



Shenzhen Huaxia Testing Technology Co., Ltd.

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

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

Report Template Version: V05

Report Template Revision Date: 2021-11-03

TEST REPORT

Report No.: CQASZ20251102748E-03
Applicant: Icarsoft Technology Inc.
Address of Applicant: 1629 K St. Suite 300 N.W. Washington D.C., 20006 United States.
Equipment Under Test (EUT):
Product: PROFESSIONAL MULTI-SYSTEM CAR DIAGNOSTIC TOOL
Model No.: CR Max P
Test Model No.: CR Max P
Brand Name: **iCarsoft**
FCC ID: 2AWD8-CRMAXP
Standards: 47 CFR Part 15, Subpart C
KDB558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10:2020
Date of Receipt: 2025-11-27
Date of Test: 2025-11-27 to 2025-12-10
Date of Issue: 2026-1-14
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)



The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20251102748E-03	Rev.01	Initial report	2026-1-14

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15.203	N/A	PASS
AC Power Line Conducted Emission	47 CFR Part 15.207	ANSI C63.10-2020	PASS
Conducted Peak & Average Output Power	47 CFR Part 15.247	ANSI C63.10-2020	PASS
6dB Occupied Bandwidth	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15.247	ANSI C63.10-2020	PASS
RF Conducted Spurious Emissions	47 CFR Part 15.247	ANSI C63.10-2020	PASS
Radiated Spurious Emissions	47 CFR Part 15.209	ANSI C63.10-2020	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15.205/15.209	ANSI C63.10-2020	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

3 Contents

	Page
1 VERSION	2
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	6
4.1 CLIENT INFORMATION	6
4.2 GENERAL DESCRIPTION OF EUT	6
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	6
4.4 TEST ENVIRONMENT AND MODE	9
4.5 DESCRIPTION OF SUPPORT UNITS	13
4.6 TEST LOCATION	13
4.7 TEST FACILITY	13
4.8 TEST CONFIGURATION	13
4.9 STATEMENT OF THE MEASUREMENT UNCERTAINTY	14
4.10 DEVIATION FROM STANDARDS	14
4.11 ABNORMALITIES FROM STANDARD CONDITIONS	14
4.12 OTHER INFORMATION REQUESTED BY THE CUSTOMER	14
4.13 EQUIPMENT LIST	15
5 TEST RESULTS AND MEASUREMENT DATA	16
5.1 ANTENNA REQUIREMENT	16
5.2 CONDUCTED EMISSIONS	17
5.3 CONDUCTED PEAK & AVERAGE OUTPUT POWER	21
Test Result	22
Note: Duty cycle correction factor details please see section 4.4.	22
When Duty cycle >98%, D.C.F is not required.	22
Test Graphs	23
5.4 99% OCCUPIED BANDWIDTH	28
Test Result	29
Test Graphs	30
5.5 6dB OCCUPIED BANDWIDTH	35
Test Result	36
Test Graphs	37
5.6 POWER SPECTRAL DENSITY	42
Test Result	43
Test Graphs	44
5.7 BAND-EDGE FOR RF CONDUCTED EMISSIONS	49
Test Result	50
5.7.1 Test Graphs	51
5.8 RF CONDUCTED SPURIOUS EMISSIONS	55
Test Result	56
Test Graphs	58
5.9 RADIATED SPURIOUS EMISSIONS	73
5.9.1 Radiated emission below 1GHz	76
5.9.2 Transmitter emission above 1GHz	78
5.10 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY	86
6 PHOTOGRAPHS - EUT TEST SETUP	92
6.1 RADIATED SPURIOUS EMISSION	92
6.2 CONDUCTED EMISSION	错误！未定义书签。
6.3 RF CONDUCTED MEASUREMENT	错误！未定义书签。

7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	95
--	----

4 General Information

4.1 Client Information

Applicant:	Icarsoft Technology Inc.
Address of Applicant:	1629 K St. Suite 300 N.W.Washington D.C.,20006 United States.
Manufacturer:	Icarsoft Technology Inc.
Address of Manufacturer:	1629 K St. Suite 300 N.W.Washington D.C.,20006 United States.
Factory:	Dongguan Yongdong Electronic Technology Co.,Ltd
Address of Factory:	No.10,4th Street,Zhangyang Fuzhu Industrial Zone,Zhangmutou town,Dongguan City

4.2 General Description of EUT

Product Name:	PROFESSIONAL MULTI-SYSTEM CAR DIAGNOSTIC TOOL
Model No.:	CR Max P
Test Model No.:	CR Max P
Trade Mark:	iCarsoft
Software Version:	V1.05
Hardware Version:	X70S1S-V2
Power Supply:	Li-ion battery DC 3.8V 10000mAh, 38Wh Charge by DC 5V for adapter
EUT Supports Radios application:	2.4GHz: Wi-Fi: 802.11b/g/n(HT20): 2412MHz~2462MHz; 802.11n(HT40): 2422MHz~2452MHz
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report. ☒ Simultaneous TX is not supported.

4.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	TX test
Antenna Type:	FPC antenna

Antenna Gain:	2.15dBi
---------------	---------

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		
Operation Frequency each of channel(802.11n HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	6	2437MHz	9	2452MHz		
4	2427MHz	7	2442MHz				
5	2432MHz	8	2447MHz				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

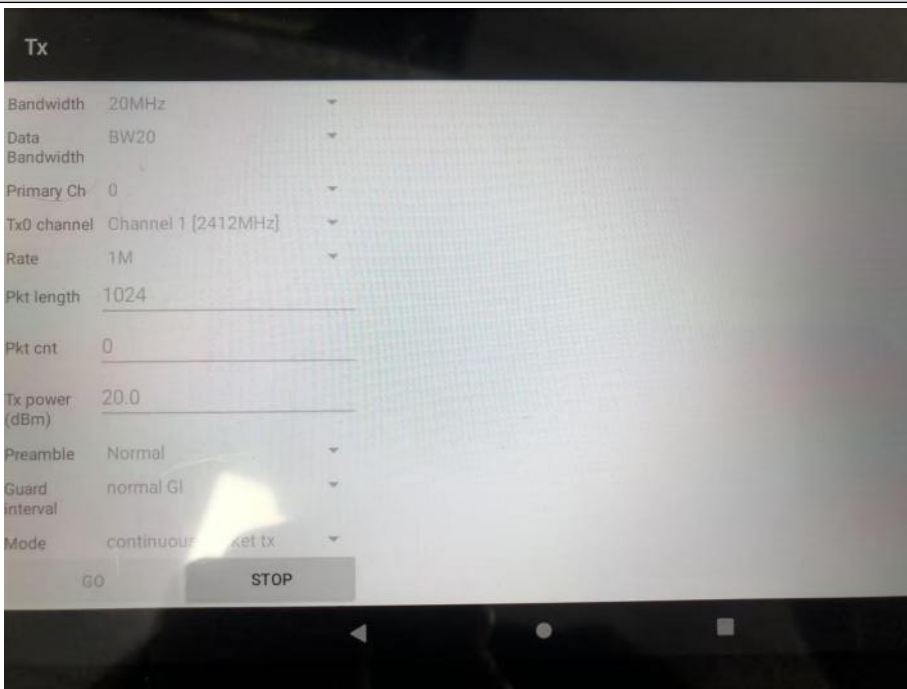
For 802.11n (HT40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.4 Test Environment and Mode

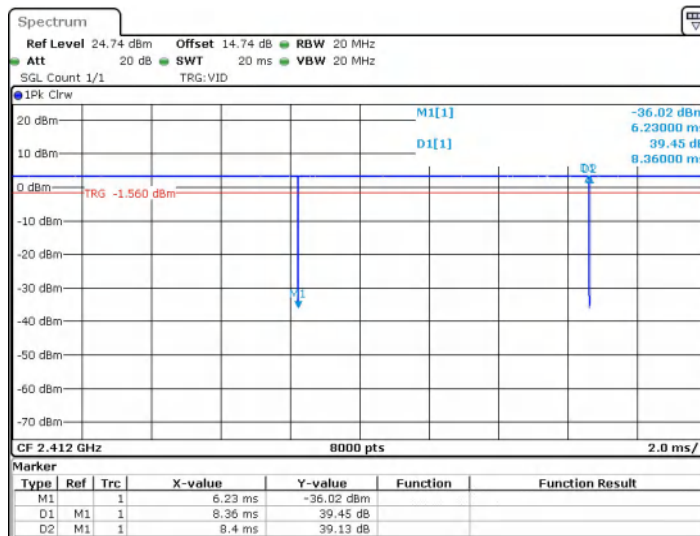
Operating Environment:	
Radiated Emissions:	
Temperature:	25.3 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.6 °C
Humidity:	60 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item test (RF Conducted test room):	
Temperature:	25.5 °C
Humidity:	52 % RH
Atmospheric Pressure:	1009 mbar
Test mode:	
Transmitting mode:	EUT is set in RF test mode in all supported modulation types, bandwidth and data rate, etc.
EUT Power level:	Class0
Run Software:	
	

Operated Mode for Worst Duty Cycle:				
Test Mode	On time [Ton] (ms)	Period [Ttotal] ms)	Duty Cycle(%)	Average correction factor(dB)
IEEE802.11b	8.36	8.40	99.52	/
IEEE802.11g	1.38	1.42	97.18	0.12
IEEE802.11n (HT20)	1.29	1.33	96.99	0.13
IEEE802.11n (HT40)	0.64	0.69	92.75	0.32

Remark:

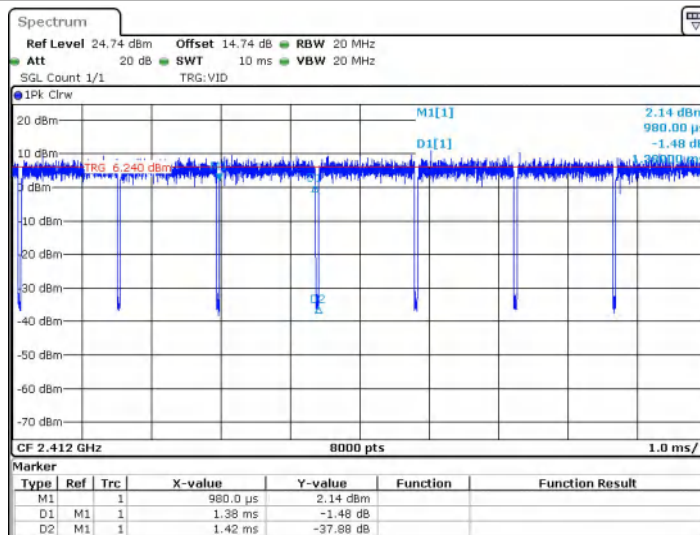
- 1) Duty cycle= On Time/ Period;
- 2) Duty Cycle factor = $10 * \log(1/ \text{Duty cycle})$;

Test Graph_IEEE802.11b Duty Cycle:



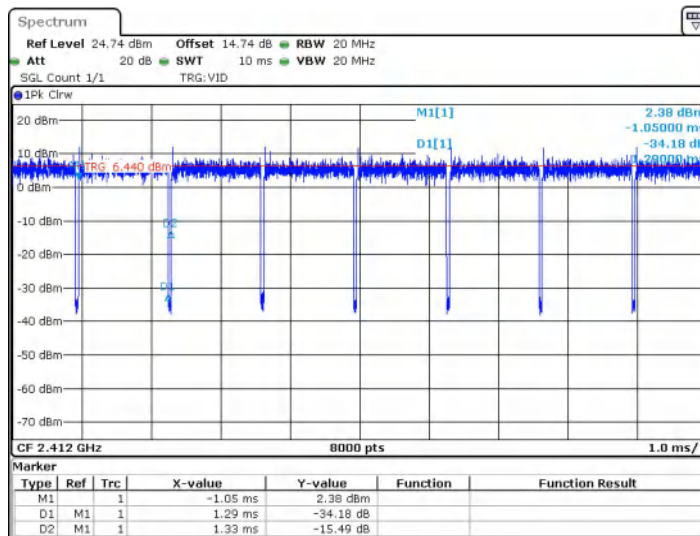
Date: 11 DEC 2025 21:34:49

Test Graph_IEEE802.11g Duty Cycle:



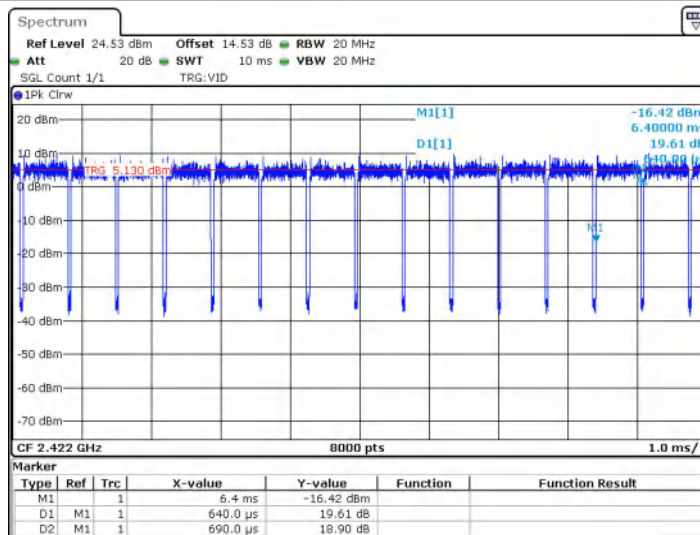
Date: 11 DEC 2025 21:40:21

Test Graph_IEEE802.11 n (HT20) Duty Cycle:



Date: 11 DEC 2025 21:44:58

Test Graph_IEEE802.11 n (HT40) Duty Cycle:



Date: 11 DEC 2025 21:48:38

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.6 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

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

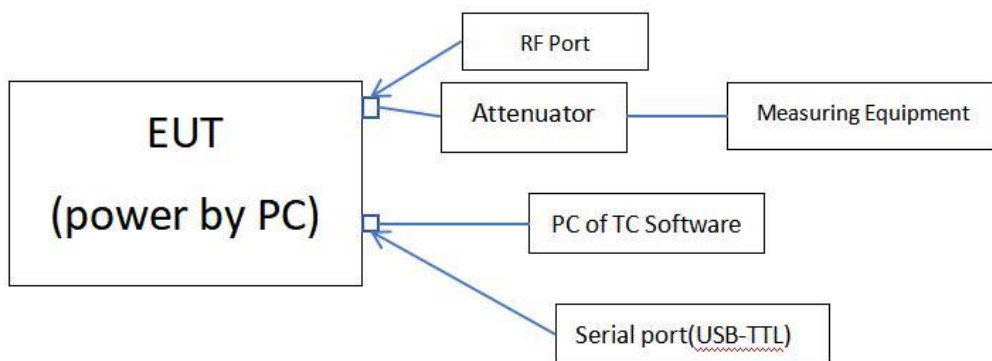
• **A2LA (Certificate No. 4742.01)**

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

4.8 Test configuration



4.9 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8℃	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	Frequency Error	5.5 Hz	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

4.10 Deviation from Standards

None.

4.11 Abnormalities from Standard Conditions

None.

4.12 Other Information Requested by the Customer

None.

4.13 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
Antenna Connector	CQA	RFC-01	CQA-080	2025/9/1	2026/8/31
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	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:

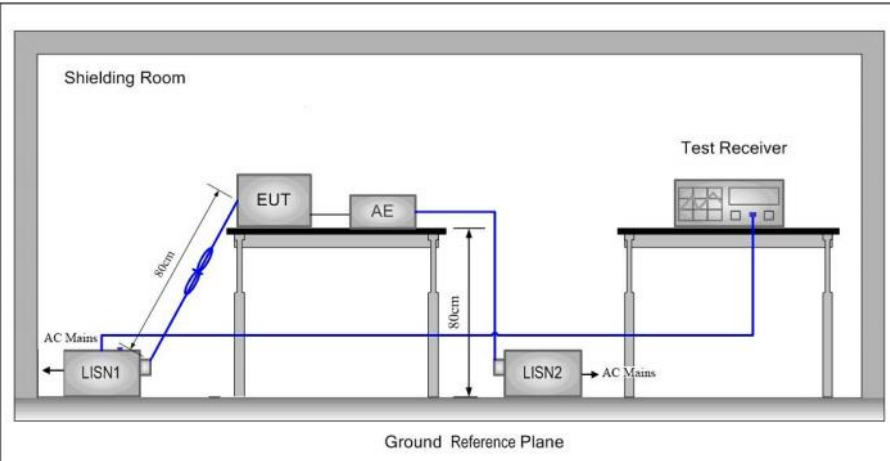
	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
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. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
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.	

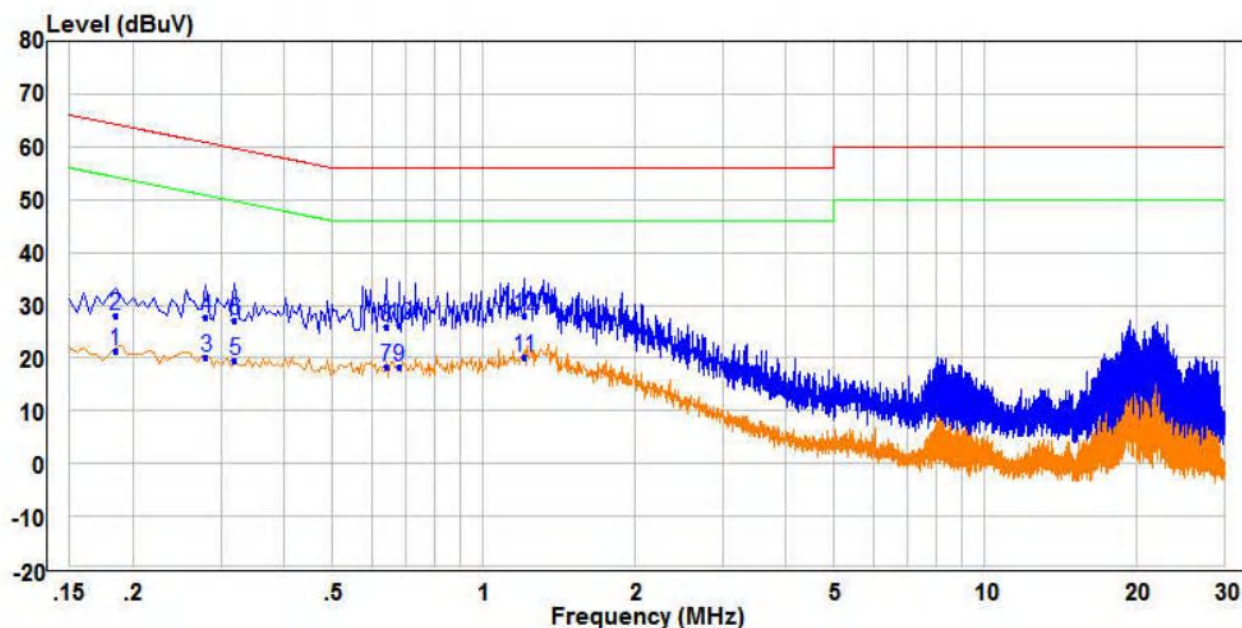
5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2020		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	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: 2020 on conducted measurement.		
Test Setup:			

Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate of 802.11b at middle channel is the worst case. Only the worst case is recorded in the report.
Test Voltage:	AC120V/60Hz
Test Results:	Pass

Measurement Data

Live Line:

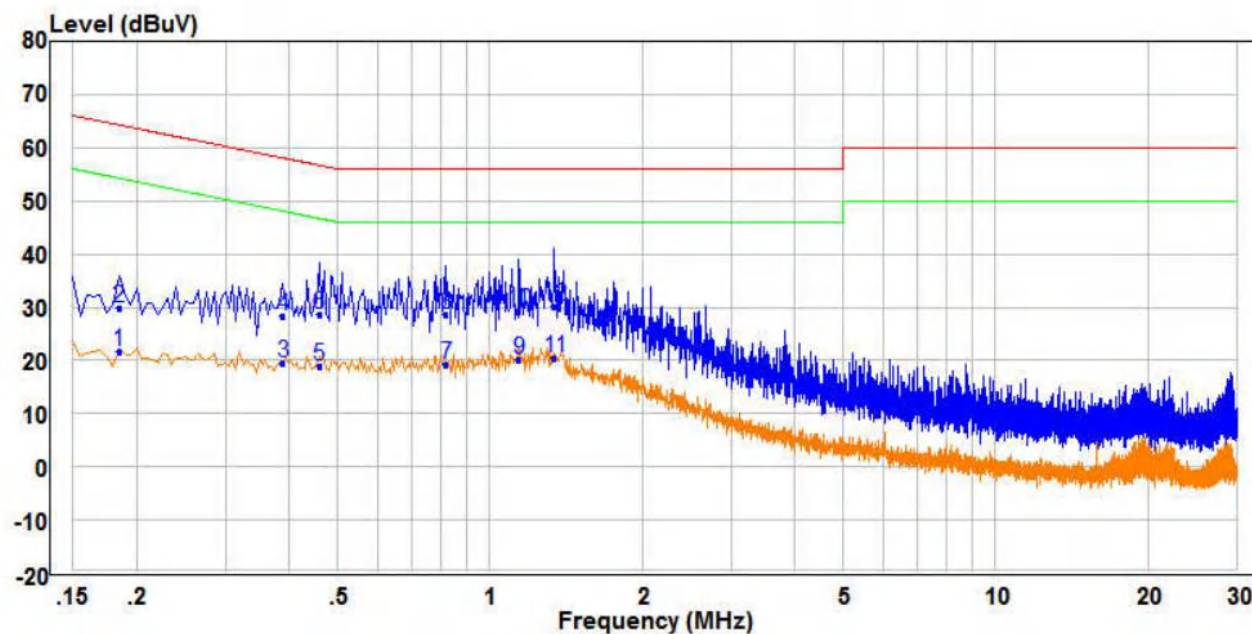


		Read		Limit	Over		
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	Pol/Phase
1	0.185	11.57	9.64	21.21	54.26	-33.05	Average
2	0.185	18.47	9.64	28.11	64.26	-36.15	QP
3	0.280	10.56	9.51	20.07	50.82	-30.75	Average
4	0.280	18.31	9.51	27.82	60.82	-33.00	QP
5	0.320	9.90	9.52	19.42	49.71	-30.29	Average
6	0.320	17.61	9.52	27.13	59.71	-32.58	QP
7	0.640	8.42	9.84	18.26	46.00	-27.74	Average
8	0.640	16.18	9.84	26.02	56.00	-29.98	QP
9	0.680	8.41	9.88	18.29	46.00	-27.71	Average
10	0.680	16.22	9.88	26.10	56.00	-29.90	QP
11 PP	1.205	9.77	10.22	19.99	46.00	-26.01	Average
12 QP	1.205	17.73	10.22	27.95	56.00	-28.05	QP

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral Line:

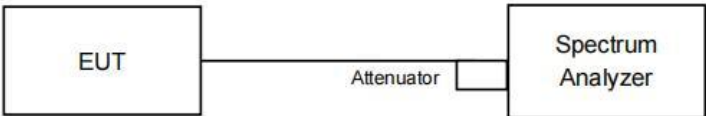


	Freq	Read	Factor	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.185	12.01	9.63	21.64	54.26	-32.62	Average	Neutral
2	0.185	20.10	9.63	29.73	64.26	-34.53	QP	Neutral
3	0.390	9.93	9.59	19.52	48.06	-28.54	Average	Neutral
4	0.390	18.62	9.59	28.21	58.06	-29.85	QP	Neutral
5	0.460	9.35	9.66	19.01	46.69	-27.68	Average	Neutral
6	0.460	18.99	9.66	28.65	56.69	-28.04	QP	Neutral
7	0.820	9.31	9.82	19.13	46.00	-26.87	Average	Neutral
8	0.820	18.75	9.82	28.57	56.00	-27.43	QP	Neutral
9	1.140	10.51	9.71	20.22	46.00	-25.78	Average	Neutral
10	1.140	19.64	9.71	29.35	56.00	-26.65	QP	Neutral
11 PP	1.340	10.62	9.72	20.34	46.00	-25.66	Average	Neutral
12 QP	1.340	20.47	9.72	30.19	56.00	-25.81	QP	Neutral

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

5.3 Conducted Peak & Average Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10: 2020
Test Setup:	<i>Setup for Power meter measurement method</i>  <i>Setup for Spectrum analyser measurement method</i> 
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

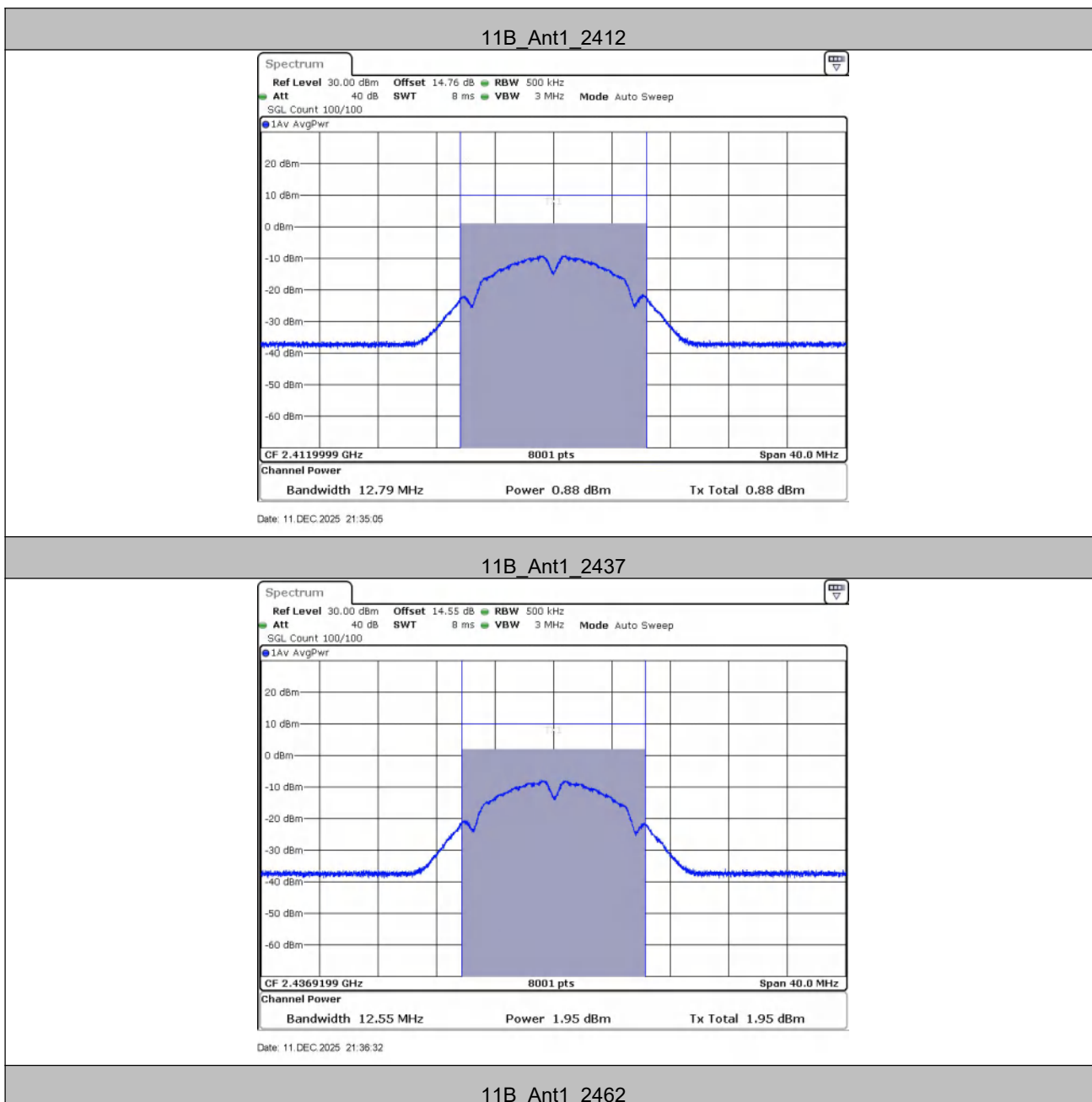
Test Result

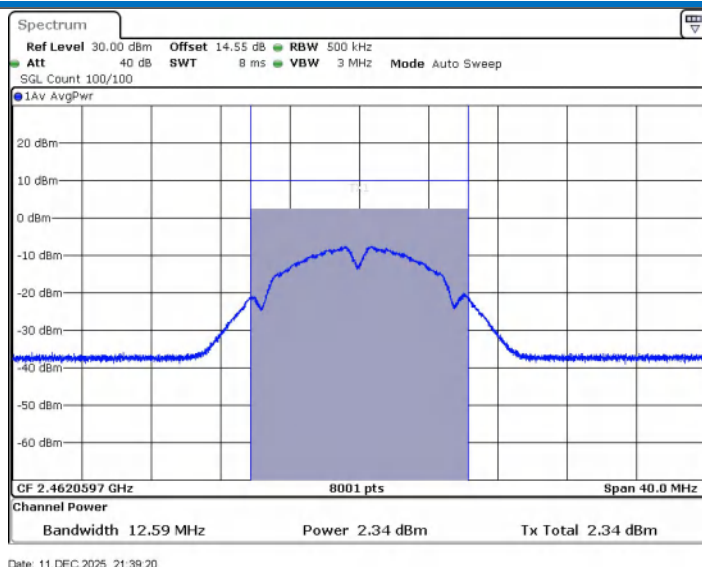
Test Mode	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	0.88	≤30.00	PASS
	2437	1.95	≤30.00	PASS
	2462	2.34	≤30.00	PASS
11G	2412	-0.03	≤30.00	PASS
	2437	1.18	≤30.00	PASS
	2462	1.96	≤30.00	PASS
11N20SISO	2412	-0.15	≤30.00	PASS
	2437	0.75	≤30.00	PASS
	2462	1.56	≤30.00	PASS
11N40SISO	2422	0.27	≤30.00	PASS
	2437	0.88	≤30.00	PASS
	2452	1.26	≤30.00	PASS

Note: Duty cycle correction factor details please see section 4.4.

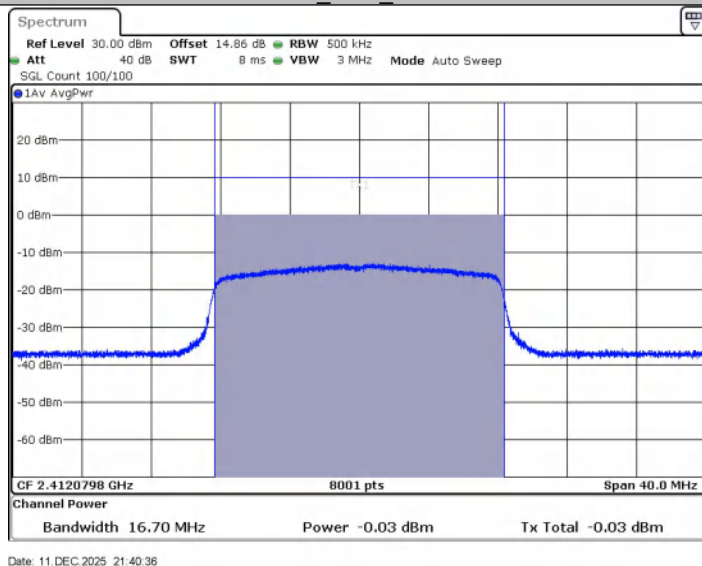
When Duty cycle >98%, D.C.F is not required.

Test Graphs

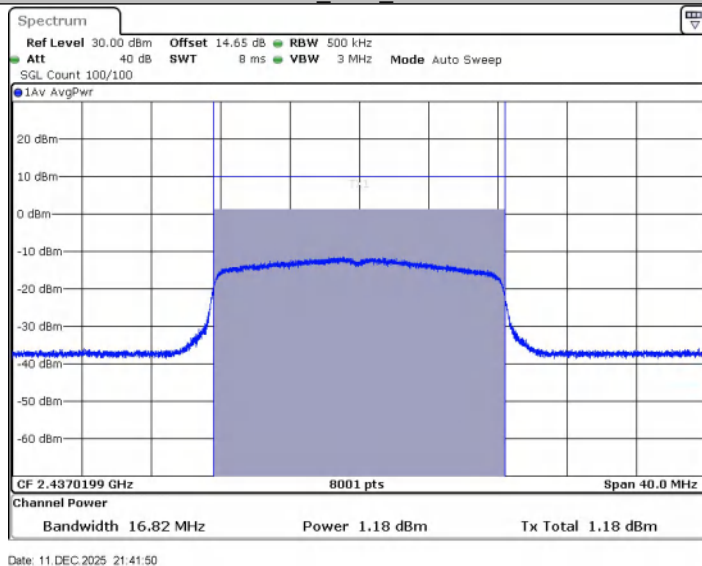




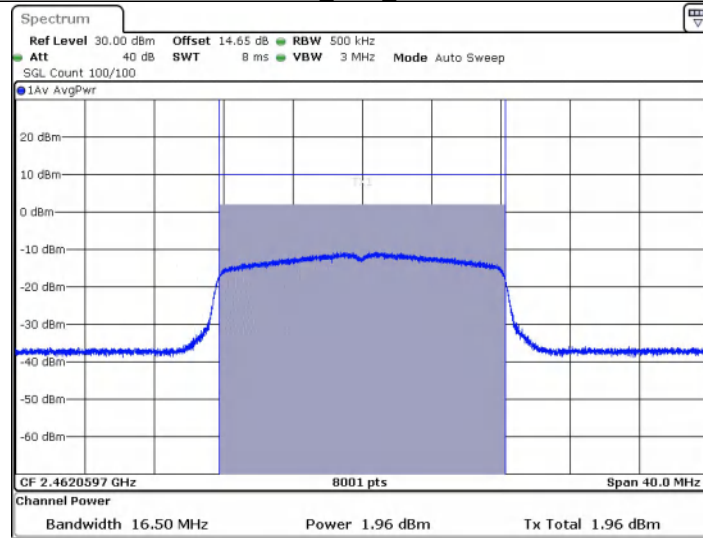
11G_Ant1_2412



11G_Ant1_2437

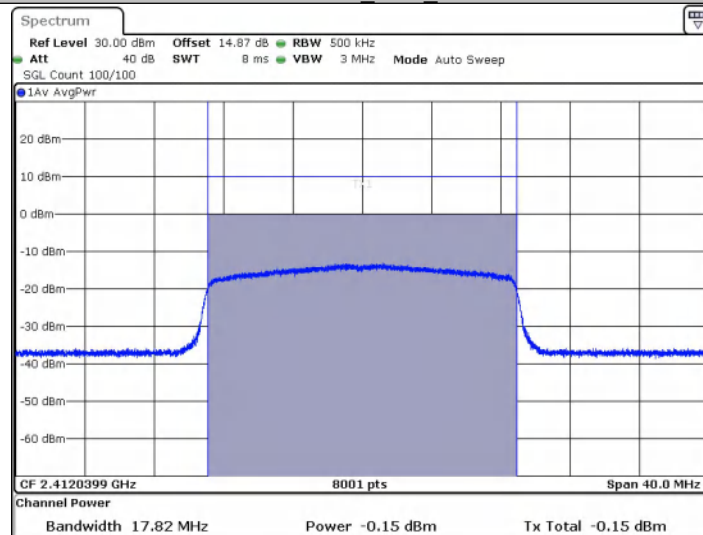


11G_Ant1_2462



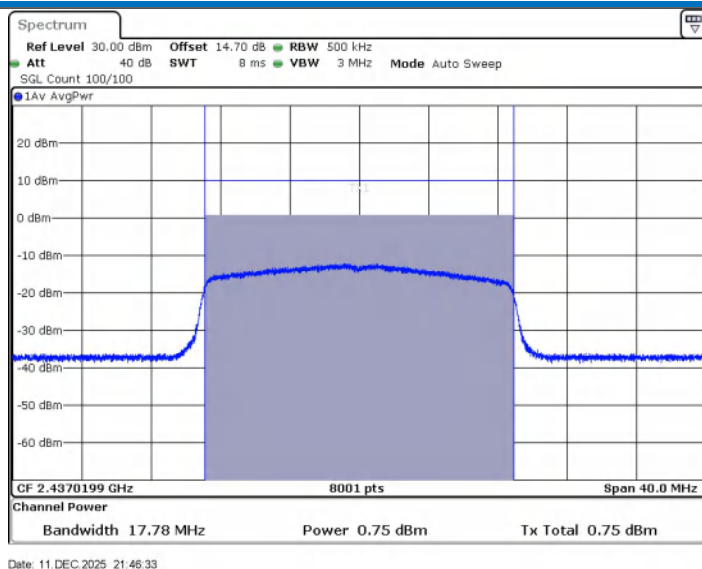
Date: 11.DEC.2025 21:43:02

11N20SISO_Ant1_2412

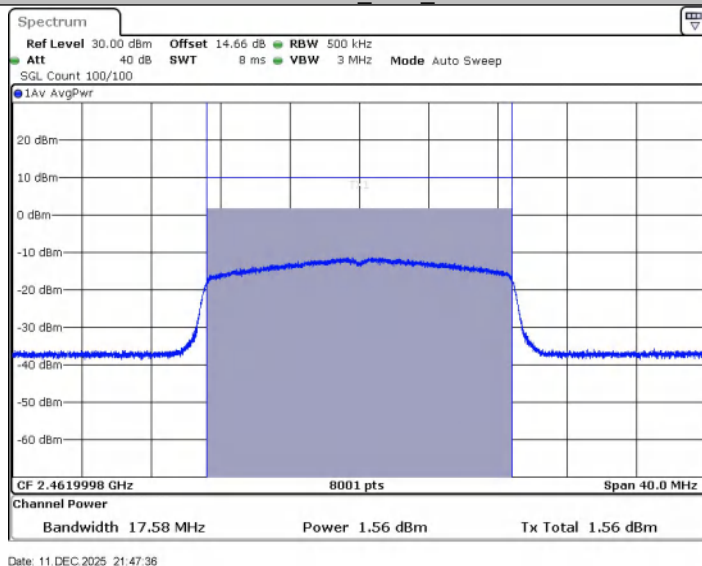


Date: 11.DEC.2025 21:45:14

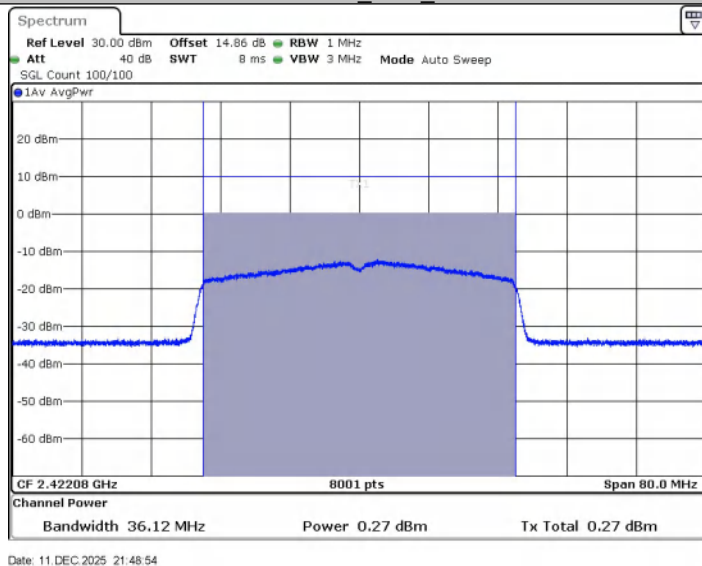
11N20SISO_Ant1_2437



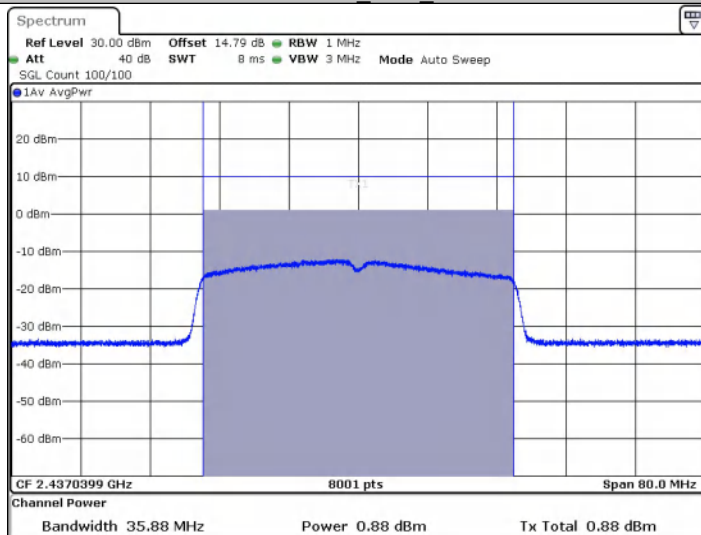
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

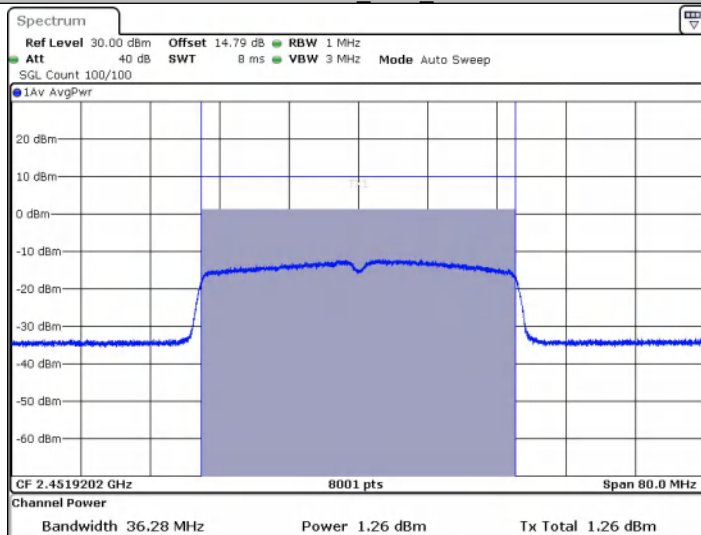


11N40SISO_Ant1_2437



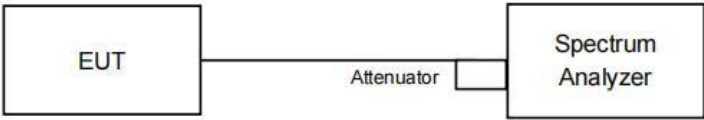
Date: 11 DEC 2025 21:50:20

11N40SISO_Ant1_2452



Date: 11 DEC 2025 21:51:32

5.4 99% Occupied Bandwidth

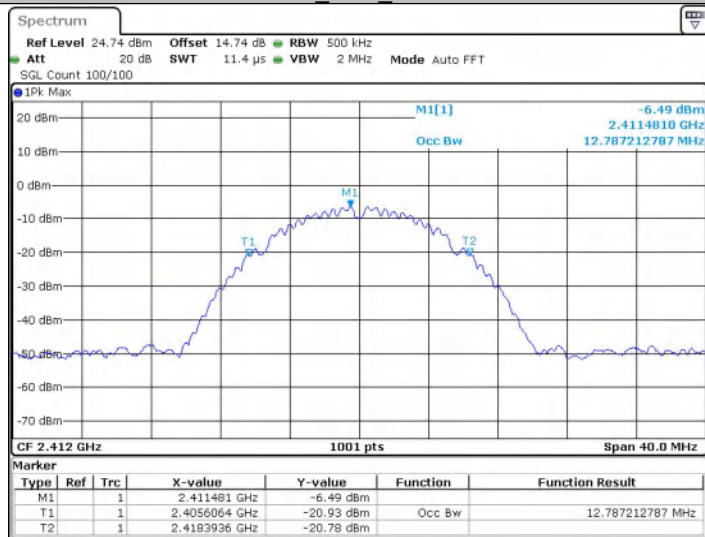
Test Requirement:	47 CFR Part 15C
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Test Result

TestMode	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11B	2412	12.787	2405.6064	2418.3936
	2437	12.547	2430.6464	2443.1938
	2462	12.587	2455.7662	2468.3536
11G	2412	16.703	2403.7283	2420.4316
	2437	16.823	2428.6084	2445.4316
	2462	16.503	2453.8082	2470.3117
11N20SISO	2412	17.822	2403.1289	2420.9510
	2437	17.782	2428.1289	2445.9111
	2462	17.582	2453.2088	2470.7912
11N40SISO	2422	36.124	2404.0180	2440.1419
	2437	35.884	2419.0979	2454.9820
	2452	36.284	2433.7782	2470.0619

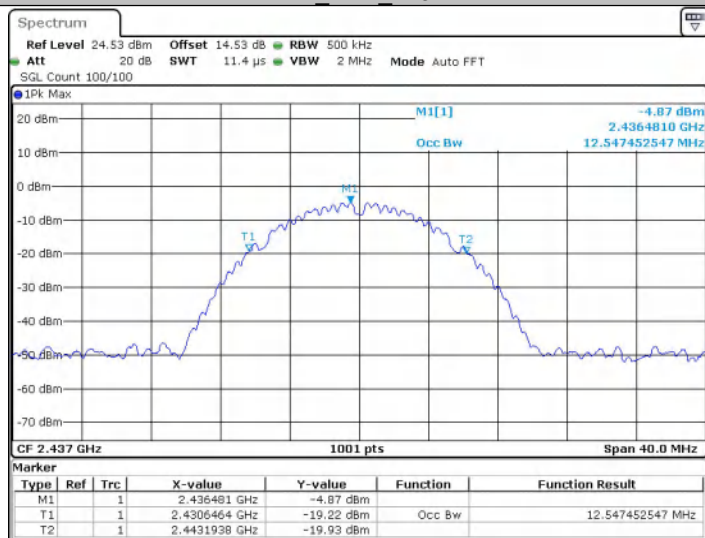
Test Graphs

11B_Ant1_2412



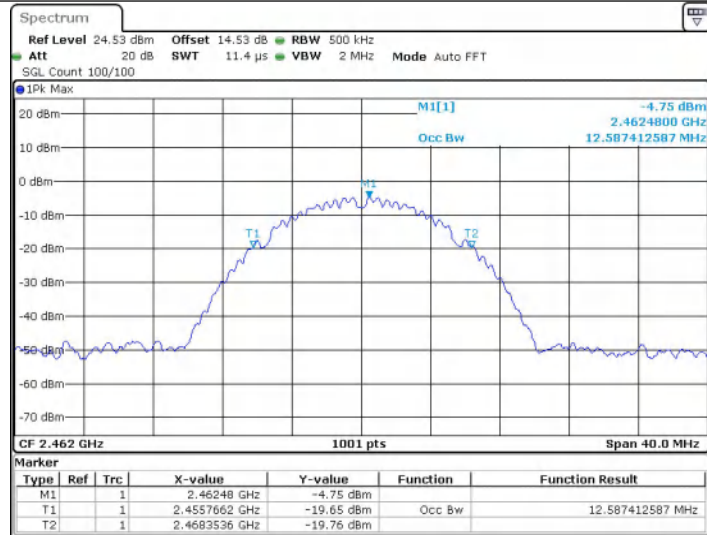
Date: 11 DEC 2025 21:34:59

11B_Ant1_2437



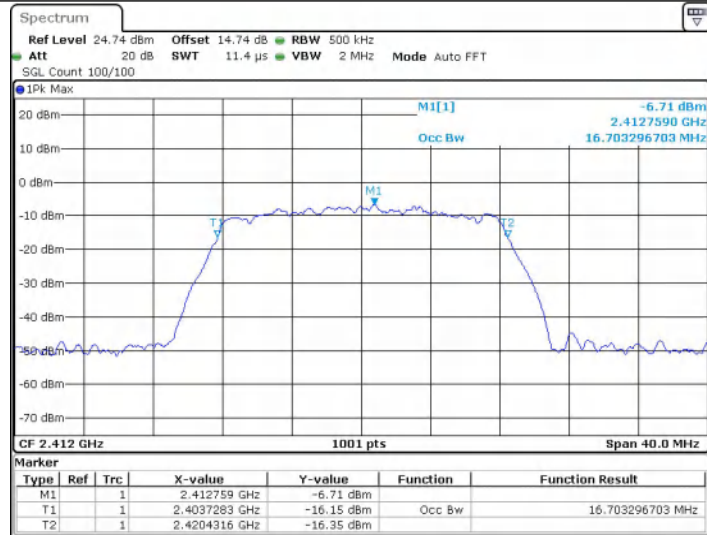
Date: 11 DEC 2025 21:36:27

11B_Ant1_2462



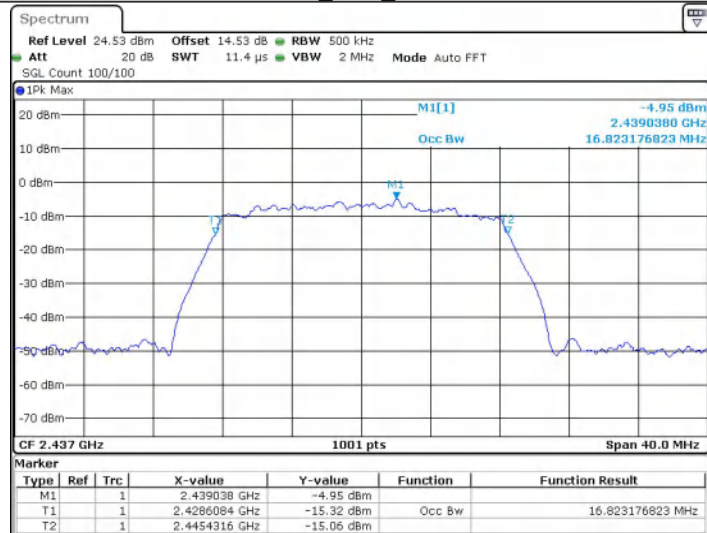
Date: 11 DEC 2025 21:39:15

11G_Ant1_2412



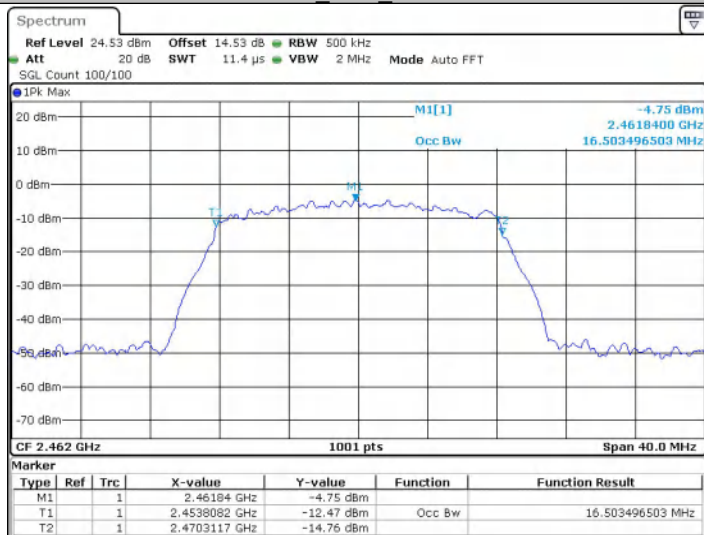
Date: 11 DEC 2025 21:40:31

11G_Ant1_2437

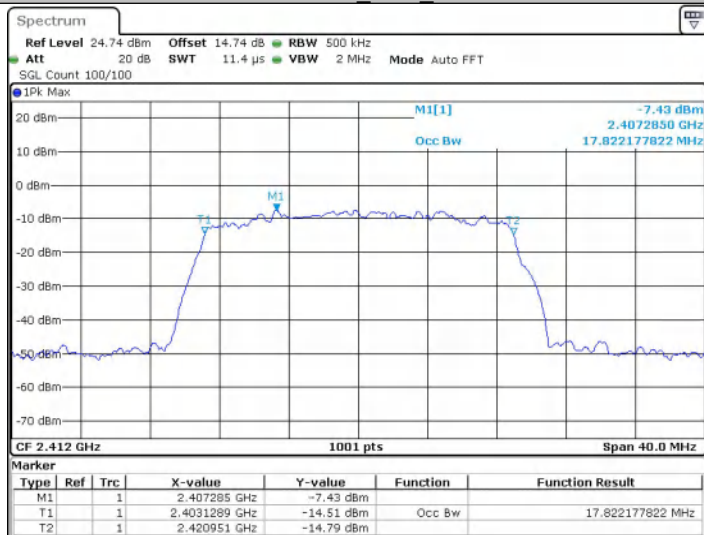


Date: 11 DEC 2025 21:41:45

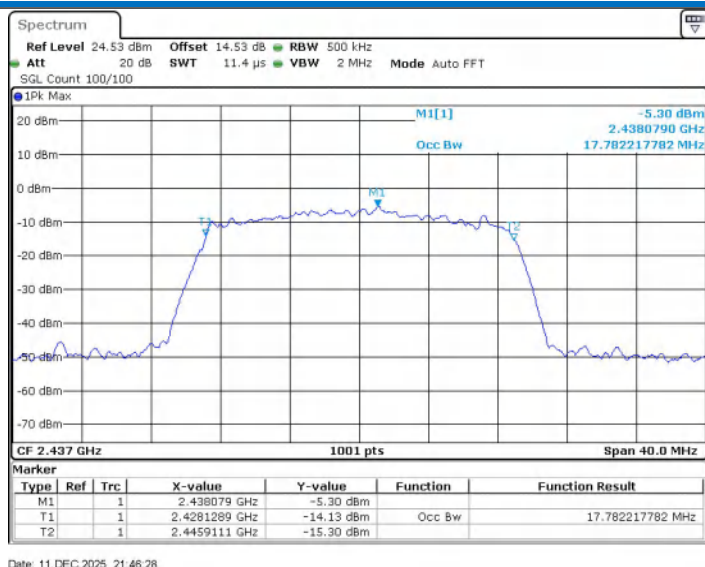
11G_Ant1_2462



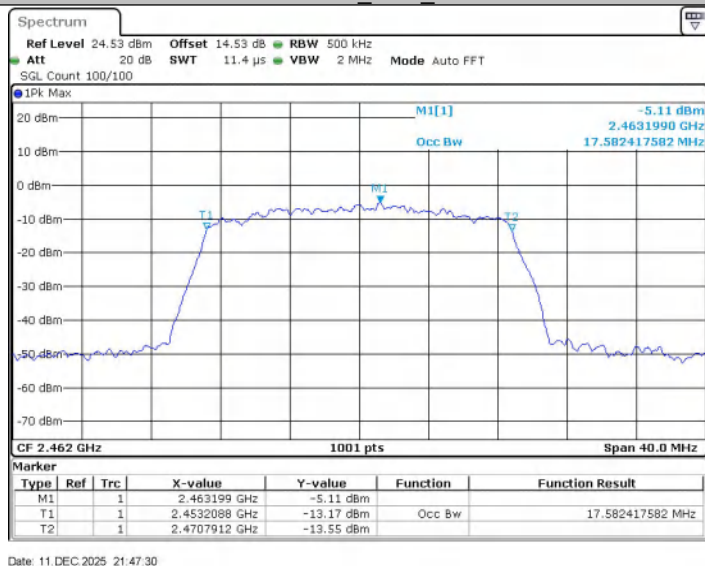
11N20SISO_Ant1_2412



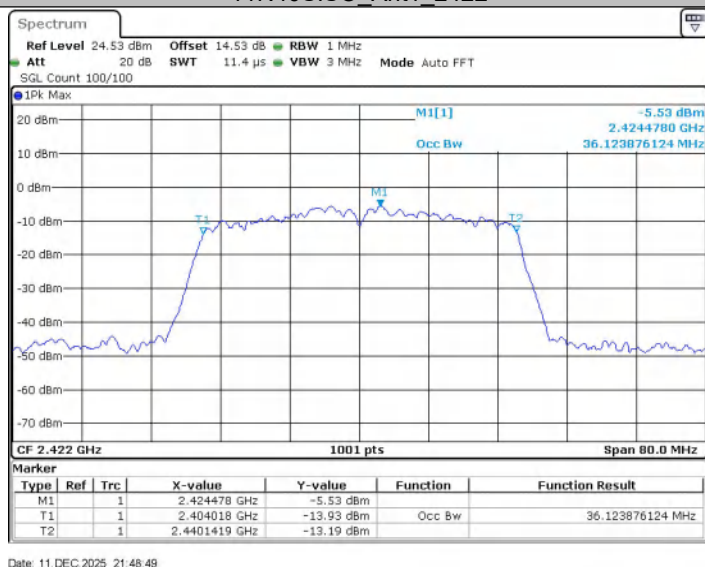
11N20SISO_Ant1_2437



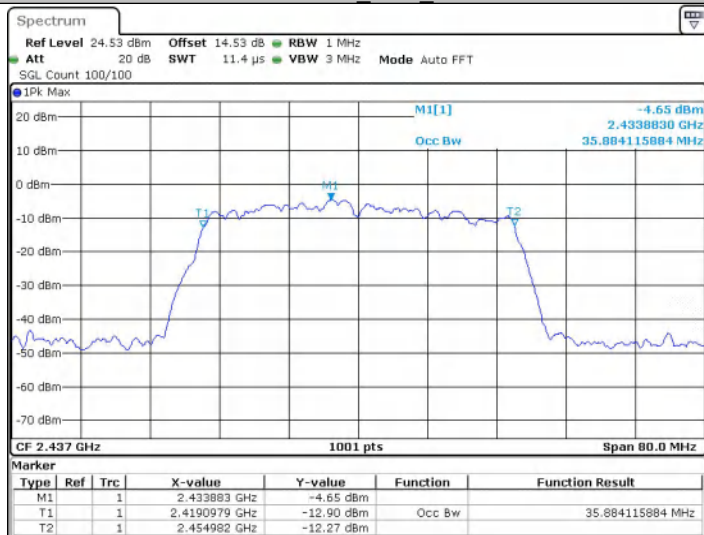
11N20SISO_Ant1_2462



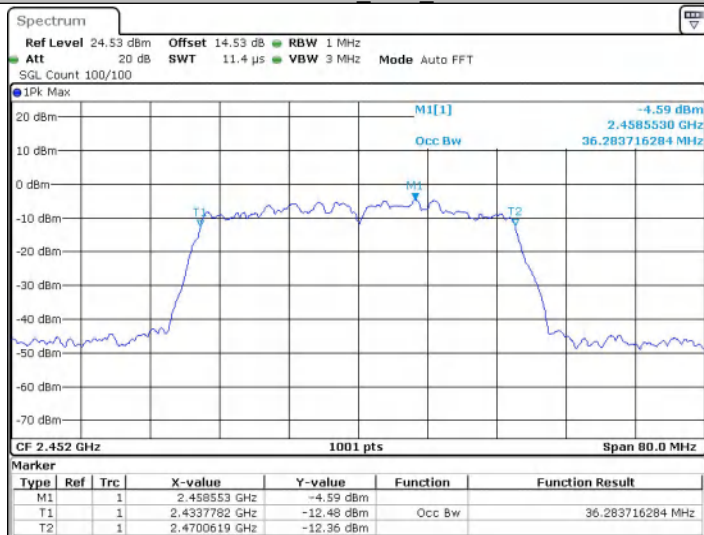
11N40SISO_Ant1_2422



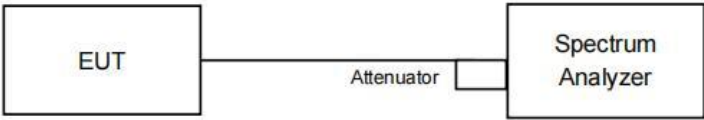
11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



5.5 6dB Occupied Bandwidth

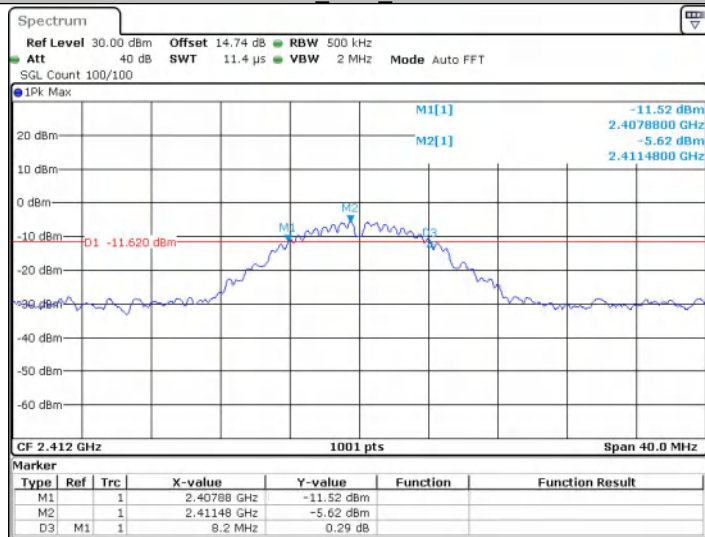
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	≥ 500 kHz
Test Results:	Pass

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.20	0.5	PASS
		2437	8.20	0.5	PASS
		2462	8.24	0.5	PASS
11G	Ant1	2412	16.44	0.5	PASS
		2437	14.60	0.5	PASS
		2462	16.04	0.5	PASS
11N20SISO	Ant1	2412	16.84	0.5	PASS
		2437	17.08	0.5	PASS
		2462	17.44	0.5	PASS
11N40SISO	Ant1	2422	35.76	0.5	PASS
		2437	35.44	0.5	PASS
		2452	35.60	0.5	PASS

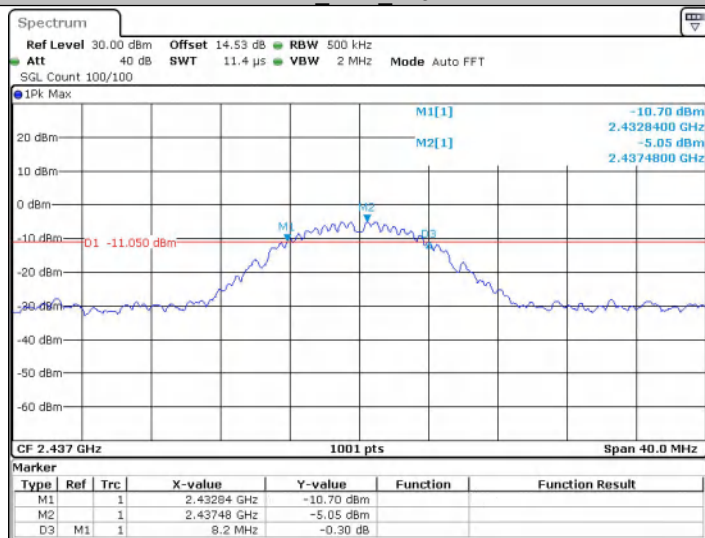
Test Graphs

11B_Ant1_2412



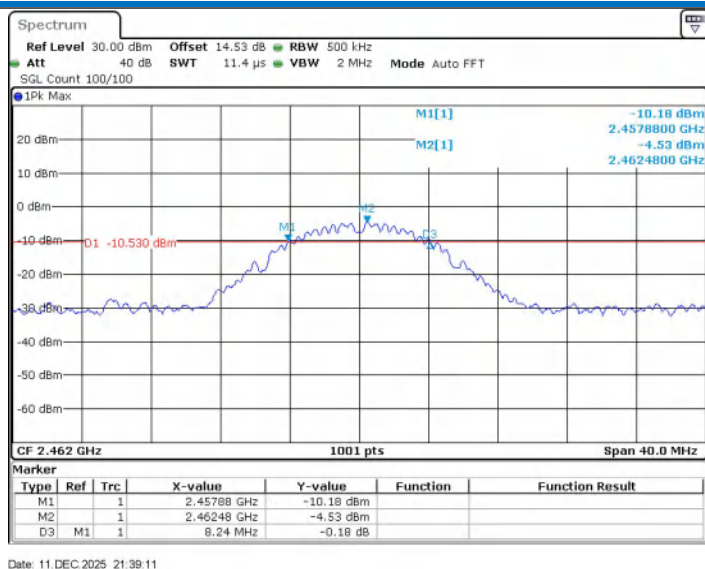
Date: 11 DEC 2025 21:34:55

11B_Ant1_2437



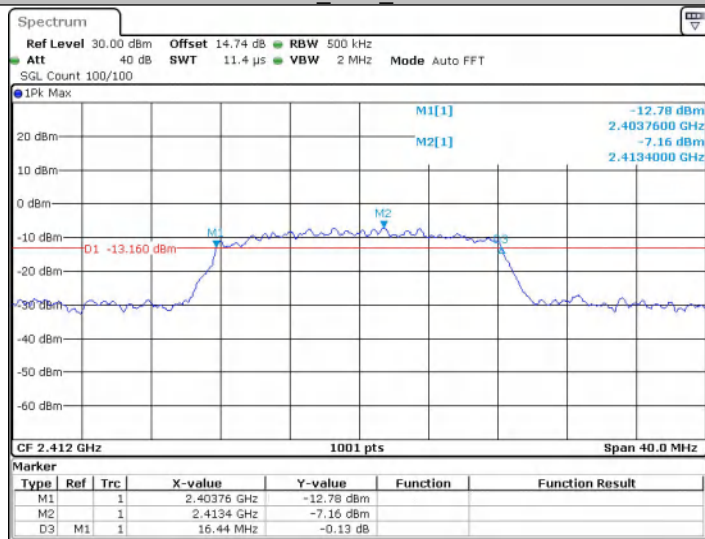
Date: 11 DEC 2025 21:36:23

11B_Ant1_2462



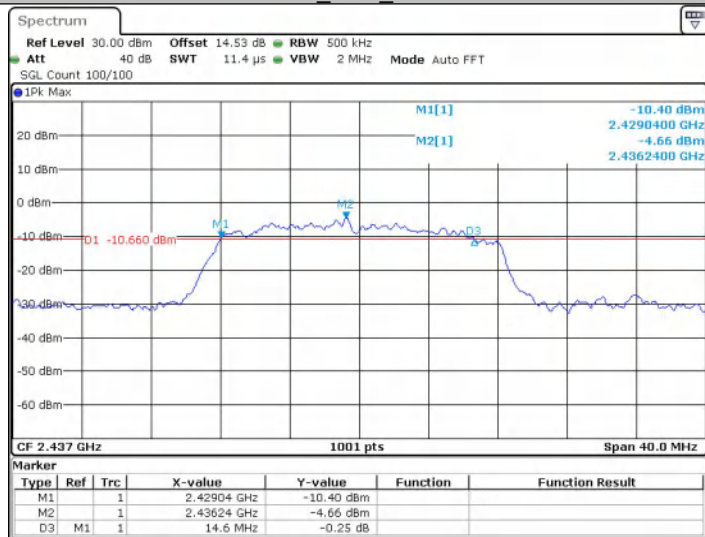
Date: 11 DEC 2025 21:39:11

11G_Ant1_2412



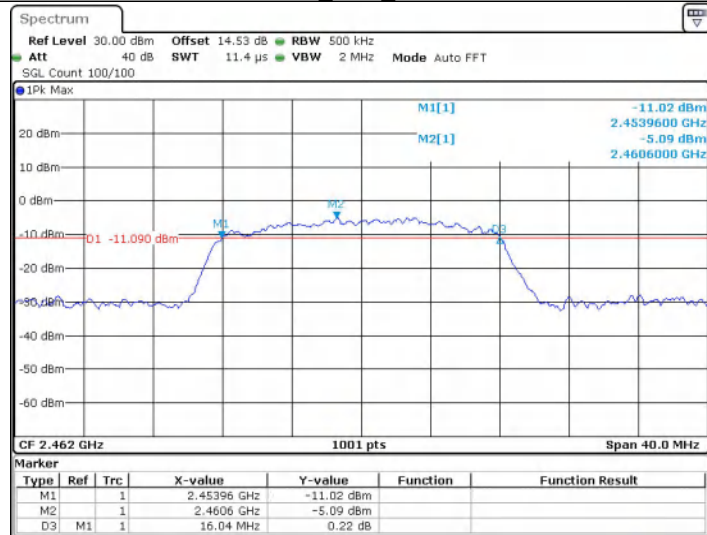
Date: 11 DEC 2025 21:40:27

11G_Ant1_2437



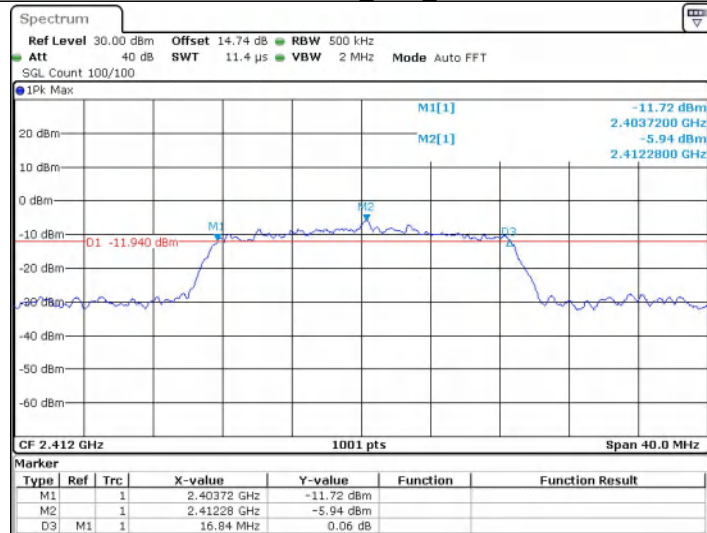
Date: 11 DEC 2025 21:41:41

11G_Ant1_2462



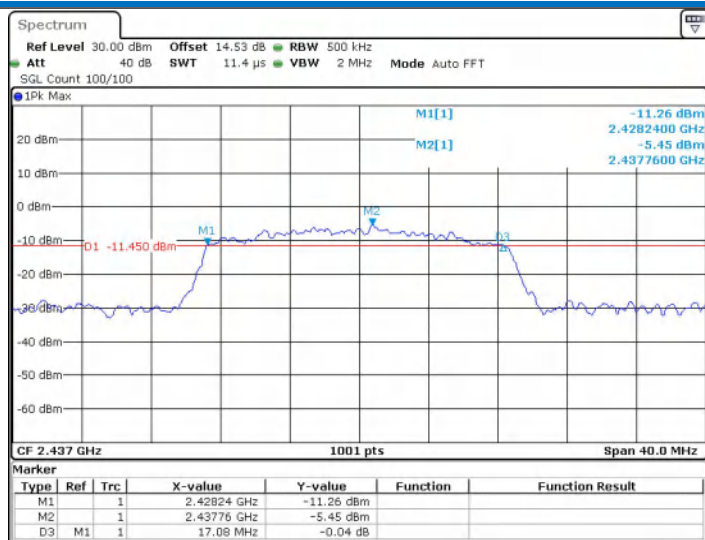
Date: 11 DEC 2025 21:42:53

11N20SISO_Ant1_2412



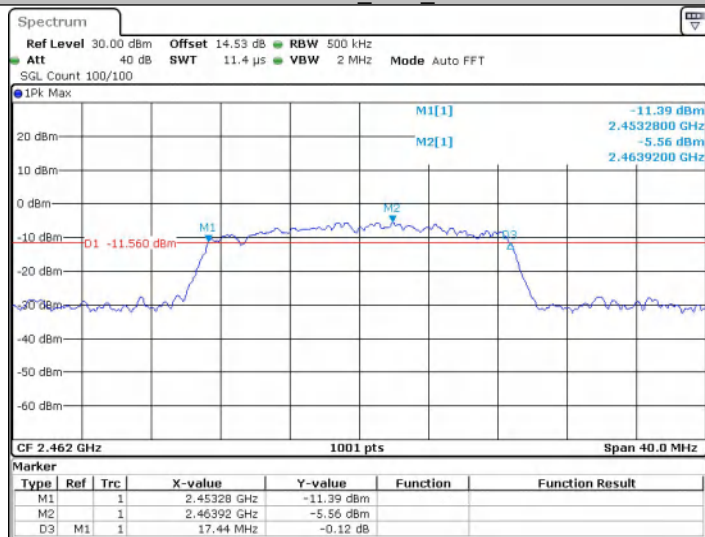
Date: 11 DEC 2025 21:45:04

11N20SISO_Ant1_2437



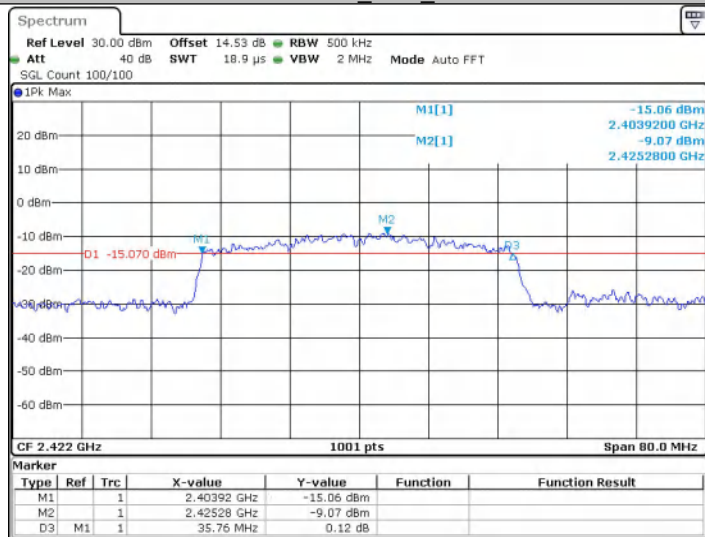
Date: 11 DEC 2025 21:46:24

11N20SISO_Ant1_2462



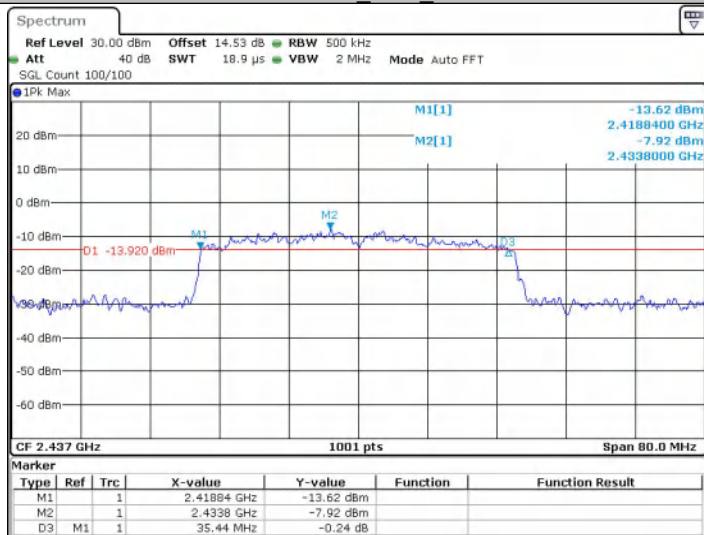
Date: 11 DEC 2025 21:47:26

11N40SISO_Ant1_2422



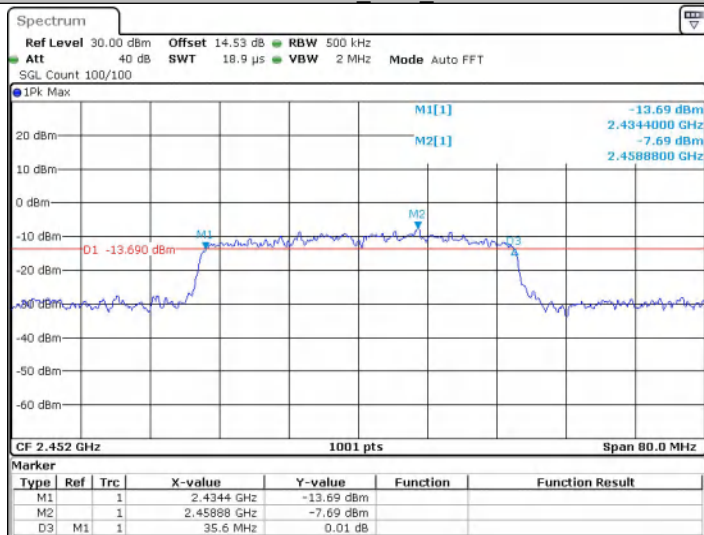
Date: 11 DEC 2025 21:48:45

11N40SISO_Ant1_2437



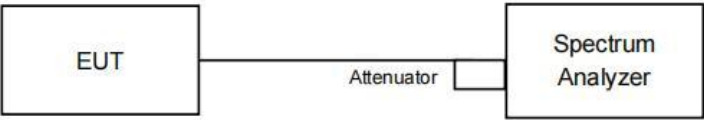
Date: 11.DEC.2025 21:50:09

11N40SISO_Ant1_2452



Date: 11.DEC.2025 21:51:22

5.6 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10: 2020
Test Setup:	 $\text{Offset} = \text{cable loss} + \text{attenuation factor}$
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	$\leq 8.00 \text{ dBm/3kHz}$
Test Results:	Pass

Test Result

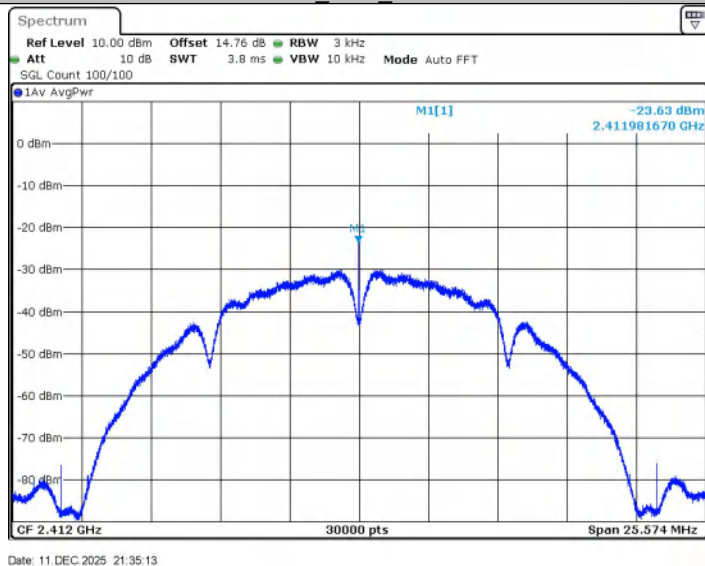
TestMode	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	2412	-23.63	≤8.00	PASS
	2437	-23.04	≤8.00	PASS
	2462	-22.85	≤8.00	PASS
11G	2412	-18.12	≤8.00	PASS
	2437	-17.89	≤8.00	PASS
	2462	-17.20	≤8.00	PASS
11N20SISO	2412	-18.17	≤8.00	PASS
	2437	-17.48	≤8.00	PASS
	2462	-17.18	≤8.00	PASS
11N40SISO	2422	-19.20	≤8.00	PASS
	2437	-18.88	≤8.00	PASS
	2452	-20.01	≤8.00	PASS

Note: Duty cycle correction factor details please see section 4.4.

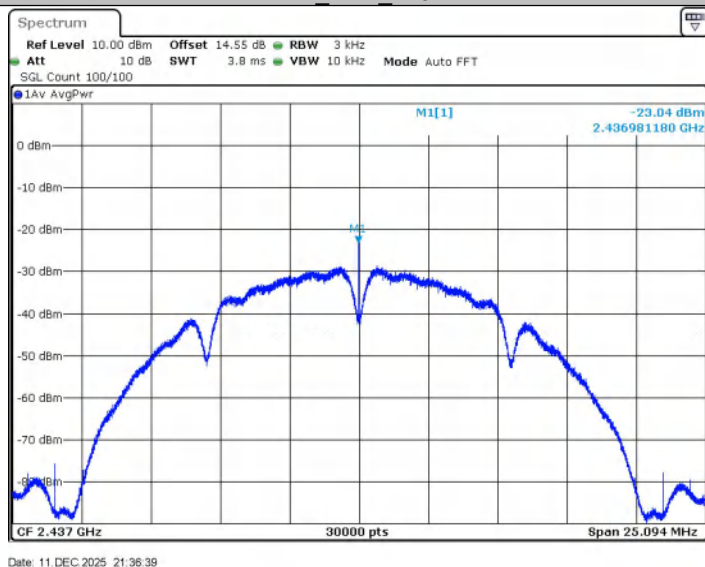
When Duty cycle >98%, D.C.F is not required.

Test Graphs

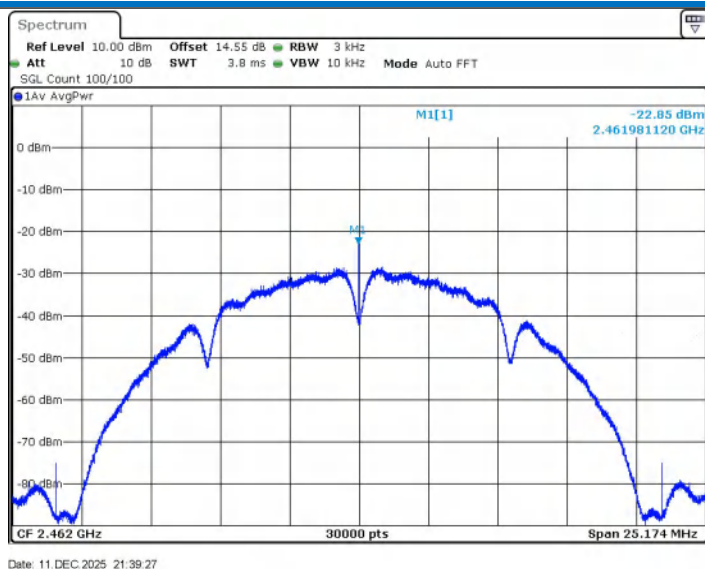
11B_Ant1_2412



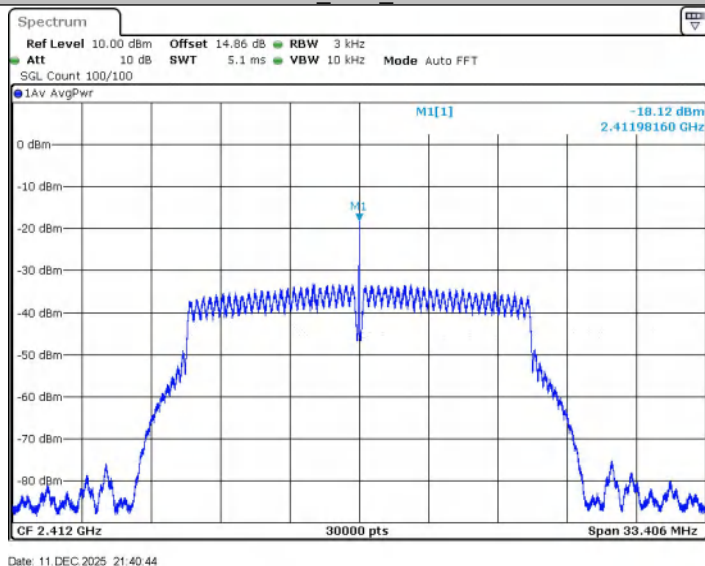
11B_Ant1_2437



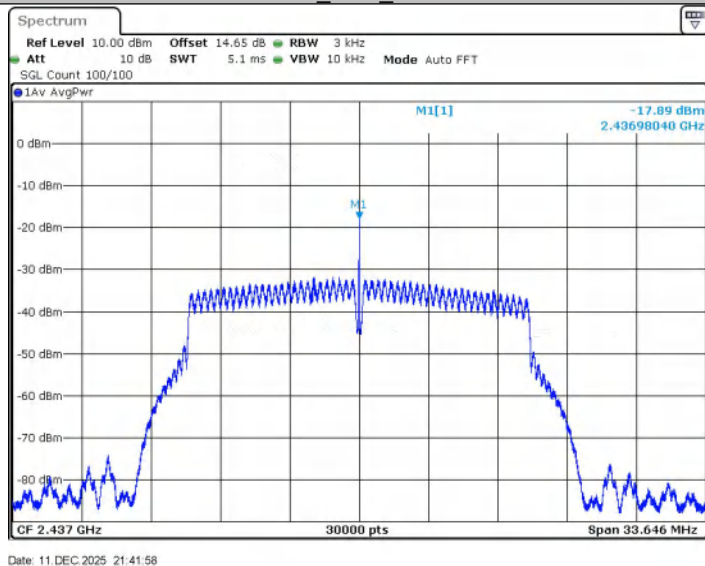
11B_Ant1_2462



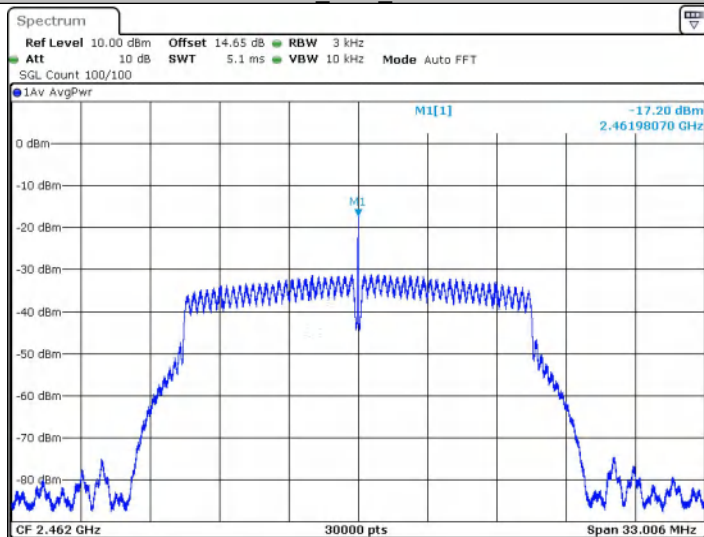
11G_Ant1_2412



11G_Ant1_2437

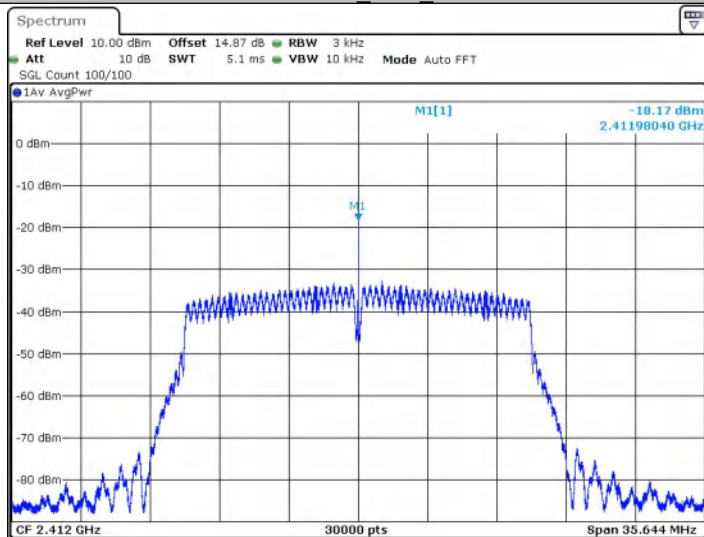


11G_Ant1_2462



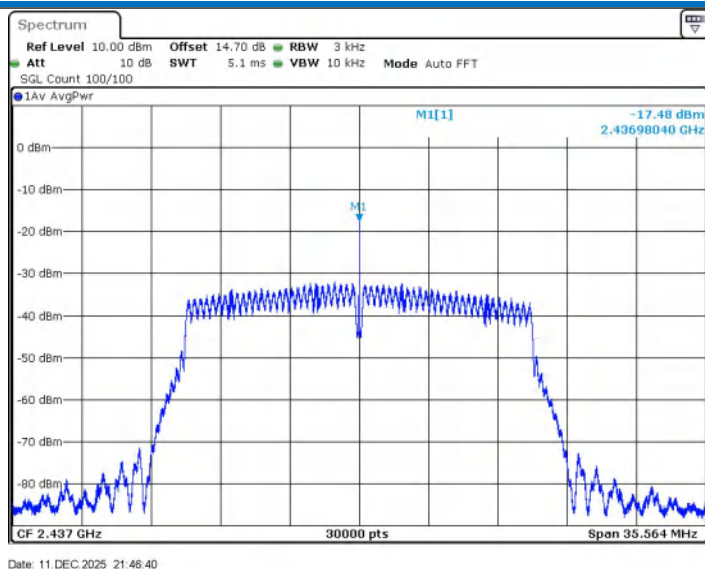
Date: 11.DEC.2025 21:43:10

11N20SISO_Ant1_2412

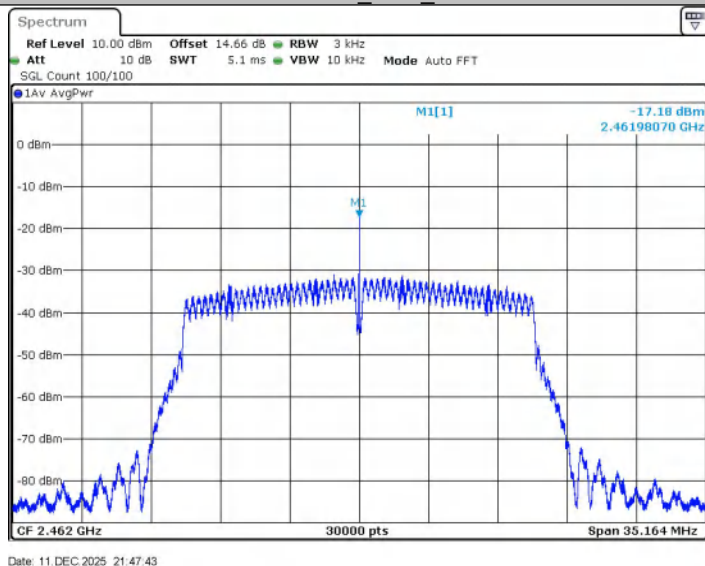


Date: 11.DEC.2025 21:45:22

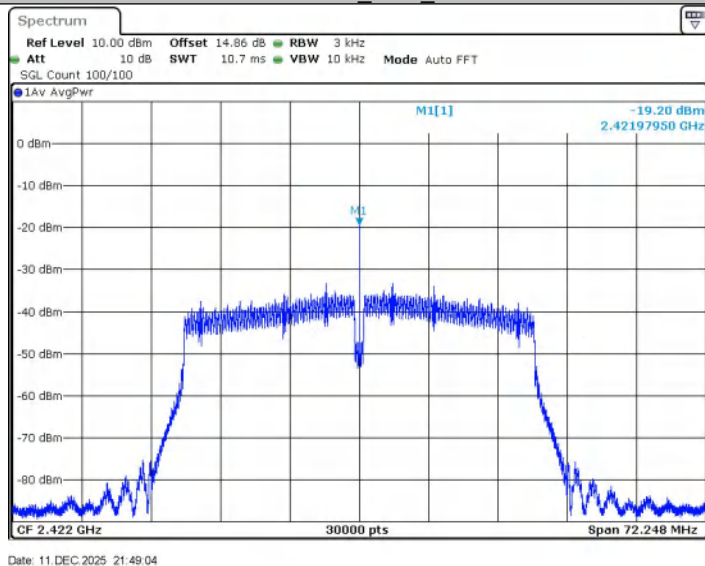
11N20SISO_Ant1_2437



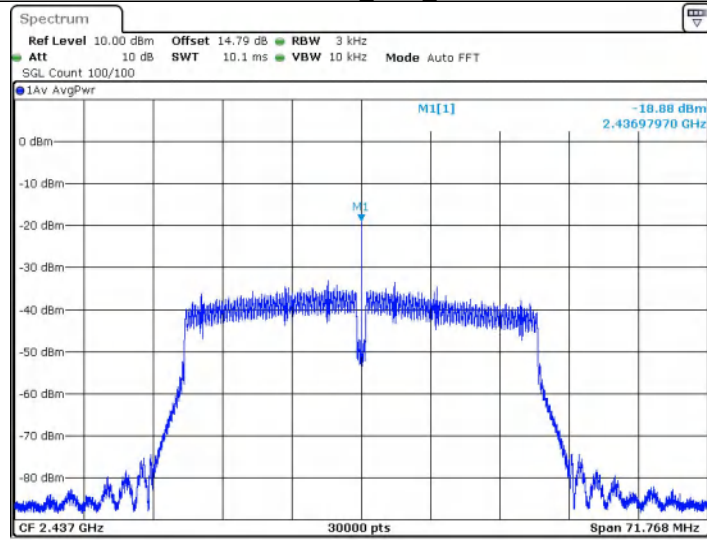
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

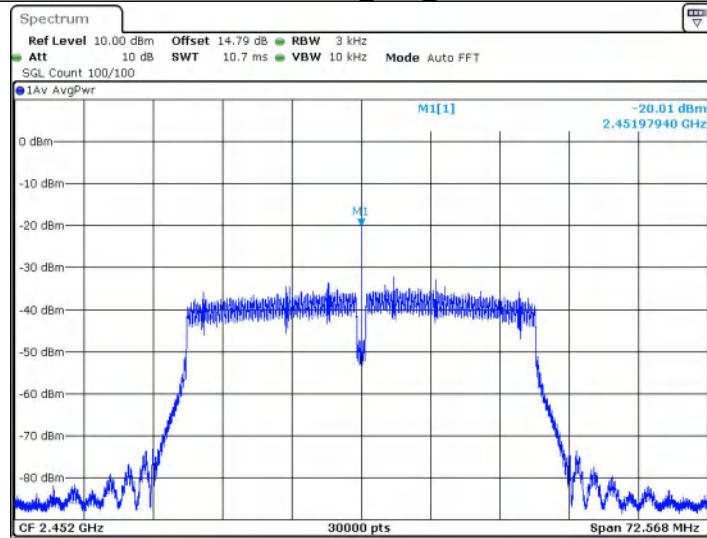


11N40SISO_Ant1_2437



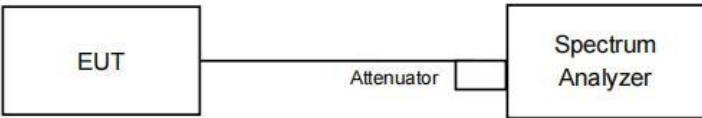
Date: 11.DEC.2025 21:50:29

11N40SISO_Ant1_2452



Date: 11.DEC.2025 21:51:42

5.7 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

Test Result

TestMode	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Low	2412	-6.96	-42.48	≤ -36.96	PASS
	High	2462	-5.77	-41.46	≤ -35.77	PASS
11G	Low	2412	-10.77	-42.98	≤ -40.77	PASS
	High	2462	-8.84	-41.06	≤ -38.84	PASS
11N20SISO	Low	2412	-10.38	-43.03	≤ -40.38	PASS
	High	2462	-8.41	-41.51	≤ -38.41	PASS
11N40SISO	Low	2422	-12.04	-42.87	≤ -42.04	PASS
	High	2452	-12.04	-42.4	≤ -42.04	PASS

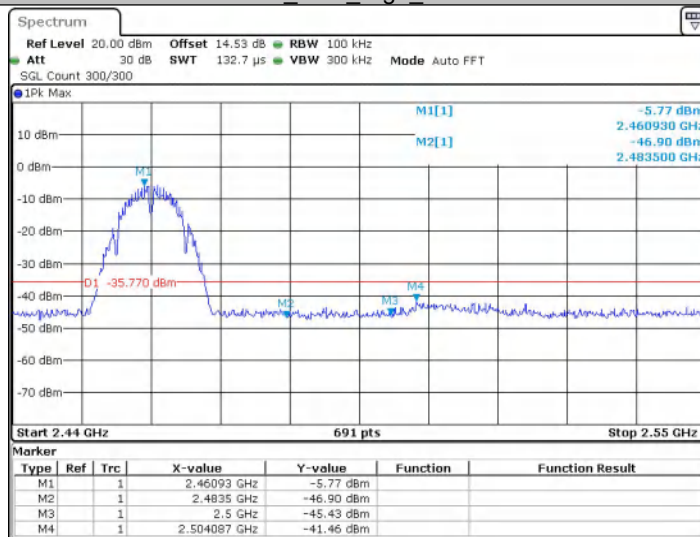
5.7.1 Test Graphs

11B_Ant1_Low_2412



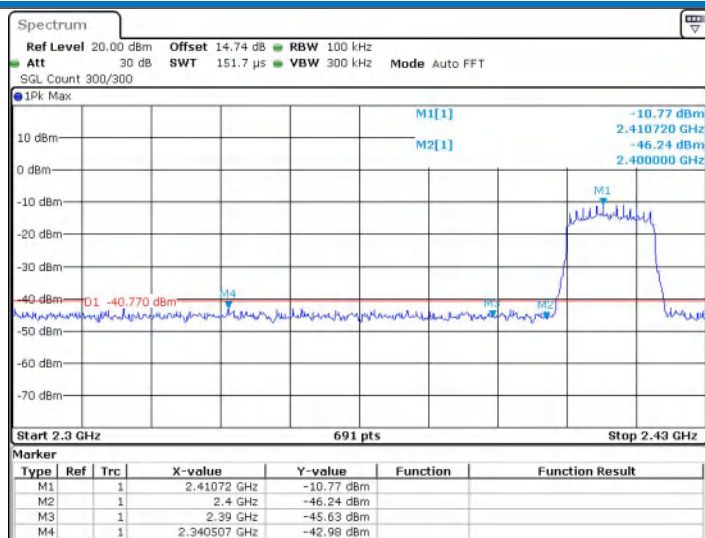
Date: 11 DEC 2025 21:35:21

11B_Ant1_High_2462



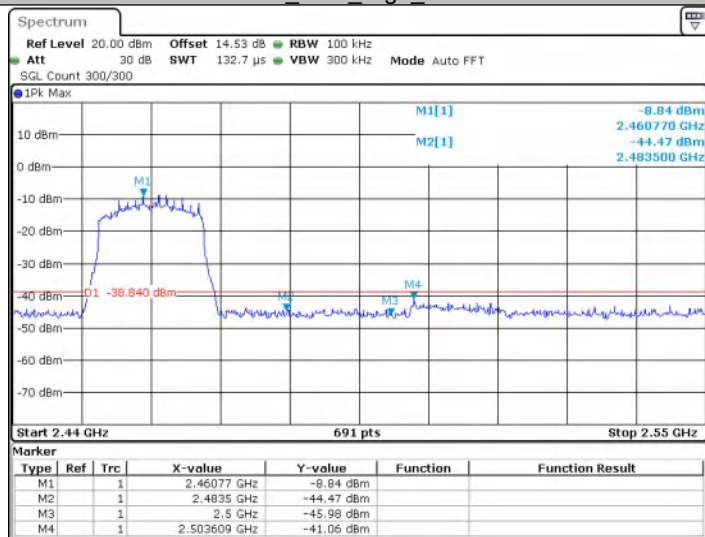
Date: 11 DEC 2025 21:39:35

11G_Ant1_Low_2412



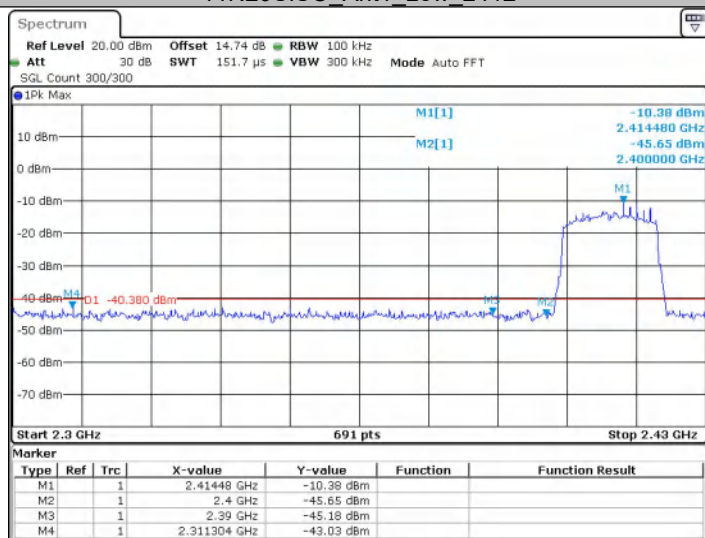
Date: 11 DEC 2025 21:40:52

11G_Ant1_High_2462



Date: 11 DEC 2025 21:43:18

11N20SISO_Ant1_Low_2412



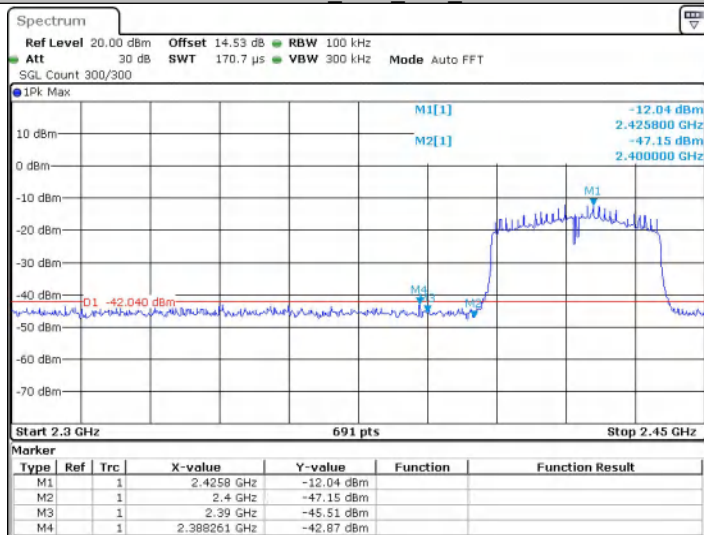
Date: 11 DEC 2025 21:45:30

11N20SISO_Ant1_High_2462



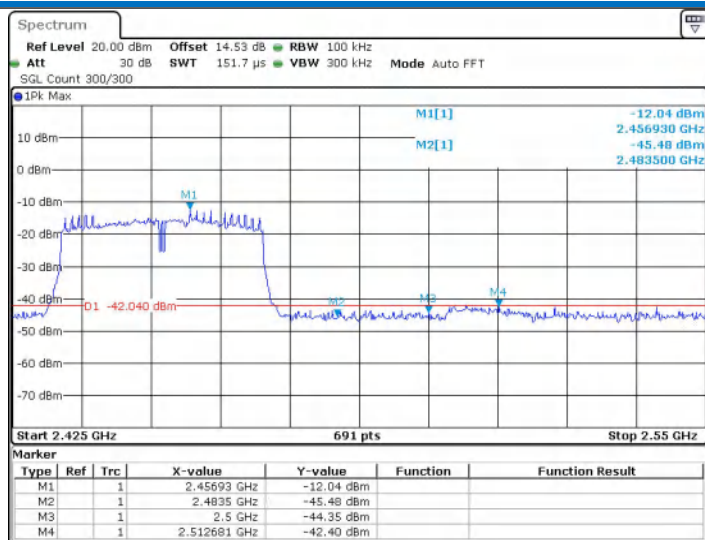
Date: 11 DEC 2025 21:47:51

11N40SISO_Ant1_Low_2422



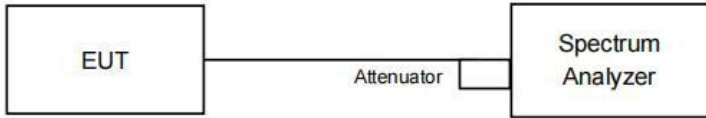
Date: 11 DEC 2025 21:49:13

11N40SISO_Ant1_High_2452



Date: 11 DEC.2025 21:52:44

5.8 RF Conducted Spurious Emissions

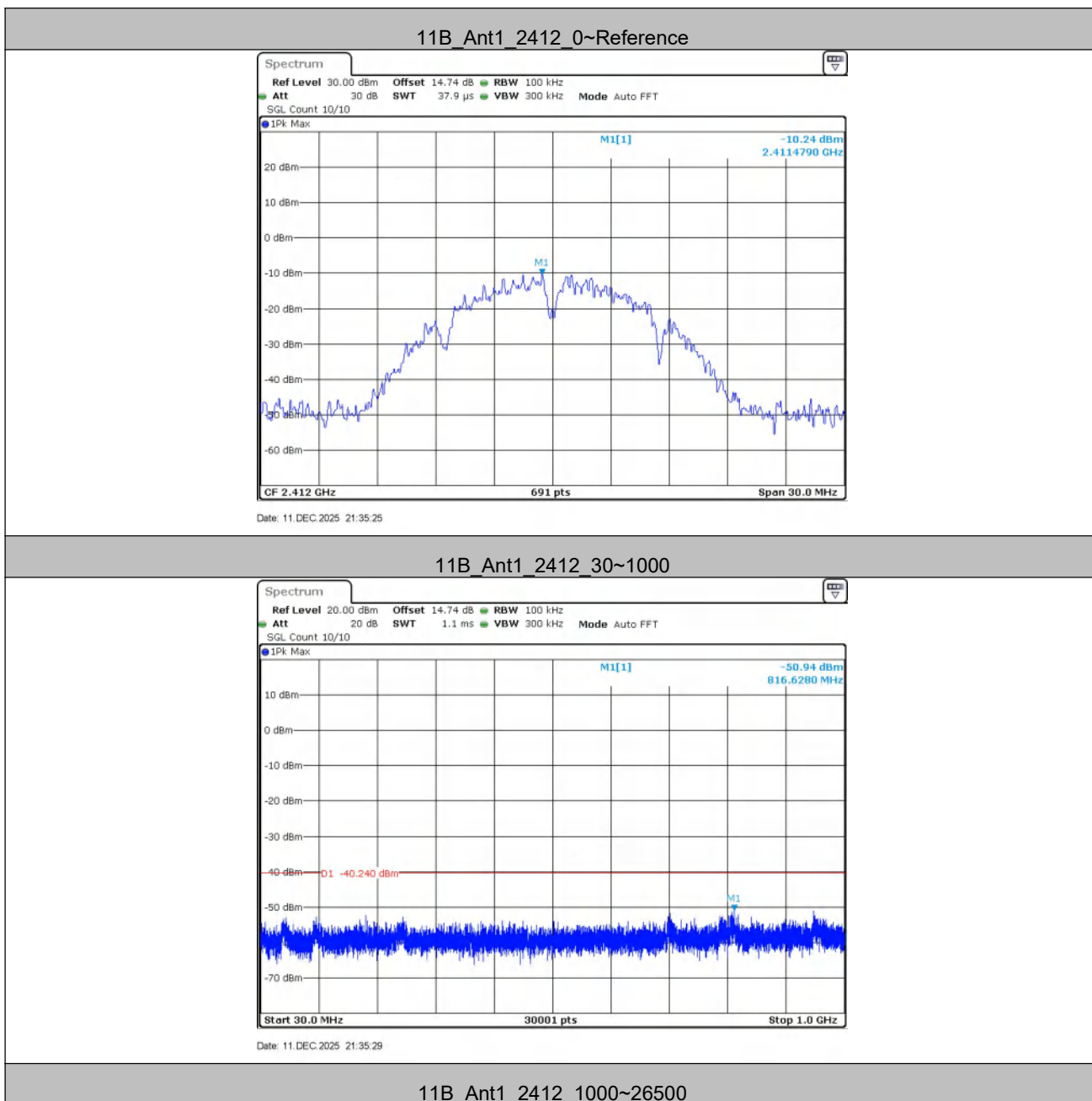
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2020
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

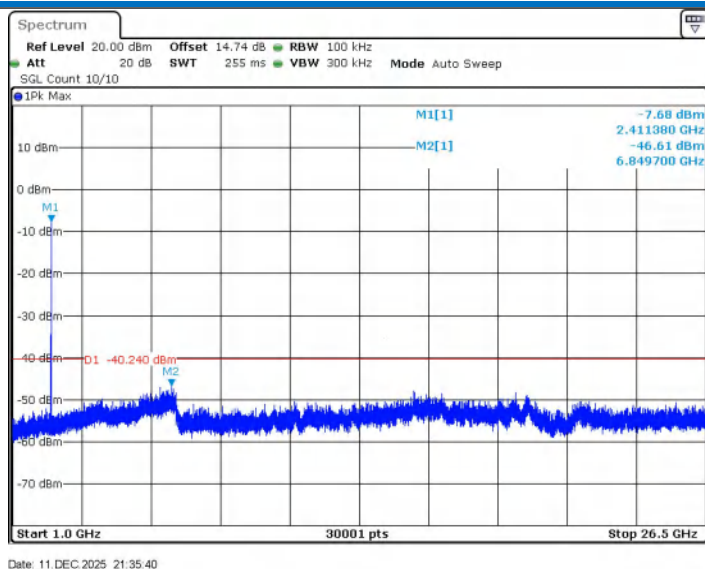
Test Result

TestMode	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	2412	Reference	-10.24	-10.24	---	PASS
		30~1000	-10.24	-50.94	≤ -40.24	PASS
		1000~26500	-10.24	-46.61	≤ -40.24	PASS
	2437	Reference	-8.21	-8.21	---	PASS
		30~1000	-8.21	-51.11	≤ -38.21	PASS
		1000~26500	-8.21	-47.27	≤ -38.21	PASS
	2462	Reference	-5.61	-5.61	---	PASS
		30~1000	-5.61	-51.33	≤ -35.61	PASS
		1000~26500	-5.61	-47.82	≤ -35.61	PASS
11G	2412	Reference	-13.89	-13.89	---	PASS
		30~1000	-13.89	-51.87	≤ -43.89	PASS
		1000~26500	-13.89	-47.44	≤ -43.89	PASS
	2437	Reference	-13.36	-13.36	---	PASS
		30~1000	-13.36	-51.5	≤ -43.36	PASS
		1000~26500	-13.36	-47.86	≤ -43.36	PASS
	2462	Reference	-12.11	-12.11	---	PASS
		30~1000	-12.11	-51.99	≤ -42.11	PASS
		1000~26500	-12.11	-45.98	≤ -42.11	PASS
11N20SISO	2412	Reference	-10.80	-10.80	---	PASS
		30~1000	-10.80	-50.53	≤ -40.8	PASS
		1000~26500	-10.80	-47.77	≤ -40.8	PASS
	2437	Reference	-12.70	-12.70	---	PASS
		30~1000	-12.70	-51.21	≤ -42.7	PASS
		1000~26500	-12.70	-47.76	≤ -42.7	PASS
	2462	Reference	-12.52	-12.52	---	PASS
		30~1000	-12.52	-51.12	≤ -42.52	PASS
		1000~26500	-12.52	-47.07	≤ -42.52	PASS
11N40SISO	2422	Reference	-16.21	-16.21	---	PASS
		30~1000	-16.21	-49.77	≤ -46.21	PASS
		1000~26500	-16.21	-47.63	≤ -46.21	PASS
	2437	Reference	-15.41	-15.41	---	PASS
		30~1000	-15.41	-51.24	≤ -45.41	PASS
		1000~26500	-15.41	-47.65	≤ -45.41	PASS
	2452	Reference	-15.98	-15.98	---	PASS

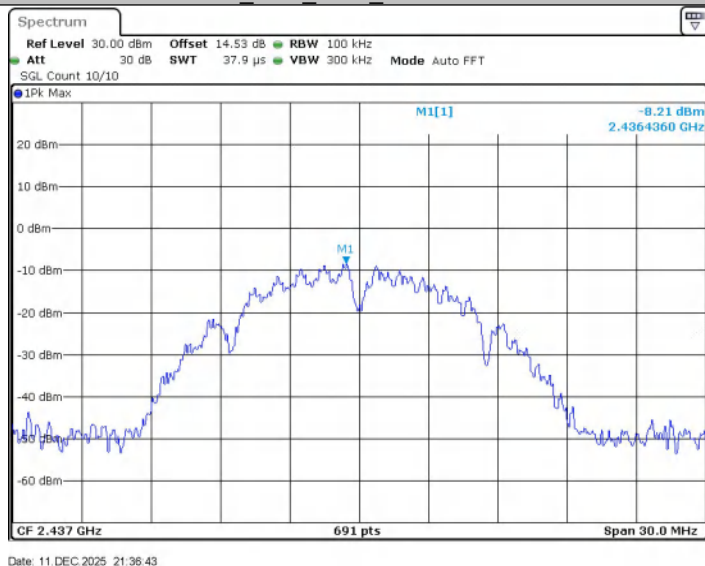
		30~1000	-15.98	-51.3	≤ -45.98	PASS
		1000~26500	-15.98	-47.83	≤ -45.98	PASS

Test Graphs

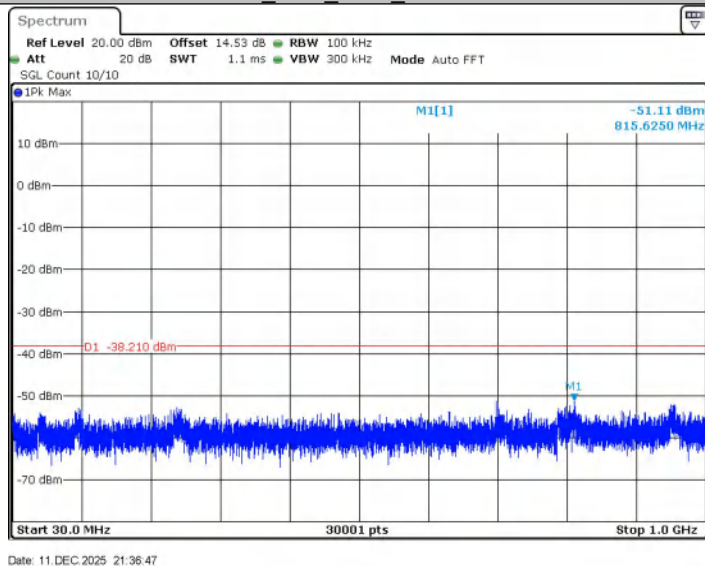




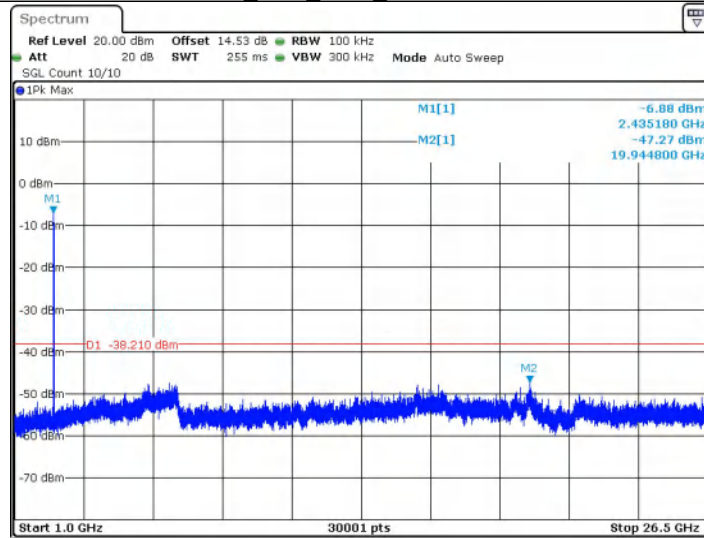
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000

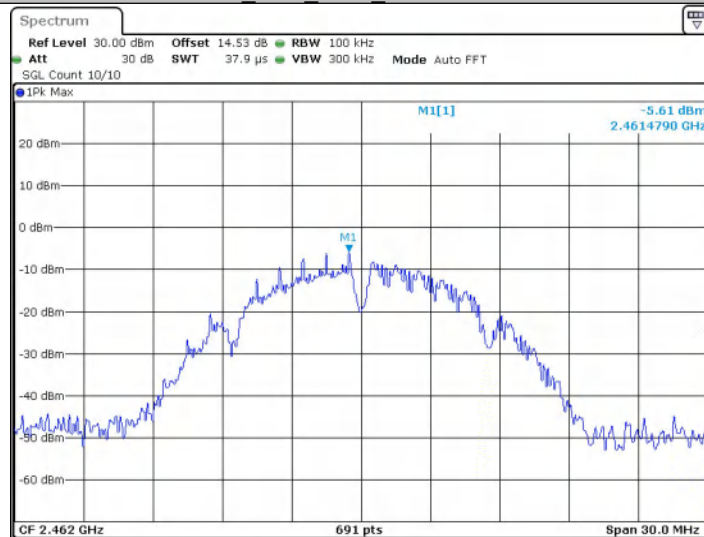


11B_Ant1_2437_1000~26500



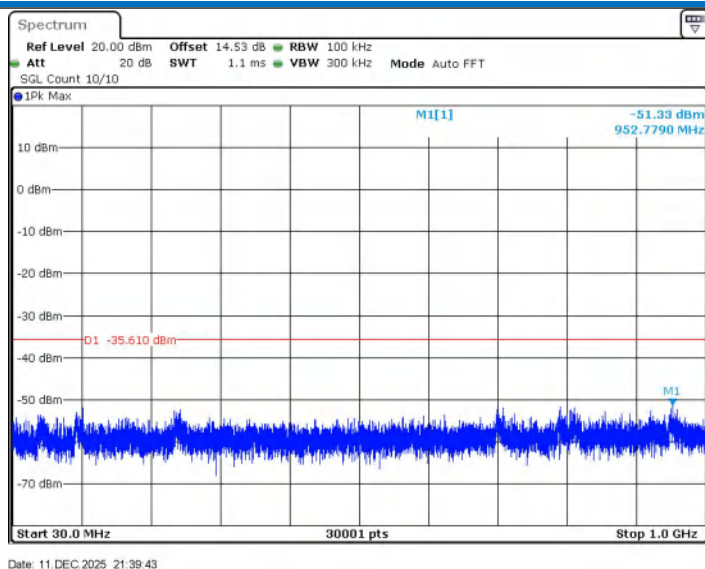
Date: 11.DEC.2025 21:36:57

11B_Ant1_2462_0~Reference

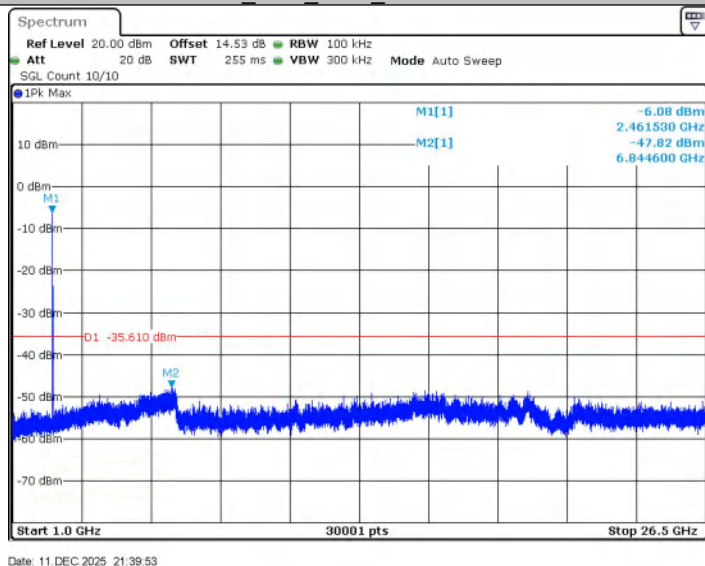


Date: 11.DEC.2025 21:39:38

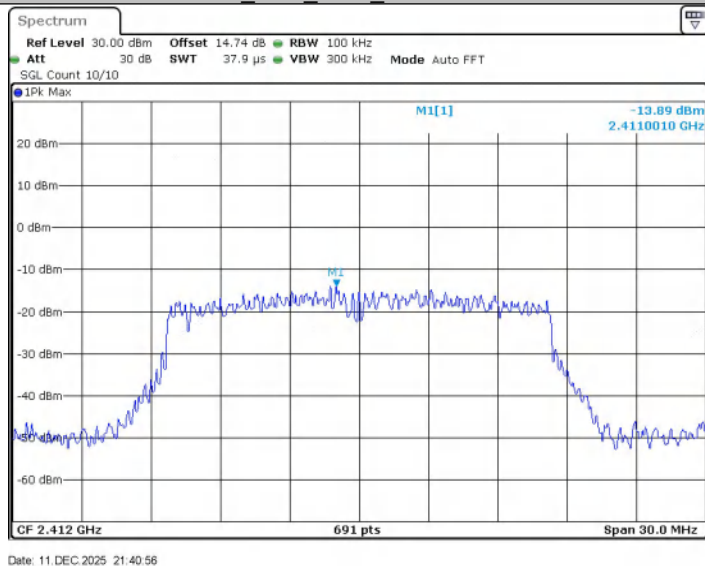
11B_Ant1_2462_30~1000



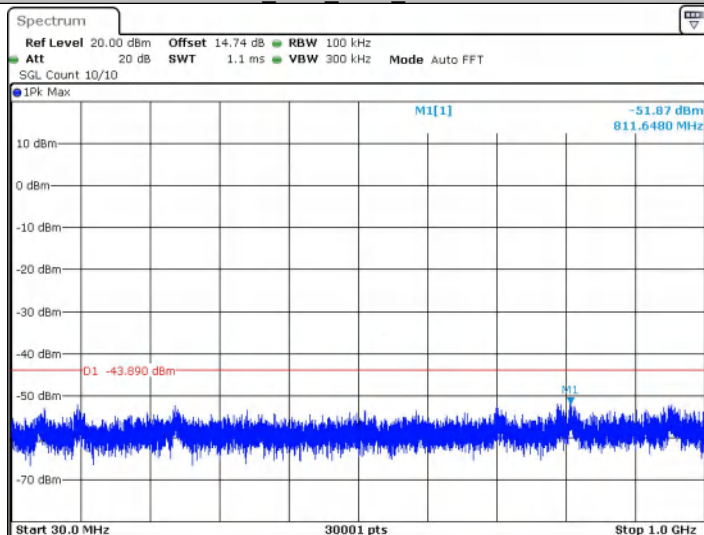
11B_Ant1_2462_1000~26500



11G_Ant1_2412_0~Reference

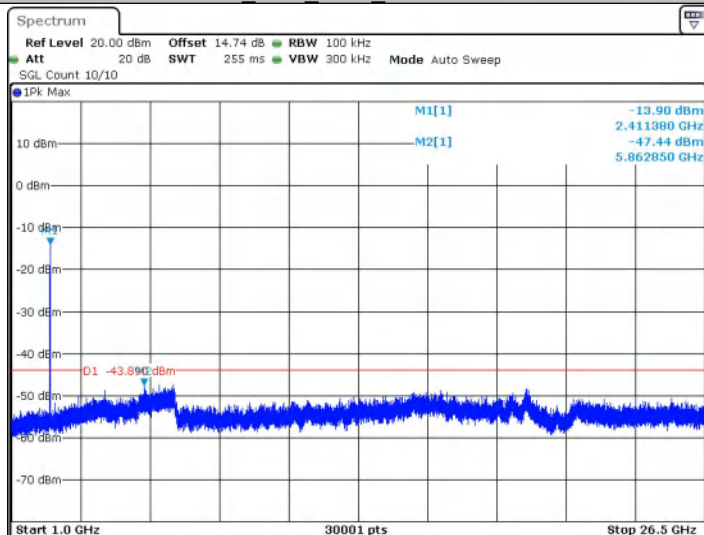


11G_Ant1_2412_30~1000



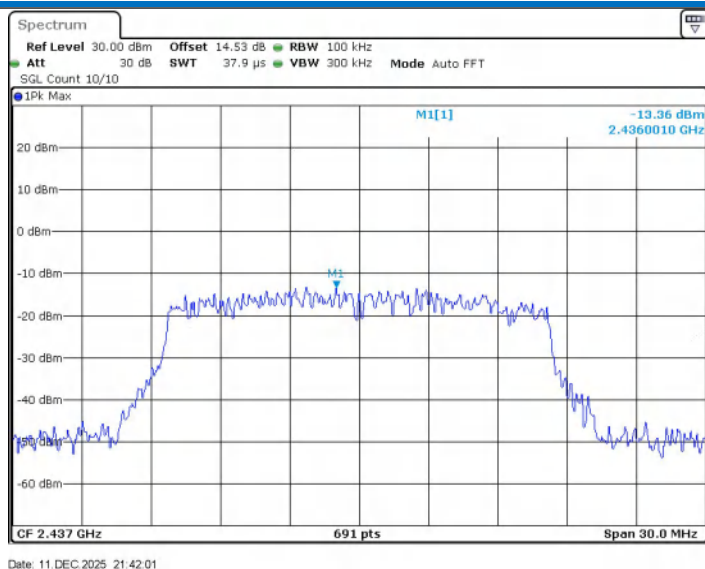
Date: 11.DEC.2025 21:41:00

11G_Ant1_2412_1000~26500

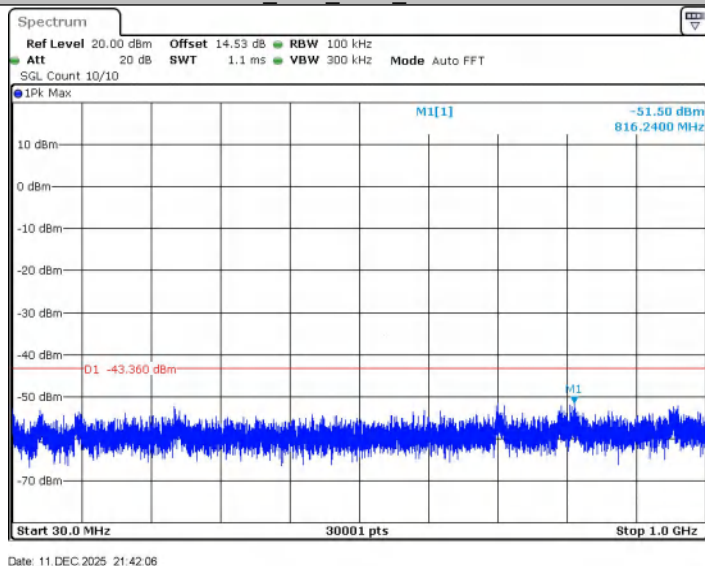


Date: 11.DEC.2025 21:41:11

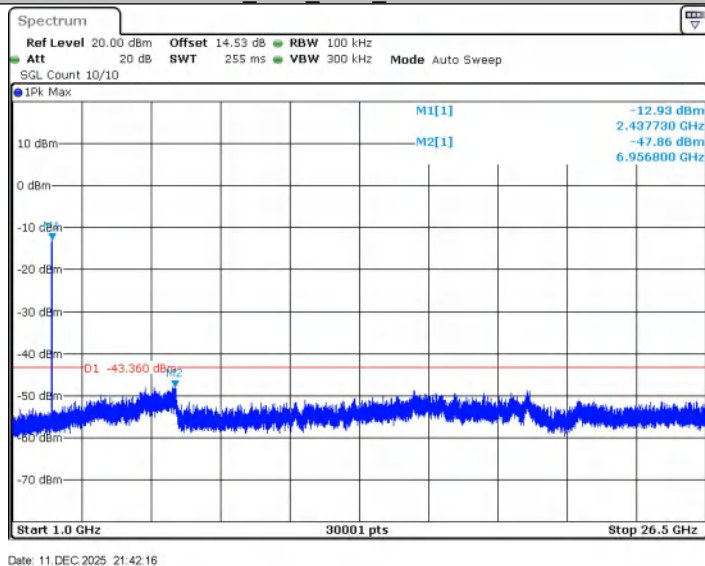
11G_Ant1_2437_0~Reference



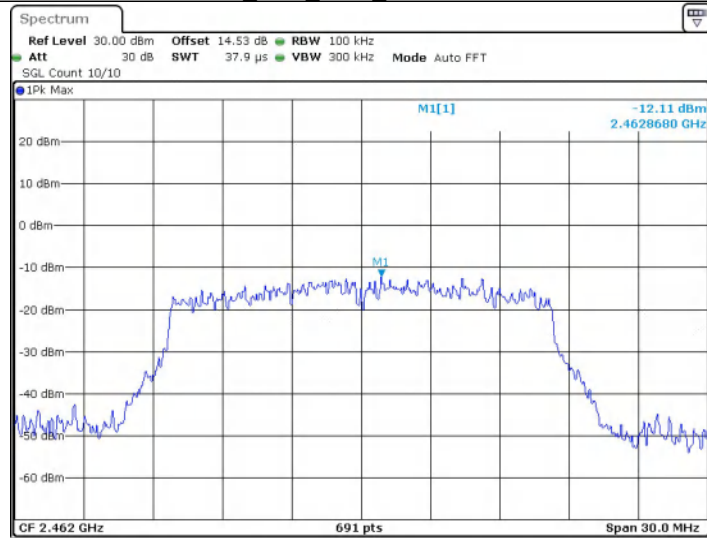
11G_Ant1_2437_30~1000



11G_Ant1_2437_1000~26500

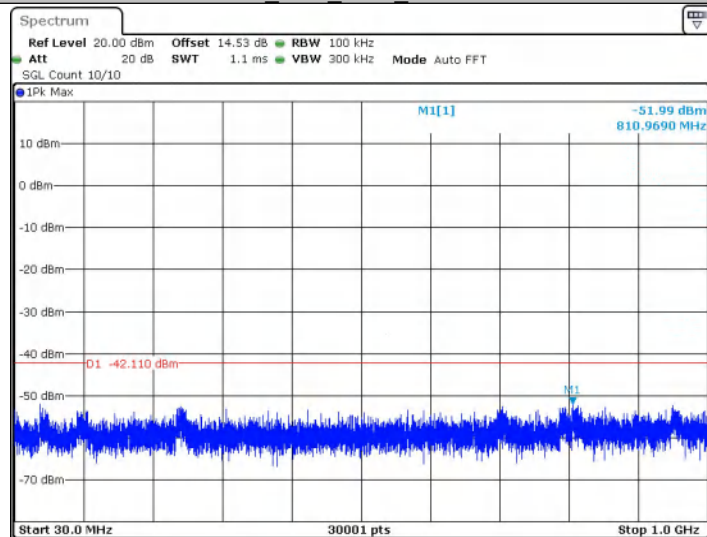


11G_Ant1_2462_0~Reference



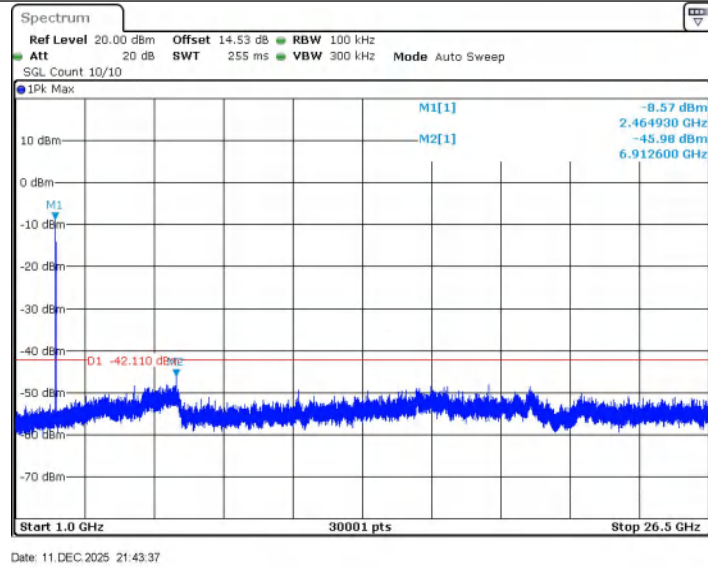
Date: 11.DEC.2025 21:43:21

11G_Ant1_2462_30~1000

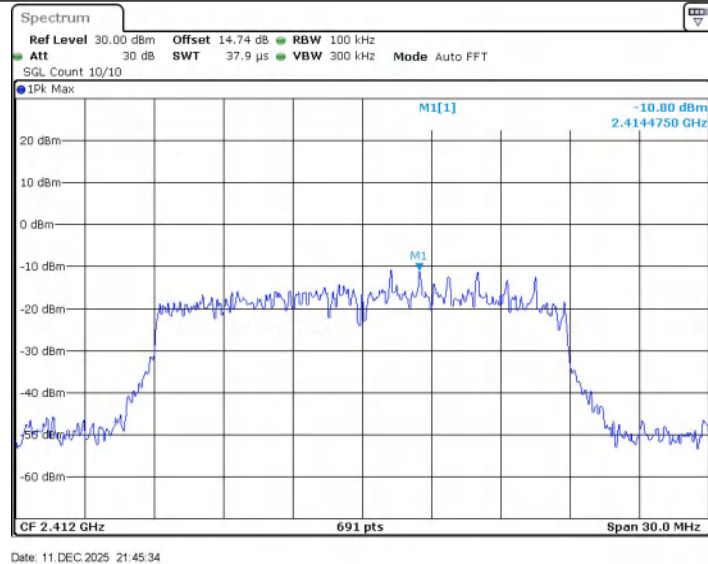


Date: 11.DEC.2025 21:43:26

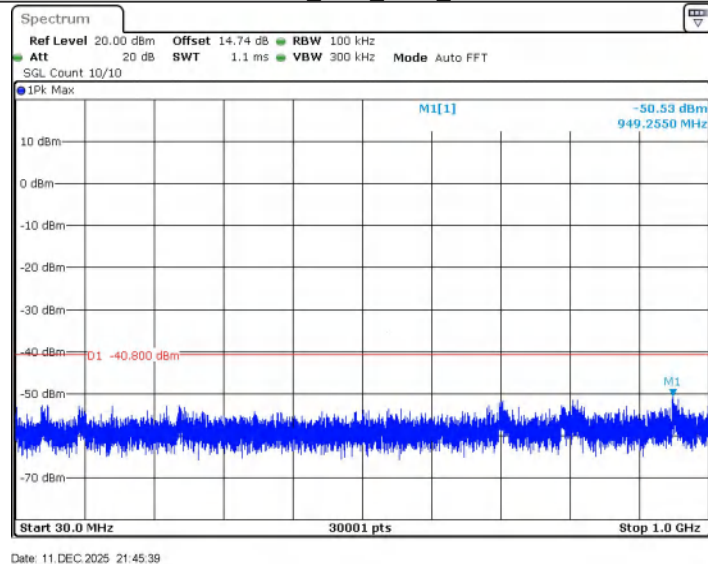
11G_Ant1_2462_1000~26500



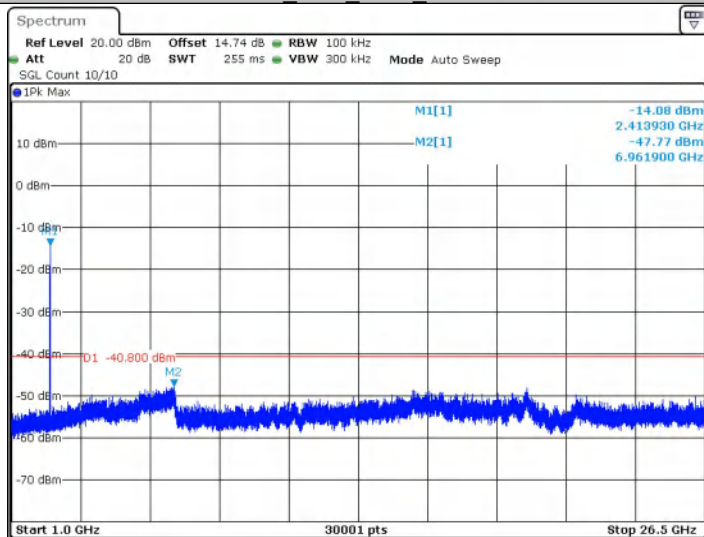
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

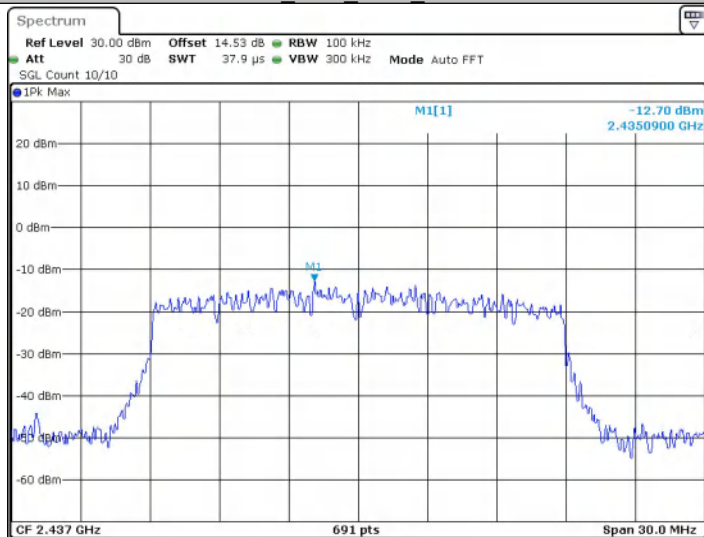


11N20SISO_Ant1_2412_1000~26500



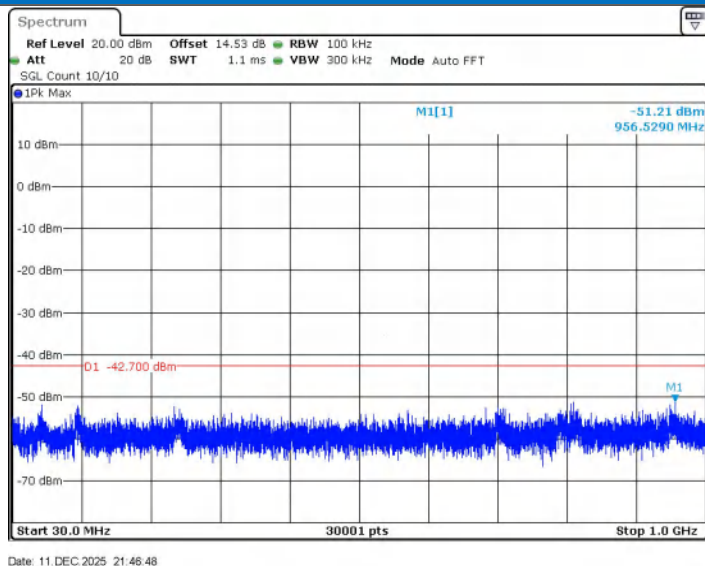
Date: 11.DEC.2025 21:45:49

11N20SISO_Ant1_2437_0~Reference

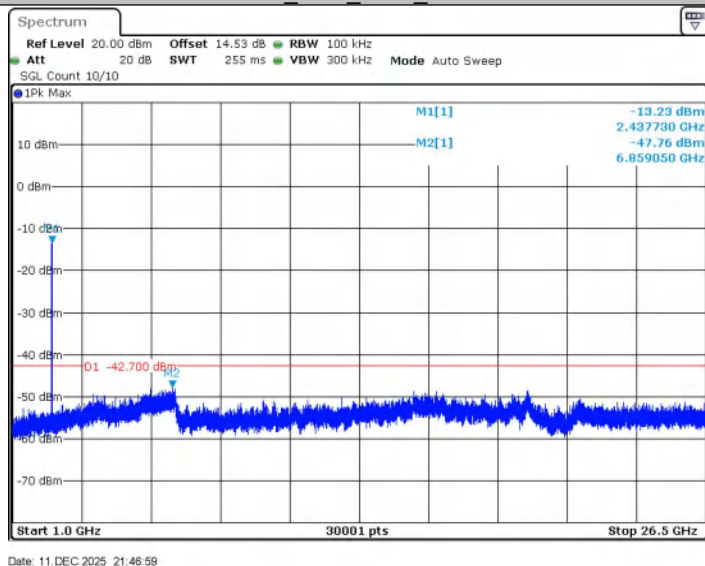


Date: 11.DEC.2025 21:46:44

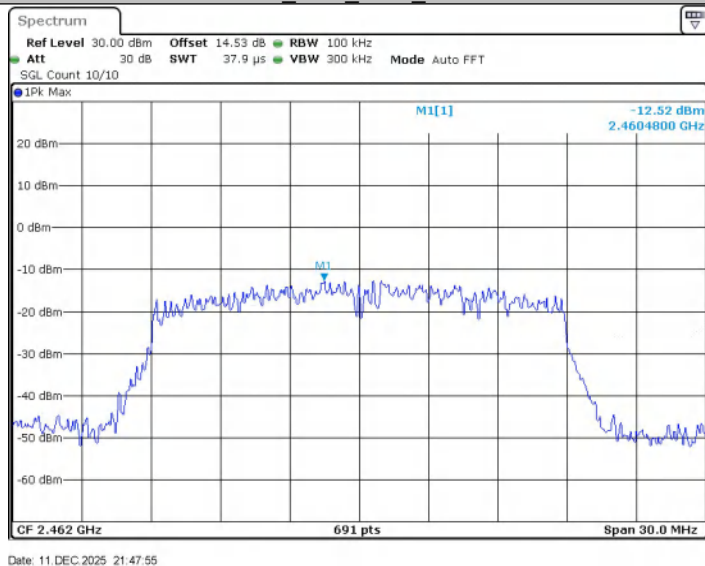
11N20SISO_Ant1_2437_30~1000



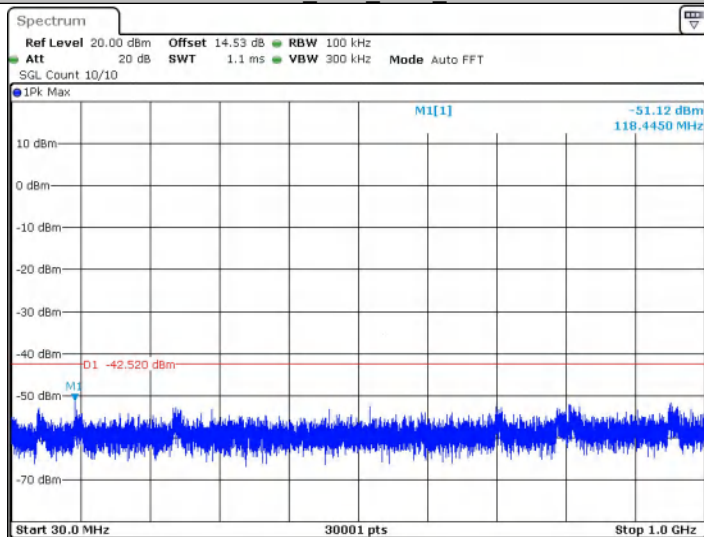
11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_0~Reference

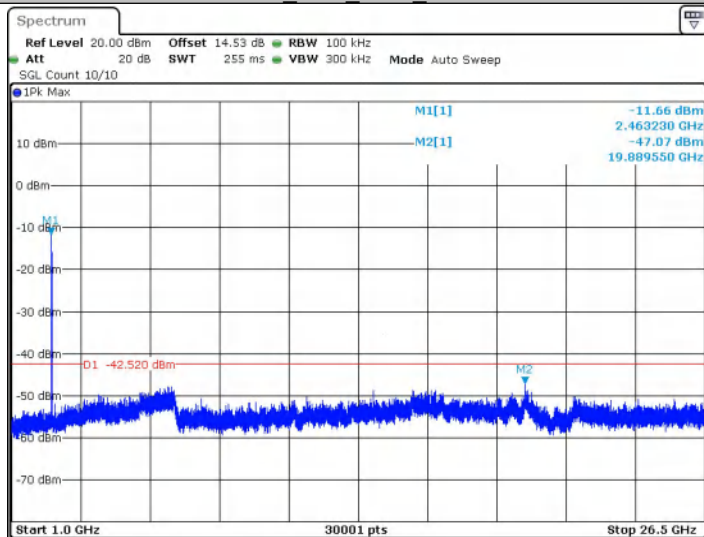


11N20SISO_Ant1_2462_30~1000



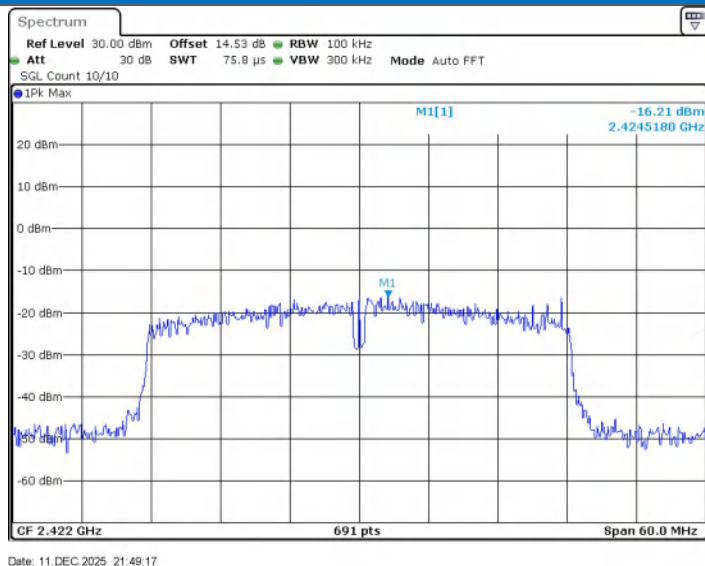
Date: 11.DEC.2025 21:47:59

11N20SISO_Ant1_2462_1000~26500

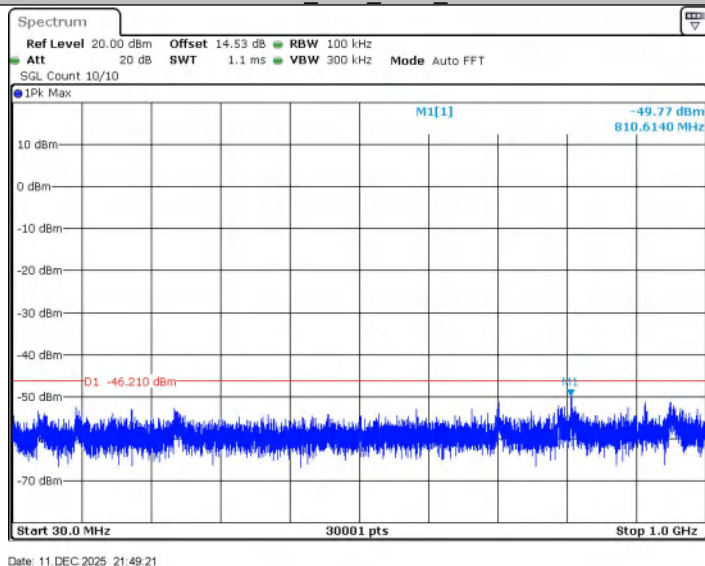


Date: 11.DEC.2025 21:48:10

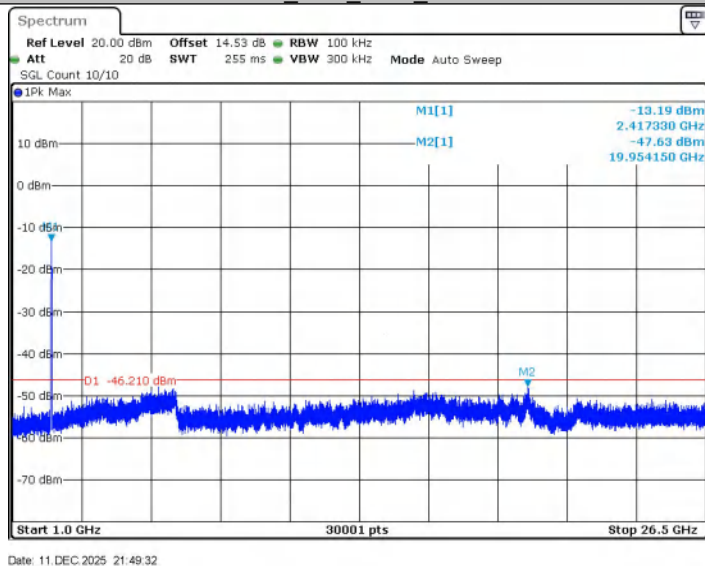
11N40SISO_Ant1_2422_0~Reference



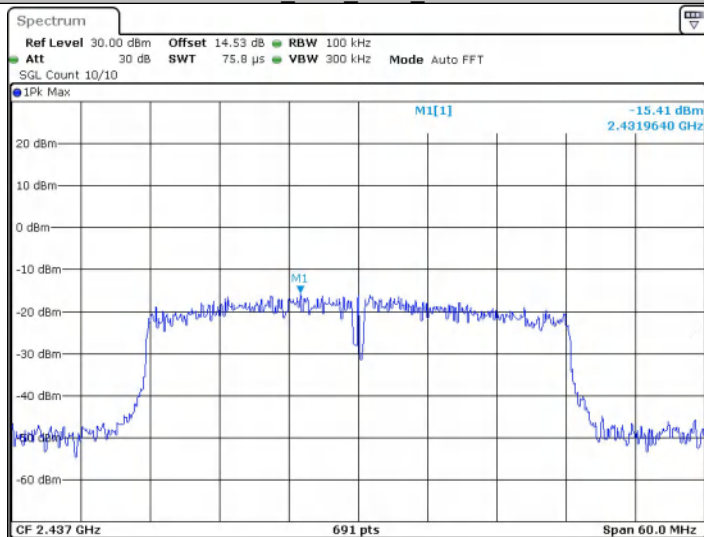
11N40SISO_Ant1_2422_30~1000



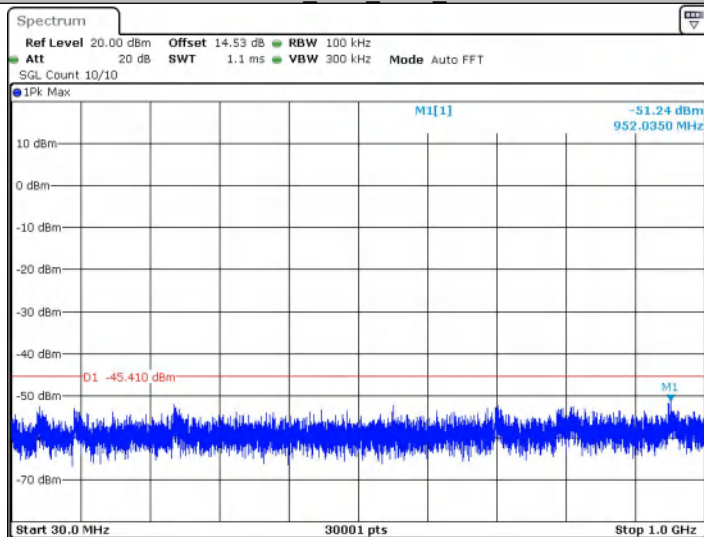
11N40SISO_Ant1_2422_1000~26500



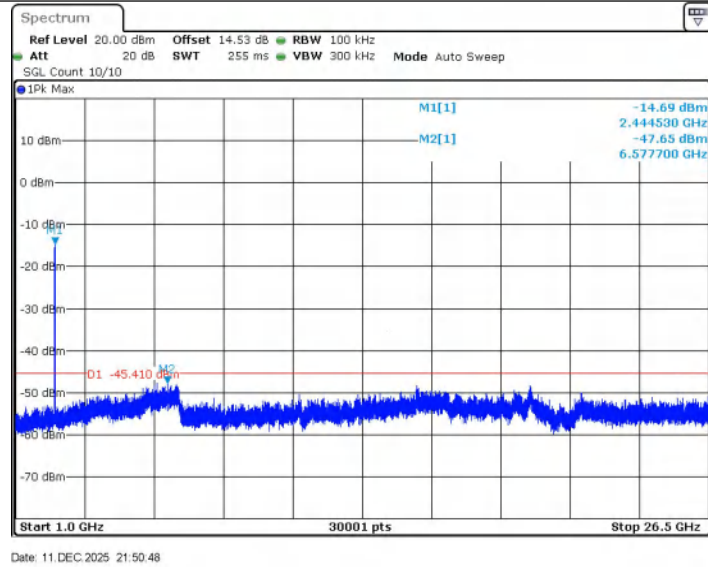
11N40SISO_Ant1_2437_0~Reference



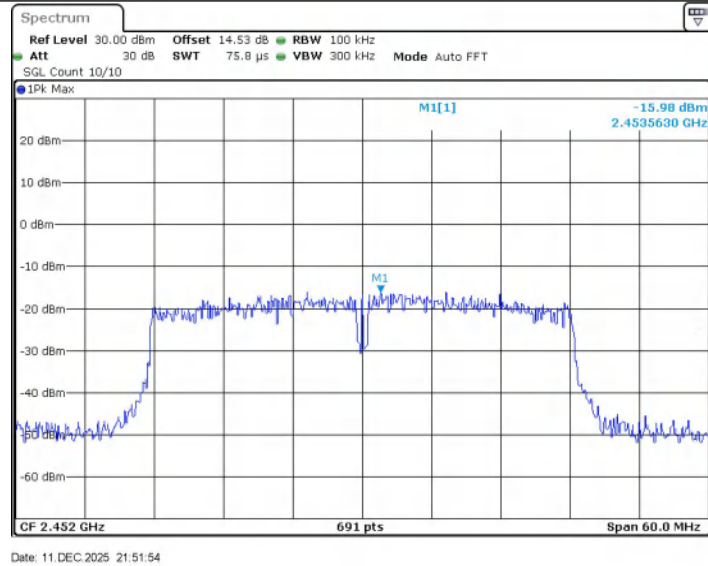
11N40SISO_Ant1_2437_30~1000



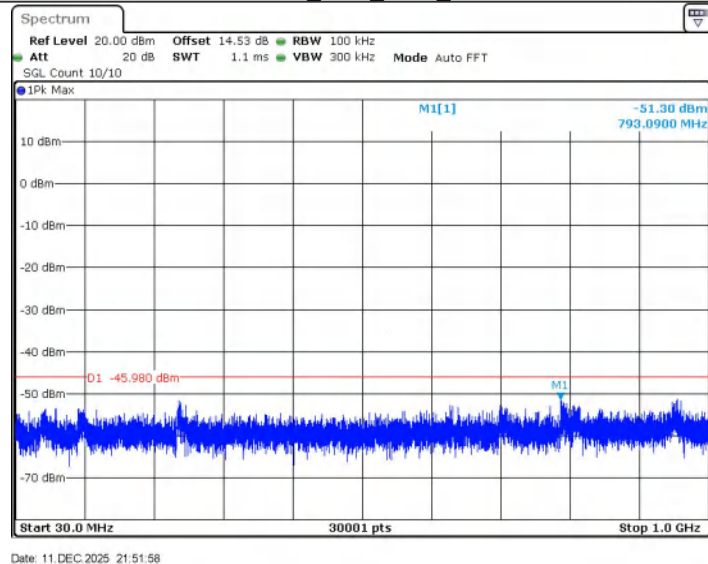
11N40SISO_Ant1_2437_1000~26500

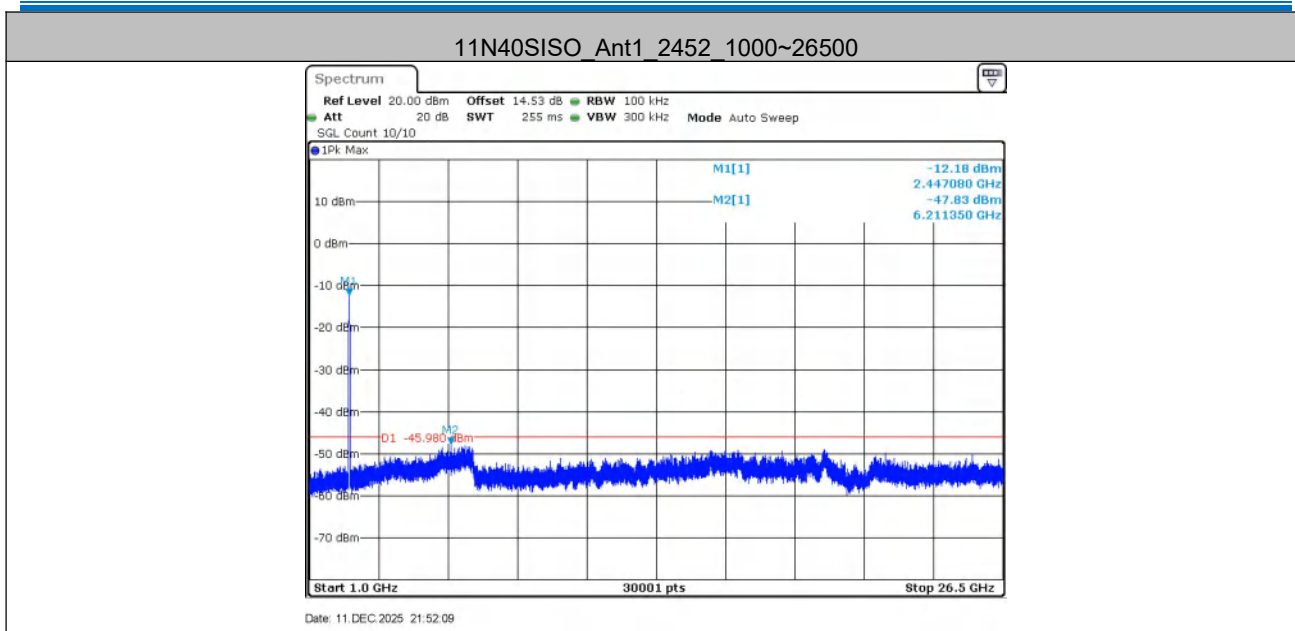


11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000





Remark:

Pretest 9kHz to 25GHz, find the highest point when testing, so only the worst data were shown in the test report. Per FCC Part 15.33 (a) and 15.31 (o) ,The amplitude of spurious emissions from intentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

5.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 2020				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
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	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	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 Setup:

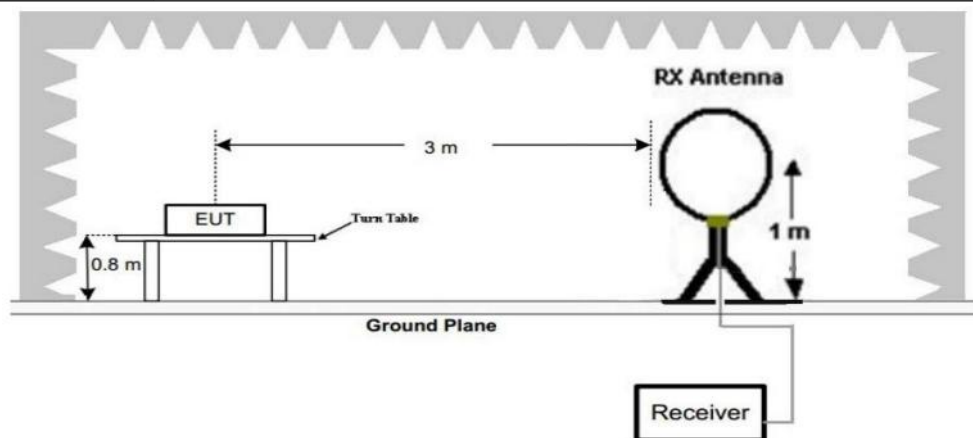


Figure 1. Below 30MHz

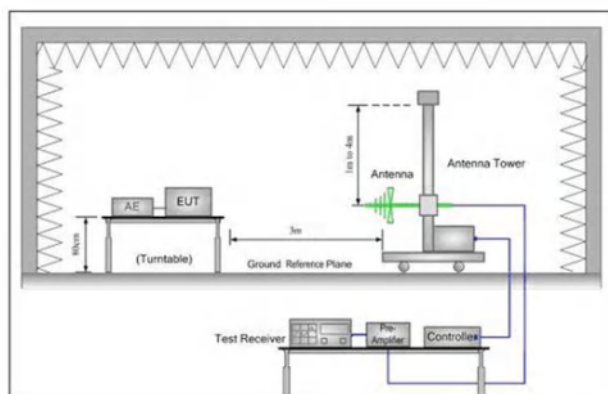


Figure 2. 30MHz to 1GHz

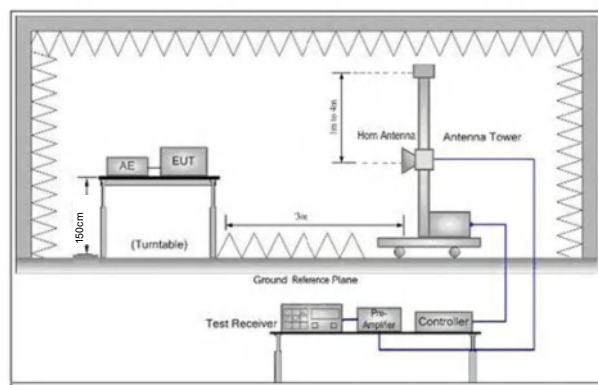


Figure 3. Above 1 GHz

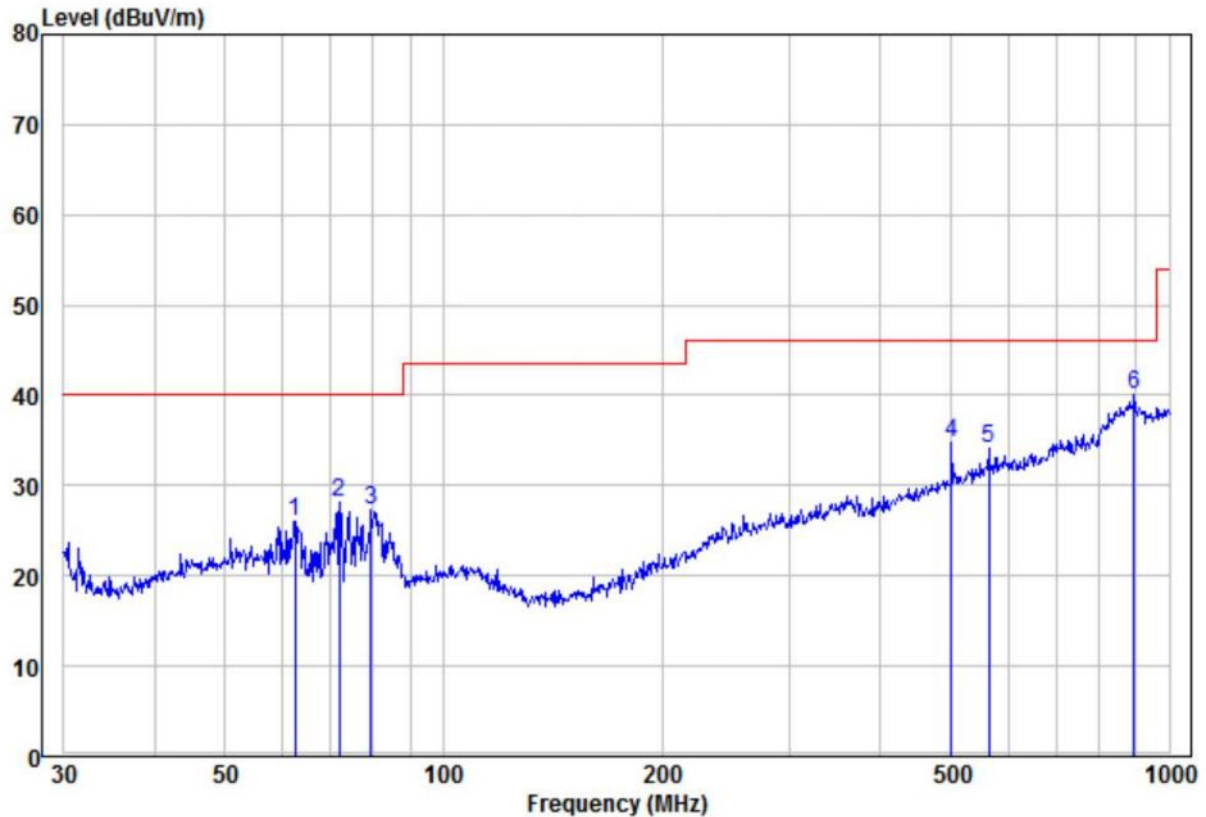
Test Procedure:

- a. 1) Below 1G: 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.
- 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 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.
- Note: For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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 rotatable 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. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. 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 . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

5.9.1 Radiated emission below 1GHz

30MHz~1GHz
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	62.43	14.63	11.48	26.11	40.00	-13.89	Peak	VERTICAL	100	10
2	71.83	18.93	9.27	28.20	40.00	-11.80	Peak	VERTICAL	100	81
3	79.52	19.39	7.83	27.22	40.00	-12.78	Peak	VERTICAL	100	330
4	501.18	13.92	20.94	34.86	46.00	-11.14	Peak	VERTICAL	100	46
5	564.64	12.11	21.96	34.07	46.00	-11.93	Peak	VERTICAL	100	142
6 pp	893.86	10.87	29.20	40.07	46.00	-5.93	Peak	VERTICAL	100	85

Remark:

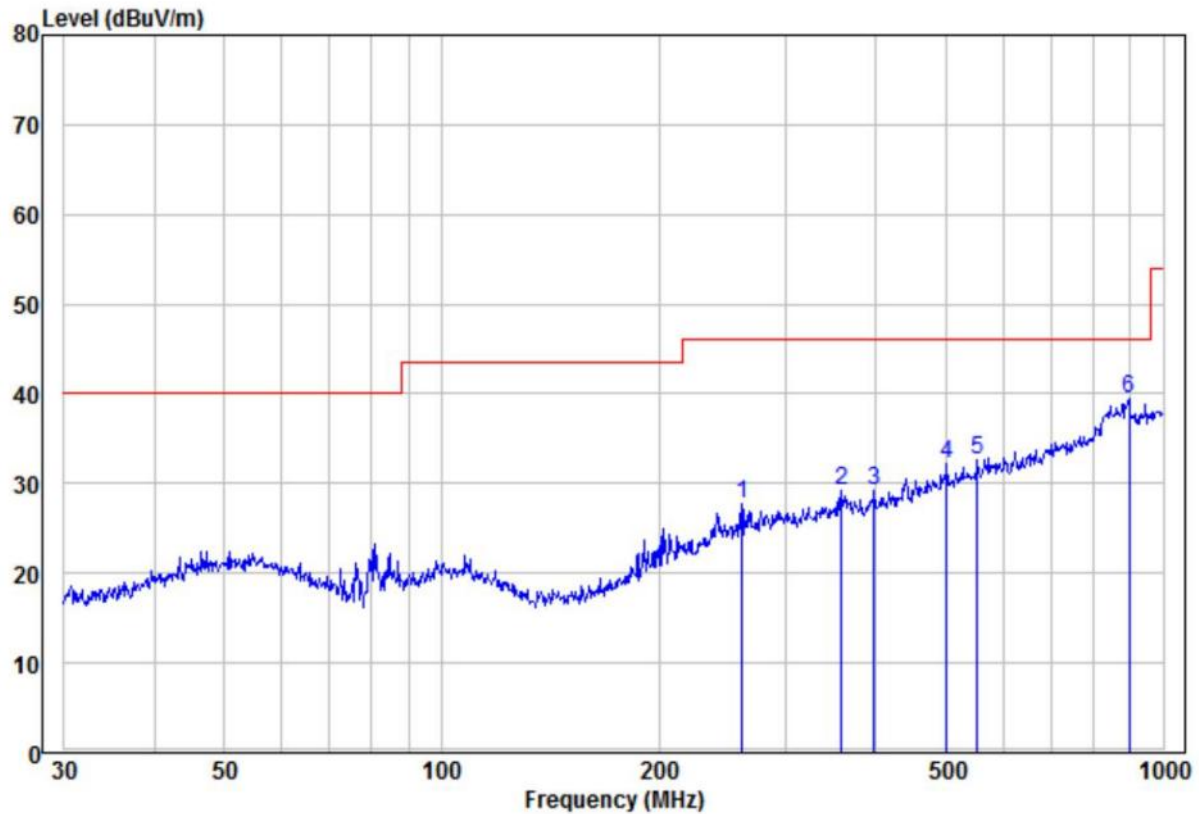
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Horizontal



	Read		Limit	Over				APos	TPos
Freq	Level	Factor	Level	Line	Limit	Remark	Pol/Phase		
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	261.06	11.86	15.97	27.83	46.00	-18.17 Peak	HORIZONTAL	100	31
2	357.93	10.93	18.33	29.26	46.00	-16.74 Peak	HORIZONTAL	100	66
3	397.63	11.00	18.33	29.33	46.00	-16.67 Peak	HORIZONTAL	100	52
4	501.18	11.23	20.94	32.17	46.00	-13.83 Peak	HORIZONTAL	100	9
5	552.88	11.00	21.68	32.68	46.00	-13.32 Peak	HORIZONTAL	100	214
6 pp	897.00	10.39	29.05	39.44	46.00	-6.56 Peak	HORIZONTAL	100	65

Remark:

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

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.9.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	54.01	-4.26	49.75	74	-24.25	peak	H	1.5	30
4824.000	37.65	-4.26	33.39	54	-20.61	AVG	H	1.5	244
7236.000	51.43	1.18	52.61	74	-21.39	peak	H	1.5	280
7236.000	38.11	1.18	39.29	54	-14.71	AVG	H	1.5	287
4824.000	55.84	-4.26	51.58	74	-22.42	peak	V	1.5	53
4824.000	39.30	-4.26	35.04	54	-18.96	AVG	V	1.5	96
7236.000	51.18	1.18	52.36	74	-21.64	peak	V	1.5	66
7236.000	35.38	1.18	36.56	54	-17.44	AVG	V	1.5	203

Test mode:		802.11b(1Mbps)		Test channel:		Middle			
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)
4874.000	52.15	-4.12	48.03	74	-25.97	peak	H	1.5	39
4874.000	37.57	-4.12	33.45	54	-20.55	AVG	H	1.5	283
7311.000	48.69	1.46	50.15	74	-23.85	peak	H	1.5	119
7311.000	36.30	1.46	37.76	54	-16.24	AVG	H	1.5	257
4874.000	53.02	-4.12	48.90	74	-25.10	peak	V	1.5	144
4874.000	36.51	-4.12	32.39	54	-21.61	AVG	V	1.5	218
7311.000	48.57	1.46	50.03	74	-23.97	peak	V	1.5	215
7311.000	36.38	1.46	37.84	54	-16.16	AVG	V	1.5	256

Test mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)			(m)	(Degree)
4924.000	51.79	-4.03	47.76	74	-26.24	peak	H	1.5	188
4924.000	37.29	-4.03	33.26	54	-20.74	AVG	H	1.5	164
7386.000	49.67	1.66	51.33	74	-22.67	peak	H	1.5	98
7386.000	36.59	1.66	38.25	54	-15.75	AVG	H	1.5	258
4924.000	54.64	-4.03	50.61	74	-23.39	peak	V	1.5	327
4924.000	38.36	-4.03	34.33	54	-19.67	AVG	V	1.5	245
7386.000	49.60	1.66	51.26	74	-22.74	peak	V	1.5	276
7386.000	36.42	1.66	38.08	54	-15.92	AVG	V	1.5	271

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 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 25GHz, The disturbance above 13GHz 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.

Test mode:		802.11g(6Mbps)		Test channel:		Lowest			
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)
4824.000	52.45	-4.26	48.19	74	-25.81	peak	H	1.5	81
4824.000	36.74	-4.26	32.48	54	-21.52	AVG	H	1.5	294
7236.000	51.04	1.18	52.22	74	-21.78	peak	H	1.5	100
7236.000	37.34	1.18	38.52	54	-15.48	AVG	H	1.5	355
4824.000	54.41	-4.26	50.15	74	-23.85	peak	V	1.5	192
4824.000	39.96	-4.26	35.70	54	-18.30	AVG	V	1.5	173
7236.000	52.16	1.18	53.34	74	-20.66	peak	V	1.5	31
7236.000	36.81	1.18	37.99	54	-16.01	AVG	V	1.5	230

Test mode:		802.11g(6Mbps)		Test channel:		Middle			
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)
4874.000	52.86	-4.12	48.74	74	-25.26	peak	H	1.5	194
4874.000	36.90	-4.12	32.78	54	-21.22	AVG	H	1.5	25
7311.000	49.06	1.46	50.52	74	-23.48	peak	H	1.5	352
7311.000	35.02	1.46	36.48	54	-17.52	AVG	H	1.5	327
4874.000	53.40	-4.12	49.28	74	-24.72	peak	V	1.5	8
4874.000	36.49	-4.12	32.37	54	-21.63	AVG	V	1.5	144
7311.000	49.61	1.46	51.07	74	-22.93	peak	V	1.5	337
7311.000	36.40	1.46	37.86	54	-16.14	AVG	V	1.5	68

Test mode:		802.11g(6Mbps)		Test channel:		Highest			
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)
4924.000	52.34	-4.03	48.31	74	-25.69	peak	H	1.5	288
4924.000	37.90	-4.03	33.87	54	-20.13	AVG	H	1.5	15
7386.000	51.00	1.66	52.66	74	-21.34	peak	H	1.5	315
7386.000	37.34	1.66	39.00	54	-15.00	AVG	H	1.5	219
4924.000	54.59	-4.03	50.56	74	-23.44	peak	V	1.5	238
4924.000	37.16	-4.03	33.13	54	-20.87	AVG	V	1.5	318
7386.000	50.41	1.66	52.07	74	-21.93	peak	V	1.5	63
7386.000	36.89	1.66	38.55	54	-15.45	AVG	V	1.5	121

Remark:

- 1) The 6Mbps of rate of 802.11g is the worst case.
- 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 25GHz, The disturbance above 13GHz 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.

Test mode:		802.11n20(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.31	-4.26	49.05	74	-24.95	peak	H	1.5	146
4824.000	36.22	-4.26	31.96	54	-22.04	AVG	H	1.5	283
7236.000	51.72	1.18	52.90	74	-21.10	peak	H	1.5	71
7236.000	38.91	1.18	40.09	54	-13.91	AVG	H	1.5	266
4824.000	56.01	-4.26	51.75	74	-22.25	peak	V	1.5	217
4824.000	38.00	-4.26	33.74	54	-20.26	AVG	V	1.5	228
7236.000	50.92	1.18	52.10	74	-21.90	peak	V	1.5	189
7236.000	36.56	1.18	37.74	54	-16.26	AVG	V	1.5	131

Test mode:		802.11n20(6.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.54	-4.12	48.42	74	-25.58	peak	H	1.5	121
4874.000	36.03	-4.12	31.91	54	-22.09	AVG	H	1.5	263
7311.000	48.28	1.46	49.74	74	-24.26	peak	H	1.5	157
7311.000	35.59	1.46	37.05	54	-16.95	AVG	H	1.5	311
4874.000	52.69	-4.12	48.57	74	-25.43	peak	V	1.5	51
4874.000	36.09	-4.12	31.97	54	-22.03	AVG	V	1.5	33
7311.000	48.56	1.46	50.02	74	-23.98	peak	V	1.5	219
7311.000	35.31	1.46	36.77	54	-17.23	AVG	V	1.5	104

Test mode:		802.11n20(6.5Mbps)		Test channel:		Highest			
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)
4924.000	51.74	-4.03	47.71	74	-26.29	peak	H	1.5	135
4924.000	37.18	-4.03	33.15	54	-20.85	AVG	H	1.5	191
7386.000	50.36	1.66	52.02	74	-21.98	peak	H	1.5	269
7386.000	37.54	1.66	39.20	54	-14.80	AVG	H	1.5	200
4924.000	53.46	-4.03	49.43	74	-24.57	peak	V	1.5	141
4924.000	38.72	-4.03	34.69	54	-19.31	AVG	V	1.5	283
7386.000	49.33	1.66	50.99	74	-23.01	peak	V	1.5	137
7386.000	37.41	1.66	39.07	54	-14.93	AVG	V	1.5	290

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 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 25GHz, The disturbance above 13GHz 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.

Test mode:		802.11n40(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.96	-4.26	49.70	74	-24.30	peak	H	1.5	342
4824.000	37.80	-4.26	33.54	54	-20.46	AVG	H	1.5	48
7236.000	51.04	1.18	52.22	74	-21.78	peak	H	1.5	209
7236.000	37.01	1.18	38.19	54	-15.81	AVG	H	1.5	141
4824.000	55.42	-4.26	51.16	74	-22.84	peak	V	1.5	96
4824.000	38.92	-4.26	34.66	54	-19.34	AVG	V	1.5	281
7236.000	50.62	1.18	51.80	74	-22.20	peak	V	1.5	249
7236.000	36.06	1.18	37.24	54	-16.76	AVG	V	1.5	293

Test mode:		802.11n40(13.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.91	-4.12	47.79	74	-26.21	peak	H	1.5	149
4874.000	36.58	-4.12	32.46	54	-21.54	AVG	H	1.5	101
7311.000	49.32	1.46	50.78	74	-23.22	peak	H	1.5	106
7311.000	35.47	1.46	36.93	54	-17.07	AVG	H	1.5	259
4874.000	53.54	-4.12	49.42	74	-24.58	peak	V	1.5	264
4874.000	36.20	-4.12	32.08	54	-21.92	AVG	V	1.5	61
7311.000	49.07	1.46	50.53	74	-23.47	peak	V	1.5	237
7311.000	36.22	1.46	37.68	54	-16.32	AVG	V	1.5	163

Test mode:		802.11n40(13.5Mbps)		Test channel:		Highest			
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)
4924.000	53.21	-4.03	49.18	74	-24.82	peak	H	1.5	172
4924.000	37.41	-4.03	33.38	54	-20.62	AVG	H	1.5	359
7386.000	50.07	1.66	51.73	74	-22.27	peak	H	1.5	199
7386.000	37.28	1.66	38.94	54	-15.06	AVG	H	1.5	261
4924.000	55.09	-4.03	51.06	74	-22.94	peak	V	1.5	274
4924.000	37.49	-4.03	33.46	54	-20.54	AVG	V	1.5	253
7386.000	50.49	1.66	52.15	74	-21.85	peak	V	1.5	317
7386.000	36.79	1.66	38.45	54	-15.55	AVG	V	1.5	166

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 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 25GHz, The disturbance above 13GHz 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.

5.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2020		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	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 Setup:

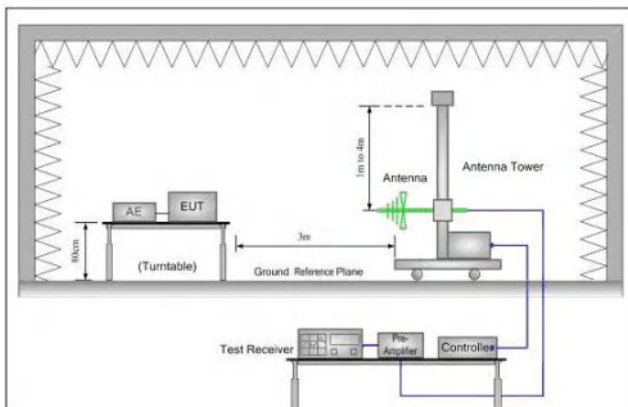


Figure 1. 30MHz to 1GHz

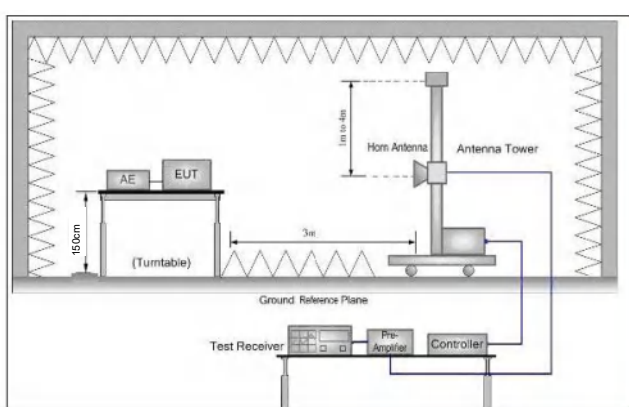


Figure 2. Above 1 GHz

Test Procedure:

- 1) Below 1G: 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.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 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.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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 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. 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 g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. 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 . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report.
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.31	-9.2	49.11	74	-24.89	peak	H	1.5	242
2390.000	44.80	-9.2	35.60	54	-18.40	AVG	H	1.5	240
2400.000	59.92	-9.39	50.53	74	-23.47	peak	H	1.5	77
2400.000	46.72	-9.39	37.33	54	-16.67	AVG	H	1.5	75
2390.000	59.09	-9.2	49.89	74	-24.11	peak	V	1.5	81
2390.000	44.71	-9.2	35.51	54	-18.49	AVG	V	1.5	2
2400.000	59.55	-9.39	50.16	74	-23.84	peak	V	1.5	221
2400.000	46.72	-9.39	37.33	54	-16.67	AVG	V	1.5	211

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	57.60	-9.29	48.31	74	-25.69	peak	H	1.5	316
2483.500	43.79	-9.29	34.50	54	-19.50	AVG	H	1.5	321
2483.500	57.47	-9.29	48.18	74	-25.82	peak	V	1.5	205
2483.500	45.79	-9.29	36.50	54	-17.50	AVG	V	1.5	81

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.83	-9.2	49.63	74	-24.37	peak	H	1.5	136
2390.000	44.78	-9.2	35.58	54	-18.42	AVG	H	1.5	213
2400.000	59.70	-9.39	50.31	74	-23.69	peak	H	1.5	46
2400.000	46.35	-9.39	36.96	54	-17.04	AVG	H	1.5	309
2390.000	58.77	-9.2	49.57	74	-24.43	peak	V	1.5	83
2390.000	44.64	-9.2	35.44	54	-18.56	AVG	V	1.5	140
2400.000	59.94	-9.39	50.55	74	-23.45	peak	V	1.5	330
2400.000	46.11	-9.39	36.72	54	-17.28	AVG	V	1.5	141

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.74	-9.29	48.45	74	-25.55	peak	H	1.5	219
2483.500	44.05	-9.29	34.76	54	-19.24	AVG	H	1.5	198
2483.500	57.63	-9.29	48.34	74	-25.66	peak	V	1.5	98
2483.500	45.77	-9.29	36.48	54	-17.52	AVG	V	1.5	21

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	59.09	-9.2	49.89	74	-24.11	peak	H	1.5	89
2390.000	44.83	-9.2	35.63	54	-18.37	AVG	H	1.5	47
2400.000	59.31	-9.39	49.92	74	-24.08	peak	H	1.5	93
2400.000	46.57	-9.39	37.18	54	-16.82	AVG	H	1.5	111
2390.000	58.27	-9.2	49.07	74	-24.93	peak	V	1.5	48
2390.000	44.32	-9.2	35.12	54	-18.88	AVG	V	1.5	320
2400.000	59.51	-9.39	50.12	74	-23.88	peak	V	1.5	223
2400.000	46.10	-9.39	36.71	54	-17.29	AVG	V	1.5	132

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.66	-9.29	48.37	74	-25.63	peak	H	1.5	6
2483.500	44.46	-9.29	35.17	54	-18.83	AVG	H	1.5	127
2483.500	58.40	-9.29	49.11	74	-24.89	peak	V	1.5	171
2483.500	45.51	-9.29	36.22	54	-17.78	AVG	V	1.5	219

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.40	-9.2	49.20	74	-24.80	peak	H	1.5	89
2390.000	44.42	-9.2	35.22	54	-18.78	AVG	H	1.5	161
2400.000	59.52	-9.39	50.13	74	-23.87	peak	H	1.5	97
2400.000	46.69	-9.39	37.30	54	-16.70	AVG	H	1.5	308
2390.000	59.05	-9.2	49.85	74	-24.15	peak	V	1.5	179
2390.000	44.07	-9.2	34.87	54	-19.13	AVG	V	1.5	320
2400.000	60.17	-9.39	50.78	74	-23.22	peak	V	1.5	42
2400.000	46.21	-9.39	36.82	54	-17.18	AVG	V	1.5	76

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	58.26	-9.29	48.97	74	-25.03	peak	H	1.5	145
2483.500	43.72	-9.29	34.43	54	-19.57	AVG	H	1.5	9
2483.500	57.88	-9.29	48.59	74	-25.41	peak	V	1.5	10
2483.500	45.71	-9.29	36.42	54	-17.58	AVG	V	1.5	136

Note:

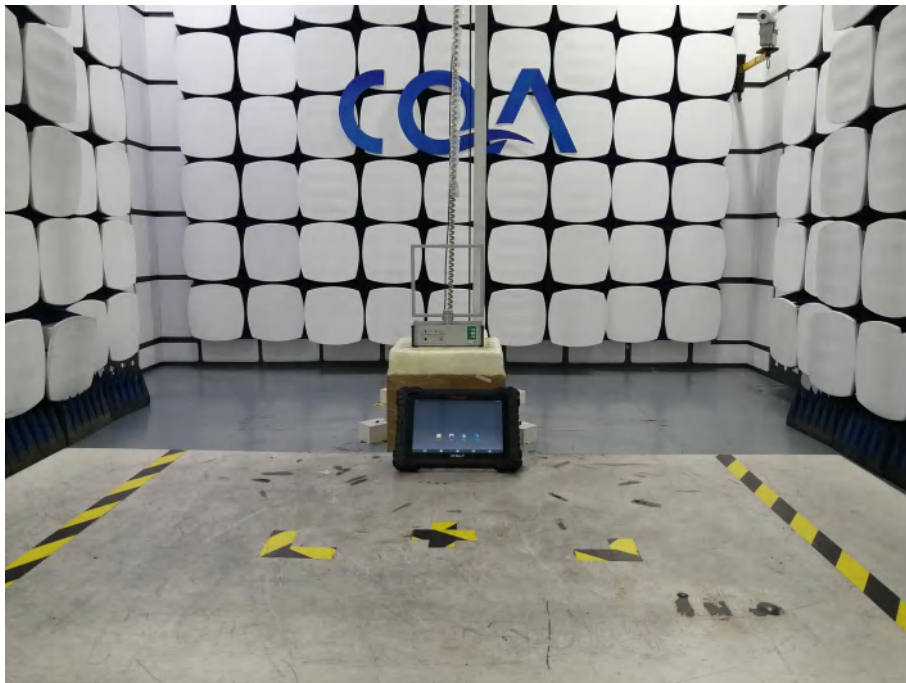
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

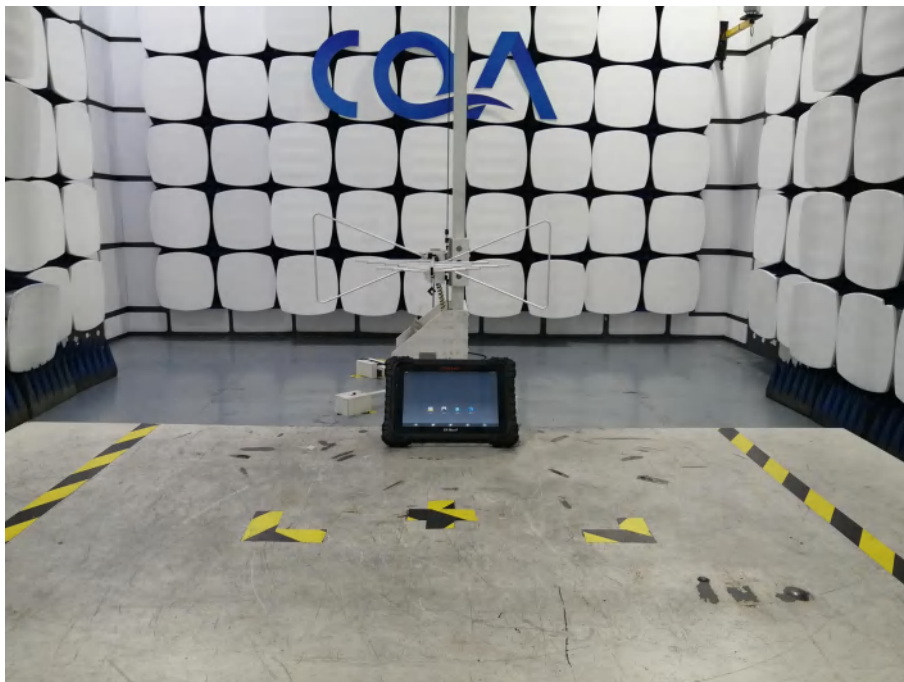
6 Photographs - EUT Test Setup

6.1 Radiated Spurious Emission

9KHz~30MHz:



30MHz~1GHz:



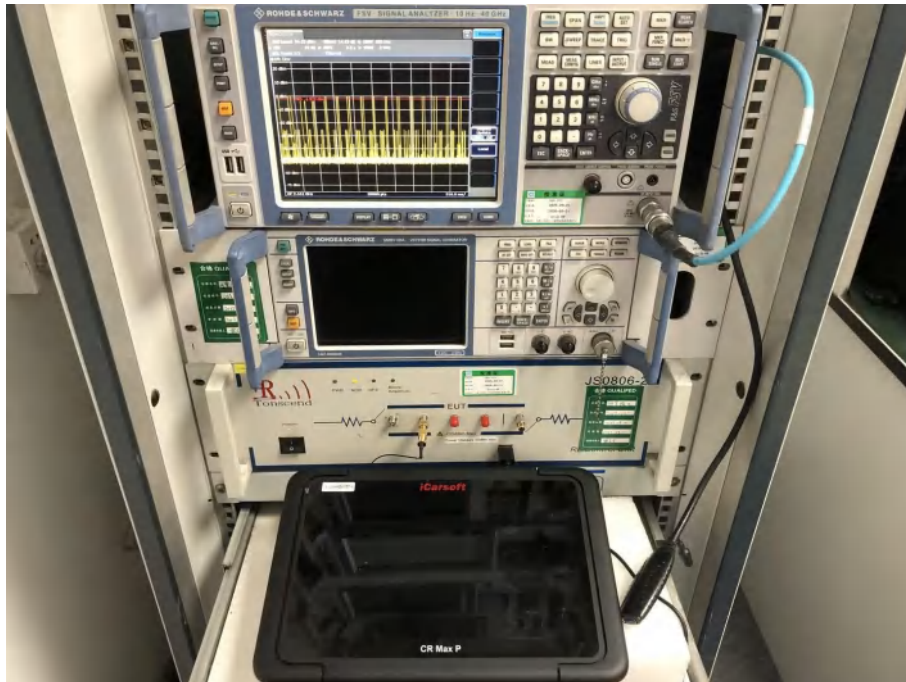
Above 1GHz:



6.2 Conducted Emission



6.3 RF Conducted measurement



7 Photographs - EUT Constructional Details

Refer to PHOTOGRAPHS OF EUT for CQASZ20251102748E-01.

*** END OF REPORT ***