VARIANT FCC TEST REPORT

(PART 22)

Applicant:	COOSEA GROUP (HK) COMPANY LIMITED
Address:	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL, HONG KONG, CHINA

Manufacturer or Supplier:	COOSEA GROUP (HK) COMPANY LIMITED
Address:	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL, HONG KONG, CHINA
Product:	LTE Smartphone
Brand Name:	Cricket
Model Name:	SL100EA
FCC ID:	2A28USL100EA
Date of tests:	Oct. 27, 2021 ~ Jun. 08, 2022

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 22, Subpart H** ☒ **FCC Part 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI C63.26-2015**
☒ **ANSI/TIA/EIA-603-E**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Date: Jun. 08, 2022	Luke Lu Date: Jun. 08, 2022

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

BV 7Layers Communications Technology (Shenzhen) Co., Ltd
No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China
Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

TABLE OF CONTENTS

RELEASE CONTROL RECORD **4**

1 SUMMARY OF TEST RESULTS **5**

1.1 MEASUREMENT UNCERTAINTY 5

1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION **8**

2.1 GENERAL DESCRIPTION OF EUT 8

2.2 CONFIGURATION OF SYSTEM UNDER TEST 10

2.3 DESCRIPTION OF SUPPORT UNITS 11

2.4 TEST ITEM AND TEST CONFIGURATION 11

2.5 EUT OPERATING CONDITIONS 15

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS 16

3 TEST TYPES AND RESULTS **17**

3.1 OUTPUT POWER MEASUREMENT 17

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 17

3.1.2 TEST PROCEDURES 17

3.1.3 TEST SETUP 18

3.1.4 TEST RESULTS 18

3.2 FREQUENCY STABILITY MEASUREMENT 27

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 27

3.2.2 TEST PROCEDURE 27

3.2.3 TEST SETUP 27

3.2.4 TEST RESULTS 28

3.3 OCCUPIED BANDWIDTH MEASUREMENT 29

3.3.1 TEST PROCEDURES 29

3.3.2 TEST SETUP 29

3.3.3 TEST RESULTS 29

3.4 BAND EDGE MEASUREMENT 30

3.4.1 LIMITS OF BAND EDGE MEASUREMENT 30

3.4.2 TEST SETUP 30

3.4.3 TEST PROCEDURES 31

3.4.4 TEST RESULTS 32

3.5 CONDUCTED SPURIOUS EMISSIONS 33

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 33

3.5.2 TEST PROCEDURE 33

3.5.3 TEST SETUP 33

3.5.4 TEST RESULTS 34

3.6 RADIATED EMISSION MEASUREMENT 35

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT 35

3.6.2 TEST PROCEDURES 35

3.6.3 DEVIATION FROM TEST STANDARD 35

3.6.4 TEST SETUP 36

3.6.5 TEST RESULTS 38

3.7 PEAK TO AVERAGE RATIO 58
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 58
3.7.2 TEST SETUP 58
3.7.3 TEST PROCEDURES 58
3.7.4 TEST RESULTS 59

4 PHOTOGRAPHS OF THE TEST CONFIGURATION 60

5 INFORMATION ON THE TESTING LABORATORIES 61

6 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 62

7 APPENDIX A 63

WCDMA BAND5: 63

LTE BAND5 76

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21100025RF04	Original release	Dec. 24, 2021
W7L-220503W001RF04	Based on the original report W7L-P21100025RF04 changing SW version and adding 3G function. Again Verify the RSE, Power and adding 3G data.	Jun. 08, 2022

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2		
STANDARD SECTION	**TEST TYPE**	**RESULT**
§2.1046	Conducted Output Power	Compliance
§22.913 (a)(5)	Effective Radiated Power	Compliance
§2.1055 §22.355	Frequency Stability	Compliance
§2.1049	Occupied Bandwidth	Compliance
§22.913 (d)	Peak to average ratio*	Compliance
§22.917(a)	Band Edge Measurements	Compliance
§2.1051 §22.917(a)	Conducted Spurious Emissions	Compliance
§2.1053 §22.917(a)	Radiated Spurious Emissions	Compliance

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

Note: Except the data of RSE and power, other data please refer to APPENDIX A.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Maximum Peak Output Power	±2.06dB
Frequency Stability	±76.97Hz
Radiated emissions (30MHz~1GMHz)	±4.98dB
Radiated emissions (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Band Edge Measurements	±4.70dB
Peak to average ratio	±0.76dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95%

confidence level using a coverage factor of k=2.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 22,21	Apr. 21,22
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 21,22	Apr. 20,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 02,22	Jun. 01,23
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-051	Feb. 14.20	Feb. 13.23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 04,22	Mar. 03,23
Horn Antenna	ETS-LINDGREN	3117	00168692	Apr. 02,21	Apr. 01,22
Horn Antenna	ETS-LINDGREN	3117	00168692	Apr. 01,22	Mar. 31,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 25,21	Feb. 24,22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 24,22	Feb. 23,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 01,22	May. 31,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,22	Jun. 01,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 21,22	Apr. 20,23
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 02,22	Jun. 01,23
Power Meter	Anritsu	ML2495A	1506002	Apr. 07,21	Apr. 06,22
Power Meter	Anritsu	ML2495A	1506002	Apr. 06,22	Apr. 05,23
Power Sensor	Anritsu	MA2411B	1339352	May. 07,21	May. 06,22
Power Sensor	Anritsu	MA2411B	1339352	May. 06,22	May. 05,23
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 01,22	May. 31,23
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 05,21	Mar. 04,22
MXG Analog Microvave	KEYSIGHT	N5183A	MY50143024	Mar. 04,22	Mar. 03,23

Signal Generator					
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	LTE Smartphone	
BRAND NAME	Cricket	
MODEL NAME	SL100EA	
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.85Vdc (Li-ion, battery)	
MODULATION TYPE	**WCDMA**	BPSK, QPSK
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	**WCDMA**	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
MAX. ERP POWER	**WCDMA**	81.10mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	122.18mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	122.74mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	123.88mW
	LTE Band 5 (Channel Bandwidth: 10MHz)	124.17mW
EMISSION DESIGNATORGOGN	**WCDMA**	4M20F9W
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	QPSK: 1M12G7D
		16QAM: 1M11W7D
		64QAM: 1M12W7D
	LTE Band 5 (Channel Bandwidth: 3MHz)	QPSK: 2M73G7D
		16QAM: 2M73W7D
		64QAM: 2M74W7D
	LTE Band 5 (Channel Bandwidth: 5MHz)	QPSK: 4M55G7D
		16QAM: 4M56W7D
		64QAM: 4M55W7D

	LTE Band 5 (Channel Bandwidth: 10MHz)	QPSK: 9M06G7D
		16QAM: 9M09W7D
		64QAM:9M08W7D
ANTENNA TYPE	PIFA Antenna with -1.2dBi gain for WCDMA V/ LTE B5	
HW VERSION	1.0	
SW VERSION	SL100EAC20101	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable: unshielded without ferrite, 1.0meter	
EXTREME TEMPERATURE	-10-55 ℃	
EXTREME VOLTAGE	3.6V - 4.4V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

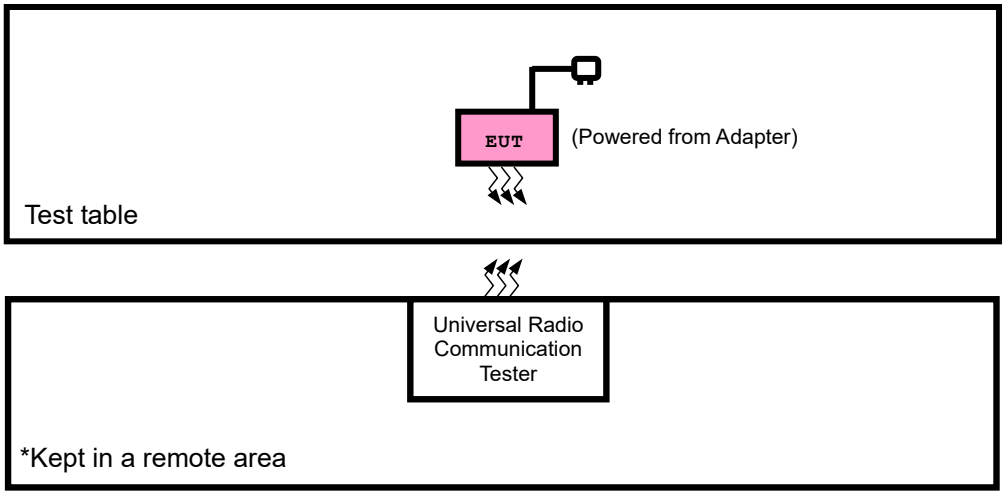
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

4. List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	COOSEA	ZHONGSHAN TIANMAO BATTERY CO., LTD	BL-A32CT	Capacity：3.85 Vdc, 3450mAh
AC Adapter	COOSEA	Guangdong Beicom Electronics Co., Ltd.	U312E0A050200	I/P:100-240V,50/60Hz,0.35A, O/P: 5.0V,2.0A 10.0W
USB Cable	COOSEA	Wivtak	TP-C0028-B3	Signal Line, 1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in ERP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

DESCRIPTION
EUT + Adapter with WCDMA or LTE link

WCDMA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	4132 to 4233	4132, 4182, 4233	WCDMA
FREQUENCY STABILITY	4132 to 4233	4132, 4182, 4233	WCDMA
OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
BAND EDGE	4132 to 4233	4132, 4233	WCDMA
CONDCUDETED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
RADIATED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4182, 4233	WCDMA

LTE BAND 5 MODE

TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
FREQUENCY STABILITY	20407 to 20643	20407, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20415 to 20635	20415, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
BAND EDGE	20407 to 20643	20407	1.4 MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
	20407 to 20643	20643	1.4 MHz	QPSK,16QAM,64QAM	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	20415 to 20635	20415	3 MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
	20415 to 20635	20635	3 MHz	QPSK,16QAM,64QAM	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	20425 to 20625	20425	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
	20425 to 20625	20625	5MHz	QPSK,16QAM,64QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20450 to 20600	20450	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
	20450 to 20600	20600	10MHz	QPSK,16QAM,64QAM	1 RB / 49 RB Offset
					50 RB / 0 RB Offset

CONDCUDETED EMISSION	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
RADIATED EMISSION	20407 to 20643	20525	1.4MHz	QPSK	1 RB / 0 RB Offset
	20415 to 20635	20525	3MHz	QPSK	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	3.6/3.85/4.4V By Battery	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDCUDETED EMISSION	23deg. C, 70%RH	DC5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC5V By Adapter	James Fu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T - L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas}, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

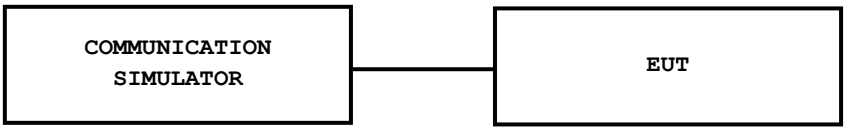
CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA V			Max. Tune-up Power
Channel	4132	4182	4233	
Frequency	826.4	836.4	846.6	
RMC 12.2K	22.26	**22.44**	22.38	23.5
HSDPA Subtest-1	21.32	21.49	21.37	22.5
HSDPA Subtest-2	21.25	21.42	21.38	22.5
HSDPA Subtest-3	20.79	20.94	20.92	22.0
HSDPA Subtest-4	20.75	20.88	20.84	22.0
DC-HSDPA Subtest-1	21.27	21.45	21.32	22.5
DC-HSDPA Subtest-2	21.22	21.40	21.30	22.5
DC-HSDPA Subtest-3	20.69	20.90	20.88	22.0
DC-HSDPA Subtest-4	20.65	20.88	20.85	22.0
HSUPA Subtest-1	21.24	21.40	21.40	22.5
HSUPA Subtest-2	19.25	19.37	19.38	20.5
HSUPA Subtest-3	20.31	20.53	20.46	21.5
HSUPA Subtest-4	19.29	19.41	19.42	20.5
HSUPA Subtest-5	21.26	21.45	21.43	22.5
HSPA+ Subtest-1	19.03	19.05	19.06	20.5

LTE Band 5

Band/BW	Modulation	RB Size	RB Offset	Low CH 20407	Mid CH 20525	High CH 20643	MPR
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz	
5/ 1.4	QPSK	1	0	24.04	24.02	24.03	0
		1	2	24.13	24.22	24.17	0
		1	5	24.03	24.00	24.07	0
		3	0	24.07	24.12	24.13	0
		3	1	24.09	24.18	24.12	0
		3	3	23.99	24.12	24.08	0
		6	0	23.10	23.20	23.14	1
	16QAM	1	0	23.49	23.59	23.51	1
		1	2	23.70	23.80	23.76	1
		1	5	23.43	23.55	23.52	1
		3	0	23.17	23.14	23.19	1
		3	1	23.06	23.14	23.12	1
		3	3	23.14	23.28	23.17	1
		6	0	22.10	22.18	22.21	2
	64QAM	1	0	22.27	22.29	22.23	2
		1	2	22.36	22.53	22.46	2
		1	5	22.33	22.30	22.30	2
		3	0	22.10	22.20	22.14	2
		3	1	22.04	22.19	22.11	2
		3	3	22.19	22.19	22.20	2
		6	0	21.16	21.23	21.19	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20415 Frequency 825.5 MHz	Mid CH 20525 Frequency 836.5 MHz	High CH 20635 Frequency 847.5 MHz	MPR
5/ 3	QPSK	1	0	23.99	24.01	24.00	0
		1	7	24.11	24.24	24.20	0
		1	14	23.97	24.06	24.03	0
		8	0	23.04	23.19	23.12	1
		8	3	23.09	23.18	23.09	1
		8	7	22.99	23.12	23.11	1
		15	0	23.09	23.20	23.11	1
	16QAM	1	0	23.53	23.53	23.55	1
		1	7	23.69	23.81	23.73	1
		1	14	23.48	23.51	23.55	1
		8	0	22.17	22.15	22.16	2
		8	3	22.08	22.12	22.18	2
		8	7	22.19	22.28	22.15	2
		15	0	22.10	22.18	22.16	2
	64QAM	1	0	22.30	22.28	22.26	2
		1	7	22.39	22.53	22.44	2
		1	14	22.33	22.30	22.31	2
		8	0	21.10	21.22	21.17	3
		8	3	21.08	21.13	21.16	3
		8	7	21.16	21.23	21.16	3
		15	0	21.18	21.20	21.23	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20425	Mid CH 20525	High CH 20625	MPR
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz	
5/ 5	QPSK	1	0	24.01	24.03	24.00	0
		1	12	24.10	24.28	24.17	0
		1	24	24.01	24.03	24.08	0
		12	0	23.06	23.18	23.09	1
		12	6	23.06	23.18	23.15	1
		12	13	22.99	23.11	23.08	1
		25	0	23.12	23.17	23.13	1
	16QAM	1	0	23.47	23.55	23.48	1
		1	12	23.71	23.83	23.72	1
		1	24	23.44	23.52	23.55	1
		12	0	22.13	22.15	22.16	2
		12	6	22.07	22.15	22.18	2
		12	13	22.12	22.28	22.17	2
		25	0	22.07	22.25	22.20	2
	64QAM	1	0	22.27	22.29	22.20	2
		1	12	22.36	22.54	22.49	2
		1	24	22.31	22.33	22.24	2
		12	0	21.12	21.24	21.19	3
		12	6	21.02	21.20	21.15	3
		12	13	21.20	21.22	21.13	3
		25	0	21.14	21.26	21.21	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 20450 Frequency 829 MHz	Mid CH 20525 Frequency 836.5 MHz	High CH 20600 Frequency 844 MHz	MPR
5/ 10	QPSK	1	0	24.05	24.08	24.05	0
		1	24	24.18	**24.29**	24.22	0
		1	49	24.05	24.08	24.09	0
		25	0	23.12	23.20	23.14	1
		25	12	23.13	23.23	23.17	1
		25	25	23.07	23.13	23.13	1
		50	0	23.14	23.25	23.15	1
	16QAM	1	0	23.55	23.61	23.56	1
		1	24	23.77	23.85	23.78	1
		1	49	23.51	23.57	23.57	1
		25	0	22.19	22.22	22.21	2
		25	12	22.14	22.20	22.20	2
		25	25	22.20	22.30	22.23	2
		50	0	22.15	22.26	22.22	2
	64QAM	1	0	22.31	22.34	22.28	2
		1	24	22.44	22.55	22.51	2
		1	49	22.35	22.38	22.32	2
		25	0	21.18	21.26	21.22	3
		25	12	21.10	21.21	21.17	3
		25	25	21.24	21.27	21.21	3
		50	0	21.20	21.28	21.24	3

ERP POWER (dBm)

WCDMA

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
4132	826.4	22.26	-1.2	18.91	77.80	7
4182	836.4	22.44	-1.2	19.09	81.10	7
4233	846.6	22.38	-1.2	19.03	79.98	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 5
CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	24.13	-1.2	20.78	119.67	7
20525	836.5	24.22	-1.2	20.87	122.18	7
20643	848.3	24.17	-1.2	20.82	120.78	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	23.7	-1.2	20.35	108.39	7
20525	836.5	23.8	-1.2	20.45	110.92	7
20643	848.3	23.76	-1.2	20.41	109.9	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	22.36	-1.2	19.01	79.62	7
20525	836.5	22.53	-1.2	19.18	82.79	7
20643	848.3	22.46	-1.2	19.11	81.47	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	24.11	-1.2	20.76	119.12	7
20525	836.5	24.24	-1.2	20.89	122.74	7
20635	847.5	24.2	-1.2	20.85	121.62	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	23.69	-1.2	20.34	108.14	7
20525	836.5	23.81	-1.2	20.46	111.17	7
20635	847.5	23.73	-1.2	20.38	109.14	7

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	22.39	-1.2	19.04	80.17	7
20525	836.5	22.53	-1.2	19.18	82.79	7
20635	847.5	22.44	-1.2	19.09	81.1	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	24.1	-1.2	20.75	118.85	7
20525	836.5	24.28	-1.2	20.93	123.88	7
20625	846.5	24.17	-1.2	20.82	120.78	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	23.71	-1.2	20.36	108.64	7
20525	836.5	23.83	-1.2	20.48	111.69	7
20625	846.5	23.72	-1.2	20.37	108.89	7

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	22.36	-1.2	19.01	79.62	7
20525	836.5	22.54	-1.2	19.19	82.99	7
20625	846.5	22.49	-1.2	19.14	82.04	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	24.18	-1.2	20.83	121.06	7
20525	836.5	24.29	-1.2	20.94	124.17	7
20600	844.0	24.22	-1.2	20.87	122.18	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	23.77	-1.2	20.42	110.15	7
20525	836.5	23.85	-1.2	20.5	112.2	7
20600	844.0	23.78	-1.2	20.43	110.41	7

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	22.44	-1.2	19.09	81.1	7
20525	836.5	22.55	-1.2	19.2	83.18	7
20600	844.0	22.51	-1.2	19.16	82.41	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

3.2.2 TEST PROCEDURE

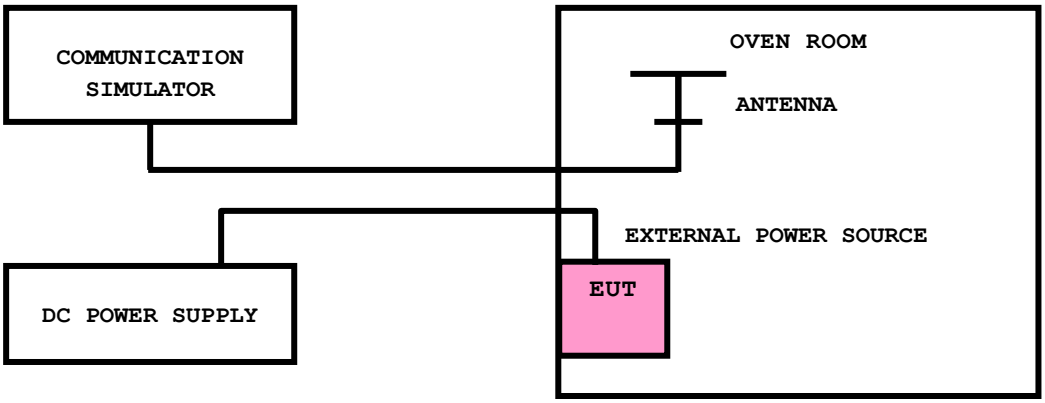
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

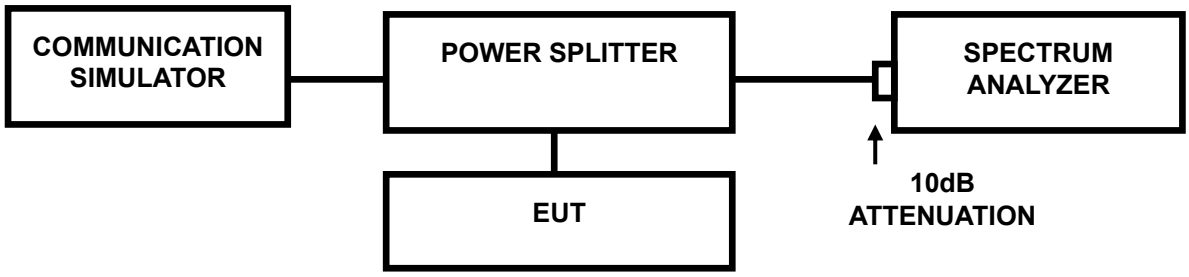
Please Refer to Appendix A Of this test report.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.2 TEST SETUP



3.3.3 TEST RESULTS

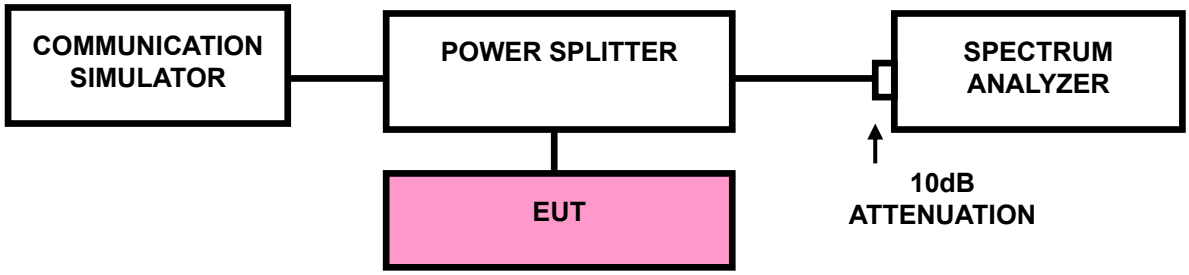
Please Refer to Appendix A Of this test report.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a. All measurements were done at low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (LTE bandwidth for (1.4M/3M/5M/10M/15M/20M)1RB/0RB&1RB/MAXRB).

c. The center frequency of spectrum is the band edge frequency and span is 10MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (WCDMA).

d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is ≥1%*EBW kHz and VBW of the spectrum is 3*RBW kHz. (LTE bandwidth 1.4M/3M/5M/10M/15M/20MHz).

e. Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

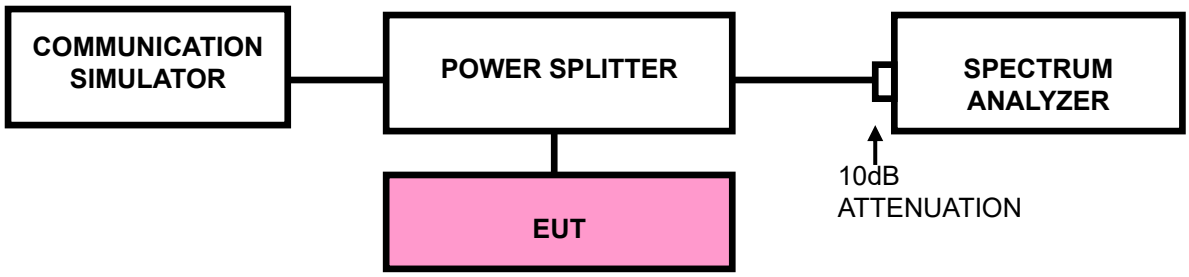
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

a. Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix A Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

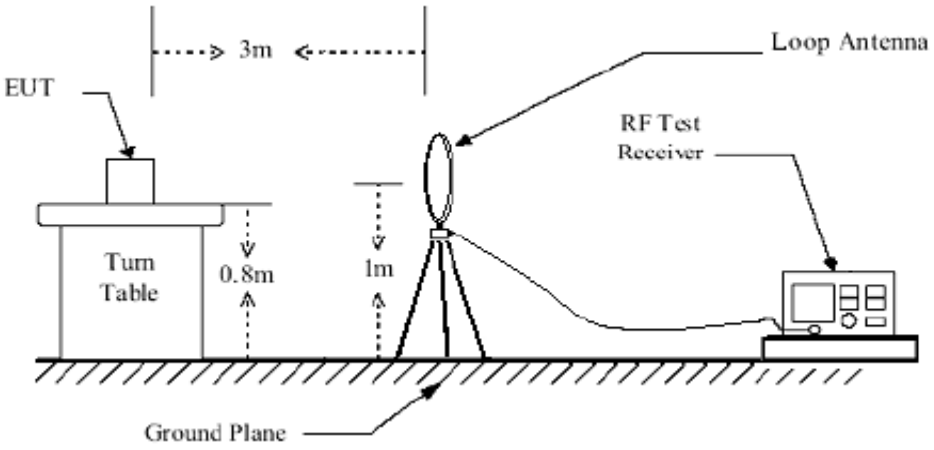
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

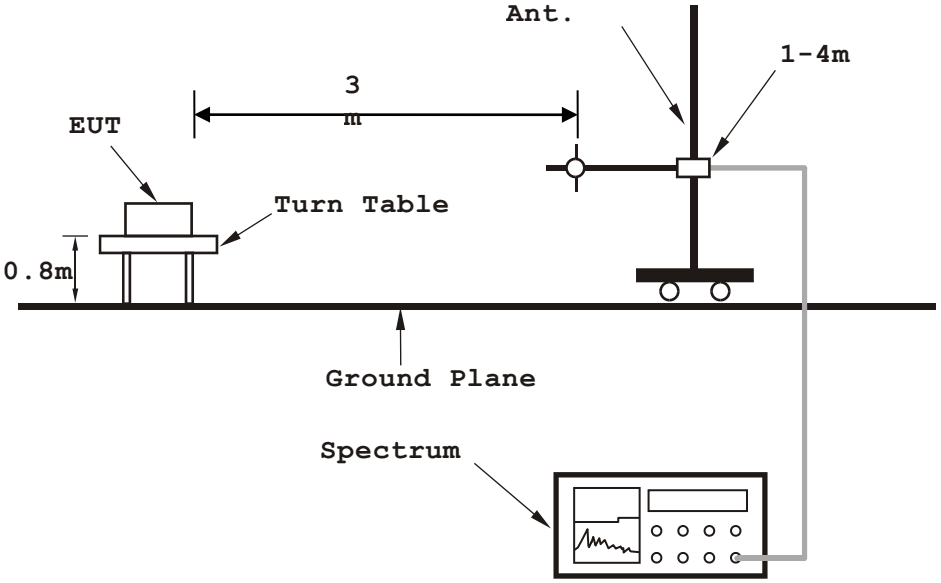
No deviation

3.6.4 TEST SETUP

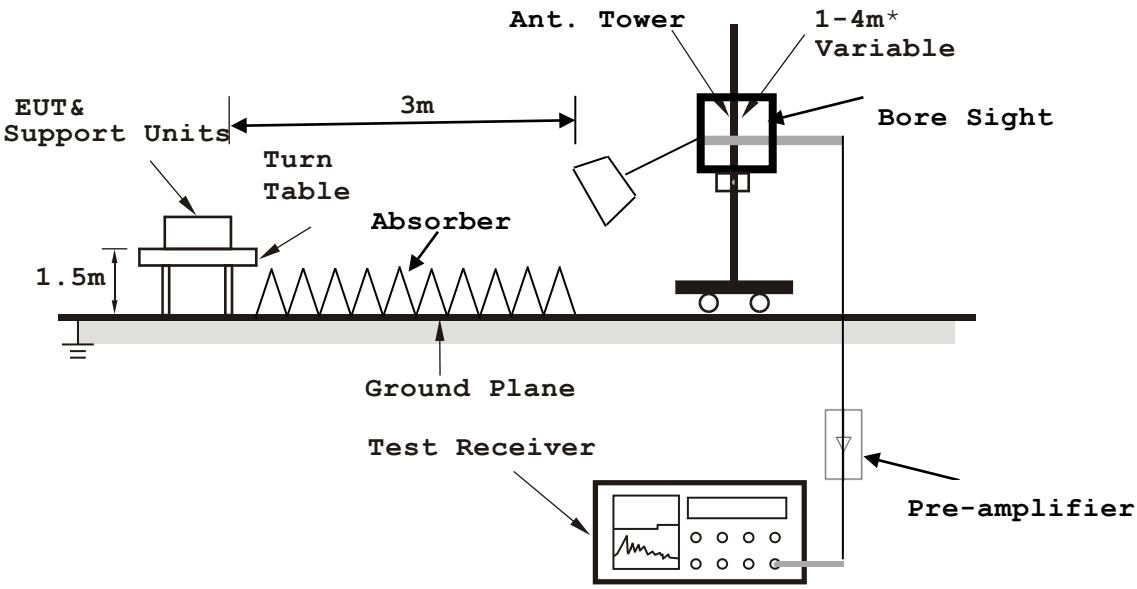
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.6.5 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

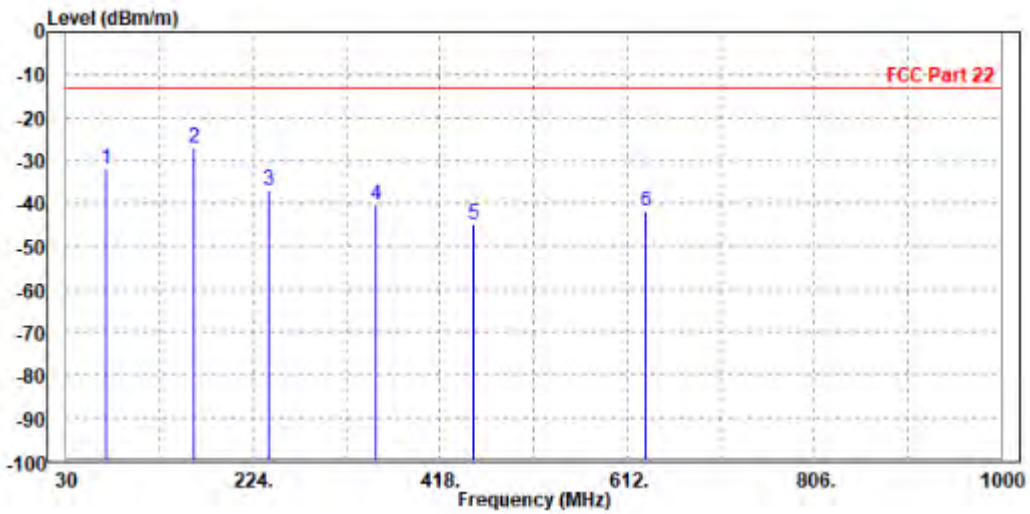
30 MHz – 1GHz data:

WCDMA Band V:

CHANNEL BANDWIDTH: 4132 – 4233

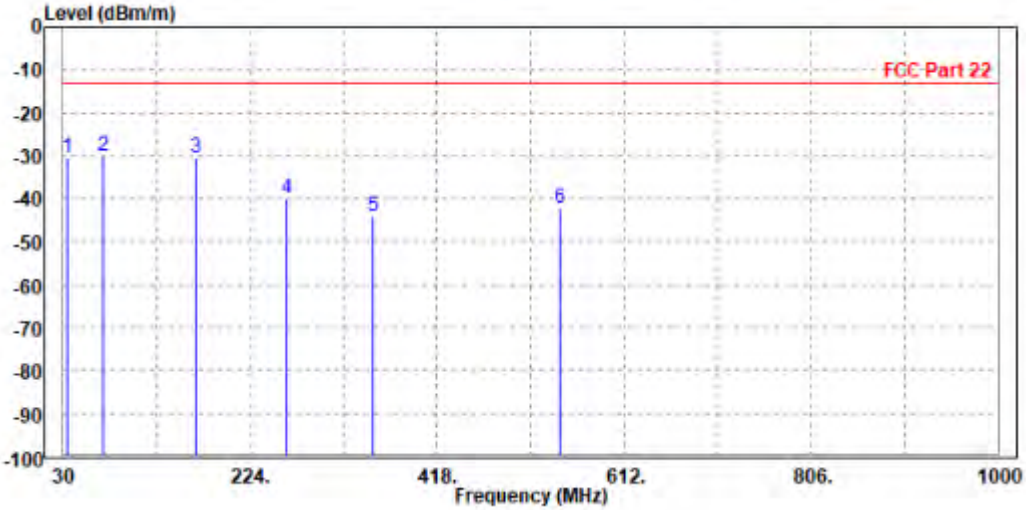
MODE	TX channel 4233	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	70.740	-31.94	-39.64	-13.00	-18.94	7.70	Peak	Horizontal
2 PP	161.920	-26.83	-37.78	-13.00	-13.83	10.95	Peak	Horizontal
3	240.490	-36.72	-49.80	-13.00	-23.72	13.08	Peak	Horizontal
4	351.070	-40.43	-55.55	-13.00	-27.43	15.12	Peak	Horizontal
5	451.950	-44.96	-62.15	-13.00	-31.96	17.19	Peak	Horizontal
6	631.400	-41.69	-61.99	-13.00	-28.69	20.30	Peak	Horizontal



MODE	TX channel 4233	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		34.850	-30.26	-48.14	-13.00	-17.26	17.88	Peak	Vertical
2	PP	70.740	-30.22	-38.28	-13.00	-17.22	8.06	Peak	Vertical
3		166.770	-30.27	-41.27	-13.00	-17.27	11.00	Peak	Vertical
4		262.800	-39.90	-52.86	-13.00	-26.90	12.96	Peak	Vertical
5		352.040	-43.96	-59.16	-13.00	-30.96	15.20	Peak	Vertical
6		545.070	-42.24	-60.74	-13.00	-29.24	18.50	Peak	Vertical



ABOVE 1GHz DATA

Note:

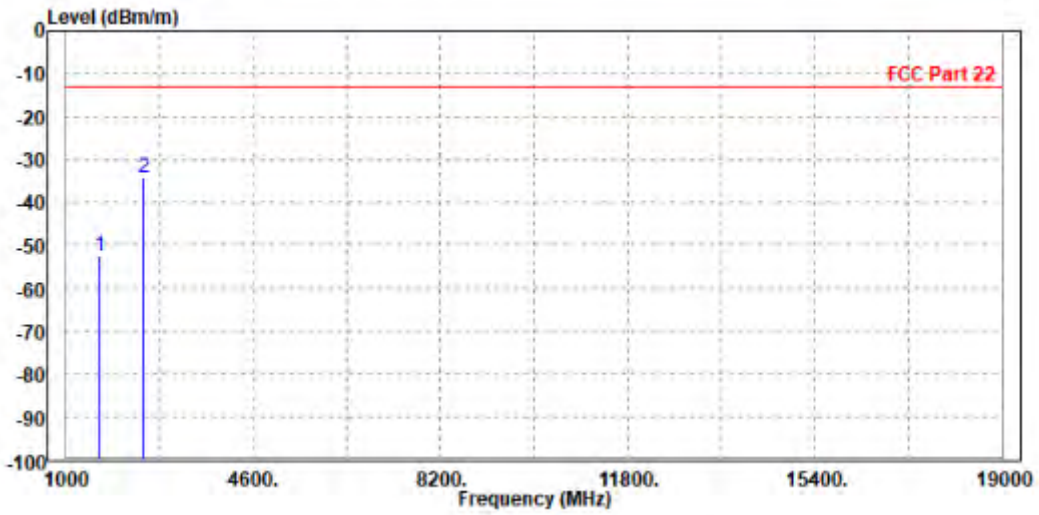
1. For higher frequency, the emission is too low to be detected.

WCDMA Band V:

CH 4132:

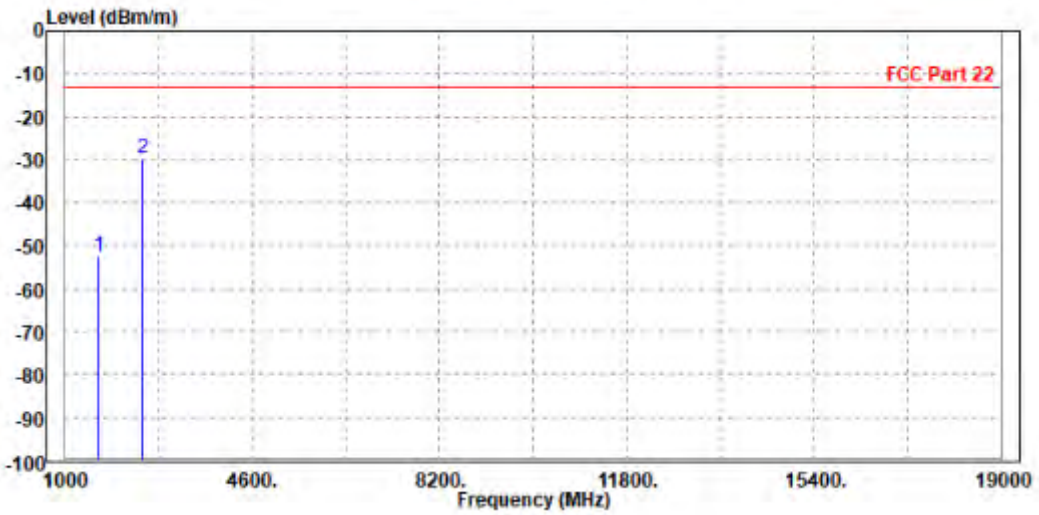
MODE	TX channel 4132	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-52.36	-55.61	-13.00	-39.36	3.25	Peak	Horizontal
2 PP	2476.000	-34.34	-42.37	-13.00	-21.34	8.03	Peak	Horizontal



MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

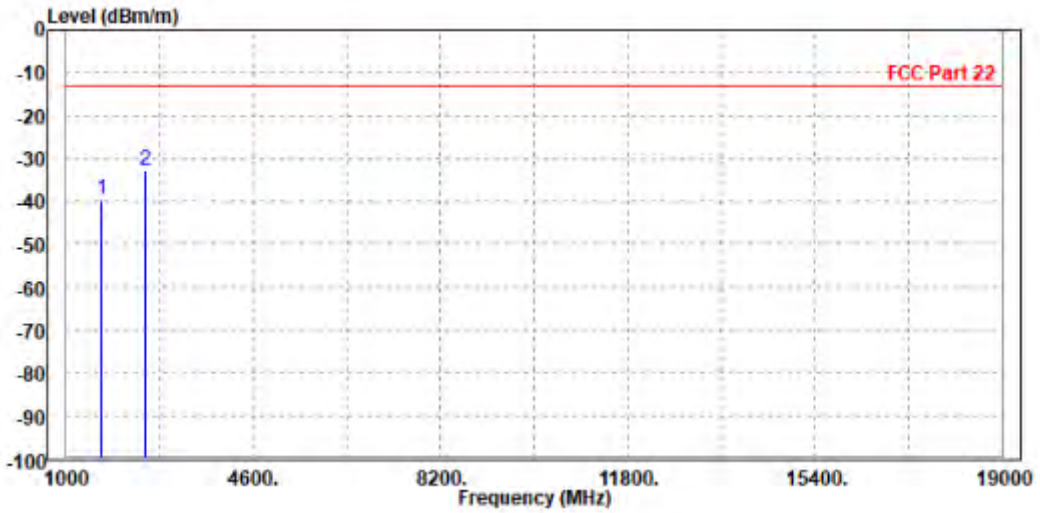
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1652.800	-52.56	-55.99	-13.00	-39.56	3.43	Peak	Vertical
2	PP	2479.200	-29.76	-36.81	-13.00	-16.76	7.05	Peak	Vertical



CH 4182:

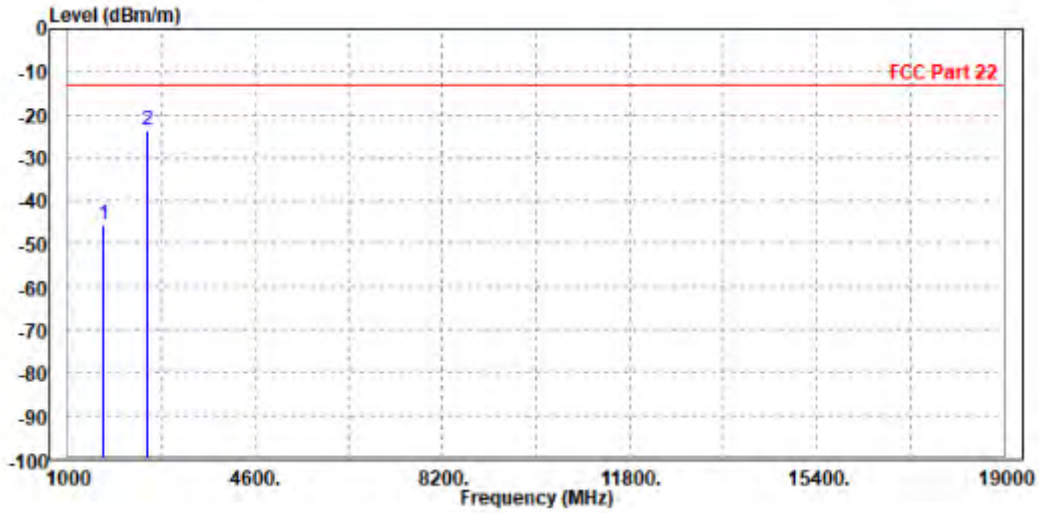
MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-39.58	-43.05	-13.00	-26.58	3.47	Peak	Horizontal
2 PP	2509.200	-32.80	-40.86	-13.00	-19.80	8.06	Peak	Horizontal



MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

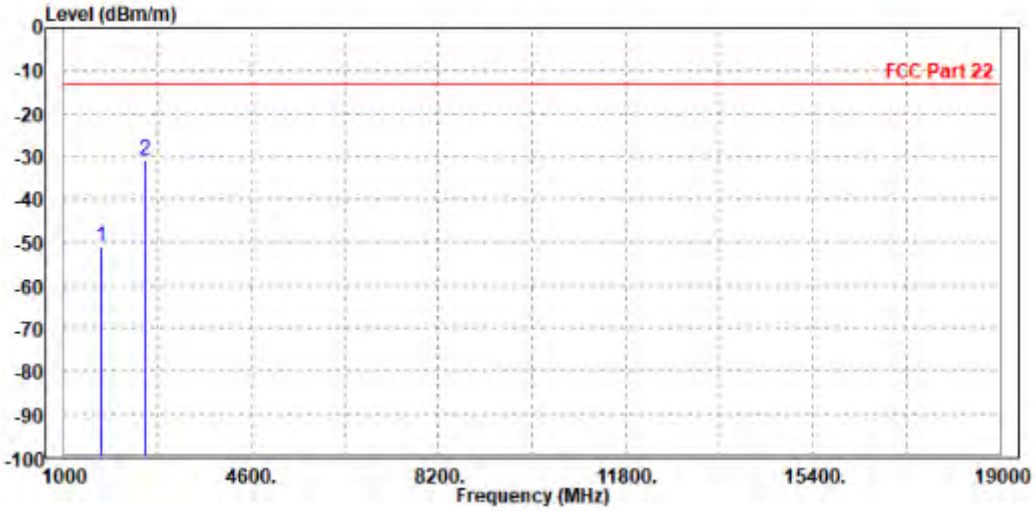
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-45.55	-49.09	-13.00	-32.55	3.54	Peak	Vertical
2 PP	2509.200	-23.60	-30.70	-13.00	-10.60	7.10	Peak	Vertical



CH 4233:

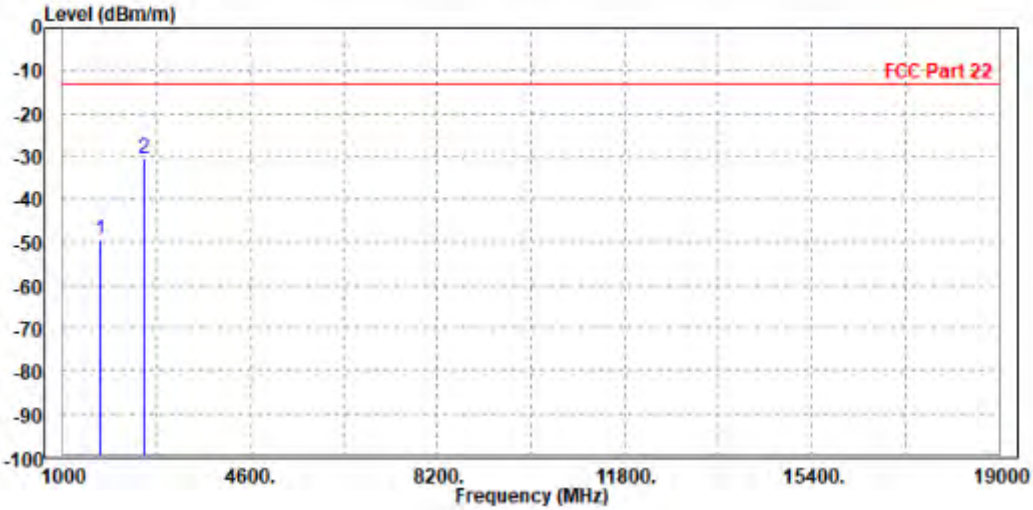
MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1702.000	-51.00	-54.91	-13.00	-38.00	3.91	Peak	Horizontal
2 PP	2539.800	-30.95	-39.05	-13.00	-17.95	8.10	Peak	Horizontal



MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1702.000	-49.52	-53.39	-13.00	-36.52	3.87	Peak	Vertical
2 PP	2539.800	-30.46	-37.66	-13.00	-17.46	7.20	Peak	Vertical

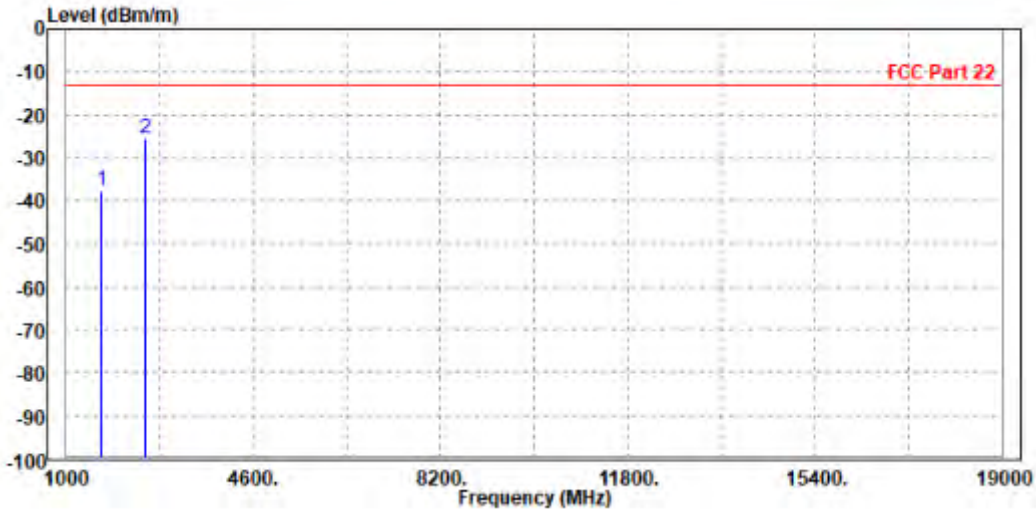


LTE Band 5

CHANNEL BANDWIDTH: 1.4MHz / QPSK

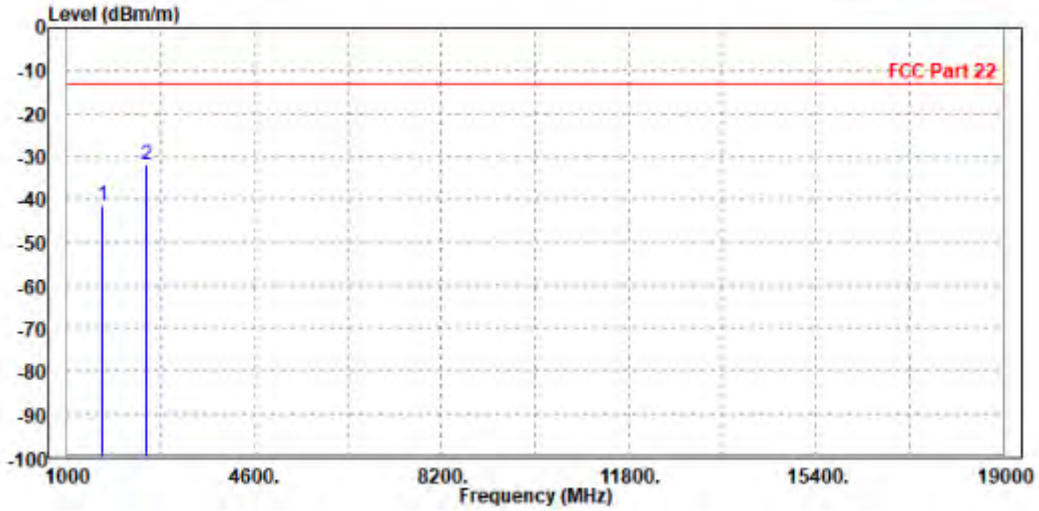
MODE	TX channel 20525	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-37.74	-41.21	-13.00	-24.74	3.47	Peak	Horizontal
2	PP	2509.500	-25.64	-33.70	-13.00	-12.64	8.06	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

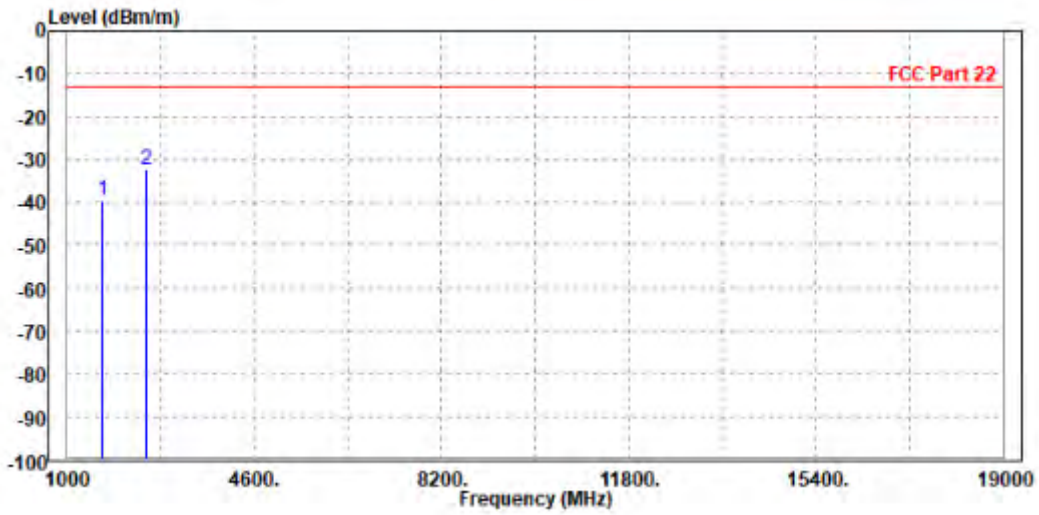
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-41.32	-44.86	-13.00	-28.32	3.54	Peak	Vertical
2	PP	2509.500	-32.01	-39.11	-13.00	-19.01	7.10	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

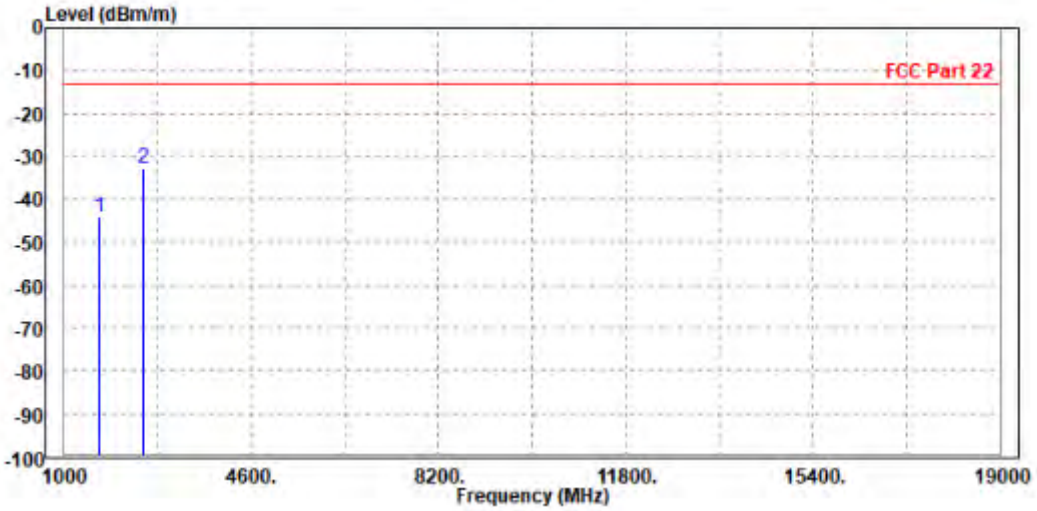
MODE	TX channel 20525	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-39.57	-43.04	-13.00	-26.57	3.47	Peak	Horizontal
2 PP	2509.500	-32.33	-40.39	-13.00	-19.33	8.06	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-44.00	-47.54	-13.00	-31.00	3.54	Peak	Vertical
2	PP	2509.500	-32.68	-39.78	-13.00	-19.68	7.10	Peak	Vertical

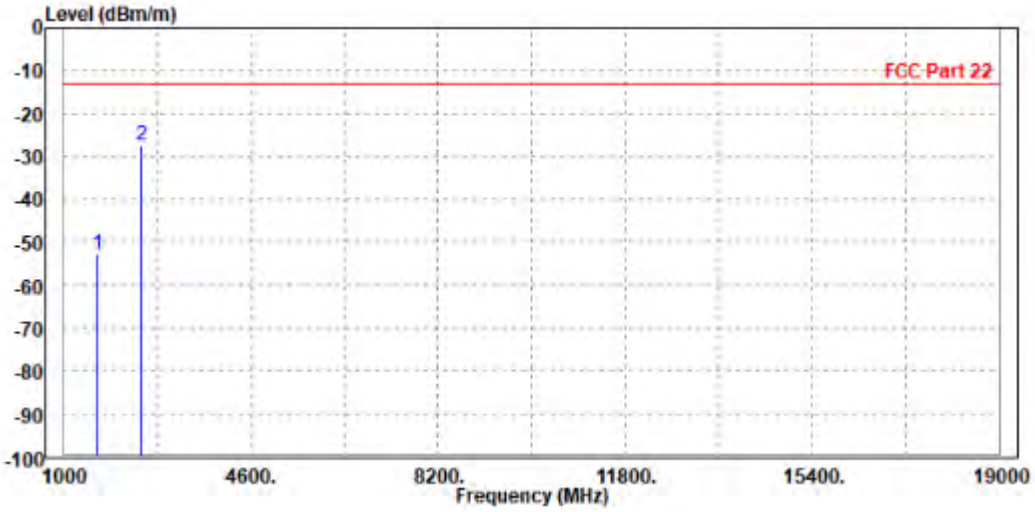


CHANNEL BANDWIDTH: 5MHz / QPSK

CH 20425

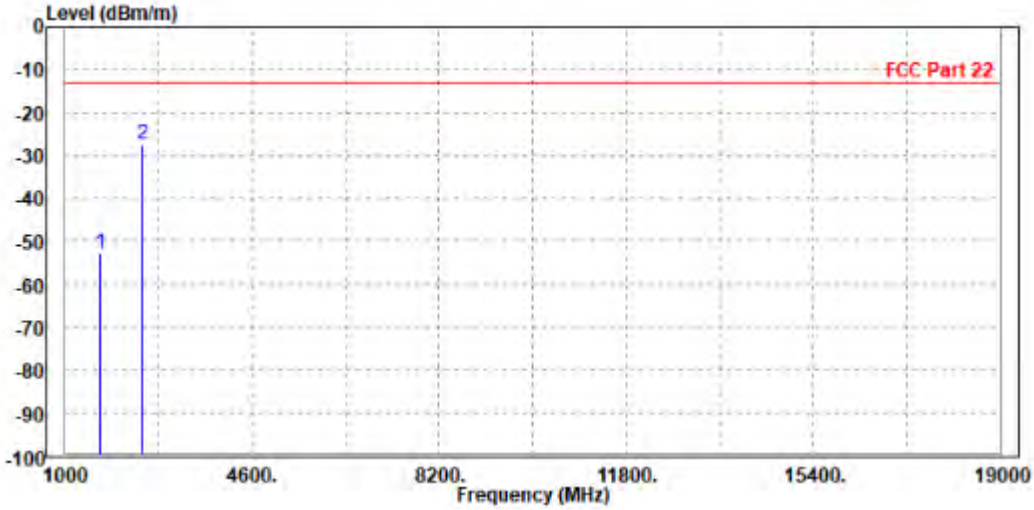
MODE	TX channel 20425	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1648.000	-53.03	-56.28	-13.00	-40.03	3.25	Peak	Horizontal
2	PP	2476.000	-27.55	-35.58	-13.00	-14.55	8.03	Peak	Horizontal



MODE	TX channel 20425	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

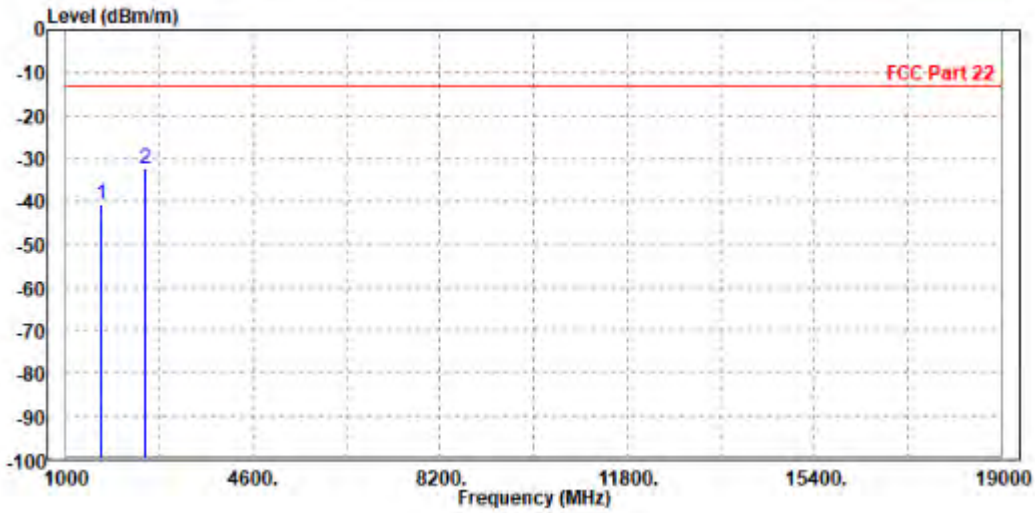
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1683.000	-52.80	-56.50	-13.00	-39.80	3.70	Peak	Vertical
2 PP	2479.500	-27.34	-34.39	-13.00	-14.34	7.05	Peak	Vertical



CH 20525

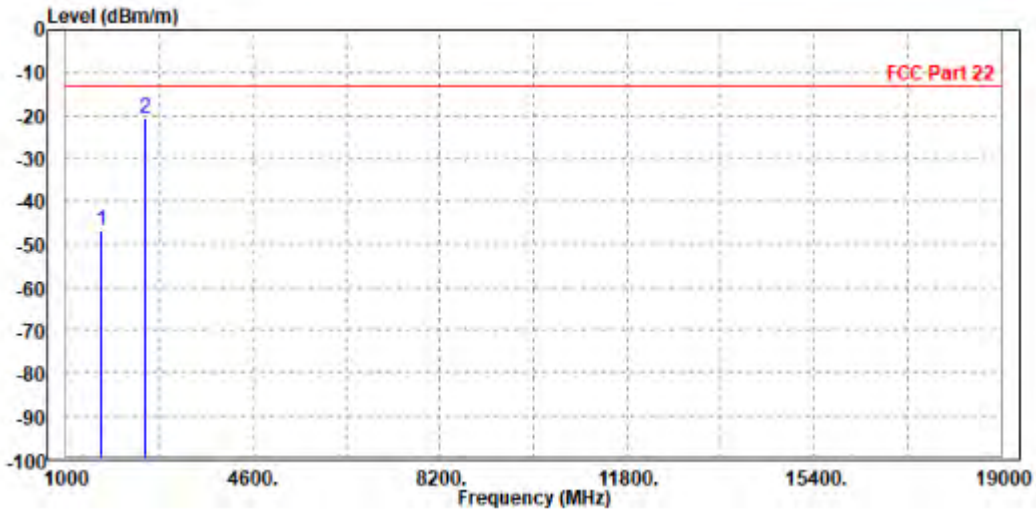
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-40.72	-44.19	-13.00	-27.72	3.47	Peak	Horizontal
2	PP	2509.500	-32.22	-40.28	-13.00	-19.22	8.06	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

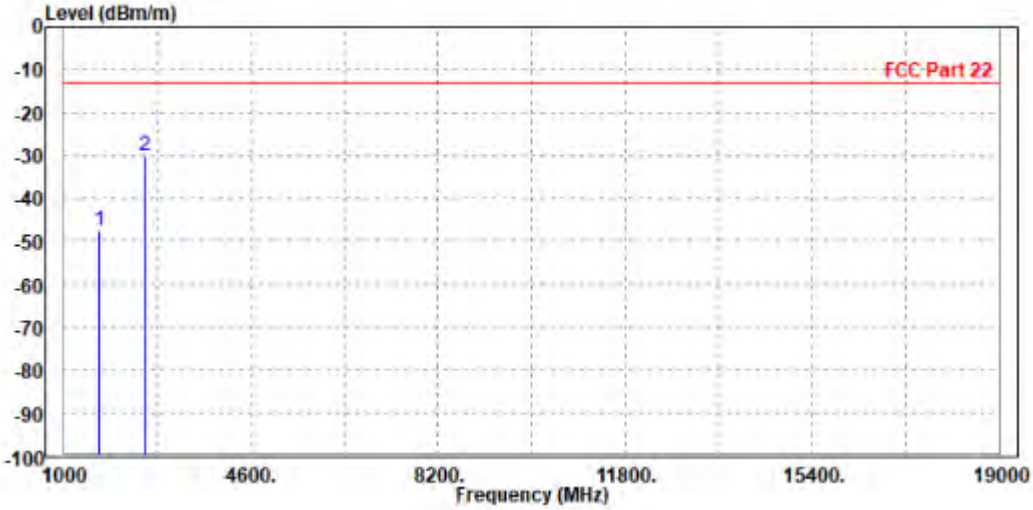
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-46.76	-50.30	-13.00	-33.76	3.54	Peak	Vertical
2	PP	2509.500	-20.41	-27.51	-13.00	-7.41	7.10	Peak	Vertical



CH 20625

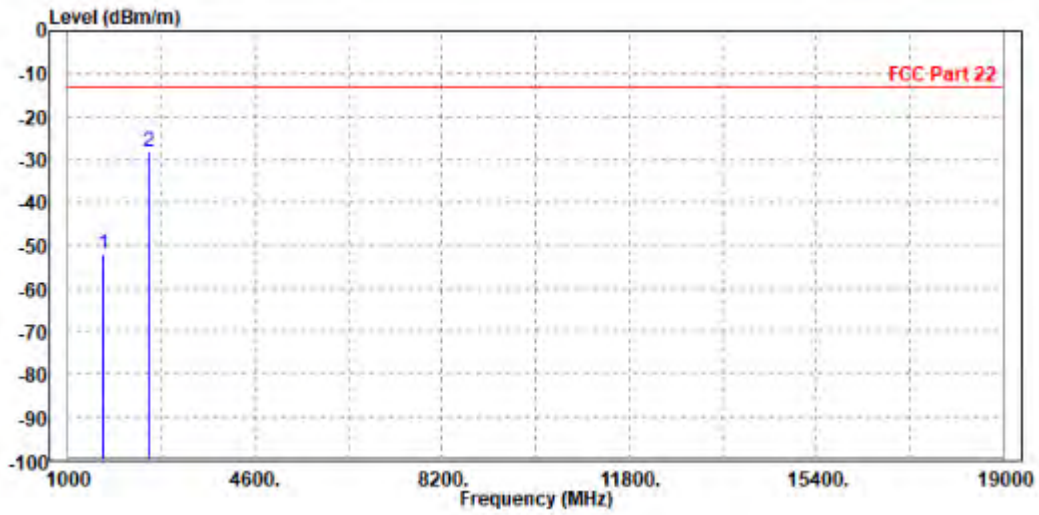
MODE	TX channel 20625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1684.000	-47.71	-51.40	-13.00	-34.71	3.69	Peak	Horizontal
2	PP	2539.500	-29.85	-37.95	-13.00	-16.85	8.10	Peak	Horizontal



MODE	TX channel 20625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

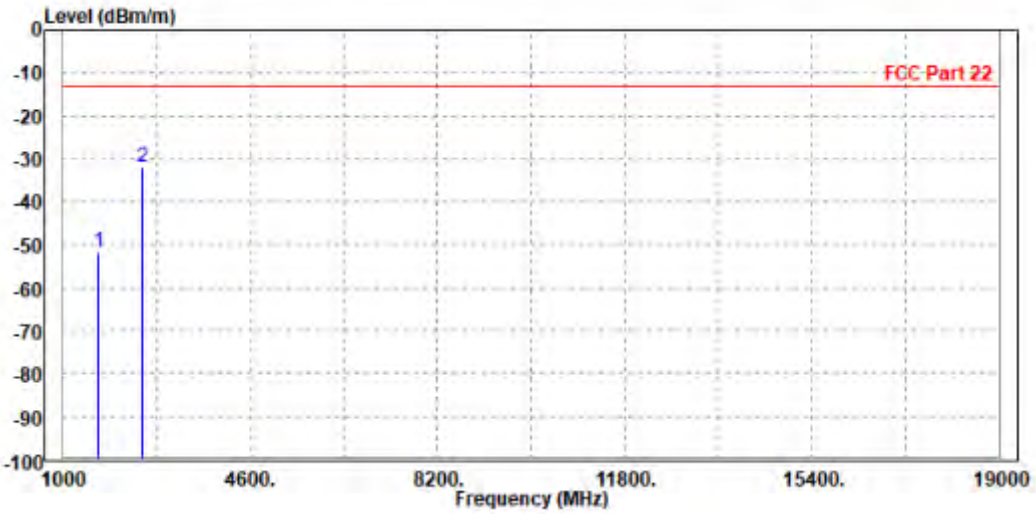
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1684.000	-52.28	-55.99	-13.00	-39.28	3.71	Peak	Vertical
2	PP	2539.500	-27.97	-35.17	-13.00	-14.97	7.20	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

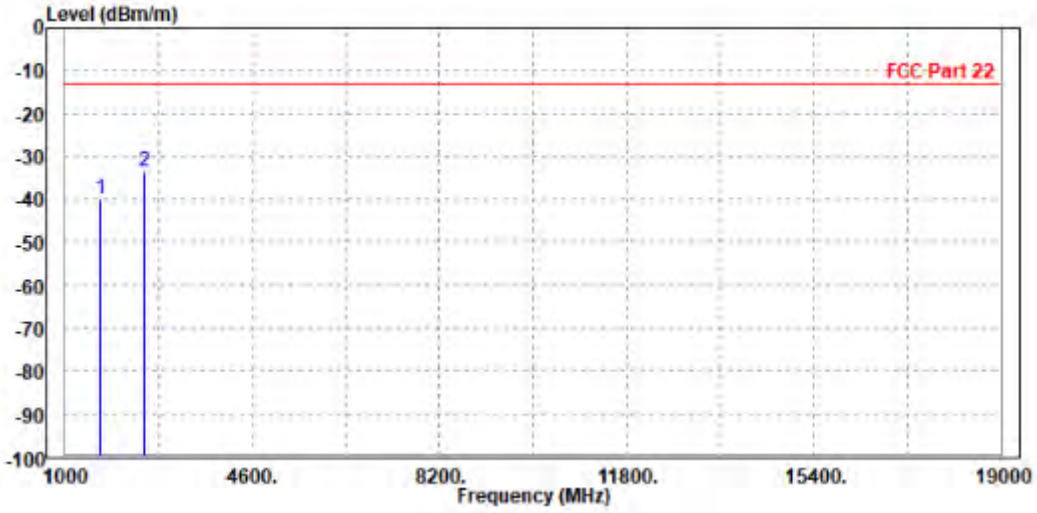
MODE	TX channel 20525	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-51.73	-55.20	-13.00	-38.73	3.47	Peak	Horizontal
2 PP	2509.500	-31.96	-40.02	-13.00	-18.96	8.06	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1666.000	-40.10	-43.64	-13.00	-27.10	3.54	Peak	Vertical
2	PP	2509.500	-33.33	-40.43	-13.00	-20.33	7.10	Peak	Vertical

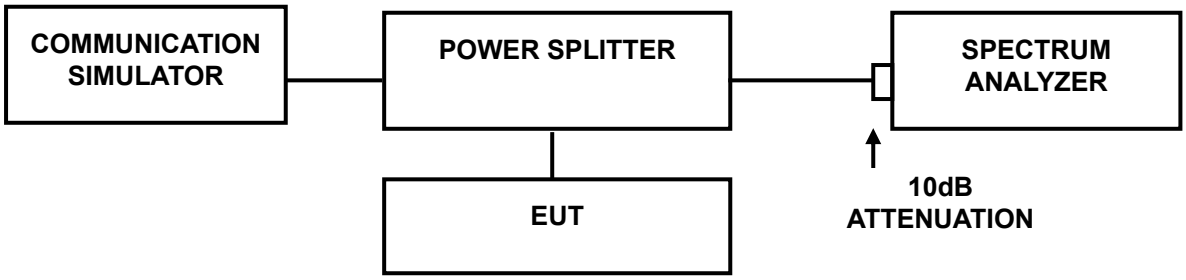


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.7.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

5 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Shenzhen EMC/RF Lab:
Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

6 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

7 APPENDIX A

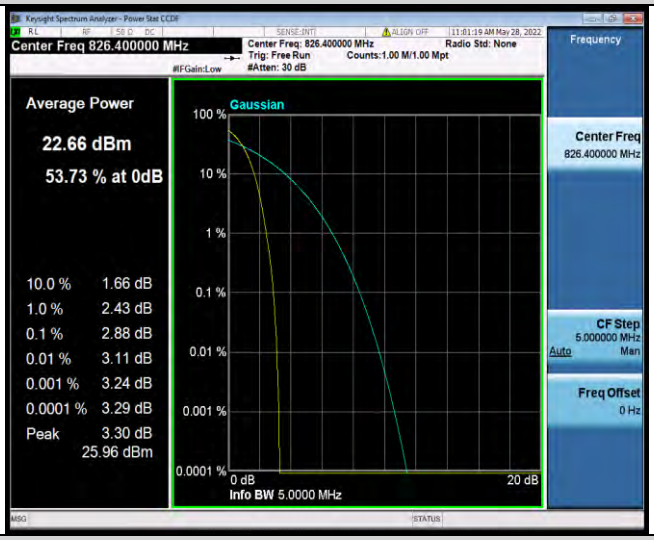
WCDMA BAND5:

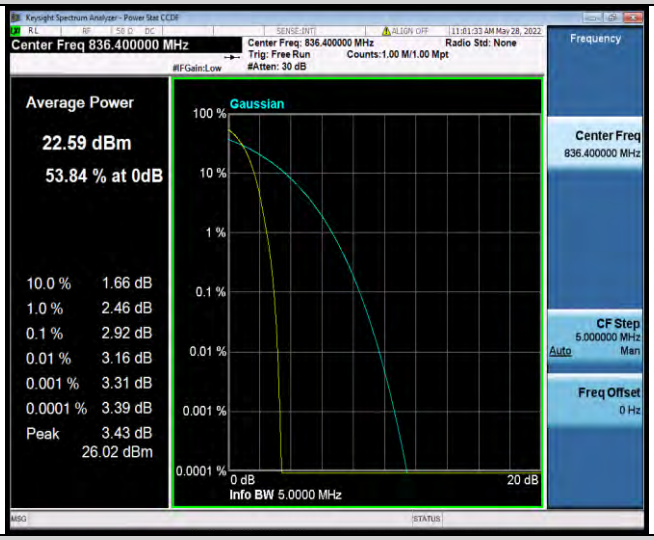
PEAK-TO-AVERAGE RATIO

Test Result

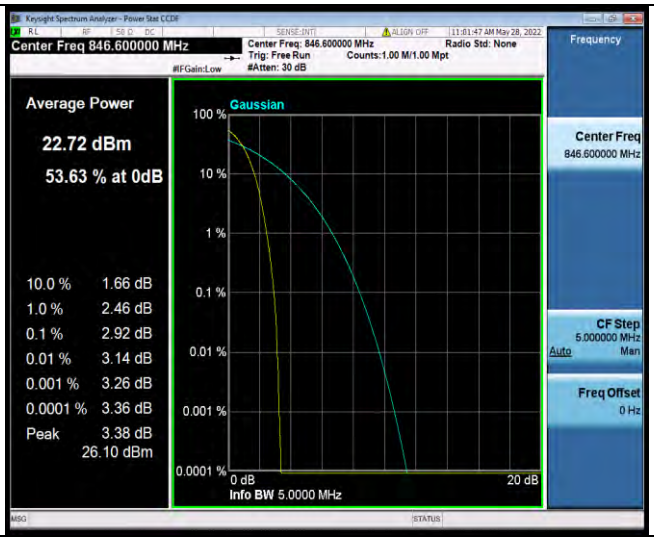
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band5	4132	2.88	13	PASS
Band5	4182	2.92	13	PASS
Band5	4233	2.92	13	PASS

Test Graphs

Band5-4132


Band5-4182


Band5-4233


Keysight Spectrum Analyzer - Power Stat CCDF
Center Freq 846.600000 MHz
Center Freq: 846.600000 MHz
Trig: Free Run
#Atten: 30 dB
Counts:1.00 M/1.00 Mpt
Radio Std: None
Frequency
Average Power
22.72 dBm
53.63 % at 0dB
10.0 % 1.66 dB
1.0 % 2.46 dB
0.1 % 2.92 dB
0.01 % 3.14 dB
0.001 % 3.26 dB
0.0001 % 3.36 dB
Peak 3.38 dB
26.10 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 5.0000 MHz
Center Freq
846.600000 MHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

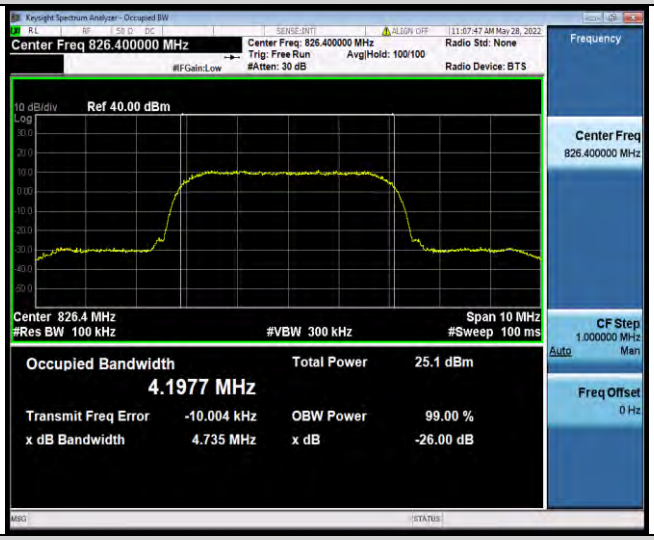
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(MHz)	Verdict
Band5	4132	4.1977	4.735	---	PASS
Band5	4182	4.1846	4.742	---	PASS
Band5	4233	4.1848	4.733	---	PASS

Test Graphs

Band5-4132



Band5-4182

Band5-4233

Keysight Spectrum Analyzer - Occupied BW
Center Freq 846.600000 MHz
Center Freq: 846.600000 MHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 12.61 dB
10 dB/div
Ref 40.00 dBm
Center 846.6 MHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10 MHz
#Sweep 100 ms
Occupied Bandwidth
4.1848 MHz
Total Power 25.3 dBm
Transmit Freq Error -14.208 kHz
OBW Power 99.00 %
x dB Bandwidth 4.733 MHz
x dB -26.00 dB
Frequency
Center Freq
846.600000 MHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band5	4132	824.00	-27.57	-13	PASS
Band5	4233	849.00	-28.42	-13	PASS

Test Graphs

Band5-4132

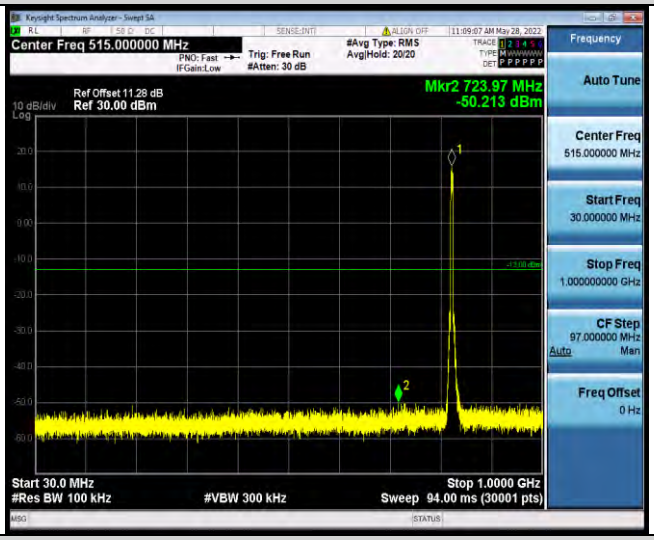
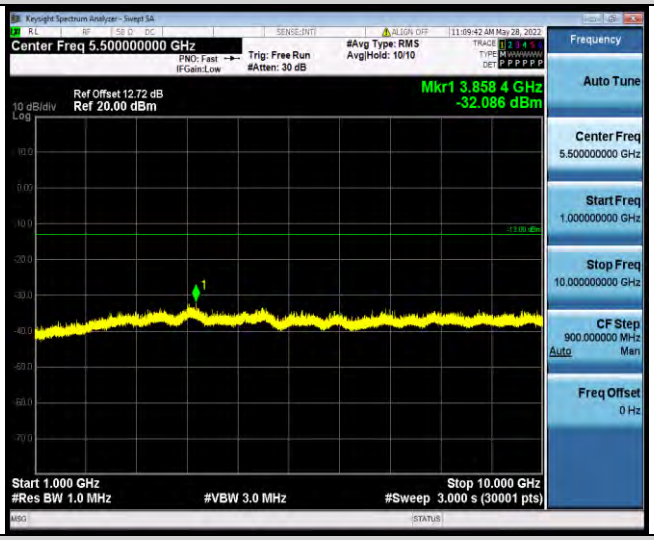
Band5-4233

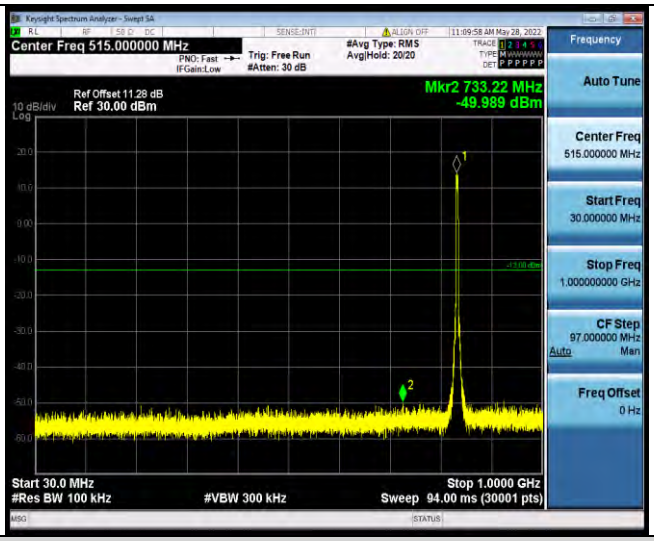
CONDUCTED SPURIOUS EMISSION

Test Result

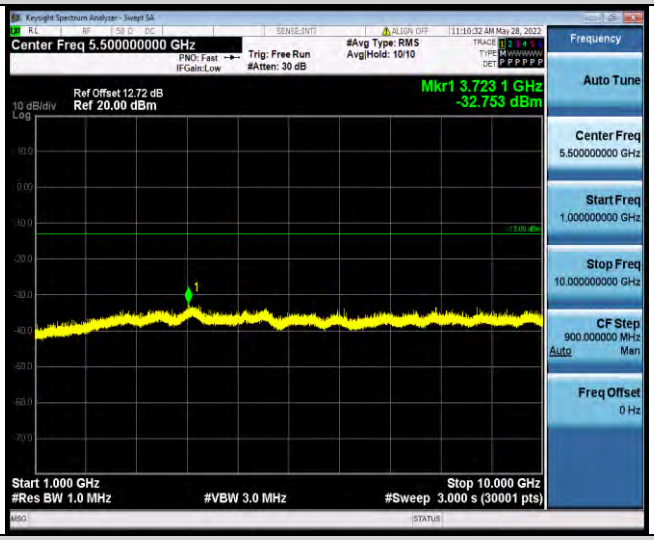
Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band5	4132	30~1000MHz	723.97	-50.21	-13	PASS
Band5	4132	1000~10000MHz	3858.4	-32.09	-13	PASS
Band5	4182	30~1000MHz	733.22	-49.99	-13	PASS
Band5	4182	1000~10000MHz	3723.1	-32.75	-13	PASS
Band5	4233	30~1000MHz	481.34	-50.51	-13	PASS
Band5	4233	1000~10000MHz	5040.7	-32.78	-13	PASS

Test Graphs

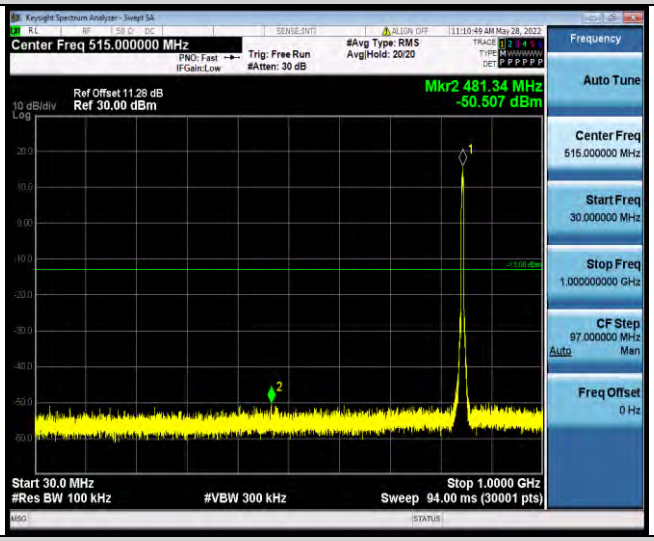
Band5-4132-30~1000MHz

Band5-4132-1000~10000MHz

Band5-4182-30~1000MHz



Band5-4182-1000~10000MHz



Band5-4233-30~1000MHz



Band5-4233-1000~10000MHz

Keysight Spectrum Analyzer - Swept SA
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
11:11:23 AM May 28, 2022
Ref Offset 12.72 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.040 7 GHz
-32.777 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 3.000 s (30001 pts)
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
900.000000 MHz
Auto
Man
Freq Offset
0 Hz

FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	VL	NT	-12.77	-0.015453	±2.5	PASS
Band5	4132	VN	NT	-10.16	-0.012294	±2.5	PASS
Band5	4132	VH	NT	-9.44	-0.011423	±2.5	PASS
Band5	4182	VL	NT	-10.59	-0.012661	±2.5	PASS
Band5	4182	VN	NT	-13.87	-0.016583	±2.5	PASS
Band5	4182	VH	NT	-12.78	-0.015280	±2.5	PASS
Band5	4233	VL	NT	-9.64	-0.011387	±2.5	PASS
Band5	4233	VN	NT	-7.24	-0.008552	±2.5	PASS
Band5	4233	VH	NT	-8.82	-0.010418	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	NV	-30	-15.23	-0.018429	±2.5	PASS
Band5	4132	NV	-20	-8.03	-0.009717	±2.5	PASS
Band5	4132	NV	0	-11.71	-0.014170	±2.5	PASS
Band5	4132	NV	10	-13.72	-0.016602	±2.5	PASS
Band5	4132	NV	20	-11.99	-0.014509	±2.5	PASS
Band5	4132	NV	30	-8.10	-0.009802	±2.5	PASS
Band5	4132	NV	40	-11.48	-0.013892	±2.5	PASS
Band5	4132	NV	50	-6.52	-0.007890	±2.5	PASS
Band5	4182	NV	-30	-8.08	-0.009660	±2.5	PASS
Band5	4182	NV	-20	-6.25	-0.007473	±2.5	PASS
Band5	4182	NV	0	-10.56	-0.012626	±2.5	PASS
Band5	4182	NV	10	-7.45	-0.008907	±2.5	PASS
Band5	4182	NV	20	-12.67	-0.015148	±2.5	PASS
Band5	4182	NV	30	-6.93	-0.008286	±2.5	PASS
Band5	4182	NV	40	-10.03	-0.011992	±2.5	PASS
Band5	4182	NV	50	-6.58	-0.007867	±2.5	PASS
Band5	4233	NV	-30	-13.44	-0.015875	±2.5	PASS
Band5	4233	NV	-20	-9.31	-0.010997	±2.5	PASS
Band5	4233	NV	0	-10.87	-0.012840	±2.5	PASS
Band5	4233	NV	10	-10.67	-0.012603	±2.5	PASS
Band5	4233	NV	20	-9.00	-0.010631	±2.5	PASS
Band5	4233	NV	30	-9.62	-0.011363	±2.5	PASS
Band5	4233	NV	40	-13.38	-0.015804	±2.5	PASS
Band5	4233	NV	50	-4.61	-0.005445	±2.5	PASS

LTE BAND5

Frequency Stability

B5_1.4MHz

Test Result

Band: 5 / Bandwidth: 1.4MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	824.7	6	0	20	3.27	-8.07	-0.01	-2.5 to 2.5	Pass
					3.85	-4.33	-0.01	-2.5 to 2.5	Pass
					4.43	-3.78	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-9.07	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.69	-0.01	-2.5 to 2.5	Pass
				10	3.85	-2.77	-0.00	-2.5 to 2.5	Pass
				30	3.85	-0.83	-0.00	-2.5 to 2.5	Pass
				40	3.85	-3.25	-0.00	-2.5 to 2.5	Pass
				50	3.85	-3.59	-0.00	-2.5 to 2.5	Pass
	836.5	6	0	20	3.27	0.50	0.00	-2.5 to 2.5	Pass
					3.85	-9.47	-0.01	-2.5 to 2.5	Pass
					4.43	-7.91	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.78	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.11	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.05	-0.01	-2.5 to 2.5	Pass
				30	3.85	-4.92	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.62	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.34	-0.01	-2.5 to 2.5	Pass
	848.3	6	0	20	3.27	-6.34	-0.01	-2.5 to 2.5	Pass
					3.85	-11.70	-0.01	-2.5 to 2.5	Pass
					4.43	-9.38	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-8.63	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.30	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.35	-0.01	-2.5 to 2.5	Pass
				30	3.85	-4.75	-0.01	-2.5 to 2.5	Pass
				40	3.85	-4.21	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.25	-0.01	-2.5 to 2.5	Pass
16QAM	824.7	6	0	20	3.27	-2.98	-0.00	-2.5 to 2.5	Pass
					3.85	-4.76	-0.01	-2.5 to 2.5	Pass
					4.43	-4.05	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-6.78	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.94	-0.01	-2.5 to 2.5	Pass
				10	3.85	-2.07	-0.00	-2.5 to 2.5	Pass
				30	3.85	-5.55	-0.01	-2.5 to 2.5	Pass
				40	3.85	-8.61	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.79	-0.01	-2.5 to 2.5	Pass
	836.5	6	0	20	3.27	-4.16	-0.01	-2.5 to 2.5	Pass
					3.85	-3.48	-0.00	-2.5 to 2.5	Pass
					4.43	-3.45	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-7.87	-0.01	-2.5 to 2.5	Pass
				0	3.85	-6.78	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.18	-0.01	-2.5 to 2.5	Pass

				30	3.85	-11.29	-0.01	-2.5 to 2.5	Pass
				40	3.85	-10.61	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.68	-0.01	-2.5 to 2.5	Pass
	848.3	6	0	20	3.27	-6.98	-0.01	-2.5 to 2.5	Pass
					3.85	-5.08	-0.01	-2.5 to 2.5	Pass
					4.43	-4.31	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-8.33	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.85	-0.01	-2.5 to 2.5	Pass
				10	3.85	-10.19	-0.01	-2.5 to 2.5	Pass
				30	3.85	-8.94	-0.01	-2.5 to 2.5	Pass
				40	3.85	-8.28	-0.01	-2.5 to 2.5	Pass
				50	3.85	-4.03	-0.00	-2.5 to 2.5	Pass
64QAM	824.7	6	0	20	3.27	-2.75	-0.00	-2.5 to 2.5	Pass
					3.85	-2.15	-0.00	-2.5 to 2.5	Pass
					4.43	-2.92	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-3.96	-0.00	-2.5 to 2.5	Pass
				0	3.85	-6.70	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.44	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.48	-0.01	-2.5 to 2.5	Pass
				40	3.85	-3.98	-0.00	-2.5 to 2.5	Pass
				50	3.85	-6.44	-0.01	-2.5 to 2.5	Pass
	836.5	6	0	20	3.27	-4.89	-0.01	-2.5 to 2.5	Pass
					3.85	-4.95	-0.01	-2.5 to 2.5	Pass
					4.43	-3.98	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-3.72	-0.00	-2.5 to 2.5	Pass
				0	3.85	-6.52	-0.01	-2.5 to 2.5	Pass
				10	3.85	-7.98	-0.01	-2.5 to 2.5	Pass
				30	3.85	-7.68	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.99	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.08	-0.01	-2.5 to 2.5	Pass
	848.3	6	0	20	3.27	-5.48	-0.01	-2.5 to 2.5	Pass
					3.85	-2.82	-0.00	-2.5 to 2.5	Pass
					4.43	-6.59	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-9.01	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.84	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.99	-0.01	-2.5 to 2.5	Pass
				30	3.85	-8.55	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.25	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.72	-0.01	-2.5 to 2.5	Pass

B5_3MHz

Test Result

Band: 5 / Bandwidth: 3MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	825.5	15	0	20	3.27	-7.04	-0.01	-2.5 to 2.5	Pass
					3.85	-3.85	-0.00	-2.5 to 2.5	Pass
					4.43	-3.06	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-0.81	-0.00	-2.5 to 2.5	Pass
				0	3.85	-1.72	-0.00	-2.5 to 2.5	Pass

				10	3.85	-1.73	-0.00	-2.5 to 2.5	Pass
				30	3.85	-2.16	-0.00	-2.5 to 2.5	Pass
				40	3.85	-5.24	-0.01	-2.5 to 2.5	Pass
				50	3.85	-2.60	-0.00	-2.5 to 2.5	Pass
	836.5	15	0	20	3.27	-2.10	-0.00	-2.5 to 2.5	Pass
					3.85	-13.23	-0.02	-2.5 to 2.5	Pass
					4.43	-9.44	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.57	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.79	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.27	-0.01	-2.5 to 2.5	Pass
				30	3.85	-6.85	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.89	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.87	-0.01	-2.5 to 2.5	Pass
	847.5	15	0	20	3.27	-2.88	-0.00	-2.5 to 2.5	Pass
					3.85	-10.39	-0.01	-2.5 to 2.5	Pass
					4.43	-6.87	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-5.16	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.26	-0.01	-2.5 to 2.5	Pass
				10	3.85	-3.59	-0.00	-2.5 to 2.5	Pass
				30	3.85	-4.16	-0.00	-2.5 to 2.5	Pass
				40	3.85	-5.74	-0.01	-2.5 to 2.5	Pass
				50	3.85	-4.33	-0.01	-2.5 to 2.5	Pass
16QAM	825.5	15	0	20	3.27	-5.81	-0.01	-2.5 to 2.5	Pass
					3.85	-4.25	-0.01	-2.5 to 2.5	Pass
					4.43	-6.74	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.75	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.99	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.17	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.99	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.09	-0.01	-2.5 to 2.5	Pass
				50	3.85	-9.86	-0.01	-2.5 to 2.5	Pass
	836.5	15	0	20	3.27	-4.88	-0.01	-2.5 to 2.5	Pass
					3.85	-6.62	-0.01	-2.5 to 2.5	Pass
					4.43	-8.53	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.82	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.96	-0.01	-2.5 to 2.5	Pass
				10	3.85	-7.42	-0.01	-2.5 to 2.5	Pass
				30	3.85	-8.25	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.57	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.14	-0.01	-2.5 to 2.5	Pass
	847.5	15	0	20	3.27	-4.18	-0.00	-2.5 to 2.5	Pass
					3.85	-3.71	-0.00	-2.5 to 2.5	Pass
					4.43	-2.50	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-3.89	-0.00	-2.5 to 2.5	Pass
				0	3.85	-5.42	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.88	-0.01	-2.5 to 2.5	Pass
				30	3.85	-10.11	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.70	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.61	-0.01	-2.5 to 2.5	Pass
64QAM	825.5	15	0	20	3.27	-8.51	-0.01	-2.5 to 2.5	Pass
					3.85	-6.64	-0.01	-2.5 to 2.5	Pass
					4.43	-3.46	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-3.45	-0.00	-2.5 to 2.5	Pass

				0	3.85	-5.68	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.43	-0.01	-2.5 to 2.5	Pass
				30	3.85	-9.43	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.98	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.74	-0.01	-2.5 to 2.5	Pass
	836.5	15	0	20	3.27	-3.16	-0.00	-2.5 to 2.5	Pass
					3.85	-5.58	-0.01	-2.5 to 2.5	Pass
					4.43	-4.33	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.54	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.78	-0.01	-2.5 to 2.5	Pass
				10	3.85	-3.40	-0.00	-2.5 to 2.5	Pass
				30	3.85	0.40	0.00	-2.5 to 2.5	Pass
				40	3.85	-4.42	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.32	-0.01	-2.5 to 2.5	Pass
	847.5	15	0	20	3.27	-6.85	-0.01	-2.5 to 2.5	Pass
					3.85	-5.26	-0.01	-2.5 to 2.5	Pass
					4.43	-2.39	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-5.36	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.98	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.27	-0.01	-2.5 to 2.5	Pass
				30	3.85	-6.79	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.87	-0.01	-2.5 to 2.5	Pass
				50	3.85	-3.28	-0.00	-2.5 to 2.5	Pass

B5_5MHz

Test Result

Band: 5 / Bandwidth: 5MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	826.5	25	0	20	3.27	-11.46	-0.01	-2.5 to 2.5	Pass
					3.85	-8.17	-0.01	-2.5 to 2.5	Pass
					4.43	-7.97	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.63	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.18	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.35	-0.01	-2.5 to 2.5	Pass
				30	3.85	-4.88	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.52	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.27	-0.01	-2.5 to 2.5	Pass
	836.5	25	0	20	3.27	-7.01	-0.01	-2.5 to 2.5	Pass
					3.85	-9.05	-0.01	-2.5 to 2.5	Pass
					4.43	-4.29	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.37	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.21	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.21	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.04	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.08	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.83	-0.01	-2.5 to 2.5	Pass
	846.5	25	0	20	3.27	-4.48	-0.01	-2.5 to 2.5	Pass
					3.85	-8.37	-0.01	-2.5 to 2.5	Pass
					4.43	-4.32	-0.01	-2.5 to 2.5	Pass

				-10	3.85	-5.26	-0.01	-2.5 to 2.5	Pass
				0	3.85	-1.99	-0.00	-2.5 to 2.5	Pass
				10	3.85	-5.75	-0.01	-2.5 to 2.5	Pass
				30	3.85	-6.91	-0.01	-2.5 to 2.5	Pass
				40	3.85	-4.91	-0.01	-2.5 to 2.5	Pass
				50	3.85	-3.52	-0.00	-2.5 to 2.5	Pass
16QAM	826.5	25	0	20	3.27	-5.85	-0.01	-2.5 to 2.5	Pass
					3.85	-6.18	-0.01	-2.5 to 2.5	Pass
					4.43	-11.41	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.27	-0.01	-2.5 to 2.5	Pass
				0	3.85	-10.09	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.88	-0.01	-2.5 to 2.5	Pass
				30	3.85	-3.73	-0.00	-2.5 to 2.5	Pass
				40	3.85	-6.04	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.87	-0.01	-2.5 to 2.5	Pass
	836.5	25	0	20	3.27	-5.79	-0.01	-2.5 to 2.5	Pass
					3.85	-5.88	-0.01	-2.5 to 2.5	Pass
					4.43	-2.12	-0.00	-2.5 to 2.5	Pass
				-10	3.85	-7.08	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.40	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.36	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.99	-0.01	-2.5 to 2.5	Pass
				40	3.85	-5.46	-0.01	-2.5 to 2.5	Pass
				50	3.85	-4.68	-0.01	-2.5 to 2.5	Pass
	846.5	25	0	20	3.27	-7.20	-0.01	-2.5 to 2.5	Pass
					3.85	-4.61	-0.01	-2.5 to 2.5	Pass
					4.43	-6.88	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.29	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.88	-0.01	-2.5 to 2.5	Pass
				10	3.85	-4.52	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.57	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.04	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.40	-0.01	-2.5 to 2.5	Pass
64QAM	826.5	25	0	20	3.27	-6.27	-0.01	-2.5 to 2.5	Pass
					3.85	-4.92	-0.01	-2.5 to 2.5	Pass
					4.43	-4.42	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-3.89	-0.00	-2.5 to 2.5	Pass
				0	3.85	-4.02	-0.00	-2.5 to 2.5	Pass
				10	3.85	-8.38	-0.01	-2.5 to 2.5	Pass
				30	3.85	-9.37	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.11	-0.01	-2.5 to 2.5	Pass
				50	3.85	-4.45	-0.01	-2.5 to 2.5	Pass
	836.5	25	0	20	3.27	-2.70	-0.00	-2.5 to 2.5	Pass
					3.85	-6.04	-0.01	-2.5 to 2.5	Pass
					4.43	-4.72	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.72	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.82	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.98	-0.01	-2.5 to 2.5	Pass
				30	3.85	-6.68	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.20	-0.01	-2.5 to 2.5	Pass
				50	3.85	-4.65	-0.01	-2.5 to 2.5	Pass
	846.5	25	0	20	3.27	-9.46	-0.01	-2.5 to 2.5	Pass
					3.85	-6.14	-0.01	-2.5 to 2.5	Pass

					4.43	-5.79	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-3.62	-0.00	-2.5 to 2.5	Pass
				0	3.85	-6.34	-0.01	-2.5 to 2.5	Pass
				10	3.85	-4.00	-0.00	-2.5 to 2.5	Pass
				30	3.85	-5.01	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.27	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.29	-0.01	-2.5 to 2.5	Pass

B5_10MHz

Test Result

Band: 5 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	829	50	0	20	3.27	-8.12	-0.01	-2.5 to 2.5	Pass
					3.85	-7.15	-0.01	-2.5 to 2.5	Pass
					4.43	-7.47	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-7.50	-0.01	-2.5 to 2.5	Pass
				0	3.85	-6.15	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.35	-0.01	-2.5 to 2.5	Pass
				30	3.85	-7.34	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.22	-0.01	-2.5 to 2.5	Pass
				50	3.85	-7.57	-0.01	-2.5 to 2.5	Pass
	836.5	50	0	20	3.27	-6.27	-0.01	-2.5 to 2.5	Pass
					3.85	-6.71	-0.01	-2.5 to 2.5	Pass
					4.43	-5.29	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.19	-0.01	-2.5 to 2.5	Pass
				0	3.85	-7.78	-0.01	-2.5 to 2.5	Pass
				10	3.85	-5.44	-0.01	-2.5 to 2.5	Pass
				30	3.85	-4.88	-0.01	-2.5 to 2.5	Pass
				40	3.85	-4.68	-0.01	-2.5 to 2.5	Pass
				50	3.85	-3.92	-0.00	-2.5 to 2.5	Pass
	844	50	0	20	3.27	-6.84	-0.01	-2.5 to 2.5	Pass
					3.85	-5.21	-0.01	-2.5 to 2.5	Pass
					4.43	-6.34	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-7.94	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.78	-0.01	-2.5 to 2.5	Pass
				10	3.85	-6.57	-0.01	-2.5 to 2.5	Pass
				30	3.85	-5.74	-0.01	-2.5 to 2.5	Pass
				40	3.85	-6.79	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.14	-0.01	-2.5 to 2.5	Pass
16QAM	829	50	0	20	3.27	-9.04	-0.01	-2.5 to 2.5	Pass
					3.85	-7.27	-0.01	-2.5 to 2.5	Pass
					4.43	-8.90	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-7.00	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.85	-0.01	-2.5 to 2.5	Pass
				10	3.85	-8.27	-0.01	-2.5 to 2.5	Pass
				30	3.85	-8.65	-0.01	-2.5 to 2.5	Pass
				40	3.85	-9.28	-0.01	-2.5 to 2.5	Pass

				50	3.85	-10.47	-0.01	-2.5 to 2.5	Pass
	836.5	50	0	20	3.27	-7.67	-0.01	-2.5 to 2.5	Pass
					3.85	-4.43	-0.01	-2.5 to 2.5	Pass
					4.43	-7.80	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.55	-0.01	-2.5 to 2.5	Pass
				0	3.85	-3.56	-0.00	-2.5 to 2.5	Pass
				10	3.85	-7.85	-0.01	-2.5 to 2.5	Pass
				30	3.85	-7.72	-0.01	-2.5 to 2.5	Pass
				40	3.85	-8.30	-0.01	-2.5 to 2.5	Pass
				50	3.85	-8.60	-0.01	-2.5 to 2.5	Pass
	844	50	0	20	3.27	-7.52	-0.01	-2.5 to 2.5	Pass
					3.85	-5.79	-0.01	-2.5 to 2.5	Pass
					4.43	-7.35	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-7.68	-0.01	-2.5 to 2.5	Pass
				0	3.85	-4.22	-0.01	-2.5 to 2.5	Pass
				10	3.85	-3.59	-0.00	-2.5 to 2.5	Pass
				30	3.85	-3.43	-0.00	-2.5 to 2.5	Pass
				40	3.85	-3.78	-0.00	-2.5 to 2.5	Pass
				50	3.85	-4.54	-0.01	-2.5 to 2.5	Pass
64QAM	829	50	0	20	3.27	-7.25	-0.01	-2.5 to 2.5	Pass
					3.85	-6.18	-0.01	-2.5 to 2.5	Pass
					4.43	-6.51	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-6.27	-0.01	-2.5 to 2.5	Pass
				0	3.85	-6.12	-0.01	-2.5 to 2.5	Pass
				10	3.85	-3.48	-0.00	-2.5 to 2.5	Pass
				30	3.85	-8.44	-0.01	-2.5 to 2.5	Pass
				40	3.85	-8.25	-0.01	-2.5 to 2.5	Pass
				50	3.85	-6.64	-0.01	-2.5 to 2.5	Pass
	836.5	50	0	20	3.27	-7.88	-0.01	-2.5 to 2.5	Pass
					3.85	-5.45	-0.01	-2.5 to 2.5	Pass
					4.43	-5.79	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-3.83	-0.00	-2.5 to 2.5	Pass
				0	3.85	-5.72	-0.01	-2.5 to 2.5	Pass
				10	3.85	-4.82	-0.01	-2.5 to 2.5	Pass
				30	3.85	-7.97	-0.01	-2.5 to 2.5	Pass
				40	3.85	-7.51	-0.01	-2.5 to 2.5	Pass
				50	3.85	-5.71	-0.01	-2.5 to 2.5	Pass
	844	50	0	20	3.27	-4.42	-0.01	-2.5 to 2.5	Pass
					3.85	-7.04	-0.01	-2.5 to 2.5	Pass
					4.43	-7.12	-0.01	-2.5 to 2.5	Pass
				-10	3.85	-4.95	-0.01	-2.5 to 2.5	Pass
				0	3.85	-5.48	-0.01	-2.5 to 2.5	Pass
				10	3.85	-7.54	-0.01	-2.5 to 2.5	Pass
				30	3.85	-6.15	-0.01	-2.5 to 2.5	Pass
				40	3.85	-3.39	-0.00	-2.5 to 2.5	Pass
				50	3.85	-6.67	-0.01	-2.5 to 2.5	Pass

99% & 26dB Bandwidth

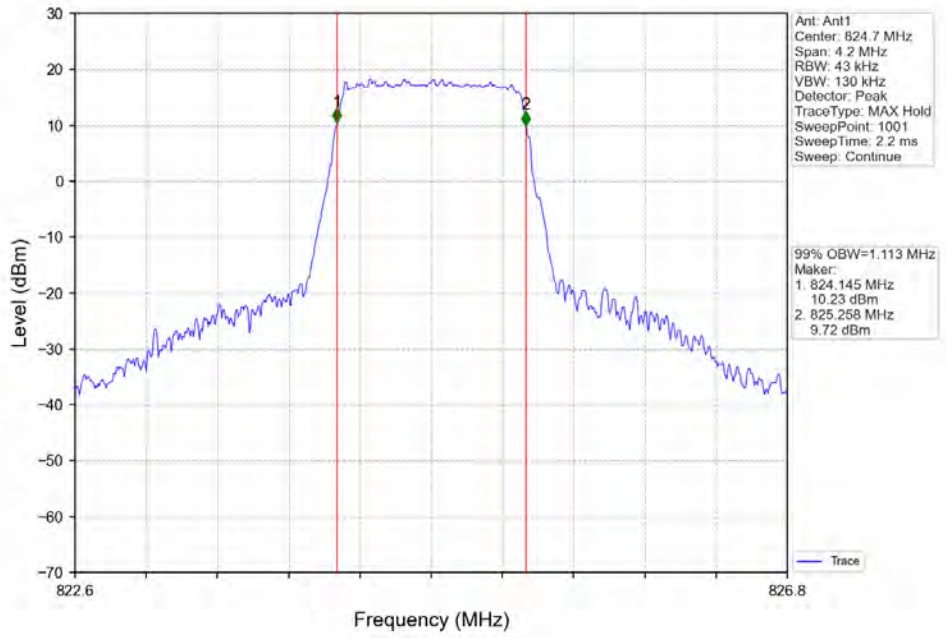
Band5_OBW

Test Result

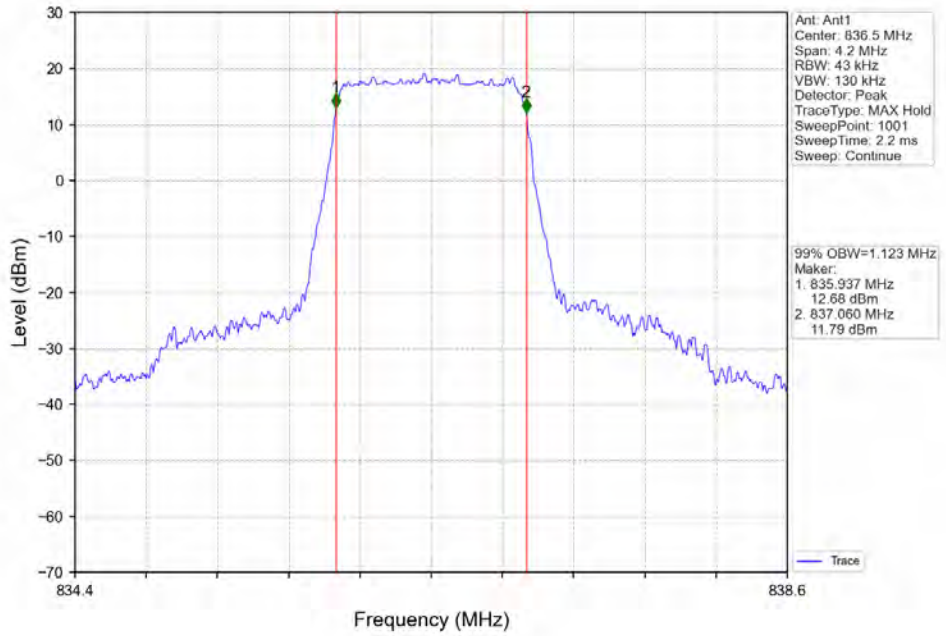
Band: 5 / NTNV						
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)	Verdict
			Size	Offset	Result	
1.4	QPSK	824.7	6	0	1.113	Pass
		836.5	6	0	1.123	Pass
		848.3	6	0	1.113	Pass
	16QAM	824.7	6	0	1.101	Pass
		836.5	6	0	1.105	Pass
		848.3	6	0	1.114	Pass
	64QAM	824.7	6	0	1.124	Pass
		836.5	6	0	1.108	Pass
		848.3	6	0	1.113	Pass
3	QPSK	825.5	15	0	2.729	Pass
		836.5	15	0	2.731	Pass
		847.5	15	0	2.727	Pass
	16QAM	825.5	15	0	2.728	Pass
		836.5	15	0	2.711	Pass
		847.5	15	0	2.719	Pass
	64QAM	825.5	15	0	2.735	Pass
		836.5	15	0	2.716	Pass
		847.5	15	0	2.741	Pass
5	QPSK	826.5	25	0	4.544	Pass
		836.5	25	0	4.547	Pass
		846.5	25	0	4.539	Pass
	16QAM	826.5	25	0	4.531	Pass
		836.5	25	0	4.558	Pass
		846.5	25	0	4.552	Pass
	64QAM	826.5	25	0	4.530	Pass
		836.5	25	0	4.550	Pass
		846.5	25	0	4.540	Pass
10	QPSK	829	50	0	9.060	Pass
		836.5	50	0	9.056	Pass
		844	50	0	9.055	Pass
	16QAM	829	50	0	9.088	Pass
		836.5	50	0	9.053	Pass
		844	50	0	9.051	Pass
	64QAM	829	50	0	9.059	Pass
		836.5	50	0	9.040	Pass
		844	50	0	9.077	Pass

Test Graph

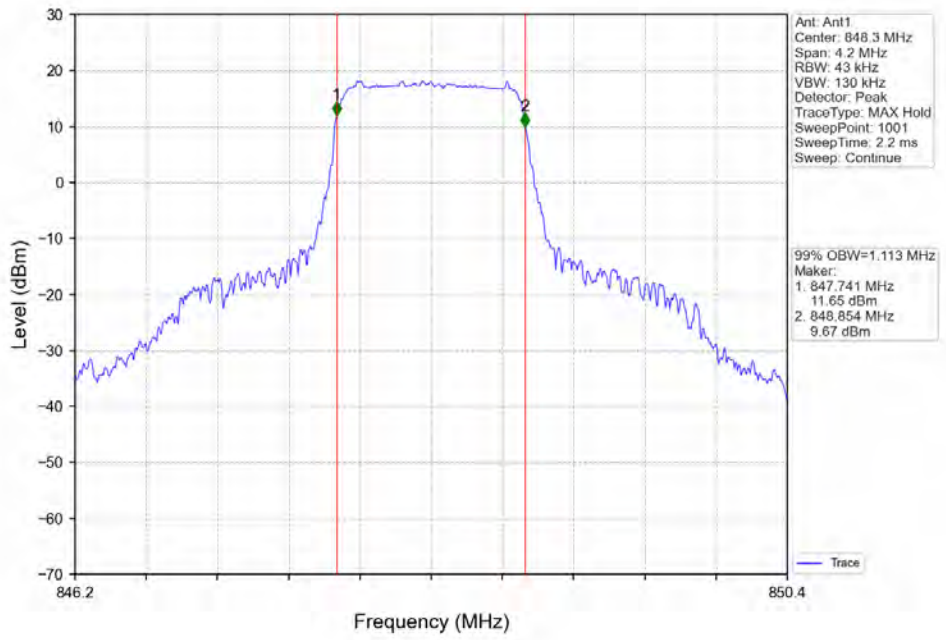
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_6_0_NTNV



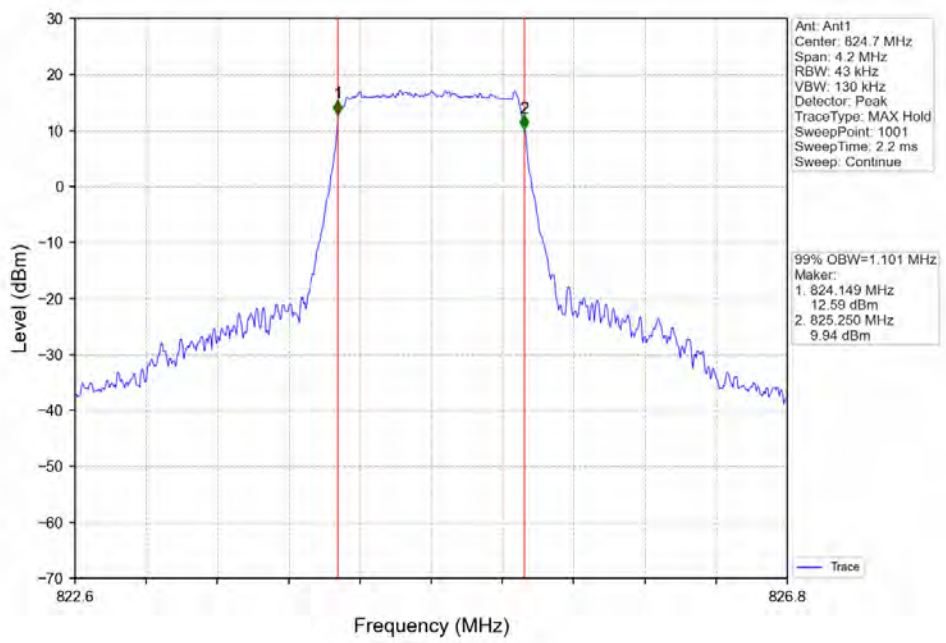
Band5_1.4MHz_QPSK_MCH_836.5MHz_RB_6_0_NTNV



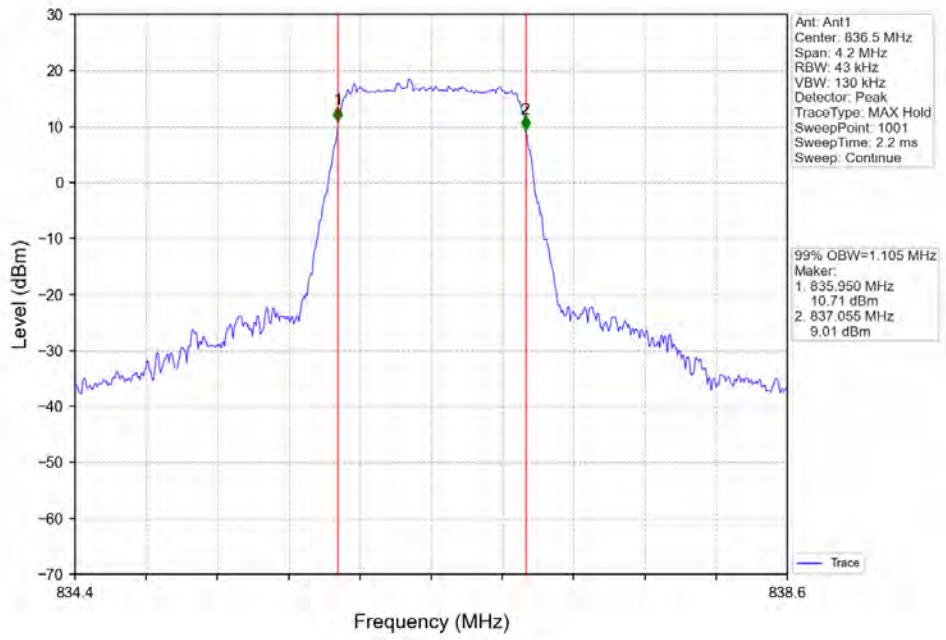
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



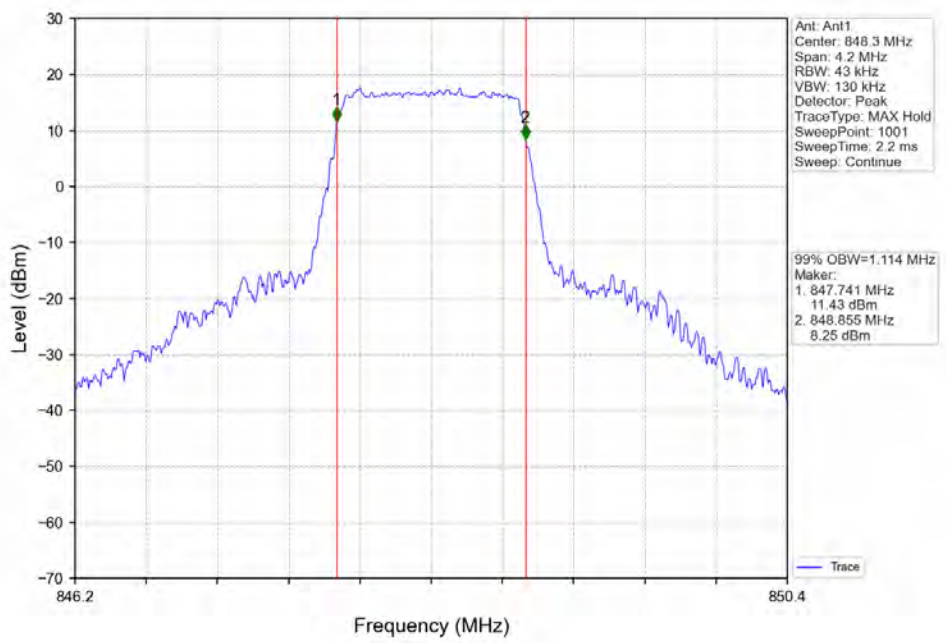
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



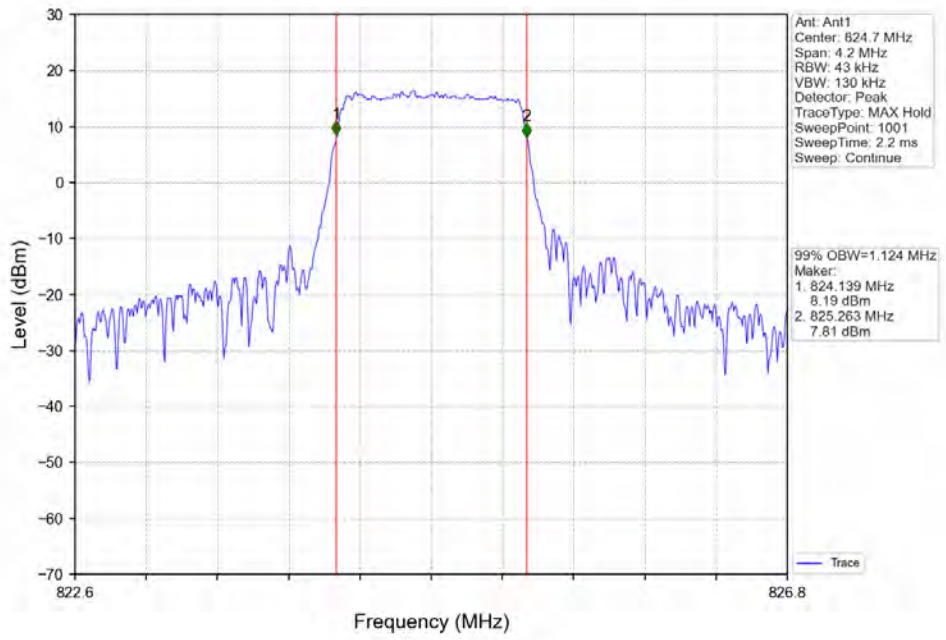
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



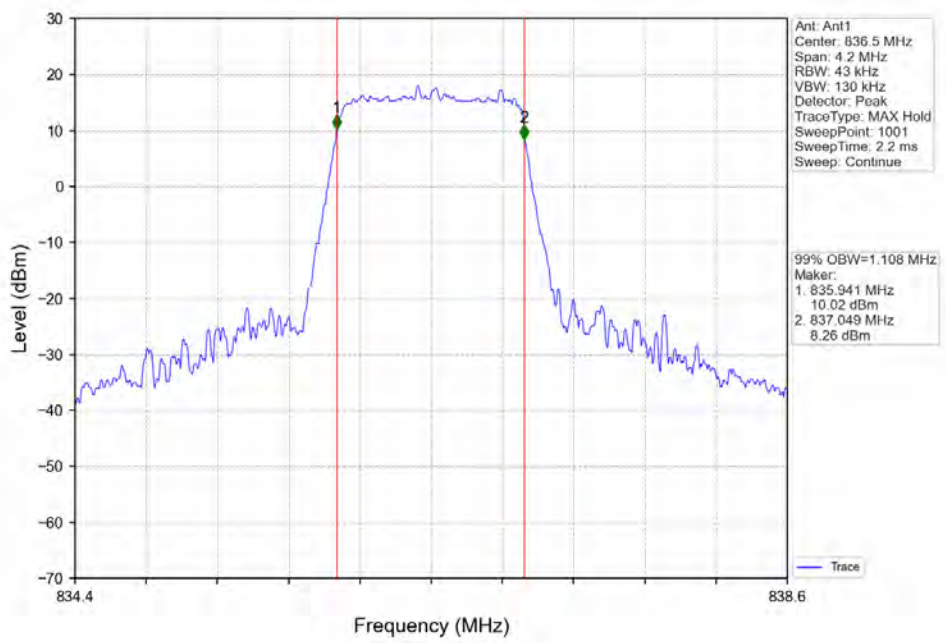
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



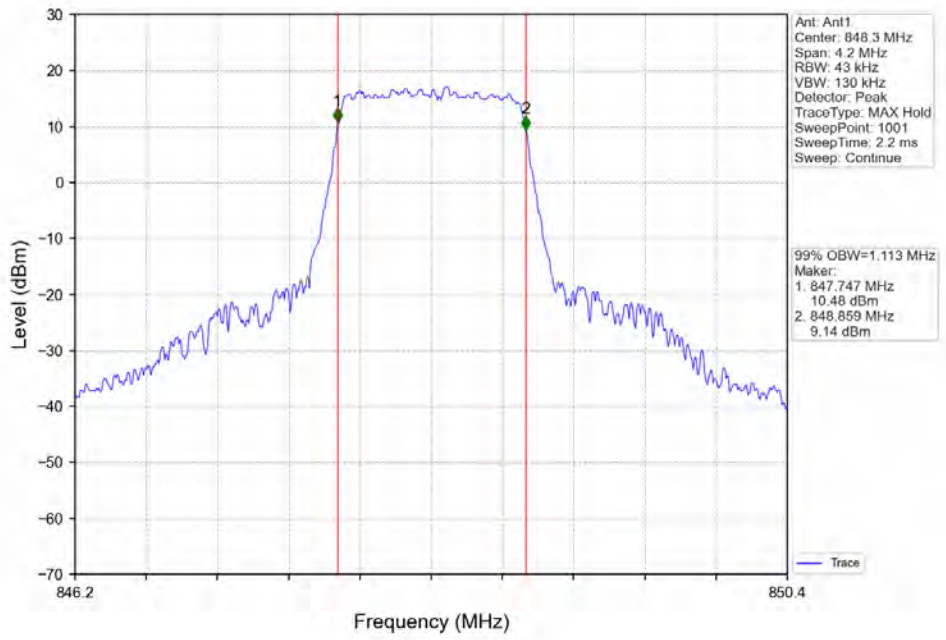
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_6_0_NTNV



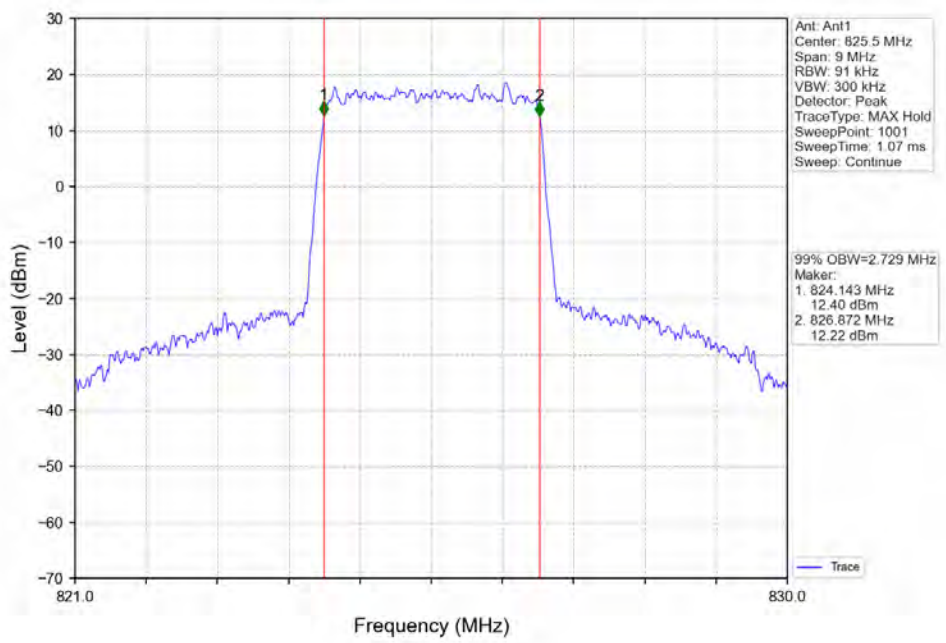
Band5_1.4MHz_64QAM_MCH_836.5MHz_RB_6_0_NTNV



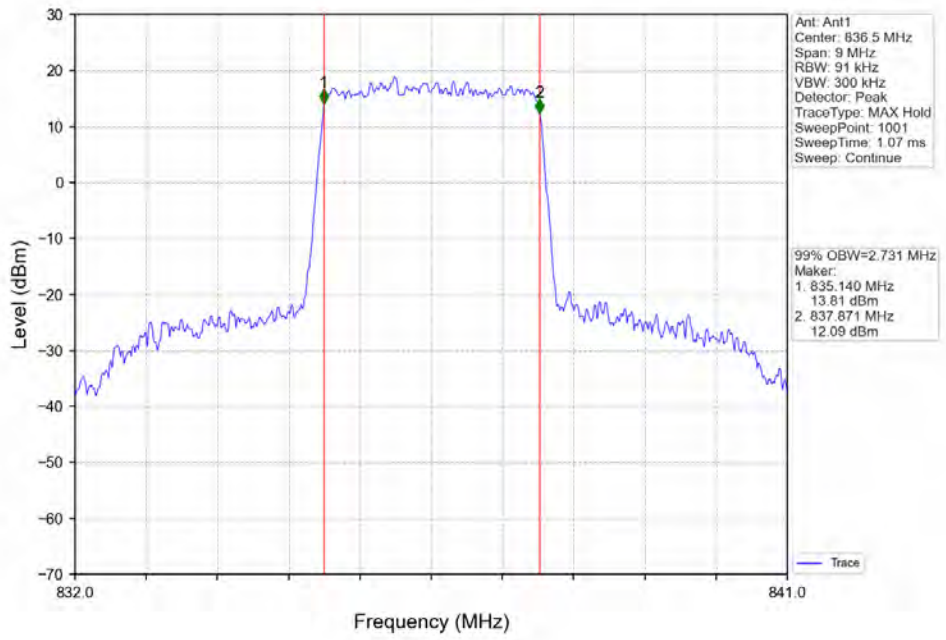
Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_6_0_NTNV



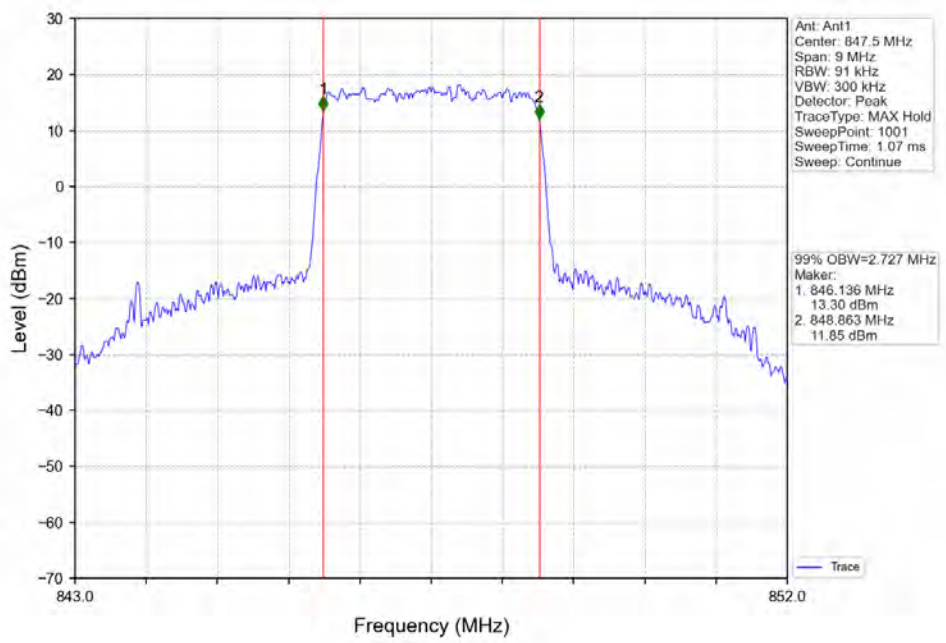
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



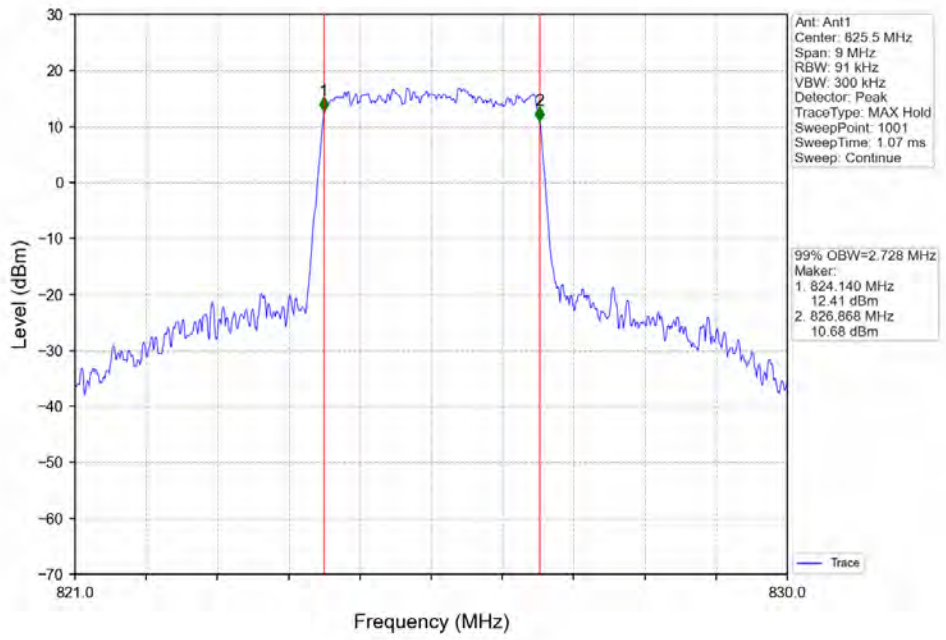
Band5_3MHz_QPSK_MCH_836.5MHz_RB_15_0_NTNV



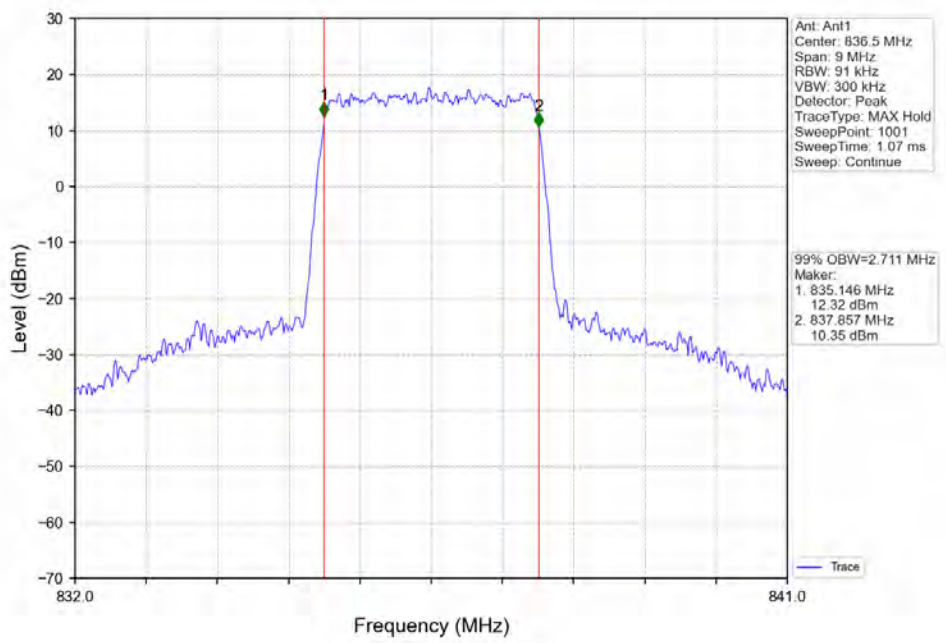
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



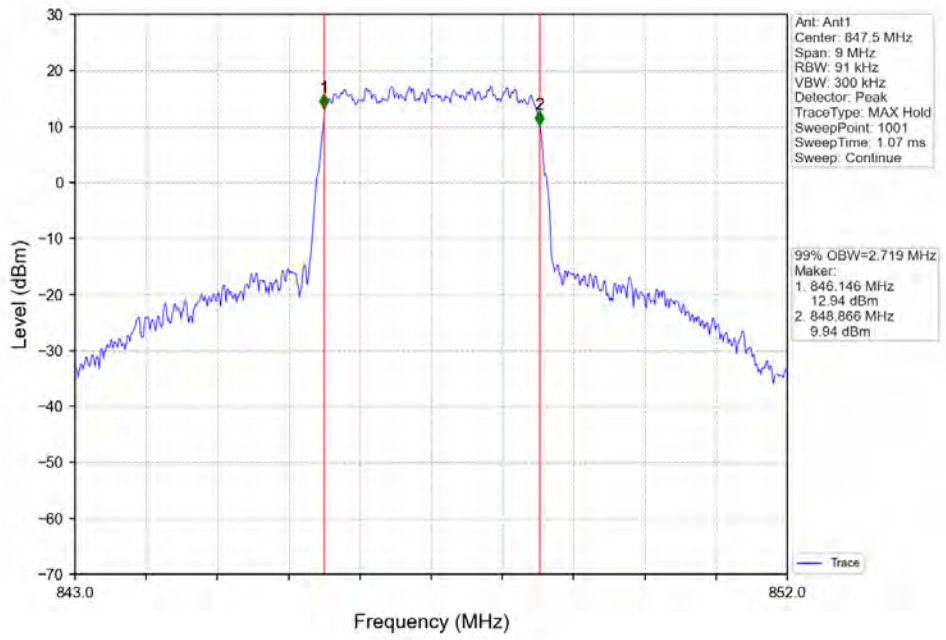
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



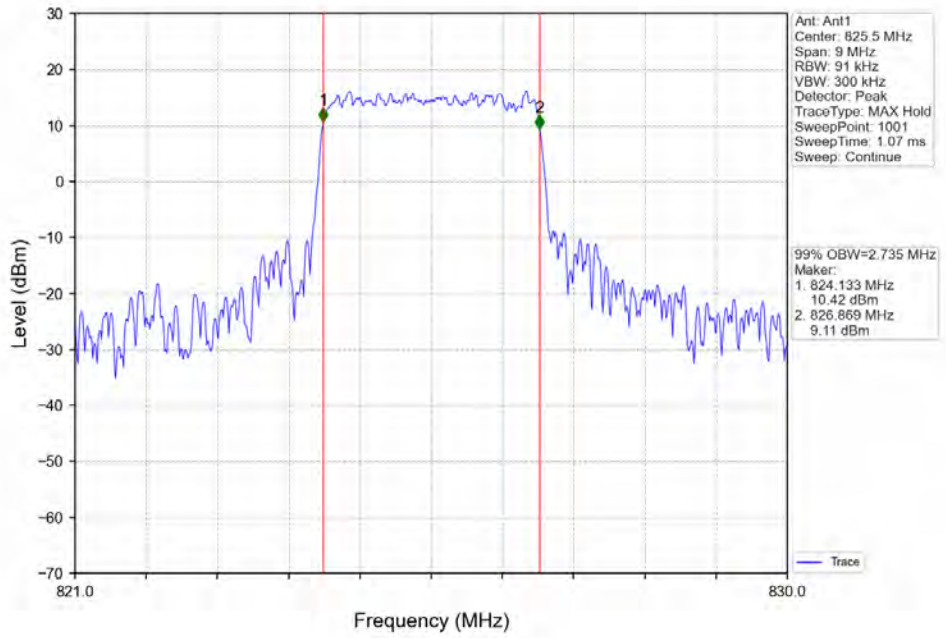
Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



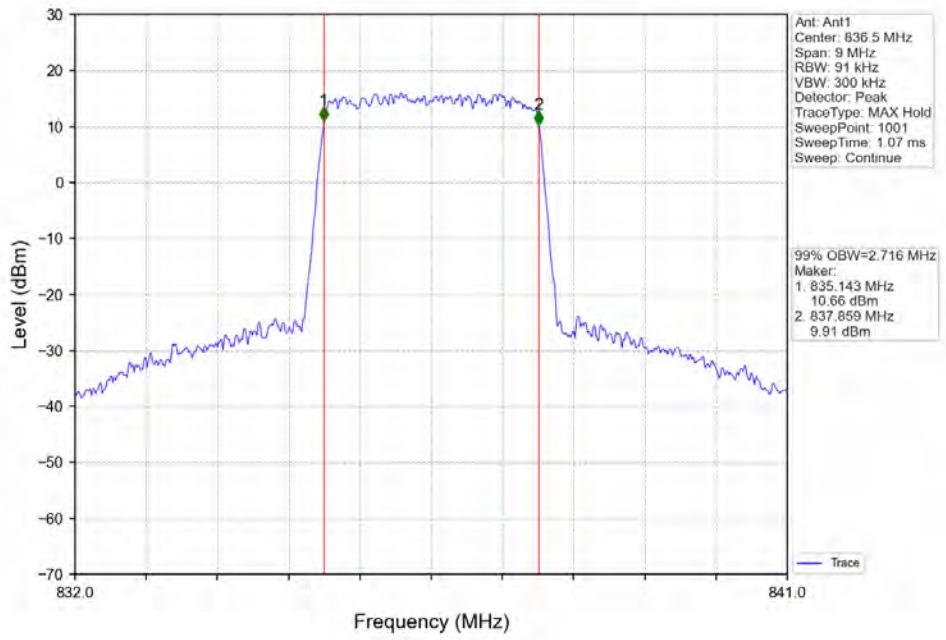
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



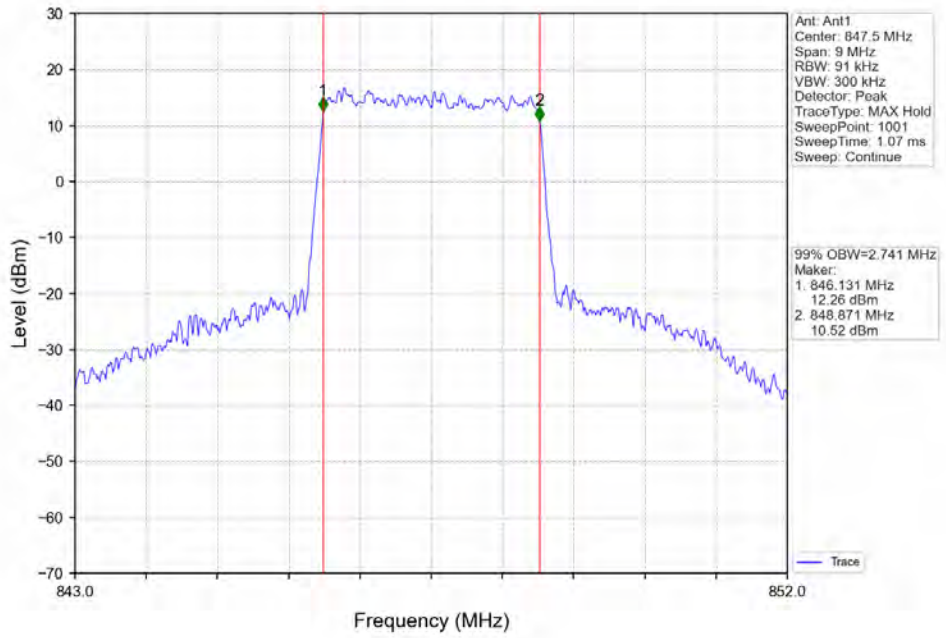
Band5_3MHz_64QAM_LCH_825.5MHz_RB_15_0_NTNV



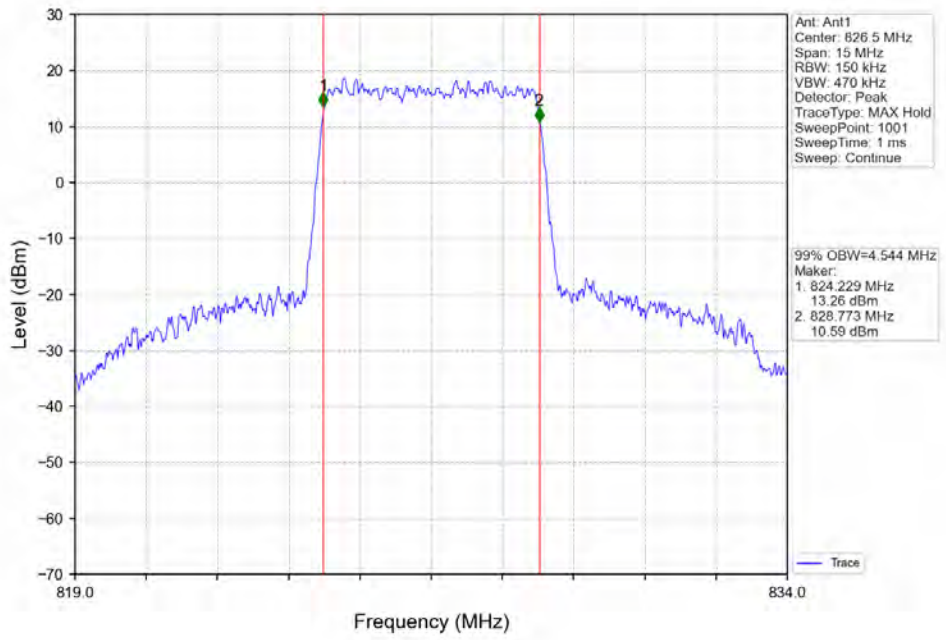
Band5_3MHz_64QAM_MCH_836.5MHz_RB_15_0_NTNV



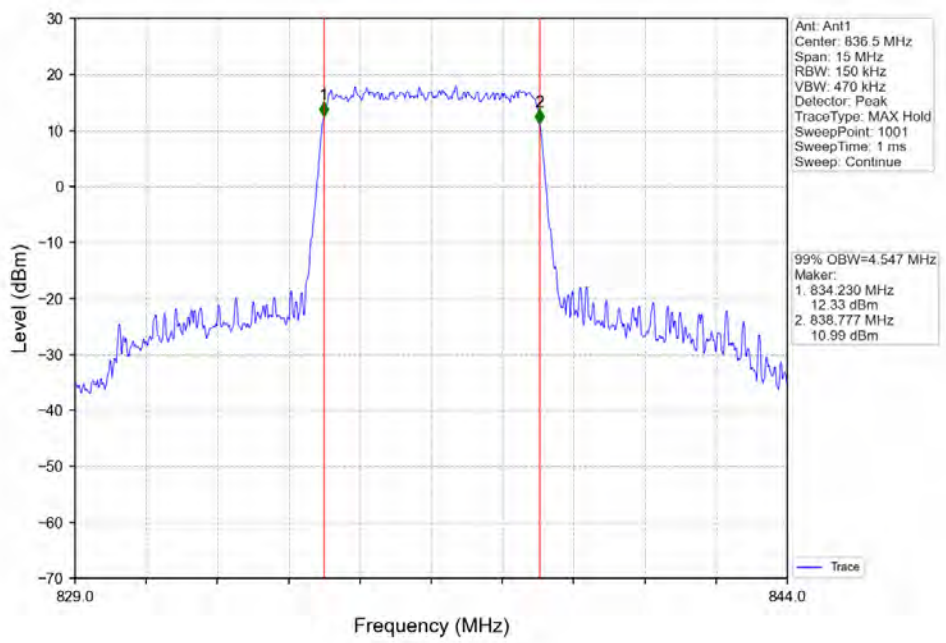
Band5_3MHz_64QAM_HCH_847.5MHz_RB_15_0_NTNV



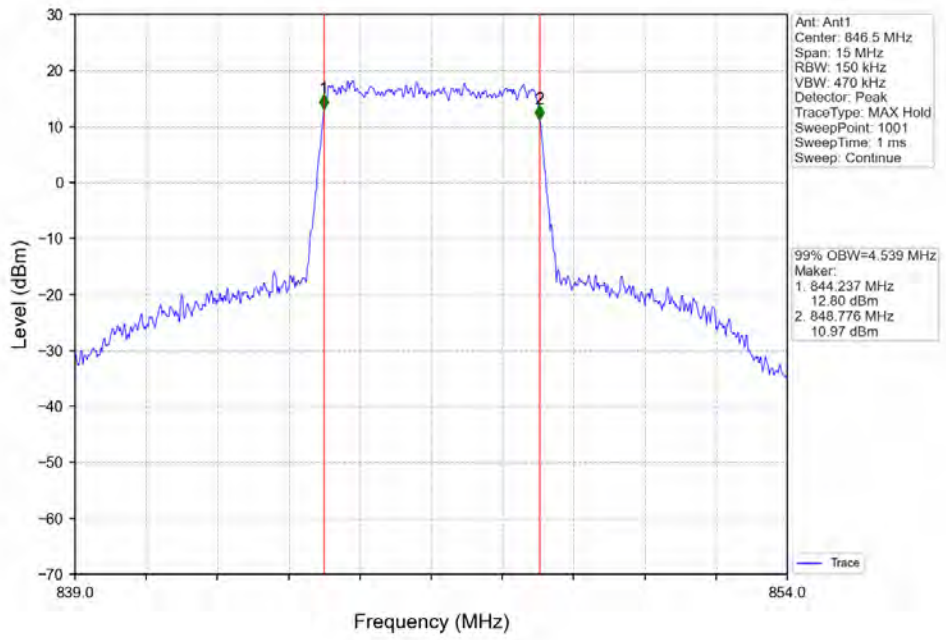
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



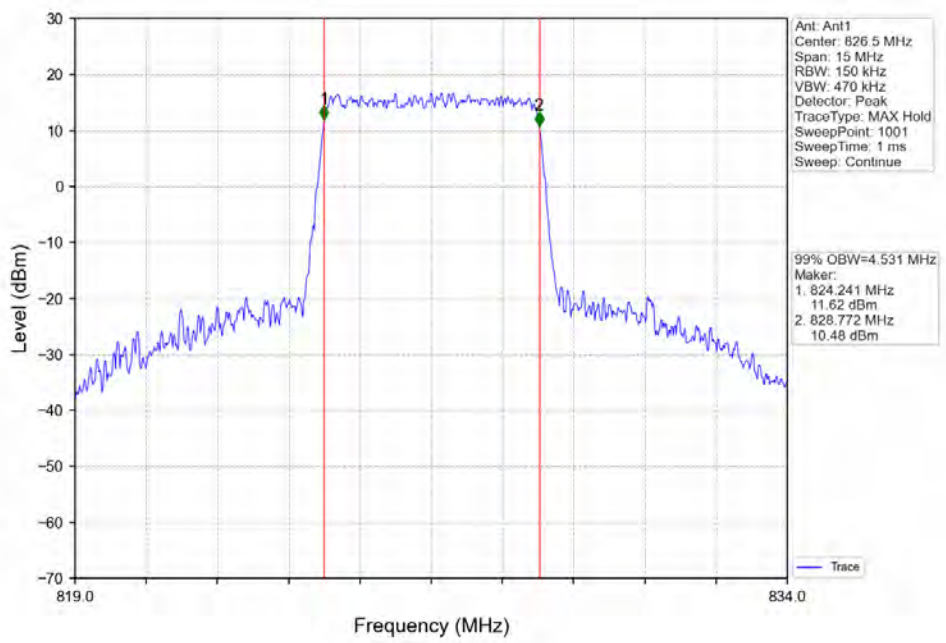
Band5_5MHz_QPSK_MCH_836.5MHz_RB_25_0_NTNV



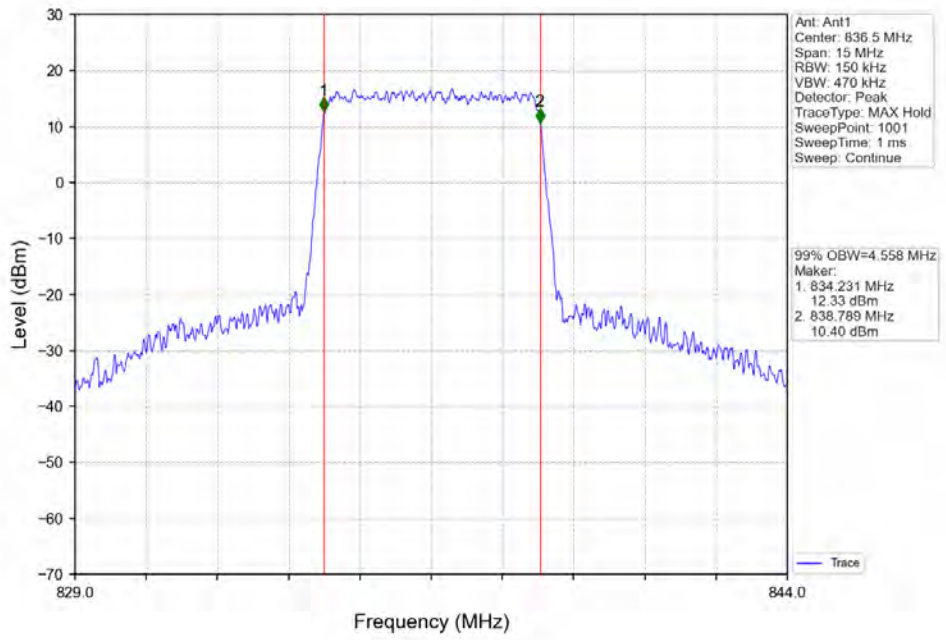
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



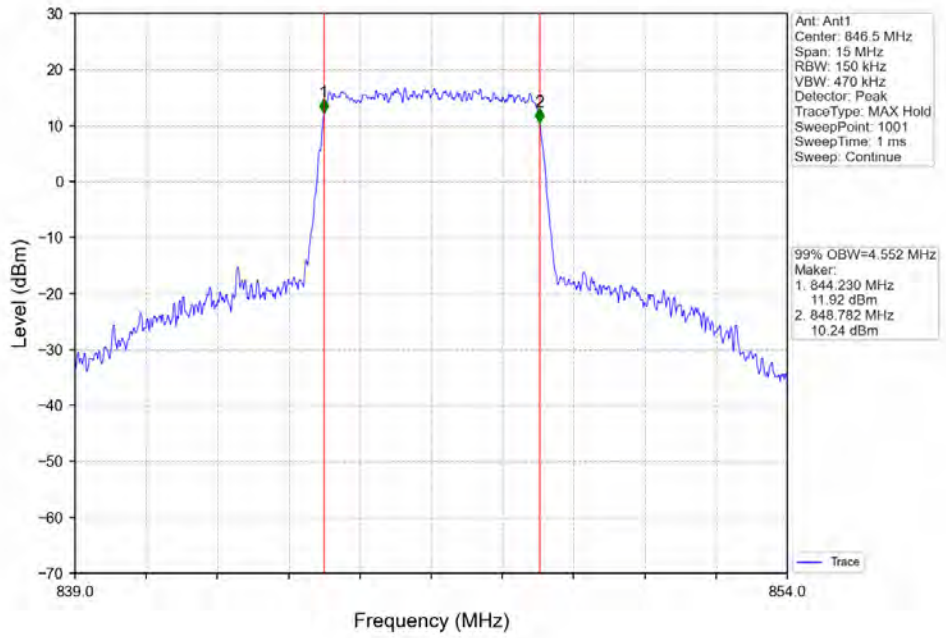
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



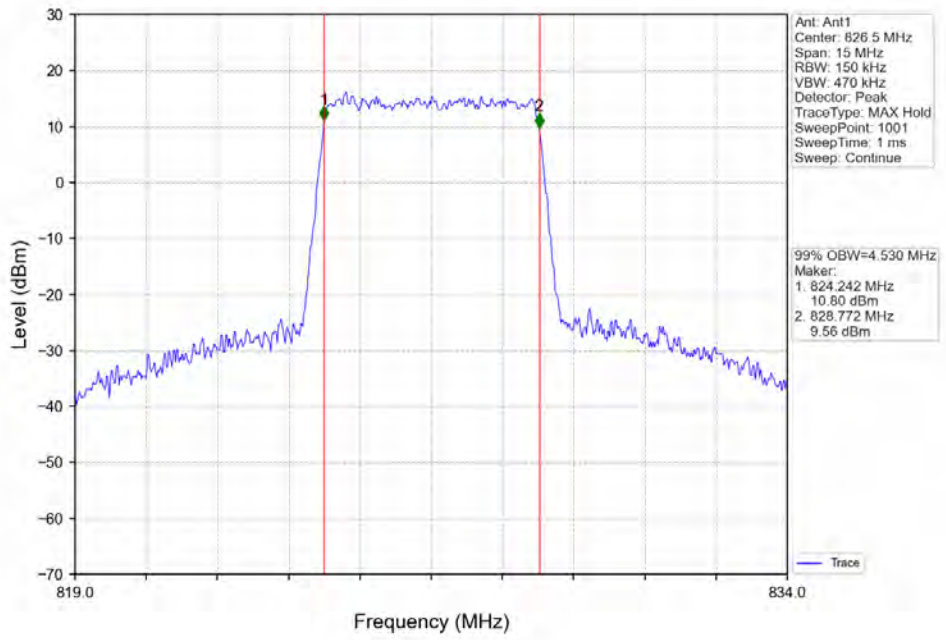
Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



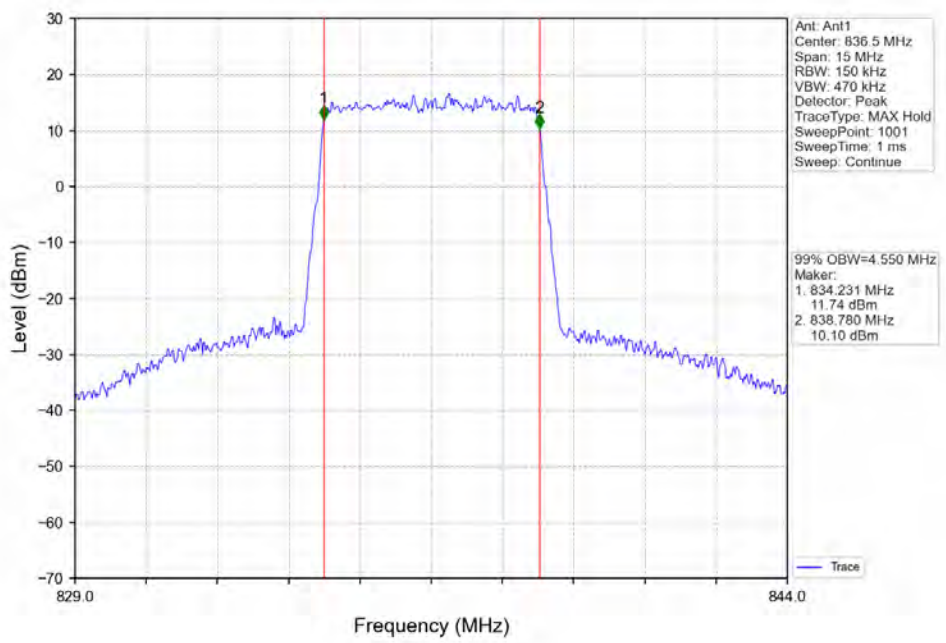
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



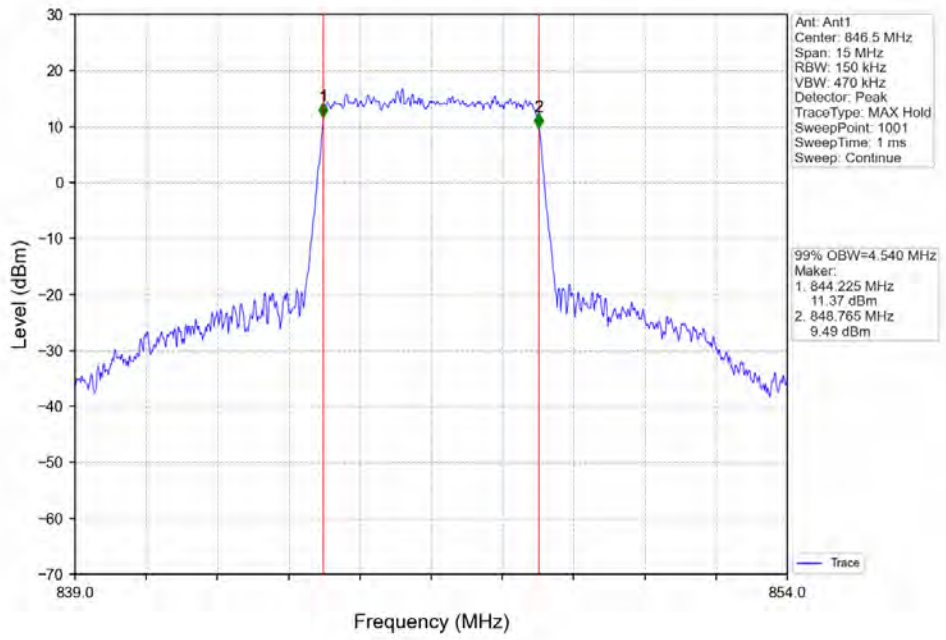
Band5_5MHz_64QAM_LCH_826.5MHz_RB_25_0_NTNV



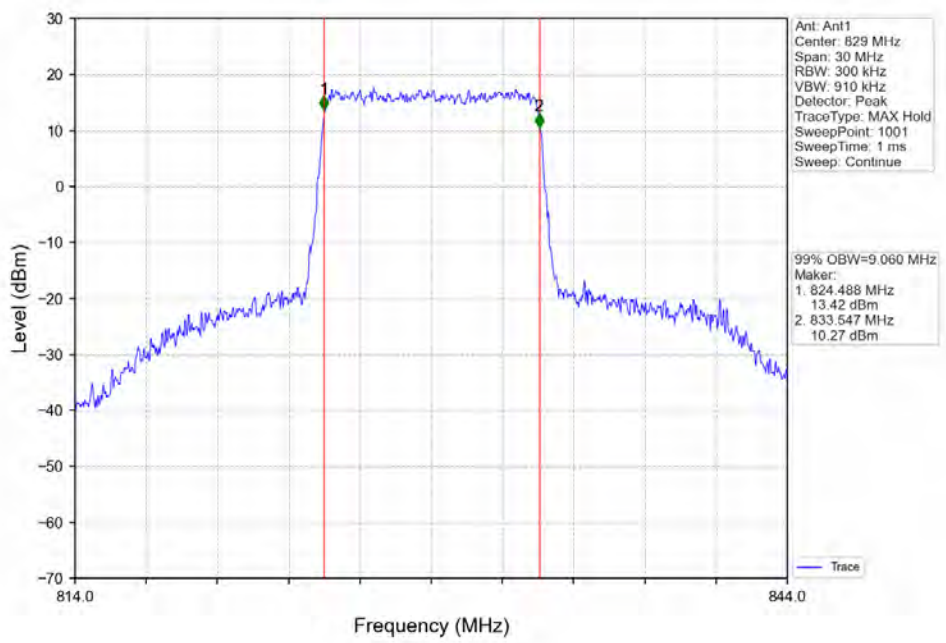
Band5_5MHz_64QAM_MCH_836.5MHz_RB_25_0_NTNV



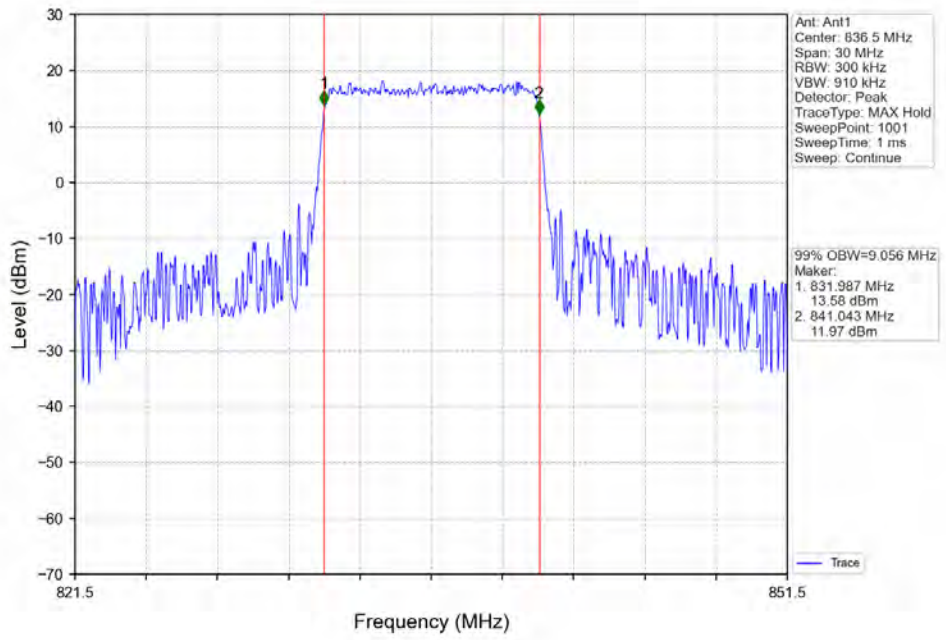
Band5_5MHz_64QAM_HCH_846.5MHz_RB_25_0_NTNV



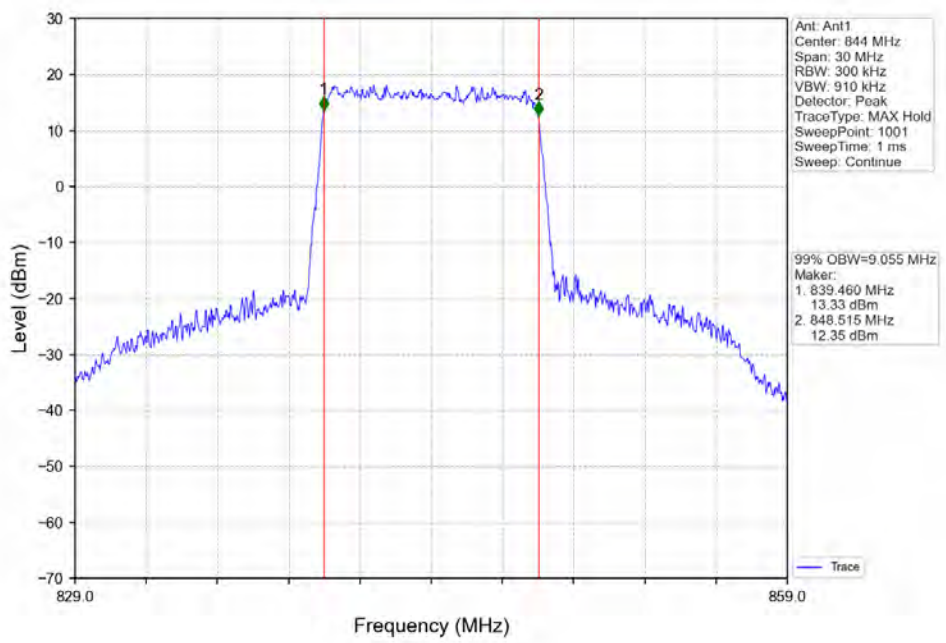
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



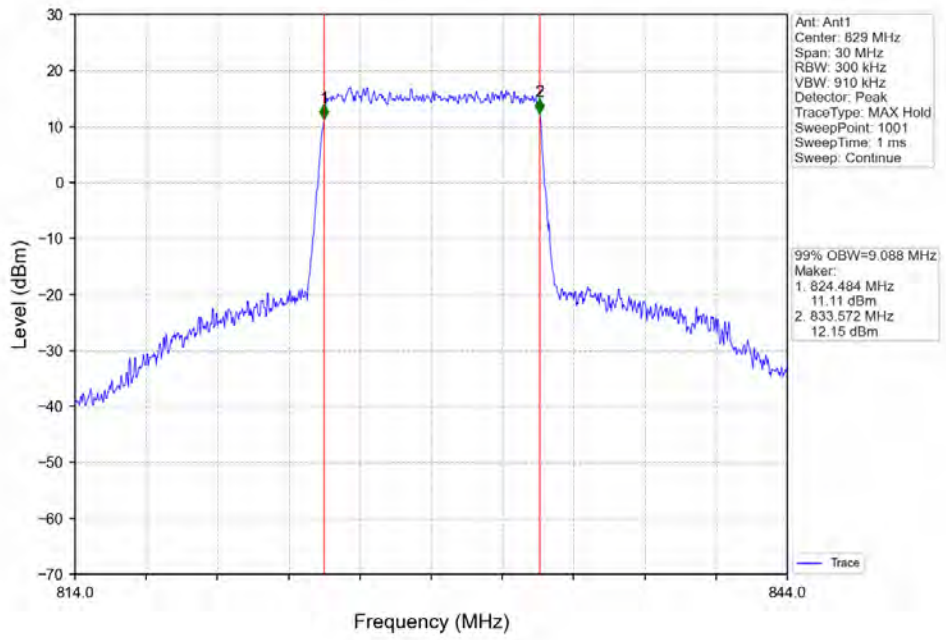
Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



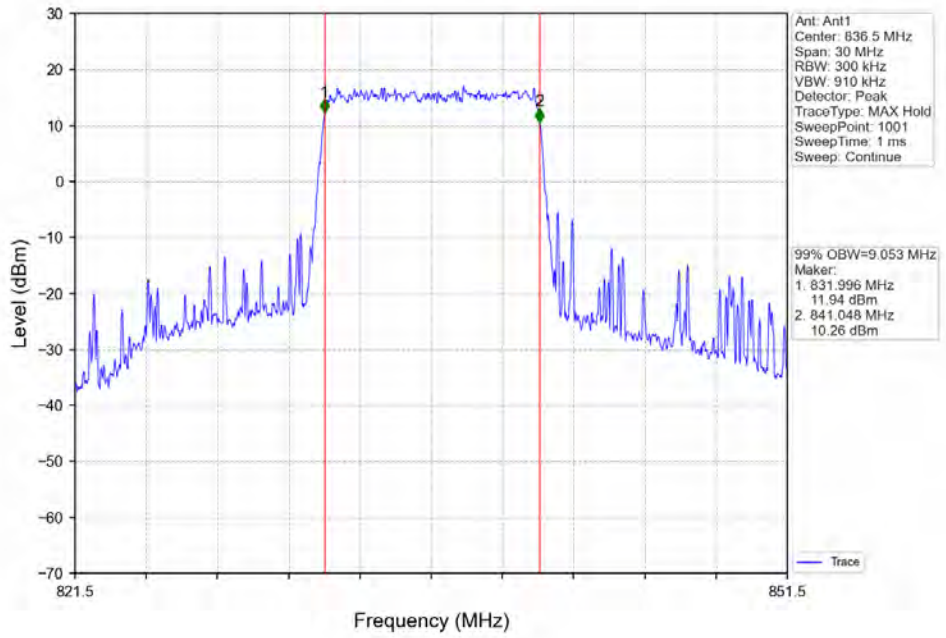
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



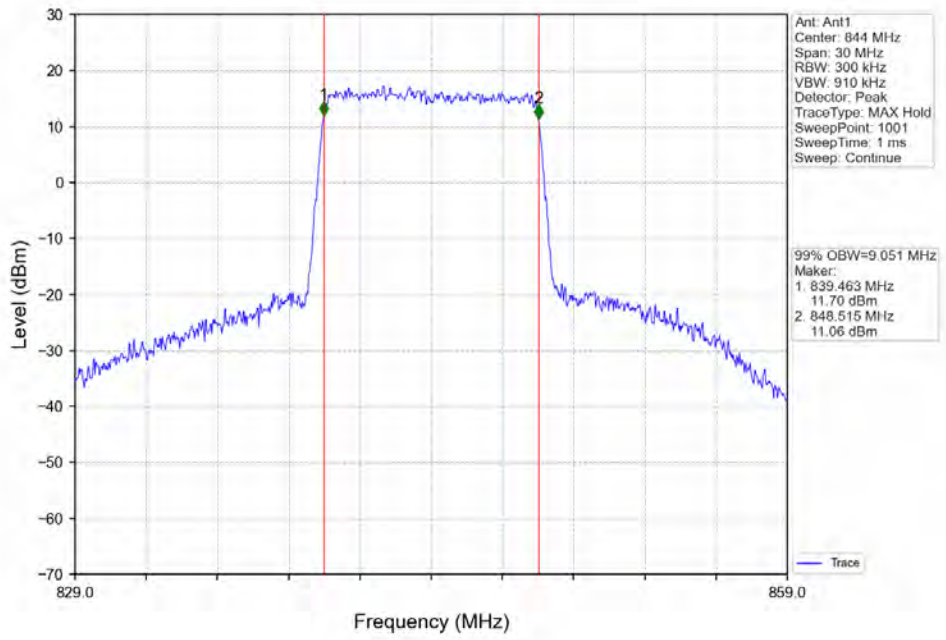
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



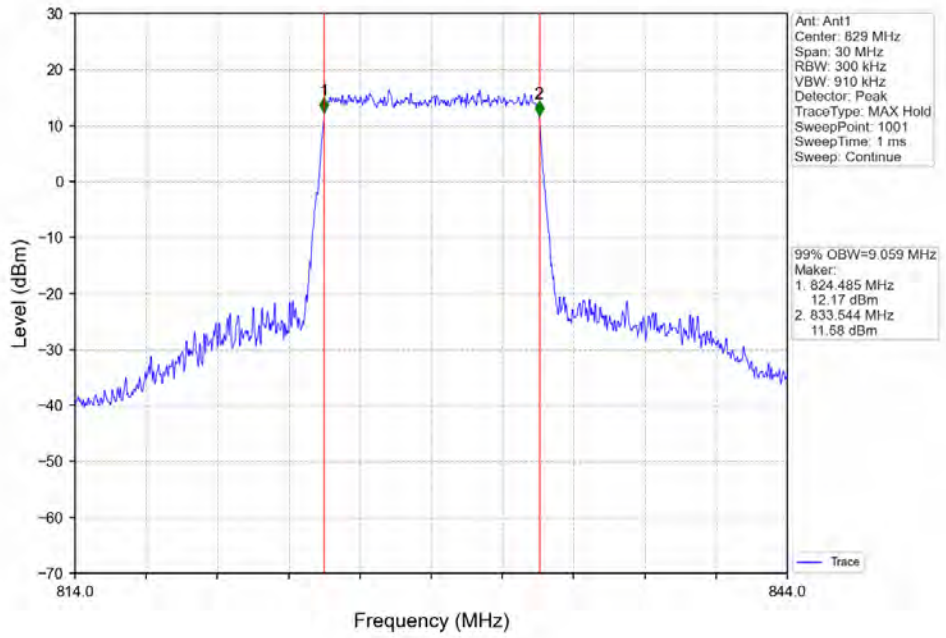
Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



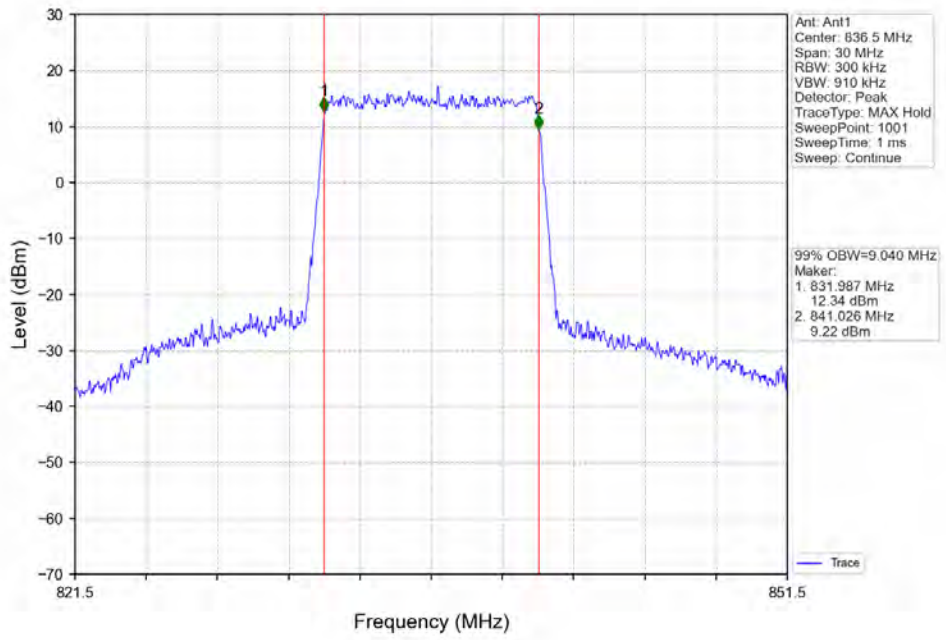
Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



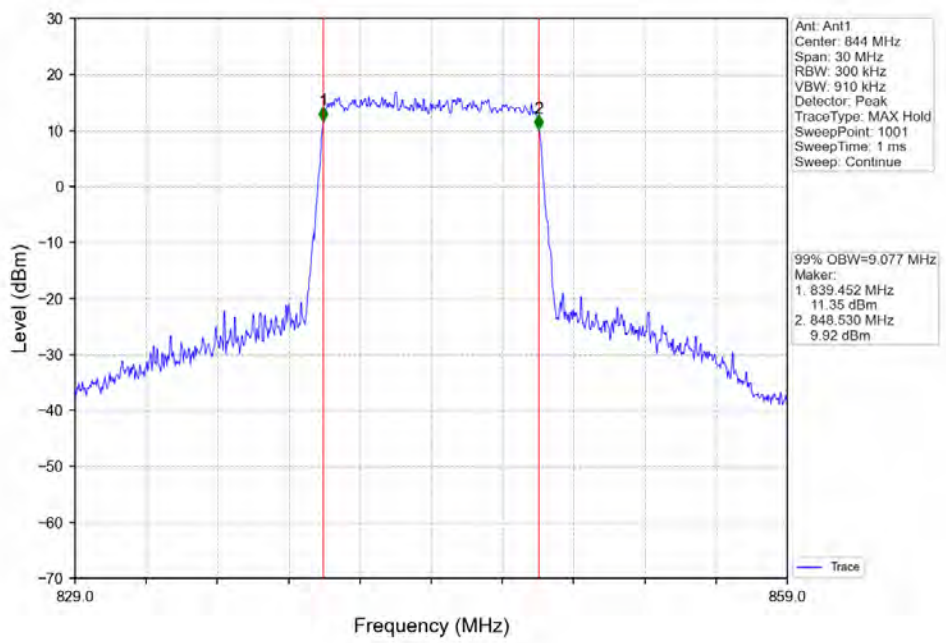
Band5_10MHz_64QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_50_0_NTNV



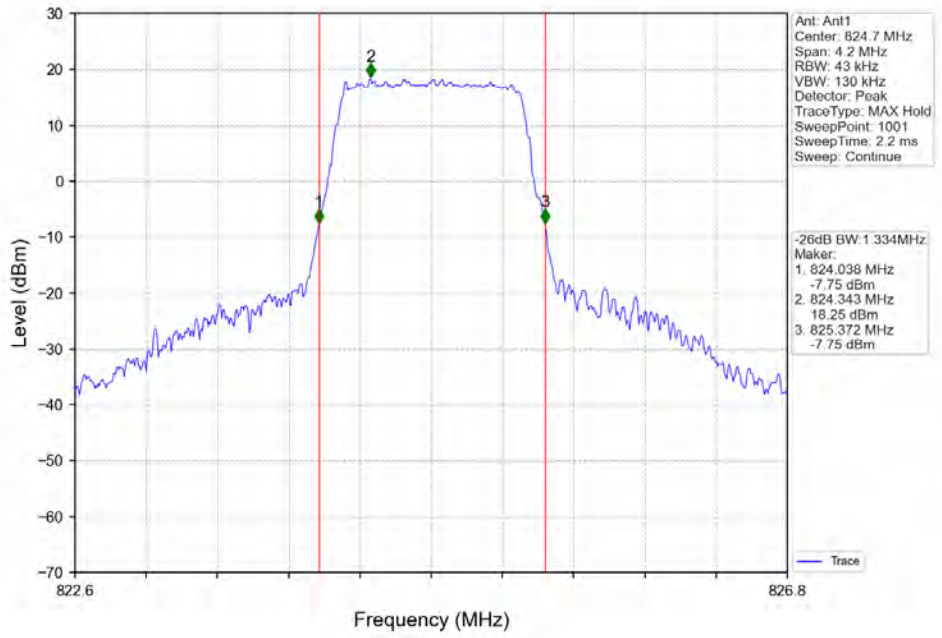
26DB_BW

Test Result

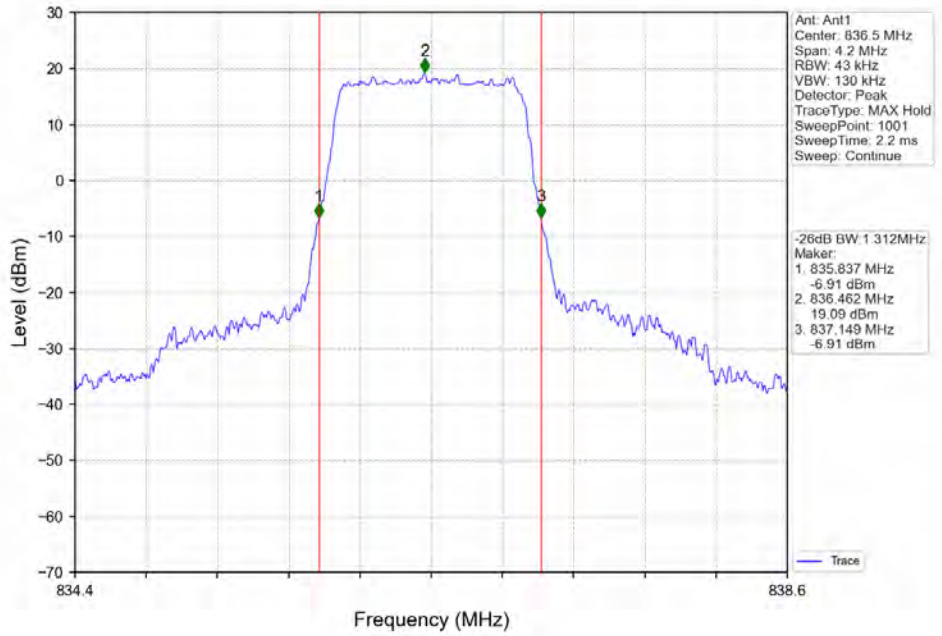
Band: 5 / NTNV						
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)	Verdict
			Size	Offset	Result	
1.4	QPSK	824.7	6	0	1.334	Pass
		836.5	6	0	1.312	Pass
		848.3	6	0	1.336	Pass
	16QAM	824.7	6	0	1.305	Pass
		836.5	6	0	1.319	Pass
		848.3	6	0	1.326	Pass
	64QAM	824.7	6	0	1.423	Pass
		836.5	6	0	1.298	Pass
		848.3	6	0	1.307	Pass
3	QPSK	825.5	15	0	2.993	Pass
		836.5	15	0	2.990	Pass
		847.5	15	0	2.982	Pass
	16QAM	825.5	15	0	2.987	Pass
		836.5	15	0	3.005	Pass
		847.5	15	0	3.006	Pass
	64QAM	825.5	15	0	3.195	Pass
		836.5	15	0	2.994	Pass
		847.5	15	0	2.992	Pass
5	QPSK	826.5	25	0	5.006	Pass
		836.5	25	0	5.024	Pass
		846.5	25	0	5.041	Pass
	16QAM	826.5	25	0	5.014	Pass
		836.5	25	0	5.043	Pass
		846.5	25	0	5.062	Pass
	64QAM	826.5	25	0	5.029	Pass
		836.5	25	0	5.032	Pass
		846.5	25	0	5.002	Pass
10	QPSK	829	50	0	9.925	Pass
		836.5	50	0	11.121	Pass
		844	50	0	9.995	Pass
	16QAM	829	50	0	9.940	Pass
		836.5	50	0	10.936	Pass
		844	50	0	9.910	Pass
	64QAM	829	50	0	9.982	Pass
		836.5	50	0	9.873	Pass
		844	50	0	9.915	Pass

est Graph

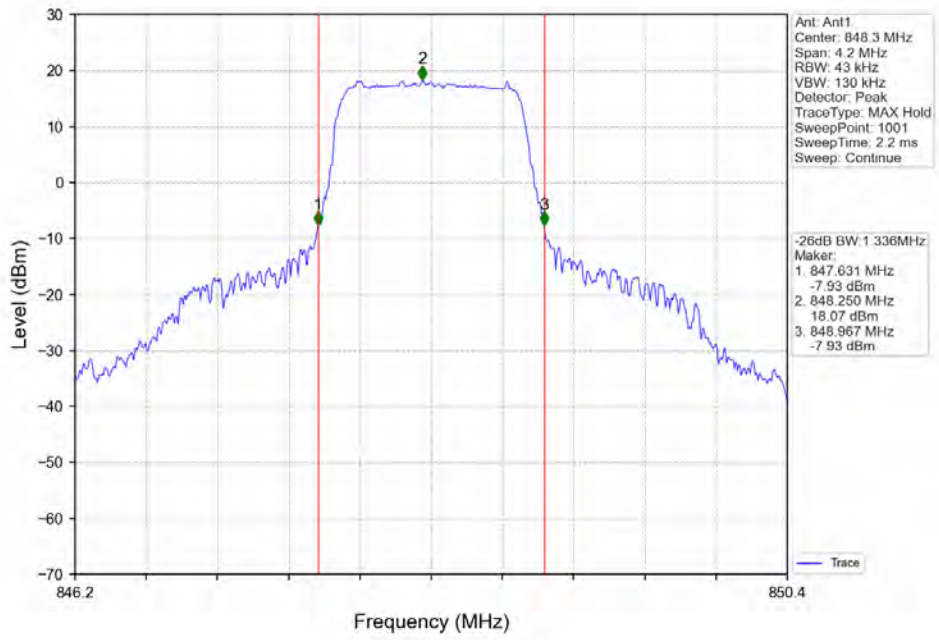
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_6_0_NTNV



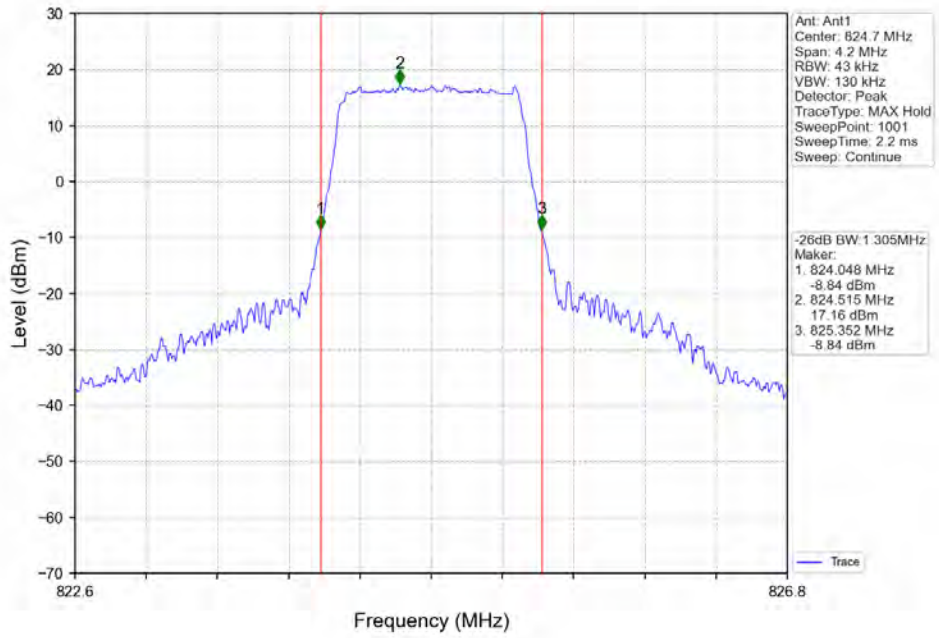
Band5_1.4MHz_QPSK_MCH_836.5MHz_RB_6_0_NTNV



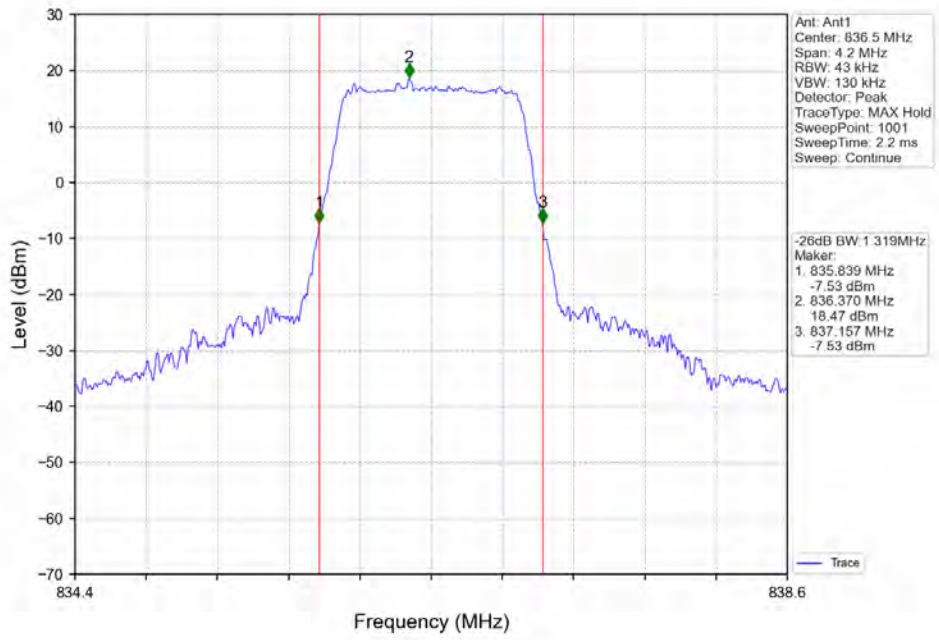
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



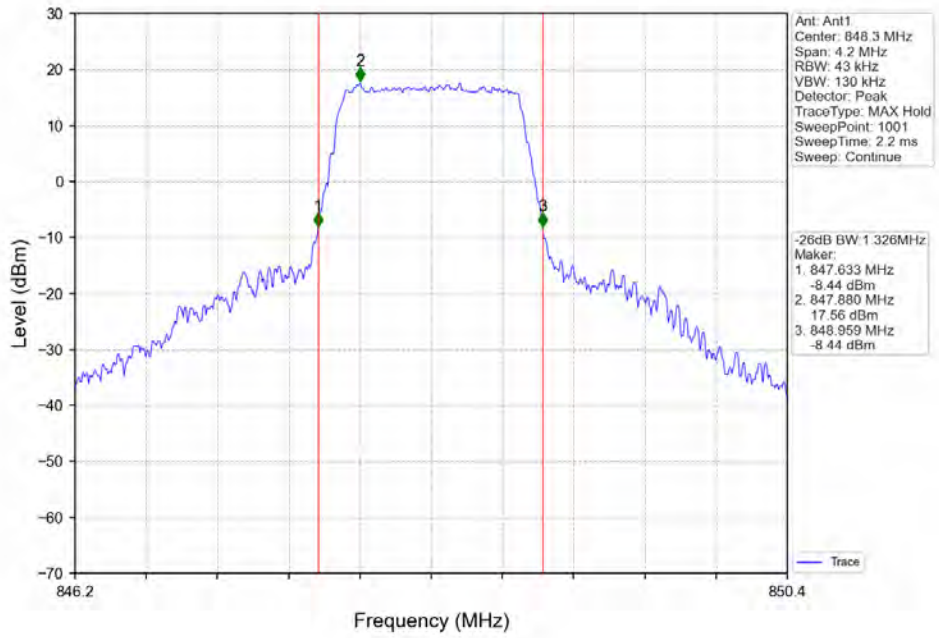
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



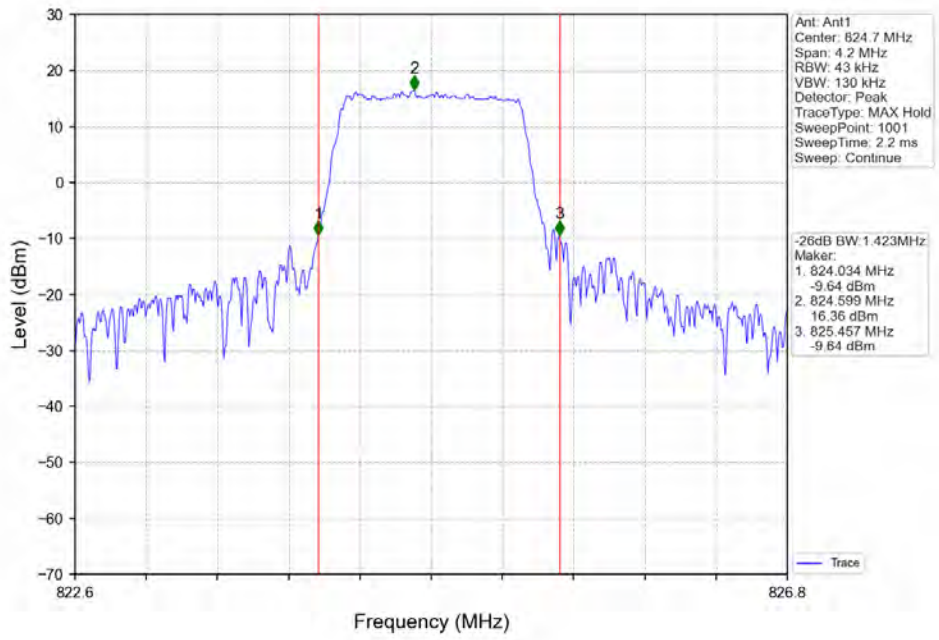
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



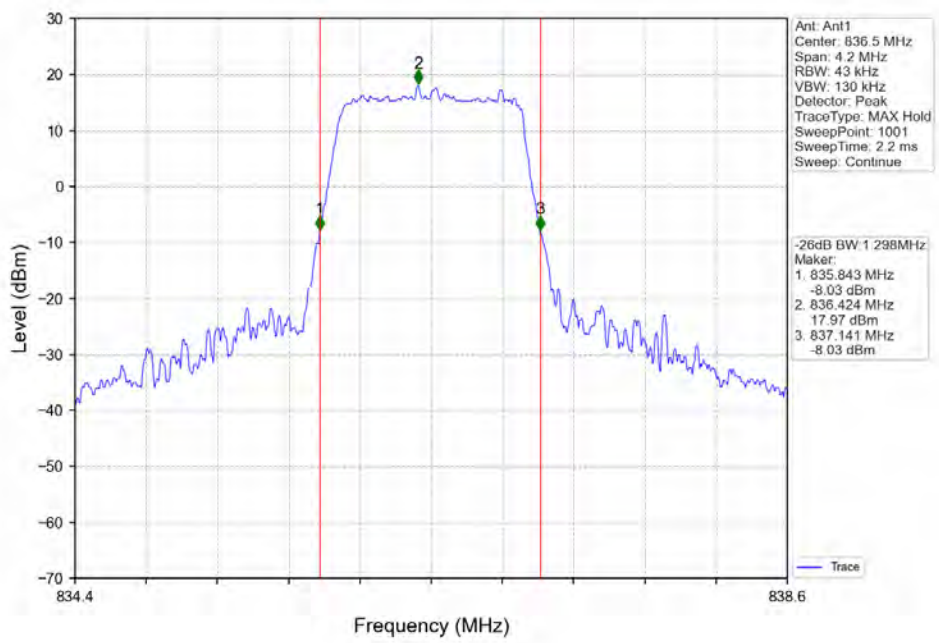
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



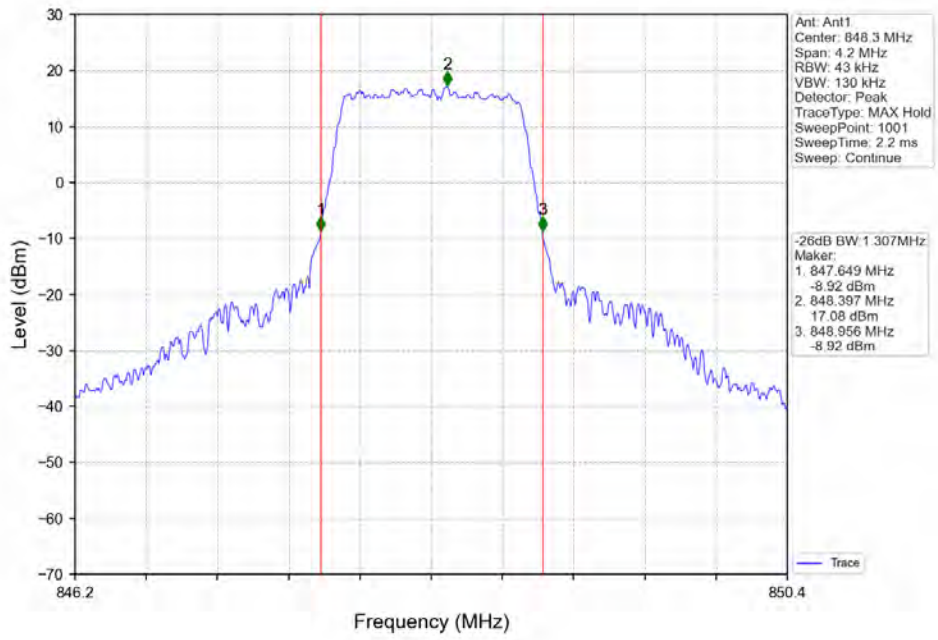
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_6_0_NTNV



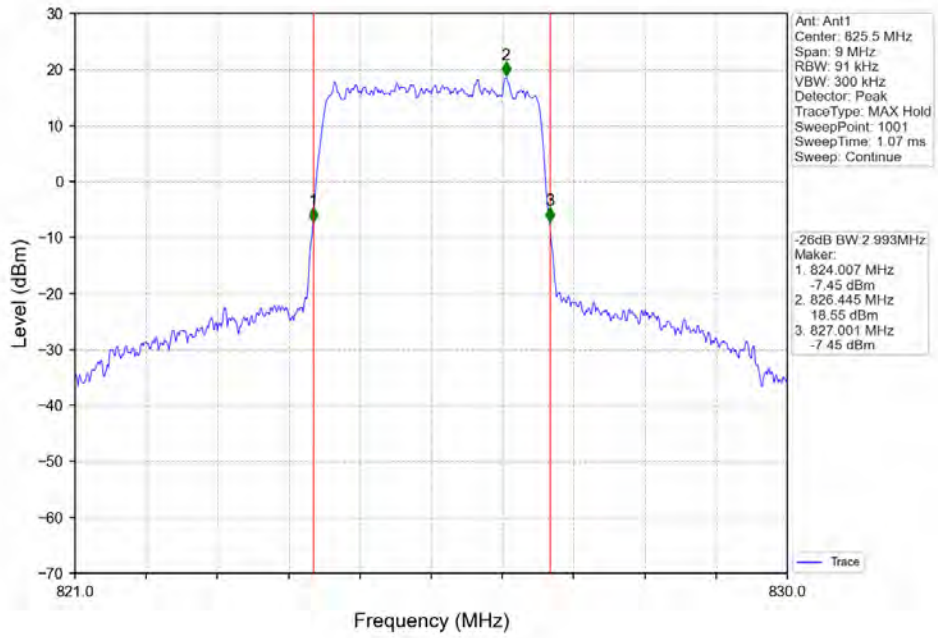
Band5_1.4MHz_64QAM_MCH_836.5MHz_RB_6_0_NTNV



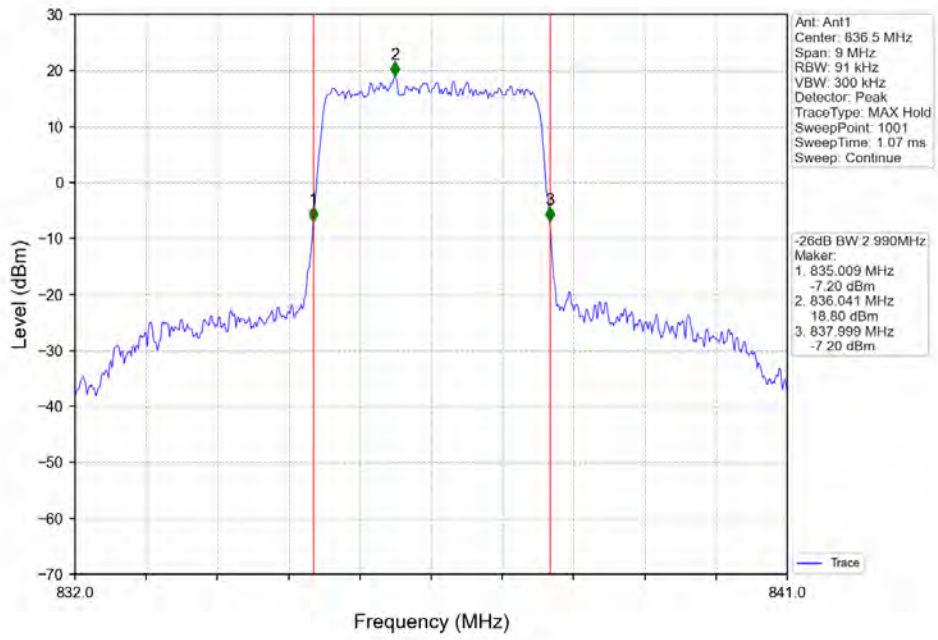
Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_6_0_NTNV



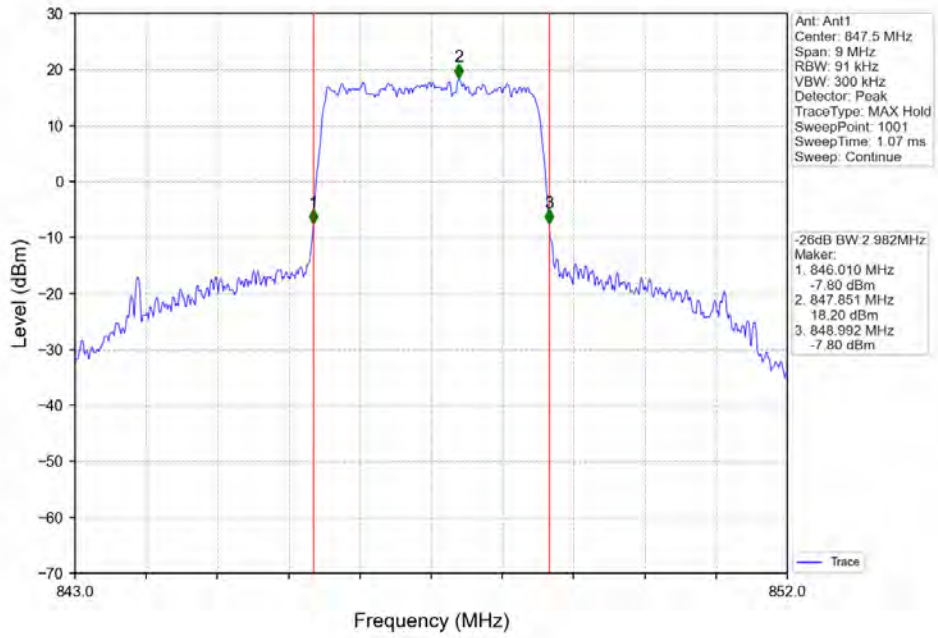
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



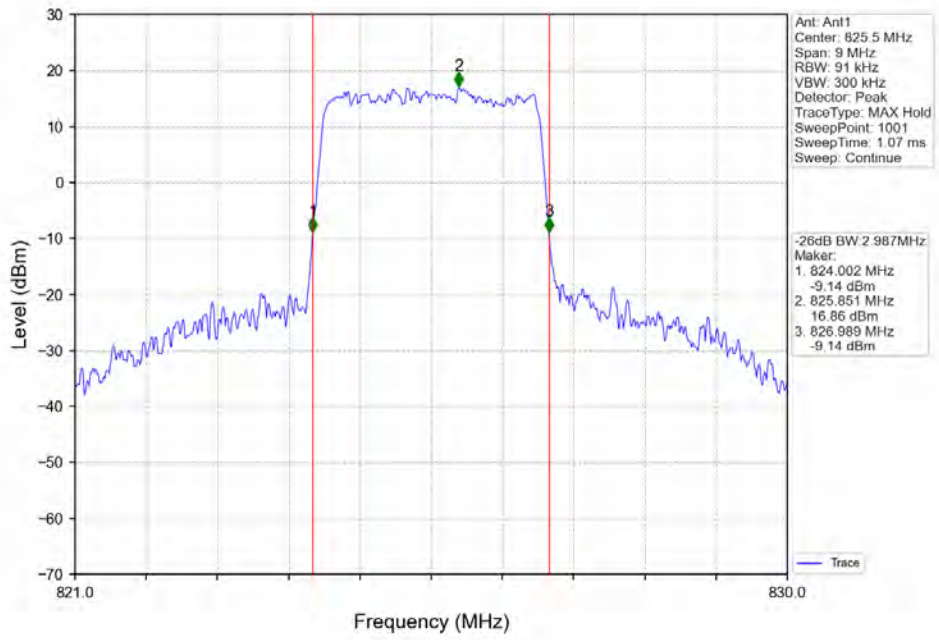
Band5_3MHz_QPSK_MCH_836.5MHz_RB_15_0_NTNV



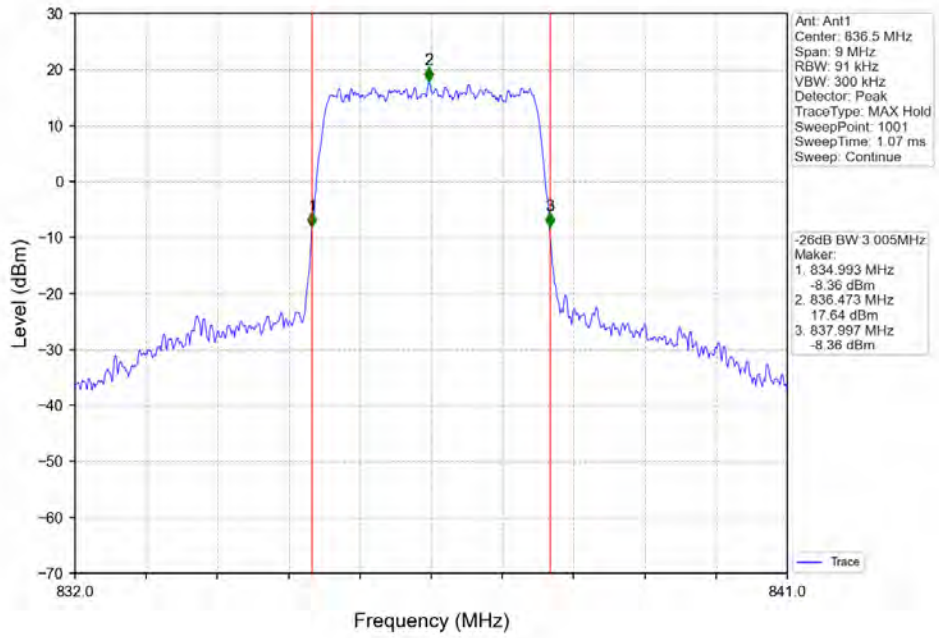
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



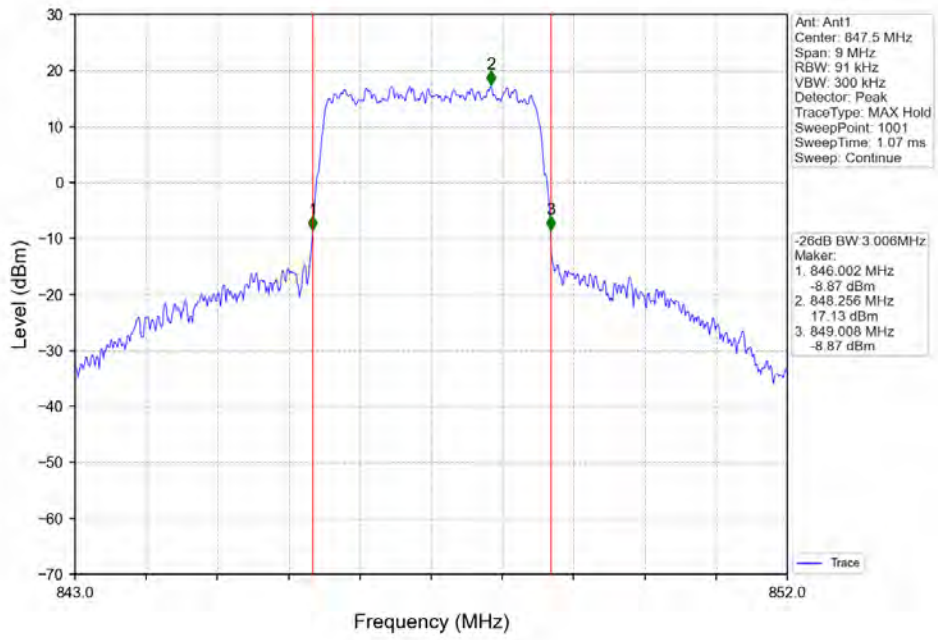
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



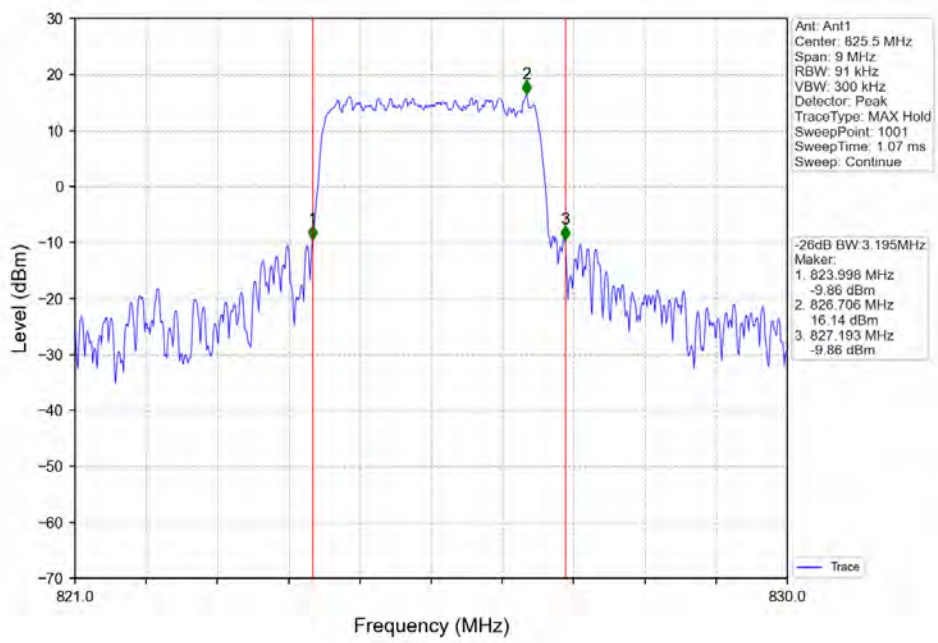
Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



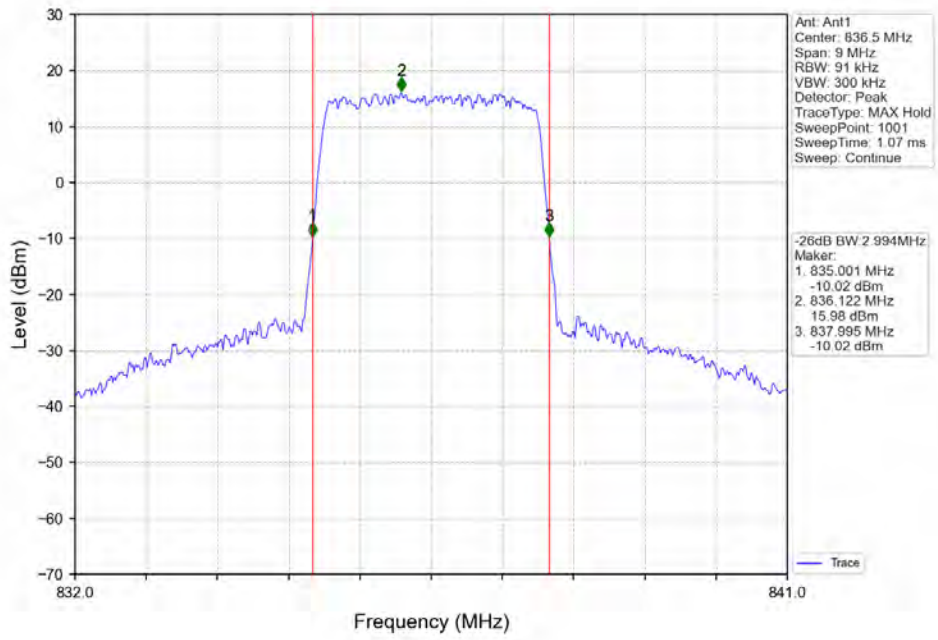
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



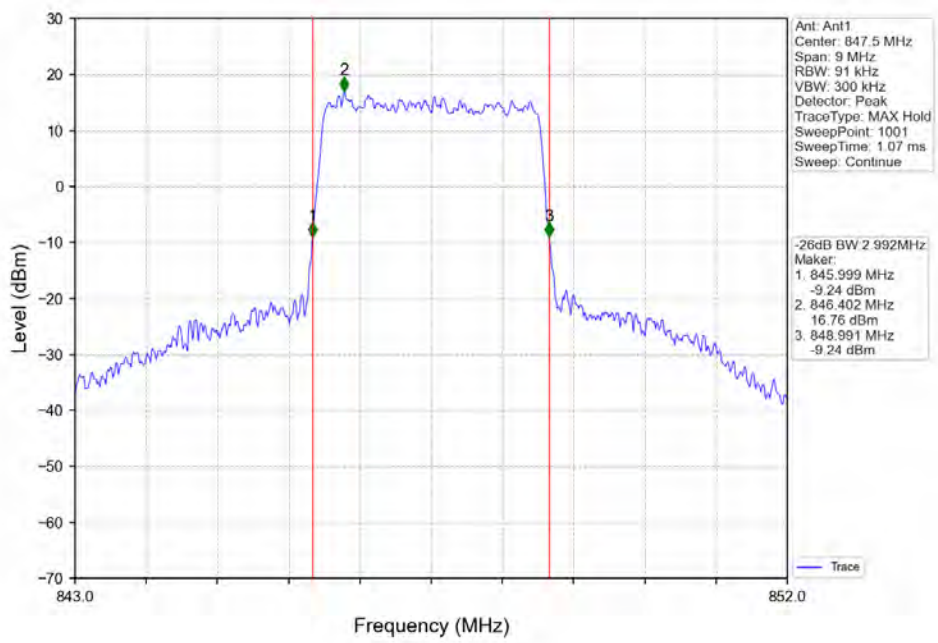
Band5_3MHz_64QAM_LCH_825.5MHz_RB_15_0_NTNV



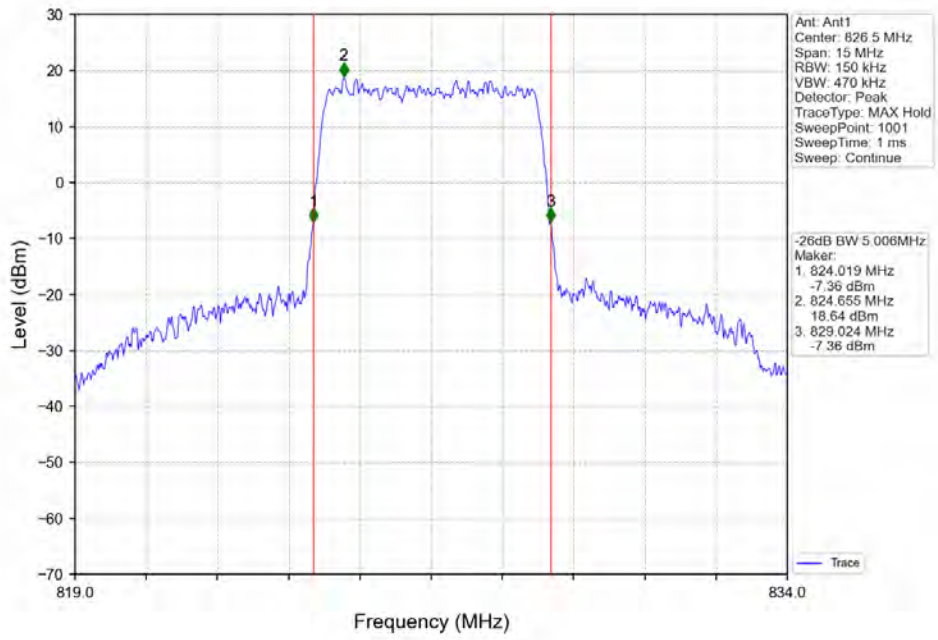
Band5_3MHz_64QAM_MCH_836.5MHz_RB_15_0_NTNV



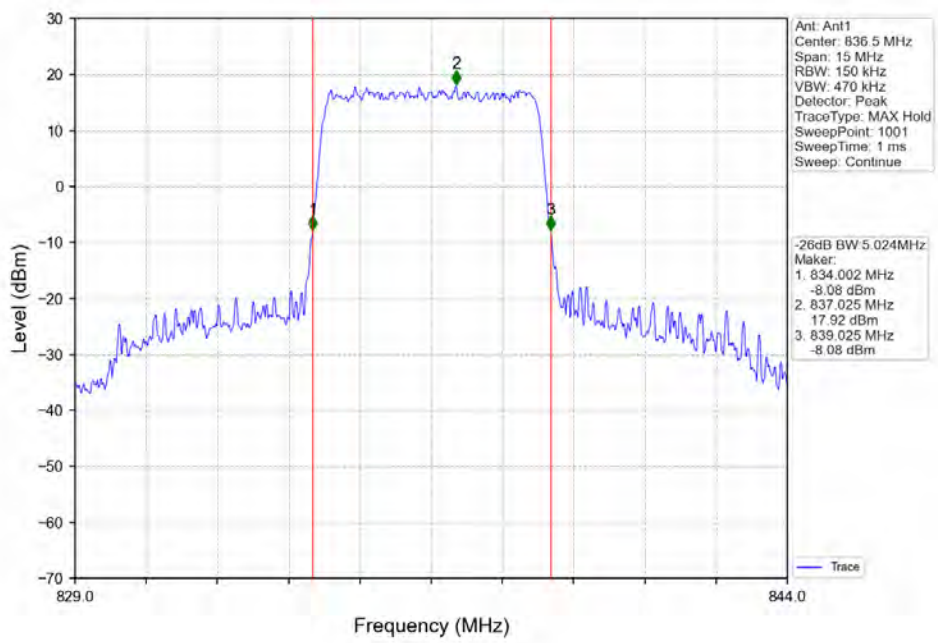
Band5_3MHz_64QAM_HCH_847.5MHz_RB_15_0_NTNV



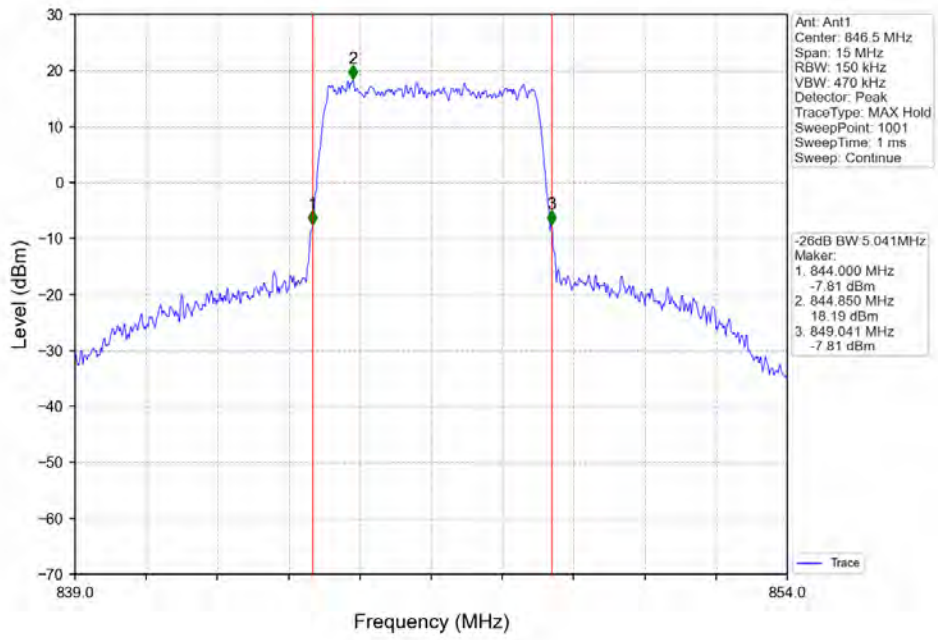
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



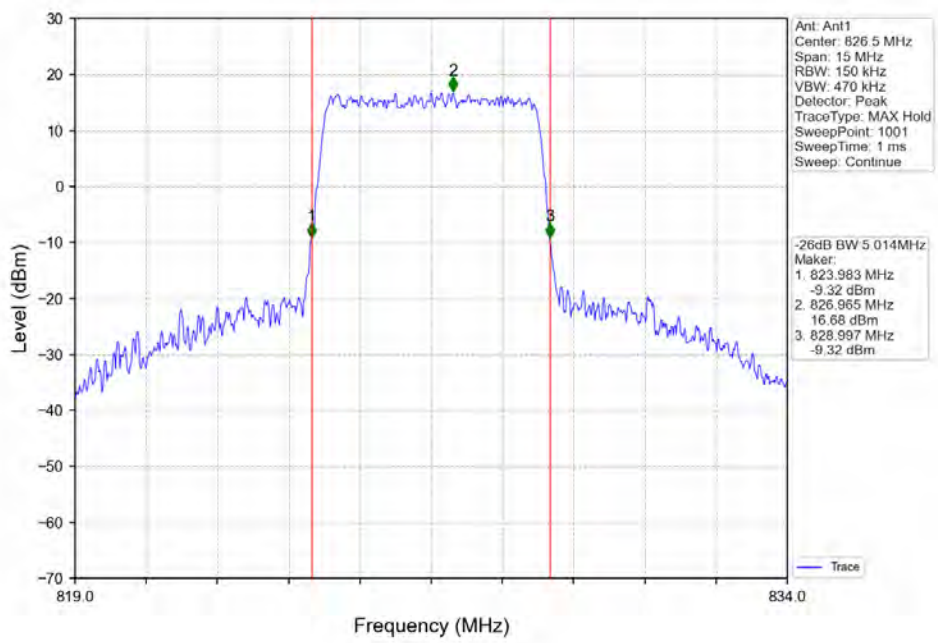
Band5_5MHz_QPSK_MCH_836.5MHz_RB_25_0_NTNV



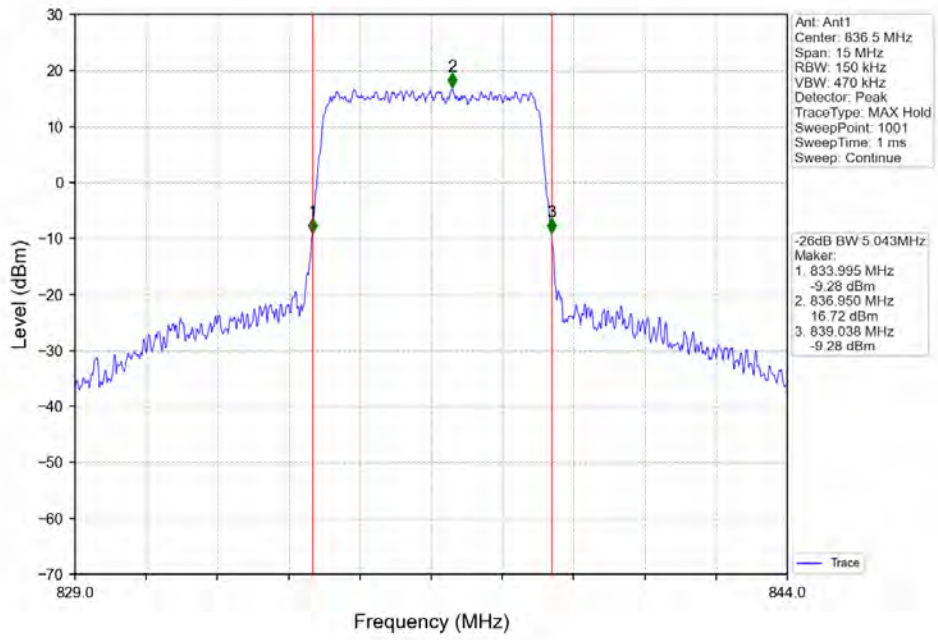
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



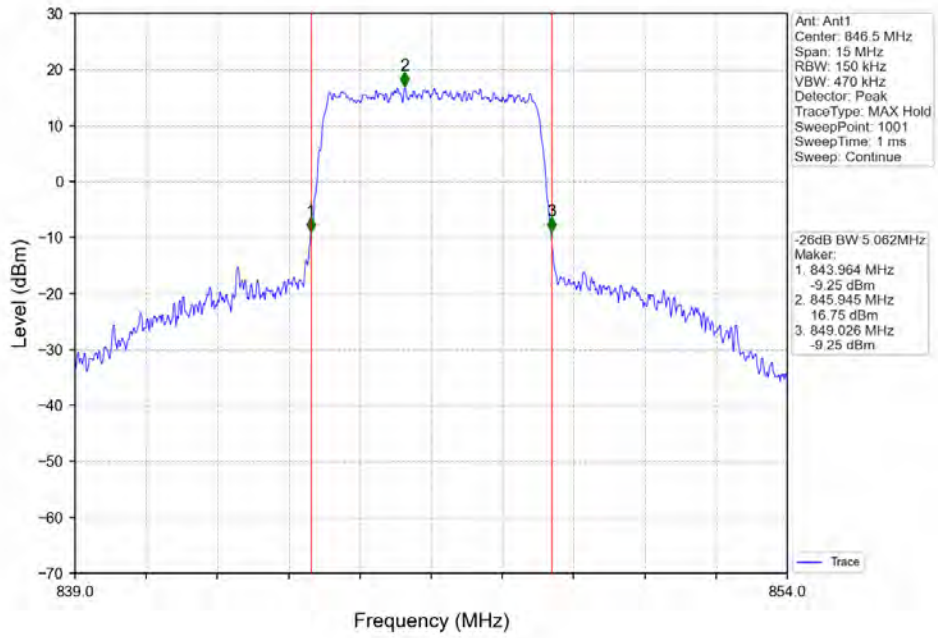
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



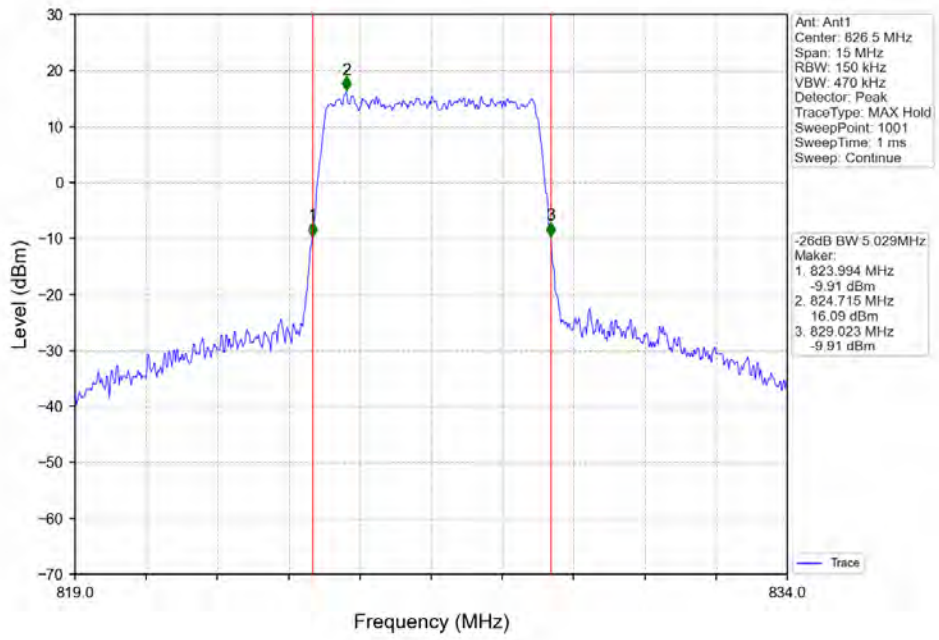
Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



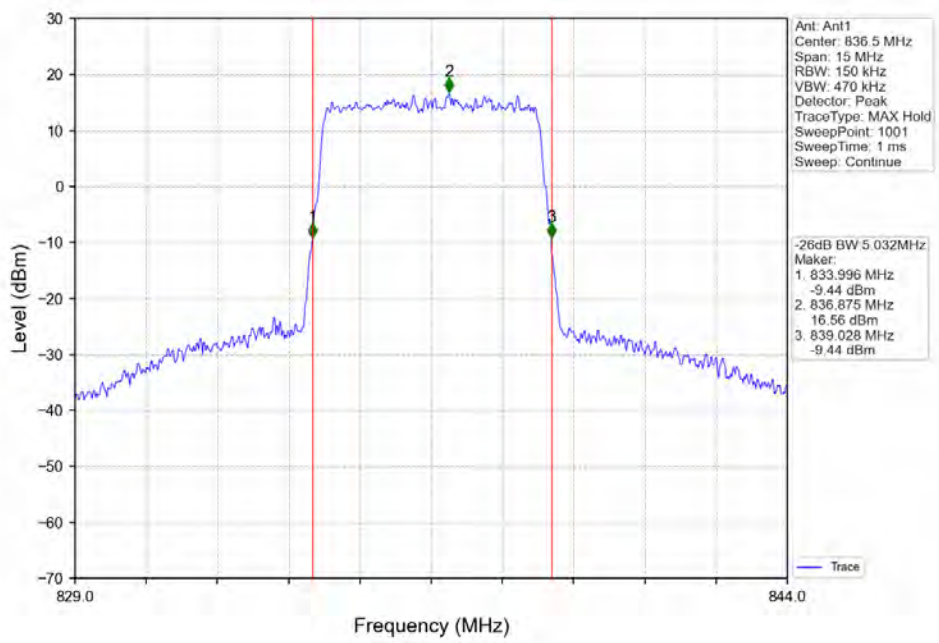
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



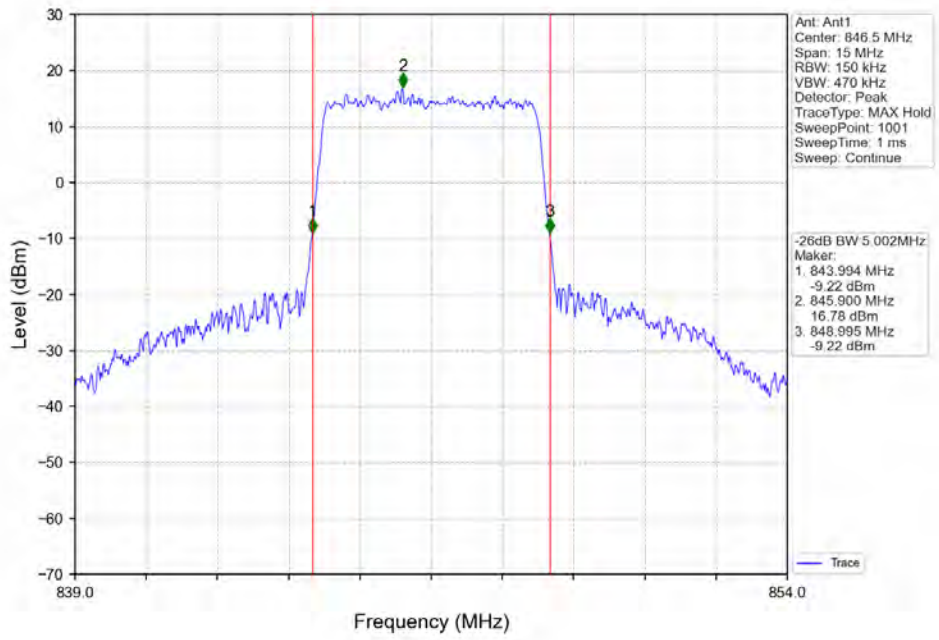
Band5_5MHz_64QAM_LCH_826.5MHz_RB_25_0_NTNV



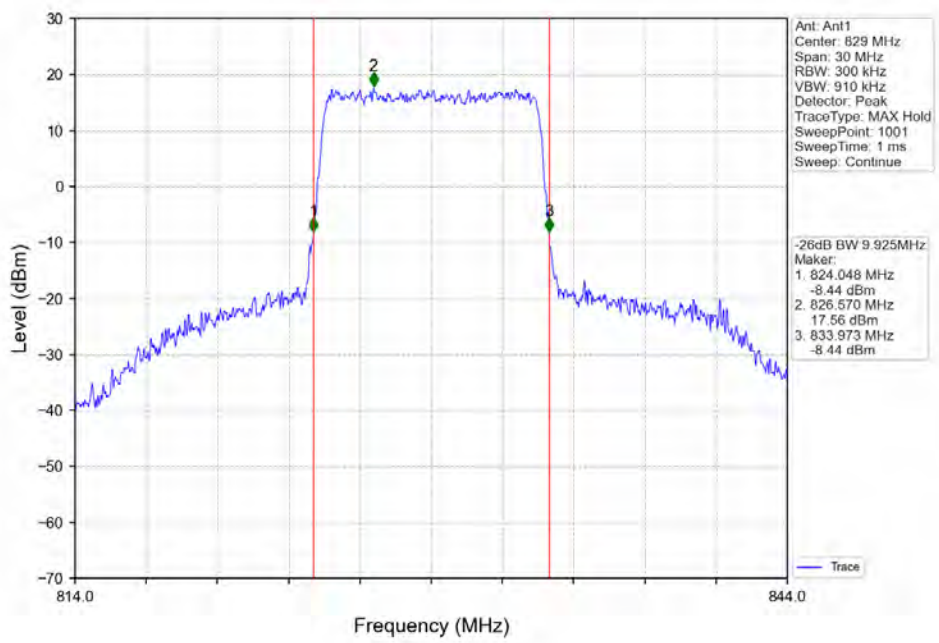
Band5_5MHz_64QAM_MCH_836.5MHz_RB_25_0_NTNV



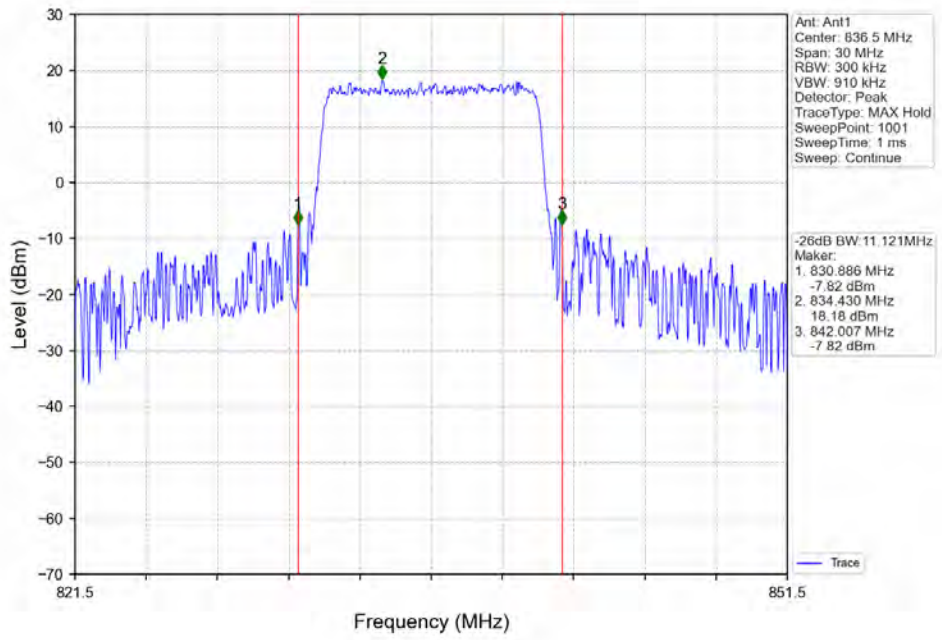
Band5_5MHz_64QAM_HCH_846.5MHz_RB_25_0_NTNV



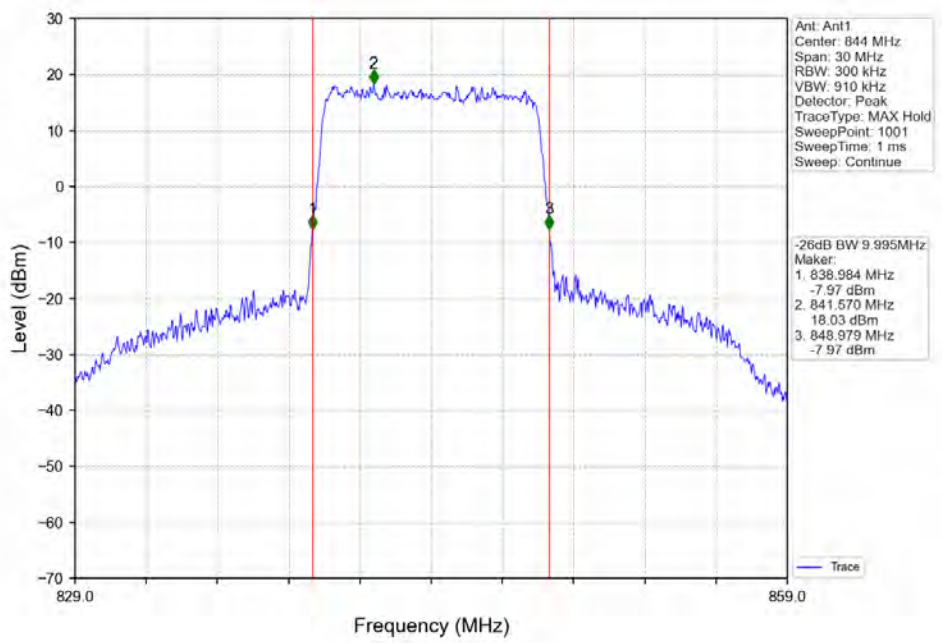
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



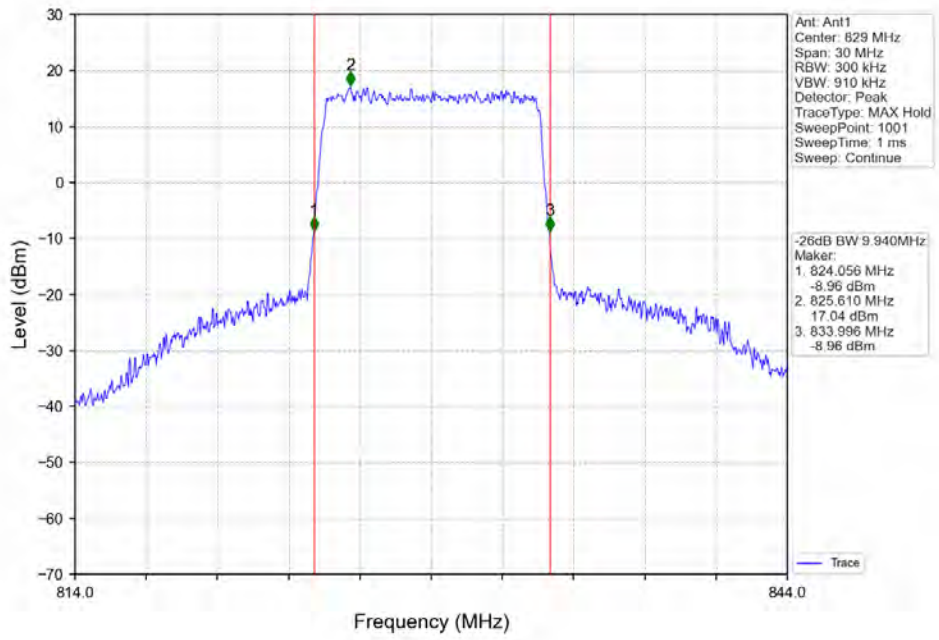
Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



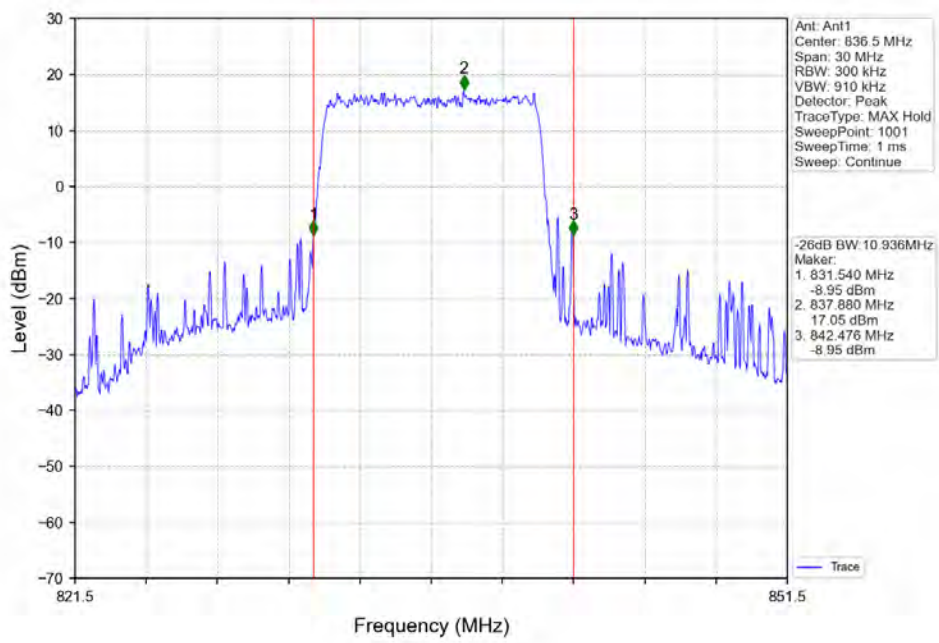
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



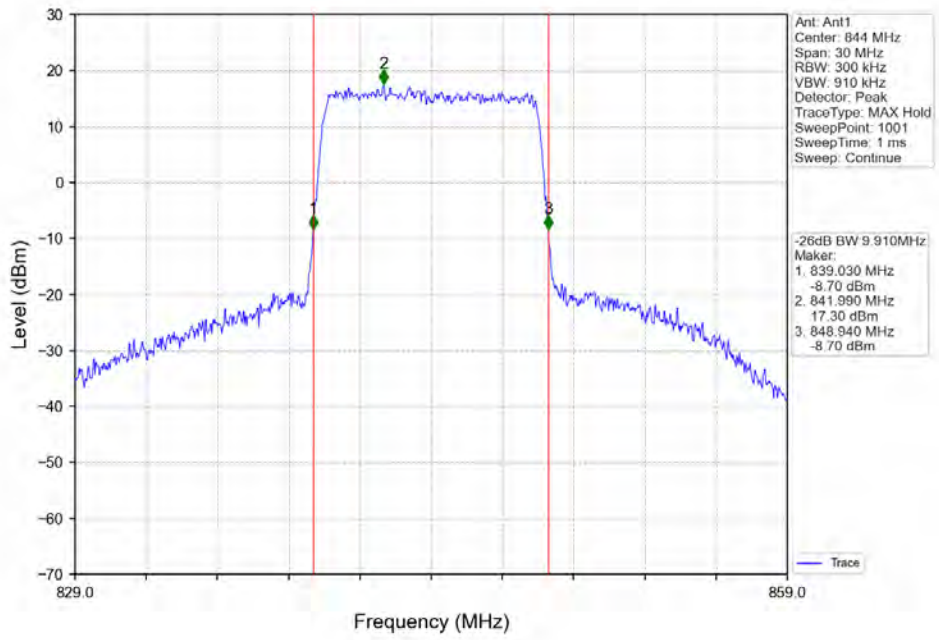
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



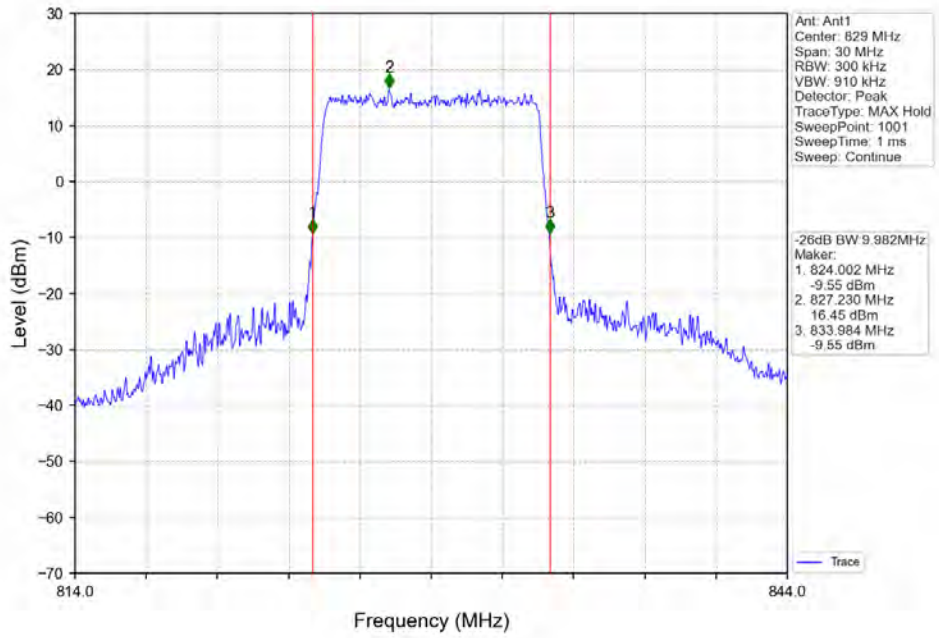
Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



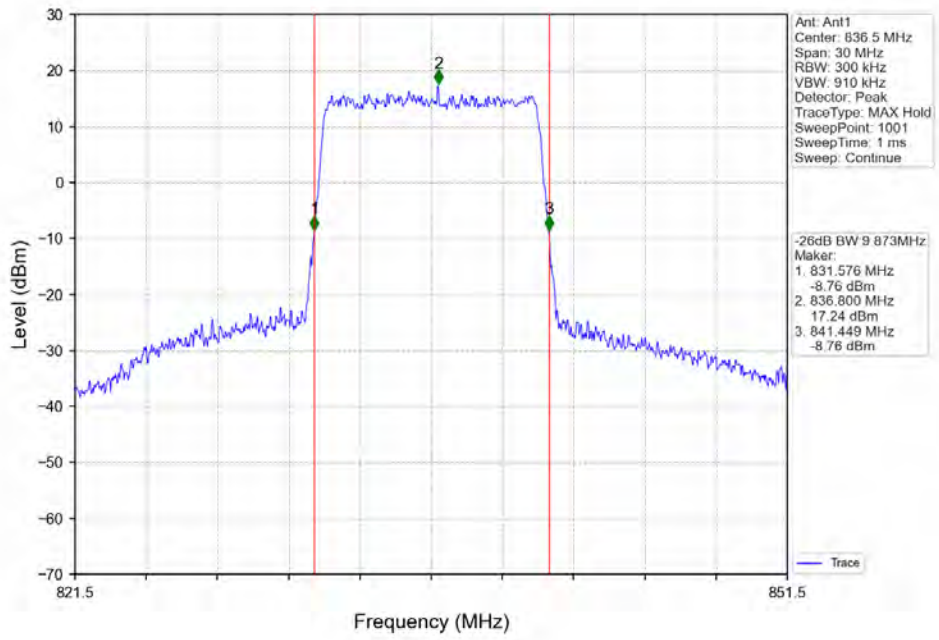
Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



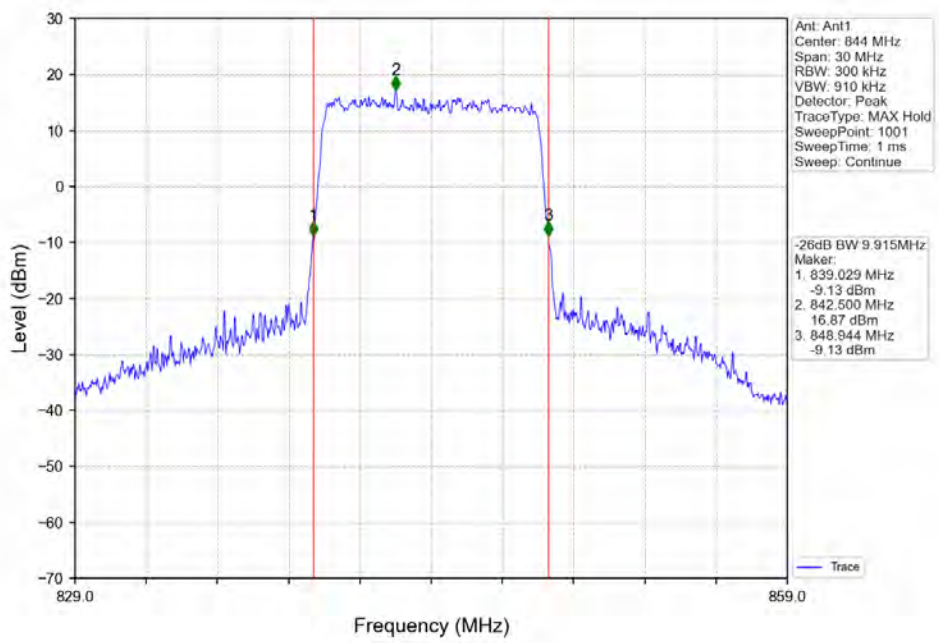
Band5_10MHz_64QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_50_0_NTNV



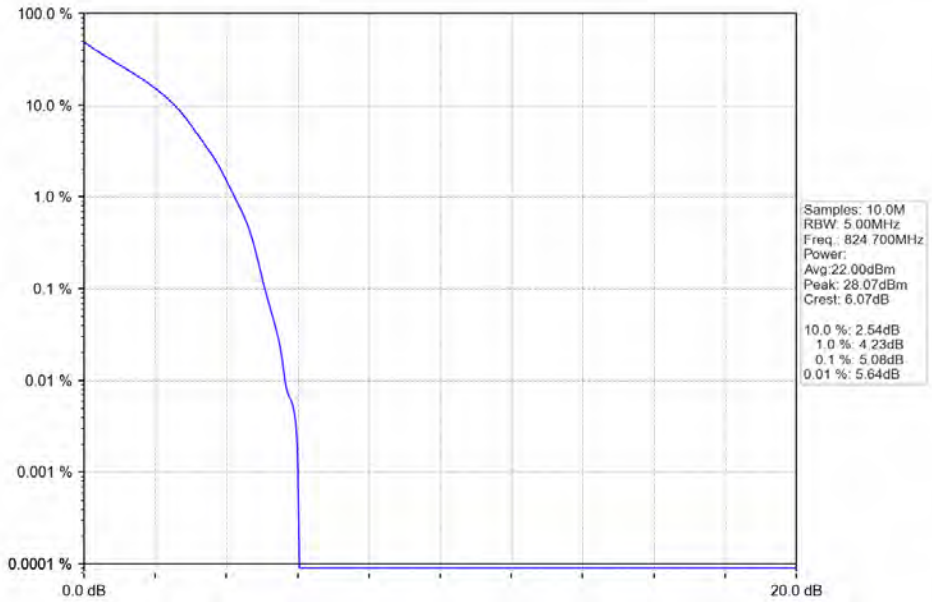
Peak-Average Ratio

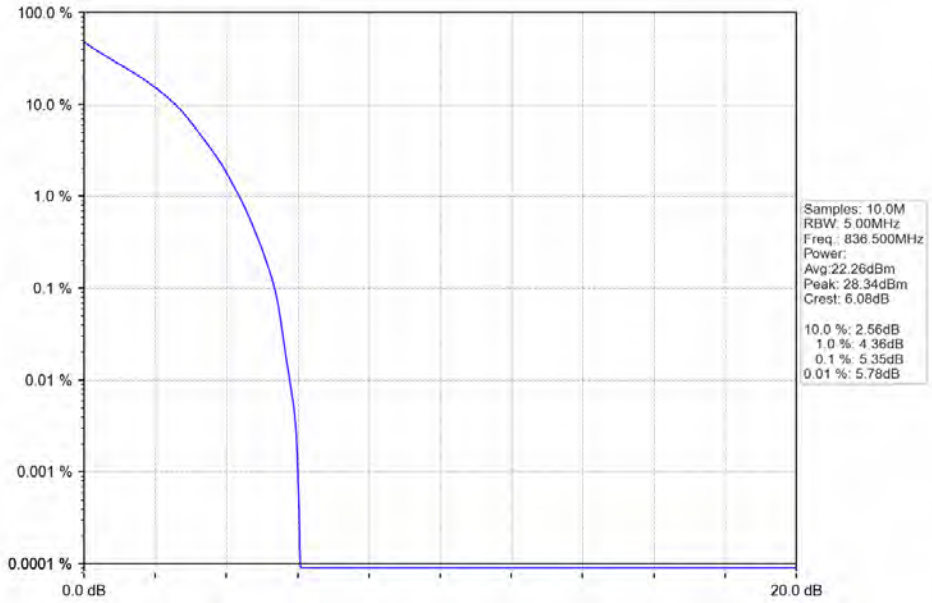
B5_1.4MHz

Test Result

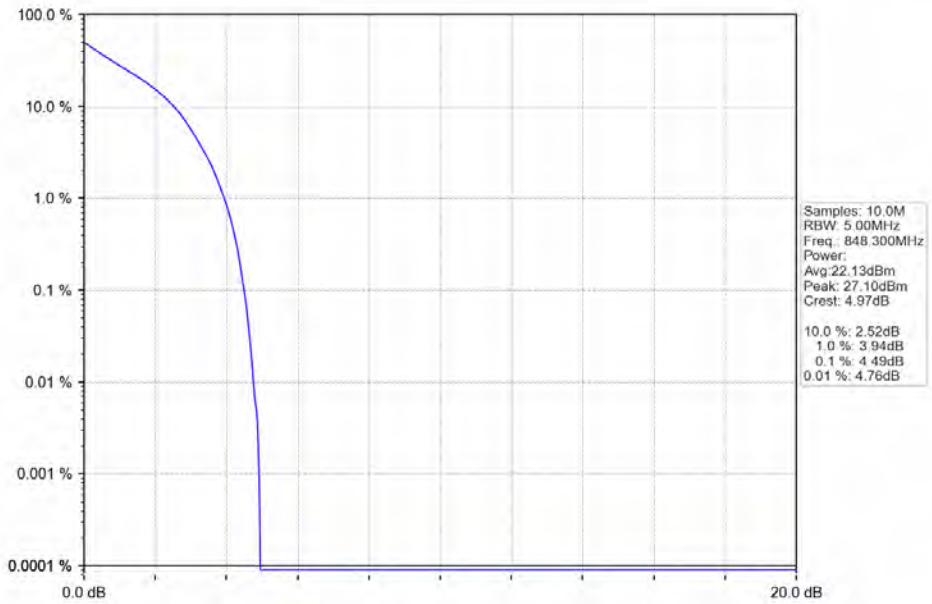
Band: 5 / Bandwidth: 1.4MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	824.7	6	0	5.08	<=13	Pass
	836.5	6	0	5.35	<=13	Pass
	848.3	6	0	4.49	<=13	Pass
16QAM	824.7	6	0	5.96	<=13	Pass
	836.5	6	0	6.12	<=13	Pass
	848.3	6	0	5.36	<=13	Pass
64QAM	824.7	6	0	6.09	<=13	Pass
	836.5	6	0	6.59	<=13	Pass
	848.3	6	0	5.92	<=13	Pass

Test Graph

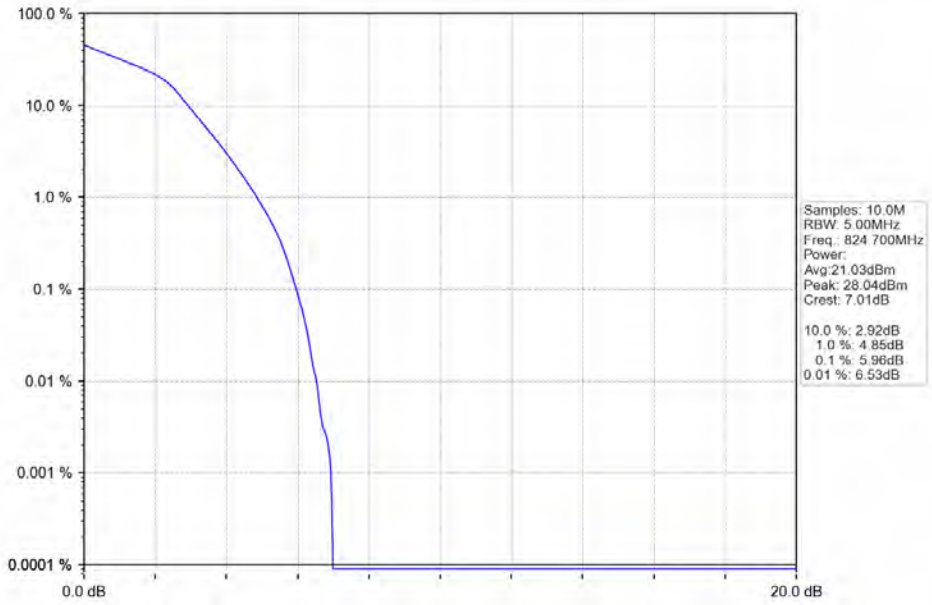
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_6_0_NTNV


Band5_1.4MHz_QPSK_MCH_836.5MHz_RB_6_0_NTNV


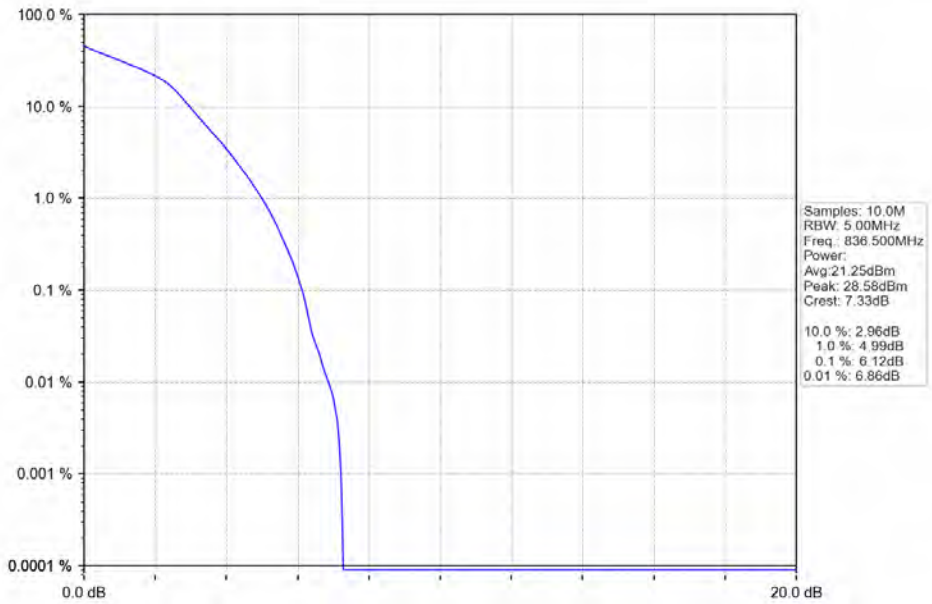
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



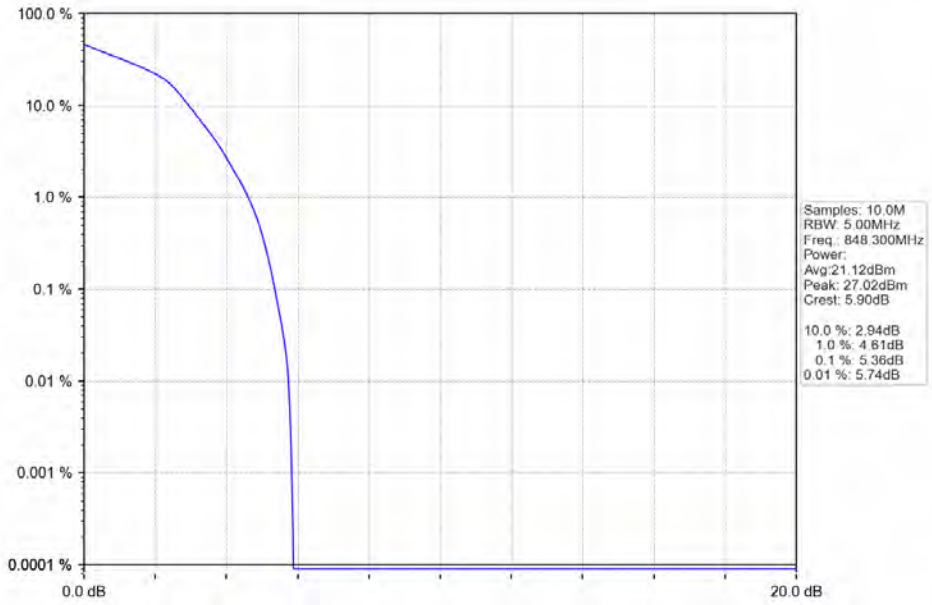
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



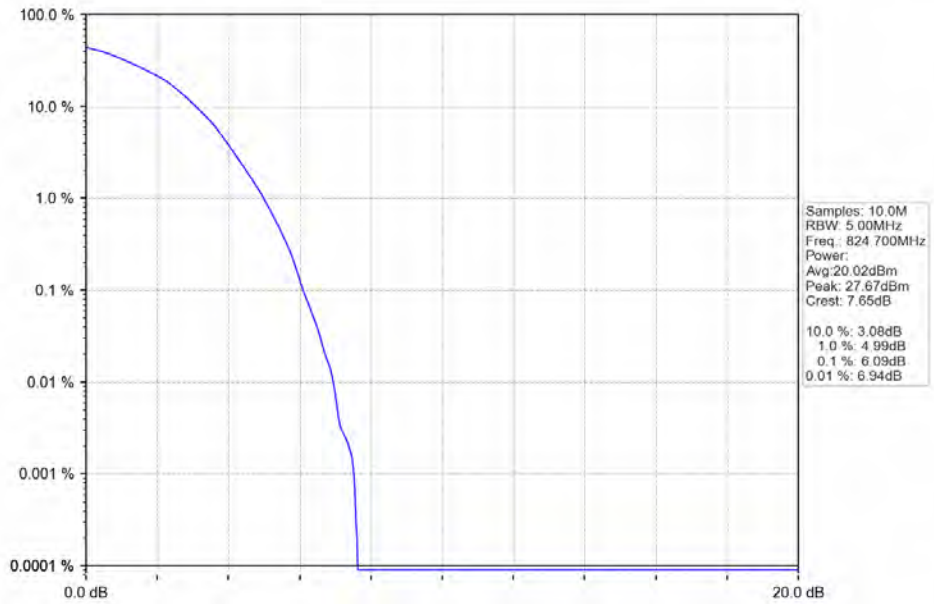
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



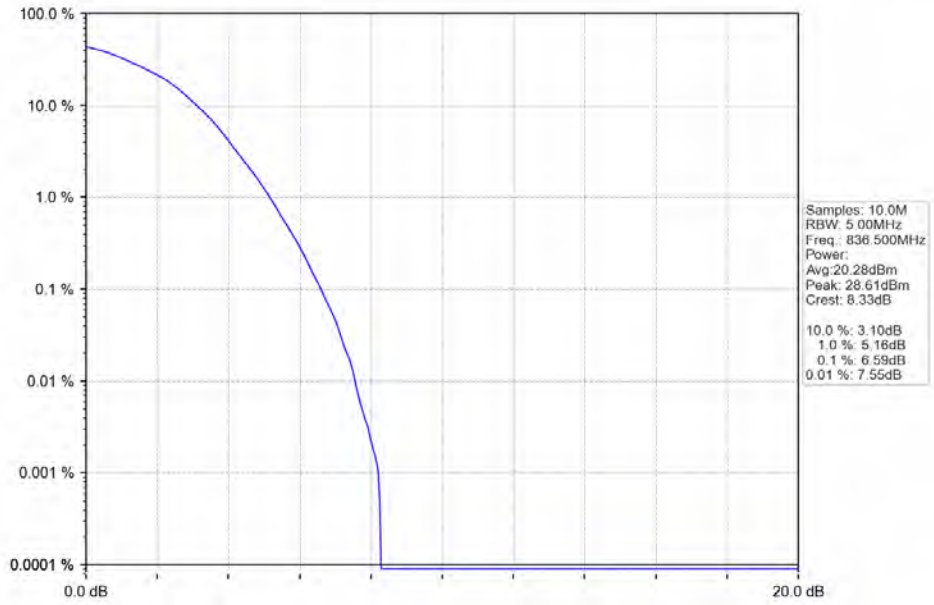
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



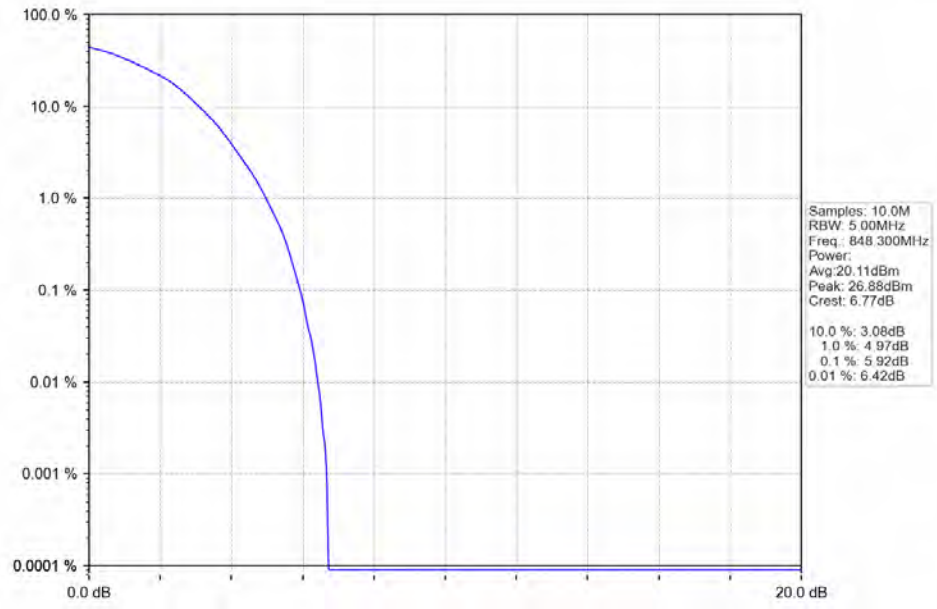
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_6_0_NTNV



Band5_1.4MHz_64QAM_MCH_836.5MHz_RB_6_0_NTNV



Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_6_0_NTNV

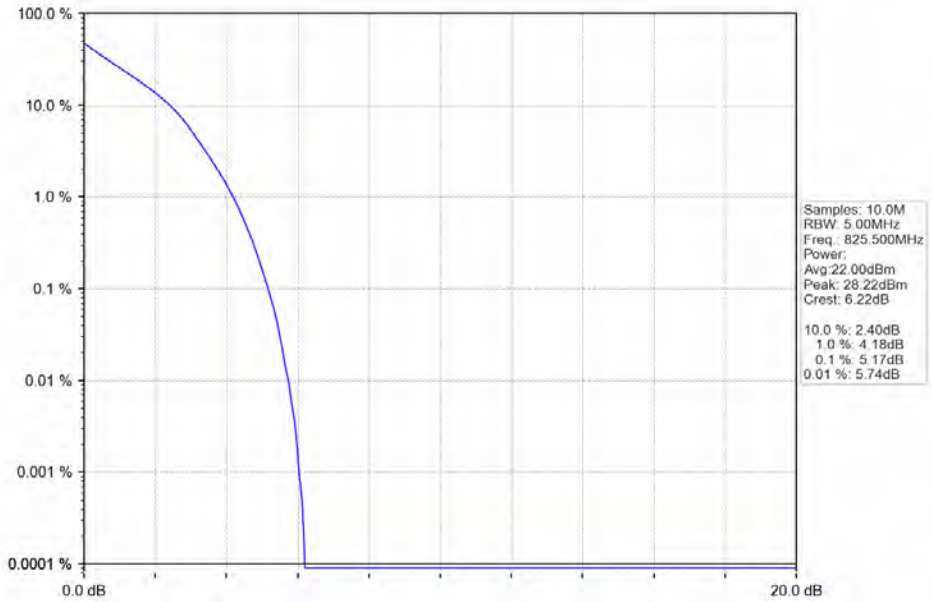


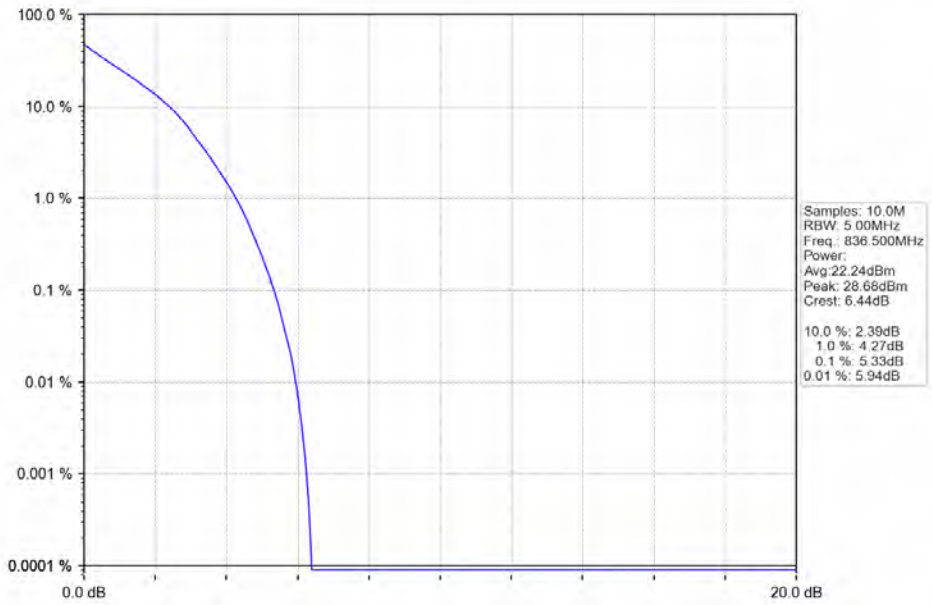
B5_3MHz

Test Result

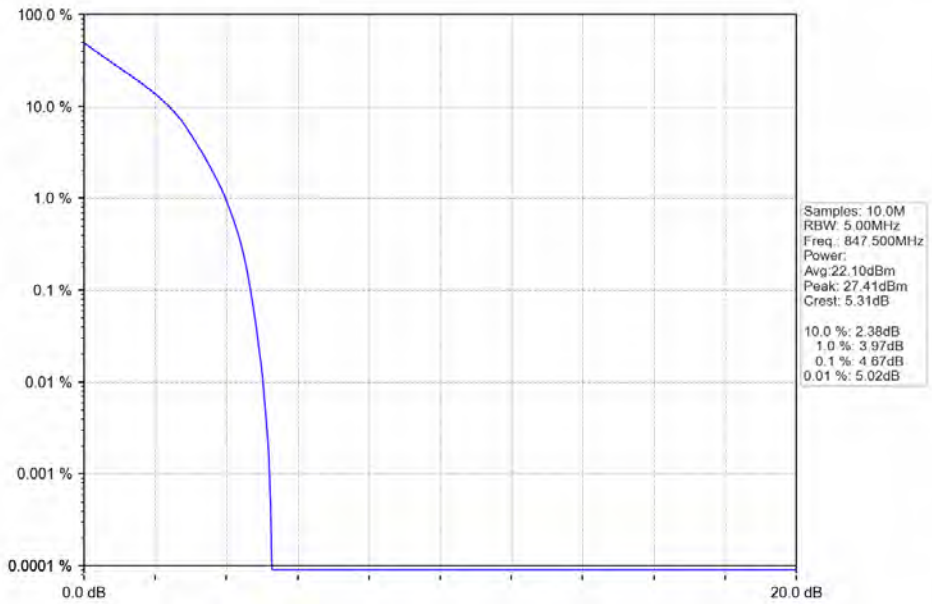
Band: 5 / Bandwidth: 3MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	825.5	15	0	5.17	<=13	Pass
	836.5	15	0	5.33	<=13	Pass
	847.5	15	0	4.67	<=13	Pass
16QAM	825.5	15	0	5.98	<=13	Pass
	836.5	15	0	6.17	<=13	Pass
	847.5	15	0	5.52	<=13	Pass
64QAM	825.5	15	0	6.32	<=13	Pass
	836.5	15	0	6.43	<=13	Pass
	847.5	15	0	6.04	<=13	Pass

Test Graph

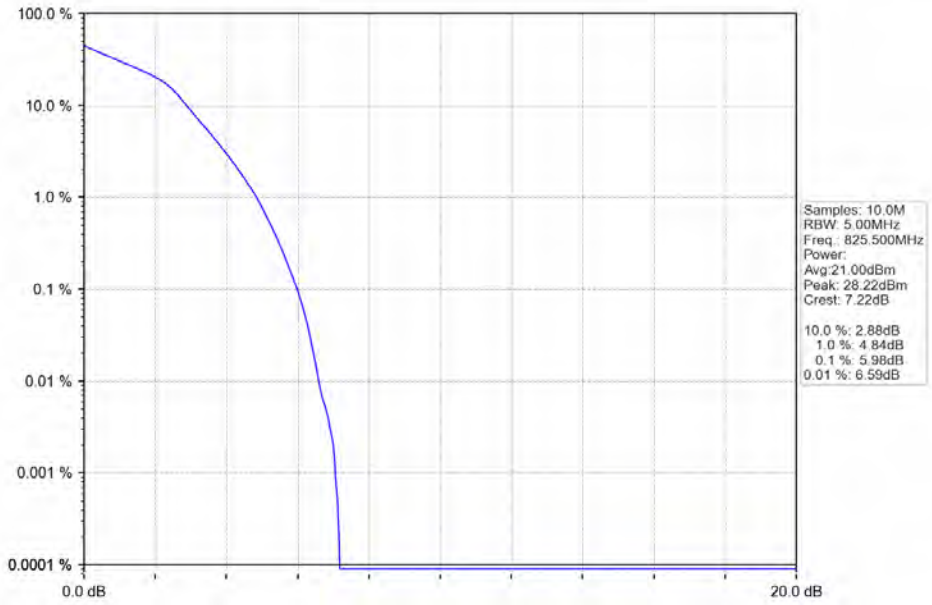
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV


Band5_3MHz_QPSK_MCH_836.5MHz_RB_15_0_NTNV


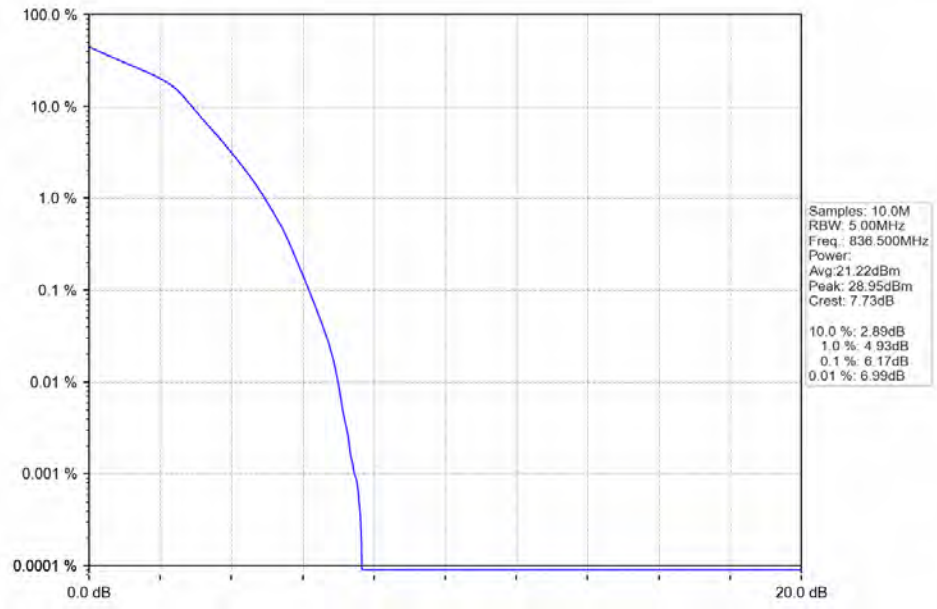
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



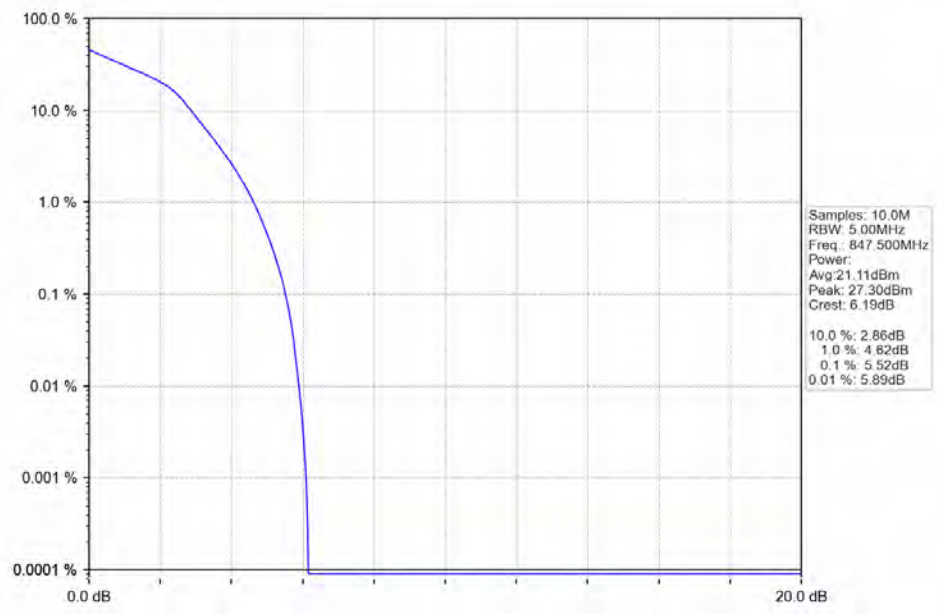
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



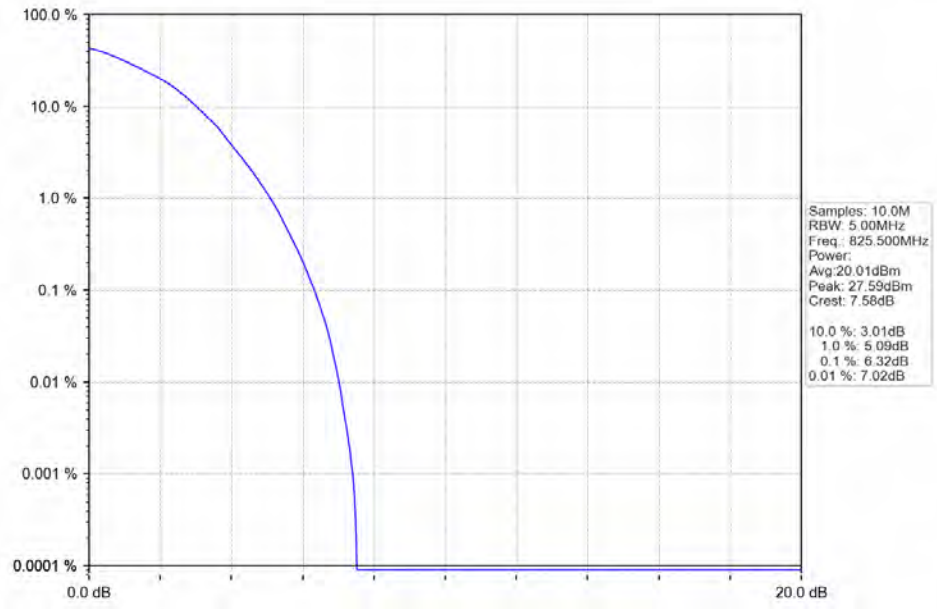
Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



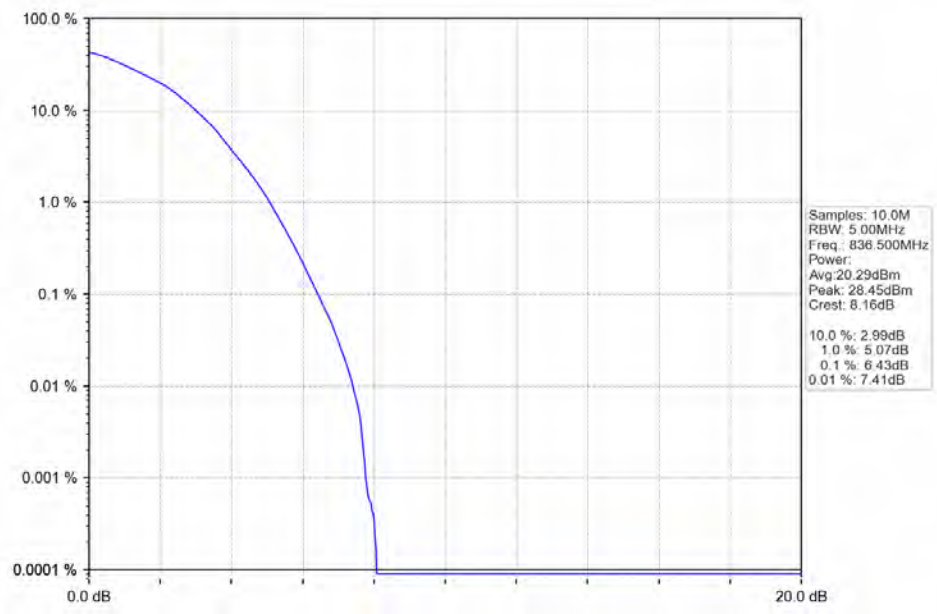
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



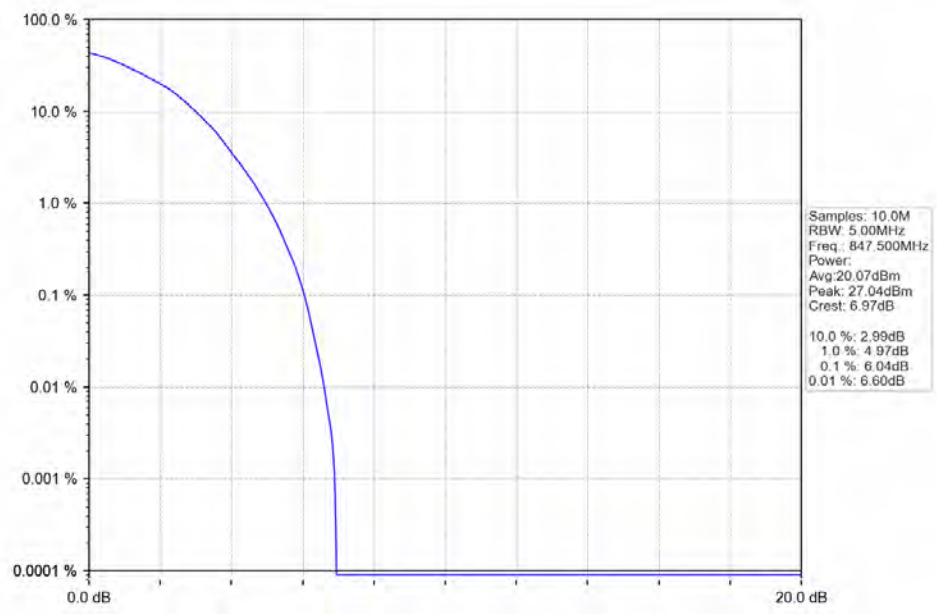
Band5_3MHz_64QAM_LCH_825.5MHz_RB_15_0_NTNV



Band5_3MHz_64QAM_MCH_836.5MHz_RB_15_0_NTNV



Band5_3MHz_64QAM_HCH_847.5MHz_RB_15_0_NTNV

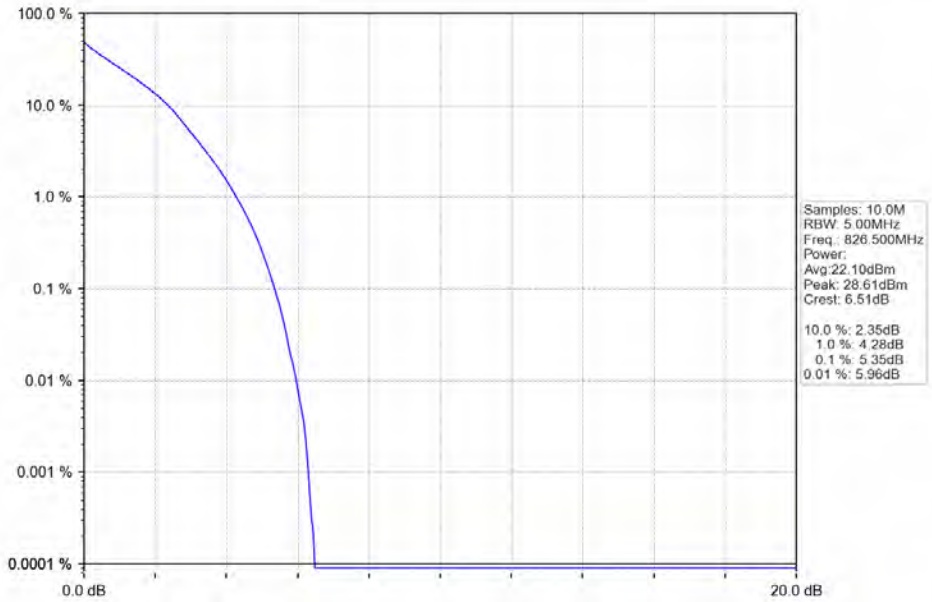


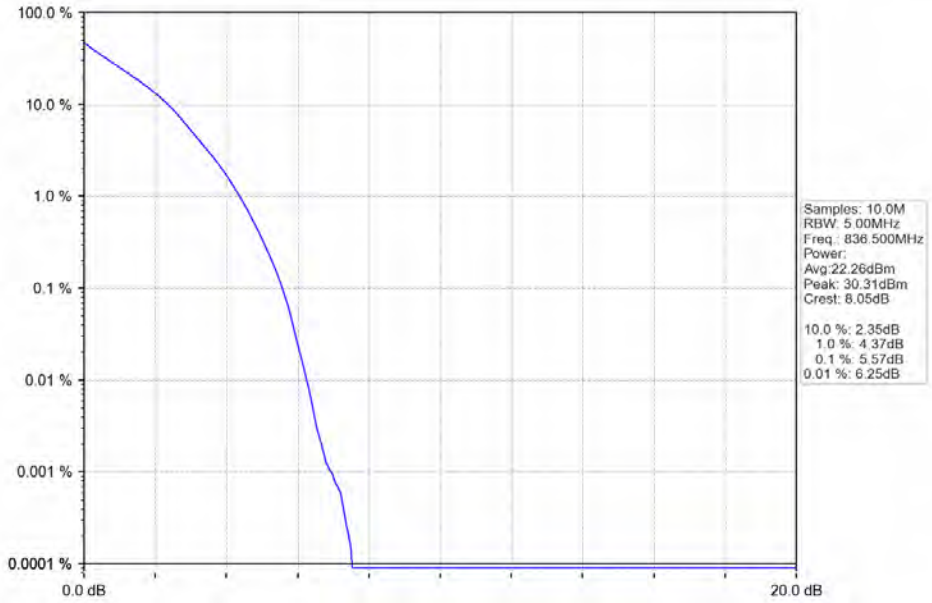
B5_5MHz

Test Result

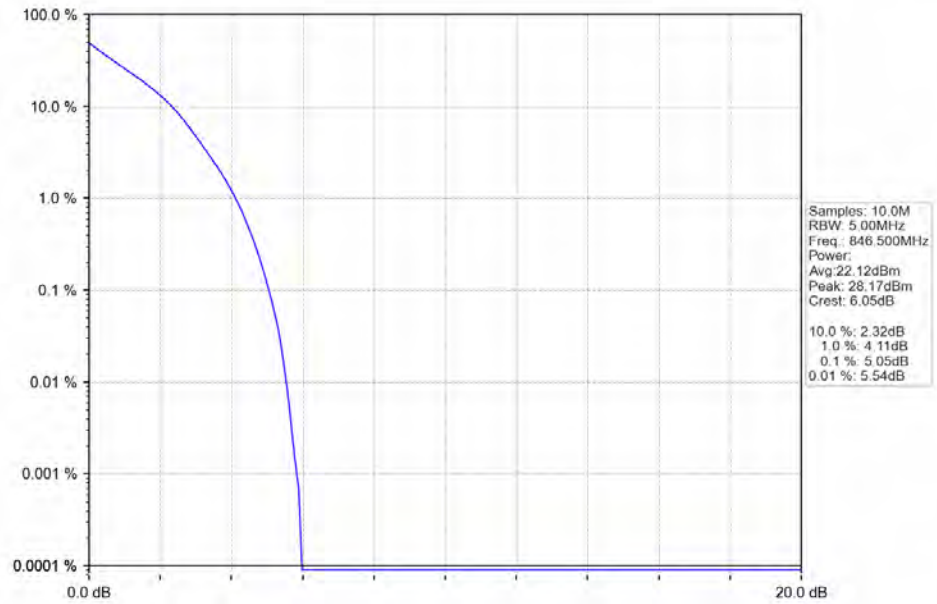
Band: 5 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	826.5	25	0	5.35	<=13	Pass
	836.5	25	0	5.57	<=13	Pass
	846.5	25	0	5.05	<=13	Pass
16QAM	826.5	25	0	6.03	<=13	Pass
	836.5	25	0	6.22	<=13	Pass
	846.5	25	0	5.79	<=13	Pass
64QAM	826.5	25	0	6.34	<=13	Pass
	836.5	25	0	6.47	<=13	Pass
	846.5	25	0	6.16	<=13	Pass

Test Graph

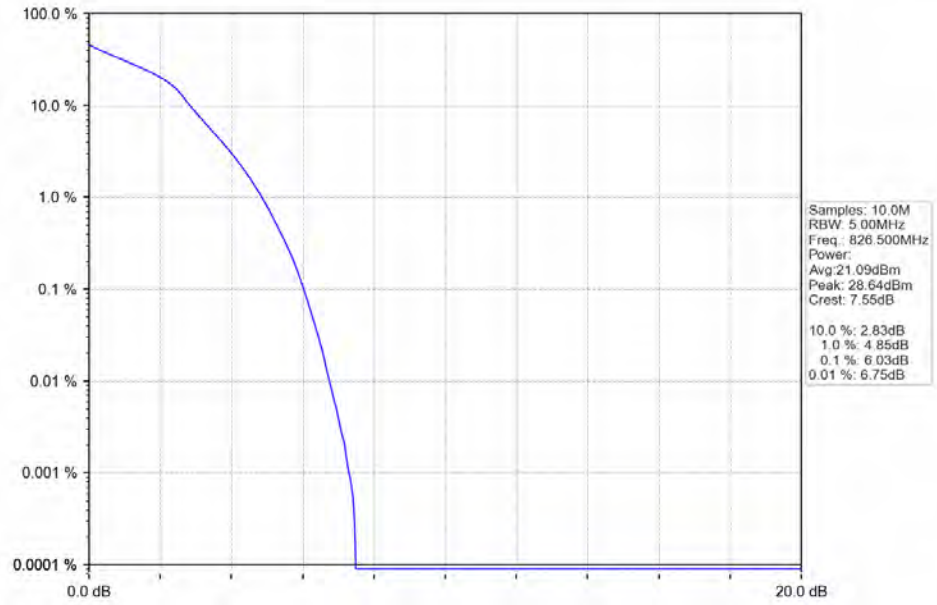
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV


Band5_5MHz_QPSK_MCH_836.5MHz_RB_25_0_NTNV


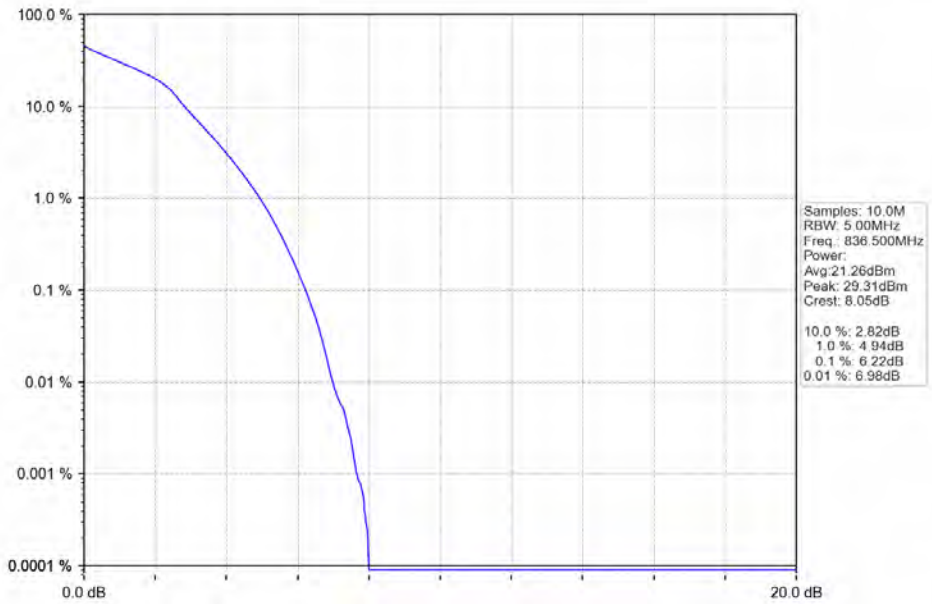
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



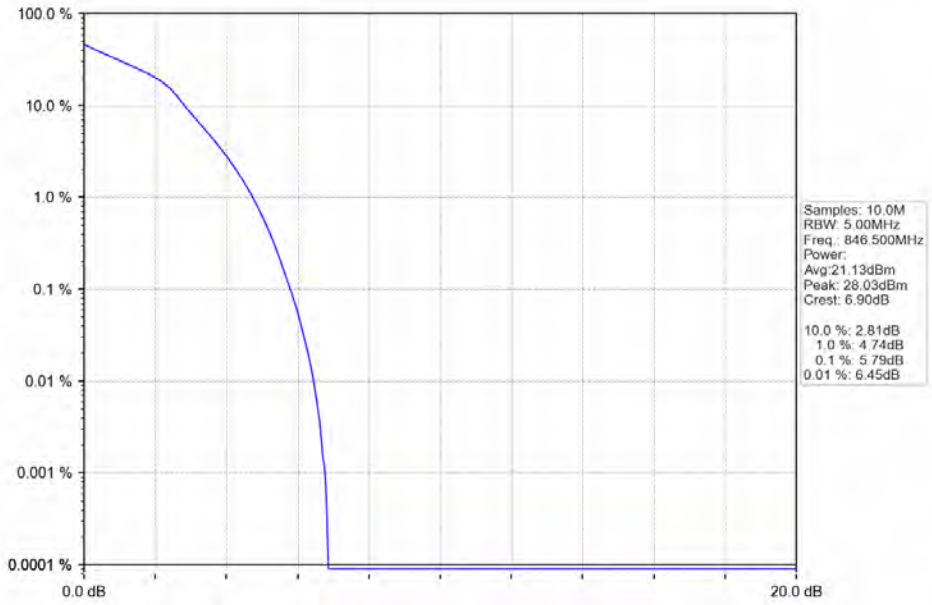
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



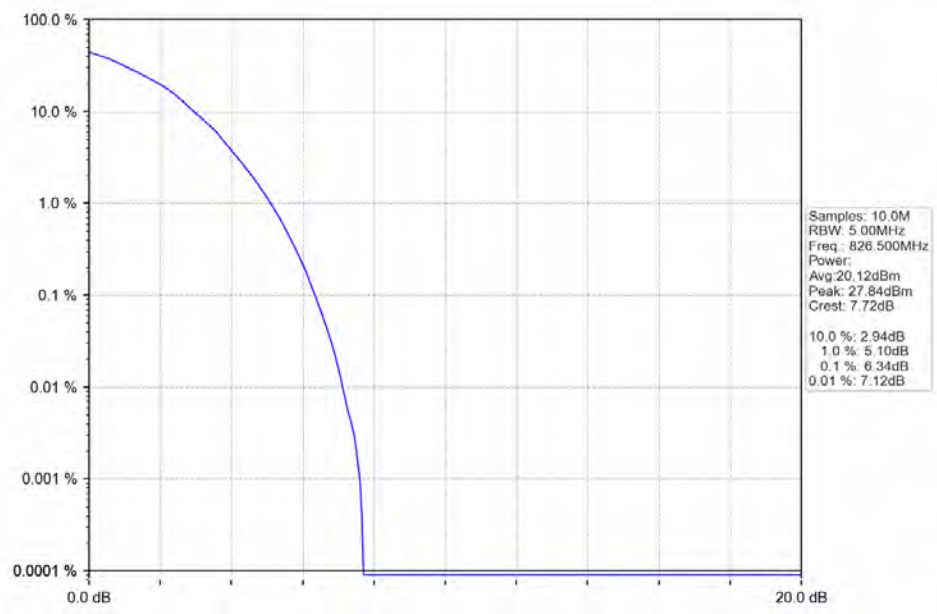
Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



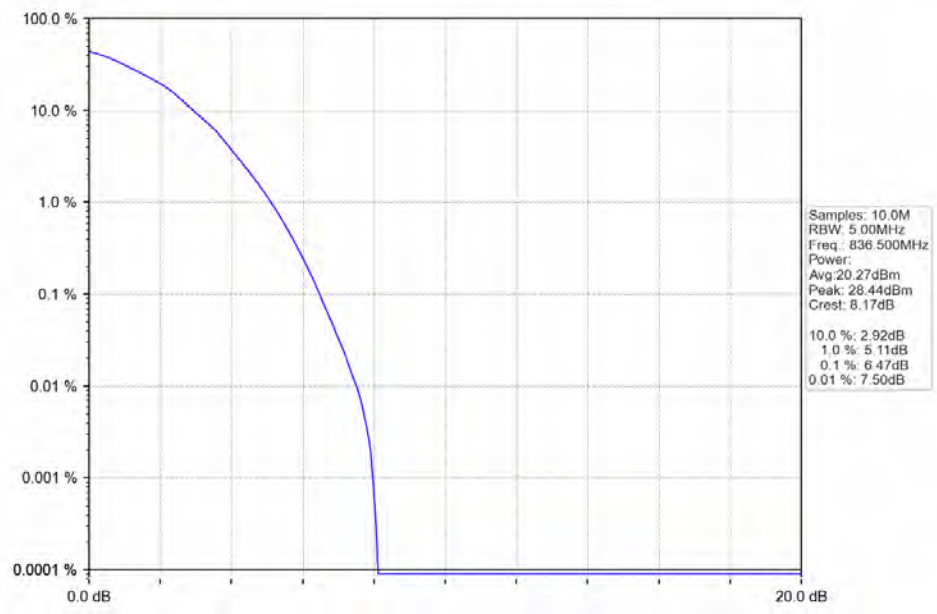
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



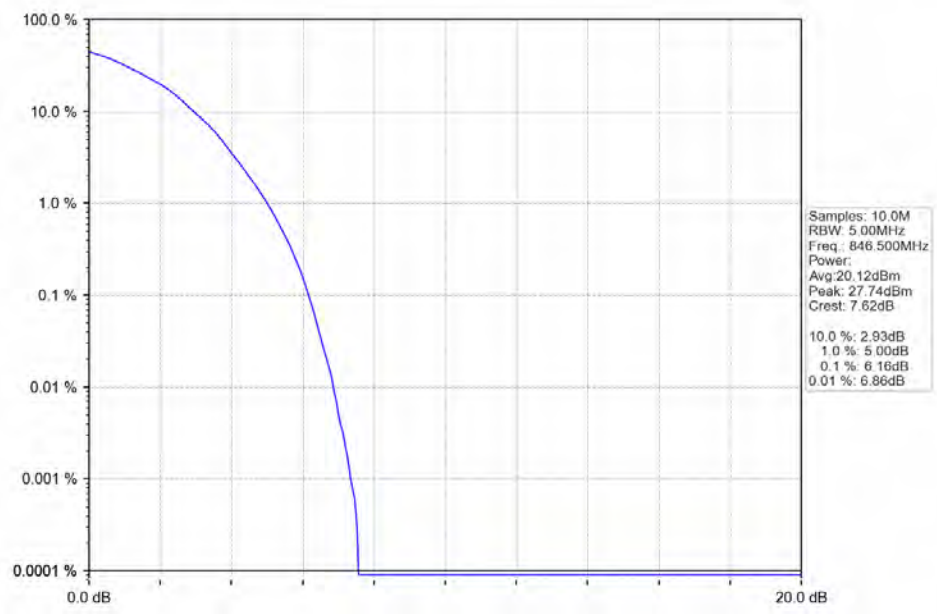
Band5_5MHz_64QAM_LCH_826.5MHz_RB_25_0_NTNV



Band5_5MHz_64QAM_MCH_836.5MHz_RB_25_0_NTNV



Band5_5MHz_64QAM_HCH_846.5MHz_RB_25_0_NTNV

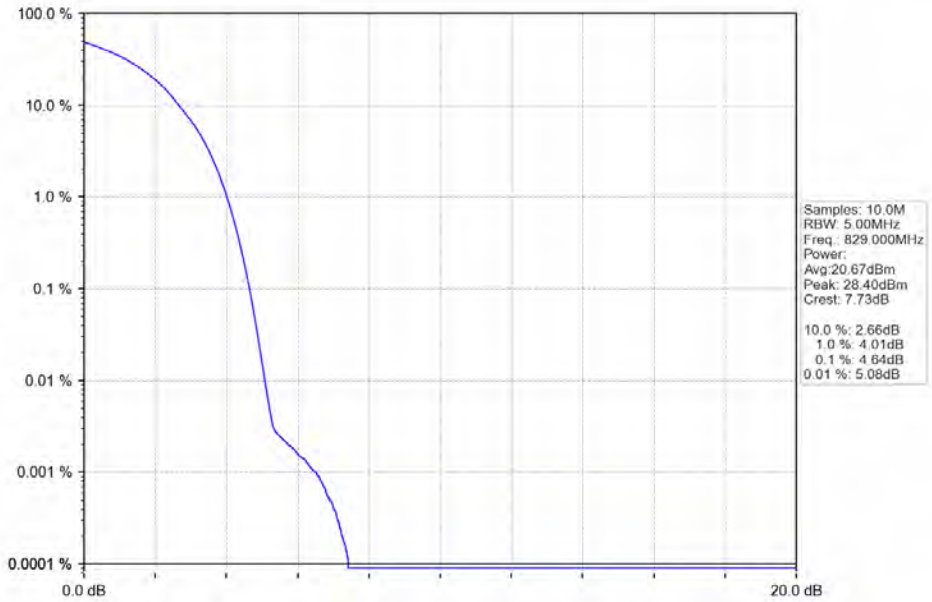


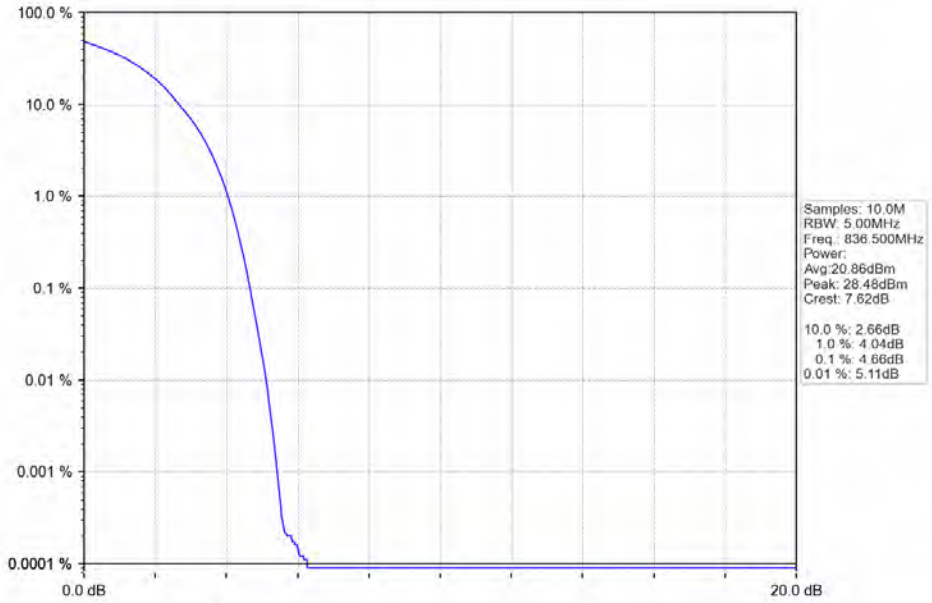
B5_10MHz

Test Result

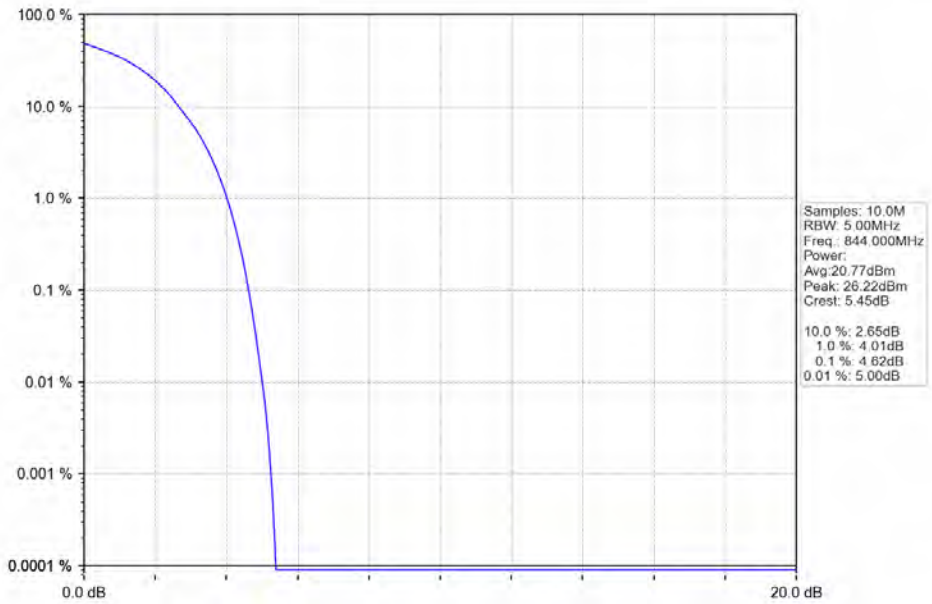
Band: 5 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	829	50	0	4.64	<=13	Pass
	836.5	50	0	4.66	<=13	Pass
	844	50	0	4.62	<=13	Pass
16QAM	829	50	0	6.03	<=13	Pass
	836.5	50	0	6.04	<=13	Pass
	844	50	0	6.01	<=13	Pass
64QAM	829	50	0	6.32	<=13	Pass
	836.5	50	0	6.36	<=13	Pass
	844	50	0	6.31	<=13	Pass

Test Graph

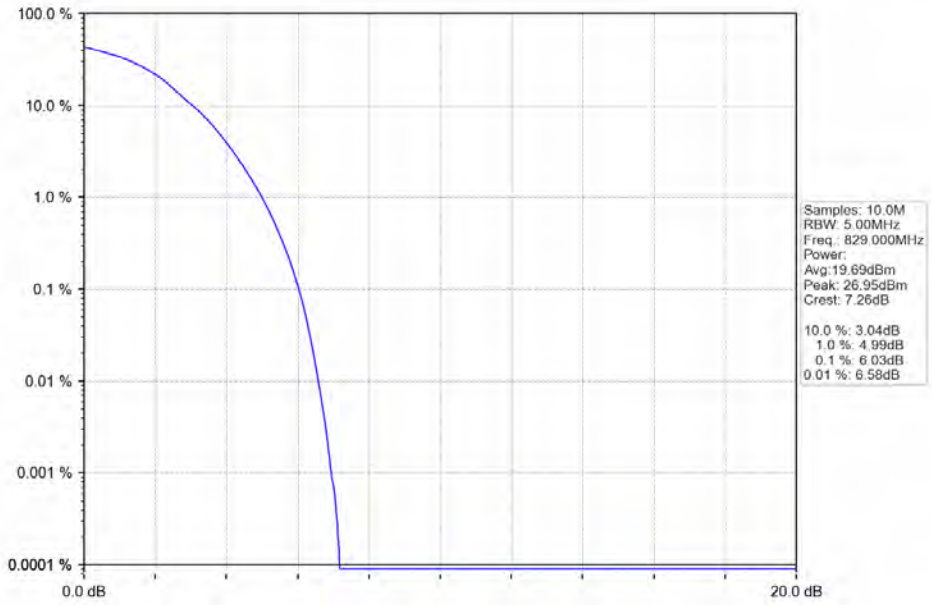
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV


Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV


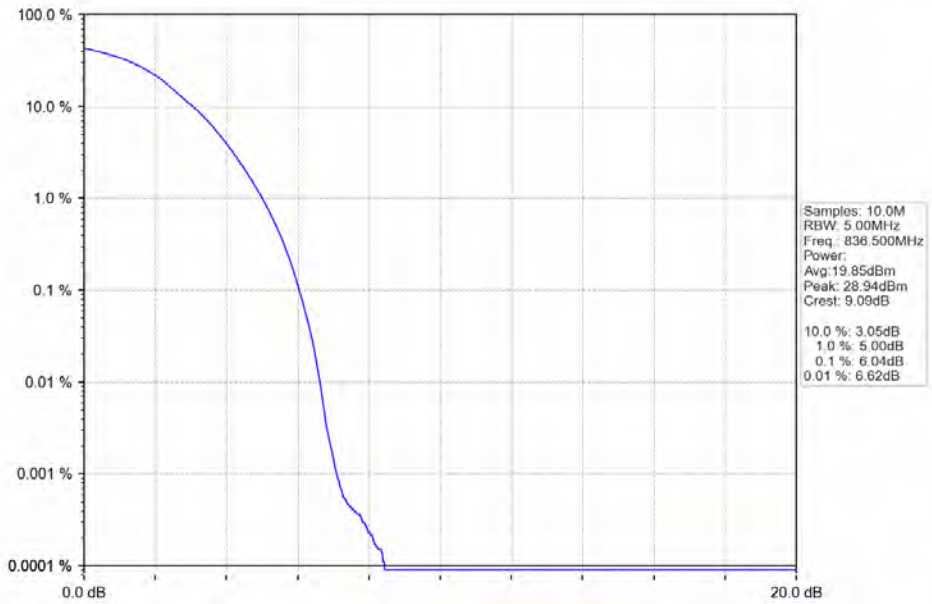
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



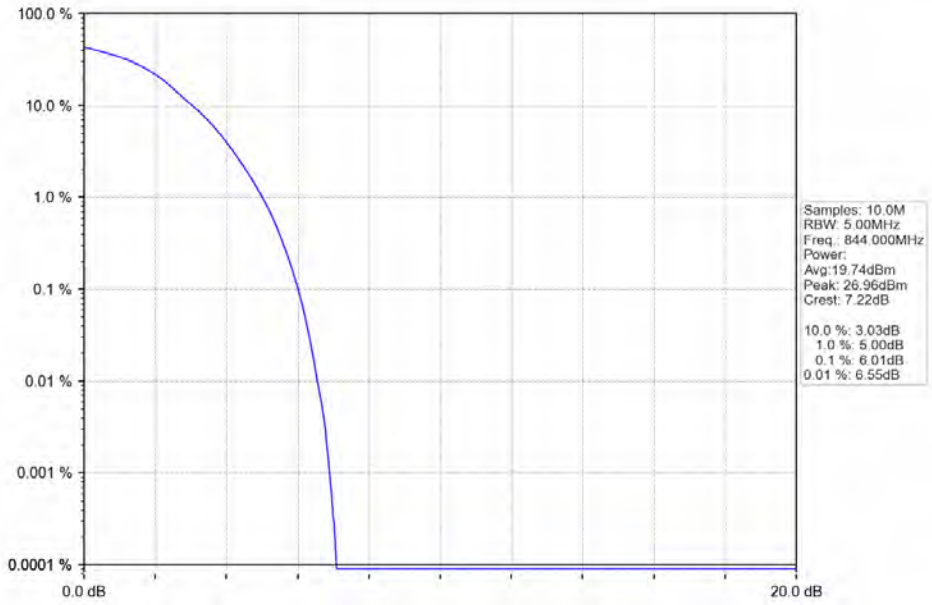
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



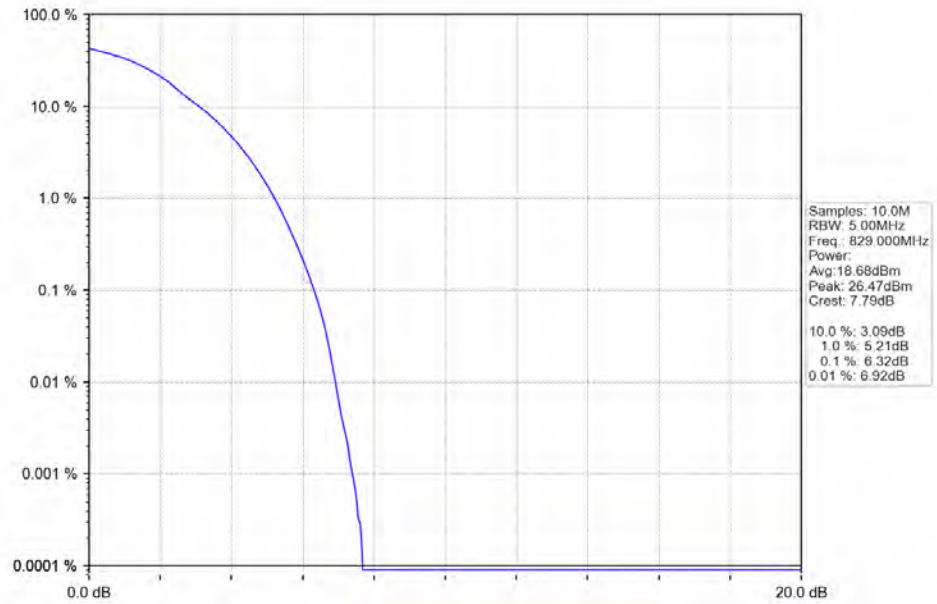
Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



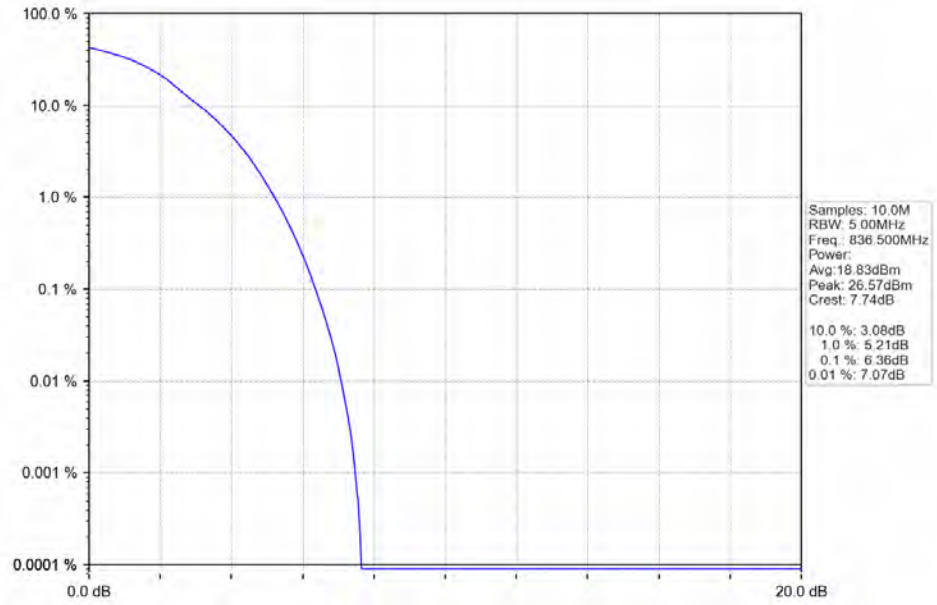
Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



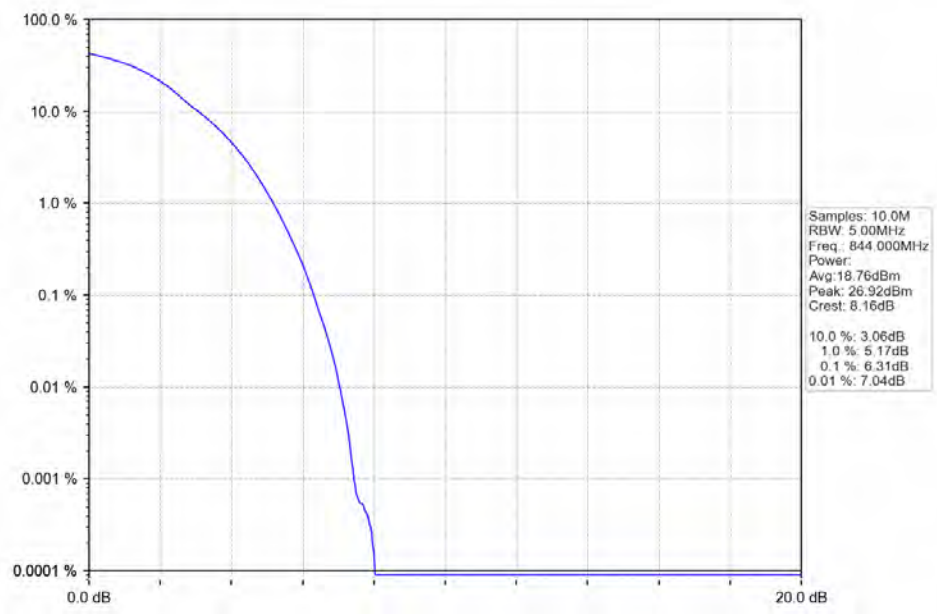
Band5_10MHz_64QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_50_0_NTNV



Spurious Emission

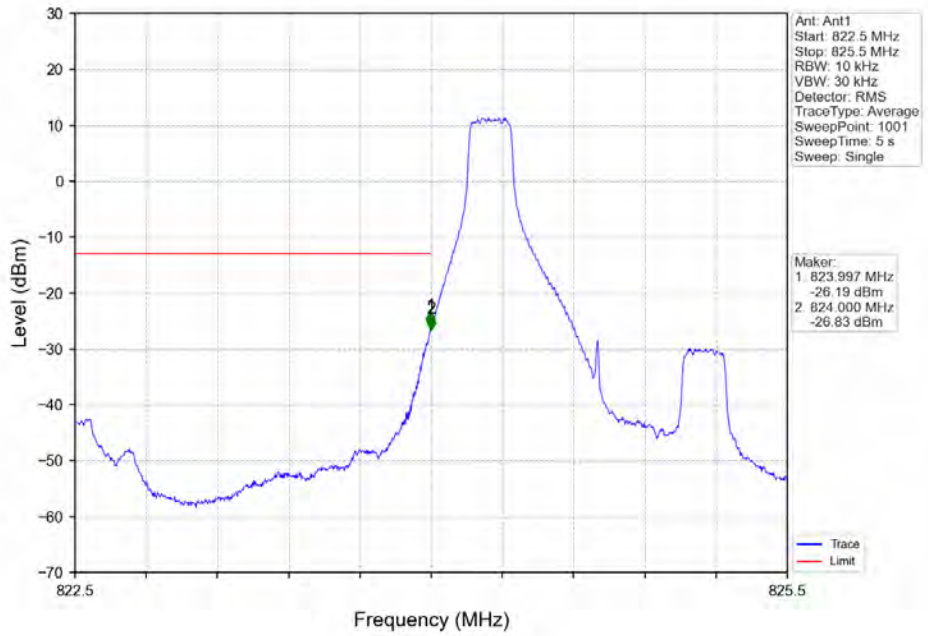
B5_1.4MHz

Test Result

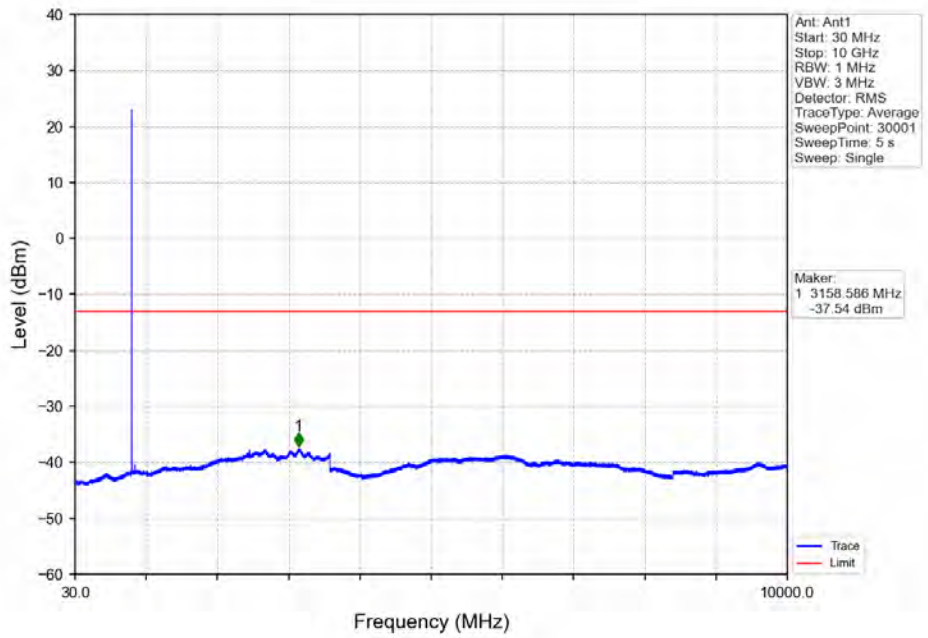
Band: 5 / Bandwidth: 1.4MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	824.7	1	0	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	848.3	1	0	Refer To Test Graph		Pass
			5	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
16QAM	824.7	1	0	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	848.3	1	0	Refer To Test Graph		Pass
			5	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
64QAM	824.7	1	0	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	848.3	1	0	Refer To Test Graph		Pass
			5	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass

Test Graph

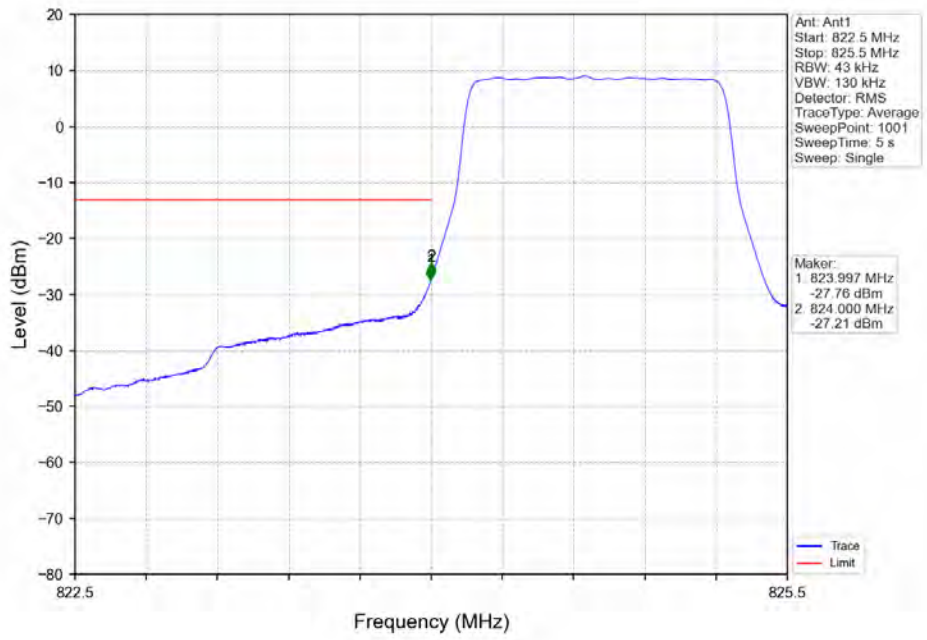
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_1_0_NTNV



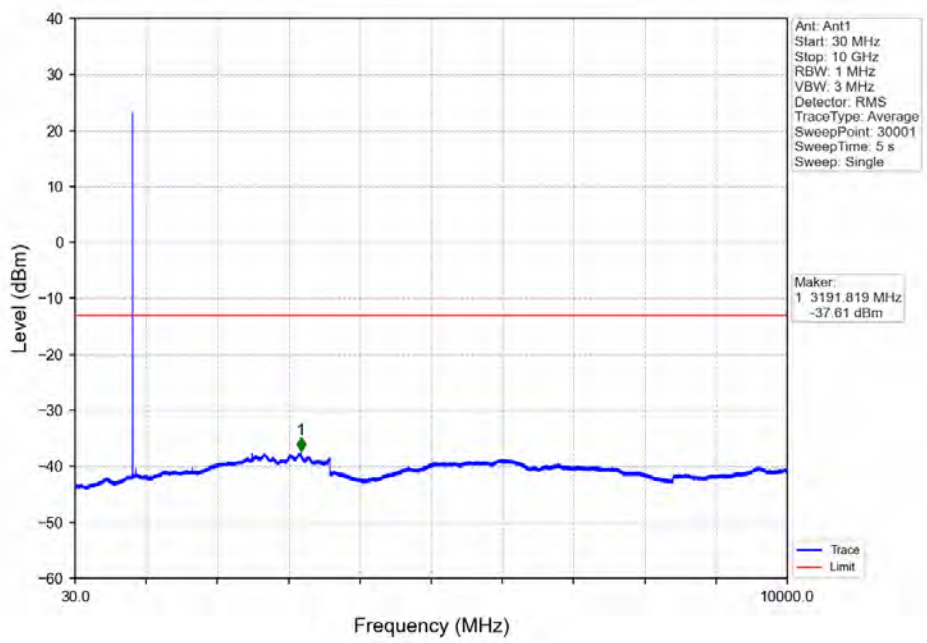
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_1_0_NTNV



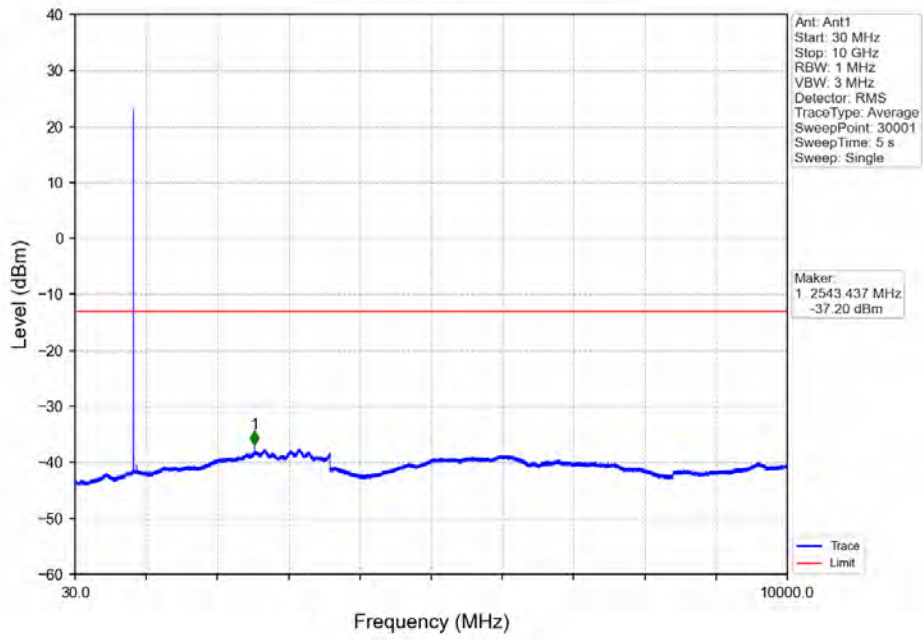
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_6_0_NTNV



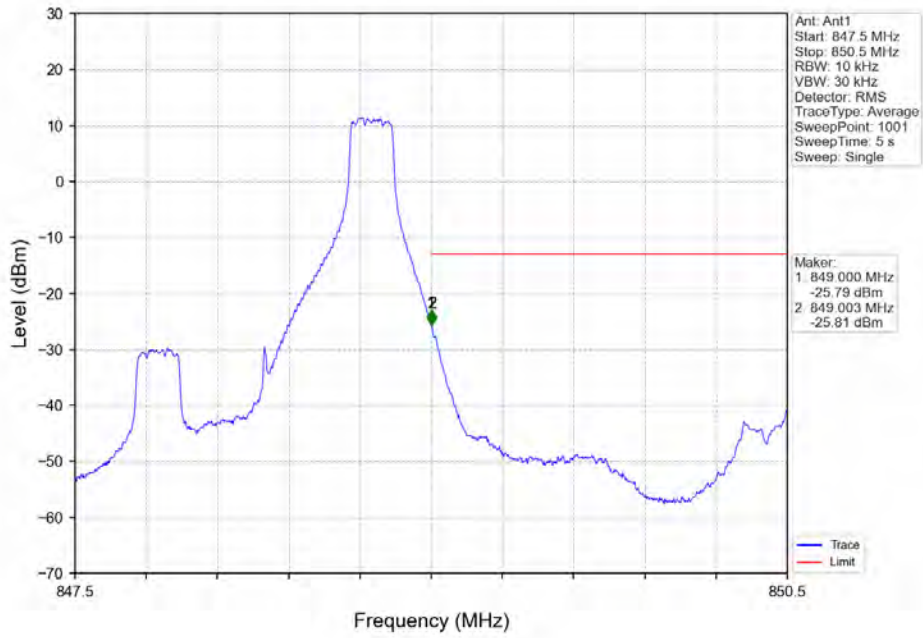
Band5_1.4MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



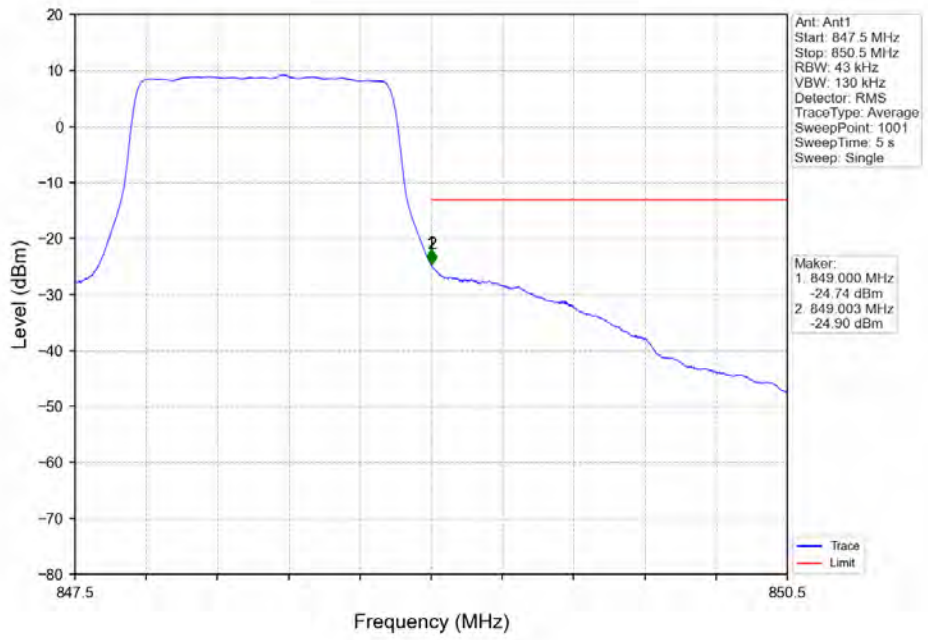
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_1_0_NTNV



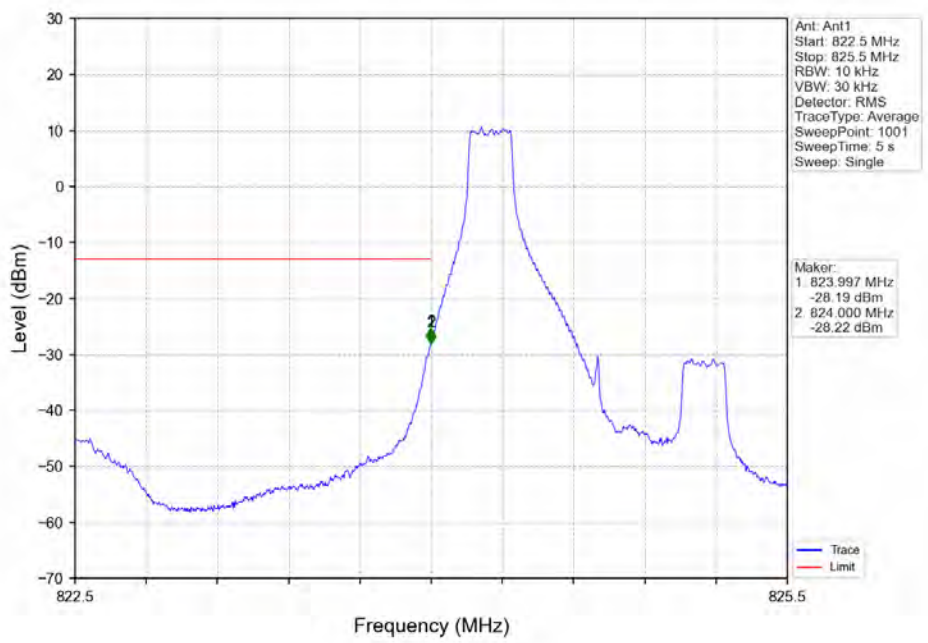
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_1_5_NTNV



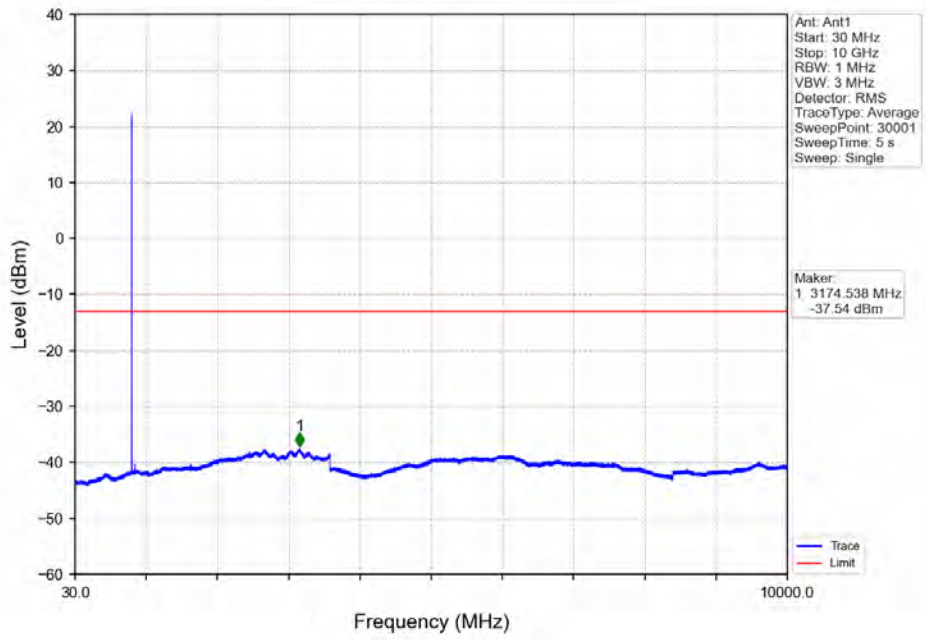
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



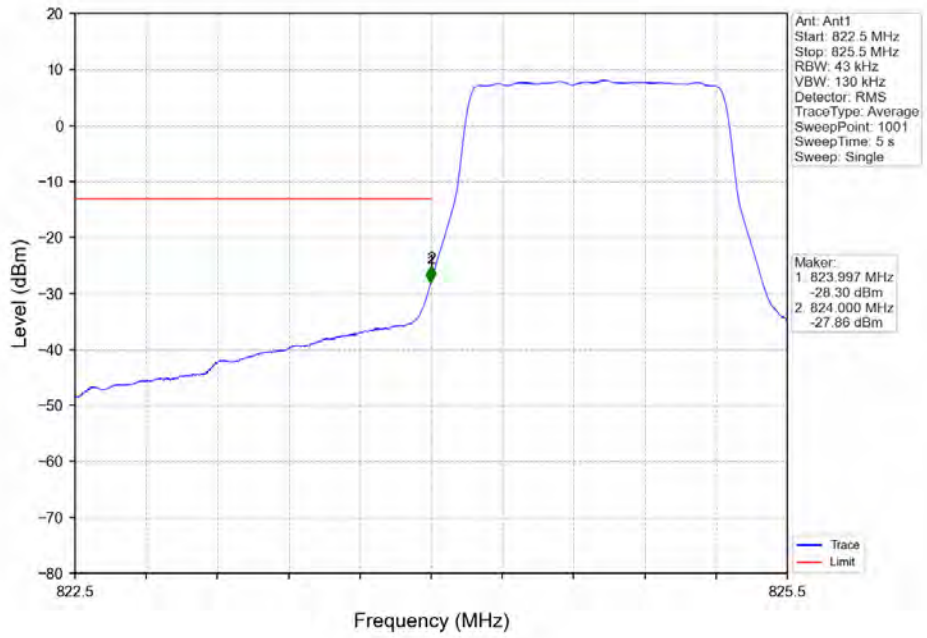
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_1_0_NTNV



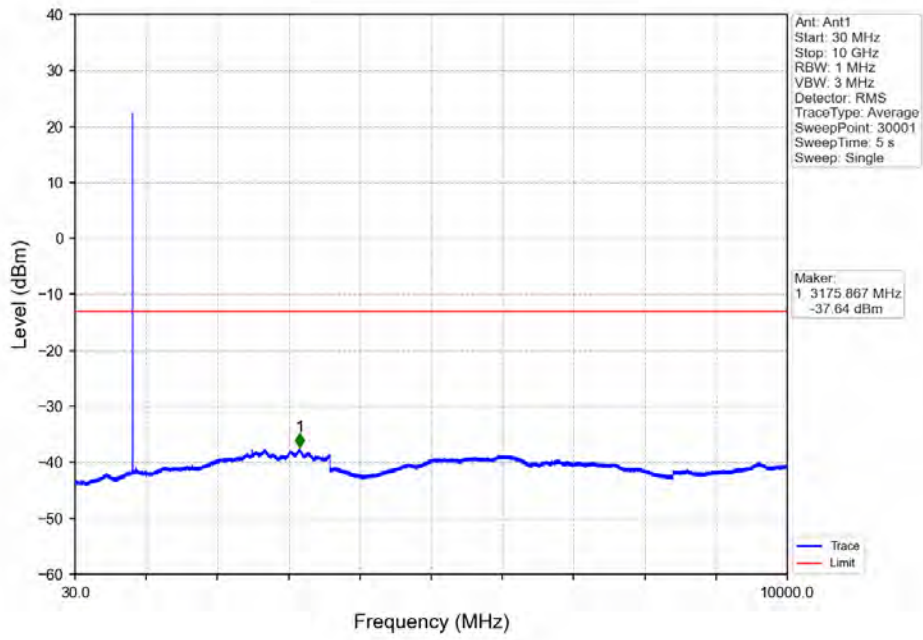
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_1_0_NTNV



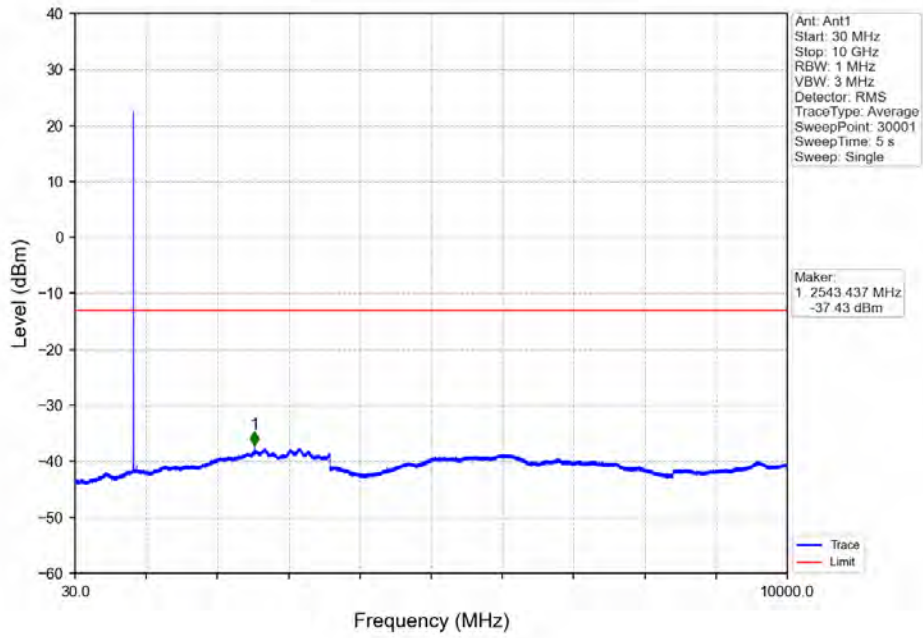
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



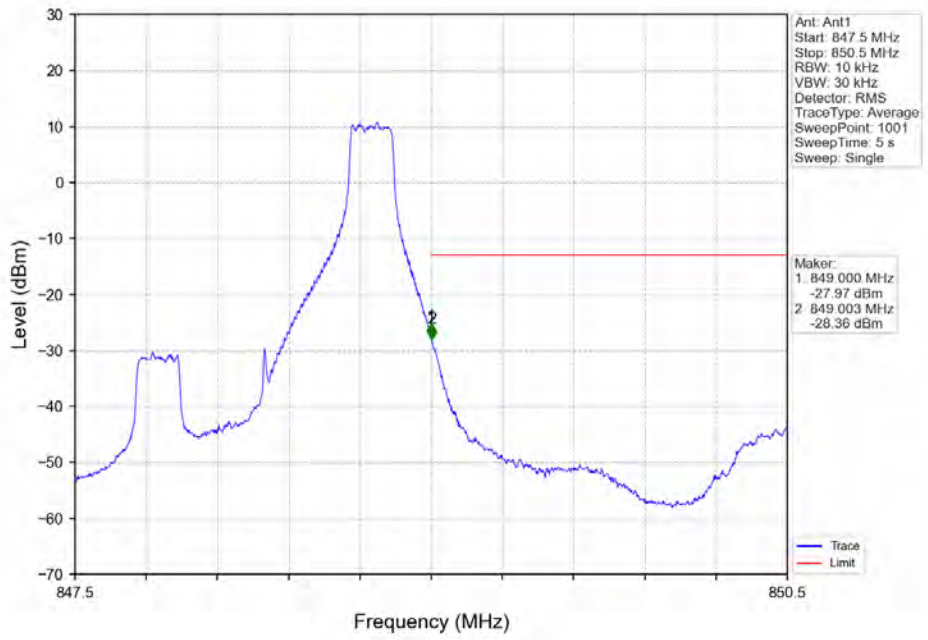
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



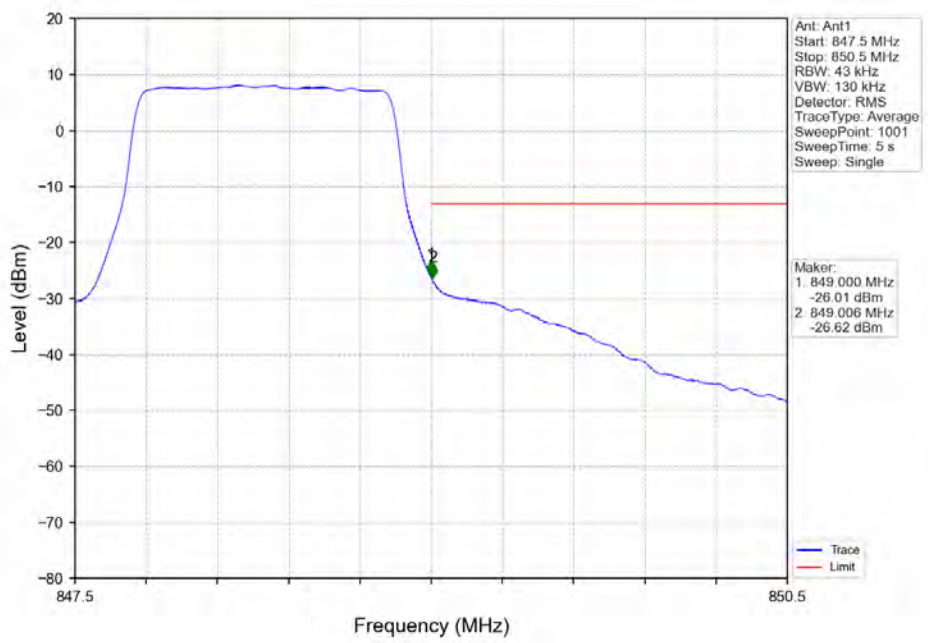
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_1_0_NTNV



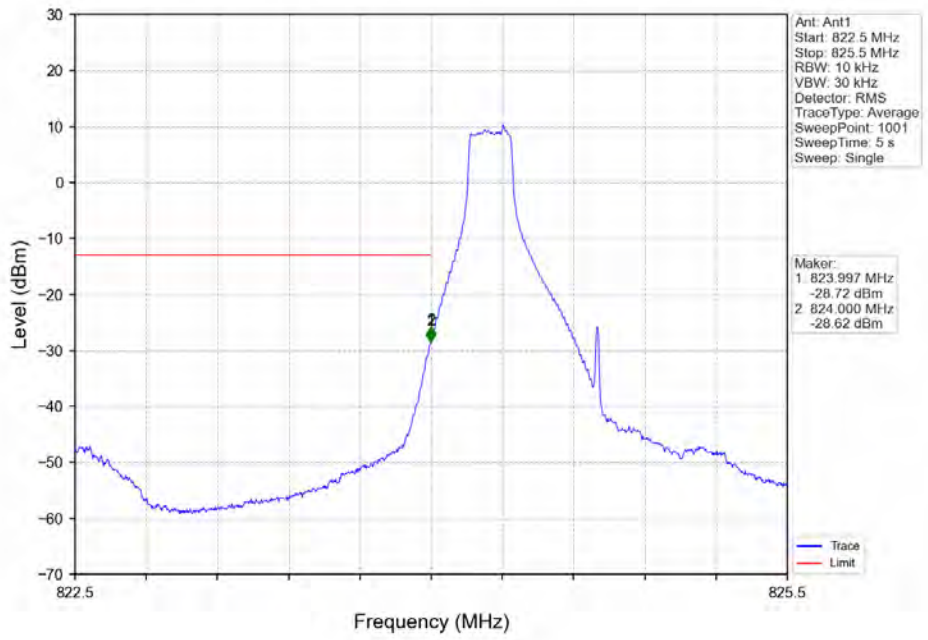
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_1_5_NTNV



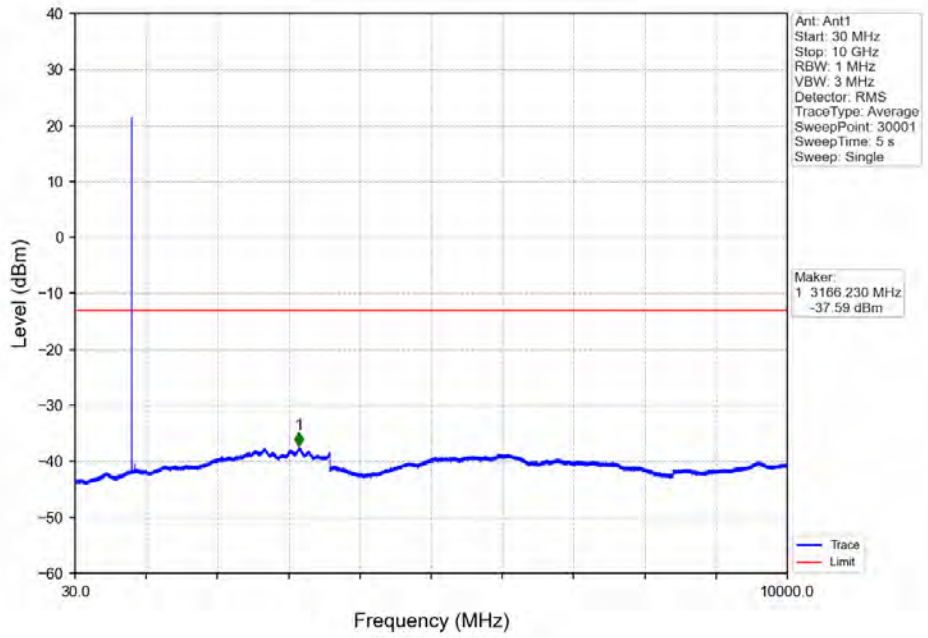
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



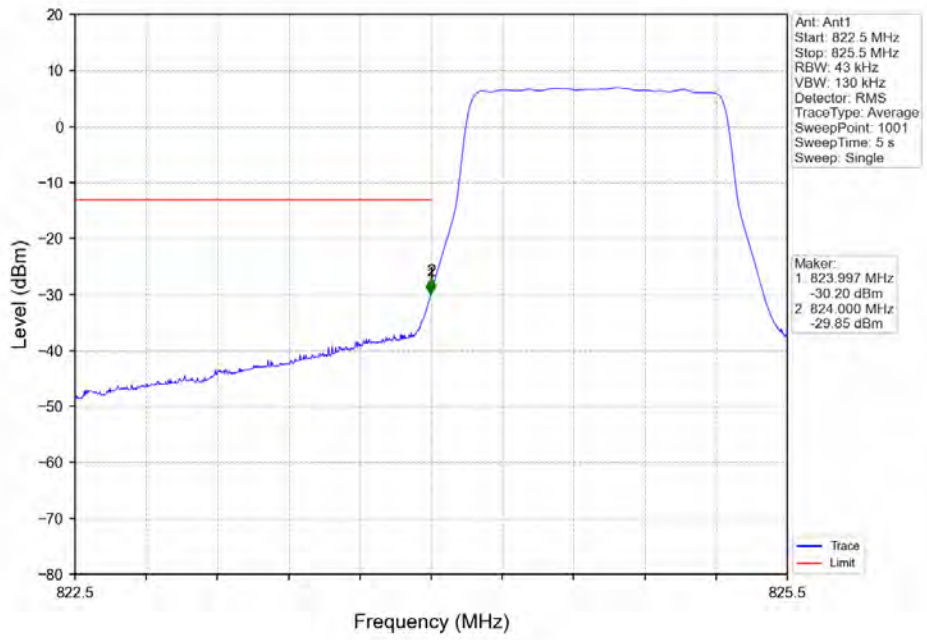
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_1_0_NTNV



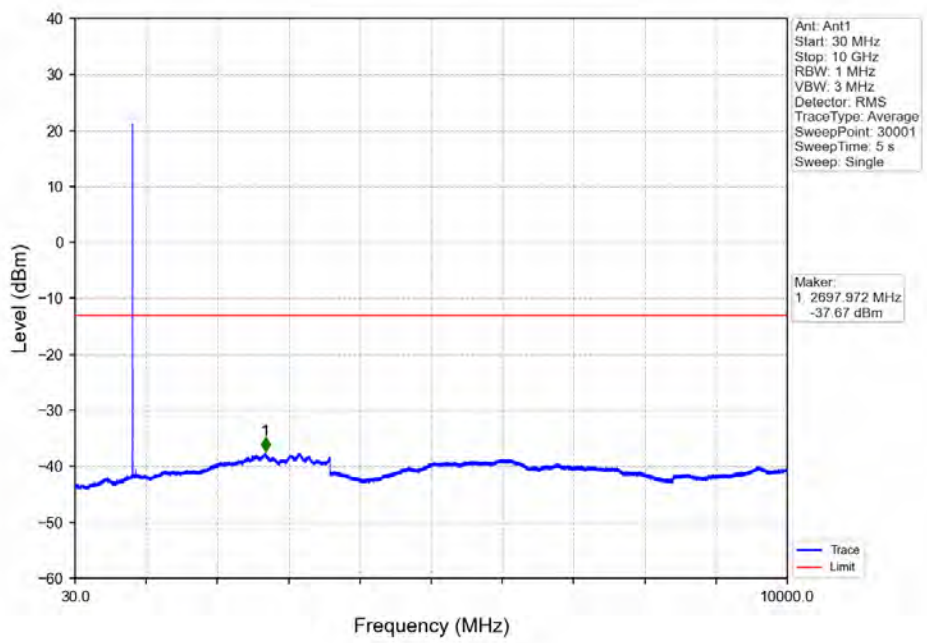
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_1_0_NTNV



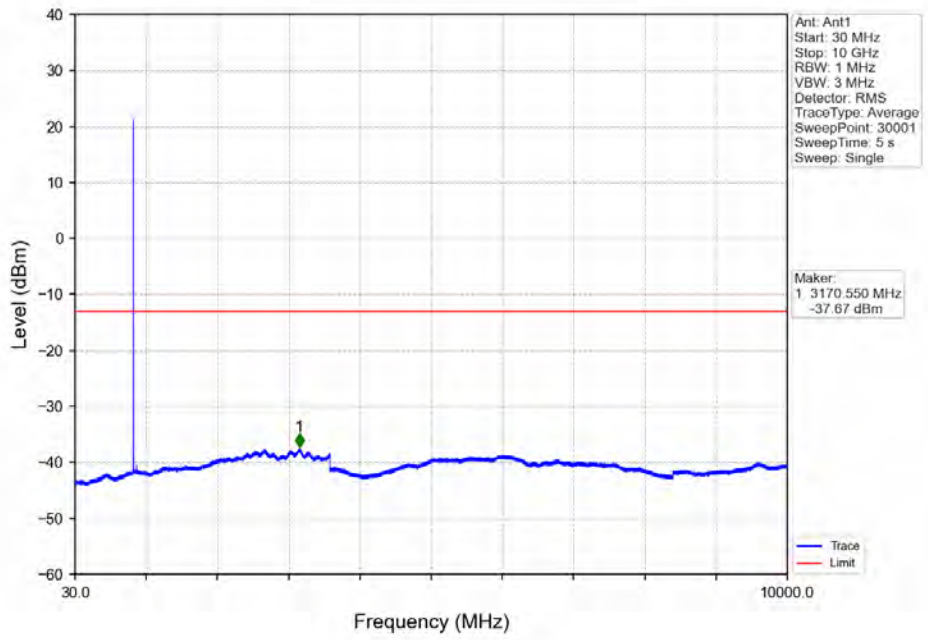
Band5_1.4MHz_64QAM_LCH_824.7MHz_RB_6_0_NTNV



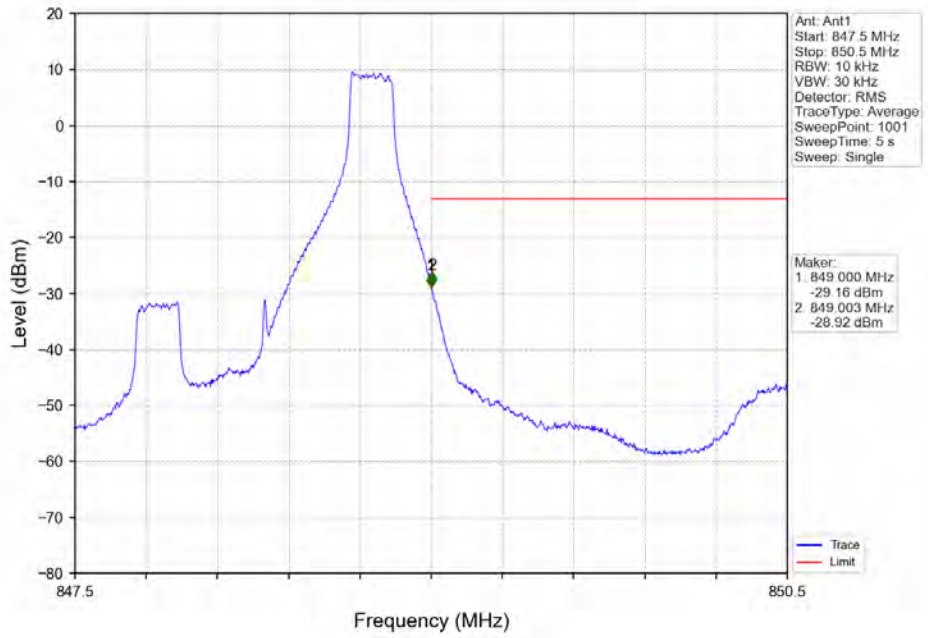
Band5_1.4MHz_64QAM_MCH_836.5MHz_RB_1_0_NTNV



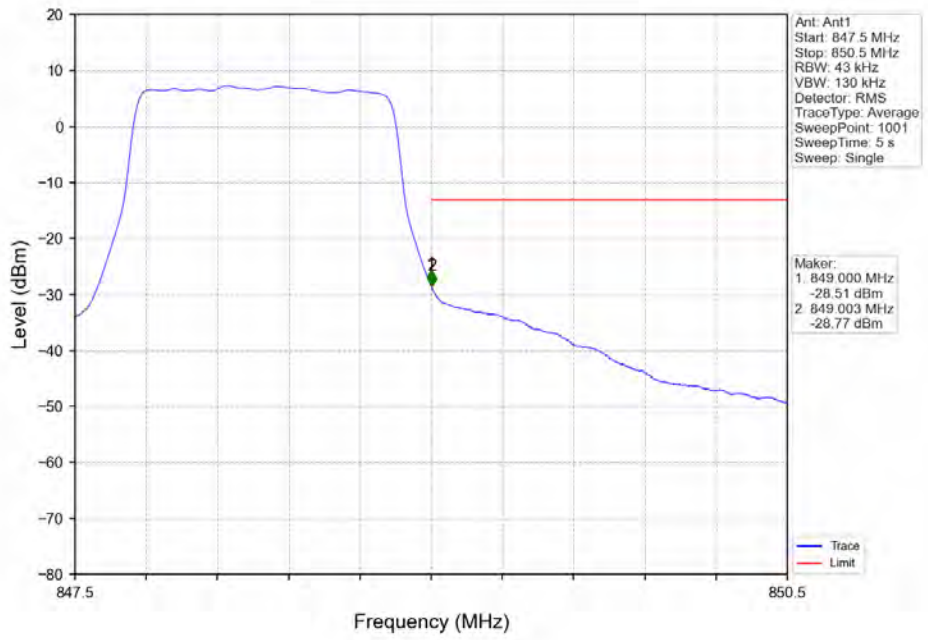
Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_1_0_NTNV



Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_1_5_NTNV



Band5_1.4MHz_64QAM_HCH_848.3MHz_RB_6_0_NTNV



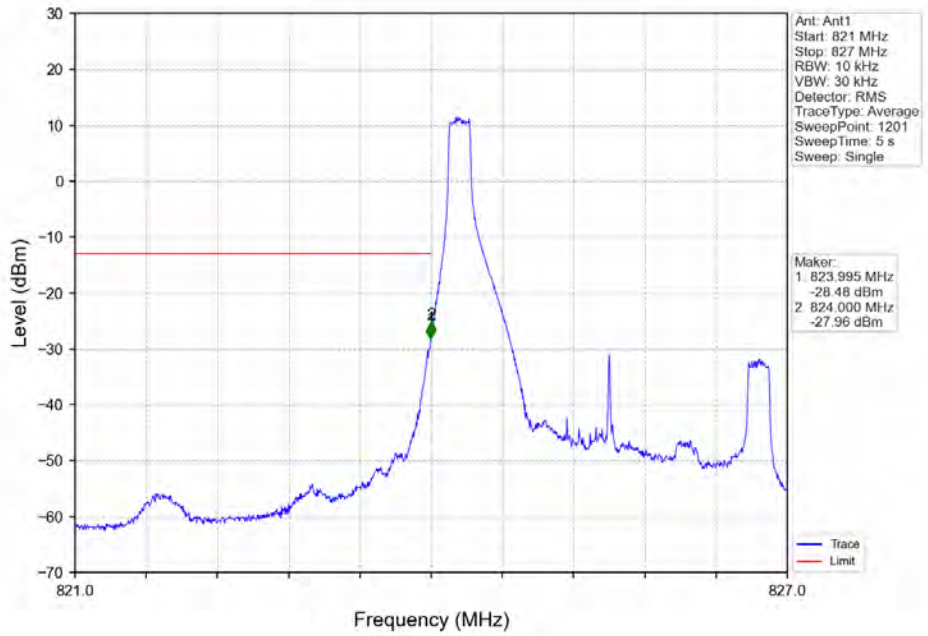
B5_3MHz

Test Result

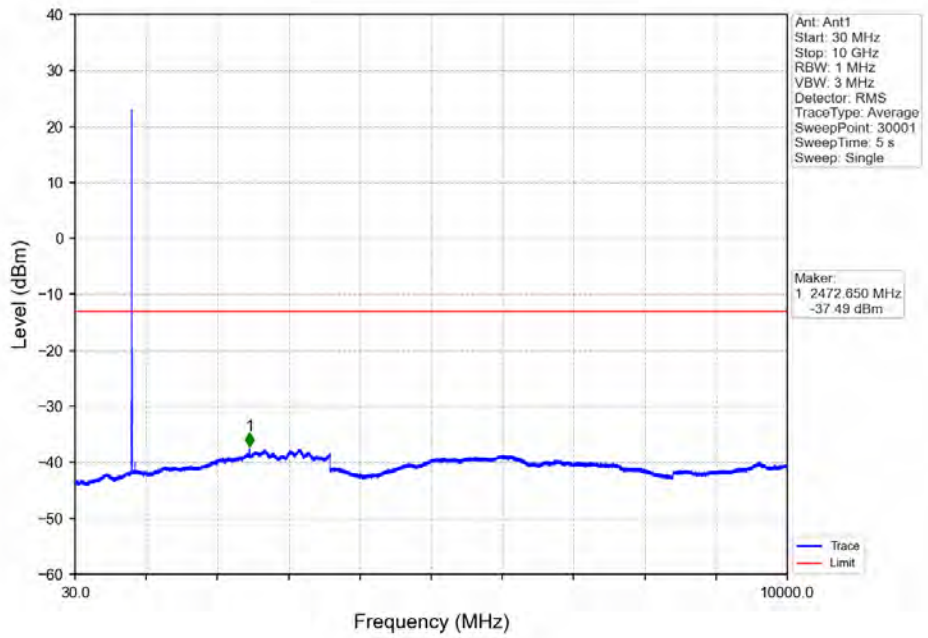
Band: 5 / Bandwidth: 3MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	825.5	1	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	847.5	1	0	Refer To Test Graph		Pass
			14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
16QAM	825.5	1	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	847.5	1	0	Refer To Test Graph		Pass
			14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
64QAM	825.5	1	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	847.5	1	0	Refer To Test Graph		Pass
			14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass

Test Graph

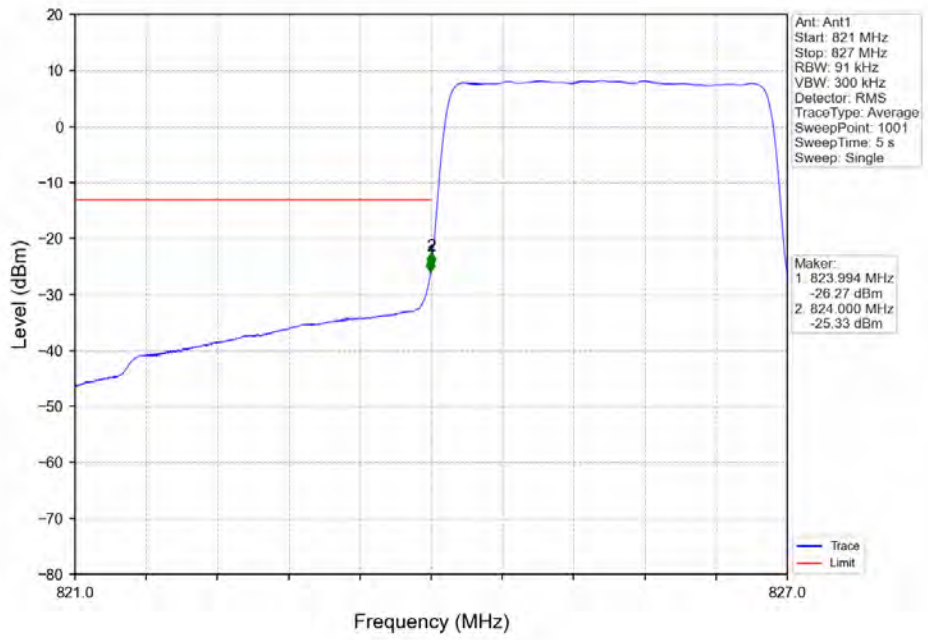
Band5_3MHz_QPSK_LCH_825.5MHz_RB_1_0_NTNV



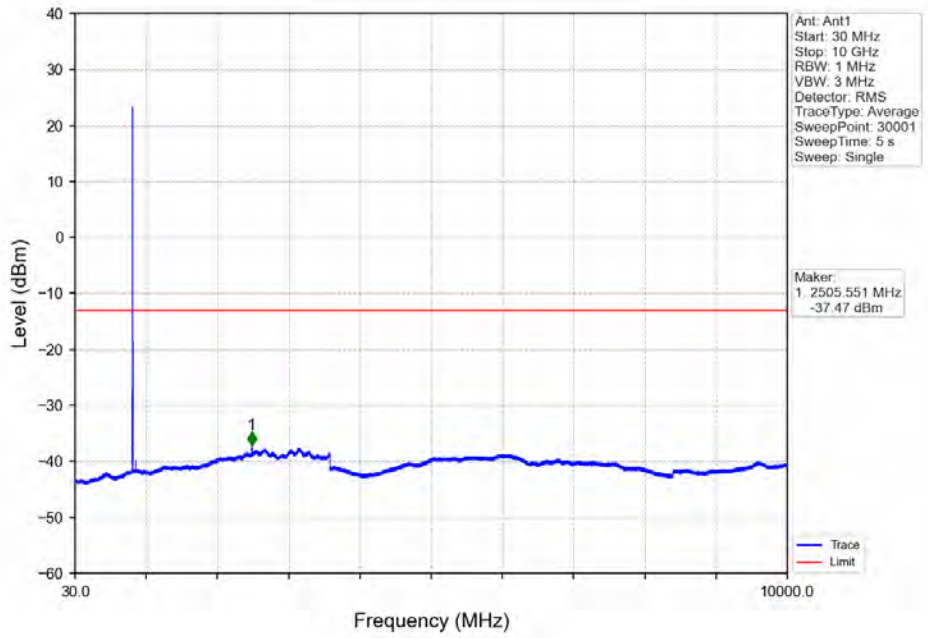
Band5_3MHz_QPSK_LCH_825.5MHz_RB_1_0_NTNV



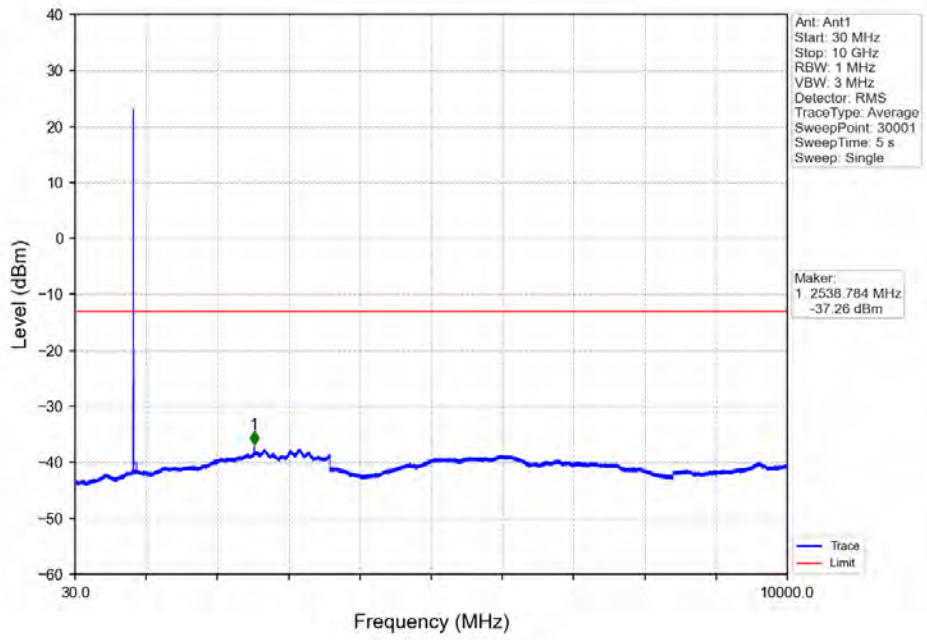
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



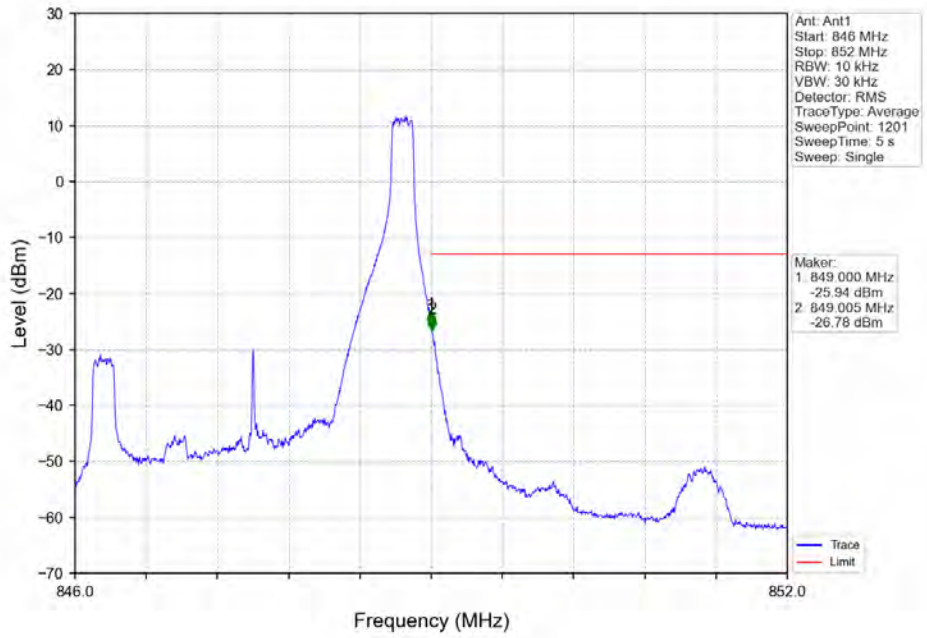
Band5_3MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



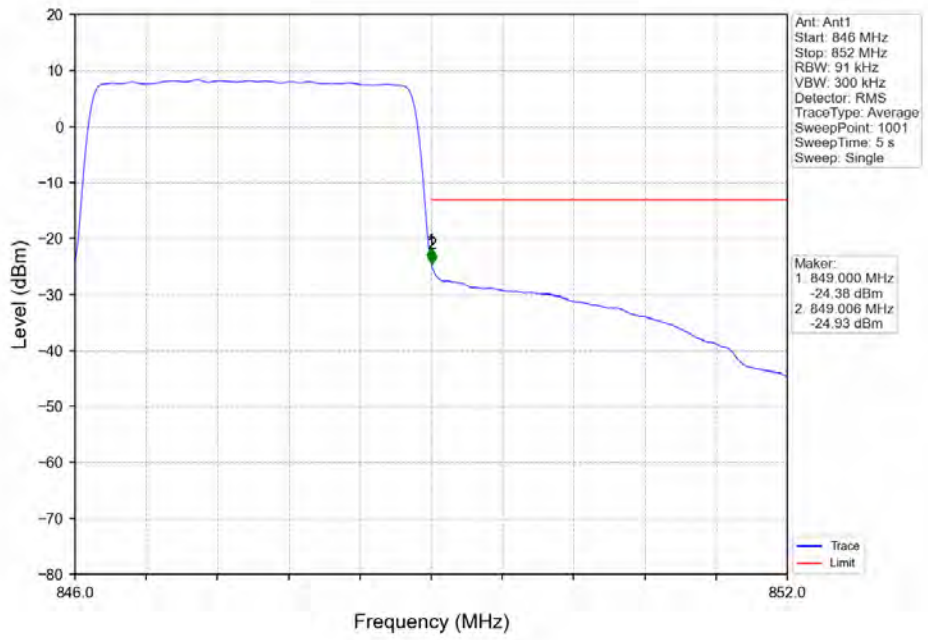
Band5_3MHz_QPSK_HCH_847.5MHz_RB_1_0_NTNV



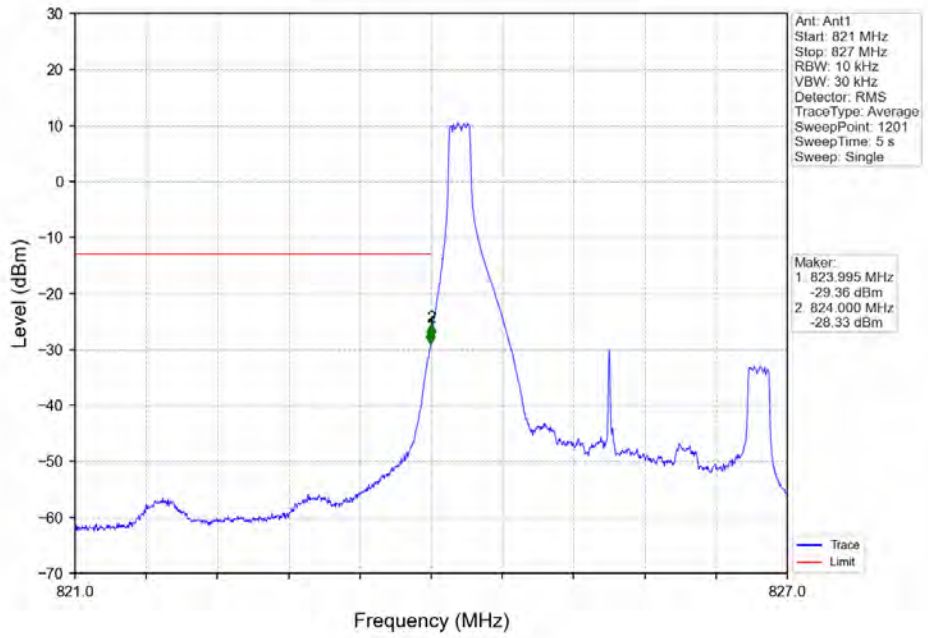
Band5_3MHz_QPSK_HCH_847.5MHz_RB_1_14_NTNV



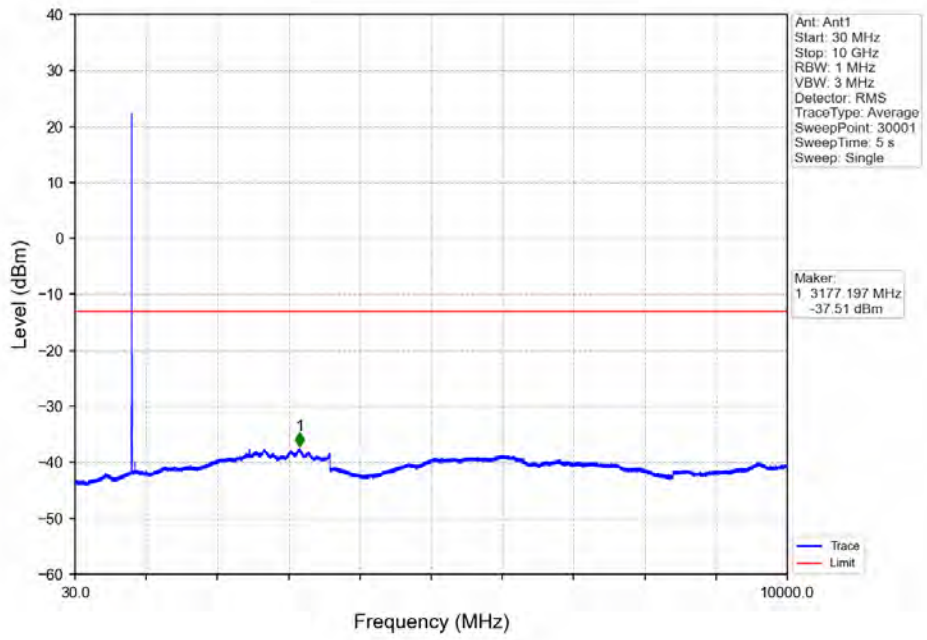
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



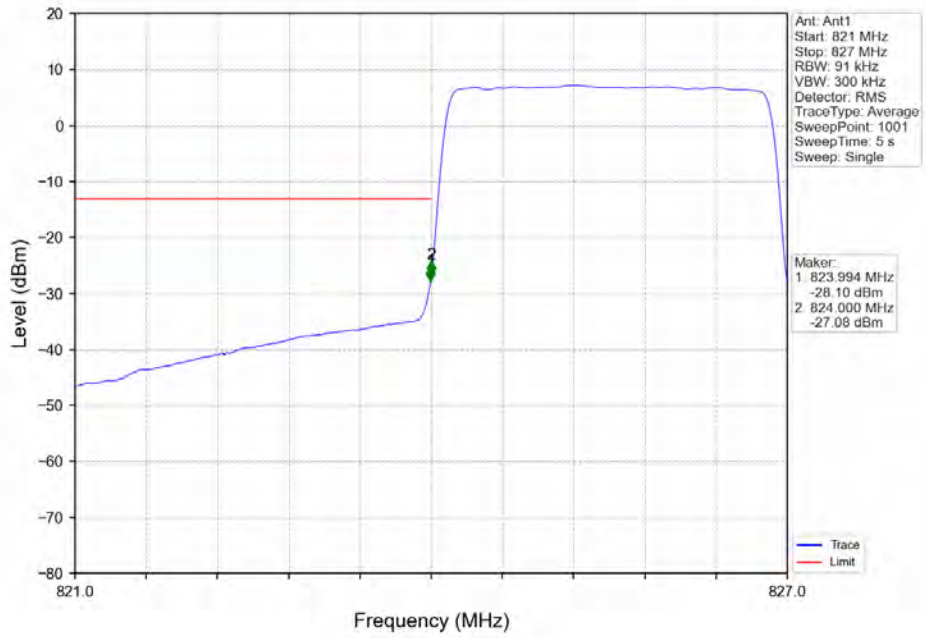
Band5_3MHz_16QAM_LCH_825.5MHz_RB_1_0_NTNV



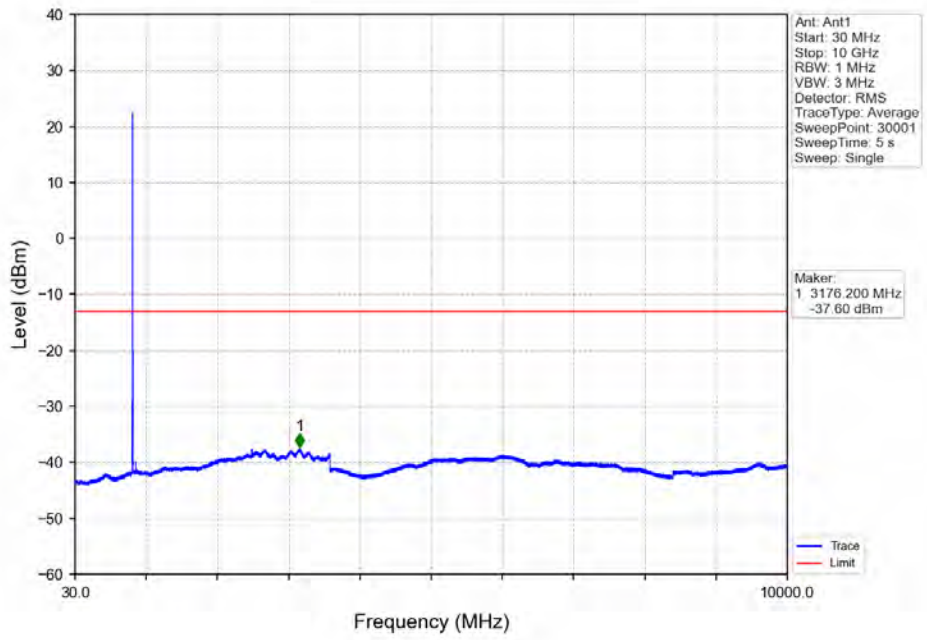
Band5_3MHz_16QAM_LCH_825.5MHz_RB_1_0_NTNV



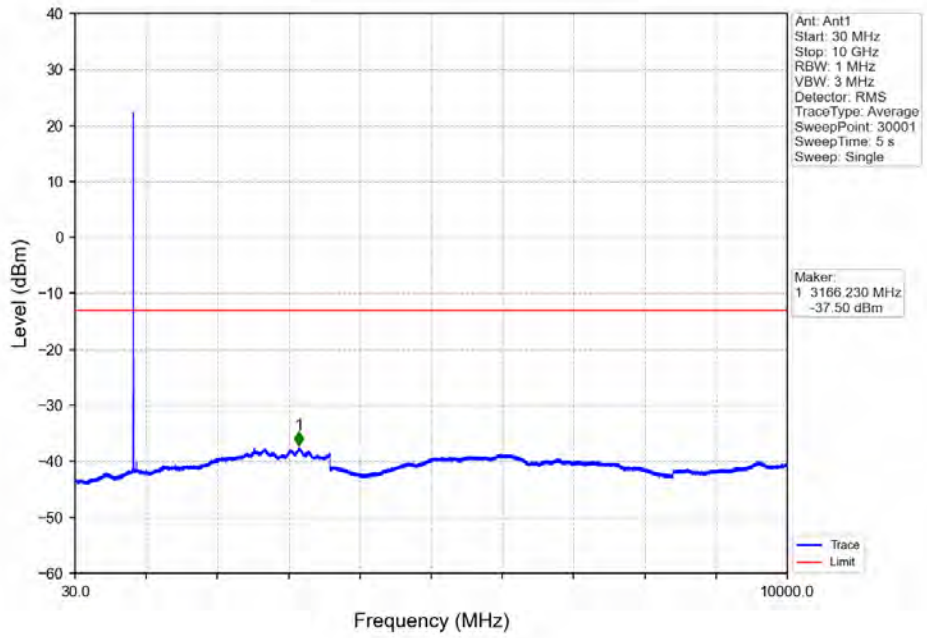
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



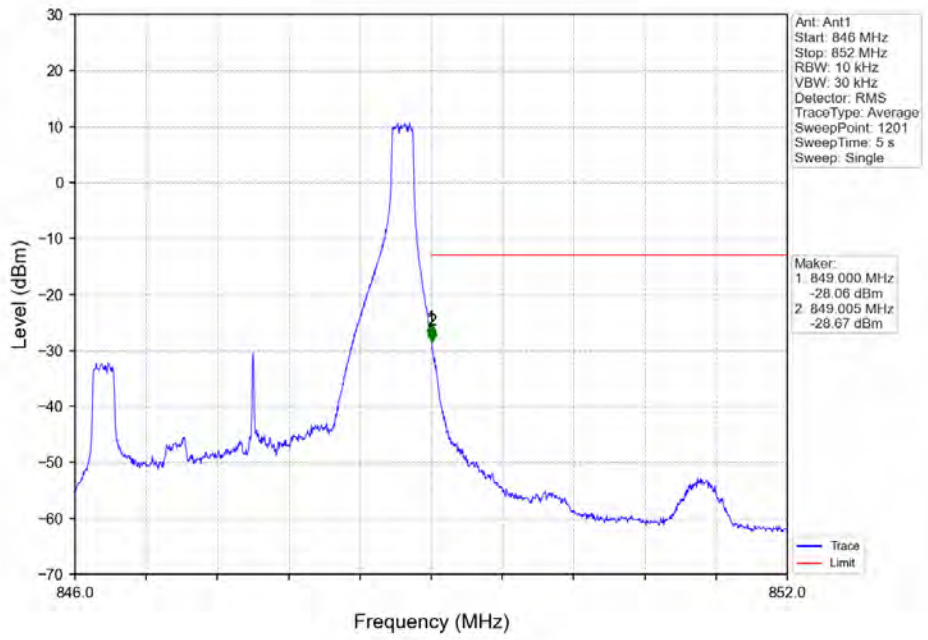
Band5_3MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



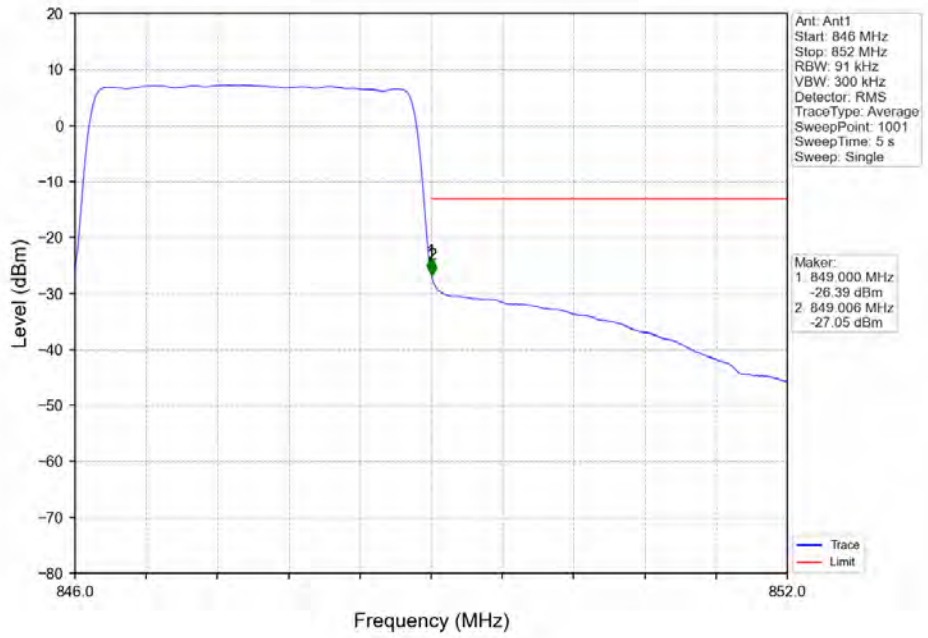
Band5_3MHz_16QAM_HCH_847.5MHz_RB_1_0_NTNV



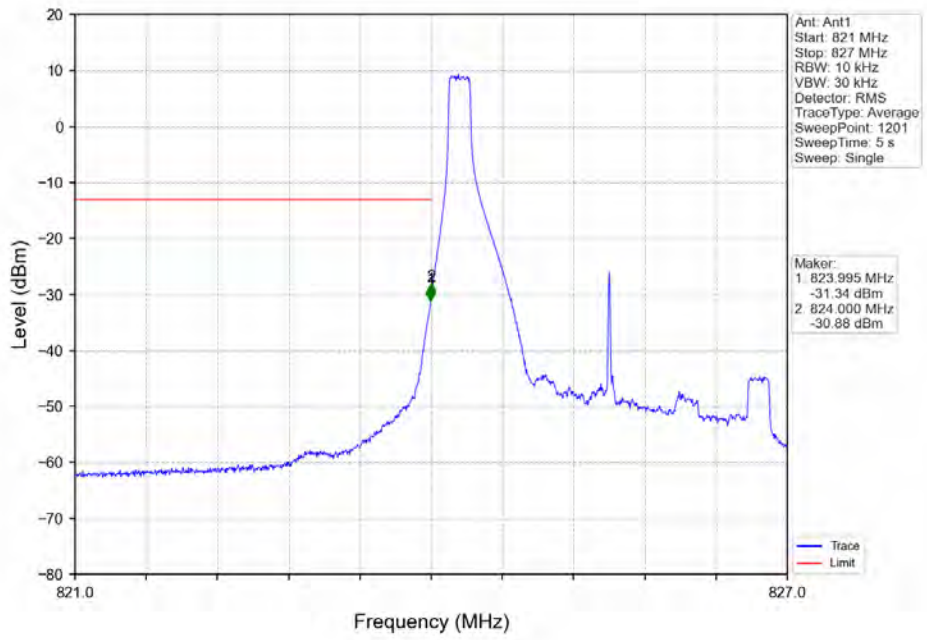
Band5_3MHz_16QAM_HCH_847.5MHz_RB_1_14_NTNV



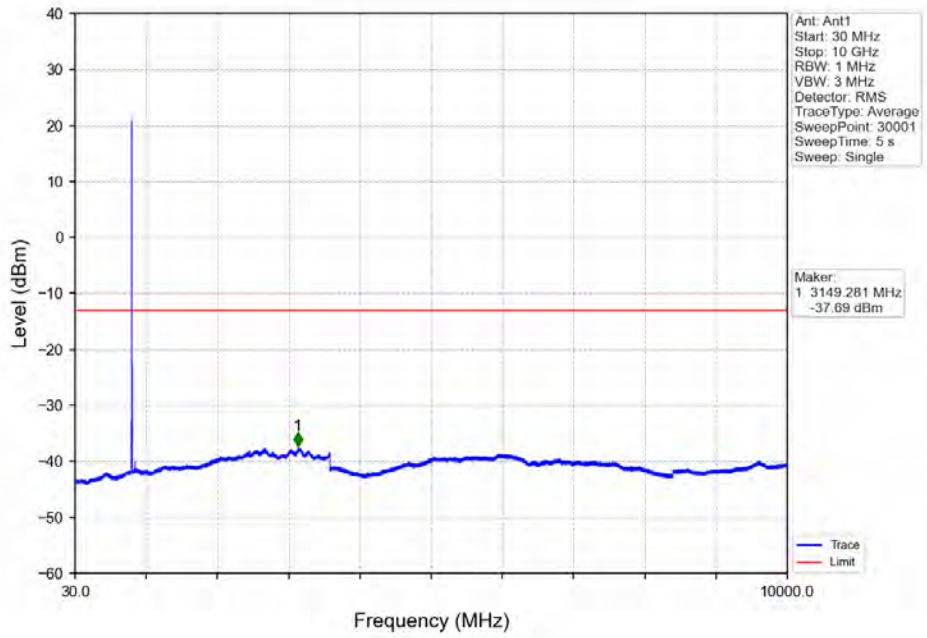
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



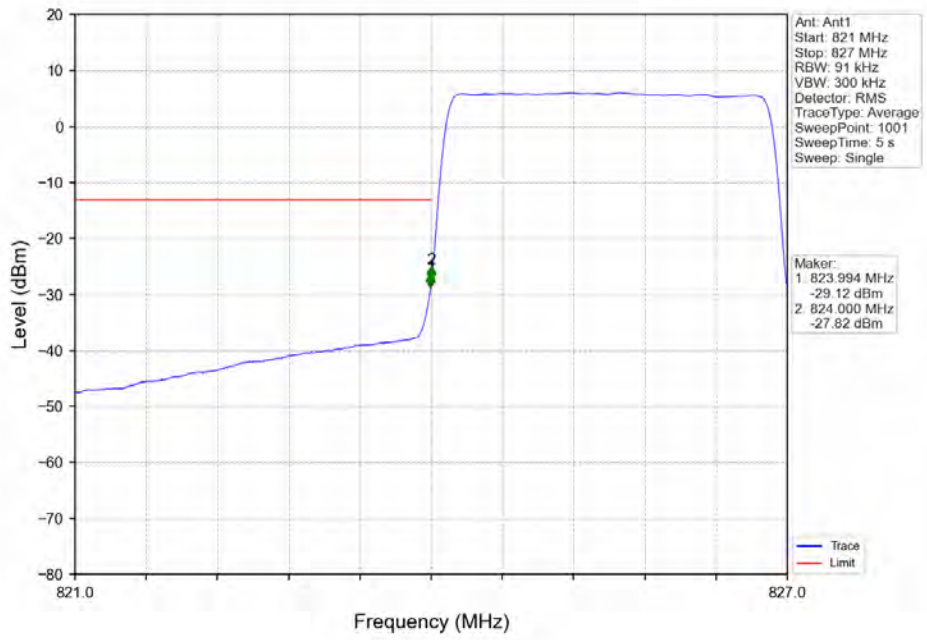
Band5_3MHz_64QAM_LCH_825.5MHz_RB_1_0_NTNV



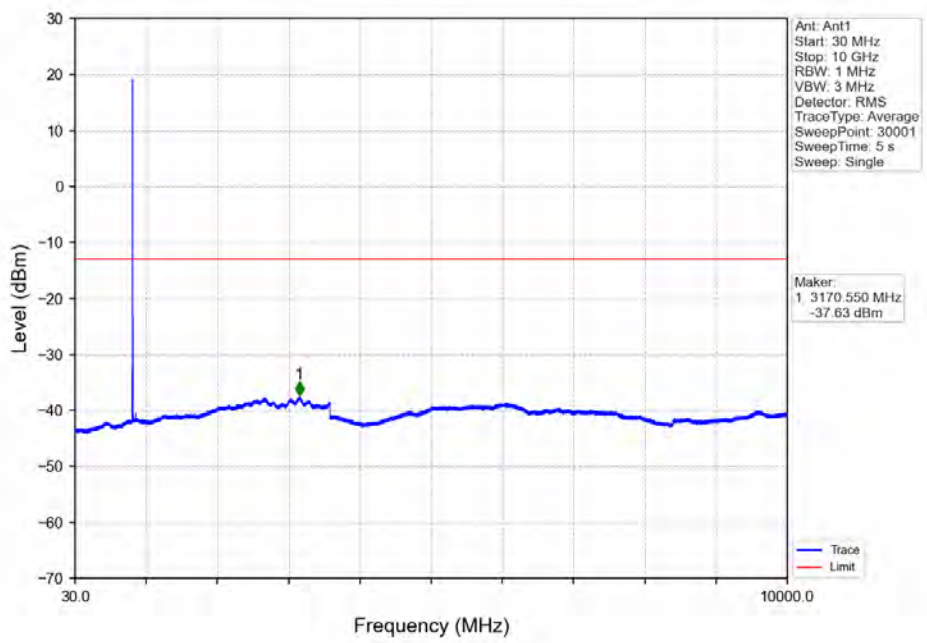
Band5_3MHz_64QAM_LCH_825.5MHz_RB_1_0_NTNV



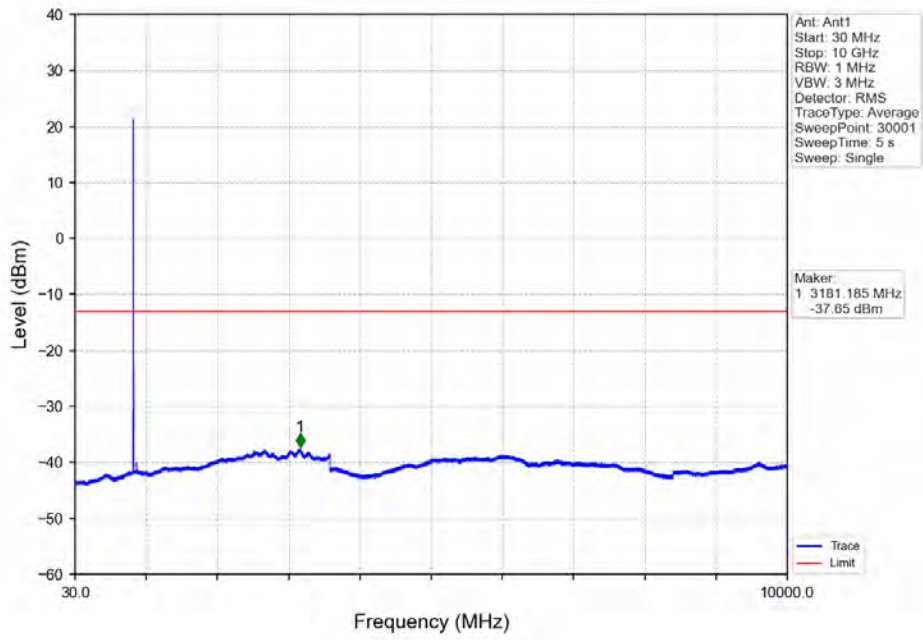
Band5_3MHz_64QAM_LCH_825.5MHz_RB_15_0_NTNV



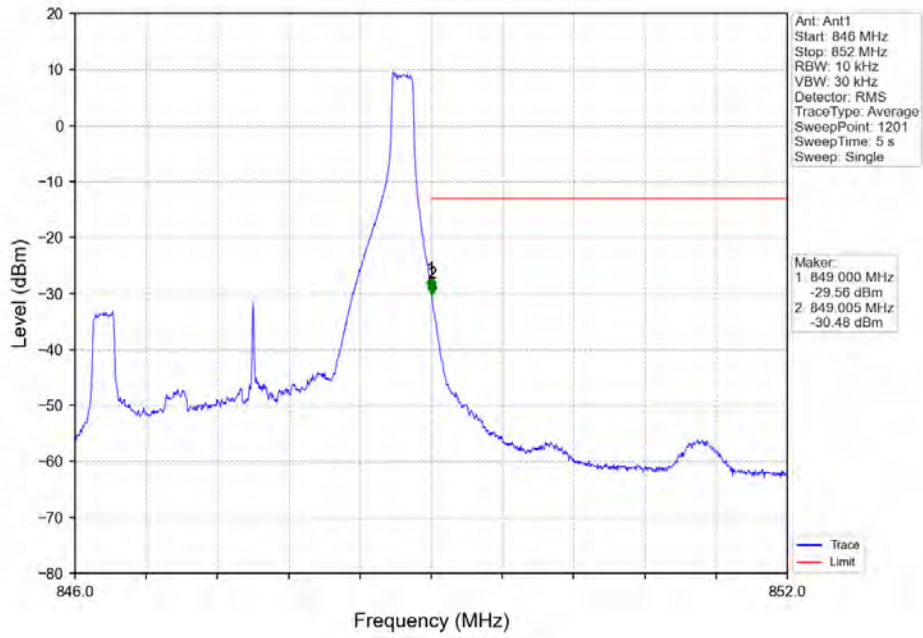
Band5_3MHz_64QAM_MCH_836.5MHz_RB_1_0_NTNV



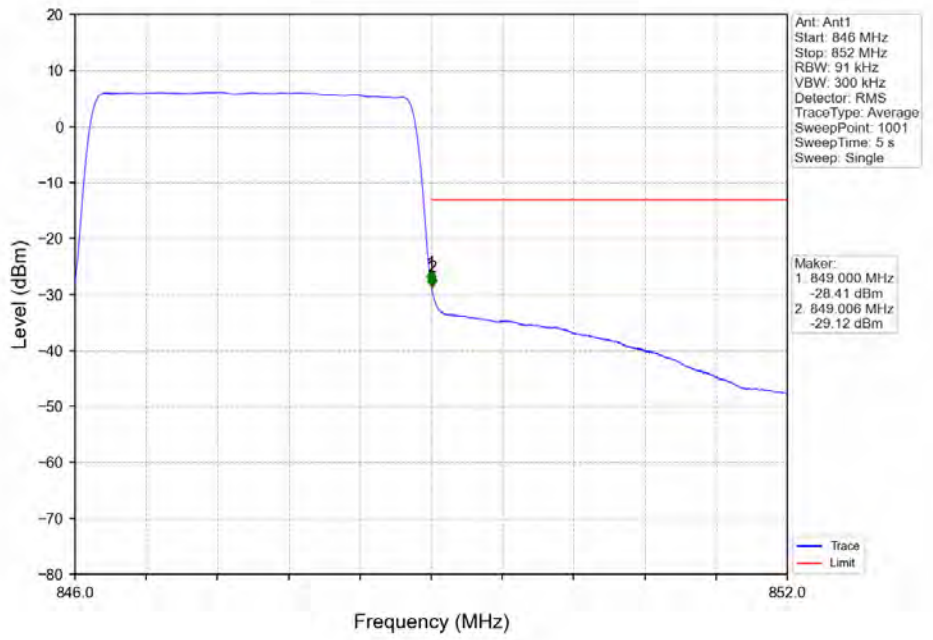
Band5_3MHz_64QAM_HCH_847.5MHz_RB_1_0_NTNV



Band5_3MHz_64QAM_HCH_847.5MHz_RB_1_14_NTNV



Band5_3MHz_64QAM_HCH_847.5MHz_RB_15_0_NTNV



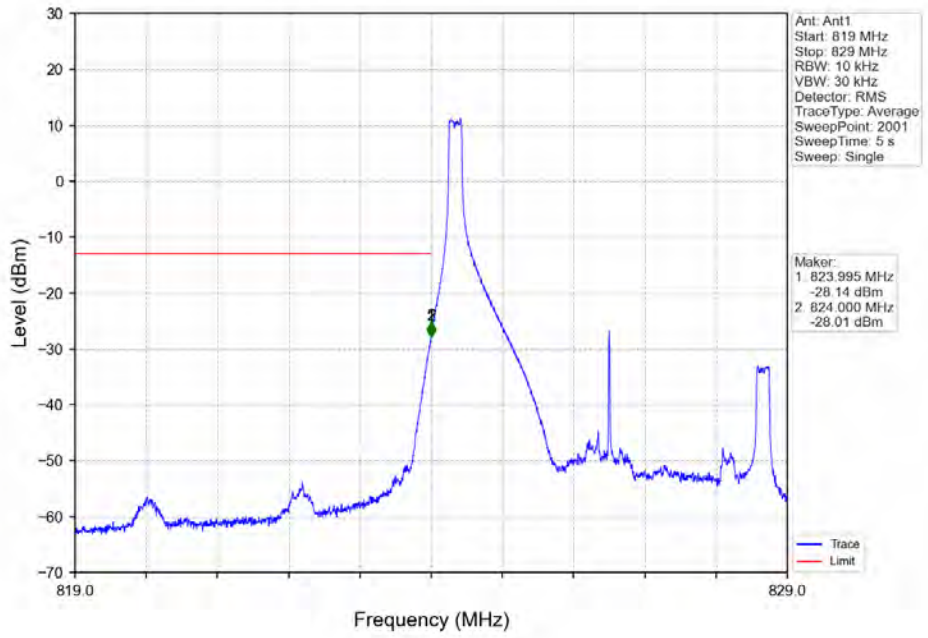
B5_5MHz

Test Result

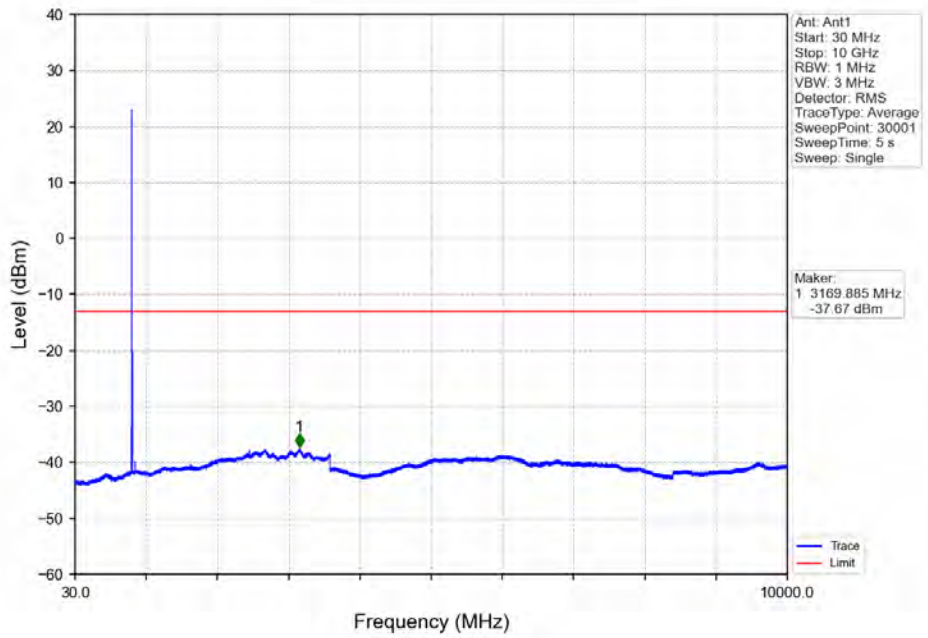
Band: 5 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	826.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	846.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
16QAM	826.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	846.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
64QAM	826.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	846.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass

Test Graph

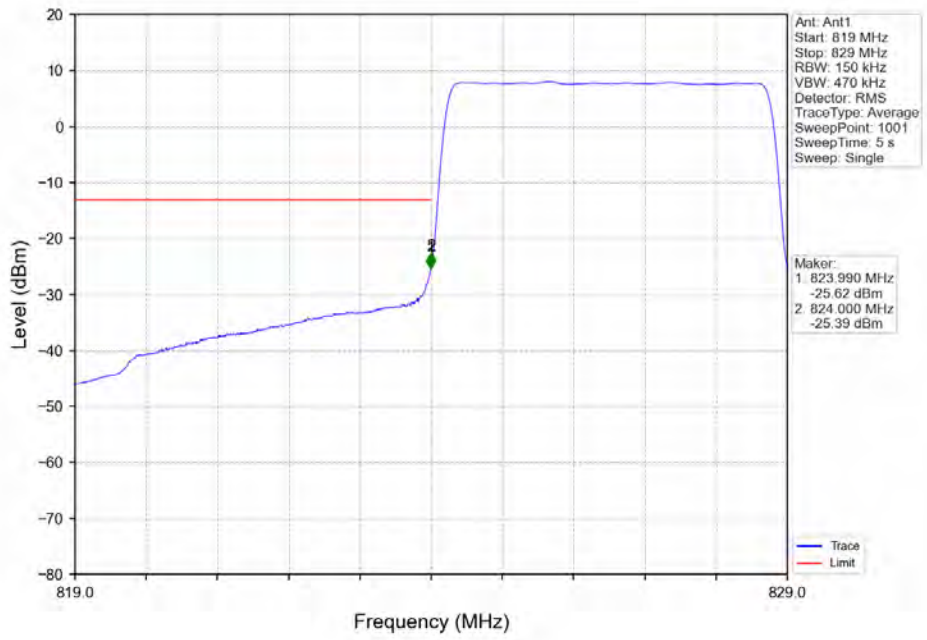
Band5_5MHz_QPSK_LCH_826.5MHz_RB_1_0_NTNV



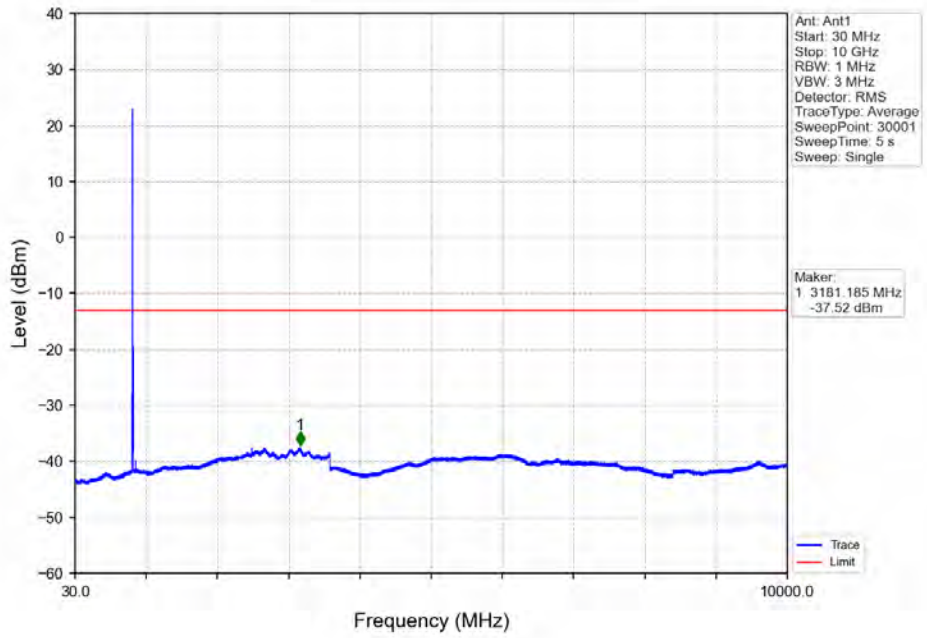
Band5_5MHz_QPSK_LCH_826.5MHz_RB_1_0_NTNV



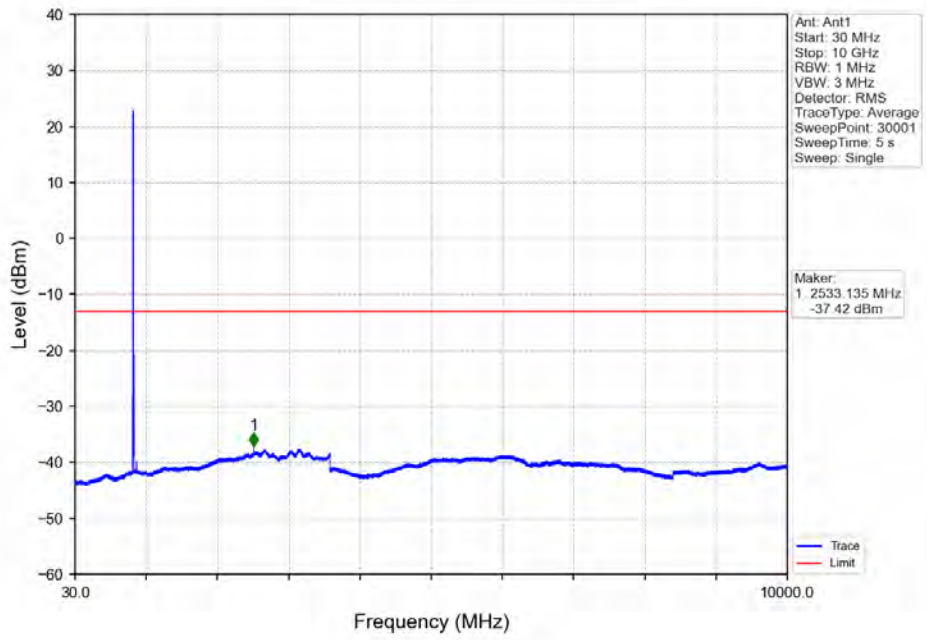
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



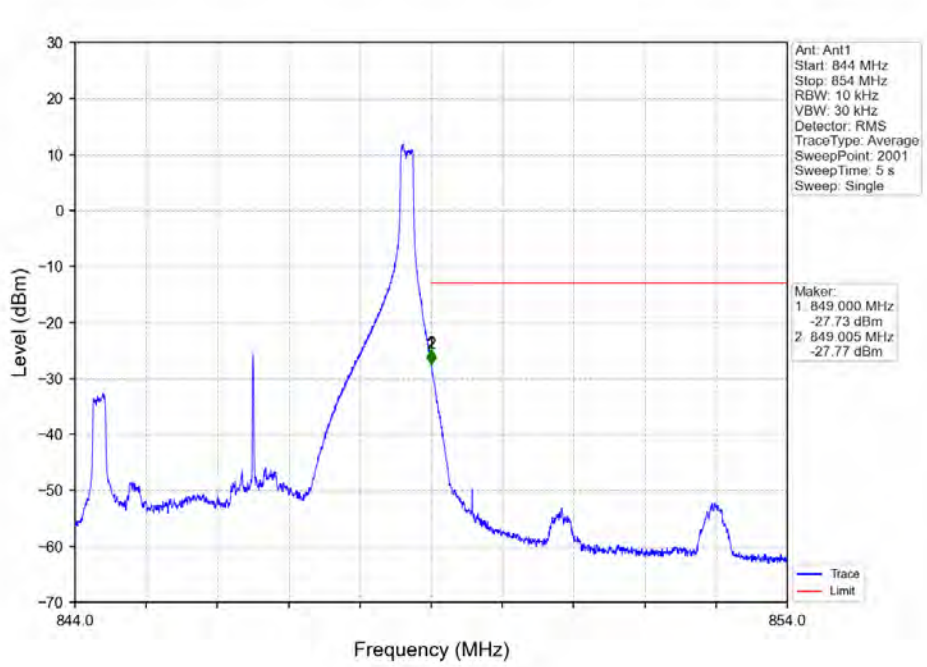
Band5_5MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



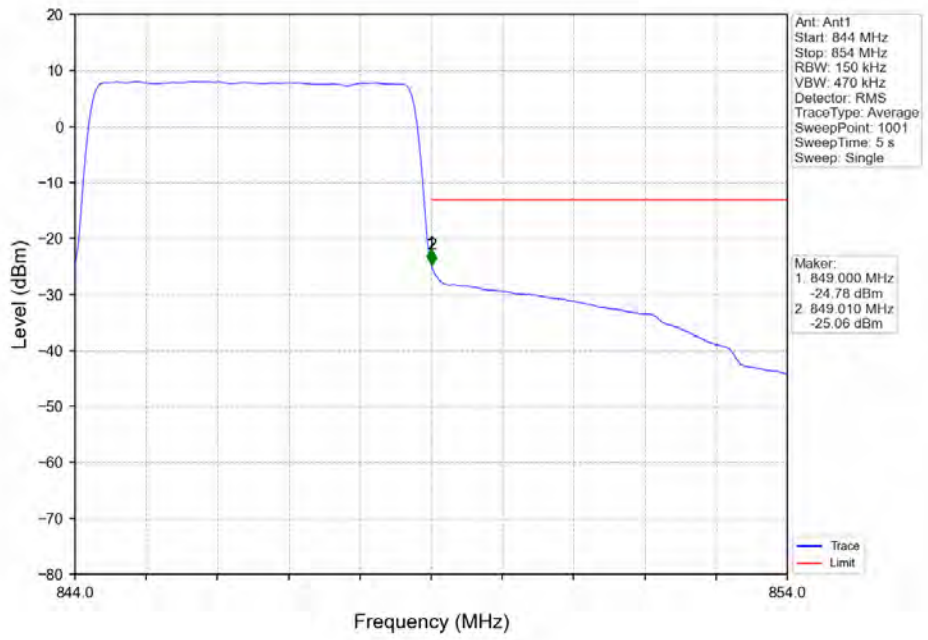
Band5_5MHz_QPSK_HCH_846.5MHz_RB_1_0_NTNV



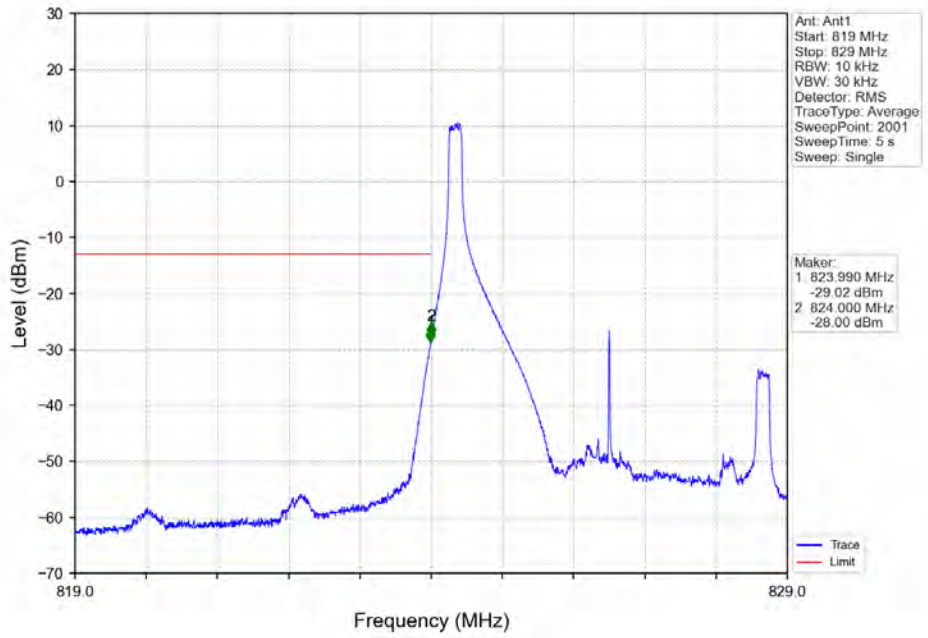
Band5_5MHz_QPSK_HCH_846.5MHz_RB_1_24_NTNV



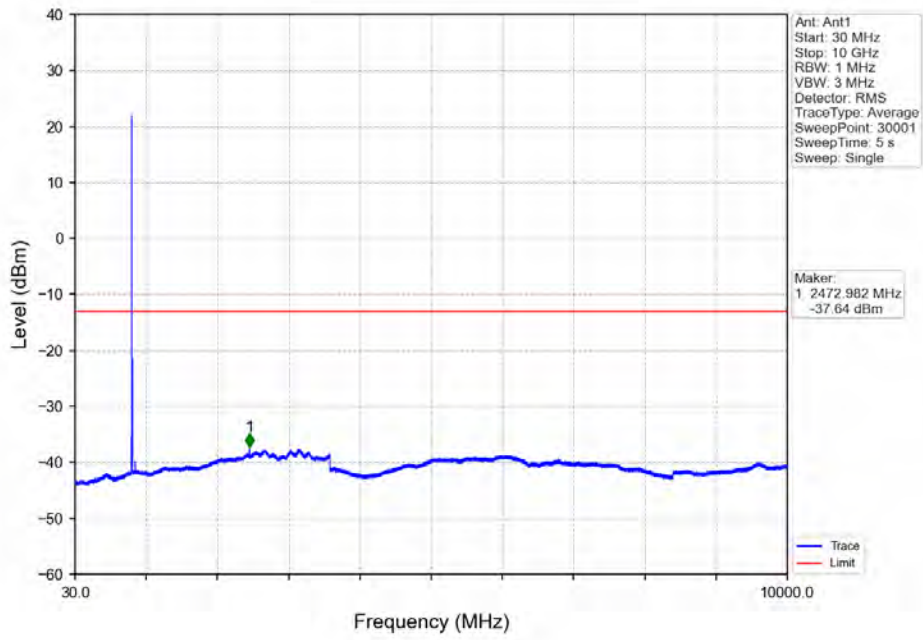
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



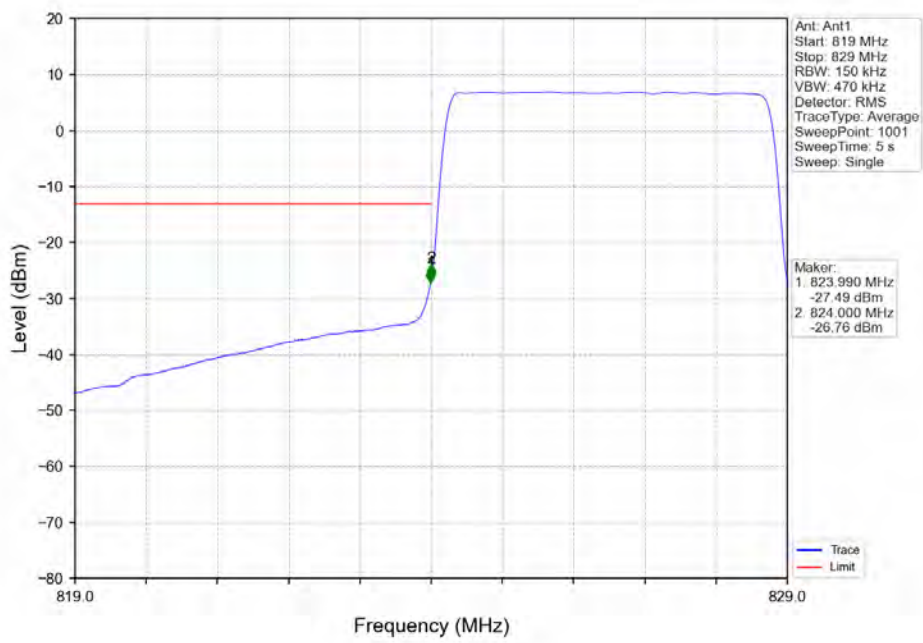
Band5_5MHz_16QAM_LCH_826.5MHz_RB_1_0_NTNV



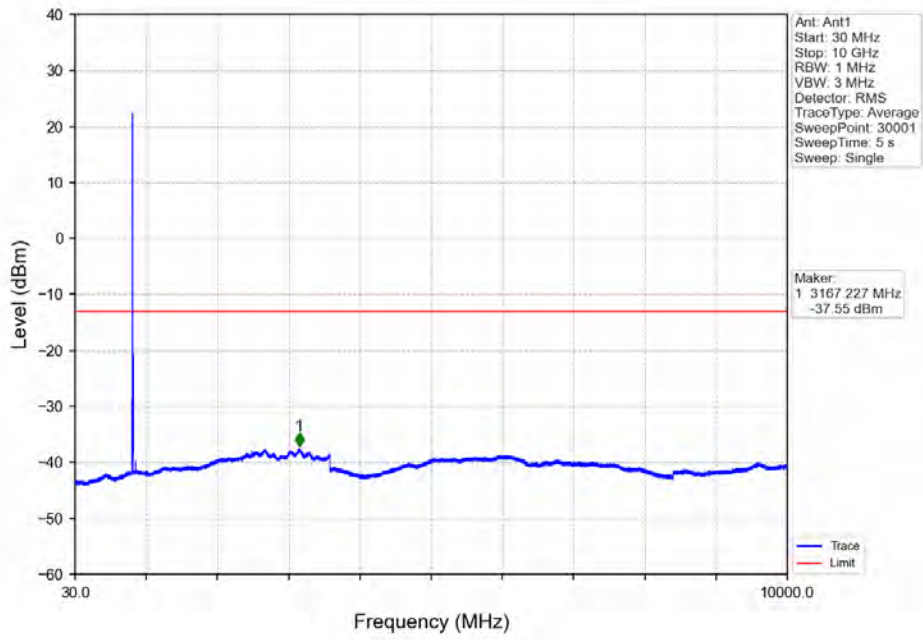
Band5_5MHz_16QAM_LCH_826.5MHz_RB_1_0_NTNV



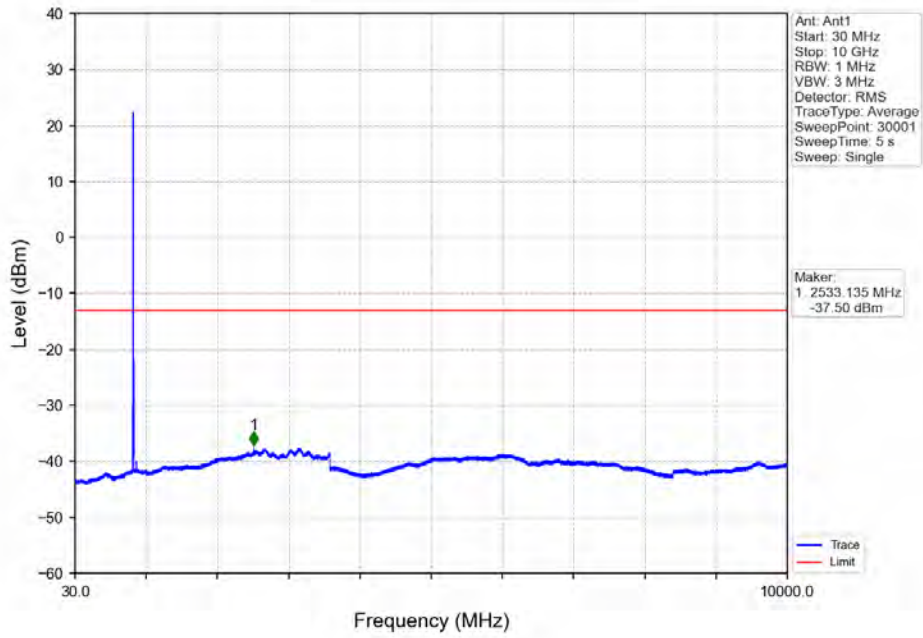
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



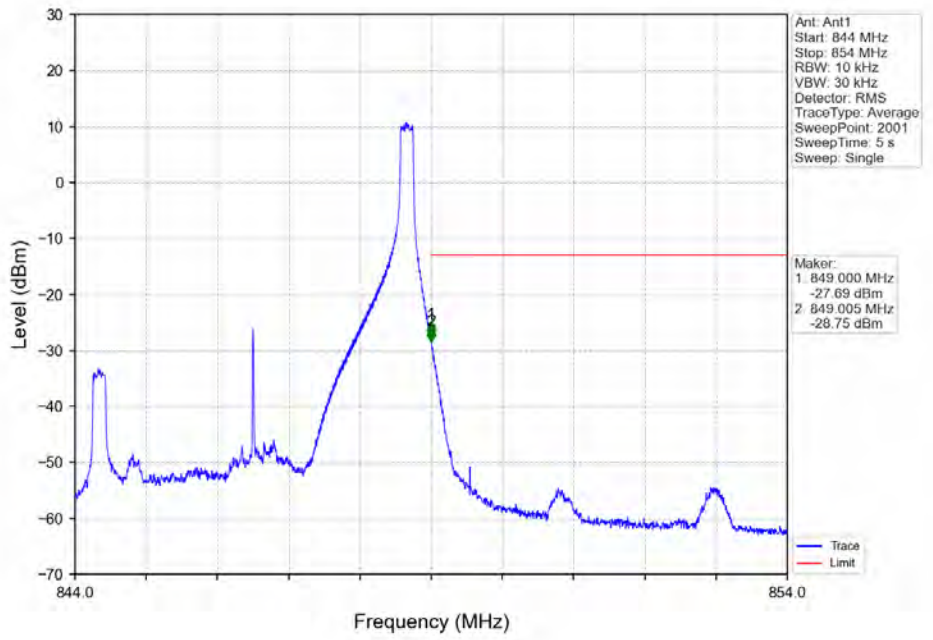
Band5_5MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



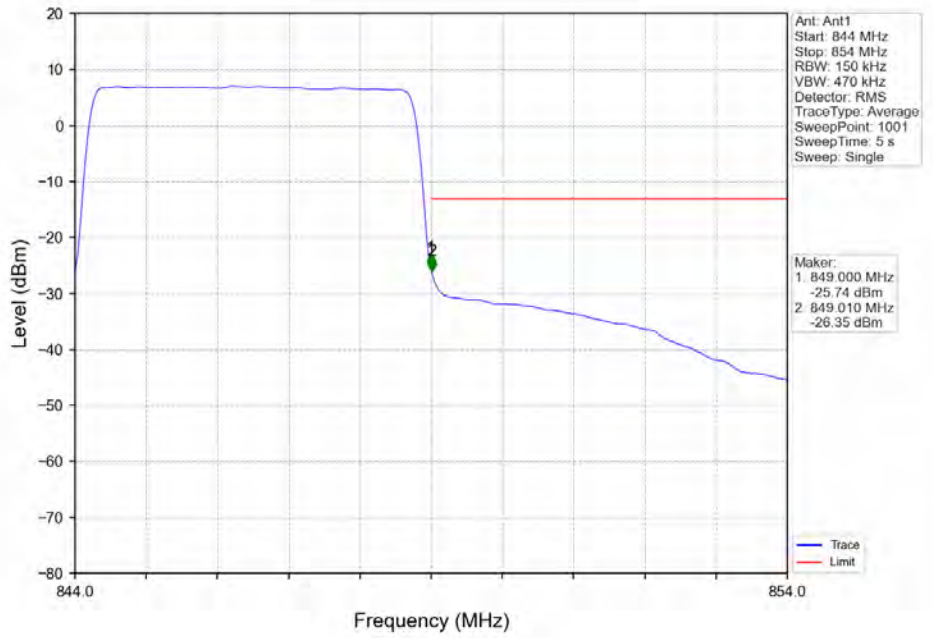
Band5_5MHz_16QAM_HCH_846.5MHz_RB_1_0_NTNV



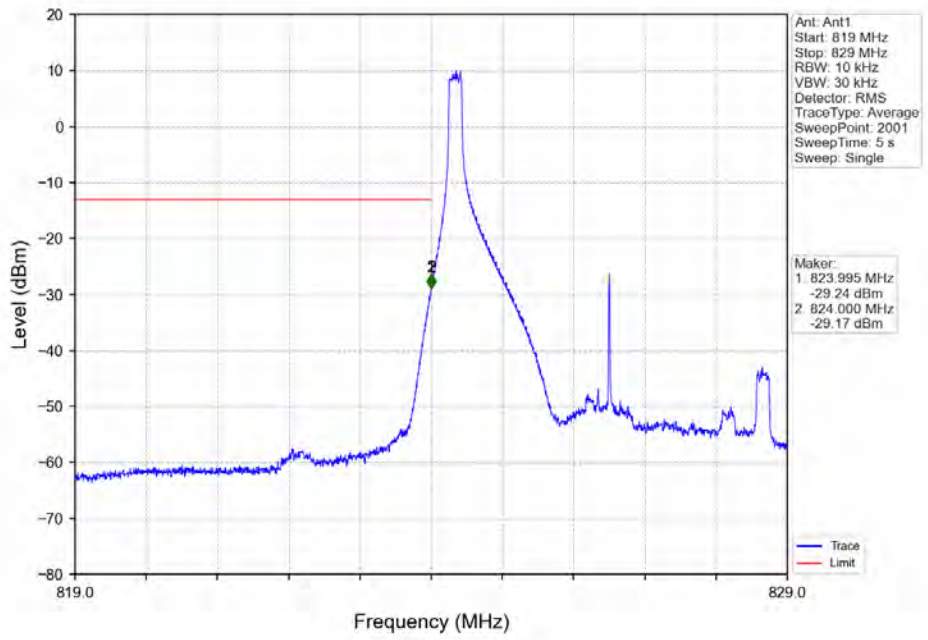
Band5_5MHz_16QAM_HCH_846.5MHz_RB_1_24_NTNV



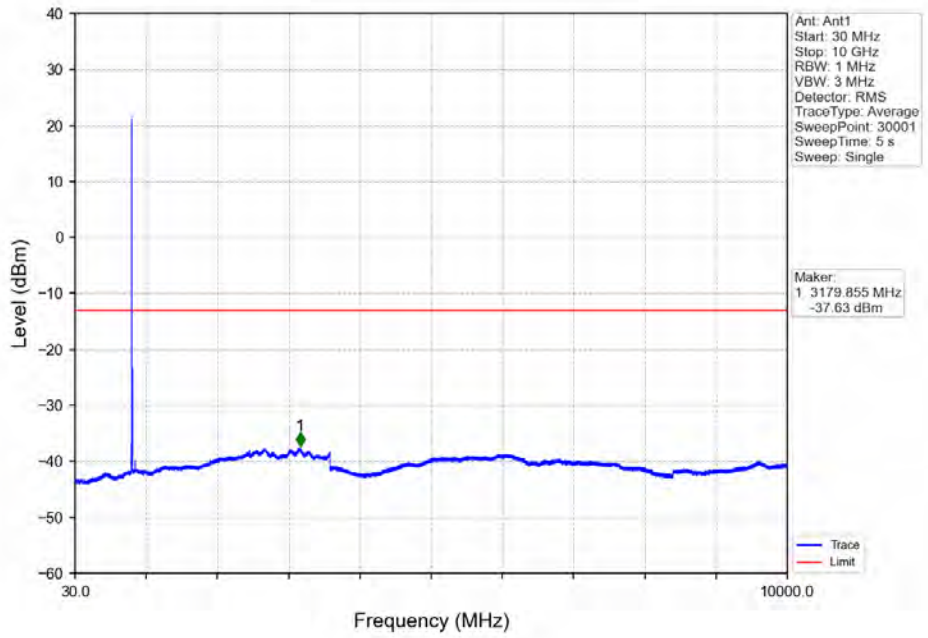
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



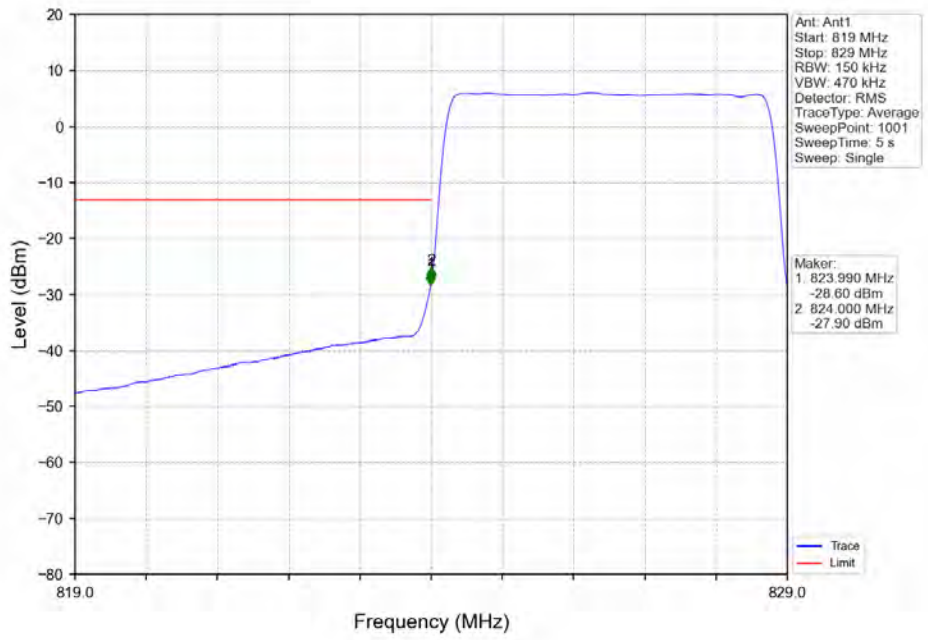
Band5_5MHz_64QAM_LCH_826.5MHz_RB_1_0_NTNV



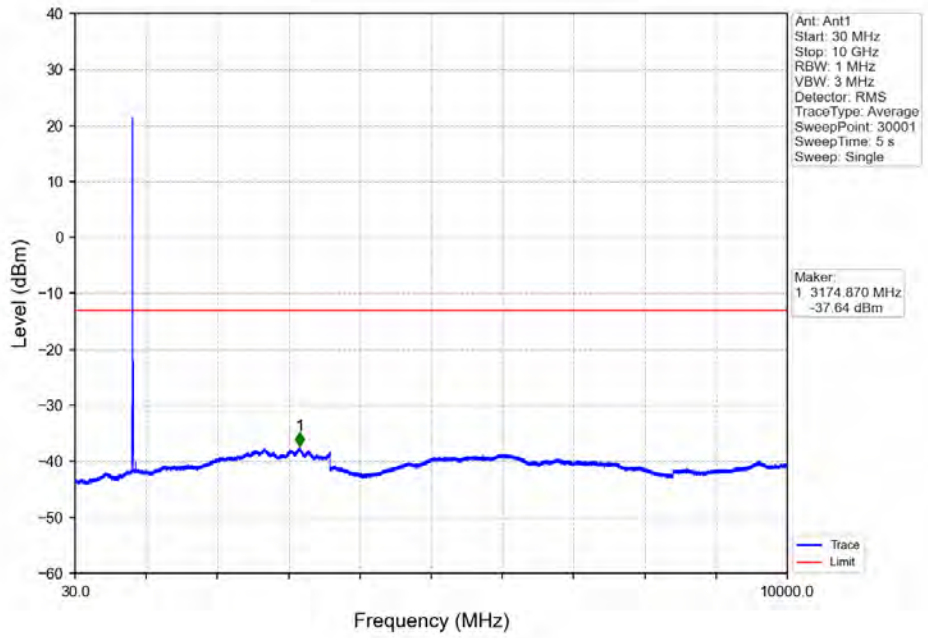
Band5_5MHz_64QAM_LCH_826.5MHz_RB_1_0_NTNV



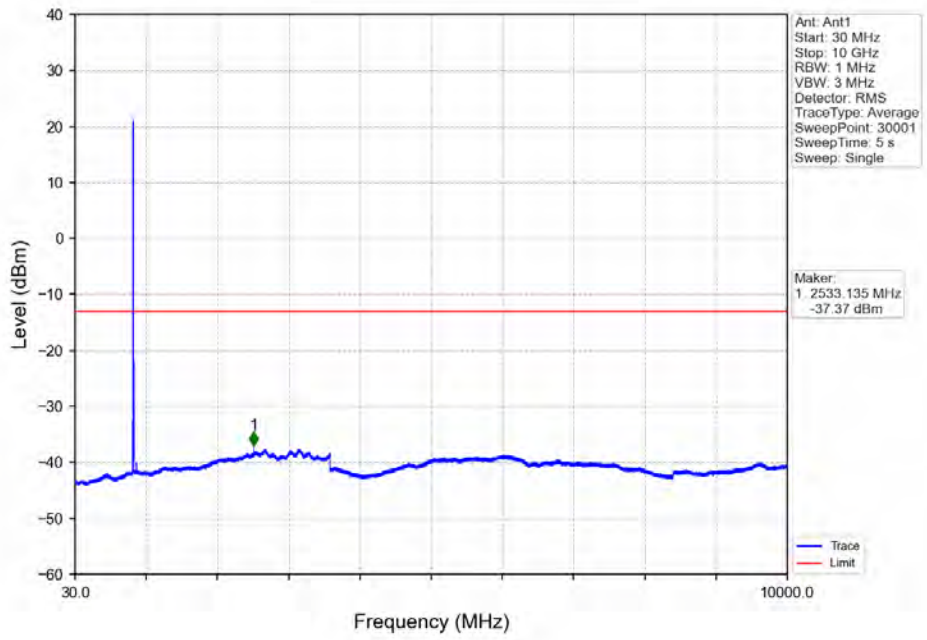
Band5_5MHz_64QAM_LCH_826.5MHz_RB_25_0_NTNV



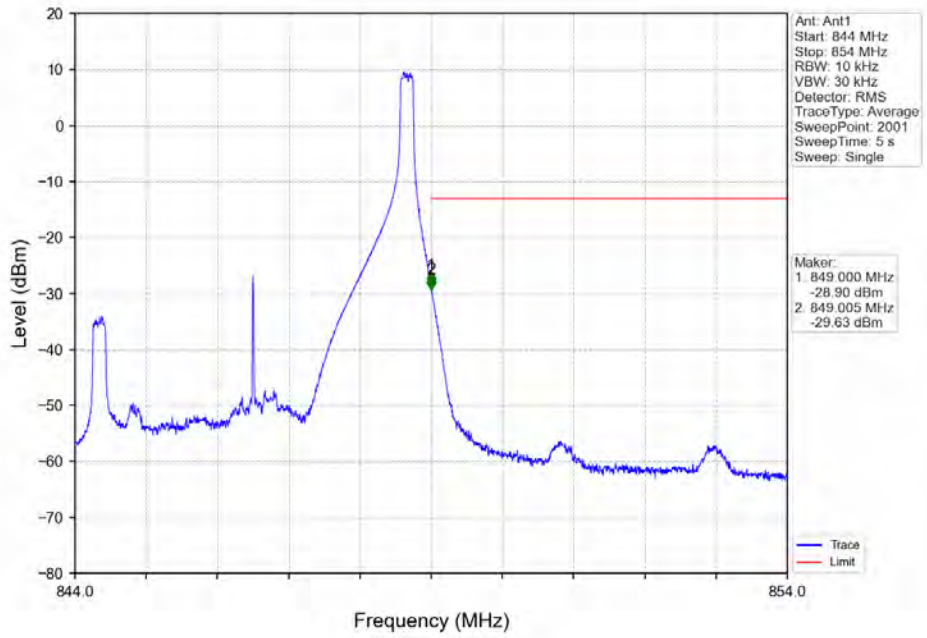
Band5_5MHz_64QAM_MCH_836.5MHz_RB_1_0_NTNV



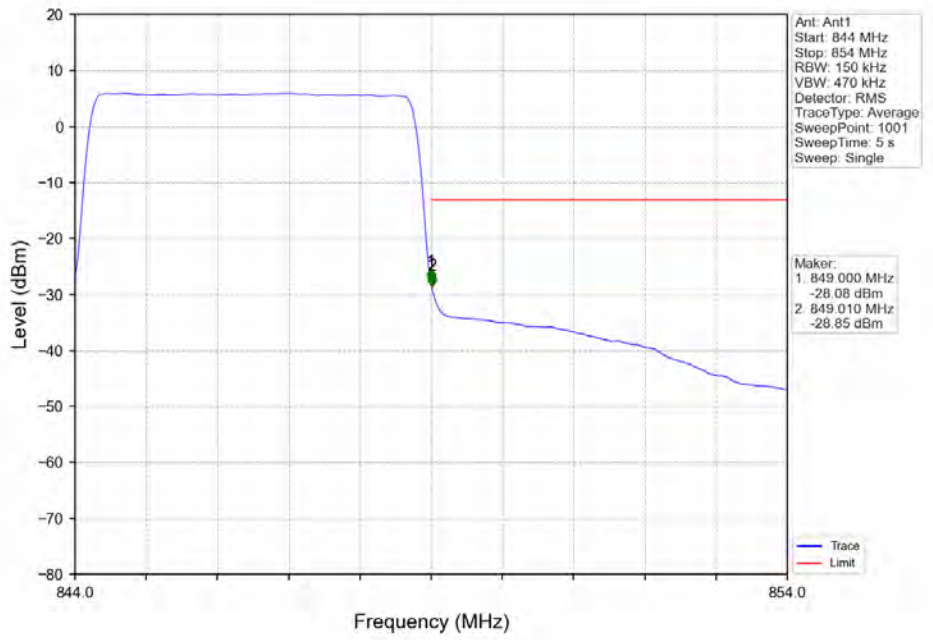
Band5_5MHz_64QAM_HCH_846.5MHz_RB_1_0_NTNV



Band5_5MHz_64QAM_HCH_846.5MHz_RB_1_24_NTNV



Band5_5MHz_64QAM_HCH_846.5MHz_RB_25_0_NTNV



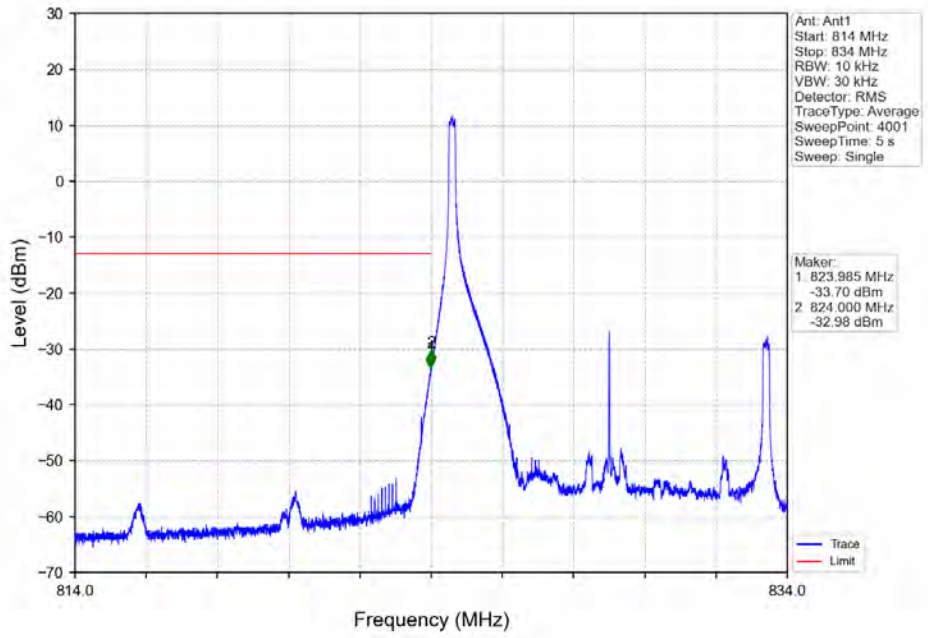
B5_10MHz

Test Result

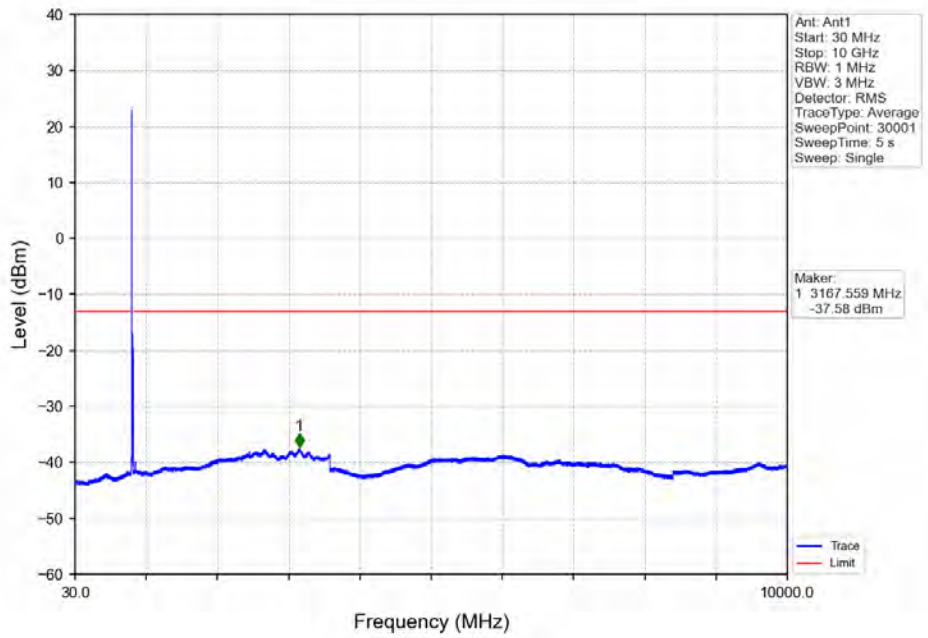
Band: 5 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	829	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	844	1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
16QAM	829	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	844	1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
64QAM	829	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	844	1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

Test Graph

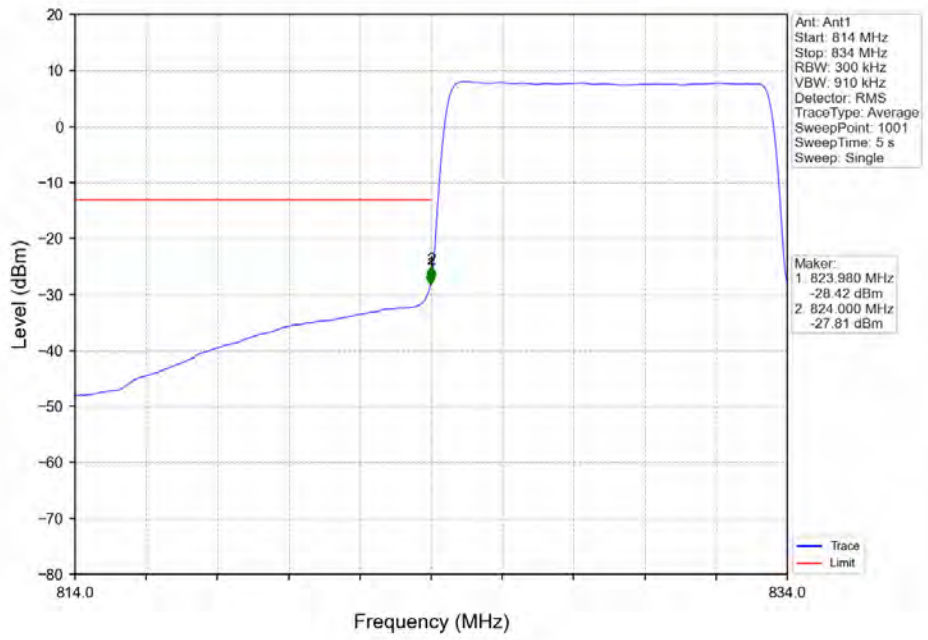
Band5_10MHz_QPSK_LCH_829MHz_RB_1_0_NTNV



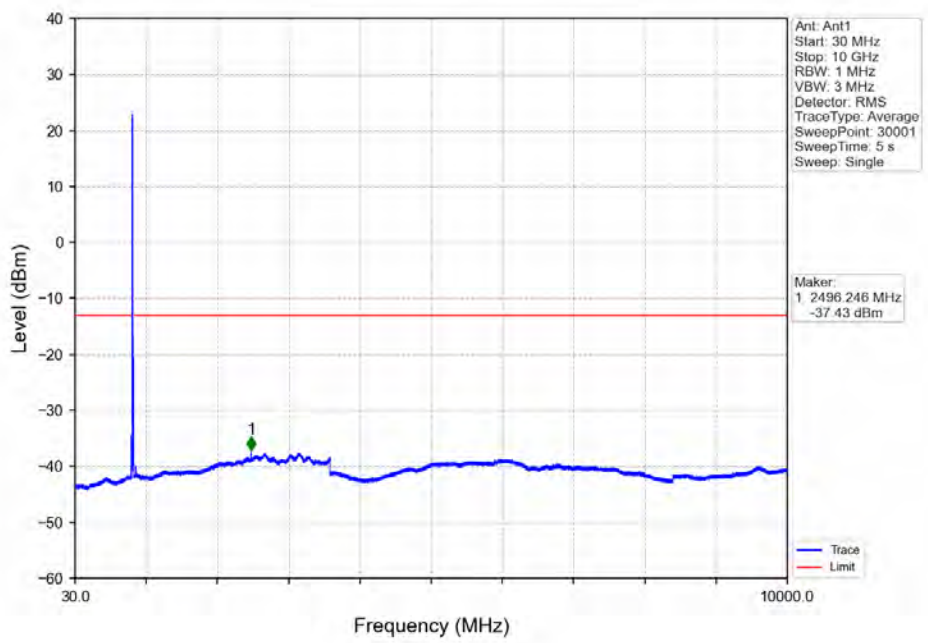
Band5_10MHz_QPSK_LCH_829MHz_RB_1_0_NTNV



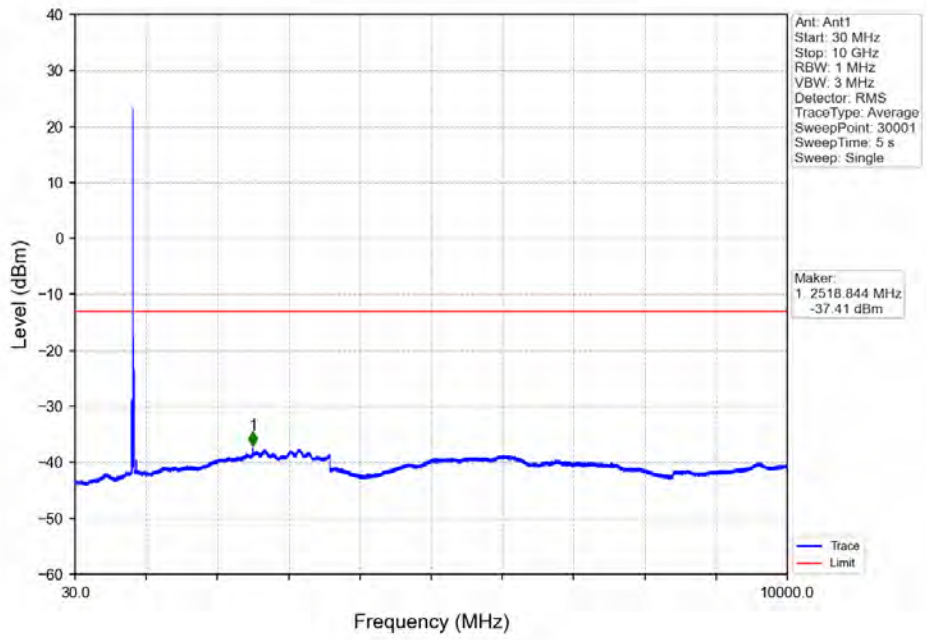
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



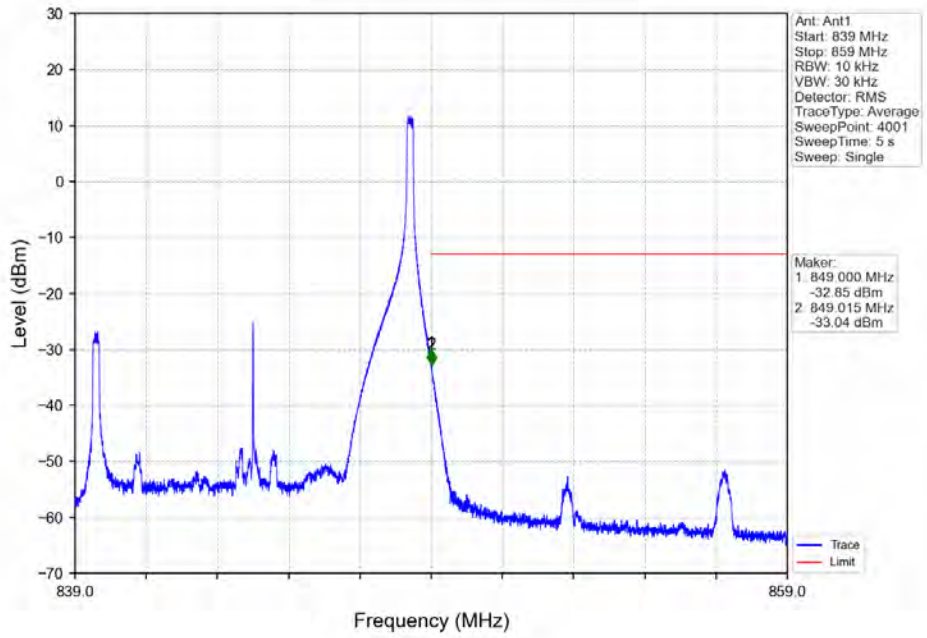
Band5_10MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



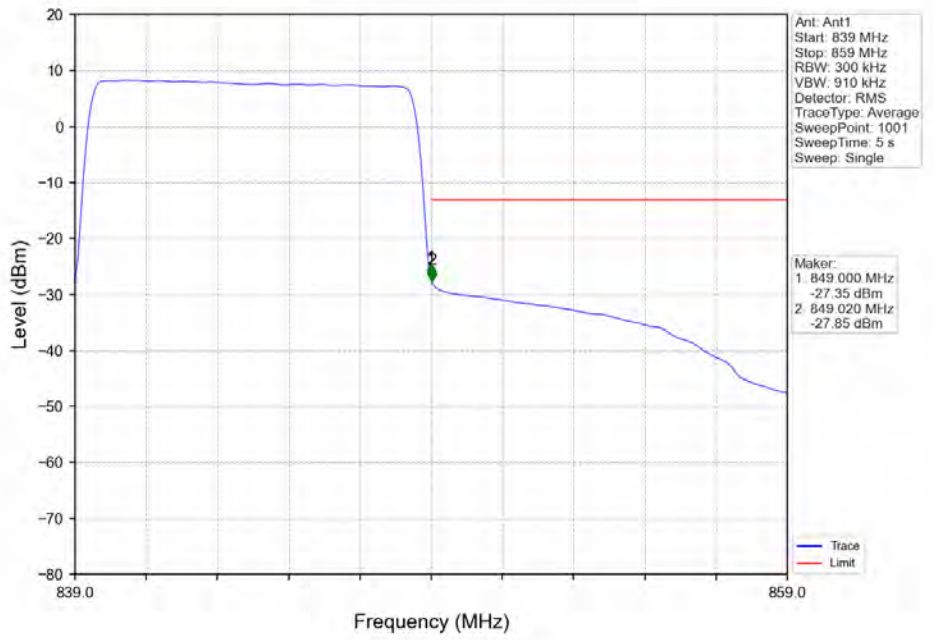
Band5_10MHz_QPSK_HCH_844MHz_RB_1_0_NTNV



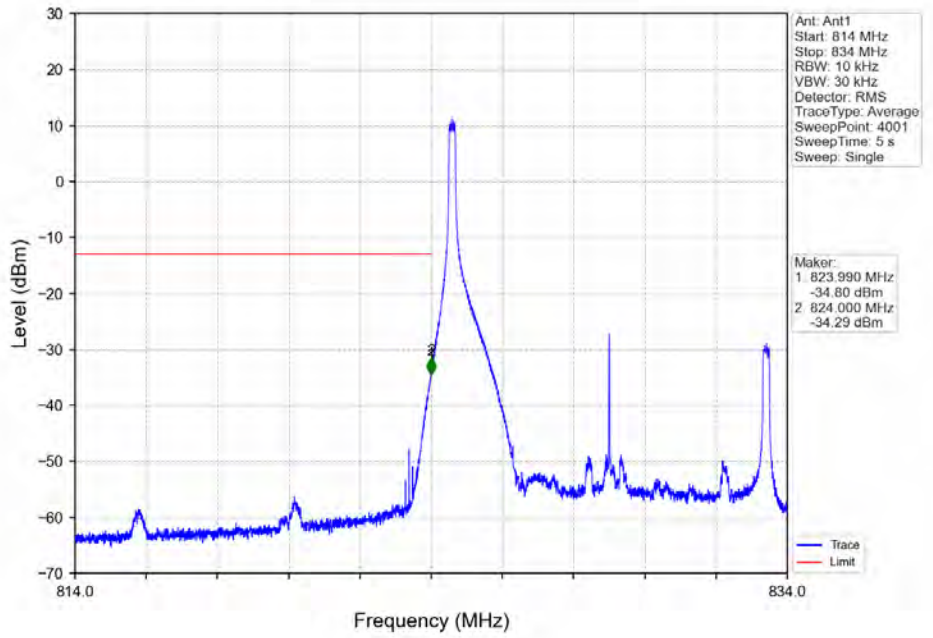
Band5_10MHz_QPSK_HCH_844MHz_RB_1_49_NTNV



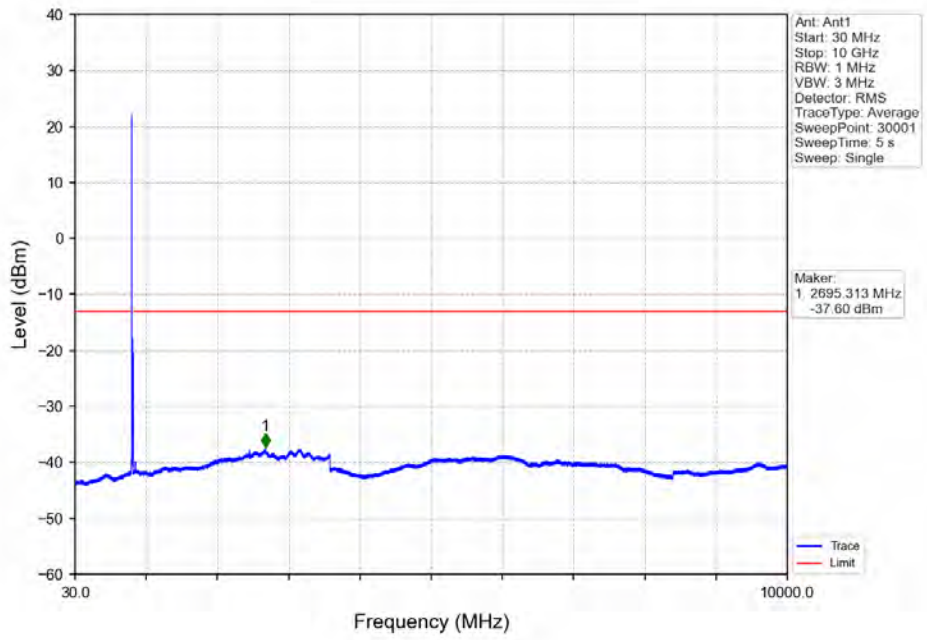
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



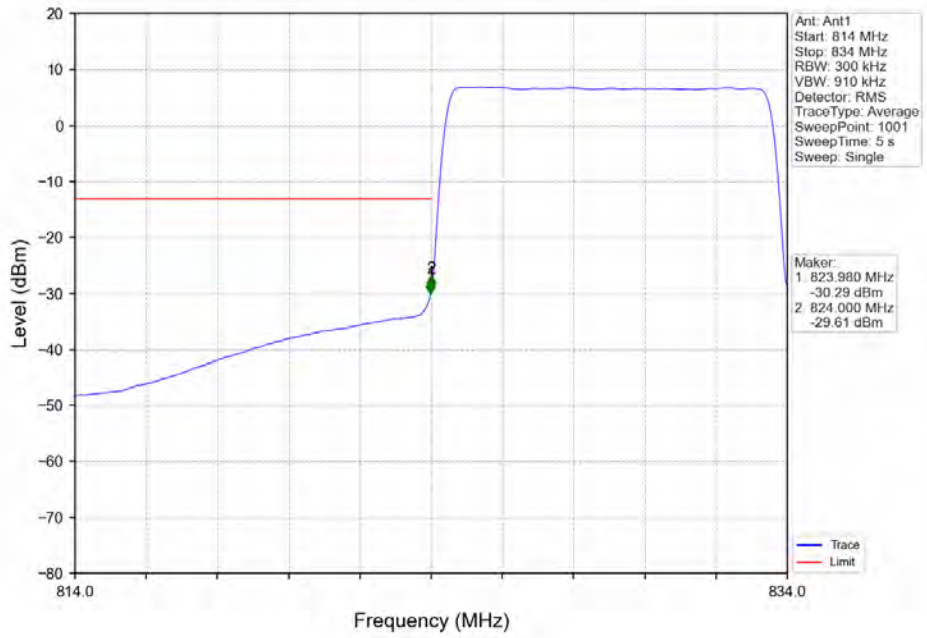
Band5_10MHz_16QAM_LCH_829MHz_RB_1_0_NTNV



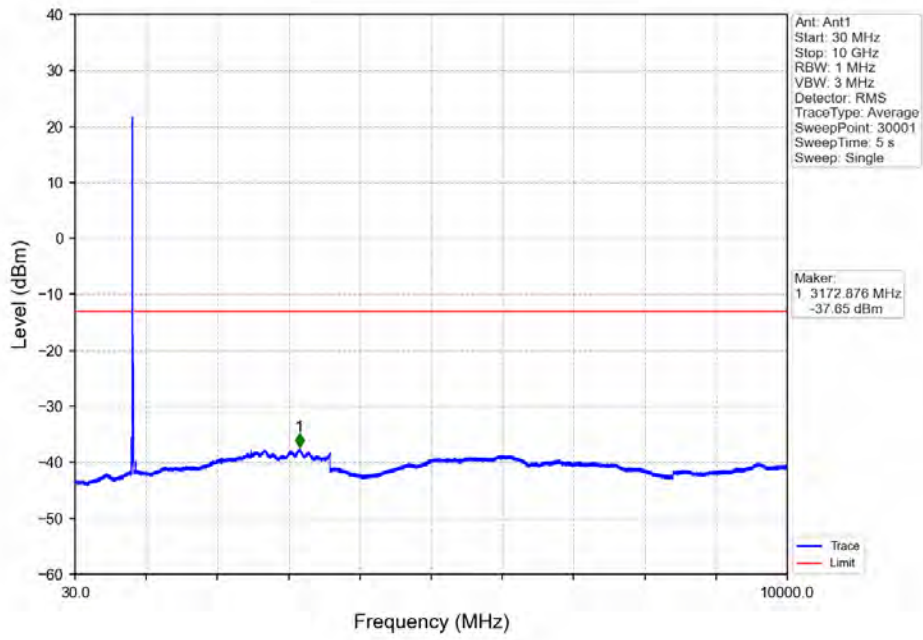
Band5_10MHz_16QAM_LCH_829MHz_RB_1_0_NTNV



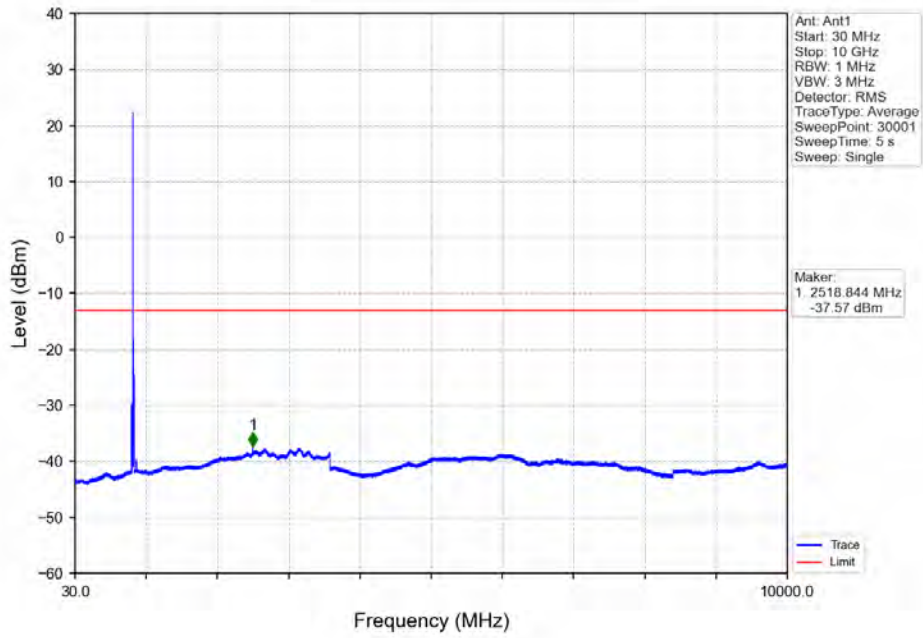
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



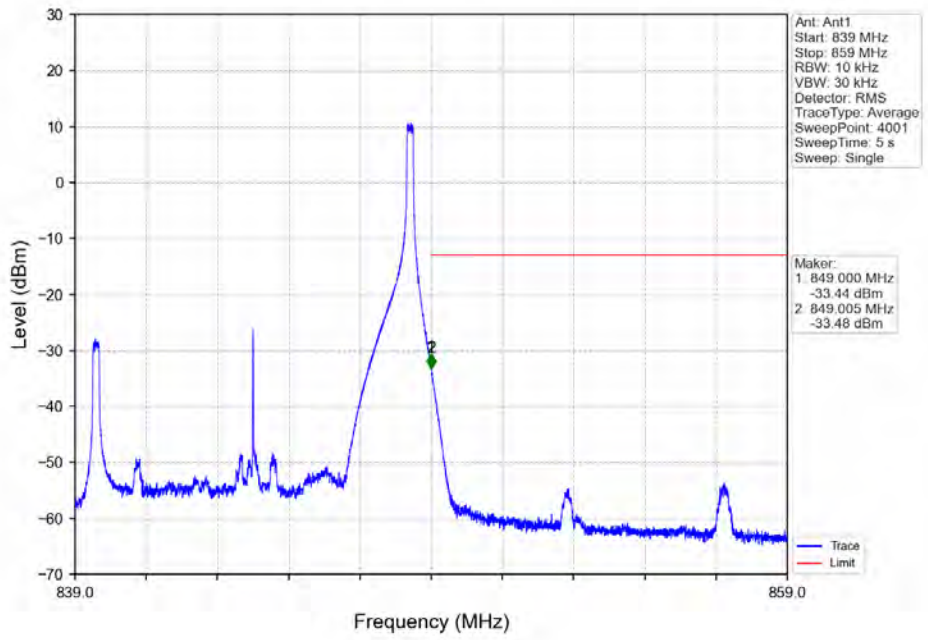
Band5_10MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



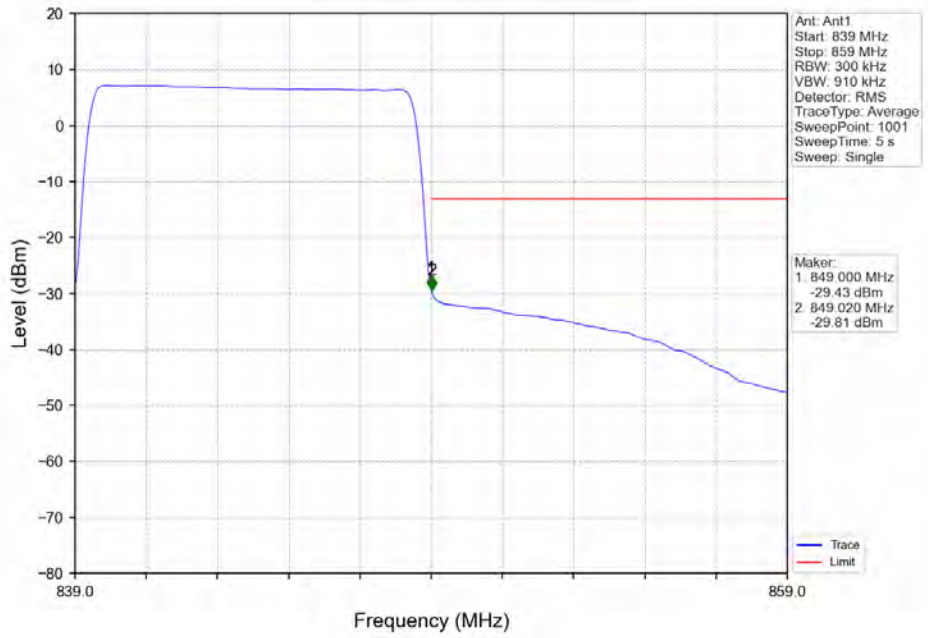
Band5_10MHz_16QAM_HCH_844MHz_RB_1_0_NTNV



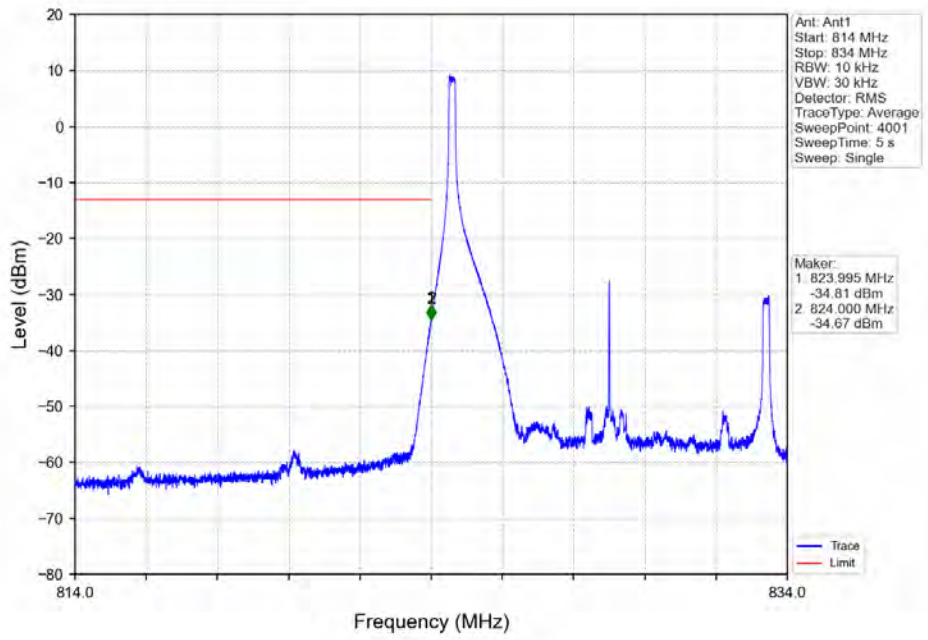
Band5_10MHz_16QAM_HCH_844MHz_RB_1_49_NTNV



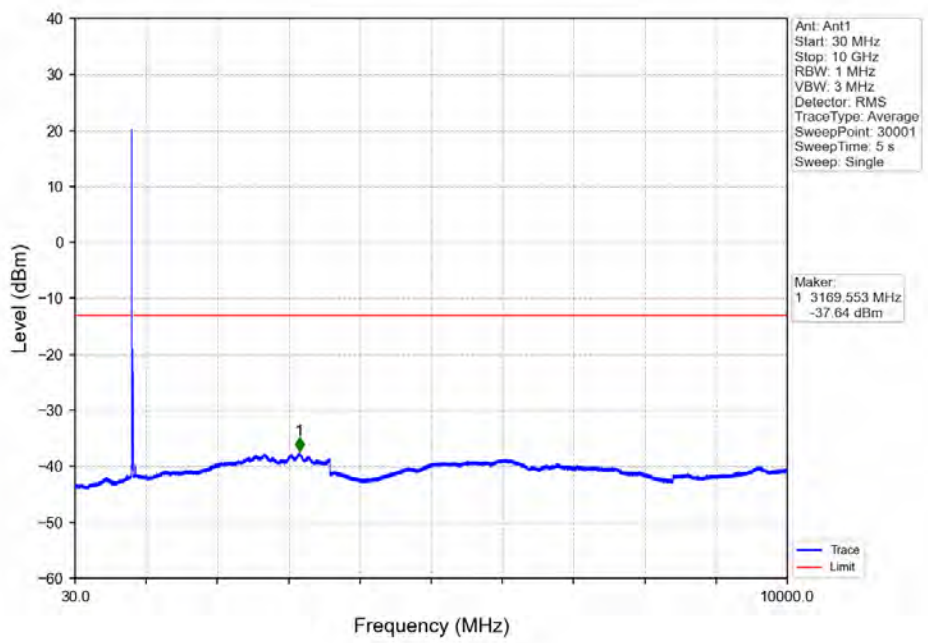
Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



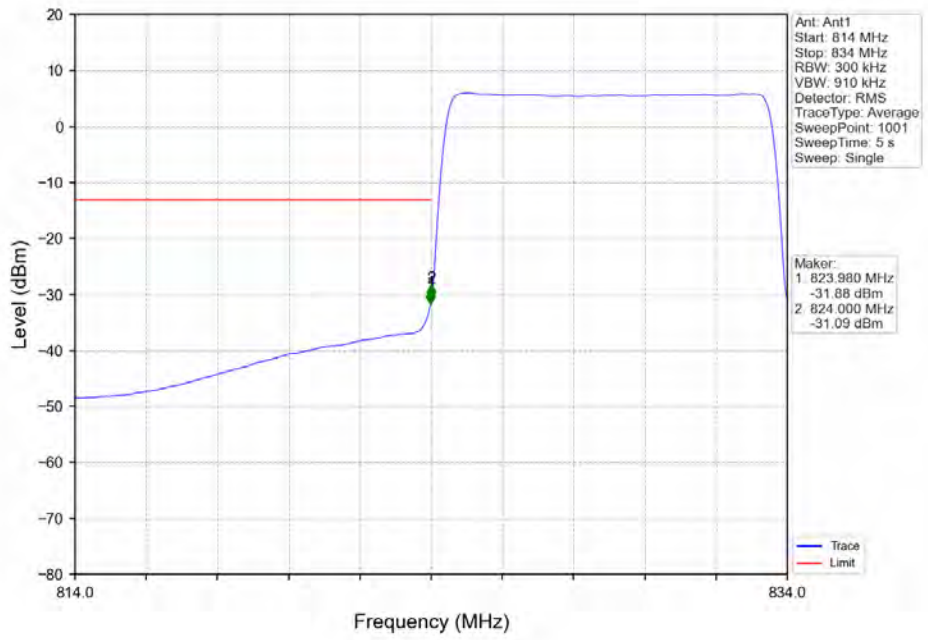
Band5_10MHz_64QAM_LCH_829MHz_RB_1_0_NTNV



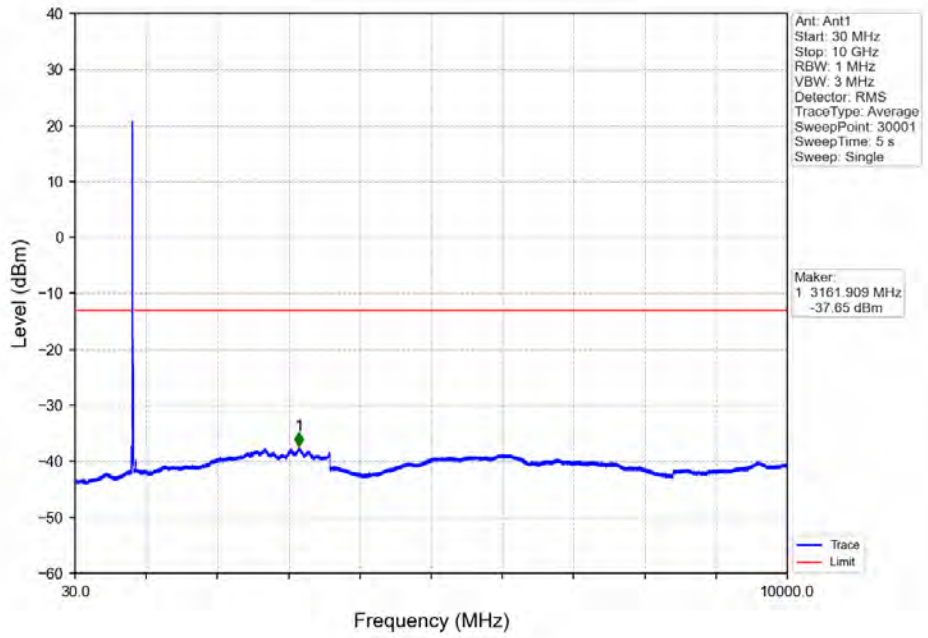
Band5_10MHz_64QAM_LCH_829MHz_RB_1_0_NTNV



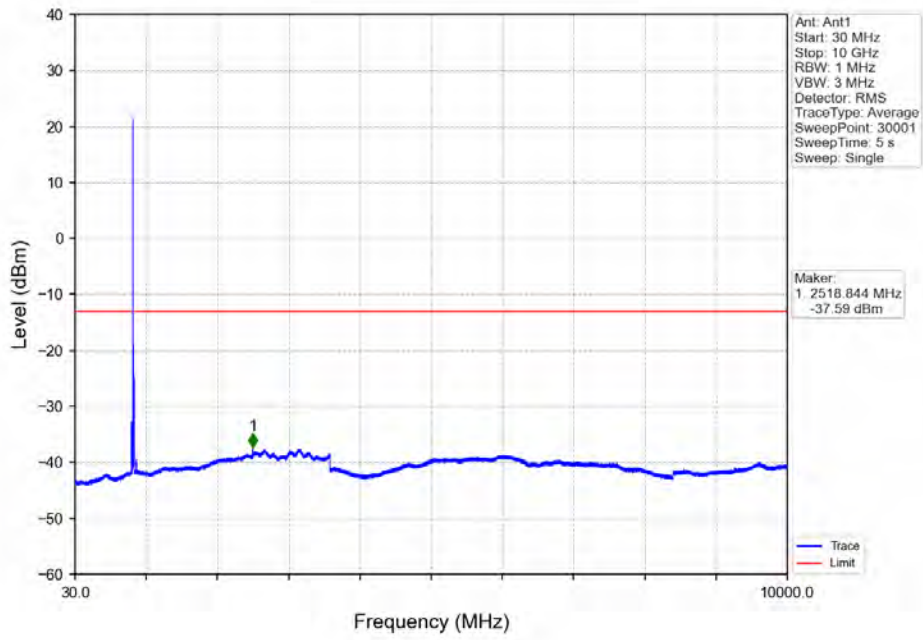
Band5_10MHz_64QAM_LCH_829MHz_RB_50_0_NTNV



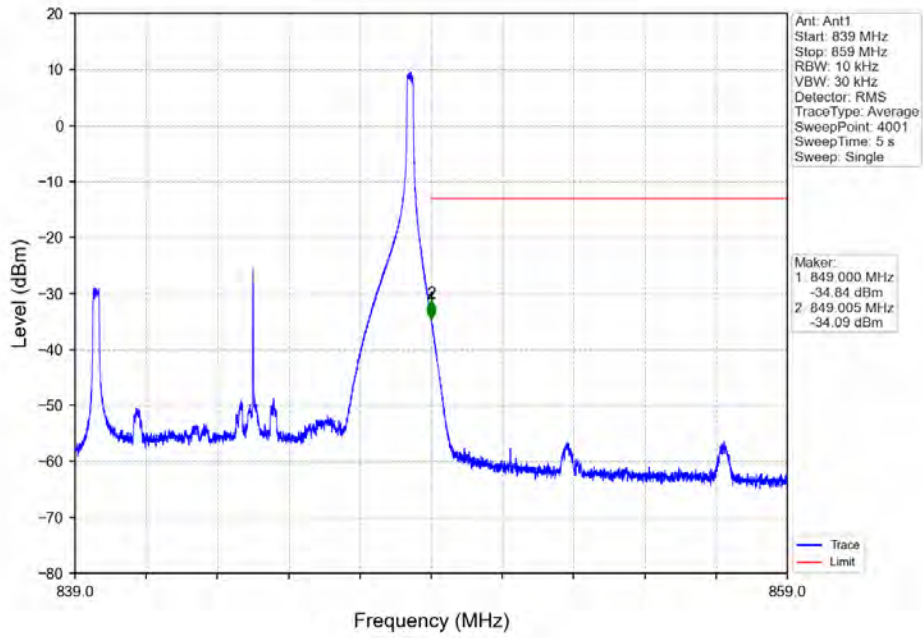
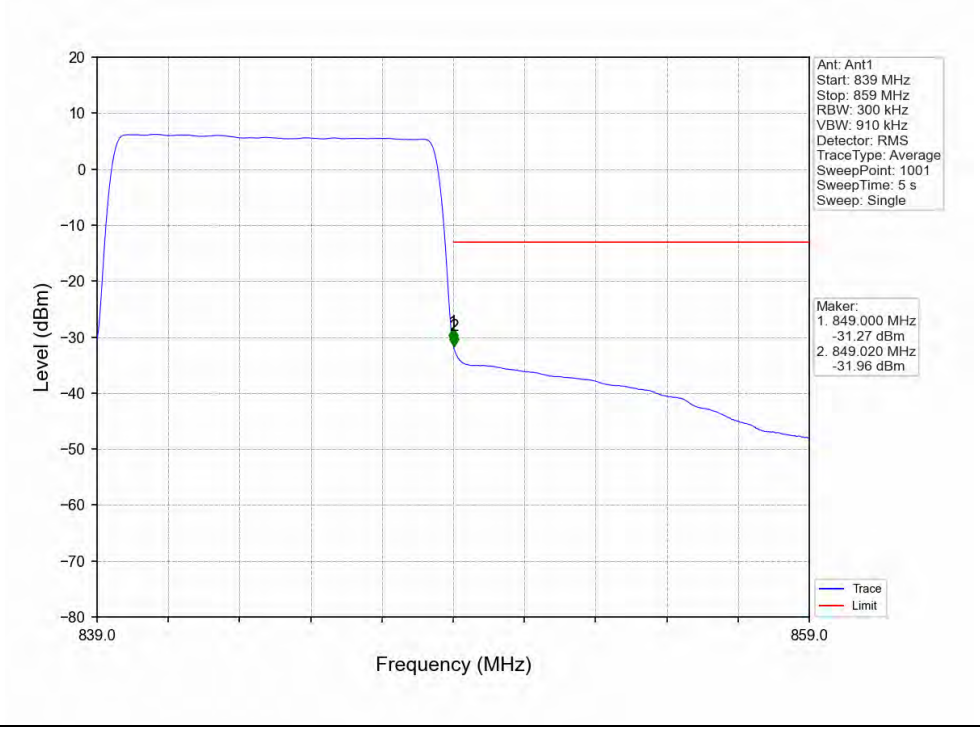
Band5_10MHz_64QAM_MCH_836.5MHz_RB_1_0_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_1_0_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_1_49_NTNV



Band5_10MHz_64QAM_HCH_844MHz_RB_50_0_NTNV