



Element Washington DC LLC

18855 Adams Court, Morgan Hill, CA 95037 USA

Tel. 410.290.6652 / Fax 410.290.6654

<http://www.element.com>



DATA REFERENCE REPORT

FCC PART 15.247 / ISED RSS-247 WLAN 802.11b/g/n/ax-SU

Applicant Name:

Apple Inc.
One Apple Park Way
Cupertino, CA 95014
United States

Date of Testing:

07/21/2022-9/12/2022

Test Site/Location:

Element Washington DC LLC, Morgan Hill, CA, USA

Test Report Serial No.:

1C2205090029-10.BCG

FCC ID:	BCGA2437
IC:	579C-A2437
APPLICANT:	Apple Inc.

Reference Model/HVIN:

A2764

Variant Model/HVIN:

A2437(A2766)

EUT Type:

Tablet Device

Frequency Range:

2412 – 2472MHz

FCC Classification:

Digital Transmission System (DTS)

FCC Rule Part(s):

Part 15 Subpart C (15.247)

ISED Specification:

RSS-247 Issue 2

Test Procedure(s):

ANSI C63.10-2013, KDB 558074 D01 v05r02

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013 and KDB 558074 D01 v05r02. Test results reported herein relate only to the item(s) tested.

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.

RJ Ortanez
Executive Vice President



FCC ID: BCGA2437		DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 1 of 15

V 1.0 03/13/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

T A B L E O F C O N T E N T S

1.0	INTRODUCTION	3
1.1	Scope	3
1.2	Element Washington DC LLC Test Location	3
1.3	Test Facility / Accreditations	3
2.0	PRODUCT INFORMATION.....	4
2.1	Equipment Description	4
2.2	Device Capabilities	4
2.3	Antenna Description	6
3.0	DESCRIPTION OF TESTS	7
3.1	Evaluations Procedure	8
3.2	Radiated Emissions.....	8
3.3	Environmental Conditions.....	8
4.0	ANTENNA REQUIREMENTS	9
5.0	MEASUREMENT UNCERTAINTY	10
6.0	TEST EQUIPMENT CALIBRATION DATA	11
7.0	TEST RESULTS (SPOT-CHECK DATA	12
7.1	Summary	12
7.2	Radiated Spurious Emission – Above 1GHz	13
8.0	CONCLUSION.....	14
9.0	APPENDIX A: REFERENCE MODEL TEST REPORT.....	15

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 2 of 15

1.0 INTRODUCTION

1.1 Scope

Per manufacturer declaration, there are two tablet models, A2764 and A2437(A2766), with high degree of similarity, reference model FCC ID: BCGA2764 / IC: 579C-A2764 and variant model **FCC ID: BCGA2437 / IC: 579C-A2437**. The reference models support mmWave operations, while the variant models have the mmWave components/antennas removed. Both models share the same material, form factor, circuit design, and components, including antennas and their locations. The reference and variant models use the same power tables and have same tune-up tolerances.

Per FCC/ISED approved Data Referencing Test Plan, testing was done fully on the reference model FCC ID: BCGA2764 / IC: 579C-A2764, while radiated and conducted spot-check verification has been performed on variant model **FCC ID: BCGA2437 / IC: 579C-A2437**. Spot-check measurements were conducted, all measurements were investigated and found to be within acceptable tolerance.

Equipment Class	Reference Model FCC ID & IC	Reference Report	Report Title
DTS	BCGA2764 579C-A2764	1C2205090028-11.BCG	RF WLAN Test Report

Table 1-1. Reference Model Details

Reference model FCC ID: BCGA2764 / IC: 579C-A2764 test report has been included in Appendix A.

1.2 Element Washington DC LLC Test Location

These measurement tests were conducted at the Element Washington DC LLC facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Washington DC LLC located in Morgan Hill, CA 95037, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (22831) test laboratory with the site description on file with ISED.

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 3 of 15

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA2437 / IC: 579C-A2437**.

Test Device Serial No.: VT04VPHP2V, HHQXGQDW0V

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), WPT, NB UNII (1x, HDR4, HDR8)

This device supports BT Beamforming

Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13*	2472
7	2442		

Table 2-1. 802.11b/g/n/ax Frequency/ Channel Operations

*Channel 13 is disabled for DTS 802.11ax HE20.

Note:

1. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance of Section 6.0 b) of KDB 558074 D01 v05r02 and ANSI C63.10-2013. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 4 of 15

Measured Duty Cycles				
802.11 Mode/Band		Duty Cycle [%]		
		Antenna 4a	Antenna 2a	CDD
2.4GHz	b	99.2	98.6	N/A
	g (Low Data Rate)	98.0	97.7	98
	g (Mid Data Rate)	96.0	96.9	96.6
	g (High Data Rate)	94.1	94.4	93.8
	n (Low Data Rate)	97.1	96.9	94.4
	n (Mid Data Rate)	96.0	96.1	92.8
	n (High Data Rate)	93.2	92.5	88.2
	11ax (SU) (Low Data Rate)	96.0	96.1	96.2
	11ax (SU) (Mid Data Rate)	95.2	94.8	95.2
	11ax (SU) (High Data Rate)	91.5	91.6	91.5

Table 2-2. Measured Duty Cycles

Below are the possible WiFi configurations.

WiFi Configurations		SISO		SDM		CDD	
		Antenna 4a	Antenna 2a	Antenna 4a	Antenna 2a	Antenna 4a	Antenna 2a
2.4GHz	11b	✓	✓	✗	✗	✗	✗
	11g	✓	✓	✓	✓	✓	✓
	11n	✓	✓	✓	✓	✓	✓
	11ax	✓	✓	✓	✓	✓	✓

✓ = Support ; ✗ = NOT Support

SISO = Single Input Single Output

SDM = Spatial Diversity Multiplexing – CDD function

CDD = Cyclic Delay Diversity - 2Tx Function

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 5 of 15



2. Data Rates Supported: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps (b)
6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps (g)
6.5/7.2Mbps, 13/14.4Mbps, 19.5/21.7Mbps, 26/28.9Mbps, 39/43.3Mbps,
52/57.8Mbps, 58.5/65Mbps, 65/72.2Mbps (n)
13/14.4Mbps, 26/28.9Mbps, 39/43.3Mbps, 52/57.8Mbps, 78/86.7Mbps,
104/115.6Mbps, 117/130Mbps, 130/144.4Mbps (CDD n)
8/8.6Mbps, 16/17.2Mbps, 24/25.8Mbps, 33/34.4Mbps, 49/51.6Mbps,
65/68.8Mbps,
73/77.4Mbps, 81/86.0Mbps, 98/103.2Mbps, 108/114.7Mbps (ax – 20MHz)
16/17.2Mbps, 32/34.4Mbps, 48/51.6Mbps, 66/68.8Mbps, 98/103.2Mbps,
130/137.6Mbps, 146/154.8Mbps, 162/172Mbps, 196/206.4Mbps,
216/229.4Mbps (CDD ax – 20MHz)

Antenna	Simultaneous Tx Config	WiFi 2.4GHz	Bluetooth	NB UNII	WiFi 5GHz	WiFi 6GHz	LTE / FR1 NR
		802.11 b/g/n/ax	BDR, EDR, HDR4/8, LE1/2M	BDR, HDR4/8	802.11 a/n/ac/ax	802.11 a/ax	Ultra High Band
2a	Config 1	✓	✗	✗	✗	✗	✓
2a	Config 2	✗	✓	✗	✗	✗	✓
4a	Config 3	✓	✗	✓	✗	✗	✗
4a	Config 4	✗	✓	✗	✓	✗	✗

Table 2-3. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

Note:

All above simultaneous transmission configurations have been tested and the worst case configuration was found to be configuration 2 (BT and LTE) and reported in RF Bluetooth and RF Part 96 test reports.

Wi-Fi 2.4GHz and Bluetooth 2.4 GHz can transmit simultaneously on separate antennas. Specific 2.4 GHz Wi-Fi antenna that can only transmit simultaneously with 2.4 GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4 GHz) in connected mode and Wi-Fi (2.4 GHz) – Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. For BT (2.4 GHz) in disconnected mode and Wi-Fi (2.4 GHz) – BT will be using iPA only and Wi-Fi max power will not exceed minimum of (SAR max cap, Reg max cap) power.

2.3 Antenna Description

Following antenna gain provided by manufacturer was used for testing.

Frequency [GHz]	Antenna Gain (dBi)	
	Antenna 4a	Antenna 2a
2.4	1.8	2.4

Table 2-4. Highest Antenna Gain

FCC ID: BCGA2437 IC: 579C-A2437		DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 6 of 15

2.4 Test Support Equipment

1	Apple MacBook Pro w/AC/DC Adapter	Model: A2141 Model: A2166	S/N:	C02DV7VKMD6T N/A
2	Apple USB-C Cable	Model: Spartan	S/N:	000MKTR02U
3	USB-C Cable w/ AC Adapter	Model: A246 Model: A2305	S/N:	N/A N/A
4	Apple Pencil	Model: N/A	S/N:	GQXGSXBJKM9
5	DC Power Supply	Model: KPS3010D	S/N:	N/A

Table 2-5. Test Support Equipment List

2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.10-2013 and KDB 558074 D01 v05r02. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, Section 3.3 for radiated emissions test setups, and, 7.2, 7.3, 7.4, 7.5, and 7.6 for antenna port conducted emissions test setups.

There are two vendors of the WiFi/Bluetooth radio modules, variant 1 and variant 2. Both radio modules have the same mechanical outline, same on-board antenna matching circuit, identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances. The worst case configuration was found between the two variants. The EUT was also investigated with and without charger.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz and above 18GHz were tested with the highest transmitting power and the worst case channel.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

Per FCC/ISED Approved Data Referencing Test Plan, spot-check measurements have been conducted and reported. Spot-Check Test Plan can be referred to below Table 2-6.

Technology	Test Case	FCC ID: BCGA2437 IC: 579C-A2437	
		Mode	Channel
WLAN (802.11b/g/n/ax-SU)	Radiated Spurious Emissions	MIMO Max Power 2.4 GHz: 11b MCS1	6

Table 2-6. FCC/ISED Approved Spot-Check Test Plan

Output powers were measured and confirmed to be consistent between Reference and Variant models prior to testing.

FCC ID: BCGA2437 IC: 579C-A2437	element		DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device		Page 7 of 15

3.0 DESCRIPTION OF TESTS

3.1 Evaluations Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 558074 D01 v05r02 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

Per KDB 414788, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was rotated about its vertical axis

while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

3.3 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

FCC ID: BCGA2437 IC: 579C-A2437	element		DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device		Page 8 of 15

4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antenna(s) of the EUT are **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT complies with the requirement of §15.203.

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 9 of 15

5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (\pm dB)
Conducted Bench Top Measurements	1.77
Line Conducted Disturbance	2.70
Radiated Disturbance (<30MHz)	4.38
Radiated Disturbance (30MHz - 1GHz)	4.75
Radiated Disturbance (1 - 18GHz)	5.20
Radiated Disturbance (>18GHz)	4.72

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 - 09/12/2022	EUT Type: Tablet Device	Page 10 of 15

6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	6/10/2022	Annual	6/10/2023	MY49430244
Agilent Technologies	N9020A	MXA Signal Analyzer	4/26/2022	Annual	4/26/2023	MY56470202
Anritsu	ML2496A	Power Meter	11/29/2021	Annual	11/29/2022	1840005
Anritsu	MA2411B	Pulse Power Sensor	11/30/2021	Annual	11/30/2022	1726261
Anritsu	MA2411B	Pulse Power Sensor	11/30/2021	Annual	11/30/2022	1726262
ATM	180-442A-KF	20dB Nominal Gain Horn Antenna	1/19/2022	Annual	1/19/2023	T058701-02
Com-Power Corporation	LIN-120A	Line Impedance Stabilization Network (LISN)	3/7/2022	Annual	3/7/2023	241296
ETS-Lindgren	3142E	Biconilog Antenna (26-6000MHz)	10/21/2021	Annual	10/21/2022	208204
ETS-Lindgren	3117	Double Ridged Guide Horn Antenna (1-18GHz)	10/25/2021	Annual	10/25/2022	227597
Keysight Technology	N9040B	UXA Signal Analyzer	2/8/2022	Annual	2/8/2023	MY57212015
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz-6GHz)	1/6/2022	Annual	1/6/2023	102328
Rohde & Schwarz	ESW26	EMI Test Receiver	5/19/2022	Annual	5/19/2023	101299
Rohde & Schwarz	ESW44	EMI Test Receiver	12/2/2021	Annual	12/2/2022	101570
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	3/4/2022	Annual	3/4/2023	101619
Rohde & Schwarz	FSVA3044	Signal Analyzer (up to 44 GHz)	5/12/2022	Annual	5/12/2023	101098
Rohde & Schwarz	HFH2-Z2	Loop Antenna	4/3/2022	Annual	4/3/2023	100546
Rohde & Schwarz	TC-TA18	Cross-Polarized Antenna 400MHz-18GHz	1/25/2022	Annual	1/25/2023	101063
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz-18GHz)	1/6/2022	Annual	1/6/2023	101639
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz-40GHz)	4/18/2022	Annual	4/18/2023	100050

Table 6-1. Test Equipment List

Notes:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 11 of 15

7.0 TEST RESULTS (SPOT-CHECK DATA)

7.1 Summary

Company Name: Apple Inc.
 FCC ID: BCGA2437
 IC: 579C-A2437
 FCC Classification: Digital Transmission System (DTS)

Technology	Test Configurations					Reference Model		Variant Model		Delta	
	Test Description	Data Rate [Mbps]	Mode	Channel Frequency [MHz]	Measurement Frequency [MHz]	FCC ID: BCGA2764	IC: 579C-A2764	FCC ID: BCGA2437	IC: 579C-A2437		
						Peak [dB μ V/m]	Average [dB μ V/m]	Peak [dB μ V/m]	Average [dB μ V/m]	Peak [dB]	Average [dB]
WLAN	Radiated Spurious Emissions	1	11b	2437	12185	52.50	41.16	51.39	41.87	1.11	0.71

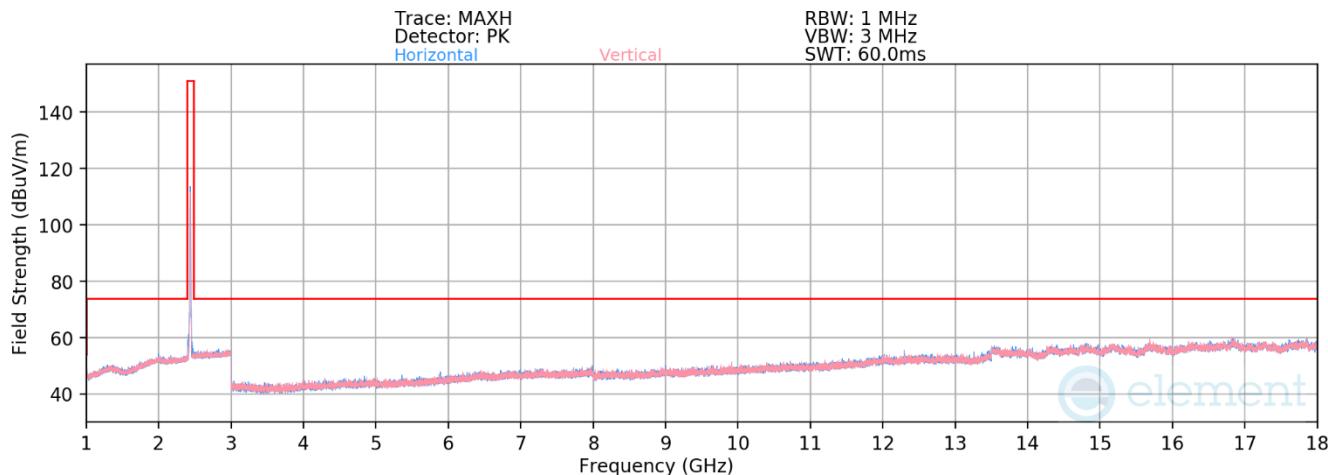
Table 7-1. Worst Case Spot-Check Results

Spot-checks were conducted, all measurements were investigated and found to be within acceptable tolerance in accordance with FCC/ISED Approved Data Referencing Test Plan

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 12 of 15

7.2 Radiated Spurious Emission – Above 1GHz

§15.205 §15.209 §15.247(d); RSS-Gen [8.9]



Plot 7-1. Radiated Spurious Emissions Above 1GHz Antenna 4a (802.11b – Ch. 6)

Mode: 802.11b
 Data Rate 1Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 2437MHz
 Channel: 06

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4874.00	Avg	H	-	-	-79.20	5.94	33.74	53.98	-20.24
4874.00	Peak	H	-	-	-67.96	5.94	44.97	73.98	-29.00
7311.00	Avg	H	-	-	-80.77	9.22	35.45	53.98	-18.53
7311.00	Peak	H	-	-	-69.73	9.22	46.49	73.98	-27.49
12185.00	Avg	H	-	-	-81.53	16.40	41.87	53.98	-12.10
12185.00	Peak	H	-	-	-72.01	16.40	51.39	73.98	-22.59

Table 7-2. Radiated Measurements Antenna 4a

FCC ID: BCGA2437 IC: 579C-A2437		DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 13 of 15

8.0 CONCLUSION

The spot-check data measured for variant model **FCC ID: BCGA2437 / IC: 579C-A2437** is in tolerance with reference model FCC ID: BCGA2764 / IC: 579C-A2764 per FCC/ISED Approved Data Referencing Test Plan.

FCC ID: BCGA2437 IC: 579C-A2437	 element	DATA REFERENCE REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 14 of 15



9.0 APPENDIX A: REFERENCE MODEL TEST REPORT

Attached is the test report (1C2205090028-11.BCG) from reference model FCC ID: BCGA2764 / IC: 579C-A2764, which includes referenced data results.

FCC ID: BCGA2437 IC: 579C-A2437	DATA REFERENCE REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1C2205090029-10.BCG	Test Dates: 07/21/2022 – 09/12/2022	EUT Type: Tablet Device	Page 15 of 15

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

V 1.0 03/13/2021



Element Washington DC LLC

18855 Adams Court, Morgan Hill, CA 95037 USA

Tel. 410.290.6652 / Fax 410.290.6654

<http://www.element.com>



MEASUREMENT REPORT

FCC PART 15.247 / ISED RSS-247 WLAN 802.11b/g/n/ax-SU

Applicant Name:

Apple Inc.
One Apple Park Way
Cupertino, CA 95014
United States

Date of Testing:

07/21/2022-9/12/2022

Test Site/Location:

Element Washington DC LLC, Morgan Hill, CA, USA

Test Report Serial No.:

1C2205090028-11.BCG

FCC ID:	BCG2764
IC:	579C-A2764
APPLICANT:	Apple Inc.

Application Type: Certification
Model/HVIN: A2764
EUT Type: Tablet Device
Frequency Range: 2412 – 2472MHz
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (15.247)
ISED Specification: RSS-247 Issue 2
Test Procedure(s): ANSI C63.10-2013, KDB 558074 D01 v05r02,
KDB 662911 D01 v02r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013 and KDB 558074 D01 v05r02. Test results reported herein relate only to the item(s) tested.

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.

RJ Ortanez
Executive Vice President



CERT #2041.02

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 1 of 429

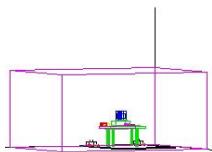
V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

T A B L E O F C O N T E N T S

1.0	INTRODUCTION.....	4
1.1	Scope	4
1.2	Element Test Location.....	4
1.3	Test Facility / Accreditations.....	4
2.0	PRODUCT INFORMATION	5
2.1	Equipment Description	5
2.2	Device Capabilities.....	5
	Antenna Description.....	8
2.3	Test Support Equipment.....	8
2.4	Test Configuration	8
2.5	Software and Firmware	9
2.6	EMI Suppression Device(s)/Modifications	9
3.0	DESCRIPTION OF TESTS	10
3.1	Evaluation Procedure	10
3.2	AC Line Conducted Emissions	10
3.3	Radiated Emissions.....	11
3.4	Environmental Conditions.....	11
4.0	ANTENNA REQUIREMENTS	12
5.0	MEASUREMENT UNCERTAINTY.....	13
6.0	TEST EQUIPMENT CALIBRATION DATA.....	14
7.0	TEST RESULTS.....	15
7.1	Summary.....	15
7.2	6dB BW and 99% OBW Measurement.....	16
7.3	Output Power Measurement.....	54
7.3.1	Average Output Power Measurement	55
7.3.2	Peak Output Power Measurement	61
7.4	Power Spectral Density	68
7.5	Conducted Authorized Band Edge	135
7.6	Conducted Spurious Emissions.....	263
7.7	Radiated Spurious Emissions – Above 1 GHz	271
7.7.1	Antenna 4a Radiated Spurious Emission Measurements.....	274
7.7.2	Antenna 2a Radiated Spurious Emission Measurements.....	280
7.7.3	CDD Radiated Spurious Emission Measurements	286
7.7.4	Antenna 4a Radiated Restricted Band Edge Measurements.....	294
7.7.5	Antenna 2a Radiated Restricted Band Edge Measurements.....	337
7.7.6	CDD Radiated Restricted Band Edge Measurements	380
7.8	Radiated Spurious Emissions – Below 1GHz.....	418
7.9	AC Line-Conducted Emissions Measurement	423
8.0	CONCLUSION	429

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 2 of 429



MEASUREMENT REPORT



Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)						
802.11g	2412 - 2472	125.893	21.00	484.172	26.85	125.603	20.99	444.631	26.48
802.11n	2412 - 2472	124.738	20.96	493.174	26.93	123.595	20.92	428.549	26.32
802.11ax (SU)	2412 - 2467	109.144	20.38	442.588	26.46	105.196	20.22	401.791	26.04

EUT Overview SISO (Low Data Rate)

Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a				CDD			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)										
802.11g	2412 - 2472	123.880	20.93	469.894	26.72	123.027	20.90	465.586	26.68	247.172	23.93	933.254	29.70
802.11n	2412 - 2472	125.314	20.98	511.682	27.09	125.314	20.98	464.515	26.67	248.886	23.96	972.747	29.88
802.11ax (SU)	2412 - 2467	97.499	19.89	408.319	26.11	100.000	20.00	409.261	26.12	197.697	22.96	818.465	29.13

EUT Overview CDD (Low Data Rate)

Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a				CDD			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)										
802.11g	2412 - 2472	120.781	20.82	440.555	26.44	121.619	20.85	404.576	26.07	247.172	23.93	933.254	29.70
802.11n	2412 - 2472	118.304	20.73	473.151	26.75	117.761	20.71	430.527	26.34	248.886	23.96	972.747	29.88
802.11ax (SU)	2412 - 2467	107.152	20.30	452.898	26.56	106.170	20.26	417.830	26.21	240.436	23.81	903.649	29.56

EUT Overview SISO (Mid Data Rate)

Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a				CDD			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)										
802.11g	2412 - 2472	124.738	20.96	449.780	26.53	122.744	20.89	406.443	26.09	247.742	23.94	857.038	29.33
802.11n	2412 - 2472	120.781	20.82	473.151	26.75	119.399	20.77	429.536	26.33	240.436	23.81	903.649	29.56
802.11ax (SU)	2412 - 2467	97.499	19.91	437.522	26.41	97.724	19.90	406.443	26.09	194.984	22.90	843.335	29.26

EUT Overview CDD (Mid Data Rate)

Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a				CDD			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)										
802.11b	2412 - 2472	125.603	20.99	232.809	23.67	125.603	20.99	229.087	23.60	247.172	23.93	933.254	29.70
802.11g	2412 - 2472	123.027	20.90	355.631	25.51	124.165	20.94	358.922	25.55	248.886	23.96	972.747	29.88
802.11n	2412 - 2472	122.462	20.88	470.977	26.73	121.339	20.84	423.643	26.27	240.436	23.81	903.649	29.56
802.11ax (SU)	2412 - 2467	111.173	20.46	466.659	26.69	109.901	20.41	421.697	26.25	238.742	23.74	843.335	29.26

EUT Overview SISO (High Data Rate)

Mode	Tx Frequency (MHz)	Antenna 4a				Antenna 2a				CDD			
		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
		Max. Power (mW)	Max. Power (dBm)										
802.11g	2412 - 2472	106.660	20.28	399.025	26.01	107.647	20.32	404.576	26.07	214.289	23.31	803.526	29.05
802.11n	2412 - 2472	109.648	20.40	243.781	23.87	109.901	20.41	197.697	22.96	219.786	23.42	441.570	26.45
802.11ax (SU)	2412 - 2467	90.365	19.56	325.837	25.13	91.622	19.62	323.594	25.10	181.970	22.60	650.130	28.13

EUT Overview CDD (High Data Rate)

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)								Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device								Page 3 of 429

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Washington DC LLC Test Location

These measurement tests were conducted at the Element Washington DC LLC facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Washington DC LLC located in Morgan Hill, CA 95037, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (22831) test laboratory with the site description on file with ISED.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 4 of 429



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCG2764, IC: 579C-A2764**. The test data contained in this report pertains only to the emissions due to the EUT's WLAN (DTS) transmitter.

Test Device Serial No.: DLX2237005M22Y21Z, H4QHXFRX21, QJKGFW0NP, M34YQC3PX6

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1/FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), WPT, NB UNII (1x, HDR4, HDR8)

This device supports BT Beamforming

Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13*	2472
7	2442		

Table 2-1. 802.11b/g/n/ax Frequency/ Channel Operations

*Channel 13 is disabled for DTS 802.11ax HE20.

Note: The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance of Section 6.0 b) of KDB 558074 D01 v05r02 and ANSI C63.10-2013. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

FCC ID: BCG2764 IC: 579C-A2764	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 5 of 429

Measured Duty Cycles				
802.11 Mode/Band		Duty Cycle [%]		
		Antenna 4a	Antenna 2a	CDD
2.4GHz	b	99.2	98.6	N/A
	g (Low Data Rate)	98.0	97.7	98
	g (Mid Data Rate)	96.0	96.9	96.6
	g (High Data Rate)	94.1	94.4	93.8
	n (Low Data Rate)	97.1	96.9	94.4
	n (Mid Data Rate)	96.0	96.1	92.8
	n (High Data Rate)	93.2	92.5	88.2
	11ax (SU) (Low Data Rate)	96.0	96.1	96.2
	11ax (SU) (Mid Data Rate)	95.2	94.8	95.2
	11ax (SU) (High Data Rate)	91.5	91.6	91.5

Table 2-2. Measured Duty Cycles

Below are the possible WiFi configurations.

WiFi Configurations		SISO		SDM		CDD	
		Antenna 4a	Antenna 2a	Antenna 4a	Antenna 2a	Antenna 4a	Antenna 2a
2.4GHz	11b	✓	✓	✗	✗	✗	✗
	11g	✓	✓	✓	✓	✓	✓
	11n	✓	✓	✓	✓	✓	✓
	11ax	✓	✓	✓	✓	✓	✓

Table 2-3. Wi-Fi Configurations

✓ = Support ; ✗ = NOT Support

SISO = Single Input Single Output

SDM = Spatial Diversity Multiplexing – CDD function

CDD = Cyclic Delay Diversity - 2Tx Function

Data Rates Supported: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps (b)

6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps (g)

6.5/7.2Mbps, 13/14.4Mbps, 19.5/21.7Mbps, 26/28.9Mbps, 39/43.3Mbps, 52/57.8Mbps, 58.5/65Mbps, 65/72.2Mbps (n)

13/14.4Mbps, 26/28.9Mbps, 39/43.3Mbps, 52/57.8Mbps, 78/86.7Mbps, 104/115.6Mbps, 117/130Mbps, 130/144.4Mbps (CDD n)

8/8.6Mbps, 16/17.2Mbps, 24/25.8Mbps, 33/34.4Mbps, 49/51.6Mbps, 65/68.8Mbps, 73/77.4Mbps, 81/86.0Mbps, 98/103.2Mbps, 108/114.7Mbps (ax – 20MHz)

16/17.2Mbps, 32/34.4Mbps, 48/51.6Mbps, 66/68.8Mbps, 98/103.2Mbps, 130/137.6Mbps, 146/154.8Mbps, 162/172Mbps, 196/206.4Mbps, 216/229.4Mbps (CDD ax – 20MHz)

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 6 of 429 V 10.5 12/15/2021



This device supports simultaneous transmission operations, which allows for multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

Antenna	Simultaneous Tx Config	WiFi 2.4GHz	Bluetooth	NB UNII	WiFi 5GHz	WiFi 6GHz	LTE / FR1 NR
		802.11 b/g/n/ax	BDR, EDR, HDR4/8, LE1/2M	BDR, HDR4/8	802.11 a/n/ac/ax	802.11 a/ax	Ultra High Band
2a	Config 1	✓	✗	✗	✗	✗	✓
2a	Config 2	✗	✓	✗	✗	✗	✓
4a	Config 3	✓	✗	✓	✗	✗	✗
4a	Config 4	✗	✓	✗	✓	✗	✗

Table 2-4. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

Note:

All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be config 2 and reported in RF Bluetooth and FCC RF Part 96 test reports.

Wi-Fi 2.4GHz and Bluetooth 2.4 GHz can transmit simultaneously on separate antennas. Specific 2.4 GHz Wi-Fi antenna that can only transmit simultaneously with 2.4 GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4 GHz) in connected mode and Wi-Fi (2.4 GHz) – Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. For BT (2.4 GHz) in disconnected mode and Wi-Fi (2.4 GHz) – BT will be using iPA only and Wi-Fi max power will not exceed minimum of (SAR max cap, Reg max cap) power.

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 7 of 429

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

2.3 Antenna Description

Following antenna gains provided by manufacturer were used for the testing.

Frequency [GHz]	Antenna Gain (dBi)	
	Antenna 4a	Antenna 2a
2.4	1.8	2.4

Table 2-5. Highest Antenna Gain

2.4 Test Support Equipment

Test Support Equipment List				
1	Apple MacBook Pro w/AC/DC Adapter	Model: A2141 Model: A2166	S/N:	C02DV7VKMD6T N/A
2	Apple USB-C Cable	Model: Spartan	S/N:	000MKTR02U
3	USB-C Cable w/ AC Adapter	Model: A246 Model: A2305	S/N:	N/A N/A
4	Apple Pencil	Model: N/A	S/N:	GQXGSXBJKM9
5	DC Power Supply	Model: KPS3010D	S/N:	N/A

Table 2-6. Test Support Equipment List

2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.10-2013 and KDB 558074 D01 v05r02. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, Section 3.3 for radiated emissions test setups, and, 7.2, 7.3, 7.4, 7.5, and 7.6 for antenna port conducted emissions test setups.

There are two vendors of the WiFi/Bluetooth radio modules, variant 1 and variant 2. Both radio modules have the same mechanical outline, same on-board antenna matching circuit, identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances. The worst case configuration was found between the two variants. The EUT was also investigated with and without charger.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz and above 18GHz were tested with the highest transmitting power and the worst case channel.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

For AC line conducted and radiated test below 1GHz, following configuration were investigated and EUT powered by AC/DC was the worst case.

- EUT powered by AC/DC adaptor via USB-C cable with wire charger
- EUT powered by host PC via USB-C cable with wire charger

802.11n CDD mode test data provided in this report covers 802.11n SDM.

802.11ax-SU HE20 2TX CDD mode test data provided in this report covers 802.11ax-SU HE20 2TX SDM.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 8 of 429



The data rates have been classified into three different groups; low data rate, middle data rate, and high data rate. All three groups of data rate have been investigated and only the worst case data rate per group is reported. The worst case data rate for each group per mode are as follows:

- 802.11b
 - 11Mbps
- 802.11g
 - Low Data Rate: 12Mbps
 - Mid Data Rate 18Mbps
 - High Data Rate: 36Mbps
- 802.11n
 - Low Data Rate: MCS2/MCS10 (SISO/CDD)
 - Mid Data Rate: MCS3/MCS11 (SISO/CDD)
 - High Data Rate: MCS5/MCS13 (SISO/CDD)
- 802.11ax(SU)
 - Low Data Rate: MCS2
 - Mid Data Rate: MCS3
 - High Data Rate: MCS5

For 802.11ax-RU test results, see separate WLAN (OFDMA) report, 1C2205090028-12.BCG

2.6 Software and Firmware

The test was conducted with firmware version 20A8359 installed on the EUT.

2.7 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 9 of 429

3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 558074 D01 v05r02 were used in the measurement of the EUT.

Deviation from measurement procedure.....**None**

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 7m x 3.66m x 2.7m shielded enclosure. The shielded enclosure is manufactured by AP Americas. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-6. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50µH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is EPCOS 2X60A Power Line Filter (100dB Attenuation, 14kHz-18GHz) and the two EPCOs 2X48A filters (100dB Minimum Insertion Loss, 14kHz - 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that the cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

Line conducted emissions test results are shown in Section 7.9. Automated test software was used to perform the AC line conducted emissions testing. Automated measurement software utilized is Rohde & Schwarz EMC32, Version 10.50.40.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 10 of 429 V 10.5 12/15/2021

3.3 Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

Per KDB 414788 D01 v01r01, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was rotated about its vertical axis while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

FCC ID: BCG2764 IC: 579C-A2764	 element		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device		Page 11 of 429

4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antennas of the EUT are **permanently attached**.
- There are no provisions for connections to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 12 of 429

5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (\pm dB)
Conducted Bench Top Measurements	1.77
Line Conducted Disturbance	2.70
Radiated Disturbance (<30MHz)	4.38
Radiated Disturbance (30MHz - 1GHz)	4.75
Radiated Disturbance (1 - 18GHz)	5.20
Radiated Disturbance (>18GHz)	4.72

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 13 of 429

6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	6/10/2022	Annual	6/10/2023	MY49430244
Agilent Technologies	N9020A	MXA Signal Analyzer	4/26/2022	Annual	4/26/2023	MY56470202
Anritsu	ML2496A	Power Meter	11/29/2021	Annual	11/29/2022	1840005
Anritsu	MA2411B	Pulse Power Sensor	11/30/2021	Annual	11/30/2022	1726261
Anritsu	MA2411B	Pulse Power Sensor	11/30/2021	Annual	11/30/2022	1726262
ATM	180-442A-KF	20dB Nominal Gain Horn Antenna	1/19/2022	Annual	1/19/2023	T058701-02
Com-Power Corporation	LIN-120A	Line Impedance Stabilization Network (LISN)	3/7/2022	Annual	3/7/2023	241296
ETS-Lindgren	3142E	Biconilog Antenna (26-6000MHz)	10/21/2021	Annual	10/21/2022	208204
ETS-Lindgren	3117	Double Ridged Guide Horn Antenna (1-18GHz)	10/25/2021	Annual	10/25/2022	227597
Keysight Technology	N9040B	UXA Signal Analyzer	2/8/2022	Annual	2/8/2023	MY57212015
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz-6GHz)	1/6/2022	Annual	1/6/2023	102328
Rohde & Schwarz	ESW26	EMI Test Receiver	5/19/2022	Annual	5/19/2023	101299
Rohde & Schwarz	ESW44	EMI Test Receiver	12/2/2021	Annual	12/2/2022	101570
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	3/4/2022	Annual	3/4/2023	101619
Rohde & Schwarz	FSVA3044	Signal Analyzer (up to 44 GHz)	5/12/2022	Annual	5/12/2023	101098
Rohde & Schwarz	HFH2-Z2	Loop Antenna	4/3/2022	Annual	4/3/2023	100546
Rohde & Schwarz	TC-TA18	Cross-Polarized Antenna 400MHz-18GHz	1/25/2022	Annual	1/25/2023	101063
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz-18GHz)	1/6/2022	Annual	1/6/2023	101639
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz-40GHz)	4/18/2022	Annual	4/18/2023	100050

Table 6-1. Test Equipment List

Note:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 14 of 429 V 10.5 12/15/2021

7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.

FCC ID: BCG2764

IC: 579C-A2764

FCC Classification: Digital Transmission System (DTS)

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	RSS-247 [5.2]	6dB Bandwidth	> 500kHz	CONDUCTED	PASS	Section 7.2
2.1049	RSS-Gen [6.7]	Occupied Bandwidth	N/A		N/A	Section 7.2
15.247(b)(3)	RSS-247 [5.4]	Transmitter Output Power	< 1 Watt		PASS	Sections 7.3
15.247(e)	RSS-247 [5.2]	Transmitter Power Spectral Density	< 8dBm / 3kHz Band		PASS	Section 7.4
15.247(d)	RSS-247 [5.5]	Band Edge / Out-of-Band Emissions	≥ 20dBc		PASS	Sections 7.5, 7.6
15.205 15.209	RSS-Gen [8.9]	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-Gen [8.9])	RADIATED	PASS	Sections 7.7, 7.8
15.207	RSS-Gen [8.8]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits (RSS-Gen[8.8])	AC LINE CONDUCTED	PASS	Section 7.9

Table 7-1. Summary of Test Results

Notes:

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
3. All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.
4. For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is Element "WLAN Automation," Version 5.0.
5. For radiated band edge, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is Element "Chamber Automation," Version 1.3.2.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 15 of 429

7.2 6dB BW and 99% OBW Measurement

§15.247(a.2); §2.1049; RSS-247 [5.2]; RSS-Gen [6.7]

Test Overview and Limit

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the transmitter antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated and the worst case configuration results are reported in this section.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible 6dB bandwidth is 500 kHz.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.8.2 Option 2

KDB 558074 D01 v05r02 – Section 8.2

RSS-Gen [6.7]

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 99% occupied bandwidth and the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 100kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, step 2 – 7 were repeated after changing the RBW such that it would be within 1 -5% of the 99% occupied bandwidth observed in Step 7

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 16 of 429

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-1. Test Instrument & Measurement Setup

Test Notes

The data rates have been classified into three different groups: low data rate, middle data rate, and high data rate. All three data rate groups have been investigated and only the worst case data rate per groups is reported.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 17 of 429



Antenna 4a 6dB BW and 99% OBW Measurements

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	g	12	16.562	16.371	0.500	Pass
2437	6	g	12	16.463	16.416	0.500	Pass
2462	11	g	12	16.598	15.813	0.500	Pass
2412	1	n	19.5/21.7 (MCS2)	17.697	17.201	0.500	Pass
2437	6	n	19.5/21.7 (MCS2)	17.658	17.584	0.500	Pass
2462	11	n	19.5/21.7 (MCS2)	17.714	16.667	0.500	Pass
2412	1	ax (SU)	24/25.8 (MCS2)	18.909	18.809	0.500	Pass
2437	6	ax (SU)	24/25.8 (MCS2)	18.919	19.056	0.500	Pass
2462	11	ax (SU)	24/25.8 (MCS2)	18.919	18.365	0.500	Pass

Table 7-2. Conducted Bandwidth Measurements Antenna 4a (Low Data Rate)

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	g	18	16.543	16.096	0.500	Pass
2437	6	g	18	16.473	16.421	0.500	Pass
2462	11	g	18	16.571	16.054	0.500	Pass
2412	1	n	26/28.9 (MCS3)	17.685	17.759	0.500	Pass
2437	6	n	26/28.9 (MCS3)	17.671	17.732	0.500	Pass
2462	11	n	26/28.9 (MCS3)	17.656	17.725	0.500	Pass
2412	1	ax (SU)	33/34.4 (MCS3)	18.900	19.033	0.500	Pass
2437	6	ax (SU)	33/34.4 (MCS3)	18.946	19.088	0.500	Pass
2462	11	ax (SU)	33/34.4 (MCS3)	18.919	19.050	0.500	Pass

Table 7-3. Conducted Bandwidth Measurements Antenna 4a (Mid Data Rate)

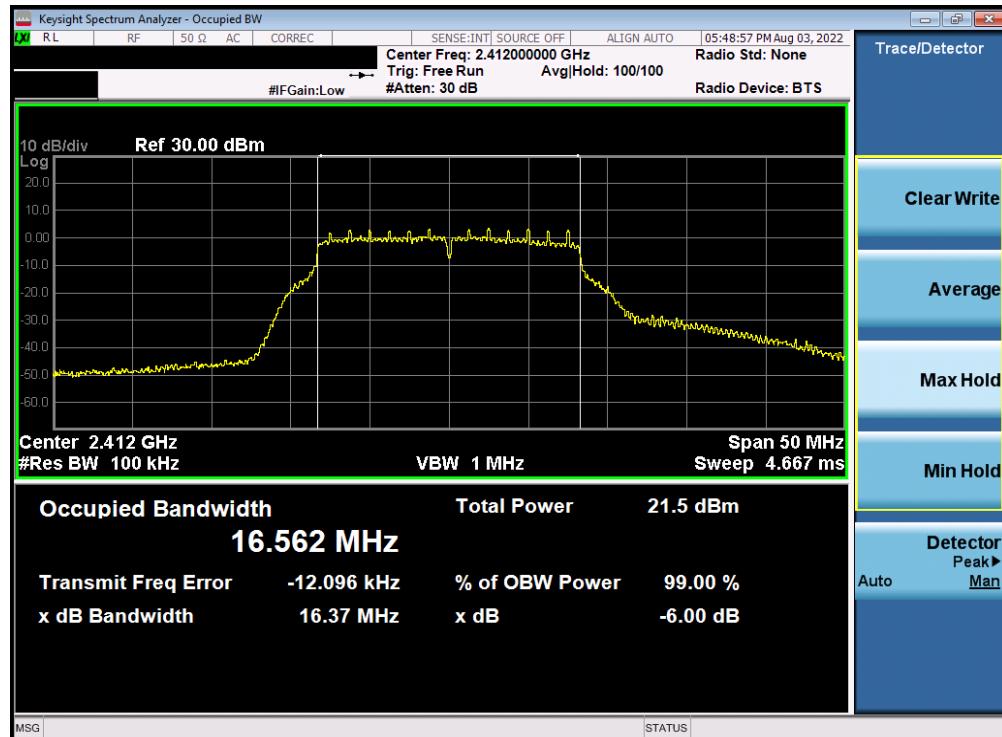
FCC ID: BCG2764 IC: 579C-A2764	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 18 of 429

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	b	11	12.758	8.880	0.500	Pass
2437	6	b	11	12.783	8.605	0.500	Pass
2462	11	b	11	12.763	8.391	0.500	Pass
2412	1	g	36	16.460	16.504	0.500	Pass
2437	6	g	36	16.466	16.501	0.500	Pass
2462	11	g	36	16.436	16.490	0.500	Pass
2412	1	n	52/57.8 (MCS5)	17.668	17.755	0.500	Pass
2437	6	n	52/57.8 (MCS5)	17.711	17.752	0.500	Pass
2462	11	n	52/57.8 (MCS5)	17.671	17.744	0.500	Pass
2412	1	ax (SU)	65/68.8 (MCS5)	18.949	19.094	0.500	Pass
2437	6	ax (SU)	65/68.8 (MCS5)	18.979	19.115	0.500	Pass
2462	11	ax (SU)	65/68.8 (MCS5)	18.956	19.134	0.500	Pass

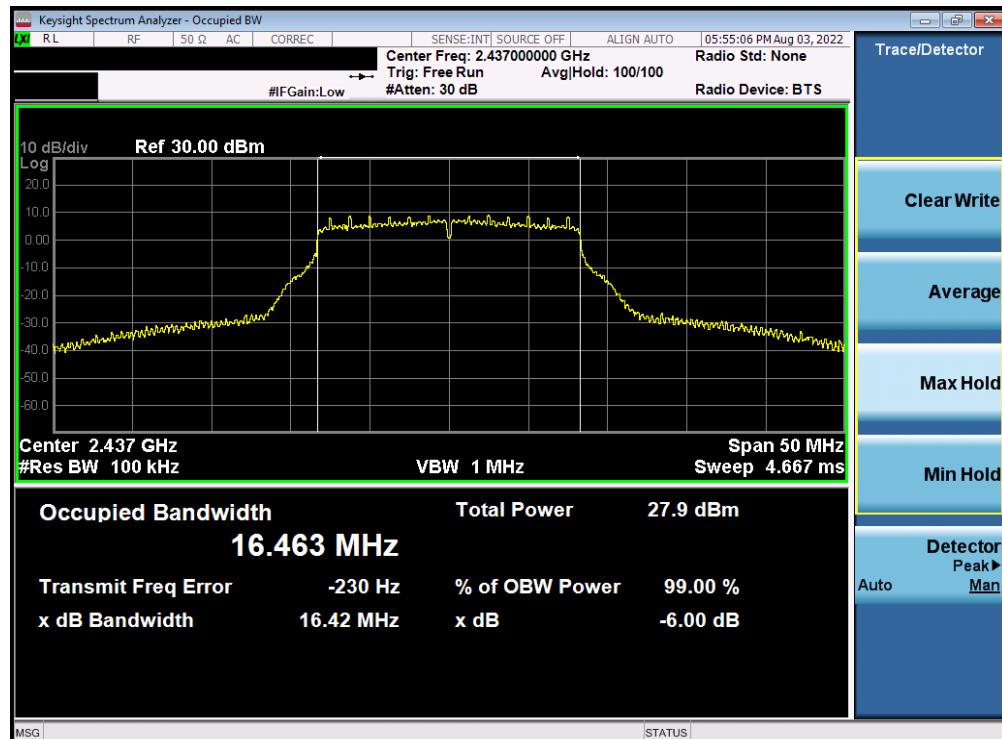
Table 7-4. Conducted Bandwidth Measurements Antenna 4a (High Data Rate)

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 19 of 429

Low Data Rate



Plot 7-1. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 1) – 12Mbps

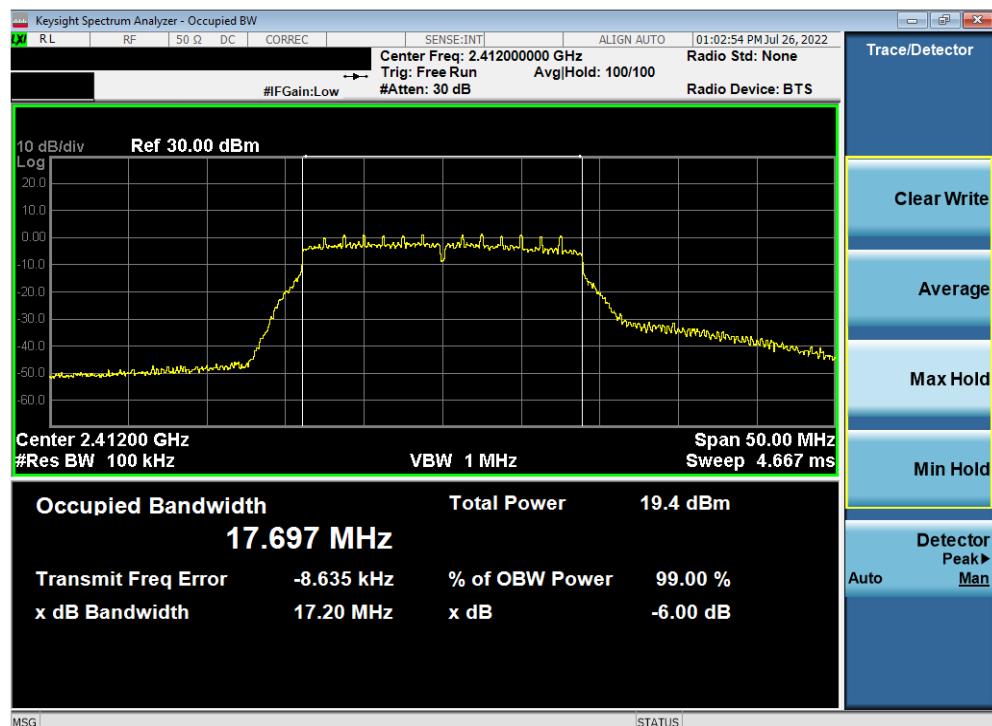


Plot 7-2. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 6) – 12Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 20 of 429

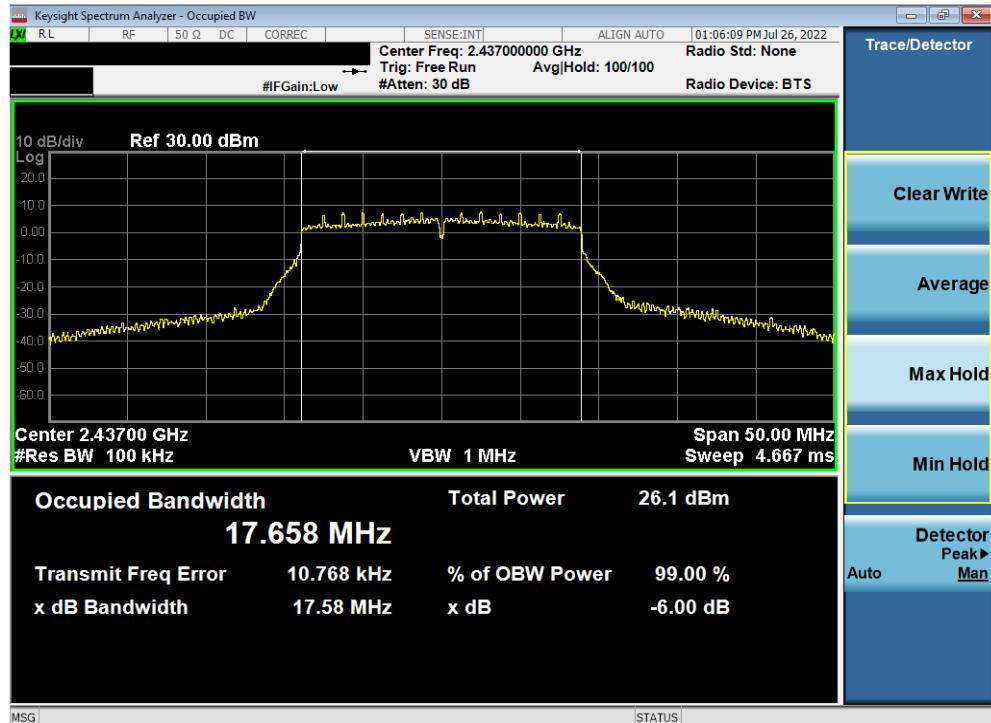


Plot 7-3. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 11) – 12Mbps

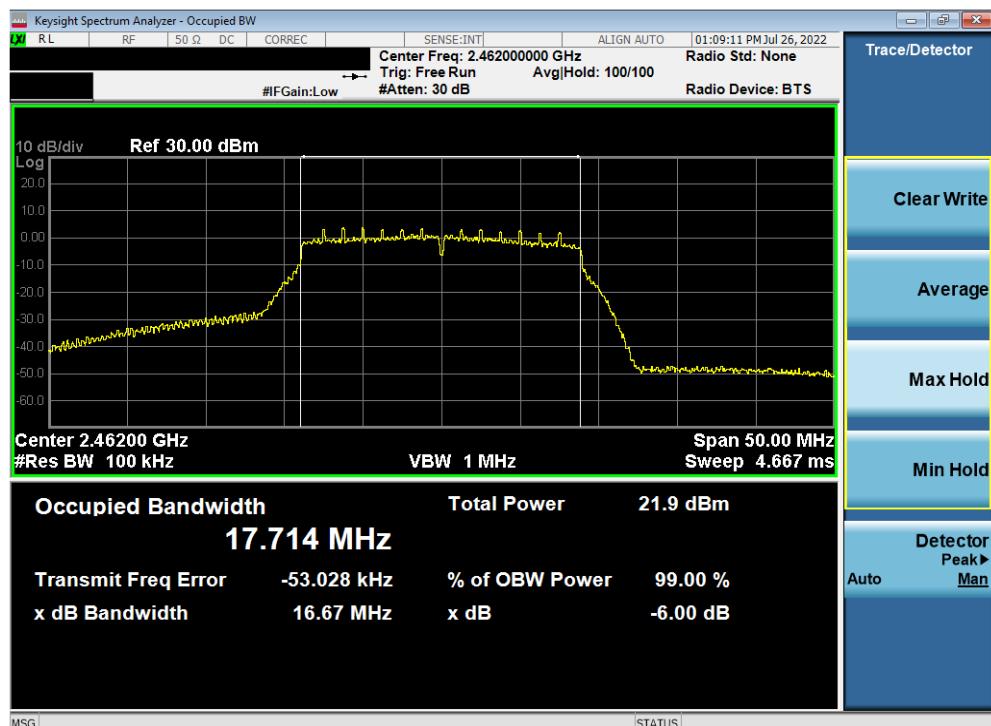


Plot 7-4. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS2

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 21 of 429

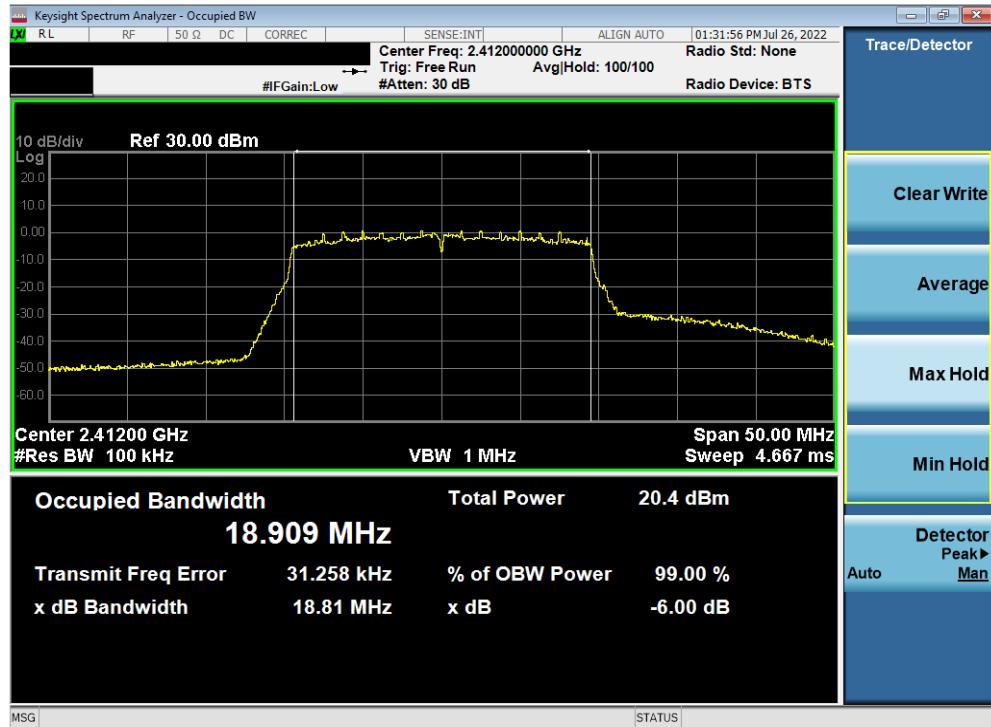


Plot 7-5. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS2

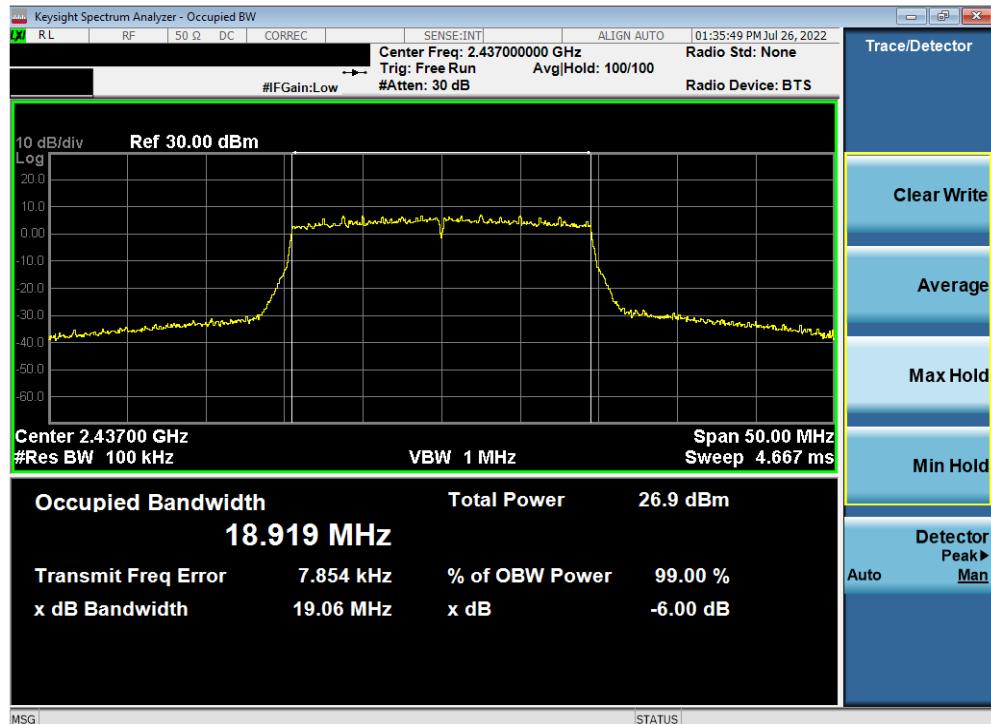


Plot 7-6. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS2

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 22 of 429

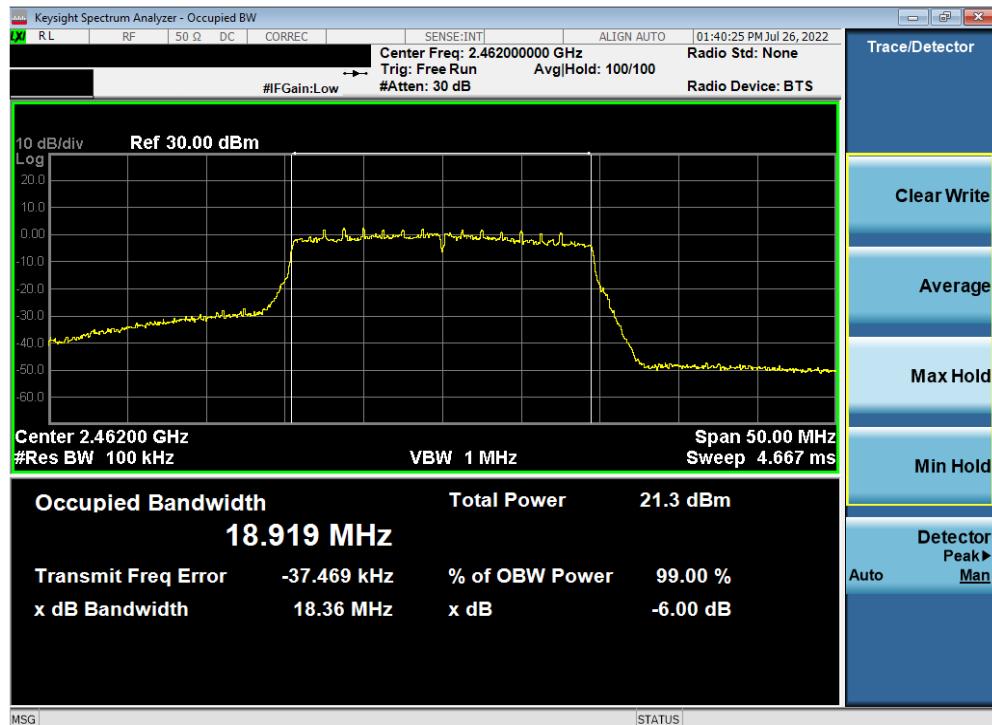


Plot 7-7. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS2



Plot 7-8. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS2

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 23 of 429



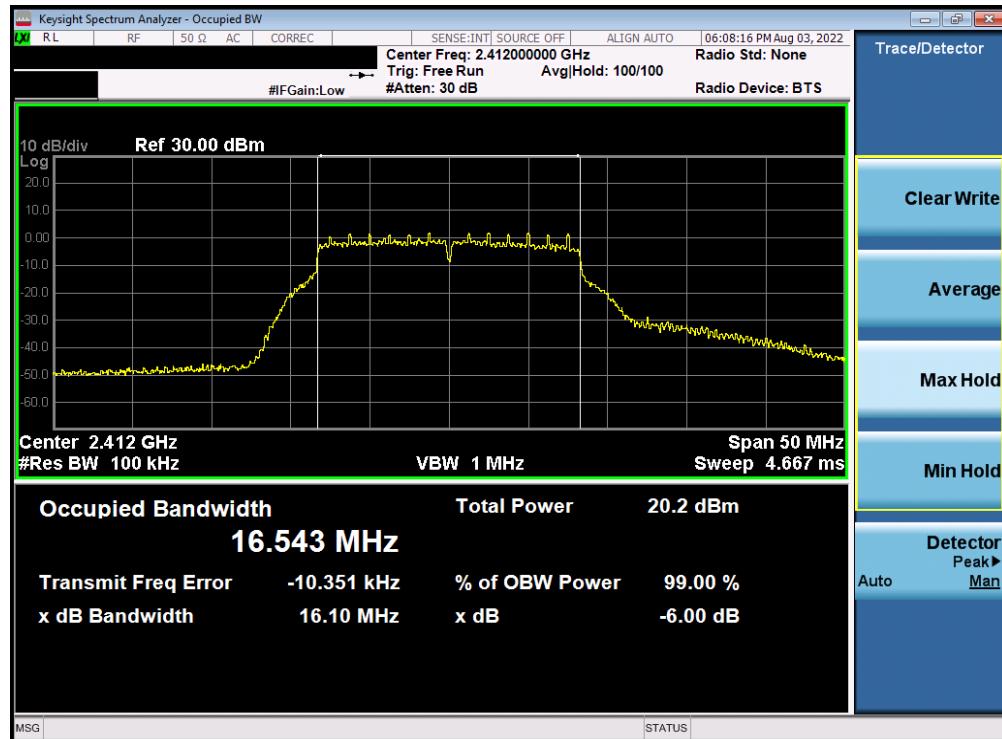
Plot 7-9. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 11) – MCS2

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 24 of 429

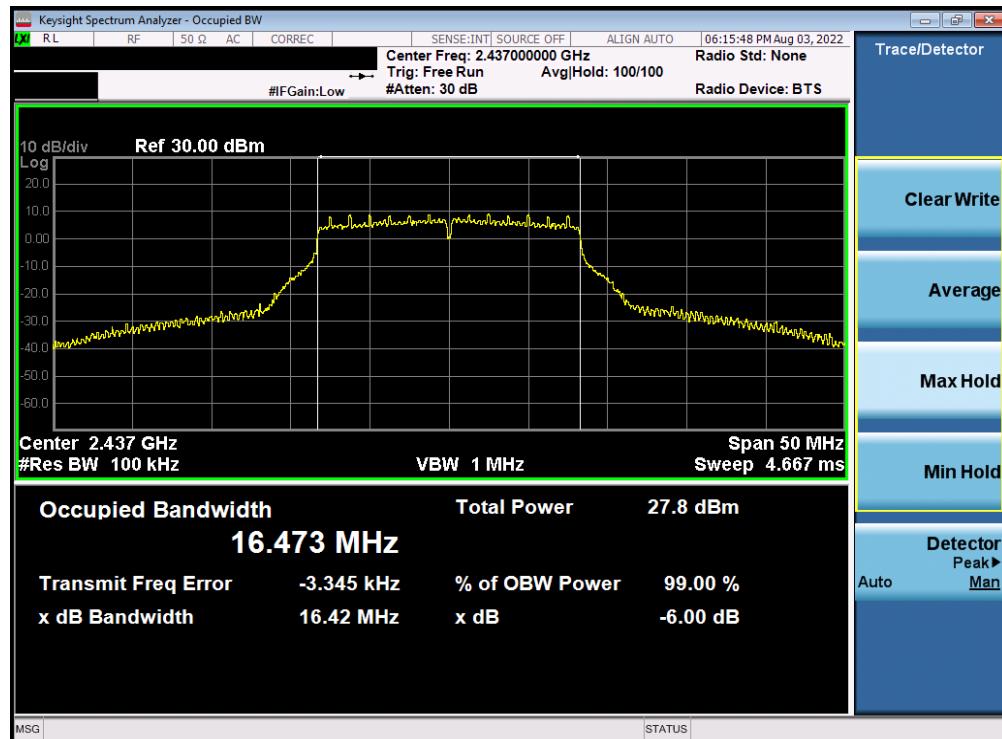
V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Mid Data Rate

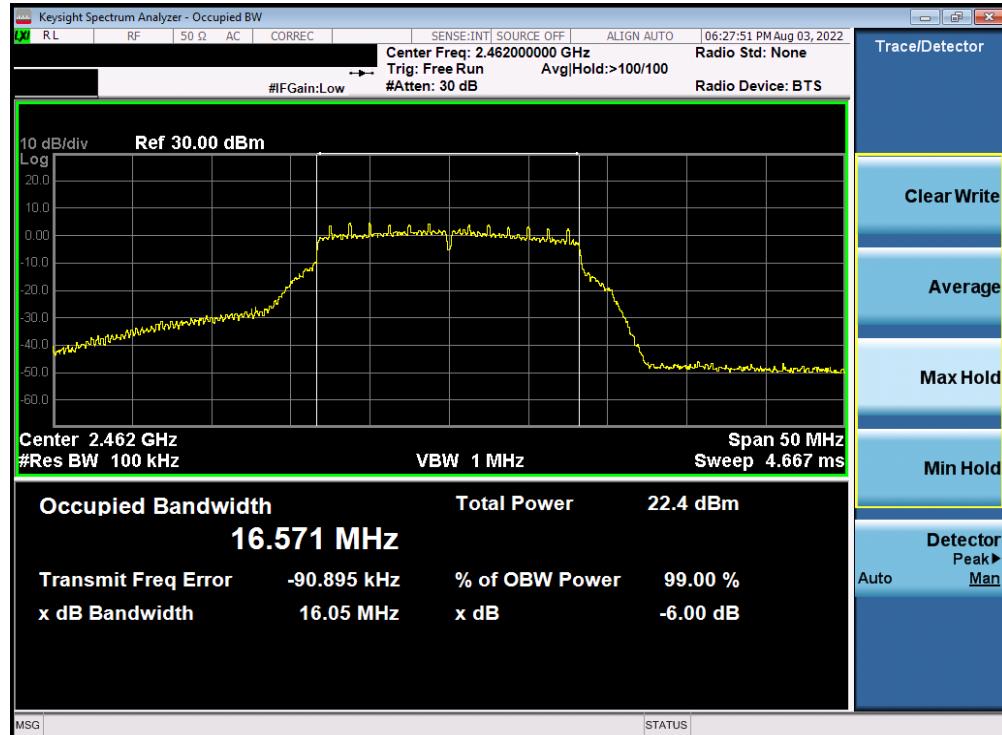


Plot 7-10. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 1) – 18Mbps

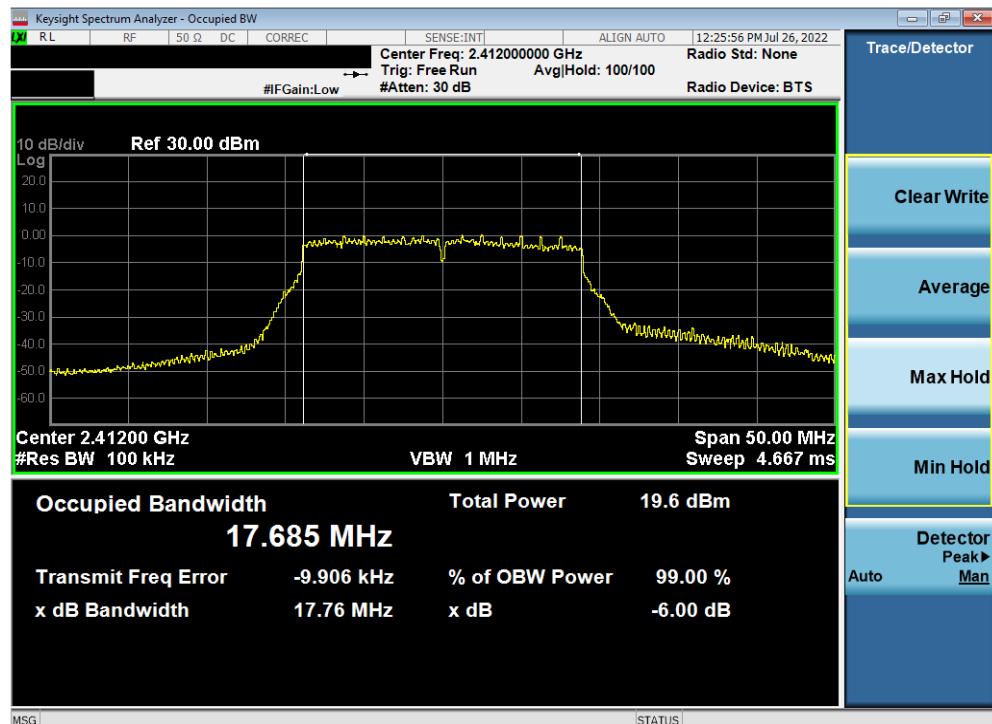


Plot 7-11. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 6) – 18Mbps

FCC ID: BCG2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 25 of 429

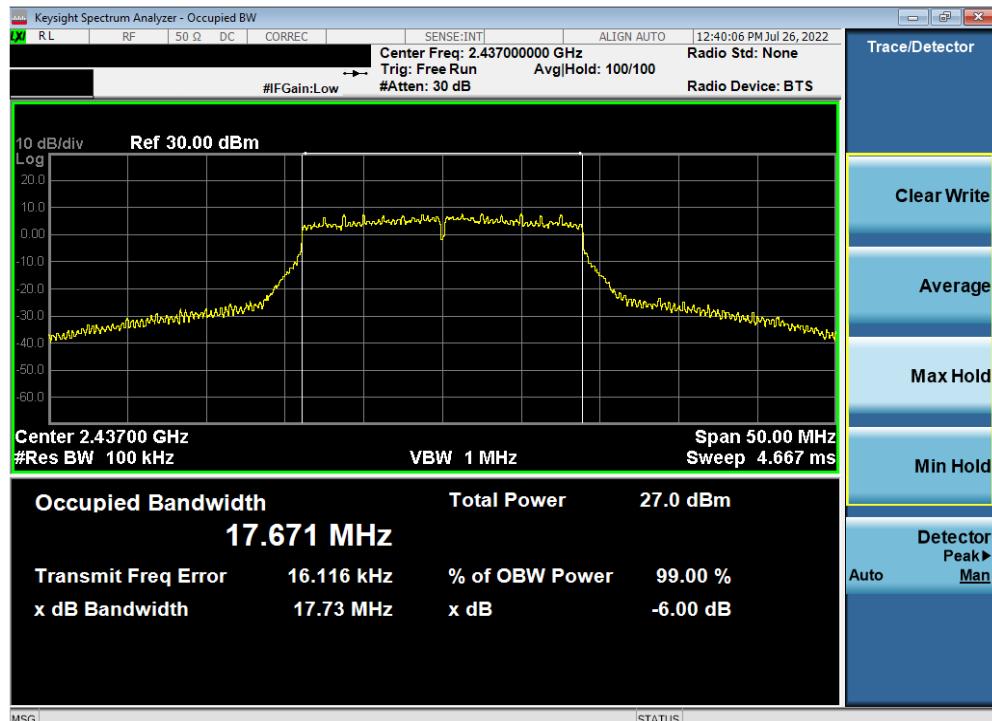


Plot 7-12. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 11) – 18Mbps

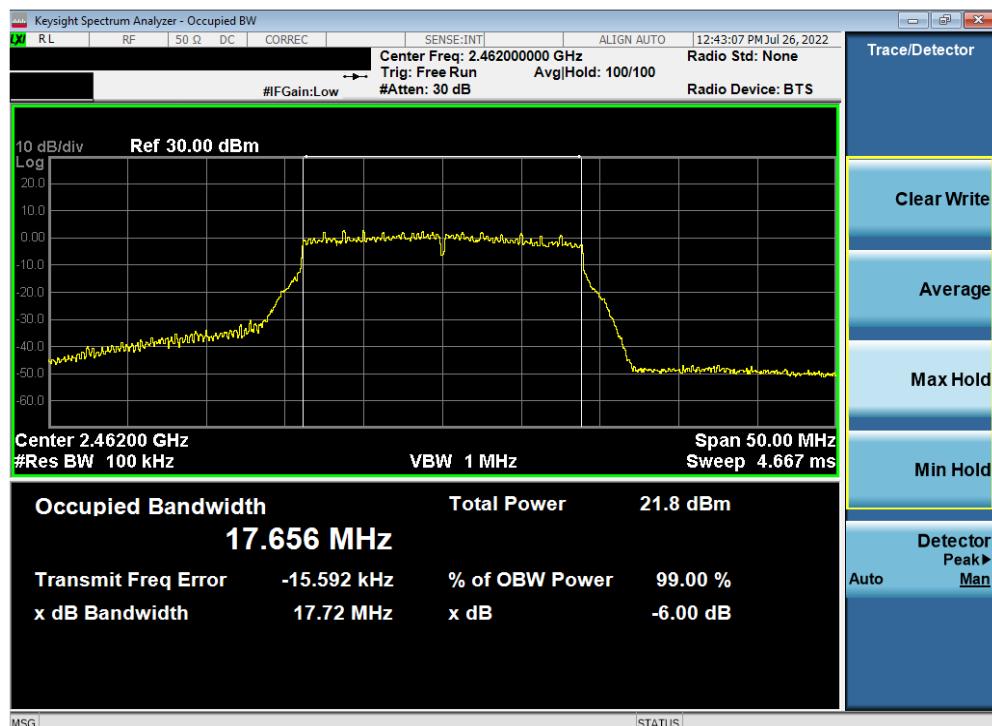


Plot 7-13. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 26 of 429

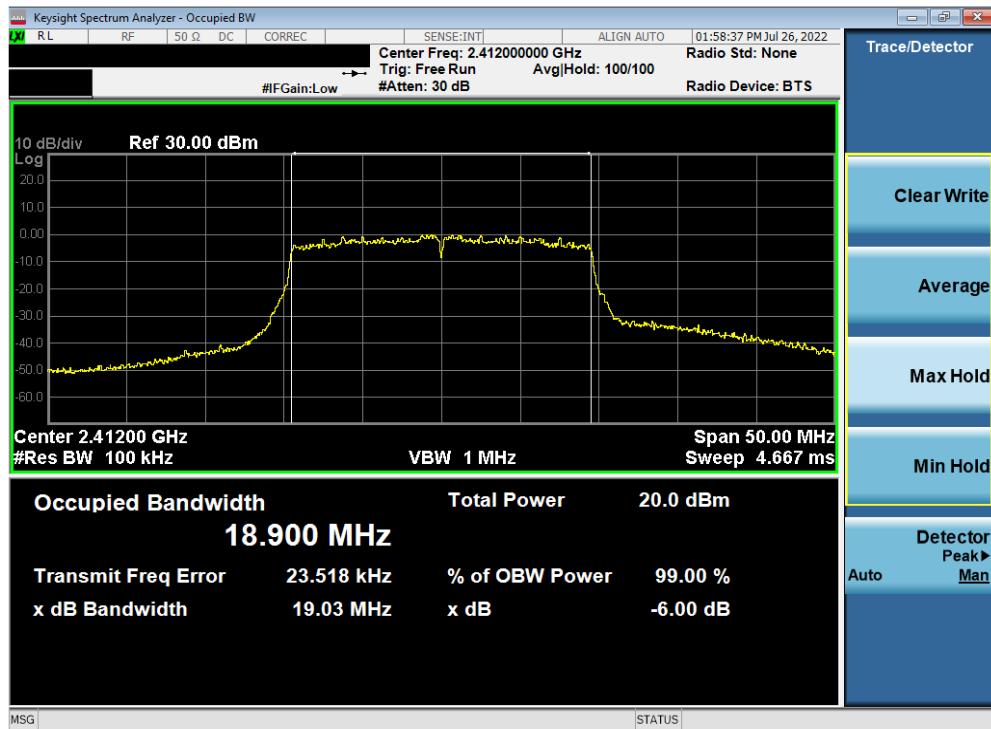


Plot 7-14. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS3



Plot 7-15. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 27 of 429

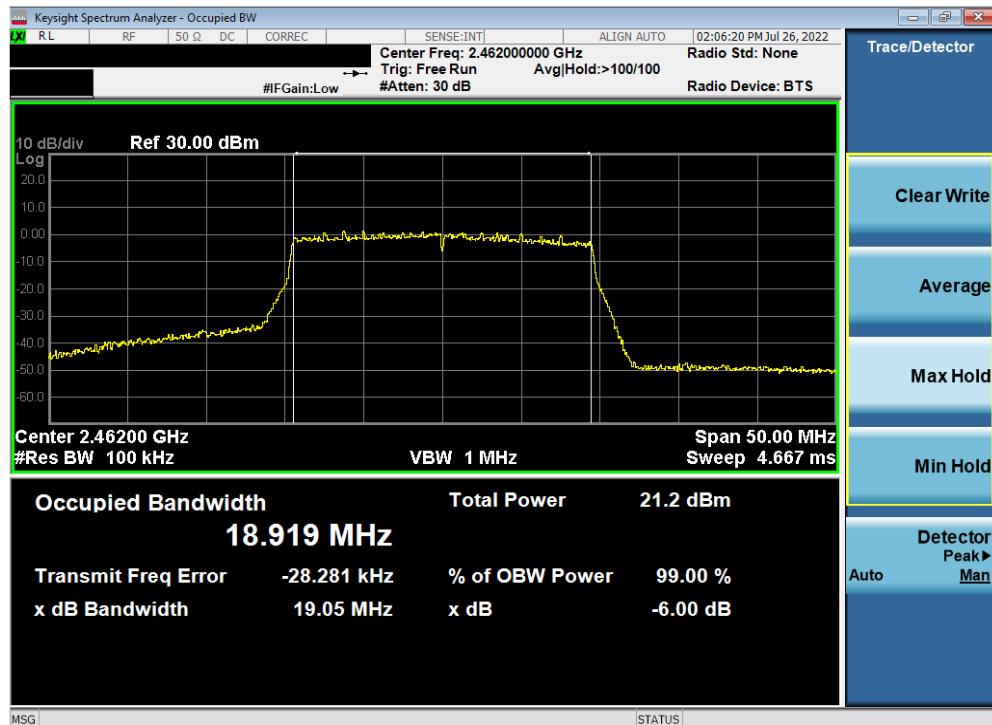


Plot 7-16. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS3



Plot 7-17. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 28 of 429



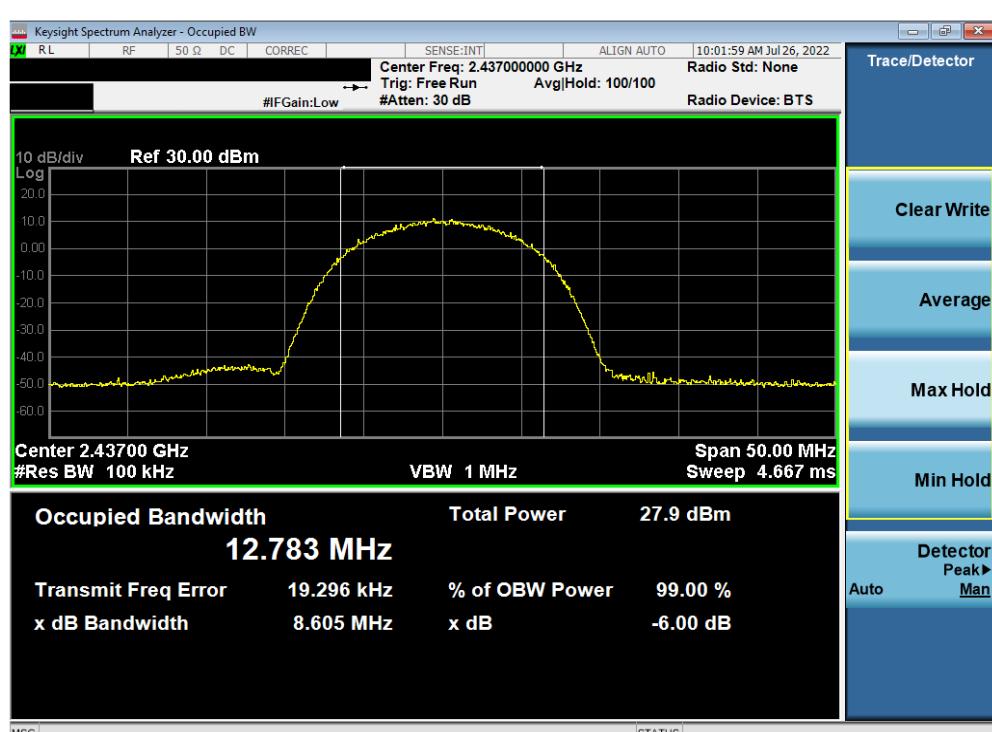
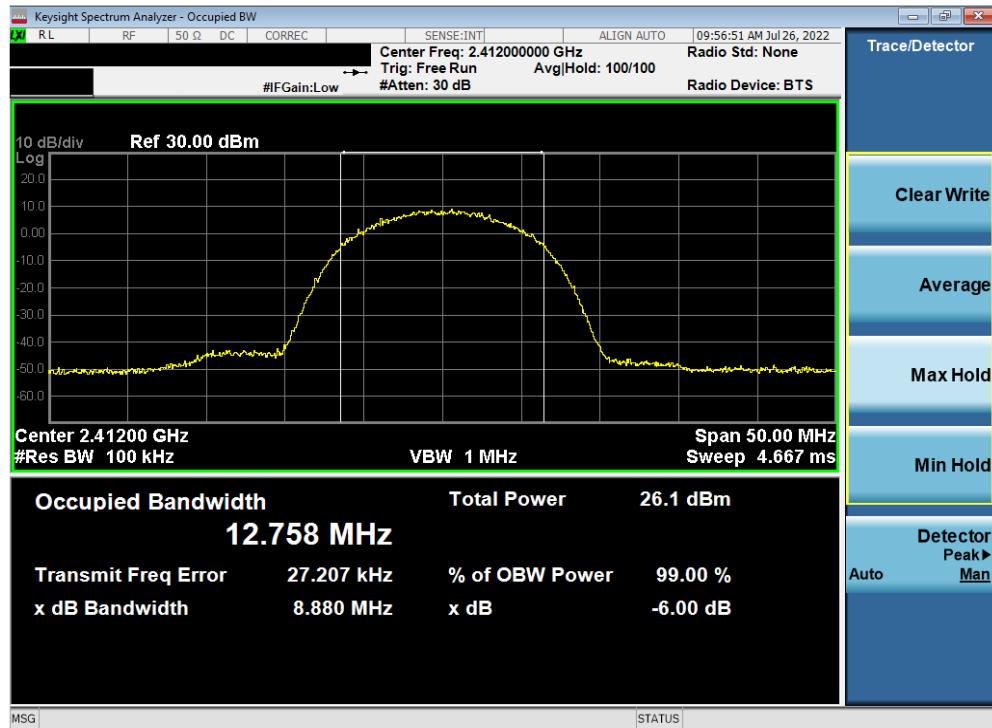
Plot 7-18. 6dB Bandwidth Plot Antenna 4a (802. 11ax (SU - 2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 29 of 429

V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

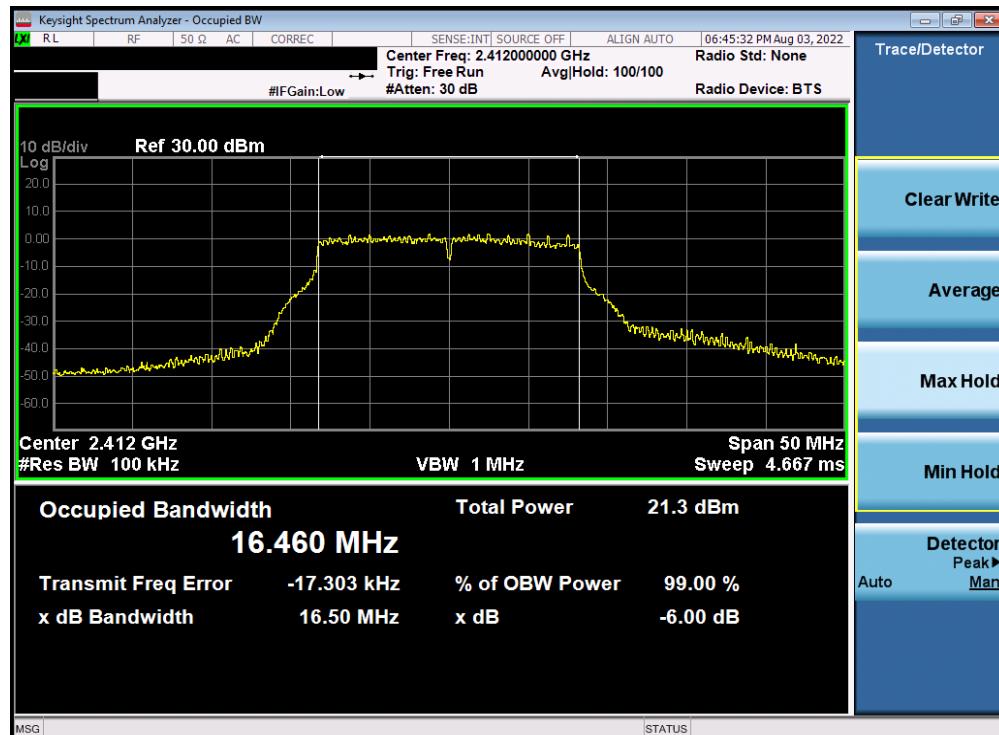
High Data Rate



FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 30 of 429

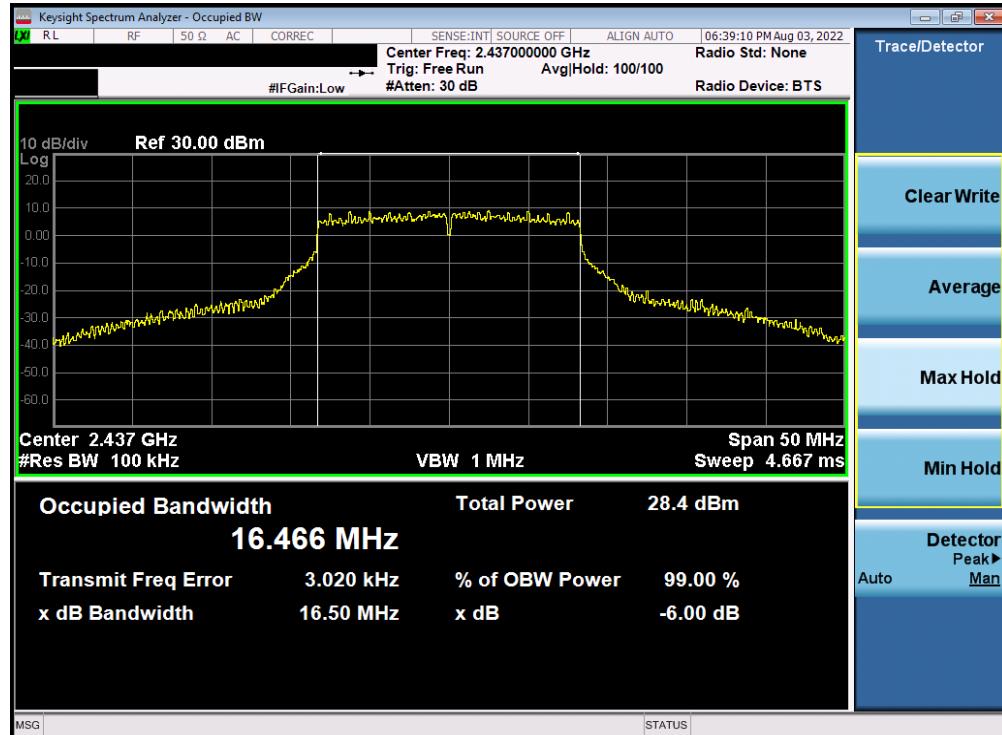


Plot 7-21. 6dB Bandwidth Plot Antenna 4a (802.11b – Ch. 11) – 11Mbps

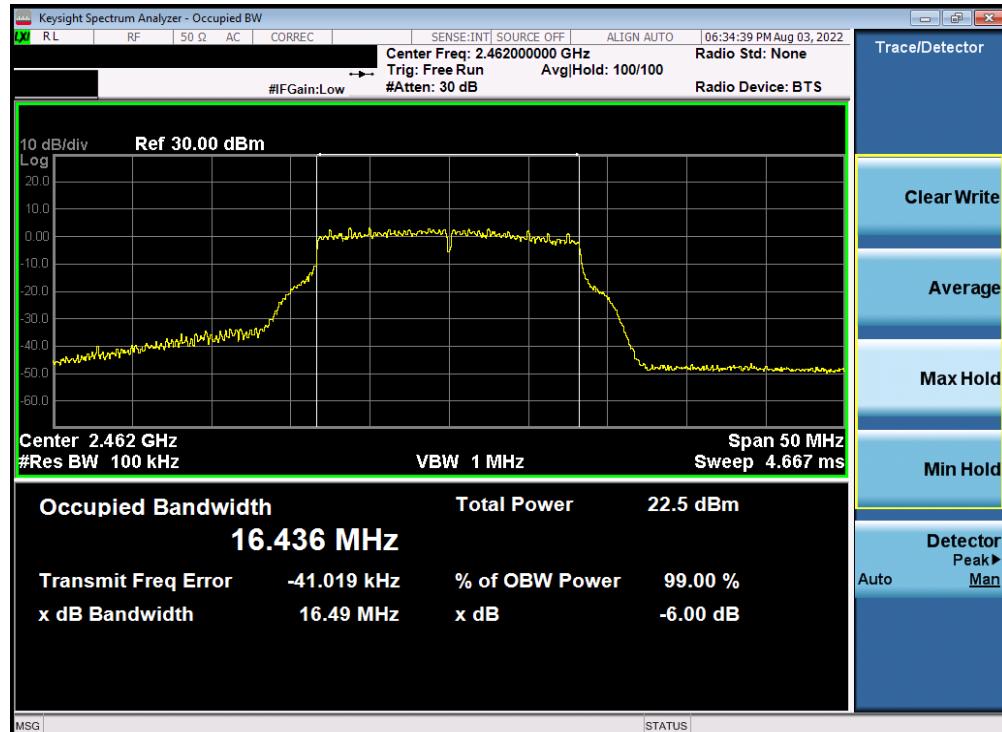


Plot 7-22. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 1) – 36Mbps

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 31 of 429

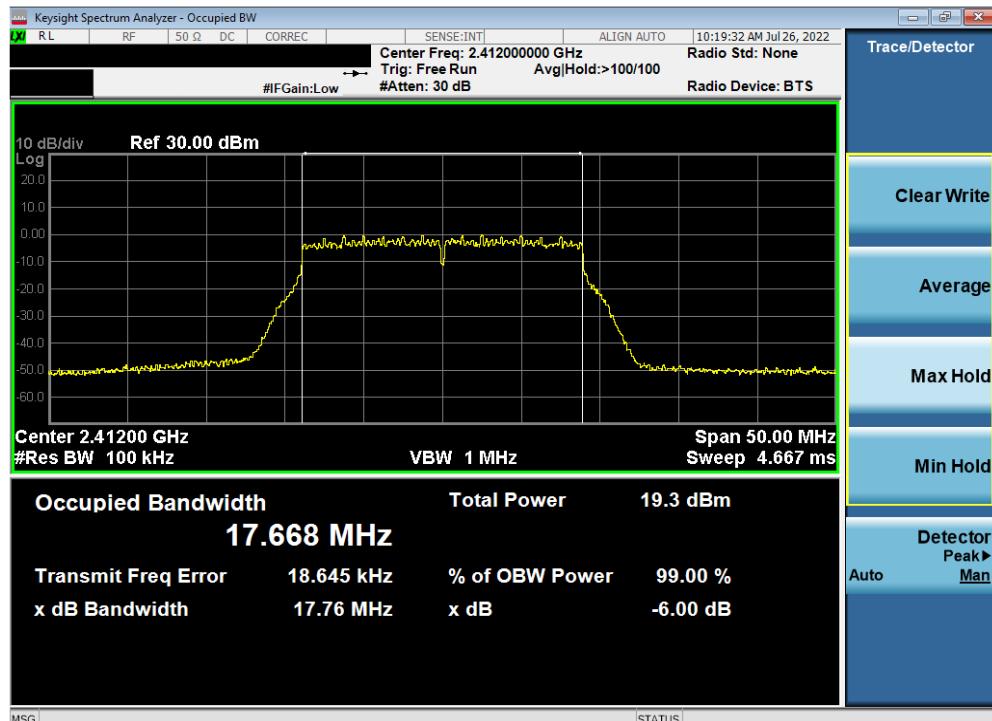


Plot 7-23. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 6) – 36Mbps

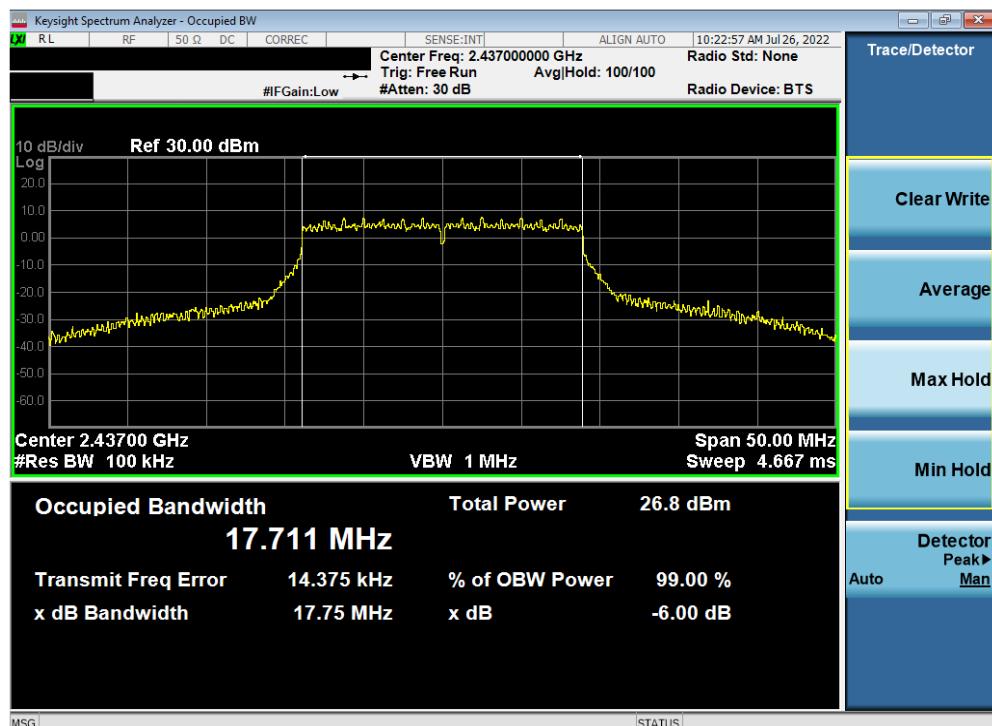


Plot 7-24. 6dB Bandwidth Plot Antenna 4a (802.11g – Ch. 11) – 36Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 32 of 429

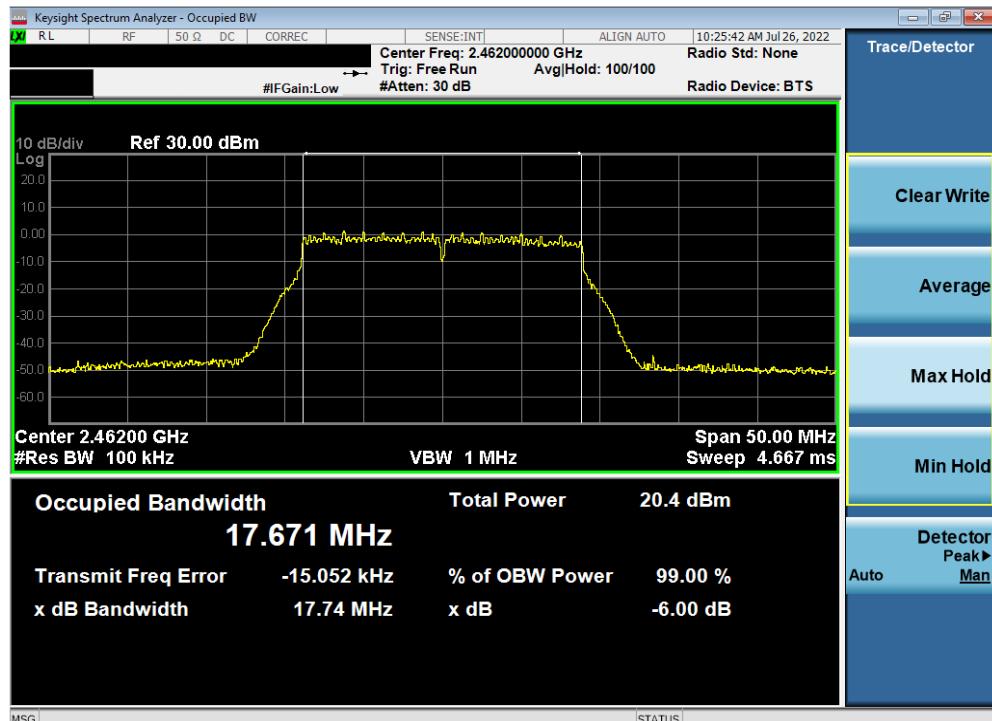


Plot 7-25. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS5

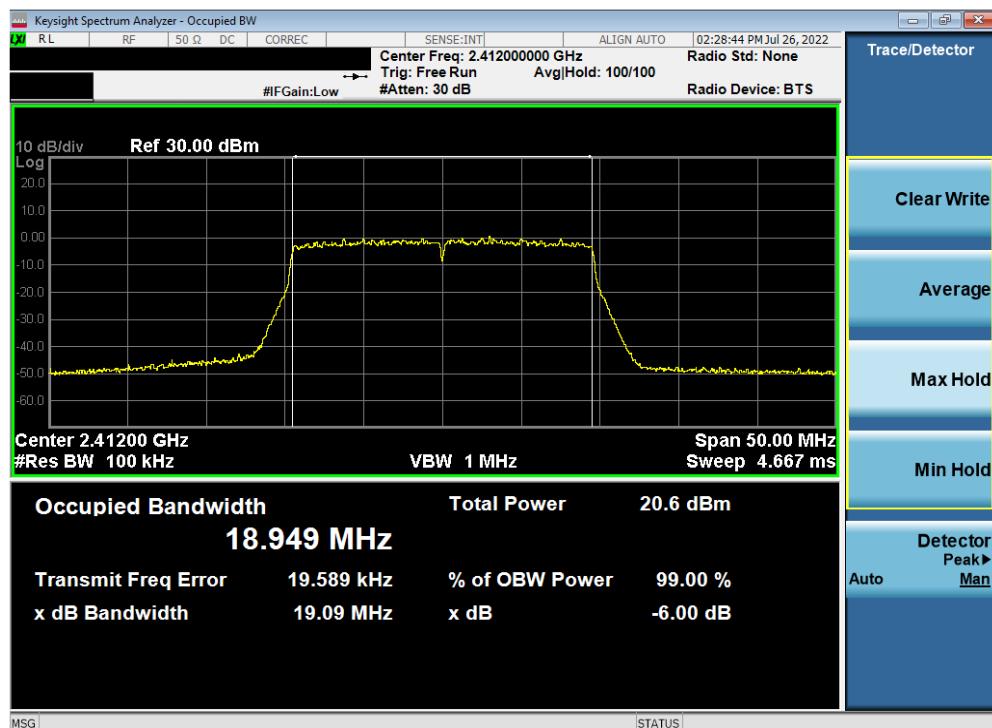


Plot 7-26. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS5

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 33 of 429

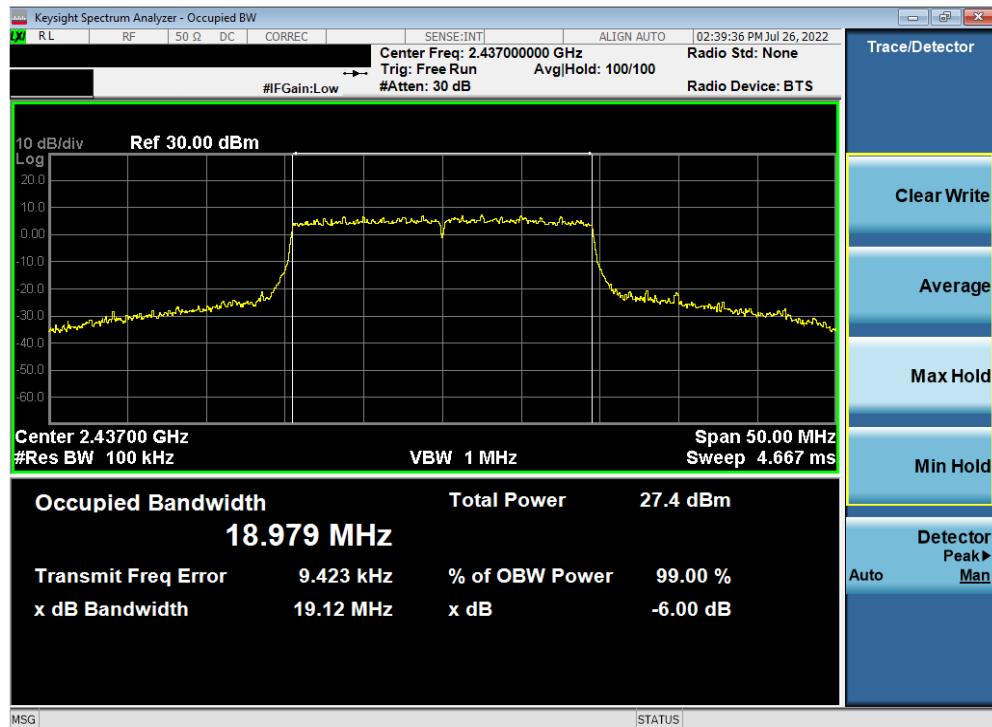


Plot 7-27. 6dB Bandwidth Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS5



Plot 7-28. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 34 of 429



Plot 7-29. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) - Ch. 6) - MCS5



Plot 7-30. 6dB Bandwidth Plot Antenna 4a (802.11ax (SU - 2.4GHz) - Ch. 11) - MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 35 of 429

Antenna 2a 6dB BW and 99% OBW Measurements

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	g	12	16.537	16.060	0.500	Pass
2437	6	g	12	16.457	16.440	0.500	Pass
2462	11	g	12	16.583	16.360	0.500	Pass
2412	1	n	19.5/21.7 (MCS2)	17.727	17.577	0.500	Pass
2437	6	n	19.5/21.7 (MCS2)	17.664	17.594	0.500	Pass
2462	11	n	19.5/21.7 (MCS2)	17.682	16.966	0.500	Pass
2412	1	ax (SU)	24/25.8 (MCS2)	18.911	18.462	0.500	Pass
2437	6	ax (SU)	24/25.8 (MCS2)	18.925	19.046	0.500	Pass
2462	11	ax (SU)	24/25.8 (MCS2)	18.913	18.940	0.500	Pass

Table 7-5. Conducted Bandwidth Measurements Antenna 2a (Low Data Rate)

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	g	18	16.585	16.122	0.500	Pass
2437	6	g	18	16.479	16.419	0.500	Pass
2462	11	g	18	16.550	16.382	0.500	Pass
2412	1	n	26/28.9 (MCS3)	17.675	17.738	0.500	Pass
2437	6	n	26/28.9 (MCS3)	17.679	17.733	0.500	Pass
2462	11	n	26/28.9 (MCS3)	17.628	17.712	0.500	Pass
2412	1	ax (SU)	33/34.4 (MCS3)	18.908	19.057	0.500	Pass
2437	6	ax (SU)	33/34.4 (MCS3)	18.940	19.079	0.500	Pass
2462	11	ax (SU)	33/34.4 (MCS3)	18.903	18.974	0.500	Pass

Table 7-6. Conducted Bandwidth Measurements Antenna 2a (Mid Data Rate)

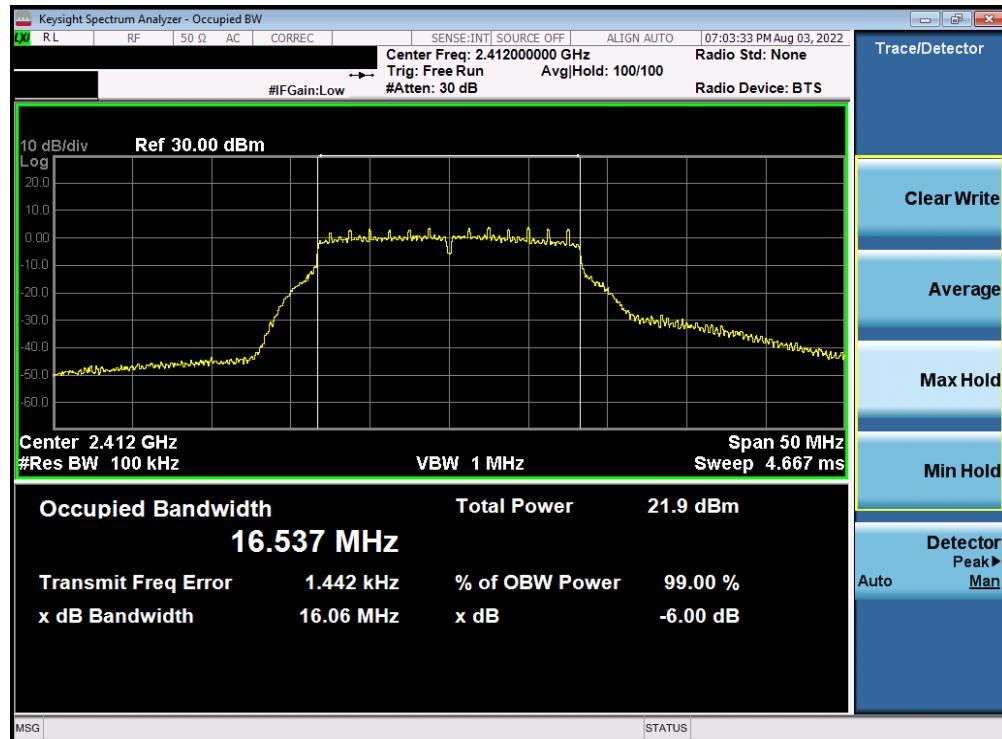
FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 36 of 429 V 10.5 12/15/2021

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
2412	1	b	11	12.768	8.610	0.500	Pass
2437	6	b	11	12.789	8.644	0.500	Pass
2462	11	b	11	12.760	8.675	0.500	Pass
2412	1	g	36	16.463	16.498	0.500	Pass
2437	6	g	36	16.482	16.519	0.500	Pass
2462	11	g	36	16.447	16.511	0.500	Pass
2412	1	n	52/57.8 (MCS5)	17.676	17.753	0.500	Pass
2437	6	n	52/57.8 (MCS5)	17.717	17.749	0.500	Pass
2462	11	n	52/57.8 (MCS5)	17.673	17.765	0.500	Pass
2412	1	ax (SU)	65/68.8 (MCS5)	18.946	19.107	0.500	Pass
2437	6	ax (SU)	65/68.8 (MCS5)	18.981	19.110	0.500	Pass
2462	11	ax (SU)	65/68.8 (MCS5)	18.950	19.128	0.500	Pass

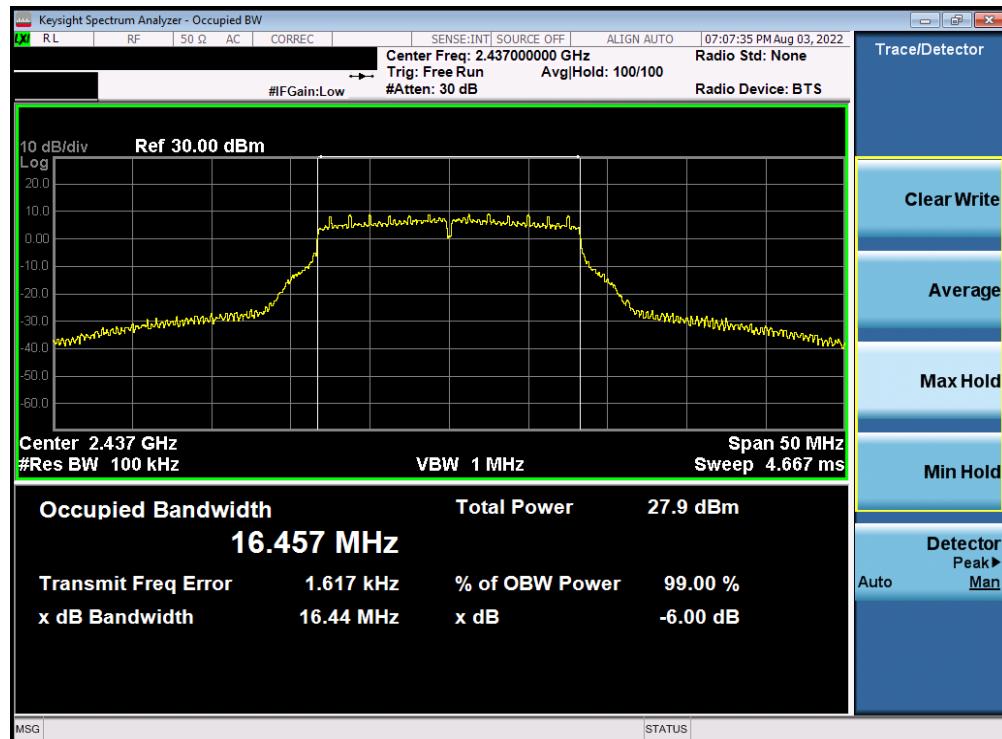
Table 7-7. Conducted Bandwidth Measurements Antenna 2a (High Data Rate)

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 37 of 429

Low Data Rate



Plot 7-31. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 1) – 12Mbps

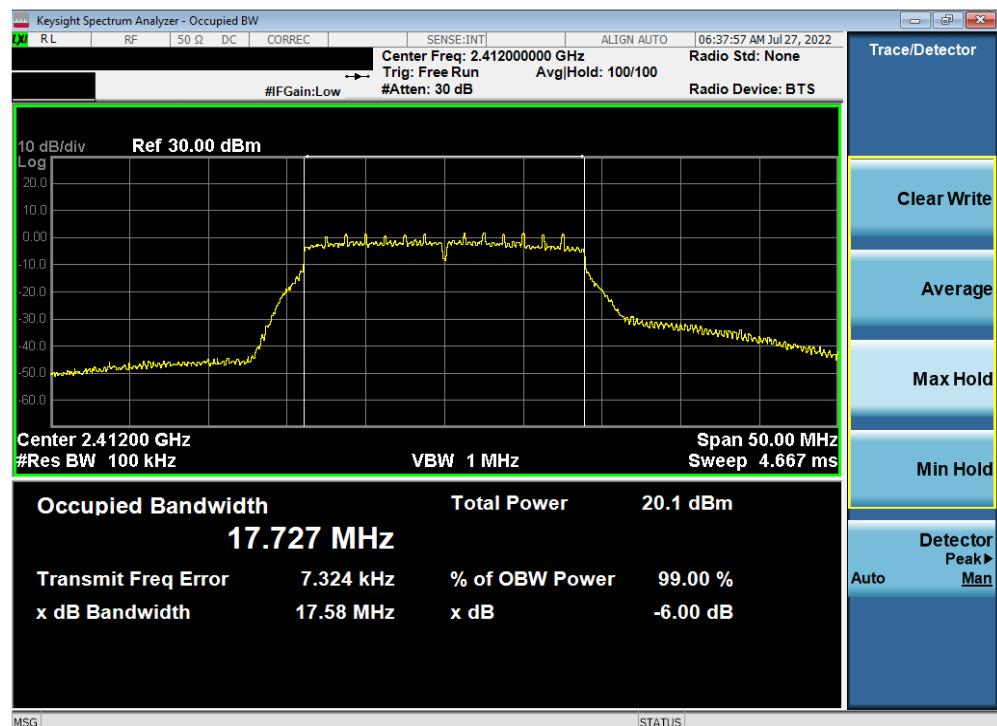


Plot 7-32. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 6) – 12Mbps

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 38 of 429

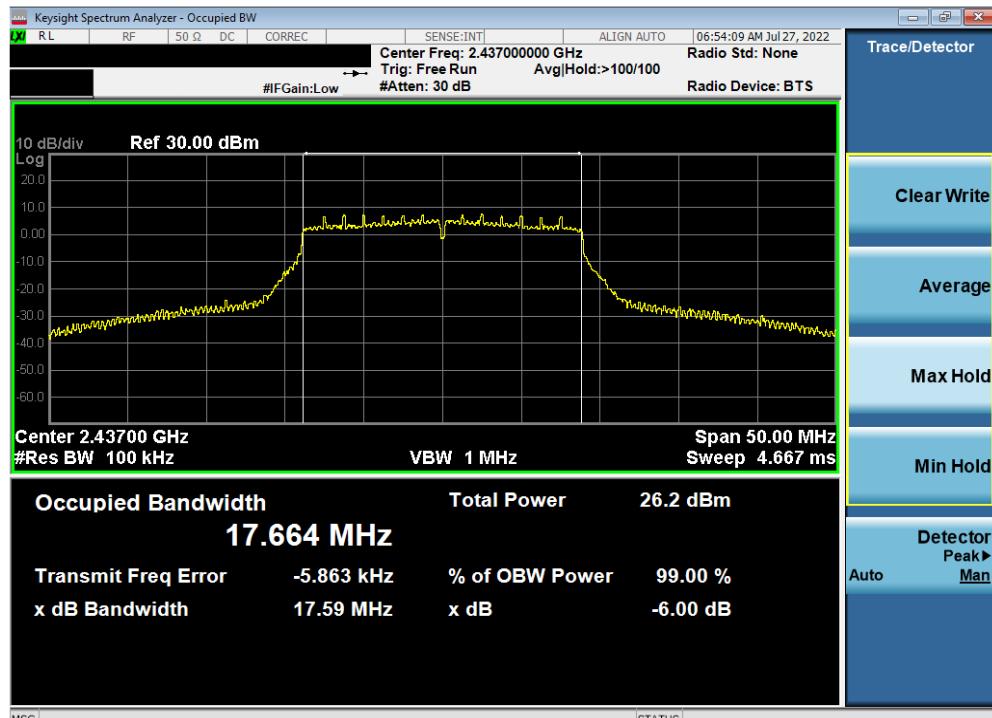


Plot 7-33. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 11) – 12Mbps

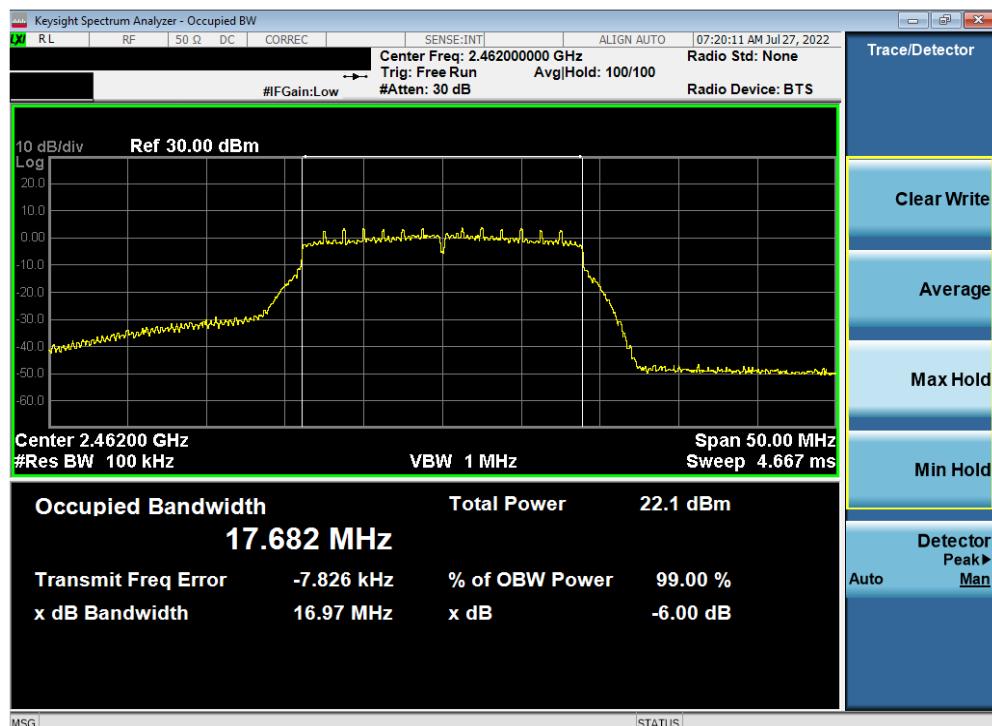


Plot 7-34. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 1) – MCS2

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 39 of 429



Plot 7-35. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 6) – MCS2

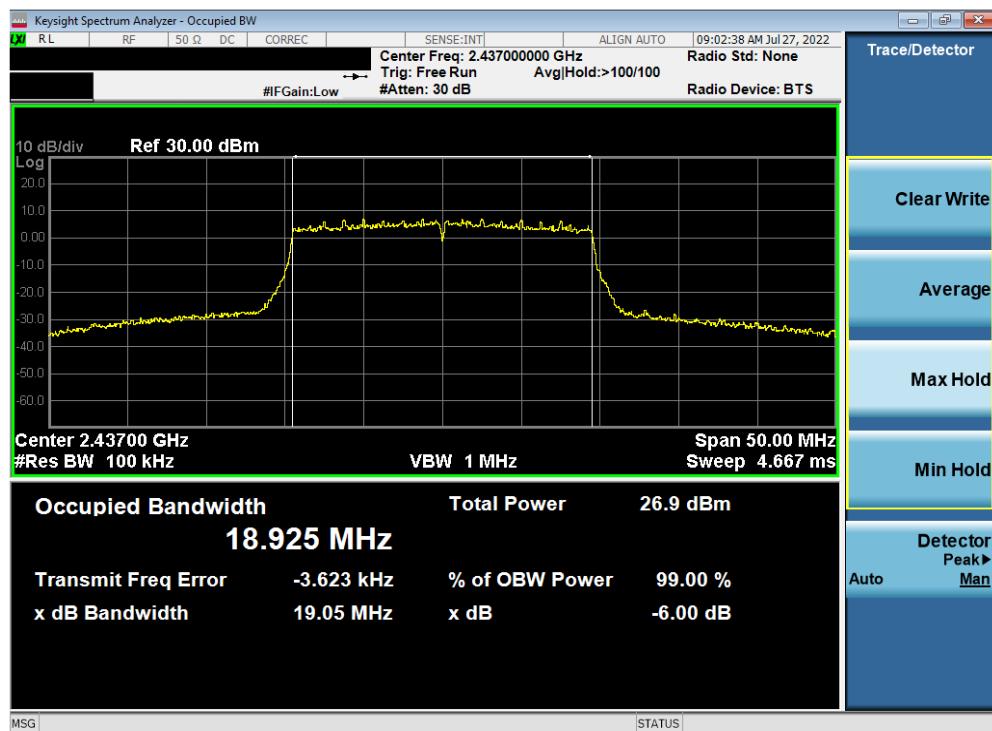


Plot 7-36. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 11) – MCS2

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 40 of 429



Plot 7-37. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS2



Plot 7-38. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS2

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 41 of 429



Plot 7-39. 6dB Bandwidth Plot Antenna 2a (802. 11ax (SU - 2.4GHz) – Ch. 11) – MCS2

FCC ID: BCG2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 42 of 429

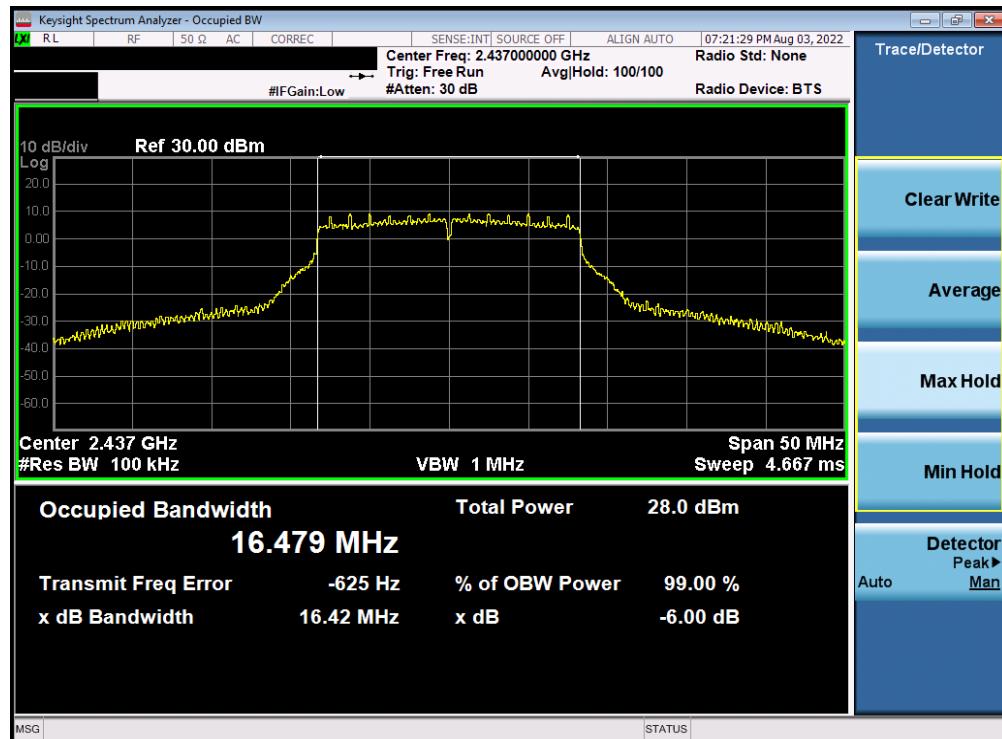
V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Mid Data Rate

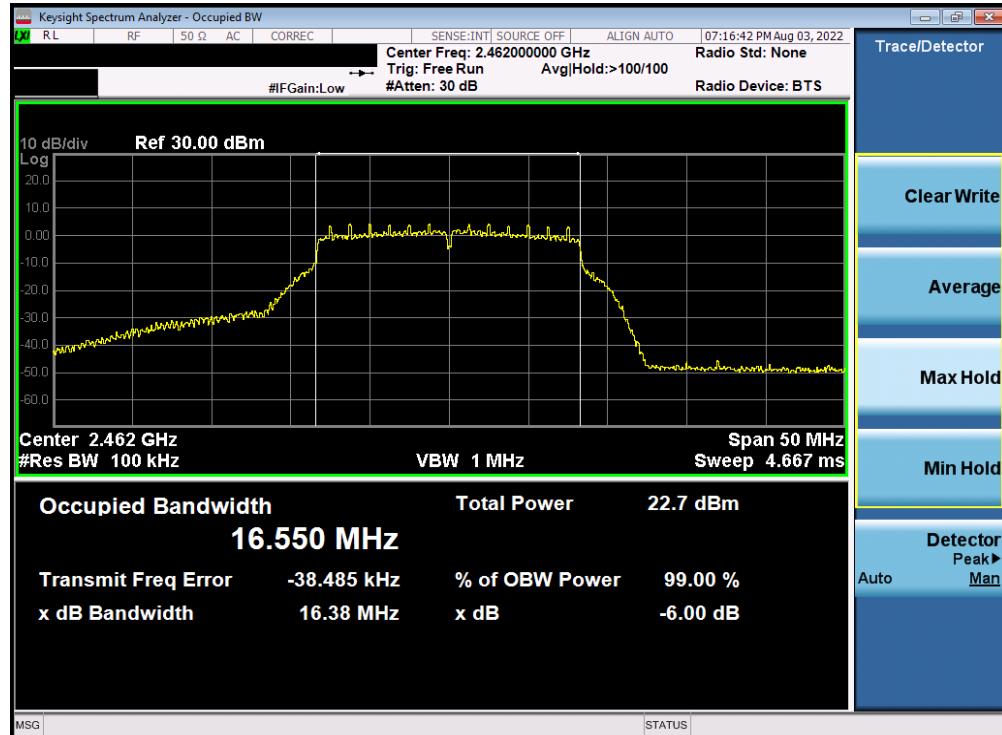


Plot 7-40. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 1) – 18Mbps

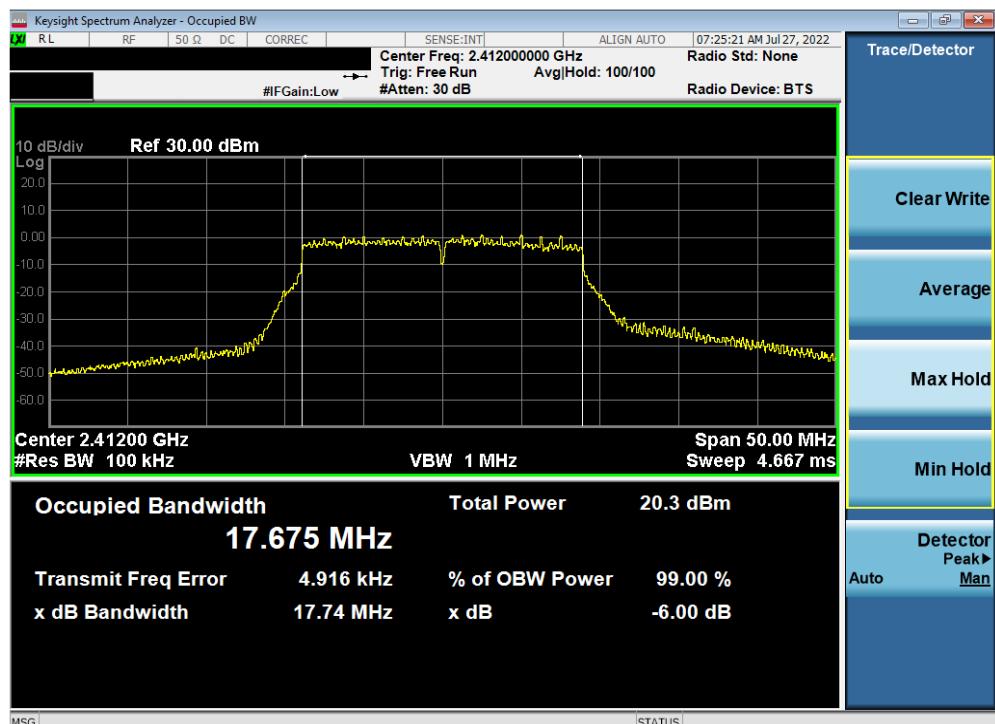


Plot 7-41. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 6) – 18Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 43 of 429

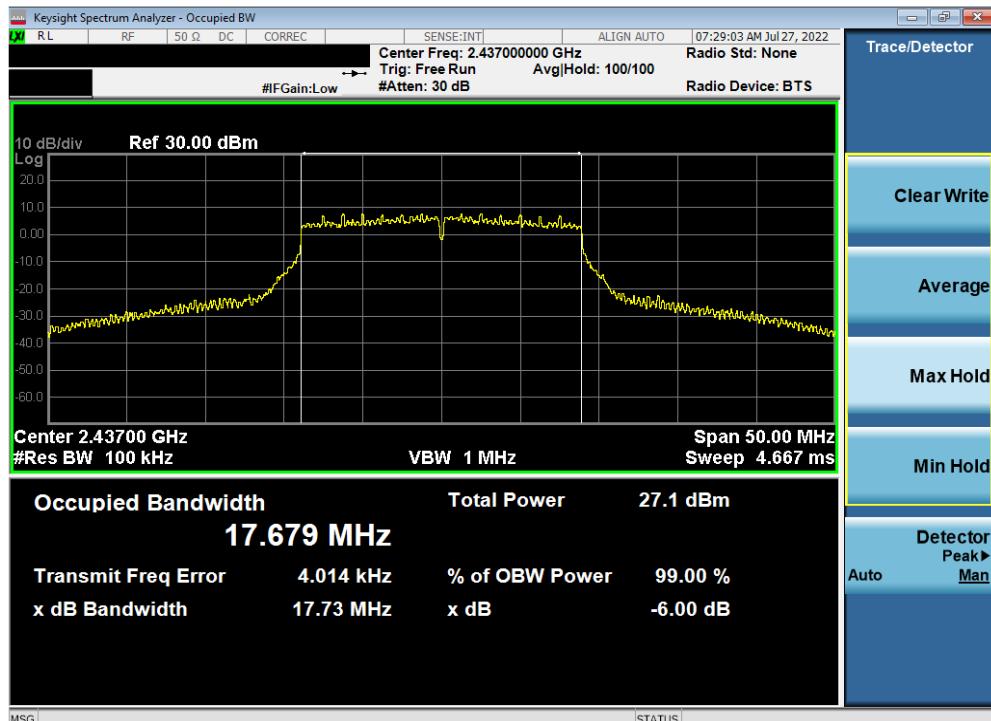


Plot 7-42. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 11) – 18Mbps



Plot 7-43. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 1) – MCS3

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 44 of 429

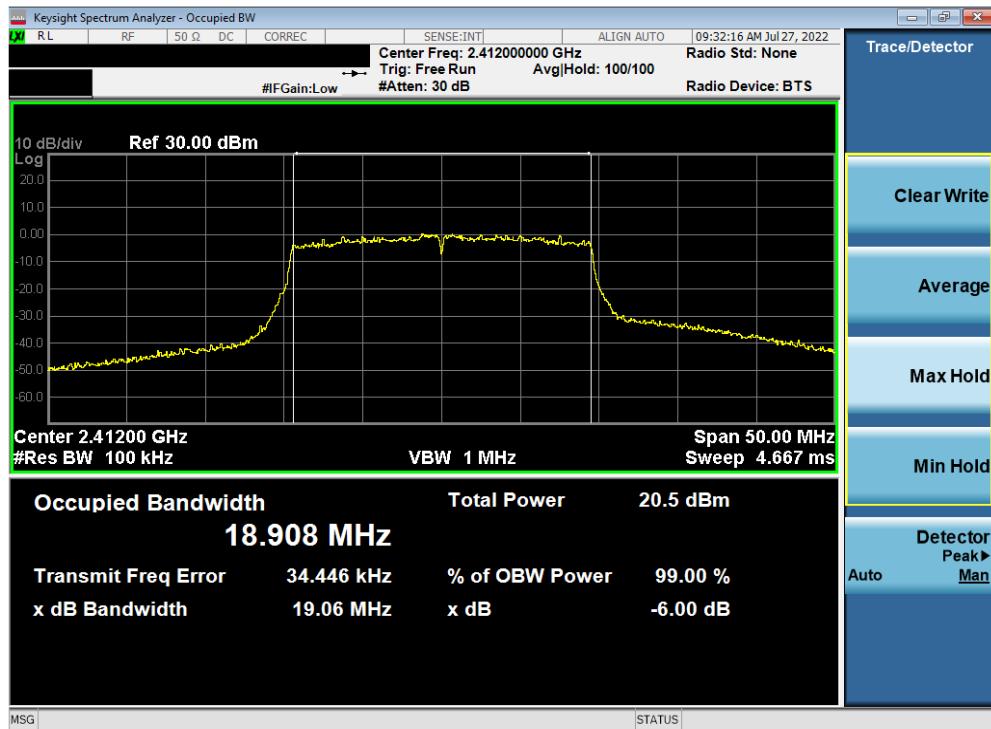


Plot 7-44. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 6) – MCS3

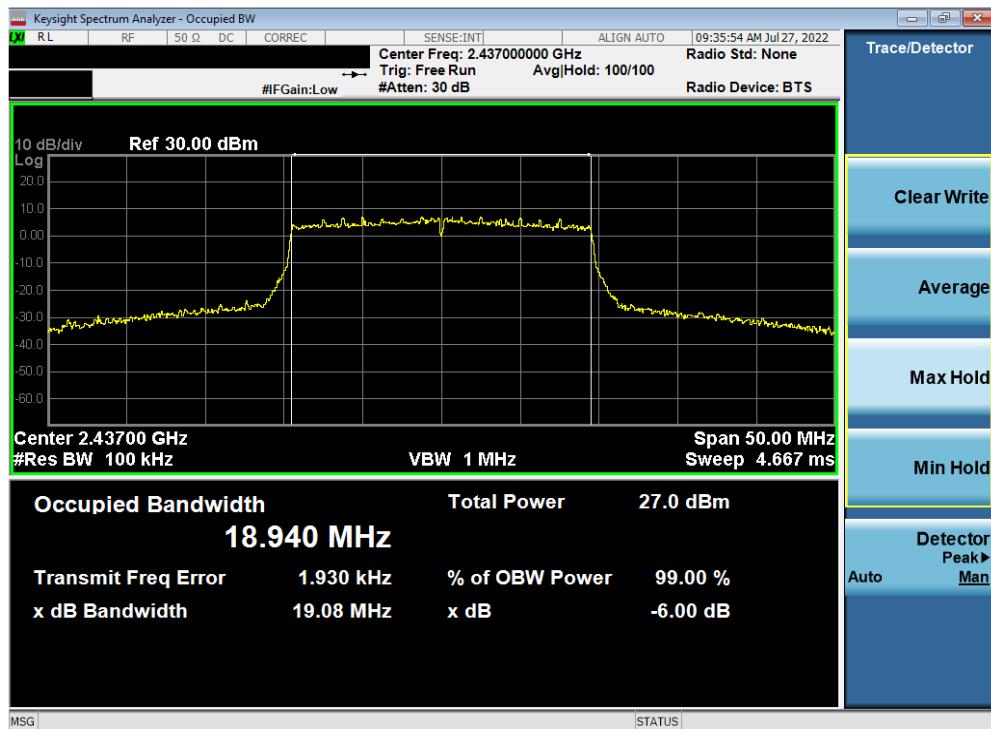


Plot 7-45. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 45 of 429



Plot 7-46. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS3



Plot 7-47. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS3

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 46 of 429



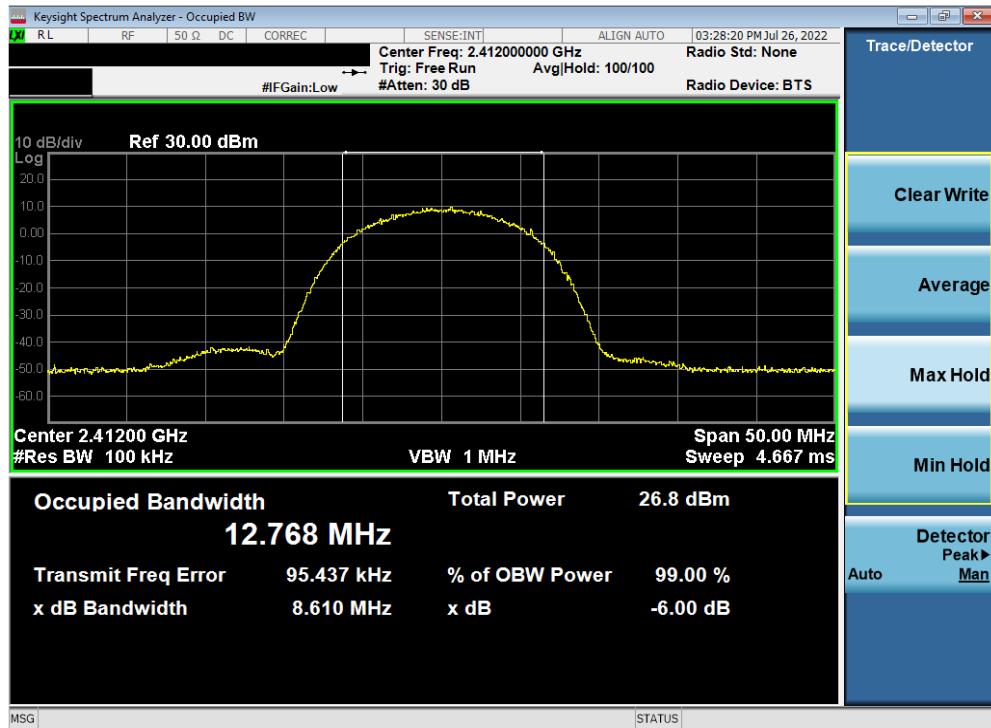
Plot 7-48. 6dB Bandwidth Plot Antenna 2a (802. 11ax (SU - 2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 47 of 429

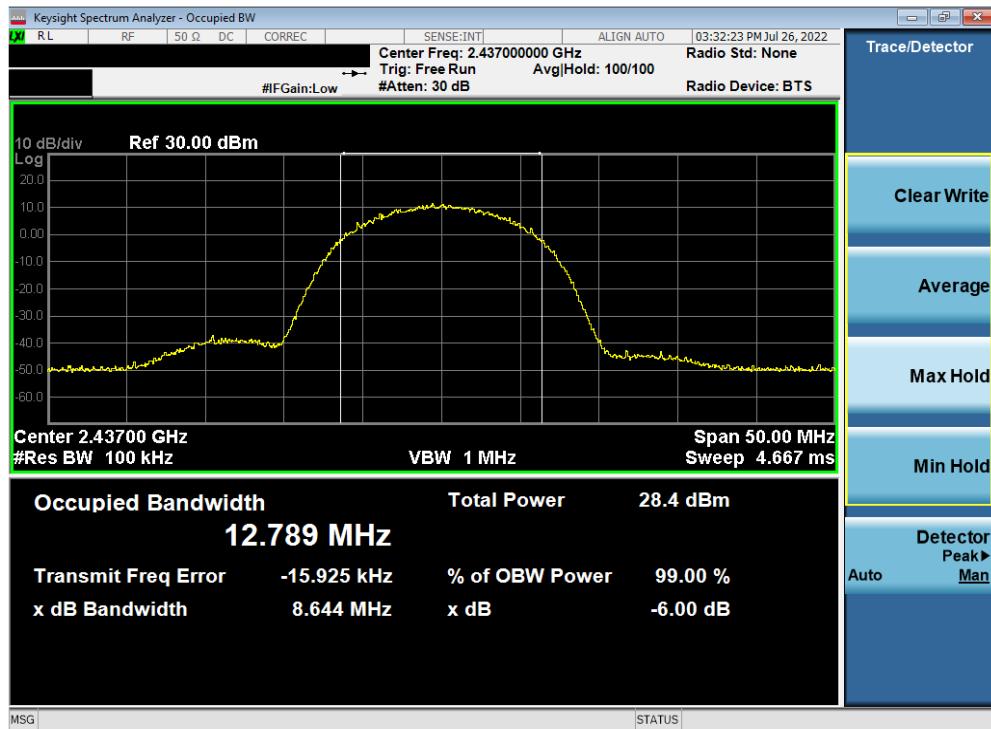
V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

High Data Rate

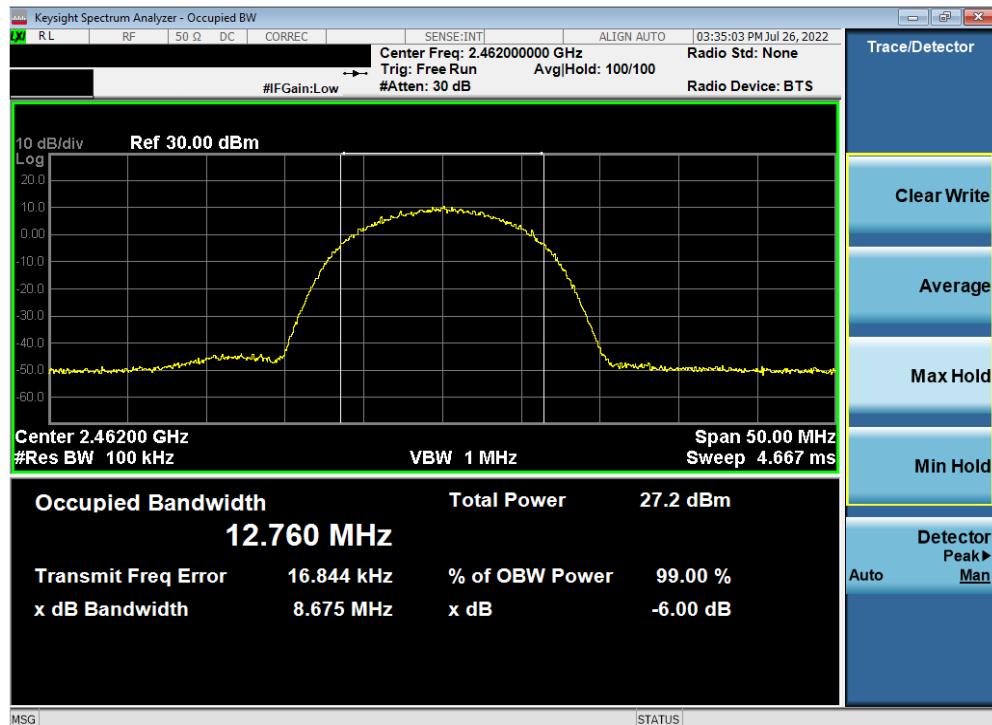


Plot 7-49. 6dB Bandwidth Plot Antenna 2a (802.11b – Ch. 1) – 11Mbps

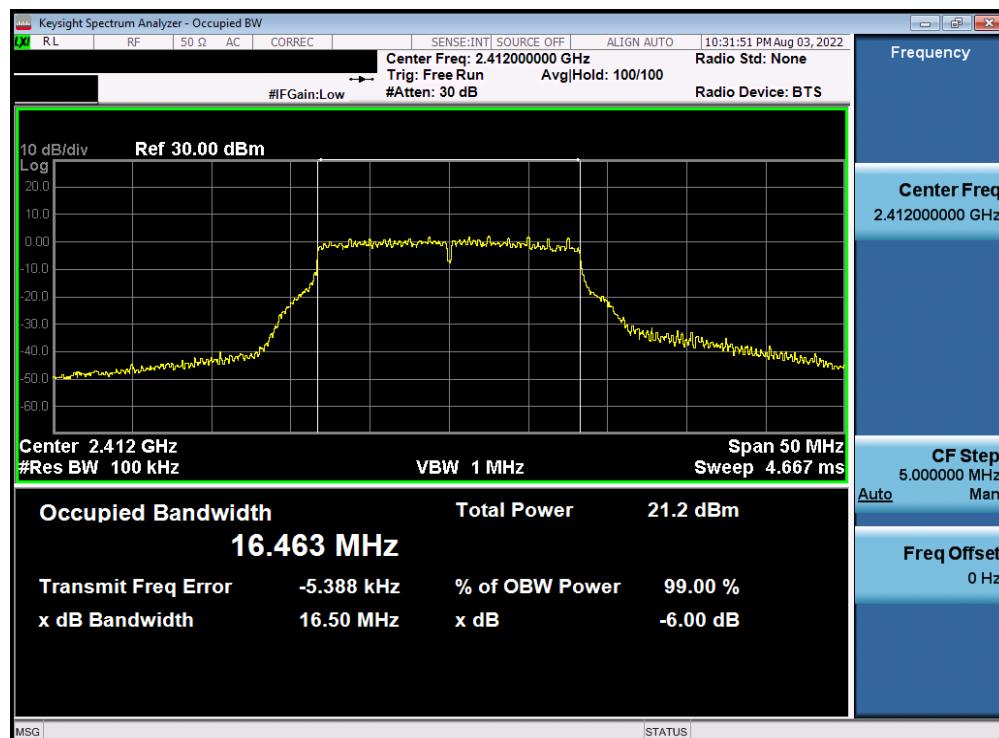


Plot 7-50. 6dB Bandwidth Plot Antenna 2a (802.11b – Ch. 6) – 11Mbps

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 48 of 429

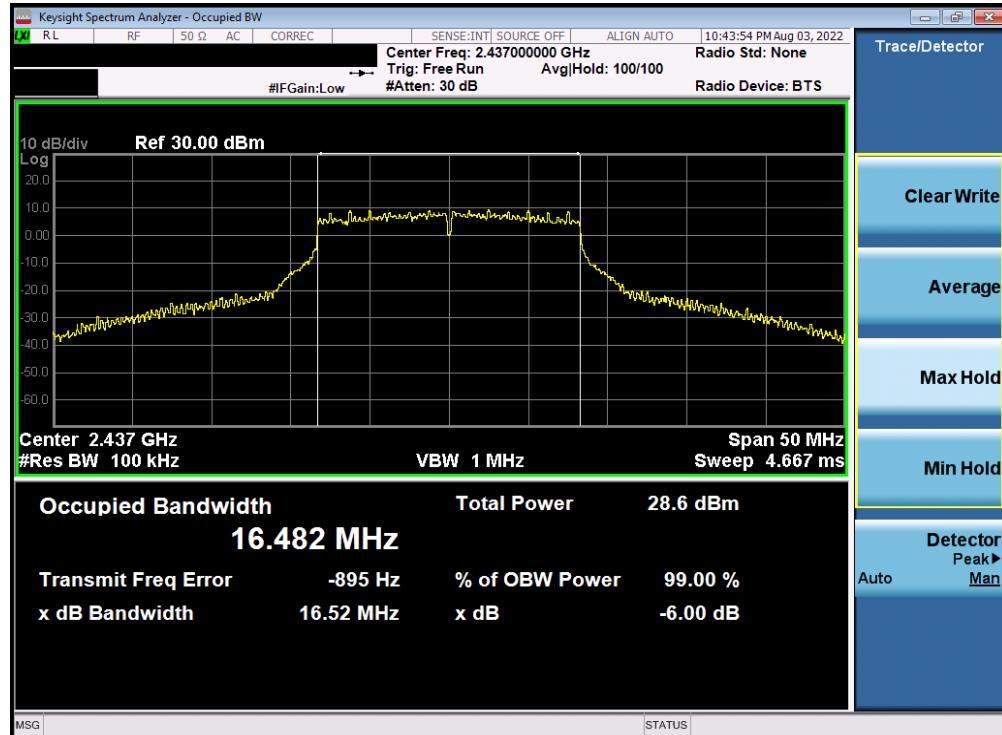


Plot 7-51. 6dB Bandwidth Plot Antenna 2a (802.11b – Ch. 11) – 11Mbps

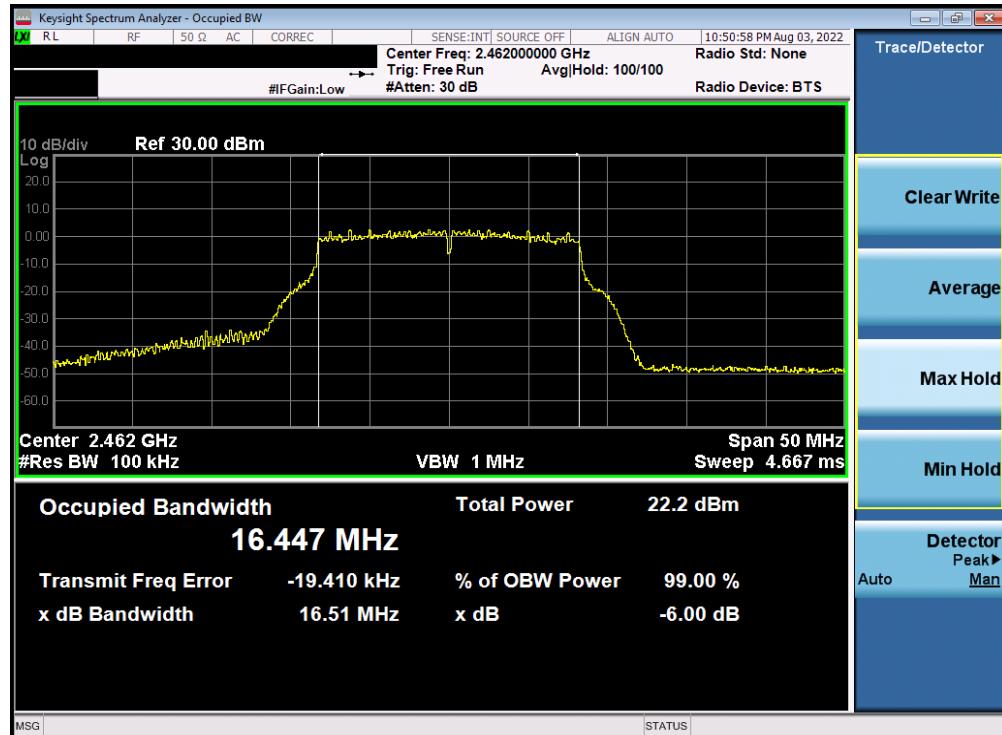


Plot 7-52. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 1) – 36Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 49 of 429

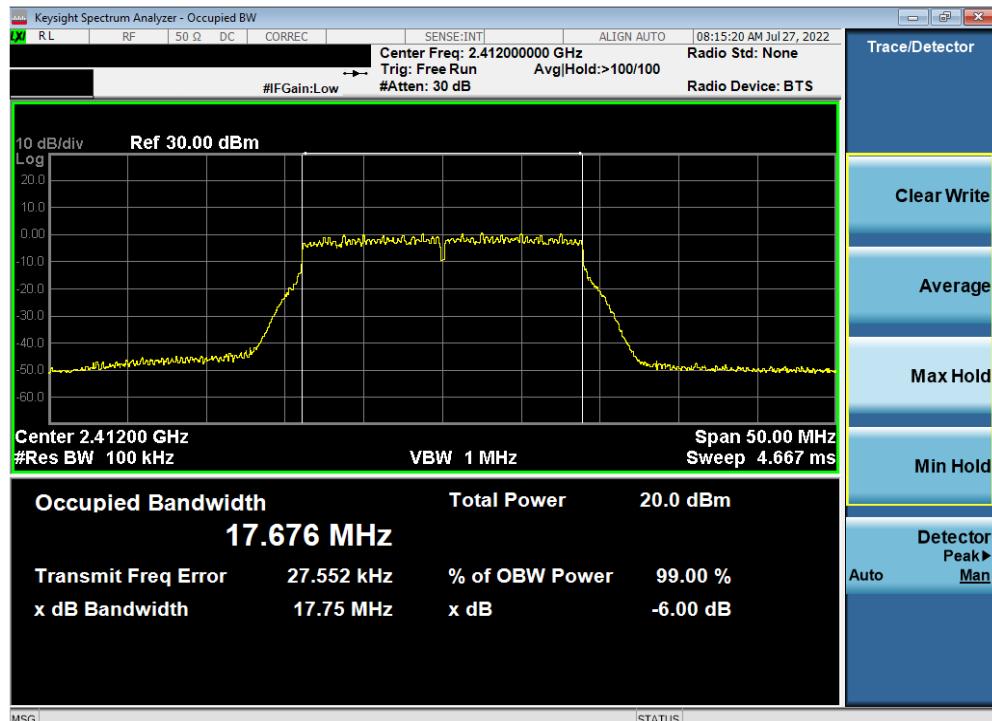


Plot 7-53. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 6) – 36Mbps

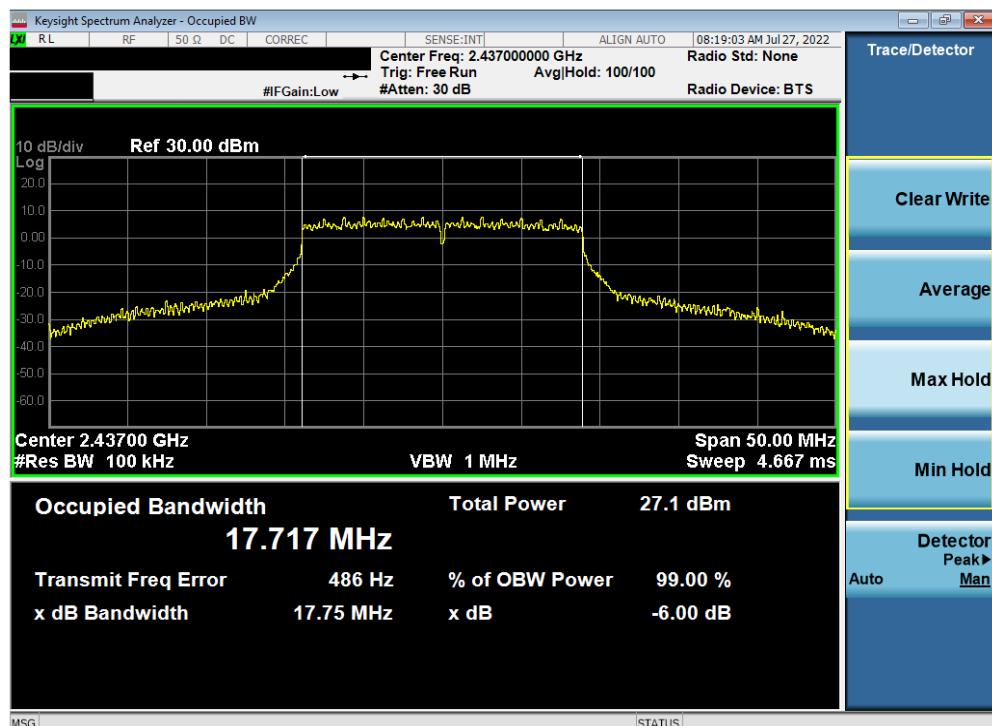


Plot 7-54. 6dB Bandwidth Plot Antenna 2a (802.11g – Ch. 11) – 36Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 50 of 429

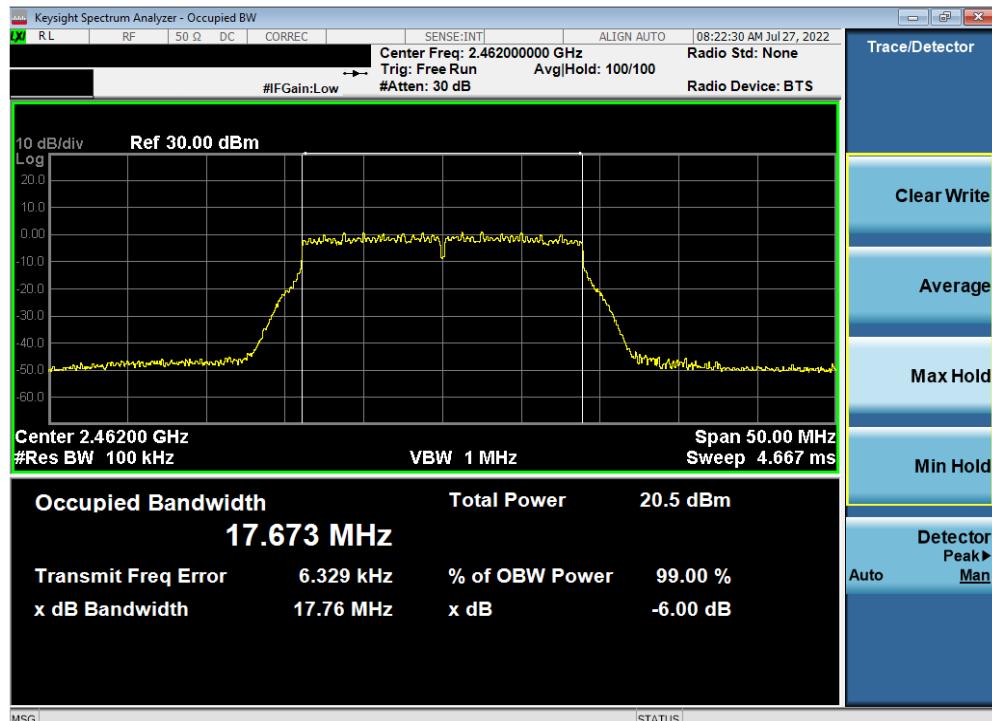


Plot 7-55. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 1) – MCS5

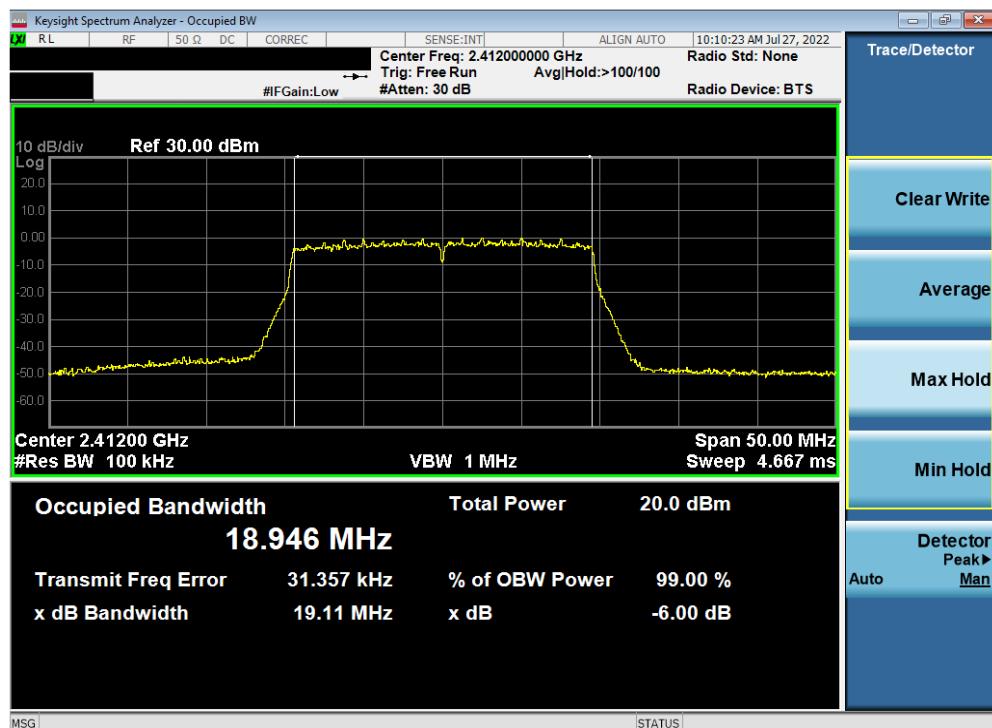


Plot 7-56. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 6) – MCS5

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 51 of 429

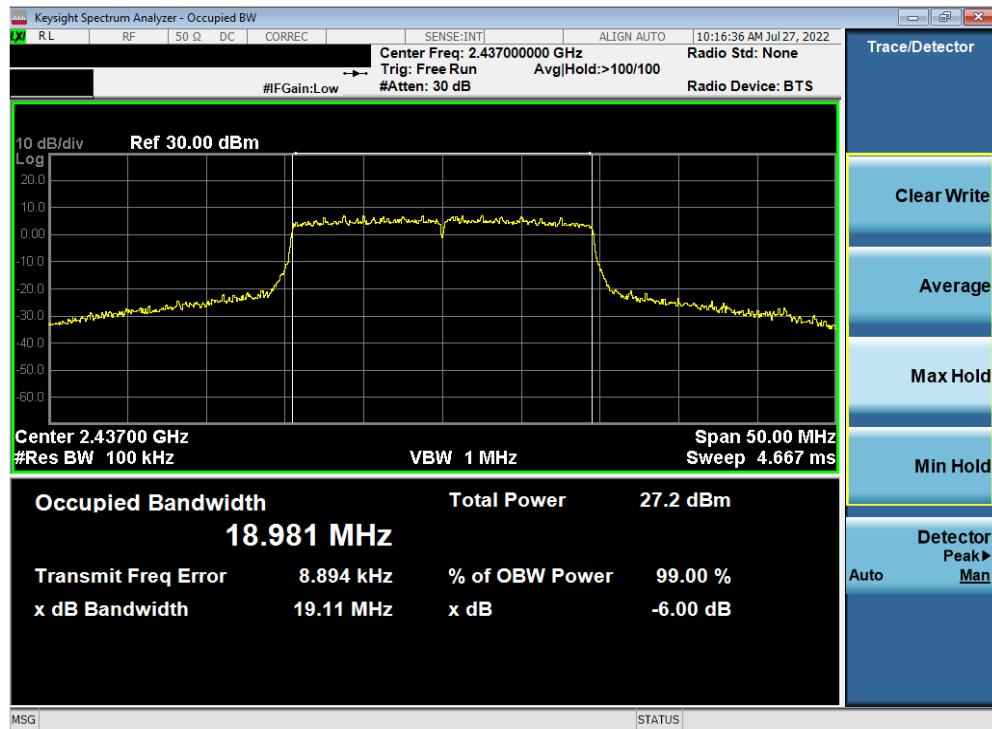


Plot 7-57. 6dB Bandwidth Plot Antenna 2a (802.11n (2.4GHz) – Ch. 11) – MCS5

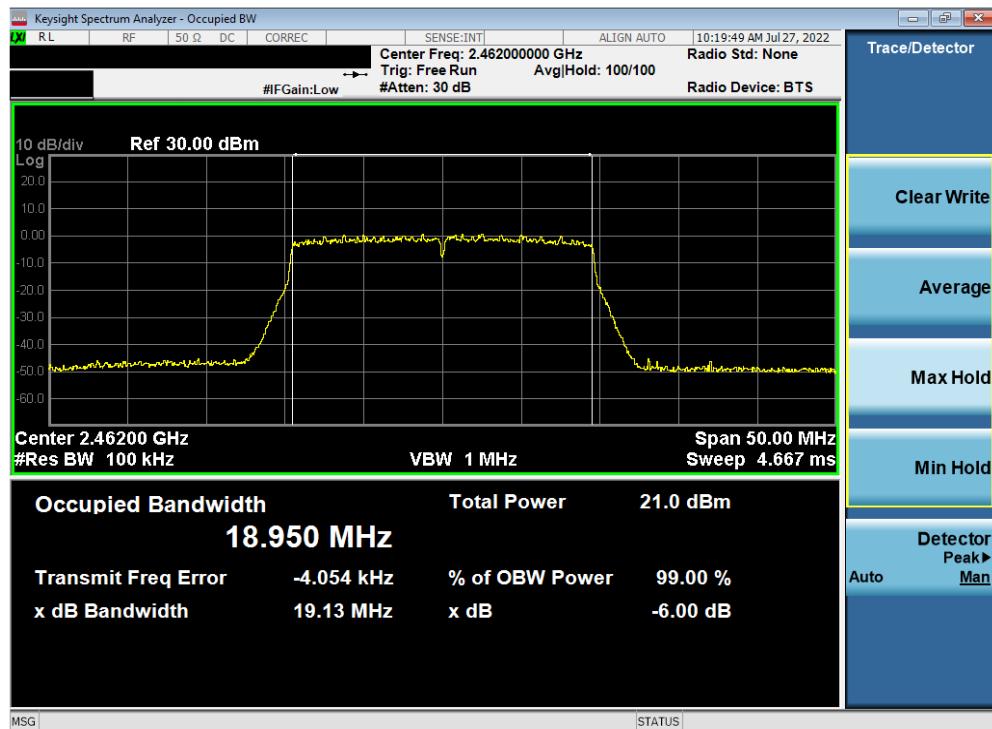


Plot 7-58. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 52 of 429



Plot 7-59. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) - Ch. 6) - MCS5



Plot 7-60. 6dB Bandwidth Plot Antenna 2a (802.11ax (SU - 2.4GHz) - Ch. 11) - MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 53 of 429

7.3 Output Power Measurement

§15.247(b.3); RSS-247 [5.4]

Test Overview and Limits

A transmitter antenna terminal of EUT is connected to the input of an RF power sensor. Measurement is made using a broadband power meter capable of making peak and average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

The maximum peak conducted output power of digital modulation systems operating in the 2400-2483.5 MHz band is 1 Watt.

The conducted output power limit on paragraph above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For DTSs employing digital modulation techniques operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.9.1.3 PKPM1 Peak Power Method

KDB 558074 D01 v05r02 – Section 8.3.1.3 PKPM1 Peak-reading Power Meter Method

ANSI C63.10-2013 – Subclause 11.9.2.3.2 Method AVGPM-G

KDB 558074 D01 v05r02 – Section 8.3.2.3 Measurement using a Power Meter (PM)

ANSI C63.10-2013 – Subclause 14.2 Measure-and-Sum Technique

KDB 662911 D01 v02r01 – Section E)1) Measure-and-Sum Technique

Test Settings

Method PKPM1 (Peak Power Measurement)

Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

Method AVGPM-G (Average Power Measurement)

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.



Figure 7-2. Test Instrument & Measurement Setup for Power Meter Measurements

Test Notes

1. For 802.11b, the worst case data rate was found to be 11Mbps.
2. 802.11ax does not support channel 13.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 54 of 429 V 10.5 12/15/2021



7.3.1 Average Output Power Measurement

§15.247(b.3); RSS-247 [5.4]

Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	14.87	14.79	14.56	30.00	-15.13	1.80	16.67	36.02	-19.35
2417	2	AVG	18.97	18.87	16.90	30.00	-11.03	1.80	20.77	36.02	-15.25
2422	3	AVG	19.72	19.92	19.22	30.00	-10.08	1.80	21.72	36.02	-14.30
2427	4	AVG	20.50	20.23	19.63	30.00	-9.50	1.80	22.30	36.02	-13.72
2432	5	AVG	20.90	20.96	20.15	30.00	-9.04	1.80	22.76	36.02	-13.26
2437	6	AVG	20.96	20.82	20.38	30.00	-9.04	1.80	22.76	36.02	-13.26
2442	7	AVG	21.00	20.86	19.77	30.00	-9.00	1.80	22.80	36.02	-13.22
2447	8	AVG	20.88	20.82	19.25	30.00	-9.12	1.80	22.68	36.02	-13.34
2452	9	AVG	20.20	20.43	19.38	30.00	-9.57	1.80	22.23	36.02	-13.79
2457	10	AVG	19.42	19.50	18.35	30.00	-10.50	1.80	21.30	36.02	-14.72
2462	11	AVG	15.82	16.70	15.35	30.00	-13.30	1.80	18.50	36.02	-17.52
2467	12	AVG	14.30	14.48	13.85	30.00	-15.52	1.80	16.28	36.02	-19.74
2472	13	AVG	10.50	11.00	-	30.00	-19.00	1.80	12.80	36.02	-23.22

Table 7-8. Average Conducted Output Power Measurements Antenna 4a – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	14.76	14.89	14.65	30.00	-15.11	2.40	17.29	36.02	-18.73
2417	2	AVG	18.75	18.77	16.92	30.00	-11.23	2.40	21.17	36.02	-14.85
2422	3	AVG	19.82	19.85	19.32	30.00	-10.15	2.40	22.25	36.02	-13.77
2427	4	AVG	20.50	20.40	19.74	30.00	-9.50	2.40	22.90	36.02	-13.12
2432	5	AVG	20.97	20.75	20.22	30.00	-9.03	2.40	23.37	36.02	-12.65
2437	6	AVG	20.86	20.70	20.20	30.00	-9.14	2.40	23.26	36.02	-12.76
2442	7	AVG	20.99	20.88	19.80	30.00	-9.01	2.40	23.39	36.02	-12.63
2447	8	AVG	20.93	20.92	19.32	30.00	-9.07	2.40	23.33	36.02	-12.69
2452	9	AVG	20.49	20.50	19.33	30.00	-9.50	2.40	22.90	36.02	-13.12
2457	10	AVG	19.47	19.30	18.20	30.00	-10.53	2.40	21.87	36.02	-14.15
2462	11	AVG	15.80	16.75	15.25	30.00	-13.25	2.40	19.15	36.02	-16.87
2467	12	AVG	14.27	14.32	13.90	30.00	-15.68	2.40	16.72	36.02	-19.30
2472	13	AVG	10.49	10.84	-	30.00	-19.16	2.40	13.24	36.02	-22.78

Table 7-9. Average Conducted Output Power Measurements Antenna 2a – Low Data Rate

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 55 of 429

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.29	13.33	16.32	30.00	-13.68	5.12	21.44	36.02	-14.59
2417	2	AVG	17.08	17.08	20.09	30.00	-9.91	5.12	25.21	36.02	-10.82
2422	3	AVG	19.41	19.26	22.35	30.00	-7.65	5.12	27.47	36.02	-8.56
2427	4	AVG	19.89	19.92	22.92	30.00	-7.08	5.12	28.04	36.02	-7.99
2432	5	AVG	20.33	20.42	23.39	30.00	-6.61	5.12	28.51	36.02	-7.52
2437	6	AVG	20.76	20.90	23.84	30.00	-6.16	5.12	28.96	36.02	-7.07
2442	7	AVG	20.93	20.90	23.93	30.00	-6.07	5.12	29.05	36.02	-6.98
2447	8	AVG	20.33	20.43	23.39	30.00	-6.61	5.12	28.51	36.02	-7.52
2452	9	AVG	19.92	19.90	22.92	30.00	-7.08	5.12	28.04	36.02	-7.99
2457	10	AVG	18.82	18.79	21.82	30.00	-8.18	5.12	26.94	36.02	-9.09
2462	11	AVG	16.32	16.47	19.41	30.00	-10.59	5.12	24.53	36.02	-11.50
2467	12	AVG	14.00	13.80	16.91	30.00	-13.09	5.12	22.03	36.02	-14.00
2472	13	AVG	10.47	10.34	13.42	30.00	-16.58	5.12	18.54	36.02	-17.49

Table 7-10. Average Conducted Output Power Measurements CDD (802.11g) – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.27	13.26	16.28	30.00	-13.72	5.12	21.40	36.02	-14.63
2417	2	AVG	17.23	17.20	20.23	30.00	-9.77	5.12	25.35	36.02	-10.68
2422	3	AVG	19.48	19.29	22.40	30.00	-7.60	5.12	27.52	36.02	-8.51
2427	4	AVG	19.91	19.78	22.86	30.00	-7.14	5.12	27.98	36.02	-8.05
2432	5	AVG	20.44	20.36	23.41	30.00	-6.59	5.12	28.53	36.02	-7.50
2437	6	AVG	20.98	20.86	23.93	30.00	-6.07	5.12	29.05	36.02	-6.98
2442	7	AVG	20.92	20.98	23.96	30.00	-6.04	5.12	29.08	36.02	-6.95
2447	8	AVG	20.47	20.35	23.42	30.00	-6.58	5.12	28.54	36.02	-7.49
2452	9	AVG	19.81	20.00	22.92	30.00	-7.08	5.12	28.04	36.02	-7.99
2457	10	AVG	18.84	18.75	21.81	30.00	-8.19	5.12	26.93	36.02	-9.10
2462	11	AVG	16.39	16.25	19.33	30.00	-10.67	5.12	24.45	36.02	-11.58
2467	12	AVG	13.82	13.75	16.80	30.00	-13.20	5.12	21.92	36.02	-14.11
2472	13	AVG	10.50	10.40	13.46	30.00	-16.54	5.12	18.58	36.02	-17.45

Table 7-11. Average Conducted Output Power Measurements CDD (802.11n) – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.49	13.35	16.43	30.00	-13.57	5.12	21.55	36.02	-14.48
2417	2	AVG	16.73	16.87	19.81	30.00	-10.19	5.12	24.93	36.02	-11.10
2422	3	AVG	18.86	18.81	21.85	30.00	-8.15	5.12	26.97	36.02	-9.06
2427	4	AVG	19.19	19.22	22.22	30.00	-7.78	5.12	27.34	36.02	-8.69
2432	5	AVG	19.78	19.86	22.83	30.00	-7.17	5.12	27.95	36.02	-8.08
2437	6	AVG	19.79	19.87	22.84	30.00	-7.16	5.12	27.96	36.02	-8.07
2442	7	AVG	19.89	20.00	22.96	30.00	-7.04	5.12	28.08	36.02	-7.95
2447	8	AVG	18.91	18.84	21.89	30.00	-8.11	5.12	27.01	36.02	-9.02
2452	9	AVG	18.78	18.91	21.86	30.00	-8.14	5.12	26.98	36.02	-9.05
2457	10	AVG	18.00	17.77	20.90	30.00	-9.10	5.12	26.02	36.02	-10.01
2462	11	AVG	14.84	14.79	17.83	30.00	-12.17	5.12	22.95	36.02	-13.08
2467	12	AVG	13.28	13.21	16.26	30.00	-13.74	5.12	21.38	36.02	-14.65

Table 7-12. Average Conducted Output Power Measurements CDD (802.11ax - SU) – Low Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 56 of 429

Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	13.26	13.75	13.38	30.00	-16.25	1.80	15.55	36.02	-20.47
2417	2	AVG	16.85	16.90	16.49	30.00	-13.10	1.80	18.70	36.02	-17.32
2422	3	AVG	18.96	18.80	18.30	30.00	-11.04	1.80	20.76	36.02	-15.26
2427	4	AVG	20.00	19.89	19.33	30.00	-10.00	1.80	21.80	36.02	-14.22
2432	5	AVG	20.32	20.26	19.92	30.00	-9.68	1.80	22.12	36.02	-13.90
2437	6	AVG	20.78	20.73	20.30	30.00	-9.22	1.80	22.58	36.02	-13.44
2442	7	AVG	20.82	20.72	19.95	30.00	-9.18	1.80	22.62	36.02	-13.40
2447	8	AVG	19.95	19.95	18.96	30.00	-10.05	1.80	21.75	36.02	-14.27
2452	9	AVG	18.77	18.55	18.35	30.00	-11.23	1.80	20.57	36.02	-15.45
2457	10	AVG	18.35	18.50	16.71	30.00	-11.50	1.80	20.30	36.02	-15.72
2462	11	AVG	15.94	16.00	14.50	30.00	-14.00	1.80	17.80	36.02	-18.22
2467	12	AVG	13.98	13.99	12.92	30.00	-16.01	1.80	15.79	36.02	-20.23
2472	13	AVG	10.48	11.00	-	30.00	-19.00	1.80	12.80	36.02	-23.22

Table 7-13. Average Conducted Output Power Measurements Antenna 4a – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	13.45	13.85	13.30	30.00	-16.15	2.40	16.25	36.02	-19.77
2417	2	AVG	16.84	16.74	16.40	30.00	-13.16	2.40	19.24	36.02	-16.78
2422	3	AVG	19.10	18.70	18.31	30.00	-10.90	2.40	21.50	36.02	-14.52
2427	4	AVG	19.97	19.95	19.36	30.00	-10.03	2.40	22.37	36.02	-13.65
2432	5	AVG	20.33	20.33	19.95	30.00	-9.67	2.40	22.73	36.02	-13.29
2437	6	AVG	20.71	20.70	20.26	30.00	-9.29	2.40	23.11	36.02	-12.91
2442	7	AVG	20.85	20.71	19.83	30.00	-9.15	2.40	23.25	36.02	-12.77
2447	8	AVG	19.84	19.84	18.84	30.00	-10.16	2.40	22.24	36.02	-13.78
2452	9	AVG	18.90	18.74	18.27	30.00	-11.10	2.40	21.30	36.02	-14.72
2457	10	AVG	18.25	18.33	16.76	30.00	-11.67	2.40	20.73	36.02	-15.29
2462	11	AVG	15.78	15.96	14.32	30.00	-14.04	2.40	18.36	36.02	-17.66
2467	12	AVG	13.95	14.00	12.87	30.00	-16.00	2.40	16.40	36.02	-19.62
2472	13	AVG	10.40	10.84	-	30.00	-19.16	2.40	13.24	36.02	-22.78

Table 7-14. Average Conducted Output Power Measurements Antenna 2a – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.35	13.20	16.29	30.00	-13.71	5.12	21.41	36.02	-14.62
2417	2	AVG	16.77	16.76	19.78	30.00	-10.22	5.12	24.90	36.02	-11.13
2422	3	AVG	18.96	18.85	21.92	30.00	-8.08	5.12	27.04	36.02	-8.99
2427	4	AVG	19.46	19.43	22.46	30.00	-7.54	5.12	27.58	36.02	-8.45
2432	5	AVG	19.96	19.97	22.98	30.00	-7.02	5.12	28.10	36.02	-7.93
2437	6	AVG	20.96	20.89	23.94	30.00	-6.06	5.12	29.06	36.02	-6.97
2442	7	AVG	20.79	20.82	23.82	30.00	-6.18	5.12	28.94	36.02	-7.09
2447	8	AVG	20.00	19.89	22.96	30.00	-7.04	5.12	28.08	36.02	-7.95
2452	9	AVG	18.46	18.34	21.41	30.00	-8.59	5.12	26.53	36.02	-9.50
2457	10	AVG	17.93	17.83	20.89	30.00	-9.11	5.12	26.01	36.02	-10.02
2462	11	AVG	14.86	14.70	17.79	30.00	-12.21	5.12	22.91	36.02	-13.12
2467	12	AVG	13.40	13.37	16.40	30.00	-13.60	5.12	21.52	36.02	-14.51
2472	13	AVG	10.43	10.46	13.46	30.00	-16.54	5.12	18.58	36.02	-17.45

Table 7-15. Average Conducted Output Power Measurements CDD (802.11g) – Mid Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 57 of 429

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.33	13.23	16.29	30.00	-13.71	5.12	21.41	36.02	-14.62
2417	2	AVG	16.88	16.72	19.81	30.00	-10.19	5.12	24.93	36.02	-11.10
2422	3	AVG	18.94	18.84	21.90	30.00	-8.10	5.12	27.02	36.02	-9.01
2427	4	AVG	19.24	19.30	22.28	30.00	-7.72	5.12	27.40	36.02	-8.63
2432	5	AVG	19.89	19.96	22.94	30.00	-7.06	5.12	28.06	36.02	-7.97
2437	6	AVG	20.78	20.77	23.79	30.00	-6.21	5.12	28.91	36.02	-7.12
2442	7	AVG	20.82	20.77	23.81	30.00	-6.19	5.12	28.93	36.02	-7.10
2447	8	AVG	19.93	19.82	22.89	30.00	-7.11	5.12	28.01	36.02	-8.02
2452	9	AVG	18.28	18.47	21.39	30.00	-8.61	5.12	26.51	36.02	-9.52
2457	10	AVG	17.89	17.72	20.82	30.00	-9.18	5.12	25.94	36.02	-10.09
2462	11	AVG	14.80	14.85	17.84	30.00	-12.16	5.12	22.96	36.02	-13.07
2467	12	AVG	13.20	13.21	16.22	30.00	-13.78	5.12	21.34	36.02	-14.69
2472	13	AVG	10.50	10.34	13.43	30.00	-16.57	5.12	18.55	36.02	-17.48

Table 7-16. Average Conducted Output Power Measurements CDD (802.11n) – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	13.17	13.09	16.14	30.00	-13.86	5.12	21.26	36.02	-14.77
2417	2	AVG	15.97	15.88	18.94	30.00	-11.06	5.12	24.06	36.02	-11.97
2422	3	AVG	18.43	18.44	21.45	30.00	-8.55	5.12	26.57	36.02	-9.46
2427	4	AVG	18.98	18.81	21.91	30.00	-8.09	5.12	27.03	36.02	-9.00
2432	5	AVG	19.87	19.90	22.90	30.00	-7.10	5.12	28.02	36.02	-8.01
2437	6	AVG	19.88	19.84	22.87	30.00	-7.13	5.12	27.99	36.02	-8.04
2442	7	AVG	19.91	19.79	22.86	30.00	-7.14	5.12	27.98	36.02	-8.05
2447	8	AVG	18.84	18.92	21.89	30.00	-8.11	5.12	27.01	36.02	-9.02
2452	9	AVG	18.48	18.40	21.45	30.00	-8.55	5.12	26.57	36.02	-9.46
2457	10	AVG	16.39	16.34	19.38	30.00	-10.62	5.12	24.50	36.02	-11.53
2462	11	AVG	13.78	14.00	16.90	30.00	-13.10	5.12	22.02	36.02	-14.01
2467	12	AVG	13.00	12.95	15.99	30.00	-14.01	5.12	21.11	36.02	-14.92

Table 7-17. Average Conducted Output Power Measurements CDD (802.11ax - SU) – Mid Data Rate

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 58 of 429

High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]				Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11b	802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	19.65	13.43	13.32	13.35	30.00	-10.35	1.80	21.45	36.02	-14.57
2417	2	AVG	19.88	16.46	16.46	15.93	30.00	-10.12	1.80	21.68	36.02	-14.34
2422	3	AVG	20.23	18.39	17.88	17.85	30.00	-9.77	1.80	22.03	36.02	-13.99
2427	4	AVG	20.94	19.42	19.30	18.47	30.00	-9.06	1.80	22.74	36.02	-13.28
2432	5	AVG	20.96	19.76	19.96	18.80	30.00	-9.04	1.80	22.76	36.02	-13.26
2437	6	AVG	20.78	20.90	20.88	20.46	30.00	-9.10	1.80	22.70	36.02	-13.32
2442	7	AVG	20.81	20.35	20.33	18.95	30.00	-9.19	1.80	22.61	36.02	-13.41
2447	8	AVG	20.90	19.43	19.37	17.88	30.00	-9.10	1.80	22.70	36.02	-13.32
2452	9	AVG	20.99	17.85	18.00	17.78	30.00	-9.01	1.80	22.79	36.02	-13.23
2457	10	AVG	20.03	17.32	17.16	15.87	30.00	-9.97	1.80	21.83	36.02	-14.19
2462	11	AVG	19.91	14.32	14.37	13.80	30.00	-10.09	1.80	21.71	36.02	-14.31
2467	12	AVG	18.03	12.27	12.32	12.48	30.00	-11.97	1.80	19.83	36.02	-16.19
2472	13	AVG	15.80	9.46	10.43	-	30.00	-14.20	1.80	17.60	36.02	-18.42

Table 7-18. Average Conducted Output Power Measurements Antenna 4a – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]				Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11b	802.11g	802.11n	802.11ax (SU)						
2412	1	AVG	19.69	13.36	13.25	13.48	30.00	-10.31	2.40	22.09	36.02	-13.93
2417	2	AVG	19.99	16.39	16.37	15.90	30.00	-10.01	2.40	22.39	36.02	-13.63
2422	3	AVG	20.20	18.32	17.99	17.95	30.00	-9.80	2.40	22.60	36.02	-13.42
2427	4	AVG	20.98	19.35	19.47	18.50	30.00	-9.02	2.40	23.38	36.02	-12.64
2432	5	AVG	20.80	19.80	19.89	18.82	30.00	-9.20	2.40	23.20	36.02	-12.82
2437	6	AVG	20.87	20.94	20.84	20.41	30.00	-9.06	2.40	23.34	36.02	-12.68
2442	7	AVG	20.94	20.39	20.30	18.99	30.00	-9.06	2.40	23.34	36.02	-12.68
2447	8	AVG	20.99	19.47	19.37	17.89	30.00	-9.01	2.40	23.39	36.02	-12.63
2452	9	AVG	20.81	17.89	17.97	17.95	30.00	-9.19	2.40	23.21	36.02	-12.81
2457	10	AVG	20.10	17.40	17.20	15.87	30.00	-9.90	2.40	22.50	36.02	-13.52
2462	11	AVG	19.80	14.40	14.43	13.98	30.00	-10.20	2.40	22.20	36.02	-13.82
2467	12	AVG	18.15	12.35	12.45	12.49	30.00	-11.85	2.40	20.55	36.02	-15.47
2472	13	AVG	15.83	9.38	10.33	-	30.00	-14.17	2.40	18.23	36.02	-17.79

Table 7-19. Average Conducted Output Power Measurements Antenna 2a – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	12.86	12.80	15.84	30.00	-14.16	5.12	20.96	36.02	-15.07
2417	2	AVG	15.95	15.79	18.88	30.00	-11.12	5.12	24.00	36.02	-12.03
2422	3	AVG	18.39	18.27	21.34	30.00	-8.66	5.12	26.46	36.02	-9.57
2427	4	AVG	18.88	18.88	21.89	30.00	-8.11	5.12	27.01	36.02	-9.02
2432	5	AVG	19.40	19.28	22.35	30.00	-7.65	5.12	27.47	36.02	-8.56
2437	6	AVG	20.28	20.32	23.31	30.00	-6.69	5.12	28.43	36.02	-7.60
2442	7	AVG	20.00	19.93	22.98	30.00	-7.02	5.12	28.10	36.02	-7.93
2447	8	AVG	19.48	19.27	22.39	30.00	-7.61	5.12	27.51	36.02	-8.52
2452	9	AVG	17.79	17.99	20.90	30.00	-9.10	5.12	26.02	36.02	-10.01
2457	10	AVG	16.90	16.76	19.84	30.00	-10.16	5.12	24.96	36.02	-11.07
2462	11	AVG	13.83	13.89	16.87	30.00	-13.13	5.12	21.99	36.02	-14.04
2467	12	AVG	12.48	12.43	15.47	30.00	-14.53	5.12	20.59	36.02	-15.44
2472	13	AVG	9.91	10.00	12.97	30.00	-17.03	5.12	18.09	36.02	-17.94

Table 7-20. Average Conducted Output Power Measurements CDD (802.11g) – High Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 59 of 429

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	12.89	12.94	15.93	30.00	-14.07	5.12	21.05	36.02	-14.98
2417	2	AVG	15.92	15.85	18.90	30.00	-11.10	5.12	24.02	36.02	-12.01
2422	3	AVG	18.39	18.36	21.39	30.00	-8.61	5.12	26.51	36.02	-9.52
2427	4	AVG	18.78	18.75	21.78	30.00	-8.22	5.12	26.90	36.02	-9.13
2432	5	AVG	19.50	19.26	22.39	30.00	-7.61	5.12	27.51	36.02	-8.52
2437	6	AVG	20.40	20.41	23.42	30.00	-6.58	5.12	28.54	36.02	-7.49
2442	7	AVG	19.77	19.79	22.79	30.00	-7.21	5.12	27.91	36.02	-8.12
2447	8	AVG	19.29	19.44	22.38	30.00	-7.62	5.12	27.50	36.02	-8.53
2452	9	AVG	18.00	17.75	20.89	30.00	-9.11	5.12	26.01	36.02	-10.02
2457	10	AVG	16.86	16.89	19.89	30.00	-10.11	5.12	25.01	36.02	-11.02
2462	11	AVG	13.82	13.75	16.80	30.00	-13.20	5.12	21.92	36.02	-14.11
2467	12	AVG	12.46	12.48	15.48	30.00	-14.52	5.12	20.60	36.02	-15.43
2472	13	AVG	9.92	9.76	12.85	30.00	-17.15	5.12	17.97	36.02	-18.06

Table 7-21. Average Conducted Output Power Measurements CDD (802.11n) – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	AVG	12.46	12.37	15.43	30.00	-14.57	5.12	20.55	36.02	-15.48
2417	2	AVG	15.39	15.44	18.43	30.00	-11.57	5.12	23.55	36.02	-12.48
2422	3	AVG	16.85	16.89	19.88	30.00	-10.12	5.12	25.00	36.02	-11.03
2427	4	AVG	17.92	17.77	20.86	30.00	-9.14	5.12	25.98	36.02	-10.05
2432	5	AVG	18.39	18.40	21.41	30.00	-8.59	5.12	26.53	36.02	-9.50
2437	6	AVG	19.56	19.62	22.60	30.00	-7.40	5.12	27.72	36.02	-8.31
2442	7	AVG	18.39	18.32	21.37	30.00	-8.63	5.12	26.49	36.02	-9.54
2447	8	AVG	17.25	17.49	20.38	30.00	-9.62	5.12	25.50	36.02	-10.53
2452	9	AVG	17.32	17.50	20.42	30.00	-9.58	5.12	25.54	36.02	-10.49
2457	10	AVG	15.28	15.39	18.35	30.00	-11.65	5.12	23.47	36.02	-12.56
2462	11	AVG	13.35	13.27	16.32	30.00	-13.68	5.12	21.44	36.02	-14.59
2467	12	AVG	11.87	11.81	14.85	30.00	-15.15	5.12	19.97	36.02	-16.06

Table 7-22. Average Conducted Output Power Measurements CDD (802.11ax - SU) – High Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 60 of 429

7.3.2 Peak Output Power Measurement

§15.247(b.3); RSS-247 [5.4]

Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	19.48	19.48	19.05	30.00	-10.52	1.80	21.28	36.02	-14.74
2417	2	PEAK	23.37	23.40	21.30	30.00	-6.60	1.80	25.20	36.02	-10.82
2422	3	PEAK	23.95	24.37	23.50	30.00	-5.63	1.80	26.17	36.02	-9.85
2427	4	PEAK	26.46	26.72	26.10	30.00	-3.28	1.80	28.52	36.02	-7.50
2432	5	PEAK	26.60	26.93	26.33	30.00	-3.07	1.80	28.73	36.02	-7.29
2437	6	PEAK	26.59	26.62	26.46	30.00	-3.38	1.80	28.42	36.02	-7.60
2442	7	PEAK	26.85	26.65	26.14	30.00	-3.15	1.80	28.65	36.02	-7.37
2447	8	PEAK	26.57	26.92	25.78	30.00	-3.08	1.80	28.72	36.02	-7.30
2452	9	PEAK	24.36	24.81	23.75	30.00	-5.19	1.80	26.61	36.02	-9.41
2457	10	PEAK	23.75	24.10	22.74	30.00	-5.90	1.80	25.90	36.02	-10.12
2462	11	PEAK	20.16	21.30	19.87	30.00	-8.70	1.80	23.10	36.02	-12.92
2467	12	PEAK	18.70	19.10	18.43	30.00	-10.90	1.80	20.90	36.02	-15.12
2472	13	PEAK	17.54	18.27	-	30.00	-11.73	1.80	20.07	36.02	-15.95

Table 7-23. Peak Conducted Output Power Measurements Antenna 4a – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	21.90	19.69	19.03	30.00	-8.10	2.40	24.30	36.02	-11.72
2417	2	PEAK	23.10	23.70	21.48	30.00	-6.30	2.40	26.10	36.02	-9.92
2422	3	PEAK	24.11	24.25	23.70	30.00	-5.75	2.40	26.65	36.02	-9.37
2427	4	PEAK	26.25	26.12	25.83	30.00	-3.75	2.40	28.65	36.02	-7.37
2432	5	PEAK	26.40	26.26	26.04	30.00	-3.60	2.40	28.80	36.02	-7.22
2437	6	PEAK	26.35	26.24	26.02	30.00	-3.65	2.40	28.75	36.02	-7.27
2442	7	PEAK	26.46	26.30	25.88	30.00	-3.54	2.40	28.86	36.02	-7.16
2447	8	PEAK	26.48	26.32	25.65	30.00	-3.52	2.40	28.88	36.02	-7.14
2452	9	PEAK	24.85	24.71	23.61	30.00	-5.15	2.40	27.25	36.02	-8.77
2457	10	PEAK	24.01	23.80	22.72	30.00	-5.99	2.40	26.41	36.02	-9.61
2462	11	PEAK	20.45	21.44	19.77	30.00	-8.56	2.40	23.84	36.02	-12.18
2467	12	PEAK	18.93	19.16	18.81	30.00	-10.84	2.40	21.56	36.02	-14.46
2472	13	PEAK	17.62	18.08	-	30.00	-11.92	2.40	20.48	36.02	-15.54

Table 7-24. Peak Conducted Output Power Measurements Antenna 2a – Low Data Rate

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 61 of 429

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	19.06	19.19	22.14	30.00	-7.86	5.12	27.26	36.02	-8.77
2417	2	PEAK	22.91	23.02	25.98	30.00	-4.02	5.12	31.10	36.02	-4.93
2422	3	PEAK	25.28	25.30	28.30	30.00	-1.70	5.12	33.42	36.02	-2.61
2427	4	PEAK	25.67	25.68	28.69	30.00	-1.31	5.12	33.81	36.02	-2.22
2432	5	PEAK	26.17	26.11	29.15	30.00	-0.85	5.12	34.27	36.02	-1.76
2437	6	PEAK	26.69	26.68	29.70	30.00	-0.30	5.12	34.82	36.02	-1.21
2442	7	PEAK	26.72	26.65	29.70	30.00	-0.30	5.12	34.82	36.02	-1.21
2447	8	PEAK	26.12	26.21	29.18	30.00	-0.82	5.12	34.30	36.02	-1.73
2452	9	PEAK	25.76	25.62	28.70	30.00	-1.30	5.12	33.82	36.02	-2.21
2457	10	PEAK	24.79	24.56	27.69	30.00	-2.31	5.12	32.81	36.02	-3.22
2462	11	PEAK	22.19	22.11	25.16	30.00	-4.84	5.12	30.28	36.02	-5.75
2467	12	PEAK	19.68	19.68	22.69	30.00	-7.31	5.12	27.81	36.02	-8.22
2472	13	PEAK	16.29	16.19	19.25	30.00	-10.75	5.12	24.37	36.02	-11.66

Table 7-25. Peak Conducted Output Power Measurements CDD (802.11g) – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	20.12	19.62	26.89	30.00	-3.11	5.12	32.01	36.02	-4.02
2417	2	PEAK	21.80	21.69	24.76	30.00	-5.24	5.12	29.88	36.02	-6.15
2422	3	PEAK	23.90	23.86	26.89	30.00	-3.11	5.12	32.01	36.02	-4.02
2427	4	PEAK	26.57	26.16	29.38	30.00	-0.62	5.12	34.50	36.02	-1.53
2432	5	PEAK	26.85	26.41	29.65	30.00	-0.35	5.12	34.77	36.02	-1.26
2437	6	PEAK	27.09	26.58	29.85	30.00	-0.15	5.12	34.97	36.02	-1.06
2442	7	PEAK	27.06	26.67	29.88	30.00	-0.12	5.12	35.00	36.02	-1.03
2447	8	PEAK	26.86	26.45	29.67	30.00	-0.33	5.12	34.79	36.02	-1.24
2452	9	PEAK	24.34	24.60	27.48	30.00	-2.52	5.12	32.60	36.02	-3.43
2457	10	PEAK	23.37	23.52	26.46	30.00	-3.54	5.12	31.58	36.02	-4.45
2462	11	PEAK	21.13	21.03	24.09	30.00	-5.91	5.12	29.21	36.02	-6.82
2467	12	PEAK	18.65	18.66	21.67	30.00	-8.33	5.12	26.79	36.02	-9.24
2472	13	PEAK	17.85	17.67	20.77	30.00	-9.23	5.12	25.89	36.02	-10.14

Table 7-26. Peak Conducted Output Power Measurements CDD (802.11n) – Low Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	17.92	17.68	20.81	30.00	-9.19	5.12	25.93	36.02	-10.10
2417	2	PEAK	21.19	21.44	24.33	30.00	-5.67	5.12	29.45	36.02	-6.58
2422	3	PEAK	23.17	23.24	26.22	30.00	-3.78	5.12	31.34	36.02	-4.69
2427	4	PEAK	25.74	25.67	28.72	30.00	-1.28	5.12	33.84	36.02	-2.19
2432	5	PEAK	26.06	25.97	29.03	30.00	-0.97	5.12	34.15	36.02	-1.88
2437	6	PEAK	26.05	26.04	29.06	30.00	-0.94	5.12	34.18	36.02	-1.85
2442	7	PEAK	26.11	26.12	29.13	30.00	-0.87	5.12	34.25	36.02	-1.78
2447	8	PEAK	25.52	25.53	28.54	30.00	-1.46	5.12	33.66	36.02	-2.37
2452	9	PEAK	23.15	23.28	26.23	30.00	-3.77	5.12	31.35	36.02	-4.68
2457	10	PEAK	22.24	22.27	25.27	30.00	-4.73	5.12	30.39	36.02	-5.64
2462	11	PEAK	19.38	19.37	22.39	30.00	-7.61	5.12	27.51	36.02	-8.52
2467	12	PEAK	17.91	18.07	21.00	30.00	-9.00	5.12	26.12	36.02	-9.91

Table 7-27. Peak Conducted Output Power Measurements CDD (802.11ax - SU) – Low Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 62 of 429

Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	17.00	20.65	19.95	30.00	-9.35	1.80	22.45	36.02	-13.57
2417	2	PEAK	21.24	23.89	23.56	30.00	-6.11	1.80	25.69	36.02	-10.33
2422	3	PEAK	23.23	25.38	24.95	30.00	-4.62	1.80	27.18	36.02	-8.84
2427	4	PEAK	26.17	26.46	26.18	30.00	-3.54	1.80	28.26	36.02	-7.76
2432	5	PEAK	26.27	26.57	26.41	30.00	-3.43	1.80	28.37	36.02	-7.65
2437	6	PEAK	26.43	26.75	26.56	30.00	-3.25	1.80	28.55	36.02	-7.47
2442	7	PEAK	26.44	26.72	26.41	30.00	-3.28	1.80	28.52	36.02	-7.50
2447	8	PEAK	26.07	26.43	25.95	30.00	-3.57	1.80	28.23	36.02	-7.79
2452	9	PEAK	23.00	25.27	25.02	30.00	-4.73	1.80	27.07	36.02	-8.95
2457	10	PEAK	22.69	25.22	23.64	30.00	-4.78	1.80	27.02	36.02	-9.00
2462	11	PEAK	20.31	23.17	21.73	30.00	-6.83	1.80	24.97	36.02	-11.05
2467	12	PEAK	18.45	21.42	20.07	30.00	-8.58	1.80	23.22	36.02	-12.80
2472	13	PEAK	17.43	19.86	-	30.00	-10.14	1.80	21.66	36.02	-14.36

Table 7-28. Peak Conducted Output Power Measurements Antenna 4a – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	16.82	20.34	19.73	30.00	-9.66	2.40	22.74	36.02	-13.28
2417	2	PEAK	21.19	23.75	23.52	30.00	-6.25	2.40	26.15	36.02	-9.87
2422	3	PEAK	23.42	25.25	24.98	30.00	-4.75	2.40	27.65	36.02	-8.37
2427	4	PEAK	25.95	26.22	25.92	30.00	-3.78	2.40	28.62	36.02	-7.40
2432	5	PEAK	25.97	26.24	26.10	30.00	-3.76	2.40	28.64	36.02	-7.38
2437	6	PEAK	25.99	26.34	26.21	30.00	-3.66	2.40	28.74	36.02	-7.28
2442	7	PEAK	26.07	26.30	26.06	30.00	-3.70	2.40	28.70	36.02	-7.32
2447	8	PEAK	25.78	26.08	25.66	30.00	-3.92	2.40	28.48	36.02	-7.54
2452	9	PEAK	23.22	25.37	24.99	30.00	-4.63	2.40	27.77	36.02	-8.25
2457	10	PEAK	22.75	25.24	23.85	30.00	-4.76	2.40	27.64	36.02	-8.38
2462	11	PEAK	20.43	23.48	21.82	30.00	-6.52	2.40	25.88	36.02	-10.14
2467	12	PEAK	18.44	21.35	20.06	30.00	-8.65	2.40	23.75	36.02	-12.27
2472	13	PEAK	17.23	19.56	-	30.00	-10.44	2.40	21.96	36.02	-14.06

Table 7-29. Peak Conducted Output Power Measurements Antenna 2a – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	18.07	17.55	20.83	30.00	-9.17	5.12	25.95	36.02	-10.08
2417	2	PEAK	21.11	21.06	24.10	30.00	-5.90	5.12	29.22	36.02	-6.81
2422	3	PEAK	23.20	23.14	26.18	30.00	-3.82	5.12	31.30	36.02	-4.73
2427	4	PEAK	25.85	25.63	28.75	30.00	-1.25	5.12	33.87	36.02	-2.16
2432	5	PEAK	26.11	25.81	28.97	30.00	-1.03	5.12	34.09	36.02	-1.94
2437	6	PEAK	26.53	26.09	29.33	30.00	-0.67	5.12	34.45	36.02	-1.58
2442	7	PEAK	26.46	26.09	29.29	30.00	-0.71	5.12	34.41	36.02	-1.62
2447	8	PEAK	26.10	25.81	28.97	30.00	-1.03	5.12	34.09	36.02	-1.94
2452	9	PEAK	22.74	22.71	25.74	30.00	-4.26	5.12	30.86	36.02	-5.17
2457	10	PEAK	22.21	22.27	25.25	30.00	-4.75	5.12	30.37	36.02	-5.66
2462	11	PEAK	19.11	19.23	22.18	30.00	-7.82	5.12	27.30	36.02	-8.73
2467	12	PEAK	17.94	17.93	20.95	30.00	-9.05	5.12	26.07	36.02	-9.96
2472	13	PEAK	17.44	17.34	20.40	30.00	-9.60	5.12	25.52	36.02	-10.51

Table 7-30. Peak Conducted Output Power Measurements CDD (802.11g) – Mid Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 63 of 429

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	20.30	19.99	23.16	30.00	-6.84	5.12	28.28	36.02	-7.75
2417	2	PEAK	23.89	23.75	26.83	30.00	-3.17	5.12	31.95	36.02	-4.08
2422	3	PEAK	25.52	25.39	28.47	30.00	-1.53	5.12	33.59	36.02	-2.44
2427	4	PEAK	26.16	25.92	29.05	30.00	-0.95	5.12	34.17	36.02	-1.86
2432	5	PEAK	26.43	26.10	29.28	30.00	-0.72	5.12	34.40	36.02	-1.63
2437	6	PEAK	26.74	26.33	29.55	30.00	-0.45	5.12	34.67	36.02	-1.36
2442	7	PEAK	26.75	26.33	29.56	30.00	-0.44	5.12	34.68	36.02	-1.35
2447	8	PEAK	26.43	26.08	29.27	30.00	-0.73	5.12	34.39	36.02	-1.64
2452	9	PEAK	25.11	25.21	28.17	30.00	-1.83	5.12	33.29	36.02	-2.74
2457	10	PEAK	24.76	24.78	27.78	30.00	-2.22	5.12	32.90	36.02	-3.13
2462	11	PEAK	22.01	22.32	25.18	30.00	-4.82	5.12	30.30	36.02	-5.73
2467	12	PEAK	20.61	20.54	23.59	30.00	-6.41	5.12	28.71	36.02	-7.32
2472	13	PEAK	19.39	19.09	22.25	30.00	-7.75	5.12	27.37	36.02	-8.66

Table 7-31. Peak Conducted Output Power Measurements CDD (802.11n) – Mid Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	19.67	19.45	22.57	30.00	-7.43	5.12	27.69	36.02	-8.34
2417	2	PEAK	22.76	22.72	25.75	30.00	-4.25	5.12	30.87	36.02	-5.16
2422	3	PEAK	25.00	25.03	28.03	30.00	-1.97	5.12	33.15	36.02	-2.88
2427	4	PEAK	25.94	25.65	28.81	30.00	-1.19	5.12	33.93	36.02	-2.10
2432	5	PEAK	26.40	26.09	29.26	30.00	-0.74	5.12	34.38	36.02	-1.65
2437	6	PEAK	26.41	26.06	29.25	30.00	-0.75	5.12	34.37	36.02	-1.66
2442	7	PEAK	26.41	26.06	29.25	30.00	-0.75	5.12	34.37	36.02	-1.66
2447	8	PEAK	25.85	25.76	28.82	30.00	-1.18	5.12	33.94	36.02	-2.09
2452	9	PEAK	25.04	25.01	28.04	30.00	-1.96	5.12	33.16	36.02	-2.87
2457	10	PEAK	23.18	23.35	26.28	30.00	-3.72	5.12	31.40	36.02	-4.63
2462	11	PEAK	20.72	21.15	23.95	30.00	-6.05	5.12	29.07	36.02	-6.96
2467	12	PEAK	20.12	20.11	23.13	30.00	-6.87	5.12	28.25	36.02	-7.78

Table 7-32. Peak Conducted Output Power Measurements CDD (802.11ax - SU) – Mid Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 64 of 429

High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]				Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11b	802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	22.36	19.16	23.93	23.94	30.00	-6.06	1.80	25.74	36.02	-10.28
2417	2	PEAK	22.61	22.10	25.78	25.51	30.00	-4.22	1.80	27.58	36.02	-8.44
2422	3	PEAK	22.95	24.10	26.25	26.20	30.00	-3.75	1.80	28.05	36.02	-7.97
2427	4	PEAK	23.61	24.67	26.50	26.36	30.00	-3.50	1.80	28.30	36.02	-7.72
2432	5	PEAK	23.59	25.02	26.64	26.45	30.00	-3.36	1.80	28.44	36.02	-7.58
2437	6	PEAK	23.45	25.51	26.73	26.69	30.00	-3.27	1.80	28.53	36.02	-7.49
2442	7	PEAK	23.49	25.23	26.63	26.45	30.00	-3.37	1.80	28.43	36.02	-7.59
2447	8	PEAK	23.54	25.02	26.44	26.16	30.00	-3.56	1.80	28.24	36.02	-7.78
2452	9	PEAK	23.67	23.36	26.12	26.06	30.00	-3.88	1.80	27.92	36.02	-8.10
2457	10	PEAK	22.73	22.60	25.91	25.40	30.00	-4.09	1.80	27.71	36.02	-8.31
2462	11	PEAK	22.64	19.07	24.60	24.23	30.00	-5.40	1.80	26.40	36.02	-9.62
2467	12	PEAK	20.75	17.21	23.10	23.27	30.00	-6.73	1.80	25.07	36.02	-10.95
2472	13	PEAK	18.70	15.05	21.11	-	30.00	-8.89	1.80	22.91	36.02	-13.11

Table 7-33. Peak Conducted Output Power Measurements Antenna 4a – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]				Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			802.11b	802.11g	802.11n	802.11ax (SU)						
2412	1	PEAK	22.41	19.09	23.90	23.95	30.00	-6.05	2.40	26.35	36.02	-9.67
2417	2	PEAK	22.67	22.03	25.47	25.25	30.00	-4.53	2.40	27.87	36.02	-8.15
2422	3	PEAK	22.94	23.03	25.83	25.83	30.00	-4.17	2.40	28.23	36.02	-7.79
2427	4	PEAK	23.53	23.60	26.10	25.93	30.00	-3.90	2.40	28.50	36.02	-7.52
2432	5	PEAK	23.34	24.06	26.17	26.00	30.00	-3.83	2.40	28.57	36.02	-7.45
2437	6	PEAK	23.43	25.55	26.27	26.25	30.00	-3.73	2.40	28.67	36.02	-7.35
2442	7	PEAK	23.49	25.27	26.19	26.04	30.00	-3.81	2.40	28.59	36.02	-7.43
2447	8	PEAK	23.60	24.06	26.10	25.80	30.00	-3.90	2.40	28.50	36.02	-7.52
2452	9	PEAK	23.41	23.40	25.81	25.78	30.00	-4.19	2.40	28.21	36.02	-7.81
2457	10	PEAK	22.76	22.68	25.59	25.20	30.00	-4.41	2.40	27.99	36.02	-8.03
2462	11	PEAK	22.48	19.15	24.60	24.17	30.00	-5.40	2.40	27.00	36.02	-9.02
2467	12	PEAK	20.90	17.29	23.15	23.05	30.00	-6.85	2.40	25.55	36.02	-10.47
2472	13	PEAK	18.59	14.97	20.90	-	30.00	-9.10	2.40	23.30	36.02	-12.72

Table 7-34. Peak Conducted Output Power Measurements Antenna 2a – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	18.68	18.49	21.60	30.00	-8.40	5.12	26.72	36.02	-9.31
2417	2	PEAK	21.67	21.46	24.58	30.00	-5.42	5.12	29.70	36.02	-6.33
2422	3	PEAK	24.10	23.98	27.05	30.00	-2.95	5.12	32.17	36.02	-3.86
2427	4	PEAK	24.67	24.69	27.69	30.00	-2.31	5.12	32.81	36.02	-3.22
2432	5	PEAK	25.02	25.10	28.07	30.00	-1.93	5.12	33.19	36.02	-2.84
2437	6	PEAK	26.01	26.07	29.05	30.00	-0.95	5.12	34.17	36.02	-1.86
2442	7	PEAK	25.51	25.45	28.49	30.00	-1.51	5.12	33.61	36.02	-2.42
2447	8	PEAK	25.02	25.19	28.12	30.00	-1.88	5.12	33.24	36.02	-2.79
2452	9	PEAK	23.61	23.61	26.62	30.00	-3.38	5.12	31.74	36.02	-4.29
2457	10	PEAK	22.60	22.47	25.55	30.00	-4.45	5.12	30.67	36.02	-5.36
2462	11	PEAK	19.66	19.70	22.69	30.00	-7.31	5.12	27.81	36.02	-8.22
2467	12	PEAK	18.00	18.16	21.09	30.00	-8.91	5.12	26.21	36.02	-9.82
2472	13	PEAK	15.55	15.62	18.60	30.00	-11.40	5.12	23.72	36.02	-12.31

Table 7-35. Peak Conducted Output Power Measurements CDD (802.11g) – High Data Rate

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 65 of 429

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

V 10.5 12/15/2021

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	19.50	19.36	22.44	30.00	-7.56	5.12	27.56	36.02	-8.47
2417	2	PEAK	21.99	21.60	24.81	30.00	-5.19	5.12	29.93	36.02	-6.10
2422	3	PEAK	23.01	22.55	25.80	30.00	-4.20	5.12	30.92	36.02	-5.11
2427	4	PEAK	21.17	20.86	24.03	30.00	-5.97	5.12	29.15	36.02	-6.88
2432	5	PEAK	23.70	22.68	26.23	30.00	-3.77	5.12	31.35	36.02	-4.68
2437	6	PEAK	23.87	22.96	26.45	30.00	-3.55	5.12	31.57	36.02	-4.46
2442	7	PEAK	23.75	22.84	26.33	30.00	-3.67	5.12	31.45	36.02	-4.58
2447	8	PEAK	23.58	22.78	26.21	30.00	-3.79	5.12	31.33	36.02	-4.70
2452	9	PEAK	22.69	22.51	25.61	30.00	-4.39	5.12	30.73	36.02	-5.30
2457	10	PEAK	22.22	21.99	25.12	30.00	-4.88	5.12	30.24	36.02	-5.79
2462	11	PEAK	19.65	19.42	22.55	30.00	-7.45	5.12	27.67	36.02	-8.36
2467	12	PEAK	18.34	18.22	21.29	30.00	-8.71	5.12	26.41	36.02	-9.62
2472	13	PEAK	15.70	15.43	18.58	30.00	-11.42	5.12	23.70	36.02	-12.33

Table 7-36. Peak Conducted Output Power Measurements CDD (802.11n) – High Data Rate

Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
			Antenna 4a	Antenna 2a	Summed						
2412	1	PEAK	18.07	18.10	21.10	30.00	-8.90	5.12	26.22	36.02	-9.81
2417	2	PEAK	20.95	21.00	23.99	30.00	-6.01	5.12	29.11	36.02	-6.92
2422	3	PEAK	22.35	22.55	25.46	30.00	-4.54	5.12	30.58	36.02	-5.45
2427	4	PEAK	23.55	23.55	26.56	30.00	-3.44	5.12	31.68	36.02	-4.35
2432	5	PEAK	23.85	23.97	26.92	30.00	-3.08	5.12	32.04	36.02	-3.99
2437	6	PEAK	25.13	25.10	28.13	30.00	-1.87	5.12	33.25	36.02	-2.78
2442	7	PEAK	24.04	24.04	27.05	30.00	-2.95	5.12	32.17	36.02	-3.86
2447	8	PEAK	22.97	22.94	25.97	30.00	-4.03	5.12	31.09	36.02	-4.94
2452	9	PEAK	23.06	22.93	26.01	30.00	-3.99	5.12	31.13	36.02	-4.90
2457	10	PEAK	21.03	21.08	24.07	30.00	-5.93	5.12	29.19	36.02	-6.84
2462	11	PEAK	19.00	19.09	22.06	30.00	-7.94	5.12	27.18	36.02	-8.85
2467	12	PEAK	17.48	17.48	20.49	30.00	-9.51	5.12	25.61	36.02	-10.42

Table 7-37. Peak Conducted Output Power Measurements CDD (802.11ax - SU) – High Data Rate

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 66 of 429

**Note:**

Per ANSI C63.10-2013 and KDB 662911 D01 v02r01 Section E1), the conducted powers at Antenna 4a and Antenna 2a were first measured separately during CDD transmission as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where GN is the gain of the n th antenna and N_{ANT} , the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_{N/20}})^2 / N_{ANT}] \text{ dBi}$$

Sample CDD Calculation:

At 2412MHz the average conducted output power was measured to be 13.27 dBm for Antenna 4a and 13.26 dBm for Antenna 2a.

$$\text{Antenna 4a} + \text{Antenna 2a} = \text{CDD}$$

$$(13.27 \text{ dBm} + 13.26 \text{ dBm}) = (21.232 \text{ mW} + 21.184 \text{ mW}) = 42.416 \text{ mW} = 16.28 \text{ dBm}$$

Sample e.i.r.p. Calculation:

At 2412MHz, the average conducted output power was calculated to be 16.28 dBm with directional gain of 5.12 dBi.

$$\text{e.i.r.p. (dBm)} = \text{Conducted Power (dBm)} + \text{Ant gain (dBi)}$$

$$16.28 \text{ dBm} + 5.12 \text{ dBi} = 21.40 \text{ dBm}$$

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 67 of 429

V 10.5 12/15/2021

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 Washington DC LLC. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

7.4 Power Spectral Density

§15.247(e); RSS-247 [5.2]

Test Overview and Limit

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated and the worst case configuration results are reported in this section.

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.10.2 Method PKPSD

KDB 558074 D01 v05r02 – Section 8.4 DTS Maximum Power Spectral Density level in the fundamental emission

ANSI C63.10-2013 – Subclause 14.3.2.2 Measure-and-Sum Technique

KDB 662911 D01 v02r01 – Section E)2) Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 1MHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

The data rate have been classified into three different groups: low data rate, middle data rate, and high data rate. All three data rate groups have been investigated and only the worst case data rate per group is reported.

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 68 of 429 V 10.5 12/15/2021

Antenna 4a Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	g	12	-9.88	8.00	-17.88	Pass
2437	6	g	12	-3.52	8.00	-11.52	Pass
2462	11	g	12	-8.41	8.00	-16.41	Pass
2412	1	n	19.5/21.7 (MCS2)	-11.61	8.00	-19.61	Pass
2437	6	n	19.5/21.7 (MCS2)	-5.45	8.00	-13.45	Pass
2462	11	n	19.5/21.7 (MCS2)	-10.12	8.00	-18.12	Pass
2412	1	ax (SU)	24/25.8 (MCS2)	-13.49	8.00	-21.49	Pass
2437	6	ax (SU)	24/25.8 (MCS2)	-6.49	8.00	-14.49	Pass
2462	11	ax (SU)	24/25.8 (MCS2)	-13.00	8.00	-21.00	Pass

Table 7-38. Conducted Power Density Measurements Antenna 4a (Low Data Rate)

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	g	18	-11.72	8.00	-19.72	Pass
2437	6	g	18	-2.47	8.00	-10.47	Pass
2462	11	g	18	-8.59	8.00	-16.59	Pass
2412	1	n	26/28.9 (MCS3)	-12.83	8.00	-20.83	Pass
2437	6	n	26/28.9 (MCS3)	-5.81	8.00	-13.81	Pass
2462	11	n	26/28.9 (MCS3)	-10.21	8.00	-18.21	Pass
2412	1	ax (SU)	33/34.4 (MCS3)	-13.37	8.00	-21.37	Pass
2437	6	ax (SU)	33/34.4 (MCS3)	-5.56	8.00	-13.56	Pass
2462	11	ax (SU)	33/34.4 (MCS3)	-11.02	8.00	-19.02	Pass

Table 7-39. Conducted Power Density Measurements Antenna 4a (Mid Data Rate)

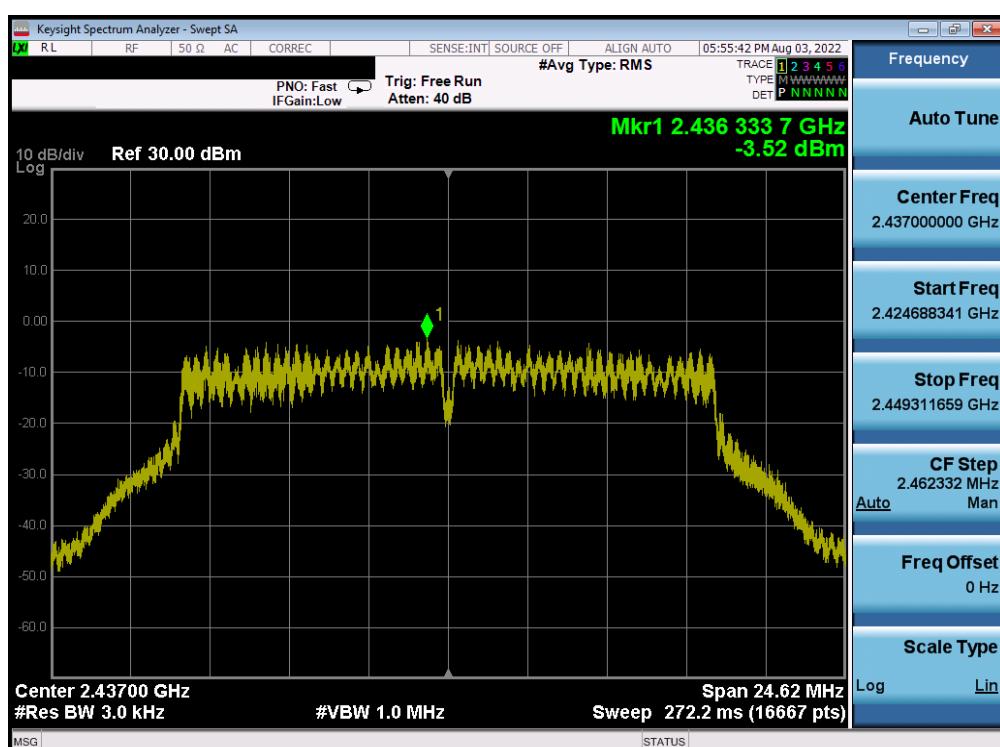
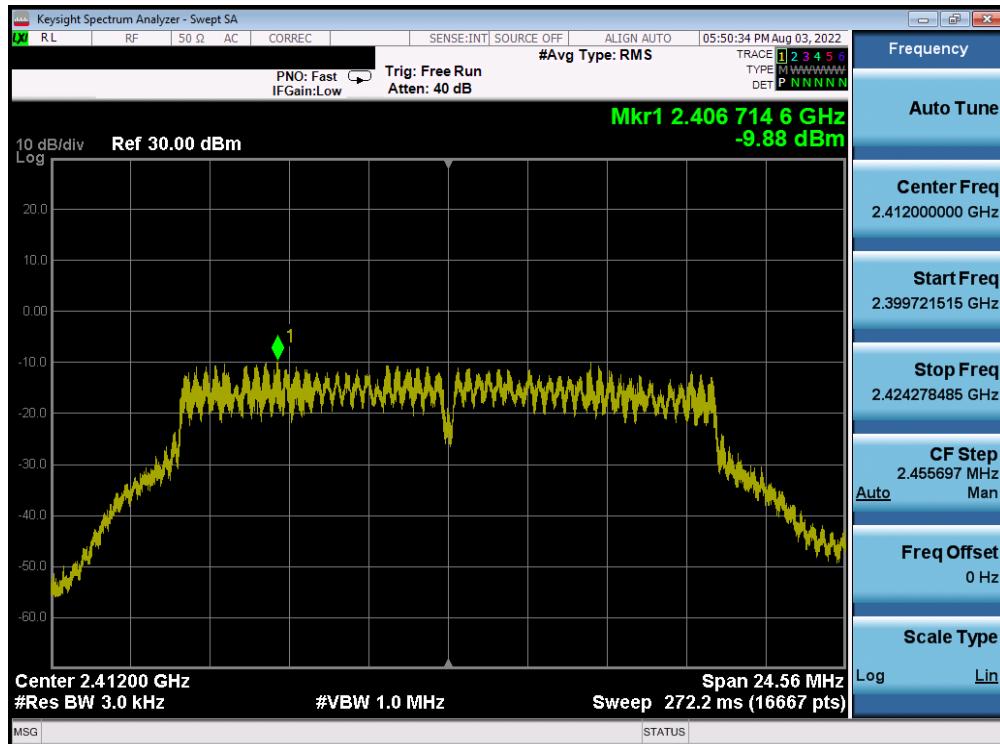
FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 69 of 429 V 10.5 12/15/2021

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	b	11	-2.19	8.00	-10.19	Pass
2437	6	b	11	-1.35	8.00	-9.35	Pass
2462	11	b	11	-2.38	8.00	-10.38	Pass
2412	1	g	36	-11.67	8.00	-19.67	Pass
2437	6	g	36	-3.26	8.00	-11.26	Pass
2462	11	g	36	-9.37	8.00	-17.37	Pass
2412	1	n	52/57.8 (MCS5)	-13.61	8.00	-21.61	Pass
2437	6	n	52/57.8 (MCS5)	-5.85	8.00	-13.85	Pass
2462	11	n	52/57.8 (MCS5)	-11.87	8.00	-19.87	Pass
2412	1	ax (SU)	65/68.8 (MCS5)	-14.09	8.00	-22.09	Pass
2437	6	ax (SU)	65/68.8 (MCS5)	-6.05	8.00	-14.05	Pass
2462	11	ax (SU)	65/68.8 (MCS5)	-12.81	8.00	-20.81	Pass

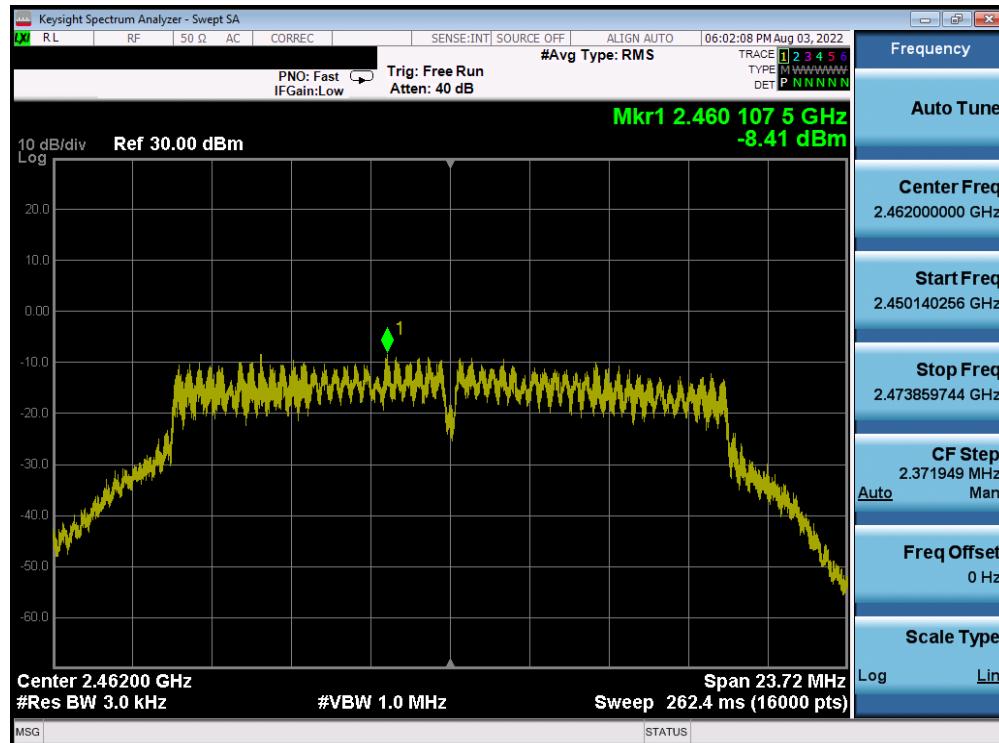
Table 7-40. Conducted Power Density Measurements Antenna 4a (High Data Rate)

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 70 of 429

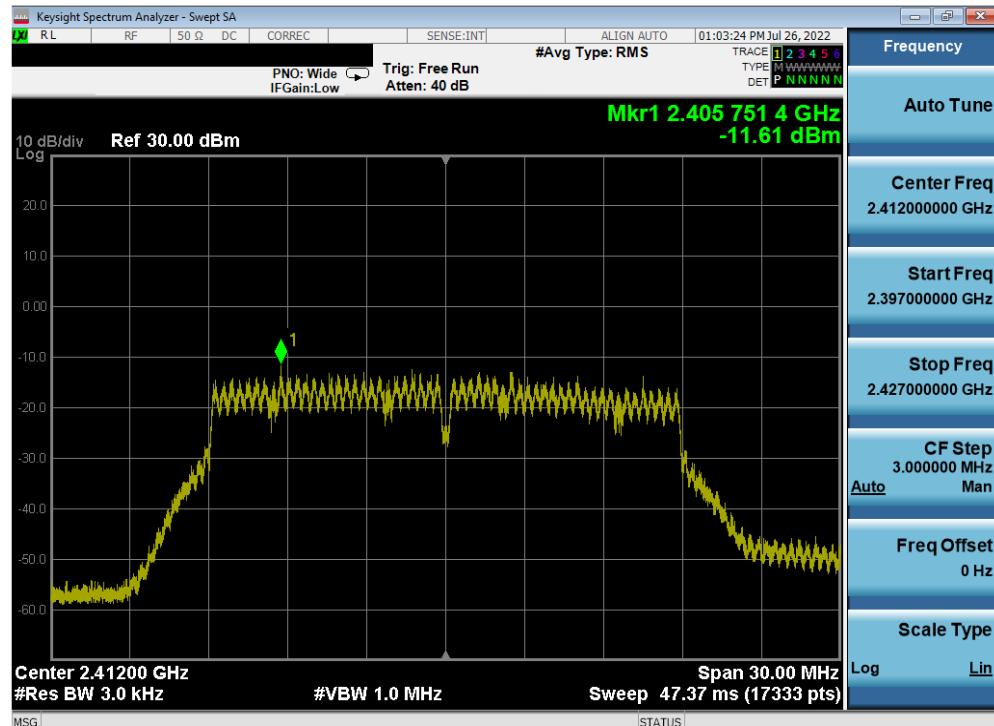
Low Data Rate



FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 71 of 429

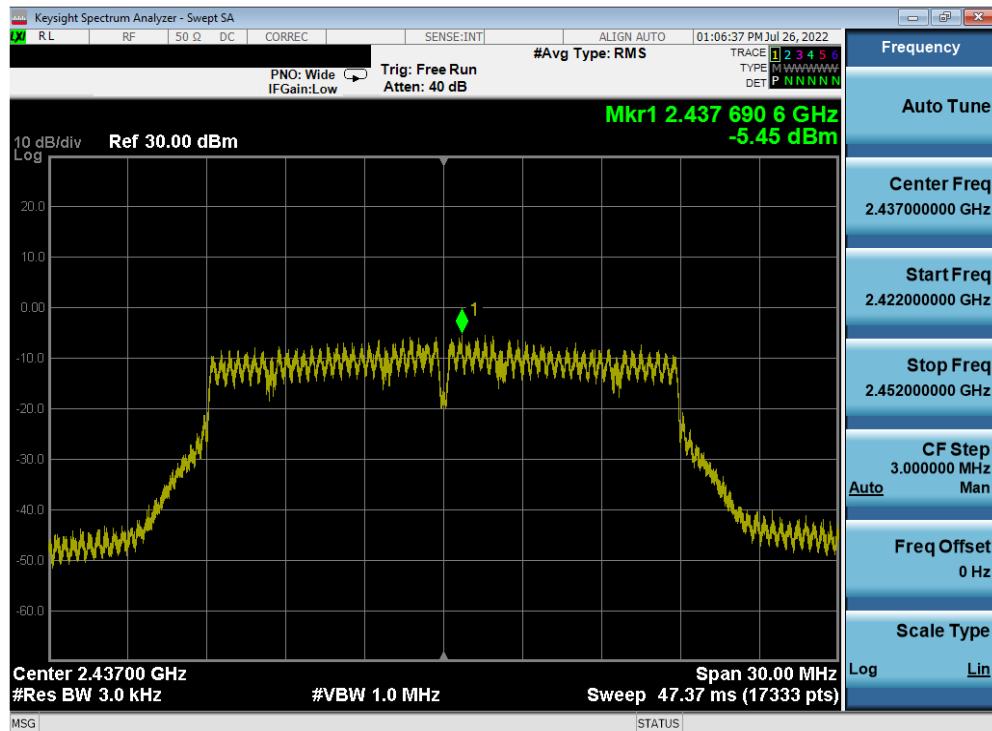


Plot 7-63. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 11) – 12Mbps

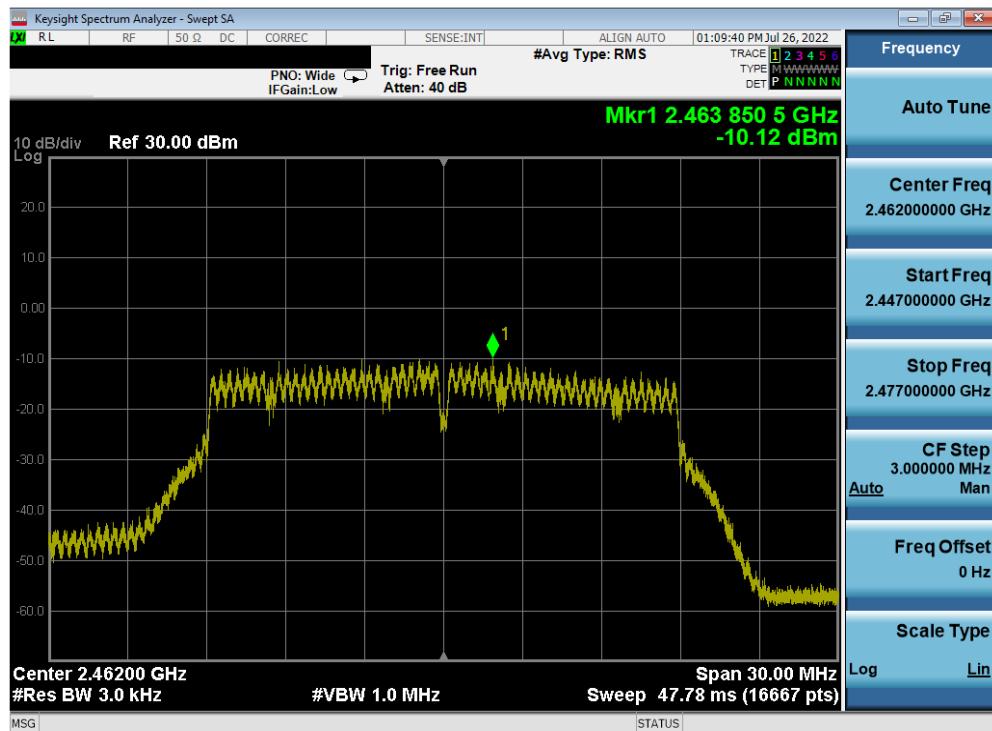


Plot 7-64. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS2

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 72 of 429

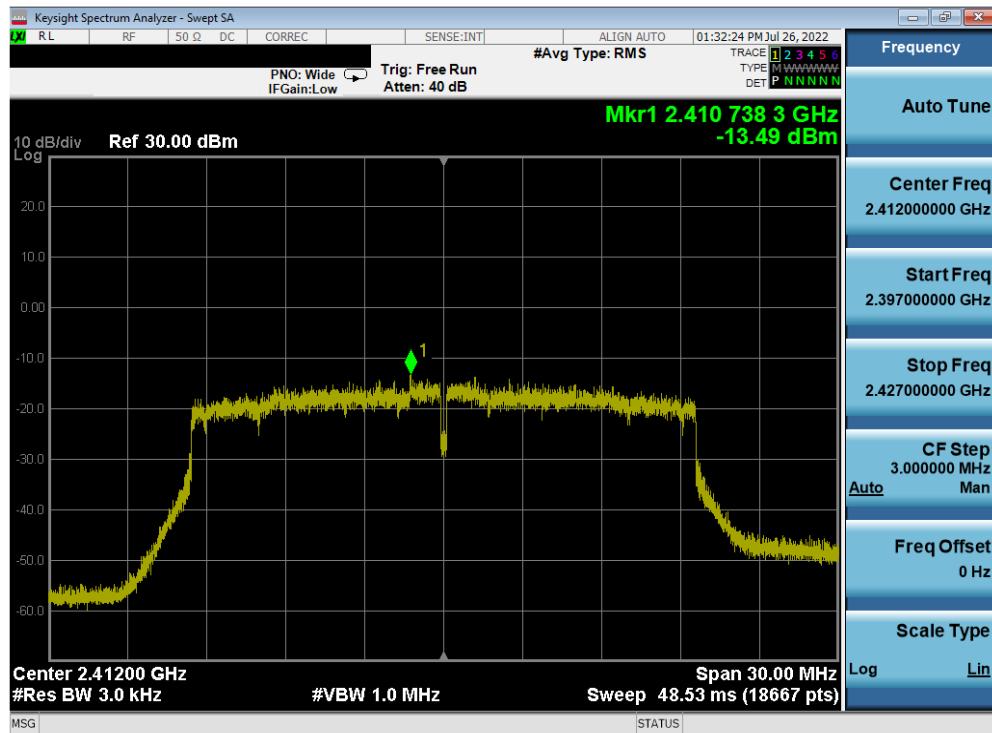


Plot 7-65. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS2

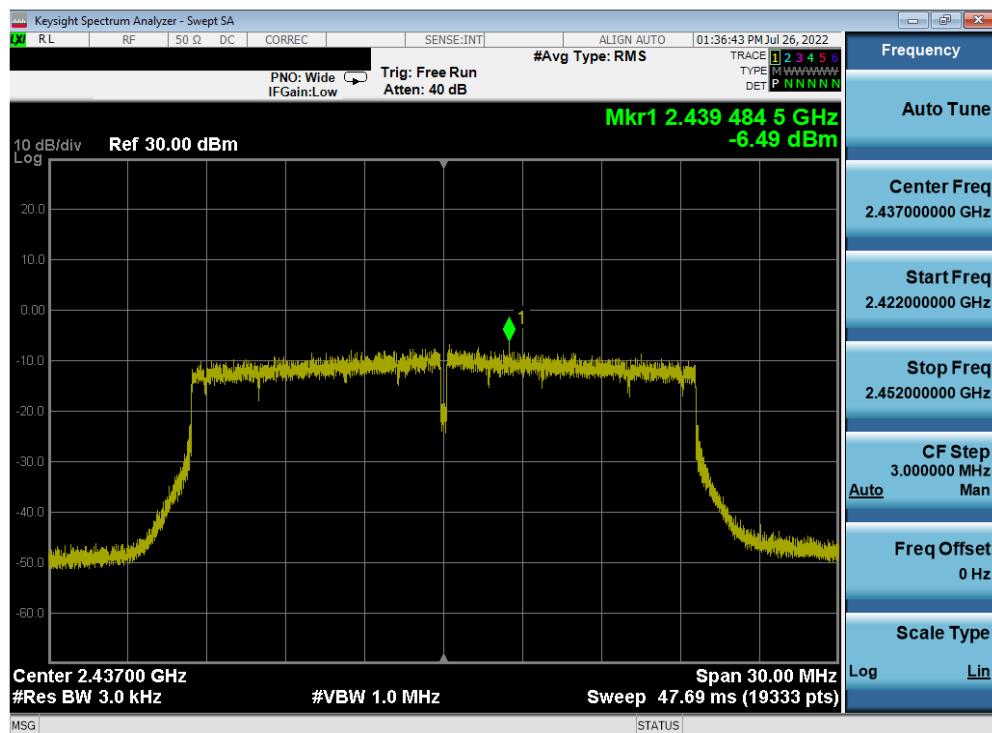


Plot 7-66. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS2

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 73 of 429

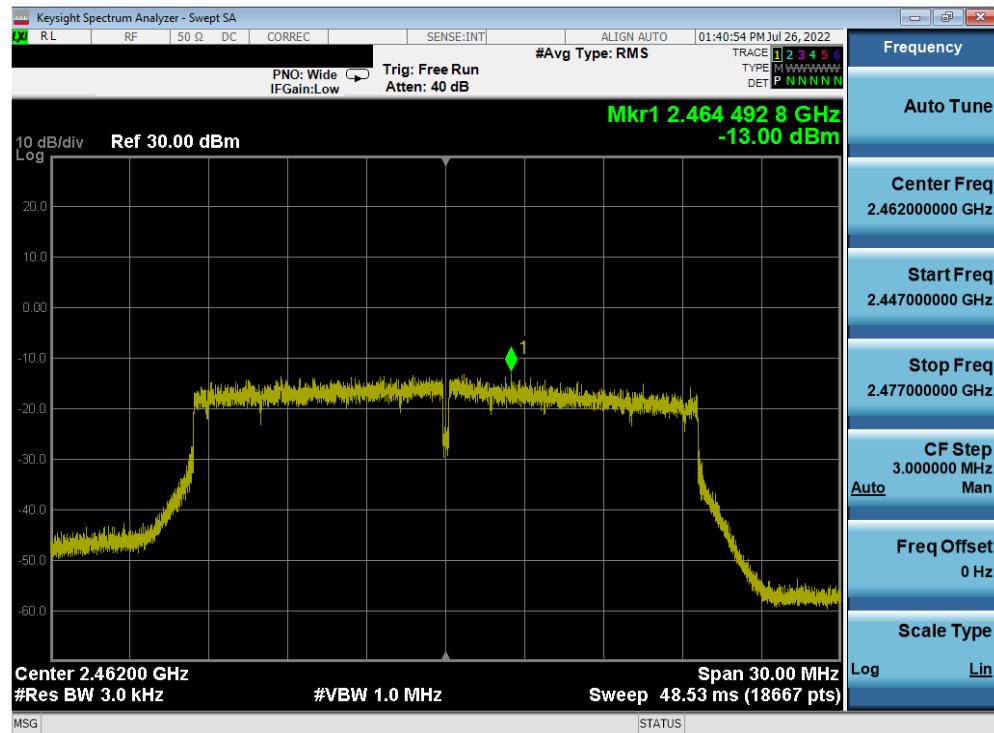


Plot 7-67. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS2



Plot 7-68. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS2

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 74 of 429

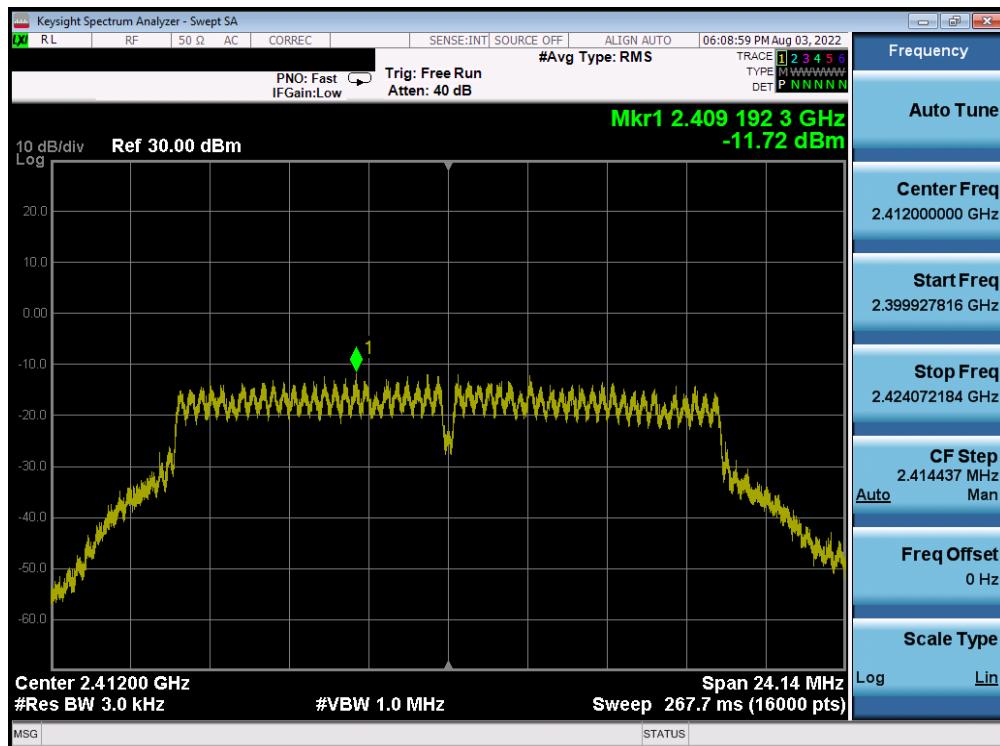
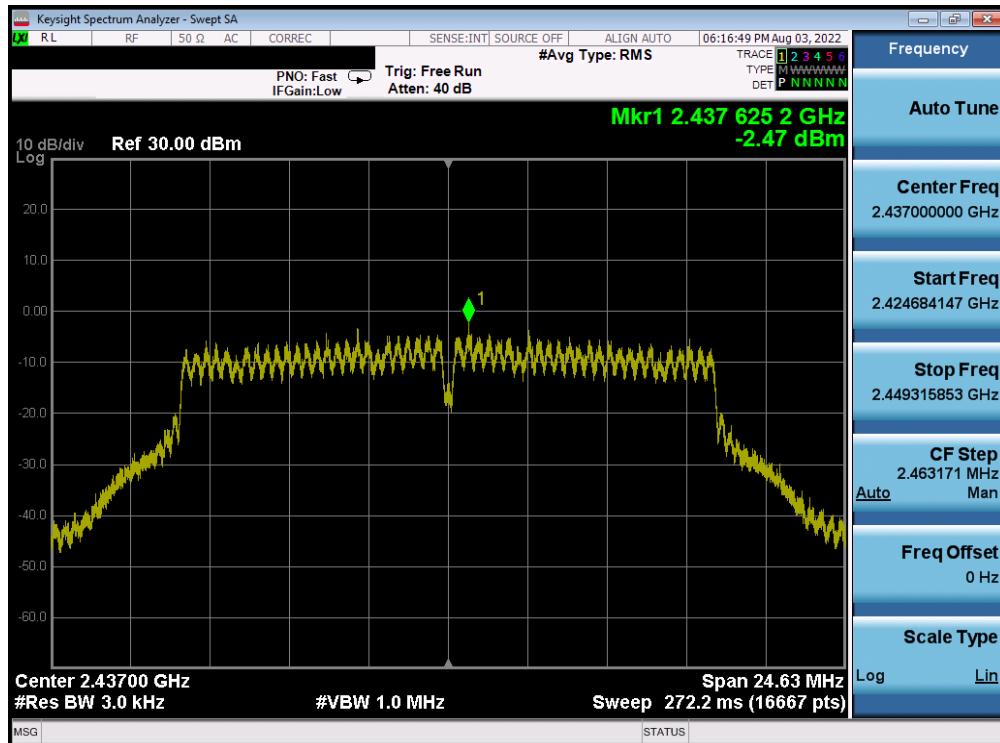


Plot 7-69. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 11) – MCS2

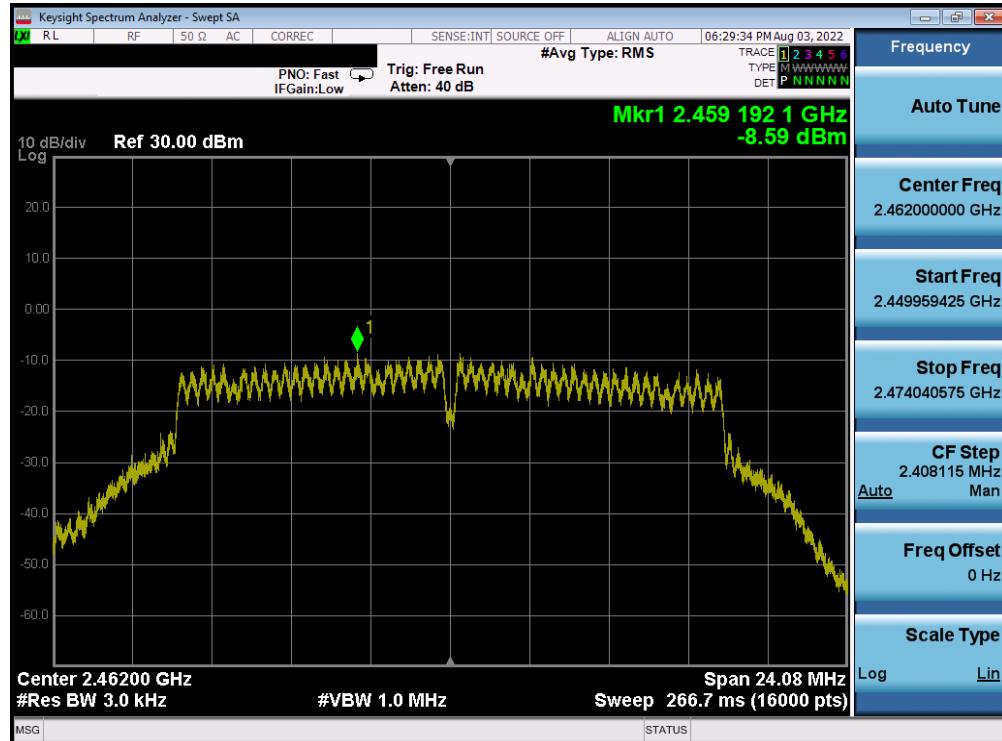
FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 75 of 429

V 10.5 12/15/2021

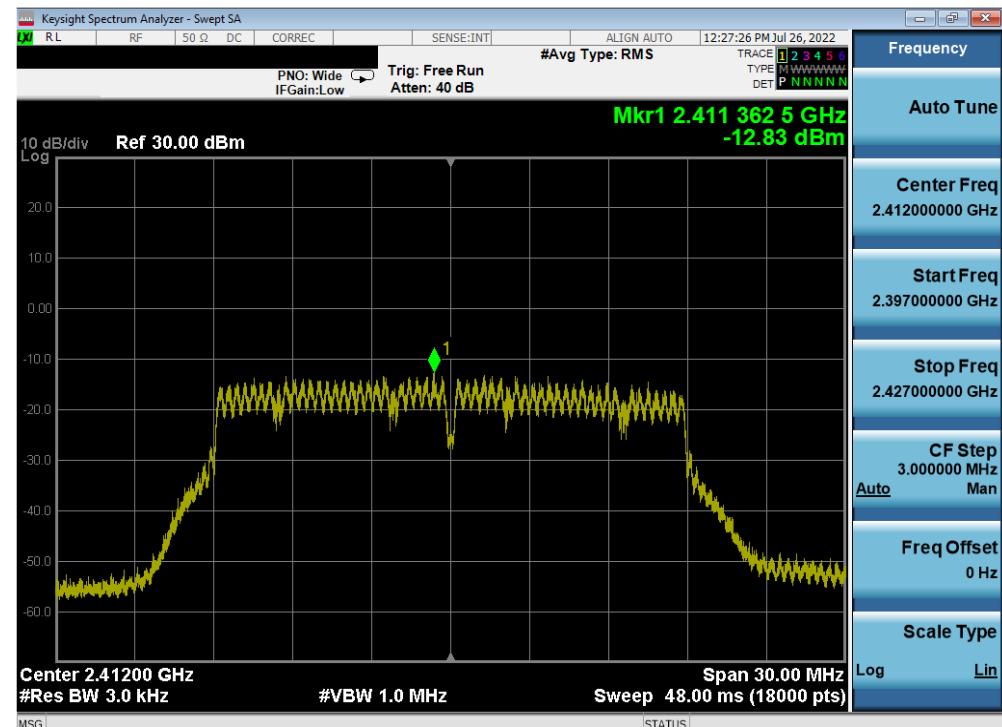
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element Washington DC LLC. If you have any questions about this or have an enquiry about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

Mid Data Rate

Plot 7-70. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 1) – 18Mbps

Plot 7-71. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 6) – 18Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
IC: 579C-A2764	Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device

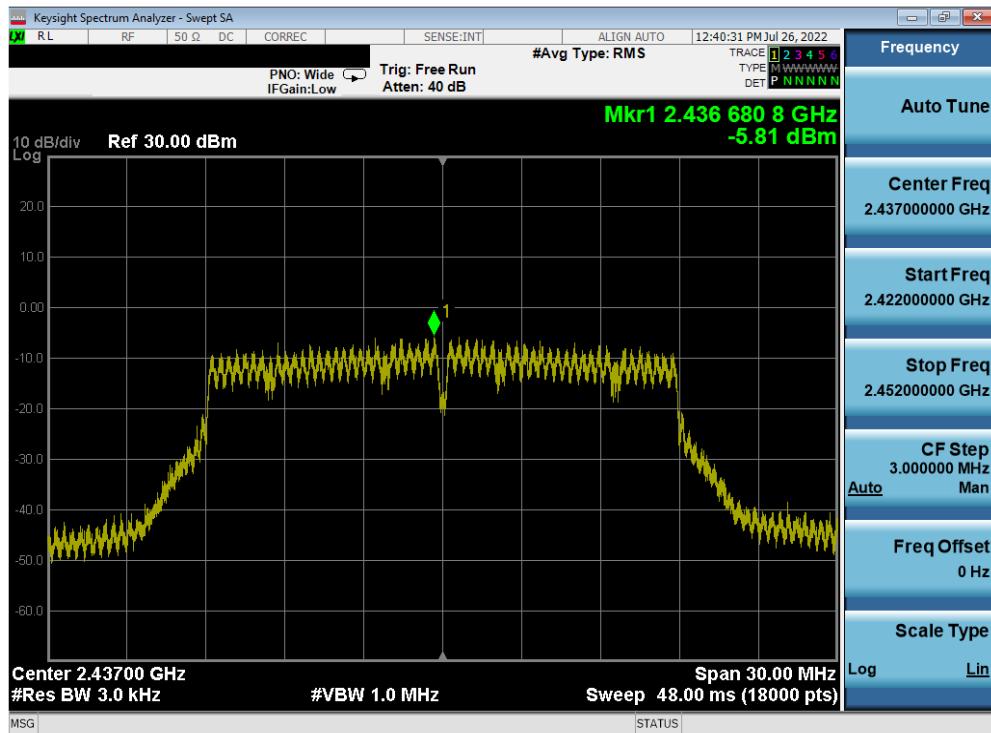


Plot 7-72. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 11) – 18Mbps

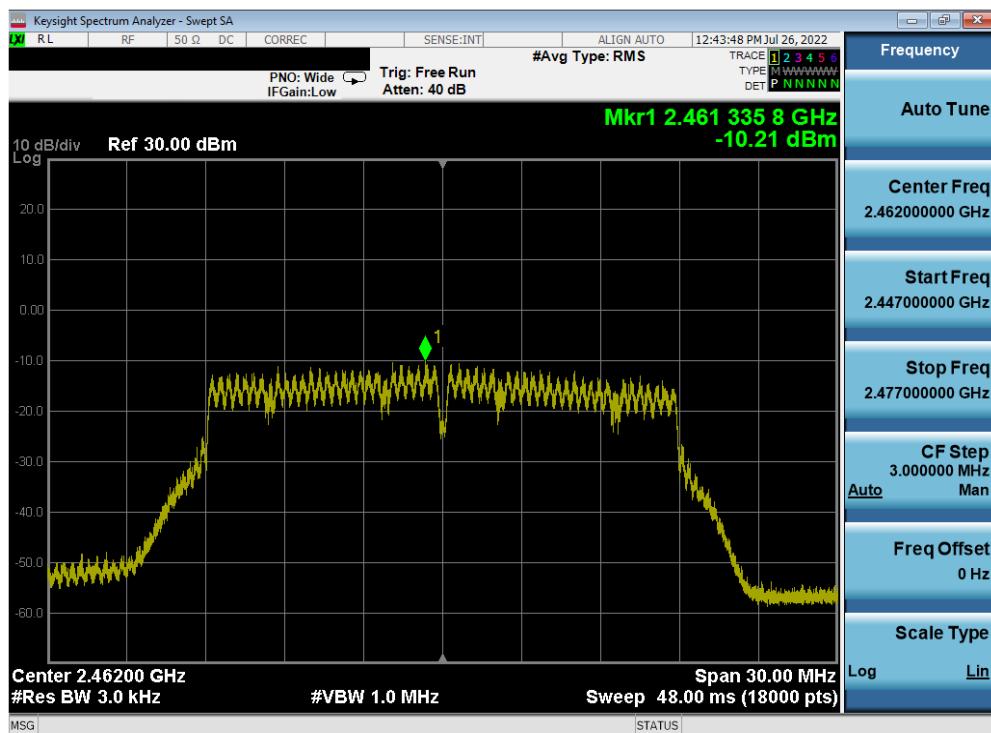


Plot 7-73. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 77 of 429

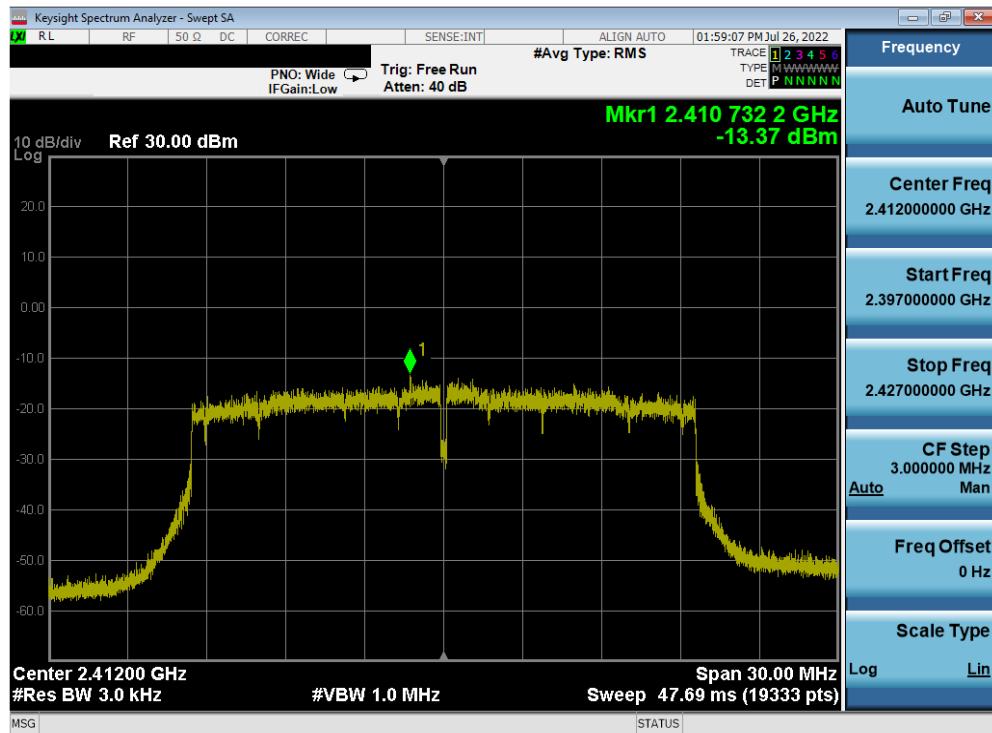


Plot 7-74. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS3

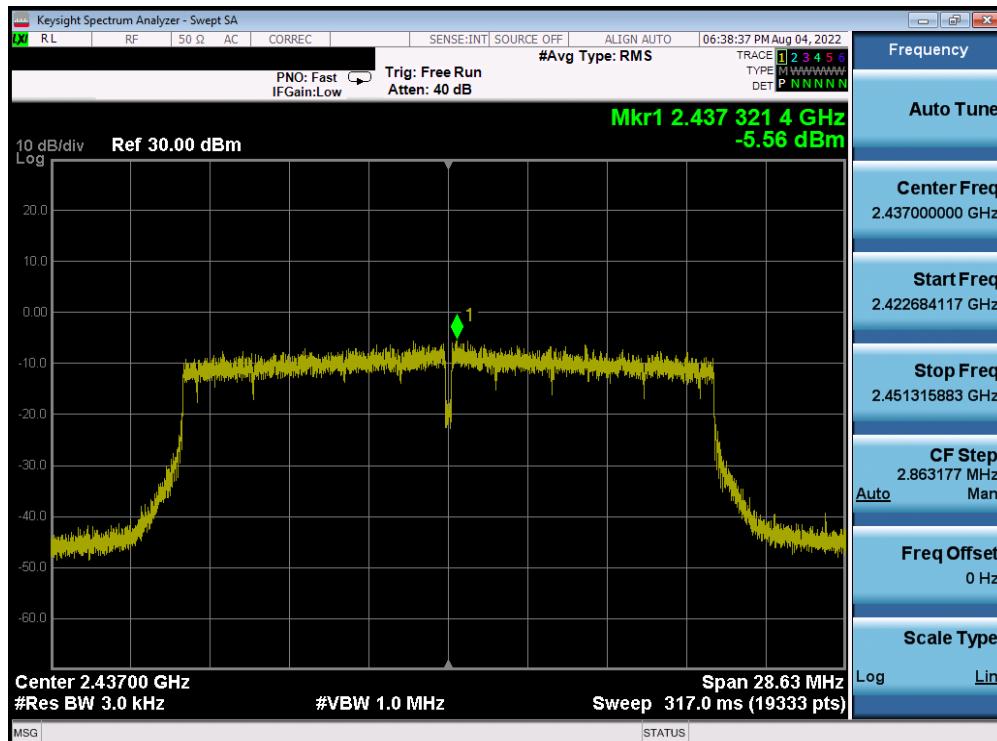


Plot 7-75. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 78 of 429

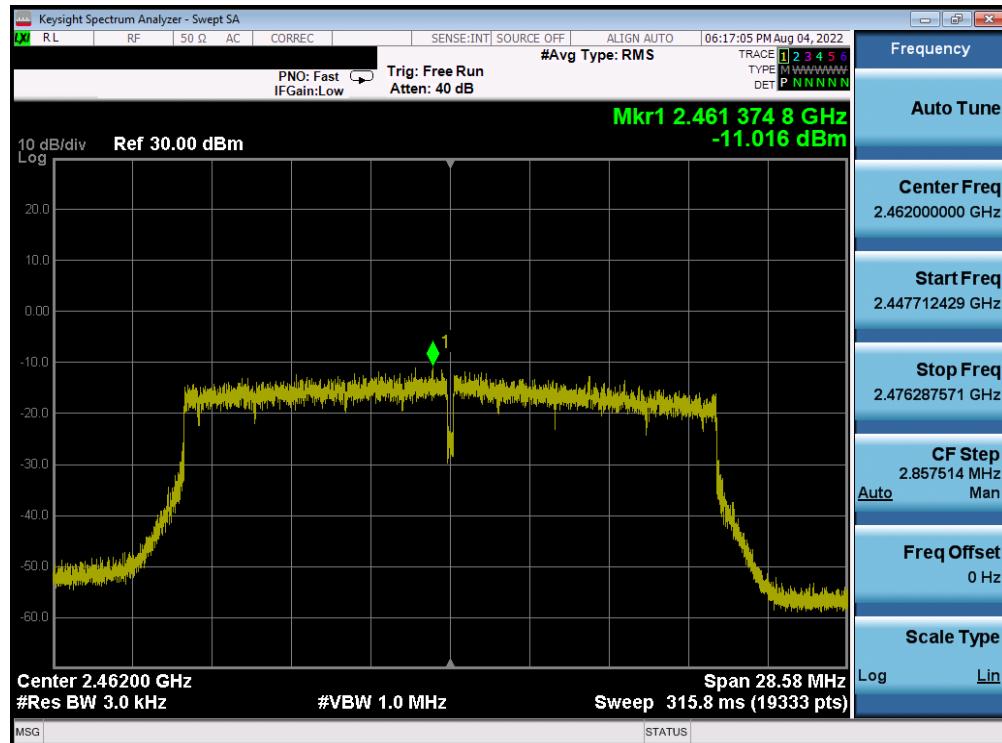


Plot 7-76. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS3



Plot 7-77. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS3

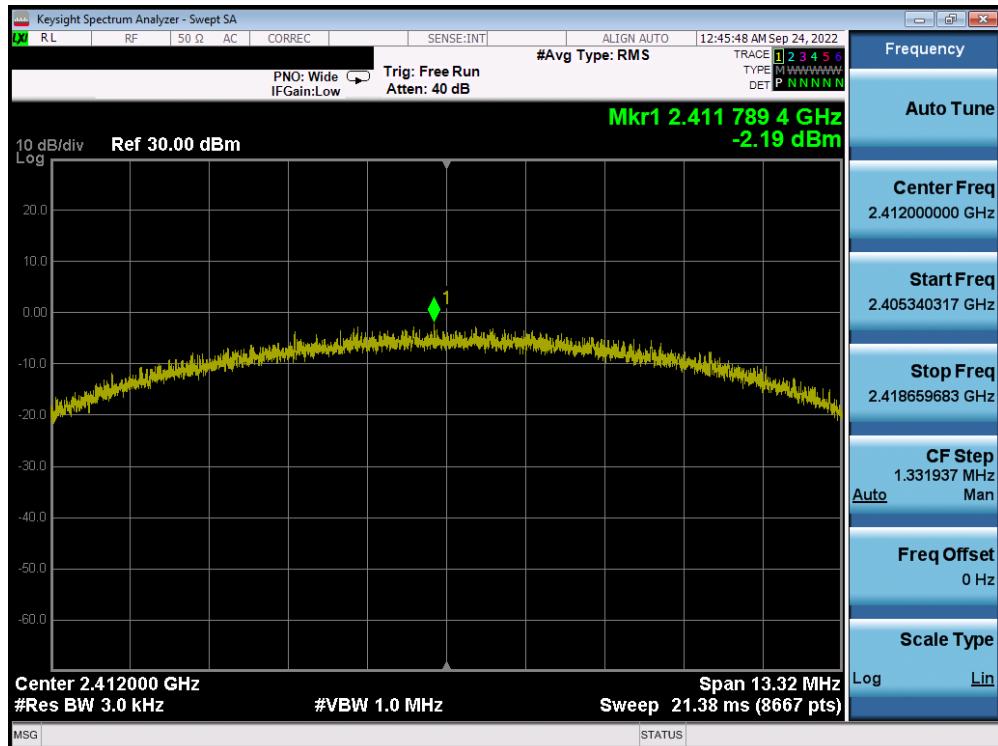
FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 79 of 429



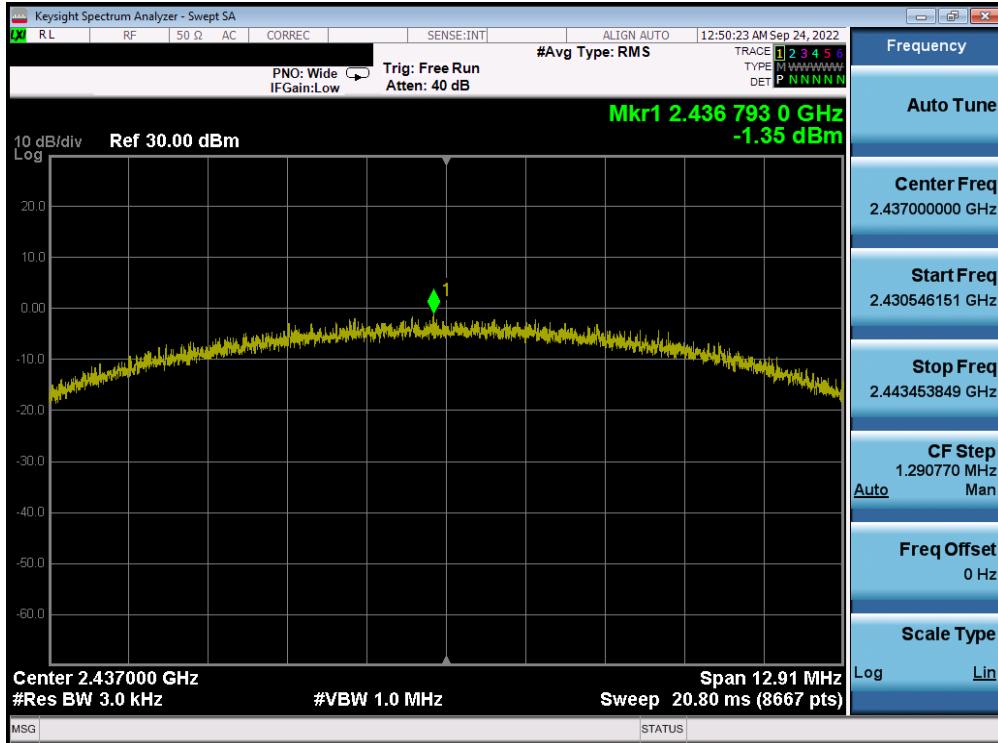
Plot 7-78. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 11) – MCS3

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 80 of 429

High Data Rate

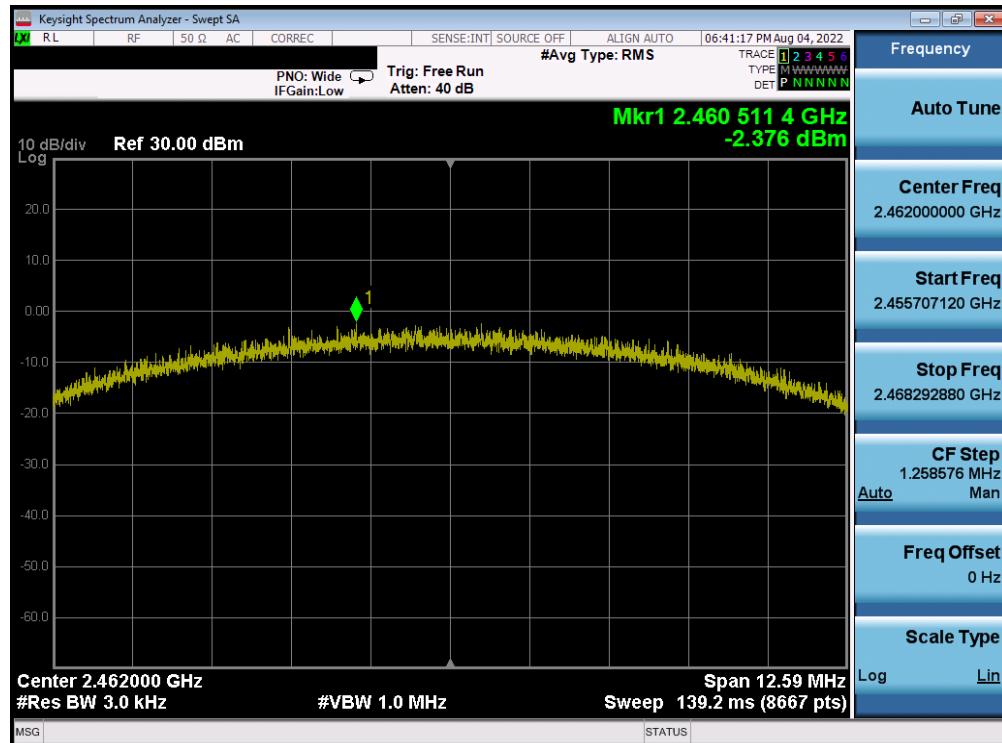


Plot 7-79. Power Spectral Density Plot Antenna 4a (802.11b – Ch. 1) – 11Mbps

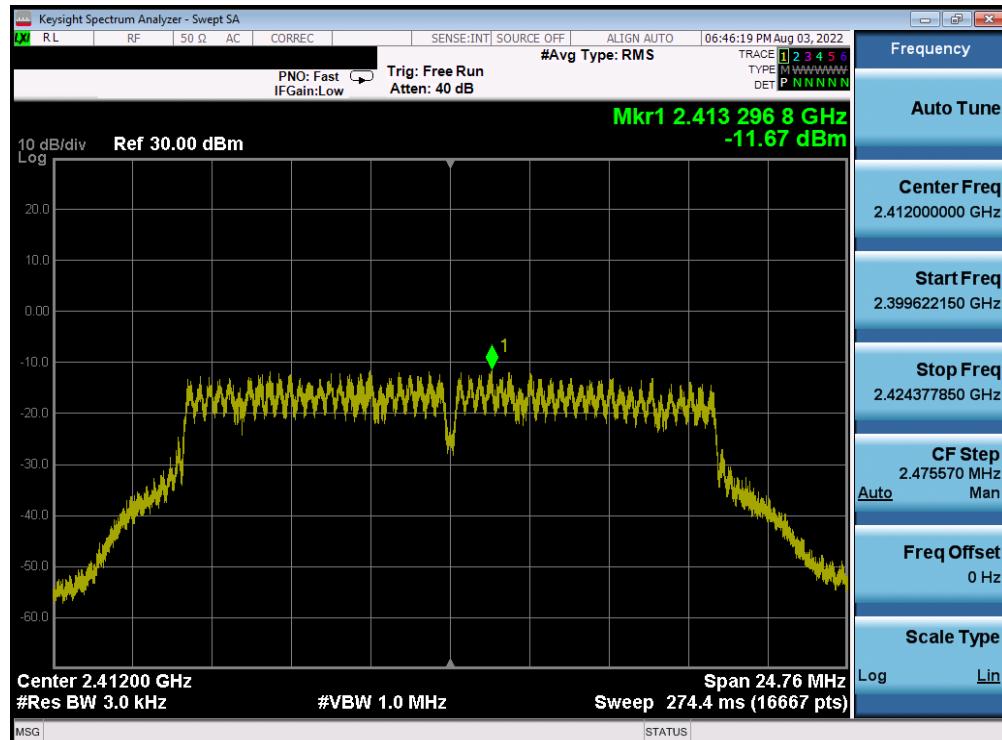


Plot 7-80. Power Spectral Density Plot Antenna 4a (802.11b – Ch. 6) – 11Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
IC: 579C-A2764	Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device

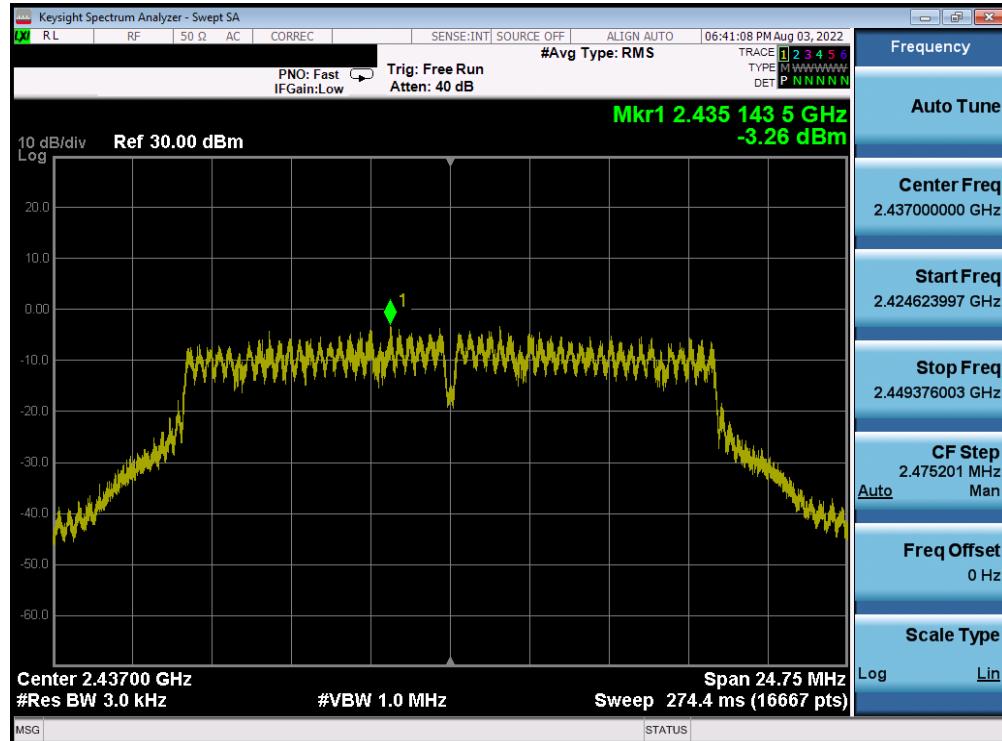


Plot 7-81. Power Spectral Density Plot Antenna 4a (802.11b – Ch. 11) – 11Mbps

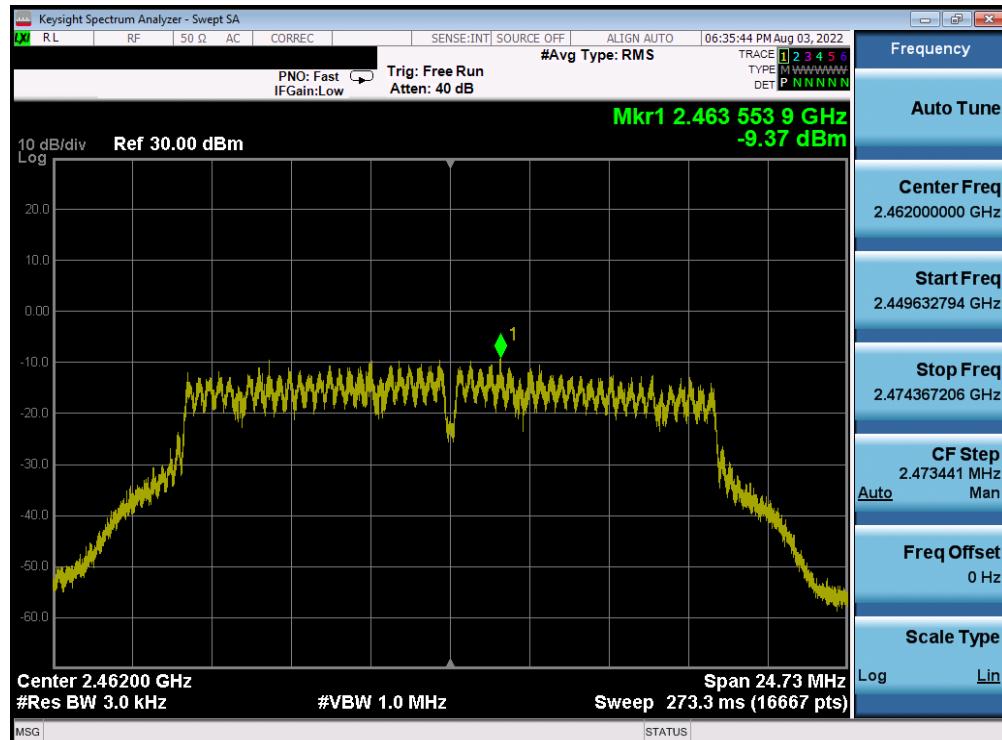


Plot 7-82. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 1) – 36Mbps

FCC ID: BCG2764 IC: 579C-A2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 82 of 429

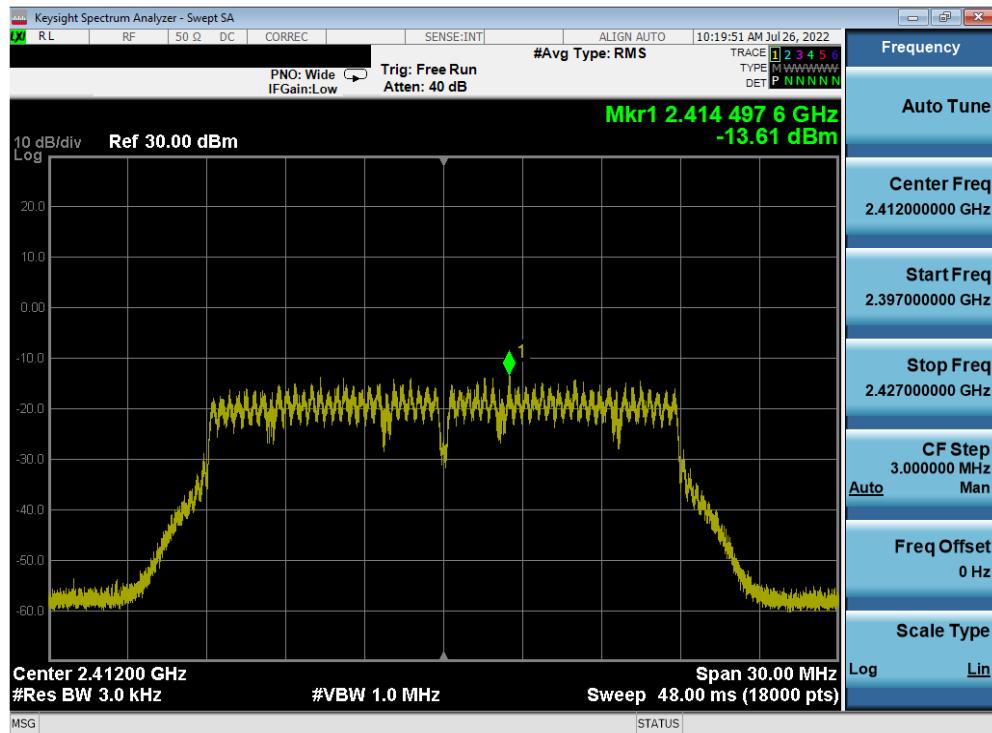


Plot 7-83. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 6) – 36Mbps

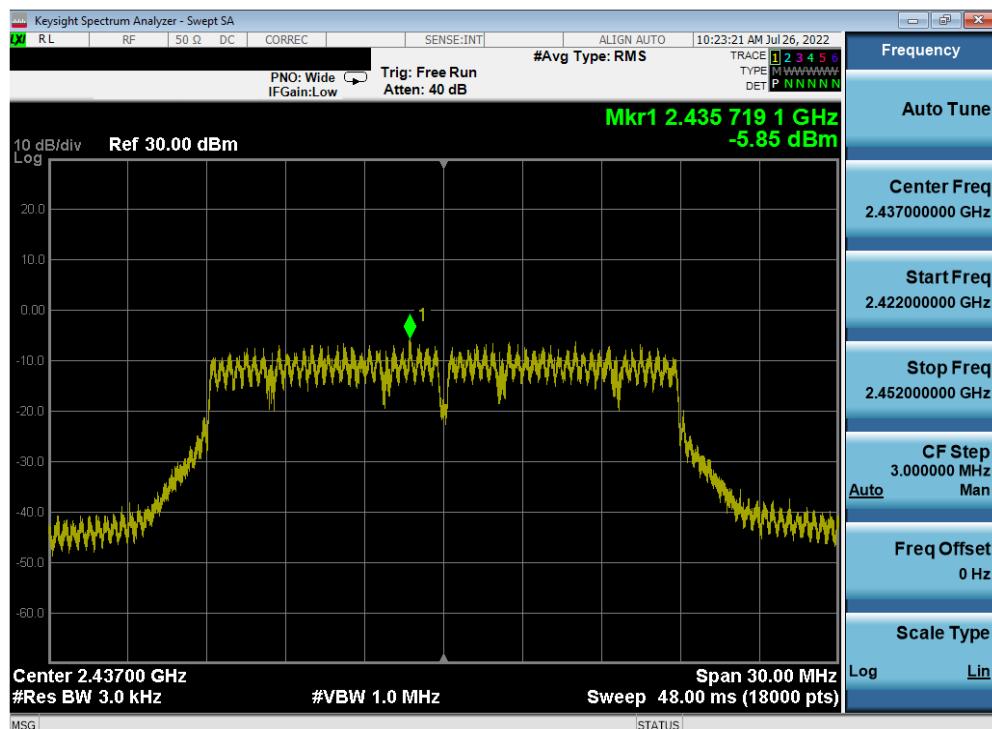


Plot 7-84. Power Spectral Density Plot Antenna 4a (802.11g – Ch. 11) – 36Mbps

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 83 of 429

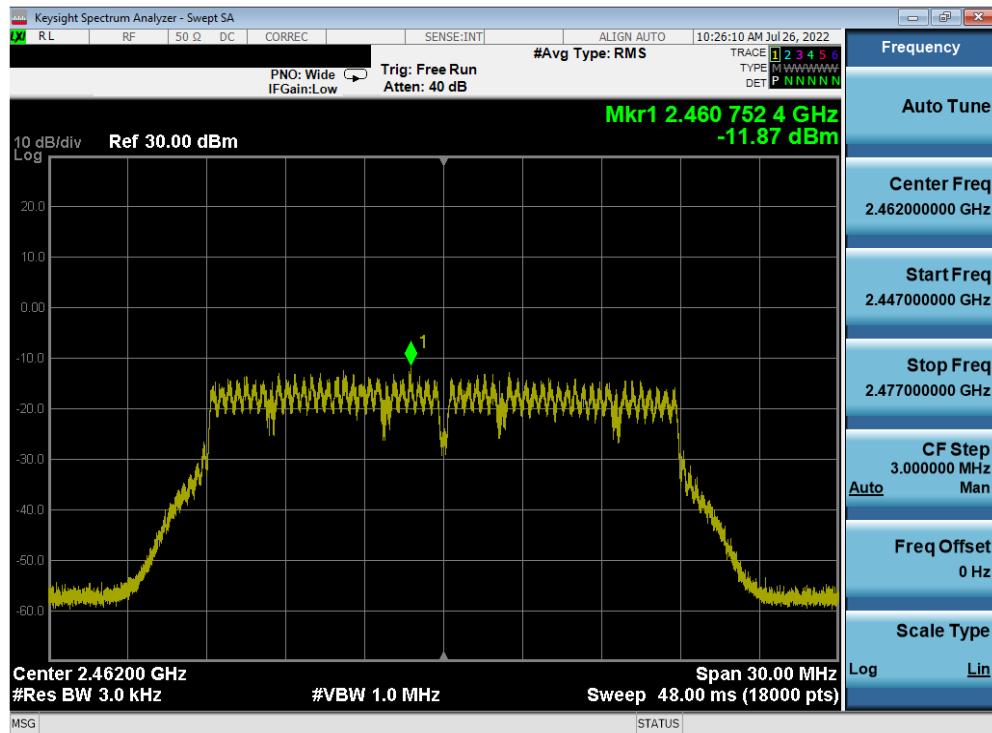


Plot 7-85. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 1) – MCS5

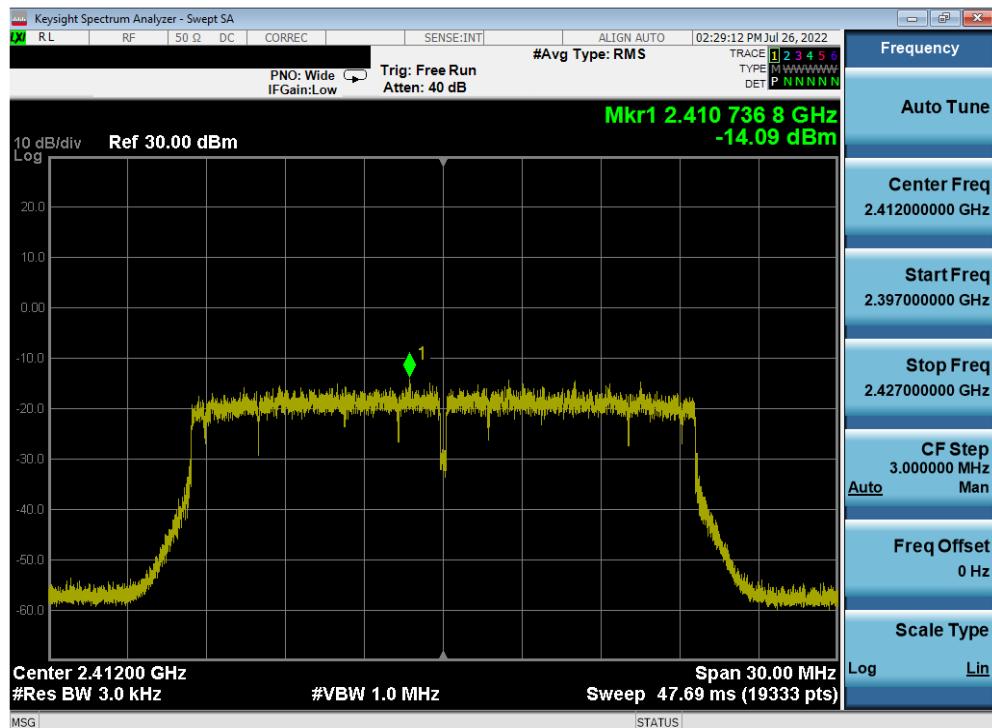


Plot 7-86. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 6) – MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 84 of 429

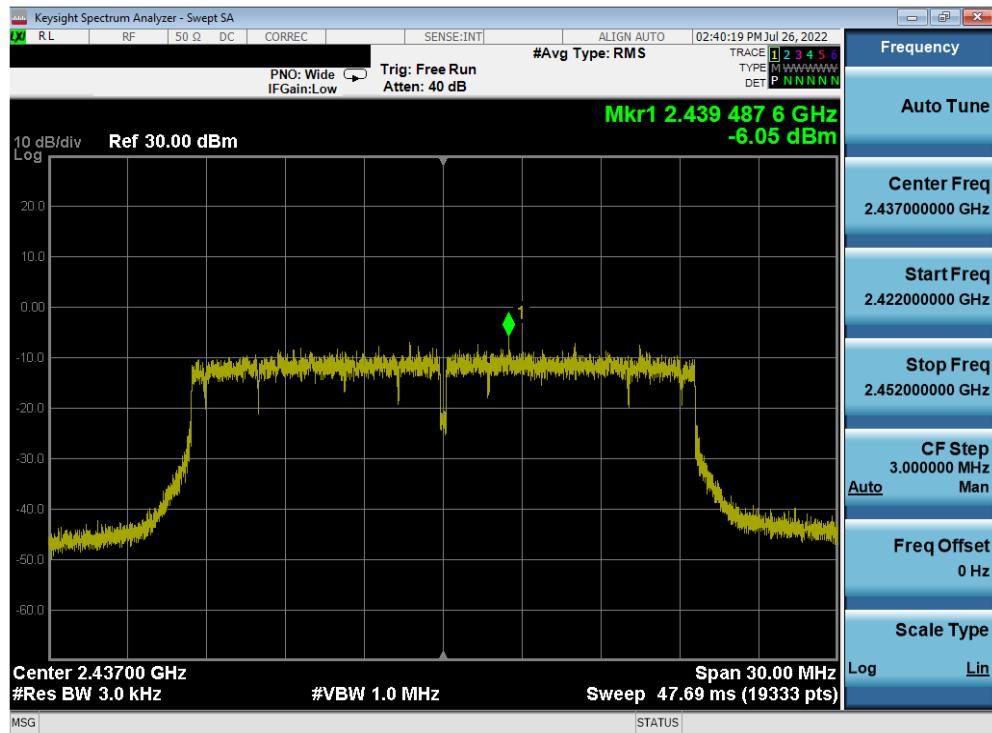


Plot 7-87. Power Spectral Density Plot Antenna 4a (802.11n (2.4GHz) – Ch. 11) – MCS5

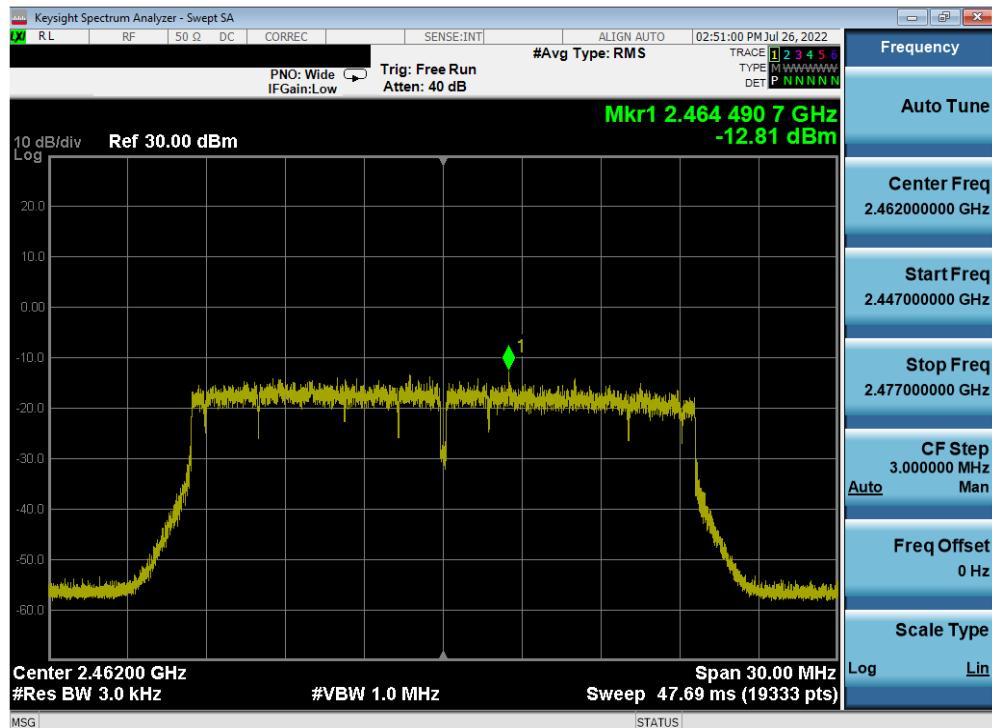


Plot 7-88. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 1) – MCS5

FCC ID: BCG2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 85 of 429



Plot 7-89. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 6) – MCS5



Plot 7-90. Power Spectral Density Plot Antenna 4a (802.11ax (SU - 2.4GHz) – Ch. 11) – MCS5

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 86 of 429

Antenna 2a Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	g	12	-9.53	8.00	-17.53	Pass
2437	6	g	12	-3.62	8.00	-11.62	Pass
2462	11	g	12	-8.87	8.00	-16.87	Pass
2412	1	n	19.5/21.7 (MCS2)	-11.39	8.00	-19.39	Pass
2437	6	n	19.5/21.7 (MCS2)	-5.12	8.00	-13.12	Pass
2462	11	n	19.5/21.7 (MCS2)	-9.59	8.00	-17.59	Pass
2412	1	ax (SU)	24/25.8 (MCS2)	-13.16	8.00	-21.16	Pass
2437	6	ax (SU)	24/25.8 (MCS2)	-6.66	8.00	-14.66	Pass
2462	11	ax (SU)	24/25.8 (MCS2)	-13.69	8.00	-21.69	Pass

Table 7-41. Conducted Power Density Measurements Antenna 2a (Low Data Rate)

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	g	18	-12.00	8.00	-20.00	Pass
2437	6	g	18	-2.98	8.00	-10.98	Pass
2462	11	g	18	-8.92	8.00	-16.92	Pass
2412	1	n	26/28.9 (MCS3)	-12.44	8.00	-20.44	Pass
2437	6	n	26/28.9 (MCS3)	-4.81	8.00	-12.81	Pass
2462	11	n	26/28.9 (MCS3)	-10.06	8.00	-18.06	Pass
2412	1	ax (SU)	33/34.4 (MCS3)	-13.02	8.00	-21.02	Pass
2437	6	ax (SU)	33/34.4 (MCS3)	-5.59	8.00	-13.59	Pass
2462	11	ax (SU)	33/34.4 (MCS3)	-11.73	8.00	-19.73	Pass

Table 7-42. Conducted Power Density Measurements Antenna 2a (Mid Data Rate)

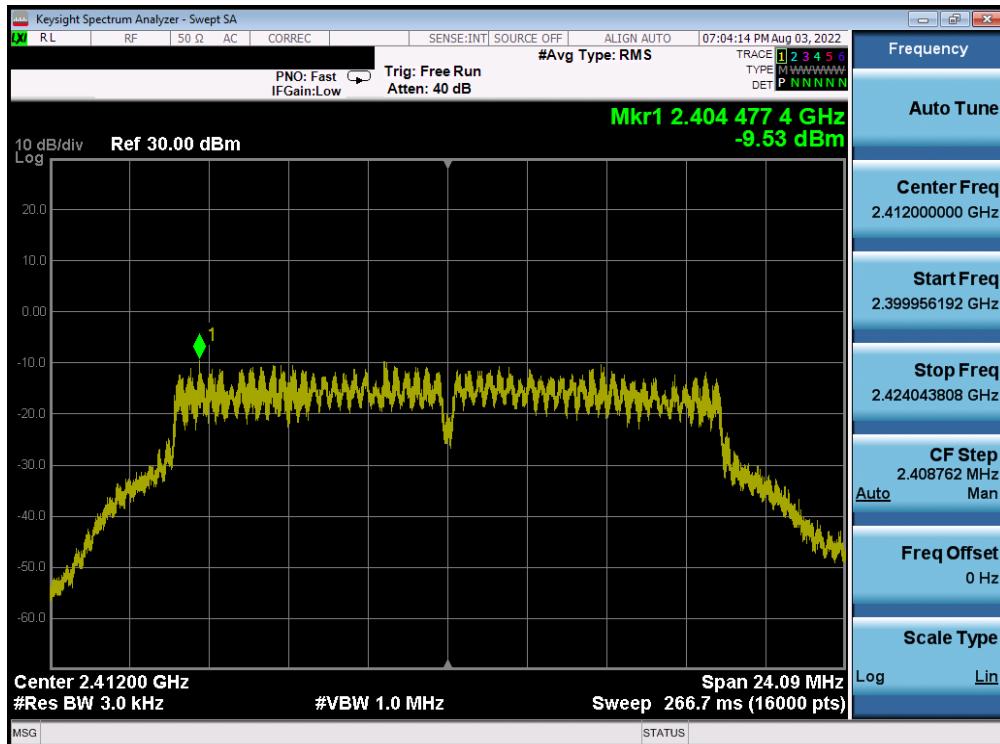
FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 87 of 429 V 10.5 12/15/2021

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Spectral Density [dBm / 3kHz]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]	Pass / Fail
2412	1	b	11	-1.92	8.00	-9.92	Pass
2437	6	b	11	-0.85	8.00	-8.85	Pass
2462	11	b	11	-2.18	8.00	-10.18	Pass
2412	1	g	36	-10.62	8.00	-18.62	Pass
2437	6	g	36	-3.55	8.00	-11.55	Pass
2462	11	g	36	-9.47	8.00	-17.47	Pass
2412	1	n	52/57.8 (MCS5)	-12.94	8.00	-20.94	Pass
2437	6	n	52/57.8 (MCS5)	-5.73	8.00	-13.73	Pass
2462	11	n	52/57.8 (MCS5)	-12.29	8.00	-20.29	Pass
2412	1	ax (SU)	65/68.8 (MCS5)	-12.95	8.00	-20.95	Pass
2437	6	ax (SU)	65/68.8 (MCS5)	-6.13	8.00	-14.13	Pass
2462	11	ax (SU)	65/68.8 (MCS5)	-12.73	8.00	-20.73	Pass

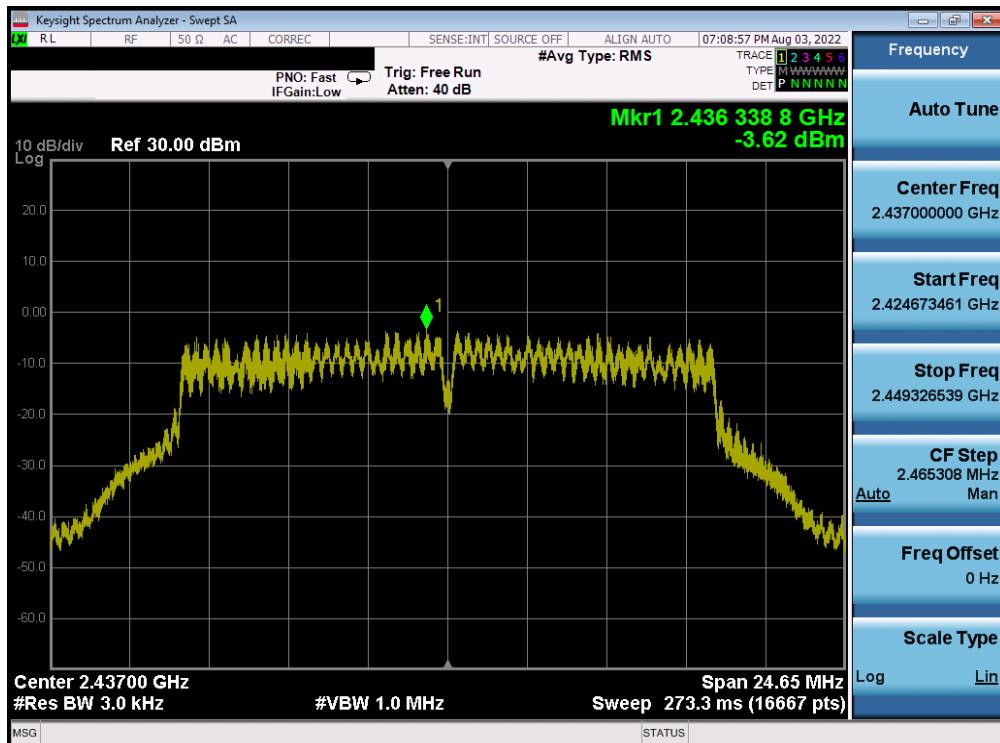
Table 7-43. Conducted Power Density Measurements Antenna 2a (High Data Rate)

FCC ID: BCG2764 IC: 579C-A2764	 element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device	Page 88 of 429

Low Data Rate



Plot 7-91. Power Spectral Density Plot Antenna 2a (802.11g – Ch. 1) – 12Mbps



Plot 7-92. Power Spectral Density Plot Antenna 2a (802.11g – Ch. 6) – 12Mbps

FCC ID: BCG2764		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
IC: 579C-A2764	Test Report S/N: 1C2205090028-11.BCG	Test Dates: 07/21/2022-9/12/2022	EUT Type: Tablet Device