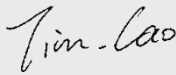




Test report No:

25B0817R.701

TEST REPORT

Product Name	WiFi BT Module
Trademark	Hisense
Model and /or type reference	MWH658B
FCC ID	2AJVQ-MWH658B
Applicant's name / address	Qingdao Intelligent & Precise Electronics Co., Ltd. No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China
Test method requested, standard	47 CFR FCC Part 15 (Section 15.247) ANSI C63.10: 2020
Verdict Summary	IN COMPLIANCE
Tested By (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2025-12-16
Report Version	V1.0
Report template No.	Template_FCC Part 15C-RF-V1.0

INDEX

	page
Competences and Guarantees	4
General conditions	4
Document History	5
Test Summary	6
Used Equipment.....	7
Uncertainty	8
1 General Information	9
Power setting in test.....	9
2 Description of Test Setup.....	10
3 Verdict summary section.....	11
3.1 Standards	11
3.2 Deviation(s) from the Standard(s) / Test Specification(s).....	11
4 Test Results	12
4.1 AC Power Line Conducted Emission.....	12
4.1.1 Limit	12
4.1.2 Test Setup	12
4.1.3 Test Procedure	12
4.2 Emissions in restricted frequency bands	13
4.2.1 Limit	13
4.2.2 Test Setup	14
4.2.3 Test Procedure	15
4.3 Emissions in non-restricted frequency band	16
4.3.1 Limit	16
4.3.2 Test Setup	16
4.3.3 Test Procedure	16
4.4 Duty cycle	17
4.4.1 Limit	17
4.4.2 Test Setup	17
4.4.3 Test Procedure	17
4.5 Radiated Emission Band Edge	18
4.5.1 Limit	18
4.5.2 Test Setup	18
4.5.3 Test Procedure	18
4.6 DTS Bandwidth.....	19
4.6.1 Limit	19

4.6.2	Test Setup	19
4.6.3	Test Procedure	19
4.7	Fundamental emission output power.....	20
4.7.1	Limit	20
4.7.2	Test Setup	20
4.7.3	Test Procedure	20
4.8	Power Density.....	21
4.8.1	Limit:	21
4.8.2	Test Setup	21
4.8.3	Test Procedure	21
4.9	Antenna Requirement.....	22
4.9.1	Limit:	22
4.9.2	Antenna Connector Construction:	22
5	Test setup photo and EUT Photo	23
	DTS Bandwidth	25
	Maximum conducted output power	35
	Maximum power spectral density	36
	Reference level measurement	46
	Conducted Band edge measurements	55
	Conducted Spurious Emission	61
	Duty Cycle.....	79
	Band edge measurements	89
	Emissions in Restricted Bands	121

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location A	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Test Facility A	A2LA (Certificate No. 3235.01) CNAS (Certificate No. L5313) FCC - Designation Number: CN1199 Test Firm Registration Number: 566524 ISED - CAB identifier: CN0040 IC#: 4075B
Test Location B	No. 8213, Fanhua Avenue, Baohe District, Hefei City, Anhui Province, China
Test Facility B	A2LA (Certificate No. 6579.01) CNAS (Certificate No. L21125) FCC - Designation Number: CN1231 Test Firm Registration Number: 690292 ISED - CAB identifier: CN0175 IC#: 32222
Date(receive sample)	Nov. 28, 2025
Date (start test)	Nov. 30, 2025
Date (finish test)	Dec. 10, 2025

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
25B0817R.701	V1.0	Initial issue of report.	2025-12-16

TEST SUMMARY

Requirement – Test Item	Standard(s)	Location	Verdict	Remark
DTS Bandwidth	FCC 15.247(a)(2)	A	PASS	Test data please refer to Appendix
Maximum conducted output power	15.247 (b)(3)	A	PASS	Test data please refer to Appendix
Maximum power spectral density	FCC 15.247(e)	A	PASS	Test data please refer to Appendix
Band edge measurements	FCC 15.247(d) FCC 15.205 FCC 15.209	B	PASS	Test data please refer to Appendix
Conducted Spurious Emission	FCC 15.247(d), FCC 15.209	A	PASS	Test data please refer to Appendix
Duty cycle	ANSI C63.10	A	PASS	Test data please refer to Appendix
Emissions in Restricted Bands	FCC 15.205 FCC 15.209	B	PASS	Test data please refer to Appendix
AC Power Line Conducted Emission	FCC 15.207	N/A	N/A	Note ¹⁾
Antenna Requirement	FCC 15.203	A	PASS	---
Notes: 1. EUT is DC powered. 2. Radiated Emission and Radiated Emission Band Edge were completed at Test Location B, and other tests were completed at Test Location A.				

USED EQUIPMENT

Test Location A: Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Wireless Connectivity Tester	R&S	CMW 270	102593	2025.05.10	2026.05.09
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2025.03.15	2026.03.14
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2025.06.17	2026.06.16
MAX Signal Analyzer	Agilent	N9020A	MY49100159	2025.10.15	2026.10.14
RF Control Unit	Tonscend	JS0806-2	22G8060594	2025.01.26	2026.01.25
Vector Signal Genertor	R&S	SMM 100A	101853	2025.09.20	2026.09.19
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2025.05.10	2026.05.09
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A

Test Location A: Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Anechoic chamber	Quietek	9m*6m*6m	AC2	2024.07.07	2029.07.06
EMI Test Receiver	R&S	ESCI	100573	2025.01.11	2026.01.10
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2025.03.24	2026.03.23
Temperature/Humidity Meter	RTS	RTS-1909	THM-021	2025.04.30	2026.04.29
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Test Location B: Radiated Emission Band Edge / AC103

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Fully-anechoic chamber	Maorui	9m*6m*6m	AC103	2023.08.23	2028.08.22
MAX Signal Analyzer	Keysight	N9020B	MY63490118	2025.08.08	2026.08.07
Horn Antenna	RF SPIN	DRH18-E	KV2D11A18ES	2025.09.06	2026.09.05
Low Noise Amplifier	Tonscend	TAP01018048S	AP23J8060307	2025.10.17	2026.10.16
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	01312	2025.10.18	2026.10.17
Low Noise Amplifier	ESE	LNA1840	LNA23070301	2025.10.17	2026.10.16
Temperature/Humidity Meter	RITERS	RTS-8S	029	2025.08.25	2026.08.24
Temperature/Humidity Meter	RITERS	RTS-8S	010	2025.08.25	2026.08.24
Test Software	Tonscend	J536	JS36-RSE	N/A	N/A

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Test item Test Location A	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.8 dB 150kHz~30MHz: 2.4 dB
Peak Power Output	± 1.3 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.5 dB 300MHz~1GHz: 3.6 dB Vertical: 30MHz~200MHz: 3.6 dB 300MHz~1GHz: 3.5 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.0 dB Vertical: 1GHz~18GHz: 4.8 dB Horizontal: 18GHz~26.5GHz: 5.3 dB Vertical: 18GHz~26.5GHz: 4.9 dB
RF antenna conducted test	± 1.3 dB
Carrier Frequency Separation	± 1.0 kHz
Number of Hopping Frequencies	± 1.0 kHz
Time of Occupancy (Dwell Time)	± 0.10 us
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	± 1.0 kHz
Occupied Bandwidth	± 1.0 kHz
Power Density	± 1.3 dB

Test item Test Location B	Uncertainty
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 4.86 dB 300MHz~1GHz: 4.86 dB Vertical: 30MHz~200MHz: 4.92 dB 300MHz~1GHz: 4.92 dB
Radiated Emission(1GHz~40GHz)	Horizontal: 1GHz~18GHz: 5.99 dB Vertical: 1GHz~18GHz: 5.76 dB Horizontal: 18GHz~40GHz: 5.99 dB Vertical: 18GHz~40GHz: 5.76 dB
Radiated Emission Band Edge	± 5.99 dB

1 GENERAL INFORMATION

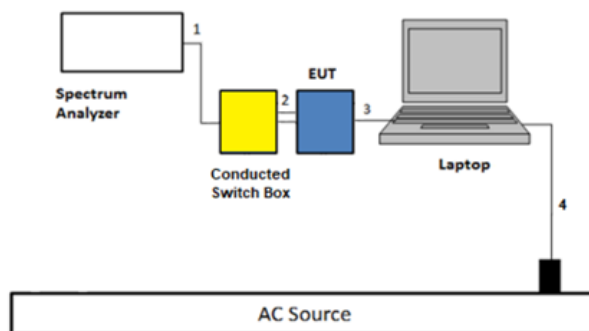
Product Name	WiFi BT Module	
Model No.	MWH658B	
Trademark.	Hisense	
FCC ID.....	2AJVQ-MWH658B	
Manufacturer	Qingdao Intelligent & Precise Electronics Co., Ltd.	
Manufacturer Address	No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China	
Power Supply	4.5~5.5 Vdc	
Wireless specification	Wi-Fi	
Operating frequency range(s)	2400~2483.5MHz	
Channel Spacing	802.11b/g/n/ax: 20MHz 802.11n/ax: 40MHz	
Modulation technology	DSSS / OFDM / OFDMA	
Smart System	☒	SISO
	☒	MIMO-CDD
Device category	☐	Fixed point-to-point
	☐	Emit multiple directional beams, simultaneously or sequentially
	☒	Other cases
Antenna type	PCB	
Antenna Gain	3.11 dBi	
Remark: As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.		

Power setting in test

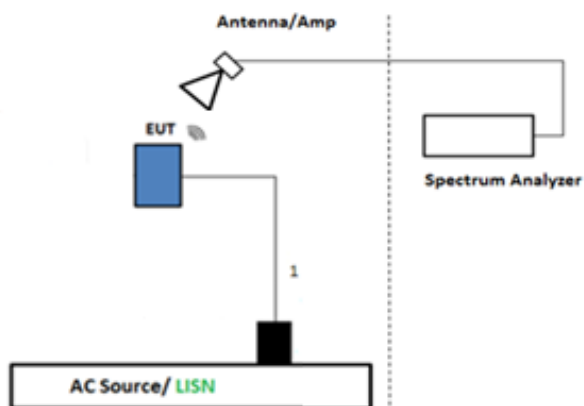
Mode	Power setting
802.11b / g / n / ax	Default

2 DESCRIPTION OF TEST SETUP

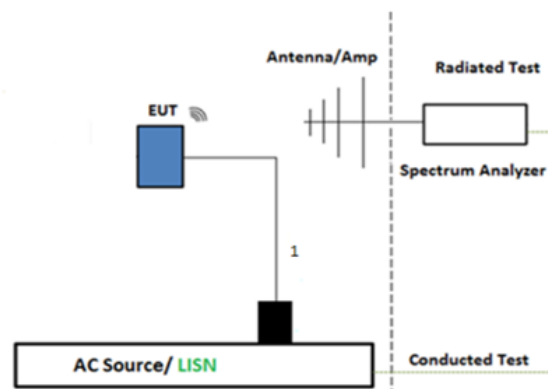
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	Think pad x220	Lenovo	Adapter
(2) Ethernet cable	N/A	N/A	N/A
(3) Ethernet cable	N/A	N/A	N/A
Software	Type / Version	Manufacturer	Supplied by
MT7920_QA-Tool	3.0.0.13	MEDIATEK	N/A



Conducted RF



Radiated Test Above 1GHz



Radiated Test Below 1GHz

Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2) Ethernet cable	1	☒	☒
(3) Ethernet cable	8	☒	☒

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15 Subpart C Section 15.247	2020	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
ANSI C63.10	2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 D01V05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247
KDB 662911 D01V02r01	2020	Provision to Allow Measurement of Directional Gain of Multi-Antenna Systems for Compliance Verification

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

4 TEST RESULTS

4.1 AC Power Line Conducted Emission

VERDICT: N/A

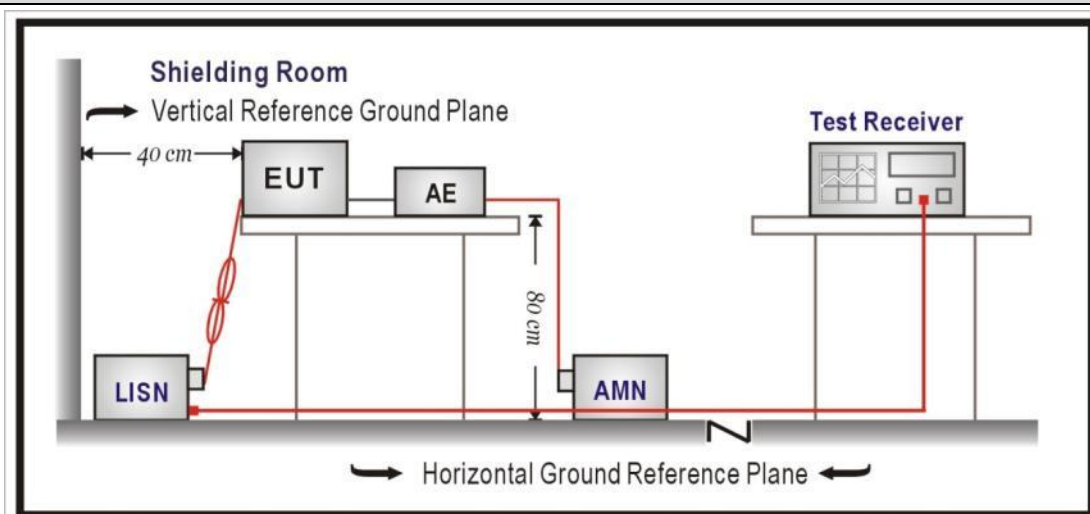
4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾]	Limit: AV [dB(μV) ¹⁾]
0,15 - 0,50	66 - 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

4.1.2 Test Setup



4.1.3 Test Procedure

	References Rule	Chapter	Item
☒	ANSI C63.10	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.2 Emissions in restricted frequency bands**VERDICT: PASS****4.2.1 Limit****Standard** FCC Part 15 Subpart C Paragraph 15.205; 15.209

Restricted Bands of operation for FCC

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	Above 38.6
13.36 – 13.41	--	--	--

Restricted Band Emissions Limit

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

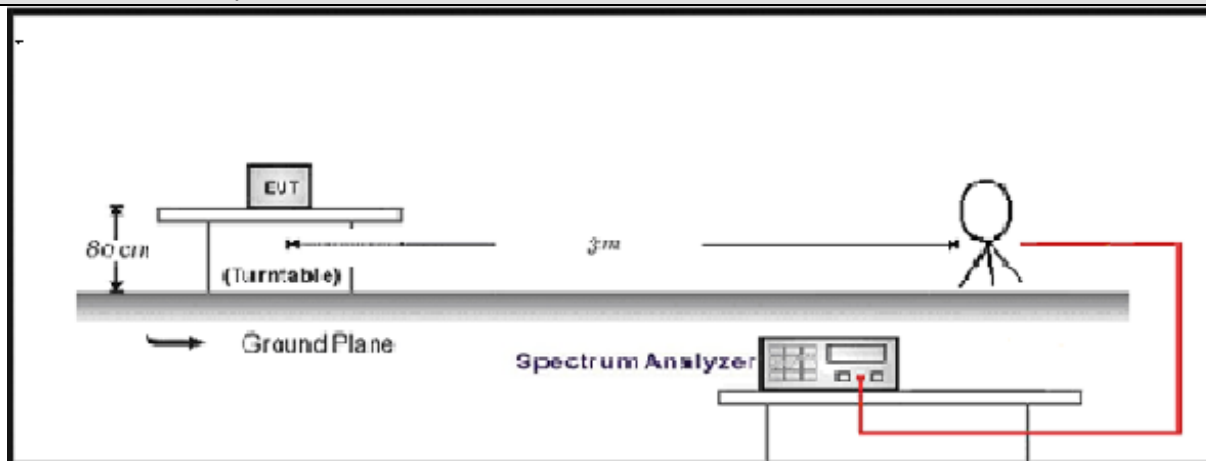
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation

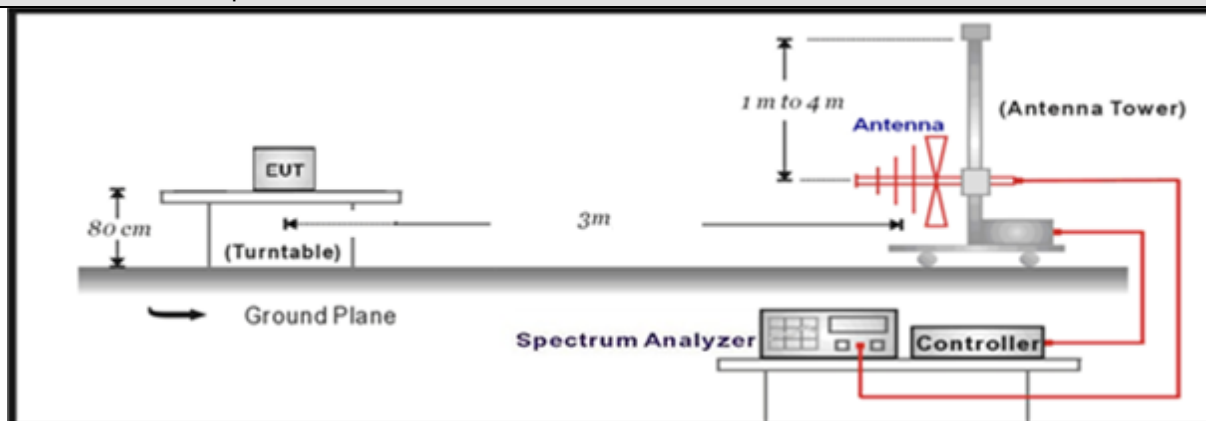
factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

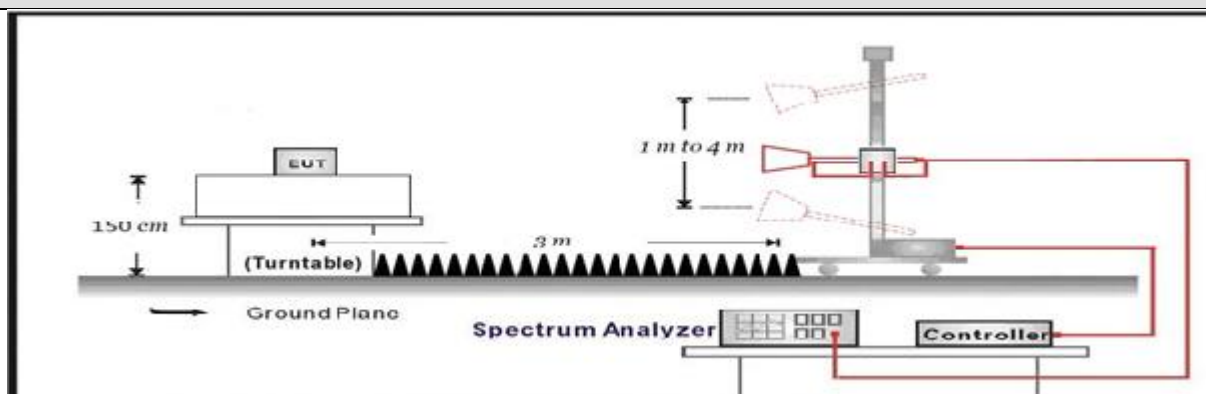
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.2.3 Test Procedure

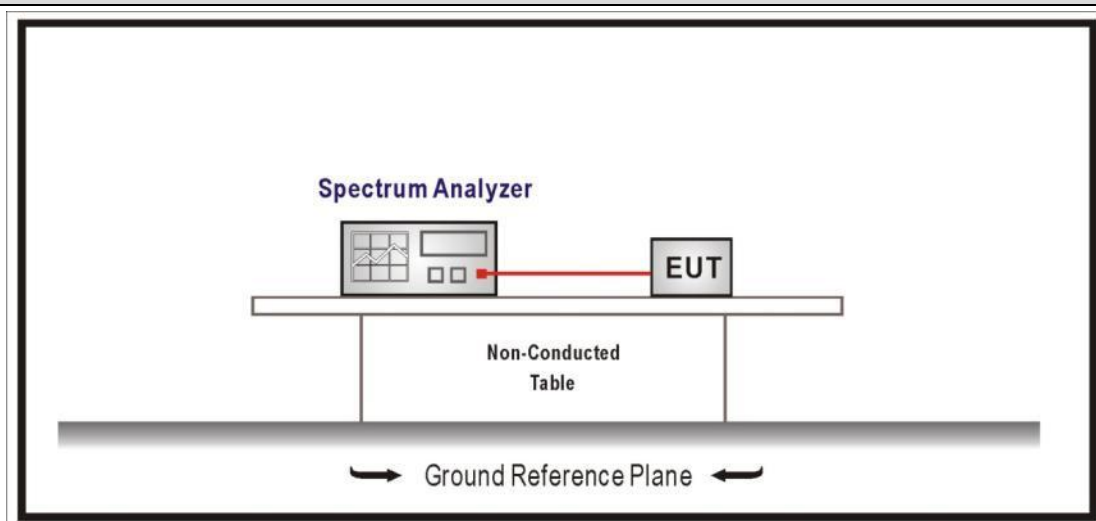
	References Rule		Chapter	Description
☒	ANSI C63.10		11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10	11.12.1	Radiated emission measurements
	☒	ANSI C63.10	6.3	Radiated spurious emission test
	☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.3 Emissions in non-restricted frequency band**VERDICT: PASS****4.3.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247(d)
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output power(PK detector)	20dBc(Note2)

Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

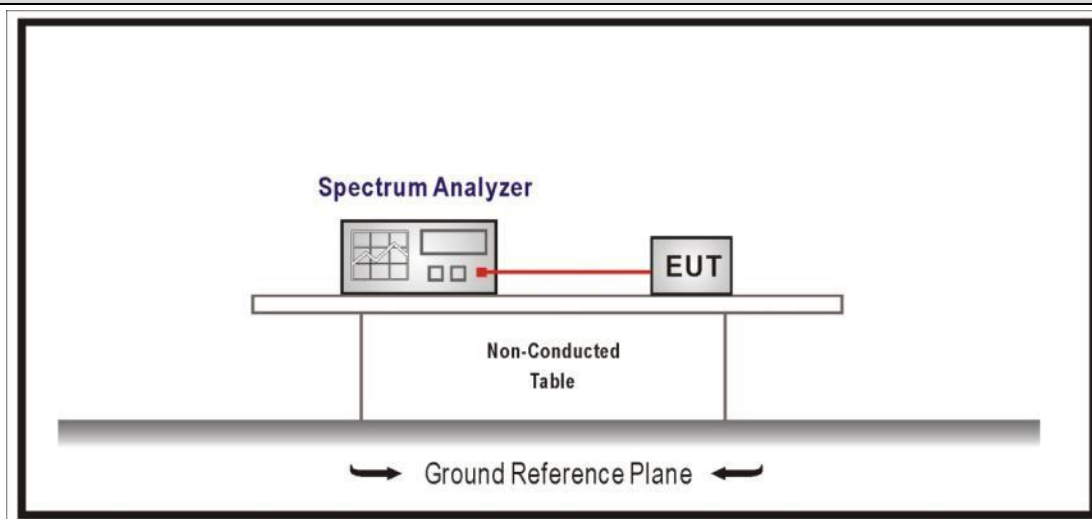
Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

4.3.2 Test Setup**4.3.3 Test Procedure**

References Rule	Chapter	Description
☒ ANSI C63.10	11.11	Emissions in non-restricted frequency bands
☒ ANSI C63.10	11.11.1	General
☒ ANSI C63.10	11.11.2	Reference level measurement
☒ ANSI C63.10	11.11.3	Emission level measurement

4.4 Duty cycle**VERDICT: PASS****4.4.1 Limit**

N/A

4.4.2 Test Setup**4.4.3 Test Procedure**

References Rule		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

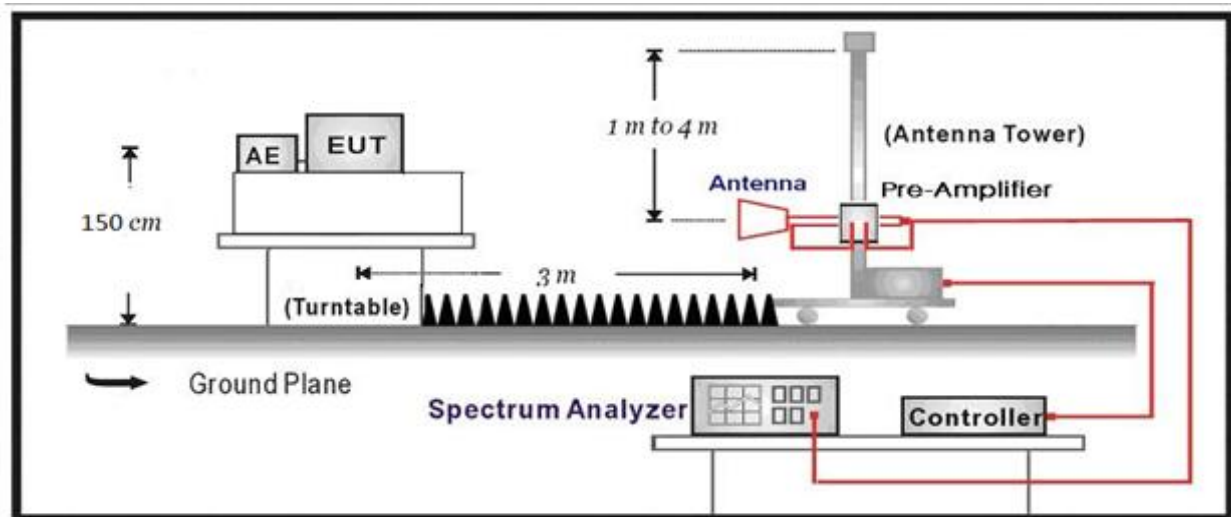
4.5 Radiated Emission Band Edge**VERDICT: PASS****4.5.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) , 15.205, 15.209		
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

4.5.2 Test Setup

Above 1GHz Test Setup:

**4.5.3 Test Procedure**

	References Rule	Chapter	Description
☒	ANSI C63.10	6.10	Band-edge testing
☒	☒ ANSI C63.10	6.10.5	Restricted-band band-edge measurements
☒	☐ ANSI C63.10	6.10.6	Marker-delta method
☒	ANSI C63.10	11.12	Emissions in restricted frequency bands
☒	☒ ANSI C63.10	11.12.1	Radiated emission measurements
☒	☒ ANSI C63.10	6.3	Radiated spurious emission test
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

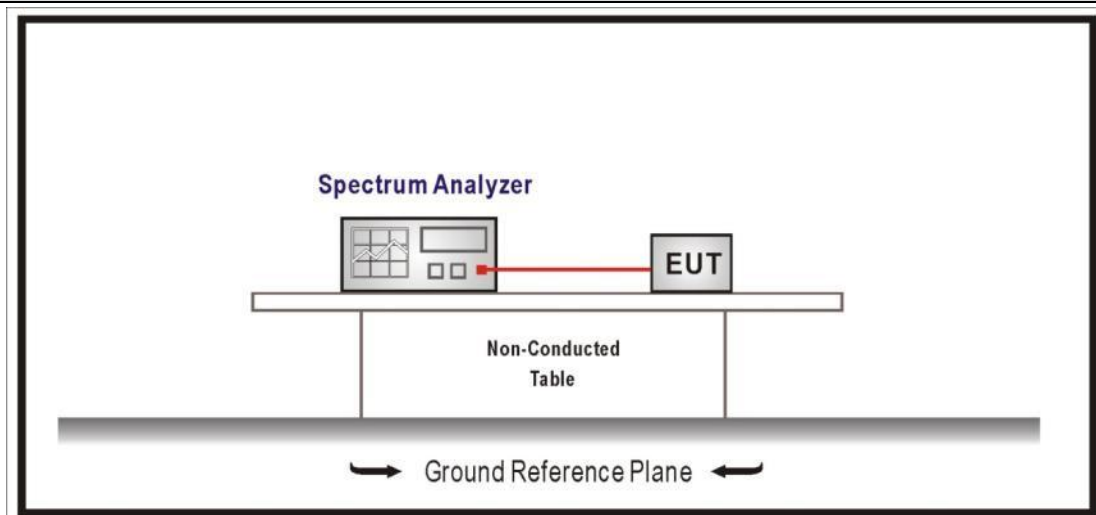
4.6 DTS Bandwidth**VERDICT: PASS****4.6.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
-----------------	---

Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

Standard	ANSI C63.10 Paragraph 6.7
-----------------	---------------------------

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs. The occupied bandwidth should be within the required frequency range.

4.6.2 Test Setup**4.6.3 Test Procedure**

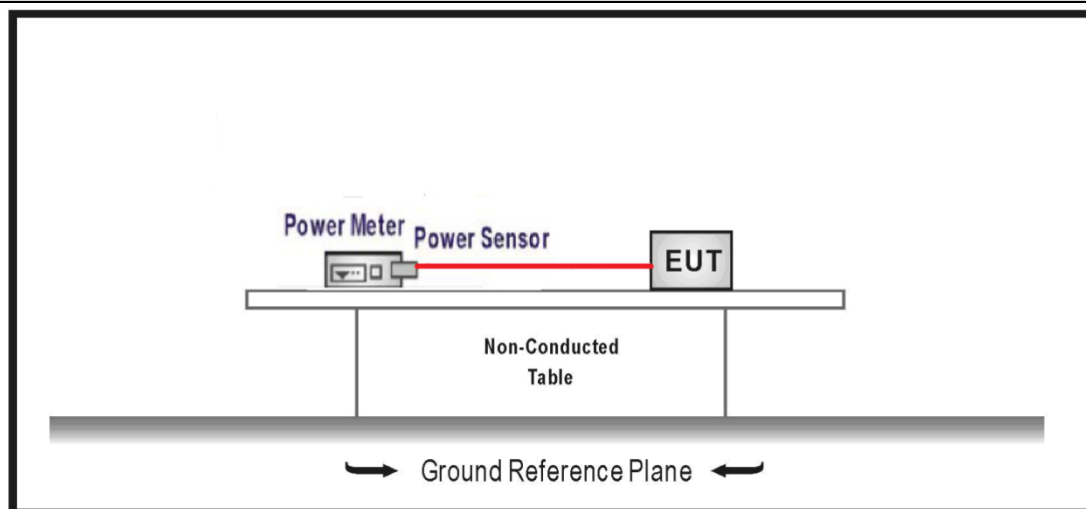
	Reference Rule	Chapter	Description
☒	ANSI C63.10	11.8	DTS bandwidth
	☒ ANSI C63.10	11.8.1	Option 1
	☐ ANSI C63.10	11.8.2	Option 2
☒	ANSI C63.10	6.9	Occupied bandwidth
	☐ ANSI C63.10	6.9.2	relative measurement procedure
	☒ ANSI C63.10	6.9.3	power bandwidth (99%) measurement procedure

4.7 Fundamental emission output power**VERDICT: PASS****4.7.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.247 (b)(3)
☒	GTX <6dBi	Pout≤30dBm
☐	GTX >6dBi	
☐	Non-Fix point-point	Pout≤30-(GTX -6)
☐	Fix point-point	Pout≤30-[(GTX-6)]/3
☐	Point-to-multipoint	Pout≤30-(GTX-6)
☐	Overlap Beams	Pout≤30-[(GTX-6)]/3
☐	Avgregate power transmitted simultaneously on all beams	Pout≤30-[(GTX-6)]/3
☐	single directional beam	Pout≤30-[(GTX-6)]/3+8dB

Note 1 : GTX directional gain of transmitting antennas.

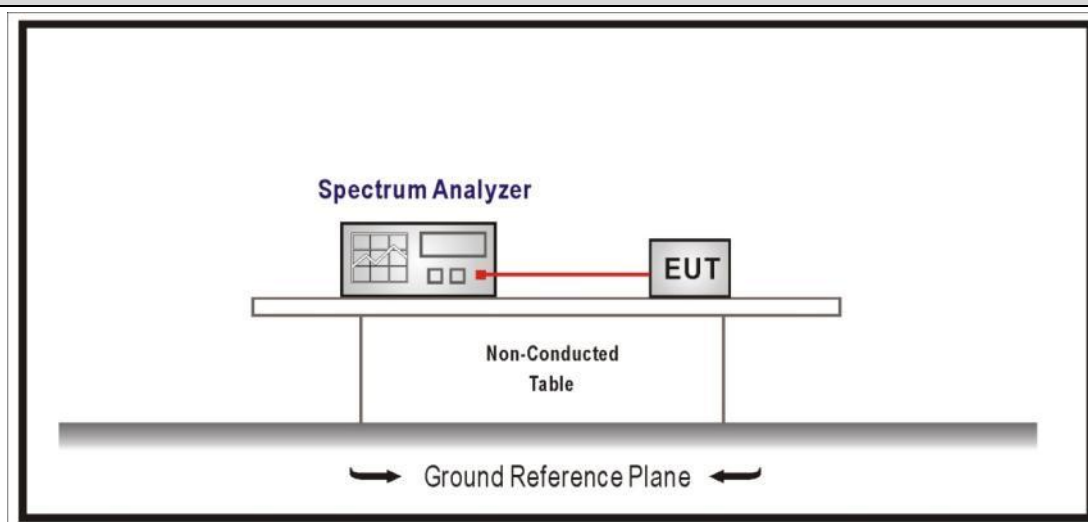
Note 2 : Pout is maximum conducted output power .

4.7.2 Test Setup**4.7.3 Test Procedure**

	References Rule		Chapter	Description
☒	ANSI C63.10		11.9	Fundamental emission output power
☒	ANSI C63.10		11.9.1	Maximum peak conducted output power
	☐	ANSI C63.10	11.9.1.1	RBW ≥ DTS bandwidth
	☒	ANSI C63.10	11.9.1.2	PKPM1 Peak power meter method

4.8 Power Density**VERDICT: PASS****4.8.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.247 (e)

Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$ **4.8.2 Test Setup****4.8.3 Test Procedure**

	References Rule	Chapter	Description
☒	ANSI C63.10	11.10	Maximum power spectral density level in the fundamental emission
☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
☒	KDB 662911	E2)c)	In-Band Power Spectral Density (PSD) Measurements

4.9 Antenna Requirement**VERDICT: PASS****4.9.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

4.9.2 Antenna Connector Construction:

- | | |
|-------------------------------------|--|
| ☐ | The use of a permanently attached antenna |
| ☐ | The antenna use of a unique coupling to the intentional radiator |
| ☒ | The use of a nonstandard antenna jack or electrical connector |

Please refer to the attached document "Internal Photograph" to show the antenna connector.

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

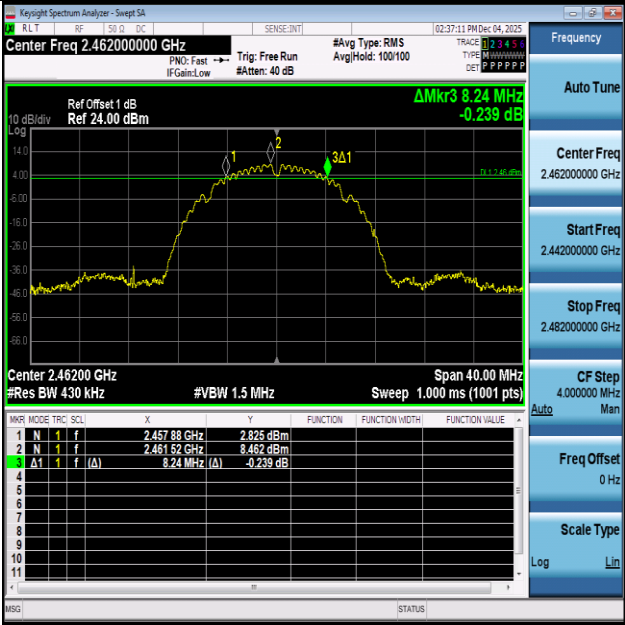
Appendix

DTS Bandwidth Test Result

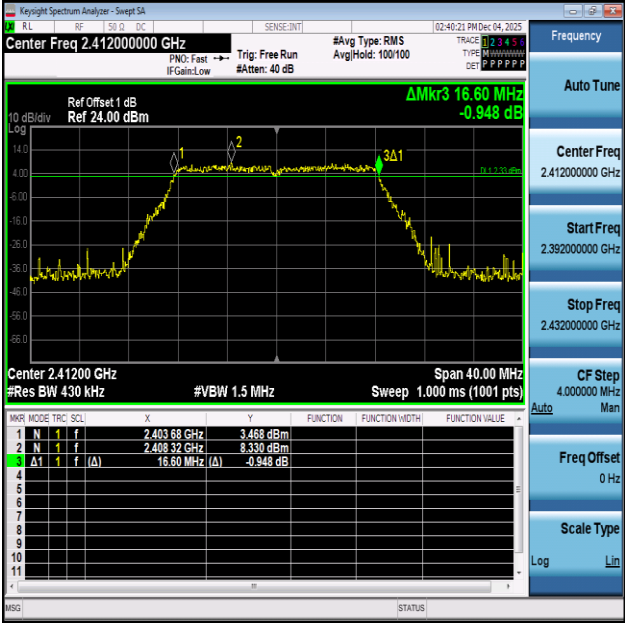
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.240	2407.880	2416.120	0.5	PASS
11B	Ant1	2437	8.240	2432.880	2441.120	0.5	PASS
11B	Ant1	2462	8.240	2457.880	2466.120	0.5	PASS
11G	Ant1	2412	16.600	2403.680	2420.280	0.5	PASS
11G	Ant1	2437	16.480	2428.760	2445.240	0.5	PASS
11G	Ant1	2462	16.600	2453.720	2470.320	0.5	PASS
11N20SISO	Ant1	2412	17.720	2403.160	2420.880	0.5	PASS
11N20SISO	Ant1	2437	17.840	2428.080	2445.920	0.5	PASS
11N20SISO	Ant1	2462	17.920	2453.000	2470.920	0.5	PASS
11N40SISO	Ant1	2422	36.800	2403.680	2440.480	0.5	PASS
11N40SISO	Ant1	2437	36.720	2418.760	2455.480	0.5	PASS
11N40SISO	Ant1	2452	36.960	2433.520	2470.480	0.5	PASS
11AX20SISO	Ant1	2412	18.960	2402.560	2421.520	0.5	PASS
11AX20SISO	Ant1	2437	19.160	2427.400	2446.560	0.5	PASS
11AX20SISO	Ant1	2462	19.000	2452.520	2471.520	0.5	PASS
11AX40SISO	Ant1	2422	38.080	2402.880	2440.960	0.5	PASS
11AX40SISO	Ant1	2437	38.160	2417.800	2455.960	0.5	PASS
11AX40SISO	Ant1	2452	38.000	2433.120	2471.120	0.5	PASS

Test Graphs

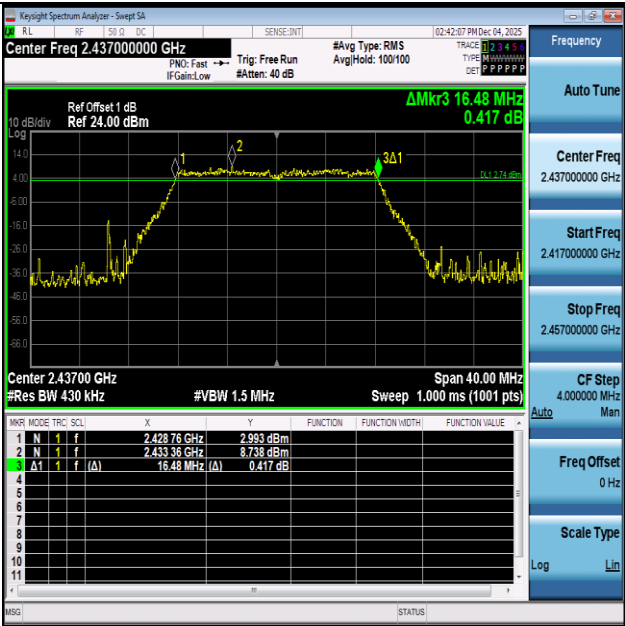




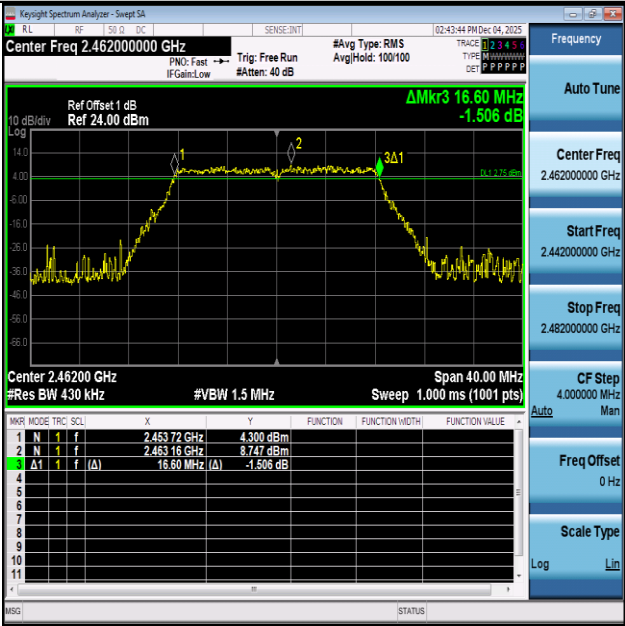
11B-Ant1-2462-PASS



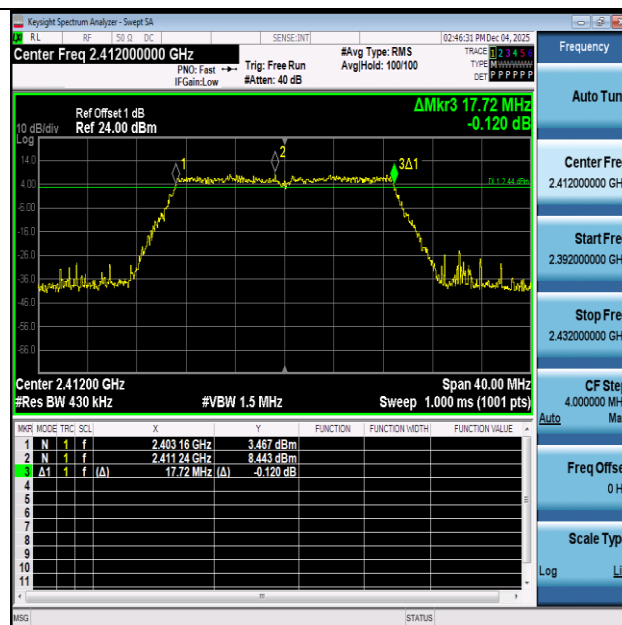
11G-Ant1-2412-PASS



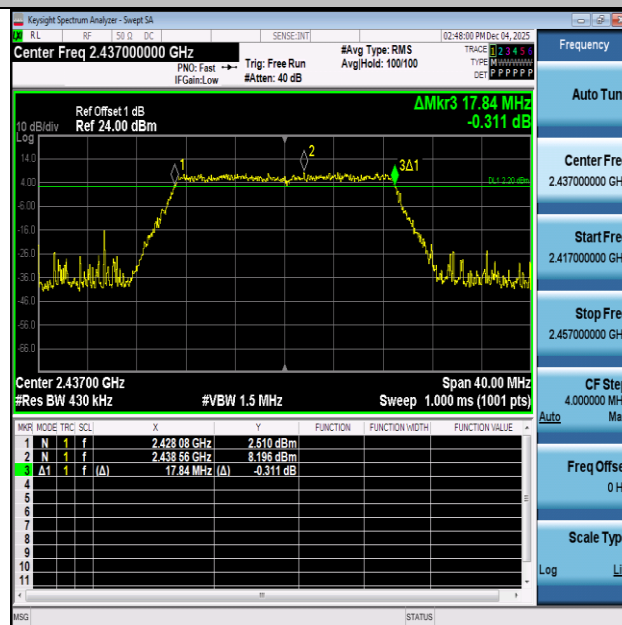
11G-Ant1-2437-PASS



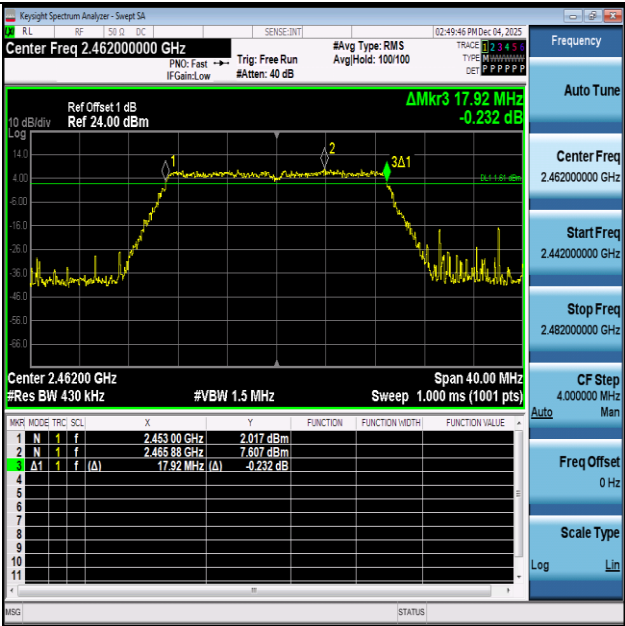
11G-Ant1-2462-PASS



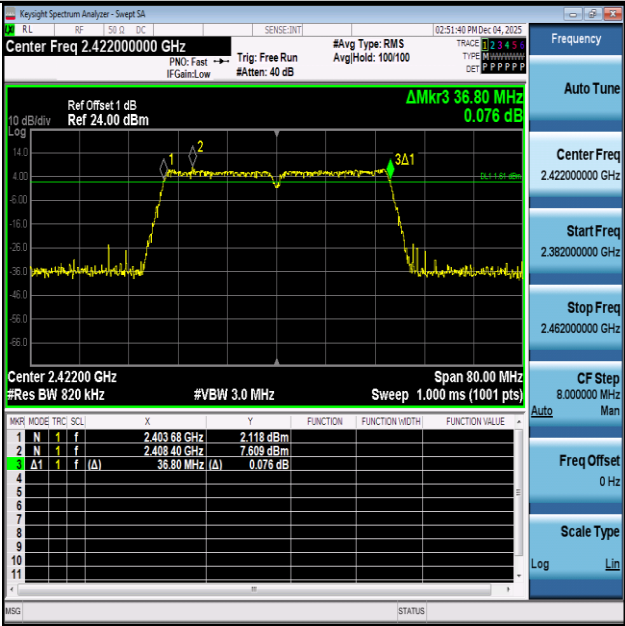
11N20SISO-Ant1-2412-PASS



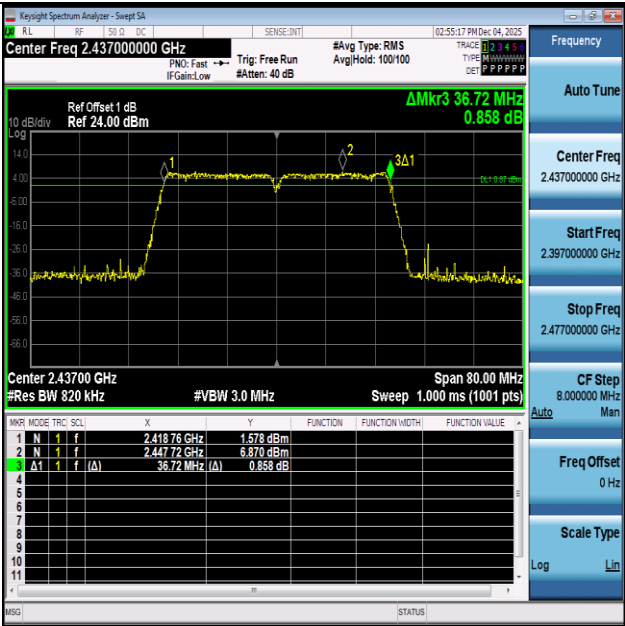
11N20SISO-Ant1-2437-PASS



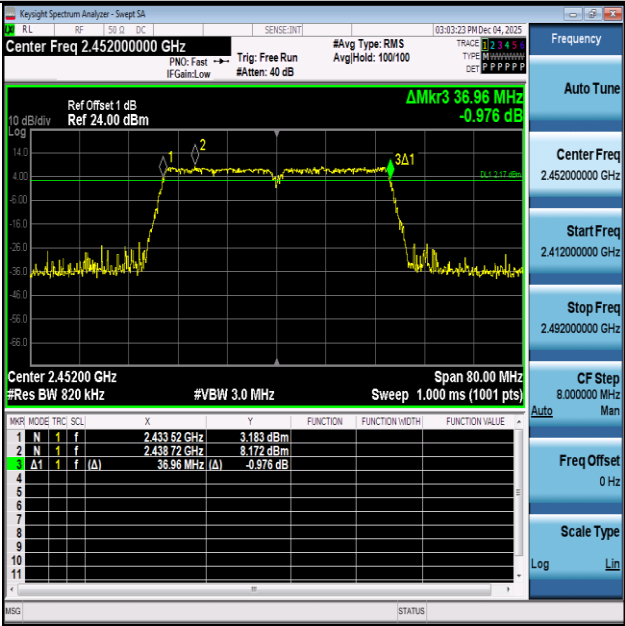
11N20SISO-Ant1-2462-PASS



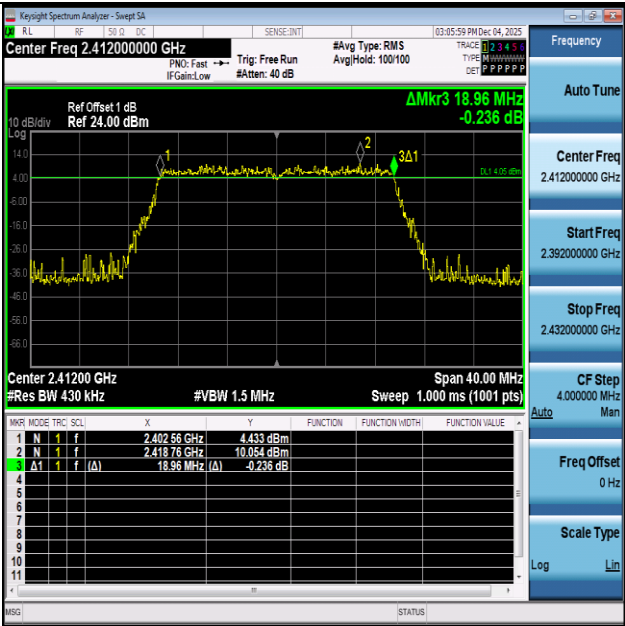
11N40SISO-Ant1-2422-PASS



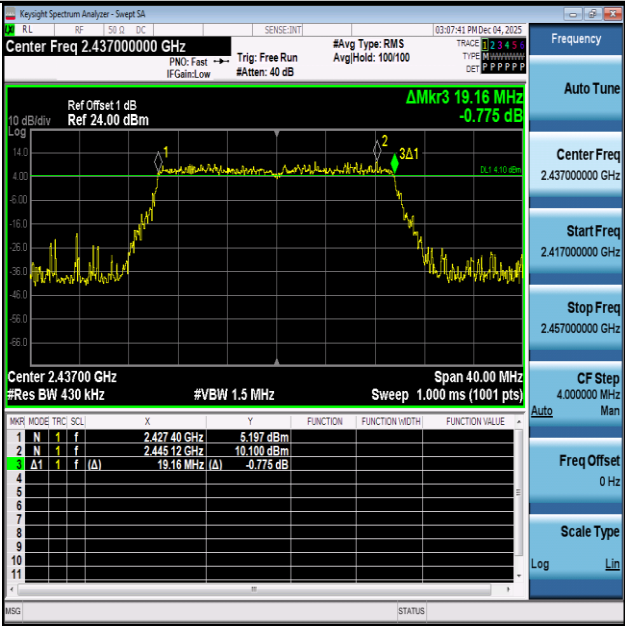
11N40SISO-Ant1-2437-PASS



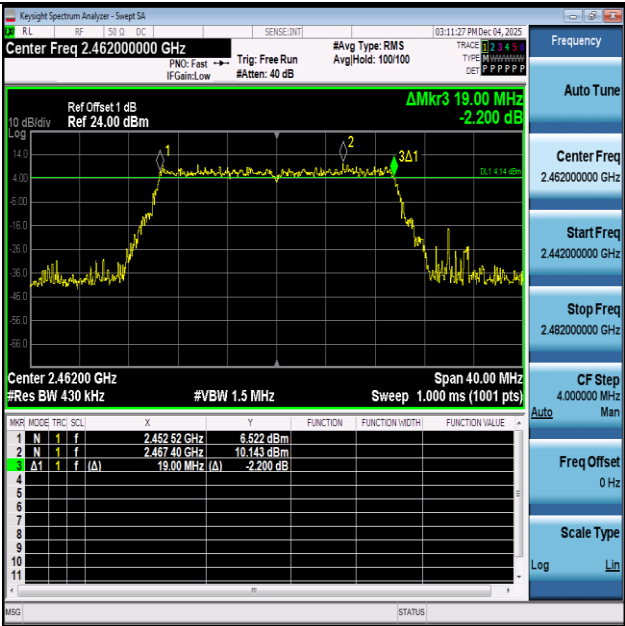
11N40SISO-Ant1-2452-PASS



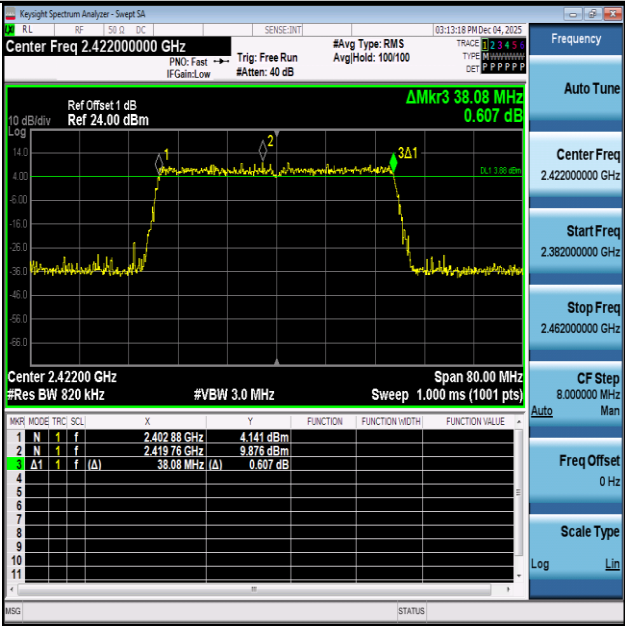
11AX20SISO-Ant1-2412-PASS



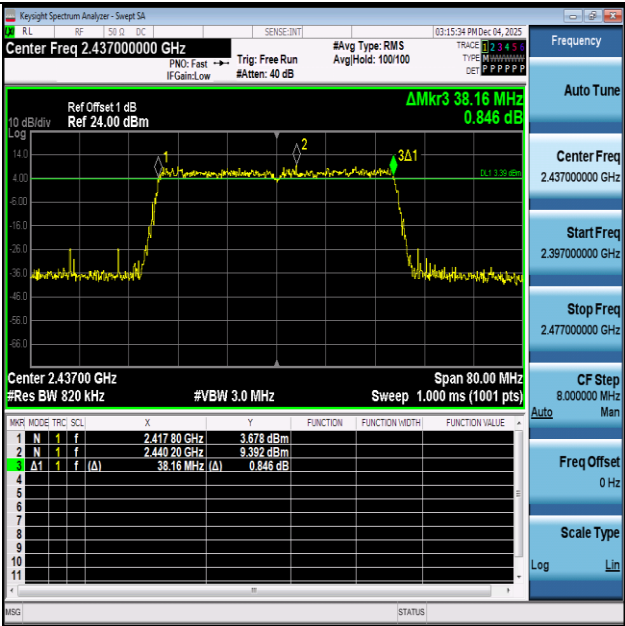
11AX20SISO-Ant1-2437-PASS



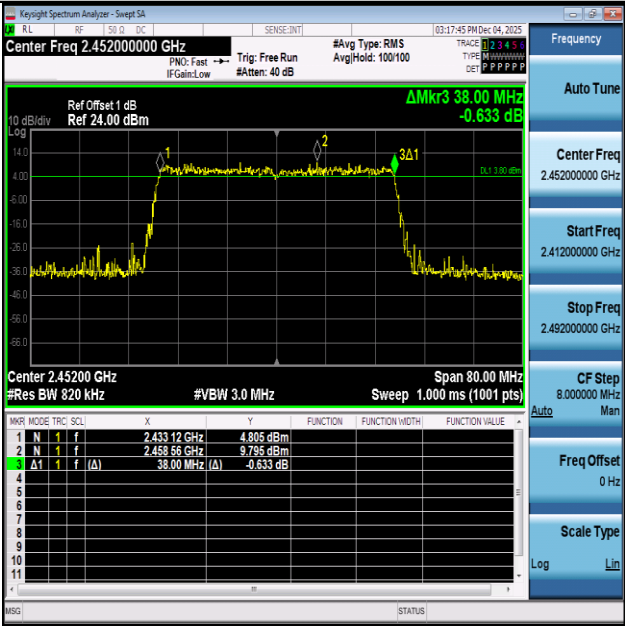
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2437-PASS



11AX40SISO-Ant1-2452-PASS

Maximum conducted output power

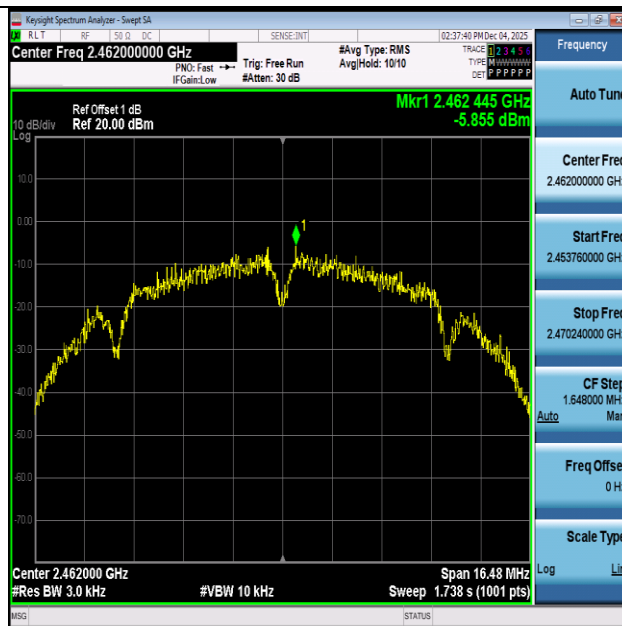
Test Mode	Frequency[MHz]	Output power [dBm]	Limit [dBm]	Verdict
11B	2412	9.49	≤30.00	PASS
11B	2437	11.46	≤30.00	PASS
11B	2462	14.62	≤30.00	PASS
11G	2412	21.13	≤30.00	PASS
11G	2437	22.86	≤30.00	PASS
11G	2462	21.32	≤30.00	PASS
11N20SISO	2412	21.57	≤30.00	PASS
11N20SISO	2437	22.90	≤30.00	PASS
11N20SISO	2462	21.12	≤30.00	PASS
11N40SISO	2422	20.75	≤30.00	PASS
11N40SISO	2437	21.52	≤30.00	PASS
11N40SISO	2452	22.31	≤30.00	PASS
11AX20SISO	2412	22.37	≤30.00	PASS
11AX20SISO	2437	23.51	≤30.00	PASS
11AX20SISO	2462	22.79	≤30.00	PASS
11AX40SISO	2422	21.19	≤30.00	PASS
11AX40SISO	2437	22.53	≤30.00	PASS
11AX40SISO	2452	21.77	≤30.00	PASS

Maximum power spectral density Test Result

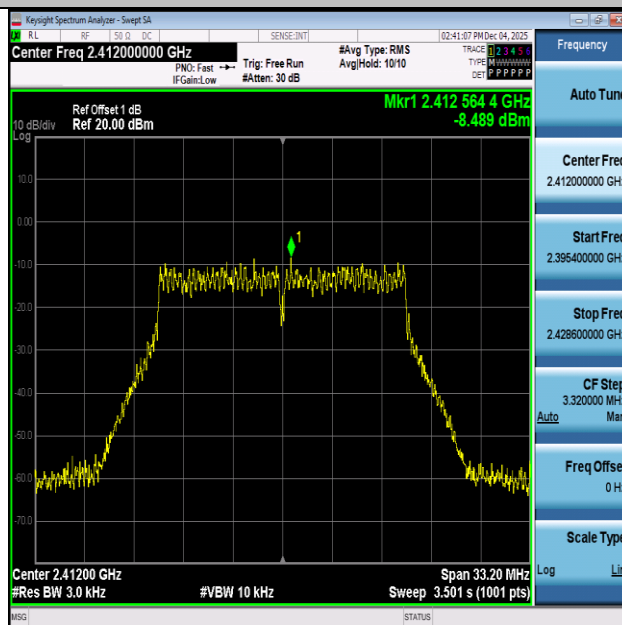
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.50	≤8.00	PASS
11B	Ant1	2437	-5.74	≤8.00	PASS
11B	Ant1	2462	-5.86	≤8.00	PASS
11G	Ant1	2412	-8.49	≤8.00	PASS
11G	Ant1	2437	-9.05	≤8.00	PASS
11G	Ant1	2462	-9.15	≤8.00	PASS
11N20SISO	Ant1	2412	-8.96	≤8.00	PASS
11N20SISO	Ant1	2437	-8.67	≤8.00	PASS
11N20SISO	Ant1	2462	-9.61	≤8.00	PASS
11N40SISO	Ant1	2422	-13.23	≤8.00	PASS
11N40SISO	Ant1	2437	-14.04	≤8.00	PASS
11N40SISO	Ant1	2452	-12.34	≤8.00	PASS
11AX20SISO	Ant1	2412	-10.20	≤8.00	PASS
11AX20SISO	Ant1	2437	-10.22	≤8.00	PASS
11AX20SISO	Ant1	2462	-10.38	≤8.00	PASS
11AX40SISO	Ant1	2422	-12.93	≤8.00	PASS
11AX40SISO	Ant1	2437	-14.18	≤8.00	PASS
11AX40SISO	Ant1	2452	-12.11	≤8.00	PASS

Test Graphs

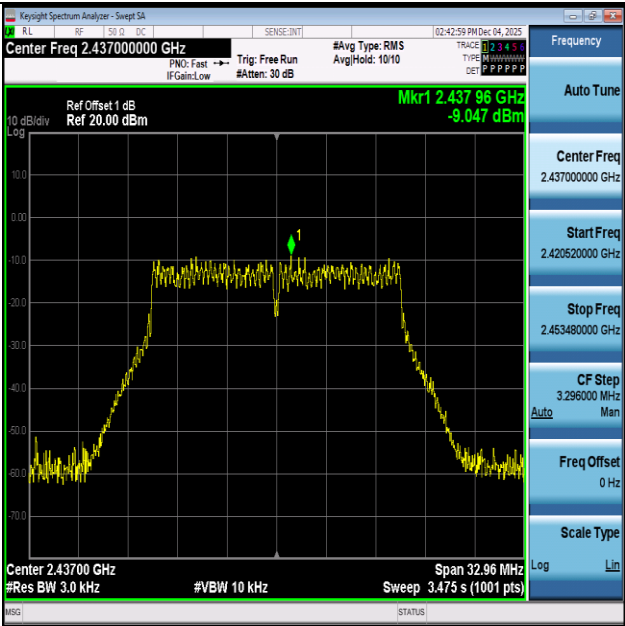




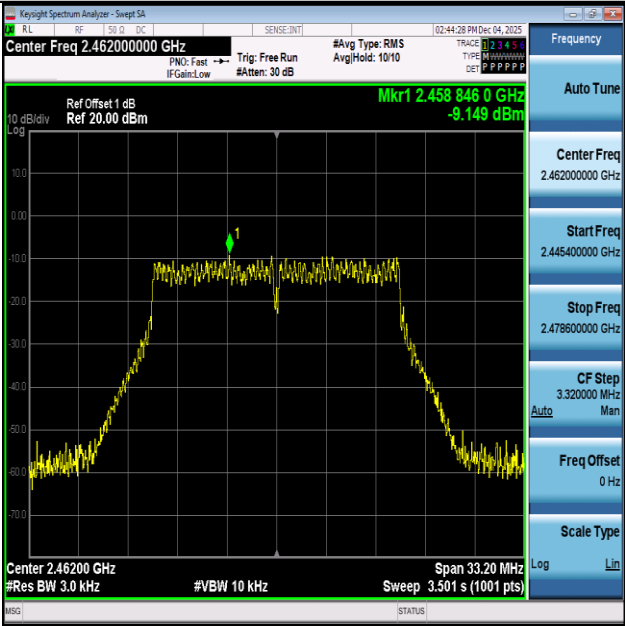
11B-Ant1-2462-PASS



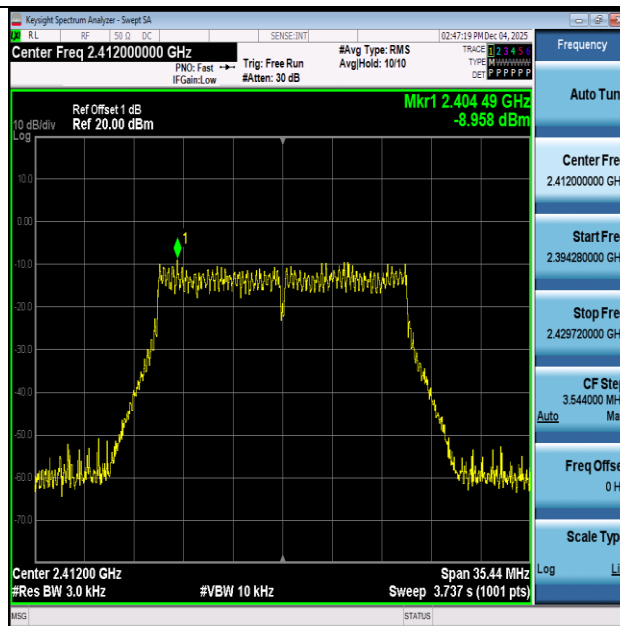
11G-Ant1-2412-PASS



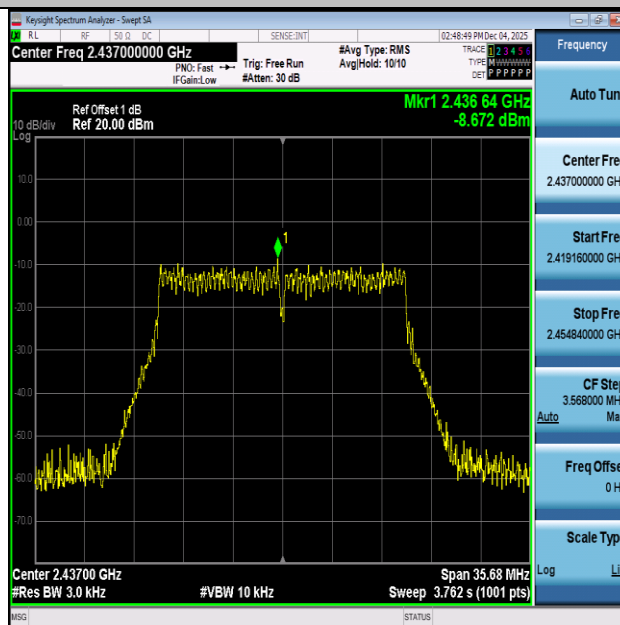
11G-Ant1-2437-PASS



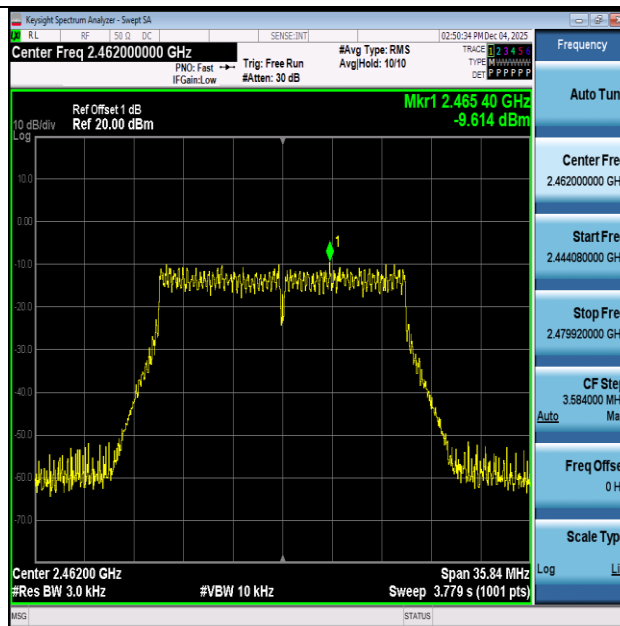
11G-Ant1-2462-PASS



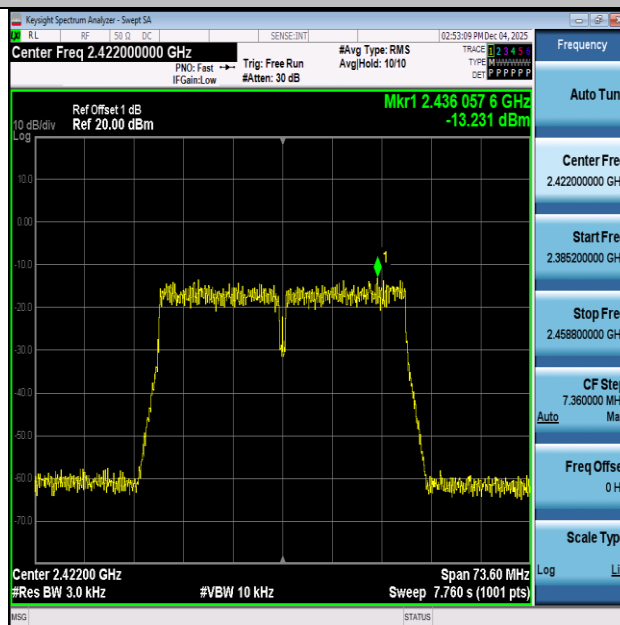
11N20SISO-Ant1-2412-PASS



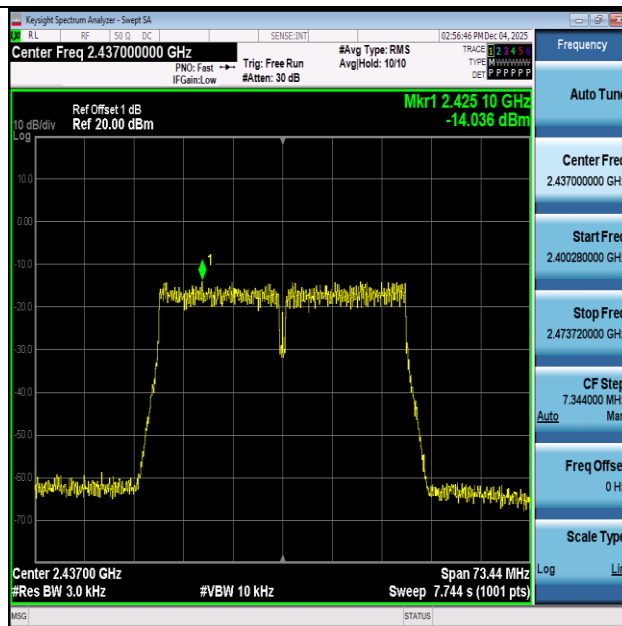
11N20SISO-Ant1-2437-PASS



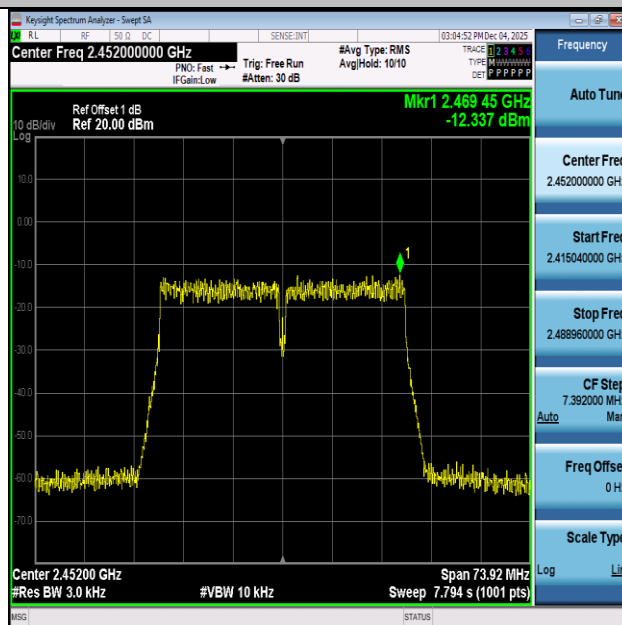
11N20SISO-Ant1-2462-PASS



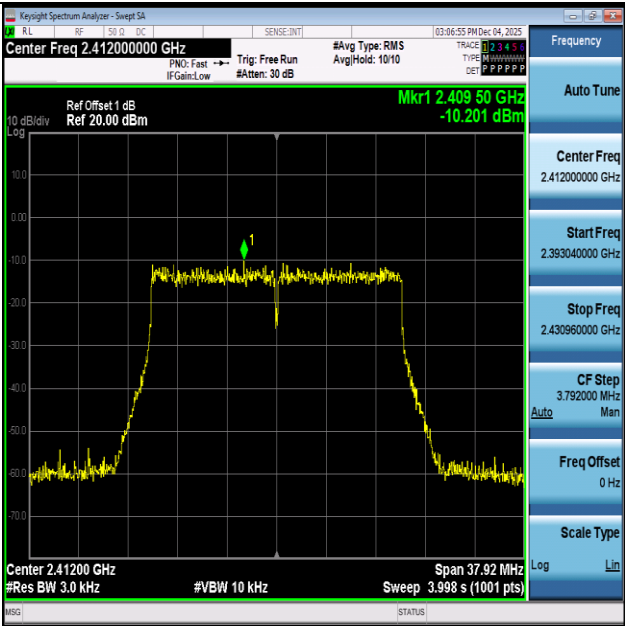
11N40SISO-Ant1-2422-PASS



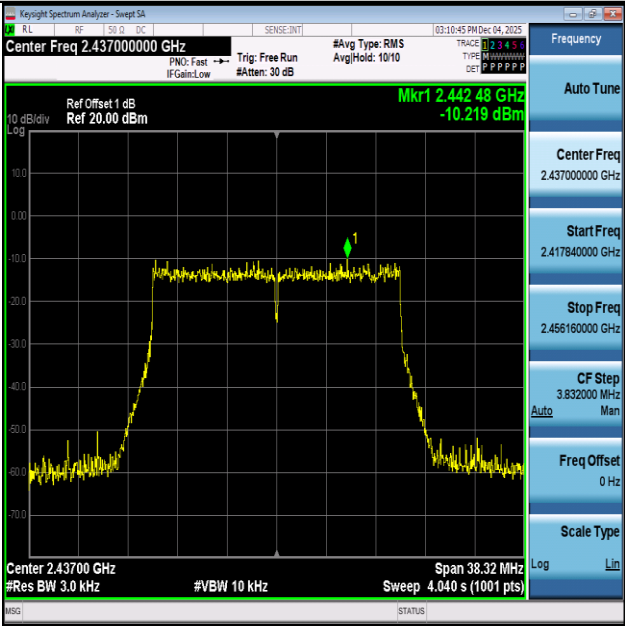
11N40SISO-Ant1-2437-PASS



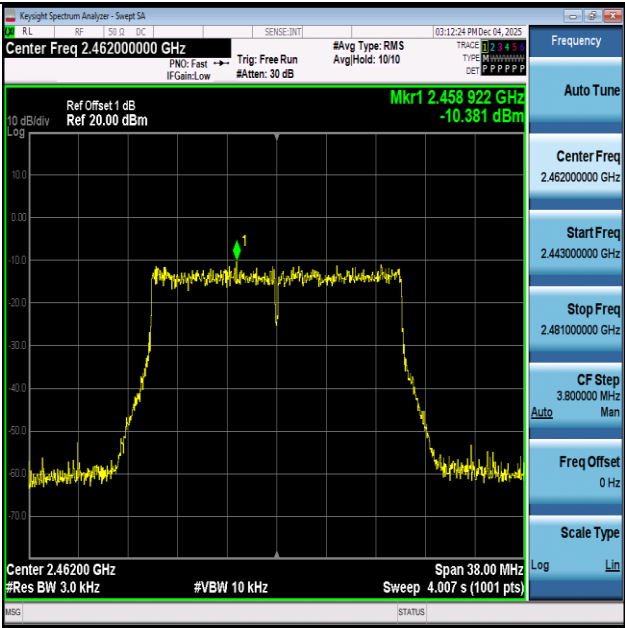
11N40SISO-Ant1-2452-PASS



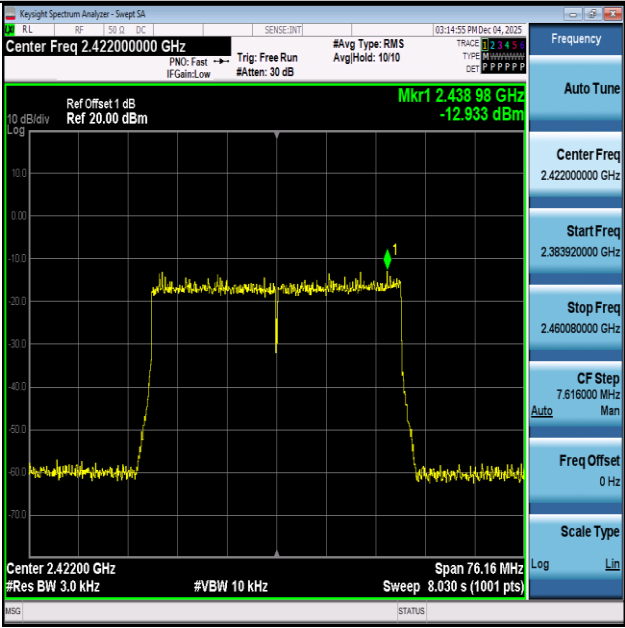
11AX20SISO-Ant1-2412-PASS



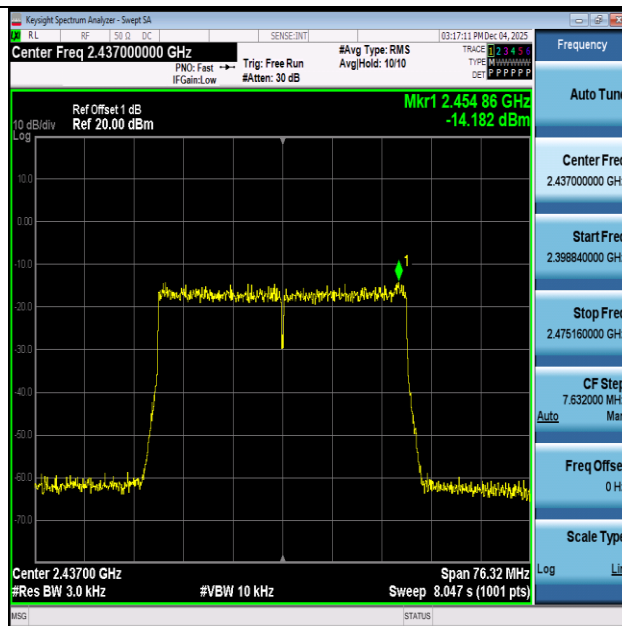
11AX20SISO-Ant1-2437-PASS



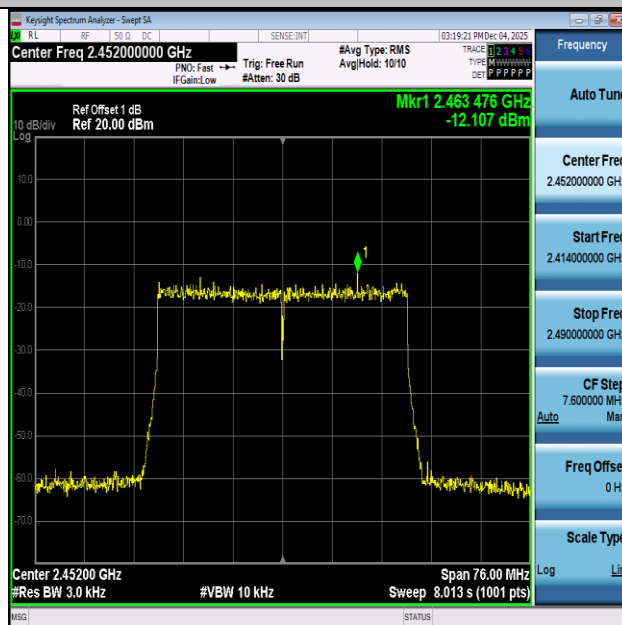
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS

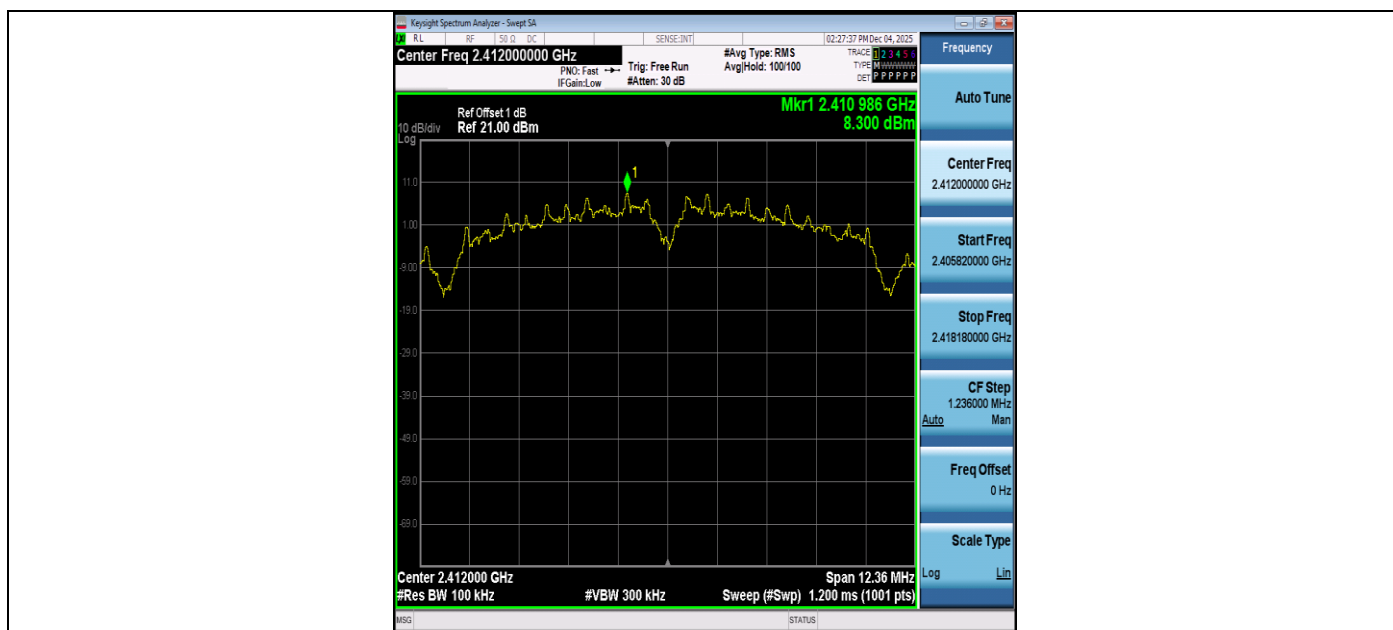


11AX40SISO-Ant1-2437-PASS

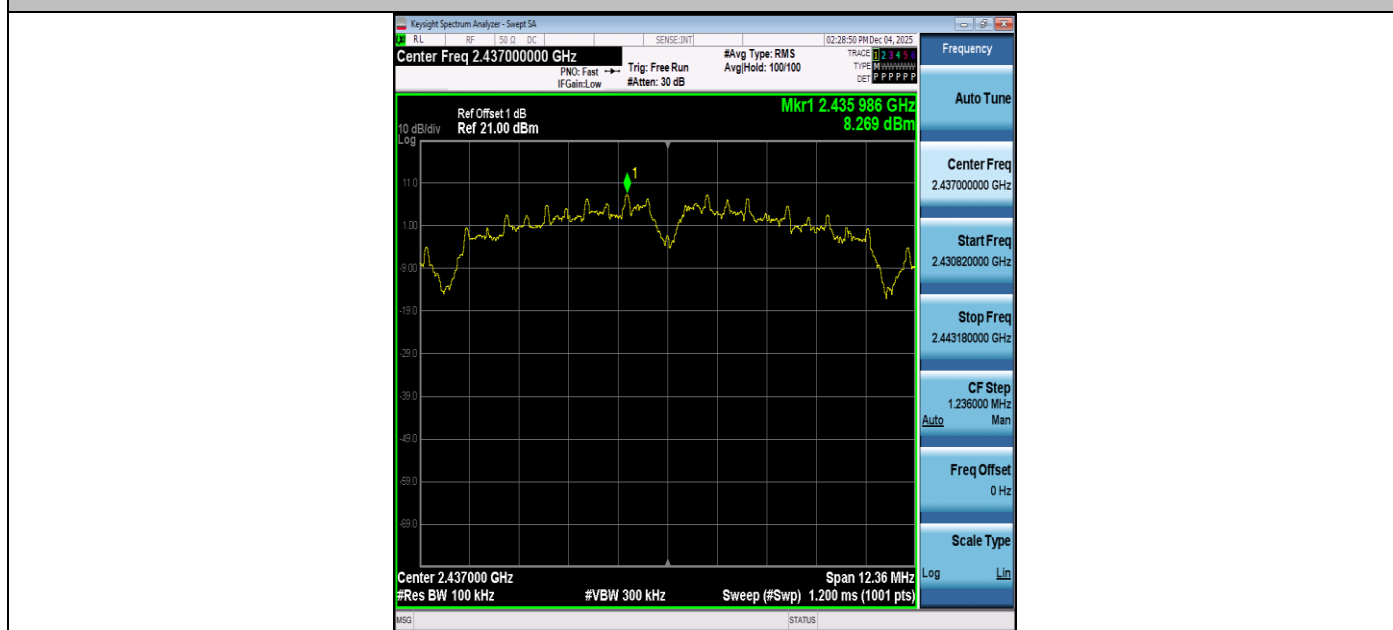


11AX40SISO-Ant1-2452-PASS

Reference level measurement Test Graphs



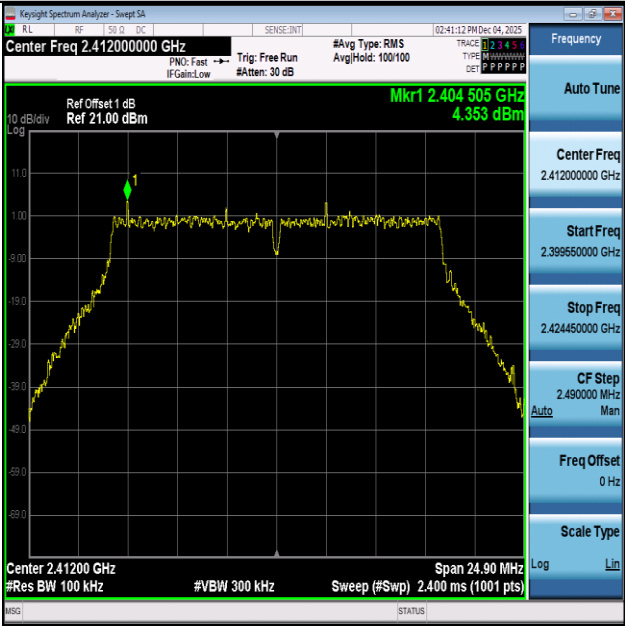
11B-Ant1-2412-PASS



11B-Ant1-2437-PASS



11B-Ant1-2462-PASS



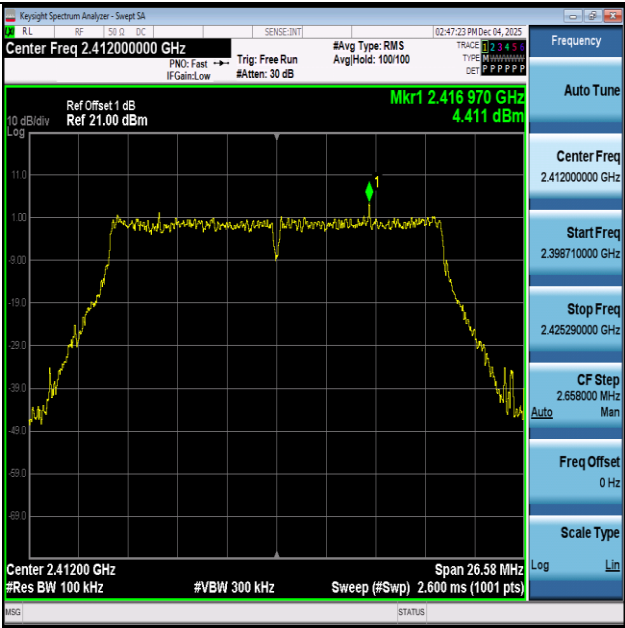
11G-Ant1-2412-PASS



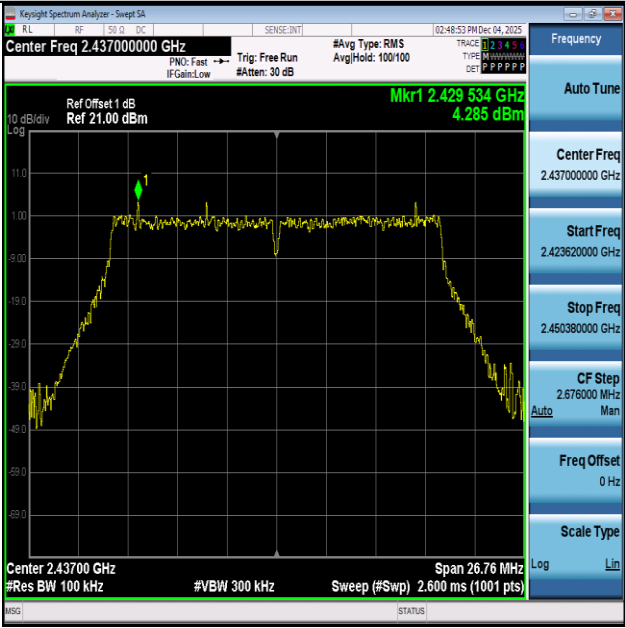
11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



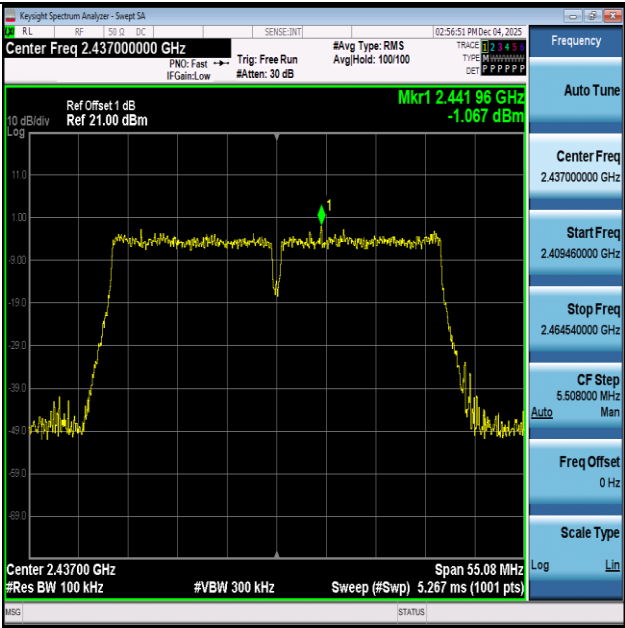
11N20SISO-Ant1-2437-PASS



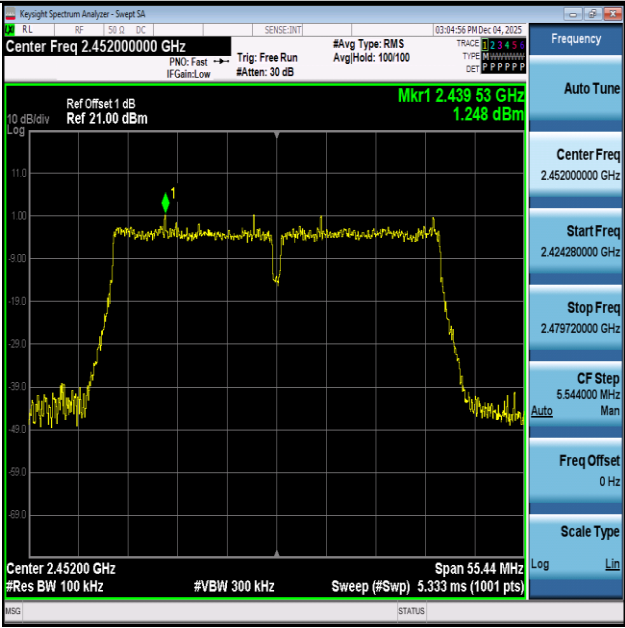
11N20SISO-Ant1-2462-PASS



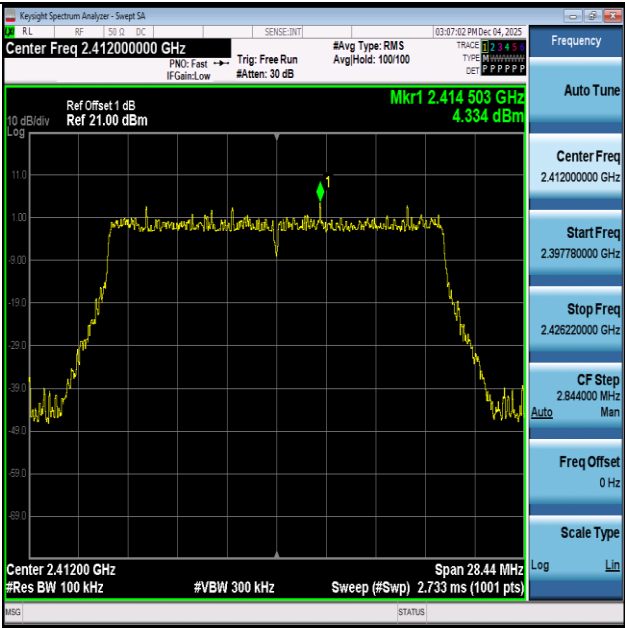
11N40SISO-Ant1-2422-PASS



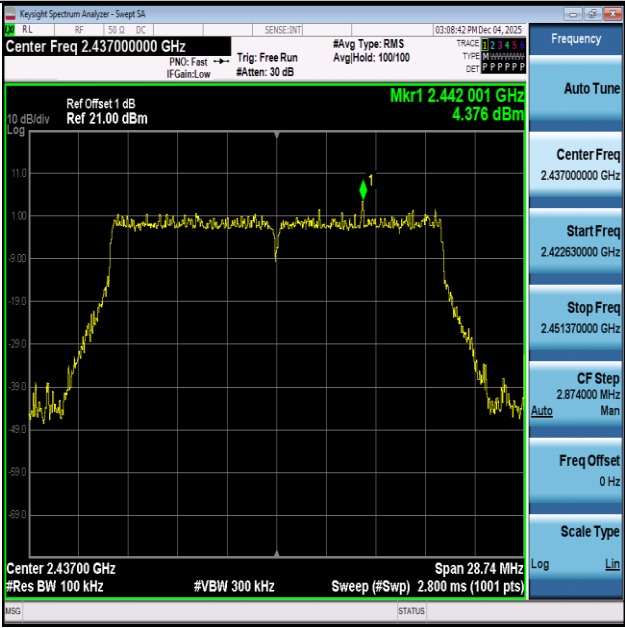
11N40SISO-Ant1-2437-PASS



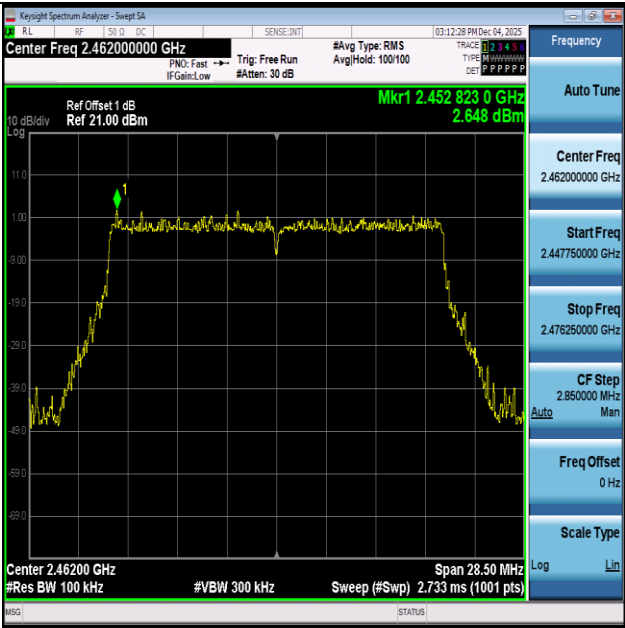
11N40SISO-Ant1-2452-PASS



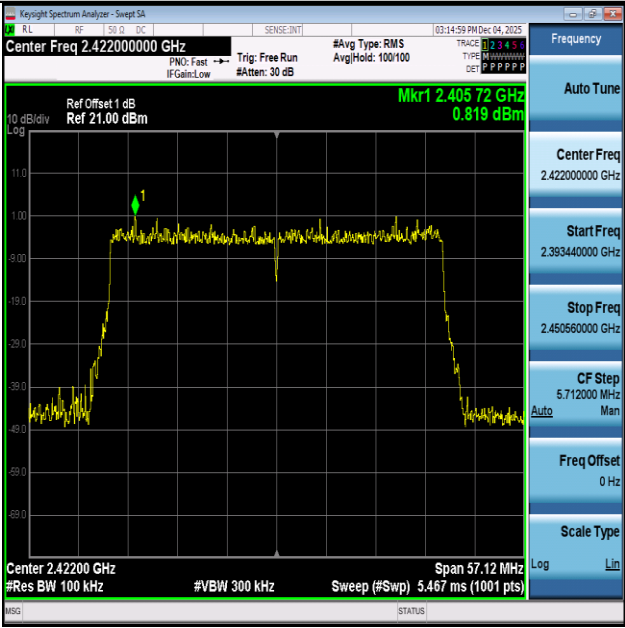
11AX20SISO-Ant1-2412-PASS



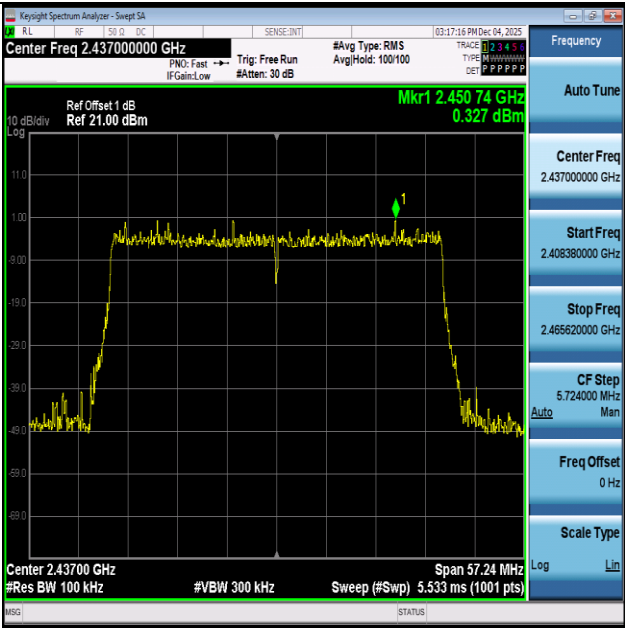
11AX20SISO-Ant1-2437-PASS



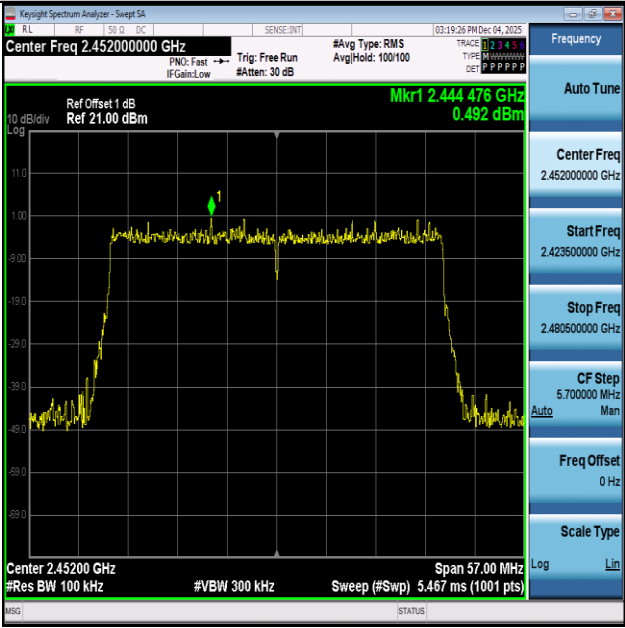
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2437-PASS

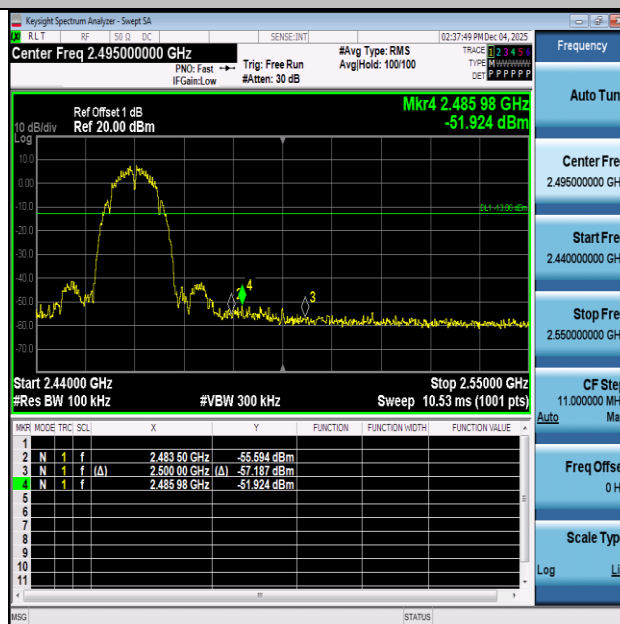


11AX40SISO-Ant1-2452-PASS

Conducted Band edge measurements Test Graphs



11B-Ant1-2412-PASS



11B-Ant1-2462-PASS