

RF Test Data

For

Project No.:	RF251027002-03-001
Client:	Autel Robotics Co., Ltd.
Manufacturer:	Autel Robotics Co., Ltd.
Product Description:	Dragonfish Repeater
Model(s):	DFRP
Test Engineer:	Jason Huang
Test Date:	2025-11-11

Test Summary

Item	Result
Duty Cycle	Pass
Bandwidth	Pass
Maximum Conducted Output Power	Pass
Maximum Power Spectral Density	Pass
Unwanted Emissions In Non-restricted Frequency Bands	Pass
Frequency Error	Pass

1. Duty Cycle

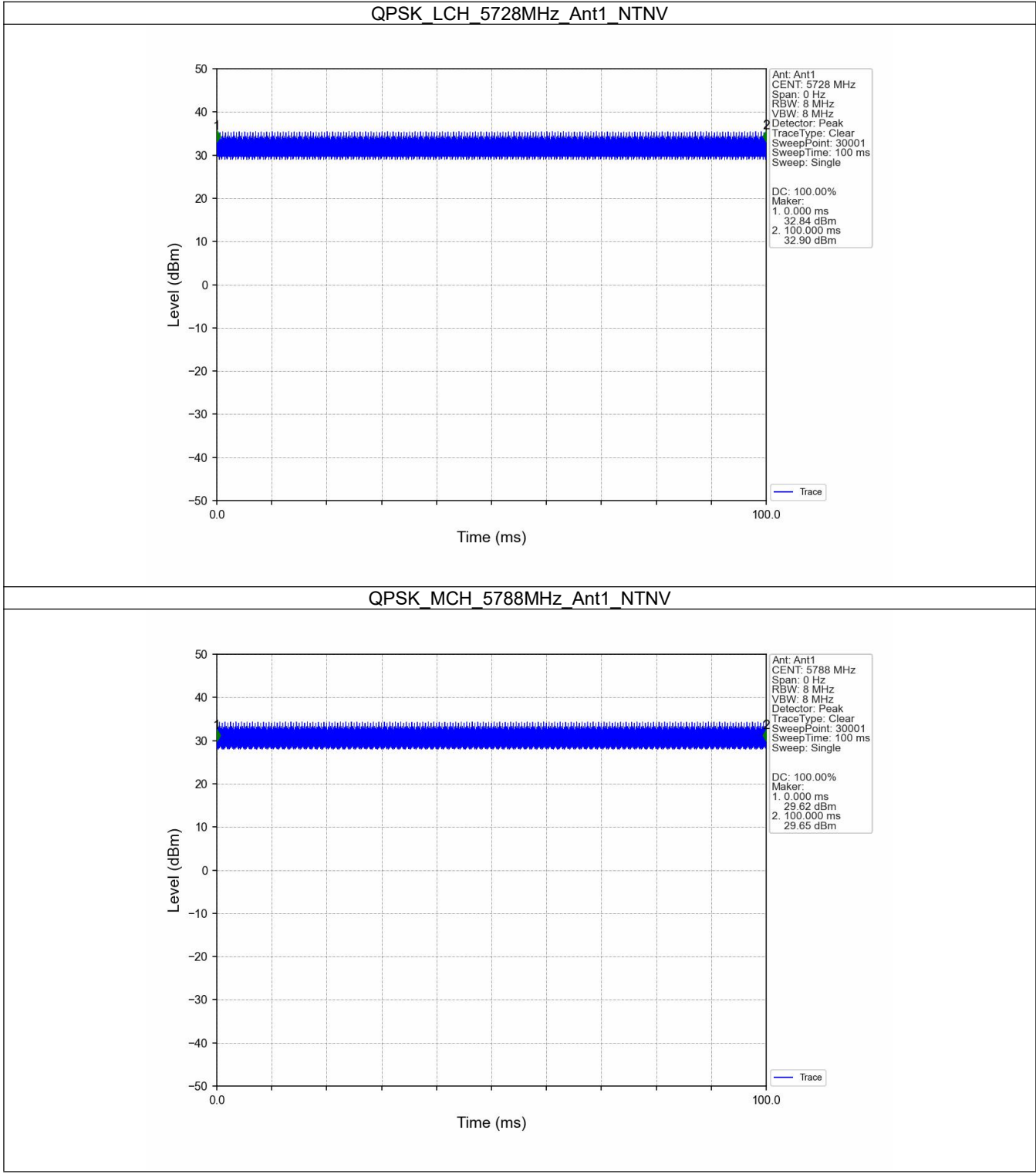
1.1 Test Result

1.1.1 Ant1

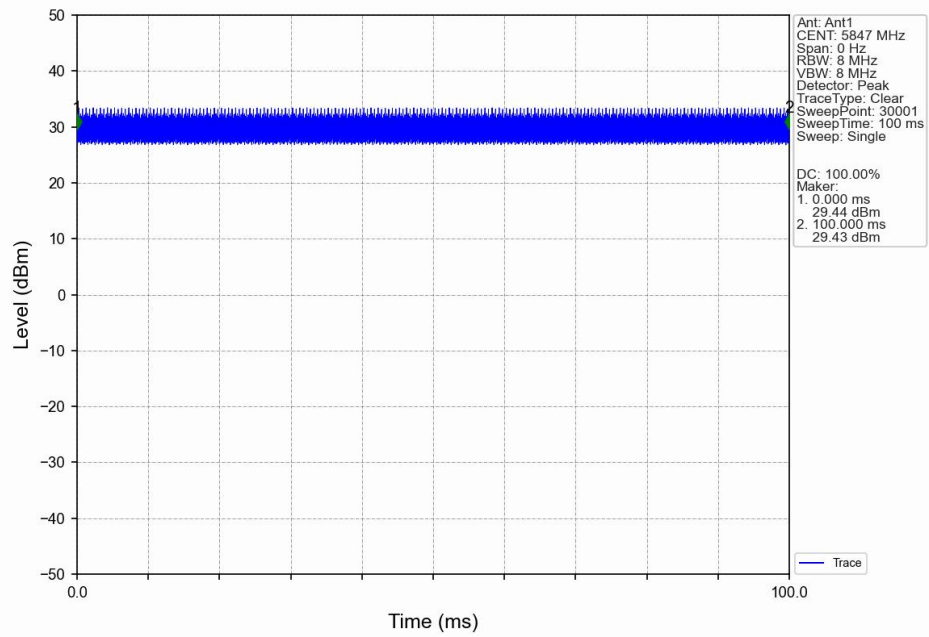
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
QPSK	MIMO	5728	100.000	100.000	100.00	0.00	0.00
		5788	100.000	100.000	100.00	0.00	0.00
		5847	100.000	100.000	100.00	0.00	0.00
16QAM	MIMO	5728	100.000	100.000	100.00	0.00	0.00
		5788	100.000	100.000	100.00	0.00	0.00
		5847	100.000	100.000	100.00	0.00	0.00

1.2 Test Graph

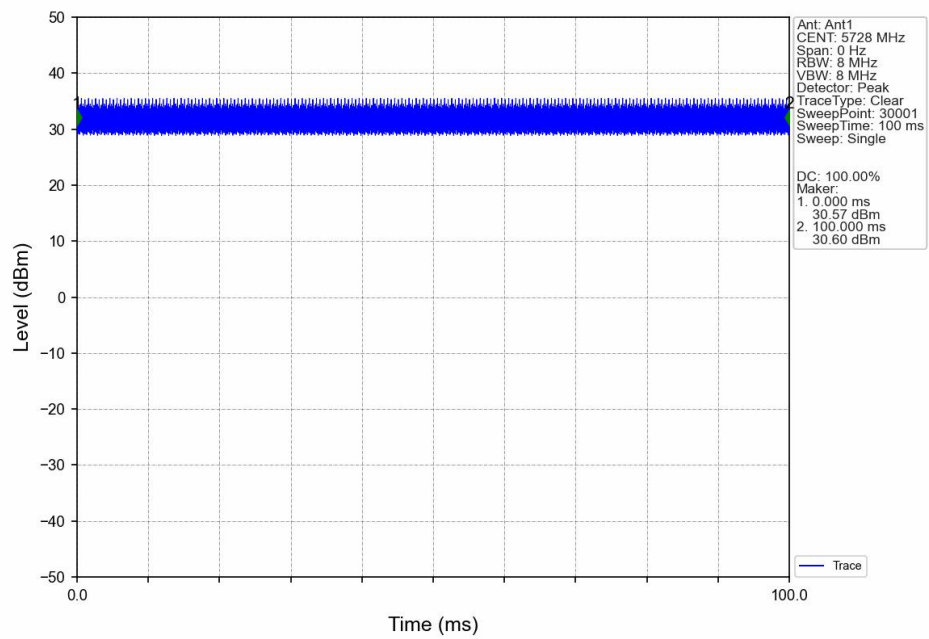
1.2.1 Ant1



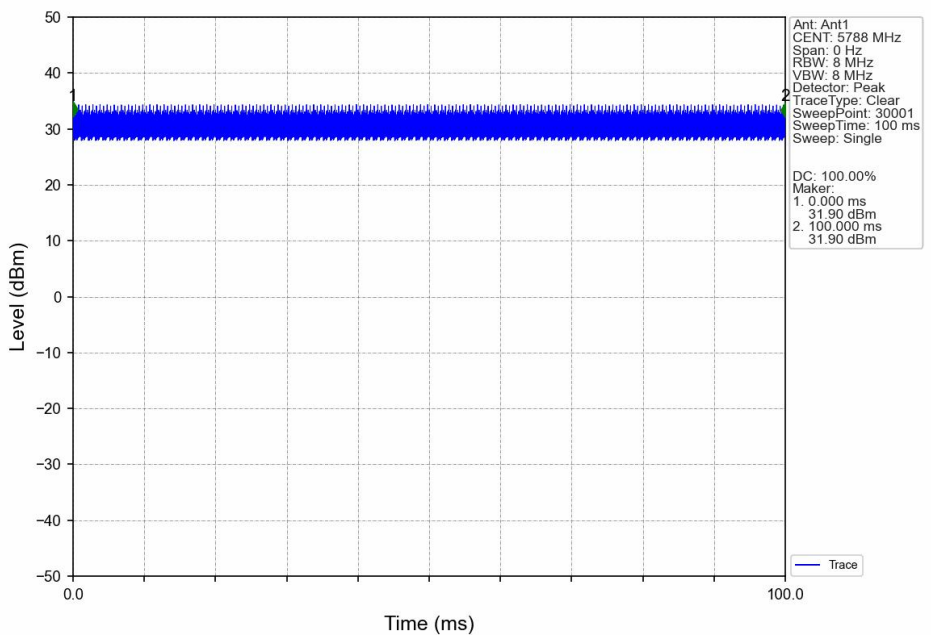
QPSK_HCH_5847MHz_Ant1_NTNV



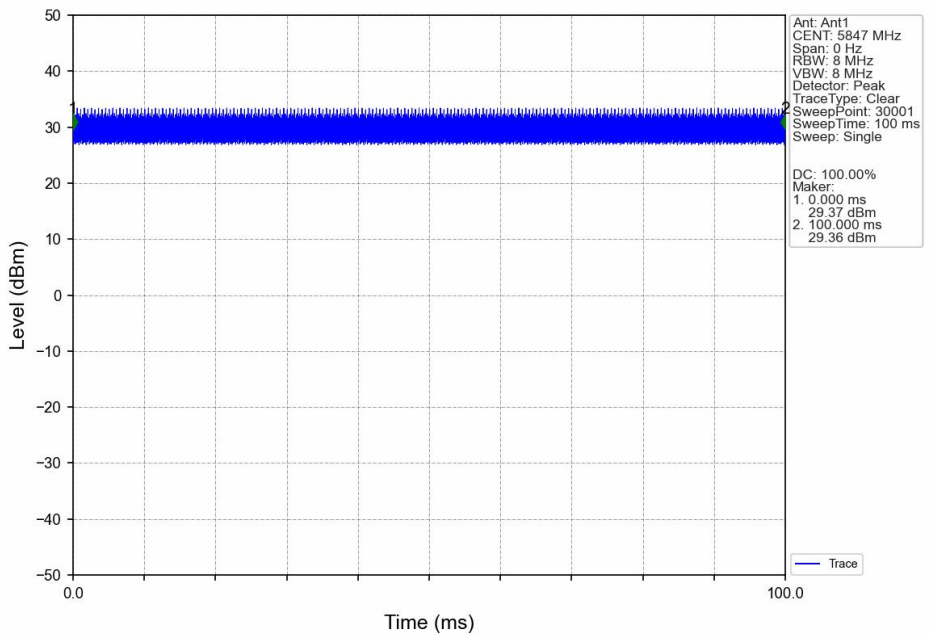
16QAM_LCH_5728MHz_Ant1_NTNV



16QAM_MCH_5788MHz_Ant1_NTNV



16QAM_HCH_5847MHz_Ant1_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

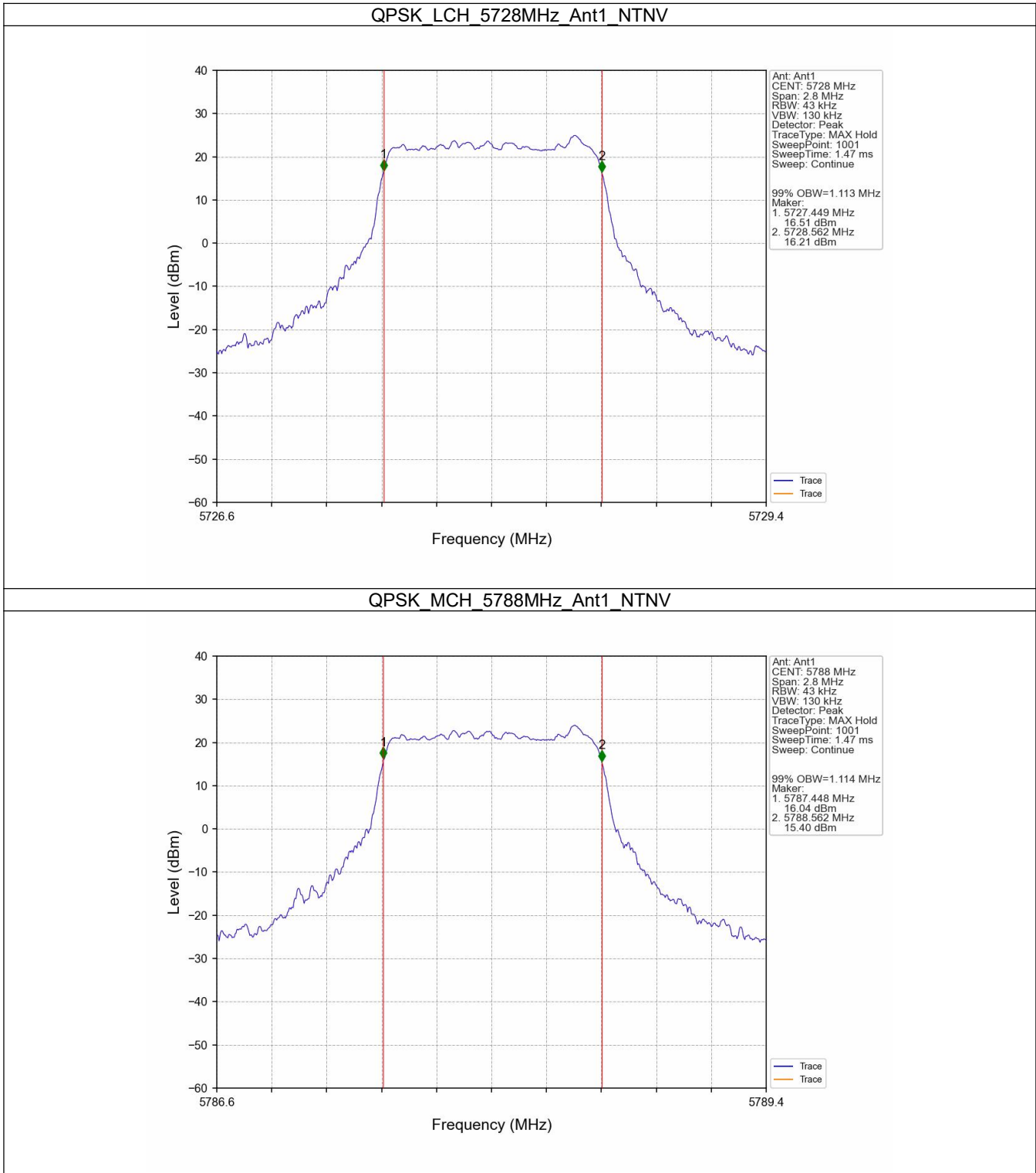
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
QPSK	MIMO	5728	1	1.113	/	Pass
		5788	1	1.114	/	Pass
		5847	1	1.115	/	Pass
16QAM	MIMO	5728	1	1.112	/	Pass
		5788	1	1.114	/	Pass
		5847	1	1.115	/	Pass

2.1.2 6dB BW

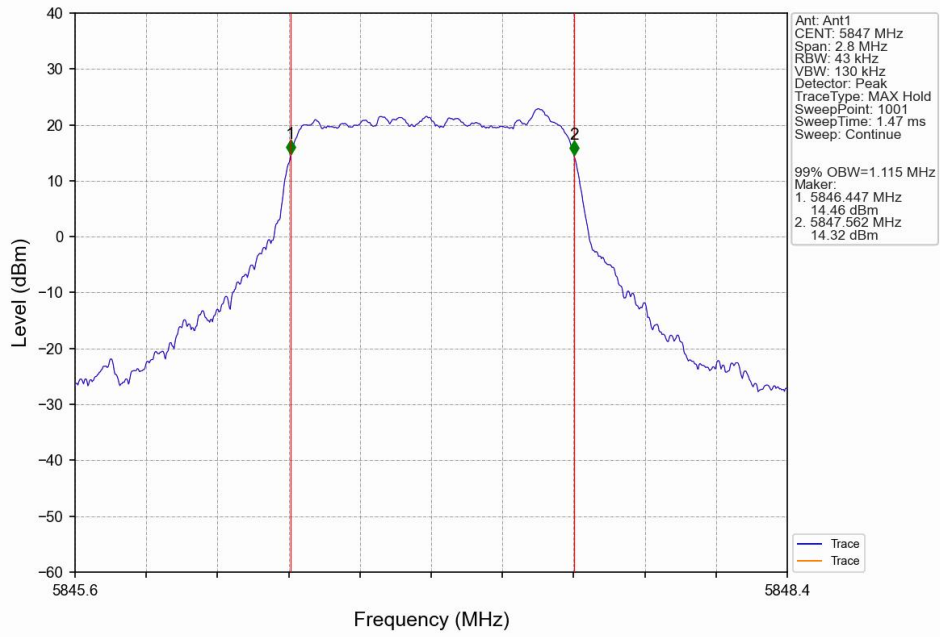
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
QPSK	MIMO	5728	1	1.132	≥ 0.5	Pass
		5788	1	1.133	≥ 0.5	Pass
		5847	1	1.134	≥ 0.5	Pass
16QAM	MIMO	5728	1	1.134	≥ 0.5	Pass
		5788	1	1.133	≥ 0.5	Pass
		5847	1	1.137	≥ 0.5	Pass

2.2 Test Graph

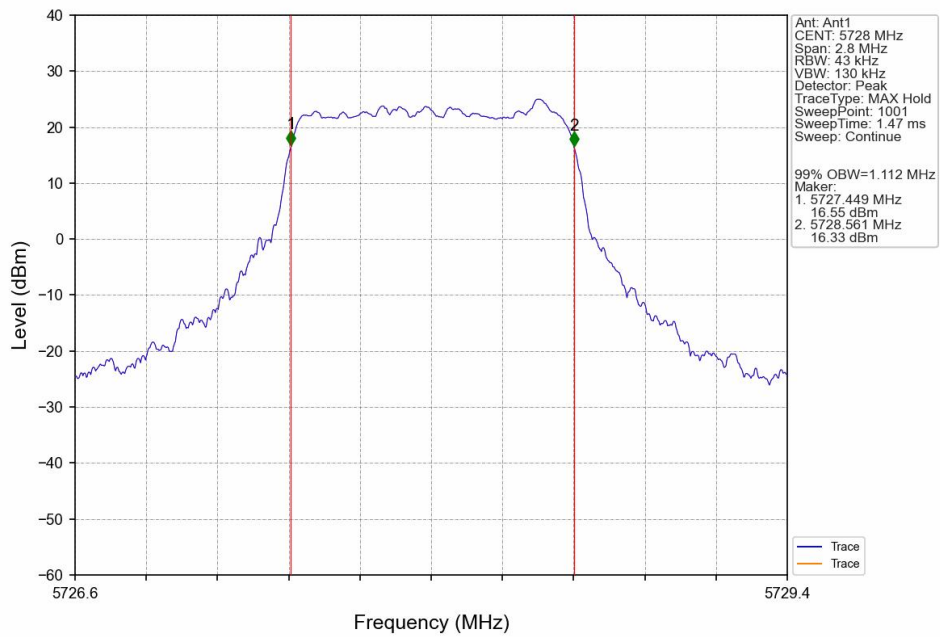
2.2.1 OBW



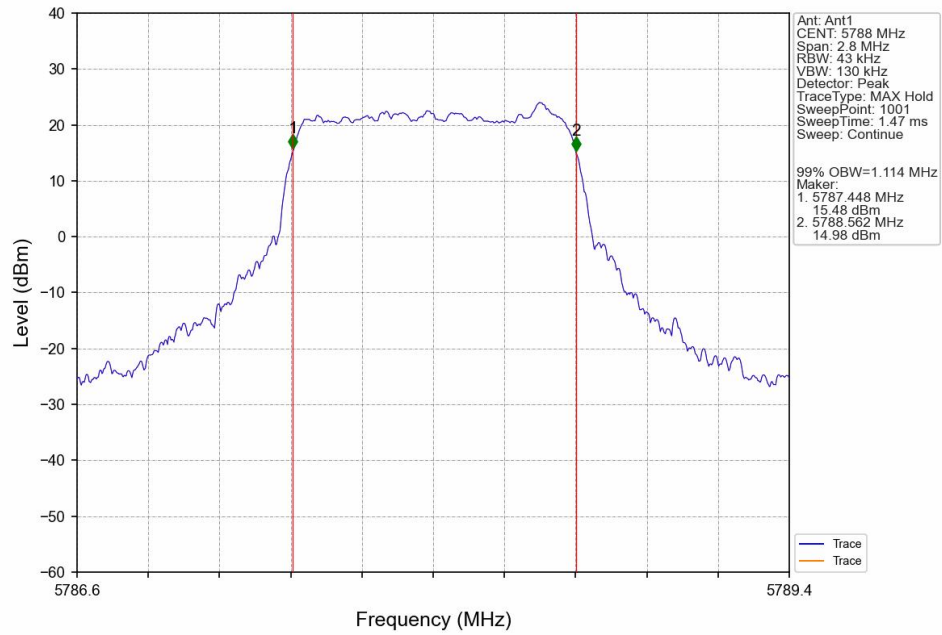
QPSK_HCH_5847MHz_Ant1_NTNV



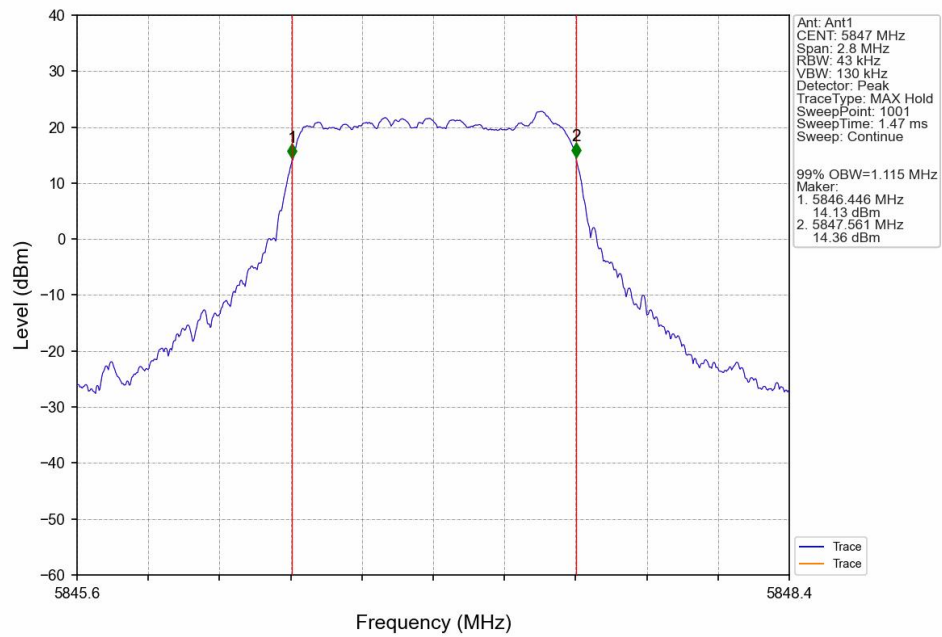
16QAM_LCH_5728MHz_Ant1_NTNV



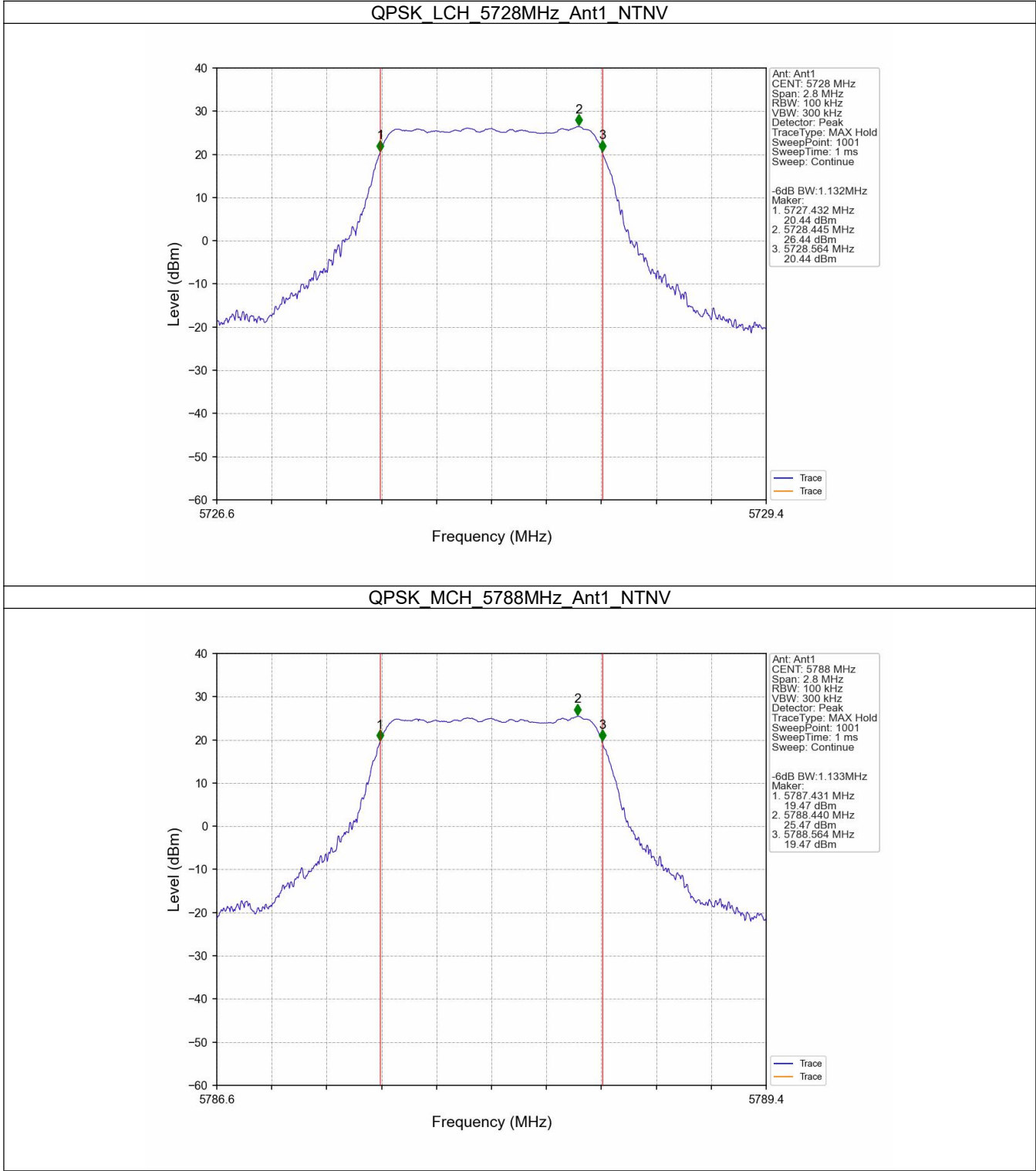
16QAM_MCH_5788MHz_Ant1_NTNV



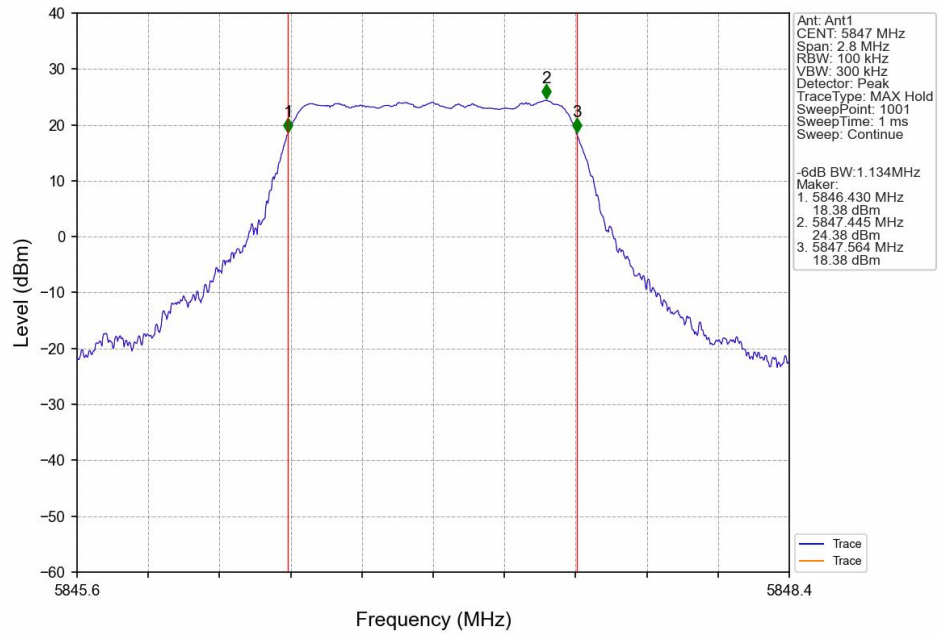
16QAM_HCH_5847MHz_Ant1_NTNV



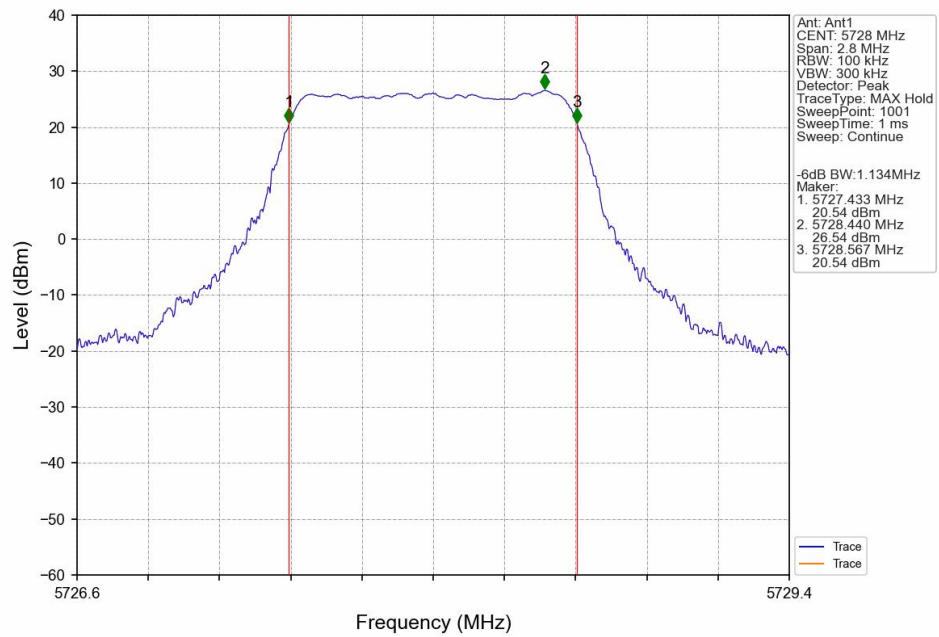
2.2.2 6dB BW



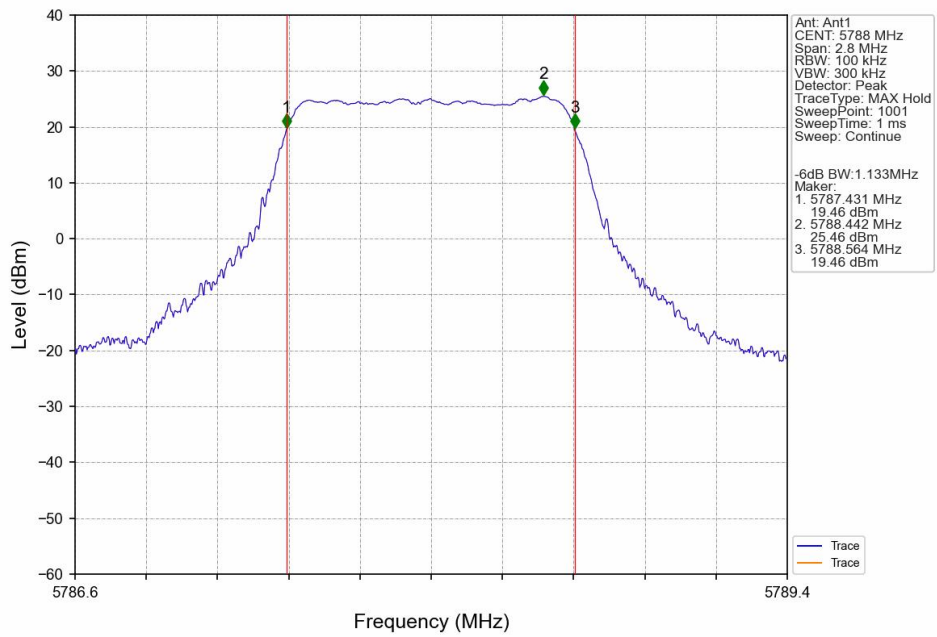
QPSK_HCH_5847MHz_Ant1_NTNV



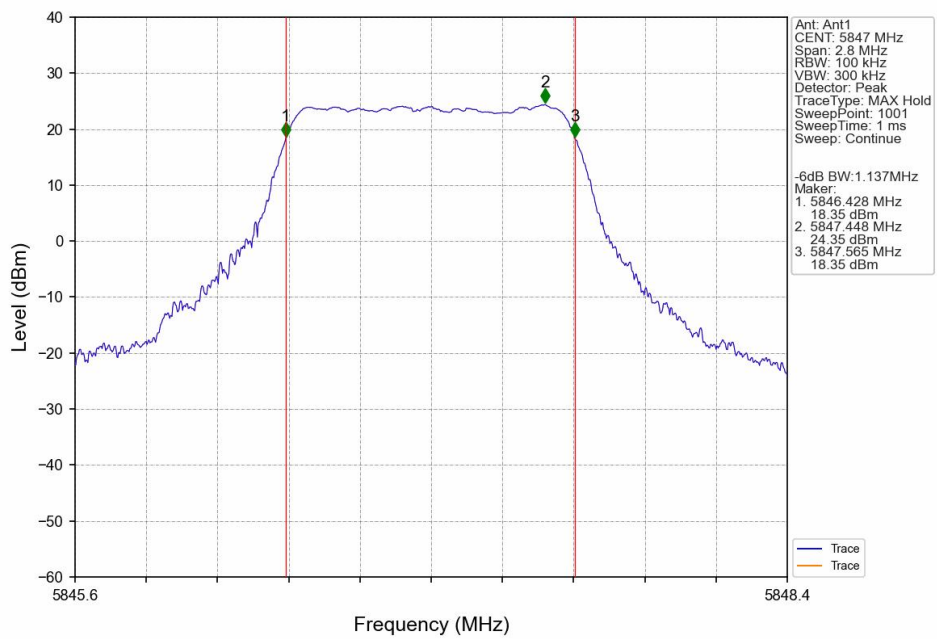
16QAM_LCH_5728MHz_Ant1_NTNV



16QAM_MCH_5788MHz_Ant1_NTNV



16QAM_HCH_5847MHz_Ant1_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)				Verdict
			ANT1	ANT2	MIMO	Limit	
QPSK	MIMO	5728	21.87	19.62	23.90	<=25.43	Pass
		5788	21.12	18.85	23.14	<=25.43	Pass
		5847	19.62	17.47	21.69	<=25.43	Pass
16QAM	MIMO	5728	21.92	19.64	23.94	<=25.43	Pass
		5788	20.97	18.60	22.96	<=25.43	Pass
		5847	19.63	17.48	21.70	<=25.43	Pass
Note1: Antenna Gain: Ant1: 7.56dBi; Ant2: 7.56dBi; Note2: Directional Gain: Band3: 10.57dBi							

4. Maximum Power Spectral Density

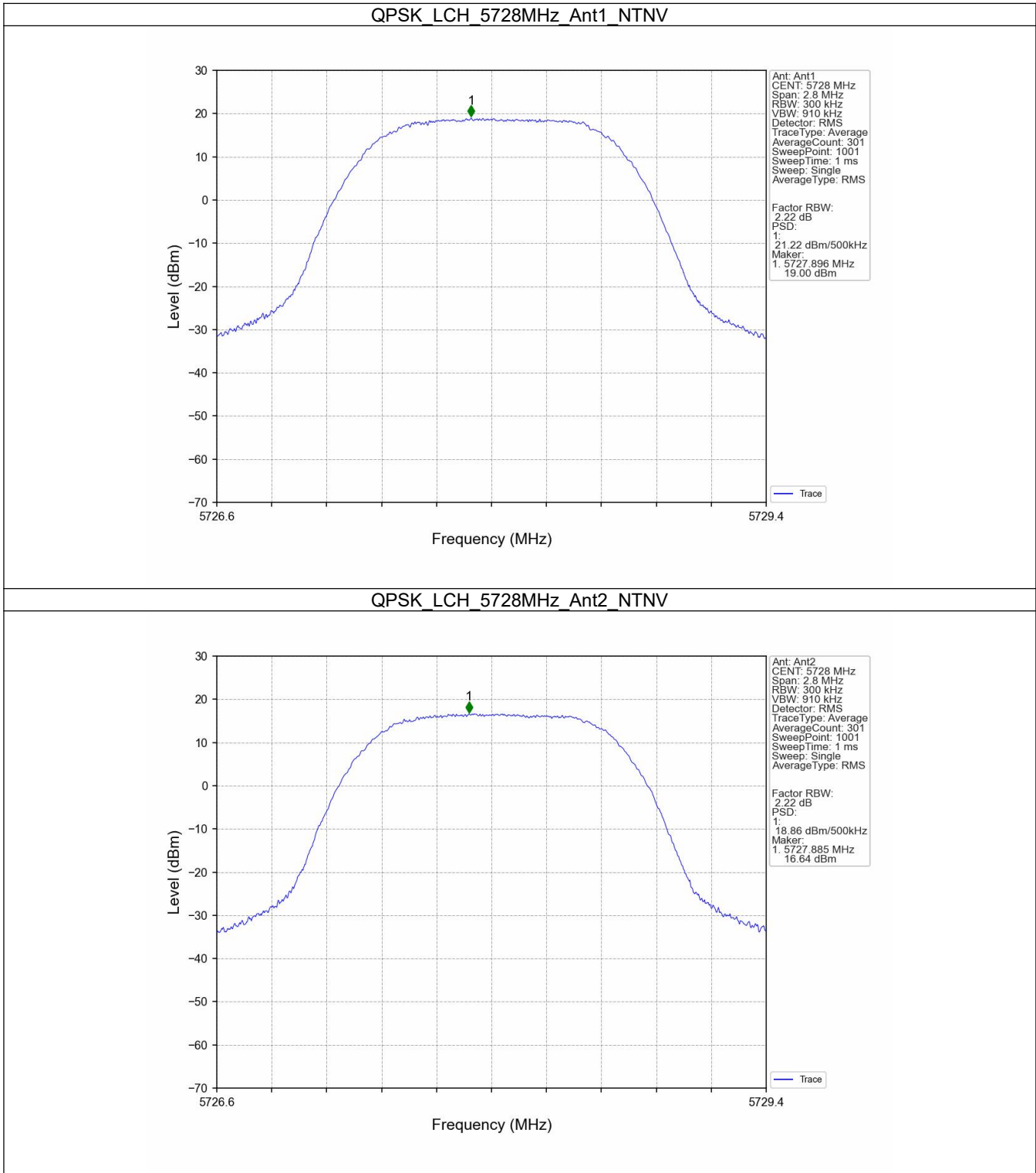
4.1 Test Result

4.1.1 PSD-Band3

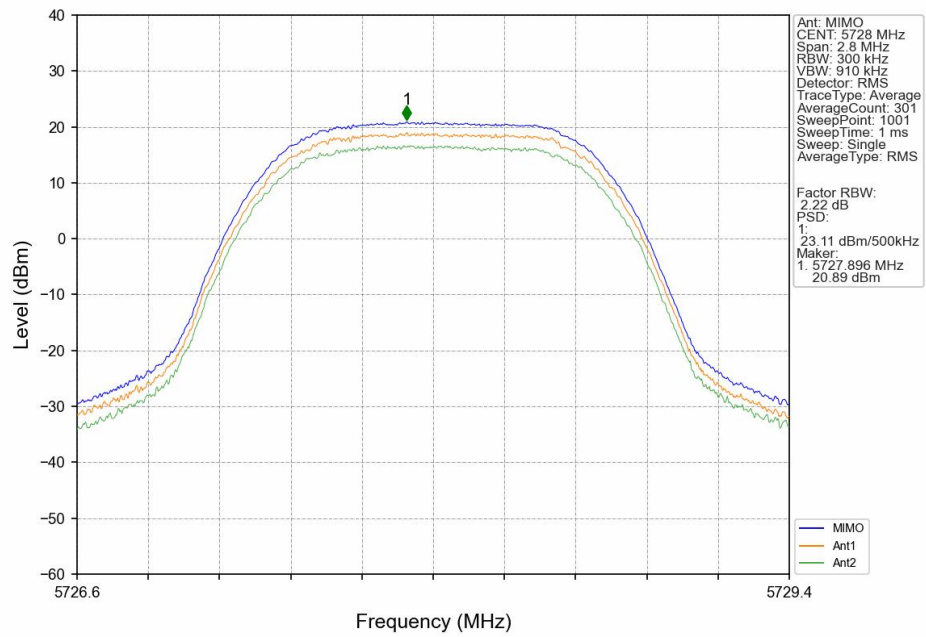
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/500kHz)				Verdict
			ANT1	ANT2	MIMO	Limit	
QPSK	MIMO	5728	21.22	18.86	23.11	<=25.43	Pass
		5788	20.42	18.26	22.37	<=25.43	Pass
		5847	18.92	16.74	20.91	<=25.43	Pass
16QAM	MIMO	5728	21.14	18.92	23.05	<=25.43	Pass
		5788	20.27	17.90	22.14	<=25.43	Pass
		5847	19.02	16.75	20.95	<=25.43	Pass
Note1: Antenna Gain: Ant1: 7.56dBi; Ant2: 7.56dBi; Note2: Directional Gain: Band3: 10.57dBi							

4.2 Test Graph

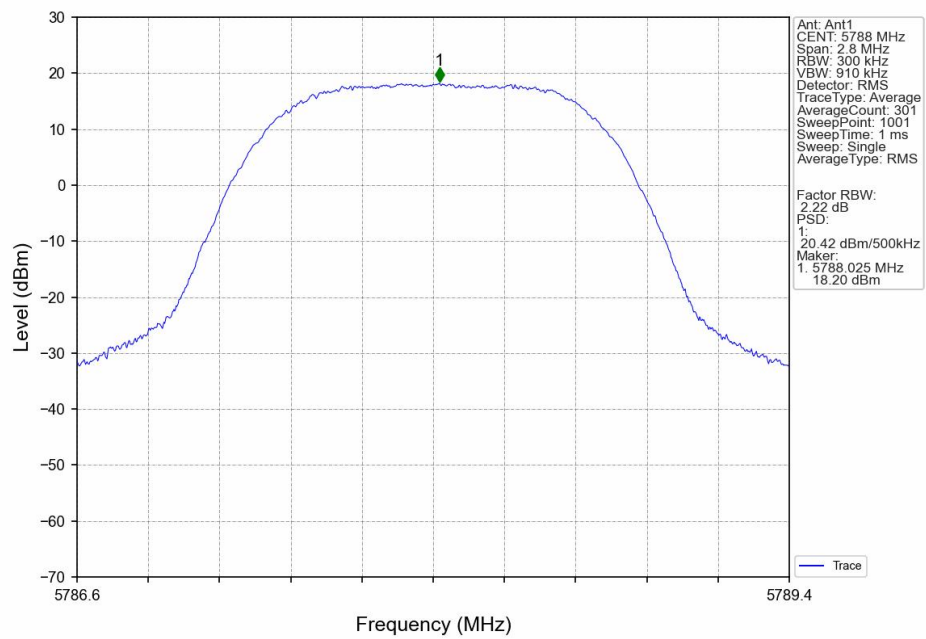
4.2.1 PSD-Band3



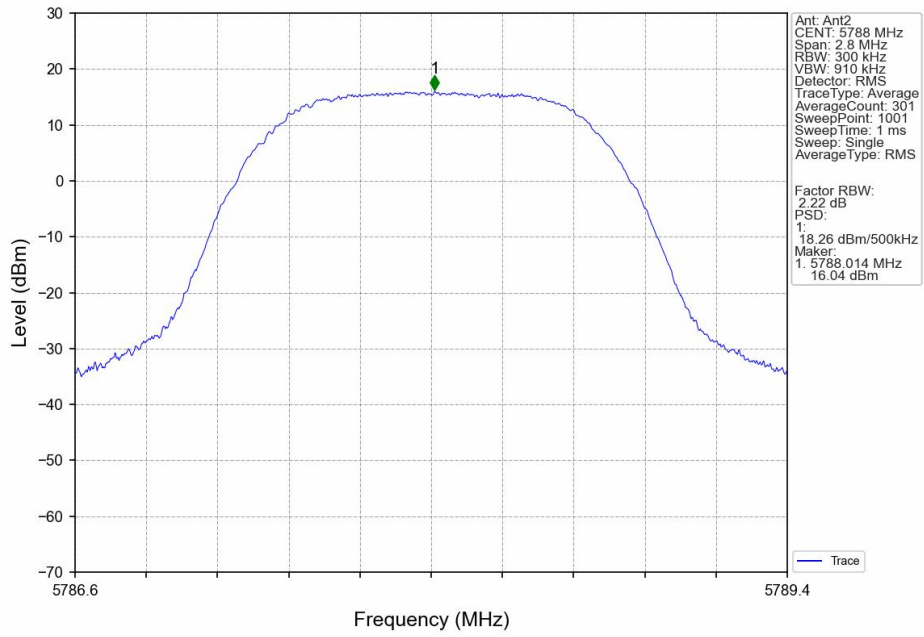
QPSK_LCH_5728MHz_MIMO_NTNV



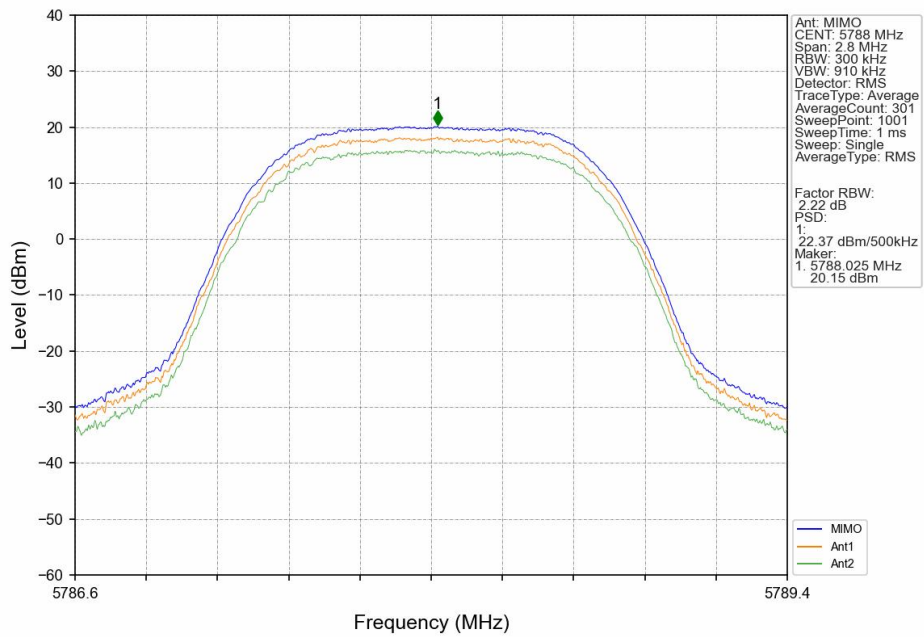
QPSK_MCH_5788MHz_Ant1_NTNV



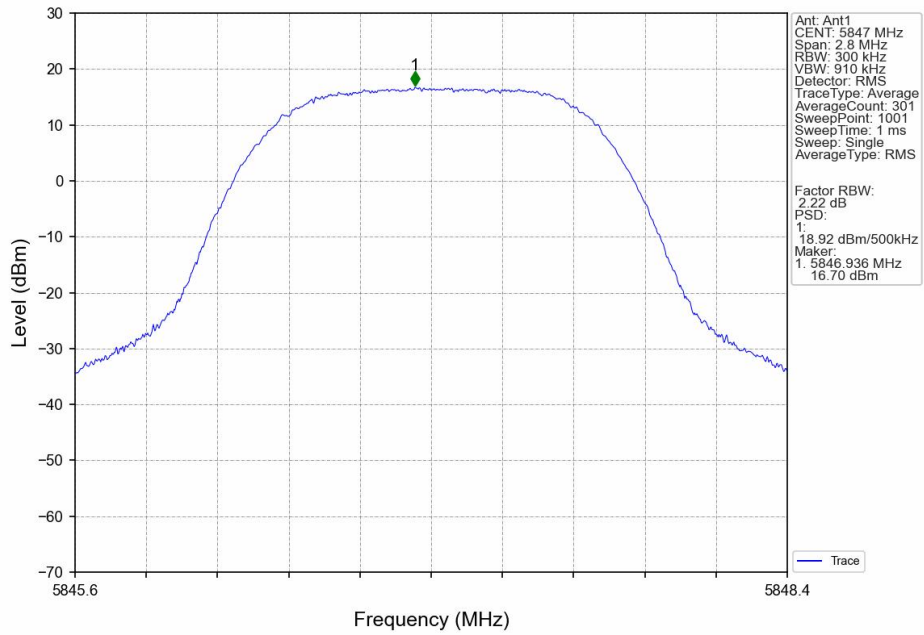
QPSK_MCH_5788MHz_Ant2_NTNV



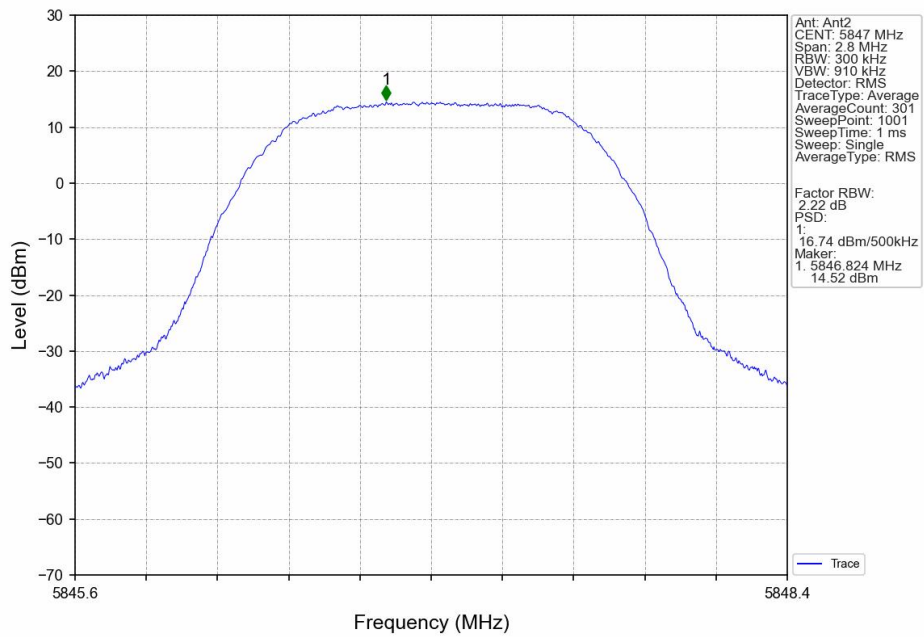
QPSK_MCH_5788MHz_MIMO_NTNV



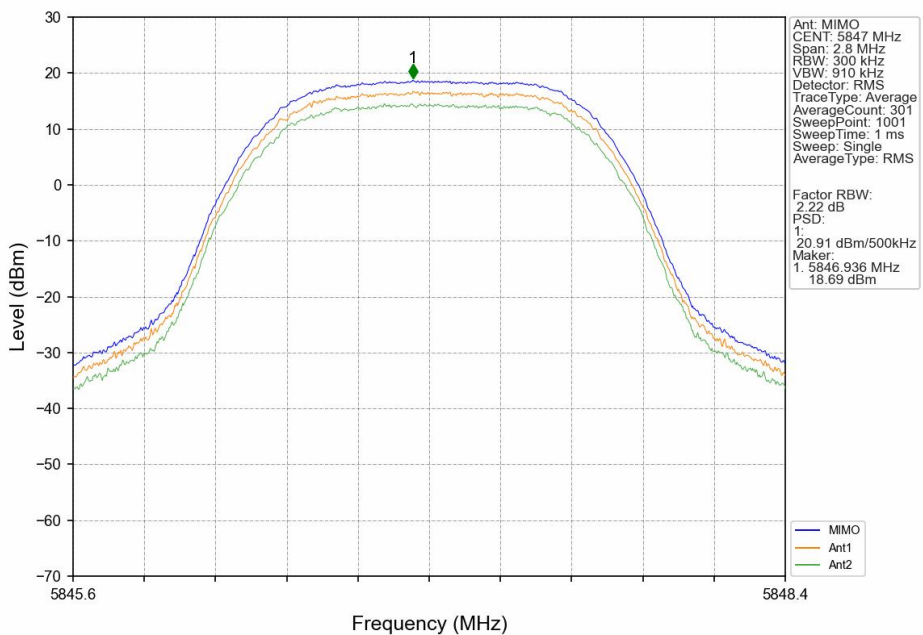
QPSK_HCH_5847MHz_Ant1_NTNV



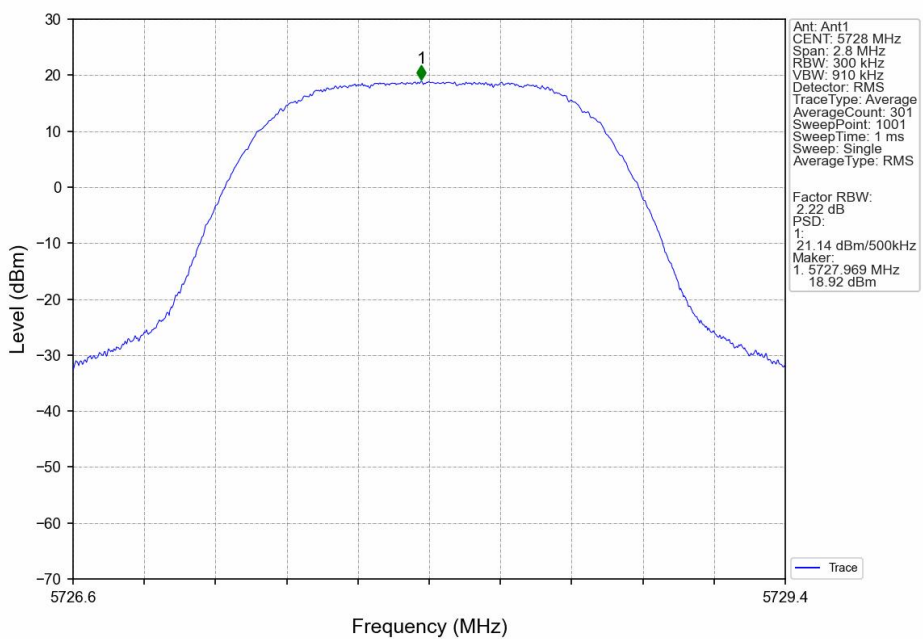
QPSK_HCH_5847MHz_Ant2_NTNV



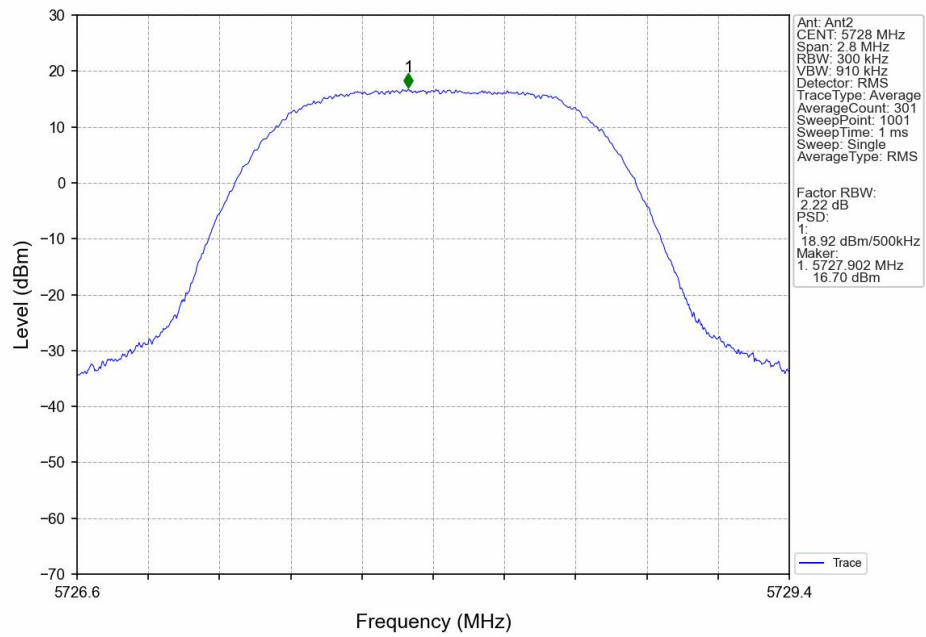
QPSK_HCH_5847MHz_MIMO_NTNV



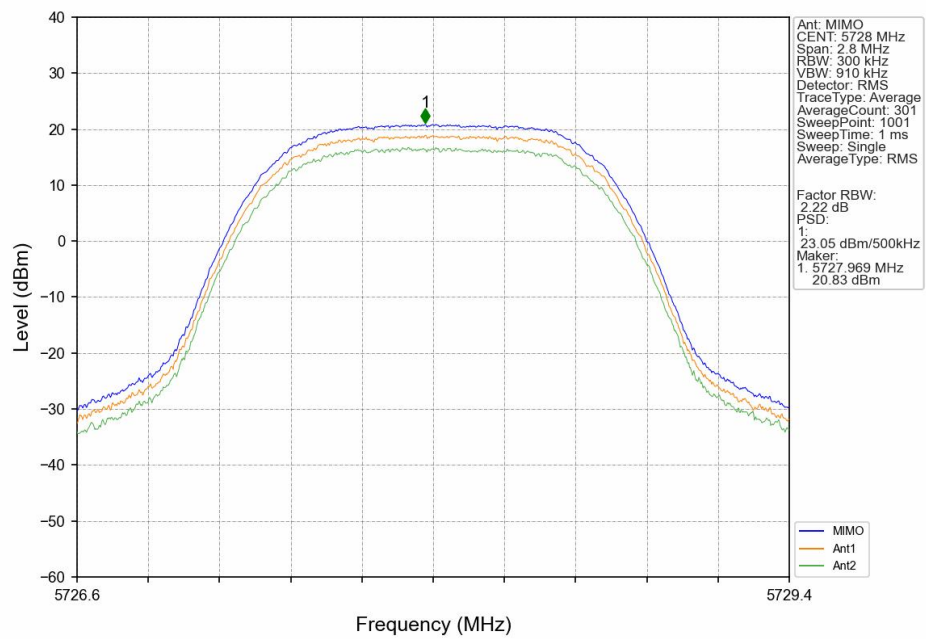
16QAM_LCH_5728MHz_Ant1_NTNV



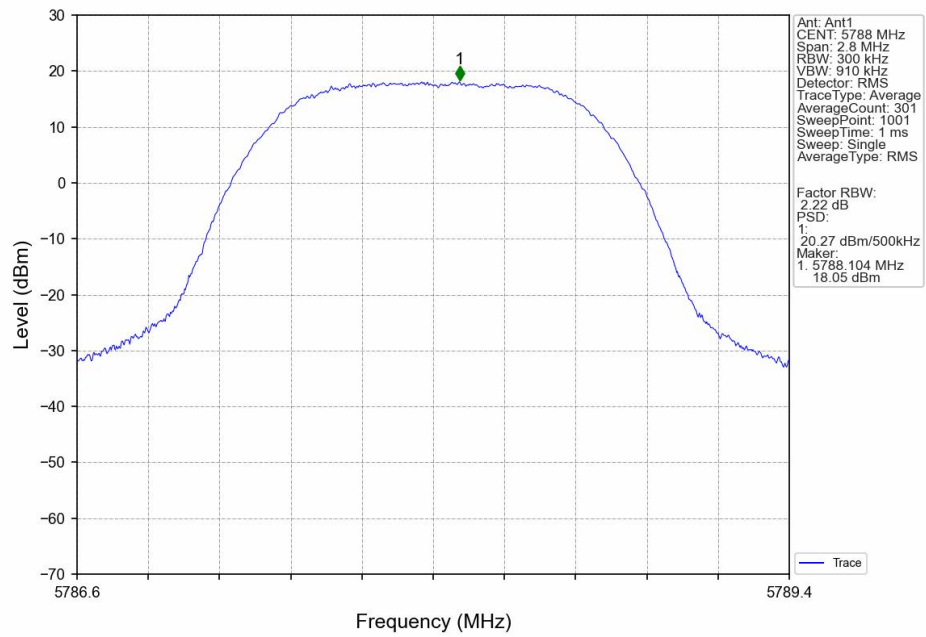
16QAM_LCH_5728MHz_Ant2_NTNV



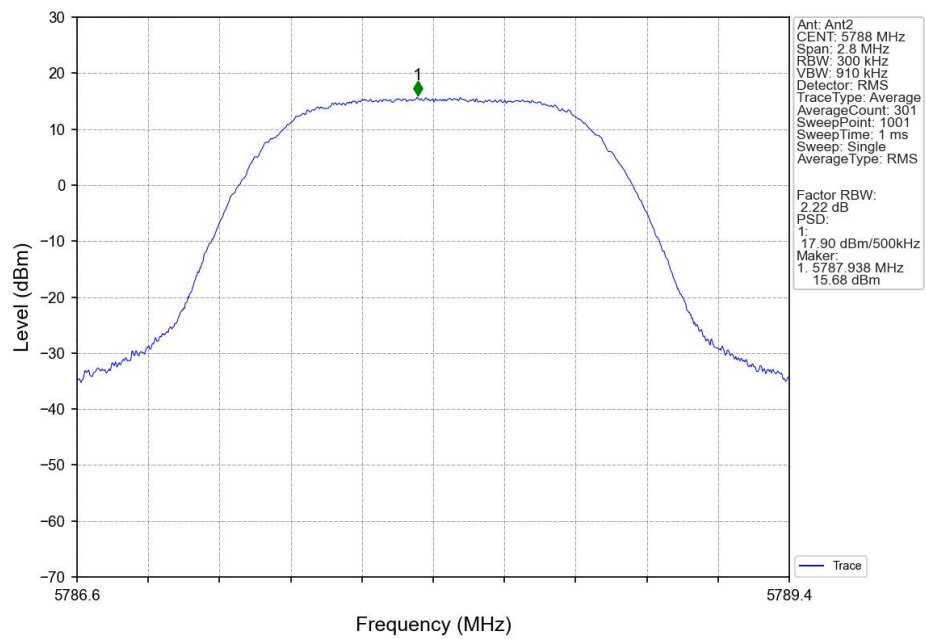
16QAM_LCH_5728MHz_MIMO_NTNV



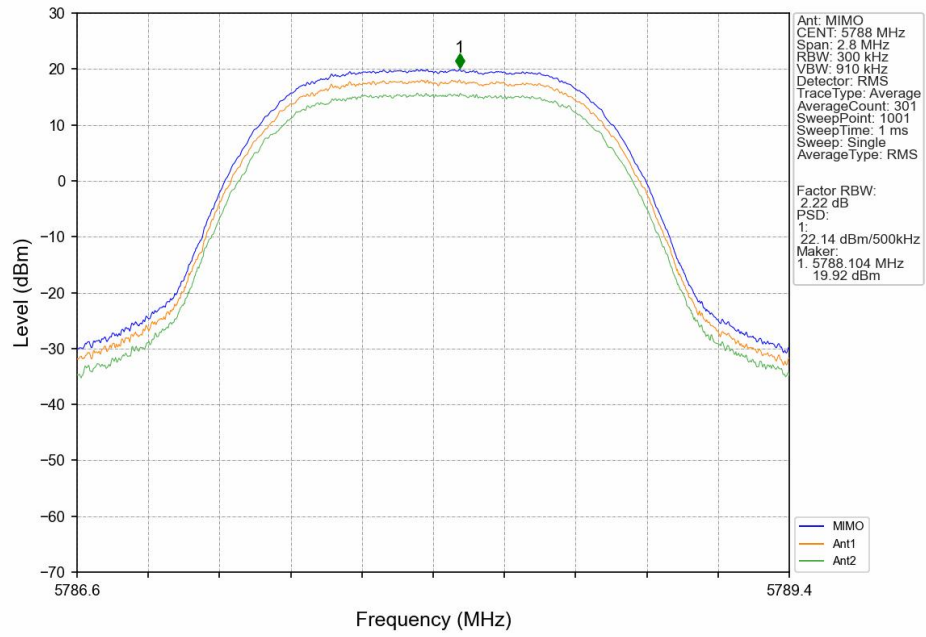
16QAM_MCH_5788MHz_Ant1_NTNV



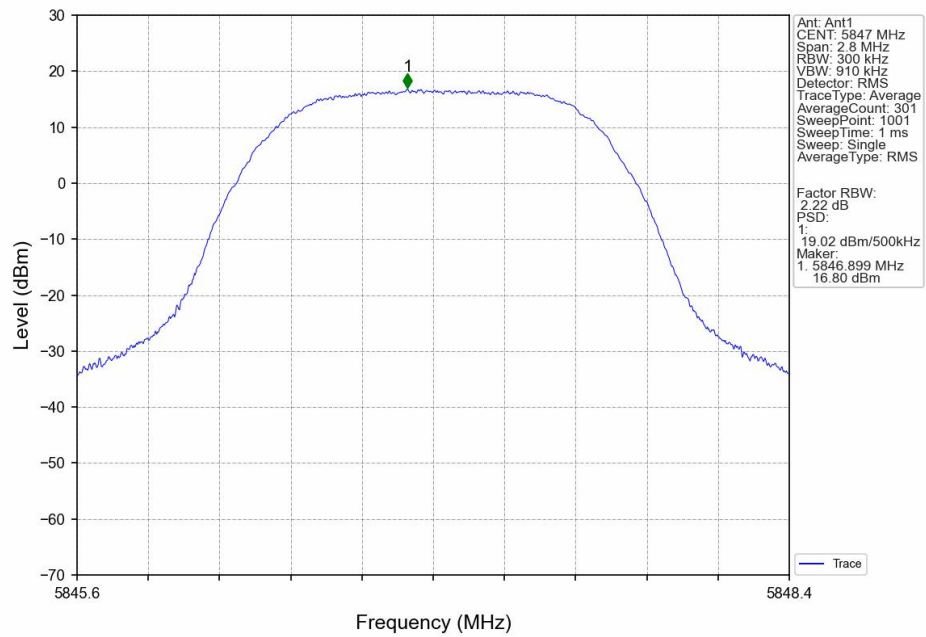
16QAM_MCH_5788MHz_Ant2_NTNV



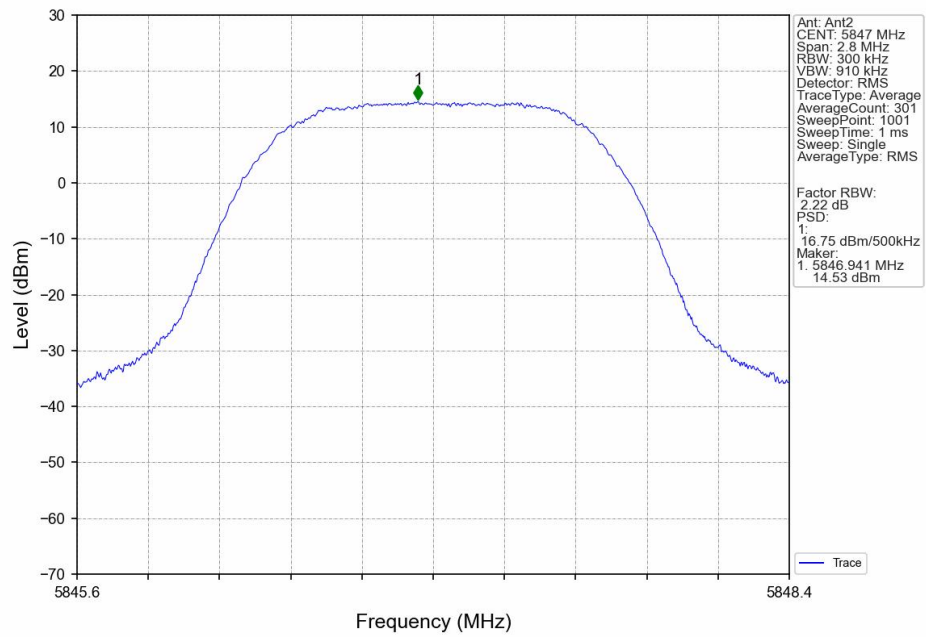
16QAM_MCH_5788MHz_MIMO_NTNV



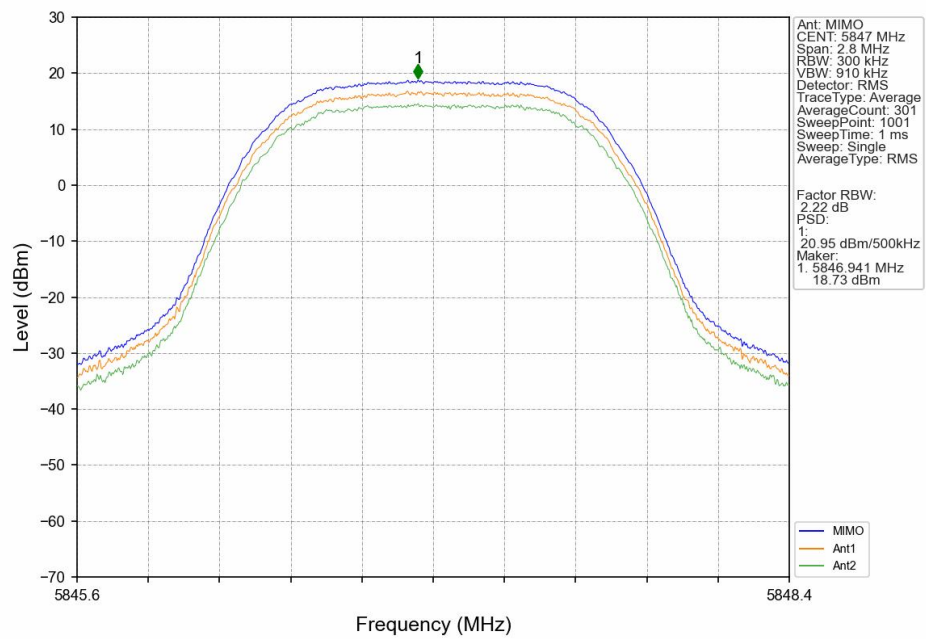
16QAM_HCH_5847MHz_Ant1_NTNV



16QAM_HCH_5847MHz_Ant2_NTNV



16QAM_HCH_5847MHz_MIMO_NTNV



5. Frequency Stability

5.1 Test Result

5.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
QPSK	MIMO	5728	20	102	5727.994	5725 to 5850	Pass
				120	5727.990	5725 to 5850	Pass
				138	5727.990	5725 to 5850	Pass
			-30	120	5727.990	5725 to 5850	Pass
			-20	120	5727.992	5725 to 5850	Pass
			-10	120	5727.994	5725 to 5850	Pass
			0	120	5727.996	5725 to 5850	Pass
			10	120	5727.992	5725 to 5850	Pass
			30	120	5727.987	5725 to 5850	Pass
			40	120	5727.992	5725 to 5850	Pass
			50	120	5727.993	5725 to 5850	Pass
		5788	20	102	5787.990	5725 to 5850	Pass
				120	5787.996	5725 to 5850	Pass
				138	5787.992	5725 to 5850	Pass
			-30	120	5787.996	5725 to 5850	Pass
			-20	120	5787.994	5725 to 5850	Pass
			-10	120	5787.989	5725 to 5850	Pass
			0	120	5787.989	5725 to 5850	Pass
			10	120	5787.989	5725 to 5850	Pass
			30	120	5787.992	5725 to 5850	Pass
			40	120	5787.990	5725 to 5850	Pass
			50	120	5787.993	5725 to 5850	Pass
		5847	20	102	5846.994	5725 to 5850	Pass
				120	5846.989	5725 to 5850	Pass
				138	5846.994	5725 to 5850	Pass
			-30	120	5846.990	5725 to 5850	Pass
			-20	120	5846.990	5725 to 5850	Pass
			-10	120	5846.993	5725 to 5850	Pass
			0	120	5846.997	5725 to 5850	Pass
			10	120	5846.990	5725 to 5850	Pass
			30	120	5846.992	5725 to 5850	Pass
			40	120	5846.993	5725 to 5850	Pass
			50	120	5846.999	5725 to 5850	Pass
16QAM	MIMO	5728	20	102	5727.993	5725 to 5850	Pass
				120	5727.993	5725 to 5850	Pass
				138	5727.987	5725 to 5850	Pass
			-30	120	5727.999	5725 to 5850	Pass
			-20	120	5727.992	5725 to 5850	Pass
			-10	120	5727.989	5725 to 5850	Pass
			0	120	5727.994	5725 to 5850	Pass
			10	120	5727.993	5725 to 5850	Pass
			30	120	5727.992	5725 to 5850	Pass
			40	120	5727.993	5725 to 5850	Pass
			50	120	5727.993	5725 to 5850	Pass
		5788	20	102	5787.989	5725 to 5850	Pass
				120	5787.994	5725 to 5850	Pass

				138	5787.992	5725 to 5850	Pass
			-30	120	5787.994	5725 to 5850	Pass
			-20	120	5787.996	5725 to 5850	Pass
			-10	120	5787.992	5725 to 5850	Pass
			0	120	5787.990	5725 to 5850	Pass
			10	120	5787.993	5725 to 5850	Pass
			30	120	5787.990	5725 to 5850	Pass
			40	120	5787.993	5725 to 5850	Pass
			50	120	5787.993	5725 to 5850	Pass
		5847	20	102	5846.996	5725 to 5850	Pass
				120	5846.986	5725 to 5850	Pass
				138	5846.992	5725 to 5850	Pass
			-30	120	5846.993	5725 to 5850	Pass
			-20	120	5846.987	5725 to 5850	Pass
			-10	120	5846.994	5725 to 5850	Pass
			0	120	5846.990	5725 to 5850	Pass
			10	120	5846.990	5725 to 5850	Pass
			30	120	5846.992	5725 to 5850	Pass
			40	120	5846.994	5725 to 5850	Pass
			50	120	5846.986	5725 to 5850	Pass

6. Form731

6.1 Test Result

6.1.1 Form731

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
5728	5847	0.2477	23.94