

SAR EVALUATION REPORT

**FCC 47 CFR § 2.1093
IEEE Std. 1528-2013**

For

N Series RC

MODEL NUMBER: NRC01

REPORT NUMBER: 4791883648-3-SAR-1

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Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	September 11, 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	Spatial Hover Inc				
Address	10415A Westpark Dr. Houston TX 77042 HoustonTexas United States				
Manufacturer	Spatial Hover Inc				
Address	10415A Westpark Dr. Houston TX 77042 HoustonTexas United States				
EUT Name	N Series RC				
Brand	/				
Model	NRC01				
Sample Received Date	July 29, 2025				
Sample Status	Normal				
Sample ID	8705555				
Date of Tested	September 9 ~ September 10, 2025				
Applicable Standards	FCC 47 CFR § 2.1093 IEEE Std. 1528-2013 KDB publication				
SAR Limits (W/Kg)					
Exposure Category	Peak spatial-average (1g of tissue)			Extremities (hands, wrists, ankles, etc.) (10g of tissue)	
General population / Uncontrolled exposure	1.6			4	
Occupational / Controlled exposure	8			20	
The Highest Reported SAR (W/kg)					
RF Exposure Conditions	Equipment Class			SRD	
	DTS	U-NII	DSS	2.4GHz	5.8GHz
Body 1-g (5 mm)	0.224	1.114	0.028	0.839	0.739
Simultaneous Transmission (1-g)	1.402				
Test Results	Pass				
Prepared By: <i>Burt Hu</i> Burt Hu Laboratory Engineer	Reviewed By: <i>kebo. zhang</i> Kebo Zhang Operations Leader			Approved By: <i>Stephen Guo</i> 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 and 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 v01

In addition to the above, the following information was used:

TCB workshop April 2024; RF Exposure Updates (SAR Evaluation for Complex Shapes)

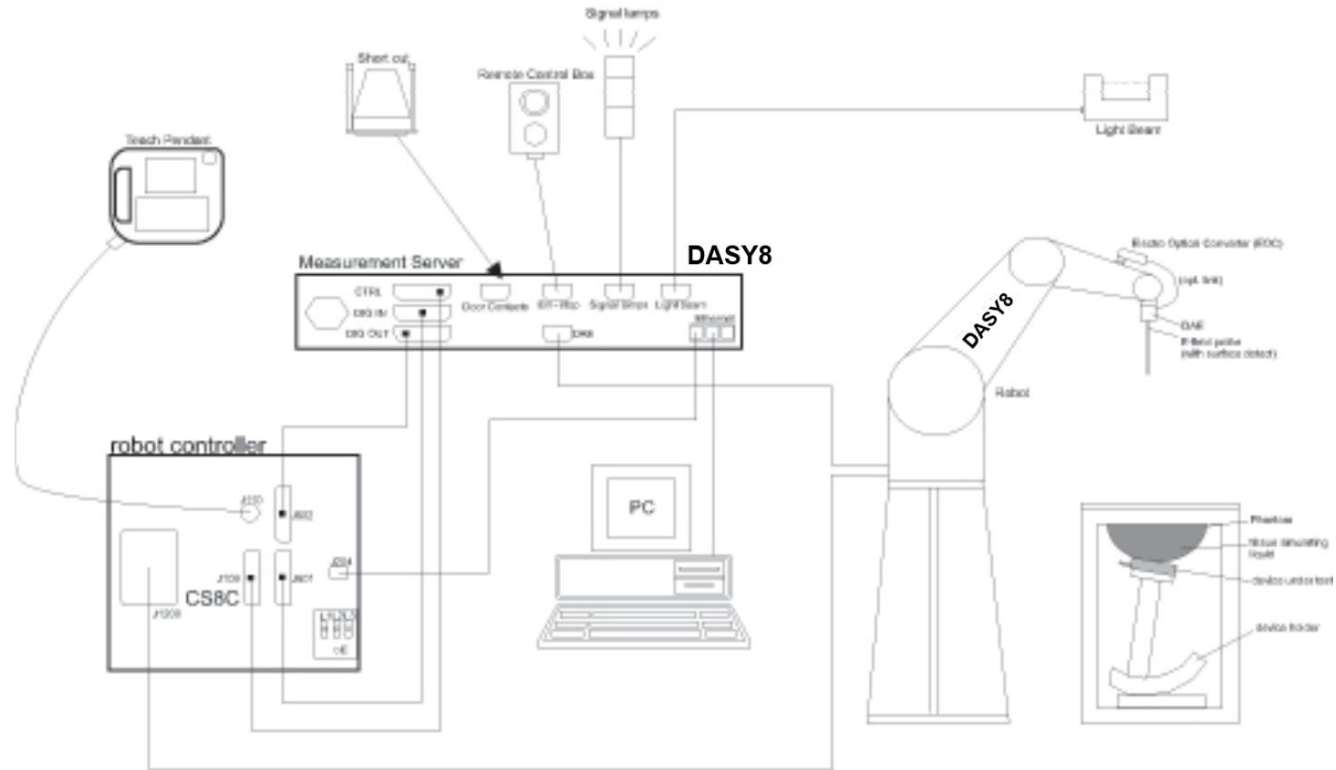
3. Facilities and Accreditation

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Room 101, Building 2, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, 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.: C-20202, G-20240, R-20248 and T-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 E, the VCCI registration No. is G-20240 and R-20248 Shielding Room F, the VCCI registration No. is C-20202 and T-20202
Description	All measurement facilities use to collect the measurement data are located at Room 101, Building 2, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, 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 IEEE Standard 1528 and IEC 62209 standards, whereby 3 Db is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). 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 KDB 865664 D01 v01r04 SAR Measurement 100 MHz to 6 GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm $\pm$ 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm $\pm$ 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$	≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*

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 KDB 865664 D01 v01r04 SAR Measurement 100 MHz to 6 GHz

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

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. 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	2028.02.26
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	7383	2026.03.13
Data Acquisition Electronic	SPEAG	DAE4	1318	2025.10.08
Dipole Kit 2450 MHz	SPEAG	D2450V2	977	2027.12.25
Dipole Kit 5 GHz	SPEAG	D5GHzV2	1231	2027.12.24
Software	SPEAG	DASY8	N/A	NCR
Phantom	SPEAG	SAM V8.0	2100	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

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std. 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Device Under Test (DUT) Information

6.1. DUT Description

DUT is a handheld remote control N Series RC with 2.4GHz/5GHz Wi-Fi and SRD/BT/BLE Wireless capabilities.

DUT Dimension	Overall (Length x Width x Height): 183.36 mm x 137.35 mm x 91.53 mm
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6.2. Wireless Technology

Wireless technology	Frequency band
Wi-Fi	2.4 GHz
Wi-Fi	5.1/5.8 GHz
SRD	2.4 GHz
SRD	5.8 GHz
BT/BLE	2.4 GHz

7. Conducted Output Power Measurement and tune-up tolerance

7.1. Test Results of 2.4GHz Wi-Fi

Mode	Freq(MHz)	AV Output Power (dBm)			Tune-up Limit (dBm)		
		ANT0	ANT1	MIMO	ANT0	ANT1	MIMO
802.11b	2412	21.25	20.86	24.07	22.0	21.0	24.5
	2437	21.35	20.72	24.06	22.0	21.0	24.5
	2462	21.56	20.93	24.27	22.0	21.0	24.5
802.11g	2412	19.81	19.40	22.62	20.0	20.0	23.0
	2437	19.82	19.26	22.56	20.0	20.0	23.0
	2462	19.88	19.37	22.64	20.0	20.0	23.0
802.11n 20M	2412	19.37	18.92	22.16	19.5	19.5	22.5
	2437	19.40	18.86	22.15	19.5	19.5	22.5
	2462	18.50	17.90	21.22	19.0	19.0	22.0
802.11n 40M	2422	18.38	18.01	21.21	19.0	19.0	22.0
	2437	19.44	18.88	22.18	19.5	19.5	22.5
	2452	17.74	17.08	20.43	18.0	18.0	21.0
802.11ax 20M	2412	19.41	18.99	22.22	20.0	20.0	23.0
	2437	19.52	19.02	22.29	20.0	20.0	23.0
	2462	18.71	18.08	21.42	19.0	19.0	22.0
802.11ax 40M	2422	18.46	18.13	21.31	18.5	18.5	21.5
	2437	19.68	19.10	22.41	20.0	20.0	23.0
	2452	17.90	17.23	20.59	18.0	18.0	21.0

Note:

- 1) The output power of the device was set to transmit at maximum power for all tests.
- 2) As per KDB 447498 D01 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. Test Results of 5GHz Wi-Fi

Mode	Freq(MHz)	AV Output Power (dBm)			Tune-up Limit (dBm)		
		ANT0	ANT1	MIMO	ANT0	ANT1	MIMO
802.11a	5180	18.56	18.33	21.46	19.0	19.0	22.0
	5200	18.32	18.25	21.30	19.0	19.0	22.0
	5240	17.75	18.05	20.91	19.0	19.0	22.0
	5745	18.78	18.66	21.73	19.0	19.0	22.0
	5785	18.37	18.75	21.57	19.0	19.0	22.0
	5825	18.75	18.89	21.83	19.0	19.0	22.0
802.11n 20M	5180	18.24	17.97	21.12	18.5	18.5	21.5
	5200	18.00	17.80	20.91	18.5	18.5	21.5
	5240	18.02	18.19	21.12	18.5	18.5	21.5
	5745	18.45	18.29	21.38	18.5	18.5	21.5
	5785	18.28	18.45	21.38	18.5	18.5	21.5
	5825	18.08	18.48	21.29	18.5	18.5	21.5
802.11ac 20M	Covered by 802.11n 20M						
802.11n 40M	5190	18.63	18.08	21.37	19.0	19.0	22.0
	5230	18.25	17.79	21.04	18.5	18.5	21.5
	5755	18.26	18.04	21.16	18.5	18.5	21.5
	5795	17.98	18.11	21.06	18.5	18.5	21.5
802.11ac 40M	Covered by 802.11n 40M						
802.11ac 80M	5210	18.05	17.57	20.83	18.5	18.5	21.5
	5775	18.36	18.34	21.36	18.5	18.5	21.5
802.11ax 20M	5180	18.36	18.17	21.28	18.5	18.5	21.5
	5200	18.16	18.06	21.12	18.5	18.5	21.5
	5240	18.19	18.41	21.31	18.5	18.5	21.5
	5745	18.56	18.45	21.52	19.0	19.0	22.0
	5785	18.36	18.59	21.49	19.0	19.0	22.0
	5825	18.20	18.67	21.45	19.0	19.0	22.0
802.11ax 40M	5190	18.92	17.78	21.40	19.0	18.0	21.5
	5230	18.51	17.55	21.07	19.0	18.0	21.5

	5755	18.64	17.85	21.27	19.0	18.0	21.5
	5795	18.32	17.94	21.14	18.5	18.5	21.5
802.11ax 80M	5210	18.45	17.44	20.98	18.5	18.5	21.5
	5775	18.21	17.68	20.96	18.5	18.5	21.5

Note:

- 1) The output power of the device was set to transmit at maximum power for all tests.
- 2) As per KDB 447498 D01 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.

7.3. Test Results of 2.4GHz SRD

Mode	Channel	AV Output Power (dBm)			Tune-up Limit (dBm)		
		Ant0	Ant1	MIMO	Ant0	Ant1	MIMO
1.4M	2409.5	22.22	21.12	24.72	22.5	21.5	25.0
	2437.5	22.26	21.63	24.97	22.5	22.5	25.5
	2465.12	21.76	20.46	24.17	22.0	21.0	24.5
3M	2410.5	24.35	23.21	26.83	24.5	24.5	27.5
	2437.5	24.05	23.80	26.94	24.5	24.5	27.5
	2464.2	23.81	23.54	26.69	24.5	24.5	27.5
10M	2405.5	16.29	15.27	18.82	16.5	15.5	19.0
	2441.5	16.51	15.93	19.24	17.0	16.0	19.5
	2472.5	17.92	16.89	20.45	18.0	17.0	20.5
	2473.5	15.00	14.09	17.58	15.0	15.0	18.0
	2474.5	13.87	12.74	16.35	14.0	13.0	16.5
	2475.5	13.07	12.09	15.62	13.5	12.5	16.0
	2476.5	11.00	9.96	13.52	11.0	10.0	13.5
20M	2410.5	16.81	16.07	19.47	17.0	17.0	20.0
	2441.5	16.49	15.71	19.13	16.5	16.5	19.5
	2468.5	16.40	15.30	18.90	16.5	15.5	19.0
	2469.5	14.60	13.35	17.03	15.0	14.0	17.5
	2470.5	13.60	12.34	16.03	14.0	13.0	16.5
	2471.5	11.66	10.44	14.10	12.0	11.0	14.5
	2472.5	9.44	8.31	11.92	9.5	8.5	12.0
40M	2422.5	13.32	12.61	15.99	13.5	13.5	16.5
	2423.5	14.48	13.66	17.10	14.5	14.5	17.5
	2424.5	16.14	15.46	18.82	16.5	15.5	19.0
	2437.5	16.49	15.38	18.98	16.5	15.5	19.0
	2450.5	14.87	14.65	17.77	15.0	15.0	18.0
	2451.5	13.86	13.79	16.84	14.0	14.0	17.0
	2452.5	12.72	12.69	15.72	13.0	13.0	16.0

Note:

- 1) The output power of the device was set to transmit at maximum power for all tests.
- 2) As per KDB 447498 D01 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.

7.4. Test Results of 5.8GHz SRD

Mode	Channel	AV Output Power (dBm)			Tune-up Limit (dBm)		
		Ant0	Ant1	MIMO	Ant0	Ant1	MIMO
1.4M	5728.5	25.76	25.00	28.41	26.0	26.0	29.0
	5788.5	25.88	24.13	28.10	26.0	25.0	28.5
	5848.12	25.80	24.46	28.19	26.0	25.0	28.5
3M	5727.5	25.39	25.24	28.33	25.5	25.5	28.5
	5787.5	25.47	24.07	27.84	25.5	24.5	28.0
	5847.2	25.37	24.23	27.85	25.5	24.5	28.0
10M	5730.5	25.26	24.59	27.95	25.5	25.5	28.5
	5787.5	25.46	23.59	27.64	25.5	24.5	28.0
	5844.5	25.70	24.17	28.01	26.0	25.0	28.5
20M	5735.5	25.51	24.91	28.23	26.0	26.0	29.0
	5787.5	25.39	23.52	27.57	25.5	25.5	28.5
	5839.5	25.79	24.28	28.11	26.0	26.0	29.0
40M	5745.5	22.27	22.59	25.44	23.0	23.0	26.0
	5787.5	23.81	23.14	26.50	24.0	24.0	27.0
	5829.50	21.91	21.15	24.56	22.0	22.0	25.0

Note:

- 1) The output power of the device was set to transmit at maximum power for all tests.
- 2) As per KDB 447498 D01 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.

7.5. Test Results of BT

Mode	Frequency (MHz)	AV Power (dBm)	Tune-up Limit (dBm)
DH5	2402	4.21	6.0
	2441	5.32	
	2480	5.73	
3DH5	2402	3.43	5.0
	2441	4.42	
	2480	4.71	
BLE_1M	2402	1.23	1.5
	2440	2.43	2.5
	2480	3.08	3.5
BLE_2M	2402	1.13	1.5
	2440	2.37	2.5
	2480	3.08	3.5

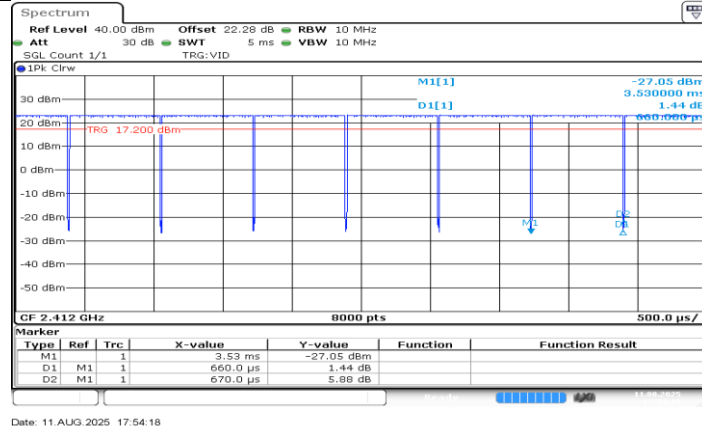
Note:

- 1) The output power of the device was set to transmit at maximum power for all tests.
- 2) As per KDB 447498 D01 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.
- 3) The maximum output power mode DH5 was selected as the primary mode to test SAR for Bluetooth mode. SAR measurement is not required for the other modes, when the secondary mode is ≤ 0.25 dB higher than the primary mode.

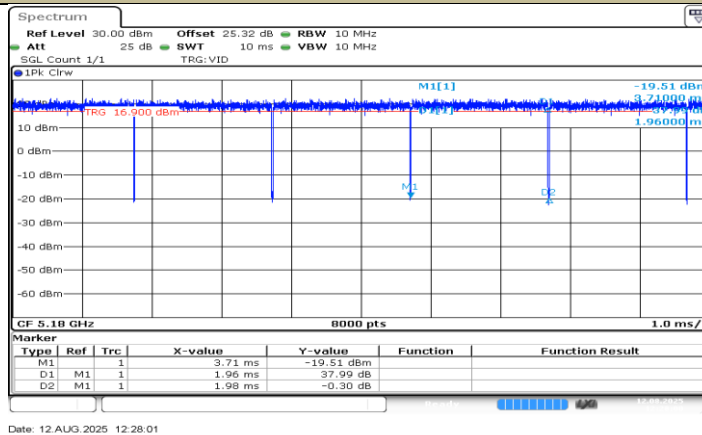
7.6. Duty Cycle

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)
802.11b	0.66	0.67	0.9851	98.51
802.11a	1.96	1.98	0.9899	98.99
SRD 3M	100.00	100.00	1.0000	100.00
SRD 20M	100.00	100.00	1.0000	100.00
DH5	2.87	3.74	0.7674	76.74

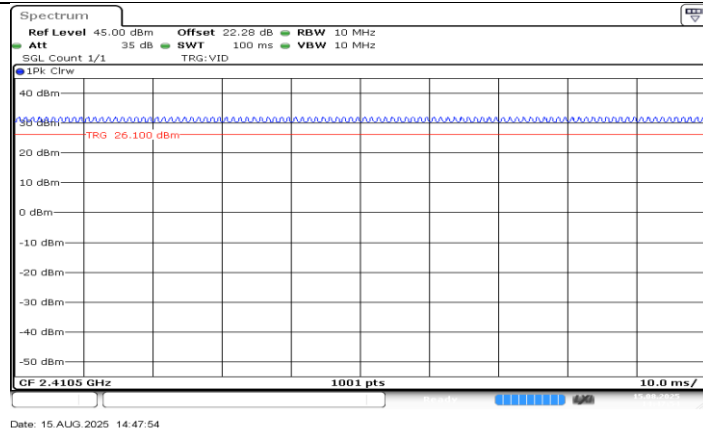
802.11b 2412MHz



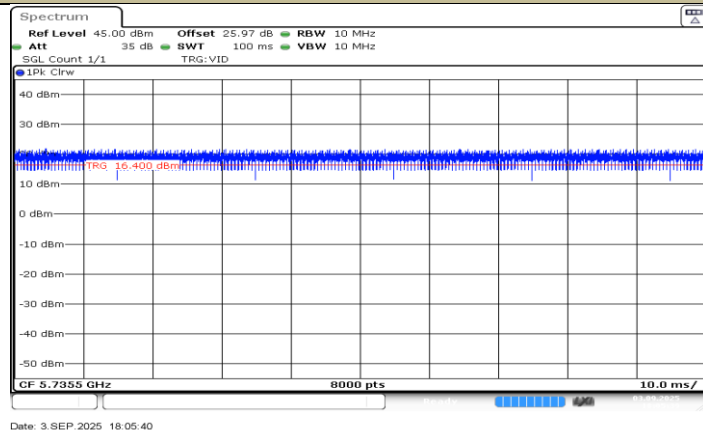
802.11a 5180MHz



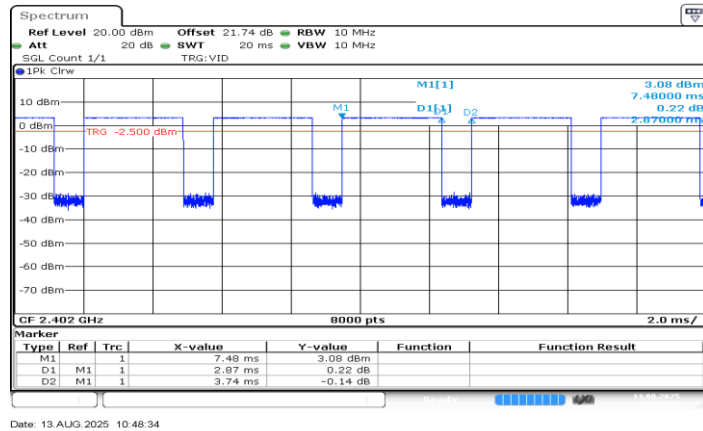
SRD 3M 2410.5MHz



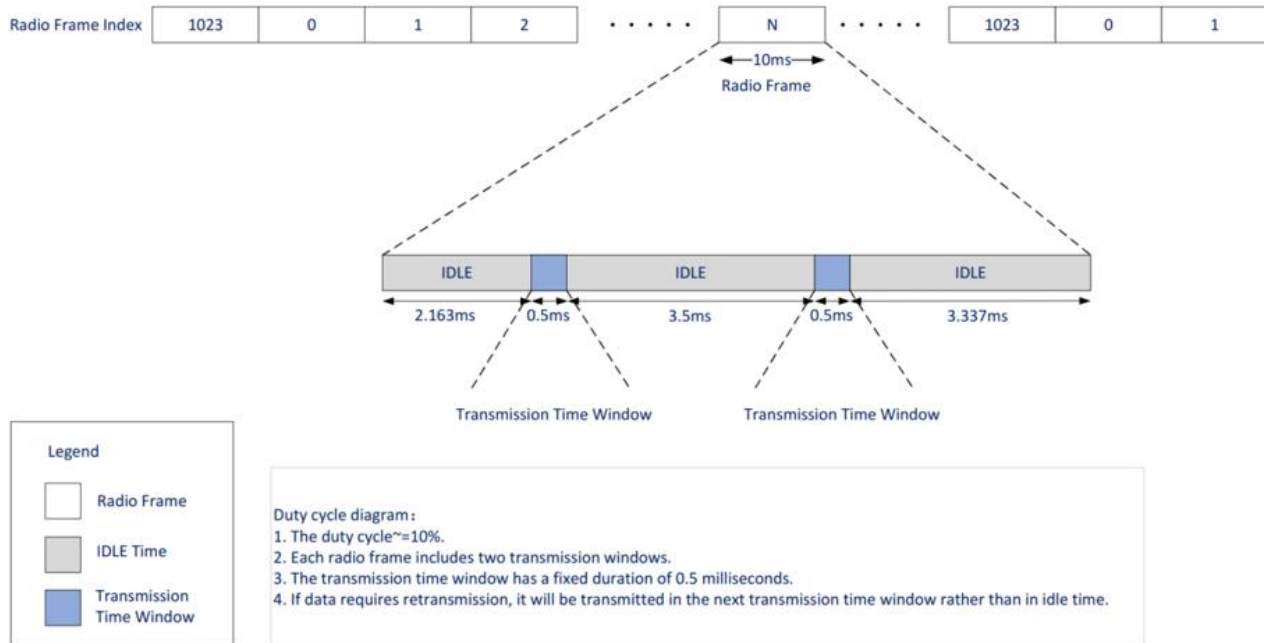
SRD 20M 5735.5MHz



DH5 2402MHz



• GND R2 Protocol Frame Duty-Cycle



8. Test Configuration

8.1. Wi-Fi Test Configuration

For Wi-Fi SAR testing, a communication link is set up with the testing software for Wi-Fi mode test. During the test, at each test frequency channel, the EUT is operated at the RF continuous emission mode. The test procedures in KDB 248227D01 are applied.

8.1.1. Initial Test Position Procedure

For exposure condition with multiple test position, such as handsets operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all position in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is $\leq 0.4\text{W/kg}$, no additional testing for the remaining test position is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR position until the reported SAR result is $\leq 0.8\text{W/kg}$ or all test position are measured. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is $> 0.8\text{W/kg}$, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is $\leq 1.2\text{W/kg}$ or all required channels are tested.

8.1.2. Initial Test Configuration Procedure

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required (see section 5.3.2 of KDB 248227D01). SAR test reduction of subsequent highest output test channels is based on the reported SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.

When the reported SAR of the initial test configuration is $> 0.8\text{W/kg}$, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the reported SAR is $\leq 1.2\text{W/kg}$ or all required channels are tested.

8.1.3. Sub Test Configuration Procedure

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units.

When the highest reported SAR for the initial test configuration, according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is $\leq 1.2\text{W/kg}$, SAR is not required for that subsequent test configuration.

8.1.4. 2.4GHz Wi-Fi SAR Test Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.

A) 802.11b DSSS SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) When the reported SAR of the highest measured maximum output power channel (section 3.1 of KDB 248227D01) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel i.e., all channels require testing.

B) 2.4GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3 of KDB 248227D01). SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

C) SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

8.1.5. 5GHz Wi-Fi SAR Test Procedures

U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output

power, SAR is measured using the higher number channel.

8.2.2.4GHz SRD SAR Test Requirements

2.4GHz SRD operating modes are tested independently according to the service requirements in each frequency band for each antenna. 1.4M/3M/10M/20M/40M MIMO modes are tested on the maximum average output power mode.

8.3.5.8GHz SRD SAR Test Requirements

5.8GHz SRD operating modes are tested independently according to the service requirements in each frequency band for each antenna. 1.4M/3M/10M/20M/40M MIMO modes are tested on the maximum average output power mode.

8.4.2.4GHz BT SAR Test Requirements

2.4GHz BT operating modes are tested independently according to the service requirements in each frequency band for each antenna. DH5/3DH5/1M/2M SISO modes are tested on the maximum average output power mode.

8.5.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 $\leq 20\%$ 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 ($\sim 10\%$ 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. RF Exposure Conditions

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation
SRD/WLAN/BT	Body	5 mm

Note:

- 1) According to KDB 941225 D07: When 1-g SAR is tested at 5 mm, 10-g SAR is not required.

Refer to the "4791883648-3-SAR-1_App A Photo" for the antenna location diagram.

10.Dielectric Property Measurements & System Check

10.1.Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ 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

FCC KDB 865664 D01 v01r04 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head		Body	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013 Dielectric Property Measurements Results:

Liquid	Freq.	Liquid Parameters				Deviation(%)		Limit (%)	Temp. (°C)	Test Date
		Measured		Target						
		ϵ _r	σ	ϵ _r	σ	ϵ _r	σ			
Head 2450	2400	40.50	1.78	39.29	1.86	3.08	-4.30	±5	21.3	September 9, 2025
	2450	40.50	1.83	39.20	1.80	3.32	1.67			
	2500	40.40	1.84	39.13	1.85	3.25	-0.54			
Head 5250	5160	36.20	4.65	36.03	4.61	0.47	0.87	±5	21.2	September 10, 2025
	5250	36.30	4.83	35.93	4.71	1.03	2.55			
	5340	36.00	4.93	35.83	4.80	0.47	2.71			
Head 5750	5660	35.60	5.23	35.46	5.13	0.39	1.95	±5	21.2	September 10, 2025
	5750	35.50	5.31	35.36	5.22	0.40	1.72			
	5840	35.30	5.42	35.27	5.30	0.09	2.26			

10.2. 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 (≤ 2 GHz), 12 mm in x- and y-dimension (2-4 GHz) and 10 mm in x- and y- dimension (4-6GHz).
- For zoom scan, $\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}} \leq 2$ GHz - ≤ 8 mm, 2-4 GHz - ≤ 5 mm and 4-6 GHz- ≤ 4 mm; $\Delta z_{\text{zoom}} \leq 3$ 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. (°C)	Test Date
		Zoom Scan (W/Kg)	Normalize to 1W (W/Kg)					
Head 2450	1-g	5.060	50.60	52.80	-4.17	±10	21.3	September 9, 2025
	10-g	2.350	23.50	24.40	-3.69			
Head 2450	1-g	5.180	51.80	52.80	-1.89	±10	21.2	September 10, 2025
	10-g	2.400	24.00	24.40	-1.64			
Head 5250	1-g	7.630	76.30	77.50	-1.55	±10	21.2	September 10, 2025
	10-g	2.210	22.10	21.80	1.38			
Head 5750	1-g	7.790	77.90	77.90	0.00	±10	21.2	September 10, 2025
	10-g	2.240	22.40	21.50	4.19			

11. Measured and Reported (Scaled) SAR 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 (%)

SRD Calculation formula: Scaled = $10^{(\text{Tune up}/10)} / 10^{(\text{meas.}/10)} * \text{Measured SAR Value} * (0.1 / \text{Duty Cycle})$

General Notes:

- 1) As per KDB447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.
- 2) As per KDB447498 D01, 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:
 - $\leq 0.8 \text{ W/kg}$ for 1-g or 2.0 W/kg for 10-g respectively, when the transmission band is $\leq 100 \text{ MHz}$.
 - $\leq 0.6 \text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
 - $\leq 0.4 \text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200 \text{ MHz}$.When the maximum output power variation across the required test channels is $> \frac{1}{2} \text{ dB}$, instead of the middle channel, the highest output power channel must be used.
- 3) As per KDB865664 D01 for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8 \text{ W/Kg}$; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR $< 1.45 \text{ W/Kg}$, only one repeated measurement is required.
- 4) As per KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is $> 1.5 \text{ W/kg}$, or $> 7.0 \text{ W/kg}$ for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing (Refer to appendix B for detailed SAR plots).
- 5) Additional SAR tests in simultaneous transmission fixed power reduction scenario are also tested in some frequency bands and required test positions for the SAR worst case, which are only used to ensure simultaneous transmission SAR test exclusion. The standalone SAR compliance still uses the SAR results tested at the maximum output power level.

11.1.SAR Test Results of 2.4GHz Wi-Fi

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.	1-g (W/Kg)			
Front Surface	802.11b	11/2462	24.50	24.27	0.041	-0.06	98.51	0.044
Back Surface	802.11b	11/2462	24.50	24.27	0.151	0.03	98.51	0.162
Back Surface	802.11b	1/2412	24.50	24.07	0.200	-0.03	98.51	0.224
Back Surface	802.11b	6/2437	24.50	24.06	0.157	0.01	98.51	0.176
Left Edge	802.11b	11/2462	24.50	24.27	0.024	-0.05	98.51	0.026
Right Edge	802.11b	11/2462	24.50	24.27	0.014	-0.08	98.51	0.015
Top Edge	802.11b	11/2462	24.50	24.27	0.016	0.09	98.51	0.017
Bottom Edge	802.11b	11/2462	24.50	24.27	0.067	0.04	98.51	0.072

Note:

- 1) The SAR testing was set to transmit at maximum power for all tests.
- 2) The 11b mode is the W-Fi 2.4GHz maximum power mode. When SAR is $\leq 1.2W/kg$, there is no need to test other modes.
- 3) Test in MIMO mode.

11.2.SAR Test Results of 5GHz Wi-Fi U-NII-1

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value 1-g (W/Kg)	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.				
Front Surface	802.11a	36/5180	22.00	21.46	0.019	0.07	98.99	0.022
Back Surface	802.11a	36/5180	22.00	21.46	0.167	-0.04	98.99	0.191
Back Surface	802.11a	40/5200	22.00	21.30	0.201	-0.03	98.99	0.239
Back Surface	802.11a	48/5240	22.00	20.91	0.330	-0.09	98.99	0.428
Left Edge	802.11a	36/5180	22.00	21.46	0.017	0.06	98.99	0.019
Right Edge	802.11a	36/5180	22.00	21.46	0.010	-0.11	98.99	0.011
Top Edge	802.11a	36/5180	22.00	21.46	0.021	0.08	98.99	0.024
Bottom Edge	802.11a	36/5180	22.00	21.46	0.043	-0.02	98.99	0.049

Note:

- 1) The SAR testing was set to transmit at maximum power for all tests.
- 2) The 11a mode is the W-Fi 5GHz U-NII-1 maximum power mode. When SAR is $\leq 1.2W/kg$, there is no need to test other modes.
- 3) Test in MIMO mode.

11.3.SAR Test Results of 5GHz Wi-Fi U-NII-3

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.	1-g (W/Kg)			
Front Surface	802.11a	165/5825	22.00	21.83	0.056	0.04	98.99	0.059
Back Surface	802.11a	165/5825	22.00	21.83	1.060	0.02	98.99	1.114
Back Surface	802.11a	149/5745	22.00	21.73	0.894	0.05	98.99	0.961
Back Surface	802.11a	157/5785	22.00	21.57	0.980	-0.01	98.99	1.093
Left Edge	802.11a	165/5825	22.00	21.83	0.047	0.07	98.99	0.049
Right Edge	802.11a	165/5825	22.00	21.83	0.056	-0.09	98.99	0.059
Top Edge	802.11a	165/5825	22.00	21.83	0.023	0.03	98.99	0.024
Bottom Edge	802.11a	165/5825	22.00	21.83	0.110	-0.06	98.99	0.116
Worst mode retest								
Back Surface	802.11a	165/5825	22.00	21.83	1.010	-0.01	98.99	1.061

Note:

- 1) The SAR testing was set to transmit at maximum power for all tests.
- 2) Due to $1.060/1.010 = 1.05 < 1.20$, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.
- 3) The 11a mode is the W-Fi 5GHz U-NII-3 maximum power mode. When SAR is ≤ 1.2 W/kg, there is no need to test other modes.
- 4) Test in MIMO mode.

11.4.SAR Test Results of 2.4GHz SRD

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.	1-g (W/Kg)			
Front Surface	SRD 3M	2437.5	27.50	26.94	0.415	0.05	100.00	0.047
Back Surface	SRD 3M	2437.5	27.50	26.94	1.460	0.02	100.00	0.166
Left Edge	SRD 3M	2437.5	27.50	26.94	0.206	-0.04	100.00	0.023
Right Edge	SRD 3M	2437.5	27.50	26.94	0.209	0.08	100.00	0.024
Top Edge	SRD 3M	2437.5	27.50	26.94	4.480	0.01	100.00	0.510
Top Edge	SRD 3M	2410.5	27.50	26.83	7.190	0.00	100.00	0.839
Top Edge	SRD 3M	2464.2	27.50	26.69	5.480	0.01	100.00	0.660
Bottom Edge	SRD 3M	2437.5	27.50	26.94	0.054	-0.07	100.00	0.006
Worst mode retest								
Top Edge	SRD 3M	2410.5	27.50	26.83	7.030	-0.05	100.00	0.820

Note:

- 1) The SAR testing was set to transmit at maximum power for all tests.
- 2) Due to $7.190/7.030 = 1.02 < 1.20$, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.
- 3) Test in MIMO mode.
- 4) SAR evaluation is conducted under fixed frequency mode, the duty cycle is 100% when in fixed frequency mode, but when actual used, the duty cycle is only 10%, so the SAR result is scaled down to 10% duty cycle depending on result of 100%.

11.5.SAR Test Results of 5.8GHz SRD

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.	1-g (W/Kg)			
Front Surface	SRD 20M	5735.5	29.00	28.23	4.200	-0.06	100.00	0.501
Back Surface	SRD 20M	5735.5	29.00	28.23	2.180	0.03	100.00	0.260
Left Edge	SRD 20M	5735.5	29.00	28.23	0.667	0.04	100.00	0.080
Right Edge	SRD 20M	5735.5	29.00	28.23	0.368	-0.07	100.00	0.044
Top Edge	SRD 20M	5735.5	29.00	28.23	4.910	-0.02	100.00	0.586
Top Edge	SRD 20M	5787.5	28.50	27.57	5.000	0.05	100.00	0.619
Top Edge	SRD 20M	5839.5	29.00	28.11	6.020	0.03	100.00	0.739
Bottom Edge	SRD 20M	5735.5	29.00	28.23	0.182	-0.01	100.00	0.022
Worst mode retest								
Top Edge	SRD 20M	5839.5	29.00	28.11	5.850	-0.06	100.00	0.718

Note:

- 1) The SAR testing was set to transmit at maximum power for all tests.
- 2) Due to $6.020/5.850 = 1.03 < 1.20$, and SAR value of original and repeated measurement is ≤ 1.45 W/kg, so only one repeated measurement is required.
- 3) Test in MIMO mode.
- 4) SAR evaluation is conducted under fixed frequency mode, the duty cycle is 100% when in fixed frequency mode, but when actual used, the duty cycle is only 10%, so the SAR result is scaled down to 10% duty cycle depending on result of 100%.

11.6.SAR Test Results of BT

Test Position (Body 5mm)	Test Mode	Channel/ Frequency	Power (dBm)		Measured SAR Value	Power Drift	Duty Cycle (%)	Scaled (W/Kg)
			Tune-up	Meas.	1-g (W/Kg)			
Front Surface	BT DH5	78/2480	6.00	5.94	0.002	-0.12	76.74	0.003
Back Surface	BT DH5	78/2480	6.00	5.94	0.005	-0.09	76.74	0.007
Back Surface	BT DH5	0/2402	6.00	4.37	0.015	-0.13	76.74	0.028
Back Surface	BT DH5	39/2441	6.00	5.43	0.008	0.14	76.74	0.012
Left Edge	BT DH5	78/2480	6.00	5.94	0.003	0.07	76.74	0.004
Right Edge	BT DH5	78/2480	6.00	5.94	0.003	-0.15	76.74	0.004
Top Edge	BT DH5	78/2480	6.00	5.94	0.003	-0.11	76.74	0.004
Bottom Edge	BT DH5	78/2480	6.00	5.94	0.001	0.13	76.74	0.001

Note:

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

12.Simultaneous Transmission SAR Analysis

Simultaneous transmission possibilities	
No.	Simultaneous TX Combination
1	2.4GHz Wi-Fi MIMO+SRD 2.4GHz MIMO
2	5.8GHz Wi-Fi MIMO+SRD 5.8GHz MIMO
3	BT+2.4GHz Wi-Fi ANT1+ SRD 2.4GHz MIMO
4	BT+5.8GHz Wi-Fi ANT1+ SRD 5.8GHz MIMO
5	5.1GHz Wi-Fi MIMO+SRD 5.8GHz MIMO
6	BT+5.1GHz Wi-Fi ANT1+ SRD 2.4GHz MIMO

Note:

- 1) Since the Wi-Fi test is in MIMO mode, the single Wi-Fi ANT value is calculated instead of the MIMO value.

12.1.Simultaneously transmit SAR calculations

RF Exposure	Test Position	2.4GHz Wi-Fi MIMO	SRD 2.4GHz MIMO	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.044	0.047	0.091	1.6
	Back Surface	0.224	0.166	0.390	
	Left Edge	0.026	0.023	0.049	
	Right Edge	0.015	0.024	0.039	
	Top Edge	0.017	0.839	0.856	
	Bottom Edge	0.072	0.006	0.078	

RF Exposure	Test Position	5.8GHz Wi-Fi MIMO	SRD 5.8GHz MIMO	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.059	0.501	0.560	1.6
	Back Surface	1.114	0.260	1.374	
	Left Edge	0.050	0.080	0.130	
	Right Edge	0.060	0.044	0.104	
	Top Edge	0.024	0.739	0.763	
	Bottom Edge	0.117	0.022	0.139	

RF Exposure	Test Position	2.4GHz Wi-Fi MIMO	SRD 2.4GHz MIMO	BT	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.044	0.047	0.003	0.094	1.6
	Back Surface	0.224	0.166	0.028	0.418	
	Left Edge	0.026	0.023	0.004	0.053	
	Right Edge	0.015	0.024	0.004	0.043	
	Top Edge	0.017	0.839	0.004	0.860	
	Bottom Edge	0.072	0.006	0.001	0.079	

RF Exposure	Test Position	5.8GHz Wi-Fi MIMO	SRD 5.8GHz MIMO	BT	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.059	0.501	0.003	0.563	1.6
	Back Surface	1.114	0.260	0.028	1.402	
	Left Edge	0.050	0.080	0.004	0.134	
	Right Edge	0.060	0.044	0.004	0.108	
	Top Edge	0.024	0.739	0.004	0.767	
	Bottom Edge	0.117	0.022	0.001	0.140	

RF Exposure	Test Position	5.1GHz Wi-Fi MIMO	SRD 5.8GHz MIMO	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.022	0.501	0.523	1.6
	Back Surface	0.428	0.260	0.688	
	Left Edge	0.019	0.080	0.099	
	Right Edge	0.011	0.044	0.055	
	Top Edge	0.024	0.739	0.763	
	Bottom Edge	0.049	0.022	0.071	

RF Exposure	Test Position	5.1GHz Wi-Fi MIMO	SRD 2.4GHz MIMO	BT	Σ SAR 1-g (W/kg)	Limit (W/kg)
Body	Front Surface	0.022	0.047	0.003	0.072	1.6
	Back Surface	0.428	0.166	0.028	0.622	
	Left Edge	0.019	0.023	0.004	0.046	
	Right Edge	0.011	0.024	0.004	0.039	
	Top Edge	0.024	0.839	0.004	0.867	
	Bottom Edge	0.049	0.006	0.001	0.056	

Appendixes

Refer to separated files for the following appendixes.

4791883648-3-SAR-1_App A Photo

4791883648-3-SAR-1_App B System Check Plots

4791883648-3-SAR-1_App C Highest Test Plots

4791883648-3-SAR-1_App D Cal. Certificates

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