RADIO TEST REPORT

Product	:	Pro 5 Wire-Free Spotlight Camera
Model Name	:	VMC4060
FCC ID	:	2APLE18300428
Test Regulation	:	FCC 47 CFR Part 15 Subpart E (Section 15.407)
Received Date	:	2023/12/18
Test Date	:	2024/1/16 ~ 2024/1/24
Issued Date	:	2024/2/1
Applicant	:	Arlo Technologies Inc 2200 Faraday Avenue, Suite 150, Carlsbad, CA 92008, USA
Issued By	:	Underwriters Laboratories Taiwan Co., Ltd. Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Testing Laboratory
3398

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REVISION HISTORY

Original Test Report No.: 4791117183-US-R1-V0

Revision	Test report No.	Date	Page revised	Contents
Original	4791117183-US-R1-V0	2024/2/1	-	Initial issue

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1. Attestation of Test Results

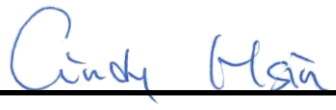
APPLICANT:	Arlo Technologies Inc 2200 Faraday Avenue, Suite 150, Carlsbad, CA 92008, USA
MANUFACTURER:	Fuyu Precision Component Company Limited Lot M1 and Lot F, Quang Chau Industrial Park, Van Trung Commune, Viet Yen District, Bac Giang Province,Viet Nam
EUT DESCRIPTION:	Pro 5 Wire-Free Spotlight Camera
BRAND:	Arlo
MODEL:	VMC4060
SAMPLE STAGE:	Engineering Verification Test sample
DATE of TESTED:	2024/1/16 ~ 2024/1/24

APPLICABLE STANDARDS	
STANDARD	**Test Results**
FCC 47 CFR PART 15 Subpart E (Section 15.407)	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:



Cindy Hsin Date : 2024/2/1
Project Handler

Approved and Authorized By:

Eric Lee Date : 2024/2/1
Senior Laboratory Engineer

2. Summary of Test Results

Summary of Test Results		
FCC Clause	**Test Items**	**Result**
15.407(e)	6dB Bandwidth	PASS
15.403(i)	26dB Bandwidth	PASS
2.1049	Occupied Bandwidth	See Note 1
15.407(a)(1/2/3)	Conducted Output Power	PASS
15.407(a)(1/2/3)	Power Spectral Density	PASS
15.407(g)	Frequency Stability	PASS
15.407(b) (1/2/3/4(i/ii)/9)	Radiated Emissions and Band Edge Measurement	PASS
15.407(b)(9)	AC Power Conducted Emission	PASS
15.203	Antenna Requirement	PASS
15.407(h)	Dynamic Frequency Selection & Transmit power control	See Note 2

Note:
1. The Occupied Bandwidth was reference only.
2. The “Dynamic Frequency Selection & Transmit power control measurement” was recorded in Report No.: 4791117183-US-R2-V0

3. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB 789033 D02 General UNII Test Procedure New Rules v02r01, KDB 414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013.

4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.

5. Measurement Uncertainty

For statement of conformity, simple acceptance (Section 3.1.4 of IEC Guide 115) was applied as decision rule for measurement in this test report.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor k=2.

Determining compliance based on the results of the compliance measurement, not considering measurement instrumentation uncertainty.

Measurement	Frequency	Uncertainty
Conducted disturbance at mains terminals ports	150kHz ~ 30MHz	3.1 dB
RF Conducted	9 kHz - 40GHz	2.3 dB
Radiated disturbance below 30MHz	9 kHz - 30 MHz	3.2 dB
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	6.1 dB
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	5.1 dB

6. Equipment under Test

6.1. Description of EUT

Product	Pro 5 Wire-Free Spotlight Camera	
Brand Name	Arlo	
Model Name	VMC4060	
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz	
Modulation	64QAM, 16QAM, QPSK, BPSK	
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to MCS7	
Number of Channel	5180 ~ 5240 MHz	4 for 802.11a, 802.11n (HT20)
	5260 ~ 5320 MHz	4 for 802.11a, 802.11n (HT20)
	5500 ~ 5720 MHz	12 for 802.11a, 802.11n (HT20)
	5745 ~ 5825 MHz	5 for 802.11a, 802.11n (HT20)
Maximum Output Power	5180 ~ 5240 MHz: 20.22 dBm 5260 ~ 5320 MHz: 20.21 dBm 5500 ~ 5720 MHz: 20.34 dBm 5745 ~ 5825 MHz: 20.35 dBm	
Normal Voltage	5Vdc from adapter 3.85Vdc from battery 3.6Vdc from battery	
Sample ID	Conducted Test: 6854048 Radiated Test: 6854048	

Note:

1. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitters and one receivers.

Modulation Mode	Tx,Rx Function
802.11a	1TX,1RX
802.11n (HT20)	1TX,1RX

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
USB Cable	Nienyi	310-50012-04	Length:0.9m
Battery	Arlo	A-4a	4800mAh, 3.85V, 18.48Wh
Battery	Arlo	A-14	13400mAh, 3.6V, 48.24Wh

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual, the laboratory shall not be held responsible.

6.2. Channel List

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

FOR 5500 ~ 5720MHz

12 channels are provided for 802.11a, 802.11n (HT20):

Channel	**Frequency**	**Channel**	**Frequency**
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz	-	-

6.3. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	20~22℃/ 62~64%RH	5Vdc	2024/01/22~ 2024/01/23	WaterNil Guan
Radiated Spurious Emission	966-2	22~26℃/ 62~68%RH	5Vdc	2024/01/16~ 2024/01/19	WaterNil Guan
AC power Line Conducted Emission	SR1	22℃/ 62%RH	120Vac/ 60Hz	2024/01/24	WaterNil Guan

FCC Test Firm Registration Number: 498077

Sample Calculation:

Antenna Port Conducted Measurement:

- Where relevant, the follow sample calculation is provided:
  Result Value (dBm) = Reading Value (dBm) +Attenuator Factor (dB) + Cable Loss (dB).
  Example: Result Value (10dBm) = Reading Value (-2dBm) +Attenuator Factor (10dB) + Cable Loss(2dB).
  *Test plot only shown the “Result Value”.

Radiated Spurious Emission:

- Where relevant, the follow sample calculation is provided:
  Result Value (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
  Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB).
  Example: Result Value (34.5dBuV/m) = Reading Value (40.1dBuV) + Antenna Factor (18.7dB/m) + Cable Loss (4.2dB) - Preamp Factor (28.5dB).

AC power Line Conducted Emission:

- Where relevant, the follow sample calculation is provided:
  Result Value (dBuV) = Reading Value (dBuV) + Correction Factor (dB).
  Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).
  Example: Result Value (53.7dBuV) = Reading Value (35.1dBuV) + Insertion loss(18.1dB) + Cable loss(0.5dB).

6.4. Description of Available Antennas

Ant. No.	Transmitter Circuit	Brand Name	Model Name	Ant. Type	Maximum Gain (dBi)
1	Chain (0)	N/A	N/A	Metal	3.4

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual, the laboratory shall not be held responsible.

6.5. Test Mode Applicability and Tested Channel Detail

- The EUT has two adapter types: 2AEA010 and AD2158 , above two types was pre-tested, the worst case was found in the AD2158. Therefore only the test data of the AD2158 was recorded in this report.
- The EUT has two batteries: A-4a and A-14 , above two types was pre-tested, the worst case was found in the A-4a. Therefore only the test data of the A-4a was recorded in this report.
- For Antenna Port Conducted Measurement, this item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.
- For below 1 GHz radiated emission and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Test Item	Mode	Modulation Technology	Modulation Type	Available Channel	Test Channel	Data Rate
Radiated Bandedge	802.11a	5180-5240	OFDM	36 to 48	36, 44, 48	6Mbps
	802.11n20		OFDM	36 to 48	36, 44, 48	MCS 0
	802.11a	5260-5320	OFDM	52 to 64	52, 60, 64	6Mbps
	802.11n20		OFDM	52 to 64	52, 60, 64	MCS 0
	802.11a	5500-5720	OFDM	100 to 144	100, 116, 140	6Mbps
	802.11n20		OFDM	100 to 144	100, 116, 140	MCS 0
	802.11a	5745-5825	OFDM	149 to 165	149, 157, 165	6Mbps
	802.11n20		OFDM	149 to 165	149, 157, 165	MCS 0
Radiated Emissions (Above 1GHz)	802.11a	5180-5240	OFDM	36 to 48	36, 44, 48	6Mbps
	802.11a	5260-5320	OFDM	52 to 64	52, 60, 64	6Mbps
	802.11a	5500-5720	OFDM	100 to 144	100, 116, 140, 144	6Mbps
	802.11a	5745-5825	OFDM	149 to 165	149, 157, 165	6Mbps
Radiated Emissions (Below 1GHz)	802.11a	5180-5240	OFDM	36 to 48	44	6Mbps
AC Power Line Conducted Emission	802.11a	5745-5825	OFDM	149 to 165	149	6Mbps
Antenna Port Conducted Measurement	802.11a	5180-5240	OFDM	36 to 48	36, 44, 48	6Mbps
	802.11n20		OFDM	36 to 48	36, 44, 48	MCS 0
	802.11a	5260-5320	OFDM	52 to 64	52, 60, 64	6Mbps
	802.11n20		OFDM	52 to 64	52, 60, 64	MCS 0
	802.11a	5500-5720	OFDM	100 to 144	100, 116, 140, 144	6Mbps
	802.11n20		OFDM	100 to 144	100, 116, 140, 144	MCS 0
	802.11a	5745-5825	OFDM	149 to 165	149, 157, 165	6Mbps
	802.11n20		OFDM	149 to 165	149, 157, 165	MCS 0

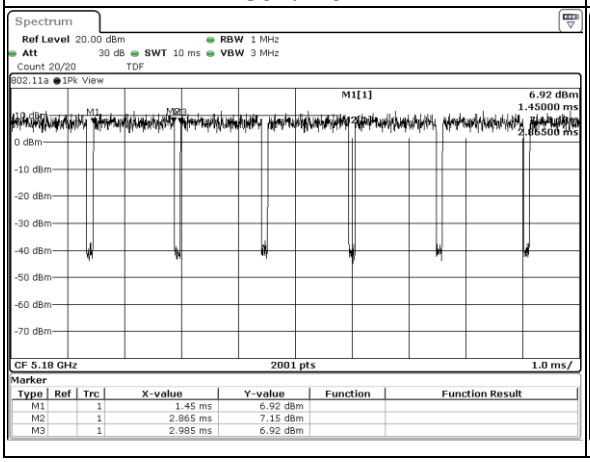
Simultaneously transmission condition:

Condition	Technology	
1	Sub-G	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

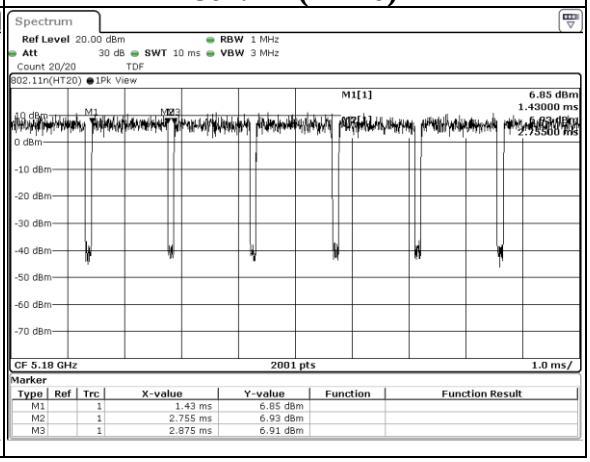
6.6. Duty cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle	Duty Factor (dB)	VBW Set (above 1GHz)
802.11a	1.415	1.535	0.9218	0.35	1kHz
802.11n(HT20)	1.325	1.445	0.9170	0.38	1kHz

802.11a



802.11n(HT20)



7. Test Equipment

Test Equipment List					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Expired date**
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070827	2023/4/7	2024/4/6
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	2023/11/22	2024/11/21
Loop Antenna	ETS lindgren	6502	00213440	2023/12/13	2024/12/12
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT-N0538	2023/2/13	2024/2/12
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	2023/12/8	2024/12/7
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	2023/12/27	2024/12/26
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	2023/6/7	2024/6/6
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	2023/2/17	2024/2/16
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	2023/5/9	2024/5/8
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-4 & 170425-2	2023/11/29	2024/11/28
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-1 & 170214-2	2023/11/29	2024/11/28

Test Equipment List					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Expired date**
Antenna Port Conducted Measurement					
Spectrum Analyzer	Keysight	N9010A	MY56070834	2023/10/11	2024/10/10
Attenuator	EMCI	EMC-40ATK2W10	17002	2023/11/15	2024/11/14
USB Power Sensor	Anritsu	MA24408A	12031	2023/7/12	2024/7/11
Temperature &Humidity Test Chamber	GIANT FORCE	GTH-150-40-CP-AR	MAA1701-010	2023/3/8	2024/3/7
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	2023/10/23	2024/10/22
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	2023/5/24	2024/5/23
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	2023/9/7	2024/9/6
Cables	TITAN	CFD200	T0732ACFD200 20A300-2	2023/5/23	2024/5/22

UL Software		
Description	**Name**	**Version**
Radiated measurement	e3	6.191211 (V6)
Conducted measurement	RF-Conducted-FCC 15407	ver 1.1
AC power Line Conducted Emission	EZ_EMC	UL-3A1.2

8. Description of Test Setup

Support Equipment

ID	Equipment	Brand Name	Model Name	S/N	Remark
A	AC Adapter	PIE	AD2158	332-50114-01	Provided by Client
B	Laptop	DELL	Latitude E5470	CXSKWF2	Provided by Lab

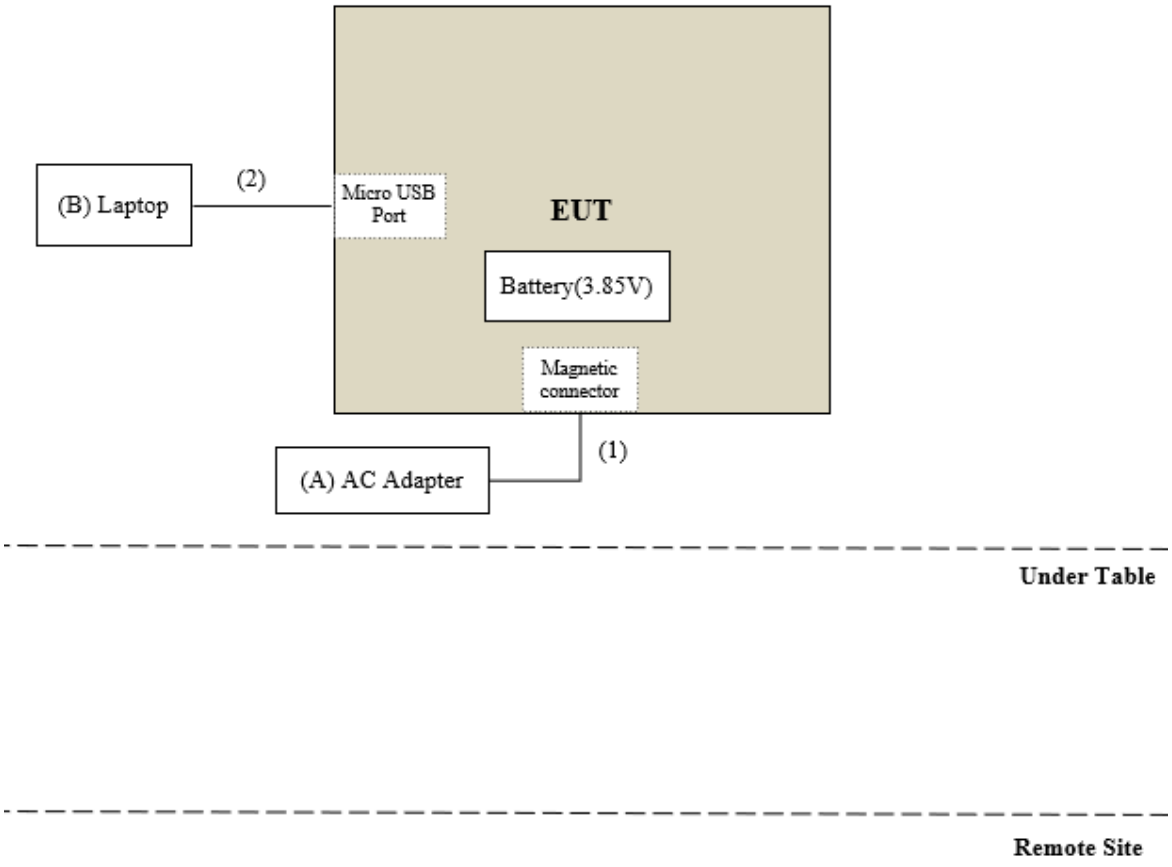
I/O Cables

ID	Equipment	Brand Name	Model Name	Length (m)	Remark
1	USB Cable	Nienyi	310-50012-04	0.9	Provided by Client
2	Micro USB Cable	WONDER	WA-W07UA	0.8	Provided by Lab

Test Setup

Controlled using a bespoke application (Typing RF command by terminal tool(Putty version 0.62)) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.

Setup Diagram for Test



9. Test Results

9.1. 6dB Bandwidth

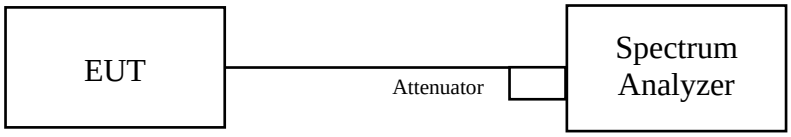
Requirements

The minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission
f. The plot of the test result only shows the worst case of channels as a representative.

Test Setup

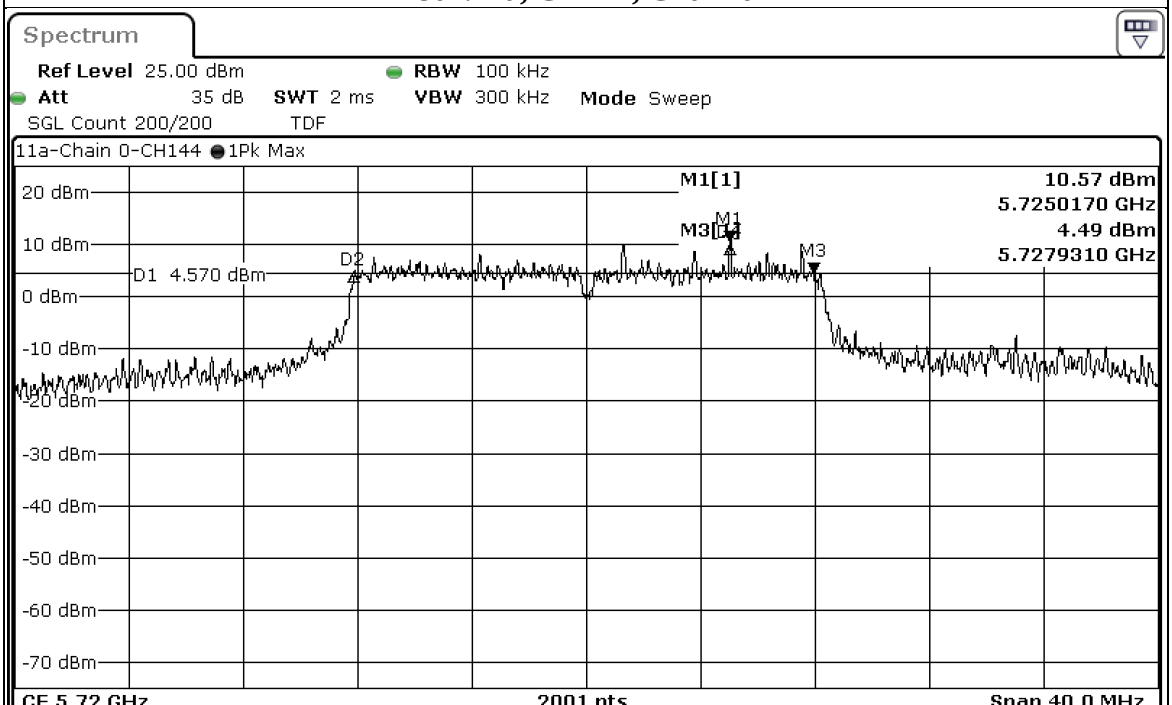


The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

Mode	CH	Freq (MHz)	6dB BW (MHz) Chain 0	Limit (MHz)	Result
802.11a	144 (U-NII-2C)	5720	13.124	0.5	PASS
	144 (U-NII-2C+U-NII-3)	5720	16.055	0.5	PASS
	144 (U-NII-3)	5720	2.931	0.5	PASS
	149	5745	16.357	0.5	PASS
	157	5785	16.291	0.5	PASS
	165	5825	16.313	0.5	PASS

802.11a, CH144, Chain 0



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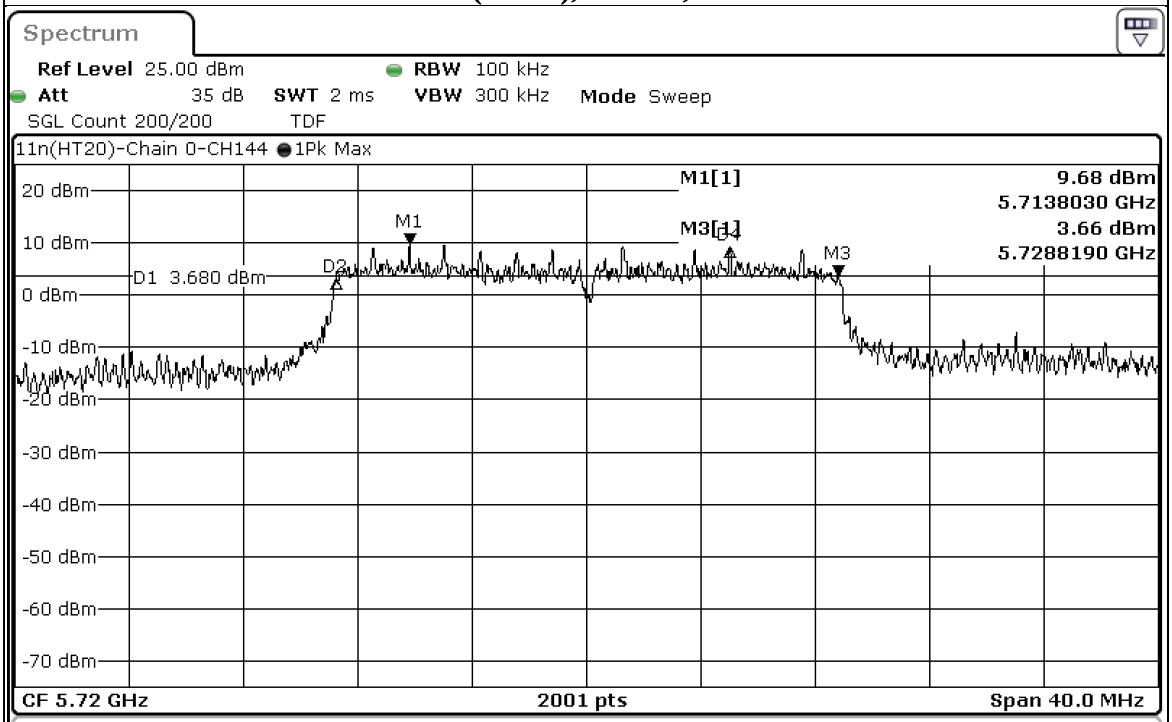
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.725017 GHz	10.57 dBm		
D2	M3	1	-16.055 MHz	0.26 dB		
M3		1	5.727931 GHz	4.49 dBm		
D4	M3	1	-2.931 MHz	5.65 dB		

Mode	CH	Freq (MHz)	6dB BW (MHz) Chain 0	Limit (MHz)	Result
802.11n(HT20)	144 (U-NII-2C)	5720	13.769	0.5	PASS
	144 (U-NII-2C+U-NII-3)	5720	17.588	0.5	PASS
	144 (U-NII-3)	5720	3.819	0.5	PASS
	149	5745	16.924	0.5	PASS
	157	5785	17.289	0.5	PASS
	165	5825	17.317	0.5	PASS

802.11n(HT20), CH144, Chain 0

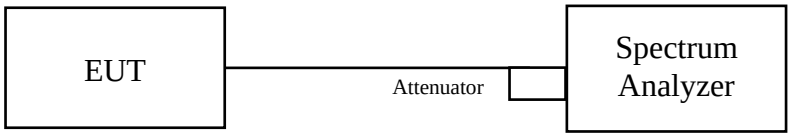


9.2. 26dB Bandwidth

Test procedure

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 peak 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%.
f. The plot of the test result only shows the worst case of channels as a representative.

Test Setup

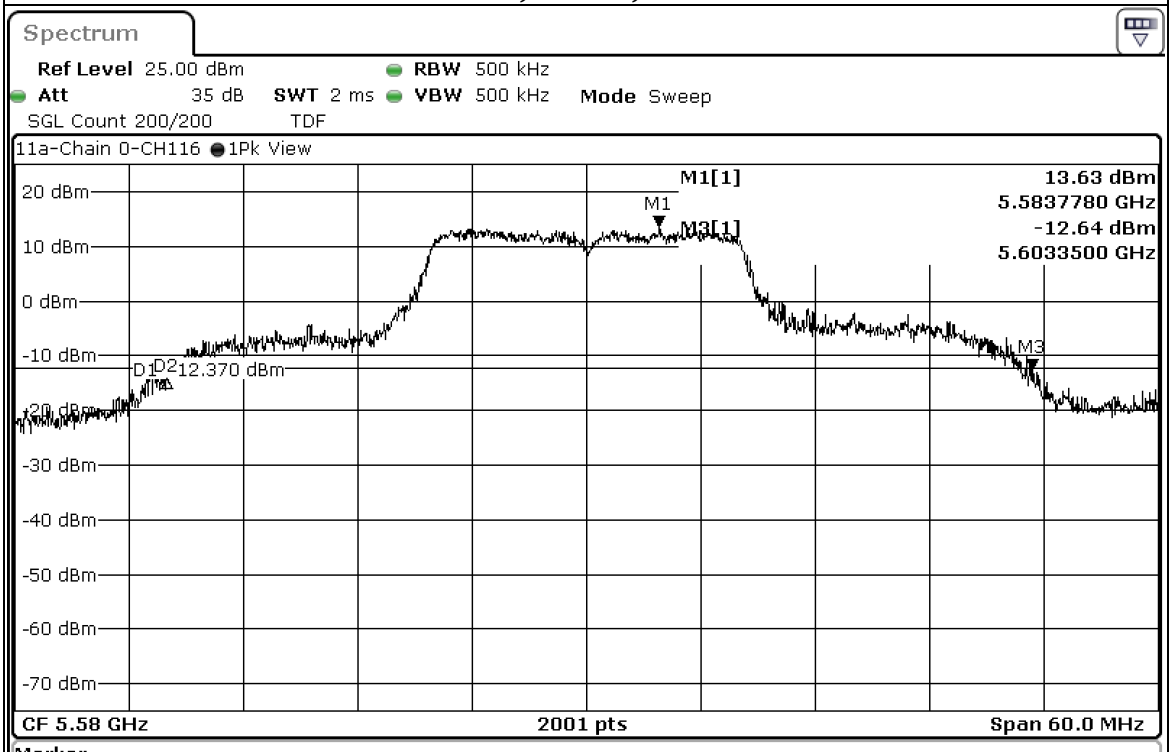


The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

Mode	CH	Freq (MHz)	26dB BW (MHz) Chain 0	Limit (MHz)	Result
802.11a	36	5180	21.299	N/A	PASS
	44	5220	44.678	N/A	PASS
	48	5240	44.796	N/A	PASS
	52	5260	44.545	N/A	PASS
	60	5300	45.092	N/A	PASS
	64	5320	31.726	N/A	PASS
	100	5500	21.037	N/A	PASS
	116	5580	45.349	N/A	PASS
	140	5700	20.965	N/A	PASS
	144 (U-NII-2C)	5720	27	N/A	PASS
	144 (U-NII-2C+U-NII-3)	5720	45.187	N/A	PASS
	144 (U-NII-3)	5720	18.187	N/A	PASS

802.11a, CH116, Chain 0



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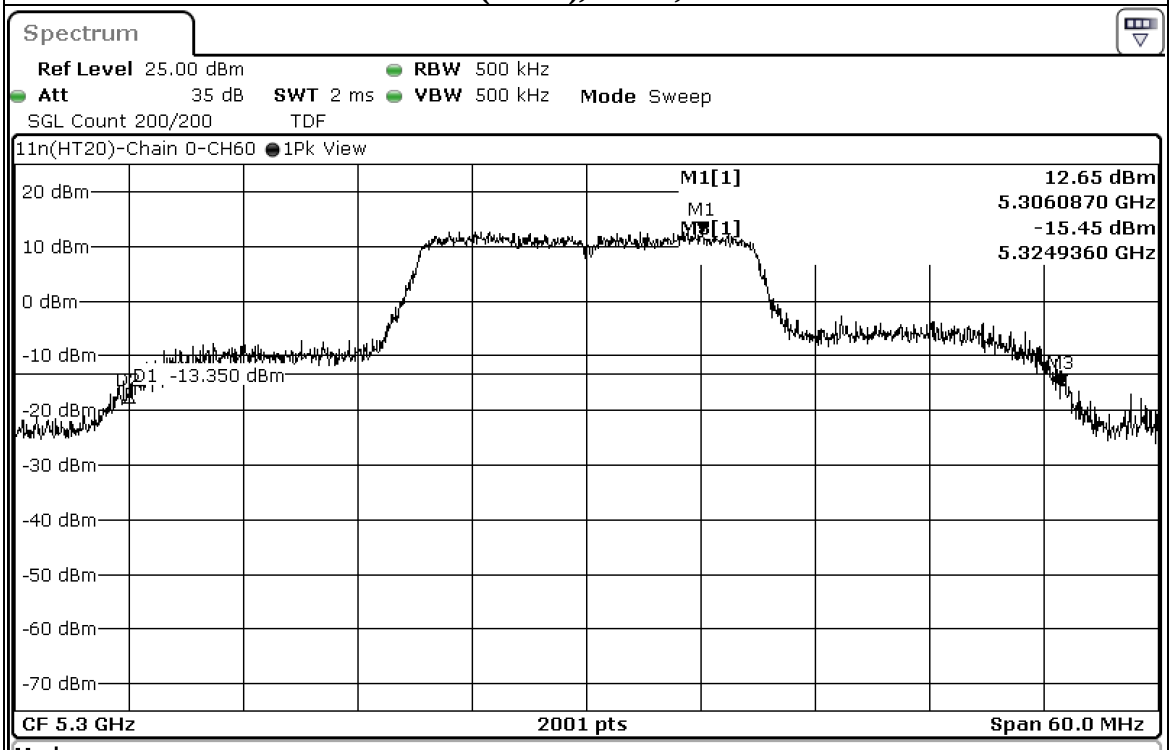
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.583778 GHz	13.63 dBm		
D2	M3	1	-45.349 MHz	-1.44 dB		
M3		1	5.60335 GHz	-12.64 dBm		

Mode	CH	Freq (MHz)	26dB BW (MHz)	Limit (MHz)	Result
			Chain 0		
802.11n(HT20)	36	5180	21.862	N/A	PASS
	44	5220	47.069	N/A	PASS
	48	5240	47.482	N/A	PASS
	52	5260	48.353	N/A	PASS
	60	5300	48.942	N/A	PASS
	64	5320	33.528	N/A	PASS
	100	5500	21.453	N/A	PASS
	116	5580	48.541	N/A	PASS
	140	5700	21.342	N/A	PASS
	144 (U-NII-2C)	5720	28.732	N/A	PASS
	144 (U-NII-2C+U-NII-3)	5720	48.624	N/A	PASS
	144 (U-NII-3)	5720	19.892	N/A	PASS

802.11n(HT20), CH60, Chain 0



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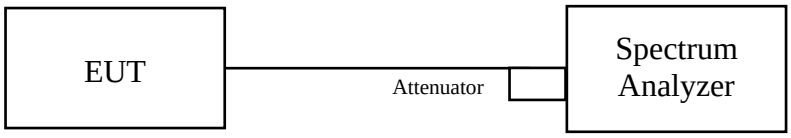
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.306087 GHz	12.65 dBm		
D2	M3	1	-48.942 MHz	-1.33 dB		
M3		1	5.324936 GHz	-15.45 dBm		

9.3. Occupied Bandwidth

Test procedure

a. Set center frequency to the nominal EUT channel center frequency.
b. Set span = 1.5 times to 5.0 times the OBW.
c. Set RBW = 1% to 5% of the OBW
d. Set VBW ≥ 3 x RBW
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).
g. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. 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% occupied bandwidth is the difference between these two frequencies.
h. The plot of the test result only shows the worst case of channels as a representative.

Test Setup

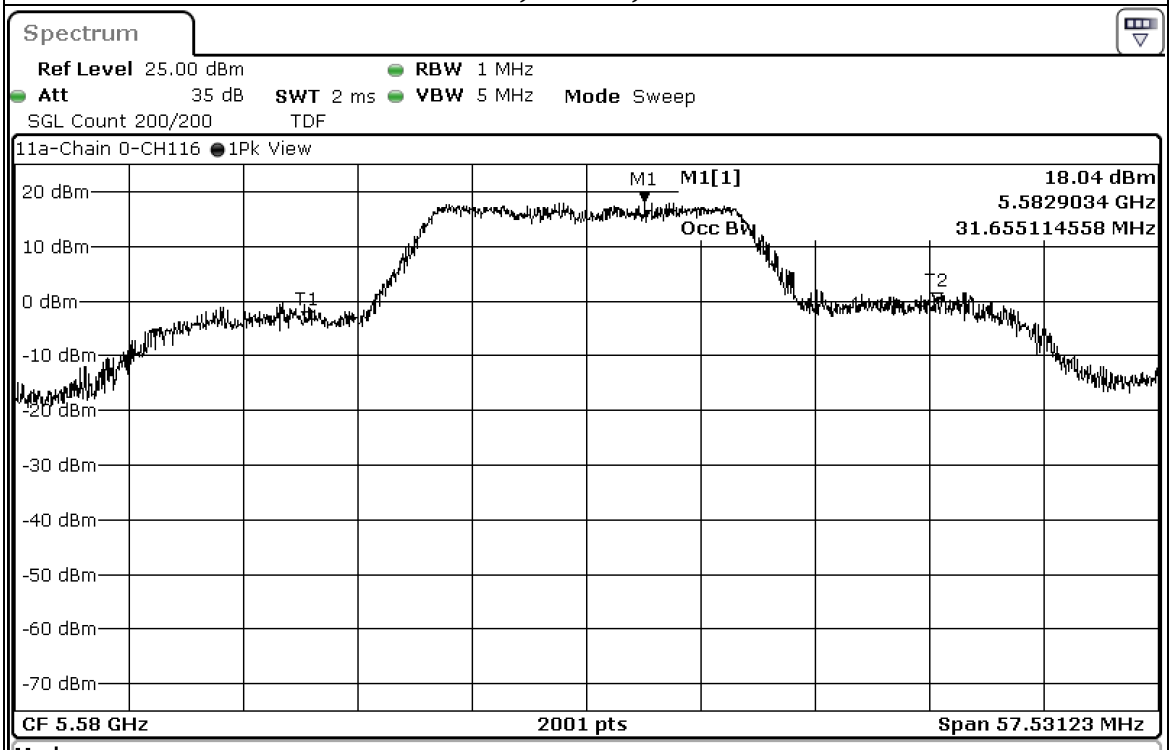


The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

Mode	CH	Freq (MHz)	OBW (MHz) Chain 0	Limit (MHz)	Result
802.11a	36	5180	17.983	N/A	PASS
	44	5220	26.09	N/A	PASS
	48	5240	26.369	N/A	PASS
	52	5260	26.43	N/A	PASS
	60	5300	28.29	N/A	PASS
	64	5320	18.411	N/A	PASS
	100	5500	17.825	N/A	PASS
	116	5580	31.655	N/A	PASS
	140	5700	17.949	N/A	PASS
	144 (U-NII-2C)	5720	18.352	N/A	PASS
	144 (U-NII-2C+U-NII-3)	5720	30.39	N/A	PASS
	144 (U-NII-3)	5720	12.039	N/A	PASS
	149	5745	28.141	N/A	PASS
	157	5785	26.822	N/A	PASS
	165	5825	24.227	N/A	PASS

802.11a, CH116, Chain 0

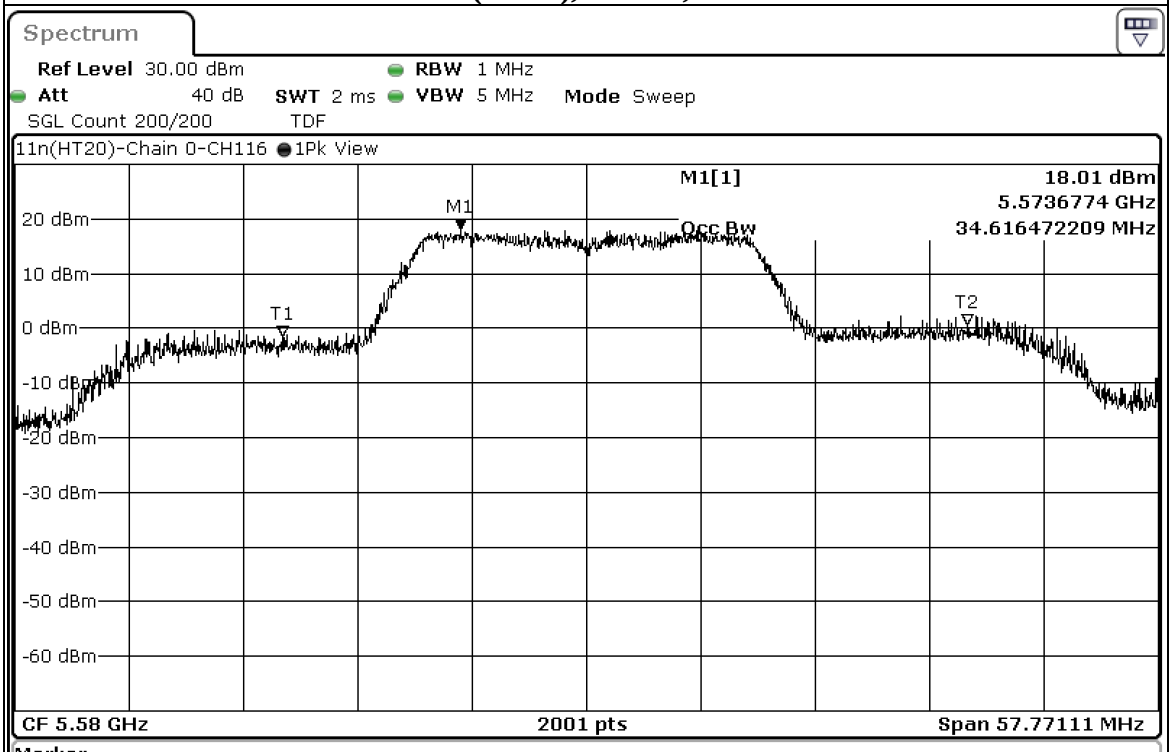


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5829034 GHz	18.04 dBm		
T1		1	5.5659694 GHz	-3.90 dBm	Occ Bw	31.655114558 MHz
T2		1	5.5976245 GHz	-0.30 dBm		

Mode	CH	Freq (MHz)	OBW (MHz) Chain 0	Limit (MHz)	Result
802.11n(HT20)	36	5180	18.882	N/A	PASS
	44	5220	27.539	N/A	PASS
	48	5240	28.101	N/A	PASS
	52	5260	28.9	N/A	PASS
	60	5300	30.893	N/A	PASS
	64	5320	19.164	N/A	PASS
	100	5500	18.737	N/A	PASS
	116	5580	34.616	N/A	PASS
	140	5700	18.702	N/A	PASS
	144 (U-NII-2C)	5720	19.874	N/A	PASS
	144 (U-NII-2C+U-NII-3)	5720	33.754	N/A	PASS
	144 (U-NII-3)	5720	13.88	N/A	PASS
	149	5745	31.911	N/A	PASS
	157	5785	29.891	N/A	PASS
	165	5825	25.811	N/A	PASS

802.11n(HT20), CH116, Chain 0



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.5736774 GHz	18.01 dBm		
T1		1	5.5646406 GHz	-1.46 dBm	Occ Bw	34.616472209 MHz
T2		1	5.599257 GHz	0.72 dBm		

9.4. Conducted output power

Requirements

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
		Fixed point-to-point Access Point	1 Watt (30 dBm) If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23)
		Indoor Access Point	1 Watt (30 dBm) If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	√	Client device	250mW (24 dBm) If G_{TX} > 6 dBi, then P_{Out} = 23.98 – (G_{TX} – 6)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B* If G_{TX} > 6 dBi, then P_{Out} = 23.98 – (G_{TX} – 6)
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B* If G_{TX} > 6 dBi, then P_{Out} = 23.98 – (G_{TX} – 6)
U-NII-3	√		For Point-to-multipoint systems (P2M): 1 Watt (30 dBm). If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6) For Point-to-point systems (P2P): 1 Watt (30 dBm)

Note:

1. P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi, B is the 26 dB emission bandwidth in megahertz
2. Straddle Channel Power in each band = Straddle Channel Total Power * (Each band EBW / Straddle Channel Total EBW).
   Example: if CH144 EBW (Total) = 20MHz, within UNII-2C Band is 15MHz, within UNII-3 Band is 5MHz, Total Power = 20dBm.
   Calculation for UNII-2C Band Power= 20dBm * (5/20) = 13.97 dBm
   Calculation for UNII-3 Band Power= 20dBm * (15/20) = 18.75 dBm.

Test Procedure

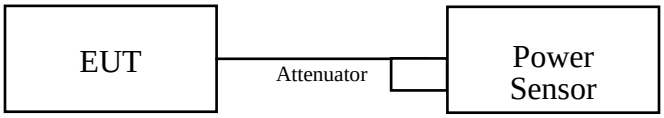
For Average Power Measurement

Test method PM

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

Test Setup

For Average Power Measurement



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

Test Data

802.11a

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	53.58	17.29	23.98	PASS
44	5220	105.196	20.22	23.98	PASS
48	5240	104.713	20.20	23.98	PASS
52	5260	104.954	20.21	23.98	PASS
60	5300	103.039	20.13	23.98	PASS
64	5320	64.863	18.12	23.98	PASS
100	5500	40.272	16.05	23.98	PASS
116	5580	108.143	20.34	23.98	PASS
140	5700	46.132	16.64	23.98	PASS
144*	5720	105.439	20.23	23.98	PASS
144 (U-NII-2c Band)	5720	62.951	17.99	23.98	PASS
144 (U-NII-3 Band)	5720	42.462	16.28	30	PASS
149	5745	108.393	20.35	30	PASS
157	5785	105.682	20.24	30	PASS
165	5825	105.439	20.23	30	PASS

Note:
1. Record the total power CH144* value for reference only.

802.11n (HT20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	51.642	17.13	23.98	PASS
44	5220	104.954	20.21	23.98	PASS
48	5240	104.472	20.19	23.98	PASS
52	5260B	104.232	20.18	23.98	PASS
60	5300	103.992	20.17	23.98	PASS
64	5320	69.343	18.41	23.98	PASS
100	5500	39.902	16.01	23.98	PASS
116	5580	108.143	20.34	23.98	PASS
140	5700	34.277	15.35	23.98	PASS
144*	5720	105.196	20.22	23.98	PASS
144 (U-NII-2c Band)	5720	62.23	17.94	23.98	PASS
144 (U-NII-3 Band)	5720	43.053	16.34	30	PASS
149	5745	105.682	20.24	30	PASS
157	5785	104.954	20.21	30	PASS
165	5825	104.472	20.19	30	PASS

Note:
1. Record the total power CH144* value for reference only.

9.5. Power Spectral Density

Requirements

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz If G_{TX} > 6 dBi, then PSD = 17 – (G_{TX} – 6)
		Fixed point-to-point Access Point	17dBm/ MHz If G_{TX} > 23 dBi, then PSD = 17 – (G_{TX} – 23)
		Indoor Access Point	17dBm/ MHz If G_{TX} > 6 dBi, then PSD = 17 – (G_{TX} – 6)
	√	Client device	11dBm/ MHz If G_{TX} > 6 dBi, then PSD = 11 – (G_{TX} – 6)
U-NII-2A	√		11dBm/ MHz If G_{TX} > 6 dBi, then PSD = 11 – (G_{TX} – 6)
U-NII-2C	√		11dBm/ MHz If G_{TX} > 6 dBi, then PSD = 11 – (G_{TX} – 6)
U-NII-3	√		For Point-to-multipoint systems (P2M): 30dBm/ 500kHz. If G_{TX} > 6 dBi, then PSD = 30 – (G_{TX} – 6) For Point-to-point systems (P2P): 30dBm/ 500kHz

Note:
1. PSD = power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
2. G_{TX} = the maximum transmitting antenna directional gain in dBi.
3. Refer to section 6.6 for duty cycle spectrum plot. (If duty cycle<98%)

Test procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method as below:

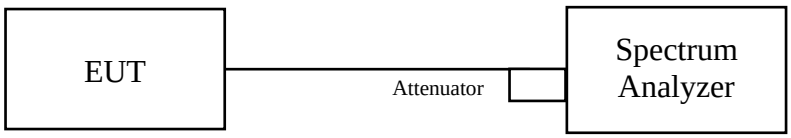
a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
c. Sweep time = auto, trigger set to "free run".
d. Trace average at least 100 traces in power averaging mode.
e. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))
f. The plot of the test result only shows the worst case of channels as a representative.

For U-NII-3 band:

Using method as below:

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10 log (500 kHz/300kHz)
e. Sweep time = auto, trigger set to "free run".
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))
h. The plot of the test result only shows the worst case of channels as a representative.

Test Setup



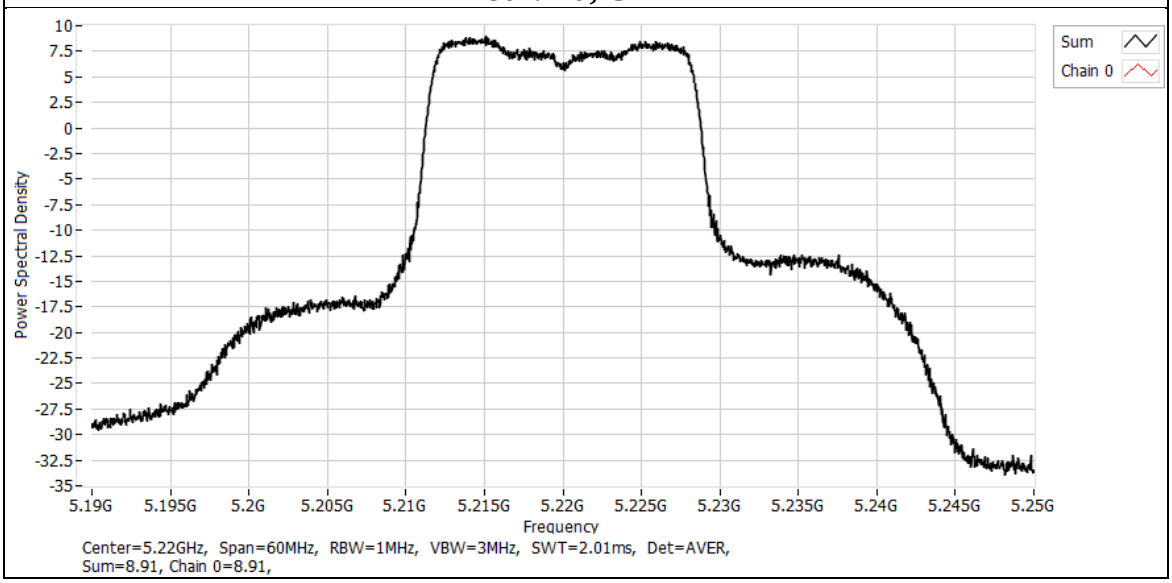
The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

Mode (U-NII-1)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	36	5180	3.4	5.8	11	PASS
	44	5220	3.4	8.91	11	PASS
	48	5240	3.4	8.44	11	PASS

Mode (U-NII-1)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11a	36	5180	5.799
	44	5220	8.905
	48	5240	8.436

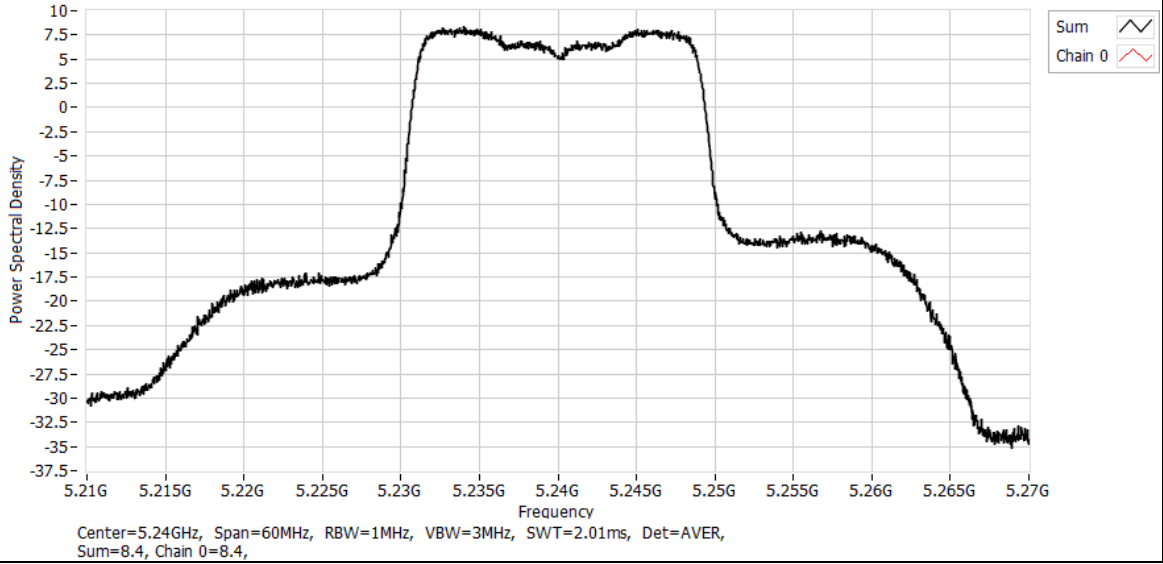
802.11a, CH44



Mode (U-NII-1)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11n(HT20)	36	5180	3.4	5.87	11	PASS
	44	5220	3.4	8.29	11	PASS
	48	5240	3.4	8.4	11	PASS

Mode (U-NII-1)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11n(HT20)	36	5180	5.869
	44	5220	8.289
	48	5240	8.403

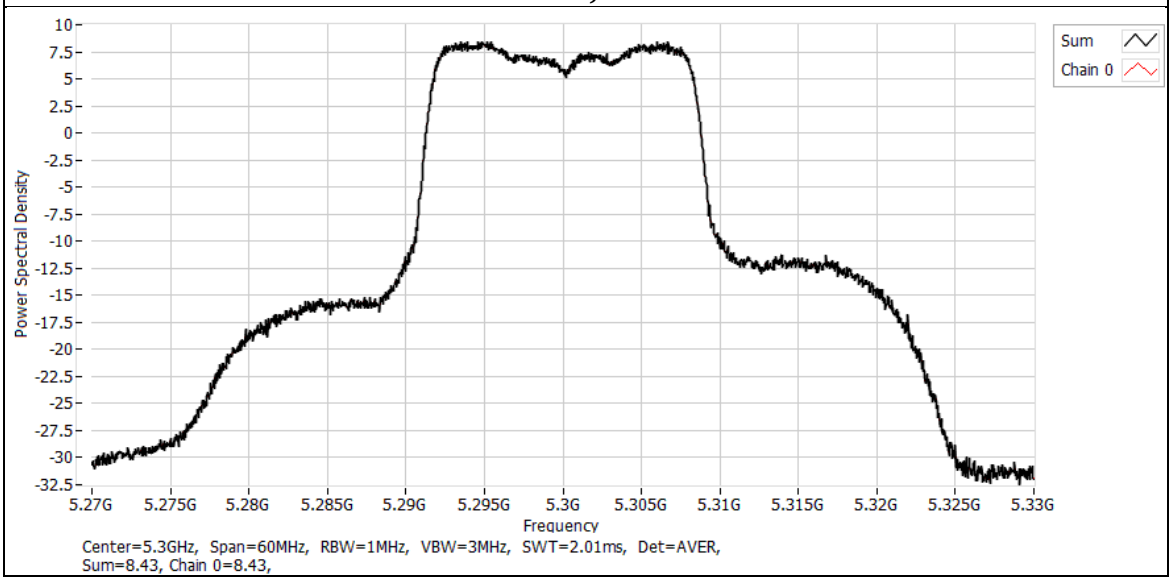
802.11n(HT20), CH48



Mode (U-NII-2A)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	52	5260	3.4	8.26	11	PASS
	60	5300	3.4	8.43	11	PASS
	64	5320	3.4	6.47	11	PASS

Mode (U-NII-2A)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11a	52	5260	8.264
	60	5300	8.428
	64	5320	6.467

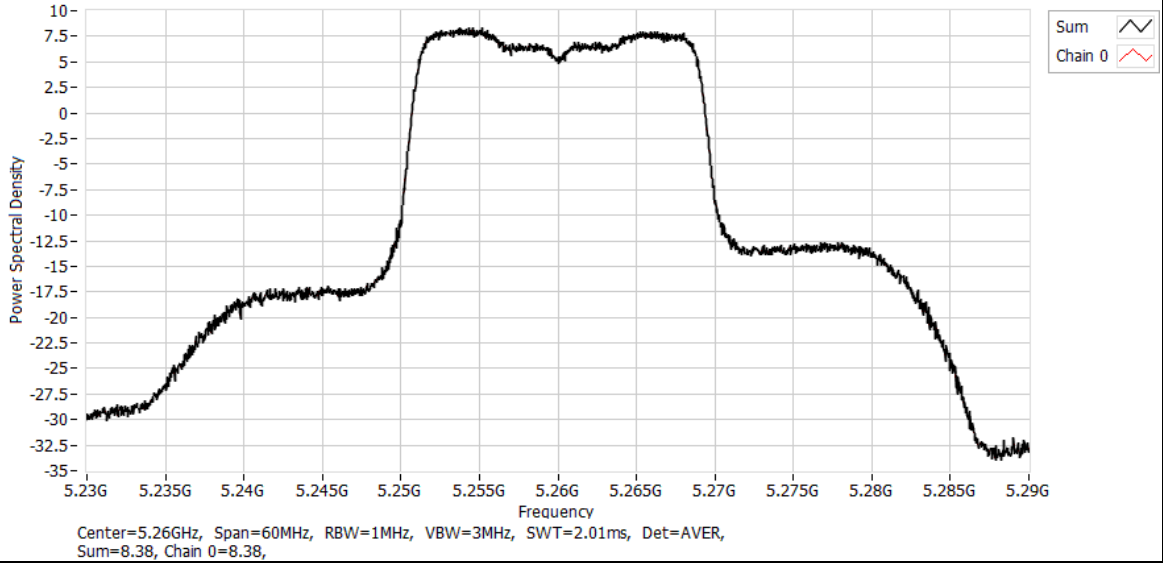
802.11a, CH60



Mode (U-NII-2A)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11n(HT20)	52	5260	3.4	8.38	11	PASS
	60	5300	3.4	8.38	11	PASS
	64	5320	3.4	6.53	11	PASS

Mode (U-NII-2A)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11n(HT20)	52	5260	8.382
	60	5300	8.385
	64	5320	6.525

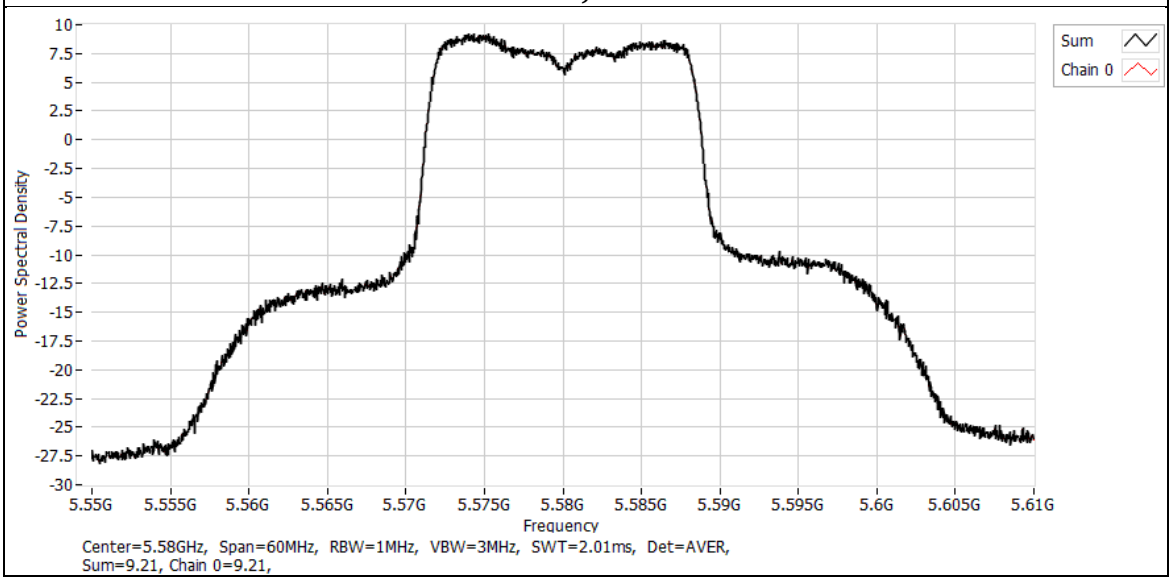
802.11n(HT20), CH52



Mode (U-NII-2C)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	100	5500	3.4	4.1	11	PASS
	116	5580	3.4	9.21	11	PASS
	140	5700	3.4	4.94	11	PASS
	144	5720	3.4	9.03	11	PASS

Mode (U-NII-2C)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11a	100	5500	4.103
	116	5580	9.209
	140	5700	4.936
	144	5720	9.031

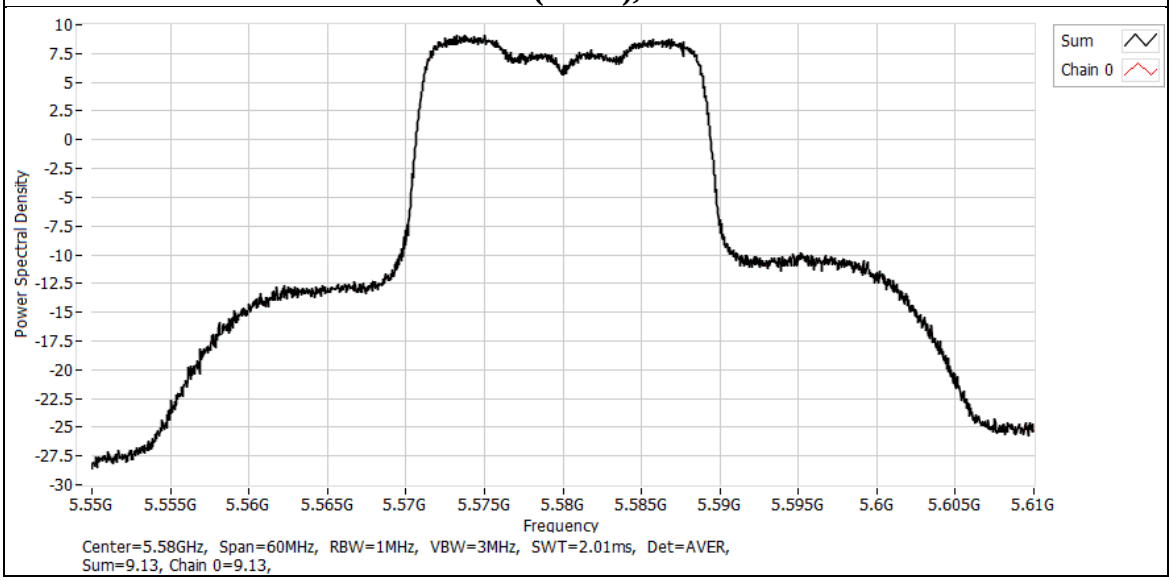
802.11a, CH116



Mode (U-NII-2C)	CH	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11n(HT20)	100	5500	3.4	4.12	11	PASS
	116	5580	3.4	9.13	11	PASS
	140	5700	3.4	3.69	11	PASS
	144	5720	3.4	9.03	11	PASS

Mode (U-NII-2C)	CH	Freq (MHz)	PSD per Chain (dBm/MHz)
			Chain 0
802.11n(HT20)	100	5500	4.122
	116	5580	9.131
	140	5700	3.694
	144	5720	9.028

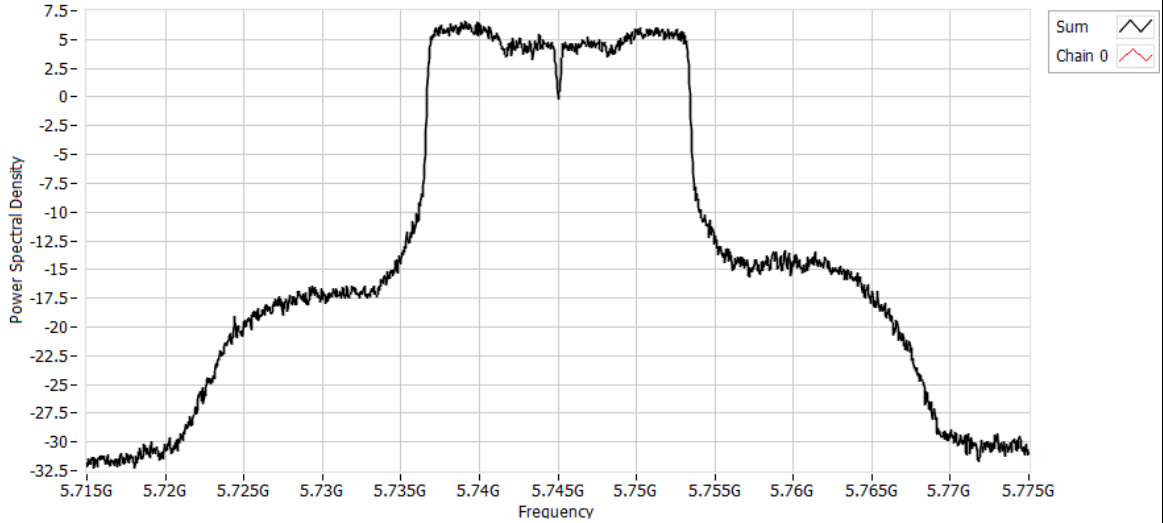
802.11n(HT20), CH116



Mode (U-NII-3)	CH	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	144	5720	2.22	3.4	8.56	30	PASS
	149	5745	2.22	3.4	8.75	30	PASS
	157	5785	2.22	3.4	8.2	30	PASS
	165	5825	2.22	3.4	8.09	30	PASS

Mode (U-NII-3)	CH	Freq (MHz)	PSD per Chain (dBm/500kHz)
			Chain 0
802.11a	144	5720	6.34
	149	5745	6.53
	157	5785	5.983
	165	5825	5.874

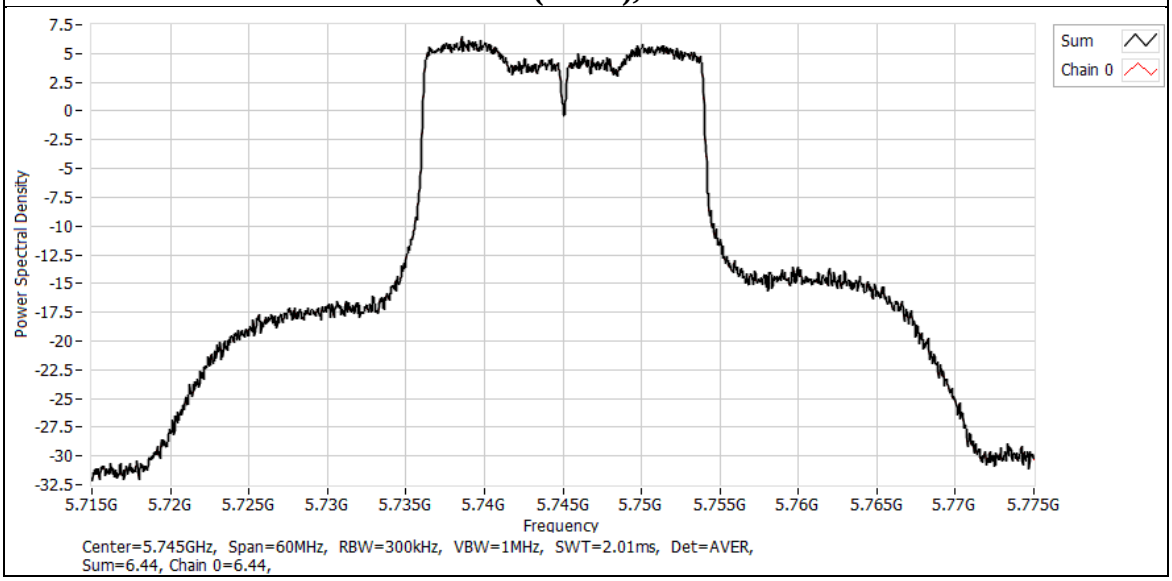
802.11a, CH149



Mode (U-NII-3)	CH	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11n(HT20)	144	5720	2.22	3.4	8.59	30	PASS
	149	5745	2.22	3.4	8.66	30	PASS
	157	5785	2.22	3.4	8.09	30	PASS
	165	5825	2.22	3.4	7.89	30	PASS

Mode (U-NII-3)	CH	Freq (MHz)	PSD per Chain (dBm/500kHz)
			Chain 0
802.11n(HT20)	144	5720	6.371
	149	5745	6.443
	157	5785	5.876
	165	5825	5.676

802.11n(HT20), CH149



9.6. Frequency Stability

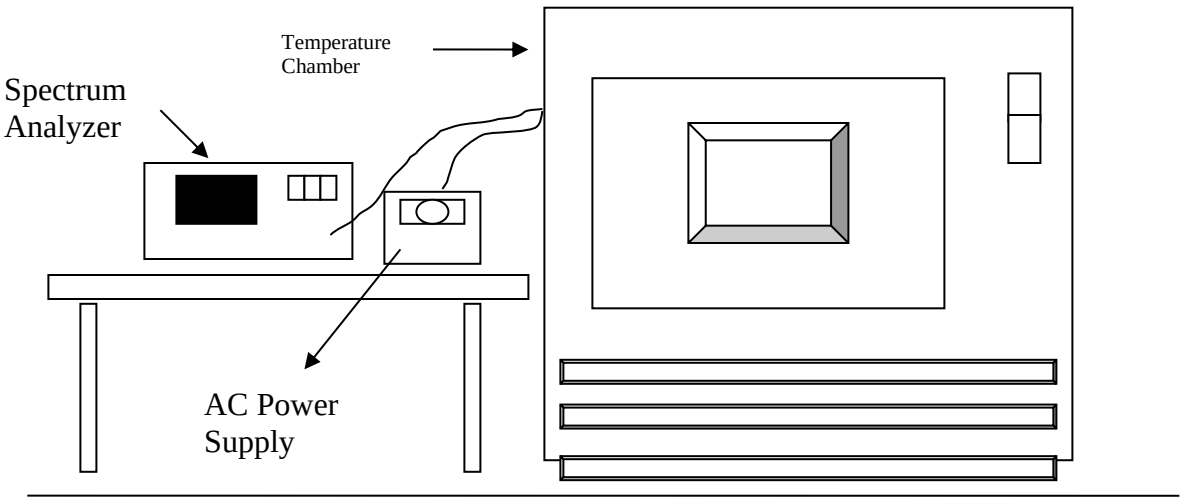
Requirements

The frequency of the carrier signal shall be maintained within band of operation.

Test procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

Test Setup



Test Data

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
50	120	5179.9822	-3.44	5179.9832	-3.24	5179.9824	-3.40	5179.9826	-3.36
40	120	5180.0218	4.21	5180.0187	3.61	5180.0194	3.75	5180.018	3.47
30	120	5179.9801	-3.84	5179.9762	-4.59	5179.9802	-3.82	5179.9782	-4.21
20	120	5180.0051	0.98	5180.0056	1.08	5180.0054	1.04	5180.0056	1.08
10	120	5179.988	-2.32	5179.9896	-2.01	5179.9894	-2.05	5179.9857	-2.76
0	120	5180.0134	2.59	5180.0165	3.19	5180.0154	2.97	5180.0158	3.05
-10	120	5180.0002	0.04	5180.0021	0.41	5180.0004	0.08	5180.0013	0.25
-20	120	5180.0232	4.48	5180.0206	3.98	5180.0207	4.00	5180.0208	4.02
-30	120	5179.9818	-3.51	5179.9828	-3.32	5179.979	-4.05	5179.9821	-3.46
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
20	138	5180.0042	0.81	5180.0061	1.18	5180.0056	1.08	5180.0046	0.89
20	120	5180.0051	0.98	5180.0056	1.08	5180.0054	1.04	5180.0056	1.08
20	102	5180.0048	0.93	5180.0061	1.18	5180.0062	1.20	5180.0053	1.02

9.7. Radiated Spurious Emission

Requirements

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	**Applicable To**	**EIRP Limit**	**Equivalent Field Strength at 3m**
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBµV/m) *1 PK:105.2 (dBµV/m) *2 PK: 110.8(dBµV/m) *3 PK:122.2 (dBµV/m) *4
*1 beyond 75 MHz or more above of the band edge. *2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. *3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. *4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.			

Note:
The following formula is used to convert the effective isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

Test Procedures

[For 9 kHz ~ 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

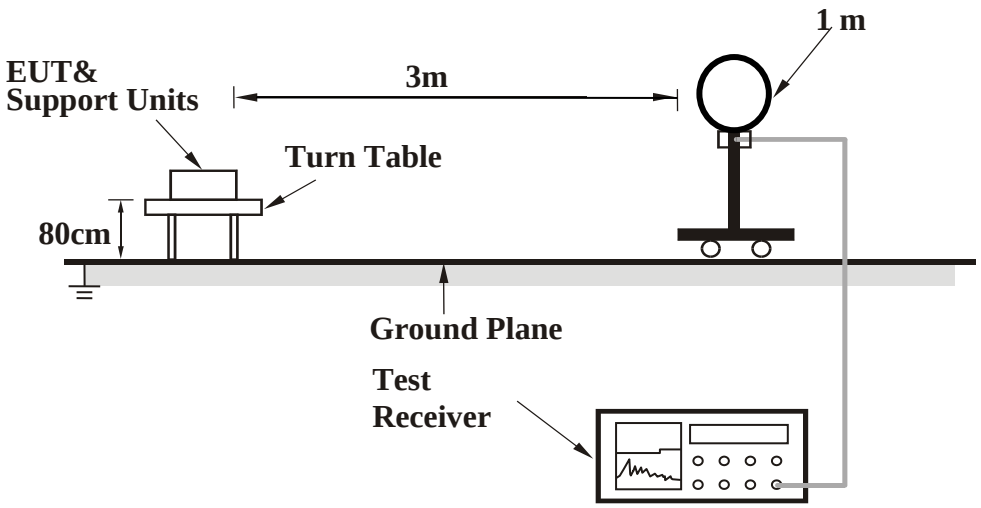
a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

Configuration	Average	
	RBW	VBW
802.11a	1MHz	Refer to section 6.6 for duty cycle.
802.11n (HT20)		

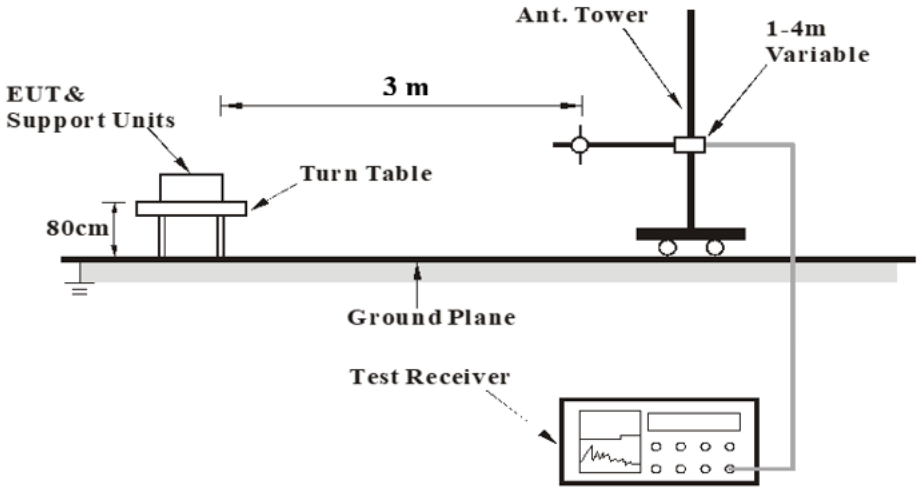
d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
e. Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
f. Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
g. Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
h. Test data of Notation "@" = Fundamental Frequency
i. Test data of Notation " * " = Only required peak limit or the peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

Test Setup

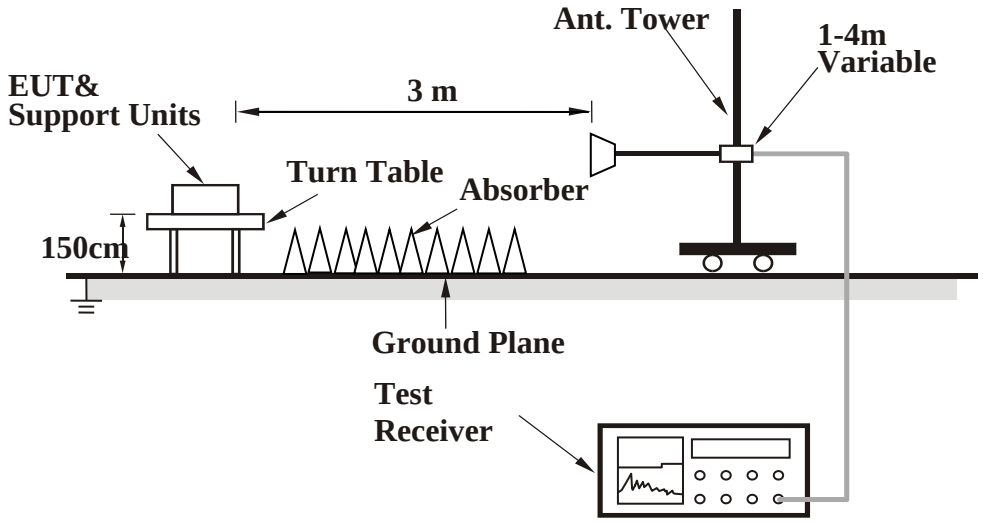
<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz>



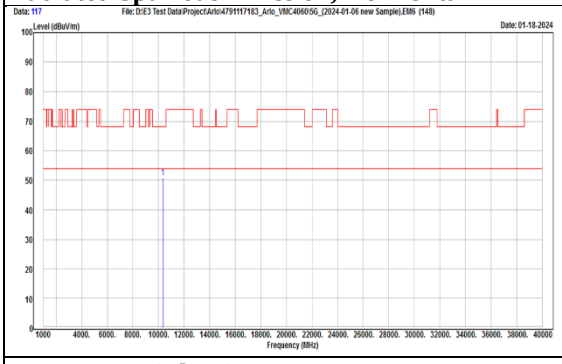
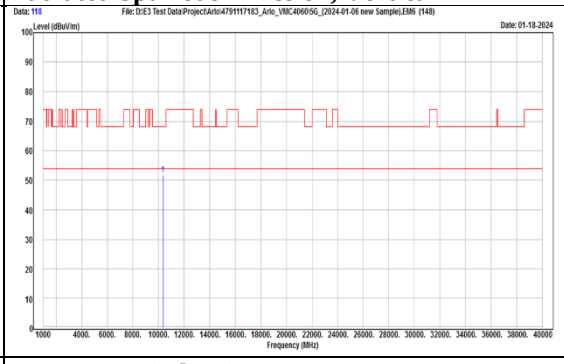
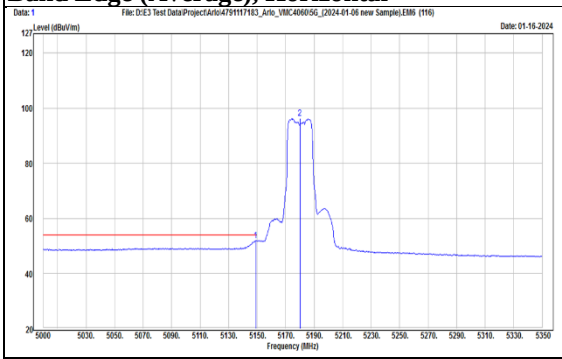
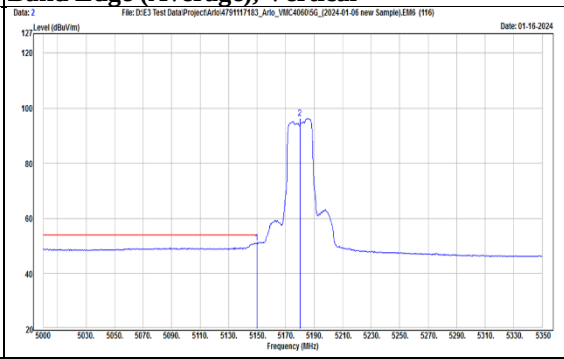
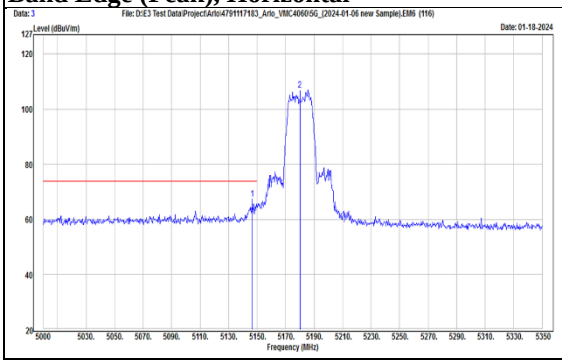
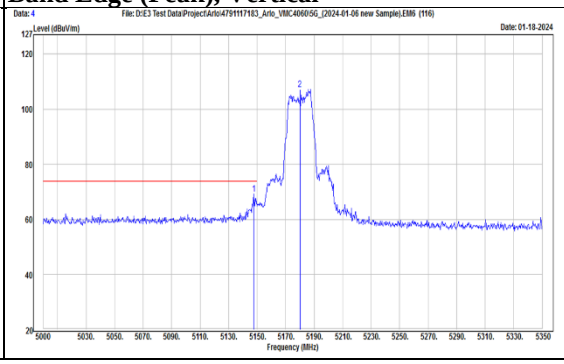
For the actual test configuration, please refer to the Setup Configurations.

Test Data

Above 1 GHz

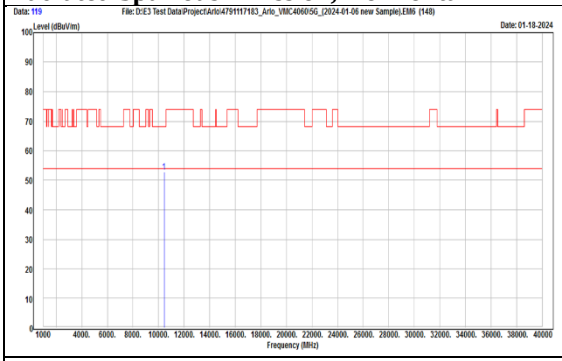
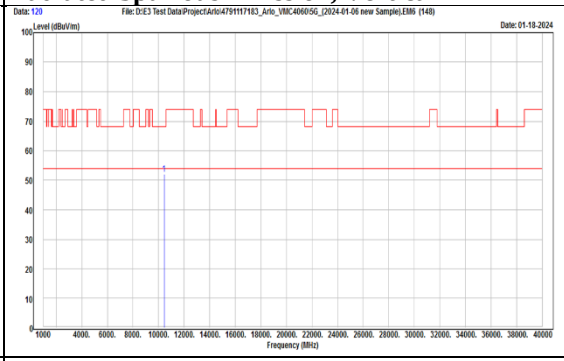
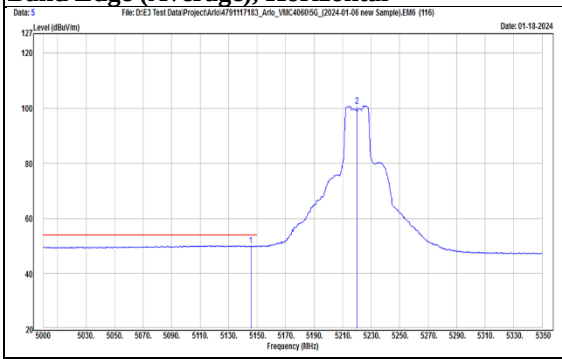
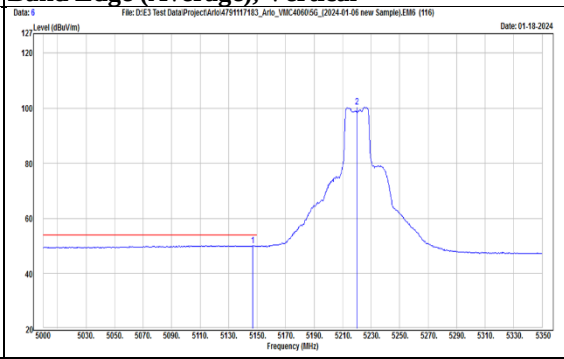
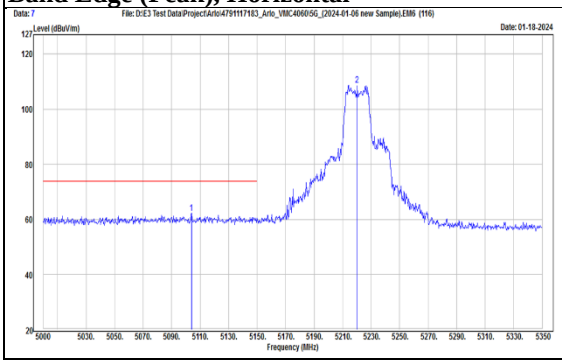
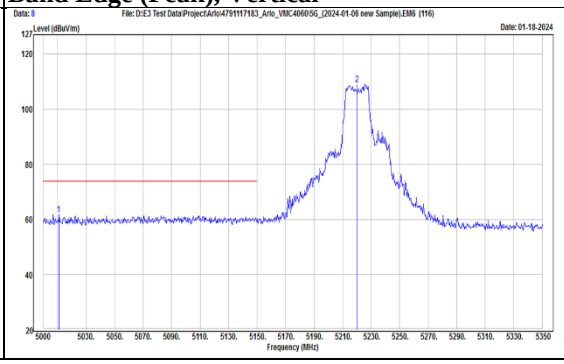
Mode	802.11a	Channel	36

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5146.65	47.01	20.47	67.48	74	-6.52	PK
		5149.1	32.42	19.57	51.99	54	-2.01	AVG
	@	5180	86.46	20.44	106.9	N/A	N/A	PK
	@	5180	76.73	19.48	96.21	N/A	N/A	AVG
	*	10360	29.82	21.07	50.89	68.2	-17.31	PK
Vertical		5147.7	48.75	20.48	69.23	74	-4.77	PK
		5149.8	31.69	19.57	51.26	54	-2.74	AVG
	@	5180	86.71	20.44	107.15	N/A	N/A	PK
	@	5180	76.81	19.48	96.29	N/A	N/A	AVG
	*	10360	30.67	21.07	51.74	68.2	-16.46	PK

TX, 802.11a (Ch 36) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 36)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 36) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 36)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 36) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 36)** **Band Edge (Peak), Vertical**
	

Mode	802.11a	Channel	44

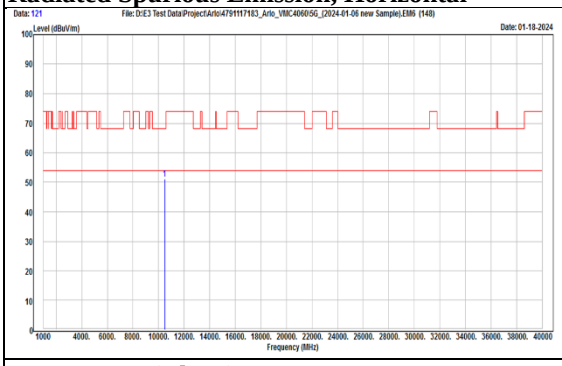
Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5103.95	41.88	20.35	62.23	74	-11.77	PK
		5145.6	29.71	20.47	50.18	54	-3.82	AVG
	@	5220	88.18	20.43	108.61	N/A	N/A	PK
	@	5220	80.4	20.43	100.83	N/A	N/A	AVG
	*	10440	31.26	21.46	52.72	68.2	-15.48	PK
Vertical		5010.85	42.11	19.71	61.82	74	-12.18	PK
		5147	29.79	20.47	50.26	54	-3.74	AVG
	@	5220	88.59	20.43	109.02	N/A	N/A	PK
	@	5220	79.89	20.43	100.32	N/A	N/A	AVG
	*	10440	30.49	21.46	51.95	68.2	-16.25	PK

TX, 802.11a (Ch 44) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 44)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 44) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 44)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 44) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 44)** **Band Edge (Peak), Vertical**
	

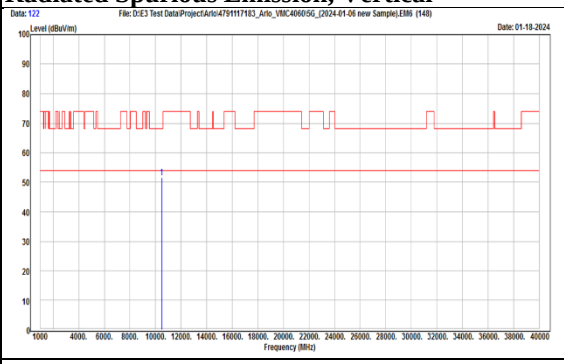
Mode	802.11a	Channel	48

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5098.7	41.64	20.33	61.97	74	-12.03	PK
		5148.4	29.72	20.48	50.2	54	-3.8	AVG
	@	5240	88.91	20.45	109.36	N/A	N/A	PK
	@	5240	80.42	20.45	100.87	N/A	N/A	AVG
	*	10480	29.53	21.64	51.17	68.2	-17.03	PK
Vertical		5105	29.82	20.35	50.17	54	-3.83	AVG
		5106.05	41.37	20.36	61.73	74	-12.27	PK
	@	5240	89.82	20.45	110.27	N/A	N/A	PK
	@	5240	80.27	20.45	100.72	N/A	N/A	AVG
	*	10480	29.92	21.64	51.56	68.2	-16.64	PK

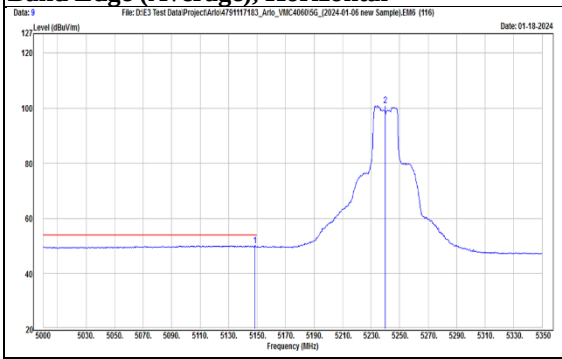
TX, 802.11a (Ch 48)
Radiated Spurious Emission, Horizontal



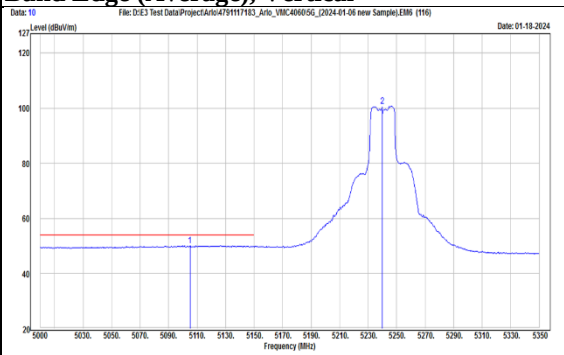
TX, 802.11a (Ch 48)
Radiated Spurious Emission, Vertical



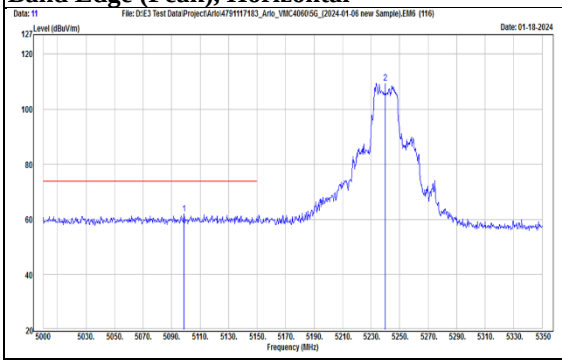
TX, 802.11a (Ch 48)
Band Edge (Average), Horizontal



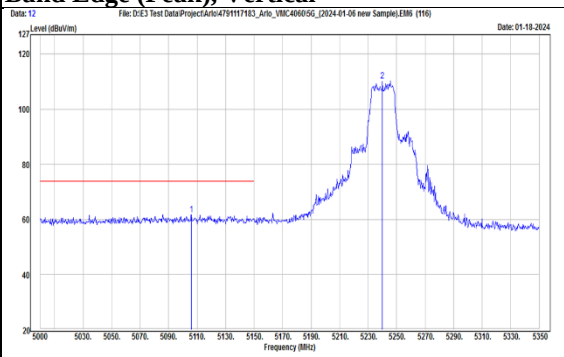
TX, 802.11a (Ch 48)
Band Edge (Average), Vertical



TX, 802.11a (Ch 48)
Band Edge (Peak), Horizontal



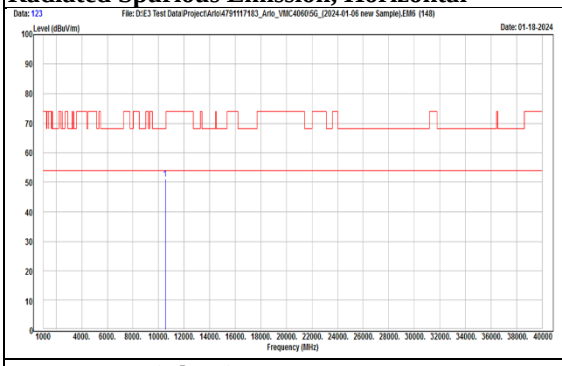
TX, 802.11a (Ch 48)
Band Edge (Peak), Vertical



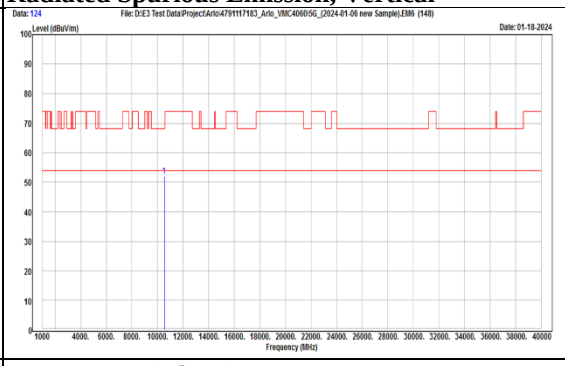
Mode	802.11a	Channel	52

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5260	88.55	20.4	108.95	N/A	N/A	PK
	@	5260	80.12	20.4	100.52	N/A	N/A	AVG
		5443.2	39.93	21.06	60.99	74	-13.01	PK
		5456.7	27.47	21.15	48.62	54	-5.38	AVG
	*	10520	29.31	21.74	51.05	68.2	-17.15	PK
Vertical	@	5260	89.12	20.4	109.52	N/A	N/A	PK
	@	5260	80.57	20.4	100.97	N/A	N/A	AVG
		5432.1	40.39	20.98	61.37	74	-12.63	PK
		5459.4	27.63	21.17	48.8	54	-5.2	AVG
	*	10520	30.28	21.74	52.02	68.2	-16.18	PK

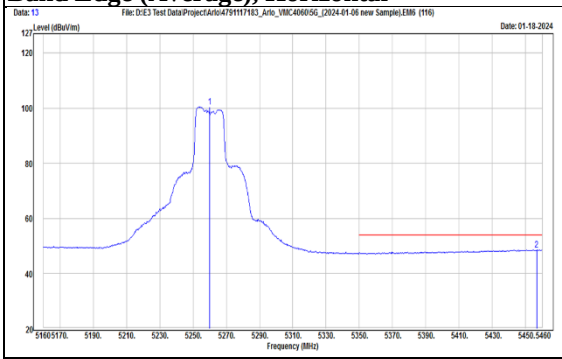
TX, 802.11a (Ch 52)
Radiated Spurious Emission, Horizontal



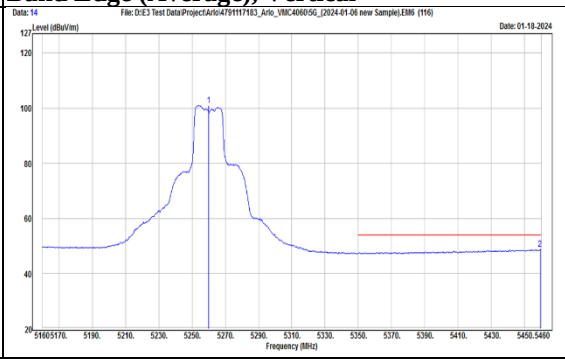
TX, 802.11a (Ch 52)
Radiated Spurious Emission, Vertical



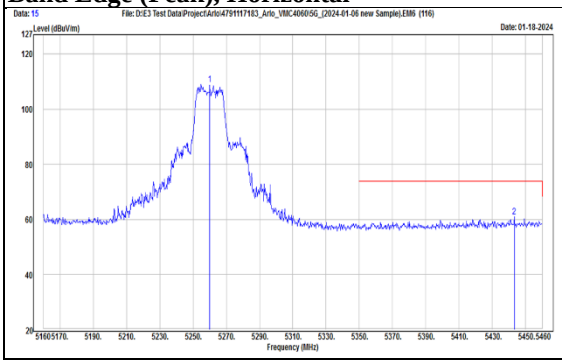
TX, 802.11a (Ch 52)
Band Edge (Average), Horizontal



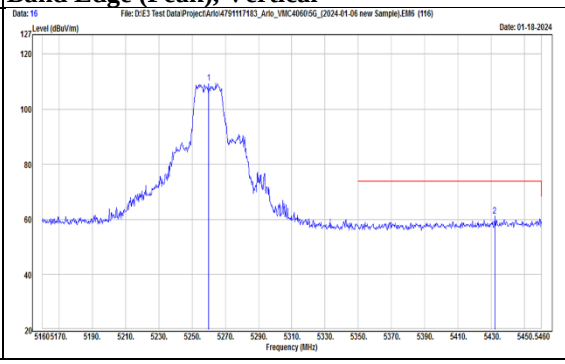
TX, 802.11a (Ch 52)
Band Edge (Average), Vertical



TX, 802.11a (Ch 52)
Band Edge (Peak), Horizontal

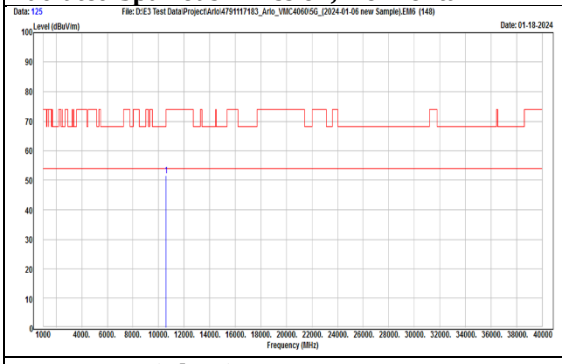
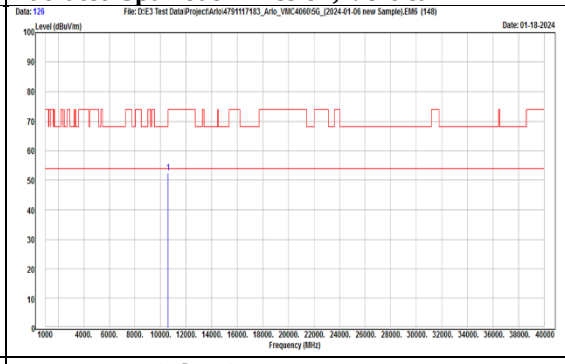
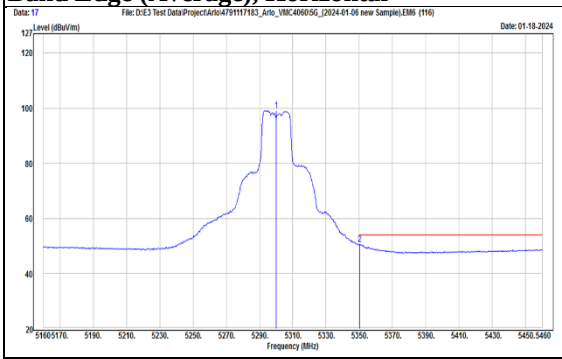
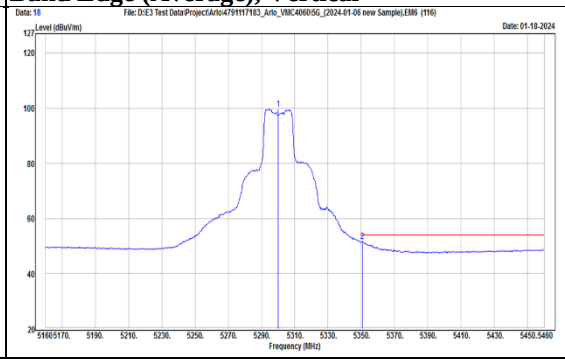
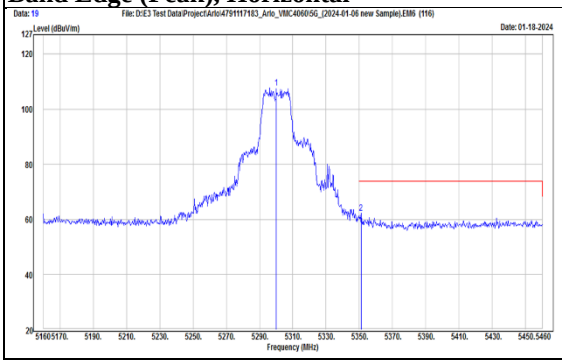
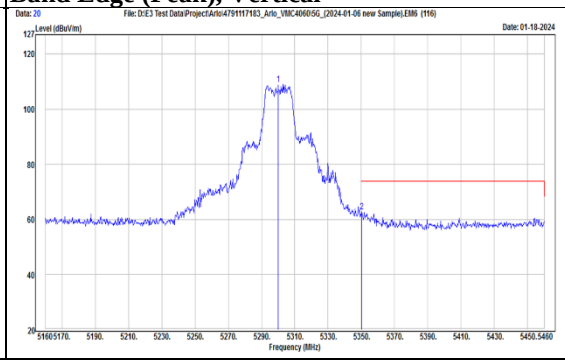


TX, 802.11a (Ch 52)
Band Edge (Peak), Vertical



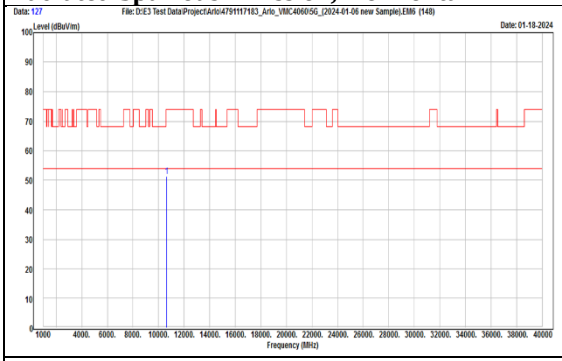
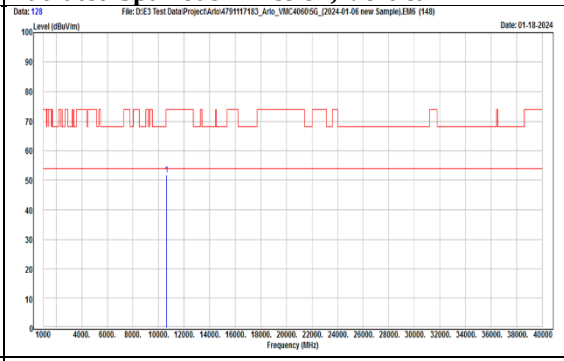
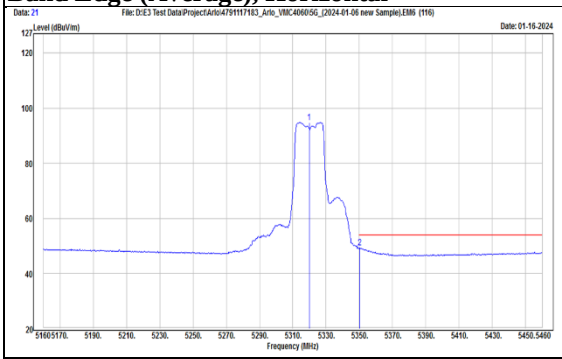
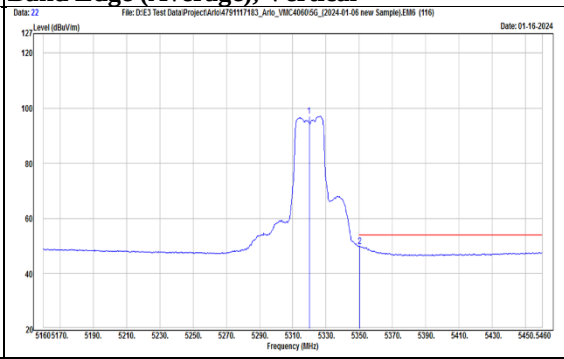
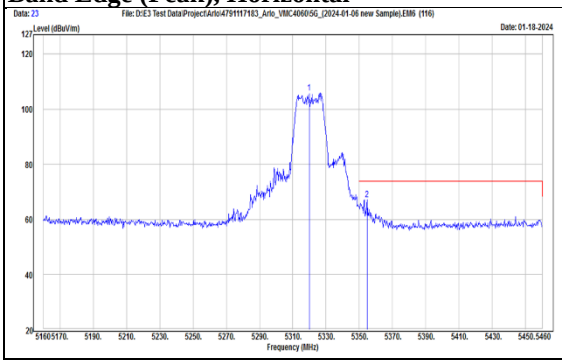
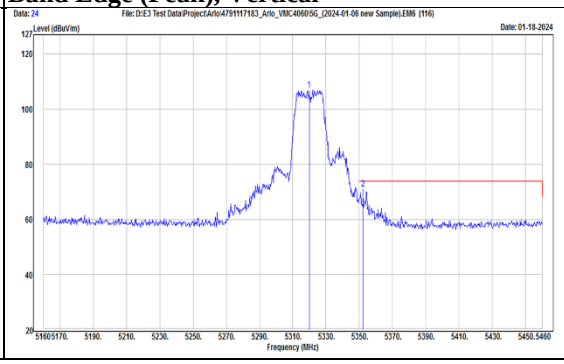
Mode	802.11a	Channel	60

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5300	87.38	20.19	107.57	N/A	N/A	PK
	@	5300	78.9	20.19	99.09	N/A	N/A	AVG
		5350.2	30.3	20.34	50.64	54	-3.36	AVG
		5351.1	41.89	20.35	62.24	74	-11.76	PK
	*	10600	29.73	21.78	51.51	74	-22.49	PK
Vertical	@	5300	88.64	20.19	108.83	N/A	N/A	PK
	@	5300	79.48	20.19	99.67	N/A	N/A	AVG
		5350.2	42.57	20.34	62.91	74	-11.09	PK
		5350.8	31.34	20.34	51.68	54	-2.32	AVG
	*	10600	30.81	21.78	52.59	74	-21.41	PK

TX, 802.11a (Ch 60) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 60)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 60) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 60)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 60) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 60)** **Band Edge (Peak), Vertical**
	

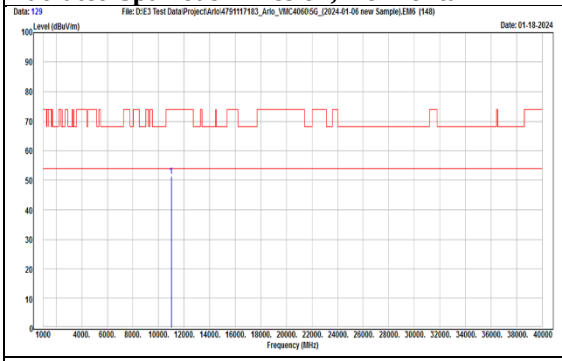
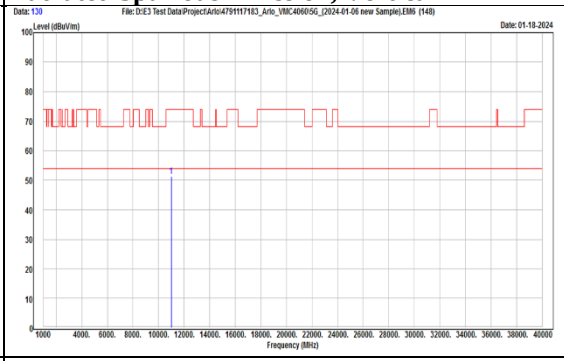
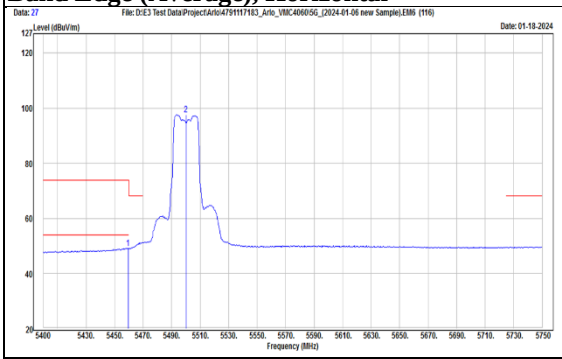
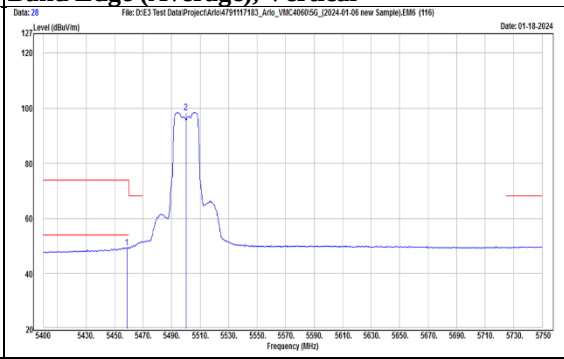
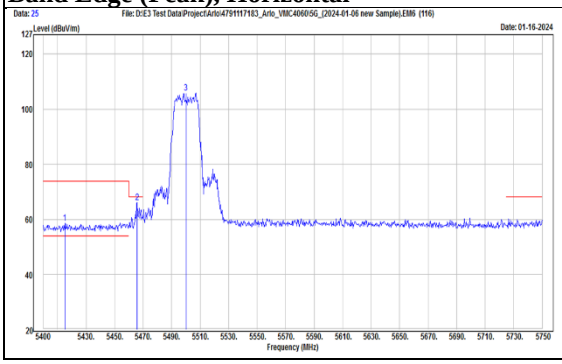
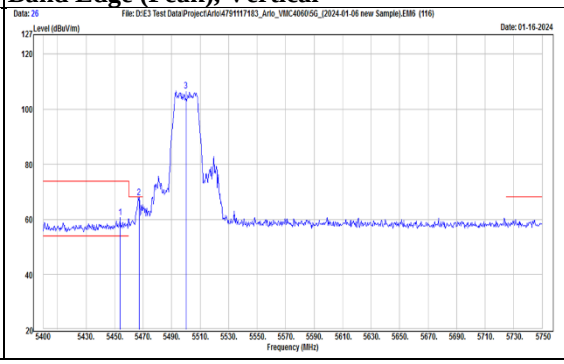
Mode	802.11a	Channel	64

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5320	85.73	20.25	105.98	N/A	N/A	PK
	@	5320	75.77	19.08	94.85	N/A	N/A	AVG
		5350.2	30.38	19.12	49.5	54	-4.5	AVG
		5354.7	46.82	20.37	67.19	74	-6.81	PK
	*	10640	29.56	21.8	51.36	74	-22.64	PK
Vertical	@	5320	86.77	20.25	107.02	N/A	N/A	PK
	@	5320	77.93	19.08	97.01	N/A	N/A	AVG
		5350.2	30.72	19.12	49.84	54	-4.16	AVG
		5352.3	50.57	20.35	70.92	74	-3.08	PK
	*	10640	30	21.8	51.8	74	-22.2	PK

TX, 802.11a (Ch 64) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 64)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 64) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 64)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 64) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 64)** **Band Edge (Peak), Vertical**
	

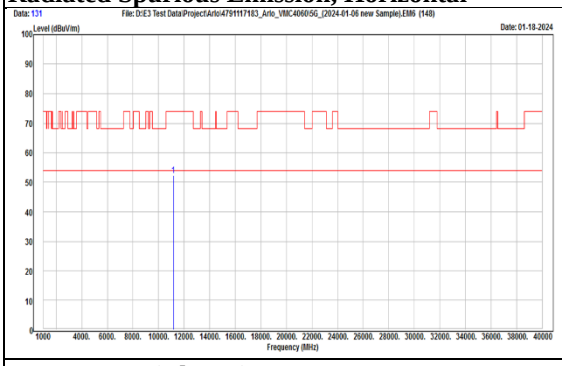
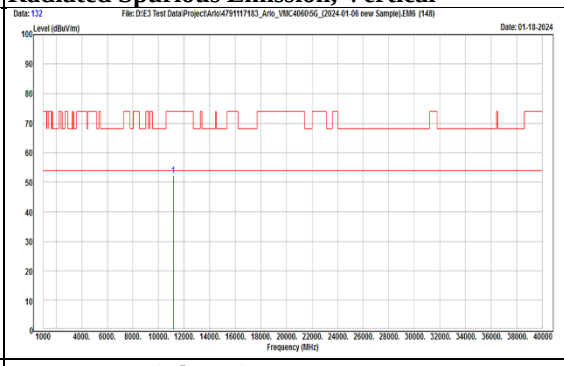
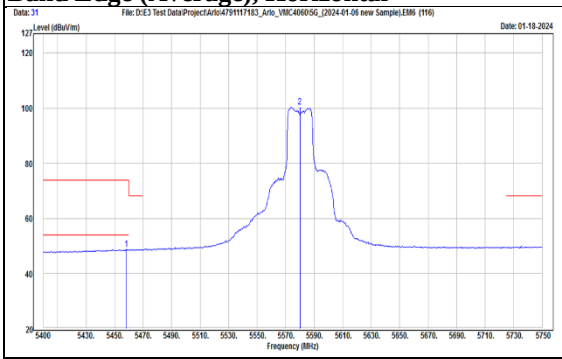
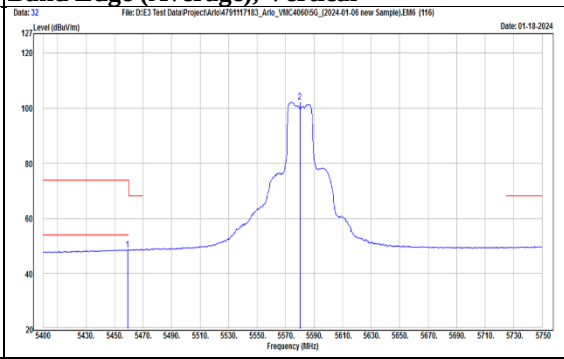
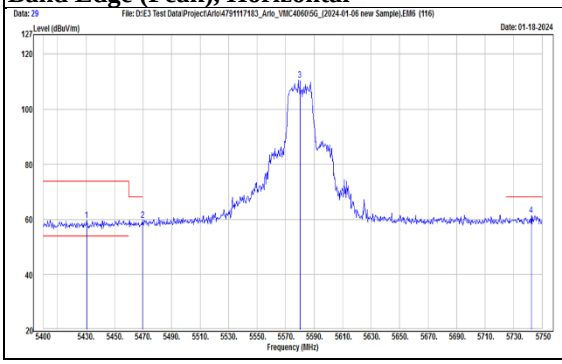
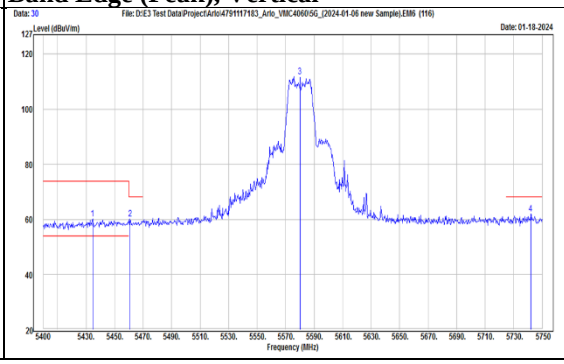
Mode	802.11a	Channel	100

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5415.05	39.19	19.55	58.74	74	-15.26	PK
		5459.5	28.06	21.17	49.23	54	-4.77	AVG
		5465.8	46.25	19.81	66.06	68.2	-2.14	PK
	@	5500	85.76	19.99	105.75	N/A	N/A	PK
	@	5500	76.2	21.44	97.64	N/A	N/A	AVG
	*	11000	28.95	22.38	51.33	74	-22.67	PK
Vertical		5453.9	40.95	19.75	60.7	74	-13.3	PK
		5458.8	28.21	21.17	49.38	54	-4.62	AVG
		5467.2	48.26	19.82	68.08	68.2	-0.12	PK
	@	5500	86.72	19.99	106.71	N/A	N/A	PK
	@	5500	77.01	21.44	98.45	N/A	N/A	AVG
	*	11000	28.87	22.38	51.25	74	-22.75	PK

TX, 802.11a (Ch 100) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 100)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 100) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 100)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 100) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 100)** **Band Edge (Peak), Vertical**
	

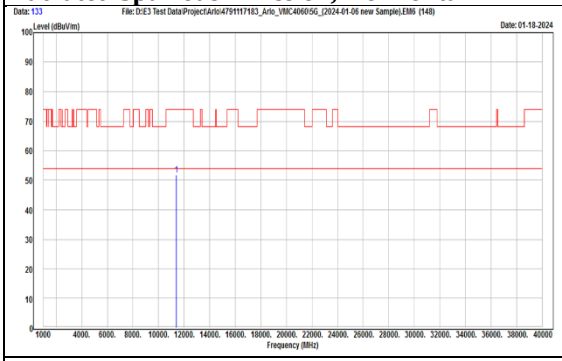
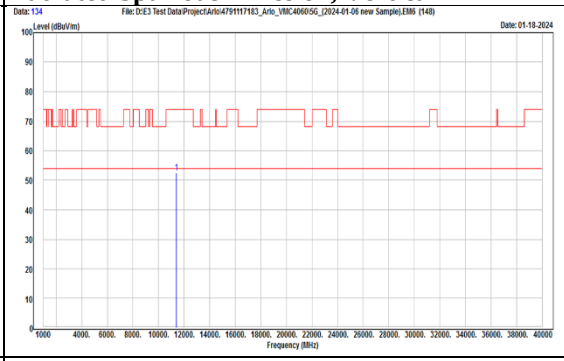
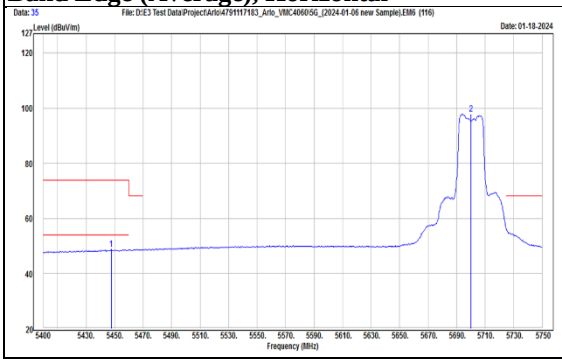
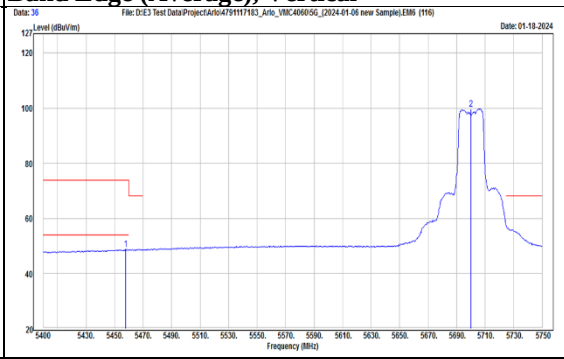
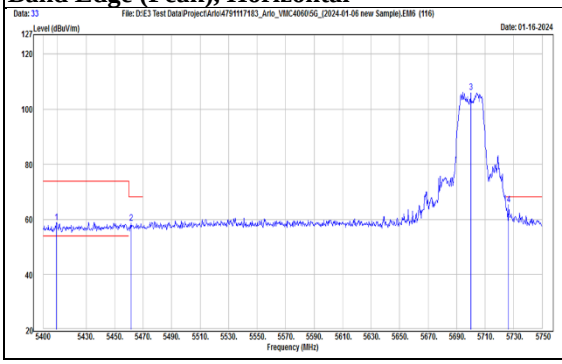
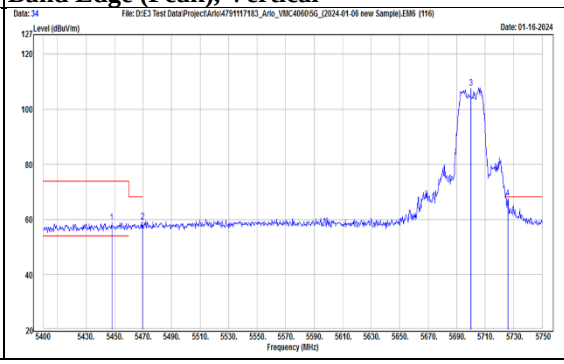
Mode	802.11a	Channel	116

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5430.45	38.81	20.97	59.78	74	-14.22	PK
		5458.1	27.6	21.16	48.76	54	-5.24	AVG
		5469.65	38.47	21.24	59.71	68.2	-8.49	PK
	@	5580	88.69	21.7	110.39	N/A	N/A	PK
	@	5580	78.64	21.7	100.34	N/A	N/A	AVG
		5742.3	39.5	21.93	61.43	68.2	-6.77	PK
	*	11160	29.81	22.4	52.21	74	-21.79	PK
Vertical		5434.65	39.24	21.01	60.25	74	-13.75	PK
		5459.15	27.51	21.17	48.68	54	-5.32	AVG
		5460.9	39.14	21.17	60.31	68.2	-7.89	PK
	@	5580	90.16	21.7	111.86	N/A	N/A	PK
	@	5580	80.46	21.7	102.16	N/A	N/A	AVG
		5741.95	39.99	21.93	61.92	68.2	-6.28	PK
	*	11160	29.86	22.4	52.26	74	-21.74	PK

TX, 802.11a (Ch 116) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 116)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 116) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 116)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 116) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 116)** **Band Edge (Peak), Vertical**
	

Mode	802.11a	Channel	140

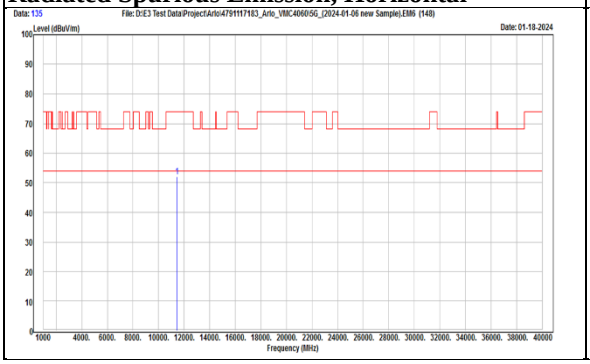
Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5409.1	39.42	19.52	58.94	74	-15.06	PK
		5447.6	27.72	21.09	48.81	54	-5.19	AVG
		5461.6	38.75	19.8	58.55	68.2	-9.65	PK
	@	5700	86.3	19.85	106.15	N/A	N/A	PK
	@	5700	76.19	21.57	97.76	N/A	N/A	AVG
		5726.55	45.25	20.05	65.3	68.2	-2.9	PK
	*	11400	28.94	22.81	51.75	74	-22.25	PK
Vertical		5447.95	39.09	19.72	58.81	74	-15.19	PK
		5457.75	27.71	21.16	48.87	54	-5.13	AVG
		5469.65	39.35	19.84	59.19	68.2	-9.01	PK
	@	5700	87.88	19.85	107.73	N/A	N/A	PK
	@	5700	78.13	21.57	99.7	N/A	N/A	AVG
		5725.85	47.76	20.05	67.81	68.2	-0.39	PK
	*	11400	29.74	22.81	52.55	74	-21.45	PK

TX, 802.11a (Ch 140) **Radiated Spurious Emission, Horizontal**	**TX, 802.11a (Ch 140)** **Radiated Spurious Emission, Vertical**
	
TX, 802.11a (Ch 140) **Band Edge (Average), Horizontal**	**TX, 802.11a (Ch 140)** **Band Edge (Average), Vertical**
	
TX, 802.11a (Ch 140) **Band Edge (Peak), Horizontal**	**TX, 802.11a (Ch 140)** **Band Edge (Peak), Vertical**
	

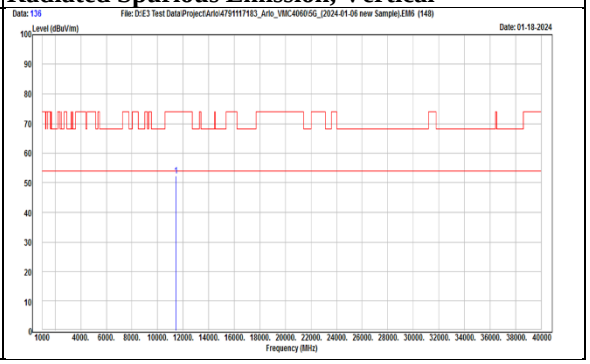
Mode	802.11a	Channel	144

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	*	11440	29.14	22.9	52.04	74	-21.96	PK
Vertical	*	11440	29.44	22.9	52.34	74	-21.66	PK

TX, 802.11a (Ch 144)
Radiated Spurious Emission, Horizontal



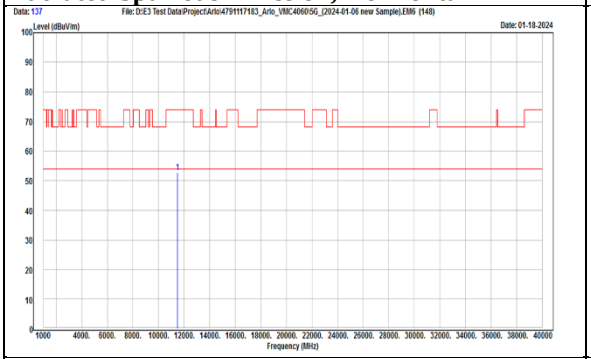
TX, 802.11a (Ch 144)
Radiated Spurious Emission, Vertical



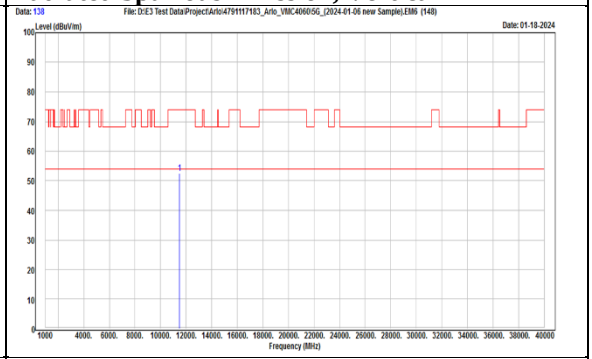
Mode	802.11a	Channel	149

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5604.5	40.21	21.7	61.91	68.2	-6.29	PK
		5697.5	44.75	21.58	66.33	103.36	-37.03	PK
	@	5745	86.17	21.96	108.13	N/A	N/A	PK
	*	11490	29.75	23.02	52.77	74	-21.23	PK
Vertical		5571	39.64	21.69	61.33	68.2	-6.87	PK
		5699	45.81	21.57	67.38	104.46	-37.08	PK
	@	5745	87.52	21.96	109.48	N/A	N/A	PK
	*	11490	29.45	23.02	52.47	74	-21.53	PK

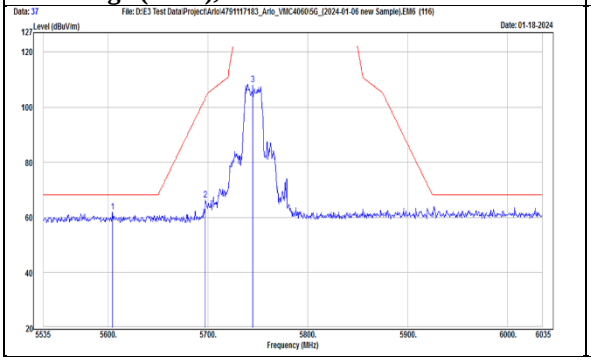
TX, 802.11a (Ch 149)
Radiated Spurious Emission, Horizontal



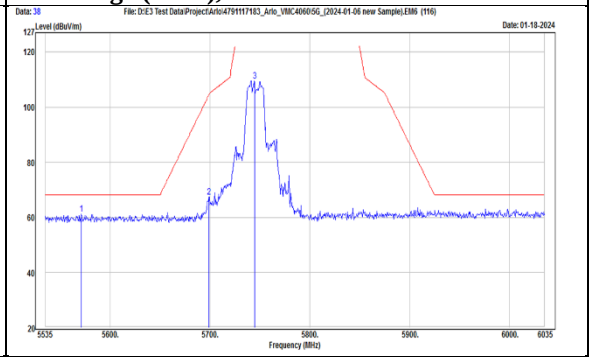
TX, 802.11a (Ch 149)
Radiated Spurious Emission, Vertical



TX, 802.11a (Ch 149)
Band Edge (Peak), Horizontal



TX, 802.11a (Ch 149)
Band Edge (Peak), Vertical

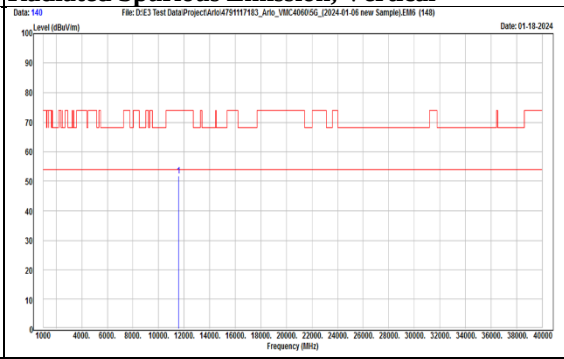


Mode	802.11a	Channel	157

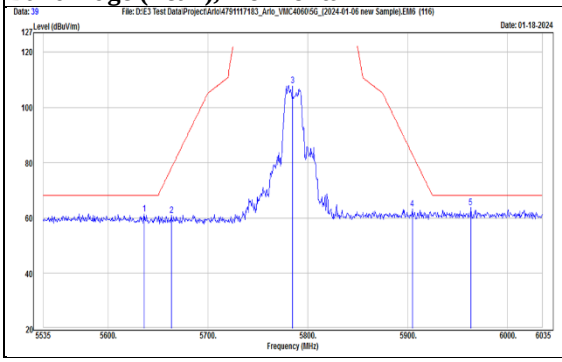
Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5636	39.86	21.66	61.52	68.2	-6.68	PK
		5663.5	39.44	21.63	61.07	78.22	-17.15	PK
	@	5785	85.6	22.3	107.9	N/A	N/A	PK
		5905	40.2	23.11	63.31	82.96	-19.65	PK
		5963.5	40.5	23.29	63.79	68.2	-4.41	PK
	*	11570	28.41	22.79	51.2	74	-22.8	PK
Vertical		5552	40.03	21.68	61.71	68.2	-6.49	PK
		5657.5	40.73	21.63	62.36	73.77	-11.41	PK
	@	5785	87.21	22.3	109.51	N/A	N/A	PK
		5906	39.95	23.11	63.06	82.22	-19.16	PK
		5983	39.62	23.38	63	68.2	-5.2	PK
	*	11570	28.97	22.79	51.76	74	-22.24	PK

TX, 802.11a (Ch 157)
Radiated Spurious Emission, Horizontal

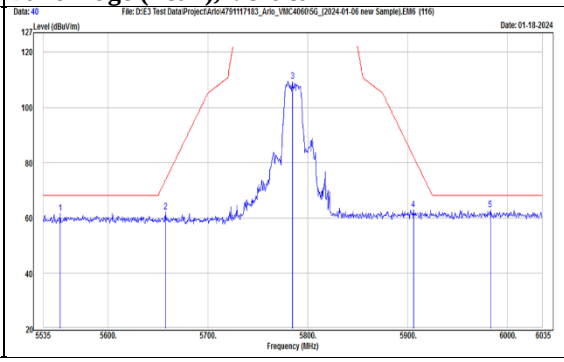
TX, 802.11a (Ch 157)
Radiated Spurious Emission, Vertical



TX, 802.11a (Ch 157)
Band Edge (Peak), Horizontal



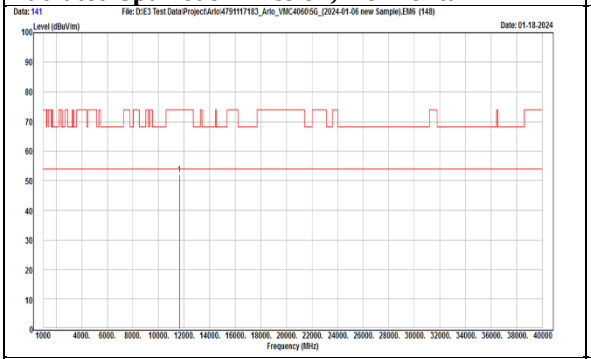
TX, 802.11a (Ch 157)
Band Edge (Peak), Vertical



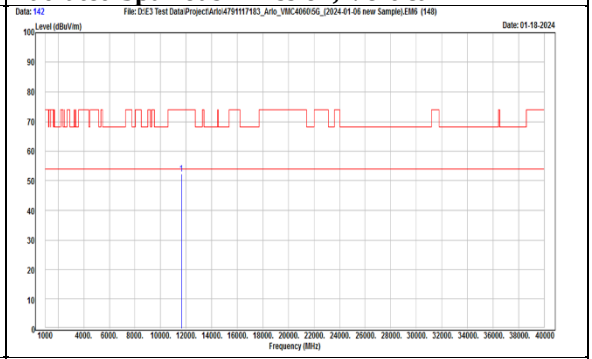
Mode	802.11a	Channel	165

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal	@	5825	84.89	22.7	107.59	N/A	N/A	PK
		5923	41.14	23.15	64.29	69.67	-5.38	PK
		5972.5	39.7	23.33	63.03	68.2	-5.17	PK
	*	11650	29.73	22.32	52.05	74	-21.95	PK
Vertical	@	5825	86.6	22.7	109.3	N/A	N/A	PK
		5878	39.87	23.03	62.9	102.97	-40.07	PK
		5931	40.47	23.18	63.65	68.2	-4.55	PK
	*	11650	30.05	22.32	52.37	74	-21.63	PK

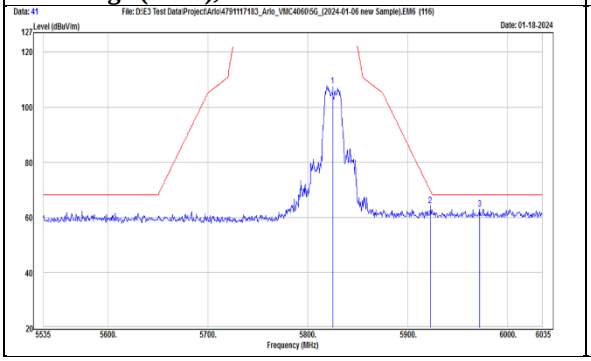
TX, 802.11a (Ch 165)
Radiated Spurious Emission, Horizontal



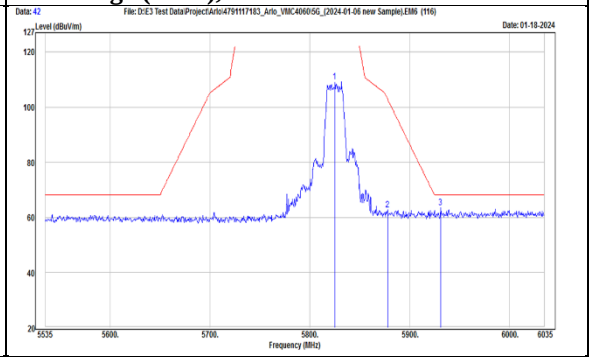
TX, 802.11a (Ch 165)
Radiated Spurious Emission, Vertical



TX, 802.11a (Ch 165)
Band Edge (Peak), Horizontal



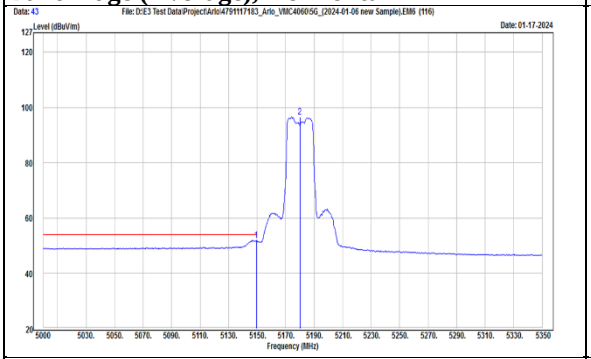
TX, 802.11a (Ch 165)
Band Edge (Peak), Vertical



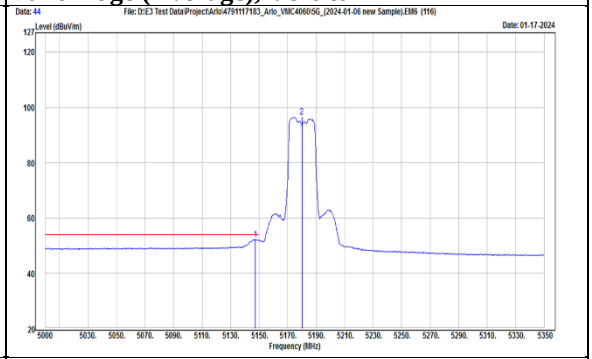
Mode	802.11n(HT20)	Channel	36

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5143.85	47.72	20.46	68.18	74	-5.82	PK
		5149.45	32.35	19.57	51.92	54	-2.08	AVG
	@	5180	85.95	20.44	106.39	N/A	N/A	PK
	@	5180	77.01	19.48	96.49	N/A	N/A	AVG
Vertical		5147.35	32.66	19.57	52.23	54	-1.77	AVG
		5147.7	47.79	20.48	68.27	74	-5.73	PK
	@	5180	85.64	20.44	106.08	N/A	N/A	PK
	@	5180	77.04	19.48	96.52	N/A	N/A	AVG

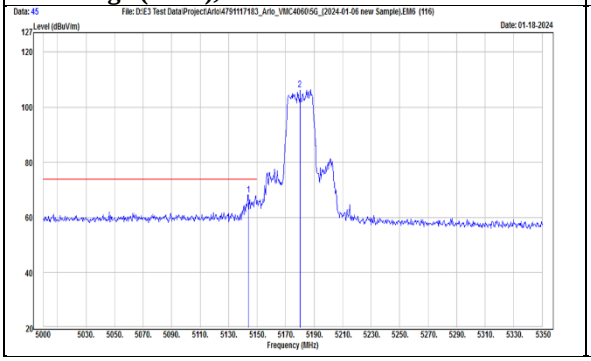
TX, 802.11n(HT20) (Ch 36)
Band Edge (Average), Horizontal



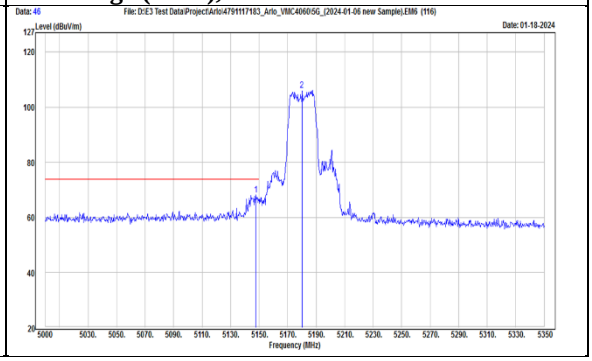
TX, 802.11n(HT20) (Ch 36)
Band Edge (Average), Vertical



TX, 802.11n(HT20) (Ch 36)
Band Edge (Peak), Horizontal



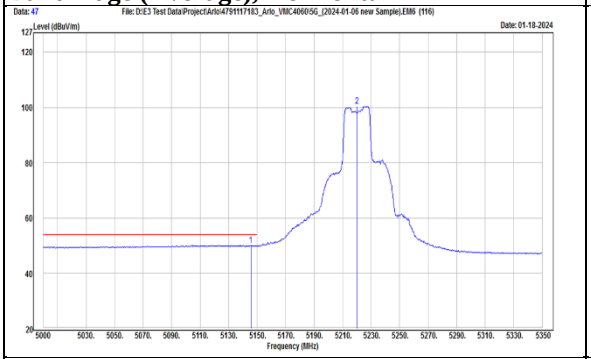
TX, 802.11n(HT20) (Ch 36)
Band Edge (Peak), Vertical



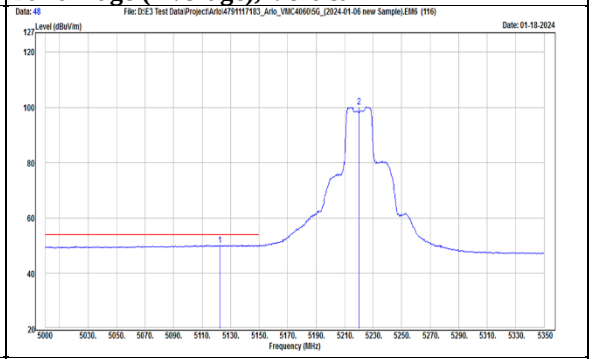
Mode	802.11n(HT20)	Channel	44

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		5140.7	41.36	20.46	61.82	74	-12.18	PK
		5145.6	29.66	20.47	50.13	54	-3.87	AVG
	@	5220	88.83	20.43	109.26	N/A	N/A	PK
	@	5220	80.08	20.43	100.51	N/A	N/A	AVG
Vertical		5122.5	29.74	20.41	50.15	54	-3.85	AVG
		5129.15	41.84	20.43	62.27	74	-11.73	PK
	@	5220	88.61	20.43	109.04	N/A	N/A	PK
	@	5220	79.68	20.43	100.11	N/A	N/A	AVG

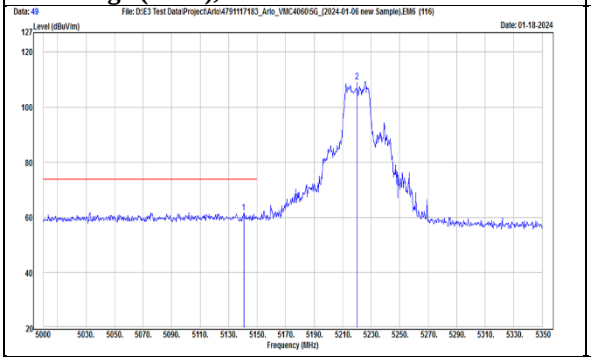
TX, 802.11n(HT20) (Ch 44)
Band Edge (Average), Horizontal



TX, 802.11n(HT20) (Ch 44)
Band Edge (Average), Vertical



TX, 802.11n(HT20) (Ch 44)
Band Edge (Peak), Horizontal



TX, 802.11n(HT20) (Ch 44)
Band Edge (Peak), Vertical