



# FCC AND ISED CERTIFICATION TEST REPORT

## FOR

<b>Applicant</b>	:	Harman International Industries, Inc.
<b>Address</b>	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
<b>Equipment under Test</b>	:	Wireless Speaker
<b>Model No.</b>	:	CHARGE 5 Wi-Fi
<b>Trade Mark</b>	:	JBL
<b>FCC ID</b>	:	APICHARGE5WIFI
<b>IC</b>	:	6132A-CHARGE5WIFI
<b>Manufacturer</b>	:	Harman International Industries, Inc.
<b>Address</b>	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

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

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# REPORT

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## Test Report Declare

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### Test Standard Used:

FCC Rules and Regulations Part 15 Subpart E, RSS-247 Issue 2 February 2017.

**Test procedure used:** ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01, RSS-Gen Issue 5 April 2018

### 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&ISED standards.**

<b>Report No:</b>	DDT-R22070406-2E04		
<b>Date of Receipt:</b>	Jul. 08, 2022	<b>Date of Test:</b>	Jul. 08, 2022 ~ Aug. 29, 2022

**Prepared By:**

*Jacky Huang*

**Jacky Huang/Engineer**

**Approved By:**



**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. 29, 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) RSS-247 Clause 6.2	PASS
Maximum Conducted Output Power	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
Power Spectral Density	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
Frequency Stability Measurement	FCC 15.407 (g) RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS
Emissions in restricted frequency bands	FCC 15.407 (a) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS
Band Edge Compliance	FCC 15.407 (a) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS
Power Line Conducted Emission	FCC 15.207 RSS-GEN Clause 8.8	PASS
Antenna requirement	FCC 15.203 RSS-GEN Clause 8.3	PASS
Dynamic Frequency Selection	FCC 15.407 (h) RSS-247 Clause 6.3	PASS



## 2. General test information

### 2.1. Description of EUT

EUT* Name	: Wireless Speaker
Model Number	: CHARGE 5 Wi-Fi
EUT function description	: Please reference user manual of this device
Power Supply	: DC 5V from external adapter DC 3.69V built-in battery, 14100mAh, 52Wh
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 802.11ac HT80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5775MHz 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 802.11ac VHT80: up to 866.6 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: 4.33 dBi Antenna 2: FPC antenna, Maximum PK gain: 4.59 dBi
Sample Number	: S22070406-07 for conductive, S22070406-09 for radiation

Note 1: EUT is the ab. of equipment under test.

Note 2: Band 5600-5650MHz will be disabled when shipped to Canada.

Note 3: 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	Directional gain
IEEE 802.11a	4.33	4.59	/
IEEE 802.11n HT20	4.33	4.59	4.46
IEEE 802.11n HT40	4.33	4.59	4.46
IEEE 802.11ac VHT20	4.33	4.59	4.46
IEEE 802.11ac VHT40	4.33	4.59	4.46
IEEE 802.11ac VHT80	4.33	4.59	4.46
IEEE 802.11ax HE20	4.33	4.59	4.46
IEEE 802.11ax HE40	4.33	4.59	4.46
IEEE 802.11ax HE80	4.33	4.59	4.46

Note: This EUT supports STBC, any transmit signals are uncorrelated with each other. So the Directional gain =  $10 \log[10^{G1/10} + 10^{G2/10}]/2$  dBi

Channel information					
IEEE 802.11a		IEEE 802.11n (HT40)		IEEE 802.11ac (VHT80)	
IEEE 802.11n (HT20)		IEEE 802.11ac (VHT40)		IEEE 802.11ax (HE80)	
IEEE 802.11ac (VHT20)		IEEE 802.11ax (HE40)			
IEEE 802.11ax (HE20)					
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	/	/	/	/



IEEE 802.11ax(HE20)	Operating Mode	Resource Unit	26 Tone(2M)	
	Specific Resource Unit		0	
			1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
		9		
		Resource Unit	52 Tone(4M)	
	Specific Resource Unit		37	
			38	
		39		
		40		
	Resource Unit	106 Tone(8M)		
Specific Resource Unit		53		
		54		
	Resource Unit	242 Tone(20M)		
	Specific Resource Unit	61		
Operating Mode	Resource Unit	26 Tone(2M)		
IEEE 802.11ax(HE40)	Specific Resource Unit	0	9	
		1	10	
		2	11	
		3	12	
		4	13	
		5	14	
		6	15	
		7	16	
		8	17	
		Resource Unit	52 Tone(4M)	
	Specific Resource Unit		37	41
			38	42
			39	43
			40	44
		Resource Unit	106 Tone(8M)	
	Specific Resource Unit		53	55
			54	56
		Resource Unit	242 Tone(20M)	
		Specific Resource Unit	61	62
	Resource Unit	484 Tone(40M)		
	Specific Resource Unit	65		
Operating Mode	Resource Unit	26 Tone(2M)		
IEEE 802.11ax(HE80)	Specific Resource Unit	0	19	
		1	20	
		2	21	
		3	22	
		4	23	
		5	24	

		6	25
		7	26
		8	27
		9	28
		10	29
		11	30
		12	31
		13	32
		14	33
		15	34
		16	35
		17	36
		18	
	Resource Unit	52 Tone(4M)	
	Specific Resource Unit	37	45
		38	46
		39	47
		40	48
		41	49
		42	50
		43	51
	44	52	
	Resource Unit	106 Tone(8M)	
	Specific Resource Unit	53	57
		54	58
		55	59
		56	60
	Resource Unit	242 Tone(20M)	
	Specific Resource Unit	61	62
		63	64
	Resource Unit	484 Tone(40M)	
	Specific Resource Unit	65	66
	Resource Unit	996 Tone(80M)	
	Specific Resource Unit	67	

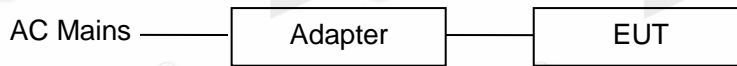
## 2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
USB cable	Harman	N/A	N/A	Length: 1.17m

## 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: adb.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: 2 dB (According to the manufacturer's claims)

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	14	6	Low: CH36	5180
	14	6	Middle: CH40	5200
	14	6	High: CH48	5240
	15	6	Low: CH52	5260
	15	6	Middle: CH56	5280
	15	6	High: CH64	5320
	15	6	Low: CH100	5500
	15	6	Middle: CH116	5580
	15	6	High: CH140	5700
	15	6	Low: CH149	5745
	15	6	Middle: CH157	5785
IEEE 802.11n HT20	14	MCS 0	Low: CH36	5180
	14	MCS 0	Middle: CH40	5200
	14	MCS 0	High: CH48	5240
	14	MCS 0	Low: CH52	5260
	14	MCS 0	Middle: CH56	5280
	14	MCS 0	High: CH64	5320
	14	MCS 0	Low: CH100	5500
	14	MCS 0	Middle: CH116	5580
	14	MCS 0	High: CH140	5700
	14	MCS 0	Low: CH149	5745
	14	MCS 0	Middle: CH157	5785
IEEE 802.11n HT40	14	MCS 0	Low: CH38	5190
	14	MCS 0	Middle: CH46	5230
	14	MCS 0	High: CH54	5270
	14	MCS 0	Low: CH62	5310
	14	MCS 0	Middle: CH102	5510
	14	MCS 0	High: CH110	5550
	14	MCS 0	Low: CH134	5670
	14	MCS 0	Middle: CH151	5755
IEEE 802.11ac VHT80	14	MCS 0	CH42	5210
	14	MCS 0	CH58	5290
	14	MCS 0	CH106	5530

	14	MCS 0	CH122	5610
	14	MCS 0	CH155	5775
IEEE 802.11ax HE20	SU:14 RU: 5	MCS 0	Low: CH36	5180
	SU:14 RU: 5	MCS 0	Middle: CH40	5200
	SU:14 RU: 5	MCS 0	High: CH48	5240
	SU:15 RU: 5	MCS 0	Low: CH52	5260
	SU:15 RU: 5	MCS 0	Middle: CH56	5280
	SU:15 RU: 5	MCS 0	High: CH64	5320
	SU:15 RU: 5	MCS 0	Low: CH100	5500
	SU:15 RU: 5	MCS 0	Middle: CH116	5580
	SU:15 RU: 5	MCS 0	High: CH140	5700
	SU:15 RU: 5	MCS 0	Low: CH149	5745
	SU:15 RU: 5	MCS 0	Middle: CH157	5785
	SU:15 RU: 5	MCS 0	High: CH165	5825
IEEE 802.11ax HE40	SU:15 RU:6	MCS 0	Low: CH38	5190
	SU:15 RU:6	MCS 0	Middle: CH46	5230
	SU:15 RU:6	MCS 0	High: CH54	5270
	SU:15 RU:6	MCS 0	Low: CH62	5310
	SU:15 RU:6	MCS 0	Middle: CH102	5510
	SU:15 RU:6	MCS 0	High: CH110	5550
	SU:15 RU:6	MCS 0	Low: CH134	5670
	SU:15 RU:6	MCS 0	Middle: CH151	5755
	SU:15 RU:6	MCS 0	High: CH159	5795
IEEE 802.11ax HE80	SU:15 RU:6	MCS 0	CH42	5210
	SU:15 RU:6	MCS 0	CH58	5290
	SU:15 RU:6	MCS 0	CH106	5530
	SU:15 RU:6	MCS 0	CH122	5610
	SU:15 RU:6	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°C
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](mailto: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 <sup>-8</sup> (Antenna couple method)
	5.5 × 10 <sup>-8</sup> (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 <sup>-8</sup>
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.



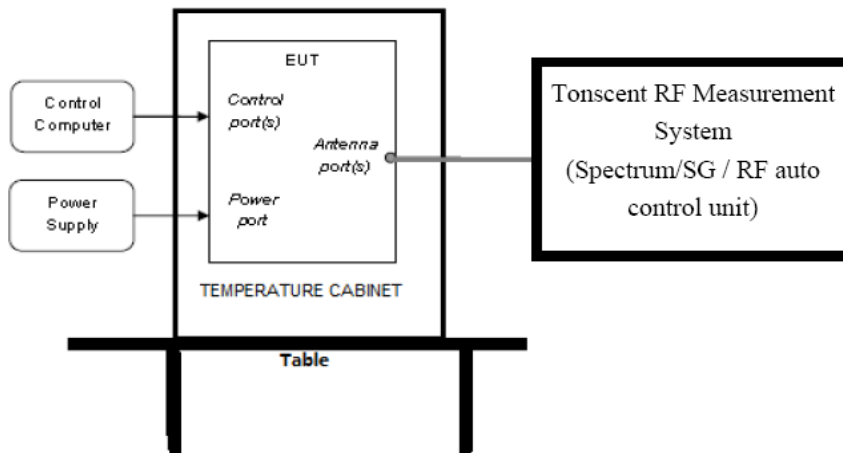
### 3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
<b>☑RF Connected Test (Tonscend RF Measurement System 3#)</b>					
SPECTRUM ANALYZER	R&S	FSV40	101407	Jul. 21, 2022	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
<b>☑RF Connected Test (Tonscend RF Measurement System 4#)</b>					
Signal &Spectrum analyzer	R&S	FSV3044	101173	Apr. 13, 2022	1 Year
Wideband Radio Communication tester	R&S	CMW500	120259	May 18, 2022	1 Year
MXG Vector Signal Generator	Agilent	N5182B	MY59100192	May 18, 2022	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Oct. 15, 2021	1 Year
RF Control Unit	Tonsend	JS0806-2	2118060485	Oct. 18, 2021	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.6.88.0346	N/A	N/A
<b>☑Radiation 3#chamber</b>					
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 9161	4034	Sep. 19, 2021	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	Nov. 29, 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
<b>☑Power Line Conducted Emissions Test 1#</b>					
Test Receiver	R&S	ESCI	100551	Sep. 02, 2021	1 Year
LISN 1	R&S	ENV216	101109	Sep. 07, 2021	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 07, 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/ RSS-247		
Test Item	Limit	Frequency Range (MHz)
Bandwidth	26 dB Bandwidth	5150 - 5250
	26 dB Bandwidth	5250 - 5350
	26 dB Bandwidth	For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 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	16.983	5171.369	5188.352	---	PASS
	Ant2	5180	16.983	5171.528	5188.511	---	PASS
	Ant1	5200	17.103	5191.369	5208.472	---	PASS
	Ant2	5200	17.183	5191.528	5208.711	---	PASS
	Ant1	5240	16.583	5231.648	5248.232	---	PASS
	Ant2	5240	16.583	5231.688	5248.272	---	PASS
	Ant1	5260	16.983	5251.449	5268.432	---	PASS
	Ant2	5260	17.023	5251.608	5268.631	---	PASS
	Ant1	5280	17.143	5271.209	5288.352	---	PASS
	Ant2	5280	17.063	5271.489	5288.551	---	PASS
	Ant1	5320	17.023	5311.329	5328.352	---	PASS
	Ant2	5320	16.943	5311.568	5328.511	---	PASS
	Ant1	5500	16.983	5491.409	5508.392	---	PASS
	Ant2	5500	16.983	5491.608	5508.591	---	PASS
	Ant1	5580	17.103	5571.369	5588.472	---	PASS
	Ant2	5580	17.223	5571.568	5588.791	---	PASS
	Ant1	5700	17.023	5691.329	5708.352	---	PASS
	Ant2	5700	16.983	5691.528	5708.511	---	PASS
	Ant1	5745	17.063	5736.369	5753.432	---	PASS
	Ant2	5745	17.103	5736.528	5753.631	---	PASS
Ant1	5785	17.063	5776.329	5793.392	---	PASS	
Ant2	5785	17.103	5776.489	5793.591	---	PASS	
Ant1	5825	17.023	5816.369	5833.392	---	PASS	
Ant2	5825	17.063	5816.528	5833.591	---	PASS	
11N20MIMO	Ant1	5180	17.982	5170.929	5188.911	---	PASS
	Ant2	5180	18.022	5170.889	5188.911	---	PASS
	Ant1	5200	18.102	5190.889	5208.991	---	PASS
	Ant2	5200	18.182	5190.849	5209.031	---	PASS
	Ant1	5240	17.662	5231.129	5248.791	---	PASS
	Ant2	5240	17.622	5231.169	5248.791	---	PASS
	Ant1	5260	18.022	5250.929	5268.951	---	PASS
	Ant2	5260	18.062	5250.889	5268.951	---	PASS
	Ant1	5280	18.062	5270.889	5288.951	---	PASS
	Ant2	5280	18.062	5270.929	5288.991	---	PASS
	Ant1	5320	18.062	5310.889	5328.951	---	PASS
	Ant2	5320	18.062	5310.929	5328.991	---	PASS
	Ant1	5500	18.062	5490.889	5508.951	---	PASS
	Ant2	5500	18.062	5490.889	5508.951	---	PASS
	Ant1	5580	18.062	5570.929	5588.991	---	PASS
	Ant2	5580	18.062	5570.929	5588.991	---	PASS
	Ant1	5700	18.062	5690.889	5708.951	---	PASS
	Ant2	5700	18.062	5690.929	5708.991	---	PASS
	Ant1	5745	18.621	5735.649	5754.271	---	PASS
	Ant2	5745	17.902	5736.049	5753.951	---	PASS
Ant1	5785	18.661	5775.569	5794.231	---	PASS	
Ant2	5785	17.902	5776.009	5793.911	---	PASS	
Ant1	5825	18.661	5815.569	5834.231	---	PASS	
Ant2	5825	17.902	5816.009	5833.911	---	PASS	

11N40MIMO	Ant1	5190	35.884	5172.098	5207.982	---	PASS
	Ant2	5190	35.804	5172.098	5207.902	---	PASS
	Ant1	5230	35.804	5212.098	5247.902	---	PASS
	Ant2	5230	35.804	5212.018	5247.822	---	PASS
	Ant1	5270	35.804	5252.098	5287.902	---	PASS
	Ant2	5270	35.884	5252.018	5287.902	---	PASS
	Ant1	5310	35.804	5292.098	5327.902	---	PASS
	Ant2	5310	35.804	5292.098	5327.902	---	PASS
	Ant1	5510	35.804	5492.098	5527.902	---	PASS
	Ant2	5510	35.884	5492.018	5527.902	---	PASS
	Ant1	5550	35.804	5532.098	5567.902	---	PASS
	Ant2	5550	35.804	5532.098	5567.902	---	PASS
	Ant1	5670	35.804	5652.098	5687.902	---	PASS
	Ant2	5670	35.884	5652.018	5687.902	---	PASS
	Ant1	5755	35.804	5737.098	5772.902	---	PASS
	Ant2	5755	35.804	5737.098	5772.902	---	PASS
	Ant1	5795	35.804	5777.098	5812.902	---	PASS
	Ant2	5795	35.884	5777.018	5812.902	---	PASS
11AC80MIMO	Ant1	5210	75.764	5172.118	5247.882	---	PASS
	Ant2	5210	75.924	5171.958	5247.882	---	PASS
	Ant1	5290	75.924	5251.958	5327.882	---	PASS
	Ant2	5290	75.764	5252.118	5327.882	---	PASS
	Ant1	5530	75.924	5491.958	5567.882	---	PASS
	Ant2	5530	75.764	5492.118	5567.882	---	PASS
	Ant1	5610	75.924	5572.118	5648.042	---	PASS
	Ant2	5610	75.764	5572.118	5647.882	---	PASS
	Ant1	5775	75.764	5737.118	5812.882	---	PASS
	Ant2	5775	75.764	5737.118	5812.882	---	PASS
11AX20SU	Ant1	5180	19.301	5170.370	5189.670	---	PASS
	Ant2	5180	19.221	5170.410	5189.630	---	PASS
	Ant1	5200	19.54	5190.410	5209.950	---	PASS
	Ant2	5200	19.261	5190.370	5209.630	---	PASS
	Ant1	5240	19.021	5230.490	5249.510	---	PASS
	Ant2	5240	19.021	5230.450	5249.471	---	PASS
	Ant1	5260	19.461	5250.370	5269.830	---	PASS
	Ant2	5260	19.301	5250.290	5269.590	---	PASS
	Ant1	5280	19.141	5270.410	5289.550	---	PASS
	Ant2	5280	19.181	5270.410	5289.590	---	PASS
	Ant1	5320	19.381	5310.330	5329.710	---	PASS
	Ant2	5320	19.461	5310.210	5329.670	---	PASS
	Ant1	5500	19.301	5490.330	5509.630	---	PASS
	Ant2	5500	19.341	5490.370	5509.710	---	PASS
	Ant1	5580	19.261	5570.330	5589.590	---	PASS
	Ant2	5580	19.221	5570.370	5589.590	---	PASS
	Ant1	5700	19.301	5690.330	5709.630	---	PASS
	Ant2	5700	19.181	5690.410	5709.590	---	PASS
	Ant1	5745	19.181	5735.410	5754.590	---	PASS
	Ant2	5745	19.301	5735.370	5754.670	---	PASS
	Ant1	5785	19.181	5775.410	5794.590	---	PASS
	Ant2	5785	19.141	5775.410	5794.550	---	PASS
	Ant1	5825	19.221	5815.450	5834.670	---	PASS

	Ant2	5825	19.261	5815.330	5834.590	---	PASS
11AX40SU	Ant1	5190	37.802	5171.059	5208.861	---	PASS
	Ant2	5190	37.882	5171.059	5208.941	---	PASS
	Ant1	5230	37.882	5210.979	5248.861	---	PASS
	Ant2	5230	37.962	5210.979	5248.941	---	PASS
	Ant1	5270	37.802	5251.139	5288.941	---	PASS
	Ant2	5270	37.882	5250.979	5288.861	---	PASS
	Ant1	5310	37.882	5291.059	5328.941	---	PASS
	Ant2	5310	37.882	5291.059	5328.941	---	PASS
	Ant1	5510	37.882	5491.059	5528.941	---	PASS
	Ant2	5510	37.962	5490.979	5528.941	---	PASS
	Ant1	5550	37.962	5530.979	5568.941	---	PASS
	Ant2	5550	37.962	5530.979	5568.941	---	PASS
	Ant1	5670	37.962	5650.979	5688.941	---	PASS
	Ant2	5670	37.882	5651.059	5688.941	---	PASS
	Ant1	5755	37.882	5736.059	5773.941	---	PASS
	Ant2	5755	37.882	5736.059	5773.941	---	PASS
	Ant1	5795	37.882	5776.059	5813.941	---	PASS
	Ant2	5795	37.882	5775.979	5813.861	---	PASS
11AX80SU	Ant1	5210	77.522	5171.159	5248.681	---	PASS
	Ant2	5210	77.522	5171.159	5248.681	---	PASS
	Ant1	5290	77.522	5251.319	5328.841	---	PASS
	Ant2	5290	77.522	5251.319	5328.841	---	PASS
	Ant1	5530	77.682	5491.159	5568.841	---	PASS
	Ant2	5530	77.522	5491.159	5568.681	---	PASS
	Ant1	5610	77.682	5571.159	5648.841	---	PASS
	Ant2	5610	77.522	5571.319	5648.841	---	PASS
	Ant1	5775	77.682	5736.159	5813.841	---	PASS
	Ant2	5775	77.682	5736.159	5813.841	---	PASS

Note: according exploratory explorer test, for 802.11ax Mode, Specific Resource Unit have no distinct influence on 99% OBW, so for 99% OBW, the final test was only performed with EUT working in 802.11ax SU mode.

Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	23.16	5168.08	5191.24	---	PASS
	Ant2	5180	23.16	5168.16	5191.32	---	PASS
	Ant1	5200	23.48	5187.88	5211.36	---	PASS
	Ant2	5200	23.84	5187.88	5211.72	---	PASS
	Ant1	5240	20.04	5230.00	5250.04	---	PASS
	Ant2	5240	19.80	5230.04	5249.84	---	PASS
	Ant1	5260	23.52	5248.04	5271.56	---	PASS
	Ant2	5260	23.72	5247.96	5271.68	---	PASS
	Ant1	5280	23.56	5267.92	5291.48	---	PASS
	Ant2	5280	23.24	5268.08	5291.32	---	PASS
	Ant1	5320	23.80	5307.64	5331.44	---	PASS
	Ant2	5320	23.44	5308.00	5331.44	---	PASS
	Ant1	5500	24.12	5487.84	5511.96	---	PASS
	Ant2	5500	23.40	5488.28	5511.68	---	PASS



	Ant1	5580	24.84	5567.56	5592.40	---	PASS
	Ant2	5580	24.84	5567.28	5592.12	---	PASS
	Ant1	5700	23.44	5688.00	5711.44	---	PASS
	Ant2	5700	23.44	5687.88	5711.32	---	PASS
	Ant1	5745	23.72	5732.80	5756.52	---	PASS
	Ant2	5745	23.00	5733.32	5756.32	---	PASS
	Ant1	5785	24.32	5772.52	5796.84	---	PASS
	Ant2	5785	23.24	5773.04	5796.28	---	PASS
	Ant1	5825	23.80	5812.84	5836.64	---	PASS
	Ant2	5825	24.20	5812.72	5836.92	---	PASS
11N20MIMO	Ant1	5180	25.52	5167.44	5192.96	---	PASS
	Ant2	5180	25.44	5167.92	5193.36	---	PASS
	Ant1	5200	25.64	5187.36	5213.00	---	PASS
	Ant2	5200	25.64	5187.20	5212.84	---	PASS
	Ant1	5240	20.56	5229.68	5250.24	---	PASS
	Ant2	5240	20.36	5229.72	5250.08	---	PASS
	Ant1	5260	25.64	5247.52	5273.16	---	PASS
	Ant2	5260	25.52	5247.76	5273.28	---	PASS
	Ant1	5280	25.68	5267.32	5293.00	---	PASS
	Ant2	5280	25.68	5267.20	5292.88	---	PASS
	Ant1	5320	25.80	5307.16	5332.96	---	PASS
	Ant2	5320	25.40	5307.64	5333.04	---	PASS
	Ant1	5500	25.76	5487.12	5512.88	---	PASS
	Ant2	5500	25.88	5487.36	5513.24	---	PASS
	Ant1	5580	25.84	5567.04	5592.88	---	PASS
	Ant2	5580	25.60	5567.56	5593.16	---	PASS
	Ant1	5700	25.72	5687.04	5712.76	---	PASS
	Ant2	5700	25.72	5687.56	5713.28	---	PASS
	Ant1	5745	25.52	5732.32	5757.84	---	PASS
	Ant2	5745	25.56	5732.24	5757.80	---	PASS
	Ant1	5785	25.36	5772.36	5797.72	---	PASS
	Ant2	5785	25.40	5772.36	5797.76	---	PASS
	Ant1	5825	25.80	5812.24	5838.04	---	PASS
	Ant2	5825	25.84	5812.08	5837.92	---	PASS
11N40MIMO	Ant1	5190	41.04	5169.44	5210.48	---	PASS
	Ant2	5190	40.96	5169.52	5210.48	---	PASS
	Ant1	5230	41.04	5209.44	5250.48	---	PASS
	Ant2	5230	41.36	5209.28	5250.64	---	PASS
	Ant1	5270	40.96	5249.52	5290.48	---	PASS
	Ant2	5270	40.08	5249.92	5290.00	---	PASS
	Ant1	5310	41.12	5289.36	5330.48	---	PASS
	Ant2	5310	41.20	5289.36	5330.56	---	PASS
	Ant1	5510	41.12	5489.36	5530.48	---	PASS
	Ant2	5510	41.12	5489.44	5530.56	---	PASS
	Ant1	5550	41.04	5529.44	5570.48	---	PASS
	Ant2	5550	41.20	5529.36	5570.56	---	PASS
	Ant1	5670	41.04	5649.28	5690.32	---	PASS
	Ant2	5670	41.28	5649.28	5690.56	---	PASS
	Ant1	5755	40.96	5734.44	5775.40	---	PASS
	Ant2	5755	41.28	5734.36	5775.64	---	PASS
	Ant1	5795	41.20	5774.28	5815.48	---	PASS

	Ant2	5795	41.12	5774.36	5815.48	---	PASS
11AC80MIMO	Ant1	5210	80.64	5169.68	5250.32	---	PASS
	Ant2	5210	80.80	5169.52	5250.32	---	PASS
	Ant1	5290	80.64	5249.68	5330.32	---	PASS
	Ant2	5290	80.80	5249.52	5330.32	---	PASS
	Ant1	5530	80.64	5489.68	5570.32	---	PASS
	Ant2	5530	80.96	5489.52	5570.48	---	PASS
	Ant1	5610	80.64	5569.68	5650.32	---	PASS
	Ant2	5610	80.64	5569.68	5650.32	---	PASS
	Ant1	5775	80.80	5734.52	5815.32	---	PASS
	Ant2	5775	80.96	5734.52	5815.48	---	PASS
11AX20SU	Ant1	5180	25.60	5167.84	5193.44	---	PASS
	Ant2	5180	24.96	5167.28	5192.24	---	PASS
	Ant1	5200	25.72	5187.64	5213.36	---	PASS
	Ant2	5200	24.88	5187.80	5212.68	---	PASS
	Ant1	5240	20.08	5229.88	5249.96	---	PASS
	Ant2	5240	20.12	5229.84	5249.96	---	PASS
	Ant1	5260	25.56	5246.56	5272.12	---	PASS
	Ant2	5260	25.92	5246.68	5272.60	---	PASS
	Ant1	5280	24.96	5267.96	5292.92	---	PASS
	Ant2	5280	24.72	5267.52	5292.24	---	PASS
	Ant1	5320	25.68	5306.64	5332.32	---	PASS
	Ant2	5320	25.44	5307.88	5333.32	---	PASS
	Ant1	5500	24.88	5487.56	5512.44	---	PASS
	Ant2	5500	25.96	5487.16	5513.12	---	PASS
	Ant1	5580	24.56	5568.32	5592.88	---	PASS
	Ant2	5580	24.48	5567.80	5592.28	---	PASS
	Ant1	5700	24.80	5687.80	5712.60	---	PASS
	Ant2	5700	24.64	5687.12	5711.76	---	PASS
	Ant1	5745	23.08	5733.64	5756.72	---	PASS
	Ant2	5745	23.44	5733.60	5757.04	---	PASS
	Ant1	5785	25.92	5771.84	5797.76	---	PASS
	Ant2	5785	24.92	5772.96	5797.88	---	PASS
	Ant1	5825	25.16	5812.24	5837.40	---	PASS
	Ant2	5825	24.44	5812.76	5837.20	---	PASS
11AX40SU	Ant1	5190	40.72	5169.60	5210.32	---	PASS
	Ant2	5190	40.64	5169.60	5210.24	---	PASS
	Ant1	5230	40.56	5209.68	5250.24	---	PASS
	Ant2	5230	40.64	5209.68	5250.32	---	PASS
	Ant1	5270	40.72	5249.60	5290.32	---	PASS
	Ant2	5270	40.64	5249.60	5290.24	---	PASS
	Ant1	5310	40.88	5289.52	5330.40	---	PASS
	Ant2	5310	40.64	5289.68	5330.32	---	PASS
	Ant1	5510	40.80	5489.44	5530.24	---	PASS
	Ant2	5510	40.64	5489.60	5530.24	---	PASS
	Ant1	5550	40.56	5529.60	5570.16	---	PASS
	Ant2	5550	40.48	5529.68	5570.16	---	PASS
	Ant1	5670	40.56	5649.60	5690.16	---	PASS
	Ant2	5670	40.64	5649.60	5690.24	---	PASS
	Ant1	5755	40.64	5734.60	5775.24	---	PASS
	Ant2	5755	40.64	5734.60	5775.24	---	PASS



	Ant1	5795	40.72	5774.52	5815.24	---	PASS
	Ant2	5795	40.72	5774.52	5815.24	---	PASS
11AX80SU	Ant1	5210	80.48	5169.68	5250.16	---	PASS
	Ant2	5210	80.96	5169.52	5250.48	---	PASS
	Ant1	5290	80.64	5249.68	5330.32	---	PASS
	Ant2	5290	80.48	5249.68	5330.16	---	PASS
	Ant1	5530	80.64	5489.52	5570.16	---	PASS
	Ant2	5530	80.64	5489.52	5570.16	---	PASS
	Ant1	5610	80.48	5569.68	5650.16	---	PASS
	Ant2	5610	80.64	5569.52	5650.16	---	PASS
	Ant1	5775	80.48	5734.68	5815.16	---	PASS
	Ant2	5775	80.48	5734.68	5815.16	---	PASS

Note: according exploratory explorer test, for 802.11ax Mode, Specific Resource Unit have no distinct influence on 26db EBW, so for 26db EBW, the final test was only performed with EUT working in 802.11ax SU mode.

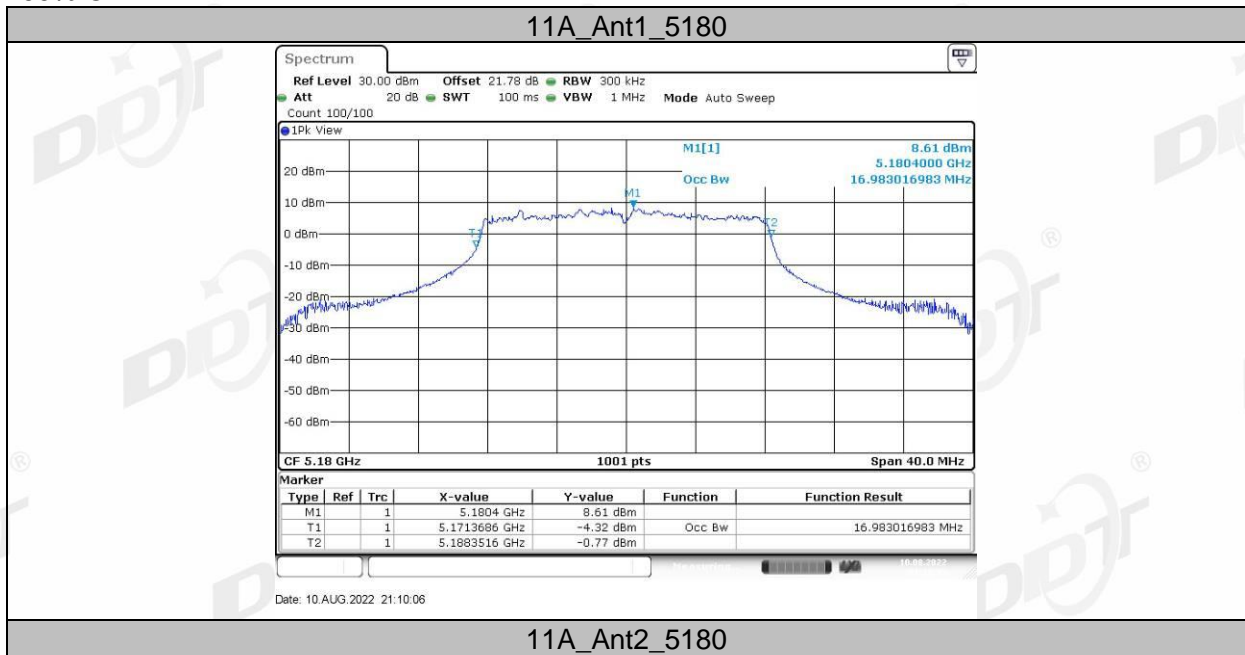
Test Mode	Antenna	Channel	6db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5745	16.40	5736.76	5753.16	0.5	PASS
	Ant2	5745	16.36	5736.80	5753.16	0.5	PASS
	Ant1	5785	16.40	5776.76	5793.16	0.5	PASS
	Ant2	5785	16.40	5776.76	5793.16	0.5	PASS
	Ant1	5825	16.40	5816.76	5833.16	0.5	PASS
	Ant2	5825	16.36	5816.76	5833.12	0.5	PASS
11N20MIMO	Ant1	5745	16.40	5737.08	5753.48	0.5	PASS
	Ant2	5745	17.56	5736.16	5753.72	0.5	PASS
	Ant1	5785	16.64	5776.44	5793.08	0.5	PASS
	Ant2	5785	17.56	5776.16	5793.72	0.5	PASS
	Ant1	5825	16.04	5816.80	5832.84	0.5	PASS
	Ant2	5825	17.52	5816.20	5833.72	0.5	PASS
11N40MIMO	Ant1	5755	35.12	5737.40	5772.52	0.5	PASS
	Ant2	5755	35.12	5737.40	5772.52	0.5	PASS
	Ant1	5795	33.76	5778.68	5812.44	0.5	PASS
	Ant2	5795	35.12	5777.40	5812.52	0.5	PASS
11AC80MIMO	Ant1	5775	76.16	5737.08	5813.24	0.5	PASS
	Ant2	5775	76.16	5737.08	5813.24	0.5	PASS
11AX20SU	Ant1	5745	19.12	5735.40	5754.52	0.5	PASS
	Ant2	5745	19.04	5735.44	5754.48	0.5	PASS
	Ant1	5785	19.12	5775.44	5794.56	0.5	PASS
	Ant2	5785	19.12	5775.40	5794.52	0.5	PASS
	Ant1	5825	19.12	5815.40	5834.52	0.5	PASS
	Ant2	5825	19.04	5815.48	5834.52	0.5	PASS
11AX40SU	Ant1	5755	38.24	5735.88	5774.12	0.5	PASS
	Ant2	5755	38.16	5735.88	5774.04	0.5	PASS
	Ant1	5795	38.00	5776.04	5814.04	0.5	PASS
	Ant2	5795	37.92	5775.96	5813.88	0.5	PASS
11AX80SU	Ant1	5775	77.92	5736.12	5814.04	0.5	PASS
	Ant2	5775	77.76	5736.12	5813.88	0.5	PASS

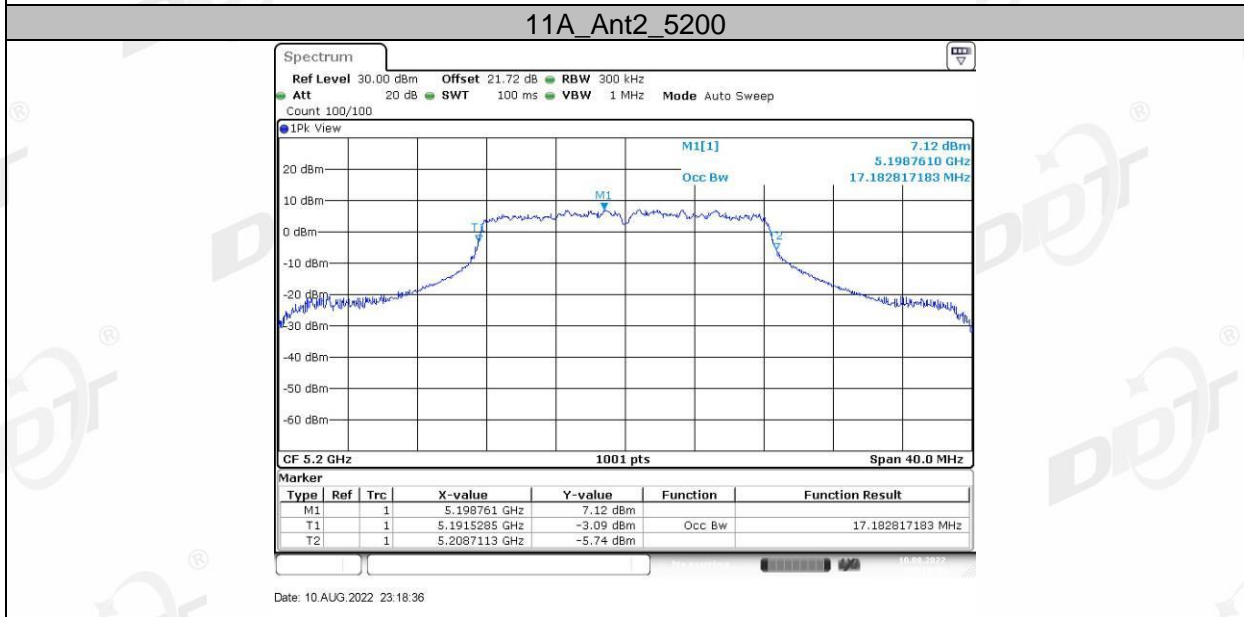
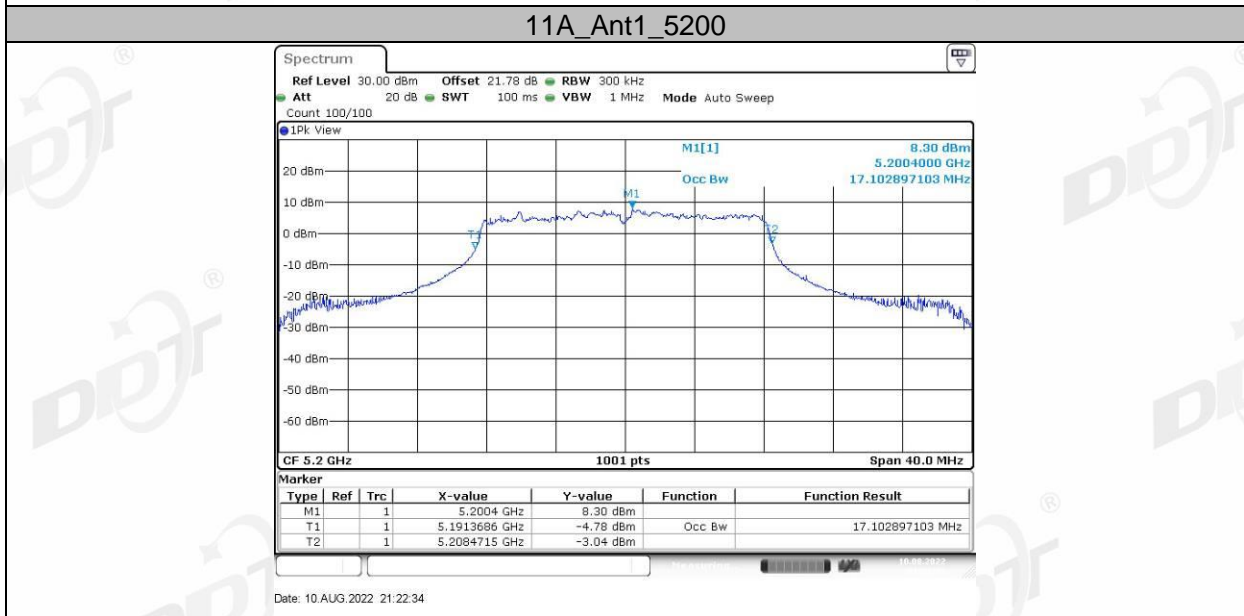
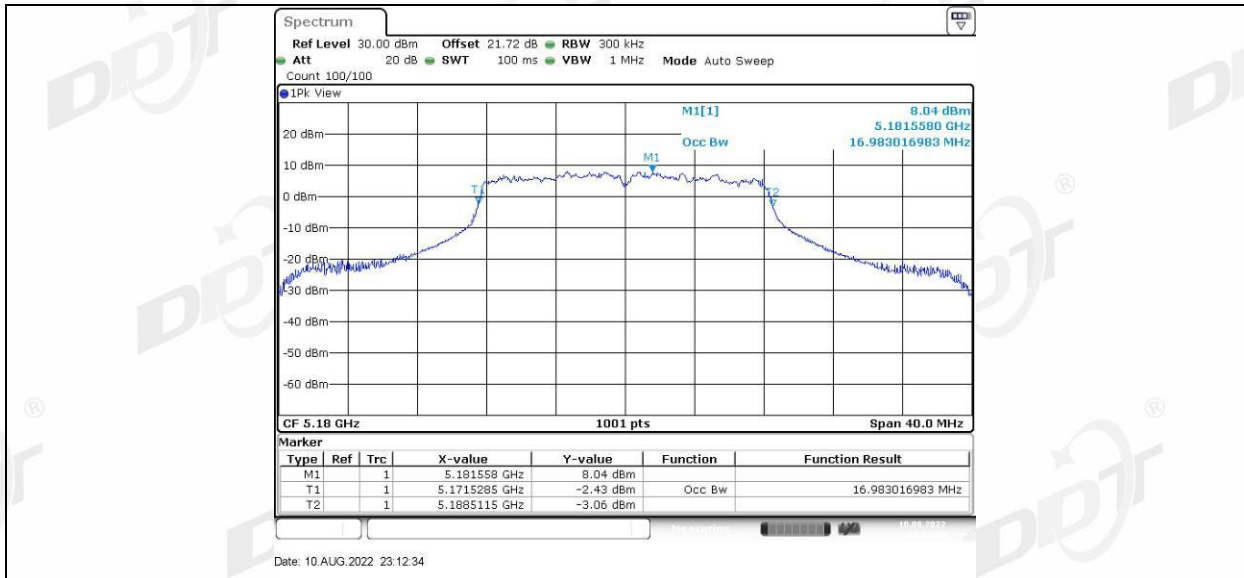
Test Mode	Antenna	Frequency[MHz]	Ru Size	Ru Index	6db BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11AX20MIMO	Ant1	5745	26Tone	RU0	2.08	5735.40	5737.48	0.5	PASS
				RU4	2.68	5743.60	5746.28	0.5	PASS
				RU8	2.08	5752.40	5754.48	0.5	PASS
			52Tone	RU37	17.04	5735.44	5752.48	0.5	PASS
				RU38	13.84	5738.64	5752.48	0.5	PASS
				RU39	15.04	5737.44	5752.48	0.5	PASS
			106Tone	RU40	15.80	5738.68	5754.48	0.5	PASS
				RU53	17.16	5735.36	5752.52	0.5	PASS
				RU54	17.16	5737.36	5754.52	0.5	PASS
	Ant2	5745	26Tone	RU0	2.12	5735.40	5737.52	0.5	PASS
				RU4	2.68	5743.60	5746.28	0.5	PASS
				RU8	2.12	5752.40	5754.52	0.5	PASS
			52Tone	RU37	17.12	5735.40	5752.52	0.5	PASS
				RU38	15.04	5737.44	5752.48	0.5	PASS
				RU39	15.04	5737.44	5752.48	0.5	PASS
			106Tone	RU40	17.08	5737.44	5754.52	0.5	PASS
				RU53	17.12	5735.40	5752.52	0.5	PASS
				RU54	17.12	5737.40	5754.52	0.5	PASS
	Ant1	5785	26Tone	RU0	2.12	5775.40	5777.52	0.5	PASS
				RU4	2.68	5783.60	5786.28	0.5	PASS
				RU8	2.08	5792.40	5794.48	0.5	PASS
			52Tone	RU37	17.04	5775.44	5792.48	0.5	PASS
				RU38	13.80	5778.68	5792.48	0.5	PASS
				RU39	13.80	5778.68	5792.48	0.5	PASS
			106Tone	RU40	17.08	5777.44	5794.52	0.5	PASS
				RU53	17.12	5775.40	5792.52	0.5	PASS
				RU54	17.12	5777.40	5794.52	0.5	PASS
	Ant2	5785	26Tone	RU0	2.12	5775.40	5777.52	0.5	PASS
				RU4	2.64	5783.64	5786.28	0.5	PASS
				RU8	2.12	5792.40	5794.52	0.5	PASS
			52Tone	RU37	17.04	5775.44	5792.48	0.5	PASS
				RU38	13.80	5778.68	5792.48	0.5	PASS
				RU39	15.04	5777.44	5792.48	0.5	PASS
			106Tone	RU40	17.08	5777.44	5794.52	0.5	PASS
				RU53	17.12	5775.40	5792.52	0.5	PASS
				RU54	17.12	5777.40	5794.52	0.5	PASS
	Ant1	5825	26Tone	RU0	2.08	5815.40	5817.48	0.5	PASS
				RU4	2.64	5823.64	5826.28	0.5	PASS
				RU8	2.08	5832.40	5834.48	0.5	PASS
			52Tone	RU37	17.04	5815.40	5832.44	0.5	PASS
				RU38	15.04	5817.44	5832.48	0.5	PASS
				RU39	15.08	5817.40	5832.48	0.5	PASS
			106Tone	RU40	15.80	5818.68	5834.48	0.5	PASS
				RU53	17.16	5815.36	5832.52	0.5	PASS
				RU54	17.16	5817.36	5834.52	0.5	PASS
	Ant2	5825	26Tone	RU0	2.08	5815.40	5817.48	0.5	PASS
				RU4	2.68	5823.60	5826.28	0.5	PASS

11AX40MIMO	Ant1	5755	52Tone	RU8	2.08	5832.40	5834.48	0.5	PASS
				RU37	17.08	5815.40	5832.48	0.5	PASS
				RU38	15.08	5817.40	5832.48	0.5	PASS
				RU39	15.04	5817.44	5832.48	0.5	PASS
	Ant2	5755	106Tone	RU40	17.04	5817.44	5834.48	0.5	PASS
				RU53	17.16	5815.36	5832.52	0.5	PASS
				RU54	17.16	5817.36	5834.52	0.5	PASS
				RU61	18.80	5735.96	5754.76	0.5	PASS
Ant1	5795	242Tone	RU62	18.88	5755.16	5774.04	0.5	PASS	
			RU61	18.80	5735.96	5754.76	0.5	PASS	
			RU62	18.80	5755.24	5774.04	0.5	PASS	
			RU61	18.80	5775.96	5794.76	0.5	PASS	
Ant2	5795	242Tone	RU62	18.88	5775.88	5794.76	0.5	PASS	
			RU62	18.80	5795.24	5814.04	0.5	PASS	
			RU65	37.60	5735.96	5773.56	0.5	PASS	
			RU66	37.76	5776.28	5814.04	0.5	PASS	
11AX80MIMO	Ant1	5775	484Tone	RU65	37.60	5735.96	5773.56	0.5	PASS
				RU66	37.76	5776.28	5814.04	0.5	PASS
	Ant2	5775	484Tone	RU65	37.60	5735.96	5773.56	0.5	PASS
				RU66	37.60	5776.44	5814.04	0.5	PASS

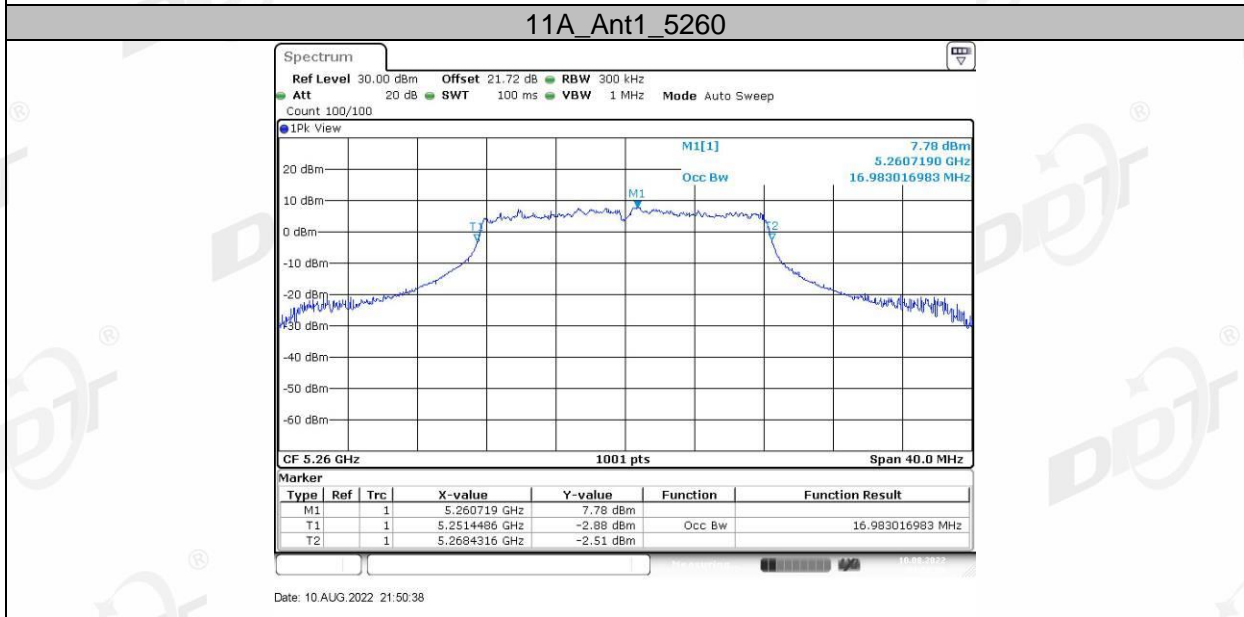
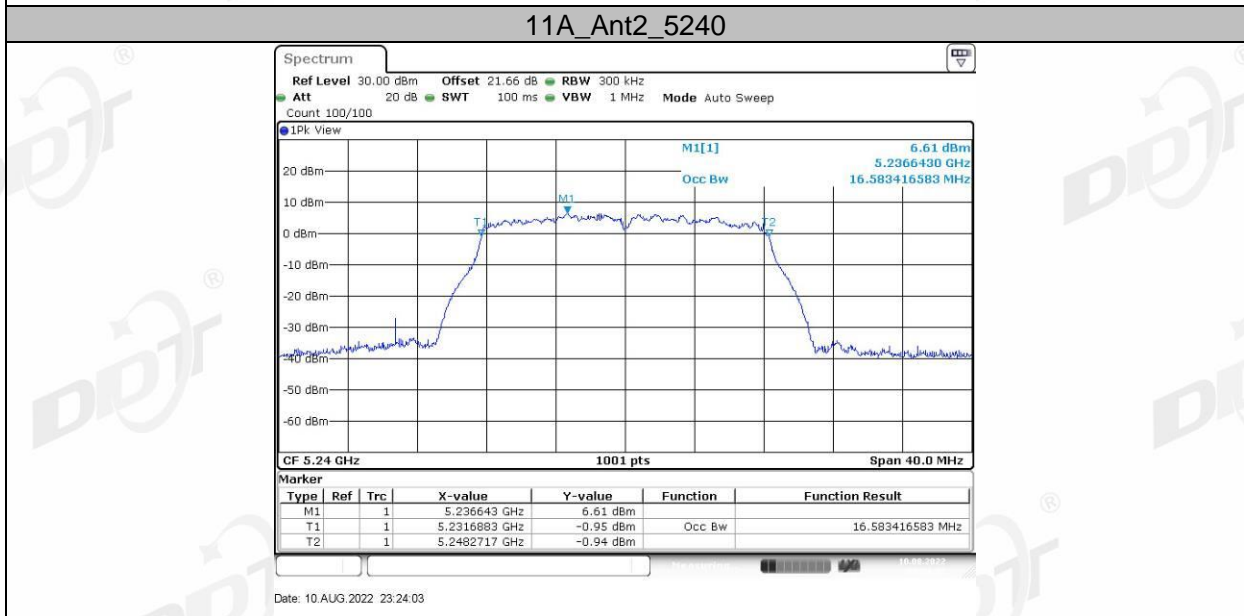
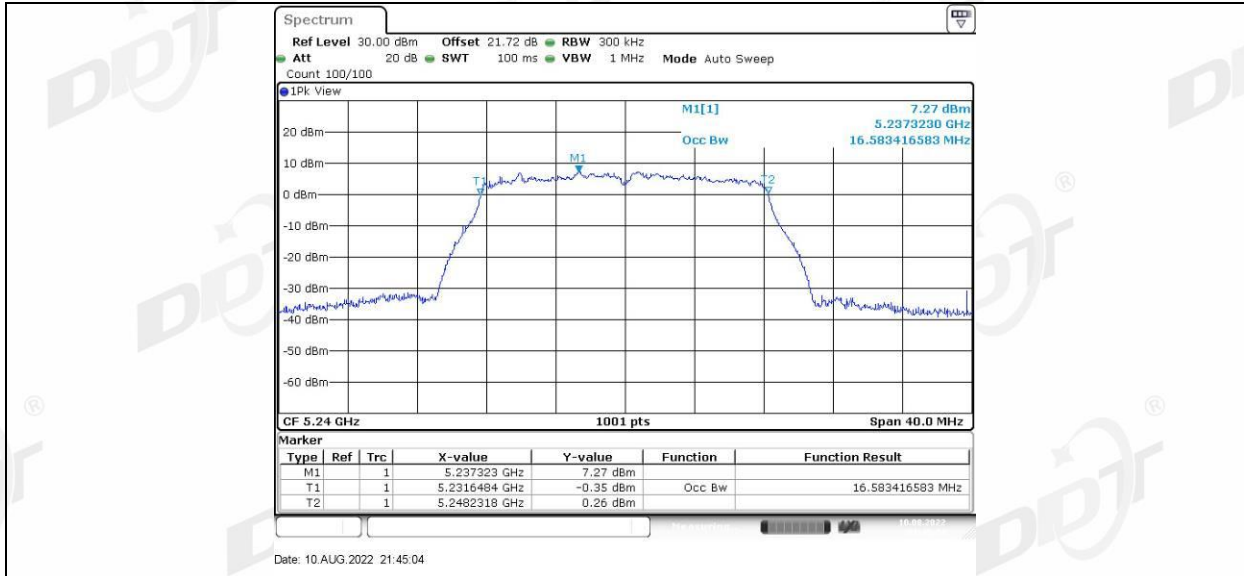
4.5. Original test data

99% OBW:

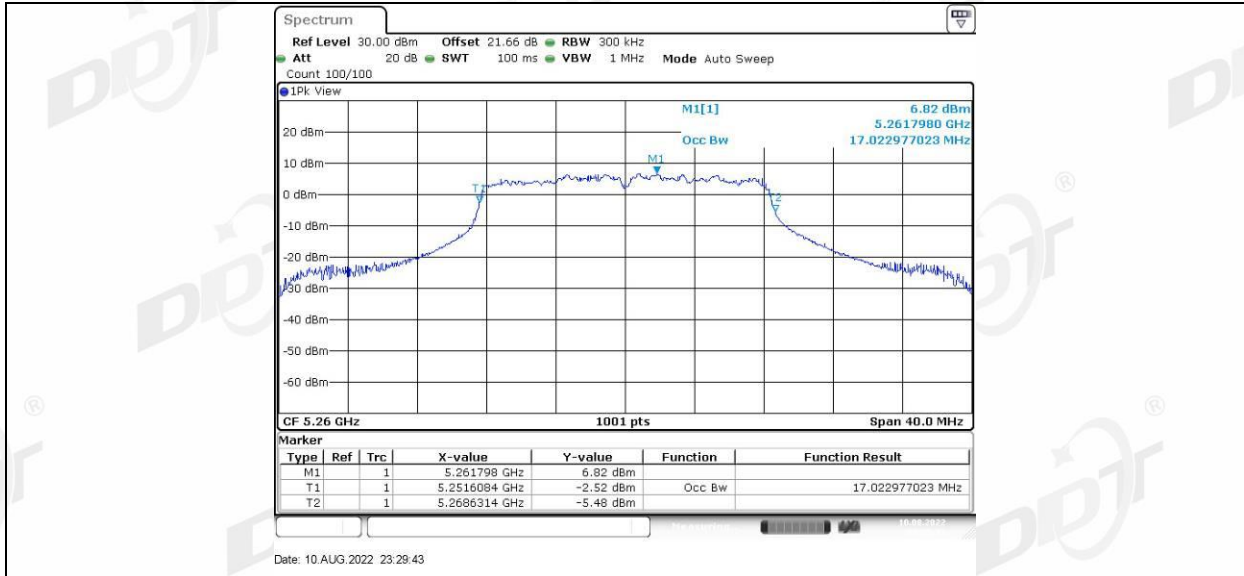




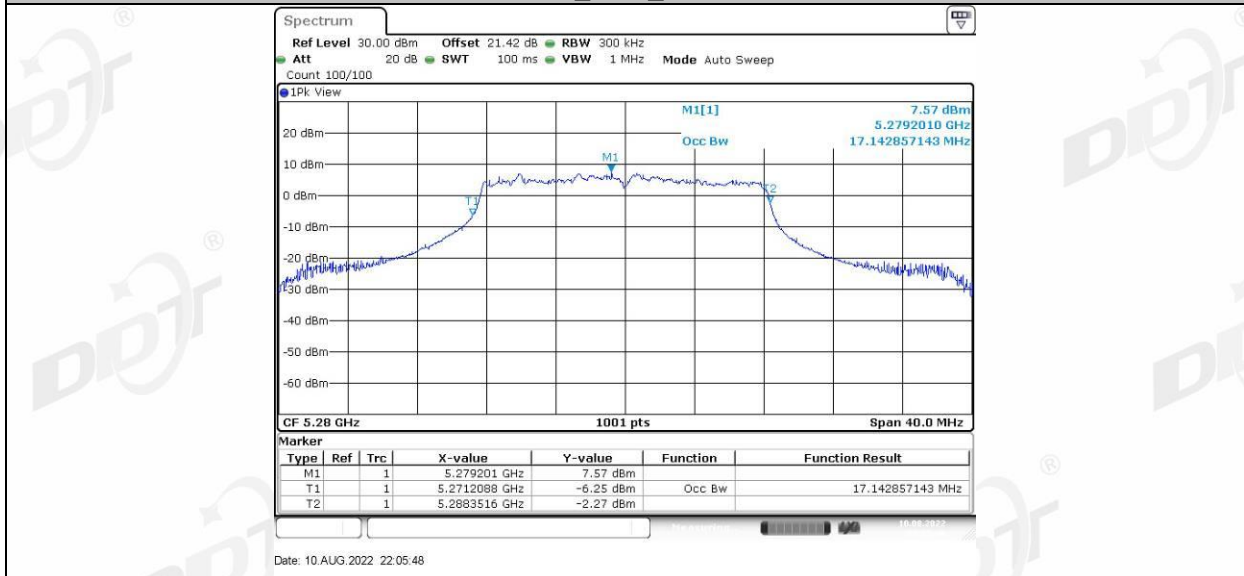




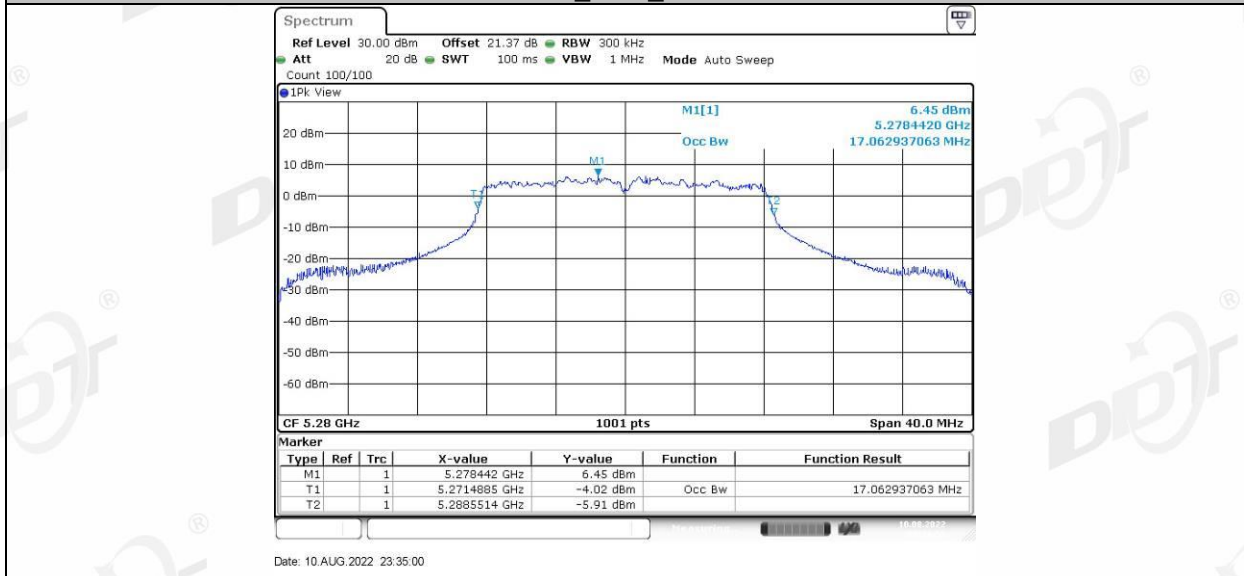




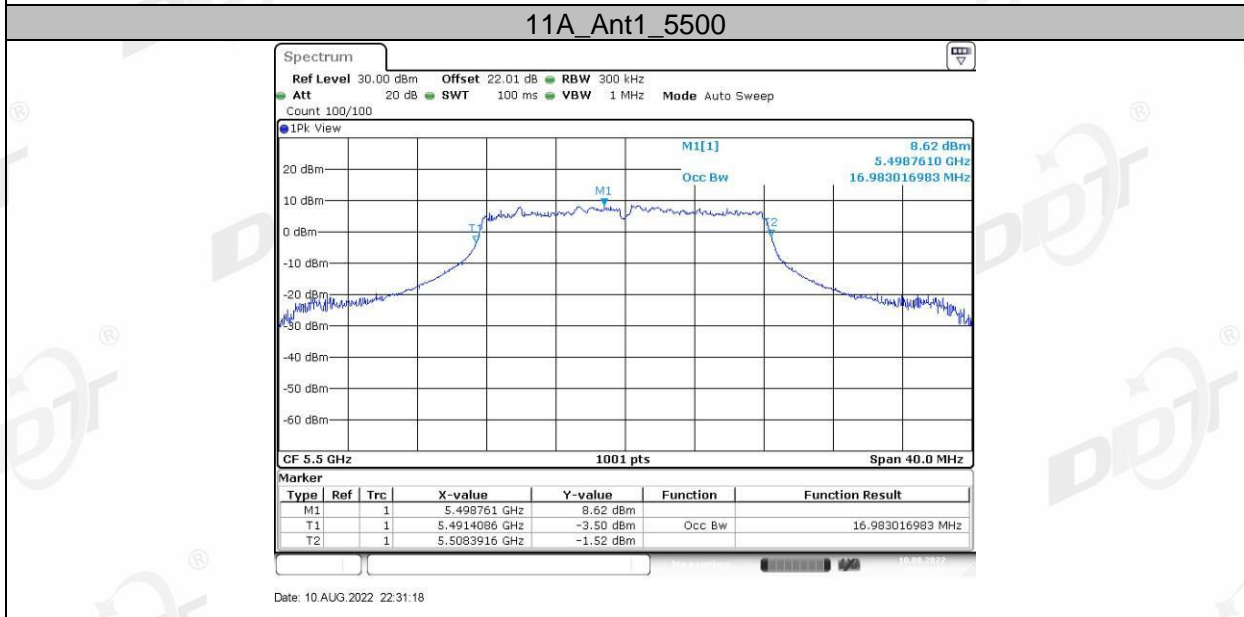
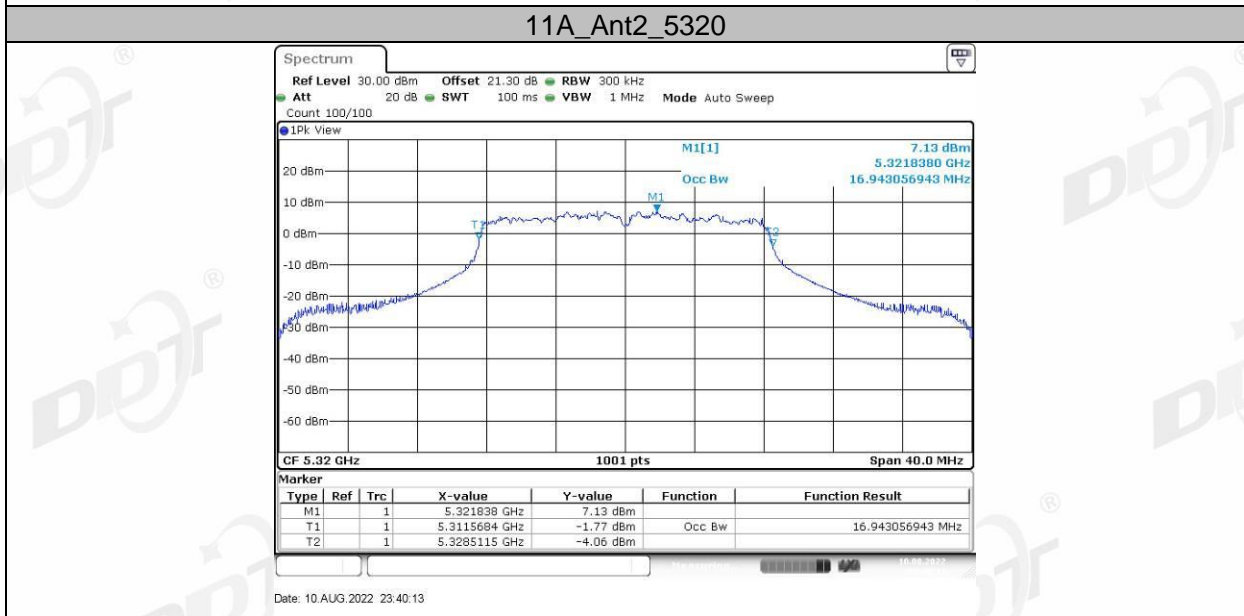
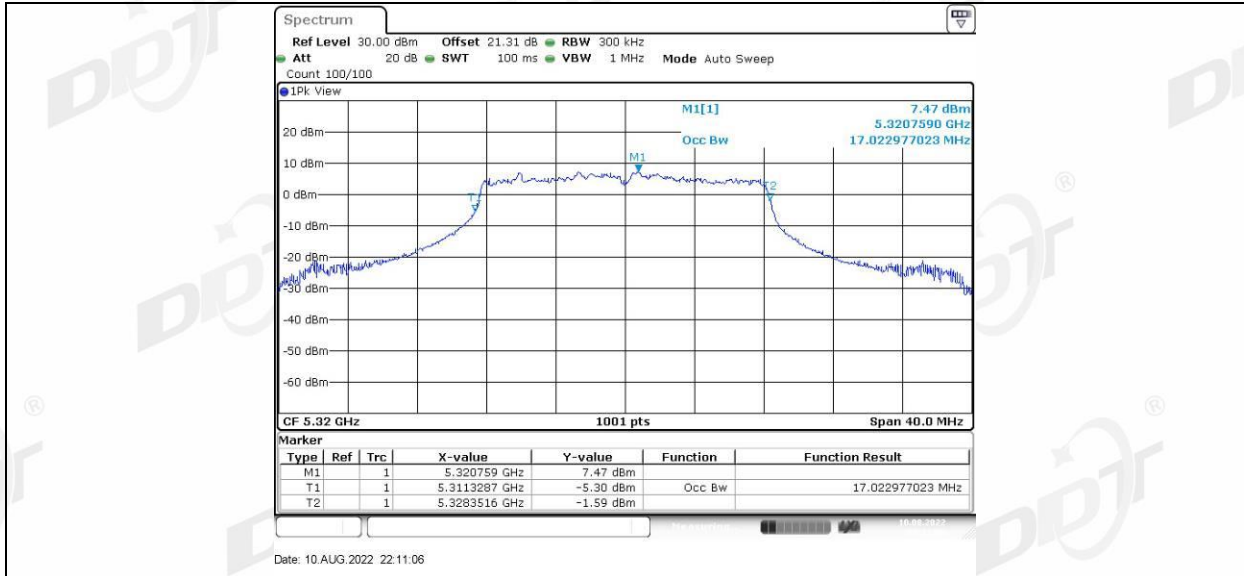
11A\_Ant1\_5280

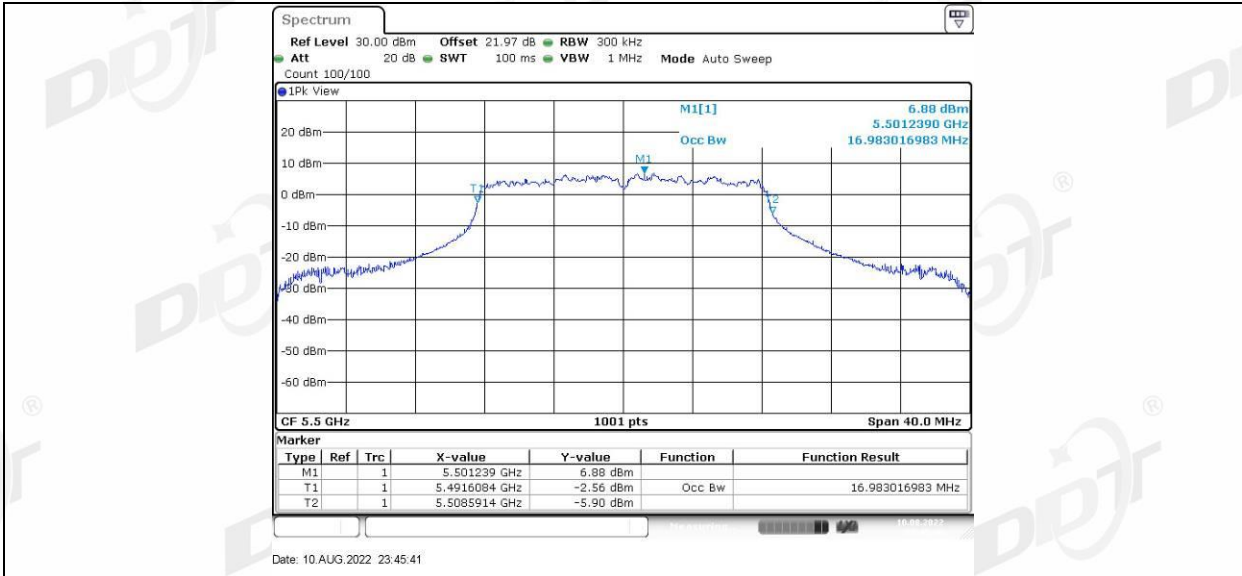


11A\_Ant2\_5280

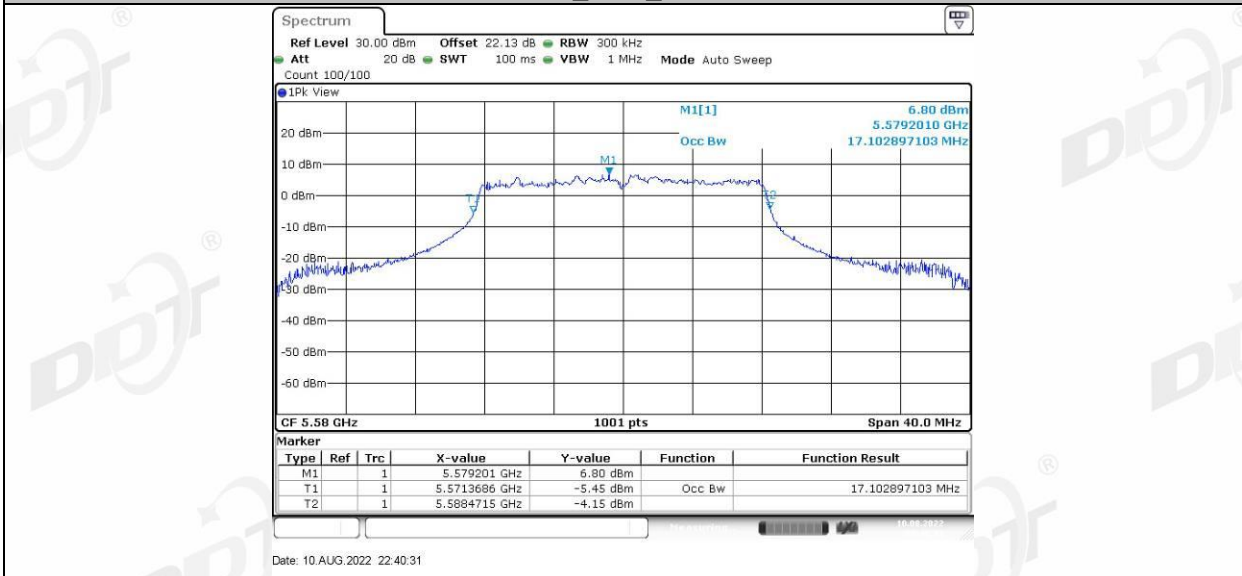


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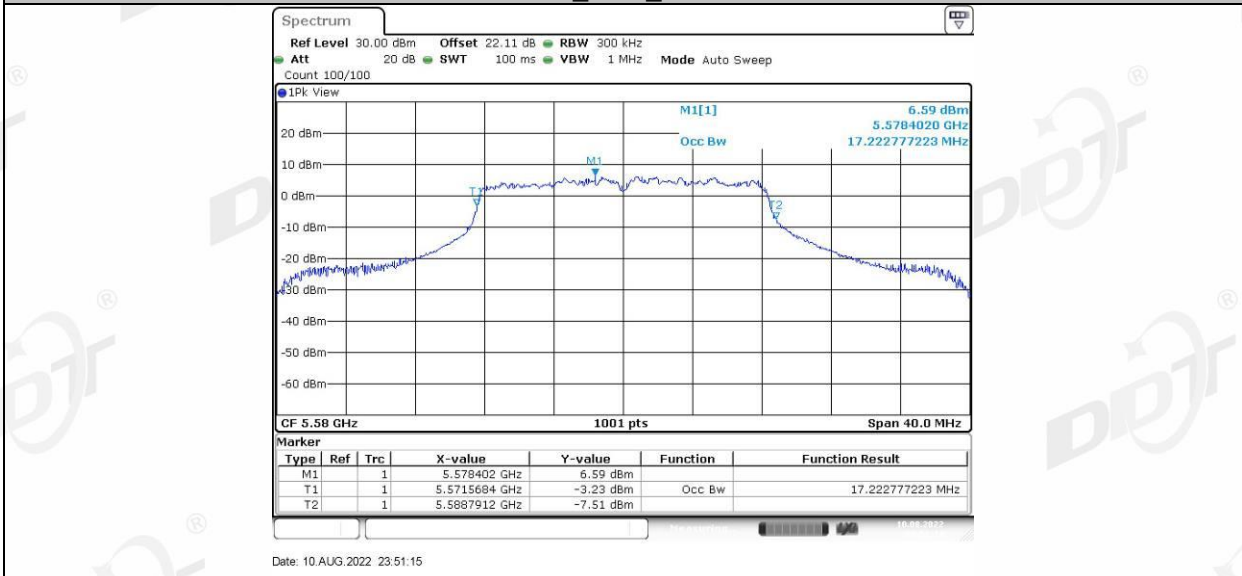




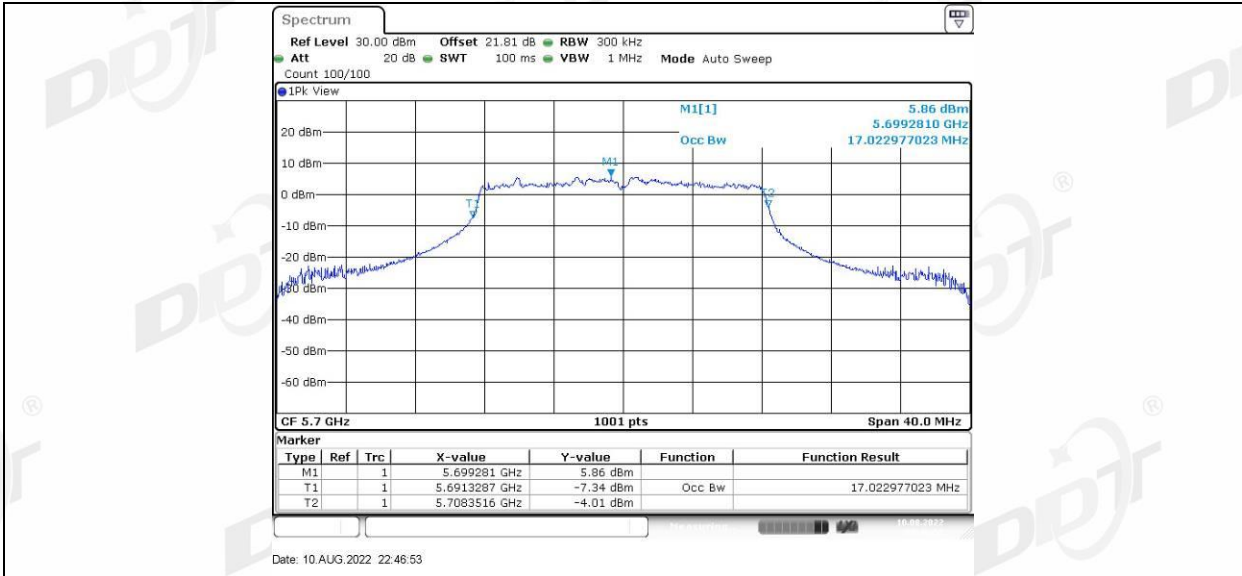
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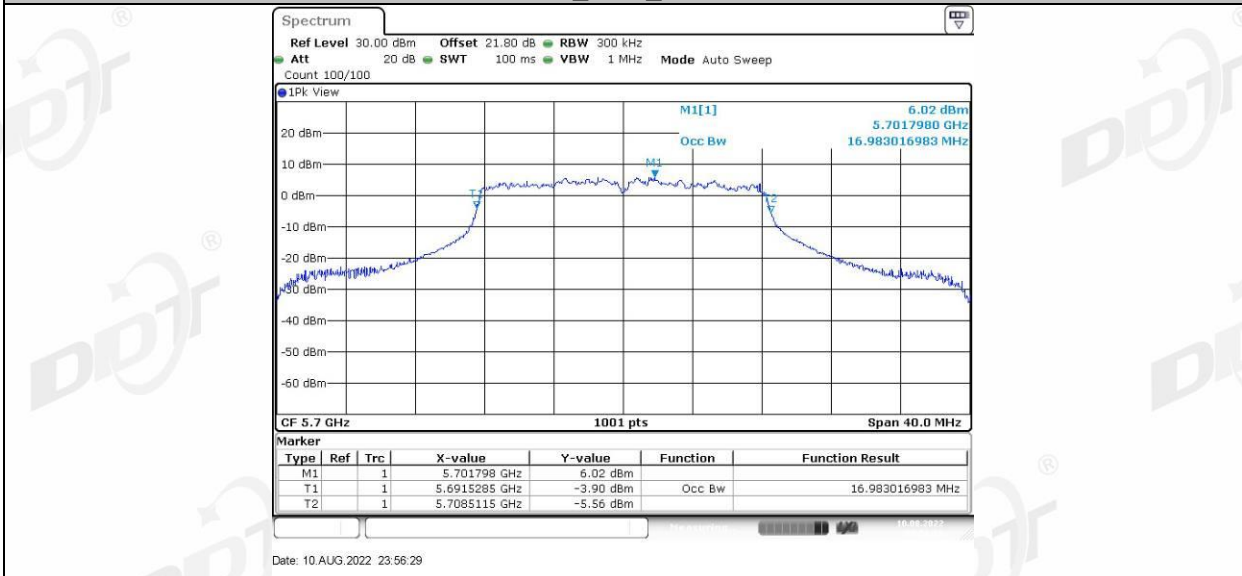
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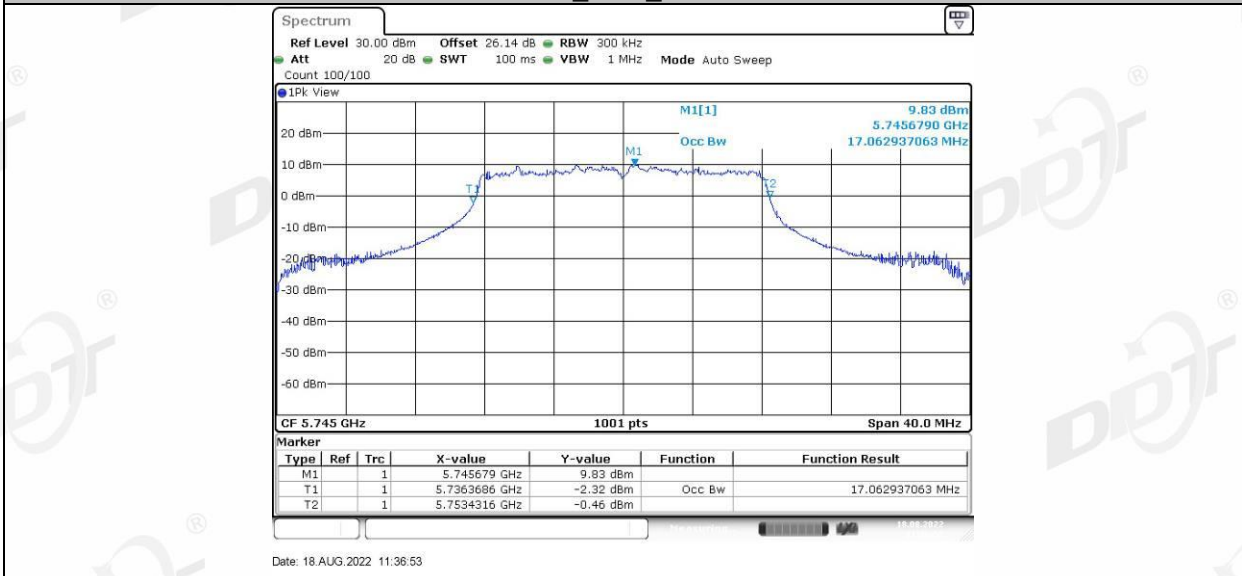
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11A\_Ant2\_5700

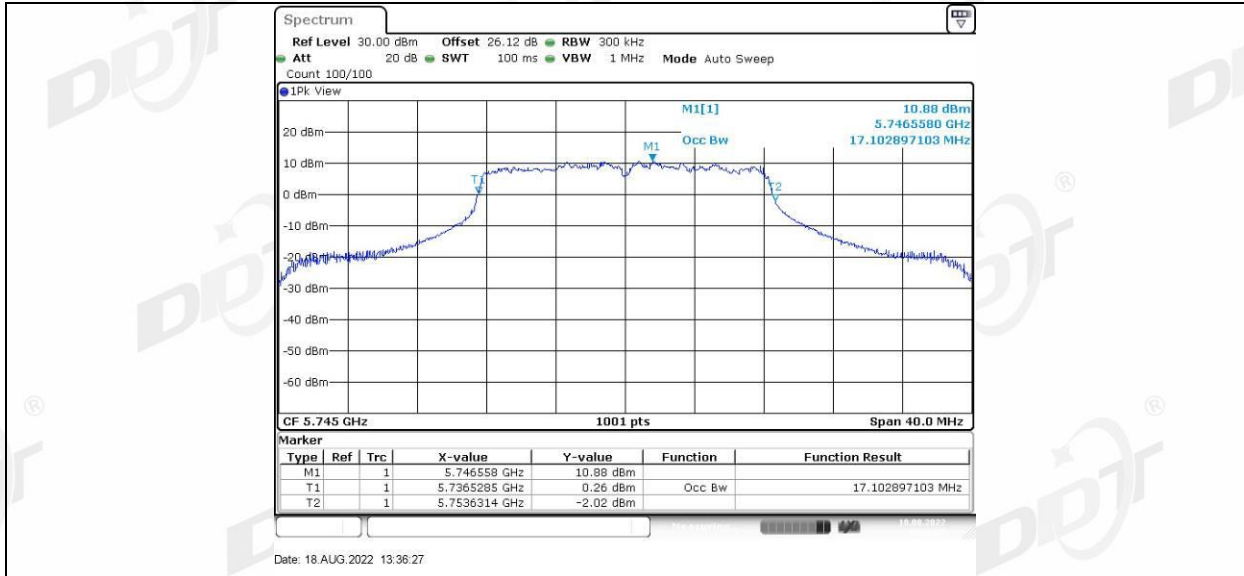


11A\_Ant1\_5745

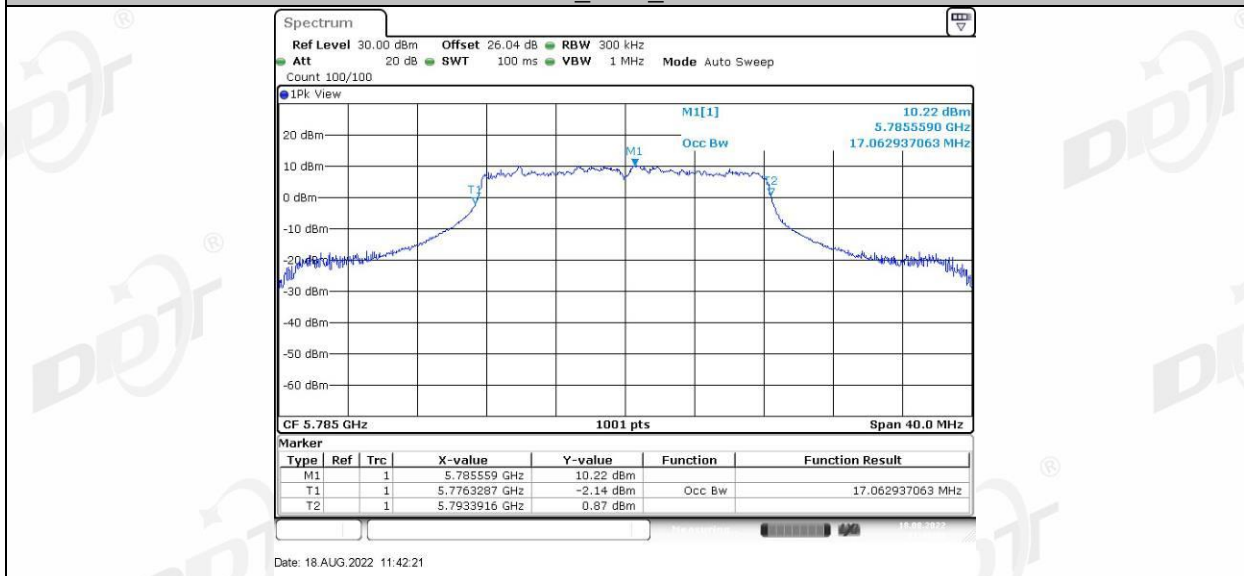


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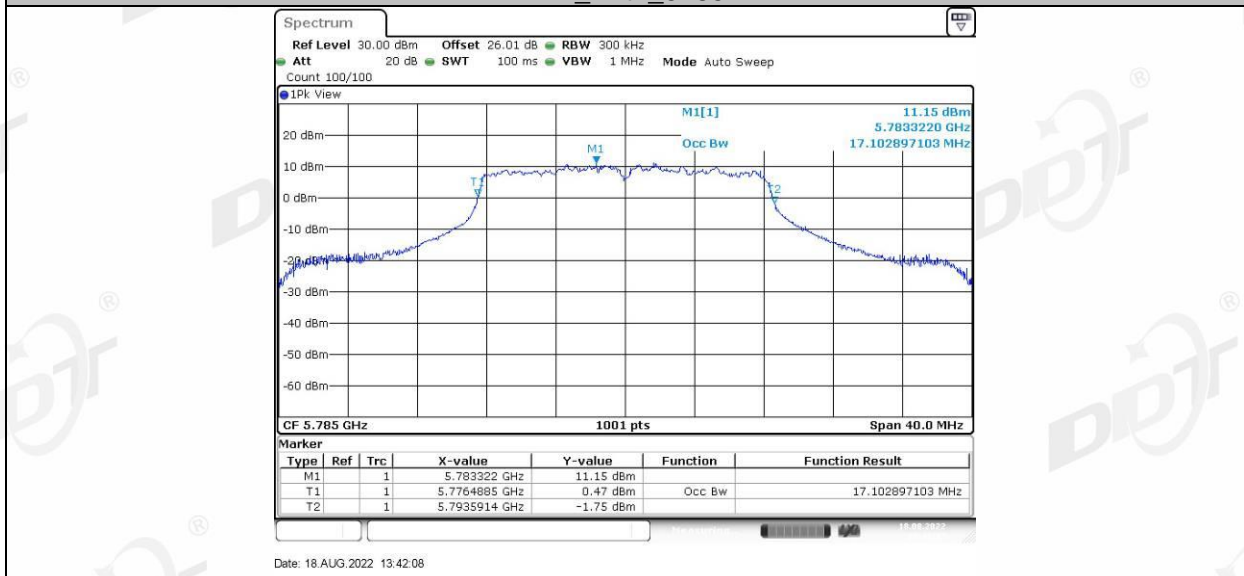




11A\_Ant1\_5785

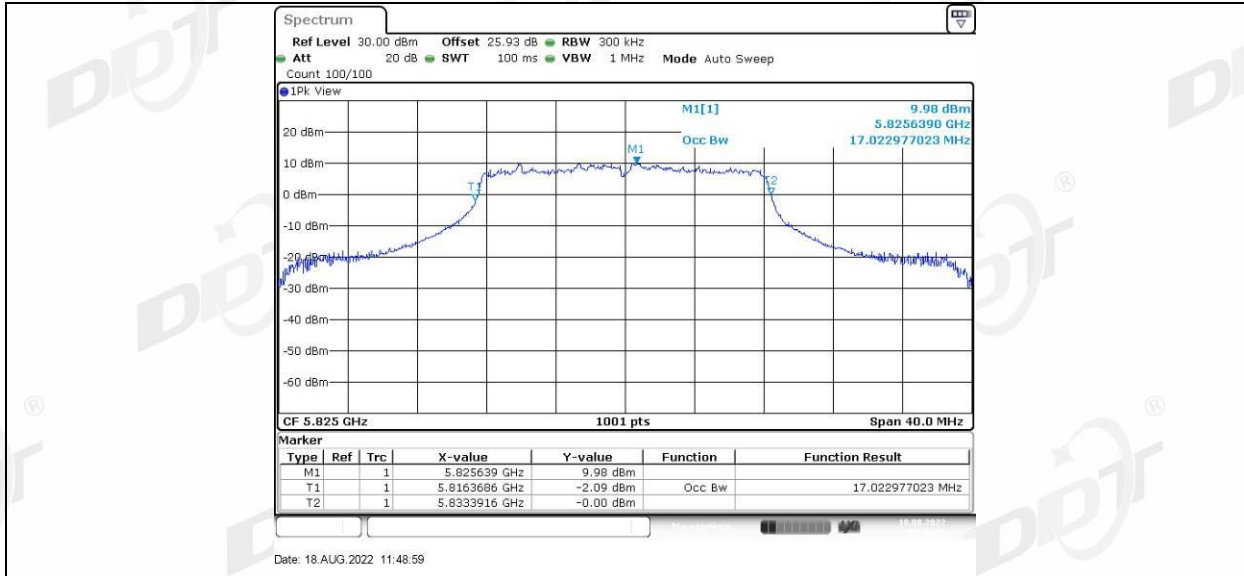


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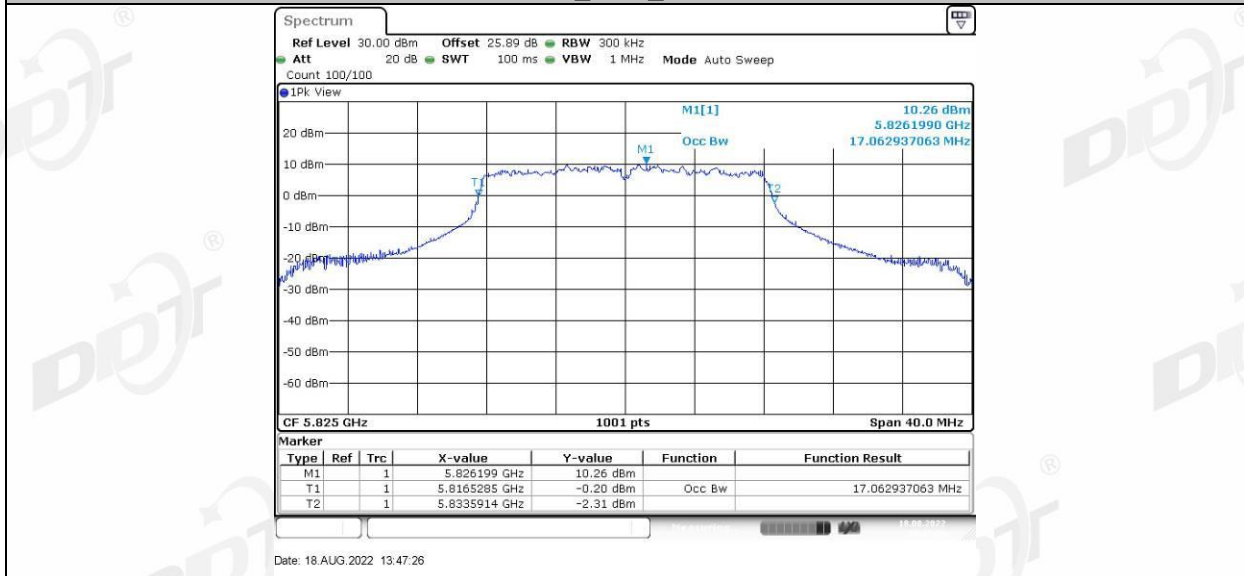


11A\_Ant1\_5825

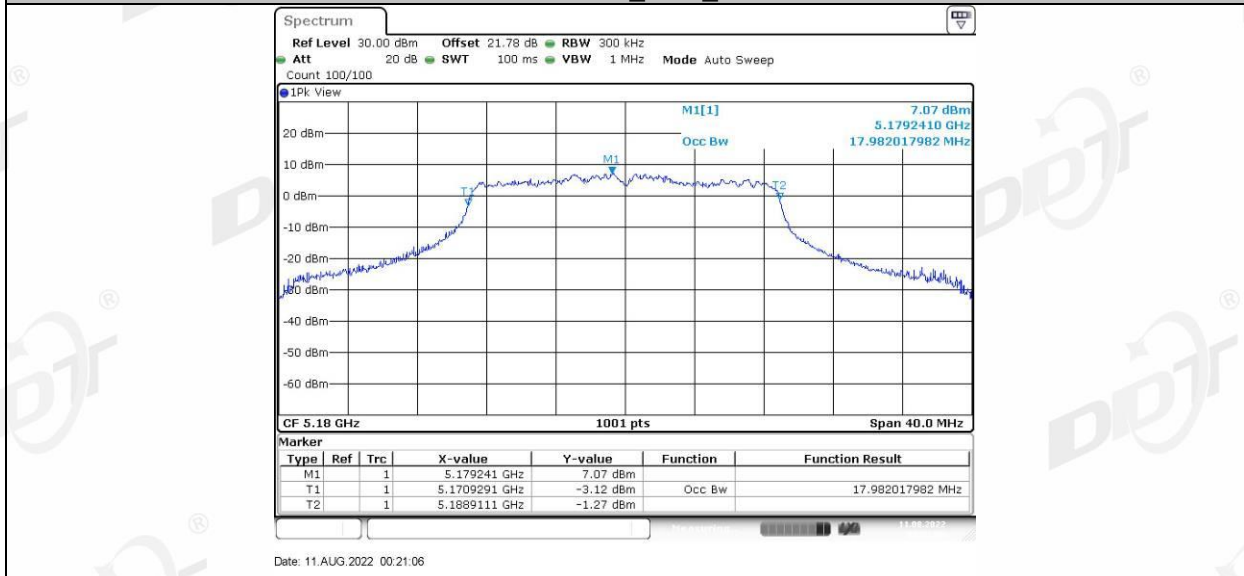




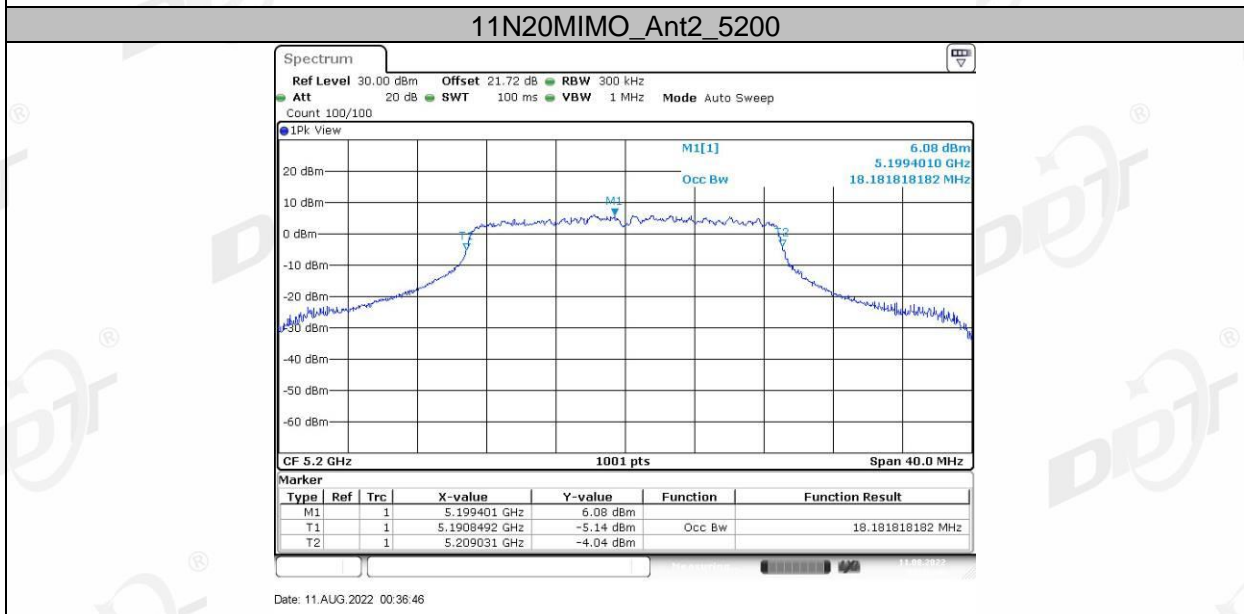
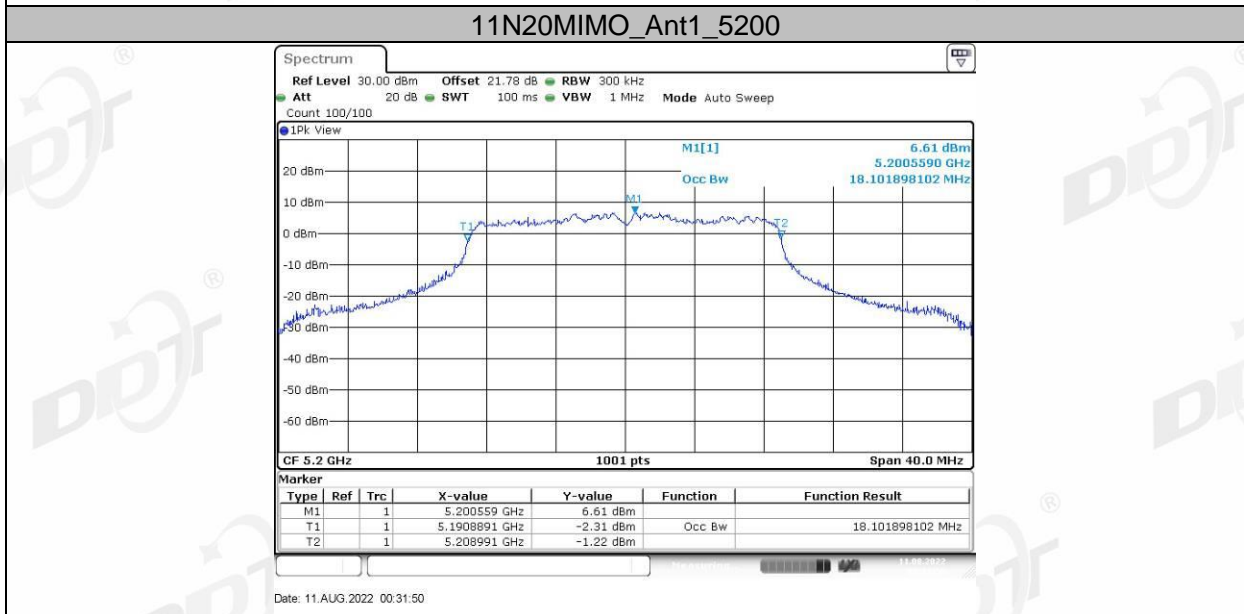
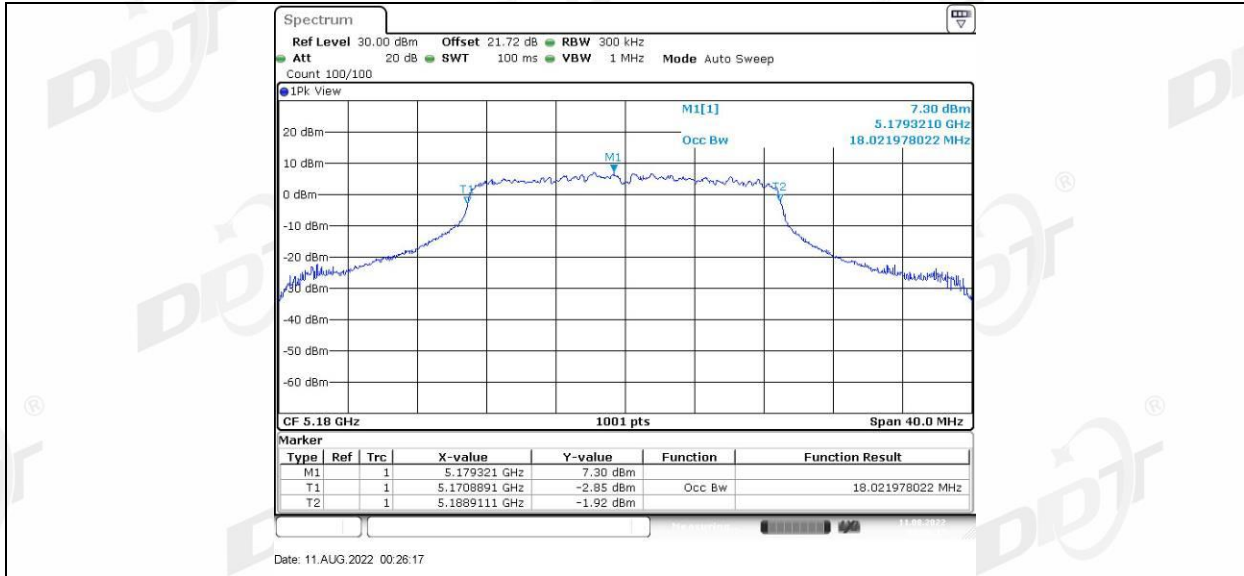
11A\_Ant2\_5825

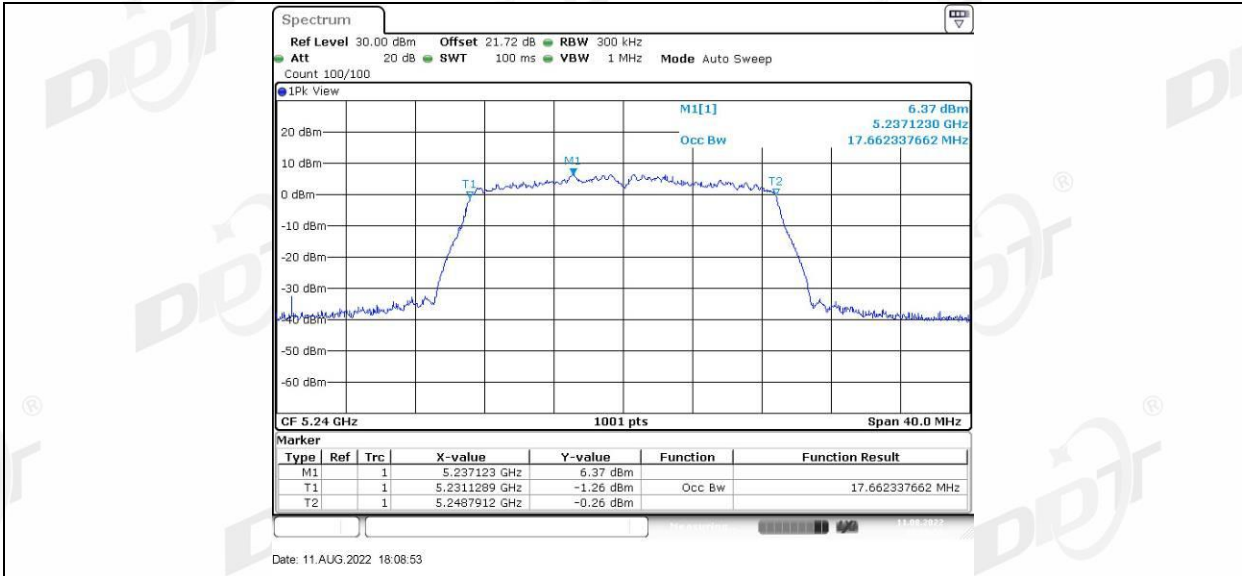


11N20MIMO\_Ant1\_5180

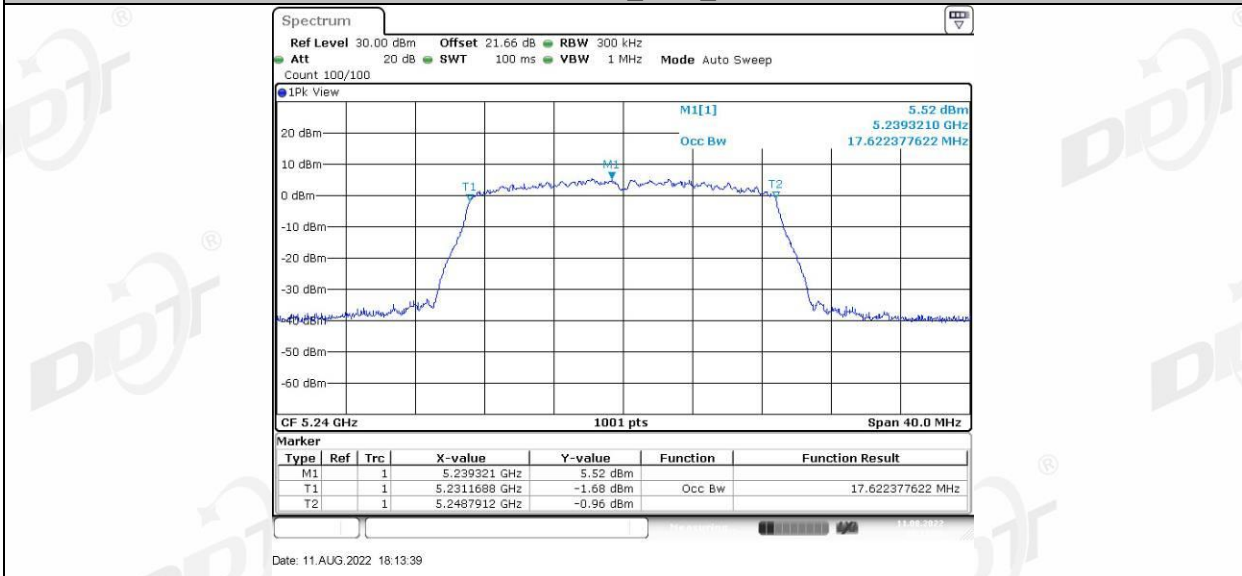


11N20MIMO\_Ant2\_5180

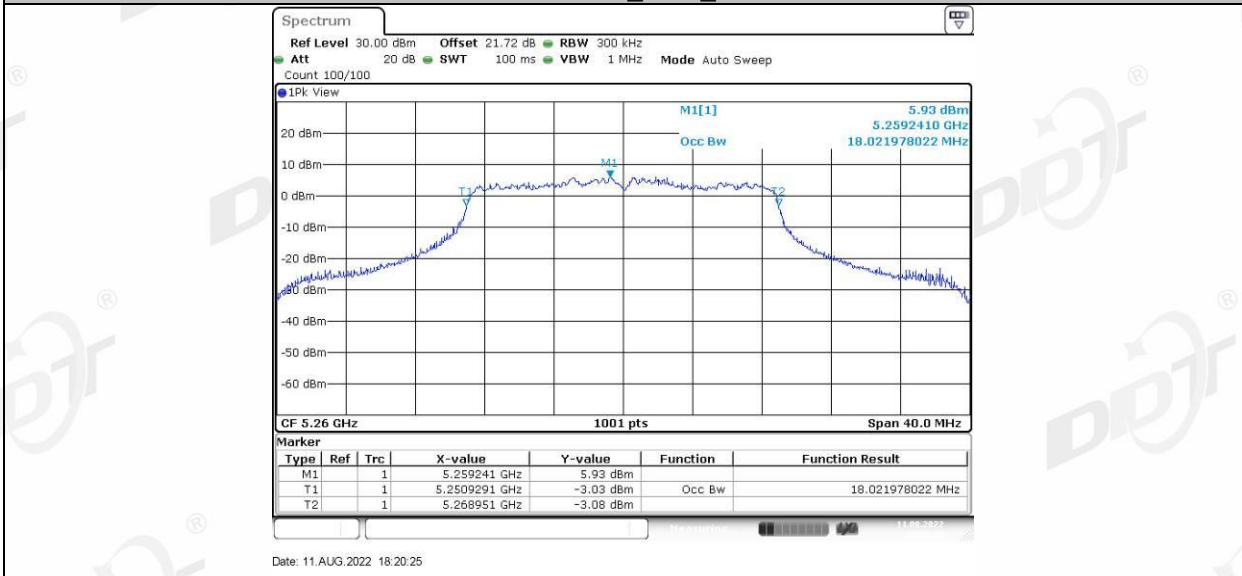




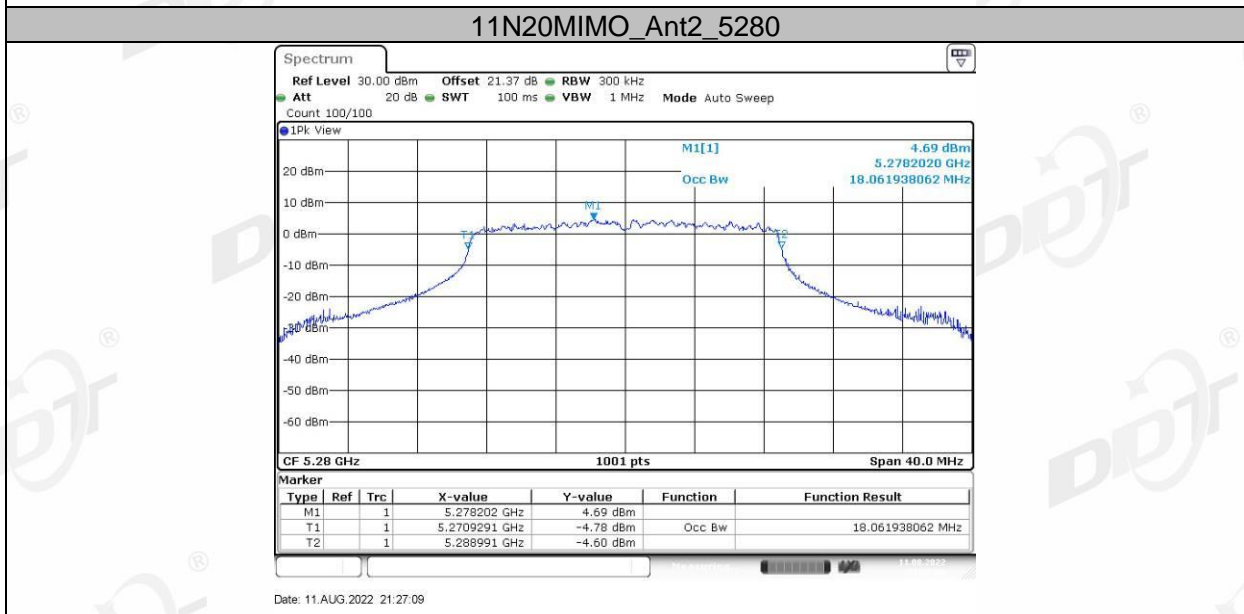
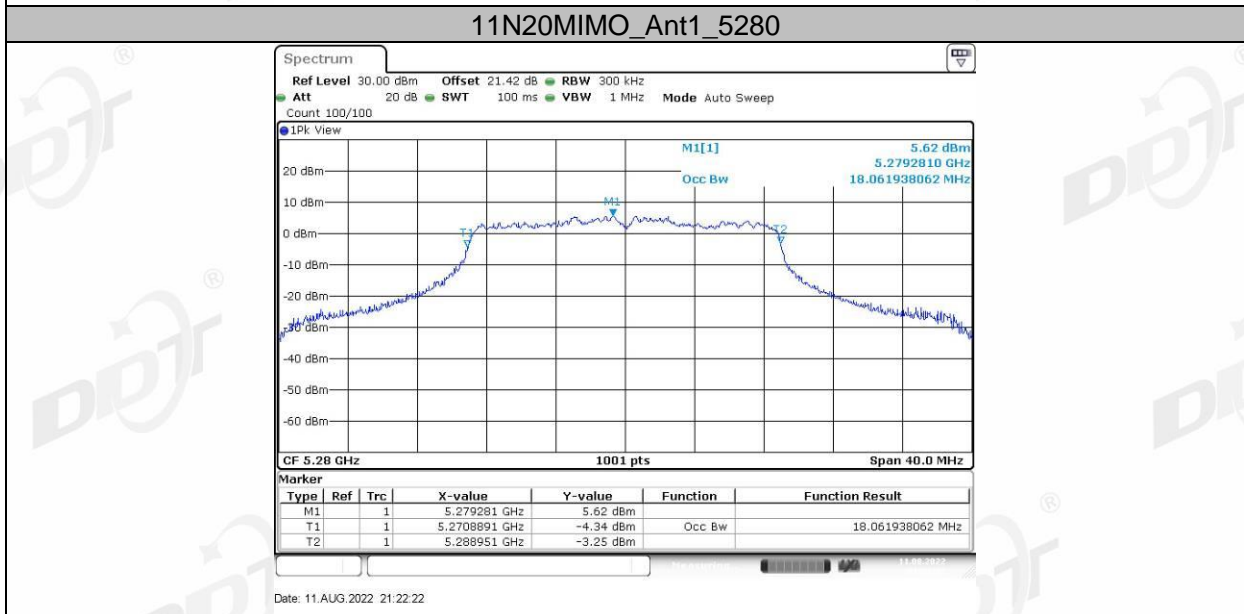
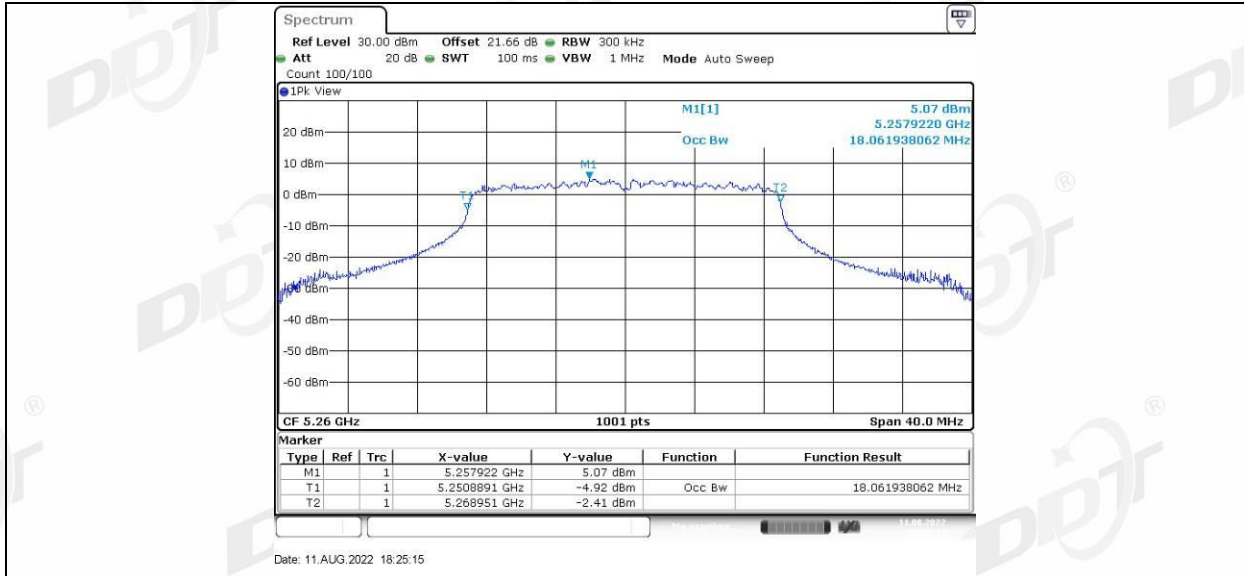
11N20MIMO\_Ant2\_5240



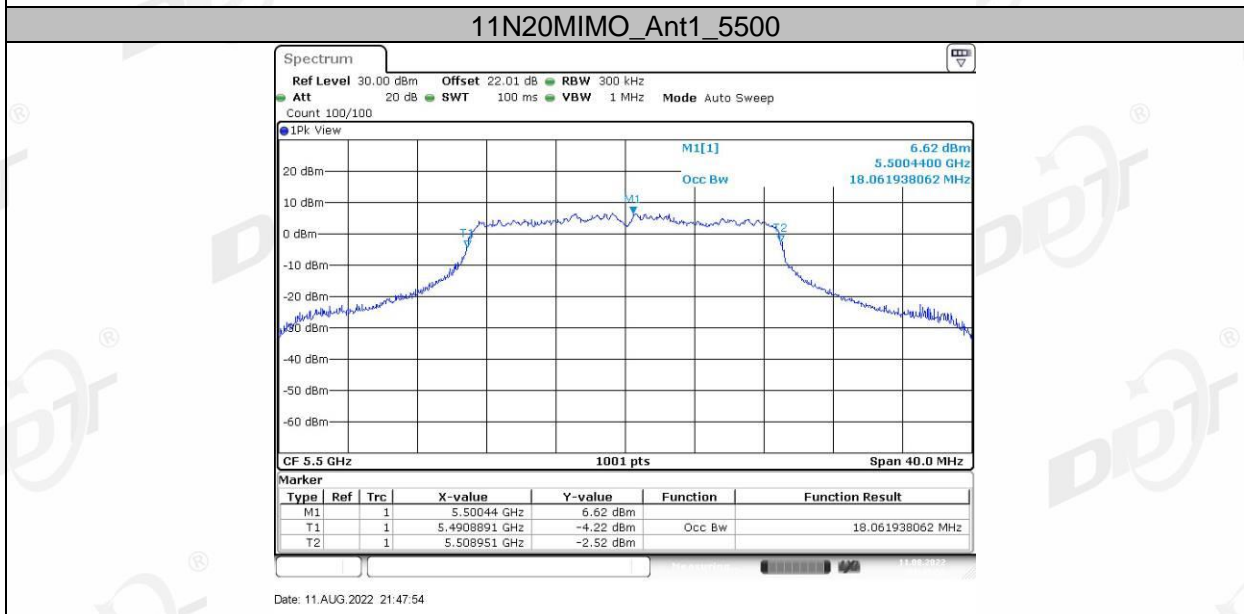
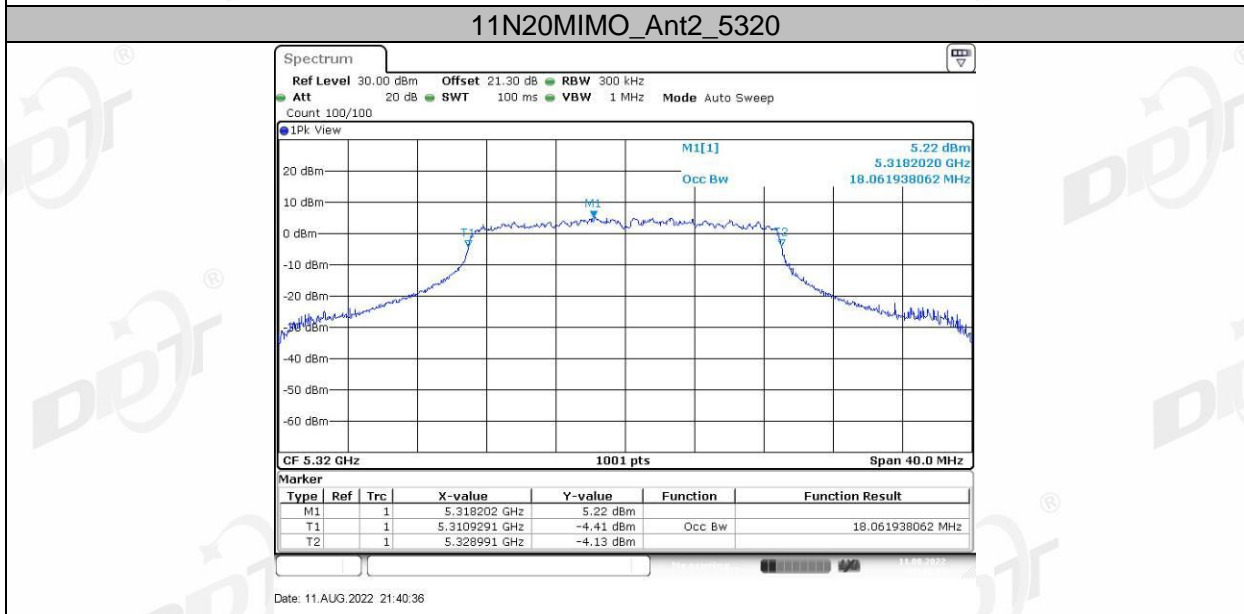
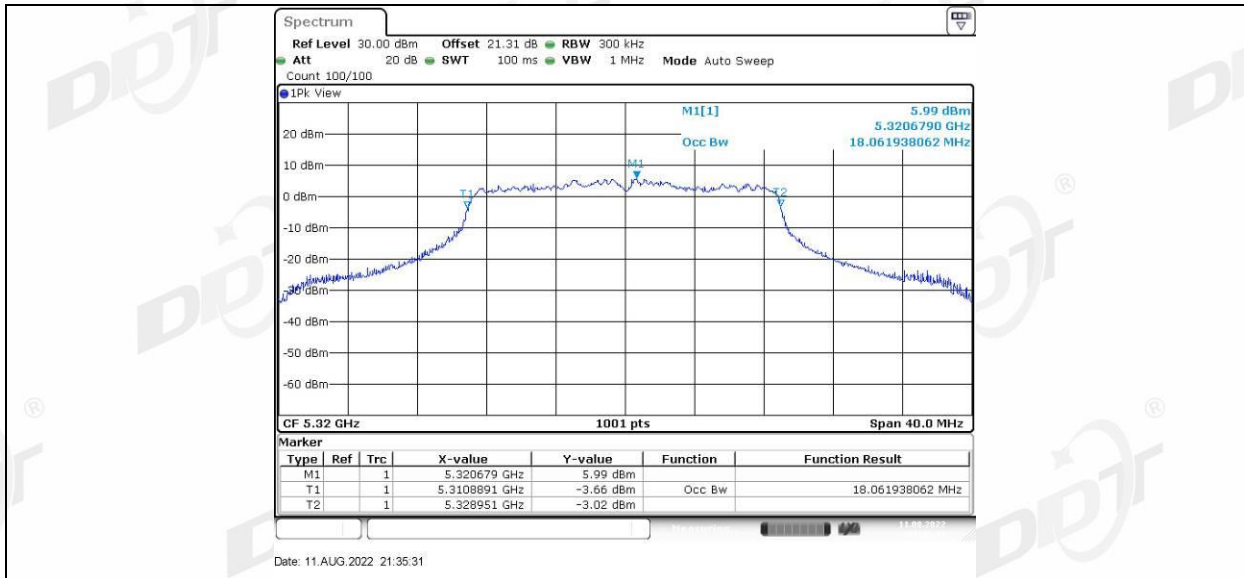
11N20MIMO\_Ant1\_5260



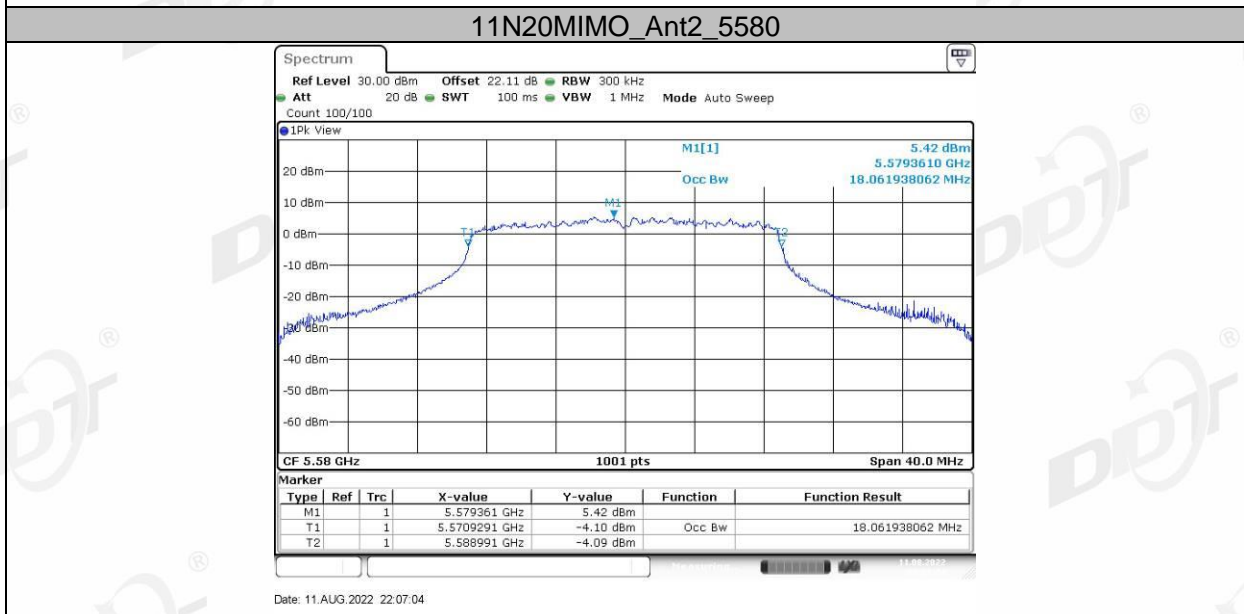
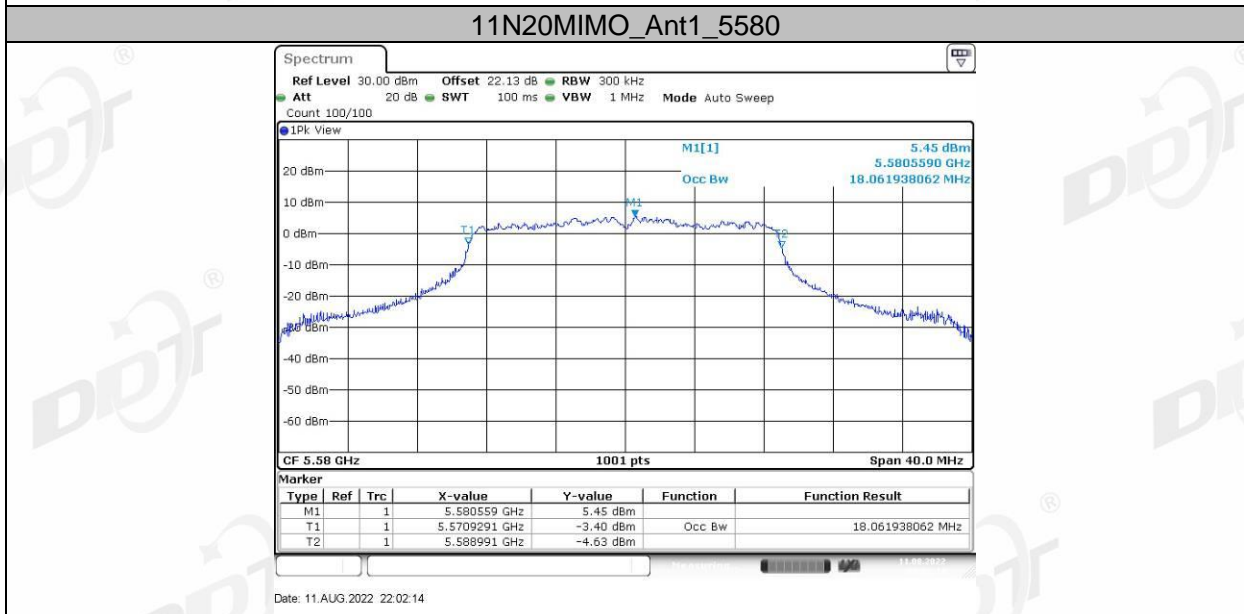
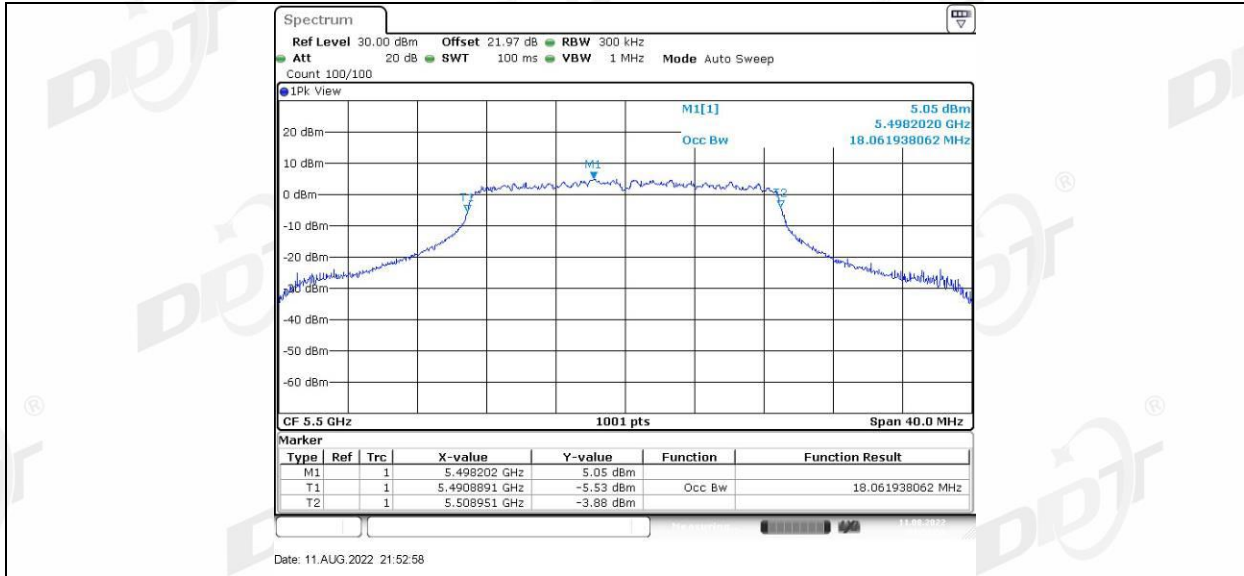
11N20MIMO\_Ant2\_5260

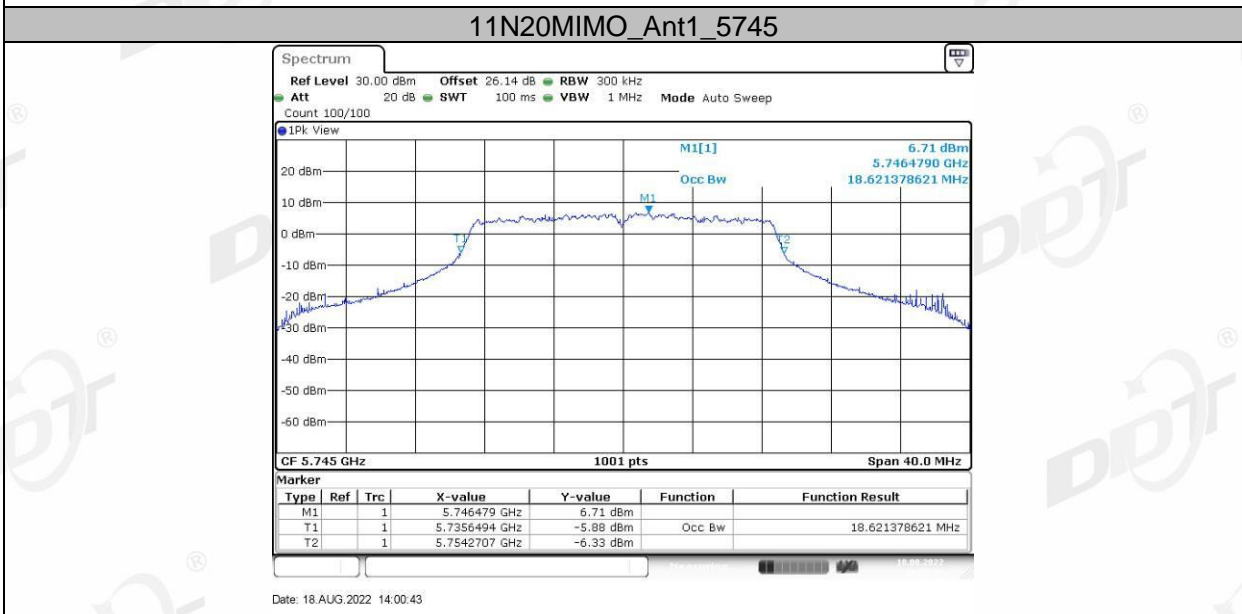
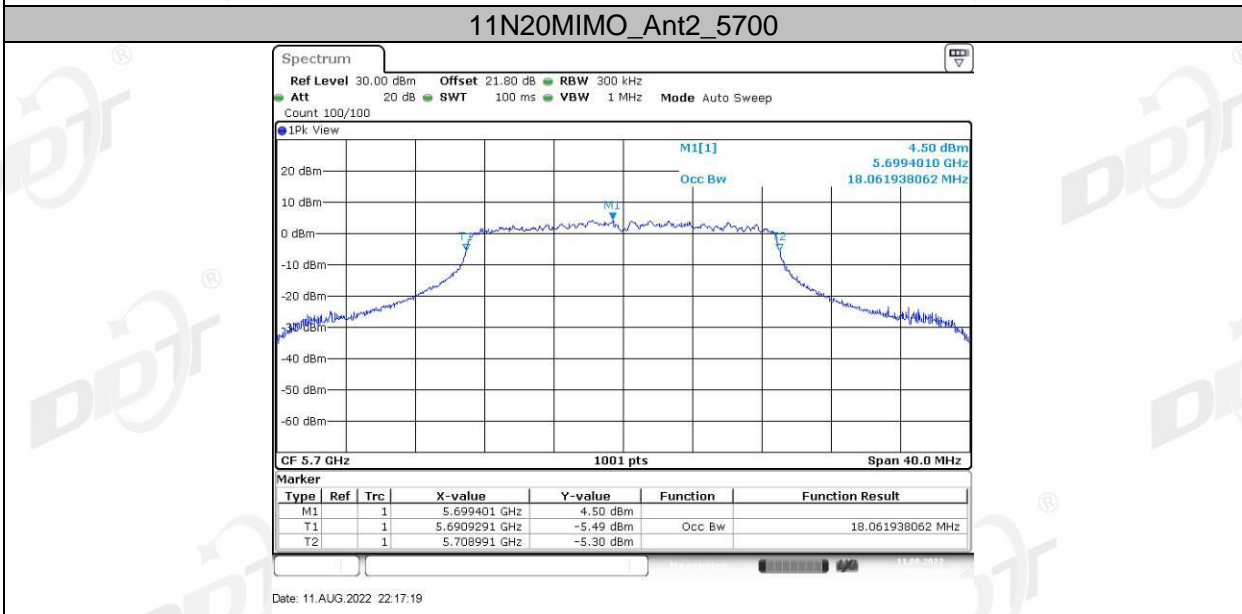
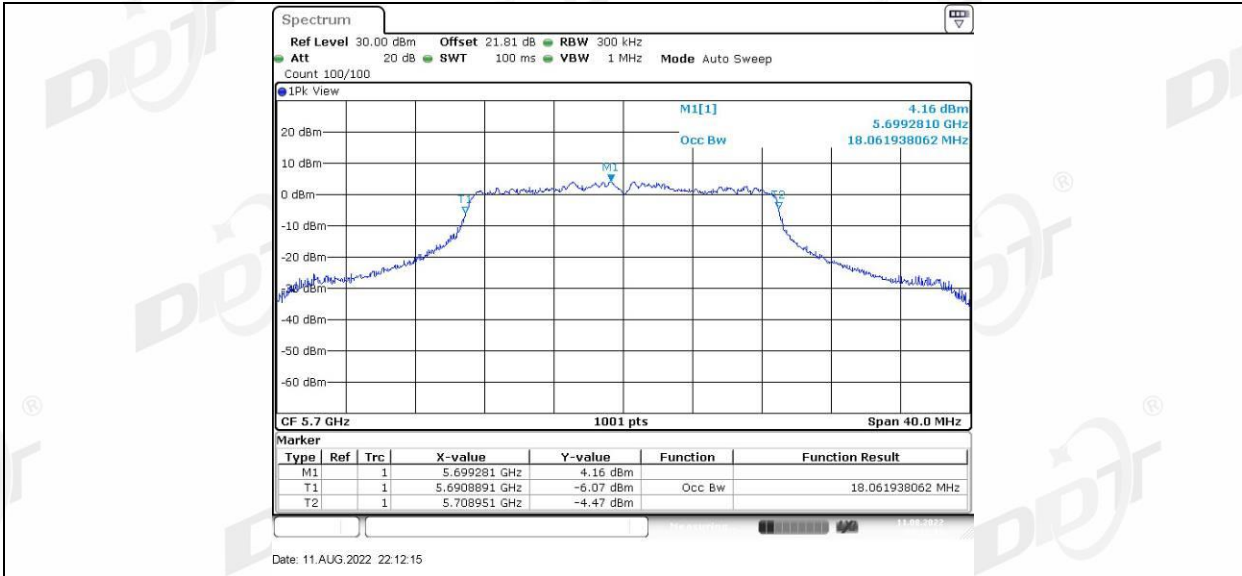


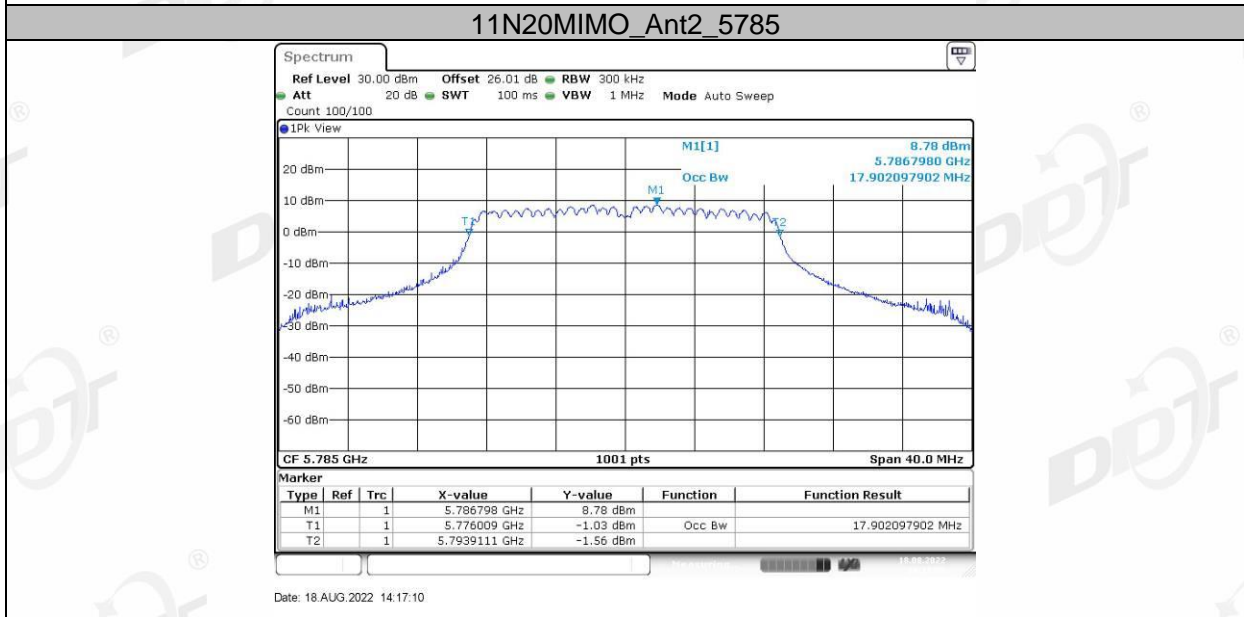
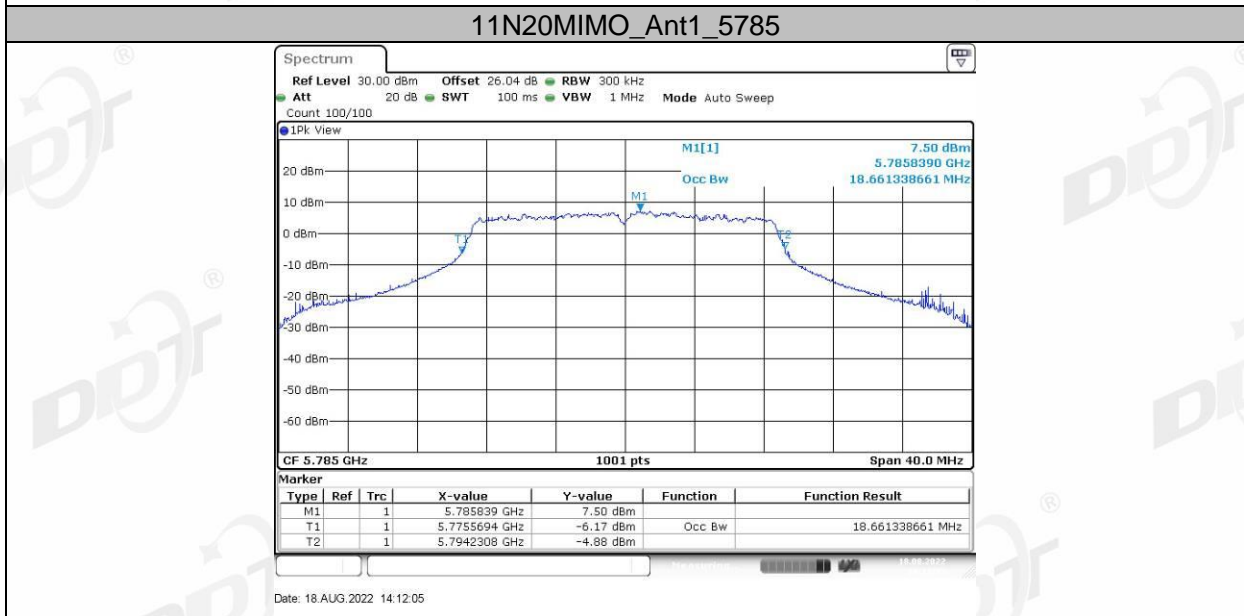
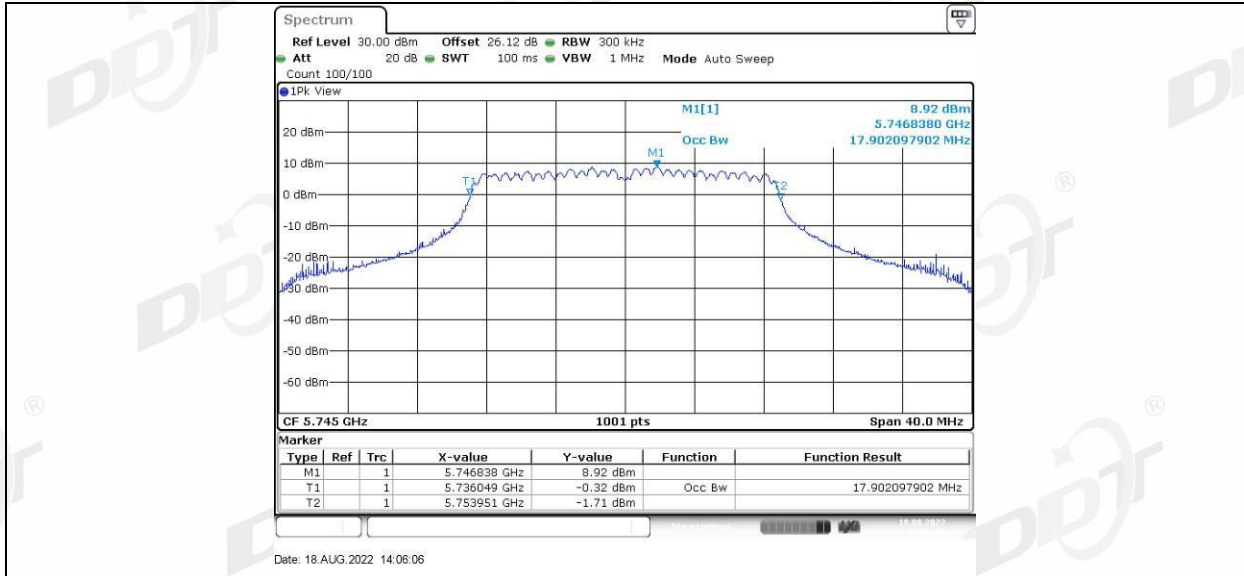


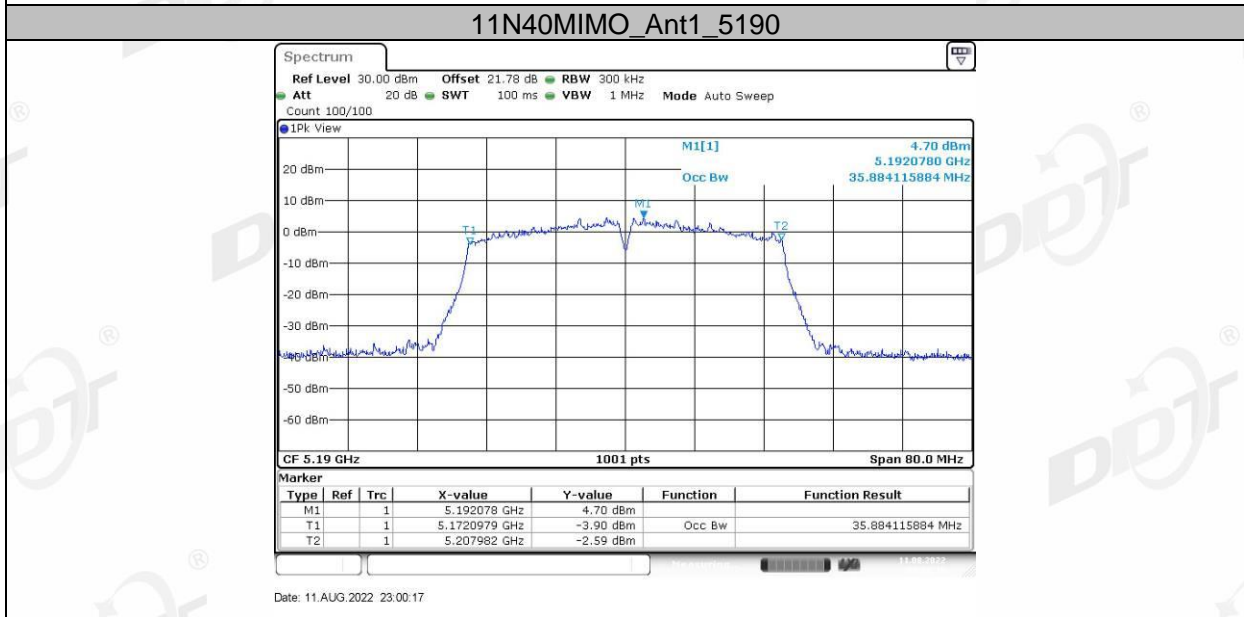
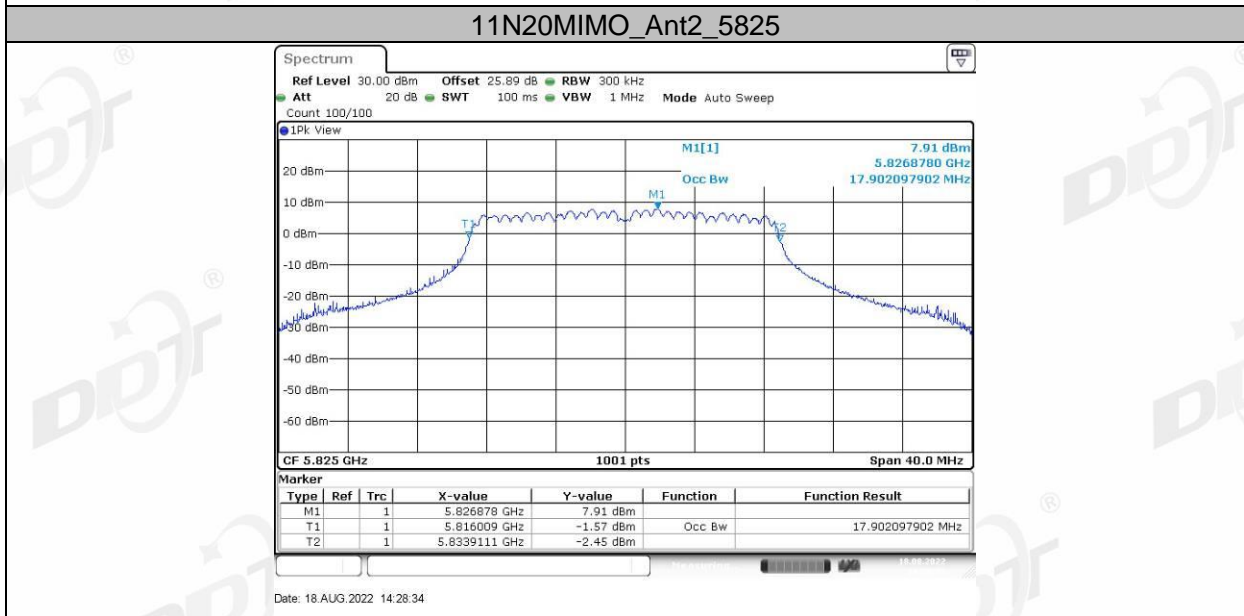
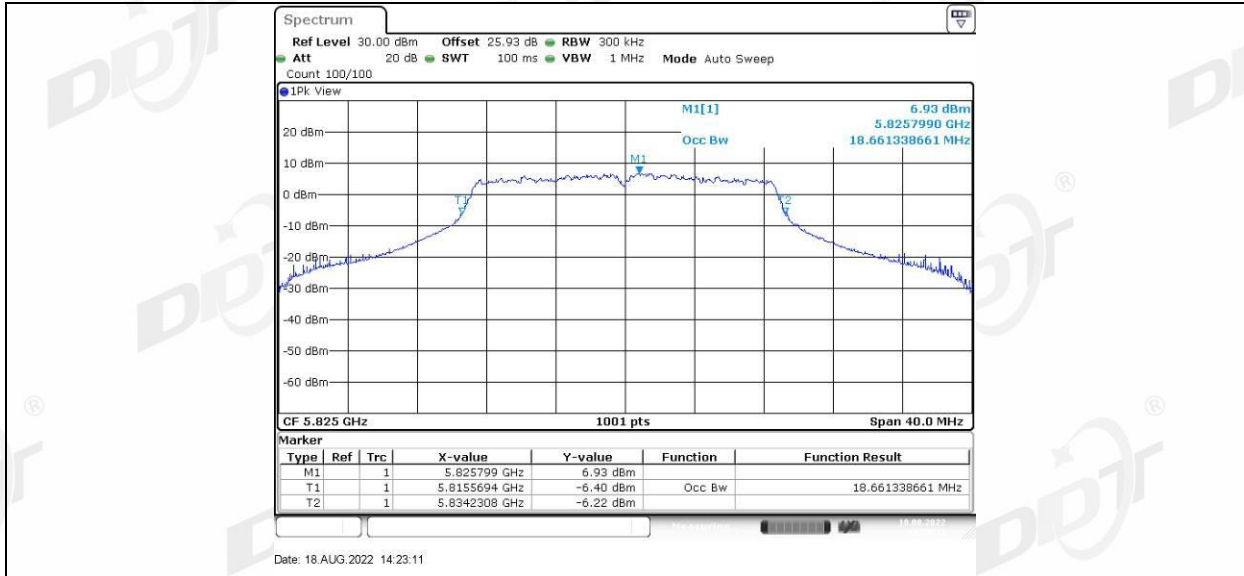




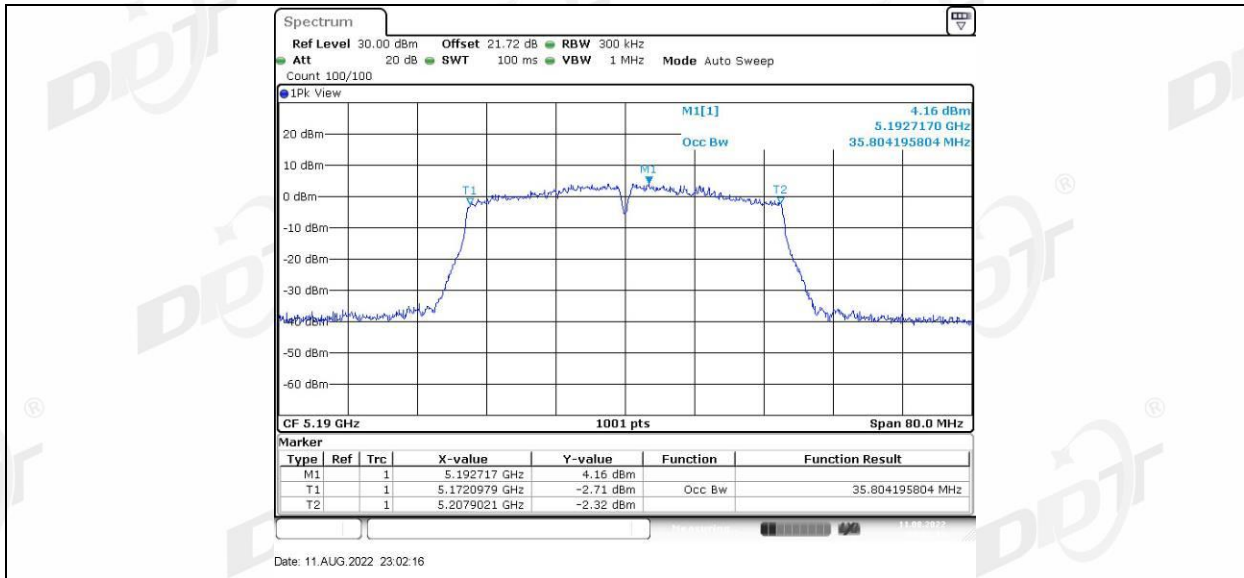




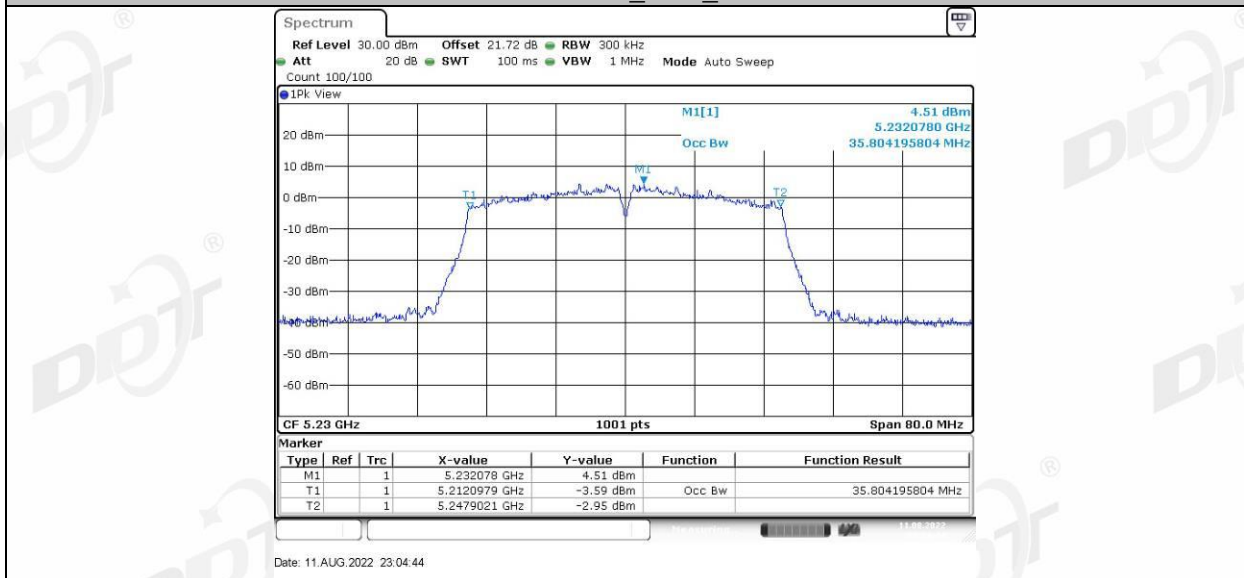








11N40MIMO\_Ant1\_5230

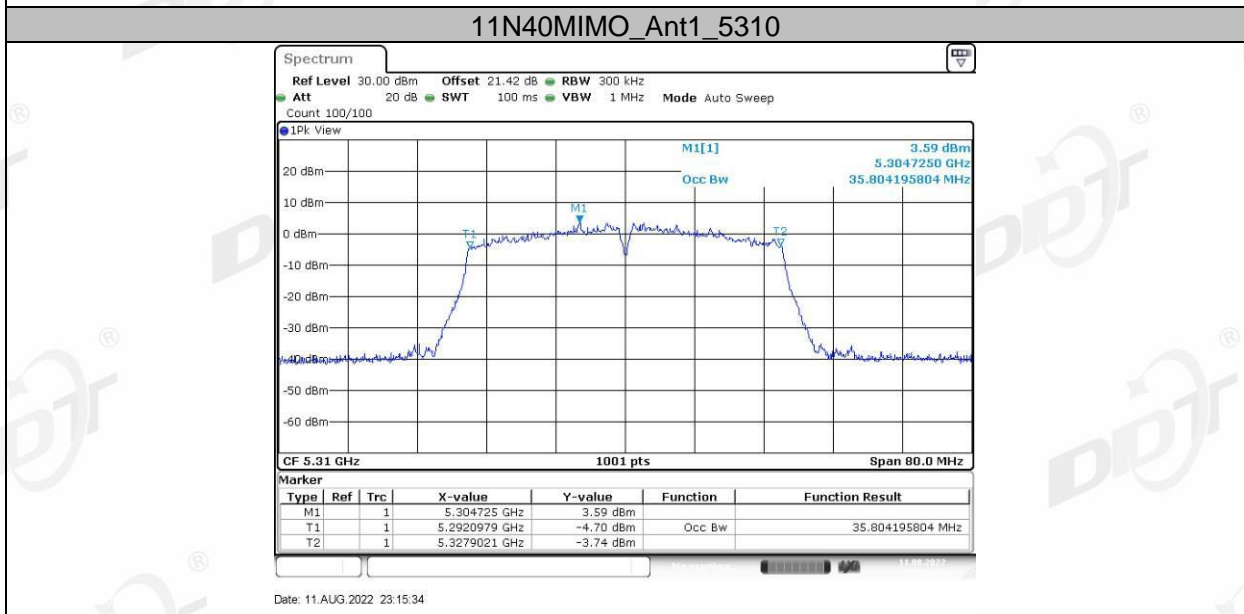
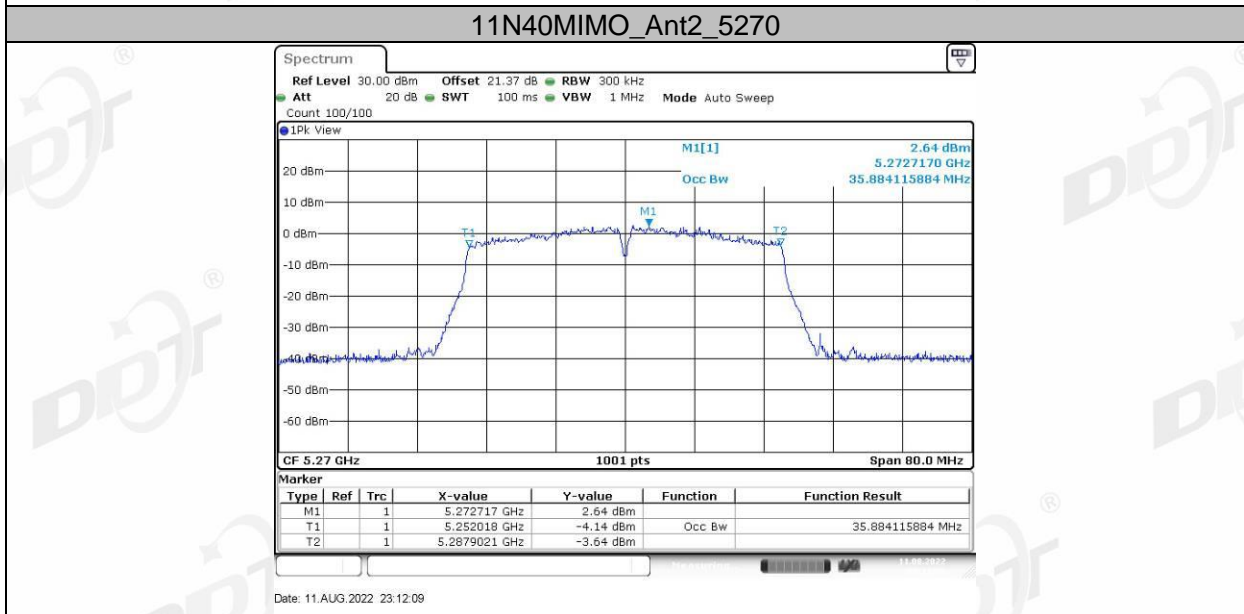
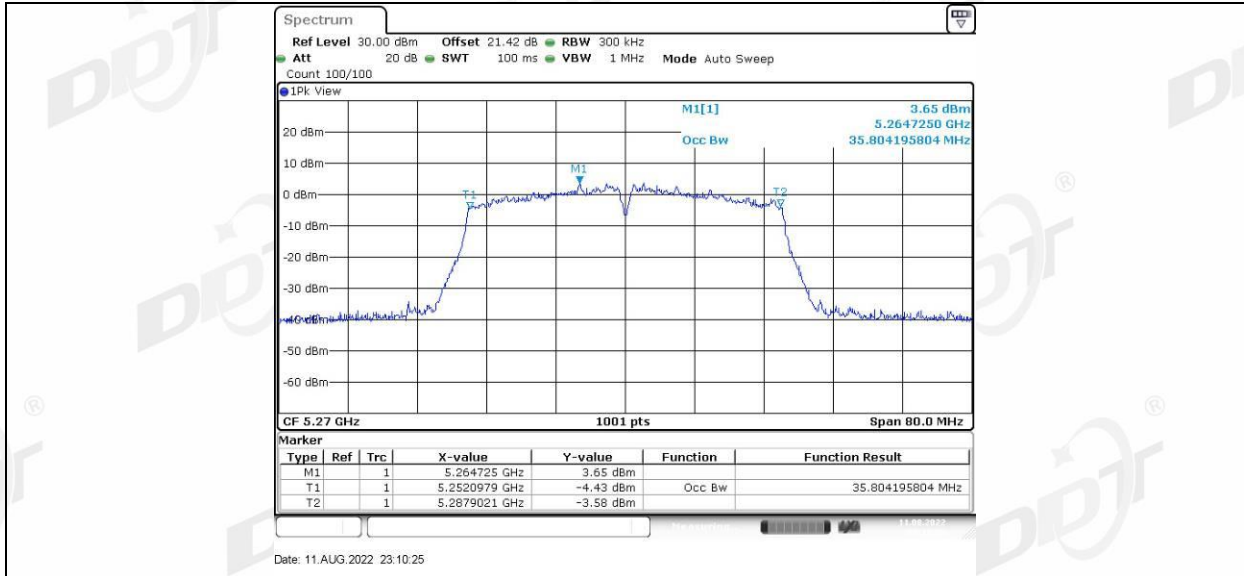


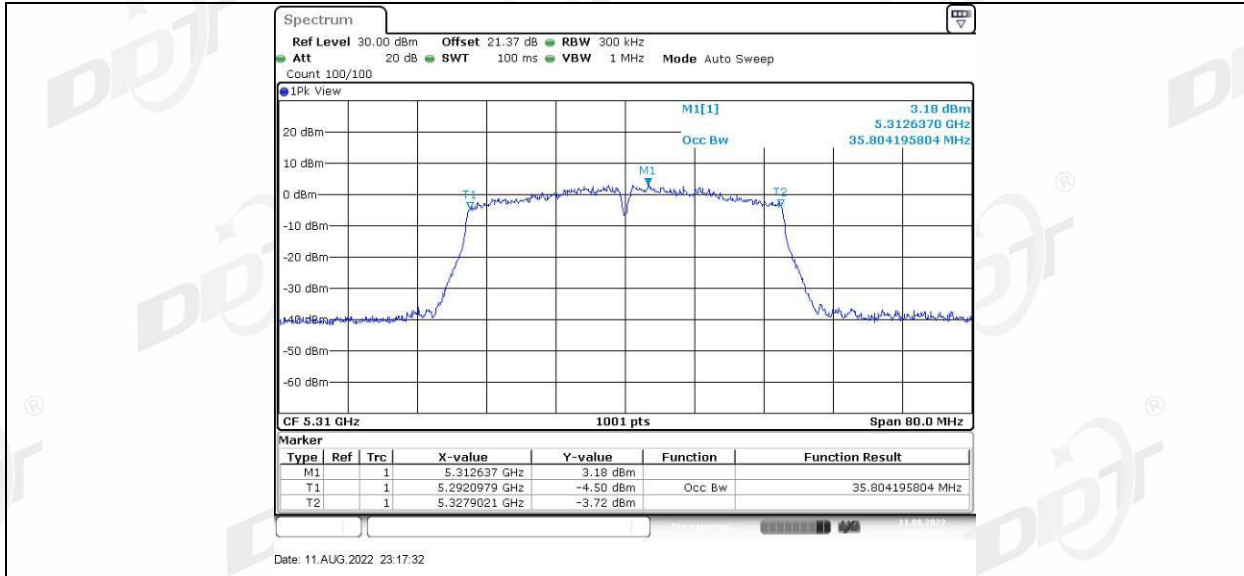
11N40MIMO\_Ant2\_5230



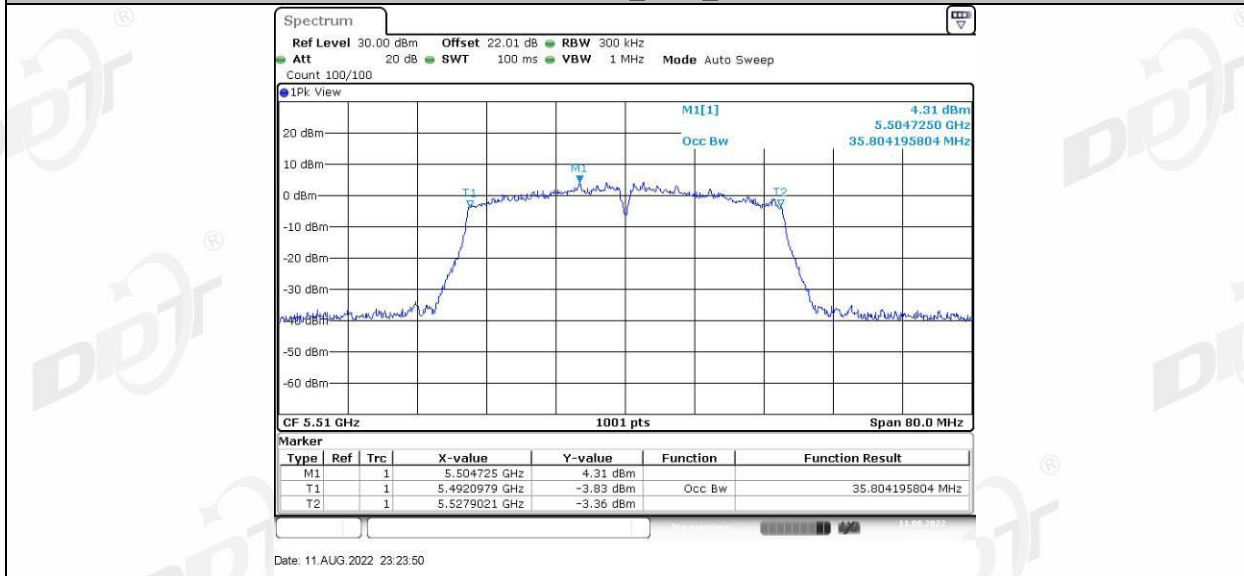
11N40MIMO\_Ant1\_5270



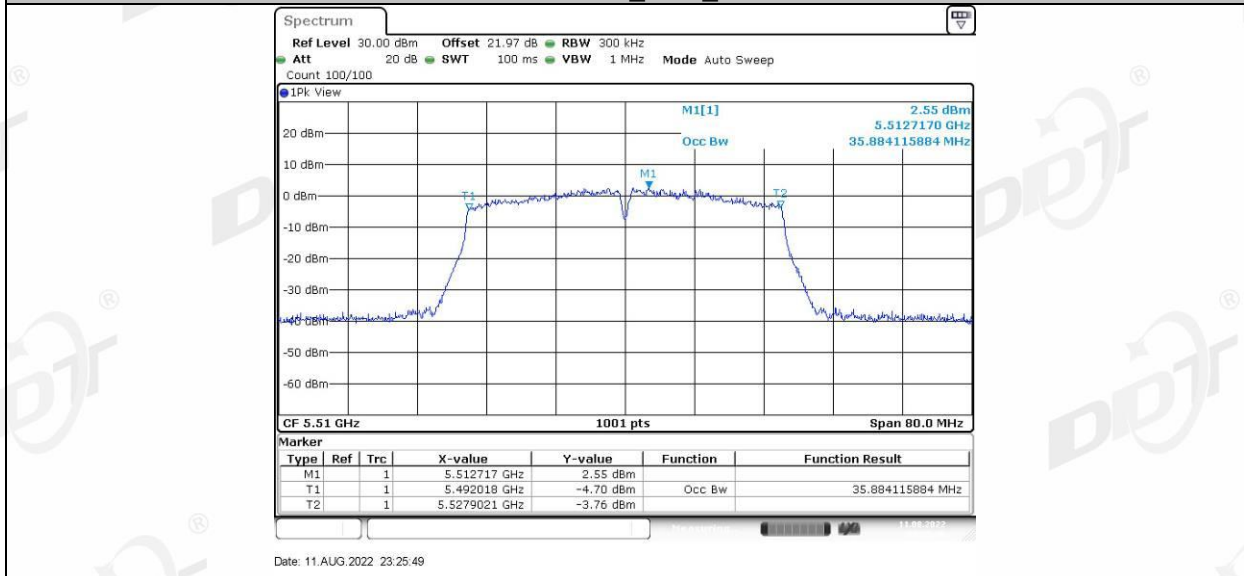




11N40MIMO\_Ant1\_5510



11N40MIMO\_Ant2\_5510



11N40MIMO\_Ant1\_5550