TEST REPORT

Applicant Name:	CAPTANA GMBH
Address:	Bundesstrasse 16,Ettenheim,Germany 77955
Report Number:	SZXX1240117-03999E-RF-00A
FCC ID:	2APO5-STOREEYE

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type:	Shelfcam
Model No.:	StoreEye
Multiple Model(s) No.:	StoreEye 120, StoreEye 80, StoreEye 60, StoreEye 50
Trade Mark:	N/A
Date Received:	2024/01/17
Issue Date:	2024/11/28

Test Result:	Pass▲

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

Prepared and Checked By:

Andy Yu

RF Engineer

Approved By:

Nancy Wang

RF Supervisor

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

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.
This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY **4**

GENERAL INFORMATION **5**
- PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 5
- OBJECTIVE 5
- TEST METHODOLOGY 5
- MEASUREMENT UNCERTAINTY 6
- TEST FACILITY 6

SYSTEM TEST CONFIGURATION **7**
- DESCRIPTION OF TEST CONFIGURATION 7
- EQUIPMENT MODIFICATIONS 7
- EUT EXERCISE SOFTWARE 7
- SUPPORT EQUIPMENT LIST AND DETAILS 7
- EXTERNAL I/O CABLE 8
- BLOCK DIAGRAM OF TEST SETUP 8

SUMMARY OF TEST RESULTS **10**

TEST EQUIPMENT LIST **11**

FCC §15.247 (I) & §1.1307 (B) & §2.1091- MPE-BASED EXEMPTION **13**
- APPLICABLE STANDARD 13
- RESULT 13

FCC §15.203 - ANTENNA REQUIREMENT **14**
- APPLICABLE STANDARD 14
- ANTENNA CONNECTOR CONSTRUCTION 14

FCC §15.207 (A) – AC LINE CONDUCTED EMISSIONS **15**
- APPLICABLE STANDARD 15
- EUT SETUP 15
- EMI TEST RECEIVER SETUP 15
- TEST PROCEDURE 15
- FACTOR & OVER LIMIT CALCULATION 16
- TEST DATA 16

FCC §15.209, §15.205 & §15.247(D) - SPURIOUS EMISSIONS **19**
- APPLICABLE STANDARD 19
- EUT SETUP 19
- EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP 20
- TEST PROCEDURE 21
- FACTOR & OVER LIMIT/MARGIN CALCULATION 21
- TEST DATA 21

FCC §15.247(A) (2) – 6 DB EMISSION BANDWIDTH **50**
- APPLICABLE STANDARD 50
- TEST PROCEDURE 50
- TEST DATA 50

FCC §15.247(B) (3) - MAXIMUM CONDUCTED OUTPUT POWER 51
APPLICABLE STANDARD 51
TEST PROCEDURE 51
TEST DATA 51
FCC §15.247(D) – 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE 52
APPLICABLE STANDARD 52
TEST PROCEDURE 52
TEST DATA 52
FCC §15.247(E) - POWER SPECTRAL DENSITY 53
APPLICABLE STANDARD 53
TEST PROCEDURE 53
TEST DATA 54
EUT PHOTOGRAPHS 55
TEST SETUP PHOTOGRAPHS 56
APPENDIX 57
APPENDIX A: DTS BANDWIDTH 57
APPENDIX B: OCCUPIED CHANNEL BANDWIDTH 70
APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER 83
APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY 85
APPENDIX E: BAND EDGE MEASUREMENTS 98
APPENDIX F: DUTY CYCLE 106

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZXX1240117-03999E-RF-00A	Original Report	2024/11/28

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Shelfcam
Tested Model	StoreEye
Multiple Model(s)	StoreEye 120, StoreEye 80, StoreEye 60, StoreEye 50
Frequency Range	2412-2462MHz
Maximum Conducted Peak Output Power	802.11b: 20.23dBm 802.11g: 24.93dBm 802.11n20: 24.64dBm 802.11n40: 24.06dBm
Modulation Technique	DSSS,OFDM
Antenna Specification#	ANT1/2: 2.23dBi (provided by the applicant)
Voltage Range	DC 3.7V from battery or DC 5V from USB port
Sample serial number	2GR5-2 for Conducted and Radiated Emissions Test 2GR5-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Note: 1. The Multiple models are electrically identical with the test model except for model name, color and the field of view of the camera lens. Please refer to the declaration letter# for more detail, which was provided by manufacturer. 2. The product is shipped without any data cables or adapters. The adapters and data cables in the test report are test tools provided by the laboratory.	

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

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

Each test item follows test standards and with no deviation.

Measurement Uncertainty

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

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

Test Facility

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For Wi-Fi mode, total 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	/	/
6	2437	/	/
7	2442	/	/

802.11 b&802.11g&802.11n-HT20 mode was tested with Channel 1, 6 and 11.
802.11n-HT40 mode was tested with Channel 3, 6 and 9.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

"AmebaPRO2 mptool 1v9.7, QCOM"# software was used to test and power level as below:

Mode	Data rate	Power Level#		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	20	20	20
802.11g	6Mbps	20	20	20
802.11n-HT20	MCS0	20	20	20
802.11n-HT40	MCS0	20	20	20

The software and power level was provided by applicant.
The RF chip RTL8735 is a 1T1R WLAN baseband, and the device with an antenna switch chip, the signals transmit on any one of the antennas which switched by the antenna switch chip automatically, the two antennas cannot be used at same time. All test was performed on the two antennas separately.

Support Equipment List and Details

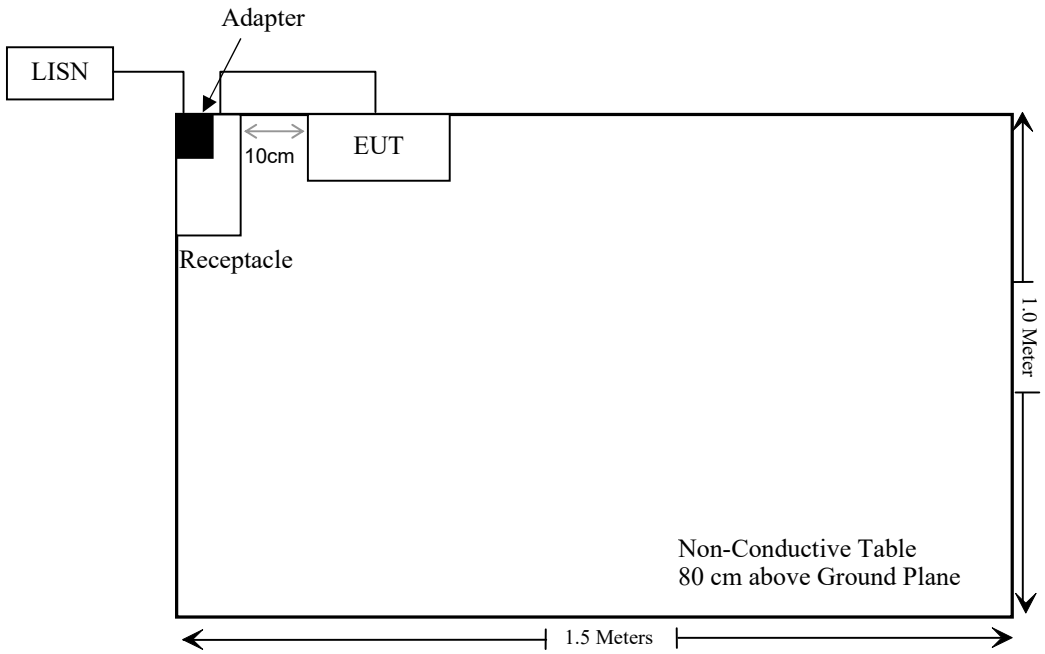
Manufacturer	Description	Model	Serial Number
TECNO	Adapter	U050TSA	AH07015321906
Dachuan	Adapter	DCT07W050100US-C1	0071 4US52209016087 17

External I/O Cable

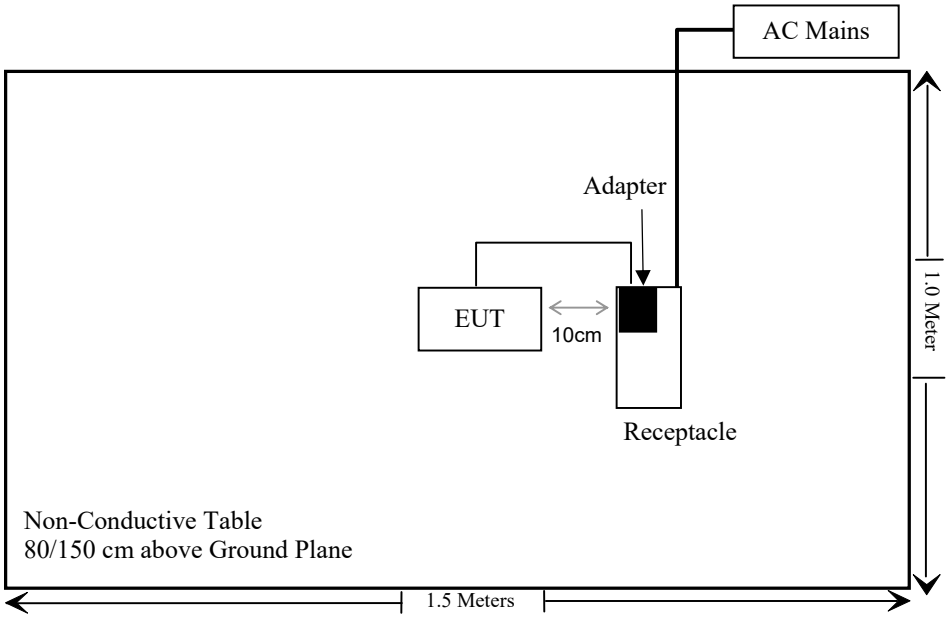
Cable Description	Length (m)	From Port	To
Un-shielding Un-Detachable USB Cable	1.2	LISN/ AC Mains	Receptacle
Un-shielding Detachable USB Cable	0.5 (white)	Adapter	EUT
Un-shielding Detachable USB Cable	0.3 (black)	Adapter	EUT

Block Diagram of Test Setup

For Conducted Emissions:



For Radiated Emissions



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b) & §2.1091	MPE-Based Exemption	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth & Occupied Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2023/08/03	2024/08/02
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test (below 30MHz)					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
Unknown	Cable	2Y194	0735	2024/05/21	2025/05/20
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emissions Test (30MHz~1GHz)					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emissions Test (above 1GHz)					
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
COM-POWER	Pre-amplifier	PA-122	181919	2024/06/18	2025/06/17
Schwarzbeck	Horn Antenna	BBHA9120D (1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
SNSD	2.4G Band Reject filter	BSF2402-2480MN-0898-001	2.4G filter	2023/08/03	2024/08/02
SNSD	2.4G Band Reject filter	BSF2402-2480MN-0898-001	2.4G filter	2024/06/27	2025/06/26
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/02	2024/08/01
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02
UTIFLEX	RF Cable	NO. 13	232308-001	2024/06/18	2025/06/17
RF Conducted Test					
Tonscend	RF control Unit	JS0806-2	19D8060154	2024/08/06	2025/08/05
ANRITSU	Microwave peak power sensor	MA24418A	12622	2024/05/21	2025/05/20
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2024/01/16	2025/01/15
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26
Unknown	RF Cable	65475	01670515	2024/06/27	2025/06/26

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

FCC §15.247 (I) & §1.1307 (B) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

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

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

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

Ris the minimum separation distance in meters
f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power#	Antenna Gain#		ERP		Evaluation Distance (m)	ERP Limit (mW)
		(dBm)	(dBi)	(dBd)	(dBm)	(mW)		
Wi-Fi	2412-2462	25.0	2.23	0.08	25.08	322	0.2	768

Note: The tune up conducted power and antenna gain was declared by the applicant.

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

Result: Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has two internal antenna arrangement, which were permanently attached and the antenna gain# is 2.23dBi, fulfill the requirement of this section. Please refer to the EUT photos.

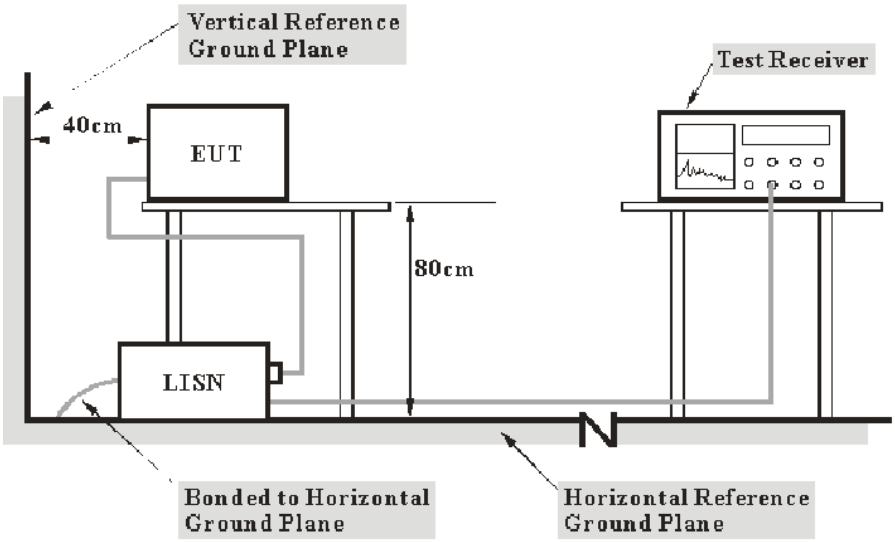
Result: Compliant

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



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

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

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

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

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

Test Procedure

During the conducted emission test, the device was connected to the outlet of the LISN.

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

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

Factor & Over Limit Calculation

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

Factor = LISN VDF + Cable Loss

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

Over Limit = level – Limit
Level= reading level+ Factor

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

Test Data

Environmental Conditions

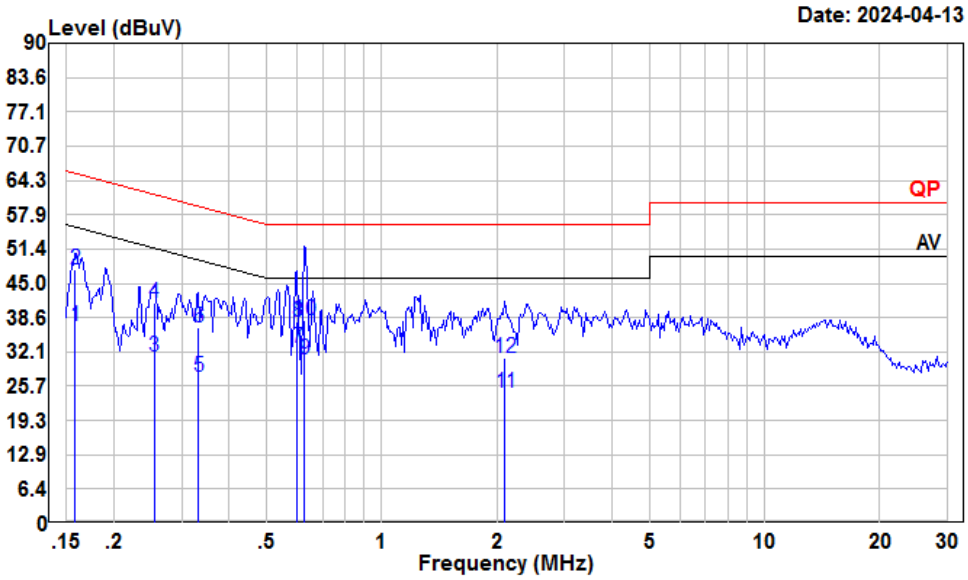
Temperature:	26 ℃
Relative Humidity:	60 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-04-13.

EUT operation mode: Transmitting

Wi-Fi: *(Maximum output power mode 802.11g mode, High Channel, ANT 1)*

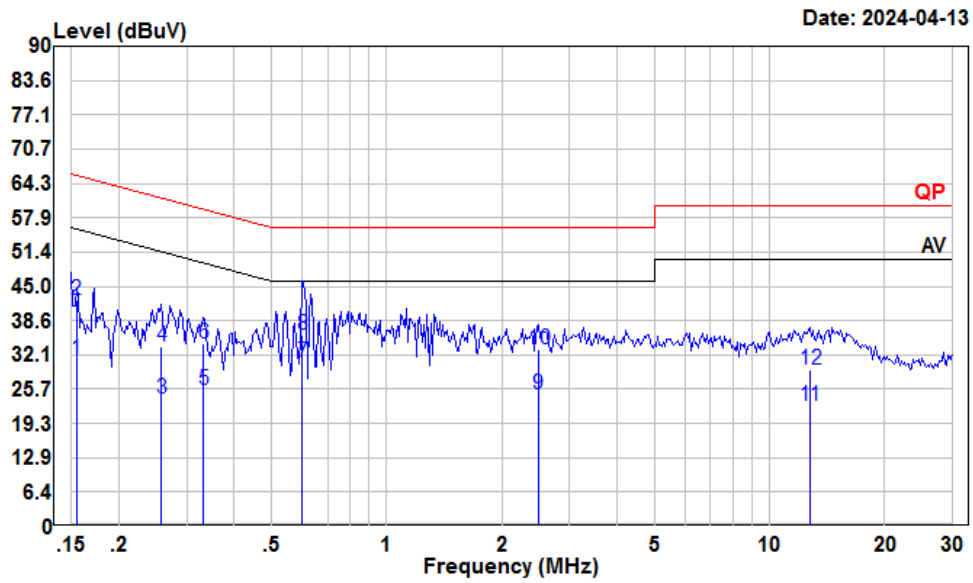
AC 120V/60 Hz, Line




```
Condition: Line
Project  : SZXX1240117-03999E-RF
Tester   : Macy shi
Note     : 2.4G WIFI
```

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	16.00	37.03	10.88	10.15	55.56	-18.53	Average
2	0.16	26.69	47.72	10.88	10.15	65.56	-17.84	QP
3	0.25	10.33	31.25	10.72	10.20	51.60	-20.35	Average
4	0.25	20.37	41.29	10.72	10.20	61.60	-20.31	QP
5	0.33	6.60	27.38	10.63	10.15	49.40	-22.02	Average
6	0.33	15.93	36.71	10.63	10.15	59.40	-22.69	QP
7	0.60	12.10	32.82	10.50	10.22	46.00	-13.18	Average
8	0.60	17.00	37.72	10.50	10.22	56.00	-18.28	QP
9	0.63	10.11	30.83	10.50	10.22	46.00	-15.17	Average
10	0.63	17.32	38.04	10.50	10.22	56.00	-17.96	QP
11	2.10	3.68	24.45	10.58	10.19	46.00	-21.55	Average
12	2.10	10.26	31.03	10.58	10.19	56.00	-24.97	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : SZXX1240117-03999E-RF
Tester : Macy shi
Note : 2.4G WIFI

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.15	10.52	31.25	10.58	10.15	55.74	-24.49	Average
2	0.15	21.74	42.47	10.58	10.15	65.74	-23.27	QP
3	0.26	3.18	23.86	10.48	10.20	51.51	-27.65	Average
4	0.26	13.07	33.75	10.48	10.20	61.51	-27.76	QP
5	0.33	4.77	25.49	10.57	10.15	49.40	-23.91	Average
6	0.33	13.59	34.31	10.57	10.15	59.40	-25.09	QP
7	0.60	9.75	30.67	10.70	10.22	46.00	-15.33	Average
8	0.60	14.92	35.84	10.70	10.22	56.00	-20.16	QP
9	2.49	4.02	24.63	10.40	10.21	46.00	-21.37	Average
10	2.49	12.46	33.07	10.40	10.21	56.00	-22.93	QP
11	12.72	1.74	22.71	10.80	10.17	50.00	-27.29	Average
12	12.72	8.43	29.40	10.80	10.17	60.00	-30.60	QP

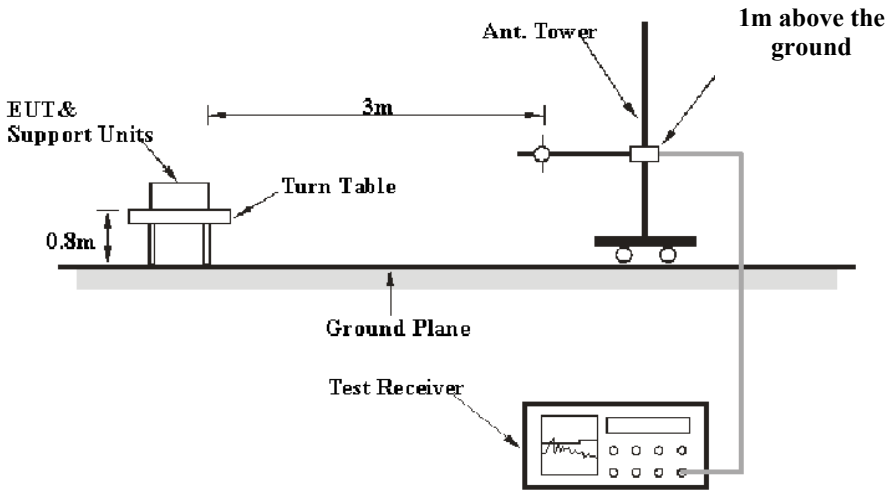
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

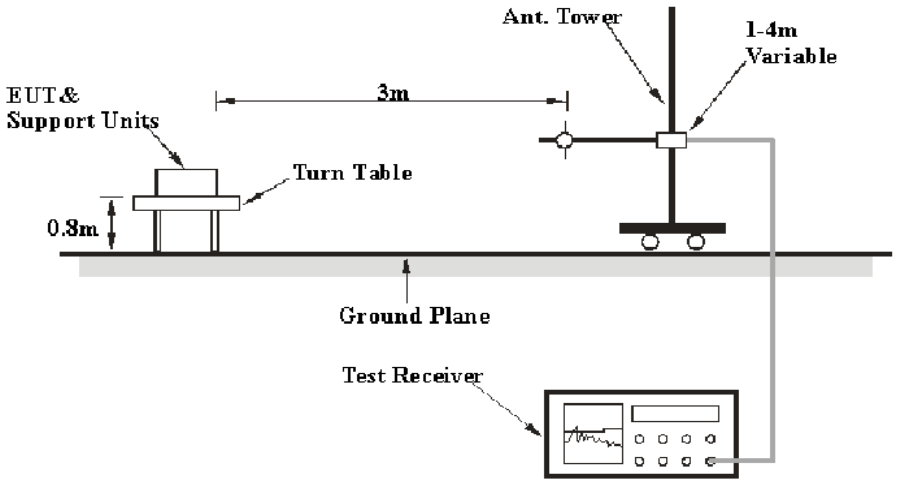
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

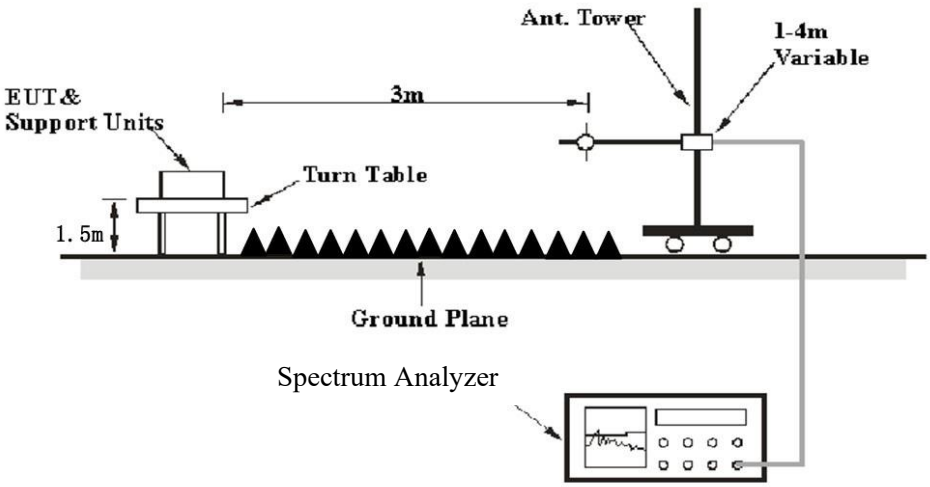
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

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

9 kHz-1GHz:

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

1-25GHz:

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

Note: T is minimum transmission duration

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

Test Procedure

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

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

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

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

Factor & Over Limit/Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

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

Over Limit/Margin = Level/Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	23~25.6 °C
Relative Humidity:	50~55 %
ATM Pressure:	101 kPa

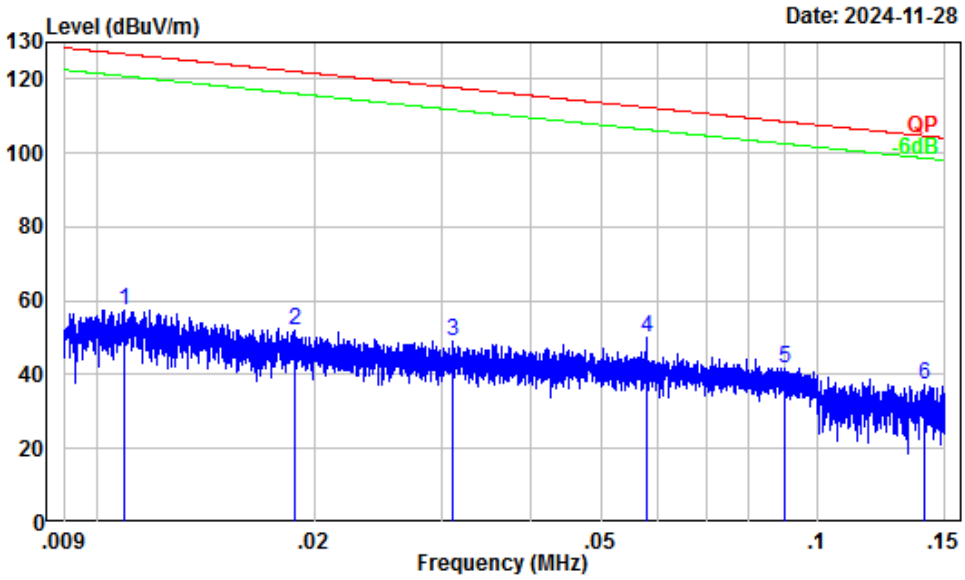
The testing was performed by Anson Su on 2024-11-28 for below 30MHz, Warren Huang on 2024-03-14 for 30MHz~1GHz and Dylan Yang and Zenos Qiao from 2024-04-05 to 2024-08-31 for above 1GHz.

EUT operation mode: Transmitting

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded.

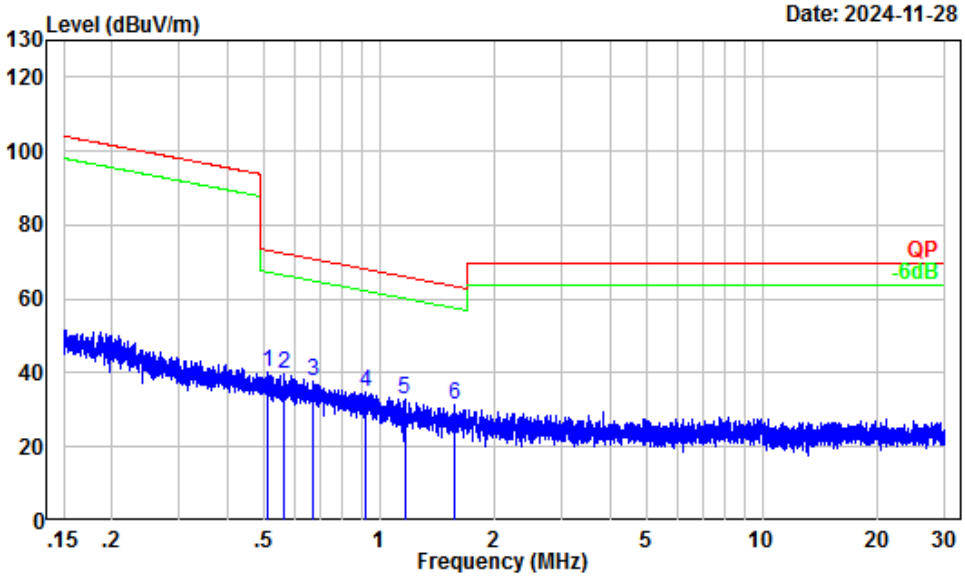
9 kHz-30MHz: (maximum output power mode 802.11g mode, high Channel, ANT 1)

Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.
Parallel (worst case)



Site : Chamber A
Condition : 3m
Project Number : SZXX1240117-03999E-RF
Test Mode : 2.4G WIFI Transmitting
Detector PK RBW: 200Hz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	32.12	25.31	57.43	126.83	-69.40	Peak
2	0.02	30.63	21.61	52.24	122.12	-69.88	Peak
3	0.03	28.38	20.45	48.83	117.74	-68.91	Peak
4	0.06	25.61	24.27	49.88	112.35	-62.47	Peak
5	0.09	22.71	19.20	41.91	108.54	-66.63	Peak
6	0.14	19.60	17.45	37.05	104.64	-67.59	Peak

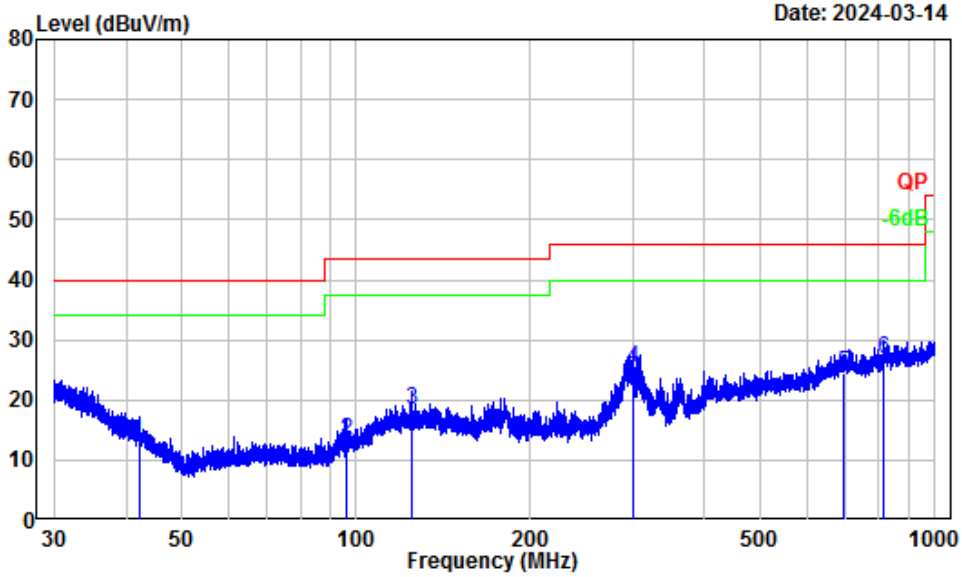


Site : Chamber A
Condition : 3m
Project Number : SZXX1240117-03999E-RF
Test Mode : 2.4G WIFI Transmitting
Detector PK RBW: 200Hz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.51	6.25	34.22	40.47	73.41	-32.94	Peak
2	0.56	5.62	34.25	39.87	72.56	-32.69	Peak
3	0.67	4.25	33.68	37.93	70.96	-33.03	Peak
4	0.92	1.83	33.00	34.83	68.25	-33.42	Peak
5	1.16	0.74	32.19	32.93	66.12	-33.19	Peak
6	1.57	-0.39	31.93	31.54	63.48	-31.94	Peak

30MHz-1GHz: (maximum output power mode 802.11g mode, high Channel, ANT 1)

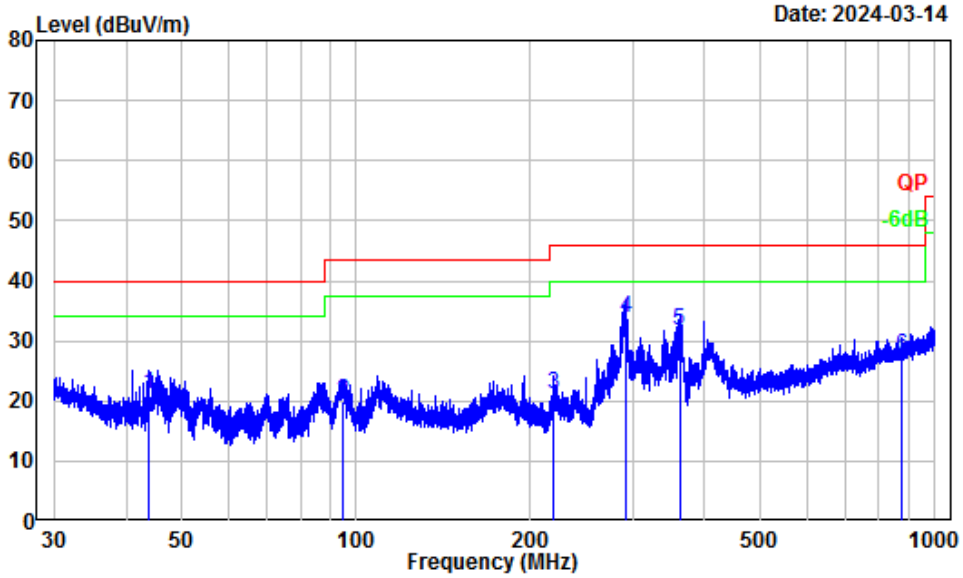
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: SZXX1240117-03999E-RF
Note : 2.4G WIFI
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	42.06	-11.71	24.79	13.08	40.00	-26.92	QP
2	96.48	-14.73	27.87	13.14	43.50	-30.36	QP
3	125.01	-10.32	28.76	18.44	43.50	-25.06	QP
4	299.97	-9.96	35.42	25.46	46.00	-20.54	QP
5	695.64	-1.59	26.15	24.56	46.00	-21.44	QP
6	813.82	-0.34	27.16	26.82	46.00	-19.18	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: SZXX1240117-03999E-RF
Note : 2.4G WIFI
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	43.81	-14.05	35.11	21.06	40.00	-18.94	QP
2	94.55	-16.39	36.29	19.90	43.50	-23.60	QP
3	219.27	-12.24	33.32	21.08	46.00	-24.92	QP
4	291.93	-10.66	44.44	33.78	46.00	-12.22	QP
5	361.87	-9.54	41.20	31.66	46.00	-14.34	QP
6	874.48	0.25	27.30	27.55	46.00	-18.45	QP

ANT1
1-25 GHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11b							
Low Channel 2412MHz							
2387.96	53.12	PK	H	-2.93	50.19	74	-23.81
2387.96	41.82	AV	H	-2.93	38.89	54	-15.11
2312.91	53.06	PK	V	-3.03	50.03	74	-23.97
2312.91	41.38	AV	V	-3.03	38.35	54	-15.65
4824.00	49.47	PK	H	1.69	51.16	74	-22.84
4824.00	43.94	AV	H	1.69	45.63	54	-8.37
4824.00	48.41	PK	V	1.69	50.10	74	-23.90
4824.00	43.25	AV	V	1.69	44.94	54	-9.06
Middle Channel 2437MHz							
4874.00	49.21	PK	H	1.69	50.90	74	-23.10
4874.00	44.08	AV	H	1.69	45.77	54	-8.23
4874.00	48.24	PK	V	1.69	49.93	74	-24.07
4874.00	42.88	AV	V	1.69	44.57	54	-9.43
High Channel 2462MHz							
2487.701	57.03	PK	H	-3.18	-53.85	74	-20.15
2487.701	47.12	AV	H	-3.18	43.94	54	-10.06
2486.965	55.76	PK	V	-3.17	52.59	74	-21.41
2486.965	41.58	AV	V	-3.17	38.41	54	-15.59
4924.00	47.94	PK	H	2.63	50.57	74	-23.43
4924.00	39.73	AV	H	2.63	42.36	54	-11.64
4924.00	47.63	PK	V	2.63	50.26	74	-23.74
4924.00	38.64	AV	V	2.63	41.27	54	-12.73

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11g							
Low Channel 2412MHz							
2387.89	62.35	PK	H	-2.93	59.42	74	-14.58
2387.89	44.19	AV	H	-2.93	41.26	54	-12.74
2386.42	61.58	PK	V	-2.93	58.65	74	-15.35
2386.42	43.82	AV	V	-2.93	40.89	54	-13.11
4824.00	54.35	PK	H	1.69	56.04	74	-17.96
4824.00	36.66	AV	H	1.69	38.35	54	-15.65
4824.00	49.58	PK	V	1.69	51.27	74	-22.73
4824.00	34.27	AV	V	1.69	35.96	54	-18.04
Middle Channel 2437MHz							
4874.00	60.12	PK	H	1.69	61.81	74	-12.19
4874.00	37.41	AV	H	1.69	39.10	54	-14.90
4874.00	54.08	PK	V	1.69	55.77	74	-18.23
4874.00	34.36	AV	V	1.69	36.05	54	-17.95
High Channel 2462MHz							
2483.72	72.64	PK	H	-3.10	69.54	74	-4.46
2483.72	53.38	AV	H	-3.10	50.28	54	-3.72
2483.71	67.45	PK	V	-3.10	64.35	74	-9.65
2483.71	48.34	AV	V	-3.10	45.24	54	-8.76
4924.00	60.63	PK	H	2.63	63.26	74	-10.74
4924.00	38.08	AV	H	2.63	40.71	54	-13.29
4924.00	53.94	PK	V	2.63	56.57	74	-17.43
4924.00	34.41	AV	V	2.63	37.04	54	-16.96

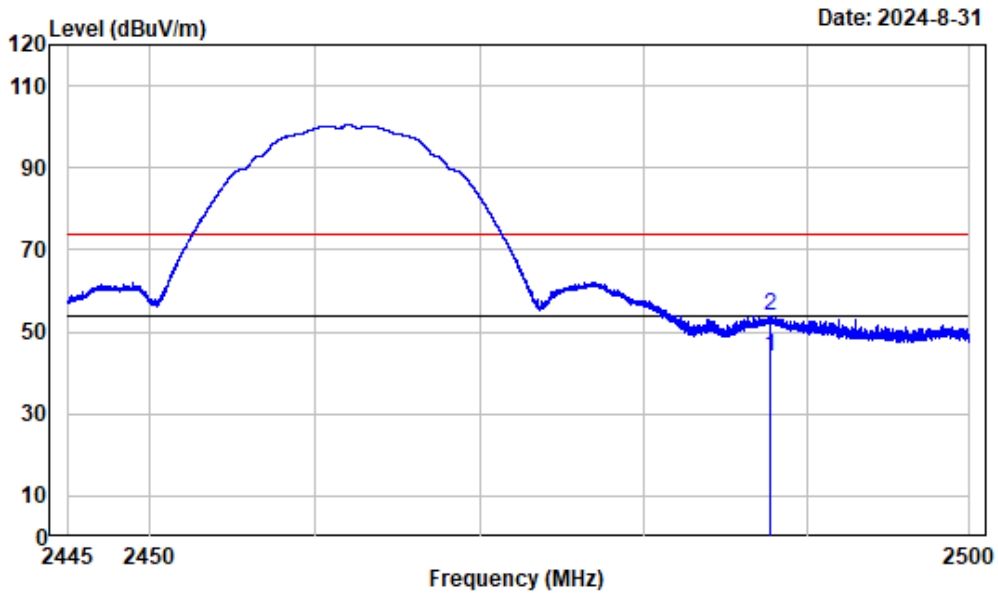
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11n20							
Low Channel 2412MHz							
2389.94	64.12	PK	H	-2.93	61.19	74	-12.81
2389.94	44.79	AV	H	-2.93	41.86	54	-12.14
2388.63	59.17	PK	V	-2.93	56.24	74	-17.76
2388.63	40.15	AV	V	-2.93	37.22	54	-16.78
4824.00	54.69	PK	H	1.69	56.38	74	-17.62
4824.00	36.84	AV	H	1.69	38.53	54	-15.47
4824.00	49.48	PK	V	1.69	51.17	74	-22.83
4824.00	33.56	AV	V	1.69	35.25	54	-18.75
Middle Channel 2437MHz							
4874.00	61.73	PK	H	1.69	63.42	74	-10.58
4874.00	36.61	AV	H	1.69	38.30	54	-15.70
4874.00	55.74	PK	V	1.69	57.43	74	-16.57
4874.00	32.93	AV	V	1.69	34.62	54	-19.38
High Channel 2462MHz							
2483.51	73.21	PK	H	-3.10	70.11	74	-3.89
2483.51	51.51	AV	H	-3.10	48.41	54	-5.59
2484.12	67.96	PK	V	-3.10	64.86	74	-9.14
2484.12	45.88	AV	V	-3.10	42.78	54	-11.22
4924.00	62.38	PK	H	1.79	64.17	74	-9.83
4924.00	36.59	AV	H	1.79	38.38	54	-15.62
4924.00	56.01	PK	V	1.79	57.80	74	-16.20
4924.00	33.31	AV	V	1.79	35.10	54	-18.90

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11n40							
Low Channel 2422MHz							
2389.91	64.55	PK	H	-2.93	61.62	74	-12.38
2389.91	45.96	AV	H	-2.93	43.03	54	-10.97
2387.45	62.17	PK	V	-2.93	59.24	74	-14.76
2387.45	43.59	AV	V	-2.93	40.66	54	-13.34
4844.00	51.31	PK	H	1.69	53.00	74	-21.00
4844.00	35.77	AV	H	1.69	37.46	54	-16.54
4844.00	47.15	PK	V	1.69	48.84	74	-25.16
4844.00	33.62	AV	V	1.69	35.31	54	-18.69
Middle Channel 2437MHz							
4874.00	51.28	PK	H	1.69	52.97	74	-21.03
4874.00	35.25	AV	H	1.69	36.94	54	-17.06
4874.00	47.10	PK	V	1.69	48.79	74	-25.21
4874.00	33.35	AV	V	1.69	35.04	54	-18.96
High Channel 2452MHz							
2483.51	73.23	PK	H	-3.10	70.13	74	-3.87
2483.51	53.09	AV	H	-3.10	49.99	54	-4.01
2484.62	67.82	PK	V	-3.10	64.72	74	-9.28
2484.62	46.62	AV	V	-3.10	43.52	54	-10.48
4904.00	52.78	PK	H	1.79	54.57	74	-19.43
4904.00	34.38	AV	H	1.79	36.17	54	-17.83
4904.00	47.19	PK	V	1.79	48.98	74	-25.02
4904.00	32.67	AV	V	1.79	34.46	54	-19.54

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

Test plots for Band Edge Measurements (Radiated):

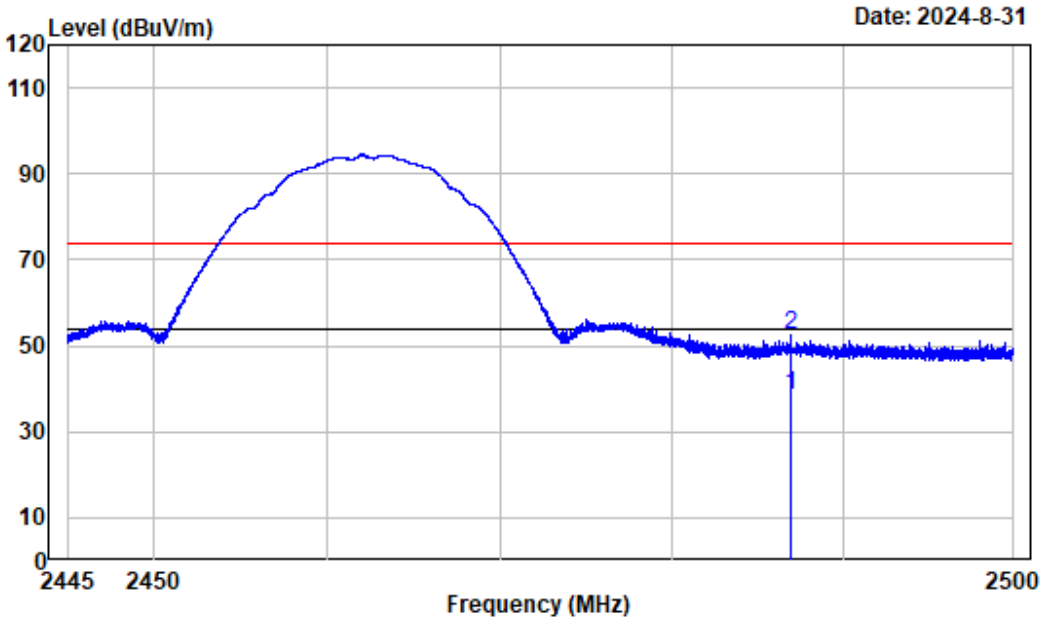
802.11b			
Test Channel:	**2462MHz**	**Ant. Polar. :**	**Horizontal**



Condition : Horizontal
Project No.: SZXX1240117-03999E-RF
Tester : Dylan.Yang
Note : B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2487.701	-3.18	47.12	43.94	54.00	-10.06	Average
2	2487.701	-3.18	57.03	53.85	74.00	-20.15	peak

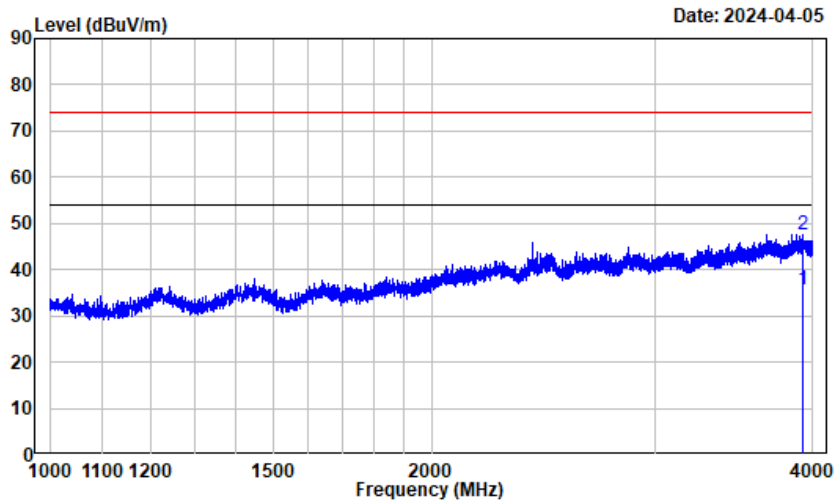
802.11b			
Test Channel:	**2462MHz**	**Ant. Polar. :**	**Vertical**



Condition : Vertical
Project No.: SZXX1240117-03999E-RF
Tester : Dylan.Yang
Note : B_2462

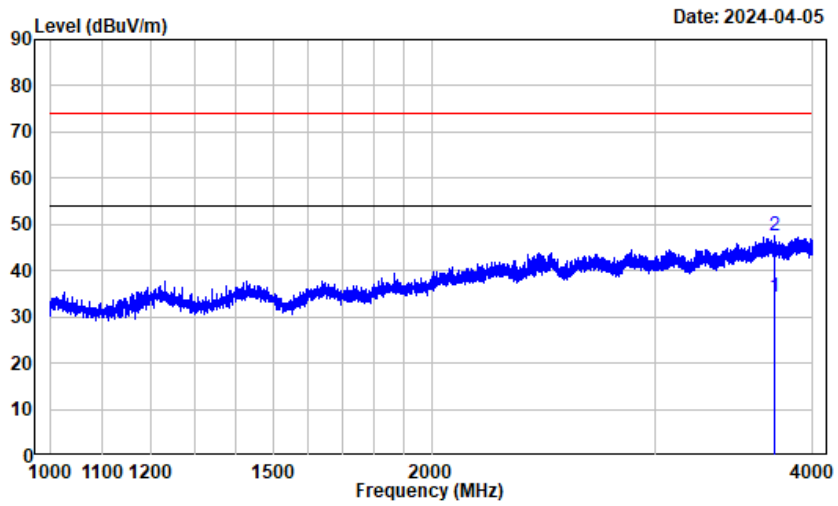
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2486.965	-3.17	41.58	38.41	54.00	-15.59	Average
2	2486.965	-3.17	55.76	52.59	74.00	-21.41	peak

Listed with the worst harmonic margin test plot:

Horizontal	
1-4GHz	 Condition : Horizontal Project No.: SZXX1240117-03999E Tester : Dylan Note : 802.11B_2462 Freq Factor Read Level Level Limit Line Over Limit Remark MHz dB/m dBuV dBuV/m dBuV/m dB 1 3928.000 -0.32 35.87 35.55 74.00 -38.45 average 2 3928.000 -0.32 47.83 47.51 74.00 -26.49 peak

Vertical

1-4GHz

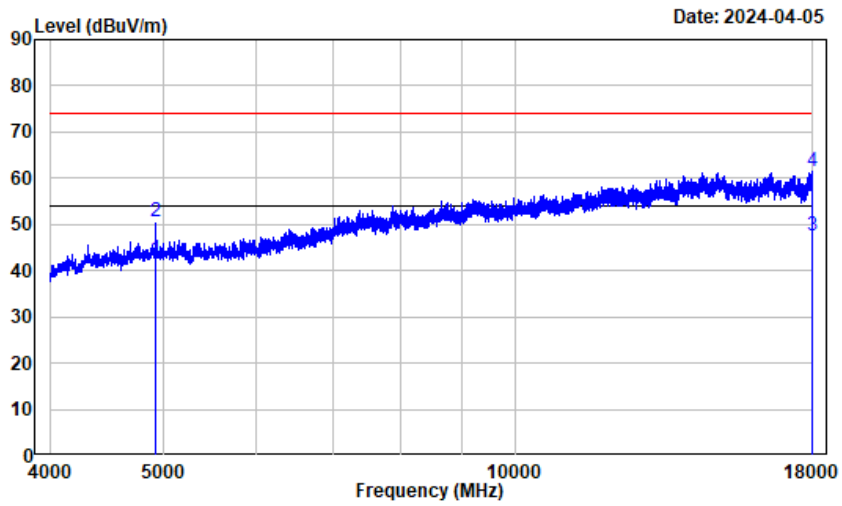


Condition : Vertical
Project No.: SZXX1240117-03999E
Tester : Dylan
Note : 802.11B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3736.750	-0.97	35.41	34.44	54.00	-19.56	Average
2	3736.750	-0.97	48.61	47.64	74.00	-26.36	Peak

Horizontal

4-18GHz

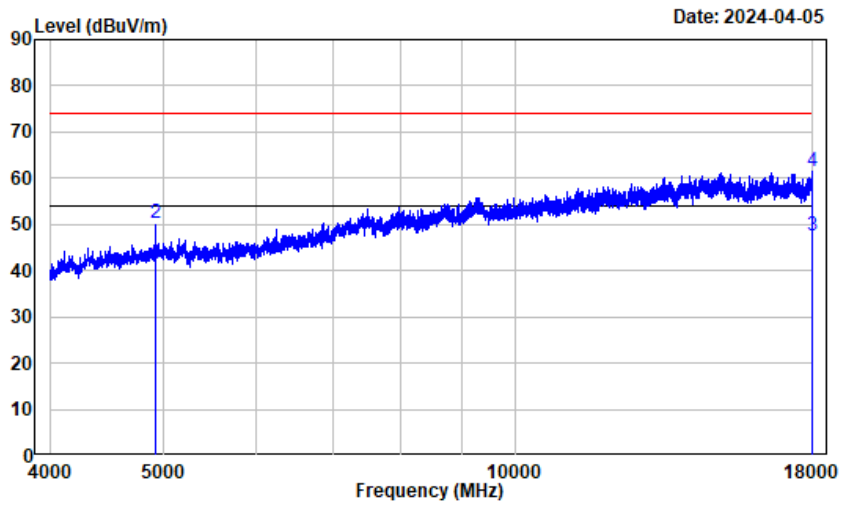


Condition : Horizontal
Project No.: SZXX1240117-03999E
Tester : Dylan
Note : 802.11B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4924.000	2.63	39.73	42.36	54.00	-11.64	Average
2	4924.000	2.63	47.94	50.57	74.00	-23.43	Peak
3	17998.250	24.61	22.89	47.50	54.00	-6.50	average
4	17998.250	24.61	36.82	61.43	74.00	-12.57	peak

Vertical

4-18GHz

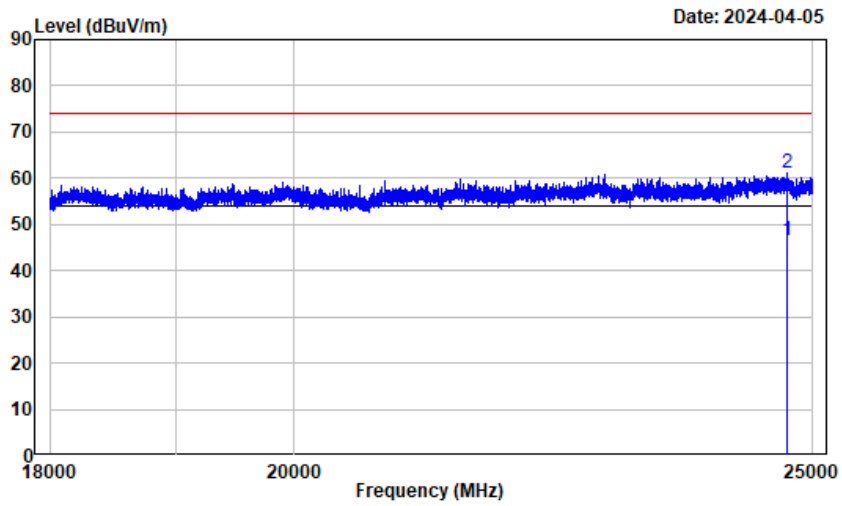


Condition : Vertical
Project No.: SZXX1240117-03999E
Tester : Dylan
Note : 802.11B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4924.000	2.63	38.64	41.27	54.00	-12.73	Average
2	4924.000	2.63	47.63	50.26	74.00	-23.74	Peak
3	17980.750	24.48	23.18	47.66	54.00	-6.34	average
4	17980.750	24.48	36.85	61.33	74.00	-12.67	peak

Horizontal

18-25GHz

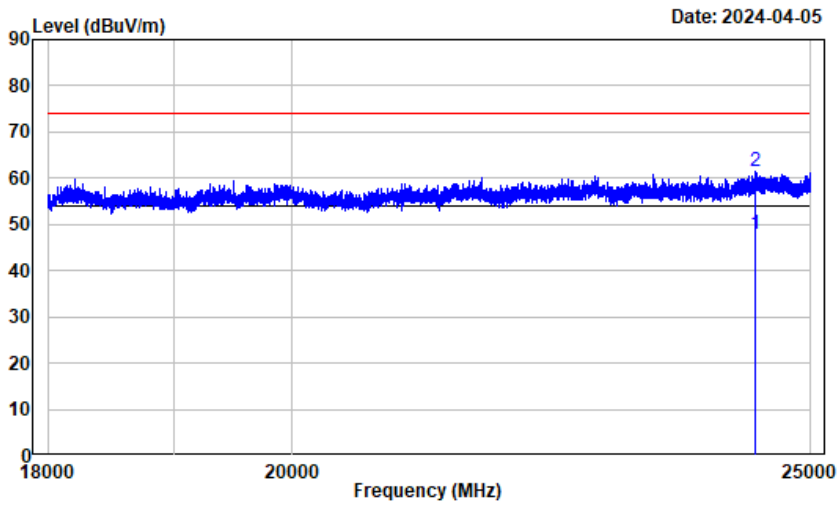


Condition : Horizontal
Project No.: SZXX1240117-03999E
Tester : Dylan
Note : 802.11B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	24728.750	18.71	27.96	46.67	54.00	-7.33	Average
2	24728.750	18.71	42.35	61.06	74.00	-12.94	peak

Vertical

18-25GHz



Condition : Vertical
Project No.: SZXX1240117-03999E
Tester : Dylan
Note : 802.11B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	24412.000	18.79	28.93	47.72	54.00	-6.28	Average
2	24412.000	18.79	42.54	61.33	74.00	-12.67	peak

ANT2
1-25 GHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11b							
Low Channel 2412MHz							
2383.57	55.02	PK	H	-2.93	52.09	74	-21.91
2383.57	40.27	AV	H	-2.93	37.34	54	-16.66
2384.64	54.86	PK	V	-2.93	51.93	74	-22.07
2384.64	40.11	AV	V	-2.93	37.18	54	-16.82
4824.00	47.59	PK	H	2.45	50.04	74	-23.96
4824.00	33.42	AV	H	2.45	35.87	54	-18.13
4824.00	47.05	PK	V	2.45	49.50	74	-24.50
4824.00	33.04	AV	V	2.45	35.49	54	-18.51
Middle Channel 2437MHz							
4874.00	47.23	PK	H	2.56	49.79	74	-24.21
4874.00	32.95	AV	H	2.56	35.51	54	-18.49
4874.00	46.78	PK	V	2.56	49.34	74	-24.66
4874.00	32.64	AV	V	2.56	35.20	54	-18.80
High Channel 2462MHz							
2487.542	58.41	PK	H	-3.18	55.23	74	-18.77
2487.542	48.97	AV	H	-3.18	45.79	54	-8.21
2487.426	54.46	PK	V	-3.17	51.29	74	-22.71
2487.426	43.21	AV	V	-3.17	40.04	54	-13.96
4924.00	47.01	PK	H	2.63	49.64	74	-24.36
4924.00	32.36	AV	H	2.63	34.99	54	-19.01
4924.00	46.64	PK	V	2.63	49.27	74	-24.73
4924.00	31.93	AV	V	2.63	34.56	54	-19.44

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11g							
Low Channel 2412MHz							
2386.12	55.38	PK	H	-2.93	52.45	74	-21.55
2386.12	40.19	AV	H	-2.93	37.26	54	-16.74
2385.77	55.15	PK	V	-2.93	52.22	74	-21.78
2385.77	40.06	AV	V	-2.93	37.13	54	-16.87
4824.00	47.19	PK	H	2.45	49.64	74	-24.36
4824.00	31.52	AV	H	2.45	33.97	54	-20.03
4824.00	46.95	PK	V	2.45	49.40	74	-24.60
4824.00	31.33	AV	V	2.45	33.78	54	-20.22
Middle Channel 2437MHz							
4874.00	46.94	PK	H	2.56	49.50	74	-24.50
4874.00	31.49	AV	H	2.56	34.05	54	-19.95
4874.00	46.78	PK	V	2.56	49.34	74	-24.66
4874.00	31.36	AV	V	2.56	33.92	54	-20.08
High Channel 2462MHz							
2483.60	56.29	PK	H	-3.17	53.12	74	-20.88
2483.60	41.46	AV	H	-3.17	38.29	54	-15.71
2483.89	55.97	PK	V	-3.17	52.80	74	-21.20
2483.89	41.23	AV	V	-3.17	38.06	54	-15.94
4924.00	47.44	PK	H	2.63	50.07	74	-23.93
4924.00	31.67	AV	H	2.63	34.30	54	-19.70
4924.00	47.23	PK	V	2.63	49.86	74	-24.14
4924.00	31.51	AV	V	2.63	34.14	54	-19.86

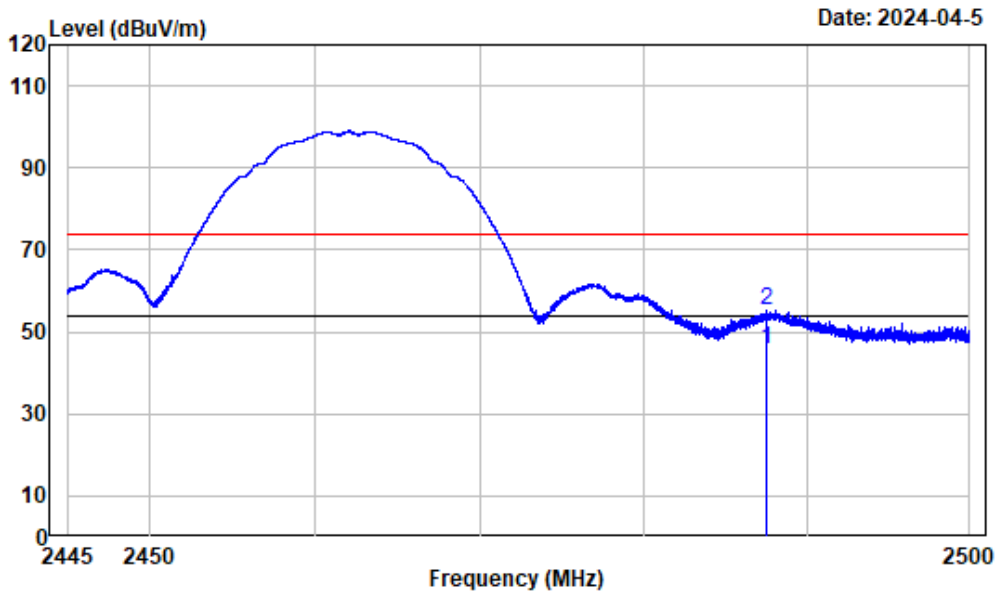
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11n20							
Low Channel 2412MHz							
2384.73	55.26	PK	H	-2.93	52.33	74	-21.67
2384.73	40.14	AV	H	-2.93	37.21	54	-16.79
2383.24	55.07	PK	V	-2.93	52.14	74	-21.86
2383.24	39.93	AV	V	-2.93	37.00	54	-17.00
4824.00	47.02	PK	H	2.45	49.47	74	-24.53
4824.00	31.46	AV	H	2.45	33.91	54	-20.09
4824.00	46.85	PK	V	2.45	49.30	74	-24.70
4824.00	31.34	AV	V	2.45	33.79	54	-20.21
Middle Channel 2437MHz							
4874.00	46.67	PK	H	2.56	49.23	74	-24.77
4874.00	31.35	AV	H	2.56	33.91	54	-20.09
4874.00	46.49	PK	V	2.56	49.05	74	-24.95
4874.00	31.24	AV	V	2.56	33.80	54	-20.20
High Channel 2462MHz							
2483.71	56.23	PK	H	-3.17	53.06	74	-20.94
2483.71	41.39	AV	H	-3.17	38.22	54	-15.78
2483.58	55.94	PK	V	-3.17	52.77	74	-21.23
2483.58	41.16	AV	V	-3.17	37.99	54	-16.01
4924.00	47.25	PK	H	2.63	49.88	74	-24.12
4924.00	31.59	AV	H	2.63	34.22	54	-19.78
4924.00	47.07	PK	V	2.63	49.70	74	-24.30
4924.00	31.41	AV	V	2.63	34.04	54	-19.96

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
802.11n40							
Low Channel 2422MHz							
2384.04	55.45	PK	H	-2.93	52.52	74	-21.48
2384.04	40.16	AV	H	-2.93	37.23	54	-16.77
2383.35	55.27	PK	V	-2.93	52.34	74	-21.66
2383.35	40.01	AV	V	-2.93	37.08	54	-16.92
4844.00	47.10	PK	H	2.45	49.55	74	-24.45
4844.00	31.45	AV	H	2.45	33.90	54	-20.10
4844.00	46.91	PK	V	2.45	49.36	74	-24.64
4844.00	31.29	AV	V	2.45	33.74	54	-20.26
Middle Channel 2437MHz							
4874.00	47.27	PK	H	2.56	49.83	74	-24.17
4874.00	31.56	AV	H	2.56	34.12	54	-19.88
4874.00	47.08	PK	V	2.56	49.64	74	-24.36
4874.00	31.40	AV	V	2.56	33.96	54	-20.04
High Channel 2452MHz							
2484.28	56.42	PK	H	-3.17	53.25	74	-20.75
2484.28	42.36	AV	H	-3.17	39.19	54	-14.81
2484.05	56.17	PK	V	-3.17	53.00	74	-21.00
2484.05	42.09	AV	V	-3.17	38.92	54	-15.08
4904.00	47.39	PK	H	2.64	50.03	74	-23.97
4904.00	31.68	AV	H	2.64	34.32	54	-19.68
4904.00	47.20	PK	V	2.64	49.84	74	-24.16
4904.00	31.52	AV	V	2.64	34.16	54	-19.84

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

Test plots for Band Edge Measurements (Radiated):

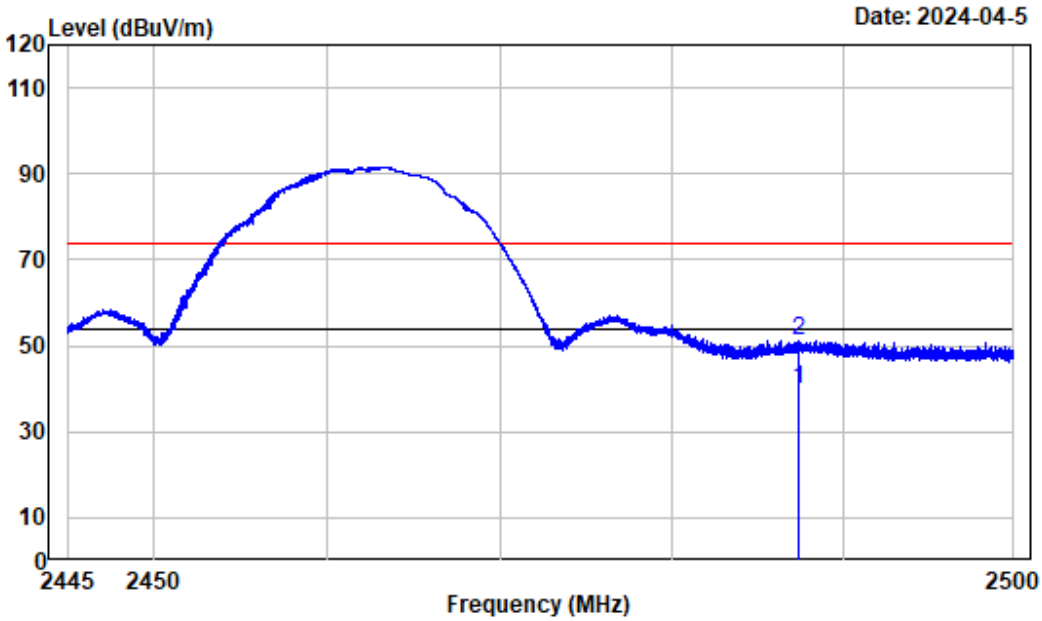
802.11b			
Test Channel:	**2462MHz**	**Ant. Polar. :**	**Horizontal**



Condition : Horizontal
Project No.: SZXX1240117-03999E-RF
Tester : Dylan.Yang
Note : B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2487.542	-3.18	48.97	45.79	54.00	-8.21	Average
2	2487.542	-3.18	58.41	55.23	74.00	-18.77	peak

802.11b			
Test Channel:	**2462MHz**	**Ant. Polar. :**	**Vertical**



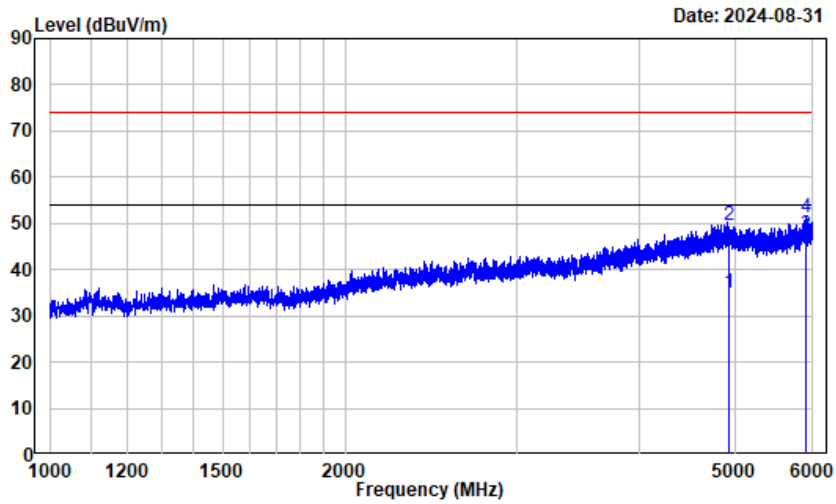
Condition : Vertical
Project No.: SZXX1240117-03999E-RF
Tester : Dylan.Yang
Note : B_2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2487.426	-3.17	43.21	40.04	54.00	-13.96	Average
2	2487.426	-3.17	54.46	51.29	74.00	-22.71	Peak

Listed with the worst harmonic margin test plot:

Horizontal

1-6GHz

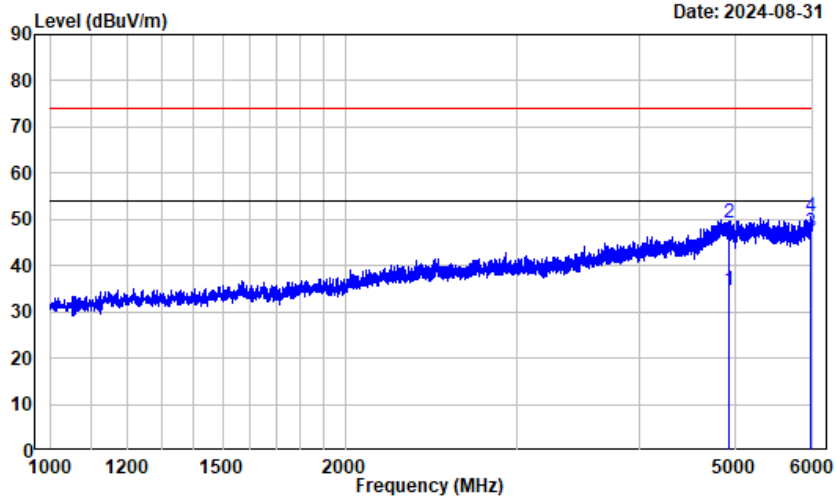


Condition : Horizontal
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4924.000	2.63	32.36	34.99	54.00	-19.01	Average
2	4924.000	2.63	47.01	49.64	74.00	-24.36	Peak
3	5906.250	3.84	43.61	47.45	54.00	-6.55	Average
4	5906.250	3.84	47.38	51.22	74.00	-22.78	Peak

Vertical

1-6GHz

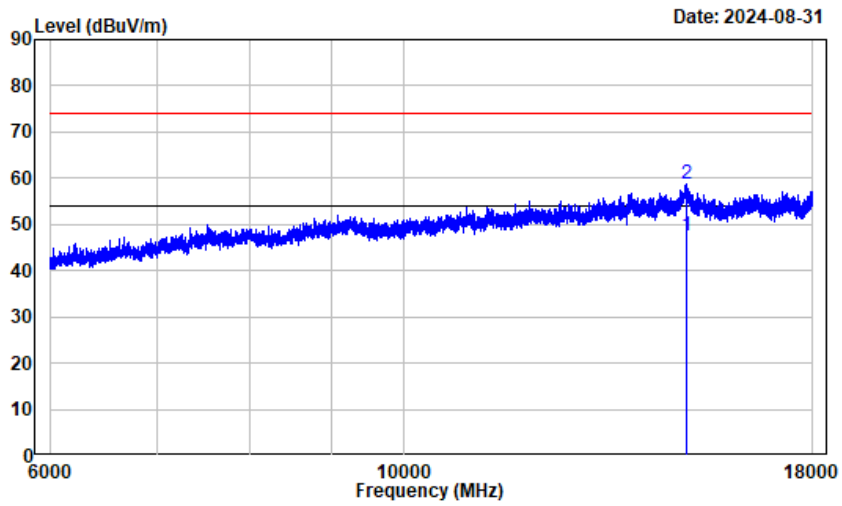


Condition : Vertical
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4924.000	2.63	31.93	34.56	54.00	-19.44	Average
2	4924.000	2.63	46.64	49.27	74.00	-24.73	Peak
3	5982.500	3.65	43.67	47.32	54.00	-6.68	Average
4	5982.500	3.65	47.10	50.75	74.00	-23.25	Peak

Horizontal

6-18GHz

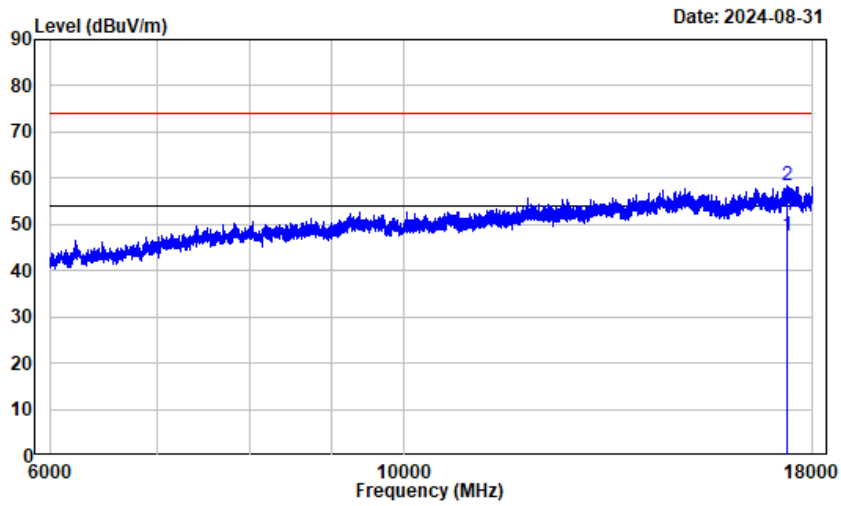


Condition : Horizontal
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	15019.500	16.22	31.46	47.68	54.00	-6.32	Average
2	15019.500	16.22	42.41	58.63	74.00	-15.37	Peak

Vertical

6-18GHz

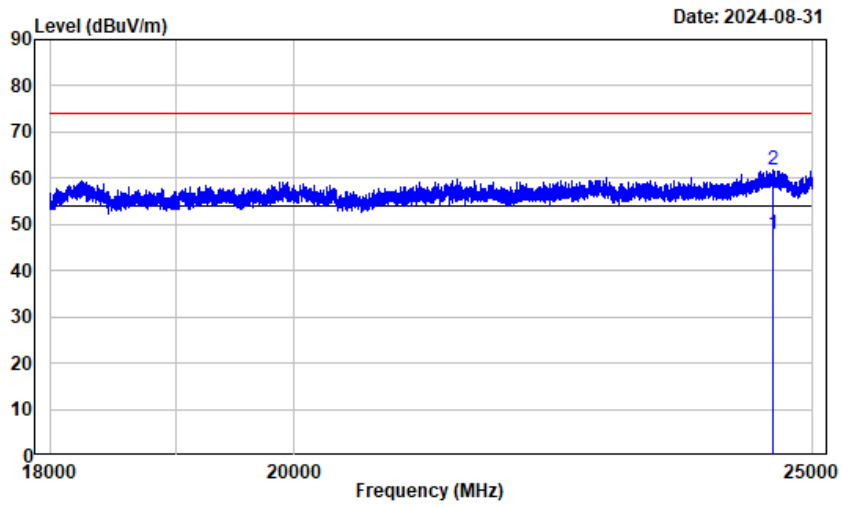


Condition : Vertical
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17332.500	19.51	28.05	47.56	54.00	-6.44	Average
2	17332.500	19.51	38.96	58.47	74.00	-15.53	Peak

Horizontal

18-25GHz

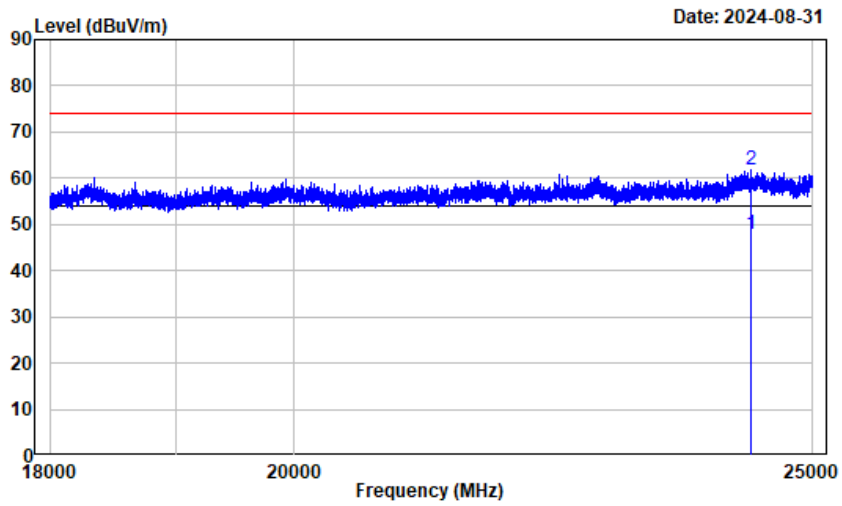


Condition : Horizontal
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	24577.380	18.90	29.03	47.93	54.00	-6.07	Average
2	24577.380	18.90	43.06	61.96	74.00	-12.04	Peak

Vertical

18-25GHz



Condition : Vertical
Project No.: SZXX1240117-03999E-RF
Tester : Zenos Qiao
Note : 2.4GWiFi-b-2462

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	24340.250	18.62	29.18	47.80	54.00	-6.20	Average
2	24340.250	18.62	43.13	61.75	74.00	-12.25	Peak

FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

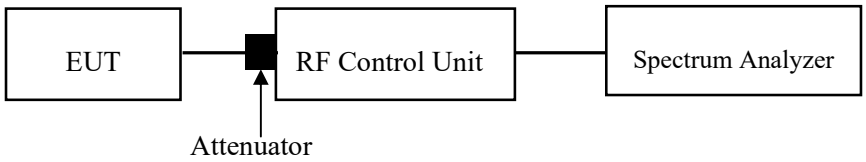
Applicable Standard

According to FCC §15.247(a) (2)
Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.8.1 & Clause 6.9.3

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-09-06.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

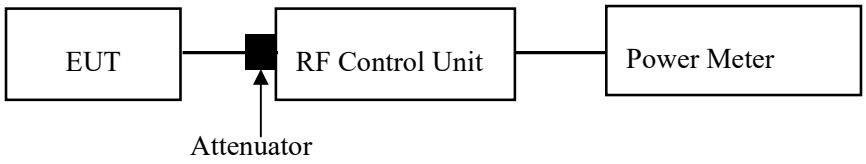
Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.9.1.3 and Clause 11.9.2.3.2

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-09-06.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

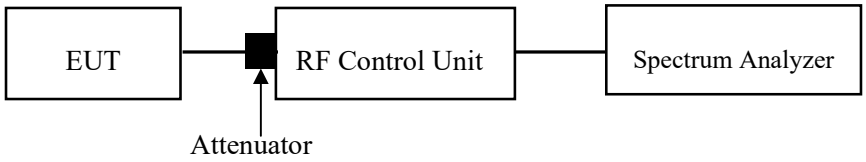
Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.11

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-09-06.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.10.2

Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.

1. Set the RBW to: 3kHz≤ RBW≤100 kHz.
2. Set the VBW ≥ 3×RBW.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Test Method: ANSI C63.10-2013 Clause 11.10.3 Method AVGPSD-1

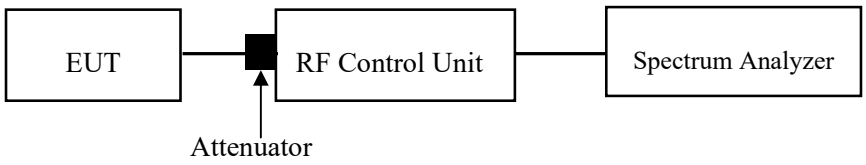
The following procedure may be used when the maximum (average) conducted output power was used to determine compliance to the fundamental output power limit. This is the baseline method for determining the maximum (average) conducted PSD level. If the instrument has a power averaging (rms) detector, then it must be used; otherwise, use the sample detector. The EUT must be configured to transmit continuously (D ⩾ 98%), or else sweep triggering/signal gating must be implemented to ensure that measurements are made only when the EUT is transmitting at its maximum power control level (no transmitter OFF time to be considered):

1. Set instrument center frequency to DTS channel center frequency.
2. Set span to at least 1.5 times the OBW.
3. Set the RBW to: 3kHz≤ RBW≤100 kHz.
4. Set the VBW ≥ 3×BW.
5. Detector = power averaging (rms) or sample detector (when rms not available)
6. Ensure that the number of measurement points in the sweep ⩾ [2 × span / RBW].
7. Sweep time = auto couple.
8. Employ trace averaging (rms) mode over a minimum of 100 traces.
9. Use the peak marker function to determine the maximum amplitude level.
10. If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

Test Method: ANSI C63.10-2013 Clause 11.10.5 Method AVGPSD-2

The following procedure is applicable when the EUT cannot be configured to transmit continuously (i.e., D < 98%), when sweep triggering/signal gating cannot be used to measure only when the EUT is transmitting at its maximum power control level, and when the transmission duty cycle is constant (i.e., duty cycle variations are less than ±2%):

1. Measure the duty cycle (D) of the transmitter output signal as described in 11.6.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. Set the RBW to: 3kHz≤ RBW≤100 kHz.
5. Set the VBW ≥ 3×BW.
6. Detector = power averaging (rms) or sample detector (when rms not available)
7. Ensure that the number of measurement points in the sweep ⩾ [2 × span / RBW].
8. Sweep time = auto couple.
9. Do not use sweep triggering; allow sweep to "free run."
10. Employ trace averaging (rms) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).



Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	55 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-09-06.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

EUT PHOTOGRAPHS

Please refer to the attachment SZXX1240117-03999E-RF External photo and SZXX1240117-03999E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment SZXX1240117-03999E-RFA Test Setup photo.

APPENDIX

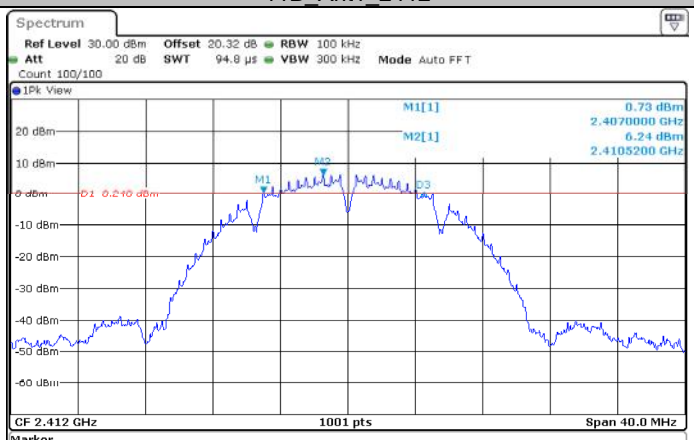
Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.52	0.5	PASS
	Ant2	2412	9.08	0.5	PASS
	Ant1	2437	9.08	0.5	PASS
	Ant2	2437	10.04	0.5	PASS
	Ant1	2462	9.08	0.5	PASS
	Ant2	2462	9.56	0.5	PASS
11G	Ant1	2412	15.32	0.5	PASS
	Ant2	2412	15.32	0.5	PASS
	Ant1	2437	15.32	0.5	PASS
	Ant2	2437	15.32	0.5	PASS
	Ant1	2462	15.68	0.5	PASS
	Ant2	2462	15.32	0.5	PASS
11N20SISO	Ant1	2412	16.28	0.5	PASS
	Ant2	2412	15.08	0.5	PASS
	Ant1	2437	14.16	0.5	PASS
	Ant2	2437	15.44	0.5	PASS
	Ant1	2462	15.44	0.5	PASS
	Ant2	2462	15.92	0.5	PASS
11N40SISO	Ant1	2422	28.88	0.5	PASS
	Ant2	2422	28.80	0.5	PASS
	Ant1	2437	28.80	0.5	PASS
	Ant2	2437	28.16	0.5	PASS
	Ant1	2452	26.80	0.5	PASS
	Ant2	2452	28.72	0.5	PASS

Test Graphs

11B_Ant1_2412



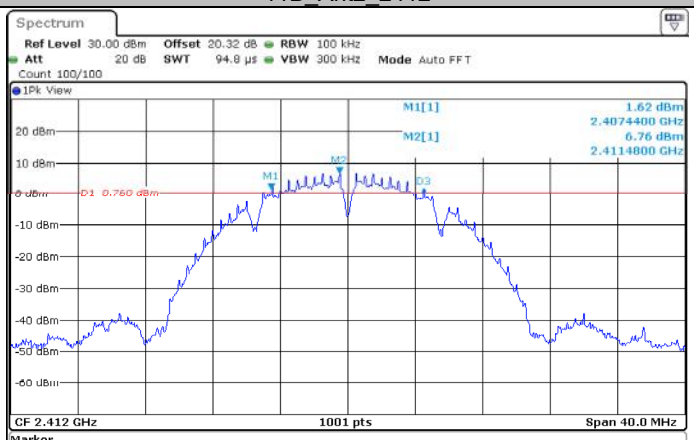
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.407 GHz	0.73 dBm		
M2		1	2.41052 GHz	6.24 dBm		
D3	M1	1	9.52 MHz	0.05 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 19:35:56

11B_Ant2_2412



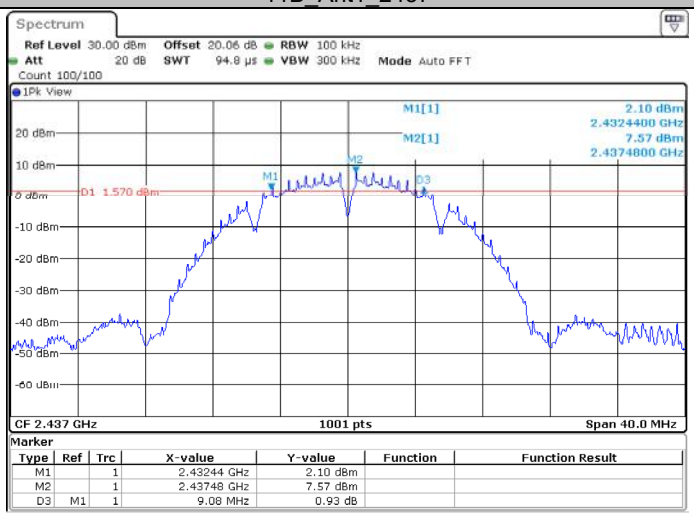
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40744 GHz	1.62 dBm		
M2		1	2.41148 GHz	6.76 dBm		
D3	M1	1	9.08 MHz	0.27 dB		

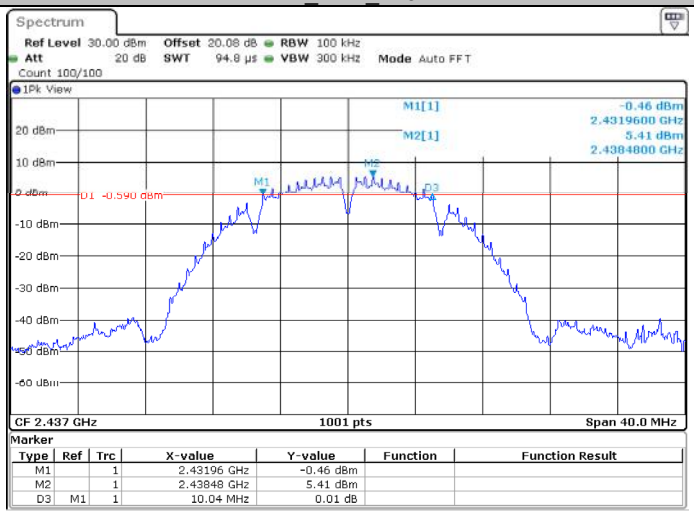
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 19:49:57

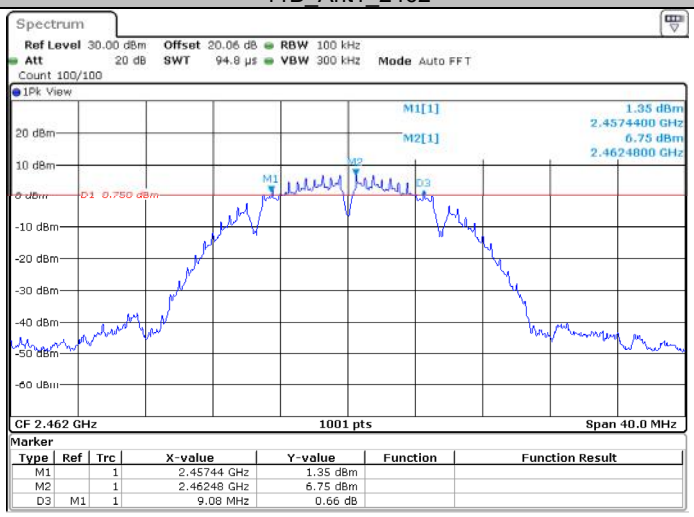
11B_Ant1_2437



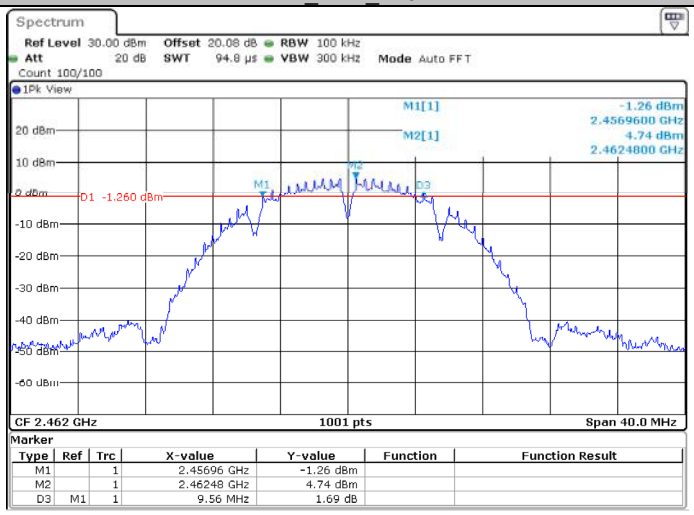
11B_Ant2_2437



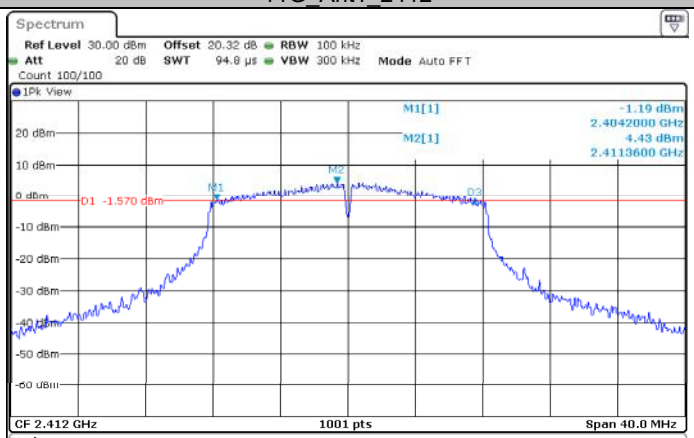
11B_Ant1_2462



11B_Ant2_2462



11G_Ant1_2412

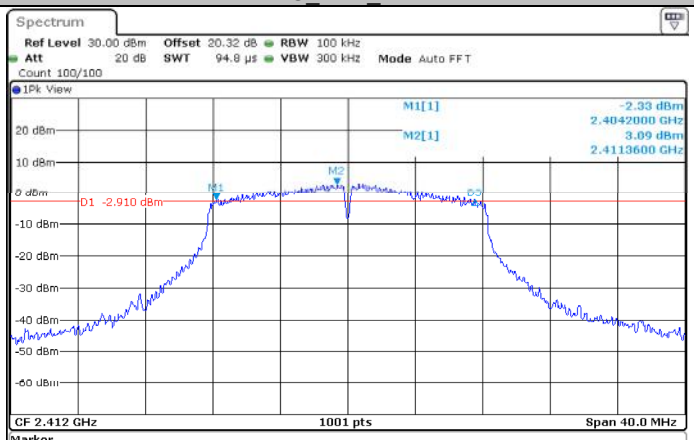


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4042 GHz	-1.19 dBm		
M2		1	2.41136 GHz	4.43 dBm		
D3	M1	1	15.32 MHz	0.13 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:57:03

11G_Ant2_2412

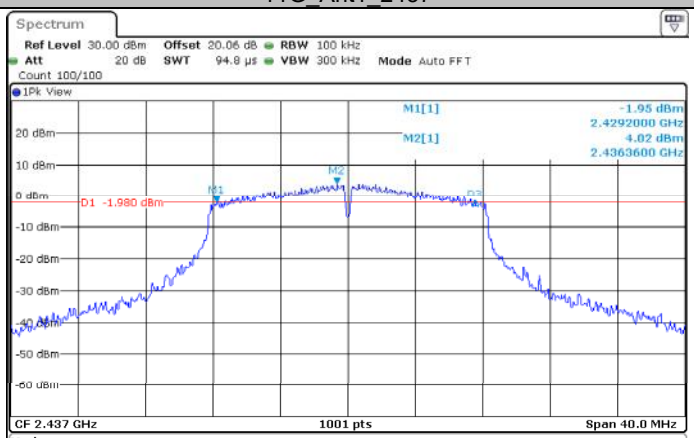


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4042 GHz	-2.33 dBm		
M2		1	2.41136 GHz	3.09 dBm		
D3	M1	1	15.32 MHz	-0.06 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:57:47

11G_Ant1_2437

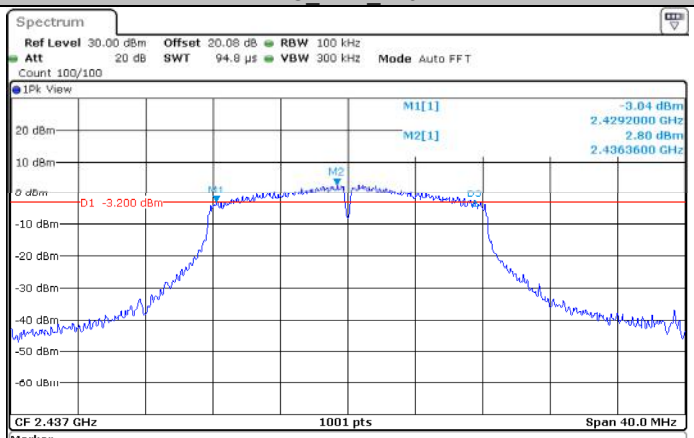


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4292 GHz	-1.95 dBm		
M2		1	2.43636 GHz	4.02 dBm		
D3	M1	1	15.32 MHz	0.50 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:58:47

11G_Ant2_2437

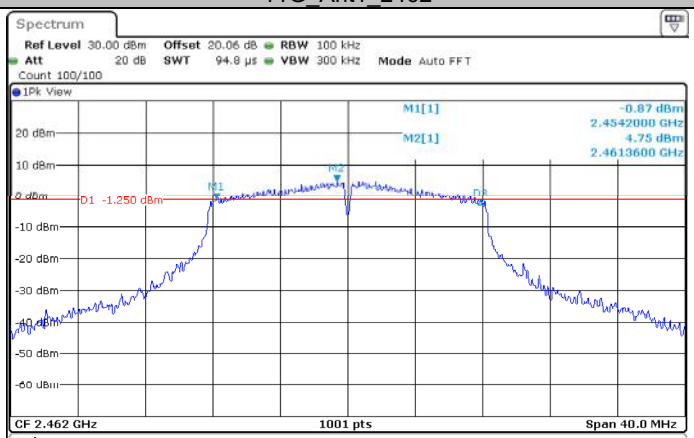


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4292 GHz	-3.04 dBm		
M2		1	2.43636 GHz	2.80 dBm		
D3	M1	1	15.32 MHz	0.43 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:59:31

11G_Ant1_2462

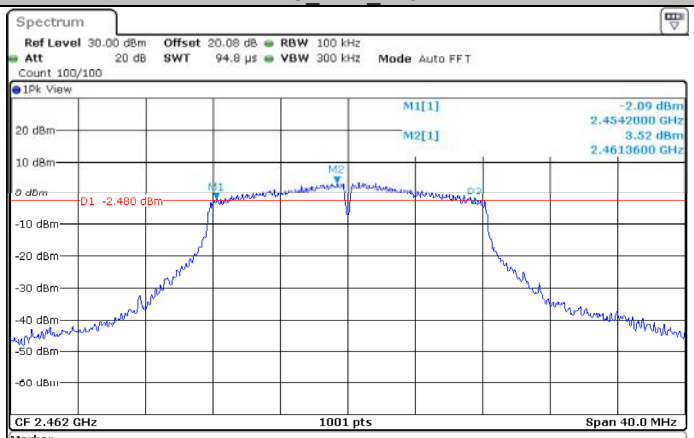


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4542 GHz	-0.87 dBm		
M2		1	2.46136 GHz	4.75 dBm		
D3	M1	1	15.68 MHz	-0.36 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:01:26

11G_Ant2_2462

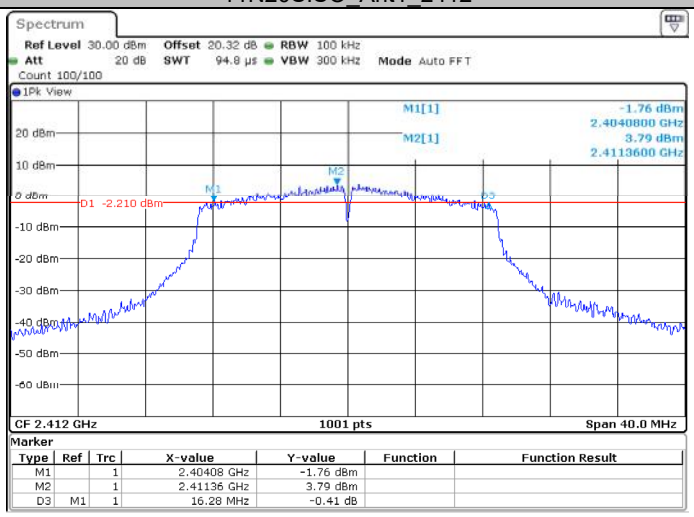


Marker

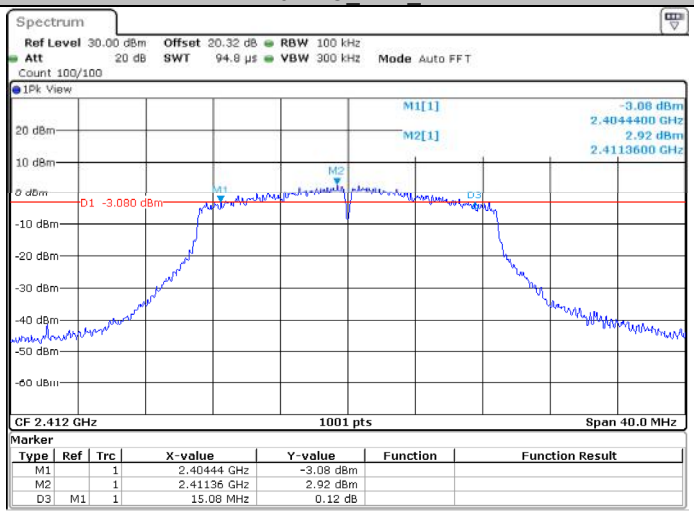
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4542 GHz	-2.09 dBm		
M2		1	2.46136 GHz	3.52 dBm		
D3	M1	1	15.32 MHz	0.30 dB		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:02:12

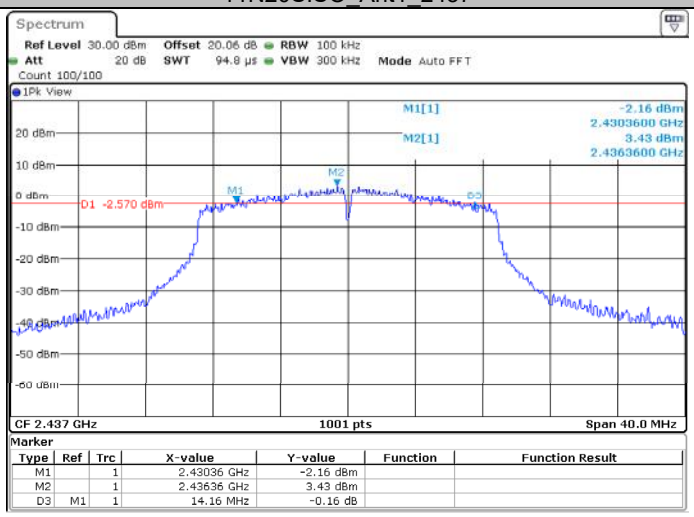
11N20SISO_Ant1_2412



11N20SISO_Ant2_2412

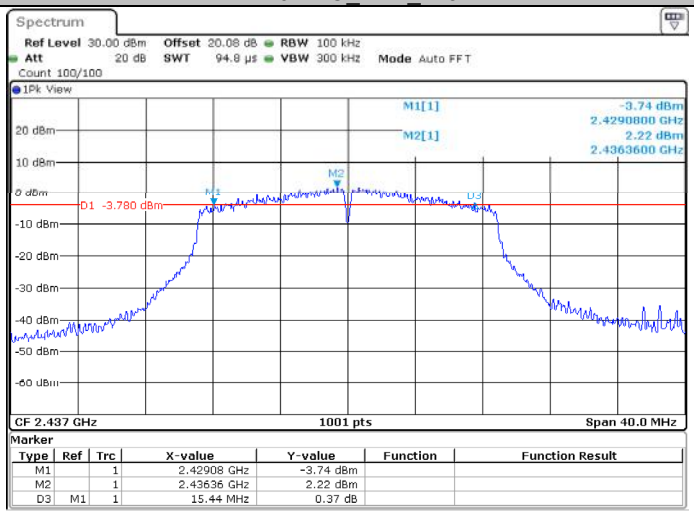


11N20SISO_Ant1_2437



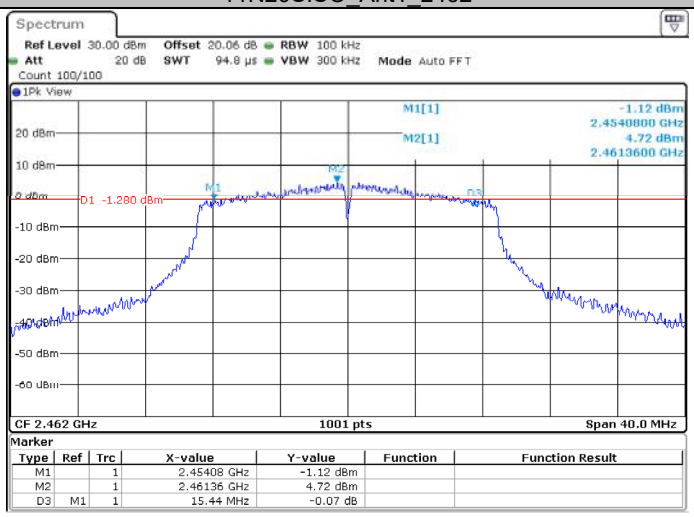
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:05:52

11N20SISO_Ant2_2437

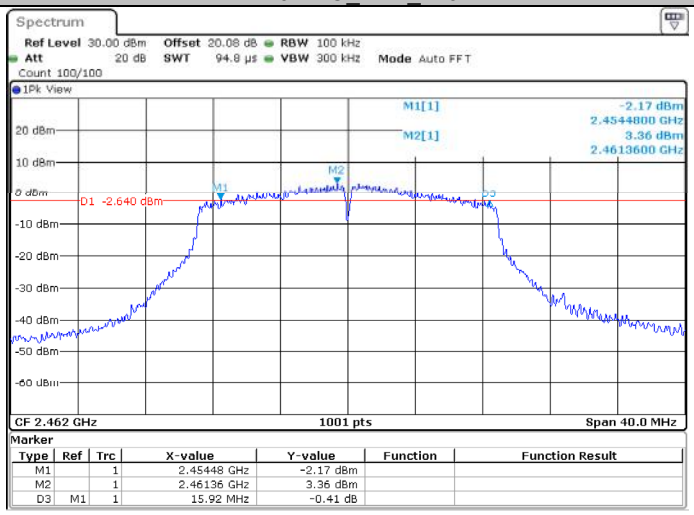


ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:07:58

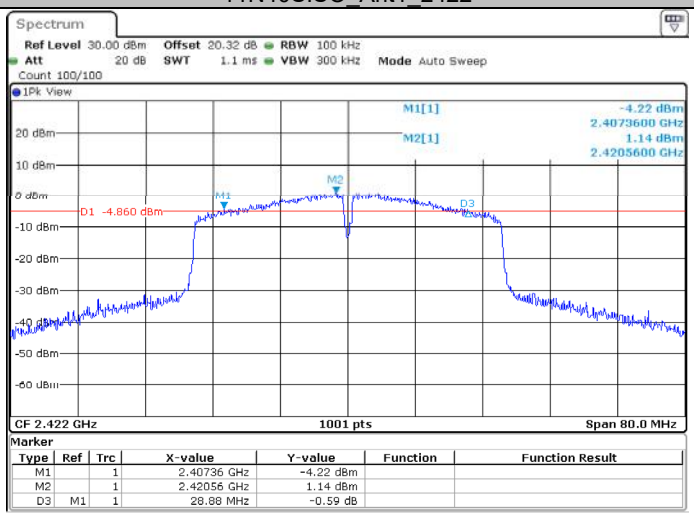
11N20SISO_Ant1_2462



11N20SISO_Ant2_2462



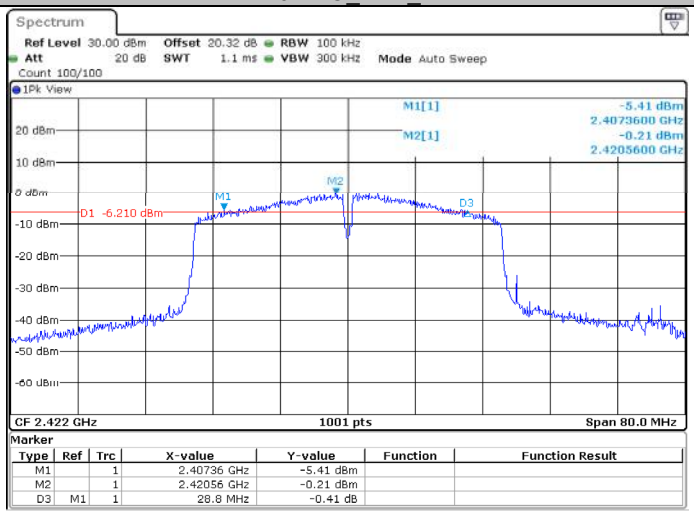
11N40SISO_Ant1_2422



ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:10:55

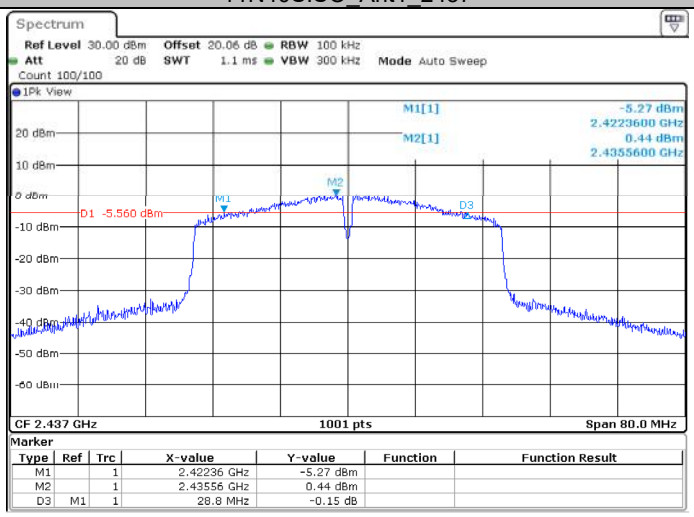
11N40SISO_Ant2_2422



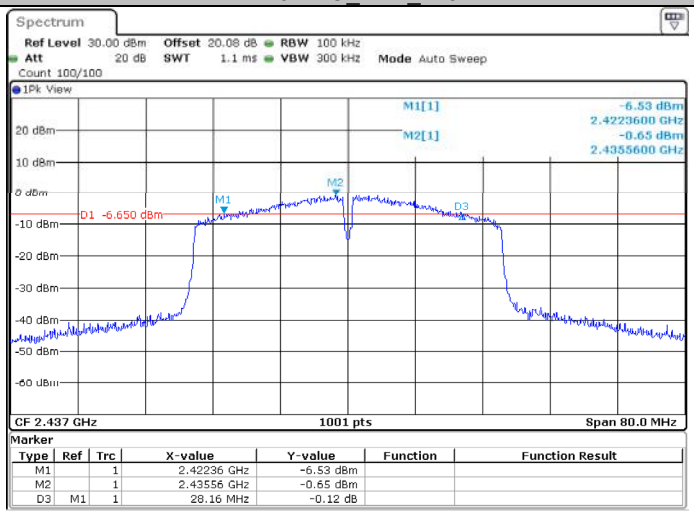
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:19:19

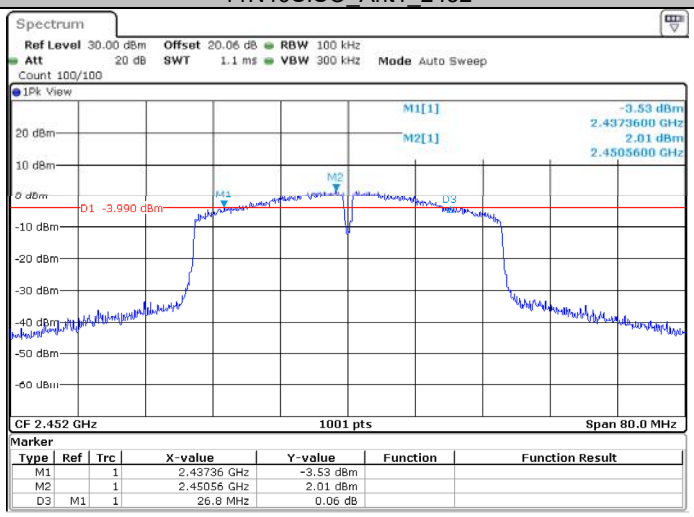
11N40SISO_Ant1_2437



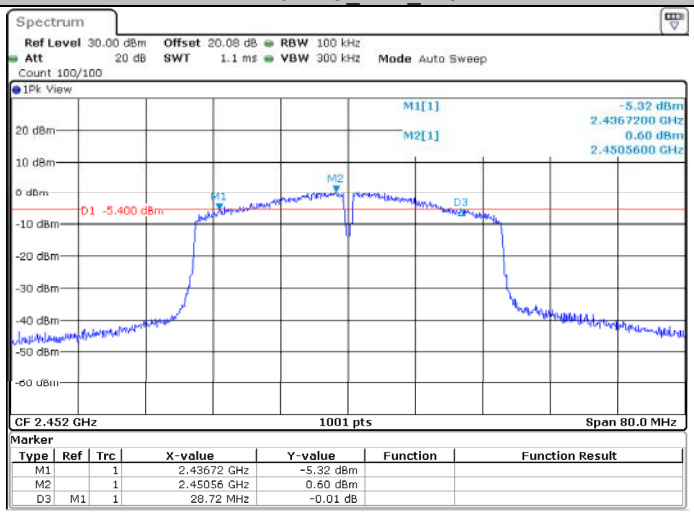
11N40SISO_Ant2_2437



11N40SISO_Ant1_2452



11N40SISO_Ant2_2452



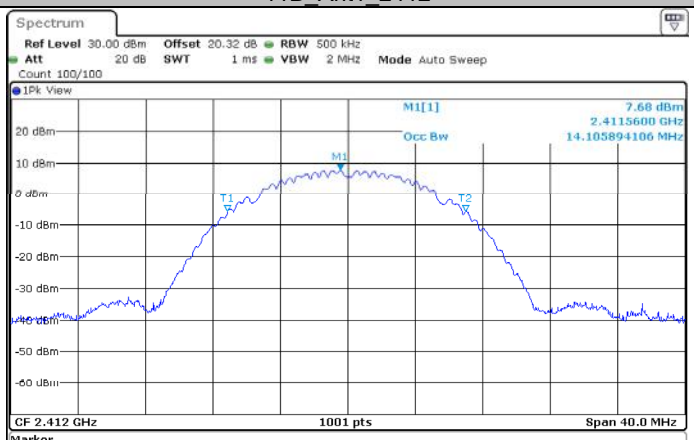
Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Channel	OCB [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.106	---	---
	Ant2	2412	14.106	---	---
	Ant1	2437	14.106	---	---
	Ant2	2437	14.106	---	---
	Ant1	2462	14.146	---	---
	Ant2	2462	14.146	---	---
11G	Ant1	2412	16.743	---	---
	Ant2	2412	16.743	---	---
	Ant1	2437	16.703	---	---
	Ant2	2437	16.703	---	---
	Ant1	2462	16.743	---	---
	Ant2	2462	16.703	---	---
11N20SISO	Ant1	2412	17.742	---	---
	Ant2	2412	17.702	---	---
	Ant1	2437	17.702	---	---
	Ant2	2437	17.702	---	---
	Ant1	2462	17.742	---	---
	Ant2	2462	17.742	---	---
11N40SISO	Ant1	2422	35.245	---	---
	Ant2	2422	35.165	---	---
	Ant1	2437	35.085	---	---
	Ant2	2437	35.085	---	---
	Ant1	2452	35.165	---	---
	Ant2	2452	35.085	---	---

Test Graphs

11B_Ant1_2412

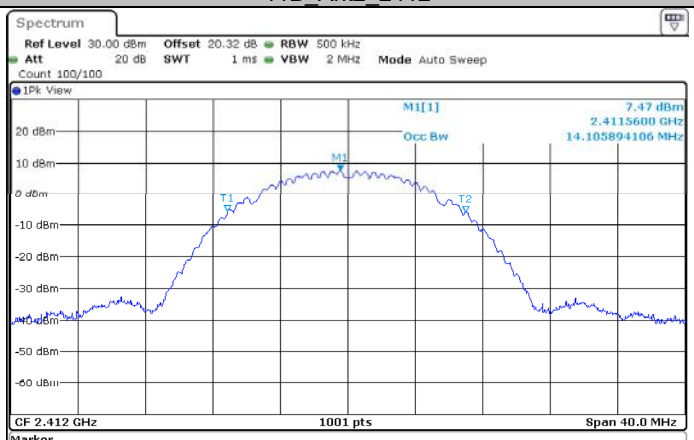


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41156 GHz	7.68 dBm		
T1		1	2.4048871 GHz	-5.67 dBm	Occ Bw	14.105894106 MHz
T2		1	2.418993 GHz	-5.82 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:36:01

11B_Ant2_2412

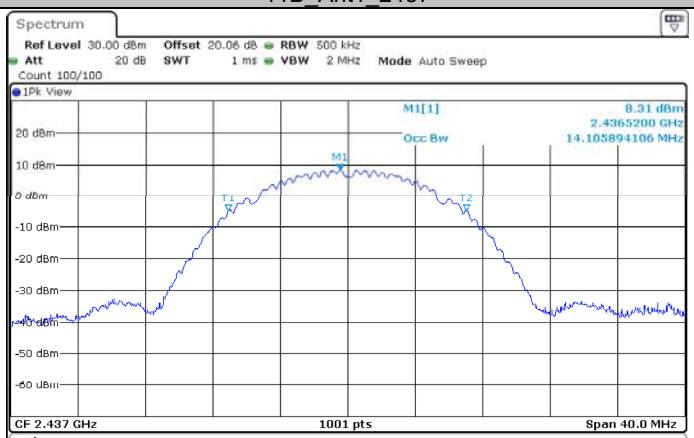


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41156 GHz	7.47 dBm		
T1		1	2.4048871 GHz	-5.73 dBm	Occ Bw	14.105894106 MHz
T2		1	2.418993 GHz	-6.04 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:50:03

11B_Ant1_2437

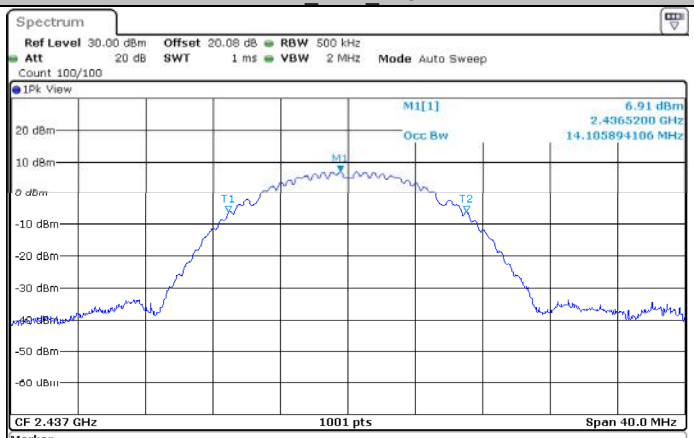


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43652 GHz	8.31 dBm		
T1		1	2.4299271 GHz	-4.98 dBm	Occ Bw	14.105894106 MHz
T2		1	2.444033 GHz	-4.99 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:51:41

11B_Ant2_2437

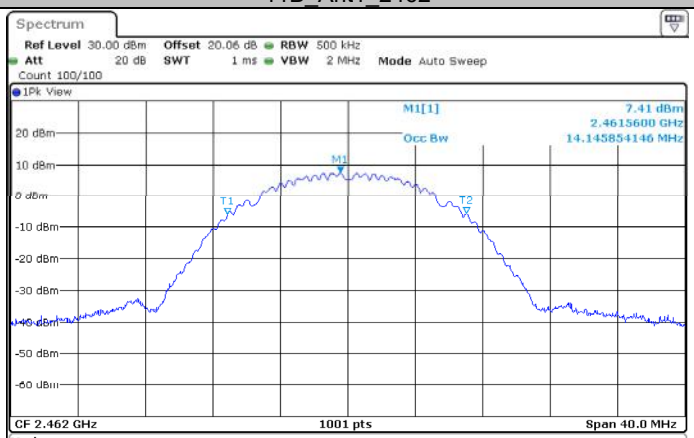


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43652 GHz	6.91 dBm		
T1		1	2.4299271 GHz	-6.35 dBm	Occ Bw	14.105894106 MHz
T2		1	2.444033 GHz	-6.34 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:52:35

11B_Ant1_2462

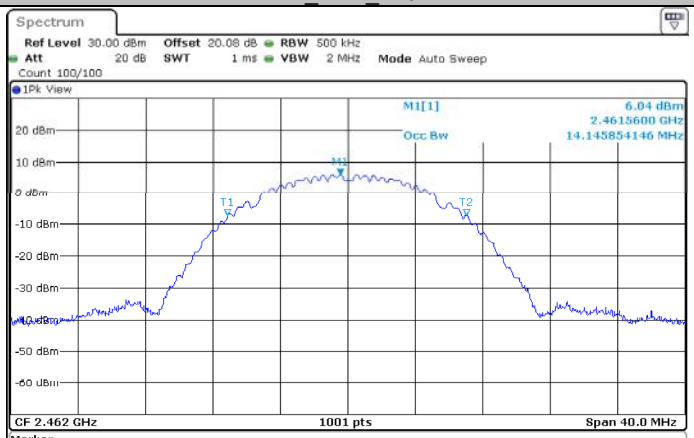


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46156 GHz	7.41 dBm		
T1		1	2.4548871 GHz	-5.86 dBm	Occ Bw	14.145854146 MHz
T2		1	2.469033 GHz	-5.82 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:55:10

11B_Ant2_2462

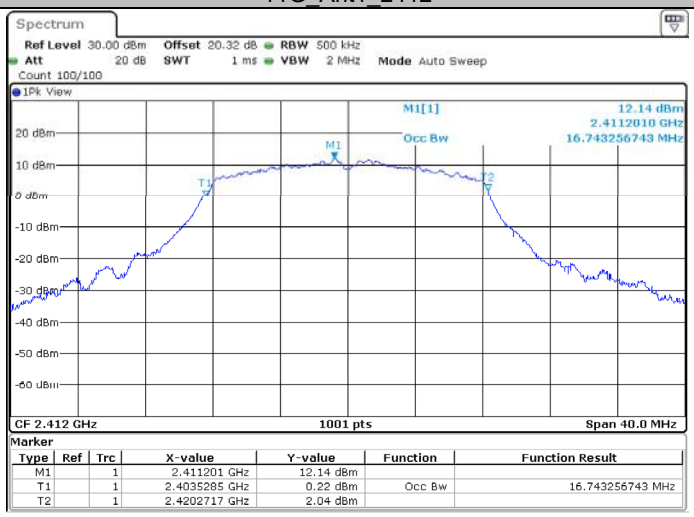


Marker

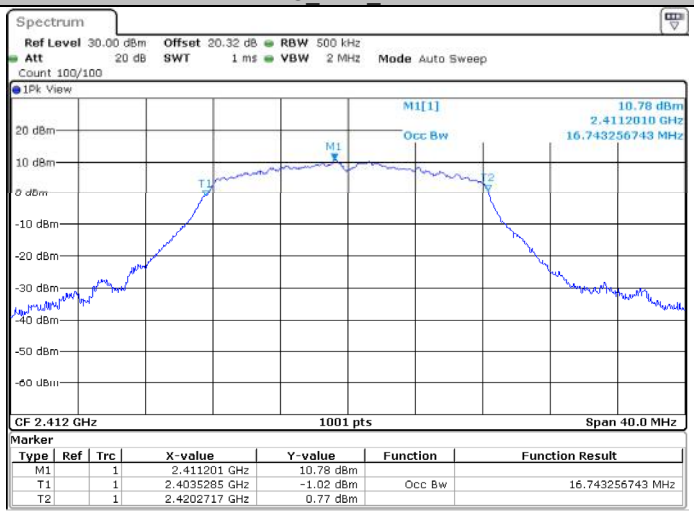
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46156 GHz	6.04 dBm		
T1		1	2.4548871 GHz	-7.29 dBm	Occ Bw	14.145854146 MHz
T2		1	2.469033 GHz	-7.25 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:55:53

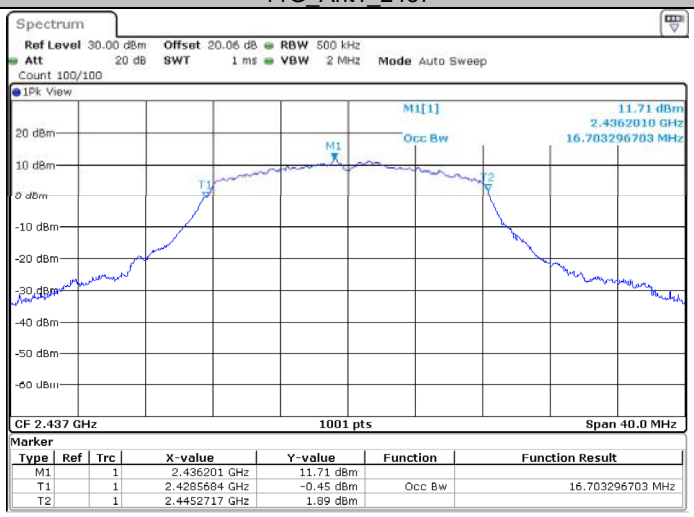
11G_Ant1_2412



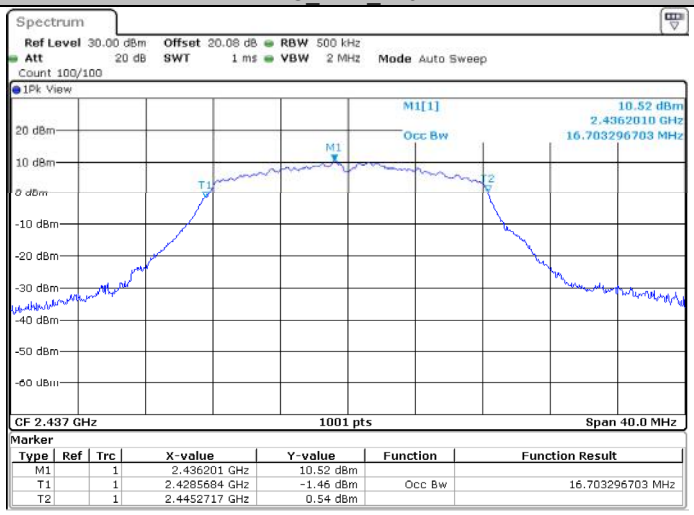
11G_Ant2_2412



11G_Ant1_2437



11G_Ant2_2437



11G_Ant1_2462

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.461201 GHz	12.49 dBm		
T1		1	2.4535285 GHz	0.56 dBm	Occ Bw	16.743256743 MHz
T2		1	2.4702717 GHz	2.27 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:01:32

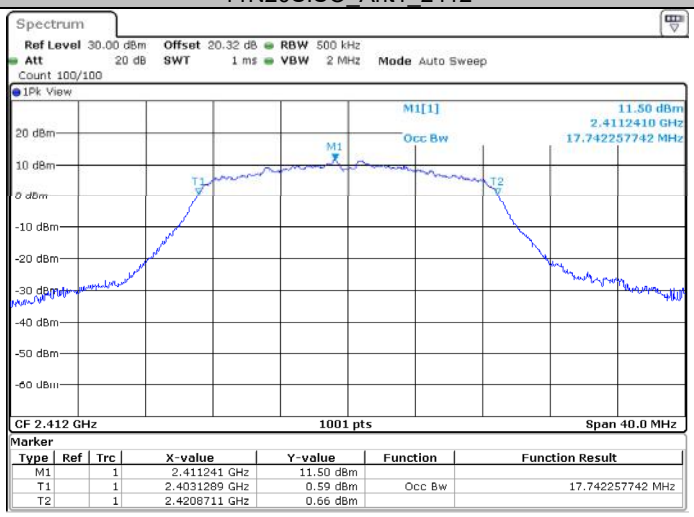
11G_Ant2_2462

Marker

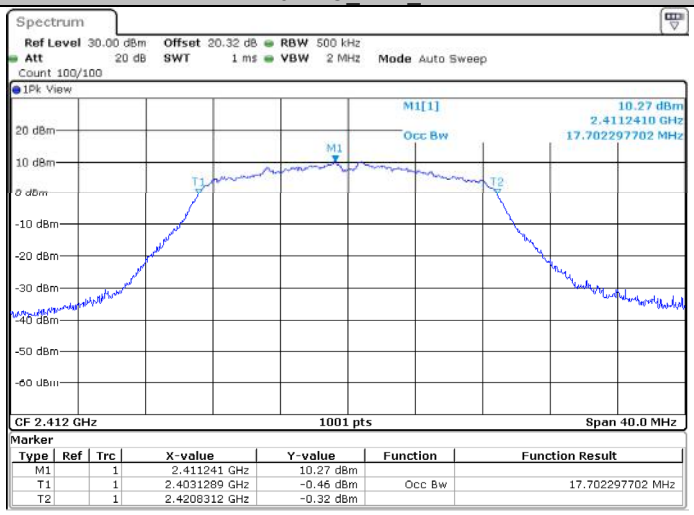
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.461241 GHz	11.22 dBm		
T1		1	2.4535684 GHz	-0.79 dBm	Occ Bw	16.703296703 MHz
T2		1	2.4702717 GHz	1.20 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:02:18

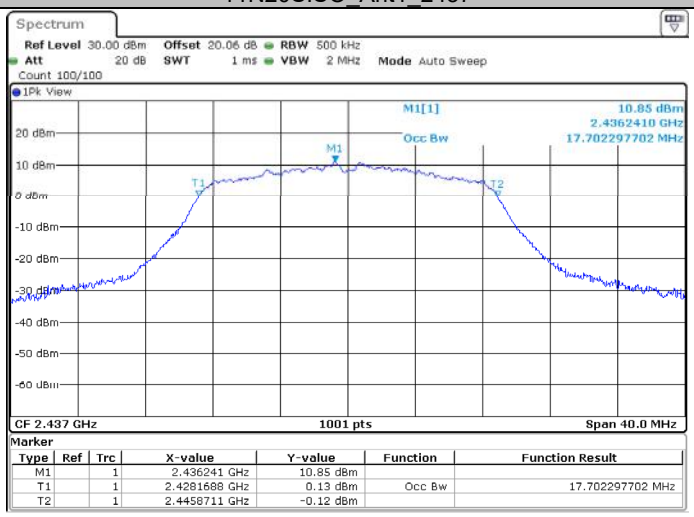
11N20SISO_Ant1_2412



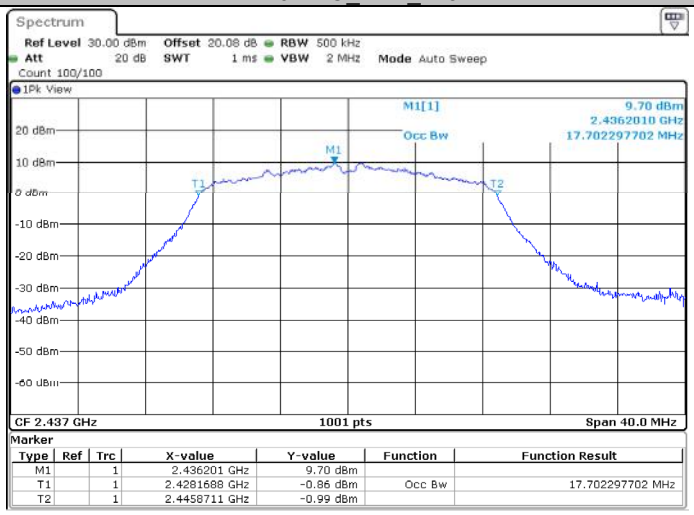
11N20SISO_Ant2_2412



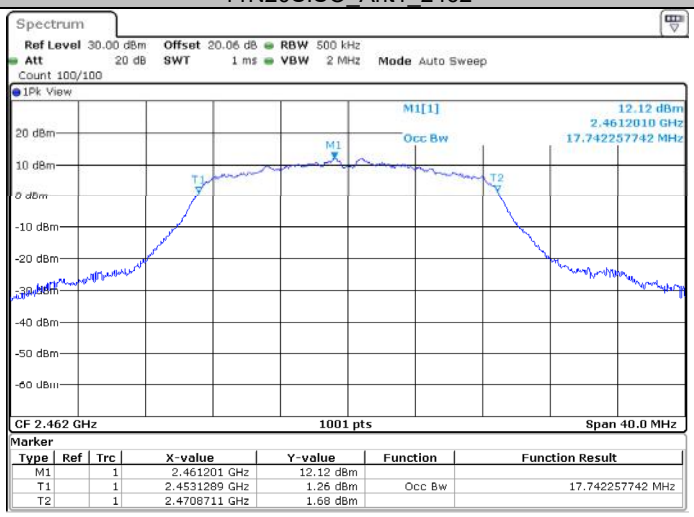
11N20SISO_Ant1_2437



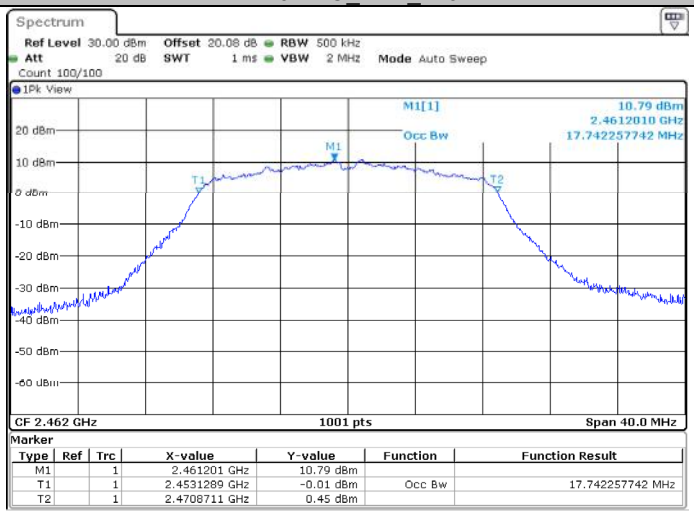
11N20SISO_Ant2_2437



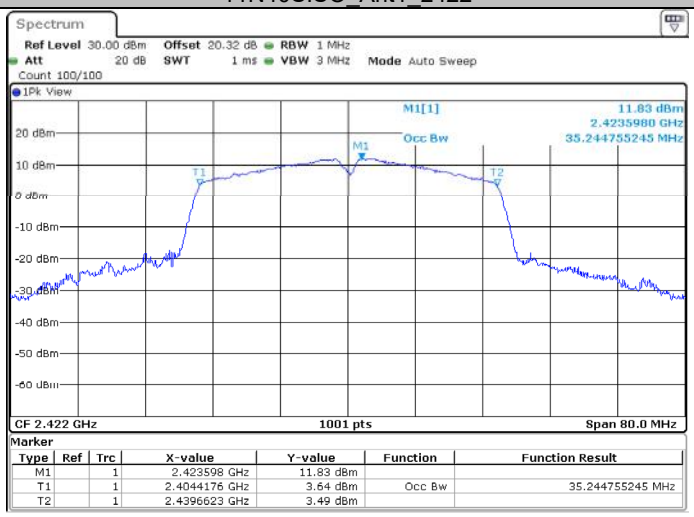
11N20SISO_Ant1_2462



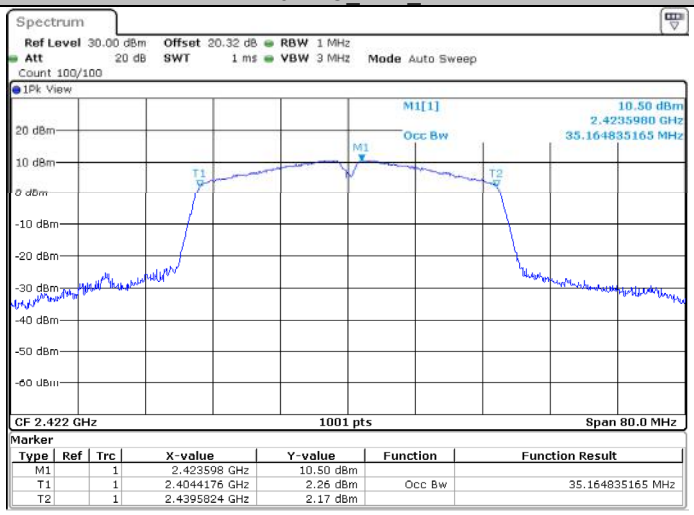
11N20SISO_Ant2_2462



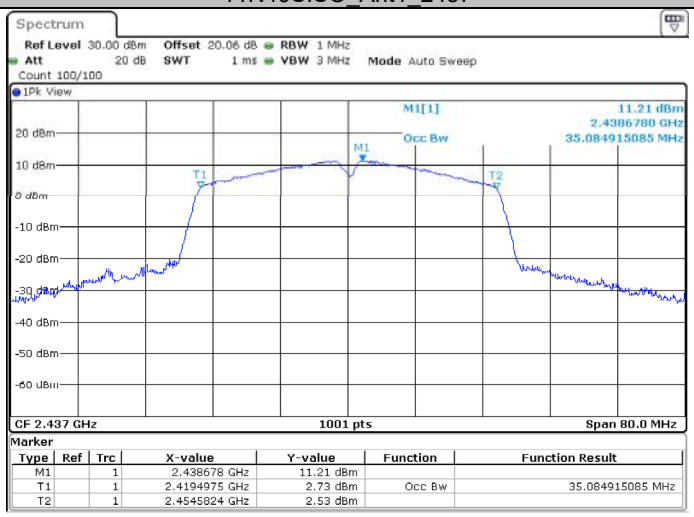
11N40SISO_Ant1_2422



11N40SISO_Ant2_2422



11N40SISO_Ant1_2437

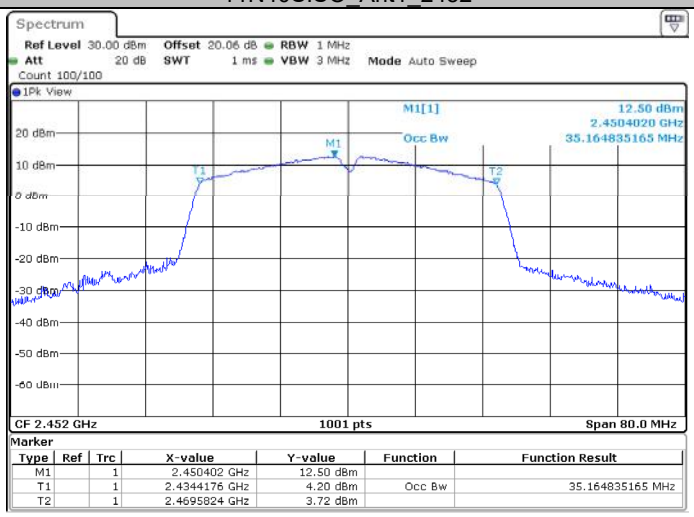


ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:20:50

11N40SISO_Ant2_2437

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:22:02

11N40SISO_Ant1_2452



ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:22:44

11N40SISO_Ant2_2452

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:23:29

Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	20.23	≤30.00	PASS
	Ant2	2412	18.84	≤30.00	PASS
	Ant1	2437	19.27	≤30.00	PASS
	Ant2	2437	18.03	≤30.00	PASS
	Ant1	2462	18.39	≤30.00	PASS
	Ant2	2462	17.13	≤30.00	PASS
11G	Ant1	2412	24.56	≤30.00	PASS
	Ant2	2412	23.21	≤30.00	PASS
	Ant1	2437	24.12	≤30.00	PASS
	Ant2	2437	22.98	≤30.00	PASS
	Ant1	2462	24.93	≤30.00	PASS
	Ant2	2462	23.68	≤30.00	PASS
11N20SISO	Ant1	2412	24.11	≤30.00	PASS
	Ant2	2412	22.88	≤30.00	PASS
	Ant1	2437	23.15	≤30.00	PASS
	Ant2	2437	22.27	≤30.00	PASS
	Ant1	2462	24.64	≤30.00	PASS
	Ant2	2462	23.49	≤30.00	PASS
11N40SISO	Ant1	2422	23.56	≤30.00	PASS
	Ant2	2422	22.30	≤30.00	PASS
	Ant1	2437	22.87	≤30.00	PASS
	Ant2	2437	21.61	≤30.00	PASS
	Ant1	2452	24.06	≤30.00	PASS
	Ant2	2452	22.97	≤30.00	PASS

Test Result Average

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	17.54	≤30.00	PASS
	Ant2	2412	16.56	≤30.00	PASS
	Ant1	2437	16.80	≤30.00	PASS
	Ant2	2437	15.51	≤30.00	PASS
	Ant1	2462	15.87	≤30.00	PASS
	Ant2	2462	14.67	≤30.00	PASS
11G	Ant1	2412	16.97	≤30.00	PASS
	Ant2	2412	15.83	≤30.00	PASS
	Ant1	2437	16.73	≤30.00	PASS
	Ant2	2437	15.60	≤30.00	PASS
	Ant1	2462	17.61	≤30.00	PASS
	Ant2	2462	16.38	≤30.00	PASS
11N20SISO	Ant1	2412	16.58	≤30.00	PASS
	Ant2	2412	15.36	≤30.00	PASS
	Ant1	2437	16.02	≤30.00	PASS
	Ant2	2437	14.43	≤30.00	PASS
	Ant1	2462	16.51	≤30.00	PASS
	Ant2	2462	15.35	≤30.00	PASS
11N40SISO	Ant1	2422	16.49	≤30.00	PASS
	Ant2	2422	15.22	≤30.00	PASS
	Ant1	2437	15.70	≤30.00	PASS
	Ant2	2437	14.26	≤30.00	PASS
	Ant1	2452	17.08	≤30.00	PASS
	Ant2	2452	15.54	≤30.00	PASS

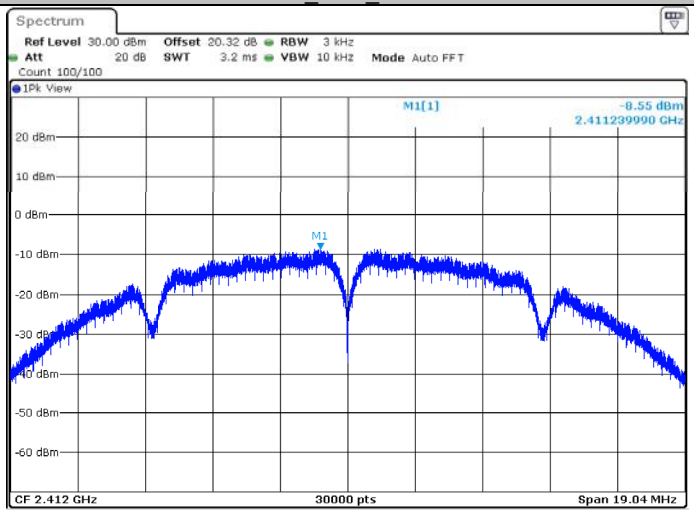
Appendix D: Maximum power spectral density

Test Result

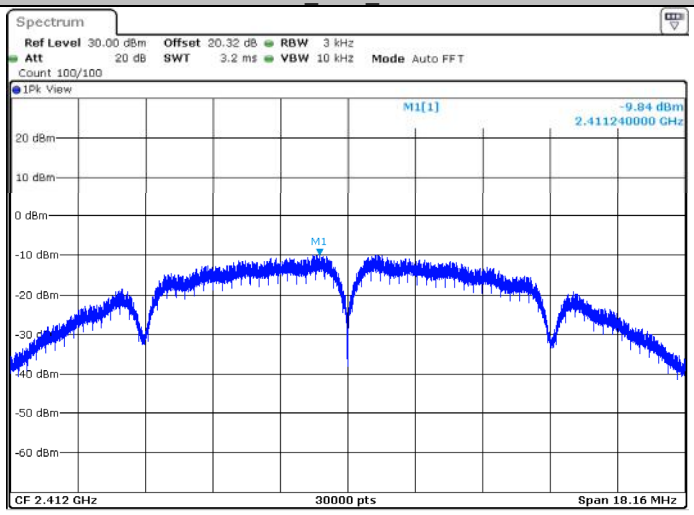
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.55	≤8.00	PASS
	Ant2	2412	-9.84	≤8.00	PASS
	Ant1	2437	-9.41	≤8.00	PASS
	Ant2	2437	-10.80	≤8.00	PASS
	Ant1	2462	-10.28	≤8.00	PASS
	Ant2	2462	-11.65	≤8.00	PASS
11G	Ant1	2412	-10.08	≤8.00	PASS
	Ant2	2412	-11.40	≤8.00	PASS
	Ant1	2437	-10.53	≤8.00	PASS
	Ant2	2437	-11.63	≤8.00	PASS
	Ant1	2462	-9.77	≤8.00	PASS
	Ant2	2462	-11.03	≤8.00	PASS
11N20SISO	Ant1	2412	-10.27	≤8.00	PASS
	Ant2	2412	-11.83	≤8.00	PASS
	Ant1	2437	-11.12	≤8.00	PASS
	Ant2	2437	-12.41	≤8.00	PASS
	Ant1	2462	-10.05	≤8.00	PASS
	Ant2	2462	-10.89	≤8.00	PASS
11N40SISO	Ant1	2422	-10.93	≤8.00	PASS
	Ant2	2422	-12.13	≤8.00	PASS
	Ant1	2437	-11.58	≤8.00	PASS
	Ant2	2437	-12.99	≤8.00	PASS
	Ant1	2452	-10.12	≤8.00	PASS
	Ant2	2452	-11.49	≤8.00	PASS

Test Graphs

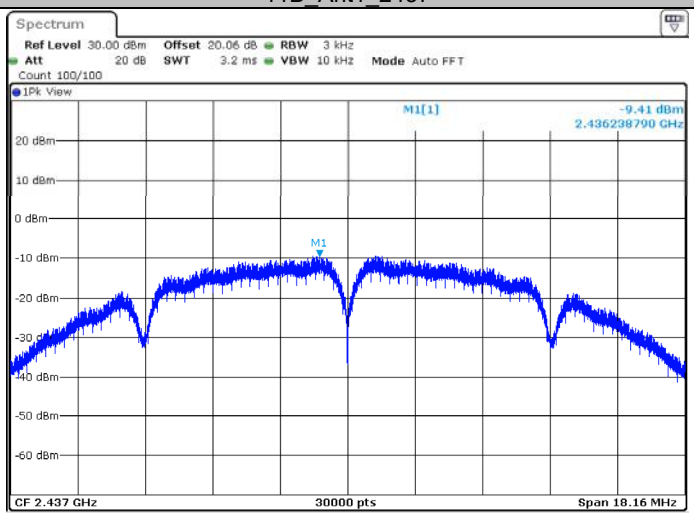
11B_Ant1_2412



11B_Ant2_2412

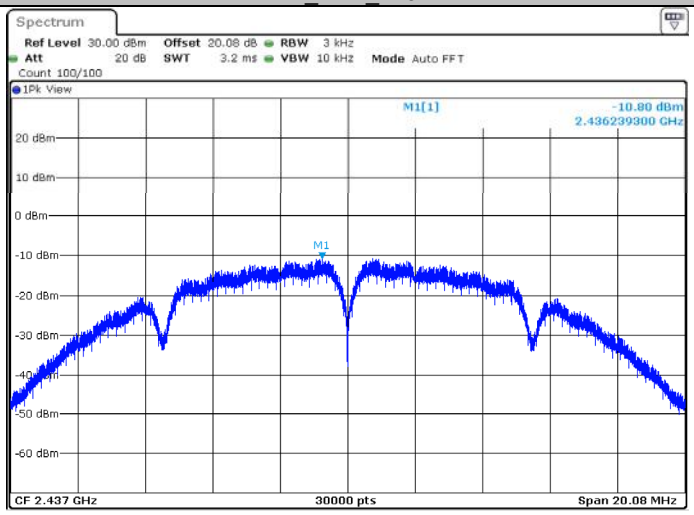


11B_Ant1_2437



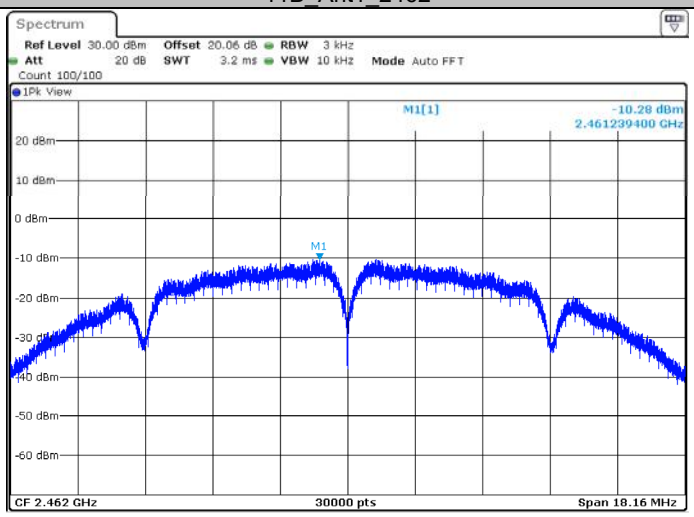
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:53:21

11B_Ant2_2437



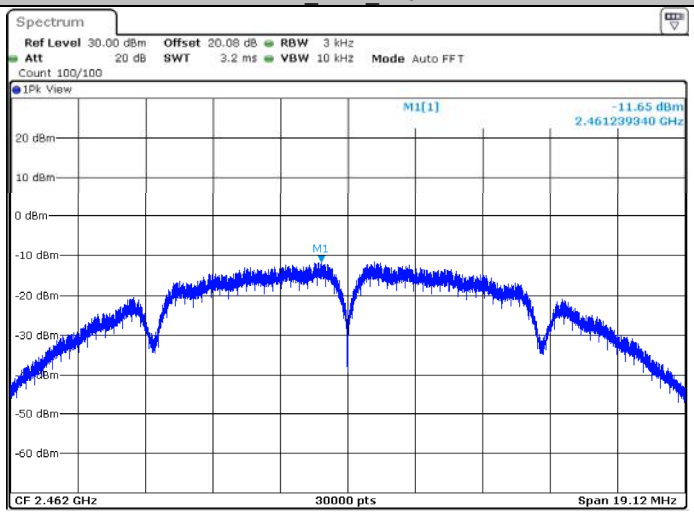
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:52:48

11B_Ant1_2462



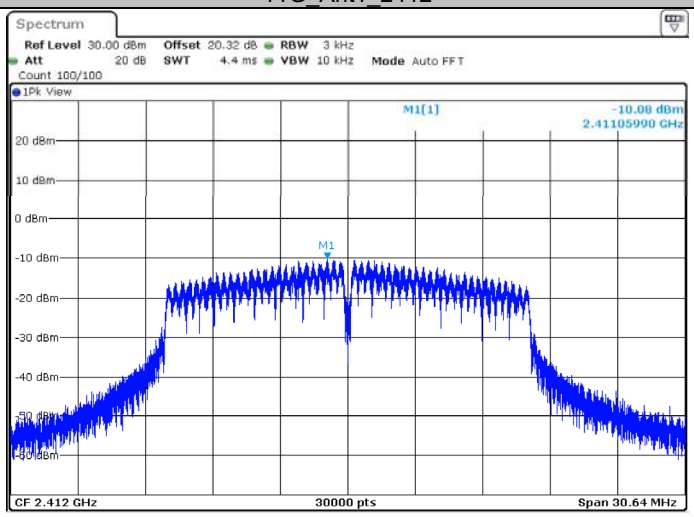
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:55:23

11B_Ant2_2462



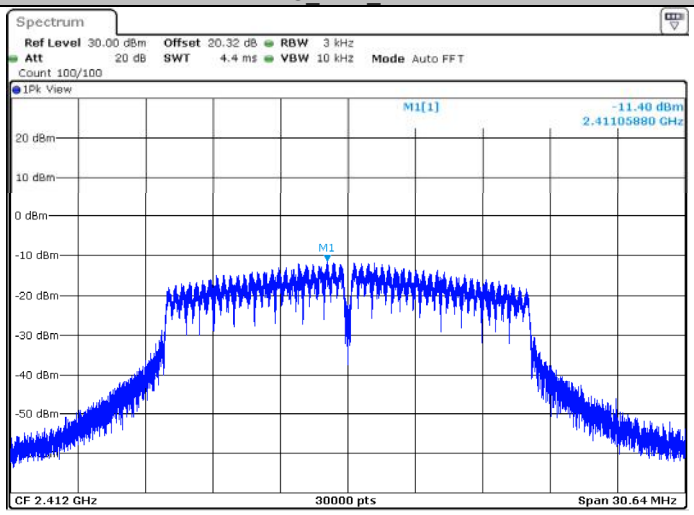
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:56:07

11G_Ant1_2412



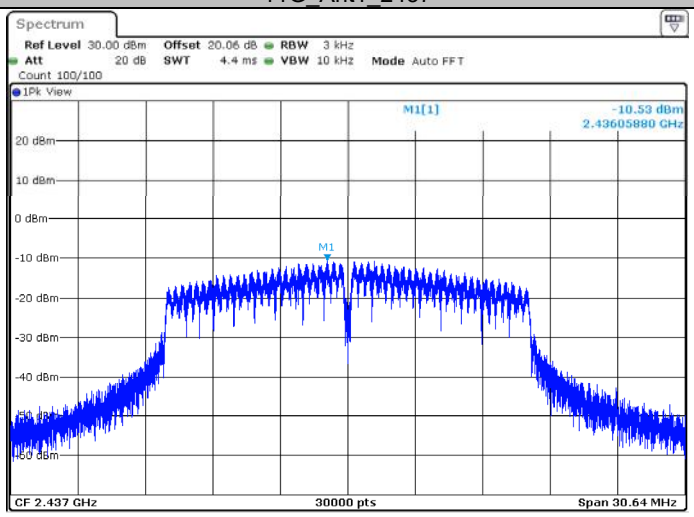
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:57:22

11G_Ant2_2412

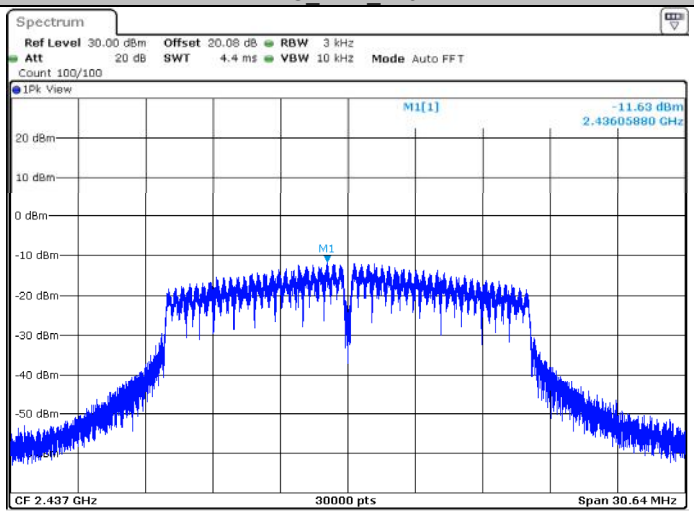


ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:58:06

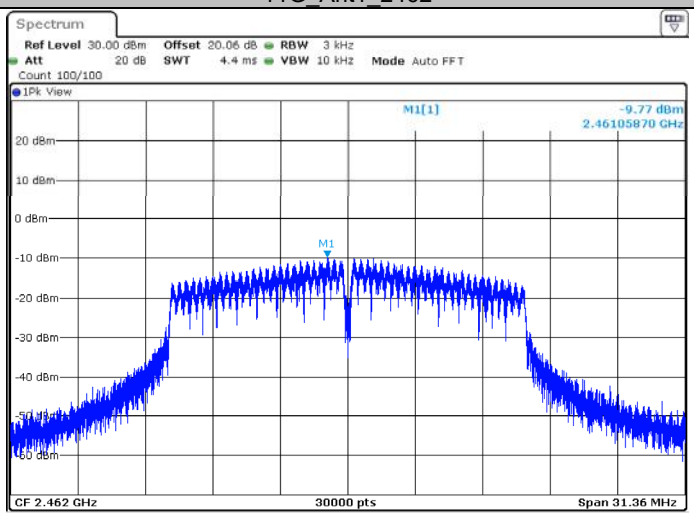
11G_Ant1_2437



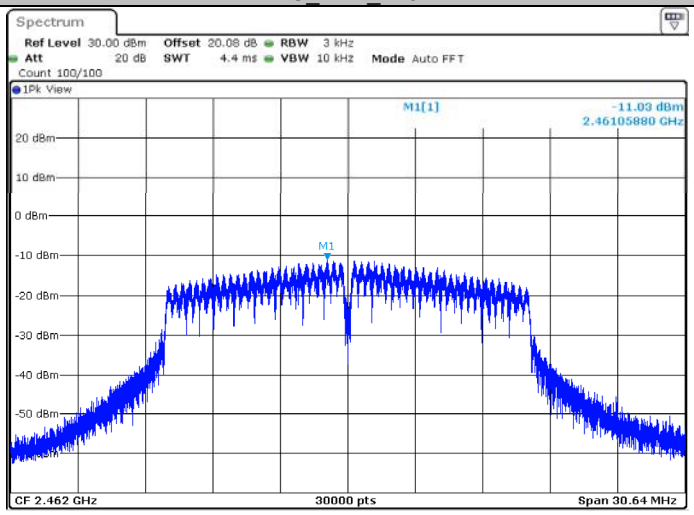
11G_Ant2_2437



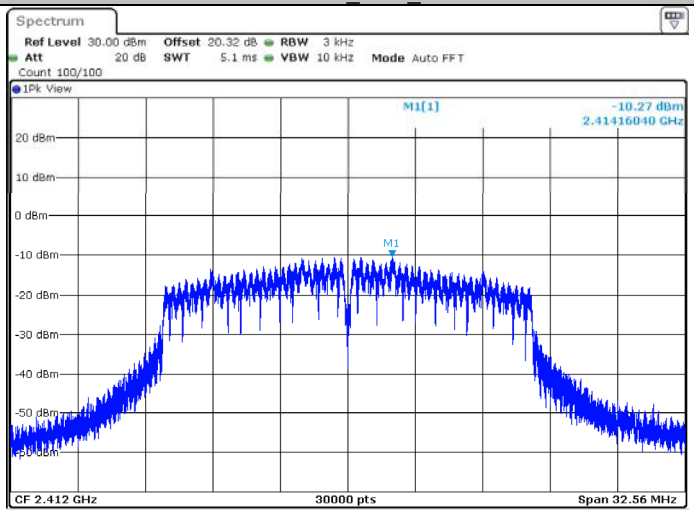
11G_Ant1_2462



11G_Ant2_2462

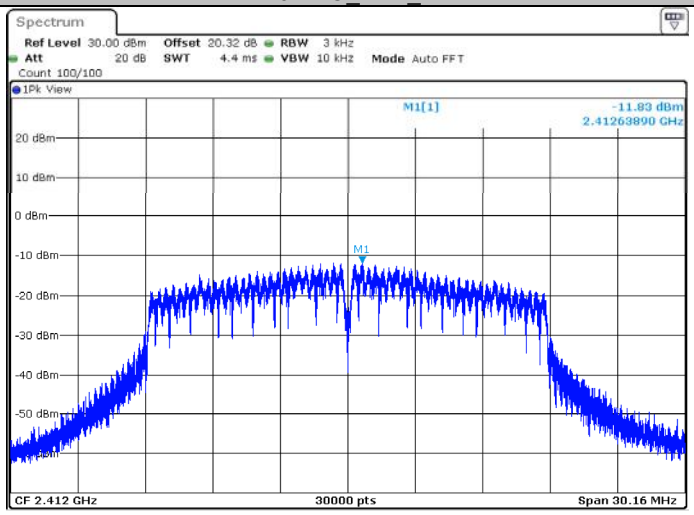


11N20SISO_Ant1_2412



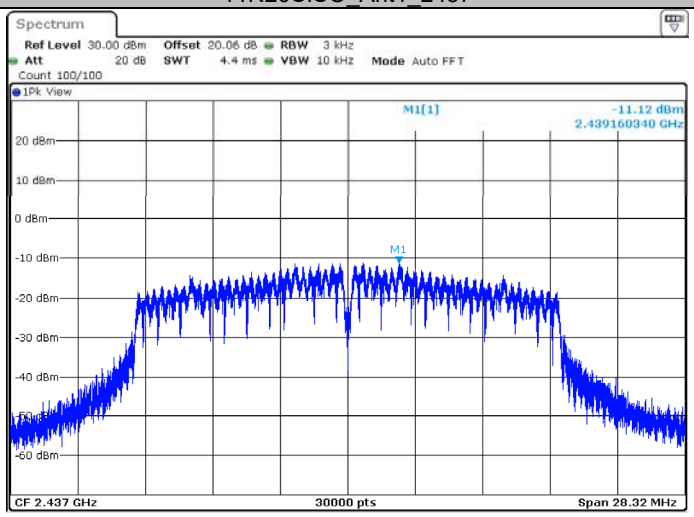
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:04:11

11N20SISO_Ant2_2412



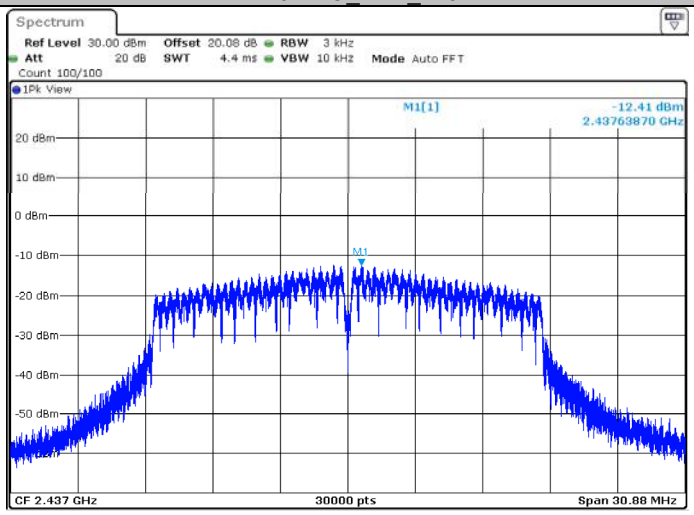
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:04:56

11N20SISO_Ant1_2437



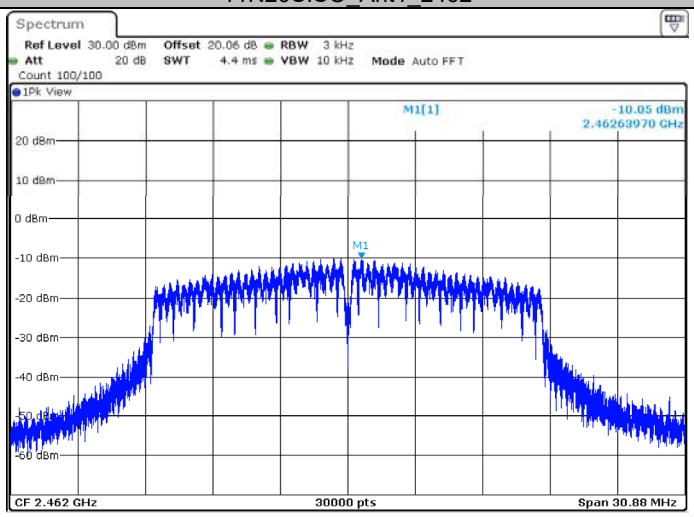
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:06:11

11N20SISO_Ant2_2437



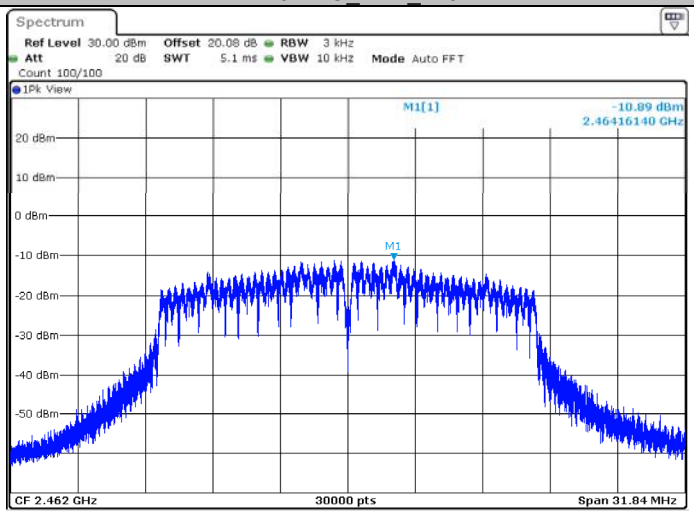
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:08:17

11N20SISO_Ant1_2462



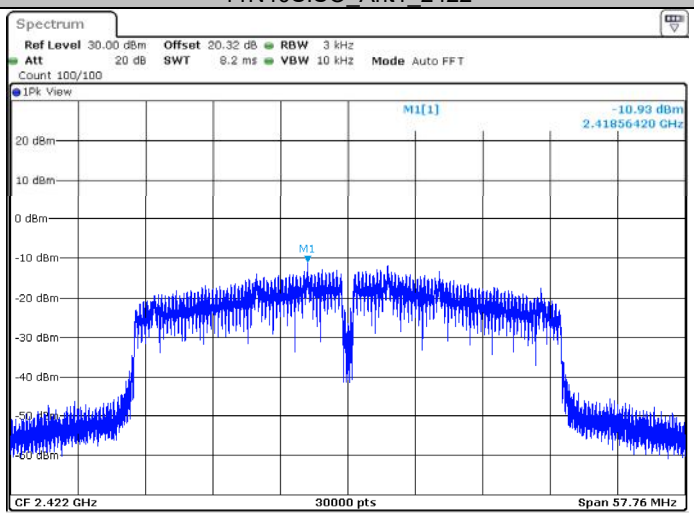
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:09:04

11N20SISO_Ant2_2462



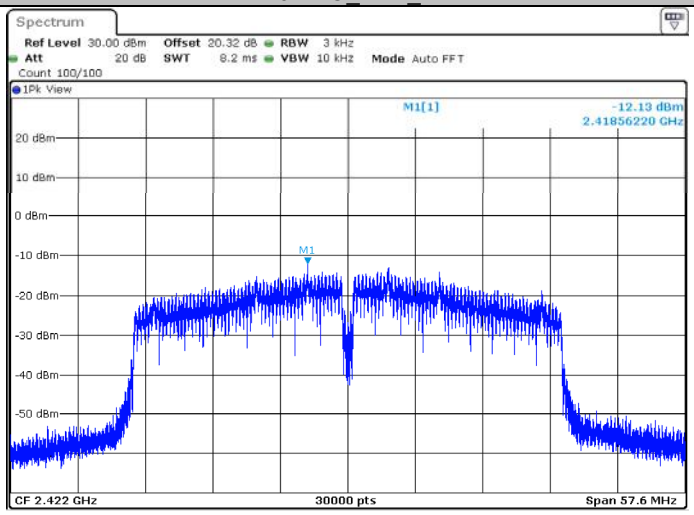
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:09:58

11N40SISO_Ant1_2422



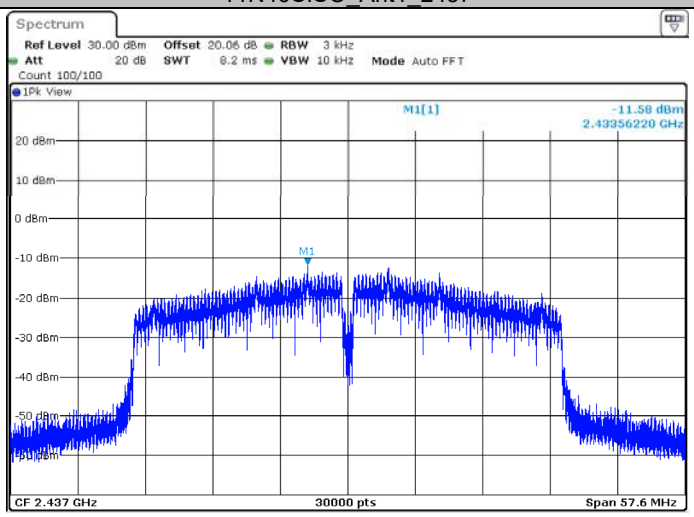
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:11:13

11N40SISO_Ant2_2422



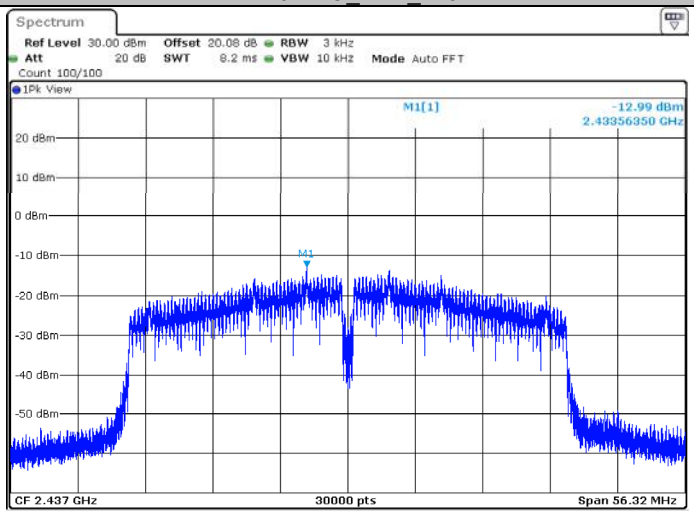
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:19:38

11N40SISO_Ant1_2437



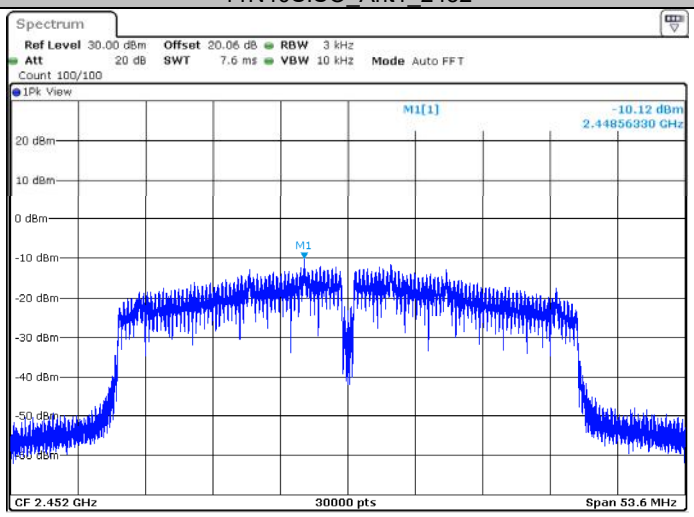
ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:21:03

11N40SISO_Ant2_2437

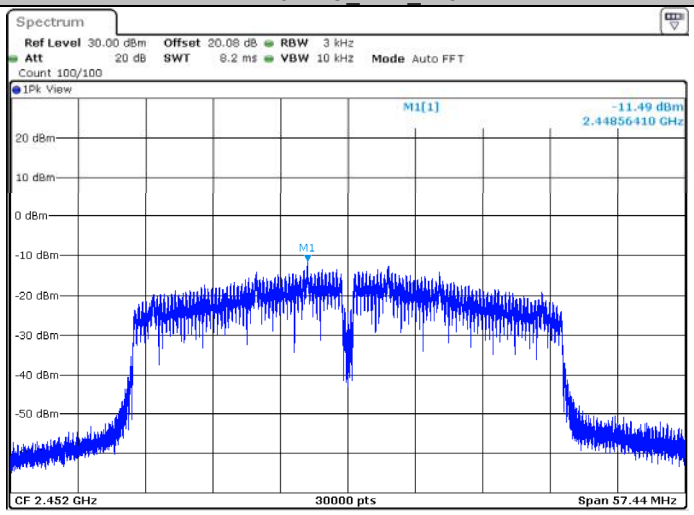


ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:22:15

11N40SISO_Ant1_2452



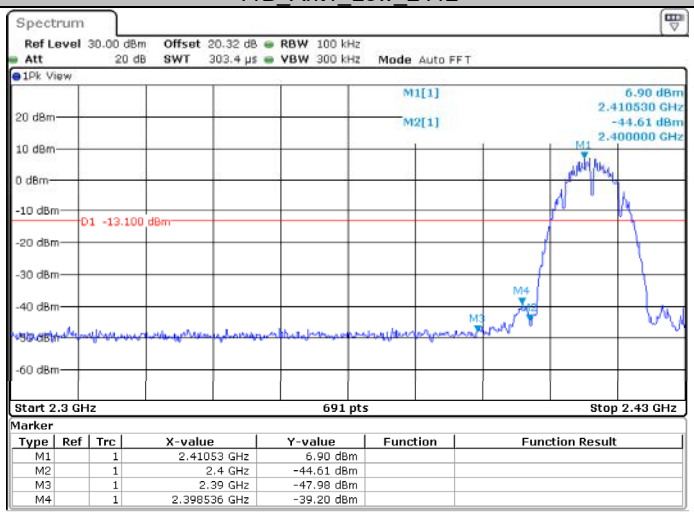
11N40SISO_Ant2_2452



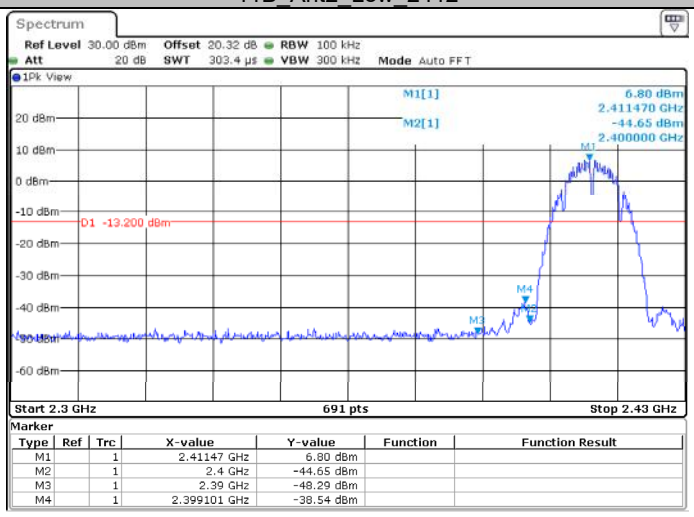
Appendix E: Band edge measurements

Test Graphs

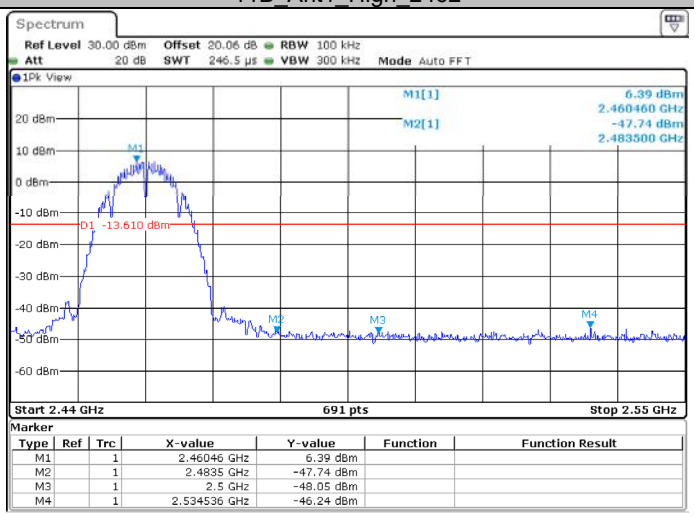
11B_Ant1_Low_2412



11B_Ant2_Low_2412



11B_Ant1_High_2462

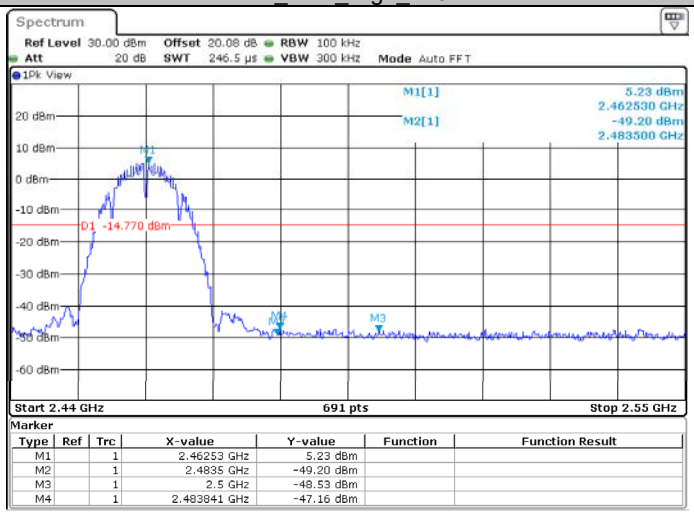


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46046 GHz	6.39 dBm		
M2		1	2.4835 GHz	-47.74 dBm		
M3		1	2.5 GHz	-48.05 dBm		
M4		1	2.534536 GHz	-46.24 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:55:32

11B_Ant2_High_2462

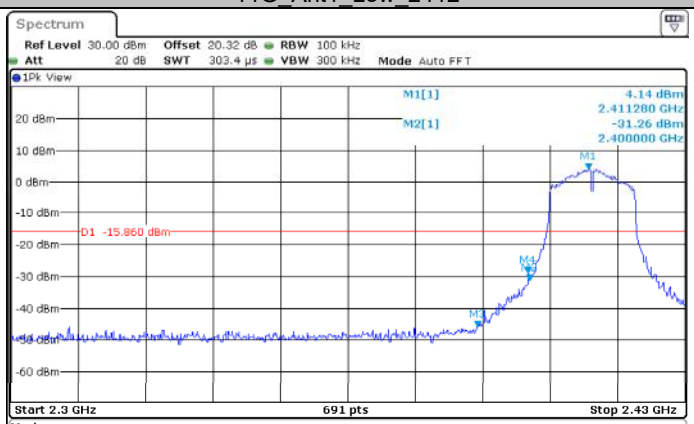


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46253 GHz	5.23 dBm		
M2		1	2.4835 GHz	-49.20 dBm		
M3		1	2.5 GHz	-48.53 dBm		
M4		1	2.483841 GHz	-47.16 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 19:56:15

11G_Ant1_Low_2412



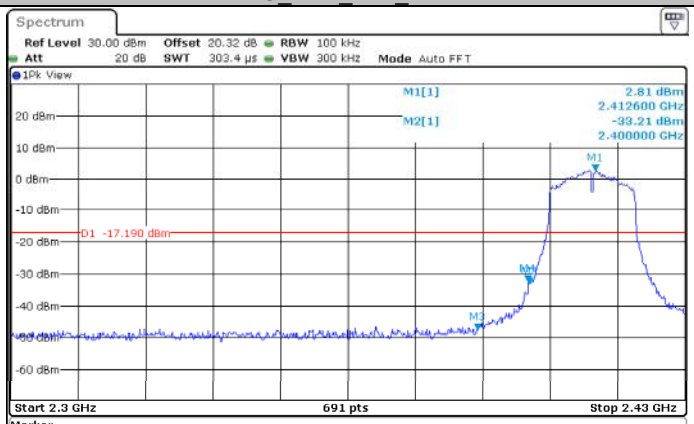
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41128 GHz	4.14 dBm		
M2		1	2.4 GHz	-31.26 dBm		
M3		1	2.39 GHz	-45.81 dBm		
M4		1	2.399667 GHz	-28.98 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 19:57:31

11G_Ant2_Low_2412



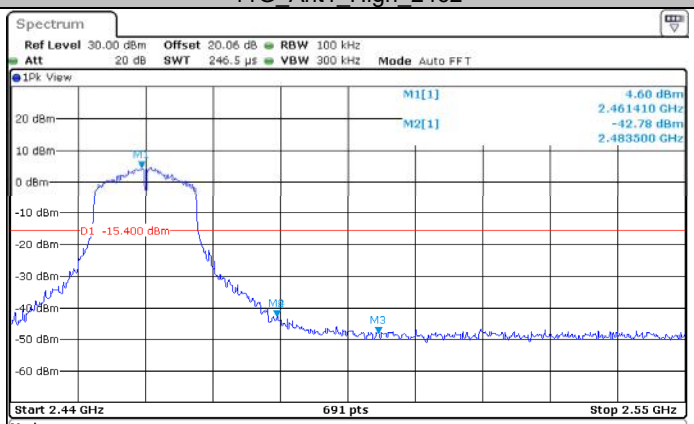
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4126 GHz	2.81 dBm		
M2		1	2.4 GHz	-33.21 dBm		
M3		1	2.39 GHz	-47.39 dBm		
M4		1	2.399667 GHz	-32.37 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 19:58:14

11G_Ant1_High_2462

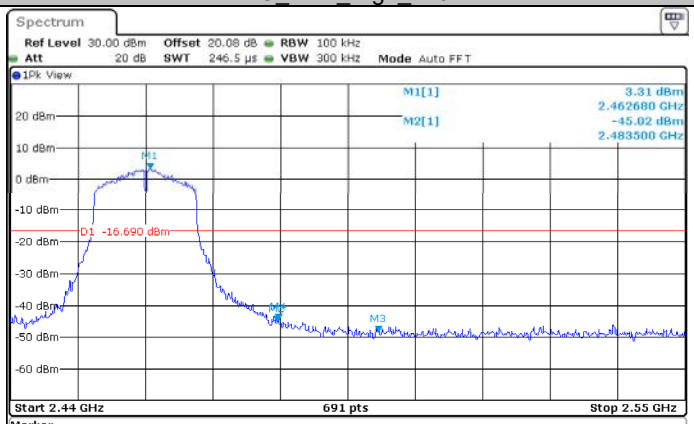


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46141 GHz	4.60 dBm		
M2		1	2.4835 GHz	-42.78 dBm		
M3		1	2.5 GHz	-47.87 dBm		
M4		1	2.483522 GHz	-42.78 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:01:54

11G_Ant2_High_2462

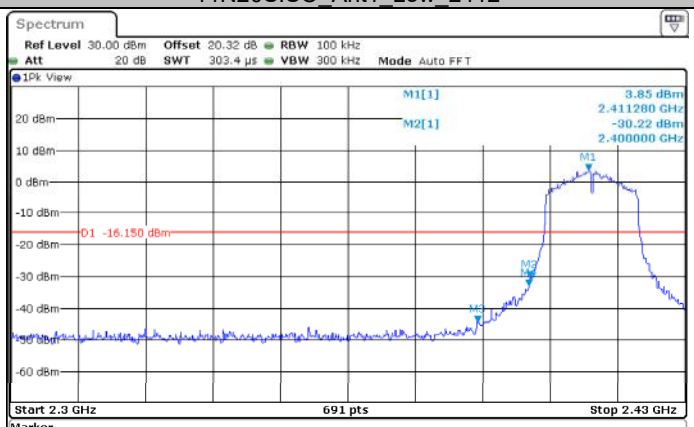


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46268 GHz	3.31 dBm		
M2		1	2.4835 GHz	-45.02 dBm		
M3		1	2.5 GHz	-48.41 dBm		
M4		1	2.483681 GHz	-44.68 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:02:40

11N20SISO_Ant1_Low_2412



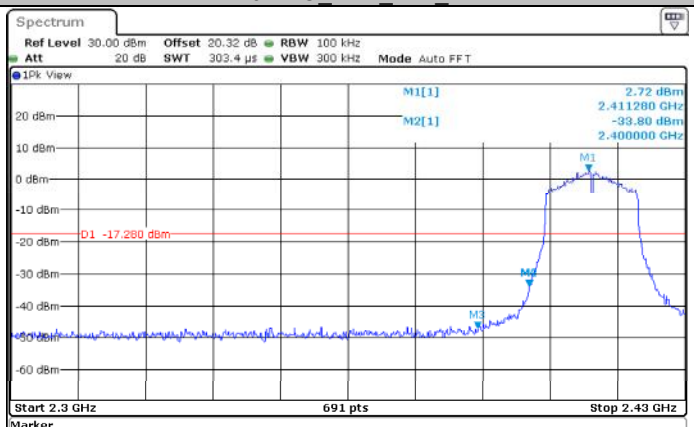
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41128 GHz	3.85 dBm		
M2		1	2.4 GHz	-30.22 dBm		
M3		1	2.39 GHz	-44.26 dBm		
M4		1	2.399855 GHz	-32.84 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:04:20

11N20SISO_Ant2_Low_2412



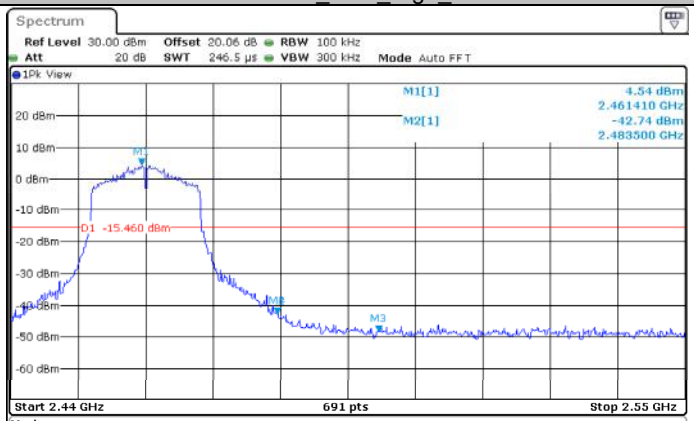
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41128 GHz	2.72 dBm		
M2		1	2.4 GHz	-33.80 dBm		
M3		1	2.39 GHz	-47.02 dBm		
M4		1	2.399855 GHz	-33.79 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:05:05

11N20SISO_Ant1_High_2462



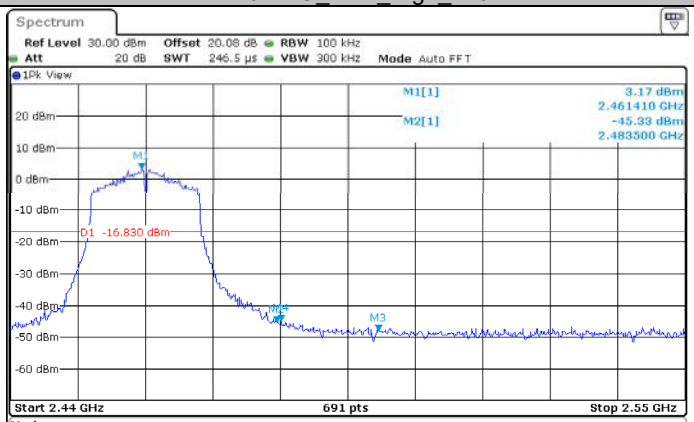
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46141 GHz	4.54 dBm		
M2		1	2.4835 GHz	-42.74 dBm		
M3		1	2.5 GHz	-48.37 dBm		
M4		1	2.483522 GHz	-42.74 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:09:13

11N20SISO_Ant2_High_2462



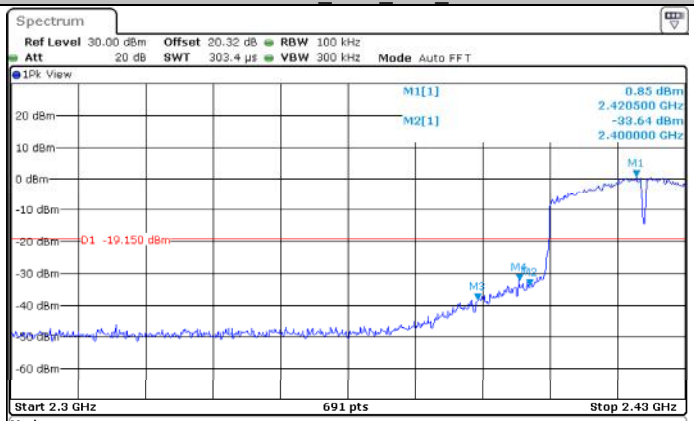
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46141 GHz	3.17 dBm		
M2		1	2.4835 GHz	-45.33 dBm		
M3		1	2.5 GHz	-48.25 dBm		
M4		1	2.484159 GHz	-44.84 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan

Date: 6.SEP.2024 20:10:06

11N40SISO_Ant1_Low_2422

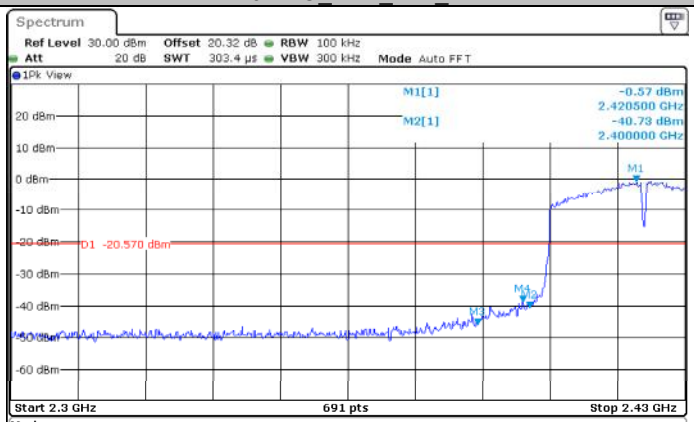


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4205 GHz	0.85 dBm		
M2		1	2.4 GHz	-33.64 dBm		
M3		1	2.39 GHz	-38.12 dBm		
M4		1	2.397971 GHz	-32.24 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:11:22

11N40SISO_Ant2_Low_2422

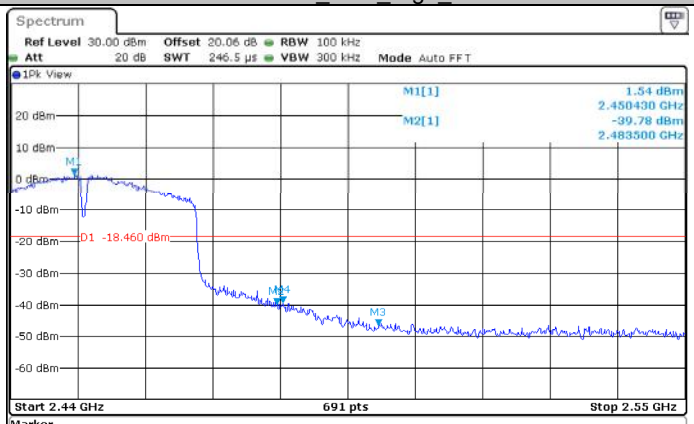


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4205 GHz	-0.57 dBm		
M2		1	2.4 GHz	-40.73 dBm		
M3		1	2.39 GHz	-45.87 dBm		
M4		1	2.398725 GHz	-38.68 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:19:47

11N40SISO_Ant1_High_2452

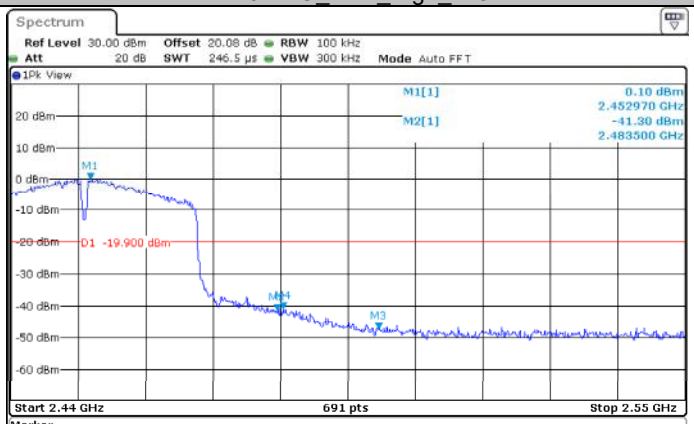


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45043 GHz	1.54 dBm		
M2		1	2.4835 GHz	-39.78 dBm		
M3		1	2.5 GHz	-47.58 dBm		
M4		1	2.484478 GHz	-39.09 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:23:06

11N40SISO_Ant2_High_2452



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45297 GHz	0.10 dBm		
M2		1	2.4835 GHz	-41.30 dBm		
M3		1	2.5 GHz	-47.38 dBm		
M4		1	2.484478 GHz	-40.74 dBm		

ProjectNo.:SZXX1240117-03999E-RF Tester:Tom Tan
Date: 6.SEP.2024 20:23:51

Appendix F: Duty Cycle

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55 %
ATM Pressure:	101 kPa

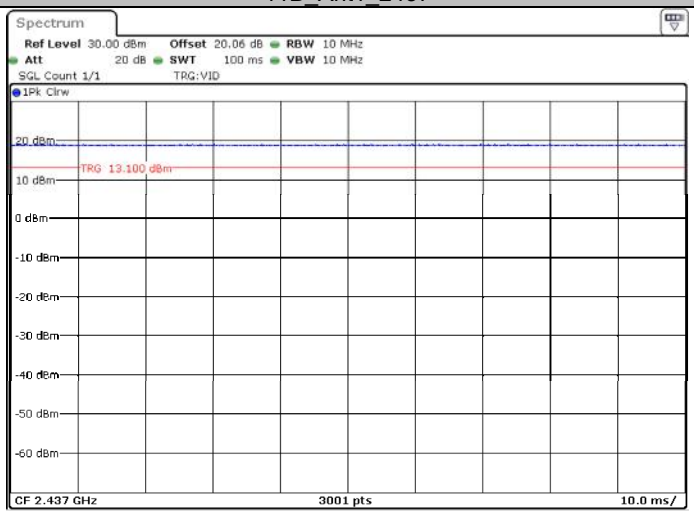
The testing was performed by Tom Tan on 2024-09-06.

Test Result

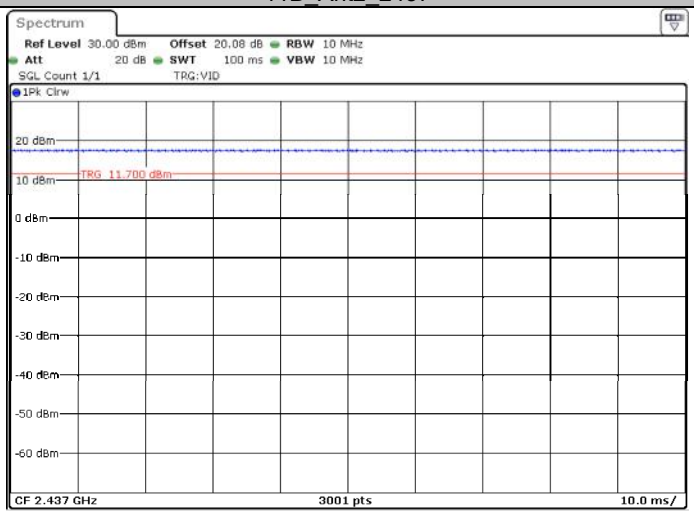
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T (Hz)	VBW Setting (Hz)
11B	Ant1	2437	100.00	100.00	100.00	/	10
	Ant2	2437	100.00	100.00	100.00	/	10
11G	Ant1	2437	100.00	100.00	100.00	/	10
	Ant2	2437	100.00	100.00	100.00	/	10
11N20SISO	Ant1	2437	100.00	100.00	100.00	/	10
	Ant2	2437	100.00	100.00	100.00	/	10
11N40SISO	Ant1	2437	100.00	100.00	100.00	/	10
	Ant2	2437	100.00	100.00	100.00	/	10

Test Graphs

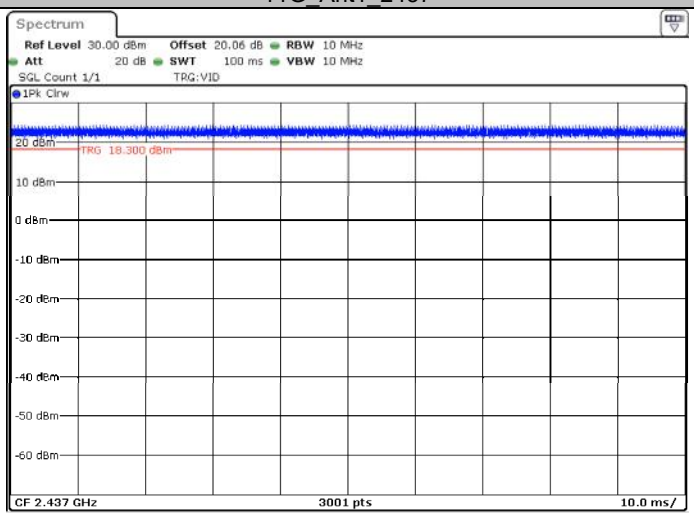
11B_Ant1_2437



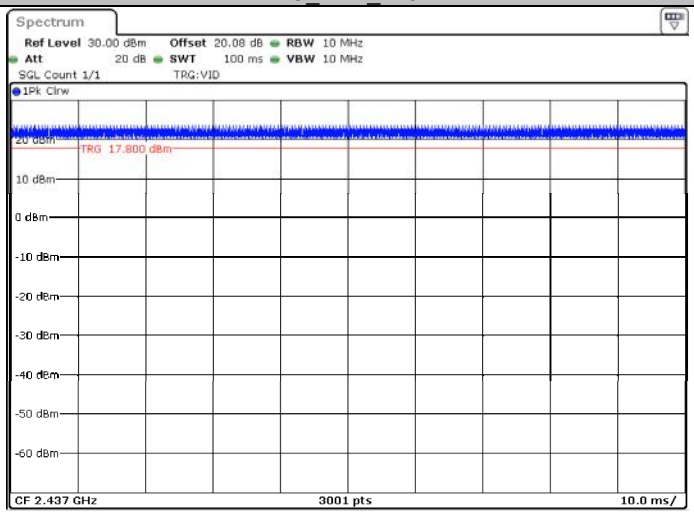
11B_Ant2_2437



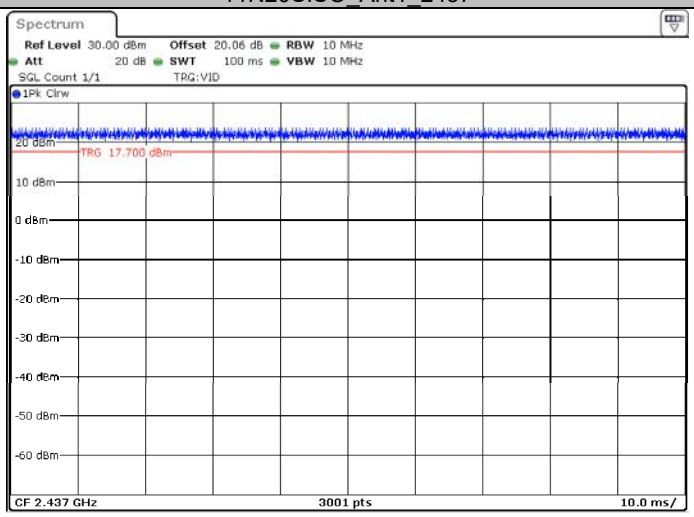
11G_Ant1_2437



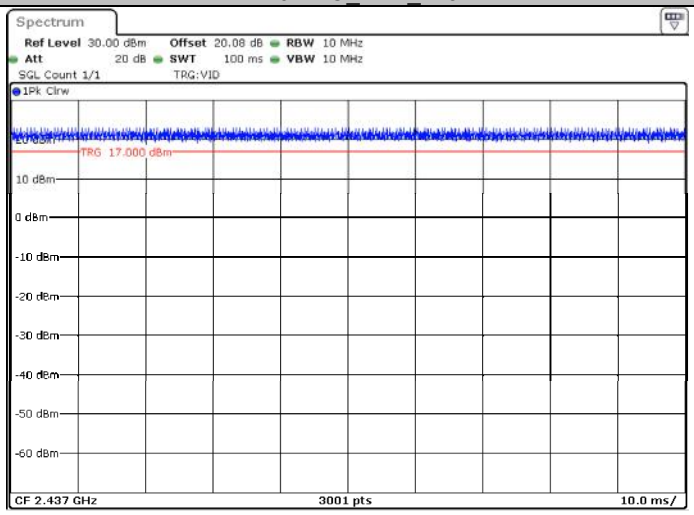
11G_Ant2_2437



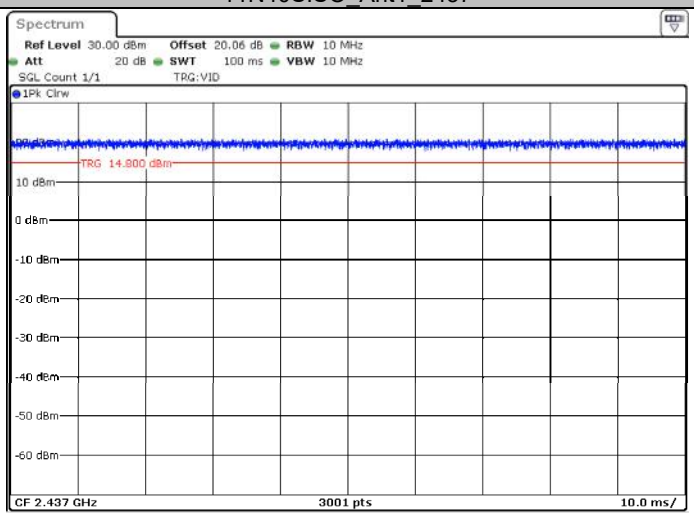
11N20SISO_Ant1_2437



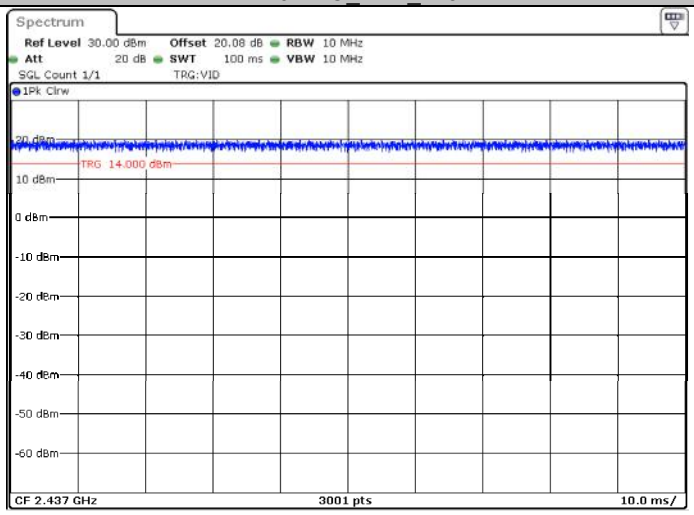
11N20SISO_Ant2_2437



11N40SISO_Ant1_2437



11N40SISO_Ant2_2437



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