

FCC TEST REPORT

(PART 22)

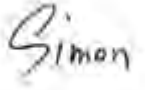
Applicant:	MUNIC
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Manufacturer or Supplier:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France
Product:	telematics embedded system
Brand Name:	MUNIC
Model Name:	C4D-4G4USAA_V8+
FCC ID:	A6GC4D-4G4USV8
Date of tests:	Nov. 15, 2021 ~ Dec. 01, 2021

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
 Date: Dec. 02, 2021	 Date: Dec. 02, 2021

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TABLE OF CONTENTS

1 SUMMARY OF TEST RESULTS.....	5
* REFER TO KDB 971168 D01 POWER MEAS LICENSE DIGITAL SYSTEMS V03R01.....	5
1.1 MEASUREMENT UNCERTAINTY	5
1.2 TEST SITE AND INSTRUMENTS	6
2 GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 CONFIGURATION OF SYSTEM UNDER TEST	9
2.3 DESCRIPTION OF SUPPORT UNITS	10
2.4 TEST ITEM AND TEST CONFIGURATION.....	10
2.5 EUT OPERATING CONDITIONS.....	13
2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS	14
3 TEST TYPES AND RESULTS.....	15
3.1 OUTPUT POWER MEASUREMENT	15
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	15
3.1.2 TEST PROCEDURES	15
3.1.3 TEST SETUP	16
3.1.4 TEST RESULTS	16
3.2 FREQUENCY STABILITY MEASUREMENT	21
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	21
3.2.2 TEST PROCEDURE	21
3.2.3 TEST SETUP	21
3.2.4 TEST RESULTS	22
3.3 OCCUPIED BANDWIDTH MEASUREMENT	23
3.3.1 TEST PROCEDURES	23
3.3.2 TEST SETUP	23
3.3.3 TEST RESULTS	24
3.4 BAND EDGE MEASUREMENT	25
3.4.1 LIMITS OF BAND EDGE MEASUREMENT	25
3.4.2 TEST SETUP	25
3.4.3 TEST PROCEDURES	26
3.4.4 TEST RESULTS	27
3.5 CONDUCTED SPURIOUS EMISSIONS.....	28
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	28
3.5.2 TEST PROCEDURE	28
3.5.3 TEST SETUP	28
3.5.4 TEST RESULTS	29
3.6 RADIATED EMISSION MEASUREMENT.....	30
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	30
3.6.2 TEST PROCEDURES	30
3.6.3 DEVIATION FROM TEST STANDARD	30
3.6.4 TEST SETUP	31



3.6.5	TEST RESULTS	32
3.7	PEAK TO AVERAGE RATIO	46
3.7.1	LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT	46
3.7.2	TEST SETUP	46
3.7.3	TEST PROCEDURES	46
3.7.4	TEST RESULTS	47
4	PHOTOGRAPHS OF THE TEST CONFIGURATION	48
5	INFORMATION ON THE TESTING LABORATORIES	49
6	MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	50
	APPENDIX A:	50
	FREQUENCY STABILITY	50
	LTE BAND5	50
	TEST RESULT	50
	99% BANDWIDTH	55
	LTE BAND5_OBW	55
	TEST RESULT	55
	TEST GRAPH	56
	26DB BANDWIDTH	68
	LTE BAND5_26DB BW	68
	TEST RESULT	68
	TEST GRAPH	69
	PEAK-AVERAGE RATIO	81
	LTE BAND5_1.4MHZ	81
	TEST RESULT	81
	TEST GRAPH	82
	LTE BAND5_3MHZ	85
	TEST RESULT	85
	TEST GRAPH	86
	LTE BAND5_5MHZ	89
	TEST RESULT	89
	TEST GRAPH	90
	LTE BAND5_10MHZ	93
	TEST RESULT	93
	TEST GRAPH	94
	SPURIOUS EMISSION(BANDEDGE AND CONDUCTED EMISSION)	97
	LTE BAND5_1.4MHZ	97
	TEST RESULT	97
	TEST GRAPH	98
	LTE BAND5_3MHZ	105
	TEST RESULT	105
	TEST GRAPH	106
	LTE BAND5_5MHZ	113
	TEST RESULT	113
	TEST GRAPH	114
	LTE BAND5_10MHZ	121
	TEST RESULT	121
	TEST GRAPH	122



Test Report No.: W7L-P21090018RF04

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21090018RF04	Original release	Dec. 02, 2021

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 22.913 (a)	Effective Radiated Power	Compliance
2.1055 22.355	Frequency Stability	Compliance
2.1049 22.917 (b)	Occupied Bandwidth	Compliance
22.913 (d)	Peak to average ratio*	Compliance
22.917	Band Edge Measurements	Compliance
2.1051 22.917	Conducted Spurious Emissions	Compliance
2.1053 22.917	Radiated Spurious Emissions	Compliance

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

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
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Aug. 19,21	Aug. 18,22
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Apr. 02,21	Apr. 01,22
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
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
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
Power Meter	Anritsu	ML2495A	1506002	Apr. 07,21	Apr. 06,22
Power Sensor	Anritsu	MA2411B	1339352	May. 07,21	May. 06,22
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 05,21	Mar. 04,22
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 36months 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	telematics embedded system	
BRAND NAME	MUNIC	
MODEL NAME	C4D-4G4USAA_V8+	
NOMINAL VOLTAGE	DC13.7V	
MODULATION TYPE	LTE	QPSK, 16QAM
FREQUENCY RANGE	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	LTE Band 5 (Channel Bandwidth: 1.4MHz)	538.27mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	538.27mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	538.27mW
	LTE Band 5 (Channel Bandwidth: 10MHz)	540.75mW
EMISSION DESIGNATOR GOGN	LTE Band 5 (Channel Bandwidth: 1.4MHz)	QPSK: 1M12G7D
		16QAM: 1M12W7D
	LTE Band 5 (Channel Bandwidth: 3MHz)	QPSK: 2M75G7D
		16QAM: 2M76W7D
	LTE Band 5 (Channel Bandwidth: 5MHz)	QPSK: 4M56G7D
		16QAM: 4M57W7D
	LTE Band 5 (Channel Bandwidth: 10MHz)	QPSK: 9M06G7D
		16QAM: 9M06W7D
ANTENNA TYPE	Fixed Internal Antenna with 5.54dBi gain for LTE B5	
HW VERSION	HW.01	
SW VERSION	SW.01	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-50-20 °C	
EXTREME VOLTAGE	DC8V – DC18V	

**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.

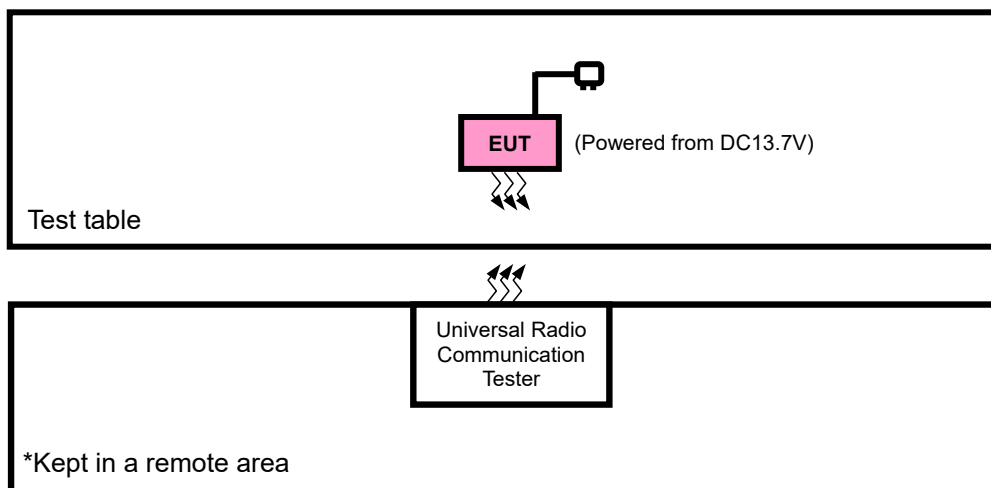
MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. C4D-4G4USAA_V8+ have ESIM and SIM two modes, respectively corresponding to MFF2 SIM and 4FF SIM detail describe in PED , pre-scan two models. worst case mode MFF2 SIM is reflected in this report

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery 1	Howell	Li-polymer 552535H	Capacity : Li-ion, 450mAh
Battery 2	Akkutronics	382530-PTL	Capacity : Li-ion, 450mAh

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 GSM /EDGE /LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC source with LTE link



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	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
FREQUENCY STABILITY	20407 to 20643	20407, 20643	1.4MHz	QPSK	1 RB / 0 RB Offset
	20415 to 20635	20415, 20635	3MHz	QPSK	1 RB / 0 RB Offset
	20425 to 20625	20425, 20625	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20450, 20600	10MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
BAND EDGE	20407 to 20643	20407	1.4 MHz	QPSK,16QAM	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
	20407 to 20643	20643	1.4 MHz	QPSK,16QAM	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	20415 to 20635	20415	3 MHz	QPSK,16QAM	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
	20415 to 20635	20635	3 MHz	QPSK,16QAM	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	20425 to 20625	20425	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
	20425 to 20625	20625	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20450 to 20600	20450	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
	20450 to 20600	20600	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
					50 RB / 0 RB Offset

CONDCUDED EMISSION	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	20407 to 20643	20525	1.4MHz	QPSK	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK	1 RB / 0 RB Offset
	20425 to 20625	20525	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	1 RB / 0 RB Offset
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	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 13.7V	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 13.7V	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 13.7V	James Fu
BAND EDGE	23deg. C, 70%RH	DC 13.7V	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 13.7V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 13.7V	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 13.7V	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



Test Report No.: W7L-P21090018RF04

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 determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

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)

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	23.21	23.37	23.66	0
		1	2	23.49	23.54	23.92	0
		1	5	23.28	23.34	23.71	0
		3	0	23.13	23.24	23.58	0
		3	1	23.15	23.35	23.53	0
		3	3	23.17	23.27	23.61	0
		6	0	22.24	22.37	22.66	1
	16QAM	1	0	22.24	22.38	22.71	1
		1	2	22.25	22.39	22.70	1
		1	5	22.44	22.49	22.90	1
		3	0	22.17	22.32	22.58	1
		3	1	22.12	22.37	22.57	1
		3	3	22.30	22.45	22.80	1
		6	0	21.14	21.31	21.58	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20415	Mid CH 20525	High CH 20635	MPR
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz	
5/ 3	QPSK	1	0	23.23	23.39	23.65	0
		1	7	23.45	23.55	23.92	0
		1	14	23.24	23.34	23.71	0
		8	0	22.12	22.27	22.58	1
		8	3	22.08	22.35	22.55	1
		8	7	22.14	22.34	22.65	1
		15	0	22.21	22.38	22.60	1
	16QAM	1	0	22.21	22.44	22.74	1
		1	7	22.22	22.42	22.68	1
		1	14	22.47	22.49	22.90	1
		8	0	21.13	21.33	21.58	2
		8	3	21.17	21.32	21.60	2
		8	7	21.32	21.43	21.76	2
		15	0	21.14	21.25	21.61	2

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	23.24	23.34	23.66	0
		1	12	23.50	23.52	23.92	0
		1	24	23.25	23.33	23.75	0
		12	0	22.15	22.27	22.55	1
		12	6	22.08	22.36	22.56	1
		12	13	22.18	22.30	22.66	1
		25	0	22.19	22.41	22.63	1
	16QAM	1	0	22.22	22.40	22.74	1
		1	12	22.19	22.45	22.67	1
		1	24	22.47	22.49	22.89	1
		12	0	21.13	21.31	21.55	2
		12	6	21.14	21.36	21.56	2
		12	13	21.27	21.45	21.79	2
		25	0	21.14	21.26	21.58	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20450	Mid CH 20525	High CH 20600	MPR
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz	
5/ 10	QPSK	1	0	23.29	23.41	23.71	0
		1	24	23.52	23.60	23.94	0
		1	49	23.30	23.41	23.76	0
		25	0	22.19	22.32	22.60	1
		25	12	22.16	22.37	22.61	1
		25	25	22.22	22.35	22.67	1
		50	0	22.25	22.43	22.68	1
	16QAM	1	0	22.29	22.45	22.76	1
		1	24	22.27	22.47	22.72	1
		1	49	22.49	22.57	22.91	1
		25	0	21.21	21.37	21.63	2
		25	12	21.20	21.38	21.62	2
		25	25	21.34	21.50	21.81	2
		50	0	21.20	21.33	21.63	2

ERP POWER (dBm)

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	23.49	5.54	26.88	487.53	7
20525	836.5	23.54	5.54	26.93	493.17	7
20643	848.3	23.92	5.54	27.31	538.27	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	22.44	5.54	25.83	382.82	7
20525	836.5	22.49	5.54	25.88	387.26	7
20643	848.3	22.9	5.54	26.29	425.6	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	23.45	5.54	26.84	483.06	7
20525	836.5	23.55	5.54	26.94	494.31	7
20635	847.5	23.92	5.54	27.31	538.27	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	22.47	5.54	25.86	385.48	7
20525	836.5	22.49	5.54	25.88	387.26	7
20635	847.5	22.9	5.54	26.29	425.60	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	23.5	5.54	26.89	488.65	7
20525	836.5	23.52	5.54	26.91	490.91	7
20625	846.5	23.92	5.54	27.31	538.27	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	22.47	5.54	25.86	385.48	7
20525	836.5	22.49	5.54	25.88	387.26	7
20625	846.5	22.89	5.54	26.28	424.62	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	23.52	5.54	26.91	490.91	7
20525	836.5	23.6	5.54	26.99	500.03	7
20600	844.0	23.94	5.54	27.33	540.75	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	22.49	5.54	25.88	387.26	7
20525	836.5	22.57	5.54	25.96	394.46	7
20600	844.0	22.91	5.54	26.3	426.58	7

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

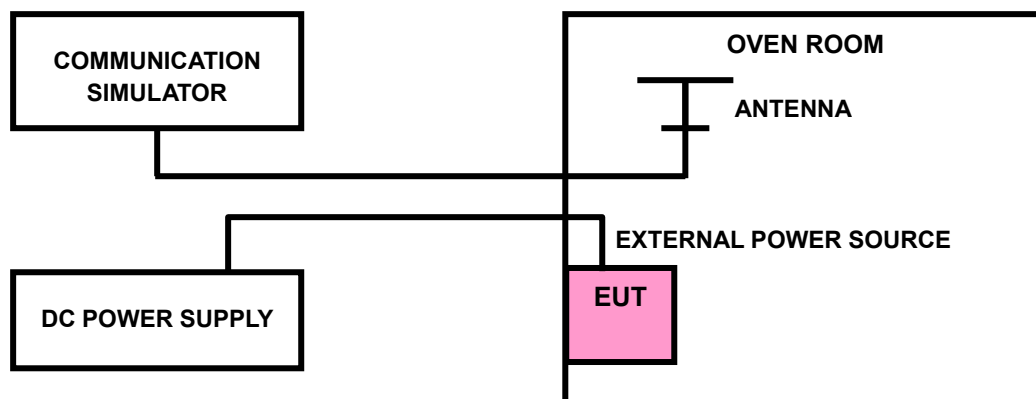
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

3.2.2 TEST PROCEDURE

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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





Test Report No.: W7L-P21090018RF04

3.2.4 TEST RESULTS

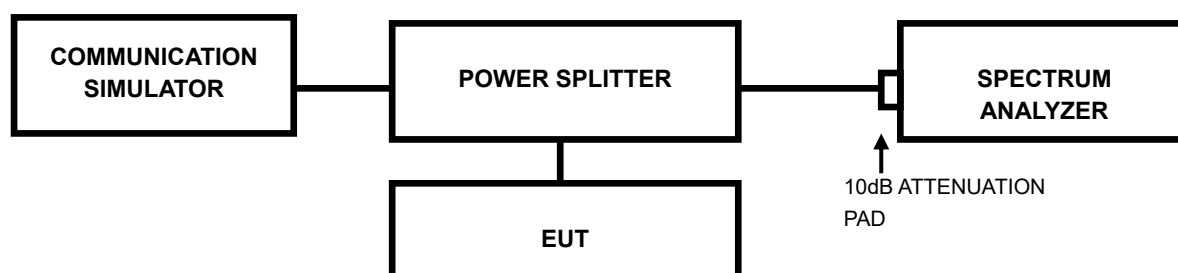
Please Refer to Appendix A Of this test report.

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





Test Report No.: W7L-P21090018RF04

3.3.3 TEST RESULTS

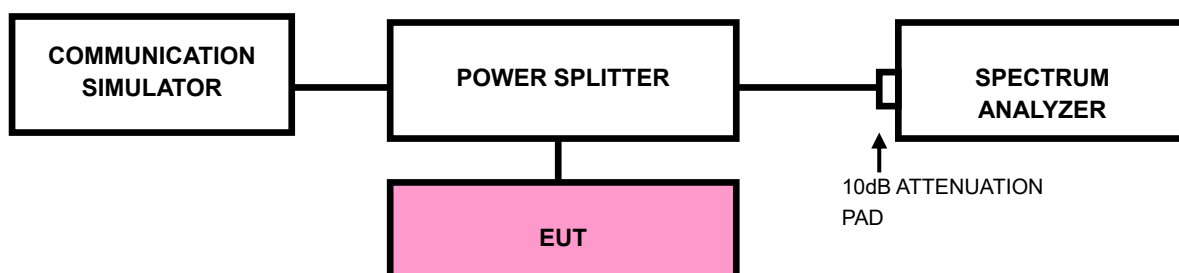
Please Refer to Appendix A Of this test report.

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 1.5MHz.
RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GSM/GPRS/EDGE).
- 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 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz.
RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)
- f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz.
RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)
- g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz.
RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- h. Record the max trace plot into the test report.



Test Report No.: W7L-P21090018RF04

3.4.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

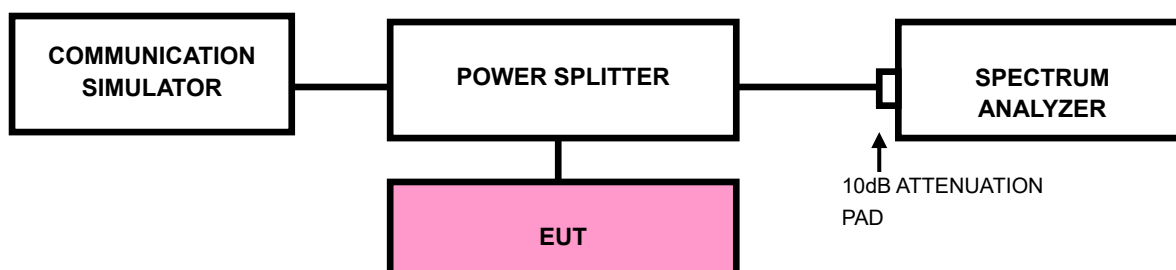
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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.
- b. Measuring frequency range is from 9 kHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP





Test Report No.: W7L-P21090018RF04

3.5.4 TEST RESULTS

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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,
 $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

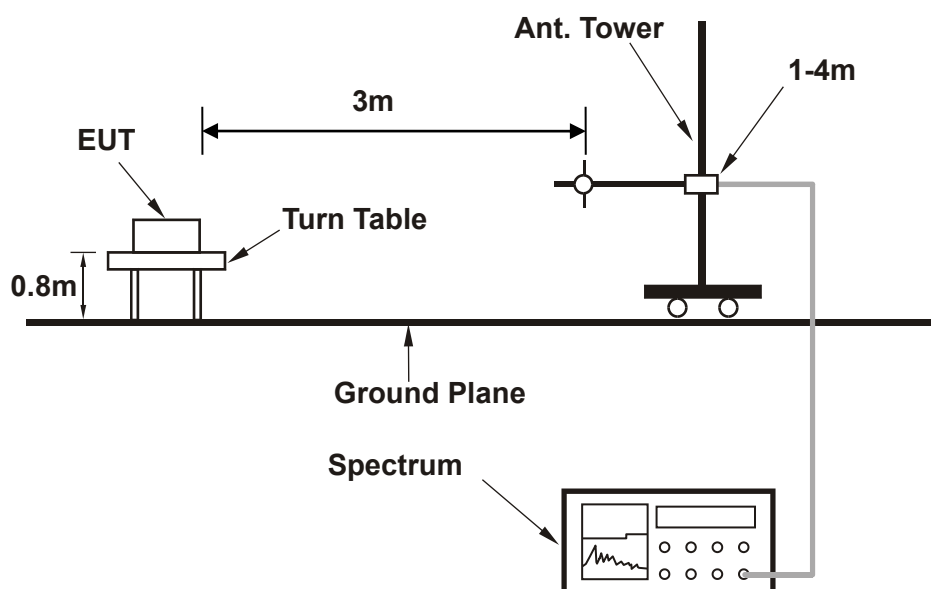
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

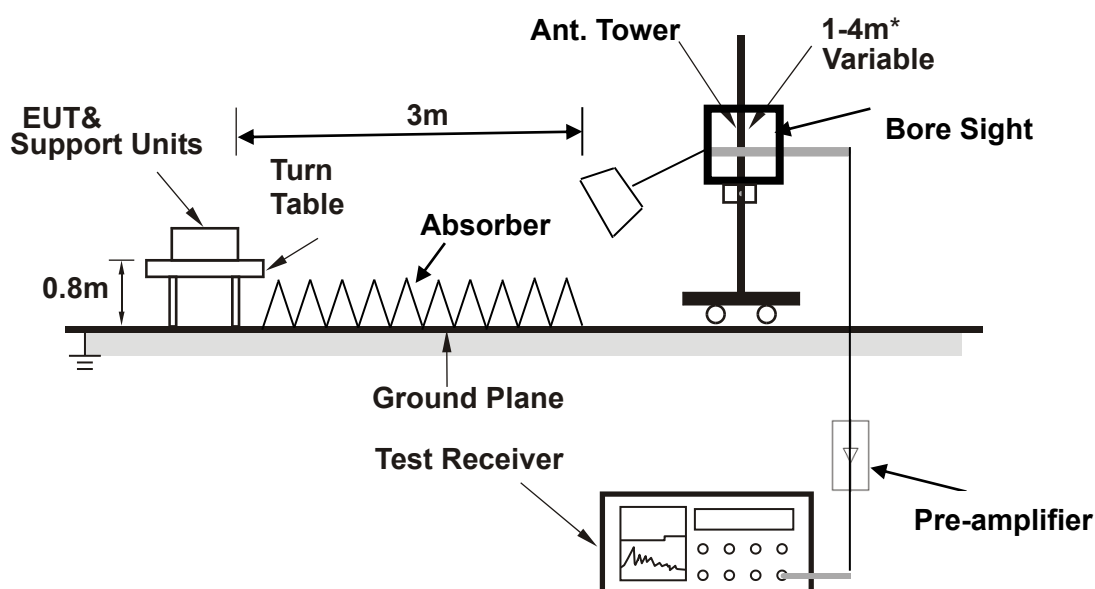
No deviation

3.6.4 TEST SETUP

< Frequency Range 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

BELOW 1GHz WORST-CASE DATA

Note: The emission in the range of 9KHz-30MHz was tested 20dB below the limit, the data not recorded in the sheet.

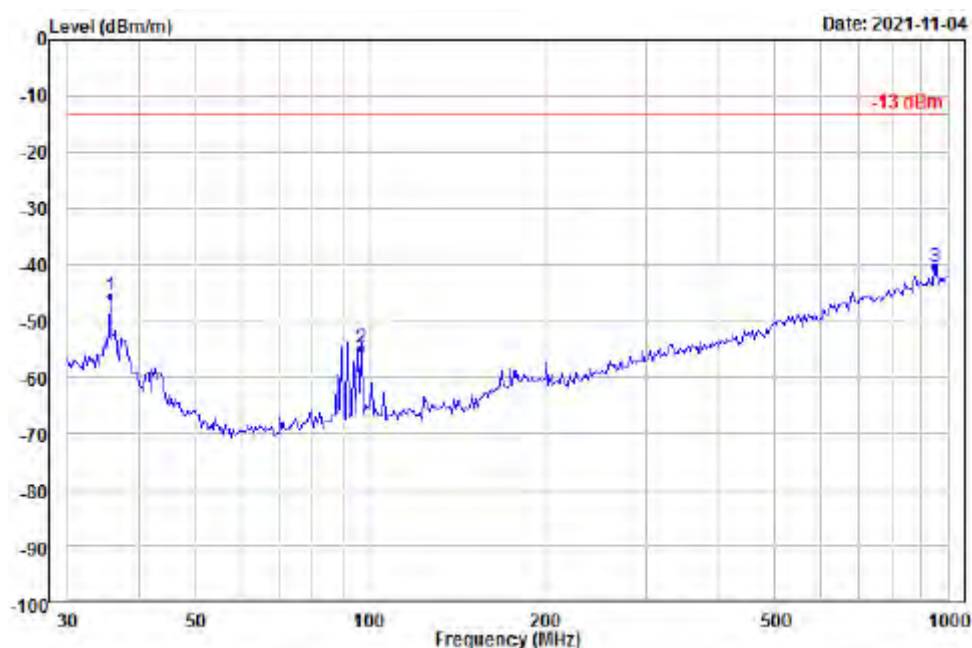
30MHz – 1GHz data:

LTE Band 5

CHANNEL BANDWIDTH: 10MHz / QPSK

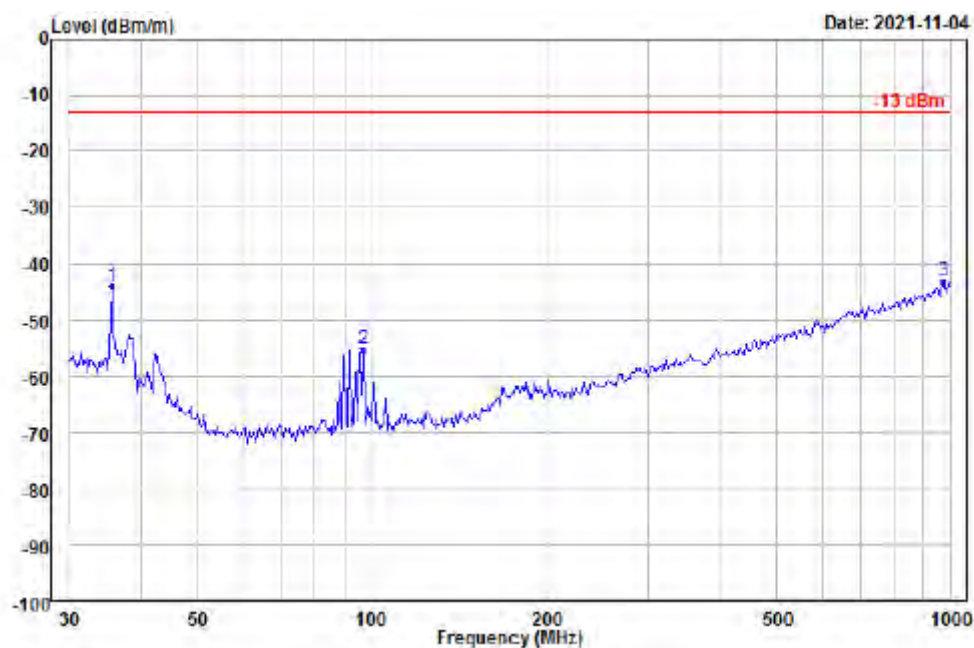
MODE	TX channel 20525	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem:
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	35.762	-78.38	22.60	0.00	0.00	10.36	-45.42	-13.00	-32.42	---	---	Peak
2	97.002	-77.06	11.60	0.00	0.00	10.62	-54.84	-13.00	-41.84	---	---	Peak
3 PP	952.000	-82.94	29.96	0.00	0.00	12.59	-48.39	-13.00	-27.39	---	---	Peak



MODE	TX channel 20525	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamplifier Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	35.762	-76.95	22.60	0.00	0.00	10.36	-43.99	-13.00	-30.99	---	---	Peak
2	97.002	-77.19	11.60	0.00	0.00	10.62	-54.97	-13.00	-41.97	---	---	Peak
3 PP	972.283	-85.86	30.15	0.00	0.00	12.68	-43.03	-13.00	-30.03	---	---	Peak





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Test Report No.: W7L-P21090018RF04

ABOVE 1GHz DATA

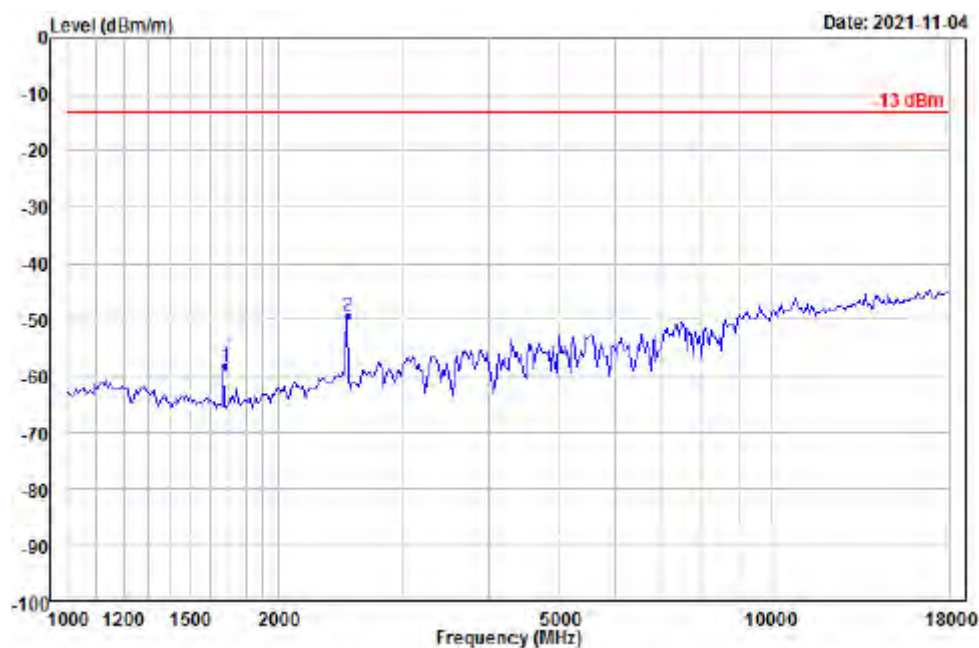
Note: For higher frequency, the emission is too low to be detected.

LTE Band 5

CHANNEL BANDWIDTH: 1.4MHz / QPSK

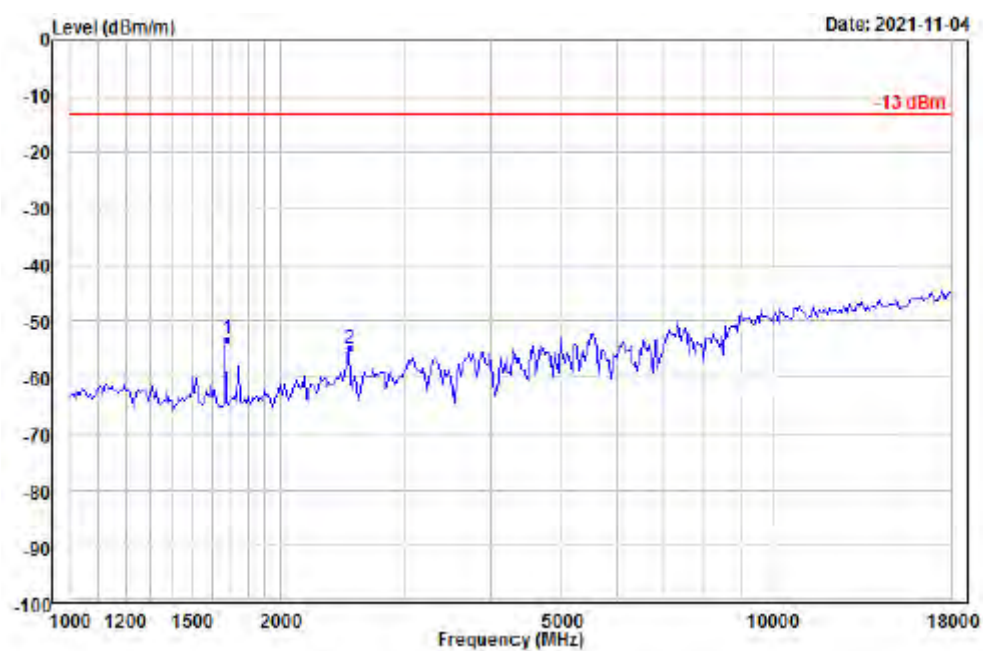
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamplifier Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remarks
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-58.57	30.42	47.80	0.00	17.74	-58.21	-13.00	-45.21	---	---	Peak
2 PP	2509.500	-53.03	33.01	48.10	0.00	18.80	-49.32	-13.00	-36.32	---	---	Peak



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

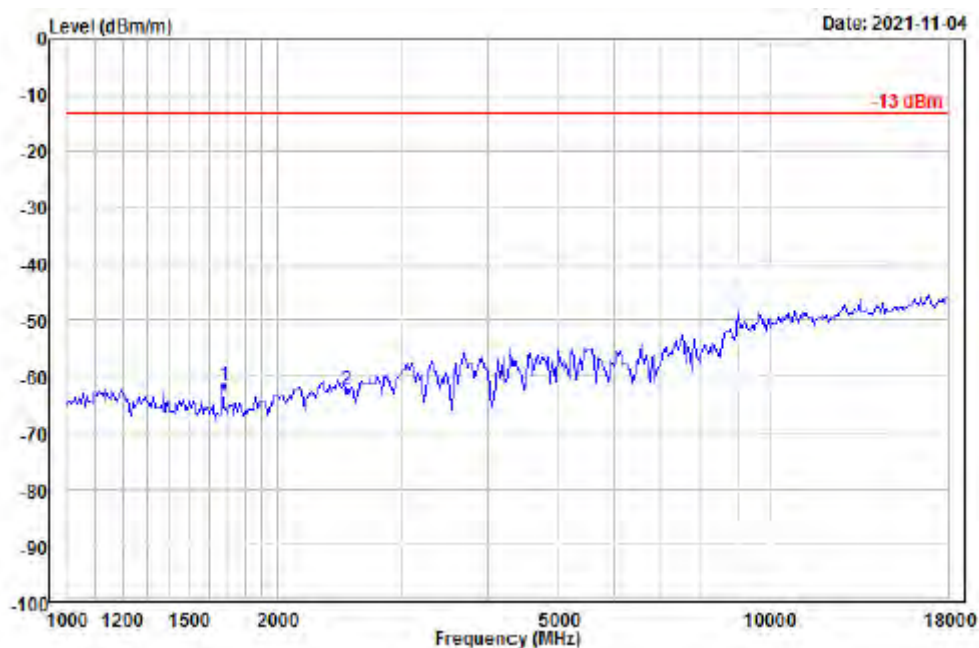
		Read	Ant	Preamp	Aux	Cable		Limit	Over	APos	TPos	
	Freq	Level	Factor	Factor	Factor	Loss	Level	Line	Limit			Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	PP 1673.000	-53.59	30.42	47.80	0.00	17.74	-53.23	-13.00	-40.23	---	---	Peak
2	2509.500	-58.38	33.01	48.10	0.00	18.80	-54.67	-13.00	-41.67	---	---	Peak



CHANNEL BANDWIDTH: 3MHz / QPSK

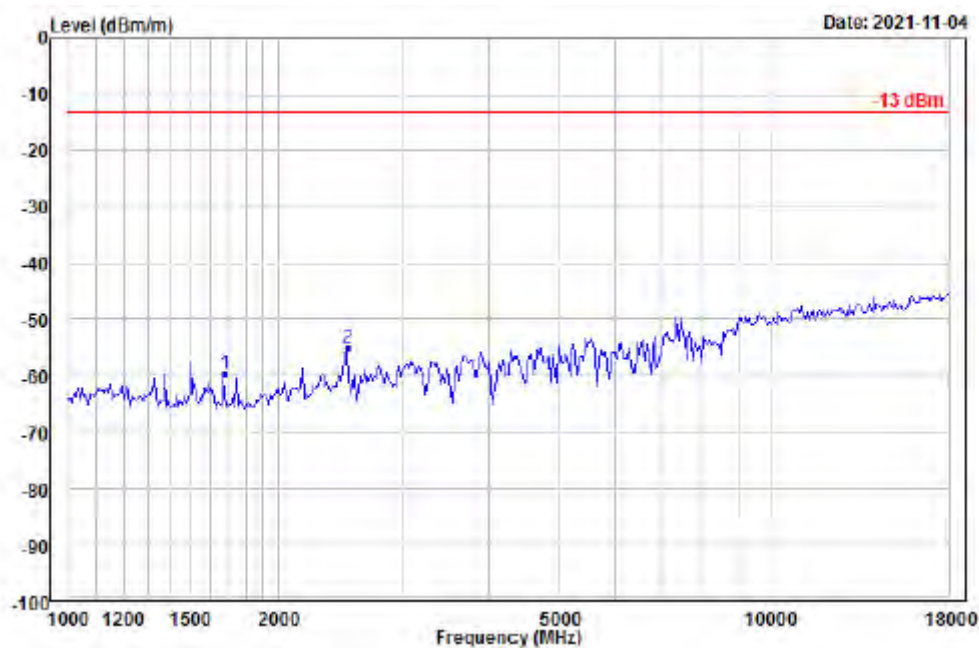
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Read	Ant	Preamp	Aux	Cable		Limit	Over	APos	TPos	
	Freq	Level	Factor	Factor	Factor	Loss	Level	Line	Limit			Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	PP 1673.000	-62.01	30.42	47.80	0.00	17.74	-61.65	-13.00	-48.65	---	---	Peak
2	2509.500	-66.16	33.01	48.10	0.00	18.80	-62.45	-13.00	-49.45	---	---	Peak



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

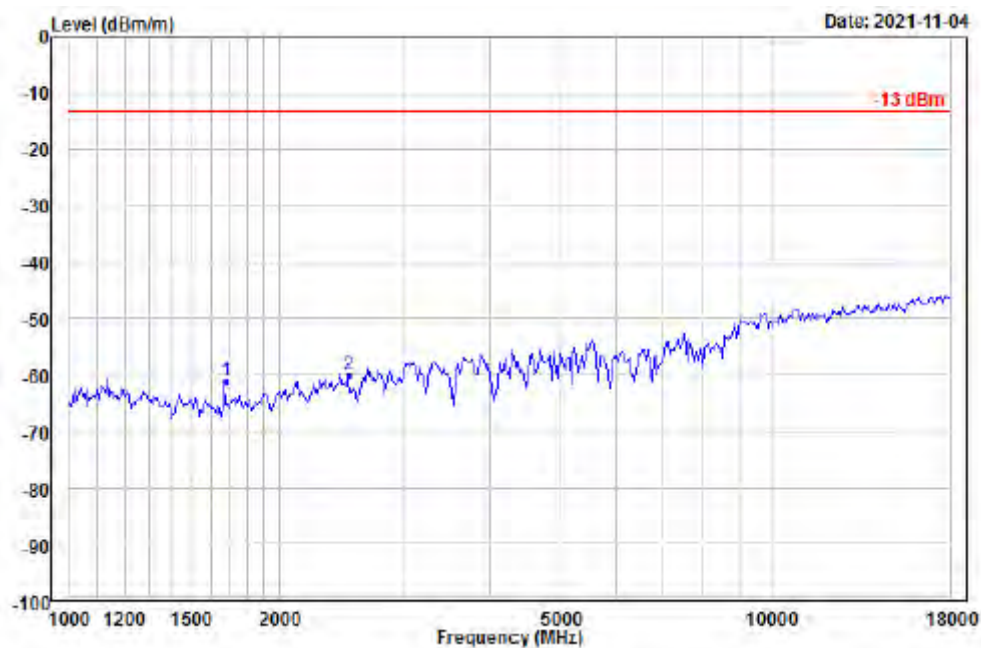
	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-59.94	30.42	47.80	0.00	17.74	-59.58	-13.00	-46.58	---	---	Peak
2 PP	2509.500	-58.71	33.01	48.10	0.00	18.80	-55.00	-13.00	-42.00	---	---	Peak



CHANNEL BANDWIDTH: 5MHz / QPSK

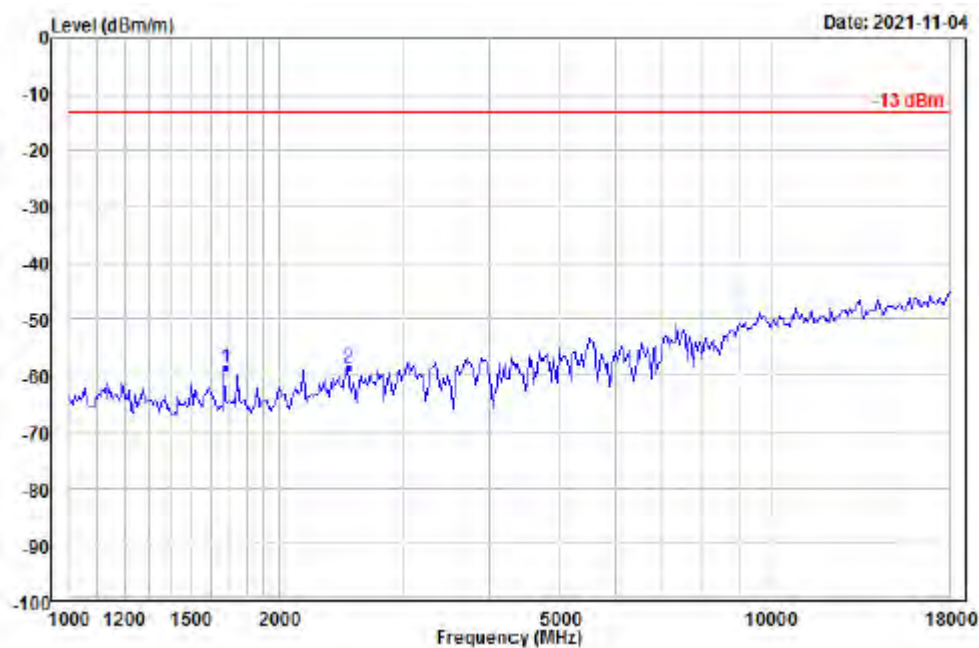
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-61.45	30.42	47.80	0.00	17.74	-61.09	-13.00	-48.09	---	---	Peak
2 PP	2509.500	-63.74	33.01	48.10	0.00	18.80	-60.03	-13.00	-47.03	---	---	Peak



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-58.92	30.42	47.80	0.00	17.74	-58.56	-13.00	-45.56	---	---	Peak
2 PP	2509.500	-62.23	33.01	48.10	0.00	18.80	-58.52	-13.00	-45.52	---	---	Peak





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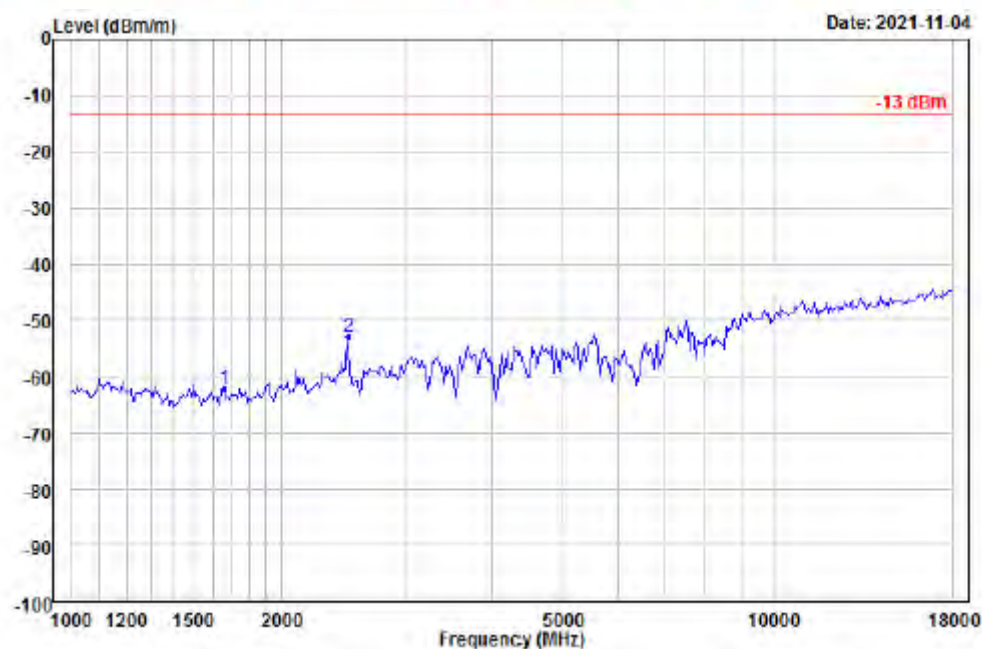
Test Report No.: W7L-P21090018RF04

CHANNEL BANDWIDTH: 10MHz / QPSK

CH20450:

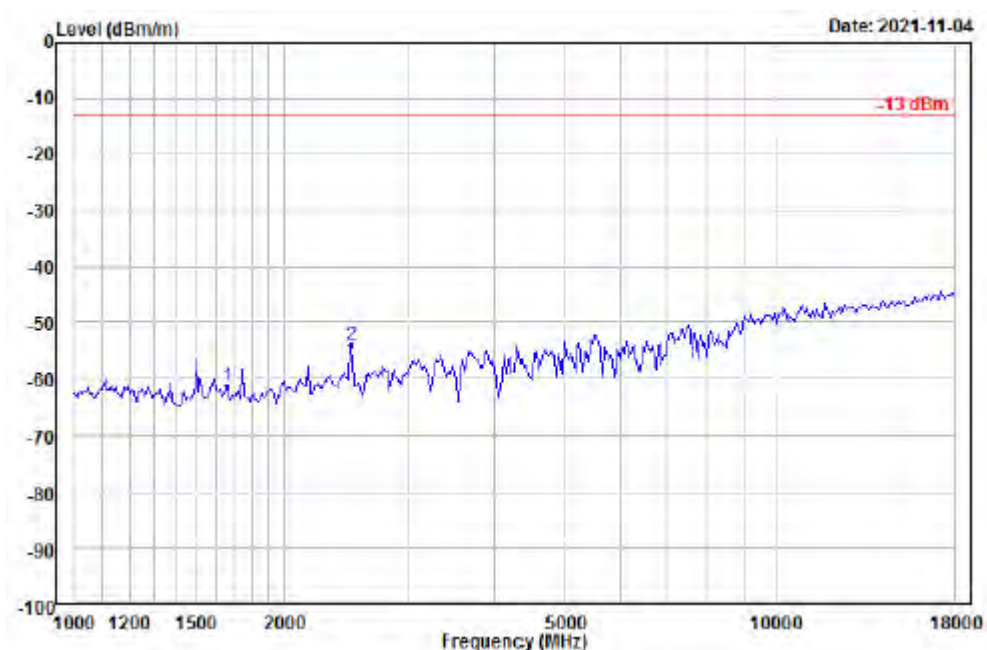
MODE	TX channel 20450	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preampl Factor	Aux Factor	Cable Loss	Level	Limit	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1658.000	-62.53	30.37	47.80	0.00	17.70	-62.26	-13.00	-49.26	---	---	Peak
2 PP	2487.000	-56.46	32.96	48.09	0.00	18.77	-52.82	-13.00	-39.82	---	---	Peak



MODE	TX channel 20450	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1658.000	-61.63	30.37	47.80	0.00	17.70	-61.36	-13.00	-48.36	---	---	Peak
2 PP	2487.000	-57.66	32.96	48.89	0.00	18.77	-54.02	-13.00	-41.02	---	---	Peak





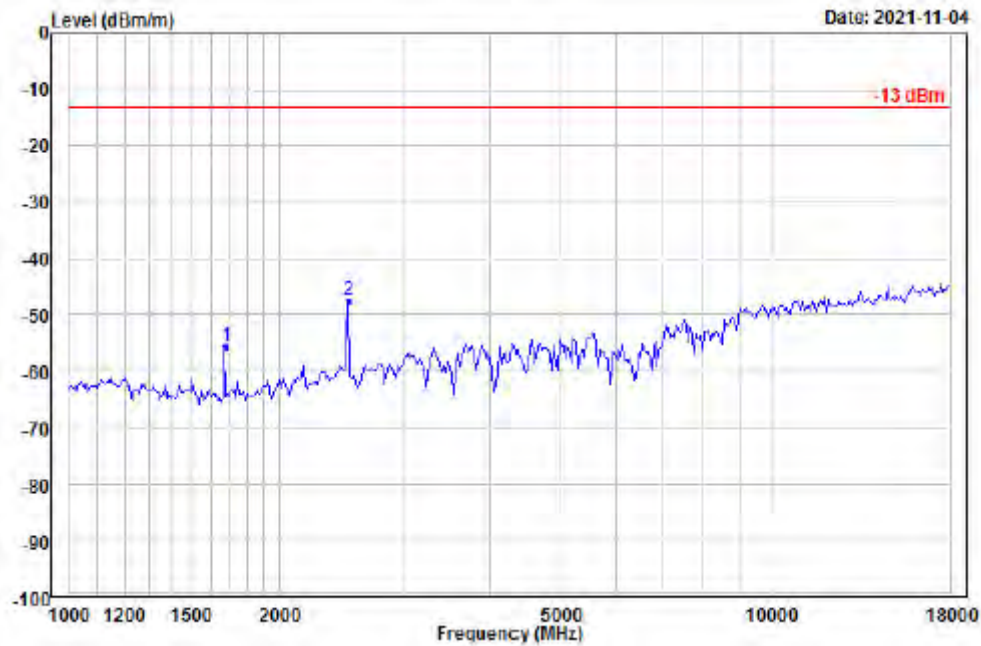
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Test Report No.: W7L-P21090018RF04

CH20525:

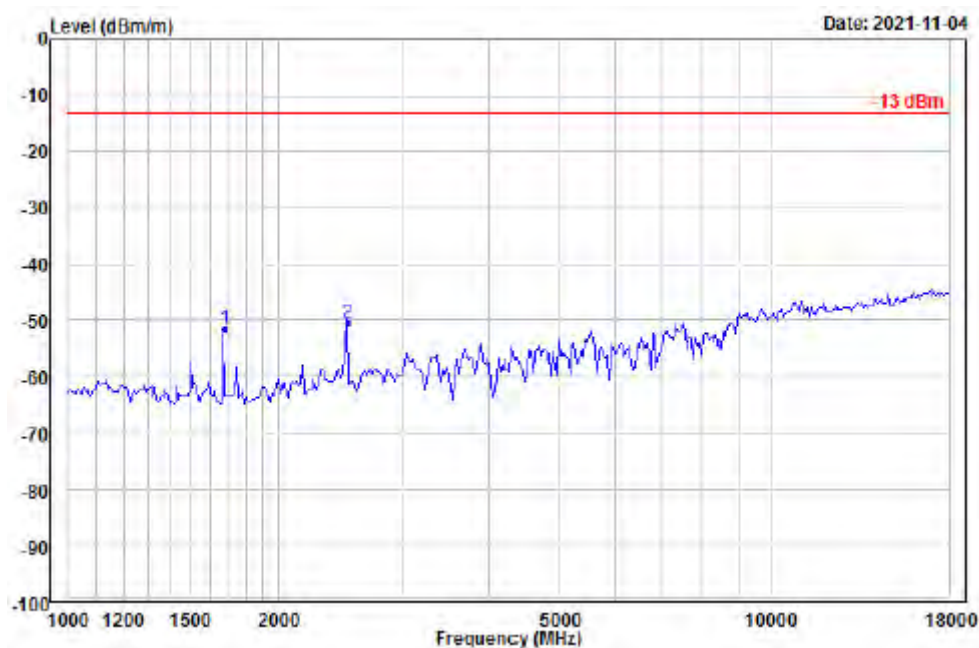
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-55.91	30.42	47.80	0.00	17.74	-55.55	-13.00	-42.55	---	---	Peak
2 PP	2509.500	-51.02	33.01	48.10	0.00	18.80	-47.31	-13.00	-34.31	---	---	Peak



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1673.000	-51.77	30.42	47.80	0.00	17.74	-51.41	-13.00	-38.41	---	---	Peak
2 PP	2509.500	-54.08	33.01	48.10	0.00	18.80	-50.37	-13.00	-37.37	---	---	Peak





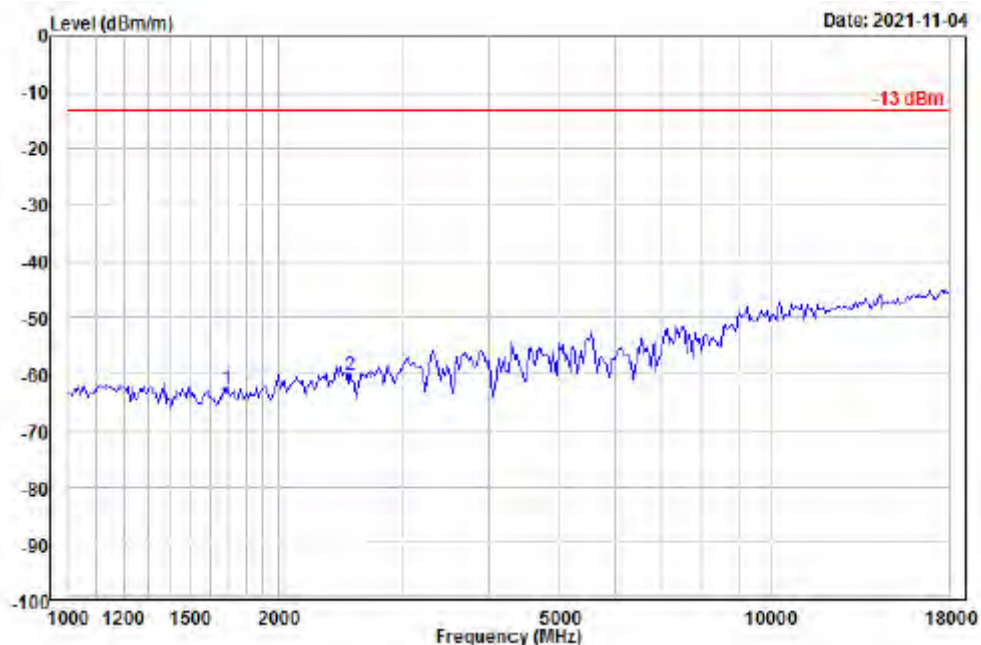
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Test Report No.: W7L-P21090018RF04

CH20600:

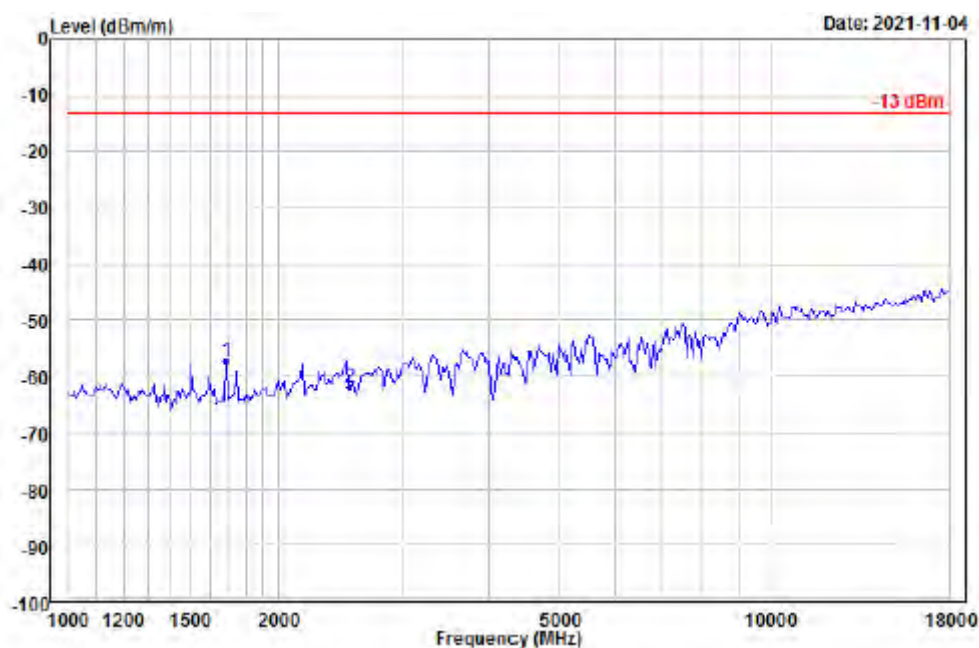
MODE	TX channel 20600	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1684.232	-63.21	30.46	47.80	0.00	17.77	-62.78	-13.00	-49.78	---	---	Peak
2 PP	2532.000	-64.11	33.03	48.09	0.00	18.82	-60.35	-13.00	-47.35	---	---	Peak



MODE	TX channel 20600	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1 PP	1684.232	-57.64	30.46	47.80	0.00	17.77	-57.21	-13.00	-44.21	---	---	Peak
2	2532.000	-65.52	33.03	48.09	0.00	18.82	-61.76	-13.00	-48.76	---	---	Peak

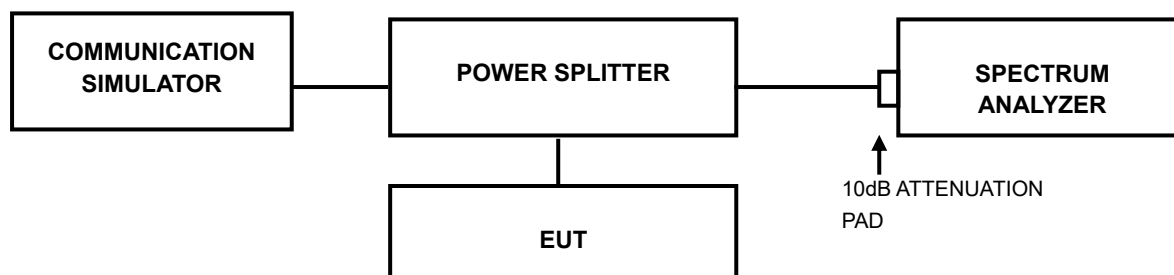


3.7 PEAK TO AVERAGE RATIO

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 $\geq$ 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%.



Test Report No.: W7L-P21090018RF04

3.7.4 TEST RESULTS

Please Refer to Appendix A Of this test report.



Test Report No.: W7L-P21090018RF04

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



Test Report No.: W7L-P21090018RF04

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.

Appendix A:

FREQUENCY STABILITY

LTE Band5

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	11.64	-2.77	-0.00	-2.5 to 2.5	Pass
					13.70	-2.06	-0.00	-2.5 to 2.5	Pass
					15.75	-1.95	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-1.92	-0.00	-2.5 to 2.5	Pass
				0	13.7	-1.80	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.70	-0.00	-2.5 to 2.5	Pass
				30	13.7	-2.29	-0.00	-2.5 to 2.5	Pass
				40	13.7	-2.13	-0.00	-2.5 to 2.5	Pass
				50	13.7	-2.23	-0.00	-2.5 to 2.5	Pass
	836.5	6	0	20	11.64	-0.04	-0.00	-2.5 to 2.5	Pass
					13.70	-0.99	-0.00	-2.5 to 2.5	Pass
					15.75	-1.27	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.40	-0.00	-2.5 to 2.5	Pass
				0	13.7	0.32	0.00	-2.5 to 2.5	Pass
				10	13.7	-0.79	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.21	-0.00	-2.5 to 2.5	Pass
				40	13.7	-0.63	-0.00	-2.5 to 2.5	Pass
				50	13.7	-1.22	-0.00	-2.5 to 2.5	Pass
	848.3	6	0	20	11.64	0.57	0.00	-2.5 to 2.5	Pass
					13.70	-0.86	-0.00	-2.5 to 2.5	Pass
					15.75	-0.03	0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.53	-0.00	-2.5 to 2.5	Pass
				0	13.7	0.79	0.00	-2.5 to 2.5	Pass
				10	13.7	-0.34	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.80	-0.00	-2.5 to 2.5	Pass
				40	13.7	-1.00	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.43	-0.00	-2.5 to 2.5	Pass
16QAM	824.7	6	0	20	11.64	-1.40	-0.00	-2.5 to 2.5	Pass
					13.70	-0.87	-0.00	-2.5 to 2.5	Pass
					15.75	-1.59	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-1.63	-0.00	-2.5 to 2.5	Pass



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VERITAS

Test Report No.: W7L-P21090018RF04

				0	13.7	-1.12	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.76	-0.00	-2.5 to 2.5	Pass
				30	13.7	-1.95	-0.00	-2.5 to 2.5	Pass
				40	13.7	-1.23	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.90	-0.00	-2.5 to 2.5	Pass
	836.5	6	0	20	11.64	-0.73	-0.00	-2.5 to 2.5	Pass
					13.70	0.01	0.00	-2.5 to 2.5	Pass
					15.75	-1.12	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.41	-0.00	-2.5 to 2.5	Pass
				0	13.7	-1.52	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.80	-0.00	-2.5 to 2.5	Pass
				30	13.7	-1.29	-0.00	-2.5 to 2.5	Pass
				40	13.7	-0.89	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.57	-0.00	-2.5 to 2.5	Pass
	848.3	6	0	20	11.64	-0.09	-0.00	-2.5 to 2.5	Pass
					13.70	-0.06	-0.00	-2.5 to 2.5	Pass
					15.75	0.14	0.00	-2.5 to 2.5	Pass
				-10	13.7	0.44	0.00	-2.5 to 2.5	Pass
				0	13.7	-0.46	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.11	-0.00	-2.5 to 2.5	Pass
				30	13.7	0.04	0.00	-2.5 to 2.5	Pass
				40	13.7	-0.41	-0.00	-2.5 to 2.5	Pass
				50	13.7	0.11	0.00	-2.5 to 2.5	Pass
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	11.64	-0.81	-0.00	-2.5 to 2.5	Pass
					13.70	0.32	0.00	-2.5 to 2.5	Pass
					15.75	-0.74	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.10	-0.00	-2.5 to 2.5	Pass
				0	13.7	0.09	0.00	-2.5 to 2.5	Pass
				10	13.7	0.74	0.00	-2.5 to 2.5	Pass
				30	13.7	0.03	0.00	-2.5 to 2.5	Pass
				40	13.7	-0.69	-0.00	-2.5 to 2.5	Pass
				50	13.7	0.36	0.00	-2.5 to 2.5	Pass
	836.5	15	0	20	11.64	-0.81	-0.00	-2.5 to 2.5	Pass
					13.70	-0.41	-0.00	-2.5 to 2.5	Pass
					15.75	-0.92	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.11	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.14	-0.00	-2.5 to 2.5	Pass
				10	13.7	0.32	0.00	-2.5 to 2.5	Pass
				30	13.7	-0.74	-0.00	-2.5 to 2.5	Pass
				40	13.7	0.01	0.00	-2.5 to 2.5	Pass
				50	13.7	-0.69	-0.00	-2.5 to 2.5	Pass
	847.5	15	0	20	11.64	-1.02	-0.00	-2.5 to 2.5	Pass
					13.70	-0.59	-0.00	-2.5 to 2.5	Pass
					15.75	-2.72	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.21	-0.00	-2.5 to 2.5	Pass
				0	13.7	-1.13	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.29	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.13	-0.00	-2.5 to 2.5	Pass
				40	13.7	-1.30	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.66	-0.00	-2.5 to 2.5	Pass



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VERITAS**

Test Report No.: W7L-P21090018RF04

16QAM	825.5	15	0	20	11.64	-1.07	-0.00	-2.5 to 2.5	Pass
					13.70	0.23	0.00	-2.5 to 2.5	Pass
					15.75	-1.10	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.21	-0.00	-2.5 to 2.5	Pass
				0	13.7	0.21	0.00	-2.5 to 2.5	Pass
				10	13.7	-0.47	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.61	-0.00	-2.5 to 2.5	Pass
				40	13.7	0.64	0.00	-2.5 to 2.5	Pass
				50	13.7	-1.40	-0.00	-2.5 to 2.5	Pass
	836.5	15	0	20	11.64	-0.83	-0.00	-2.5 to 2.5	Pass
					13.70	0.04	0.00	-2.5 to 2.5	Pass
					15.75	-0.39	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.46	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.29	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.73	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.01	0.00	-2.5 to 2.5	Pass
				40	13.7	-0.54	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.54	-0.00	-2.5 to 2.5	Pass
	847.5	15	0	20	11.64	-1.30	-0.00	-2.5 to 2.5	Pass
					13.70	-1.72	-0.00	-2.5 to 2.5	Pass
					15.75	-1.87	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-1.75	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.93	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.06	-0.00	-2.5 to 2.5	Pass
				30	13.7	-1.23	-0.00	-2.5 to 2.5	Pass
				40	13.7	-2.39	-0.00	-2.5 to 2.5	Pass
				50	13.7	-1.84	-0.00	-2.5 to 2.5	Pass
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	11.64	-2.02	-0.00	-2.5 to 2.5	Pass
					13.70	-2.03	-0.00	-2.5 to 2.5	Pass
					15.75	-1.36	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-1.67	-0.00	-2.5 to 2.5	Pass
				0	13.7	-1.90	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.60	-0.00	-2.5 to 2.5	Pass
				30	13.7	-1.16	-0.00	-2.5 to 2.5	Pass
				40	13.7	-1.32	-0.00	-2.5 to 2.5	Pass
				50	13.7	-1.54	-0.00	-2.5 to 2.5	Pass
	836.5	25	0	20	11.64	-0.81	-0.00	-2.5 to 2.5	Pass
					13.70	-0.63	-0.00	-2.5 to 2.5	Pass
					15.75	-1.09	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.24	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.53	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.34	-0.00	-2.5 to 2.5	Pass
				30	13.7	-1.14	-0.00	-2.5 to 2.5	Pass
				40	13.7	-0.90	-0.00	-2.5 to 2.5	Pass
				50	13.7	0.21	0.00	-2.5 to 2.5	Pass
	846.5	25	0	20	11.64	-0.33	-0.00	-2.5 to 2.5	Pass
					13.70	-1.04	-0.00	-2.5 to 2.5	Pass
					15.75	-0.74	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.49	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.32	-0.00	-2.5 to 2.5	Pass



BUREAU
VERITAS

Test Report No.: W7L-P21090018RF04

				10	13.7	-0.26	-0.00	-2.5 to 2.5	Pass	
				30	13.7	0.90	0.00	-2.5 to 2.5	Pass	
				40	13.7	-0.40	-0.00	-2.5 to 2.5	Pass	
				50	13.7	-0.14	-0.00	-2.5 to 2.5	Pass	
16QAM	826.5	25	0	20	11.64	-2.22	-0.00	-2.5 to 2.5	Pass	
					13.70	-1.25	-0.00	-2.5 to 2.5	Pass	
					15.75	-1.49	-0.00	-2.5 to 2.5	Pass	
				-10	13.7	-1.66	-0.00	-2.5 to 2.5	Pass	
				0	13.7	-2.29	-0.00	-2.5 to 2.5	Pass	
				10	13.7	-1.54	-0.00	-2.5 to 2.5	Pass	
				30	13.7	-1.52	-0.00	-2.5 to 2.5	Pass	
				40	13.7	-1.27	-0.00	-2.5 to 2.5	Pass	
				50	13.7	-2.39	-0.00	-2.5 to 2.5	Pass	
				836.5	25	0	20	11.64	0.06	0.00
	13.70	-0.06	-0.00					-2.5 to 2.5	Pass	
	15.75	-0.16	-0.00					-2.5 to 2.5	Pass	
	-10	13.7	-0.16				-0.00	-2.5 to 2.5	Pass	
	0	13.7	0.40				0.00	-2.5 to 2.5	Pass	
	10	13.7	-1.42				-0.00	-2.5 to 2.5	Pass	
	30	13.7	0.21				0.00	-2.5 to 2.5	Pass	
	40	13.7	-1.12				-0.00	-2.5 to 2.5	Pass	
	50	13.7	-0.33				-0.00	-2.5 to 2.5	Pass	
	846.5	25	0				20	11.64	-1.26	-0.00
				13.70	-1.46	-0.00		-2.5 to 2.5	Pass	
				15.75	-0.37	-0.00		-2.5 to 2.5	Pass	
				-10	13.7	-0.10	-0.00	-2.5 to 2.5	Pass	
				0	13.7	-0.64	-0.00	-2.5 to 2.5	Pass	
				10	13.7	-0.21	-0.00	-2.5 to 2.5	Pass	
				30	13.7	-0.07	-0.00	-2.5 to 2.5	Pass	
				40	13.7	-0.07	-0.00	-2.5 to 2.5	Pass	
				50	13.7	-0.63	-0.00	-2.5 to 2.5	Pass	
				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	11.64	-1.53	-0.00	-2.5 to 2.5	Pass
13.70						-1.04	-0.00	-2.5 to 2.5	Pass	
15.75						-0.34	-0.00	-2.5 to 2.5	Pass	
-10					13.7	-0.76	-0.00	-2.5 to 2.5	Pass	
0					13.7	-0.74	-0.00	-2.5 to 2.5	Pass	
10					13.7	0.17	0.00	-2.5 to 2.5	Pass	
30					13.7	-0.49	-0.00	-2.5 to 2.5	Pass	
40					13.7	-0.64	-0.00	-2.5 to 2.5	Pass	
50					13.7	-0.23	-0.00	-2.5 to 2.5	Pass	
836.5		50	0	20	11.64	-0.47	-0.00	-2.5 to 2.5	Pass	
					13.70	-0.87	-0.00	-2.5 to 2.5	Pass	
					15.75	-1.13	-0.00	-2.5 to 2.5	Pass	
				-10	13.7	-1.07	-0.00	-2.5 to 2.5	Pass	
				0	13.7	-0.80	-0.00	-2.5 to 2.5	Pass	
				10	13.7	0.07	0.00	-2.5 to 2.5	Pass	
				30	13.7	-0.06	-0.00	-2.5 to 2.5	Pass	
				40	13.7	-0.21	-0.00	-2.5 to 2.5	Pass	
				50	13.7	-0.59	-0.00	-2.5 to 2.5	Pass	
844		50	0	20	11.64	-1.06	-0.00	-2.5 to 2.5	Pass	



**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF04

					13.70	-0.83	-0.00	-2.5 to 2.5	Pass
					15.75	-0.36	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.32	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.64	-0.00	-2.5 to 2.5	Pass
				10	13.7	-1.52	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.99	-0.00	-2.5 to 2.5	Pass
				40	13.7	0.29	0.00	-2.5 to 2.5	Pass
16QAM	829	50	0		13.7	-0.16	-0.00	-2.5 to 2.5	Pass
					11.64	-1.45	-0.00	-2.5 to 2.5	Pass
				20	13.70	-0.71	-0.00	-2.5 to 2.5	Pass
					15.75	-1.46	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.86	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.33	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.10	-0.00	-2.5 to 2.5	Pass
	836.5	50	0	30	13.7	-0.61	-0.00	-2.5 to 2.5	Pass
				40	13.7	-0.26	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.14	-0.00	-2.5 to 2.5	Pass
					11.64	0.04	0.00	-2.5 to 2.5	Pass
				20	13.70	-0.03	0.00	-2.5 to 2.5	Pass
					15.75	-0.23	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-0.26	-0.00	-2.5 to 2.5	Pass
	844	50	0	0	13.7	0.01	0.00	-2.5 to 2.5	Pass
				10	13.7	0.14	0.00	-2.5 to 2.5	Pass
				30	13.7	-0.74	-0.00	-2.5 to 2.5	Pass
				40	13.7	-0.16	-0.00	-2.5 to 2.5	Pass
				50	13.7	-0.10	-0.00	-2.5 to 2.5	Pass
					11.64	-1.42	-0.00	-2.5 to 2.5	Pass
				20	13.70	-0.67	-0.00	-2.5 to 2.5	Pass
					15.75	-0.26	-0.00	-2.5 to 2.5	Pass
				-10	13.7	-1.26	-0.00	-2.5 to 2.5	Pass
				0	13.7	-0.39	-0.00	-2.5 to 2.5	Pass
				10	13.7	-0.53	-0.00	-2.5 to 2.5	Pass
				30	13.7	-0.66	-0.00	-2.5 to 2.5	Pass
				40	13.7	-1.47	-0.00	-2.5 to 2.5	Pass
				50	13.7	-1.10	-0.00	-2.5 to 2.5	Pass

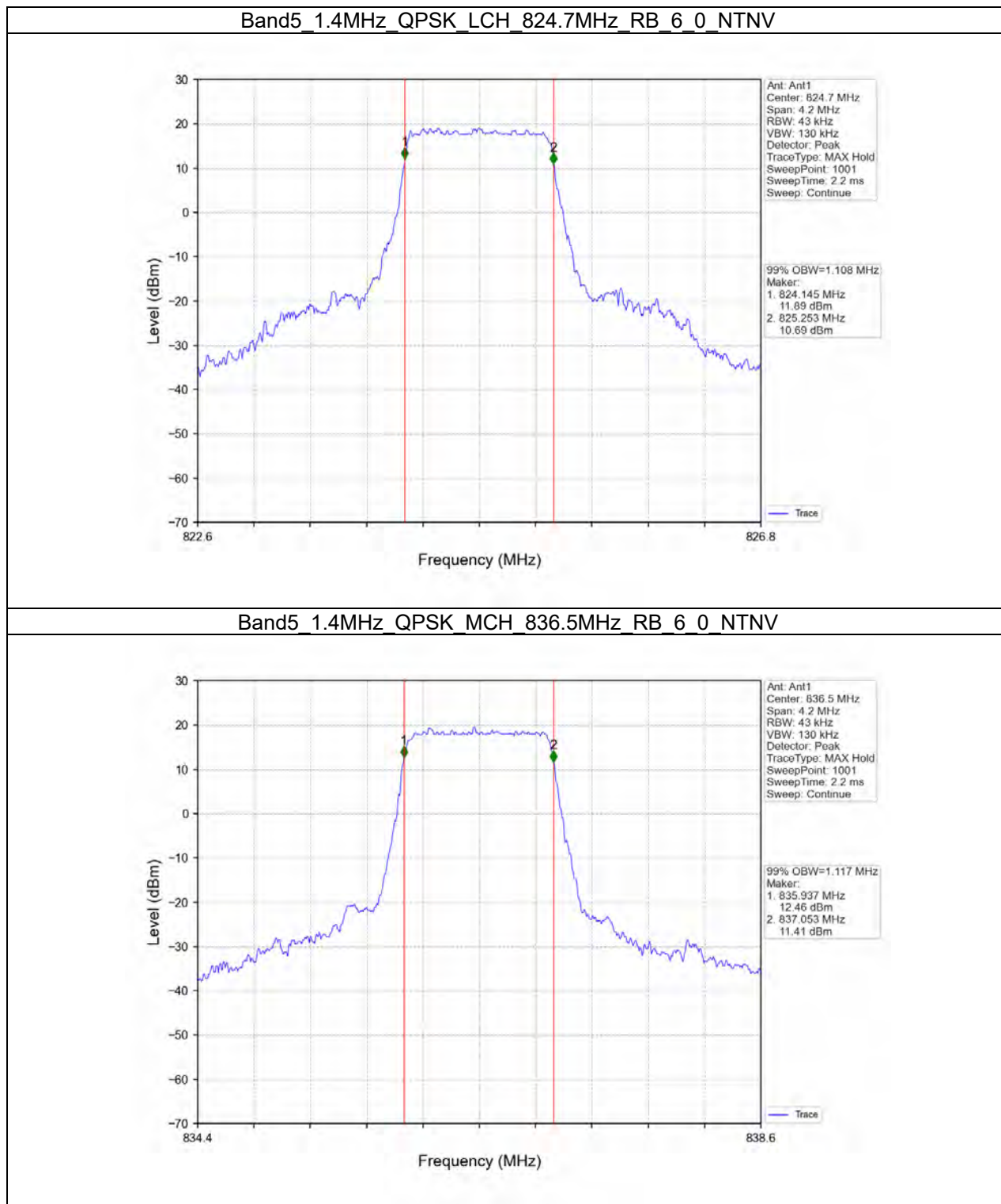
99% Bandwidth

LTE Band5_OBW

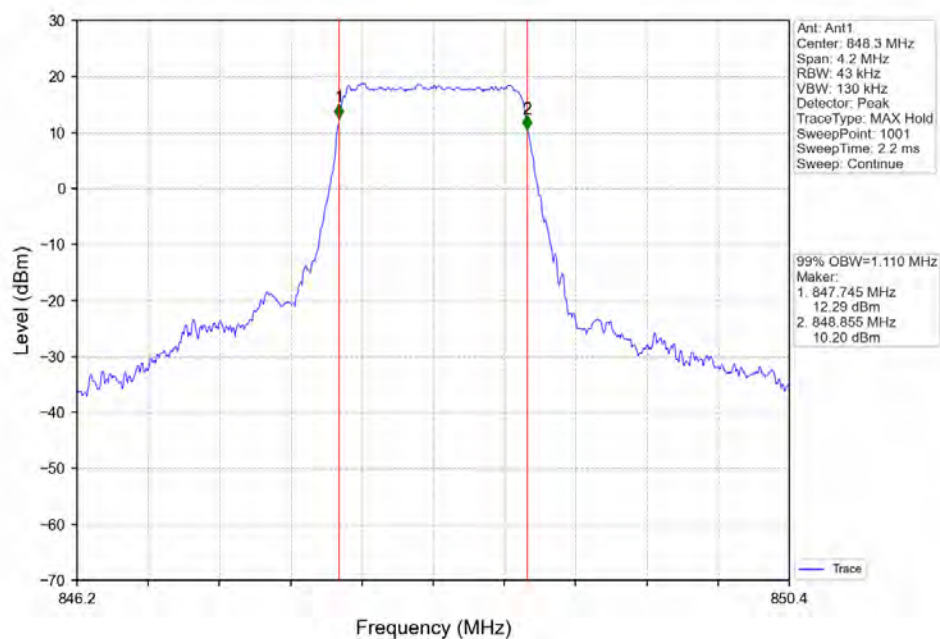
Test Result

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	1.108	Pass
		836.5	6	0	1.117	Pass
		848.3	6	0	1.110	Pass
	16QAM	824.7	6	0	1.104	Pass
		836.5	6	0	1.109	Pass
		848.3	6	0	1.117	Pass
3	QPSK	825.5	15	0	2.744	Pass
		836.5	15	0	2.751	Pass
		847.5	15	0	2.740	Pass
	16QAM	825.5	15	0	2.756	Pass
		836.5	15	0	2.741	Pass
		847.5	15	0	2.741	Pass
5	QPSK	826.5	25	0	4.559	Pass
		836.5	25	0	4.545	Pass
		846.5	25	0	4.551	Pass
	16QAM	826.5	25	0	4.554	Pass
		836.5	25	0	4.570	Pass
		846.5	25	0	4.572	Pass
10	QPSK	829	50	0	9.059	Pass
		836.5	50	0	8.995	Pass
		844	50	0	9.049	Pass
	16QAM	829	50	0	9.061	Pass
		836.5	50	0	9.020	Pass
		844	50	0	9.027	Pass

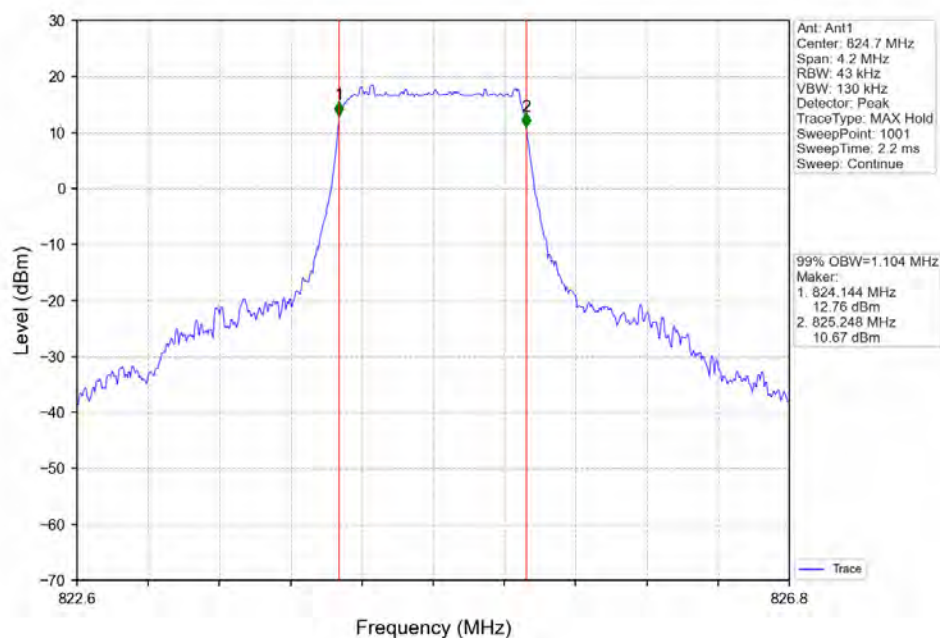
Test Graph



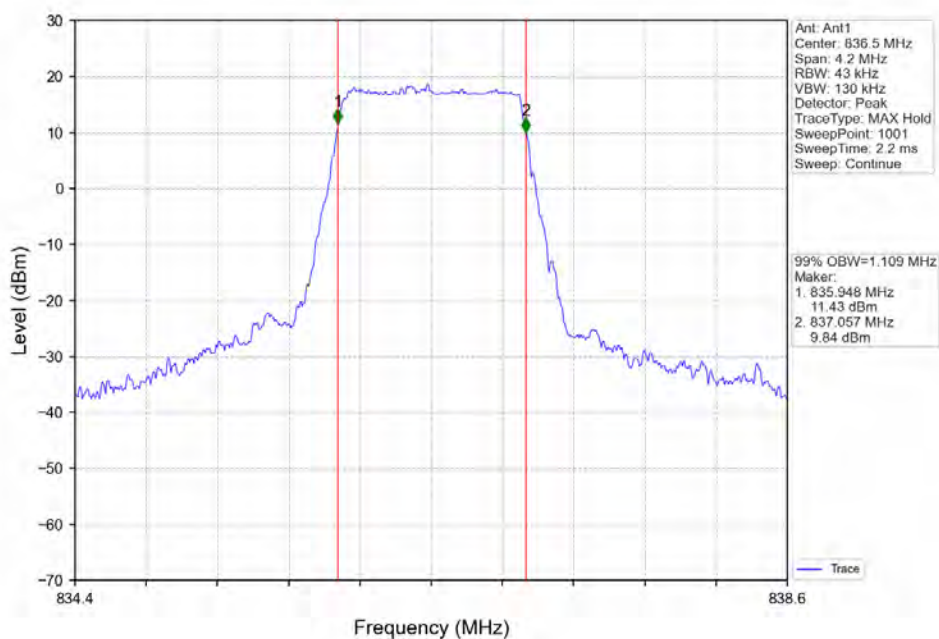
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



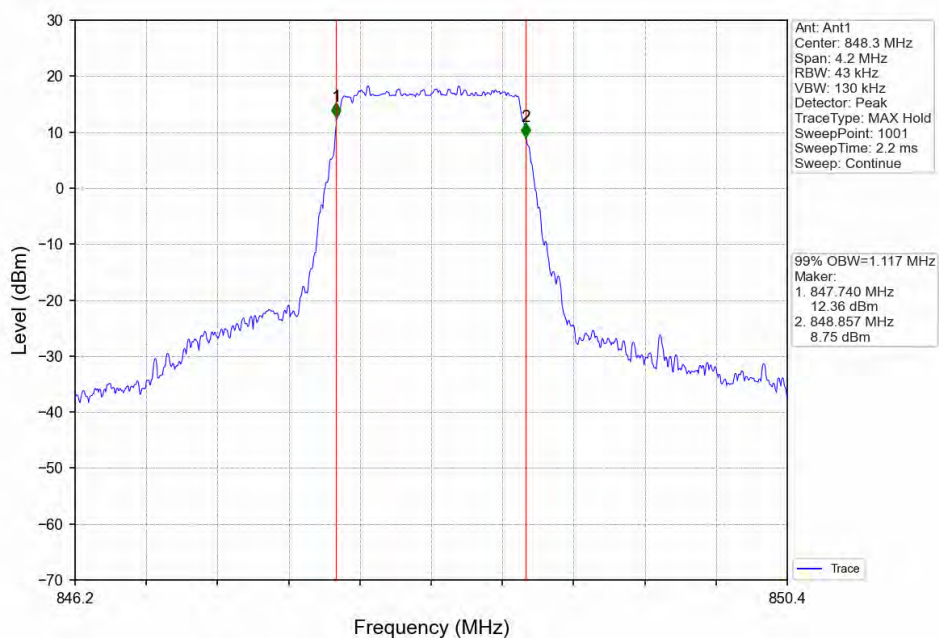
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



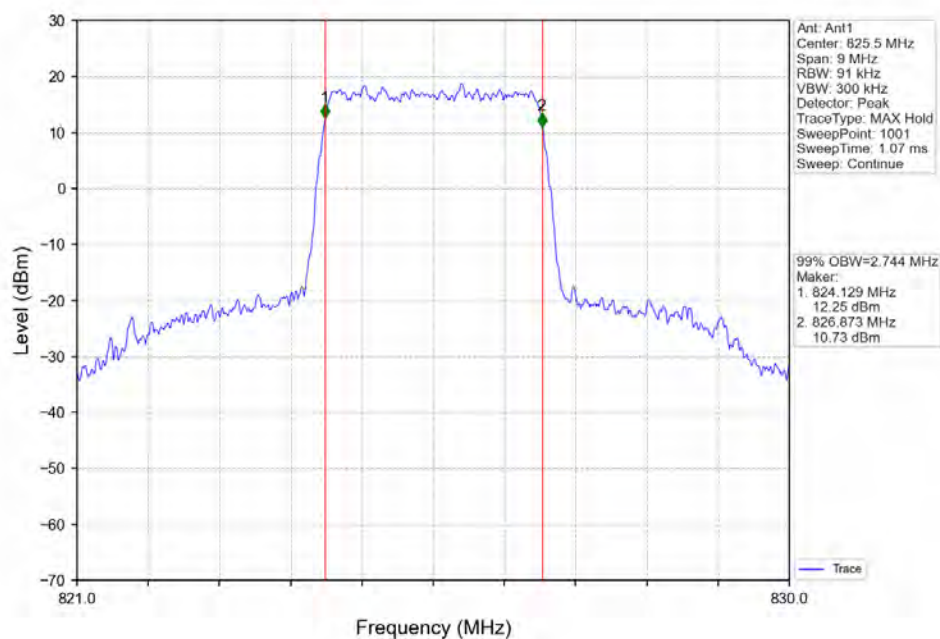
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



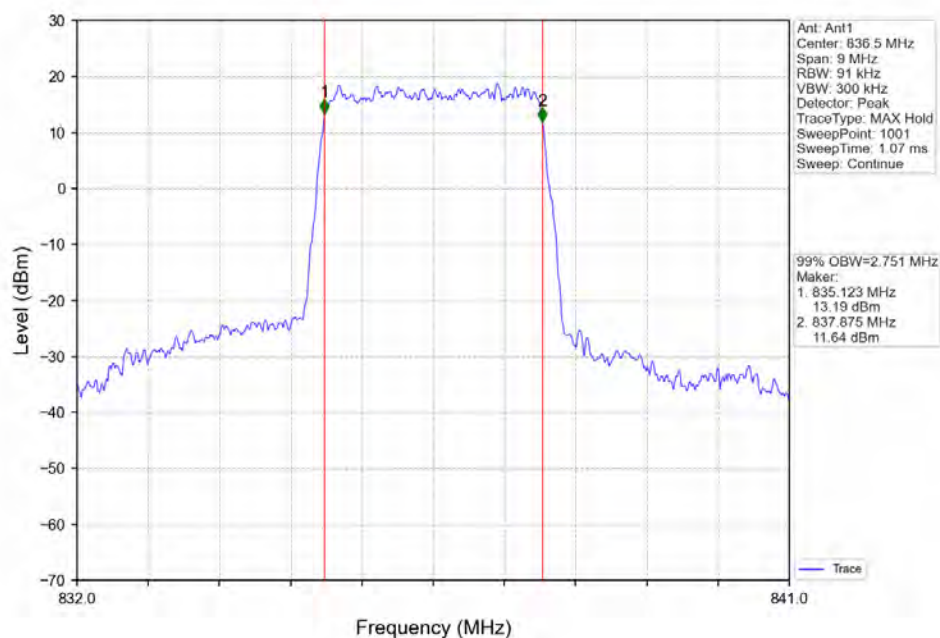
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



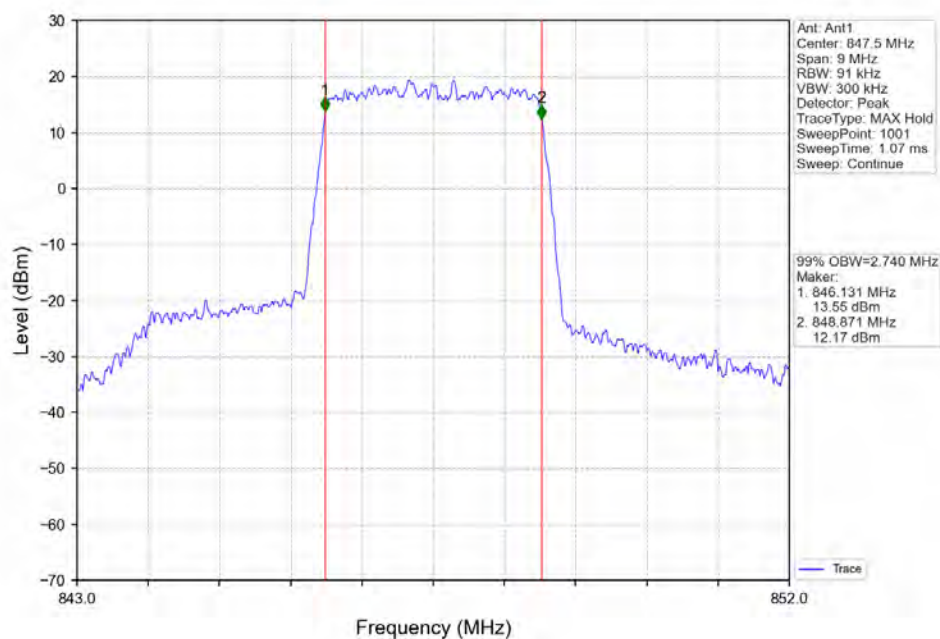
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



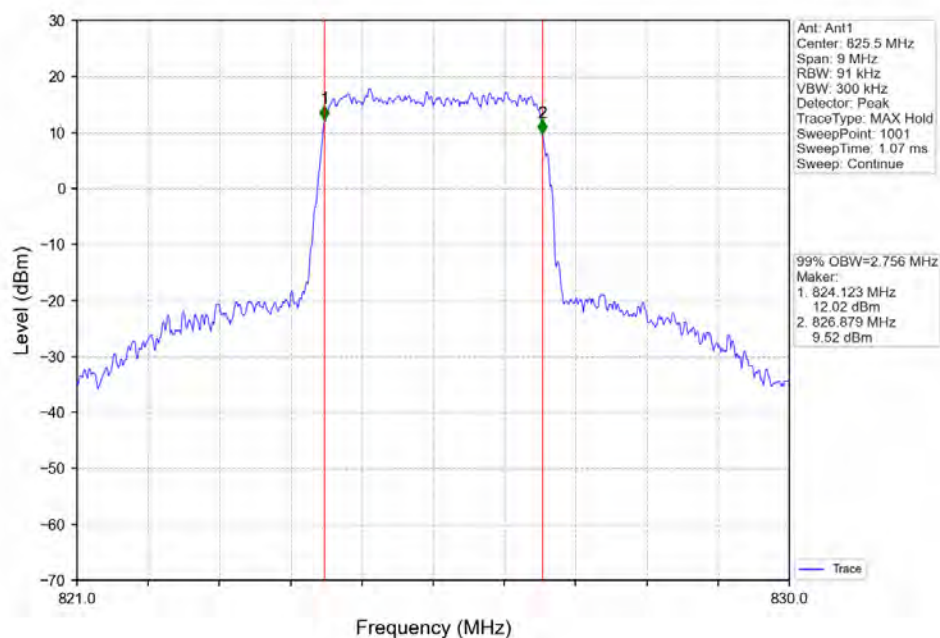
Band5_3MHz_QPSK_MCH_836.5MHz_RB_15_0_NTNV



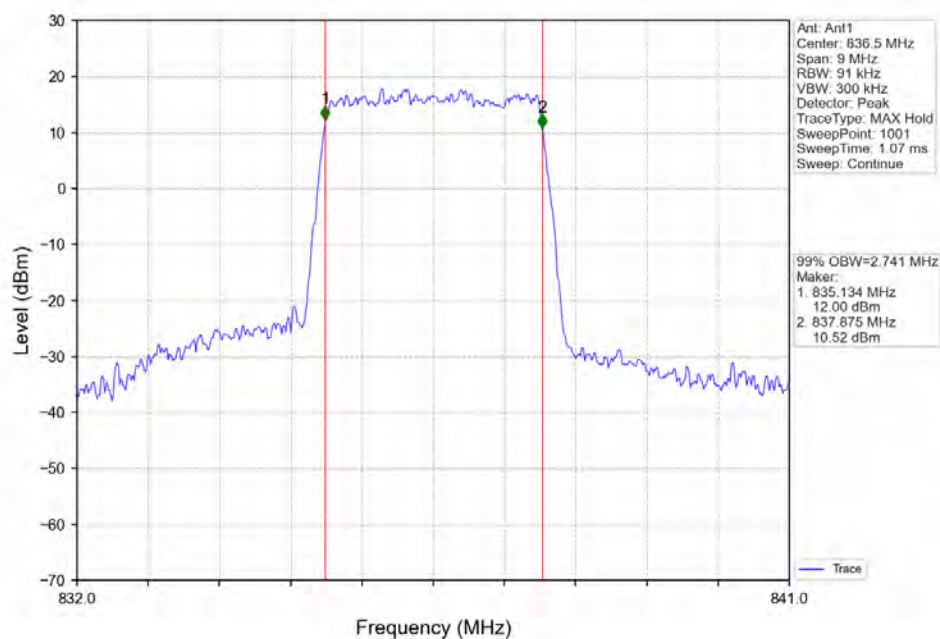
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



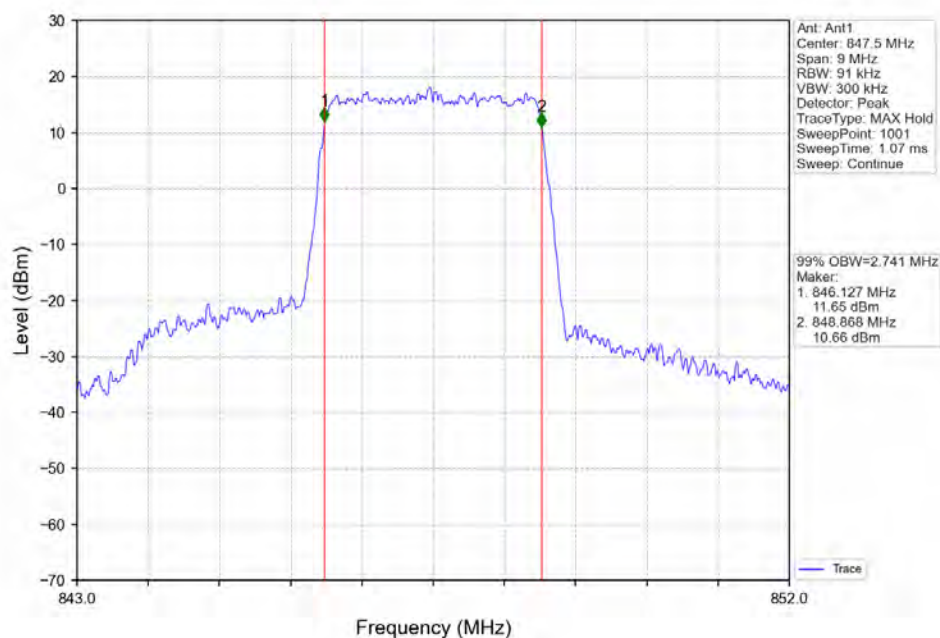
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



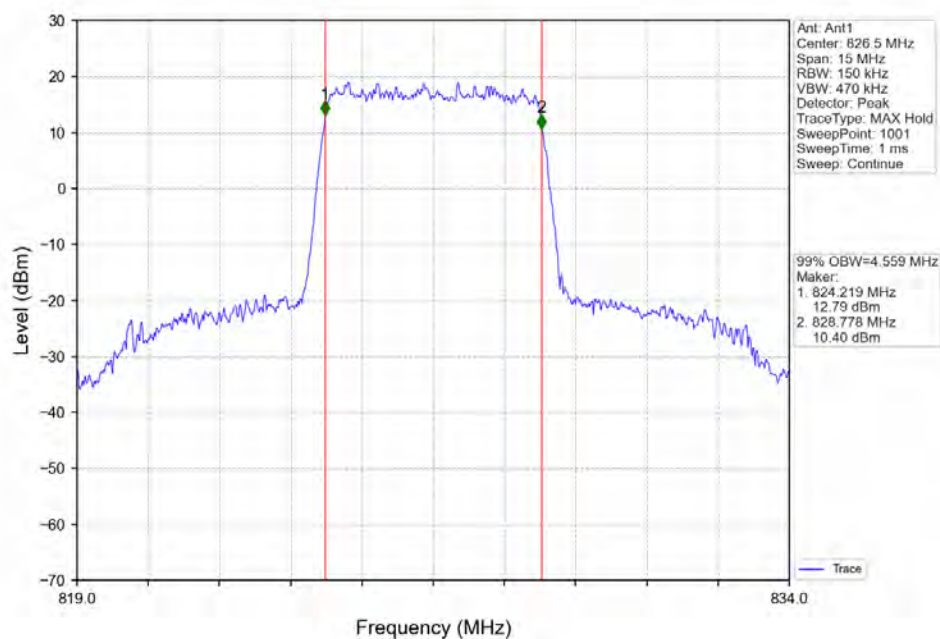
Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



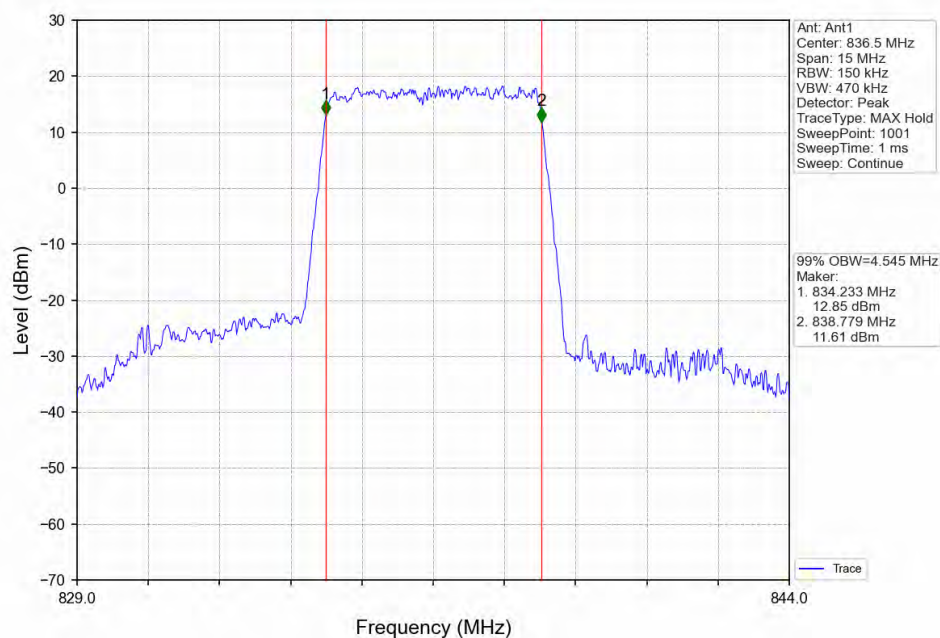
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



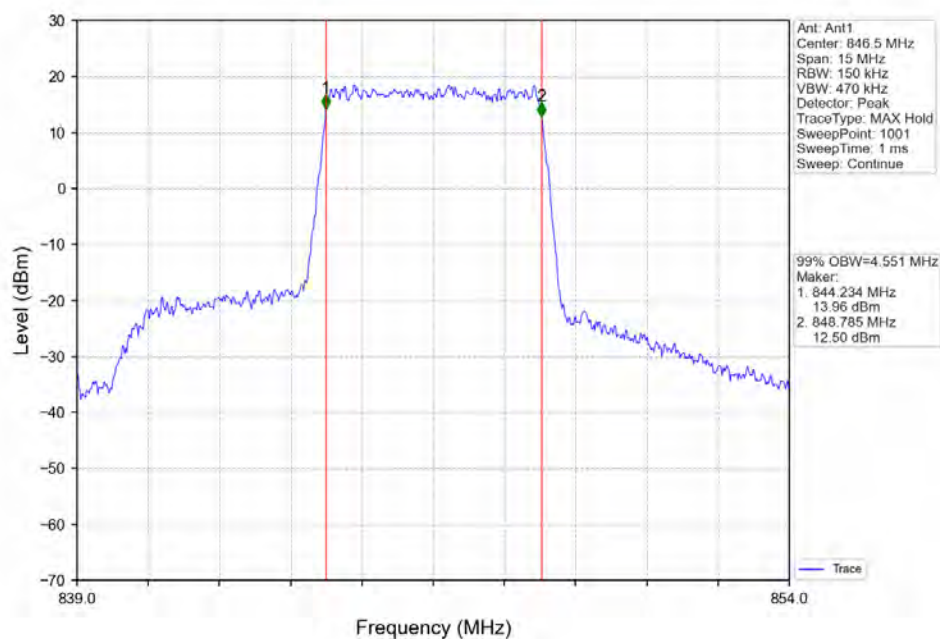
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



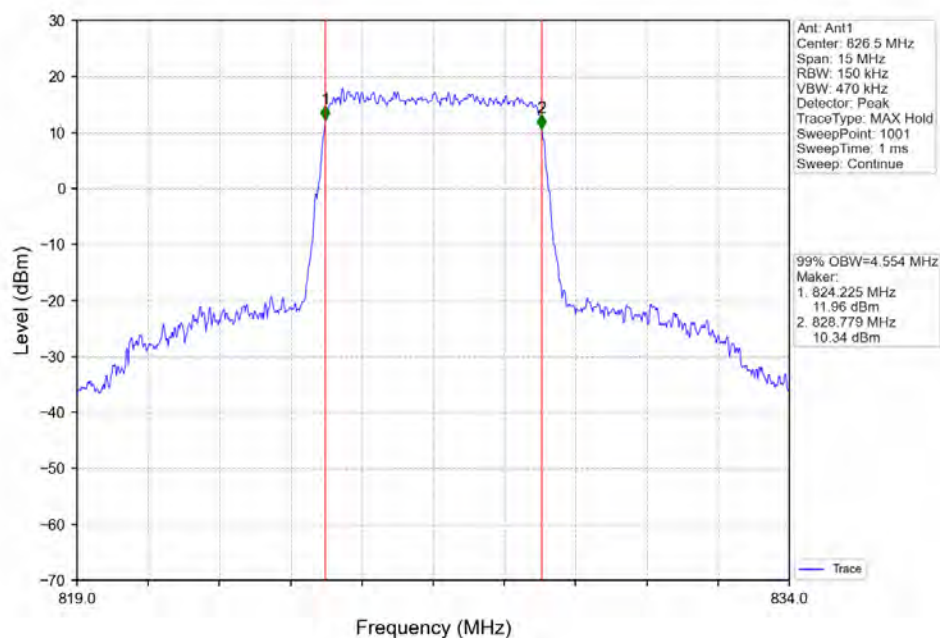
Band5_5MHz_QPSK_MCH_836.5MHz_RB_25_0_NTNV



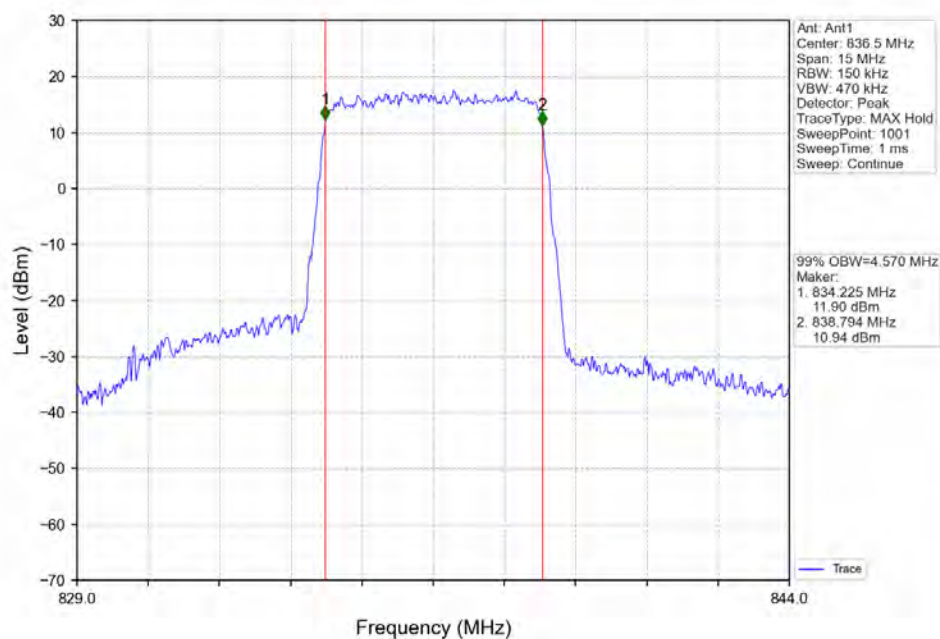
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



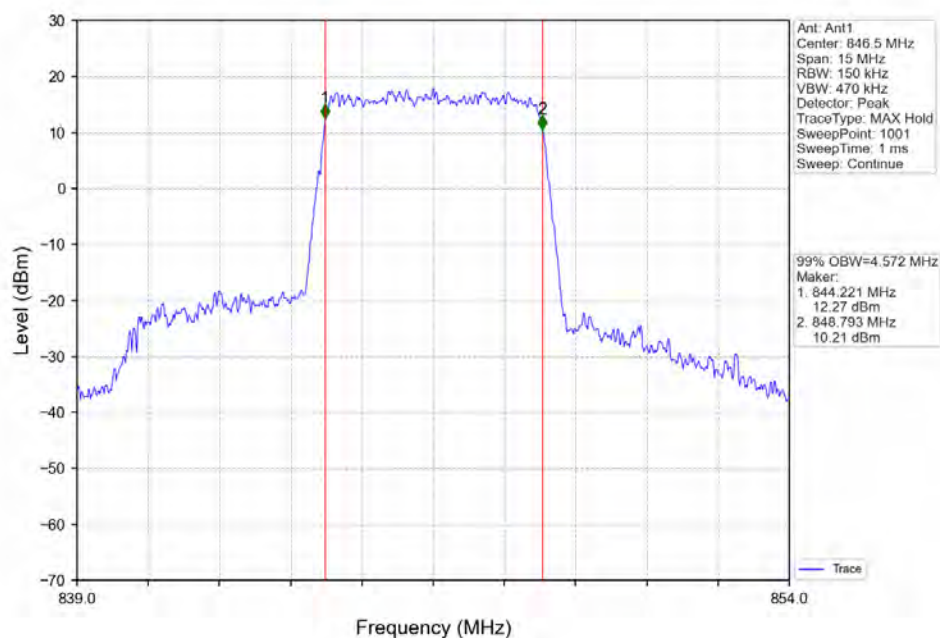
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



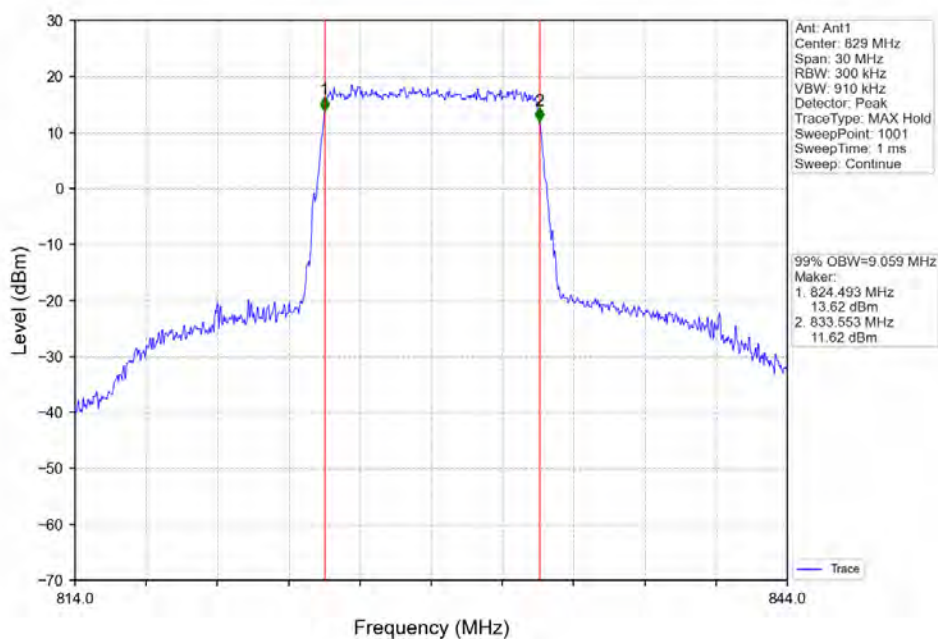
Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



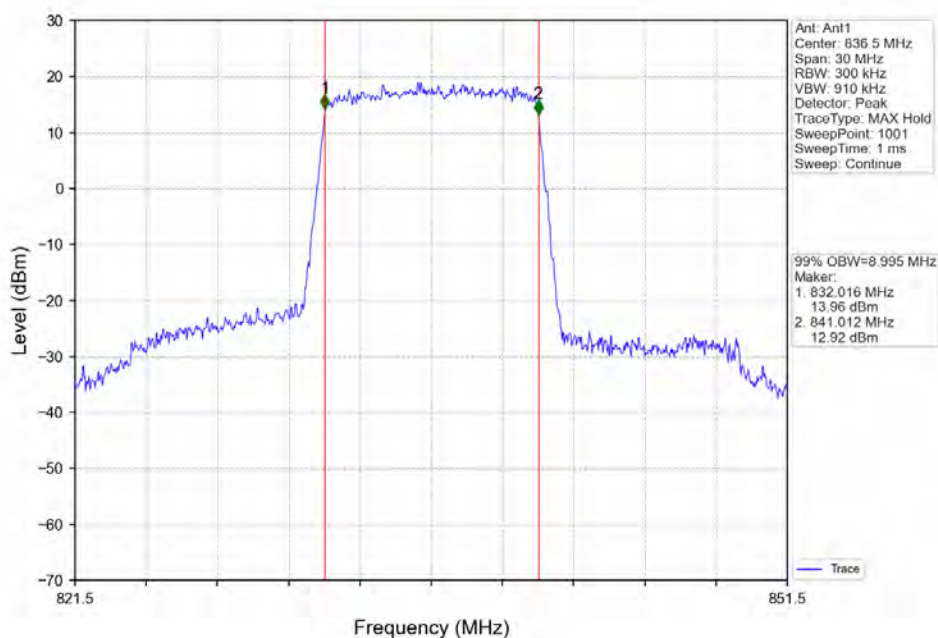
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



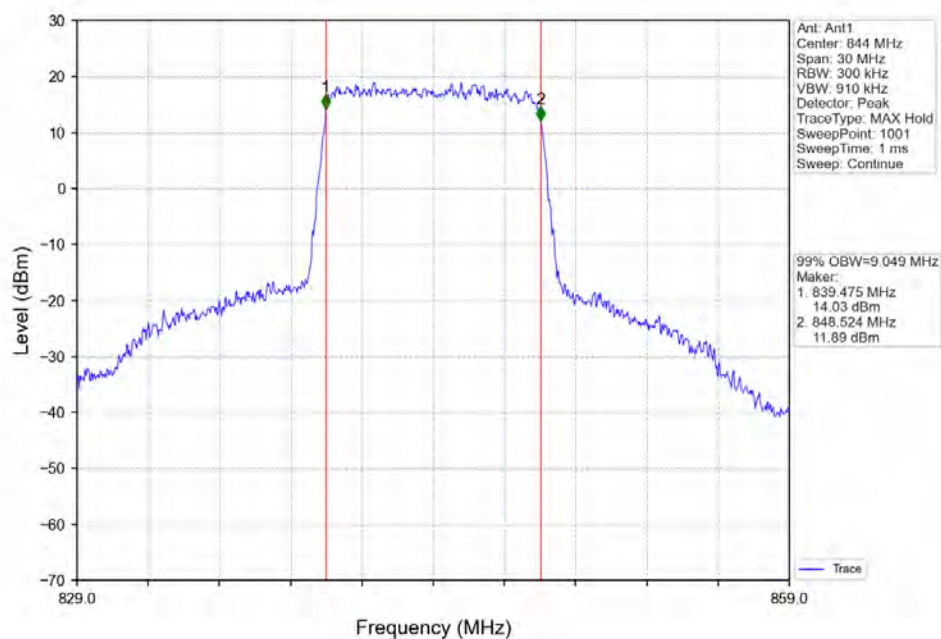
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



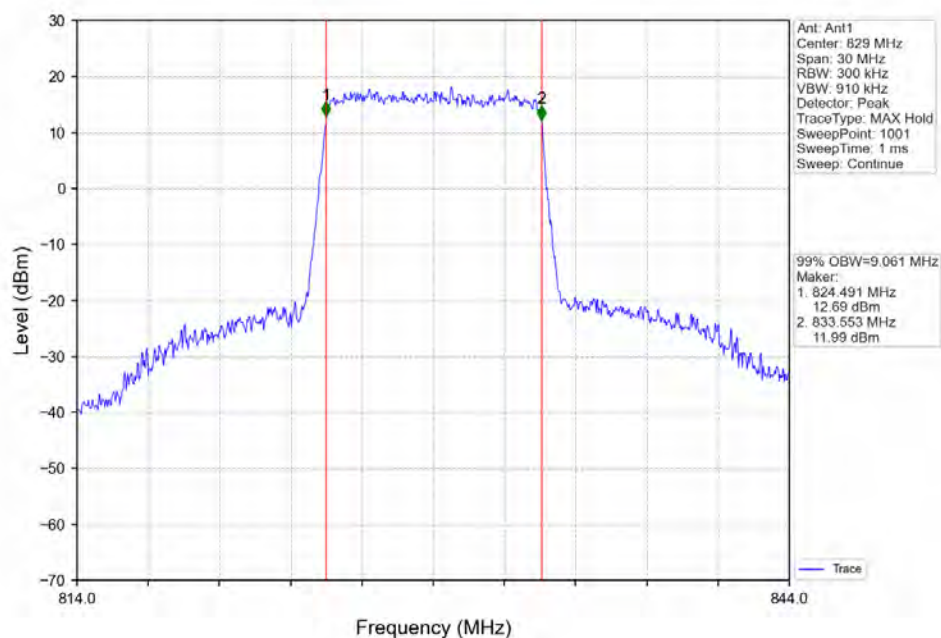
Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



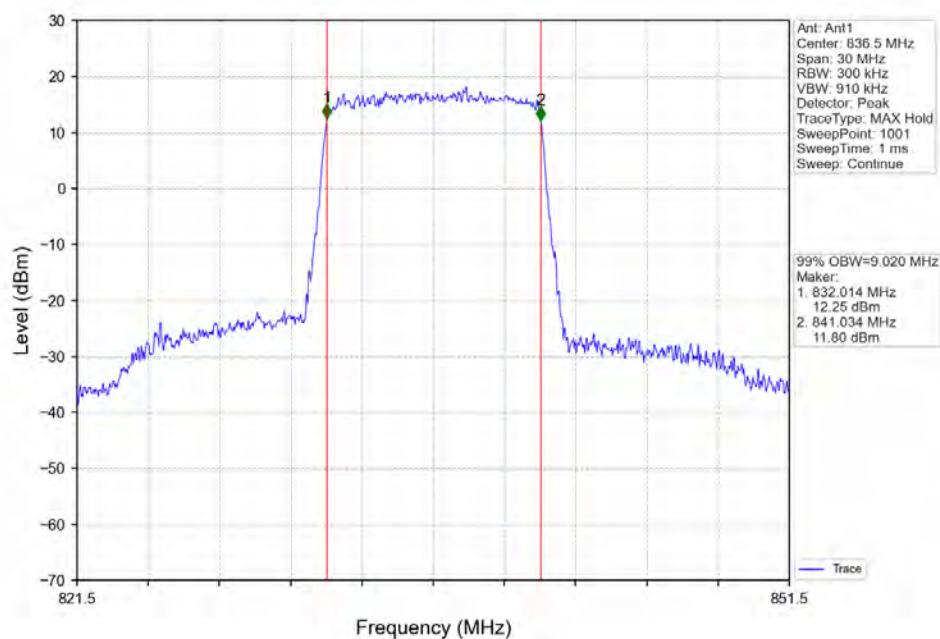
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



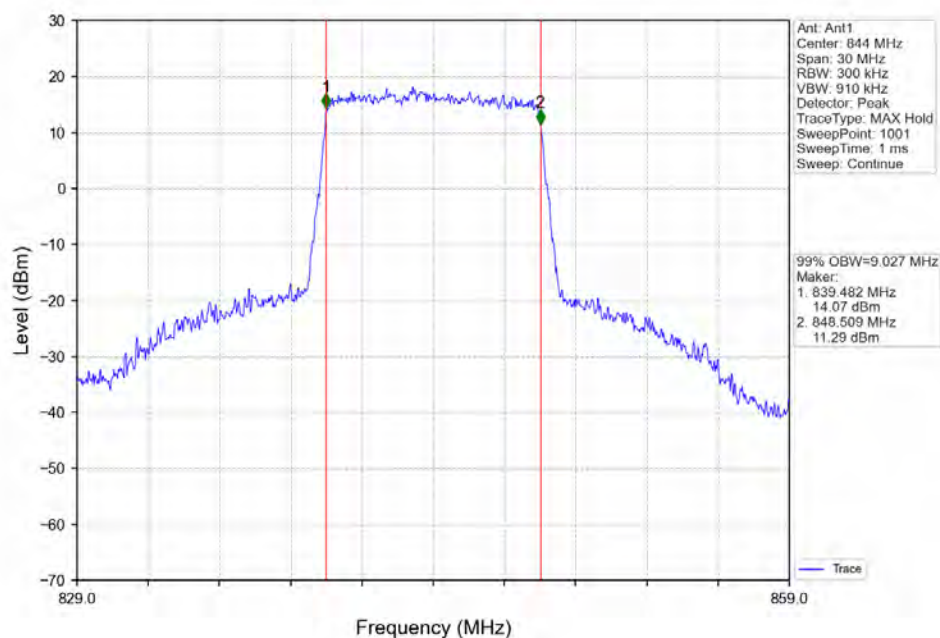
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



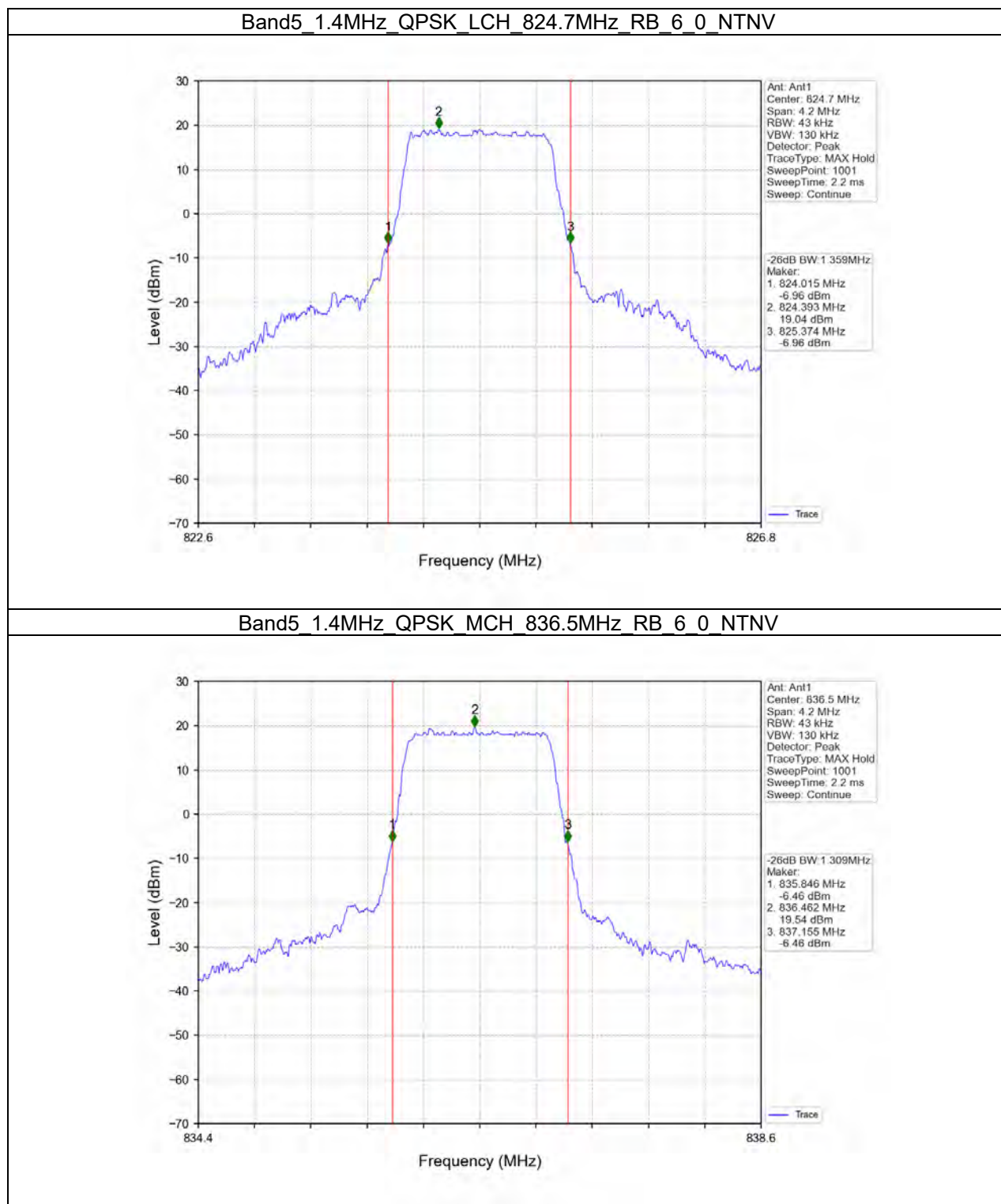
26DB BANDWIDTH

LTE Band5_26DB BW

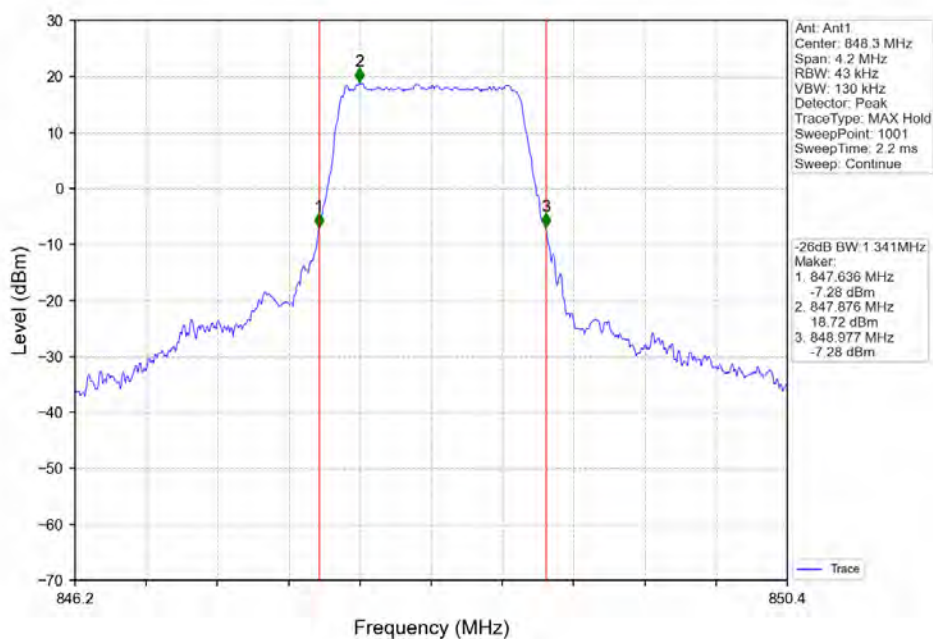
Test Result

Band: 5 / NTNV						
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)	Verdict
			Size	Offset	Result	
1.4	QPSK	824.7	6	0	1.359	Pass
		836.5	6	0	1.309	Pass
		848.3	6	0	1.341	Pass
	16QAM	824.7	6	0	1.304	Pass
		836.5	6	0	1.329	Pass
		848.3	6	0	1.322	Pass
3	QPSK	825.5	15	0	3.047	Pass
		836.5	15	0	3.062	Pass
		847.5	15	0	3.071	Pass
	16QAM	825.5	15	0	3.051	Pass
		836.5	15	0	3.067	Pass
		847.5	15	0	3.053	Pass
5	QPSK	826.5	25	0	5.102	Pass
		836.5	25	0	5.079	Pass
		846.5	25	0	5.073	Pass
	16QAM	826.5	25	0	5.054	Pass
		836.5	25	0	5.056	Pass
		846.5	25	0	5.124	Pass
10	QPSK	829	50	0	10.065	Pass
		836.5	50	0	10.027	Pass
		844	50	0	10.011	Pass
	16QAM	829	50	0	10.003	Pass
		836.5	50	0	9.884	Pass
		844	50	0	9.994	Pass

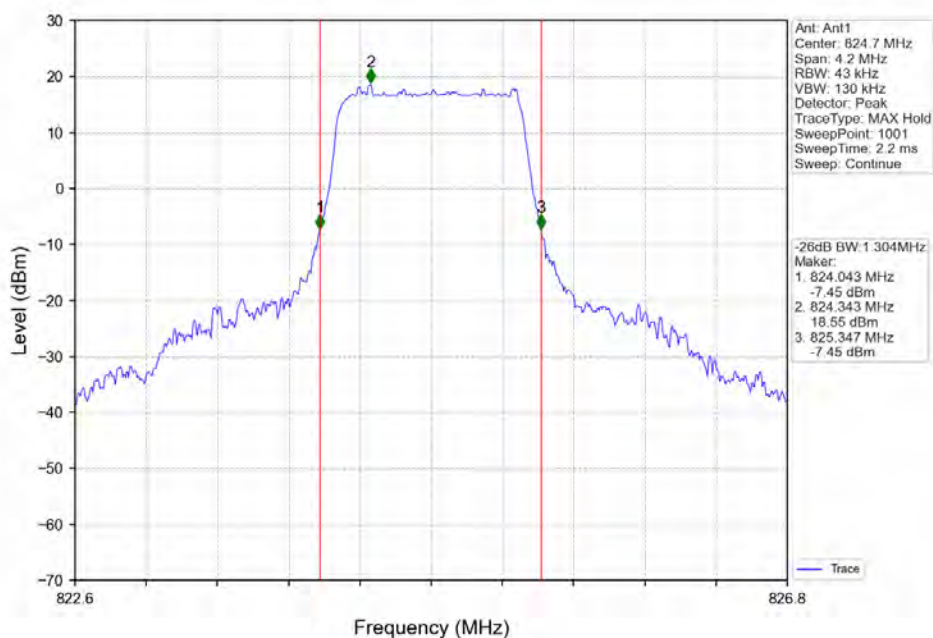
Test Graph



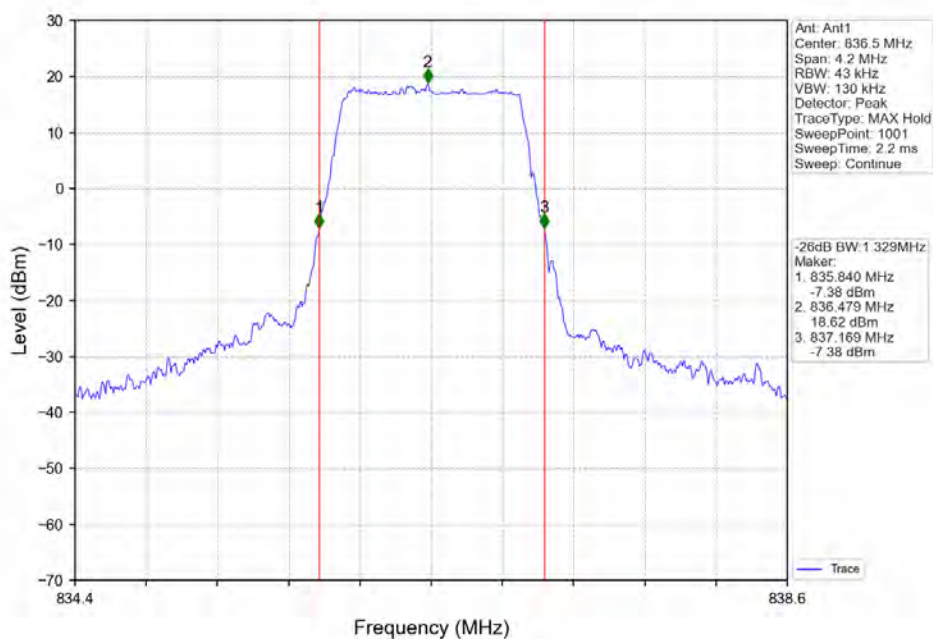
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



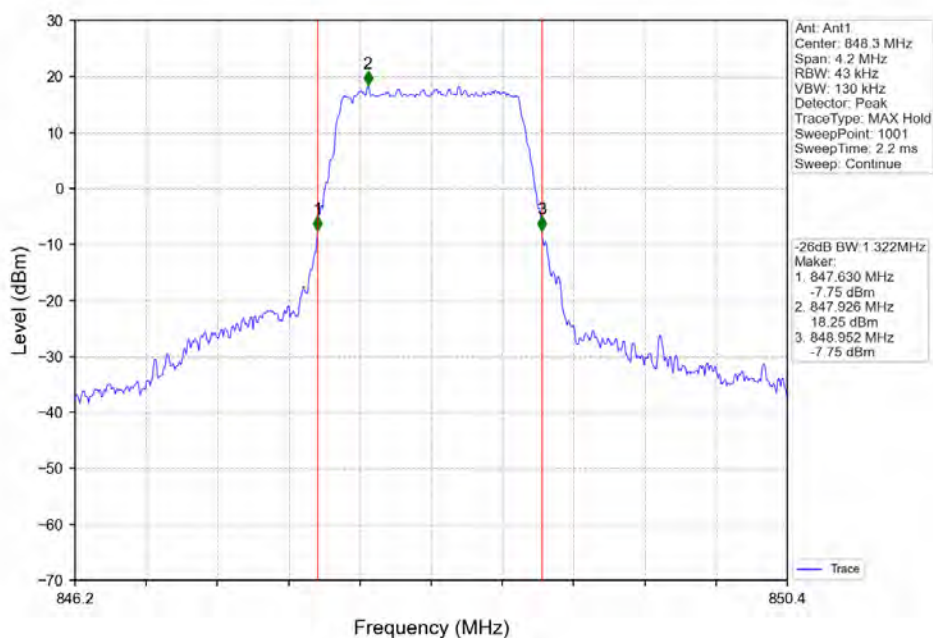
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



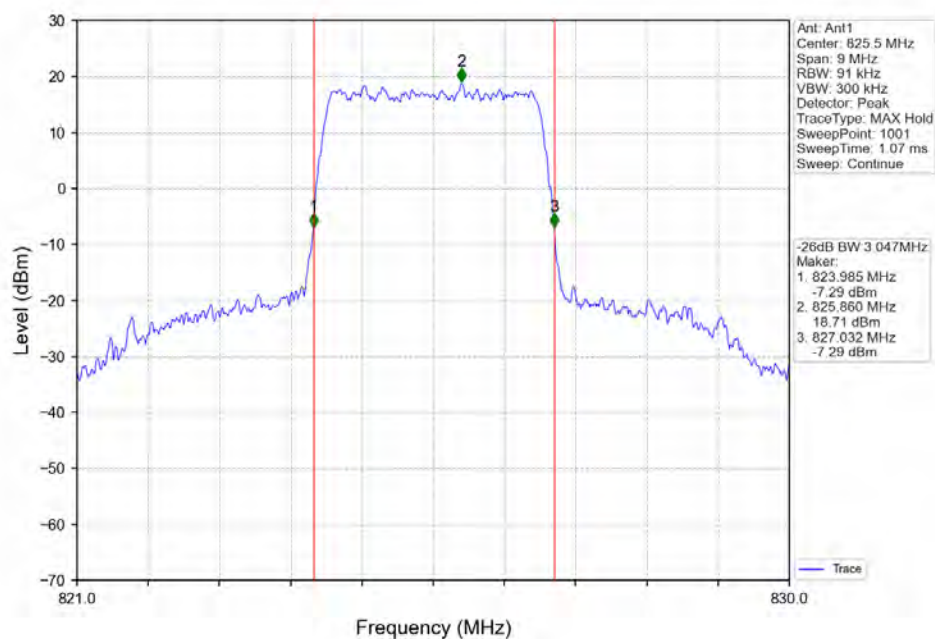
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



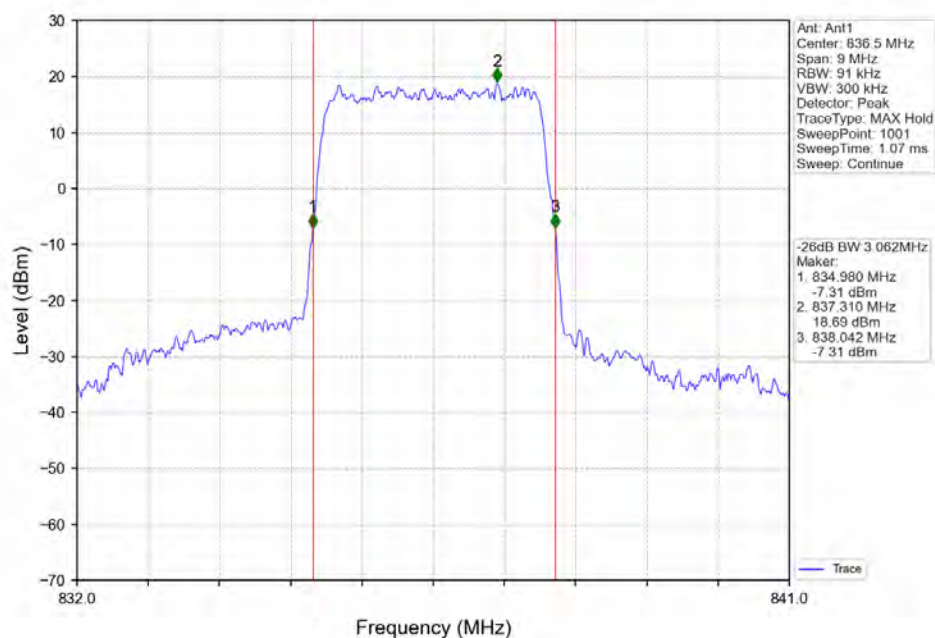
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV



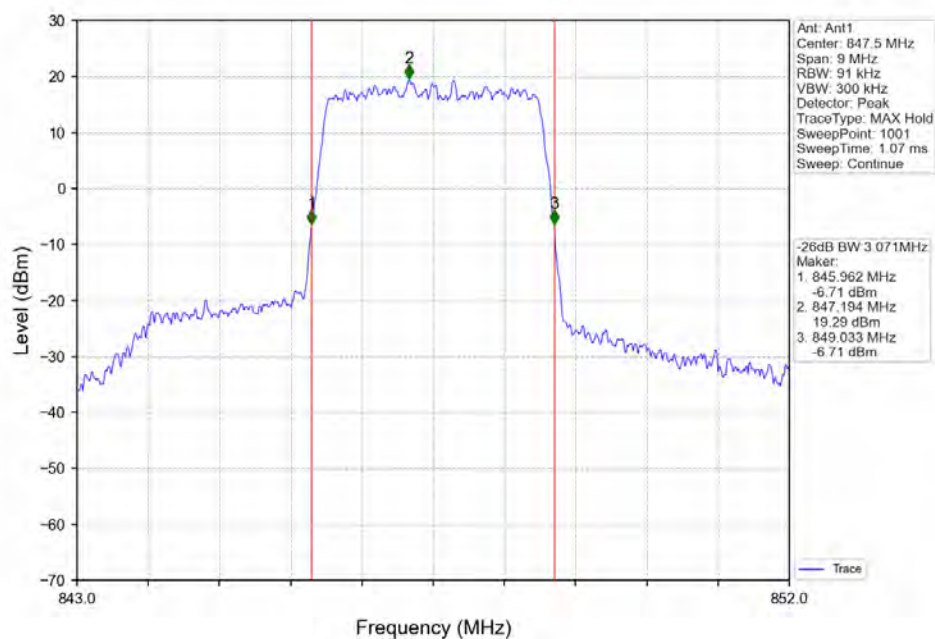
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



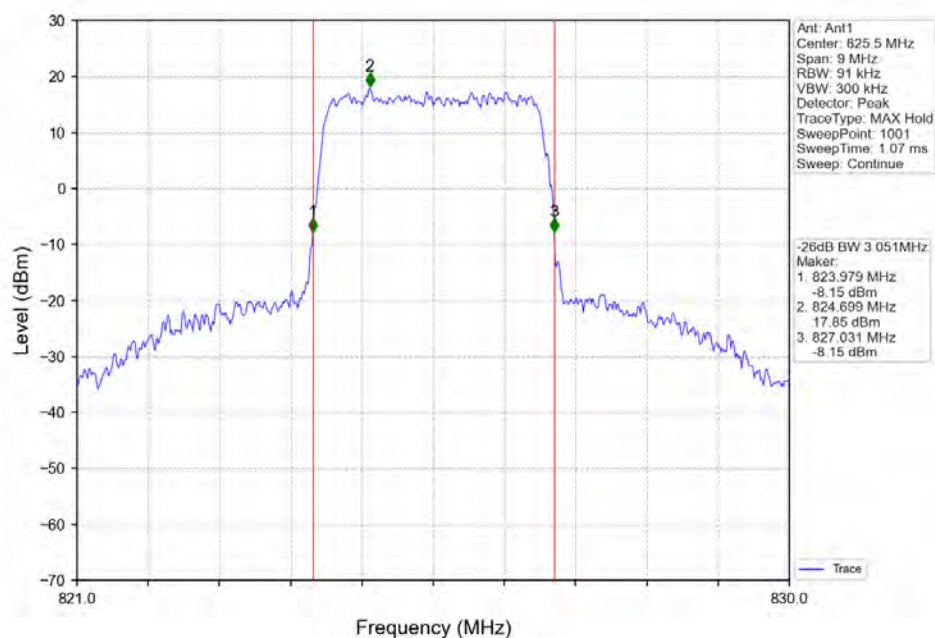
Band5_3MHz_QPSK_MCH_836.5MHz_RB_15_0_NTNV



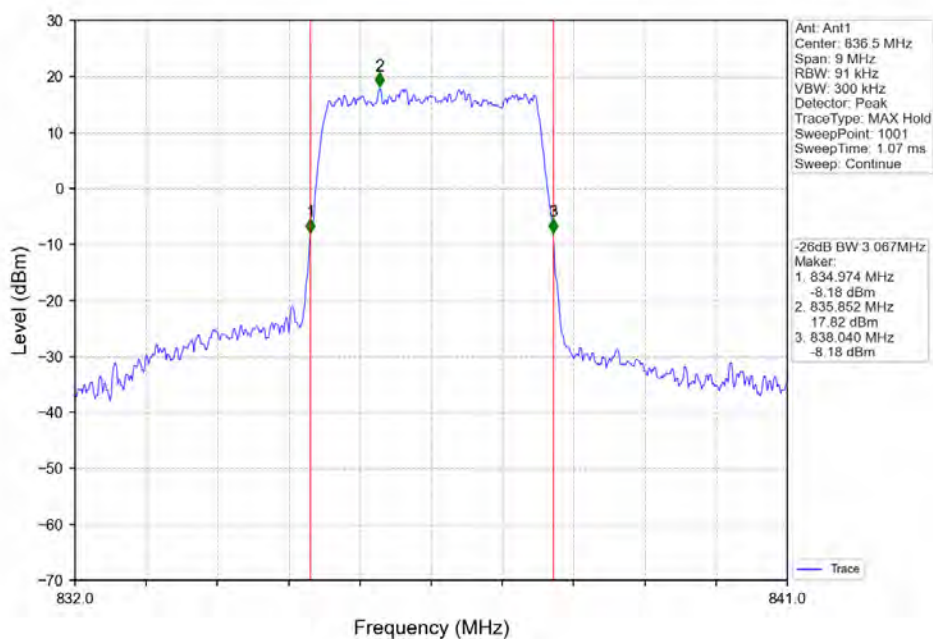
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



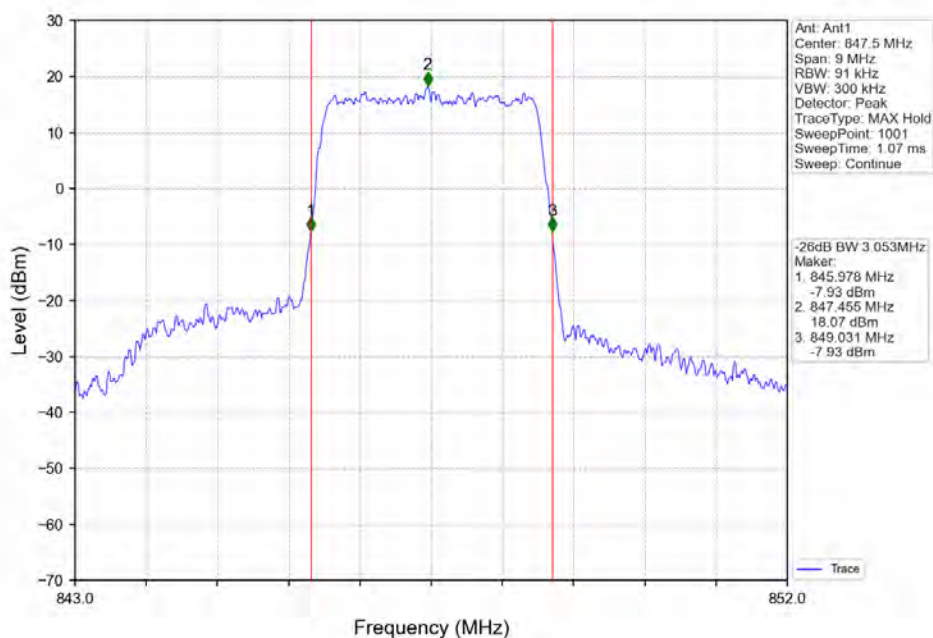
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



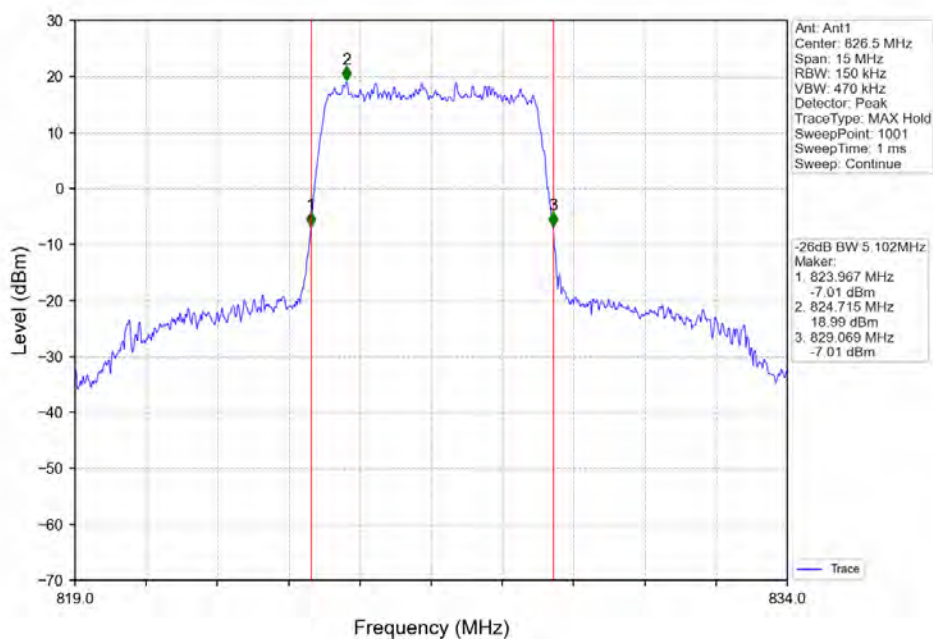
Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



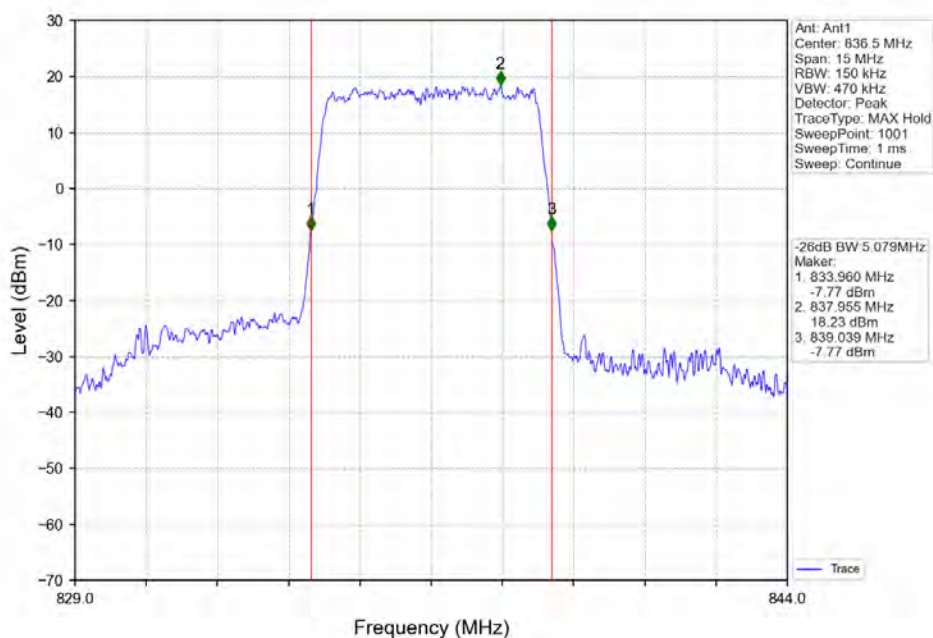
Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV



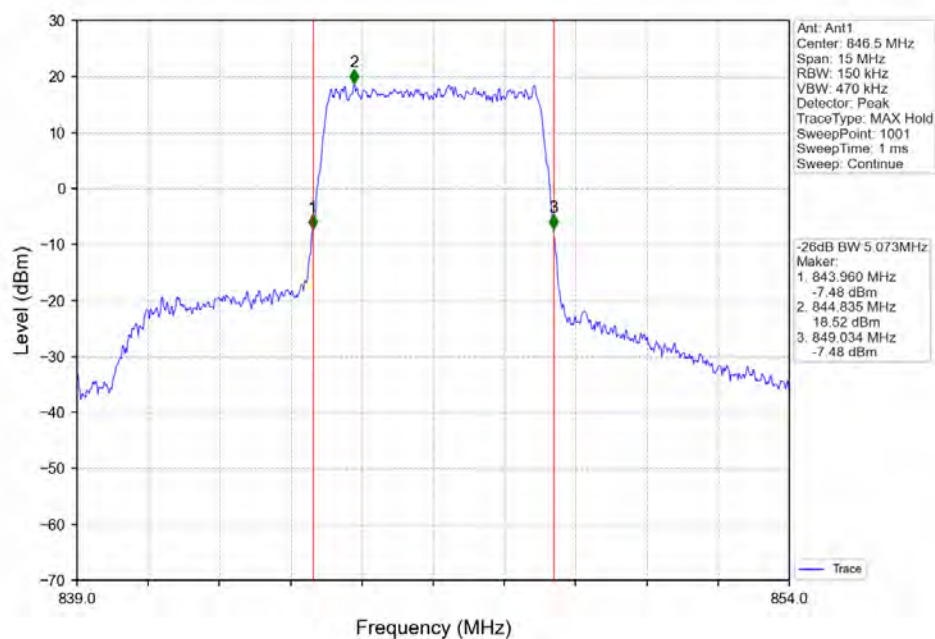
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



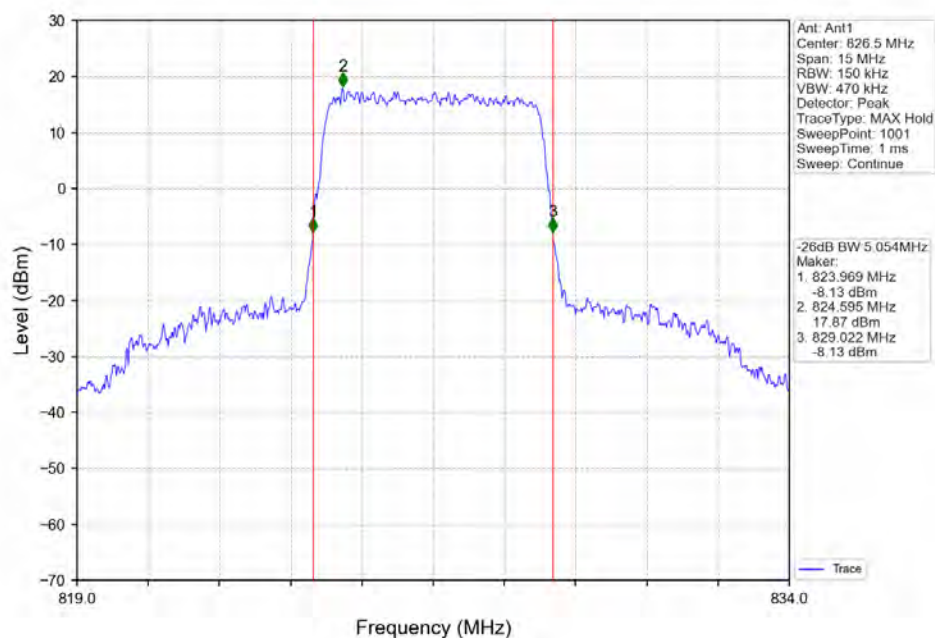
Band5_5MHz_QPSK_MCH_836.5MHz_RB_25_0_NTNV



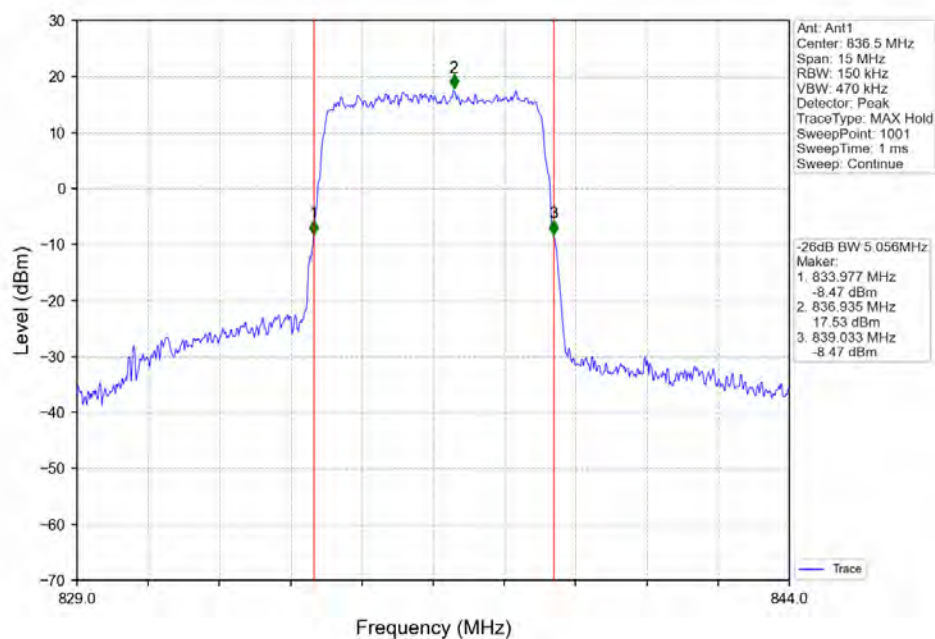
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



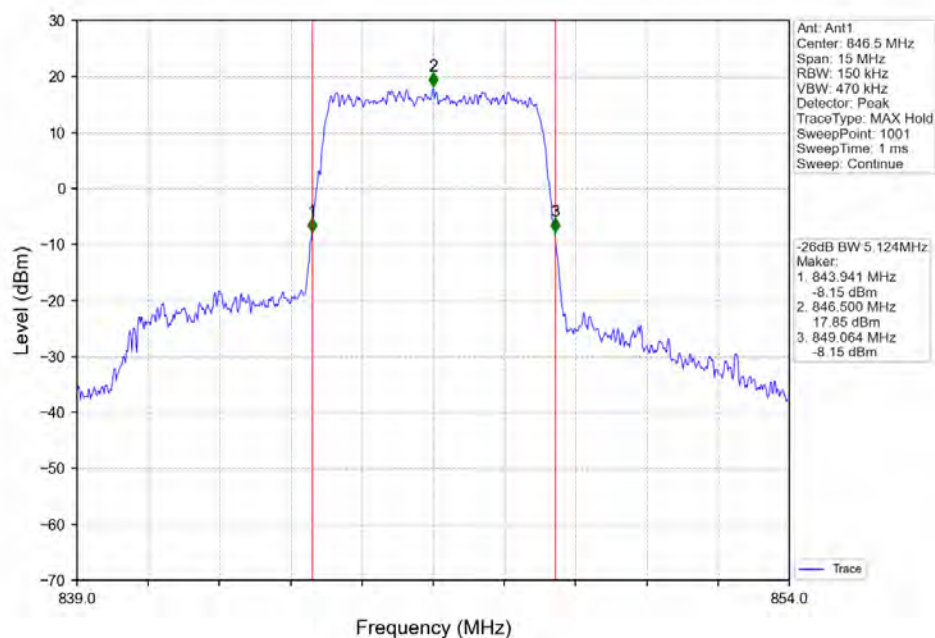
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



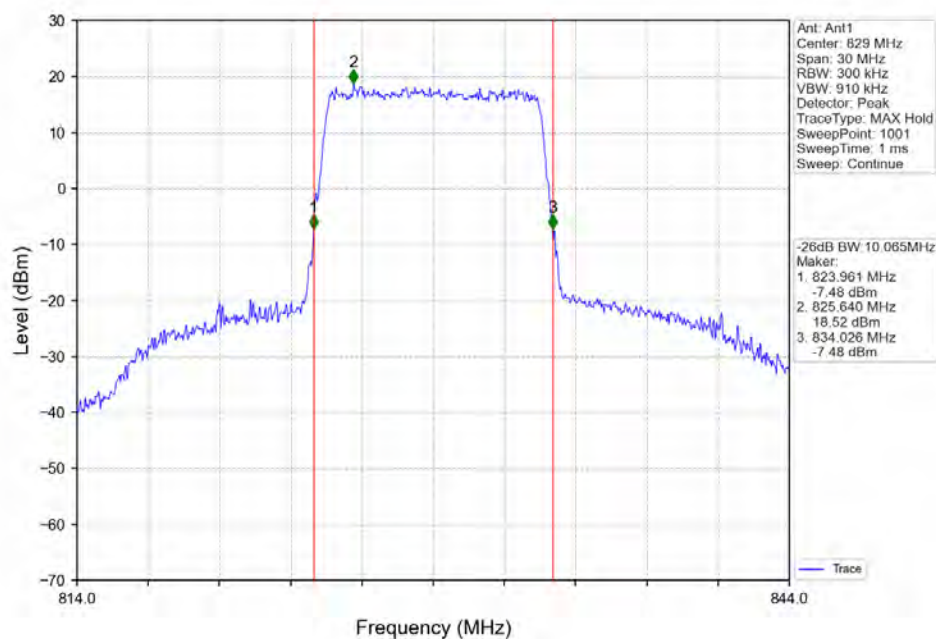
Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



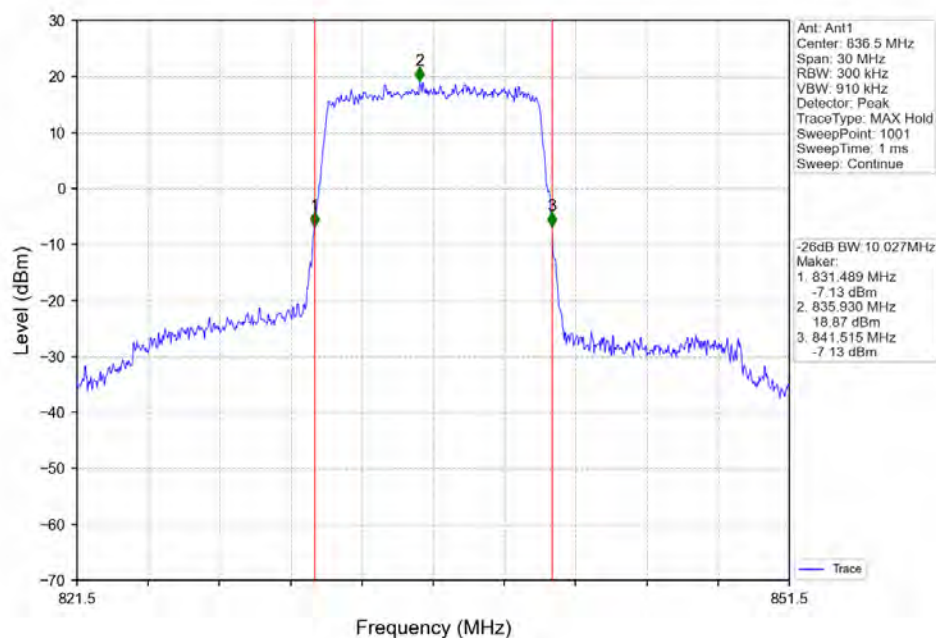
Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV



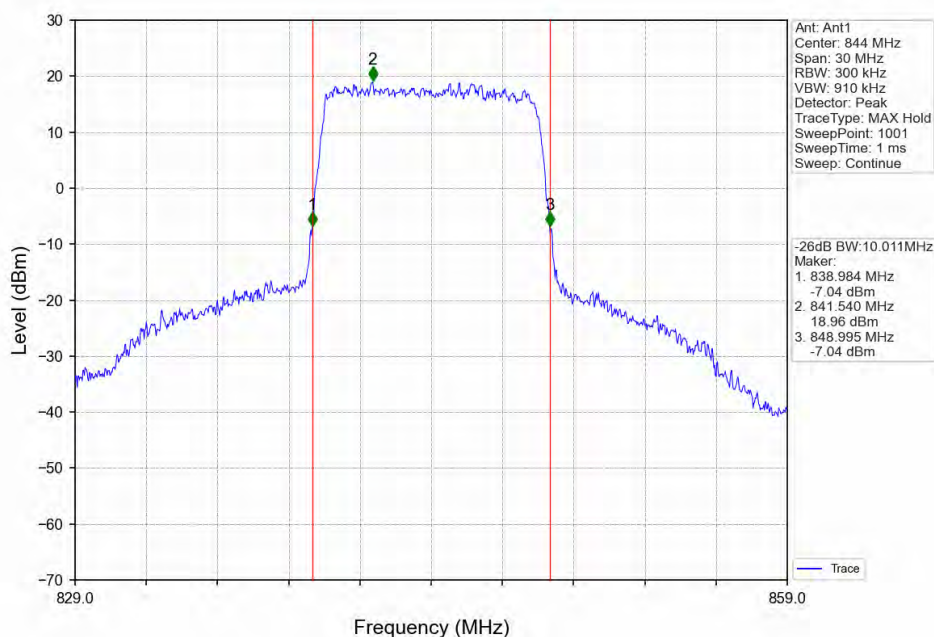
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



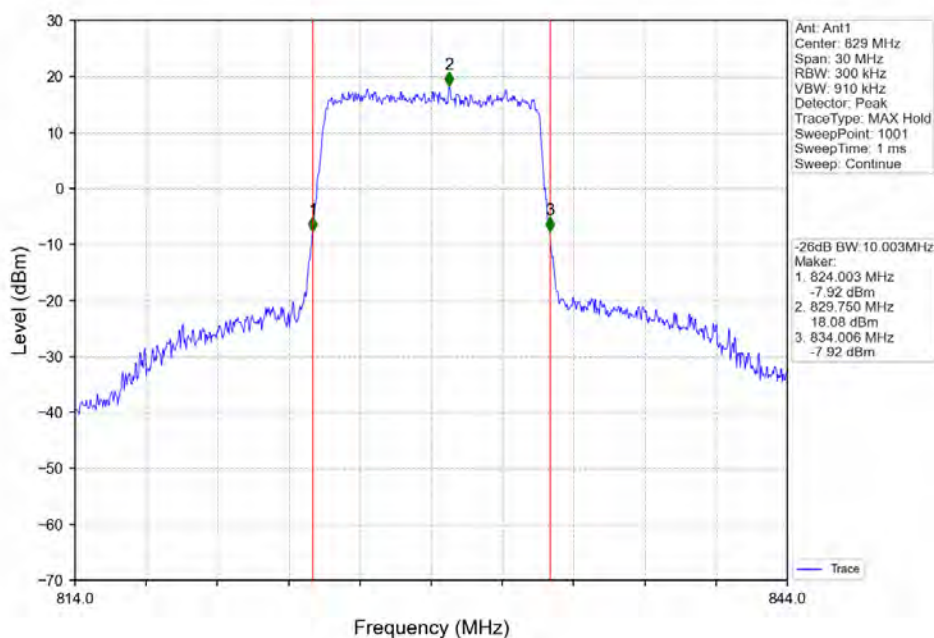
Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



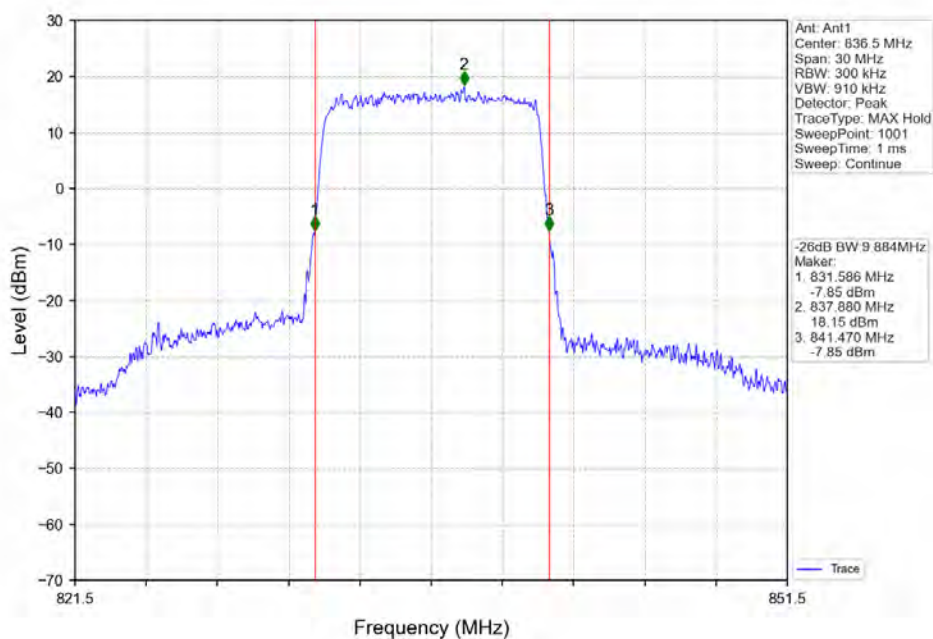
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



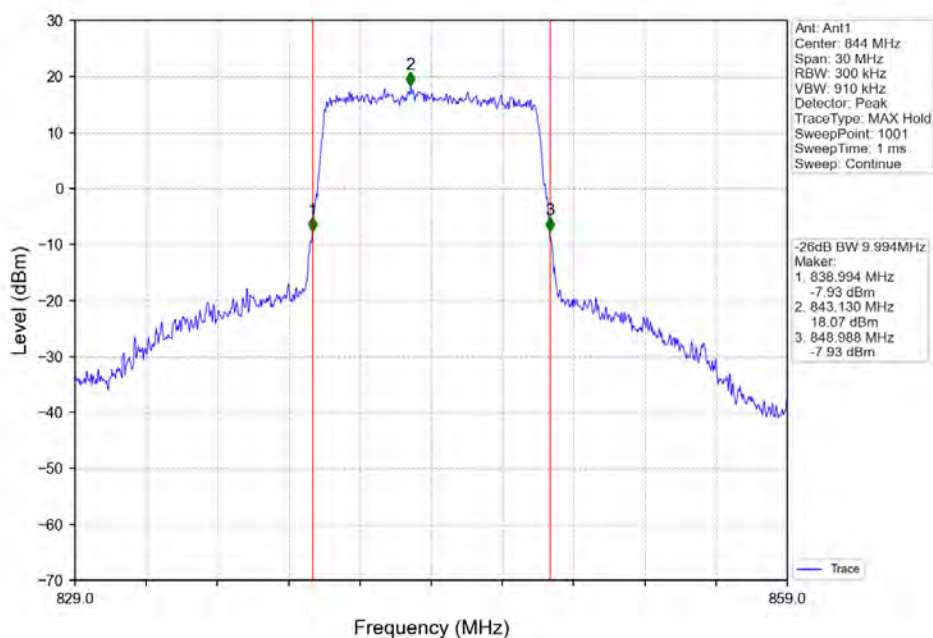
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV





BUREAU
VERITAS

Test Report No.: W7L-P21090018RF04

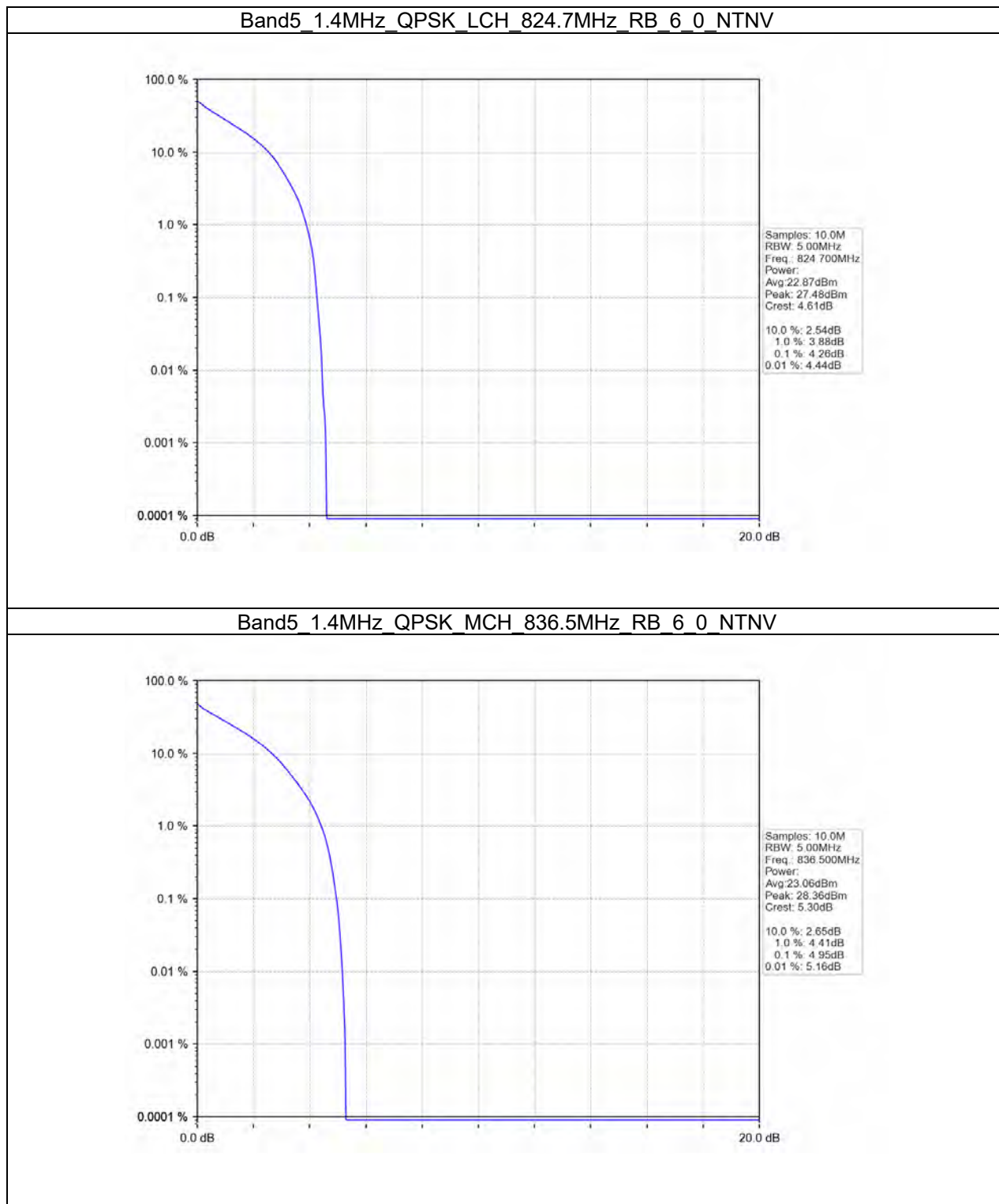
PEAK-AVERAGE RATIO

LTE Band5_1.4MHz

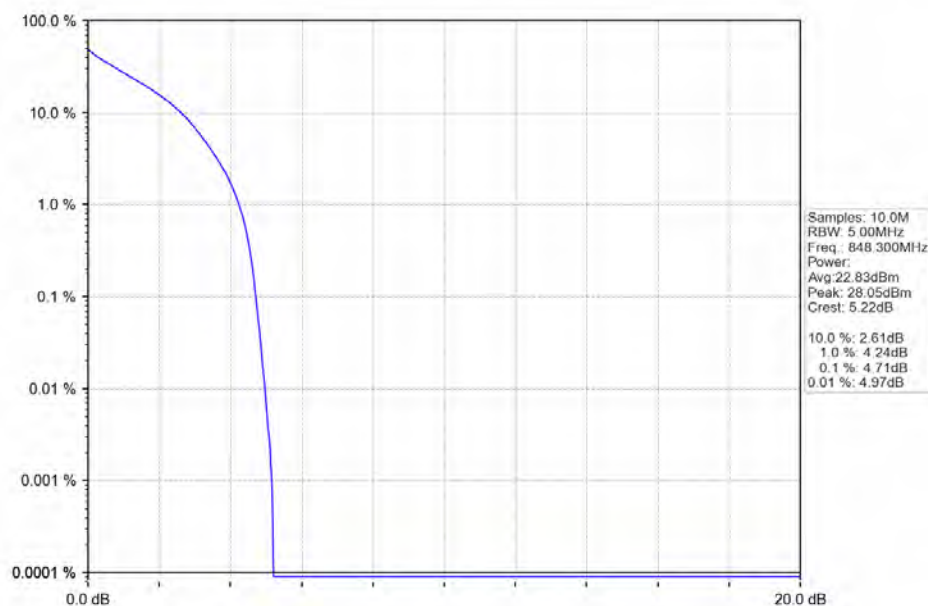
Test Result

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	4.26	<=13	Pass
	836.5	6	0	4.95	<=13	Pass
	848.3	6	0	4.71	<=13	Pass
16QAM	824.7	6	0	5.16	<=13	Pass
	836.5	6	0	5.83	<=13	Pass
	848.3	6	0	5.62	<=13	Pass

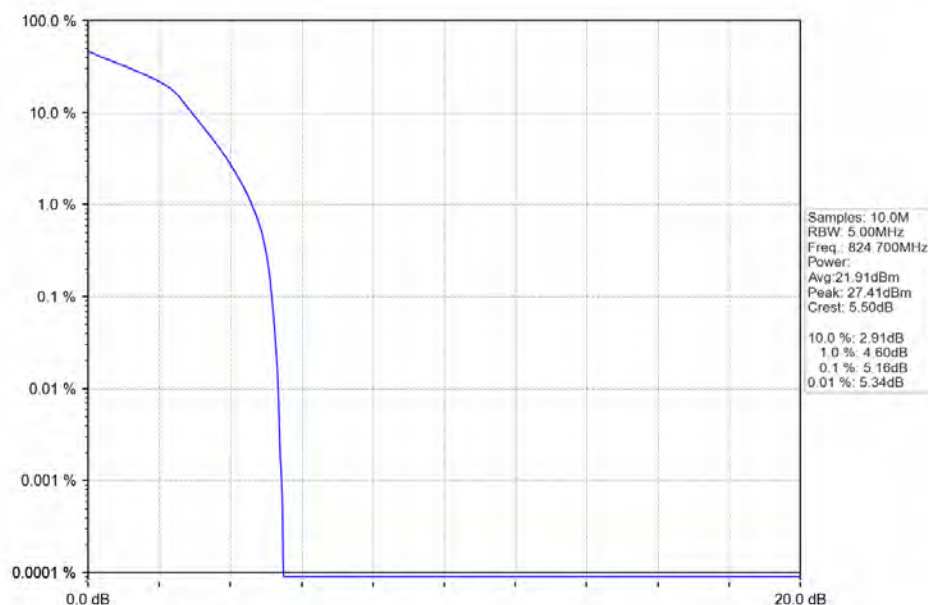
Test Graph



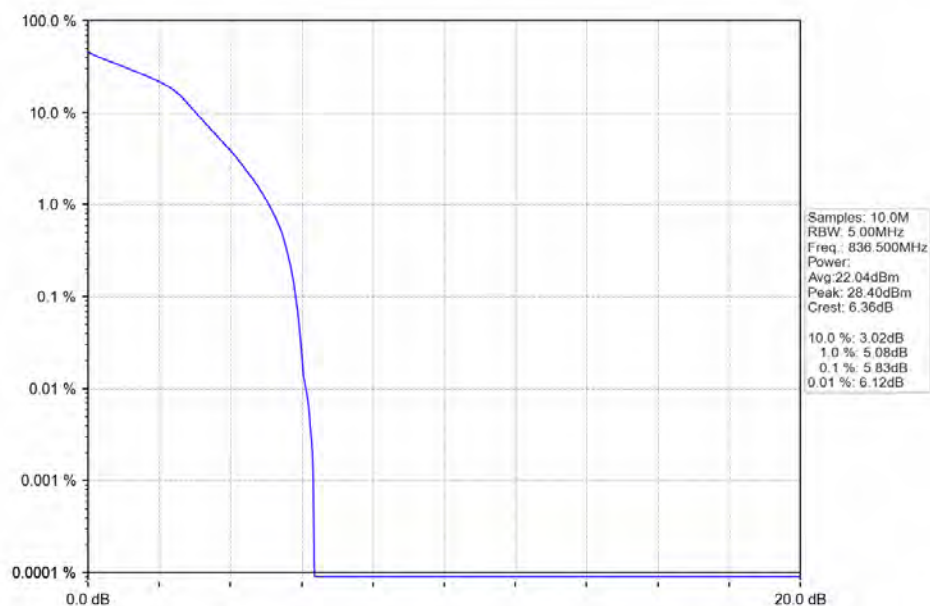
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



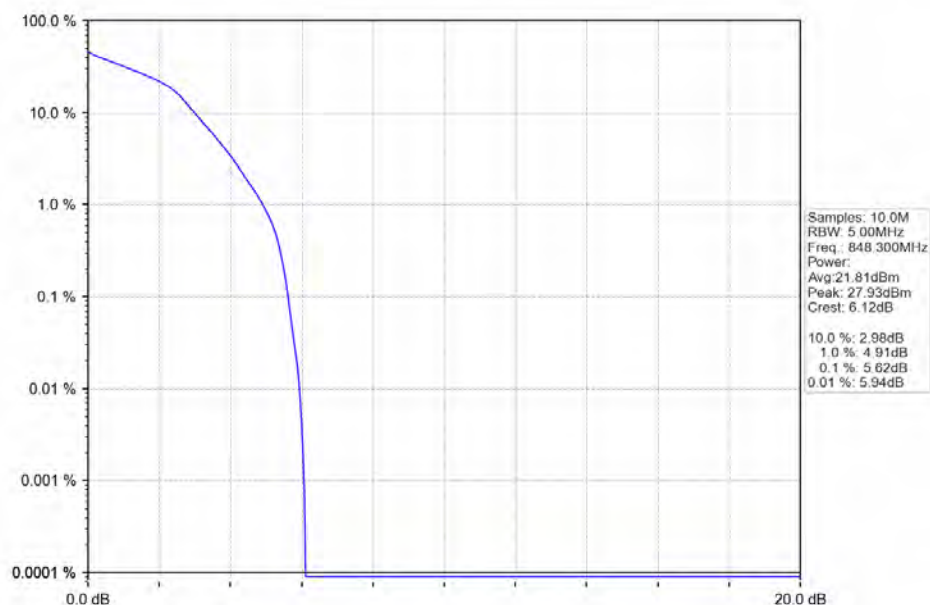
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_6_0_NTNV



Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV

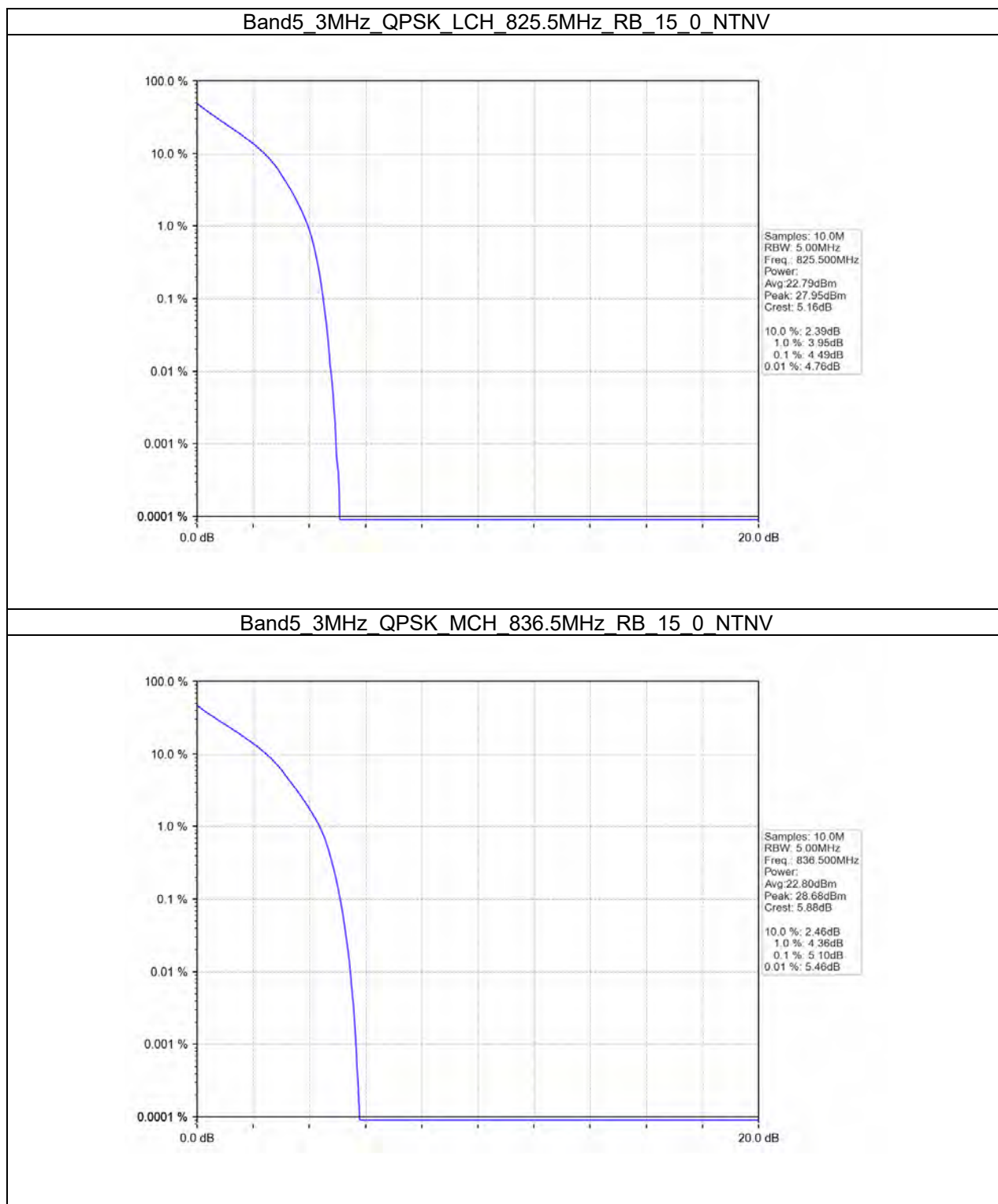


LTE Band5_3MHz

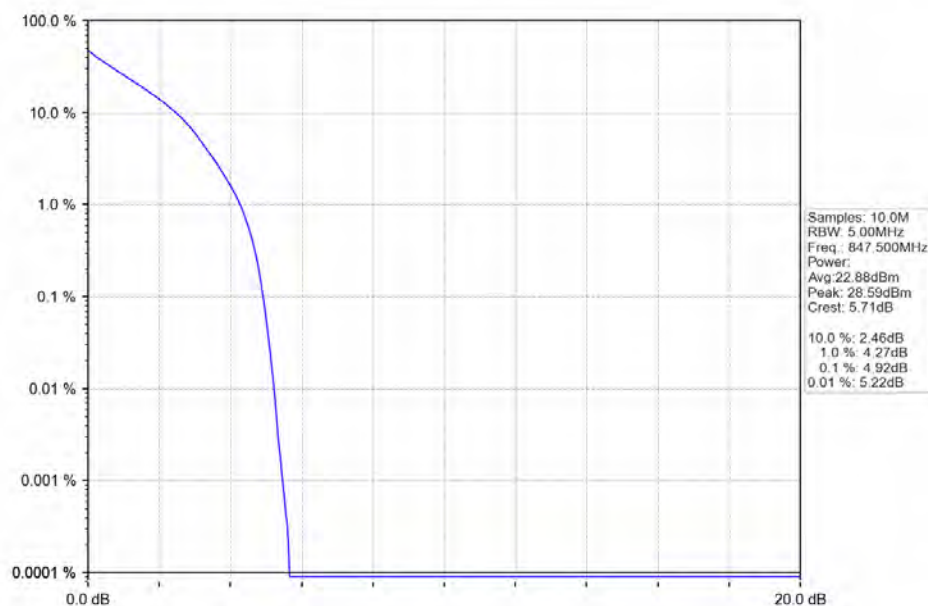
Test Result

Band: 5 / Bandwidth: 3MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	825.5	15	0	4.49	<=13	Pass
	836.5	15	0	5.10	<=13	Pass
	847.5	15	0	4.92	<=13	Pass
16QAM	825.5	15	0	5.39	<=13	Pass
	836.5	15	0	5.99	<=13	Pass
	847.5	15	0	5.78	<=13	Pass

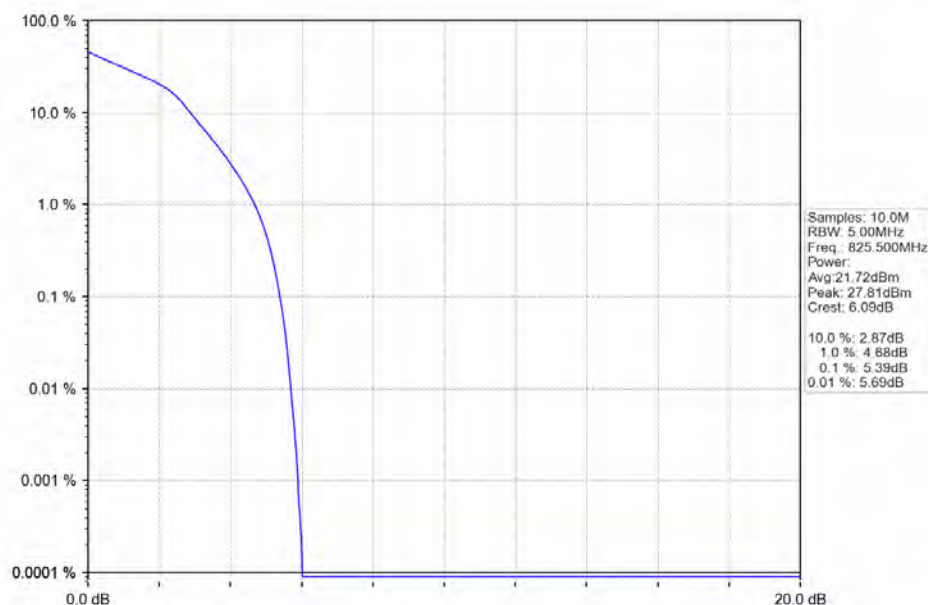
Test Graph



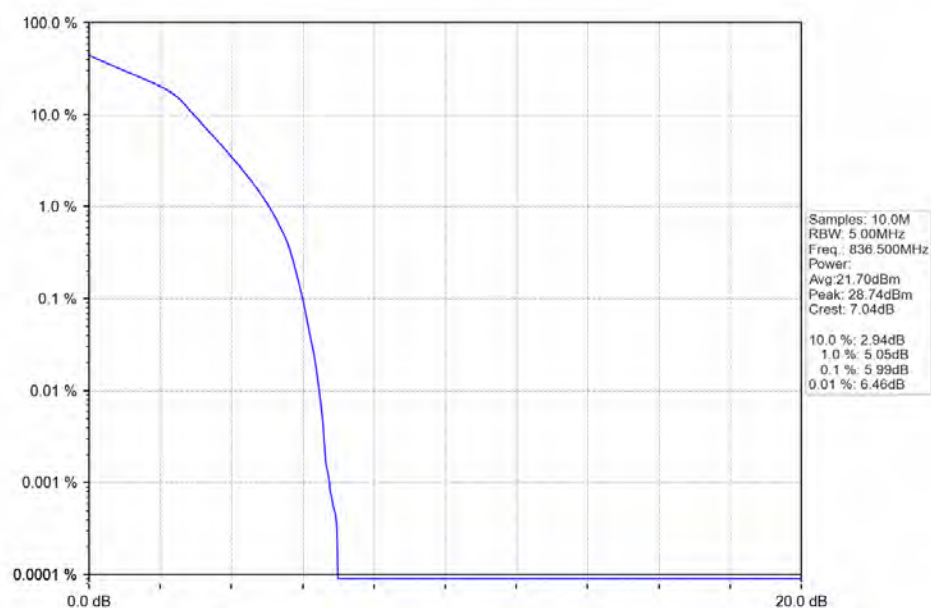
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



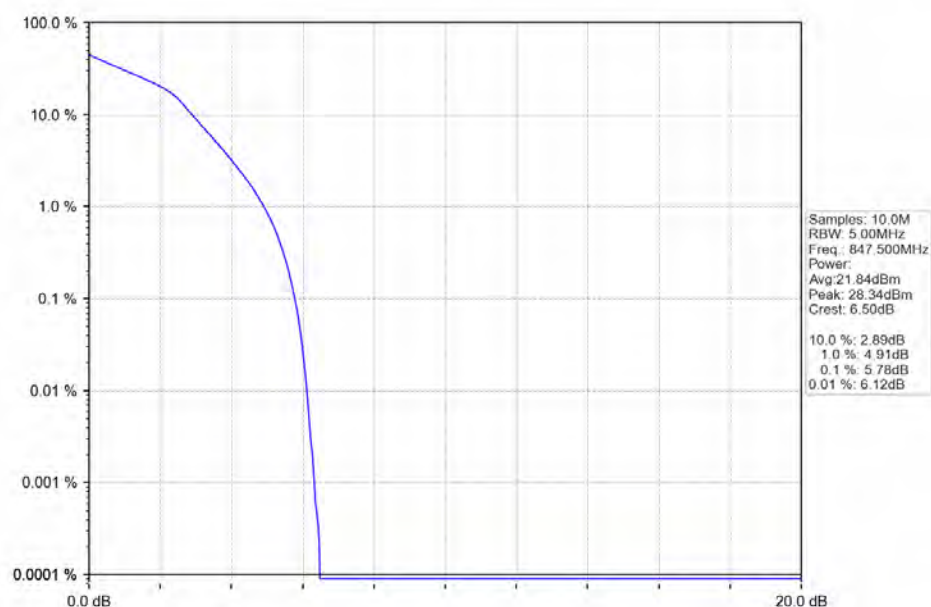
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



Band5_3MHz_16QAM_MCH_836.5MHz_RB_15_0_NTNV



Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV

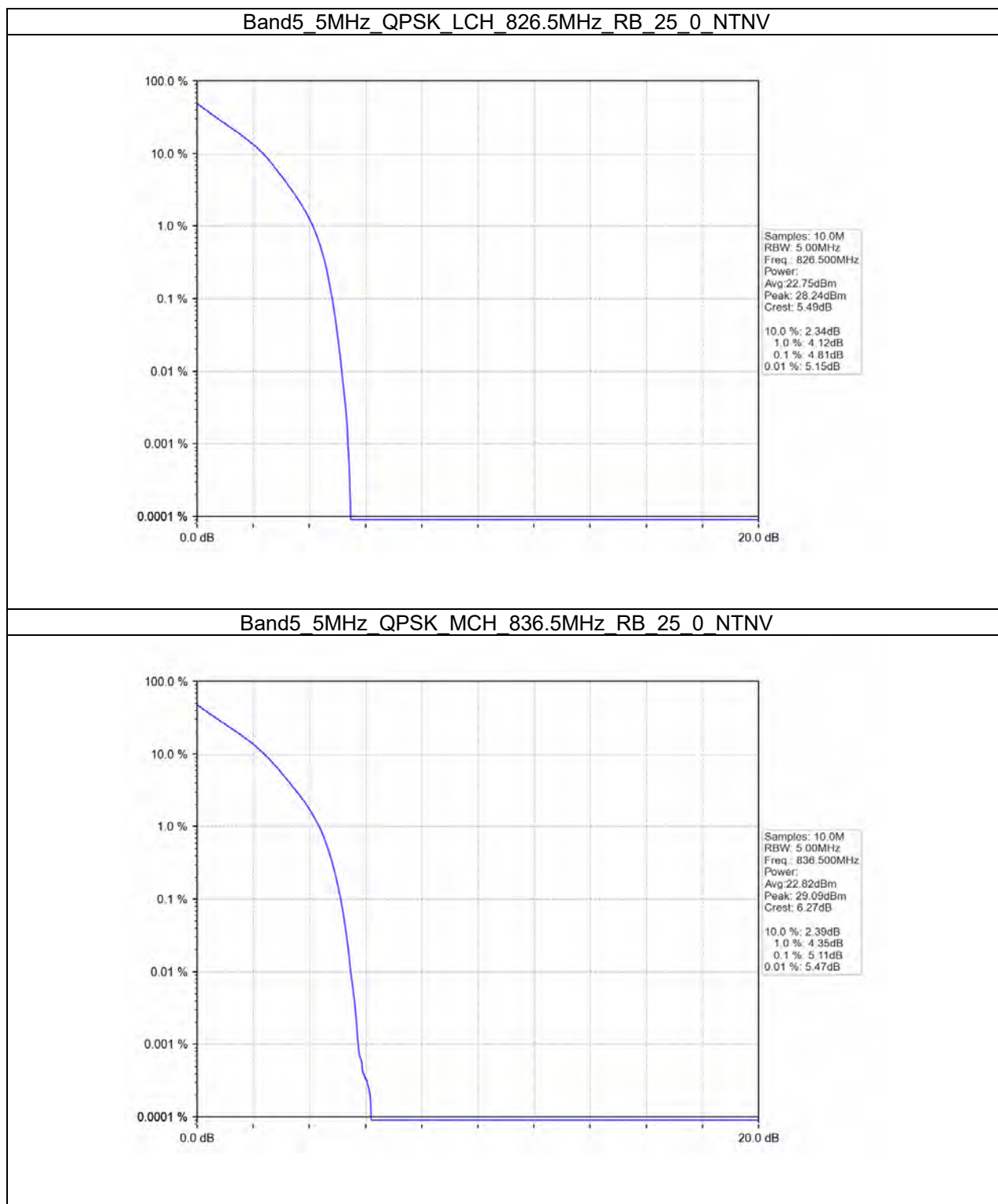


LTE Band5_5MHz

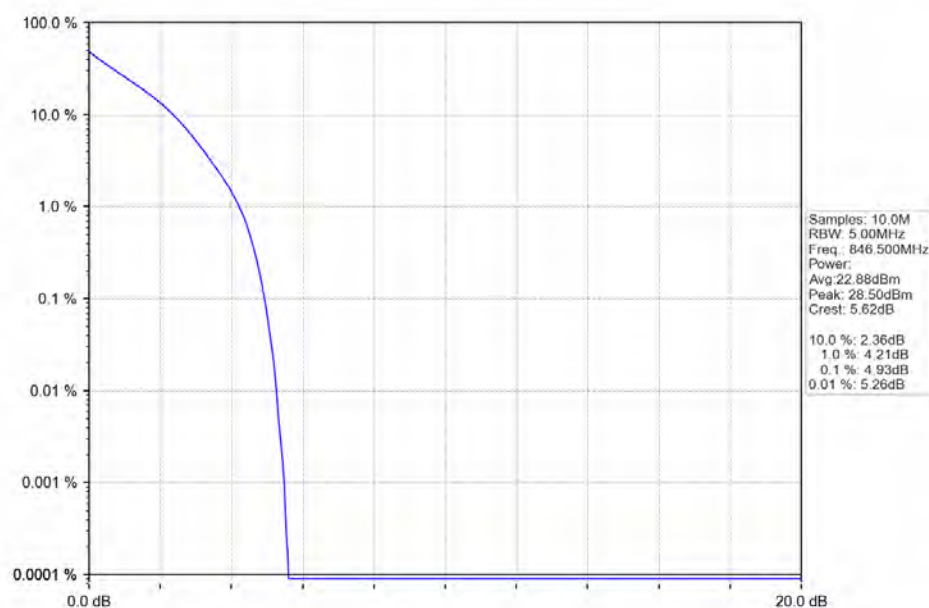
Test Result

Band: 5 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	826.5	25	0	4.81	<=13	Pass
	836.5	25	0	5.11	<=13	Pass
	846.5	25	0	4.93	<=13	Pass
16QAM	826.5	25	0	5.58	<=13	Pass
	836.5	25	0	5.94	<=13	Pass
	846.5	25	0	5.75	<=13	Pass

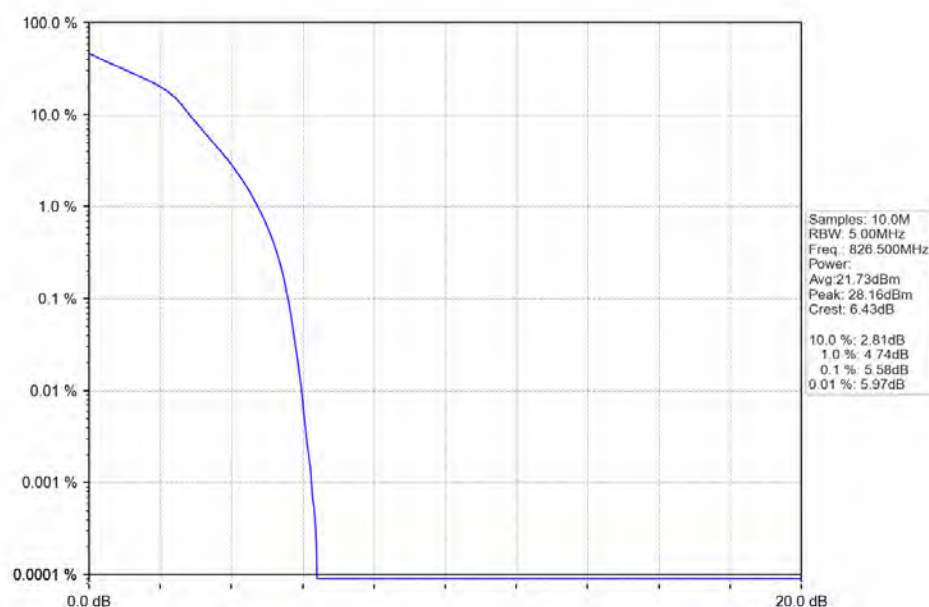
Test Graph



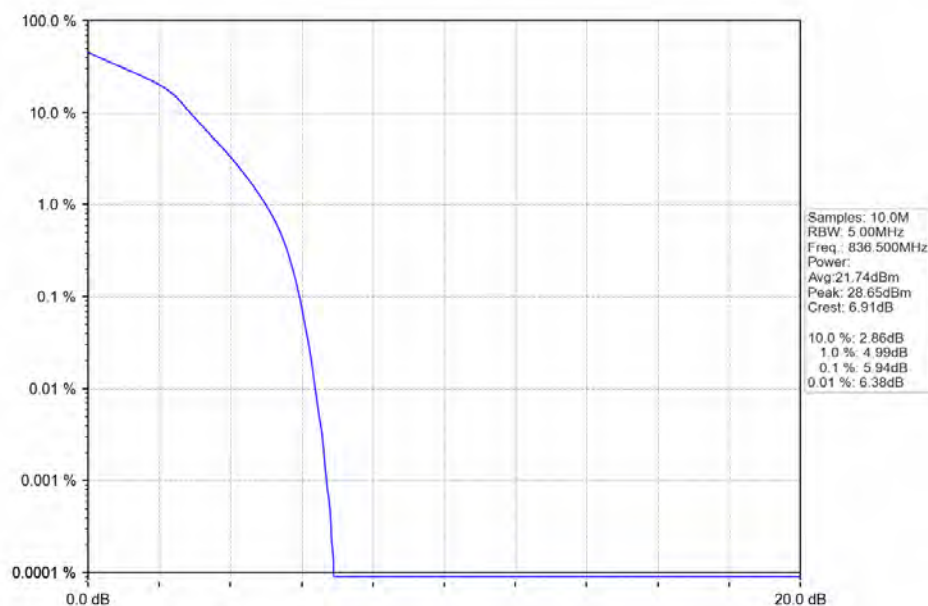
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



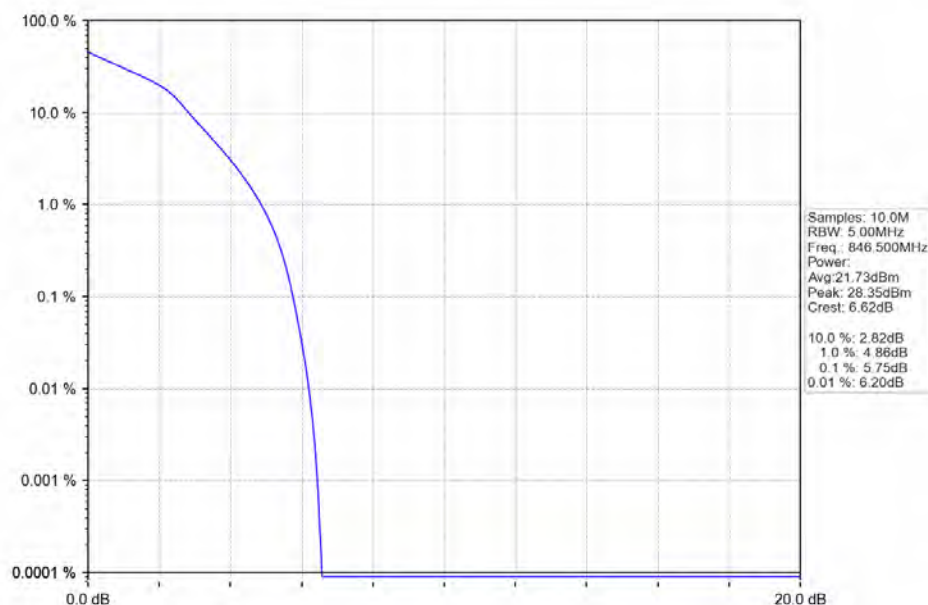
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



Band5_5MHz_16QAM_MCH_836.5MHz_RB_25_0_NTNV



Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV





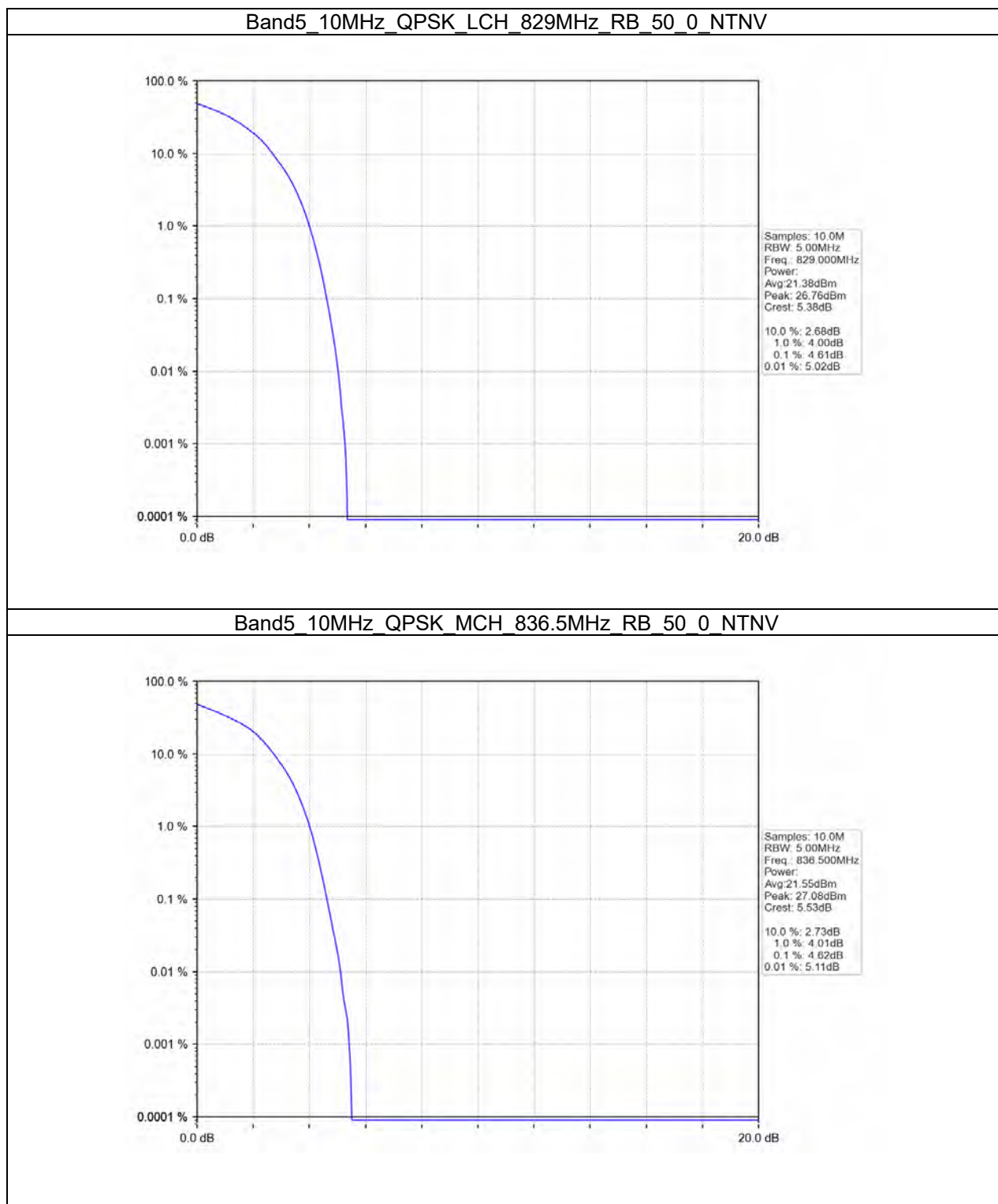
Test Report No.: W7L-P21090018RF04

LTE Band5_10MHz

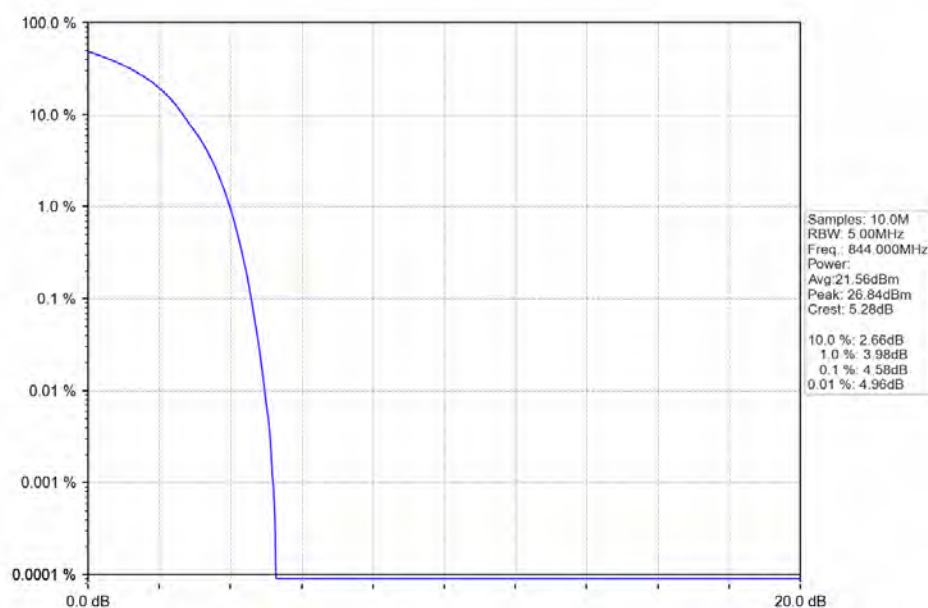
Test Result

Band: 5 / Bandwidth: 10MHz / NTN						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	829	50	0	4.61	<=13	Pass
	836.5	50	0	4.62	<=13	Pass
	844	50	0	4.58	<=13	Pass
16QAM	829	50	0	6.00	<=13	Pass
	836.5	50	0	6.03	<=13	Pass
	844	50	0	5.93	<=13	Pass

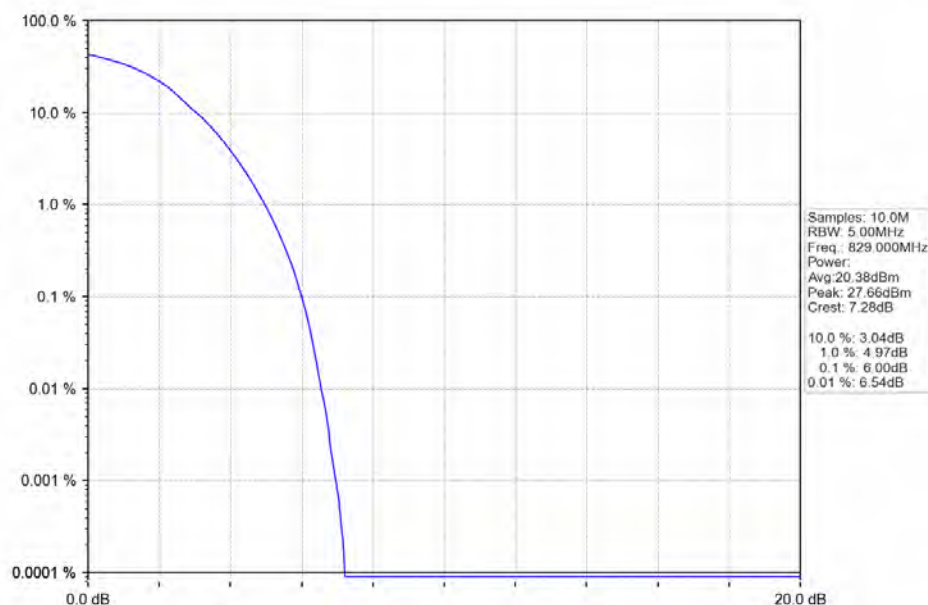
Test Graph



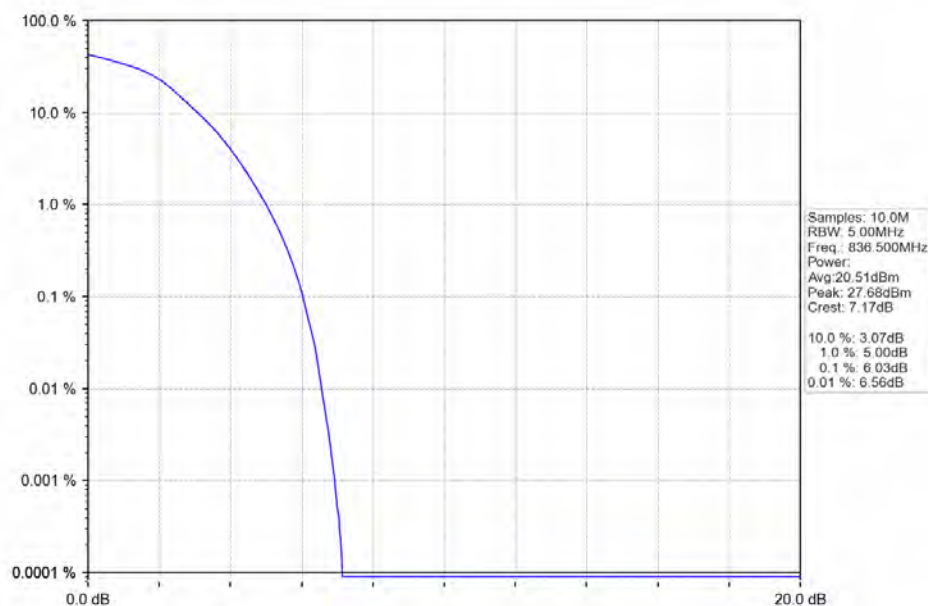
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



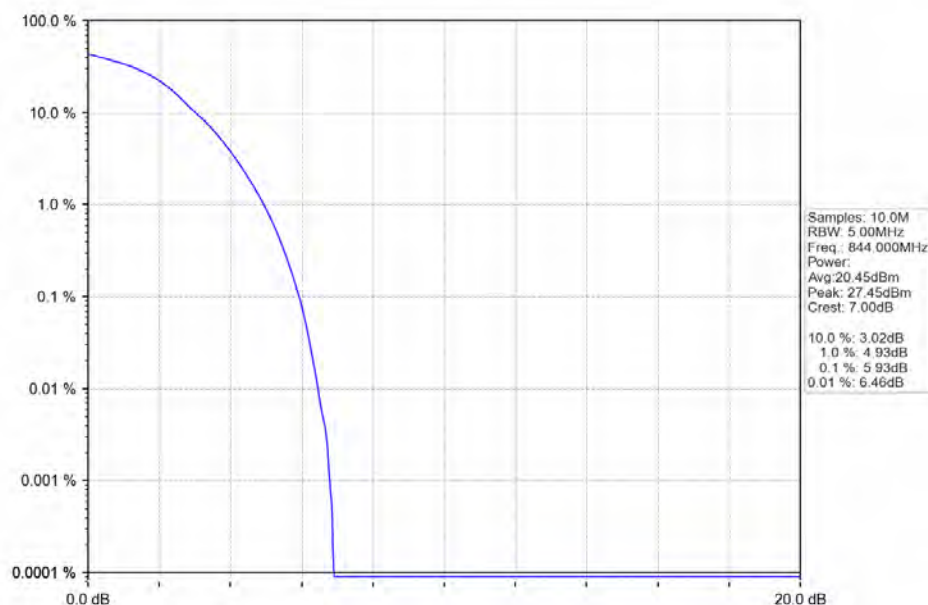
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



Spurious Emission



**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF04

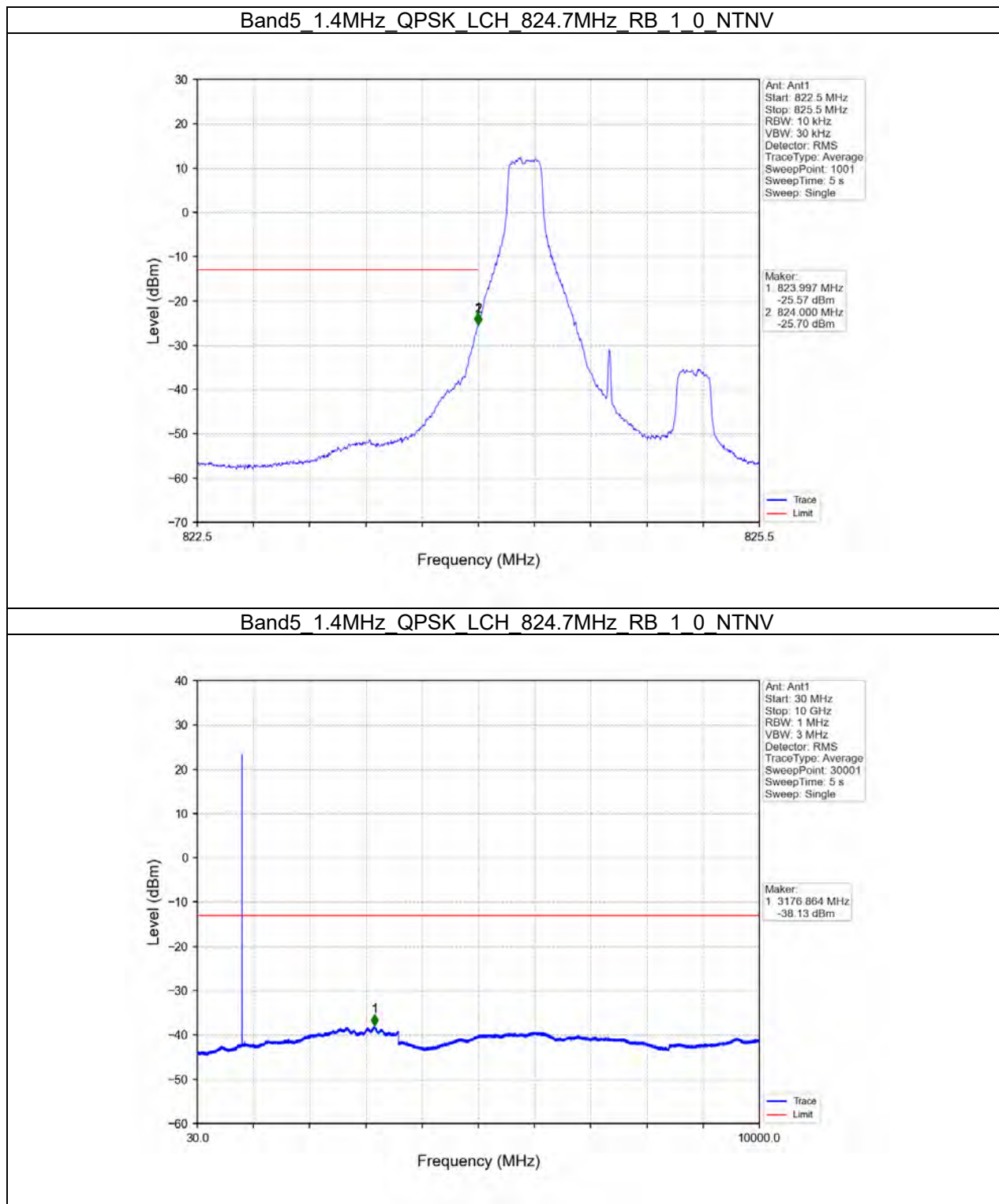
SPURIOUS EMISSION(BANDEDGE AND CONDUCTED EMISSION)

LTE Band5_1.4MHz

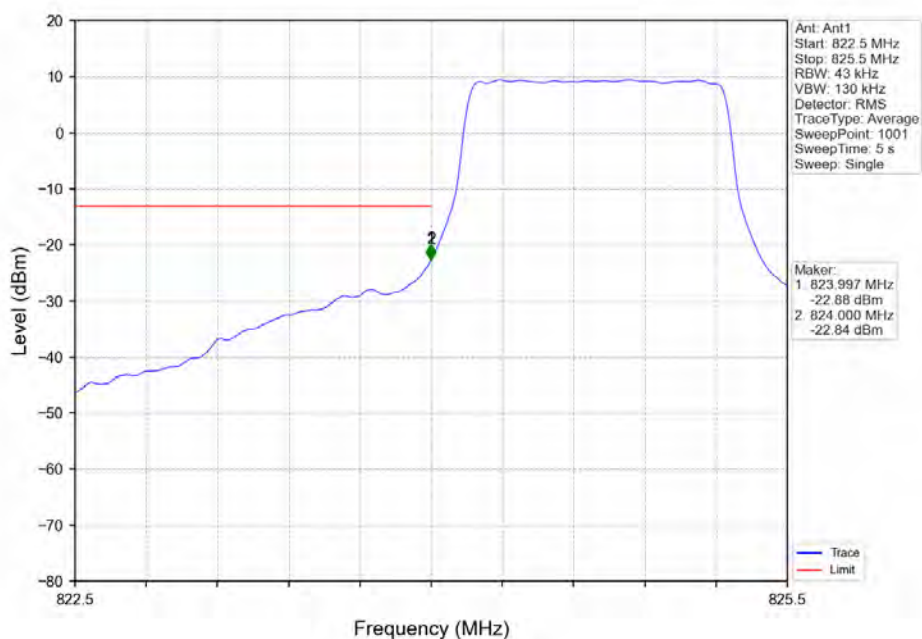
Test Result

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

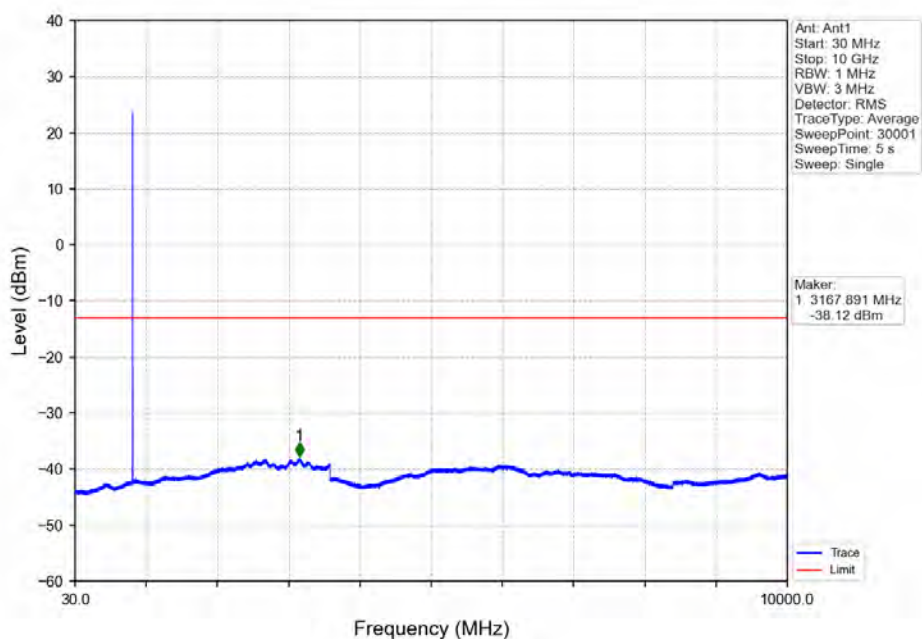
Test Graph



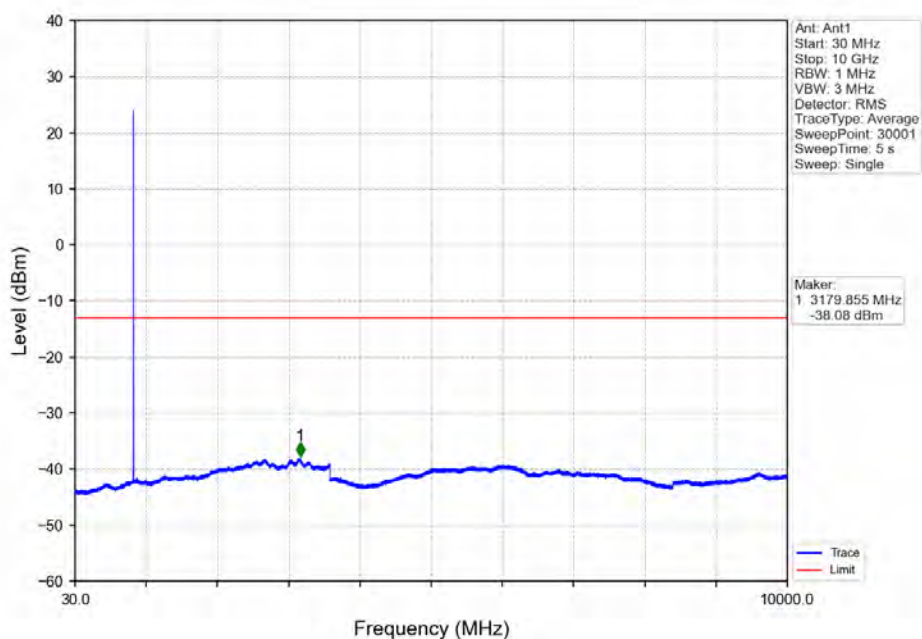
Band5_1.4MHz_QPSK_LCH_824.7MHz_RB_6_0_NTNV



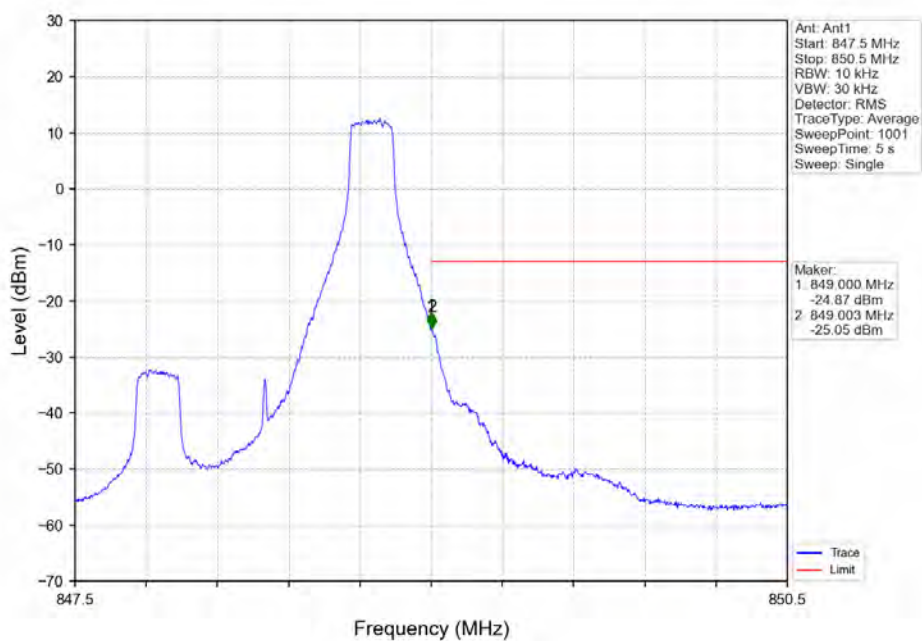
Band5_1.4MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



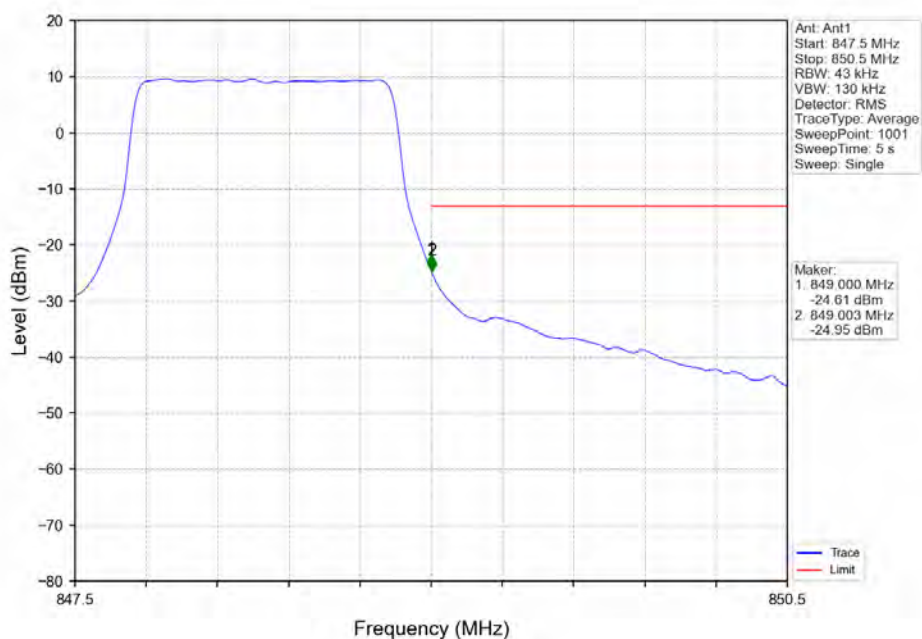
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_1_0_NTNV



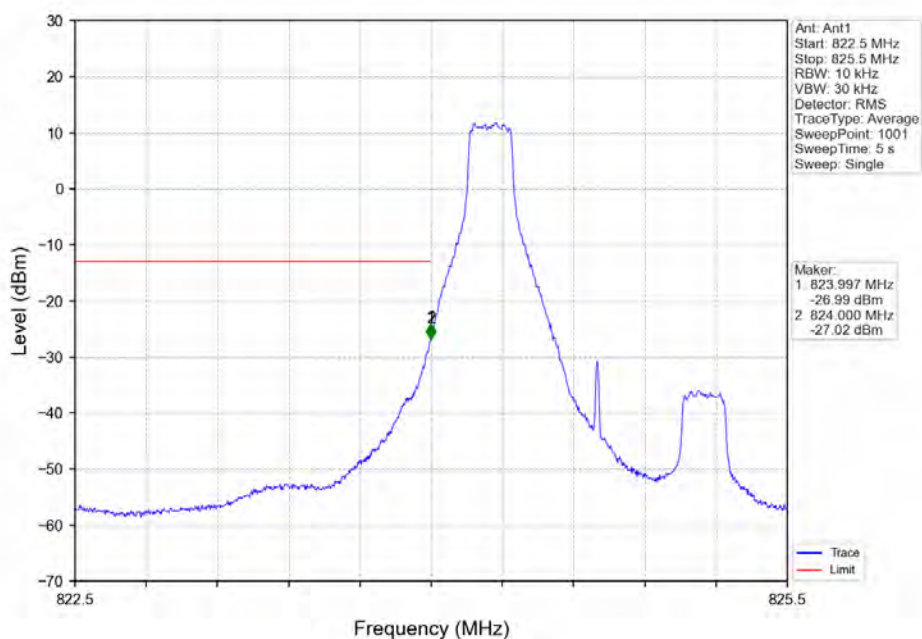
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_1_5_NTNV



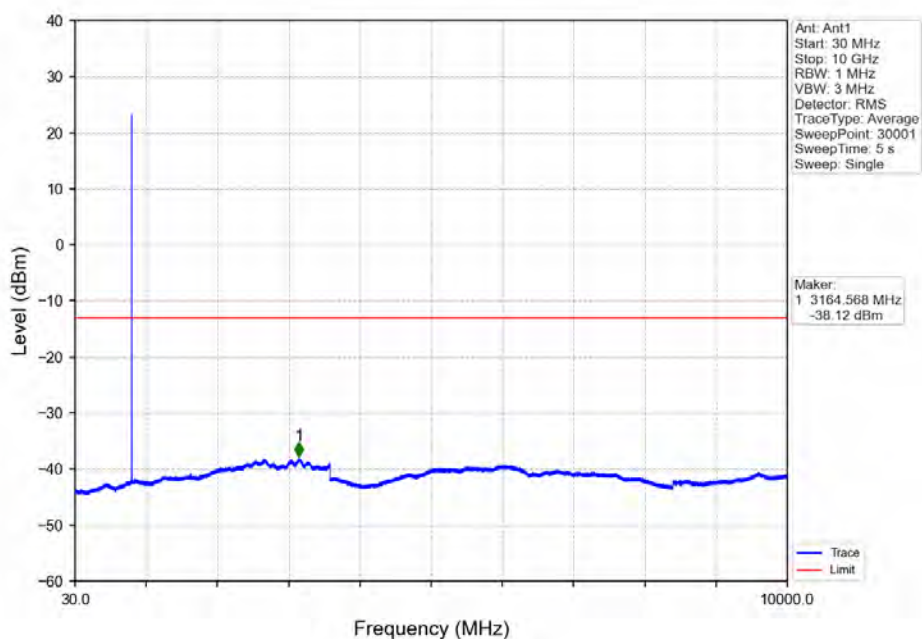
Band5_1.4MHz_QPSK_HCH_848.3MHz_RB_6_0_NTNV



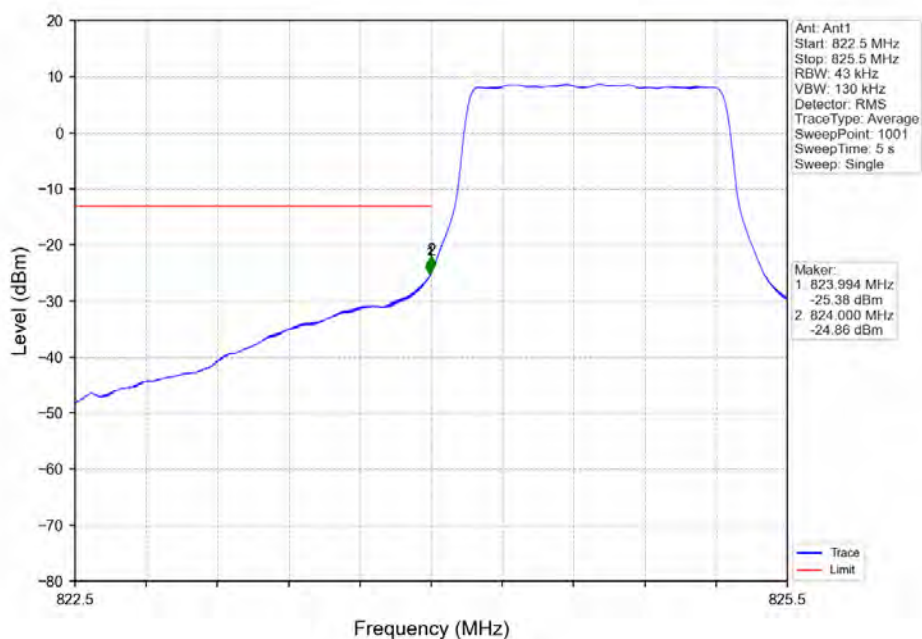
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_1_0_NTNV



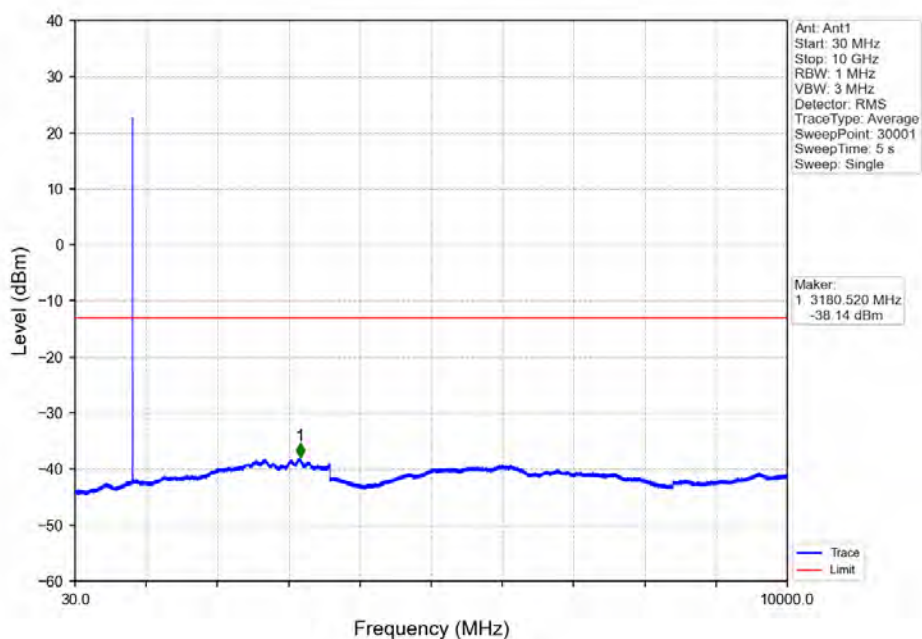
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_1_0_NTNV



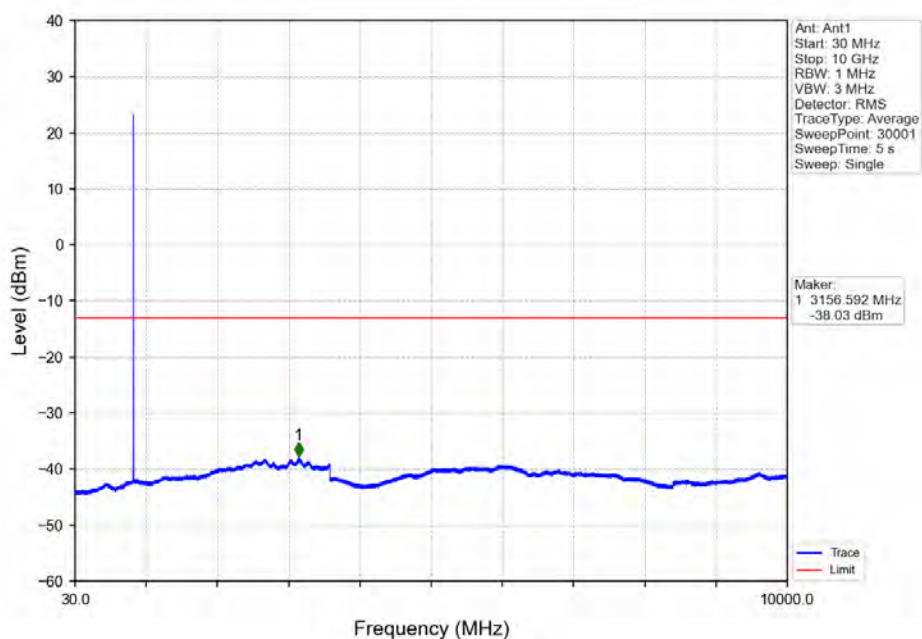
Band5_1.4MHz_16QAM_LCH_824.7MHz_RB_6_0_NTNV



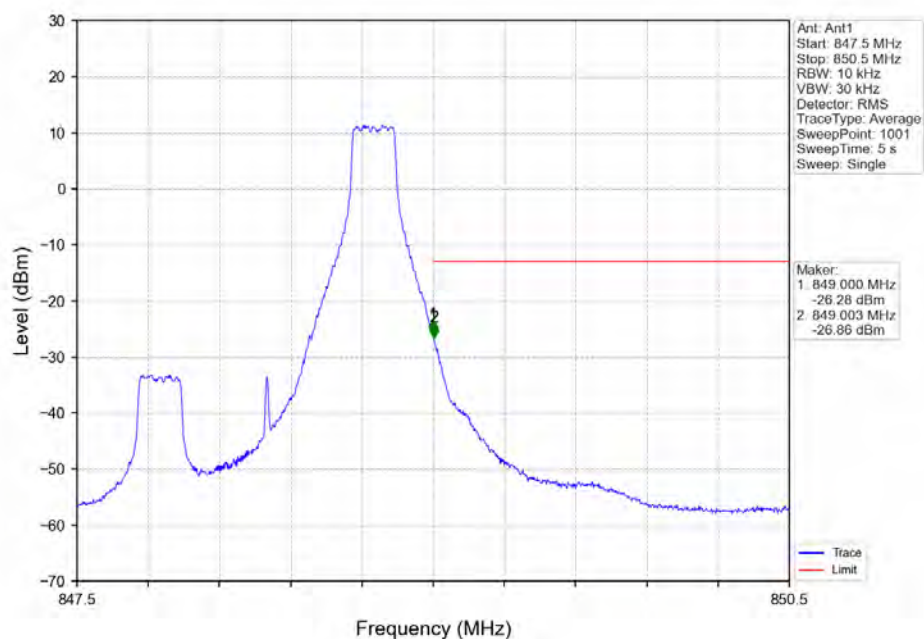
Band5_1.4MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



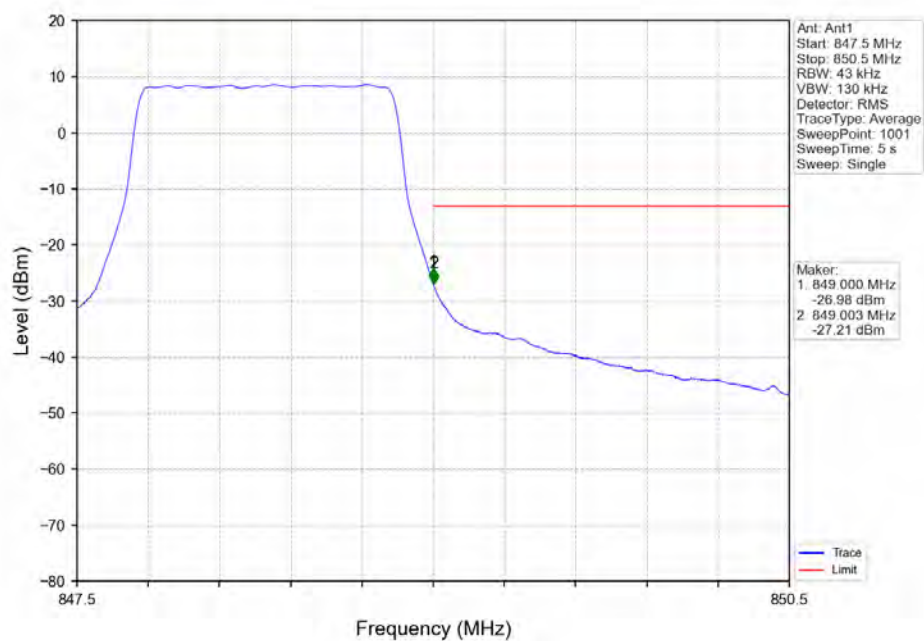
Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_1_0_NTNV



Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_1_5_NTNV



Band5_1.4MHz_16QAM_HCH_848.3MHz_RB_6_0_NTNV

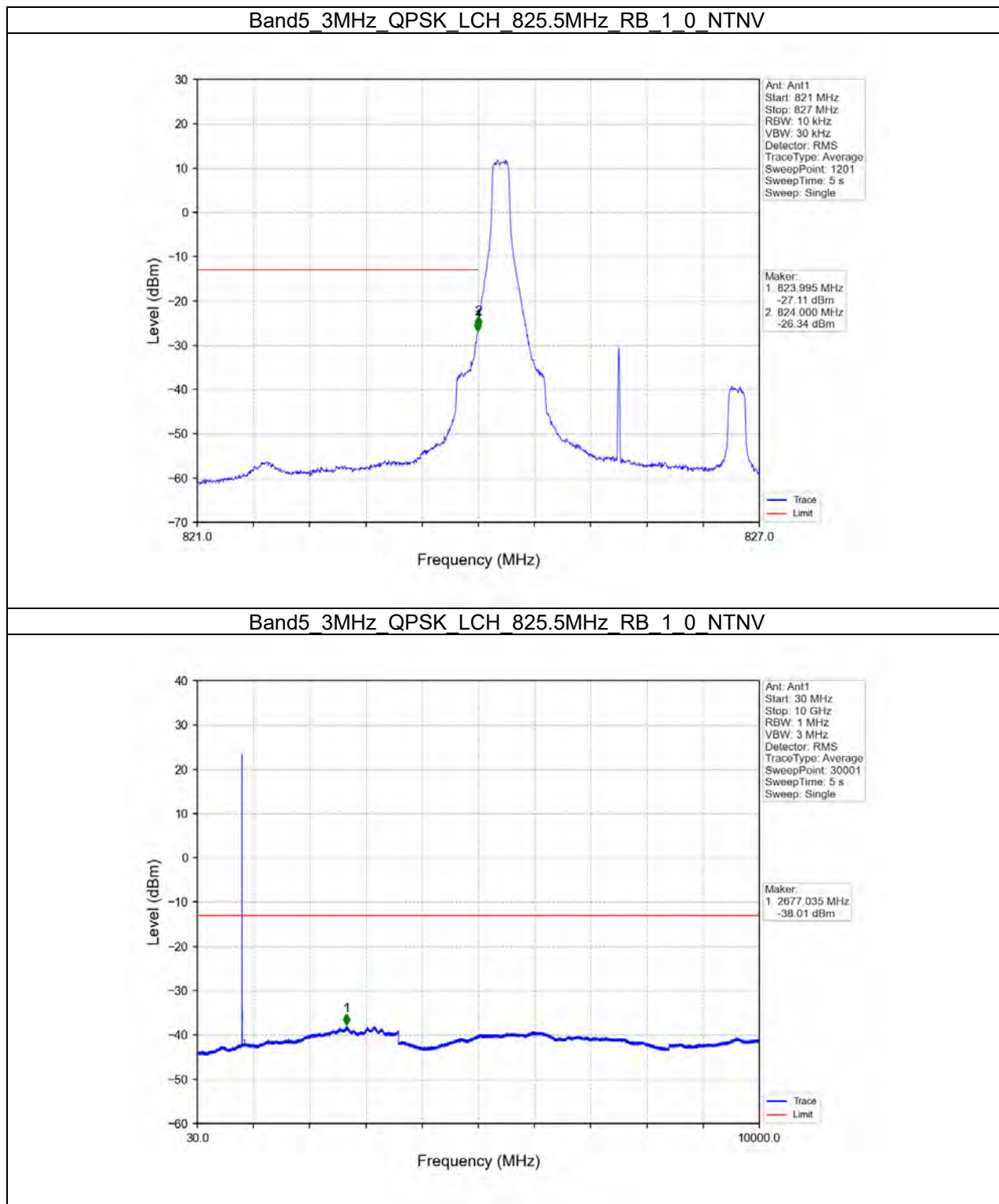


LTE Band5_3MHz

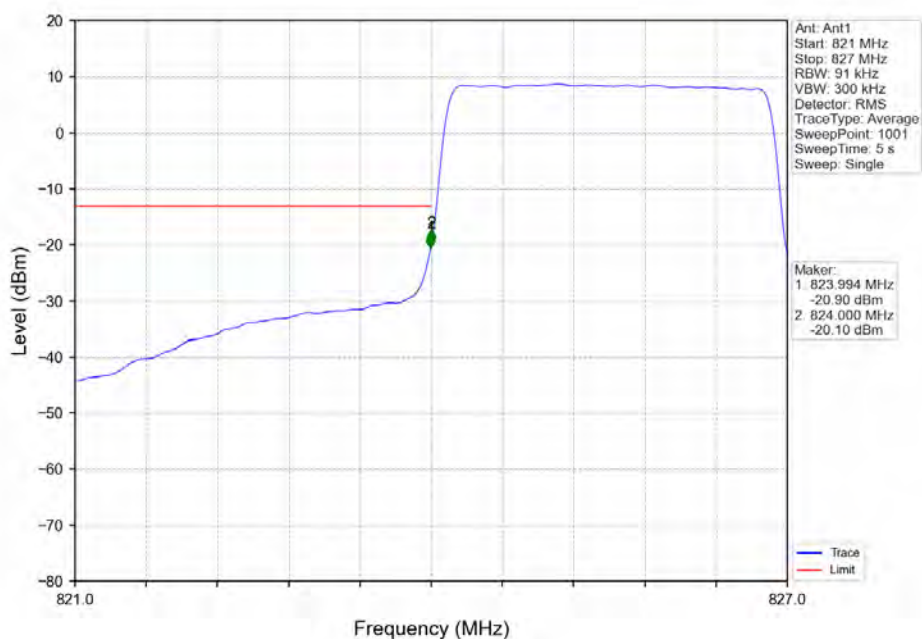
Test Result

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
	847.5	1	0	Refer To Test Graph		Pass
		1	14	Refer To Test Graph		Pass
		15	0	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
	847.5	1	0	Refer To Test Graph		Pass
		1	14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass

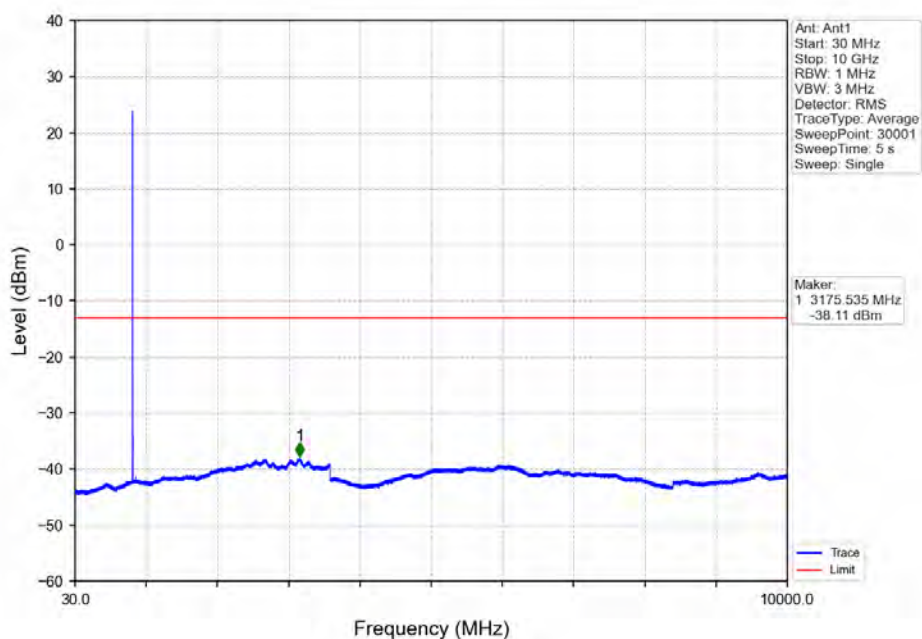
Test Graph



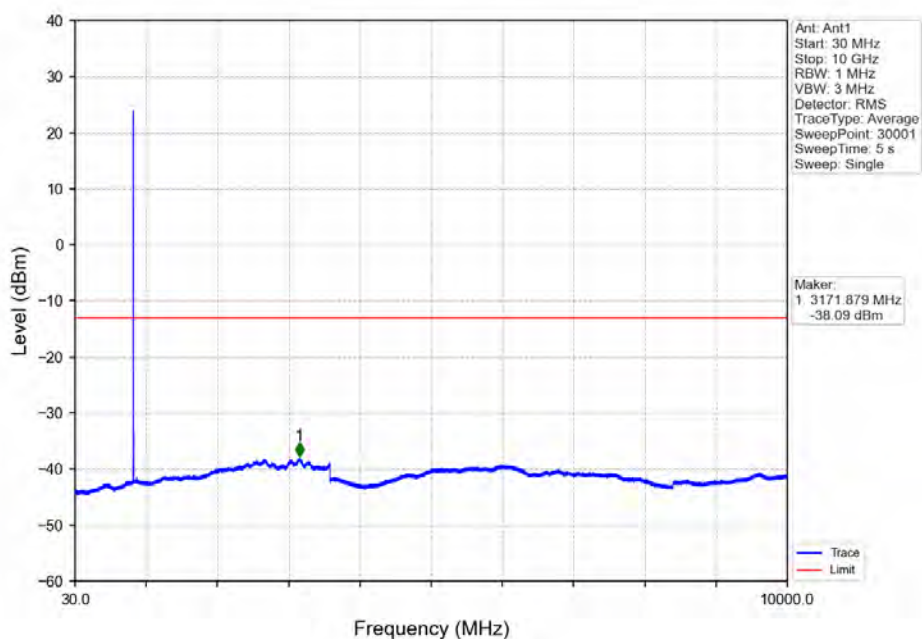
Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV



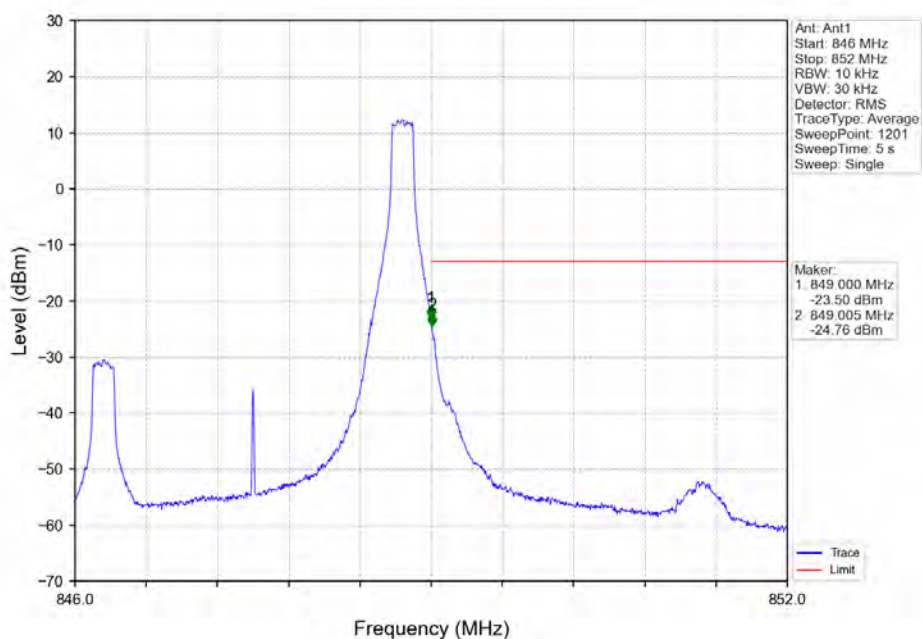
Band5_3MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



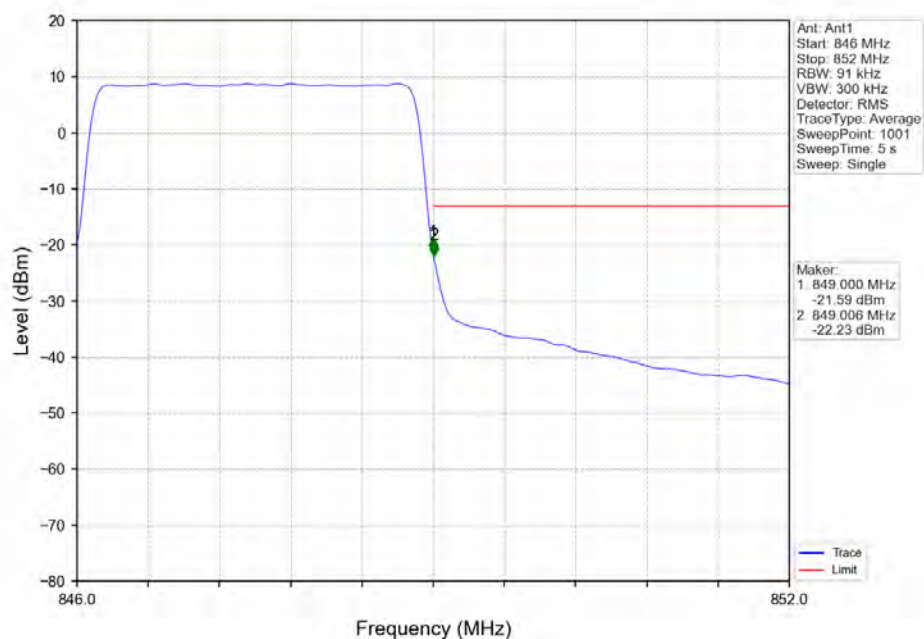
Band5_3MHz_QPSK_HCH_847.5MHz_RB_1_0_NTNV



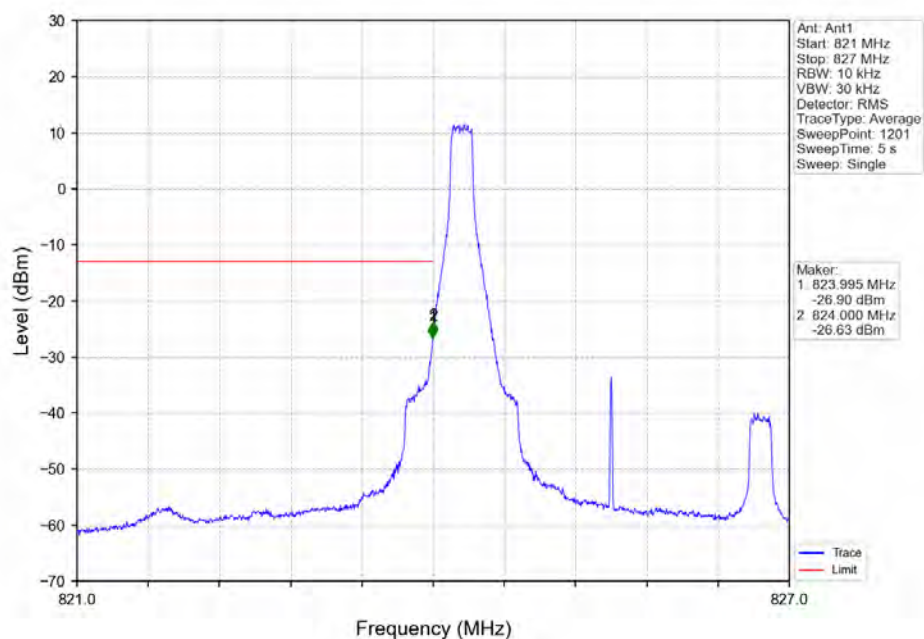
Band5_3MHz_QPSK_HCH_847.5MHz_RB_1_14_NTNV



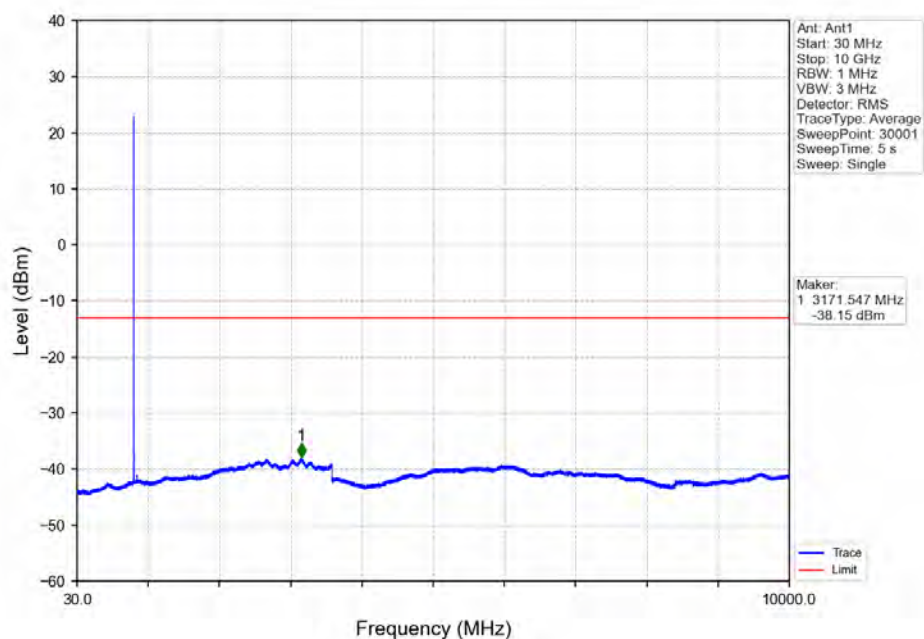
Band5_3MHz_QPSK_HCH_847.5MHz_RB_15_0_NTNV



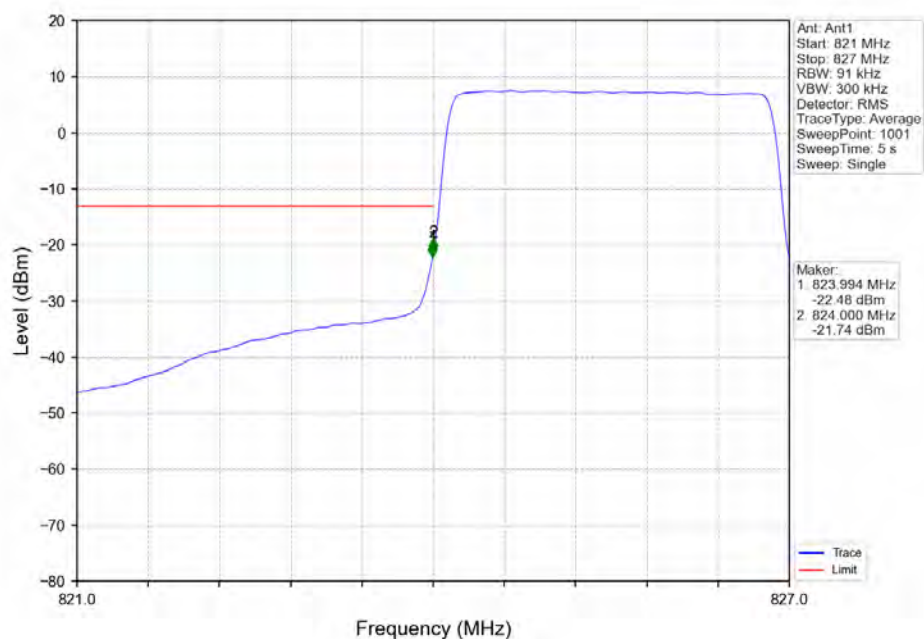
Band5_3MHz_16QAM_LCH_825.5MHz_RB_1_0_NTNV



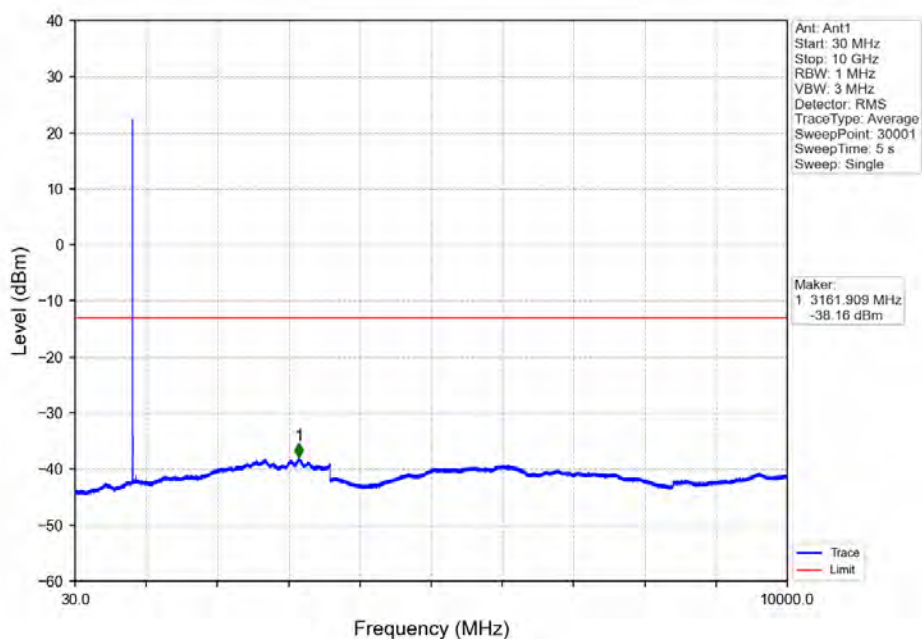
Band5_3MHz_16QAM_LCH_825.5MHz_RB_1_0_NTNV



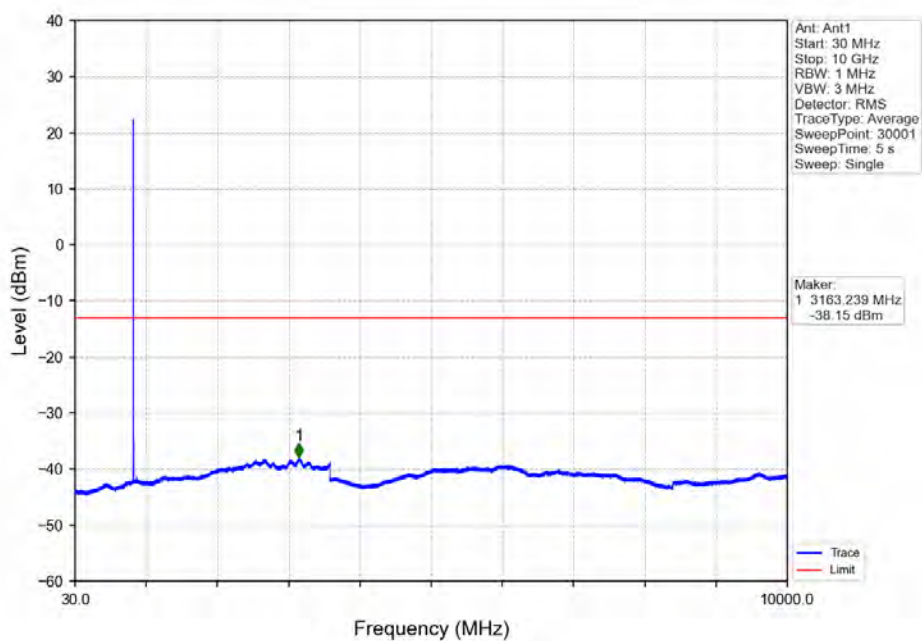
Band5_3MHz_16QAM_LCH_825.5MHz_RB_15_0_NTNV



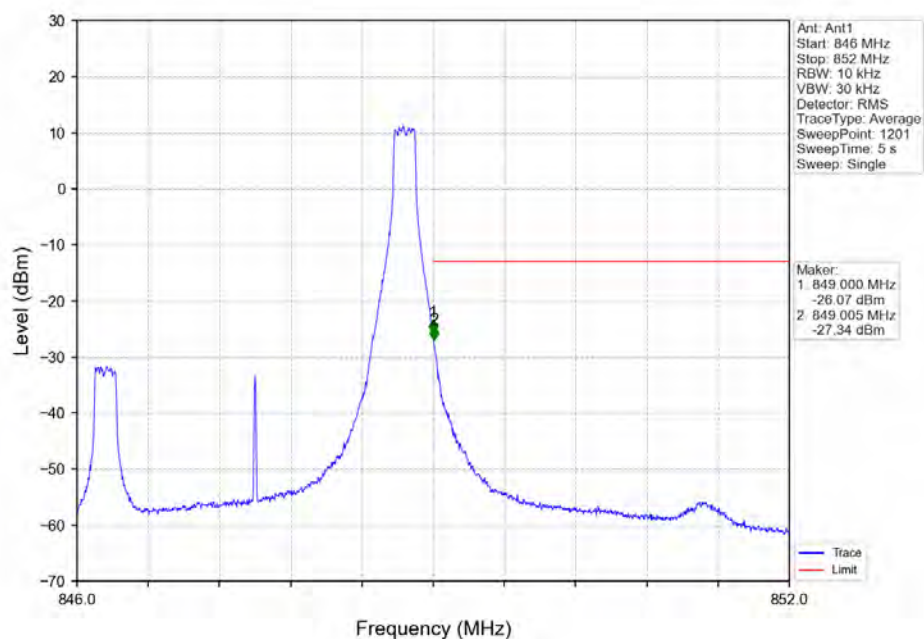
Band5_3MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



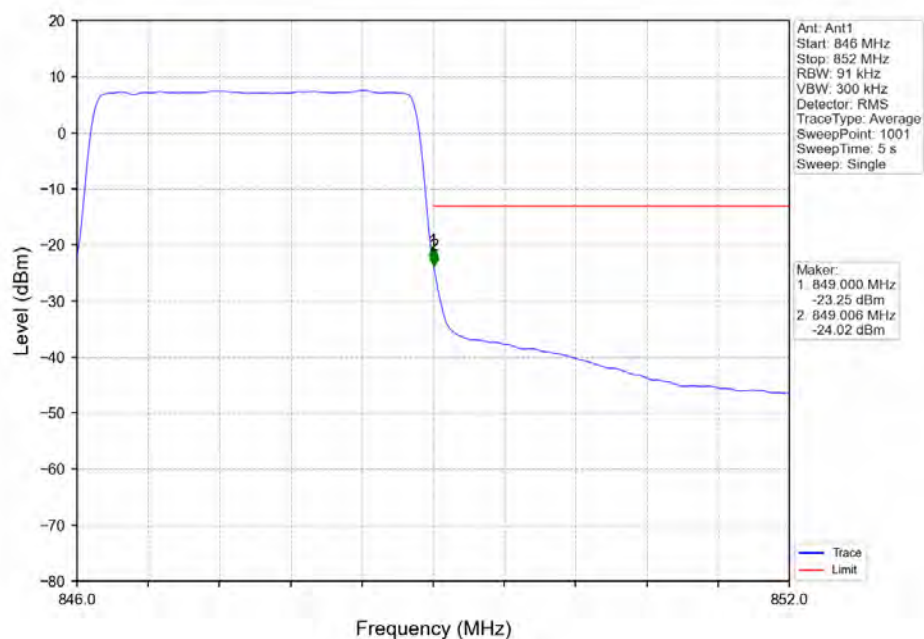
Band5_3MHz_16QAM_HCH_847.5MHz_RB_1_0_NTNV



Band5_3MHz_16QAM_HCH_847.5MHz_RB_1_14_NTNV



Band5_3MHz_16QAM_HCH_847.5MHz_RB_15_0_NTNV

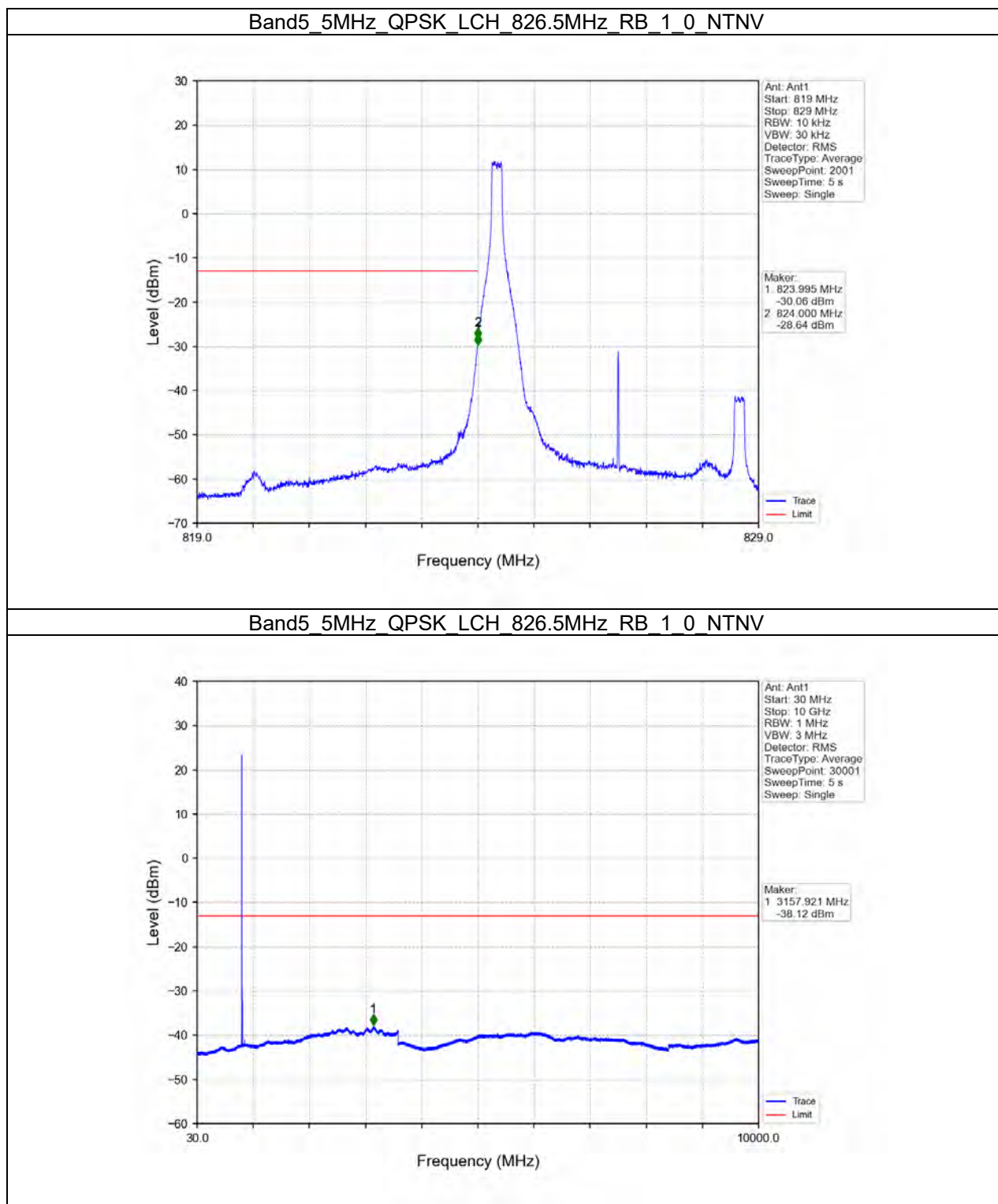


LTE Band5_5MHz

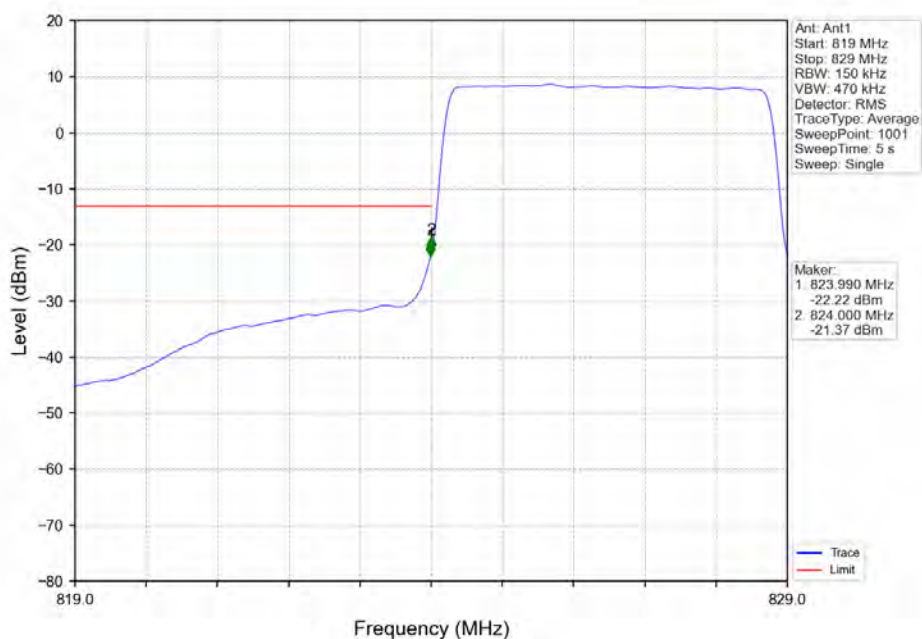
Test Result

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
	846.5	1	0	Refer To Test Graph		Pass
		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
	846.5	1	0	Refer To Test Graph		Pass
		1	0	Refer To Test Graph		Pass
		24		Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass

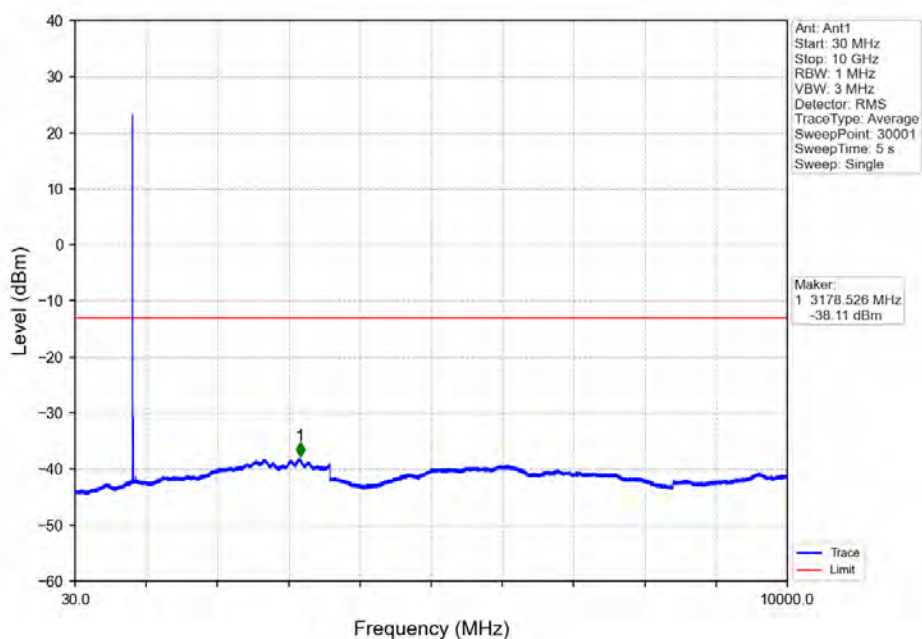
Test Graph



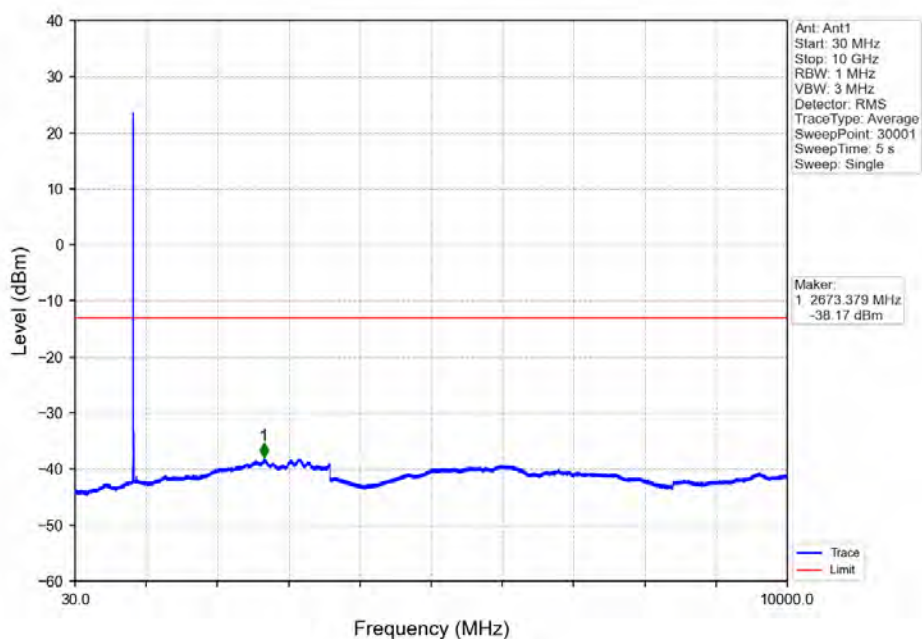
Band5_5MHz_QPSK_LCH_826.5MHz_RB_25_0_NTNV



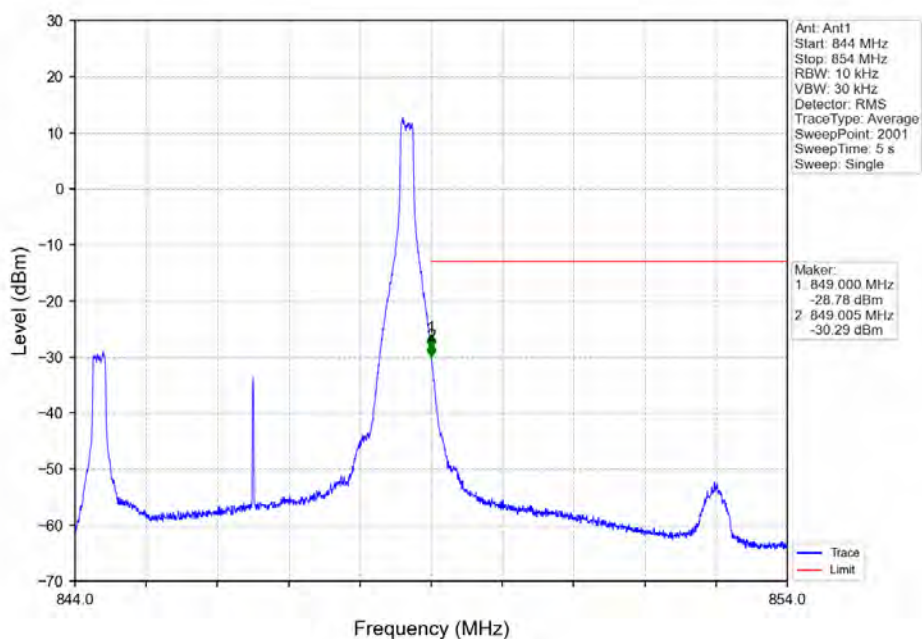
Band5_5MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



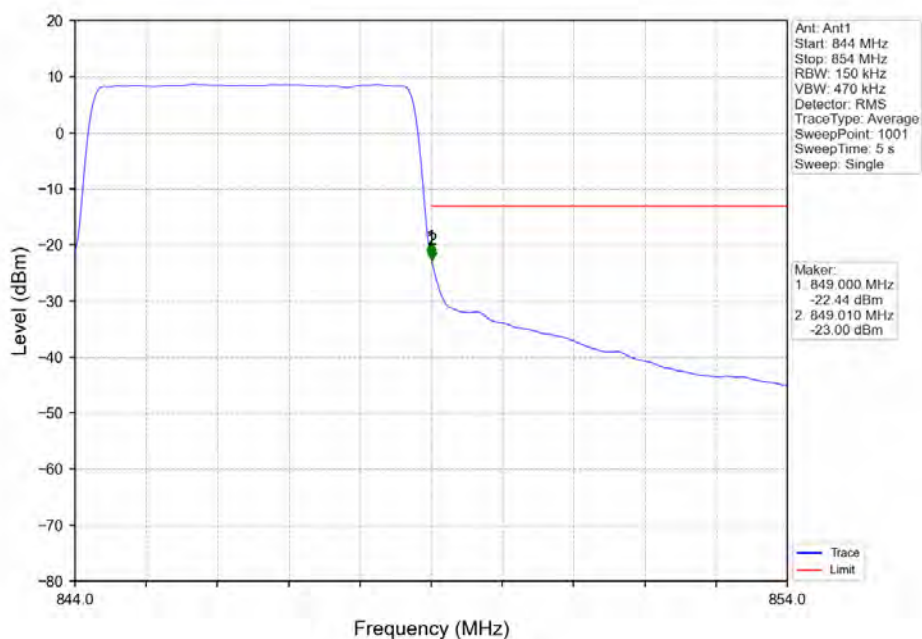
Band5_5MHz_QPSK_HCH_846.5MHz_RB_1_0_NTNV



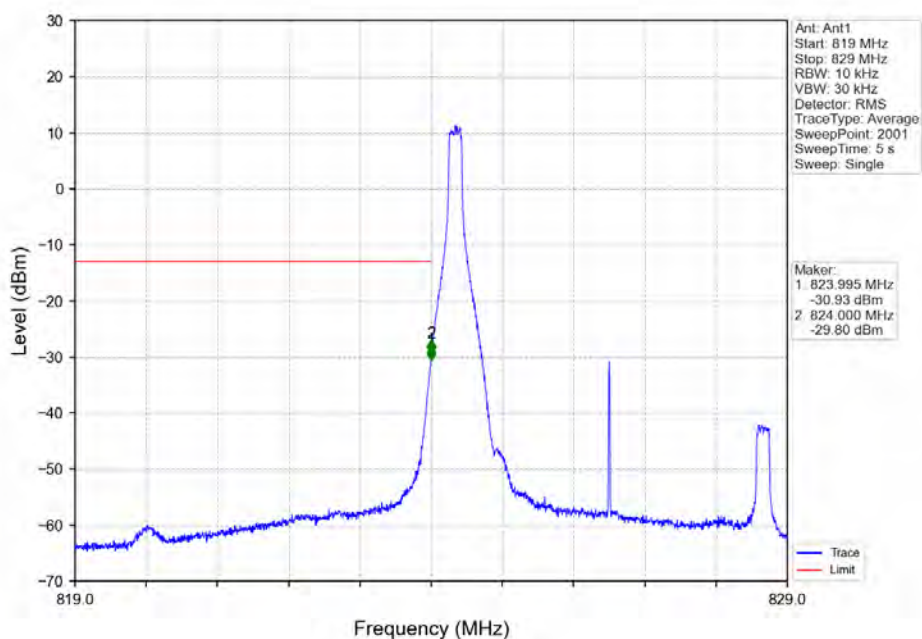
Band5_5MHz_QPSK_HCH_846.5MHz_RB_1_24_NTNV



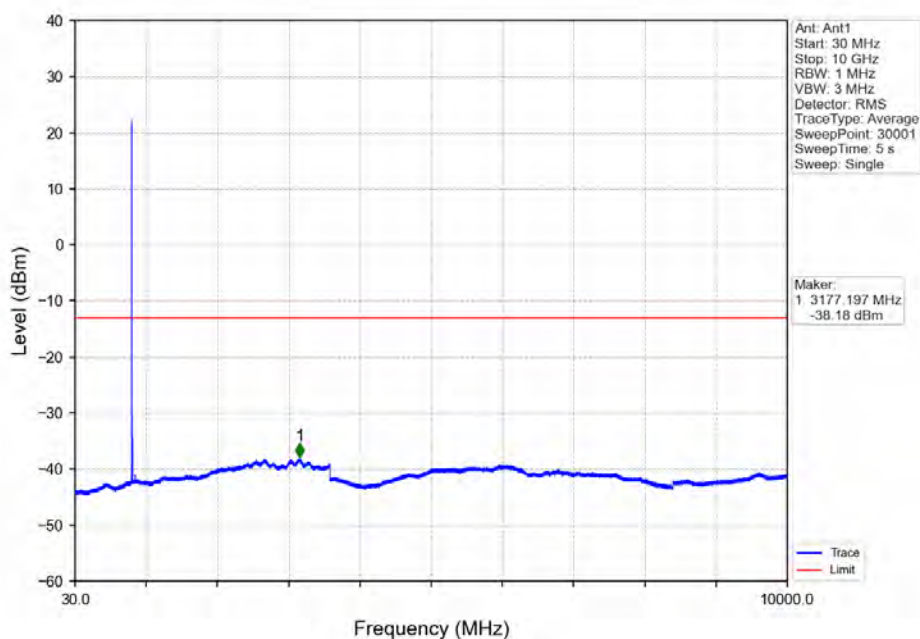
Band5_5MHz_QPSK_HCH_846.5MHz_RB_25_0_NTNV



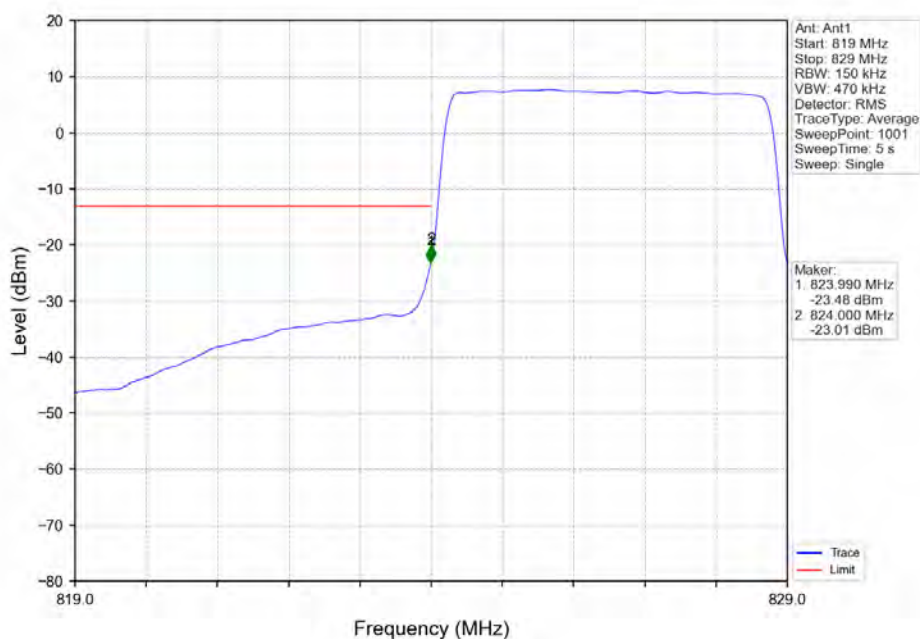
Band5_5MHz_16QAM_LCH_826.5MHz_RB_1_0_NTNV



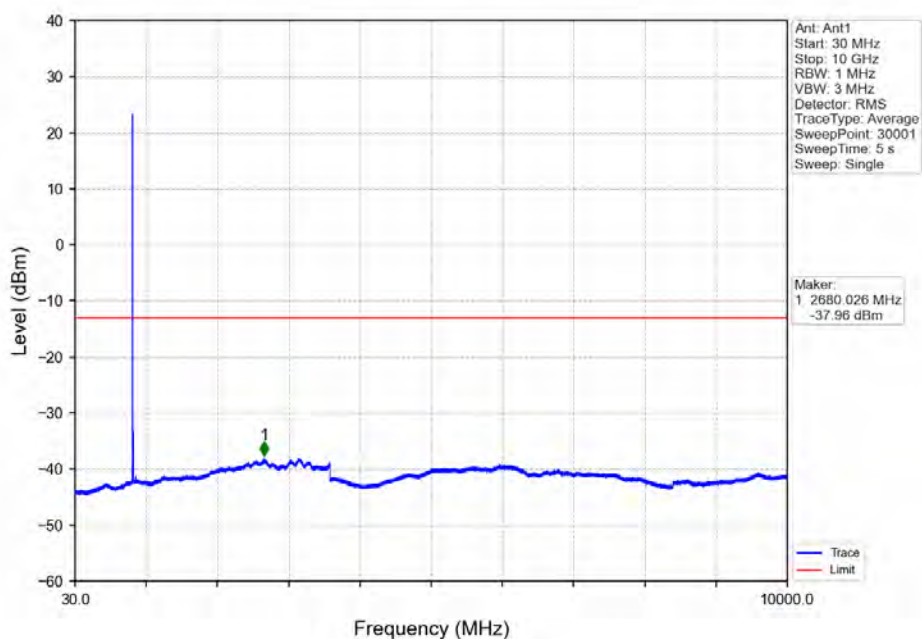
Band5_5MHz_16QAM_LCH_826.5MHz_RB_1_0_NTNV



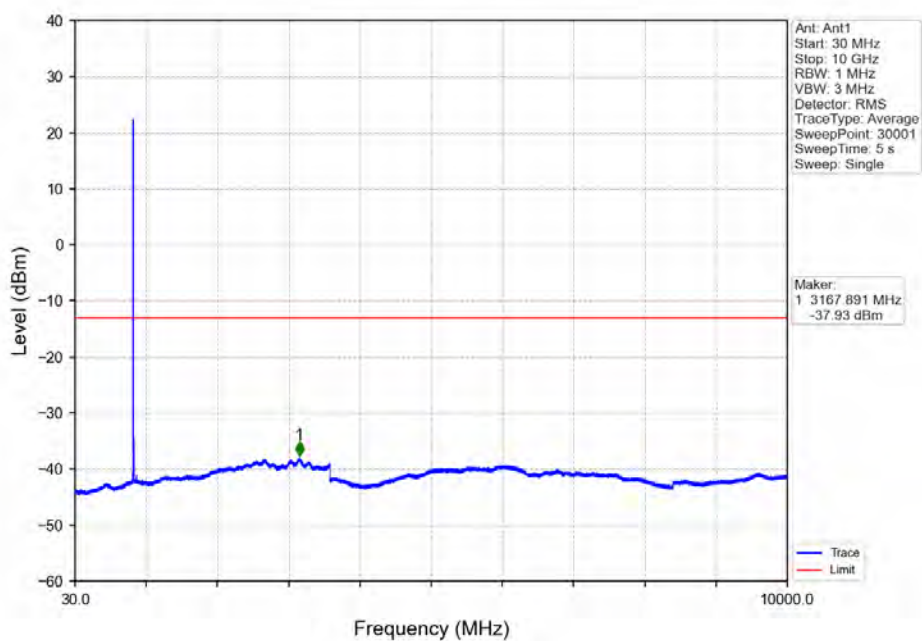
Band5_5MHz_16QAM_LCH_826.5MHz_RB_25_0_NTNV



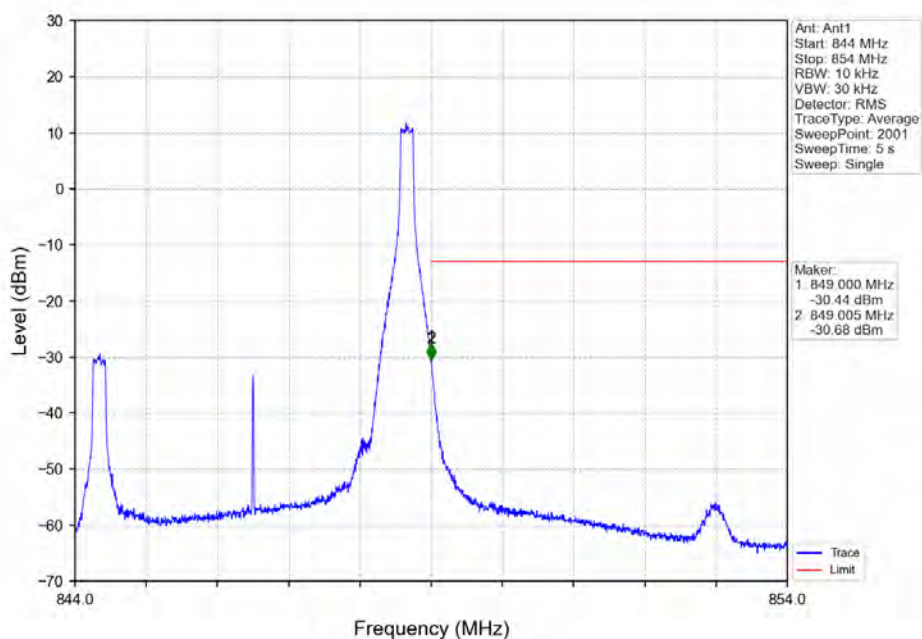
Band5_5MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



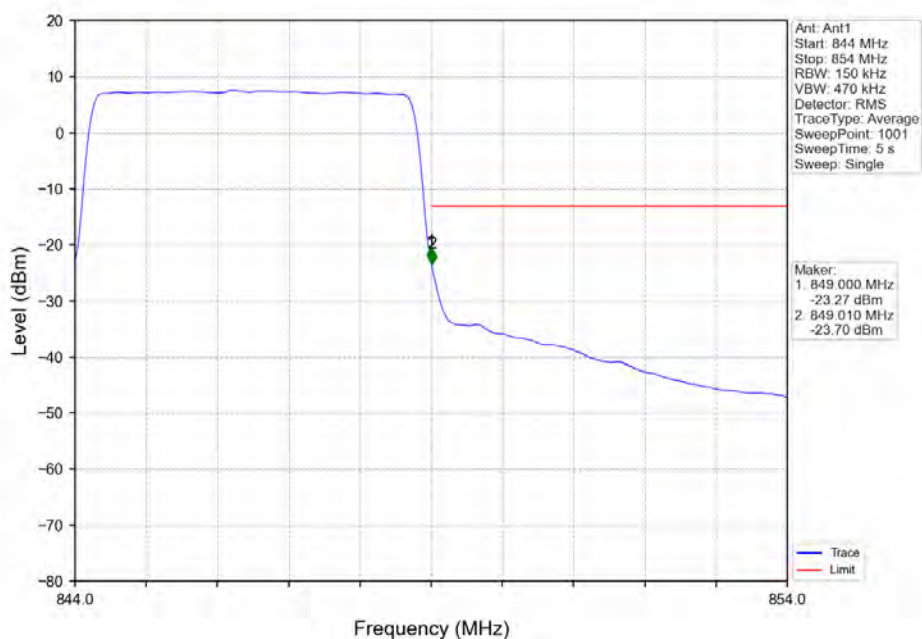
Band5_5MHz_16QAM_HCH_846.5MHz_RB_1_0_NTNV



Band5_5MHz_16QAM_HCH_846.5MHz_RB_1_24_NTNV



Band5_5MHz_16QAM_HCH_846.5MHz_RB_25_0_NTNV

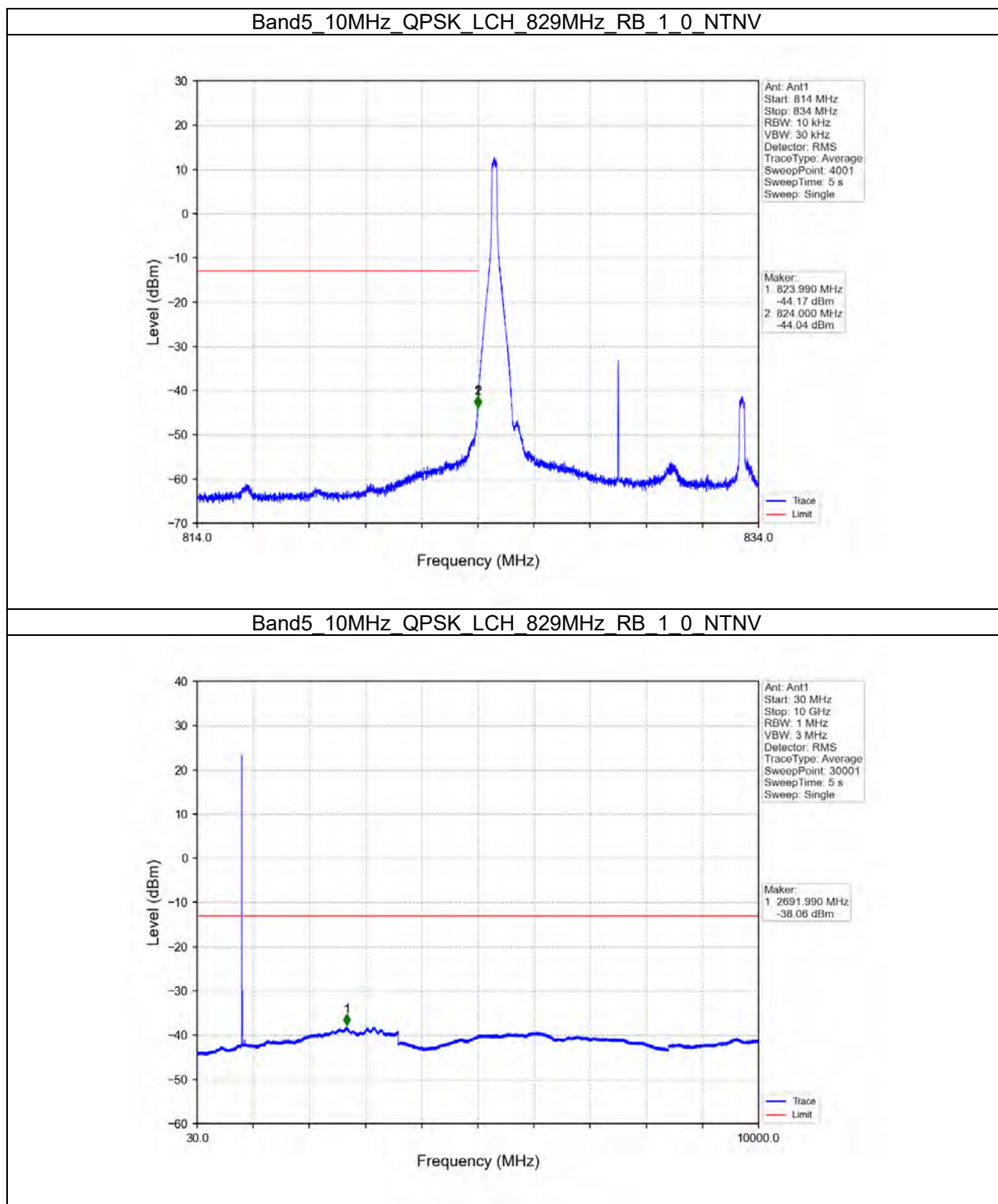


LTE Band5_10MHz

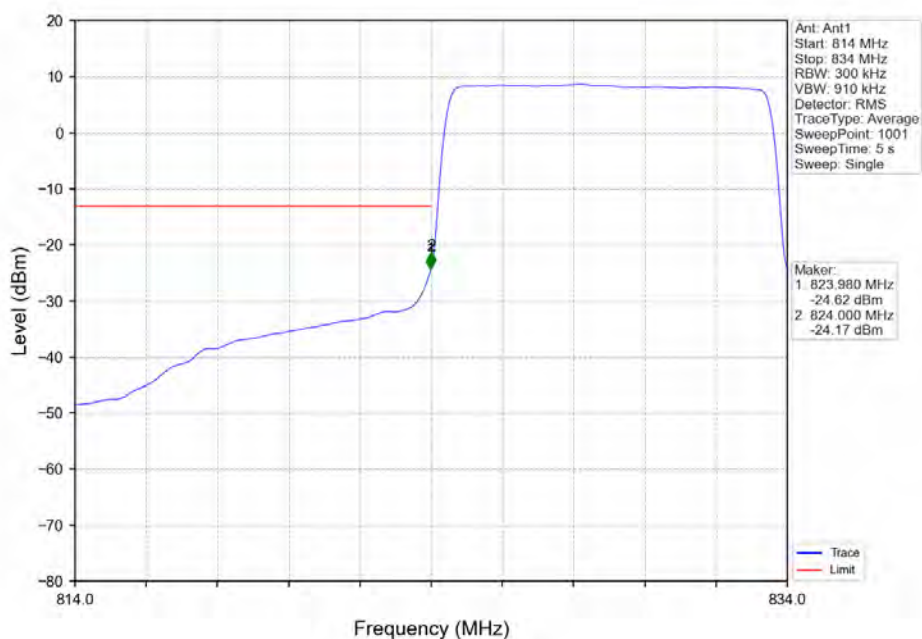
Test Result

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
		1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
			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
		1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
			0	Refer To Test Graph		Pass
			0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

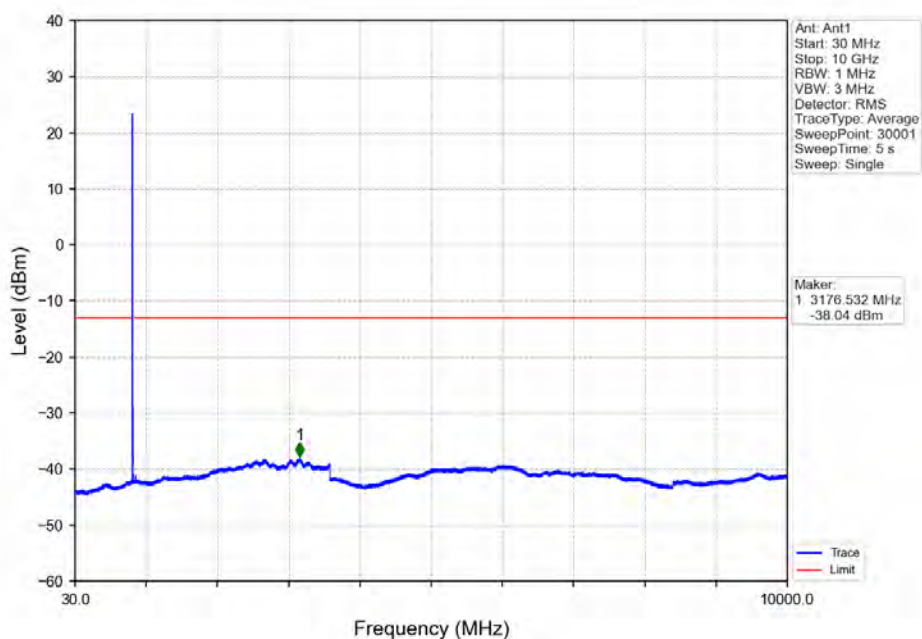
Test Graph



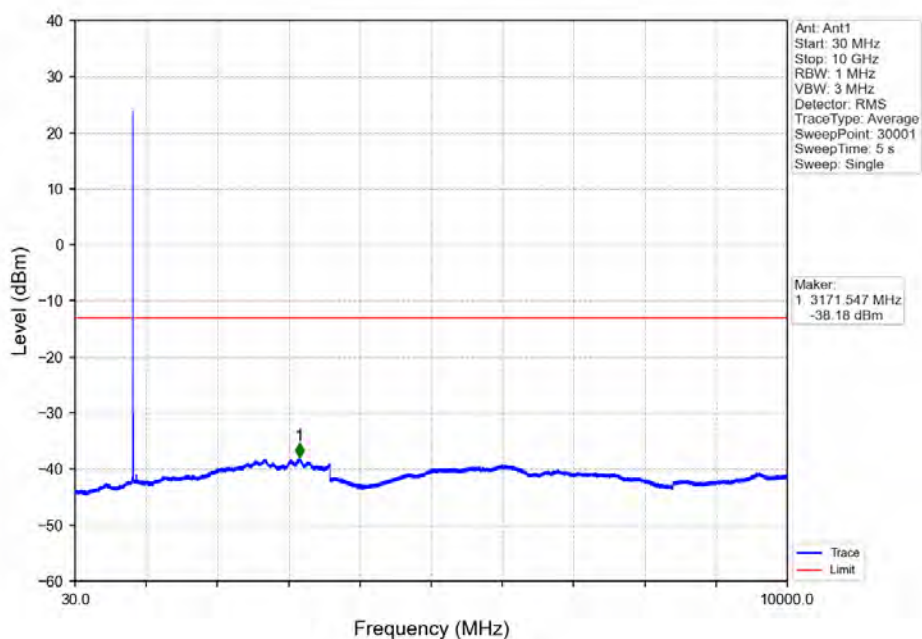
Band5_10MHz_QPSK_LCH_829MHz_RB_50_0_NTNV



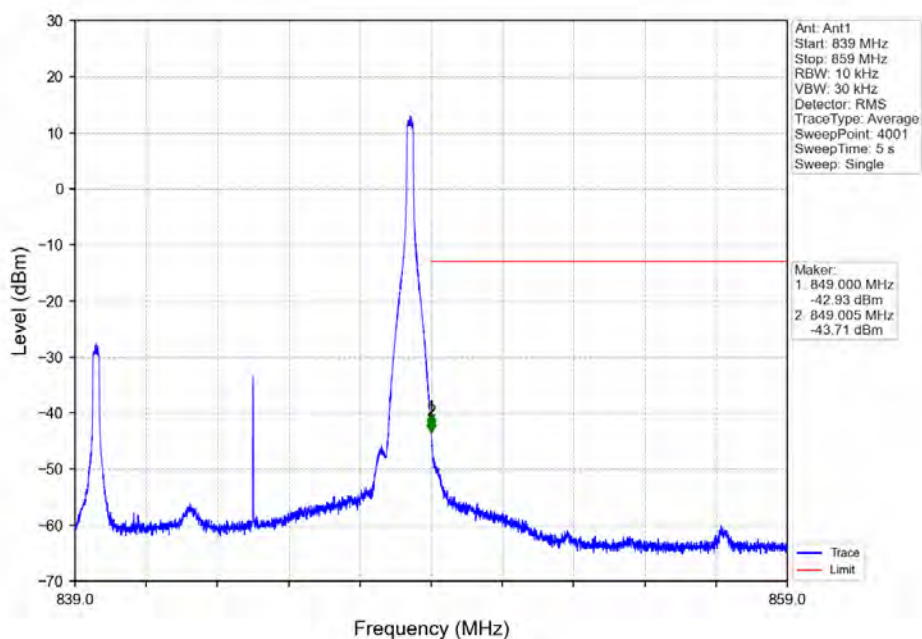
Band5_10MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



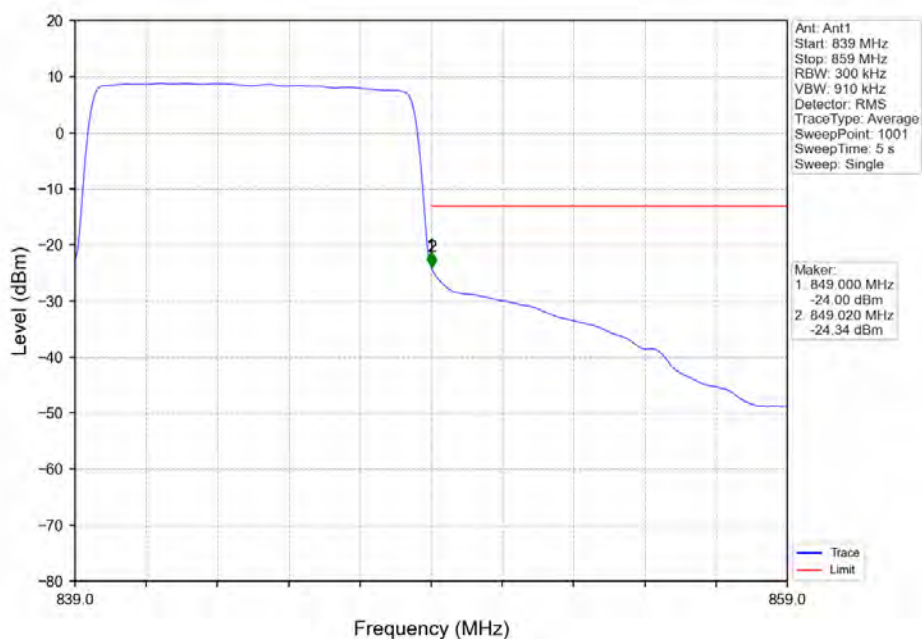
Band5_10MHz_QPSK_HCH_844MHz_RB_1_0_NTNV



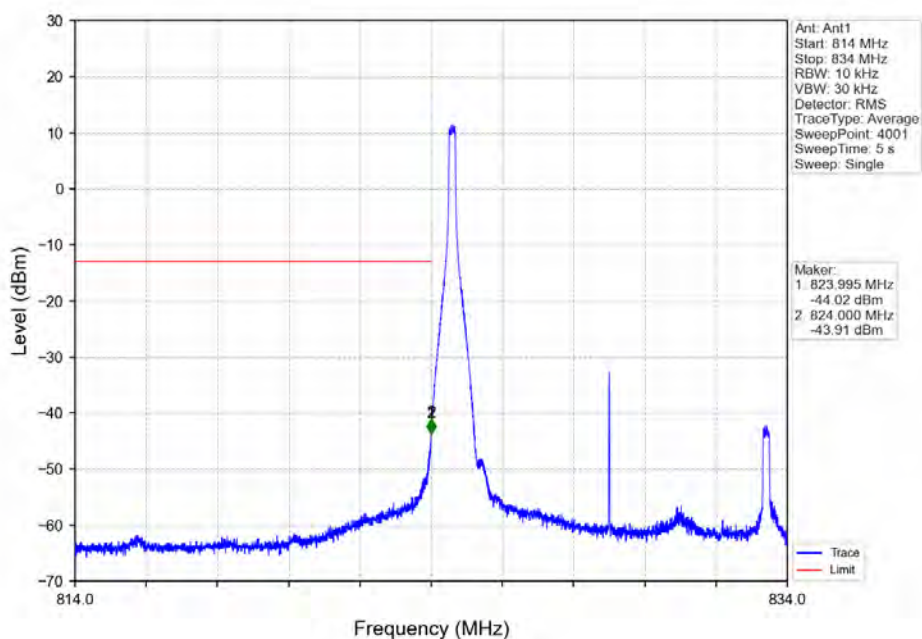
Band5_10MHz_QPSK_HCH_844MHz_RB_1_49_NTNV



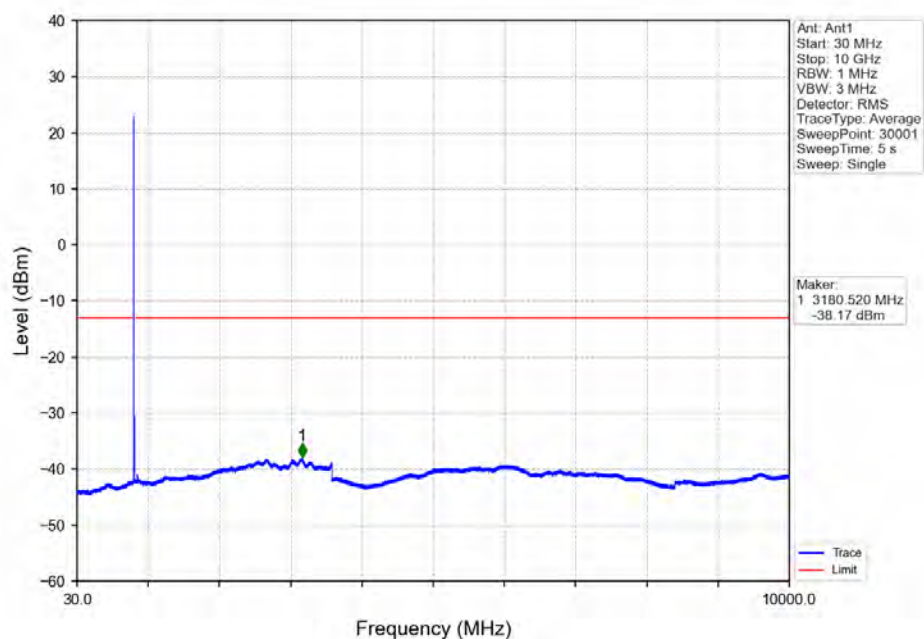
Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



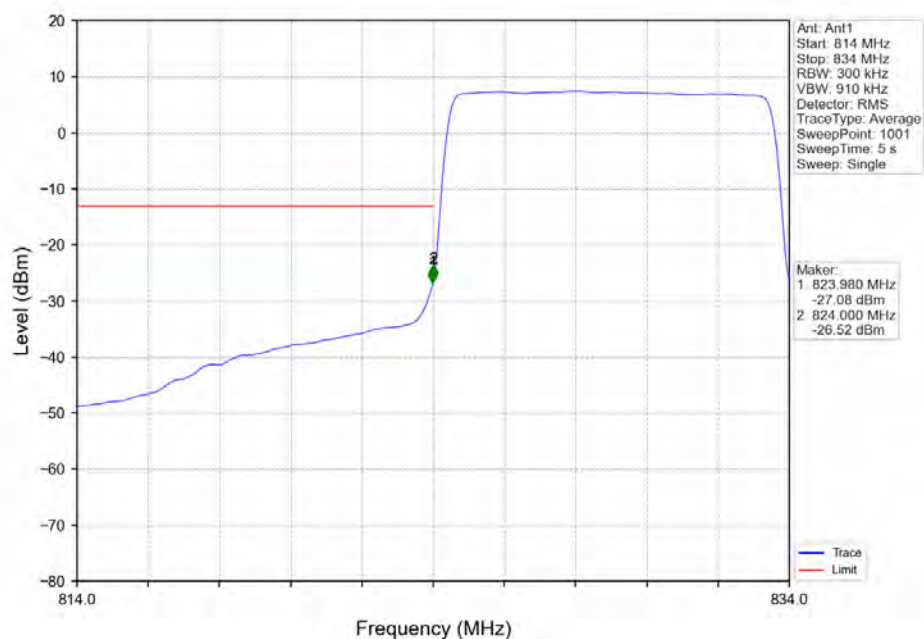
Band5_10MHz_16QAM_LCH_829MHz_RB_1_0_NTNV



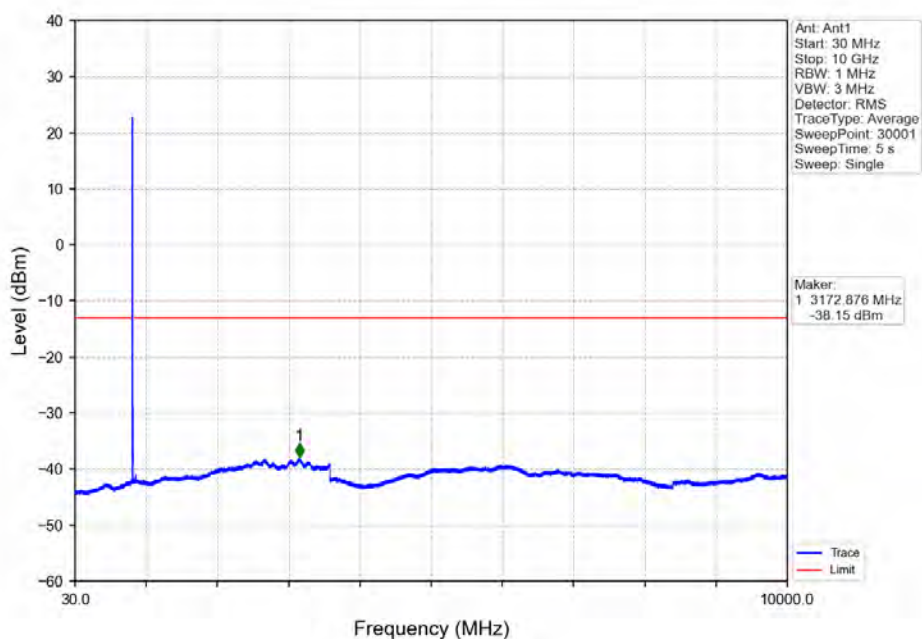
Band5_10MHz_16QAM_LCH_829MHz_RB_1_0_NTNV



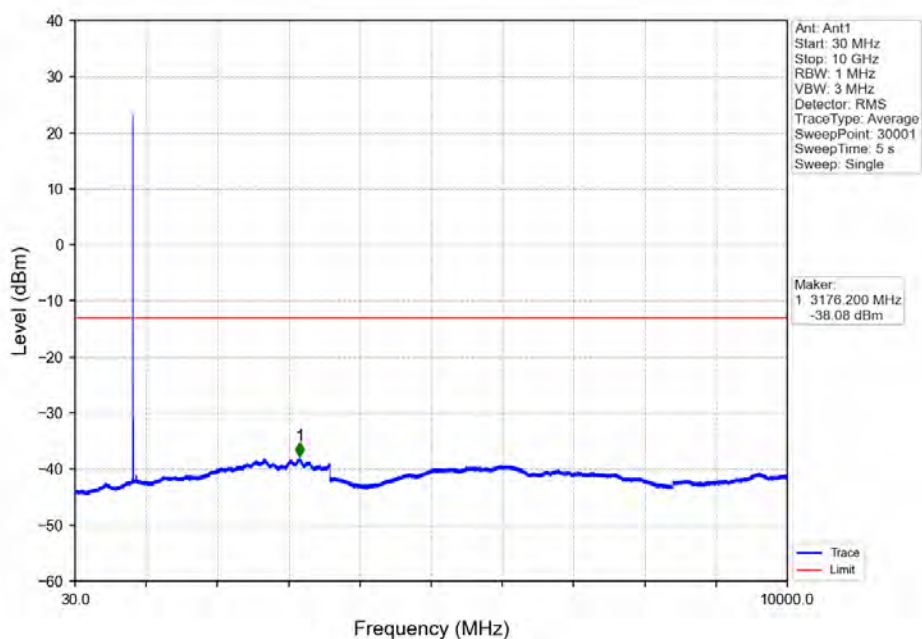
Band5_10MHz_16QAM_LCH_829MHz_RB_50_0_NTNV



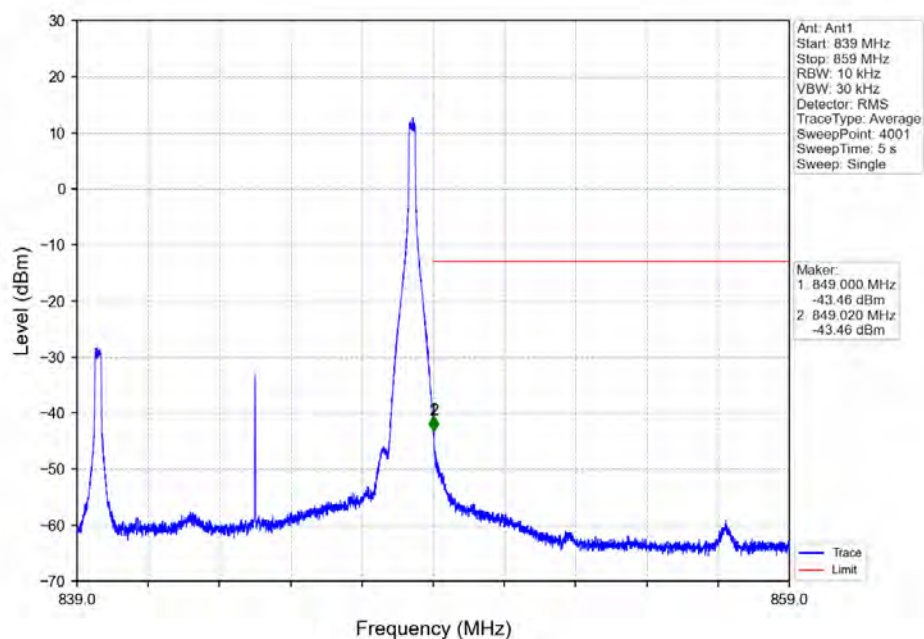
Band5_10MHz_16QAM_MCH_836.5MHz_RB_1_0_NTNV



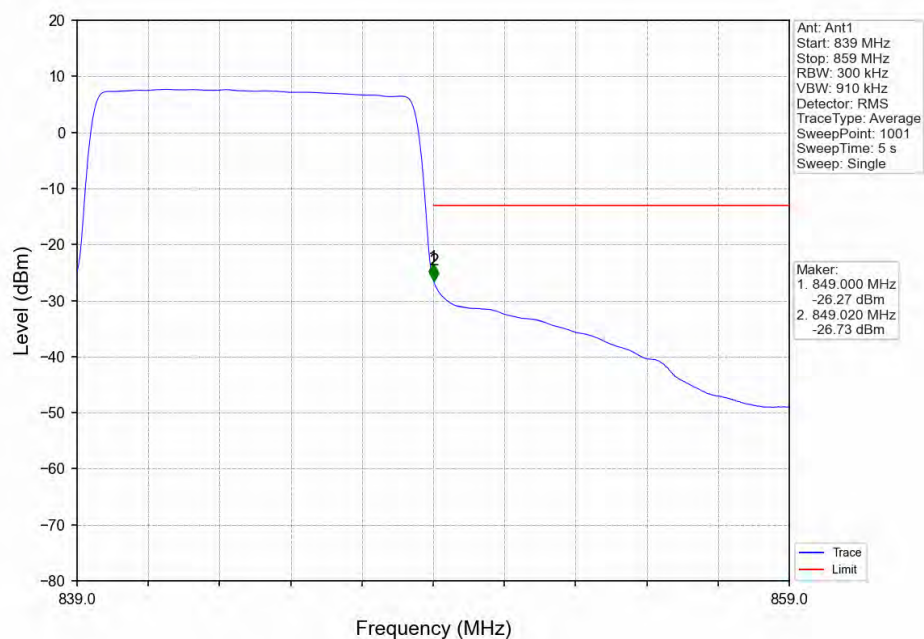
Band5_10MHz_16QAM_HCH_844MHz_RB_1_0_NTNV



Band5_10MHz_16QAM_HCH_844MHz_RB_1_49_NTNV



Band5_10MHz_16QAM_HCH_844MHz_RB_50_0_NTNV



---END---