FCC RF Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2213-1, XT2213DL, XT2213-2, XT2213-3
FCC ID	:	IHDT56AA3
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure
TEST DATE(S)	:	Jan. 02, 2022 ~ Jan. 25, 2022

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Reviewed by: Jason Jia / Supervisor

Approved by: Alex Wang / Manager

ACCREDITED Cert #5145.02

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR1D1722D	Rev. 01	Initial issue of report	Feb. 08, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit for U-NII-1 ~ U-NII-2C	Limit for U-NII-3	Result	Remark
3.1	2.1049 & 15.403(i)	6dB, 26dB & 99% Bandwidth	-	> 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	15.407(b)(4)(i) &15.209(a)	Pass	Under limit 3.03 dB at 5725.000 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	15.207(a)	Pass	Under limit 14.16 dB at 0.637 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	N/A	N/A	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2213-1, XT2213DL, XT2213-2, XT2213-3
FCC ID	IHDT56AA3
IMEI Code	Conducted: 353739480009600 Conduction/ Radiation: 353739480012224
HW Version	DVT2
SW Version	S1SA32.27
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz 5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 19.23 dBm / 0.0838 W 802.11n HT20 : 19.14 dBm / 0.0820 W 802.11n HT40 : 19.28 dBm / 0.0847 W 802.11ac VHT20: 18.26 dBm / 0.0670 W 802.11ac VHT40: 18.43 dBm / 0.0697 W 802.11ac VHT80: 14.39 dBm / 0.0275 W **<5260 MHz ~ 5320 MHz>** 802.11a : 19.17 dBm / 0.0826 W 802.11n HT20 : 19.13 dBm / 0.0818 W 802.11n HT40 : 19.24 dBm / 0.0839 W 802.11ac VHT20: 18.16 dBm / 0.0655 W 802.11ac VHT40: 18.33 dBm / 0.0681 W 802.11ac VHT80: 13.76 dBm / 0.0238 W **<5500 MHz ~ 5700 MHz >** 802.11a : 19.26 dBm / 0.0843 W 802.11n HT20 : 19.17 dBm / 0.0826 W 802.11n HT40 : 18.99 dBm / 0.0793 W 802.11ac VHT20: 18.16 dBm / 0.0655 W 802.11ac VHT40: 18.45 dBm / 0.0700 W 802.11ac VHT80: 11.31 dBm / 0.0135 W **<5745 MHz ~ 5825 MHz>** 802.11a : 19.22 dBm / 0.0836 W 802.11n HT20 : 19.15 dBm / 0.0822 W 802.11n HT40 : 19.18 dBm / 0.0828 W 802.11ac VHT20: 18.14 dBm / 0.0652 W 802.11ac VHT40: 18.28 dBm / 0.0673 W 802.11ac VHT80: 18.16 dBm / 0.0655 W
99% Occupied Bandwidth	**<5180 MHz ~ 5240 MHz>** 802.11a : 17.463 MHz 802.11n HT20 : 18.342 MHz 802.11n HT40 : 36.923 MHz 802.11ac VHT80 : 75.285 MHz **<5260 MHz ~ 5320 MHz>** 802.11a : 17.303 MHz 802.11n HT20 : 18.302 MHz 802.11n HT40 : 36.843 MHz 802.11ac VHT80 : 75.604 MHz **<5500 MHz ~ 5700 MHz>** 802.11a : 17.383 MHz 802.11n HT20 : 18.302 MHz 802.11n HT40 : 36.683 MHz 802.11ac VHT80 : 75.604 MHz **<5745 MHz ~ 5825 MHz>** 802.11a : 17.463 MHz 802.11n HT20 : 18.342 MHz 802.11n HT40 : 36.763 MHz 802.11ac VHT80 : 75.604 MHz

Antenna Type / Gain	**<5180 MHz ~ 5240 MHz>** PIFA Antenna with gain -5.4 dBi **<5260 MHz ~ 5320 MHz>** PIFA Antenna with gain -5.07 dBi **<5500 MHz ~ 5700 MHz>** PIFA Antenna with gain -5.73 dBi **<5745 MHz ~ 5825 MHz>** PIFA Antenna with gain -6.65 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note:

1. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
2. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing has assessed only 802.11n HT20/ HT40 by referring to their higher conducted power.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CO01-KS 03CH02-KS 03CH05-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-KS	AUDIX	E3	6.2009-8-24a
2.	03CH05-KS	AUDIX	E3	6.2009-8-24al
3.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.9 Specification of Accessory

Specification of Accessory				
AC Adapter 1	**Brand Name**	Motorola (Salcomp)	**Model Name**	MC-101
AC Adapter 2	**Brand Name**	Motorola (AOHAI)	**Model Name**	MC-101
AC Adapter 3	**Brand Name**	Motorola (Chenyang)	**Model Name**	MC-101
Battery 1	**Brand Name**	Motorola (SCUD)	**Model Name**	JK50
Battery 2	**Brand Name**	Motorola (ATL)	**Model Name**	JK50
USB Cable 1	**Brand Name**	Motorola(Saibao)	**Model Name**	SC18D22297
USB Cable 2	**Brand Name**	Motorola(Cabletech)	**Model Name**	SC18D22298
USB Cable 3	**Brand Name**	Motorola(Luxshare)	**Model Name**	SC18D22299

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz U-NII-1	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42#	5210		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz U-NII-2A	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58#	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz U-NII-2C	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106#	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz U-NII-3	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "#" were 802.11ac VHT80.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Remark:

1. For Radiated Test Cases, The tests were performance with Adapter 1, Earphone, USB Cable 1

2. All test modes of the Radiated Spurious Emission (RSE) were tested in different，including low/Middle/High channels and different bandwidths; Only the worse data in each bandwidth is shown in the reported.

Simultaneous transmission
WIFI 802.11a CH140+LTE 48B BW=10M+10M

AC Conducted Emission	Mode 1 : GSM850 Idle+Bluetooth Link+WLAN Link(5G)+USB Cable 2(Charging from Adapter2)+Earphone

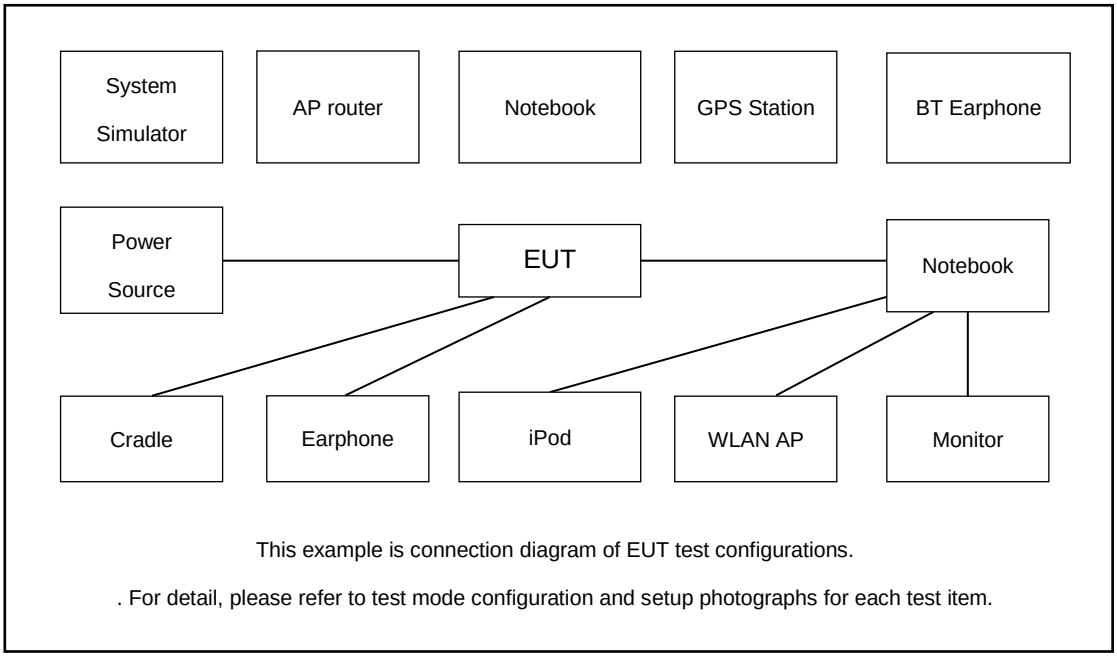
Ch. #		U-NII-1 5150-5250 MHz	U-NII-2A 5250-5350 MHz	U-NII-2C 5470-5725MHz	U-NII-3 5725-5850 MHz
		802.11a	802.11a	802.11a	802.11a
L	Low	36	52	100	149
M	Middle	44	60	116	157
H	High	48	64	140	165

Ch. #		U-NII-1 5150-5250 MHz	U-NII-2A 5250-5350 MHz	U-NII-2C 5470-5725MHz	U-NII-3 5725-5850 MHz
		802.11n HT20	802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100	149
M	Middle	44	60	116	157
H	High	48	64	140	165

Ch. #		U-NII-1 5150-5250 MHz	U-NII-2A 5250-5350 MHz	U-NII-2C 5470-5725MHz	U-NII-3 5725-5850 MHz
		802.11n HT40	802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102	151
M	Middle	-	-	110	-
H	High	46	62	134	159

Ch. #		U-NII-1 5150-5250 MHz	U-NII-2A 5250-5350 MHz	U-NII-2C 5470-5725MHz	U-NII-3 5725-5850 MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	106	-
M	Middle	42	58	-	155
H	High	-	-	-	-

2.3 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
3.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
5.	SD Card	Kingston	8GB	N/A	N/A	N/A
6.	Adapter	N/A	N/A	N/A	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 6.75 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 6.75 + 10 = 16.75 (dB)

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

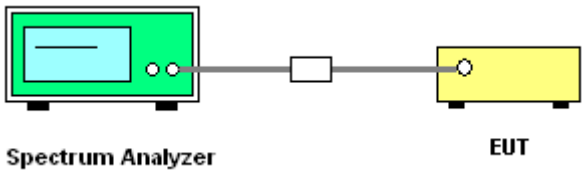
The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

☒	Section C) Bandwidth Measurement 1. Emission Bandwidth (EBW)
	1. Set RBW = approximately 1% of the emission bandwidth. **2.** Set the VBW > RBW. **3.** Detector = Peak. **4.** Trace mode = max hold **5.** Measure the maximum width of the emission that is 26 dB down from the peak 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%. **6.** For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) ≥ 3 * RBW. **7.** Measure and record the results in the test report.
☒	Section C) Bandwidth Measurement 2. Minimum Emission Bandwidth for the band 5.725 - 5.85 GHz
	1. Set RBW = 100kHz. **2.** Set the VBW ≥ 3 x RBW. **3.** Detector = Peak. **4.** Trace mode = max hold **5.** Measure the maximum width of the emission that is 6 dB down from the peak of the emission. **6.** Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For mobile and portable 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.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

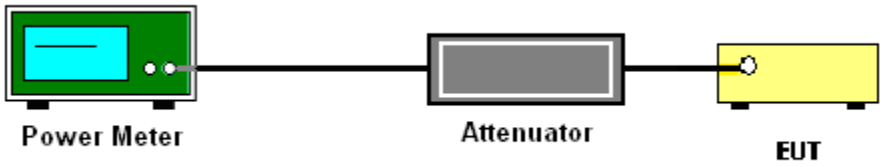
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725–5.85 GHz, 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, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section F) Maximum power spectral density.

For devices operating in the bands 5.15 - 5.25 GHz, 5.25 - 5.35 GHz, and 5.47 - 5.725 GHz

 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.

- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

For devices operating in the band 5.725 - 5.85 GHz

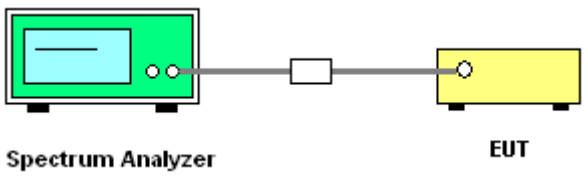
 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz.
- Set VBW ≥ 1 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(500kHz/RBW) to the test result.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of –27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) For transmitters operating in the 5.725-5.85 GHz band:
15.407(b)(4)(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.

(3) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

(4) EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.2

Note: The following formula is used to convert the EIRP to field strength.

$$EIRP = E_{Meas} + 20\log(d_{Meas}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

   (4) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

   - RBW = 1 MHz
   - VBW = 3 MHz
   - Detector = power averaging (rms), set span/(# of points in sweep) ≥ RBW/2.
   - Averaging type = power averaging(RMS)
   - The correction factor shall be offset is 10 log (1/x), where x is the duty cycle.

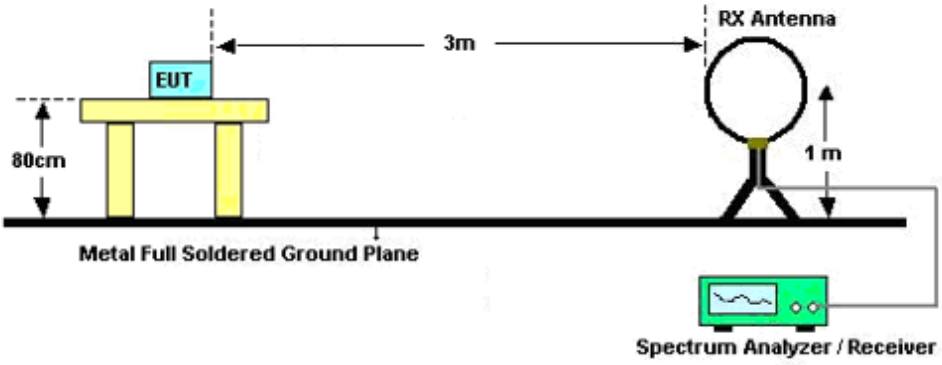
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal

polarization and vertical polarization of the antenna.

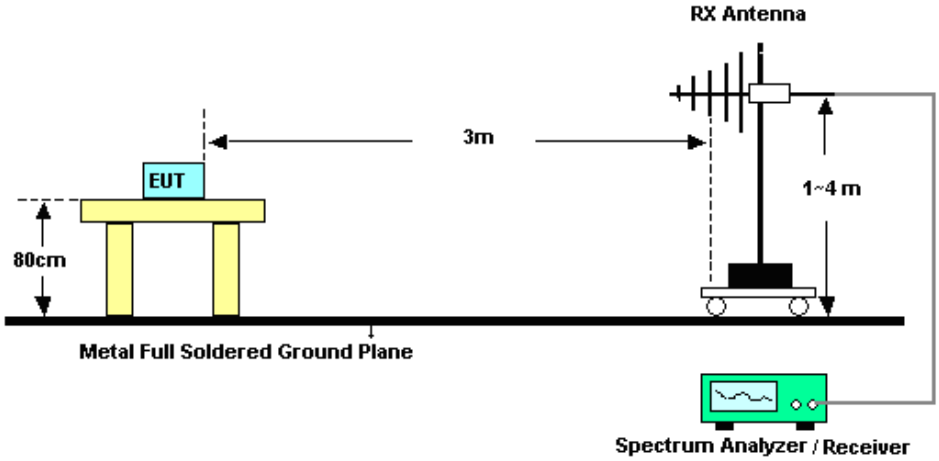
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

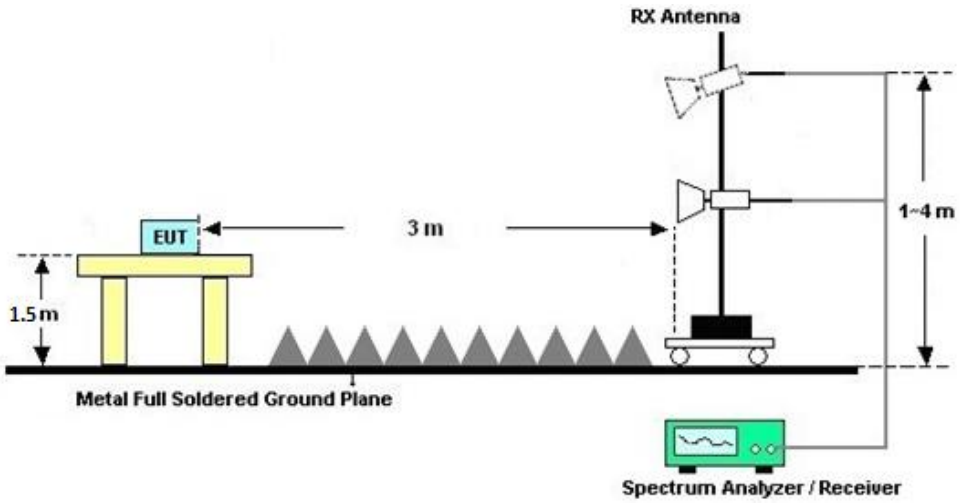
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

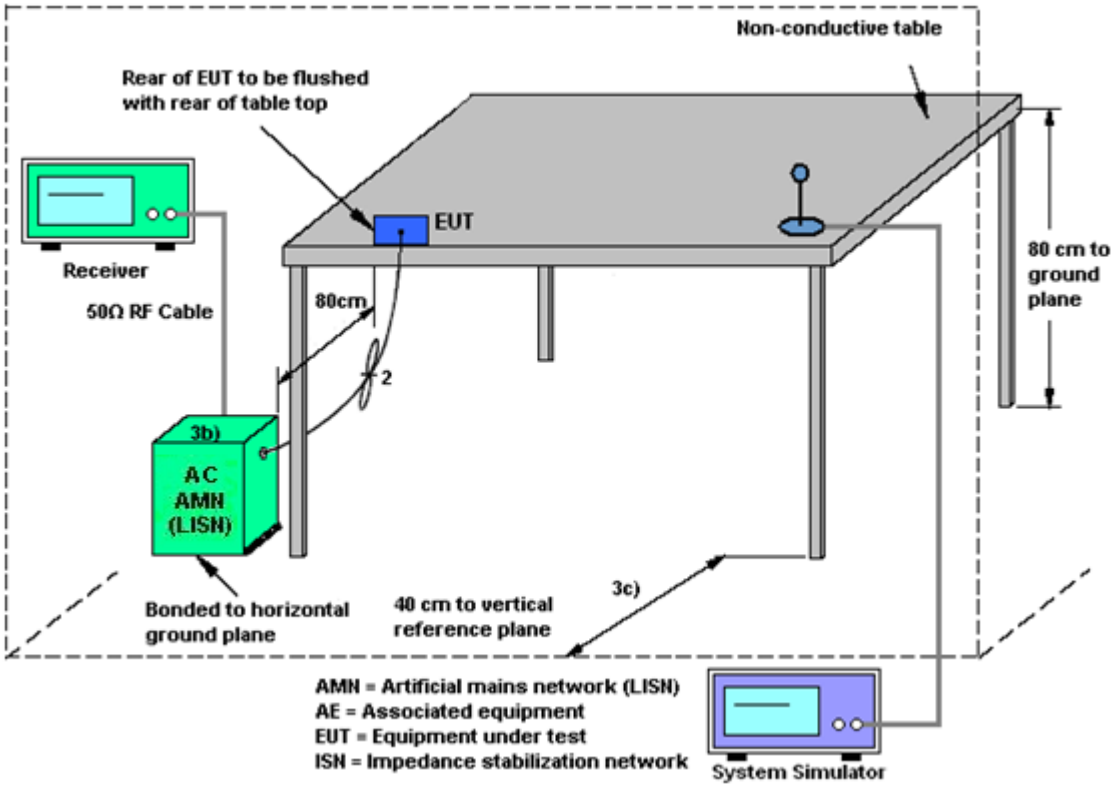
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 14, 2021	Jan. 02, 2022~ Jan. 25, 2022	Oct. 13, 2022	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2021	Jan. 02, 2022~ Jan. 25, 2022	Jan. 04, 2023	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2021	Jan. 02, 2022~ Jan. 25, 2022	Jan. 04, 2023	Conducted (TH01-KS)
Temperature &hu midity chamber	Hongzhan	LP-150U	H2014011 440	-40~+150°C 20%~95%RH	Jul. 12, 2021	Jan. 02, 2022~ Jan. 25, 2022	Jul. 11, 2022	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY553705 28	10Hz-44G,MAX 30dB	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jan. 25, 2022	Oct. 29, 2022	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 22, 2021	Jan. 25, 2022	Dec. 21, 2022	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 30, 2021	Jan. 25, 2022	Oct. 29, 2022	Radiation (03CH02-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2025788	1Ghz-18Ghz	Jul. 30, 2021	Jan. 25, 2022	Jul. 29, 2022	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jan. 25, 2022	Jan. 04, 2023	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Apr. 13, 2021	Jan. 25, 2022	Apr. 12, 2022	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY532703 16	500MHz~26.5GH z	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH02-KS)
Amplifier	MITEQ	EM18G40GG A	060728	18~40GHz	Jan. 05, 2022	Jan. 25, 2022	Jan. 04, 2023	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002 473	N/A	NCR	Jan. 25, 2022	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Jan. 25, 2022	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Jan. 25, 2022	NCR	Radiation (03CH02-KS)
EMI Test Receiver	Keysight	N9038A	MY564000 04	3Hz~8.5GHz;Ma x 30dBm	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY551502 44	10Hz-44G,MAX 30dB	Apr. 13, 2021	Jan. 25, 2022	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jan. 25, 2022	Oct. 29, 2022	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jun. 04, 2021	Jan. 25, 2022	Jun. 03, 2022	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	Jan. 25, 2022	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jan. 25, 2022	Jan. 04, 2023	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Apr. 12, 2021	Jan. 25, 2022	Apr. 11, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GG A	060728	18~40GHz	Jan. 05, 2022	Jan. 25, 2022	Jan. 04, 2023	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2012228	1Ghz-18Ghz	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY532703 16	500MHz~26.5GH z	Oct. 16, 2021	Jan. 25, 2022	Oct. 15, 2022	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F1040900 04	N/A	NCR	Jan. 25, 2022	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 25, 2022	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 25, 2022	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Jan. 22, 2022	Apr. 20, 2022	Conduction (CO01-KS)

AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Jan. 22, 2022	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	R&S	ENV216	100334	9kHz~30MHz	Apr. 13, 2021	Jan. 22, 2022	Apr. 12, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Jan. 22, 2022	Oct. 13, 2022	Conduction (CO01-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.94dB**

03CH02:

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.9dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.1dB**

03CH05:

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0dB**

Appendix A. Conducted Test Results

Report Number : FR1D1722D

Test Engineer:	Jack Fan	Temperature:	21~25	°C
Test Date:	2022/1/2~2022/1/25	Relative Humidity:	51~54	%

Report Number : FR1D1722D

TEST RESULTS DATA
Average Power Table

U-NII-1										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6Mbps	1	36	5180	0.11	19.22	24.00	-5.40		Pass
11a	6Mbps	1	44	5220	0.11	19.20	24.00	-5.40		Pass
11a	6Mbps	1	48	5240	0.11	19.23	24.00	-5.40		Pass
HT20	MCS0	1	36	5180	0.12	19.09	24.00	-5.40		Pass
HT20	MCS0	1	44	5220	0.12	19.14	24.00	-5.40		Pass
HT20	MCS0	1	48	5240	0.12	19.07	24.00	-5.40		Pass
HT40	MCS0	1	38	5190	0.24	16.79	24.00	-5.40		Pass
HT40	MCS0	1	46	5230	0.24	19.28	24.00	-5.40		Pass
VHT20	MCS0	1	36	5180	0.12	18.25	24.00	-5.40		Pass
VHT20	MCS0	1	44	5220	0.12	18.26	24.00	-5.40		Pass
VHT20	MCS0	1	48	5240	0.12	18.23	24.00	-5.40		Pass
VHT40	MCS0	1	38	5190	0.23	16.70	24.00	-5.40		Pass
VHT40	MCS0	1	46	5230	0.23	18.43	24.00	-5.40		Pass
VHT80	MCS0	1	42	5210	0.44	14.39	24.00	-5.40		Pass

Report Number : FR1D1722D

TEST RESULTS DATA
Average Power Table

FCC U-NII-2A										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	52	5260	0.11	19.17	23.98	-5.07	26.99	Pass
11a	6M bps	1	60	5300	0.11	19.12	23.98	-5.07	26.99	Pass
11a	6M bps	1	64	5320	0.11	19.09	23.98	-5.07	26.99	Pass
HT20	MCS 0	1	52	5260	0.12	19.13	23.98	-5.07	26.99	Pass
HT20	MCS 0	1	60	5300	0.12	19.04	23.98	-5.07	26.99	Pass
HT20	MCS 0	1	64	5320	0.12	17.43	23.98	-5.07	26.99	Pass
HT40	MCS 0	1	54	5270	0.24	19.24	23.98	-5.07	26.99	Pass
HT40	MCS 0	1	62	5310	0.24	14.70	23.98	-5.07	26.99	Pass
VHT20	MCS 0	1	52	5260	0.12	18.16	23.98	-5.07	26.99	Pass
VHT20	MCS 0	1	60	5300	0.12	18.09	23.98	-5.07	26.99	Pass
VHT20	MCS 0	1	64	5320	0.12	17.40	23.98	-5.07	26.99	Pass
VHT40	MCS 0	1	54	5270	0.23	18.33	23.98	-5.07	26.99	Pass
VHT40	MCS 0	1	62	5310	0.23	14.64	23.98	-5.07	26.99	Pass
VHT80	MCS 0	1	58	5290	0.44	13.76	23.98	-5.07	26.99	Pass

Report Number : FR1D1722D

TEST RESULTS DATA
Average Power Table

FCC U-NII-2C										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6M bps	1	100	5500	0.11	19.04	23.98	-5.73	26.99	Pass
11a	6M bps	1	116	5580	0.11	19.26	23.98	-5.73	26.99	Pass
11a	6M bps	1	140	5700	0.11	18.28	23.98	-5.73	26.99	Pass
HT20	MCS 0	1	100	5500	0.12	18.97	23.98	-5.73	26.99	Pass
HT20	MCS 0	1	116	5580	0.12	19.17	23.98	-5.73	26.99	Pass
HT20	MCS 0	1	140	5700	0.12	17.17	23.98	-5.73	26.99	Pass
HT40	MCS 0	1	102	5510	0.24	15.41	23.98	-5.73	26.99	Pass
HT40	MCS 0	1	110	5550	0.24	18.99	23.98	-5.73	26.99	Pass
HT40	MCS 0	1	134	5670	0.24	18.47	23.98	-5.73	26.99	Pass
VHT20	MCS 0	1	100	5500	0.12	18.00	23.98	-5.73	26.99	Pass
VHT20	MCS 0	1	116	5580	0.12	18.16	23.98	-5.73	26.99	Pass
VHT20	MCS 0	1	140	5700	0.12	17.01	23.98	-5.73	26.99	Pass
VHT40	MCS 0	1	102	5510	0.23	15.35	23.98	-5.73	26.99	Pass
VHT40	MCS 0	1	110	5550	0.23	18.09	23.98	-5.73	26.99	Pass
VHT40	MCS 0	1	134	5670	0.23	18.45	23.98	-5.73	26.99	Pass
VHT80	MCS 0	1	106	5530	0.44	11.31	23.98	-5.73	26.99	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
11a	6M bps	1	149	5745	0.11	19.04	30.00	-6.65		Pass
11a	6Mbps	1	157	5785	0.11	19.22	30.00	-6.65		Pass
11a	6Mbps	1	165	5825	0.11	19.06	30.00	-6.65		Pass
HT20	MCS 0	1	149	5745	0.12	18.92	30.00	-6.65		Pass
HT20	MCS 0	1	157	5785	0.12	19.15	30.00	-6.65		Pass
HT20	MCS 0	1	165	5825	0.12	18.98	30.00	-6.65		Pass
HT40	MCS 0	1	151	5755	0.24	19.18	30.00	-6.65		Pass
HT40	MCS 0	1	159	5795	0.24	19.14	30.00	-6.65		Pass
VHT20	MCS 0	1	149	5745	0.12	17.90	30.00	-6.65		Pass
VHT20	MCS 0	1	157	5785	0.12	18.14	30.00	-6.65		Pass
VHT20	MCS 0	1	165	5825	0.12	18.02	30.00	-6.65		Pass
VHT40	MCS 0	1	151	5755	0.23	18.25	30.00	-6.65		Pass
VHT40	MCS 0	1	159	5795	0.23	18.28	30.00	-6.65		Pass
VHT80	MCS 0	1	155	5775	0.44	18.16	30.00	-6.65		Pass

Case No. : 1D1722	
Ambient Condition: 25 ℃, 45 %RH,	
Test Date: 2022.1.2 ~ 2022.1.25	**Test Engineer:** Jack Fan

Emission Bandwidth

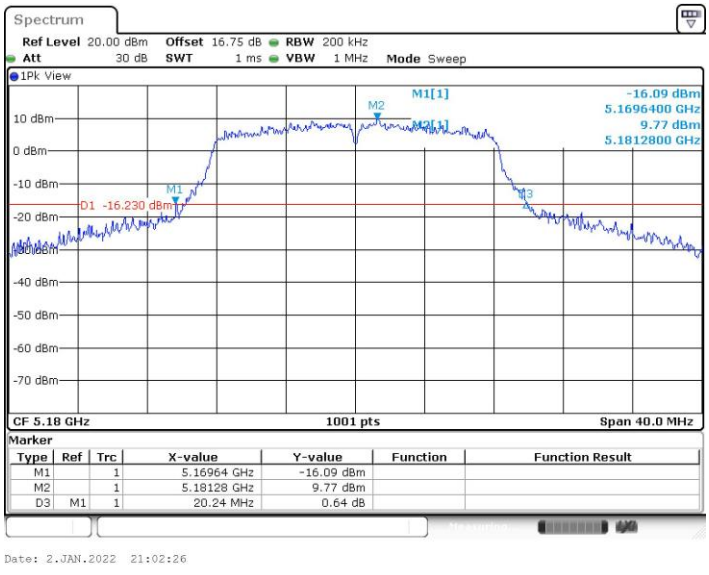
Test Result

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.24	5169.64	5189.88	---	---
		5220	20.08	5209.80	5229.88	---	---
		5240	19.84	5230.16	5250.00	---	---
		5260	21.04	5249.60	5270.64	---	---
		5300	19.72	5290.04	5309.76	---	---
		5320	19.84	5310.08	5329.92	---	---
		5500	19.80	5490.08	5509.88	---	---
		5580	19.80	5570.12	5589.92	---	---
		5700	20.16	5690.12	5710.28	---	---
		5745	19.80	5735.12	5754.92	---	---
		5785	20.12	5775.00	5795.12	---	---
		5825	22.52	5813.72	5836.24	---	---
11N20SISO	Ant1	5180	20.44	5169.60	5190.04	---	---
		5220	20.48	5209.48	5229.96	---	---
		5240	20.00	5230.00	5250.00	---	---
		5260	20.52	5249.52	5270.04	---	---
		5300	20.16	5289.92	5310.08	---	---
		5320	20.08	5309.88	5329.96	---	---
		5500	19.96	5490.08	5510.04	---	---
		5580	19.92	5570.08	5590.00	---	---
		5700	19.92	5690.04	5709.96	---	---
		5745	20.44	5734.64	5755.08	---	---
		5785	20.48	5774.52	5795.00	---	---
		5825	21.16	5814.48	5835.64	---	---
11N40SISO	Ant1	5190	40.72	5169.76	5210.48	---	---
		5230	43.76	5207.60	5251.36	---	---
		5270	42.16	5249.12	5291.28	---	---
		5310	40.96	5289.60	5330.56	---	---
		5510	40.72	5489.60	5530.32	---	---
		5550	41.04	5529.36	5570.40	---	---

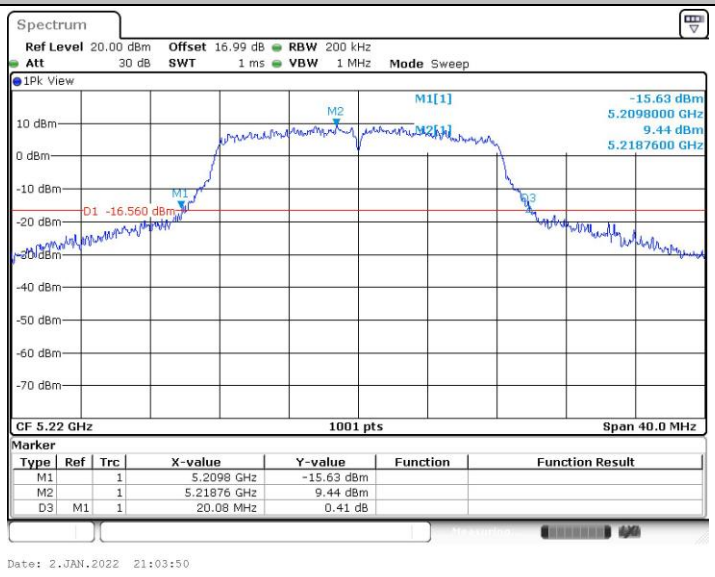
		5670	41.92	5649.28	5691.20	---	---
		5755	43.44	5732.92	5776.36	---	---
		5795	45.68	5774.04	5819.72	---	---
11AC80SISO	Ant1	5210	81.28	5169.36	5250.64	---	---
		5290	81.76	5249.04	5330.80	---	---
		5530	81.44	5489.20	5570.64	---	---
		5775	81.44	5734.36	5815.80	---	---

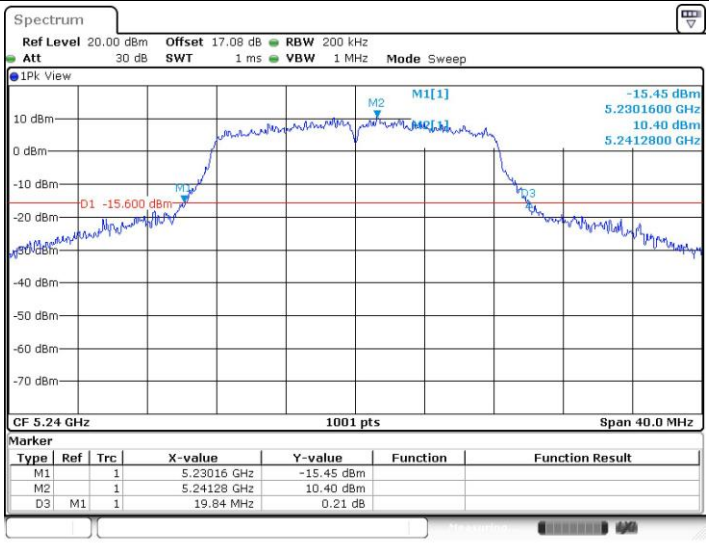
Test Graphs

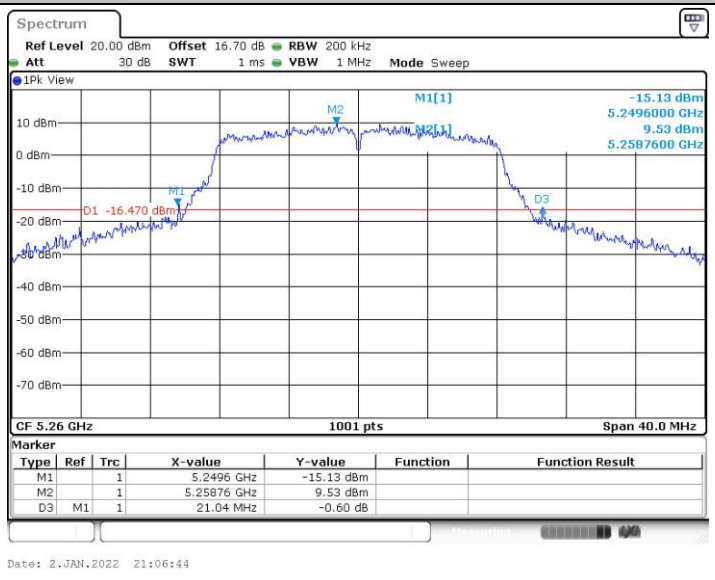
11A_Ant1_5180



11A_Ant1_5220



11A_Ant1_5240


11A_Ant1_5260


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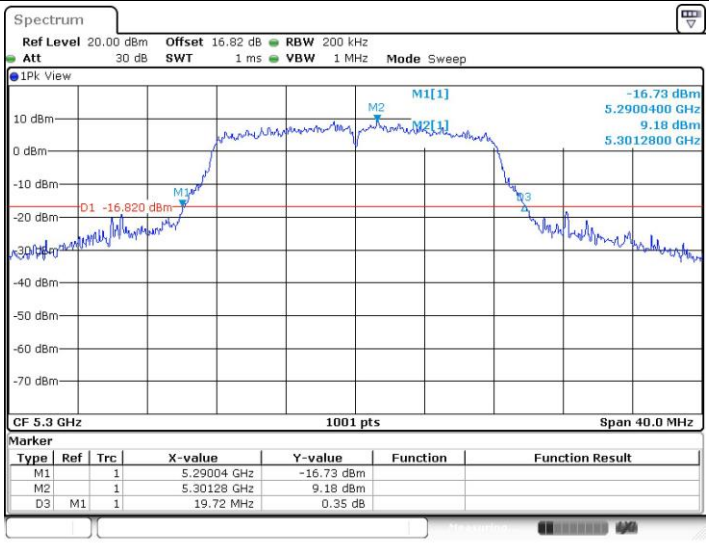

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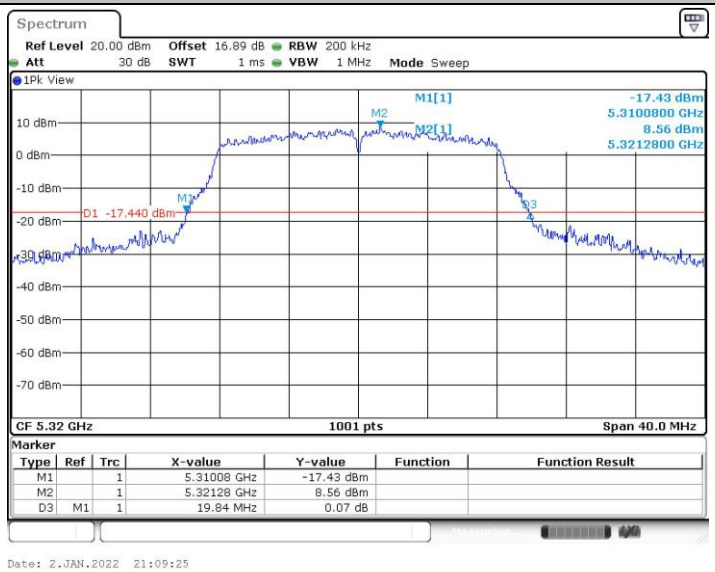

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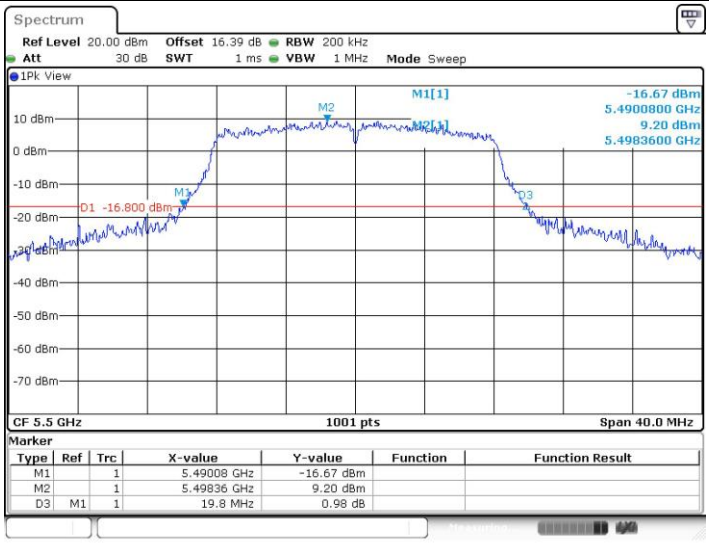

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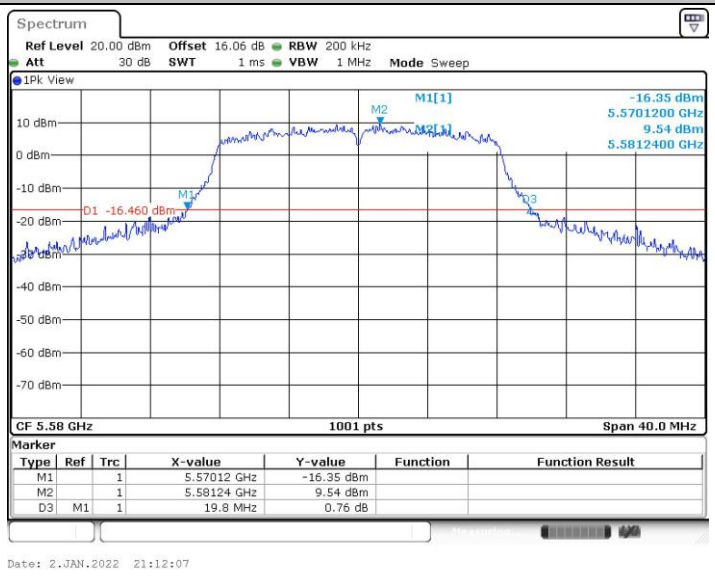

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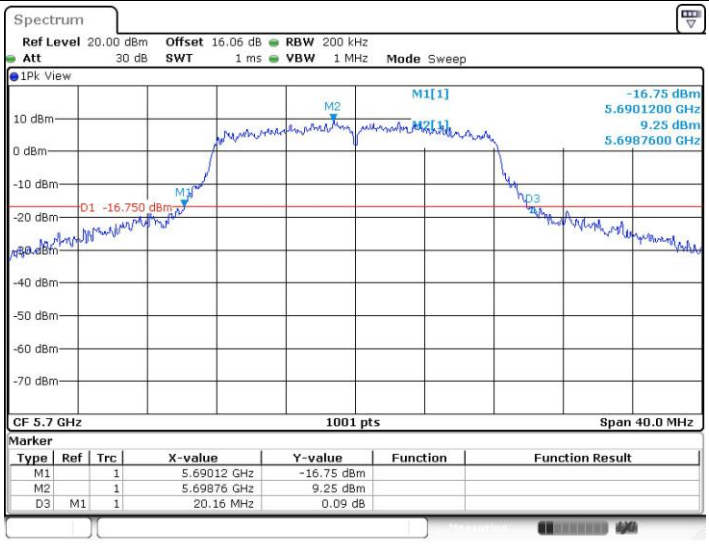

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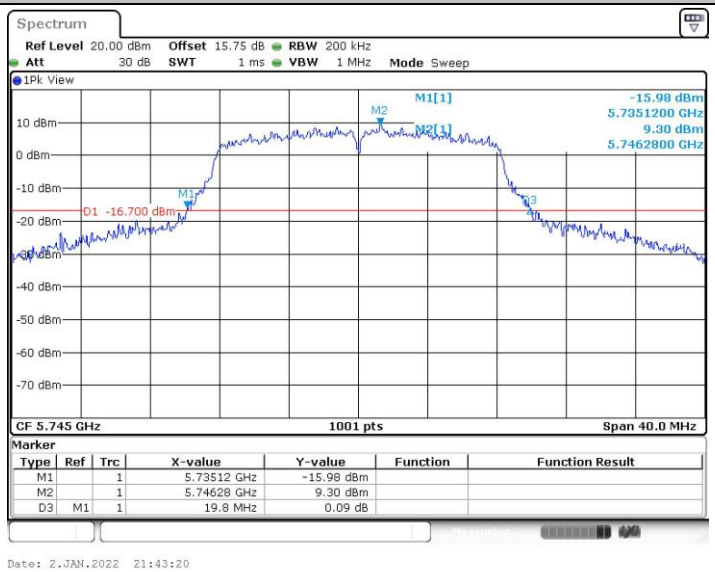
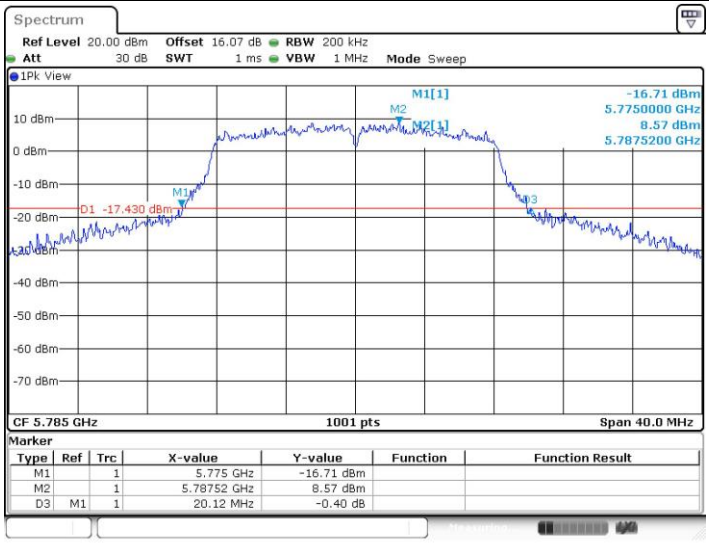
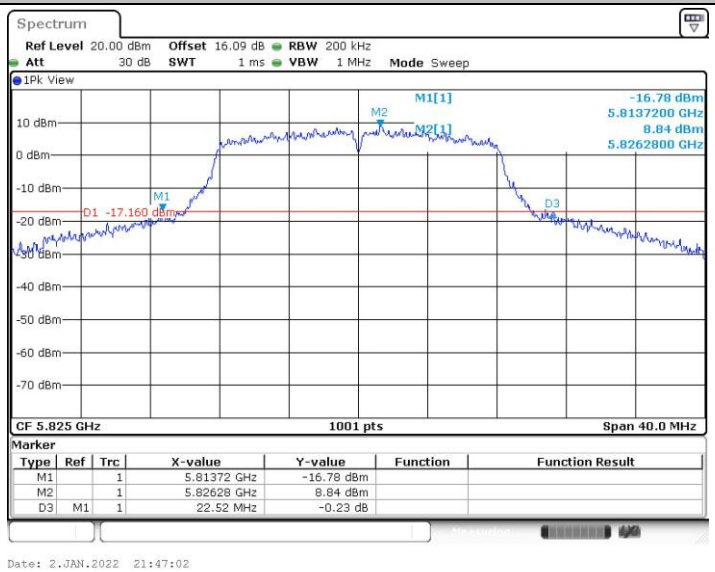
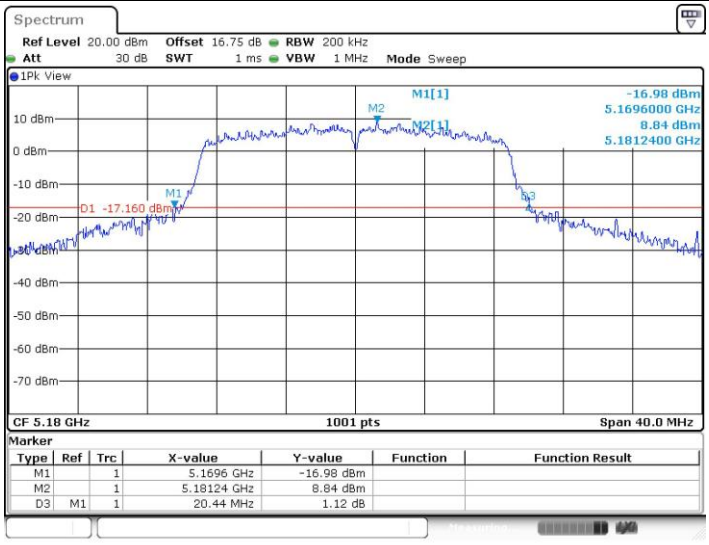


11A_Ant1_5785


11A_Ant1_5825


11N20SISO_Ant1_5180



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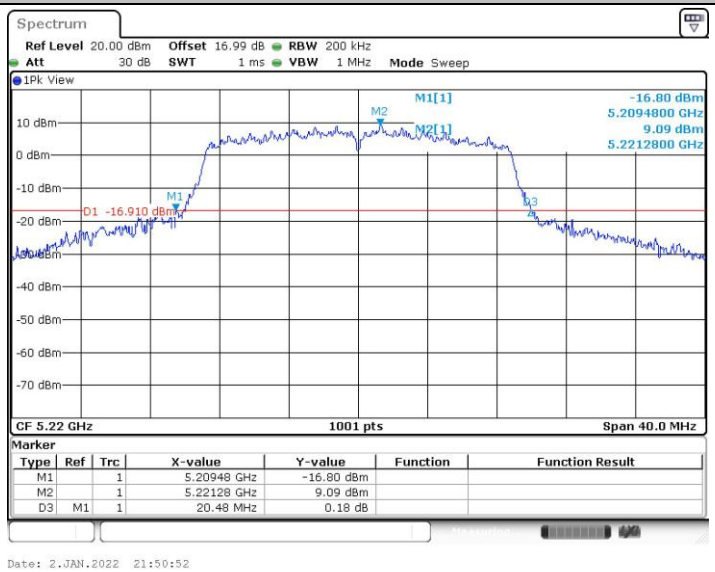

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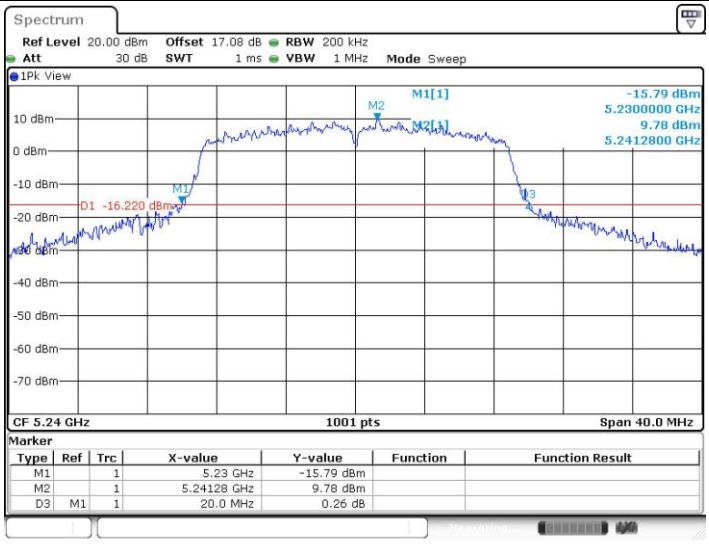

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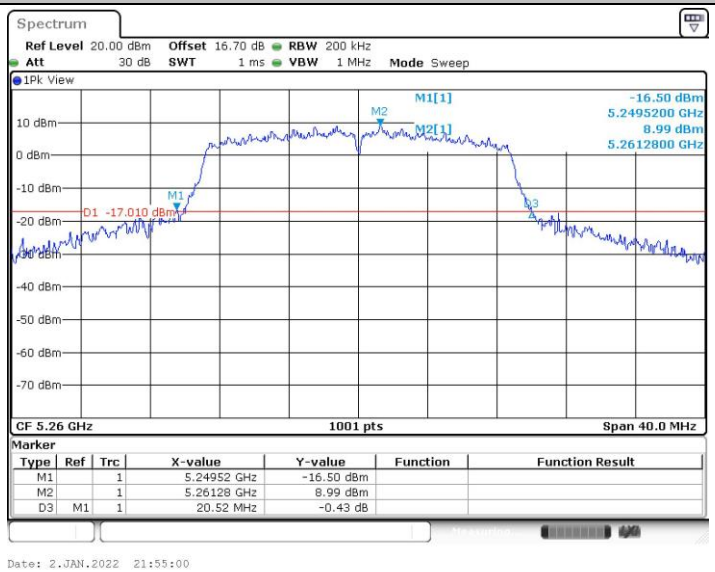

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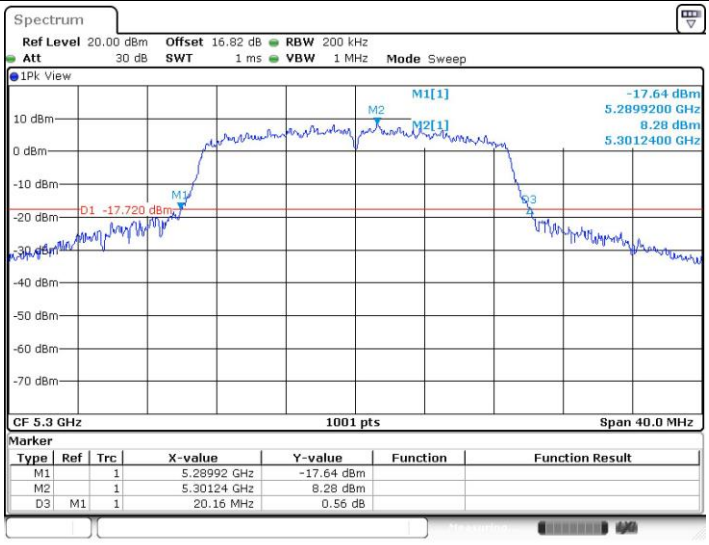

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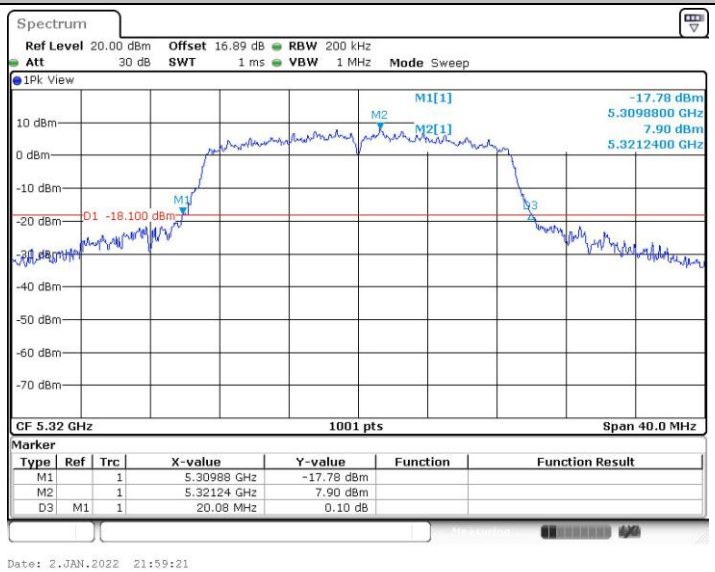

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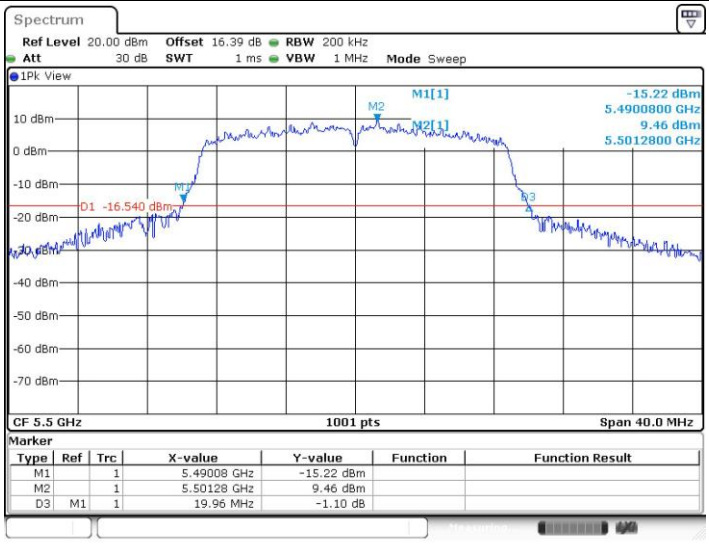

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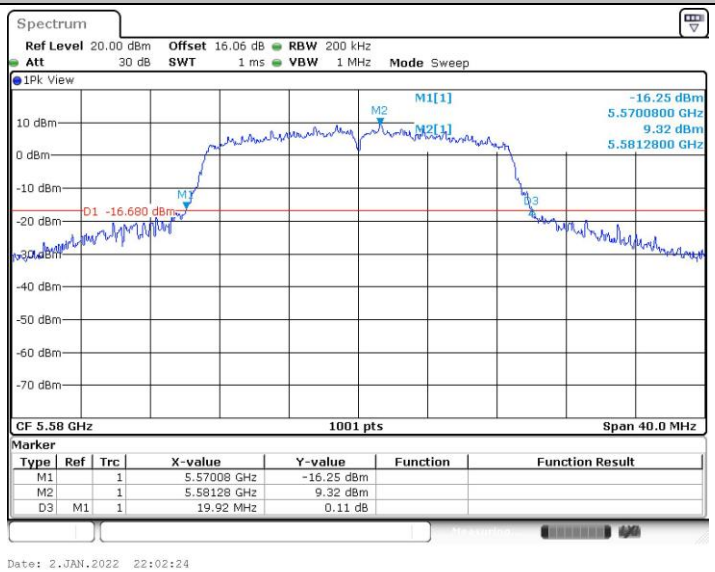

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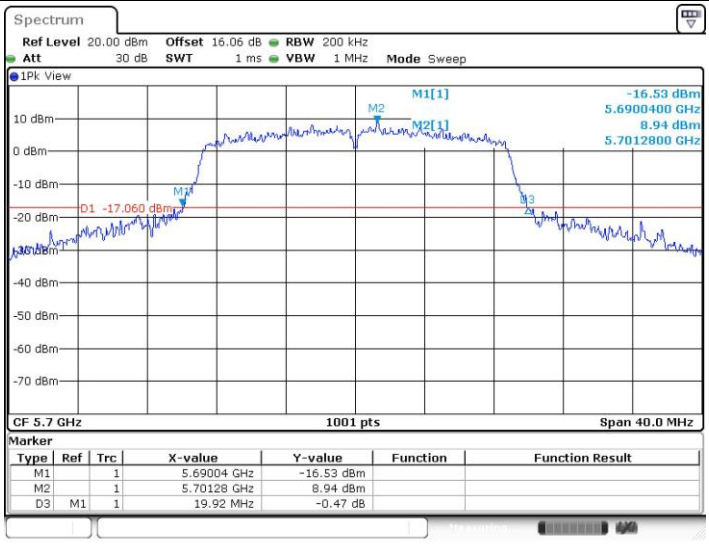

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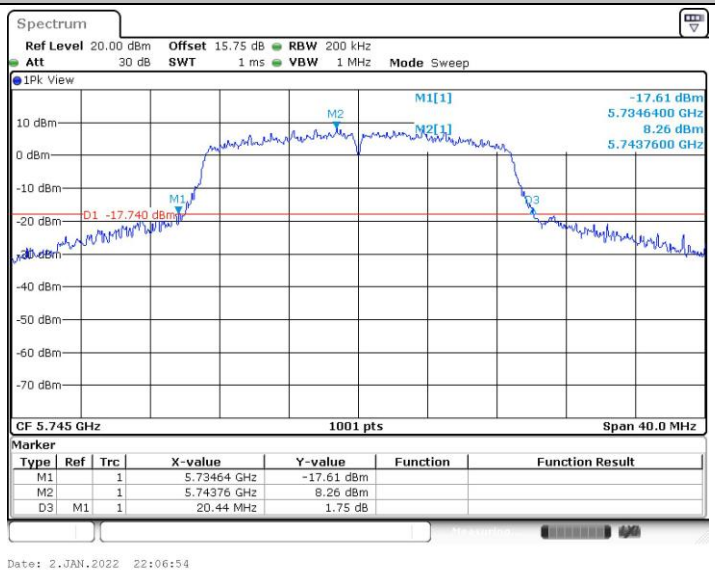

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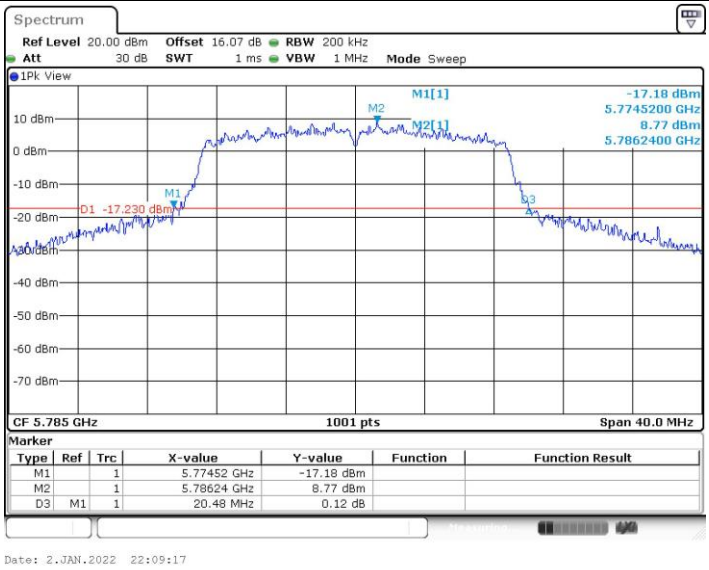

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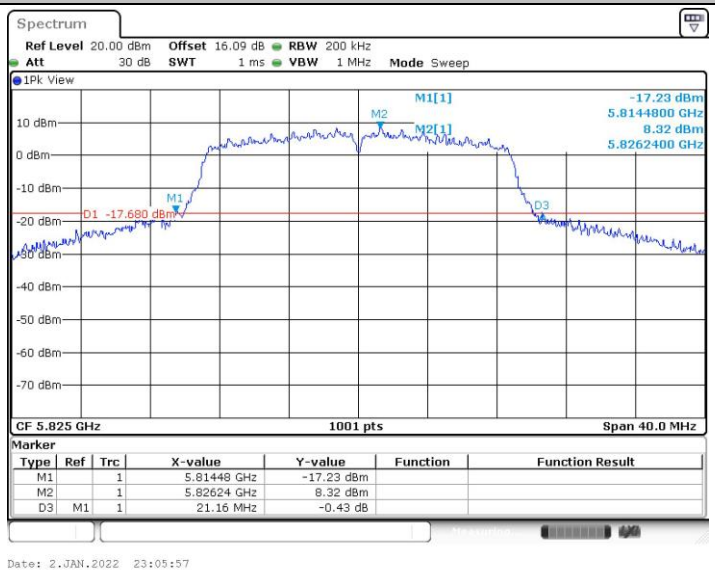

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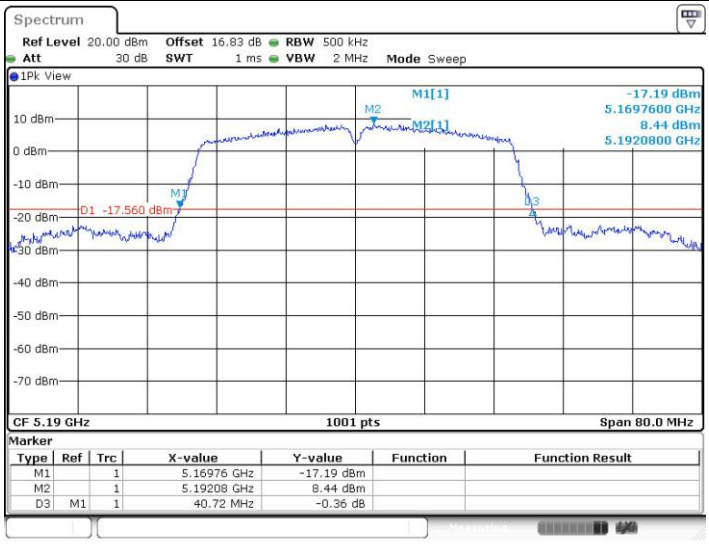

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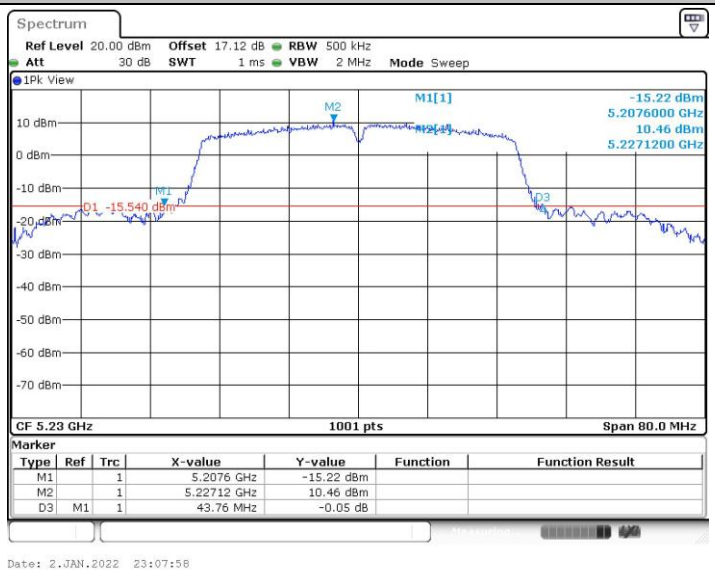

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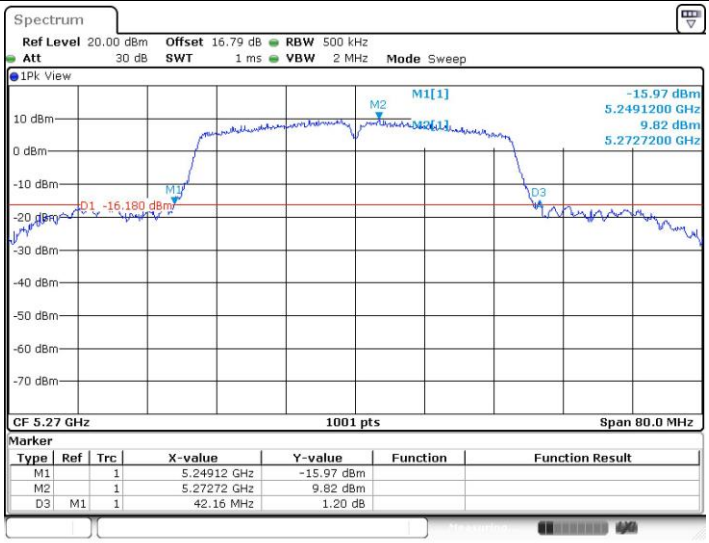
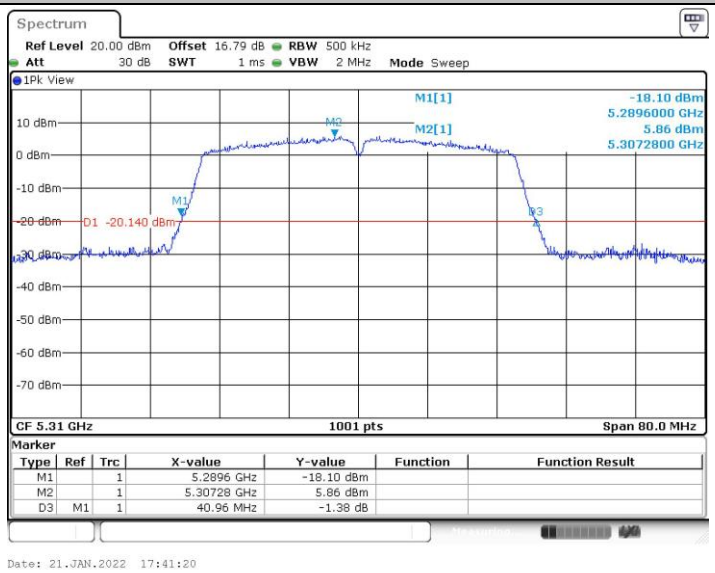


11N40SISO_Ant1_5310


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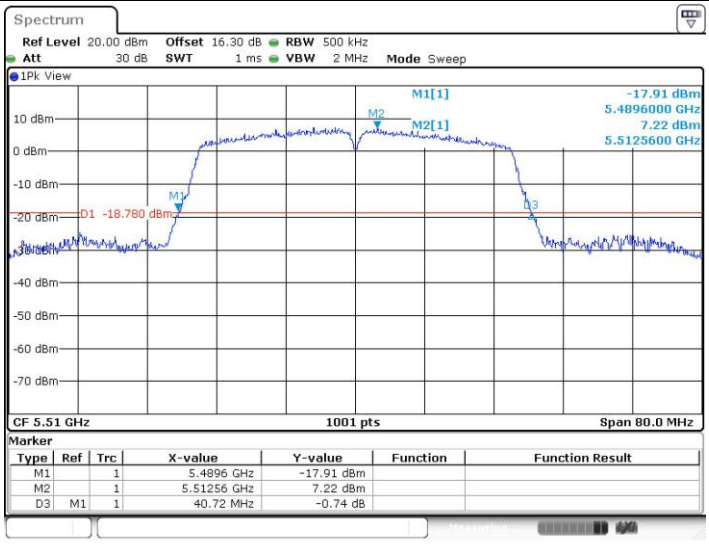

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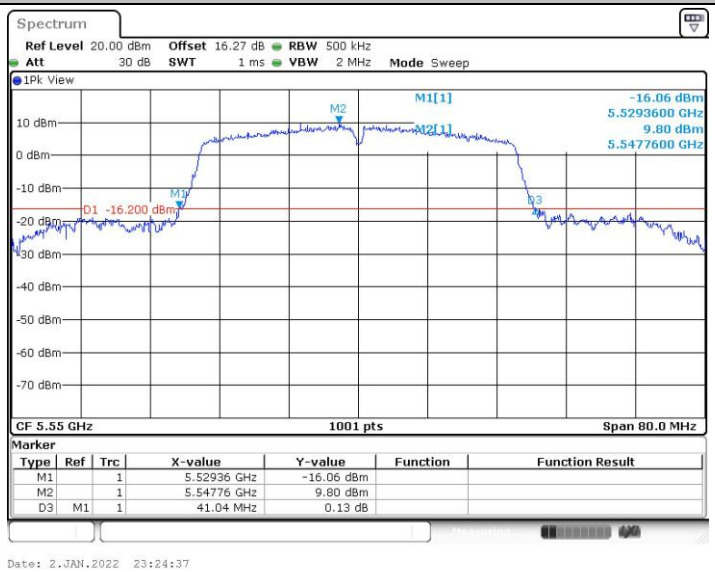

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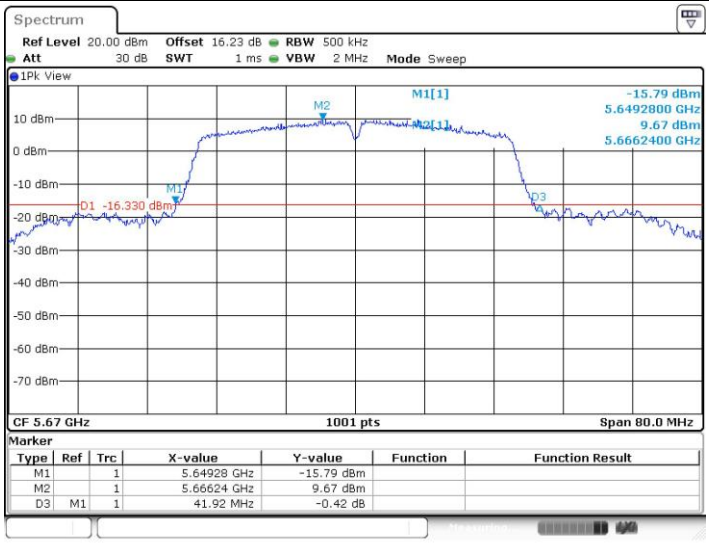

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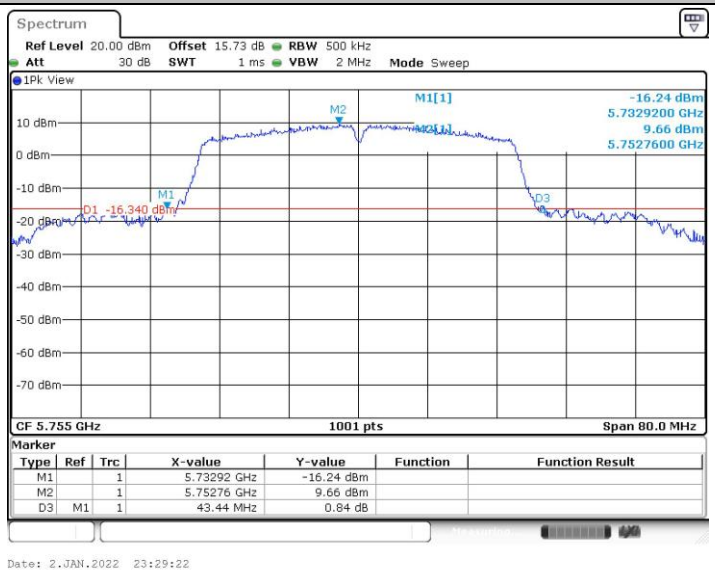

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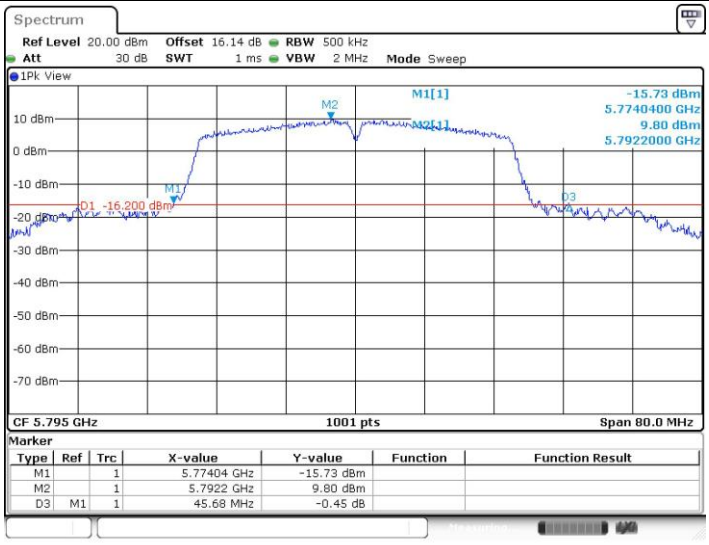
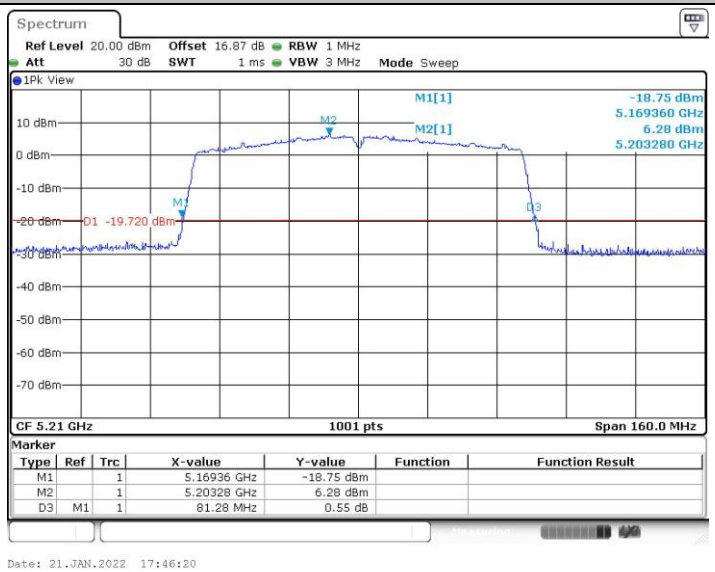
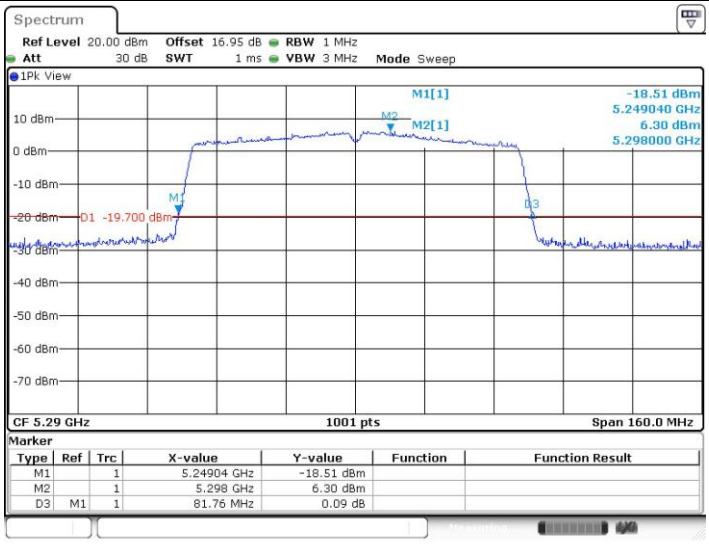
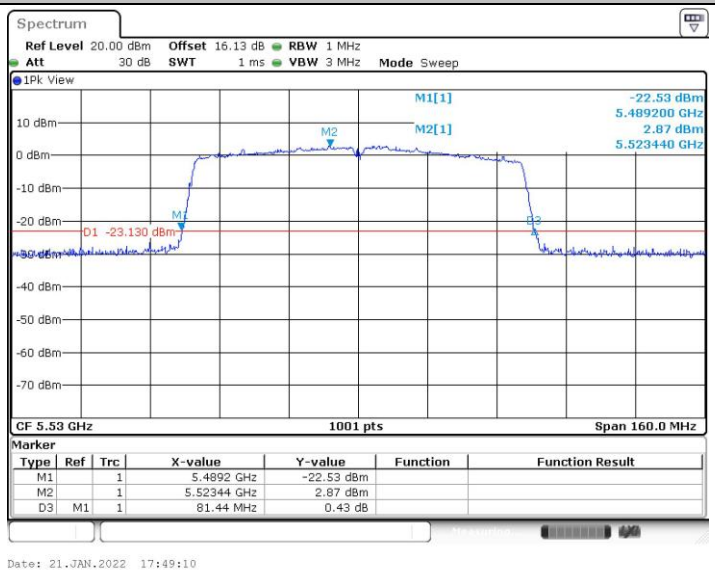
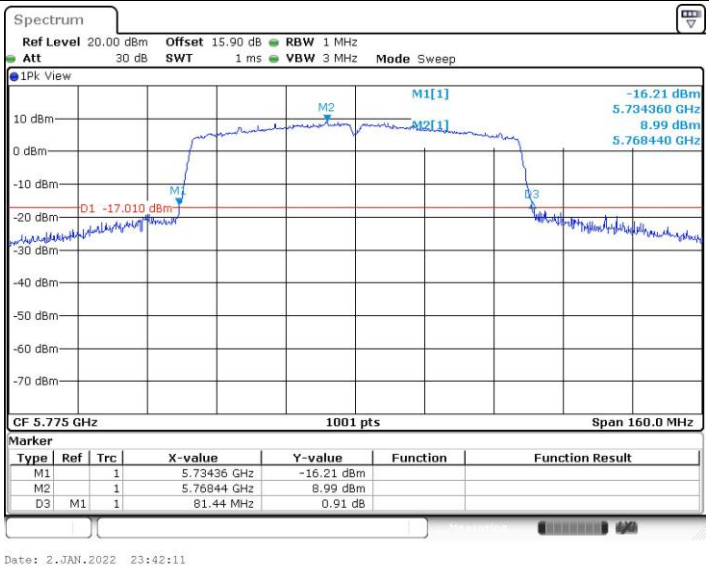


11AC80SISO_Ant1_5210


11AC80SISO_Ant1_5290


11AC80SISO_Ant1_5530


11AC80SISO_Ant1_5775



Occupied channel bandwidth

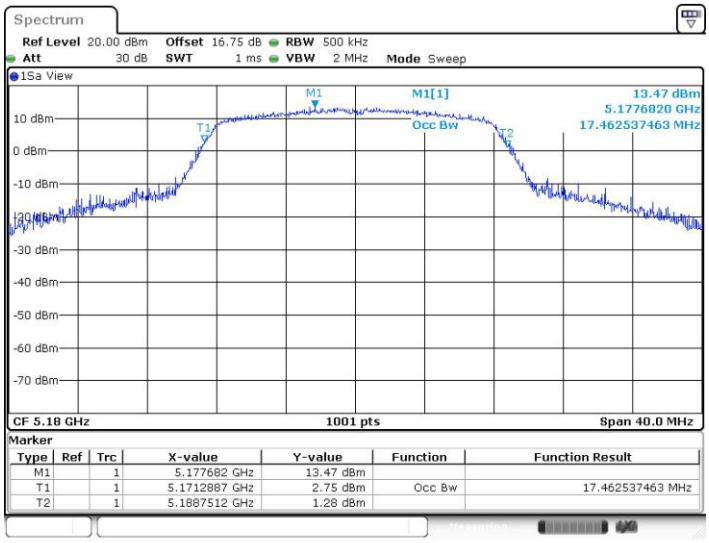
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.463	5171.289	5188.751	---	---
		5220	17.343	5211.289	5228.631	---	---
		5240	17.303	5231.369	5248.671	---	---
		5260	17.303	5251.289	5268.591	---	---
		5300	17.223	5291.369	5308.591	---	---
		5320	17.183	5311.409	5328.591	---	---
		5500	17.263	5491.329	5508.591	---	---
		5580	17.303	5571.329	5588.631	---	---
		5700	17.383	5691.329	5708.711	---	---
		5745	17.383	5736.329	5753.711	---	---
		5785	17.383	5776.289	5793.671	---	---
		5825	17.463	5816.249	5833.711	---	---
11N20SISO	Ant1	5180	18.342	5170.809	5189.151	---	---
		5220	18.262	5210.809	5229.071	---	---
		5240	18.222	5230.889	5249.111	---	---
		5260	18.302	5250.769	5269.071	---	---
		5300	18.222	5290.849	5309.071	---	---
		5320	18.222	5310.849	5329.071	---	---
		5500	18.222	5490.849	5509.071	---	---
		5580	18.182	5570.889	5589.071	---	---
		5700	18.302	5690.809	5709.111	---	---
		5745	18.302	5735.809	5754.111	---	---
		5785	18.342	5775.769	5794.111	---	---
		5825	18.342	5815.769	5834.111	---	---
11N40SISO	Ant1	5190	36.444	5171.858	5208.302	---	---
		5230	36.923	5211.538	5248.462	---	---
		5270	36.843	5251.538	5288.382	---	---
		5310	36.444	5291.778	5328.222	---	---
		5510	36.284	5491.778	5528.062	---	---
		5550	36.603	5531.618	5568.222	---	---
		5670	36.683	5651.698	5688.382	---	---
		5755	36.763	5736.618	5773.382	---	---
		5795	36.763	5776.538	5813.302	---	---
11AC80SISO	Ant1	5210	75.285	5172.438	5247.722	---	---

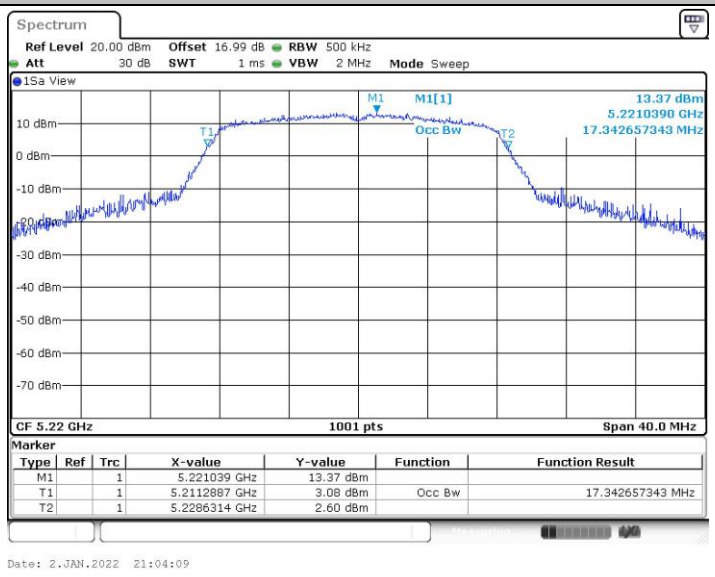
		5290	75.604	5252.118	5327.722	---	---
		5530	75.445	5492.118	5567.562	---	---
		5775	75.604	5737.118	5812.722	---	---

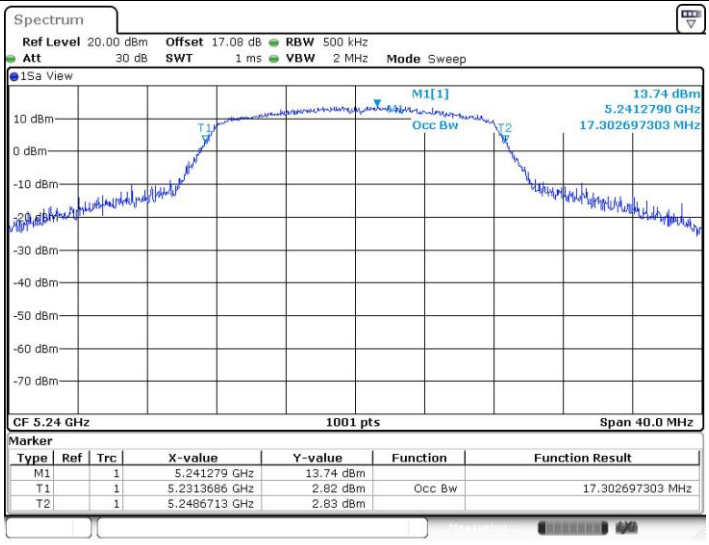
Test Graphs

11A_Ant1_5180



11A_Ant1_5220



11A_Ant1_5240


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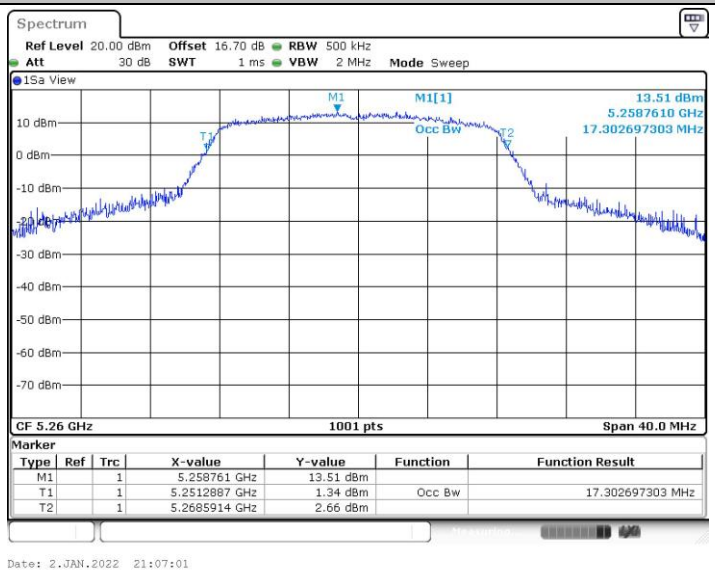

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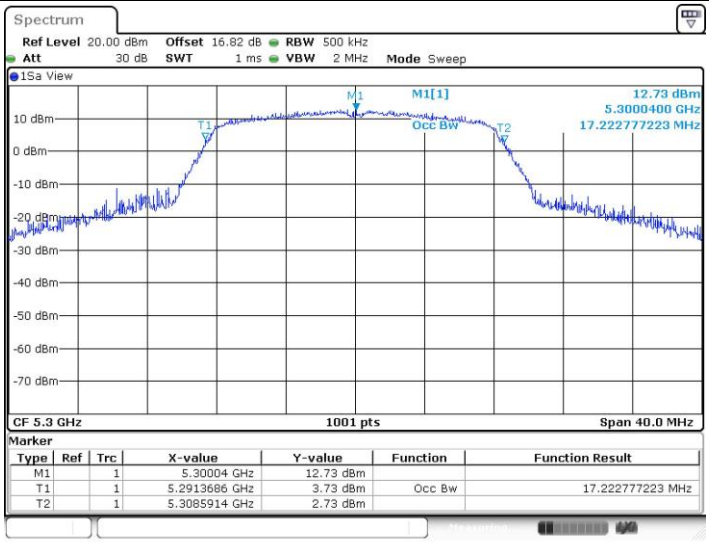

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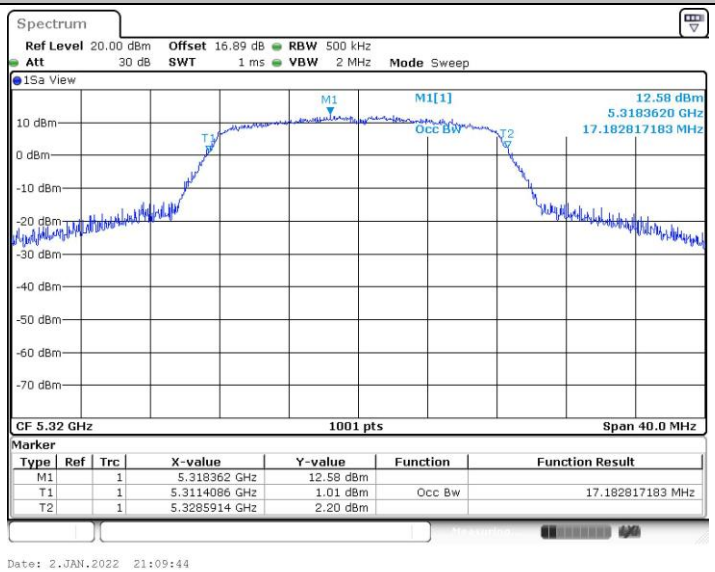

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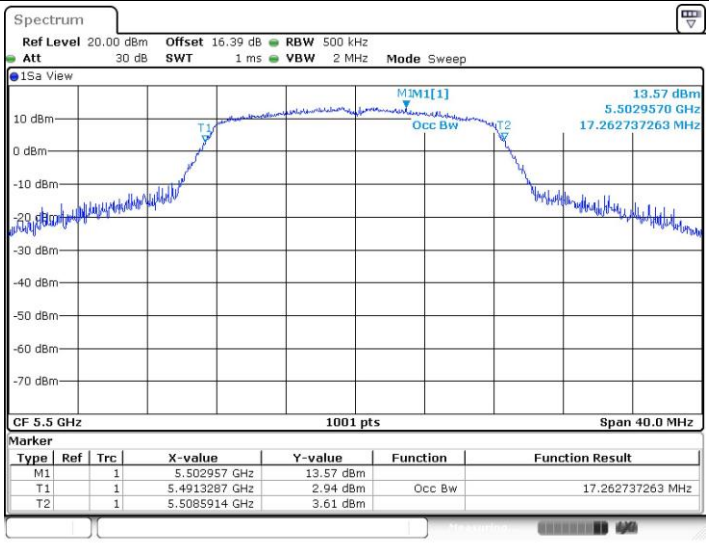

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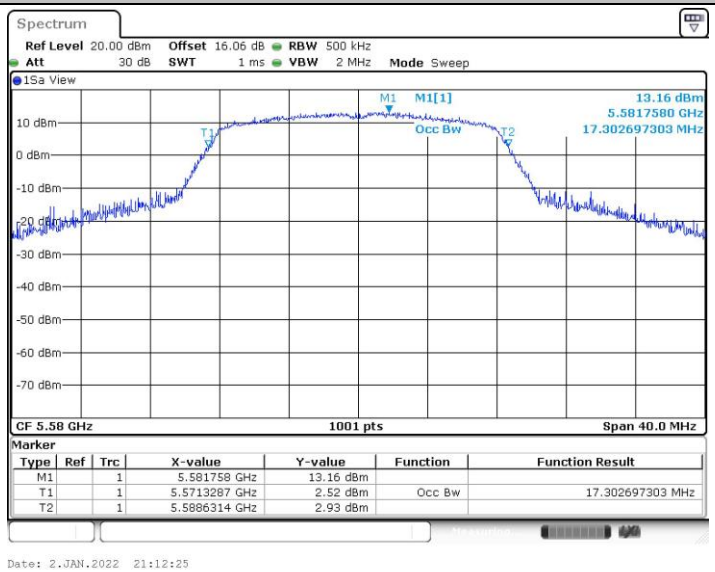

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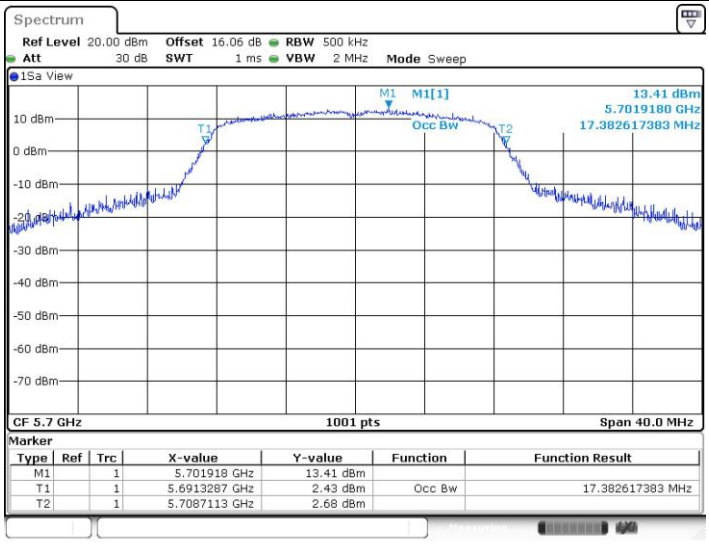

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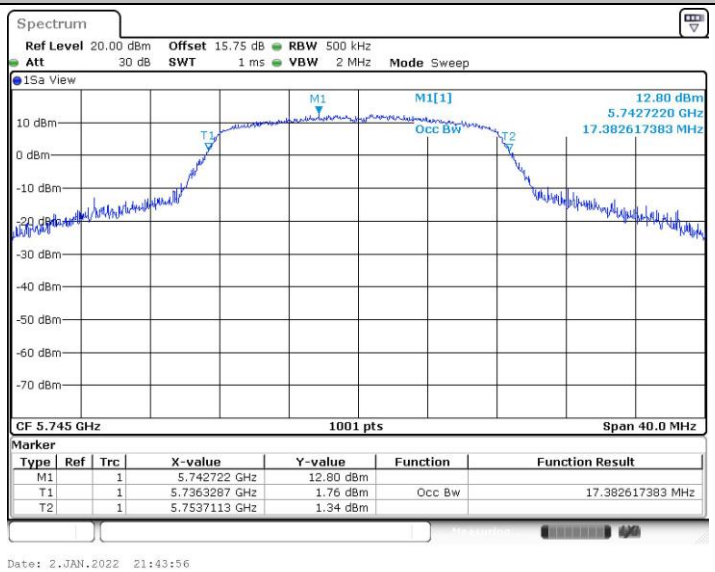
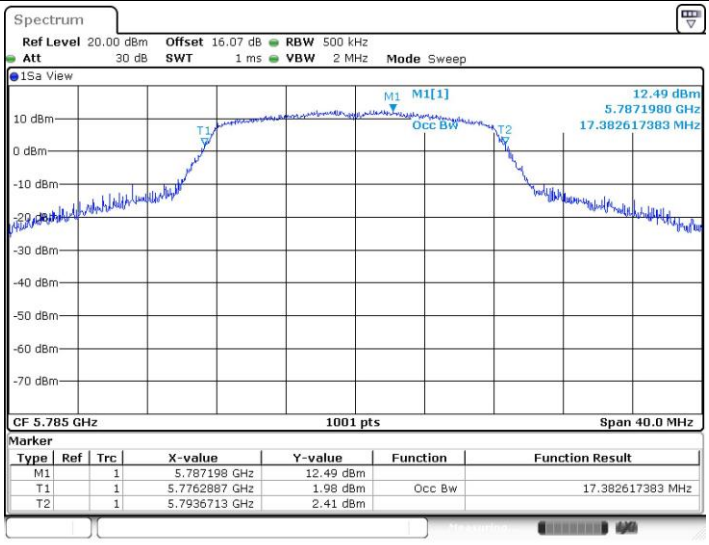


11A_Ant1_5785


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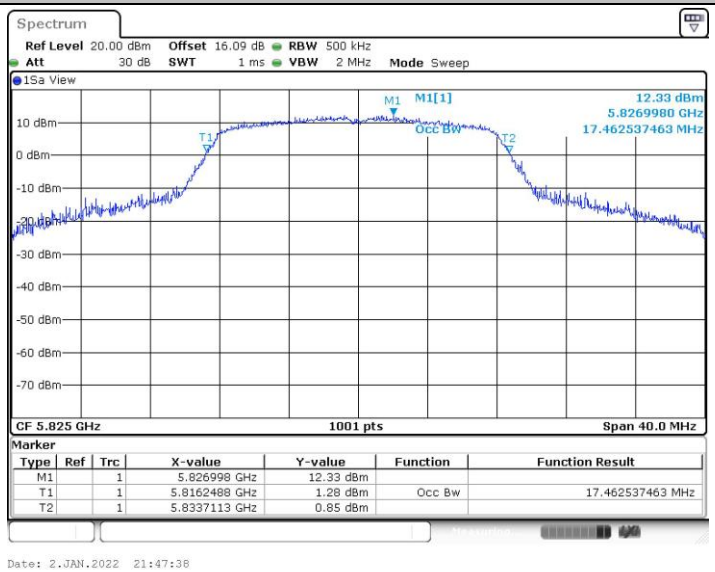
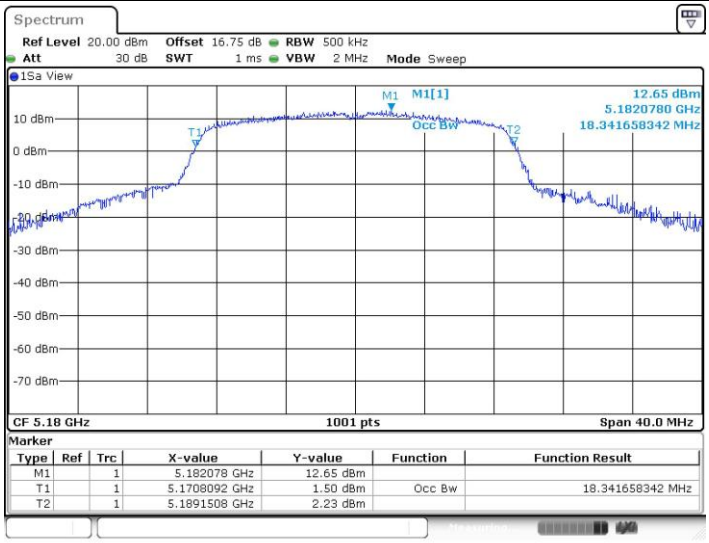
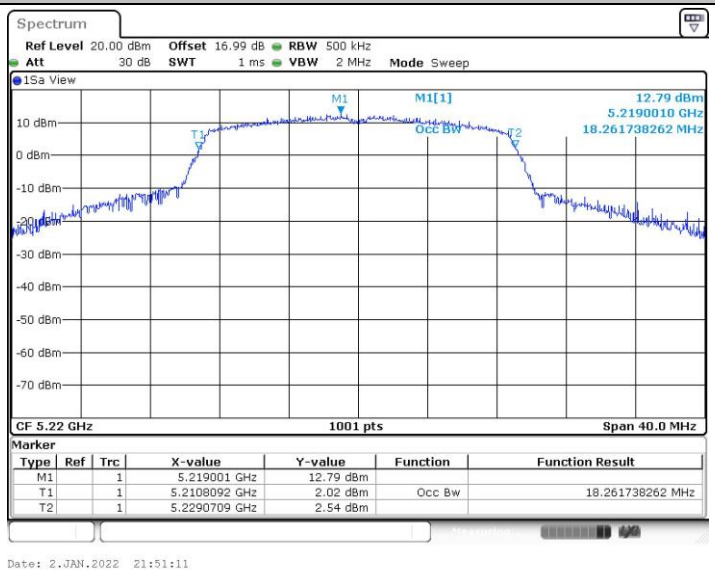


11N20SISO_Ant1_5180



11N20SISO_Ant1_5220



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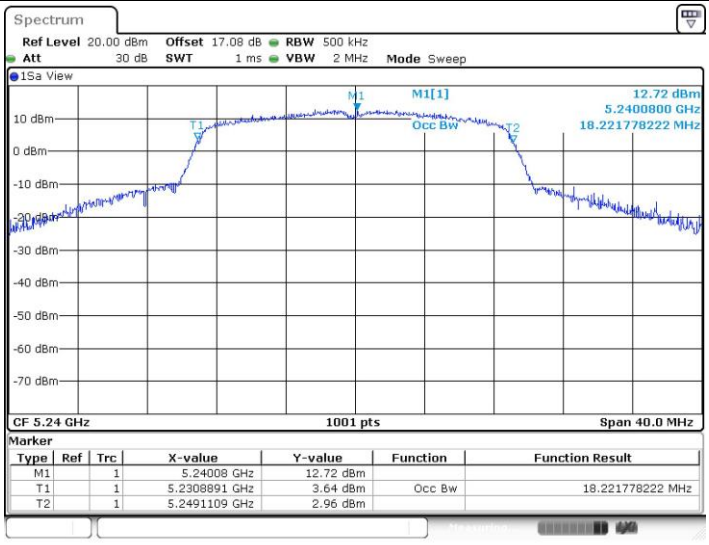
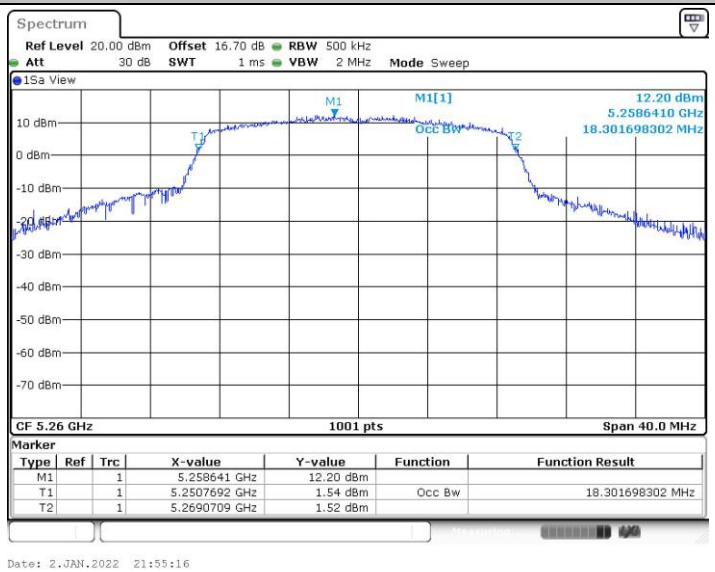
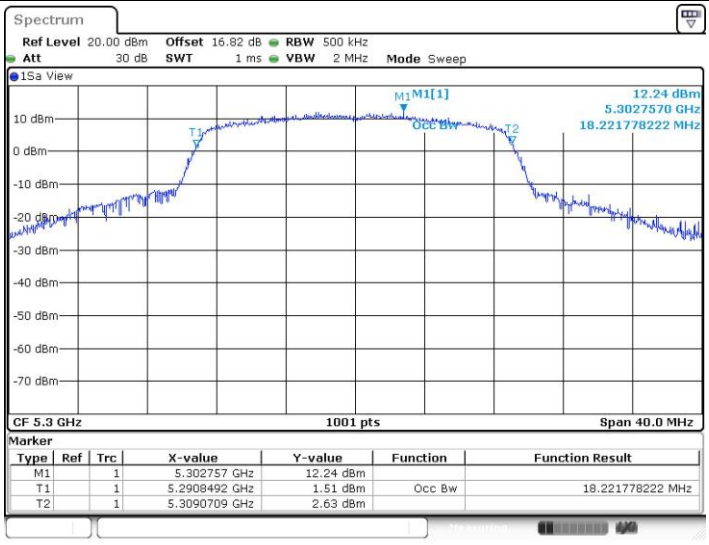


11N20SISO_Ant1_5260


11N20SISO_Ant1_5300


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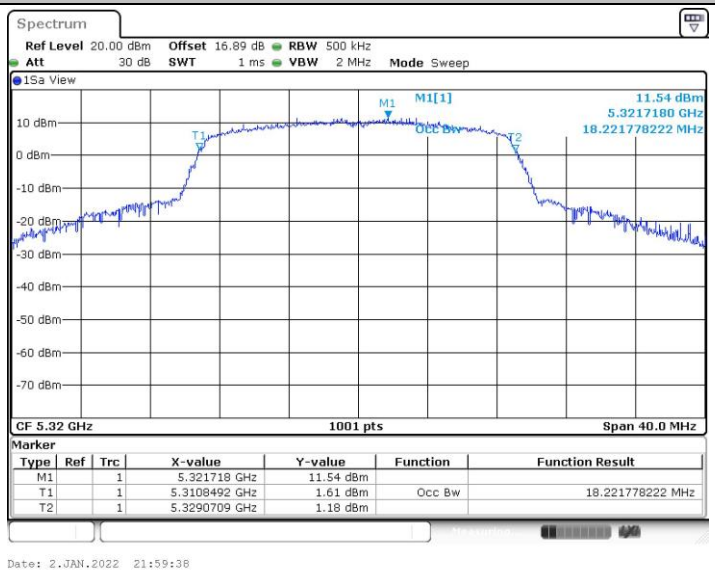

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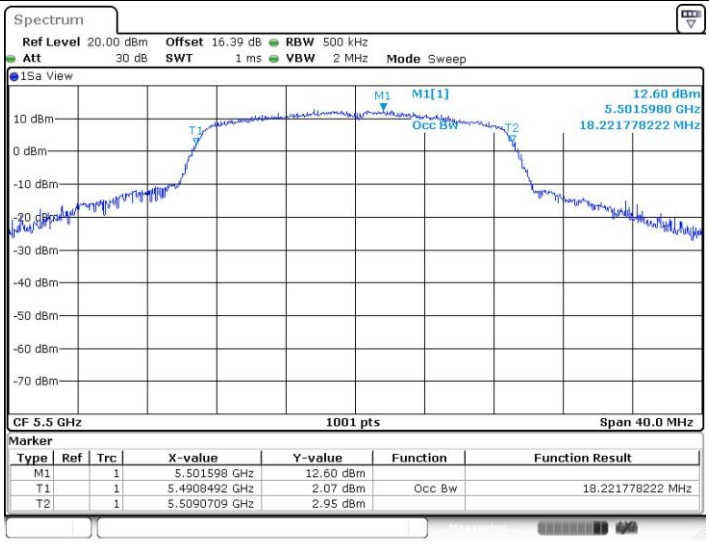

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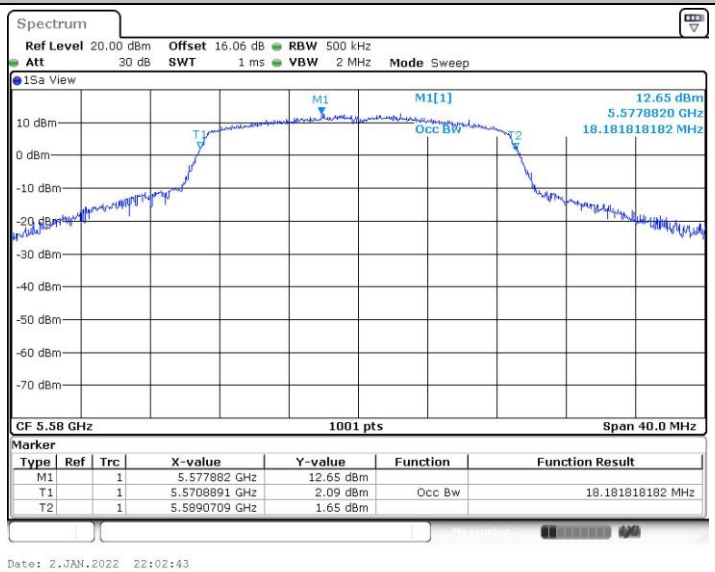

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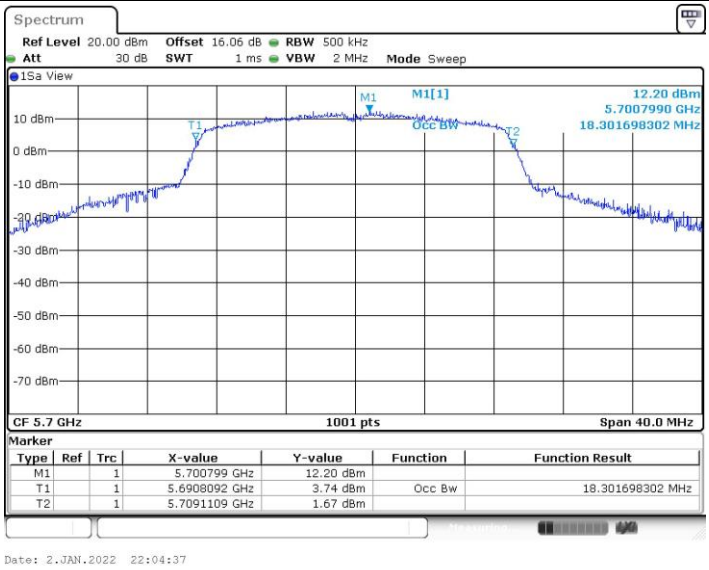

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