ELEMENT MATERIALS TECHNOLOGY
(formerly PCTEST)
18855 Adams Court, Morgan Hill, CA 95037 USA
Tel. 408.538.5600
http://www.element.com

RF EXPOSURE REPORT

Applicant Name:
Apple, Inc.
One Apple Park Way
Cupertino, CA 95014 USA

Date of Testing:
06/14/2026 – 07/08/2026
Test Report Issue Date:
08/07/2026
Test Site/Location:
Element, Morgan Hill, CA, USA
Document Serial No.:
1C2604100029-12.BCG-R1

FCC ID: **BCG-A3584**

APPLICANT: **APPLE, INC.**

DUT Type: Watch
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: A3584, A3585

Equipment Class	Band & Mode	Tx Frequency	SAR	
			1g Head (W/kg)	10g Extremity (W/kg)
DTS	2.4 GHz WIFI	2412 - 2472 MHz	0.30	<0.1
NII	5 GHz WIFI	U-NII-1: 5180 - 5240 MHz U-NII-2A: 5260 - 5320 MHz U-NII-2C: 5500 - 5720 MHz U-NII-3: 5745 - 5825 MHz	0.20	<0.1
DSS/DTS	2.4 GHz Bluetooth	2402 - 2480 MHz	0.21	<0.1
NII	802.15.4 ab-NB	5728.75 - 5846.25 MHz	<0.1	<0.1
DXX	NFC	13.56 MHz	N/A	<0.1
UWB	UWB	6489.6 - 7987.2 MHz	N/A	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			**0.42**	**<0.1**

Note: This revised Test Report supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This watch has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

RJ Ortanez
Executive Vice President

The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sartick@mwfai.info.

Revision Summary

Revision	Description	Issue Date	Revised By
-	Initial Release	7/13/2026	WKR0000016715
R1	Addressed TCB Comments	7/28/2026	WKR0000016715

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
2.4 GHz WLAN	Voice/Data	2412 - 2472 MHz
5 GHz WIFI	Voice/Data	U-NII-1: 5180 - 5240 MHz U-NII-2A: 5260 - 5320 MHz U-NII-2C: 5500 - 5720 MHz U-NII-3: 5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
802.15.4 ab-NB	Data	5728.75 - 5846.25 MHz
NFC	Data	13.56 MHz
UWB	Data	6489.6 - 7987.2 MHz

1.2 Power Reduction for SAR

There is no power reduction used for any band/mode implemented in this device for SAR purposes.

1.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D04v01.

1.3.1 Maximum Output Power – WiFi Mode

Mode/ Band			IEEE 802.11b (2.4 GHz)		IEEE 802.11g (2.4 GHz)		IEEE 802.11n (2.4 GHz)	
		Channel	Maximum	Nominal	Maximum	Nominal	Maximum	Nominal
Modulated Average - Single Tx Chain (dBm)	20 MHz Bandwidth	1	18.00	17.00	17.00	16.00	17.00	16.00
		2	18.00	17.00	18.00	17.00	18.00	17.00
		3	18.00	17.00	18.00	17.00	18.00	17.00
		4	18.00	17.00	18.00	17.00	18.00	17.00
		5	18.00	17.00	18.00	17.00	18.00	17.00
		6	18.00	17.00	18.00	17.00	18.00	17.00
		7	18.00	17.00	18.00	17.00	18.00	17.00
		8	18.00	17.00	18.00	17.00	18.00	17.00
		9	18.00	17.00	18.00	17.00	18.00	17.00
		10	18.00	17.00	18.00	17.00	18.00	17.00
		11	18.00	17.00	17.00	16.00	17.00	16.00
		12	18.00	17.00	14.50	13.50	14.50	13.50
		13	18.00	17.00	2.50	1.50	2.50	1.50

Mode/ Band			IEEE 802.11a (5 GHz)		IEEE 802.11n (5 GHz)	
		Channel	Maximum	Nominal	Maximum	Nominal
Modulated Average - Single Tx Chain (dBm)	20 MHz Bandwidth	36	17.00	16.00	17.00	16.00
		40	17.00	16.00	17.00	16.00
		44	17.00	16.00	17.00	16.00
		48	17.00	16.00	17.00	16.00
		52	17.00	16.00	17.00	16.00
		56	17.00	16.00	17.00	16.00
		60	17.00	16.00	17.00	16.00
		64	17.00	16.00	17.00	16.00
		100	17.00	16.00	17.00	16.00
		104	17.00	16.00	17.00	16.00
		108	17.00	16.00	17.00	16.00
		112	17.00	16.00	17.00	16.00
		116	17.00	16.00	17.00	16.00
		120	17.00	16.00	17.00	16.00
		124	17.00	16.00	17.00	16.00
		128	17.00	16.00	17.00	16.00
		132	17.00	16.00	17.00	16.00
		136	15.00	14.00	15.00	14.00
		140	12.50	11.50	12.50	11.50
		144	17.00	16.00	17.00	16.00
		149	17.00	16.00	17.00	16.00
		153	17.00	16.00	17.00	16.00
		157	17.00	16.00	17.00	16.00
		161	17.00	16.00	17.00	16.00
		165	17.00	16.00	17.00	16.00

1.3.2 Maximum Output Power – Bluetooth Mode

Mode / Band		Modulated Average - Single Tx Chain (dBm)
Bluetooth BDR/LE	Maximum	**17.50**
	Nominal	**16.50**
Bluetooth EDR	Maximum	**12.50**
	Nominal	**11.50**
Bluetooth HDR	Maximum	**12.50**
	Nominal	**11.50**

1.3.3 Maximum Output Power – 802.15.4 ab-NB

Mode / Band		Modulated Average - Single Tx Chain (dBm)
802.15.4 ab-NB	Maximum	**16.00**
	Nominal	**14.00**

1.4 DUT Antenna Locations

A diagram showing the location of the device antennas can be found in the DUT Antenna Diagram & SAR Test Setup Photographs Appendix**.**

1.5 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in the DUT Antenna Diagram & SAR Test Setup Photographs Appendix**.**

1.6 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D04v01, transmitters are considered to be operating simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D04v01 4.3 procedures.

Table 1-1
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Extremity
1	2.4 GHz WI-FI + 802.15.4 ab-NB + NFC*	Yes*	Yes
2	2.4 GHz WI-FI + UWB + NFC*	Yes*	Yes
3	2.4 GHz Bluetooth + 5 GHz WI-FI + NFC*	Yes*	Yes
4	2.4 GHz Bluetooth + 802.15.4 ab-NB + NFC*	Yes*	Yes
5	2.4 GHz Bluetooth + UWB + NFC*	Yes*	Yes

1. 2.4 GHz WLAN and 2.4 GHz Bluetooth cannot transmit simultaneously.
2. 2.4 GHz WLAN and 5 GHz WLAN cannot transmit simultaneously.
3. 802.15.4ab-NB, 5 GHz WLAN and UWB cannot transmit simultaneously.
4. This device supports VOWIFI.
5. *NFC were evaluated for extremity only based on expected usage conditions.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

This device supports channel 1-13 for 2.4 GHz WLAN. However, because channel 12/13 targets are not higher than those of channels 1-11, channels 1, 6, and 11 were considered for SAR testing per FCC KDB 248227 D01V02r02.

Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg, SAR is not required for U-NII-1 band according to FCC KDB Publication 248227 D01v02r02.

Per October 2022 TCB Workshop, the 1 mW test exemption is allowed for 6-8.5 GHz UWB in multi-transmitter end products. No further evaluation for UWB is required.

1.8 Guidance Applied

- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D04v01 (General SAR Guidance, Wrist-worn Device Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- IEEE 1528-2013
- October 2022 TCB Workshop Notes (UWB)

1.9 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical, and thermal characteristics and are within operational

tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 9.

1.10 Device Housing Types and Wrist Band Types

This device has one housing type that was evaluated independently for SAR: Aluminum. The device can also be used with different wristband accessories. The non-metallic wrist accessory, sport band, was evaluated for all exposure conditions. The available metallic wrist accessories, metal links band and metal loop band, were additionally evaluated.

2 INTRODUCTION

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996, and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [22]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

2.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 2-1).

Equation 2-1
SAR Mathematical Equation

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right) = \frac{d}{dt}\left(\frac{dU}{\rho dv}\right)$$

SAR is expressed in units of Watts per Kilogram (W/kg).

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

where:

σ = conductivity of the tissue-simulating material (S/m)
ρ = mass density of the tissue-simulating material (kg/m^3)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

3 DOSIMETRIC ASSESSMENT

3.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and:

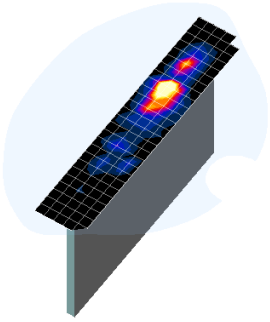


Figure 3-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface, and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 3-1).
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 3-1). On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

   a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 3-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).

   b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

Table 3-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
			$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)$*	$\Delta z_{zoom}(n>1)$*	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	≤ 1.5*Δz_{zoom}(n-1)	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5*Δz_{zoom}(n-1)	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5*Δz_{zoom}(n-1)	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5*Δz_{zoom}(n-1)	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5*Δz_{zoom}(n-1)	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

4 TEST CONFIGURATION POSITIONS

4.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. Additionally, a manufacturer provided low-loss foam was used to position the device for head SAR evaluations.

4.2 Positioning for Head

Devices that are designed to be worn on the wrist may operate in speaker mode for voice communication, with the device worn on the wrist and positioned next to the mouth. When next-to-mouth SAR evaluation is required, the device is positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium. The device is evaluated with wrist bands strapped together to represent normal use conditions.

4.3 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions: i.e., hands, wrists, feet, and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. When extremity SAR evaluation is required, the device is evaluated with the back of the device touching the flat phantom, which is filled with head tissue-equivalent medium. The device was evaluated with Sport wristband unstrapped and touching the phantom. For Metal Loop and Metal Links wristbands, the device was evaluated with wristbands strapped and the distance between wristbands and the phantom was minimized to represent the spacing created by actual use conditions.

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. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

5.3 RF Exposure Limits for Frequencies Below 6 GHz

Table 5-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

5.4 RF Exposure Limits for Frequencies Above 6 GHz

Per §1.1310 (d)(3), the MPE limits are applied for frequencies above 6 GHz. Power Density is expressed in units of W/m^2 or mW/cm^2.

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

Table 5-2
Human Exposure Limits Specified in FCC 47 CFR §1.1310

Human Exposure to Radiofrequency (RF) Radiation Limits		
Frequency Range [MHz]	**Power Density** [mW/cm^2]	**Average Time** [Minutes]
(A) Limits For Occupational / Controlled Environments		
1,500 – 100,000	5.0	6
(B) Limits For General Population / Uncontrolled Environments		
1,500 – 100,000	1.0	30

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

6 FCC MEASUREMENT PROCEDURES

6.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D04v01, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

6.2 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset-based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

6.2.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to a 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

6.2.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

6.2.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 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, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. Each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

6.2.4 2.4 GHz SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either the 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 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 position 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.

2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

6.2.5 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, and 802.11n 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 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.

6.2.6 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 6.2.5). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

6.2.7 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the

subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

7 RF CONDUCTED POWERS

7.1 WLAN Conducted Powers

Table 7-1
2.4 GHz WLAN Maximum Average RF Power

2.4GHz WIFI (20MHz 802.11b SISO)				2.4GHz WIFI (20MHz 802.11g SISO)				2.4GHz WIFI (20MHz 802.11n SISO)			
Freq. [MHz]	Channel	Detector	Conducted Power [dBm]	Freq. [MHz]	Channel	Detector	Conducted Power [dBm]	Freq. [MHz]	Channel	Detector	Conducted Power [dBm]
2412	1	Average	17.61	2417	2	Average	16.56	2417	2	Average	16.51
2437	6		17.53	2437	6		16.66	2437	6		16.63
2462	11		17.44	2457	10		16.57	2457	10		16.52

Table 7-2
5 GHz WLAN Maximum Average RF Power

5GHz WIFI (20MHz 802.11a SISO)				5GHz WIFI (20MHz 802.11n SISO)			
Band	Freq. [MHz]	Channel	Avg. Conducted Power [dBm]	Band	Freq. [MHz]	Channel	Avg. Conducted Power [dBm]
UNII-1	5180	36	15.87	UNII-1	5180	36	15.10
	5200	40	15.71		5200	40	15.17
	5220	44	15.94		5220	44	15.23
	5240	48	15.82		5240	48	15.36
UNII-2A	5260	52	15.96	UNII-2A	5260	52	15.55
	5280	56	15.76		5280	56	15.57
	5300	60	15.97		5300	60	15.60
	5320	64	15.91		5320	64	15.62
UNII-2C	5500	100	16.04	UNII-2C	5500	100	15.78
	5600	120	16.05		5600	120	15.82
	5620	124	16.08		5620	124	15.81
	5720	144	16.18		5720	144	15.92
UNII-3	5745	149	15.93	UNII-3	5745	149	15.71
	5785	157	15.94		5785	157	15.57
	5825	165	16.05		5825	165	15.83

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

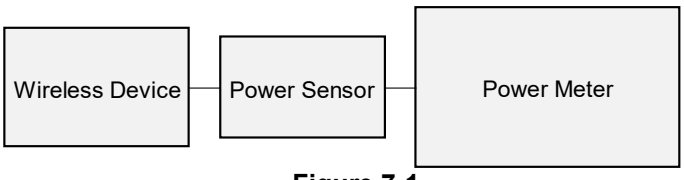


Figure 7-1
Power Measurement Setup

7.2 Bluetooth Conducted Powers

Table 7-3
Bluetooth Average RF Power

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	17.49	56.105
2441	GFSK	1.0	39	17.44	55.463
2480	GFSK	1.0	78	17.46	55.719

Note 1: Bluetooth was evaluated with a test mode with 100% transmission duty factor.

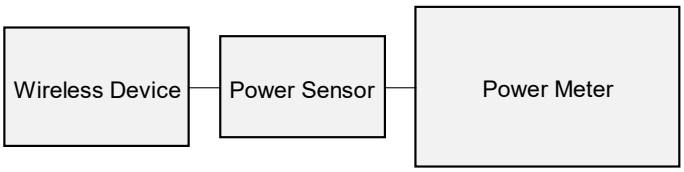


Figure 7-2
Power Measurement Setup

7.3 802.15.4 ab-NB Conducted Powers

Table 7-4
802.15.4 ab-NB Average RF Power

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel	Avg Conducted Power	
				[dBm]	[mW]
5728.75	O-QPSK	1.0	Low	15.33	34.119
5786.25	O-QPSK	1.0	Middle	15.31	33.963
5846.25	O-QPSK	1.0	High	15.26	33.574

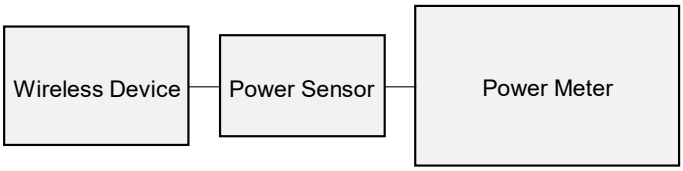
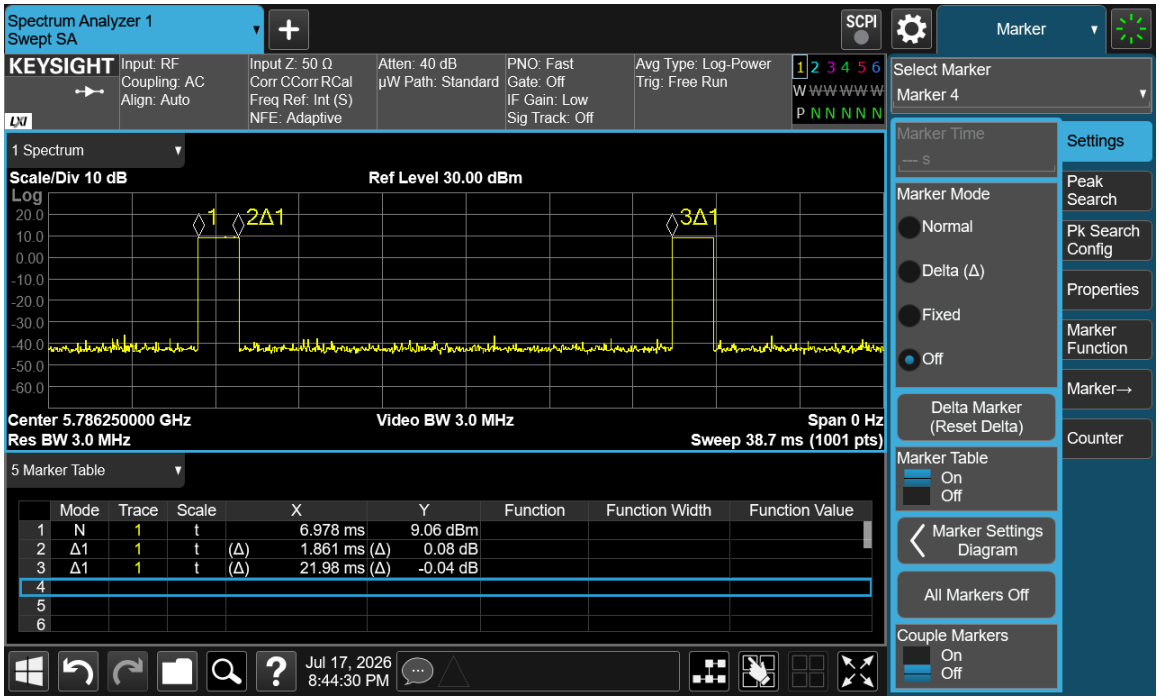


Figure 7-3
Power Measurement Setup

7.4 802.15.4 ab-NB Duty Cycle

Figure 7-4
802.15.4 ab-NB Transmission Plot



Equation 7-1
802.15.4 ab-NB Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{1.861\ ms}{21.98\ ms} * 100\% = 8.47\%$$

8 SYSTEM VERIFICATION

8.1 Tissue Verification

Table 8-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
7/8/2026	30 Head	23.0	12	0.752	53.501	0.750	55.000	0.27%	-2.73%
			13	0.752	53.490	0.750	55.000	0.27%	-2.75%
			14	0.752	53.432	0.750	55.000	0.27%	-2.85%
6/16/2026	2450 Head	24.6	2300	1.696	38.762	1.670	39.500	1.56%	-1.87%
			2310	1.708	38.727	1.679	39.480	1.73%	-1.91%
			2320	1.719	38.691	1.687	39.460	1.90%	-1.95%
			2400	1.808	38.347	1.756	39.289	2.96%	-2.40%
			2450	1.863	38.174	1.800	39.200	3.50%	-2.62%
			2480	1.895	38.023	1.833	39.162	3.38%	-2.91%
			2500	1.920	37.926	1.855	39.136	3.50%	-3.09%
			2510	1.933	37.888	1.866	39.123	3.59%	-3.16%
			2535	1.962	37.801	1.893	39.092	3.65%	-3.30%
			2550	1.978	37.745	1.909	39.073	3.61%	-3.40%
			2560	1.988	37.702	1.920	39.060	3.54%	-3.48%
			2600	2.034	37.502	1.964	39.009	3.56%	-3.86%
			2650	2.093	37.315	2.018	38.945	3.72%	-4.19%
			2680	2.124	37.183	2.051	38.907	3.56%	-4.43%
			2700	2.148	37.082	2.073	38.882	3.62%	-4.63%
7/7/2026	2450 Head	24.6	2300	1.695	38.979	1.670	39.500	1.50%	-1.32%
			2310	1.707	38.943	1.679	39.480	1.67%	-1.36%
			2320	1.718	38.910	1.687	39.460	1.84%	-1.39%
			2400	1.806	38.577	1.756	39.289	2.85%	-1.81%
			2450	1.862	38.409	1.800	39.200	3.44%	-2.02%
			2480	1.895	38.276	1.833	39.162	3.38%	-2.26%
			2500	1.919	38.190	1.855	39.136	3.45%	-2.42%
			2510	1.931	38.151	1.866	39.123	3.48%	-2.48%
			2535	1.961	38.057	1.893	39.092	3.59%	-2.65%
			2550	1.978	37.999	1.909	39.073	3.61%	-2.75%
			2560	1.989	37.961	1.920	39.060	3.59%	-2.81%
			2600	2.035	37.789	1.964	39.009	3.62%	-3.13%
			2650	2.094	37.593	2.018	38.945	3.77%	-3.47%
			2680	2.127	37.465	2.051	38.907	3.71%	-3.71%
			2700	2.150	37.375	2.073	38.882	3.71%	-3.88%

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/14/2026	5200-5800 Head	19.0	5150	4.385	36.200	4.608	36.050	-4.84%	0.42%
			5160	4.398	36.186	4.618	36.040	-4.76%	0.41%
			5170	4.408	36.164	4.629	36.030	-4.77%	0.37%
			5180	4.420	36.134	4.635	36.009	-4.64%	0.35%
			5190	4.434	36.110	4.645	35.998	-4.54%	0.31%
			5200	4.446	36.090	4.655	35.986	-4.49%	0.29%
			5210	4.457	36.076	4.666	35.975	-4.48%	0.28%
			5220	4.466	36.060	4.676	35.963	-4.49%	0.27%
			5240	4.488	36.023	4.696	35.940	-4.43%	0.23%
			5250	4.499	36.013	4.706	35.929	-4.40%	0.23%
			5260	4.509	36.005	4.717	35.917	-4.41%	0.25%
			5270	4.520	35.988	4.727	35.906	-4.38%	0.23%
			5280	4.529	35.962	4.737	35.894	-4.39%	0.19%
			5290	4.540	35.929	4.748	35.883	-4.38%	0.13%
			5300	4.553	35.906	4.758	35.871	-4.31%	0.10%
			5310	4.566	35.889	4.768	35.860	-4.24%	0.08%
			5320	4.578	35.875	4.778	35.849	-4.19%	0.07%
			5500	4.772	35.571	4.963	35.643	-3.85%	-0.20%
			5510	4.782	35.559	4.973	35.632	-3.84%	-0.20%
			5520	4.793	35.531	4.983	35.620	-3.81%	-0.25%
			5530	4.804	35.498	4.994	35.609	-3.80%	-0.31%
			5540	4.814	35.473	5.004	35.597	-3.80%	-0.35%
			5550	4.824	35.464	5.014	35.586	-3.79%	-0.34%
			5560	4.836	35.455	5.024	35.574	-3.74%	-0.33%
			5580	4.867	35.420	5.045	35.551	-3.53%	-0.37%
			5600	4.889	35.374	5.065	35.529	-3.47%	-0.44%
			5610	4.899	35.365	5.076	35.518	-3.49%	-0.43%
			5620	4.910	35.348	5.086	35.506	-3.46%	-0.44%
			5640	4.934	35.289	5.106	35.483	-3.37%	-0.55%
			5660	4.953	35.265	5.127	35.460	-3.39%	-0.55%
			5670	4.965	35.263	5.137	35.449	-3.35%	-0.52%
			5680	4.979	35.248	5.147	35.437	-3.26%	-0.53%
			5690	4.992	35.233	5.158	35.426	-3.22%	-0.54%
			5700	5.007	35.211	5.168	35.414	-3.12%	-0.57%
			5710	5.022	35.191	5.178	35.403	-3.01%	-0.60%
			5720	5.033	35.169	5.188	35.391	-2.99%	-0.63%
			5745	5.050	35.120	5.214	35.363	-3.15%	-0.69%
			5750	5.055	35.113	5.219	35.357	-3.14%	-0.69%
			5755	5.062	35.108	5.224	35.351	-3.10%	-0.69%
			5765	5.074	35.100	5.234	35.340	-3.06%	-0.68%
			5775	5.085	35.085	5.245	35.329	-3.05%	-0.69%
			5785	5.098	35.057	5.255	35.317	-2.99%	-0.74%
			5795	5.112	35.035	5.265	35.305	-2.91%	-0.76%
			5800	5.120	35.026	5.270	35.300	-2.85%	-0.78%
			5805	5.128	35.023	5.275	35.294	-2.79%	-0.77%
			5825	5.149	34.994	5.296	35.271	-2.78%	-0.79%
			5835	5.158	34.966	5.305	35.230	-2.77%	-0.75%
			5845	5.168	34.947	5.315	35.210	-2.77%	-0.75%
			5850	5.173	34.941	5.320	35.200	-2.76%	-0.74%
			5855	5.180	34.934	5.325	35.197	-2.72%	-0.75%
			5865	5.192	34.918	5.336	35.190	-2.70%	-0.77%
			5875	5.204	34.898	5.347	35.183	-2.67%	-0.81%
			5885	5.215	34.879	5.357	35.177	-2.65%	-0.85%
			5905	5.239	34.867	5.379	35.163	-2.60%	-0.84%

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/19/2026	5200-5800 Head	19.0	5150	4.416	35.920	4.608	36.050	-4.17%	-0.36%
			5160	4.429	35.907	4.618	36.040	-4.09%	-0.37%
			5170	4.441	35.883	4.629	36.030	-4.06%	-0.41%
			5180	4.453	35.850	4.635	36.009	-3.93%	-0.44%
			5190	4.467	35.818	4.645	35.998	-3.83%	-0.50%
			5200	4.480	35.807	4.655	35.986	-3.76%	-0.50%
			5210	4.489	35.802	4.666	35.975	-3.79%	-0.48%
			5220	4.495	35.786	4.676	35.963	-3.87%	-0.49%
			5240	4.516	35.739	4.696	35.940	-3.83%	-0.56%
			5250	4.530	35.724	4.706	35.929	-3.74%	-0.57%
			5260	4.542	35.710	4.717	35.917	-3.71%	-0.58%
			5270	4.552	35.698	4.727	35.906	-3.70%	-0.58%
			5280	4.561	35.675	4.737	35.894	-3.72%	-0.61%
			5290	4.574	35.643	4.748	35.883	-3.66%	-0.67%
			5300	4.589	35.621	4.758	35.871	-3.55%	-0.70%
			5310	4.602	35.607	4.768	35.860	-3.48%	-0.71%
			5320	4.612	35.588	4.778	35.849	-3.47%	-0.73%
			5500	4.804	35.276	4.963	35.643	-3.20%	-1.03%
			5510	4.817	35.259	4.973	35.632	-3.14%	-1.05%
			5520	4.828	35.242	4.983	35.620	-3.11%	-1.06%
			5530	4.839	35.217	4.994	35.609	-3.10%	-1.10%
			5540	4.846	35.196	5.004	35.597	-3.16%	-1.13%
			5550	4.856	35.181	5.014	35.586	-3.15%	-1.14%
			5560	4.867	35.170	5.024	35.574	-3.13%	-1.14%
			5580	4.897	35.145	5.045	35.551	-2.93%	-1.14%
			5600	4.922	35.094	5.065	35.529	-2.82%	-1.22%
			5610	4.935	35.069	5.076	35.518	-2.78%	-1.26%
			5620	4.945	35.044	5.086	35.506	-2.77%	-1.30%
			5640	4.966	35.009	5.106	35.483	-2.74%	-1.34%
			5660	4.984	34.982	5.127	35.460	-2.79%	-1.35%
			5670	4.993	34.971	5.137	35.449	-2.80%	-1.35%
			5680	5.004	34.957	5.147	35.437	-2.78%	-1.35%
			5690	5.019	34.932	5.158	35.426	-2.69%	-1.39%
			5700	5.034	34.916	5.168	35.414	-2.59%	-1.41%
			5710	5.048	34.902	5.178	35.403	-2.51%	-1.42%
			5720	5.060	34.889	5.188	35.391	-2.47%	-1.42%
			5745	5.082	34.832	5.214	35.363	-2.53%	-1.50%
			5750	5.086	34.822	5.219	35.357	-2.55%	-1.51%
			5755	5.091	34.821	5.224	35.351	-2.55%	-1.50%
			5765	5.100	34.816	5.234	35.340	-2.56%	-1.48%
			5775	5.109	34.803	5.245	35.329	-2.59%	-1.49%
			5785	5.121	34.779	5.255	35.317	-2.55%	-1.52%
			5795	5.135	34.760	5.265	35.305	-2.47%	-1.54%
			5800	5.142	34.749	5.270	35.300	-2.43%	-1.56%
			5805	5.150	34.737	5.275	35.294	-2.37%	-1.58%
			5825	5.173	34.698	5.296	35.271	-2.32%	-1.62%
			5835	5.185	34.679	5.305	35.230	-2.26%	-1.56%
			5845	5.197	34.650	5.315	35.210	-2.22%	-1.59%
			5850	5.202	34.644	5.320	35.200	-2.22%	-1.58%
			5855	5.208	34.633	5.325	35.197	-2.20%	-1.60%
			5865	5.219	34.626	5.336	35.190	-2.19%	-1.60%
			5875	5.228	34.619	5.347	35.183	-2.23%	-1.60%
			5885	5.241	34.604	5.357	35.177	-2.17%	-1.63%
			5905	5.262	34.575	5.379	35.163	-2.18%	-1.67%

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/22/2026	5200-5800 Head	19.0	5150	4.393	35.290	4.608	36.050	-4.67%	-2.11%
			5160	4.404	35.276	4.618	36.040	-4.63%	-2.12%
			5170	4.417	35.245	4.629	36.030	-4.58%	-2.18%
			5180	4.431	35.205	4.635	36.009	-4.40%	-2.23%
			5190	4.445	35.174	4.645	35.998	-4.31%	-2.29%
			5200	4.459	35.160	4.655	35.986	-4.21%	-2.30%
			5210	4.468	35.143	4.666	35.975	-4.24%	-2.31%
			5220	4.478	35.122	4.676	35.963	-4.23%	-2.34%
			5240	4.502	35.094	4.696	35.940	-4.13%	-2.35%
			5250	4.513	35.091	4.706	35.929	-4.10%	-2.33%
			5260	4.524	35.080	4.717	35.917	-4.09%	-2.33%
			5270	4.535	35.063	4.727	35.906	-4.06%	-2.35%
			5280	4.545	35.038	4.737	35.894	-4.05%	-2.38%
			5290	4.557	35.008	4.748	35.883	-4.02%	-2.44%
			5300	4.568	34.982	4.758	35.871	-3.99%	-2.48%
			5310	4.580	34.962	4.768	35.860	-3.94%	-2.50%
			5320	4.592	34.944	4.778	35.849	-3.89%	-2.52%
			5500	4.794	34.589	4.963	35.643	-3.41%	-2.96%
			5510	4.808	34.579	4.973	35.632	-3.32%	-2.96%
			5520	4.818	34.572	4.983	35.620	-3.31%	-2.94%
			5530	4.825	34.556	4.994	35.609	-3.38%	-2.96%
			5540	4.833	34.540	5.004	35.597	-3.42%	-2.97%
			5550	4.841	34.523	5.014	35.586	-3.45%	-2.99%
			5560	4.849	34.509	5.024	35.574	-3.48%	-2.99%
			5580	4.877	34.465	5.045	35.551	-3.33%	-3.05%
			5600	4.907	34.396	5.065	35.529	-3.12%	-3.19%
			5610	4.921	34.375	5.076	35.518	-3.05%	-3.22%
			5620	4.934	34.358	5.086	35.506	-2.99%	-3.23%
			5640	4.956	34.333	5.106	35.483	-2.94%	-3.24%
			5660	4.972	34.323	5.127	35.460	-3.02%	-3.21%
			5670	4.979	34.313	5.137	35.449	-3.08%	-3.20%
			5680	4.990	34.301	5.147	35.437	-3.05%	-3.21%
			5690	5.003	34.274	5.158	35.426	-3.01%	-3.25%
			5700	5.016	34.237	5.168	35.414	-2.94%	-3.32%
			5710	5.028	34.208	5.178	35.403	-2.90%	-3.38%
			5720	5.042	34.190	5.188	35.391	-2.81%	-3.39%
			5745	5.067	34.114	5.214	35.363	-2.82%	-3.53%
			5750	5.071	34.104	5.219	35.357	-2.84%	-3.54%
			5755	5.074	34.102	5.224	35.351	-2.87%	-3.53%
			5765	5.083	34.096	5.234	35.340	-2.88%	-3.52%
			5775	5.095	34.088	5.245	35.329	-2.86%	-3.51%
			5785	5.109	34.077	5.255	35.317	-2.78%	-3.51%
			5795	5.122	34.063	5.265	35.305	-2.72%	-3.52%
			5800	5.129	34.048	5.270	35.300	-2.68%	-3.55%
			5805	5.136	34.036	5.275	35.294	-2.64%	-3.56%
			5825	5.158	33.973	5.296	35.271	-2.61%	-3.68%
			5835	5.169	33.956	5.305	35.230	-2.56%	-3.62%
			5845	5.181	33.931	5.315	35.210	-2.52%	-3.63%
			5850	5.188	33.918	5.320	35.200	-2.48%	-3.64%
			5855	5.194	33.906	5.325	35.197	-2.46%	-3.67%
			5865	5.207	33.883	5.336	35.190	-2.42%	-3.71%
			5875	5.219	33.866	5.347	35.183	-2.39%	-3.74%
			5885	5.231	33.858	5.357	35.177	-2.35%	-3.75%
			5905	5.255	33.849	5.379	35.163	-2.31%	-3.74%

The above measured tissue parameters were used in DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

Per April 2019 TCB Workshop Notes, single head-tissue simulating liquid specified in IEC 62209-1 is permitted to use for all SAR tests.

8.2 Test System Verification

Prior to SAR assessment, the system is verified to ±10% of the SAR measurement on the reference dipole at the time of calibration by the calibration facility. Full system validation status and result summary can be found in the SAR System Validation Appendix.

Table 8-2
System Verification Results

System Verification TARGET & MEASURED																	
SAR System	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp. (C)	Liquid Temp. (C)	Input Power (W)	Source SN	Probe SN	DAE	Measured SAR 1g (W/kg)	1W Target SAR 1g (W/kg)	1W Normalized SAR 1g (W/kg)	Deviation 1g (%)	Measured SAR 10g (W/kg)	1W Target SAR 10g (W/kg)	1W Normalized SAR 10g (W/kg)	Deviation 10g (%)
AM14	13	HEAD	07/08/2026	21.1	24.6	1.00	1004	7782	1646	0.544	0.585	0.544	-7.01%	0.334	0.358	0.334	-6.70%
AM16	2450	HEAD	06/16/2026	22.5	23.1	0.10	855	7551	1323	5.430	53.300	54.300	1.88%	2.450	25.000	24.500	-2.00%
AM16	2450	HEAD	07/07/2026	24.0	23.2	0.10	855	7551	1323	5.330	53.300	53.300	0.00%	2.420	25.000	24.200	-3.20%
AM9	5250	HEAD	06/14/2026	19.0	19.0	0.05	1123	7668	1681	3.730	80.200	74.600	-6.98%	1.100	22.900	22.000	-3.93%
AM9	5250	HEAD	06/19/2026	19.1	19.0	0.05	1123	7668	1681	3.730	80.200	74.600	-6.98%	1.100	22.900	22.000	-3.93%
AM8	5250	HEAD	06/22/2026	22.0	20.6	0.05	1066	7490	1644	3.930	77.900	78.600	0.90%	1.130	22.500	22.600	0.44%
AM9	5600	HEAD	06/14/2026	19.0	19.0	0.05	1123	7668	1681	3.860	82.100	77.200	-5.97%	1.130	23.500	22.600	-3.83%
AM9	5600	HEAD	06/19/2026	19.1	19.0	0.05	1123	7668	1681	4.060	82.100	81.200	-1.10%	1.190	23.500	23.800	1.28%
AM8	5600	HEAD	06/22/2026	22.0	20.6	0.05	1066	7490	1644	4.070	81.800	81.400	-0.49%	1.160	23.700	23.200	-2.11%
AM9	5750	HEAD	06/14/2026	19.0	19.0	0.05	1123	7668	1681	3.690	78.500	73.800	-5.99%	1.090	22.300	21.800	-2.24%
AM9	5750	HEAD	06/19/2026	19.1	19.0	0.05	1123	7668	1681	3.970	78.500	79.400	1.15%	1.180	22.300	23.600	5.83%
AM8	5750	HEAD	06/22/2026	22.0	20.6	0.05	1066	7490	1644	4.130	80.700	82.600	2.35%	1.180	23.200	23.600	1.72%
AM9	5850	HEAD	06/14/2026	19.0	19.0	0.05	1123	7668	1681	3.820	82.300	76.400	-7.17%	1.110	23.400	22.200	-5.13%
AM9	5850	HEAD	06/19/2026	19.1	19.0	0.05	1123	7668	1681	4.010	82.300	80.200	-2.55%	1.160	23.400	23.200	-0.85%
AM8	5850	HEAD	06/22/2026	22.0	20.6	0.05	1066	7490	1644	4.130	77.400	82.600	6.72%	1.170	22.200	23.400	5.41%

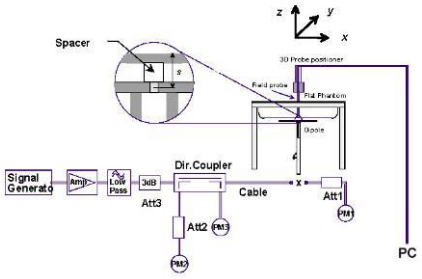


Figure 8-1
System Verification Setup Diagram

Figure 8-2
System Verification Setup Photo

9 SAR DATA SUMMARY

9.1 2.4 GHz WIFI SISO Standalone Head SAR

Table 9-1

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 1g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Exposure Ratio (1g SAR)	Plot #
Head	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Sport	447PQ	99.76	0.02	2412	1	1.0	18.00	17.61	Front	10	0.276	1.094	1.002	0.303	0.189	A1
Head	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Metal Loop	447PQ	99.76	-0.12	2412	1	1.0	18.00	17.61	Front	10	0.200	1.094	1.002	0.219	0.137	
Head	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Metal Links	447PQ	99.76	-0.01	2412	1	1.0	18.00	17.61	Front	10	0.173	1.094	1.002	0.190	0.119	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram							

9.2 2.4 GHz WIFI SISO Standalone Extremity SAR

Table 9-2

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 10g SAR [W/kg]	Exposure Ratio (10g SAR)	Plot #
Extremity	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Sport	447PQ	99.76	0.03	2412	1	1.0	18.00	17.61	Back	0	0.028	1.094	1.002	0.031	0.008	
Extremity	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Metal Loop	447PQ	99.76	0.05	2412	1	1.0	18.00	17.61	Back	0	0.037	1.094	1.002	0.041	0.010	A2
Extremity	2.4 GHz WIFI/ IEEE 802.11b	22	DSSS	Aluminum	Metal Links	447PQ	99.76	0.12	2412	1	1.0	18.00	17.61	Back	0	0.029	1.094	1.002	0.032	0.008	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Extremity 4.0 W/kg (mW/g) averaged over 10 grams							

9.3 5 GHz WIFI SISO Standalone Head SAR

Table 9-3

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	U-NII band	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 1g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Exposure Ratio (1g SAR)	Plot #
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	-0.10	5300	60	U-NII-2A	6.0	17.00	15.97	Front	10	0.145	1.268	1.013	0.186	0.116	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	0.05	5720	144	U-NII-2C	6.0	17.00	16.18	Front	10	0.140	1.208	1.013	0.171	0.107	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	-0.10	5825	165	U-NII-3	6.0	17.00	16.05	Front	10	0.145	1.245	1.013	0.183	0.114	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.02	5300	60	U-NII-2A	6.0	17.00	15.97	Front	10	0.158	1.268	1.013	0.203	0.127	A3
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.06	5720	144	U-NII-2C	6.0	17.00	16.18	Front	10	0.119	1.208	1.013	0.146	0.091	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.13	5825	165	U-NII-3	6.0	17.00	16.05	Front	10	0.126	1.245	1.013	0.159	0.099	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	0.09	5300	60	U-NII-2A	6.0	17.00	15.97	Front	10	0.142	1.268	1.013	0.182	0.114	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	-0.06	5720	144	U-NII-2C	6.0	17.00	16.18	Front	10	0.119	1.208	1.013	0.146	0.091	
Head	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	0.15	5825	165	U-NII-3	6.0	17.00	16.05	Front	10	0.129	1.245	1.013	0.163	0.102	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram							

9.4 5 GHz WIFI SISO Standalone Extremity SAR

Table 9-4

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	U-NII band	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 10g SAR [W/kg]	Exposure Ratio (10g SAR)	Plot #
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	0.01	5300	60	U-NII-2A	6.0	17.00	15.97	Back	0	0.005	1.268	1.013	0.006	0.002	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	0.07	5720	144	U-NII-2C	6.0	17.00	16.18	Back	0	0.018	1.208	1.013	0.022	0.006	A4
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Sport	7H4TS	98.67	0.06	5825	165	U-NII-3	6.0	17.00	16.05	Back	0	0.016	1.245	1.013	0.020	0.005	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.02	5300	60	U-NII-2A	6.0	17.00	15.97	Back	0	0.003	1.268	1.013	0.004	0.001	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.19	5720	144	U-NII-2C	6.0	17.00	16.18	Back	0	0.013	1.208	1.013	0.016	0.004	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Loop	7H4TS	98.67	0.06	5825	165	U-NII-3	6.0	17.00	16.05	Back	0	0.005	1.245	1.013	0.006	0.002	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	0.05	5300	60	U-NII-2A	6.0	17.00	15.97	Back	0	0.003	1.268	1.013	0.004	0.001	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	0.01	5720	144	U-NII-2C	6.0	17.00	16.18	Back	0	0.006	1.208	1.013	0.007	0.002	
Extremity	5 GHz WIFI/ IEEE 802.11a	20	OFDM	Aluminum	Metal Links	7H4TS	98.67	0.07	5825	165	U-NII-3	6.0	17.00	16.05	Back	0	0.010	1.245	1.013	0.013	0.003	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Extremity 4.0 W/kg (mW/g) averaged over 10 grams							

9.5 2.4 GHz Bluetooth SISO Standalone Head SAR

Table 9-5

Exposure	Band / Mode	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 1g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Exposure Ratio (1g SAR)	Plot #
Head	2.4 GHz Bluetooth	GFSK	Aluminum	Sport	447PQ	100.00	-0.02	2402	0	1	17.50	17.49	Front	10	0.212	1.002	1.000	0.212	0.133	A5
Head	2.4 GHz Bluetooth	GFSK	Aluminum	Metal Loop	447PQ	100.00	-0.01	2402	0	1	17.50	17.49	Front	10	0.166	1.002	1.000	0.166	0.104	
Head	2.4 GHz Bluetooth	GFSK	Aluminum	Metal Links	447PQ	100.00	0.00	2402	0	1	17.50	17.49	Front	10	0.143	1.002	1.000	0.143	0.089	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram							

9.6 2.4 GHz Bluetooth SISO Standalone Extremity SAR

Table 9-6

Exposure	Band / Mode	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 10g SAR [W/kg]	Exposure Ratio (10g SAR)	Plot #
Extremity	2.4 GHz Bluetooth	GFSK	Aluminum	Sport	447PQ	100.00	-0.14	2402	0	1	17.50	17.49	Back	0	0.025	1.002	1.000	0.025	0.006	
Extremity	2.4 GHz Bluetooth	GFSK	Aluminum	Metal Loop	447PQ	100.00	0.06	2402	0	1	17.50	17.49	Back	0	0.030	1.002	1.000	0.030	0.008	
Extremity	2.4 GHz Bluetooth	GFSK	Aluminum	Metal Links	447PQ	100.00	0.00	2402	0	1	17.50	17.49	Back	0	0.031	1.002	1.000	0.031	0.008	A6
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Extremity 4.0 W/kg (mW/g) averaged over 10 grams							

9.7 5 GHz 802.15.4 ab-NB SISO Standalone Head SAR

Table 9-7

Exposure	Band / Mode	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 1g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Exposure Ratio (1g SAR)	Plot #
Head	802.15.4 ab-NB	O-QPSK	Aluminum	Sport	49WGX	8.47	0.03	5728.75	Low	1	16.00	15.33	Front	10	0.000	1.167	1.051	0.000	0.000	
Head	802.15.4 ab-NB	O-QPSK	Aluminum	Metal Loop	49WGX	8.47	0.09	5728.75	Low	1	16.00	15.33	Front	10	0.000	1.167	1.051	0.000	0.000	A7
Head	802.15.4 ab-NB	O-QPSK	Aluminum	Metal Links	49WGX	8.47	0.09	5728.75	Low	1	16.00	15.33	Front	10	0.000	1.167	1.051	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: The reported SAR was scaled to the 8.90% transmission duty factor.

9.8 5 GHz 802.15.4 ab-NB SISO Standalone Extremity SAR

Table 9-8

Exposure	Band / Mode	Service / Modulation	Housing Type	Wristband Type	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 10g SAR [W/kg]	Exposure Ratio (10g SAR)	Plot #
Extremity	802.15.4 ab-NB	O-QPSK	Aluminum	Sport	49WGX	8.47	0.03	5728.75	Low	1	16.00	15.33	Back	0	0.000	1.167	1.051	0.000	0.000	A8
Extremity	802.15.4 ab-NB	O-QPSK	Aluminum	Metal Loop	49WGX	8.47	0.14	5728.75	Low	1	16.00	15.33	Back	0	0.000	1.167	1.051	0.000	0.000	
Extremity	802.15.4 ab-NB	O-QPSK	Aluminum	Metal Links	49WGX	8.47	0.05	5728.75	Low	1	16.00	15.33	Back	0	0.000	1.167	1.051	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Extremity 4.0 W/kg (mW/g) averaged over 10 grams							

Note: The reported SAR was scaled to the 8.90% transmission duty factor.

9.9 NFC Standalone Extremity SAR

Table 9-9

Exposure	Band / Mode	Signal Type	Housing Type	Wristband Type	Serial Number	Power Drift [dB]	Frequency [MHz]	Test Position	Spacing [mm]	Measured 10g SAR [W/kg]	Exposure Ratio (10g SAR)	Plot #
Extremity	NFC	B	Aluminum	Sport	7H4T5	0.07	13.60	Back	0	0.000	0.000	A9
Extremity	NFC	B	Aluminum	Metal Loop	7H4T5	0.01	13.60	Back	0	0.000	0.000	
Extremity	NFC	B	Aluminum	Metal Links	7H4T5	0.01	13.60	Back	0	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Extremity 4.0 W/kg (mW/g) averaged over 10 grams				

9.10 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE
1. 1528-2013, and FCC KDB Publication 447498 D04v01.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical, and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D04v01.
6. Per FCC KDB Publication 865664 D01v01r04, variability SAR tests were not required since measured SAR results for all frequency bands were less than 0.8 W/kg and 2.0 W/kg for 10g SAR.
7. This device has one housing type: Aluminum. The non-metallic wrist accessory, sport band, was evaluated for all exposure conditions. The available metallic wrist accessories, metal links band and metal loop band, were additionally evaluated.
8. This device is a portable wrist-worn device and does not support any other use conditions. Therefore, the procedures in FCC KDB Publication 447498 D04v01 Section 3.3.3/3.3.1 have been applied for extremity and next to mouth (head) conditions.
9. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
10. The orange highlights throughout the report represent the highest scaled SAR per Equipment Class.

WLAN Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 6.2.4 for more information.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 6.2.5 for more information.
3. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.
4. 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. The reported SAR was scaled to the 100% transmission duty factor to determine compliance.
5. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Bluetooth Notes

1. To determine compliance, Bluetooth SAR was measured with the maximum power condition. Bluetooth was evaluated with a test mode with 100% transmission duty factor.

802.15.4 ab-Nb Notes

1. 802.15.4 ab-NB SAR was scaled to the 8.9% transmission duty factor to determine compliance since the duty factor of the device is limited to 8.9% per manufacturer. See Section 7.4 for the time domain plot and calculation for the duty factor of the device.

UWB Notes:

1. Per October 2022 TCB Workshop, the 1 mW test exemption is allowed for 6-8.5 GHz UWB in multi-transmitter end products. No further evaluation for UWB is required. UWB Notes

10 SAR MEASUREMENT VARIABILITY

10.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01, SAR measurement variability was not assessed for each frequency band since all measured SAR values are < 0.8 W/kg for 1g SAR and < 2.0 W/kg for 10g SAR.

10.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis was not required.

11 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	E4404B	Spectrum Analyzer	N/A	N/A	N/A	MY45113242
Agilent	E4438C	ESG Vector Signal Generator	11/2/2025	Annual	11/2/2026	MY45093852
Agilent	E4438C	ESG Vector Signal Generator	3/23/2026	Annual	3/23/2027	MY45092078
Agilent	N5182A	MXG Vector Signal Generator	4/13/2026	Annual	4/13/2027	MY48180366
Agilent	8753ES	S-Parameter Vector Network Analyzer	10/28/2025	Annual	10/28/2026	MY40003841
Agilent	8753ES	S-Parameter Vector Network Analyzer	10/27/2025	Annual	10/27/2026	US39170118
Agilent	E5515C	Wireless Communications Test Set	CBT	N/A	CBT	GB46310798
Agilent	E5515C	Wireless Communications Test Set	CBT	N/A	CBT	GB41450275
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433973
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	150A100C	Amplifier	CBT	N/A	CBT	350132
Anritsu	MN8110B	I/O Adaptor	CBT	N/A	CBT	6261747881
Anritsu	ML2496A	Power Meter	8/21/2025	Annual	8/21/2026	1138001
Anritsu	ML2496A	Power Meter	4/6/2026	Annual	4/6/2027	1351001
Anritsu	MA2411B	Pulse Power Sensor	10/14/2025	Annual	10/14/2026	1726262
Anritsu	MA2411B	Pulse Power Sensor	10/14/2025	Annual	10/14/2026	1027293
Insize	1108-150	Insize - Digital Caliper	1/7/2026	Annual	1/7/2027	1410255640
Anritsu	MA24106A	USB Power Sensor	2/20/2026	Annual	2/20/2027	1520501
Anritsu	MA24106A	USB Power Sensor	12/12/2025	Annual	12/12/2026	1344554
Mini-Circuits	PWR-4GHS	9-KHz-4000MHz USB Power Sensor	1/28/2026	Annual	1/28/2027	11710030062
Control Company	4352	Long Stem Thermometer	12/22/2025	Biennial	12/22/2027	250770121
Control Company	4352	Long Stem Thermometer	12/22/2025	Biennial	12/22/2027	250770096
Control Company	4352	Long Stem Thermometer	12/22/2025	Biennial	12/22/2027	200670653
Control Company	4040	Therm./ Clock/ Humidity Monitor	12/29/2025	Biennial	12/29/2027	250778120
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/24/2025	Biennial	10/24/2027	250652331
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/15/2024	Biennial	10/15/2026	240763503
Keysight Technologies	N9020A	MXA Signal Analyzer	6/5/2026	Annual	6/5/2027	MY54500644
Agilent	N9020A	MXA Signal Analyzer	7/7/2025	Biennial	7/7/2027	MY56470202
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	VLF-6000+	Low Pass Filter DC to 6000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	VLF-6000+	Low Pass Filter DC to 6000 MHz	7/22/2025	Annual	7/22/2026	32028
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	ZUDC10-83-S+	Directional Coupler	CBT	N/A	CBT	2050
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	5/29/2025	Biennial	5/29/2027	N/A
SPEAG	DAK-3.5	Dielectric Assessment Kit	11/10/2025	Annual	11/10/2026	1277
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	8/5/2025	Annual	8/5/2026	1041
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1237
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1331
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1390
SPEAG	DAK-12	Dielectric Assessment Kit (4MHz - 3GHz)	3/3/2026	Annual	3/3/2027	1102
GW Instek	GPS-3030DD	DC Power Supply	N/A	N/A	N/A	EI883874
SPEAG	CLA13	Confined Loop Antenna	11/7/2025	Annual	11/7/2026	1004
SPEAG	D2450V2	2450 MHz SAR Dipole	11/10/2025	Annual	11/10/2026	855
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/6/2025	Annual	8/6/2026	1123
SPEAG	D5GHzV2	5 GHz SAR Dipole	11/8/2024	Biennial	11/8/2026	1066
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/10/2025	Annual	9/10/2026	1646
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/10/2026	Annual	3/10/2027	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/8/2025	Annual	8/8/2026	1681
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/3/2025	Annual	12/3/2026	1644
SPEAG	EX3DV4	SAR Probe	9/15/2025	Annual	9/15/2026	7782
SPEAG	EX3DV4	SAR Probe	3/10/2026	Annual	3/10/2027	7551
SPEAG	EX3DV4	SAR Probe	8/11/2025	Annual	8/11/2026	7668
SPEAG	EX3DV4	SAR Probe	12/23/2025	Annual	12/23/2026	7490

Note: CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler, or filter were connected to a calibrated source (i.e., a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements. Each equipment item was used solely within its respective calibration period.

12 MEASUREMENT UNCERTAINTIES

SAR Uncertainty Budget based on IEC/IEEE 62209-1528:2020 (4 MHz to 10 GHz)

Symbol	Input quantity X (source of uncertainty)	Ref.	Prob. Dist. PDFi	Unc. a(xi)	Div. qi	u(xi) = a(xi)/qi	ci (1g)	ci (10g)	u(y) = cixu(xi) 1g (± %)	u(y) = cixu(xi) 10g (± %)	vi
	Measurement system errors										
CF	Probe calibration	8.4.1.1	N (k=2)	9.30	1	9.30	1	1	9.30	9.30	∞
CFdrift	Probe calibration drift	8.4.1.2	R	1.70	1.73	0.98	1	1	0.98	0.98	∞
LIN	Probe linearity and detection limit	8.4.1.3	R	4.70	1.73	2.71	1	1	2.71	2.71	∞
BBS	Broadband signal	8.4.1.4	R	2.80	1.73	1.62	1	1	1.62	1.62	∞
ISO	Probe isotropy	8.4.1.5	R	7.60	1.73	4.39	1	1	4.39	4.39	∞
DAE	Other probe and data acquisition errors	8.4.1.6	N	2.40	1	2.40	1	1	2.40	2.40	∞
AMB	RF ambient and noise	8.4.1.7	N	1.80	1	1.80	1	1	1.80	1.80	∞
Δxyz	Probe positioning errors	8.4.1.8	N	0.30	1	0.30	1	1	0.30	0.30	∞
DAT	Data processing errors	8.4.1.9	N	3.50	1.00	3.50	1	1	3.50	3.50	∞
	Phantom and device (DUT or validation antenna) errors										
LIQ(σ)	Measurement of phantom conductivity	8.4.2.1	N	2.50	1	2.50	0.78	0.71	1.95	1.78	∞
LIQ(Tc)	Temperature effects (medium)	8.4.2.2	R	5.40	1.73	3.12	0.78	0.71	2.43	2.21	∞
EPS	Shell permitivitty	8.4.2.3	R	14.00	1.73	8.08	0.5	0.5	4.04	4.04	∞
DIS	Distance between the radiating element of the DUT and the phantom medium	8.4.2.4	N	2.00	1	2.00	2	2	4.00	4.00	∞
Dxyz	Repeatability of positioning the DUT or source against the phantom	8.4.2.5	N	3.12	1	3.12	1	1	3.12	3.12	35
H	Device holder effects	8.4.2.6	N	1.67	1	1.67	1	1	1.67	1.67	5
MOD	Effect of operating mode on probe sensitivity	8.4.2.7	R	2.40	1.73	1.39	1	1	1.39	1.39	∞
TAS	Time-average SAR	8.4.2.8	R	1.73	1.73	1.00	1	1	1.00	1.00	∞
RFdrift	Variation in SAR due to drift in output power of DUT	8.4.2.9	N	2.50	1	2.50	1	1	2.50	2.50	∞
VAL	Validation antenna uncertainty (validation measurement only)	8.4.2.10	N	0.00	1	0.00	1	1	0.00	0.00	∞
Pin	Uncertainty in accepted power (validation measurement only)	8.4.2.11	N	0.00	1	0.00	1	1	0.00	0.00	∞
	Corrections to the SAR result (if applied)										
C(ε′,σ)	Phantom deviation from target	8.4.3.1	R	5.00	1.73	2.89	0.64	0.43	1.85	1.24	∞
C(R)	SAR scaling	8.4.3.2	R	0.00	1.73	0.00	1	1	0.00	0.00	∞
u(ΔSAR)	**Combined uncertainty**								**14.32**	**14.20**	**40**
U	**Expanded unsertainty and effective degrees of freedom**								**28.65**	**28.40**	

SAR Uncertainty Budget based on IEEE 1528-2013 and SPEAG (0.3 GHz to 6 GHz)

a	b	c	d	e *f(d,k)*	f	g	h cxf/e	i cxg/e	k
Uncertainty component	**Reference**	**Tol. (± %)**	**Prob. dist.**	**Dvi.**	**ci (1g)**	**ci (10g)**	**1g ui (± %)**	**10g ui (± %)**	**vi**
Measurement system									
Probe calibration	E.2.1	6.55	N	1	1	1	6.55	6.55	∞
Axial isotropy	E.2.2	0.25	N	1	0.707	0.707	0.18	0.18	∞
Hemispherical isotropy	E.2.2	1.30	N	1	0.707	0.707	0.92	0.92	∞
Boundary effect	E.2.3	2.00	R	1.73	1	1	1.15	1.15	∞
Linearity	E.2.4	0.30	R	1.73	1	1	0.17	0.17	∞
System detection limits	E.2.4	0.25	R	1.73	1	1	0.14	0.14	∞
Modulation response	E.2.5	4.80	R	1.73	1	1	2.77	2.77	∞
Readout electronics	E.2.6	0.30	N	1	1	1	0.30	0.30	∞
Response time	E.2.7	1.01	R	1.73	1	1	0.58	0.58	∞
Integration time	E.2.8	2.60	R	1.73	1	1	1.50	1.50	∞
RF ambient conditions - noise	E.6.1	3.00	R	1.73	1	1	1.73	1.73	∞
RF ambient conditions - reflections	E.6.1	3.00	R	1.73	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	E.6.2	0.04	R	1.73	1	1	0.02	0.02	∞
Probe positioning with respect to phantom shell	E.6.3	0.80	R	1.73	1	1	0.46	0.46	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	E.5	4.00	R	1.73	1	1	2.31	2.31	∞
Test sample related									
Test sample positioning	E.4.2	3.12	N	1	1	1	3.12	3.12	35
Device holder uncertainty	E.4.1	1.67	N	1	1	1	1.67	1.67	5
Output power variation - SAR drift	E.2.9	5.00	R	1.73	1	1	2.89	2.89	∞
SAR scaling	E.6.5	0.00	R	1.73	1	1	0.00	0.00	∞
Phantom and tissue parameters									
Phantom shell uncertainty - shape, thickness and permittivity	E.3.1	7.60	R	1.73	1	1	4.39	4.39	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	0.00	N	1	1	1	0.00	0.00	∞
Liquid conductivity measurement	E.3.3	2.50	N	1	0.78	0.71	1.95	1.78	∞
Liquid permittivity measurement	E.3.3	2.50	N	1	0.23	0.26	0.58	0.65	∞
Liquid conductivity - temperature uncertainty	E.3.4	3.36	R	1.73	0.78	0.71	1.51	1.38	∞
Liquid permittivity - temperature uncertainty	E.3.4	0.77	R	1.73	0.23	0.26	0.10	0.12	∞
Liquid Conductivity - deviation from target values	E.3.2	5.00	R	1.73	0.64	0.43	1.85	1.24	∞
Liquid Permittivity - deviation from target values	E.3.2	5.00	R	1.73	0.60	0.49	1.73	1.41	∞
Combined standard uncertainty							**11.0**	**10.8**	**40**
Expanded uncertainty (95% confidence interval)							**21.9**	**21.6**	

13 CONCLUSION

13.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g., ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g., age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

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