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Report Template Version: V05
Report Template Revision Date: 2018-07-06

Test Report

Report No.: CQASZ20251202911E-03
Applicant: WIRELESS-TAG TECHNOLOGY CO., LIMITED
Address of Applicant: 801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Equipment Under Test (EUT):
Product: WiFi + BLE Module
Model No.: WT0132C5-S5, WT0132C5-S5U
Test Model No.: WT0132C5-S5, WT0132C5-S5U
Brand Name: Wireless-tag
FCC ID: 2AFOS-WT0132C5-S5
Standards: 47 CFR Part 15, Subpart E
KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Date of Receipt: 2025-12-12
Date of Test: 2025-12-12 to 2025-12-30
Date of Issue: 2026-01-27
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above.

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20251202911E-03	Rev.01	Initial report	2026-01-27

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2020; KDB789033	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.207	ANSI C63.10-2020; KDB789033	PASS
Maximum Conducted Output Power	47 CFR Part 15 Subpart C Section 15.407 (a)	ANSI C63.10-2020; KDB789033	PASS
Emission Bandwidth	47 CFR Part 15 Subpart C Section 15.407 (a)(e)	ANSI C63.10-2020; KDB789033	PASS
Maximum Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)	ANSI C63.10-2020; KDB789033	PASS
Band Edge Measurements	47 CFR Part 15 Subpart C Section 15.209 & 15.407(b)	ANSI C63.10-2020; KDB789033	PASS
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	ANSI C63.10-2020; KDB789033	PASS
Operation in the absence of information to the transmit	47 CFR Part 15 Subpart E Section 15.407 (c)	47 CFR Part 15 Subpart E	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart E Section 15.407 (b)	ANSI C63.10-2020; KDB789033	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

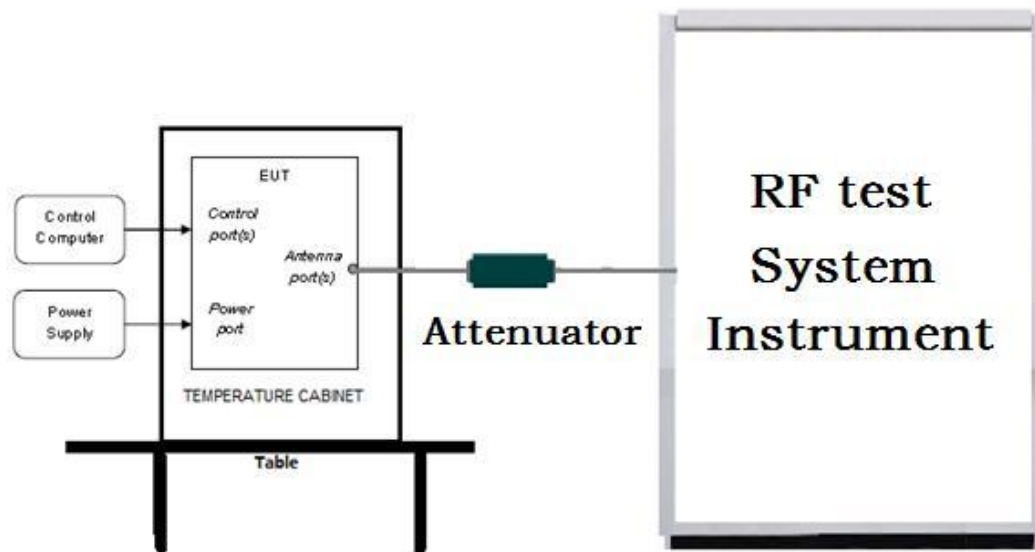
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4 Test Requirement

4.1 Test setup

4.1.1 For Conducted test setup



4.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

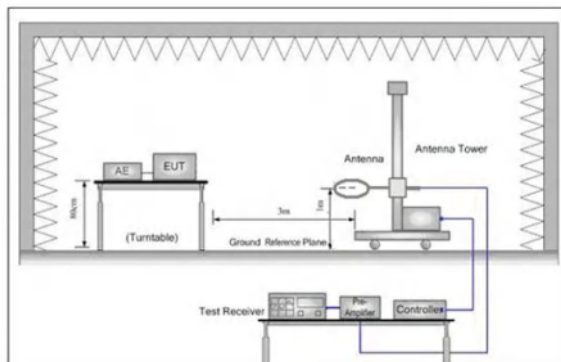


Figure 1. Below 30MHz

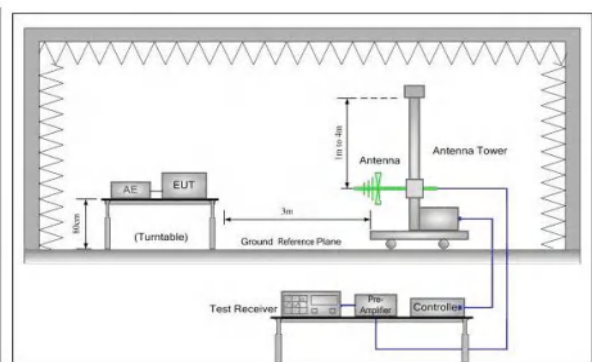


Figure 2. 30MHz to 1GHz

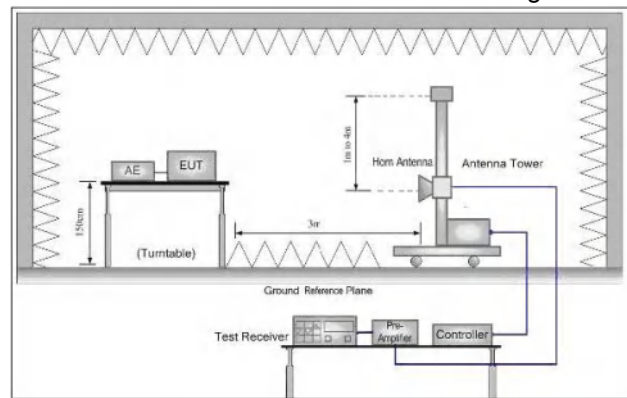
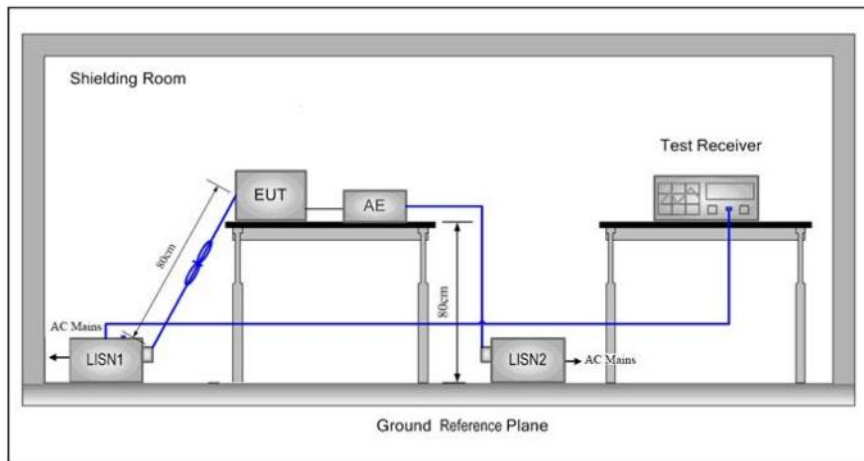


Figure 3. Above 1GHz

4.1.3 For Conducted Emissions test setup

Conducted Emissions setup



4.2 Test Environment

Operating Environment:		
Conducted Emissions:		
Temperature:	25.6 °C	
Humidity:	60 % RH	
Atmospheric Pressure:	1009 mbar	
Radiated Emissions:		
Temperature:	25.5 °C	
Humidity:	54 % RH	
Atmospheric Pressure:	1009mbar	
Radio conducted item test (RF Conducted test room):		
Temperature:	25.3 °C	
Humidity:	50 % RH	
Atmospheric Pressure:	1009 mbar	
Test Condition	Temperature (°C)	Voltage (V)
TN/VN	+15 to +35	5
TL/VL	-30	4.5
TH/VL	50	4.5
TL/VH	-30	5.5
TH/VH	50	5.5

Remark:

1)The EUT just work in such extreme temperature of -30 °C to 50 °C and the extreme voltage of 4.5V to 5.5V, so here the EUT is tested in the temperature of -30 °C to 50 °C and the voltage of 4.5V to 5.5V.

2)VN: Normal Voltage; TN: Normal Temperature;

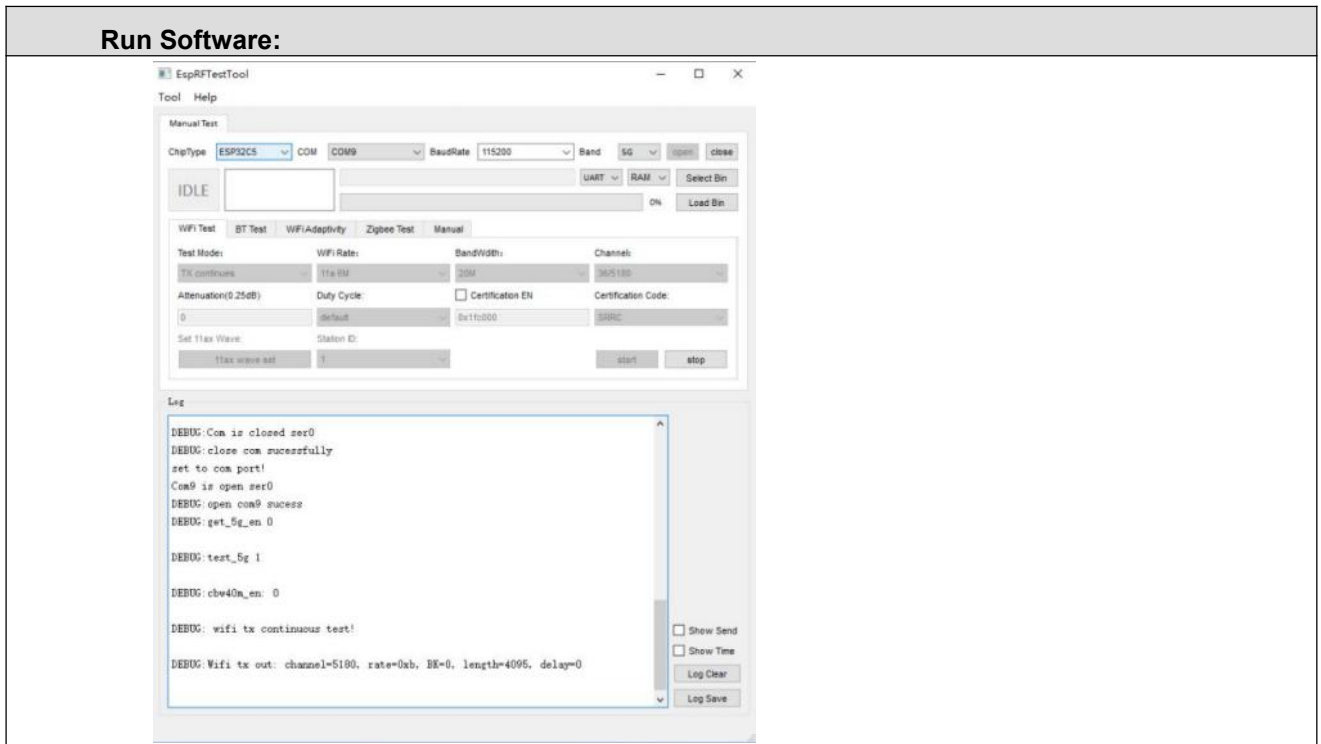
TL: Low Extreme Test Temperature; TH: High Extreme Test Temperature;

VL: Low Extreme Test Voltage; VH: High Extreme Test Voltage.

4.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11a/n/ax(20M)	5150MHz ~5250 MHz	Channel 36	Channel 40	Channel 48
		5180MHz	5200MHz	5240MHz
802.11n(40M)	5150MHz ~5250 MHz	Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
		N/A	5210MHz	N/A
802.11a/n/ax(20M)	5725MHz ~5850 MHz	Channel 149	Channel 157	Channel 165
		5745MHz	5785MHz	5825MHz
802.11n(40M)	5725MHz ~5850 MHz	Channel 151	N/A	Channel 159
		5755MHz	N/A	5795MHz
		N/A	5775MHz	N/A



Test mode:

Through Pre-scan, 6Mbps is the worst case of 802.11a (20M); MCS0 is the worst case of 802.11n (20M); MCS0 is the worst case of 802.11n(40M); MCS0 is the worst case of 802.11ax (20M)

5 General Information

5.1 Client Information

Applicant:	WIRELESS-TAG TECHNOLOGY CO., LIMITED
Address of Applicant:	801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Manufacturer:	WIRELESS-TAG TECHNOLOGY CO., LIMITED
Address of Manufacturer:	801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Factory:	WIRELESS-TAG TECHNOLOGY CO., LIMITED
Address of Factory:	801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China

5.2 General Description of EUT

Product Name:	WiFi + BLE Module
Model No.:	WT0132C5-S5, WT0132C5-S5U
Test Model No.:	WT0132C5-S5, WT0132C5-S5U
Trade Mark:	Wireless-tag
Software Version:	V1.0
Hardware Version:	V1.0
EUT Power Supply:	Power supply DC 5V
EUT Supports Radios application:	U-NII-1: 5.15-5.25GHz;U-NII-3: 5.725-5.850GHz
EUT Type:	Client devices

5.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11a/n/ax(20M): 5150MHz ~5250 MHz IEEE802.11n(40M): 5150MHz ~5250 MHz IEEE 802.11a/n/ax(20M): 5725MHz ~5850 MHz IEEE802.11n(40M): 5725MHz ~5850 MHz
Channel Numbers:	IEEE 802.11a/n/ax(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11a/n/ax(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n(40M): 5725MHz ~5850MHz/ 2 channel
Type of Modulation:	IEEE for 802.11a/n: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11ax: OFDMA(1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Sample Type:	☒ Mobile ☐ Portable
Test Software of EUT:	EspRFTTestTool
Antenna Type:	FPC antenna/PCB antenna
Antenna gain:	FPC antenna:4.48dBi PCB antenna:2.71dBi
Cable loss:	1.0 dB

Operation Frequency each of channel

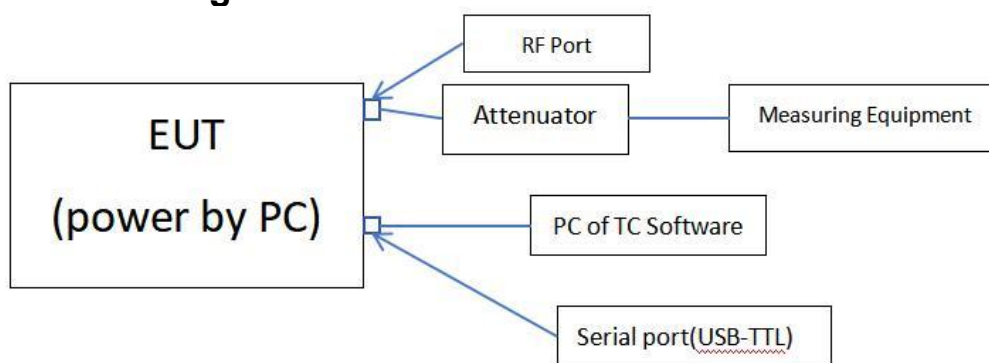
(U-NII-1) 5180MHz-5240MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	36	5180	40	5200
	44	5220	48	5240
40MHz	38	5190	46	5230
(U-NII-3) 5745MHz-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	149	5745	153	5765
	157	5785	161	5805
	165	5825	/	/
40MHz	151	5755	159	5795

5.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Certification	Supplied by
Laptop	/	/	/	CQA
Serial port board	/	/	/	CQA

5.5 Test configuration



5.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

5.7 Test Facility

• **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

5.8 Deviation from Standards

None.

5.9 Abnormalities from Standard Conditions

None.

5.10 Other Information Requested by the Customer

None.

5.11 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	3×10^{-8}
2	RF power, conducted	0.86dB
3	Radiated Spurious emission test	5.12dB (Below 1GHz)
		4.6dB (Above 1GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.8°C
6	Humidity test	2.0%
7	DC power voltages	0.5%

6 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2025/9/1	2026/8/31
Spectrum analyzer	R&S	FSU26	CQA-038	2025/9/1	2026/8/31
Spectrum analyzer	R&S	FSU40	CQA-075	2025/9/1	2026/8/31
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2025/9/1	2026/8/31
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2025/9/1	2026/8/31
Preamplifier	EMCI	EMC184055SE	CQA-089	2025/9/1	2026/8/31
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2025/9/1	2026/8/31
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2025/9/1	2026/8/31
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2025/9/1	2026/8/31
Antenna Connector	CQA	RFC-01	CQA-080	2025/9/1	2026/8/31
Power Sensor	KEYSIGHT	U2021XA	CQA-30	2025/9/1	2026/8/31
N1918A Power Analysis Manager Power Panel	Agilent	N1918A	CQA-074	2025/9/1	2026/8/31
Power meter	R&S	NRVD	CQA-029	2025/9/1	2026/8/31
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2025/9/1	2026/8/31
EMI Test Receiver	R&S	ESR7	CQA-005	2025/9/1	2026/8/31
LISN	R&S	ENV216	CQA-003	2025/9/1	2026/8/31
Coaxial cable	CQA	N/A	CQA-C009	2025/9/1	2026/8/31
DC power	KEYSIGHT	E3631A	CQA-028	2025/9/1	2026/8/31

Test software:

	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

7 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15E	Subpart C-Intentional Radiators
2	ANSI C63.10-2020	American National Standard for Testing Unlicensed Wireless Devices
3	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15, subpart E

Appendix A): Emission Bandwidth

26dB Emission bandwidth

Test Requirement: 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II C 1

6 dB bandwidth (5.725-5.85 GHz band)

Test Requirement 47 CFR Part 15, Subpart C 15.407 (e)

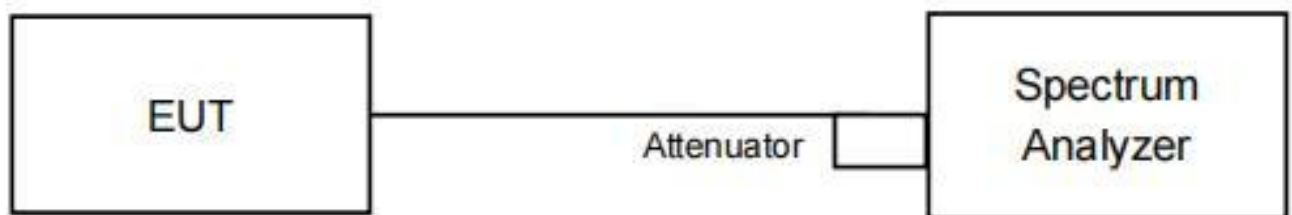
Test Method: KDB 789033 D02 II C 2

Limit: ≥ 500 kHz

Test Procedure:

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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%.

Test Setup Diagram



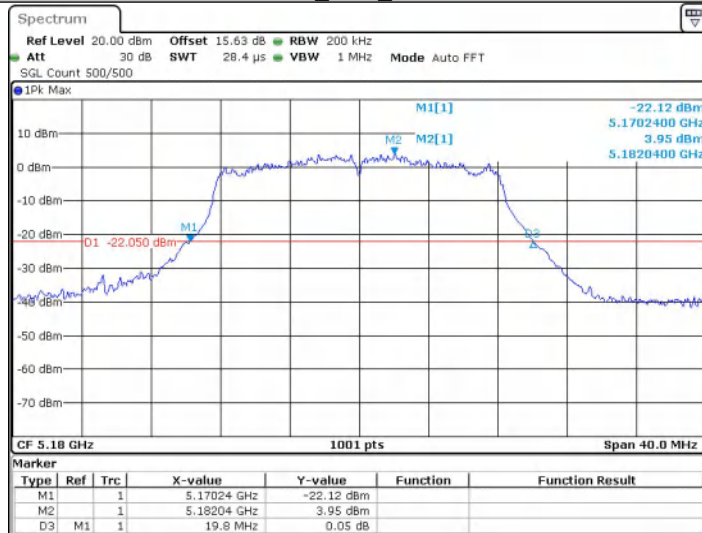
Result Table

TestMode	Freq(MHz)	26db EBW [MHz]	FL[MHz]	FH[MHz]
11A	5180	19.80	5170.24	5190.04
	5200	20.08	5189.76	5209.84
	5240	20.52	5230.12	5250.64
	5745	19.32	5735.44	5754.76
	5785	20.48	5774.88	5795.36
	5825	20.64	5814.56	5835.20
11N20SISO	5180	20.24	5169.84	5190.08
	5200	20.92	5189.48	5210.40
	5240	21.32	5229.32	5250.64
	5745	20.32	5734.84	5755.16
	5785	21.20	5774.56	5795.76
	5825	20.92	5814.36	5835.28
11N40SISO	5190	39.60	5170.00	5209.60
	5230	40.96	5209.92	5250.88
	5755	39.84	5735.08	5774.92
	5795	39.68	5775.32	5815.00
11AX20SISO	5180	20.68	5169.64	5190.32
	5200	20.56	5189.64	5210.20
	5240	20.68	5229.76	5250.44
	5745	20.60	5734.68	5755.28
	5785	20.92	5774.60	5795.52
	5825	20.28	5814.76	5835.04

TestMode	Freq(MHz)	6db EBW [MHz]	Limit[MHz]	Verdict
11A	5745	13.88	0.5	PASS
	5785	16.08	0.5	PASS
	5825	16.36	0.5	PASS
11N20SISO	5745	16.92	0.5	PASS
	5785	15.08	0.5	PASS
	5825	17.28	0.5	PASS
11N40SISO	5755	26.32	0.5	PASS
	5795	35.04	0.5	PASS
11AX20SISO	5745	15.56	0.5	PASS
	5785	15.80	0.5	PASS
	5825	15.12	0.5	PASS

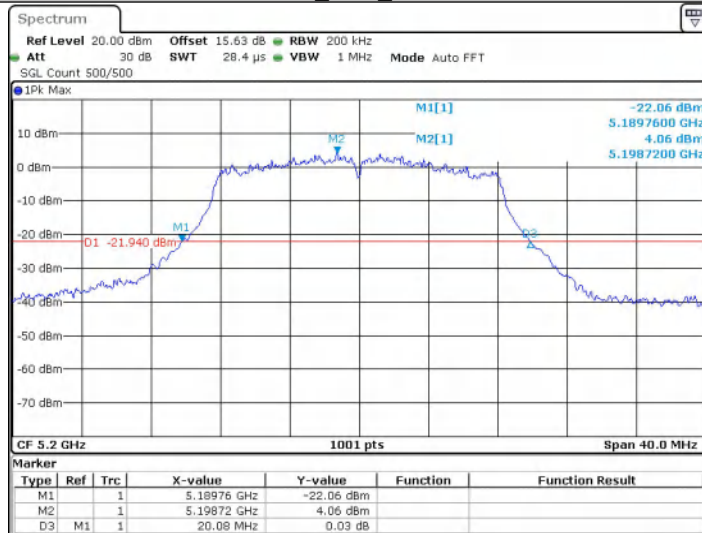
Test Graph

11A_Ant1_5180



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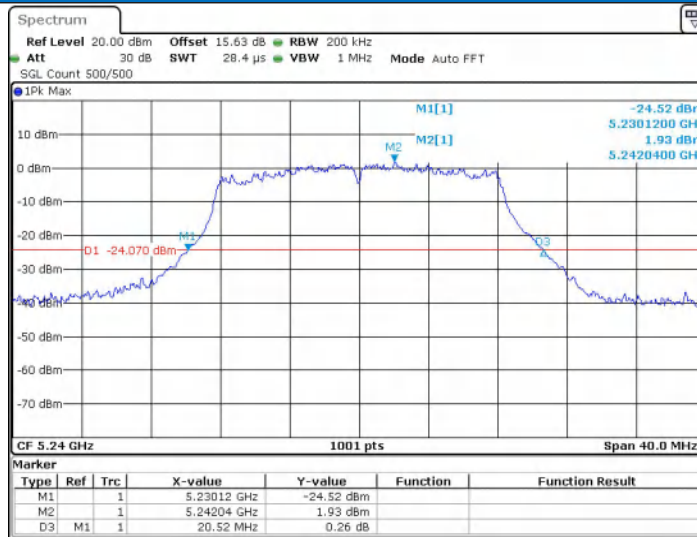
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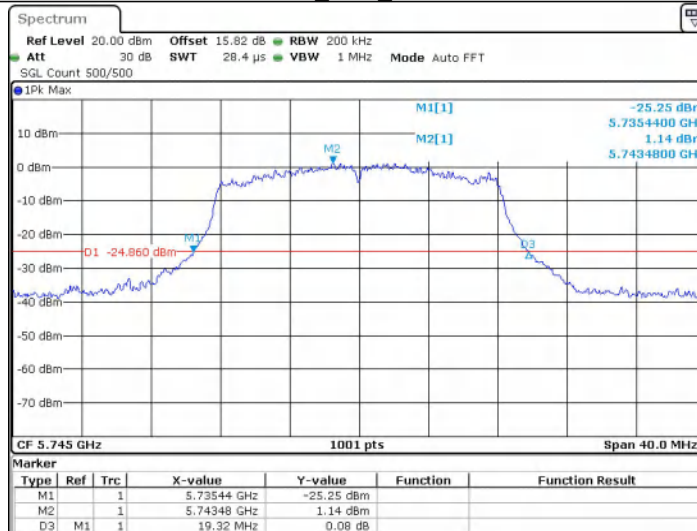
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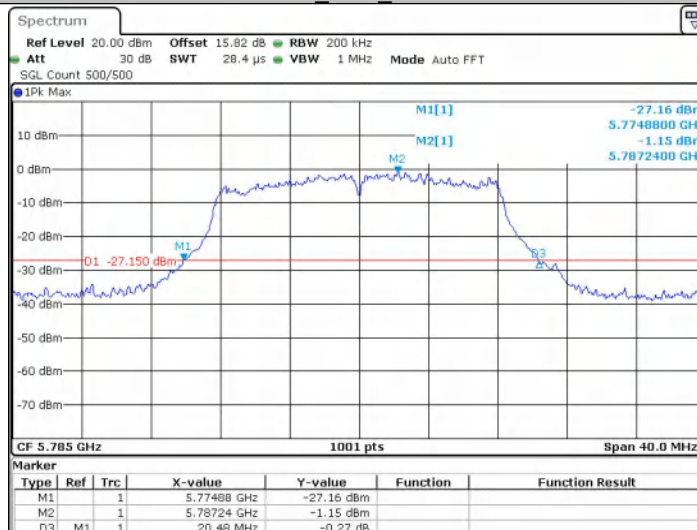
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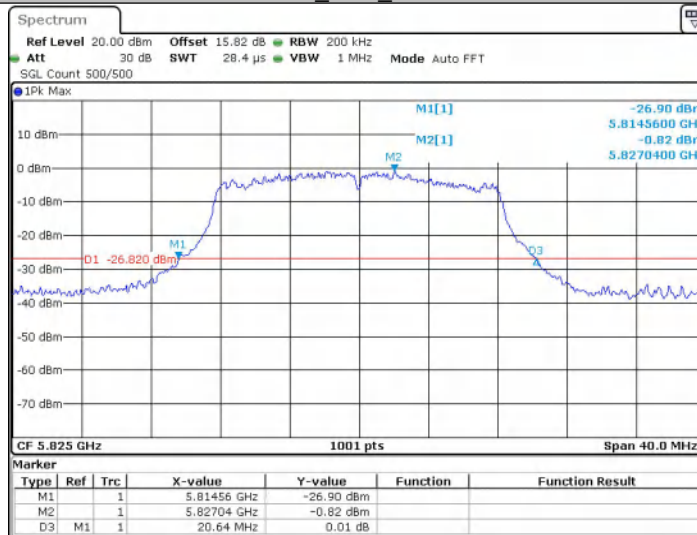
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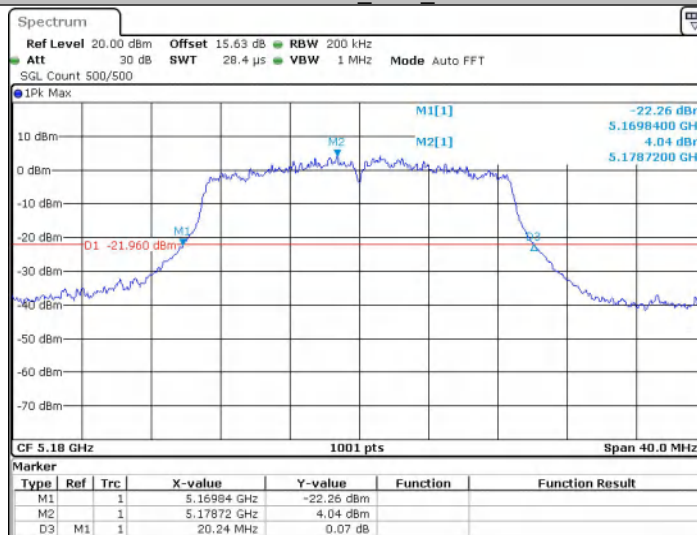
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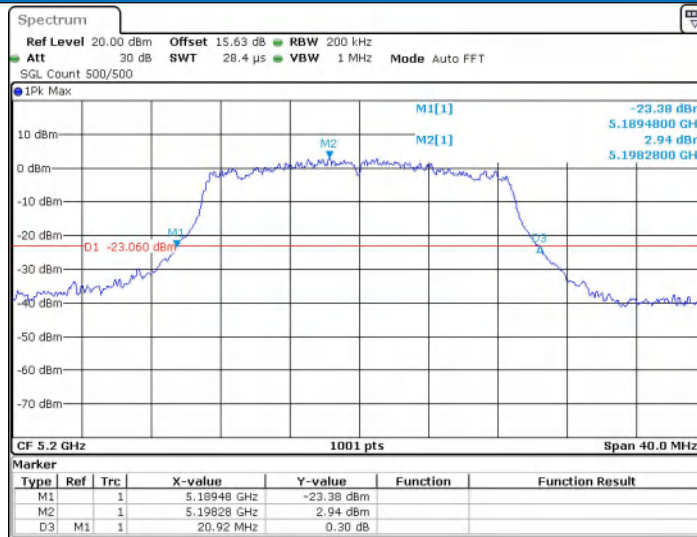
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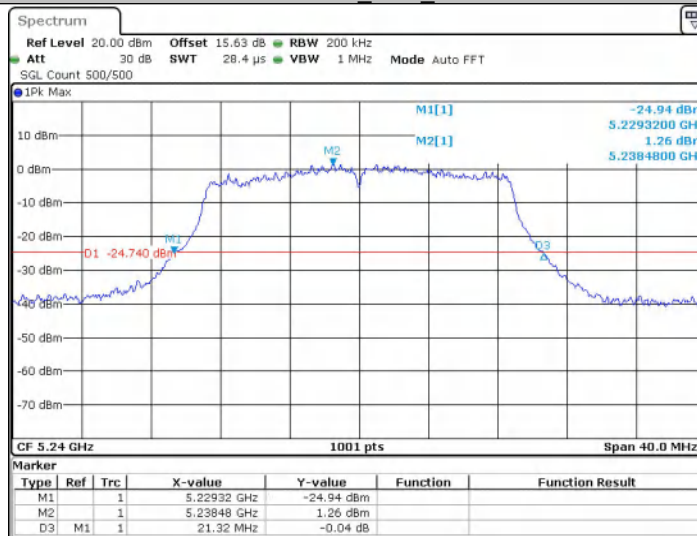
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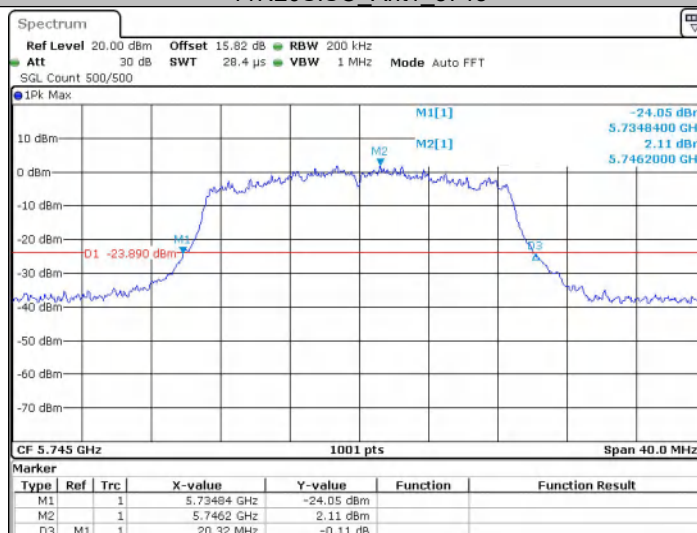
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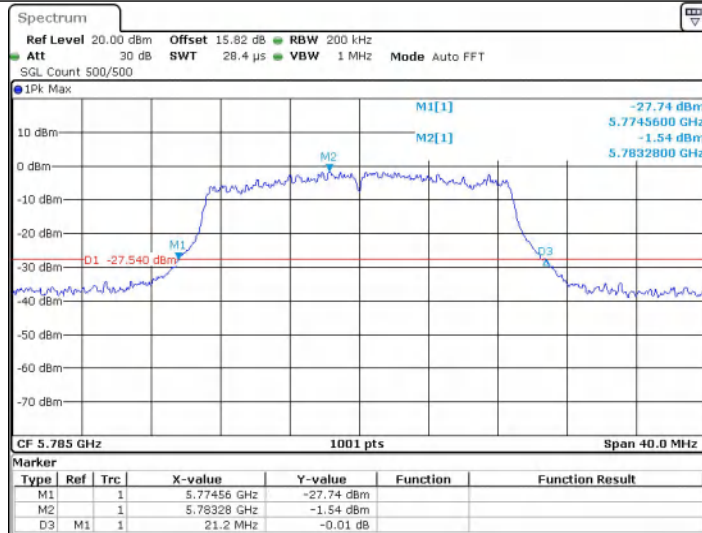
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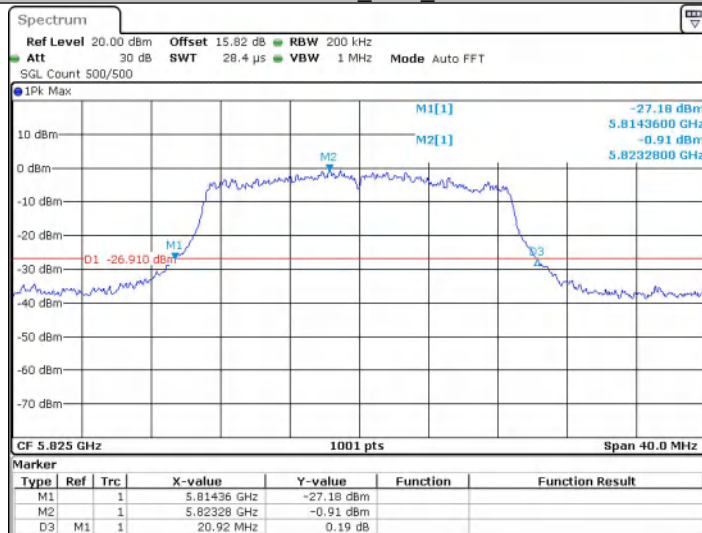
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11N20SISO_Ant1_5785



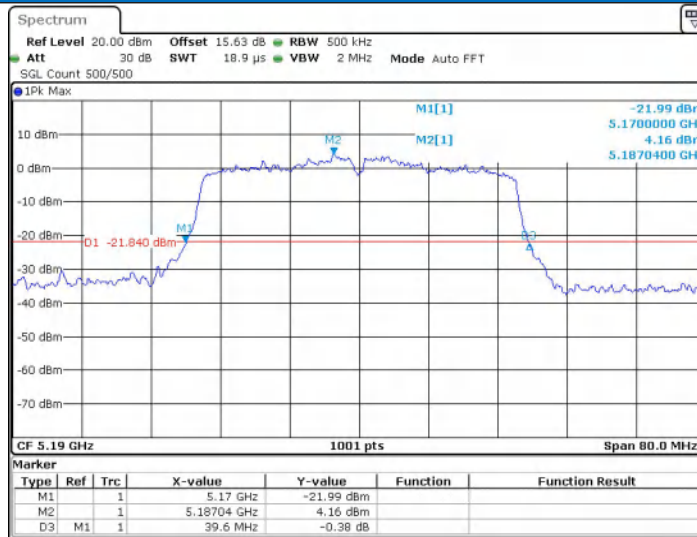
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11N20SISO_Ant1_5825



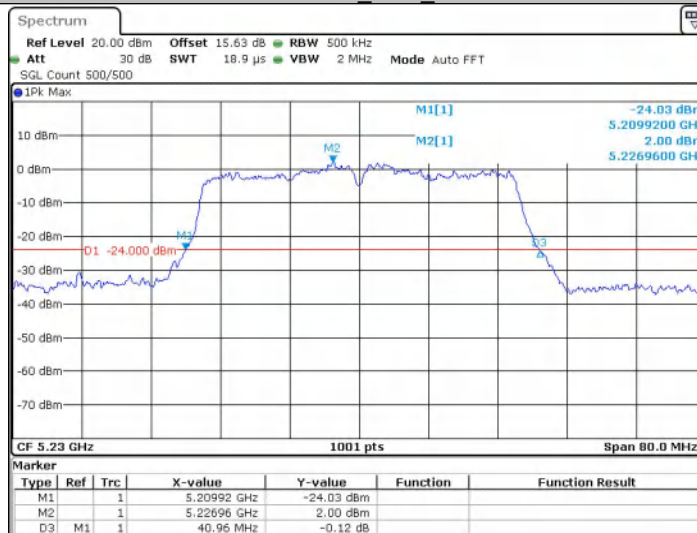
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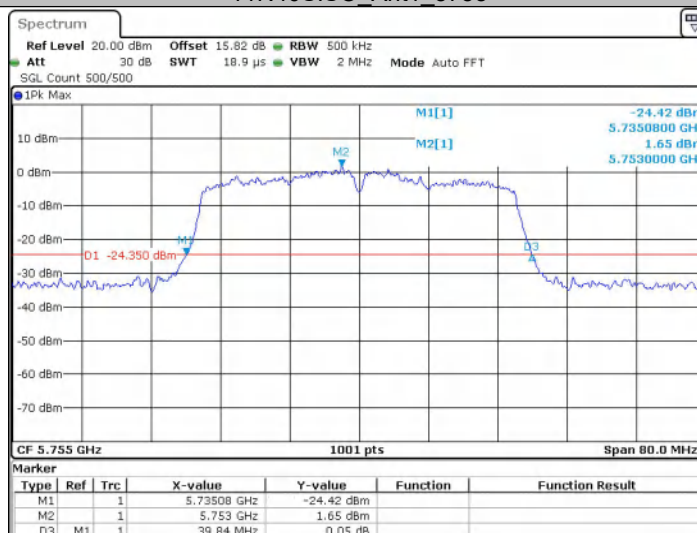
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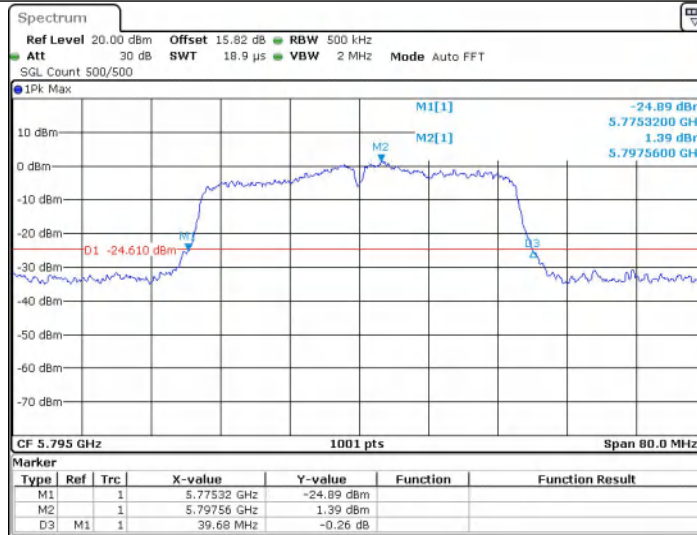
Date: 26 DEC 2025 17:29:50

11N40SISO_Ant1_5755



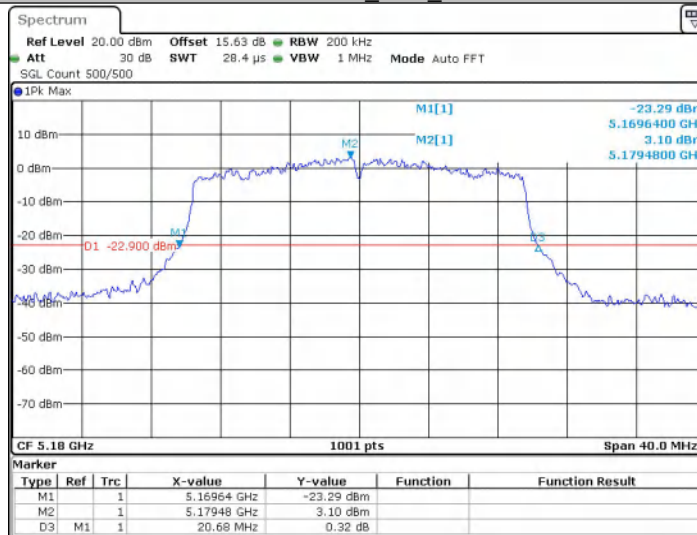
Date: 26 DEC 2025 17:31:51

11N40SISO_Ant1_5795



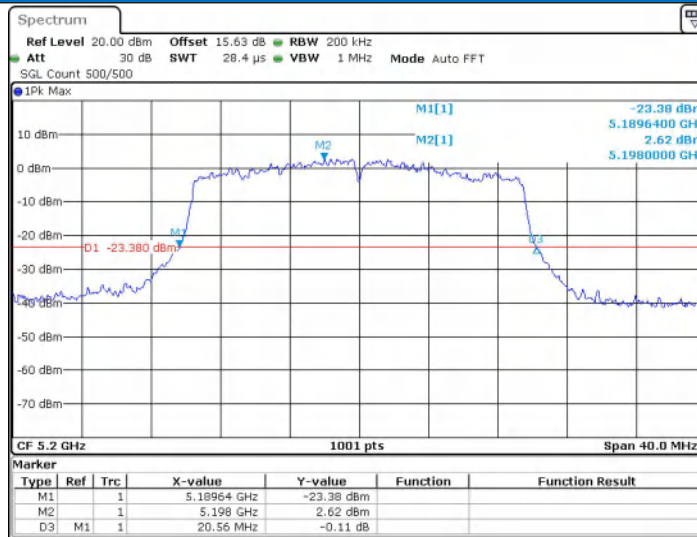
Date: 26 DEC 2025 17:40:46

11AX20SISO_Ant1_5180



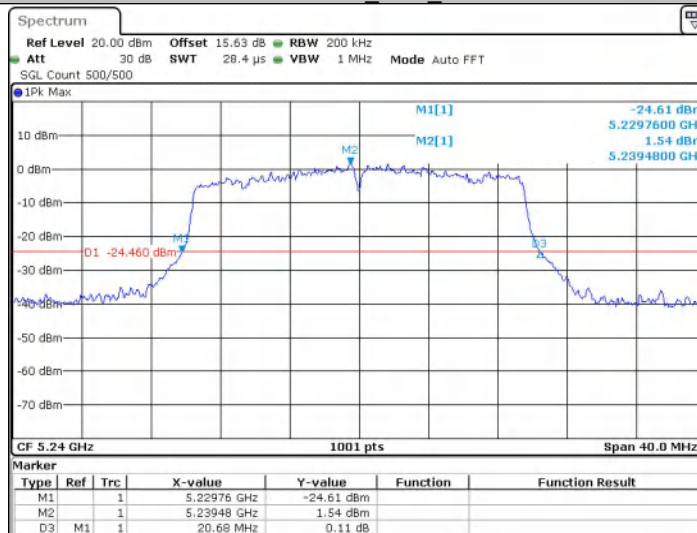
Date: 26 DEC 2025 17:46:20

11AX20SISO_Ant1_5200



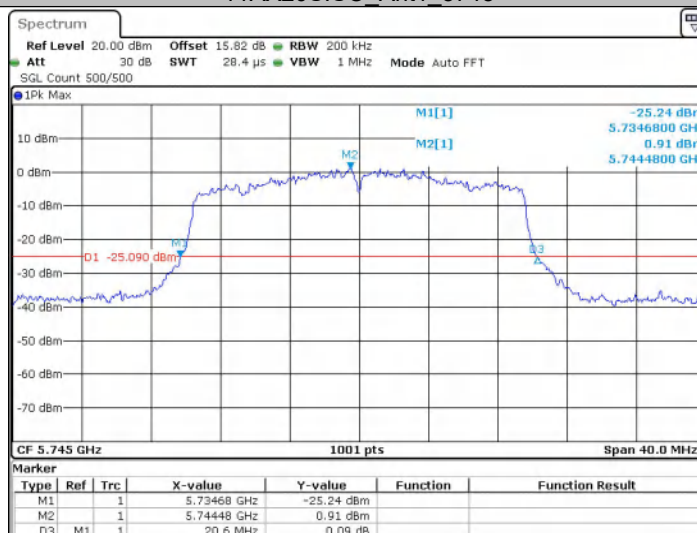
Date: 26 DEC 2025 17:48:52

11AX20SISO_Ant1_5240



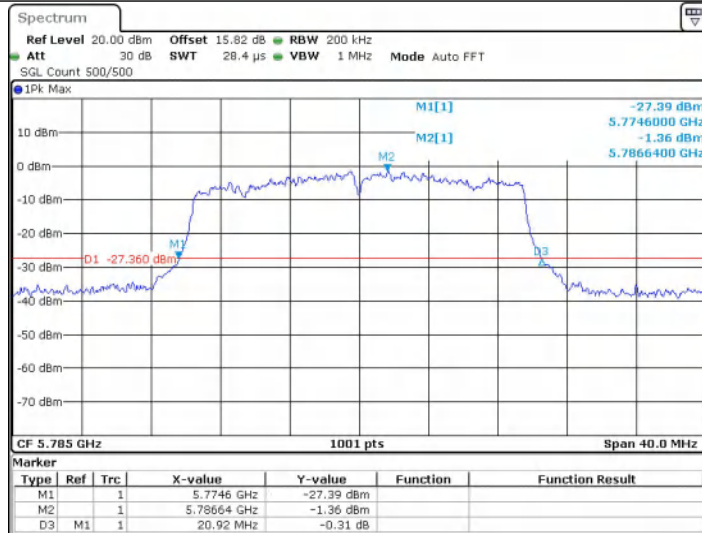
Date: 26 DEC 2025 17:51:30

11AX20SISO_Ant1_5745



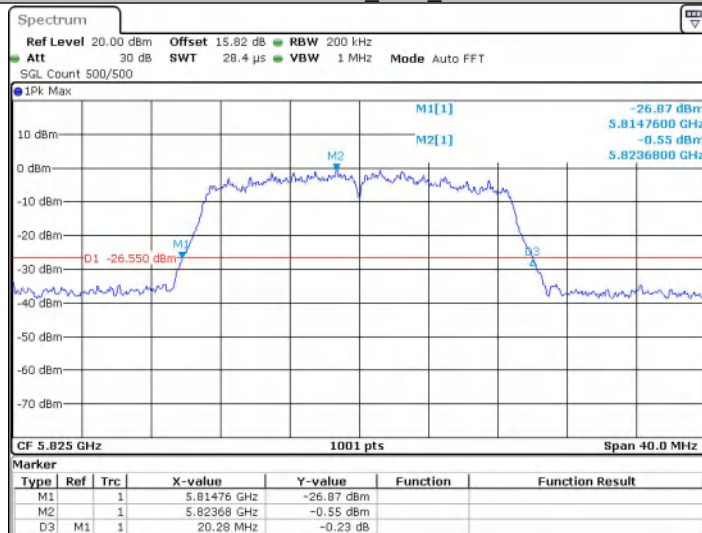
Date: 26 DEC 2025 17:53:28

11AX20SISO_Ant1_5785



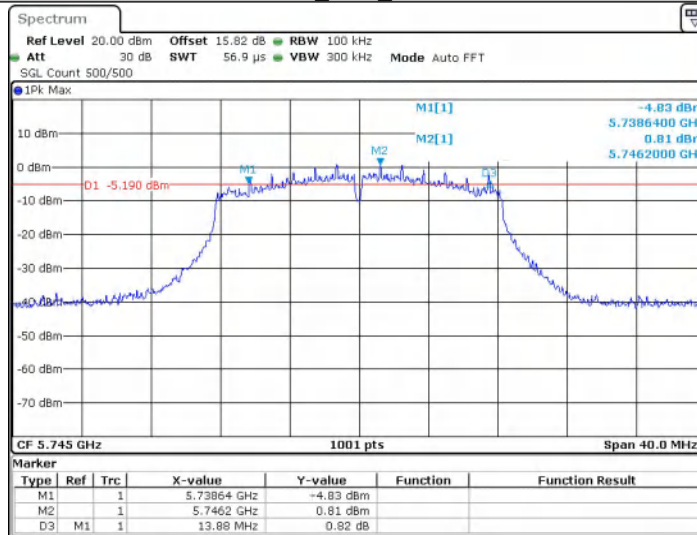
Date: 26 DEC 2025 17:56:43

11AX20SISO_Ant1_5825



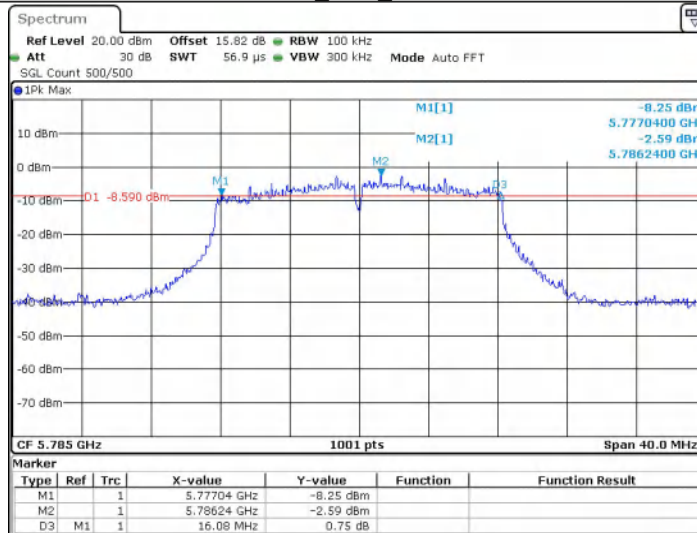
Date: 27 DEC 2025 20:05:31

11A_Ant1_5745



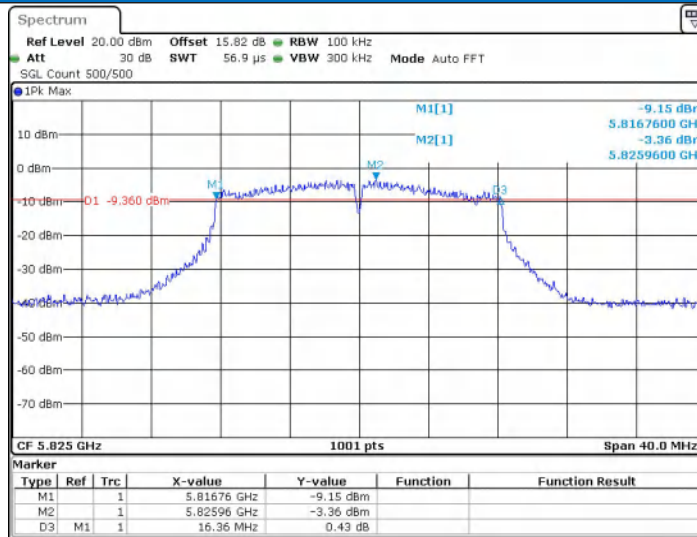
Date: 26 DEC 2025 17:09:41

11A_Ant1_5785



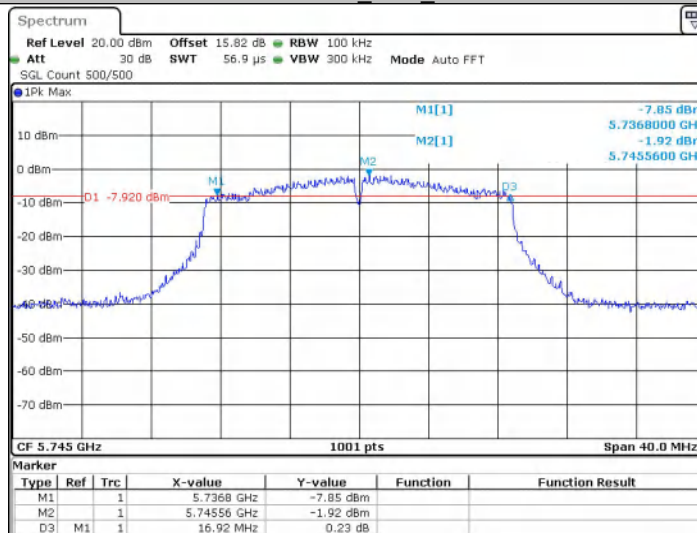
Date: 26 DEC 2025 17:11:18

11A_Ant1_5825



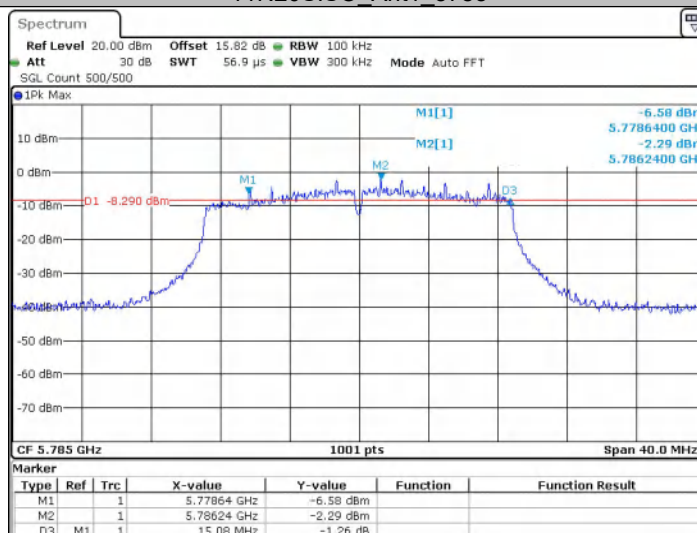
Date: 26 DEC 2025 17:13:32

11N20SISO_Ant1_5745



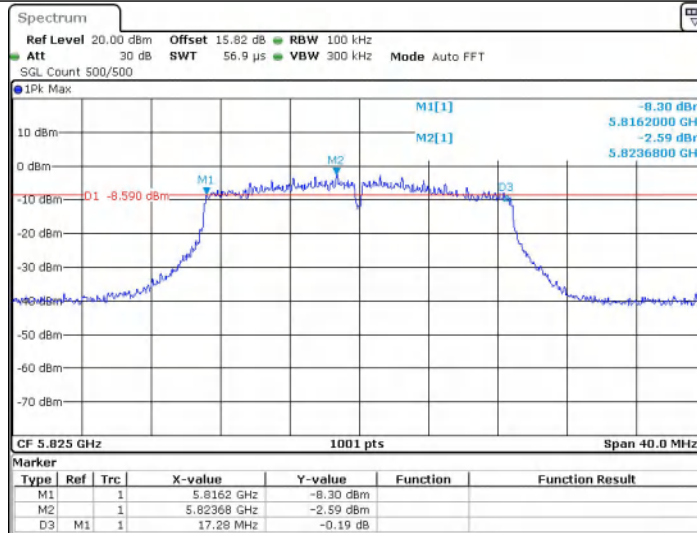
Date: 26 DEC 2025 17:21:22

11N20SISO_Ant1_5785



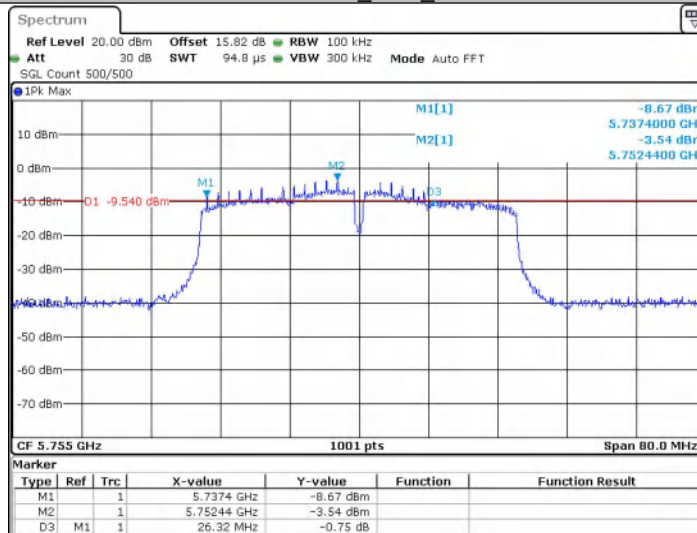
Date: 26 DEC 2025 17:23:05

11N20SISO_Ant1_5825



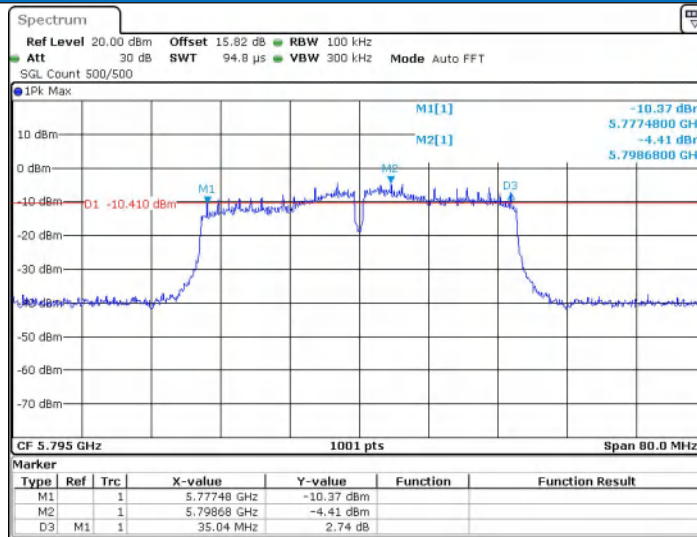
Date: 26 DEC 2025 17:24:42

11N40SISO_Ant1_5755



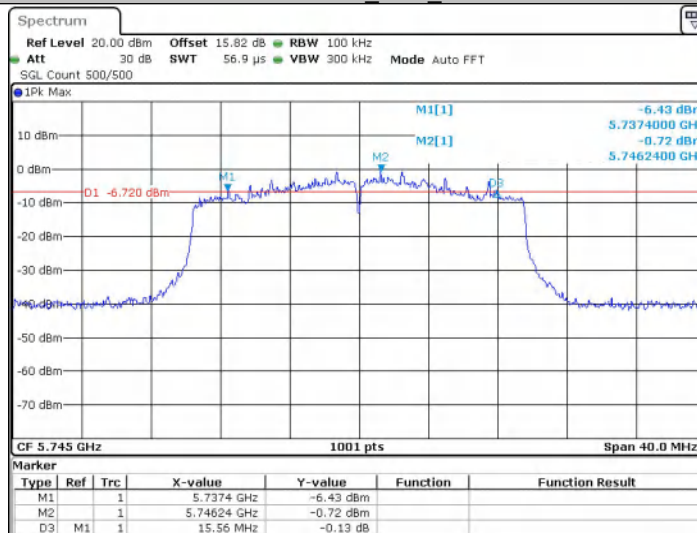
Date: 26 DEC 2025 17:32:00

11N40SISO_Ant1_5795



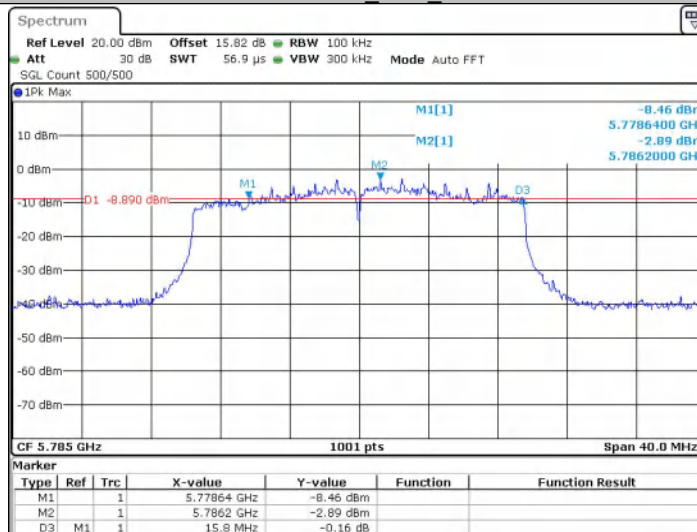
Date: 26 DEC 2025 17:40:56

11AX20SISO_Ant1_5745



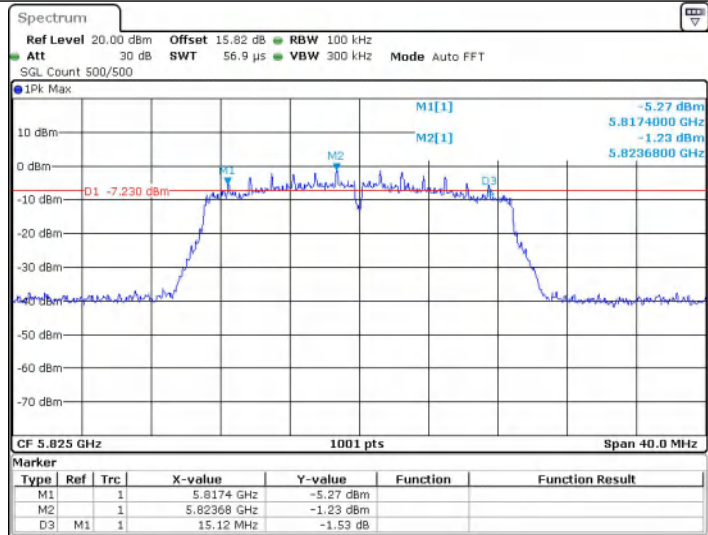
Date: 26 DEC 2025 17:53:35

11AX20SISO_Ant1_5785



Date: 26 DEC 2025 17:56:51

11AX20SISO_Ant1_5825



Date: 27 DEC 2025 20:05:39

Appendix B): Maximum Conduct Output Power

1.Duty Cycle (x)

Test Requirement KDB 789033 D02 II B 1

Test Method: KDB 789033 II B 1

Test Procedure:

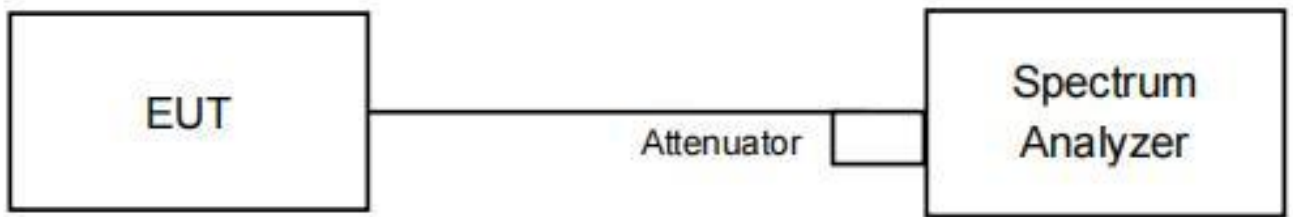
Set RBW = 20MHz

Set VBW = 40MHz

Set detector = peak.

Set span =0Hz

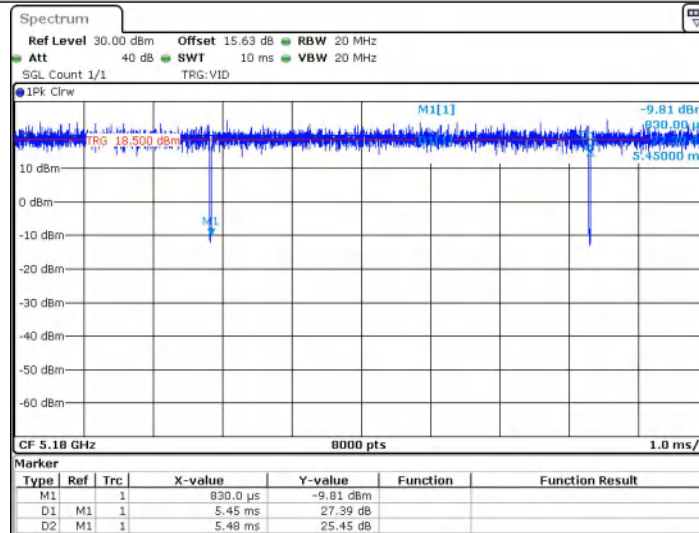
Test Setup Diagram



Measurement Data

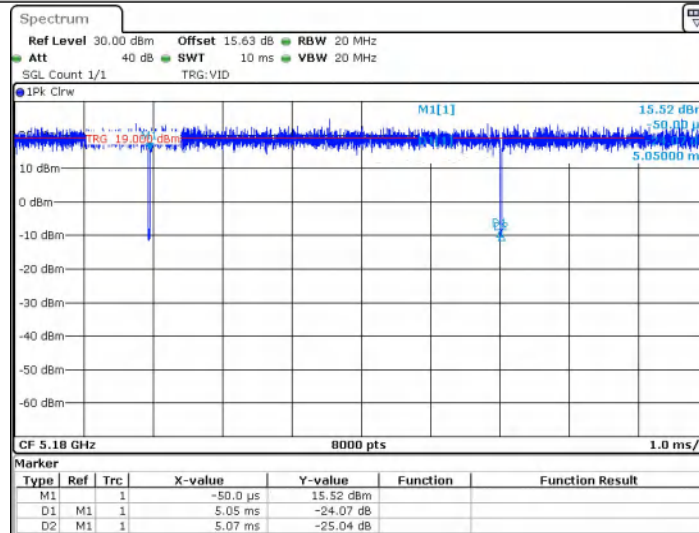
Test Mode	Antenna	Duty Cycle[%]	10log(1/x) Factor[dB]
11A	Ant1	99.45	0.02
11N20	Ant1	99.61	0.02
11N40	Ant1	99.19	0.04
11AX20	Ant1	97.09	0.13

11A



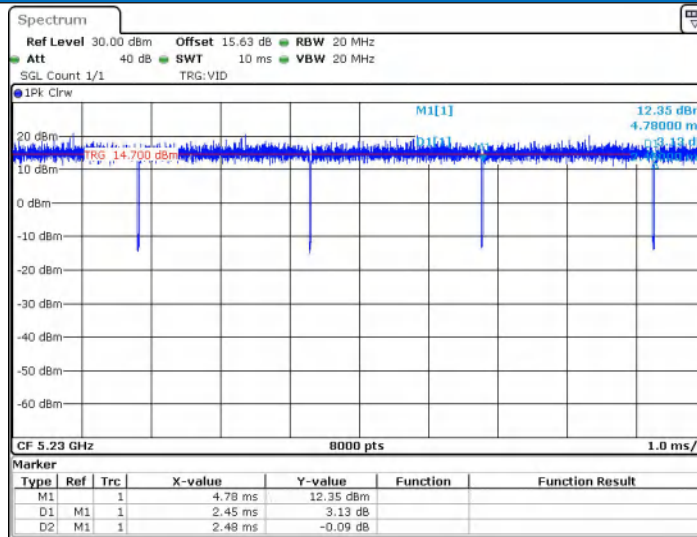
Date: 26 DEC 2025 17:02:56

11N20



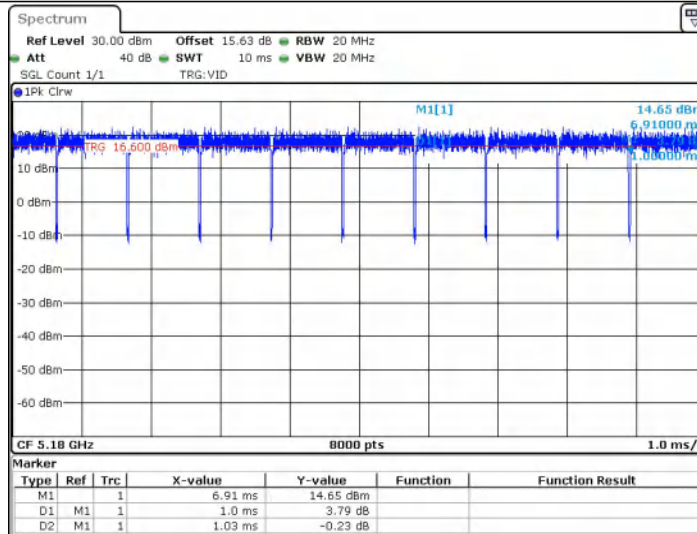
Date: 26 DEC 2025 17:15:17

11N40



Date: 26 DEC 2025 17:30:12

11AX20



Date: 26 DEC 2025 17:46:38

2. Maximum Conducted Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II E

Limit:

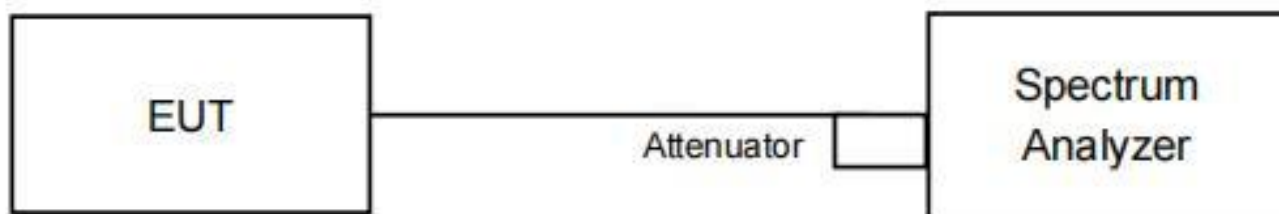
Frequency band(MHz)	Limit
5150-5250	$\leq 1\text{W}(30\text{dBm})$ for master device
	$\leq 250\text{mW}(24\text{dBm})$ for client device
5250-5350	$\leq 250\text{mW}(24\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
5470-5725	$\leq 250\text{mW}(24\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
5725-5850	$\leq 1\text{W}(30\text{dBm})$
Remark:	* Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Procedure:

Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- (1) Set RBW = 1 MHz.
- (2) Set VBW $\geq$ 3 MHz.
- (3) Detector = power average
- (4) Sweep time = auto.
- (5) Add duty cycle to the measured average power.

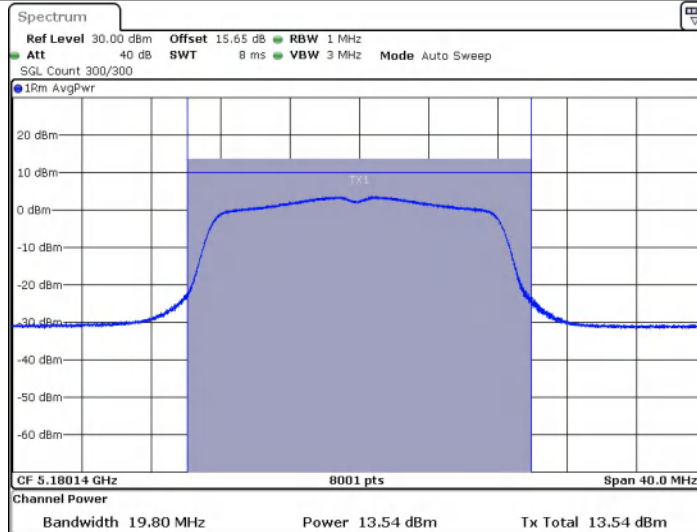
Test Setup Diagram



Measurement Data

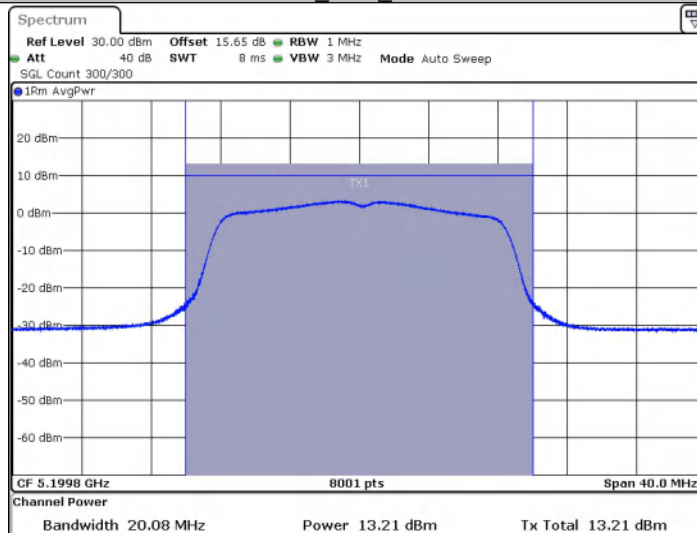
Test Mode	Antenna	Freq(MHz)	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	13.54	≤ 23.98	PASS
		5200	13.21	≤ 23.98	PASS
		5240	11.83	≤ 23.98	PASS
		5745	11.12	≤ 30.00	PASS
		5785	9.13	≤ 30.00	PASS
		5825	9.37	≤ 30.00	PASS
11N20SISO	Ant1	5180	13.41	≤ 23.98	PASS
		5200	13.00	≤ 23.98	PASS
		5240	11.67	≤ 23.98	PASS
		5745	10.93	≤ 30.00	PASS
		5785	8.94	≤ 30.00	PASS
		5825	9.25	≤ 30.00	PASS
11N40SISO	Ant1	5190	12.37	≤ 23.98	PASS
		5230	10.58	≤ 23.98	PASS
		5755	9.67	≤ 30.00	PASS
		5795	9.41	≤ 30.00	PASS
11AX20SISO	Ant1	5180	12.39	≤ 23.98	PASS
		5200	11.94	≤ 23.98	PASS
		5240	10.56	≤ 23.98	PASS
		5745	9.79	≤ 30.00	PASS
		5785	9.04	≤ 30.00	PASS
		5825	9.06	≤ 30.00	PASS

11A_Ant1_5180



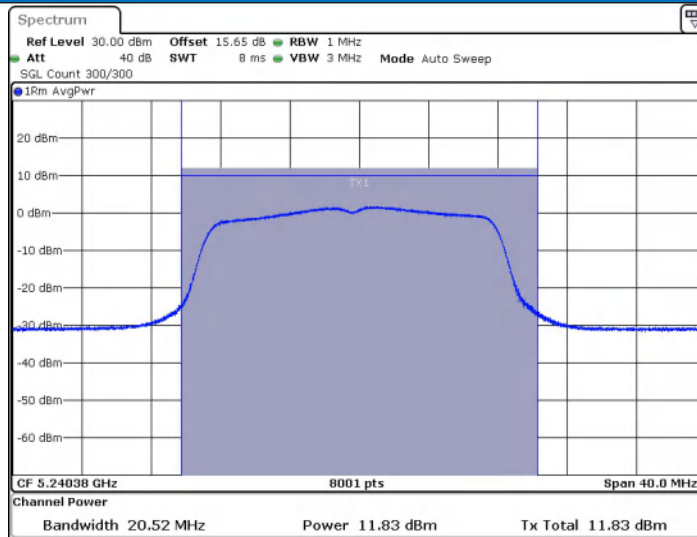
Date: 26 DEC 2025 17:03:06

11A_Ant1_5200



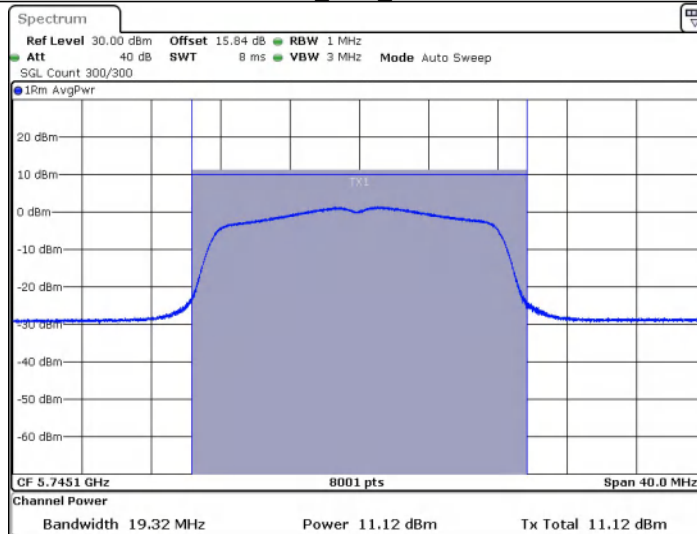
Date: 26 DEC 2025 17:06:04

11A_Ant1_5240



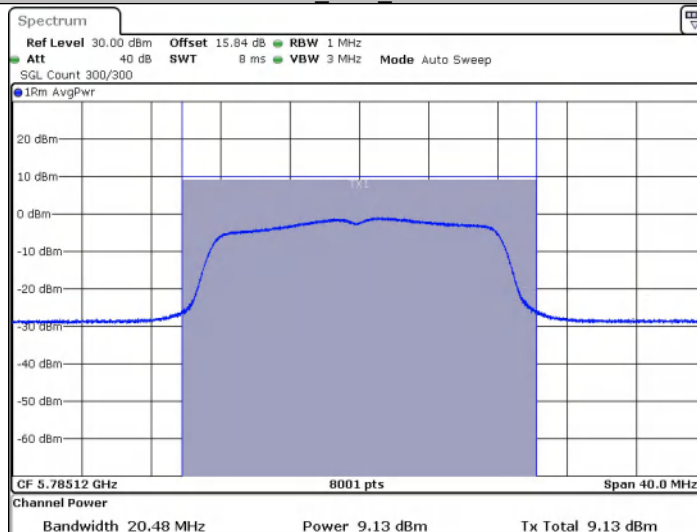
Date: 26 DEC 2025 17:07:02

11A_Ant1_5745



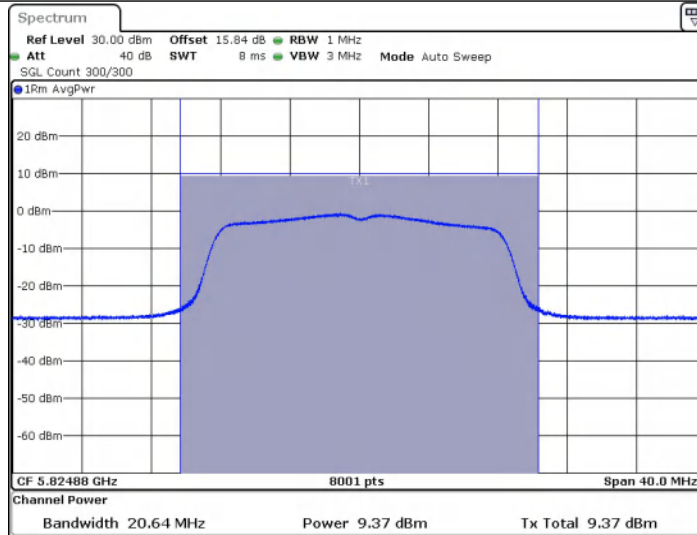
Date: 26 DEC 2025 17:10:08

11A_Ant1_5785



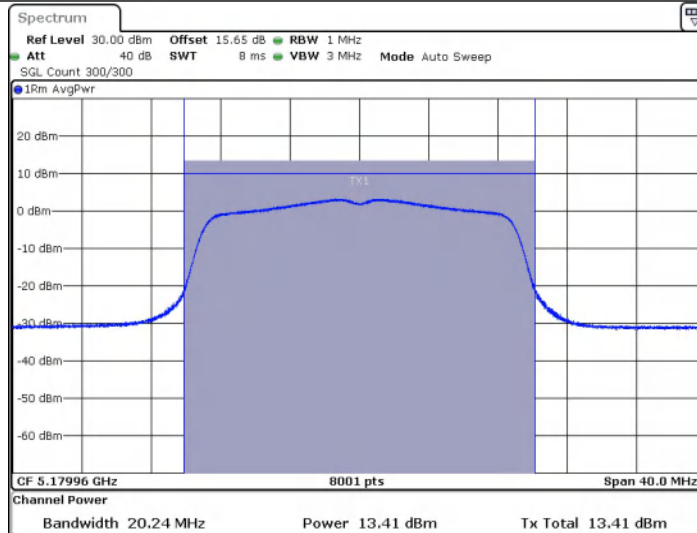
Date: 26 DEC 2025 17:11:46

11A_Ant1_5825



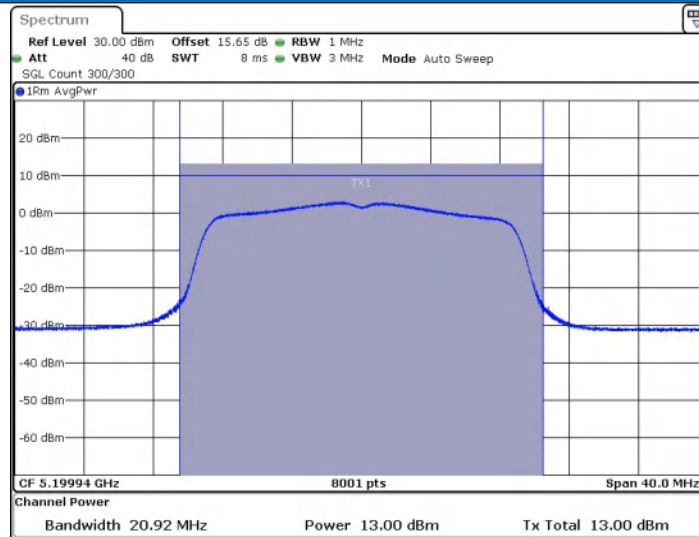
Date: 26 DEC 2025 17:14:00

11N20SISO_Ant1_5180



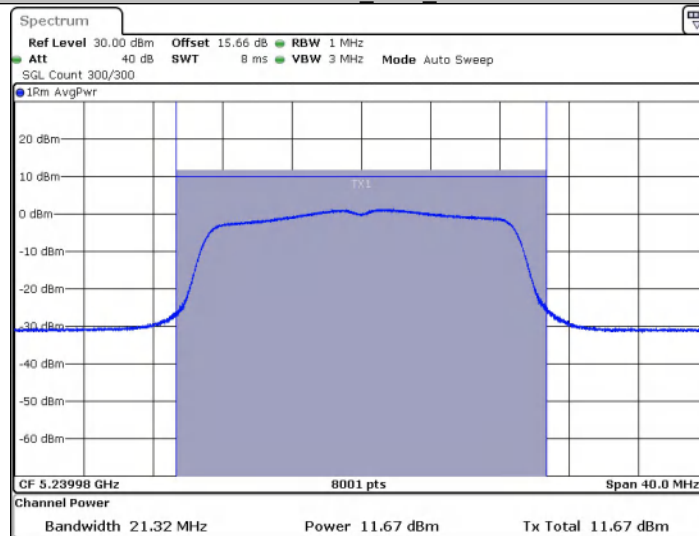
Date: 26 DEC 2025 17:15:27

11N20SISO_Ant1_5200



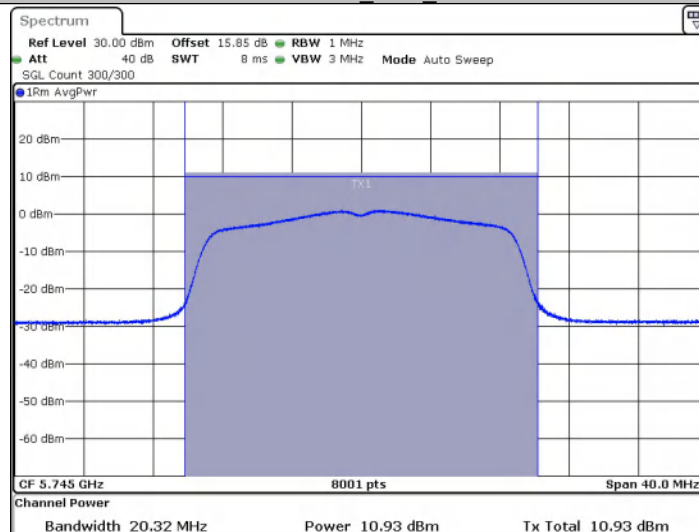
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11N20SISO_Ant1_5240



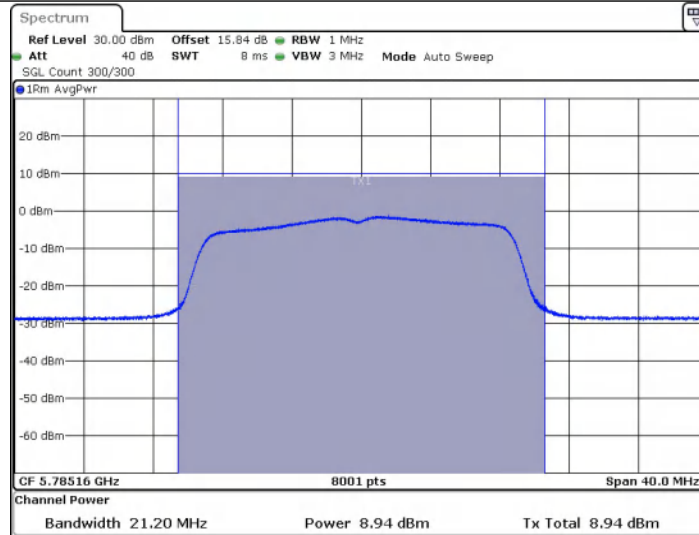
Date: 26 DEC 2025 17:18:52

11N20SISO_Ant1_5745



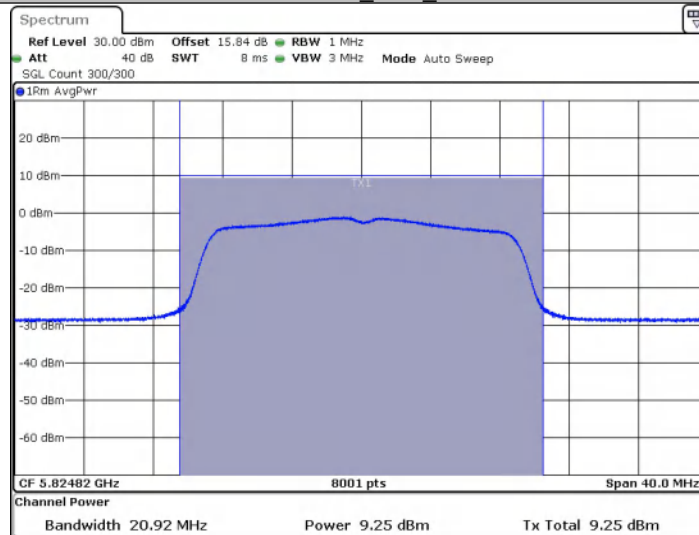
Date: 26 DEC 2025 17:21:50

11N20SISO_Ant1_5785



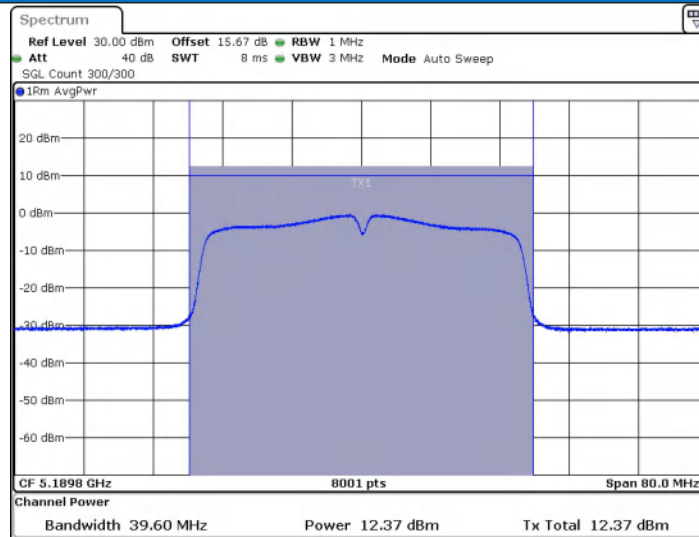
Date: 26 DEC 2025 17:23:32

11N20SISO_Ant1_5825



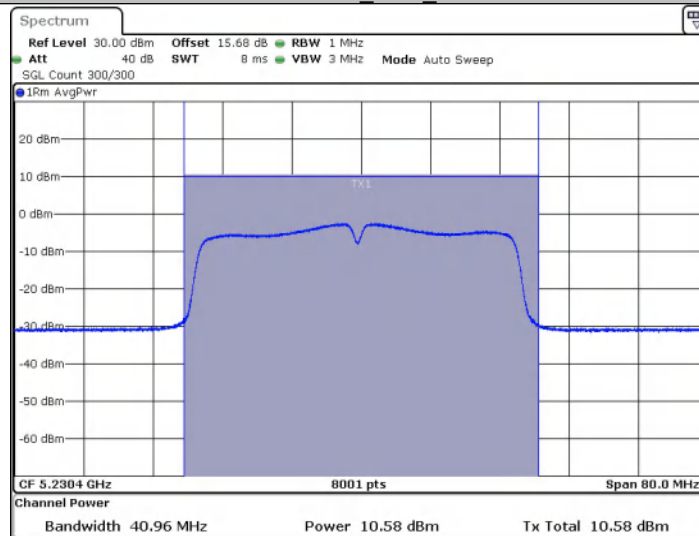
Date: 26 DEC 2025 17:25:09

11N40SISO_Ant1_5190



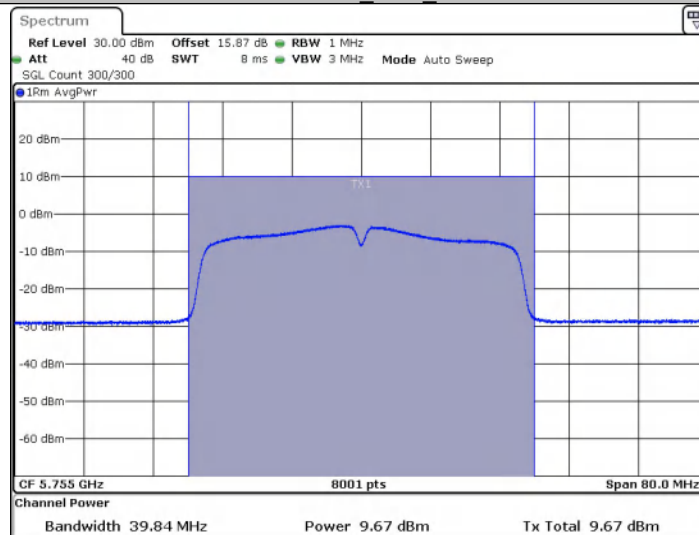
Date: 26 DEC 2025 17:27:23

11N40SISO_Ant1_5230



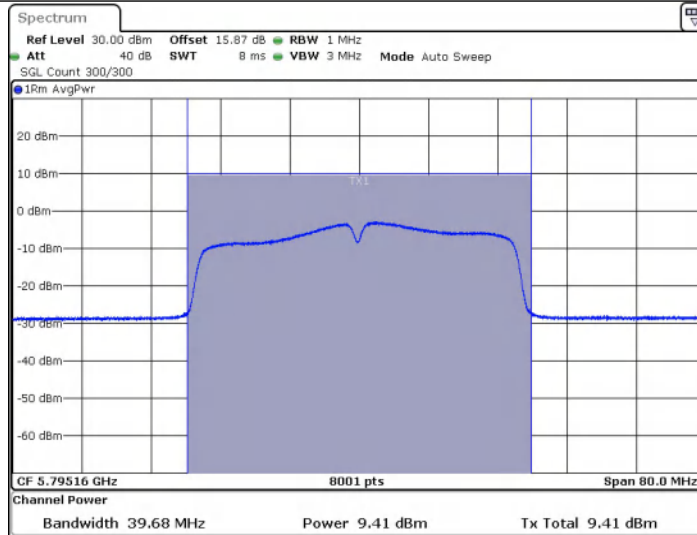
Date: 26 DEC 2025 17:30:21

11N40SISO_Ant1_5755



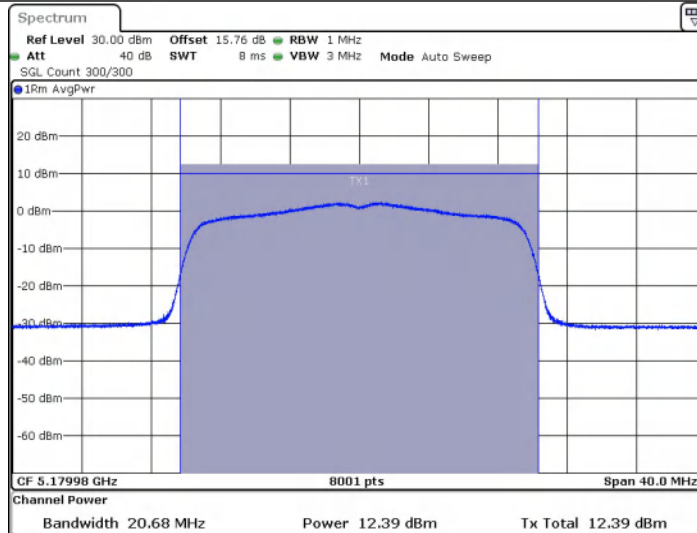
Date: 26 DEC 2025 17:32:31

11N40SISO_Ant1_5795



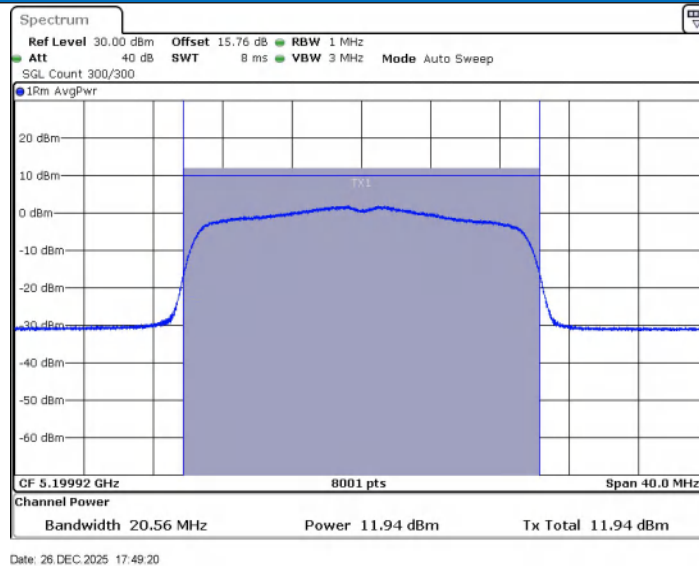
Date: 26 DEC 2025 17:41:25

11AX20SISO_Ant1_5180

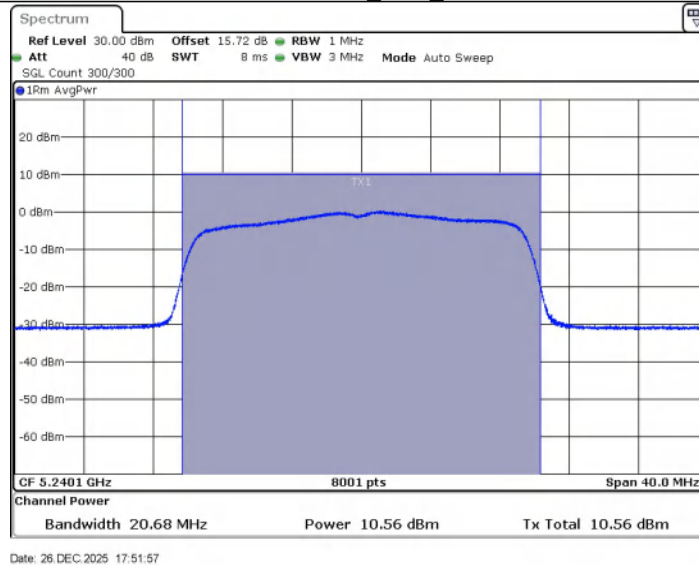


Date: 26 DEC 2025 17:46:48

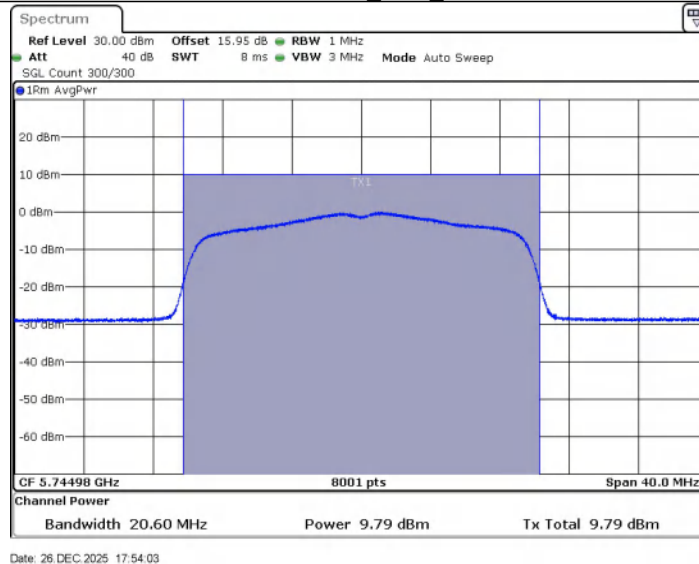
11AX20SISO_Ant1_5200



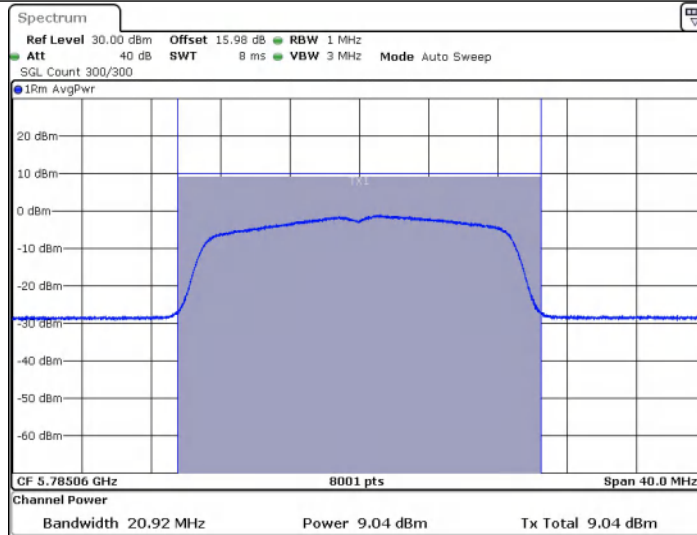
11AX20SISO_Ant1_5240



11AX20SISO_Ant1_5745

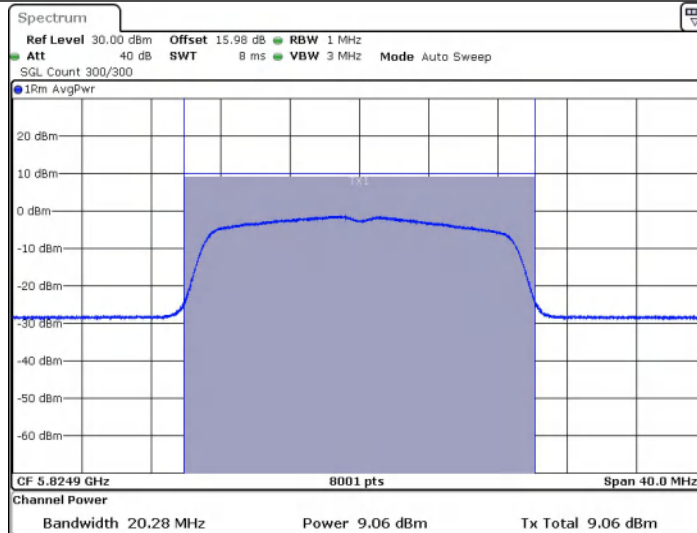


11AX20SISO_Ant1_5785



Date: 27 DEC 2025 20:04:46

11AX20SISO_Ant1_5825



Date: 27 DEC 2025 20:06:06

Remark:

$Av.Power = Meas.Level + 10 \log(1/duty\ cycle)$

$E.i.r.p = Av.Power + G$,

G = antenna gain in dBi.

Appendix C): Maximum Power Spectral Density

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 II F

Test Procedure:

For 5150-5725MHz:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 1MHz.
4. Set the VBW $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold.

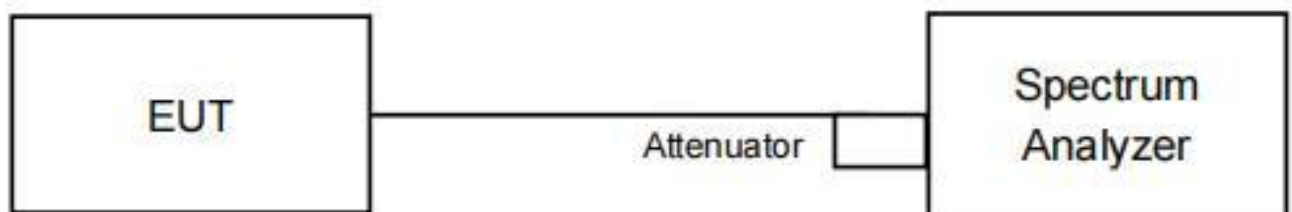
For 5725-5850MHz:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 500KHz.
4. Set the VBW $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold.

Limit:

Frequency band(MHz)	Limit
5150-5250	$\leq 17\text{dBm}$ in 1MHz for master device
	$\leq 11\text{dBm}$ in 1MHz for client device
5250-5350	$\leq 11\text{dBm}$ in 1MHz for client device
5470-5725	$\leq 11\text{dBm}$ in 1MHz for client device
5725-5850	$\leq 30\text{dBm}$ in 500 kHz
Remark:	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

Test Setup Diagram



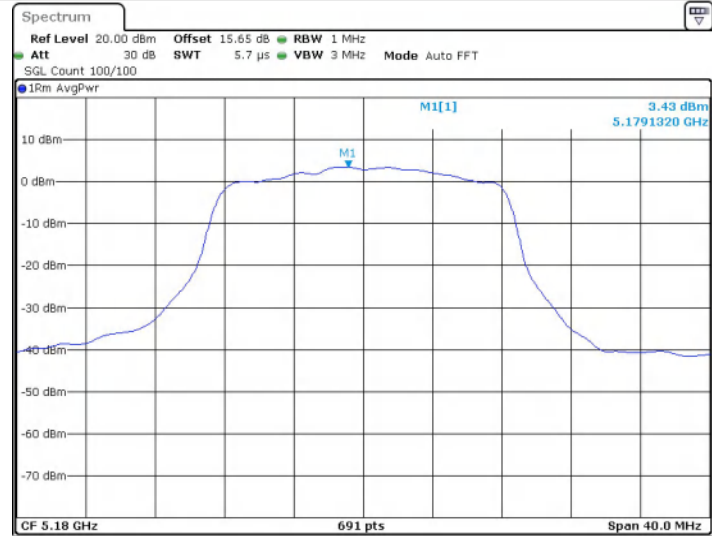
Result Table

TestMode	Freq(MHz)	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	5180	3.43	≤11.00	PASS
	5200	3.47	≤11.00	PASS
	5240	1.16	≤11.00	PASS
	5745	-1.50	≤30.00	PASS
	5785	-4.11	≤30.00	PASS
	5825	-3.76	≤30.00	PASS
11N20SISO	5180	2.60	≤11.00	PASS
	5200	2.31	≤11.00	PASS
	5240	0.78	≤11.00	PASS
	5745	-1.99	≤30.00	PASS
	5785	-4.57	≤30.00	PASS
	5825	-3.49	≤30.00	PASS
11N40SISO	5190	-0.49	≤11.00	PASS
	5230	-2.29	≤11.00	PASS
	5755	-5.72	≤30.00	PASS
	5795	-5.83	≤30.00	PASS
11AX20SISO	5180	1.54	≤11.00	PASS
	5200	1.63	≤11.00	PASS
	5240	-0.05	≤11.00	PASS
	5745	-2.56	≤30.00	PASS
	5785	-3.83	≤30.00	PASS
	5825	-4.40	≤30.00	PASS

Remark:

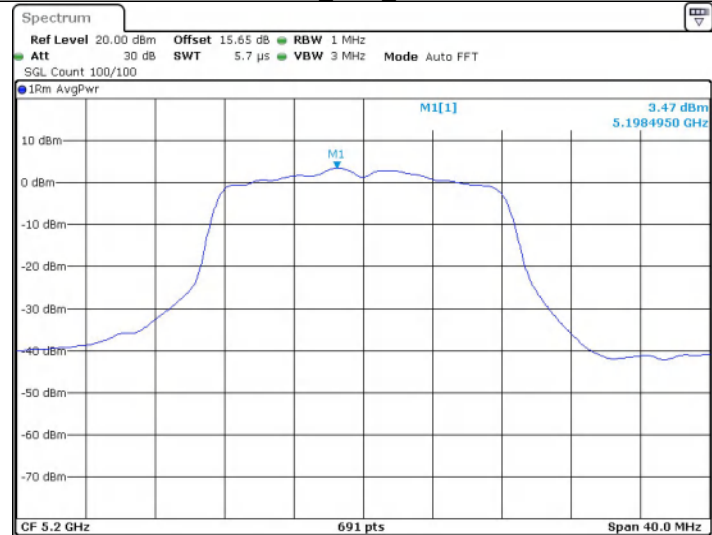
PSD = Meas PSD + Duty Cycle Factor

11A_Ant1_5180



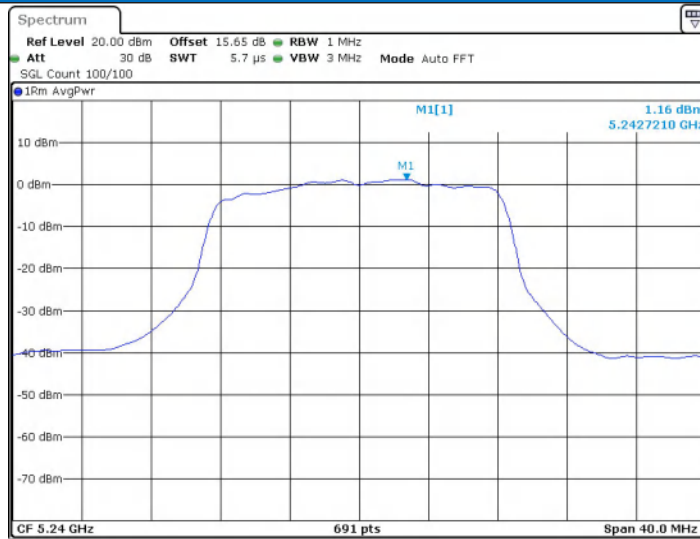
Date: 26 DEC 2025 17:03:11

11A_Ant1_5200



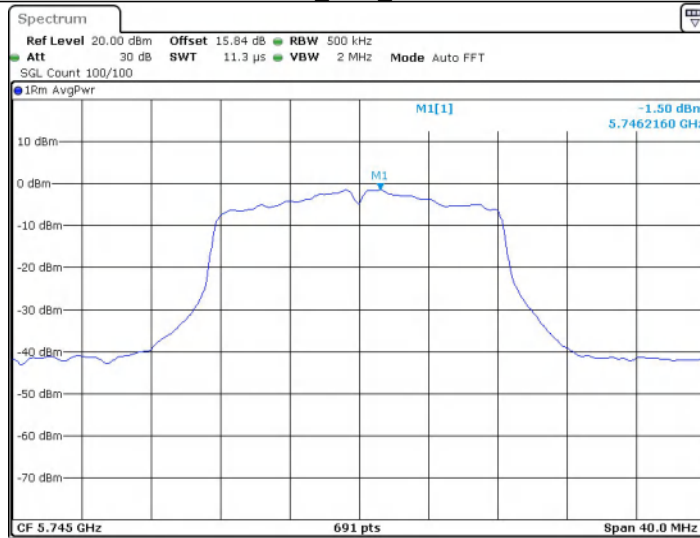
Date: 26 DEC 2025 17:06:10

11A_Ant1_5240



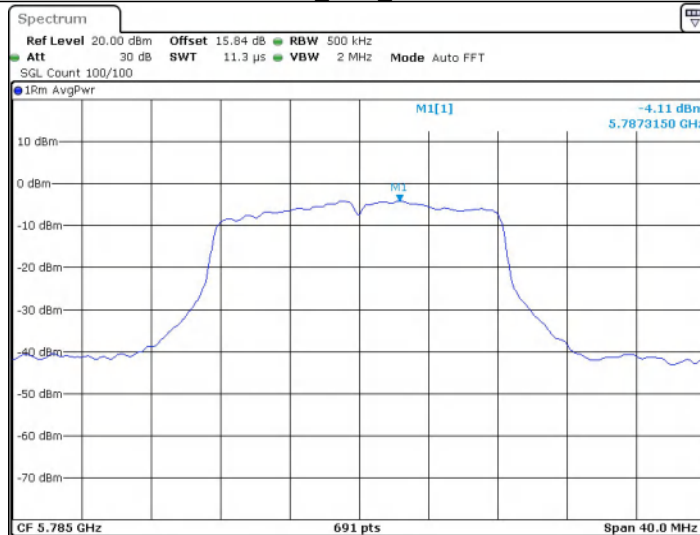
Date: 26 DEC 2025 17:07:08

11A_Ant1_5745



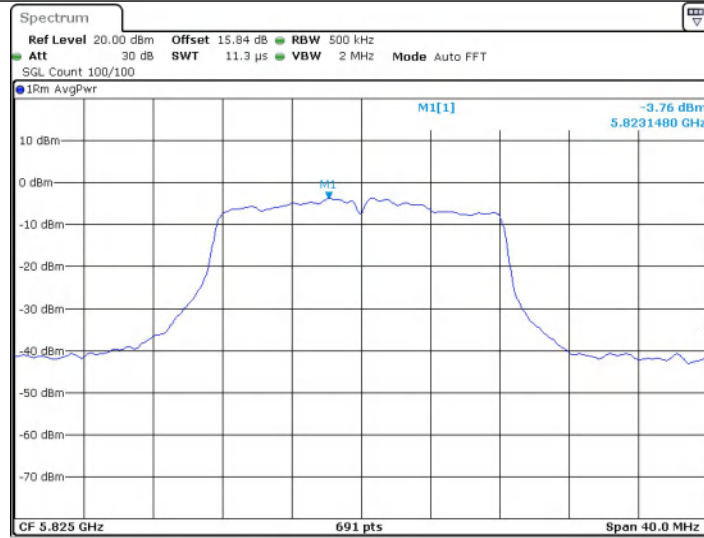
Date: 26 DEC 2025 17:10:14

11A_Ant1_5785



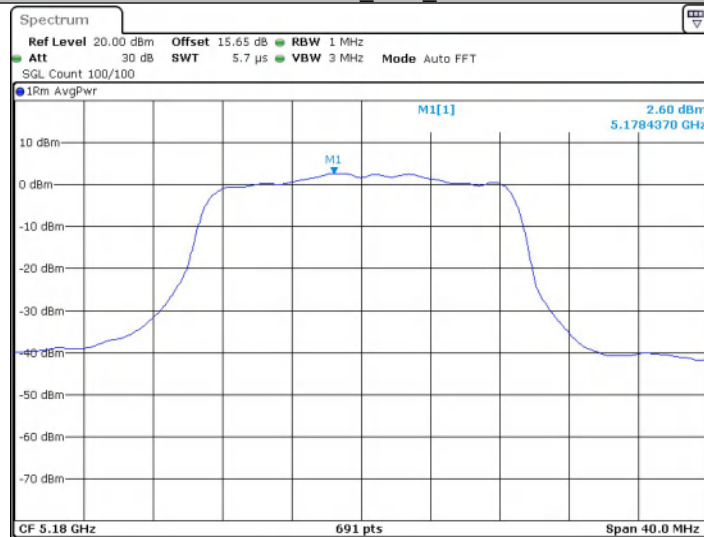
Date: 26 DEC 2025 17:11:52

11A_Ant1_5825



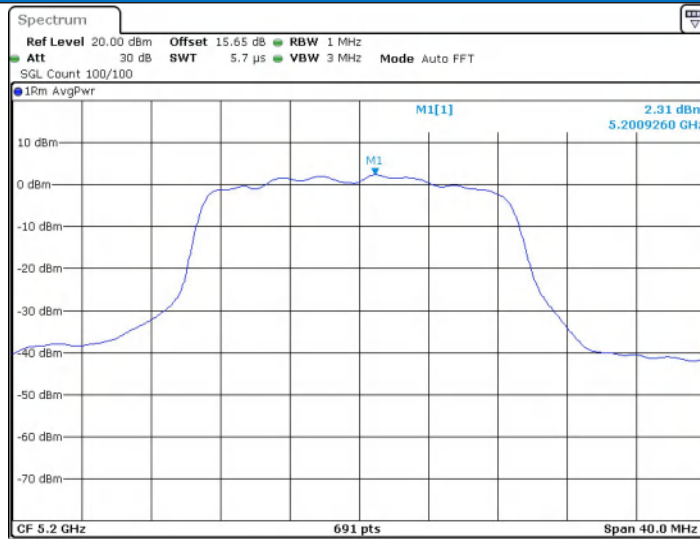
Date: 26 DEC 2025 17:14:05

11N20SISO_Ant1_5180



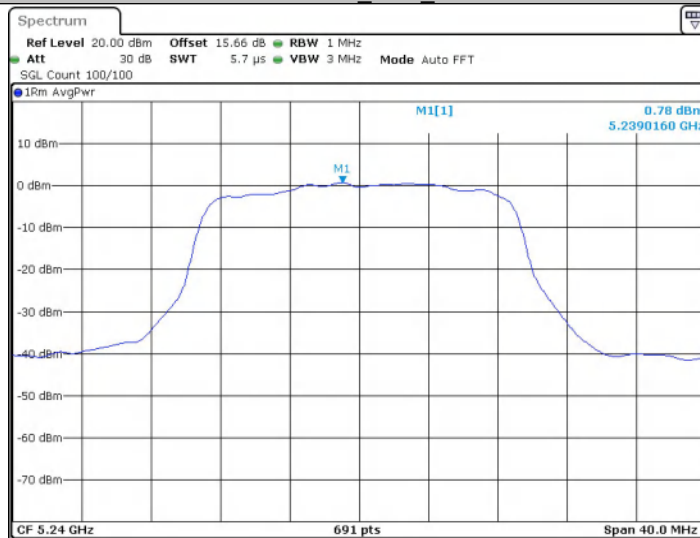
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11N20SISO_Ant1_5200



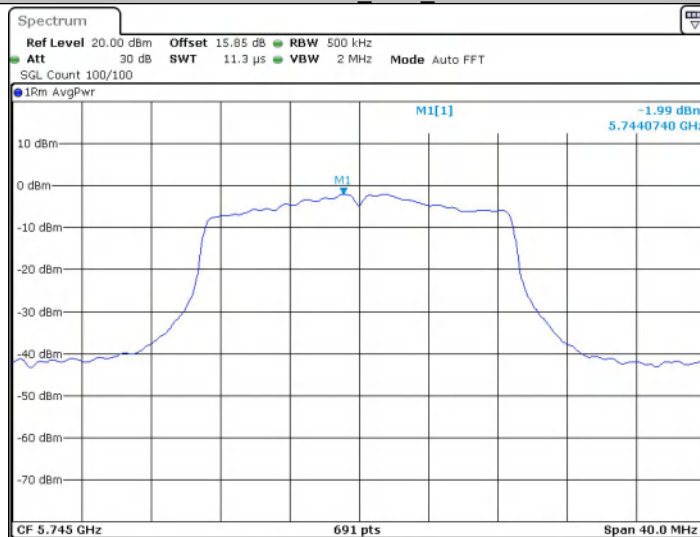
Date: 26 DEC 2025 17:18:01

11N20SISO_Ant1_5240



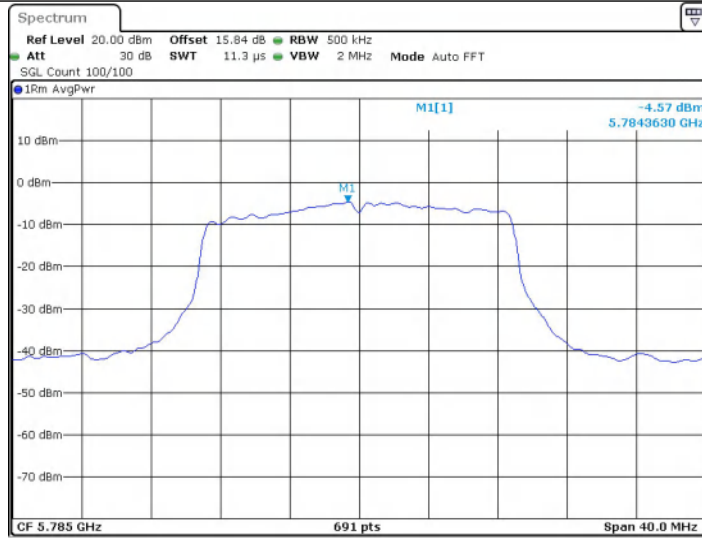
Date: 26 DEC 2025 17:18:58

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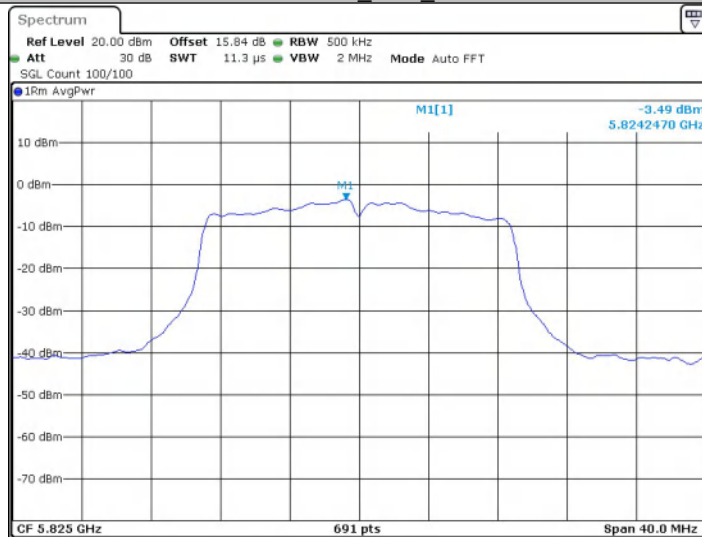
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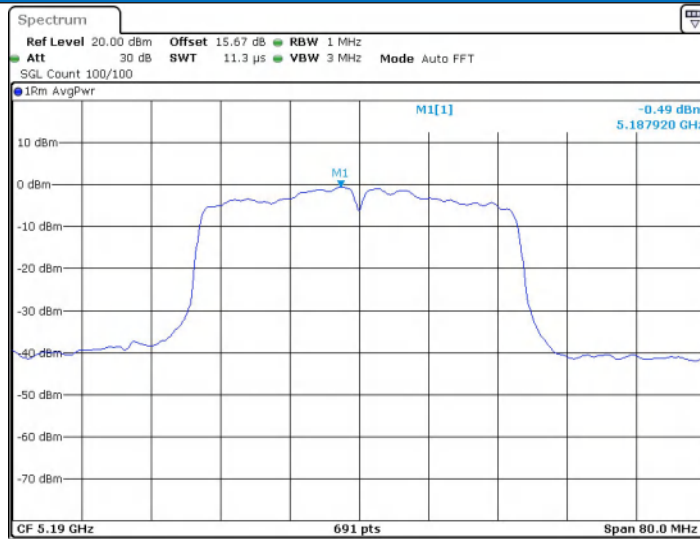
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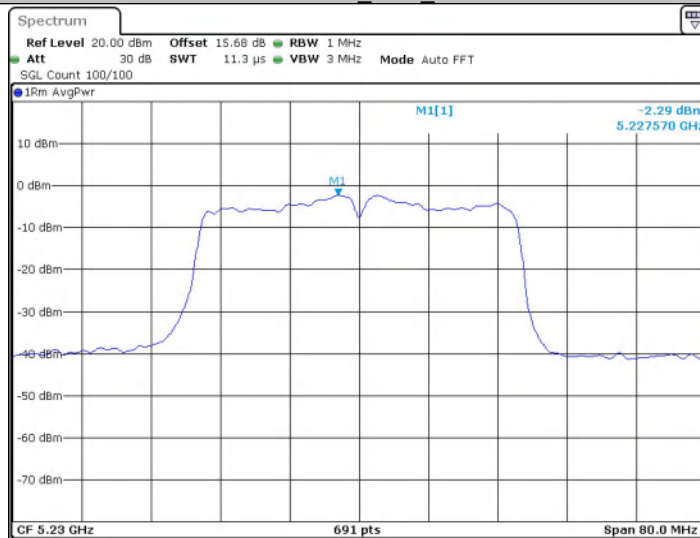
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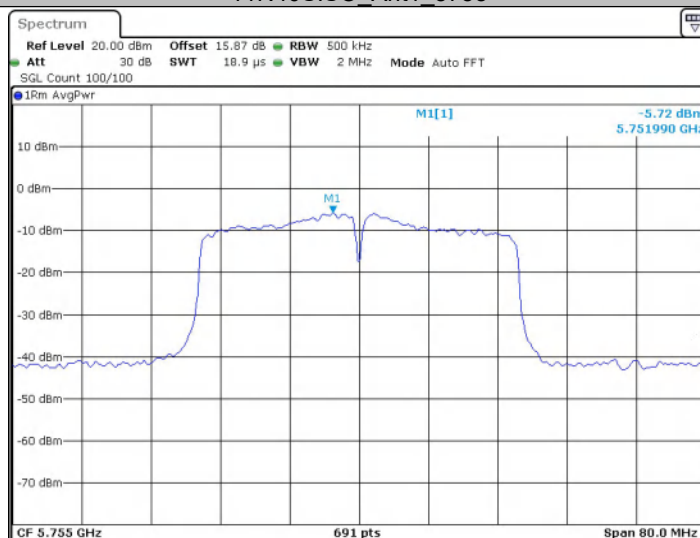
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11N40SISO_Ant1_5230



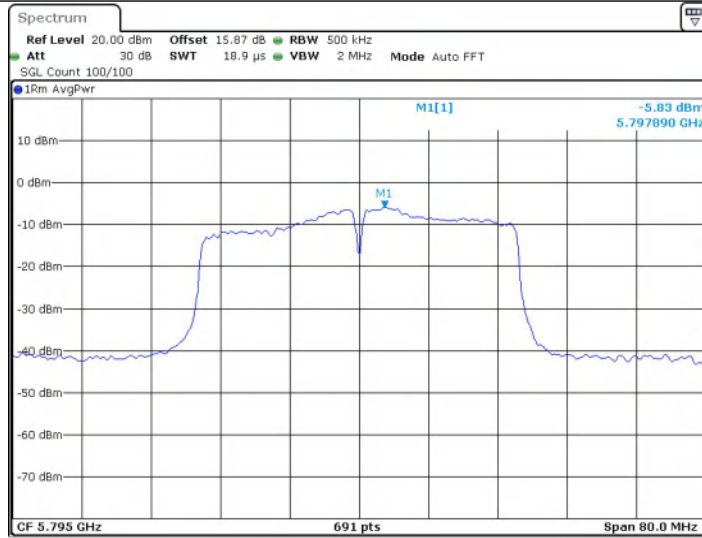
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11N40SISO_Ant1_5755



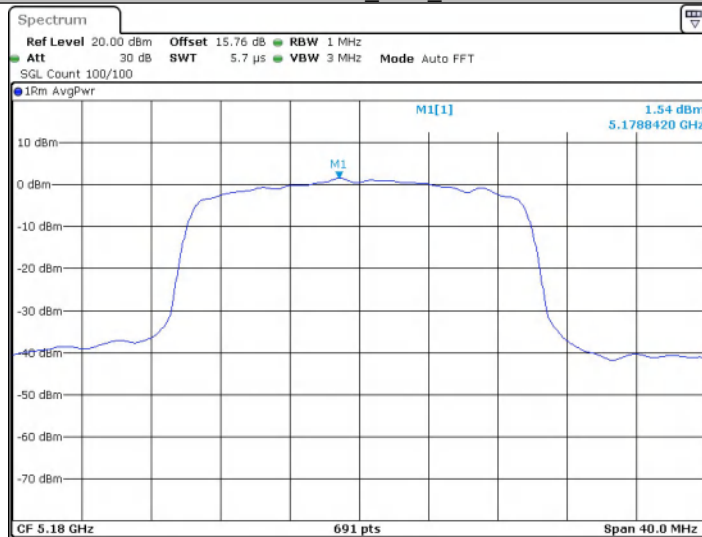
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11N40SISO_Ant1_5795



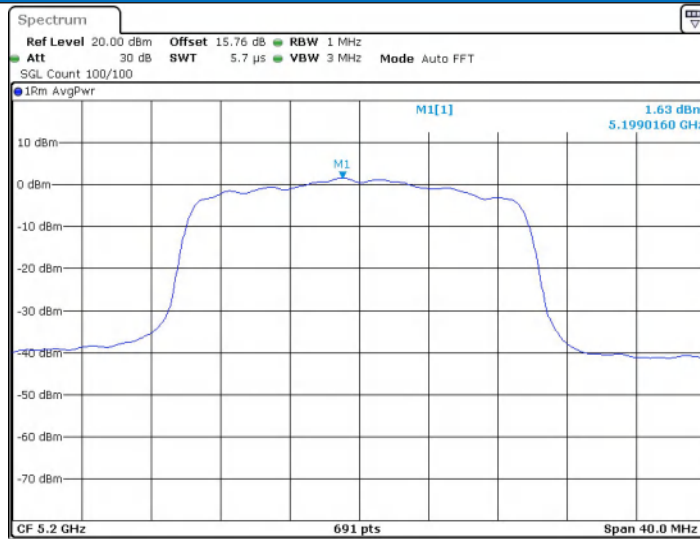
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11AX20SISO_Ant1_5180



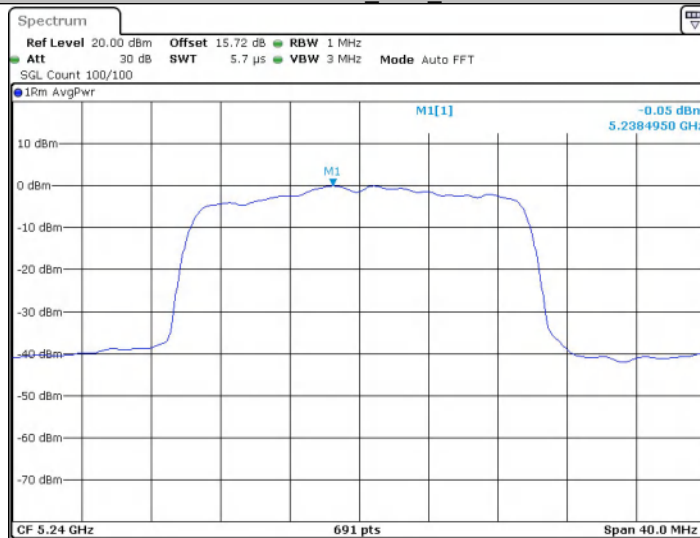
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11AX20SISO_Ant1_5200



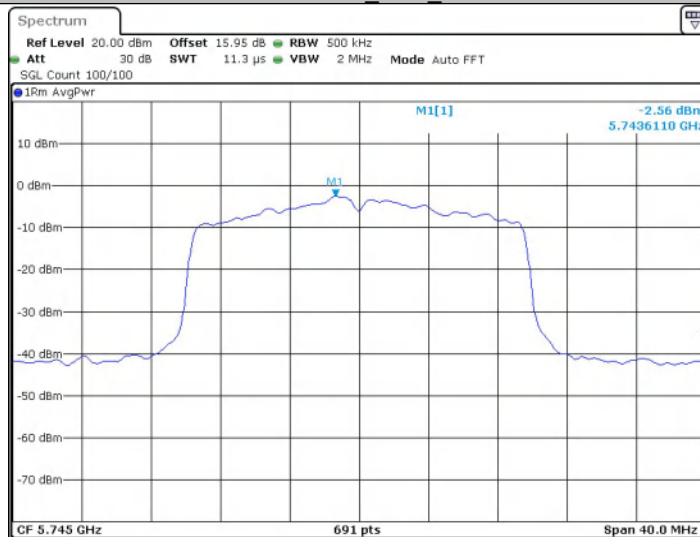
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11AX20SISO_Ant1_5240



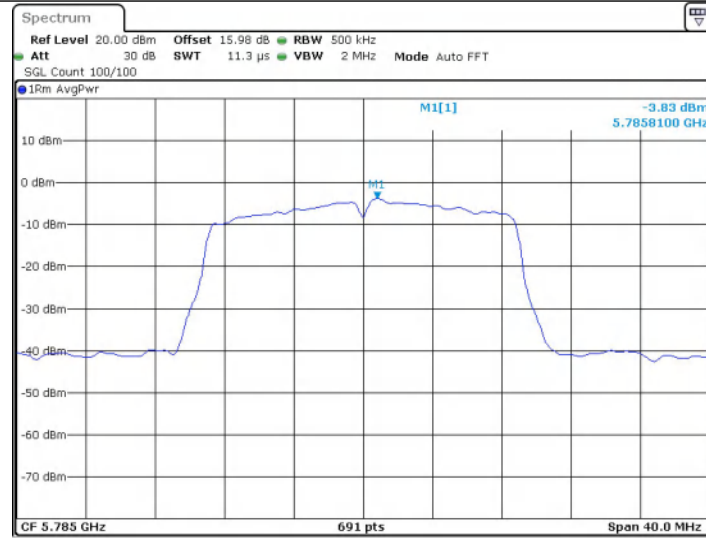
Date: 26 DEC 2025 17:52:03

11AX20SISO_Ant1_5745

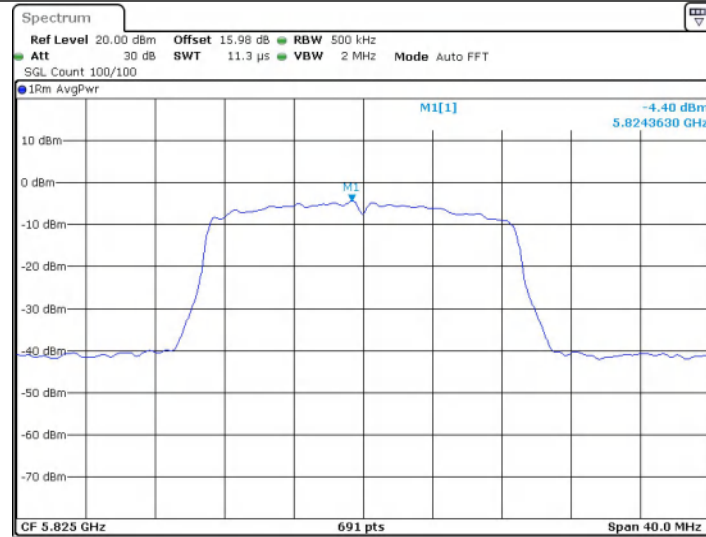


Date: 26 DEC 2025 17:54:09

11AX20SISO_Ant1_5785



11AX20SISO_Ant1_5825



Appendix D): Band Edge Measurements

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.407(b)

Test Method: KDB 789033 D02 II G

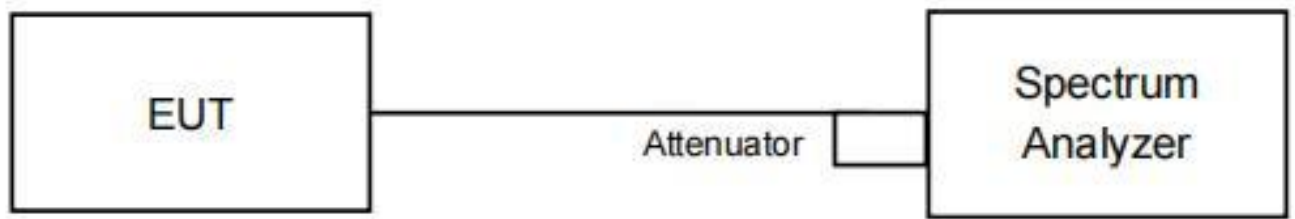
Test Procedure:

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

Limit:

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 (68.2dBuV/m).
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 (68.2dBuV/m).
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 (68.2dBuV/m).
For transmitters operating in the 5.725-5.85 GHz band:	(i) All emissions shall be limited to a level of -27 dBm/MHz (68.2dBuV/m) at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz (105.2dBuV/m) 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 (110.8dBuV/m) 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 (122.2dBuV/m) at the band edge.

Test Setup Diagram



7.1.1 Test Result B1

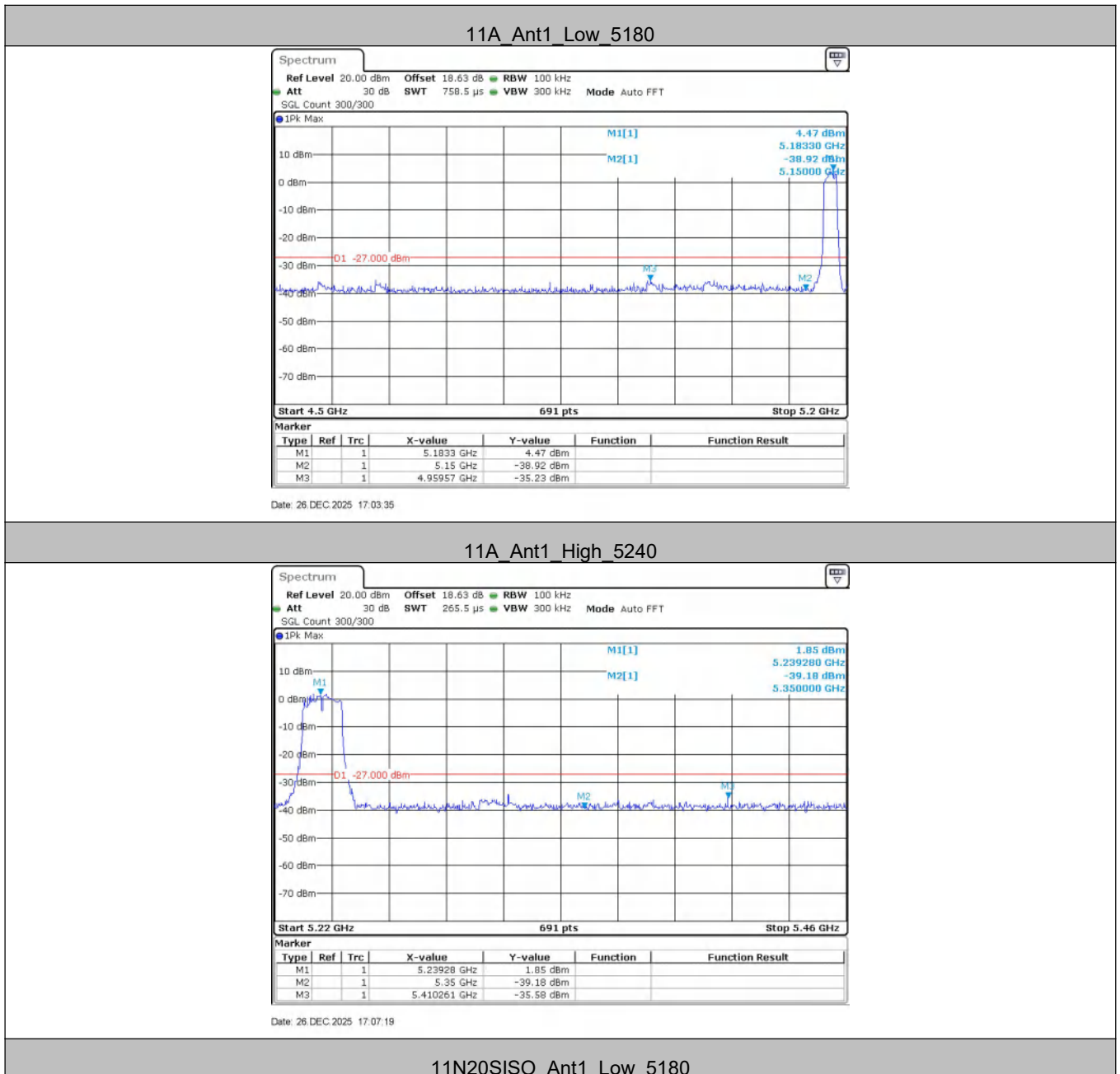
TestMode	ChName	Freq(MHz)	Result[dBm]	Limit[dBm]	Verdict
11A	Low	5180	-35.23	≤ -27	PASS
	High	5240	-35.58	≤ -27	PASS
11N20SISO	Low	5180	-35.03	≤ -27	PASS
	High	5240	-35.83	≤ -27	PASS
11N40SISO	Low	5190	-34.87	≤ -27	PASS
	High	5230	-36.64	≤ -27	PASS
11AX20SISO	Low	5180	-34.56	≤ -27	PASS
	High	5240	-36.81	≤ -27	PASS

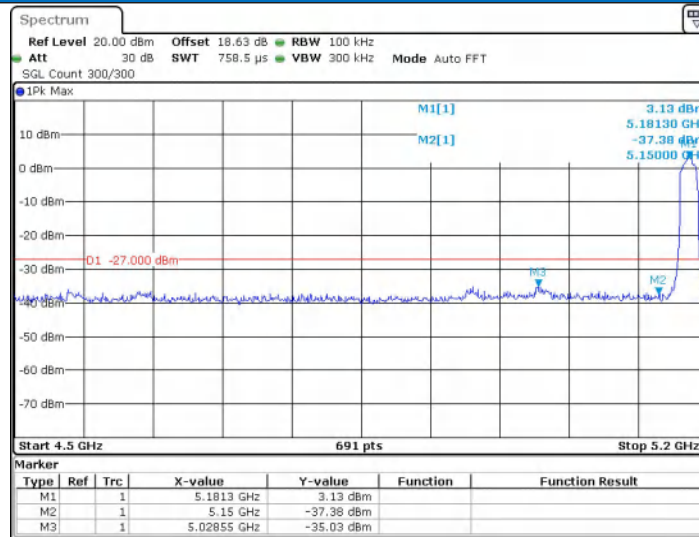
7.1.2 Test Result B4

TestMode	ChName	Freq(MHz)	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Low	5745	5650~5700	-37.78	≤ -26.63	PASS
			5700~5720	-36.41	≤ 10.51	PASS
			5720~5725	-37.13	≤ 15.98	PASS
			5760~5650	-36.24	≤ -27	PASS
	High	5825	5850~5855	-36.45	≤ 15.65	PASS
			5855~5875	-35.49	≤ 10.07	PASS
			5875~5925	-36.74	≤ -26.58	PASS
			5925~5935	-34.54	≤ -27	PASS
11N20SISO	Low	5745	5650~5700	-38.24	≤ -26.88	PASS
			5700~5720	-34.95	≤ 11.17	PASS
			5720~5725	-38.08	≤ 15.98	PASS
			5760~5650	-36.36	≤ -27	PASS
	High	5825	5850~5855	-35.03	≤ 16.54	PASS
			5855~5875	-35.91	≤ 10.29	PASS
			5875~5925	-35.39	≤ -25.57	PASS
			5925~5935	-34.96	≤ -27	PASS
11N40SISO	Low	5755	5650~5700	-37.01	≤ -26.79	PASS
			5700~5720	-36.3	≤ 10.10	PASS
			5720~5725	-37.09	≤ 15.90	PASS
			5780~5650	-34.12	≤ -27	PASS
	High	5795	5850~5855	-35.64	≤ 16.94	PASS
			5855~5875	-34.41	≤ 11.14	PASS

11AX20SIS O	Low	5745	5875~5925	-37.26	≤ -26.61	PASS
			5925~5935	-35.21	≤ -27	PASS
		5745	5650~5700	-35.86	≤ -26.26	PASS
			5700~5720	-36.92	≤ 10.05	PASS
			5720~5725	-37.19	≤ 15.98	PASS
	High	5825	5760~5650	-36.93	≤ -27	PASS
			5850~5855	-35.99	≤ 15.65	PASS
			5855~5875	-35.86	≤ 10.29	PASS
			5875~5925	-36.43	≤ -26.73	PASS
			5925~5935	-34.46	≤ -27	PASS

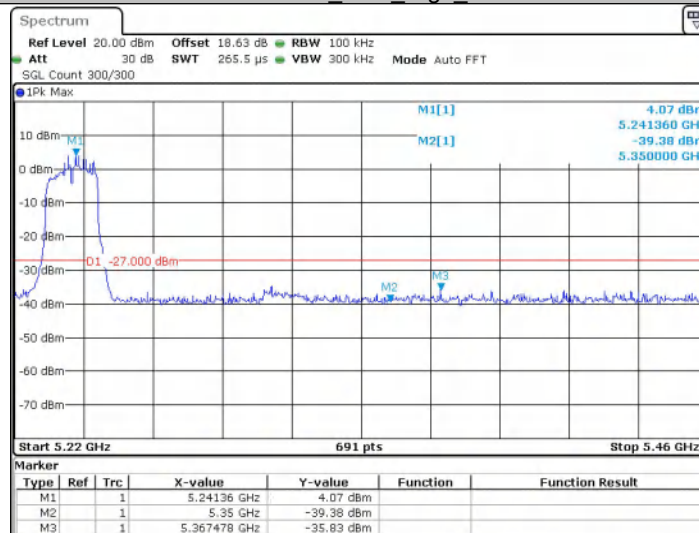
7.1.3 Test Graphs B1





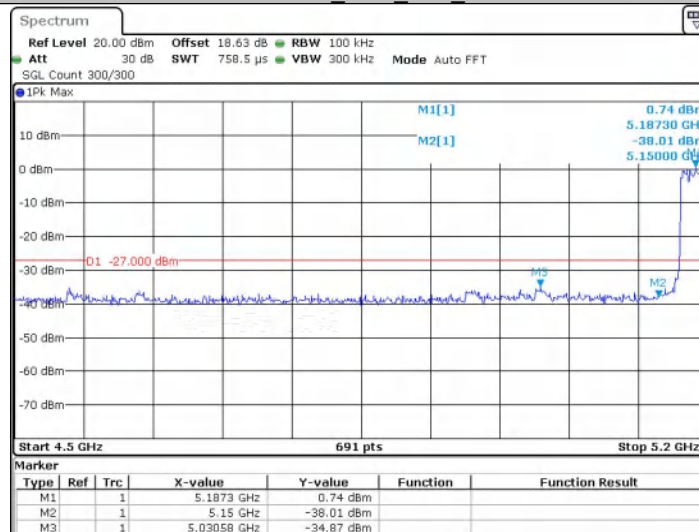
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11N20SISO_Ant1_High_5240



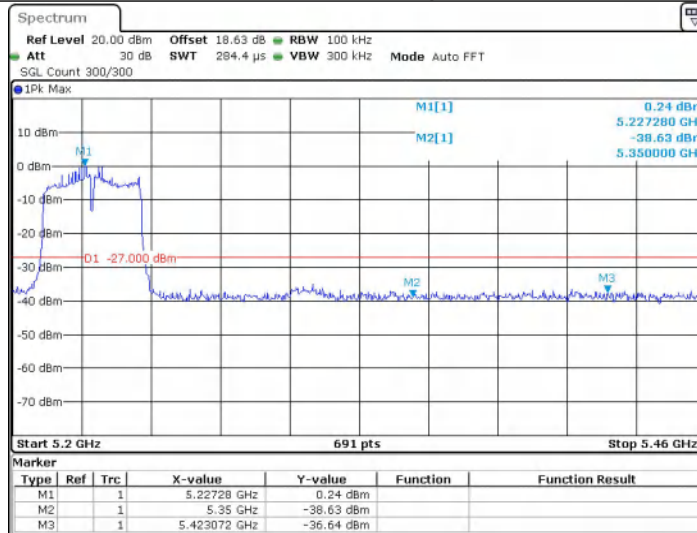
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11N40SISO_Ant1_Low_5190



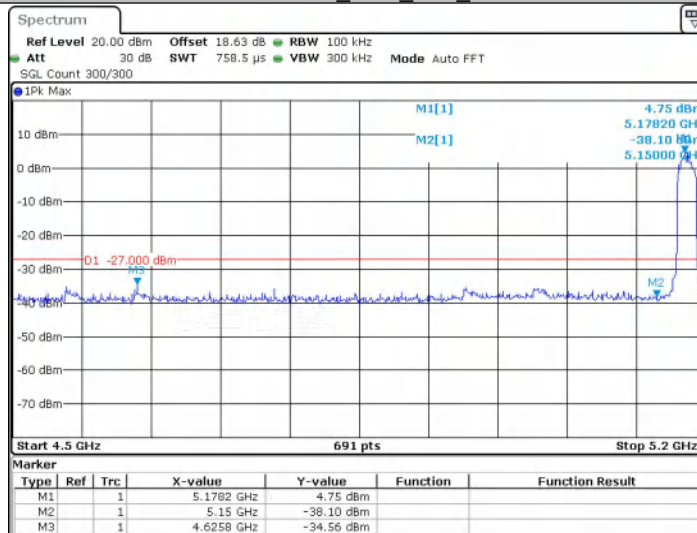
Date: 26 DEC 2025 17:27:53

11N40SISO_Ant1_High_5230



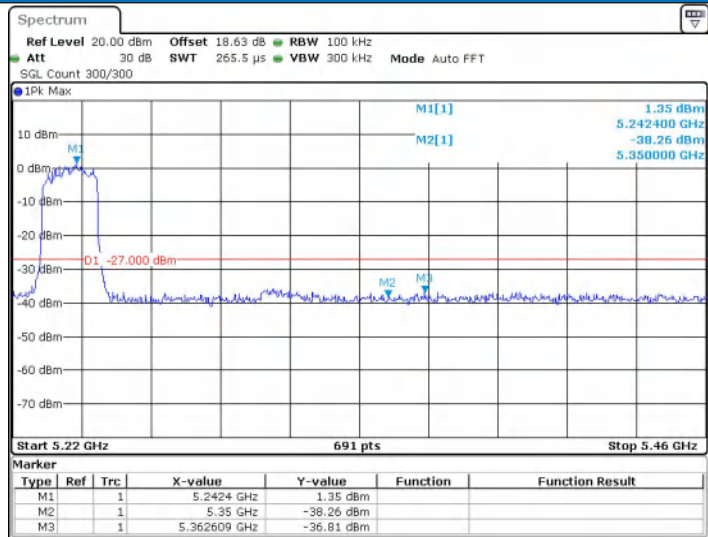
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11AX20SISO_Ant1_Low_5180



Date: 26 DEC 2025 17:47:18

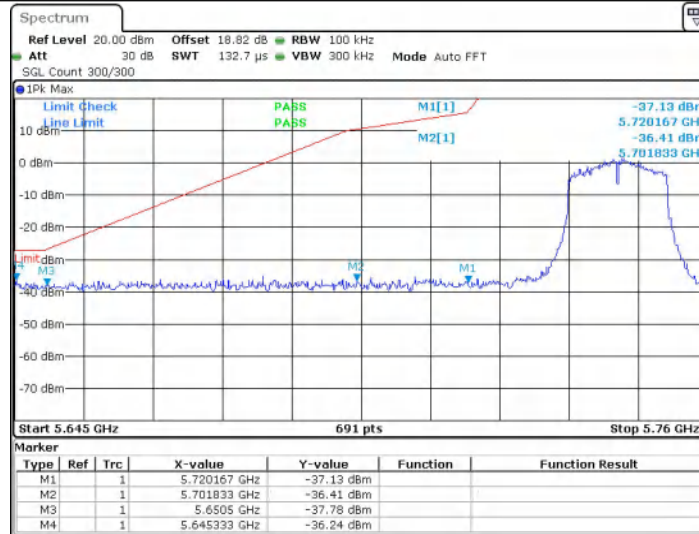
11AX20SISO_Ant1_High_5240



Date: 26 DEC 2025 17:52:13

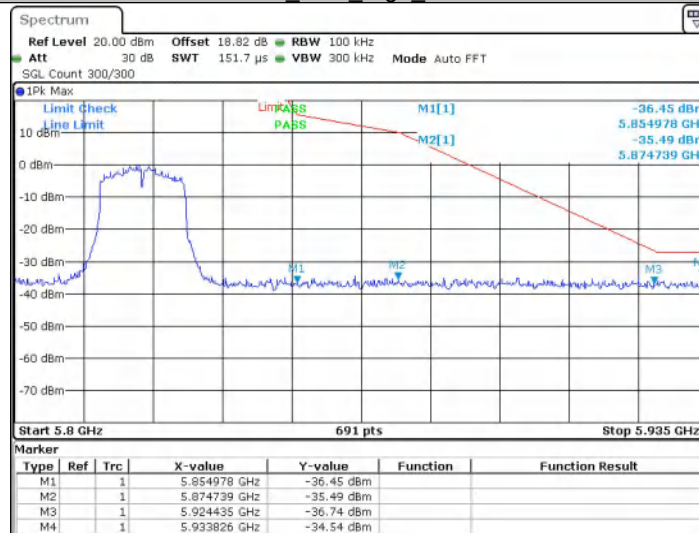
7.1.4 Test Graphs B4

11A_Ant1_Low_5745



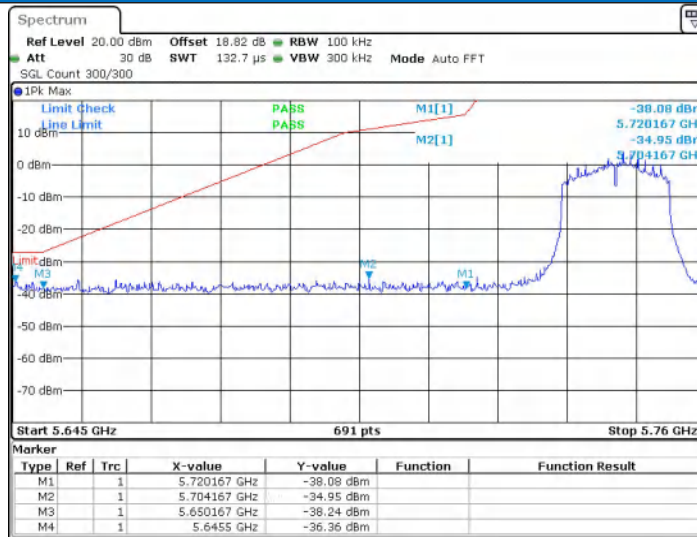
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11A_Ant1_High_5825



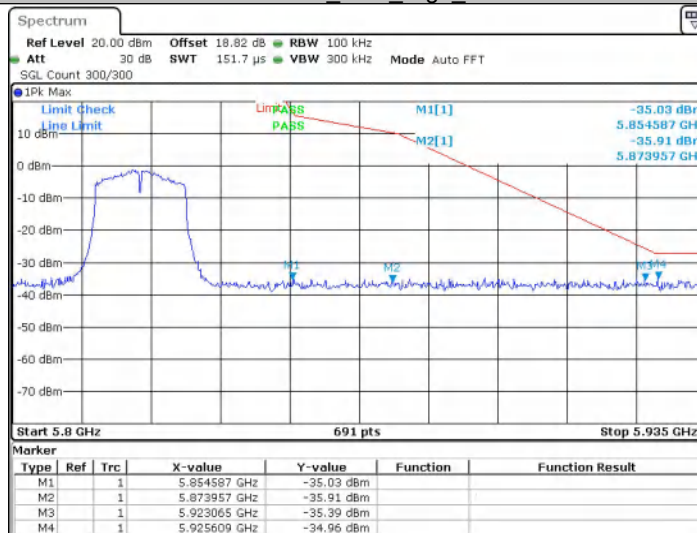
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11N20SISO_Ant1_Low_5745



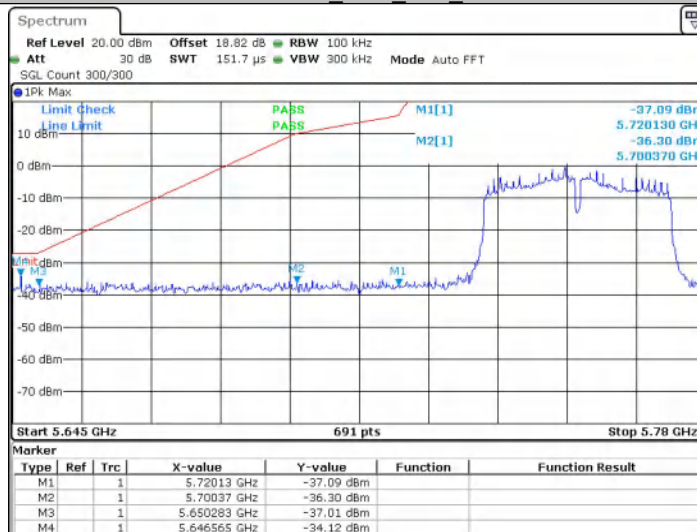
Date: 26 DEC 2025 17:22:03

11N20ISO_Ant1_High_5825



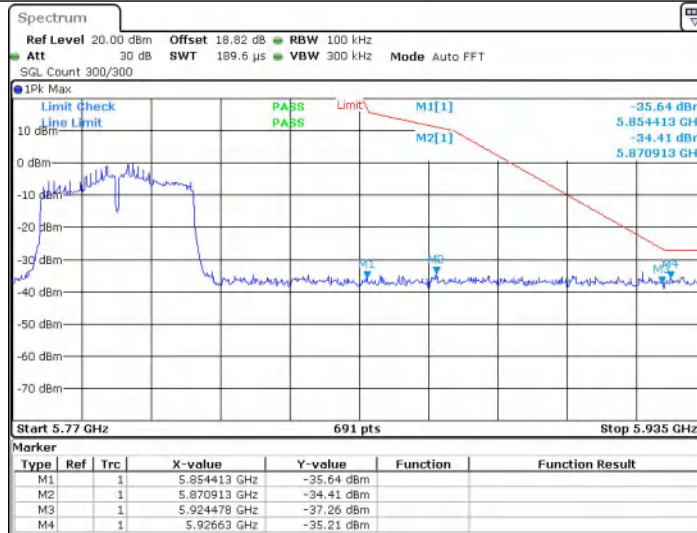
Date: 26 DEC 2025 17:25:23

11N40ISO_Ant1_Low_5755



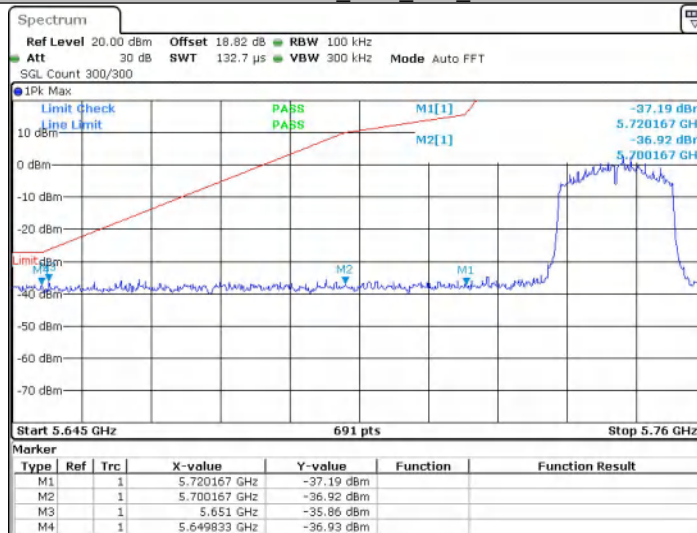
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11N40SISO_Ant1_High_5795



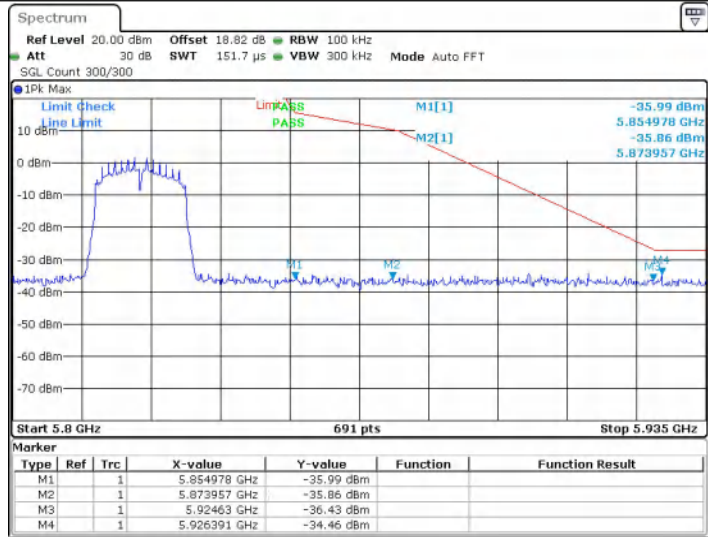
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11AX20SISO_Ant1_Low_5745



Date: 26 DEC 2025 17:54:16

11AX20SISO_Ant1_High_5825



Date: 27 DEC 2025 20:06:20

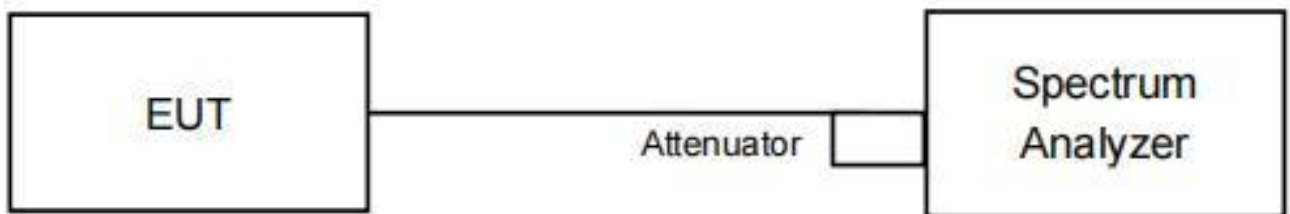
Appendix E): Frequency Stability

Test Requirement 47 CFR Part 15, Subpart C 15.407 (g)

Test Method: ANSI C63.10 (2020) Section 6.8

Limit: The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

Test Setup Diagram



Measurement Data

Frequency Stability Versus Temp.			
Operating Frequency: 5240 MHz			
Temp	Voltage	Measured Frequency	Limit
(°C)		(MHz)	(MHz)
50	VN	5240.14	5150-5250
40		5240.65	5150-5250
30		5240.25	5150-5250
20		5240.45	5150-5250
10		5240.35	5150-5250
0		5240.14	5150-5250
-10		5240.35	5150-5250
-30		5240.42	5150-5250

Frequency Stability Versus Temp.			
Operating Frequency: 5240 MHz			
Temp.	Voltage	Measured Frequency	Limit
		(MHz)	(MHz)
TN	VL	5240.28	5150-5250
	VN	5240.17	5150-5250
	VH	5240.36	5150-5250

Note: All the modulation and channels had been tested, but only the worst data recorded in the report.

Appendix F): Antenna Requirement

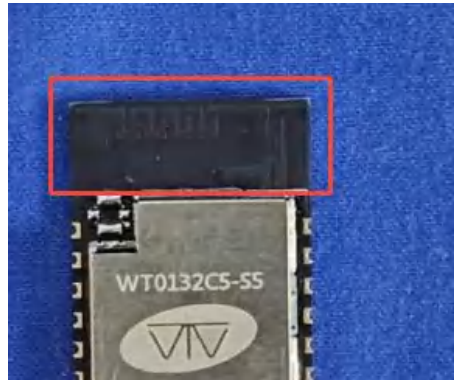
15.203 requirement:

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, 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.

15.407(a)(1) (2) requirement:

The conducted output power limit specified in paragraph (a) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (a) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:



The antenna is PCB antenna.

The connection/connection type between the antenna to the EUT's antenna port is: permanently attachment

This is either permanently attachment or a unique coupling that satisfies the requirement.

EUT Antenna:



The antenna is FPC antenna.

The connection/connection type between the antenna to the EUT's antenna port is: unique coupling

This is either permanently attachment or a unique coupling that satisfies the requirement.

Appendix G): Operation in the absence of information to the transmit**15.407(c) requirement:**

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

Operation in the absence of information to the transmit

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission. (manufacturer declare)

Appendix H): AC Power Line Conducted Emission

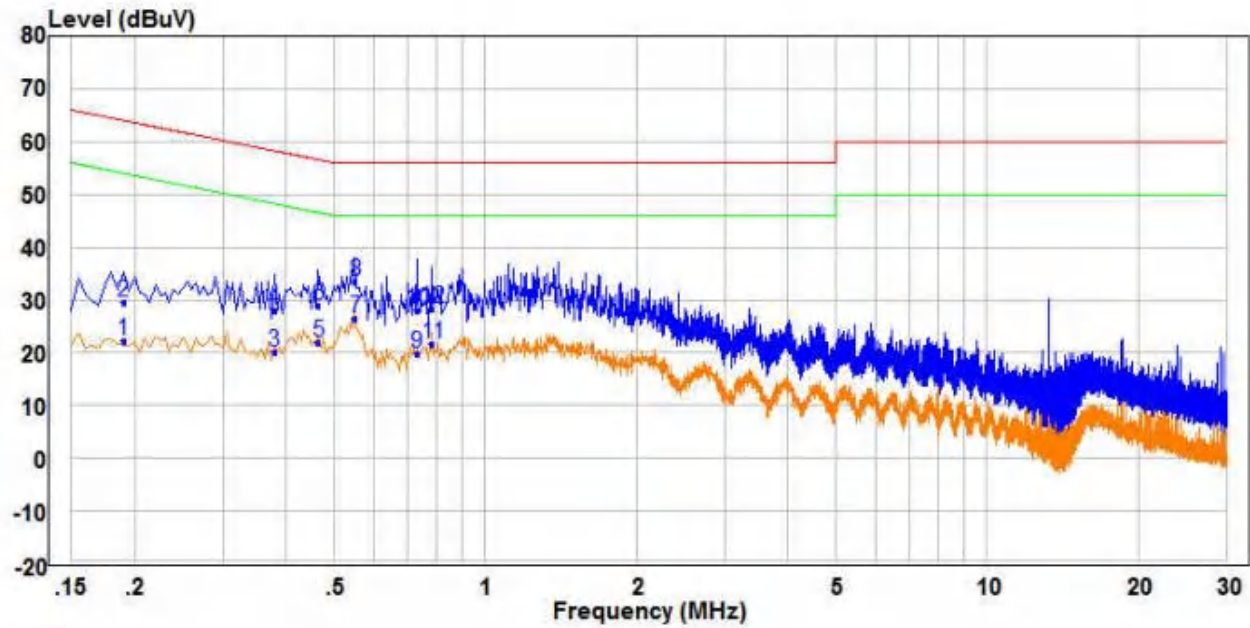
Test Procedure:	Test frequency range :150KHz-30MHz 1)The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3)The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.															
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr> <tr> <th>Quasi-peak</th><th>Average</th></tr> </thead> <tbody> <tr> <td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr> <tr> <td>0.5-5</td><td>56</td><td>46</td></tr> <tr> <td>5-30</td><td>60</td><td>50</td></tr> </tbody> </table> * The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. NOTE : The lower limit is applicable at the transition frequency		Frequency range (MHz)	Limit (dB μ V)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dB μ V)															
	Quasi-peak	Average														
0.15-0.5	66 to 56*	56 to 46*														
0.5-5	56	46														
5-30	60	50														

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

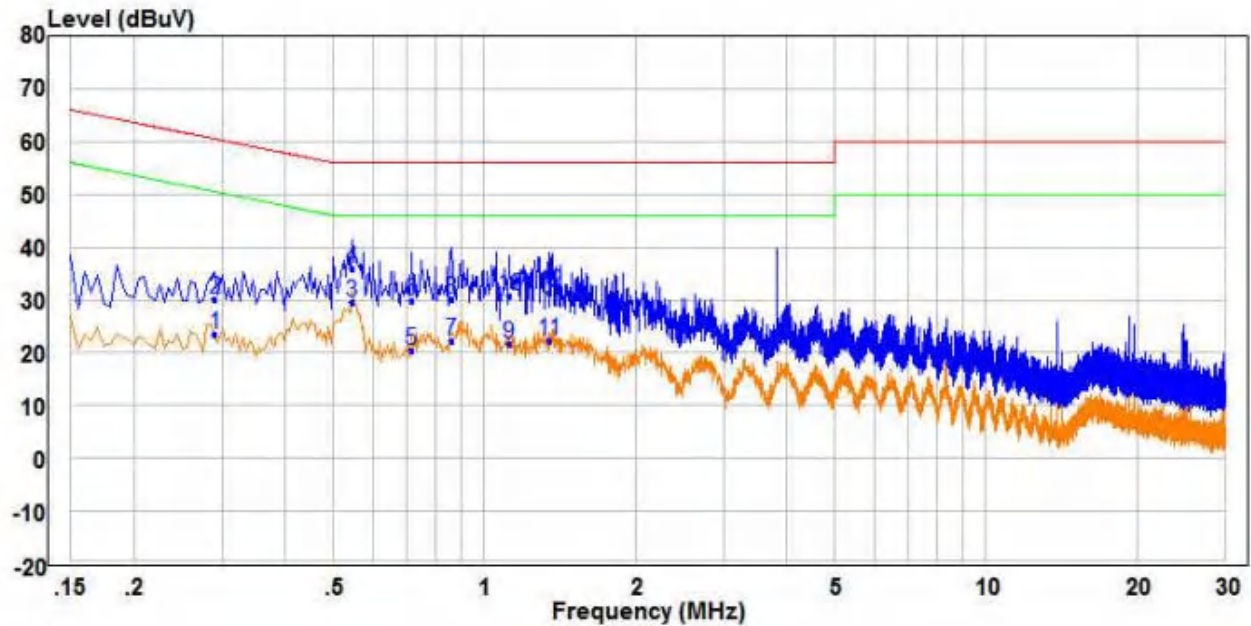
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.190	12.59	9.63	22.22	54.04	-31.82	Average	Line
2	0.190	20.00	9.63	29.63	64.04	-34.41	QP	Line
3	0.380	10.59	9.59	20.18	48.28	-28.10	Average	Line
4	0.380	18.34	9.59	27.93	58.28	-30.35	QP	Line
5	0.465	12.23	9.67	21.90	46.60	-24.70	Average	Line
6	0.465	19.21	9.67	28.88	56.60	-27.72	QP	Line
7 PP	0.550	16.83	9.75	26.58	46.00	-19.42	Average	Line
8 QP	0.550	23.61	9.75	33.36	56.00	-22.64	QP	Line
9	0.730	10.06	9.88	19.94	46.00	-26.06	Average	Line
10	0.730	18.14	9.88	28.02	56.00	-27.98	QP	Line
11	0.785	11.70	9.84	21.54	46.00	-24.46	Average	Line
12	0.785	18.61	9.84	28.45	56.00	-27.55	QP	Line

Neutral line:



	Freq	Read	Factor	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.290	14.14	9.49	23.63	50.52	-26.89	Average	Neutral
2	0.290	20.79	9.49	30.28	60.52	-30.24	QP	Neutral
3 PP	0.545	19.94	9.75	29.69	46.00	-16.31	Average	Neutral
4 QP	0.545	26.20	9.75	35.95	56.00	-20.05	QP	Neutral
5	0.715	10.67	9.89	20.56	46.00	-25.44	Average	Neutral
6	0.715	19.95	9.89	29.84	56.00	-26.16	QP	Neutral
7	0.860	12.44	9.79	22.23	46.00	-23.77	Average	Neutral
8	0.860	20.46	9.79	30.25	56.00	-25.75	QP	Neutral
9	1.120	11.82	9.71	21.53	46.00	-24.47	Average	Neutral
10	1.120	21.17	9.71	30.88	56.00	-25.12	QP	Neutral
11	1.345	12.60	9.72	22.32	46.00	-23.68	Average	Neutral
12	1.345	21.52	9.72	31.24	56.00	-24.76	QP	Neutral

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. The 6Mbps of rate of 802.11A_5240 is the worst case, only the worst data recorded in the report.

Appendix I): Restricted bands around fundamental frequency (Radiated Emission)

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Test Procedure:	Below 1GHz test procedure as below: - The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. - The antenna height 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. - 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 was turned from 0 degrees to 360 degrees to find the maximum reading. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel Above 1GHz test procedure as below: - Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre). - Test the EUT in the lowest channel , the Highest channel - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. - Repeat above procedures until all frequencies measured was complete.				
Limit:	Frequency	Limit (dB μ V/m @3cm)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	960MHz-1GHz	54.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
		74.0		Peak Value	

Test plot as follows:

Worse case mode:		802.11a		Test channel:		36			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5150.00	58.69	-3.63	55.06	74	-18.94	peak	H	1.5	255
5150.00	44.88	-3.63	41.25	54	-12.75	AVG	H	1.5	7
5150.00	59.99	-3.63	56.36	74	-17.64	peak	V	1.5	234
5150.00	46.21	-3.63	42.58	54	-11.42	AVG	V	1.5	130

Worse case mode:		802.11a		Test channel:		48			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5350.00	59.02	-3.59	55.43	74	-18.57	peak	H	1.5	244
5350.00	44.12	-3.59	40.53	54	-13.47	AVG	H	1.5	29
5350.00	59.96	-3.59	56.37	74	-17.63	peak	V	1.5	168
5350.00	46.36	-3.59	42.77	54	-11.23	AVG	V	1.5	306

Worse case mode:		802.11a		Test channel:		149			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5470.00	57.81	-3.44	54.37	74	-19.63	peak	H	1.5	27
5470.00	43.90	-3.44	40.46	54	-13.54	AVG	H	1.5	108
5470.00	57.58	-3.44	54.14	74	-19.86	peak	V	1.5	287
5470.00	46.27	-3.44	42.83	54	-11.17	AVG	V	1.5	76

Worse case mode:		802.11a		Test channel:		165			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5850.00	58.25	-3.42	54.83	74	-19.17	peak	H	1.5	136
5850.00	44.50	-3.42	41.08	54	-12.92	AVG	H	1.5	93
5850.00	59.27	-3.42	55.85	74	-18.15	peak	V	1.5	91
5850.00	46.08	-3.42	42.66	54	-11.34	AVG	V	1.5	322

Worse case mode:		802.11n(HT20)		Test channel:		36			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5150.00	58.37	-3.63	54.74	74	-19.26	peak	H	1.5	18
5150.00	44.26	-3.63	40.63	54	-13.37	AVG	H	1.5	238
5150.00	59.81	-3.63	56.18	74	-17.82	peak	V	1.5	129
5150.00	46.40	-3.63	42.77	54	-11.23	AVG	V	1.5	301

Worse case mode:		802.11n(HT20)		Test channel:		48			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5350.00	58.78	-3.59	55.19	74	-18.81	peak	H	1.5	1
5350.00	44.64	-3.59	41.05	54	-12.95	AVG	H	1.5	155
5350.00	60.13	-3.59	56.54	74	-17.46	peak	V	1.5	96
5350.00	46.23	-3.59	42.64	54	-11.36	AVG	V	1.5	159

Worse case mode:		802.11n(HT20)		Test channel:		149			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5470.00	57.89	-3.44	54.45	74	-19.55	peak	H	1.5	225
5470.00	43.95	-3.44	40.51	54	-13.49	AVG	H	1.5	0
5470.00	58.09	-3.44	54.65	74	-19.35	peak	V	1.5	184
5470.00	46.01	-3.44	42.57	54	-11.43	AVG	V	1.5	191

Worse case mode:		802.11n(HT20)		Test channel:		165			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5850.00	59.00	-3.42	55.58	74	-18.42	peak	H	1.5	161
5850.00	44.06	-3.42	40.64	54	-13.36	AVG	H	1.5	36
5850.00	59.40	-3.42	55.98	74	-18.02	peak	V	1.5	311
5850.00	46.90	-3.42	43.48	54	-10.52	AVG	V	1.5	285

Worse case mode:		802.11n(HT40)		Test channel:		38			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5150.00	59.02	-3.63	55.39	74	-18.61	peak	H	1.5	27
5150.00	44.20	-3.63	40.57	54	-13.43	AVG	H	1.5	12
5150.00	59.58	-3.63	55.95	74	-18.05	peak	V	1.5	36
5150.00	46.04	-3.63	42.41	54	-11.59	AVG	V	1.5	120

Worse case mode:		802.11n(HT40)		Test channel:		48			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5350.00	58.66	-3.59	55.07	74	-18.93	peak	H	1.5	266
5350.00	44.23	-3.59	40.64	54	-13.36	AVG	H	1.5	352
5350.00	59.48	-3.59	55.89	74	-18.11	peak	V	1.5	11
5350.00	46.88	-3.59	43.29	54	-10.71	AVG	V	1.5	259

Worse case mode:		802.11n(HT40)		Test channel:		149			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5470.00	58.37	-3.44	54.93	74	-19.07	peak	H	1.5	355
5470.00	44.19	-3.44	40.75	54	-13.25	AVG	H	1.5	210
5470.00	58.13	-3.44	54.69	74	-19.31	peak	V	1.5	212
5470.00	45.74	-3.44	42.30	54	-11.70	AVG	V	1.5	226

Worse case mode:		802.11n(HT40)		Test channel:		159			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5850.00	58.83	-3.42	55.41	74	-18.59	peak	H	1.5	295
5850.00	44.11	-3.42	40.69	54	-13.31	AVG	H	1.5	290
5850.00	59.59	-3.42	56.17	74	-17.83	peak	V	1.5	75
5850.00	46.25	-3.42	42.83	54	-11.17	AVG	V	1.5	317

Worse case mode:		802.11ax(HE20)		Test channel:		36			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5150.00	58.42	-3.63	54.79	74	-19.21	peak	H	1.5	208
5150.00	44.65	-3.63	41.02	54	-12.98	AVG	H	1.5	44
5150.00	59.82	-3.63	56.19	74	-17.81	peak	V	1.5	39
5150.00	46.59	-3.63	42.96	54	-11.04	AVG	V	1.5	303

Worse case mode:		802.11ax(HE20)		Test channel:		48			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5350.00	58.31	-3.59	54.72	74	-19.28	peak	H	1.5	128
5350.00	44.89	-3.59	41.30	54	-12.70	AVG	H	1.5	232
5350.00	59.69	-3.59	56.10	74	-17.90	peak	V	1.5	98
5350.00	46.97	-3.59	43.38	54	-10.62	AVG	V	1.5	107

Worse case mode:		802.11ax(HE20)		Test channel:		149			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5470.00	57.60	-3.44	54.16	74	-19.84	peak	H	1.5	193
5470.00	44.14	-3.44	40.70	54	-13.30	AVG	H	1.5	3
5470.00	57.46	-3.44	54.02	74	-19.98	peak	V	1.5	118
5470.00	45.48	-3.44	42.04	54	-11.96	AVG	V	1.5	277

Worse case mode:		802.11ax(HE20)		Test channel:		165			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
5850.00	58.62	-3.42	55.20	74	-18.80	peak	H	1.5	115
5850.00	44.18	-3.42	40.76	54	-13.24	AVG	H	1.5	305
5850.00	59.59	-3.42	56.17	74	-17.83	peak	V	1.5	266
5850.00	46.92	-3.42	43.50	54	-10.50	AVG	V	1.5	68

Note:

1) Through Pre-scan transmitting mode with all kind of modulation and data rate, Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

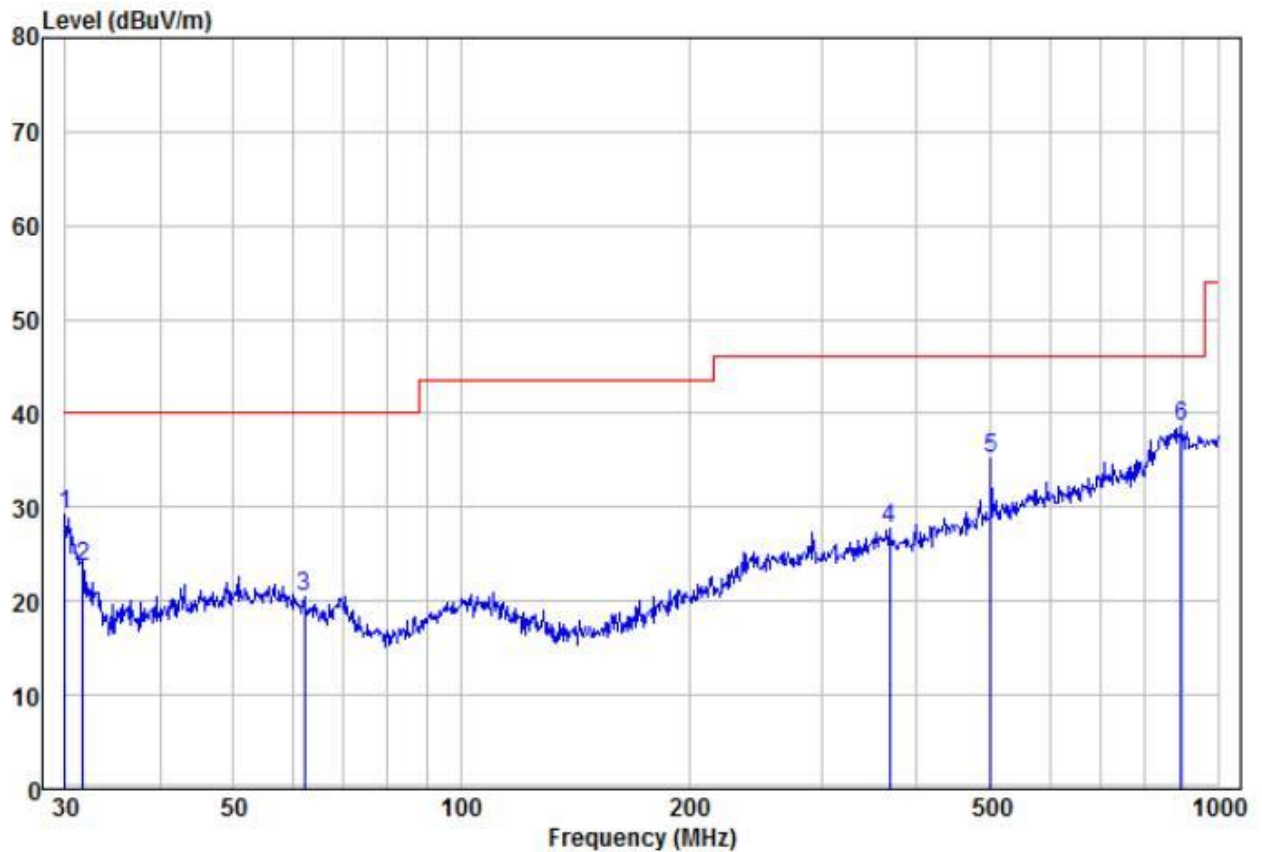
Appendix J): Radiated Spurious Emissions

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Test Procedure:					
Below 1GHz test procedure as below: a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 antenna height 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Above 1GHz test procedure as below: g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre) h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. j. Repeat above procedures until all frequencies measured was complete.					
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBµV/cm)	Remark	Measurement distance (cm)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				
Test result: PASS					

Test Data:

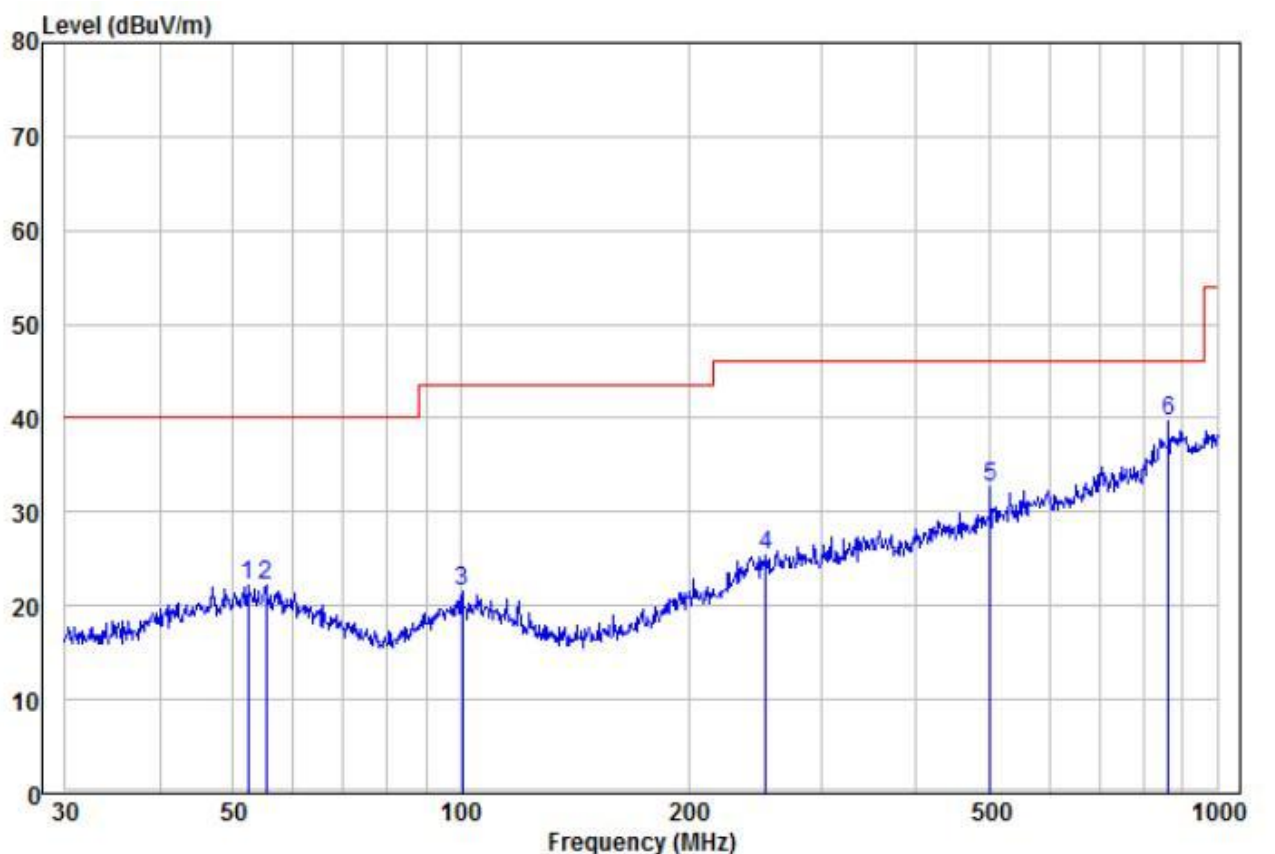
Radiated Emission below 1GHz

30MHz~1GHz		
Test mode:	Transmitting (802.11a 36CH)	Vertical



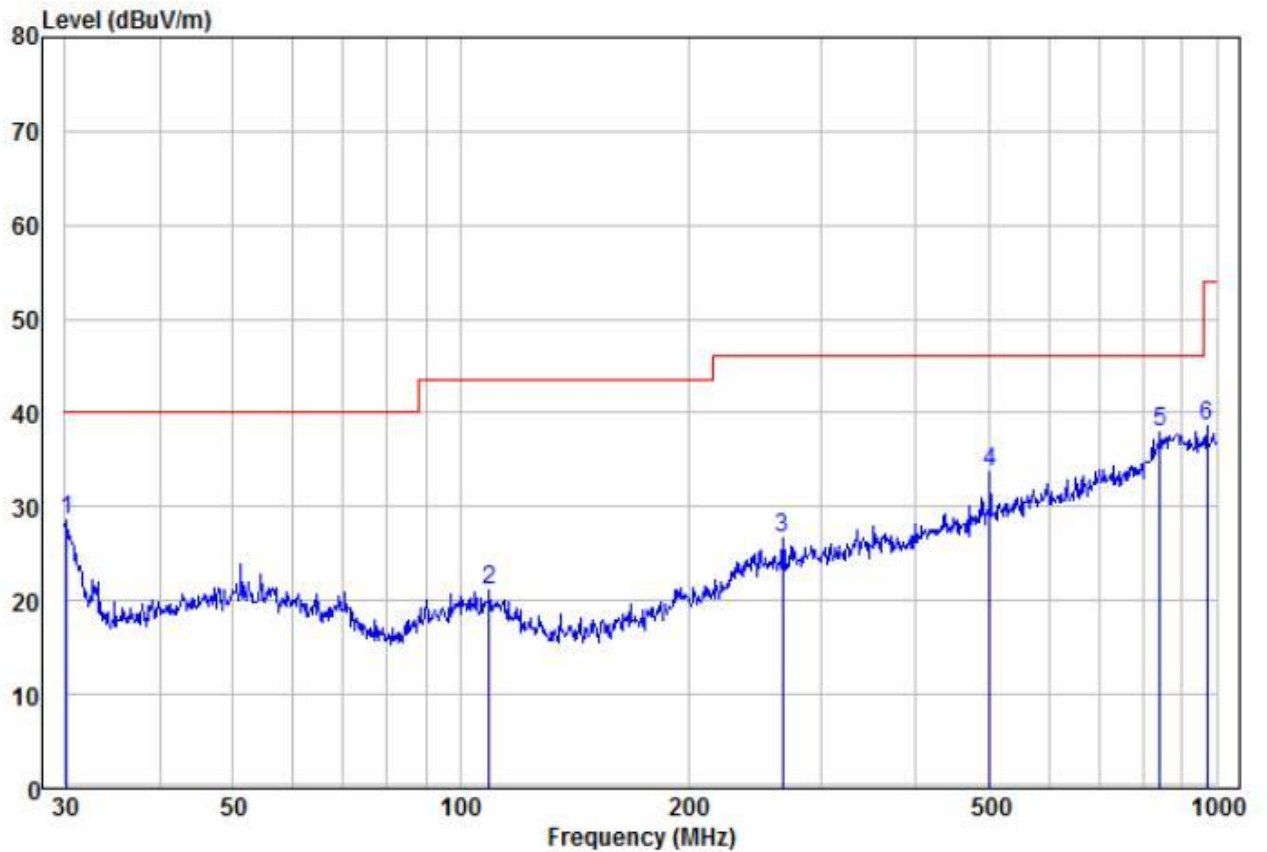
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	30.00	21.08	8.11	29.19	40.00	-10.81	Peak	VERTICAL	100	333
2	31.62	15.29	8.37	23.66	40.00	-16.34	Peak	VERTICAL	100	52
3	62.00	8.95	11.59	20.54	40.00	-19.46	Peak	VERTICAL	100	244
4	368.11	9.19	18.59	27.78	46.00	-18.22	Peak	VERTICAL	100	14
5	501.18	14.21	20.94	35.15	46.00	-10.85	Peak	VERTICAL	100	55
6 pp	893.86	9.33	29.20	38.53	46.00	-7.47	Peak	VERTICAL	100	89

Test mode:	Transmitting (802.11a 36CH)	Horizontal
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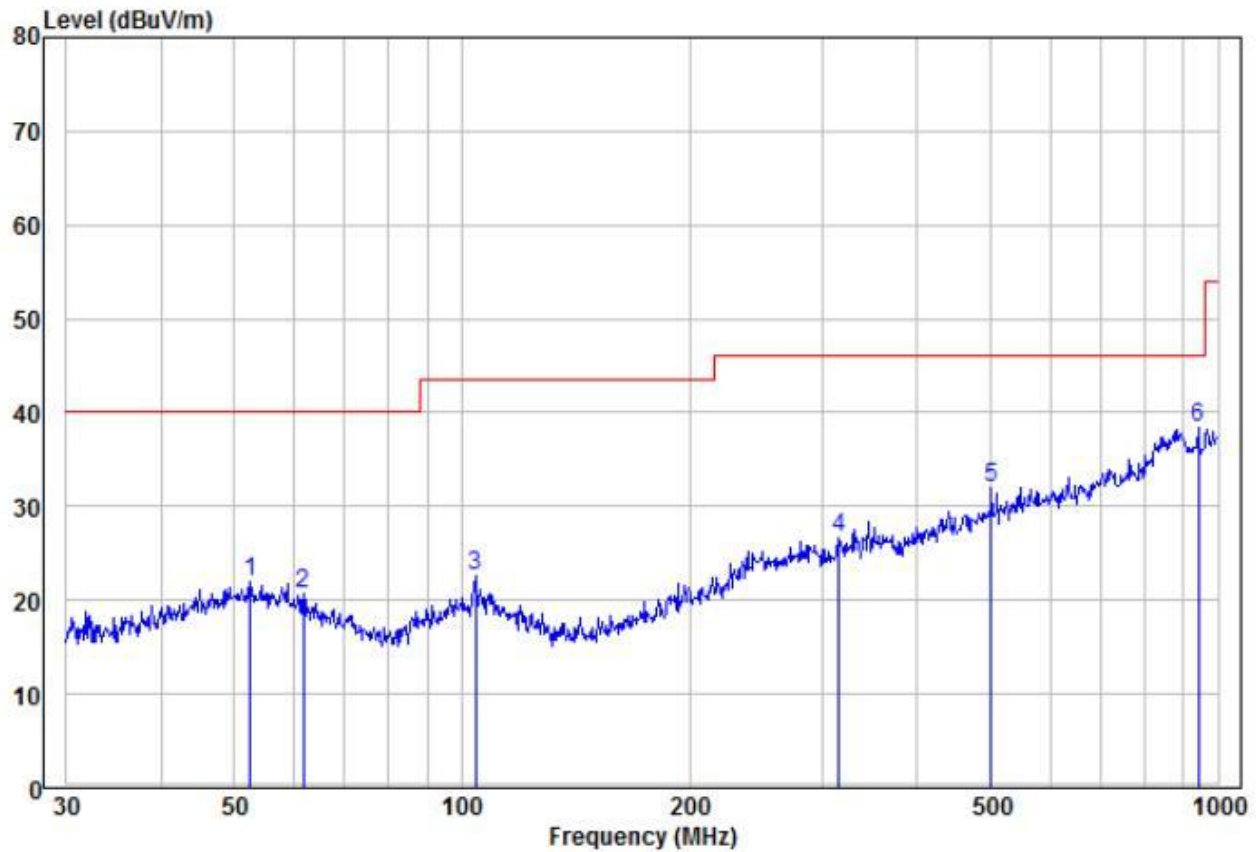
	Freq	Read Level	Factor	Level	Limit	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	52.39	9.49	12.70	22.19	40.00	-17.81	Peak	HORIZONTAL	100	1
2	55.22	9.32	12.79	22.11	40.00	-17.89	Peak	HORIZONTAL	100	175
3	100.58	9.65	11.87	21.52	43.50	-21.98	Peak	HORIZONTAL	100	221
4	252.95	9.56	15.79	25.35	46.00	-20.65	Peak	HORIZONTAL	100	146
5	501.18	11.71	20.94	32.65	46.00	-13.35	Peak	HORIZONTAL	100	360
6 pp	863.06	10.91	28.68	39.59	46.00	-6.41	Peak	HORIZONTAL	100	330

30MHz~1GHz		
Test mode:	Transmitting (802.11a 149CH)	Vertical



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	30.11	20.44	8.12	28.56	40.00	-11.44	Peak	VERTICAL	100	84
2	109.03	9.21	11.85	21.06	43.50	-22.44	Peak	VERTICAL	100	105
3	266.61	10.55	16.10	26.65	46.00	-19.35	Peak	VERTICAL	100	280
4	501.18	12.76	20.94	33.70	46.00	-12.30	Peak	VERTICAL	100	33
5 pp	842.13	9.70	28.33	38.03	46.00	-7.97	Peak	VERTICAL	100	24
6	972.34	10.47	28.12	38.59	54.00	-15.41	Peak	VERTICAL	100	106

Test mode:	Transmitting (802.11a 149CH)	Horizontal
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	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	52.58	9.22	12.71	21.93	40.00	-18.07	Peak	HORIZONTAL	100	41
2	61.78	9.08	11.64	20.72	40.00	-19.28	Peak	HORIZONTAL	100	110
3	104.17	10.74	11.87	22.61	43.50	-20.89	Peak	HORIZONTAL	100	23
4	315.48	9.38	17.26	26.64	46.00	-19.36	Peak	HORIZONTAL	100	29
5	501.18	11.14	20.94	32.08	46.00	-13.92	Peak	HORIZONTAL	100	81
6 pp	942.13	10.40	27.96	38.36	46.00	-7.64	Peak	HORIZONTAL	100	33

Transmitter Emission above 1GHz

Test mode:	802.11a(6Mbps)			Test channel:		36 CH			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
10360	54.11	2.26	56.37	74	-17.63	peak	H	1.5	267
10360	37.54	2.26	39.80	54	-14.20	AVG	H	1.5	34
15540	50.92	3.75	54.67	74	-19.33	peak	H	1.5	93
15540	37.39	3.75	41.14	54	-12.86	AVG	H	1.5	337
10360	55.63	2.26	57.89	74	-16.11	peak	V	1.5	252
10360	38.37	2.26	40.63	54	-13.37	AVG	V	1.5	180
15540	50.68	3.75	54.43	74	-19.57	peak	V	1.5	206
15540	35.58	3.75	39.33	54	-14.67	AVG	V	1.5	244

Test mode:	802.11a(6Mbps)			Test channel:		48 CH			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
10480	51.57	2.31	53.88	74	-20.12	peak	H	1.5	242
10480	36.93	2.31	39.24	54	-14.76	AVG	H	1.5	224
15720	50.16	3.79	53.95	74	-20.05	peak	H	1.5	13
15720	36.70	3.79	40.49	54	-13.51	AVG	H	1.5	321
10480	52.37	2.31	54.68	74	-19.32	peak	V	1.5	160
10480	36.37	2.31	38.68	54	-15.32	AVG	V	1.5	1
15720	48.62	3.79	52.41	74	-21.59	peak	V	1.5	133
15720	35.62	3.79	39.41	54	-14.59	AVG	V	1.5	200

Test mode:	802.11a(6Mbps)			Test channel:		149			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
11490	52.84	2.54	55.38	74	-18.62	peak	H	1.5	61
11490	38.36	2.54	40.90	54	-13.10	AVG	H	1.5	208
17235	50.55	3.94	54.49	74	-19.51	peak	H	1.5	17
17235	36.89	3.94	40.83	54	-13.17	AVG	H	1.5	17
11490	53.90	2.54	56.44	74	-17.56	peak	V	1.5	177
11490	37.17	2.54	39.71	54	-14.29	AVG	V	1.5	165
17235	49.90	3.94	53.84	74	-20.16	peak	V	1.5	22
17235	36.59	3.94	40.53	54	-13.47	AVG	V	1.5	26

Test mode:	802.11a(6Mbps)			Test channel:		165			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
11650	52.52	2.58	55.10	74	-18.90	peak	H	1.5	49
11650	38.29	2.58	40.87	54	-13.13	AVG	H	1.5	138
17475	50.52	4.02	54.54	74	-19.46	peak	H	1.5	338
17475	37.93	4.02	41.95	54	-12.05	AVG	H	1.5	137
11650	53.51	2.58	56.09	74	-17.91	peak	V	1.5	307
11650	38.15	2.58	40.73	54	-13.27	AVG	V	1.5	6
17475	50.97	4.02	54.99	74	-19.01	peak	V	1.5	120
17475	36.86	4.02	40.88	54	-13.12	AVG	V	1.5	38

Remark:

- 1) The 802.11a 6Mbps of rate is the worst case, only the worst data recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 40GHz, The disturbance above 18GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

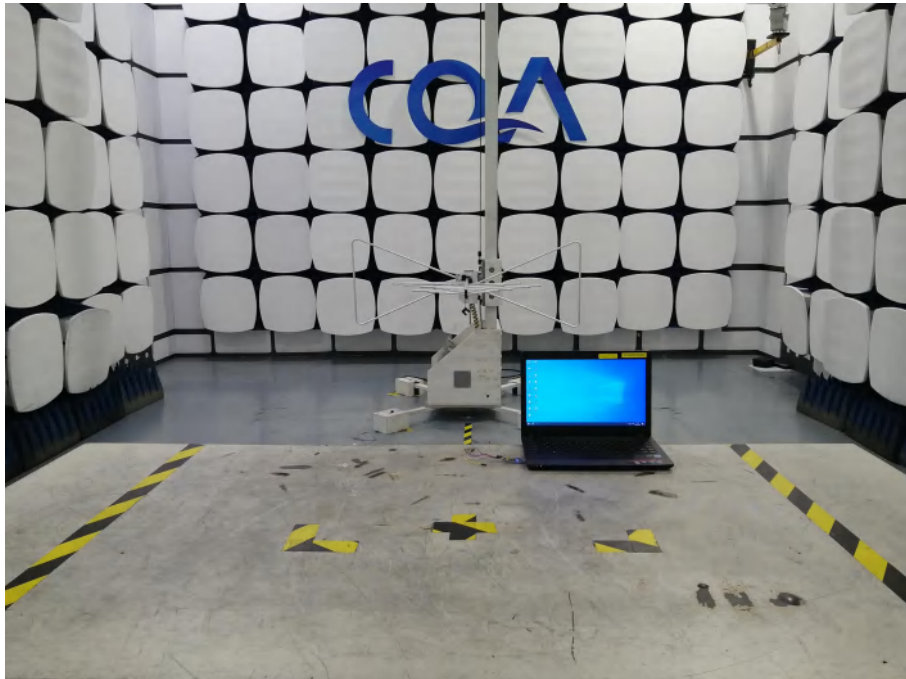
8 Photographs - EUT Test Setup

8.1 Radiated Spurious Emission

9kHz~30MHz:



30MHz~1GHz:



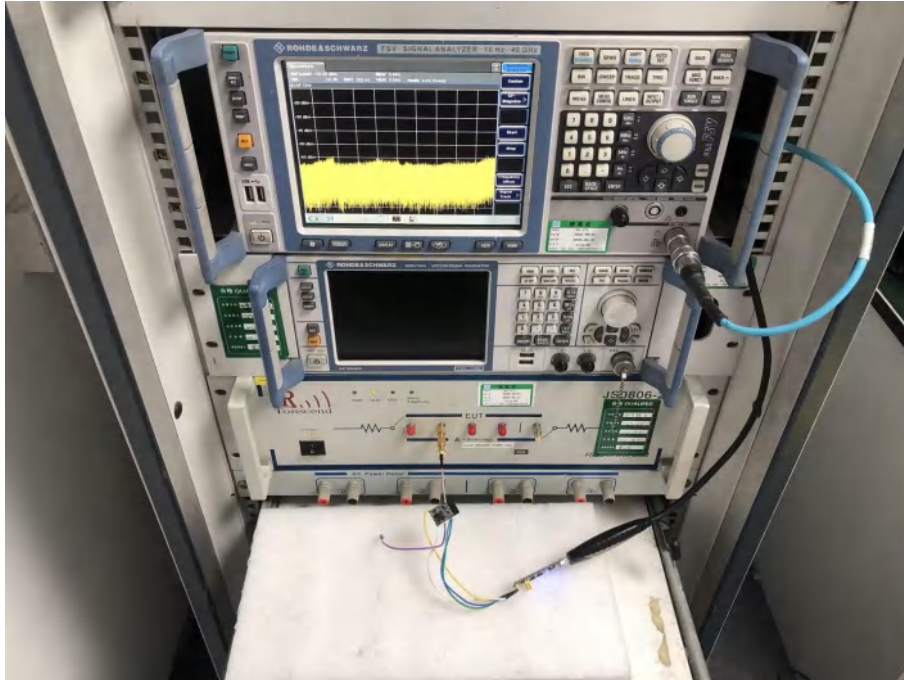
Above 1GHz:



8.2 Conducted Emission



8.3 RF Conducted measurement



9 Photographs - EUT Constructional Details

Refer to PHOTOGRAPHS OF EUT for CQASZ20251202911E-01.

*** END OF REPORT ***