Element Materials Technology
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SAR EVALUATION REPORT

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

Date of Testing:
01/18/2024 – 02/25/2024
Test Report Issue Date:
03/29/2024
Test Site/Location:
Element, Morgan Hill, CA, USA
Document Serial No.:
1C2311270067-01.BCG-R1 (Rev1)

FCC ID:	**BCGA2836**
APPLICANT:	**APPLE, INC.**

DUT Type:	Tablet Device
Application Type:	Certification
FCC Rule Part(s):	CFR §2.1093
Models:	A2836

Equipment Class	Band & Mode	Tx Frequency	SAR 1g Body (W/kg)
DTS	2.4 GHz WIFI	2412 - 2472 MHz	1.18
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	1.18
6CD	6 GHz WIFI	U-NII-5: 5935 - 6415 MHz U-NII-6: 6435 - 6515 MHz U-NII-7: 6535 - 6875 MHz U-NII-8: 6895 - 7115 MHz	1.18
DSS/DTS	2.4 GHz Bluetooth	2402 - 2480 MHz	1.18
DTS	802.15.4	2405 - 2475 MHz	1.18
NII	NB U-NII 1	5162 - 5245 MHz	1.18
NII	NB U-NII 3	5733 - 5844 MHz	1.18
DXX	wPT	13.56 MHz	<0.1
Simultaneous SAR per KDB 690783 D01v01r03:			**1.58**
Equipment Class	Band & Mode	Tx Frequency	APD (W/m^2)
6CD	6 GHz WIFI	U-NII-5: 5935 - 6415 MHz U-NII-6: 6435 - 6515 MHz U-NII-7: 6535 - 6875 MHz U-NII-8: 6895 - 7115 MHz	8.30
Equipment Class	Band & Mode	Tx Frequency	Reported PD (W/m^2)
6CD	6 GHz WIFI	U-NII-5: 5935 - 6415 MHz U-NII-6: 6435 - 6515 MHz U-NII-7: 6535 - 6875 MHz U-NII-8: 6895 - 7115 MHz	6.86

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 wireless portable device 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

Prepared by: WKR011771

Reviewed by: WKR0000010082

ACCREDITED
CERT #2041.02

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.

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
2.4 GHz WIFI	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
6 GHz WIFI	Voice/Data	U-NII-5: 5935 - 6415 MHz U-NII-6: 6435 - 6515 MHz U-NII-7: 6535 - 6875 MHz U-NII-8: 6895 - 7115 MHz
2.4 GHz Bluetooth	Data	2402 - 2480 MHz
802.15.4	Data	2405 - 2475 MHz
NB U-NII 1	Data	5162 - 5245 MHz
NB U-NII 3	Data	5733 - 5844 MHz
wPT	N/A	13.56 MHz

1.2 Power Reduction for SAR

This device additionally utilizes a power reduction mechanism for Bluetooth/802.15.4/NB UNII and WLAN operations. When Bluetooth/802.15.4/NB UNII is operating simultaneously with certain combinations of WLAN antennas, the output power is permanently reduced.

Additionally, this device uses an independent mechanism that limits WIFI powers to a time-averaged output power. For the purposes of this test report, all SAR measurements were performed with the algorithm disabled at the maximum time-averaged output power level. Verification data for this time-averaged SAR mechanism can be found in the WLAN Time-Averaged SAR Verification Appendix.

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. The tolerances specified in the tables in this section refers to conducted tolerances.

1.3.1 Maximum WLAN Time-Averaged Output Power

Note: Targets for 802.11ax RU operations can be found in 802.11ax RU SAR Exclusion Appendix.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF7 Tolerance (+0/-3 dB)					
		SISO				MIMO	
		b	g	n	ax SU	g/n	ax SU
	1	12.00	12.00	12.00	12.00	12.00	12.00
	2	12.00	12.00	12.00	12.00	12.00	12.00
	3	12.00	12.00	12.00	12.00	12.00	12.00
	4	12.00	12.00	12.00	12.00	12.00	12.00
	5	12.00	12.00	12.00	12.00	12.00	12.00
2.4 GHz WIFI	6	12.00	12.00	12.00	12.00	12.00	12.00
MHz Bandwidth	7	12.00	12.00	12.00	12.00	12.00	12.00
	8	12.00	12.00	12.00	12.00	12.00	12.00
	9	12.00	12.00	12.00	12.00	12.00	12.00
	10	12.00	12.00	12.00	12.00	12.00	12.00
	11	12.00	12.00	12.00	12.00	12.00	12.00
	12	12.00	12.00	12.00	12.00	12.00	12.00
	13	12.00	8.50	8.50	NS	6.50	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF8 Tolerance (+0/-3 dB)					
		SISO				MIMO	
		b	g	n	ax SU	g/n	ax SU
	1	13.25	13.25	13.25	13.25	13.25	13.25
	2	13.25	13.25	13.25	13.25	13.25	13.25
	3	13.25	13.25	13.25	13.25	13.25	13.25
	4	13.25	13.25	13.25	13.25	13.25	13.25
	5	13.25	13.25	13.25	13.25	13.25	13.25
2.4 GHz WIFI	6	13.25	13.25	13.25	13.25	13.25	13.25
20 MHz Bandwidth	7	13.25	13.25	13.25	13.25	13.25	13.25
	8	13.25	13.25	13.25	13.25	13.25	13.25
	9	13.25	13.25	13.25	13.25	13.25	13.25
	10	13.25	13.25	13.25	13.25	13.25	13.25
	11	13.25	13.25	13.25	13.25	13.25	13.25
	12	13.25	13.00	13.00	13.00	12.50	12.50
	13	13.25	8.50	8.50	NS	6.50	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF9 Tolerance (+0/-3 dB)					
		SISO				MIMO	
		b	g	n	ax SU	g/n	ax SU
	1	17.00	14.75	14.75	14.50	14.50	14.00
	2	17.00	17.00	17.00	17.00	17.00	17.00
	3	17.00	17.00	17.00	17.00	17.00	17.00
	4	17.00	17.00	17.00	17.00	17.00	17.00
	5	17.00	17.00	17.00	17.00	17.00	17.00
2.4 GHz WIFI	6	17.00	17.00	17.00	17.00	17.00	17.00
20 MHz Bandwidth	7	17.00	17.00	17.00	17.00	17.00	17.00
	8	17.00	17.00	17.00	17.00	17.00	17.00
	9	17.00	17.00	17.00	17.00	17.00	17.00
	10	17.00	17.00	17.00	17.00	17.00	17.00
	11	17.00	15.50	15.50	14.50	14.50	13.50
	12	17.00	13.00	13.00	13.00	12.50	12.50
	13	16.00	8.50	8.50	NS	6.50	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Ant WF5B Tolerance (+0/-3 dB)						
		SISO			MIMO CDD		MIMO SDM	
		a	n/ac	ax SU	n/ac	ax SU	n/ac	ax SU
	36	17.75	17.75	17.75	17.00	16.50	17.00	16.50
	40	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	44	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	48	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	52	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	56	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	60	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	64	17.00	17.00	17.00	17.00	16.50	17.00	16.50
	100	17.00	17.00	17.00	17.00	16.50	17.00	16.50
	104	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	108	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	112	17.00	17.00	17.00	17.00	17.00	17.00	17.00
5 GHz WIFI	116	17.00	17.00	17.00	17.00	17.00	17.00	17.00
20 MHz Bandwidth	120	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	124	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	128	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	132	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	136	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	140	17.00	17.00	15.00	15.50	14.50	15.50	14.50
	144	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	149	16.75	16.75	16.75	16.75	16.75	16.75	16.75
	153	16.75	16.75	16.75	16.75	16.75	16.75	16.75
	157	16.75	16.75	16.75	16.75	16.75	16.75	16.75
	161	16.75	16.75	16.75	16.75	16.75	16.75	16.75
	165	16.75	16.75	16.75	16.75	16.75	16.75	16.75
	38	[redacted]	15.25	15.00	14.00	14.00	14.00	14.00
	46		17.75	17.75	17.75	17.75	17.75	17.75
	54		17.00	17.00	17.00	17.00	17.00	17.00
	62		16.00	15.50	15.00	14.00	15.00	14.00
	102		15.50	14.50	15.00	13.50	15.00	13.50
5 GHz WIFI	110		17.00	17.00	17.00	17.00	17.00	17.00
40 MHz Bandwidth	118		17.00	17.00	17.00	17.00	17.00	17.00
	126		17.00	17.00	17.00	17.00	17.00	17.00
	134		17.00	17.00	17.00	17.00	17.00	17.00
	142		17.00	17.00	17.00	17.00	17.00	17.00
	151		16.75	16.75	16.75	16.75	16.75	16.75
	159		16.75	16.75	16.75	16.75	16.75	16.75
	42		14.50	14.00	13.50	12.50	13.50	12.50
	58		16.00	14.50	14.50	14.00	14.50	14.00
5 GHz WIFI	106		14.00	13.00	13.50	12.50	13.50	12.50
80 MHz Bandwidth	122		17.00	17.00	17.00	17.00	17.00	17.00
	138		17.00	17.00	17.00	17.00	17.00	17.00
	155		16.75	16.75	16.75	16.75	16.75	16.75
5 GHz WIFI	50		12.50	12.50	12.00	12.00	12.00	12.00
160 MHz Bandwidth	114		12.00	12.00	10.50	10.50	10.50	10.50

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11n supports up to 40MHz, 802.11ac/ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF7 Tolerance (+0/-3 dB)						
		SISO			MIMO CDD		MIMO SDM	
		a	n/ac	ax SU	n/ac	ax SU	n/ac	ax SU
	36	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	40	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	44	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	48	8.00	8.00	8.00	8.00	8.00	8.00	8.00
	52	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	56	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	60	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	64	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	100	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	104	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	108	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	112	8.50	8.50	8.50	8.50	8.50	8.50	8.50
5 GHz WIFI	116	8.50	8.50	8.50	8.50	8.50	8.50	8.50
20 MHz Bandwidth	120	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	124	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	128	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	132	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	136	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	140	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	144	8.50	8.50	8.50	8.50	8.50	8.50	8.50
	149	9.50	9.50	9.50	9.50	9.50	9.50	9.50
	153	9.50	9.50	9.50	9.50	9.50	9.50	9.50
	157	9.50	9.50	9.50	9.50	9.50	9.50	9.50
	161	9.50	9.50	9.50	9.50	9.50	9.50	9.50
	165	9.50	9.50	9.50	9.50	9.50	9.50	9.50
	38	[redacted]	8.00	8.00	8.00	8.00	8.00	8.00
	46		8.00	8.00	8.00	8.00	8.00	8.00
	54		8.25	8.25	8.25	8.25	8.25	8.25
	62		8.25	8.25	8.25	8.25	8.25	8.25
	102		8.50	8.50	8.50	8.50	8.50	8.50
5 GHz WIFI	110		8.50	8.50	8.50	8.50	8.50	8.50
40 MHz Bandwidth	118		8.50	8.50	8.50	8.50	8.50	8.50
	126		8.50	8.50	8.50	8.50	8.50	8.50
	134		8.50	8.50	8.50	8.50	8.50	8.50
	142		8.50	8.50	8.50	8.50	8.50	8.50
	151		9.50	9.50	9.50	9.50	9.50	9.50
	159		9.50	9.50	9.50	9.50	9.50	9.50
	42		8.00	8.00	8.00	8.00	8.00	8.00
	58		8.25	8.25	8.25	8.25	8.25	8.25
5 GHz WIFI	106		8.50	8.50	8.50	8.50	8.50	8.50
80 MHz Bandwidth	122		8.50	8.50	8.50	8.50	8.50	8.50
	138		8.50	8.50	8.50	8.50	8.50	8.50
	155		9.50	9.50	9.50	9.50	9.50	9.50
5 GHz WIFI	50		8.25	8.25	8.25	8.25	8.25	8.25
160 MHz Bandwidth	114		8.50	8.50	8.50	8.50	8.50	8.50

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11n supports up to 40MHz, 802.11ac/ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF8 Tolerance (+0/-3 dB)						
		SISO			MIMO CDD		MIMO SDM	
		a	n/ac	ax SU	n/ac	ax SU	n/ac	ax SU
	36	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	40	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	44	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	48	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	52	9.25	9.25	9.25	9.25	9.25	9.25	9.25
	56	9.25	9.25	9.25	9.25	9.25	9.25	9.25
	60	9.25	9.25	9.25	9.25	9.25	9.25	9.25
	64	9.25	9.25	9.25	9.25	9.25	9.25	9.25
	100	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	104	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	108	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	112	8.25	8.25	8.25	8.25	8.25	8.25	8.25
5 GHz WIFI	116	8.25	8.25	8.25	8.25	8.25	8.25	8.25
20 MHz Bandwidth	120	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	124	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	128	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	132	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	136	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	140	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	144	8.25	8.25	8.25	8.25	8.25	8.25	8.25
	149	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	153	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	157	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	161	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	165	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	38	[redacted]	9.00	9.00	9.00	9.00	9.00	9.00
	46		9.00	9.00	9.00	9.00	9.00	9.00
	54		9.25	9.25	9.25	9.25	9.25	9.25
	62		9.25	9.25	9.25	9.25	9.25	9.25
	102		8.25	8.25	8.25	8.25	8.25	8.25
5 GHz WIFI	110		8.25	8.25	8.25	8.25	8.25	8.25
40 MHz Bandwidth	118		8.25	8.25	8.25	8.25	8.25	8.25
	126		8.25	8.25	8.25	8.25	8.25	8.25
	134		8.25	8.25	8.25	8.25	8.25	8.25
	142		8.25	8.25	8.25	8.25	8.25	8.25
	151		9.00	9.00	9.00	9.00	9.00	9.00
	159		9.00	9.00	9.00	9.00	9.00	9.00
	42		9.00	9.00	9.00	9.00	9.00	9.00
	58		9.25	9.25	9.25	9.25	9.25	9.25
5 GHz WIFI	106		8.25	8.25	8.25	8.25	8.25	8.25
80 MHz Bandwidth	122		8.25	8.25	8.25	8.25	8.25	8.25
	138		8.25	8.25	8.25	8.25	8.25	8.25
	155		9.00	9.00	9.00	9.00	9.00	9.00
5 GHz WIFI	50		9.25	9.25	9.25	9.25	9.25	9.25
160 MHz Bandwidth	114		8.25	8.25	8.25	8.25	8.25	8.25

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11n supports up to 40MHz, 802.11ac/ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Ant WF5B			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	6.25	6.25	0.75	3.75
	5	6.25	6.25	0.75	3.75
	9-29	6.25	6.25	0.75	3.75
	33-61	6.50	6.50	0.50	3.50
	65-85	6.25	6.25	0.75	3.75
6 GHz WIFI	89	6.25	6.25	0.75	3.75
(20MHz BW)	93	6.25	6.25	0.75	3.75
(LP)	97-113	5.75	5.75	0.50	3.50
	117-181	4.75	4.75	-0.25	2.75
	185	4.75	4.75	-0.25	2.75
	189-225	5.50	5.50	0.50	3.50
	229	5.50	5.50	0.50	3.50
	233	5.50	5.50	0.50	3.50
	3	[redacted]	9.25	3.75	6.75
	11		9.25	3.75	6.75
	19-27		9.25	3.75	6.75
	35-59		9.50	3.50	6.50
	67-75		9.25	3.75	6.75
	83		9.25	3.75	6.75
6 GHz WIFI	91		9.25	3.75	6.75
(40MHz BW)	99-107		8.75	3.50	6.50
(LP)	115		7.75	2.75	5.75
	123-179		7.75	2.75	5.75
	187		7.75	2.75	5.75
	195-219		8.50	3.50	6.50
	227		8.50	3.50	6.50
	7		12.25	6.75	9.75
	23		12.25	6.75	9.75
	39-55		12.50	6.50	9.50
	71		12.25	6.75	9.75
	87		12.25	6.75	9.75
6 GHz WIFI	103		11.75	6.50	9.50
(80MHz BW)	119		10.75	5.75	8.75
(LP)	135-167		10.75	5.75	8.75
	183		10.75	5.75	8.75
	199		11.50	6.50	9.50
	215		11.50	6.50	9.50
	15		14.75	9.25	12.25
	47		15.00	9.00	12.00
6 GHz WIFI	79		14.75	9.25	12.25
(160MHz BW)	111		13.25	8.25	11.25
(LP)	143		13.25	8.25	11.25
	175		13.25	8.25	11.25
	207		14.00	9.00	12.00

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Ant WF5B			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	15.50	15.50	15.50	15.50
	5	15.50	15.50	15.50	15.50
	9-29	15.50	15.50	15.50	15.50
	33-61	15.50	15.50	15.50	15.50
	65-85	14.75	14.75	14.75	14.75
6 GHz WIFI	89	14.75	14.75	14.75	14.75
(20MHz BW)	93	14.75	14.75	14.75	14.75
(SP)	97-113	NS	NS	NS	NS
	117-181	13.75	13.75	13.75	13.75
	185	NS	NS	NS	NS
	189-225	NS	NS	NS	NS
	229	NS	NS	NS	NS
	233	NS	NS	NS	NS
	3	[redacted]	15.50	15.50	15.50
	11		15.50	15.50	15.50
	19-27		15.50	15.50	15.50
	35-59		15.50	15.50	15.50
	67-75		14.75	14.75	14.75
	83		14.75	14.75	14.75
6 GHz WIFI	91		14.75	14.75	14.75
(40MHz BW)	99-107		NS	NS	NS
(SP)	115		NS	NS	NS
	123-179		13.75	13.75	13.75
	187		NS	NS	NS
	195-219		NS	NS	NS
	227		NS	NS	NS
	7		15.50	15.50	15.50
	23		15.50	15.50	15.50
	39-55		15.50	15.50	15.50
	71		14.75	14.75	14.75
	87		14.75	14.75	14.75
6 GHz WIFI	103		NS	NS	NS
(80MHz BW)	119		NS	NS	NS
(SP)	135-167		13.75	13.75	13.75
	183		NS	NS	NS
	199		NS	NS	NS
	215		NS	NS	NS
	15		15.50	15.50	15.50
	47		15.50	15.50	15.50
6 GHz WIFI	79		14.75	14.75	14.75
(160MHz BW)	111		NS	NS	NS
(SP)	143		13.75	13.75	13.75
	175		NS	NS	NS
	207		NS	NS	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF7			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	6.25	6.25	0.75	3.75
	5	6.25	6.25	0.75	3.75
	9-29	6.25	6.25	0.75	3.75
	33-61	6.50	6.50	0.50	3.50
	65-85	6.25	6.25	0.75	3.75
6 GHz WIFI	89	6.25	6.25	0.75	3.75
(20MHz BW)	93	6.25	6.25	0.75	3.75
(LP)	97-113	5.75	5.75	0.50	3.50
	117-181	4.75	4.75	-0.25	2.75
	185	4.75	4.75	-0.25	2.75
	189-225	5.50	5.50	0.50	3.50
	229	5.50	5.50	0.50	3.50
	233	5.50	5.50	0.50	3.50
	3	[redacted]	9.25	3.75	6.75
	11		9.25	3.75	6.75
	19-27		9.25	3.75	6.75
	35-59		9.50	3.50	6.50
	67-75		8.25	3.75	6.75
	83		8.25	3.75	6.75
6 GHz WIFI	91		8.25	3.75	6.75
(40MHz BW)	99-107		8.25	3.50	6.50
(LP)	115		7.75	2.75	5.75
	123-179		7.75	2.75	5.75
	187		7.75	2.75	5.75
	195-219		8.25	3.50	6.50
	227		8.25	3.50	6.50
	7		9.50	6.75	9.50
	23		9.50	6.75	9.50
	39-55		9.50	6.50	9.50
	71		8.25	6.75	8.25
	87		8.25	6.75	8.25
6 GHz WIFI	103		8.25	6.50	8.25
(80MHz BW)	119		8.25	5.75	8.25
(LP)	135-167		10.00	5.75	8.75
	183		10.00	5.75	8.75
	199		8.25	6.50	8.25
	215		8.25	6.50	8.25
	15		9.50	9.25	9.50
	47		9.50	9.00	9.50
6 GHz WIFI	79		8.25	8.25	8.25
(160MHz BW)	111		8.25	8.25	8.25
(LP)	143		10.00	8.25	10.00
	175		10.00	8.25	10.00
	207		8.25	8.25	8.25

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF7			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	9.50	9.50	9.50	9.50
	5	9.50	9.50	9.50	9.50
	9-29	9.50	9.50	9.50	9.50
	33-61	9.50	9.50	9.50	9.50
	65-85	8.25	8.25	8.25	8.25
6 GHz WIFI	89	8.25	8.25	8.25	8.25
(20MHz BW)	93	8.25	8.25	8.25	8.25
(SP)	97-113	NS	NS	NS	NS
	117-181	8.25	8.25	8.25	8.25
	185	NS	NS	NS	NS
	189-225	NS	NS	NS	NS
	229	NS	NS	NS	NS
	233	NS	NS	NS	NS
	3	[redacted]	9.50	9.50	9.50
	11		9.50	9.50	9.50
	19-27		9.50	9.50	9.50
	35-59		9.50	9.50	9.50
	67-75		8.25	8.25	8.25
	83		8.25	8.25	8.25
6 GHz WIFI	91		8.25	8.25	8.25
(40MHz BW)	99-107		NS	NS	NS
(SP)	115		NS	NS	NS
	123-179		8.25	8.25	8.25
	187		NS	NS	NS
	195-219		NS	NS	NS
	227		NS	NS	NS
	7		9.50	9.50	9.50
	23		9.50	9.50	9.50
	39-55		9.50	9.50	9.50
	71		8.25	8.25	8.25
	87		8.25	8.25	8.25
6 GHz WIFI	103		NS	NS	NS
(80MHz BW)	119		NS	NS	NS
(SP)	135-167		10.00	10.00	10.00
	183		NS	NS	NS
	199		NS	NS	NS
	215		NS	NS	NS
	15		9.50	9.50	9.50
	47		9.50	9.50	9.50
6 GHz WIFI	79		8.25	8.25	8.25
(160MHz BW)	111		NS	NS	NS
(SP)	143		10.00	10.00	10.00
	175		NS	NS	NS
	207		NS	NS	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF8			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	6.25	6.25	0.75	3.75
	5	6.25	6.25	0.75	3.75
	9-29	6.25	6.25	0.75	3.75
	33-61	6.50	6.50	0.50	3.50
	65-85	6.25	6.25	0.75	3.75
6 GHz WIFI	89	6.25	6.25	0.75	3.75
(20MHz BW)	93	6.25	6.25	0.75	3.75
(LP)	97-113	5.75	5.75	0.50	3.50
	117-181	4.75	4.75	-0.25	2.75
	185	4.75	4.75	-0.25	2.75
	189-225	5.50	5.50	0.50	3.50
	229	5.50	5.50	0.50	3.50
	233	5.50	5.50	0.50	3.50
	3	[redacted]	8.00	3.75	6.75
	11		8.00	3.75	6.75
	19-27		8.00	3.75	6.75
	35-59		8.00	3.50	6.50
	67-75		7.25	3.75	6.75
	83		7.25	3.75	6.75
6 GHz WIFI	91		7.25	3.75	6.75
(40MHz BW)	99-107		6.00	3.50	6.00
(LP)	115		6.00	2.75	5.75
	123-179		6.00	2.75	5.75
	187		6.25	2.75	5.75
	195-219		6.75	3.50	6.50
	227		6.75	3.50	6.50
	7		8.00	6.75	8.00
	23		8.00	6.75	8.00
	39-55		8.00	6.50	8.00
	71		7.25	6.75	7.25
	87		7.25	6.75	7.25
6 GHz WIFI	103		6.00	6.00	6.00
(80MHz BW)	119		6.00	5.75	6.00
(LP)	135-167		6.25	5.75	6.25
	183		6.25	5.75	6.25
	199		6.75	6.50	6.75
	215		6.75	6.50	6.75
	15		8.00	8.00	8.00
	47		8.00	8.00	8.00
6 GHz WIFI	79		7.25	7.25	7.25
(160MHz BW)	111		6.00	6.00	6.00
(LP)	143		6.25	6.25	6.25
	175		6.25	6.25	6.25
	207		6.75	6.75	6.75

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

Mode	Channel	IEEE 802.11 (Maximum in dBm) - Antenna WF8			
		Tolerance (+0/-3 dB)			
		SISO		MIMO	
		a	ax (SU)	ax (SU) CDD	ax (SU) SDM
	2	NS	NS	NS	NS
	1	8.00	8.00	8.00	8.00
	5	8.00	8.00	8.00	8.00
	9-29	8.00	8.00	8.00	8.00
	33-61	8.00	8.00	8.00	8.00
	65-85	7.25	7.25	7.25	7.25
6 GHz WIFI	89	7.25	7.25	7.25	7.25
(20MHz BW)	93	7.25	7.25	7.25	7.25
(SP)	97-113	NS	NS	NS	NS
	117-181	6.00	6.00	6.00	6.00
	185	NS	NS	NS	NS
	189-225	NS	NS	NS	NS
	229	NS	NS	NS	NS
	233	NS	NS	NS	NS
	3	[redacted]	8.00	8.00	8.00
	11		8.00	8.00	8.00
	19-27		8.00	8.00	8.00
	35-59		8.00	8.00	8.00
	67-75		7.25	7.25	7.25
	83		7.25	7.25	7.25
6 GHz WIFI	91		7.25	7.25	7.25
(40MHz BW)	99-107		NS	NS	NS
(SP)	115		NS	NS	NS
	123-179		6.00	6.00	6.00
	187		NS	NS	NS
	195-219		NS	NS	NS
	227		NS	NS	NS
	7		8.00	8.00	8.00
	23		8.00	8.00	8.00
	39-55		8.00	8.00	8.00
	71		7.25	7.25	7.25
	87		7.25	7.25	7.25
6 GHz WIFI	103		NS	NS	NS
(80MHz BW)	119		NS	NS	NS
(SP)	135-167		6.25	6.25	6.25
	183		NS	NS	NS
	199		NS	NS	NS
	215		NS	NS	NS
	15		8.00	8.00	8.00
	47		8.00	8.00	8.00
6 GHz WIFI	79		7.25	7.25	7.25
(160MHz BW)	111		NS	NS	NS
(SP)	143		6.25	6.25	6.25
	175		NS	NS	NS
	207		NS	NS	NS

Note: In MIMO operations, each antenna transmits at maximum allowed powers as indicated above. 802.11a supports up to 20MHz, 802.11ax supports up to 160MHz.

1.3.2 Bluetooth Maximum Output Power

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
Bluetooth BDR	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth EDR	Maximum	**12.50**	**7.50**
	Nominal	**11.00**	**6.00**
Bluetooth LE	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth HDR4	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**
Bluetooth HDR8	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF7	Modulated Average (iPA) TXBF (dBm) Antenna WF7
Bluetooth BDR	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth EDR	Maximum	**12.50**	**7.50**
	Nominal	**11.00**	**6.00**
Bluetooth LE	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth HDR4	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**
Bluetooth HDR8	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
Bluetooth BDR	Maximum	**14.00**	**11.50**
	Nominal	**12.50**	**10.00**
Bluetooth EDR	Maximum	**14.00**	**7.50**
	Nominal	**12.50**	**6.00**
Bluetooth LE	Maximum	**14.00**	**11.50**
	Nominal	**12.50**	**10.00**
Bluetooth HDR4	Maximum	**12.00**	**5.00**
	Nominal	**10.50**	**3.50**
Bluetooth HDR8	Maximum	**12.00**	**5.00**
	Nominal	**10.50**	**3.50**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
Bluetooth BDR	Maximum	**14.00**	**11.50**
	Nominal	**12.50**	**10.00**
Bluetooth EDR	Maximum	**13.50**	**7.50**
	Nominal	**12.00**	**6.00**
Bluetooth LE	Maximum	**14.00**	**11.50**
	Nominal	**12.50**	**10.00**
Bluetooth HDR4	Maximum	**12.00**	**5.00**
	Nominal	**10.50**	**3.50**
Bluetooth HDR8	Maximum	**12.00**	**5.00**
	Nominal	**10.50**	**3.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF9	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF9
Bluetooth BDR	Maximum	**18.50**	**11.50**
	Nominal	**17.00**	**10.00**
Bluetooth EDR	Maximum	**14.50**	**7.50**
	Nominal	**13.00**	**6.00**
Bluetooth LE	Maximum	**18.50**	**11.50**
	Nominal	**17.00**	**10.00**
Bluetooth HDR4	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**
Bluetooth HDR8	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**

1.3.3 802.15.4 Maximum Output Power

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average Single Tx Chain (dBm) Antenna WF7
802.15.4	Maximum	**13.50**	**12.00**
	Nominal	**12.00**	**10.50**

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average Single Tx Chain (dBm) Antenna WF8
802.15.4	Maximum	**15.00**	**12.00**
	Nominal	**13.50**	**10.50**

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF9	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF9
802.15.4	Maximum	**20.00**	**12.00**
	Nominal	**18.50**	**10.50**

1.3.4 NB UNII Maximum Output Power

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF5B	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF5B
NB UNII-1 BDR	Maximum	**10.00**	**2.50**
	Nominal	**8.50**	**1.00**
NB UNII-1 HDR4	Maximum	**12.50**	**2.50**
	Nominal	**11.00**	**1.00**
NB UNII-1 HDR8	Maximum	**13.50**	**2.50**
	Nominal	**12.00**	**1.00**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF5B	Modulated Average (iPA) TXBF (dBm) Antenna WF5B
NB UNII-1 BDR	Maximum	**7.00**	**2.50**
	Nominal	**5.50**	**1.00**
NB UNII-1 HDR4	Maximum	**9.50**	**2.50**
	Nominal	**8.00**	**1.00**
NB UNII-1 HDR8	Maximum	**12.00**	**2.50**
	Nominal	**10.50**	**1.00**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
NB UNII-1 BDR	Maximum	**8.50**	**2.50**
	Nominal	**7.00**	**1.00**
NB UNII-1 HDR4	Maximum	**8.50**	**2.50**
	Nominal	**7.00**	**1.00**
NB UNII-1 HDR8	Maximum	**8.50**	**2.50**
	Nominal	**7.00**	**1.00**

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
NB UNII-1 BDR	Maximum	**10.00**	**2.50**
	Nominal	**8.50**	**1.00**
NB UNII-1 HDR4	Maximum	**10.50**	**2.50**
	Nominal	**9.00**	**1.00**
NB UNII-1 HDR8	Maximum	**10.50**	**2.50**
	Nominal	**9.00**	**1.00**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
NB UNII-1 BDR	Maximum	**7.00**	**2.50**
	Nominal	**5.50**	**1.00**
NB UNII-1 HDR4	Maximum	**9.50**	**2.50**
	Nominal	**8.00**	**1.00**
NB UNII-1 HDR8	Maximum	**10.50**	**2.50**
	Nominal	**9.00**	**1.00**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF5B	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF5B
NB UNII-3 BDR	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**
NB UNII-3 HDR4	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**
NB UNII-3 HDR8	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF5B	Modulated Average (iPA) TXBF (dBm) Antenna WF5B
NB UNII-3 BDR	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**
NB UNII-3 HDR4	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**
NB UNII-3 HDR8	Maximum	**13.50**	**2.00**
	Nominal	**12.00**	**0.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
NB UNII-3 BDR	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR4	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR8	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
NB UNII-3 BDR	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR4	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR8	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
NB UNII-3 BDR	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR4	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**
NB UNII-3 HDR8	Maximum	**10.50**	**2.00**
	Nominal	**9.00**	**0.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

1.3.5 Bluetooth Reduced Output Power

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
Bluetooth BDR	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth EDR	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth LE	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth HDR4	Maximum	**6.50**	**5.00**
	Nominal	**5.00**	**3.50**
Bluetooth HDR8	Maximum	**6.50**	**5.00**
	Nominal	**5.00**	**3.50**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF7	Modulated Average (iPA) TXBF (dBm) Antenna WF7
Bluetooth BDR	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth EDR	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth LE	Maximum	**6.50**	**6.50**
	Nominal	**5.00**	**5.00**
Bluetooth HDR4	Maximum	**6.50**	**5.00**
	Nominal	**5.00**	**3.50**
Bluetooth HDR8	Maximum	**6.50**	**5.00**
	Nominal	**5.00**	**3.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
Bluetooth BDR	Maximum	**8.00**	**8.00**
	Nominal	**6.50**	**6.50**
Bluetooth EDR	Maximum	**8.00**	**7.50**
	Nominal	**6.50**	**6.00**
Bluetooth LE	Maximum	**8.00**	**8.00**
	Nominal	**6.50**	**6.50**
Bluetooth HDR4	Maximum	**8.00**	**5.00**
	Nominal	**6.50**	**3.50**
Bluetooth HDR8	Maximum	**8.00**	**5.00**
	Nominal	**6.50**	**3.50**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
Bluetooth BDR	Maximum	**8.00**	**8.00**
	Nominal	**6.50**	**6.50**
Bluetooth EDR	Maximum	**8.00**	**7.50**
	Nominal	**6.50**	**6.00**
Bluetooth LE	Maximum	**8.00**	**8.00**
	Nominal	**6.50**	**6.50**
Bluetooth HDR4	Maximum	**8.00**	**5.00**
	Nominal	**6.50**	**3.50**
Bluetooth HDR8	Maximum	**8.00**	**5.00**
	Nominal	**6.50**	**3.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF9	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF9
Bluetooth BDR	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth EDR	Maximum	**12.50**	**7.50**
	Nominal	**11.00**	**6.00**
Bluetooth LE	Maximum	**12.50**	**11.50**
	Nominal	**11.00**	**10.00**
Bluetooth HDR4	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**
Bluetooth HDR8	Maximum	**11.50**	**5.00**
	Nominal	**10.00**	**3.50**

1.3.6 802.15.4 Reduced Output Power

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
802.15.4	Maximum	**7.50**	**7.50**
	Nominal	**6.00**	**6.00**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average Single Tx Chain (dBm) Antenna WF8
802.15.4	Maximum	**9.00**	**9.00**
	Nominal	**7.50**	**7.50**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 5/6 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF9	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF9
802.15.4	Maximum	**14.00**	**12.00**
	Nominal	**12.50**	**10.50**

1.3.7 NB UNII Reduced Output Power

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
NB UNII-1 BDR	Maximum	**2.50**	**2.50**
	Nominal	**1.00**	**1.00**
NB UNII-1 HDR4	Maximum	**2.50**	**2.50**
	Nominal	**1.00**	**1.00**
NB UNII-1 HDR8	Maximum	**2.50**	**2.50**
	Nominal	**1.00**	**1.00**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
NB UNII-1 BDR	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**
NB UNII-1 HDR4	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**
NB UNII-1 HDR8	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
NB UNII-1 BDR	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**
NB UNII-1 HDR4	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**
NB UNII-1 HDR8	Maximum	**4.50**	**2.50**
	Nominal	**3.00**	**1.00**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF7	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF7
NB UNII-3 BDR	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR4	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR8	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) Single Tx Chain (dBm) Antenna WF8	Modulated Average (iPA) Single Tx Chain (dBm) Antenna WF8
NB UNII-3 BDR	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR4	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR8	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**

Note: Below table is applicable in the following conditions:
-Simultaneous conditions with 2.4 GHz WLAN and wPT active.

Mode / Band		Modulated Average (ePA) TXBF (dBm) Antenna WF8	Modulated Average (iPA) TXBF (dBm) Antenna WF8
NB UNII-3 BDR	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR4	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**
NB UNII-3 HDR8	Maximum	**4.50**	**2.00**
	Nominal	**3.00**	**0.50**

Note: In TxBF operations, each antenna transmits at allowed powers as indicated above.

1.4 DUT Antenna Locations

The overall diagonal dimension of the device is > 200 mm. A diagram showing the location of the device antennas can be found in DUT Antenna Diagram & SAR Test Setup Photographs Appendix. Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC filings.

Note: Per FCC KDB Publication 616217 D04v01r01, front side of the device is not required to be evaluated for SAR. All other edges were evaluated for simultaneous transmission analysis.

1.5 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 4.3.2 procedures.

Table 1-1
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Body
1	2.4 GHz WI-FI MIMO + WPT	Yes
2	5/6 GHz WI-FI MIMO + WPT	Yes
3	2.4 GHz Bluetooth (TXBF) + WPT	Yes
4	NB UNII (TXBF) + WPT	Yes
5	2.4 GHz Bluetooth + 5/6 GHz WI-FI + WPT	Yes
6	802.15.4 + 5/6 GHz WI-FI + WPT	Yes
7	2.4 GHz Bluetooth + 5/6 GHz WI-FI MIMO + WPT	Yes
8	802.15.4 + 5/6 GHz WI-FI MIMO + WPT	Yes
9	2.4 GHz Bluetooth (TXBF) + 5/6 GHz WI-FI + WPT	Yes
10	2.4 GHz Bluetooth (TXBF) + 5/6 GHz WI-FI MIMO + WPT	Yes
11	NB UNII + 2.4 GHz WI-FI + WPT	Yes
12	NB UNII + 2.4 GHz WI-FI MIMO + WPT	Yes
13	NB UNII (TXBF) + 2.4 GHz WI-FI + WPT	Yes
14	NB UNII (TXBF) + 2.4 GHz WI-FI MIMO + WPT	Yes
15	2.4 GHz WI-FI Antenna WF8 + 2.4 GHz Bluetooth Antenna WF7 + WPT	Yes
16	2.4 GHz WI-FI Antenna WF8 + 802.15.4 Antenna WF7 + WPT	Yes

Note: Specific 2.4/5/6 GHz WIFI MIMO and BT/NB UNII TxBF antennas can only transmit simultaneously and is listed in the Simultaneously Backoff Scenarios document.

1. 2.4GHz WIFI and 2.4 GHz Bluetooth/802.15.4 can transmit simultaneously on separate antennas. Specific 2.4 GHz WIFI Antenna that can only transmit simultaneously with 2.4GHz Bluetooth/802.15.4 is listed in the above table. In this scenario Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. Additionally, in disconnected mode, BT will be using iPA only.
2. Specific 2.4/5/6 GHz WIFI MIMO and BT/NB UNII TxBF antennas can only transmit simultaneously and is listed in the Simultaneously Backoff Scenarios document.
3. 5 GHz WLAN and NB UNII share the same antenna path and cannot transmit simultaneously on any antenna (WF5B, WF7, and WF8).
4. 2.4GHz WLAN and 5 GHz WLAN cannot transmit simultaneously.
5. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
6. This device supports VoWIFI.
7. No other combinations of antennas and modes are supported

1.6 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Based on the maximum allowed power for the respective antennas, U-NII-1 was evaluated for Antenna WF5B and U-NII-2A was evaluated for Antenna WF7 and Antenna WF8. Additional testing for U-NII-2A Antenna WF5B and for U-NII-1 Antenna WF7 and Antenna WF8 SAR was not required since all reported SAR was less than 1.2 W/kg per FCC KDB Publication 248227 D01v02r02.

The WLAN/Bluetooth/802.15.4/NB UNII chipset in this device is produced by two different suppliers. The electrically identical modules are manufactured with identical mechanical structures to meet the same specifications and functions. Two device variants are referenced as Variant 1 and Variant 2 in this report. WLAN/Bluetooth SAR worst case configuration was spotchecked on Variant 1 and Variant 2. The Variant with the highest reported SAR value was evaluated for the remaining WLAN/Bluetooth configurations.

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

This device supports IEEE 802.11ac with the following features:

a) Up to 160 MHz Bandwidth only for 5/6 GHz
b) 3 Tx antenna output
c) 256 QAM is supported
d) TDWR and Band gap channels are supported

This device supports IEEE 802.11ax with the following features:

a) Up to 160 MHz Bandwidth only for 5/6 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) No aggregate channel configurations
d) 3 Tx antenna output
e) Up to 1024 QAM is supported
f) TDWR and Band gap channels are supported for 5 GHz
g) MU-MIMO UL Operations are not supported

Per April 2019 TCB Workshop Notes, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227, with 802.11ax considered a higher order 802.11 mode.

Per FCC guidance, SAR was performed using 6.5 GHz SAR probe calibration factors. FCC KDB 648474 and FCC KDB 248227 were followed for test positions, distances, and modes. Per TCB workshop October 2020 notes, 5 channels were tested. Absorbed power density (APD) using a 4cm2 averaging area is reported based on SAR measurements. Incident power density is evaluated at 2mm ensuring that the resolution is sufficient such that integrated power density (iPD) between d=2mm and d=λ/5mm is ≥ -1dB per equipment manufacturer guidance. Power density results are scaled up for uncertainty above 30%.

1.7 Guidance Applied

- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D04v01 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 616217 D04v01r02 (Tablet)
- November 2017, October 2018, April 2019, November 2019, October 2020 TCB Workshop Notes (IEEE 802.11ax)
- SPEAG DASY6 System Handbook
- SPEAG DASY6 Application Note (Interim Procedures for Devices Operating at 6-10 GHz) (Nov 2021)
- IEEE 1528-2013
- IEC TR 63170:2018
- IEC 62479:2010

1.8 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.

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 IEEE 1528-2013:

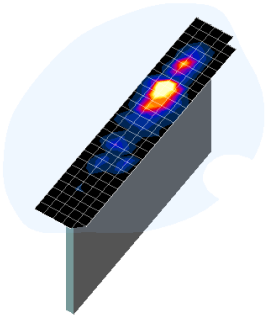


Figure 3-1
Sample SAR Area Scan

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) and IEEE 1528-2013.
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) and IEEE 1528-2013. 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.

4.2 SAR Testing for Tablet per KDB Publication 616217 D04v01r02

Per FCC KDB Publication 616217 D04v01r02, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D04v01 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

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/m2 or mW/cm2.

Peak Spatially Averaged Power Density was evaluated over a circular area of 4 cm2 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

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

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 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/ax 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, 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. Per April 2019 TCB Workshop guidance, 802.11ax was considered the highest order 802.11 mode. 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.

6.2.8 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D04v01 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

7 RF CONDUCTED POWERS

7.1 WLAN Maximum Time-Averaged Conducted Powers

Table 7-1
2.4 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 1

2.4GHz WIFI (20MHz 802.11b SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.13
2437	6		11.09
2462	11		11.03
2.4GHz WIFI (20MHz 802.11g SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.72
2437	6		10.84
2462	11		10.40
2.4GHz WIFI (20MHz 802.11n SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.66
2437	6		10.81
2462	11		10.35
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.22
2437	6		10.71
2462	11		10.17

Table 7-2
2.4 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 2

2.4GHz WIFI (20MHz 802.11b SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.06
2437	6		11.02
2462	11		10.98
2.4GHz WIFI (20MHz 802.11g SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.76
2437	6		10.96
2462	11		10.84
2.4GHz WIFI (20MHz 802.11n SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.74
2437	6		10.82
2462	11		10.87
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF7)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	10.62
2437	6		11.00
2462	11		10.77

Table 7-3
2.4 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 1

2.4GHz WIFI (20MHz 802.11b SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	12.02
2437	6		12.07
2462	11		11.90
2.4GHz WIFI (20MHz 802.11g SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.77
2437	6		12.07
2462	11		11.87
2.4GHz WIFI (20MHz 802.11n SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.79
2437	6		12.04
2462	11		11.85
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.57
2437	6		12.01
2462	11		11.70

Table 7-4
2.4 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 2

2.4GHz WIFI (20MHz 802.11b SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.97
2437	6		11.98
2462	11		12.00
2.4GHz WIFI (20MHz 802.11g SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	12.02
2437	6		12.07
2462	11		12.06
2.4GHz WIFI (20MHz 802.11n SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	12.19
2437	6		12.23
2462	11		11.99
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF8)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	11.98
2437	6		12.04
2462	11		11.93

Table 7-5
2.4 GHz WLAN Maximum Average RF Power – Antenna WF9, Variant 1

2.4GHz WIFI (20MHz 802.11b SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	16.55
2437	6		16.44
2462	11		16.62
2.4GHz WIFI (20MHz 802.11g SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.41
2417	2		15.42
2437	6		15.45
2457	10		15.42
2462	11		14.39
2.4GHz WIFI (20MHz 802.11n SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.45
2417	2		15.25
2437	6		15.50
2457	10		15.65
2462	11		14.21
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.50
2417	2		15.50
2437	6		15.55
2457	10		15.40
2462	11		14.35

Table 7-6
2.4 GHz WLAN Maximum Average RF Power – Antenna WF9, Variant 2

2.4GHz WIFI (20MHz 802.11b SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	16.45
2437	6		16.72
2462	11		16.68
2.4GHz WIFI (20MHz 802.11g SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.54
2417	2		15.91
2437	6		15.77
2457	10		15.81
2462	11		14.47
2.4GHz WIFI (20MHz 802.11n SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.54
2417	2		15.88
2437	6		15.80
2457	10		15.79
2462	11		14.48
2.4GHz WIFI (20MHz 802.11ax SISO ANT WF9)			
Freq. [MHz]	**Channel**	**Detector**	**Conducted Power [dBm]**
2412	1	Average	13.44
2417	2		15.78
2437	6		15.85
2457	10		15.71
2462	11		13.39

Table 7-7
5 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 1

5GHz WIFI (80MHz 802.11ac SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	6.39
UNII-2A	5290	58	7.62
UNII-2C	5530	106	7.42
	5610	122	7.47
	5690	138	7.41
UNII-3	5775	155	8.06
5GHz WIFI (80MHz 802.11ax SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	6.65
UNII-2A	5290	58	7.00
UNII-2C	5530	106	7.38
	5610	122	7.29
	5690	138	7.25
UNII-3	5775	155	7.99

Table 7-8
5 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 2

5GHz WIFI (80MHz 802.11ac SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	6.42
UNII-2A	5290	58	7.79
UNII-2C	5530	106	7.54
	5610	122	7.38
	5690	138	7.42
UNII-3	5775	155	8.07
5GHz WIFI (80MHz 802.11ax SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	6.50
UNII-2A	5290	58	6.80
UNII-2C	5530	106	7.35
	5610	122	7.23
	5690	138	7.30
UNII-3	5775	155	8.01

Table 7-9
5 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 1

5GHz WIFI (80MHz 802.11ac SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	8.00
UNII-2A	5290	58	7.86
UNII-2C	5530	106	7.61
	5610	122	7.55
	5690	138	7.72
UNII-3	5775	155	8.05
5GHz WIFI (80MHz 802.11ax SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	7.47
UNII-2A	5290	58	7.65
UNII-2C	5530	106	7.11
	5610	122	7.01
	5690	138	6.70
UNII-3	5775	155	7.46

Table 7-10
5 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 2

5GHz WIFI (80MHz 802.11ac SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	8.05
UNII-2A	5290	58	7.84
UNII-2C	5530	106	7.65
	5610	122	7.70
	5690	138	7.77
UNII-3	5775	155	7.94
5GHz WIFI (80MHz 802.11ax SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5210	42	7.88
UNII-2A	5290	58	8.21
UNII-2C	5530	106	7.04
	5610	122	7.20
	5690	138	7.00
UNII-3	5775	155	7.97

Table 7-11
5 GHz WLAN Maximum Average RF Power – Antenna WF5B, Variant 1

5GHz WIFI (40MHz 802.11n SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	14.31
	5230	46	16.15
UNII-2A	5270	54	15.61
	5310	62	15.03
5GHz WIFI (40MHz 802.11ac SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	14.19
	5230	46	16.60
UNII-2A	5270	54	15.70
	5310	62	14.86
5GHz WIFI (40MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	13.85
	5230	46	16.43
UNII-2A	5270	54	15.35
	5310	62	14.38
5GHz WIFI (80MHz 802.11ac SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-2C	5530	106	13.97
	5610	122	15.52
	5690	138	15.59
UNII-3	5775	155	15.53
5GHz WIFI (80MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-2C	5530	106	11.79
	5610	122	15.56
	5690	138	15.15
UNII-3	5775	155	15.20

Table 7-12
5 GHz WLAN Maximum Average RF Power – Antenna WF5B, Variant 2

5GHz WIFI (40MHz 802.11n SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	14.34
	5230	46	15.96
UNII-2A	5270	54	15.45
	5310	62	14.97
5GHz WIFI (40MHz 802.11ac SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	13.95
	5230	46	16.62
UNII-2A	5270	54	15.92
	5310	62	14.95
5GHz WIFI (40MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-1	5190	38	13.73
	5230	46	16.49
UNII-2A	5270	54	15.97
	5310	62	14.29
5GHz WIFI (80MHz 802.11ac SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-2C	5530	106	13.90
	5610	122	15.43
	5690	138	15.56
UNII-3	5775	155	15.42
5GHz WIFI (80MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-2C	5530	106	12.00
	5610	122	15.96
	5690	138	15.71
UNII-3	5775	155	15.69

Table 7-13
6 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 1

6GHz WIFI (160MHz 802.11ax SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	8.46
	6345	79	7.75
UNII-6	6505	111	6.29
UNII-7	6665	143	8.85
UNII-8	6985	207	7.80

Table 7-14
6 GHz WLAN Maximum Average RF Power – Antenna WF7, Variant 2

6GHz WIFI (160MHz 802.11ax SISO ANT WF7)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	8.47
	6345	79	7.45
UNII-6	6505	111	6.37
UNII-7	6665	143	8.75
UNII-8	6985	207	7.73

Table 7-15
6 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 1

6GHz WIFI (160MHz 802.11ax SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	7.63
	6345	79	5.79
UNII-6	6505	111	4.70
UNII-7	6665	143	4.49
UNII-8	6985	207	4.88

Table 7-16
6 GHz WLAN Maximum Average RF Power – Antenna WF8, Variant 2

6GHz WIFI (160MHz 802.11ax SISO ANT WF8)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	7.30
	6345	79	5.73
UNII-6	6505	111	5.23
UNII-7	6665	143	4.63
UNII-8	6985	207	4.82

Table 7-17
6 GHz WLAN Maximum Average RF Power – Antenna WF5B, Variant 1

6GHz WIFI (160MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	14.98
	6345	79	13.70
UNII-6	6505	111	12.52
UNII-7	6665	143	12.89
UNII-8	6985	207	13.05

Table 7-18
6 GHz WLAN Maximum Average RF Power – Antenna WF5B, Variant 2

6GHz WIFI (160MHz 802.11ax SISO ANT WF5B)			
Band	**Freq. [MHz]**	**Channel**	**Avg. Conducted Power [dBm]**
UNII-5	6025	15	15.28
	6345	79	13.88
UNII-6	6505	111	12.52
UNII-7	6665	143	13.20
UNII-8	6985	207	13.25

7.2 Notes for WLAN

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.
- The WLAN chipset in this device is produced by two different suppliers. The electrically identical modules are manufactured with identical mechanical structures to meet the same specifications and functions.
- Two device variants are referenced as Variant 1 and Variant 2 in this report.
- WLAN SAR worst case configuration was spotchecked on Variant 1 and Variant 2.

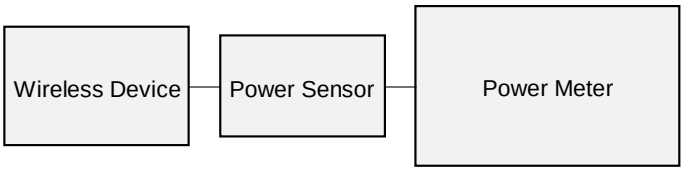


Figure 7-1
Power Measurement Setup

7.3 Bluetooth Maximum Conducted Powers

Table 7-19
Bluetooth Maximum Average RF Power – Antenna WF7, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.84	15.276
2441	GFSK	1.0	39	11.85	15.311
2480	GFSK	1.0	78	11.91	15.524

Table 7-20
Bluetooth Maximum Average RF Power – Antenna WF7, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.94	15.631
2441	GFSK	1.0	39	11.76	14.997
2480	GFSK	1.0	78	11.60	14.454

Table 7-21
Bluetooth Maximum Average RF Power – Antenna WF8, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	13.40	21.878
2441	GFSK	1.0	39	13.44	22.080
2480	GFSK	1.0	78	13.47	22.233

Table 7-22
Bluetooth Maximum Average RF Power – Antenna WF8, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	13.19	20.845
2441	GFSK	1.0	39	13.11	20.464
2480	GFSK	1.0	78	13.08	20.324

Table 7-23
Bluetooth Maximum Average RF Power – Antenna WF9, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	17.30	53.703
2441	GFSK	1.0	39	17.57	57.148
2480	GFSK	1.0	78	17.43	55.335

Table 7-24
Bluetooth Maximum Average RF Power – Antenna WF9, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	17.53	56.624
2441	GFSK	1.0	39	17.60	57.544
2480	GFSK	1.0	78	17.78	59.979

7.4 802.15.4 Maximum Conducted Powers

Table 7-25
802.15.4 Maximum Average RF Power – Antenna WF7, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	11.63	14.555
2440	O-QPSK	0.25	18	11.71	14.825
2475	O-QPSK	0.25	25	11.60	14.454

Table 7-26
802.15.4 Maximum Average RF Power – Antenna WF7, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	11.51	14.158
2440	O-QPSK	0.25	18	11.61	14.488
2475	O-QPSK	0.25	25	11.67	14.689

Table 7-27
802.15.4 Maximum Average RF Power – Antenna WF8, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	13.97	24.946
2440	O-QPSK	0.25	18	14.01	25.177
2475	O-QPSK	0.25	25	13.76	23.768

Table 7-28
802.15.4 Maximum Average RF Power – Antenna WF8, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	14.20	26.303
2440	O-QPSK	0.25	18	13.88	24.434
2475	O-QPSK	0.25	25	13.79	23.933

Table 7-29
802.15.4 Maximum Average RF Power – Antenna WF9, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	18.25	66.834
2440	O-QPSK	0.25	18	18.69	73.961
2475	O-QPSK	0.25	25	18.09	64.417

Table 7-30
802.15.4 Maximum Average RF Power – Antenna WF9, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	18.84	76.560
2440	O-QPSK	0.25	18	18.32	67.920
2475	O-QPSK	0.25	25	18.34	68.234

7.5 NB UNII Maximum Conducted Powers

Table 7-31
NB UNII Maximum Average RF Power – Antenna WF5B, Variant 1

Type	Band	Frequency	Channel	Average
HDR-8	U-NII 1	5162	Low	12.39
		5204	Mid	12.66
		5245	High	12.61
BDR	U-NII 3	5733	Low	12.31
		5789	Mid	12.43
		5844	High	12.43

Table 7-32
NB UNII Maximum Average RF Power – Antenna WF5B, Variant 2

Type	Band	Frequency	Channel	Average
HDR-8	U-NII 1	5162	Low	12.27
		5204	Mid	12.62
		5245	High	12.52
BDR	U-NII 3	5733	Low	12.43
		5789	Mid	12.75
		5844	High	12.57

Table 7-33
NB UNII Maximum Average RF Power – Antenna WF7, Variant 1

Type	Band	Frequency	Channel	Average
BDR	U-NII 1	5162	Low	7.64
		5204	Mid	7.61
		5245	High	7.82
BDR	U-NII 3	5733	Low	8.55
		5789	Mid	8.56
		5844	High	8.52

Table 7-34
NB UNII Maximum Average RF Power – Antenna WF7, Variant 2

Type	Band	Frequency	Channel	Average
BDR	U-NII 1	5162	Low	7.6
		5204	Mid	7.73
		5245	High	7.77
BDR	U-NII 3	5733	Low	8.54
		5789	Mid	8.55
		5844	High	8.51

Table 7-35
NB UNII Maximum Average RF Power – Antenna WF8, Variant 1

Type	Band	Frequency	Channel	Average
HDR-4	U-NII 1	5162	Low	9.52
		5204	Mid	9.62
		5245	High	9.67
BDR	U-NII 3	5733	Low	9.47
		5789	Mid	9.52
		5844	High	9.44

Table 7-36
NB UNII Maximum Average RF Power – Antenna WF8, Variant 2

Type	Band	Frequency	Channel	Average
HDR-4	U-NII 1	5162	Low	9.65
		5204	Mid	9.66
		5245	High	9.45
BDR	U-NII 3	5733	Low	9.34
		5789	Mid	9.44
		5844	High	9.62

7.6 Bluetooth Reduced Conducted Powers

Table 7-37
Bluetooth Reduced Average RF Power – Antenna WF7, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	5.89	3.882
2441	GFSK	1.0	39	5.82	3.819
2480	GFSK	1.0	78	5.77	3.776

Table 7-38
Bluetooth Reduced Average RF Power – Antenna WF7, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	5.81	3.811
2441	GFSK	1.0	39	5.59	3.622
2480	GFSK	1.0	78	5.58	3.614

Table 7-39
Bluetooth Reduced Average RF Power – Antenna WF8, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	6.92	4.920
2441	GFSK	1.0	39	6.97	4.977
2480	GFSK	1.0	78	7.14	5.176

Table 7-40
Bluetooth Reduced Average RF Power – Antenna WF8, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	6.73	4.710
2441	GFSK	1.0	39	6.59	4.560
2480	GFSK	1.0	78	6.51	4.477

Table 7-41
Bluetooth Reduced Average RF Power – Antenna WF9, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.59	14.421
2441	GFSK	1.0	39	11.79	15.101
2480	GFSK	1.0	78	11.77	15.031

Table 7-42
Bluetooth Reduced Average RF Power – Antenna WF9, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	11.37	13.709
2441	GFSK	1.0	39	11.45	13.964
2480	GFSK	1.0	78	11.11	12.912

7.7 802.15.4 Reduced Conducted Powers

Table 7-43
802.15.4 Reduced Average RF Power – Antenna WF7, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	6.43	4.395
2440	O-QPSK	0.25	18	6.41	4.375
2475	O-QPSK	0.25	25	6.55	4.519

Table 7-44
802.15.4 Reduced Average RF Power – Antenna WF7, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	6.87	4.864
2440	O-QPSK	0.25	18	6.52	4.487
2475	O-QPSK	0.25	25	6.65	4.624

Table 7-45
802.15.4 Reduced Average RF Power – Antenna WF8, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	8.08	6.427
2440	O-QPSK	0.25	18	8.21	6.622
2475	O-QPSK	0.25	25	8.06	6.397

Table 7-46
802.15.4 Reduced Average RF Power – Antenna WF8, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	8.30	6.761
2440	O-QPSK	0.25	18	8.25	6.683
2475	O-QPSK	0.25	25	8.44	6.982

Table 7-47
802.15.4 Reduced Average RF Power – Antenna WF9, Variant 1

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	12.45	17.579
2440	O-QPSK	0.25	18	12.47	17.660
2475	O-QPSK	0.25	25	12.19	16.558

Table 7-48
802.15.4 Reduced Average RF Power – Antenna WF9, Variant 2

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2405	O-QPSK	0.25	11	12.39	17.338
2440	O-QPSK	0.25	18	12.44	17.539
2475	O-QPSK	0.25	25	12.58	18.113

7.8 NB UNII Reduced Conducted Powers

Table 7-49
NB UNII Reduced Average RF Power – Antenna WF7, Variant 1

Type	Band	Frequency	Frequency	Average
BDR	U-NII 1	5162	Low	1.78
		5204	Mid	1.86
		5245	High	1.63
BDR	U-NII 3	5733	Low	3.6
		5789	Mid	3.45
		5844	High	3.72

Table 7-50
NB UNII Reduced Average RF Power – Antenna WF7, Variant 2

Type	Band	Frequency	Frequency	Average
BDR	U-NII 1	5162	Low	1.55
		5204	Mid	1.7
		5245	High	1.78
BDR	U-NII 3	5733	Low	3.69
		5789	Mid	3.5
		5844	High	3.66

Table 7-51
NB UNII Reduced Average RF Power – Antenna WF8, Variant 1

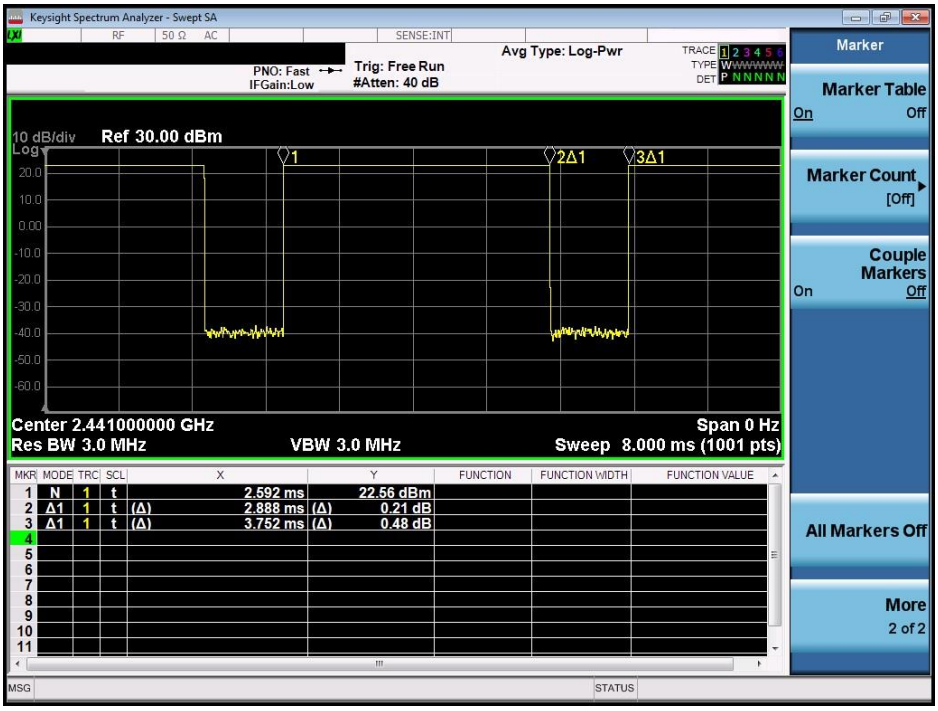
Type	Band	Frequency	Frequency	Average
BDR	U-NII 1	5162	Low	3.57
		5204	Mid	3.56
		5245	High	3.62
BDR	U-NII 3	5733	Low	3.64
		5789	Mid	3.74
		5844	High	3.55

Table 7-52
NB UNII Reduced Average RF Power – Antenna WF8, Variant 2

Type	Band	Frequency	Frequency	Average
BDR	U-NII 1	5162	Low	3.57
		5204	Mid	3.47
		5245	High	3.5
BDR	U-NII 3	5733	Low	3.75
		5789	Mid	3.68
		5844	High	3.42

7.9 Bluetooth Duty Cycle Plots

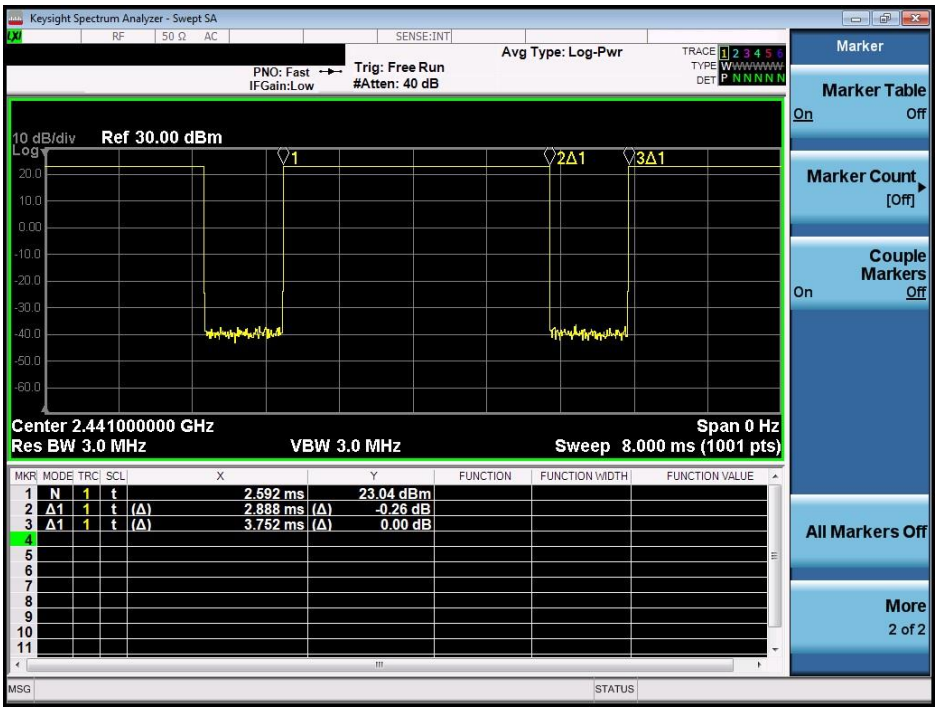
Figure 7-2
Bluetooth Transmission Plot – Antenna WF7, Variant 1



Equation 7-1
Bluetooth Duty Cycle Calculation – Antenna WF7, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

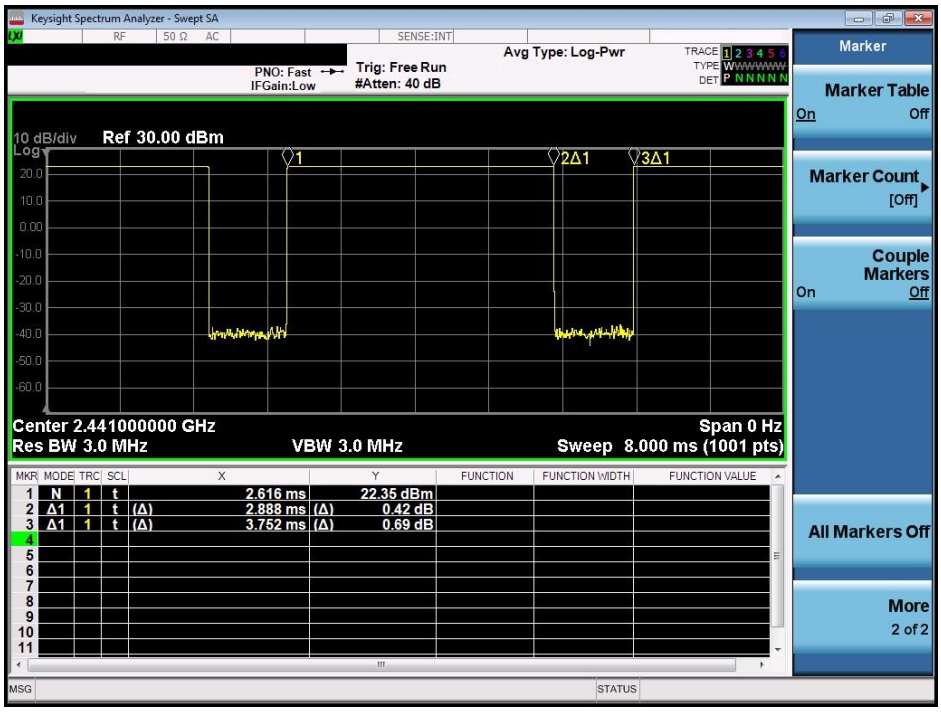
Figure 7-3
Bluetooth Transmission Plot – Antenna WF7, Variant 2



Equation 7-2
Bluetooth Duty Cycle Calculation – Antenna WF7, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

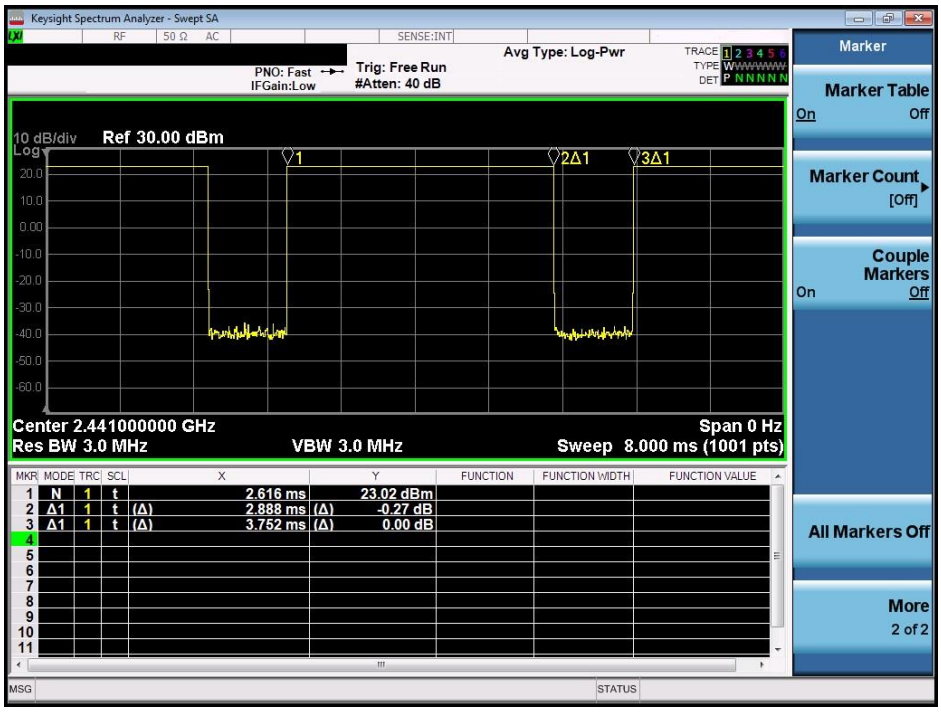
Figure 7-4
Bluetooth Transmission Plot – Antenna WF8, Variant 1



Equation 7-3
Bluetooth Duty Cycle Calculation – Antenna WF8, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

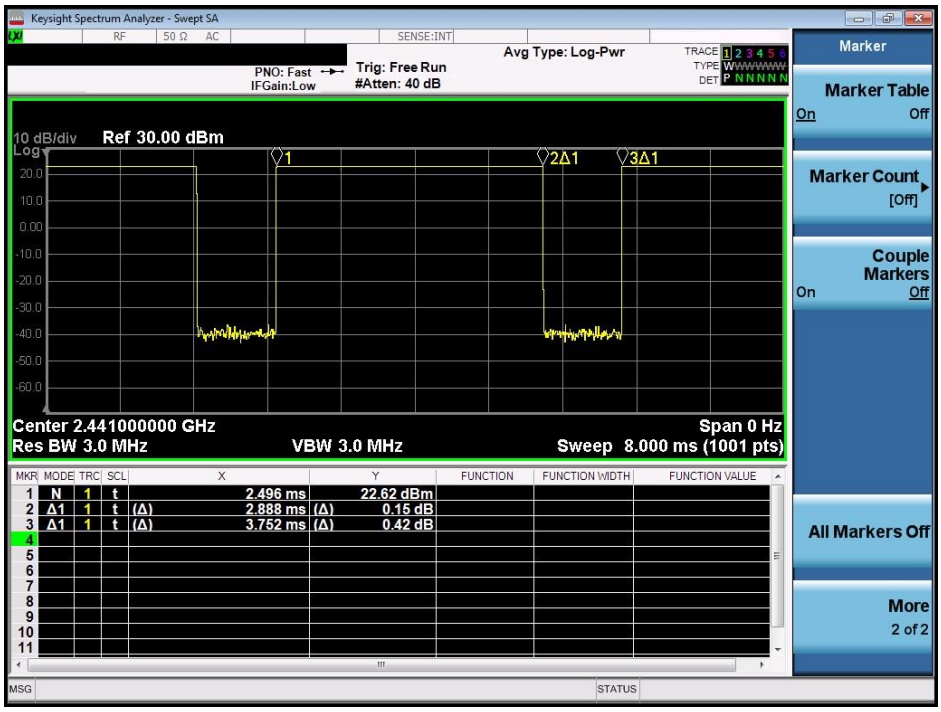
Figure 7-5
Bluetooth Transmission Plot – Antenna WF8, Variant 2



Equation 7-4
Bluetooth Duty Cycle Calculation – Antenna WF8, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

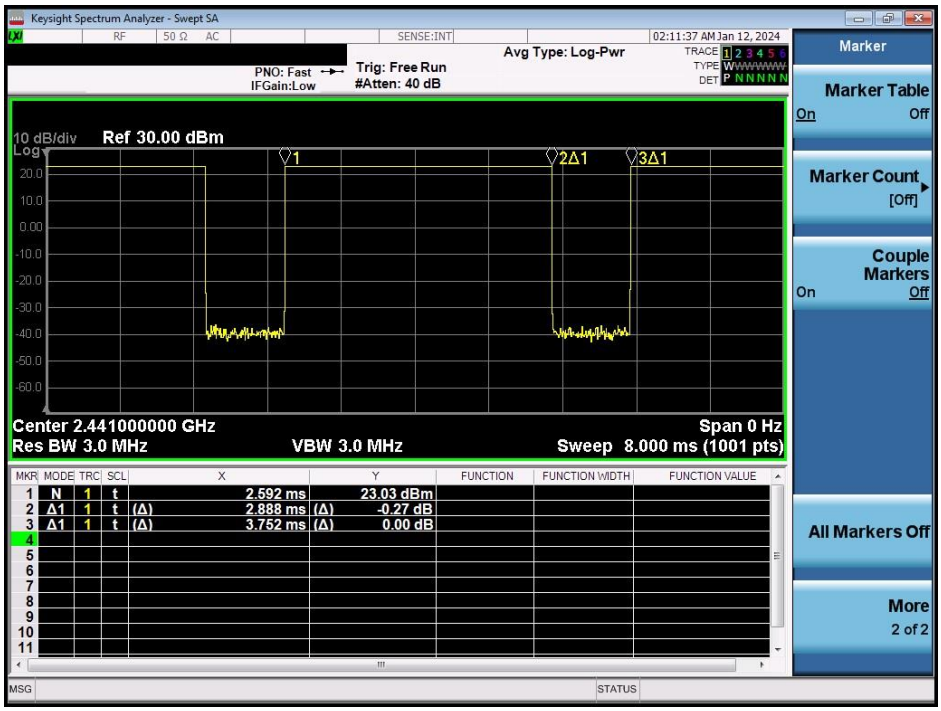
Figure 7-6
Bluetooth Transmission Plot – Antenna WF9, Variant 1



Equation 7-5
Bluetooth Duty Cycle Calculation – Antenna WF9, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

Figure 7-7
Bluetooth Transmission Plot – Antenna WF9, Variant 2

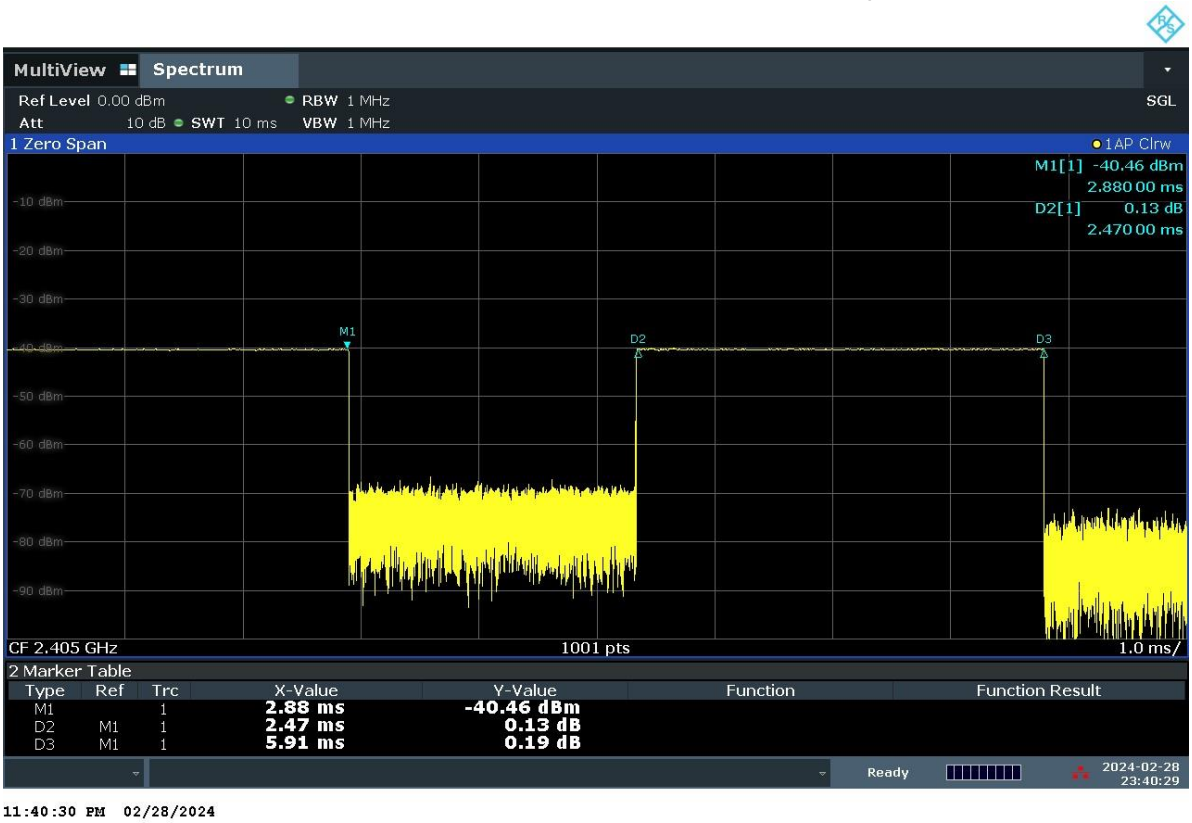


Equation 7-6
Bluetooth Duty Cycle Calculation – Antenna WF9, Variant 2

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{2.888\ ms}}{\mathbf{3.752\ ms}} * \mathbf{100\%} = \mathbf{77.0\%}$$

7.10 802.15.4 Duty Cycle Plots

Figure 7-8
802.15.4 Transmission Plot – Antenna WF7/WF8/WF9, Variant 1

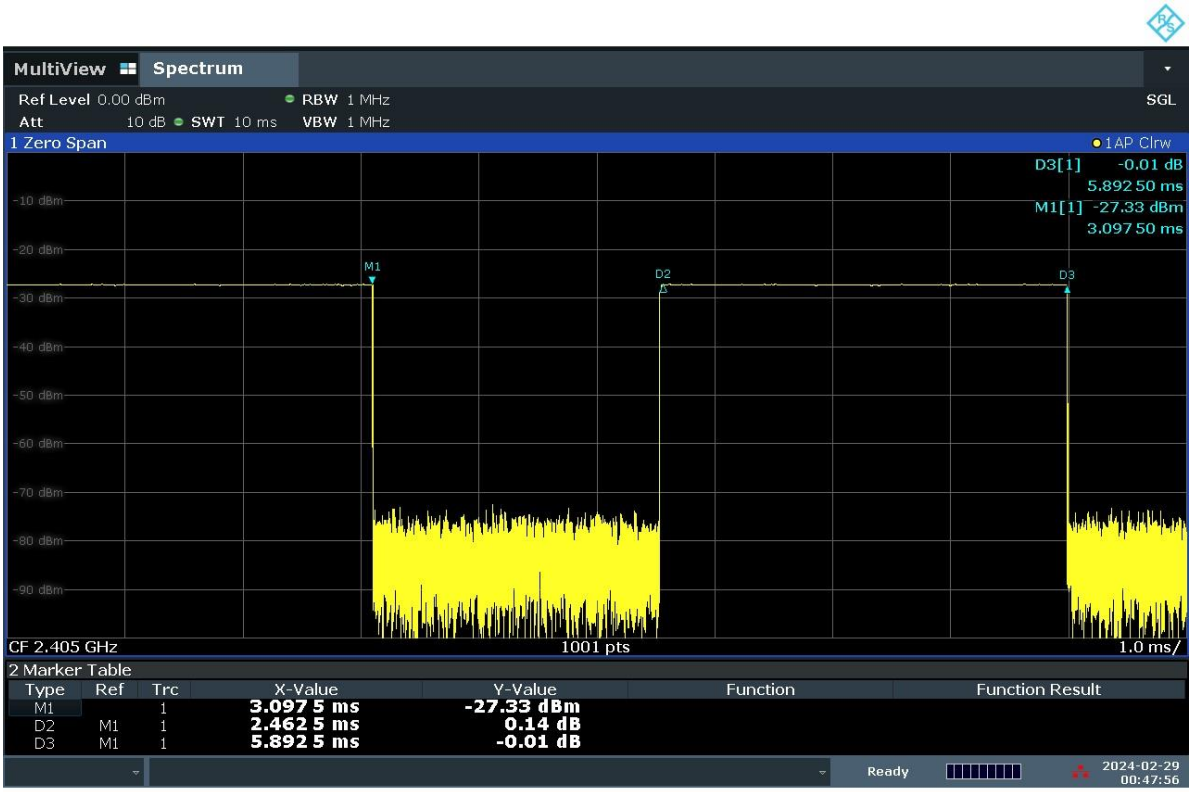


Measured duty cycle as shown above is within the device maximum source-based duty cycle of 60%.

Equation 7-7
802.15.4 Duty Cycle Calculation – Antenna WF7/WF8/WF9, Variants 1

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{3.44\ ms}}{\mathbf{5.91\ ms}} * \mathbf{100\%} = \mathbf{58.2\%}$$

Figure 7-9
802.15.4 Transmission Plot – Antenna WF7/WF8/WF9, Variant 2

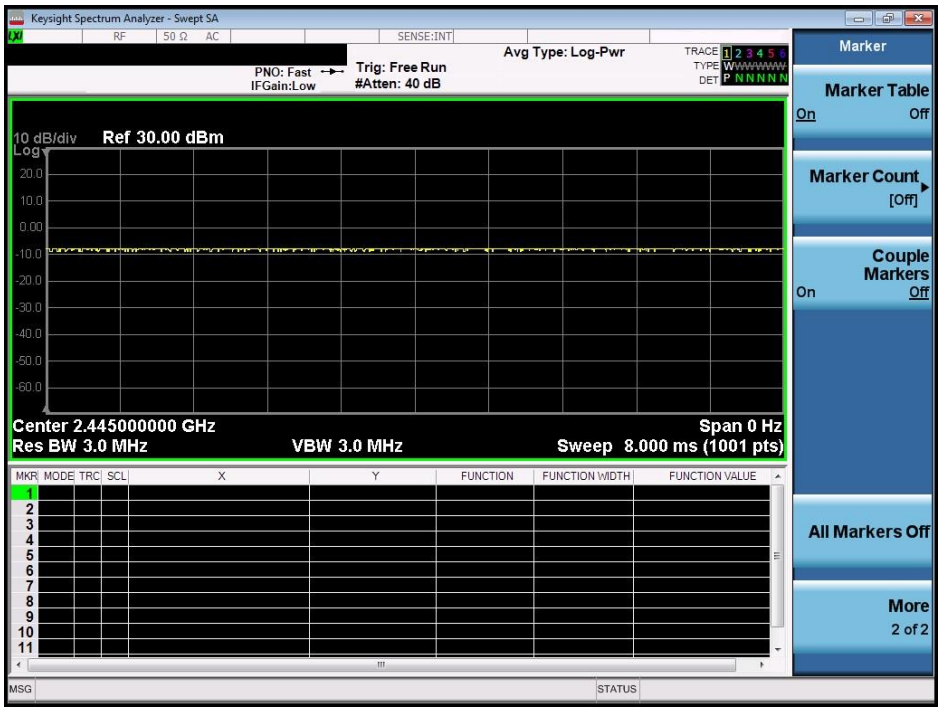


Measured duty cycle as shown above is within the device maximum source-based duty cycle of 60%.

Equation 7-8
802.15.4 Duty Cycle Calculation – Antenna WF7/WF8/WF9, Variant 2

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{3.43\ ms}}{\mathbf{5.892\ ms}} * \mathbf{100\%} = \mathbf{58.2\%}$$

Figure 7-10
802.15.4 Transmission Plot – Antenna WF7/WF8/WF9, Variants 1/2



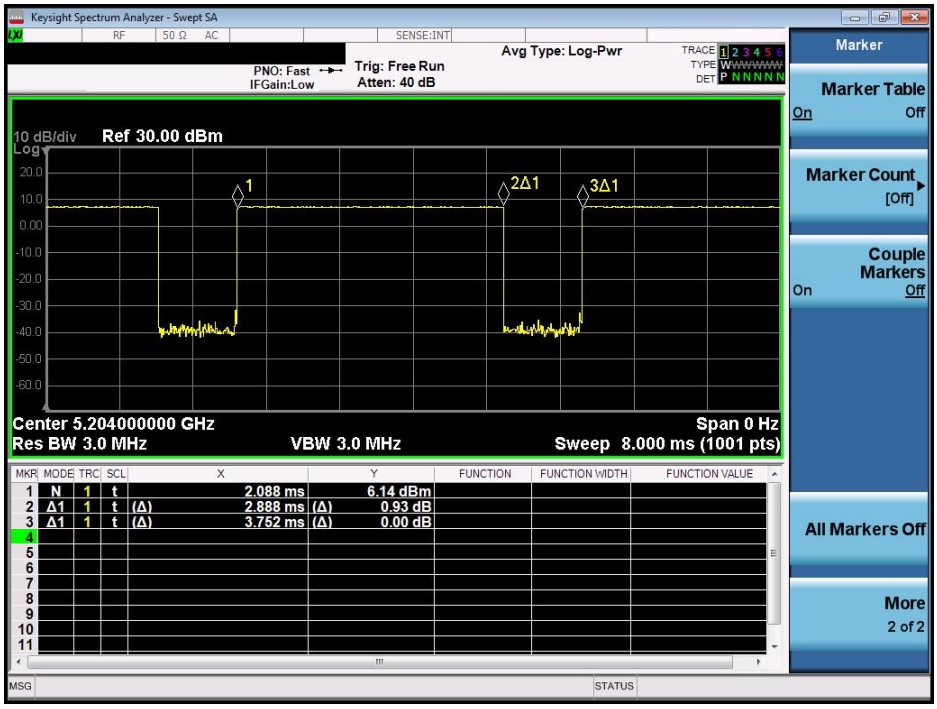
Test Mode measured duty cycle for 802.15.4 during SAR measurement.

Equation 7-9
802.15.4 Duty Cycle Calculation – Antenna WF7/WF8/WF9, Variants 1/2

$$\boldsymbol{Duty\ Cycle} = \mathbf{100.0}\%$$

7.11 NB UNII Duty Cycle Plots

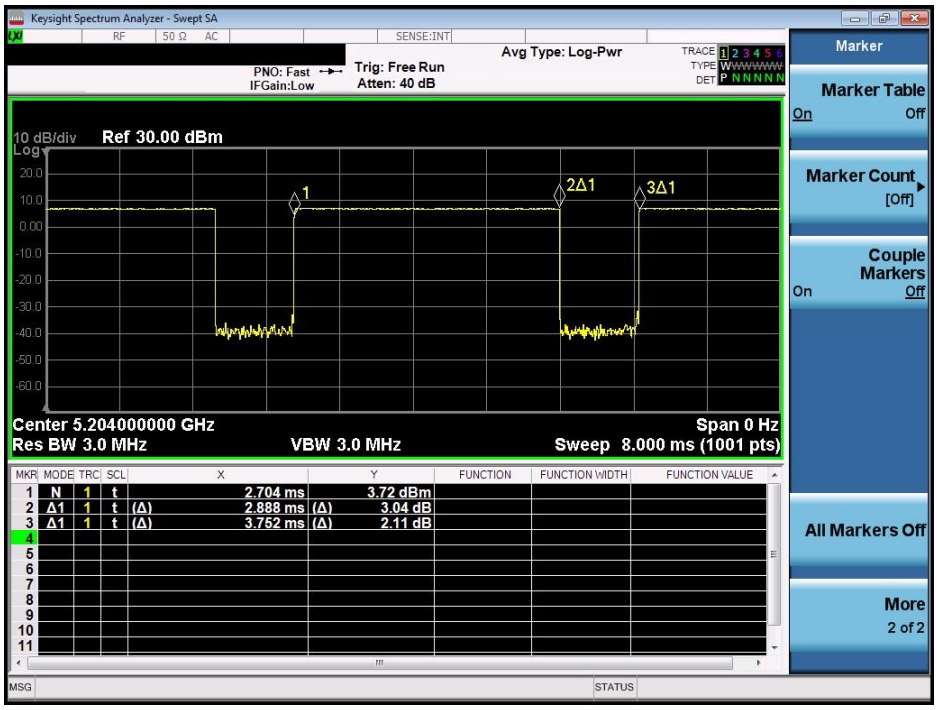
Figure 7-11
NB UNII 1 (BDR) Transmission Plot – Antenna WF7, Variant 1



Equation 7-10
NB UNII 1 (BDR) Duty Cycle Calculation – Antenna WF7, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

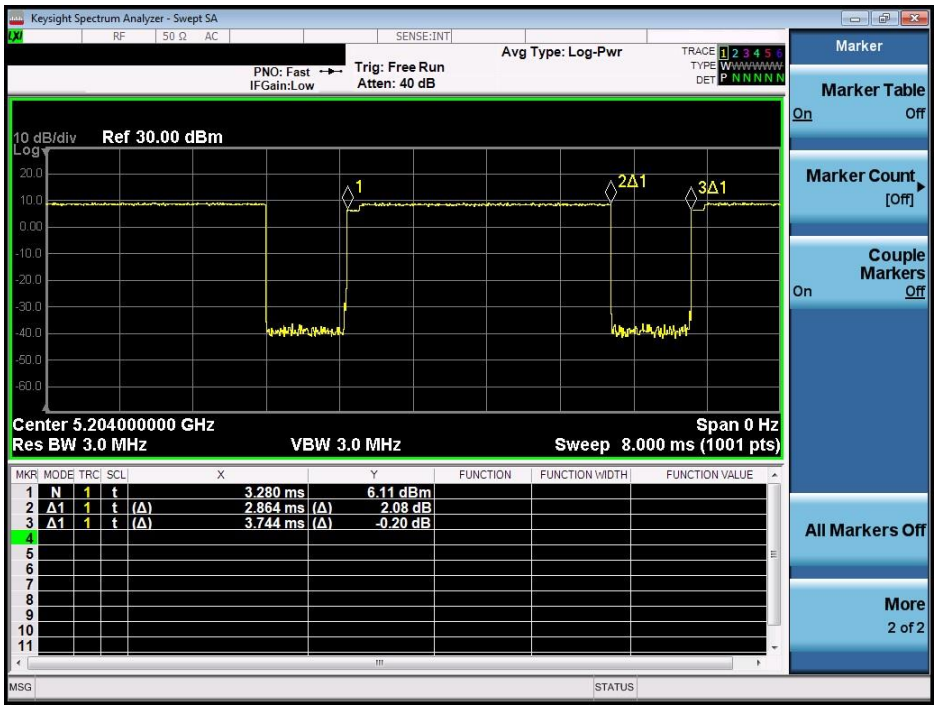
Figure 7-12
NB UNII 1 (BDR) Transmission Plot – Antenna WF7, Variant 2



Equation 7-11
NB UNII 1 (BDR) Duty Cycle Calculation – Antenna WF7, Variant 2

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{2.888\ ms}}{\mathbf{3.752\ ms}} * \mathbf{100\%} = \mathbf{77.0\%}$$

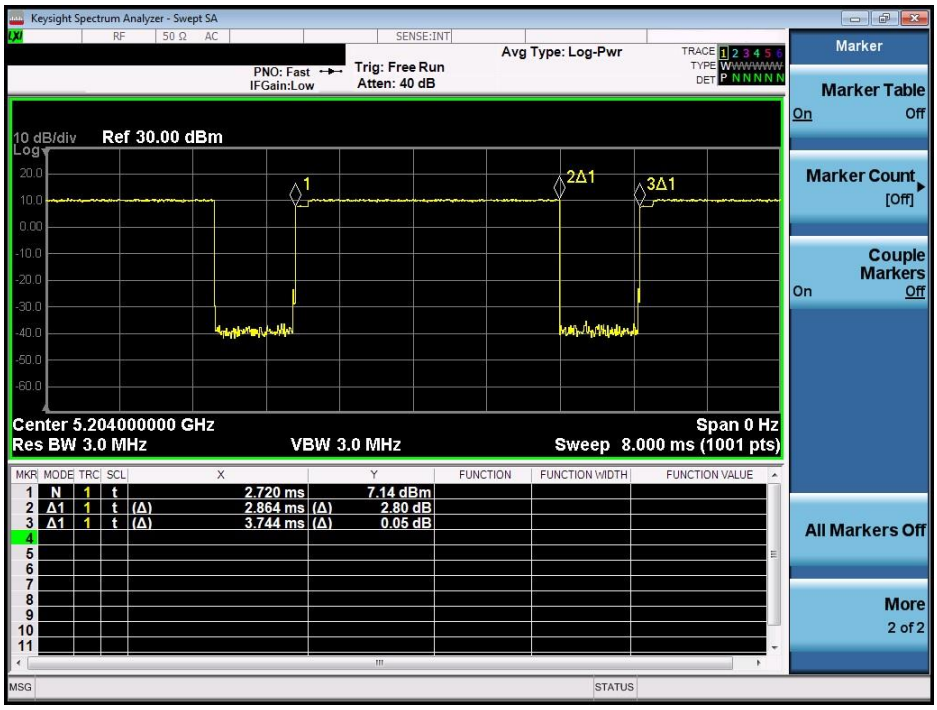
Figure 7-13
NB UNII 1 (HDR4) Transmission Plot – Antenna WF8, Variant 1



Equation 7-12
NB UNII 1 (HDR4) Duty Cycle Calculation – Antenna WF8, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.864\ ms}{3.744\ ms} * 100\% = 76.5\%$$

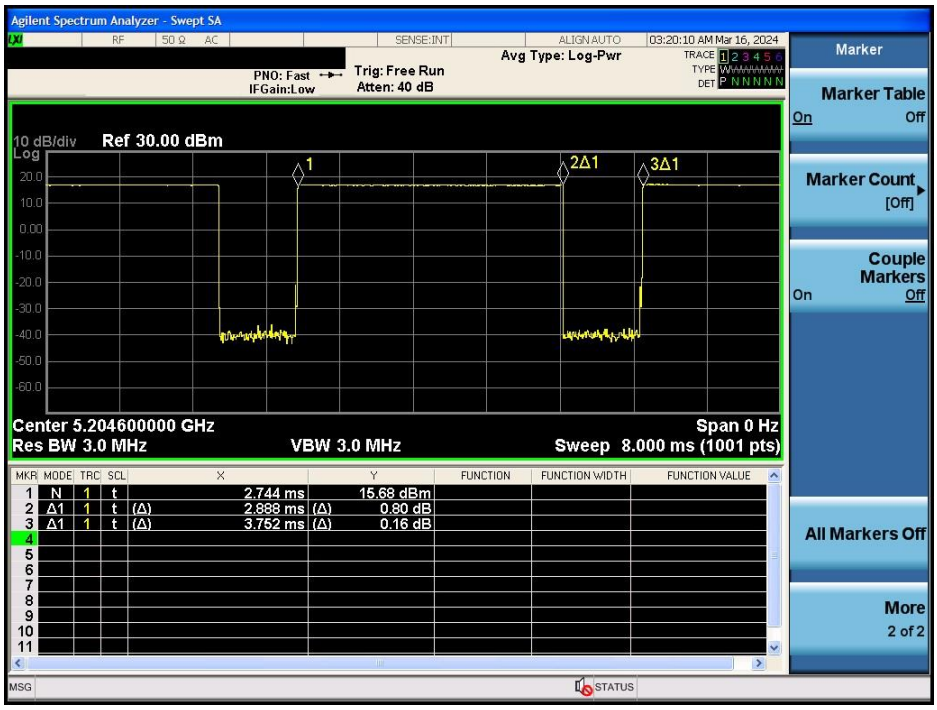
Figure 7-14
NB UNII 1 (HDR4) Transmission Plot – Antenna WF8, Variant 2



Equation 7-13
NB UNII 1 (HDR4) Duty Cycle Calculation – Antenna WF8, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.864\ ms}{3.744\ ms} * 100\% = 76.5\%$$

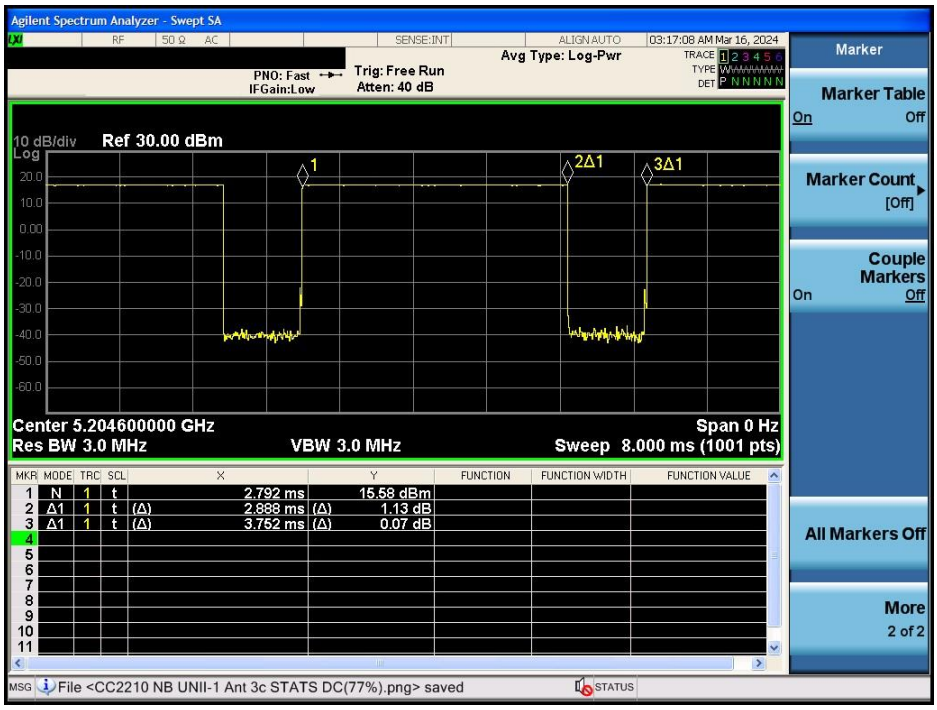
Figure 7-15
NB UNII 1 (BDR) Transmission Plot – Antenna WF8, Variant 1



Equation 7-14
NB UNII 1 (BDR) Duty Cycle Calculation – Antenna WF8, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

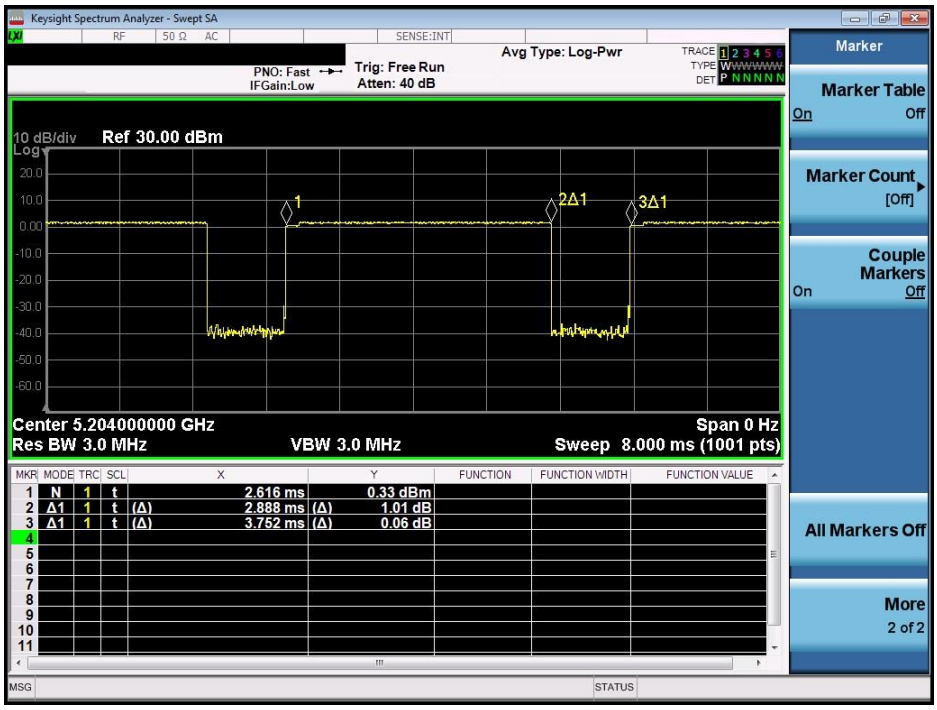
Figure 7-16
NB UNII 1 (BDR) Transmission Plot – Antenna WF8, Variant 2



Equation 7-15
NB UNII 1 (BDR) Duty Cycle Calculation – Antenna WF8, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

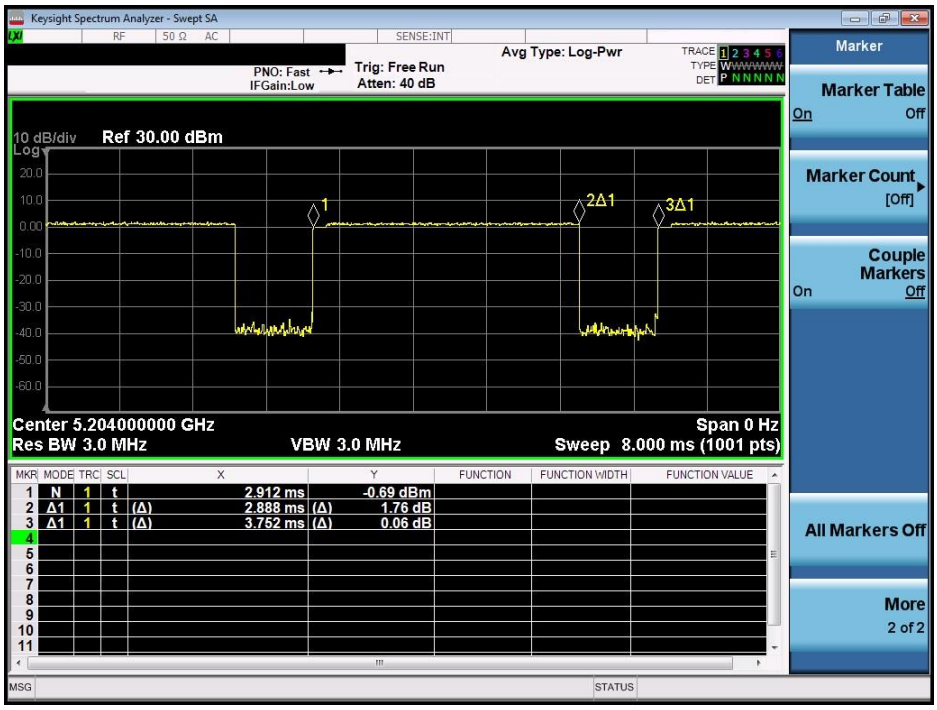
Figure 7-17
NB UNII 1 (HDR8) Transmission Plot – Antenna WF5B, Variant 1



Equation 7-16
NB UNII 1 (HDR8) Duty Cycle Calculation – Antenna WF5B, Variant 1

$$\boldsymbol{Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%}$$

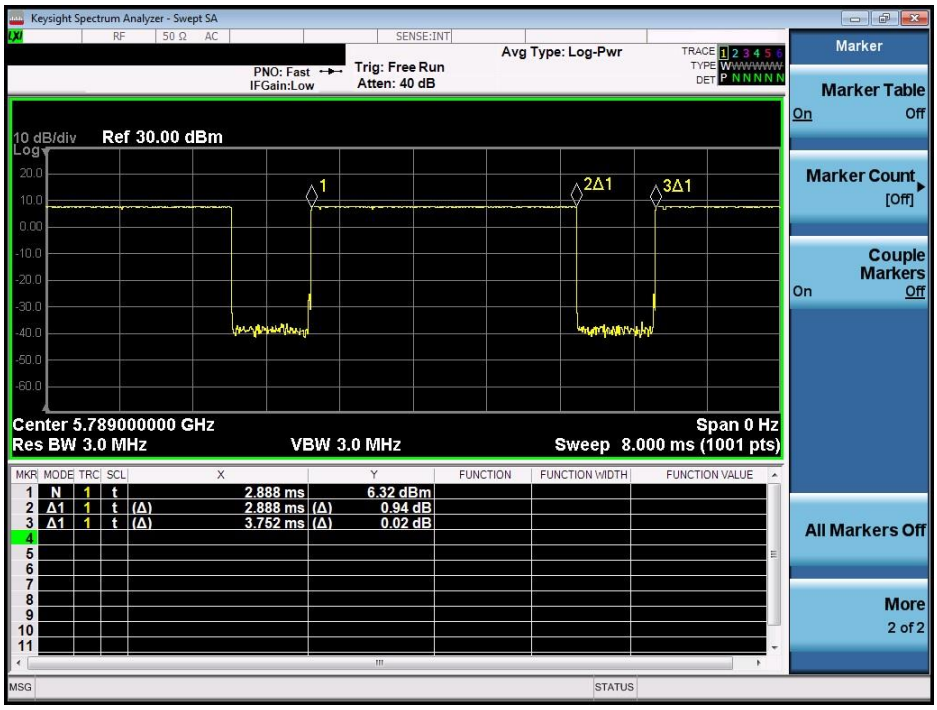
Figure 7-18
NB UNII 1 (HDR8) Transmission Plot – Antenna WF5B, Variant 2



Equation 7-17
NB UNII 1 (HDR8) Duty Cycle Calculation – Antenna WF5B, Variant 2

$$\boldsymbol{Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%}$$

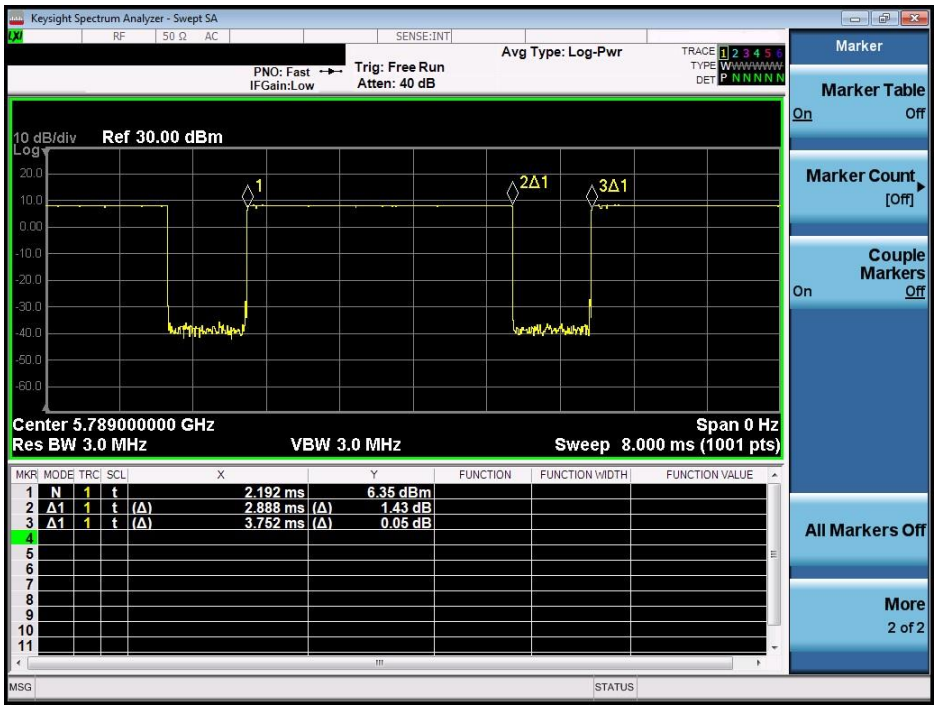
Figure 7-19
NB UNII 3 (BDR) Transmission Plot – Antenna WF7, Variant 1



Equation 7-18
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF7, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

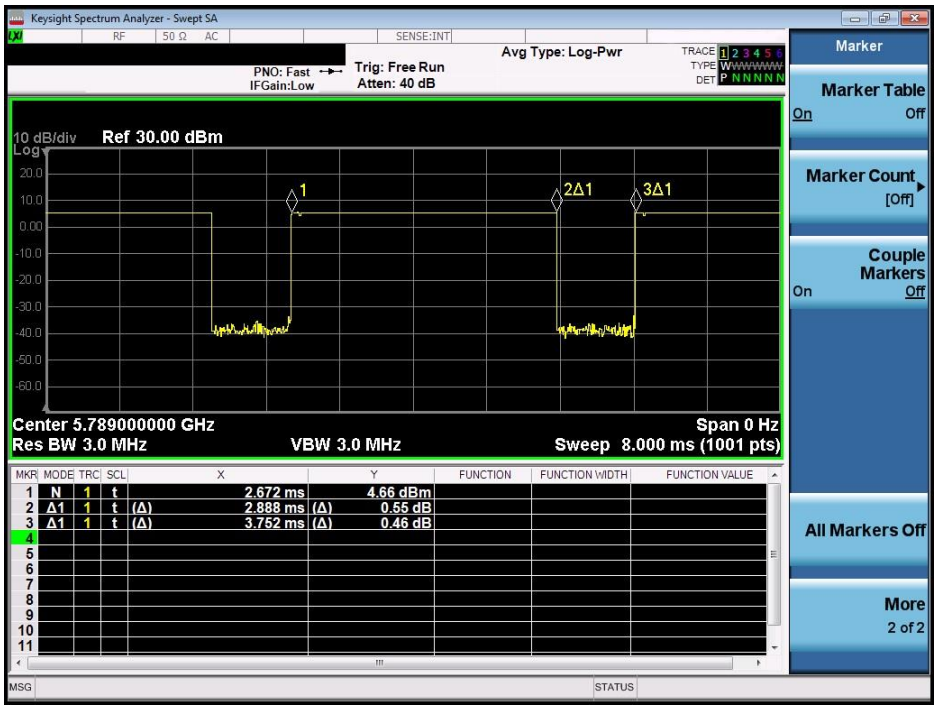
Figure 7-20
NB UNII 3 (BDR) Transmission Plot – Antenna WF7, Variant 2



Equation 7-19
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF7, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

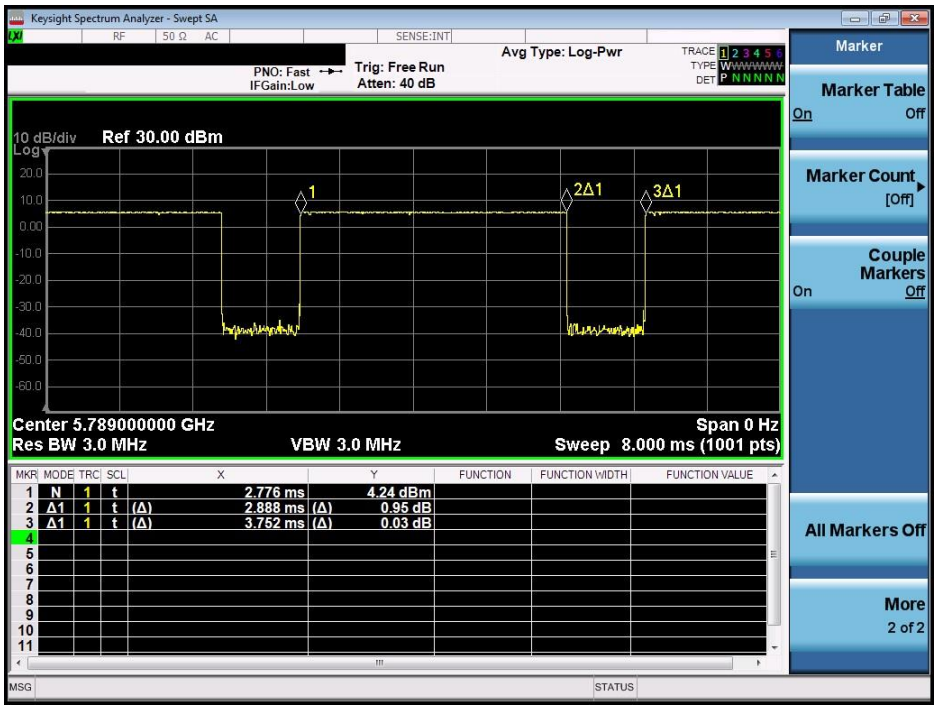
Figure 7-21
NB UNII 3 (BDR) Transmission Plot – Antenna WF8, Variant 1



Equation 7-20
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF8, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

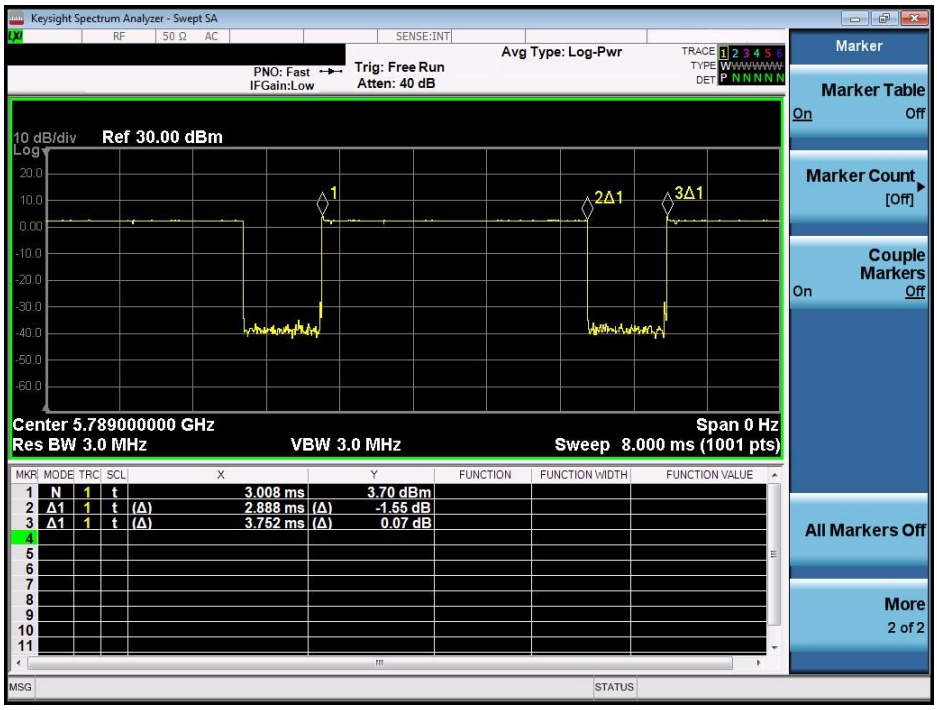
Figure 7-22
NB UNII 3 (BDR) Transmission Plot – Antenna WF8, Variant 2



Equation 7-21
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF8, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

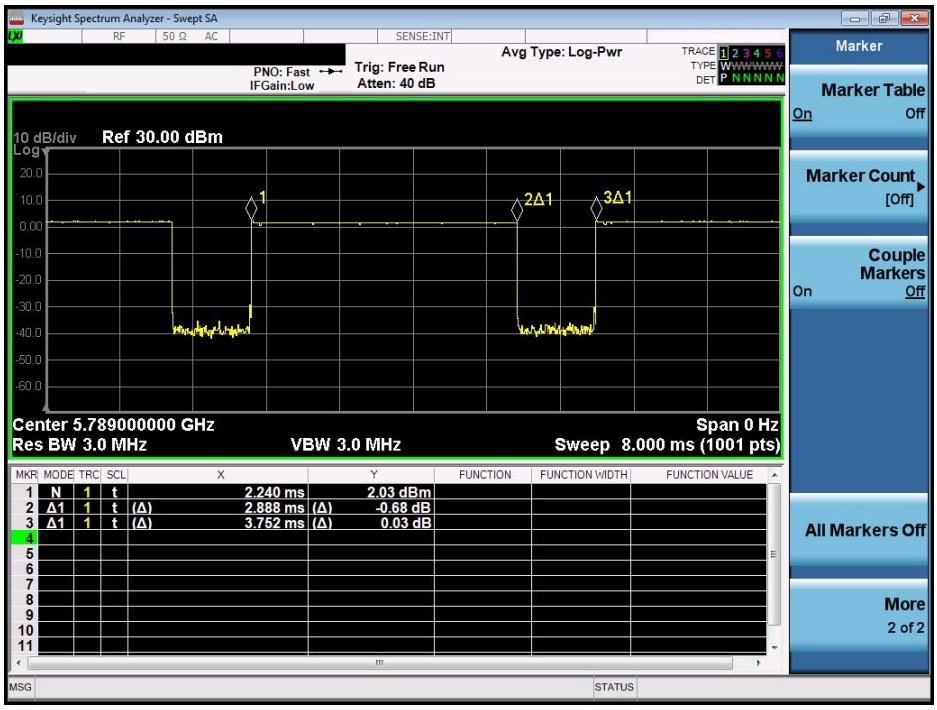
Figure 7-23
NB UNII 3 (BDR) Transmission Plot – Antenna WF5B, Variant 1



Equation 7-22
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF5B, Variant 1

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

Figure 7-24
NB UNII 3 (BDR) Transmission Plot – Antenna WF5B, Variant 2



Equation 7-23
NB UNII 3 (BDR) Duty Cycle Calculation – Antenna WF5B, Variant 2

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77.0\%$$

7.12 Bluetooth/NB UNII Power Reduction Verification Summary

Table 7-53
NB UNII Power Reduction Verification

Antenna	Mode/Band	Condition (s)	Maximum Scenario Maximum Allowed Tune Up Power [dBm]	Reduced Scenario Maximum Allowed Tune Up Power [dBm]	Maximum Measured Power	Reduced Measured Power	Verdict
					[dBm]	[dBm]	
Ant WF7	NB UNII	2.4 GHz WLAN Ant WF7/WF8/WF9 ON	10.5	4.5	10.22	3.99	PASS
Ant WF8	NB UNII	2.4 GHz WLAN Ant WF7/WF8/WF9 ON	10.5	4.5	9.86	2.21	PASS

NB UNII max power will not exceed minimum of (SAR max cap, Reg max cap). Power reduction backoff for simultaneous transmission is applied to SAR max cap for each antenna. Reduced power level will not exceed minimum of (SAR max cap-power reduction backoff, Reg max cap).

Conducted powers were measured for each mode/band and applied condition. All conducted power measurements were verified to be below the maximum allowed.

Table 7-54
Bluetooth Power Reduction Verification

Antenna	Mode/Band	Condition (s)	Maximum Scenario Maximum Allowed Tune Up Power [dBm]	Reduced Scenario Maximum Allowed Tune Up Power [dBm]	Maximum Measured Power	Reduced Measured Power	Verdict
					[dBm]	[dBm]	
Ant WF7	2.4 GHz Bluetooth	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	12.5	6.5	11.97	6.00	PASS
	802.15.4	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	13.5	7.5	12.99	7.05	PASS
Ant WF8	802.15.4	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	15	9	12.82	8.00	PASS
	2.4 GHz Bluetooth	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	14	8	13.71	7.72	PASS
Ant WF9	2.4 GHz Bluetooth	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	18.5	12.5	17.92	11.68	PASS
	802.15.4	5/6 GHz WLAN Ant WF7/WF8/WF5B ON	20	14	19.61	13.54	PASS

Per manufacturer, 2.4 GHz Bluetooth and 802.15.4 share the same antenna path and reduces with the same power backoff when it transmits simultaneously with cellular and 5/6 GHz WLAN antennas. Therefore, conducted power measurements were measured for both mode/band as shown above and applied condition.

Conducted powers were measured for each Mode/Band and applied condition. All conducted power measurements were verified to be within tolerance.

7.13 Notes for Bluetooth/802.15.4/NB-UNII

- The Bluetooth/802.15.4/NB UNII chipset in this device is produced by two different suppliers. The electrically identical modules are manufactured with identical mechanical structures to meet the same specifications and functions. Two device variants are referenced as Variant 1 and Variant 2 in this report.
- Bluetooth/802.15.4/NB UNII SAR worst case configuration was spotchecked on Variant 1 and Variant 2.
- Full power measurements were performed for Variant 1 and Variant 2 per FCC KDB Procedures 248227.

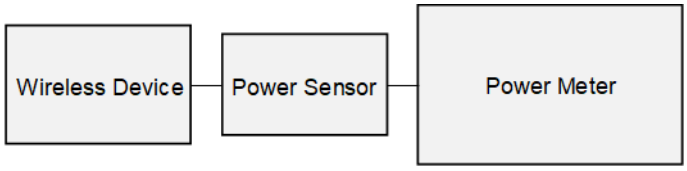


Figure 7-16
Power Measurement Setup

8 SYSTEM VERIFICATION

8.1 Tissue Verification

Table 8-1
Measured 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
02/14/2024	30 Head	22.5	4	0.727	53.823	0.750	55.000	-3.07%	-2.14%
			6	0.727	53.745	0.750	55.000	-3.07%	-2.28%
			12	0.727	53.515	0.750	55.000	-3.07%	-2.70%
			13	0.727	53.480	0.750	55.000	-3.07%	-2.76%
			14	0.727	53.404	0.750	55.000	-3.07%	-2.90%
			30	0.730	52.704	0.750	55.000	-2.67%	-4.17%
			60	0.735	52.001	0.753	54.325	-2.39%	-4.28%
			65	0.736	51.916	0.753	54.213	-2.26%	-4.24%
			150	0.765	50.032	0.760	52.300	0.66%	-4.34%
01/18/2024	2450 Head	19.7	2300	1.652	40.564	1.670	39.500	-1.08%	2.69%
			2310	1.659	40.546	1.679	39.480	-1.19%	2.70%
			2320	1.667	40.526	1.687	39.460	-1.19%	2.70%
			2400	1.728	40.408	1.756	39.289	-1.59%	2.85%
			2450	1.767	40.316	1.800	39.200	-1.83%	2.85%
			2480	1.792	40.288	1.833	39.162	-2.24%	2.88%
			2500	1.806	40.269	1.855	39.136	-2.64%	2.90%
			2510	1.813	40.255	1.866	39.123	-2.84%	2.89%
			2535	1.835	40.211	1.893	39.092	-3.06%	2.86%
			2550	1.849	40.184	1.909	39.073	-3.14%	2.84%
			2560	1.858	40.170	1.920	39.060	-3.23%	2.84%
			2600	1.892	40.122	1.964	39.009	-3.67%	2.85%
			2650	1.933	40.028	2.018	38.945	-4.21%	2.78%
			2680	1.960	39.974	2.051	38.907	-4.44%	2.74%
			2700	1.978	39.942	2.073	38.882	-4.58%	2.73%
01/28/2024	2450 Head	19.0	2300	1.644	40.672	1.670	39.500	-1.56%	2.97%
			2310	1.651	40.652	1.679	39.480	-1.67%	2.97%
			2320	1.659	40.629	1.687	39.460	-1.66%	2.96%
			2400	1.724	40.517	1.756	39.289	-1.82%	3.13%
			2450	1.765	40.401	1.800	39.200	-1.94%	3.06%
			2480	1.790	40.375	1.833	39.162	-2.35%	3.10%
			2500	1.804	40.351	1.855	39.136	-2.75%	3.10%
			2510	1.812	40.331	1.866	39.123	-2.89%	3.09%
			2535	1.832	40.275	1.893	39.092	-3.22%	3.03%
			2550	1.846	40.241	1.909	39.073	-3.30%	2.99%
			2560	1.856	40.223	1.920	39.060	-3.33%	2.98%
			2600	1.889	40.177	1.964	39.009	-3.82%	2.99%
			2650	1.928	40.084	2.018	38.945	-4.46%	2.92%
			2680	1.956	40.025	2.051	38.907	-4.63%	2.87%
			2700	1.974	40.000	2.073	38.882	-4.78%	2.88%
02/25/2024	2450 Head	19.1	2300	1.625	40.954	1.670	39.500	-2.69%	3.68%
			2310	1.633	40.944	1.679	39.480	-2.74%	3.71%
			2320	1.641	40.934	1.687	39.460	-2.73%	3.74%
			2400	1.701	40.820	1.756	39.289	-3.13%	3.90%
			2450	1.740	40.763	1.800	39.200	-3.33%	3.99%
			2480	1.762	40.706	1.833	39.162	-3.87%	3.94%
			2500	1.780	40.670	1.855	39.136	-4.04%	3.92%
			2510	1.789	40.660	1.866	39.123	-4.13%	3.93%
			2535	1.810	40.633	1.893	39.092	-4.38%	3.94%
			2550	1.821	40.618	1.909	39.073	-4.61%	3.95%
			2560	1.828	40.601	1.920	39.060	-4.79%	3.95%
01/18/2024	5200-5800 Head	20.0	5180	4.507	36.138	4.635	36.009	-2.78%	0.36%
			5190	4.521	36.120	4.645	35.998	-2.67%	0.34%
			5200	4.534	36.117	4.655	35.986	-2.60%	0.36%
			5210	4.542	36.110	4.666	35.975	-2.66%	0.38%
			5220	4.546	36.083	4.676	35.963	-2.78%	0.33%
			5240	4.572	36.024	4.696	35.940	-2.64%	0.23%
			5250	4.586	36.013	4.706	35.929	-2.55%	0.23%
			5260	4.597	35.998	4.717	35.917	-2.54%	0.23%
			5270	4.607	35.974	4.727	35.906	-2.54%	0.19%
			5280	4.618	35.947	4.737	35.894	-2.51%	0.15%
			5290	4.632	35.927	4.748	35.883	-2.44%	0.12%
			5300	4.641	35.918	4.758	35.871	-2.46%	0.13%
			5310	4.652	35.910	4.768	35.860	-2.43%	0.14%
			5320	4.664	35.894	4.778	35.849	-2.39%	0.13%
			5500	4.864	35.536	4.963	35.643	-1.99%	-0.30%
			5510	4.873	35.525	4.973	35.632	-2.01%	-0.30%
			5520	4.885	35.510	4.983	35.620	-1.97%	-0.31%
			5530	4.896	35.484	4.994	35.609	-1.96%	-0.35%
			5540	4.905	35.450	5.004	35.597	-1.98%	-0.41%
			5550	4.918	35.430	5.014	35.586	-1.91%	-0.44%
			5560	4.930	35.429	5.024	35.574	-1.87%	-0.41%
			5580	4.948	35.414	5.045	35.551	-1.92%	-0.39%
			5600	4.979	35.352	5.065	35.529	-1.70%	-0.50%
			5610	4.992	35.332	5.076	35.518	-1.65%	-0.52%
			5620	5.003	35.316	5.086	35.506	-1.63%	-0.54%
			5640	5.030	35.268	5.106	35.483	-1.49%	-0.61%
			5660	5.053	35.233	5.127	35.460	-1.44%	-0.64%
			5670	5.063	35.219	5.137	35.449	-1.44%	-0.65%
			5680	5.068	35.205	5.147	35.437	-1.53%	-0.65%
			5690	5.080	35.178	5.158	35.426	-1.51%	-0.70%
			5700	5.096	35.159	5.168	35.414	-1.39%	-0.72%
			5710	5.111	35.137	5.178	35.403	-1.29%	-0.75%
			5720	5.123	35.123	5.188	35.391	-1.25%	-0.76%
			5745	5.153	35.093	5.214	35.363	-1.17%	-0.76%
			5750	5.159	35.081	5.219	35.357	-1.15%	-0.78%
			5755	5.164	35.064	5.224	35.351	-1.15%	-0.81%
			5765	5.175	35.034	5.234	35.340	-1.13%	-0.87%
			5775	5.185	35.029	5.245	35.329	-1.14%	-0.85%
			5785	5.196	35.028	5.255	35.317	-1.12%	-0.82%
			5795	5.204	35.009	5.265	35.305	-1.16%	-0.84%
			5800	5.210	34.993	5.270	35.300	-1.14%	-0.87%
			5800	5.210	34.993	5.270	35.300	-1.14%	-0.87%
			5805	5.219	34.982	5.275	35.294	-1.06%	-0.88%
			5825	5.245	34.952	5.296	35.271	-0.96%	-0.90%
			5835	5.255	34.939	5.305	35.230	-0.94%	-0.83%
			5845	5.263	34.919	5.315	35.210	-0.98%	-0.83%
			5855	5.277	34.896	5.325	35.197	-0.90%	-0.86%
			5865	5.290	34.874	5.336	35.190	-0.86%	-0.90%
			5865	5.290	34.874	5.336	35.190	-0.86%	-0.90%
			5865	5.290	34.874	5.336	35.190	-0.86%	-0.90%
			5865	5.290	34.874	5.336	35.190	-0.86%	-0.90%
			5875	5.301	34.858	5.347	35.183	-0.86%	-0.92%
			5885	5.311	34.838	5.357	35.177	-0.86%	-0.96%
			5905	5.334	34.803	5.379	35.163	-0.84%	-1.02%

01/28/2024	5200-5800 Head	19.0	5180	4.406	36.176	4.635	36.009	-4.94%	0.46%
			5190	4.417	36.150	4.645	35.998	-4.91%	0.42%
			5200	4.428	36.123	4.655	35.986	-4.88%	0.38%
			5210	4.439	36.111	4.666	35.975	-4.86%	0.38%
			5220	4.449	36.102	4.676	35.963	-4.85%	0.39%
			5240	4.473	36.071	4.696	35.940	-4.75%	0.36%
			5250	4.481	36.050	4.706	35.929	-4.78%	0.34%
			5260	4.488	36.028	4.717	35.917	-4.85%	0.31%
			5270	4.499	36.004	4.727	35.906	-4.82%	0.27%
			5280	4.513	35.975	4.737	35.894	-4.73%	0.23%
			5290	4.529	35.956	4.748	35.883	-4.61%	0.20%
			5300	4.542	35.946	4.758	35.871	-4.54%	0.21%
			5310	4.554	35.939	4.768	35.860	-4.49%	0.22%
			5320	4.563	35.934	4.778	35.849	-4.50%	0.24%
			5500	4.754	35.589	4.963	35.643	-4.21%	-0.15%
			5510	4.768	35.574	4.973	35.632	-4.12%	-0.16%
			5520	4.780	35.559	4.983	35.620	-4.07%	-0.17%
			5530	4.792	35.542	4.994	35.609	-4.04%	-0.19%
			5540	4.805	35.534	5.004	35.597	-3.98%	-0.18%
			5550	4.819	35.529	5.014	35.586	-3.89%	-0.16%
			5560	4.829	35.511	5.024	35.574	-3.88%	-0.18%
			5580	4.849	35.453	5.045	35.551	-3.89%	-0.28%
			5600	4.876	35.416	5.065	35.529	-3.73%	-0.32%
			5610	4.886	35.398	5.076	35.518	-3.74%	-0.34%
			5620	4.897	35.386	5.086	35.506	-3.72%	-0.34%
			5640	4.926	35.363	5.106	35.483	-3.53%	-0.34%
			5660	4.945	35.325	5.127	35.460	-3.55%	-0.38%
			5670	4.954	35.296	5.137	35.449	-3.56%	-0.43%
			5680	4.964	35.271	5.147	35.437	-3.56%	-0.47%
			5690	4.976	35.263	5.158	35.426	-3.53%	-0.46%
			5700	4.989	35.254	5.168	35.414	-3.46%	-0.45%
			5710	5.003	35.232	5.178	35.403	-3.38%	-0.48%
			5720	5.012	35.202	5.188	35.391	-3.39%	-0.53%
			5745	5.045	35.159	5.214	35.363	-3.24%	-0.58%
			5750	5.053	35.153	5.219	35.357	-3.18%	-0.58%
			5755	5.059	35.148	5.224	35.351	-3.16%	-0.57%
			5765	5.068	35.135	5.234	35.340	-3.17%	-0.58%
			5775	5.078	35.121	5.245	35.329	-3.18%	-0.59%
			5785	5.087	35.107	5.255	35.317	-3.20%	-0.59%
			5795	5.096	35.085	5.265	35.305	-3.21%	-0.62%
			5800	5.102	35.072	5.270	35.300	-3.19%	-0.65%
			5800	5.102	35.072	5.270	35.300	-3.19%	-0.65%
			5805	5.107	35.061	5.275	35.294	-3.18%	-0.66%
			5825	5.133	35.033	5.296	35.271	-3.08%	-0.67%
			5835	5.144	35.013	5.305	35.230	-3.03%	-0.62%
			5845	5.154	34.989	5.315	35.210	-3.03%	-0.63%
			5855	5.168	34.969	5.325	35.197	-2.95%	-0.65%
			5865	5.181	34.955	5.336	35.190	-2.90%	-0.67%
			5865	5.181	34.955	5.336	35.190	-2.90%	-0.67%
			5865	5.181	34.955	5.336	35.190	-2.90%	-0.67%
			5865	5.181	34.955	5.336	35.190	-2.90%	-0.67%
			5875	5.193	34.949	5.347	35.183	-2.88%	-0.67%
			5885	5.202	34.936	5.357	35.177	-2.89%	-0.69%
			5905	5.222	34.895	5.379	35.163	-2.92%	-0.76%
01/24/2024	6000 Head	20.5	5935	5.232	34.038	5.411	35.143	-3.31%	-3.14%
			5970	5.266	33.971	5.448	35.120	-3.34%	-3.27%
			5985	5.289	33.949	5.464	35.110	-3.20%	-3.31%
			6000	5.308	33.923	5.480	35.100	-3.14%	-3.35%
			6025	5.338	33.875	5.510	35.070	-3.12%	-3.41%
			6065	5.382	33.804	5.557	35.022	-3.15%	-3.48%
			6075	5.396	33.787	5.569	35.010	-3.11%	-3.49%
			6085	5.410	33.774	5.580	34.998	-3.05%	-3.50%
			6185	5.526	33.591	5.698	34.878	-3.02%	-3.69%
			6275	5.635	33.440	5.805	34.770	-2.93%	-3.83%
			6285	5.643	33.421	5.816	34.758	-2.97%	-3.85%
			6305	5.665	33.373	5.840	34.734	-3.00%	-3.92%
			6345	5.714	33.323	5.887	34.686	-2.94%	-3.93%
			6475	5.859	33.130	6.041	34.530	-3.01%	-4.05%
			6485	5.868	33.113	6.052	34.518	-3.04%	-4.07%
			6500	5.885	33.071	6.070	34.500	-3.05%	-4.14%
			6505	5.892	33.056	6.076	34.494	-3.03%	-4.17%
			6545	5.949	32.978	6.122	34.446	-2.83%	-4.26%
			6665	6.096	32.772	6.265	34.302	-2.70%	-4.46%
			6675	6.101	32.764	6.273	34.290	-2.74%	-4.45%
			6685	6.107	32.752	6.285	34.278	-2.83%	-4.45%
			6715	6.135	32.682	6.319	34.242	-2.91%	-4.56%
			6785	6.225	32.604	6.400	34.158	-2.73%	-4.55%
			6825	6.255	32.507	6.447	34.110	-2.98%	-4.70%
			6985	6.450	32.246	6.633	33.918	-2.76%	-4.93%
			7025	6.471	32.210	6.680	33.870	-3.13%	-4.90%

The above measured tissue parameters were used in the 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.

Note: 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 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 4cm2 APD (W/m2)	1W Target 4cm2 APD (W/m2)	1W Normalized 4cm2 APD (W/m2)	Deviation 4cm2 APD (%)
AM14	13	HEAD	02/14/2024	22.6	21.9	1.00	1004	7360	534	0.552	0.578	0.552	-4.50%				
AM8	2450	HEAD	01/18/2024	19.9	19.5	0.10	921	7421	604	5.230	54.200	52.300	-3.51%				
AM8	2450	HEAD	01/28/2024	21.3	19.8	0.10	855	7421	604	5.040	52.400	50.400	-3.82%				
AM8	2450	HEAD	02/25/2024	20.1	19.3	0.10	921	7421	604	5.160	54.200	51.600	-4.80%				
AM9	5250	HEAD	01/18/2024	23.0	20.1	0.05	1123	3746	1237	3.710	80.500	74.200	-7.83%				
AM9	5250	HEAD	01/28/2024	22.8	20.7	0.05	1123	3746	1237	3.790	80.500	75.800	-5.84%				
AM9	5600	HEAD	01/18/2024	23.0	20.1	0.05	1123	3746	1237	4.050	83.700	81.000	-3.23%				
AM9	5600	HEAD	01/28/2024	22.8	20.7	0.05	1123	3746	1237	4.080	83.700	81.600	-2.51%				
AM9	5750	HEAD	01/18/2024	23.0	20.1	0.05	1123	3746	1237	3.750	80.500	75.000	-6.83%				
AM9	5750	HEAD	01/28/2024	22.8	20.7	0.05	1123	3746	1237	3.870	80.500	77.400	-3.85%				
AM9	5800	HEAD	01/18/2024	23.0	20.1	0.05	1123	3746	1237	3.810	80.500	76.200	-5.34%				
AM9	5800	HEAD	01/28/2024	22.8	20.7	0.05	1123	3746	1237	3.850	80.500	77.000	-4.35%				
AM2	6500	HEAD	01/24/2024	22.2	20.0	0.03	1019	7420	1333	7.090	293.000	283.600	-3.21%	31.9	1320	1276	-3.33%

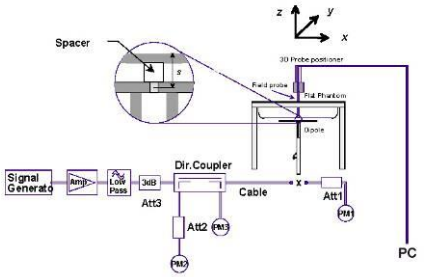


Figure 8-1
System Verification Setup Diagram

Figure 8-2
System Verification Setup Photo

8.3 Power Density Test System Verification

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check.

The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

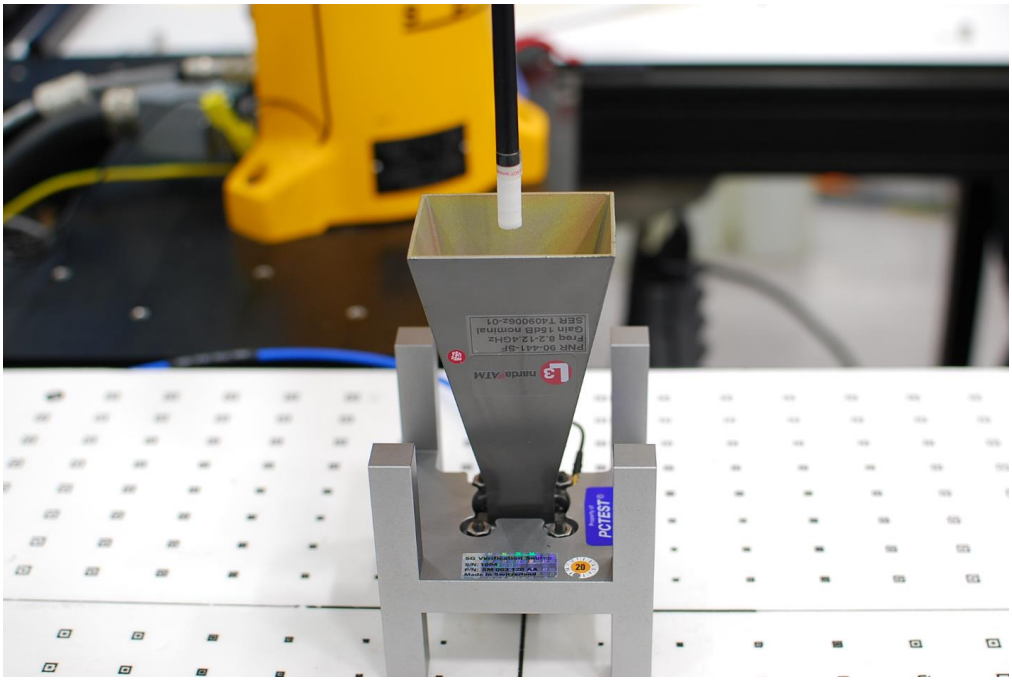


Figure 8-3
System Verification Setup Photo

Table 8-3
10 GHz Verification Results

System	Frequency (GHz)	Date	Source S/N	Probe S/N	Prad (mW)	Normal psPD (W/m² over 4 cm²)		Deviation (dB)	Total psPD (W/m² over 4 cm²)		Deviation (dB)
						Measured	Target		Measured	Target	
AM5	10	01/29/2024	1002	9407	89.1	56.20	52.80	0.27	56.30	53.10	0.25

Note: A **10 mm distance spacing** was used from the reference horn antenna aperture to the probe element.

9 SAR DATA SUMMARY

9.1 Standalone SAR Data

Table 9-1
2.4 GHz WLAN Body SAR Data – Ant WF7

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.06	2412	1	1	12.00	11.06	Back	0	V2	0.907	0.385	1.242	1.003	1.130	0.480	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.01	2437	6	1	12.00	11.02	Back	0	V2	0.903	0.386	1.253	1.003	1.135	0.485	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	7M2PQ	99.7	-0.01	2437	6	1	12.00	11.09	Back	0	V1	0.865	0.367	1.233	1.003	1.070	0.454	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.07	2462	11	1	12.00	10.98	Back	0	V2	0.817	0.350	1.265	1.003	1.037	0.444	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.03	2412	1	1	12.00	11.06	Top	0	V2	0.333	0.108	1.242	1.003	0.415	0.135	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.16	2412	1	1	12.00	11.06	Bottom	0	V2	0.018	0.007	1.242	1.003	0.022	0.009	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	0.01	2412	1	1	12.00	11.06	Right	0	V2	0.000	0.000	1.242	1.003	0.000	0.000	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.03	2412	1	1	12.00	11.06	Left	0	V2	0.785	0.285	1.242	1.003	0.978	0.355	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.02	2437	6	1	12.00	11.02	Left	0	V2	0.793	0.287	1.253	1.003	0.997	0.361	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF7	Y4157	99.7	-0.03	2462	11	1	12.00	10.98	Left	0	V2	0.763	0.275	1.265	1.003	0.968	0.349	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 9-2
2.4 GHz WLAN Body SAR Data – Ant WF8

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.01	2412	1	1	13.25	11.97	Back	0	V2	0.693	0.331	1.343	1.003	0.933	0.446	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.00	2437	6	1	13.25	11.98	Back	0	V2	0.705	0.327	1.340	1.003	0.948	0.439	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.00	2462	11	1	13.25	12.00	Back	0	V2	0.757	0.350	1.334	1.003	1.013	0.468	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.00	2462	11	1	13.25	12.00	Top	0	V2	0.546	0.169	1.334	1.003	0.731	0.226	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.04	2462	11	1	13.25	12.00	Bottom	0	V2	0.036	0.014	1.334	1.003	0.048	0.019	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	-0.01	2412	1	1	13.25	11.97	Right	0	V2	0.766	0.291	1.343	1.003	1.032	0.392	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.01	2437	6	1	13.25	11.98	Right	0	V2	0.760	0.285	1.340	1.003	1.021	0.383	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	-0.01	2462	11	1	13.25	12.00	Right	0	V2	0.880	0.324	1.334	1.003	1.177	0.434	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	3X20R	99.7	0.01	2462	11	1	13.25	11.90	Right	0	V1	0.813	0.303	1.365	1.003	1.113	0.415	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF8	Y4157	99.7	0.01	2462	11	1	13.25	12.00	Left	0	V2	0.000	0.000	1.334	1.003	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 9-3
2.4 GHz WLAN Body SAR Data – Ant WF9

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	-0.01	2412	1	1	17.00	16.45	Back	0	V2	0.941	0.460	1.135	1.003	1.071	0.524	A1
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	3X20R	99.7	0.05	2412	1	1	17.00	16.55	Back	0	V1	0.918	0.450	1.109	1.003	1.021	0.501	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	-0.18	2437	6	1	17.00	16.72	Back	0	V2	0.884	0.435	1.067	1.003	0.946	0.466	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	0.01	2462	11	1	17.00	16.68	Back	0	V2	0.916	0.449	1.076	1.003	0.989	0.485	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	0.01	2437	6	1	17.00	16.72	Top	0	V2	0.361	0.151	1.067	1.003	0.386	0.162	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	0.11	2437	6	1	17.00	16.72	Bottom	0	V2	0.058	0.024	1.067	1.003	0.062	0.026	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	-0.08	2437	6	1	17.00	16.72	Right	0	V2	0.005	0.002	1.067	1.003	0.005	0.002	
Body	2.4 GHz WiFi/ IEEE 802.11b	22	DSSS	WF9	Y4157	99.7	-0.17	2437	6	1	17.00	16.72	Left	0	V2	0.029	0.012	1.067	1.003	0.031	0.013	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 9-4
5 GHz WLAN Body SAR Data – Ant WF5B

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	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]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	0.16	5230	46	U-NII-1	13.5	17.75	15.96	Back	0	V2	0.109	0.035	1.510	1.023	0.168	0.054	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	0.04	5230	46	U-NII-1	13.5	17.75	15.96	Top	0	V2	0.000	0.000	1.510	1.023	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	0.03	5230	46	U-NII-1	13.5	17.75	15.96	Bottom	0	V2	0.065	0.012	1.510	1.023	0.100	0.019	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	0.00	5190	38	U-NII-1	13.5	15.25	14.34	Right	0	V2	0.505	0.158	1.233	1.023	0.637	0.199	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	-0.08	5230	46	U-NII-1	13.5	17.75	15.96	Right	0	V2	0.728	0.234	1.510	1.023	1.125	0.361	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	6VCTW	97.7	-0.01	5230	46	U-NII-1	13.5	17.75	16.15	Right	0	V1	0.745	0.231	1.445	1.023	1.101	0.341	
Body	5 GHz WIFI/ IEEE 802.11n	40	OFDM	WF5B	C6443	97.7	0.01	5230	46	U-NII-1	13.5	17.75	15.96	Left	0	V2	0.004	0.000	1.510	1.023	0.006	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	0.05	5690	138	U-NII-2C	29.3	17.00	15.59	Back	0	V1	0.103	0.033	1.384	1.050	0.150	0.048	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	0.15	5690	138	U-NII-2C	29.3	17.00	15.59	Top	0	V1	0.000	0.000	1.384	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	0.01	5690	138	U-NII-2C	29.3	17.00	15.59	Bottom	0	V1	0.073	0.018	1.384	1.050	0.106	0.026	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	-0.09	5530	106	U-NII-2C	29.3	14.00	13.97	Right	0	V1	0.722	0.207	1.007	1.050	0.763	0.219	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	-0.01	5610	122	U-NII-2C	29.3	17.00	15.52	Right	0	V1	0.779	0.231	1.406	1.050	1.150	0.341	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	-0.08	5610	122	U-NII-2C	29.3	17.00	15.43	Right	0	V2	0.776	0.238	1.435	1.050	1.169	0.359	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	0.08	5690	138	U-NII-2C	29.3	17.00	15.59	Right	0	V1	0.759	0.232	1.384	1.050	1.103	0.337	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	02GPC	95.2	0.07	5690	138	U-NII-2C	29.3	17.00	15.59	Left	0	V1	0.005	0.000	1.384	1.050	0.007	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	-0.20	5775	155	U-NII-3	29.3	16.75	15.42	Back	0	V2	0.103	0.028	1.358	1.050	0.147	0.040	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	0.04	5775	155	U-NII-3	29.3	16.75	15.42	Top	0	V2	0.000	0.000	1.358	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	0.01	5775	155	U-NII-3	29.3	16.75	15.42	Bottom	0	V2	0.054	0.009	1.358	1.050	0.077	0.013	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	FNN7X	95.2	-0.10	5775	155	U-NII-3	29.3	16.75	15.53	Right	0	V1	0.792	0.250	1.324	1.050	1.101	0.348	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	0.01	5775	155	U-NII-3	29.3	16.75	15.42	Right	0	V2	0.826	0.266	1.358	1.050	1.178	0.379	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF5B	C6443	95.2	0.02	5775	155	U-NII-3	29.3	16.75	15.42	Left	0	V2	0.006	0.000	1.358	1.050	0.009	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 9-5
5 GHz WLAN Body SAR Data – Ant WF7

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	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]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	V29WJ	95.2	-0.08	5290	58	U-NII-2A	29.3	8.25	7.62	Back	0	V1	0.837	0.194	1.156	1.050	1.016	0.235	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	-0.07	5290	58	U-NII-2A	29.3	8.25	7.79	Back	0	V2	1.010	0.234	1.112	1.050	1.179	0.273	A2
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	0.02	5290	58	U-NII-2A	29.3	8.25	7.79	Back	0	V2	1.000	0.238	1.112	1.050	1.168	0.278	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	0.02	5290	58	U-NII-2A	29.3	8.25	7.79	Top	0	V2	0.166	0.049	1.112	1.050	0.194	0.057	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	0.06	5290	58	U-NII-2A	29.3	8.25	7.79	Bottom	0	V2	0.000	0.000	1.112	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	0.07	5290	58	U-NII-2A	29.3	8.25	7.79	Right	0	V2	0.000	0.000	1.112	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	C6443	95.2	-0.12	5290	58	U-NII-2A	29.3	8.25	7.79	Left	0	V2	0.306	0.058	1.112	1.050	0.357	0.068	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	Y4157	95.2	0.02	5530	106	U-NII-2C	29.3	8.50	7.54	Back	0	V2	0.834	0.216	1.247	1.050	1.092	0.283	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	Y4157	95.2	-0.03	5610	122	U-NII-2C	29.3	8.50	7.38	Back	0	V2	0.850	0.205	1.294	1.050	1.155	0.279	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	-0.07	5610	122	U-NII-2C	29.3	8.50	7.47	Back	0	V1	0.872	0.219	1.268	1.050	1.161	0.292	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	Y4157	95.2	0.02	5690	138	U-NII-2C	29.3	8.50	7.42	Back	0	V2	0.696	0.164	1.282	1.050	0.937	0.221	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	-0.17	5610	122	U-NII-2C	29.3	8.50	7.47	Top	0	V1	0.149	0.038	1.268	1.050	0.198	0.051	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.02	5610	122	U-NII-2C	29.3	8.50	7.47	Bottom	0	V1	0.000	0.000	1.268	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.07	5610	122	U-NII-2C	29.3	8.50	7.47	Right	0	V1	0.000	0.000	1.268	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.20	5610	122	U-NII-2C	29.3	8.50	7.47	Left	0	V1	0.162	0.020	1.268	1.050	0.216	0.027	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	Y4157	95.2	-0.04	5775	155	U-NII-3	29.3	9.50	8.07	Back	0	V2	0.749	0.168	1.390	1.050	1.093	0.245	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	-0.01	5775	155	U-NII-3	29.3	9.50	8.06	Back	0	V1	0.768	0.174	1.393	1.050	1.123	0.255	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.04	5775	155	U-NII-3	29.3	9.50	8.06	Top	0	V1	0.135	0.034	1.393	1.050	0.197	0.050	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.02	5775	155	U-NII-3	29.3	9.50	8.06	Bottom	0	V1	0.000	0.000	1.393	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.06	5775	155	U-NII-3	29.3	9.50	8.06	Right	0	V1	0.000	0.000	1.393	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF7	31MQJ	95.2	0.05	5775	155	U-NII-3	29.3	9.50	8.06	Left	0	V1	0.065	0.000	1.393	1.050	0.095	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue entry represents variability measurement.

Table 9-6
5 GHz WLAN Body SAR Data – Ant WF8

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	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]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	6VCTW	95.2	0.00	5290	58	U-NII-2A	29.3	9.25	7.86	Back	0	V1	0.338	0.086	1.377	1.050	0.489	0.124	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	6VCTW	95.2	-0.04	5290	58	U-NII-2A	29.3	9.25	7.86	Top	0	V1	0.110	0.021	1.377	1.050	0.159	0.030	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	6VCTW	95.2	0.08	5290	58	U-NII-2A	29.3	9.25	7.86	Bottom	0	V1	0.000	0.000	1.377	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	6VCTW	95.2	-0.05	5290	58	U-NII-2A	29.3	9.25	7.86	Right	0	V1	0.814	0.180	1.377	1.050	1.177	0.260	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.03	5290	58	U-NII-2A	29.3	9.25	7.84	Right	0	V2	0.761	0.170	1.384	1.050	1.106	0.247	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	6VCTW	95.2	0.07	5290	58	U-NII-2A	29.3	9.25	7.86	Left	0	V1	0.000	0.000	1.377	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.02	5530	106	U-NII-2C	29.3	8.25	7.65	Right	0	V2	0.969	0.213	1.148	1.050	1.168	0.257	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	991VQ	95.2	0.00	5530	106	U-NII-2C	29.3	8.25	7.61	Right	0	V1	0.894	0.201	1.159	1.050	1.088	0.245	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.12	5530	106	U-NII-2C	29.3	8.25	7.65	Right	0	V2	0.955	0.211	1.148	1.050	1.151	0.254	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	-0.11	5610	122	U-NII-2C	29.3	8.25	7.70	Right	0	V2	0.956	0.210	1.135	1.050	1.139	0.250	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	-0.08	5690	138	U-NII-2C	29.3	8.25	7.77	Back	0	V2	0.518	0.118	1.117	1.050	0.608	0.138	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.02	5690	138	U-NII-2C	29.3	8.25	7.77	Top	0	V2	0.081	0.011	1.117	1.050	0.095	0.013	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.02	5690	138	U-NII-2C	29.3	8.25	7.77	Bottom	0	V2	0.000	0.000	1.117	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	-0.04	5690	138	U-NII-2C	29.3	8.25	7.77	Right	0	V2	0.873	0.189	1.117	1.050	1.024	0.222	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	Y4157	95.2	0.05	5690	138	U-NII-2C	29.3	8.25	7.77	Left	0	V2	0.000	0.000	1.117	1.050	0.000	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	FNN7X	95.2	-0.05	5775	155	U-NII-3	29.3	9.00	8.05	Back	0	V1	0.404	0.092	1.245	1.050	0.528	0.120	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	FNN7X	95.2	0.09	5775	155	U-NII-3	29.3	9.00	8.05	Top	0	V1	0.053	0.004	1.245	1.050	0.069	0.005	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	FNN7X	95.2	0.02	5775	155	U-NII-3	29.3	9.00	8.05	Bottom	0	V1	0.002	0.000	1.245	1.050	0.003	0.000	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	FNN7X	95.2	0.03	5775	155	U-NII-3	29.3	9.00	8.05	Right	0	V1	0.867	0.183	1.245	1.050	1.133	0.239	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	C6443	95.2	-0.09	5775	155	U-NII-3	29.3	9.00	7.94	Right	0	V2	0.707	0.151	1.276	1.050	0.947	0.202	
Body	5 GHz WIFI/ IEEE 802.11ac	80	OFDM	WF8	FNN7X	95.2	0.09	5775	155	U-NII-3	29.3	9.00	8.05	Left	0	V1	0.000	0.000	1.245	1.050	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue entry represents variability measurement.

Table 9-7
6 GHz WLAN Body SAR Data – Ant WF5B

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.10	6025	15	68.1	15.50	15.28	Back	0	V2	0.130	0.049	1.052	1.023	0.140	0.053	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.07	6025	15	68.1	15.50	15.28	Top	0	V2	0.003	0.000	1.052	1.023	0.003	0.000	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	-0.09	6025	15	68.1	15.50	15.28	Bottom	0	V2	0.067	0.025	1.052	1.023	0.072	0.027	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.15	6025	15	68.1	15.50	15.28	Right	0	V2	0.807	0.271	1.052	1.023	0.868	0.292	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6345	79	68.1	14.75	13.88	Right	0	V2	0.832	0.267	1.222	1.023	1.040	0.334	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6505	111	68.1	13.25	12.52	Right	0	V2	0.643	0.204	1.183	1.023	0.778	0.247	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6665	143	68.1	13.75	13.20	Right	0	V2	0.984	0.311	1.135	1.023	1.143	0.361	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	-0.03	6985	207	68.1	14.00	13.25	Right	0	V2	0.969	0.298	1.189	1.023	1.179	0.362	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	31MQJ	97.7	-0.17	6985	207	68.1	14.00	13.05	Right	0	V1	0.902	0.279	1.245	1.023	1.149	0.355	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.08	6025	15	68.1	15.50	15.28	Left	0	V2	0.026	0.010	1.052	1.023	0.028	0.011	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 9-8
6 GHz WLAN Body SAR Data – Ant WF7

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	-0.06	6025	15	68.1	9.50	8.46	Back	0	V1	0.887	0.241	1.271	1.023	1.153	0.313	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6345	79	68.1	8.25	7.75	Back	0	V1	1.020	0.259	1.122	1.023	1.171	0.297	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	C6443	97.7	0.01	6345	79	68.1	8.25	7.45	Back	0	V2	0.893	0.231	1.202	1.023	1.098	0.284	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	-0.08	6505	111	68.1	8.25	6.29	Back	0	V1	0.697	0.182	1.570	1.023	1.119	0.292	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6665	143	68.1	10.00	8.85	Back	0	V1	0.874	0.246	1.303	1.023	1.165	0.328	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6985	207	68.1	8.25	7.80	Back	0	V1	1.010	0.258	1.109	1.023	1.146	0.293	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.04	6665	143	68.1	10.00	8.85	Top	0	V1	0.132	0.042	1.303	1.023	0.176	0.056	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.09	6665	143	68.1	10.00	8.85	Bottom	0	V1	0.005	0.000	1.303	1.023	0.007	0.000	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6665	143	68.1	10.00	8.85	Right	0	V1	0.000	0.000	1.303	1.023	0.000	0.000	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.02	6665	143	68.1	10.00	8.85	Left	0	V1	0.327	0.069	1.303	1.023	0.436	0.092	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 9-9
6 GHz WLAN Body SAR Data – Ant WF8

Exposure	Band / Mode	Bandwidth [MHz]	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.01	6025	15	68.1	8.00	7.63	Back	0	V1	0.822	0.192	1.089	1.023	0.916	0.214	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6345	79	68.1	7.25	5.79	Back	0	V1	0.801	0.177	1.400	1.023	1.147	0.253	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.05	6505	111	68.1	6.00	4.70	Back	0	V1	0.822	0.178	1.349	1.023	1.134	0.246	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.02	6665	143	68.1	6.25	4.49	Back	0	V1	0.764	0.164	1.500	1.023	1.172	0.252	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6985	207	68.1	6.75	4.88	Back	0	V1	0.747	0.160	1.538	1.023	1.175	0.252	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.20	6025	15	68.1	8.00	7.63	Top	0	V1	0.125	0.035	1.089	1.023	0.139	0.039	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.06	6025	15	68.1	8.00	7.63	Bottom	0	V1	0.012	0.003	1.089	1.023	0.013	0.003	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	Q70X1	97.7	0.00	6025	15	68.1	8.00	7.30	Right	0	V2	0.972	0.212	1.175	1.023	1.168	0.255	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6025	15	68.1	8.00	7.63	Right	0	V1	1.060	0.228	1.089	1.023	1.181	0.254	A3
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.05	6025	15	68.1	8.00	7.63	Right	0	V1	1.030	0.223	1.089	1.023	1.147	0.248	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.03	6345	79	68.1	7.25	5.79	Right	0	V1	0.556	0.119	1.400	1.023	0.796	0.170	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.03	6505	111	68.1	6.00	4.70	Right	0	V1	0.431	0.092	1.349	1.023	0.595	0.127	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.09	6665	143	68.1	6.25	4.49	Right	0	V1	0.324	0.066	1.500	1.023	0.497	0.101	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.02	6985	207	68.1	6.75	4.88	Right	0	V1	0.222	0.045	1.538	1.023	0.349	0.071	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.04	6025	15	68.1	8.00	7.63	Left	0	V1	0.001	0.000	1.089	1.023	0.001	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Blue entry represents variability measurement.

Table 9-10
6 GHz WLAN Body Absorbed Power Density Data – Ant WF5B

Exposure	Band/ Mode	Bandwidth [MHz]	Service/ Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured APD [W/m² (4cm²)]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported APD [W/m² (4cm²)]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.10	6025	15	68.1	15.50	15.28	Back	0	V2	1.090	1.052	1.023	1.173	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.07	6025	15	68.1	15.50	15.28	Top	0	V2	0.011	1.052	1.023	0.012	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	-0.09	6025	15	68.1	15.50	15.28	Bottom	0	V2	0.564	1.052	1.023	0.607	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.15	6025	15	68.1	15.50	15.28	Right	0	V2	6.090	1.052	1.023	6.554	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6345	79	68.1	14.75	13.88	Right	0	V2	6.070	1.222	1.023	7.588	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6505	111	68.1	13.25	12.52	Right	0	V2	4.650	1.183	1.023	5.627	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.00	6665	143	68.1	13.75	13.20	Right	0	V2	7.090	1.135	1.023	8.232	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	-0.03	6985	207	68.1	14.00	13.25	Right	0	V2	6.820	1.189	1.023	8.295	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	31MQJ	97.7	-0.17	6985	207	68.1	14.00	13.05	Right	0	V1	6.390	1.245	1.023	8.139	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF5B	C6443	97.7	0.08	6025	15	68.1	15.50	15.28	Left	0	V2	0.215	1.052	1.023	0.231	

Table 9-11
6 GHz WLAN Body Absorbed Power Density Data – Ant WF7

Exposure	Band/ Mode	Bandwidth [MHz]	Service/ Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured APD [W/m² (4cm²)]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported APD [W/m² (4cm²)]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	-0.06	6025	15	68.1	9.50	8.46	Back	0	V1	5.650	1.271	1.023	7.346	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6345	79	68.1	8.25	7.75	Back	0	V1	6.140	1.122	1.023	7.048	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	C6443	97.7	0.01	6345	79	68.1	8.25	7.45	Back	0	V2	5.470	1.202	1.023	6.726	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	-0.08	6505	111	68.1	8.25	6.29	Back	0	V1	4.300	1.570	1.023	6.906	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6665	143	68.1	10.00	8.85	Back	0	V1	5.760	1.303	1.023	7.678	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6985	207	68.1	8.25	7.80	Back	0	V1	6.110	1.109	1.023	6.932	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.04	6665	143	68.1	10.00	8.85	Top	0	V1	0.966	1.303	1.023	1.288	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.09	6665	143	68.1	10.00	8.85	Bottom	0	V1	0.008	1.303	1.023	0.011	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.01	6665	143	68.1	10.00	8.85	Right	0	V1	0.001	1.303	1.023	0.001	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF7	31MQJ	97.7	0.02	6665	143	68.1	10.00	8.85	Left	0	V1	1.650	1.303	1.023	2.199	

Table 9-12
6 GHz WLAN Body Absorbed Power Density Data – Ant WF8

Exposure	Band/ Mode	Bandwidth [MHz]	Service/ Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured APD [W/m² (4cm²)]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported APD [W/m² (4cm²)]	Plot #
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.01	6025	15	68.1	8.00	7.63	Back	0	V1	4.530	1.089	1.023	5.047	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6345	79	68.1	7.25	5.79	Back	0	V1	4.200	1.400	1.023	6.015	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.05	6505	111	68.1	6.00	4.70	Back	0	V1	4.250	1.349	1.023	5.865	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.02	6665	143	68.1	6.25	4.49	Back	0	V1	3.930	1.500	1.023	6.031	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6985	207	68.1	6.75	4.88	Back	0	V1	3.840	1.538	1.023	6.042	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.20	6025	15	68.1	8.00	7.63	Top	0	V1	0.807	1.089	1.023	0.899	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.06	6025	15	68.1	8.00	7.63	Bottom	0	V1	0.074	1.089	1.023	0.082	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	Q70X1	97.7	0.00	6025	15	68.1	8.00	7.30	Right	0	V2	5.040	1.175	1.023	6.058	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.00	6025	15	68.1	8.00	7.63	Right	0	V1	5.430	1.089	1.023	6.049	A3
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.05	6025	15	68.1	8.00	7.63	Right	0	V1	5.300	1.089	1.023	5.904	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.03	6345	79	68.1	7.25	5.79	Right	0	V1	2.840	1.400	1.023	4.067	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.03	6505	111	68.1	6.00	4.70	Right	0	V1	2.180	1.349	1.023	3.008	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	-0.09	6665	143	68.1	6.25	4.49	Right	0	V1	1.580	1.500	1.023	2.425	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.02	6985	207	68.1	6.75	4.88	Right	0	V1	1.080	1.538	1.023	1.699	
Body	6 GHz WIFI/ IEEE 802.11ax	160	OFDM	WF8	31MQJ	97.7	0.04	6025	15	68.1	8.00	7.63	Left	0	V1	0.017	1.089	1.023	0.019	

Note: Blue entry represents variability measurement.

Table 9-13
Bluetooth Body SAR Data – Ant WF7

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.01	2402	0	1	12.50	11.84	Back	0	V1	1.010	0.422	1.164	1.006	1.183	0.494	
Body	2.4 GHz Bluetooth	FHSS	WF7	Y4157	77.0	0.00	2402	0	1	12.50	11.94	Back	0	V2	1.030	0.428	1.138	1.006	1.180	0.490	A4
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	0.02	2441	39	1	12.50	11.85	Back	0	V1	1.010	0.418	1.161	1.006	1.180	0.488	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.16	2480	78	1	12.50	11.91	Back	0	V1	1.010	0.416	1.146	1.006	1.165	0.480	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.03	2480	78	1	12.50	11.91	Top	0	V1	0.406	0.129	1.146	1.006	0.468	0.149	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.03	2480	78	1	12.50	11.91	Bottom	0	V1	0.023	0.009	1.146	1.006	0.027	0.010	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	0.06	2480	78	1	12.50	11.91	Right	0	V1	0.000	0.000	1.146	1.006	0.000	0.000	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.01	2402	0	1	12.50	11.84	Left	0	V1	0.831	0.298	1.164	1.006	0.974	0.349	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.01	2441	39	1	12.50	11.85	Left	0	V1	0.863	0.306	1.161	1.006	1.008	0.358	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.08	2480	78	1	12.50	11.91	Left	0	V1	0.820	0.291	1.146	1.006	0.946	0.336	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.01	2402	0	1	6.50	5.89	Back	0	V1	0.280	0.118	1.151	1.006	0.324	0.137	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	0.11	2402	0	1	6.50	5.89	Top	0	V1	0.066	0.021	1.151	1.006	0.076	0.024	
Body	2.4 GHz Bluetooth	FHSS	WF7	3X20R	77.0	-0.03	2402	0	1	6.50	5.89	Left	0	V1	0.215	0.078	1.151	1.006	0.249	0.090	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-14
Bluetooth Body SAR Data – Ant WF8

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	-0.09	2402	0	1	14.00	13.19	Back	0	V2	0.691	0.331	1.205	1.006	0.838	0.401	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.04	2402	0	1	14.00	13.19	Top	0	V2	0.478	0.148	1.205	1.006	0.580	0.179	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.03	2402	0	1	14.00	13.19	Bottom	0	V2	0.015	0.005	1.205	1.006	0.018	0.006	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	-0.05	2402	0	1	14.00	13.19	Right	0	V2	0.965	0.360	1.205	1.006	1.170	0.437	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.00	2441	39	1	14.00	13.11	Right	0	V2	0.959	0.356	1.227	1.006	1.184	0.440	
Body	2.4 GHz Bluetooth	FHSS	WF8	31MQJ	77.0	-0.03	2441	39	1	14.00	13.44	Right	0	V1	0.909	0.335	1.138	1.006	1.041	0.384	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.03	2480	78	1	14.00	13.08	Right	0	V2	0.947	0.349	1.236	1.006	1.178	0.434	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.06	2402	0	1	14.00	13.19	Left	0	V2	0.000	0.000	1.205	1.006	0.000	0.000	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.01	2402	0	1	8.00	6.73	Back	0	V2	0.164	0.077	1.340	1.006	0.221	0.104	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	-0.04	2402	0	1	8.00	6.73	Top	0	V2	0.116	0.036	1.340	1.006	0.156	0.049	
Body	2.4 GHz Bluetooth	FHSS	WF8	Y4157	77.0	0.00	2402	0	1	8.00	6.73	Right	0	V2	0.227	0.084	1.340	1.006	0.306	0.113	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-15
Bluetooth Body SAR Data – Ant WF9

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Duty Cycle Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	-0.02	2402	0	1	18.50	17.30	Back	0	V1	0.890	0.426	1.318	1.006	1.181	0.565	
Body	2.4 GHz Bluetooth	FHSS	WF9	J067F	77.0	0.02	2402	0	1	18.50	17.53	Back	0	V2	0.783	0.388	1.250	1.006	0.985	0.488	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	0.02	2441	39	1	18.50	17.57	Back	0	V1	0.759	0.366	1.239	1.006	0.947	0.456	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	-0.07	2480	78	1	18.50	17.43	Back	0	V1	0.658	0.314	1.279	1.006	0.847	0.404	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	-0.03	2441	39	1	18.50	17.57	Top	0	V1	0.361	0.152	1.239	1.006	0.450	0.190	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	0.06	2441	39	1	18.50	17.57	Bottom	0	V1	0.000	0.000	1.239	1.006	0.000	0.000	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	0.09	2441	39	1	18.50	17.57	Right	0	V1	0.026	0.022	1.239	1.006	0.032	0.027	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	-0.11	2441	39	1	18.50	17.57	Left	0	V1	0.024	0.010	1.239	1.006	0.030	0.012	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	0.03	2441	39	1	12.50	11.79	Back	0	V1	0.177	0.083	1.178	1.006	0.210	0.098	
Body	2.4 GHz Bluetooth	FHSS	WF9	31MQJ	77.0	-0.08	2441	39	1	12.50	11.79	Top	0	V1	0.078	0.032	1.178	1.006	0.092	0.038	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-16
802.15.4 Body SAR Data – Ant WF7

Exposure	Band / Mode	Ant.	Serial Number	Power Drift [dB]	Frequency [MHz]	Channel #	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	802.15.4	WF7	7M2PQ	0.00	2405	11	13.50	11.63	Back	0	V1	1.080	0.453	1.538	0.997	0.418	
Body	802.15.4	WF7	7M2PQ	0.00	2440	18	13.50	11.71	Back	0	V1	1.240	0.524	1.510	1.123	0.475	
Body	802.15.4	WF7	7M2PQ	0.01	2475	25	13.50	11.60	Back	0	V1	1.250	0.517	1.549	1.162	0.480	
Body	802.15.4	WF7	WL722	-0.01	2475	25	13.50	11.67	Back	0	V2	1.070	0.445	1.524	0.978	0.407	
Body	802.15.4	WF7	7M2PQ	0.04	2440	18	13.50	11.71	Top	0	V1	0.459	0.146	1.510	0.416	0.132	
Body	802.15.4	WF7	7M2PQ	-0.20	2440	18	13.50	11.71	Bottom	0	V1	0.028	0.011	1.510	0.025	0.010	
Body	802.15.4	WF7	7M2PQ	0.01	2440	18	13.50	11.71	Right	0	V1	0.000	0.000	1.510	0.000	0.000	
Body	802.15.4	WF7	7M2PQ	0.01	2405	11	13.50	11.63	Left	0	V1	0.847	0.320	1.538	0.782	0.295	
Body	802.15.4	WF7	7M2PQ	-0.02	2440	18	13.50	11.71	Left	0	V1	1.050	0.381	1.510	0.951	0.345	
Body	802.15.4	WF7	7M2PQ	0.04	2475	25	13.50	11.60	Left	0	V1	1.040	0.369	1.549	0.967	0.343	
Body	802.15.4	WF7	7M2PQ	0.00	2475	25	7.50	6.55	Back	0	V1	0.494	0.195	1.245	0.369	0.146	
Body	802.15.4	WF7	7M2PQ	-0.01	2475	25	7.50	6.55	Top	0	V1	0.150	0.049	1.245	0.112	0.037	
Body	802.15.4	WF7	7M2PQ	-0.02	2475	25	7.50	6.55	Left	0	V1	0.434	0.151	1.245	0.324	0.113	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: The manufacturer declared that the maximum source-based duty cycle of 802.15.4 mode is permanently limited to 60%. SAR measurement for 802.15.4 is evaluated at a higher duty cycle of 100% and scaled down to 60%.

Table 9-17
802.15.4 Body SAR Data – Ant WF8

Exposure	Band / Mode	Ant.	Serial Number	Power Drift [dB]	Frequency [MHz]	Channel #	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	802.15.4	WF8	J067F	0.01	2405	11	15.00	14.20	Back	V2	0.962	0.464	1.202	0.694	0.335	
Body	802.15.4	WF8	J067F	-0.12	2405	11	15.00	14.20	Top	V2	0.599	0.186	1.202	0.432	0.134	
Body	802.15.4	WF8	J067F	-0.05	2405	11	15.00	14.20	Bottom	V2	0.075	0.031	1.202	0.054	0.022	
Body	802.15.4	WF8	J067F	0.03	2405	11	15.00	14.20	Right	V2	1.490	0.556	1.202	1.075	0.401	A5
Body	802.15.4	WF8	J067F	-0.02	2405	11	15.00	14.20	Right	V2	1.480	0.543	1.202	1.067	0.392	
Body	802.15.4	WF8	J067F	0.00	2405	11	15.00	14.20	Right	V2	1.310	0.488	1.202	0.945	0.352	
Body	802.15.4	WF8	J067F	0.05	2440	18	15.00	13.88	Right	V2	1.480	0.552	1.294	1.149	0.429	
Body	802.15.4	WF8	J067F	-0.02	2475	25	15.00	13.79	Right	V2	1.460	0.535	1.321	1.157	0.424	
Body	802.15.4	WF8	31MQJ	0.03	2475	25	15.00	13.76	Right	V1	1.400	0.520	1.330	1.117	0.415	
Body	802.15.4	WF8	J067F	0.03	2405	11	15.00	14.20	Left	V2	0.009	0.003	1.202	0.006	0.002	
Body	802.15.4	WF8	J067F	0.04	2475	25	9.00	8.44	Back	V2	0.276	0.122	1.138	0.188	0.083	
Body	802.15.4	WF8	J067F	0.03	2475	25	9.00	8.44	Top	V2	0.159	0.046	1.138	0.109	0.031	
Body	802.15.4	WF8	J067F	-0.06	2475	25	9.00	8.44	Right	V2	0.377	0.130	1.138	0.257	0.089	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue entry represents variability measurement.
Note: The manufacturer declared that the maximum source-based duty cycle of 802.15.4 mode is permanently limited to 60%. SAR measurement for 802.15.4 is evaluated at a higher duty cycle of 100% and scaled down to 60%.

Table 9-18
802.15.4 Body SAR Data – Ant WF9

Exposure	Band / Mode	Ant.	Serial Number	Power Drift [dB]	Frequency [MHz]	Channel #	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	802.15.4	WF9	WL722	0.07	2405	11	20.00	18.84	Back	0	V2	1.140	0.548	1.306	0.893	0.429	
Body	802.15.4	WF9	WL722	0.07	2440	18	20.00	18.32	Back	0	V2	1.340	0.647	1.472	1.183	0.571	
Body	802.15.4	WF9	3X20R	-0.04	2440	18	20.00	18.69	Back	0	V1	1.310	0.645	1.352	1.063	0.523	
Body	802.15.4	WF9	WL722	0.00	2475	25	20.00	18.34	Back	0	V2	1.320	0.641	1.466	1.161	0.564	
Body	802.15.4	WF9	WL722	0.00	2405	11	20.00	18.84	Top	0	V2	0.670	0.278	1.306	0.525	0.218	
Body	802.15.4	WF9	WL722	-0.12	2405	11	20.00	18.84	Bottom	0	V2	0.030	0.012	1.306	0.024	0.009	
Body	802.15.4	WF9	WL722	0.01	2405	11	20.00	18.84	Right	0	V2	0.000	0.000	1.306	0.000	0.000	
Body	802.15.4	WF9	WL722	-0.03	2405	11	20.00	18.84	Left	0	V2	0.037	0.012	1.306	0.029	0.009	
Body	802.15.4	WF9	WL722	-0.02	2475	25	14.00	12.58	Back	0	V2	0.241	0.108	1.387	0.201	0.090	
Body	802.15.4	WF9	WL722	-0.08	2475	25	14.00	12.58	Top	0	V2	0.123	0.050	1.387	0.102	0.042	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: The manufacturer declared that the maximum source-based duty cycle of 802.15.4 mode is permanently limited to 60%. SAR measurement for 802.15.4 is evaluated at a higher duty cycle of 100% and scaled down to 60%.

Table 9-19
NB UNII Body SAR Data – Ant WF5B

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	NB U-NII 1	FHSS	WF5B	FNN7X	77.0	0.05	5204	Mid	8	13.50	12.66	Back	0	V1	0.034	0.006	1.213	0.042	0.007	
Body	NB U-NII 1	FHSS	WF5B	FNN7X	77.0	0.04	5204	Mid	8	13.50	12.66	Top	0	V1	0.000	0.000	1.213	0.000	0.000	
Body	NB U-NII 1	FHSS	WF5B	FNN7X	77.0	0.06	5204	Mid	8	13.50	12.66	Bottom	0	V1	0.016	0.000	1.213	0.020	0.000	
Body	NB U-NII 1	FHSS	WF5B	FNN7X	77.0	-0.06	5204	Mid	8	13.50	12.66	Right	0	V1	0.269	0.077	1.213	0.328	0.094	
Body	NB U-NII 1	FHSS	WF5B	J067F	77.0	-0.04	5204	Mid	8	13.50	12.62	Right	0	V2	0.264	0.081	1.225	0.326	0.100	
Body	NB U-NII 1	FHSS	WF5B	FNN7X	77.0	0.07	5204	Mid	8	13.50	12.66	Left	0	V1	0.000	0.000	1.213	0.000	0.000	
Body	NB U-NII 3	FHSS	WF5B	J067F	77.0	0.07	5789	Mid	1	13.50	12.75	Back	0	V2	0.039	0.011	1.189	0.047	0.013	
Body	NB U-NII 3	FHSS	WF5B	J067F	77.0	0.02	5789	Mid	1	13.50	12.75	Top	0	V2	0.000	0.000	1.189	0.000	0.000	
Body	NB U-NII 3	FHSS	WF5B	J067F	77.0	0.08	5789	Mid	1	13.50	12.75	Bottom	0	V2	0.022	0.005	1.189	0.026	0.006	
Body	NB U-NII 3	FHSS	WF5B	FNN7X	77.0	-0.11	5789	Mid	1	13.50	12.43	Right	0	V1	0.294	0.089	1.279	0.378	0.115	
Body	NB U-NII 3	FHSS	WF5B	J067F	77.0	0.02	5789	Mid	1	13.50	12.75	Right	0	V2	0.345	0.100	1.189	0.413	0.120	
Body	NB U-NII 3	FHSS	WF5B	J067F	77.0	0.04	5789	Mid	1	13.50	12.75	Left	0	V2	0.000	0.000	1.189	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-20
NB UNII Body SAR Data – Ant WF7

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	NB U-NII 1	FHSS	WF7	J067F	77.0	-0.04	5162	Low	1	8.50	7.60	Back	0	V2	0.793	0.198	1.230	0.982	0.245	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.05	5162	Low	1	8.50	7.64	Back	0	V1	0.960	0.236	1.219	1.178	0.290	A6
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	-0.04	5204	Mid	1	8.50	7.61	Back	0	V1	0.796	0.211	1.227	0.983	0.261	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	-0.02	5245	High	1	8.50	7.82	Back	0	V1	0.734	0.180	1.169	0.864	0.212	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.01	5245	High	1	8.50	7.82	Top	0	V1	0.129	0.033	1.169	0.152	0.039	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.05	5245	High	1	8.50	7.82	Bottom	0	V1	0.000	0.000	1.169	0.000	0.000	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.08	5245	High	1	8.50	7.82	Right	0	V1	0.004	0.000	1.169	0.005	0.000	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	-0.14	5245	High	1	8.50	7.82	Left	0	V1	0.262	0.047	1.169	0.308	0.055	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.01	5204	Mid	1	2.50	1.86	Back	0	V1	0.188	0.039	1.159	0.219	0.045	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.08	5204	Mid	1	2.50	1.86	Top	0	V1	0.014	0.000	1.159	0.016	0.000	
Body	NB U-NII 1	FHSS	WF7	31MQJ	77.0	0.02	5204	Mid	1	2.50	1.86	Left	0	V1	0.032	0.000	1.159	0.037	0.000	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	-0.02	5844	High	1	10.50	8.52	Back	0	V1	0.614	0.134	1.578	0.975	0.213	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.07	5733	Low	1	10.50	8.55	Back	0	V1	0.615	0.140	1.567	0.970	0.221	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	-0.04	5789	Mid	1	10.50	8.56	Back	0	V1	0.692	0.156	1.563	1.089	0.245	
Body	NB U-NII 3	FHSS	WF7	922CG	77.0	0.12	5789	Mid	1	10.50	8.55	Back	0	V2	0.609	0.135	1.567	0.960	0.213	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.02	5789	Mid	1	10.50	8.56	Top	0	V1	0.099	0.017	1.563	0.156	0.027	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.06	5789	Mid	1	10.50	8.56	Bottom	0	V1	0.000	0.000	1.563	0.000	0.000	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.08	5789	Mid	1	10.50	8.56	Right	0	V1	0.000	0.000	1.563	0.000	0.000	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.02	5789	Mid	1	10.50	8.56	Left	0	V1	0.046	0.000	1.563	0.072	0.000	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	0.03	5844	High	1	4.50	3.72	Back	0	V1	0.163	0.035	1.197	0.196	0.042	
Body	NB U-NII 3	FHSS	WF7	31MQJ	77.0	-0.17	5844	High	1	4.50	3.72	Top	0	V1	0.025	0.002	1.197	0.030	0.002	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-21
NB UNII Body SAR Data – Ant WF8

Exposure	Band / Mode	Service / Modulation	Ant.	Serial Number	Duty Cycle [%]	Power Drift [dB]	Frequency [MHz]	Channel #	Data Rate [Mbps]	Max Allowed Power [dBm]	Conducted Power [dBm]	Test Position	Spacing [mm]	Add'l Info	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Power Scaling Factor	Reported 1g SAR [W/kg]	Reported 10g SAR [W/kg]	Plot #
Body	NB U-NII 1	FHSS	WF8	J067F	76.5	-0.02	5204	Mid	4	10.50	9.66	Back	0	V2	0.430	0.115	1.213	0.528	0.141	
Body	NB U-NII 1	FHSS	WF8	J067F	76.5	-0.13	5204	Mid	4	10.50	9.66	Top	0	V2	0.154	0.034	1.213	0.189	0.042	
Body	NB U-NII 1	FHSS	WF8	J067F	76.5	0.05	5204	Mid	4	10.50	9.66	Bottom	0	V2	0.002	0.000	1.213	0.002	0.000	
Body	NB U-NII 1	FHSS	WF8	991VQ	76.5	0.06	5245	High	4	10.50	9.67	Right	0	V1	0.886	0.217	1.211	1.087	0.266	
Body	NB U-NII 1	FHSS	WF8	J067F	76.5	-0.01	5245	High	4	10.50	9.45	Right	0	V2	0.880	0.199	1.274	1.136	0.257	
Body	NB U-NII 1	FHSS	WF8	991VQ	76.5	-0.01	5162	Low	4	10.50	9.52	Right	0	V1	0.850	0.202	1.253	1.079	0.256	
Body	NB U-NII 1	FHSS	WF8	991VQ	76.5	0.01	5204	Mid	4	10.50	9.62	Right	0	V1	0.834	0.198	1.225	1.035	0.246	
Body	NB U-NII 1	FHSS	WF8	J067F	76.5	0.01	5204	Mid	4	10.50	9.66	Left	0	V2	0.000	0.000	1.213	0.000	0.000	
Body	NB U-NII 1	FHSS	WF8	J067F	77.0	0.03	5162	Low	1	4.50	3.57	Back	0	V2	0.130	0.030	1.239	0.162	0.037	
Body	NB U-NII 1	FHSS	WF8	J067F	77.0	0.06	5162	Low	1	4.50	3.57	Top	0	V2	0.034	0.004	1.239	0.042	0.005	
Body	NB U-NII 1	FHSS	WF8	J067F	77.0	0.04	5162	Low	1	4.50	3.57	Right	0	V2	0.214	0.043	1.239	0.267	0.054	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	-0.04	5789	Mid	1	10.50	9.52	Back	0	V1	0.536	0.130	1.253	0.676	0.164	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	-0.15	5789	Mid	1	10.50	9.52	Top	0	V1	0.079	0.018	1.253	0.100	0.023	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.01	5789	Mid	1	10.50	9.52	Bottom	0	V1	0.000	0.000	1.253	0.000	0.000	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.04	5844	High	1	10.50	9.44	Right	0	V1	0.922	0.196	1.276	1.184	0.252	
Body	NB U-NII 3	FHSS	WF8	Q70X1	77.0	-0.01	5844	High	1	10.50	9.62	Right	0	V2	0.958	0.200	1.225	1.181	0.247	
Body	NB U-NII 3	FHSS	WF8	Q70X1	77.0	0.05	5844	High	1	10.50	9.62	Right	0	V2	0.881	0.193	1.225	1.086	0.238	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.11	5733	Low	1	10.50	9.47	Right	0	V1	0.910	0.193	1.268	1.161	0.246	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	-0.03	5733	Low	1	10.50	9.47	Right	0	V1	0.890	0.200	1.268	1.136	0.255	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.05	5789	Mid	1	10.50	9.52	Right	0	V1	0.875	0.181	1.253	1.103	0.228	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.02	5789	Mid	1	10.50	9.52	Left	0	V1	0.001	0.000	1.253	0.001	0.000	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	0.01	5789	Mid	1	4.50	3.74	Back	0	V1	0.123	0.022	1.191	0.147	0.026	
Body	NB U-NII 3	FHSS	WF8	FNN7X	77.0	-0.01	5789	Mid	1	4.50	3.74	Right	0	V1	0.222	0.041	1.191	0.266	0.049	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Blue entry represents variability measurement.

Note: The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is permanently limited to 77.5% per manufacturer.

Table 9-22
wPT SAR Data

Exposure	Band / Mode	Serial Number	Power Drift [dB]	Frequency [MHz]	Test Position	Measured 1g SAR [W/kg]	Measured 10g SAR [W/kg]	Plot #
Body	wPT	L9LQW	-0.16	13.6	Back	0.034	0.008	A7
Body	wPT	L9LQW	-0.01	13.6	Top	0.000	0.000	
Body	wPT	L9LQW	0.02	13.6	Bottom	0.000	0.000	
Body	wPT	L9LQW	-0.05	13.6	Right	0.003	0.000	
Body	wPT	L9LQW	0.04	13.6	Left	0.000	0.000	
ANSI/IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Body 1.6 W/kg (mW/g) averaged over 1 gram			

9.2 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 616217 D04v01r02, 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 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 11 for variability analysis.
7. FCC KDB Publication 616217 D04v01r02 Section 4.3, SAR tests are required for the back surface and edges of the tablet with the tablet touching the phantom. The SAR Exclusion Threshold in FCC KDB 447498 D04v01 was applied to determine SAR test exclusion for adjacent edge configurations.
8. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.2. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
9. The orange highlights throughout the report represent the highest scaled SAR per Equipment Class.
10. Per FCC guidance, SAR was performed using 6.5 GHz SAR probe calibration factors. Per October 2020 TCB Workshop notes, 5 channels were tested. Absorbed power density (APD) using a $4cm^2$ averaging area is reported based on SAR measurements.

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/ax) 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. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D04v01 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 11 for complete analysis.
4. 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.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
6. The time-averaged mechanism for WLAN operations was disabled for the above SAR measurements. The SAR was scaled to the maximum time-averaged output power.

Bluetooth/NB-UNII Notes

1. Bluetooth SAR was evaluated with a test mode with hopping disabled with DH5 operation. The reported SAR was scaled to the 77.5% transmission duty factor to determine compliance since the duty factor of the device is limited to 77.5% per manufacturer. See Section 7.9 and 7.11 for the time domain plot and calculation for the duty factor of the device.

802.15.4

1. Notes The manufacturer declared that the maximum source-based duty cycle of 802.15.4 mode is permanently limited to 60%. SAR measurement for 802.15.4 is evaluated at a higher duty cycle of 100% and scaled down to 60%. See Section 7.10 for the time domain plot for the duty factor of the device at the maximum source-based duty cycle of 60% and at the test mode during SAR measurement of 100%

9.3 Power Density Data

MEASUREMENT RESULTS																							
Frequency (MHz)	Channel	Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift (dB)	Spacing (mm)	Antenna Config.	Variant	DUT Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Grid Step (λ)	iPD (W/m²)	Scaling Factor for Measurement Uncertainty per IEC 62479	Scaling Factor (Duty Cycle)	Normal psPD (W/m²)	Scaled Normal psPD (W/m²)	Total psPD (W/m²)	Scaled Total psPD (W/m²)	Plot #
6025	15	802.11ax	OFDM	160	0.00	0.00	0.06	2	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	-	1.554	1.024	0.523	1.058	0.662	1.339	
6345	79	802.11ax	OFDM	160	0.00	0.00	0.00	2	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	0.630	1.554	1.024	0.941	1.680	1.060	1.893	
6505	111	802.11ax	OFDM	160	0.00	0.00	-0.17	2	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	-	1.554	1.024	0.238	0.595	0.457	1.142	
6665	143	802.11ax	OFDM	160	0.00	0.00	0.16	2	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	-	1.554	1.024	0.462	0.958	0.840	1.742	
6665	143	802.11ax	OFDM	160	0.00	0.00	-0.01	2	WF7	V1	R07QJ31MQJ	68.1	Top	97.7	0.25	-	1.554	1.024	0.230	0.477	0.369	0.765	
6665	143	802.11ax	OFDM	160	0.00	0.00	-0.06	2	WF7	V1	R07QJ31MQJ	68.1	Bottom	97.7	0.25	-	1.554	1.024	0.271	0.562	0.275	0.570	
6665	143	802.11ax	OFDM	160	0.00	0.00	0.19	2	WF7	V1	R07QJ31MQJ	68.1	Left	97.7	0.25	-	1.554	1.024	0.359	0.744	0.467	0.968	
6665	143	802.11ax	OFDM	160	0.00	0.00	0.14	2	WF7	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	-	1.554	1.024	0.194	0.402	0.204	0.423	
6985	207	802.11ax	OFDM	160	0.00	0.00	0.15	2	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	1.740	1.554	1.024	0.947	1.671	1.180	2.082	
6985	207	802.11ax	OFDM	160	0.00	0.00	0.04	8.58	WF7	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	1.230	1.554	1.024	0.349	0.616	0.392	0.692	
6025	15	802.11ax	OFDM	160	0.00	0.00	-0.15	2	WF8	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	-	1.554	1.024	0.743	1.288	1.030	1.785	
6025	15	802.11ax	OFDM	160	0.00	0.00	-0.07	2	WF8	V1	R07QJ31MQJ	68.1	Top	97.7	0.25	-	1.554	1.024	0.920	1.594	0.997	1.728	
6025	15	802.11ax	OFDM	160	0.00	0.00	0.03	2	WF8	V1	R07QJ31MQJ	68.1	Bottom	97.7	0.25	-	1.554	1.024	0.023	0.040	0.033	0.057	
6025	15	802.11ax	OFDM	160	0.00	0.00	0.03	2	WF8	V1	R07QJ31MQJ	68.1	Left	97.7	0.25	-	1.554	1.024	0.296	0.513	0.316	0.548	
6025	15	802.11ax	OFDM	160	0.00	0.00	0.02	2	WF8	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	1.380	1.554	1.024	1.980	3.431	3.450	5.979	
6345	79	802.11ax	OFDM	160	0.00	0.00	-0.08	2	WF8	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	-	1.554	1.024	0.229	0.510	1.220	2.718	
6505	111	802.11ax	OFDM	160	6.00	4.70	0.10	2	WF8	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	-	1.554	1.024	0.306	0.657	0.570	1.224	
6665	143	802.11ax	OFDM	160	6.25	4.49	0.04	2	WF8	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	-	1.554	1.024	0.297	0.709	0.586	1.399	
6985	207	802.11ax	OFDM	160	6.75	4.88	-0.04	2	WF8	V1	R07QJ31MQJ	68.1	Right	97.7	0.25	-	1.554	1.024	0.430	1.052	0.444	1.087	
6025	15	802.11ax	OFDM	160	8.00	7.63	0.04	9.95	WF8	V1	R07QJ31MQJ	68.1	Back	97.7	0.25	1.250	1.554	1.024	0.500	0.866	0.590	1.022	
6025	15	802.11ax	OFDM	160	15.50	15.28	0.16	2	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	-	1.554	1.024	2.610	4.369	4.090	6.847	A8
6025	15	802.11ax	OFDM	160	15.50	15.28	0.09	2	WF5B	V2	CJFGDC6443	68.1	Back	97.7	0.25	-	1.554	1.024	0.694	1.162	0.755	1.264	
6025	15	802.11ax	OFDM	160	15.50	15.28	0.12	2	WF5B	V2	CJFGDC6443	68.1	Top	97.7	0.25	-	1.554	1.024	0.215	0.360	0.226	0.378	
6025	15	802.11ax	OFDM	160	15.50	15.28	0.01	2	WF5B	V2	CJFGDC6443	68.1	Bottom	97.7	0.25	-	1.554	1.024	0.832	1.393	0.878	1.470	
6025	15	802.11ax	OFDM	160	15.50	15.28	0.03	2	WF5B	V2	CJFGDC6443	68.1	Left	97.7	0.25	-	1.554	1.024	0.132	0.221	0.146	0.244	
6345	79	802.11ax	OFDM	160	14.75	13.88	-0.12	2	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	1.760	1.554	1.024	2.570	4.998	3.530	6.864	
6505	111	802.11ax	OFDM	160	13.25	12.52	0.03	2	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	-	1.554	1.024	1.680	3.163	2.770	5.215	
6665	143	802.11ax	OFDM	160	13.75	13.20	-0.02	2	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	-	1.554	1.024	1.780	3.215	3.110	5.617	
6985	207	802.11ax	OFDM	160	14.00	13.25	-0.02	2	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	-	1.554	1.024	2.010	3.803	3.470	6.565	
6345	79	802.11ax	OFDM	160	14.75	13.88	0.03	9.45	WF5B	V2	CJFGDC6443	68.1	Right	97.7	0.25	2.160	1.554	1.024	0.924	1.797	1.250	2.431	
47 CFR §1.1310 - SAFETY LIMIT Spatial Average Uncontrolled Exposure / General Population																			Power Density 10 W/m² averaged over 4 cm²				

9.4 Power Density Notes

1. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
2. Batteries are fully charged at the beginning of the measurements. The DUT was connected to a wall charger for some measurements due to the test duration. It was confirmed that the charger plugged into this DUT did not impact the near-field PD test results.

3. Power density was calculated by repeated E-field measurements on two measurement planes separated by λ/4.
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.
5. Per FCC guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of 2.68 dB (85.4%) was used to determine the psPD measurement scaling factor.
6. Per equipment manufacturer guidance, power density was measured at d=2mm and d=λ/5mm using the same grid size and grid step size for some frequencies and surfaces. The integrated Power Density (iPD) was calculated based on these measurements. Since iPD ratio between the two distances is ≥ -1dB, the grid step was sufficient for determining compliance at d=2mm.
7. PD results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D04v01.
8. PTP-PR algorithm was used during psPD measurement and calculations.

10 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

10.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D04v01 are applicable to devices with built-in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

10.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D04v01 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

Note:
SAR Summations for some scenarios when the output power levels are reduced, SAR values at the maximum output power level were used as the most conservative evaluation for simultaneous transmission analysis.

*The SAR distributions for at least one of the antennas are spatially separated from the other antennas per FCC KDB Publication 248227 Section 6.1 procedures. Therefore, simultaneous transmission were treated independently for this configuration. See section 11.4 for more information about the Spatial Separation Analysis.

In some cases where simultaneous transmission scenarios overlap with the same power level (for example, cellular band + 2.4 GHz WIFI SISO and cellular band + 2.4 GHz WIFI MIMO), the most conservative SAR summation scenario was evaluated.

10.3 Body SAR Simultaneous Transmission Analysis

Table 10-1
Simultaneous Transmission Scenario with 2.4 GHz Bluetooth TXBF and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 SAR (W/kg)	2.4 GHz Bluetooth Ant WF8 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	1+2+3
Body SAR	Back	1.183	0.838	0.034	1.217*
	Top	0.468	0.580	0.000	1.048
	Bottom	0.027	0.018	0.000	0.045
	Right	0.000	1.184	0.003	1.187
	Left	1.008	0.000	0.000	1.008

Table 10-2
Simultaneous Transmission Scenario with NB U-NII TXBF and wPT

Simult Tx	Configuration	NB U-NII Ant WF5B SAR (W/kg)	NB U-NII Ant WF8 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	1+2+3
Body SAR	Back	0.047	0.676	0.034	0.757
	Top	0.000	0.189	0.000	0.189
	Bottom	0.026	0.002	0.000	0.028
	Right	0.413	1.184	0.003	1.187*
	Left	0.000	0.001	0.000	0.001

Table 10-3
Simultaneous Transmission Scenario 2.4 GHz Bluetooth with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF9 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.210	0.608	0.168	0.034	1.020
	Top	0.092	0.159	0.000	0.000	0.251
	Bottom	0.000	0.003	0.106	0.000	0.109
	Right	0.032	1.177	1.178	0.003	1.213*
	Left	0.030	0.000	0.009	0.000	0.039

Table 10-4
Simultaneous Transmission Scenario 2.4 GHz Bluetooth with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF9 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.210	0.608	1.179	0.034	1.423*
	Top	0.092	0.159	0.198	0.000	0.449
	Bottom	0.000	0.003	0.000	0.000	0.003
	Right	0.032	1.177	0.000	0.003	1.212
	Left	0.030	0.000	0.357	0.000	0.387

Table 10-5
Simultaneous Transmission Scenario 2.4 GHz Bluetooth with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF9 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.210	1.175	0.140	0.034	1.559
	Top	0.092	0.139	0.003	0.000	0.234
	Bottom	0.000	0.013	0.072	0.000	0.085
	Right	0.032	1.181	1.179	0.003	1.216*
	Left	0.030	0.001	0.028	0.000	0.059

Table 10-6
Simultaneous Transmission Scenario 2.4 GHz Bluetooth with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF9 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.210	1.175	1.171	0.034	1.419*
	Top	0.092	0.139	0.176	0.000	0.407
	Bottom	0.000	0.013	0.007	0.000	0.020
	Right	0.032	1.181	0.000	0.003	1.216
	Left	0.030	0.001	0.436	0.000	0.467

Table 10-7
Simultaneous Transmission Scenario 802.15.4 with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF7 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.369	0.608	0.168	0.034	1.179
	Top	0.112	0.159	0.000	0.000	0.271
	Bottom	0.025	0.003	0.106	0.000	0.134
	Right	0.000	1.177	1.178	0.003	1.181*
	Left	0.324	0.000	0.009	0.000	0.333

Table 10-8
Simultaneous Transmission Scenario 802.15.4 with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF8 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.188	0.608	0.168	0.034	0.998
	Top	0.109	0.159	0.000	0.000	0.268
	Bottom	0.054	0.003	0.106	0.000	0.163
	Right	0.257	1.177	1.178	0.003	1.437*
	Left	0.006	0.000	0.009	0.000	0.015

Table 10-9
Simultaneous Transmission Scenario 802.15.4 with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF9 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.201	0.608	0.168	0.034	1.011
	Top	0.102	0.159	0.000	0.000	0.261
	Bottom	0.024	0.003	0.106	0.000	0.133
	Right	0.000	1.177	1.178	0.003	1.181*
	Left	0.029	0.000	0.009	0.000	0.038

Table 10-10
Simultaneous Transmission 802.15.4 Scenario with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF7 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.369	0.608	1.179	0.034	1.582*
	Top	0.112	0.159	0.198	0.000	0.469
	Bottom	0.025	0.003	0.000	0.000	0.028
	Right	0.000	1.177	0.000	0.003	1.180
	Left	0.324	0.000	0.357	0.000	0.681

Table 10-11
Simultaneous Transmission Scenario 802.15.4 with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF8 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.188	0.608	1.179	0.034	1.213*
	Top	0.109	0.159	0.198	0.000	0.466
	Bottom	0.054	0.003	0.000	0.000	0.057
	Right	0.257	1.177	0.000	0.003	1.437
	Left	0.006	0.000	0.357	0.000	0.363

Table 10-12
Simultaneous Transmission Scenario 802.15.4 with 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF9 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.201	0.608	1.179	0.034	1.414*
	Top	0.102	0.159	0.198	0.000	0.459
	Bottom	0.024	0.003	0.000	0.000	0.027
	Right	0.000	1.177	0.000	0.003	1.180
	Left	0.029	0.000	0.357	0.000	0.386

Table 10-13
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF7 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.369	1.175	0.140	0.034	1.578*
	Top	0.112	0.139	0.003	0.000	0.254
	Bottom	0.025	0.013	0.072	0.000	0.110
	Right	0.000	1.181	1.179	0.003	1.184*
	Left	0.324	0.001	0.028	0.000	0.353

Table 10-14
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF8 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.188	1.175	0.140	0.034	1.537
	Top	0.109	0.139	0.003	0.000	0.251
	Bottom	0.054	0.013	0.072	0.000	0.139
	Right	0.257	1.181	1.179	0.003	1.441*
	Left	0.006	0.001	0.028	0.000	0.035

Table 10-15
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF9 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.201	1.175	0.140	0.034	1.550
	Top	0.102	0.139	0.003	0.000	0.244
	Bottom	0.024	0.013	0.072	0.000	0.109
	Right	0.000	1.181	1.179	0.003	1.184*
	Left	0.029	0.001	0.028	0.000	0.058

Table 10-16
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF7 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.369	1.175	1.171	0.034	1.574*
	Top	0.112	0.139	0.176	0.000	0.427
	Bottom	0.025	0.013	0.007	0.000	0.045
	Right	0.000	1.181	0.000	0.003	1.184
	Left	0.324	0.001	0.436	0.000	0.761

Table 10-17
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF8 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.188	1.175	1.171	0.034	1.397*
	Top	0.109	0.139	0.176	0.000	0.424
	Bottom	0.054	0.013	0.007	0.000	0.074
	Right	0.257	1.181	0.000	0.003	1.441
	Left	0.006	0.001	0.436	0.000	0.443

Table 10-18
Simultaneous Transmission Scenario 802.15.4 with 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	802.15.4 Ant WF9 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.201	1.175	1.171	0.034	1.410*
	Top	0.102	0.139	0.176	0.000	0.417
	Bottom	0.024	0.013	0.007	0.000	0.044
	Right	0.000	1.181	0.000	0.003	1.184
	Left	0.029	0.001	0.436	0.000	0.466

Table 10-19
Simultaneous Transmission Scenario with 2.4 GHz Bluetooth TXBF, 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz Bluetooth Ant WF8 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.324	0.221	0.608	1.179	0.034	1.537*
	Top	0.076	0.156	0.159	0.198	0.000	0.589
	Bottom	0.027	0.018	0.003	0.000	0.000	0.048
	Right	0.000	0.306	1.177	0.000	0.003	1.486
	Left	0.249	0.000	0.000	0.357	0.000	0.606

Table 10-20
Simultaneous Transmission Scenario with 2.4 GHz Bluetooth TXBF, 5 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz Bluetooth Ant WF8 with 6 dB backoff SAR (W/kg)	5 GHz WIFI Ant WF8 SAR (W/kg)	5 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.324	0.221	0.608	0.168	0.034	1.355
	Top	0.076	0.156	0.159	0.000	0.000	0.391
	Bottom	0.027	0.018	0.003	0.106	0.000	0.154
	Right	0.000	0.306	1.177	1.178	0.003	1.486*
	Left	0.249	0.000	0.000	0.009	0.000	0.258

Table 10-21
Simultaneous Transmission Scenario with 2.4 GHz Bluetooth TXBF, 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz Bluetooth Ant WF8 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.324	0.221	1.175	1.171	0.034	1.529*
	Top	0.076	0.156	0.139	0.176	0.000	0.547
	Bottom	0.027	0.018	0.013	0.007	0.000	0.065
	Right	0.000	0.306	1.181	0.000	0.003	1.490
	Left	0.249	0.000	0.001	0.436	0.000	0.686

Table 10-22
Simultaneous Transmission Scenario with 2.4 GHz Bluetooth TXBF, 6 GHz WIFI MIMO and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz Bluetooth Ant WF8 with 6 dB backoff SAR (W/kg)	6 GHz WIFI Ant WF8 SAR (W/kg)	6 GHz WIFI Ant WF5B SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.324	0.221	1.175	0.140	0.034	1.57*
	Top	0.076	0.156	0.139	0.003	0.000	0.374
	Bottom	0.027	0.018	0.013	0.072	0.000	0.130
	Right	0.000	0.306	1.181	1.179	0.003	1.49*
	Left	0.249	0.000	0.001	0.028	0.000	0.278

Table 10-23
Simultaneous Transmission Scenario NB UNII with 2.4 GHz WIFI MIMO and wPT

Simult Tx	Configuration	NB U-NII Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	2.4 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.219	1.013	1.135	0.034	1.388*
	Top	0.030	0.731	0.415	0.000	1.176
	Bottom	0.000	0.048	0.022	0.000	0.070
	Right	0.005	1.177	0.000	0.003	1.185
	Left	0.072	0.000	0.997	0.000	1.069

Table 10-24
Simultaneous Transmission Scenario NB UNII with 2.4 GHz WIFI MIMO and wPT

Simult Tx	Configuration	NB U-NII Ant WF7 with 6 dB backoff SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	2.4 GHz WIFI Ant WF9 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.219	1.013	1.071	0.034	1.324*
	Top	0.030	0.731	0.386	0.000	1.147
	Bottom	0.000	0.048	0.062	0.000	0.110
	Right	0.005	1.177	0.005	0.003	1.190
	Left	0.072	0.000	0.031	0.000	0.103

Table 10-25
Simultaneous Transmission Scenario with NB U-NII TXBF, 2.4 GHz WIFI MIMO and wPT

Simult Tx	Configuration	NB U-NII Ant WF5B SAR (W/kg)	NB U-NII Ant WF8 with 6 dB backoff SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	2.4 GHz WIFI Ant WF7 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.047	0.162	1.013	1.135	0.034	1.256*
	Top	0.000	0.100	0.731	0.415	0.000	1.246
	Bottom	0.026	0.002	0.048	0.022	0.000	0.098
	Right	0.413	0.267	1.177	0.000	0.003	1.447*
	Left	0.000	0.001	0.000	0.997	0.000	0.998

Table 10-26
Simultaneous Transmission Scenario with NB U-NII TXBF, 2.4 GHz WIFI MIMO and wPT

Simult Tx	Configuration	NB U-NII Ant WF5B SAR (W/kg)	NB U-NII Ant WF8 with 6 dB backoff SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	2.4 GHz WIFI Ant WF9 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Body SAR	Back	0.047	0.162	1.013	1.071	0.034	1.256*
	Top	0.000	0.100	0.731	0.386	0.000	1.217
	Bottom	0.026	0.002	0.048	0.062	0.000	0.138
	Right	0.413	0.267	1.177	0.005	0.003	1.452*
	Left	0.000	0.001	0.000	0.031	0.000	0.032

Table 10-27
Simultaneous Transmission Scenario 2.4 GHz Bluetooth with 2.4 GHz WIFI and wPT

Simult Tx	Configuration	2.4 GHz Bluetooth Ant WF7 SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	1+2+3
Body SAR	Back	1.183	1.013	0.034	1.217*
	Top	0.468	0.731	0.000	1.199
	Bottom	0.027	0.048	0.000	0.075
	Right	0.000	1.177	0.003	1.180
	Left	1.008	0.000	0.000	1.008

Table 10-28
Simultaneous Transmission Scenario 802.15.4 with 2.4 GHz WIFI and wPT

Simult Tx	Configuration	802.15.4 Ant WF7 SAR (W/kg)	2.4 GHz WIFI Ant WF8 SAR (W/kg)	wPT SAR (W/kg)	∑ SAR (W/kg)
		1	2	3	1+2+3
Body SAR	Back	1.162	1.013	0.034	1.196*
	Top	0.416	0.731	0.000	1.147
	Bottom	0.025	0.048	0.000	0.073
	Right	0.000	1.177	0.003	1.180
	Left	0.967	0.000	0.000	0.967

10.4 Spatial Separation Analysis

Per FCC KDB Publication 248227, antennas may be considered spatially separated when the aggregate SAR from multiple antennas at any location in the combined SAR distribution is either ≤ 1.2 W/kg where at least 90% of the SAR is attributed to a single SAR distribution or ≤ 0.4 W/kg where no more than one SAR distribution is contributing > 0.1 W/kg.

Spatial separation was determined by inspection of the area scan SAR distributions to confirm that at all locations, SAR was < 1.2 W/kg, where at least 90% of the SAR is attributed to a single SAR distribution. See below for illustrations of the spatial separated antennas considered.

10.4.1 Back Side Spatial Separation Analysis

Figure 10-1
Back Side Spatial Separation for Antenna WF5B and Antenna WF8

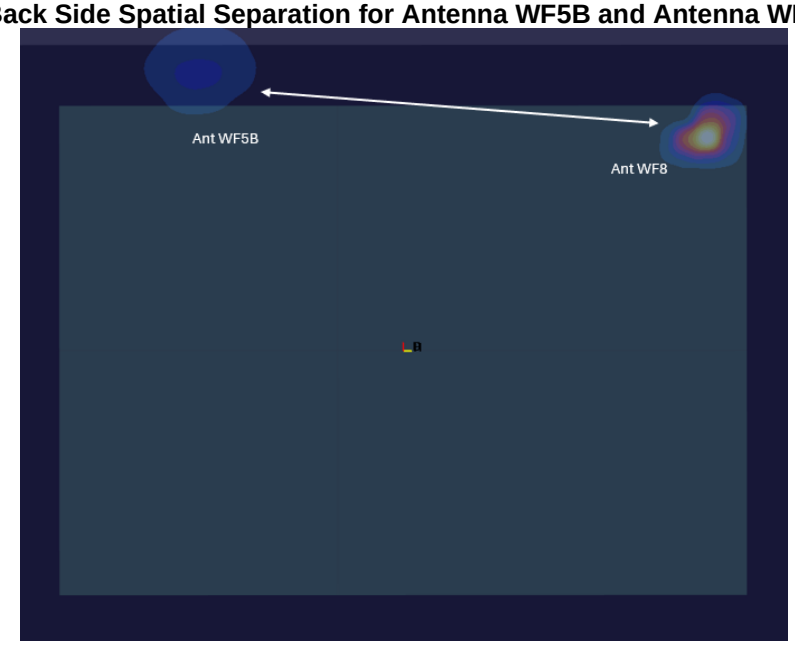


Figure 10-2
Back Side Spatial Separation for Antenna WF8 and Antenna WF7

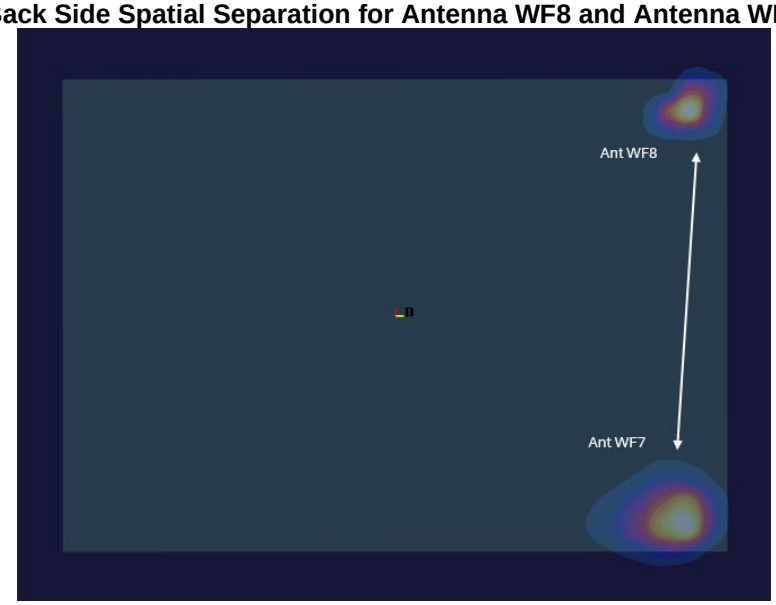
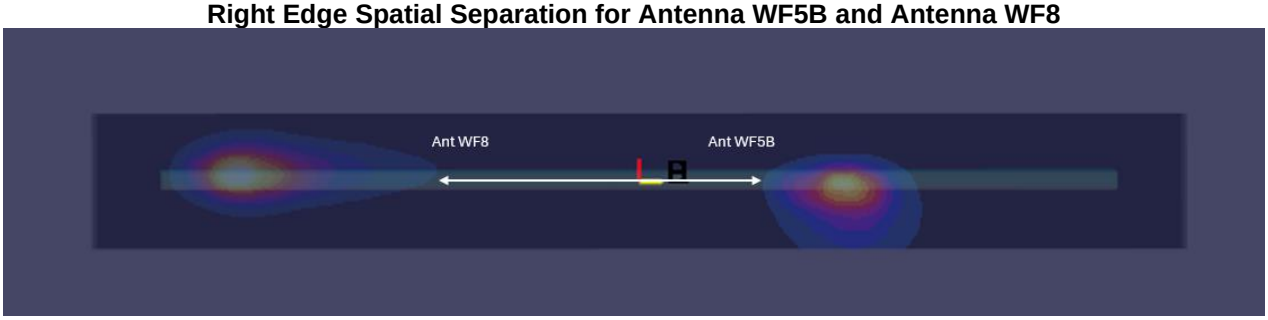


Figure 10-3
Back Side Spatial Separation for Antenna WF8 and Antenna WF9

10.4.2 Right Edge Spatial Separation Analysis

Figure 10-4
Right Edge Spatial Separation for Antenna WF5B and Antenna WF8



10.5 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D04v01 and IEEE 1528-2013 Section 6.3.4.1.2.

11 SAR MEASUREMENT VARIABILITY

11.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg.
5) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 11-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS															
Band	FREQUENCY		Mode	Service	Ant	Data Rate (Mbps)	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.							(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2405	11	802.15.4	CW	Ant WF8	0.25	Right	0 mm	1.490	1.480	1.01	1.31	1.14	N/A	N/A
5250	5290	58	5 GHz WIFI/ IEEE 802.11ac, 80 MHz Bandwidth	OFDM	Ant WF7	29.3	Back	0 mm	1.010	1.000	1.01	N/A	N/A	N/A	N/A
5600	5535	106	5 GHz WIFI/ IEEE 802.11ac, 80 MHz Bandwidth	OFDM	Ant WF8	29.3	Right	0 mm	0.969	0.955	1.01	N/A	N/A	N/A	N/A
5750	5733	Low	NB U-NII 3	FHSS	Ant WF8	1.0	Right	0 mm	0.910	0.890	1.02	N/A	N/A	N/A	N/A
5850	5844	High	NB U-NII 3	FHSS	Ant WF8	1.0	Right	0 mm	0.958	0.881	1.09	N/A	N/A	N/A	N/A
6500	6025	15	6 GHz WIFI/ IEEE 802.11ax, 160 MHz Bandwidth	OFDM	Ant WF8	68.1	Right	0 mm	1.060	1.030	1.03	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**									**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

11.2 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 per IEEE 1528-2013 was not required.

12 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	11/14/2023	Annual	11/14/2024	MY45093852
Agilent	E4438C	ESG Vector Signal Generator	11/15/2023	Annual	11/15/2024	MY45092078
Agilent	N5182A	MXG Vector Signal Generator	10/12/2023	Annual	10/12/2024	MY47400015
Agilent	N5182A	MXG Vector Signal Generator	7/4/2023	Annual	7/4/2024	MY48180366
Agilent	8753ES	S-Parameter Vector Network Analyzer	6/2/2023	Annual	6/2/2024	MY40003841
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	6/15/2023	Annual	6/15/2024	1138001
Anritsu	ML2496A	Power Meter	4/4/2023	Annual	4/4/2024	1840005
Anritsu	MA2411B	Pulse Power Sensor	8/22/2023	Annual	8/22/2024	1726262
Anritsu	MA2411B	Pulse Power Sensor	11/8/2023	Annual	11/8/2024	1027293
Anritsu	MA24106A	USB Power Sensor	6/15/2023	Annual	6/15/2024	1827530
Anritsu	MA24106A	USB Power Sensor	12/4/2022	Annual	12/4/2023	1520501
Control Company	4052	Long Stem Thermometer	10/16/2023	Biennial	10/16/2025	230703247
Control Company	4052	Long Stem Thermometer	10/16/2023	Biennial	10/16/2025	230702935
Control Company	4052	Long Stem Thermometer	2/17/2023	Biennial	2/17/2025	230111049
Control Company	4040	Traceable Therm./ Clock/ Humidity Monitor	5/11/2022	Biennial	5/11/2024	221514980
Mitutoyo	500-196-30	CD-6"ASX 6Inch Digital Caliper	2/16/2022	Triennial	2/16/2025	A20238413
Keysight Technologies	N6705B	DC Power Analyzer	5/5/2021	Triennial	5/5/2024	MY53004059
Keysight Technologies	N9020A	MXA Signal Analyzer	4/6/2023	Annual	4/6/2024	MY48010233
Agilent	N9020A	MXA Signal Analyzer	4/26/2022	Biennial	4/26/2024	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	7/5/2023	Annual	7/5/2024	31634
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
Seekonk	NC-100	Torque Wrench	10/17/2023	Biennial	10/17/2025	22847
SPEAG	DAK-3.5	Dielectric Assessment Kit	11/13/2023	Annual	11/13/2024	1277
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	8/14/2023	Annual	8/14/2024	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)	3/13/2023	Annual	3/13/2024	1102
SPEAG	CLA-13	Confined Loop Antenna	11/9/2023	Annual	11/9/2024	1004
SPEAG	D2450V2	2450 MHz SAR Dipole	11/9/2021	Triennial	11/9/2024	921
SPEAG	D2450V2	2450 MHz SAR Dipole	11/15/2022	Biennial	11/15/2024	855
SPEAG	D5GHzV2	5 GHz SAR Dipole	3/22/2022	Biennial	3/22/2024	1123
SPEAG	D6.5GHzV2	6.5 GHz SAR Dipole	10/11/2023	Annual	10/11/2024	1019
SPEAG	5G Verification Source 10GHz	10 GHz System Verification	3/6/2023	Annual	3/6/2024	1002
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/18/2023	Annual	10/18/2024	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/18/2023	Annual	10/18/2024	1237
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/15/2023	Annual	3/15/2024	604
SPEAG	EX3DV4	SAR Probe	10/16/2023	Annual	10/16/2024	3746
SPEAG	EX3DV4	SAR Probe	10/16/2023	Annual	10/16/2024	7420
SPEAG	EX3DV4	SAR Probe	3/16/2023	Annual	3/16/2024	7421
SPEAG	EX3DV4	SAR Probe	3/16/2023	Annual	3/16/2024	7360
SPEAG	EUmmWV3	EUmmWV3 Probe	10/9/2023	Annual	10/9/2024	9407

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.

13 MEASUREMENT UNCERTAINTIES

Applicable for SAR measurements < 6 GHz:

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c_i 1gm	c_i 10 gms	1gm u_i (± %)	10gms u_i (± %)	v_i
Measurement System									
Probe Calibration	E.2.1	7	N	1	1	1	7.0	7.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	E.2.3	2	R	1.732	1	1	1.2	1.2	∞
Linearity	E.2.4	0.3	N	1	1	1	0.3	0.3	∞
System Detection Limits	E.2.4	0.25	R	1.732	1	1	0.1	0.1	∞
Modulation Response	E.2.5	4.8	R	1.732	1	1	2.8	2.8	∞
Readout Electronics	E.2.6	0.3	N	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	R	1.732	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	3	R	1.732	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.732	1	1	0.5	0.5	∞
Probe Positioning w/ respect to Phantom	E.6.3	6.7	R	1.732	1	1	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	4	R	1.732	1	1	2.3	2.3	∞
Test Sample Related									
Test Sample Positioning	E.4.2	3.12	N	1	1	1	3.1	3.1	35
Device Holder Uncertainty	E.4.1	1.67	N	1	1	1	1.7	1.7	5
Output Power Variation - SAR drift measurement	E.2.9	5	R	1.732	1	1	2.9	2.9	∞
SAR Scaling	E.6.5	0	R	1.732	1	1	0.0	0.0	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	E.3.3	4.3	N	1	0.78	0.71	3.3	3.0	76
Liquid Permittivity - measurement uncertainty	E.3.3	4.2	N	1	0.23	0.26	1.0	1.1	75
Liquid Conductivity - Temperature Uncertainty	E.3.4	3.4	R	1.732	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	E.3.4	0.6	R	1.732	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)			RSS				12.2	12.0	191
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.4	24.0	

The above measurement uncertainties are according to IEEE Std. 1528-2013

Applicable for SAR measurements > 6 GHz:

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	IEEE 1528 Sec.	Tol. (± %)	Prob. Dist.	Div.	c_i 1gm	c_i 10 gms	1gm u_i (± %)	10gms u_i (± %)	v_i
Measurement System									
Probe Calibration	E2.1	9.3	N	1	1	1	9.3	9.3	∞
Axial Isotropy	E2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E2.2	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	E2.3	2	R	1.732	1	1	1.2	1.2	∞
Linearity	E2.4	0.3	N	1	1	1	0.3	0.3	∞
System Detection Limits	E2.4	0.25	R	1.732	1	1	0.1	0.1	∞
Modulation Response	E2.5	4.8	R	1.732	1	1	2.8	2.8	∞
Readout Electronics	E2.6	0.3	N	1	1	1	0.3	0.3	∞
Response Time	E2.7	0.8	R	1.732	1	1	0.5	0.5	∞
Integration Time	E2.8	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E6.1	3	R	1.732	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E6.1	3	R	1.732	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E6.2	0.8	R	1.732	1	1	0.5	0.5	∞
Probe Positioning w/ respect to Phantom	E6.3	6.7	R	1.732	1	1	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E5	4	R	1.732	1	1	2.3	2.3	∞
Test Sample Related									
Test Sample Positioning	E4.2	3.12	N	1	1	1	3.1	3.1	35
Device Holder Uncertainty	E4.1	1.67	N	1	1	1	1.7	1.7	5
Output Power Variation - SAR drift measurement	E2.9	5	R	1.732	1	1	2.9	2.9	∞
SAR Scaling	E6.5	0	R	1.732	1	1	0.0	0.0	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E3.1	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	E3.3	4.3	N	1	0.78	0.71	3.3	3.0	76
Liquid Permittivity - measurement uncertainty	E3.3	4.2	N	1	0.23	0.26	1.0	1.1	75
Liquid Conductivity - Temperature Uncertainty	E3.4	3.4	R	1.732	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	E3.4	0.6	R	1.732	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	E3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	E3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)			RSS				13.8	13.6	191
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				27.6	27.1	

The above measurement uncertainties are according to IEEE Std. 1528-2013

Applicable for Power Density measurements:

a	b	c	d	e	f = c x f/e	g
Uncertainty Component	Unc. (± dB)	Prob. Dist.	Div.	c_i	u_i (± dB)	v_i
Measurement System						
Calibration	0.49	N	1	1	0.49	∞
Probe Correction	0.00	R	1.73	1	0.00	∞
Frequency Response	0.20	R	1.73	1	0.12	∞
Sensor Cross Coupling	0.00	R	1.73	1	0.00	∞
Isotropy	0.50	R	1.73	1	0.29	∞
Linearity	0.20	R	1.73	1	0.12	∞
Probe Scattering	0.00	R	1.73	1	0.00	∞
Probe Positioning offset	0.30	R	1.73	1	0.17	∞
Probe Positioning Repeatability	0.04	R	1.73	1	0.02	∞
Sensor MechanicalOffset	0.00	R	1.73	1	0.00	∞
Probe Spatial Resolution	0.00	R	1.73	1	0.00	∞
Field Impedence Dependance	0.00	R	1.73	1	0.00	∞
Amplitude and Phase Drift	0.00	R	1.73	1	0.00	∞
Amplitude and Phase Noise	0.04	R	1.73	1	0.02	∞
Measurement Area Truncation	0.00	R	1.73	1	0.00	∞
Data Acquisition	0.03	N	1	1	0.03	∞
Sampling	0.00	R	1.73	1	0.00	∞
Field Reconstruction	2.00	R	1.73	1	1.15	∞
Forward Transformation	0.00	R	1.73	1	0.00	∞
Power Density Scaling	0.00	R	1.73	1	0.00	∞
Spatial Averaging	0.10	R	1.73	1	0.06	∞
System Detection Limit	0.04	R	1.73	1	0.02	∞
Test Sample Related						
Probe Coupling with DUT	0.00	R	1.73	1	0.00	∞
Modulation Response	0.40	R	1.73	1	0.23	∞
Integration Time	0.00	R	1.73	1	0.00	∞
Response Time	0.00	R	1.73	1	0.00	∞
Device Holder Influence	0.10	R	1.73	1	0.06	∞
DUT alignment	0.00	R	1.73	1	0.00	∞
RF Ambient Conditions	0.04	R	1.73	1	0.02	∞
Ambient Reflections	0.04	R	1.73	1	0.02	∞
Immunity/Secondary Reception	0.00	R	1.73	1	0.00	∞
Drift of DUT	0.21	R	1.73	1	0.12	∞
Combined Standard Uncertainty (k=1)		RSS			1.34	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2			2.68	

14 CONCLUSION

14.1 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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