

TEST REPORT

Applicant Name: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.
Address: No.666 Hu'an Rd. Huli District Xiamen City, Fujian, P.R. China
Report Number: 2401T34651E-RF-00A
FCC ID: T2C-CTP25

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type: Collaboration Touch Panel
Model No.: CTP25
Multiple Model(s) No.: N/A
Trade Mark: **Yealink**
Date Received: 2024/05/20
Issue Date: 2024/07/15

Test Result:	Pass▲
--------------	-------

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Andy Yu

Andy Yu
RF Engineer

Approved By:

Jimmy Xiao

Jimmy Xiao
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

Bay Area Compliance Laboratories Corp. (Shenzhen)

5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China

Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY	4
GENERAL INFORMATION.....	5
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	5
OBJECTIVE	5
TEST METHODOLOGY	5
MEASUREMENT UNCERTAINTY	6
TEST FACILITY	6
SYSTEM TEST CONFIGURATION	7
DESCRIPTION OF TEST CONFIGURATION	7
EUT EXERCISE SOFTWARE	8
DUTY CYCLE	10
EQUIPMENT MODIFICATIONS	14
SUPPORT EQUIPMENT LIST AND DETAILS	14
EXTERNAL I/O CABLE.....	15
BLOCK DIAGRAM OF TEST SETUP	15
SUMMARY OF TEST RESULTS	17
TEST EQUIPMENT LIST	18
FCC 1.1307 (B) & §2.1091- MPE-BASED EXEMPTION	20
APPLICABLE STANDARD	20
RESULT	20
FCC §15.203 - ANTENNA REQUIREMENT.....	21
APPLICABLE STANDARD	21
ANTENNA CONNECTOR CONSTRUCTION	21
FCC §15.407 (B) (6) §15.207 (A) - CONDUCTED EMISSIONS.....	22
APPLICABLE STANDARD	22
EUT SETUP	22
EMI TEST RECEIVER SETUP.....	22
TEST PROCEDURE	22
FACTOR & OVER LIMIT CALCULATION.....	23
TEST DATA	23
§15.205 & §15.209 & §15.407(B) - UNDESIRABLE EMISSION.....	26
APPLICABLE STANDARD	26
EUT SETUP	26
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	28
TEST PROCEDURE	28
FACTOR & OVER LIMIT/MARGIN CALCULATION	29
TEST DATA	29
FCC §15.407(A), (E) - 26 DB & 6DB EMISSION BANDWIDTH	69
APPLICABLE STANDARD	69
TEST PROCEDURE	69
TEST DATA	70

FCC §15.407(A) - CONDUCTED TRANSMITTER OUTPUT POWER	117
APPLICABLE STANDARD	117
TEST PROCEDURE	117
TEST DATA	118
FCC §15.407(A) - POWER SPECTRAL DENSITY	122
TEST PROCEDURE	122
TEST DATA	123
EUT PHOTOGRAPHS.....	169
TEST SETUP PHOTOGRAPHS	170

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401T34651E-RF-00A	Original Report	2024/07/15

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Collaboration Touch Panel
Tested Model	CTP25
Multiple Model(s)	N/A
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5600MHz&5650-5725MHz; 5725-5850MHz
Mode	802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80
Maximum Conducted Average Output Power	5150-5250MHz: 11.41dBm 5250-5350MHz: 12.61dBm 5470-5600MHz&5650-5725MHz: 12.14dBm 5725-5850MHz: 11.22dBm
Modulation Technique	OFDM, OFDMA
Antenna Specification [#]	ANT 1: 3.10dBi, ANT 2: 2.23dBi (provided by the applicant)
Voltage Range	DC 20V from Adapter or DC 48V From POE
Sample serial number	2LLD-2 for Conducted and Radiated Emissions Test 2LLD-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Model: HKA06520033-016 Input: AC 100-240V, 50/60Hz, 1.6A Output: DC 5.0V, 3.0A, 15.0W or 9.0V, 3.0A, 27.0W or 12.0V, 3.0A, 36.0W or 15.0V, 3.0A, 45.0W or 20.0V, 3.25A, 65.0W
Note: The EUT powered by adapter or POE, the worst case adapter power supply was selected to test for AC line conducted and radiated emission below 1GHz according to DTS report test result.	

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.94dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

For 5150-5250MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a/ac20/ax20 mode: channel 36, 40, 48 were tested;

For 802.11ac40/ax40 mode: channel 38, 46 were tested;

For 802.11ac80/ax80 mode, channel 42 was tested.

For 5250-5350MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For 802.11a/ac20/ax20 mode: channel 52, 56, 64 were tested;

For 802.11ac40/ax40 mode: channel 54, 62 were tested;

For 802.11ac80/ax80 mode, channel 58 was tested.

For 5470-5725MHz Band, 12 channels are provided to test:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	112	5560
102	5510	116	5580
104	5520	132	5660
106	5530	134	5670
108	5540	136	5680
110	5550	140	5700

For 802.11a/ac20/ax20 mode: channel 100, 116, 140 were tested;

For 802.11ac40/ax40 mode: channel 102, 110, 134 were tested;

For 802.11ac80/ax80 mode, channel 106 was tested.

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

For 802.11a/ac20/ax20 mode: channel 149, 157, 165 were tested;

For 802.11a40/ax40 mode: channel 151, 159 were tested;

For 802.11ac80/ax80 mode, channel 155 was tested.

EUT Exercise Software

“AuthenticationTool.exe”[#] software was used and power level as below. The software and power level was provided by the applicant. The device was tested with the worst case was performed as below:

5150-5250 MHz Band:					
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level [#] Setting	
				ANT1	ANT2
802.11a	Lowest	5180	6Mbps	11	11
	Middle	5200	6Mbps	11	11
	Highest	5240	6Mbps	11	11
802.11ac-VHT20	Lowest	5180	MCS0	11	11
	Middle	5200	MCS0	11	11
	Highest	5240	MCS0	11	11
802.11ac-VHT40	Lowest	5190	MCS0	11	11
	Highest	5230	MCS0	11	11
802.11ac-VHT80	Middle	5210	MCS0	10	10
802.11ax-HE20	Lowest	5180	MCS0	10	10
	Middle	5200	MCS0	10	10
	Highest	5240	MCS0	10	10
802.11ax-HE40	Lowest	5190	MCS0	8	8
	Highest	5230	MCS0	8	8
802.11ax-HE80	Middle	5210	MCS0	8	8

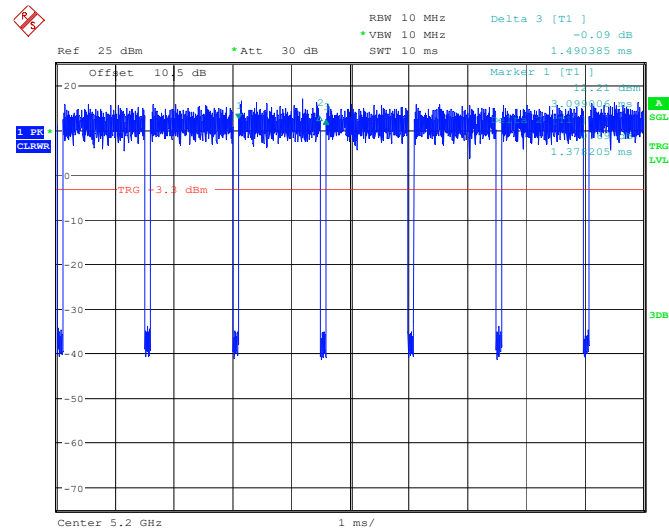
5250-5350 MHz Band:					
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level [#] Setting	
				ANT1	ANT2
802.11a	Lowest	5260	6Mbps	12	12
	Middle	5280	6Mbps	12	12
	Highest	5320	6Mbps	12	12
802.11ac-VHT20	Lowest	5260	MCS0	12	12
	Middle	5280	MCS0	12	12
	Highest	5320	MCS0	12	12
802.11ac-VHT40	Lowest	5270	MCS0	11	11
	Highest	5310	MCS0	11	11
802.11ac-VHT80	Middle	5290	MCS0	11	11
802.11ax-HE20	Lowest	5260	MCS0	11	11
	Middle	5280	MCS0	11	11
	Highest	5320	MCS0	11	11
802.11ax-HE40	Lowest	5270	MCS0	8	8
	Highest	5310	MCS0	8	8
802.11ax-HE80	Middle	5290	MCS0	8	8
5470-5725MHz Band:					
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level [#] Setting	
				ANT1	ANT2
802.11a	Lowest	5500	6Mbps	11	11
	Middle	5580	6Mbps	11	11
	Highest	5700	6Mbps	11	11
802.11ac-VHT20	Lowest	5500	MCS0	10	10
	Middle	5580	MCS0	10	10
	Highest	5700	MCS0	10	10
802.11ac-VHT40	Lowest	5510	MCS0	10	10
	Middle	5550	MCS0	10	10
	Highest	5670	MCS0	10	10
802.11ac-VHT80	Lowest	5530	MCS0	10	10
802.11ax-HE20	Lowest	5500	MCS0	10	10
	Middle	5580	MCS0	10	10
	Highest	5700	MCS0	10	10
802.11ax-HE40	Lowest	5510	MCS0	8	8
	Middle	5550	MCS0	8	8
	Highest	5670	MCS0	8	8
802.11ax-HE80	Lowest	5530	MCS0	8	8

5725-5850 MHz Band:					
Test Modes	Test Channels	Test Frequency (MHz)	Data rate	Power Level[#] Setting	
				ANT1	ANT2
802.11a	Lowest	5745	6Mbps	12	12
	Middle	5785	6Mbps	12	12
	Highest	5825	6Mbps	12	12
802.11ac-VHT20	Lowest	5745	MCS0	12	12
	Middle	5785	MCS0	12	12
	Highest	5825	MCS0	12	12
802.11ac-VHT40	Lowest	5755	MCS0	12	12
	Highest	5795	MCS0	12	12
802.11ac-VHT80	Middle	5775	MCS0	12	12
802.11ax-HE20	Lowest	5745	MCS0	12	12
	Middle	5785	MCS0	12	12
	Highest	5825	MCS0	12	12
802.11ax-HE40	Lowest	5755	MCS0	12	12
	Highest	5795	MCS0	12	12
802.11ax-HE80	Middle	5775	MCS0	12	12
Note: 1. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, average power and PSD across all data rates bandwidths, and modulations. 2. The device supports SISO in all modes, and MIMO 2T2R in 802.11n/ac/ax modes, per pretest, 2T2R mode was the worst mode and reported for 802.11n/ac/ax modes. 3. The n20/n40 mode was reduced test as identical parameter with ac20/ac40 mode. 4. For 802.11ax modes, the device not support partial RU mode.					

Duty cycle

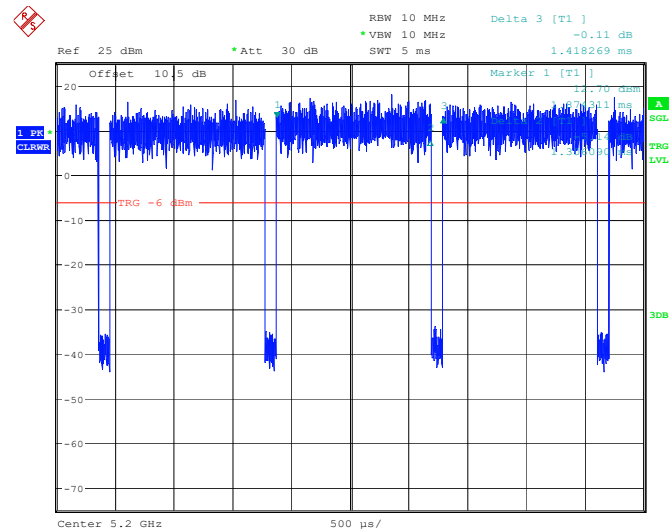
Test Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	Duty Cycle Factor (dB)	1/T (Hz)	VBW Setting (kHz)
802.11a	1.38	1.49	92.62	0.33	725	1
802.11ac-VHT20	1.31	1.42	92.25	0.35	763	1
802.11ac-VHT40	0.65	0.75	86.67	0.62	1538	3
802.11ac-VHT80	0.32	0.43	74.42	1.28	3125	5
802.11ax-HE20	1.01	1.12	90.18	0.45	990	1
802.11ax-HE40	0.53	0.73	72.60	1.39	1887	3
802.11ax-HE80	0.28	0.40	70.00	1.55	3571	5
Note: Test only was performed at ANT1.						

802.11a



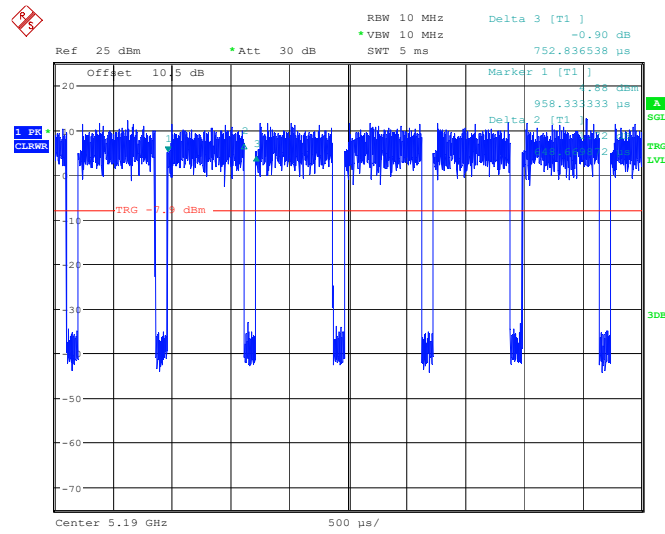
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 2.JUN.2024 17:12:41

802.11ac-VHT20



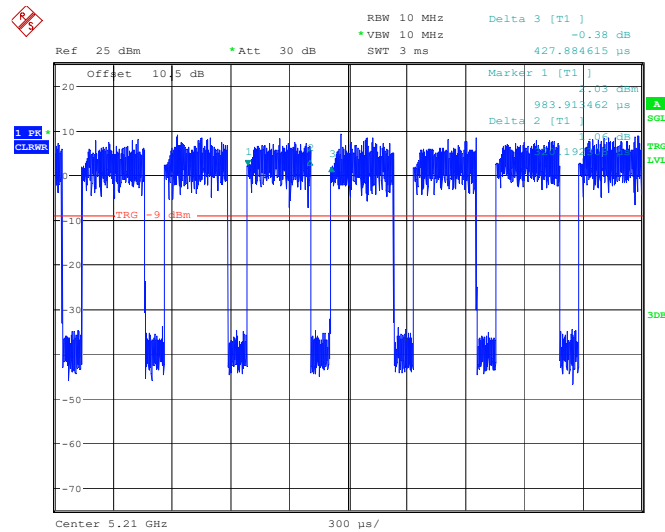
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 22:52:08

802.11ac-VHT40



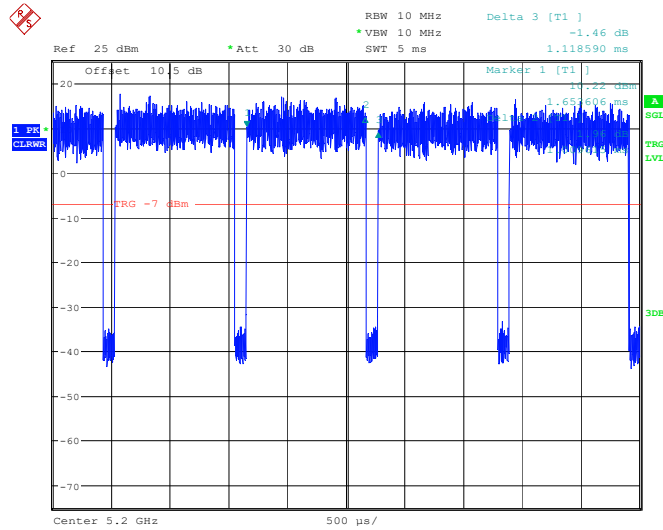
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUN.2024 22:48:28

802.11ac-VHT80



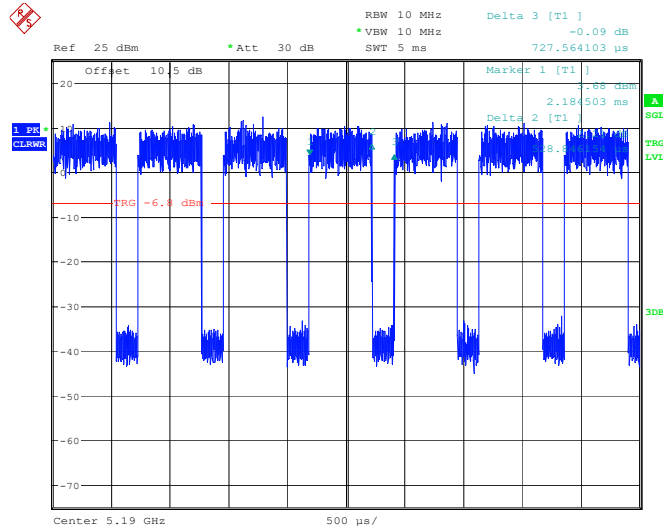
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUN.2024 23:21:22

802.11ax-HE20



ProjectNo.:2401T34651E-RF Tester:Allen Bai
 Date: 4.JUN.2024 01:08:08

802.11ax-HE40



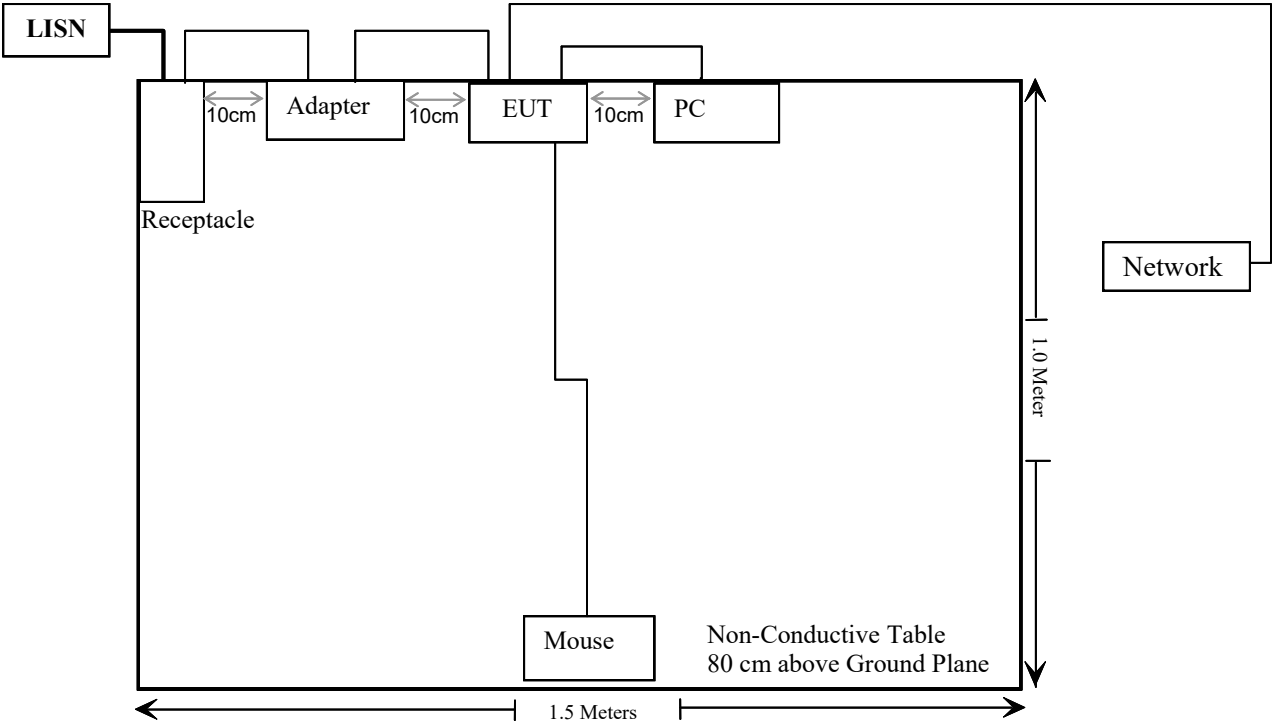
ProjectNo.:2401T34651E-RF Tester:Allen Bai
 Date: 4.JUN.2024 00:16:42

External I/O Cable

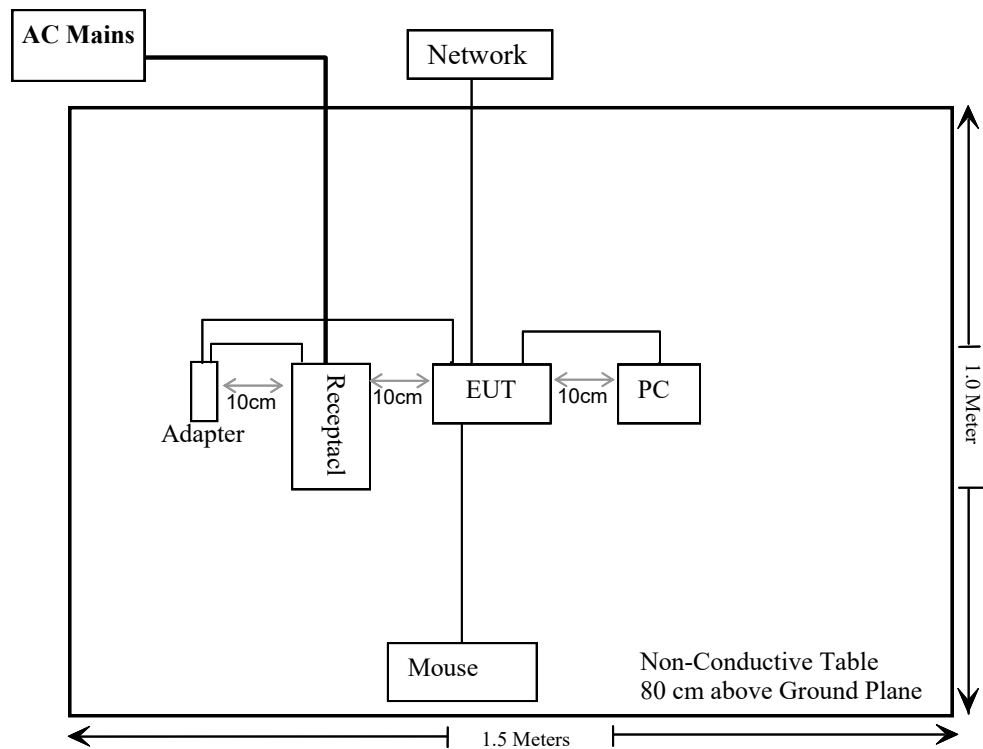
Cable Description	Length (m)	From Port	To
Un-shielded Un-detachable AC cable	1.2	LISN/ AC Mains	Receptacle
Un-shielded Detachable AC cable	0.5	Receptacle	Adapter
Un-Shielded Un-detachable DC cable	1.5	Adapter	EUT
Un-Shielded Un-detachable USB cable	1.2	Mouse	EUT
Shielded detachable USB 3.1 (C - C, HDMI) cable	1.2	EUT	PC
Shielded Detachable RJ45 cable	5.0	EUT	Network

Block Diagram of Test Setup

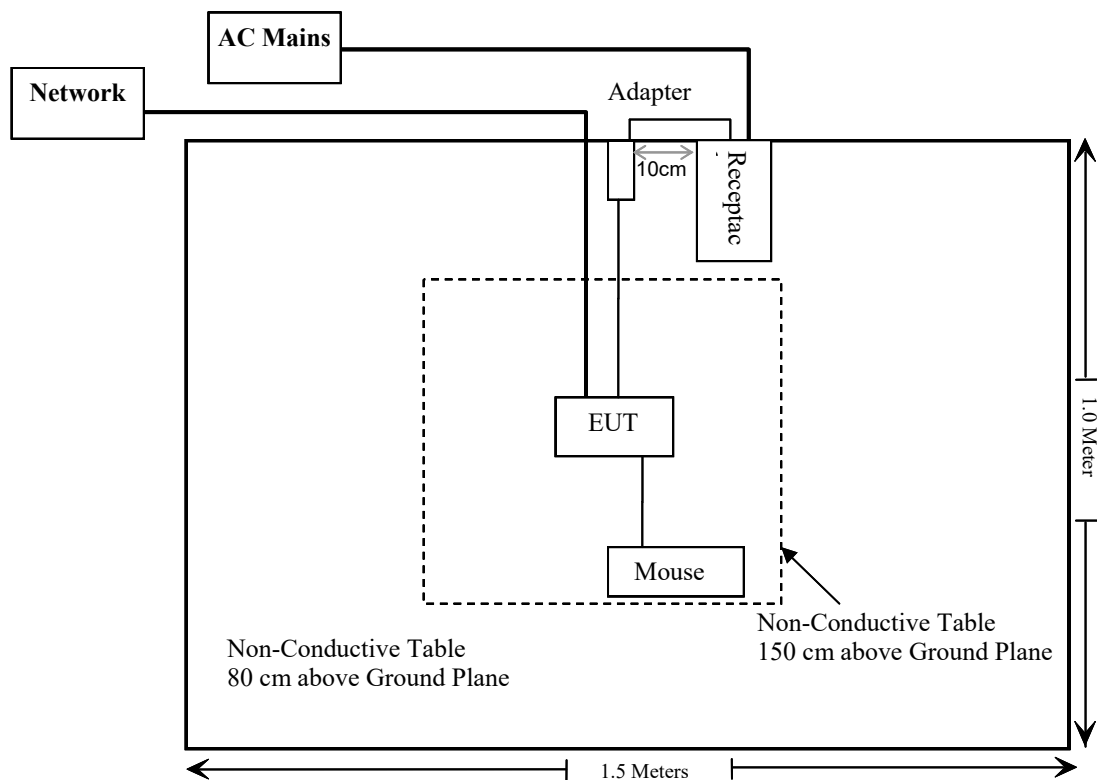
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) & §2.1091	MPE-Based Exemption	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Compliant*

Compliant*: Please refer to the DFS report 2401T34651E-RF-00B.

Not Applicable: For 5250-5350MHz/5470-5725MHz, the maximum EIRP is 15.71dBm≤27dBm (500mW).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/05/21	2025/05/20
Unknown	Cable	PNG214	1354	2024/05/21	2025/05/20
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2024/06/18	2025/06/17
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/06/18	2025/06/17
Unknown	RF Cable	UFA147	219661	2024/06/18	2025/06/17
Unknown	RF Cable	XH750A-N	J-10M	2024/06/18	2025/06/17
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	2024/06/18	2025/06/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
R&S	SPECTRUM ANALYZER	FSU26	200120	2024/01/08	2025/01/07
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
MARCONI	10dB Attenuator	6534/3	2942	2023/07/04	2024/07/03
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26
Unknown	RF Cable	65475	01670515	2023/07/04	2024/07/03
Unknown	RF Cable	65475	01670515	2024/06/27	2025/06/26

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC 1.1307 (B) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

According to subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(3)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power [#]	Antenna Gain [#]		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
BLE	2402-2480	6.5	1.56	-0.59	5.91	3.90	0.2	768
2.4G Wi-Fi	2412-2462	27.0	2.66	0.51	27.51	563.64	0.2	768
5.2G Wi-Fi	5180-5240	11.5	3.10	0.95	12.45	17.58	0.2	768
5.3G Wi-Fi	5260-5320	13.0	3.10	0.95	13.95	24.83	0.2	768
5.6G Wi-Fi	5500-5600/ 5650-5700	12.5	3.10	0.95	13.45	22.13	0.2	768
5.8G Wi-Fi	5745-5825	11.5	3.10	0.95	12.45	17.58	0.2	768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.
 2. The BLE, 2.4G Wi-Fi and 5G Wi-Fi cannot transmit at same time.
 3. 0dBd=2.15dBi

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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 manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has two internal antennas arrangement which were permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

Mode	Antenna Type	Antenna Gain [#]	Impedance	Frequency Range
Wi-Fi ANT1	PCB	3.10dBi	50Ω	5150-5850MHz
Wi-Fi ANT2	PCB	2.23dBi	50Ω	5150-5850MHz

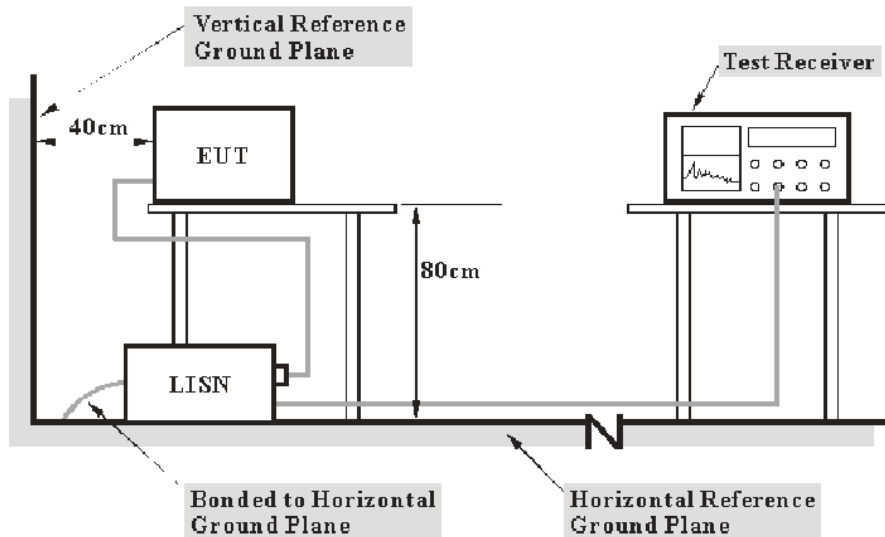
Result: Compliant

FCC §15.407 (b) (6) §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and Average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

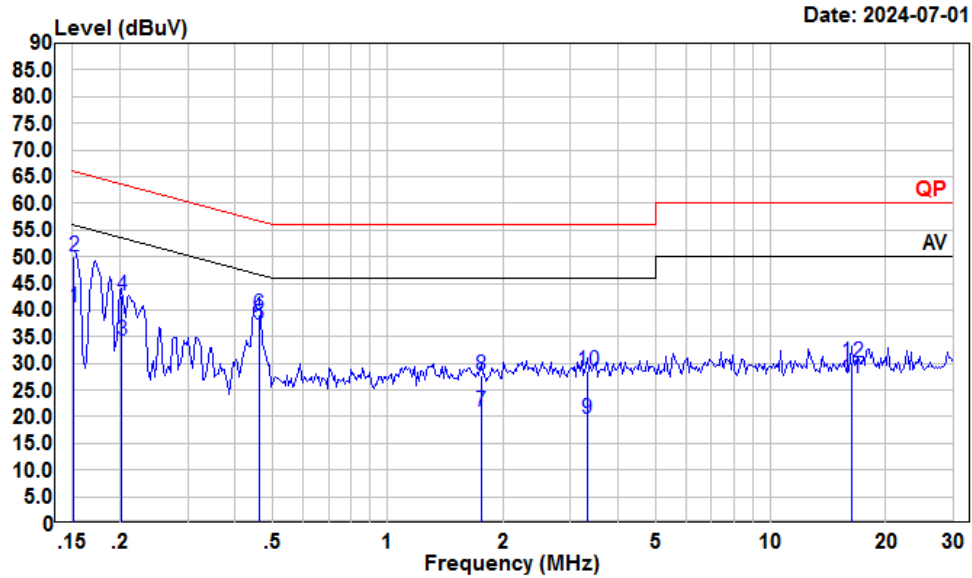
Environmental Conditions

Temperature:	27 °C
Relative Humidity:	69 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-07-01.

EUT operation mode: Transmitting (Maximum output power mode, 802.11 ax20 5280MHz MIMO)

AC 120V/60 Hz, Line



Condition: Line

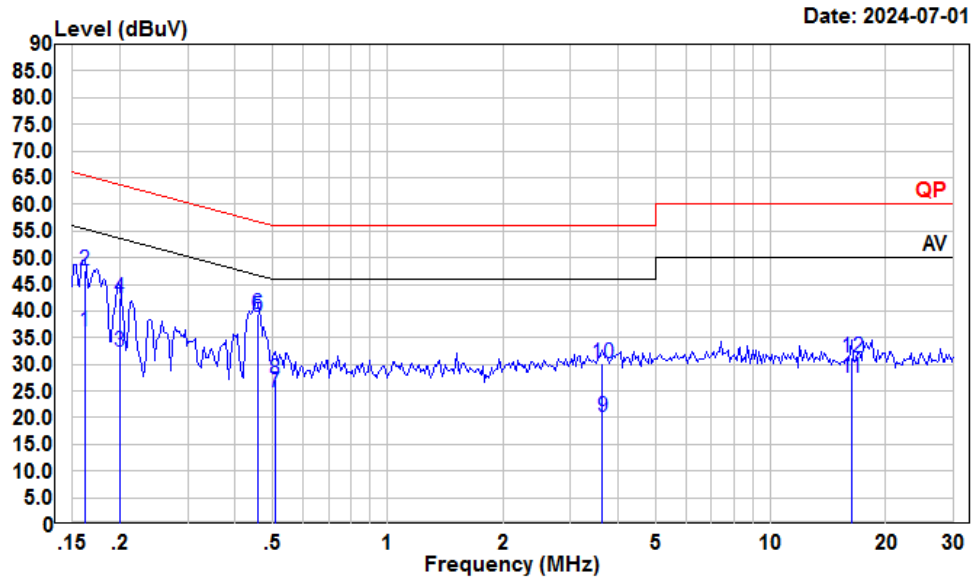
Project : 2401T34651E-RF

tester : Macy.shi

Note : 5G WIFI

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.15	19.46	40.49	10.90	10.13	55.91	-15.42	Average
2	0.15	28.88	49.91	10.90	10.13	65.91	-16.00	QP
3	0.20	13.45	34.34	10.80	10.09	53.54	-19.20	Average
4	0.20	21.84	42.73	10.80	10.09	63.54	-20.81	QP
5	0.46	16.69	37.34	10.53	10.12	46.67	-9.33	Average
6	0.46	18.56	39.21	10.53	10.12	56.67	-17.46	QP
7	1.75	0.08	20.82	10.56	10.18	46.00	-25.18	Average
8	1.75	6.97	27.71	10.56	10.18	56.00	-28.29	QP
9	3.31	-0.93	19.64	10.38	10.19	46.00	-26.36	Average
10	3.31	8.12	28.69	10.38	10.19	56.00	-27.31	QP
11	16.23	6.22	27.11	10.68	10.21	50.00	-22.89	Average
12	16.23	9.17	30.06	10.68	10.21	60.00	-29.94	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2401T34651E-RF
tester : Macy.shi
Note : 5G WIFI

	Freq	Read Level	LISN Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	15.60	36.26	10.55	10.11	55.38	-19.12	Average
2	0.16	26.96	47.62	10.55	10.11	65.38	-17.76	QP
3	0.20	11.76	32.25	10.40	10.09	53.62	-21.37	Average
4	0.20	21.87	42.36	10.40	10.09	63.62	-21.26	QP
5	0.46	18.23	39.02	10.67	10.12	46.76	-7.74	Average
6	0.46	18.60	39.39	10.67	10.12	56.76	-17.37	QP
7	0.51	4.00	24.84	10.70	10.14	46.00	-21.16	Average
8	0.51	6.35	27.19	10.70	10.14	56.00	-28.81	QP
9	3.64	-0.47	20.13	10.40	10.20	46.00	-25.87	Average
10	3.64	9.62	30.22	10.40	10.20	56.00	-25.78	QP
11	16.23	6.39	27.37	10.77	10.21	50.00	-22.63	Average
12	16.23	10.26	31.24	10.77	10.21	60.00	-28.76	QP

§15.205 & §15.209 & §15.407(B) - UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

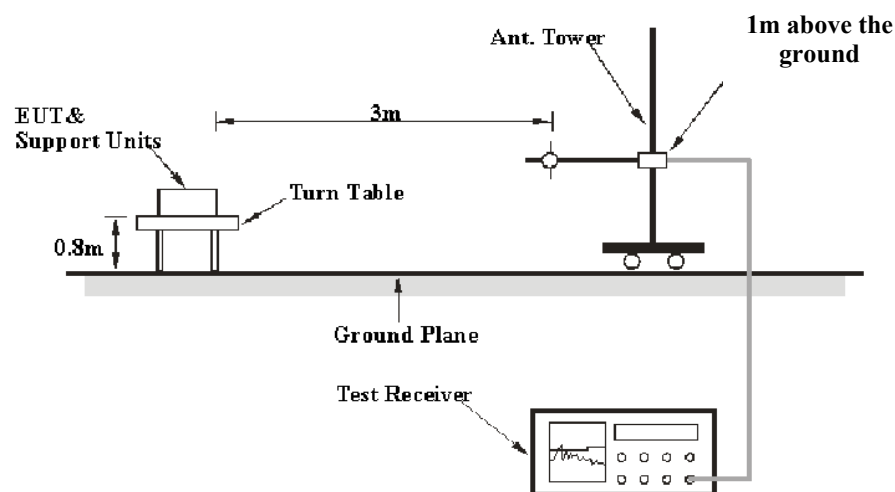
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

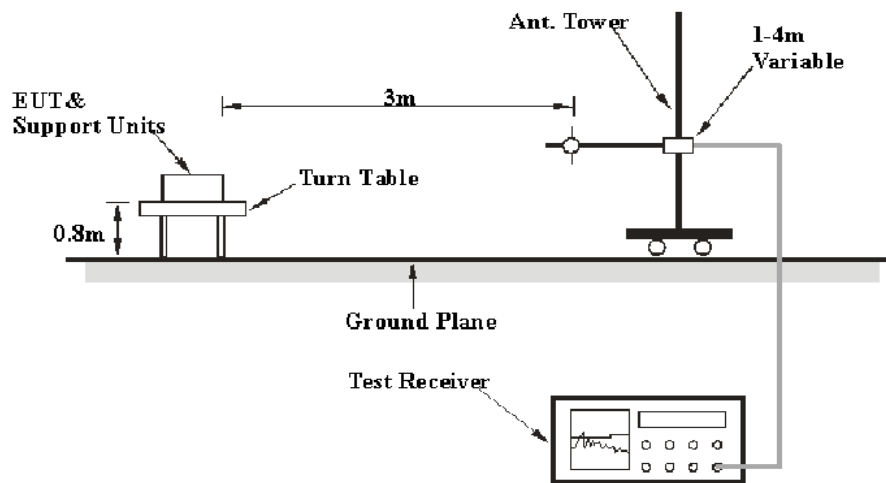
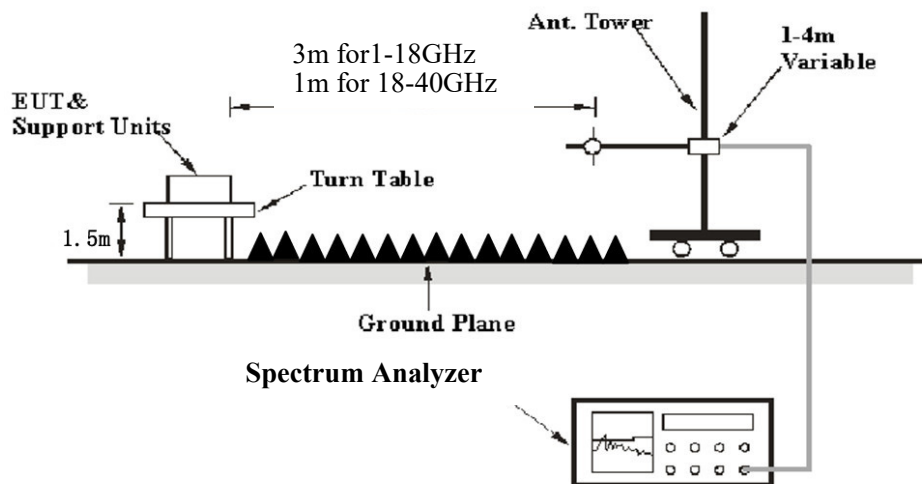
- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

9 kHz-30MHz:



30MHz-1GHz:**Above 1 GHz:**

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

9 kHz-1GHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

1-40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	≥1/Ton

Note: Ton is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

All emissions under the average limit and under the noise floor have not recorded in the report.

According to ANSI C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified, extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance). In some cases, a different distance correction factor may be required;

$$E_{\text{SpecLimit}} = E_{\text{Meas}} + 20 \log \left(\frac{d_{\text{Meas}}}{d_{\text{SpecLimit}}} \right)$$

where

$E_{\text{SpecLimit}}$	is the field strength of the emission at the distance specified by the limit, in dB μ V/m
E_{Meas}	is the field strength of the emission at the measurement distance, in dB μ V/m
d_{Meas}	is the measurement distance, in m
$d_{\text{SpecLimit}}$	is the distance specified by the limit, in m

So the extrapolation factor of 1m is $20 \cdot \log(1/3) = -9.5$ dB, for 18-40GHz range, the limit of 1m distance was added by 9.5dB from limit of 3m to compared with the result measurement at 1m distance.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit/Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

$$\begin{aligned} \text{Over Limit} &= \text{Level} - \text{Limit}; \text{Margin} = \text{Limit} - \text{Corrected Amplitude} \\ \text{Level} / \text{Corrected Amplitude} &= \text{Read Level} + \text{Factor} \end{aligned}$$

Test Data

Environmental Conditions

Temperature:	22~25.5 °C
Relative Humidity:	50~57 %
ATM Pressure:	101 kPa

The testing was performed by Anson Su on 2024-07-03 for below 1GHz and Zenos Qiao from 2024-06-22 to 2024-06-26 for above 1GHz.

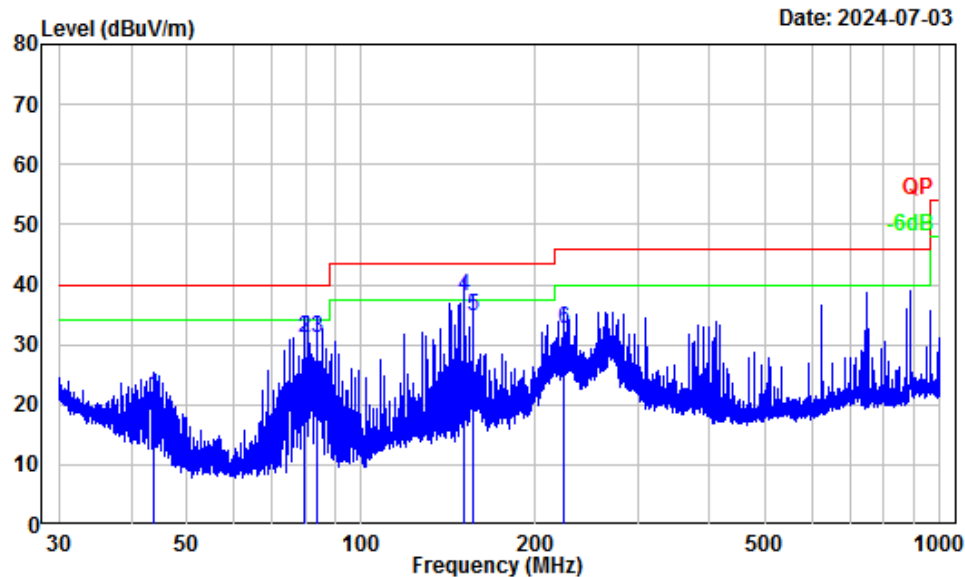
EUT operation mode: Transmitting

9 kHz-30MHz: *(Maximum output power mode, 802.11 ax20 5280MHz MIMO)*

The amplitude of spurious emissions attenuated more than 20 dB below the limit was not recorded.

30 MHz–1 GHz: (Maximum output power mode, 802.11 ax20 5280MHz MIMO)

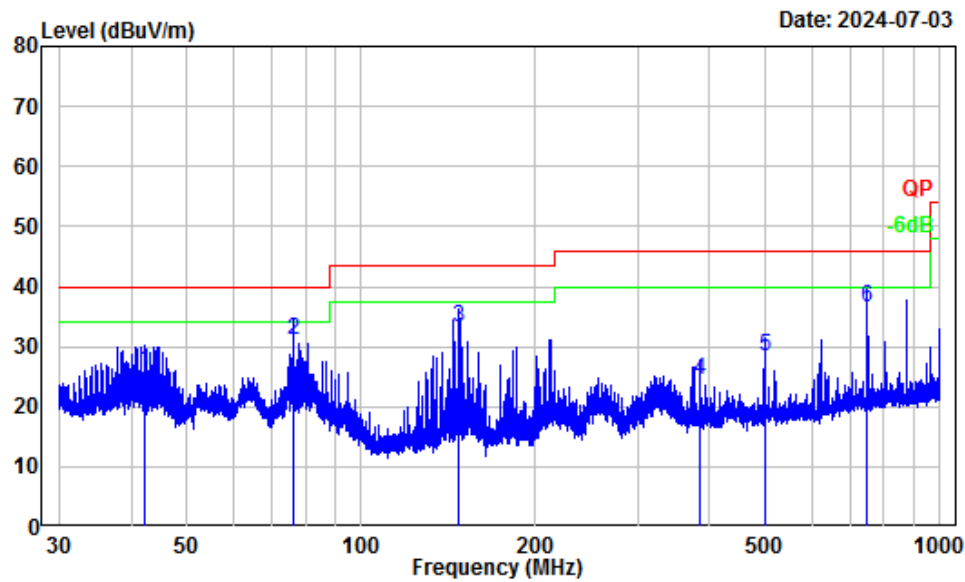
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401T34651E-RF
Test Mode : 5G WIFI
Tester : Anson Su

	Freq Factor		Read Level	Level	Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	43.89	-13.99	35.42	21.43	40.00	-18.57	QP
2	79.49	-18.18	49.39	31.21	40.00	-8.79	QP
3	84.00	-18.17	49.34	31.17	40.00	-8.83	QP
4	150.01	-13.57	51.62	38.05	43.50	-5.45	QP
5	156.05	-13.81	48.50	34.69	43.50	-8.81	QP
6	223.54	-13.98	46.73	32.75	46.00	-13.25	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401T34651E-RF
Test Mode : 5G WIFI
Tester : Anson Su

		Read		Limit	Over	Remark
Freq Factor		Level	Level	Line	Limit	
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	42.34	-14.34	40.38	26.04	40.00	-13.96 QP
2	76.51	-18.70	49.65	30.95	40.00	-9.05 QP
3	147.02	-13.69	46.83	33.14	43.50	-10.36 QP
4	385.62	-11.22	35.82	24.60	46.00	-21.40 QP
5	500.08	-8.47	36.93	28.46	46.00	-17.54 QP
6	750.11	-6.04	42.47	36.43	46.00	-9.57 QP

Above 1GHz: *worst case is adapter*

5150-5250 MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5180MHz							
5149.24	68.17	PK	H	2.71	70.88	74	-3.12
5149.24	46.08	AV	H	2.71	48.79	54	-5.21
5149.05	66.85	PK	V	2.71	69.56	74	-4.44
5149.05	45.42	AV	V	2.71	48.13	54	-5.87
10360.00	45.68	PK	H	13.07	58.75	68.2	-9.45
10360.00	45.45	PK	V	13.07	58.52	68.2	-9.68
5200MHz							
10400.00	45.36	PK	H	13.12	58.48	68.2	-9.72
10400.00	45.14	PK	V	13.12	58.26	68.2	-9.94
5240MHz							
5387.69	55.42	PK	H	3.07	58.49	74	-15.51
5387.69	41.59	AV	H	3.07	44.66	54	-9.34
5390.86	55.27	PK	V	3.07	58.34	74	-15.66
5390.86	41.33	AV	V	3.07	44.40	54	-9.60
10480.00	45.03	PK	H	13.07	58.10	68.2	-10.10
10480.00	44.82	PK	V	13.07	57.89	68.2	-10.31

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5180MHz							
5149.67	67.93	PK	H	2.71	70.64	74	-3.36
5149.67	47.27	AV	H	2.71	49.98	54	-4.02
5149.53	66.72	PK	V	2.71	69.43	74	-4.57
5149.53	46.61	AV	V	2.71	49.32	54	-4.68
10360.00	47.24	PK	H	13.07	60.31	68.2	-7.89
10360.00	47.71	PK	V	13.07	60.78	68.2	-7.42
5200MHz							
10400.00	46.72	PK	H	13.12	59.84	68.2	-8.36
10400.00	47.17	PK	V	13.12	60.29	68.2	-7.91
5240MHz							
5353.47	55.78	PK	H	3.07	58.85	74	-15.15
5353.47	41.83	AV	H	3.07	44.90	54	-9.10
5355.56	55.56	PK	V	3.07	58.63	74	-15.37
5355.56	41.64	AV	V	3.07	44.71	54	-9.29
10480.00	46.18	PK	H	13.07	59.25	68.2	-8.95
10480.00	46.59	PK	V	13.07	59.66	68.2	-8.54

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5180MHz							
5149.54	68.05	PK	H	2.71	70.76	74	-3.24
5149.54	46.38	AV	H	2.71	49.09	54	-4.91
5149.37	66.86	PK	V	2.71	69.57	74	-4.43
5149.37	45.79	AV	V	2.71	48.50	54	-5.50
10360.00	45.37	PK	H	13.07	58.44	68.2	-9.76
10360.00	45.18	PK	V	13.07	58.25	68.2	-9.95
5200MHz							
10400.00	45.15	PK	H	13.12	58.27	68.2	-9.93
10400.00	44.92	PK	V	13.12	58.04	68.2	-10.16
5240MHz							
5350.72	55.93	PK	H	3.07	59.00	74	-15.00
5350.72	41.78	AV	H	3.07	44.85	54	-9.15
5351.23	55.66	PK	V	3.07	58.73	74	-15.27
5351.23	41.54	AV	V	3.07	44.61	54	-9.39
10480.00	44.89	PK	H	13.07	57.96	68.2	-10.24
10480.00	44.66	PK	V	13.07	57.73	68.2	-10.47

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5190MHz							
5149.24	64.08	PK	H	2.71	66.79	74	-7.21
5149.24	48.13	AV	H	2.71	50.84	54	-3.16
5149.53	62.87	PK	V	2.71	65.58	74	-8.42
5149.53	47.54	AV	V	2.71	50.25	54	-3.75
10380.00	45.03	PK	H	13.09	58.12	68.2	-10.08
10380.00	44.79	PK	V	13.09	57.88	68.2	-10.32
5230MHz							
5356.29	56.57	PK	H	3.07	59.64	74	-14.36
5356.29	42.68	AV	H	3.07	45.75	54	-8.25
5354.45	56.05	PK	V	3.07	59.12	74	-14.88
5354.45	42.21	AV	V	3.07	45.28	54	-8.72
10460.00	44.65	PK	H	13.09	57.74	68.2	-10.46
10460.00	44.43	PK	V	13.09	57.52	68.2	-10.68
802.11ac-VHT80							
5210MHz							
5149.69	60.47	PK	H	2.71	63.18	74	-10.82
5149.69	47.58	AV	H	2.71	50.29	54	-3.71
5149.38	59.32	PK	V	2.71	62.03	74	-11.97
5149.38	47.03	AV	V	2.71	49.74	54	-4.26
5365.84	57.09	PK	H	3.07	60.16	74	-13.84
5365.84	44.24	AV	H	3.07	47.31	54	-6.69
5359.67	56.46	PK	V	3.07	59.53	74	-14.47
5359.67	43.78	AV	V	3.07	46.85	54	-7.15
10420.00	45.08	PK	H	13.12	58.20	68.2	-10.00
10420.00	44.86	PK	V	13.12	57.98	68.2	-10.22

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5180MHz							
5149.89	68.19	PK	H	2.71	70.90	74	-3.10
5149.89	48.22	AV	H	2.71	50.93	54	-3.07
5149.72	66.94	PK	V	2.71	69.65	74	-4.35
5149.72	47.68	AV	V	2.71	50.39	54	-3.61
10360.00	45.78	PK	H	13.07	58.85	68.2	-9.35
10360.00	45.55	PK	V	13.07	58.62	68.2	-9.58
5200MHz							
10400.00	45.39	PK	H	13.12	58.51	68.2	-9.69
10400.00	45.15	PK	V	13.12	58.27	68.2	-9.93
5240MHz							
5355.33	56.24	PK	H	3.07	59.31	74	-14.69
5355.33	42.07	AV	H	3.07	45.14	54	-8.86
5353.54	55.68	PK	V	3.07	58.75	74	-15.25
5353.54	41.59	AV	V	3.07	44.66	54	-9.34
10480.00	45.07	PK	H	13.07	58.14	68.2	-10.06
10480.00	44.84	PK	V	13.07	57.91	68.2	-10.29

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5190MHz							
5149.86	61.93	PK	H	2.71	64.64	74	-9.36
5149.86	48.04	AV	H	2.71	50.75	54	-3.25
5149.61	60.72	PK	V	2.71	63.43	74	-10.57
5149.61	47.51	AV	V	2.71	50.22	54	-3.78
10380.00	44.97	PK	H	13.09	58.06	68.2	-10.14
10380.00	44.74	PK	V	13.09	57.83	68.2	-10.37
5230MHz							
5368.55	55.87	PK	H	3.07	58.94	74	-15.06
5368.55	42.46	AV	H	3.07	45.53	54	-8.47
5365.32	55.39	PK	V	3.07	58.46	74	-15.54
5365.32	41.98	AV	V	3.07	45.05	54	-8.95
10460.00	44.68	PK	H	13.09	57.77	68.2	-10.43
10460.00	44.43	PK	V	13.09	57.52	68.2	-10.68
802.11ax-HE80							
5210MHz							
5149.73	59.05	PK	H	2.71	61.76	74	-12.24
5149.73	47.78	AV	H	2.71	50.49	54	-3.51
5149.50	58.14	PK	V	2.71	60.85	74	-13.15
5149.50	47.21	AV	V	2.71	49.92	54	-4.08
5356.61	55.65	PK	H	3.07	58.72	74	-15.28
5356.61	43.73	AV	H	3.07	46.80	54	-7.20
5355.44	55.18	PK	V	3.07	58.25	74	-15.75
5355.44	43.32	AV	V	3.07	46.39	54	-7.61
10420.00	45.28	PK	H	13.12	58.40	68.2	-9.80
10420.00	45.07	PK	V	13.12	58.19	68.2	-10.01

5250-5350MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5260MHz							
5038.97	55.88	PK	H	2.97	58.85	74	-15.15
5038.97	41.79	AV	H	2.97	44.76	54	-9.24
5053.39	55.57	PK	V	2.97	58.54	74	-15.46
5053.39	41.61	AV	V	2.97	44.58	54	-9.42
10520.00	45.45	PK	H	13.05	58.50	68.2	-9.70
10520.00	45.24	PK	V	13.05	58.29	68.2	-9.91
5280MHz							
10560.00	45.96	PK	H	13.02	58.98	68.2	-9.22
10560.00	45.73	PK	V	13.02	58.75	68.2	-9.45
5320MHz							
5350.56	65.95	PK	H	3.07	69.02	74	-4.98
5350.56	45.86	AV	H	3.07	48.93	54	-5.07
5350.25	64.73	PK	V	3.07	67.80	74	-6.20
5350.25	45.27	AV	V	3.07	48.34	54	-5.66
10640.00	46.49	PK	H	13.19	59.68	74	-14.32
10640.00	32.94	AV	H	13.19	46.13	54	-7.87
10640.00	46.32	PK	V	13.19	59.51	74	-14.49
10640.00	32.76	AV	V	13.19	45.95	54	-8.05

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5260MHz							
5047.50	56.02	PK	H	2.97	58.99	74	-15.01
5047.50	41.75	AV	H	2.97	44.72	54	-9.28
5045.96	55.69	PK	V	2.97	58.66	74	-15.34
5045.96	41.38	AV	V	2.97	44.35	54	-9.65
10520.00	46.34	PK	H	13.05	59.39	68.2	-8.81
10520.00	46.77	PK	V	13.05	59.82	68.2	-8.38
5280MHz							
10560.00	46.56	PK	H	13.02	59.58	68.2	-8.62
10560.00	47.05	PK	V	13.02	60.07	68.2	-8.13
5320MHz							
5350.18	67.19	PK	H	3.07	70.26	74	-3.74
5350.18	47.38	AV	H	3.07	50.45	54	-3.55
5350.57	65.94	PK	V	3.07	69.01	74	-4.99
5350.57	46.87	AV	V	3.07	49.94	54	-4.06
10640.00	46.87	PK	H	13.19	60.06	74	-13.94
10640.00	33.75	AV	H	13.19	46.94	54	-7.06
10640.00	47.38	PK	V	13.19	60.57	74	-13.43
10640.00	34.29	AV	V	13.19	47.48	54	-6.52

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5260MHz							
5059.84	55.63	PK	H	2.97	58.60	74	-15.40
5059.84	41.54	AV	H	2.97	44.51	54	-9.49
5047.65	55.38	PK	V	2.97	58.35	74	-15.65
5047.65	41.42	AV	V	2.97	44.39	54	-9.61
10520.00	46.15	PK	H	13.05	59.20	68.2	-9.00
10520.00	45.92	PK	V	13.05	58.97	68.2	-9.23
5280MHz							
10560.00	46.47	PK	H	13.02	59.49	68.2	-8.71
10560.00	46.25	PK	V	13.02	59.27	68.2	-8.93
5320MHz							
5350.40	67.78	PK	H	3.07	70.85	74	-3.15
5350.40	47.66	AV	H	3.07	50.73	54	-3.27
5350.87	66.57	PK	V	3.07	69.64	74	-4.36
5350.87	47.09	AV	V	3.07	50.16	54	-3.84
10640.00	46.88	PK	H	13.19	60.07	74	-13.93
10640.00	32.52	AV	H	13.19	45.71	54	-8.29
10640.00	46.64	PK	V	13.19	59.83	74	-14.17
10640.00	32.35	AV	V	13.19	45.54	54	-8.46

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5270MHz							
5079.34	55.76	PK	H	2.97	58.73	74	-15.27
5079.34	42.38	AV	H	2.97	45.35	54	-8.65
5067.59	55.43	PK	V	2.97	58.40	74	-15.60
5067.59	42.11	AV	V	2.97	45.08	54	-8.92
10540.00	45.65	PK	H	13.03	58.68	68.2	-9.52
10540.00	45.42	PK	V	13.03	58.45	68.2	-9.75
5310MHz							
5350.72	62.67	PK	H	3.07	65.74	74	-8.26
5350.72	47.82	AV	H	3.07	50.89	54	-3.11
5350.93	61.44	PK	V	3.07	64.51	74	-9.49
5350.93	47.25	AV	V	3.07	50.32	54	-3.68
10620.00	46.19	PK	H	13.09	59.28	74	-14.72
10620.00	32.92	AV	H	13.09	46.01	54	-7.99
10620.00	46.01	PK	V	13.09	59.10	74	-14.90
10620.00	32.78	AV	V	13.09	45.87	54	-8.13
802.11ac-VHT80							
5290MHz							
5031.58	56.49	PK	H	2.97	59.46	74	-14.54
5031.58	43.87	AV	H	2.97	46.84	54	-7.16
5030.25	56.05	PK	V	2.97	59.02	74	-14.98
5030.25	43.56	AV	V	2.97	46.53	54	-7.47
5350.24	61.48	PK	H	3.07	64.55	74	-9.45
5350.24	47.74	AV	H	3.07	50.81	54	-3.19
5350.57	60.25	PK	V	3.07	63.32	74	-10.68
5350.57	47.19	AV	V	3.07	50.26	54	-3.74
10580.00	45.68	PK	H	13.00	58.68	68.2	-9.52
10580.00	45.51	PK	V	13.00	58.51	68.2	-9.69

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5260MHz							
5030.93	55.81	PK	H	2.97	58.78	74	-15.22
5030.93	41.79	AV	H	2.97	44.76	54	-9.24
5045.52	55.48	PK	V	2.97	58.45	74	-15.55
5045.52	41.54	AV	V	2.97	44.51	54	-9.49
10520.00	45.84	PK	H	13.05	58.89	68.2	-9.31
10520.00	45.69	PK	V	13.05	58.74	68.2	-9.46
5280MHz							
10560.00	46.17	PK	H	13.02	59.19	68.2	-9.01
10560.00	45.95	PK	V	13.02	58.97	68.2	-9.23
5320MHz							
5350.61	67.45	PK	H	3.07	70.52	74	-3.48
5350.61	47.36	AV	H	3.07	50.43	54	-3.57
5350.86	66.17	PK	V	3.07	69.24	74	-4.76
5350.86	46.93	AV	V	3.07	50.00	54	-4.00
10640.00	46.55	PK	H	13.19	59.74	74	-14.26
10640.00	32.72	AV	H	13.19	45.91	54	-8.09
10640.00	46.36	PK	V	13.19	59.55	74	-14.45
10640.00	32.57	AV	V	13.19	45.76	54	-8.24

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5270MHz							
5060.37	55.93	PK	H	2.97	58.90	74	-15.10
5060.37	42.21	AV	H	2.97	45.18	54	-8.82
5048.68	55.45	PK	V	2.97	58.42	74	-15.58
5048.68	41.86	AV	V	2.97	44.83	54	-9.17
10540.00	45.69	PK	H	13.03	58.72	68.2	-9.48
10540.00	45.46	PK	V	13.03	58.49	68.2	-9.71
5310MHz							
5350.42	64.36	PK	H	3.07	67.43	74	-6.57
5350.42	47.42	AV	H	3.07	50.49	54	-3.51
5350.65	63.04	PK	V	3.07	66.11	74	-7.89
5350.65	46.75	AV	V	3.07	49.82	54	-4.18
10620.00	46.14	PK	H	13.09	59.23	74	-14.77
10620.00	32.89	AV	H	13.09	45.98	54	-8.02
10620.00	45.95	PK	V	13.09	59.04	74	-14.96
10620.00	32.73	AV	V	13.09	45.82	54	-8.18
802.11ax-HE80							
5290MHz							
5044.84	56.22	PK	H	2.97	59.19	74	-14.81
5044.84	43.18	AV	H	2.97	46.15	54	-7.85
5059.56	55.75	PK	V	2.97	58.72	74	-15.28
5059.56	42.64	AV	V	2.97	45.61	54	-8.39
5350.93	59.69	PK	H	3.07	62.76	74	-11.24
5350.93	47.14	AV	H	3.07	50.21	54	-3.79
5350.78	58.47	PK	V	3.07	61.54	74	-12.46
5350.78	46.52	AV	V	3.07	49.59	54	-4.41
10580.00	45.61	PK	H	13.00	58.61	68.2	-9.59
10580.00	45.34	PK	V	13.00	58.34	68.2	-9.86

5470-5725MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5500MHz							
5460.00	58.45	PK	H	3.59	62.04	74	-11.96
5460.00	41.64	AV	H	3.59	45.23	54	-8.77
5460.00	57.98	PK	V	3.59	61.57	74	-12.43
5460.00	41.29	AV	V	3.59	44.88	54	-9.12
5469.90	60.87	PK	H	3.69	64.56	68.2	-3.64
5469.25	59.72	PK	V	3.69	63.41	68.2	-4.79
11000.00	44.63	PK	H	13.98	58.61	74	-15.39
11000.00	30.91	AV	H	13.98	44.89	54	-9.11
11000.00	44.45	PK	V	13.98	58.43	74	-15.57
11000.00	30.77	AV	V	13.98	44.75	54	-9.25
5580MHz							
11160.00	45.06	PK	H	13.62	58.68	74	-15.32
11160.00	31.43	AV	H	13.62	45.05	54	-8.95
11160.00	44.89	PK	V	13.62	58.51	74	-15.49
11160.00	31.25	AV	V	13.62	44.87	54	-9.13
5700MHz							
5725.78	57.69	PK	H	4.09	61.78	68.2	-6.42
5725.39	57.16	PK	V	4.09	61.25	68.2	-6.95
11400.00	45.59	PK	H	14.08	59.67	74	-14.33
11400.00	32.02	AV	H	14.08	46.10	54	-7.90
11400.00	45.38	PK	V	14.08	59.46	74	-14.54
11400.00	31.84	AV	V	14.08	45.92	54	-8.08

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5500MHz							
5460.00	58.89	PK	H	3.59	62.48	74	-11.52
5460.00	41.92	AV	H	3.59	45.51	54	-8.49
5460.00	58.43	PK	V	3.59	62.02	74	-11.98
5460.00	41.55	AV	V	3.59	45.14	54	-8.86
5469.86	61.51	PK	H	3.69	65.20	68.2	-3.00
5469.57	60.34	PK	V	3.69	64.03	68.2	-4.17
11000.00	44.42	PK	H	13.98	58.40	74	-15.60
11000.00	30.88	AV	H	13.98	44.86	54	-9.14
11000.00	44.57	PK	V	13.98	58.55	74	-15.45
11000.00	31.04	AV	V	13.98	45.02	54	-8.98
5580MHz							
11160.00	44.85	PK	H	13.62	58.47	74	-15.53
11160.00	31.37	AV	H	13.62	44.99	54	-9.01
11160.00	45.02	PK	V	13.62	58.64	74	-15.36
11160.00	31.56	AV	V	13.62	45.18	54	-8.82
5700MHz							
5725.54	58.27	PK	H	4.09	62.36	68.2	-5.84
5726.09	57.75	PK	V	4.09	61.84	68.2	-6.36
11400.00	45.36	PK	H	14.08	59.44	74	-14.56
11400.00	31.79	AV	H	14.08	45.87	54	-8.13
11400.00	45.52	PK	V	14.08	59.60	74	-14.40
11400.00	31.95	AV	V	14.08	46.03	54	-7.97

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5500MHz							
5460.00	55.68	PK	H	3.59	59.27	74	-14.73
5460.00	41.77	AV	H	3.59	45.36	54	-8.64
5460.00	55.26	PK	V	3.59	58.85	74	-15.15
5460.00	41.32	AV	V	3.59	44.91	54	-9.09
5469.18	61.24	PK	H	3.69	64.93	68.2	-3.27
5468.75	60.05	PK	V	3.69	63.74	68.2	-4.46
11000.00	44.49	PK	H	13.98	58.47	74	-15.53
11000.00	30.87	AV	H	13.98	44.85	54	-9.15
11000.00	44.32	PK	V	13.98	58.30	74	-15.70
11000.00	30.71	AV	V	13.98	44.69	54	-9.31
5580MHz							
11160.00	44.91	PK	H	13.62	58.53	74	-15.47
11160.00	31.38	AV	H	13.62	45.00	54	-9.00
11160.00	44.75	PK	V	13.62	58.37	74	-15.63
11160.00	31.22	AV	V	13.62	44.84	54	-9.16
5700MHz							
5726.21	60.64	PK	H	4.09	64.73	68.2	-3.47
5725.84	59.57	PK	V	4.09	63.66	68.2	-4.54
11400.00	45.43	PK	H	14.08	59.51	74	-14.49
11400.00	31.92	AV	H	14.08	46.00	54	-8.00
11400.00	45.26	PK	V	14.08	59.34	74	-14.66
11400.00	31.77	AV	V	14.08	45.85	54	-8.15

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5510MHz							
5460.00	55.64	PK	H	3.59	59.23	74	-14.77
5460.00	42.86	AV	H	3.59	46.45	54	-7.55
5460.00	55.17	PK	V	3.59	58.76	74	-15.24
5460.00	42.45	AV	V	3.59	46.04	54	-7.96
5469.32	60.73	PK	H	3.69	64.42	68.2	-3.78
5469.05	59.59	PK	V	3.69	63.28	68.2	-4.92
11020.00	44.67	PK	H	13.89	58.56	74	-15.44
11020.00	31.35	AV	H	13.89	45.24	54	-8.76
11020.00	44.48	PK	V	13.89	58.37	74	-15.63
11020.00	31.21	AV	V	13.89	45.10	54	-8.90
5550MHz							
11100.00	45.02	PK	H	13.53	58.55	74	-15.45
11100.00	31.61	AV	H	13.53	45.14	54	-8.86
11100.00	44.84	PK	V	13.53	58.37	74	-15.63
11100.00	31.45	AV	V	13.53	44.98	54	-9.02
5670MHz							
5727.56	57.28	PK	H	4.09	61.37	68.2	-6.83
5726.87	56.81	PK	V	4.09	60.90	68.2	-7.30
11340.00	45.42	PK	H	13.99	59.41	74	-14.59
11340.00	31.93	AV	H	13.99	45.92	54	-8.08
11340.00	45.27	PK	V	13.99	59.26	74	-14.74
11340.00	31.75	AV	V	13.99	45.74	54	-8.26

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT80							
5530MHz							
5460.00	57.36	PK	H	3.59	60.95	74	-13.05
5460.00	44.69	AV	H	3.59	48.28	54	-5.72
5460.00	56.87	PK	V	3.59	60.46	74	-13.54
5460.00	44.24	AV	V	3.59	47.83	54	-6.17
5466.12	60.51	PK	H	3.59	64.10	68.2	-4.10
5466.63	59.45	PK	V	3.59	63.04	68.2	-5.16
5744.05	57.15	PK	H	4.19	61.34	68.2	-6.86
5743.54	56.72	PK	V	4.19	60.91	68.2	-7.29
11060.00	44.51	PK	H	13.71	58.22	74	-15.78
11060.00	32.78	AV	H	13.71	46.49	54	-7.51
11060.00	44.35	PK	V	13.71	58.06	74	-15.94
11060.00	32.63	AV	V	13.71	46.34	54	-7.66

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5500MHz							
5460.00	58.26	PK	H	3.59	61.85	74	-12.15
5460.00	41.97	AV	H	3.59	45.56	54	-8.44
5460.00	57.78	PK	V	3.59	61.37	74	-12.63
5460.00	41.49	AV	V	3.59	45.08	54	-8.92
5469.44	61.15	PK	H	3.69	64.84	68.2	-3.36
5469.15	60.02	PK	V	3.69	63.71	68.2	-4.49
11000.00	44.72	PK	H	13.98	58.70	74	-15.30
11000.00	31.13	AV	H	13.98	45.11	54	-8.89
11000.00	44.54	PK	V	13.98	58.52	74	-15.48
11000.00	30.95	AV	V	13.98	44.93	54	-9.07
5580MHz							
11160.00	45.19	PK	H	13.62	58.81	74	-15.19
11160.00	31.56	AV	H	13.62	45.18	54	-8.82
11160.00	45.02	PK	V	13.62	58.64	74	-15.36
11160.00	31.38	AV	V	13.62	45.00	54	-9.00
5700MHz							
5726.57	59.88	PK	H	4.09	63.97	68.2	-4.23
5725.96	59.25	PK	V	4.09	63.34	68.2	-4.86
11400.00	45.64	PK	H	14.08	59.72	74	-14.28
11400.00	32.05	AV	H	14.08	46.13	54	-7.87
11400.00	45.46	PK	V	14.08	59.54	74	-14.46
11400.00	31.87	AV	V	14.08	45.95	54	-8.05

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5510MHz							
5460.00	57.54	PK	H	3.59	61.13	74	-12.87
5460.00	41.72	AV	H	3.59	45.31	54	-8.69
5460.00	57.03	PK	V	3.59	60.62	74	-13.38
5460.00	42.36	AV	V	3.59	45.95	54	-8.05
5469.87	60.61	PK	H	3.69	64.30	68.2	-3.90
5469.32	59.48	PK	V	3.69	63.17	68.2	-5.03
11020.00	44.36	PK	H	13.89	58.25	74	-15.75
11020.00	31.54	AV	H	13.89	45.43	54	-8.57
11020.00	44.12	PK	V	13.89	58.01	74	-15.99
11020.00	31.37	AV	V	13.89	45.26	54	-8.74
5550MHz							
11100.00	44.65	PK	H	13.53	58.18	74	-15.82
11100.00	31.78	AV	H	13.53	45.31	54	-8.69
11100.00	44.47	PK	V	13.53	58.00	74	-16.00
11100.00	31.52	AV	V	13.53	45.05	54	-8.95
5670MHz							
5734.79	56.84	PK	H	4.19	61.03	68.2	-7.17
5732.56	56.37	PK	V	4.19	60.56	68.2	-7.64
11340.00	44.98	PK	H	13.99	58.97	74	-15.03
11340.00	32.01	AV	H	13.99	46.00	54	-8.00
11340.00	44.79	PK	V	13.99	58.78	74	-15.22
11340.00	31.84	AV	V	13.99	45.83	54	-8.17

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5530MHz							
5460.00	57.64	PK	H	3.59	61.23	74	-12.77
5460.00	43.96	AV	H	3.59	47.55	54	-6.45
5460.00	57.15	PK	V	3.59	60.74	74	-13.26
5460.00	43.47	AV	V	3.59	47.06	54	-6.94
5465.86	58.13	PK	H	3.59	61.72	68.2	-6.48
5466.57	57.08	PK	V	3.59	60.67	68.2	-7.53
5727.01	56.63	PK	H	4.09	60.72	68.2	-7.48
5726.68	56.09	PK	V	4.09	60.18	68.2	-8.02
11060.00	44.77	PK	H	13.71	58.48	74	-15.52
11060.00	32.85	AV	H	13.71	46.56	54	-7.44
11060.00	44.59	PK	V	13.71	58.30	74	-15.70
11060.00	32.68	AV	V	13.71	46.39	54	-7.61

5725-5850 MHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 1)							
5745MHz							
5650.00	57.32	PK	H	3.59	60.91	68.20	-7.29
5700.00	67.51	PK	H	4.09	71.60	105.20	-33.60
5720.00	77.64	PK	H	4.09	81.73	110.80	-29.07
5725.00	83.39	PK	H	4.09	87.48	122.20	-34.72
5650.00	57.08	PK	V	3.59	60.67	68.20	-7.53
5700.00	66.23	PK	V	4.09	70.32	105.20	-34.88
5720.00	76.17	PK	V	4.09	80.26	110.80	-30.54
5725.00	81.96	PK	V	4.09	86.05	122.20	-36.15
11490.00	44.39	PK	H	14.31	58.70	74	-15.30
11490.00	30.68	AV	H	14.31	44.99	54	-9.01
11490.00	44.22	PK	V	14.31	58.53	74	-15.47
11490.00	30.55	AV	V	14.31	44.86	54	-9.14
5785MHz							
11570.00	44.92	PK	H	14.05	58.97	74	-15.03
11570.00	31.24	AV	H	14.05	45.29	54	-8.71
11570.00	44.75	PK	V	14.05	58.80	74	-15.20
11570.00	31.07	AV	V	14.05	45.12	54	-8.88
5825MHz							
5850.00	66.91	PK	H	4.09	71.00	122.20	-51.20
5855.00	64.52	PK	H	4.09	68.61	110.80	-42.19
5875.00	58.84	PK	H	4.19	63.03	105.20	-42.17
5925.00	56.25	PK	H	4.69	60.94	68.20	-7.26
5850.00	65.48	PK	V	4.09	69.57	122.20	-52.63
5855.00	63.17	PK	V	4.09	67.26	110.80	-43.54
5875.00	57.96	PK	V	4.19	62.15	105.20	-43.05
5925.00	56.03	PK	V	4.69	60.72	68.20	-7.48
11650.00	45.51	PK	H	13.83	59.34	74	-14.66
11650.00	31.85	AV	H	13.83	45.68	54	-8.32
11650.00	45.36	PK	V	13.83	59.19	74	-14.81
11650.00	31.73	AV	V	13.83	45.56	54	-8.44

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11a (ANT 2)							
5745MHz							
5650.00	55.55	PK	H	3.59	59.14	68.20	-9.06
5700.00	67.16	PK	H	4.09	71.25	105.20	-33.95
5720.00	78.89	PK	H	4.09	82.98	110.80	-27.82
5725.00	82.64	PK	H	4.09	86.73	122.20	-35.47
5650.00	55.32	PK	V	3.59	58.91	68.20	-9.29
5700.00	65.87	PK	V	4.09	69.96	105.20	-35.24
5720.00	77.36	PK	V	4.09	81.45	110.80	-29.35
5725.00	81.18	PK	V	4.09	85.27	122.20	-36.93
11490.00	46.04	PK	H	14.31	60.35	74	-13.65
11490.00	30.63	AV	H	14.31	44.94	54	-9.06
11490.00	46.21	PK	V	14.31	60.52	74	-13.48
11490.00	30.78	AV	V	14.31	45.09	54	-8.91
5785MHz							
11570.00	46.45	PK	H	14.05	60.50	74	-13.50
11570.00	30.94	AV	H	14.05	44.99	54	-9.01
11570.00	46.63	PK	V	14.05	60.68	74	-13.32
11570.00	31.12	AV	V	14.05	45.17	54	-8.83
5825MHz							
5850.00	78.12	PK	H	4.09	82.21	122.20	-39.99
5855.00	75.57	PK	H	4.09	79.66	110.80	-31.14
5875.00	66.21	PK	H	4.19	70.40	105.20	-34.80
5925.00	56.45	PK	H	4.69	61.14	68.20	-7.06
5850.00	76.69	PK	V	4.09	80.78	122.20	-41.42
5855.00	74.06	PK	V	4.09	78.15	110.80	-32.65
5875.00	64.88	PK	V	4.19	69.07	105.20	-36.13
5925.00	56.17	PK	V	4.69	60.86	68.20	-7.34
11650.00	46.96	PK	H	13.83	60.79	74	-13.21
11650.00	31.77	AV	H	13.83	45.60	54	-8.40
11650.00	47.15	PK	V	13.83	60.98	74	-13.02
11650.00	31.92	AV	V	13.83	45.75	54	-8.25

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT20							
5745MHz							
5650.00	55.53	PK	H	3.59	59.12	68.20	-9.08
5700.00	63.08	PK	H	4.09	67.17	105.20	-38.03
5720.00	72.97	PK	H	4.09	77.06	110.80	-33.74
5725.00	76.32	PK	H	4.09	80.41	122.20	-41.79
5650.00	55.31	PK	V	3.59	58.90	68.20	-9.30
5700.00	61.66	PK	V	4.09	65.75	105.20	-39.45
5720.00	71.49	PK	V	4.09	75.58	110.80	-35.22
5725.00	75.04	PK	V	4.09	79.13	122.20	-43.07
11490.00	44.32	PK	H	14.31	58.63	74	-15.37
11490.00	30.65	AV	H	14.31	44.96	54	-9.04
11490.00	44.16	PK	V	14.31	58.47	74	-15.53
11490.00	30.51	AV	V	14.31	44.82	54	-9.18
5785MHz							
11570.00	44.96	PK	H	14.05	59.01	74	-14.99
11570.00	31.24	AV	H	14.05	45.29	54	-8.71
11570.00	44.78	PK	V	14.05	58.83	74	-15.17
11570.00	31.07	AV	V	14.05	45.12	54	-8.88
5825MHz							
5850.00	69.09	PK	H	4.09	73.18	122.20	-49.02
5855.00	66.16	PK	H	4.09	70.25	110.80	-40.55
5875.00	59.34	PK	H	4.19	63.53	105.20	-41.67
5925.00	55.28	PK	H	4.69	59.97	68.20	-8.23
5850.00	67.67	PK	V	4.09	71.76	122.20	-50.44
5855.00	64.91	PK	V	4.09	69.00	110.80	-41.80
5875.00	58.53	PK	V	4.19	62.72	105.20	-42.48
5925.00	55.06	PK	V	4.69	59.75	68.20	-8.45
11650.00	45.63	PK	H	13.83	59.46	74	-14.54
11650.00	31.87	AV	H	13.83	45.70	54	-8.30
11650.00	45.48	PK	V	13.83	59.31	74	-14.69
11650.00	31.70	AV	V	13.83	45.53	54	-8.47

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT40							
5755MHz							
5650.00	58.59	PK	H	3.59	62.18	68.20	-6.02
5700.00	68.78	PK	H	4.09	72.87	105.20	-32.33
5720.00	75.92	PK	H	4.09	80.01	110.80	-30.79
5725.00	76.61	PK	H	4.09	80.70	122.20	-41.50
5650.00	58.17	PK	V	3.59	61.76	68.20	-6.44
5700.00	67.25	PK	V	4.09	71.34	105.20	-33.86
5720.00	74.39	PK	V	4.09	78.48	110.80	-32.32
5725.00	75.06	PK	V	4.09	79.15	122.20	-43.05
11510.00	45.27	PK	H	14.29	59.56	74	-14.44
11510.00	31.69	AV	H	14.29	45.98	54	-8.02
11510.00	45.11	PK	V	14.29	59.40	74	-14.60
11510.00	31.56	AV	V	14.29	45.85	54	-8.15
5795MHz							
5850.00	65.48	PK	H	4.09	69.57	122.20	-52.63
5855.00	62.39	PK	H	4.09	66.48	110.80	-44.32
5875.00	59.95	PK	H	4.19	64.14	105.20	-41.06
5925.00	56.21	PK	H	4.69	60.90	68.20	-7.30
5850.00	64.07	PK	V	4.09	68.16	122.20	-54.04
5855.00	60.14	PK	V	4.09	64.23	110.80	-46.57
5875.00	58.86	PK	V	4.19	63.05	105.20	-42.15
5925.00	55.98	PK	V	4.69	60.67	68.20	-7.53
11590.00	45.93	PK	H	13.97	59.90	74	-14.10
11590.00	32.32	AV	H	13.97	46.29	54	-7.71
11590.00	45.75	PK	V	13.97	59.72	74	-14.28
11590.00	32.14	AV	V	13.97	46.11	54	-7.89

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ac-VHT80							
5775MHz							
5650.00	58.54	PK	H	3.59	62.13	68.20	-6.07
5700.00	67.68	PK	H	4.09	71.77	105.20	-33.43
5720.00	70.71	PK	H	4.09	74.80	110.80	-36.00
5725.00	72.96	PK	H	4.09	77.05	122.20	-45.15
5650.00	58.15	PK	V	3.59	61.74	68.20	-6.46
5700.00	66.22	PK	V	4.09	70.31	105.20	-34.89
5720.00	69.34	PK	V	4.09	73.43	110.80	-37.37
5725.00	71.57	PK	V	4.09	75.66	122.20	-46.54
5850.00	68.19	PK	H	4.09	72.28	122.20	-49.92
5855.00	65.74	PK	H	4.09	69.83	110.80	-40.97
5875.00	61.36	PK	H	4.19	65.55	105.20	-39.65
5925.00	60.05	PK	H	4.69	64.74	68.20	-3.46
5850.00	66.87	PK	V	4.09	70.96	122.20	-51.24
5855.00	64.23	PK	V	4.09	68.32	110.80	-42.48
5875.00	60.15	PK	V	4.19	64.34	105.20	-40.86
5925.00	59.42	PK	V	4.69	64.11	68.20	-4.09
11550.00	45.31	PK	H	14.13	59.44	74	-14.56
11550.00	33.22	AV	H	14.13	47.35	54	-6.65
11550.00	45.13	PK	V	14.13	59.26	74	-14.74
11550.00	33.05	AV	V	14.13	47.18	54	-6.82

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE20							
5745MHz							
5650.00	58.81	PK	H	3.59	62.40	68.20	-5.80
5700.00	68.29	PK	H	4.09	72.38	105.20	-32.82
5720.00	77.38	PK	H	4.09	81.47	110.80	-29.33
5725.00	82.75	PK	H	4.09	86.84	122.20	-35.36
5650.00	58.24	PK	V	3.59	61.83	68.20	-6.37
5700.00	66.93	PK	V	4.09	71.02	105.20	-34.18
5720.00	75.86	PK	V	4.09	79.95	110.80	-30.85
5725.00	81.32	PK	V	4.09	85.41	122.20	-36.79
11490.00	44.43	PK	H	14.31	58.74	74	-15.26
11490.00	30.68	AV	H	14.31	44.99	54	-9.01
11490.00	44.25	PK	V	14.31	58.56	74	-15.44
11490.00	30.54	AV	V	14.31	44.85	54	-9.15
5785MHz							
11570.00	44.98	PK	H	14.05	59.03	74	-14.97
11570.00	31.32	AV	H	14.05	45.37	54	-8.63
11570.00	44.81	PK	V	14.05	58.86	74	-15.14
11570.00	31.07	AV	V	14.05	45.12	54	-8.88
5825MHz							
5850.00	76.68	PK	H	4.09	80.77	122.20	-41.43
5855.00	70.12	PK	H	4.09	74.21	110.80	-36.59
5875.00	63.25	PK	H	4.19	67.44	105.20	-37.76
5925.00	55.96	PK	H	4.69	60.65	68.20	-7.55
5850.00	75.24	PK	V	4.09	79.33	122.20	-42.87
5855.00	68.73	PK	V	4.09	72.82	110.80	-37.98
5875.00	61.91	PK	V	4.19	66.10	105.20	-39.10
5925.00	55.58	PK	V	4.69	60.27	68.20	-7.93
11650.00	45.54	PK	H	13.83	59.37	74	-14.63
11650.00	32.02	AV	H	13.83	45.85	54	-8.15
11650.00	45.39	PK	V	13.83	59.22	74	-14.78
11650.00	31.85	AV	V	13.83	45.68	54	-8.32

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE40							
5755MHz							
5650.00	60.43	PK	H	3.59	64.02	68.20	-4.18
5700.00	69.89	PK	H	4.09	73.98	105.20	-31.22
5720.00	78.11	PK	H	4.09	82.20	110.80	-28.60
5725.00	79.94	PK	H	4.09	84.03	122.20	-38.17
5650.00	59.68	PK	V	3.59	63.27	68.20	-4.93
5700.00	68.37	PK	V	4.09	72.46	105.20	-32.74
5720.00	76.72	PK	V	4.09	80.81	110.80	-29.99
5725.00	78.45	PK	V	4.09	82.54	122.20	-39.66
11510.00	45.02	PK	H	14.29	59.31	74	-14.69
11510.00	31.74	AV	H	14.29	46.03	54	-7.97
11510.00	44.85	PK	V	14.29	59.14	74	-14.86
11510.00	31.58	AV	V	14.29	45.87	54	-8.13
5795MHz							
5850.00	67.07	PK	H	4.09	71.16	122.20	-51.04
5855.00	63.69	PK	H	4.09	67.78	110.80	-43.02
5875.00	61.15	PK	H	4.19	65.34	105.20	-39.86
5925.00	56.48	PK	H	4.69	61.17	68.20	-7.03
5850.00	65.54	PK	V	4.09	69.63	122.20	-52.57
5855.00	62.22	PK	V	4.09	66.31	110.80	-44.49
5875.00	60.01	PK	V	4.19	64.20	105.20	-41.00
5925.00	56.13	PK	V	4.69	60.82	68.20	-7.38
11590.00	45.44	PK	H	13.97	59.41	74	-14.59
11590.00	32.36	AV	H	13.97	46.33	54	-7.67
11590.00	45.25	PK	V	13.97	59.22	74	-14.78
11590.00	32.19	AV	V	13.97	46.16	54	-7.84

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
802.11ax-HE80							
5775MHz							
5650.00	61.33	PK	H	3.59	64.92	68.20	-3.28
5700.00	70.19	PK	H	4.09	74.28	105.20	-30.92
5720.00	73.02	PK	H	4.09	77.11	110.80	-33.69
5725.00	74.48	PK	H	4.09	78.57	122.20	-43.63
5650.00	60.54	PK	V	3.59	64.13	68.20	-4.07
5700.00	68.75	PK	V	4.09	72.84	105.20	-32.36
5720.00	71.67	PK	V	4.09	75.76	110.80	-35.04
5725.00	73.01	PK	V	4.09	77.10	122.20	-45.10
5850.00	71.08	PK	H	4.09	75.17	122.20	-47.03
5855.00	69.15	PK	H	4.09	73.24	110.80	-37.56
5875.00	65.94	PK	H	4.19	70.13	105.20	-35.07
5925.00	60.36	PK	H	4.69	65.05	68.20	-3.15
5850.00	69.69	PK	V	4.09	73.78	122.20	-48.42
5855.00	67.57	PK	V	4.09	71.66	110.80	-39.14
5875.00	64.32	PK	V	4.19	68.51	105.20	-36.69
5925.00	59.45	PK	V	4.69	64.14	68.20	-4.06
11550.00	45.06	PK	H	14.13	59.19	74	-14.81
11550.00	33.21	AV	H	14.13	47.34	54	-6.66
11550.00	44.89	PK	V	14.13	59.02	74	-14.98
11550.00	33.04	AV	V	14.13	47.17	54	-6.83

Note:

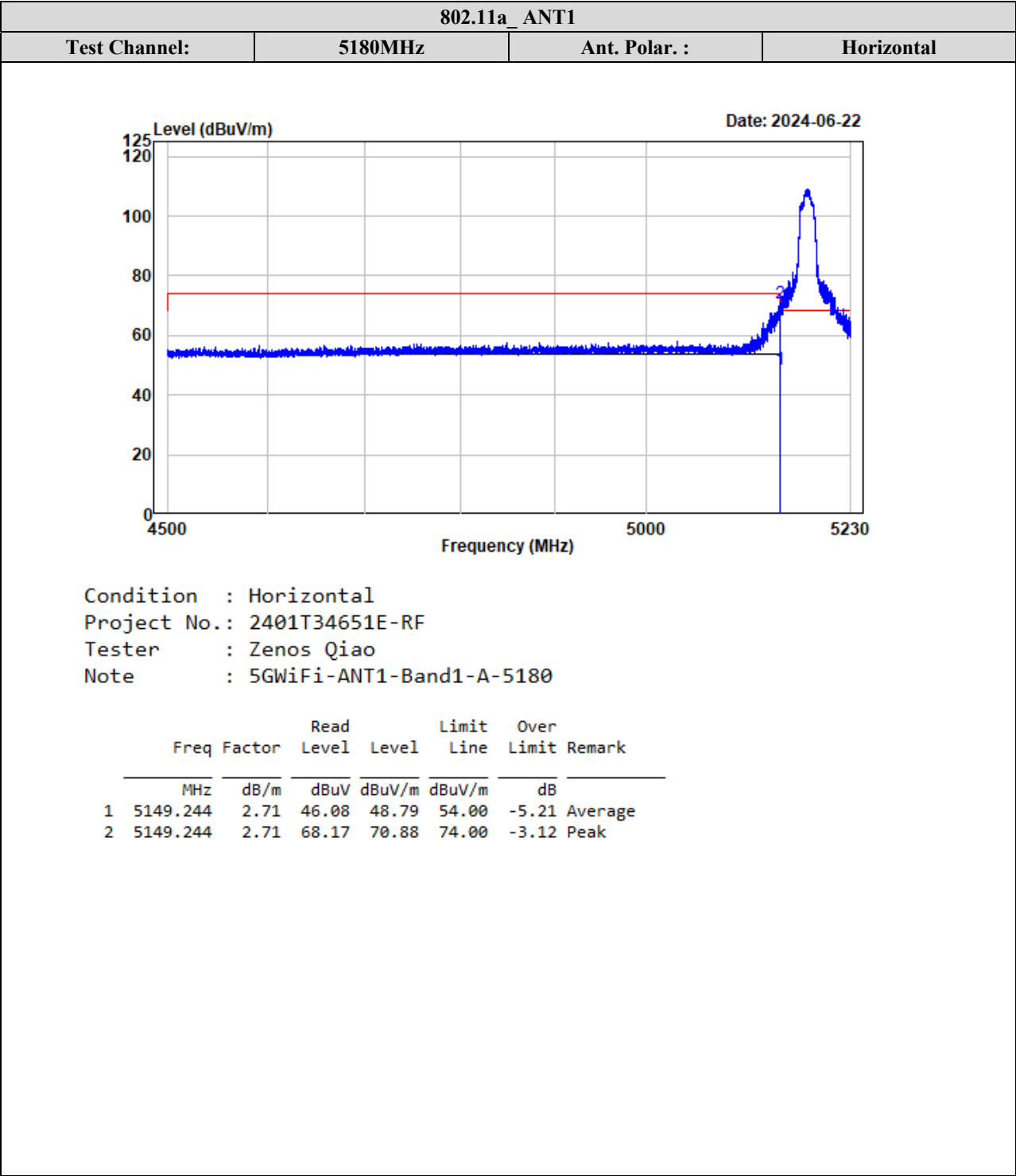
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

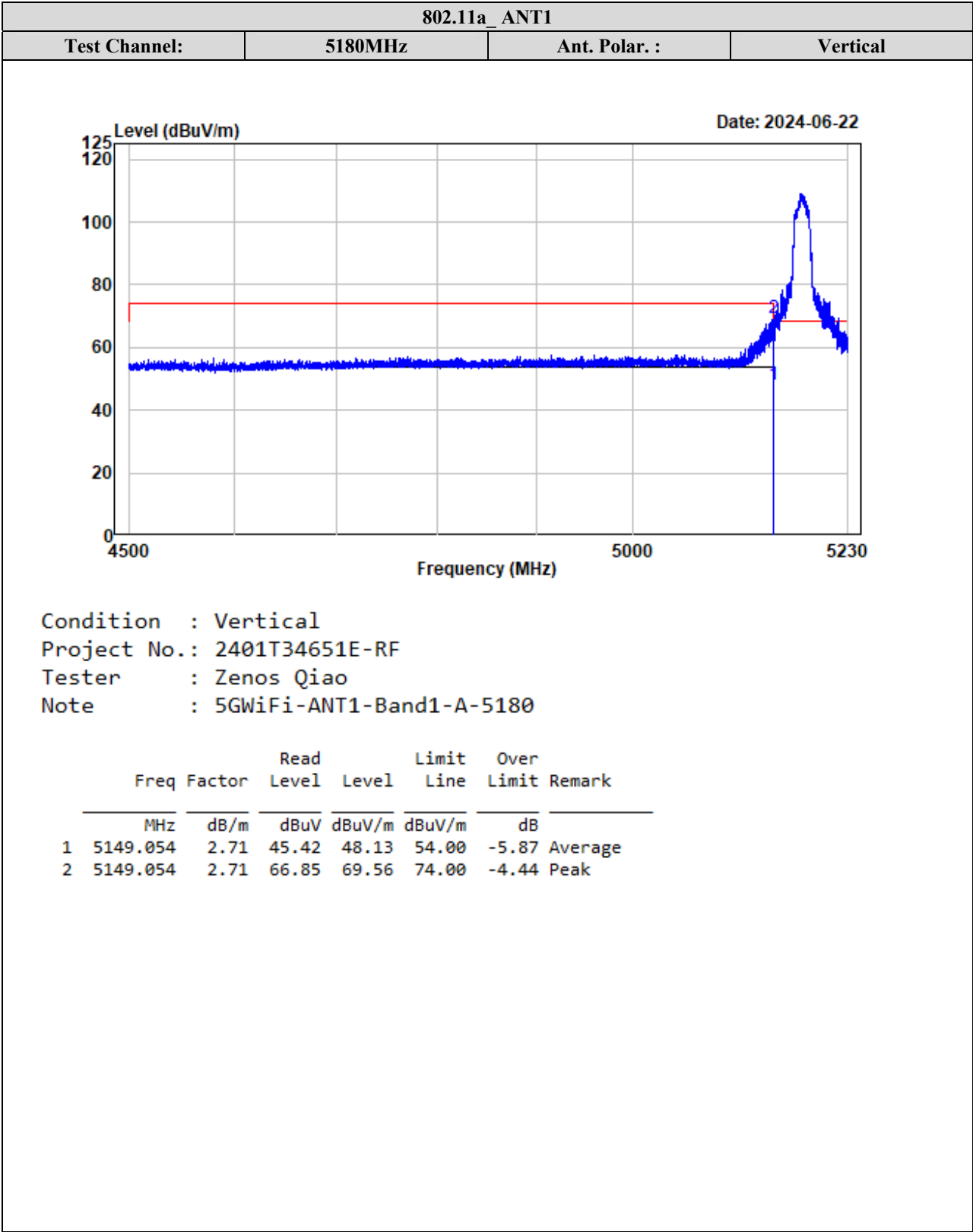
Corrected Amplitude = Factor + Reading

Margin = Corrected. Amplitude - Limit

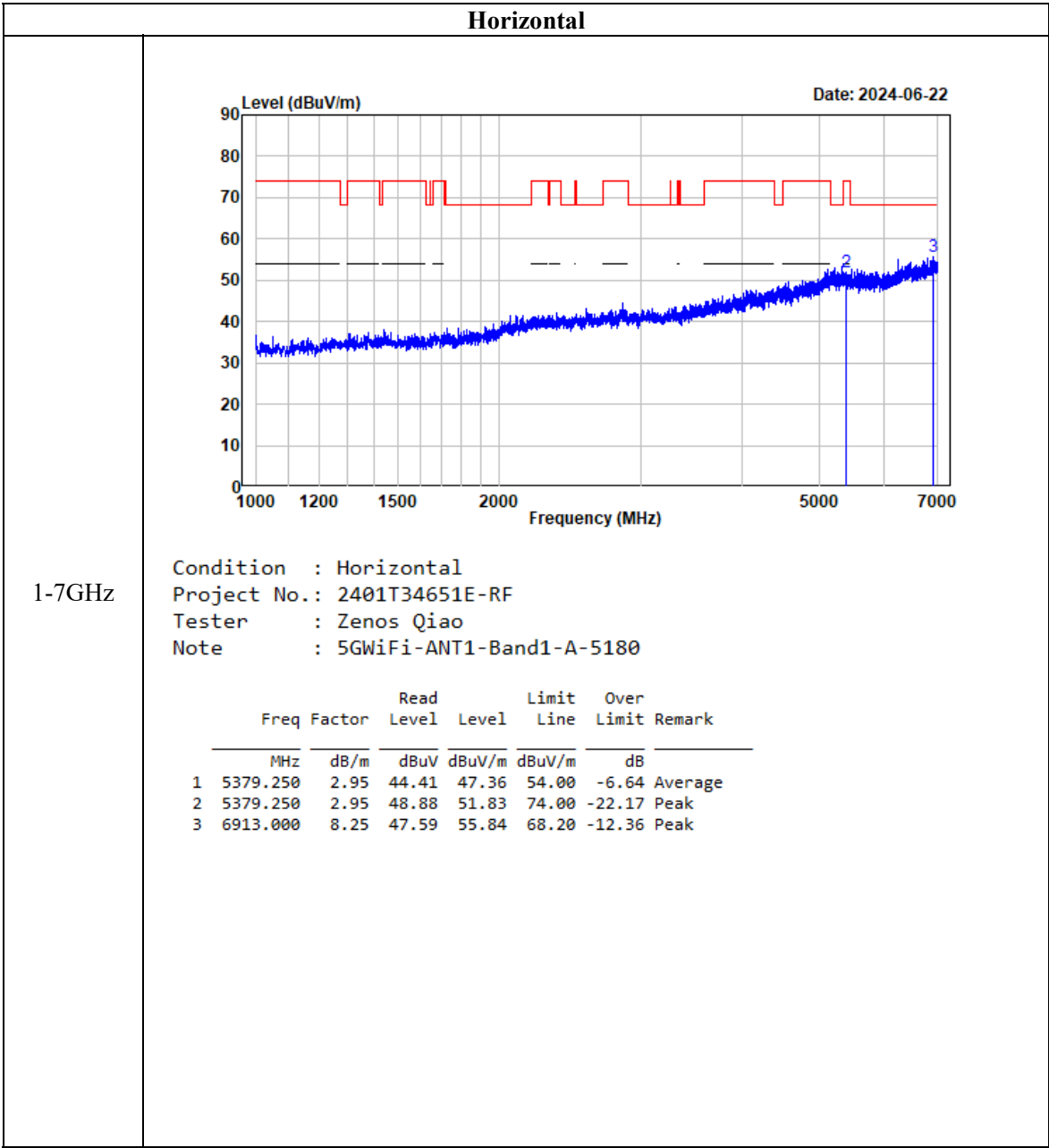
The other spurious emission which is in the noise floor level was not recorded.

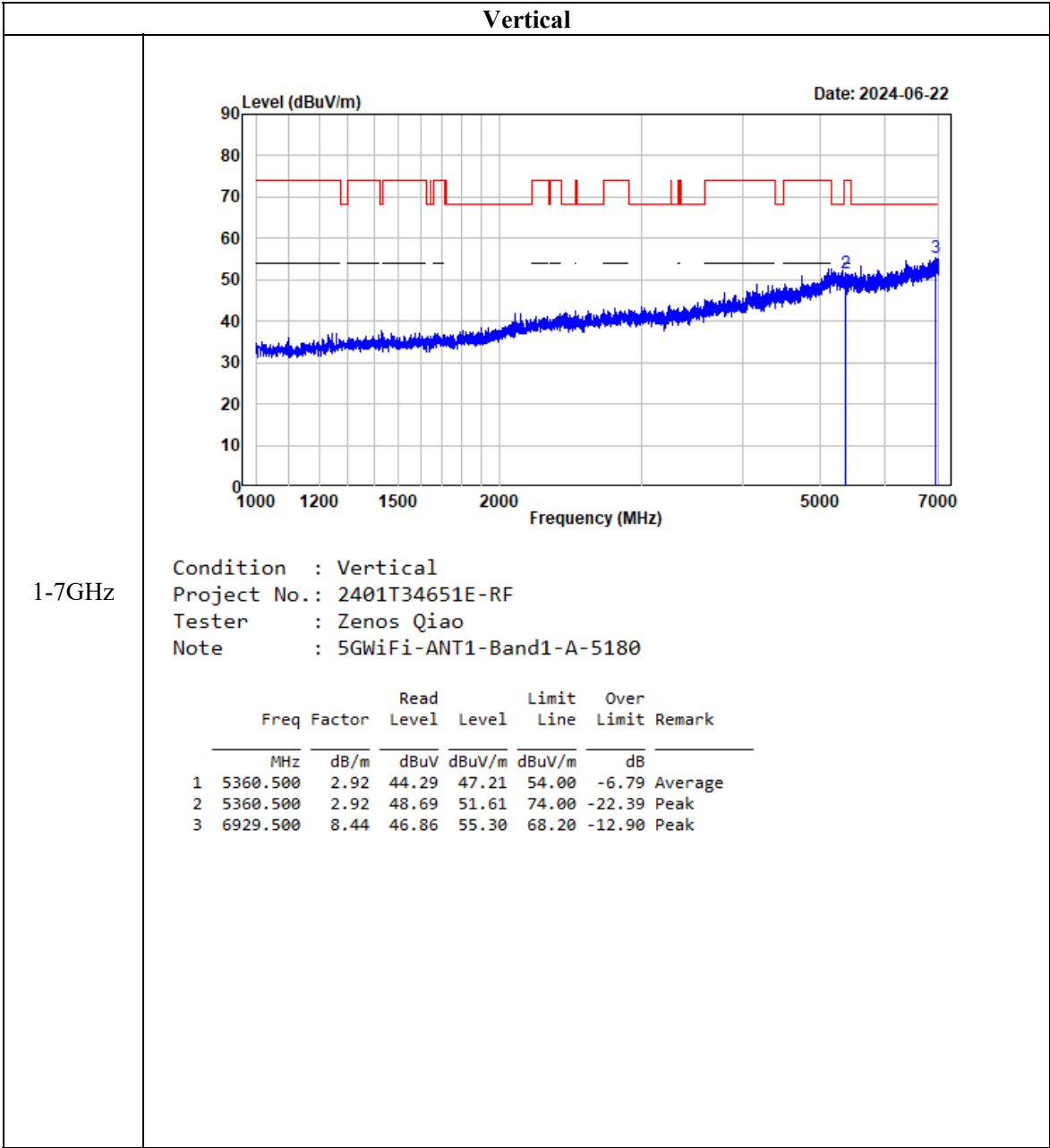
Test plots for Band Edge Measurements (Radiated)

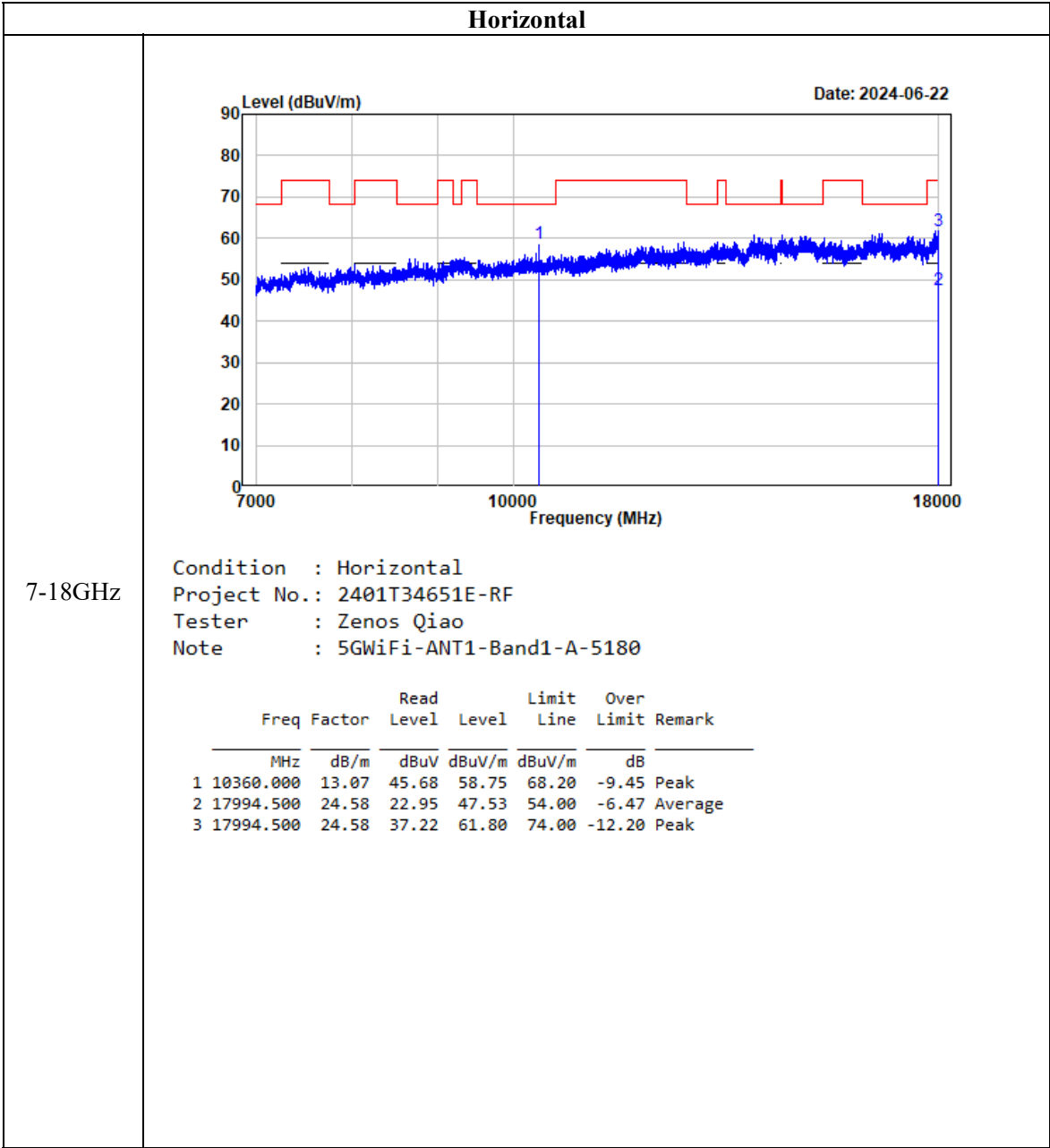


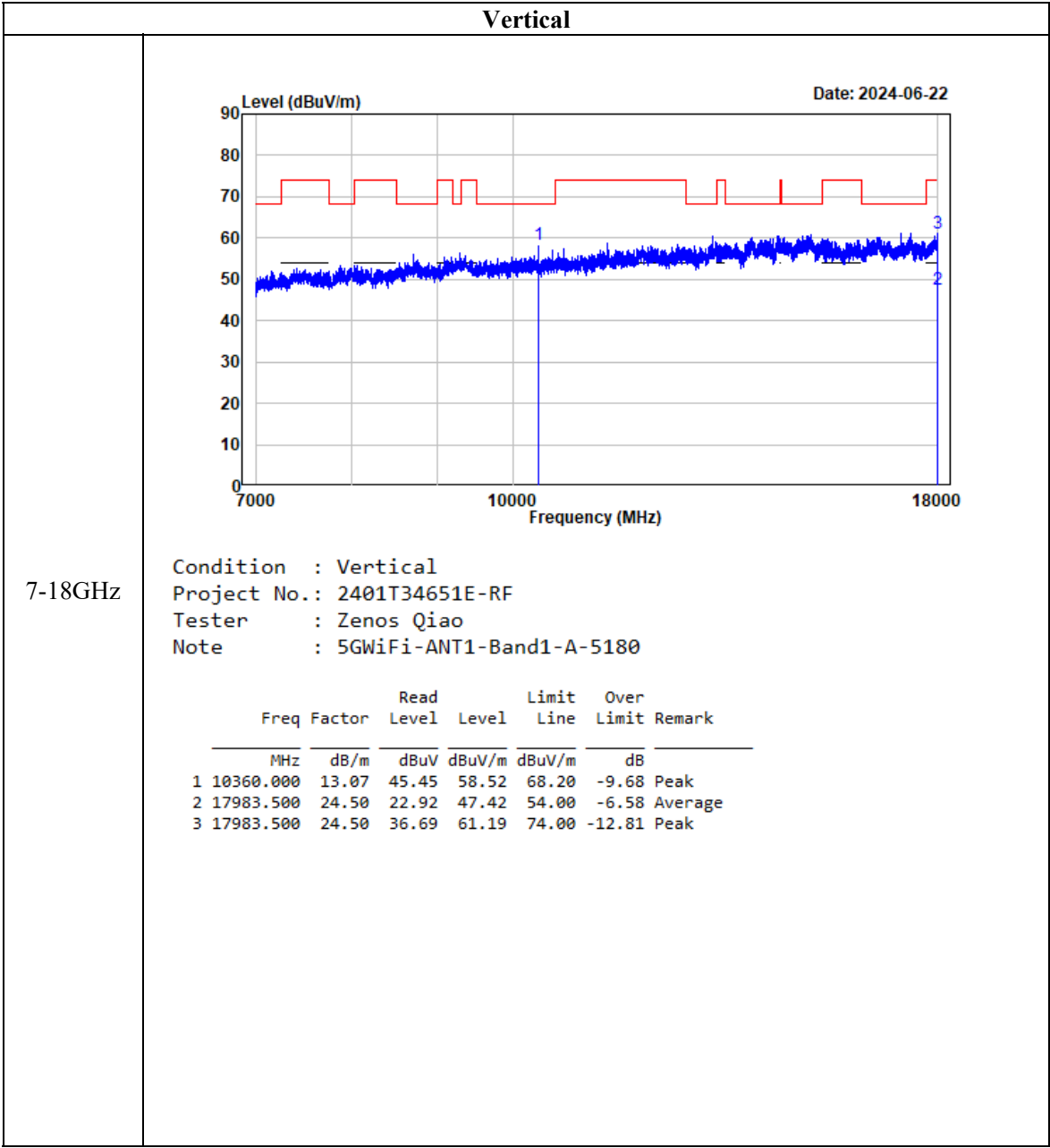


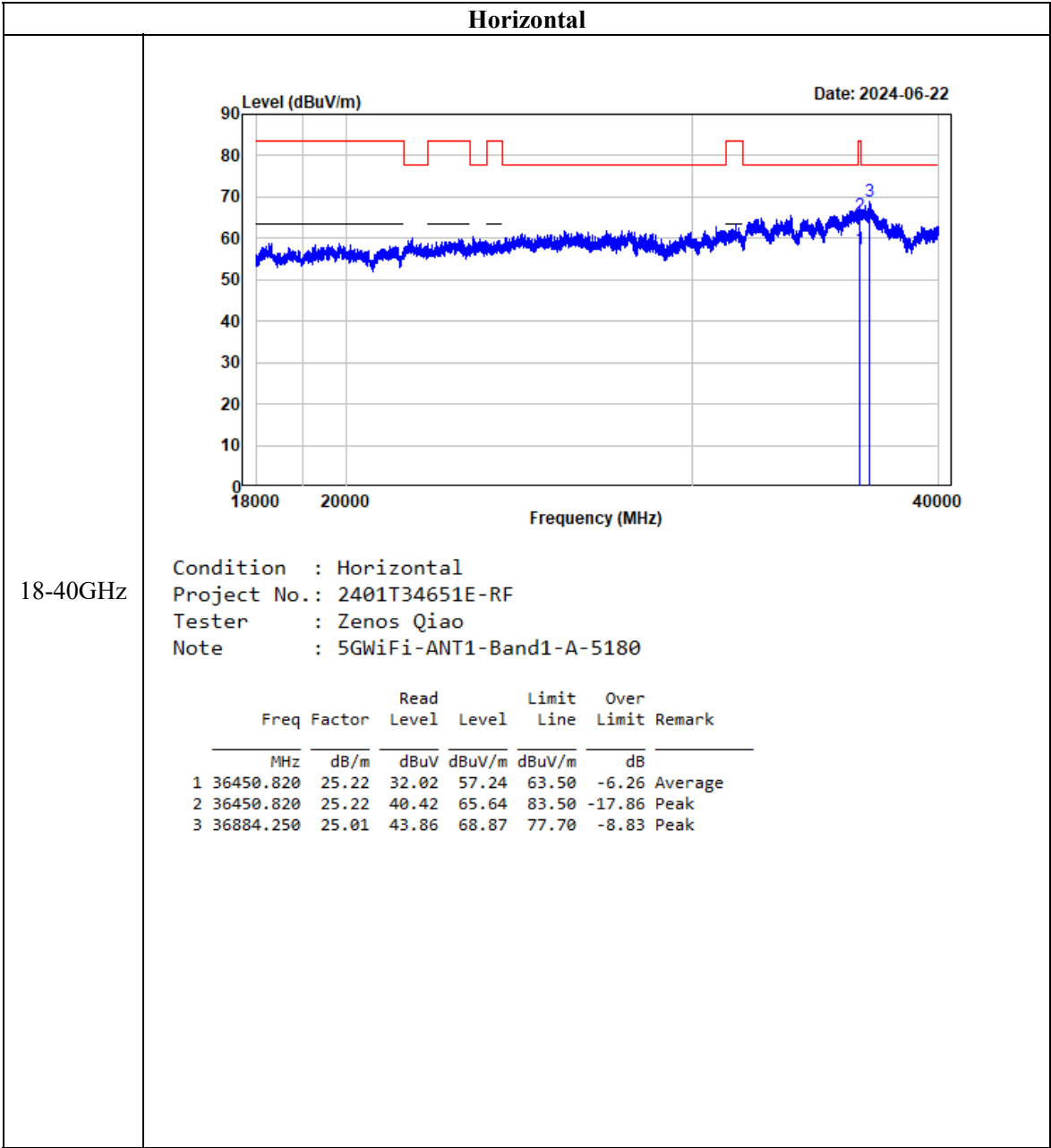
Test plots for Harmonic and Emissions Measurements: (802.11a, ANT1, 5180MHz)

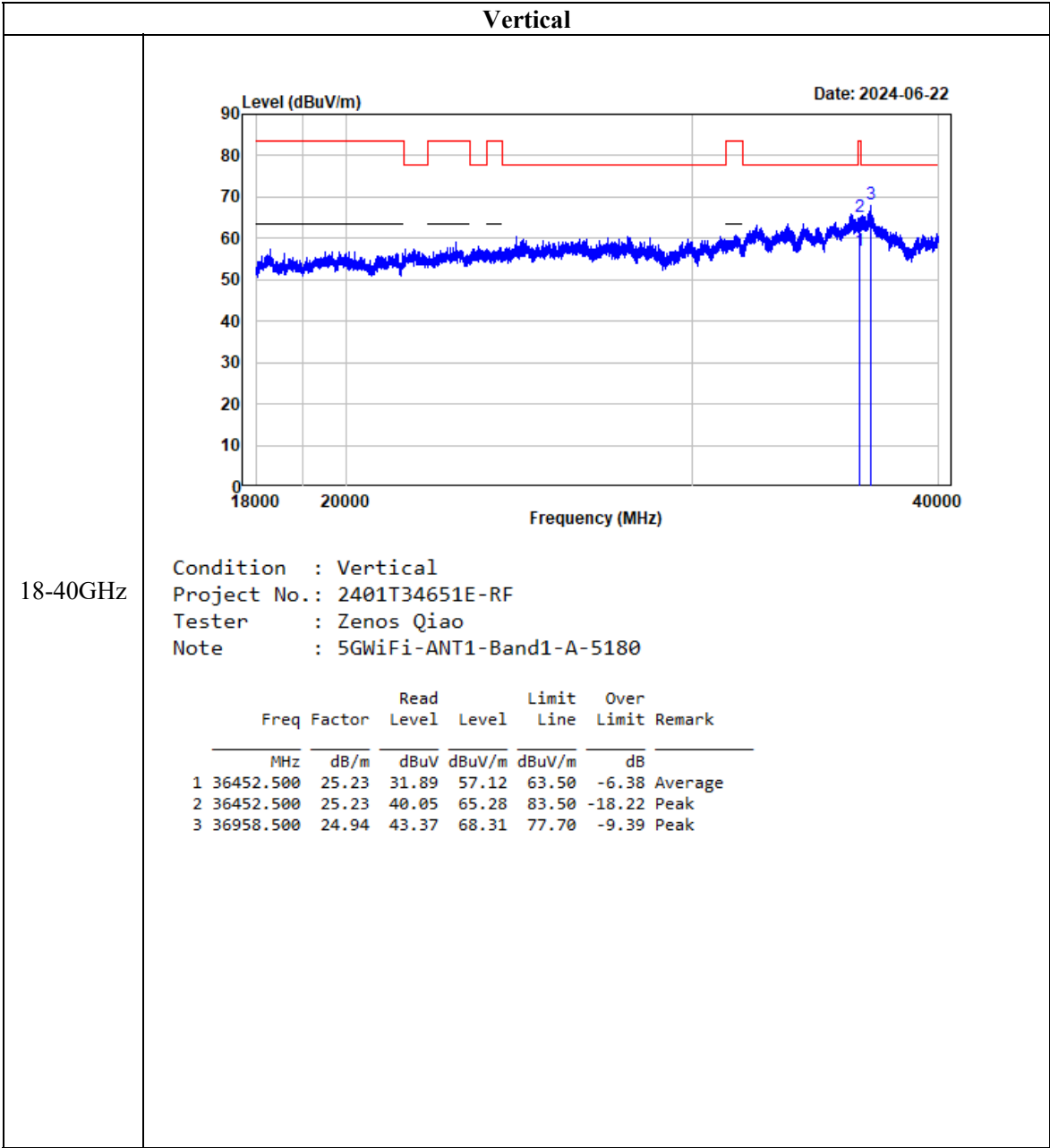












FCC §15.407(a), (e) - 26 dB & 6dB EMISSION BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

According to KDB789033 D02 section II.C and section II.D

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

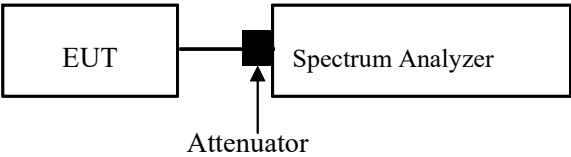
3. 99% Occupied Bandwidth:

According to ANSI C63.10-2013 Section 12.4.2&6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.

- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Test Data

Environmental Conditions

Temperature:	25~28 °C
Relative Humidity:	45~50 %
ATM Pressure:	100 kPa

The testing was performed by Allen Bai from 2024-06-02 to 2024-07-13.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5180	21.69	16.92
	5200	21.82	16.92
	5240	21.41	16.92
802.11ac-VHT20	5180	24.00	18.27
	5200	21.82	18.08
	5240	22.01	18.01
802.11ac-VHT40	5190	40.21	36.15
	5230	40.38	36.28
802.11ac-VHT80	5210	81.79	75.38
802.11ax-HE20	5180	21.79	19.10
	5200	21.79	19.17
	5240	21.67	19.04
802.11ax-HE40	5190	41.08	37.69
	5230	40.82	37.82
802.11ax-HE80	5210	83.08	77.44
Note: Test only was performed at ANT 1. The 99% Occupied Bandwidth have not fall into the band 5250-5350MHz, please refer to the test plots of 99% Occupied Bandwidth			

5250-5350MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260	21.54	16.92
	5280	21.36	16.92
	5320	21.41	16.88
802.11ac-VHT20	5260	22.12	18.04
	5280	21.76	18.04
	5320	21.79	18.04
802.11ac-VHT40	5270	40.05	36.15
	5310	40.13	36.28
802.11ac-VHT80	5290	81.54	75.38
802.11ax-HE20	5260	21.79	19.04
	5280	21.76	19.10
	5320	21.67	19.04
802.11ax-HE40	5270	40.56	37.69
	5310	40.74	37.56
802.11ax-HE80	5290	82.82	77.18
Note: Test only was performed at ANT 1.			

5470-5725MHz:

Test Modes	Test Frequency (MHz)	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5500	21.44	16.86
	5580	21.47	16.86
	5700	21.44	16.92
802.11ac-VHT20	5500	21.86	17.95
	5580	21.63	18.01
	5700	21.76	17.95
802.11ac-VHT40	5510	40.18	36.28
	5550	39.87	36.15
	5670	40.05	36.15
802.11ac-VHT80	5530	81.64	75.64
802.11ax-HE20	5500	21.63	19.04
	5580	21.56	19.04
	5700	21.69	19.04
802.11ax-HE40	5510	41.28	37.69
	5550	40.77	37.69
	5670	40.72	37.69
802.11ax-HE80	5530	83.44	77.44
Note: Test only was performed at ANT 1.			

5725-5850MHz:

Test Modes	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5745	15.28	16.84
	5785	15.28	16.84
	5825	15.28	16.84
802.11ac-VHT20	5745	15.28	18.04
	5785	15.28	18.00
	5825	15.29	17.96
802.11ac-VHT40	5755	35.46	36.16
	5795	35.36	36.00
802.11ac-VHT80	5775	75.65	75.52
802.11ax-HE20	5745	18.95	19.04
	5785	18.63	19.04
	5825	18.68	19.00
802.11ax-HE40	5755	37.76	37.60
	5795	37.85	37.60
802.11ax-HE80	5775	78.04	77.28

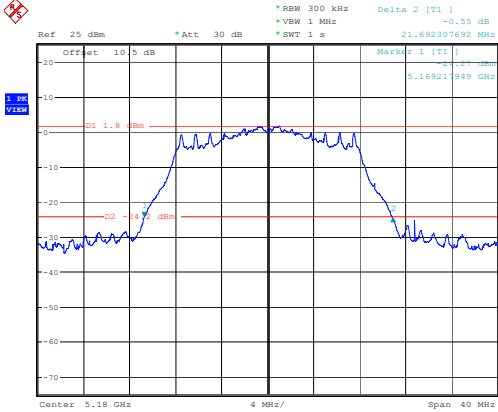
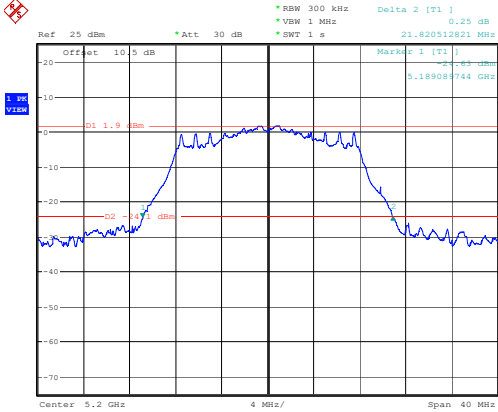
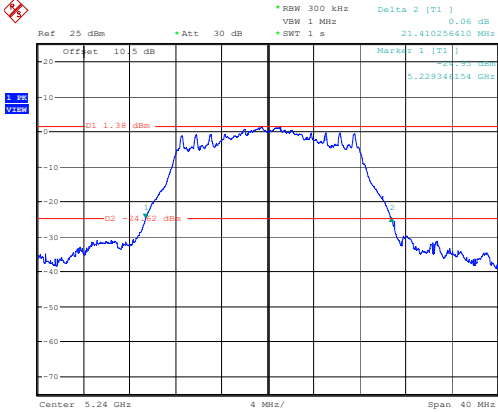
Note:

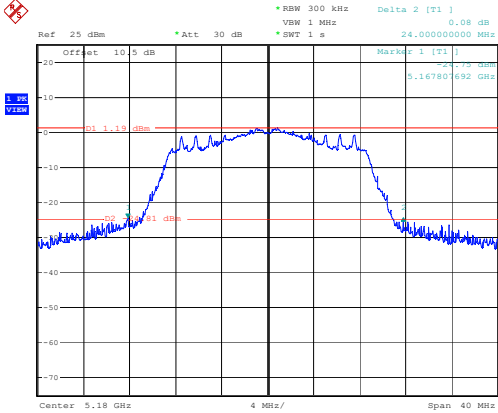
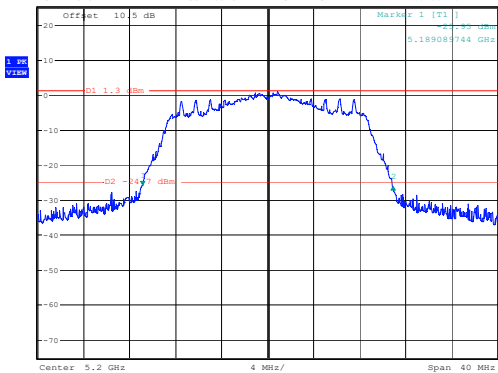
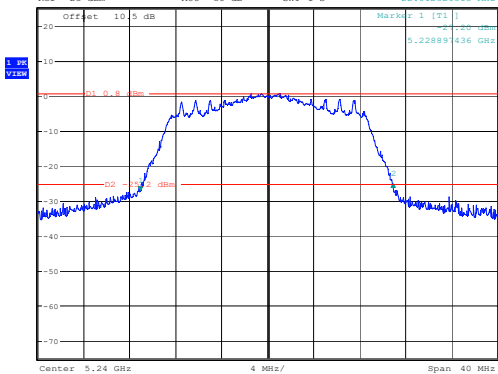
Test only was performed at ANT 1.

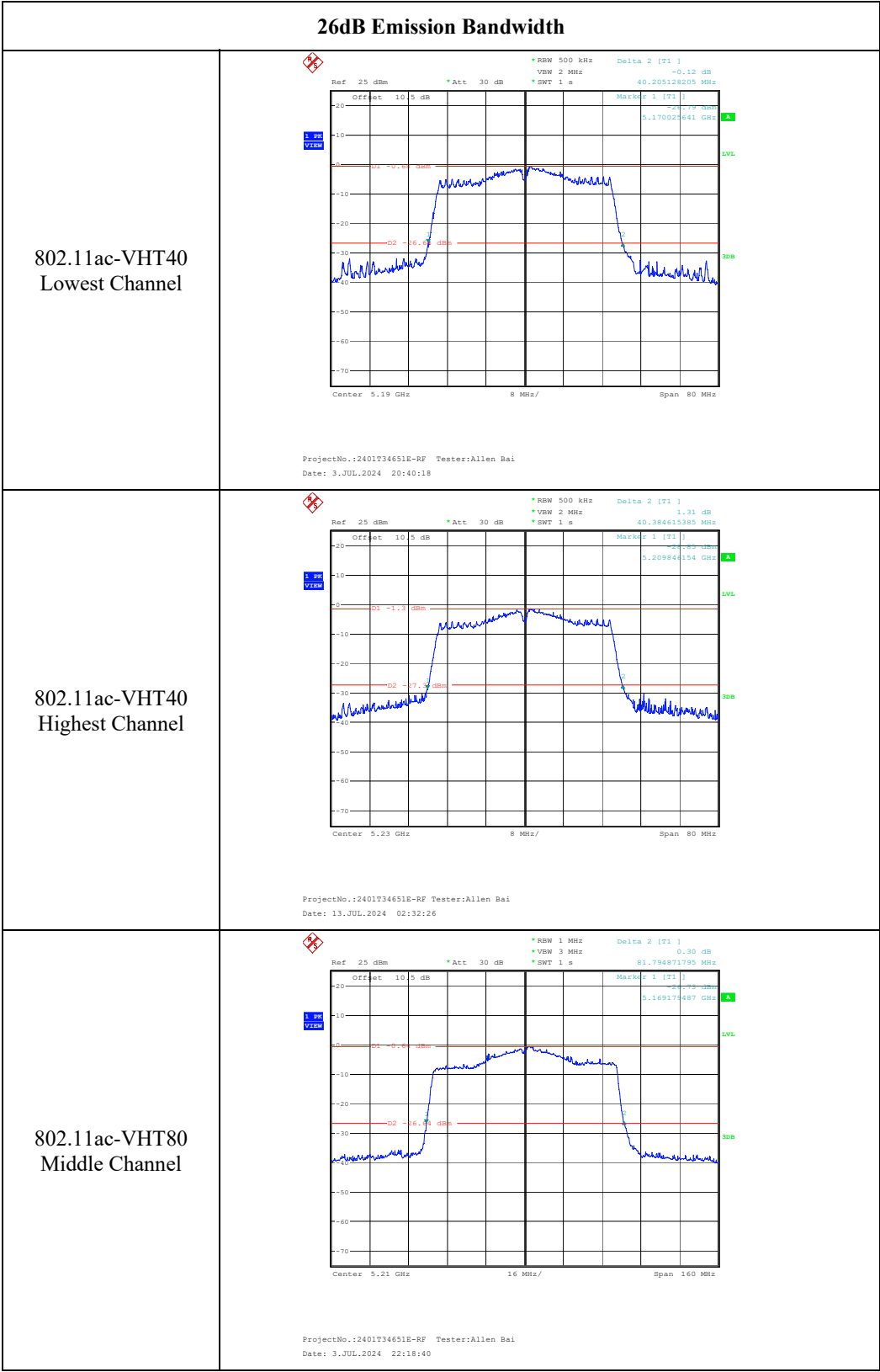
6dB Emission Bandwidth Limit: ≥ 0.5 MHz

The 99% Occupied Bandwidth have not fall into the band 5470-5725MHz, please refer to the test plots of 99% Occupied Bandwidth.

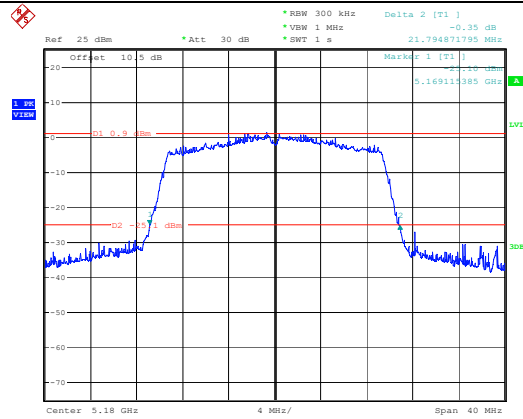
5150-5250MHz:

26dB Emission Bandwidth	
802.11a Lowest Channel	 Ref: 25 dBm, Att: 30 dB, RBW: 300 kHz, VSW: 1 MHz, SWT: 1 s, Delta 2 [T1]: -0.55 dB, Marker 1 [T1]: 5.16921949 GHz, Offset: 10.5 dB, D1: 1.8 dBm, D2: -14 dBm, Center: 5.18 GHz, 4 MHz, Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 02:13:57
802.11a Middle Channel	 Ref: 25 dBm, Att: 30 dB, RBW: 300 kHz, VSW: 1 MHz, SWT: 1 s, Delta 2 [T1]: 0.25 dB, Marker 1 [T1]: 5.18908744 GHz, Offset: 10.5 dB, D1: 1.8 dBm, D2: -14 dBm, Center: 5.2 GHz, 4 MHz, Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 02:15:41
802.11a Highest Channel	 Ref: 25 dBm, Att: 30 dB, RBW: 300 kHz, VSW: 1 MHz, SWT: 1 s, Delta 2 [T1]: 0.06 dB, Marker 1 [T1]: 5.229346154 GHz, Offset: 10.5 dB, D1: 1.8 dBm, D2: -14 dBm, Center: 5.24 GHz, 4 MHz, Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 2.JUL.2024 22:53:29

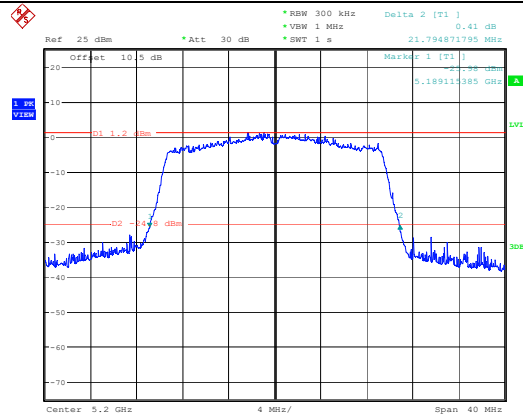
802.11ac-VHT20 Lowest Channel	26dB Emission Bandwidth  Ref: 25 dBm *Att: 30 dB *RBW: 300 kHz Delta 2 [T1]: 0.08 dB *VSW: 1 MHz *SWT: 1 s 24.00000000 MHz Offset: 10.5 dB Marker 1 [T1]: -2.3 dBm 5.16780492 GHz D1: 1.3 dBm D2: -2.3 dBm Center: 5.18 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 3.JUL.2024 00:34:35
802.11ac-VHT20 Middle Channel	 Ref: 25 dBm *Att: 30 dB *RBW: 300 kHz Delta 2 [T1]: -2.45 dB *VSW: 1 MHz *SWT: 1 s 21.820512821 MHz Offset: 10.5 dB Marker 1 [T1]: -2.45 dBm 5.1820512821 GHz D1: 1.3 dBm D2: -2.45 dBm Center: 5.2 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 02:23:55
802.11ac-VHT20 Highest Channel	 Ref: 25 dBm *Att: 30 dB *RBW: 300 kHz Delta 2 [T1]: 1.79 dB *VSW: 1 MHz *SWT: 1 s 22.012820513 MHz Offset: 10.5 dB Marker 1 [T1]: -2.20 dBm 5.222887436 GHz D1: 0.8 dBm D2: -2.2 dBm Center: 5.24 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 02:25:17



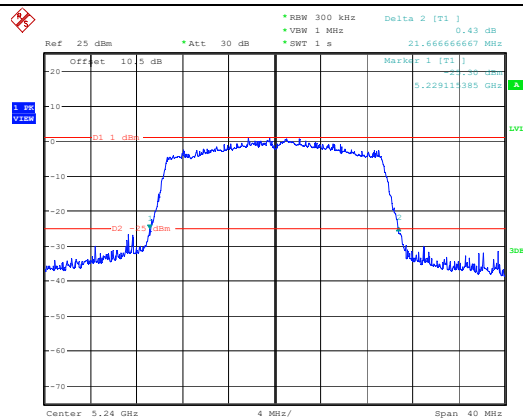
26dB Emission Bandwidth



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 02:38:13

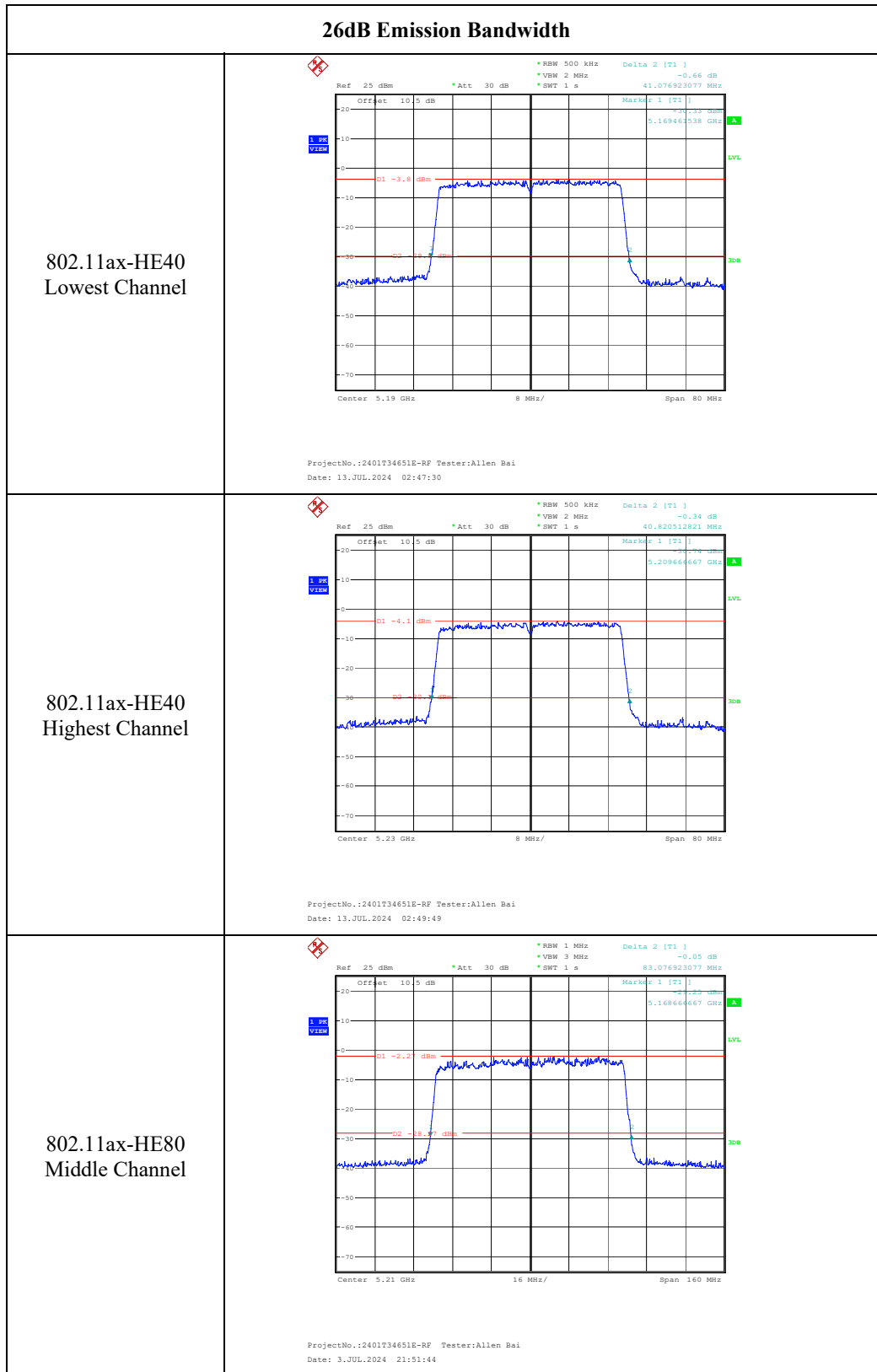
802.11ax-HE20
Lowest Channel

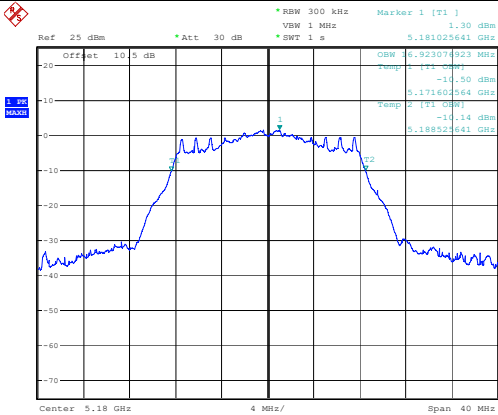
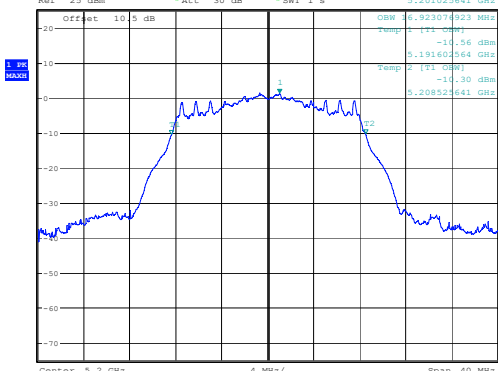
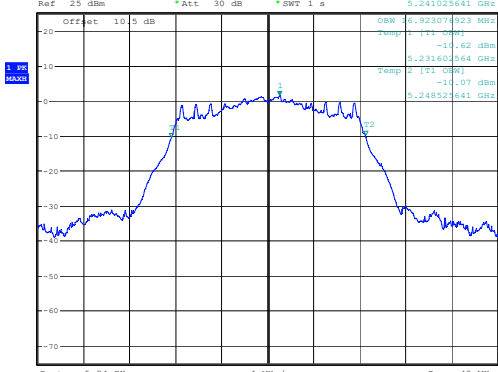
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 02:39:26

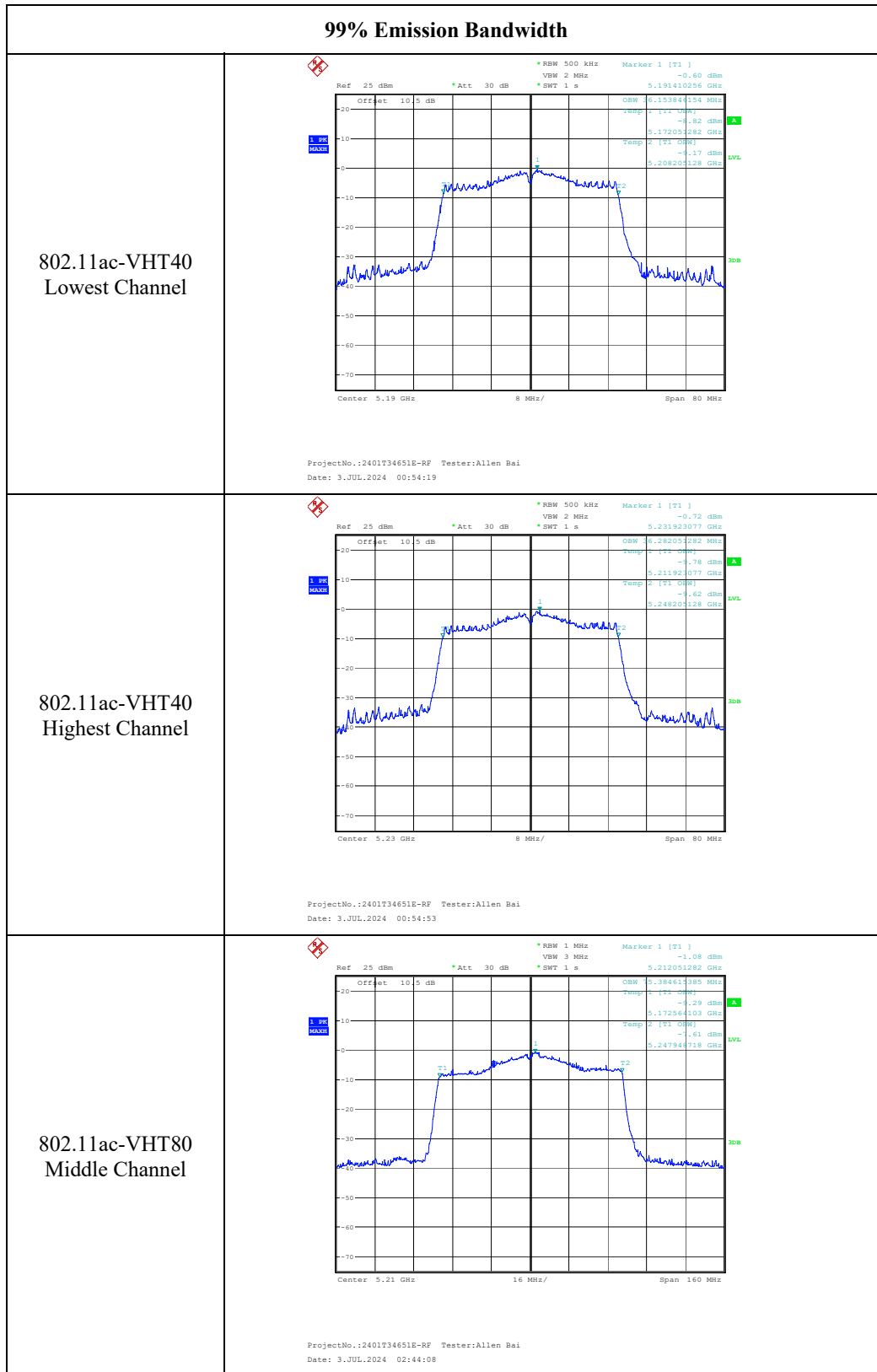
802.11ax-HE20
Middle Channel

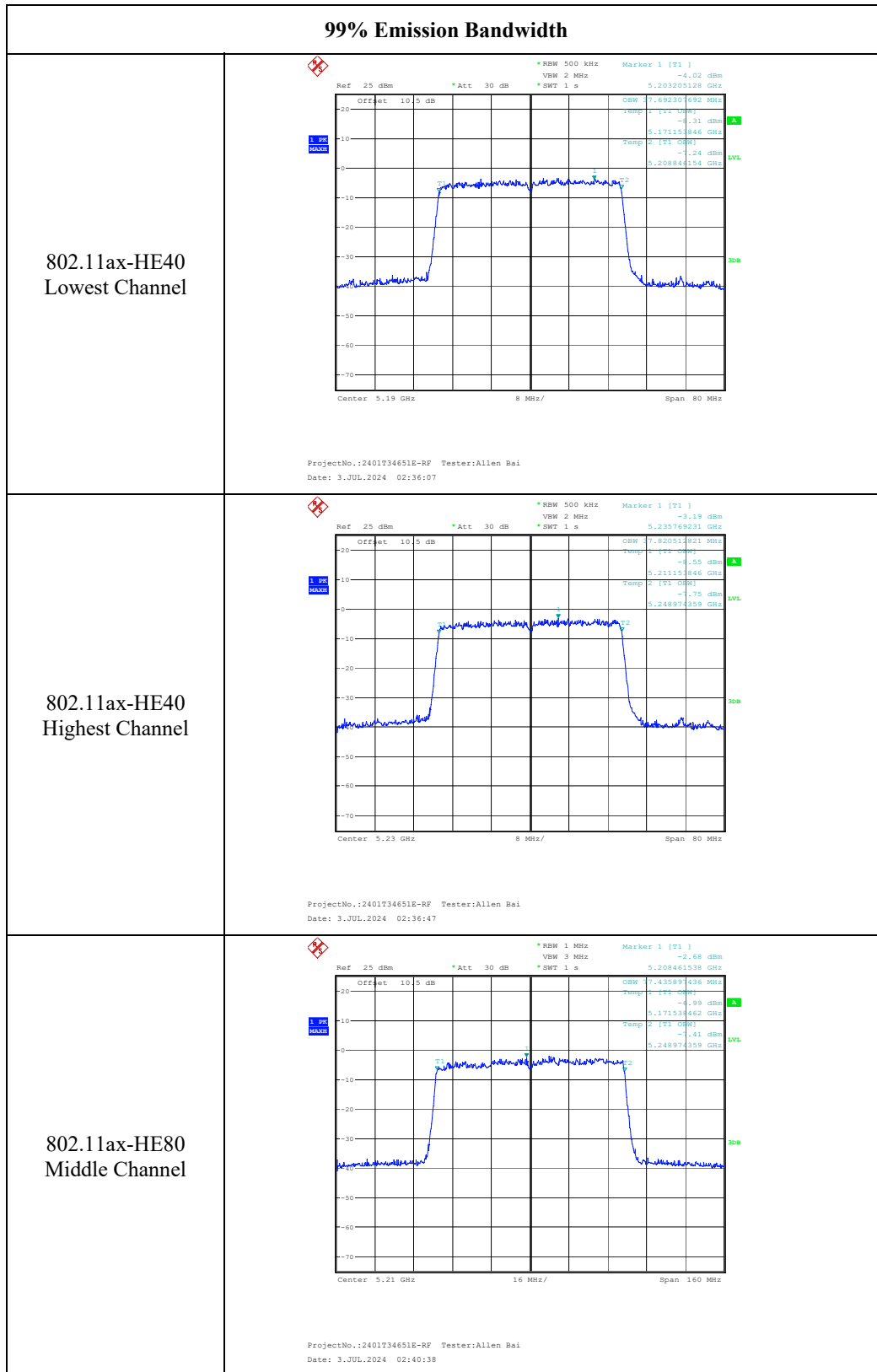
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 02:40:46

802.11ax-HE20
Highest Channel



802.11a Lowest Channel	99% Emission Bandwidth  ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 2.JUL.2024 22:42:45
802.11a Middle Channel	 ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 2.JUL.2024 22:43:29
802.11a Highest Channel	 ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 2.JUL.2024 22:44:05





26dB Emission Bandwidth

802.11a
Lowest Channel

Ref 25 dBm Offset 10.5 dB Att 30 dB RBW 300 kHz VBW 1 MHz SWT 1 s Delta 2 (T1) 0.06 dB Mark# 1 (T1) 21.53846538 MHz 5.249301692 GHz

Center 5.26 GHz 4 MHz/ Span 40 MHz

Measurements: D1 2.24 dBm, D2 -33.76 dBm

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 01:25:49

802.11a
Middle Channel

Ref 25 dBm Offset 10.5 dB Att 30 dB RBW 300 kHz VBW 1 MHz SWT 1 s Delta 2 (T1) 0.14 dB Mark# 1 (T1) 21.360000000 MHz 5.269320000 GHz

Center 5.28 GHz 4 MHz/ Span 40 MHz

Measurements: D1 2.96 dBm, D2 -33.04 dBm

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 2.JUN.2024 17:30:22

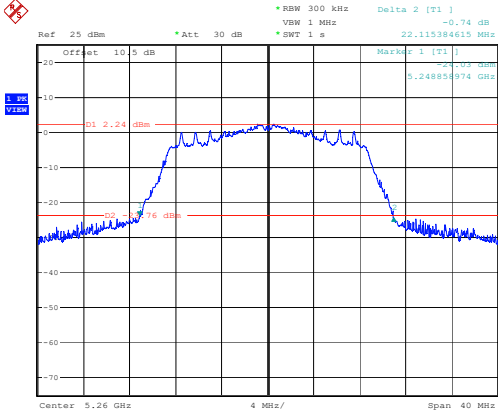
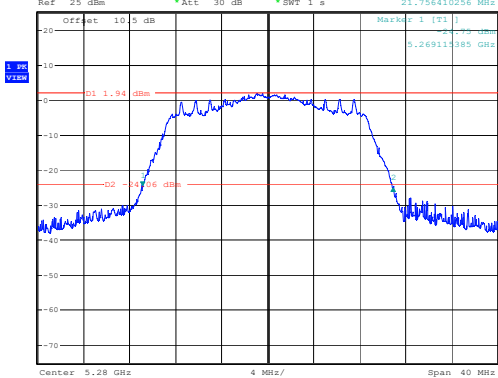
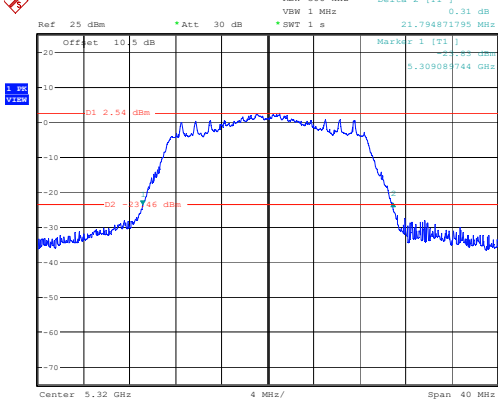
802.11a
Highest Channel

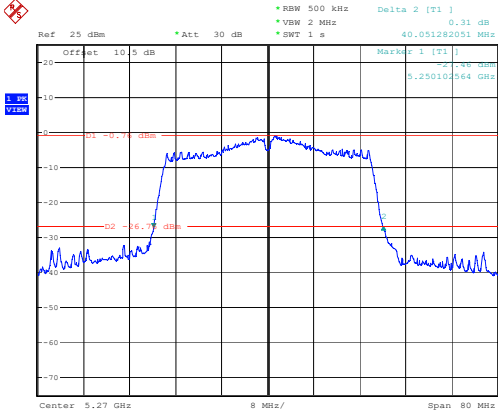
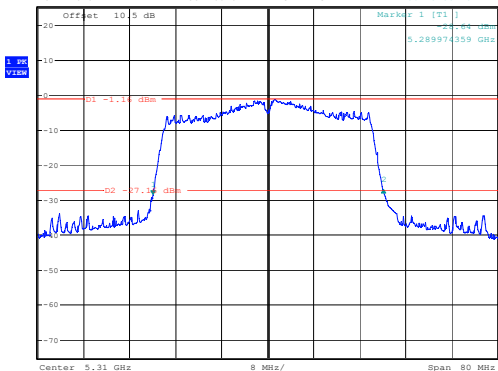
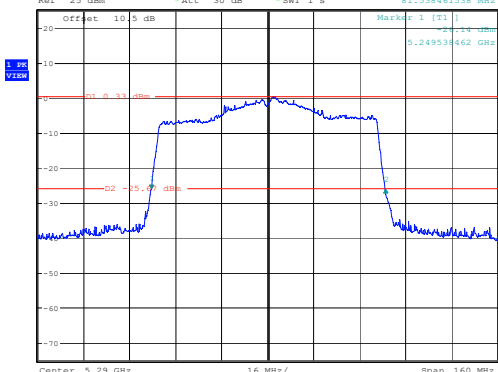
Ref 25 dBm Offset 10.5 dB Att 30 dB RBW 300 kHz VBW 1 MHz SWT 1 s Delta 2 (T1) 0.49 dB Mark# 1 (T1) 21.410256410 MHz 5.309301692 GHz

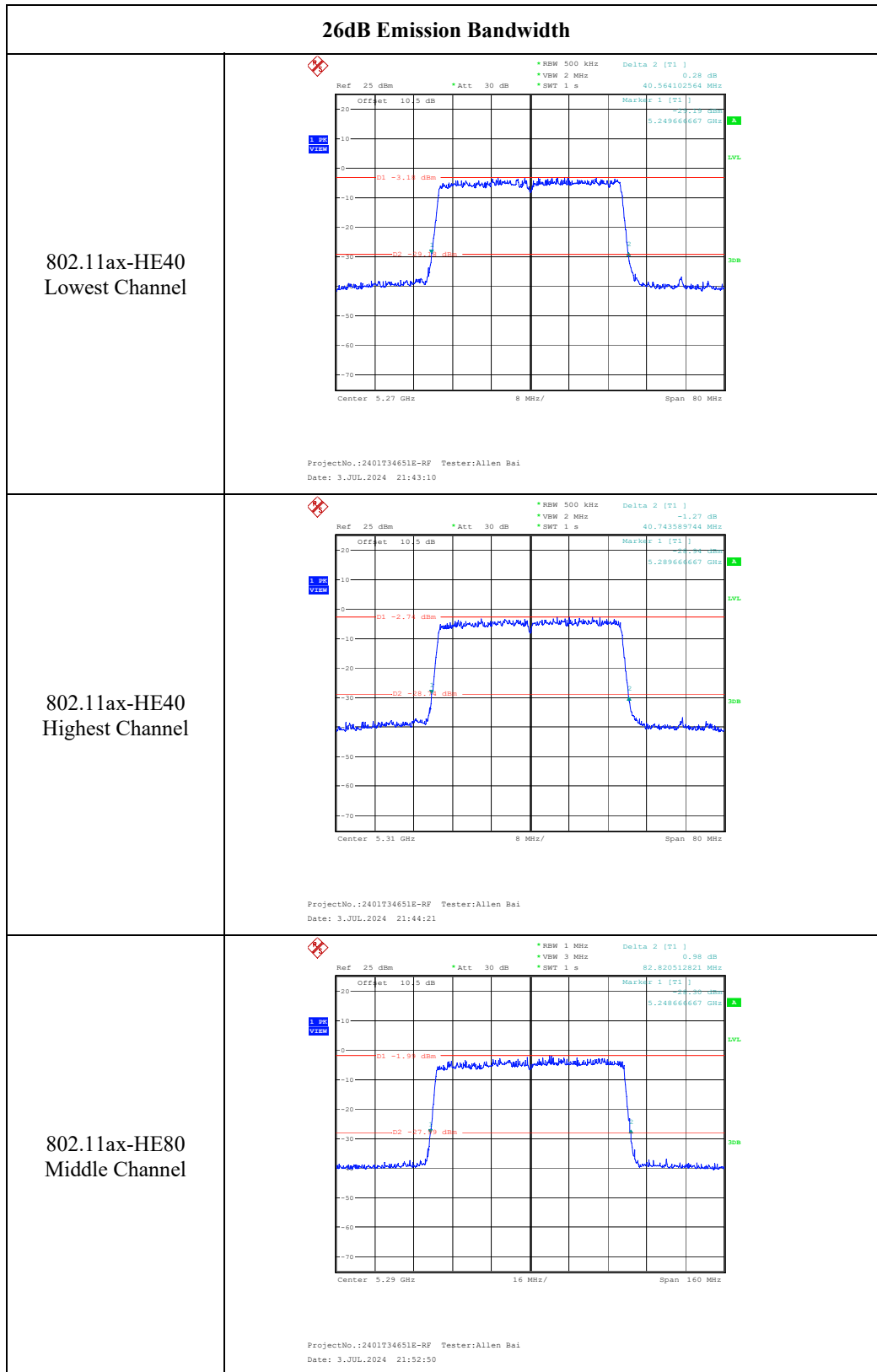
Center 5.32 GHz 4 MHz/ Span 40 MHz

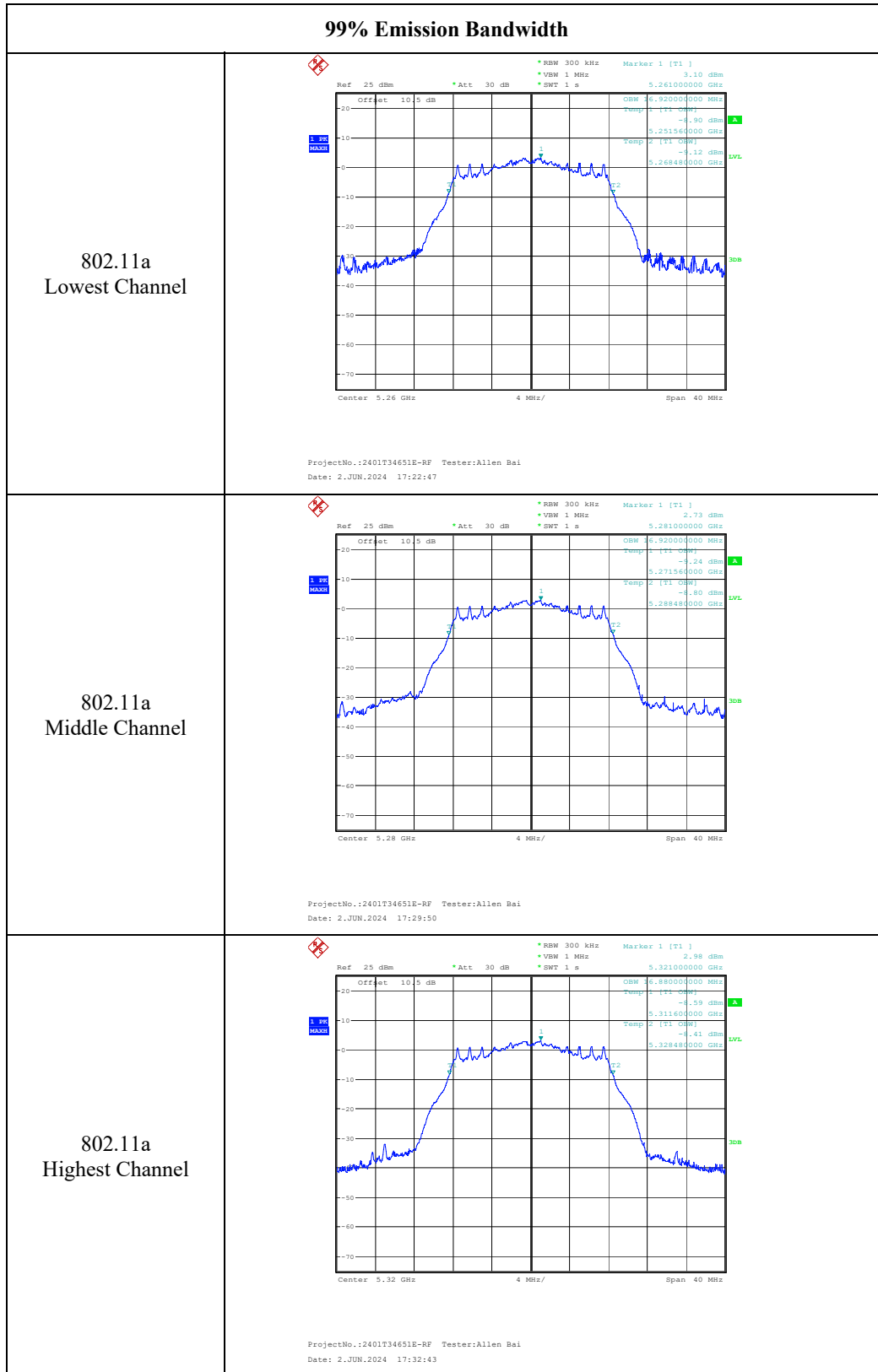
Measurements: D1 2 dBm, D2 -34.38 dBm

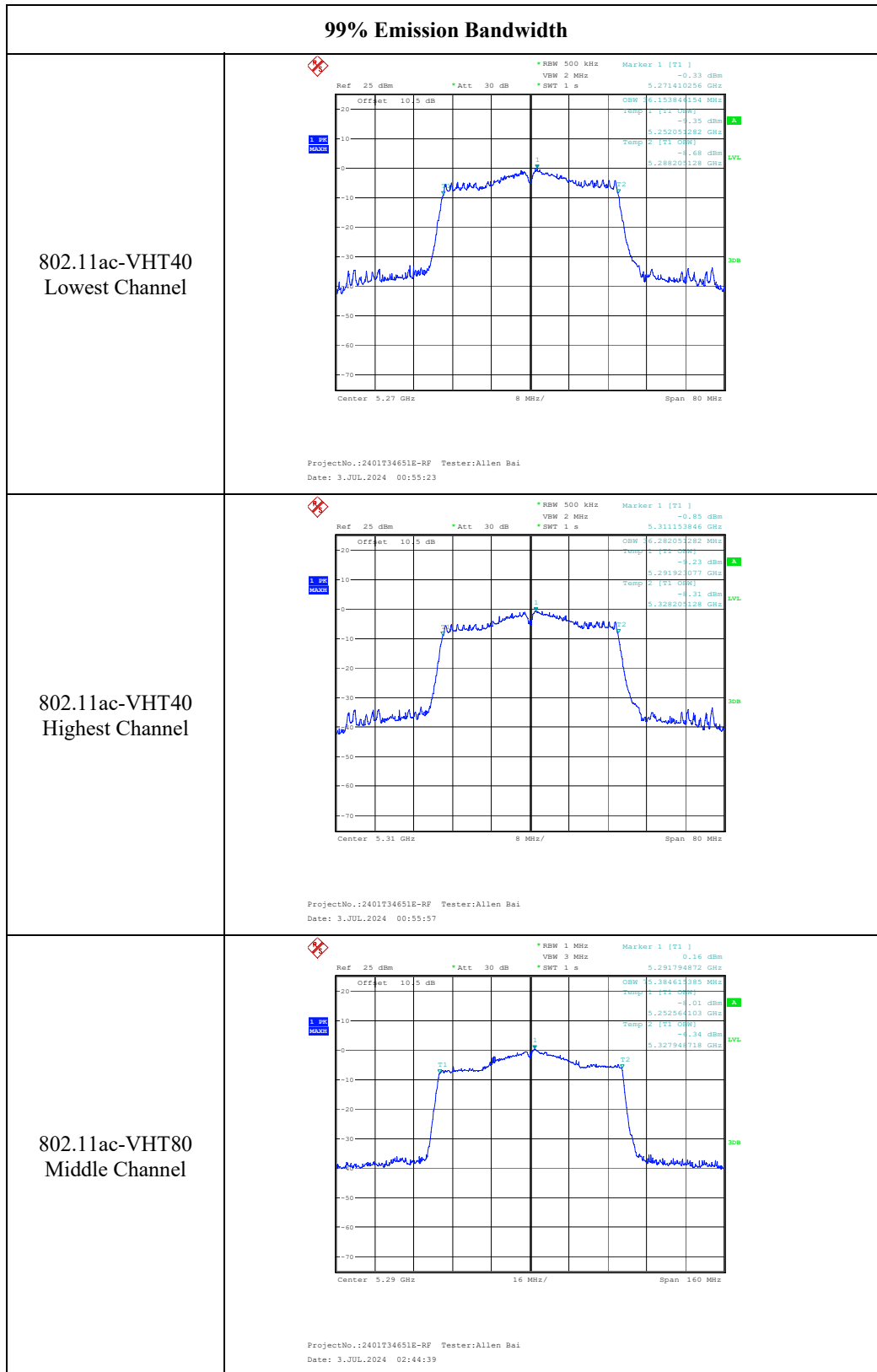
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 02:19:00

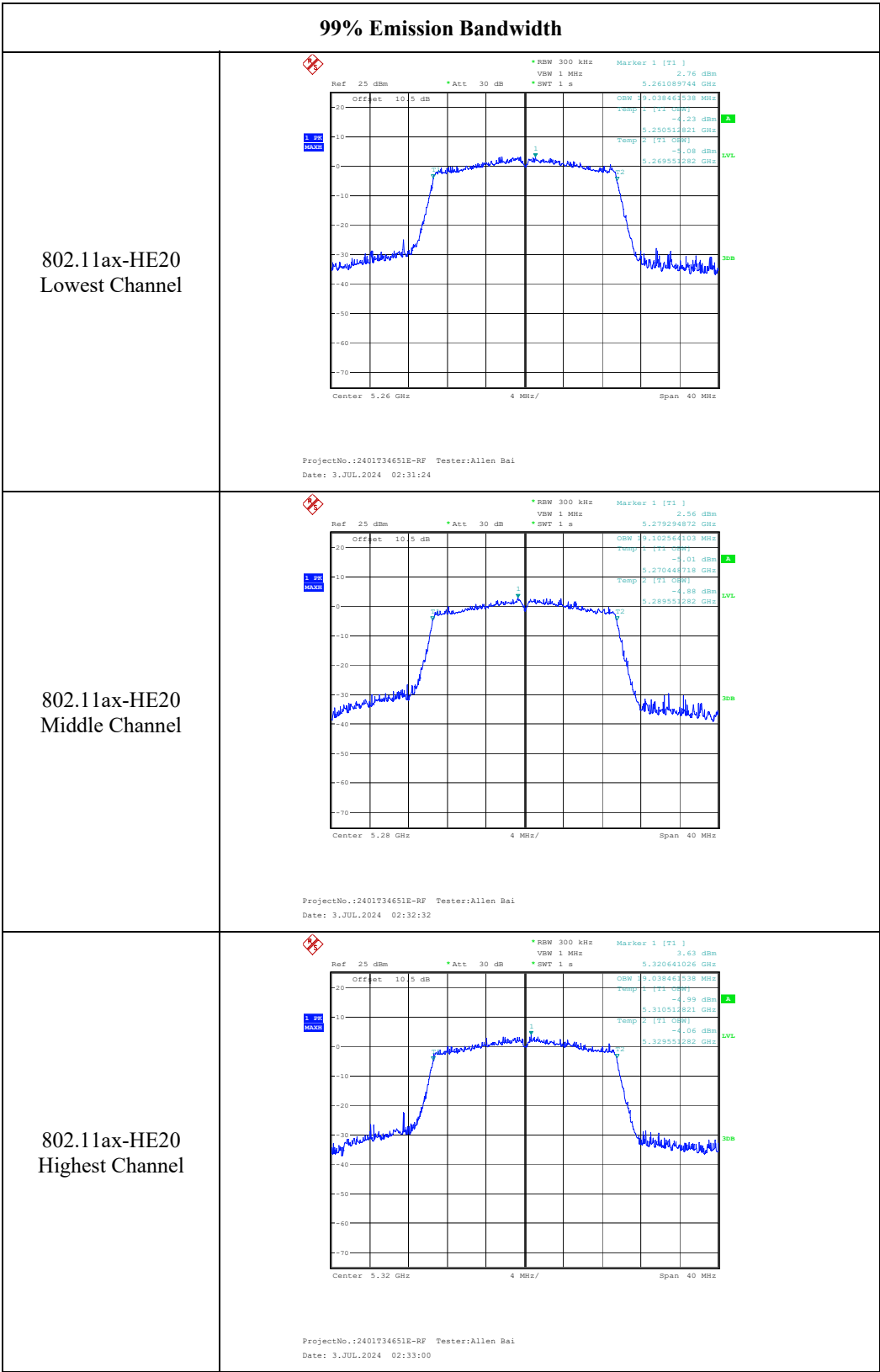
802.11ac-VHT20 Lowest Channel	26dB Emission Bandwidth  ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 01:21:54
802.11ac-VHT20 Middle Channel	 ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 01:20:36
802.11ac-VHT20 Highest Channel	 ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 01:23:27

802.11ac-VHT40 Lowest Channel	26dB Emission Bandwidth  Ref: 25 dBm *Att: 30 dB *RBW: 500 kHz Delta 2 [T1]: 0.31 dB *VSW: 2 MHz *SNT: 1 s 40.051262051 MHz Marker 1 [T1]: 5.250100564 GHz -20.04 dBm Offset: 10.5 dB Center: 5.27 GHz 8 MHz/ Span: 80 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 01:29:35
802.11ac-VHT40 Highest Channel	 Ref: 25 dBm *Att: 30 dB *RBW: 500 kHz Delta 2 [T1]: 1.37 dB *VSW: 2 MHz *SNT: 1 s 40.128200128 MHz Marker 1 [T1]: 5.289974359 GHz -20.04 dBm Offset: 10.5 dB Center: 5.31 GHz 8 MHz/ Span: 80 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 13.JUL.2024 01:31:24
802.11ac-VHT80 Middle Channel	 Ref: 25 dBm *Att: 30 dB *RBW: 1 MHz Delta 2 [T1]: -0.21 dB *VSW: 3 MHz *SNT: 1 s 61.538461538 MHz Marker 1 [T1]: 5.249336662 GHz -20.04 dBm Offset: 10.5 dB Center: 5.29 GHz 16 MHz/ Span: 160 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 3.JUL.2024 21:10:23

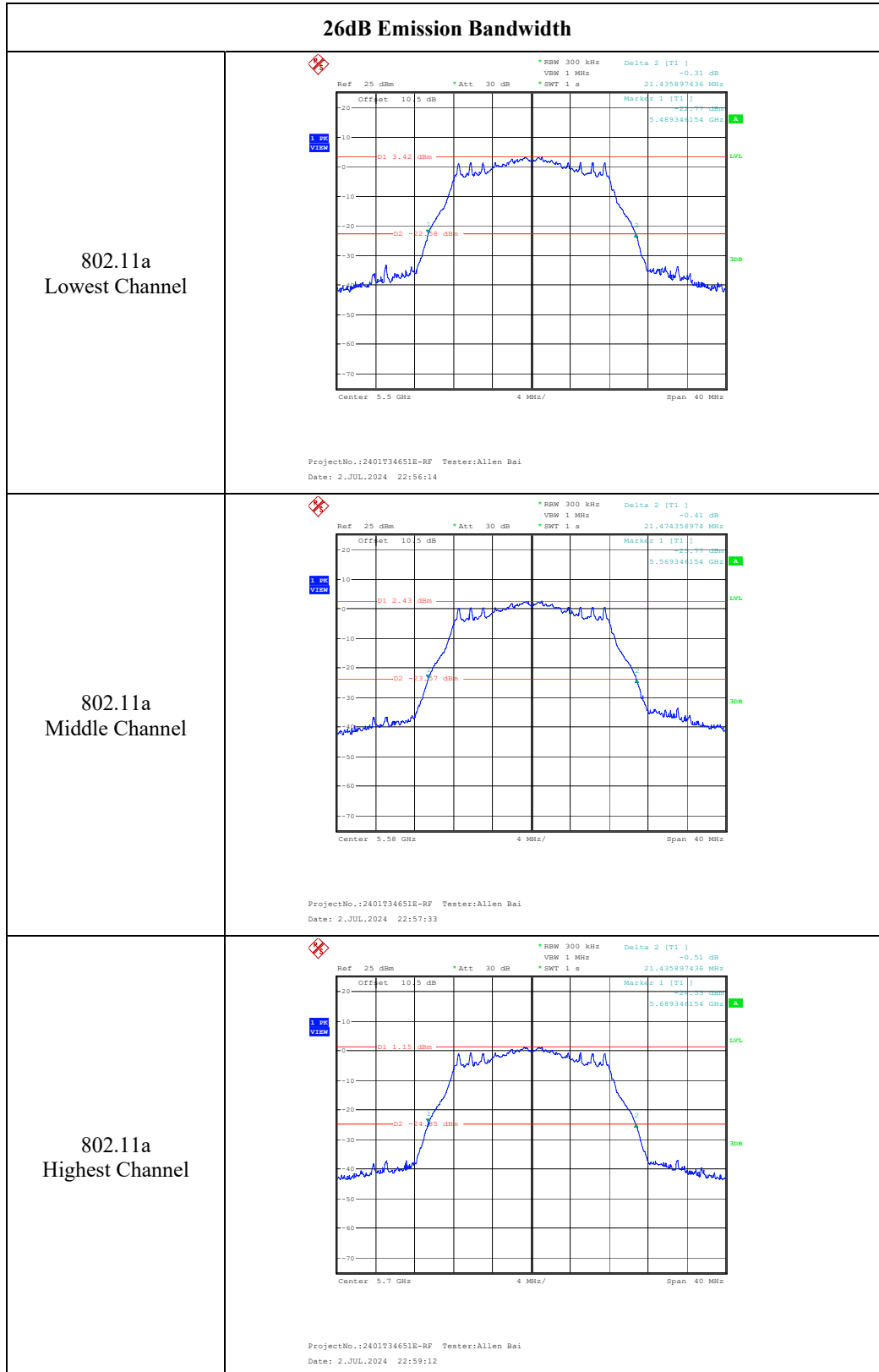


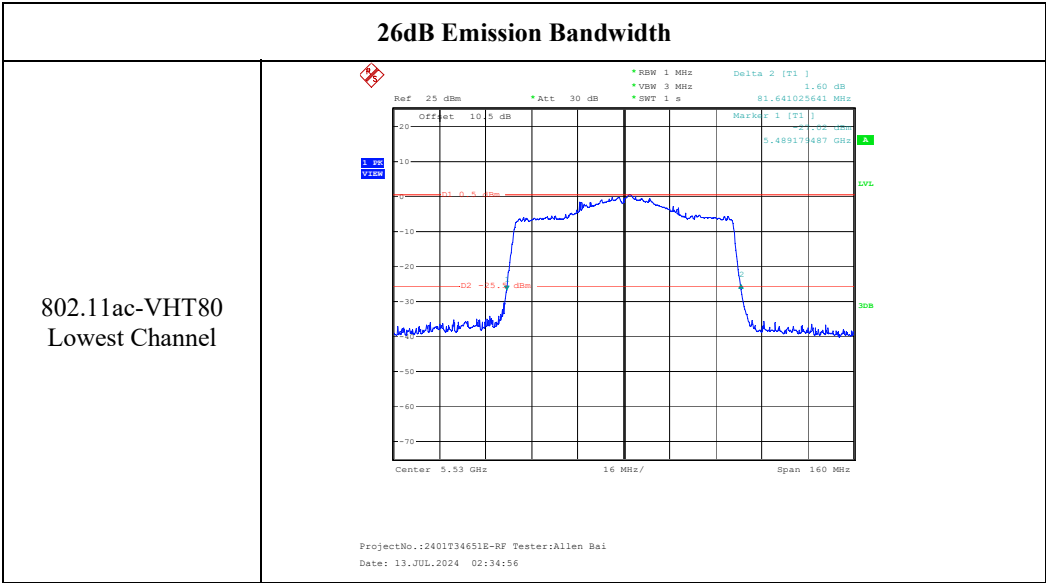


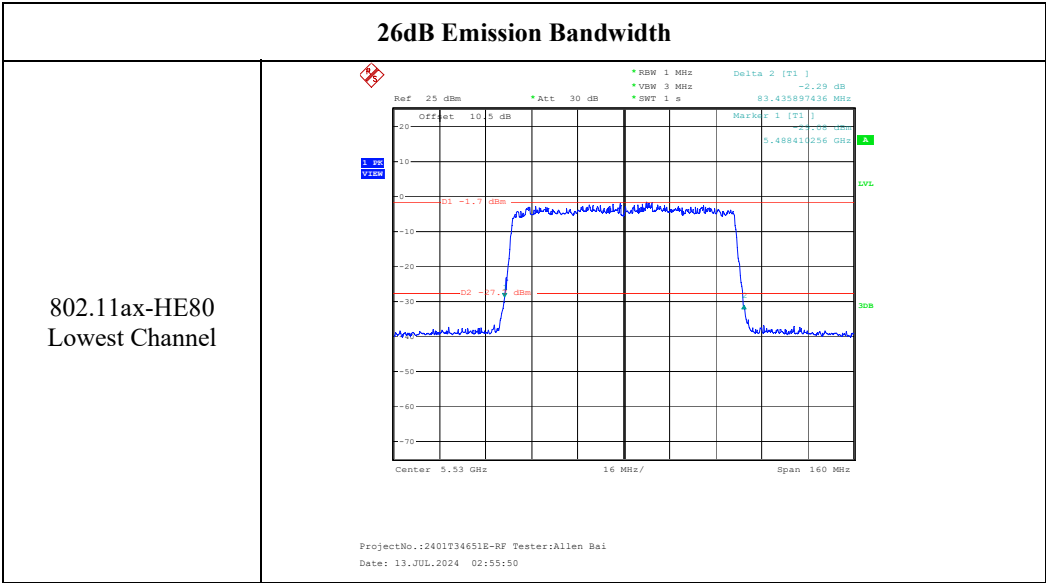


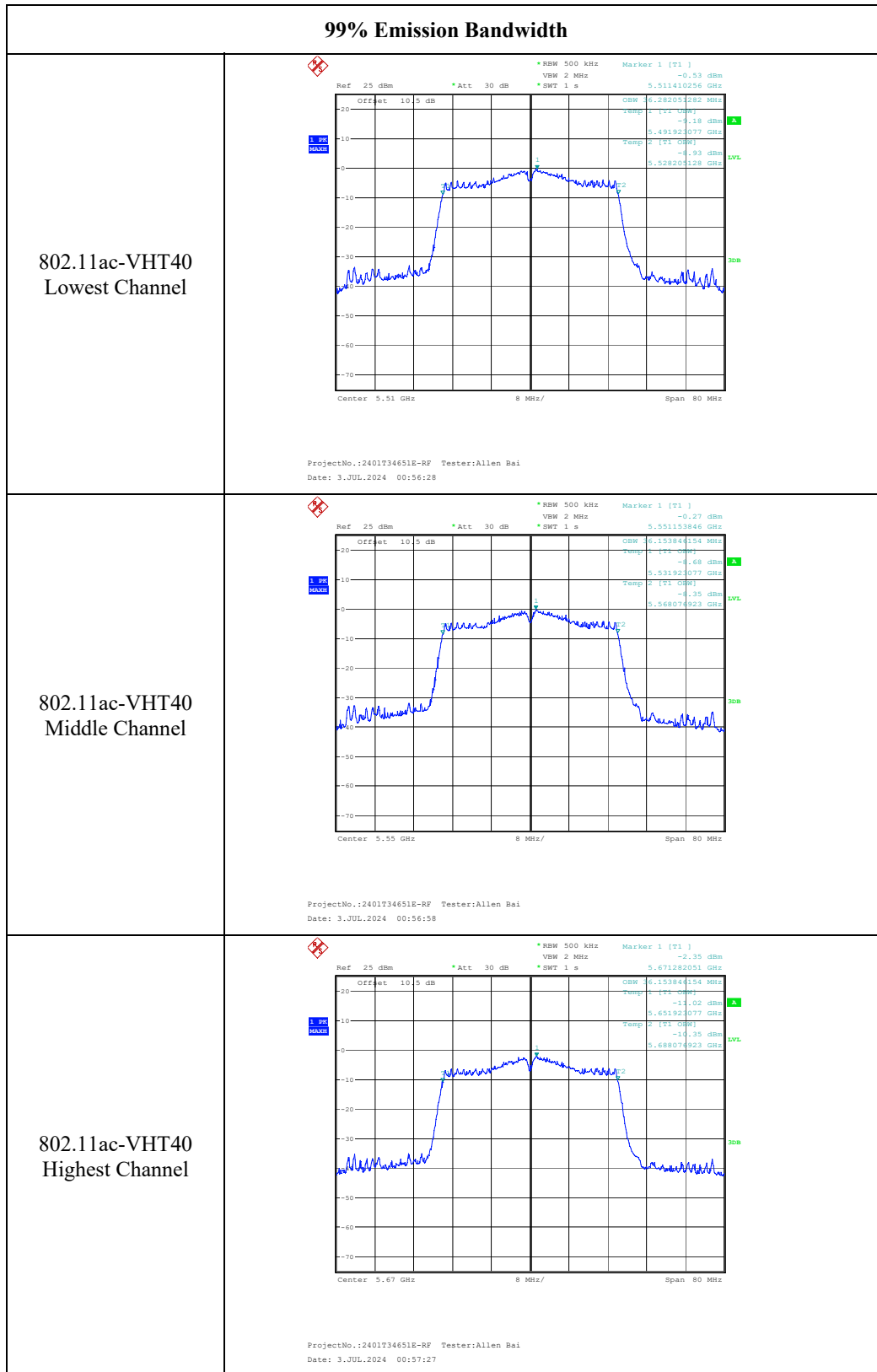


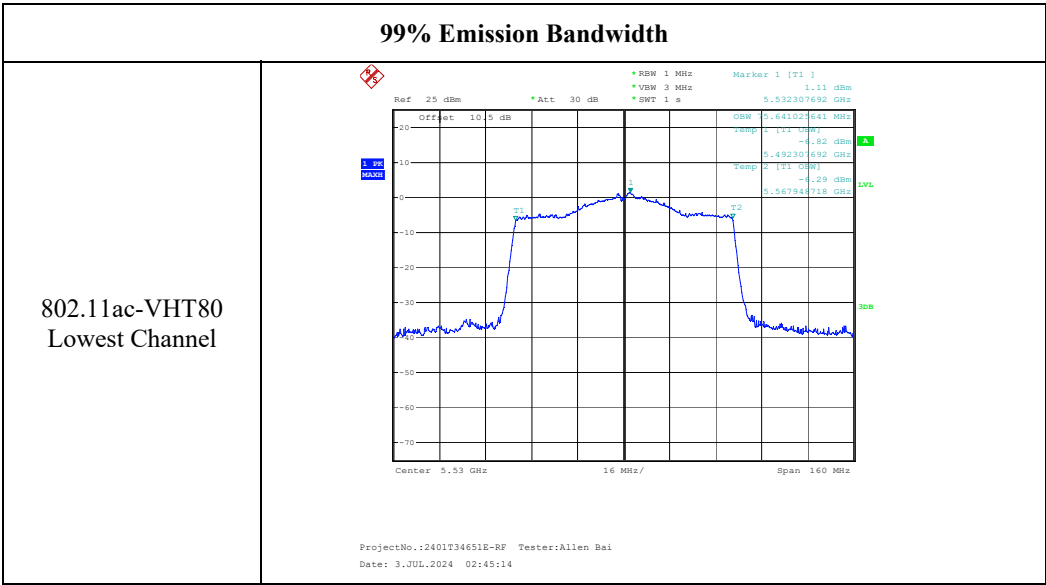
5470-5725MHz:

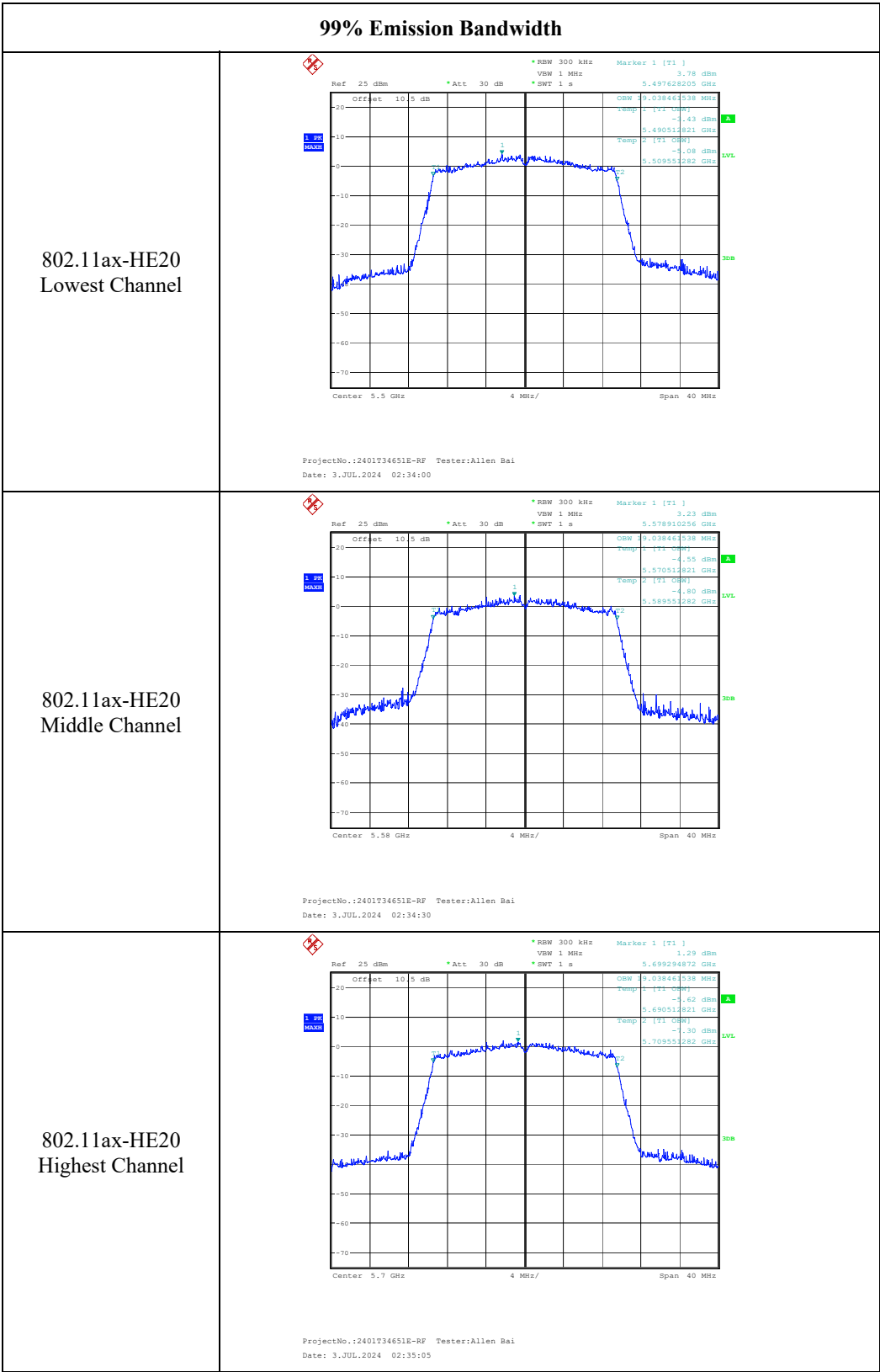


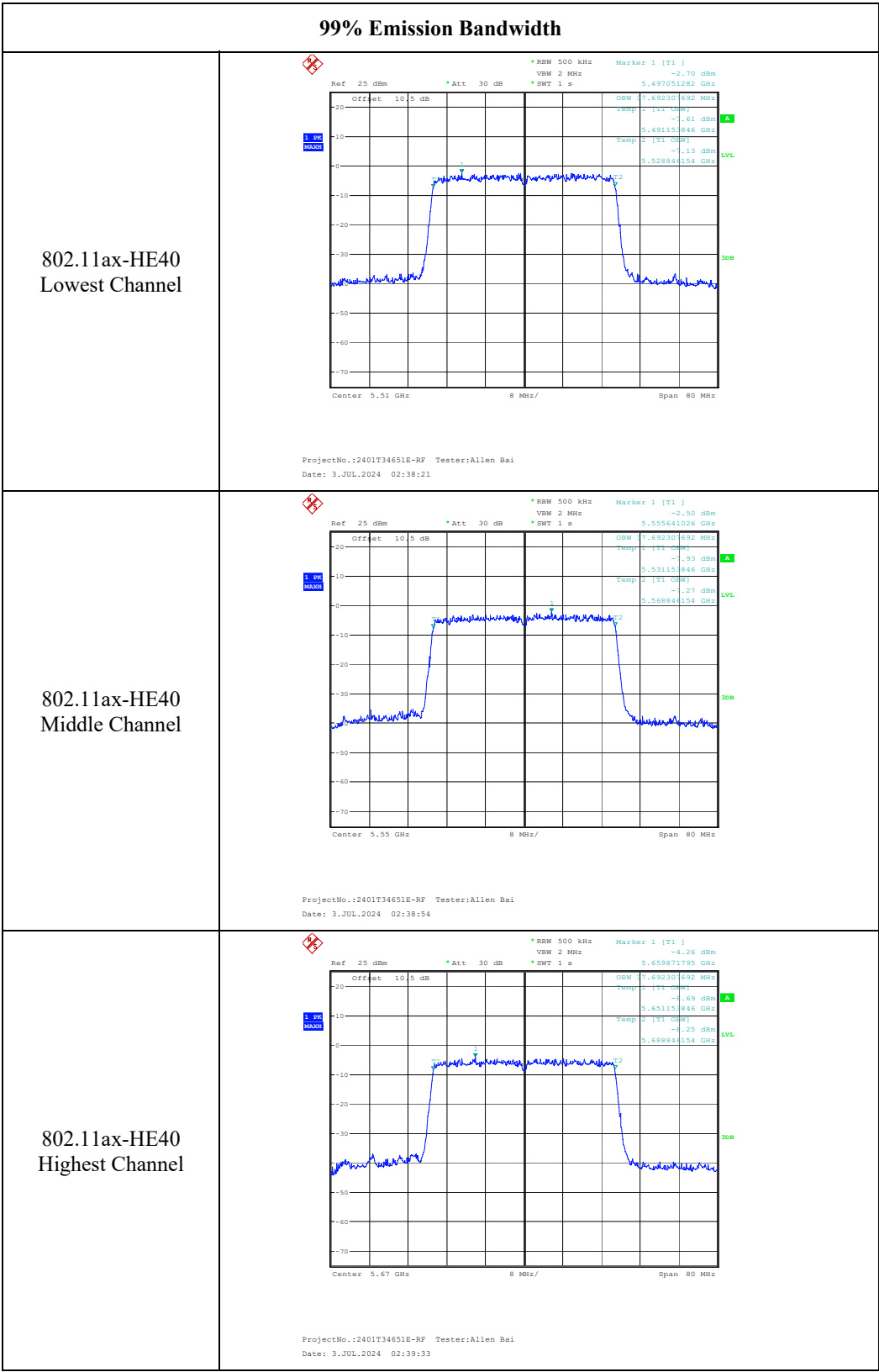


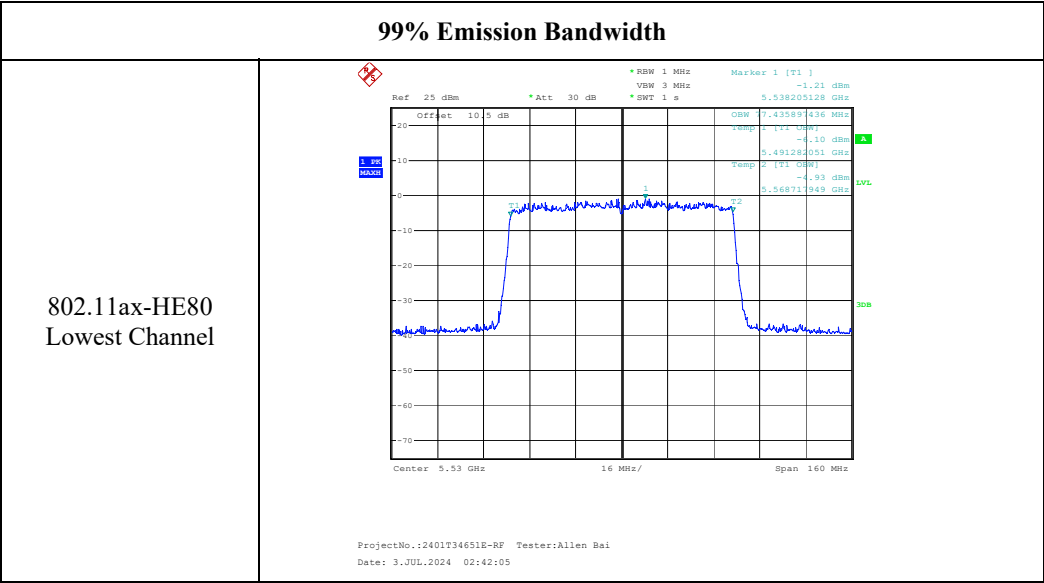












6dB Emission Bandwidth

Ref 25 dBm *Att 30 dB *SWT 1 s Delta 2 [T2] 0.04 dB
15.280000000 GHz 5.737360000 GHz

Offset 10.5 dB Marker 1 [T1] 5.737360000 GHz

D1 -1.9 dBm
D2 -1.9 dBm

Center 5.745 GHz 4 MHz/ Span 40 MHz

Ref 25 dBm Att 30 dB BW 300 kHz SWT 1 s Delta f [T1] 0.04 dB 15.280000000 GHz

Offset 10.5 dB

Marker 1 [T1] 15.280000000 GHz

D1 -1.8 dBm

D2 -1.83 dBm

Center 5.785 GHz 4 MHz/ Span 40 MHz

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 2.JUN.2024 17:47:08

Ref 25 dBm Att 30 dB BW 100 KHz VMW 300 KHz SWT 1 s Delta 2 [T1] -0.18 dB 15.280000000 MHz

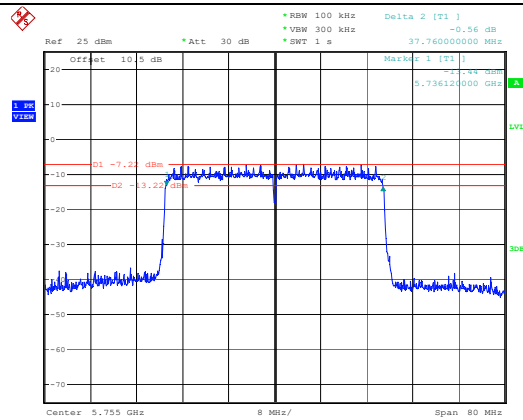
Masker 1 [T1] -1.9 dBm -7.91 dBm

D1 -1.9 dBm D2 -7.91 dBm

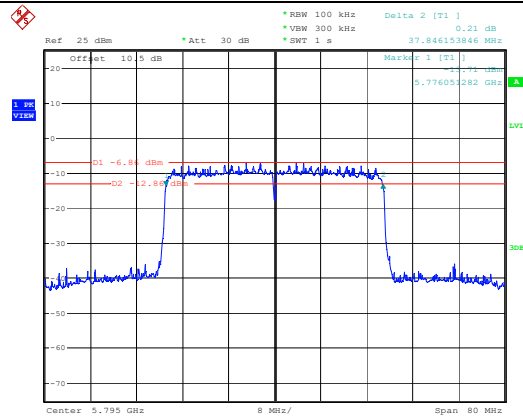
Center 5.825 GHz 4 MHz/ Span 40 MHz

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 2.JUN.2024 17:49:29

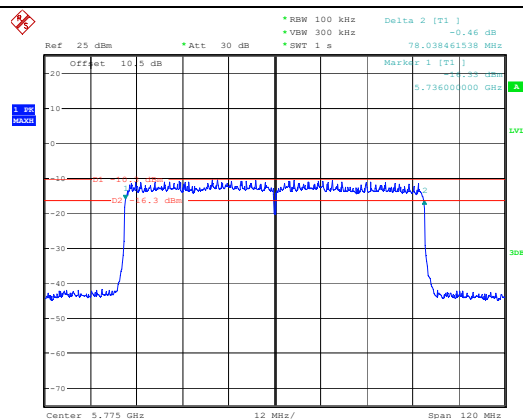
6dB Emission Bandwidth

802.11ax-HE40
Lowest Channel

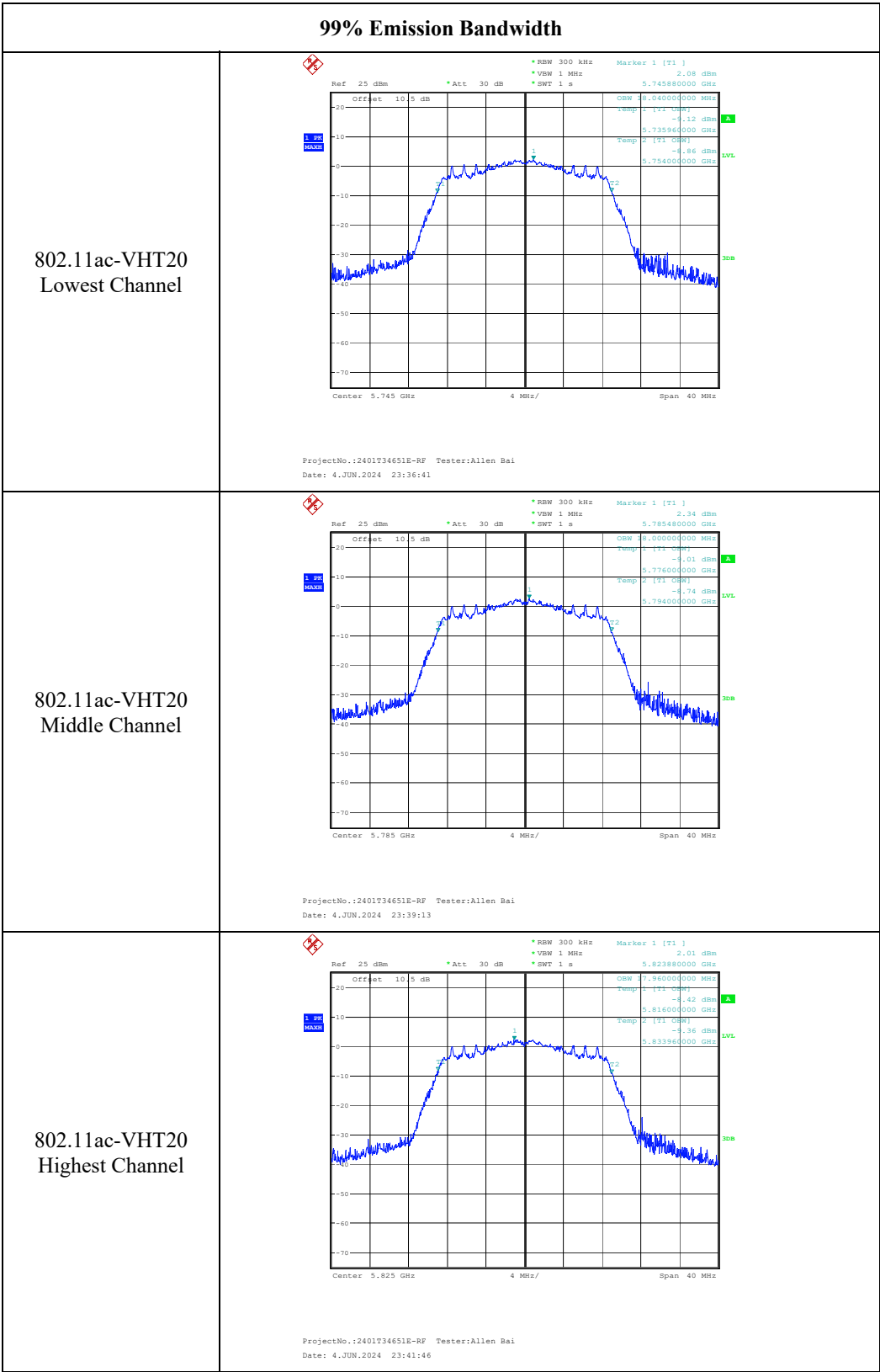
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:35:46

802.11ax-HE40
Highest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 02:04:08

802.11ax-HE80
Middle Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 13.JUL.2024 03:34:58



FCC §15.407(a) - CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

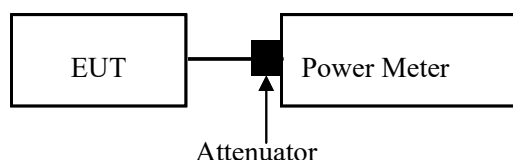
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method PM-G should be applied

- a. Place the EUT on a bench and set it in transmitting mode.
- b. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.



Test Data

Environmental Conditions

Temperature:	25~28 °C
Relative Humidity:	45~50 %
ATM Pressure:	100 kPa

The testing was performed by Allen Bai from 2024-06-04 to 2024-07-07.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT1	ANT2	Total	Limit
802.11a	5180	7.01	8.88	/	23.98
	5200	7.08	9.34	/	23.98
	5240	7.30	9.56	/	23.98
802.11ac-VHT20	5180	7.09	8.98	11.15	23.98
	5200	7.00	9.02	11.14	23.98
	5240	7.15	9.37	11.41	23.98
802.11ac-VHT40	5190	6.17	7.88	10.12	23.98
	5230	6.17	8.16	10.29	23.98
802.11ac-VHT80	5210	4.19	6.17	8.30	23.98
802.11ax-HE20	5180	6.98	8.79	10.99	23.98
	5200	6.93	9.29	11.28	23.98
	5240	6.99	9.35	11.34	23.98
802.11ax-HE40	5190	2.89	4.47	6.76	23.98
	5230	3.10	4.74	7.01	23.98
802.11ax-HE80	5210	2.99	4.90	7.06	23.98
Note: The device is a client. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.10	dBi	Directional Gain:	3.10	dBi

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT1	ANT2	Total	Limit
802.11a	5260	8.65	10.20	/	23.98
	5280	8.72	10.01	/	23.98
	5320	8.96	9.94	/	23.98
802.11ac-VHT20	5260	8.12	10.67	12.59	23.98
	5280	7.93	10.52	12.43	23.98
	5320	8.09	10.54	12.50	23.98
802.11ac-VHT40	5270	6.28	8.07	10.28	23.98
	5310	6.35	7.84	10.17	23.98
802.11ac-VHT80	5290	5.33	7.47	9.54	23.98
802.11ax-HE20	5260	8.29	10.53	12.56	23.98
	5280	8.27	10.61	12.61	23.98
	5320	8.42	10.42	12.54	23.98
802.11ax-HE40	5270	3.19	4.24	6.76	23.98
	5310	3.41	3.92	6.68	23.98
802.11ax-HE80	5290	2.77	4.94	7.00	23.98
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.10	dBi	Directional Gain:	3.10	dBi

5470-5725 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT1	ANT2	Total	Limit
802.11a	5500	9.14	9.54	/	23.98
	5580	8.18	9.13	/	23.98
	5700	7.04	6.93	/	23.98
802.11ac-VHT20	5500	7.95	8.09	11.03	23.98
	5580	7.01	7.69	10.37	23.98
	5700	5.75	5.49	8.63	23.98
802.11ac-VHT40	5510	6.58	6.92	9.76	23.98
	5550	6.33	7.20	9.80	23.98
	5670	4.79	5.38	8.11	23.98
802.11ac-VHT80	5530	6.34	6.67	9.52	23.98
802.11ax-HE20	5500	9.01	9.24	12.14	23.98
	5580	8.22	8.74	11.50	23.98
	5700	6.93	6.44	9.70	23.98
802.11ax-HE40	5510	4.16	4.09	7.14	23.98
	5550	3.90	4.16	7.04	23.98
	5670	2.50	2.17	5.35	23.98
802.11ax-HE80	5530	4.29	4.63	7.47	23.98
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$					
Antenna Gain:	3.10	dB	Directional Gain:	3.10	dB

5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Max. Conducted Average Output Power (dBm)			
		ANT1	ANT2	Total	Limit
802.11a	5745	7.22	8.15	/	30
	5785	7.32	7.61	/	30
	5825	7.28	6.98	/	30
802.11ac-VHT20	5745	7.22	7.89	10.58	30
	5785	7.32	7.46	10.40	30
	5825	7.28	6.92	10.11	30
802.11ac-VHT40	5755	6.75	7.41	10.10	30
	5795	6.55	6.96	9.77	30
802.11ac-VHT80	5775	6.38	6.55	9.48	30
802.11ax-HE20	5745	7.79	8.60	11.22	30
	5785	7.85	8.08	10.98	30
	5825	8.11	7.63	10.89	30
802.11ax-HE40	5755	7.64	7.87	10.77	30
	5795	7.68	7.58	10.64	30
802.11ax-HE80	5775	7.70	8.20	10.97	30
Note: The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices: Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$					
Antenna Gain:	3.10	dB	Directional Gain:	3.10	dB

FCC §15.407(a) - POWER SPECTRAL DENSITY

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Duty cycle $\geq 98\%$

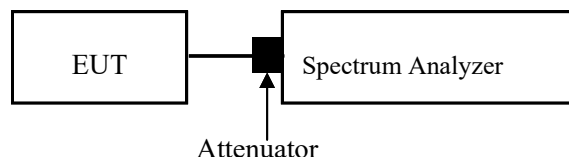
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-1 should be applied.

Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied.

Duty cycle $< 98\%$, duty cycle variations exceed $\pm 2\%$

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-3 should be applied.



Test Data**Environmental Conditions**

Temperature:	25~28 °C
Relative Humidity:	45~50 %
ATM Pressure:	100 kPa

The testing was performed by Allen Bai from 2024-06-02 to 2024-07-07.

EUT operation mode: Transmitting

Test Result: Compliant.

5150-5250 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT1	ANT2	Total		Result	Limit
802.11a	5180	-1.49	0.17	/	0.33	0.50	11
	5200	-1.45	0.06	/	0.33	0.39	11
	5240	-1.34	0.25	/	0.33	0.58	11
802.11ac-VHT20	5180	-2.22	-0.24	1.89	0.35	2.24	10.90
	5200	-2.46	-0.25	1.79	0.35	2.14	10.90
	5240	-2.12	0.10	2.14	0.35	2.49	10.90
802.11ac-VHT40	5190	-7.37	-5.44	-3.29	0.62	-2.67	10.90
	5230	-7.14	-5.09	-2.98	0.62	-2.36	10.90
802.11ac-VHT80	5210	-11.37	-9.66	-7.42	1.28	-6.14	10.90
802.11ax-HE20	5180	-4.57	-2.55	-0.43	0.45	0.02	10.90
	5200	-4.45	-2.34	-0.26	0.45	0.19	10.90
	5240	-4.42	-2.33	-0.24	0.45	0.21	10.90
802.11ax-HE40	5190	-12.75	-11.21	-8.90	1.39	-7.51	10.90
	5230	-12.57	-10.72	-8.54	1.39	-7.15	10.90
802.11ax-HE80	5210	-16.01	-14.14	-11.96	1.55	-10.41	10.90
Note: 1. The device is a client. 2. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices: Array Gain = $10 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB 3. Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used for PSD test. 4. For 802.11a mode, $\text{PSD} = \text{Max}\{\text{Reading}_{\text{ANT1}}, \text{Reading}_{\text{ANT2}}\} + \text{Duty Cycle Factor}$ 5. For 802.11 ac/ax modes, $\text{PSD} = \text{Total} + \text{Duty Cycle Factor}$							
Antenna Gain:	3.10		dBi	Directional Gain:	6.10		dBi

5250-5350 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT1	ANT2	Total		Result	Limit
802.11a	5260	-0.19	1.29	/	0.33	1.62	11
	5280	-0.18	1.25	/	0.33	1.58	11
	5320	0.09	1.09	/	0.33	1.42	11
802.11ac-VHT20	5260	-0.95	1.49	3.45	0.35	3.80	10.90
	5280	-0.91	1.35	3.38	0.35	3.73	10.90
	5320	-0.56	1.32	3.49	0.35	3.84	10.90
802.11ac-VHT40	5270	-6.75	-4.85	-2.69	0.62	-2.07	10.90
	5310	-6.55	-5.17	-2.80	0.62	-2.18	10.90
802.11ac-VHT80	5290	-10.12	-8.29	-6.10	1.28	-4.82	10.90
802.11ax-HE20	5260	-3.09	-1.09	1.03	0.45	1.48	10.90
	5280	-2.97	-1.29	0.96	0.45	1.41	10.90
	5320	-2.94	-1.45	0.88	0.45	1.33	10.90
802.11ax-HE40	5270	-12.44	-11.25	-8.79	1.39	-7.40	10.90
	5310	-12.93	-11.56	-9.18	1.39	-7.79	10.90
802.11ax-HE80	5290	-16.46	-14.20	-12.17	1.55	-10.62	10.90
Note: 1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices: Array Gain = $10 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB 2. Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used for PSD test. 3. For 802.11a mode, PSD = $\text{Max}\{\text{Reading}_{\text{ANT1}}, \text{Reading}_{\text{ANT2}}\} + \text{Duty Cycle Factor}$ 4. For 802.11 ac/ax modes, PSD = Total + Duty Cycle Factor							
Antenna Gain:	3.10		dBi	Directional Gain:	6.10		dBi

5475-5725 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/MHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/MHz)	
		ANT1	ANT2	Total		Result	Limit
802.11a	5500	0.32	0.54	/	0.33	0.87	11
	5580	-0.49	0.16	/	0.33	0.49	11
	5700	-1.84	-2.03	/	0.33	-1.51	11
802.11ac-VHT20	5500	-1.35	-1.06	1.81	0.35	2.16	10.90
	5580	-2.18	-1.63	1.11	0.35	1.46	10.90
	5700	-3.49	-3.77	-0.62	0.35	-0.27	10.90
802.11ac-VHT40	5510	-6.67	-6.07	-3.35	0.62	-2.73	10.90
	5550	-6.66	-5.77	-3.18	0.62	-2.56	10.90
	5670	-8.38	-7.95	-5.15	0.62	-4.53	10.90
802.11ac-VHT80	5530	-9.29	-8.93	-6.10	1.28	-4.82	10.90
802.11ax-HE20	5500	-2.51	-2.59	0.46	0.45	0.91	10.90
	5580	-3.15	-2.75	0.06	0.45	0.51	10.90
	5700	-4.80	-5.16	-1.97	0.45	-1.52	10.90
802.11ax-HE40	5510	-11.87	-11.45	-8.64	1.39	-7.25	10.90
	5550	-12.45	-11.68	-9.04	1.39	-7.65	10.90
	5670	-13.45	-13.32	-10.37	1.39	-8.98	10.90
802.11ax-HE80	5530	-14.65	-14.34	-11.48	1.55	-9.93	10.90
Note: 1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices: Array Gain = $10 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB 2. Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used for PSD test. 3. For 802.11a mode, PSD = $\text{Max}\{\text{Reading}_{\text{ANT1}}, \text{Reading}_{\text{ANT2}}\} + \text{Duty Cycle Factor}$ 4. For 802.11 ac/ax modes, PSD = $\text{Total} + \text{Duty Cycle Factor}$							
Antenna Gain:	3.10		dBi	Directional Gain:	6.10		dBi

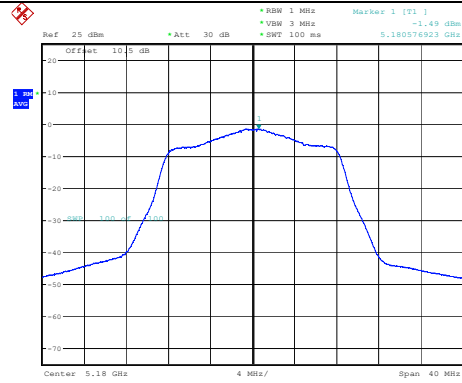
5725-5850 MHz:

Test Modes	Test Frequency (MHz)	Reading (dBm/500kHz)			Duty Cycle Factor (dB)	Maximum Power Spectral Density (dBm/500kHz)	
		ANT1	ANT2	Total		Result	Limit
802.11a	5745	-3.69	-3.23	/	0.33	-2.90	30
	5785	-3.53	-3.76	/	0.33	-3.20	30
	5825	-3.80	-4.37	/	0.33	-3.47	30
802.11ac-VHT20	5745	-4.21	-3.80	-0.99	0.35	-0.64	29.90
	5785	-4.10	-4.37	-1.22	0.35	-0.87	29.90
	5825	-4.12	-4.78	-1.43	0.35	-1.08	29.90
802.11ac-VHT40	5755	-8.27	-8.29	-5.27	0.62	-4.65	29.90
	5795	-8.47	-8.14	-5.29	0.62	-4.67	29.90
802.11ac-VHT80	5775	-11.22	-11.97	-8.57	1.28	-7.29	29.90
802.11ax-HE20	5745	-6.36	-5.69	-3.00	0.45	-2.55	29.90
	5785	-6.01	-6.03	-3.01	0.45	-2.56	29.90
	5825	-6.38	-6.41	-3.38	0.45	-2.93	29.90
802.11ax-HE40	5755	-11.07	-10.15	-7.58	1.39	-6.19	29.90
	5795	-10.73	-10.47	-7.59	1.39	-6.20	29.90
802.11ax-HE80	5775	-13.98	-13.34	-10.64	1.55	-9.09	29.90
Note: 1. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices: Array Gain = $10 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB 2. Method SA-2 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01 was used for PSD test. 3. For 802.11a mode, PSD = $\text{Max}\{\text{Reading}_{\text{ANT1}}, \text{Reading}_{\text{ANT2}}\} + \text{Duty Cycle Factor}$ 4. For 802.11 ac/ax modes, PSD = Total + Duty Cycle Factor							
Antenna Gain:	3.10		dBi	Directional Gain:	6.10		dBi

5150-5250MHz:

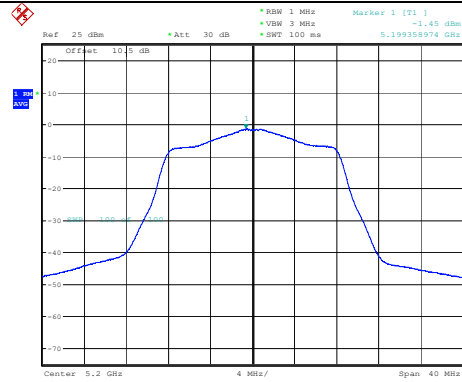
Maximum power spectral density

802.11a
Lowest Channel



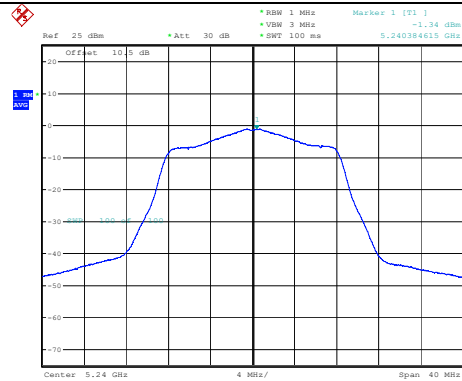
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:04:42

802.11a
Middle Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:05:15

802.11a
Highest Channel

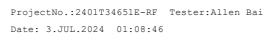


ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:05:50

[illegible]

Version 1.0 (2023/10/07)

802.11ac-VHT40
Lowest Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 01:08:04

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 01:21:06

[illegible]

Ref 25 dBm *Att 30 dB

*RBW 1 MHz Marker 1 [T1] -4.45 dBm
 *VBW 3 MHz
 *SWT 100 ms 5.20189744 GHz

Offset 10.5 dB

1. Ref
 100
 100

Center 5.2 GHz 4 MHz/ Span 40 MHz



Ref 25 dBm Att 30 dB RBW 1 MHz VBW 3 MHz SMT 100 ms Marker 1 [T1] -4.42 dBm 5.24153846 GHz

Offset 10.5 dB

5.24 GHz

Center 5.24 GHz 4 MHz Span 40 MHz

Version 1.0 (2023/10/07)

Maximum power spectral density

Offset 25 dBm

Center 5.26 GHz

Span 40 MHz

4 MHz

VSW 3 MHz

Peak level: -10 dBm

Offset 25 dBm

Center 5.28 GHz

4 MHz/

Span 40 MHz

Offset 25 dBm

Center 5.28 GHz

4 MHz/

Span 40 MHz

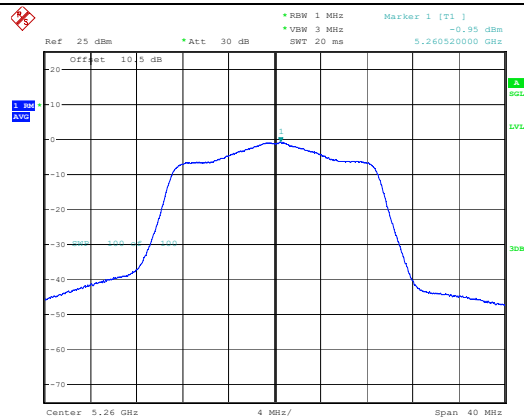
RBW 1 MHz Marker 1 175.1
 VBW 3 MHz 0.09 dBm
 SMT 20 ms 5.320480000 GHz

Offset 25 dBm Att 30 dB

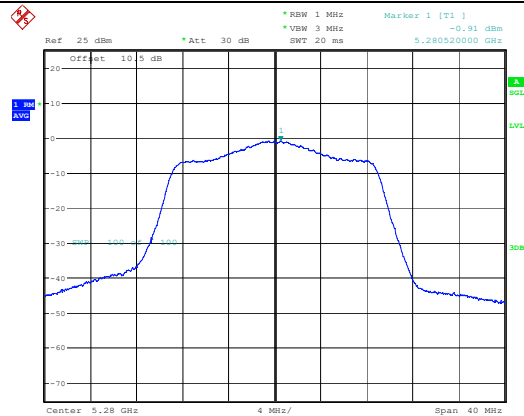
Center 5.32 GHz 4 MHz/ Span 40 MHz

Version 1.0 (2023/10/07)

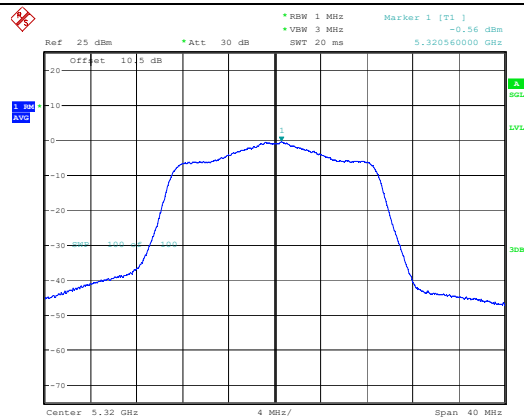
Maximum power spectral density

802.11ac-VHT20
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 23:17:08

802.11ac-VHT20
Middle Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 23:21:13

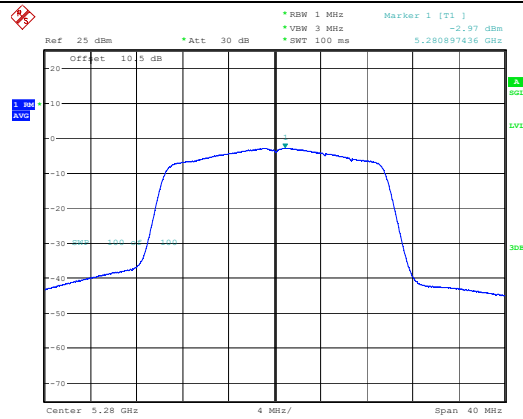
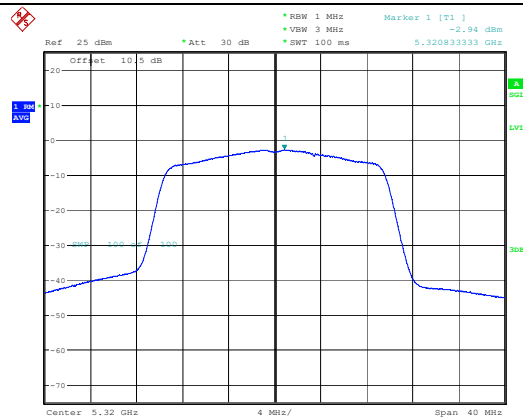
802.11ac-VHT20
Highest Channel

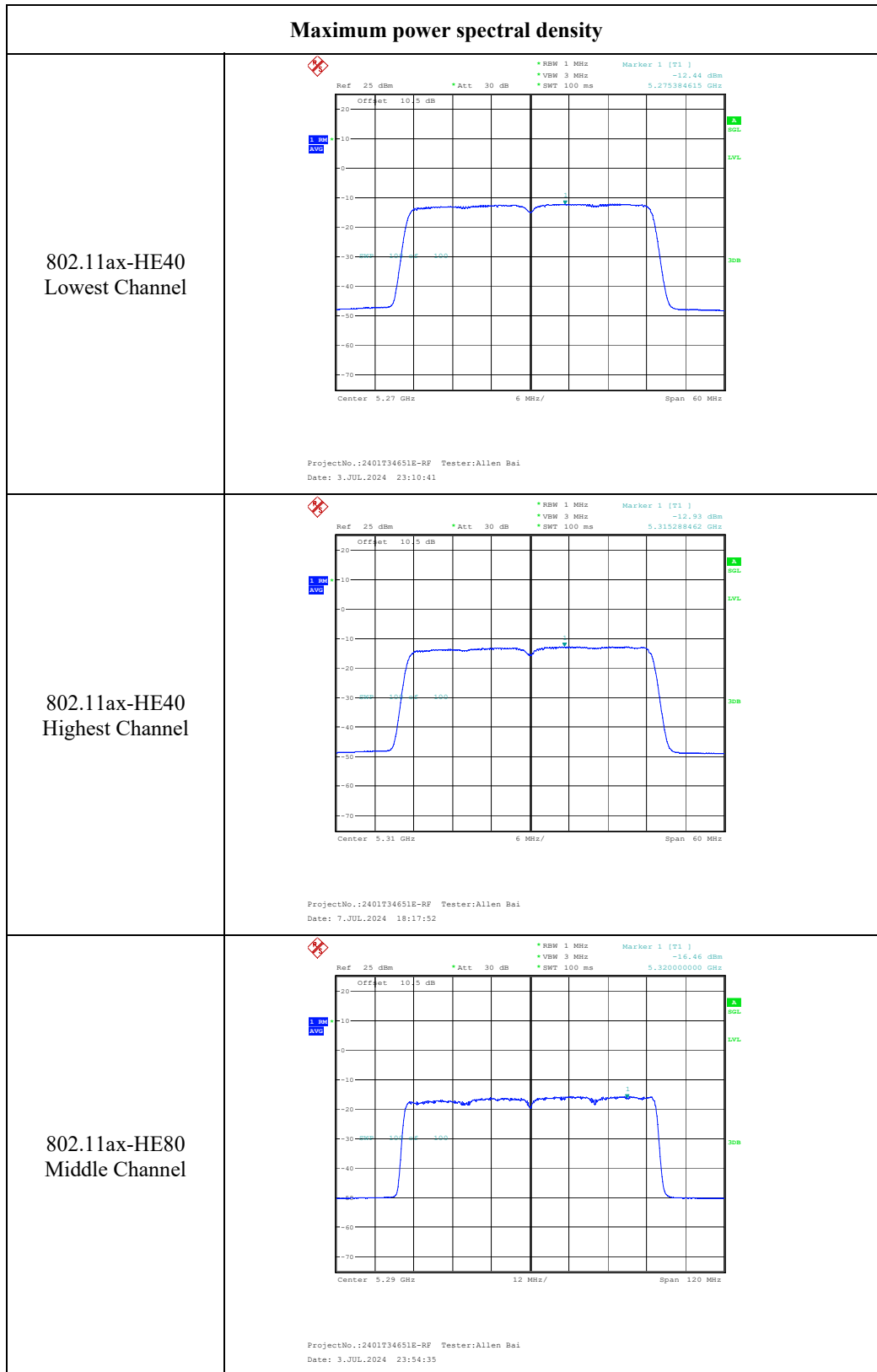
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 23:26:19

Ref 25 dBm Att 30 dB Marker 1 [T1] ~3.09 dBm
 * RBW 1 MHz * VBW 3 MHz * SMT 100 ms
 5.260833333 GHz

Offset 10.5 dB

Center 5.26 GHz 4 MHz/ Span 40 MHz

802.11ax-HE20
Lowest Channel802.11ax-HE20
Middle Channel802.11ax-HE20
Highest Channel



Maximum power spectral density

Offset 10.5 dB

dBm 1.00 -5.00

Center 5.5 GHz 4 MHz/ Span 40 MHz

Ref -25 dBm * Att 30 dB

* RBW 1 MHz * VBW 3 MHz * SWT 100 ms

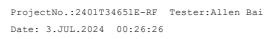
Marker 1 (7) 0.32 dBm 5.499615365 GHz

* RBW 1 MHz
 * VBW 3 MHz
 * SMT 1 s

Marker 1 [71.1]
 -1.84 dBm
 5.699615369 GHz

Offset 10.5 dB

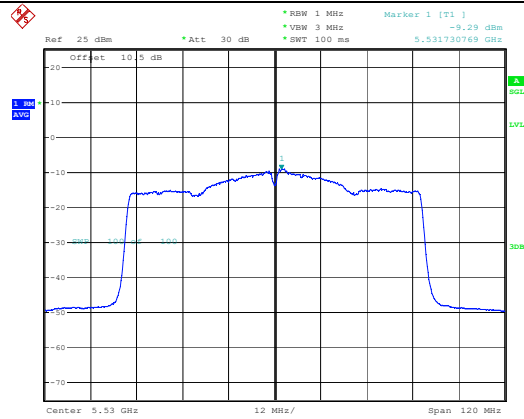
Center 5.7 GHz 4 MHz / Span 40 MHz

802.11ac-VHT20
Lowest Channel

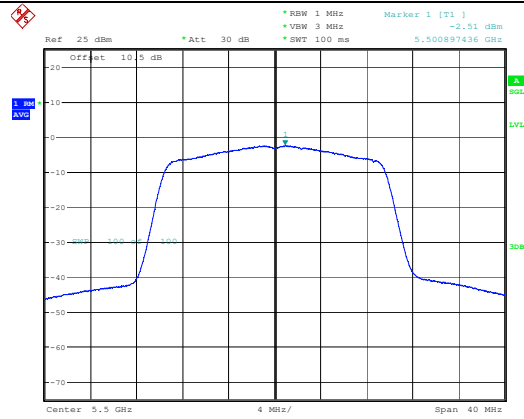
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 00:29:50

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 00:30:23

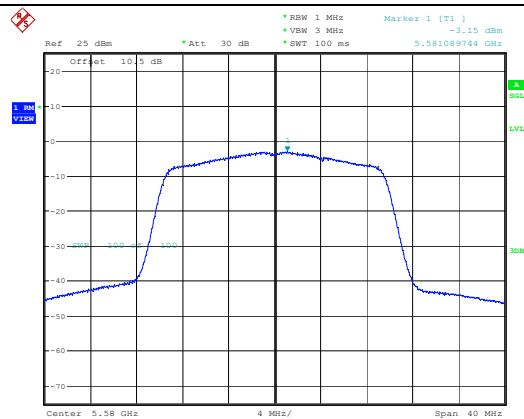
Maximum power spectral density

802.11ac-VHT80
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 01:23:15

802.11ax-HE20
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 22:37:53

802.11ax-HE20
Middle Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUL.2024 22:38:40

802.11ax-HE40
Highest Channel

Maximum power spectral density

Ref 25 dBm

Offset 10.5 dB

Att 30 dB

RBW 1 MHz

VBW 3 MHz

SWT 100 ms

Marker 1 [T1]

-13.45 dBm

5.674807692 GHz

1 MHz

SPAN

10 dB

VIEW

20

-10

0

-10

-20

-30

-40

-50

-60

-70

Center 5.67 GHz

6 MHz/

Span 60 MHz

PSD

30 dB

100

10

20

30

40

50

60

70

10

20

30

40

50

60

70

ProjectNo.:2401T34651E-RF

Tester:Allen Bai

Date: 3.JUL.2024 23:15:26

802.11ax-HE80
Lowest Channel

Maximum power spectral density

Ref 25 dBm

Offset 10.5 dB

Att 30 dB

RBW 1 MHz

VBW 3 MHz

SWT 100 ms

Marker 1 [T1]

-14.65 dBm

5.942307692 GHz

1 MHz

SPAN

10 dB

VIEW

20

-10

0

-10

-20

-30

-40

-50

-60

-70

Center 5.93 GHz

12 MHz/

Span 120 MHz

PSD

30 dB

100

10

20

30

40

50

60

70

10

20

30

40

50

60

70

ProjectNo.:2401T34651E-RF

Tester:Allen Bai

Date: 3.JUL.2024 23:56:26

Maximum power spectral density

Ref 25 dBm Att 30 dB

Offset 10.5 dB

Center 5.745 GHz 4 MHz/ Span 40 MHz

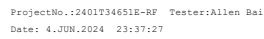
RBW 500 kHz VBW 2 MHz SMT 20 ms

Marker 1 [17.1] -3.69 dBm 5.74400000 GHz

[illegible]

The screenshot displays a Spectrum Analyzer interface. At the top, there are several status indicators: a red square icon, a frequency of 5.825 GHz, a power level of 25 dBm, a label '*Att 30 dB', a marker 'Marker 1 [72.1]', a frequency of 5.8254 GHz, and a power level of -3.80 dBm. The main plot area shows a blue trace of the signal spectrum. The x-axis is labeled 'Center 5.825 GHz' and 'Span 40 MHz'. The y-axis is labeled 'dB' and ranges from -70 to 20. The trace shows a signal with a peak around 5.8252 GHz, which is labeled 'OffAnt' and 'Att 30 dB'. The signal is also labeled 'SMB 1.00 MHz' and 'SMB 1.00 MHz'.

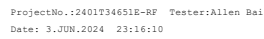
Version 1.0 (2023/10/07)

802.11ac-VHT20
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 23:40:00

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 23:42:44

802.11ac-VHT40
Lowest Channel

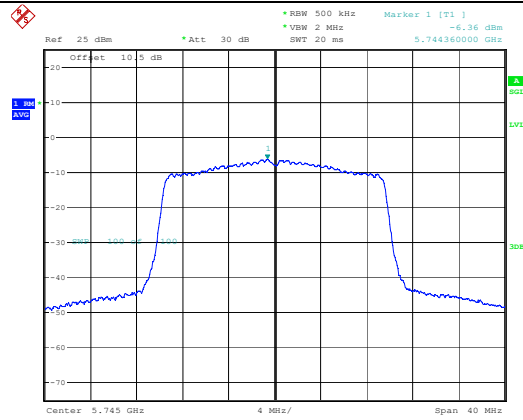


ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUN.2024 23:17:45

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 3.JUN.2024 23:31:35

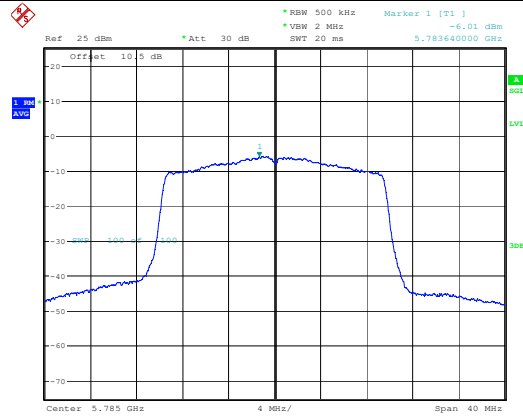
Maximum power spectral density

802.11ax-HE20
Lowest Channel



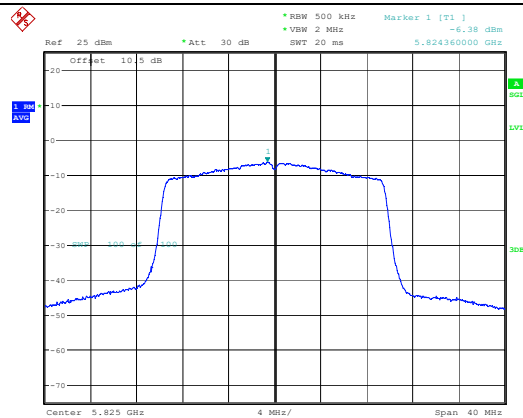
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:07:48

802.11ax-HE20
Middle Channel



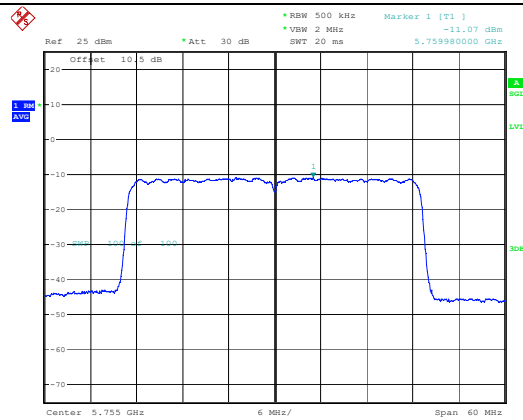
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:11:02

802.11ax-HE20
Highest Channel

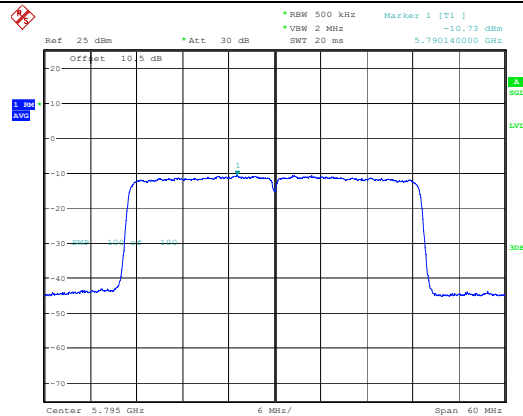


ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:13:21

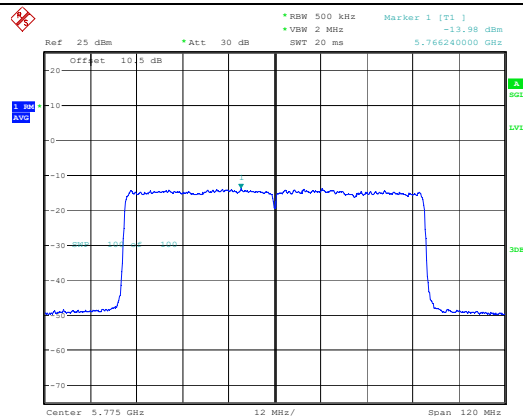
Maximum power spectral density

802.11ax-HE40
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:36:01

802.11ax-HE40
Highest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:38:06

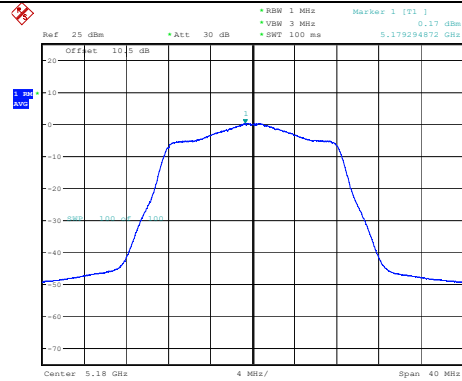
802.11ax-HE80
Middle Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUN.2024 00:53:50

5150-5250MHz:

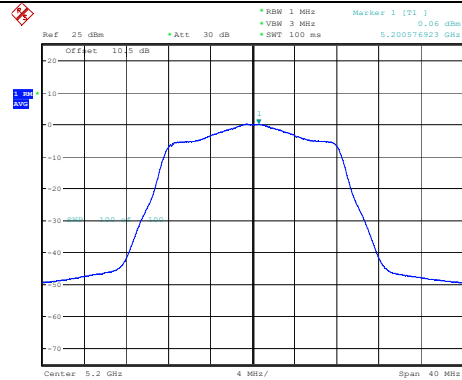
Maximum power spectral density

802.11a
Lowest Channel



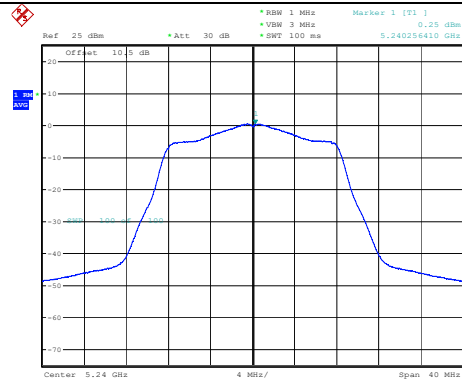
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:24:22

802.11a
Middle Channel



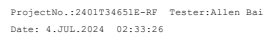
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:24:55

802.11a
Highest Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:25:29

802.11ac-VHT20
Lowest Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:34:25

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:34:57

[illegible][illegible]

Ref 25 dBm Att 30 dB RBW 1 MHz VBW 3 MHz SMT 100 ms Marker 1 [T1] -2.33 dBm 5.240769231 GHz

Offset 10.5 dB

1.000 AVG

1

5.24 GHz 4 MHz/ Span 40 MHz

Version 1.0 (2023/10/07)

Maximum power spectral density

Ref 25 dBm Att 30 dB RBW 1 MHz VBW 3 MHz SWT 20 ms Marker 1 [71.1] 1.29 dBm 5.25940000 GHz

Center 5.26 GHz Span 4.0 MHz

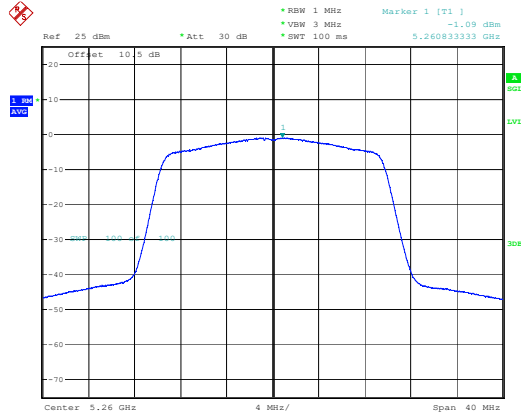
[illegible]

Ref: 25 dBm
 Att: 30 dB
 BW: 1 MHz
 VBW: 3 MHz
 SMT: 20 ms
 Marker 1 (71.1): 1.09 dBm
 5.319260000 GHz

Center: 5.32 GHz
 Span: 40 MHz

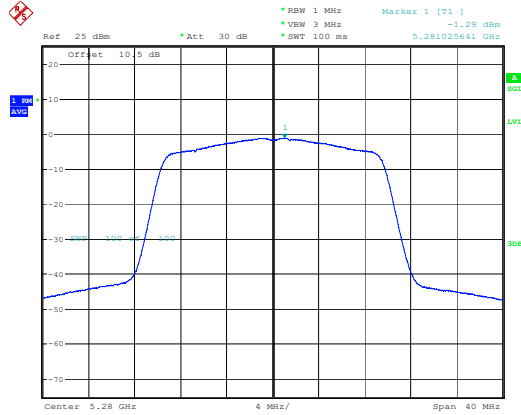
Maximum power spectral density

802.11ax-HE20
Lowest Channel



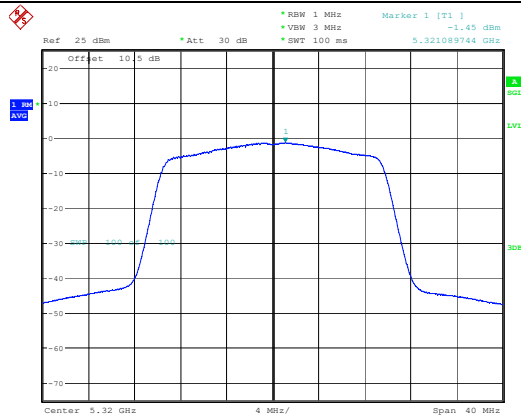
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:48:26

802.11ax-HE20
Middle Channel



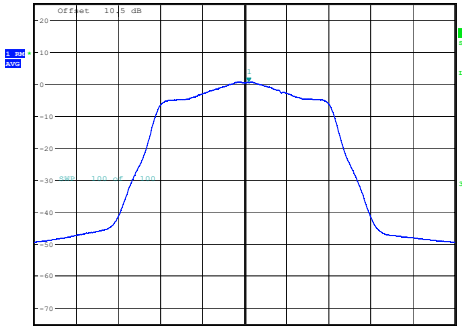
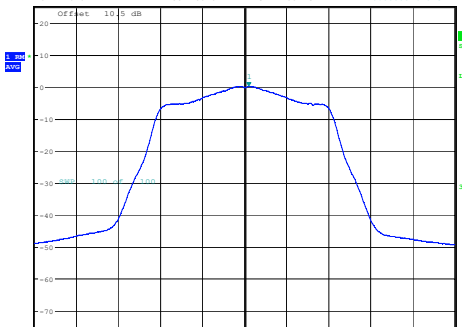
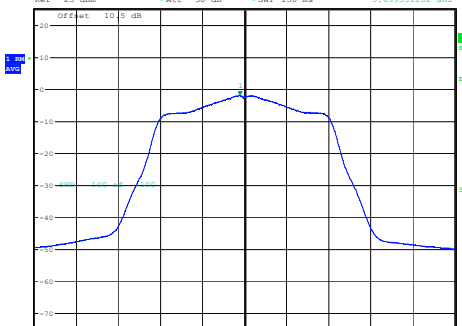
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:49:22

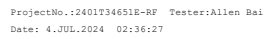
802.11ax-HE20
Highest Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:49:58

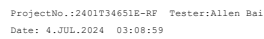
5470-5725MHz:

Maximum power spectral density	
802.11a Lowest Channel	Ref: 25 dBm Offset: 10.5 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SMT: 100 ms Marker 1 [T1] 0.04 dBm 5.500364615 GHz  Center: 5.5 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 4.JUL.2024 02:26:06
802.11a Middle Channel	Ref: 25 dBm Offset: 10.5 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SMT: 100 ms Marker 1 [T2] 0.16 dBm 5.580364615 GHz  Center: 5.58 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 4.JUL.2024 02:26:36
802.11a Highest Channel	Ref: 25 dBm Offset: 10.5 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SMT: 150 ms Marker 1 [T1] -2.03 dBm 5.659551262 GHz  Center: 5.7 GHz 4 MHz/ Span: 40 MHz ProjectNo.:2401T34651E-RF Tester:Allen Bai Date: 4.JUL.2024 02:32:24

802.11ac-VHT20
Lowest Channel

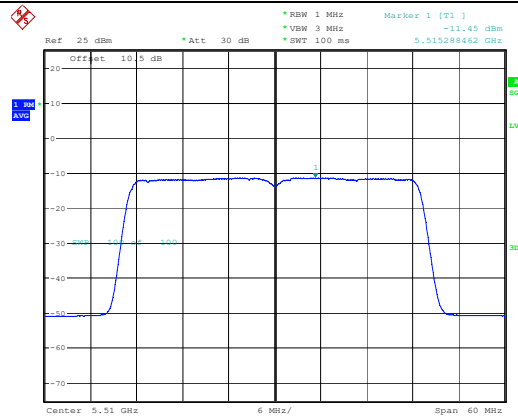
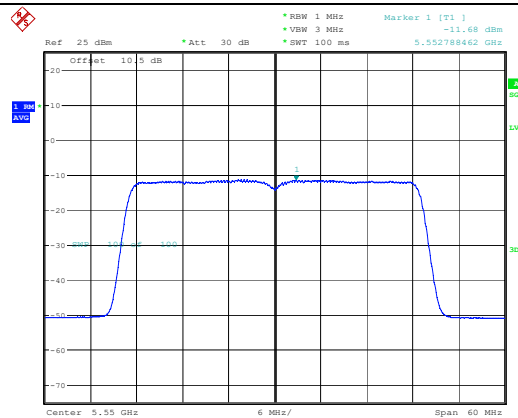
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:36:59

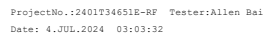
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:37:33

802.11ac-VHT80
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:50:48

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 02:51:32

802.11ax-HE20
Highest Channel802.11ax-HE40
Lowest Channel802.11ax-HE40
Middle Channel

802.11ax-HE40
Highest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 4.JUL.2024 03:13:05

Maximum power spectral density

Ref 25 dBm Att 30 dB

*RBW 500 kHz *Marker 1 [75.1] -3.23 dBm
 *VBW 2 MHz
 SMT 20 ms 5.74600000 GHz

Offset 10.5 dB

dBm -30 -40 -50 -60 -70

Center 5.745 GHz 4 MHz/ Span 40 MHz

Offset 25 dBm

Peak 1 171.1

-3.76 dBm

VSW 2 MHz

SMT 20 ns

Center 5.785 GHz

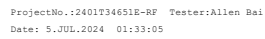
4 MHz/

Span 60 MHz

Marker 1 [71.1]
 Ref: 25 dBm *Att: 30 dB
 *RSM 500 kHz
 *VSW 2 MHz
 SMT 20 ms
 5.825480000 GHz

Offset 25 dBm

Center 5.825 GHz 4 MHz/ Span 40 MHz

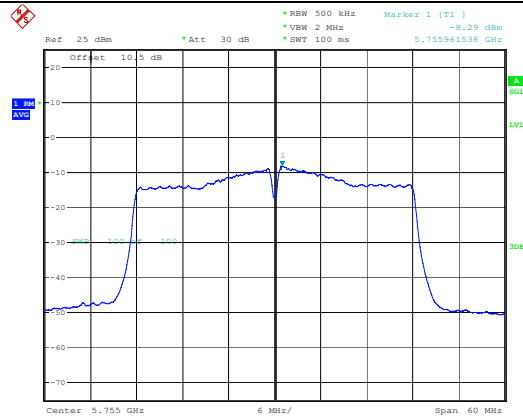
802.11ac-VHT20
Lowest Channel

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 5.JUL.2024 01:33:49

ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 5.JUL.2024 01:34:46

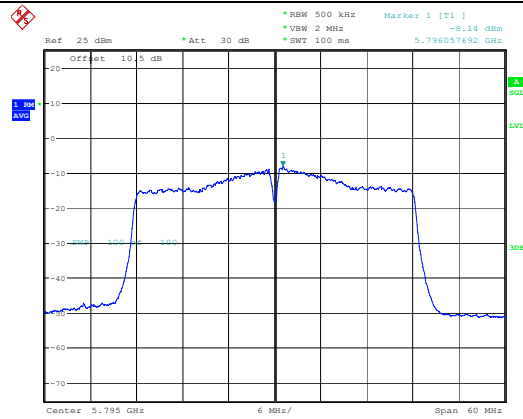
Maximum power spectral density

802.11ac-VHT40
Lowest Channel



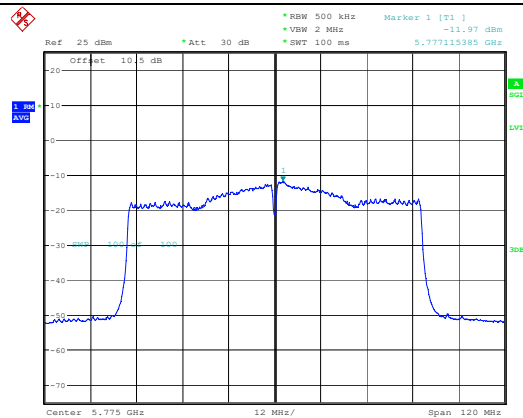
ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 5.JUL.2024 01:35:52

802.11ac-VHT40
Highest Channel

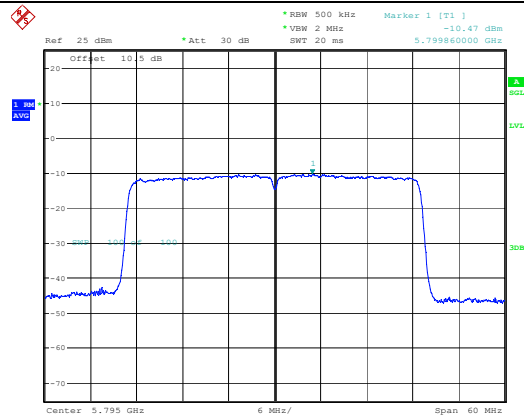
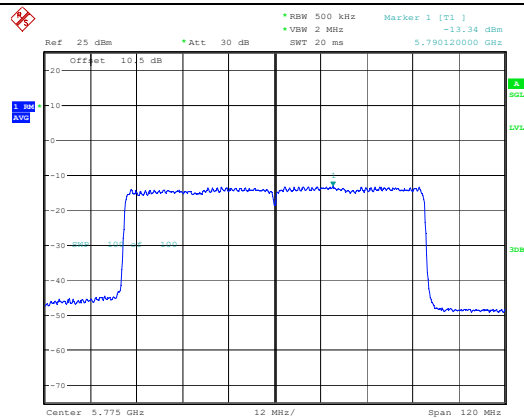


ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 5.JUL.2024 01:37:28

802.11ac-VHT80
Middle Channel



ProjectNo.:2401T34651E-RF Tester:Allen Bai
Date: 5.JUL.2024 01:41:01

[illegible]802.11ax-HE40
Lowest Channel802.11ax-HE40
Highest Channel802.11ax-HE80
Middle Channel

EUT PHOTOGRAPHS

Please refer to the attachment 2401T34651E-RF External photo and 2401T34651E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2401T34651E-RFB Test Setup photo.

******* END OF REPORT *******