



# ELEMENT Washington DC LLC

18855 Adams Ct, Morgan Hill, CA 95037 USA  
Tel. 410.290.6652 / Fax 410.290.6654  
<http://www.element.com>



## SAR EVALUATION REPORT

**Applicant Name:**

Apple Inc.  
One Apple Park Way  
Cupertino, CA 95014 USA

**Date of Testing:**

06/08/2022 – 09/06/2022

**Test Site/Location:**

Element Washington DC LLC,  
Morgan Hill, CA, USA

**Document Serial No.:**

1C2205090027-15.BCG (Rev 1)

**FCC ID:**

BCGA2436

**APPLICANT:**

APPLE, INC.

**DUT Type:**

Tablet Device

**Application Type:**

Certification

**FCC Rule Part(s):**

CFR §2.1093

**Models:**

A2436

Equipment Class	Band & Mode	Tx Frequency	SAR
			1g Body (W/kg)
DTS	2.4 GHz WLAN	2412 - 2472 MHz	1.18
NII	U-NII-1	5180 - 5240 MHz	1.18
NII	U-NII-2A	5260 - 5320 MHz	1.16
NII	U-NII-2C	5500 - 5720 MHz	1.15
NII	U-NII-3	5745 - 5825 MHz	1.13
DSS/DTS	Bluetooth	2402 - 2480 MHz	1.17
NII	NB UNII-1	5162 - 5245 MHz	0.15
NII	NB UNII-3	5733 - 5844 MHz	1.16
Simultaneous SAR per KDB 690783 D01v01r03:			1.57

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



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](mailto:sartick@mwfai.info).

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 1 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

# TABLE OF CONTENTS

1	DEVICE UNDER TEST .....	3
2	INTRODUCTION .....	13
3	DOSIMETRIC ASSESSMENT .....	14
4	TEST CONFIGURATION POSITIONS.....	15
5	RF EXPOSURE LIMITS .....	16
6	FCC MEASUREMENT PROCEDURES.....	17
7	RF CONDUCTED POWERS.....	20
8	SYSTEM VERIFICATION.....	36
9	SAR DATA SUMMARY .....	40
10	FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS.....	45
11	SAR MEASUREMENT VARIABILITY .....	48
12	EQUIPMENT LIST .....	49
13	MEASUREMENT UNCERTAINTIES.....	50
14	CONCLUSION.....	51
15	REFERENCES .....	52
APPENDIX A: SAR TEST PLOTS		
APPENDIX B: SAR DIPOLE VERIFICATION PLOTS		
APPENDIX C: SAR TISSUE SPECIFICATIONS		
APPENDIX D: SAR SYSTEM VALIDATION		
APPENDIX E: DUT ANTENNA DIAGRAM & SAR TEST SETUP PHOTOGRAPHS		
APPENDIX F: IEEE 802.11AX RU SAR EXCLUSION		
APPENDIX G: TIME-AVERAGED SAR VERIFICATION		
APPENDIX H: PROBE AND DIPOLE CALIBRATION CERTIFICATES		

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 2 of 53

REV 22.0  
03/30/2022

# 1 DEVICE UNDER TEST

## 1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
2.4 GHz WLAN	Voice/Data	2412 - 2472 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
U-NII-5	Voice/Data	5955 - 6415 MHz
U-NII-6	Voice/Data	6435 - 6515 MHz
U-NII-7	Voice/Data	6535 - 6875 MHz
U-NII-8	Voice/Data	6895 - 7115 MHz
Bluetooth	Data	2402 - 2480 MHz
NB UNII-1	Data	5162 - 5245 MHz
NB UNII-3	Data	5733 - 5844 MHz

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 3 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 1.2 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 D01v06. This device used 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. Time-averaged SAR verification appendix includes verification data for this time averaged SAR mechanism.

### 1.2.1 Maximum WLAN Time-Averaged Output Power

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

Mode	IEEE 802.11 (Maximum in dBm) - Antenna WF8 Tolerance (+0/-3.00 dB)							
	Channel	SISO				MIMO		
		b	g	n	ax SU	g	n	ax SU
2.4 GHz WIFI 20 MHz Bandwidth	1	17.00	15.00	15.00	14.00	13.75	13.75	12.50
	2	17.00	17.00	17.00	17.00	17.00	17.00	15.50
	3	17.00	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	17.00
	5	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	6	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	7	17.00	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	17.00
	9	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	10	17.00	17.00	17.00	16.50	17.00	17.00	16.00
	11	17.00	15.25	15.25	14.00	13.50	13.50	13.00
	12	17.00	12.50	12.50	12.50	12.00	12.00	11.00
	13	16.50	9.50	9.50	N/A	7.50	7.50	N/A

Mode	IEEE 802.11 (Maximum in dBm) - Antenna WF7 Tolerance (+0/-3.00 dB)							
	Channel	SISO				MIMO		
		b	g	n	ax SU	g	n	ax SU
2.4 GHz WIFI 20 MHz Bandwidth	1	15.50	15.00	15.00	14.00	13.75	13.75	12.50
	2	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	3	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	4	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	5	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	6	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	7	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	8	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	9	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	10	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	11	15.50	15.25	15.25	14.00	13.50	13.50	13.00
	12	15.50	12.50	12.50	12.50	12.00	12.00	11.00
	13	15.50	9.50	9.50	N/A	7.50	7.50	N/A

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

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device		Page 4 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

Mode	IEEE 802.11 (Maximum in dBm) - Antenna WFTT Tolerance (+0/-3.00 dB)							
	Channel	SISO			MIMO CDD		MIMO SDM	
		a	n/ac	ax SU	a/n/ac	ax SU	n/ac	ax SU
5 GHz WIFI 20 MHz Bandwidth	36	17.50	17.50	17.50	17.00	16.00	17.00	16.00
	40	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	44	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	48	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	52	17.25	17.25	17.25	17.00	17.00	17.00	17.00
	56	17.25	17.25	17.25	17.00	17.00	17.00	17.00
	60	17.25	17.25	17.25	17.00	17.00	17.00	17.00
	64	17.25	17.25	17.25	17.00	17.00	17.00	17.00
	100	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	104	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	108	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	112	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	116	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	120	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	124	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	128	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	132	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	136	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	140	15.50	15.50	14.50	15.50	13.50	15.50	13.50
	144	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	149	16.00	16.00	16.00	16.00	16.00	16.00	16.00
5 GHz WIFI 40 MHz Bandwidth	153	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	157	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	161	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	165	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	38		16.50	14.00	14.75	13.00	14.75	13.00
	46		17.50	17.50	17.50	17.50	17.50	17.50
	54		17.25	17.25	17.25	17.25	17.25	17.25
	62		16.75	16.00	15.50	13.00	15.50	13.00
	102		15.50	14.00	14.00	12.00	14.00	12.00
	110		15.50	15.50	15.50	15.50	15.50	15.50
	118		15.50	15.50	15.50	15.50	15.50	15.50
	126		15.50	15.50	15.50	15.50	15.50	15.50
5 GHz WIFI 80 MHz Bandwidth	134		15.50	15.50	15.50	15.50	15.50	15.50
	142		15.50	15.50	15.50	15.50	15.50	15.50
	151		16.00	16.00	16.00	16.00	16.00	16.00
	159		16.00	16.00	16.00	16.00	16.00	16.00
	42		14.00	13.50	13.50	12.00	13.50	12.00
	58		14.25	14.25	13.50	12.75	13.50	12.75
5GHz WIFI 160 Mhz Bandwidth	106		15.00	14.25	12.75	12.25	12.75	12.25
	122		15.50	15.50	15.50	15.50	15.50	15.50
	138		15.50	15.50	15.50	15.50	15.50	15.50
	155		16.00	16.00	16.00	16.00	16.00	16.00
	50		10.00	9.50	9.50	9.00	9.50	9.00
	114		8.00	8.00	7.50	7.50	7.50	7.50

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 support up to 160MHz"

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device		Page 5 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

Mode	IEEE 802.11 (Maximum in dBm) - Antenna WF5B Tolerance (+0/-3.00 dB)							
	Channel	SISO			MIMO CDD		MIMO SDM	
		a	n/ac	ax SU	a/n/ac	ax SU	n/ac	ax SU
5 GHz WIFI 20 MHz Bandwidth	36	17.50	17.50	17.50	17.00	16.00	17.00	16.00
	40	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	44	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	48	17.50	17.50	17.50	17.00	17.00	17.00	17.00
	52	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	56	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	60	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	64	17.75	17.75	17.75	17.00	17.00	17.00	17.00
	100	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	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
	116	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	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	14.50	15.50	13.50	15.50	13.50
	144	17.00	17.00	17.00	17.00	17.00	17.00	17.00
	149	16.50	16.50	16.50	16.50	16.50	16.50	16.50
5 GHz WIFI 40 MHz Bandwidth	153	16.50	16.50	16.50	16.50	16.50	16.50	16.50
	157	16.50	16.50	16.50	16.50	16.50	16.50	16.50
	161	16.50	16.50	16.50	16.50	16.50	16.50	16.50
	165	16.50	16.50	16.50	16.50	16.50	16.50	16.50
	38		16.50	14.00	14.75	13.00	14.75	13.00
	46		17.50	17.50	17.50	17.50	17.50	17.50
	54		17.75	17.75	17.75	17.75	17.75	17.75
	62		16.75	16.00	15.50	13.00	15.50	13.00
	102		15.75	14.00	14.00	12.00	14.00	12.00
	110		17.00	17.00	17.00	17.00	17.00	17.00
5 GHz WIFI 80 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	16.25	16.25	16.25	16.25
	142		17.00	17.00	17.00	17.00	17.00	17.00
	151		16.50	16.50	16.50	16.50	16.50	16.50
	159		16.50	16.50	16.50	16.50	16.50	16.50
5 GHz WIFI 160 Mhz Bandwidth	42		14.00	13.50	13.50	12.00	13.50	12.00
	58		14.25	14.25	13.50	12.75	13.50	12.75
	106		15.00	14.25	12.75	12.25	12.75	12.25
	122		17.00	17.00	17.00	16.25	17.00	16.25
	138		17.00	17.00	17.00	17.00	17.00	17.00
	155		16.50	16.50	16.50	16.50	16.50	16.50
5GHz WIFI	50		10.00	9.50	9.50	9.00	9.50	9.00
	114		8.00	8.00	7.50	7.50	7.50	7.50

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 support up to 160MHz"

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device		Page 6 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 1.2.2

## Bluetooth Maximum Output Power

Mode / Band		Modulated Average (ePA)- Single Tx Chain (dBm) - Antenna WF8	Modulated Average (iPA) - Single Tx Chain (dBm) - Antenna WF8
Bluetooth BDR/LE	Maximum	<b>17.50</b>	<b>12.00</b>
	Nominal	<b>16.00</b>	<b>10.50</b>
Bluetooth EDR	Maximum	<b>15.00</b>	<b>8.00</b>
	Nominal	<b>13.50</b>	<b>6.50</b>
Bluetooth HDR	Maximum	<b>12.00</b>	<b>5.50</b>
	Nominal	<b>10.50</b>	<b>4.00</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF8	Modulated Average (iPA) - TxBF (dBm) - Antenna WF8
Bluetooth BDR/LE	Maximum	<b>17.00</b>	<b>12.00</b>
	Nominal	<b>15.50</b>	<b>10.50</b>
Bluetooth EDR	Maximum	<b>13.50</b>	<b>8.00</b>
	Nominal	<b>12.00</b>	<b>6.50</b>
Bluetooth HDR	Maximum	<b>12.00</b>	<b>5.50</b>
	Nominal	<b>10.50</b>	<b>4.00</b>

Note: In TxBF operations, each antenna transmits at maximum 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
Bluetooth BDR/LE	Maximum	<b>16.50</b>	<b>12.50</b>
	Nominal	<b>15.00</b>	<b>11.00</b>
Bluetooth EDR	Maximum	<b>15.00</b>	<b>8.50</b>
	Nominal	<b>13.50</b>	<b>7.00</b>
Bluetooth HDR	Maximum	<b>12.00</b>	<b>6.00</b>
	Nominal	<b>10.50</b>	<b>4.50</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF7	Modulated Average (iPA) - TxBF (dBm) - Antenna WF7
Bluetooth BDR/LE	Maximum	<b>16.50</b>	<b>12.50</b>
	Nominal	<b>15.00</b>	<b>11.00</b>
Bluetooth EDR	Maximum	<b>13.50</b>	<b>8.50</b>
	Nominal	<b>12.00</b>	<b>7.00</b>
Bluetooth HDR	Maximum	<b>12.00</b>	<b>6.00</b>
	Nominal	<b>10.50</b>	<b>4.50</b>

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

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 7 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

### 1.2.1

### NB UNII Maximum Output Power

Mode / Band		Modulated Average (ePA) - Single Tx Chain (dBm) - Antenna WF5T
NB UNII-1 BDR	Maximum	<b>10.00</b>
	Nominal	<b>8.50</b>
NB UNII-1 HDR	Maximum	<b>12.00</b>
	Nominal	<b>10.50</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF5T
NB UNII-1 BDR	Maximum	<b>7.00</b>
	Nominal	<b>5.50</b>
NB UNII-1 HDR	Maximum	<b>9.00</b>
	Nominal	<b>7.50</b>

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

Mode / Band		Modulated Average (ePA) - Single Tx Chain (dBm) - Antenna WF5B
NB UNII-1 BDR	Maximum	<b>10.00</b>
	Nominal	<b>8.50</b>
NB UNII-1 HDR	Maximum	<b>12.00</b>
	Nominal	<b>10.50</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF5B
NB UNII-1 BDR	Maximum	<b>7.00</b>
	Nominal	<b>5.50</b>
NB UNII-1 HDR	Maximum	<b>9.00</b>
	Nominal	<b>7.50</b>

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

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 8 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).



Mode / Band		Modulated Average (ePA) - Single Tx Chain (dBm) - Antenna WF5T
NB UNII-3 BDR	Maximum	<b>19.00</b>
	Nominal	<b>17.50</b>
NB UNII-3 HDR	Maximum	<b>13.50</b>
	Nominal	<b>12.00</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF5T
NB UNII-3 BDR	Maximum	<b>19.00</b>
	Nominal	<b>17.50</b>
NB UNII-3 HDR	Maximum	<b>13.50</b>
	Nominal	<b>12.00</b>

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

Mode / Band		Modulated Average (ePA) - Single Tx Chain (dBm) - Antenna WF5B
NB UNII-3 BDR	Maximum	<b>19.00</b>
	Nominal	<b>17.50</b>
NB UNII-3 HDR	Maximum	<b>14.50</b>
	Nominal	<b>13.00</b>

Mode / Band		Modulated Average (ePA) - TxBF (dBm) - Antenna WF5B
NB UNII-3 BDR	Maximum	<b>19.00</b>
	Nominal	<b>17.50</b>
NB UNII-3 HDR	Maximum	<b>14.50</b>
	Nominal	<b>13.00</b>

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

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 9 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

### 1.3 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 Appendix E. Exact antenna dimensions and separation distances are shown in the Technical Descriptions in the FCC filings.

**Table 1-1**  
**Device Edges/Sides for SAR Testing**

Device Sides/Edges for SAR Testing						
Mode	Back	Front	Top	Bottom	Right	Left
2.4 GHz WLAN Ant WF8	Yes	No	Yes	No	Yes	No
2.4 GHz WLAN Ant WF7	Yes	No	Yes	No	No	Yes
5 GHz WLAN Ant WF5T	Yes	No	No	No	Yes	No
5 GHz WLAN Ant WF5B	Yes	No	No	No	Yes	No
Bluetooth Ant WF8	Yes	No	Yes	No	Yes	No
Bluetooth Ant WF7	Yes	No	Yes	No	No	Yes
NB UNII Ant WF5T	Yes	No	No	No	Yes	No
NB UNII Ant WF5B	Yes	No	No	No	Yes	No

Note: Per FCC KDB Publication 616217 D04v01r01, particular edges were not required to be evaluated for SAR based on the SAR exclusion threshold in KDB 447498 D01v06. Additional edges may have been evaluated for simultaneous transmission analysis.

### 1.4 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, 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 D01v06 4.3.2 procedures.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 10 of 53

REV 22.0  
03/30/2022

**Table 1-2  
Simultaneous Transmission Scenarios**

No.	Capable Transmit Configuration	Body
1	2.4 GHz WiFi MIMO	Yes
2	2.4 GHz Bluetooth TxBF	Yes
3	5GHz WiFi MIMO	Yes
4	5GHz NB UNII TxBF	Yes
5	6 GHz WiFi MIMO	Yes
6	2.4 GHz Bluetooth Antenna WF7 + 2.4 GHz WiFi Antenna WF8	Yes
7	2.4 GHz Bluetooth + 5 GHz WIFI	Yes
8	2.4 GHz Bluetooth + 5 GHz WIFI MIMO	Yes
9	2.4 GHz Bluetooth TxBF + 5 GHz WiFi	Yes
10	2.4 GHz Bluetooth TxBF + 5 GHz WiFi MIMO	Yes
11	2.4 GHz Bluetooth + 6 GHz WiFi	Yes
12	2.4 GHz Bluetooth + 6 GHz WiFi MIMO	Yes
13	2.4 GHz Bluetooth TxBF + 6 GHz WiFi	Yes
14	2.4 GHz Bluetooth TxBF + 6 GHz WiFi MIMO	Yes
15	5 GHz NB UNII + 2.4 GHz WiFi	Yes
16	5 GHz NB UNII + 2.4 GHz WiFi MIMO	Yes
17	5 GHz NB UNII TxBF + 2.4 GHz WiFi	Yes
18	5 GHz NB UNII TxBF + 2.4 GHz WiFi MIMO	Yes

1. 2.4GHz WIFI and 2.4 GHz Bluetooth can transmit simultaneously on separate antennas, Specific 2.4 GHz WIFI Antenna that can only transmit simultaneously with 2.4 GHz Bluetooth 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. 5 GHz WLAN, 5 GHz NB UNII share the same antenna path and cannot transmit simultaneously on any antenna (Antenna WF5T, Antenna WF5B).
3. 2.4 GHz WLAN and 5 GHz WLAN cannot transmit simultaneously.
4. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
5. This device supports VOWIFI.
6. No other combinations of antennas and modes are supported.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 11 of 53

REV 22.0  
03/30/2022

## 1.5 Miscellaneous SAR Test Considerations

### (A) WIFI/BT

Based on the maximum allowed power for the respective antennas, 5GHz WLAN U-NII-1 was evaluated for Antenna WF5T and 5GHz WLAN U-NII-2A was evaluated for Antenna WF5B. Additional testing for 5GHz WLAN U-NII-2A Antenna WF5T and for 5GHz WLAN U-NII-1 Antenna WF5B SAR was not required since all reported SAR was less than 1.2 W/kg per FCC KDB Publication 248227 D01v02r02.

The WLAN/Bluetooth chipset in this device is produced by two different suppliers. The electrically identical modules are manufactured with the identical mechanical structure to meet the same specifications and functions. Two device variants are referenced as Variant 1 and Variant 2 in this report. The worst case configurations were evaluated for both Variant 1 and Variant 2.

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) 2 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) 2Tx antenna output
- d) Up to 1024 QAM is supported
- e) TDWR and Band gap channels are supported for 5/6 GHz
- f) MU-MIMO UL Operations are not supported

## 1.6 Guidance Applied

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.

- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 616217 D04v01r02 (Tablet)
- April 2019 TCB Workshop Notes (IEEE 802.11ax)

## 1.7 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.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 12 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 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 ( $\rho$ ). 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:

- $\sigma$  = conductivity of the tissue-simulating material (S/m)
- $\rho$  = mass density of the tissue-simulating material (kg/m<sup>3</sup>)
- 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]

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 13 of 53

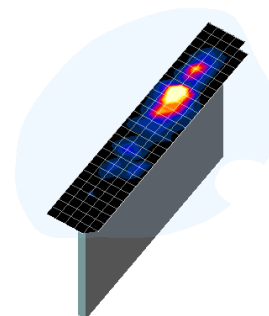
REV 22.0  
03/30/2022

## 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:

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.



**Figure 4-1**  
**Sample SAR Area**  
**Scan**

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

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

\*Also compliant to IEEE 1528-2013 Table 6

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 14 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 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  $\epsilon = 3$  and loss tangent  $\delta = 0.02$ .

### 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 D01v06 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.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 15 of 53

REV 22.0  
03/30/2022

## 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.

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

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT <i>General Population</i> (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT <i>Occupational</i> (W/kg) or (mW/g)
<b>Peak Spatial Average SAR</b> Head	1.6	8.0
<b>Whole Body SAR</b>	0.08	0.4
<b>Peak Spatial Average SAR</b> 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.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 16 of 53

REV 22.0  
03/30/2022



## 6 FCC MEASUREMENT PROCEDURES

### 6.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, 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.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 17 of 53

REV 22.0  
03/30/2022

## 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  $\leq 0.8$  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 powers 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  $\leq 0.8$  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  $\leq 1.2$  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.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 18 of 53

REV 22.0  
03/30/2022

## 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  $\leq 1.2$  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 D01v06 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.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 19 of 53

REV 22.0  
03/30/2022

## 7 RF CONDUCTED POWERS

### 7.1 WLAN Conducted Powers

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

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax (SU)
		Average	Average	Average	Average
2412	1	16.03	14.07	13.89	13.11
2417	2	N/A	15.98	15.81	15.98
2437	6	16.02	15.70	15.62	15.63
2452	9	N/A	N/A	N/A	15.96
2457	10	N/A	16.09	15.90	N/A
2462	11	16.01	14.12	14.28	13.16

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

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax (SU)
		Average	Average	Average	Average
2412	1	15.91	14.03	13.96	13.10
2417	2	N/A	16.01	16.02	15.88
2437	6	16.02	15.99	16.09	16.12
2452	9	N/A	N/A	N/A	15.98
2457	10	N/A	16.13	16.12	N/A
2462	11	16.06	14.31	14.29	12.91

Table 7-3  
2.4 GHz WLAN Maximum Average RF Power – Ant WF7, Variant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax (SU)
		Average	Average	Average	Average
2412	1	14.17	14.48	14.12	13.19
2417	2	N/A	14.51	14.48	14.50
2437	6	14.10	14.17	13.94	14.11
2457	10	N/A	14.50	14.49	14.46
2462	11	14.07	14.19	14.10	13.01

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 20 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact CT.INFO@ELEMENT.COM.

**Table 7-4**  
**2.4 GHz WLAN Maximum Average RF Power – Ant WF7, Variant 2**

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax (SU)
		Average	Average	Average	Average
2412	1	14.05	13.93	14.09	12.92
2417	2	N/A	14.39	14.41	14.40
2437	6	14.11	14.57	14.58	14.66
2457	10	N/A	14.55	14.56	14.67
2462	11	13.98	14.15	14.33	13.04

**Table 7-5**  
**5 GHz WLAN Maximum Average RF Power – Ant WF5T, Variant 1**

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax (SU)
		Average	Average	Average
5190	38	15.57	15.36	12.99
5230	46	16.91	16.59	16.42
5270	54	16.37	16.40	16.40
5310	62	15.00	15.61	14.91

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax (SU)
		Average	Average
5530	106	13.90	13.15
5610	122	14.41	14.48
5690	138	14.42	14.45
5775	155	14.95	14.80

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 21 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 7-6**  
**5 GHz WLAN Maximum Average RF Power – Ant WF5T, Variant 2**

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax (SU)
		Average	Average	Average
5190	38	15.47	15.61	12.87
5230	46	17.03	16.09	16.38
5270	54	16.10	16.30	16.16
5310	62	14.81	16.70	15.84

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax (SU)
		Average	Average
5530	106	14.10	13.23
5610	122	14.61	14.51
5690	138	14.45	14.60
5775	155	15.15	14.84

**Table 7-7**  
**5 GHz WLAN Maximum Average RF Power – Ant WF5B, Variant 1**

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax (SU)
		Average	Average	Average
5190	38	14.74	15.55	12.81
5230	46	16.75	16.58	16.46
5270	54	16.63	16.13	16.10
5310	62	15.76	16.64	15.02

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax (SU)
		Average	Average
5530	106	13.86	13.10
5610	122	16.17	16.03
5690	138	16.10	15.99
5775	155	15.89	15.60

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 22 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 7-8**  
**5 GHz WLAN Maximum Average RF Power – Ant WF5B, Variant 2**

5GHz (40MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11n	802.11ac	802.11ax (SU)
		Average	Average	Average
5190	38	14.54	15.56	13.04
5230	46	16.46	16.39	16.38
5270	54	16.77	16.16	16.41
5310	62	15.65	15.64	15.85

5GHz (80MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11ac	802.11ax (SU)
		Average	Average
5530	106	13.91	13.17
5610	122	16.15	16.04
5690	138	15.85	15.96
5775	155	15.51	15.37

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

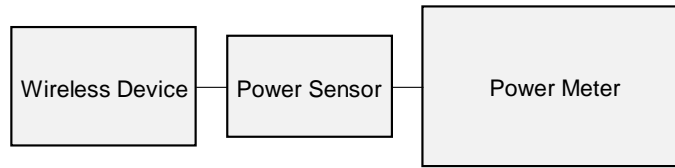
## 7.2 Notes for WLAN

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 the identical mechanical structure to meet the same specifications and functions.
- Two device variants are referenced as Variant 1 and Variant 2 in this report.
- The worst case configurations were evaluated for both Variant 1 and Variant 2..

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 23 of 53

REV 22.0  
03/30/2022



**Figure 7-1**  
**Power Measurement Setup**

### 7.3 Bluetooth Maximum Conducted Powers

**Table 7-9**  
**Bluetooth Maximum Average RF Power – Ant WF8, Variant 1**

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	17.33	54.075
2441	GFSK	1.0	39	17.25	53.088
2480	GFSK	1.0	78	17.50	56.234

**Table 7-10**  
**Bluetooth Maximum Average RF Power – Ant WF8, Variant 2**

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	17.50	56.234
2441	GFSK	1.0	39	17.38	54.702
2480	GFSK	1.0	78	17.33	54.075

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 24 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).



**Table 7-11**  
**Bluetooth Maximum Average RF Power – Ant WF7, Variant 1**

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	16.40	43.652
2441	GFSK	1.0	39	16.50	44.668
2480	GFSK	1.0	78	16.45	44.157

**Table 7-12**  
**Bluetooth Maximum Average RF Power – Ant WF7, Variant 2**

Frequency [MHz]	Modulation	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
				[dBm]	[mW]
2402	GFSK	1.0	0	16.35	43.152
2441	GFSK	1.0	39	16.49	44.566
2480	GFSK	1.0	78	16.45	44.157

**Table 7-13**  
**NB UNII Maximum Average RF Power – Ant WF5T, Variant 1**

Type	Band	Frequency	Channel	Average
HDR	UNII1	5162	Low	10.90
		5204	Middle	10.94
		5245	High	10.92
BDR	UNII3	5733	Low	18.08
		5789	Middle	18.04
		5844	High	18.12

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 25 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 7-14**  
**NB UNII Maximum Average RF Power – Ant WF5T, Variant 2**

Type	Band	Frequency	Channel	Average
HDR	UNII1	5162	Low	11.05
		5204	Middle	11.18
		5245	High	11.2
BDR	UNII3	5733	Low	17.89
		5789	Middle	17.61
		5844	High	17.8

**Table 7-15**  
**NB UNII Maximum Average RF Power – Ant WF5B, Variant 1**

Type	Band	Frequency	Channel	Average
HDR	UNII1	5162	Low	10.97
		5204	Middle	10.83
		5245	High	10.81
BDR	UNII3	5733	Low	18.16
		5789	Middle	18.14
		5844	High	18.19

**Table 7-16**  
**NB UNII Maximum Average RF Power – Ant WF5B Variant 2**

Type	Band	Frequency	Channel	Average
HDR	UNII1	5162	Low	10.78
		5204	Middle	10.94
		5245	High	10.7
BDR	UNII3	5733	Low	17.91
		5789	Middle	18.01
		5844	High	18.12

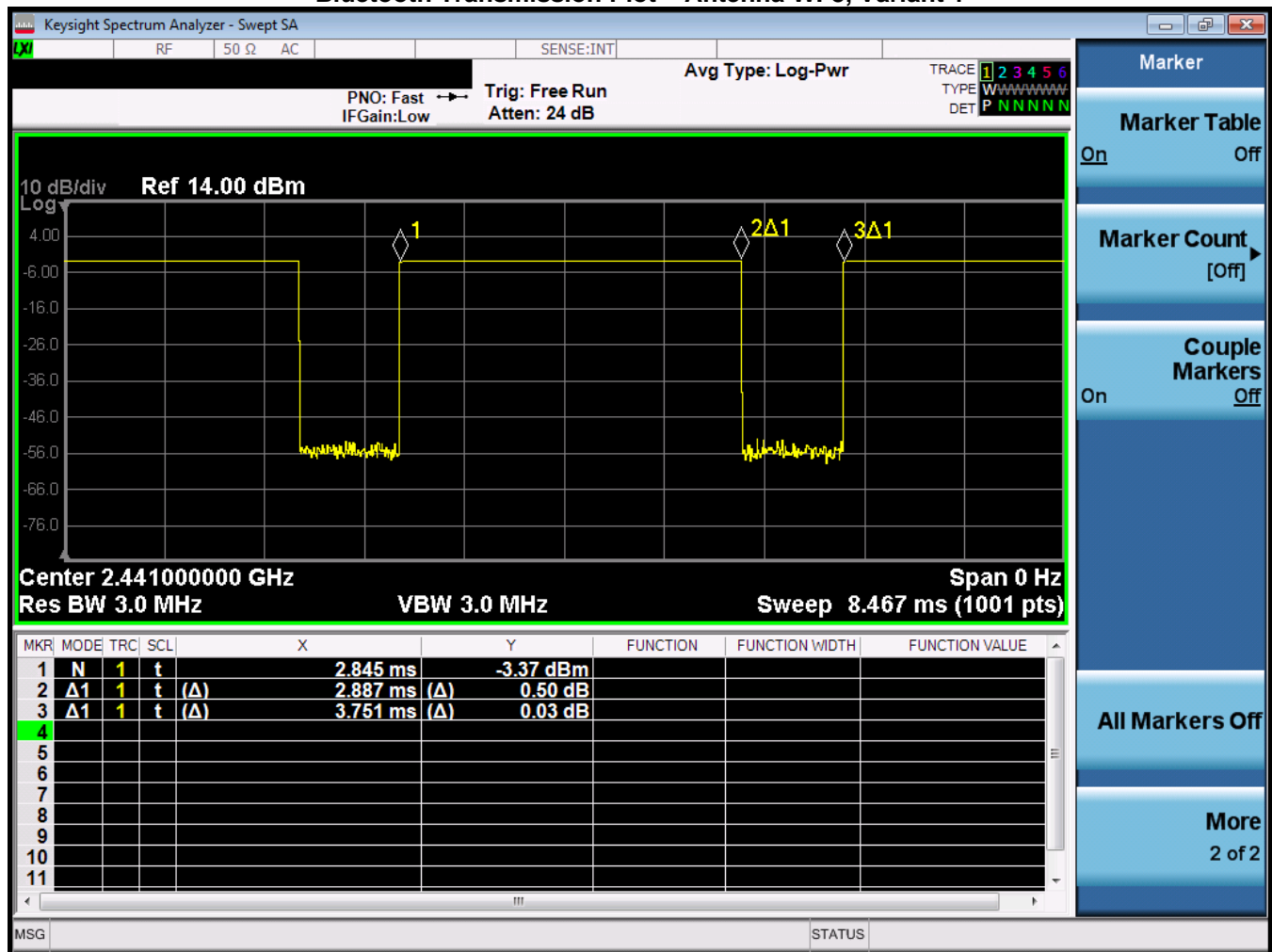
<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 26 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 7.4 Bluetooth Duty Cycle Plots

Figure 7-2  
Bluetooth Transmission Plot – Antenna WF8, Variant 1



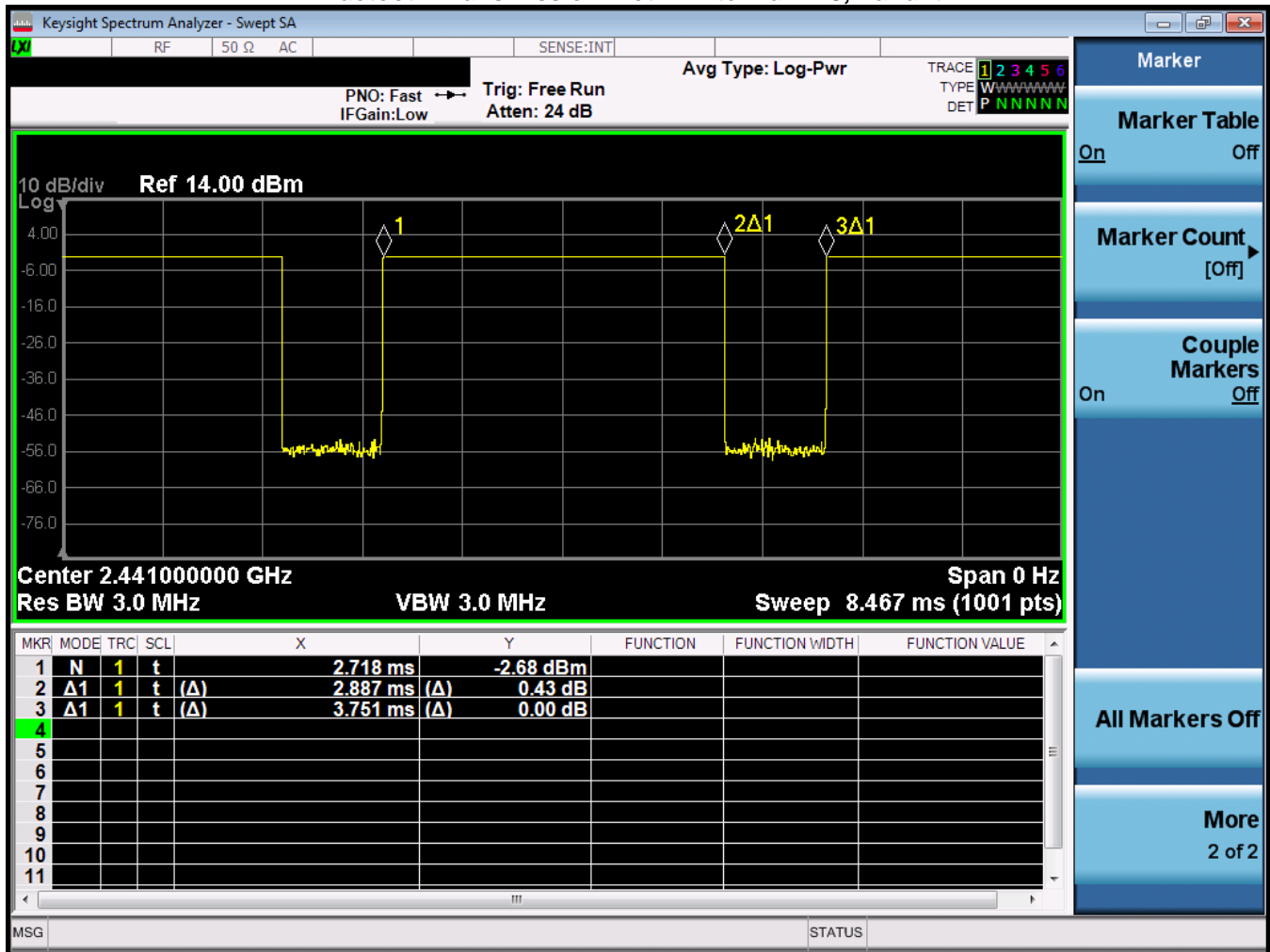
Equation 7-1  
Bluetooth Duty Cycle Calculation – Antenna WF8, Variant 1

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.887 \text{ ms}}{3.751 \text{ ms}} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 27 of 53

REV 22.0  
03/30/2022

**Figure 7-3**  
**Bluetooth Transmission Plot – Antenna WF8, Variant 2**



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

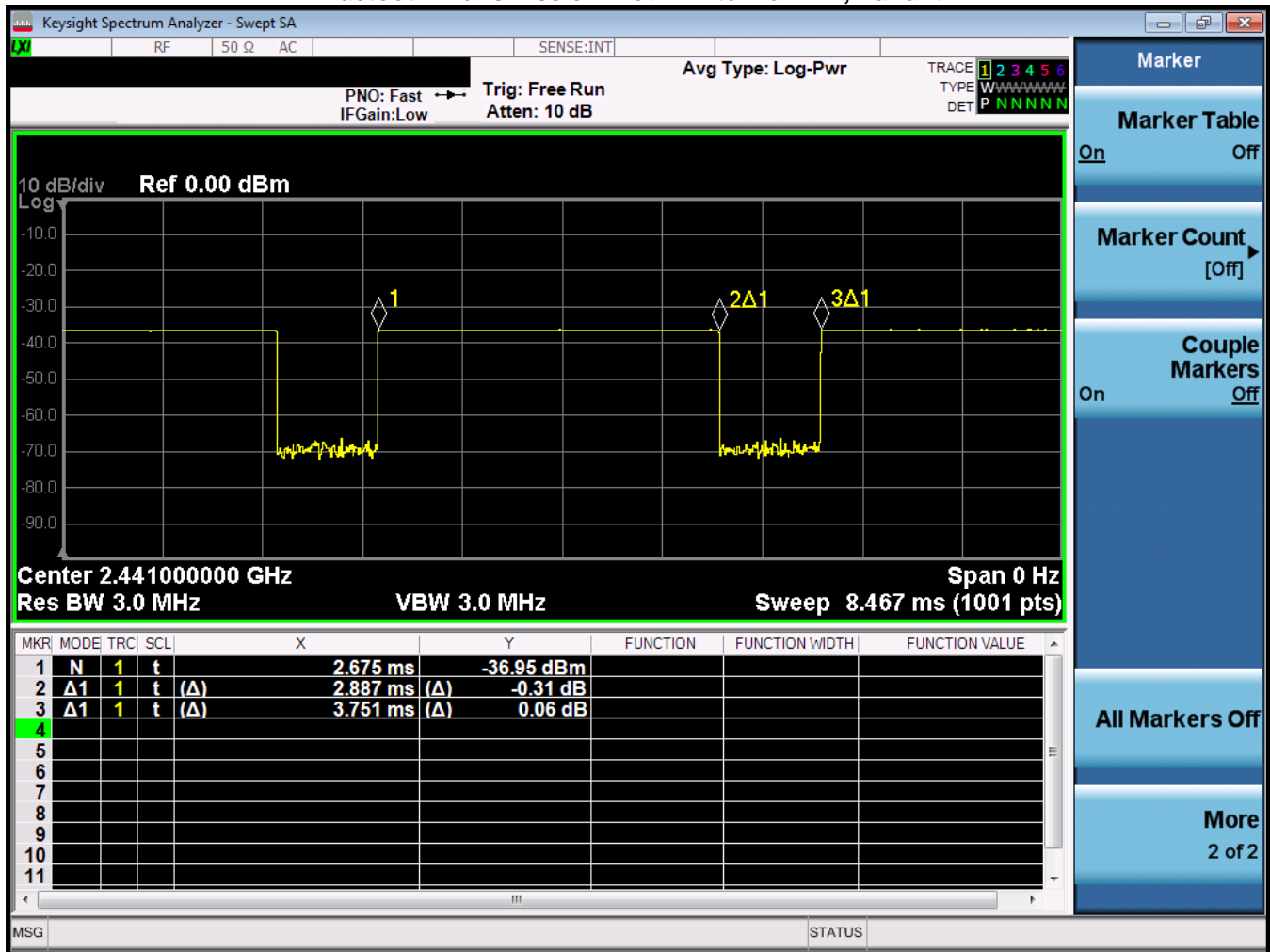
$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.887\ ms}{3.751\ ms} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 28 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Figure 7-4**  
**Bluetooth Transmission Plot – Antenna WF7, Variant 1**



**Equation 7-3**  
**Bluetooth Duty Cycle Calculation – Antenna WF7, Variant 1**

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.887 \text{ ms}}{3.751 \text{ ms}} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 29 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Keysight Spectrum Analyzer - Swept SA**

RF 50 Ω AC SENSE:INT Avg Type: Log-Pwr

PNO: Fast IFGain:Low Trig: Free Run Atten: 10 dB

TRACE 1 2 3 4 5 6  
TYPE W P  
DET NNNNNN

10 dB/div Ref 0.00 dBm

Center 2.44100000 GHz Span 0 Hz  
Res BW 3.0 MHz VBW 3.0 MHz Sweep 8.467 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	2.870 ms	-29.14 dBm			
2	Δ1	1	t (Δ)	2.887 ms (Δ)	0.17 dB			
3	Δ1	1	t (Δ)	3.751 ms (Δ)	-0.02 dB			
4								
5								
6								
7								
8								
9								
10								
11								

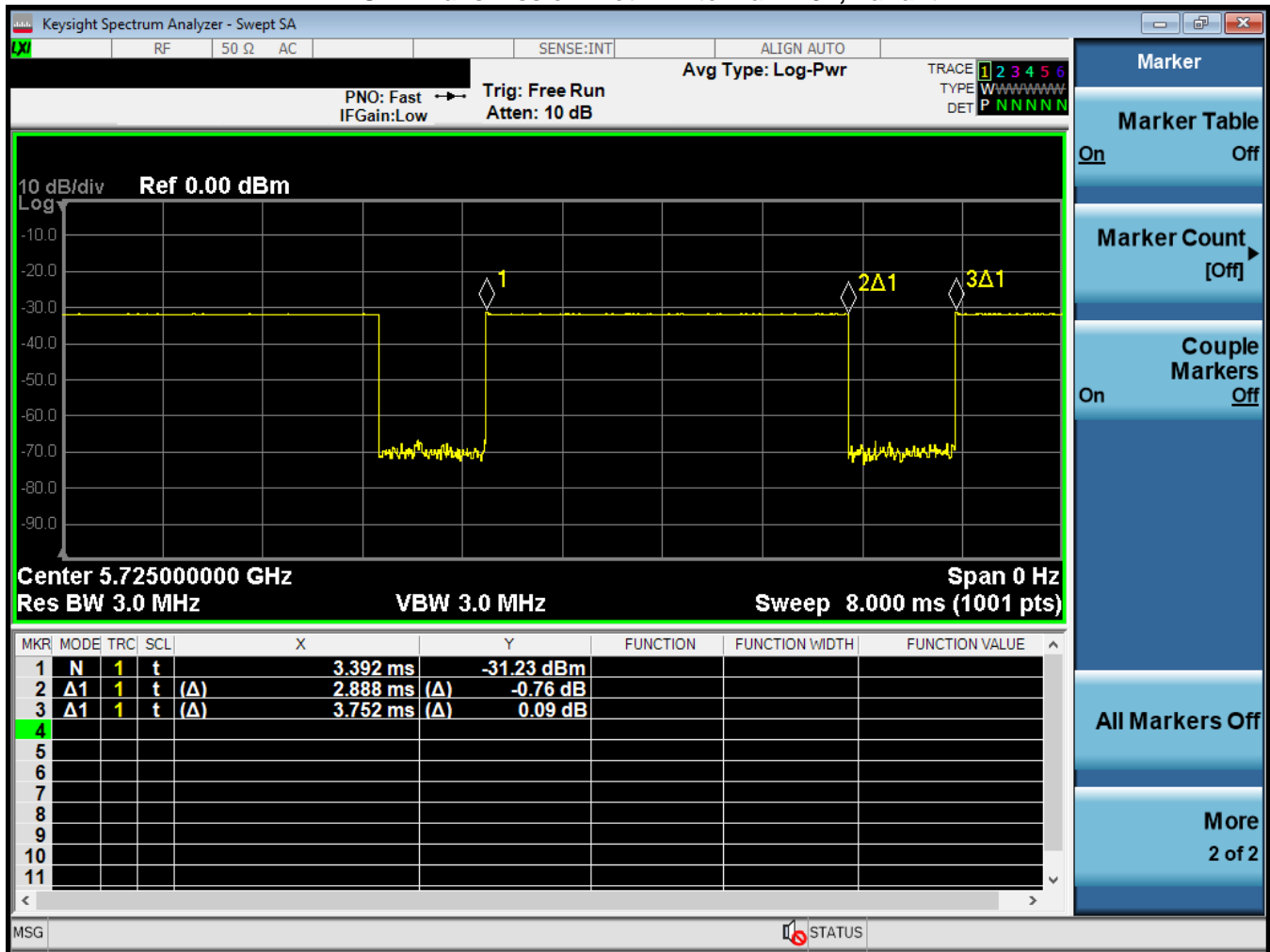
MSG STATUS

Marker  
Marker Table On Off  
Marker Count [Off]  
Couple Markers On Off  
All Markers Off  
More 2 of 2

$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.887 \text{ ms}}{3.751 \text{ ms}} * 100\% = 77\%$$

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 30 of 53

**Figure 7-6**  
**NB UNII Transmission Plot – Antenna WF5T, Variant 1**



**Equation 7-5**  
**NB UNII Duty Cycle Calculation – Antenna WF5T, Variant 1**

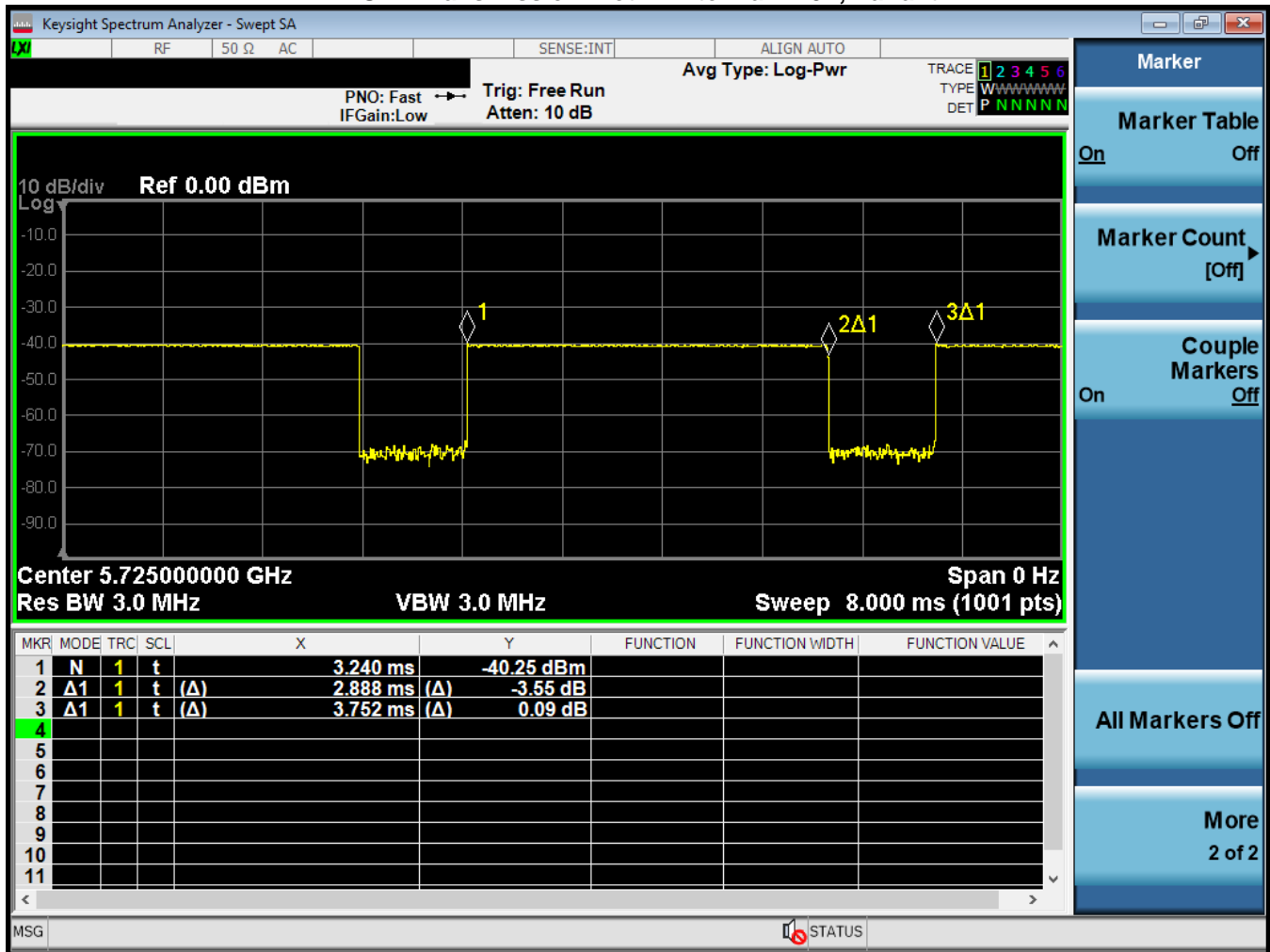
$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.888 \text{ ms}}{3.752 \text{ ms}} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 31 of 53

REV 22.0  
 03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Figure 7-7**  
**NB UNII Transmission Plot – Antenna WF5T, Variant 2**



**Equation 7-6**  
**NB UNII Duty Cycle Calculation – Antenna WF5T, Variant 2**

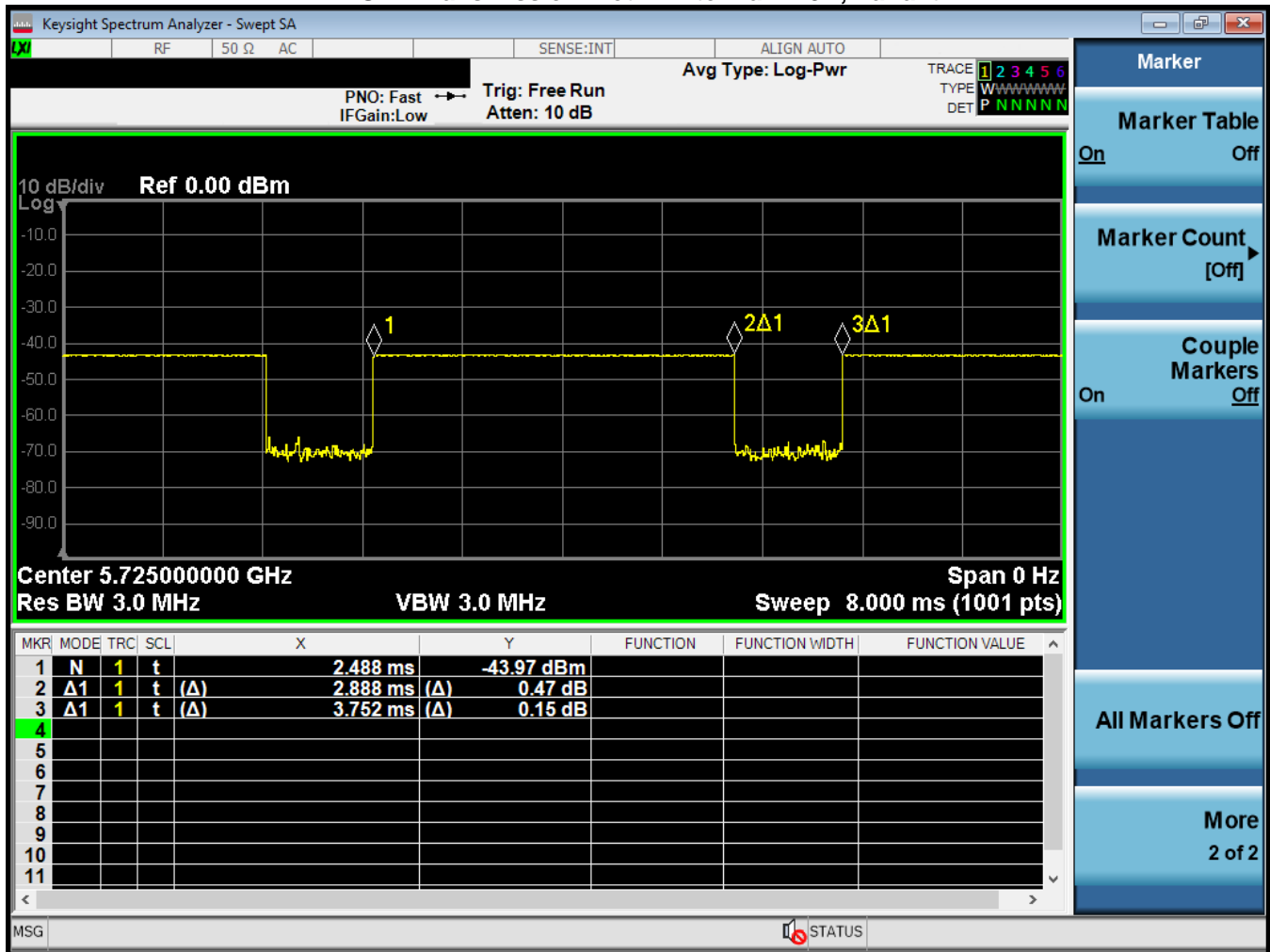
$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 32 of 53

REV 22.0  
03/30/2022



**Figure 7-8**  
**NB UNII Transmission Plot – Antenna WF5B, Variant 1**



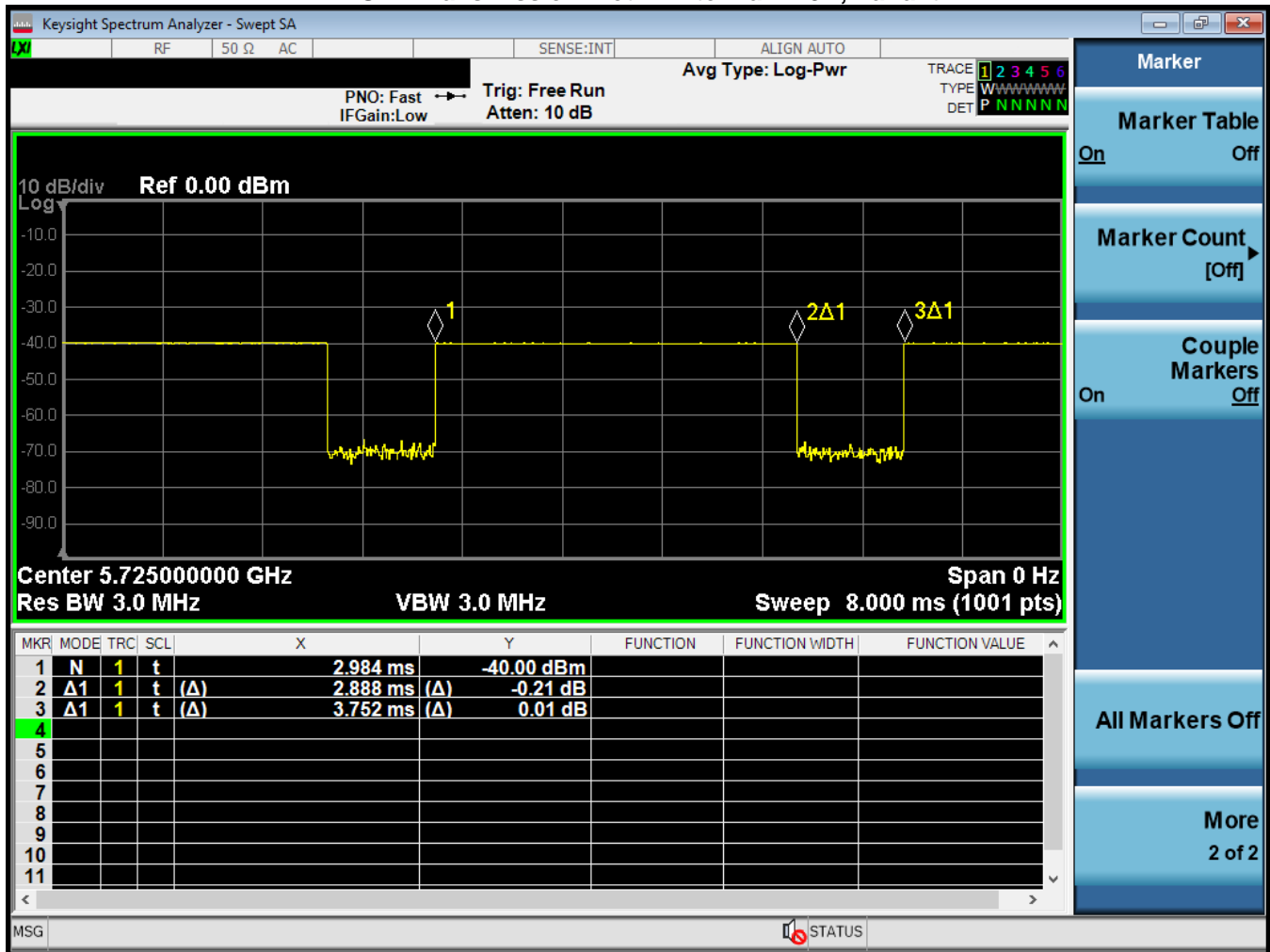
**Equation 7-7**  
**NB UNII Duty Cycle Calculation – Antenna WF5B, Variant 1**

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.888\ ms}{3.752\ ms} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 33 of 53

REV 22.0  
03/30/2022

**Figure 7-9**  
**NB UNII Transmission Plot – Antenna WF5B, Variant 2**



**Equation 7-8**  
**NB UNII Duty Cycle Calculation – Antenna WF5B, Variant 2**

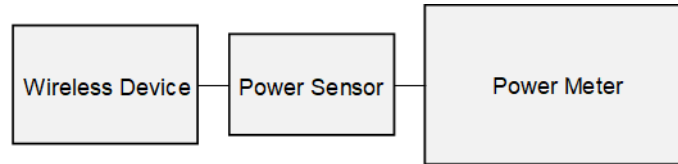
$$\text{Duty Cycle} = \frac{\text{Pulse Width}}{\text{Period}} * 100\% = \frac{2.888 \text{ ms}}{3.752 \text{ ms}} * 100\% = 77\%$$

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 34 of 53

REV 22.0  
03/30/2022

## 7.5 Notes for Bluetooth

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



**Figure 7-10**  
**Power Measurement Setup**

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 35 of 53

REV 22.0  
03/30/2022

## 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, $\sigma$ (S/m)	Measured Dielectric Constant, $\epsilon$	TARGET Conductivity, $\sigma$ (S/m)	TARGET Dielectric Constant, $\epsilon$	% dev $\sigma$	% dev $\epsilon$
06/08/2022	2450 Head	21.2	2300	1.656	39.570	1.670	39.500	-0.84%	0.18%
			2310	1.664	39.558	1.679	39.480	-0.89%	0.20%
			2320	1.671	39.545	1.687	39.460	-0.95%	0.22%
			2400	1.729	39.423	1.756	39.289	-1.54%	0.34%
			2450	1.768	39.356	1.800	39.200	-1.78%	0.40%
			2480	1.790	39.303	1.833	39.162	-2.35%	0.36%
			2500	1.805	39.277	1.855	39.136	-2.70%	0.36%
			2510	1.813	39.261	1.866	39.123	-2.84%	0.35%
			2535	1.833	39.222	1.893	39.092	-3.17%	0.33%
			2550	1.845	39.201	1.909	39.073	-3.35%	0.33%
			2560	1.853	39.188	1.920	39.060	-3.49%	0.33%
			2600	1.888	39.123	1.964	39.009	-3.87%	0.29%
			2650	1.931	39.044	2.018	38.945	-4.31%	0.25%
			2680	1.957	39.001	2.051	38.907	-4.58%	0.24%
			2700	1.973	38.966	2.073	38.882	-4.82%	0.22%

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 36 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, $\sigma$ (S/m)	Measured Dielectric Constant, $\epsilon$	TARGET Conductivity, $\sigma$ (S/m)	TARGET Dielectric Constant, $\epsilon$	% dev $\sigma$	% dev $\epsilon$
07/15/2022	5200-5800 Head	20.8	5180	4.527	35.275	4.635	36.009	-2.33%	-2.04%
			5190	4.536	35.261	4.645	35.998	-2.35%	-2.05%
			5200	4.546	35.249	4.655	35.986	-2.34%	-2.05%
			5210	4.557	35.230	4.666	35.975	-2.34%	-2.07%
			5220	4.568	35.212	4.676	35.963	-2.31%	-2.09%
			5240	4.590	35.166	4.696	35.940	-2.26%	-2.15%
			5250	4.600	35.147	4.706	35.929	-2.25%	-2.18%
			5260	4.612	35.125	4.717	35.917	-2.23%	-2.21%
			5270	4.623	35.107	4.727	35.906	-2.20%	-2.23%
			5280	4.635	35.095	4.737	35.894	-2.15%	-2.23%
			5290	4.646	35.077	4.748	35.883	-2.15%	-2.25%
			5300	4.658	35.063	4.758	35.871	-2.10%	-2.25%
			5310	4.669	35.045	4.768	35.860	-2.08%	-2.27%
			5320	4.678	35.031	4.778	35.849	-2.09%	-2.28%
			5500	4.877	34.696	4.963	35.643	-1.73%	-2.66%
			5510	4.889	34.681	4.973	35.632	-1.69%	-2.67%
			5520	4.899	34.664	4.983	35.620	-1.69%	-2.68%
			5530	4.912	34.647	4.994	35.609	-1.64%	-2.70%
			5540	4.925	34.629	5.004	35.597	-1.58%	-2.72%
			5550	4.937	34.609	5.014	35.586	-1.54%	-2.75%
			5560	4.949	34.591	5.024	35.574	-1.49%	-2.76%
			5580	4.974	34.566	5.045	35.551	-1.41%	-2.77%
			5600	4.991	34.523	5.065	35.529	-1.46%	-2.83%
			5610	5.003	34.497	5.076	35.518	-1.44%	-2.87%
			5620	5.019	34.481	5.086	35.506	-1.32%	-2.89%
			5640	5.043	34.458	5.106	35.483	-1.23%	-2.89%
			5660	5.061	34.422	5.127	35.460	-1.29%	-2.93%
			5670	5.074	34.399	5.137	35.449	-1.23%	-2.96%
			5680	5.087	34.376	5.147	35.437	-1.17%	-2.99%
			5690	5.098	34.360	5.158	35.426	-1.16%	-3.01%
			5700	5.109	34.349	5.168	35.414	-1.14%	-3.01%
			5710	5.119	34.334	5.178	35.403	-1.14%	-3.02%
			5720	5.129	34.312	5.188	35.391	-1.14%	-3.05%
			5745	5.161	34.266	5.214	35.363	-1.02%	-3.10%
			5750	5.167	34.257	5.219	35.357	-1.00%	-3.11%
			5755	5.173	34.250	5.224	35.351	-0.98%	-3.11%
			5765	5.184	34.231	5.234	35.340	-0.96%	-3.14%
			5775	5.196	34.215	5.245	35.329	-0.93%	-3.15%
			5785	5.209	34.202	5.255	35.317	-0.88%	-3.16%
			5795	5.220	34.180	5.265	35.305	-0.85%	-3.19%
			5800	5.227	34.170	5.270	35.300	-0.82%	-3.20%
			5800	5.227	34.170	5.270	35.300	-0.82%	-3.20%
			5805	5.231	34.161	5.275	35.294	-0.83%	-3.21%
			5825	5.254	34.133	5.296	35.271	-0.79%	-3.23%
			5835	5.269	34.122	5.305	35.230	-0.68%	-3.15%
			5845	5.286	34.110	5.315	35.210	-0.55%	-3.12%
			5855	5.298	34.099	5.325	35.197	-0.51%	-3.12%
			5865	5.304	34.084	5.336	35.190	-0.60%	-3.14%
			5865	5.304	34.084	5.336	35.190	-0.60%	-3.14%
			5865	5.304	34.084	5.336	35.190	-0.60%	-3.14%
			5865	5.304	34.084	5.336	35.190	-0.60%	-3.14%
			5875	5.313	34.068	5.347	35.183	-0.64%	-3.17%
			5885	5.325	34.049	5.357	35.177	-0.60%	-3.21%
			5905	5.357	34.009	5.379	35.163	-0.41%	-3.28%

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 37 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, $\sigma$ (S/m)	Measured Dielectric Constant, $\epsilon$	TARGET Conductivity, $\sigma$ (S/m)	TARGET Dielectric Constant, $\epsilon$	% dev $\sigma$	% dev $\epsilon$
09/06/2022	5200-5800 Head	21.1	5180	4.649	35.626	4.635	36.009	0.30%	-1.06%
			5190	4.662	35.604	4.645	35.998	0.37%	-1.09%
			5200	4.674	35.588	4.655	35.986	0.41%	-1.11%
			5210	4.684	35.573	4.666	35.975	0.39%	-1.12%
			5220	4.691	35.544	4.676	35.963	0.32%	-1.17%
			5240	4.714	35.519	4.696	35.940	0.38%	-1.17%
			5250	4.726	35.516	4.706	35.929	0.42%	-1.15%
			5260	4.737	35.491	4.717	35.917	0.42%	-1.19%
			5270	4.753	35.450	4.727	35.906	0.55%	-1.27%
			5280	4.771	35.429	4.737	35.894	0.72%	-1.30%
			5290	4.781	35.427	4.748	35.883	0.70%	-1.27%
			5300	4.788	35.411	4.758	35.871	0.63%	-1.28%
			5310	4.800	35.381	4.768	35.860	0.67%	-1.34%
			5320	4.811	35.348	4.778	35.849	0.69%	-1.40%
			5500	5.014	34.998	4.963	35.643	1.03%	-1.81%
			5510	5.024	34.974	4.973	35.632	1.03%	-1.85%
			5520	5.041	34.957	4.983	35.620	1.16%	-1.86%
			5530	5.058	34.937	4.994	35.609	1.28%	-1.89%
			5540	5.066	34.926	5.004	35.597	1.24%	-1.88%
			5550	5.069	34.921	5.014	35.586	1.10%	-1.87%
			5560	5.074	34.912	5.024	35.574	1.00%	-1.86%
			5580	5.107	34.864	5.045	35.551	1.23%	-1.93%
			5600	5.138	34.824	5.065	35.529	1.44%	-1.98%
			5610	5.154	34.806	5.076	35.518	1.54%	-2.00%
			5620	5.167	34.778	5.086	35.506	1.59%	-2.05%
			5640	5.189	34.727	5.106	35.483	1.63%	-2.13%
			5660	5.208	34.719	5.127	35.460	1.58%	-2.09%
			5670	5.217	34.709	5.137	35.449	1.56%	-2.09%
			5680	5.223	34.677	5.147	35.437	1.48%	-2.14%
			5690	5.234	34.638	5.158	35.426	1.47%	-2.22%
			5700	5.251	34.609	5.168	35.414	1.61%	-2.27%
			5710	5.266	34.588	5.178	35.403	1.70%	-2.30%
			5720	5.280	34.581	5.188	35.391	1.77%	-2.29%
			5745	5.314	34.532	5.214	35.363	1.92%	-2.35%
			5750	5.318	34.521	5.219	35.357	1.90%	-2.36%
			5755	5.323	34.516	5.224	35.351	1.90%	-2.36%
			5765	5.329	34.514	5.234	35.340	1.82%	-2.34%
			5775	5.336	34.510	5.245	35.329	1.73%	-2.32%
			5785	5.348	34.482	5.255	35.317	1.77%	-2.36%
			5795	5.363	34.447	5.265	35.305	1.86%	-2.43%
			5800	5.370	34.429	5.270	35.300	1.90%	-2.47%
			5800	5.370	34.429	5.270	35.300	1.90%	-2.47%
			5805	5.378	34.421	5.275	35.294	1.95%	-2.47%
			5825	5.403	34.398	5.296	35.271	2.02%	-2.48%
			5835	5.412	34.381	5.305	35.230	2.02%	-2.41%
			5845	5.425	34.356	5.315	35.210	2.07%	-2.43%
			5855	5.440	34.326	5.325	35.197	2.16%	-2.47%
			5865	5.454	34.304	5.336	35.190	2.21%	-2.52%
			5865	5.454	34.304	5.336	35.190	2.21%	-2.52%
			5865	5.454	34.304	5.336	35.190	2.21%	-2.52%
			5875	5.462	34.292	5.347	35.183	2.15%	-2.53%
			5885	5.469	34.285	5.357	35.177	2.09%	-2.54%
			5905	5.495	34.236	5.379	35.163	2.16%	-2.64%

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.

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

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device		Page 38 of 53

REV 22.0  
03/30/2022

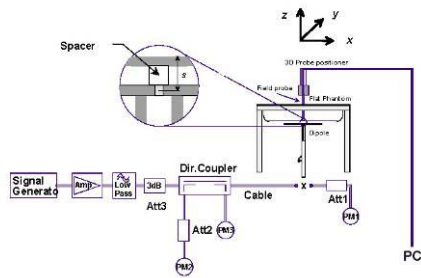
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 8.2 Test System Verification

Prior to SAR assessment, the system is verified to  $\pm 10\%$  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 Appendix D.

**Table 8-2**  
**System Verification Results – 1g**

SAR System	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp. (C)	Liquid Temp. (C)	Input Power (W)	Source SN	Probe SN	Measured SAR1g (W/kg)	1W Target SAR1g (W/kg)	1W Normalized SAR 1g (W/kg)	Deviation1g (%)
AM4	2450	HEAD	06/08/2022	23.1	22.2	0.10	921	3837	5.120	54.20	51.200	-5.54%
AM9	5250	HEAD	07/15/2022	21.5	20.8	0.05	1123	7638	4.190	80.50	83.800	4.10%
AM9	5250	HEAD	09/06/2022	22.0	21.5	0.05	1123	7638	4.060	80.50	81.200	0.87%
AM9	5600	HEAD	07/15/2022	21.5	20.8	0.05	1123	7638	4.280	83.70	85.600	2.27%
AM9	5600	HEAD	09/06/2022	22.0	21.5	0.05	1123	7638	4.240	83.70	84.800	1.31%
AM9	5750	HEAD	07/15/2022	21.5	20.8	0.05	1123	7638	3.730	80.50	74.600	-7.33%
AM9	5750	HEAD	09/06/2022	22.0	21.5	0.05	1123	7638	3.980	80.50	79.600	-1.12%



**Figure 8-1**  
**System Verification Setup Diagram**



**Figure 8-2**  
**System Verification Setup Photo**

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 39 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

# 9 SAR DATA SUMMARY

## 9.1 Standalone SAR Data

Table 9-1  
2.4 GHz WLAN Body SAR Data – Antenna WF8

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	(W/kg)		
2412	1	802.11b	DSSS	22	17.00	16.03	0.08	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	100.0	0.885	1.250	1.000	1.106	0.435	0.544	A1
2437	6	802.11b	DSSS	22	17.00	16.02	0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	100.0	0.828	1.253	1.000	1.037	0.405	0.507	
2462	11	802.11b	DSSS	22	17.00	16.01	0.06	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	100.0	0.805	1.256	1.000	1.011	0.399	0.501	
2412	1	802.11b	DSSS	22	17.00	15.91	0.00	0 mm	Ant WF8	V2	WK6464P62L	1	back	100.0	0.847	1.285	1.000	1.088	0.415	0.533	
2412	1	802.11b	DSSS	22	17.00	16.03	0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	top	100.0	0.421	1.250	1.000	0.526	0.175	0.219	
2412	1	802.11b	DSSS	22	17.00	16.03	0.12	0 mm	Ant WF8	V1	JYP1QGG4D2	1	bottom	100.0	0.050	1.250	1.000	0.063	0.021	0.026	
2412	1	802.11b	DSSS	22	17.00	16.03	0.13	0 mm	Ant WF8	V1	JYP1QGG4D2	1	right	100.0	0.040	1.250	1.000	0.050	0.017	0.021	
2412	1	802.11b	DSSS	22	17.00	16.03	0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	left	100.0	0.000	1.250	1.000	0.000	0.000	0.000	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Body												
Spatial Peak									1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population									averaged over 1 gram												

Table 9-2  
2.4 GHz WLAN Body SAR Data – Antenna WF7

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)		(W/kg)	
2412	1	802.11b	DSSS	22	15.50	14.17	0.01	0 mm	Ant WF7	V1	GQLOGP61G2	1	back	100.0	0.872	1.358	1.000	1.184	0.376	0.511	
2437	6	802.11b	DSSS	22	15.50	14.10	0.01	0 mm	Ant WF7	V1	GQLOGP61G2	1	back	100.0	0.761	1.380	1.000	1.050	0.325	0.449	
2462	11	802.11b	DSSS	22	15.50	14.07	0.01	0 mm	Ant WF7	V1	GQLOGP61G2	1	back	100.0	0.633	1.390	1.000	0.880	0.265	0.368	
2412	1	802.11b	DSSS	22	15.50	14.05	0.03	0 mm	Ant WF7	V2	WRV2PL729H	1	back	100.0	0.847	1.396	1.000	1.182	0.360	0.503	
2412	1	802.11b	DSSS	22	15.50	14.17	0.02	0 mm	Ant WF7	V1	GQLOGP61G2	1	top	100.0	0.294	1.358	1.000	0.399	0.135	0.183	
2412	1	802.11b	DSSS	22	15.50	14.17	-0.09	0 mm	Ant WF7	V1	GQLOGP61G2	1	bottom	100.0	0.037	1.358	1.000	0.050	0.015	0.020	
2412	1	802.11b	DSSS	22	15.50	14.17	0.20	0 mm	Ant WF7	V1	GQLOGP61G2	1	right	100.0	0.000	1.358	1.000	0.000	0.000	0.000	
2412	1	802.11b	DSSS	22	15.50	14.17	-0.01	0 mm	Ant WF7	V1	GQLOGP61G2	1	left	100.0	0.179	1.358	1.000	0.243	0.068	0.092	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Body												
Spatial Peak									1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population									averaged over 1 gram												

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by:
Document S/N:	DUT Type:		Technical Manager
1C2205090027-15.BCG (Rev 1)	Tablet Device		Page 40 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact CT.INFO@ELEMENT.COM.



**Table 9-3**  
**5 GHz WLAN Body SAR Data – Antenna WF5T**

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	(W/kg)		
5230	46	802.11n	OFDM	40	17.50	17.03	-0.13	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	back	97.9	0.092	1.114	1.021	0.105	0.036	0.041	
5230	46	802.11n	OFDM	40	17.50	17.03	0.03	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	top	97.9	0.004	1.114	1.021	0.005	0.000	0.000	
5230	46	802.11n	OFDM	40	17.50	17.03	0.02	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	bottom	97.9	0.000	1.114	1.021	0.000	0.000	0.000	
5190	38	802.11n	OFDM	40	16.50	15.47	0.04	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	right	97.9	0.612	1.268	1.021	0.792	0.195	0.252	
5230	46	802.11n	OFDM	40	17.50	17.03	-0.01	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	right	97.9	1.040	1.114	1.021	1.183	0.327	0.372	A2
5230	46	802.11n	OFDM	40	17.50	16.91	0.02	0 mm	Ant WF5T	V1	GP2VMM2YV	13.5	right	97.9	0.916	1.146	1.021	1.072	0.291	0.340	
5230	46	802.11n	OFDM	40	17.50	17.03	0.08	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	left	97.9	0.007	1.114	1.021	0.008	0.000	0.000	
5690	138	802.11ac	OFDM	80	15.50	14.42	-0.15	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	back	95.8	0.046	1.282	1.044	0.062	0.015	0.020	
5690	138	802.11ac	OFDM	80	15.50	14.42	0.02	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	top	95.8	0.000	1.282	1.044	0.000	0.000	0.000	
5690	138	802.11ac	OFDM	80	15.50	14.42	0.05	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	bottom	95.8	0.000	1.282	1.044	0.000	0.000	0.000	
5530	106	802.11ac	OFDM	80	15.00	13.90	0.00	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	right	95.8	0.647	1.288	1.044	0.870	0.208	0.280	
5610	122	802.11ac	OFDM	80	15.50	14.41	0.06	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	right	95.8	0.700	1.285	1.044	0.939	0.219	0.294	
5690	138	802.11ac	OFDM	80	15.50	14.42	-0.09	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	right	95.8	0.706	1.282	1.044	0.945	0.223	0.298	
5690	138	802.11ac	OFDM	80	15.50	14.45	-0.14	0 mm	Ant WF5T	V2	R9TL2070TW	29.3	right	95.8	0.672	1.274	1.044	0.894	0.219	0.291	
5690	138	802.11ac	OFDM	80	15.50	14.42	0.08	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	left	95.8	0.022	1.282	1.044	0.029	0.000	0.000	
5775	155	802.11ac	OFDM	80	16.00	15.15	0.01	0 mm	Ant WF5T	V2	R9TL2070TW	29.3	back	95.8	0.037	1.216	1.044	0.047	0.012	0.015	
5775	155	802.11ac	OFDM	80	16.00	14.95	0.09	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	top	95.8	0.005	1.274	1.044	0.007	0.000	0.000	
5775	155	802.11ac	OFDM	80	16.00	14.95	0.01	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	bottom	95.8	0.004	1.274	1.044	0.005	0.000	0.000	
5775	155	802.11ac	OFDM	80	16.00	14.95	0.00	0 mm	Ant WF5T	V1	YTXG90V2PG	29.3	right	95.8	0.680	1.274	1.044	0.904	0.223	0.297	
5775	155	802.11ac	OFDM	80	16.00	15.15	0.00	0 mm	Ant WF5T	V2	R9TL2070TW	29.3	right	95.8	0.677	1.216	1.044	0.859	0.224	0.284	
5775	155	802.11ac	OFDM	80	16.00	15.15	0.05	0 mm	Ant WF5T	V2	R9TL2070TW	29.3	left	95.8	0.008	1.216	1.044	0.010	0.000	0.000	
5230	46	802.11ac	OFDM	40	17.50	17.03	0.04	0 mm	Ant WF5T	V2	YQ217J4PW0	13.5	right	97.9	1.010	1.114	1.021	1.149	0.323	0.367	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body													
Spatial Peak								1.6 W/kg (mW/g)													
Uncontrolled Exposure/General Population								averaged over 1 gram													

Blue entry represents variability measurement.

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

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.														(W/kg)			(W/kg)	(W/kg)		
5270	54	802.11n	OFDM	40	17.75	16.63	0.03	0 mm	Ant WF5B	V1	GP2VMM2YV	13.5	back	97.9	0.097	1.294	1.021	0.128	0.039	0.052	
5270	54	802.11n	OFDM	40	17.75	16.77	0.08	0 mm	Ant WF5B	V2	R9TL2070TW	13.5	top	97.9	0.000	1.253	1.021	0.000	0.000	0.000	
5270	54	802.11n	OFDM	40	17.75	16.77	0.06	0 mm	Ant WF5B	V2	R9TL2070TW	13.5	bottom	97.9	0.044	1.253	1.021	0.056	0.012	0.015	
5270	54	802.11n	OFDM	40	17.75	16.77	0.00	0 mm	Ant WF5B	V2	R9TL2070TW	13.5	right	97.9	0.904	1.253	1.021	1.156	0.277	0.354	
5310	62	802.11n	OFDM	40	16.75	15.65	-0.01	0 mm	Ant WF5B	V2	R9TL2070TW	13.5	right	97.9	0.532	1.288	1.021	0.700	0.159	0.209	
5270	54	802.11n	OFDM	40	17.75	16.63	0.02	0 mm	Ant WF5B	V1	YTXG90V2PG	13.5	right	97.9	0.846	1.294	1.021	1.118	0.262	0.346	
5270	54	802.11n	OFDM	40	17.75	16.63	0.04	0 mm	Ant WF5B	V1	GP2VMM2YV	13.5	left	97.9	0.022	1.294	1.021	0.029	0.007	0.009	
5610	122	802.11ac	OFDM	80	17.00	16.17	-0.07	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	back	95.8	0.102	1.211	1.044	0.129	0.039	0.049	
5610	122	802.11ac	OFDM	80	17.00	16.17	0.03	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	top	95.8	0.000	1.211	1.044	0.000	0.000	0.000	
5610	122	802.11ac	OFDM	80	17.00	16.17	0.08	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	bottom	95.8	0.021	1.211	1.044	0.027	0.004	0.005	
5530	106	802.11ac	OFDM	80	15.00	13.86	0.01	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	right	95.8	0.544	1.300	1.044	0.738	0.162	0.220	
5610	122	802.11ac	OFDM	80	17.00	16.17	0.01	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	right	95.8	0.908	1.211	1.044	1.148	0.276	0.349	
5690	138	802.11ac	OFDM	80	17.00	16.10	0.02	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	right	95.8	0.887	1.230	1.044	1.139	0.272	0.349	
5610	122	802.11ac	OFDM	80	17.00	16.15	-0.07	0 mm	Ant WF5B	V2	WK6464P62L	29.3	right	95.8	0.808	1.216	1.044	1.026	0.243	0.308	
5610	122	802.11ac	OFDM	80	17.00	16.17	0.03	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	left	95.8	0.018	1.211	1.044	0.023	0.006	0.008	
5775	155	802.11ac	OFDM	80	16.50	15.51	0.09	0 mm	Ant WF5B	V2	KJF60WT2HJ	29.3	back	95.8	0.090	1.256	1.044	0.118	0.032	0.042	
5775	155	802.11ac	OFDM	80	16.50	15.51	0.07	0 mm	Ant WF5B	V2	KJF60WT2HJ	29.3	top	95.8	0.000	1.256	1.044	0.000	0.000	0.000	
5775	155	802.11ac	OFDM	80	16.50	15.51	-0.09	0 mm	Ant WF5B	V2	KJF60WT2HJ	29.3	bottom	95.8	0.026	1.256	1.044	0.034	0.007	0.009	
5775	155	802.11ac	OFDM	80	16.50	15.89	0.01	0 mm	Ant WF5B	V1	JYP1QGG4D2	29.3	right	95.8	0.826	1.151	1.044	0.993	0.253	0.304	
5775	155	802.11ac	OFDM	80	16.50	15.51	-0.07	0 mm	Ant WF5B	V2	KJF60WT2HJ	29.3	right	95.8	0.858	1.256	1.044	1.125	0.267	0.350	
5775	155	802.11ac	OFDM	80	16.50	15.51	0.05	0 mm	Ant WF5B	V2	KJF60WT2HJ	29.3	left	95.8	0.018	1.256	1.044	0.024	0.005	0.007	
5610	122	802.11ac	OFDM	80	17.00	16.17	-0.02	0 mm	Ant WF5B	V1	JR0P99G6F0	29.3	right	95.8	0.818	1.211	1.044	1.034	0.247	0.312	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT									Body												
Spatial Peak									1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population									averaged over 1 gram												

Blue entry represents variability measurement.

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by:
			Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 41 of 53	

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 9-5**  
**Bluetooth Body SAR Data – Antenna WF8**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)			(W/kg)	(W/kg)		
2402	0	Bluetooth	17.50	17.33	0.05	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	77.0	1.000	1.040	1.006	1.046	0.483	0.505	
2441	39	Bluetooth	17.50	17.25	0.03	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	77.0	1.100	1.059	1.006	1.172	0.527	0.561	A3
2480	78	Bluetooth	17.50	17.50	0.03	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	77.0	0.898	1.000	1.006	0.903	0.438	0.441	
2441	39	Bluetooth	17.50	17.38	0.01	0 mm	Ant WF8	V2	WRV2PL729H	1	back	77.0	1.010	1.028	1.006	1.045	0.496	0.513	
2480	78	Bluetooth	17.50	17.50	-0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	Top	77.0	0.477	1.000	1.006	0.480	0.191	0.192	
2480	78	Bluetooth	17.50	17.50	0.03	0 mm	Ant WF8	V1	JYP1QGG4D2	1	bottom	77.0	0.025	1.000	1.006	0.025	0.010	0.010	
2480	78	Bluetooth	17.50	17.50	0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	right	77.0	0.033	1.000	1.006	0.033	0.014	0.014	
2480	78	Bluetooth	17.50	17.50	0.04	0 mm	Ant WF8	V1	JYP1QGG4D2	1	left	77.0	0.000	1.000	1.006	0.000	0.000	0.000	
2441	39	Bluetooth	17.50	17.25	0.00	0 mm	Ant WF8	V1	JYP1QGG4D2	1	back	77.0	1.040	1.059	1.006	1.108	0.503	0.536	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																			
Spatial Peak						Body													
Uncontrolled Exposure/General Population						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 the manufacturer.  
Blue entry represents variability measurement.

**Table 9-6**  
**Bluetooth Body SAR Data – Antenna WF7**

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	SAR (10g)	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)			(W/kg)	(W/kg)		
2402	0	Bluetooth	16.50	16.40	0.04	0 mm	Ant WF7	V1	GQL0GP61G2	1	back	77.0	1.070	1.023	1.006	1.101	0.528	0.543	
2441	39	Bluetooth	16.50	16.50	0.02	0 mm	Ant WF7	V1	GQL0GP61G2	1	back	77.0	1.050	1.000	1.006	1.056	0.490	0.493	
2480	78	Bluetooth	16.50	16.45	0.02	0 mm	Ant WF7	V1	GQL0GP61G2	1	back	77.0	0.788	1.012	1.006	0.802	0.384	0.391	
2402	0	Bluetooth	16.50	16.35	0.01	0 mm	Ant WF7	V2	WRV2PL729H	1	back	77.0	1.040	1.035	1.006	1.083	0.496	0.516	
2402	0	Bluetooth	16.50	16.40	0.01	0 mm	Ant WF7	V1	GQL0GP61G2	1	Top	77.0	0.424	1.023	1.006	0.436	0.194	0.200	
2441	39	Bluetooth	16.50	16.50	0.00	0 mm	Ant WF7	V1	GQL0GP61G2	1	top	77.0	0.487	1.000	1.006	0.490	0.224	0.225	
2441	39	Bluetooth	16.50	16.50	0.04	0 mm	Ant WF7	V1	GQL0GP61G2	1	bottom	77.0	0.009	1.000	1.006	0.009	0.003	0.003	
2441	39	Bluetooth	16.50	16.50	0.00	0 mm	Ant WF7	V1	GQL0GP61G2	1	right	77.0	0.010	1.000	1.006	0.010	0.003	0.003	
2441	39	Bluetooth	16.50	16.50	0.06	0 mm	Ant WF7	V1	GQL0GP61G2	1	left	77.0	0.078	1.000	1.006	0.078	0.027	0.027	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT						Body													
Spatial Peak						1.6 W/kg (mW/g)													
Uncontrolled Exposure/General Population						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 the manufacturer.

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by:
Document S/N:	DUT Type:		Technical Manager
1C2205090027-15.BCG (Rev 1)	Tablet Device		Page 42 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 9-7**  
**NB UNII Body SAR Data – Antenna WF5T**

MEASUREMENT RESULTS																		
FREQUENCY	Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	SAR (10g) (W/kg)	Reported SAR (10g) (W/kg)	Plot #
MHz																		
5245	NB UNII 1	12.00	11.20	0.05	0 mm	Ant WF5T	V2	R9TL2070TW	4	back	77.0	0.004	1.202	1.006	0.005	0.000	0.000	
5245	NB UNII 1	12.00	11.20	0.03	0 mm	Ant WF5T	V2	R9TL2070TW	4	Top	77.0	0.000	1.202	1.006	0.000	0.000	0.000	
5245	NB UNII 1	12.00	11.20	0.02	0 mm	Ant WF5T	V2	R9TL2070TW	4	bottom	77.0	0.000	1.202	1.006	0.000	0.000	0.000	
5245	NB UNII 1	12.00	11.20	0.01	0 mm	Ant WF5T	V2	R9TL2070TW	4	right	77.0	0.058	1.202	1.006	0.070	0.013	0.016	
5245	NB UNII 1	12.00	10.92	0.05	0 mm	Ant WF5T	V1	YTXG90V2PG	4	right	77.0	0.052	1.282	1.006	0.067	0.010	0.013	
5245	NB UNII 1	12.00	11.20	0.05	0 mm	Ant WF5T	V2	R9TL2070TW	4	left	77.0	0.000	1.202	1.006	0.000	0.000	0.000	
5844	NB UNII 3	19.00	18.12	-0.10	0 mm	Ant WF5T	V1	JR0P99G6F0	1	back	77.0	0.054	1.225	1.006	0.067	0.017	0.021	
5844	NB UNII 3	19.00	18.12	0.06	0 mm	Ant WF5T	V1	JR0P99G6F0	1	Top	77.0	0.004	1.225	1.006	0.005	0.000	0.000	
5844	NB UNII 3	19.00	18.12	0.03	0 mm	Ant WF5T	V1	JR0P99G6F0	1	bottom	77.0	0.003	1.225	1.006	0.004	0.000	0.000	
5733	NB UNII 3	19.00	17.89	0.00	0 mm	Ant WF5T	V2	YQ217J4PW0	1	right	77.0	0.896	1.291	1.006	1.164	0.301	0.391	
5789	NB UNII 3	19.00	17.61	-0.04	0 mm	Ant WF5T	V2	YQ217J4PW0	1	right	77.0	0.737	1.377	1.006	1.021	0.229	0.317	
5844	NB UNII 3	19.00	17.80	-0.12	0 mm	Ant WF5T	V2	YQ217J4PW0	1	right	77.0	0.698	1.318	1.006	0.925	0.224	0.297	
5733	NB UNII 3	19.00	18.08	-0.03	0 mm	Ant WF5T	V1	JR0P99G6F0	1	right	77.0	0.878	1.236	1.006	1.092	0.300	0.373	
5844	NB UNII 3	19.00	18.12	0.06	0 mm	Ant WF5T	V1	JR0P99G6F0	1	left	77.0	0.022	1.225	1.006	0.027	0.004	0.005	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT					Body													
Spatial Peak					1.6 W/kg (mW/g)													
Uncontrolled Exposure/General Population					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 the manufacturer.

**Table 9-8**  
**NB UNII Body SAR Data – Antenna WF5B**

MEASUREMENT RESULTS																		
FREQUENCY	Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Variant	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) (W/kg)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	SAR (10g) (W/kg)	Reported SAR (10g) (W/kg)	Plot #
MHz																		
5162	NB UNII 1	12.00	10.97	0.04	0 mm	Ant WF5B	V1	JR0P99G6F0	4	back	77.0	0.004	1.268	1.006	0.005	0.000	0.000	
5162	NB UNII 1	12.00	10.97	0.01	0 mm	Ant WF5B	V1	JR0P99G6F0	4	Top	77.0	0.000	1.268	1.006	0.000	0.000	0.000	
5162	NB UNII 1	12.00	10.97	0.03	0 mm	Ant WF5B	V1	JR0P99G6F0	4	bottom	77.0	0.002	1.268	1.006	0.003	0.000	0.000	
5162	NB UNII 1	12.00	10.97	0.03	0 mm	Ant WF5B	V1	JR0P99G6F0	4	right	77.0	0.117	1.268	1.006	0.149	0.038	0.048	
5162	NB UNII 1	12.00	10.78	0.00	0 mm	Ant WF5B	V2	WK6464P62L	4	right	77.0	0.101	1.324	1.006	0.135	0.031	0.041	
5162	NB UNII 1	12.00	10.97	0.09	0 mm	Ant WF5B	V1	JR0P99G6F0	4	left	77.0	0.000	1.268	1.006	0.000	0.000	0.000	
5844	NB UNII 3	19.00	18.19	0.05	0 mm	Ant WF5B	V1	R6176N40F2	1	back	77.0	0.142	1.205	1.006	0.172	0.055	0.067	
5844	NB UNII 3	19.00	18.19	0.02	0 mm	Ant WF5B	V1	R6176N40F2	1	Top	77.0	0.000	1.205	1.006	0.000	0.000	0.000	
5844	NB UNII 3	19.00	18.19	0.02	0 mm	Ant WF5B	V1	R6176N40F2	1	bottom	77.0	0.029	1.205	1.006	0.035	0.006	0.007	
5733	NB UNII 3	19.00	18.16	0.09	0 mm	Ant WF5B	V1	R6176N40F2	1	right	77.0	0.854	1.213	1.006	1.042	0.277	0.338	
5789	NB UNII 3	19.00	18.14	0.08	0 mm	Ant WF5B	V1	R6176N40F2	1	right	77.0	0.946	1.219	1.006	1.160	0.309	0.379	A4
5844	NB UNII 3	19.00	18.19	-0.02	0 mm	Ant WF5B	V1	R6176N40F2	1	right	77.0	0.786	1.205	1.006	0.953	0.261	0.316	
5789	NB UNII 3	19.00	18.01	0.07	0 mm	Ant WF5B	V2	YQ217J4PW0	1	right	77.0	0.821	1.256	1.006	1.037	0.267	0.337	
5844	NB UNII 3	19.00	18.19	0.20	0 mm	Ant WF5B	V1	R6176N40F2	1	left	77.0	0.007	1.205	1.006	0.008	0.000	0.000	
5789	NB UNII 3	19.00	18.14	-0.15	0 mm	Ant WF5B	V1	R6176N40F2	1	right	77.0	0.903	1.219	1.006	1.107	0.299	0.367	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT					Body													
Spatial Peak					1.6 W/kg (mW/g)													
Uncontrolled Exposure/General Population					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 the manufacturer.  
Blue entry represents variability measurement.

FCC ID: BCGA2436	SAR EVALUATION REPORT		Approved by:
			Technical Manager
Document S/N:	DUT Type:	Page 43 of 53	
1C2205090027-15.BCG (Rev 1)	Tablet Device		

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 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 D01v06.
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 D01v06.
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 D01v06 was applied to determine SAR test exclusion for adjacent edge configurations.
8. The orange highlights throughout the report represents the highest scaled SAR per Equipment Class.

### WLAN Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n/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 D01v06 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  $\leq 0.8$  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  $\leq 1.20$  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 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 the manufacturer. See Section 7.4 for the time domain plot and calculation for the duty factor of the device.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 44 of 53

REV 22.0  
03/30/2022

## 10 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

### 10.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit together.

### 10.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 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 physical test configuration is  $\leq 1.6$  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.

\*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, the simultaneous transmission were treated independently for this configuration. See section 10.4 for more information about the Spatial Separation Analysis.

### 10.3 Body SAR Simultaneous Transmission Analysis

**Table 10-1**  
**Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN**

Simult Tx	Configuration	Bluetooth Ant WF8 SAR (W/kg)	Bluetooth Ant WF7 SAR (W/kg)	5 GHz WLAN Ant WF5T SAR (W/kg)	5 GHz WLAN Ant WF5B SAR (W/kg)	$\Sigma$ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	1.172	1.101	0.105	0.129	1.406*
	Top	0.480	0.490	0.007	0.000	0.977
	Bottom	0.025	0.009	0.005	0.056	0.095
	Right	0.033	0.010	1.183	1.156	1.226*
	Left	0.000	0.078	0.029	0.029	0.136

**Table 10-2**  
**Simultaneous Transmission Scenario with NB UNII and 2.4 GHz WLAN**

Simult Tx	Configuration	NB UNII Ant WF5T SAR (W/kg)	NB UNII Ant WF5B SAR (W/kg)	2.4 GHz WLAN Ant WF8 SAR (W/kg)	2.4 GHz WLAN Ant WF7 SAR (W/kg)	$\Sigma$ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	0.067	0.172	1.106	1.184	1.423*
	Top	0.005	0.000	0.526	0.399	0.930
	Bottom	0.004	0.035	0.063	0.050	0.152
	Right	1.164	1.160	0.050	0.000	1.214*
	Left	0.027	0.008	0.000	0.243	0.278

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 45 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

**Table 10-3**  
**Simultaneous Transmission Scenario with BT Antenna WF7 and 2.4 GHz WLAN WF8**

Simult Tx	Configuration	Bluetooth Ant WF7 SAR (W/kg)	2.4 GHz WLAN Ant WF8 SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body SAR	Back	1.101	1.106	<b>1.106*</b>
	Top	0.490	0.526	1.016
	Bottom	0.009	0.063	0.072
	Right	0.010	0.050	0.060
	Left	0.078	0.000	0.078

**Table 10-4**  
**Simultaneous Transmission Scenario with Bluetooth and 6 GHz WLAN**

Simult Tx	Configuration	Bluetooth Ant WF8 SAR (W/kg)	Bluetooth Ant WF7 SAR (W/kg)	6 GHz WLAN Ant WF5T SAR (W/kg)	6 GHz WLAN Ant WF5B SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body SAR	Back	1.172	1.101	0.076	0.086	1.334*
	Top	0.480	0.490	0.004	0.001	0.975
	Bottom	0.025	0.009	0.007	0.068	0.109
	Right	0.033	0.010	0.808	0.715	<b>1.566</b>
	Left	0.000	0.078	0.004	0.016	0.098

## 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  $\leq 1.2$  W/kg where at least 90% of the SAR is attributed to a single SAR distribution or  $\leq 0.4$  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.

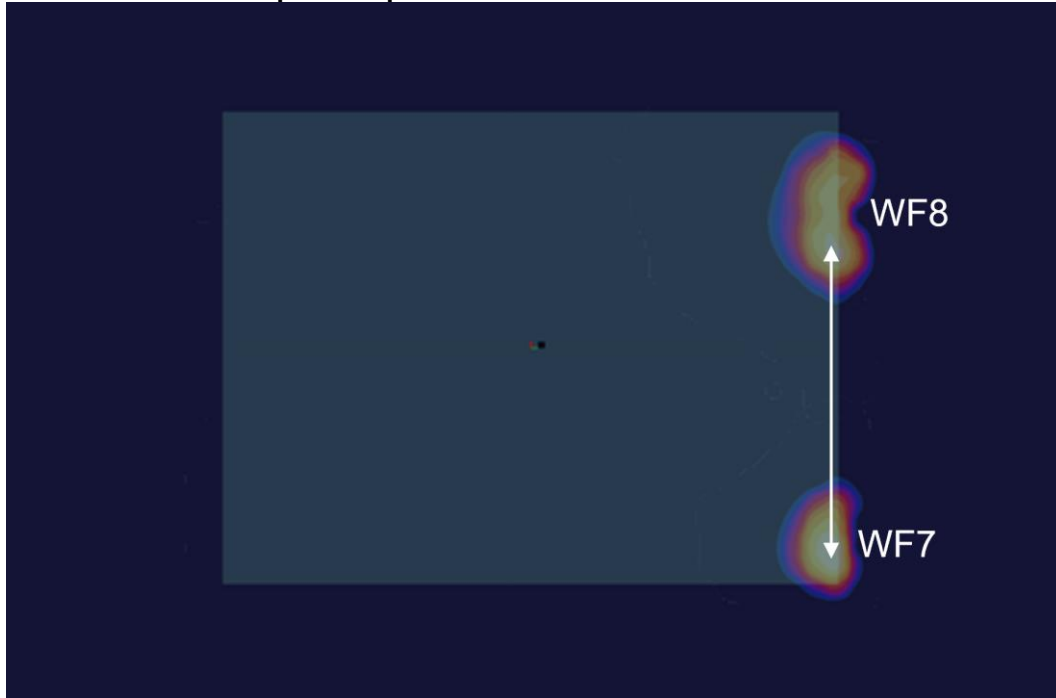
<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 46 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

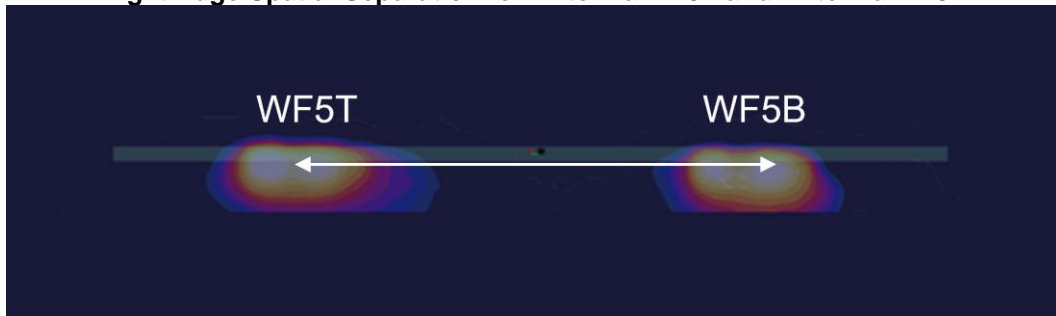
### 10.4.1 Back Side Spatial Separation Analysis

Figure 10-1  
Back Side Spatial Separation for Antenna WF8 and Antenna WF7



### 10.4.2 Right Edge Spatial Separation Analysis

Figure 10-2  
Right Edge Spatial Separation for Antenna WF5T and Antenna WF5B



## 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 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 47 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

# 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  $\geq 0.80$  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  $\geq 1.45$  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  $\geq 1.5$  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							(W/kg)	(W/kg)		(W/kg)		(W/kg)	
2450	2441.00	Bluetooth	FHSS	WF8	1	back	0 mm	1.100	1.040	1.06	N/A	N/A	N/A	N/A
5250	5230.00	802.11n, 40 MHz Bandwidth	OFDM	WF5T	13.5	right	0 mm	1.040	1.010	1.03	N/A	N/A	N/A	N/A
5600	5610.00	802.11ac, 80 MHz Bandwidth	OFDM	WF5B	29.3	right	0 mm	0.908	0.818	1.11	N/A	N/A	N/A	N/A
5750	5789.00	NB UNII 3	N/A	WF5B	1	right	0 mm	0.946	0.903	1.05	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Body  1.6 W/kg (mW/g)  averaged over 1 gram							
Spatial Peak  Uncontrolled Exposure/General Population														

## 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.

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
Document S/N: 1C2205090027-15.BCG (Rev 1)	DUT Type: Tablet Device	Page 48 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).



## 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	3/24/2022	Annual	3/24/2023	MY45093678
Agilent	E4438C	ESG Vector Signal Generator	3/22/2022	Annual	3/22/2023	US41460739
Agilent	N5182A	MXG Vector Signal Generator	1/12/2022	Annual	1/12/2023	MY47420837
Agilent	N5182A	MXG Vector Signal Generator	11/17/2021	Annual	11/17/2022	US46240505
Agilent	8753ES	S-Parameter Vector Network Analyzer	2/11/2022	Annual	2/11/2023	MY40003841
Agilent	E5515C	Wireless Communications Test Set	5/4/2021	Biennial	5/4/2023	GB41450275
Agilent	E5515C	Wireless Communications Test Set	1/14/2020	Triennial	1/14/2023	GB43304447
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	343972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	343971
Amplifier Research	150A100C	Amplifier	CBT	N/A	CBT	350132
Anritsu	MN8110B	I/O Adaptor	CBT	N/A	CBT	6261747881
Anritsu	ML2496A	Power Meter	3/31/2022	Annual	3/31/2023	1138001
Anritsu	ML2496A	Power Meter	3/29/2022	Annual	3/29/2023	1306009
Anritsu	ML2496A	Power Meter	2/11/2022	Annual	2/11/2023	1405003
Anritsu	MA2411B	Pulse Power Sensor	3/28/2022	Annual	3/28/2023	1339007
Anritsu	MA2411B	Pulse Power Sensor	3/2/2022	Annual	3/2/2023	1126066
Anritsu	MA24106A	USB Power Sensor	3/28/2022	Annual	3/28/2023	1520503
Anritsu	MA24106A	USB Power Sensor	3/28/2022	Annual	3/28/2023	1520501
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670623
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670633
Control Company	4353	Long Stem Thermometer	10/28/2020	Biennial	10/28/2022	200670635
Control Company	4040	Therm./ Clock/ Humidity Monitor	1/21/2022	Annual	1/21/2023	160574418
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	3/4/2022	Annual	3/4/2023	US46470561
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	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
Huber + Suhner	74Z-0-0-21	Torque Wrench	4/6/2022	Biennial	4/6/2024	83881
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2022	Annual	5/12/2023	1070
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	10/7/2021	Annual	10/7/2022	1045
SPEAG	MAIA	Modulation and Audio Interference Analyzer	N/A	N/A	N/A	1237
SPEAG	DAK-12	Dielectric Assessment Kit (10MHz - 3GHz)	11/16/2021	Annual	11/16/2022	1121
SPEAG	D2450V2	2450 MHz SAR Dipole	11/9/2021	Annual	11/9/2022	921
SPEAG	D5GHzV2	5 GHz SAR Dipole	3/22/2022	Annual	3/22/2023	1123
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2022	Annual	1/13/2023	793
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/21/2022	Annual	3/21/2023	1408
SPEAG	EX3DV4	SAR Probe	1/19/2022	Annual	1/19/2023	3837
SPEAG	EX3DV4	SAR Probe	3/22/2022	Annual	3/22/2023	7638

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.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 49 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 13 MEASUREMENT UNCERTAINTIES

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 <sub>i</sub> 1gm	c <sub>i</sub> 10 gms	1gm u <sub>i</sub> (± %)	10gms u <sub>i</sub> (± %)	v <sub>i</sub>
<b>Measurement System</b>									
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	∞
<b>Test Sample Related</b>									
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	∞
<b>Phantom &amp; Tissue Parameters</b>									
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 Uncertainty	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	∞
<b>Combined Standard Uncertainty (k=1)</b>							RSS	12.2	12.0
<b>Expanded Uncertainty</b> (95% CONFIDENCE LEVEL)							k=2	24.4	24.0

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

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 50 of 53

REV 22.0  
03/30/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact [CT.INFO@ELEMENT.COM](mailto:CT.INFO@ELEMENT.COM).

## 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]

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 51 of 53

REV 22.0  
03/30/2022

## 15 REFERENCES

- [1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.
- [2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.
- [3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.
- [4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.
- [5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
- [6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.
- [7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.
- [8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 1 -124.
- [9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.
- [10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.
- [11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.
- [12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.
- [13] G. Hartsgrrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.
- [14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.
- [15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.
- [16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.
- [17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 52 of 53

REV 22.0  
03/30/2022

- [18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.
- [19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hochschule Zürich, Dosimetric Evaluation of the Cellular Phone.
- [20] IEC 62209-1, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz), July 2016.
- [21] Innovation, Science, Economic Development Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 5, March 2015.
- [22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2015
- [23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07
- [24] SAR Measurement Guidance for IEEE 802.11 Transmitters, KDB Publication 248227 D01
- [25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D03-D04
- [26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04
- [27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02
- [28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02
- [29] Anexo à Resolução No. 533, de 10 de Setembro de 2009.
- [30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

<b>FCC ID:</b> BCGA2436	<b>SAR EVALUATION REPORT</b>	<b>Approved by:</b> Technical Manager
<b>Document S/N:</b> 1C2205090027-15.BCG (Rev 1)	<b>DUT Type:</b> Tablet Device	Page 53 of 53

REV 22.0  
03/30/2022