



Report No.: PTC22082406103E-FC03

FCC TEST REPORT

FCC ID: 2AOBQ-HIBYRS8

Product	:	High Resolution Music Player
Model Name	:	HiBy RS8
Brand	:	HiBy
Report No.	:	PTC22082406103E-FC03
Prepared for		
Dongguan SmartAction Technology Co.,Ltd		
Room 1201, Lianjing Commercial Building, No.39, Hongwei 3rd Road, Nancheng District, Dongguan, Guangdong, China		
Prepared by		
Precise Testing & Certification Co., Ltd		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



1 TEST RESULT CERTIFICATION

Applicant's name : Dongguan SmartAction Technology Co.,Ltd

Address : Room 1201, Lianjing Commercial Building, No.39, Hongwei 3rd Road, Nancheng District, Dongguan, Guangdong, China

Manufacture's name : Dongguan SmartAction Technology Co.,Ltd

Address : Room 1201, Lianjing Commercial Building, No.39, Hongwei 3rd Road, Nancheng District, Dongguan, Guangdong, China

Product name : High Resolution Music Player

Model name : HiBy RS8

Standards : FCC CFR47 Part 15 Section 15.407

Test procedure : ANSI C63.10:2013

Test Date : Sep. 02, 2022 to Sep. 28, 2022

Date of Issue : Oct. 14, 2022

Test Result : Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink that reads 'Simon Pu'.

Simon Pu / Engineer

Technical Manager:

A handwritten signature in black ink that reads 'Ronnie Liu'.

Ronnie Liu / Manager



Contents

	Page
1 TEST RESULT CERTIFICATION.....	2
2 TEST SUMMARY	5
3 GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF E.U.T.	6
3.2 CHANNEL LIST	7
3.3 TEST SITE.....	8
4 EQUIPMENT DURING TEST	9
4.1 EQUIPMENTS LIST.....	9
4.2 MEASUREMENT UNCERTAINTY	11
4.3 DESCRIPTION OF SUPPORT UNITS.....	12
5 CONDUCTED EMISSION.....	13
5.1 E.U.T. OPERATION.....	13
5.2 EUT SETUP	13
5.3 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION).....	14
5.4 MEASUREMENT PROCEDURE	14
5.5 CONDUCTED EMISSION LIMIT	14
5.6 MEASUREMENT DESCRIPTION.....	14
5.7 CONDUCTED EMISSION TEST RESULT	14
6 RADIATED SPURIOUS EMISSIONS	17
6.1 EUT OPERATION	18
6.2 TEST SETUP	19
6.3 SPECTRUM ANALYZER SETUP.....	20
6.4 TEST PROCEDURE.....	21
6.5 SUMMARY OF TEST RESULTS	22
6.6 BAND EDGE MEASUREMENTS	77
6.7 RESTRICTED BAND	91
7 EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH	95
7.1 TEST PROCEDURE.....	95
7.2 TEST RESULT	96
8 MAXIMUM AVERAGE OUTPUT POWER.....	119



8.1 TEST PROCEDURE.....	119
8.2 TEST RESULT	120
9 POWER SPECTRAL DENSITY	135
9.1 TEST PROCEDURE.....	136
9.2 TEST RESULT	137
10 ANTENNA REQUIREMENT.....	152
10.1 RESULT.....	152
11 FREQUENCY STABILITY	153
11.1 TEST PROCEDURE.....	153
11.2 TEST RESULT	153
12 TEST SETUP	160
13 EUT PHOTOS.....	162



2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.407(b)	PASS
Emission and Occupied Bandwidth	15.407(a)(e)	PASS
Maximum Peak Output Power	15.407(a)(1)	PASS
Power Spectral Density	15.407(a)	PASS
Frequency stability	15.407 (g)	PASS
Antenna Requirement	15.203	PASS



3 General Information

3.1 General Description of E.U.T.

Product Name	:	High Resolution Music Player
Model Name	:	HiBy RS8
Additional model	:	N/A
Specification	:	802.11a/n HT20/HT40/ac20/ac40/ac80
Operation Frequency	:	5G Wifi:5150-5250 MHz 5.8G Wifi:5725MHz~5850MHz
Number of Channel	:	4 channels for 802.11a/n20/ac20 5150-5250 MHz 5 channels for 802.11a/n20/ac20 5725MHz~5850MHz 2 channels for 802.11n40/ac40 5150-5250 MHz 2 channels for 802.11n40/ac40 5725MHz~5850MHz 1 channels for 802.11 ac80
Type of Modulation	:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n/a/ac
Antenna installation	:	PIFA Antenna
Antenna Gain	:	5G Wifi:2.6 dBi 5.8G Wifi: 2.8 dBi
Power supply	:	Li-ion Battery : 1166100 Rated Voltage: 3.87V Capacity:12000mAh 46.44Wh
Hardware Version	:	V2.0
Software Version	:	V1.0



3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11a: 6 Mbps; 802.11n (HT20): MCS0; 802.11ac: MCS0) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 a/N20/N40/AC20/AC40

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	46	5230	153	5765
38	5190	48	5240	157	5785
40	5200	149	5745	159	5795
44	5220	151	5755	161	5805
				165	5825

Frequency and Channel list for 802.11 ac80:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	155	5775	/	/



The maximum duty cycle as following table:

Test Mode	Duty Cycle(%)
802.11a	100%
802.11n/ac20	100%
802.11n/ac40	100%
802.11ac80	100%

3.3 Test Site

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A



4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due	Calibration period
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-30GHz	Aug. 21, 2023	1 year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 21, 2023	1 year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 21, 2023	1 year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 21, 2023	1 year
Signal Analyzer 40GHz	Rohde&Schwarz	FSV40	101456	10Hz-40GHz	Aug. 21, 2023	1 year

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due	Calibration period
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug. 21, 2023	1 year
Loop Antenna	Schwarzbeck	FMZB 1519	012	9 KHz -30MHz	Aug. 21, 2023	1 year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Aug. 21, 2023	1 year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Aug. 21, 2023	1 year
Cable	Schwarzbeck	PLF-100	549489	9KHz-3GHz	Aug. 21, 2023	1 year
Spectrum Analyzer	Agilent	E4407B	MY45109572	9KHz-40GHz	Aug. 21, 2023	1 year
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug. 21, 2023	1 year
Power Amplifier	LUNAR EM	LNA1G18-40	J10100000081	1GHz-26.5GHz	Aug. 21, 2023	1 year



Report No.: PTC22082406103E-FC03

Horn Antenna	SCHWARZBEC K	BBHA 9170	9170-181	14GHz- 40GHz	Aug. 21, 2023	1 year
Amplifier	SCHWARZBEC K	BBV 9721	9721-205	18GHz- 40GHz	Aug. 21, 2023	1 year
Cable	H+S	CBL-26	N/A	1GHz- 26.5GHz	Aug. 21, 2023	1 year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 21, 2023	1 year

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due	Calibration period
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug. 21, 2023	1 year
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Aug. 21, 2023	1 year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Aug. 21, 2023	1 year



4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1\text{ }^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(9kHz~30MHz)	$\pm 3.15\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~18GHz)	$\pm 4.74\text{dB}$
Radiated Emission(18GHz~40GHz)	$\pm 3.20\text{dB}$



Report No.: PTC22082406103E-FC03

4.3 Description of Support Units

Equipment	Model No.	Series No.
Adapter	M200-C001BUS	N/A

5 Conducted Emission

Test Requirement:	: FCC CFR 47 Part 15 Section 15.207
Test Method	: ANSI C63.10: 2013
Test Result	: PASS
Frequency Range	: 150kHz to 30MHz
Class/Severity	: Class B

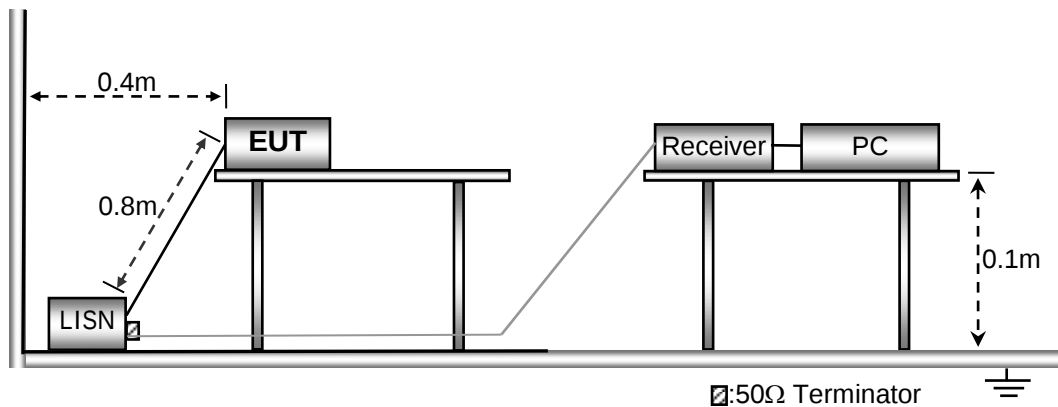
5.1 E.U.T. Operation

Operating Environment :

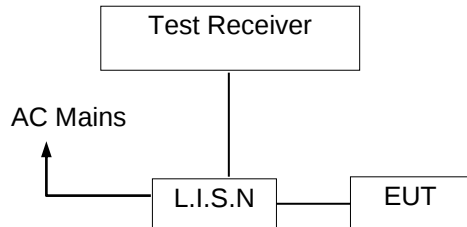
Temperature	: 23.9 °C
Humidity	: 51.4 % RH
Atmospheric Pressure	: 101.21kPa

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. The EUT was placed on a table, which is 0.1m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

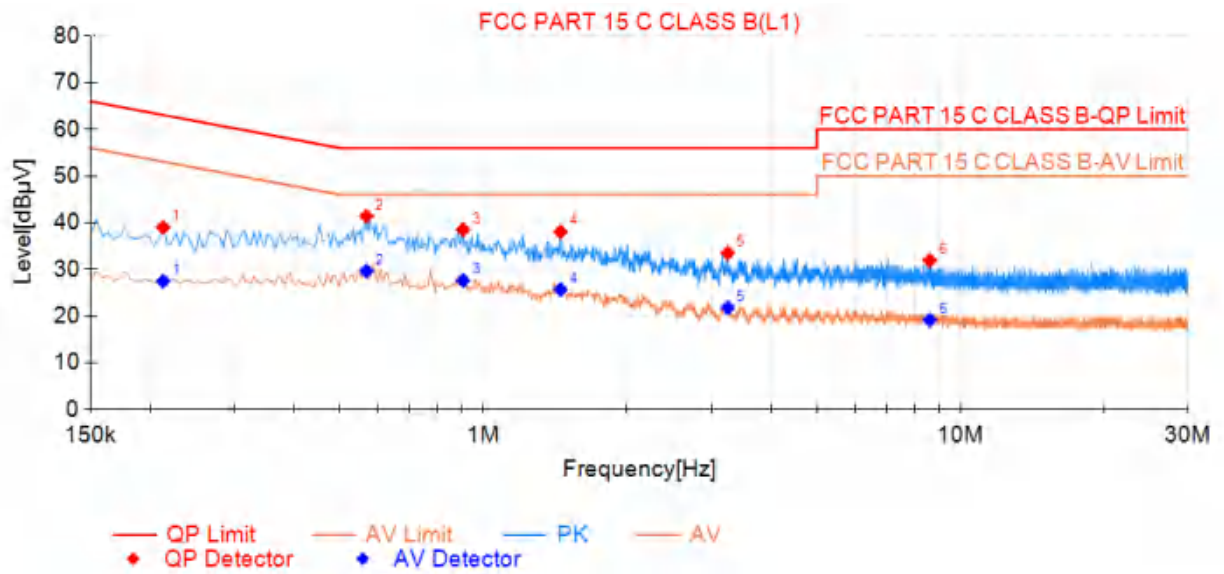
5.7 Conducted Emission Test Result

Pass.

All the modulation modes were tested the data of the worst mode (AC 120V/60Hz, TX 802.11a 5180MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.



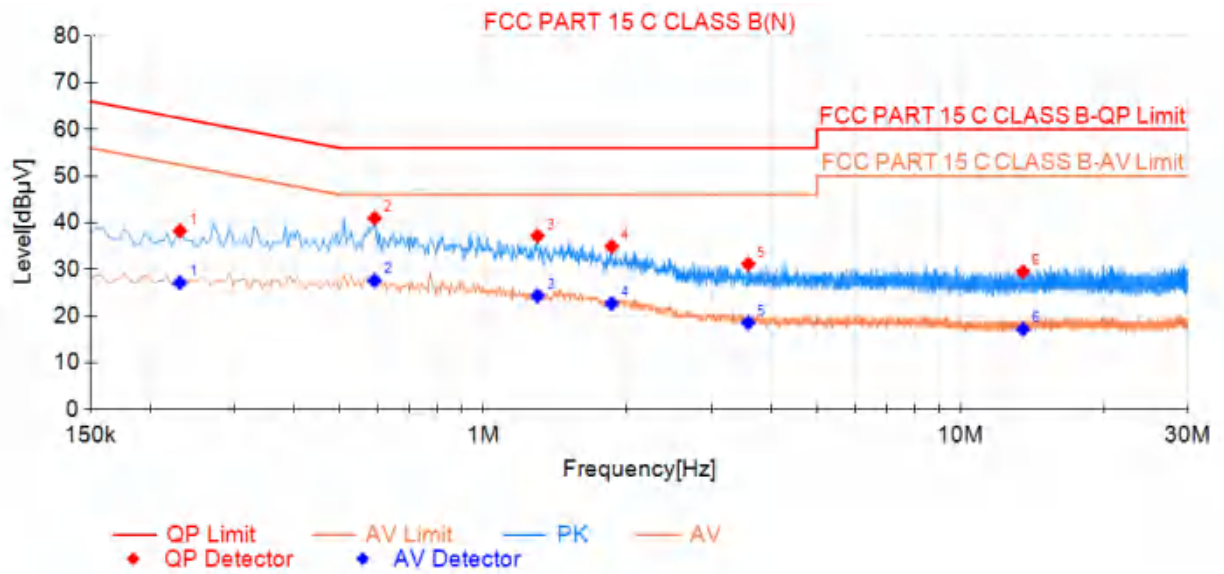
Line-AC 120V/60Hz



Final Data List								
NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.213	39.01	63.09	24.08	27.51	53.09	25.58	PASS
2	0.569	41.43	56.00	14.57	29.68	46.00	16.32	PASS
3	0.906	38.52	56.00	17.48	27.64	46.00	18.36	PASS
4	1.451	38.06	56.00	17.94	25.71	46.00	20.29	PASS
5	3.251	33.55	56.00	22.45	21.83	46.00	24.17	PASS
6	8.619	31.94	60.00	28.06	19.19	50.00	30.81	PASS



Neutral-AC 120V/60Hz



Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.231	38.25	62.41	24.16	27.16	52.41	25.25	PASS
2	0.591	40.99	56.00	15.01	27.64	46.00	18.36	PASS
3	1.298	37.19	56.00	18.81	24.36	46.00	21.64	PASS
4	1.856	34.94	56.00	21.06	22.70	46.00	23.30	PASS
5	3.588	31.16	56.00	24.84	18.62	46.00	27.38	PASS
6	13.515	29.51	60.00	30.49	17.20	50.00	32.80	PASS



6 Radiated Spurious Emissions

Test Requirement	:	FCC CFR47 Part 15 Section 15.209 & 15.407(b)
Test Method	:	ANSI C63.10:2013
Test Result	:	PASS
Measurement Distance	:	3m
Limit		

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

Further.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits. As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz



As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

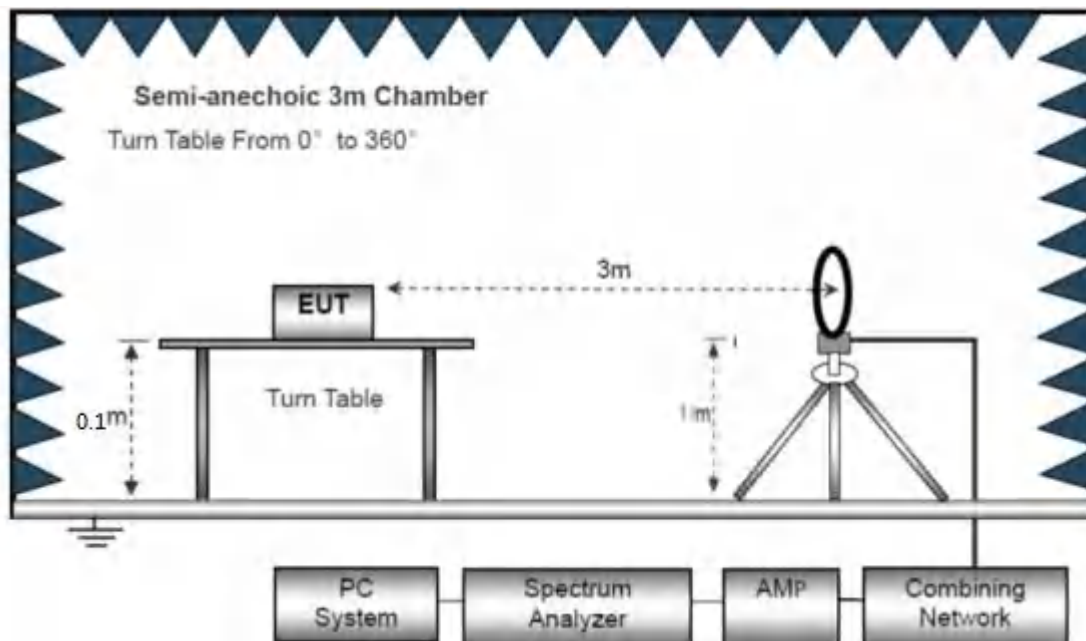
Operating Environment :

Temperature:	:	24.5 °C
Humidity:	:	52 % RH
Atmospheric Pressure:	:	101.3kPa
Test Voltage	:	AC 120V 60Hz

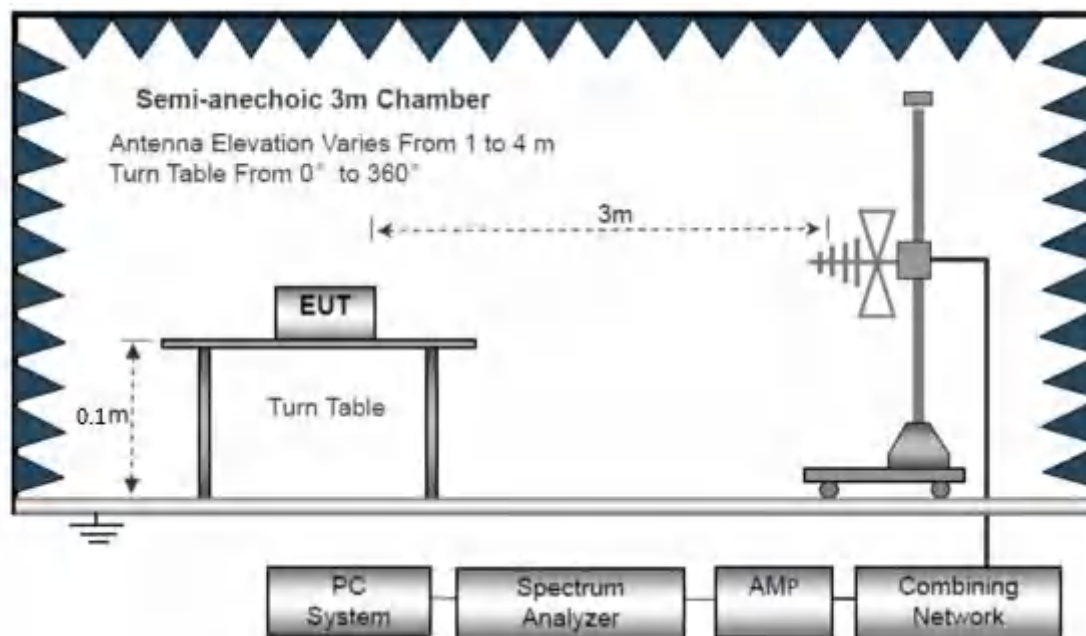
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

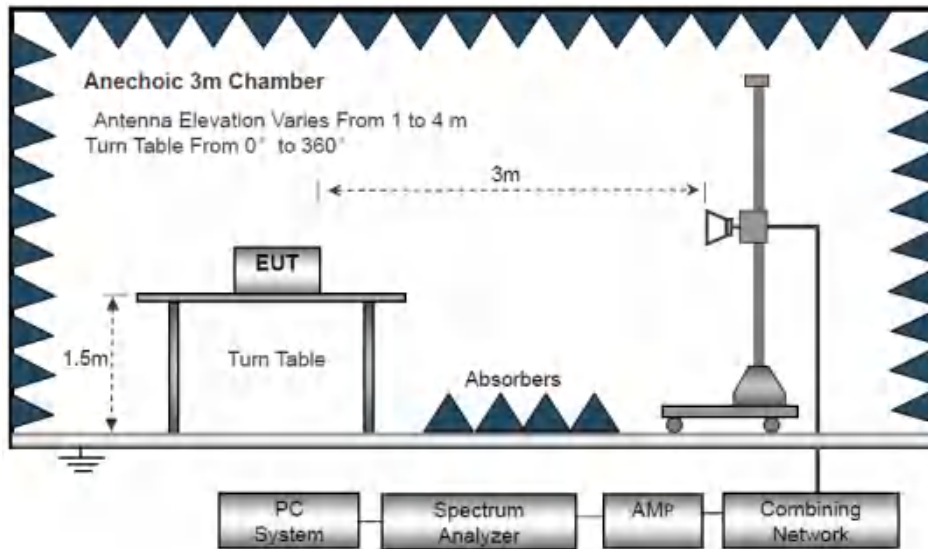
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

	Frequency	Detector	RBW	VBW	Remark
Receiver Setup	Below 30MHz	--	10kHz	10kHz	--
	30MHz ~ 1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value



6.4 Test Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane, And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room



6.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	>20

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance} / \text{test distance})$ (dB);

Limit line = Specific limits (dBuV) + distance extrapolation factor.

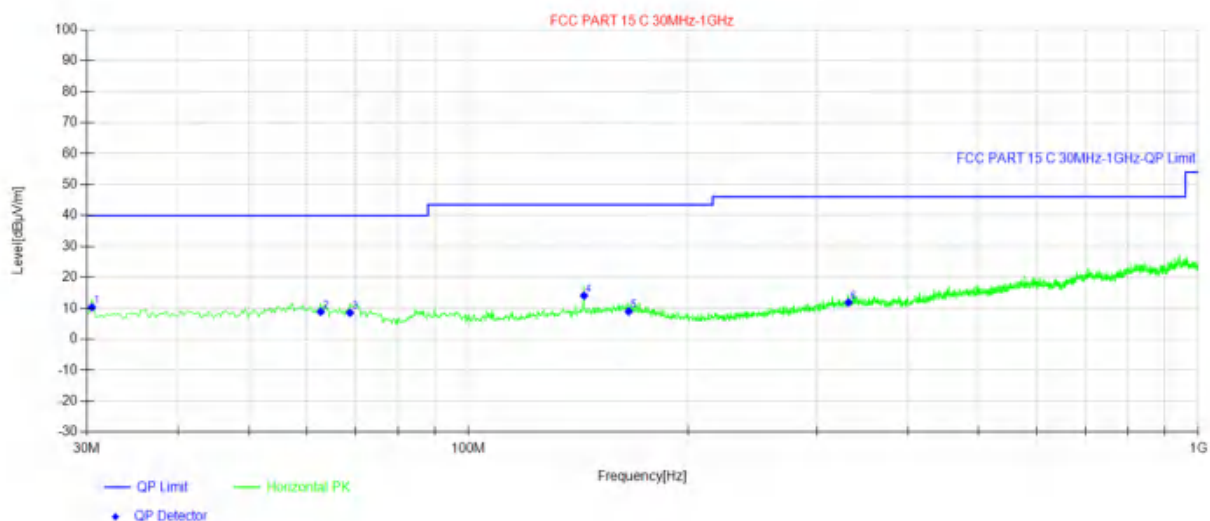
Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11a Channel 36, CH149) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:



Antenna Polarization: Horizontal(CH36)



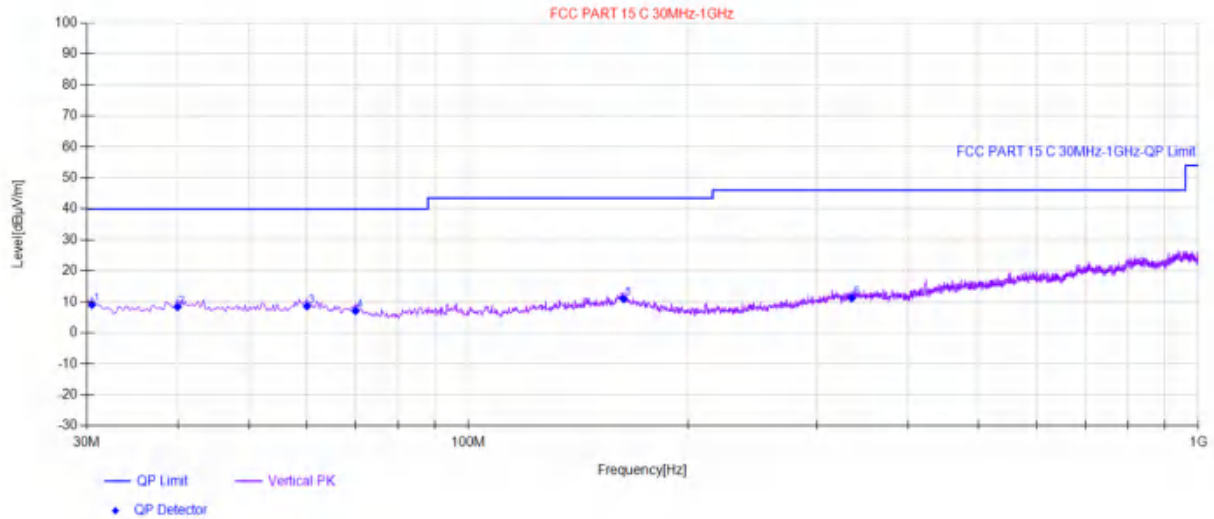
Final Data List[QP]

NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	30.49	28.66	-18.32	10.34	40.00	29.66	Horizontal
2	62.74	27.09	-18.21	8.88	40.00	31.12	Horizontal
3	68.80	27.61	-19.06	8.55	40.00	31.45	Horizontal
4	143.98	30.54	-16.46	14.08	43.50	29.42	Horizontal
5	165.80	24.99	-15.99	9.00	43.50	34.50	Horizontal
6	331.67	26.42	-14.55	11.87	46.00	34.13	Horizontal

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor



Antenna Polarization: Vertical (CH36)



Final Data List[QP]							
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	30.49	27.41	-18.32	9.09	40.00	30.91	Vertical
2	39.94	26.15	-17.77	8.38	40.00	31.62	Vertical
3	60.07	26.4	-17.81	8.59	40.00	31.41	Vertical
4	70.01	26.33	-19.22	7.11	40.00	32.89	Vertical
5	163.13	26.85	-15.90	10.95	43.50	32.55	Vertical
6	335.07	25.79	-14.52	11.27	46.00	34.73	Vertical

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor

Note: only the worst case recorded in the report.



Test Frequency: From 1GHz to 40GHz

Pre-scan all test modes

Only the worst case Main test data.

802.11a

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	47.59	35.22	5.36	31.25	56.92	68.23	-11.31	V
15540	42.25	35.96	7.85	30.63	55.43	68.23	-12.80	V
20720	43.47	39.12	8.56	34.95	56.20	68.23	-12.03	V
10360	48.25	34.12	5.36	31.25	56.48	68.23	-11.75	H
15540	42.11	36.52	7.85	30.63	55.85	68.23	-12.38	H
20720	42.71	40.01	8.56	34.95	56.33	68.23	-11.90	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	33.43	34.56	5.36	31.25	42.10	54	-11.90	V
15540	30.06	36.22	7.85	30.63	43.50	54	-10.50	V
20720	28.30	38.97	8.56	34.95	40.88	54	-13.12	V
10360	32.31	33.57	5.36	31.25	39.99	54	-14.01	H
15540	24.68	36.49	7.85	30.63	38.39	54	-15.61	H
20720	27.04	39.92	8.56	34.95	40.57	54	-13.43	H



802.11a

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	47.98	35.63	5.36	31.25	57.72	68.23	-10.51	V
15600	43.60	35.91	7.85	30.63	56.73	68.23	-11.50	V
20800	44.54	39.67	8.56	34.95	57.82	68.23	-10.41	V
10400	46.82	34.25	5.36	31.25	55.18	68.23	-13.05	H
15600	41.97	37.02	7.85	30.63	56.21	68.23	-12.02	H
20800	43.47	38.88	8.56	34.95	55.96	68.23	-12.27	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.43	34.39	5.36	31.25	41.93	54	-12.07	V
15600	28.98	36.74	7.85	30.63	42.94	54	-11.06	V
20800	29.44	38.96	8.56	34.95	42.01	54	-11.99	V
10400	32.81	33.77	5.36	31.25	40.69	54	-13.31	H
15600	28.88	36.69	7.85	30.63	42.79	54	-11.21	H
20800	30.02	39.35	8.56	34.95	42.98	54	-11.02	H



802.11a

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.91	34.68	5.36	31.25	54.70	68.23	-13.53	V
17520	43.19	36.52	7.85	30.63	56.93	68.23	-11.30	V
20960	44.26	38.77	8.56	34.95	56.64	68.23	-11.59	V
10480	46.68	33.99	5.36	31.25	54.78	68.23	-13.45	H
17520	45.11	36.84	7.85	30.63	59.17	68.23	-9.06	H
20960	46.33	39.93	8.56	34.95	59.87	68.23	-8.36	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	33.38	34.82	5.36	31.25	42.31	54	-11.69	V
17520	28.71	36.91	7.85	30.63	42.84	54	-11.16	V
20960	29.96	38.74	8.56	34.95	42.31	54	-11.69	V
10480	32.19	33.95	5.36	31.25	40.25	54	-13.75	H
17520	27.22	36.63	7.85	30.63	41.07	54	-12.93	H
20960	29.06	39.91	8.56	34.95	42.58	54	-11.42	H



802.11a

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.64	35.26	5.42	31.75	56.57	68.23	-11.66	V
17235	42.50	36.88	7.32	30.96	55.74	68.23	-12.49	V
22980	44.22	39.14	8.85	35.25	56.96	68.23	-11.27	V
11490	49.54	34.21	5.42	31.75	57.42	68.23	-10.81	H
17235	44.03	37.52	7.32	30.96	57.91	68.23	-10.32	H
22980	44.33	39.88	8.85	35.25	57.81	68.23	-10.42	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.31	34.96	5.42	31.75	40.94	54	-13.06	V
17235	29.86	36.74	7.32	30.96	42.96	54	-11.04	V
22980	29.30	39.14	8.85	35.25	42.04	54	-11.96	V
11490	31.43	34.02	5.42	31.75	39.12	54	-14.88	H
17235	28.99	36.57	7.32	30.96	41.92	54	-12.08	H
22980	29.29	39.89	8.85	35.25	42.78	54	-11.22	H



802.11a

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	48.73	35.26	5.42	31.75	57.66	68.23	-10.57	V
17355	44.25	36.88	7.32	30.96	57.49	68.23	-10.74	V
23140	45.45	39.14	8.85	35.25	58.19	68.23	-10.04	V
11570	48.34	34.21	5.42	31.75	56.22	68.23	-12.01	H
17355	42.21	37.52	7.32	30.96	56.09	68.23	-12.14	H
23140	43.41	39.88	8.85	35.25	56.89	68.23	-11.34	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.17	34.96	5.42	31.75	41.80	54	-12.20	V
17355	29.49	36.74	7.32	30.96	42.59	54	-11.41	V
23140	28.74	39.14	8.85	35.25	41.48	54	-12.52	V
11570	34.34	34.02	5.42	31.75	42.03	54	-11.97	H
17355	29.26	36.57	7.32	30.96	42.19	54	-11.81	H
23140	29.39	39.89	8.85	35.25	42.88	54	-11.12	H



802.11a

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.30	35.26	5.42	31.75	57.23	68.23	-11.00	V
17475	44.64	36.88	7.32	30.96	57.88	68.23	-10.35	V
23300	45.51	39.14	8.85	35.25	58.25	68.23	-9.98	V
11650	49.35	34.21	5.42	31.75	57.23	68.23	-11.00	H
17475	44.12	37.52	7.32	30.96	58.00	68.23	-10.23	H
23300	44.87	39.88	8.85	35.25	58.35	68.23	-9.88	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.69	34.96	5.42	31.75	43.32	54	-10.68	V
17475	28.79	36.74	7.32	30.96	41.89	54	-12.11	V
23300	30.08	39.14	8.85	35.25	42.82	54	-11.18	V
11650	33.42	34.02	5.42	31.75	41.11	54	-12.89	H
17475	28.75	36.57	7.32	30.96	41.68	54	-12.32	H
23300	28.30	39.89	8.85	35.25	41.79	54	-12.21	H



802.11n20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	45.55	34.56	5.36	31.25	54.22	68.23	-14.01	V
15540	43.16	36.22	7.85	30.63	56.60	68.23	-11.63	V
20720	44.10	38.97	8.56	34.95	56.68	68.23	-11.55	V
10360	49.21	33.57	5.36	31.25	56.89	68.23	-11.34	H
15540	40.20	36.49	7.85	30.63	53.91	68.23	-14.32	H
20720	42.09	39.92	8.56	34.95	55.62	68.23	-12.61	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	32.34	34.56	5.36	31.25	41.01	54	-12.99	V
15540	29.66	36.22	7.85	30.63	43.10	54	-10.90	V
20720	28.40	38.97	8.56	34.95	40.98	54	-13.02	V
10360	32.23	33.57	5.36	31.25	39.91	54	-14.09	H
15540	27.06	36.49	7.85	30.63	40.77	54	-13.23	H
20720	27.86	39.92	8.56	34.95	41.39	54	-12.61	H



802.11n20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	48.32	34.63	5.36	31.25	57.06	68.23	-11.17	V
15600	44.41	36.42	7.85	30.63	58.05	68.23	-10.18	V
20800	44.96	38.81	8.56	34.95	57.38	68.23	-10.85	V
10400	48.21	33.93	5.36	31.25	56.25	68.23	-11.98	H
15600	43.26	36.55	7.85	30.63	57.03	68.23	-11.20	H
20800	44.32	39.94	8.56	34.95	57.87	68.23	-10.36	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	32.91	34.39	5.36	31.25	41.41	54	-12.59	V
15600	28.79	36.74	7.85	30.63	42.75	54	-11.25	V
20800	29.30	38.96	8.56	34.95	41.87	54	-12.13	V
10400	33.51	33.77	5.36	31.25	41.39	54	-12.61	H
15600	28.45	36.69	7.85	30.63	42.36	54	-11.64	H
20800	29.95	39.35	8.56	34.95	42.91	54	-11.09	H



802.11n20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.50	34.68	5.36	31.25	54.29	68.23	-13.94	V
17520	44.45	36.52	7.85	30.63	58.19	68.23	-10.04	V
20960	42.83	38.77	8.56	34.95	55.21	68.23	-13.02	V
10480	46.72	33.99	5.36	31.25	54.82	68.23	-13.41	H
17520	45.79	36.84	7.85	30.63	59.85	68.23	-8.38	H
20960	44.02	39.93	8.56	34.95	57.56	68.23	-10.67	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	31.74	34.82	5.36	31.25	40.67	54	-13.33	V
17520	27.97	36.91	7.85	30.63	42.10	54	-11.90	V
20960	28.05	38.74	8.56	34.95	40.40	54	-13.60	V
10480	30.83	33.95	5.36	31.25	38.89	54	-15.11	H
17520	27.14	36.63	7.85	30.63	40.99	54	-13.01	H
20960	29.52	39.91	8.56	34.95	43.04	54	-10.96	H



802.11n20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	49.56	35.26	5.42	31.75	58.49	68.23	-9.74	V
17235	42.80	36.88	7.32	30.96	56.04	68.23	-12.19	V
22980	43.37	39.14	8.85	35.25	56.11	68.23	-12.12	V
11490	49.30	34.21	5.42	31.75	57.18	68.23	-11.05	H
17235	43.85	37.52	7.32	30.96	57.73	68.23	-10.50	H
22980	44.95	39.88	8.85	35.25	58.43	68.23	-9.80	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	33.70	34.96	5.42	31.75	42.33	54	-11.67	V
17235	30.10	36.74	7.32	30.96	43.20	54	-10.80	V
22980	29.72	39.14	8.85	35.25	42.46	54	-11.54	V
11490	32.96	34.02	5.42	31.75	40.65	54	-13.35	H
17235	28.57	36.57	7.32	30.96	41.50	54	-12.50	H
22980	28.87	39.89	8.85	35.25	42.36	54	-11.64	H



802.11n20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	45.91	35.26	5.42	31.75	54.84	68.23	-13.39	V
17355	44.13	36.88	7.32	30.96	57.37	68.23	-10.86	V
23140	44.87	39.14	8.85	35.25	57.61	68.23	-10.62	V
11570	48.33	34.21	5.42	31.75	56.21	68.23	-12.02	H
17355	42.82	37.52	7.32	30.96	56.70	68.23	-11.53	H
23140	42.06	39.88	8.85	35.25	55.54	68.23	-12.69	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.40	34.96	5.42	31.75	42.03	54	-11.97	V
17355	30.16	36.74	7.32	30.96	43.26	54	-10.74	V
23140	29.27	39.14	8.85	35.25	42.01	54	-11.99	V
11570	33.50	34.02	5.42	31.75	41.19	54	-12.81	H
17355	30.14	36.57	7.32	30.96	43.07	54	-10.93	H
23140	29.60	39.89	8.85	35.25	43.09	54	-10.91	H



802.11n20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	47.74	35.26	5.42	31.75	56.67	68.23	-11.56	V
17475	44.71	36.88	7.32	30.96	57.95	68.23	-10.28	V
23300	45.33	39.14	8.85	35.25	58.07	68.23	-10.16	V
11650	49.05	34.21	5.42	31.75	56.93	68.23	-11.30	H
17475	44.36	37.52	7.32	30.96	58.24	68.23	-9.99	H
23300	45.62	39.88	8.85	35.25	59.10	68.23	-9.13	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	35.68	34.96	5.42	31.75	44.31	54	-9.69	V
17475	29.13	36.74	7.32	30.96	42.23	54	-11.77	V
23300	28.05	39.14	8.85	35.25	40.79	54	-13.21	V
11650	33.02	34.02	5.42	31.75	40.71	54	-13.29	H
17475	28.28	36.57	7.32	30.96	41.21	54	-12.79	H
23300	28.91	39.89	8.85	35.25	42.40	54	-11.60	H



802.11ac20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	47.79	35.22	5.36	31.25	57.12	68.23	-11.11	V
15540	42.00	35.96	7.85	30.63	55.18	68.23	-13.05	V
20720	43.19	39.12	8.56	34.95	55.92	68.23	-12.31	V
10360	48.42	34.12	5.36	31.25	56.65	68.23	-11.58	H
15540	42.37	36.52	7.85	30.63	56.11	68.23	-12.12	H
20720	42.91	40.01	8.56	34.95	56.53	68.23	-11.70	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	33.03	34.56	5.36	31.25	41.70	54	-12.30	V
15540	30.22	36.22	7.85	30.63	43.66	54	-10.34	V
20720	28.02	38.97	8.56	34.95	40.60	54	-13.40	V
10360	32.48	33.57	5.36	31.25	40.16	54	-13.84	H
15540	24.74	36.49	7.85	30.63	38.45	54	-15.55	H
20720	27.03	39.92	8.56	34.95	40.56	54	-13.44	H



802.11ac20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	47.94	35.63	5.36	31.25	57.68	68.23	-10.55	V
15600	43.35	35.91	7.85	30.63	56.48	68.23	-11.75	V
20800	44.27	39.67	8.56	34.95	57.55	68.23	-10.68	V
10400	46.94	34.25	5.36	31.25	55.30	68.23	-12.93	H
15600	42.13	37.02	7.85	30.63	56.37	68.23	-11.86	H
20800	43.46	38.88	8.56	34.95	55.95	68.23	-12.28	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.76	34.39	5.36	31.25	42.26	54	-11.74	V
15600	28.64	36.74	7.85	30.63	42.60	54	-11.40	V
20800	29.71	38.96	8.56	34.95	42.28	54	-11.72	V
10400	33.32	33.77	5.36	31.25	41.20	54	-12.80	H
15600	28.74	36.69	7.85	30.63	42.65	54	-11.35	H
20800	30.26	39.35	8.56	34.95	43.22	54	-10.78	H



802.11ac20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.67	34.68	5.36	31.25	54.46	68.23	-13.77	V
17520	43.10	36.52	7.85	30.63	56.84	68.23	-11.39	V
20960	44.32	38.77	8.56	34.95	56.70	68.23	-11.53	V
10480	46.77	33.99	5.36	31.25	54.87	68.23	-13.36	H
17520	45.50	36.84	7.85	30.63	59.56	68.23	-8.67	H
20960	46.49	39.93	8.56	34.95	60.03	68.23	-8.20	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	33.06	34.82	5.36	31.25	41.99	54	-12.01	V
17520	29.01	36.91	7.85	30.63	43.14	54	-10.86	V
20960	30.09	38.74	8.56	34.95	42.44	54	-11.56	V
10480	32.47	33.95	5.36	31.25	40.53	54	-13.47	H
17520	26.84	36.63	7.85	30.63	40.69	54	-13.31	H
20960	29.45	39.91	8.56	34.95	42.97	54	-11.03	H



802.11ac20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.66	35.26	5.42	31.75	56.59	68.23	-11.64	V
17235	42.48	36.88	7.32	30.96	55.72	68.23	-12.51	V
22980	44.09	39.14	8.85	35.25	56.83	68.23	-11.40	V
11490	49.77	34.21	5.42	31.75	57.65	68.23	-10.58	H
17235	44.40	37.52	7.32	30.96	58.28	68.23	-9.95	H
22980	44.15	39.88	8.85	35.25	57.63	68.23	-10.60	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.54	34.96	5.42	31.75	41.17	54	-12.83	V
17235	30.16	36.74	7.32	30.96	43.26	54	-10.74	V
22980	29.87	39.14	8.85	35.25	42.61	54	-11.39	V
11490	31.41	34.02	5.42	31.75	39.10	54	-14.90	H
17235	28.62	36.57	7.32	30.96	41.55	54	-12.45	H
22980	29.15	39.89	8.85	35.25	42.64	54	-11.36	H



802.11ac20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	48.58	35.26	5.42	31.75	57.51	68.23	-10.72	V
17355	44.20	36.88	7.32	30.96	57.44	68.23	-10.79	V
23140	45.01	39.14	8.85	35.25	57.75	68.23	-10.48	V
11570	48.55	34.21	5.42	31.75	56.43	68.23	-11.80	H
17355	42.02	37.52	7.32	30.96	55.90	68.23	-12.33	H
23140	43.44	39.88	8.85	35.25	56.92	68.23	-11.31	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.26	34.96	5.42	31.75	41.89	54	-12.11	V
17355	29.76	36.74	7.32	30.96	42.86	54	-11.14	V
23140	28.29	39.14	8.85	35.25	41.03	54	-12.97	V
11570	34.63	34.02	5.42	31.75	42.32	54	-11.68	H
17355	29.65	36.57	7.32	30.96	42.58	54	-11.42	H
23140	29.35	39.89	8.85	35.25	42.84	54	-11.16	H



802.11ac20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.35	35.26	5.42	31.75	57.28	68.23	-10.95	V
17475	44.34	36.88	7.32	30.96	57.58	68.23	-10.65	V
23300	45.44	39.14	8.85	35.25	58.18	68.23	-10.05	V
11650	49.26	34.21	5.42	31.75	57.14	68.23	-11.09	H
17475	44.52	37.52	7.32	30.96	58.40	68.23	-9.83	H
23300	45.06	39.88	8.85	35.25	58.54	68.23	-9.69	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.77	34.96	5.42	31.75	43.40	54	-10.60	V
17475	28.66	36.74	7.32	30.96	41.76	54	-12.24	V
23300	30.07	39.14	8.85	35.25	42.81	54	-11.19	V
11650	33.71	34.02	5.42	31.75	41.40	54	-12.60	H
17475	28.73	36.57	7.32	30.96	41.66	54	-12.34	H
23300	28.28	39.89	8.85	35.25	41.77	54	-12.23	H



802.11n40

Test Mode:5190					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.51	35.26	5.42	31.75	56.44	68.23	-11.79	V
15570	44.64	36.88	7.32	30.96	57.88	68.23	-10.35	V
20760	44.96	39.14	8.85	35.25	57.70	68.23	-10.53	V
10380	49.15	34.21	5.42	31.75	57.03	68.23	-11.20	H
15570	44.38	37.52	7.32	30.96	58.26	68.23	-9.97	H
20760	45.59	39.88	8.85	35.25	59.07	68.23	-9.16	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	35.47	34.96	5.42	31.75	44.10	54	-9.90	V
15570	29.06	36.74	7.32	30.96	42.16	54	-11.84	V
20760	27.75	39.14	8.85	35.25	40.49	54	-13.51	V
10380	33.09	34.02	5.42	31.75	40.78	54	-13.22	H
15570	28.44	36.57	7.32	30.96	41.37	54	-12.63	H
20760	29.10	39.89	8.85	35.25	42.59	54	-11.41	H



802.11n40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.52	35.26	5.42	31.75	56.45	68.23	-11.78	V
15690	44.65	36.88	7.32	30.96	57.89	68.23	-10.34	V
20920	45.31	39.14	8.85	35.25	58.05	68.23	-10.18	V
10460	49.27	34.21	5.42	31.75	57.15	68.23	-11.08	H
15690	44.70	37.52	7.32	30.96	58.58	68.23	-9.65	H
20920	45.48	39.88	8.85	35.25	58.96	68.23	-9.27	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	35.76	34.96	5.42	31.75	44.39	54	-9.61	V
15690	28.91	36.74	7.32	30.96	42.01	54	-11.99	V
20920	27.64	39.14	8.85	35.25	40.38	54	-13.62	V
10460	33.01	34.02	5.42	31.75	40.70	54	-13.30	H
15690	28.39	36.57	7.32	30.96	41.32	54	-12.68	H
20920	28.99	39.89	8.85	35.25	42.48	54	-11.52	H



802.11ac40

Test Mode:5190					Test channel:LOW			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.42	35.26	5.42	31.75	56.35	68.23	-11.88	V
15570	44.30	36.88	7.32	30.96	57.54	68.23	-10.69	V
20760	45.15	39.14	8.85	35.25	57.89	68.23	-10.34	V
10380	49.47	34.21	5.42	31.75	57.35	68.23	-10.88	H
15570	44.80	37.52	7.32	30.96	58.68	68.23	-9.55	H
20760	45.26	39.88	8.85	35.25	58.74	68.23	-9.49	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	35.63	34.96	5.42	31.75	44.26	54	-9.74	V
15570	28.90	36.74	7.32	30.96	42.00	54	-12.00	V
20760	28.02	39.14	8.85	35.25	40.76	54	-13.24	V
10380	32.96	34.02	5.42	31.75	40.65	54	-13.35	H
15570	28.81	36.57	7.32	30.96	41.74	54	-12.26	H
20760	29.31	39.89	8.85	35.25	42.80	54	-11.20	H



802.11ac40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.46	35.26	5.42	31.75	56.39	68.23	-11.84	V
15690	44.45	36.88	7.32	30.96	57.69	68.23	-10.54	V
20920	44.96	39.14	8.85	35.25	57.70	68.23	-10.53	V
10460	48.92	34.21	5.42	31.75	56.80	68.23	-11.43	H
15690	44.92	37.52	7.32	30.96	58.80	68.23	-9.43	H
20920	45.53	39.88	8.85	35.25	59.01	68.23	-9.22	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	35.36	34.96	5.42	31.75	43.99	54	-10.01	V
15690	28.89	36.74	7.32	30.96	41.99	54	-12.01	V
20920	27.65	39.14	8.85	35.25	40.39	54	-13.61	V
10460	32.98	34.02	5.42	31.75	40.67	54	-13.33	H
15690	28.66	36.57	7.32	30.96	41.59	54	-12.41	H
20920	28.88	39.89	8.85	35.25	42.37	54	-11.63	H



802.11ac80

Test Mode:5775					Test channel: middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11,550	48.25	35.18	5.39	31.75	57.07	68.23	-11.16	V
17,325	44.19	36.74	7.27	30.96	57.24	68.23	-10.99	V
23,100	45.40	39.08	8.79	35.25	58.02	68.23	-10.21	V
11,550	48.24	35.18	5.39	31.75	57.06	68.23	-11.17	H
17,325	42.16	36.74	7.27	30.96	55.21	68.23	-13.02	H
23,100	43.03	39.08	8.79	35.25	55.65	68.23	-12.58	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11,550	33.21	35.18	5.39	31.75	42.03	54	-11.97	V
17,325	29.80	36.74	7.27	30.96	42.85	54	-11.15	V
23,100	28.29	39.08	8.79	35.25	40.91	54	-13.09	V
11,550	34.51	35.18	5.39	31.75	43.33	54	-10.67	H
17,325	29.75	36.74	7.27	30.96	42.80	54	-11.20	H
23,100	29.59	39.08	8.79	35.25	42.21	54	-11.79	H

Note:

1. The testing has been conformed to 1GHz-40GHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor
Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.



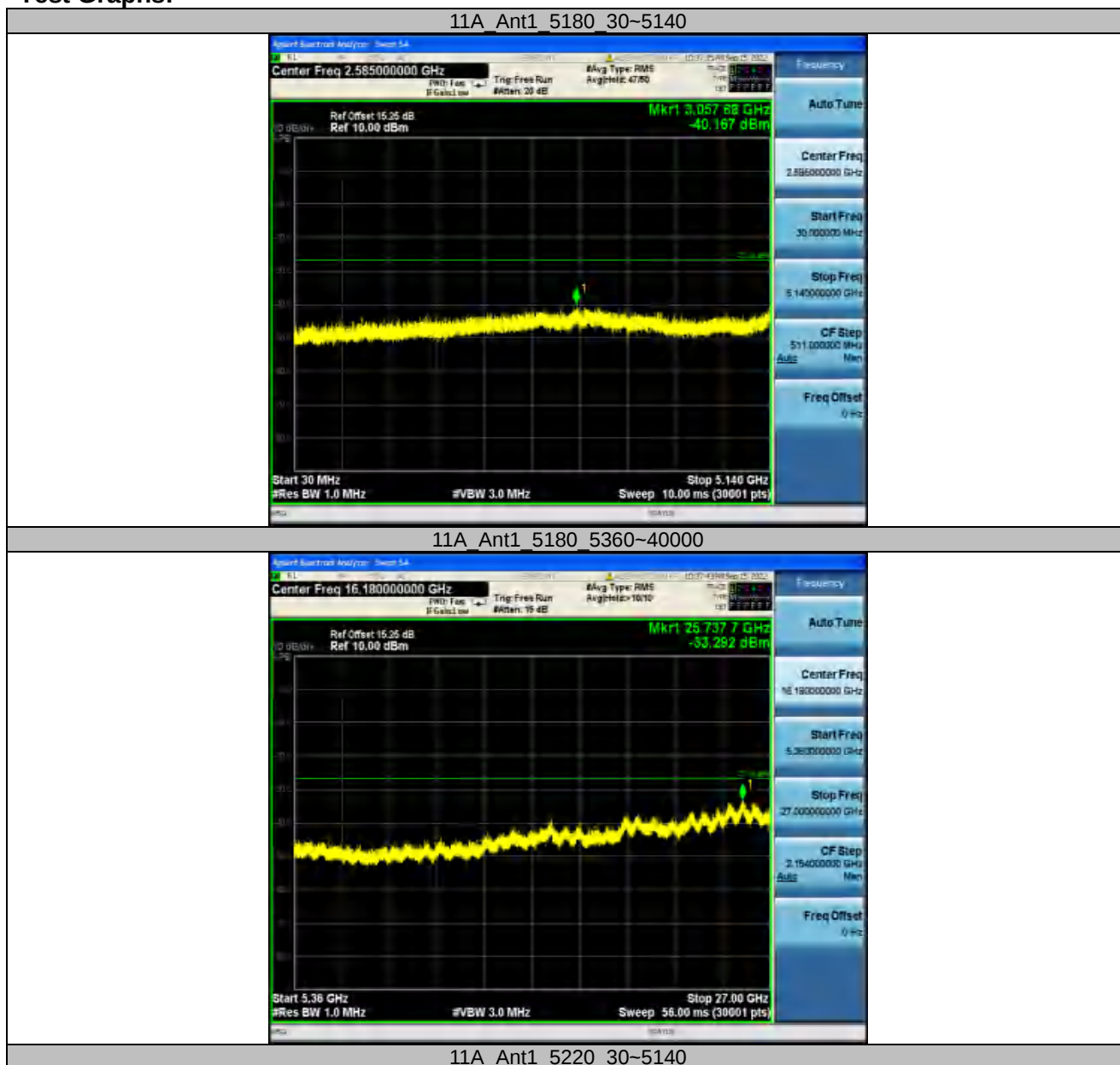
Undesirable emission

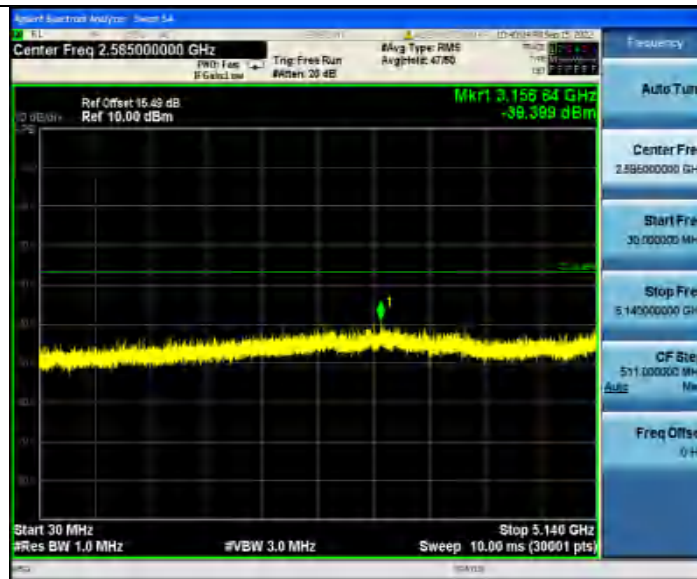
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	3057.68	-40.17	≤-27	PASS
			5360~40000	25737.67	-33.29	≤-27	PASS
		5220	30~5140	3156.64	-39.4	≤-27	PASS
			5360~40000	25693.67	-32.69	≤-27	PASS
		5240	30~5140	2540.71	-40.12	≤-27	PASS
			5360~40000	25705.93	-31.82	≤-27	PASS
		5745	30~5650	3284.54	-41.15	≤-27	PASS
			5925~40000	25782.57	-30.09	≤-27	PASS
		5785	30~5650	3299.15	-40.97	≤-27	PASS
			5925~40000	25785.38	-28.71	≤-27	PASS
		5825	30~5650	3334.75	-40.89	≤-27	PASS
			5925~40000	25718.64	-30.02	≤-27	PASS
11N20SISO	Ant1	5180	30~5140	3271.78	-39.03	≤-27	PASS
			5360~40000	25767.24	-32.83	≤-27	PASS
		5220	30~5140	3170.78	-39.56	≤-27	PASS
			5360~40000	25802.59	-32.73	≤-27	PASS
		5240	30~5140	3042.86	-40.48	≤-27	PASS
			5360~40000	25801.87	-32.48	≤-27	PASS
		5745	30~5650	3200.8	-41.63	≤-27	PASS
			5925~40000	25685.62	-30.54	≤-27	PASS
		5785	30~5650	3339.62	-40.78	≤-27	PASS
			5925~40000	26299.61	-28.79	≤-27	PASS
		5825	30~5650	3177.76	-40.27	≤-27	PASS
			5925~40000	25695.46	-30.35	≤-27	PASS
11N40SISO	Ant1	5190	30~5140	5122.29	-39.06	≤-27	PASS
			5360~40000	25731.17	-32.91	≤-27	PASS
		5230	30~5140	2707.13	-39.57	≤-27	PASS
			5360~40000	25770.13	-32.24	≤-27	PASS
		5755	30~5650	2822.02	-41.18	≤-27	PASS
			5925~40000	25721.45	-30.62	≤-27	PASS
		5795	30~5650	3267.87	-41.23	≤-27	PASS
			5925~40000	25658.23	-30.34	≤-27	PASS
11AC20SISO	Ant1	5180	30~5140	3146.93	-40.63	≤-27	PASS
			5360~40000	25767.96	-32.79	≤-27	PASS
		5220	30~5140	3203.99	-40.59	≤-27	PASS
			5360~40000	25809.08	-33.17	≤-27	PASS
		5240	30~5140	2694.01	-39.73	≤-27	PASS
			5360~40000	25723.96	-32.48	≤-27	PASS
		5745	30~5650	3172.14	-41.82	≤-27	PASS
			5925~40000	25706	-29.86	≤-27	PASS
		5785	30~5650	3197.62	-40.68	≤-27	PASS
			5925~40000	25772.73	-30.14	≤-27	PASS
		5825	30~5650	3140.48	-40.87	≤-27	PASS
			5925~40000	25807.86	-29.35	≤-27	PASS
11AC40SISO	Ant1	5190	30~5140	3299.72	-40.37	≤-27	PASS
			5360~40000	25698.71	-32.37	≤-27	PASS
		5230	30~5140	3161.75	-40.13	≤-27	PASS
			5360~40000	25713.14	-31.6	≤-27	PASS
		5755	30~5650	3193.12	-42.31	≤-27	PASS
			5925~40000	25733.39	-30.63	≤-27	PASS
		5795	30~5650	3594.95	-41.63	≤-27	PASS
			5925~40000	25745.34	-29.61	≤-27	PASS
11AC80SISO	Ant1	5210	30~5140	5133.7	-40.16	≤-27	PASS



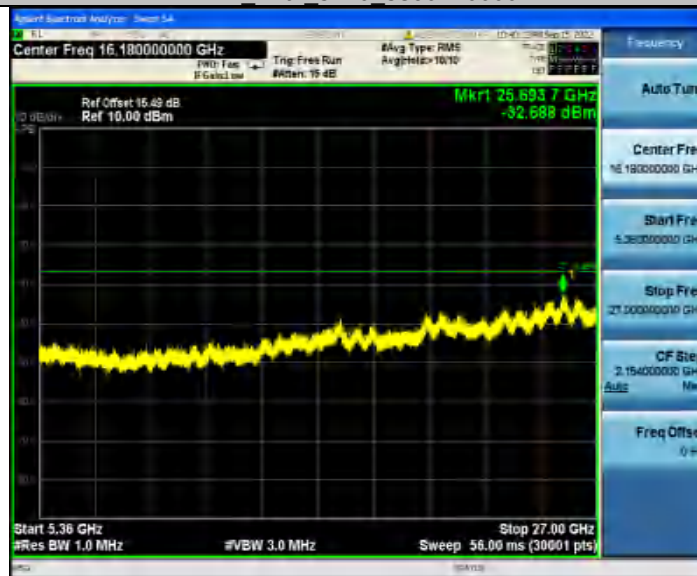
		5360~40000	25794.65	-31.96	≤-27	PASS
	5775	30~5650	3174.2	-41.36	≤-27	PASS
		5925~40000	25704.59	-30.45	≤-27	PASS

Test Graphs:

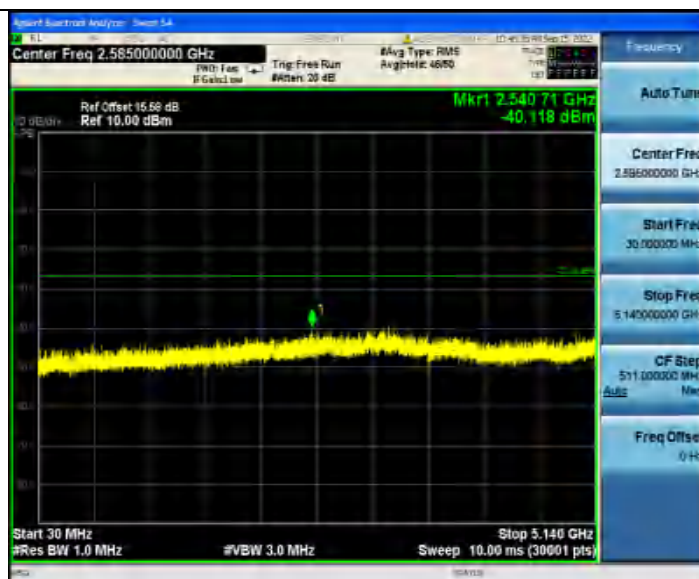




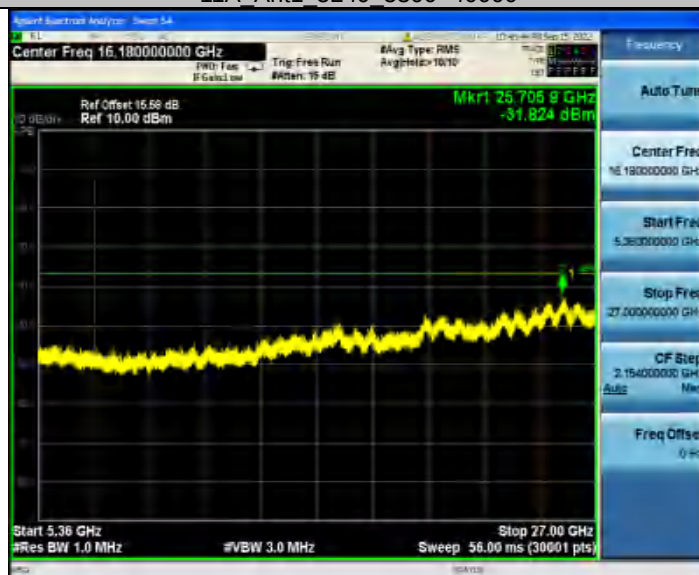
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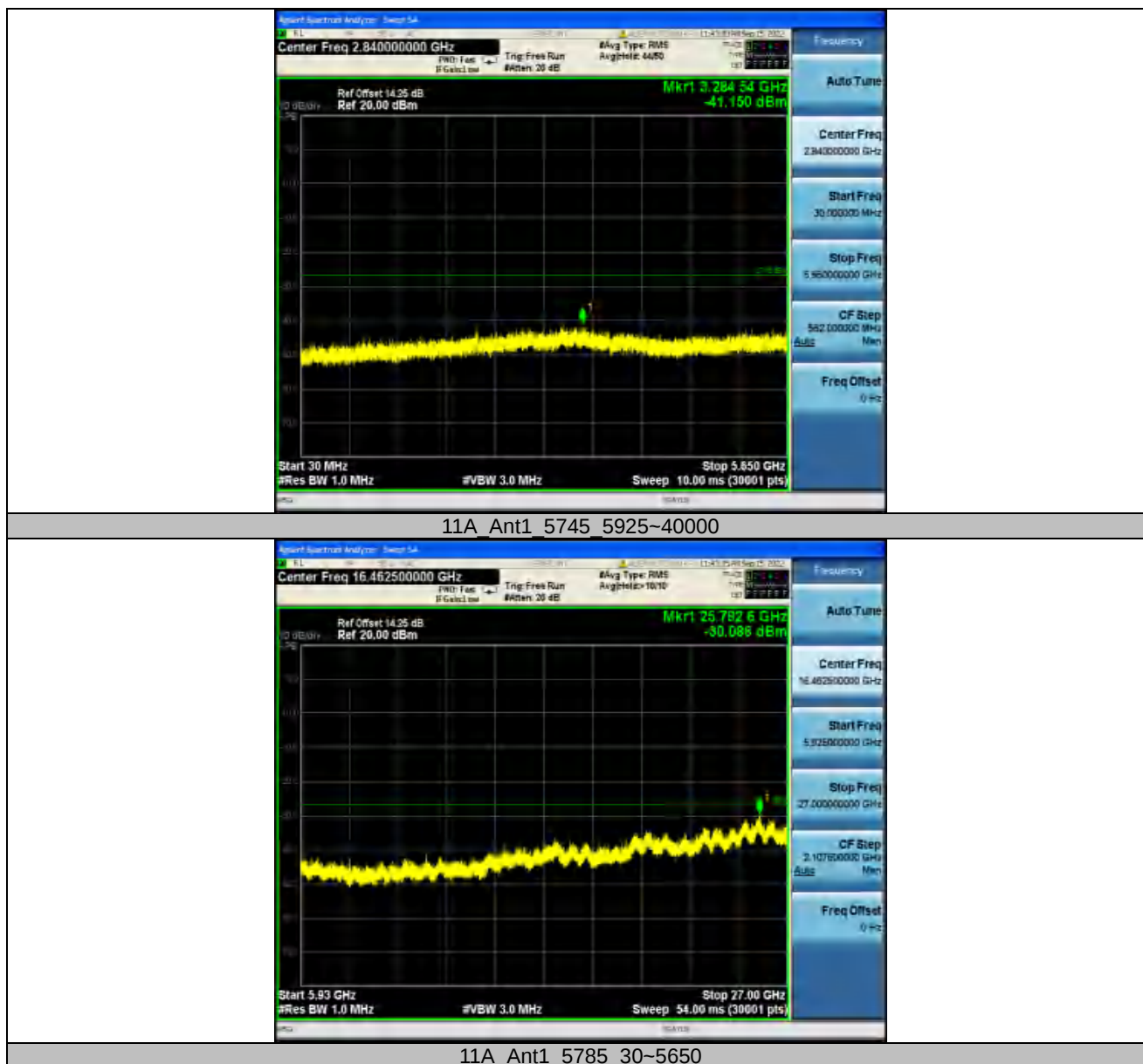
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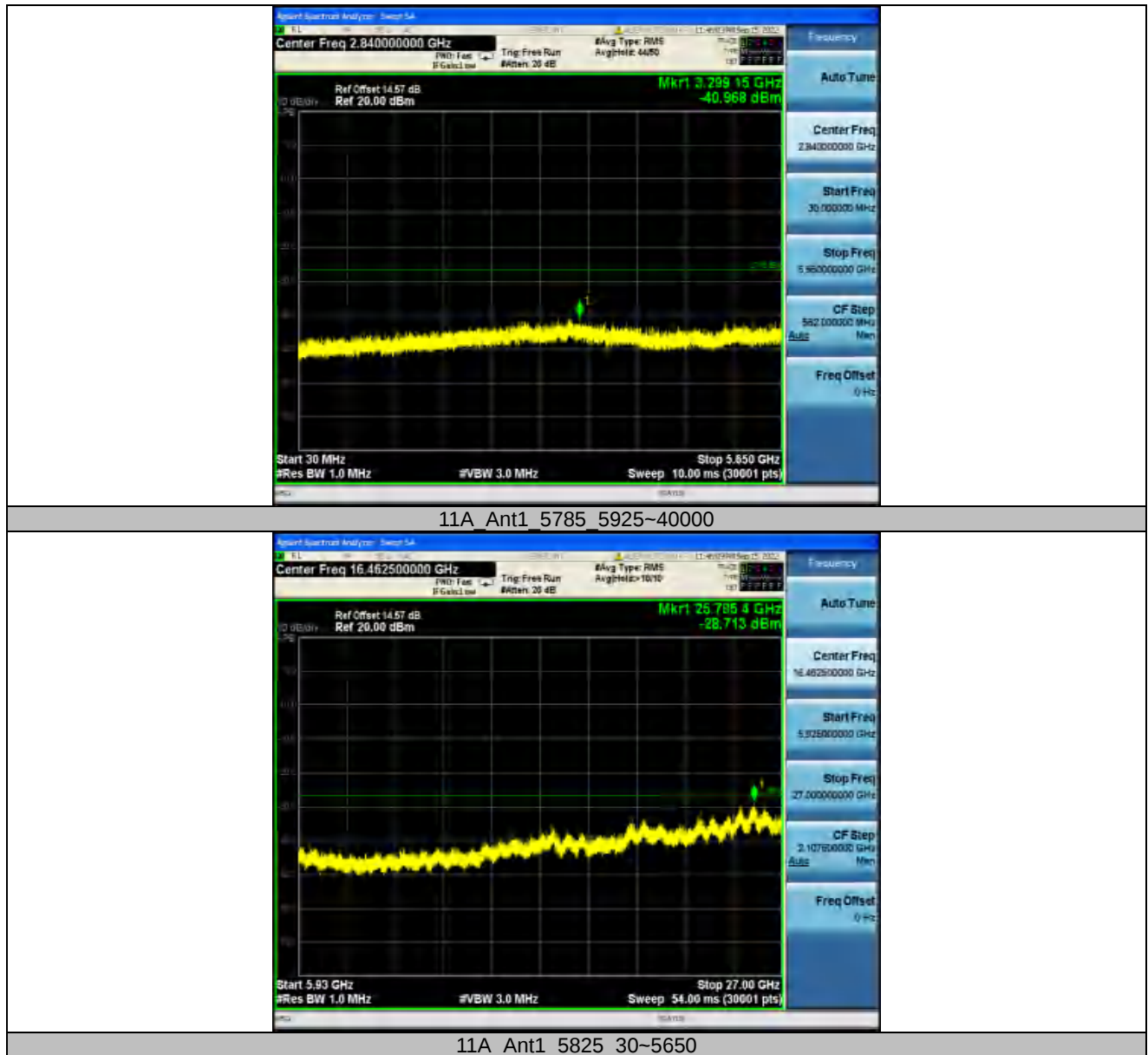


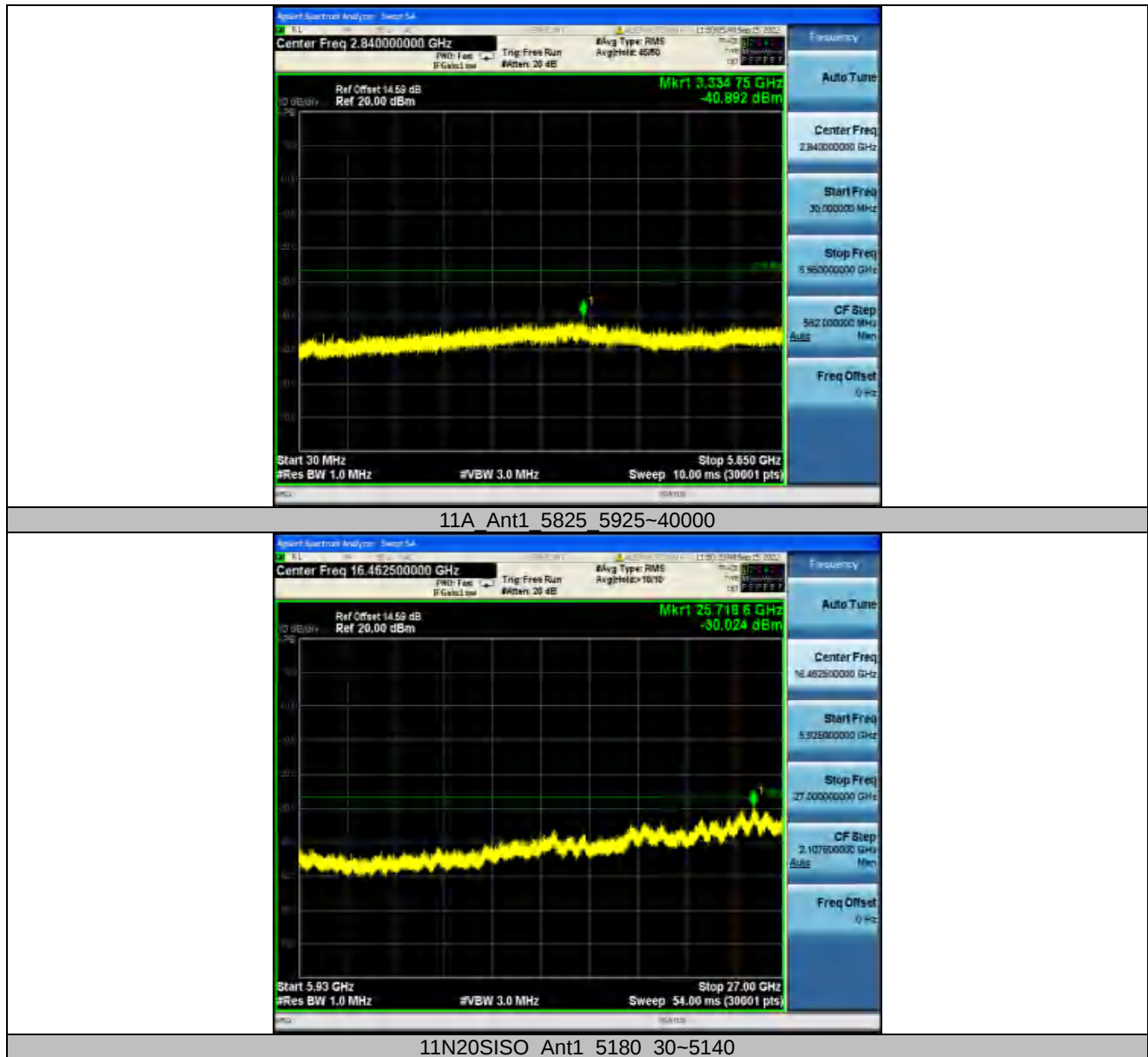
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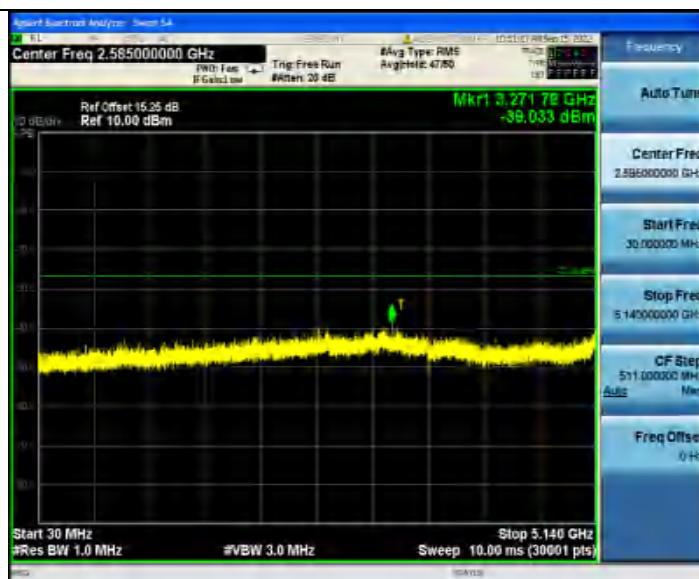


11A_Ant1_5745_30~5650

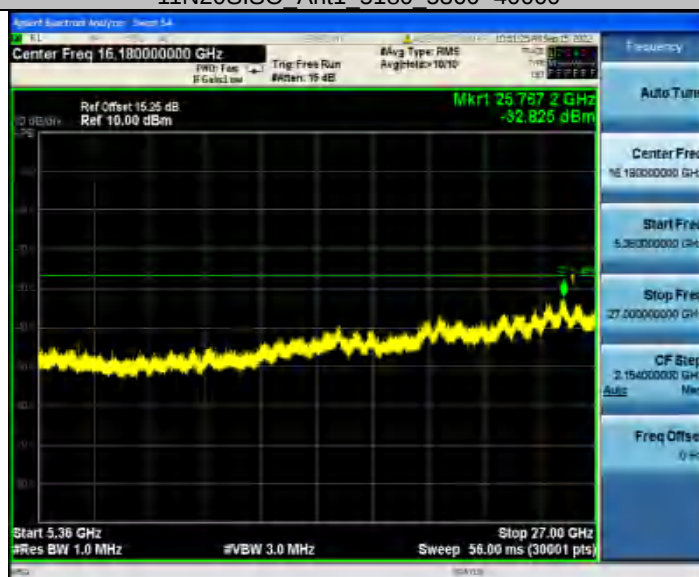




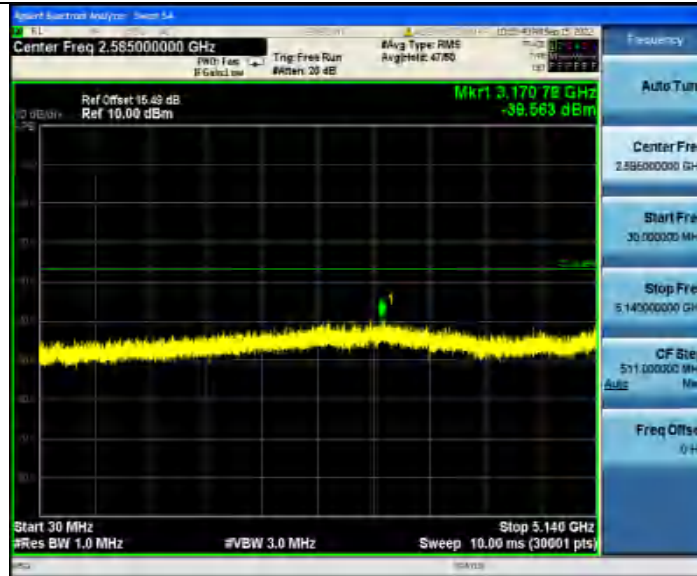




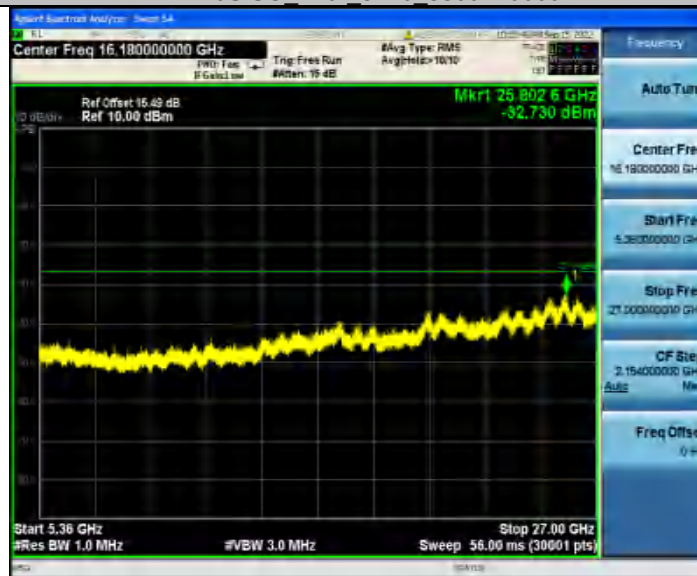
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11N20ISO_Ant1_5220_30-5140



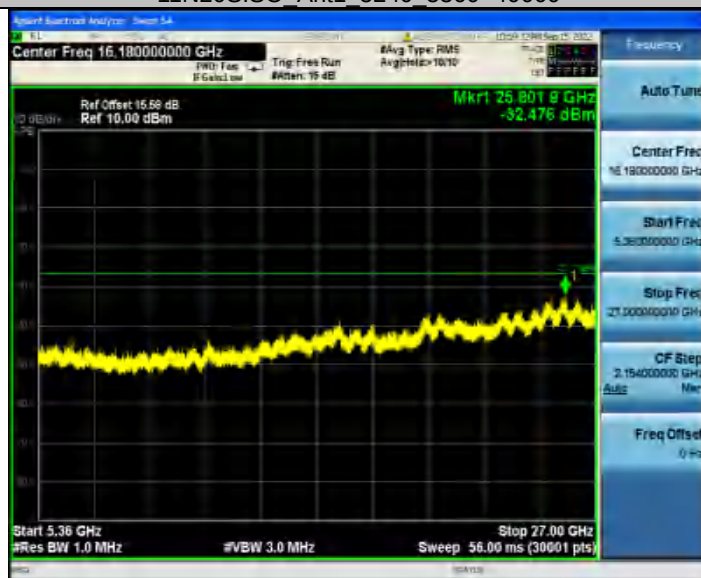
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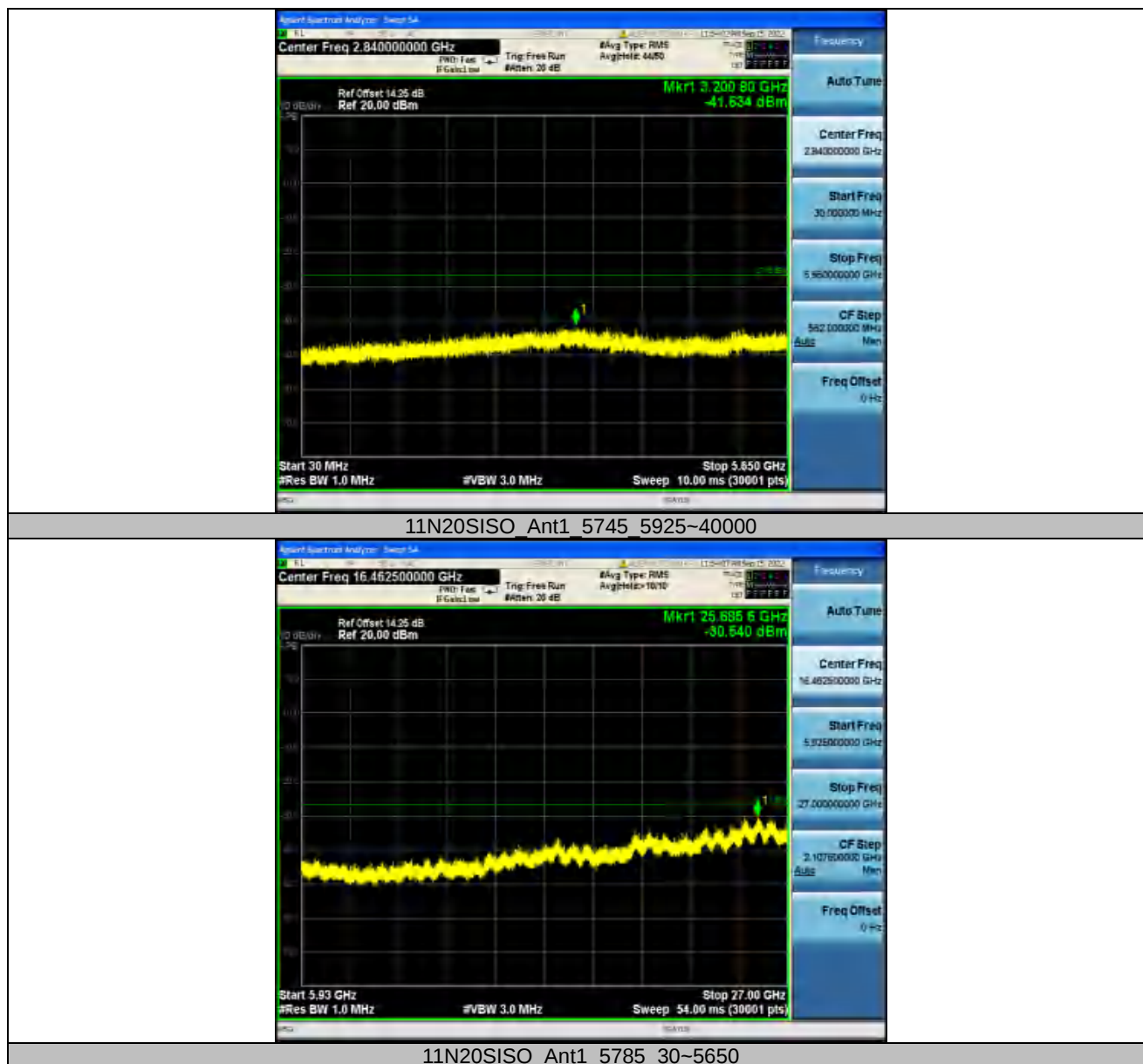
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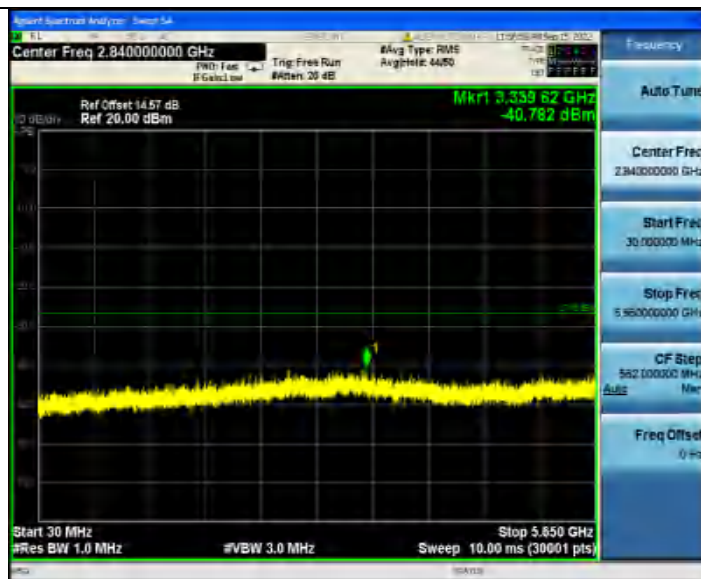


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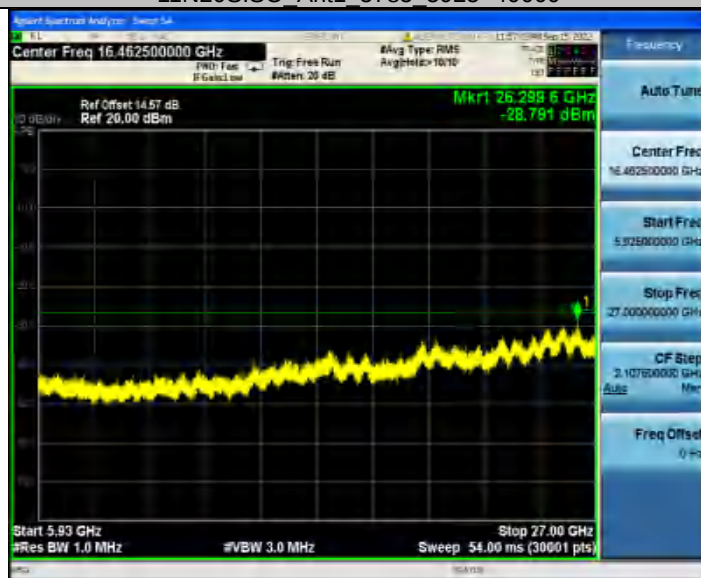


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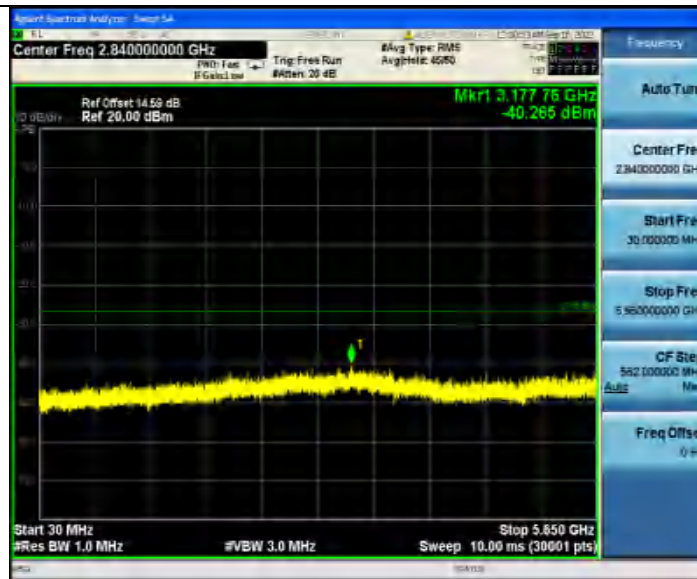




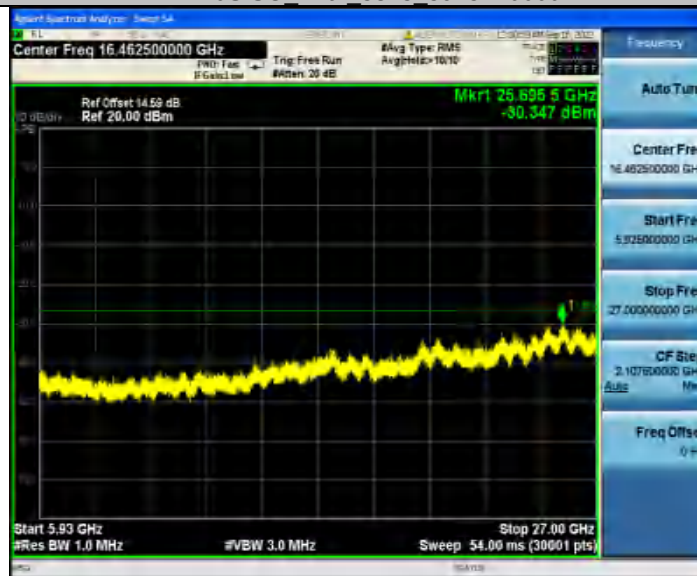
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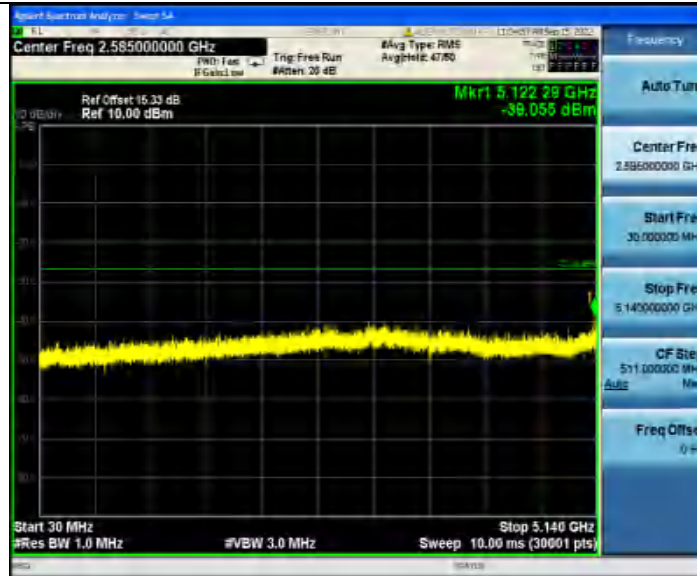
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11N20SISO Ant1 5825 5925-40000



11N40SISO Ant1 5190 30-5140



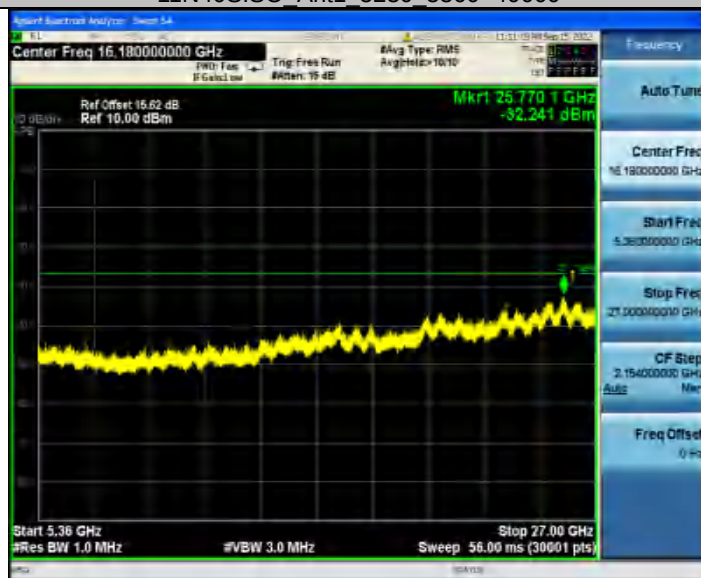
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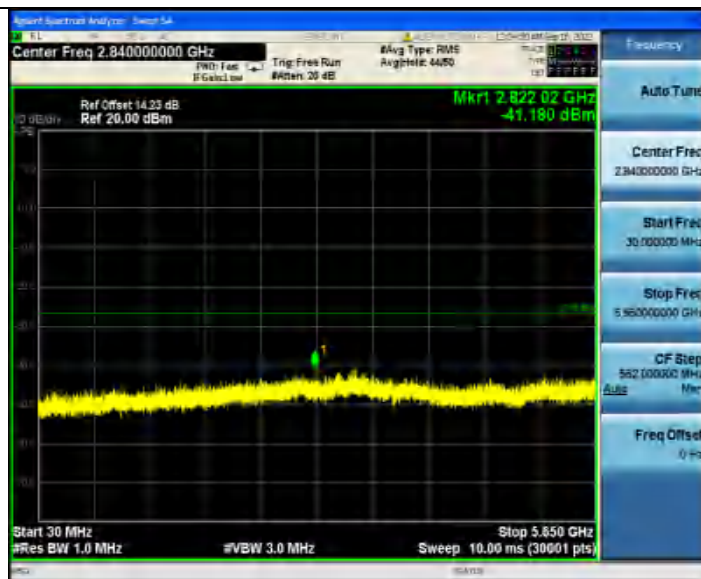
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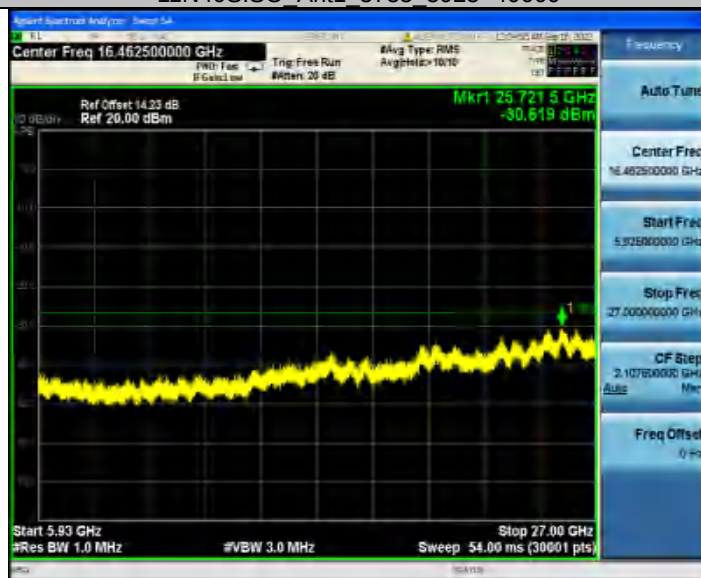
11N40SISO_Ant1_5230_5360-40000



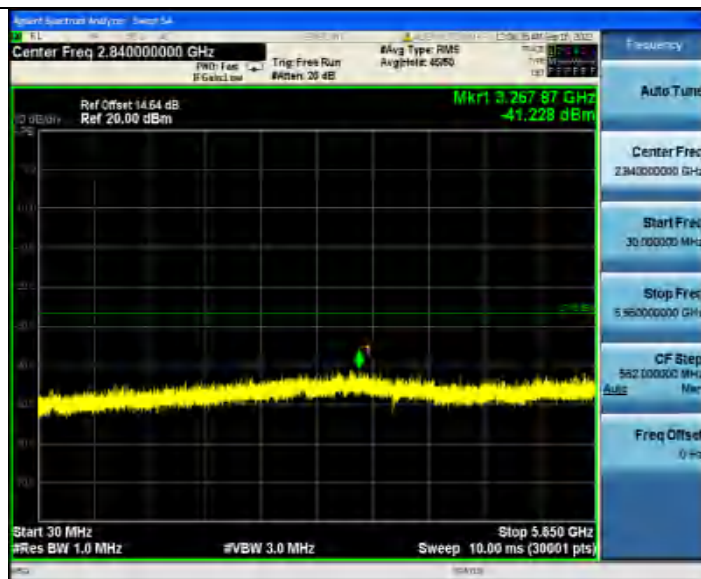
11N40SISO_Ant1_5755_30-5650



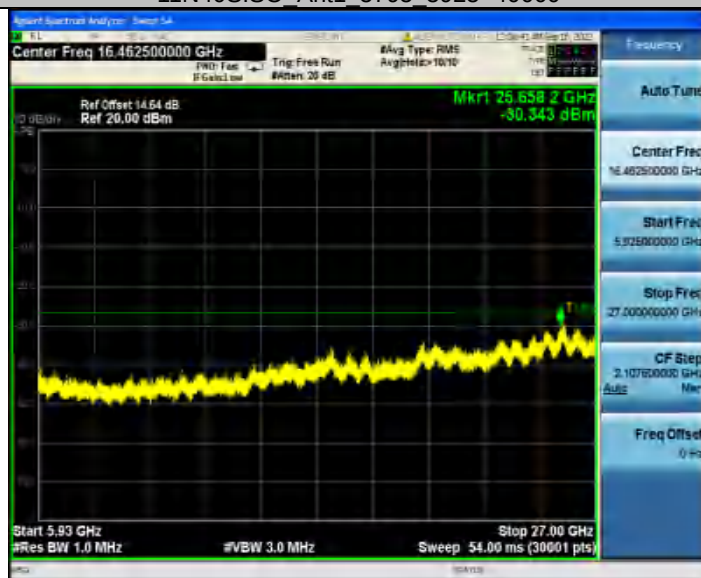
11N40SISO_Ant1_5755_5925-40000



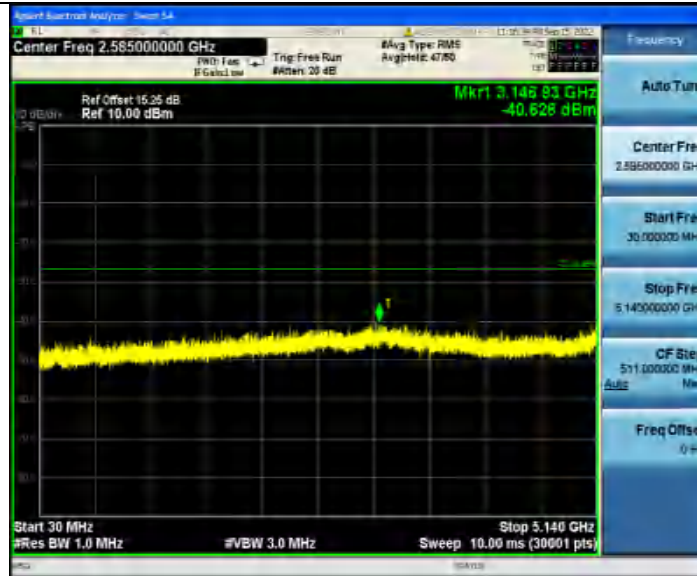
11N40SISO_Ant1_5795_30-5650



11N40SISO Ant1 5795 5925-40000



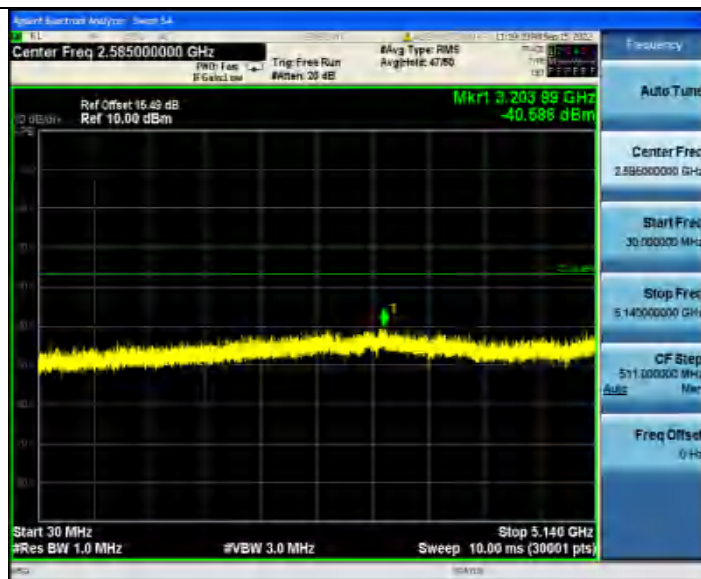
11AC20SISO Ant1 5180 30-5140



11AC20SISO_Ant1_5180_5360~40000



11AC20SISO_Ant1_5220_30~5140



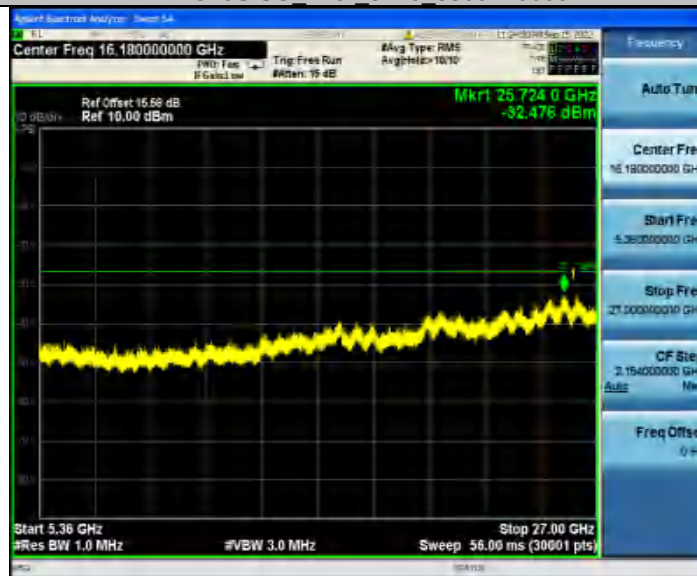
11AC20SISO_Ant1_5220_5360~40000



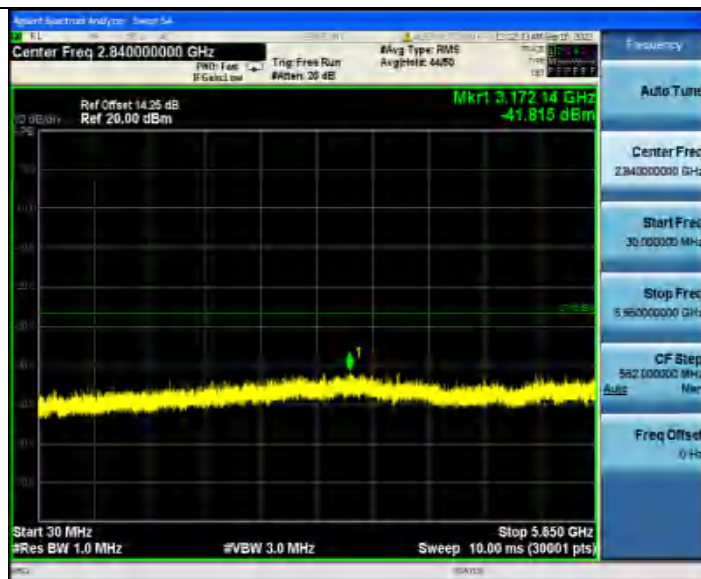
11AC20SISO_Ant1_5240_30~5140



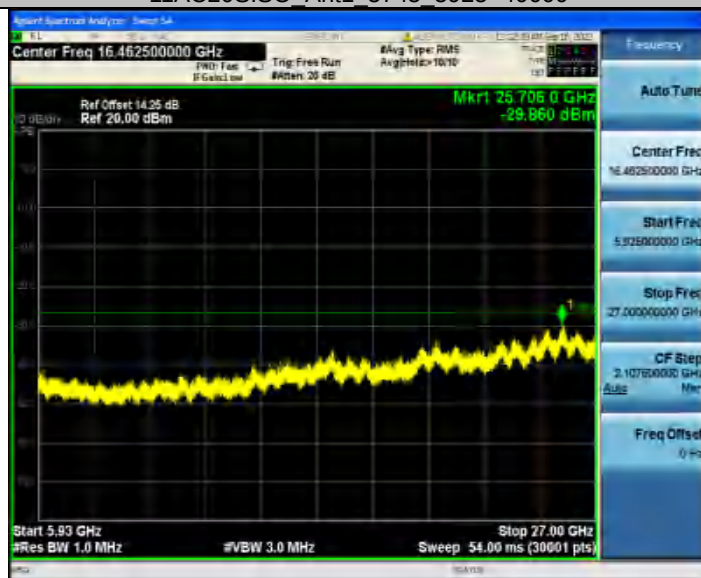
11AC20SISO_Ant1_5240_5360~40000



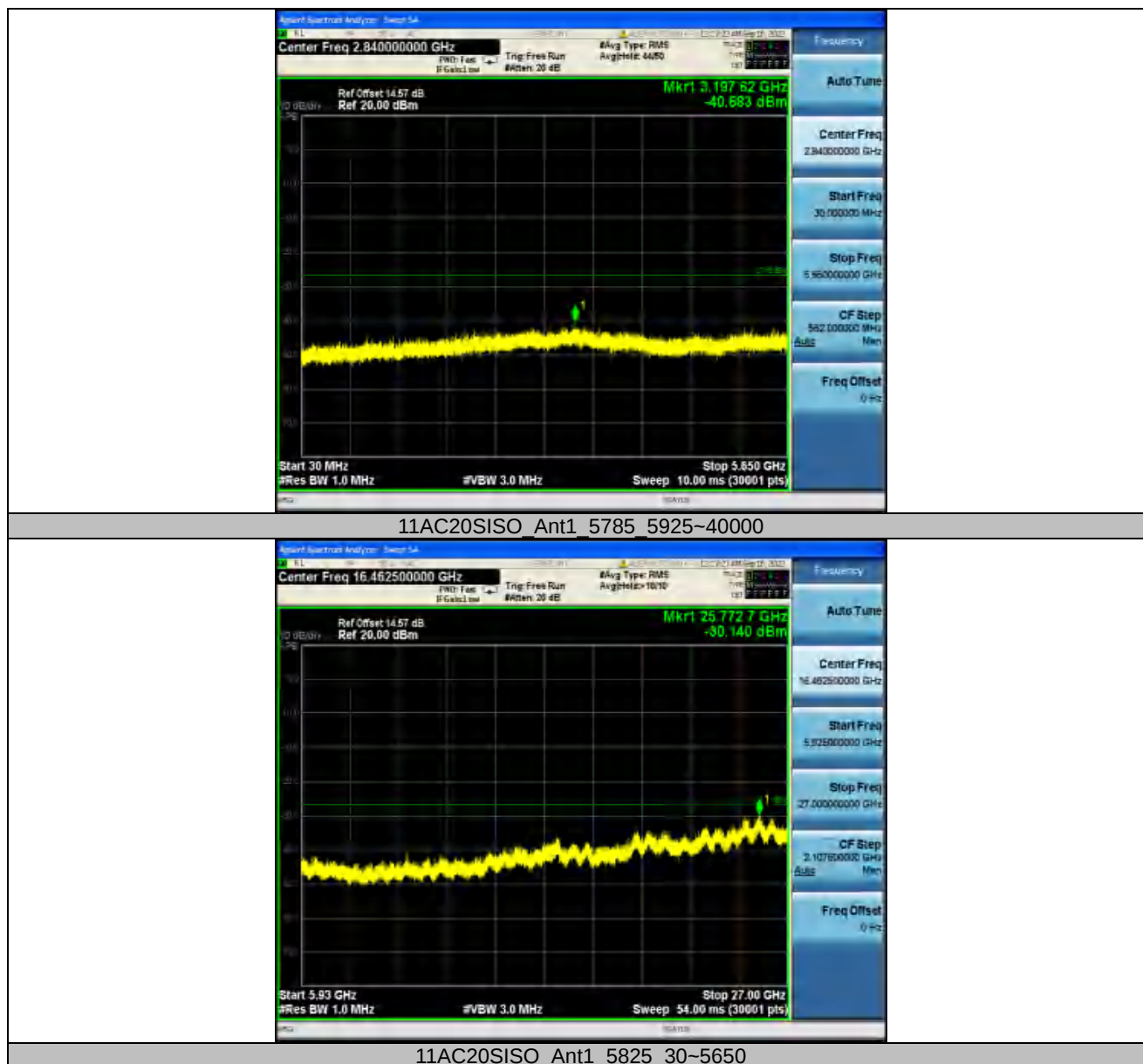
11AC20SISO_Ant1_5745_30~5650

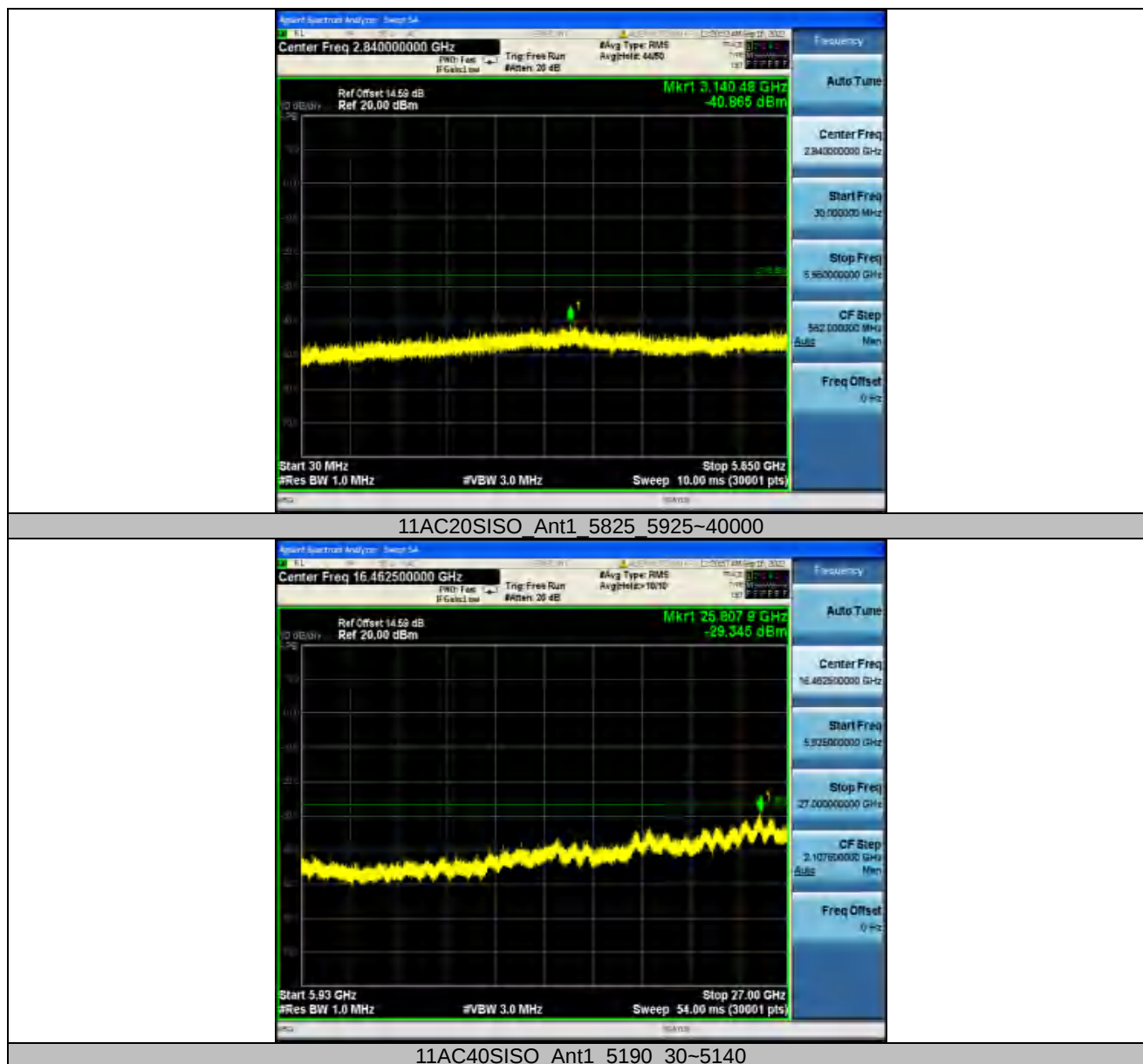


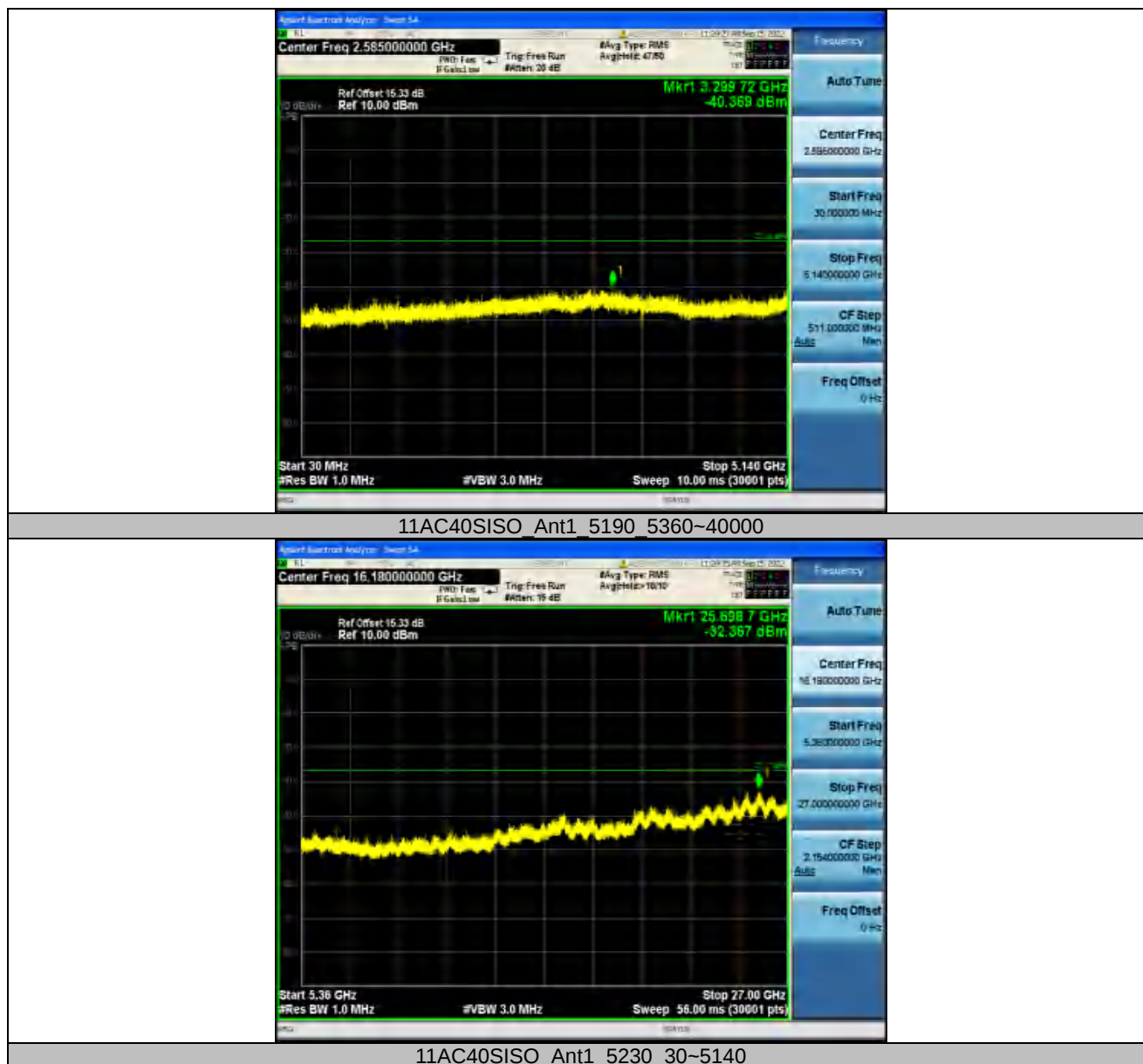
11AC20SISO_Ant1_5745_5925~40000



11AC20SISO_Ant1_5785_30~5650

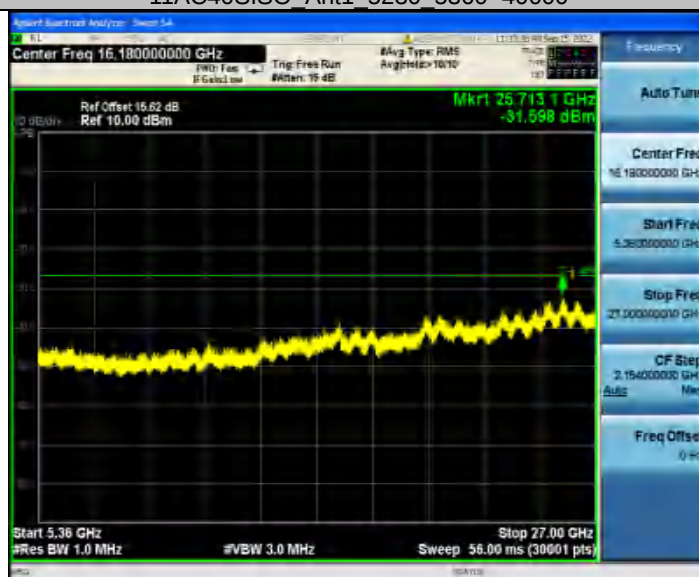




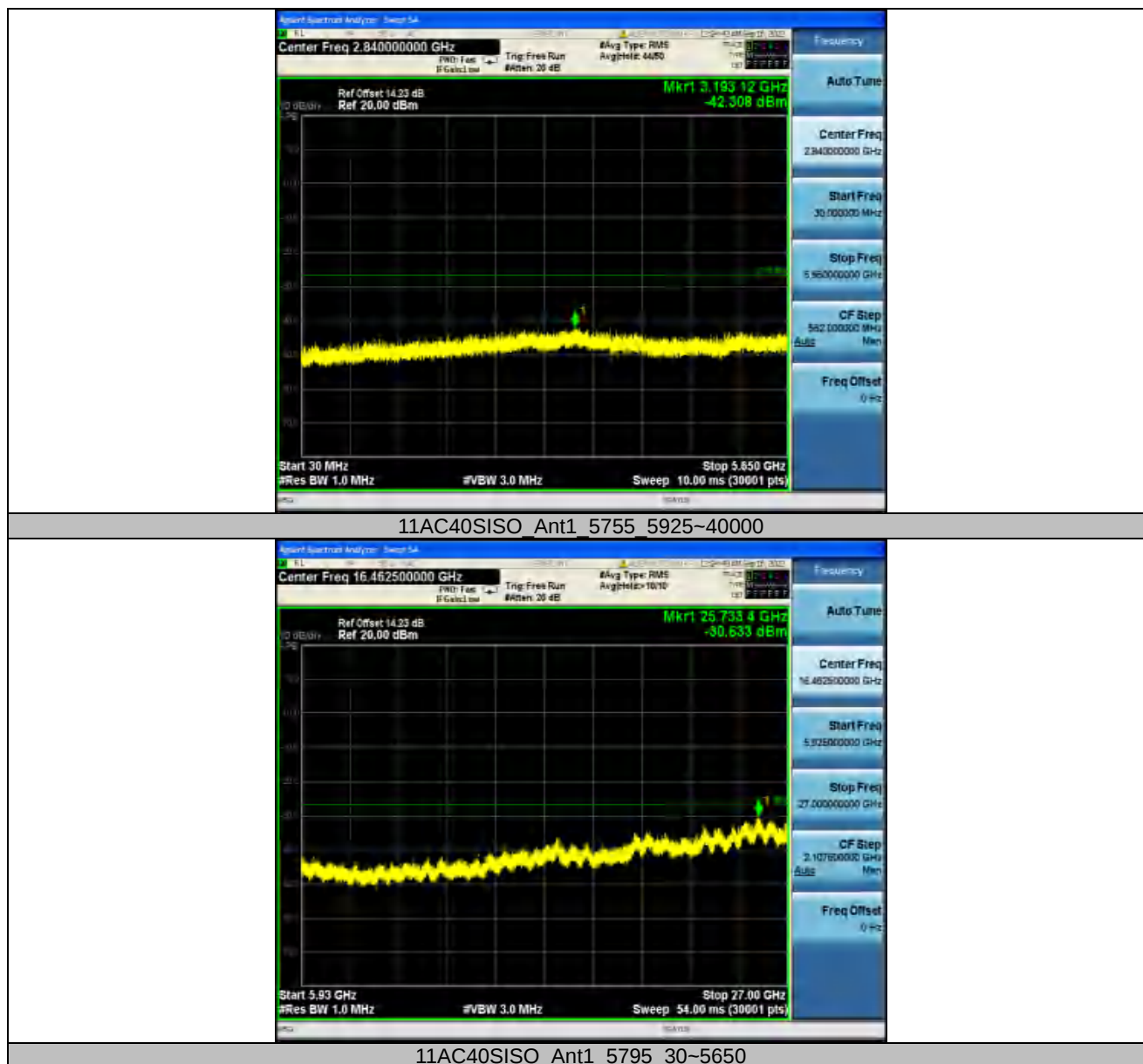


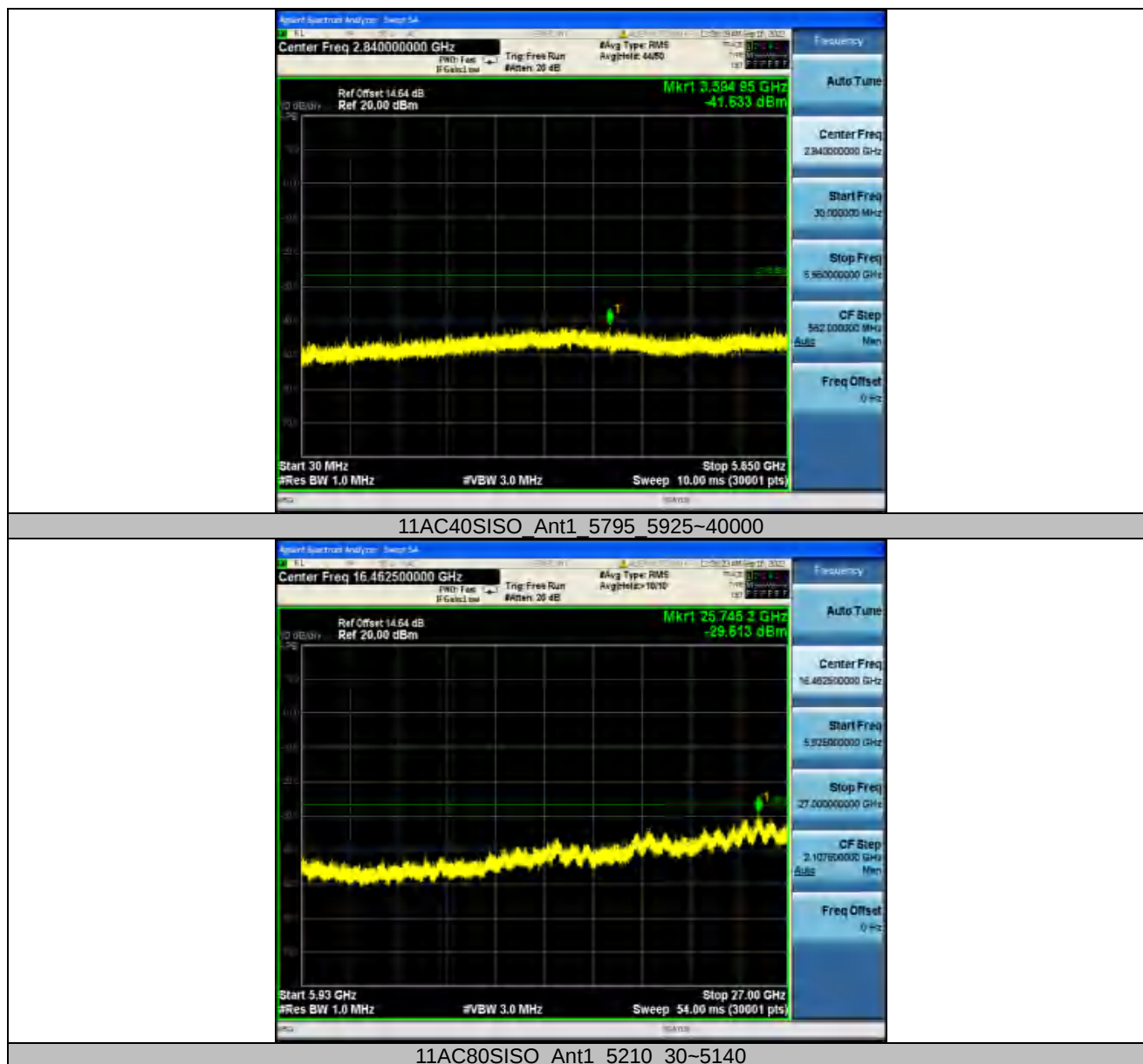


11AC40SISO_Ant1_5230_5360~40000



11AC40SISO_Ant1_5755_30~5650



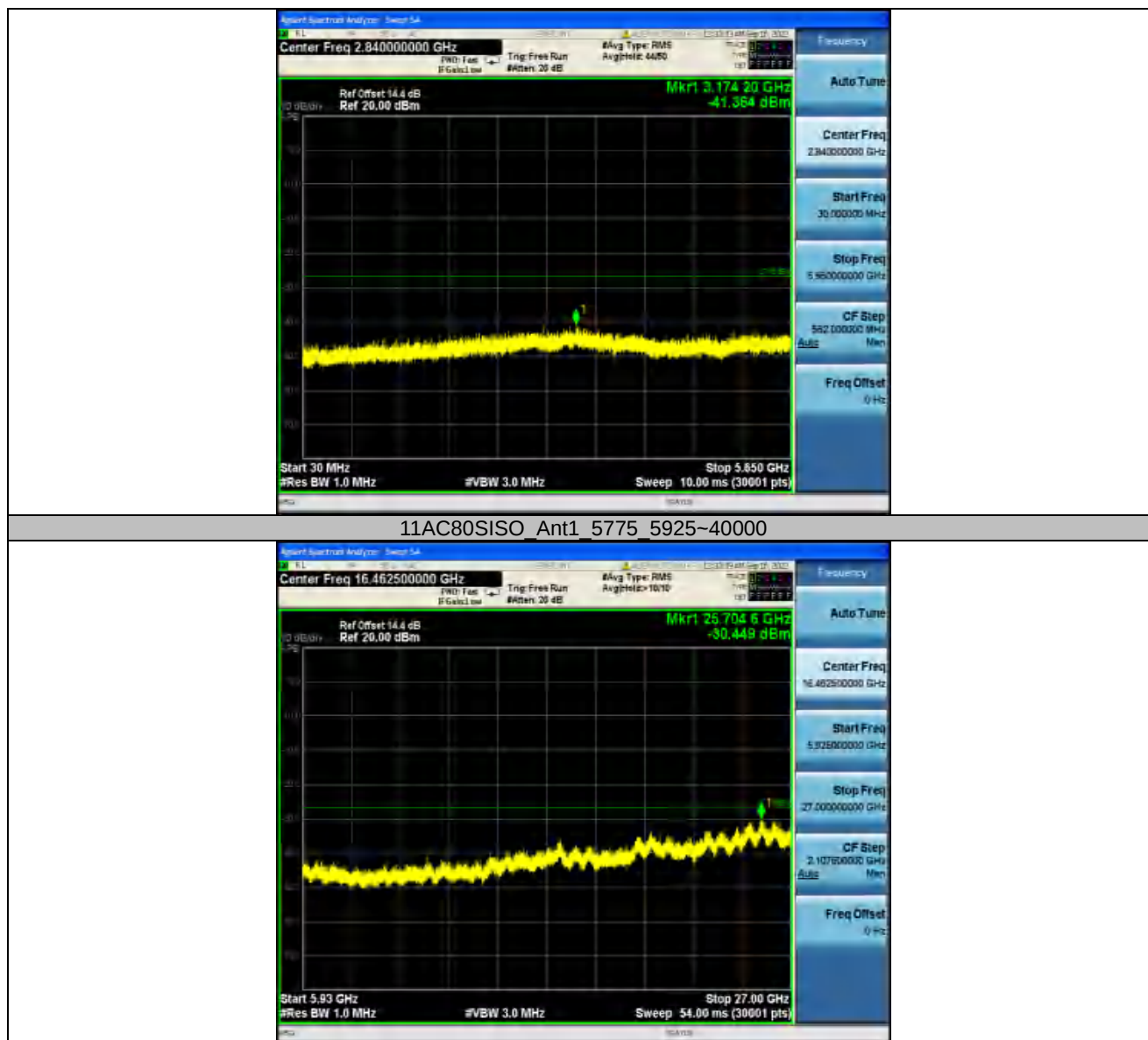




11AC80SISO_Ant1_5210_5360~40000



11AC80SISO_Ant1_5775_30~5650





6.6 Band edge measurements

Test Result:

TestMode	Antenna	ChName	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-29.1	≤ -27	PASS
		High	5240	-29.97	≤ -27	PASS
11N20SISO	Ant1	Low	5180	-29.54	≤ -27	PASS
		High	5240	-29.16	≤ -27	PASS
11N40SISO	Ant1	Low	5190	-29.3	≤ -27	PASS
		High	5230	-29.83	≤ -27	PASS
11AC20SISO	Ant1	Low	5180	-29.75	≤ -27	PASS
		High	5240	-30.15	≤ -27	PASS
11AC40SISO	Ant1	Low	5190	-28.95	≤ -27	PASS
		High	5230	-30.09	≤ -27	PASS
11AC80SISO	Ant1	Low	5210	-28.68	≤ -27	PASS
		High	5210	-30.21	≤ -27	PASS

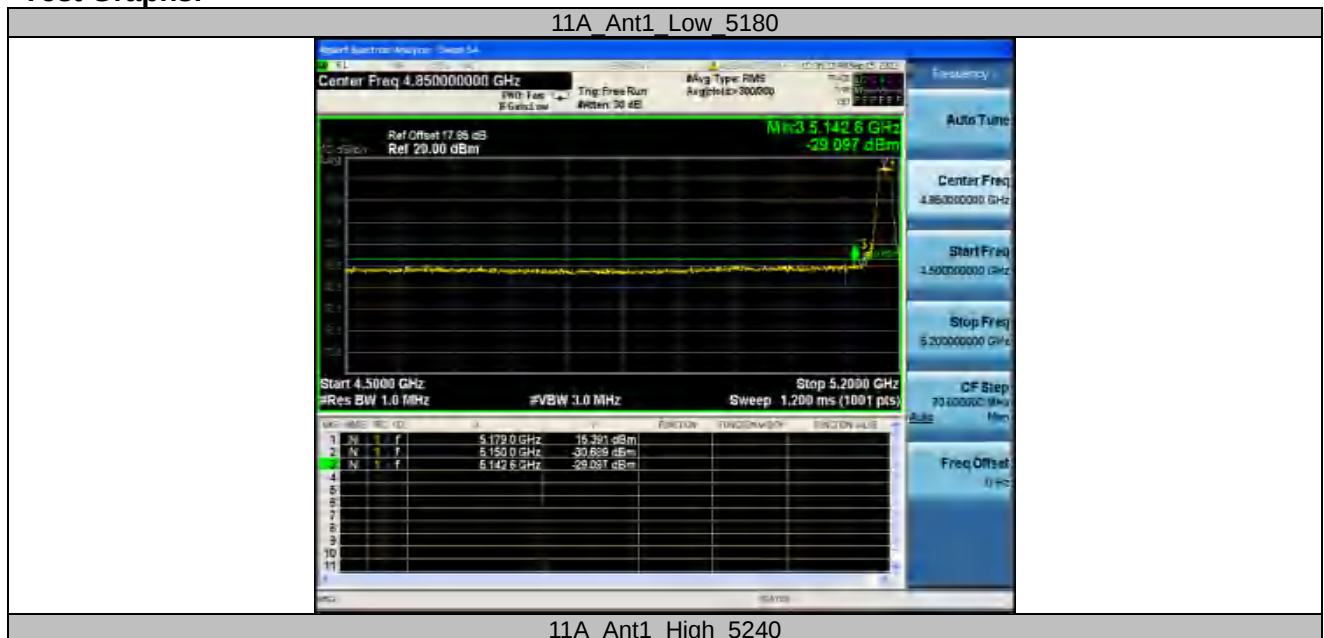
TestMode	Antenna	ChName	Frequency[MHz]	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5650~5700	-31.17	≤ 0.87	PASS
				5700~5720	-28.56	≤ 15.14	PASS
				5720~5725	-23.04	≤ 23.42	PASS
				5760~5650	-31.49	≤ -27	PASS
		High	5825	5850~5855	-25.82	≤ 15.79	PASS
				5855~5875	-27.9	≤ 10.82	PASS
				5875~5925	-29.79	≤ -21.86	PASS
				5925~5935	-30.87	≤ -27	PASS
11N20SISO	Ant1	Low	5745	5650~5700	-31.39	≤ -10.19	PASS
				5700~5720	-31.19	≤ 10.86	PASS
				5720~5725	-29.72	≤ 23.94	PASS
				5760~5650	-31.37	≤ -27	PASS
		High	5825	5850~5855	-30.95	≤ 17.03	PASS
				5855~5875	-30.4	≤ 14.60	PASS
				5875~5925	-30.32	≤ 6.01	PASS
				5925~5935	-29.86	≤ -27	PASS
11N40SISO	Ant1	Low	5755	5650~5700	-30.7	≤ 5.56	PASS
				5700~5720	-29.28	≤ 15.20	PASS
				5720~5725	-29.2	≤ 21.58	PASS
				5780~5650	-32.14	≤ -27	PASS
		High	5795	5850~5855	-31.75	≤ 26.19	PASS
				5855~5875	-29.56	≤ 15.49	PASS
				5875~5925	-30.59	≤ -17.76	PASS
				5925~5935	-30.91	≤ -27	PASS
11AC20SISO	Ant1	Low	5745	5650~5700	-31.3	≤ 8.96	PASS
				5700~5720	-31.15	≤ 12.05	PASS
				5720~5725	-28.71	≤ 24.21	PASS
				5760~5650	-30.61	≤ -27	PASS
		High	5825	5850~5855	-31.3	≤ 16.10	PASS
				5855~5875	-31.22	≤ 10.25	PASS
				5875~5925	-30.06	≤ -0.88	PASS
				5925~5935	-29.72	≤ -27	PASS
11AC40SISO	Ant1	Low	5755	5650~5700	-30.02	≤ 7.26	PASS
				5700~5720	-29.76	≤ 15.47	PASS



Report No.: PTC22082406103E-FC03

11AC80SIS O	Ant1	High	5795	5720~5725	-29.88	≤26.82	PASS
				5780~5650	-31.65	≤-27	PASS
				5850~5855	-32.02	≤20.55	PASS
				5855~5875	-31.08	≤12.58	PASS
				5875~5925	-30.3	≤-19.84	PASS
				5925~5935	-30.9	≤-27	PASS
		Low	5775	5650~5700	-30.76	≤-7.53	PASS
				5700~5720	-29.59	≤12.09	PASS
				5720~5725	-29.71	≤20.24	PASS
				5800~5650	-31.79	≤-27	PASS
		High	5775	5850~5855	-30.16	≤25.07	PASS
				5855~5875	-30.57	≤14.22	PASS
				5875~5925	-30.14	≤9.60	PASS
				5925~5935	-30.5	≤-27	PASS

Test Graphs:





11N20SISO_Ant1_Low_5180



11N20SISO_Ant1_High_5240



11N40SISO_Ant1_Low_5190



11N40SISO_Ant1_High_5230



11AC20SISO_Ant1_Low_5180



11AC20SISO_Ant1_High_5240



11AC40SISO_Ant1_Low_5190



11AC40SISO_Ant1_High_5230



11AC80SISO_Ant1_Low_5210



11AC80SISO_Ant1_High_5210





Test plots B4:

11A_Ant1_Low 5745



11A_Ant1_High 5825



11N20SISO Ant1_Low 5745



11N20SISO_Ant1_High_5825



11N40SISO_Ant1_Low_5755



11N40SISO_Ant1_High_5795



11AC20SISO_Ant1_Low_5745



11AC20SISO_Ant1_High_5825



11AC40SISO_Ant1_Low_5755



11AC40SISO_Ant1_High_5795



11AC80SISO_Ant1_Low_5775



11AC80SISO Ant1_High_5775





6.7 Restricted Band

Test Requirement : FCC Part15 E Section 15.407(b)

Test site : Measurement Distance: 3m

Test Limit :

Frequency	Limit (dBUV/m @3m)	Remark
Above 1GHz	74	Peak Value
	54	Average Value

Test Procedure:

1. The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room

Test Result:

Worst case mode:		802.11a(6Mbps)		Test channel:		36		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	49.56	6.53	56.09	74	-17.91	H	Peak
2	5150	40.32	6.53	46.85	54	-7.15	H	Average
3	5150	49.14	6.53	55.67	74	-18.33	V	Peak
4	5150	39.45	6.53	45.98	54	-8.02	V	Average



Worst case mode:		802.11a(6Mbps)		Test channel:		48		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5350	51.52	6.56	58.08	74	-15.92	H	Peak
2	5350	40.27	6.56	46.83	54	-7.17	H	Average
3	5350	51.61	6.56	58.17	74	-15.83	V	Peak
4	5350	40.93	6.56	47.49	54	-6.51	V	Average

Worst case mode:		802.11n(HT20)(6.5 Mbps)		Test channel:		36		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	49.55	6.53	56.08	74	-17.92	H	Peak
2	5150	40.51	6.53	47.04	54	-6.96	H	Average
3	5150	50.44	6.53	56.97	74	-17.03	V	Peak
4	5150	40.08	6.53	46.61	54	-7.39	V	Average

Worst case mode:		802.11n(HT20)(6.5 Mbps)		Test channel:		48		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5350	51.52	6.56	58.08	74	-15.92	H	Peak
2	5350	40.27	6.56	46.83	54	-7.17	H	Average
3	5350	51.61	6.56	58.17	74	-15.83	V	Peak
4	5350	40.93	6.56	47.49	54	-6.51	V	Average

Worst case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		38		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	48.76	6.53	55.29	74	-18.71	H	Peak
2	5150	40.26	6.53	46.79	54	-7.21	H	Average
3	5150	49.1	6.53	55.63	74	-18.37	V	Peak
4	5150	39.05	6.53	45.58	54	-8.42	V	Average



Worst case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		46		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5350	51.17	6.56	57.73	74	-16.27	H	Peak
2	5350	41.91	6.56	48.47	54	-5.53	H	Average
3	5350	52.17	6.56	58.73	74	-15.27	V	Peak
4	5350	41.45	6.56	48.01	54	-5.99	V	Average

Worst case mode:		802.11ac(HT20)		Test channel:		36		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	49.08	6.53	55.61	74	-18.39	H	Peak
2	5150	40.72	6.53	47.25	54	-6.75	H	Average
3	5150	49.01	6.53	55.54	74	-18.46	V	Peak
4	5150	39.6	6.53	46.13	54	-7.87	V	Average

Worst case mode:		802.11ac(HT20)		Test channel:		48		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5350	52.56	6.56	59.12	74	-14.88	H	Peak
2	5350	40.19	6.56	46.75	54	-7.25	H	Average
3	5350	51.02	6.56	57.58	74	-16.42	V	Peak
4	5350	40.69	6.56	47.25	54	-6.75	V	Average



Worst case mode:		802.11ac(VHT40)		Test channel:		38		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	49.86	6.53	56.39	74	-17.61	H	Peak
2	5150	41.66	6.53	48.19	54	-5.81	H	Average
3	5150	50.69	6.53	57.22	74	-16.78	V	Peak
4	5150	38.02	6.53	44.55	54	-9.45	V	Average

Worst case mode:		802.11ac(VHT40)		Test channel:		46		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5350	51.39	6.56	57.95	74	-16.05	H	Peak
2	5350	41.72	6.56	48.28	54	-5.72	H	Average
3	5350	51.65	6.56	58.21	74	-15.79	V	Peak
4	5350	40.96	6.56	47.52	54	-6.48	V	Average

Worst case mode:		802.11ac(VHT80)		Test channel:		42		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Over [dB]	Polarity	Detector Type
1	5150	49.19	6.53	55.72	74	-18.28	H	Peak
2	5150	41.87	6.53	48.4	54	-5.6	H	Average
3	5150	50.45	6.53	56.98	74	-17.02	V	Peak
4	5150	41.66	6.53	48.19	54	-5.81	V	Average
5	5350	51.94	6.56	58.5	74	-15.5	H	Peak
6	5350	40.51	6.56	47.07	54	-6.93	H	Average
7	5350	51.75	6.56	58.31	74	-15.69	V	Peak
8	5350	41.23	6.56	47.79	54	-6.21	V	Average



7 Emission Bandwidth and Occupied Bandwidth

Test Requirement	: FCC CFR47 Part 15 Section 15.407(a)(e)
Test Method	: ANSI C63.10:2013 According to FCC §15.407(a), The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less.
Test Limit	: Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth. As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

7.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01,
Emission Bandwidth (EBW)

a) Set RBW = approximately 1% of the emission bandwidth; b) Set the VBW > RBW; c) Detector = Peak; d) Trace mode = max hold; e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%; 99% Occupied Bandwidth
The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set $VBW \geq 3 \cdot RBW$
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency.



The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

7.2 Test Result

PASS

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations / data rates and antenna ports.

Following channel was selected for the final test as listed below.

26 dB emission bandwidth:

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	21.800	5169.360	5191.160	---	---
		5220	21.480	5209.680	5231.160	---	---
		5240	21.400	5229.560	5250.960	---	---
		5745	21.800	5734.200	5756.000	---	---
		5785	21.480	5774.760	5796.240	---	---
		5825	21.880	5814.400	5836.280	---	---
11N20SISO	Ant1	5180	21.640	5169.120	5190.760	---	---
		5220	22.280	5208.760	5231.040	---	---
		5240	21.720	5229.240	5250.960	---	---
		5745	22.440	5733.680	5756.120	---	---
		5785	22.880	5773.080	5795.960	---	---
		5825	22.360	5813.960	5836.320	---	---
11N40SISO	Ant1	5190	43.280	5168.480	5211.760	---	---
		5230	43.360	5208.080	5251.440	---	---
		5755	41.920	5734.040	5775.960	---	---
		5795	41.280	5774.200	5815.480	---	---
11AC20SISO	Ant1	5180	23.480	5167.920	5191.400	---	---
		5220	22.280	5208.960	5231.240	---	---
		5240	22.240	5228.840	5251.080	---	---
		5745	22.520	5733.640	5756.160	---	---
		5785	21.920	5774.040	5795.960	---	---
		5825	22.240	5813.560	5835.800	---	---
11AC40SISO	Ant1	5190	41.600	5169.200	5210.800	---	---
		5230	40.880	5209.760	5250.640	---	---
		5755	41.840	5734.200	5776.040	---	---
		5795	41.520	5774.040	5815.560	---	---
11AC80SISO	Ant1	5210	83.360	5168.400	5251.760	---	---
		5775	84.320	5732.600	5816.920	---	---



minimum 6 dB bandwidth:

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.480	5736.760	5753.240	0.5	PASS
		5785	16.480	5776.760	5793.240	0.5	PASS
		5825	16.480	5816.760	5833.240	0.5	PASS
11N20SISO	Ant1	5745	17.080	5736.400	5753.480	0.5	PASS
		5785	17.240	5776.240	5793.480	0.5	PASS
		5825	15.680	5816.800	5832.480	0.5	PASS
11N40SISO	Ant1	5755	35.760	5737.000	5772.760	0.5	PASS
		5795	35.360	5777.240	5812.600	0.5	PASS
11AC20SISO	Ant1	5745	16.760	5736.480	5753.240	0.5	PASS
		5785	15.120	5777.440	5792.560	0.5	PASS
		5825	16.280	5816.520	5832.800	0.5	PASS
11AC40SISO	Ant1	5755	35.680	5737.000	5772.680	0.5	PASS
		5795	35.840	5776.920	5812.760	0.5	PASS
11AC80SISO	Ant1	5775	75.200	5737.400	5812.600	0.5	PASS

Test Graphs:





11A_Ant1_5240



11A_Ant1_5745



11A_Ant1_5785



11A_Ant1_5825



11N20SISO_Ant1_5180



11N20SISO_Ant1_5220



11N20SISO_Ant1_5240



11N20SISO_Ant1_5745



11N20SISO_Ant1_5785



11N20SISO_Ant1_5825



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



11AC20SISO_Ant1_5180



11AC20SISO_Ant1_5220



11AC20SISO_Ant1_5240



11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775





Min emission bandwidth Test Graphs:

11A Ant1_5745



11A Ant1_5785



11A Ant1_5825



11N20SISO_Ant1_5745



11N20SISO_Ant1_5785



11N20SISO_Ant1_5825



11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



11AC20SISO_Ant1_5745





11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775





8 Maximum average Output Power

Test Requirement	: FCC CFR47 Part 15 Section 15.247
Test Method	: ANSI C63.10:2013
Test Limit	: For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

8.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, The use spectrum analyzer. Place the EUT on a bench and set it in transmitting mode. 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to spectrum analyzer.

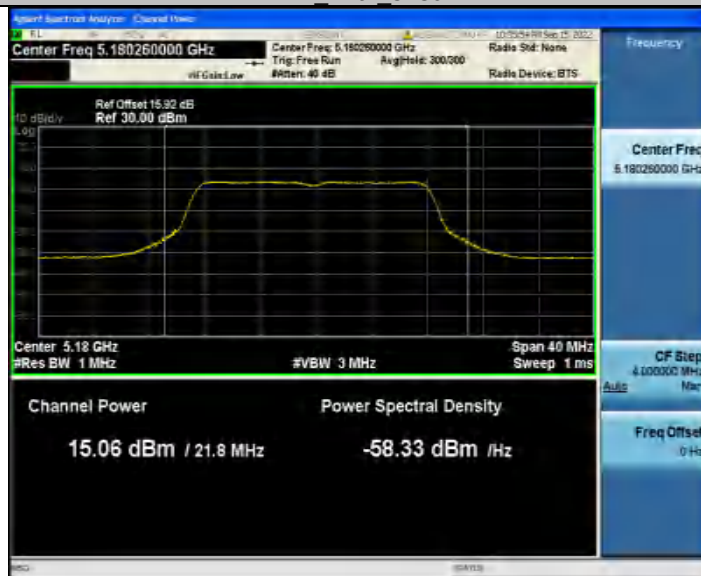


8.2 Test Result

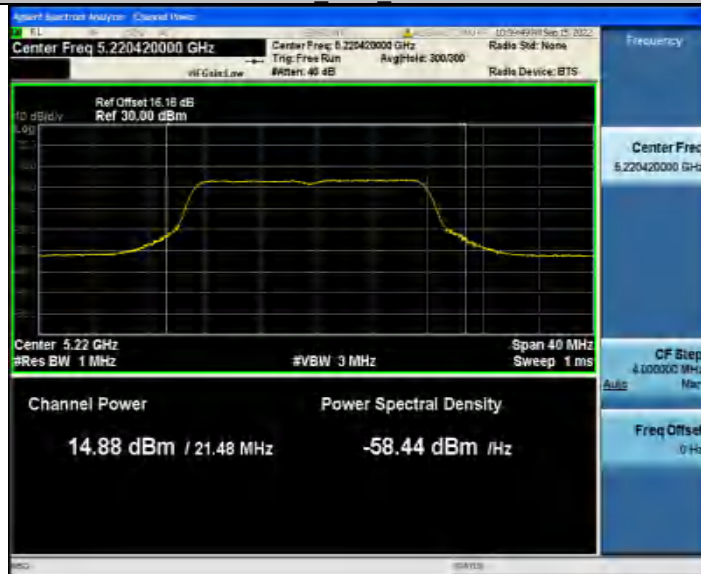
Test Mode	Antenna	Frequency[MHz]	Conducted Output power [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	15.06	≤23.98	PASS
		5220	14.88	≤23.98	PASS
		5240	14.70	≤23.98	PASS
		5745	12.81	≤30.00	PASS
		5785	12.32	≤30.00	PASS
		5825	11.60	≤30.00	PASS
11N20SISO	Ant1	5180	15.05	≤23.98	PASS
		5220	14.95	≤23.98	PASS
		5240	14.72	≤23.98	PASS
		5745	13.15	≤30.00	PASS
		5785	12.51	≤30.00	PASS
		5825	10.96	≤30.00	PASS
11N40SISO	Ant1	5190	11.16	≤23.98	PASS
		5230	11.95	≤23.98	PASS
		5755	11.67	≤30.00	PASS
		5795	10.79	≤30.00	PASS
11AC20SISO	Ant1	5180	14.00	≤23.98	PASS
		5220	13.89	≤23.98	PASS
		5240	13.76	≤23.98	PASS
		5745	13.09	≤30.00	PASS
		5785	12.40	≤30.00	PASS
		5825	10.80	≤30.00	PASS
11AC40SISO	Ant1	5190	11.54	≤23.98	PASS
		5230	11.43	≤23.98	PASS
		5755	11.41	≤30.00	PASS
		5795	10.70	≤30.00	PASS
11AC80SISO	Ant1	5210	12.19	≤23.98	PASS
		5775	12.19	≤30.00	PASS



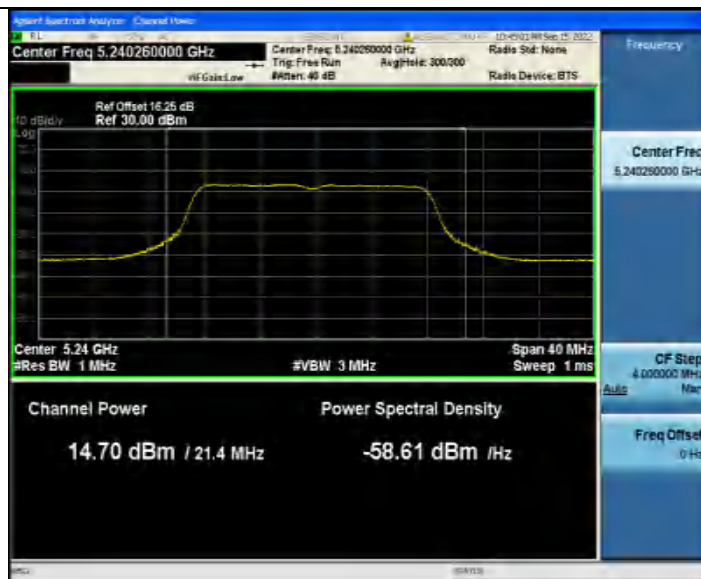
11A_Ant1_5180



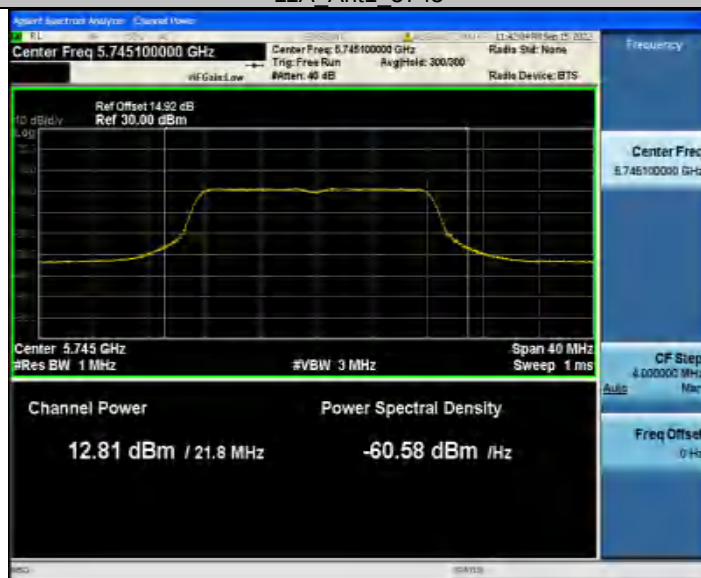
11A_Ant1_5220



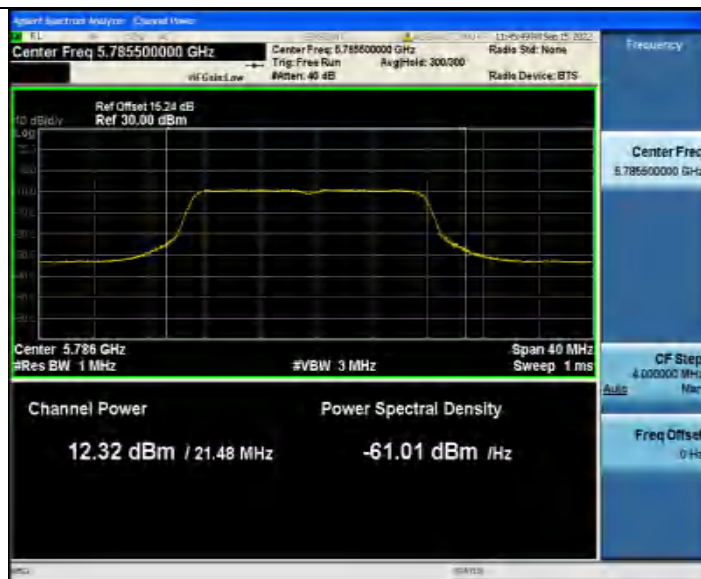
11A_Ant1_5240



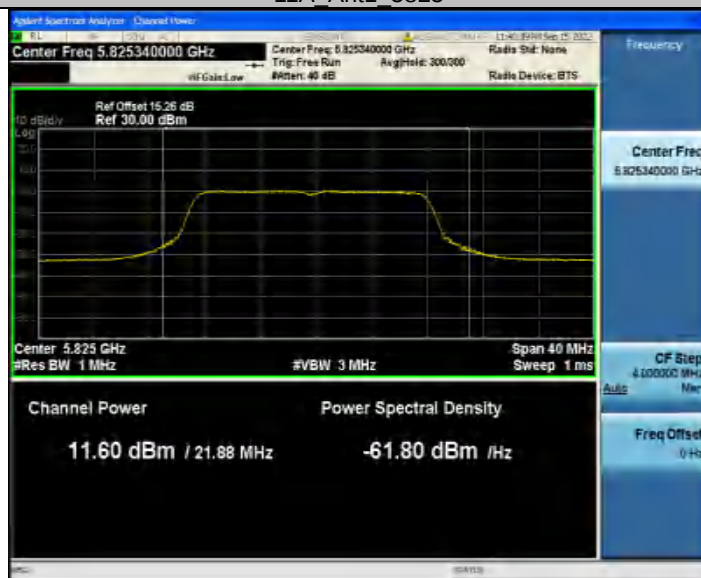
11A_Ant1_5745



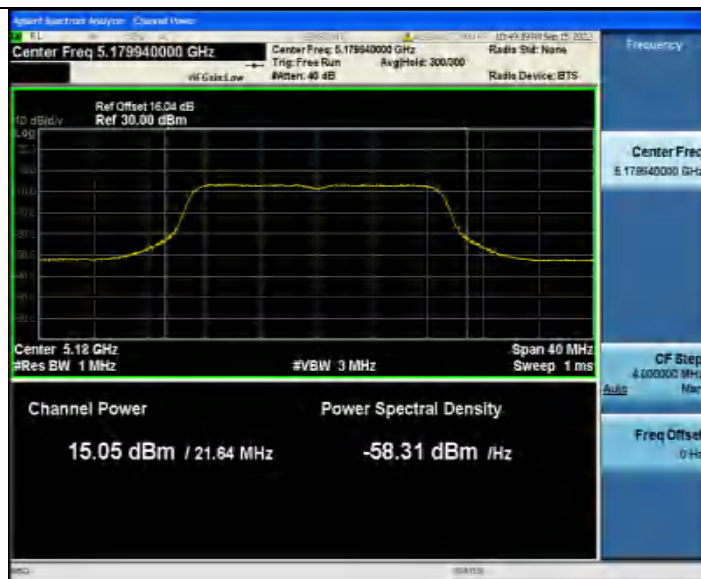
11A_Ant1_5785



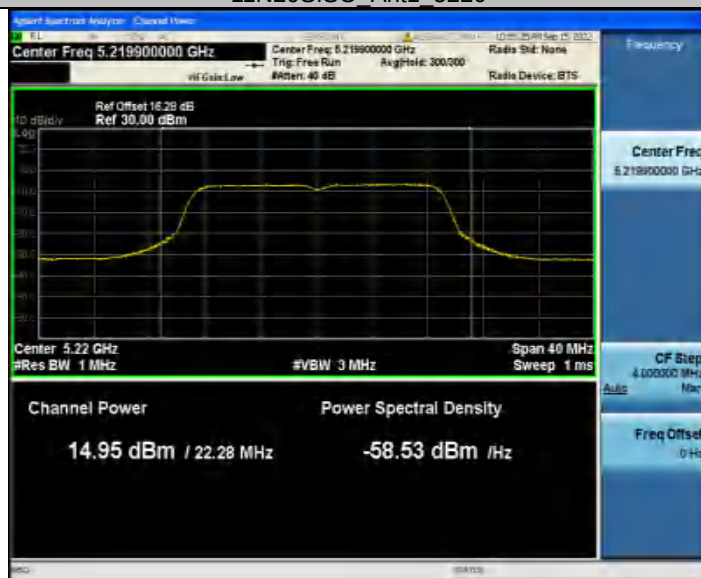
11A_Ant1_5825



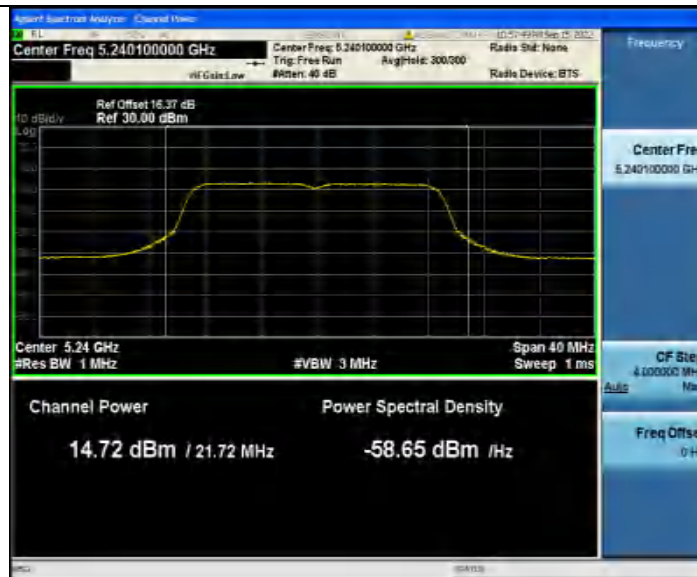
11N20SISO_Ant1_5180



11N20SISO_Ant1_5220



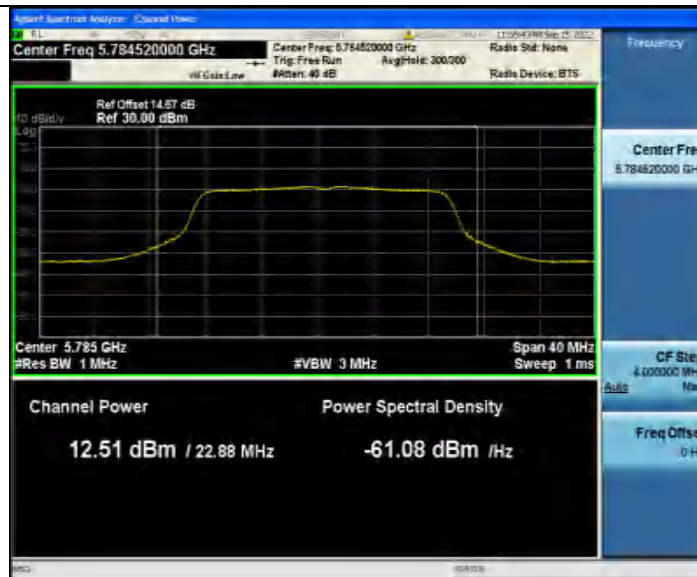
11N20SISO_Ant1_5240



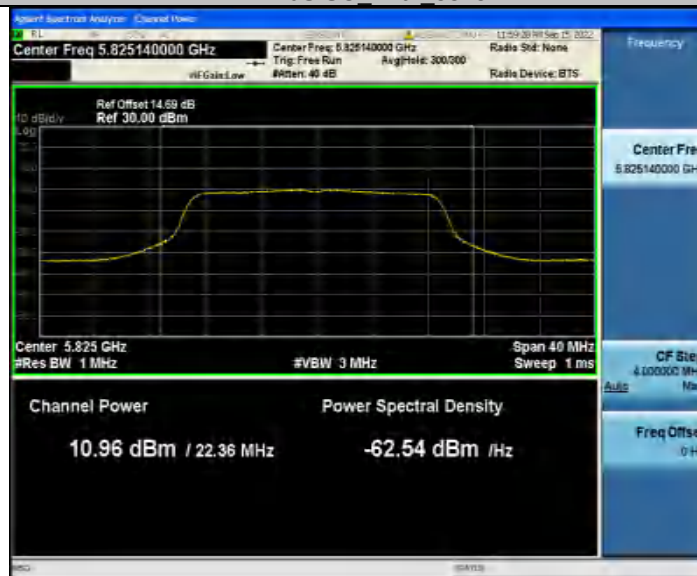
11N20SISO_Ant1_5745



11N20SISO_Ant1_5785



11N20SISO_Ant1_5825



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



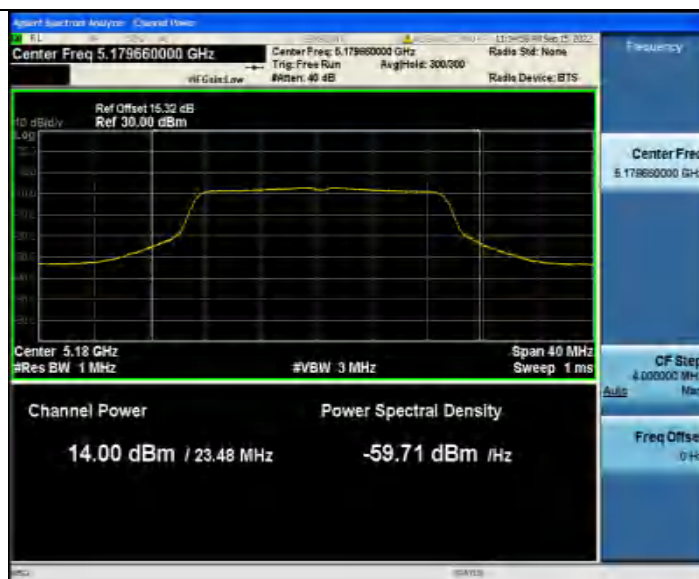
11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



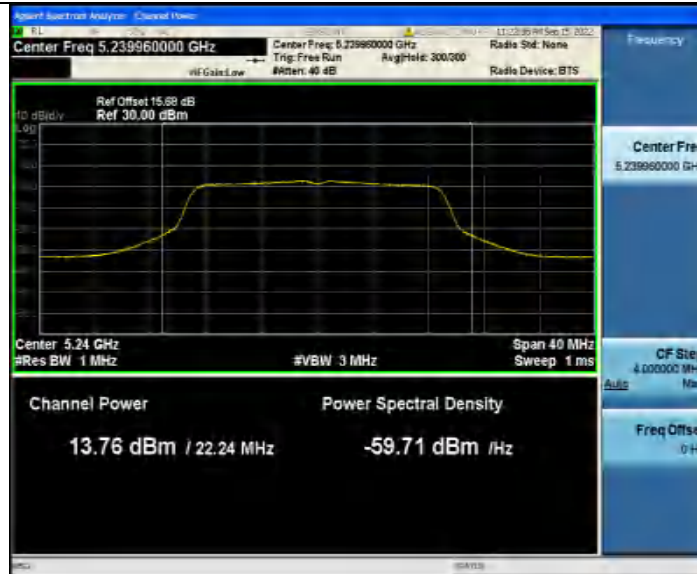
11AC20SISO_Ant1_5180



11AC20SISO_Ant1_5220



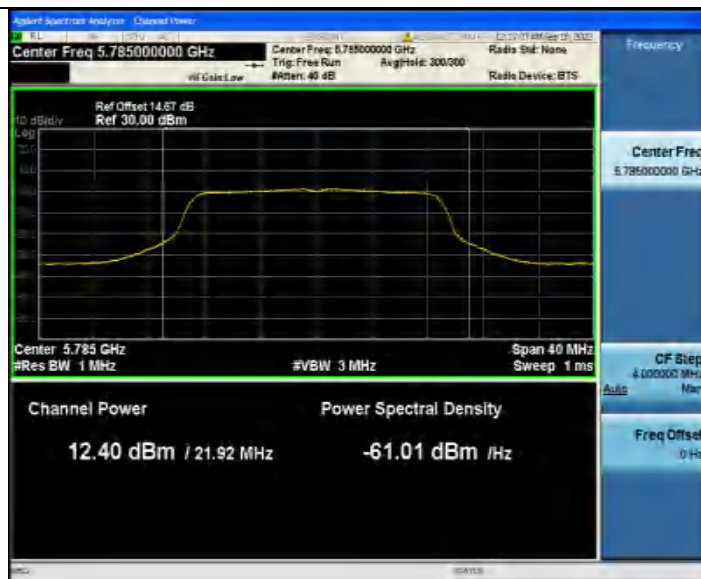
11AC20SISO_Ant1_5240



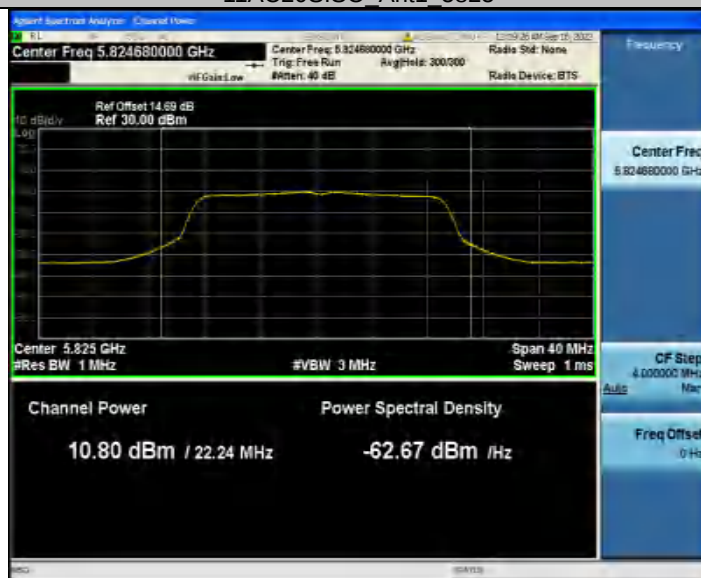
11AC20SISO_Ant1_5745



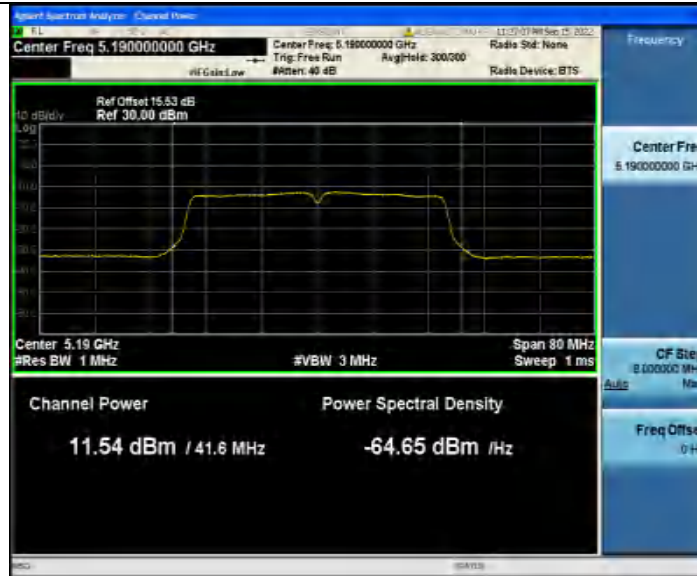
11AC20SISO_Ant1_5785



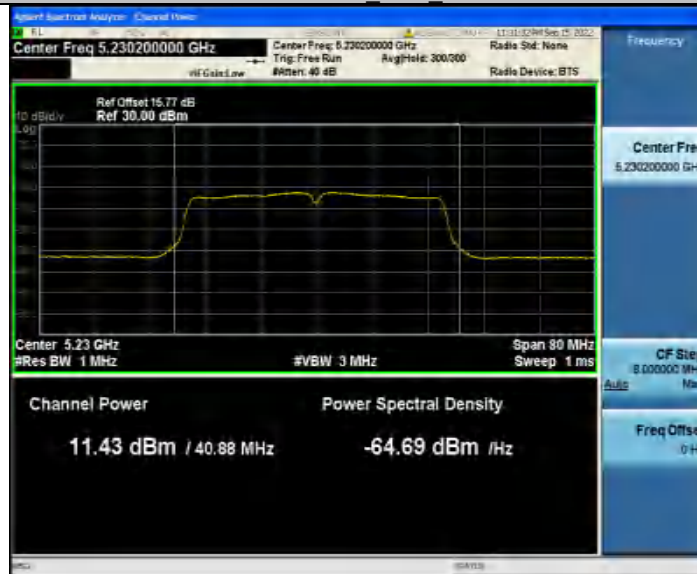
11AC20SISO_Ant1_5825



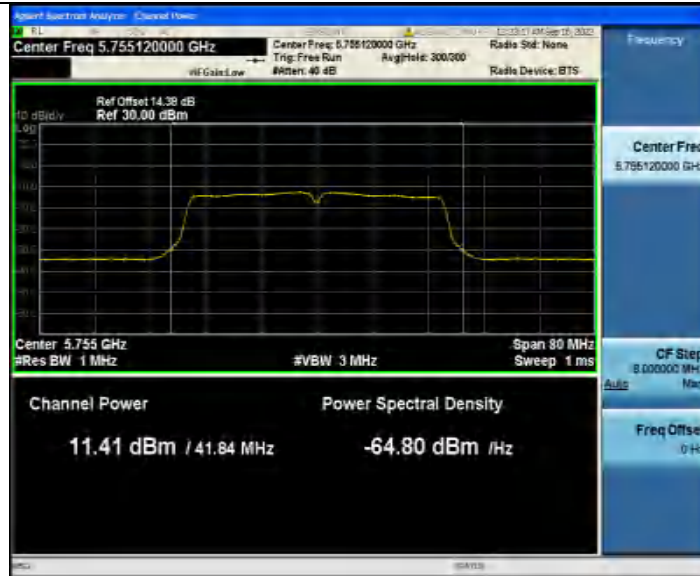
11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



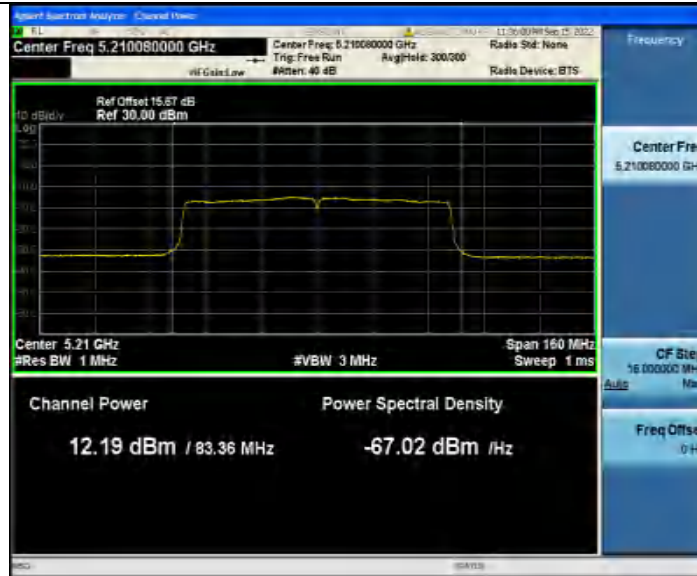
11AC40SISO_Ant1_5755



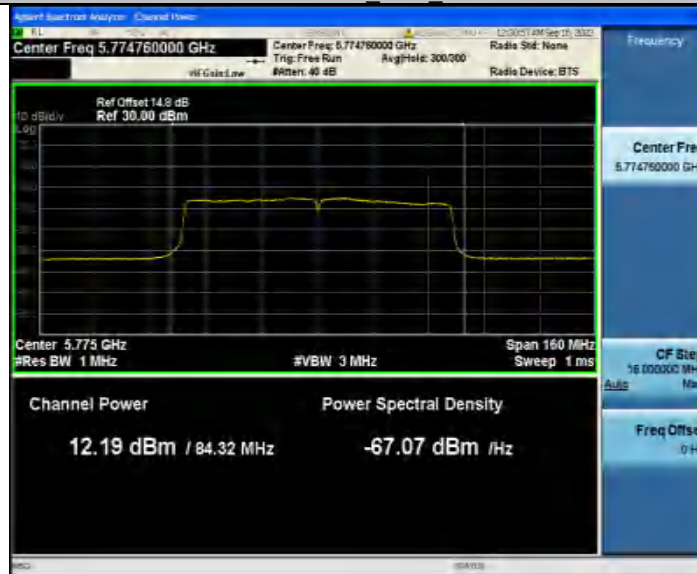
11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775





9 Power Spectral density

Test Requirement	: FCC CFR47 Part 15 Section 15.2407(a)
Test Method	: ANSI C63.10:2013
Test Limit	: For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHzband. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations



9.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 and ANSI 63.10: 2013 Sec 10.3.7. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set the RBW to 1 MHz.
- b) Set the VBW to be at least 1 MHz (a VBW of 3 MHz is desirable).
- c) Set the frequency span to examine the spectrum across a convenient frequency segment (e.g., 600 MHz).
- d) Select the power averaging (rms) detector.
- e) Set the sweep time so that there is no more than a 1 ms integration period over each measurement bin.
- f) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.



9.2 Test Result

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations / data rates and antenna ports.

Following channel was selected for the final test as listed below

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	3.83	≤11.00	PASS
		5220	3.76	≤11.00	PASS
		5240	3.74	≤11.00	PASS
		5745	1.03	≤30.00	PASS
		5785	0.41	≤30.00	PASS
		5825	0.20	≤30.00	PASS
11N20SISO	Ant1	5180	3.69	≤11.00	PASS
		5220	3.51	≤11.00	PASS
		5240	3.25	≤11.00	PASS
		5745	2.04	≤30.00	PASS
		5785	1.26	≤30.00	PASS
		5825	-0.65	≤30.00	PASS
11N40SISO	Ant1	5190	-3.63	≤11.00	PASS
		5230	-2.48	≤11.00	PASS
		5755	-2.73	≤30.00	PASS
		5795	-3.8	≤30.00	PASS
11AC20SISO	Ant1	5180	3.25	≤11.00	PASS
		5220	3.02	≤11.00	PASS
		5240	3.08	≤11.00	PASS
		5745	1.5	≤30.00	PASS
		5785	1.17	≤30.00	PASS
		5825	-0.39	≤30.00	PASS
11AC40SISO	Ant1	5190	-2.21	≤11.00	PASS
		5230	-2.38	≤11.00	PASS
		5755	-3.45	≤30.00	PASS
		5795	-3.91	≤30.00	PASS
11AC80SISO	Ant1	5210	-4.69	≤11.00	PASS
		5775	-5.92	≤30.00	PASS

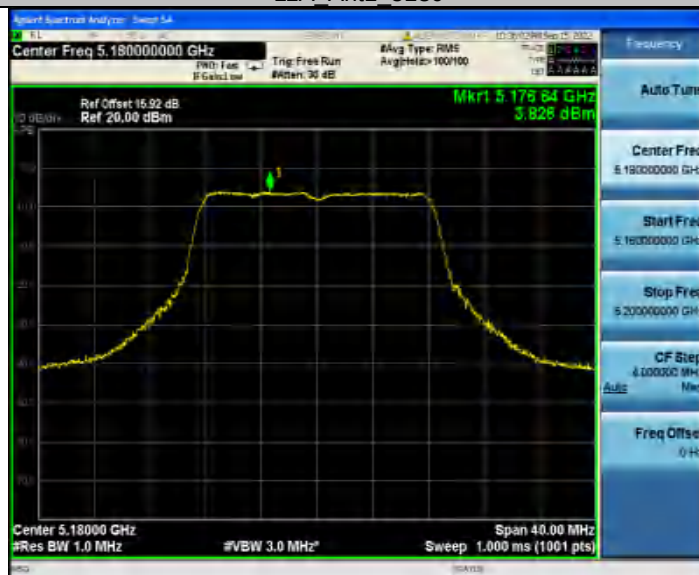
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2. in the band 5.725–5.85 GHz the test RBW select 300KHz,so the measured result corrected by Result+10 log (500 kHz/300kHz).

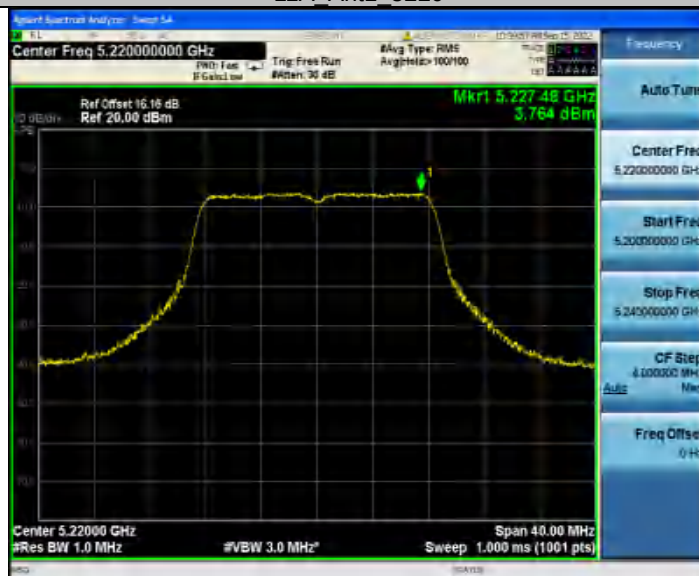


Test Graphs:

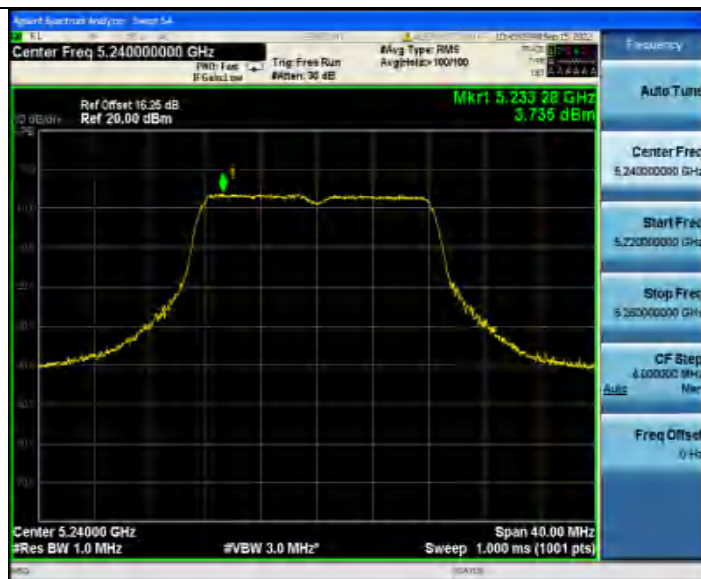
11A_Ant1_5180



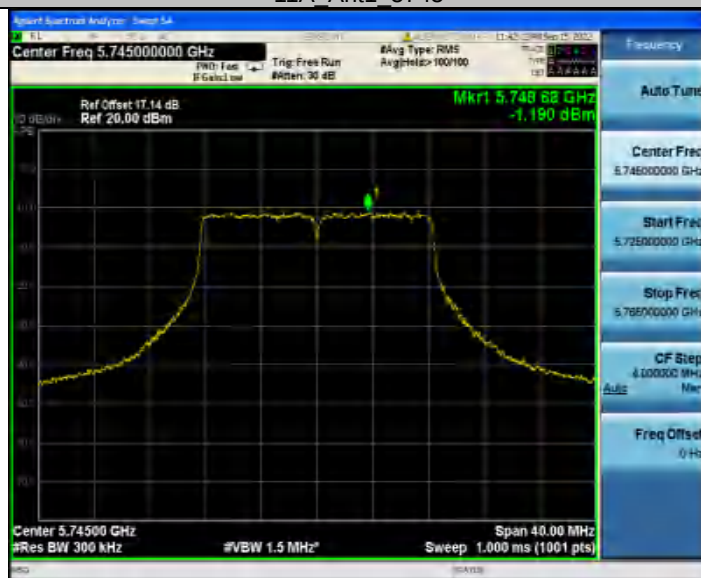
11A_Ant1_5220



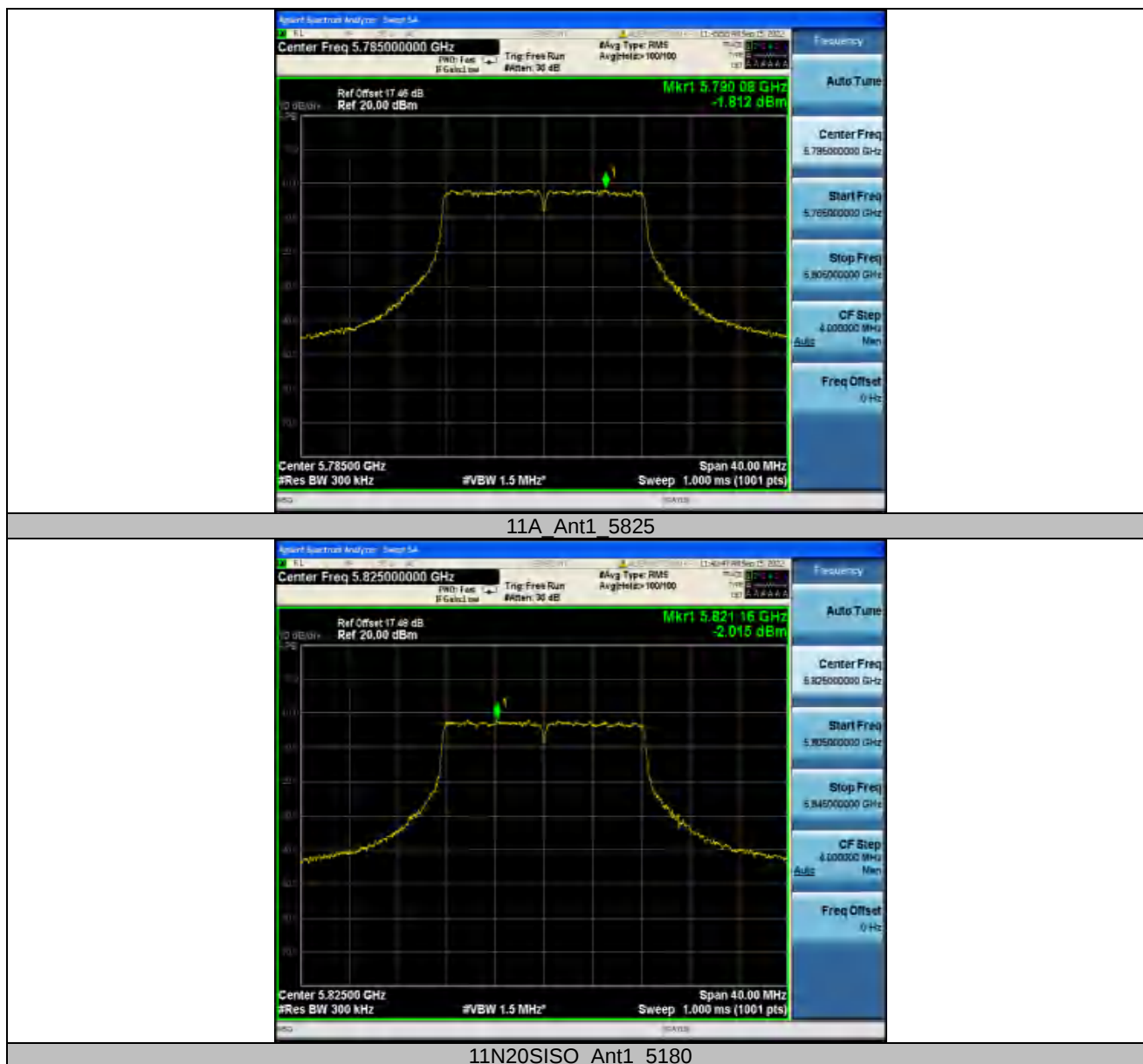
11A_Ant1_5240

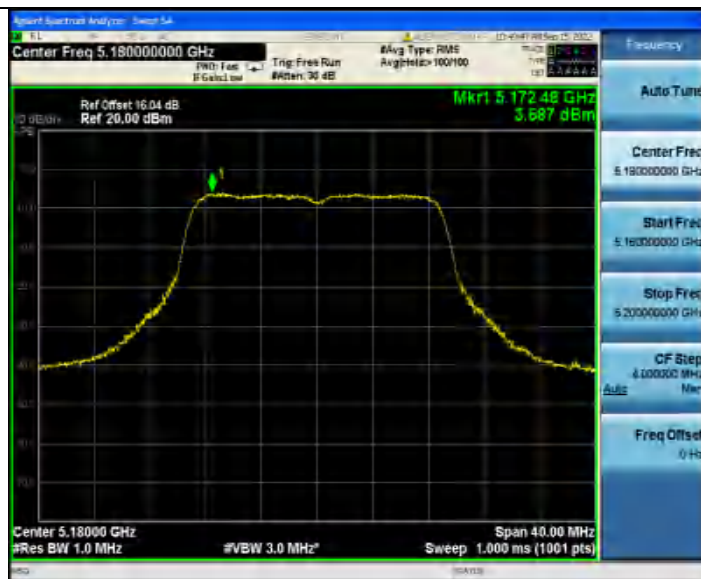


11A_Ant1_5745

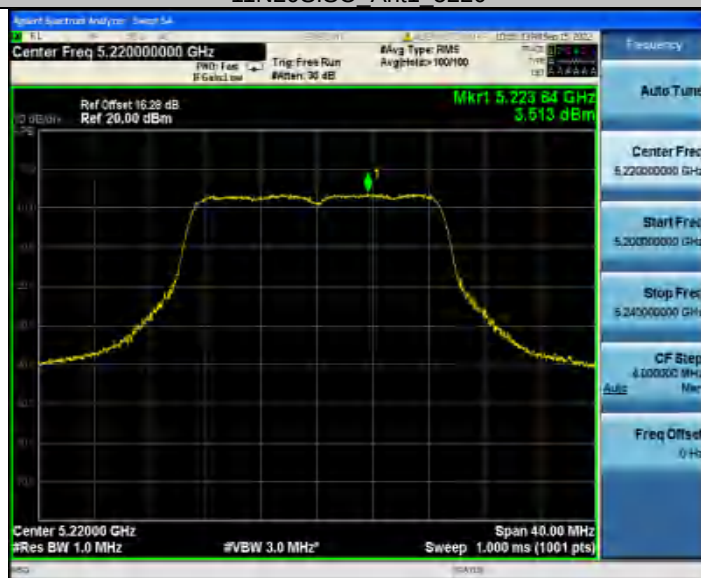


11A_Ant1_5785

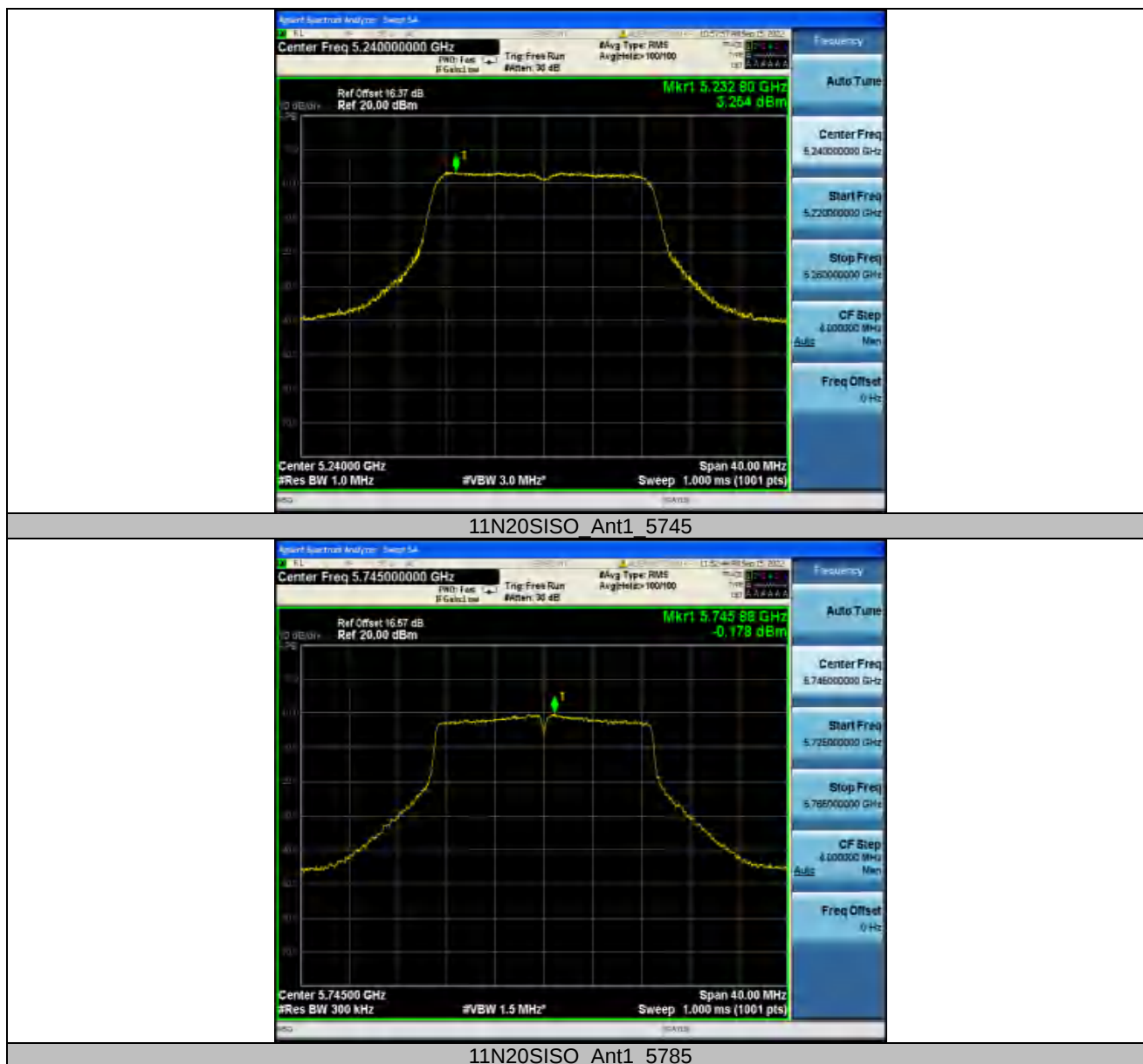


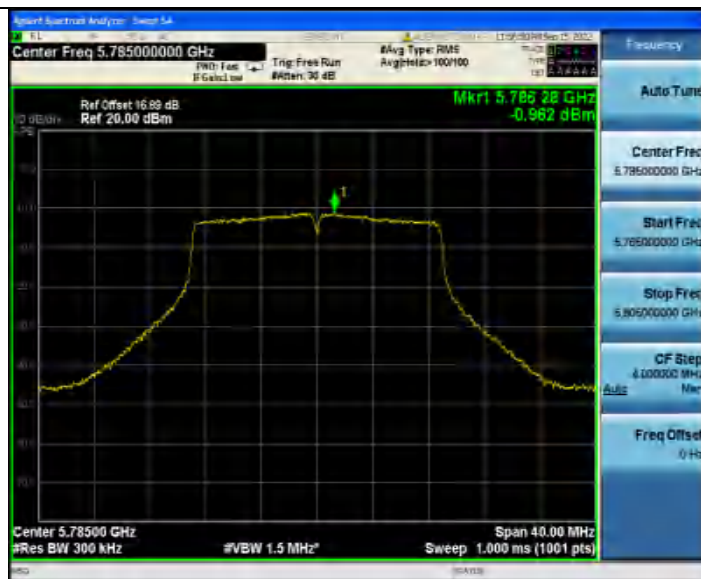


11N20SISO_Ant1_5220

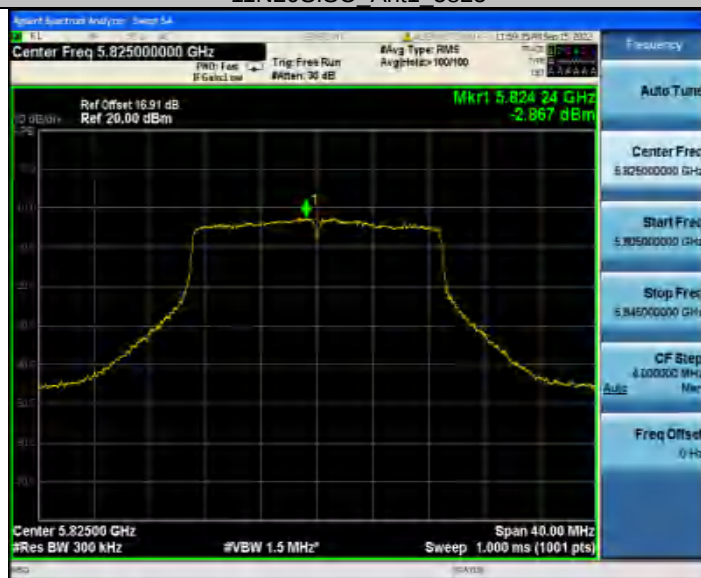


11N20SISO_Ant1_5240

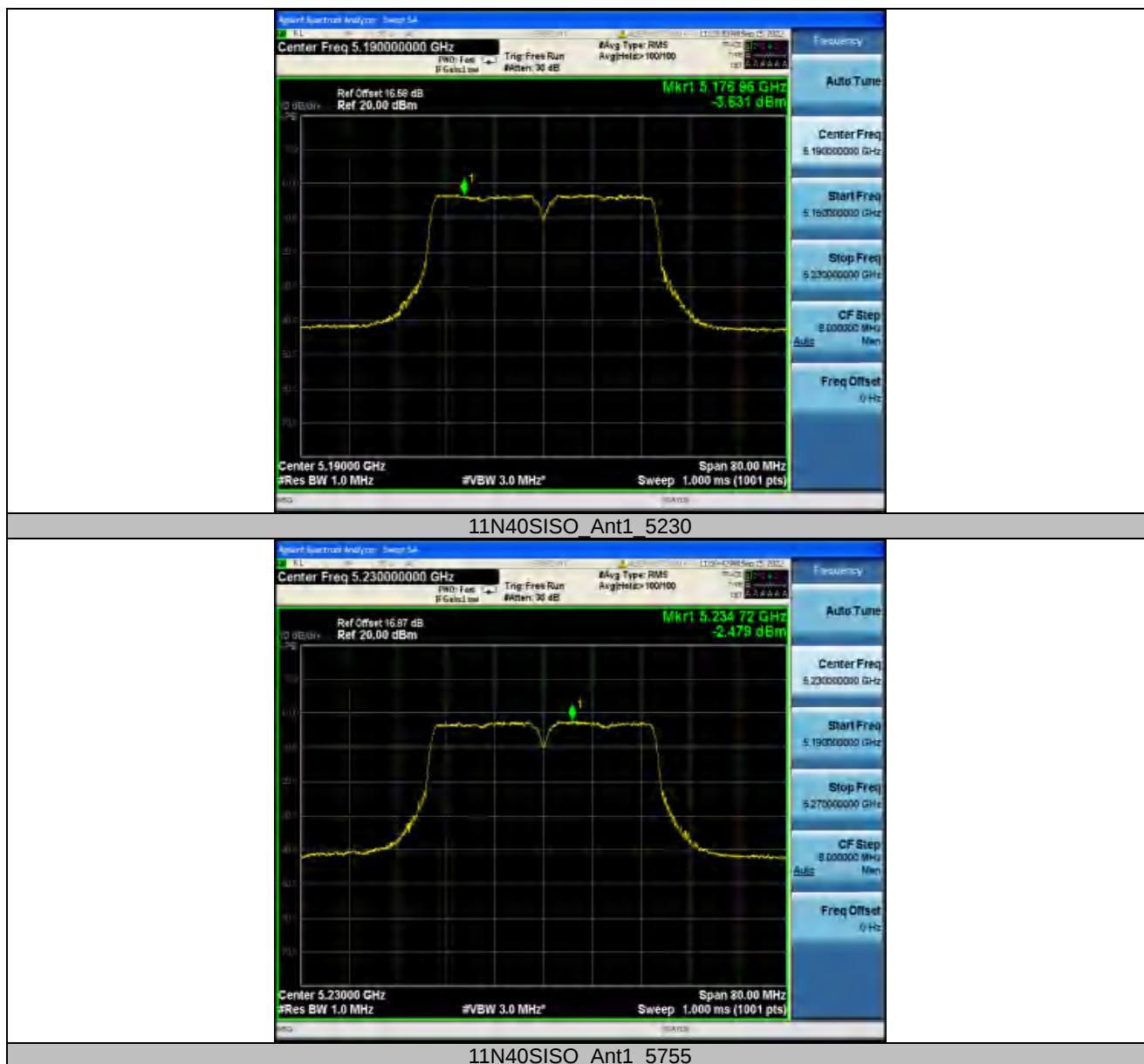




11N20SISO_Ant1_5825



11N40SISO_Ant1_5190





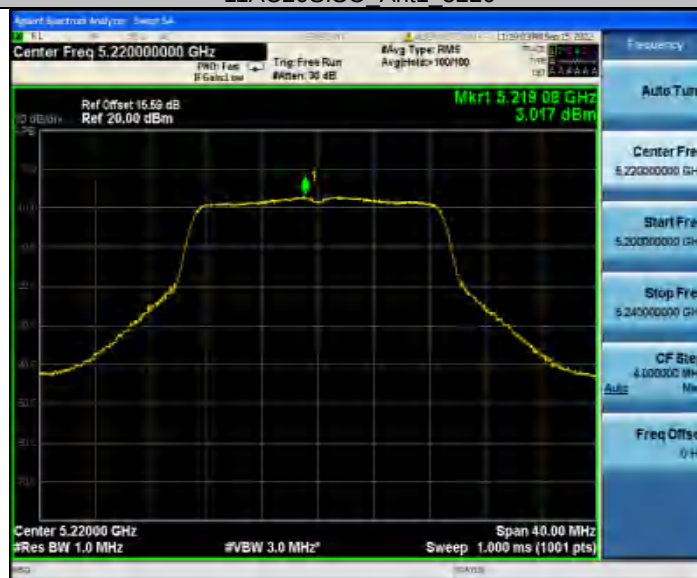
11N40SISO_Ant1_5795



11AC20SISO_Ant1_5180



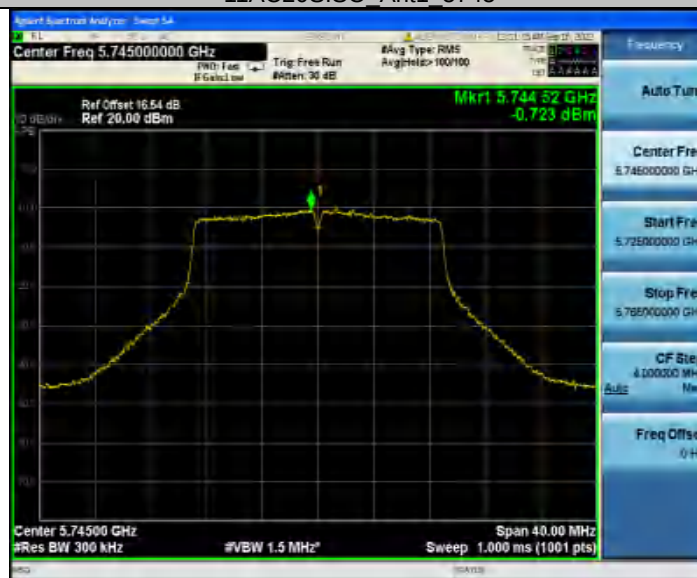
11AC20SISO_Ant1_5220



11AC20SISO_Ant1_5240



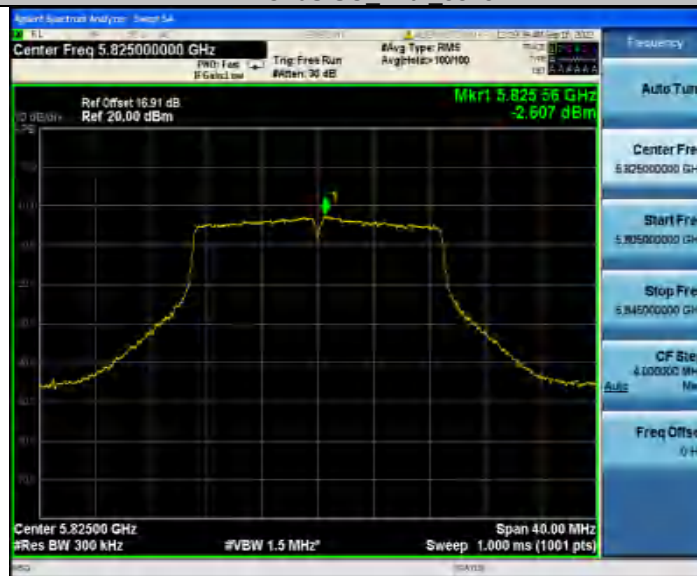
11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



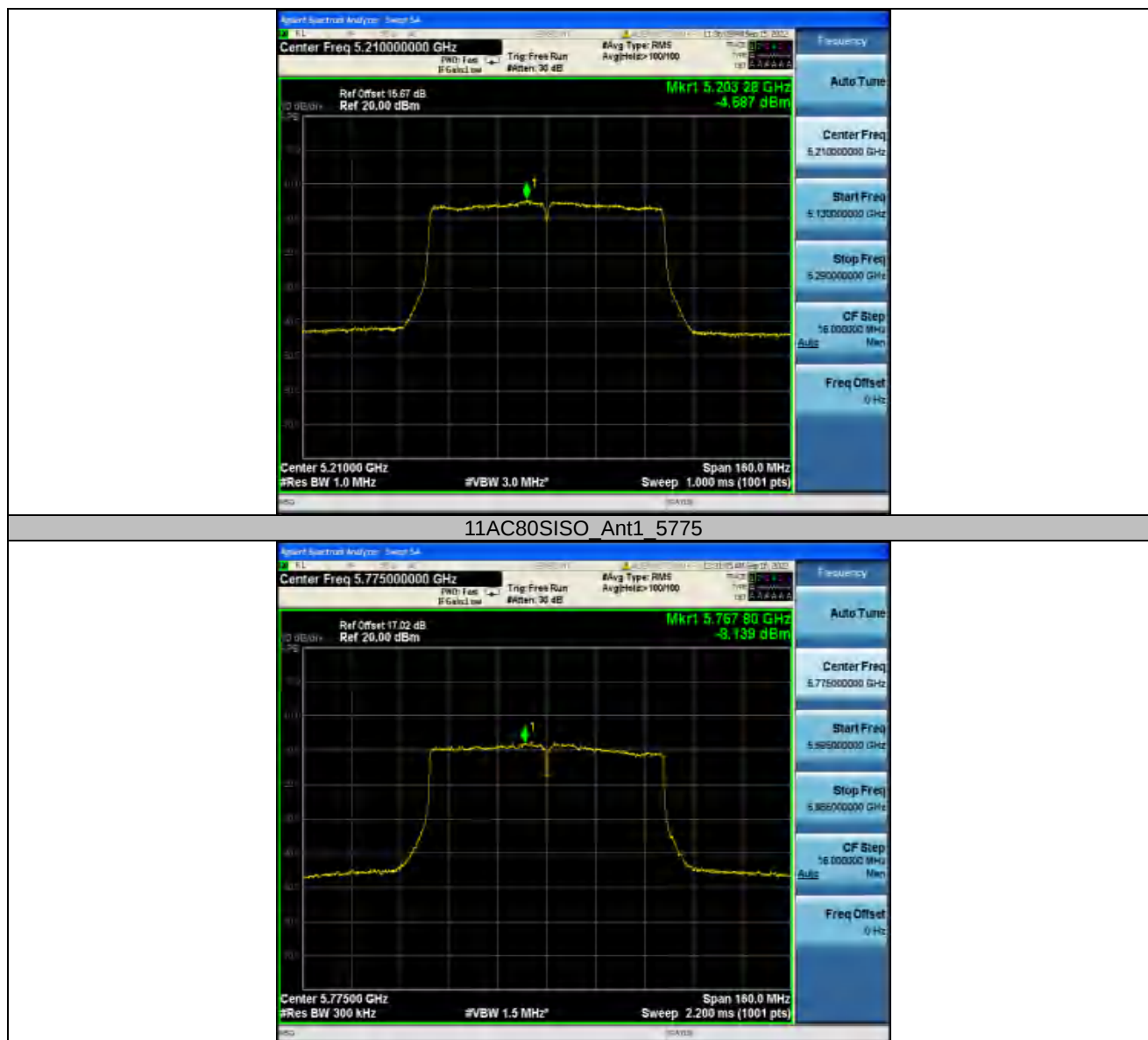
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210





10 Antenna Requirement

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.1 Result

The EUT'S antenna, permanent attached antenna, is PIFA Antenna. The antenna's gain are 5G Wifi: 2.6 dBi, 5.8G Wifi: 2.8 dBi and meets the requirement.



11 Frequency Stability

Test Requirement : FCC Part15 E Section 15.407 (g)

Test Limit
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

11.1 Test Procedure

1. The EUT is installed in an environment test chamber with external power source.
 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.
 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
 4. When temperature is stabled, measure the frequency stability.
 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.
- Change setting of chamber and external power source to complete all conditions.

11.2 Test Result

Voltage								
TestMode	Antenna	Frequenc y[MHz]	Voltage [Vdc]	Temperat ure (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	NT	-26000	-5.019305	20	PASS
			LV	NT	-20000	-3.861004	20	PASS
			HV	NT	-27000	-5.212355	20	PASS
		5220	NV	NT	-26000	-4.980843	20	PASS
			LV	NT	-25000	-4.789272	20	PASS
			HV	NT	-18000	-3.448276	20	PASS
		5240	NV	NT	-26000	-4.961832	20	PASS
			LV	NT	-20000	-3.816794	20	PASS
			HV	NT	-20000	-3.816794	20	PASS
		5745	NV	NT	-13000	-2.262837	20	PASS
			LV	NT	-15000	-2.610966	20	PASS
			HV	NT	-27000	-4.699739	20	PASS
		5785	NV	NT	-27000	-4.667243	20	PASS
			LV	NT	-20000	-3.457217	20	PASS
			HV	NT	-11000	-1.901469	20	PASS
		5825	NV	NT	-26000	-4.463519	20	PASS
			LV	NT	-14000	-2.403433	20	PASS
			HV	NT	-24000	-4.120172	20	PASS
11N20SISO	Ant1	5180	NV	NT	-22000	-4.247104	20	PASS
			LV	NT	-16000	-3.088803	20	PASS
			HV	NT	-16000	-3.088803	20	PASS
		5220	NV	NT	-22000	-4.214559	20	PASS
			LV	NT	-16000	-3.065134	20	PASS
			HV	NT	-28000	-5.363985	20	PASS
		5240	NV	NT	-12000	-2.290076	20	PASS
			LV	NT	-15000	-2.862595	20	PASS
			HV	NT	-17000	-3.244275	20	PASS
		5745	NV	NT	-16000	-2.785030	20	PASS
			LV	NT	-15000	-2.610966	20	PASS
			HV	NT	-23000	-4.003481	20	PASS
		5785	NV	NT	-20000	-3.457217	20	PASS
			LV	NT	-18000	-3.111495	20	PASS



			HV	NT	-18000	-3.111495	20	PASS
		5825	NV	NT	-17000	-2.918455	20	PASS
			LV	NT	-28000	-4.806867	20	PASS
			HV	NT	-15000	-2.575107	20	PASS
11N40SISO	Ant1	5190	NV	NT	-18000	-3.468208	20	PASS
			LV	NT	-28000	-5.394990	20	PASS
			HV	NT	-12000	-2.312139	20	PASS
		5230	NV	NT	-16000	-3.059273	20	PASS
			LV	NT	-29000	-5.544933	20	PASS
			HV	NT	-22000	-4.206501	20	PASS
		5755	NV	NT	-20000	-3.475239	20	PASS
			LV	NT	-29000	-5.039096	20	PASS
			HV	NT	-20000	-3.475239	20	PASS
		5795	NV	NT	-23000	-3.968939	20	PASS
			LV	NT	-19000	-3.278689	20	PASS
			HV	NT	-24000	-4.141501	20	PASS
11AC20SISO	Ant1	5180	NV	NT	-29000	-5.598456	20	PASS
			LV	NT	-17000	-3.281853	20	PASS
			HV	NT	-24000	-4.633205	20	PASS
		5220	NV	NT	-15000	-2.873563	20	PASS
			LV	NT	-11000	-2.107280	20	PASS
			HV	NT	-25000	-4.789272	20	PASS
		5240	NV	NT	-24000	-4.580153	20	PASS
			LV	NT	-22000	-4.198473	20	PASS
			HV	NT	-24000	-4.580153	20	PASS
		5745	NV	NT	-20000	-3.481288	20	PASS
			LV	NT	-29000	-5.047868	20	PASS
			HV	NT	-13000	-2.262837	20	PASS
		5785	NV	NT	-28000	-4.840104	20	PASS
			LV	NT	-14000	-2.420052	20	PASS
			HV	NT	-29000	-5.012965	20	PASS
		5825	NV	NT	-27000	-4.635193	20	PASS
			LV	NT	-28000	-4.806867	20	PASS
			HV	NT	-14000	-2.403433	20	PASS
11AC40SISO	Ant1	5190	NV	NT	-24000	-4.624277	20	PASS
			LV	NT	-19000	-3.660886	20	PASS
			HV	NT	-28000	-5.394990	20	PASS
		5230	NV	NT	-20000	-3.824092	20	PASS
			LV	NT	-24000	-4.588910	20	PASS
			HV	NT	-20000	-3.824092	20	PASS
		5755	NV	NT	-22000	-3.822763	20	PASS
			LV	NT	-27000	-4.691573	20	PASS
			HV	NT	-13000	-2.258905	20	PASS
		5795	NV	NT	-25000	-4.314064	20	PASS
LV	NT		-27000	-4.659189	20	PASS		
HV	NT		-28000	-4.831752	20	PASS		
11AC80SISO	Ant1	5210	NV	NT	-24000	-4.606526	20	PASS
			LV	NT	-12000	-2.303263	20	PASS
			HV	NT	-20000	-3.838772	20	PASS
		5775	NV	NT	-28000	-4.848485	20	PASS
			LV	NT	-16000	-2.770563	20	PASS
			HV	NT	-16000	-2.770563	20	PASS



TestMode	Antenna	Channel	Temperature					Verdict
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	
11A	Ant1	5180	NV	-30	37000	7.142857	20	PASS
			NV	-20	44000	8.494208	20	PASS
			NV	-10	33000	6.370656	20	PASS
			NV	0	47000	9.073359	20	PASS
			NV	10	40000	7.722008	20	PASS
			NV	20	47000	9.073359	20	PASS
			NV	30	42000	8.108108	20	PASS
			NV	40	40000	7.722008	20	PASS
			NV	50	47000	9.073359	20	PASS
		5220	NV	-30	49000	9.386973	20	PASS
			NV	-20	40000	7.662835	20	PASS
			NV	-10	43000	8.237548	20	PASS
			NV	0	34000	6.513410	20	PASS
			NV	10	33000	6.321839	20	PASS
			NV	20	37000	7.088123	20	PASS
			NV	30	34000	6.513410	20	PASS
			NV	40	44000	8.429119	20	PASS
			NV	50	37000	7.088123	20	PASS
		5240	NV	-30	36000	6.870229	20	PASS
			NV	-20	39000	7.442748	20	PASS
			NV	-10	40000	7.633588	20	PASS
			NV	0	38000	7.251908	20	PASS
			NV	10	40000	7.633588	20	PASS
			NV	20	35000	6.679389	20	PASS
			NV	30	34000	6.488550	20	PASS
			NV	40	38000	7.251908	20	PASS
			NV	50	46000	8.778626	20	PASS
		5745	NV	-30	41000	7.136641	20	PASS
			NV	-20	35000	6.092254	20	PASS
			NV	-10	44000	7.658834	20	PASS
			NV	0	38000	6.614447	20	PASS
			NV	10	34000	5.918190	20	PASS
			NV	20	37000	6.440383	20	PASS
			NV	30	40000	6.962576	20	PASS
			NV	40	32000	5.570061	20	PASS
			NV	50	31000	5.395997	20	PASS
		5785	NV	-30	40000	6.914434	20	PASS
			NV	-20	44000	7.605877	20	PASS
			NV	-10	37000	6.395851	20	PASS
			NV	0	38000	6.568712	20	PASS
			NV	10	42000	7.260156	20	PASS
			NV	20	44000	7.605877	20	PASS
			NV	30	42000	7.260156	20	PASS
			NV	40	40000	6.914434	20	PASS
			NV	50	45000	7.778738	20	PASS
		5825	NV	-30	45000	7.725322	20	PASS
			NV	-20	39000	6.695279	20	PASS
			NV	-10	49000	8.412017	20	PASS
			NV	0	42000	7.210300	20	PASS
			NV	10	35000	6.008584	20	PASS
			NV	20	33000	5.665236	20	PASS



			NV	30	37000	6.351931	20	PASS
			NV	40	45000	7.725322	20	PASS
			NV	50	39000	6.695279	20	PASS
11N20SISO	Ant1	5180	NV	-30	40000	7.722008	20	PASS
			NV	-20	32000	6.177606	20	PASS
			NV	-10	45000	8.687259	20	PASS
			NV	0	40000	7.722008	20	PASS
			NV	10	33000	6.370656	20	PASS
			NV	20	31000	5.984556	20	PASS
			NV	30	42000	8.108108	20	PASS
			NV	40	40000	7.722008	20	PASS
			NV	50	45000	8.687259	20	PASS
		5220	NV	-30	35000	6.704981	20	PASS
			NV	-20	37000	7.088123	20	PASS
			NV	-10	40000	7.662835	20	PASS
			NV	0	38000	7.279693	20	PASS
			NV	10	41000	7.854406	20	PASS
			NV	20	38000	7.279693	20	PASS
			NV	30	40000	7.662835	20	PASS
			NV	40	31000	5.938697	20	PASS
			NV	50	32000	6.130268	20	PASS
		5240	NV	-30	48000	9.160305	20	PASS
			NV	-20	32000	6.106870	20	PASS
			NV	-10	40000	7.633588	20	PASS
			NV	0	40000	7.633588	20	PASS
			NV	10	40000	7.633588	20	PASS
			NV	20	41000	7.824427	20	PASS
			NV	30	42000	8.015267	20	PASS
			NV	40	35000	6.679389	20	PASS
			NV	50	37000	7.061069	20	PASS
		5745	NV	-30	44000	7.658834	20	PASS
			NV	-20	45000	7.832898	20	PASS
			NV	-10	39000	6.788512	20	PASS
			NV	0	40000	6.962576	20	PASS
			NV	10	44000	7.658834	20	PASS
			NV	20	49000	8.529156	20	PASS
			NV	30	48000	8.355091	20	PASS
			NV	40	42000	7.310705	20	PASS
			NV	50	33000	5.744125	20	PASS
		5785	NV	-30	31000	5.358686	20	PASS
			NV	-20	42000	7.260156	20	PASS
			NV	-10	34000	5.877269	20	PASS
			NV	0	47000	8.124460	20	PASS
			NV	10	48000	8.297321	20	PASS
			NV	20	42000	7.260156	20	PASS
			NV	30	46000	7.951599	20	PASS
			NV	40	45000	7.778738	20	PASS
			NV	50	37000	6.395851	20	PASS
		5825	NV	-30	34000	5.836910	20	PASS
			NV	-20	31000	5.321888	20	PASS
			NV	-10	33000	5.665236	20	PASS
			NV	0	31000	5.321888	20	PASS
			NV	10	37000	6.351931	20	PASS
			NV	20	36000	6.180258	20	PASS
			NV	30	37000	6.351931	20	PASS
			NV	40	48000	8.240343	20	PASS



			NV	50	41000	7.038627	20	PASS
11N40SISO	Ant1	5190	NV	-30	43000	8.285164	20	PASS
			NV	-20	34000	6.551060	20	PASS
			NV	-10	41000	7.899807	20	PASS
			NV	0	41000	7.899807	20	PASS
			NV	10	43000	8.285164	20	PASS
			NV	20	45000	8.670520	20	PASS
			NV	30	43000	8.285164	20	PASS
			NV	40	31000	5.973025	20	PASS
			NV	50	40000	7.707129	20	PASS
		5230	NV	-30	37000	7.074570	20	PASS
			NV	-20	42000	8.030593	20	PASS
			NV	-10	47000	8.986616	20	PASS
			NV	0	48000	9.177820	20	PASS
			NV	10	49000	9.369025	20	PASS
			NV	20	36000	6.883365	20	PASS
			NV	30	49000	9.369025	20	PASS
			NV	40	36000	6.883365	20	PASS
			NV	50	34000	6.500956	20	PASS
		5755	NV	-30	46000	7.993050	20	PASS
			NV	-20	32000	5.560382	20	PASS
			NV	-10	32000	5.560382	20	PASS
			NV	0	48000	8.340573	20	PASS
			NV	10	40000	6.950478	20	PASS
			NV	20	40000	6.950478	20	PASS
			NV	30	40000	6.950478	20	PASS
			NV	40	31000	5.386620	20	PASS
			NV	50	31000	5.386620	20	PASS
		5795	NV	-30	37000	6.384814	20	PASS
			NV	-20	31000	5.349439	20	PASS
			NV	-10	45000	7.765315	20	PASS
			NV	0	40000	6.902502	20	PASS
			NV	10	33000	5.694564	20	PASS
			NV	20	35000	6.039689	20	PASS
			NV	30	46000	7.937877	20	PASS
			NV	40	40000	6.902502	20	PASS
			NV	50	48000	8.283003	20	PASS
11AC20SISO	Ant1	5180	NV	-30	42000	8.108108	20	PASS
			NV	-20	45000	8.687259	20	PASS
			NV	-10	35000	6.756757	20	PASS
			NV	0	35000	6.756757	20	PASS
			NV	10	39000	7.528958	20	PASS
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			NV	30	49000	9.459459	20	PASS
			NV	40	43000	8.301158	20	PASS
		5220	NV	50	32000	6.177606	20	PASS
			NV	-30	44000	8.429119	20	PASS
			NV	-20	37000	7.088123	20	PASS
			NV	-10	37000	7.088123	20	PASS
			NV	0	37000	7.088123	20	PASS
			NV	10	32000	6.130268	20	PASS
			NV	20	35000	6.704981	20	PASS
			NV	30	44000	8.429119	20	PASS
			NV	40	34000	6.513410	20	PASS
			NV	50	48000	9.195402	20	PASS
		5240	NV	-30	47000	8.969466	20	PASS



			NV	-20	44000	8.396947	20	PASS
			NV	-10	39000	7.442748	20	PASS
			NV	0	40000	7.633588	20	PASS
			NV	10	48000	9.160305	20	PASS
			NV	20	40000	7.633588	20	PASS
			NV	30	41000	7.824427	20	PASS
			NV	40	47000	8.969466	20	PASS
			NV	50	47000	8.969466	20	PASS
		5745	NV	-30	40000	6.962576	20	PASS
			NV	-20	45000	7.832898	20	PASS
			NV	-10	31000	5.395997	20	PASS
			NV	0	42000	7.310705	20	PASS
			NV	10	43000	7.484769	20	PASS
			NV	20	49000	8.529156	20	PASS
			NV	30	41000	7.136641	20	PASS
			NV	40	46000	8.006963	20	PASS
		5785	NV	50	35000	6.092254	20	PASS
			NV	-30	41000	7.087295	20	PASS
			NV	-20	47000	8.124460	20	PASS
			NV	-10	48000	8.297321	20	PASS
			NV	0	39000	6.741573	20	PASS
			NV	10	42000	7.260156	20	PASS
			NV	20	36000	6.222990	20	PASS
			NV	30	41000	7.087295	20	PASS
		5825	NV	40	39000	6.741573	20	PASS
			NV	50	43000	7.433016	20	PASS
			NV	-30	32000	5.493562	20	PASS
			NV	-20	39000	6.695279	20	PASS
			NV	-10	36000	6.180258	20	PASS
			NV	0	47000	8.068670	20	PASS
			NV	10	32000	5.493562	20	PASS
			NV	20	46000	7.896996	20	PASS
11AC40SIS O	Ant1	5190	NV	30	33000	5.665236	20	PASS
			NV	40	45000	7.725322	20	PASS
			NV	50	40000	6.866953	20	PASS
			NV	-30	47000	9.055877	20	PASS
			NV	-20	47000	9.055877	20	PASS
			NV	-10	49000	9.441233	20	PASS
			NV	0	35000	6.743738	20	PASS
			NV	10	47000	9.055877	20	PASS
		5230	NV	20	49000	9.441233	20	PASS
			NV	30	49000	9.441233	20	PASS
			NV	40	38000	7.321773	20	PASS
			NV	50	31000	5.973025	20	PASS
			NV	-30	44000	8.413002	20	PASS
			NV	-20	37000	7.074570	20	PASS
			NV	-10	49000	9.369025	20	PASS
			NV	0	31000	5.927342	20	PASS
			NV	10	31000	5.927342	20	PASS
		5755	NV	20	35000	6.692161	20	PASS
			NV	30	40000	7.648184	20	PASS
			NV	40	32000	6.118547	20	PASS
			NV	50	40000	7.648184	20	PASS
			NV	-30	31000	5.386620	20	PASS
			NV	-20	46000	7.993050	20	PASS
			NV	-10	44000	7.645526	20	PASS



			NV	0	33000	5.734144	20	PASS
			NV	10	38000	6.602954	20	PASS
			NV	20	42000	7.298002	20	PASS
			NV	30	40000	6.950478	20	PASS
			NV	40	41000	7.124240	20	PASS
			NV	50	37000	6.429192	20	PASS
		5795	NV	-30	39000	6.729940	20	PASS
			NV	-20	45000	7.765315	20	PASS
			NV	-10	42000	7.247627	20	PASS
			NV	0	44000	7.592752	20	PASS
			NV	10	33000	5.694564	20	PASS
			NV	20	43000	7.420190	20	PASS
			NV	30	42000	7.247627	20	PASS
			NV	40	42000	7.247627	20	PASS
			NV	50	42000	7.247627	20	PASS
		5210	NV	-30	49000	9.404990	20	PASS
			NV	-20	47000	9.021113	20	PASS
			NV	-10	34000	6.525912	20	PASS
			NV	0	33000	6.333973	20	PASS
			NV	10	43000	8.253359	20	PASS
			NV	20	41000	7.869482	20	PASS
			NV	30	39000	7.485605	20	PASS
			NV	40	31000	5.950096	20	PASS
			NV	50	38000	7.293666	20	PASS
		5775	NV	-30	43000	7.445887	20	PASS
			NV	-20	37000	6.406926	20	PASS
			NV	-10	44000	7.619048	20	PASS
			NV	0	33000	5.714286	20	PASS
			NV	10	48000	8.311688	20	PASS
			NV	20	33000	5.714286	20	PASS
			NV	30	44000	7.619048	20	PASS
			NV	40	39000	6.753247	20	PASS
			NV	50	45000	7.792208	20	PASS

12 Test Setup

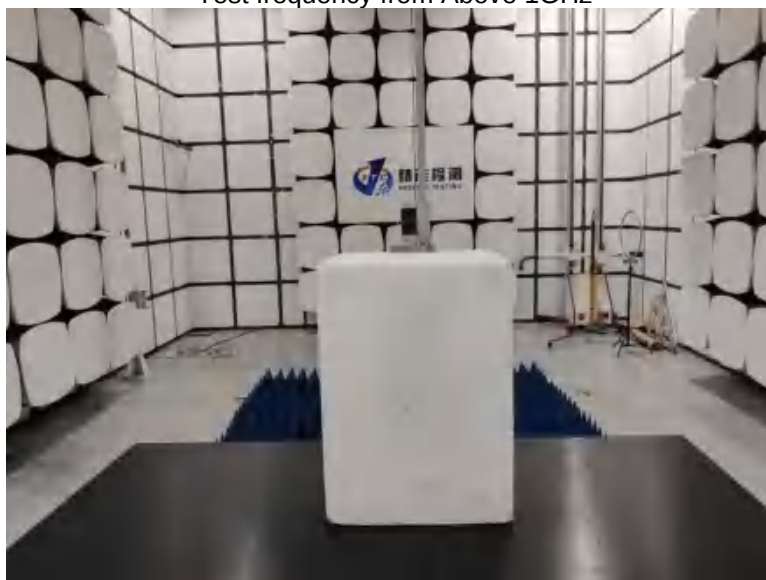
Conducted Emissions



Radiated Spurious Emissions From 30MHz-1000MHz

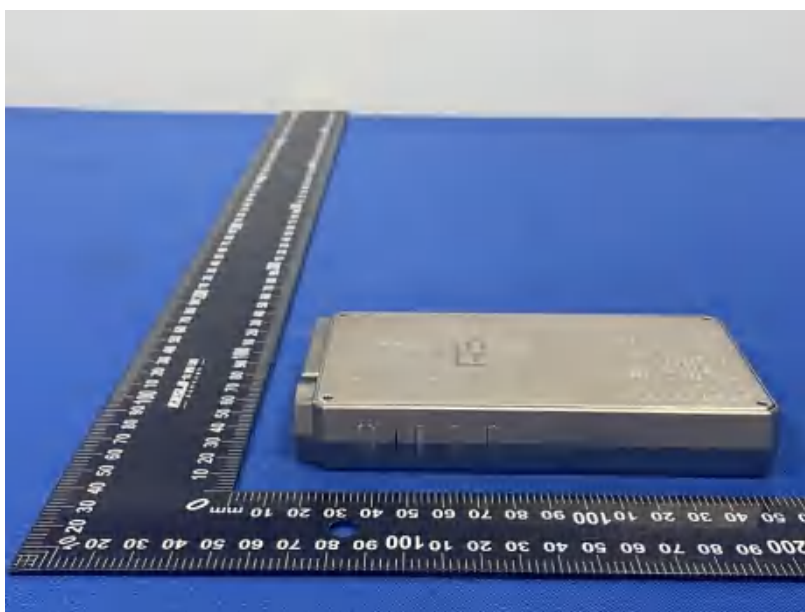
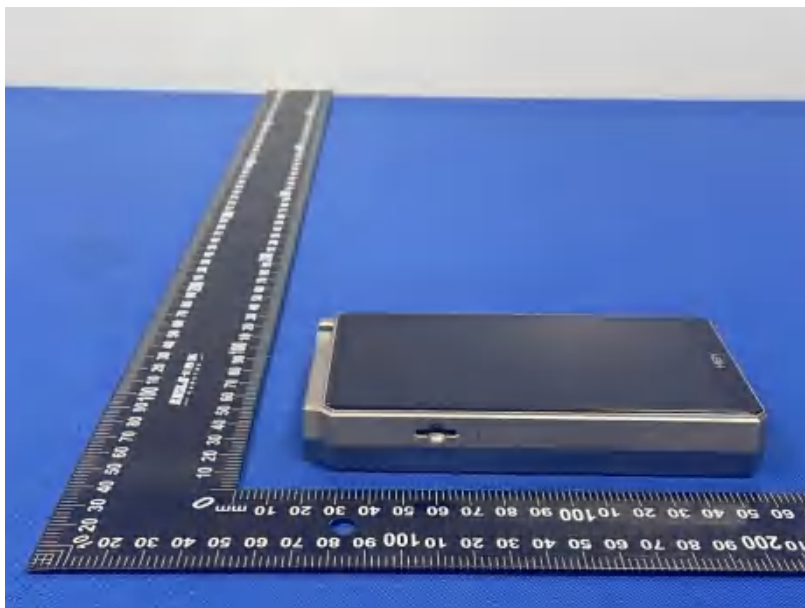


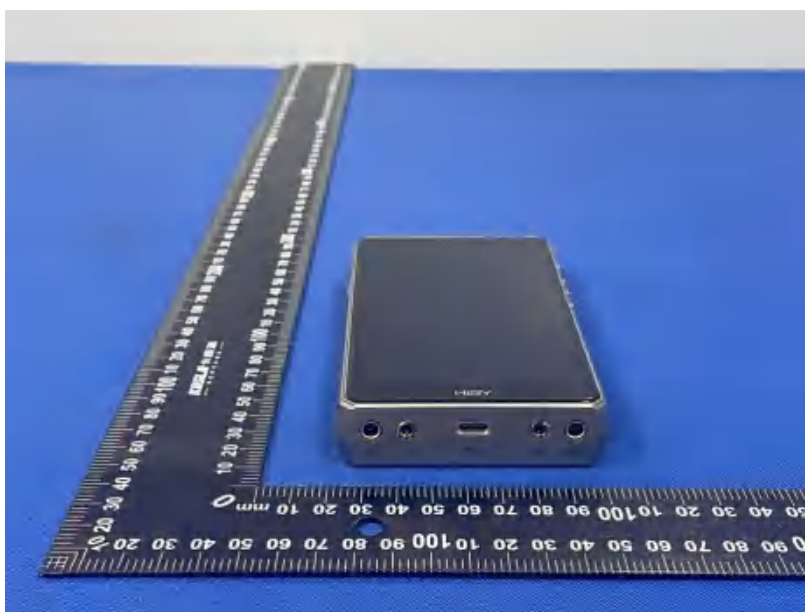
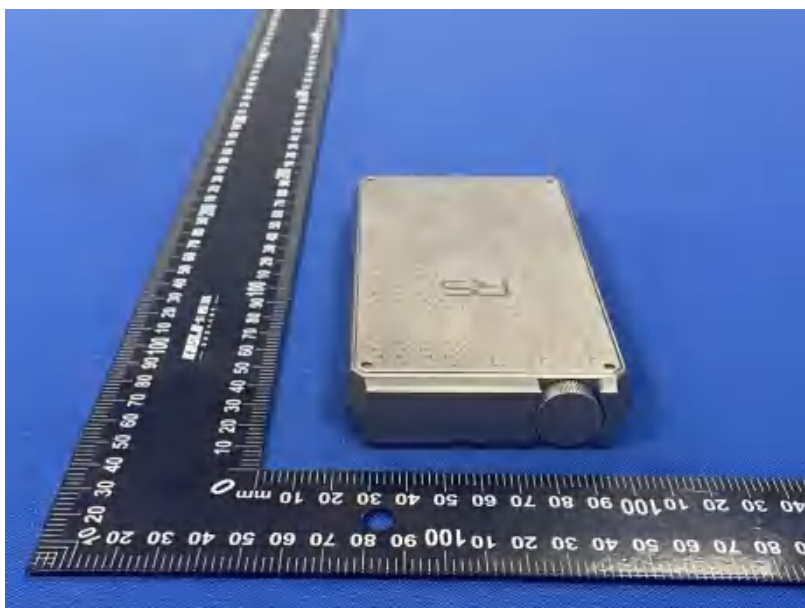
Test frequency from Above 1GHz

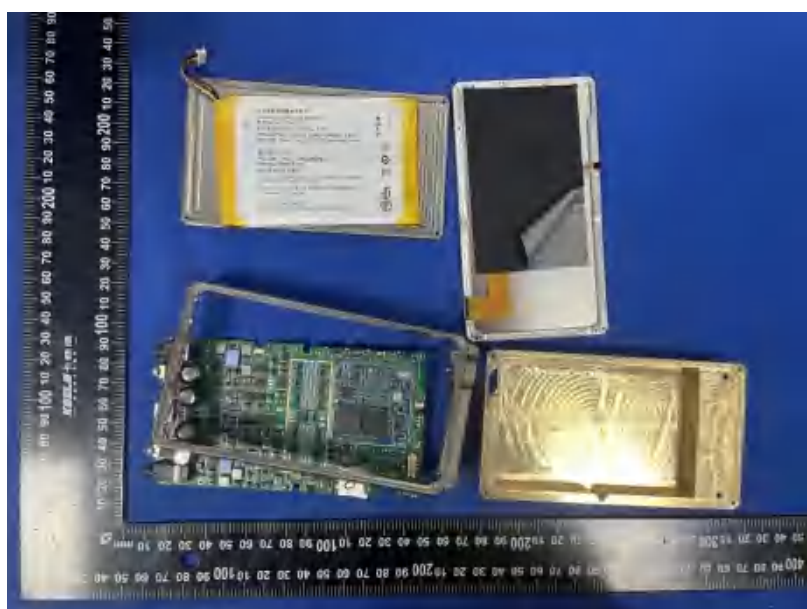


13 EUT PHOTOS

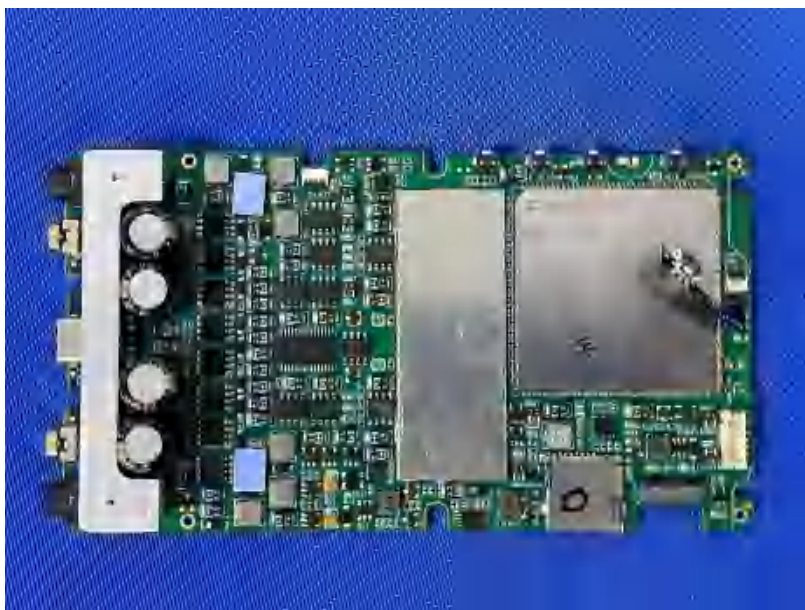




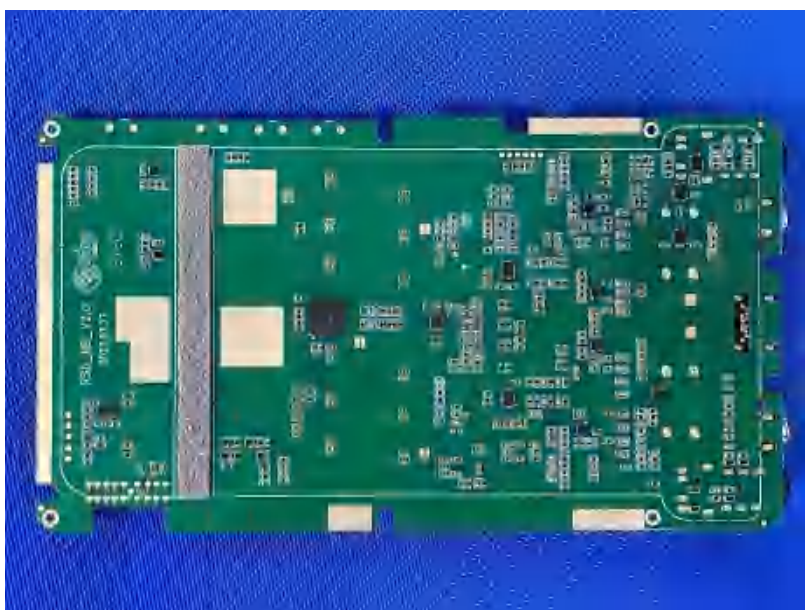














*****THE END REPORT*****