FCC RF Test Report

APPLICANT	:	Technicolor Connected Home USA LLC
EQUIPMENT	:	Wireless router
BRAND NAME	:	Technicolor
MODEL NAME	:	OWA0111TCH1, OWA0111TCH2, OWA0111XXXXX (where X can be alphanumeric, -, or blank)
FCC ID	:	G95OWA0111
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System
TEST DATE(S)	:	Nov. 22, 2022 ~ Jan. 10, 2023

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.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR2N0411A	Rev. 01	Initial issue of report	Jan. 12, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	99% Bandwidth	-	Report Only	-
3.2	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges	≤ 20dBc	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.54 dB at 2483.56 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 13.56 dB at 0.479 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	15.203 & 15.247(b)	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits.
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

Technicolor Connected Home USA LLC
4855 Peachtree Industrial Blvd. Suite 200 Norcross, Georgia 30092

1.2 Manufacturer

Cal-Comp Electronics (Thailand) Public Co.,Ltd
138 MOO 4 Petchkasem Road, Sapang, Khaoyoi, Petchburi 76140, THAILAND

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wireless router
Brand Name	Technicolor
Model Name	OWA0111TCH1, OWA0111TCH2, OWA0111XXXXX (where X can be alphanumeric, -, or blank)
FCC ID	G95OWA0111
HW Version	FGR
SW Version	17.10.188.6401 (r808804)
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

<table>
<tr><th colspan="2">Standards-related Product Specification</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>2412 MHz ~ 2462 MHz</td></tr>
<tr><td>Maximum (Average) Output Power to antenna</td><td><MIMO Ant.1+2>
802.11b : 24.47 dBm (0.2799 W)
802.11g : 25.44 dBm (0.3499 W)
802.11n HT20 : 25.37 dBm (0.3443 W)
802.11n HT40 : 20.92 dBm (0.1236 W)
802.11ac VHT20 : 25.44 dBm (0.3499 W)
802.11ac VHT40 : 21.00 dBm (0.1259 W)
802.11ax HE20 : 25.49 dBm (0.3540 W)
802.11ax HE40 : 21.10 dBm (0.1288 W)</td></tr>
<tr><td>Antenna Type</td><td>Offboard pcb antenna with coaxial RF cable</td></tr>
<tr><td>Type of Modulation</td><td>802.11b : DSSS (DBPSK / DQPSK / CCK)
802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
802.11ax: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)</td></tr>
<tr><td>Antenna Function Description</td><td>
<table>
<tr><th></th><th>Ant. 1</th><th>Ant. 2</th></tr>
<tr><td>802.11 b/g/n/ac/ax SISO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 b/g/n/ac/ax CDD 1S2T</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n/ac/ax Tx Beamforming 1S2T</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Note:

1. For SISO&MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power.
2. For 802.11n/ac/ax 20/40MHz mode, the whole testing has assessed only 802.11ax HE20/HE40MHz mode by referring to the higher output power.
3. The device does not support partial RU tone for 802.11ax mode
4. The device supports 1S2T (CDD&TXBF) mode; 1S2T means NSS=1, MIMO 2Tx.
5. Please refer to the antenna report for the maximum Single antenna gain and CDD (Cyclic Delay Diversity) directional gain and TXBF (Tx Beamforming) directional gain.

Frequency Band	Max Single Antenna gain (dBi)		CDD DG (dBi)		TXBF DG (dBi)	
	ANT1	ANT2	For Power	For PSD	For Power	For PSD
2.4GHz	3.18	3.15	3.18	5.42	5.42	5.42

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter 1	**Brand Name**	Honor	**Model Name**	ADS-12HG-12 12012EPCU
AC Adapter 2	**Brand Name**	Masspower	**Model Name**	E012-1O120100VU

1.6 Modification of EUT

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

1.7 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 03CH05-KS TH01-KS	CN1257	314309

1.8 Test Software

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

1.9 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 C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 662911 D01 Multiple Transmitter Output 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.

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 (X 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)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

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

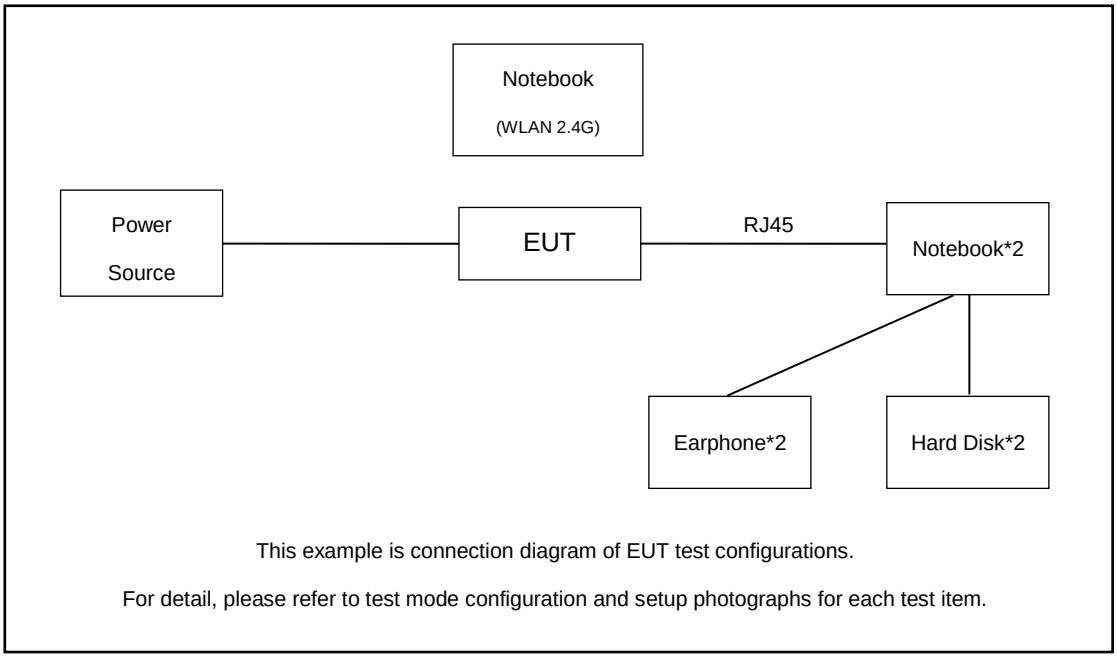
MIMO Antenna

Modulation	Data Rate
802.11b CDD 1S2T	**1 Mbps**
802.11g CDD 1S2T	**6 Mbps**
802.11ax HE20 CDD 1S2T	**MCS0**
802.11ax HE40 CDD 1S2T	**MCS0**
802.11ax HE20 TXBF 1S2T	**MCS0**
802.11ax HE40 TXBF 1S2T	**MCS0**

Test Cases	
AC Conducted Emission	Mode 1 :WLAN Link(2.4G) + Power from Adapter 1
Remark: For Radiated Test Cases, The tests were performance with Adapter 1.	

2.3 Connection Diagram of Test System

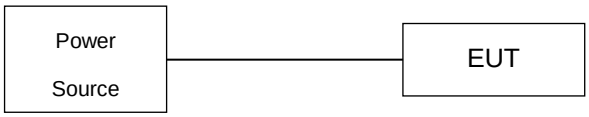
For Conducted Emission:



This example is connection diagram of EUT test configurations.

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

For Radiated Emission:



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.	Notebook	Lenovo	V130-15IKB005	N/A	N/A	Shielded cable DC O/P 1.8m, Unshielded AC I/P cable 1.8m
2.	Notebook	Lenovo	V130-14IKB004	N/A	N/A	Shielded cable DC O/P 1.8m, Unshielded AC I/P cable 1.8m
3.	Earphone	Lenovo	P121	N/A	N/A	Unshielded, 1.2m
4.	Hard Disk	WD	C6B	N/A	N/A	N/A
5.	RJ45 Cable	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.

For AC power line conducted emissions, the EUT was set to connect with the Notebook 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 2.95 dB and 10dB attenuator.

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

= 2.95 + 10 = 12.95 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

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 ANSI C63.10-2013 clause 11.8
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1%~5% of OBW and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup

3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

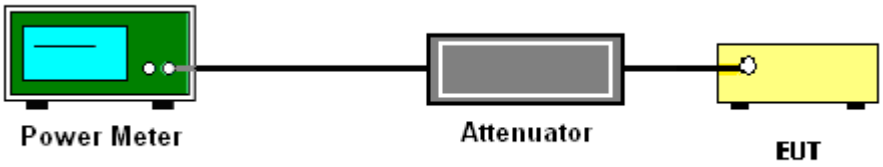
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.2.3.1 Method AVGPM method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows Measurement Procedure of ANSI C63.10-2013 clause 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

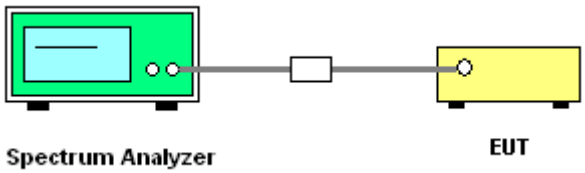
   If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

   Method (1): Measure and sum the spectra across the outputs.

   The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

   Method (2): Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

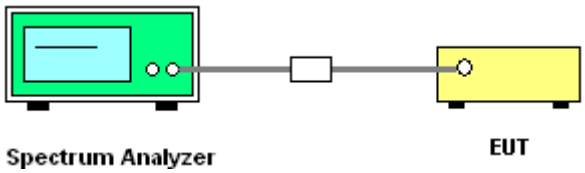
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Please refer to Appendix A.

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

3.5.2 Measuring Instruments

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

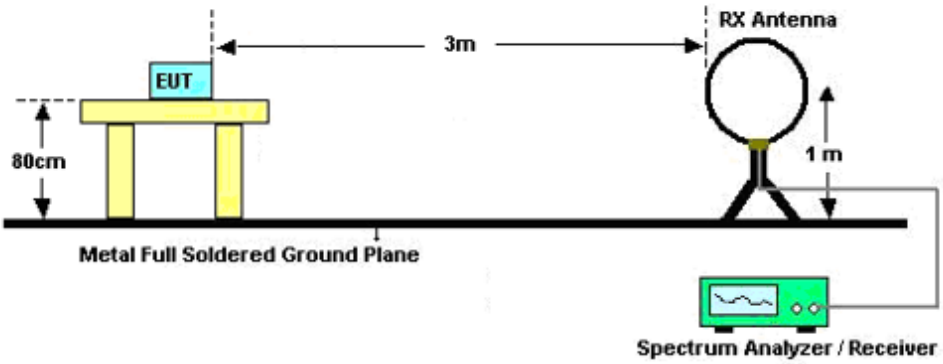
3.5.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. 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.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
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 peak 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.
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement (for CDD & SISO):
   - 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.

   For average measurement (for TXBF):
   - RBW = 1 MHz
   - VBW = 3 MHz
   - The correction factor shall be offset is 10 log (1/x), where x is the duty cycle;
   - Correction factors are compensated in the data.

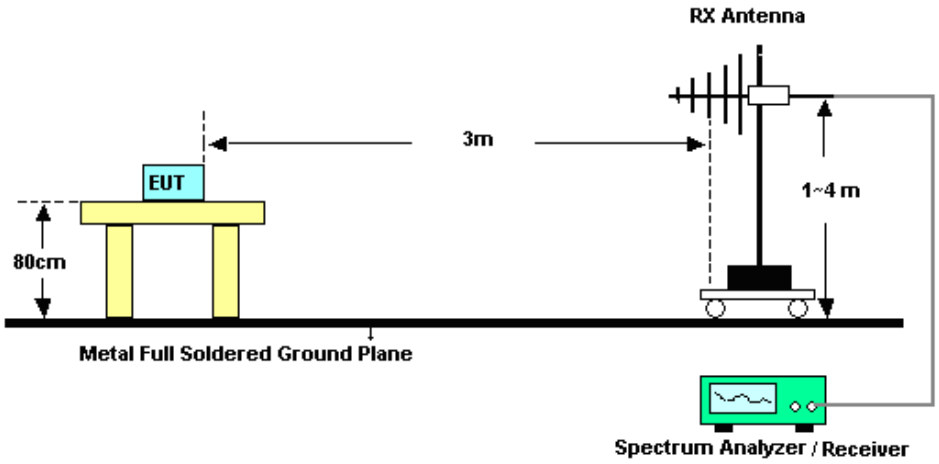
3.5.4 Test Setup

For radiated emissions below 30MHz

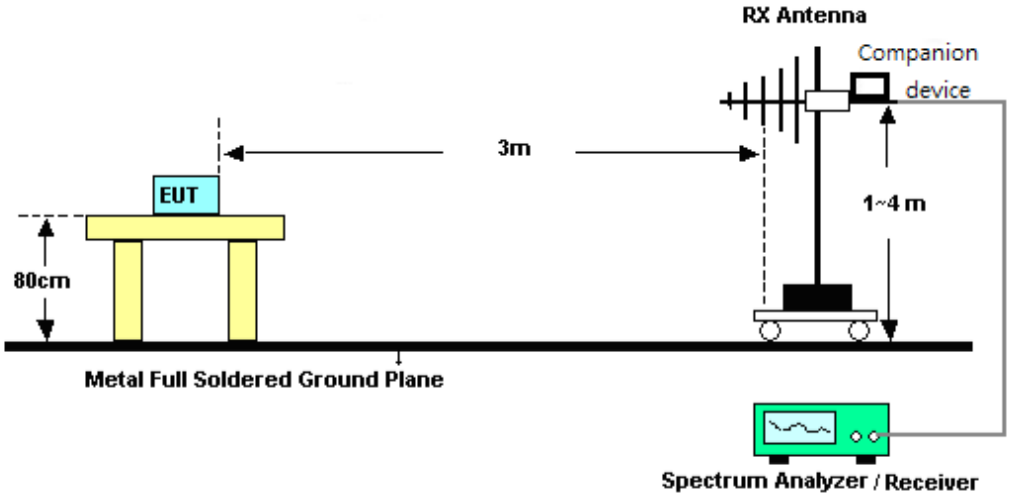


For radiated emissions from 30MHz to 1GHz

<CDD Mode>

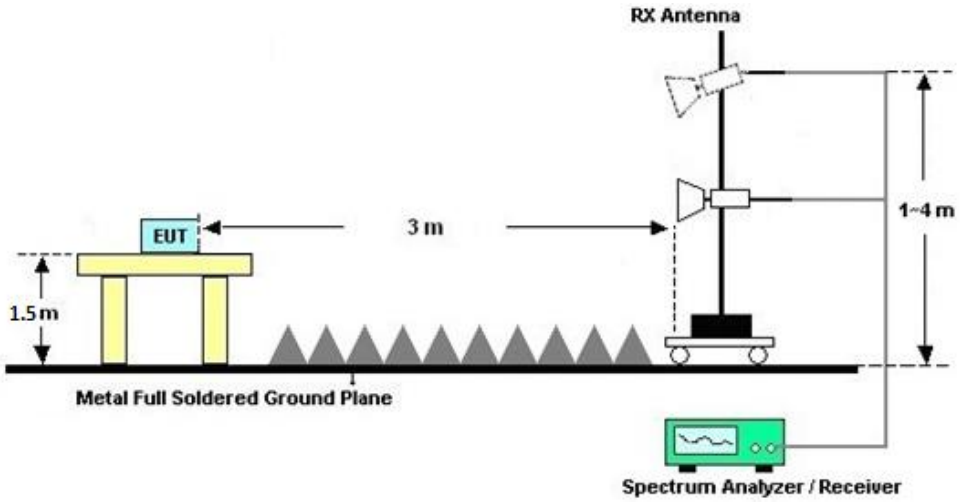


<TXBF Modes>

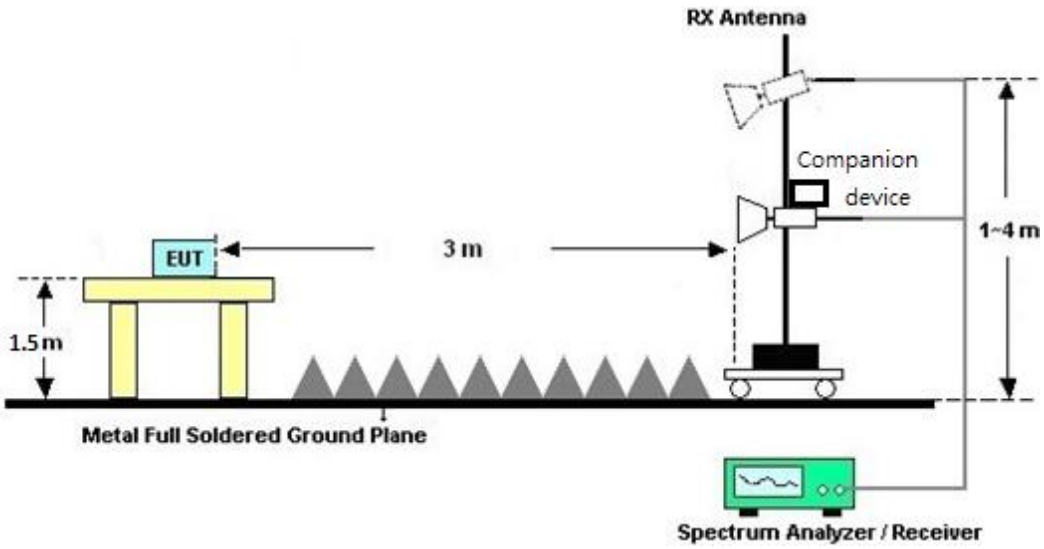


For radiated emissions above 1GHz

<CDD Mode>



<TXBF Modes>



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

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.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C&D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

Please refer to Appendix C&D.

3.6 AC Conducted Emission Measurement

3.6.1 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.

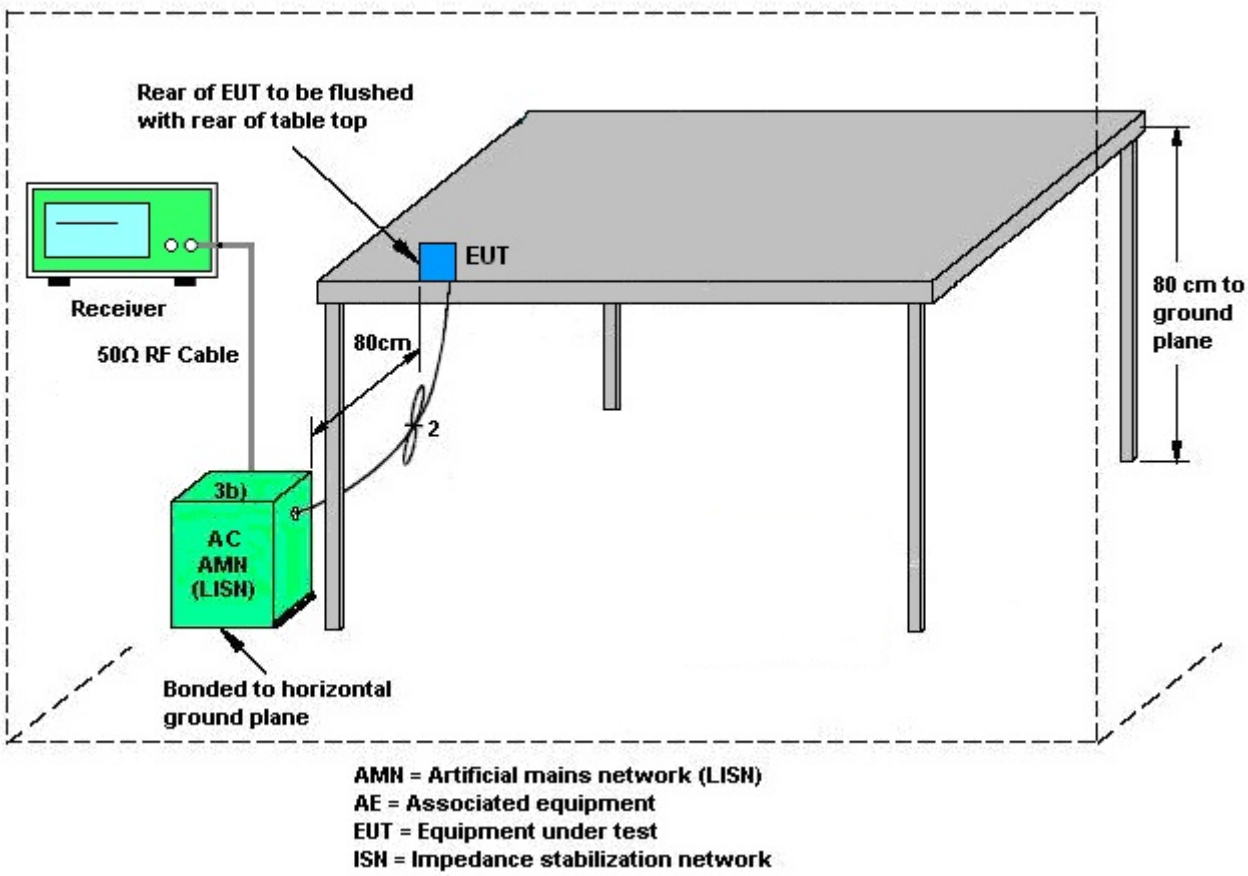
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it 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 (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes>

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

The EUT supports CDD for 802.11b/g/n/ac/ax modes

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii).

Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + … + $10^{GN/20}$)2 /N_{ANT}] dBi

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi

<TXBF Modes>

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For TXBF transmissions, directional gain is calculated as

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The EUT supports beamforming for 802.11n/ac/ax modes.

The directional gain calculation is following F)2)e)ii).

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is as following table.

Frequency Band	Max Single Antenna gain (dBi)		CDD DG (dBi)		TXBF DG (dBi)	
	ANT1	ANT2	For Power	For PSD	For Power	For PSD
2.4GHz	3.18	3.15	3.18	5.42	5.42	5.42

Note:

1. Please refer to the antenna report for the maximum Single antenna gain and CDD (Cyclic Delay Diversity) directional gain and TXBF (Tx Beamforming) directional gain.
2. The device supports 1S2T(CDD&TXBF) mode;
   1S2T: NSS=1, MIMO 2Tx

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. 12, 2022	Dec. 16, 2022~ Jan. 10, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2022	Dec. 16, 2022~ Jan. 10, 2023	Jan. 04, 2023	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 04, 2023		Jan. 03, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2022	Dec. 16, 2022~ Jan. 10, 2023	Jan. 04, 2023	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 04, 2023		Jan. 03, 2024	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 13, 2022	Jan. 07, 2023	Oct. 12, 2023	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Mar. 24, 2022	Jan. 07, 2023	Mar. 23, 2023	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Jan. 07, 2023	Oct. 15, 2023	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24 ,2022	Jan. 07, 2023	May 23, 2023	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218642	1GHz~18GHz	Apr. 18, 2022	Jan. 07, 2023	Apr. 17, 2023	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 04, 2023	Jan. 07, 2023	Jan. 03, 2024	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	380826	9KHz-1GHz	Jul. 11, 2022	Jan. 07, 2023	Jul. 10, 2023	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 04, 2023	Jan. 07, 2023	Jan. 03, 2024	Radiation (03CH05-KS)
high gain Amplifier	EM	EM01G18GA	060839	1Ghz-18Ghz	Oct. 12, 2022	Jan. 07, 2023	Oct. 11, 2023	Radiation (03CH05-KS)
Amplifier	EM	EM01G18GA	060833	1Ghz-18Ghz	Jan. 04, 2023	Jan. 07, 2023	Jan. 03, 2024	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 07, 2023	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 07, 2023	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 07, 2023	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 24, 2022	Nov. 22, 2022	May 23, 2023	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2022	Nov. 22, 2022	Oct. 12, 2023	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	May 24, 2022	Nov. 22, 2022	May 23, 2023	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2022	Nov. 22, 2022	Oct. 11, 2023	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 Measurement

Test Item	Uncertainty
Conducted Power	±0.46 dB
Conducted Emissions	±0.48 dB
Occupied Channel Bandwidth	±0.1 %
Conducted Power Spectral Density	±0.40 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.78dB

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

---------- THE END ----------

Appendix A. Conducted Test Results

Test Engineer:	Jiang Jun	Temperature:	21~25	°C
Test Date:	2022.12.16~2023.1.10	Relative Humidity:	51~54	%

<CDD 1S2T>

Report Number : FR2N0411A

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																		
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail	Setting
					Ant 1	Ant 2	Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2		Ant 1+2
11b	1Mbps	2	1	2412	0.22	0.22	20.64	21.38	24.04	30.00		3.18		27.22		36.00		Pass	20.50
11b	1Mbps	2	2	2417	0.22	0.22	20.83	21.04	23.95	30.00		3.18		27.13		36.00		Pass	20.50
11b	1Mbps	2	3	2422	0.22	0.22	21.27	21.43	24.36	30.00		3.18		27.54		36.00		Pass	21.00
11b	1Mbps	2	6	2437	0.22	0.22	21.19	21.71	24.47	30.00		3.18		27.65		36.00		Pass	21.00
11b	1Mbps	2	10	2457	0.22	0.22	21.11	21.47	24.30	30.00		3.18		27.48		36.00		Pass	21.00
11b	1Mbps	2	11	2462	0.22	0.22	20.48	21.28	23.91	30.00		3.18		27.09		36.00		Pass	20.50
11g	6Mbps	2	1	2412	0.24	0.24	19.45	19.65	22.56	30.00		3.18		25.74		36.00		Pass	20.00
11g	6Mbps	2	2	2417	0.24	0.24	21.28	21.32	24.31	30.00		3.18		27.49		36.00		Pass	21.50
11g	6Mbps	2	3	2422	0.24	0.24	20.66	20.75	23.72	30.00		3.18		26.90		36.00		Pass	21.00
11g	6Mbps	2	4	2427	0.24	0.24	21.30	21.26	24.29	30.00		3.18		27.47		36.00		Pass	21.50
11g	6Mbps	2	5	2432	0.24	0.24	21.87	21.73	24.81	30.00		3.18		27.99		36.00		Pass	22.00
11g	6Mbps	2	6	2437	0.24	0.24	22.43	22.42	25.44	30.00		3.18		28.62		36.00		Pass	22.50
11g	6Mbps	2	7	2442	0.24	0.24	22.37	22.29	25.34	30.00		3.18		28.52		36.00		Pass	22.50
11g	6Mbps	2	8	2447	0.24	0.24	21.81	21.77	24.80	30.00		3.18		27.98		36.00		Pass	22.00
11g	6Mbps	2	9	2452	0.24	0.24	20.77	20.88	23.84	30.00		3.18		27.02		36.00		Pass	21.00
11g	6Mbps	2	10	2457	0.24	0.24	21.16	21.30	24.24	30.00		3.18		27.42		36.00		Pass	21.50
11g	6Mbps	2	11	2462	0.24	0.24	20.42	20.83	23.64	30.00		3.18		26.82		36.00		Pass	21.00
HT20	MCS0	2	1	2412	0.22	0.22	19.93	19.98	22.97	30.00		3.18		26.15		36.00		Pass	20.50
HT20	MCS0	2	2	2417	0.22	0.22	21.18	21.21	24.21	30.00		3.18		27.39		36.00		Pass	21.50
HT20	MCS0	2	3	2422	0.22	0.22	20.20	20.17	23.20	30.00		3.18		26.38		36.00		Pass	20.50
HT20	MCS0	2	4	2427	0.22	0.22	21.35	21.29	24.33	30.00		3.18		27.51		36.00		Pass	21.50
HT20	MCS0	2	5	2432	0.22	0.22	21.73	21.67	24.71	30.00		3.18		27.89		36.00		Pass	22.00
HT20	MCS0	2	6	2437	0.22	0.22	22.24	22.23	25.25	30.00		3.18		28.43		36.00		Pass	20.50
HT20	MCS0	2	7	2442	0.22	0.22	22.55	22.16	25.37	30.00		3.18		28.55		36.00		Pass	22.50
HT20	MCS0	2	8	2447	0.22	0.22	21.68	21.74	24.72	30.00		3.18		27.90		36.00		Pass	22.00
HT20	MCS0	2	9	2452	0.22	0.22	20.64	20.80	23.73	30.00		3.18		26.91		36.00		Pass	21.00
HT20	MCS0	2	10	2457	0.22	0.22	20.53	20.65	23.60	30.00		3.18		26.78		36.00		Pass	21.00
HT20	MCS0	2	11	2462	0.22	0.22	19.81	20.04	22.94	30.00		3.18		26.12		36.00		Pass	20.50
HT40	MCS0	2	3	2422	0.44	0.44	17.41	17.56	20.50	30.00		3.18		23.68		36.00		Pass	17.50
HT40	MCS0	2	6	2437	0.44	0.44	17.85	17.97	20.92	30.00		3.18		24.10		36.00		Pass	17.50
HT40	MCS0	2	9	2452	0.44	0.44	17.36	17.51	20.45	30.00		3.18		23.63		36.00		Pass	17.50
VHT20	MCS0	2	1	2412	0.22	0.22	20.03	20.05	23.05	30.00		3.18		26.23		36.00		Pass	20.50
VHT20	MCS0	2	2	2417	0.22	0.22	21.25	21.27	24.27	30.00		3.18		27.45		36.00		Pass	21.50
VHT20	MCS0	2	3	2422	0.22	0.22	20.28	20.23	23.27	30.00		3.18		26.45		36.00		Pass	20.50
VHT20	MCS0	2	4	2427	0.22	0.22	21.49	21.38	24.45	30.00		3.18		27.63		36.00		Pass	21.50
VHT20	MCS0	2	5	2432	0.22	0.22	21.80	21.76	24.79	30.00		3.18		27.97		36.00		Pass	22.00
VHT20	MCS0	2	6	2437	0.22	0.22	22.33	22.28	25.32	30.00		3.18		28.50		36.00		Pass	20.50
VHT20	MCS0	2	7	2442	0.22	0.22	22.61	22.25	25.44	30.00		3.18		28.62		36.00		Pass	22.50
VHT20	MCS0	2	8	2447	0.22	0.22	21.74	21.81	24.79	30.00		3.18		27.97		36.00		Pass	22.00
VHT20	MCS0	2	9	2452	0.22	0.22	20.70	20.87	23.80	30.00		3.18		26.98		36.00		Pass	21.00
VHT20	MCS0	2	10	2457	0.22	0.22	20.65	20.74	23.71	30.00		3.18		26.89		36.00		Pass	21.00
VHT20	MCS0	2	11	2462	0.22	0.22	19.88	20.15	23.03	30.00		3.18		26.21		36.00		Pass	20.50
VHT40	MCS0	2	3	2422	0.44	0.44	17.46	17.65	20.57	30.00		3.18		23.75		36.00		Pass	17.50
VHT40	MCS0	2	6	2437	0.44	0.44	17.93	18.05	21.00	30.00		3.18		24.18		36.00		Pass	17.50
VHT40	MCS0	2	9	2452	0.44	0.44	17.42	17.56	20.50	30.00		3.18		23.68		36.00		Pass	17.50

Note: Measured power (dBm) has offset with cable loss.

Report Number : FR2N0411A

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																			
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail	Setting
						Ant1	Ant2	Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2		Ant 1+2
HE20	MCS0	2	1	2412	Full	0.08	0.10	20.10	20.15	23.14	30.00		3.18		26.32		36.00		Pass	20.50
HE20	MCS0	2	2	2417	Full	0.08	0.10	21.27	21.33	24.31	30.00		3.18		27.49		36.00		Pass	21.50
HE20	MCS0	2	3	2422	Full	0.08	0.10	20.31	20.26	23.30	30.00		3.18		26.48		36.00		Pass	20.50
HE20	MCS0	2	4	2427	Full	0.08	0.10	21.44	21.42	24.44	30.00		3.18		27.62		36.00		Pass	21.50
HE20	MCS0	2	5	2432	Full	0.08	0.10	21.79	21.83	24.82	30.00		3.18		28.00		36.00		Pass	22.00
HE20	MCS0	2	6	2437	Full	0.08	0.10	22.42	22.39	25.42	30.00		3.18		28.60		36.00		Pass	22.50
HE20	MCS0	2	7	2442	Full	0.08	0.10	22.60	22.35	25.49	30.00		3.18		28.67		36.00		Pass	22.50
HE20	MCS0	2	8	2447	Full	0.08	0.10	21.72	21.86	24.80	30.00		3.18		27.98		36.00		Pass	22.00
HE20	MCS0	2	9	2452	Full	0.08	0.10	20.74	20.91	23.84	30.00		3.18		27.02		36.00		Pass	21.00
HE20	MCS0	2	10	2457	Full	0.08	0.10	20.70	20.79	23.76	30.00		3.18		26.94		36.00		Pass	21.00
HE20	MCS0	2	11	2462	Full	0.08	0.10	19.99	20.24	23.13	30.00		3.18		26.31		36.00		Pass	20.50
HE40	MCS0	2	3	2422	Full	0.14	0.14	17.61	17.75	20.69	30.00		3.18		23.87		36.00		Pass	17.50
HE40	MCS0	2	6	2437	Full	0.14	0.14	18.06	18.12	21.10	30.00		3.18		24.28		36.00		Pass	17.50
HE40	MCS0	2	9	2452	Full	0.14	0.14	17.67	17.72	20.71	30.00		3.18		23.89		36.00		Pass	17.50

Note: Measured power (dBm) has offset with cable loss.

<TXBF 1S2T>

Report Number : FR2N0411A

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																		
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail	Setting
					Ant 1	Ant 2	Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2		Ant 1+2
HT20	MCS0	2	1	2412	0.22	0.22	18.77	18.95	21.87	30.00		5.42		27.29		36.00		Pass	19.50
HT20	MCS0	2	2	2417	0.22	0.22	19.51	19.37	22.45	30.00		5.42		27.87		36.00		Pass	20.00
HT20	MCS0	2	3	2422	0.22	0.22	18.97	18.96	21.98	30.00		5.42		27.40		36.00		Pass	19.50
HT20	MCS0	2	4	2427	0.22	0.22	20.04	20.01	23.04	30.00		5.42		28.46		36.00		Pass	20.50
HT20	MCS0	2	5	2432	0.22	0.22	21.09	21.16	24.14	30.00		5.42		29.56		36.00		Pass	21.50
HT20	MCS0	2	6	2437	0.22	0.22	21.58	21.54	24.57	30.00		5.42		29.99		36.00		Pass	22.00
HT20	MCS0	2	7	2442	0.22	0.22	21.63	21.68	24.67	30.00		5.42		30.09		36.00		Pass	22.00
HT20	MCS0	2	8	2447	0.22	0.22	19.85	20.11	22.99	30.00		5.42		28.41		36.00		Pass	20.50
HT20	MCS0	2	9	2452	0.22	0.22	20.01	20.13	23.08	30.00		5.42		28.50		36.00		Pass	20.50
HT20	MCS0	2	10	2457	0.22	0.22	18.38	18.50	21.45	30.00		5.42		26.87		36.00		Pass	19.00
HT20	MCS0	2	11	2462	0.22	0.22	18.53	18.46	21.51	30.00		5.42		26.93		36.00		Pass	19.00
HT40	MCS0	2	3	2422	0.44	0.44	16.39	16.51	19.46	30.00		5.42		24.88		36.00		Pass	16.50
HT40	MCS0	2	4	2427	0.44	0.44	17.16	17.09	20.14	30.00		5.42		25.56		36.00		Pass	17.00
HT40	MCS0	2	6	2437	0.44	0.44	17.37	17.52	20.46	30.00		5.42		25.88		36.00		Pass	17.00
HT40	MCS0	2	9	2452	0.44	0.44	17.01	17.03	20.03	30.00		5.42		25.45		36.00		Pass	17.00
VHT20	MCS0	2	1	2412	0.22	0.22	18.82	18.99	21.92	30.00		5.42		27.34		36.00		Pass	19.50
VHT20	MCS0	2	2	2417	0.22	0.22	19.57	19.46	22.53	30.00		5.42		27.95		36.00		Pass	20.00
VHT20	MCS0	2	3	2422	0.22	0.22	19.08	19.05	22.08	30.00		5.42		27.50		36.00		Pass	19.50
VHT20	MCS0	2	4	2427	0.22	0.22	20.14	20.11	23.14	30.00		5.42		28.56		36.00		Pass	20.50
VHT20	MCS0	2	5	2432	0.22	0.22	21.17	21.23	24.21	30.00		5.42		29.63		36.00		Pass	21.50
VHT20	MCS0	2	6	2437	0.22	0.22	21.64	21.57	24.62	30.00		5.42		30.04		36.00		Pass	22.00
VHT20	MCS0	2	7	2442	0.22	0.22	21.73	21.74	24.75	30.00		5.42		30.17		36.00		Pass	22.00
VHT20	MCS0	2	8	2447	0.22	0.22	19.96	20.17	23.08	30.00		5.42		28.50		36.00		Pass	20.50
VHT20	MCS0	2	9	2452	0.22	0.22	20.08	20.20	23.15	30.00		5.42		28.57		36.00		Pass	20.50
VHT20	MCS0	2	10	2457	0.22	0.22	18.54	18.56	21.56	30.00		5.42		26.98		36.00		Pass	19.00
VHT20	MCS0	2	11	2462	0.22	0.22	18.58	18.51	21.56	30.00		5.42		26.98		36.00		Pass	19.00
VHT40	MCS0	2	3	2422	0.44	0.44	16.42	16.56	19.50	30.00		5.42		24.92		36.00		Pass	16.50
VHT40	MCS0	2	4	2427	0.44	0.44	17.27	17.16	20.23	30.00		5.42		25.65		36.00		Pass	17.00
VHT40	MCS0	2	6	2437	0.44	0.44	17.43	17.55	20.50	30.00		5.42		25.92		36.00		Pass	17.00
VHT40	MCS0	2	9	2452	0.44	0.44	17.08	17.13	20.12	30.00		5.42		25.54		36.00		Pass	17.00

Note: Measured power (dBm) has offset with cable loss.

Report Number : FR2N0411A

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																		
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Average Conducted Power with duty factor (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail	Setting
						Ant1	Ant2	Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2		Ant 1+2
HE20	MCS0	2	1	2412	Full	0.08	0.10	18.92	19.12	22.03	30.00		5.42		27.45		36.00		Pass	19.50
HE20	MCS0	2	2	2417	Full	0.08	0.10	19.71	19.61	22.67	30.00		5.42		28.09		36.00		Pass	20.00
HE20	MCS0	2	3	2422	Full	0.08	0.10	19.22	19.22	22.23	30.00		5.42		27.65		36.00		Pass	19.50
HE20	MCS0	2	4	2427	Full	0.08	0.10	20.23	20.24	23.25	30.00		5.42		28.67		36.00		Pass	20.50
HE20	MCS0	2	5	2432	Full	0.08	0.10	21.26	21.38	24.33	30.00		5.42		29.75		36.00		Pass	21.50
HE20	MCS0	2	6	2437	Full	0.08	0.10	21.73	21.66	24.71	30.00		5.42		30.13		36.00		Pass	22.00
HE20	MCS0	2	7	2442	Full	0.08	0.10	21.86	21.87	24.88	30.00		5.42		30.30		36.00		Pass	22.00
HE20	MCS0	2	8	2447	Full	0.08	0.10	20.11	20.28	23.21	30.00		5.42		28.63		36.00		Pass	20.50
HE20	MCS0	2	9	2452	Full	0.08	0.10	20.23	20.35	23.30	30.00		5.42		28.72		36.00		Pass	20.50
HE20	MCS0	2	10	2457	Full	0.08	0.10	18.72	18.73	21.74	30.00		5.42		27.16		36.00		Pass	19.00
HE20	MCS0	2	11	2462	Full	0.08	0.10	18.68	18.58	21.64	30.00		5.42		27.06		36.00		Pass	19.00
HE40	MCS0	2	3	2422	Full	0.14	0.14	16.55	16.68	19.63	30.00		5.42		25.05		36.00		Pass	16.50
HE40	MCS0	2	4	2427	Full	0.14	0.14	17.35	17.37	20.37	30.00		5.42		25.79		36.00		Pass	17.00
HE40	MCS0	2	6	2437	Full	0.14	0.14	17.52	17.71	20.63	30.00		5.42		26.05		36.00		Pass	17.00
HE40	MCS0	2	9	2452	Full	0.14	0.14	17.17	17.22	20.21	30.00		5.42		25.63		36.00		Pass	17.00

Note: Measured power (dBm) has offset with cable loss.

Ambient Condition: 25 ℃, 45 %RH	
Test Date: 2022.12.16~2023.1.10	**Test Engineer:** Jiang Jun

<CDD 1S2T>

6dB Bandwidth

Test Result

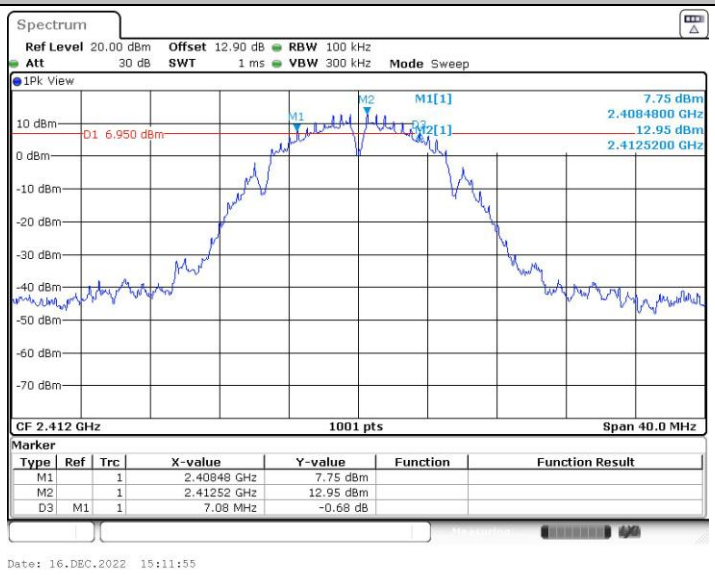
TestMode	Antenna	Freq(MHz)	6dB BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-CDD	Ant1	2412	7.08	2408.48	2415.56	0.5	PASS
	Ant2	2412	7.08	2408.48	2415.56	0.5	PASS
	Ant1	2417	6.52	2413.52	2420.04	0.5	PASS
	Ant2	2417	6.08	2413.96	2420.04	0.5	PASS
	Ant1	2422	6.60	2418.48	2425.08	0.5	PASS
	Ant2	2422	7.08	2418.48	2425.56	0.5	PASS
	Ant1	2437	7.04	2433.52	2440.56	0.5	PASS
	Ant2	2437	6.52	2434.00	2440.52	0.5	PASS
	Ant1	2457	7.04	2453.48	2460.52	0.5	PASS
	Ant2	2457	7.04	2453.48	2460.52	0.5	PASS
	Ant1	2462	7.08	2458.48	2465.56	0.5	PASS
	Ant2	2462	7.08	2458.48	2465.56	0.5	PASS
11G-CDD	Ant1	2412	16.28	2403.88	2420.16	0.5	PASS
	Ant2	2412	16.36	2403.84	2420.20	0.5	PASS
	Ant1	2417	16.32	2408.84	2425.16	0.5	PASS
	Ant2	2417	16.28	2408.88	2425.16	0.5	PASS
	Ant1	2422	16.32	2413.84	2430.16	0.5	PASS
	Ant2	2422	16.32	2413.84	2430.16	0.5	PASS
	Ant1	2427	16.32	2418.84	2435.16	0.5	PASS
	Ant2	2427	16.28	2418.88	2435.16	0.5	PASS
	Ant1	2432	16.32	2423.84	2440.16	0.5	PASS
	Ant2	2432	16.32	2423.84	2440.16	0.5	PASS
	Ant1	2437	16.32	2428.88	2445.20	0.5	PASS
	Ant2	2437	16.32	2428.88	2445.20	0.5	PASS
	Ant1	2442	16.32	2433.84	2450.16	0.5	PASS
	Ant2	2442	16.36	2433.84	2450.20	0.5	PASS
	Ant1	2447	16.32	2438.84	2455.16	0.5	PASS

	Ant2	2447	16.32	2438.84	2455.16	0.5	PASS
	Ant1	2452	16.32	2443.84	2460.16	0.5	PASS
	Ant2	2452	16.32	2443.84	2460.16	0.5	PASS
	Ant1	2457	16.32	2448.84	2465.16	0.5	PASS
	Ant2	2457	16.32	2448.84	2465.16	0.5	PASS
	Ant1	2462	16.36	2453.84	2470.20	0.5	PASS
	Ant2	2462	16.36	2453.84	2470.20	0.5	PASS
11AX20MIMO	Ant1	2412	18.72	2402.60	2421.32	0.5	PASS
	Ant2	2412	18.92	2402.56	2421.48	0.5	PASS
	Ant1	2417	18.68	2407.76	2426.44	0.5	PASS
	Ant2	2417	18.76	2407.72	2426.48	0.5	PASS
	Ant1	2422	18.72	2412.76	2431.48	0.5	PASS
	Ant2	2422	18.84	2412.68	2431.52	0.5	PASS
	Ant1	2427	18.80	2417.68	2436.48	0.5	PASS
	Ant2	2427	18.36	2418.00	2436.36	0.5	PASS
	Ant1	2432	18.92	2422.56	2441.48	0.5	PASS
	Ant2	2432	18.24	2423.20	2441.44	0.5	PASS
	Ant1	2437	18.72	2427.76	2446.48	0.5	PASS
	Ant2	2437	18.20	2428.24	2446.44	0.5	PASS
	Ant1	2442	18.84	2432.60	2451.44	0.5	PASS
	Ant2	2442	18.68	2432.80	2451.48	0.5	PASS
	Ant1	2447	18.88	2437.60	2456.48	0.5	PASS
	Ant2	2447	17.96	2437.84	2455.80	0.5	PASS
	Ant1	2452	18.88	2442.60	2461.48	0.5	PASS
	Ant2	2452	18.60	2442.80	2461.40	0.5	PASS
	Ant1	2457	18.72	2447.60	2466.32	0.5	PASS
	Ant2	2457	18.68	2447.76	2466.44	0.5	PASS
	Ant1	2462	18.72	2452.64	2471.36	0.5	PASS
	Ant2	2462	18.28	2453.16	2471.44	0.5	PASS
11AX40MIMO	Ant1	2422	37.04	2403.20	2440.24	0.5	PASS
	Ant2	2422	37.68	2403.20	2440.88	0.5	PASS
	Ant1	2437	37.68	2418.20	2455.88	0.5	PASS
	Ant2	2437	37.60	2418.28	2455.88	0.5	PASS
	Ant1	2452	37.12	2433.20	2470.32	0.5	PASS
	Ant2	2452	37.68	2433.20	2470.88	0.5	PASS

Test Graphs

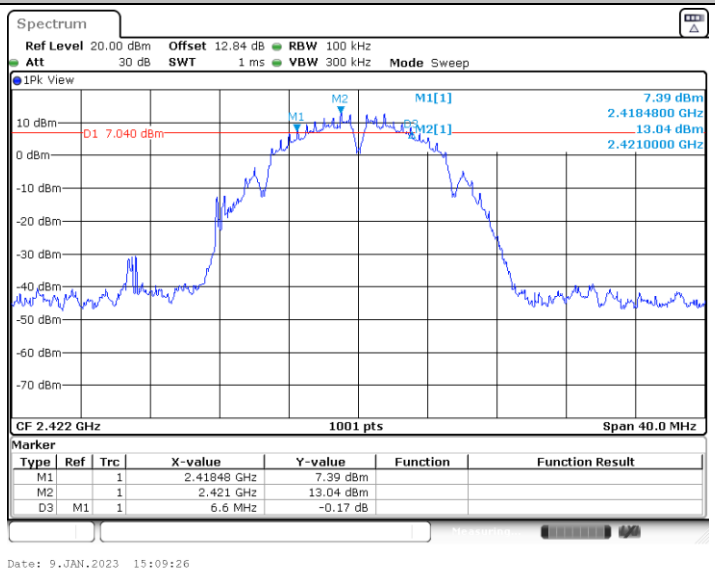
11B-CDD_Ant1_2412

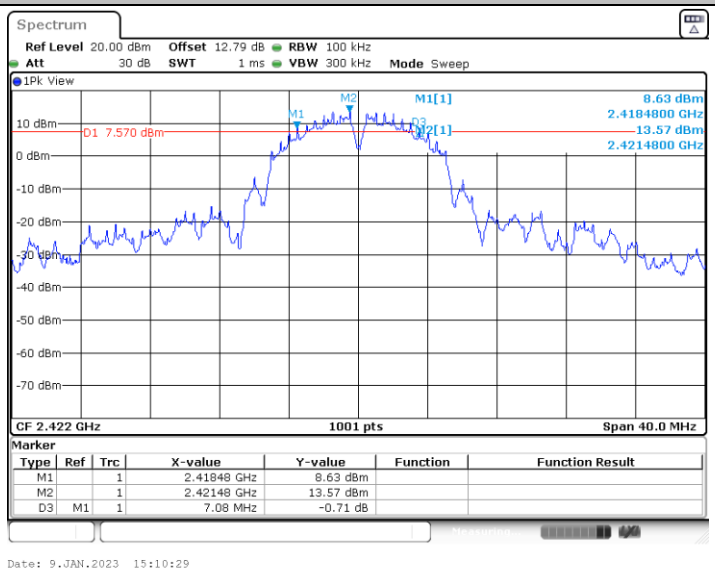
11B-CDD_Ant2_2412

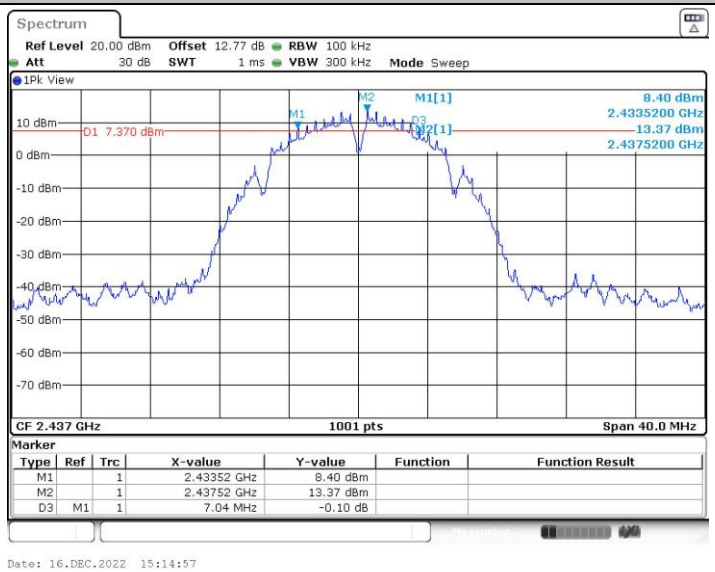


11B-CDD_Ant1_2417


11B-CDD_Ant2_2417


11B-CDD_Ant1_2422


11B-CDD_Ant2_2422


11B-CDD_Ant1_2437


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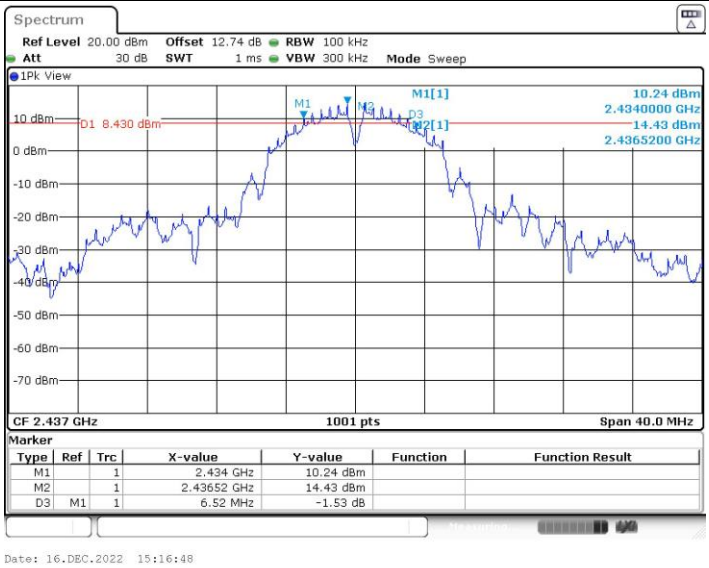
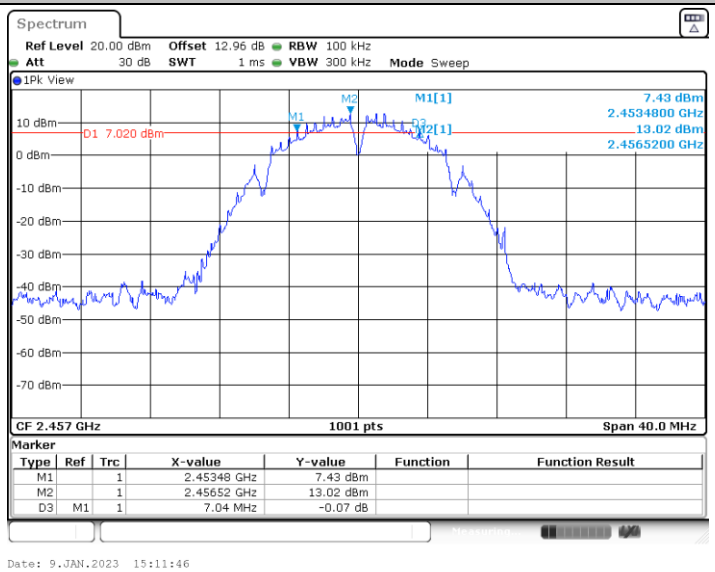


11B-CDD_Ant1_2457


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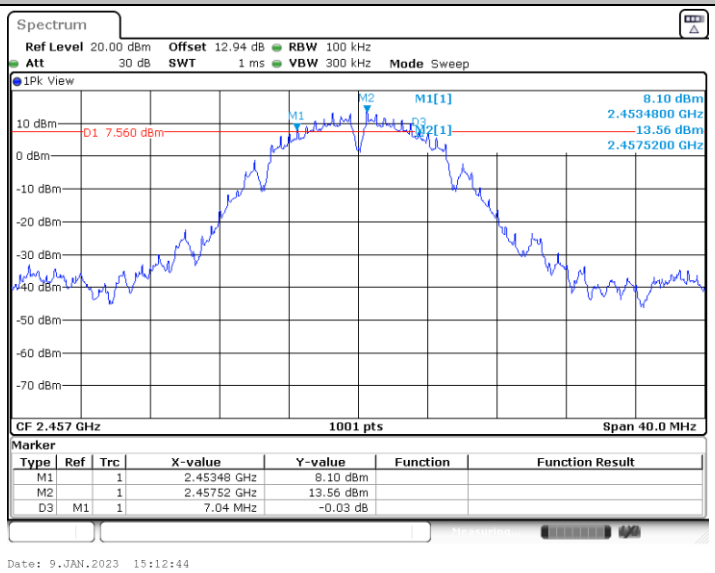
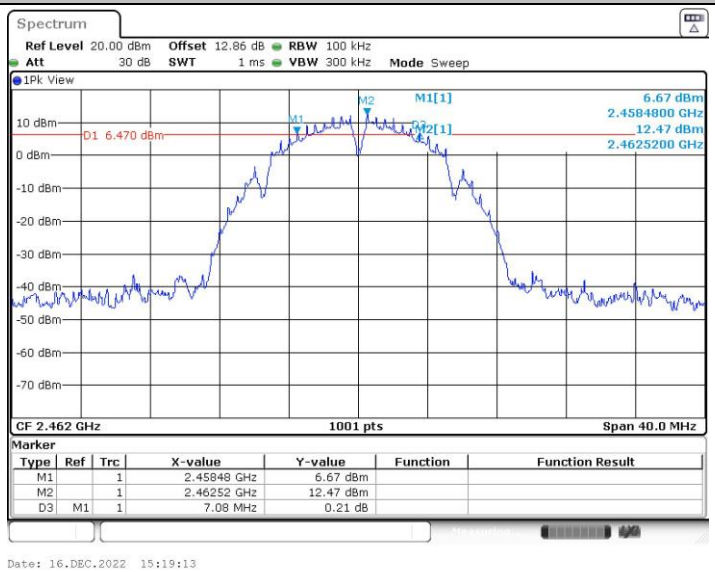


11B-CDD_Ant1_2462


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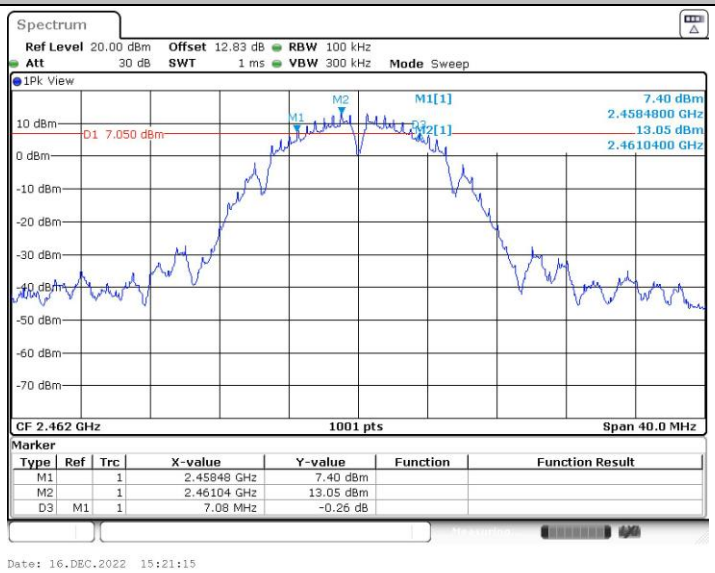
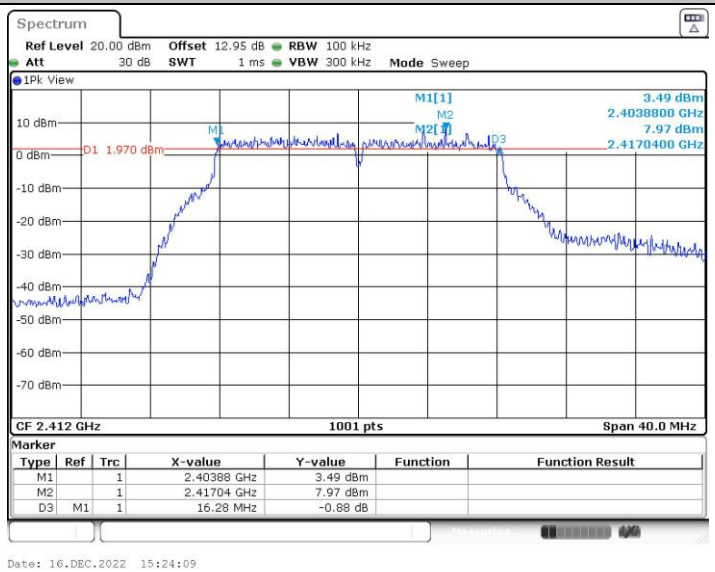
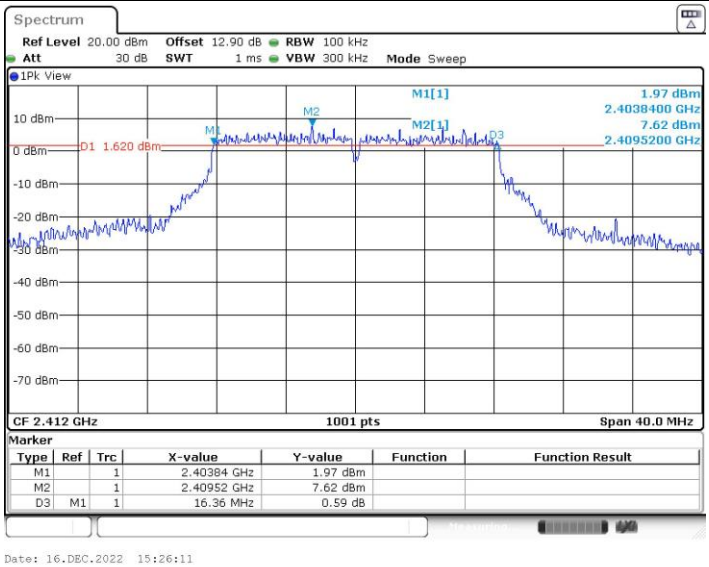


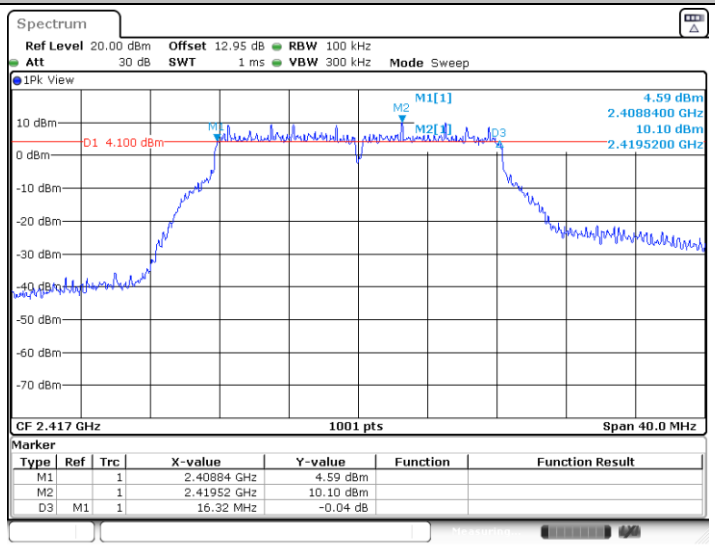
11G-CDD_Ant1_2412



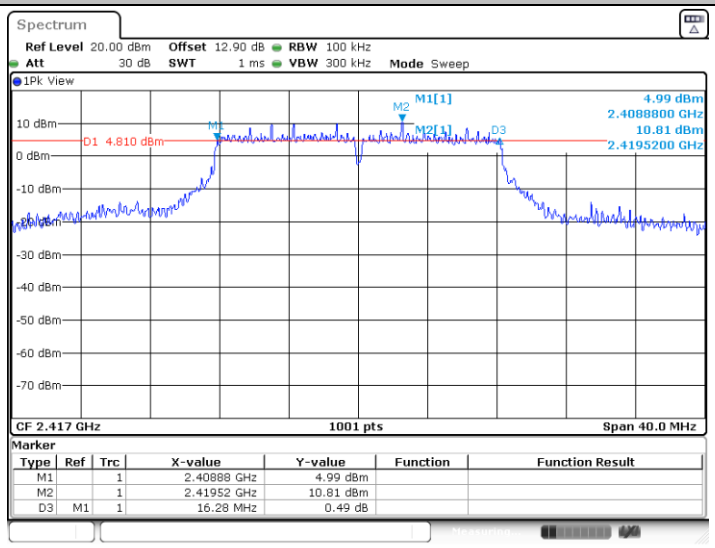
11G-CDD_Ant2_2412

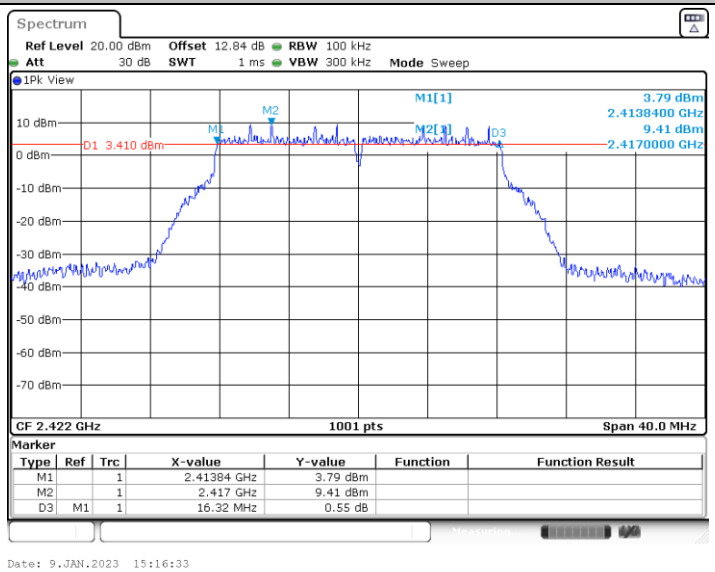


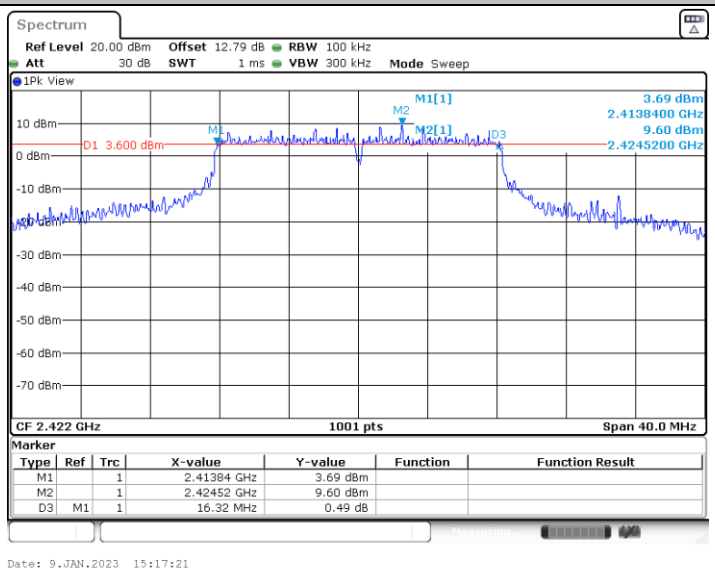
11G-CDD_Ant1_2417

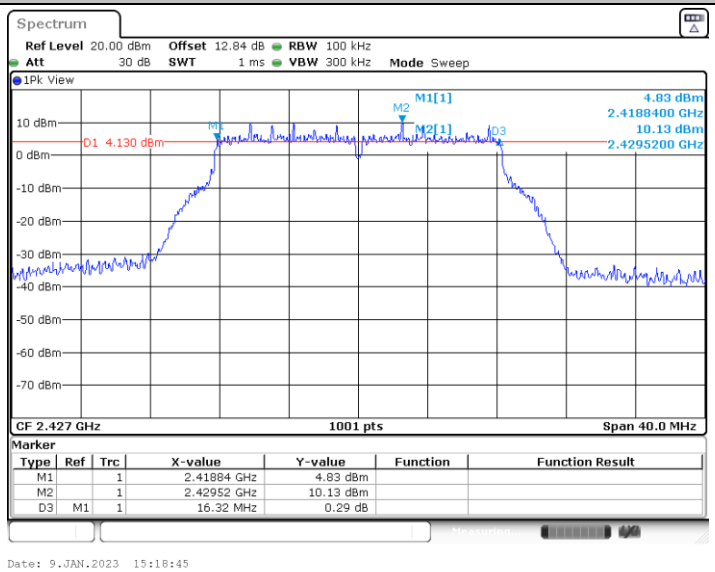


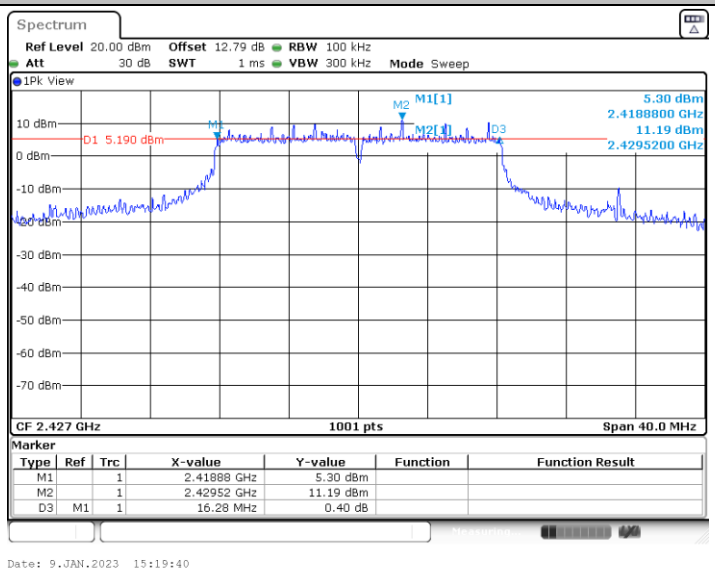
11G-CDD_Ant2_2417

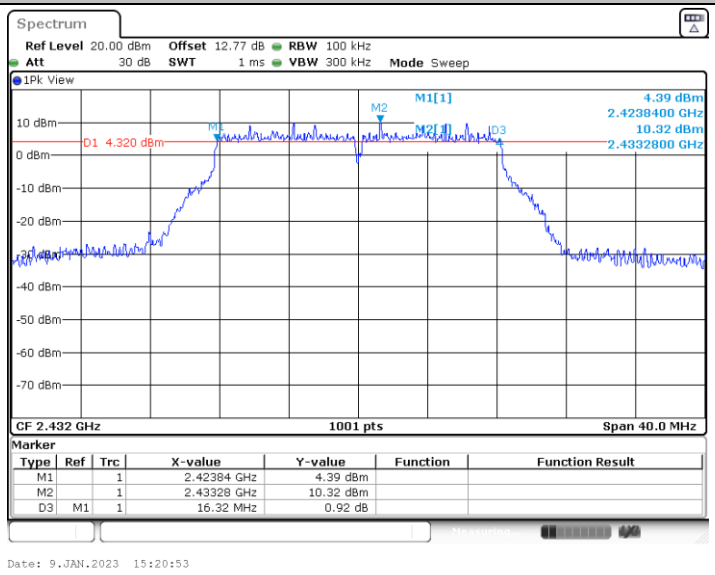


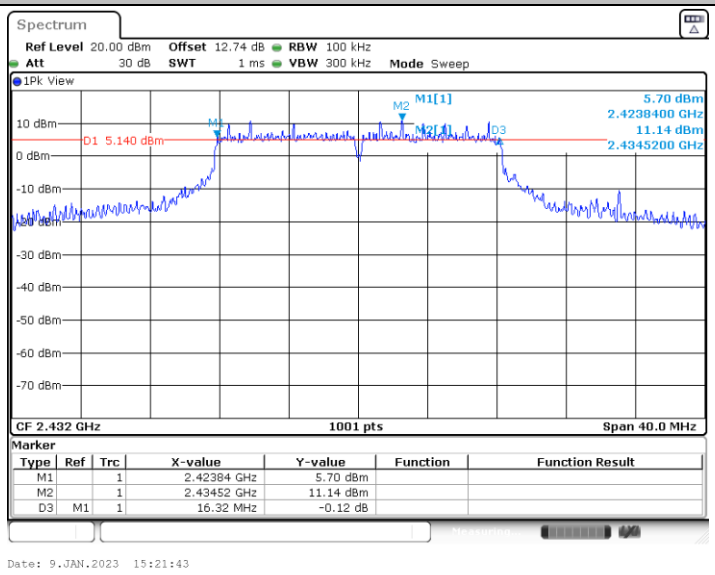
11G-CDD_Ant1_2422


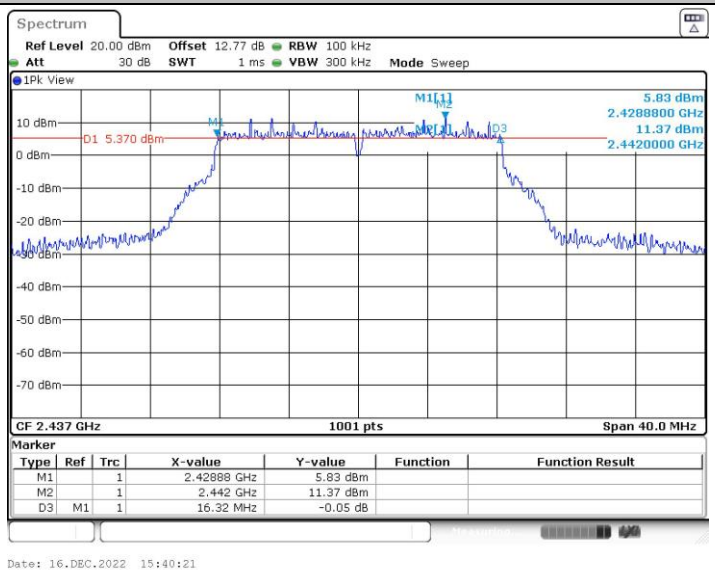
11G-CDD_Ant2_2422


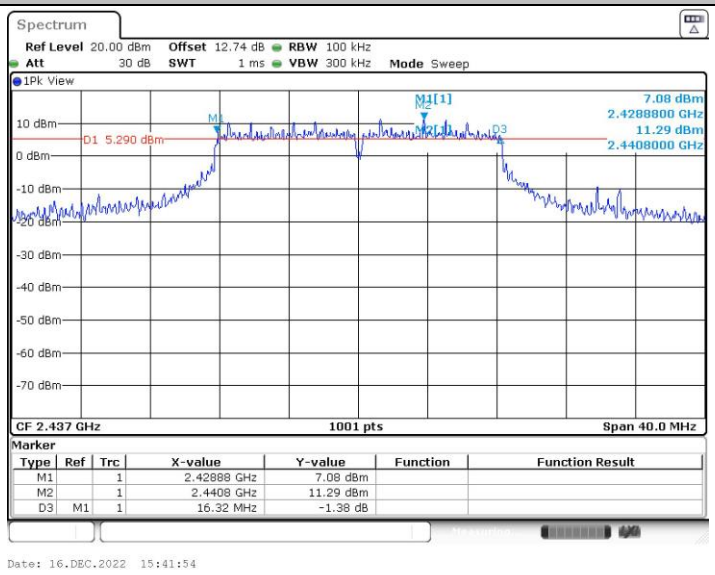
11G-CDD_Ant1_2427


11G-CDD_Ant2_2427


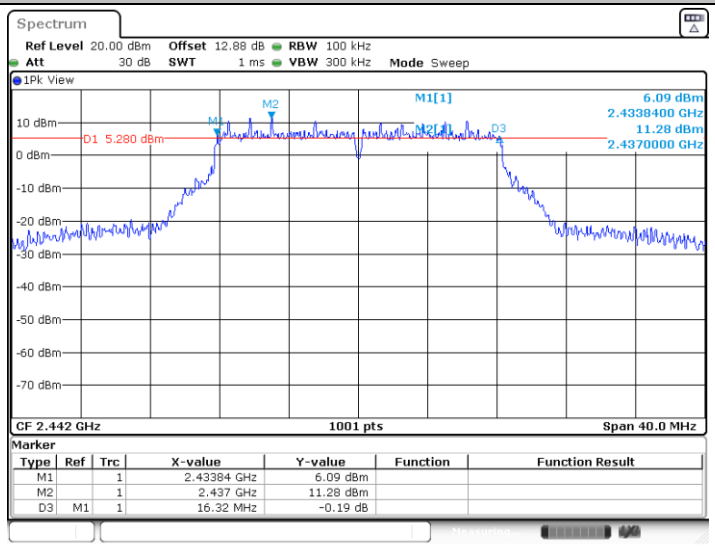
11G-CDD_Ant1_2432


11G-CDD_Ant2_2432


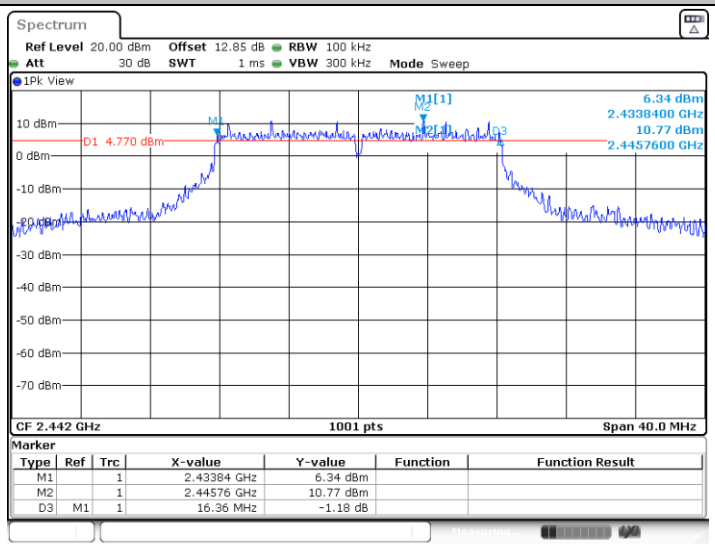
11G-CDD_Ant1_2437


11G-CDD_Ant2_2437


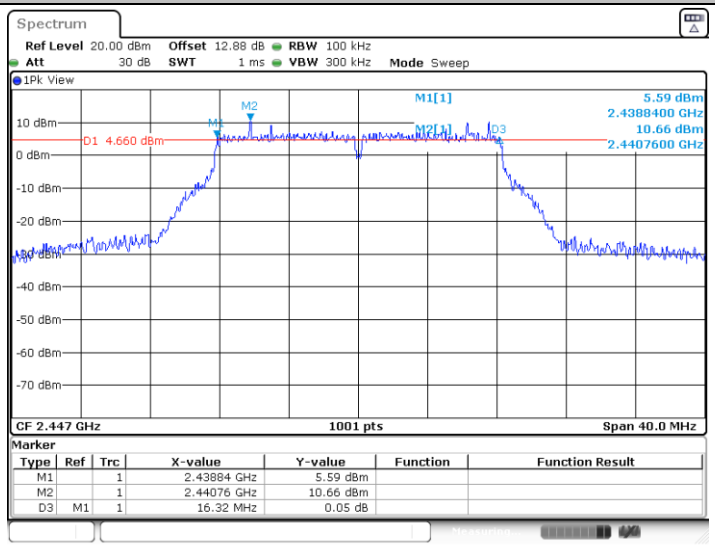
11G-CDD_Ant1_2442



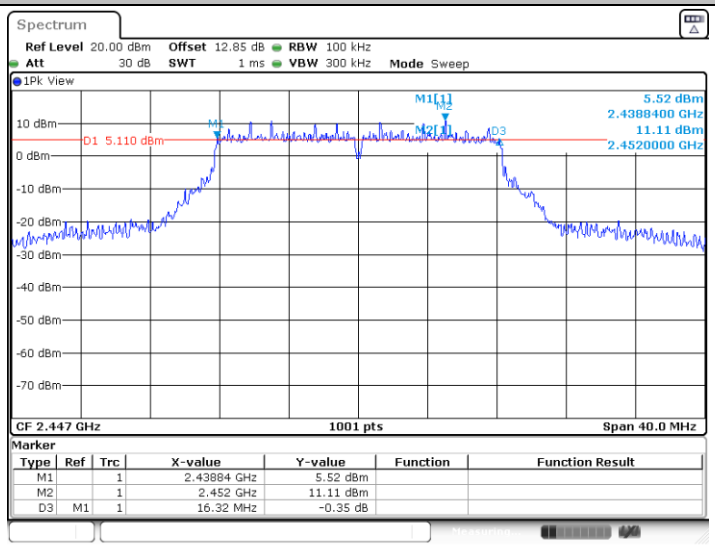
11G-CDD_Ant2_2442



11G-CDD_Ant1_2447



11G-CDD_Ant2_2447



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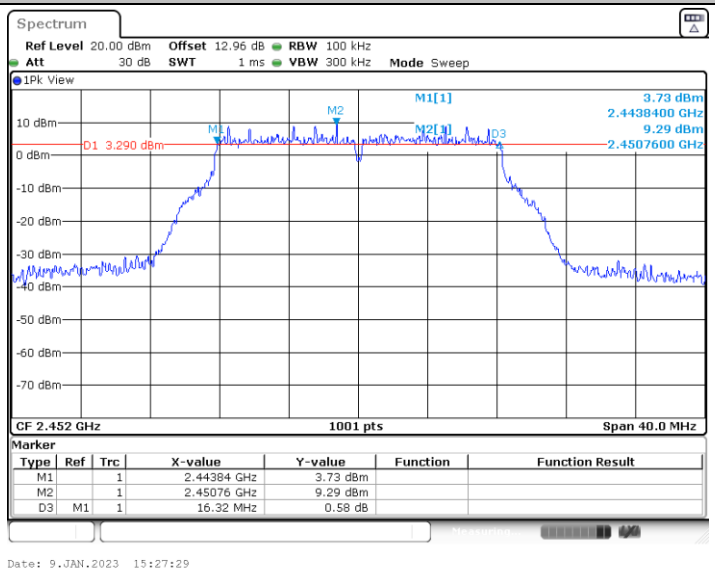
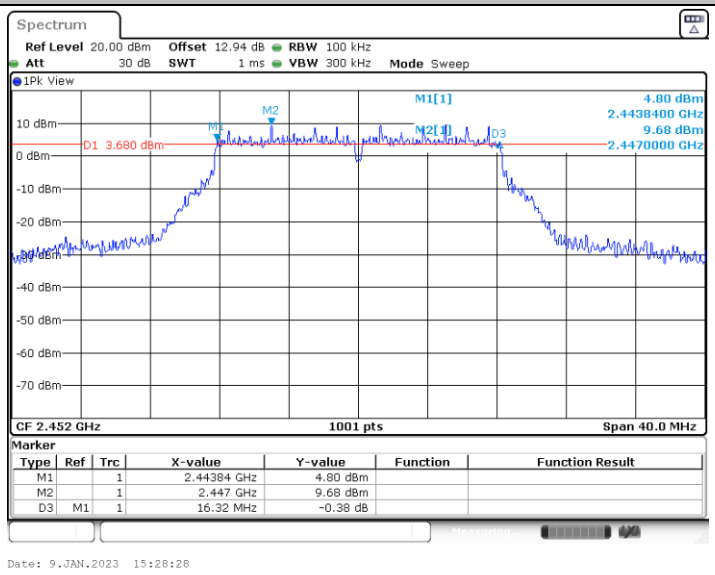


11G-CDD_Ant2_2452


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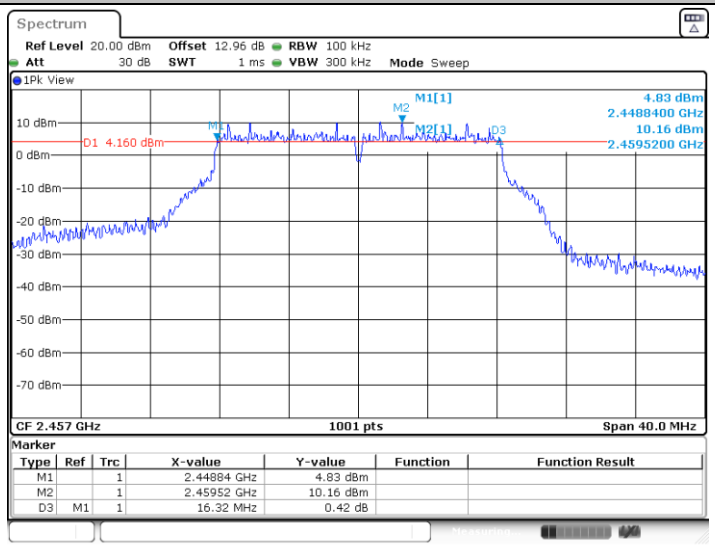

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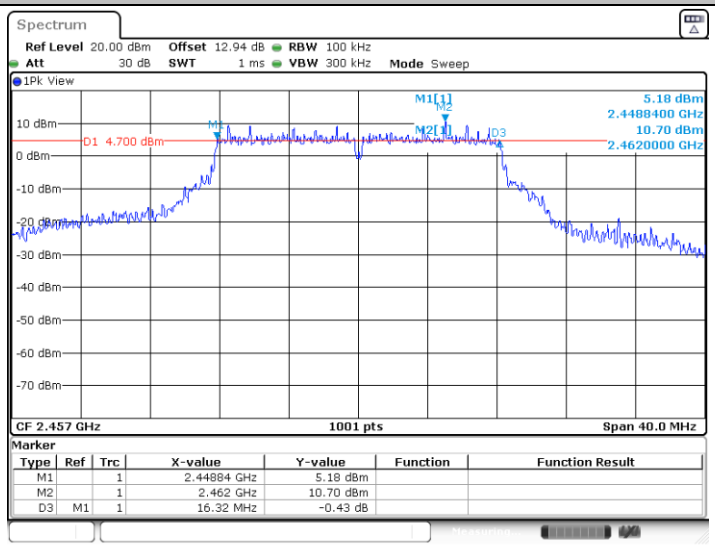

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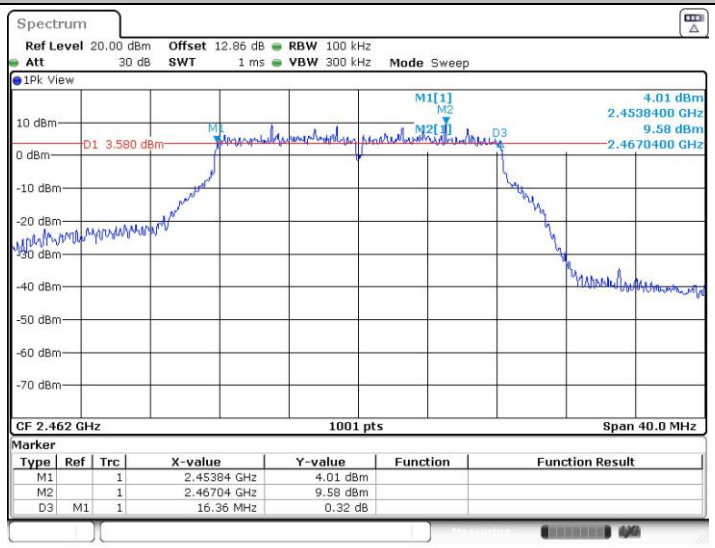
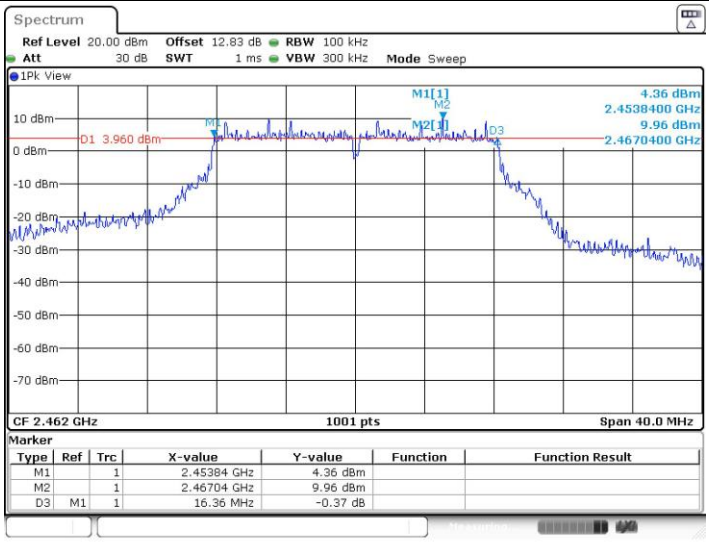
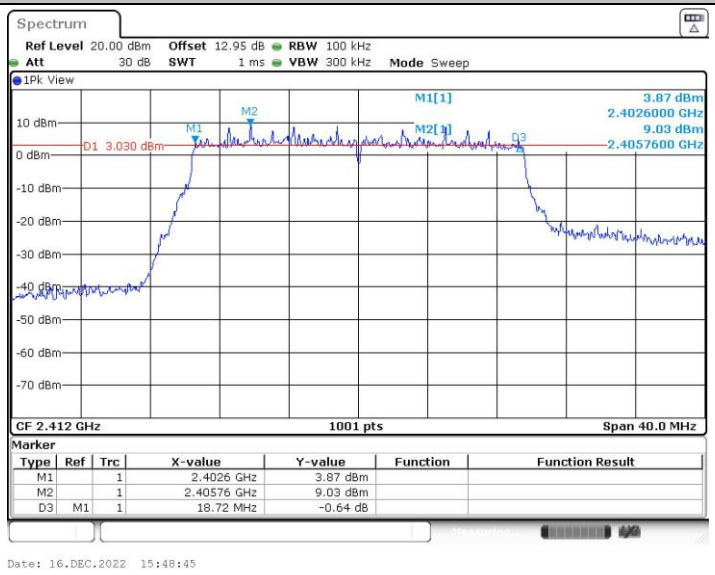


11G-CDD_Ant2_2462



11AX20MIMO_Ant1_2412


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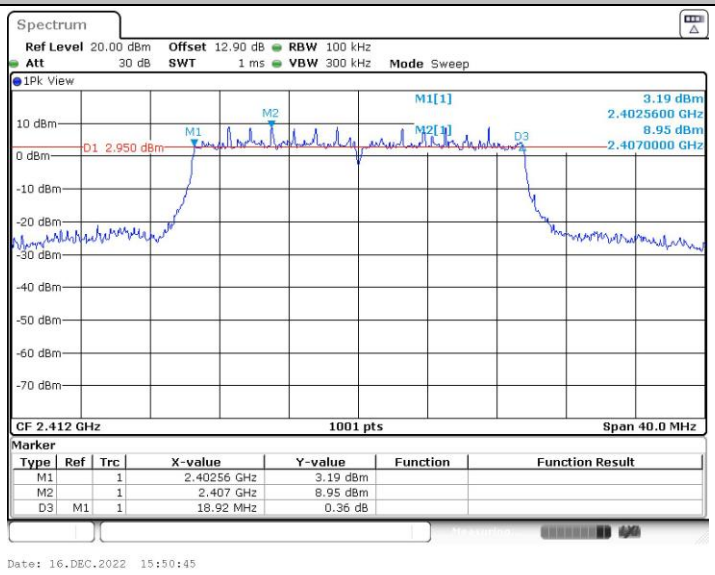
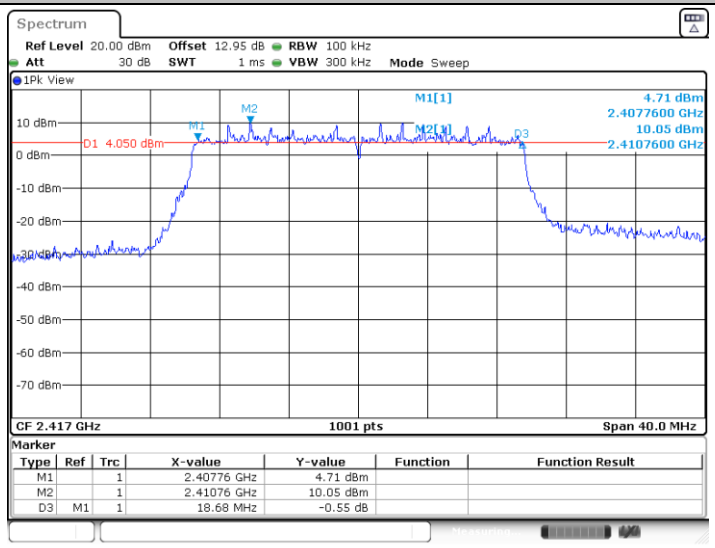
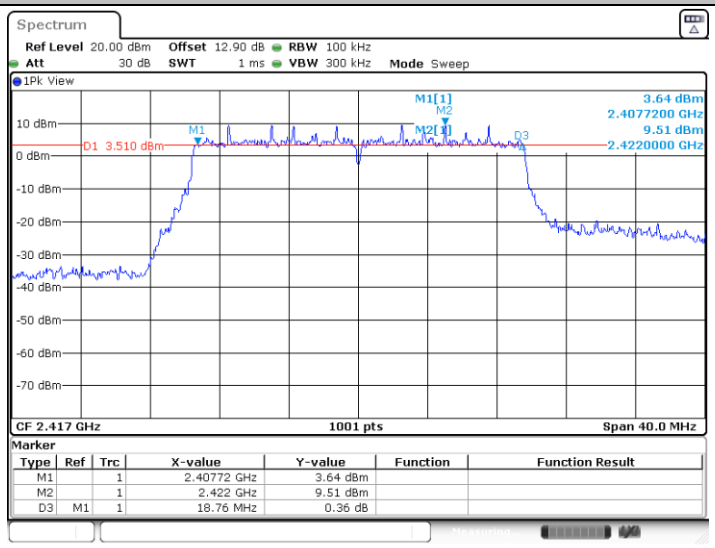
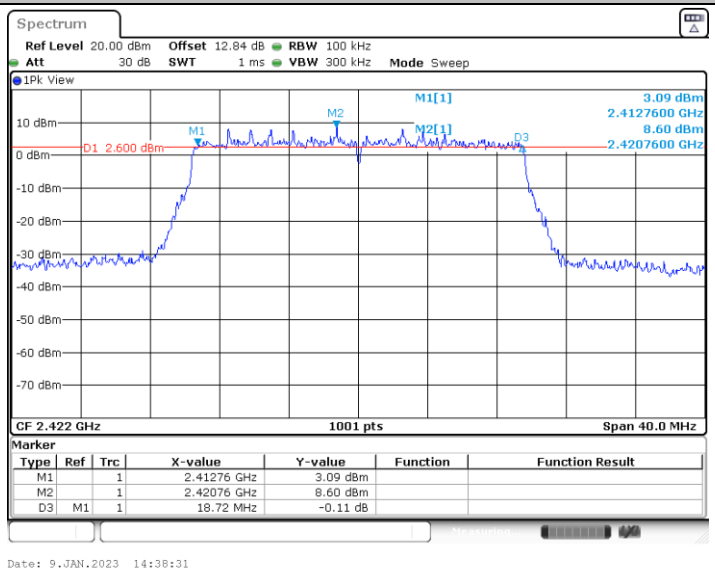


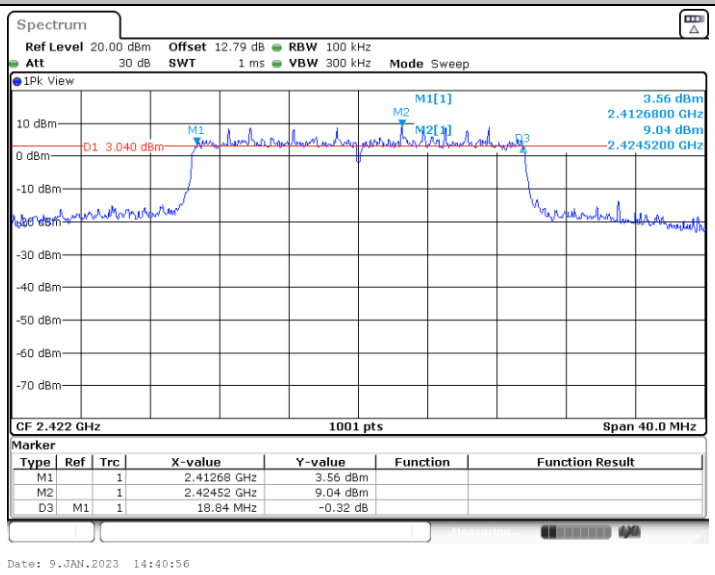
11AX20MIMO_Ant1_2417

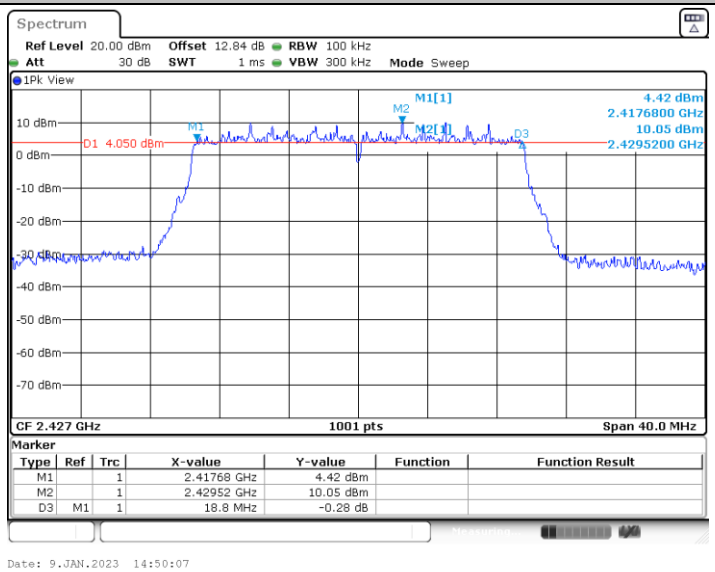


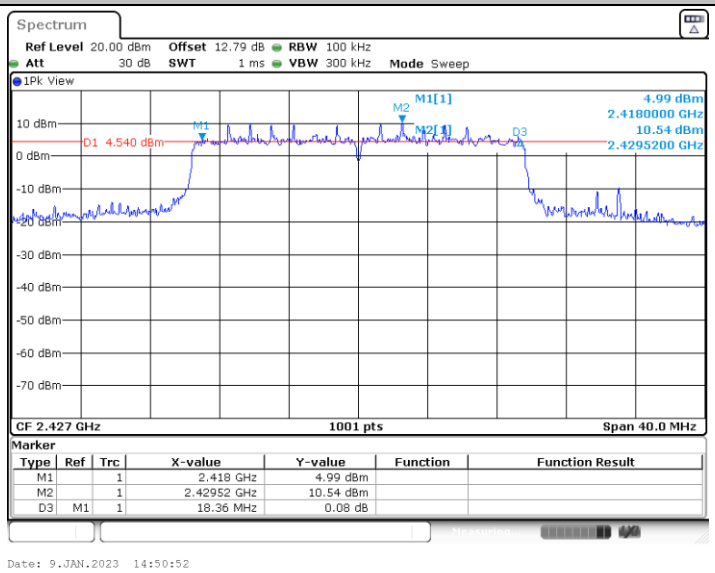
11AX20MIMO_Ant2_2417



11AX20MIMO_Ant1_2422


11AX20MIMO_Ant2_2422


11AX20MIMO_Ant1_2427


11AX20MIMO_Ant2_2427


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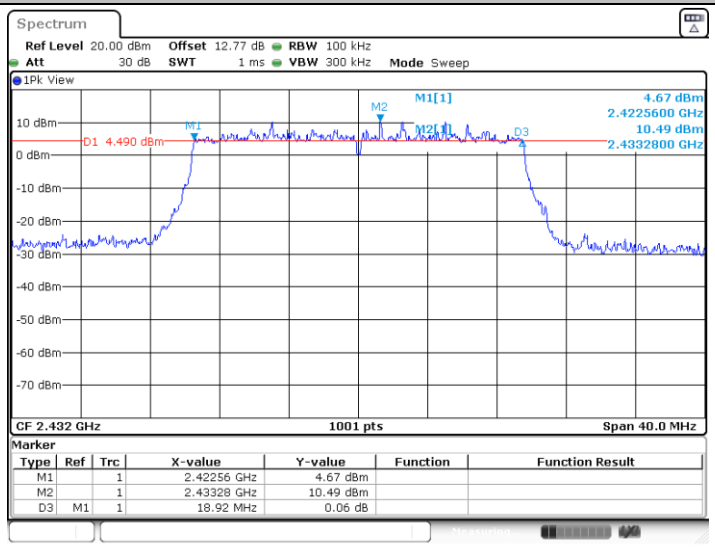
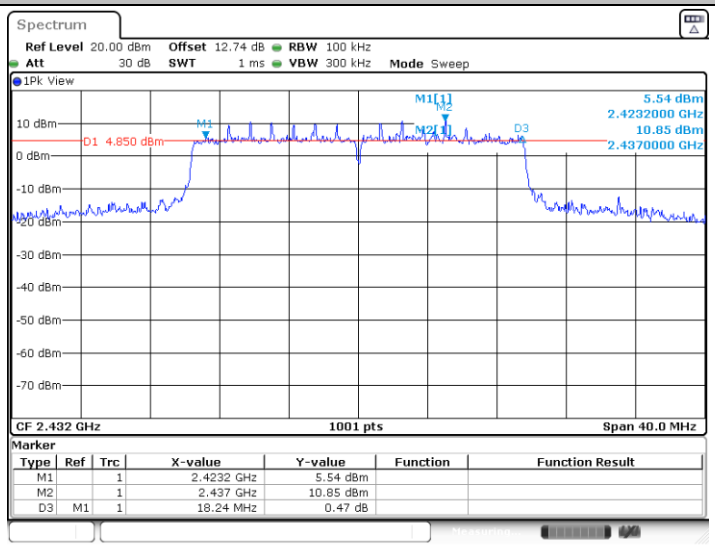
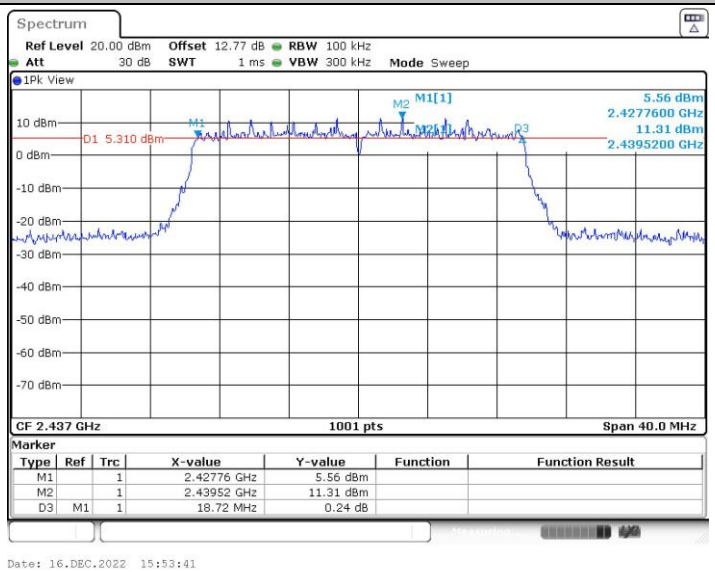
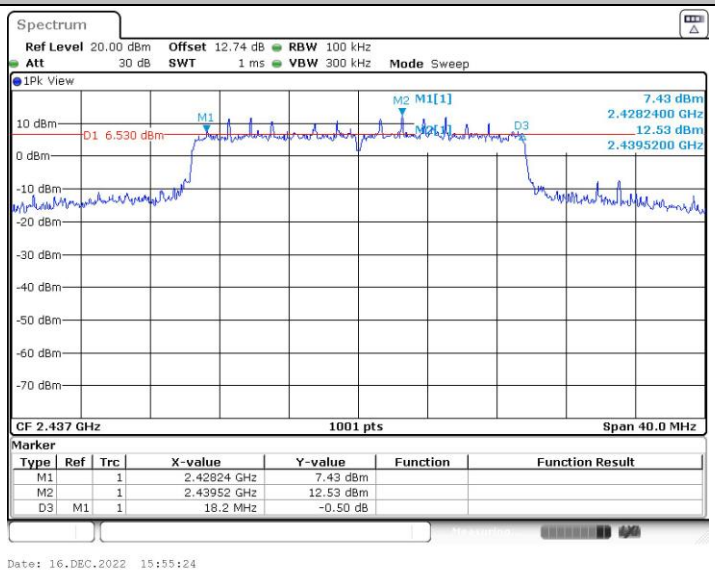
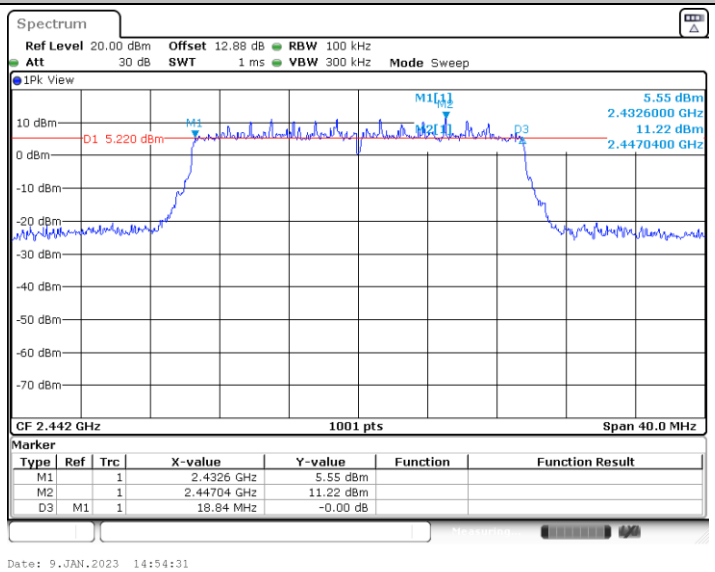
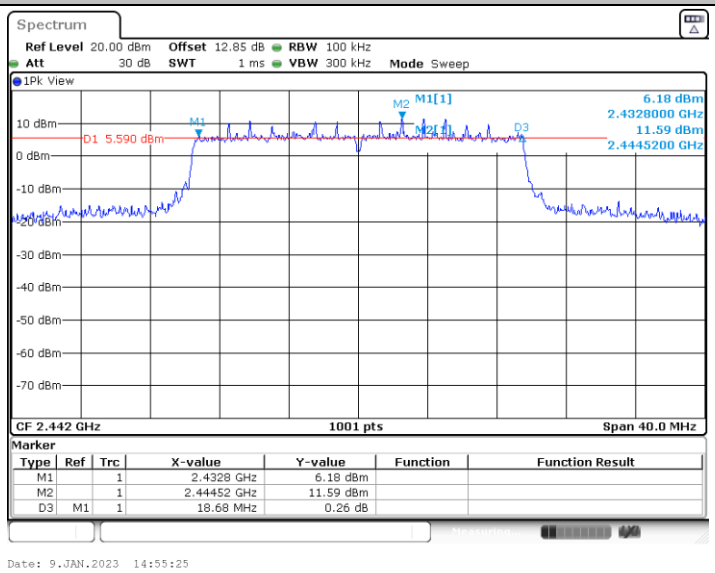


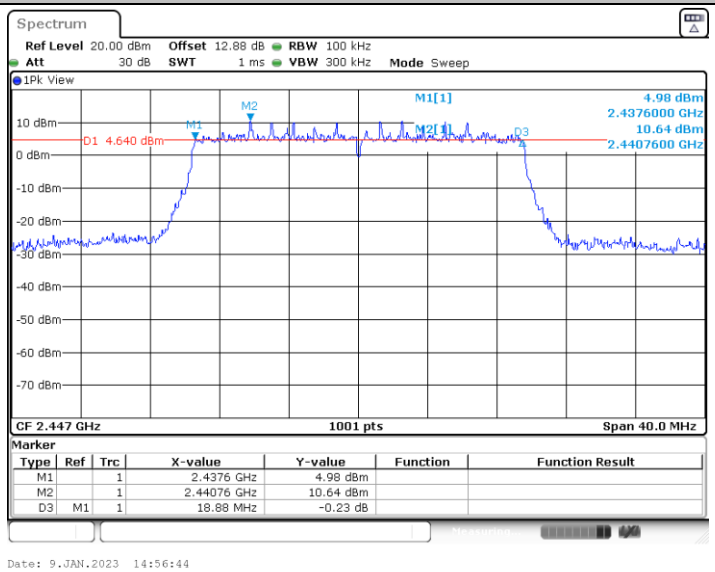
11AX20MIMO_Ant2_2432


11AX20MIMO_Ant1_2437


11AX20MIMO_Ant2_2437


11AX20MIMO_Ant1_2442


11AX20MIMO_Ant2_2442


11AX20MIMO_Ant1_2447


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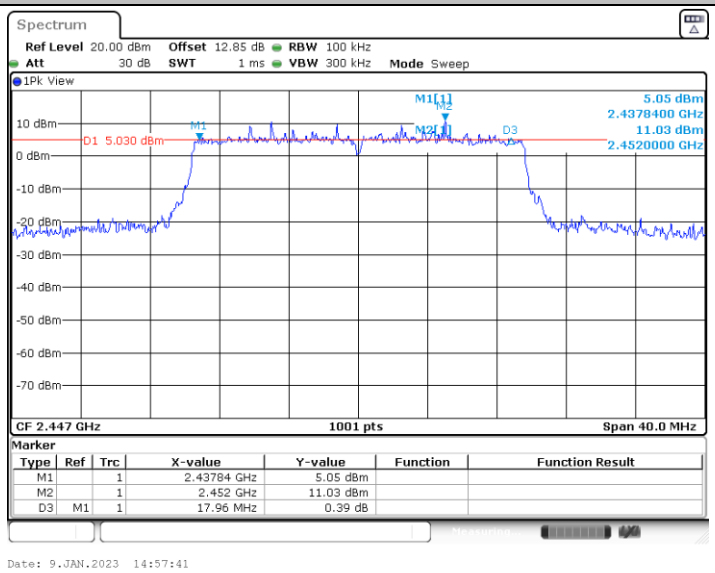
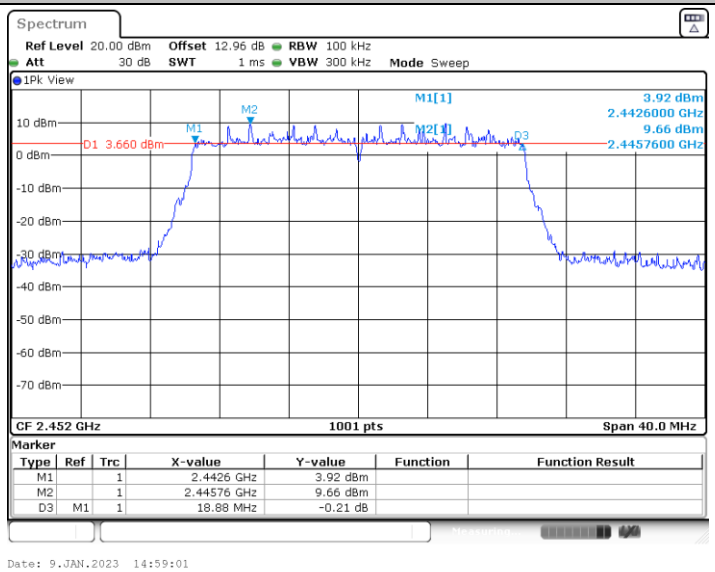
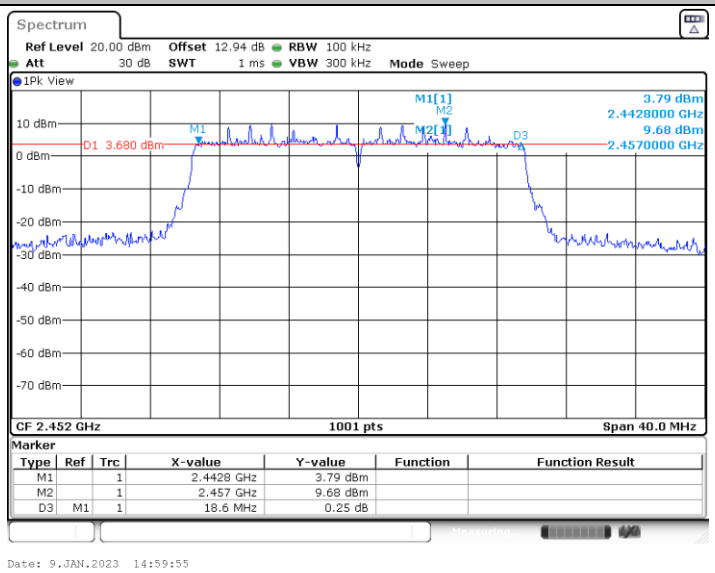
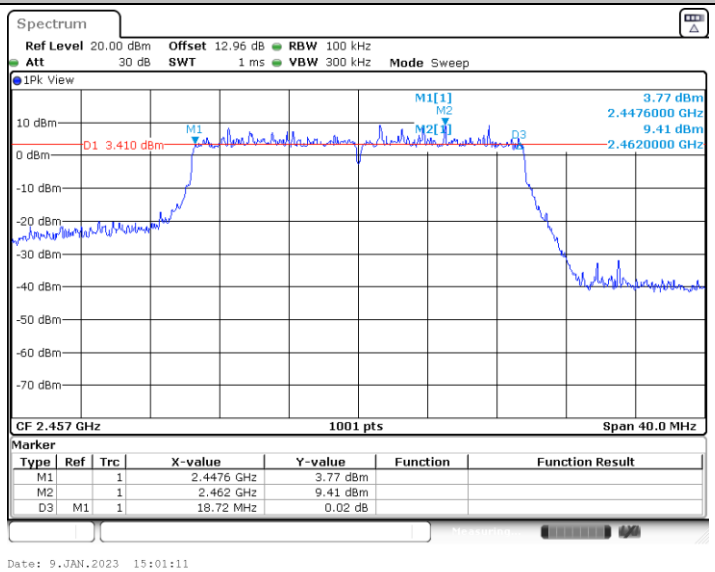
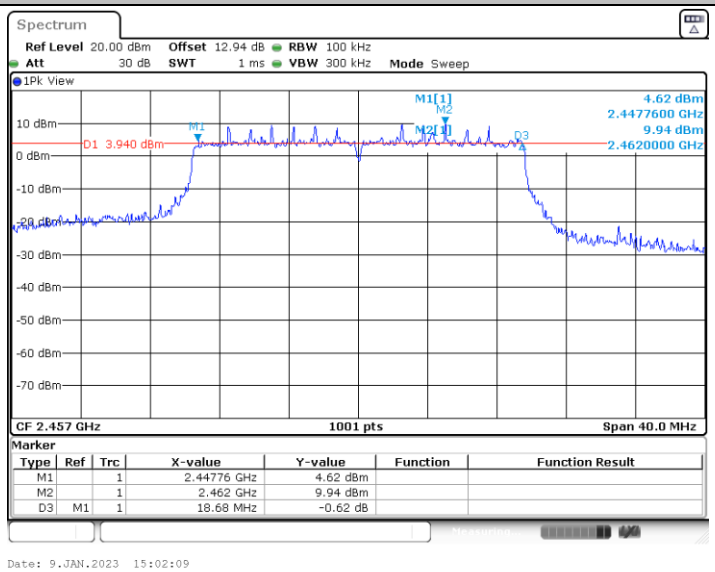
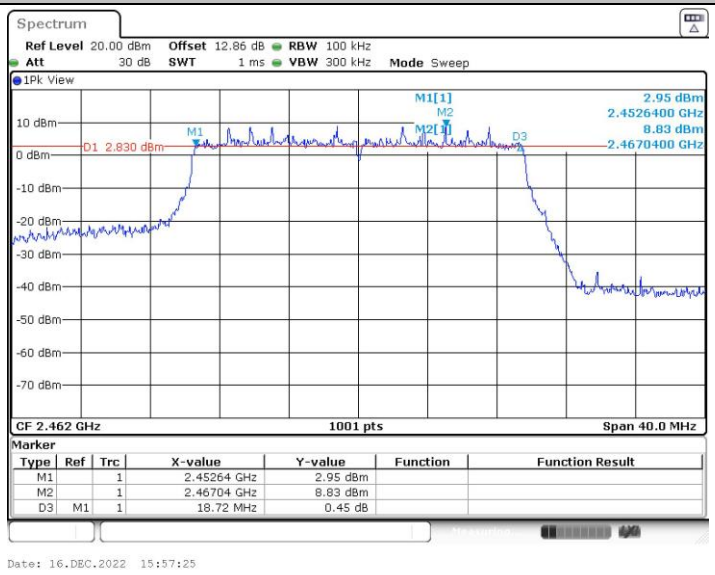


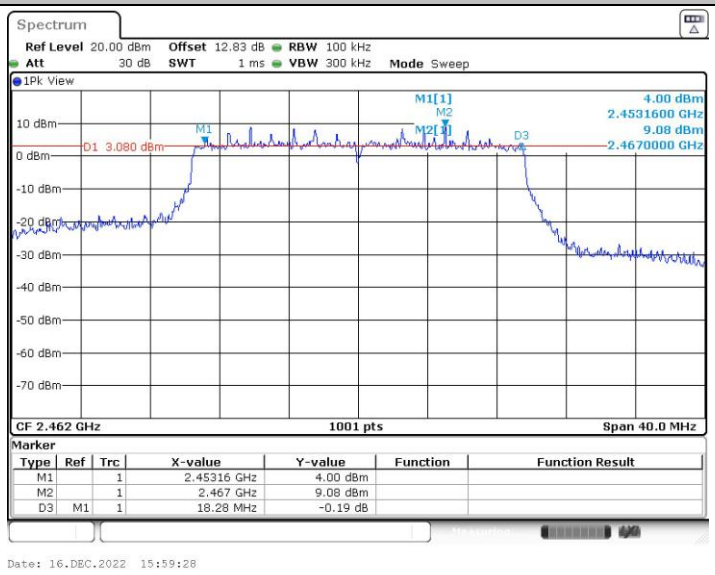
11AX20MIMO_Ant1_2452


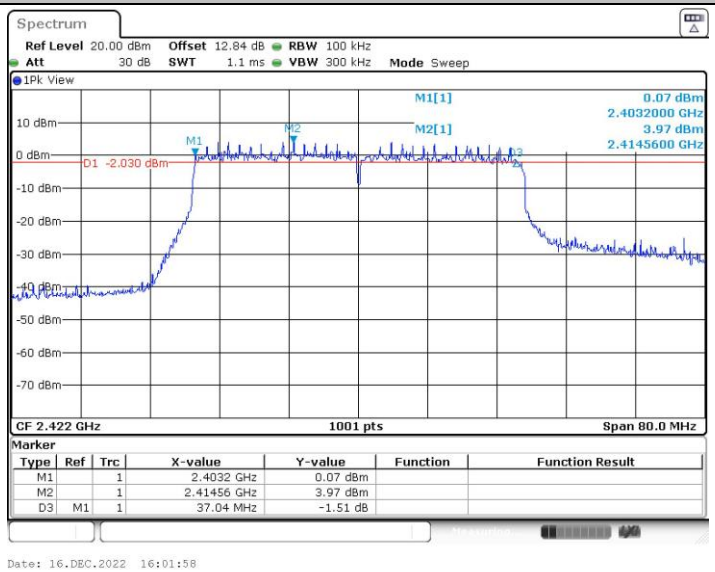
11AX20MIMO_Ant2_2452


11AX20MIMO_Ant1_2457


11AX20MIMO_Ant2_2457


11AX20MIMO_Ant1_2462


11AX20MIMO_Ant2_2462


11AX40MIMO_Ant1_2422


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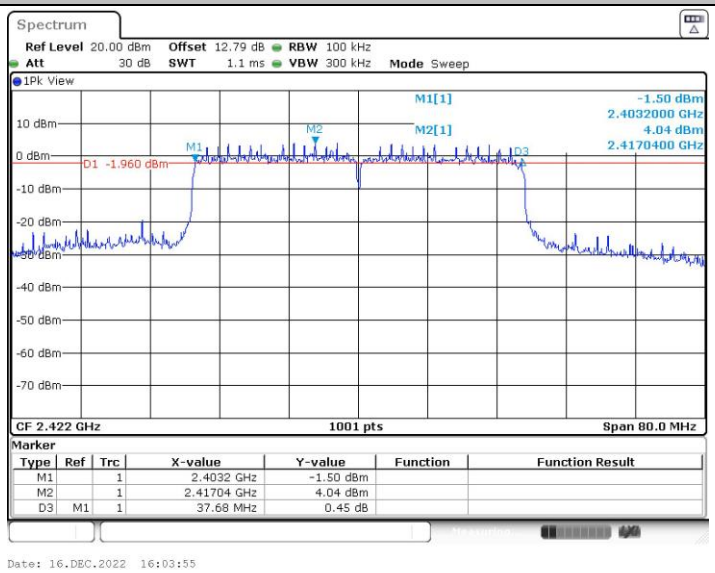
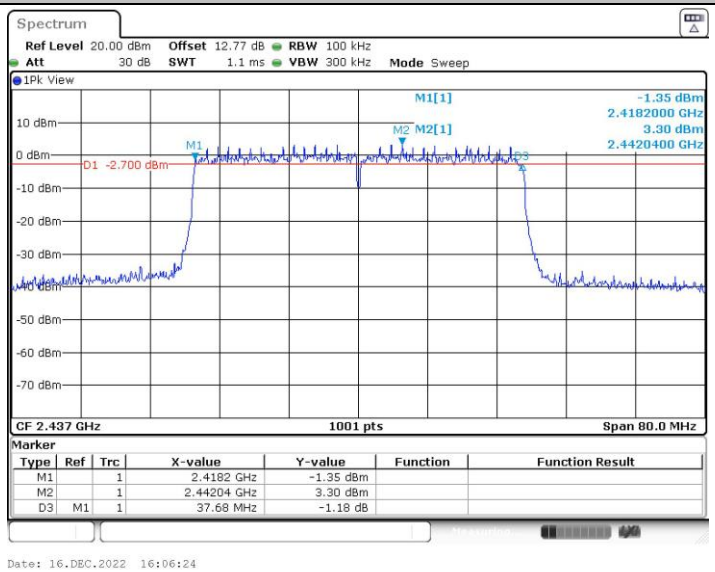
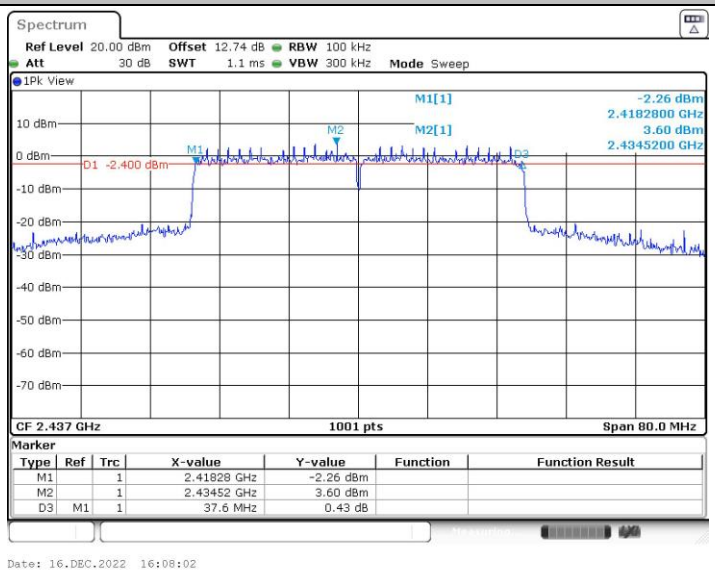
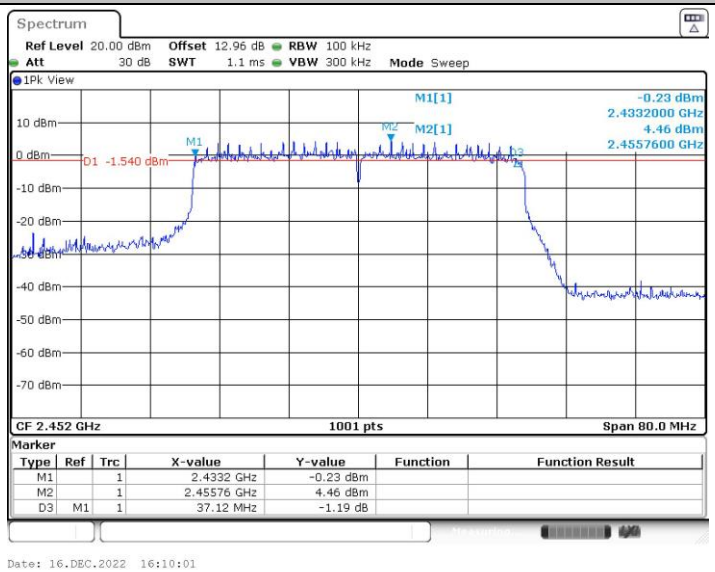


11AX40MIMO_Ant1_2437


11AX40MIMO_Ant2_2437


11AX40MIMO_Ant1_2452


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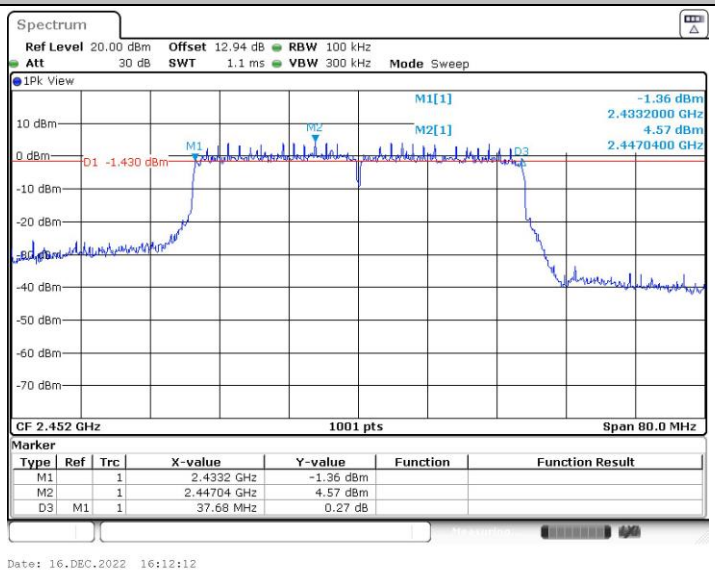


Occupied Channel Bandwidth

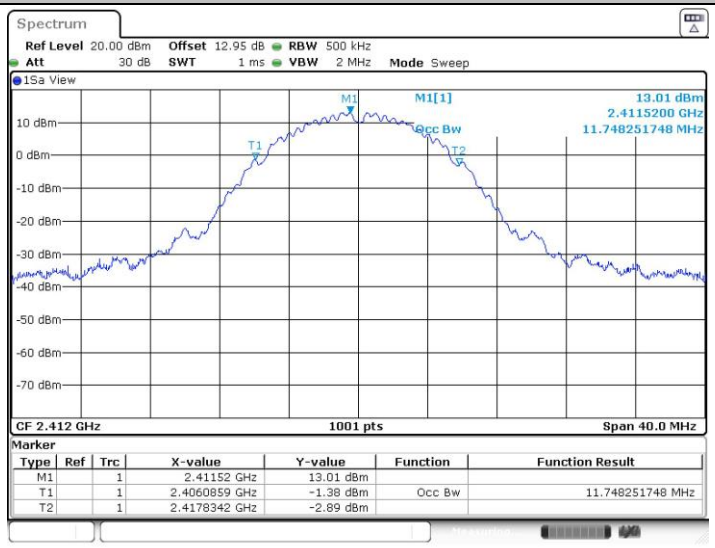
Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B-CDD	Ant1	2412	11.748	2406.0859	2417.8342	---	---
	Ant2	2412	11.189	2406.3656	2417.5544	---	---
	Ant1	2417	10.789	2411.5654	2422.3546	---	---
	Ant2	2417	10.11	2411.9650	2422.0749	---	---
	Ant1	2422	10.909	2416.5255	2427.4346	---	---
	Ant2	2422	10.11	2417.0050	2427.1149	---	---
	Ant1	2437	10.909	2431.5654	2442.4745	---	---
	Ant2	2437	10.31	2431.9251	2442.2348	---	---
	Ant1	2457	10.949	2451.5255	2462.4745	---	---
	Ant2	2457	11.668	2451.1259	2462.7942	---	---
	Ant1	2462	10.909	2456.5255	2467.4346	---	---
	Ant2	2462	11.229	2456.3656	2467.5944	---	---
11G-CDD	Ant1	2412	17.782	2403.2088	2420.9910	---	---
	Ant2	2412	17.542	2403.2088	2420.7512	---	---
	Ant1	2417	17.822	2408.2088	2426.0310	---	---
	Ant2	2417	18.102	2407.8492	2425.9510	---	---
	Ant1	2422	17.702	2413.2088	2430.9111	---	---
	Ant2	2422	18.581	2412.6094	2431.1908	---	---
	Ant1	2427	17.742	2418.2088	2435.9510	---	---
	Ant2	2427	18.981	2417.4895	2436.4705	---	---
	Ant1	2432	17.782	2423.1688	2440.9510	---	---
	Ant2	2432	18.661	2422.6893	2441.3506	---	---
	Ant1	2437	17.742	2428.2488	2445.9910	---	---
	Ant2	2437	18.861	2427.6893	2446.5504	---	---
	Ant1	2442	17.982	2433.0889	2451.0709	---	---
	Ant2	2442	18.022	2433.0490	2451.0709	---	---
	Ant1	2447	17.782	2438.1688	2455.9510	---	---
	Ant2	2447	17.702	2438.2088	2455.9111	---	---
	Ant1	2452	17.662	2443.2488	2460.9111	---	---
	Ant2	2452	17.463	2443.2887	2460.7512	---	---
	Ant1	2457	17.942	2448.0090	2465.9510	---	---
	Ant2	2457	18.022	2447.8891	2465.9111	---	---
	Ant1	2462	17.862	2453.0490	2470.9111	---	---
	Ant2	2462	17.782	2453.0090	2470.7912	---	---

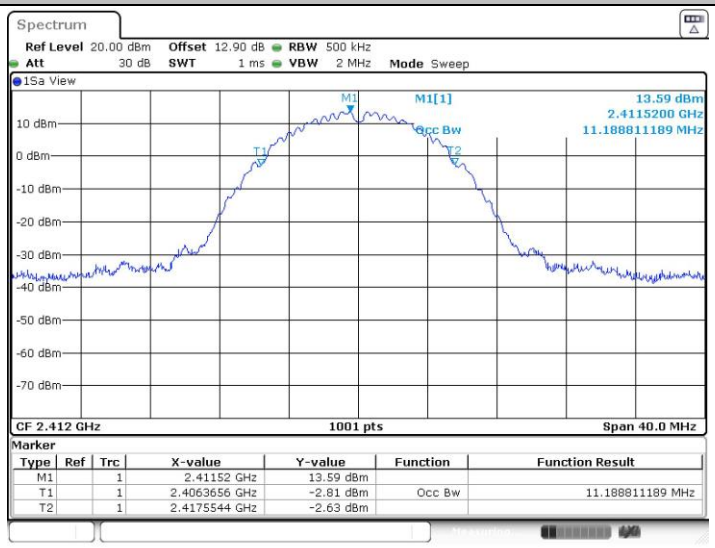
11AX20MIMO	Ant1	2412	19.341	2402.3297	2421.6703	---	---
	Ant2	2412	19.341	2402.3696	2421.7103	---	---
	Ant1	2417	19.341	2407.3297	2426.6703	---	---
	Ant2	2417	19.301	2407.4096	2426.7103	---	---
	Ant1	2422	19.301	2412.3297	2431.6304	---	---
	Ant2	2422	19.62	2412.2098	2431.8302	---	---
	Ant1	2427	19.341	2417.3297	2436.6703	---	---
	Ant2	2427	19.54	2417.2498	2436.7902	---	---
	Ant1	2432	19.341	2422.3297	2441.6703	---	---
	Ant2	2432	19.62	2422.2098	2441.8302	---	---
	Ant1	2437	19.381	2427.3297	2446.7103	---	---
	Ant2	2437	19.98	2427.0500	2447.0300	---	---
	Ant1	2442	19.341	2432.3297	2451.6703	---	---
	Ant2	2442	19.5	2432.2897	2451.7902	---	---
	Ant1	2447	19.341	2437.3297	2456.6703	---	---
	Ant2	2447	19.381	2437.3297	2456.7103	---	---
	Ant1	2452	19.341	2442.3297	2461.6703	---	---
	Ant2	2452	19.301	2442.4096	2461.7103	---	---
	Ant1	2457	19.341	2447.2897	2466.6304	---	---
	Ant2	2457	19.381	2447.2897	2466.6703	---	---
	Ant1	2462	19.381	2452.2897	2471.6703	---	---
	Ant2	2462	19.341	2452.3297	2471.6703	---	---
11AX40MIMO	Ant1	2422	37.882	2403.0589	2440.9411	---	---
	Ant2	2422	37.962	2402.9790	2440.9411	---	---
	Ant1	2437	37.722	2418.1389	2455.8611	---	---
	Ant2	2437	38.042	2417.9790	2456.0210	---	---
	Ant1	2452	37.802	2433.0589	2470.8611	---	---
	Ant2	2452	37.802	2433.0589	2470.8611	---	---

Test Graphs

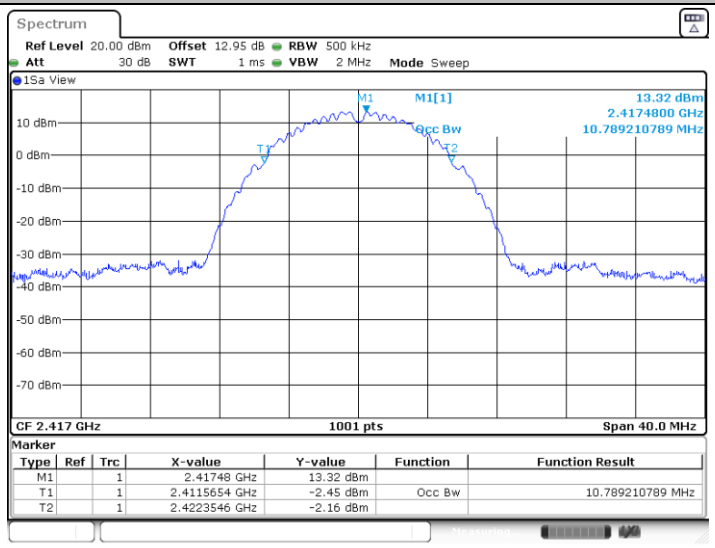
11B-CDD_Ant1_2412



11B-CDD_Ant2_2412



11B-CDD_Ant1_2417



11B-CDD_Ant2_2417