Report No.: DDT-R22041329-2E04

Issued Date: Aug. 31, 2022

FCC CERTIFICATION TEST REPORT

FOR

Applicant	**:**	arpara Technology Co.,Ltd.
Address	**:**	Room 109 1/F Building 36, Nantaihu Dongyuan Business Building High-tech Zone, Wuxing District, Huzhou City, Zhejiang Province China
Equipment under Test	**:**	arpara AIO 5K
Model No.	**:**	VRM1020WNA
Trade Mark	**:**	arpara
FCC ID	**:**	2A77G-VRM1020
Manufacturer	**:**	arpara Technology Co.,Ltd.
Address	**:**	Room 109 1/F Building 36, Nantaihu Dongyuan Business Building High-tech Zone, Wuxing District, Huzhou City, Zhejiang Province China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

Table of Contents

Test Report Declare

Applicant	:	arpara Technology Co.,Ltd.
Address	:	Room 109 1/F Building 36, Nantaihu Dongyuan Business Building High-tech Zone, Wuxing District, Huzhou City, Zhejiang Province China
Equipment under Test	:	arpara AIO 5K
Model No.	:	VRM1020WNA
Trade Mark	:	arpara
Manufacturer	:	arpara Technology Co.,Ltd.
Address	:	Room 109 1/F Building 36, Nantaihu Dongyuan Business Building High-tech Zone, Wuxing District, Huzhou City, Zhejiang Province China

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart E.

Test procedure used: ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01.

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	DDT-R22041329-2E04		
Date of Receipt:	Jun. 13, 2022	**Date of Test:**	Jun. 13, 2022 ~ Aug. 31, 2022

Prepared By: ***Approved By:***

Johnny Wang

Johnny Wang/Engineer ***Damon Hu/EMC Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 31, 2022	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	**Standard**	**Results**
6/26db Bandwidth and 99% Bandwidth	FCC 15.407 (e) ANSI C63.10:2013	Pass
Maximum Conducted Output Power	FCC 15.407 (a) ANSI C63.10:2013	Pass
Power Spectral Density	FCC 15.407 (a) ANSI C63.10:2013	Pass
Frequency Stability Measurement	FCC 15.407 (g) ANSI C63.10:2013	Pass
Emissions in restricted frequency bands	FCC 15.407 (a) FCC 15.209 FCC 15.205 ANSI C63.10:2013	Pass
Band Edge Compliance	FCC 15.407 (a) FCC 15.209 FCC 15.205 ANSI C63.10:2013	Pass
Power Line Conducted Emission	FCC 15.207 ANSI C63.10:2013	Pass
Antenna requirement	FCC 15.203 ANSI C63.10:2013	Pass
Dynamic Frequency Selection	FCC 15.407 (h) ANSI C63.10:2013	Pass

2. General test information

2.1. Description of EUT

EUT* Name	:	arpara AIO 5K
Model Number	:	VRM1020WNA
EUT function description	:	Please reference user manual of this device
Power Supply	:	Battery 3.85V or DC 5V by external adapter power supply
Radio Technology	:	IEEE 802.11a/n/ac/ax
Operation frequency	:	IEEE 802.11a: 5180MHz-5240MHz, 5260MHz-5320MHz, 5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11n HT20: 5180MHz-5240MHz, 5260MHz-5320MHz, 5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5270MHz-5310MHz, 5510MHz-5670MHz, 5755MHz-5755MHz IEEE 802.11ac HT20: 5180MHz-5240MHz, 5260MHz-5320MHz,5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11ac HT40: 5190MHz-5230MHz, 5270MHz-5310MHz, 5510MHz-5670MHz, 5755MHz-5755MHz IEEE 802.11ax HT20: 5180MHz-5240MHz, 5260MHz-5320MHz,5500MHz-5700MHz, 5745MHz-5825MHz IEEE 802.11ax HT40: 5190MHz-5230MHz, 5270MHz-5310MHz, 5510MHz-5670MHz, 5755MHz-5755MHz IEEE 802.11ax HT80: 5210MHz, 5290MHz, 5530MHz,5610MHz, 5775MHz
Modulation	:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDM (1024QAM,256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	:	IEEE 802.11a: up to 54 Mbps IEEE 802.11n HT20: up to 144.4 Mbps IEEE 802.11n HT40: up to 300 Mbps IEEE 802.11ac VHT20: up to 173.4 Mbps IEEE 802.11ac VHT40: up to 400 Mbps IEEE 802.11ax HE20: up to 286.8 Mbps IEEE 802.11ax HE40: up to 573.5 Mbps IEEE 802.11ax HE80: up to 1201 Mbps
Antenna Type	:	Antenna 1: FPC antenna, Maximum PK gain: 4.94 dBi Antenna 2: FPC antenna, Maximum PK gain: 5.45 dBi
Sample Type	:	Series production
Sample Number	:	S22041329-01 for conductive S22041329-02 for radiation

Note 1: EUT is the ab. of equipment under test. It does not support RU mode.
Note 2: According exploratory explorer test, The 802.11n HT20/n HT40 mode are the same attribute with the 802.11ac VHT20/ac VHT40 mode, so choose the 802.11n HT20/n HT40 mode to test and report.

Antenna information			
	Ant1 gain	Ant2 gain	MIMO
IEEE 802.11a	4.94	5.45	/
IEEE 802.11n HT20	4.94	5.45	8.21
IEEE 802.11n HT40	4.94	5.45	8.21
IEEE 802.11ac VHT20	4.94	5.45	8.21
IEEE 802.11ac VHT40	4.94	5.45	8.21
IEEE 802.11ax HE20	4.94	5.45	8.21
IEEE 802.11ax HE40	4.94	5.45	8.21
IEEE 802.11ax HE80	4.94	5.45	8.21

Channel information					
IEEE 802.11a IEEE 802.11n (HT20) IEEE 802.11ac (VHT20) IEEE 802.11ax (HE20)		IEEE 802.11n (HT40) IEEE 802.11ac (VHT40) IEEE 802.11ax (HE40)		IEEE 802.11ax (HE80)	
UNII-1					
CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	/	/
44	5220	/	/	/	/
48	5240	/	/	/	/
UNII-2A					
52	5260	54	5270	58	5290
56	5280	62	5310		/
60	5300	/	/	/	/
64	5320	/	/	/	/
UNII-2C					
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	/	/
112	5560	126	5630	/	/
116	5580	134	5670	/	/
120	5600	/	/	/	/
124	5620	/	/	/	/
128	5640	/	/	/	/
132	5660	/	/	/	/
134	5680	/	/	/	/
140	5700	/	/	/	/
UNII-3					
149	5745	151	5755	155	5725
153	5765	159	5795	/	/
157	5785	/	/	/	/
161	5805	/	/	/	/
165	5825	/	/	/	/

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Other
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

Test software: QRCT.exe
The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.
The pathloss of external cable: 0.5dB (According to the manufacturer's claims)

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mpbs) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	/	6	Low: CH36	5180
	/	6	Middle: CH40	5200
	/	6	High: CH48	5240
	/	6	Low: CH52	5260
	/	6	Middle: CH56	5280
	/	6	High: CH64	5320
	/	6	Low: CH100	5500
	/	6	Middle: CH116	5580
	/	6	High: CH140	5700
	/	6	Low: CH149	5745
	/	6	Middle: CH157	5785
	/	6	High: CH165	5825
IEEE 802.11n HT20	/	MCS 0	Low: CH36	5180
	/	MCS 0	Middle: CH40	5200
	/	MCS 0	High: CH48	5240
	/	MCS 0	Low: CH52	5260
	/	MCS 0	Middle: CH56	5280
	/	MCS 0	High: CH64	5320
	/	MCS 0	Low: CH100	5500
	/	MCS 0	Middle: CH116	5580
	/	MCS 0	High: CH140	5700
	/	MCS 0	Low: CH149	5745
	/	MCS 0	Middle: CH157	5785
	/	MCS 0	High: CH165	5825
IEEE 802.11n HT40	/	MCS 0	Low: CH38	5190
	/	MCS 0	Middle: CH46	5230
	/	MCS 0	High: CH54	5270

	/	MCS 0	Low: CH62	5310
	/	MCS 0	Middle: CH102	5510
	/	MCS 0	High: CH110	5550
	/	MCS 0	Low: CH134	5670
	/	MCS 0	Middle: CH151	5755
	/	MCS 0	High: CH159	5795
IEEE 802.11ac HT20	/	MCS 0	Low: CH36	5180
	/	MCS 0	Middle: CH40	5200
	/	MCS 0	High: CH48	5240
	/	MCS 0	Low: CH52	5260
	/	MCS 0	Middle: CH56	5280
	/	MCS 0	High: CH64	5320
	/	MCS 0	Low: CH100	5500
	/	MCS 0	Middle: CH116	5580
	/	MCS 0	High: CH140	5700
	/	MCS 0	Low: CH149	5745
	/	MCS 0	Middle: CH157	5785
	/	MCS 0	High: CH165	5825
IEEE 802.11ac HT40	/	MCS 0	Low: CH38	5190
	/	MCS 0	Middle: CH46	5230
	/	MCS 0	High: CH54	5270
	/	MCS 0	Low: CH62	5310
	/	MCS 0	Middle: CH102	5510
	/	MCS 0	High: CH110	5550
	/	MCS 0	Low: CH134	5670
	/	MCS 0	Middle: CH151	5755
	/	MCS 0	High: CH159	5795
IEEE 802.11ax HE20	/	MCS 0	Low: CH36	5180
	/	MCS 0	Middle: CH40	5200
	/	MCS 0	High: CH48	5240
	/	MCS 0	Low: CH52	5260
	/	MCS 0	Middle: CH56	5280
	/	MCS 0	High: CH64	5320
	/	MCS 0	Low: CH100	5500
	/	MCS 0	Middle: CH116	5580
	/	MCS 0	High: CH140	5700
	/	MCS 0	Low: CH149	5745
	/	MCS 0	Middle: CH157	5785
	/	MCS 0	High: CH165	5825
IEEE 802.11ax HE40	/	MCS 0	Low: CH38	5190
	/	MCS 0	Middle: CH46	5230
	/	MCS 0	High: CH54	5270
	/	MCS 0	Low: CH62	5310
	/	MCS 0	Middle: CH102	5510
	/	MCS 0	High: CH110	5550
	/	MCS 0	Low: CH134	5670
	/	MCS 0	Middle: CH151	5755
	/	MCS 0	High: CH159	5795
IEEE 802.11ax HE80	/	MCS 0	CH42	5210
	/	MCS 0	CH58	5290
	/	MCS 0	CH106	5530

	/	MCS 0	CH122	5610
	/	MCS 0	CH155	5775
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.				

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

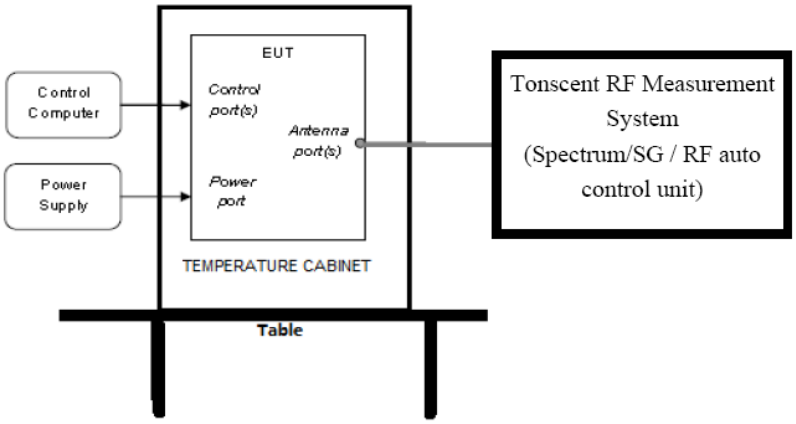
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz≤ f < 22 GHz)
Uncertainty for radio frequency (RBW<20kHz)	3×10^{-8}
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-40GHz)	4.10 dB (1-6 GHz)
	4.40 dB (6 GHz-18 GHz)
	3.54 dB (18 GHz-26 GHz)
	4.30 dB (26 GHz-40 GHz)
Uncertainty for Power line conduction emission test	3.32 dB (150 kHz-30 MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒RF Connected Test (Tonscend RF Measurement System 3#)					
SPECTRUM ANALYZER	R&S	FSU26	200071	Sep. 02, 2021	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	May 18, 2022	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	May 18, 2022	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.6.77.0518	N/A	N/A
☒Radiation 3#chamber					
EMI Test Receiver	R&S	ESU	100472	May 18, 2022	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 18, 2022	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 19, 2021	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Aug. 07, 2021	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02468	Nov. 17, 2021	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Sep. 02, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Apr. 11, 2022	1 Year
Test software	Audix	E3	V 6.1.1.1	N/A	N/A
☒Power Line Conducted Emissions Test 1#					
Test Receiver	R&S	ESCI	100551	Sep. 02, 2021	1 Year
LISN 1	R&S	ENV216	101109	Sep. 02, 2021	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 02, 2021	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 02, 2021	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 02, 2021	1 Year
LISN 3	SCHWARZBECK	NSLK 8163	00017	Sep. 02, 2021	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth

4.1. Block diagram of test setup



4.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Bandwidth	26 dB Bandwidth	5150 - 5250
	26 dB Bandwidth	5250 - 5350
	26 dB Bandwidth	5470 - 5725
	Minimum 500 kHz 6 dB Bandwidth	5725 - 5850

4.3. Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth: RBW=100 kHz For 26 dB Bandwidth: approximately 1% of the emission bandwidth.
VBW	For 6 dB Bandwidth: VBW=300 kHz For 26 dB Bandwidth: >3 RBW
Trace	Max hold
Sweep	Auto couple

(2) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB and 6 dB relative to the maximum level measured in the fundamental emission.

4.4. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.46	5171.8082	5188.2717	---	PASS
	Ant2	5180	16.46	5171.8082	5188.2717	---	PASS
	Ant1	5200	16.46	5191.8082	5208.2717	---	PASS
	Ant2	5200	16.46	5191.8082	5208.2717	---	PASS
	Ant1	5240	16.46	5231.8082	5248.2717	---	PASS
	Ant2	5240	16.42	5231.8082	5248.2318	---	PASS
	Ant1	5260	16.46	5251.8082	5268.2717	---	PASS
	Ant2	5260	16.46	5251.8082	5268.2717	---	PASS
	Ant1	5280	16.46	5271.8082	5288.2717	---	PASS
	Ant2	5280	16.42	5271.8082	5288.2318	---	PASS
	Ant1	5320	16.42	5311.8082	5328.2318	---	PASS
	Ant2	5320	16.46	5311.8082	5328.2717	---	PASS
	Ant1	5500	16.46	5491.8082	5508.2717	---	PASS
	Ant2	5500	16.46	5491.8082	5508.2717	---	PASS
	Ant1	5580	16.46	5571.8082	5588.2717	---	PASS
	Ant2	5580	16.46	5571.8082	5588.2717	---	PASS
	Ant1	5700	16.46	5691.8082	5708.2717	---	PASS
	Ant2	5700	16.42	5691.8082	5708.2318	---	PASS
	Ant1	5745	16.46	5736.8082	5753.2717	---	PASS
	Ant2	5745	16.46	5736.8082	5753.2717	---	PASS
	Ant1	5785	16.46	5776.8082	5793.2717	---	PASS
	Ant2	5785	16.42	5776.8082	5793.2318	---	PASS
	Ant1	5825	16.46	5816.8082	5833.2717	---	PASS
	Ant2	5825	16.42	5816.8082	5833.2318	---	PASS
11N20MIMO	Ant1	5180	17.86	5171.0889	5188.9510	---	PASS
	Ant2	5180	17.90	5171.0490	5188.9510	---	PASS
	Ant1	5200	17.86	5191.0889	5208.9510	---	PASS
	Ant2	5200	17.90	5191.0889	5208.9910	---	PASS
	Ant1	5240	17.86	5231.0889	5248.9510	---	PASS
	Ant2	5240	17.90	5231.0490	5248.9510	---	PASS
	Ant1	5260	17.86	5251.0889	5268.9510	---	PASS
	Ant2	5260	17.86	5251.0889	5268.9510	---	PASS
	Ant1	5280	17.86	5271.0889	5288.9510	---	PASS
	Ant2	5280	17.94	5271.0490	5288.9910	---	PASS
	Ant1	5320	17.86	5311.0889	5328.9510	---	PASS
	Ant2	5320	17.90	5311.0490	5328.9510	---	PASS
	Ant1	5500	17.86	5491.0889	5508.9510	---	PASS
	Ant2	5500	17.86	5491.0889	5508.9510	---	PASS
	Ant1	5580	17.86	5571.0889	5588.9510	---	PASS
	Ant2	5580	17.86	5571.0889	5588.9510	---	PASS
	Ant1	5700	17.86	5691.0889	5708.9510	---	PASS
	Ant2	5700	17.86	5691.0889	5708.9510	---	PASS
	Ant1	5745	17.86	5736.0889	5753.9510	---	PASS
	Ant2	5745	17.90	5736.0889	5753.9910	---	PASS
	Ant1	5785	17.86	5776.0889	5793.9510	---	PASS
	Ant2	5785	17.86	5776.0889	5793.9510	---	PASS
	Ant1	5825	17.90	5816.0490	5833.9510	---	PASS

	Ant2	5825	17.90	5816.0490	5833.9510	---	PASS
11N40MIMO	Ant1	5190	36.20	5171.9381	5208.1419	---	PASS
	Ant2	5190	36.20	5171.9381	5208.1419	---	PASS
	Ant1	5230	36.28	5211.8581	5248.1419	---	PASS
	Ant2	5230	36.28	5211.8581	5248.1419	---	PASS
	Ant1	5270	36.20	5251.9381	5288.1419	---	PASS
	Ant2	5270	36.28	5251.8581	5288.1419	---	PASS
	Ant1	5310	36.20	5291.9381	5328.1419	---	PASS
	Ant2	5310	36.20	5291.9381	5328.1419	---	PASS
	Ant1	5510	36.20	5491.9381	5528.1419	---	PASS
	Ant2	5510	36.28	5491.8581	5528.1419	---	PASS
	Ant1	5550	36.20	5531.9381	5568.1419	---	PASS
	Ant2	5550	36.20	5531.9381	5568.1419	---	PASS
	Ant1	5670	36.20	5651.9381	5688.1419	---	PASS
	Ant2	5670	36.20	5651.9381	5688.1419	---	PASS
	Ant1	5755	36.28	5736.8581	5773.1419	---	PASS
	Ant2	5755	36.20	5736.9381	5773.1419	---	PASS
	Ant1	5795	36.28	5776.8581	5813.1419	---	PASS
	Ant2	5795	36.28	5776.8581	5813.1419	---	PASS
11AX20MIMO	Ant1	5180	18.86	5170.6094	5189.4705	---	PASS
	Ant2	5180	18.90	5170.5694	5189.4705	---	PASS
	Ant1	5200	18.86	5190.6094	5209.4705	---	PASS
	Ant2	5200	18.86	5190.6094	5209.4705	---	PASS
	Ant1	5240	18.82	5230.6094	5249.4306	---	PASS
	Ant2	5240	18.90	5230.5694	5249.4705	---	PASS
	Ant1	5260	18.86	5250.6094	5269.4705	---	PASS
	Ant2	5260	18.90	5250.5694	5269.4705	---	PASS
	Ant1	5280	18.82	5270.6094	5289.4306	---	PASS
	Ant2	5280	18.90	5270.5694	5289.4705	---	PASS
	Ant1	5320	18.82	5310.6094	5329.4306	---	PASS
	Ant2	5320	18.82	5310.6094	5329.4306	---	PASS
	Ant1	5500	18.82	5490.6094	5509.4306	---	PASS
	Ant2	5500	18.82	5490.6094	5509.4306	---	PASS
	Ant1	5580	18.86	5570.6094	5589.4705	---	PASS
	Ant2	5580	18.82	5570.6094	5589.4306	---	PASS
	Ant1	5700	18.86	5690.6094	5709.4705	---	PASS
	Ant2	5700	18.86	5690.5694	5709.4306	---	PASS
	Ant1	5745	18.86	5735.6094	5754.4705	---	PASS
	Ant2	5745	18.86	5735.6094	5754.4705	---	PASS
	Ant1	5785	18.86	5775.6094	5794.4705	---	PASS
	Ant2	5785	18.82	5775.6094	5794.4306	---	PASS
	Ant1	5825	18.86	5815.6094	5834.4705	---	PASS
	Ant2	5825	18.90	5815.5694	5834.4705	---	PASS
11AX40MIMO	Ant1	5190	37.88	5171.0589	5208.9411	---	PASS
	Ant2	5190	37.80	5171.1389	5208.9411	---	PASS
	Ant1	5230	37.88	5211.0589	5248.9411	---	PASS
	Ant2	5230	37.80	5211.1389	5248.9411	---	PASS
	Ant1	5270	37.80	5251.1389	5288.9411	---	PASS
	Ant2	5270	37.80	5251.1389	5288.9411	---	PASS
	Ant1	5310	37.80	5291.1389	5328.9411	---	PASS
	Ant2	5310	37.88	5291.1389	5329.0210	---	PASS

	Ant1	5510	37.96	5491.0589	5529.0210	---	PASS
	Ant2	5510	37.88	5491.0589	5528.9411	---	PASS
	Ant1	5550	37.80	5531.1389	5568.9411	---	PASS
	Ant2	5550	37.80	5531.1389	5568.9411	---	PASS
	Ant1	5670	37.80	5651.1389	5688.9411	---	PASS
	Ant2	5670	37.80	5651.1389	5688.9411	---	PASS
	Ant1	5755	37.80	5736.1389	5773.9411	---	PASS
	Ant2	5755	37.88	5736.1389	5774.0210	---	PASS
	Ant1	5795	37.88	5776.0589	5813.9411	---	PASS
	Ant2	5795	37.88	5776.0589	5813.9411	---	PASS
11AX80MIMO	Ant1	5210	77.36	5171.3187	5248.6813	---	PASS
	Ant2	5210	77.52	5171.3187	5248.8412	---	PASS
	Ant1	5290	77.52	5251.3187	5328.8412	---	PASS
	Ant2	5290	77.52	5251.3187	5328.8412	---	PASS
	Ant1	5530	77.52	5491.3187	5568.8412	---	PASS
	Ant2	5530	77.36	5491.3187	5568.6813	---	PASS
	Ant1	5610	77.52	5571.3187	5648.8412	---	PASS
	Ant2	5610	77.52	5571.3187	5648.8412	---	PASS
	Ant1	5775	77.36	5736.3187	5813.6813	---	PASS
	Ant2	5775	77.36	5736.3187	5813.6813	---	PASS

Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	18.76	5170.72	5189.48	---	PASS
	Ant2	5180	18.88	5170.60	5189.48	---	PASS
	Ant1	5200	18.72	5190.76	5209.48	---	PASS
	Ant2	5200	18.68	5190.80	5209.48	---	PASS
	Ant1	5240	18.76	5230.72	5249.48	---	PASS
	Ant2	5240	18.84	5230.64	5249.48	---	PASS
	Ant1	5260	18.88	5250.64	5269.52	---	PASS
	Ant2	5260	18.68	5250.80	5269.48	---	PASS
	Ant1	5280	18.80	5270.68	5289.48	---	PASS
	Ant2	5280	18.72	5270.76	5289.48	---	PASS
	Ant1	5320	18.64	5310.80	5329.44	---	PASS
	Ant2	5320	18.80	5310.68	5329.48	---	PASS
	Ant1	5500	18.68	5490.80	5509.48	---	PASS
	Ant2	5500	18.72	5490.76	5509.48	---	PASS
	Ant1	5580	18.72	5570.80	5589.52	---	PASS
	Ant2	5580	18.72	5570.76	5589.48	---	PASS
	Ant1	5700	18.72	5690.76	5709.48	---	PASS
	Ant2	5700	18.84	5690.64	5709.48	---	PASS
	Ant1	5745	18.76	5735.72	5754.48	---	PASS
	Ant2	5745	18.84	5735.64	5754.48	---	PASS
	Ant1	5785	18.72	5775.76	5794.48	---	PASS
	Ant2	5785	18.72	5775.76	5794.48	---	PASS
	Ant1	5825	18.84	5815.68	5834.52	---	PASS
	Ant2	5825	18.80	5815.68	5834.48	---	PASS
11N20MIMO	Ant1	5180	22.60	5168.68	5191.28	---	PASS
	Ant2	5180	21.92	5169.04	5190.96	---	PASS
	Ant1	5200	22.40	5188.88	5211.28	---	PASS

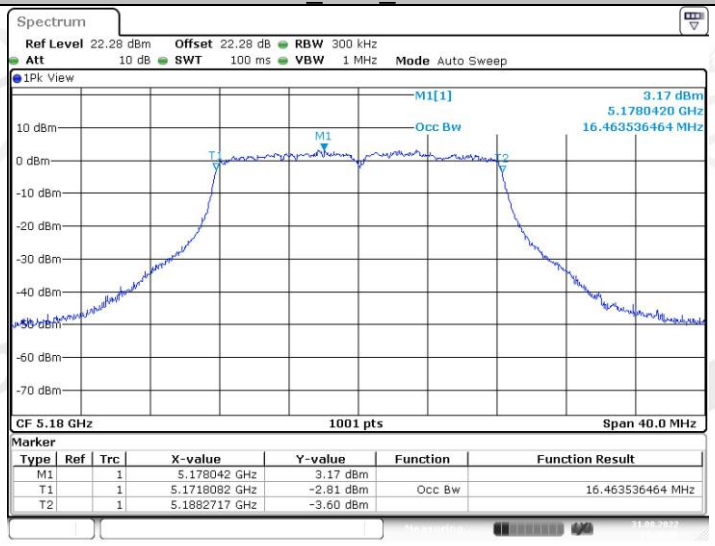
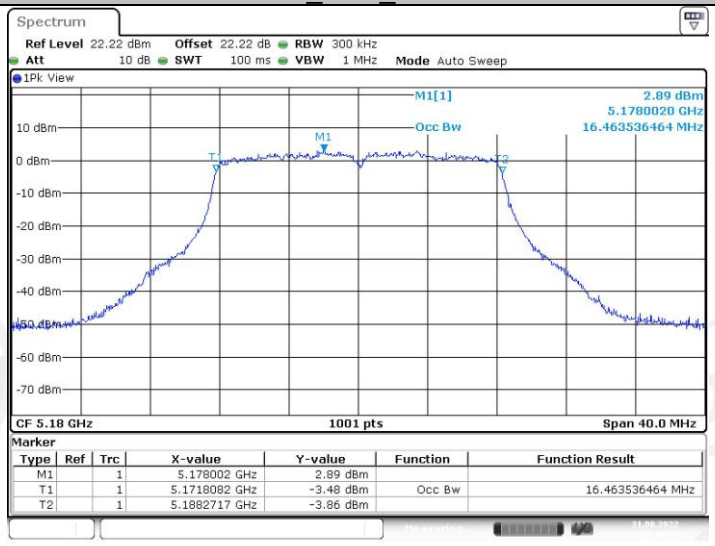
	Ant2	5200	21.84	5189.12	5210.96	---	PASS
	Ant1	5240	22.64	5228.80	5251.44	---	PASS
	Ant2	5240	22.16	5228.92	5251.08	---	PASS
	Ant1	5260	22.48	5248.92	5271.40	---	PASS
	Ant2	5260	21.56	5249.24	5270.80	---	PASS
	Ant1	5280	22.56	5268.92	5291.48	---	PASS
	Ant2	5280	21.60	5269.16	5290.76	---	PASS
	Ant1	5320	22.40	5308.80	5331.20	---	PASS
	Ant2	5320	21.84	5309.08	5330.92	---	PASS
	Ant1	5500	22.48	5488.80	5511.28	---	PASS
	Ant2	5500	21.96	5488.92	5510.88	---	PASS
	Ant1	5580	22.32	5568.84	5591.16	---	PASS
	Ant2	5580	22.08	5568.80	5590.88	---	PASS
	Ant1	5700	22.16	5688.84	5711.00	---	PASS
	Ant2	5700	22.00	5688.84	5710.84	---	PASS
	Ant1	5745	22.64	5733.68	5756.32	---	PASS
	Ant2	5745	22.16	5733.80	5755.96	---	PASS
	Ant1	5785	22.12	5773.96	5796.08	---	PASS
	Ant2	5785	21.64	5774.16	5795.80	---	PASS
	Ant1	5825	22.20	5813.80	5836.00	---	PASS
	Ant2	5825	22.20	5813.72	5835.92	---	PASS
11N40MIMO	Ant1	5190	41.12	5169.52	5210.64	---	PASS
	Ant2	5190	41.12	5169.68	5210.80	---	PASS
	Ant1	5230	41.20	5209.44	5250.64	---	PASS
	Ant2	5230	41.20	5209.44	5250.64	---	PASS
	Ant1	5270	40.96	5249.60	5290.56	---	PASS
	Ant2	5270	41.12	5249.68	5290.80	---	PASS
	Ant1	5310	40.88	5289.60	5330.48	---	PASS
	Ant2	5310	40.80	5289.76	5330.56	---	PASS
	Ant1	5510	41.04	5489.52	5530.56	---	PASS
	Ant2	5510	41.28	5489.52	5530.80	---	PASS
	Ant1	5550	40.96	5529.52	5570.48	---	PASS
	Ant2	5550	40.80	5529.84	5570.64	---	PASS
	Ant1	5670	41.28	5649.36	5690.64	---	PASS
	Ant2	5670	41.12	5649.60	5690.72	---	PASS
	Ant1	5755	41.28	5734.36	5775.64	---	PASS
	Ant2	5755	41.12	5734.60	5775.72	---	PASS
	Ant1	5795	41.28	5774.20	5815.48	---	PASS
	Ant2	5795	41.04	5774.60	5815.64	---	PASS
11AX20MIMO	Ant1	5180	20.72	5169.64	5190.36	---	PASS
	Ant2	5180	20.76	5169.60	5190.36	---	PASS
	Ant1	5200	20.68	5189.72	5210.40	---	PASS
	Ant2	5200	20.60	5189.76	5210.36	---	PASS
	Ant1	5240	20.88	5229.52	5250.40	---	PASS
	Ant2	5240	20.76	5229.64	5250.40	---	PASS
	Ant1	5260	20.72	5249.72	5270.44	---	PASS
	Ant2	5260	20.80	5249.68	5270.48	---	PASS
	Ant1	5280	20.72	5269.68	5290.40	---	PASS
	Ant2	5280	20.84	5269.56	5290.40	---	PASS
	Ant1	5320	20.80	5309.48	5330.28	---	PASS
	Ant2	5320	20.76	5309.64	5330.40	---	PASS

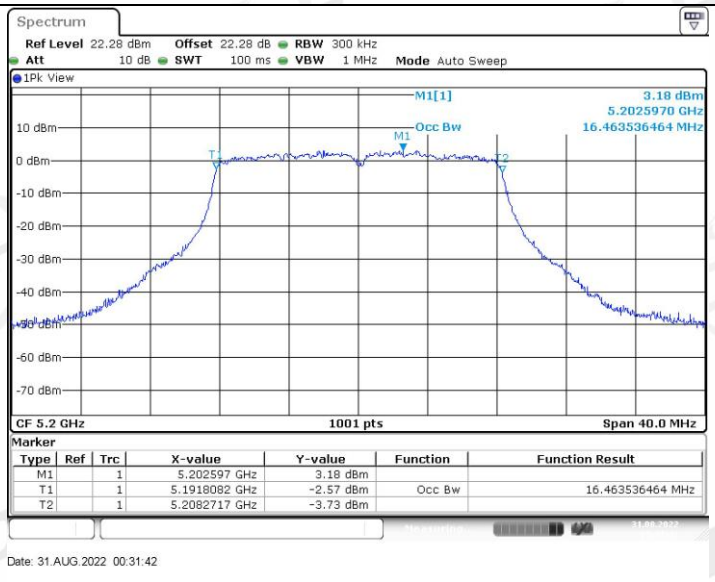
	Ant1	5500	20.72	5489.64	5510.36	---	PASS
	Ant2	5500	20.76	5489.60	5510.36	---	PASS
	Ant1	5580	20.84	5569.64	5590.48	---	PASS
	Ant2	5580	20.56	5569.76	5590.32	---	PASS
	Ant1	5700	21.00	5689.56	5710.56	---	PASS
	Ant2	5700	20.68	5689.72	5710.40	---	PASS
	Ant1	5745	20.80	5734.60	5755.40	---	PASS
	Ant2	5745	20.76	5734.72	5755.48	---	PASS
	Ant1	5785	20.84	5774.56	5795.40	---	PASS
	Ant2	5785	20.84	5774.56	5795.40	---	PASS
	Ant1	5825	20.96	5814.60	5835.56	---	PASS
	Ant2	5825	20.72	5814.60	5835.32	---	PASS
11AX40MIMO	Ant1	5190	41.60	5169.36	5210.96	---	PASS
	Ant2	5190	42.16	5169.20	5211.36	---	PASS
	Ant1	5230	42.00	5208.88	5250.88	---	PASS
	Ant2	5230	41.76	5209.04	5250.80	---	PASS
	Ant1	5270	42.16	5248.96	5291.12	---	PASS
	Ant2	5270	41.92	5248.96	5290.88	---	PASS
	Ant1	5310	41.52	5289.36	5330.88	---	PASS
	Ant2	5310	41.68	5289.20	5330.88	---	PASS
	Ant1	5510	41.60	5489.20	5530.80	---	PASS
	Ant2	5510	42.08	5489.04	5531.12	---	PASS
	Ant1	5550	41.76	5529.36	5571.12	---	PASS
	Ant2	5550	41.84	5528.96	5570.80	---	PASS
	Ant1	5670	41.84	5649.20	5691.04	---	PASS
	Ant2	5670	41.60	5649.28	5690.88	---	PASS
	Ant1	5755	42.00	5733.96	5775.96	---	PASS
	Ant2	5755	41.92	5734.20	5776.12	---	PASS
	Ant1	5795	41.92	5773.88	5815.80	---	PASS
	Ant2	5795	41.44	5774.20	5815.64	---	PASS
11AX80MIMO	Ant1	5210	82.88	5168.56	5251.44	---	PASS
	Ant2	5210	83.20	5168.24	5251.44	---	PASS
	Ant1	5290	83.36	5248.56	5331.92	---	PASS
	Ant2	5290	83.20	5248.24	5331.44	---	PASS
	Ant1	5530	82.40	5489.04	5571.44	---	PASS
	Ant2	5530	84.00	5487.92	5571.92	---	PASS
	Ant1	5610	83.20	5568.56	5651.76	---	PASS
	Ant2	5610	83.36	5568.40	5651.76	---	PASS
	Ant1	5775	83.20	5733.40	5816.60	---	PASS
	Ant2	5775	82.72	5733.40	5816.12	---	PASS

Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.96	5737.20	5753.16	0.5	PASS
	Ant2	5745	16.28	5736.88	5753.16	0.5	PASS
	Ant1	5785	15.72	5777.20	5792.92	0.5	PASS
	Ant2	5785	15.72	5777.20	5792.92	0.5	PASS
	Ant1	5825	16.12	5816.84	5832.96	0.5	PASS
	Ant2	5825	16.04	5816.88	5832.92	0.5	PASS
11N20MIMO	Ant1	5745	17.72	5736.12	5753.84	0.5	PASS
	Ant2	5745	17.76	5736.16	5753.92	0.5	PASS
	Ant1	5785	17.76	5776.16	5793.92	0.5	PASS
	Ant2	5785	17.76	5776.16	5793.92	0.5	PASS
	Ant1	5825	17.76	5816.16	5833.92	0.5	PASS
	Ant2	5825	17.72	5816.16	5833.88	0.5	PASS
11N40MIMO	Ant1	5755	36.48	5736.76	5773.24	0.5	PASS
	Ant2	5755	36.40	5736.84	5773.24	0.5	PASS
	Ant1	5795	36.56	5776.76	5813.32	0.5	PASS
	Ant2	5795	36.48	5776.76	5813.24	0.5	PASS
11AX20MIMO	Ant1	5745	19.00	5735.52	5754.52	0.5	PASS
	Ant2	5745	16.96	5736.48	5753.44	0.5	PASS
	Ant1	5785	18.92	5775.52	5794.44	0.5	PASS
	Ant2	5785	18.32	5775.92	5794.24	0.5	PASS
	Ant1	5825	19.04	5815.52	5834.56	0.5	PASS
	Ant2	5825	19.00	5815.52	5834.52	0.5	PASS
11AX40MIMO	Ant1	5755	38.16	5735.96	5774.12	0.5	PASS
	Ant2	5755	38.16	5735.96	5774.12	0.5	PASS
	Ant1	5795	38.08	5775.96	5814.04	0.5	PASS
	Ant2	5795	38.16	5775.96	5814.12	0.5	PASS
11AX80MIMO	Ant1	5775	78.08	5735.96	5814.04	0.5	PASS
	Ant2	5775	78.08	5735.96	5814.04	0.5	PASS

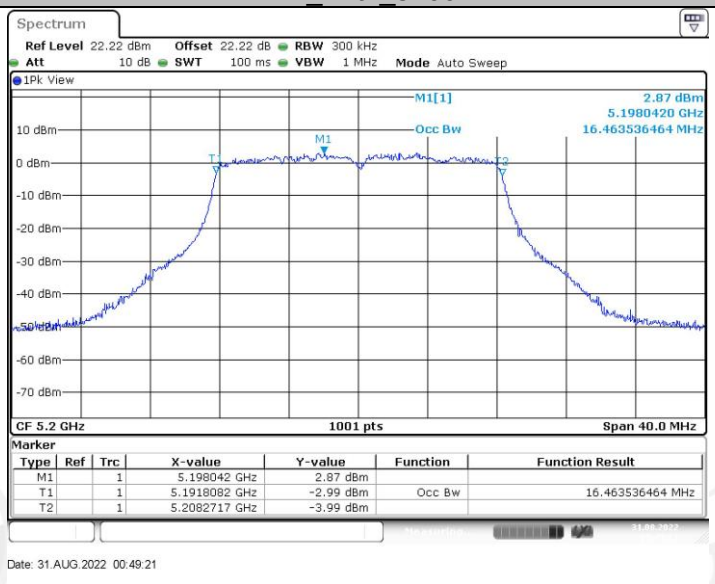
4.5. Original test data

99% OBW:

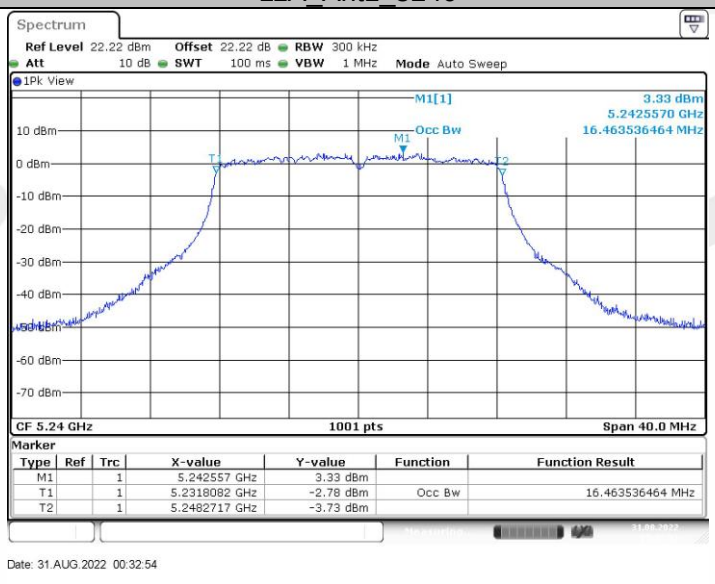
11A_Ant1_5180

11A_Ant2_5180

11A_Ant1_5200



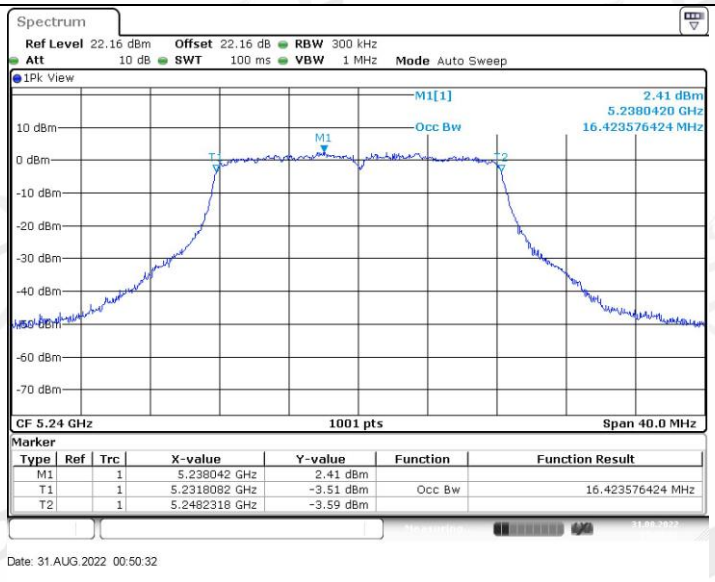
11A_Ant2_5200



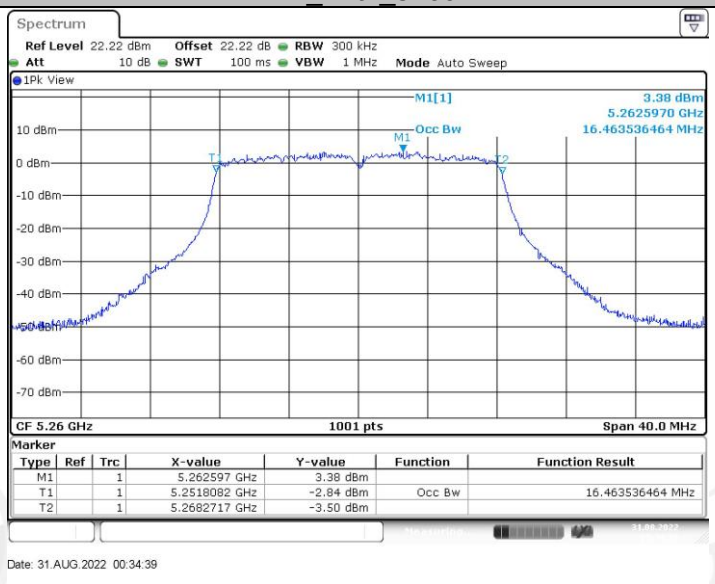
11A_Ant1_5240



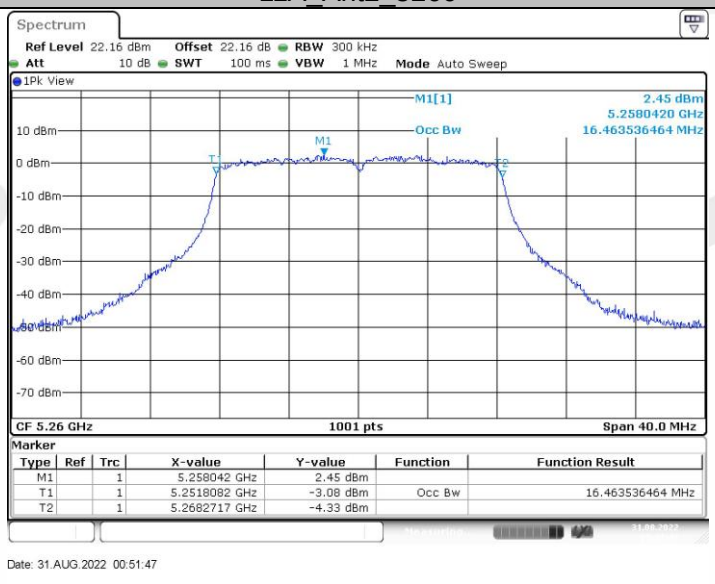
11A_Ant2_5240



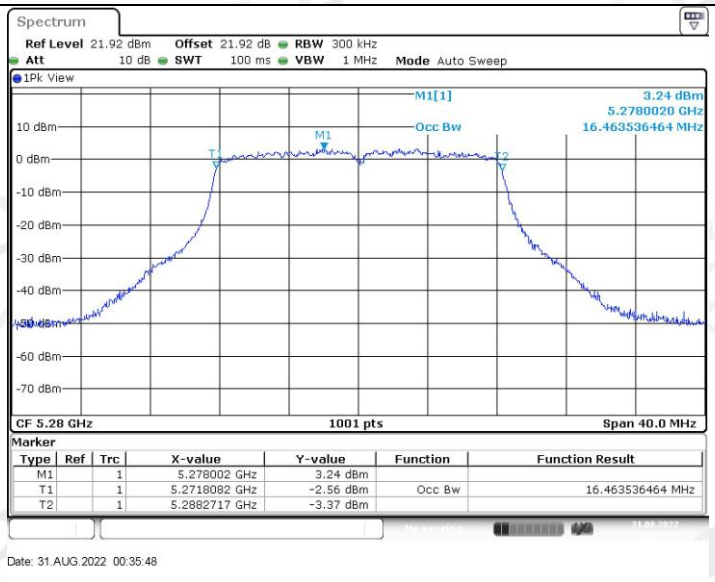
11A_Ant1_5260



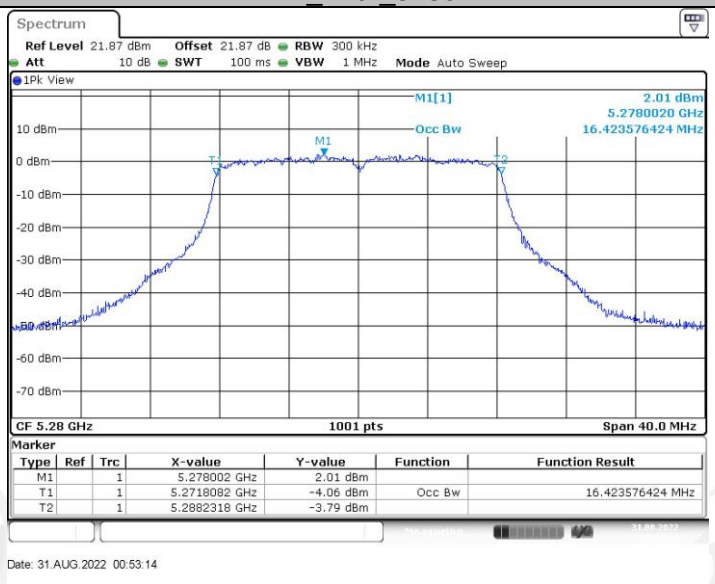
11A_Ant2_5260



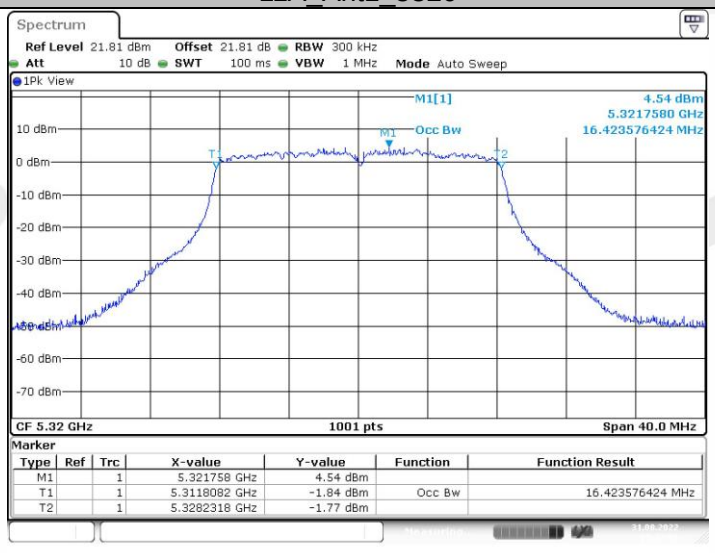
11A_Ant1_5280



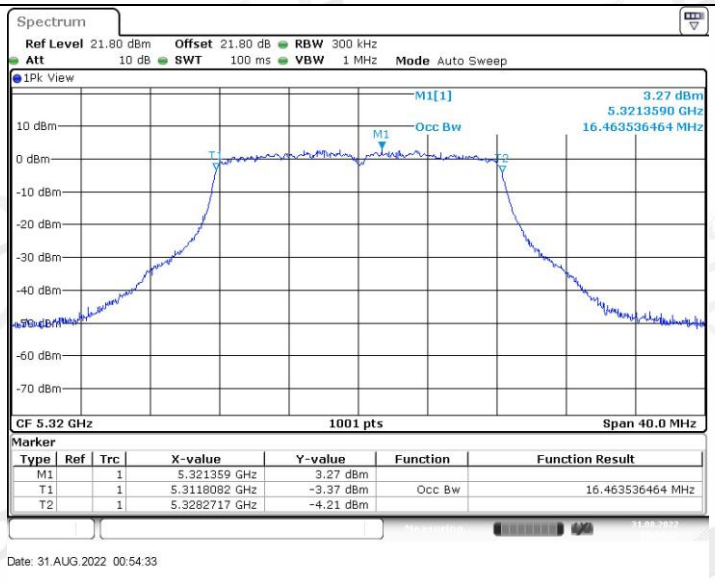
11A_Ant2_5280



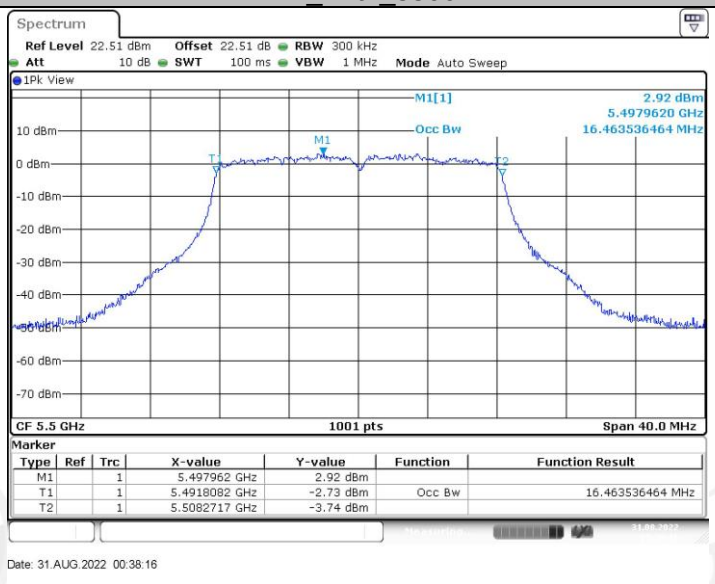
11A_Ant1_5320



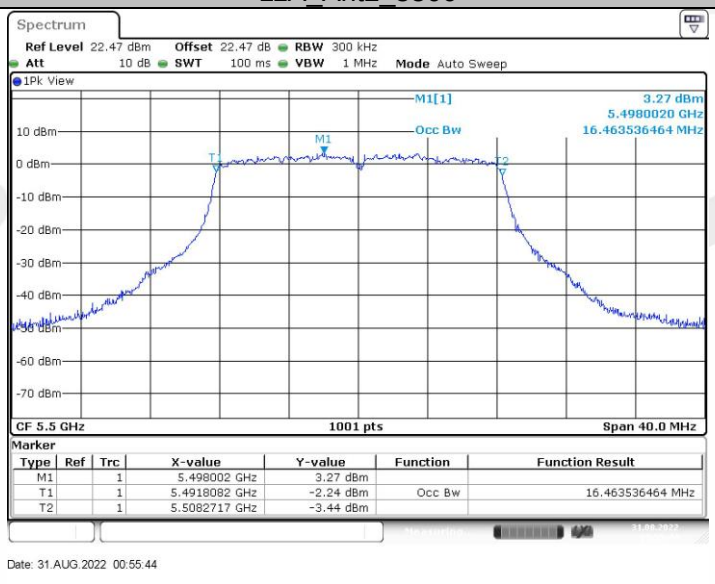
11A_Ant2_5320



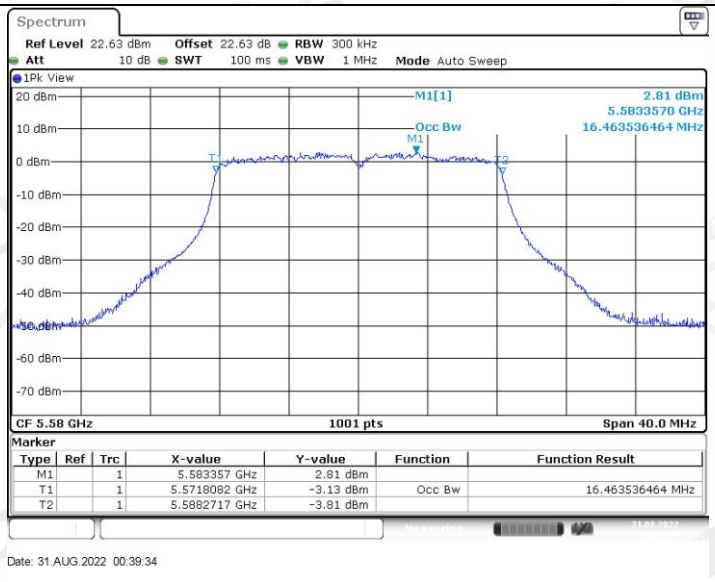
11A_Ant1_5500



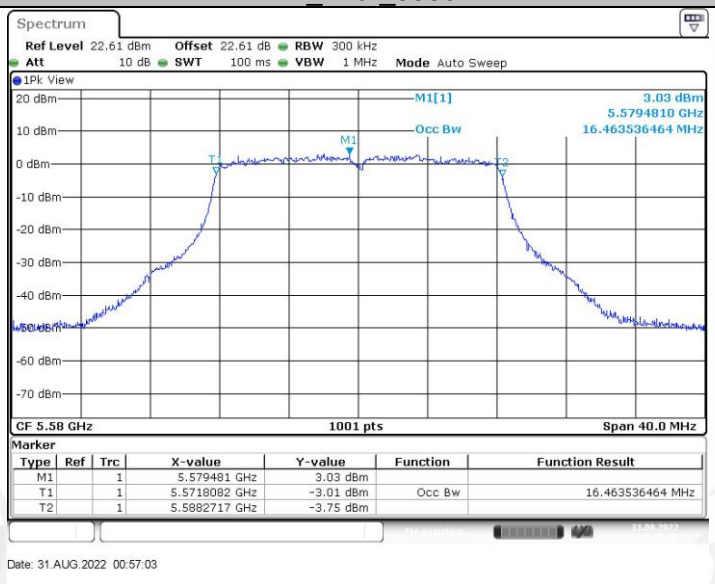
11A_Ant2_5500



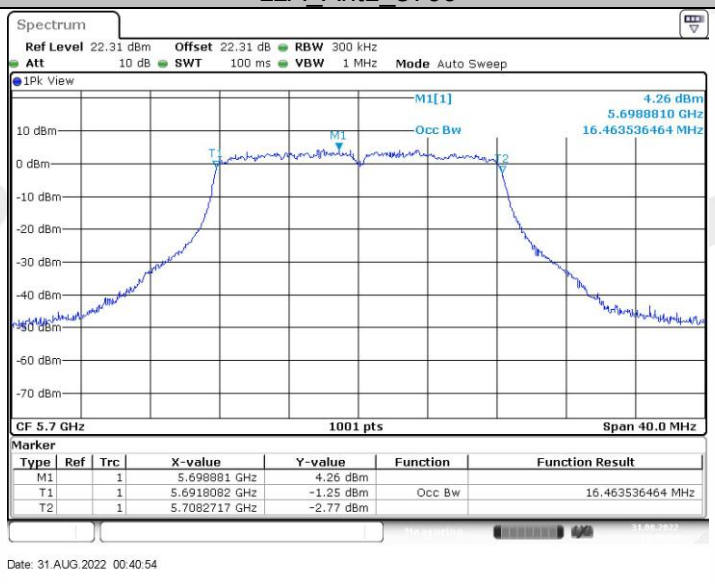
11A_Ant1_5580



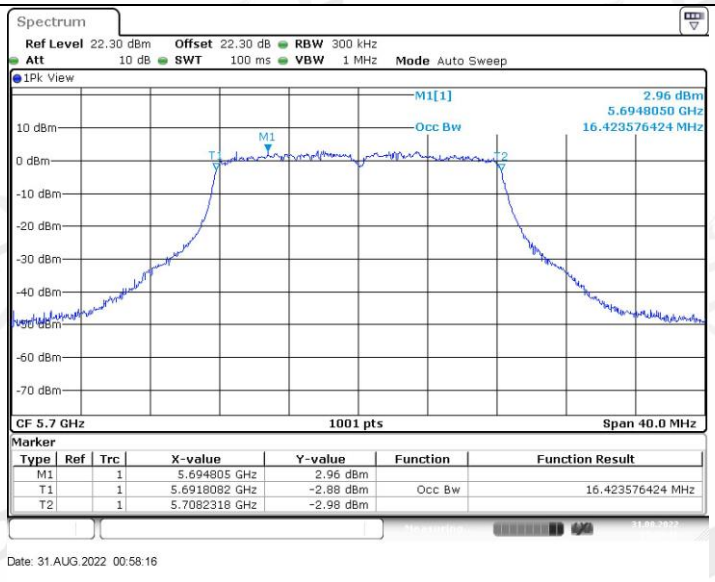
11A_Ant2_5580



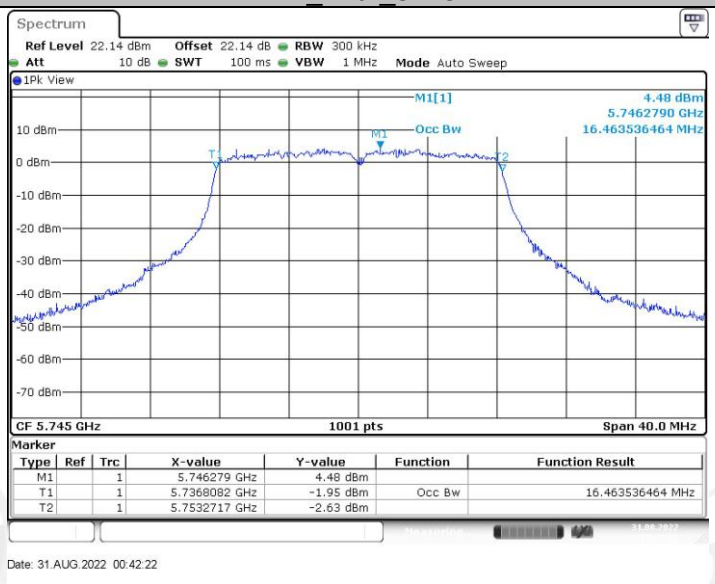
11A_Ant1_5700



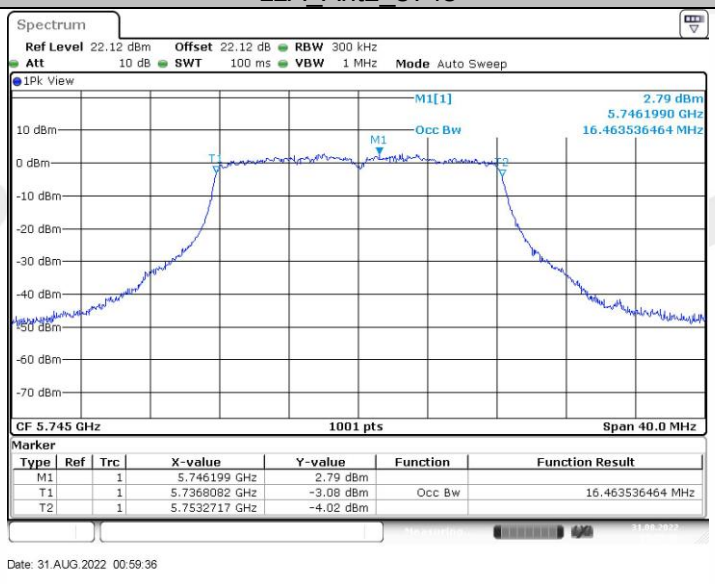
11A_Ant2_5700



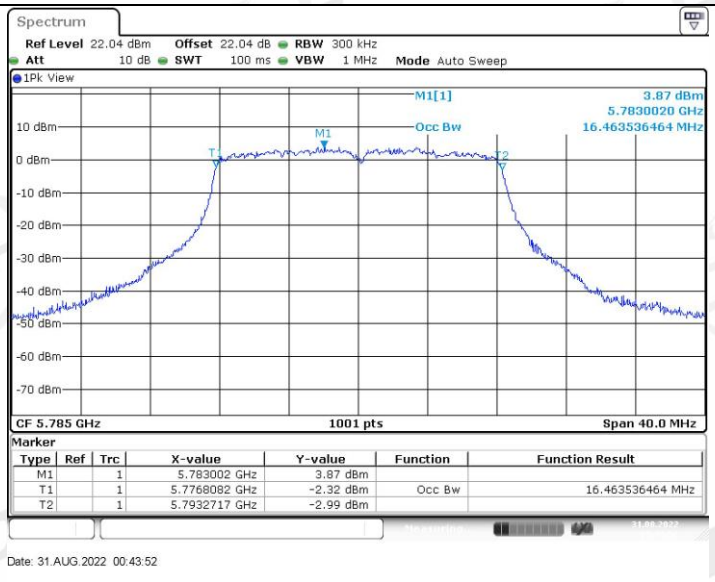
11A_Ant1_5745



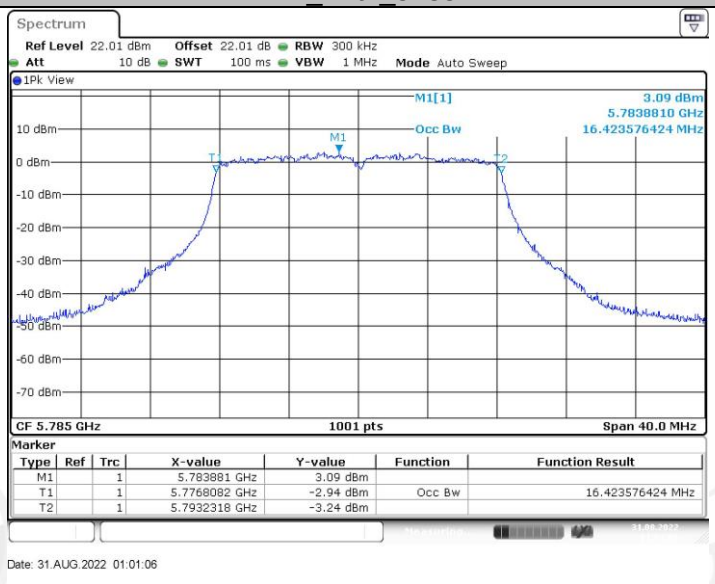
11A_Ant2_5745



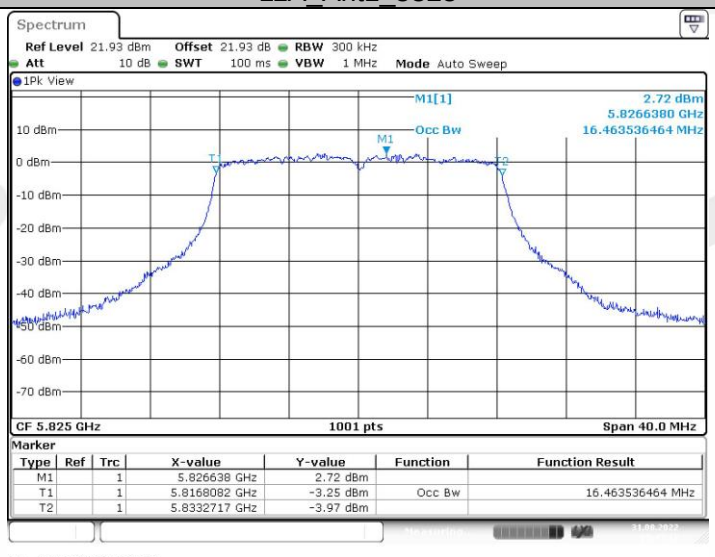
11A_Ant1_5785



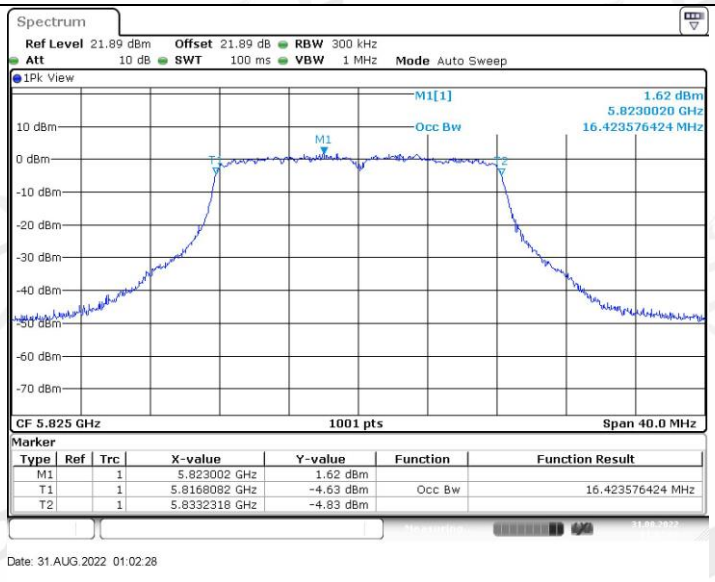
11A_Ant2_5785



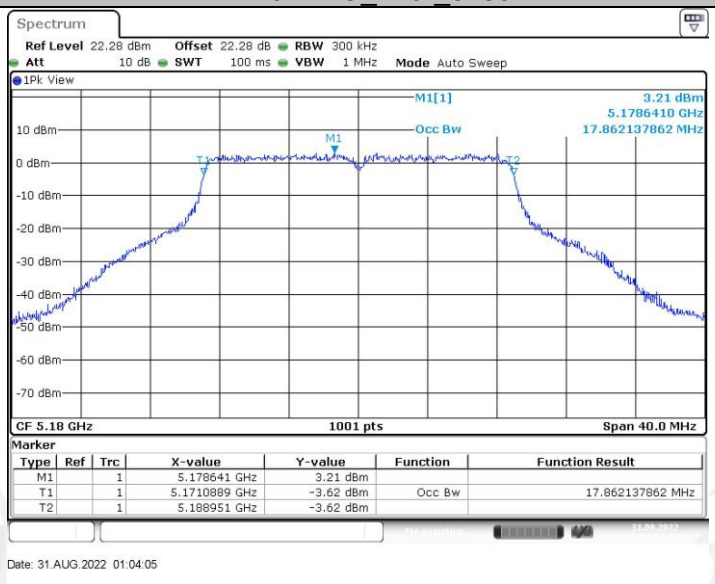
11A_Ant1_5825



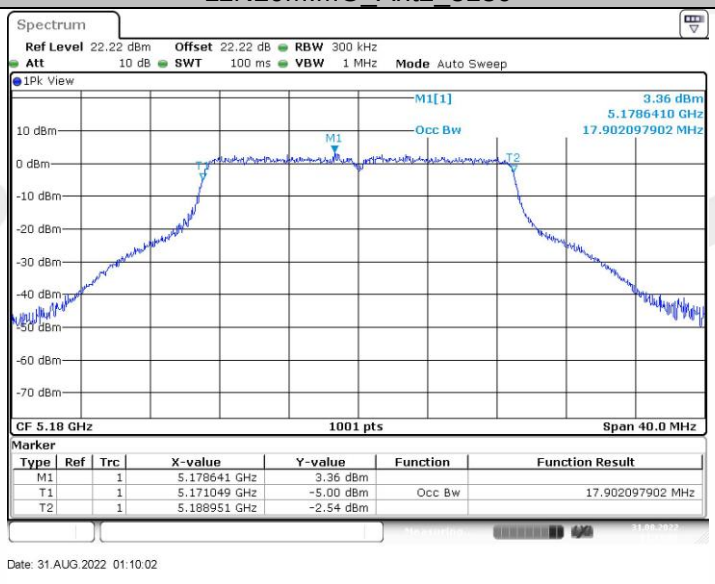
11A_Ant2_5825



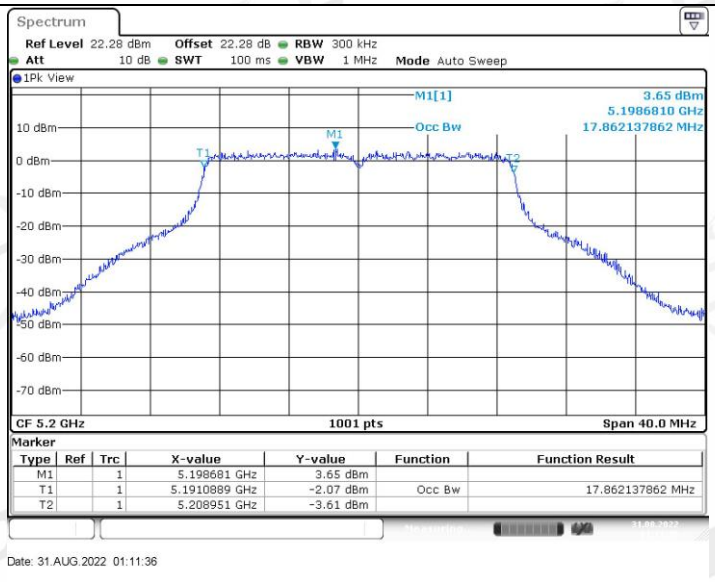
11N20MIMO_Ant1_5180



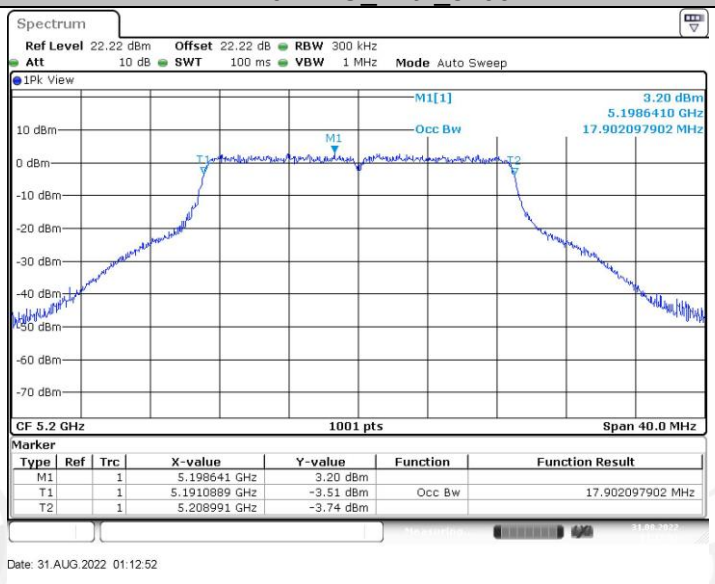
11N20MIMO_Ant2_5180



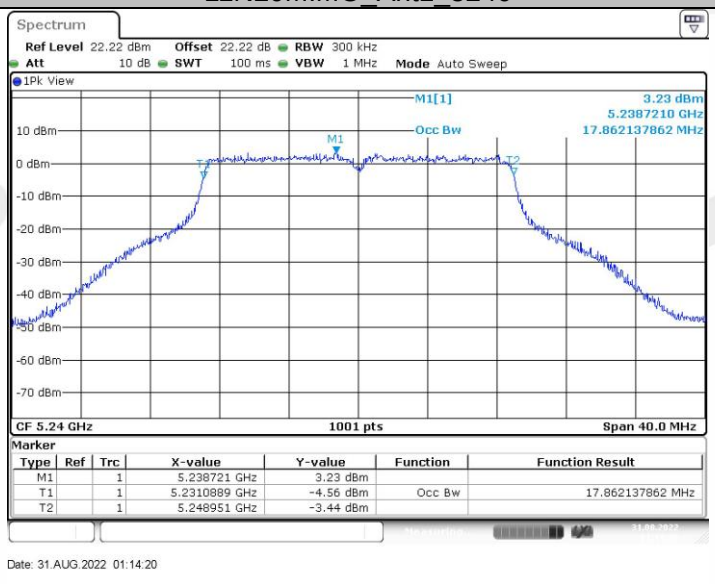
11N20MIMO_Ant1_5200



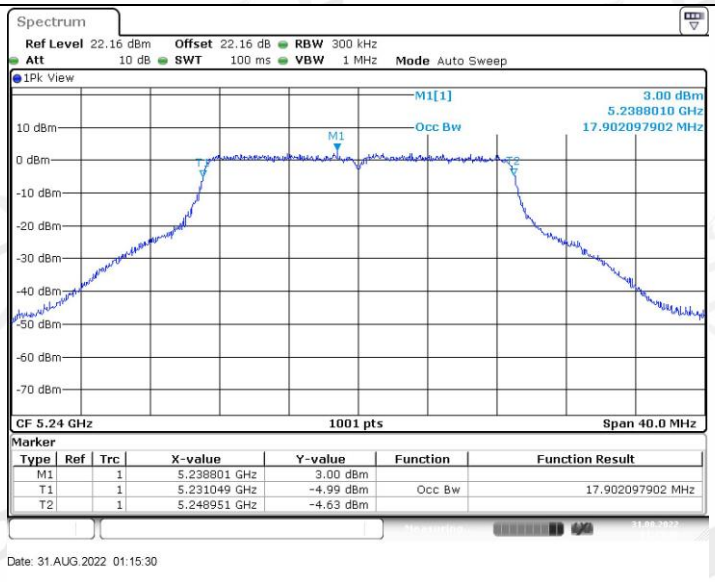
11N20MIMO_Ant2_5200



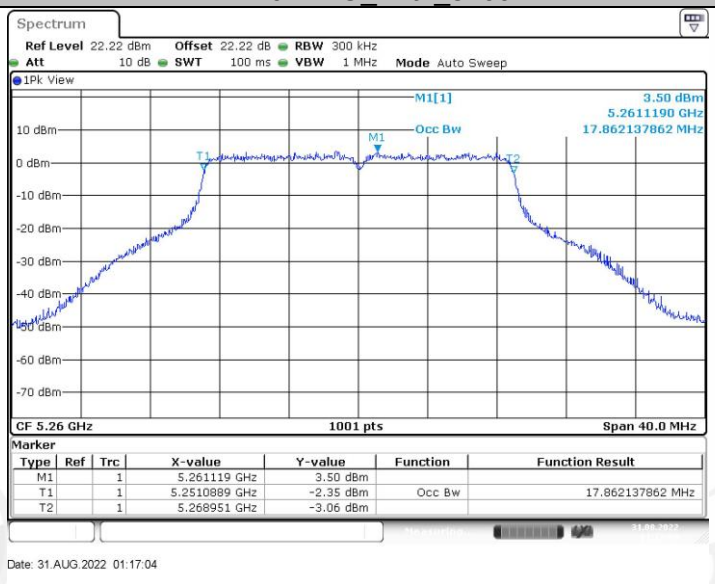
11N20MIMO_Ant1_5240



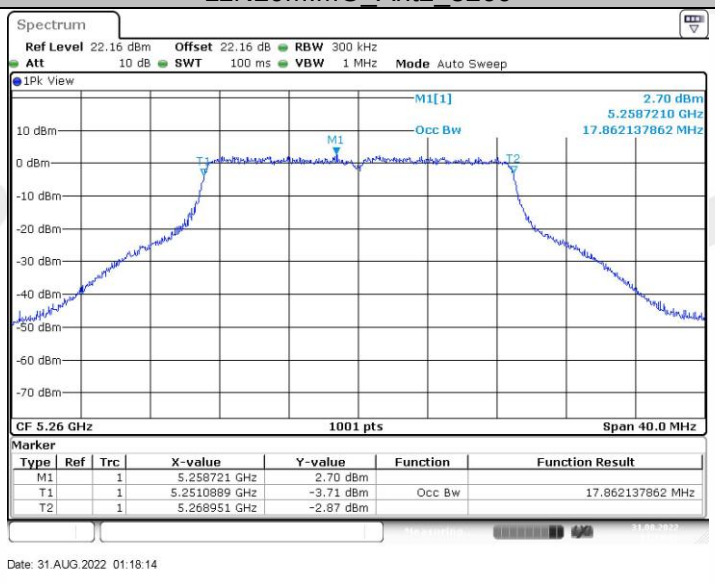
11N20MIMO_Ant2_5240



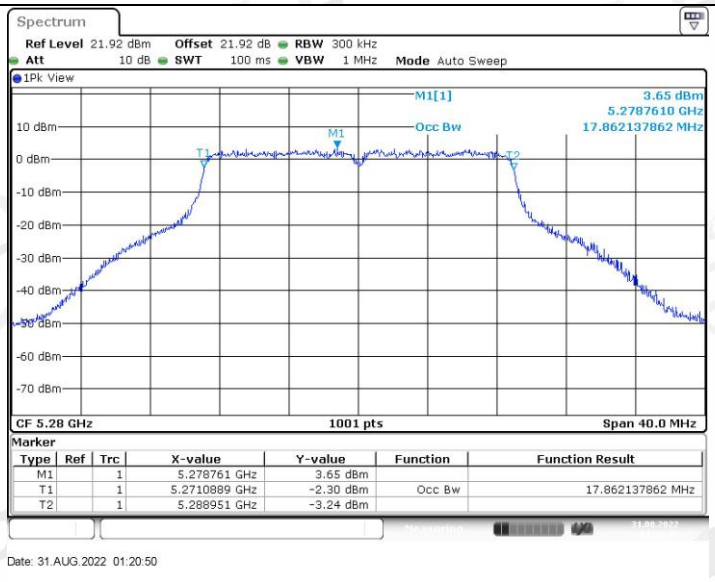
11N20MIMO_Ant1_5260



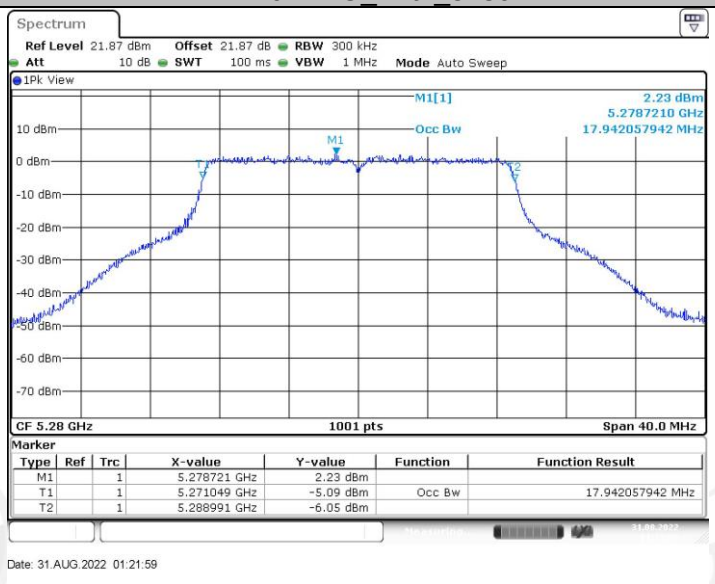
11N20MIMO_Ant2_5260



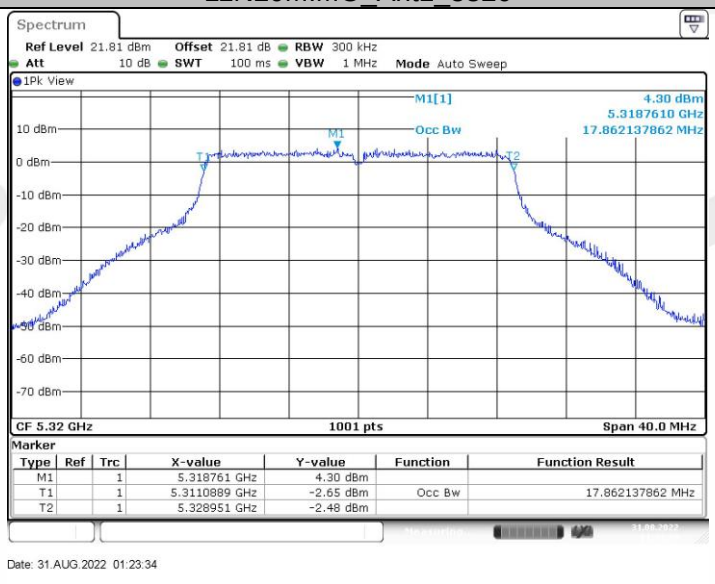
11N20MIMO_Ant1_5280



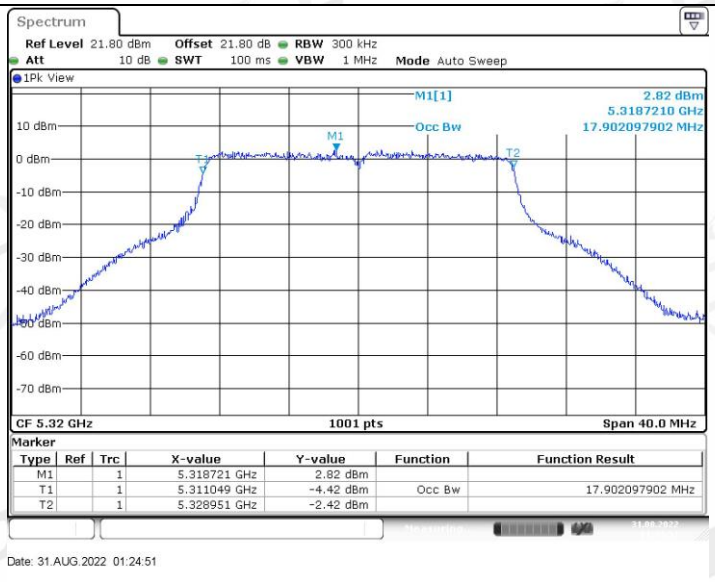
11N20MIMO_Ant2_5280



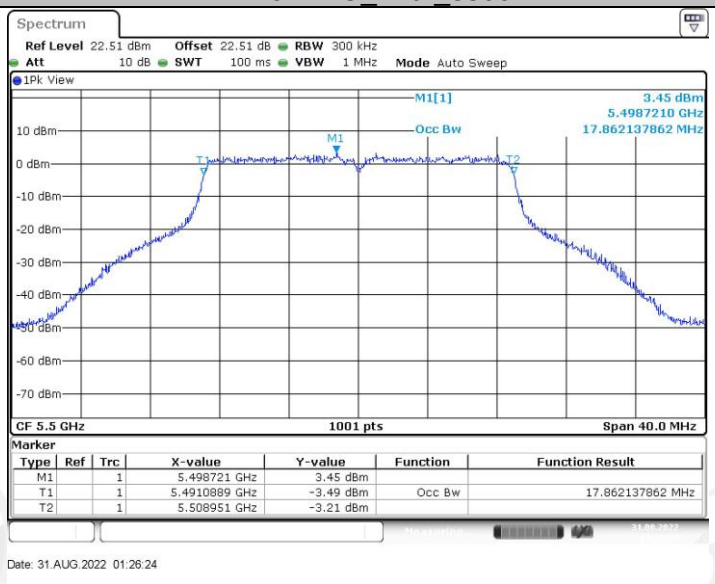
11N20MIMO_Ant1_5320



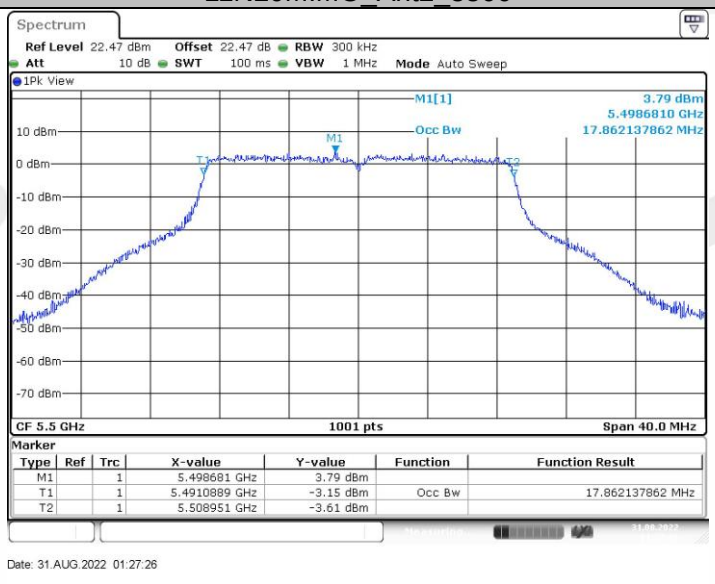
11N20MIMO_Ant2_5320



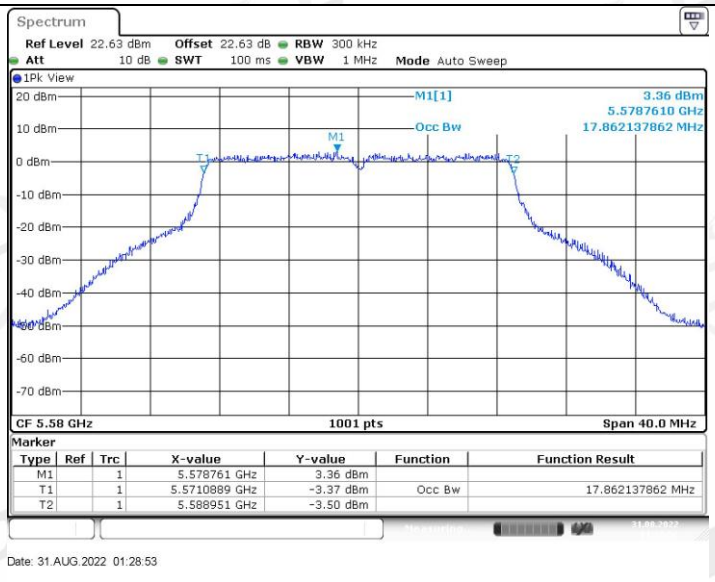
11N20MIMO_Ant1_5500



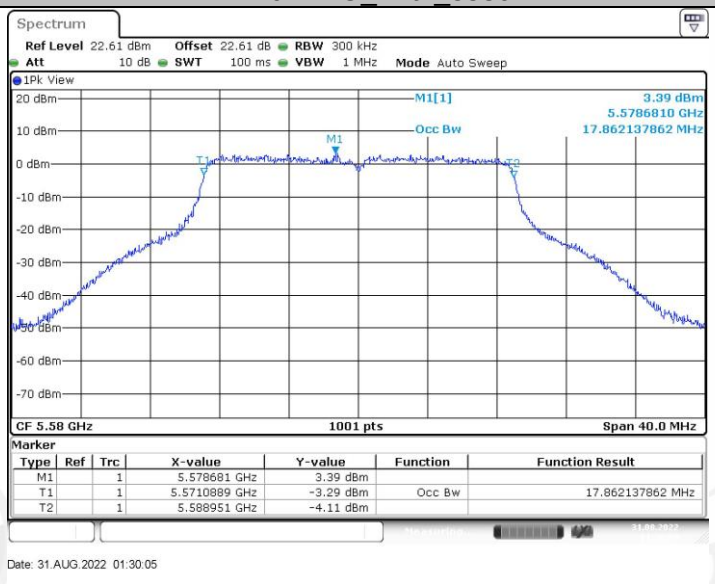
11N20MIMO_Ant2_5500



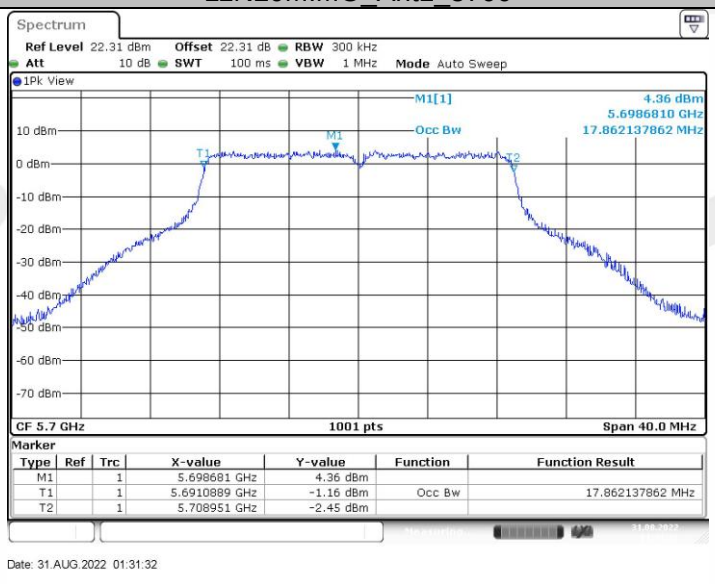
11N20MIMO_Ant1_5580



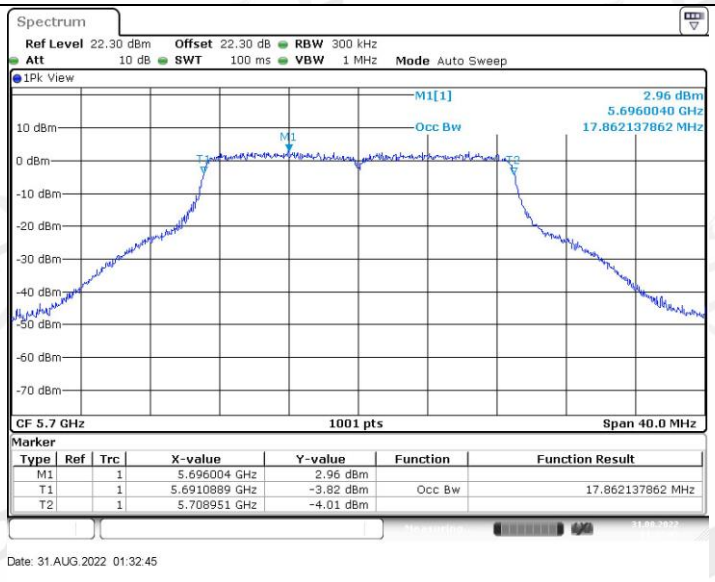
11N20MIMO_Ant2_5580



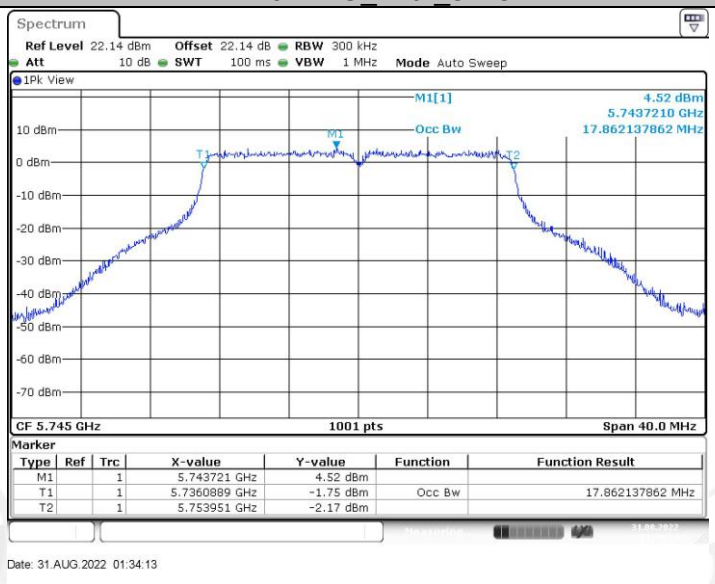
11N20MIMO_Ant1_5700



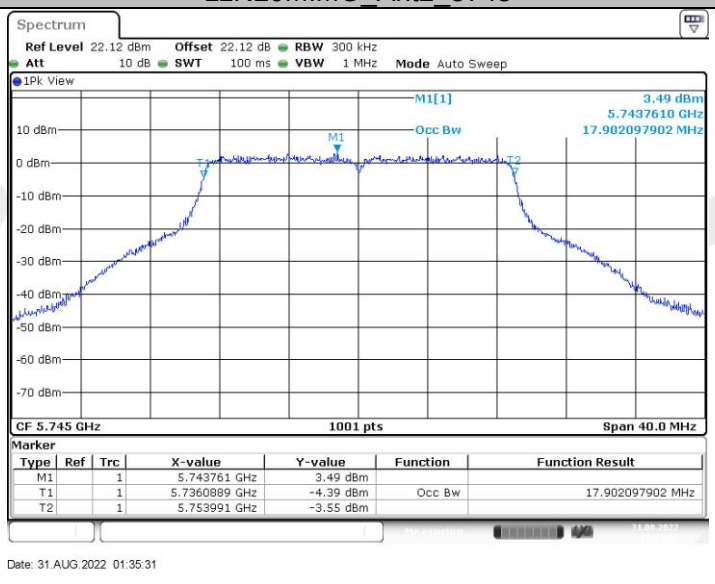
11N20MIMO_Ant2_5700



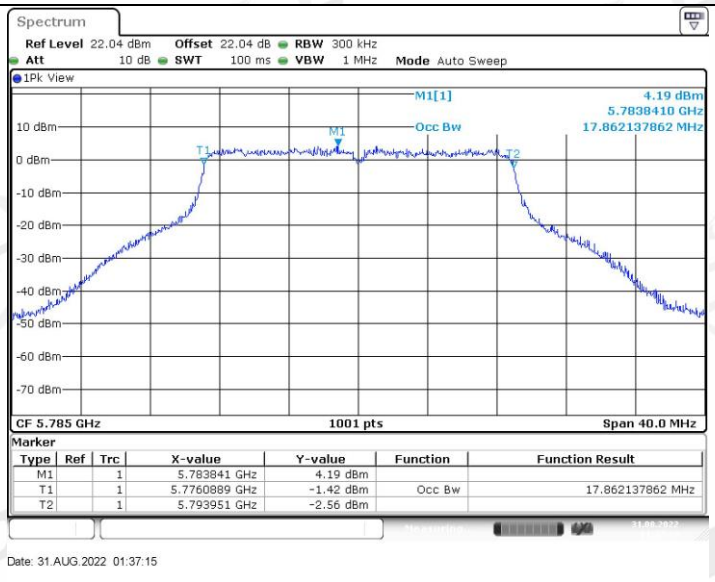
11N20MIMO_Ant1_5745



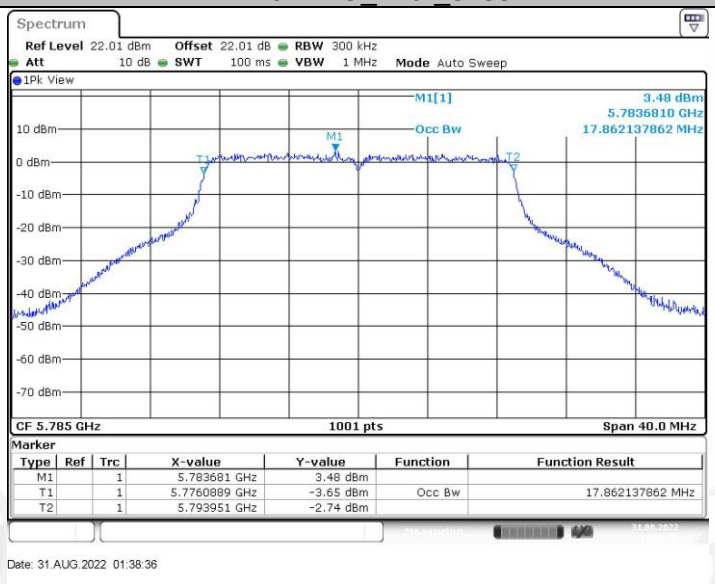
11N20MIMO_Ant2_5745



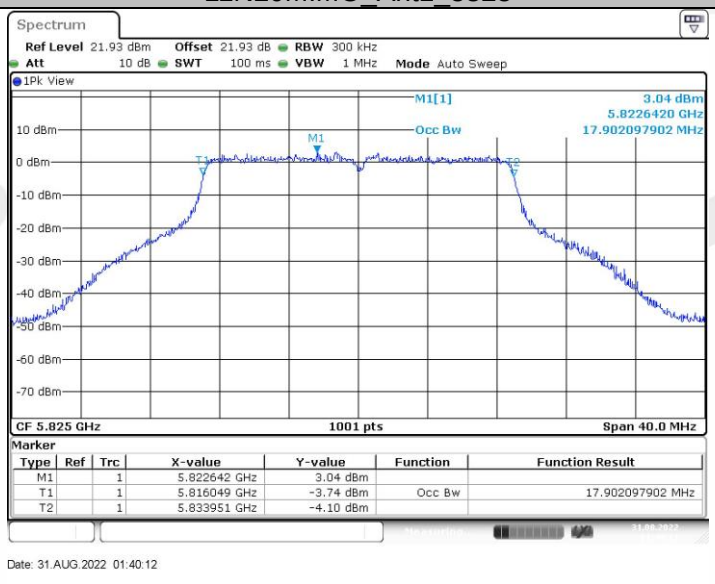
11N20MIMO_Ant1_5785



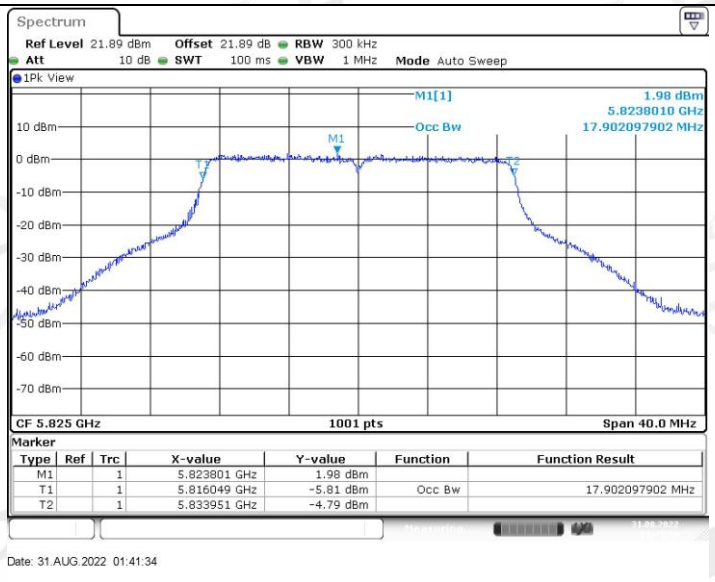
11N20MIMO_Ant2_5785



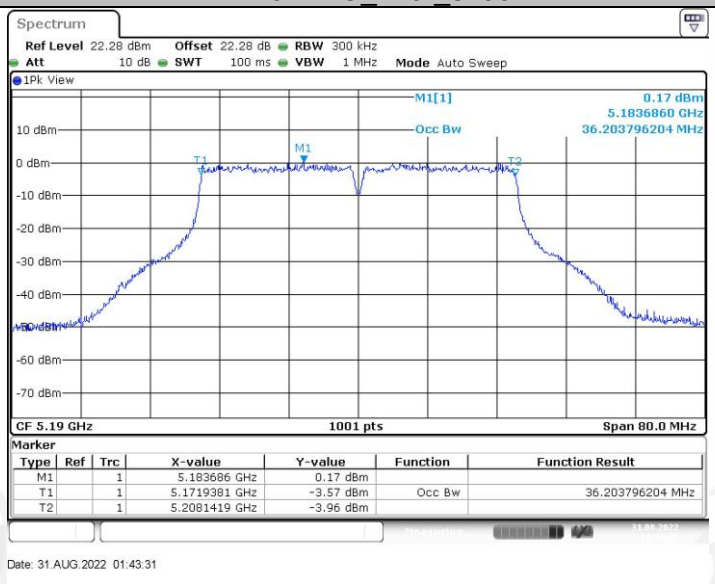
11N20MIMO_Ant1_5825



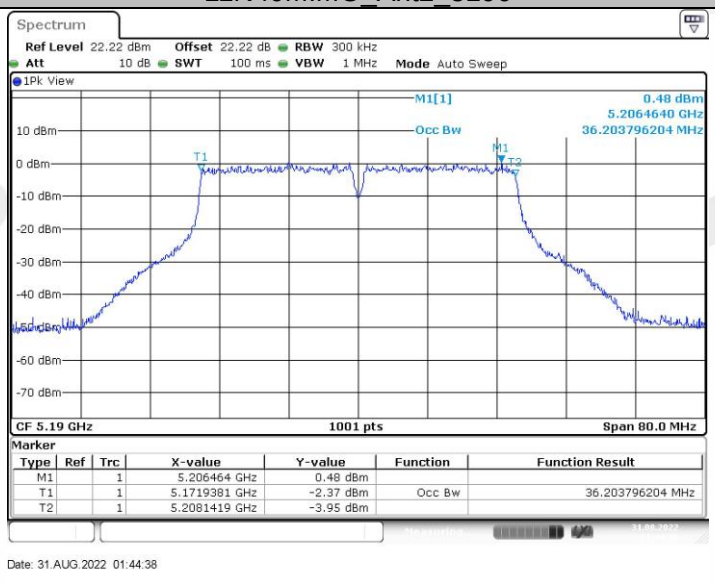
11N20MIMO_Ant2_5825



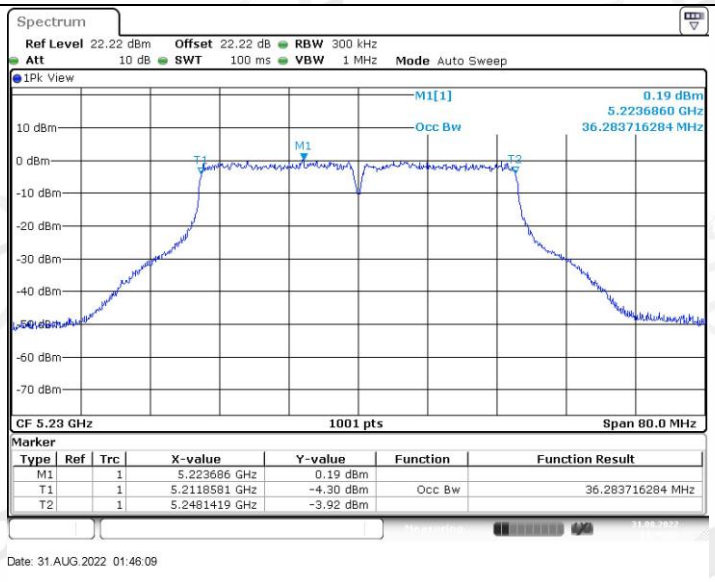
11N40MIMO_Ant1_5190



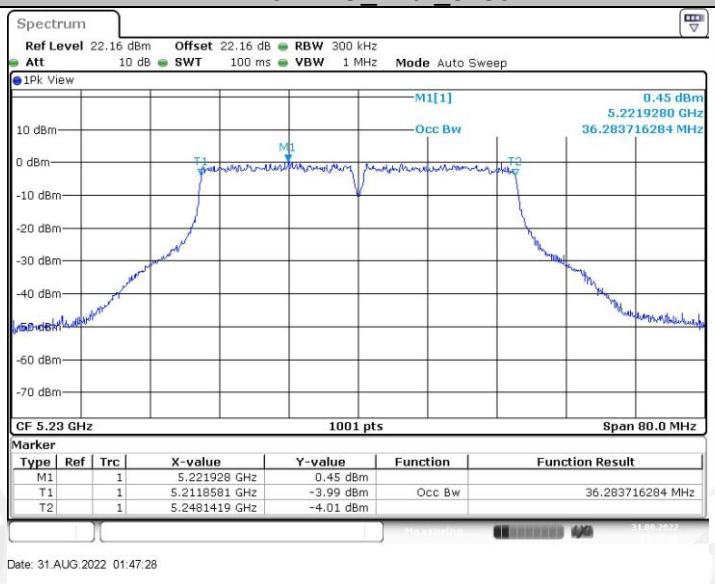
11N40MIMO_Ant2_5190



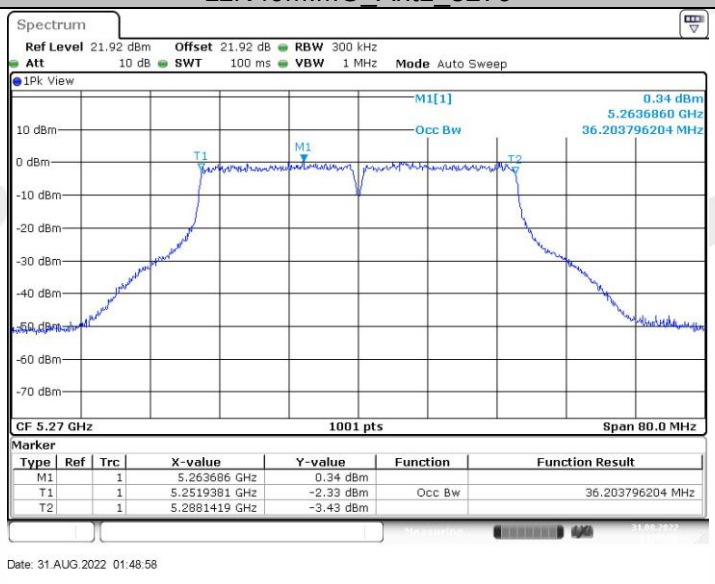
11N40MIMO_Ant1_5230



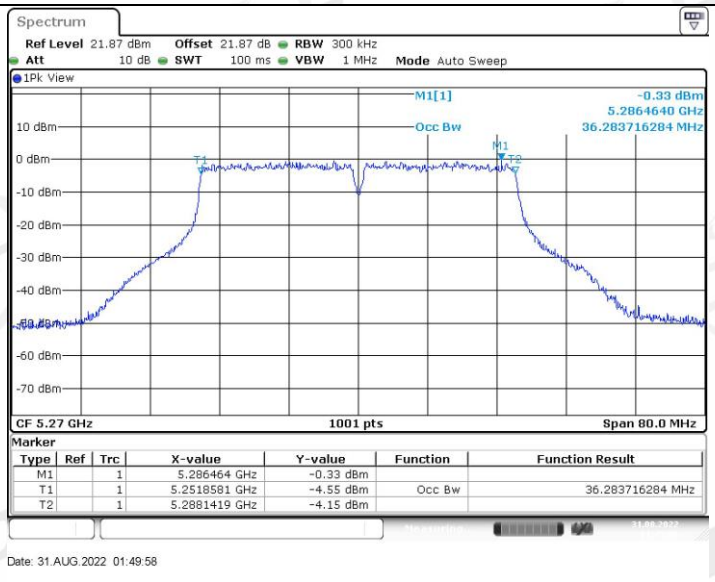
11N40MIMO_Ant2_5230



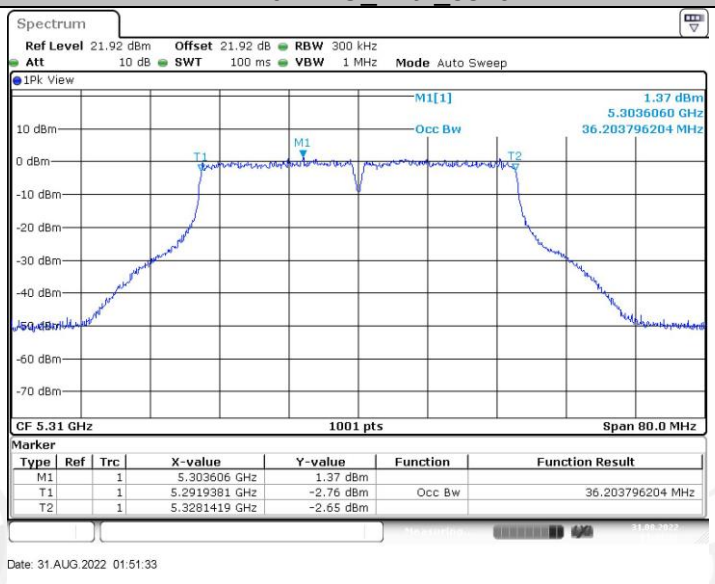
11N40MIMO_Ant1_5270



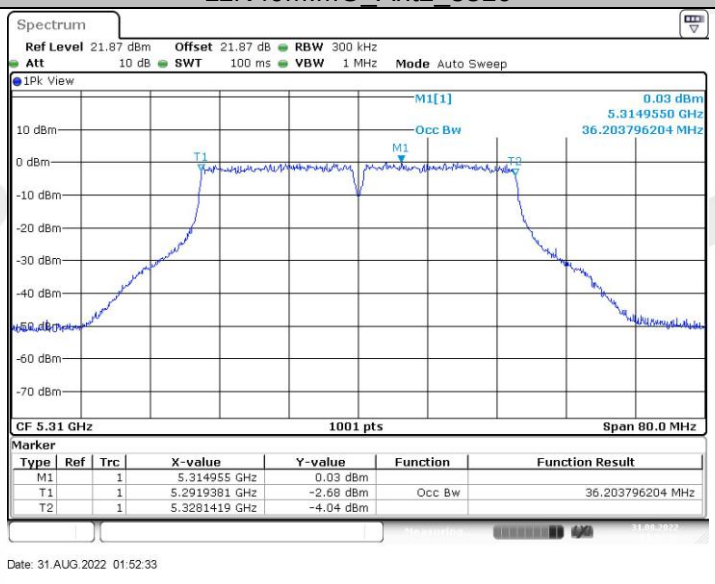
11N40MIMO_Ant2_5270



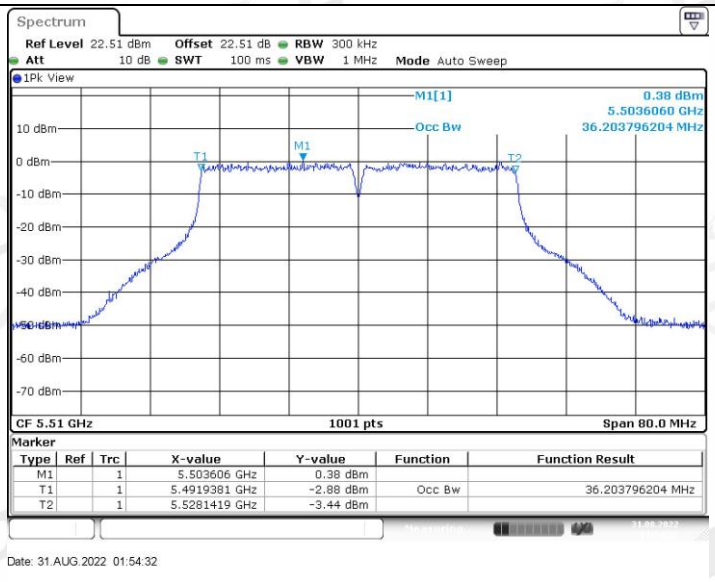
11N40MIMO_Ant1_5310



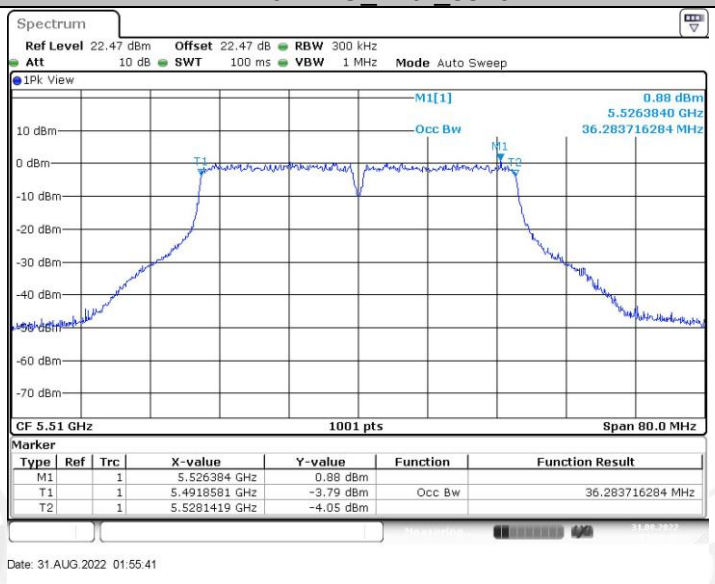
11N40MIMO_Ant2_5310



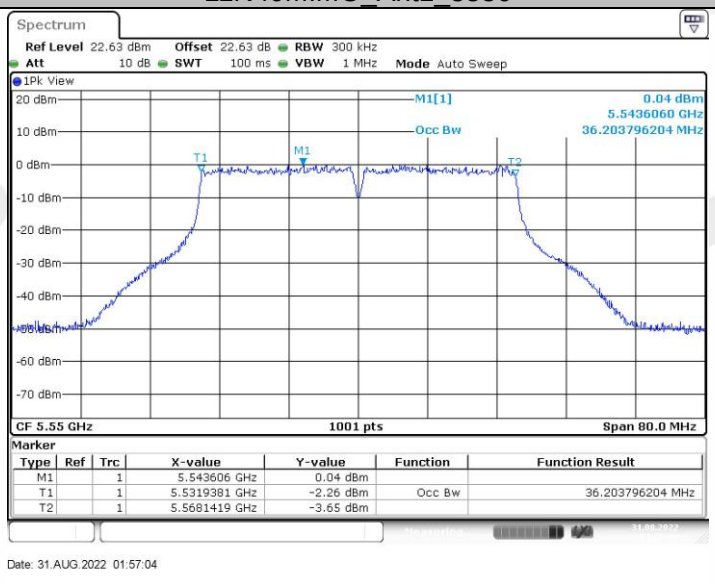
11N40MIMO_Ant1_5510



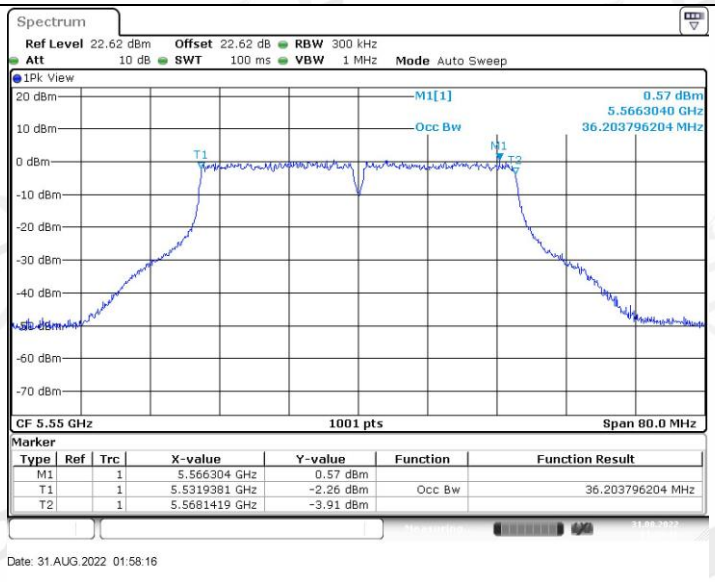
11N40MIMO_Ant2_5510



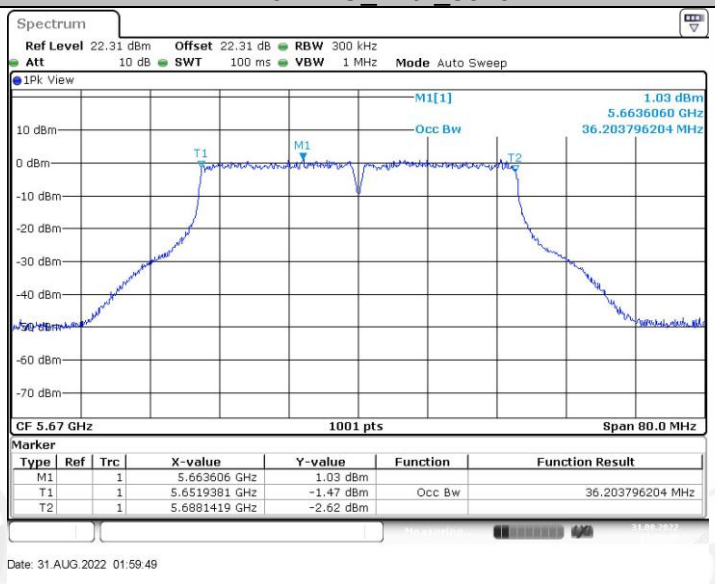
11N40MIMO_Ant1_5550



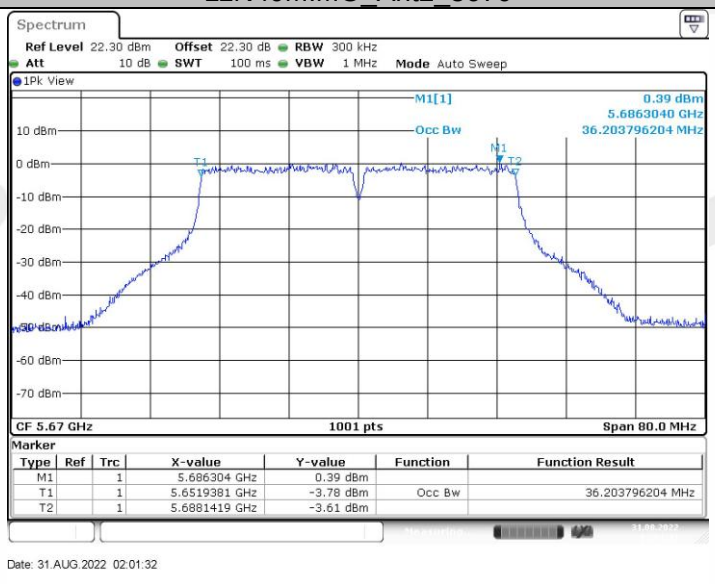
11N40MIMO_Ant2_5550



11N40MIMO_Ant1_5670



11N40MIMO_Ant2_5670



11N40MIMO_Ant1_5755