

FCC AND ISED CERTIFICATION TEST REPORT

FOR

Applicant	:	Sahara Presentation Systems PLC
Address	:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent, United Kingdom
Equipment under Test	:	Clevershare Hub
Model No.	:	Clevershare Hub
Trade Mark	:	N/A
FCC ID	:	2APKO-WB05
IC	:	25437-WB05
Manufacturer	:	Sahara Presentation Systems PLC
Address	:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent, United Kingdom

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

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REPORT

TABLE OF CONTENTS

	Test report declares.....	4
1.	Summary of test results	6
2.	General test information	7
2.1.	Description of EUT	7
2.2.	Accessories of EUT	8
2.3.	Assistant equipment used for test.....	8
2.4.	Block diagram of EUT configuration for test	8
2.5.	Deviations of test standard.....	9
2.6.	Test environment conditions	9
2.7.	Test laboratory	9
2.8.	Measurement uncertainty.....	10
3.	Equipment used during test	11
4.	26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth	12
4.1.	Block diagram of test setup.....	12
4.2.	Limits	12
4.3.	Test Procedure	12
4.4.	Test Result	13
4.5.	Original test data	16
5.	Maximum Output Power.....	64
5.1.	Block diagram of test setup.....	64
5.2.	Limits	64
5.3.	Test Procedure	64
5.4.	Test Result	65
6.	Power Spectral Density.....	65
6.1.	Block diagram of test setup.....	70
6.2.	Limits	70
6.3.	Test Procedure	70
6.4.	Test Result	71
6.5.	Original test data	74
7.	Frequency Stability Measurement	93
7.1.	Limit of Frequency Stability	93
7.2.	Measuring Instruments.....	93
7.3.	Test Procedures	93
7.4.	Test Setup	93
7.5.	Test Result	93
8.	Emissions in restricted frequency bands	97
8.1.	Block diagram of test setup.....	97

8.2.	Limit	98
8.3.	Test Procedure	100
8.4.	Test result	101
9.	Band Edge Compliance	136
9.1.	Block diagram of test setup	136
9.2.	Limit	136
9.3.	Test Procedure	136
9.4.	Test result	136
10.	Power Line Conducted Emission	167
10.1.	Block diagram of test setup	167
10.2.	Power Line Conducted Emission Limits (Class B)	167
10.3.	Test Procedure	167
10.4.	Test Result	168
11.	Antenna Requirements	171
11.1.	Limit	171
11.2.	Result	171
12.	Dynamic Frequency Selection	172
12.1.	Applicability of DFS requirements	172
12.2.	Limit	173
12.3.	Parameters of radar test waveforms	173
12.4.	Calibration of radar waveform	174
12.5.	Channel closing transmission time, channel move time and non-occupancy period	175
12.6.	Test setup	176
12.7.	Test result	176

Test Report Declare

Applicant	:	Sahara Presentation Systems PLC
Address	:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent, United Kingdom
Equipment under Test	:	Clevershare Hub
Model No.	:	Clevershare Hub
Trade Mark	:	N/A
Manufacturer	:	Sahara Presentation Systems PLC
Address	:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent, United Kingdom

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, RSS-Gen Issue 5, Apr. 2018, 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&ISED standards.

Report No:	DDT-R21121709-2E06		
Date of Receipt:	Dec. 22, 2021	Date of Test:	Dec. 22, 2021 ~ Apr. 24, 2022

Prepared By:

Johnny Wang

Johnny Wang/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	Apr. 24, 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)	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	N/A
Note: N/A is an abbreviation for Not Applicable and means this test item is not applicable for this device according to the technology characteristic of device.		

2. General test information

2.1. Description of EUT

EUT* Name	: Clevershare Hub
Model Number	: Clevershare Hub
EUT function description	: Please reference user manual of this device
Power supply	: Input: 100-240V ~ 50/60Hz 1.0A Max
Radio Technology	: IEEE 802.11a/n/ac
FCC Operation frequency	: IEEE 802.11a: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11ac HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT80: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT80: 5210MHz, 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)
Transmitter rate	: IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130.0, 144.4 Mbps IEEE 802.11n HT40: 30, 60, 90, 120, 180, 240, 270, 300 Mbps IEEE 802.11ac HT20: 14.4, 28.8, 43.4, 57.8, 86.6, 115.6, 130, 144.4, 173.4 Mbps IEEE 802.11ac HT40: 30, 60, 90, 120, 180, 240, 270, 300, 360, 400 Mbps IEEE 802.11ac HT80: 65, 130, 195, 260, 390, 520, 585, 650, 780, 866.6 Mbps
Antenna Type	: Antenna 1: PCB antenna, Maximum PK gain: 2.85 dBi Antenna 2: PCB antenna, Maximum PK gain: 2.85 dBi
Sample Type	: Series production
Serial number	: N/A

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

Antenna information			
	Ant1 gain	Ant2 gain	MIMO
IEEE 802.11a	2.85	2.85	/
IEEE 802.11n HT20	2.85	2.85	5.86
IEEE 802.11n HT40	2.85	2.85	5.86
IEEE 802.11ac VHT20	2.85	2.85	5.86
IEEE 802.11ac VHT40	2.85	2.85	5.86
IEEE 802.11ac VHT80	2.85	2.85	5.86

2.2. Accessories of EUT

Assistant equipment	Manufacturer	Model number	Other
Switching adapter	GangQi	GQ36-120300-Ax	Input: 100-240V 50/60Hz 1.0A Max Output: DC 12V3A 36.0W

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: QATool_Dbg.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, and data rate information					
Mode	Setting Tx Power		data rate (Mbps) (see Note)	Channel	Frequency (MHz)
	ANT1	ANT2			
IEEE 802.11a	1E	1A	6	CH36	5180
	1E	1A	6	CH40	5200
	1E	1A	6	CH48	5240
	/	/	6	CH149	5745
	/	/	6	CH157	5785
	/	/	6	CH165	5825
IEEE 802.11n HT20	1A	1A	MCS 0	CH36	5180
	1A	1A	MCS 0	CH40	5200
	1A	1A	MCS 0	CH48	5240
	/	/	MCS 0	CH149	5745
	/	/	MCS 0	CH157	5785
	/	/	MCS 0	CH165	5825
IEEE 802.11n HT40	1E	1E	MCS 0	CH38	5190
	1E	1E	MCS 0	CH46	5230
	/	/	MCS 0	CH151	5755
	/	/	MCS 0	CH159	5795
IEEE 802.11ac HT20	18	18	MCS 0	CH36	5180
	18	18	MCS 0	CH40	5200
	18	18	MCS 0	CH48	5240
	/	/	MCS 0	CH149	5745
	/	/	MCS 0	CH157	5785
	/	/	MCS 0	CH165	5825
IEEE 802.11ac	1E	1E	MCS 0	CH38	5190

HT40	1E	1E	MCS 0	CH46	5230
	/	/	MCS 0	CH151	5755
	/	/	MCS 0	CH159	5795
IEEE 802.11ac	1E	1E	MCS 0	CH42	5210
HT80	/	/	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, G-20118

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
	1.66 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for radio frequency (RBW<20kHz)	3×10^{-8}
Temperature	0.4°C
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)

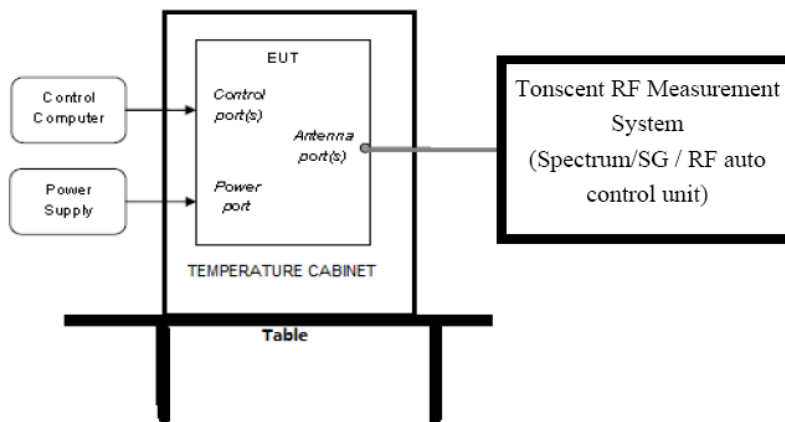
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 3#)					
Signal analyzer	R&S	FSQ26	101272	Jun. 01, 2021	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jun. 01, 2021	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	Jun. 01, 2021	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	Jun. 01, 2021	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	Jun. 01, 2021	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150 L	ZX170110-A	Jun. 01, 2021	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	Jun. 01, 2021	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jun. 01, 2021	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
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 17, 2021	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 08, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Sep. 02, 2021	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Mar. 15, 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/ 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 500kHz 6dB Bandwidth	5725-5850

4.3. Test Procedure

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

Center Frequency	The centre 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	16.76	5171.600	5188.360	---	Pass
	Ant2	5180	16.56	5171.720	5188.280	---	Pass
	Ant1	5200	16.84	5191.600	5208.440	---	Pass
	Ant2	5200	16.56	5191.720	5208.280	---	Pass
	Ant1	5240	16.88	5231.560	5248.440	---	Pass
	Ant2	5240	16.60	5231.680	5248.280	---	Pass
	Ant1	5745	16.92	5736.520	5753.440	---	Pass
	Ant2	5745	16.68	5736.640	5753.320	---	Pass
	Ant1	5785	16.96	5776.520	5793.480	---	Pass
	Ant2	5785	16.72	5776.640	5793.360	---	Pass
	Ant1	5825	17.08	5816.440	5833.520	---	Pass
	Ant2	5825	16.68	5816.640	5833.320	---	Pass
11N20MIMO	Ant1	5180	17.76	5171.120	5188.880	---	Pass
	Ant2	5180	17.64	5171.160	5188.800	---	Pass
	Ant1	5200	17.80	5191.120	5208.920	---	Pass
	Ant2	5200	17.64	5191.160	5208.800	---	Pass
	Ant1	5240	17.80	5231.120	5248.920	---	Pass
	Ant2	5240	17.64	5231.160	5248.800	---	Pass
	Ant1	5745	17.76	5736.120	5753.880	---	Pass
	Ant2	5745	17.76	5736.120	5753.880	---	Pass
	Ant1	5785	17.84	5776.080	5793.920	---	Pass
	Ant2	5785	17.76	5776.120	5793.880	---	Pass
	Ant1	5825	17.84	5816.080	5833.920	---	Pass
	Ant2	5825	17.76	5816.120	5833.880	---	Pass
11N40MIMO	Ant1	5190	36.48	5171.840	5208.320	---	Pass
	Ant2	5190	36.40	5171.840	5208.240	---	Pass
	Ant1	5230	36.56	5211.760	5248.320	---	Pass
	Ant2	5230	36.40	5211.840	5248.240	---	Pass
	Ant1	5755	36.64	5736.680	5773.320	---	Pass
	Ant2	5755	36.72	5736.680	5773.400	---	Pass
	Ant1	5795	36.64	5776.680	5813.320	---	Pass
	Ant2	5795	36.56	5776.760	5813.320	---	Pass
11AC20MIMO	Ant1	5180	17.76	5171.080	5188.840	---	Pass
	Ant2	5180	17.64	5171.160	5188.800	---	Pass
	Ant1	5200	17.72	5191.120	5208.840	---	Pass
	Ant2	5200	17.64	5191.160	5208.800	---	Pass
	Ant1	5240	17.80	5231.080	5248.880	---	Pass
	Ant2	5240	17.64	5231.160	5248.800	---	Pass
	Ant1	5745	17.80	5736.080	5753.880	---	Pass
	Ant2	5745	17.76	5736.120	5753.880	---	Pass
	Ant1	5785	17.80	5776.080	5793.880	---	Pass
	Ant2	5785	17.72	5776.120	5793.840	---	Pass
	Ant1	5825	17.84	5816.040	5833.880	---	Pass
	Ant2	5825	17.72	5816.120	5833.840	---	Pass
11AC40MIMO	Ant1	5190	36.40	5171.840	5208.240	---	Pass
	Ant2	5190	36.48	5171.760	5208.240	---	Pass
	Ant1	5230	36.64	5211.680	5248.320	---	Pass
	Ant2	5230	36.40	5211.840	5248.240	---	Pass

	Ant1	5755	36.72	5736.680	5773.400	---	Pass
	Ant2	5755	36.72	5736.680	5773.400	---	Pass
	Ant1	5795	36.56	5776.680	5813.240	---	Pass
	Ant2	5795	36.64	5776.680	5813.320	---	Pass
11AC80MIMO	Ant1	5210	75.36	5172.400	5247.760	---	Pass
	Ant2	5210	75.36	5172.400	5247.760	---	Pass
	Ant1	5775	75.52	5737.240	5812.760	---	Pass
	Ant2	5775	75.52	5737.240	5812.760	---	Pass

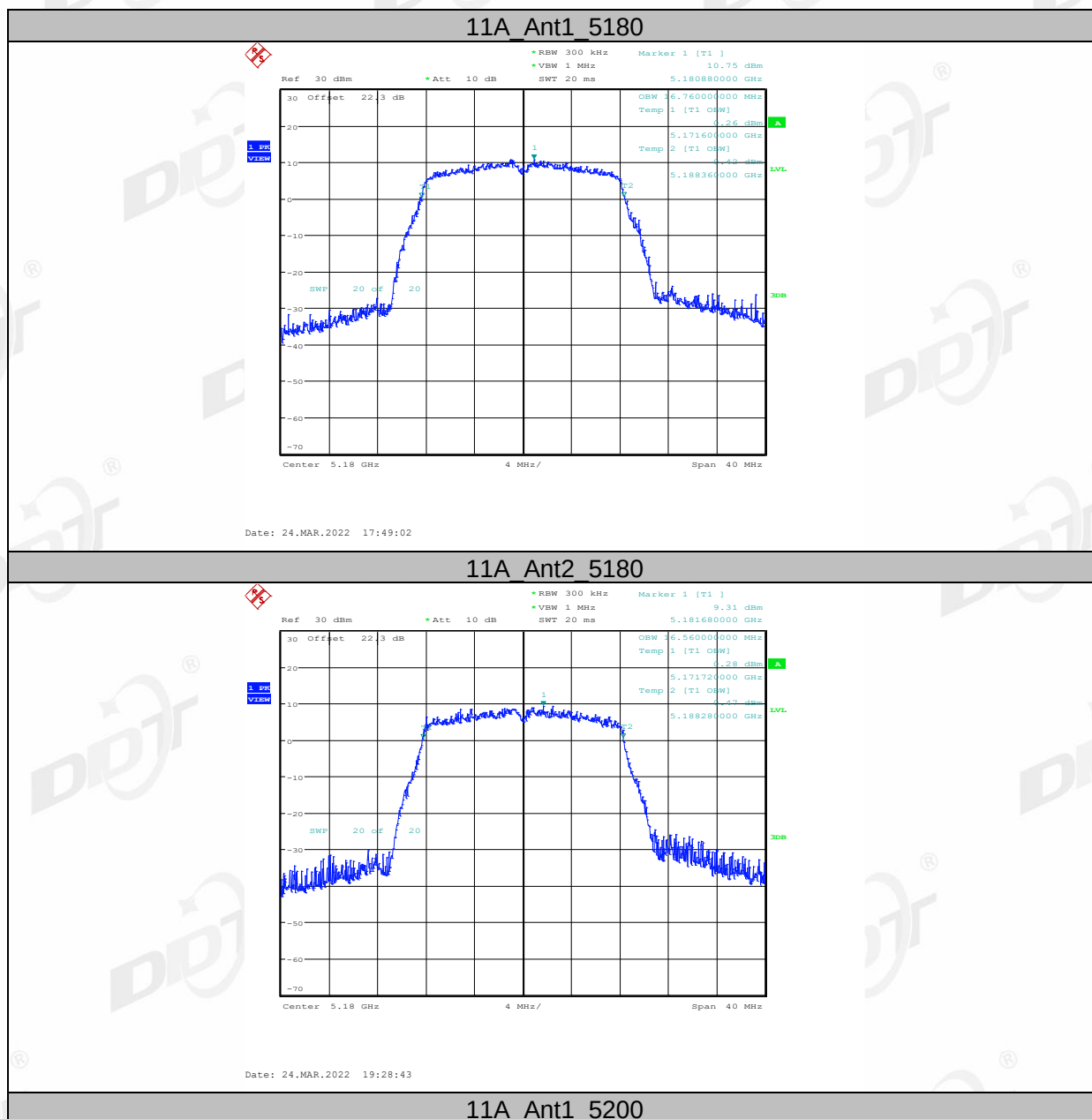
Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.04	5169.96	5190.00	---	Pass
	Ant2	5180	19.64	5170.20	5189.84	---	Pass
	Ant1	5200	20.20	5189.92	5210.12	---	Pass
	Ant2	5200	19.64	5190.16	5209.80	---	Pass
	Ant1	5240	20.36	5229.84	5250.20	---	Pass
	Ant2	5240	19.80	5230.04	5249.84	---	Pass
	Ant1	5745	20.40	5734.68	5755.08	---	Pass
	Ant2	5745	19.88	5735.00	5754.88	---	Pass
	Ant1	5785	20.44	5774.76	5795.20	---	Pass
	Ant2	5785	20.04	5775.16	5795.20	---	Pass
	Ant1	5825	21.12	5814.28	5835.40	---	Pass
	Ant2	5825	19.72	5815.08	5834.80	---	Pass
11N20MIMO	Ant1	5180	20.20	5169.92	5190.12	---	Pass
	Ant2	5180	20.28	5169.76	5190.04	---	Pass
	Ant1	5200	20.32	5189.88	5210.20	---	Pass
	Ant2	5200	20.24	5189.92	5210.16	---	Pass
	Ant1	5240	20.12	5229.92	5250.04	---	Pass
	Ant2	5240	20.08	5229.96	5250.04	---	Pass
	Ant1	5745	20.48	5734.72	5755.20	---	Pass
	Ant2	5745	21.36	5734.28	5755.64	---	Pass
	Ant1	5785	20.52	5774.76	5795.28	---	Pass
	Ant2	5785	20.48	5774.72	5795.20	---	Pass
	Ant1	5825	20.60	5814.64	5835.24	---	Pass
	Ant2	5825	20.64	5814.68	5835.32	---	Pass
11N40MIMO	Ant1	5190	40.88	5169.60	5210.48	---	Pass
	Ant2	5190	40.32	5169.84	5210.16	---	Pass
	Ant1	5230	41.12	5209.52	5250.64	---	Pass
	Ant2	5230	40.40	5209.84	5250.24	---	Pass
	Ant1	5755	41.76	5734.36	5776.12	---	Pass
	Ant2	5755	41.28	5734.28	5775.56	---	Pass
	Ant1	5795	41.60	5774.12	5815.72	---	Pass
	Ant2	5795	41.20	5774.44	5815.64	---	Pass
11AC20MIMO	Ant1	5180	20.36	5169.76	5190.12	---	Pass
	Ant2	5180	20.32	5169.80	5190.12	---	Pass
	Ant1	5200	20.32	5189.92	5210.24	---	Pass
	Ant2	5200	20.20	5189.88	5210.08	---	Pass
	Ant1	5240	20.28	5229.92	5250.20	---	Pass
	Ant2	5240	20.20	5229.88	5250.08	---	Pass
	Ant1	5745	20.40	5734.76	5755.16	---	Pass
	Ant2	5745	20.64	5734.56	5755.20	---	Pass

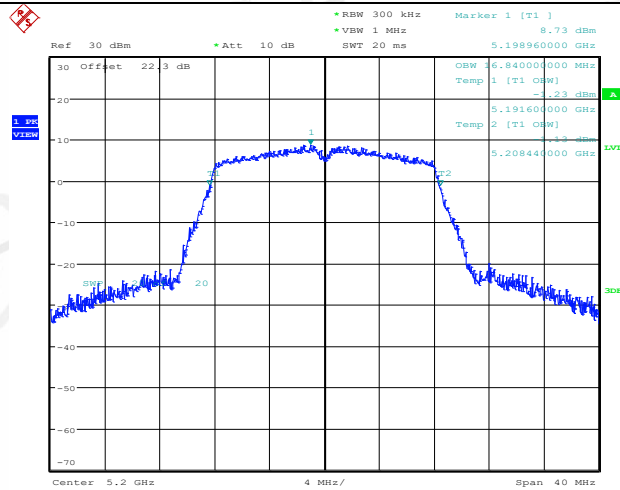
	Ant1	5785	20.48	5774.72	5795.20	---	Pass
	Ant2	5785	20.60	5774.64	5795.24	---	Pass
	Ant1	5825	20.60	5814.68	5835.28	---	Pass
	Ant2	5825	20.44	5814.80	5835.24	---	Pass
11AC40MIMO	Ant1	5190	41.28	5169.44	5210.72	---	Pass
	Ant2	5190	40.32	5169.84	5210.16	---	Pass
	Ant1	5230	41.36	5209.28	5250.64	---	Pass
	Ant2	5230	40.72	5209.60	5250.32	---	Pass
	Ant1	5755	41.68	5734.04	5775.72	---	Pass
	Ant2	5755	41.68	5734.28	5775.96	---	Pass
	Ant1	5795	41.36	5774.44	5815.80	---	Pass
	Ant2	5795	40.88	5774.52	5815.40	---	Pass
11AC80MIMO	Ant1	5210	81.60	5169.20	5250.80	---	Pass
	Ant2	5210	81.44	5169.20	5250.64	---	Pass
	Ant1	5775	81.44	5734.36	5815.80	---	Pass
	Ant2	5775	92.64	5723.32	5815.96	---	Pass

Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.08	5737.48	5752.56	0.5	Pass
	Ant2	5745	15.40	5737.36	5752.76	0.5	Pass
	Ant1	5785	15.12	5777.40	5792.52	0.5	Pass
	Ant2	5785	15.92	5777.20	5793.12	0.5	Pass
	Ant1	5825	15.12	5817.40	5832.52	0.5	Pass
	Ant2	5825	15.36	5817.16	5832.52	0.5	Pass
11N20MIMO	Ant1	5745	15.08	5737.44	5752.52	0.5	Pass
	Ant2	5745	15.08	5737.44	5752.52	0.5	Pass
	Ant1	5785	15.08	5777.44	5792.52	0.5	Pass
	Ant2	5785	15.08	5777.44	5792.52	0.5	Pass
	Ant1	5825	15.04	5817.44	5832.48	0.5	Pass
	Ant2	5825	15.72	5816.84	5832.56	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	35.04	5777.48	5812.52	0.5	Pass
	Ant2	5795	35.04	5777.48	5812.52	0.5	Pass
11AC20MIMO	Ant1	5745	15.08	5737.44	5752.52	0.5	Pass
	Ant2	5745	15.64	5737.44	5753.08	0.5	Pass
	Ant1	5785	15.12	5777.44	5792.56	0.5	Pass
	Ant2	5785	15.76	5776.80	5792.56	0.5	Pass
	Ant1	5825	15.08	5817.44	5832.52	0.5	Pass
	Ant2	5825	15.04	5817.48	5832.52	0.5	Pass
11AC40MIMO	Ant1	5755	35.20	5737.40	5772.60	0.5	Pass
	Ant2	5755	35.12	5737.40	5772.52	0.5	Pass
	Ant1	5795	35.04	5777.48	5812.52	0.5	Pass
	Ant2	5795	35.12	5777.40	5812.52	0.5	Pass
11AC80MIMO	Ant1	5775	73.92	5737.40	5811.32	0.5	Pass
	Ant2	5775	75.20	5737.40	5812.60	0.5	Pass

4.5. Original test data

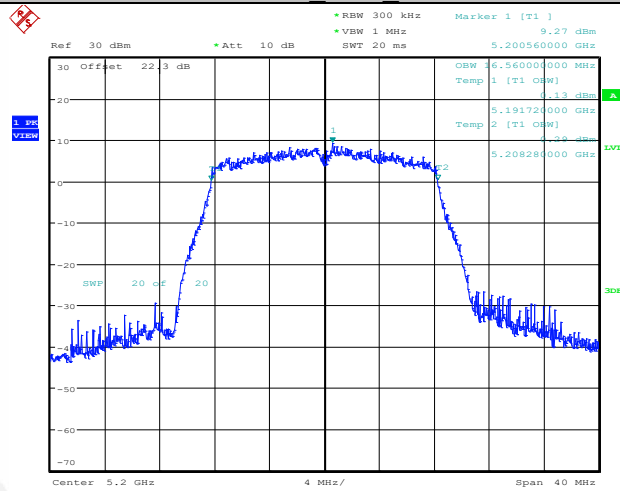
99% OBW:





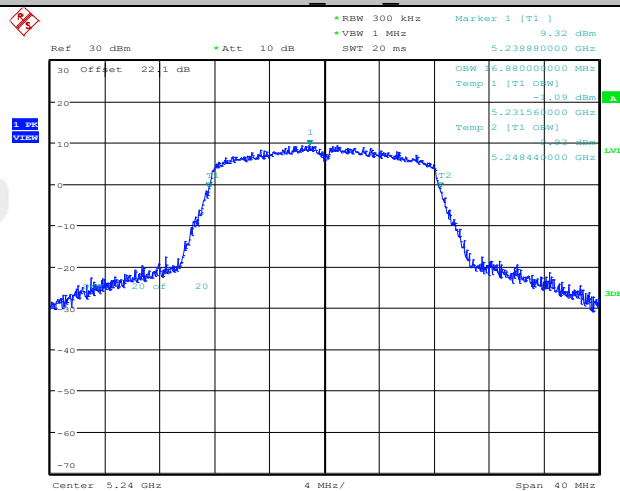
Date: 24.MAR.2022 17:59:47

11A Ant2 5200



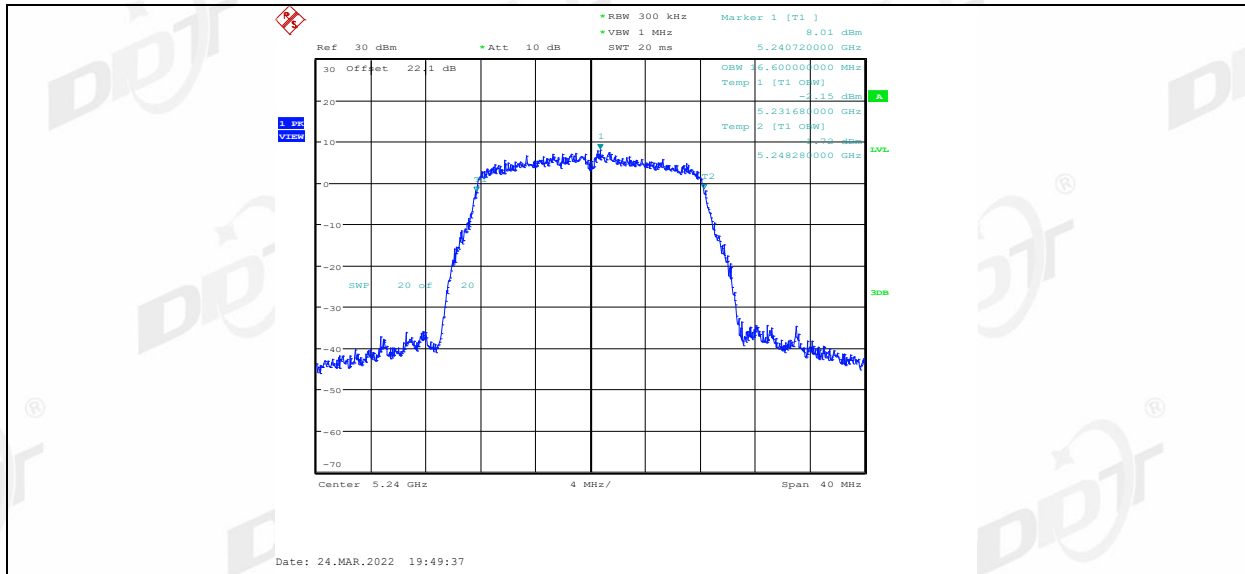
Date: 24.MAR.2022 19:42:29

11A Ant1 5240

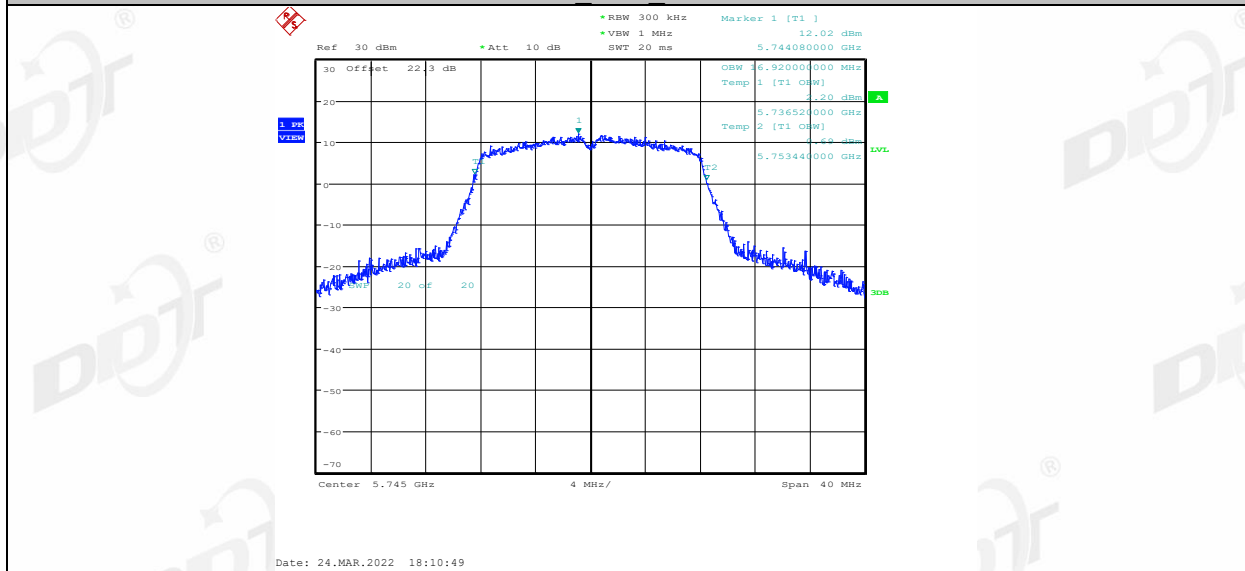


Date: 24.MAR.2022 18:05:16

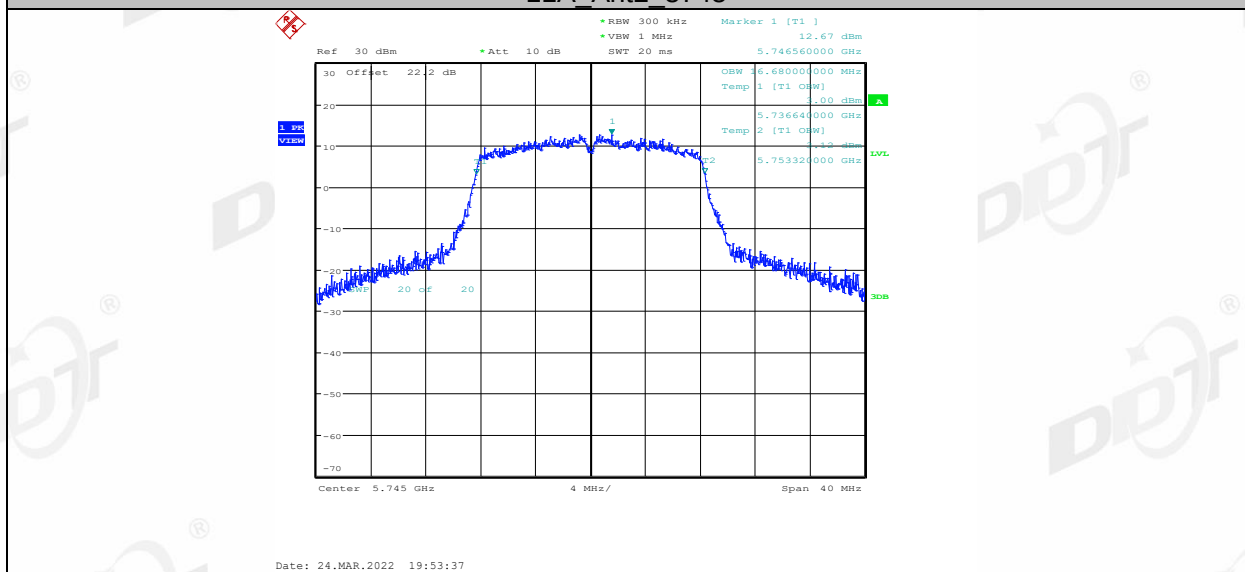
11A Ant2 5240



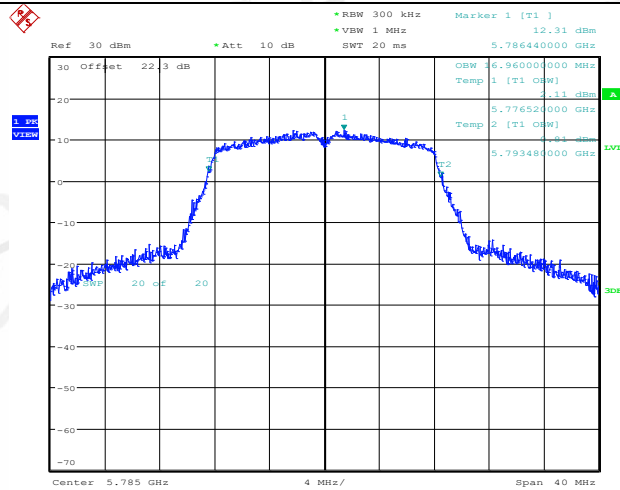
11A Ant1 5745



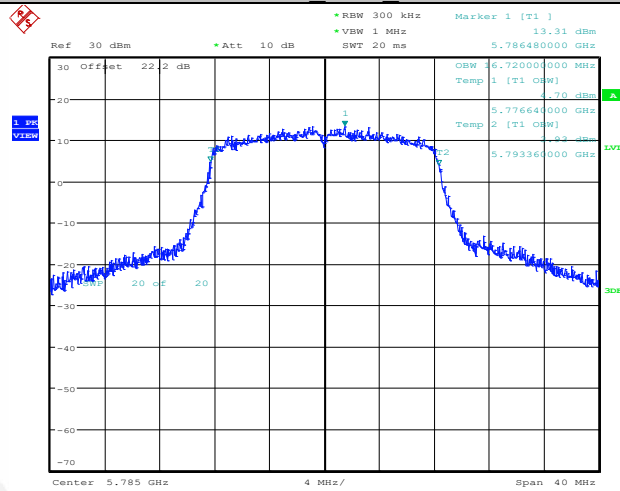
11A Ant2 5745



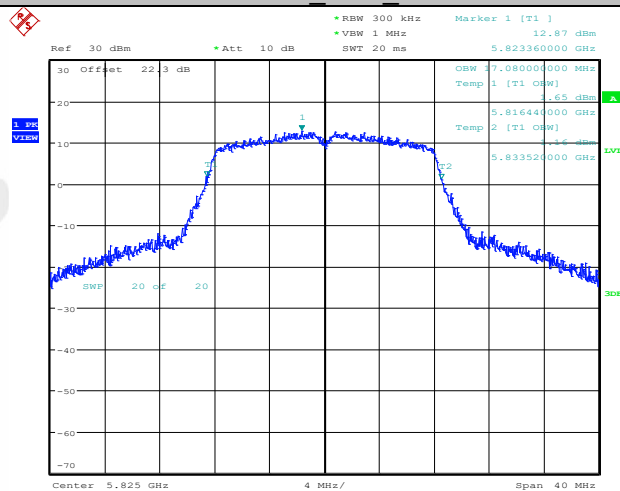
11A Ant1 5785



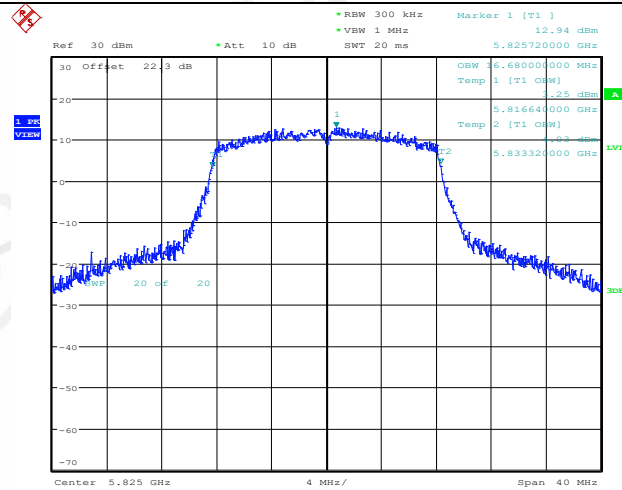
11A Ant2 5785



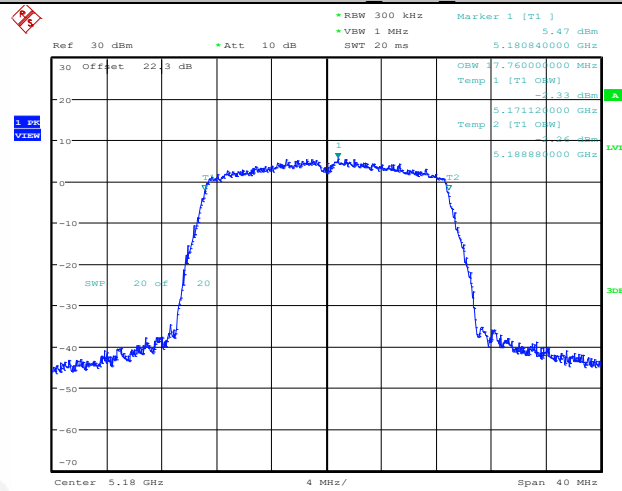
11A Ant1 5825



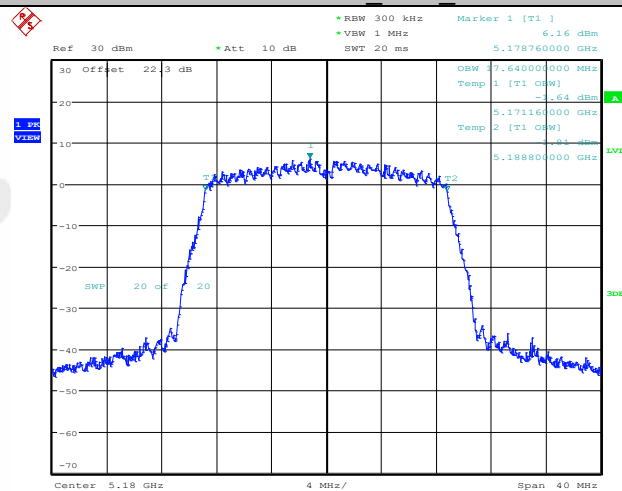
11A Ant2 5825



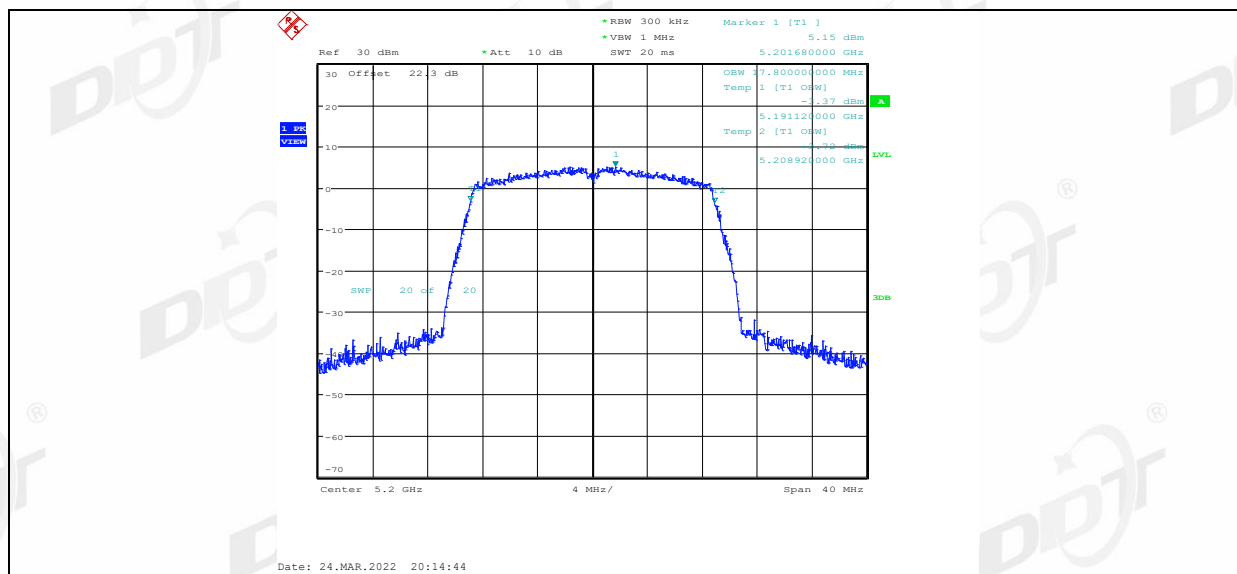
11N20MIMO_Ant1_5180



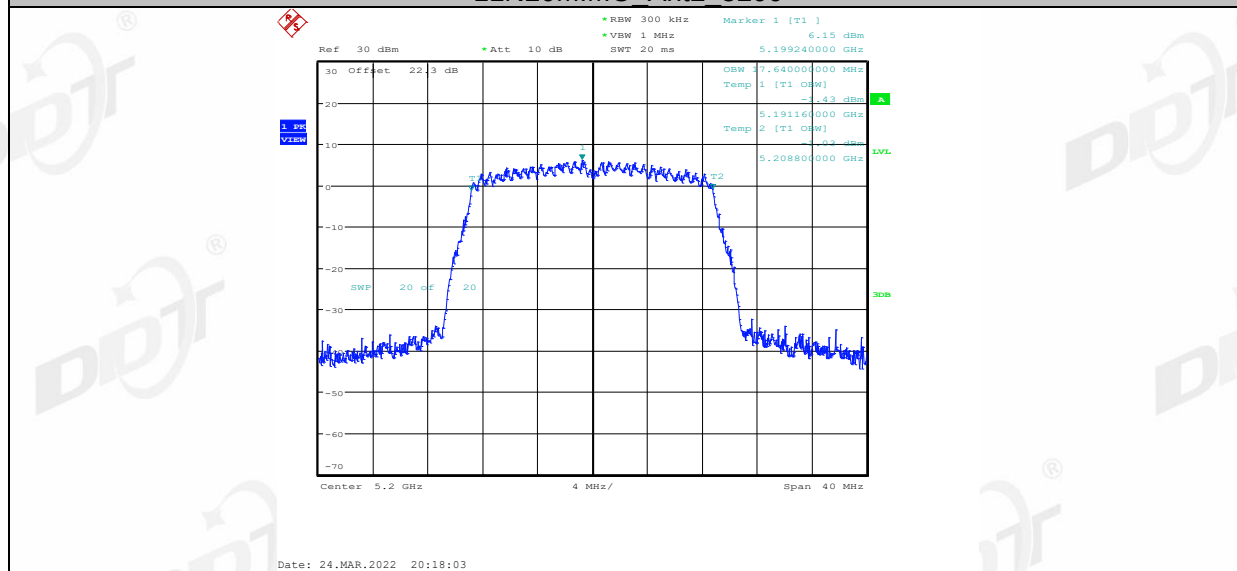
11N20MIMO_Ant2_5180



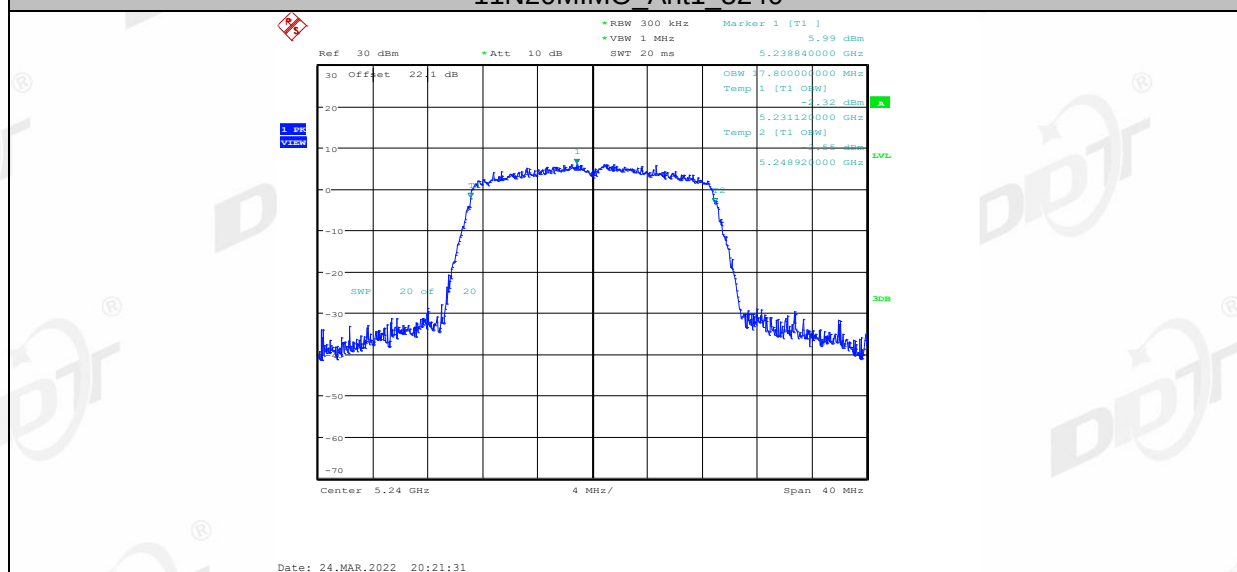
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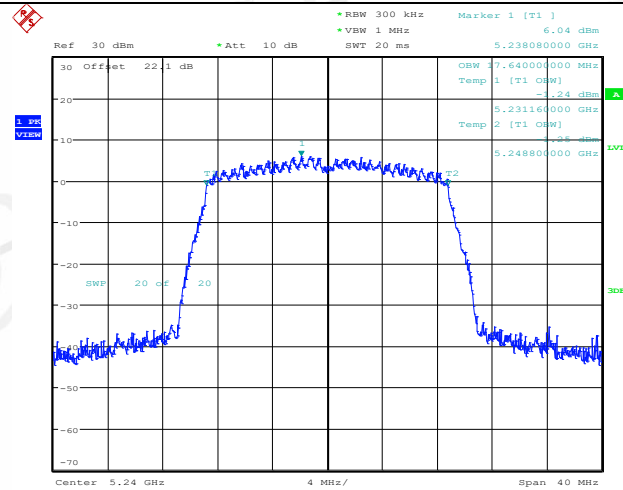
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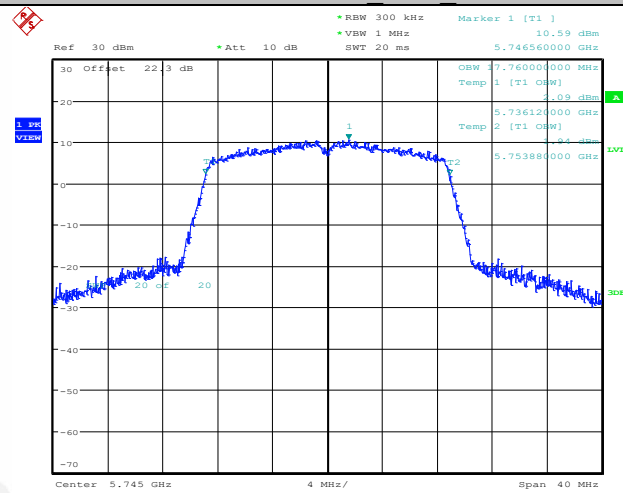
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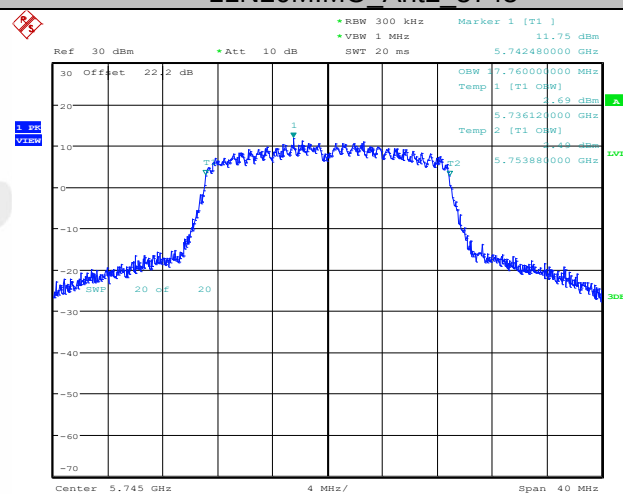
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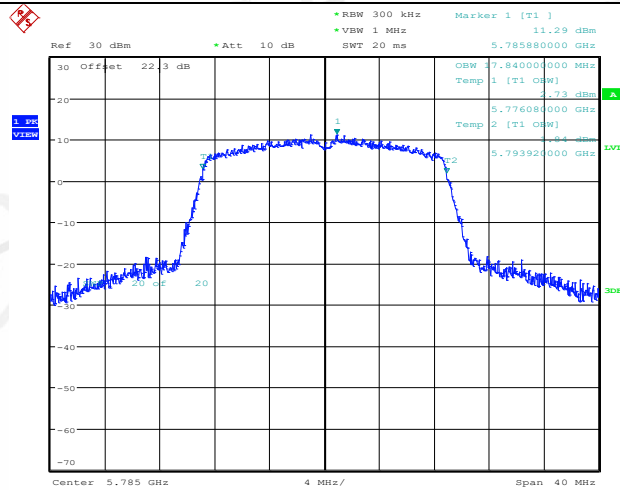
11N20MIMO Ant1 5745



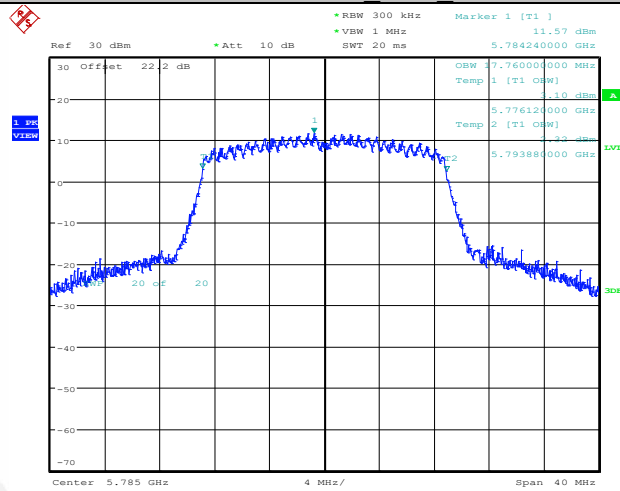
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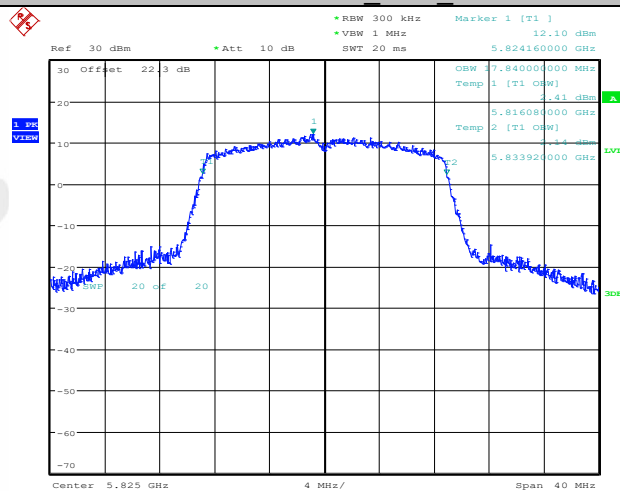
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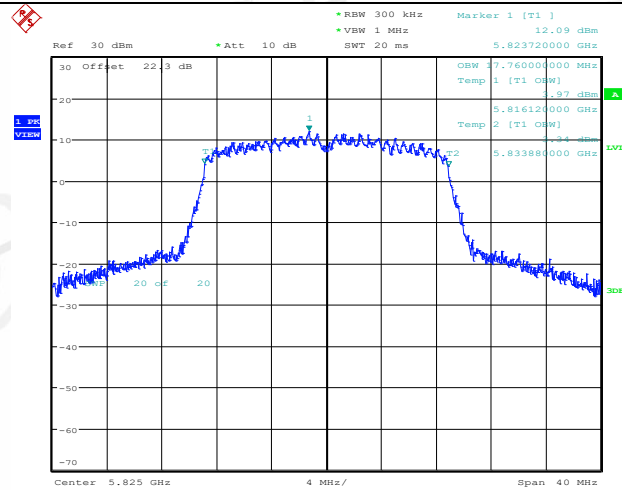
11N20MIMO Ant2 5785



11N20MIMO Ant1 5825

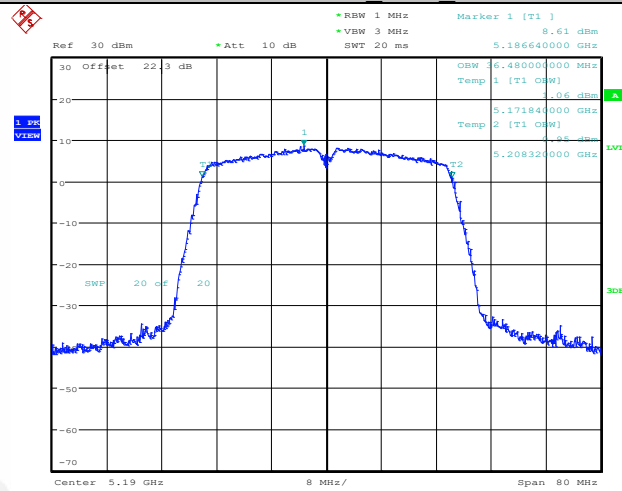


11N20MIMO Ant2 5825



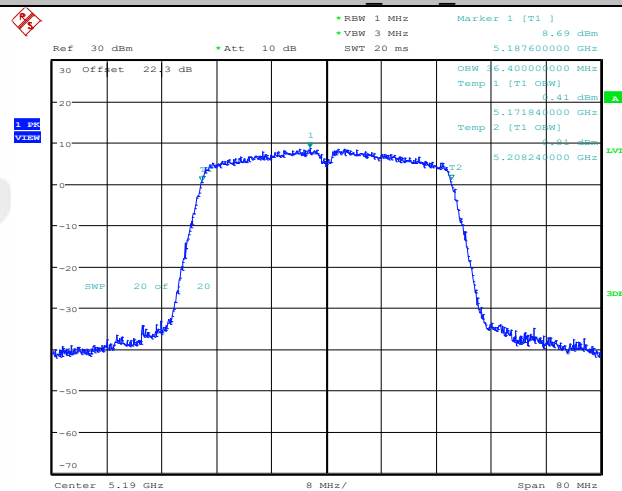
Date: 24.MAR.2022 20:49:34

11N40MIMO Ant1 5190



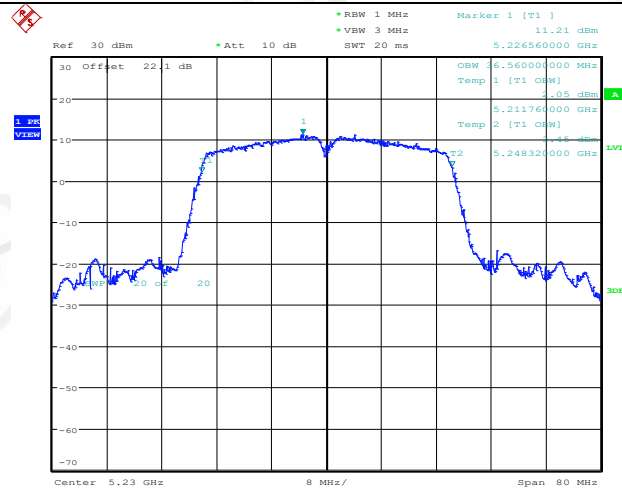
Date: 24.MAR.2022 20:58:03

11N40MIMO Ant2 5190



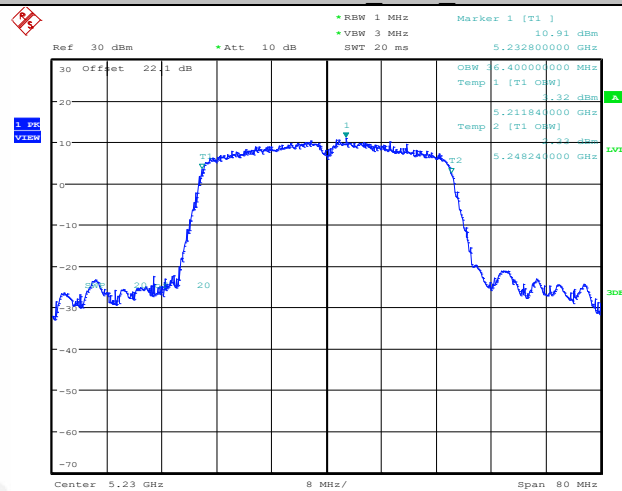
Date: 24.MAR.2022 21:01:31

11N40MIMO Ant1 5230



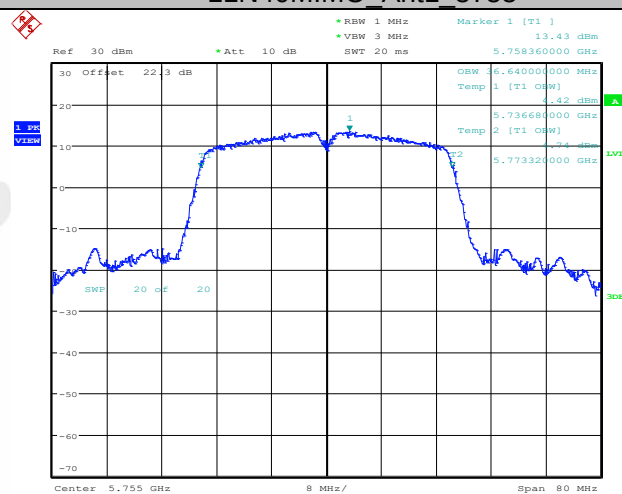
Date: 24.MAR.2022 21:07:33

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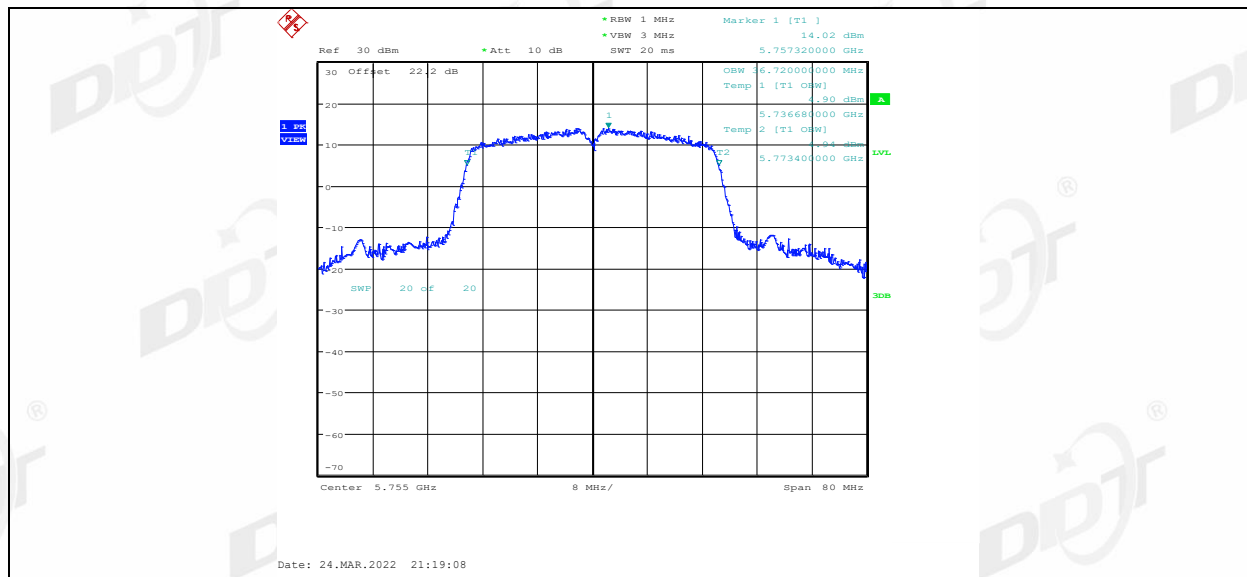
Date: 24.MAR.2022 21:11:09

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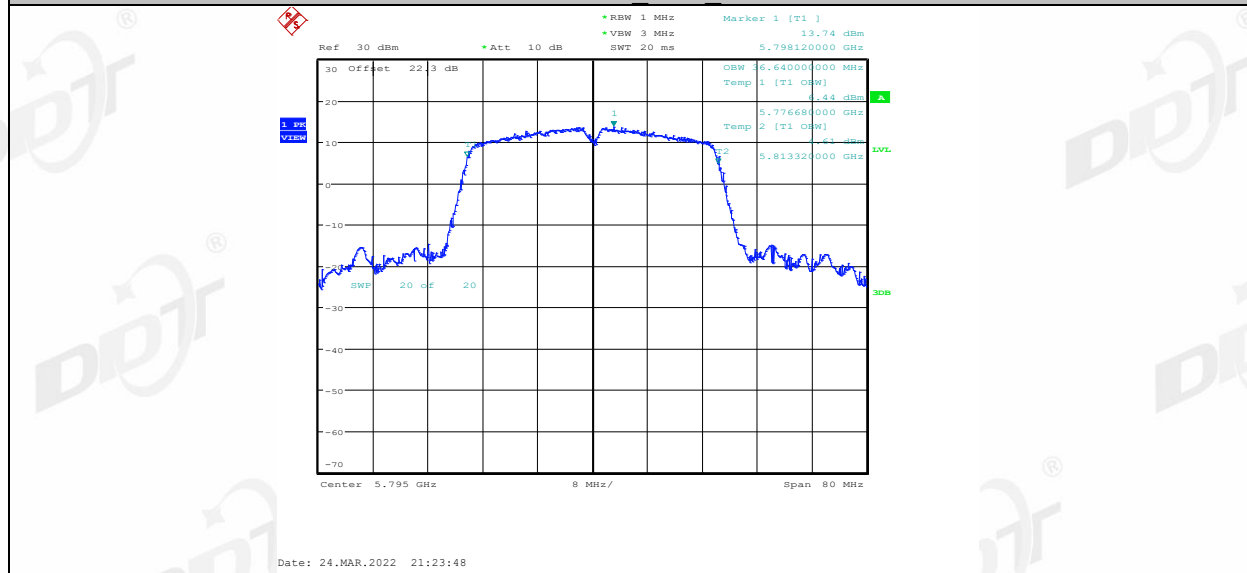


Date: 24.MAR.2022 21:15:15

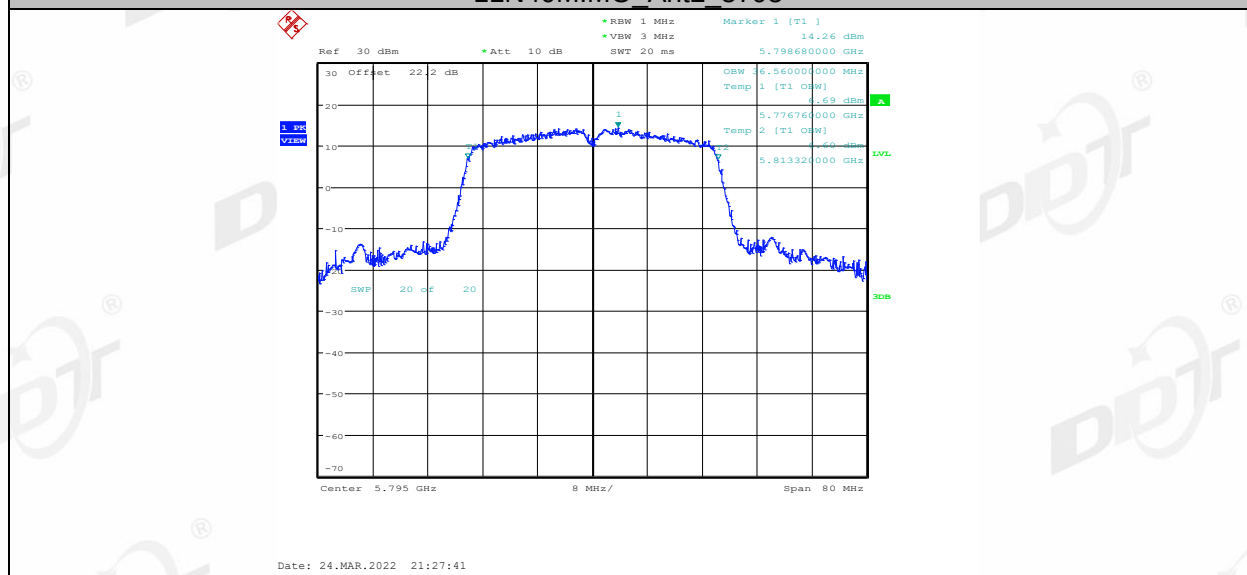
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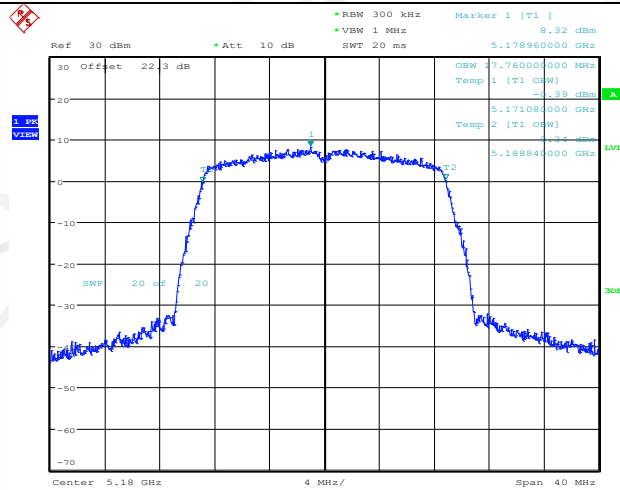
11N40MIMO_Ant1_5795



11N40MIMO_Ant2_5795

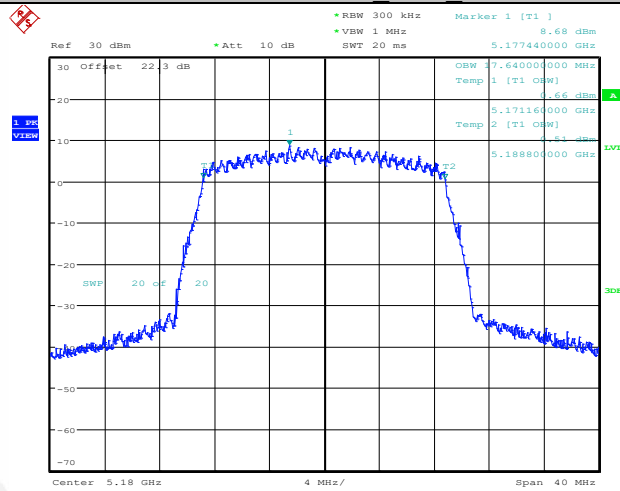


11AC20MIMO_Ant1_5180



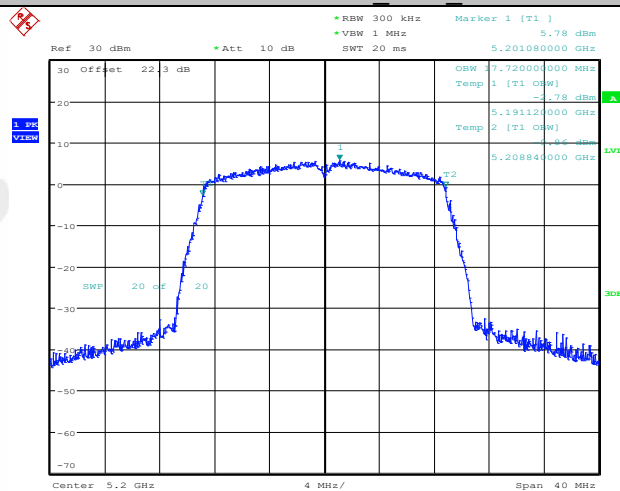
Date: 25.MAR.2022 08:22:45

11AC20MIMO_Ant2_5180



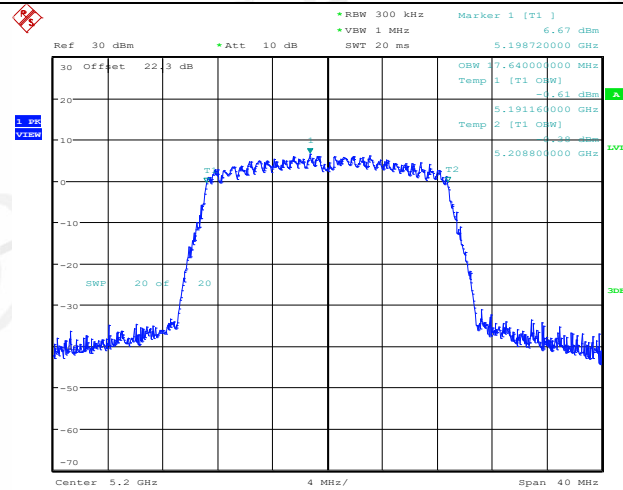
Date: 25.MAR.2022 08:26:13

11AC20MIMO_Ant1_5200



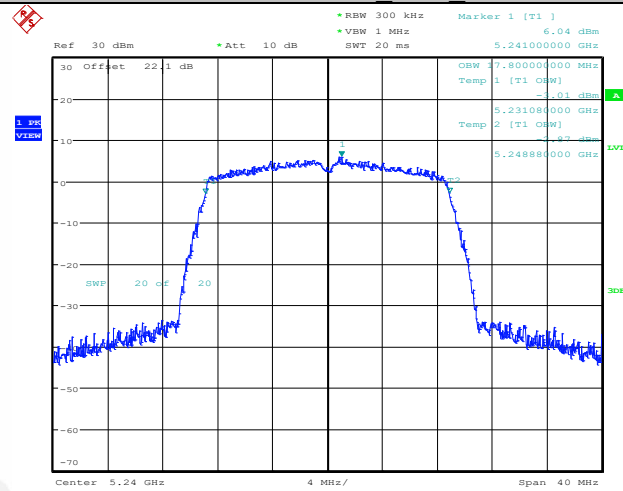
Date: 25.MAR.2022 08:33:51

11AC20MIMO_Ant2_5200



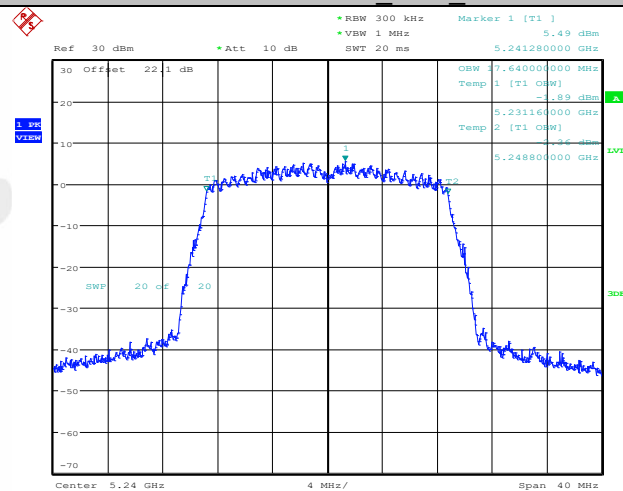
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11AC20MIMO_Ant1_5240



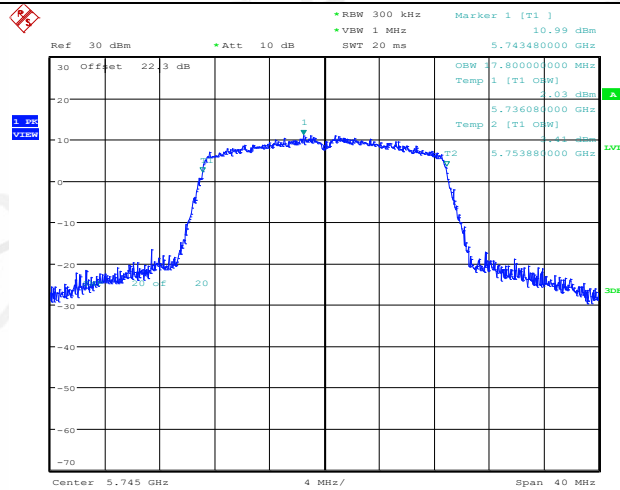
Date: 25.MAR.2022 08:44:52

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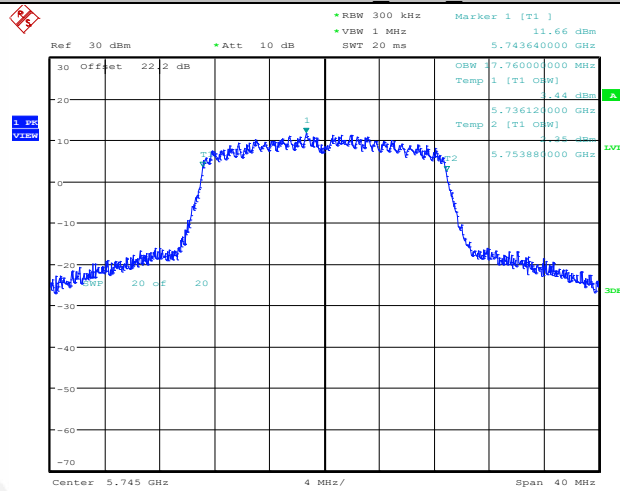


Date: 25.MAR.2022 08:48:29

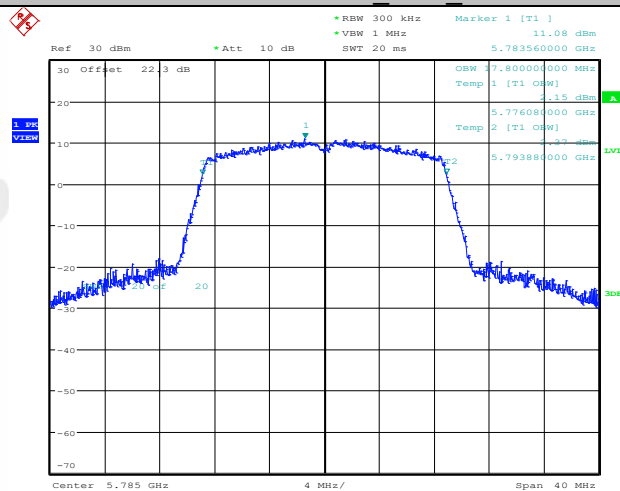
11AC20MIMO_Ant1_5745



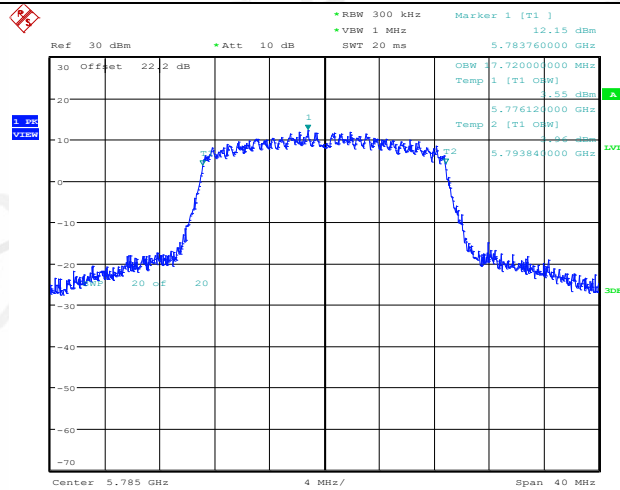
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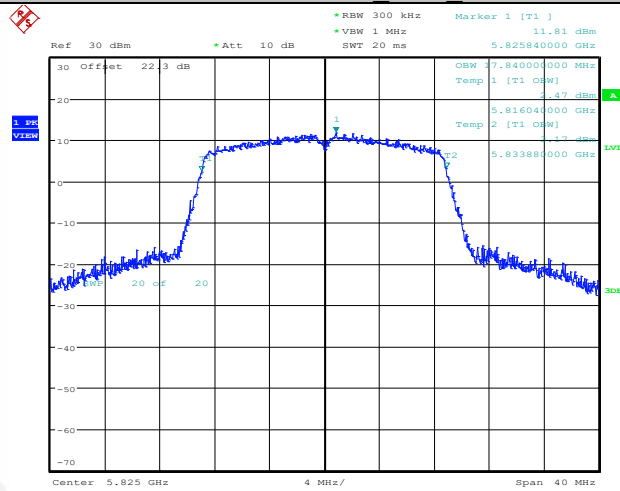
11AC20MIMO_Ant1_5785



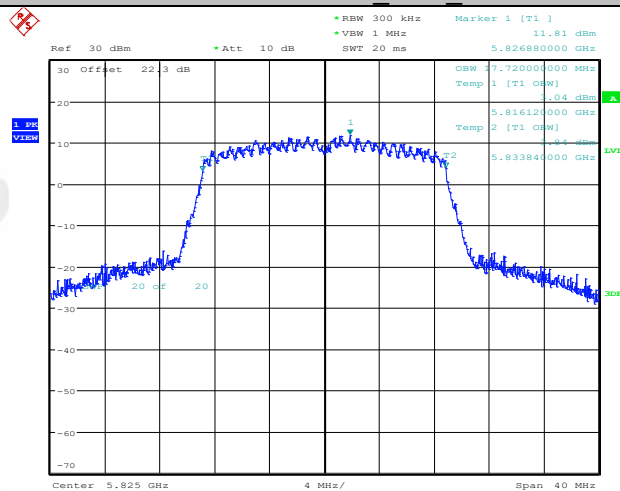
11AC20MIMO_Ant2_5785



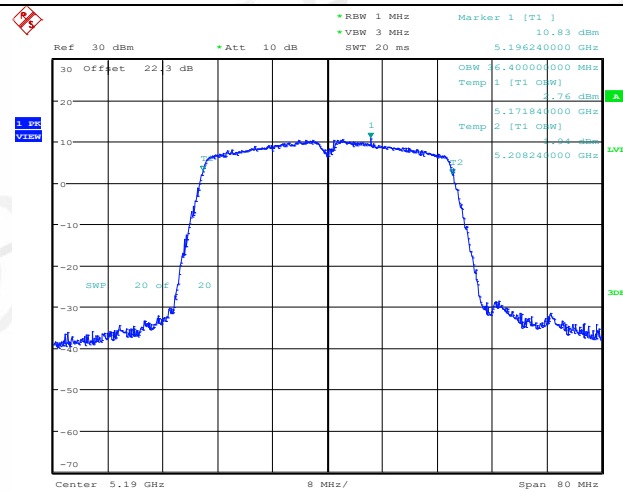
11AC20MIMO_Ant1_5825



11AC20MIMO_Ant2_5825

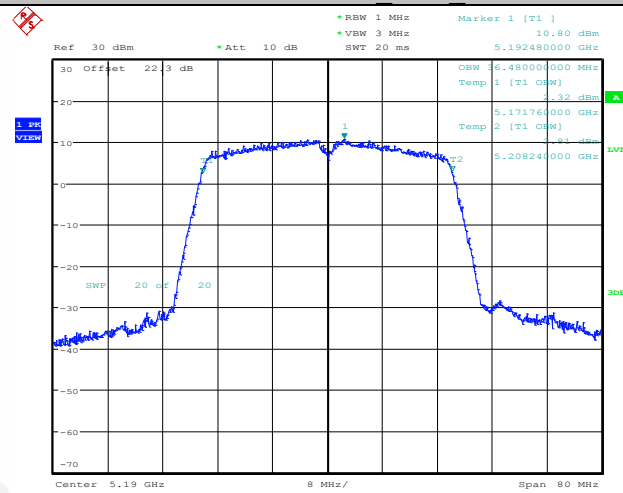


11AC40MIMO_Ant1_5190



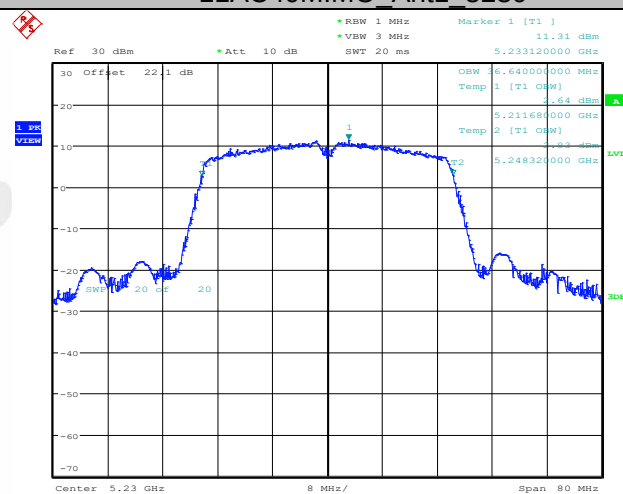
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11AC40MIMO_Ant2_5190



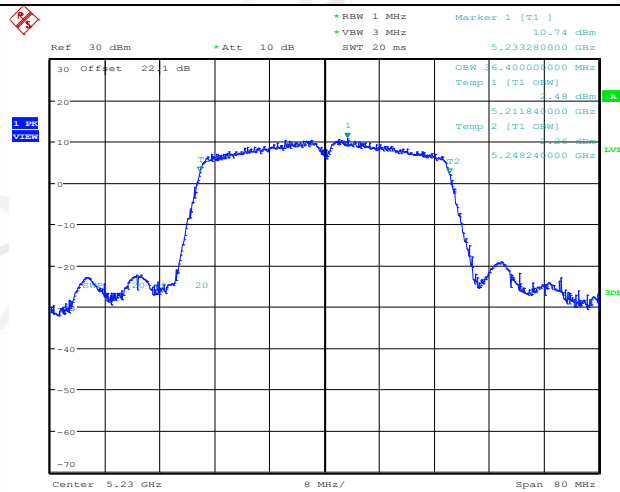
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11AC40MIMO Ant1 5230

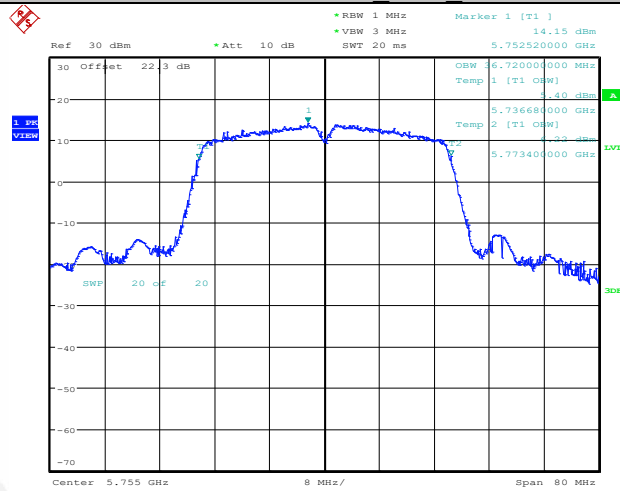


Date: 25.MAR.2022 09:30:13

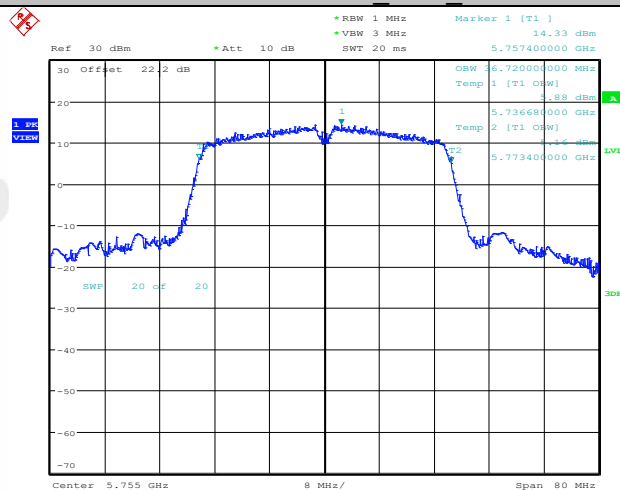
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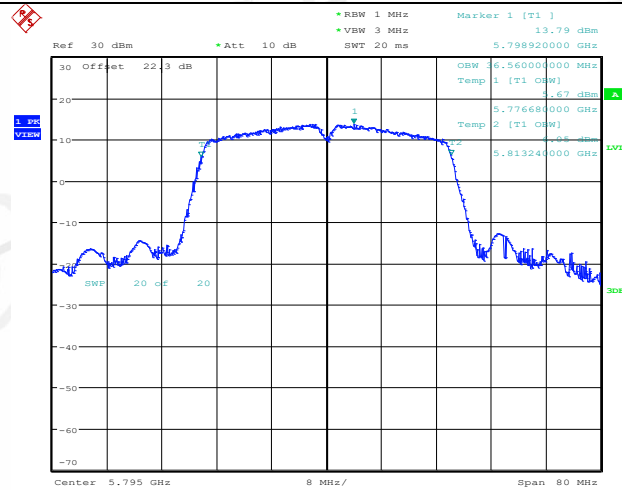
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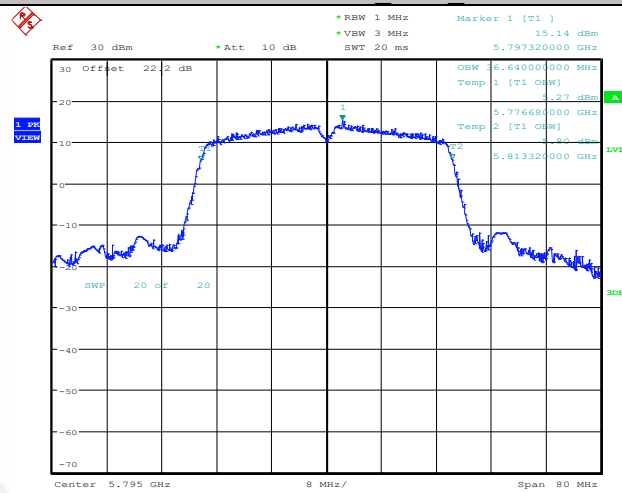
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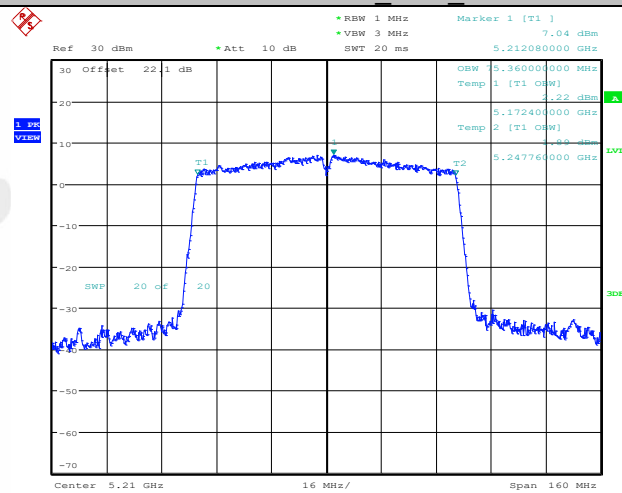
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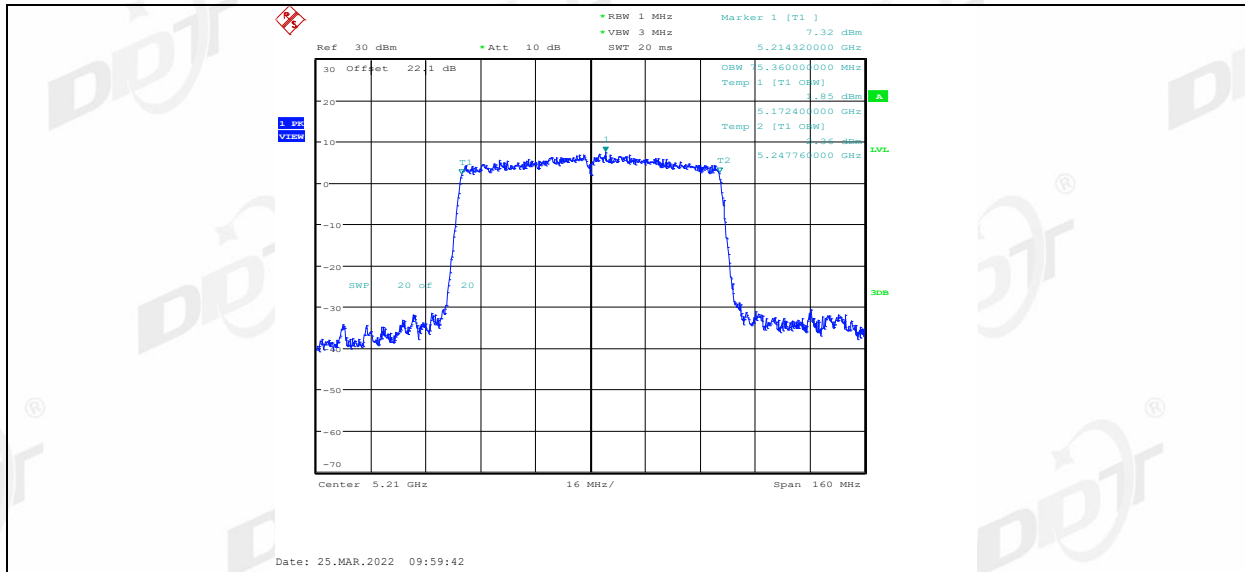
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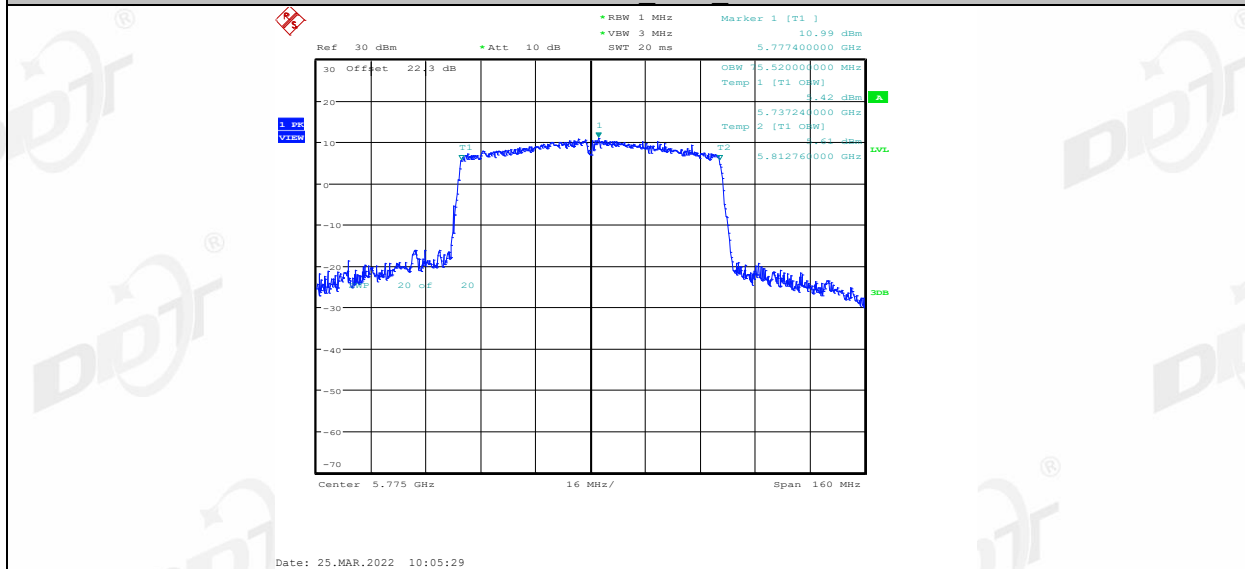
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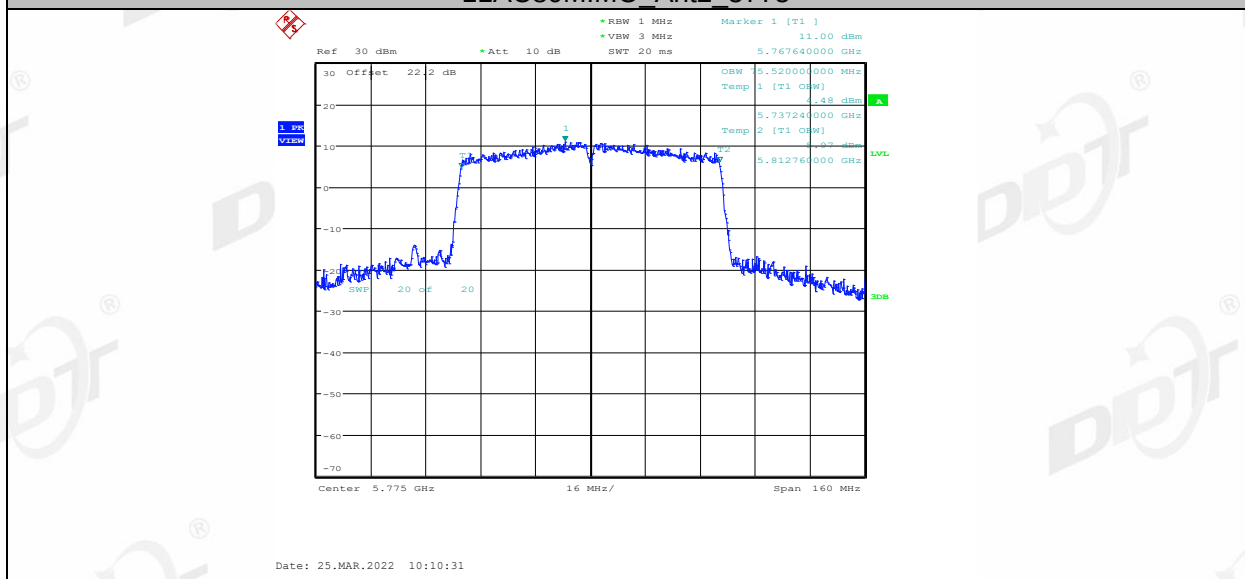
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11AC80MIMO Ant1 5775

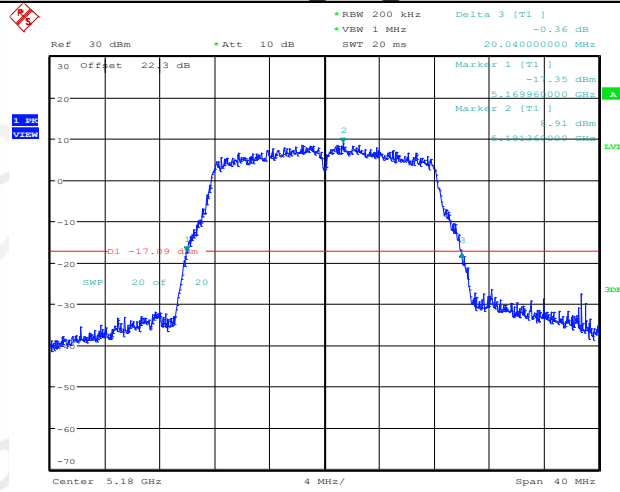


11AC80MIMO Ant2 5775



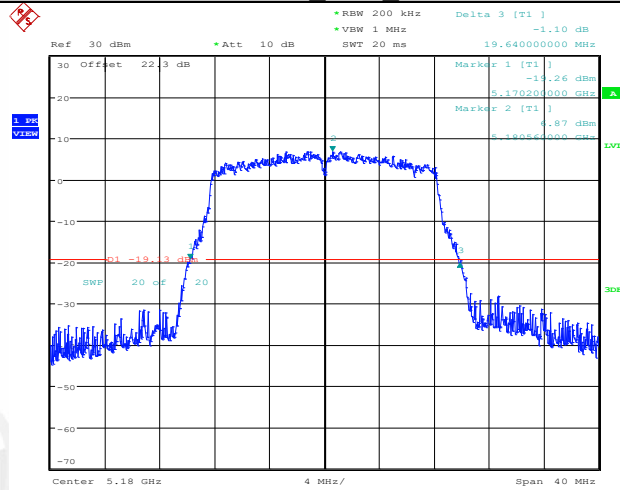
26db EBW:

11A_Ant1_5180



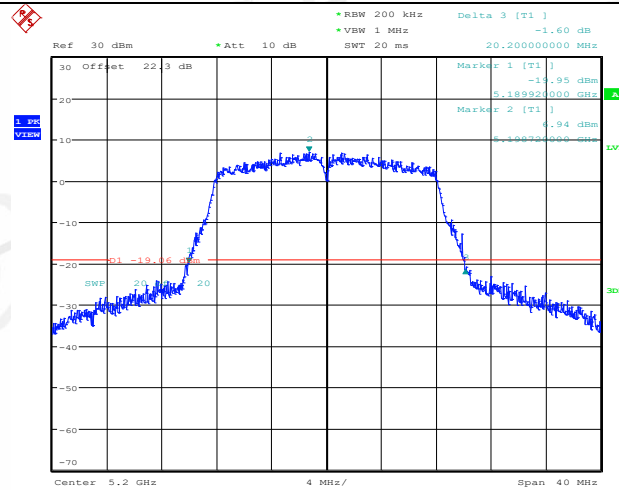
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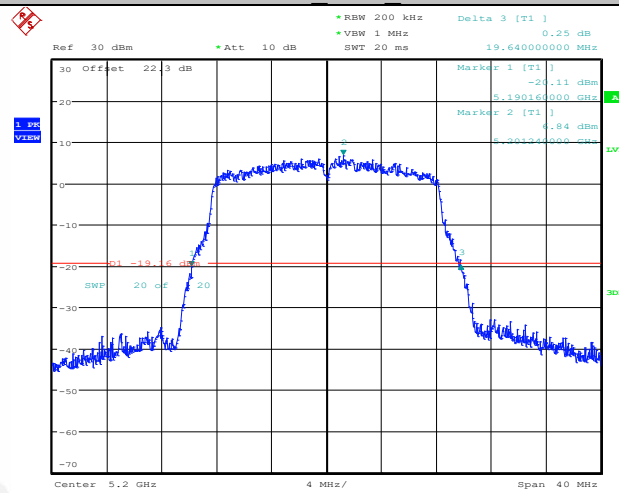
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11A_Ant1_5200



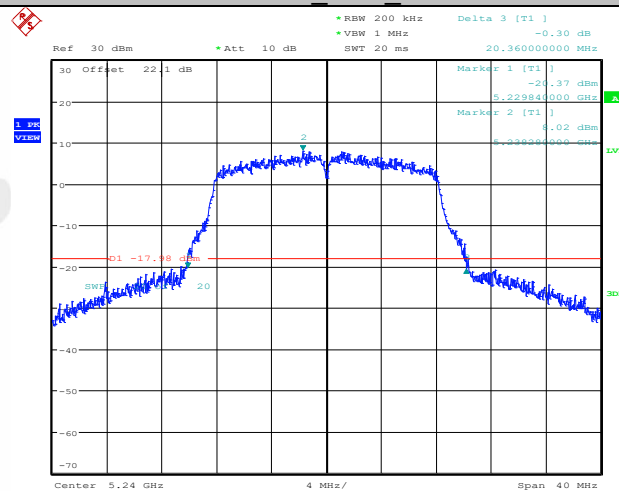
Date: 24.MAR.2022 17:59:35

11A Ant2 5200



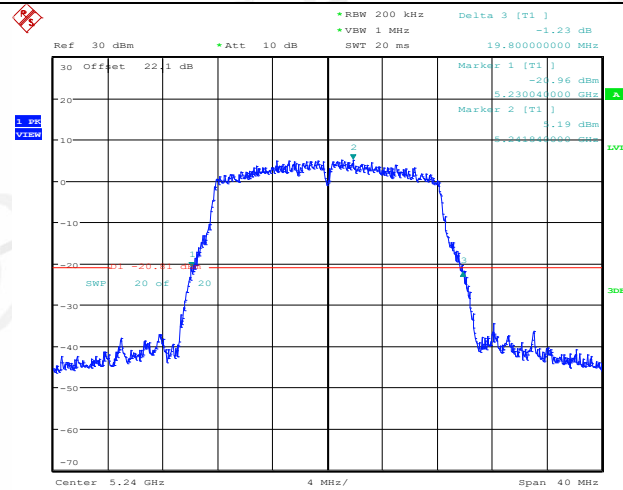
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11A Ant1 5240

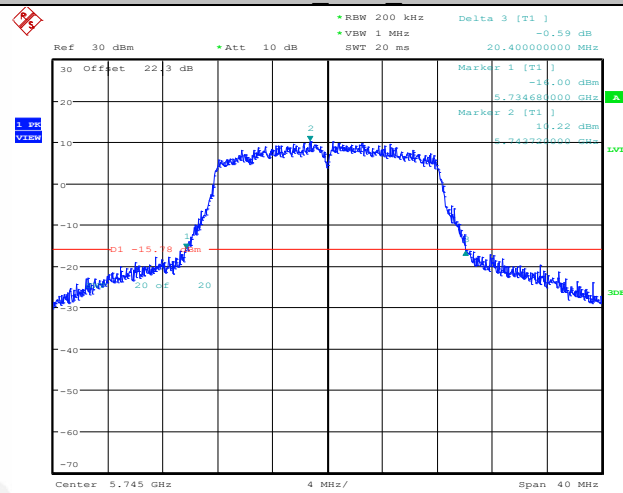


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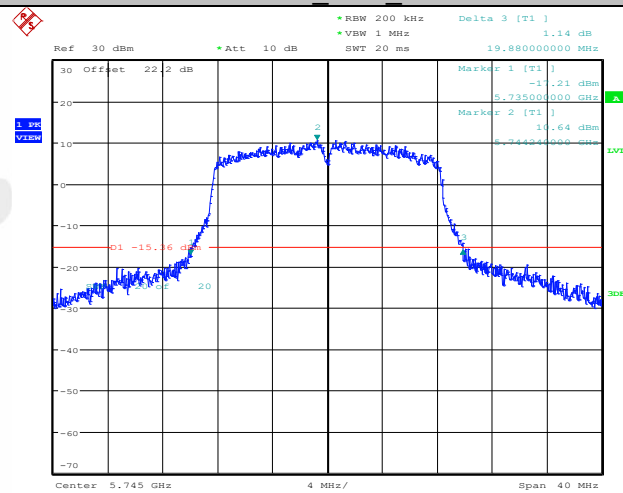
11A Ant2 5240



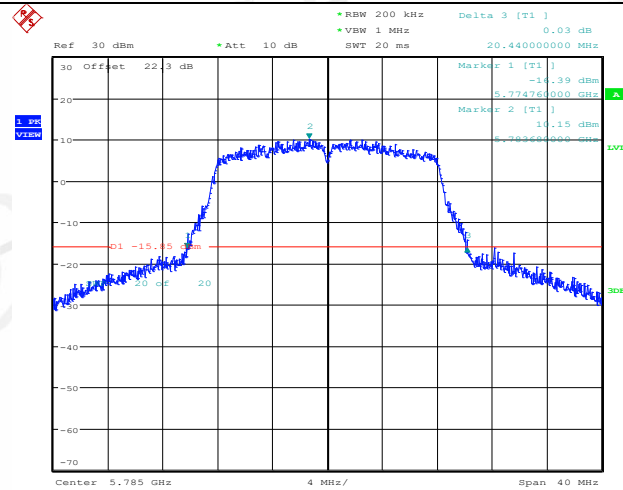
11A Ant1 5745



11A Ant2 5745

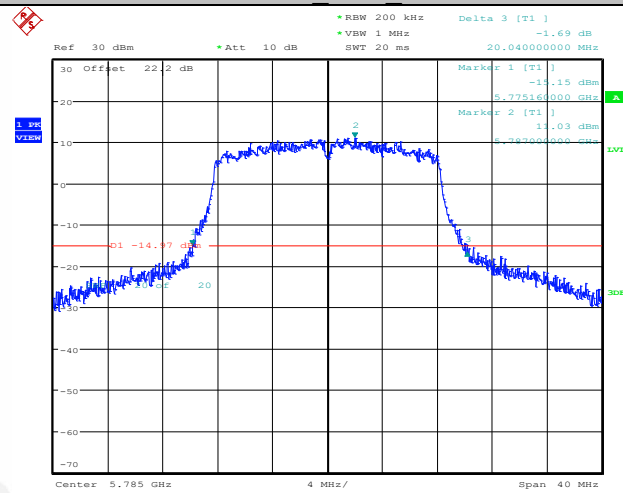


11A Ant1 5785



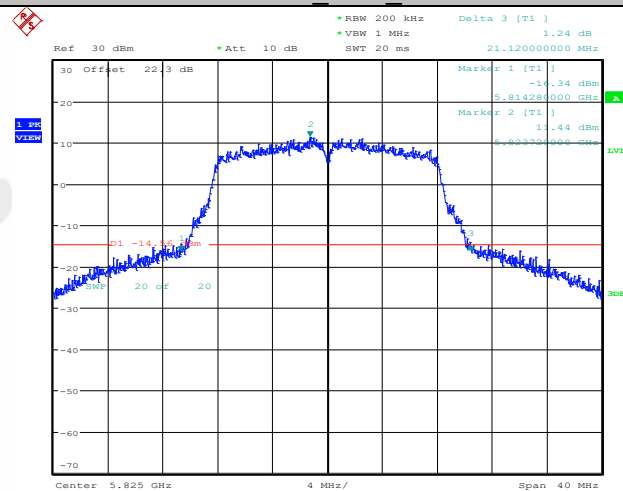
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11A Ant2 5785



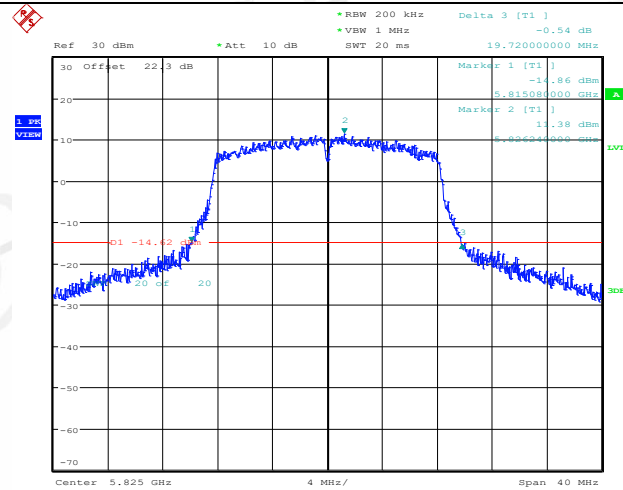
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11A Ant1 5825



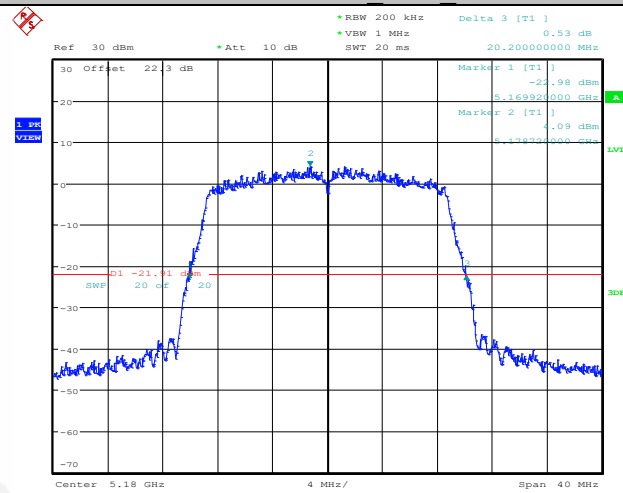
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11A Ant2 5825



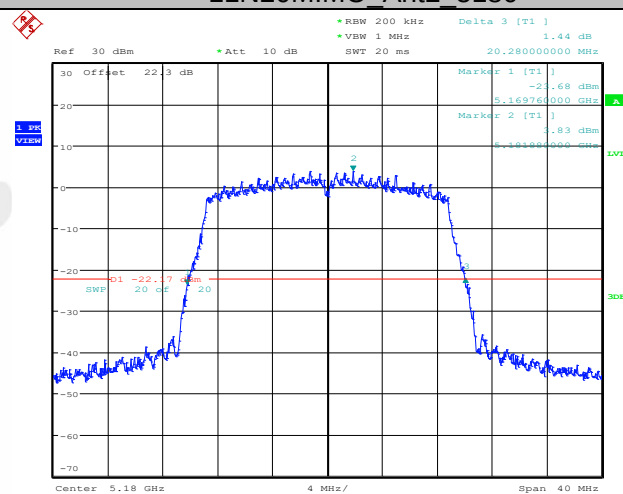
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11N20MIMO Ant1 5180



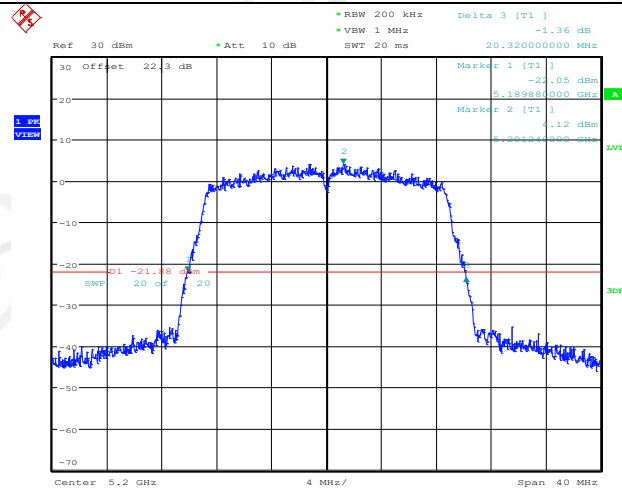
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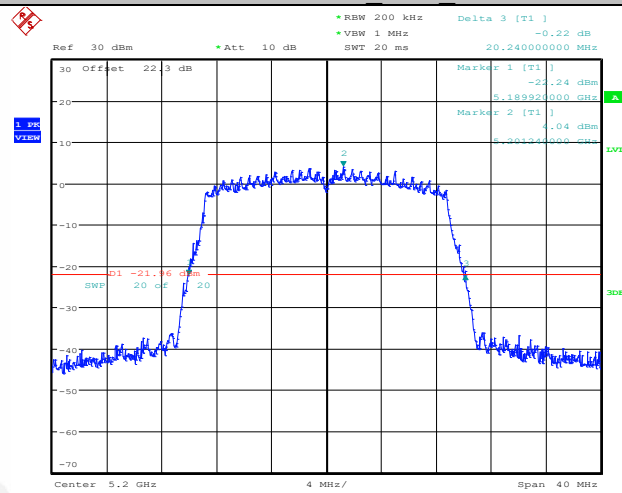
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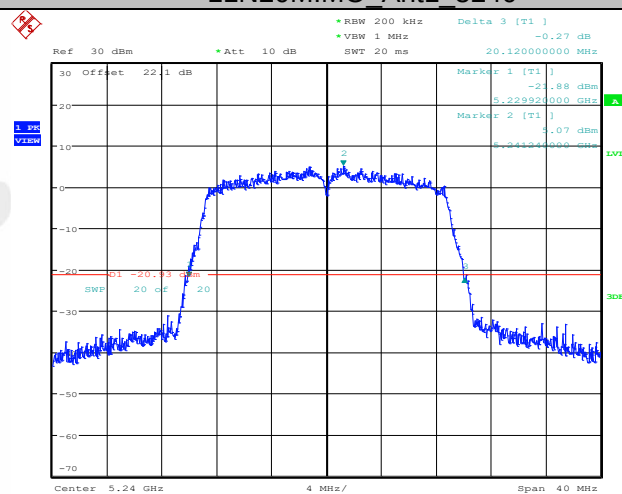
Date: 24.MAR.2022 20:14:30

11N20MIMO_Ant2_5200



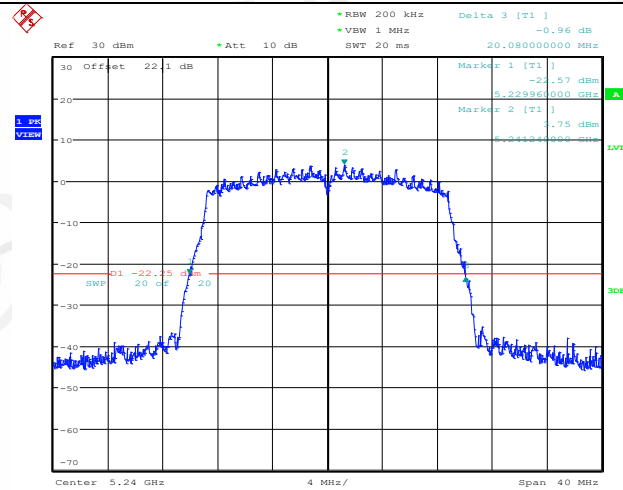
Date: 24.MAR.2022 20:17:49

11N20MIMO_Ant1_5240



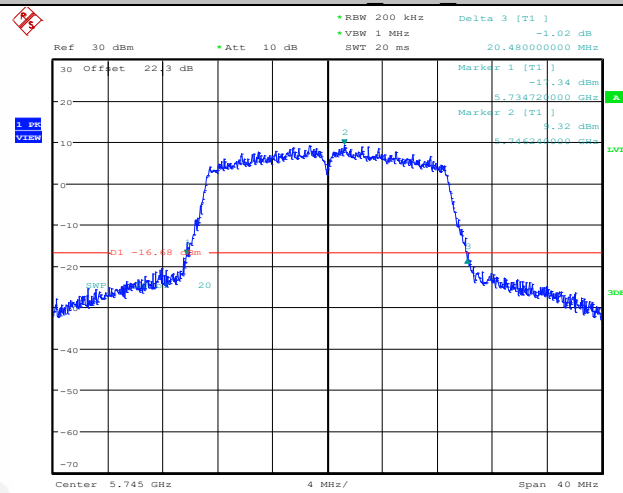
Date: 24.MAR.2022 20:21:17

11N20MIMO_Ant2_5240



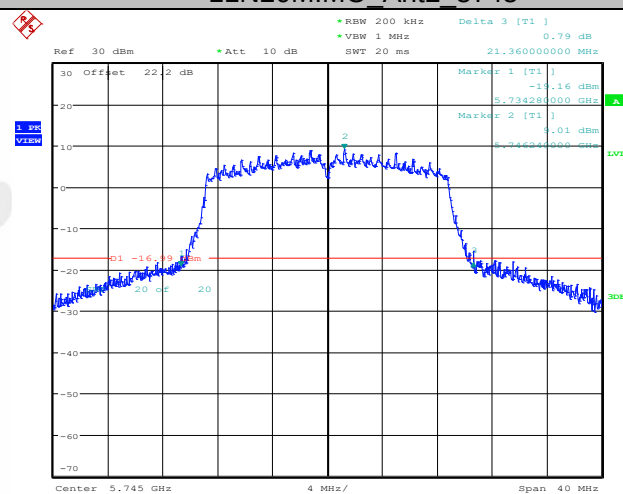
Date: 24.MAR.2022 20:24:54

11N20MIMO_Ant1_5745



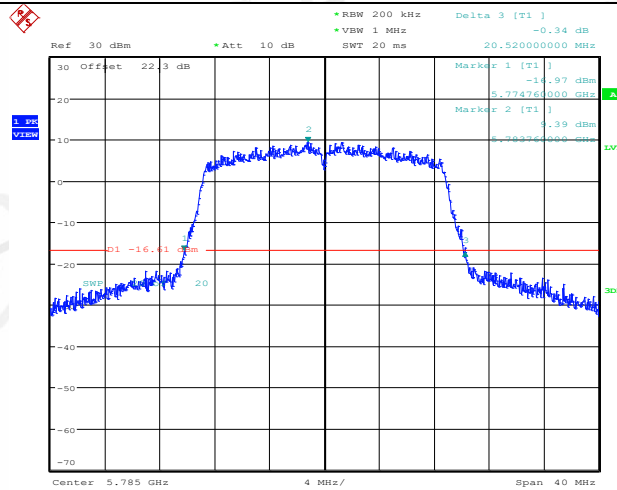
Date: 24.MAR.2022 20:29:11

11N20MIMO_Ant2_5745



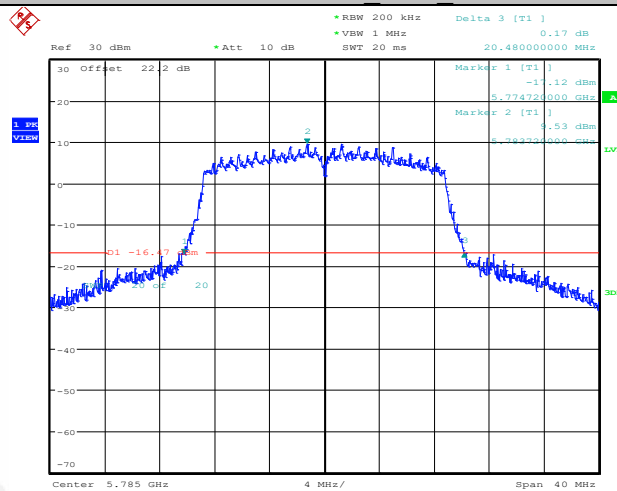
Date: 24.MAR.2022 20:33:05

11N20MIMO_Ant1_5785



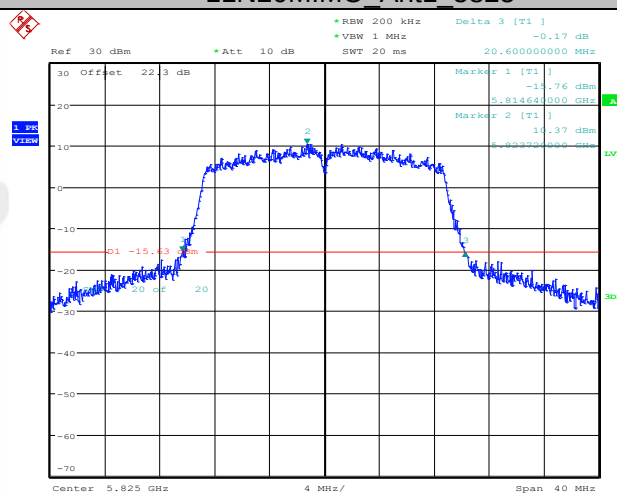
Date: 24.MAR.2022 20:37:22

11N20MIMO_Ant2_5785



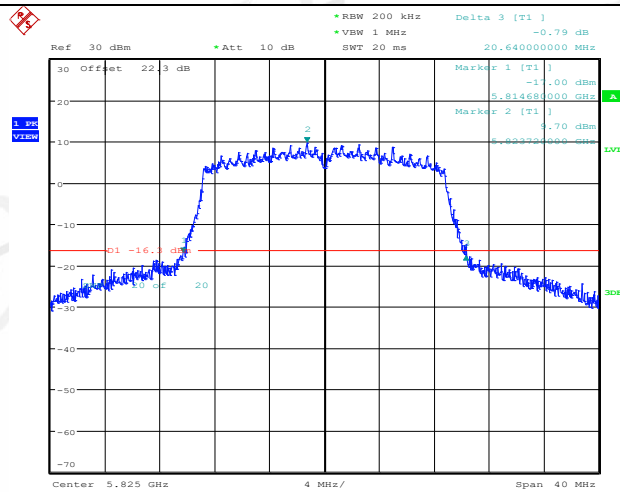
Date: 24.MAR.2022 20:40:55

11N20MIMO_Ant1_5825



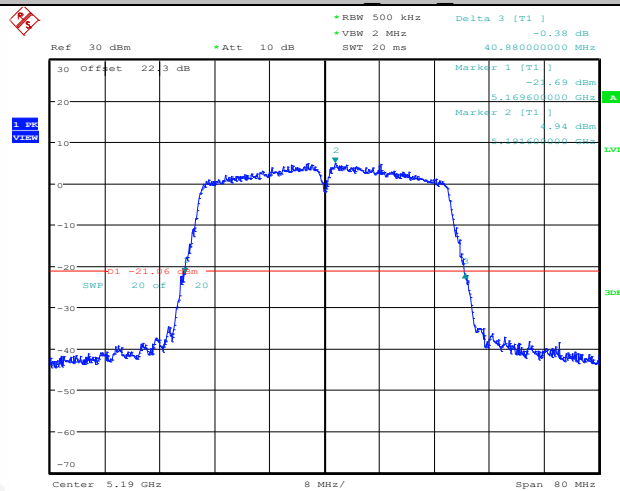
Date: 24.MAR.2022 20:45:15

11N20MIMO_Ant2_5825



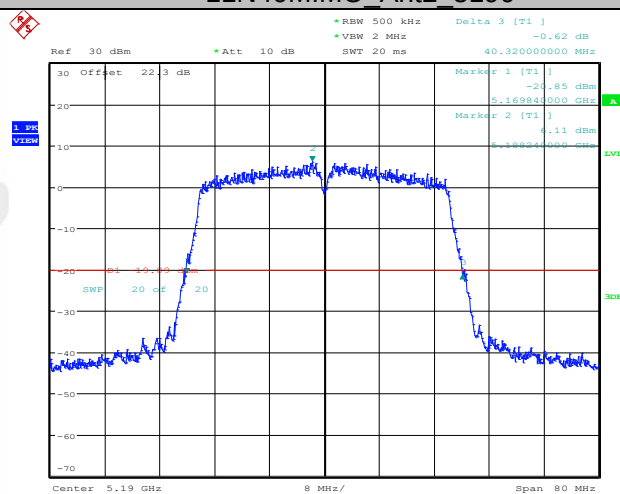
Date: 24.MAR.2022 20:49:09

11N40MIMO Ant1 5190



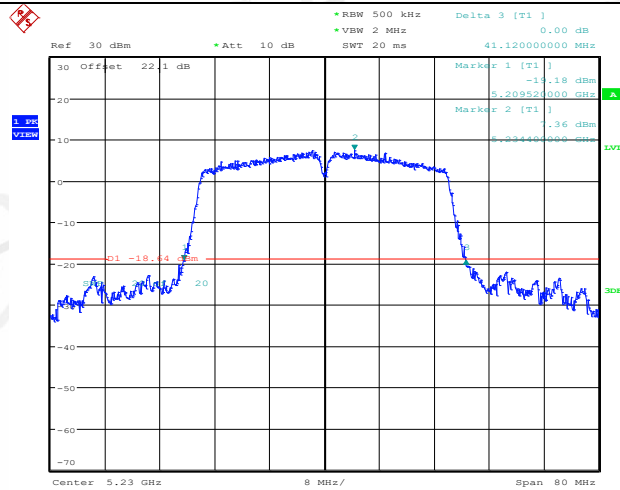
Date: 24.MAR.2022 20:57:51

11N40MIMO Ant2 5190



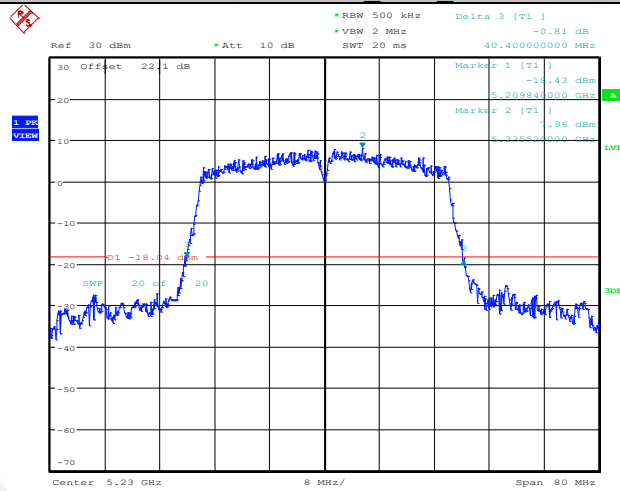
Date: 24.MAR.2022 21:01:17

11N40MIMO Ant1 5230



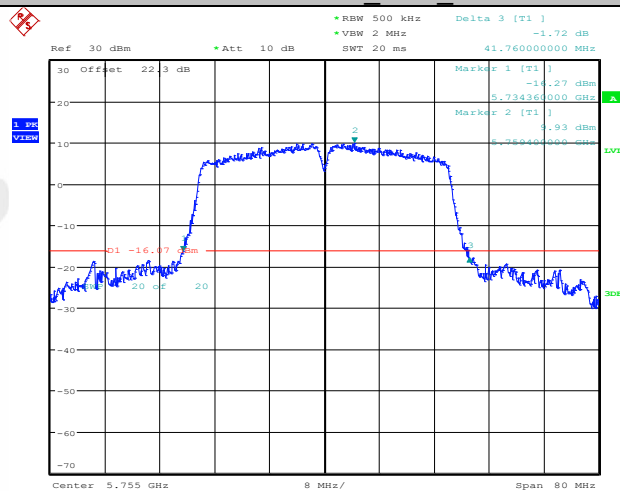
Date: 24.MAR.2022 21:07:20

11N40MIMO_Ant2_5230



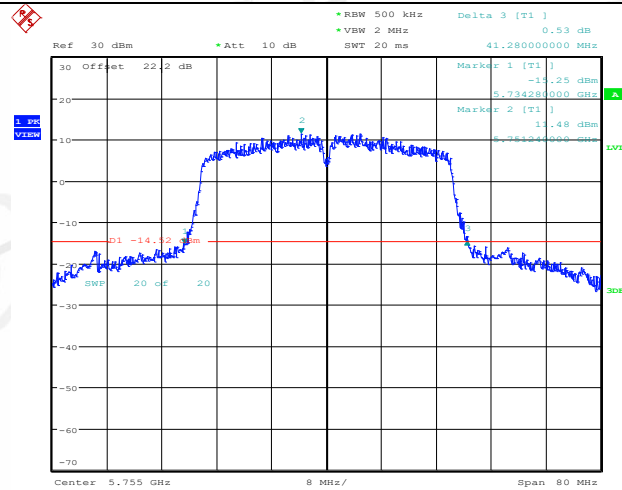
Date: 24.MAR.2022 21:10:56

11N40MIMO_Ant1_5755



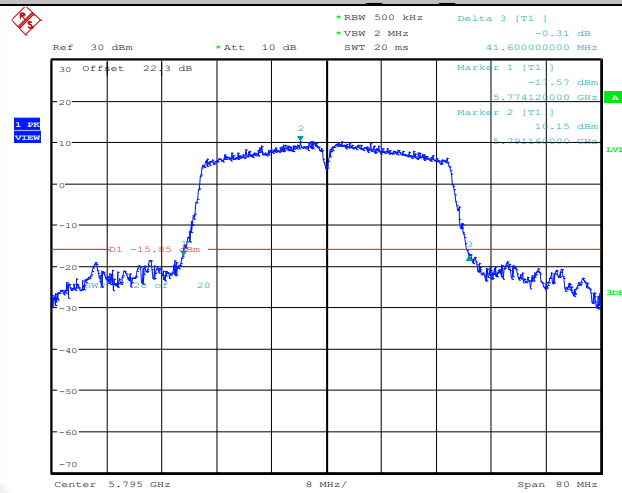
Date: 24.MAR.2022 21:14:50

11N40MIMO_Ant2_5755



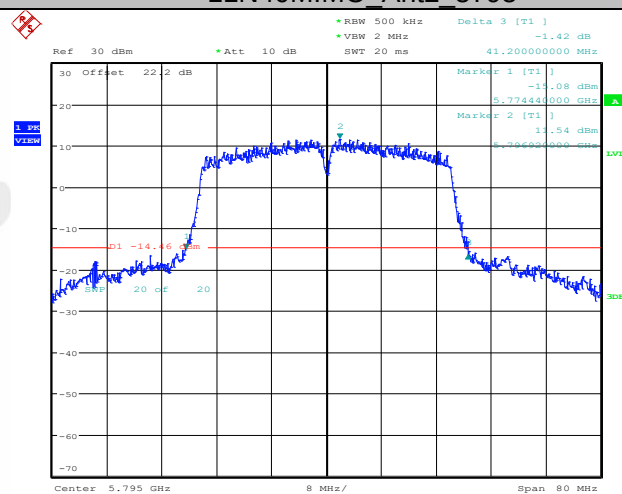
Date: 24.MAR.2022 21:18:42

11N40MIMO_Ant1_5795



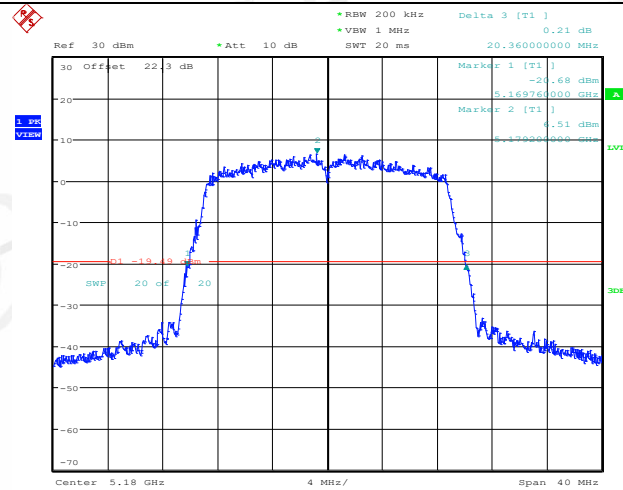
Date: 24.MAR.2022 21:23:23

11N40MIMO_Ant2_5795



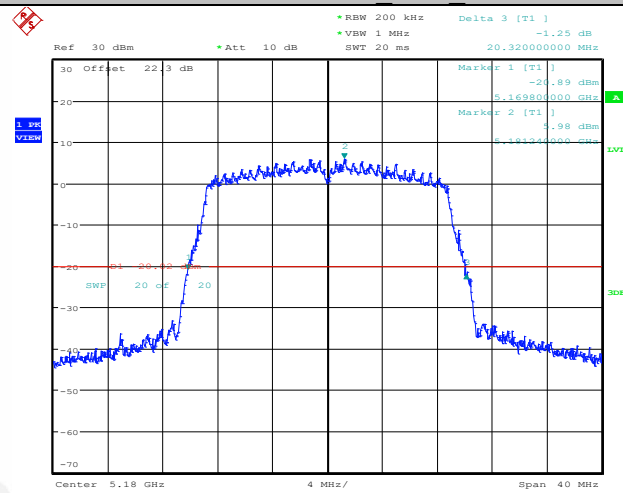
Date: 24.MAR.2022 21:27:16

11AC20MIMO_Ant1_5180



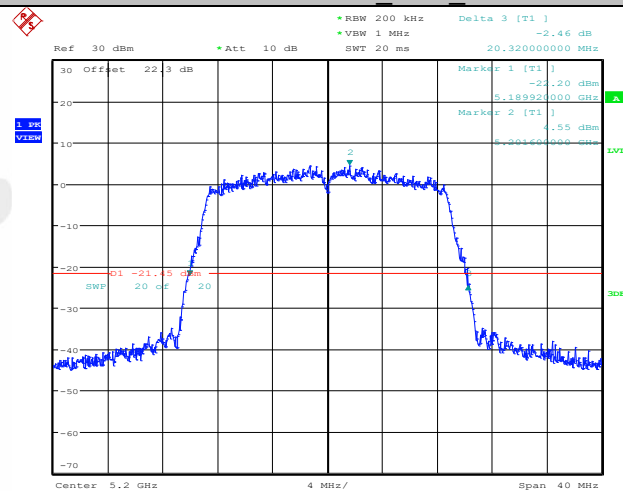
Date: 25.MAR.2022 08:22:33

11AC20MIMO_Ant2_5180



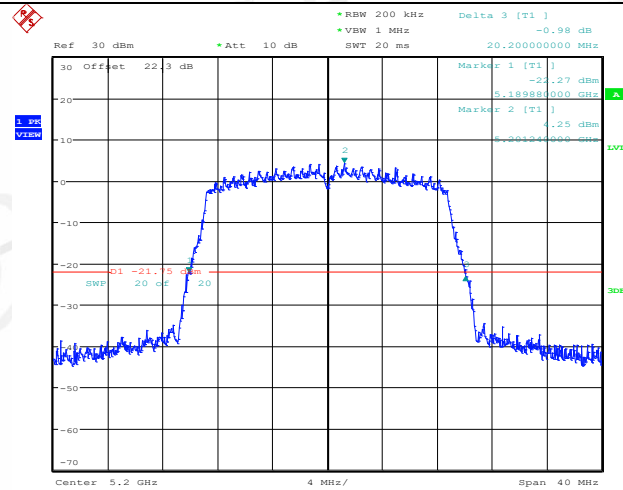
Date: 25.MAR.2022 08:26:00

11AC20MIMO_Ant1_5200



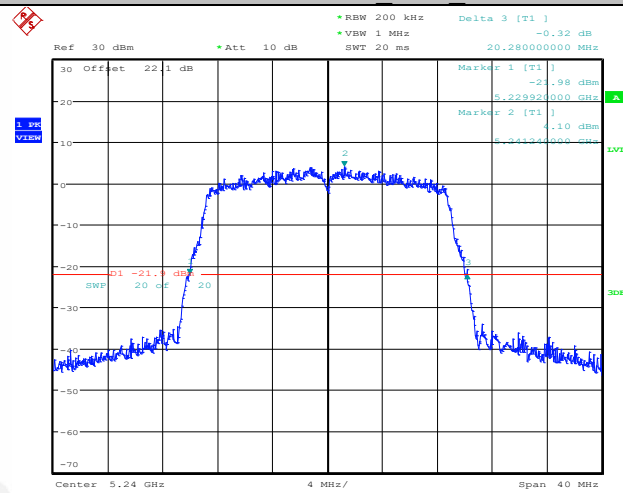
Date: 25.MAR.2022 08:33:40

11AC20MIMO_Ant2_5200



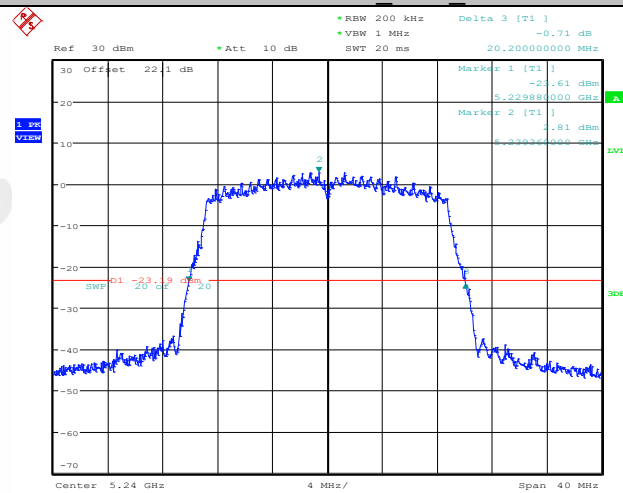
Date: 25.MAR.2022 08:36:56

11AC20MIMO Ant1 5240



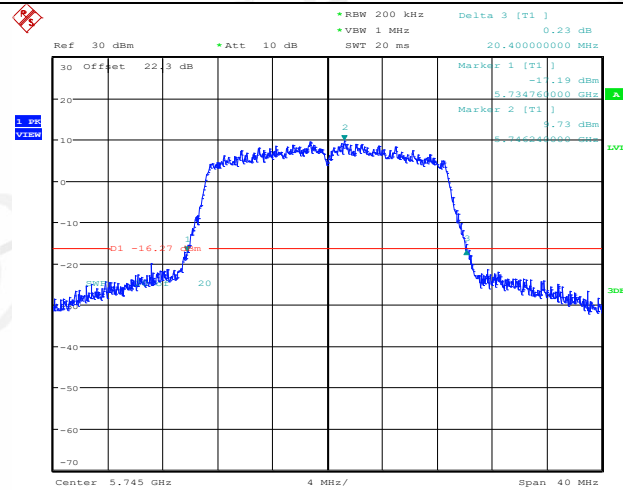
Date: 25.MAR.2022 08:44:39

11AC20MIMO Ant2 5240



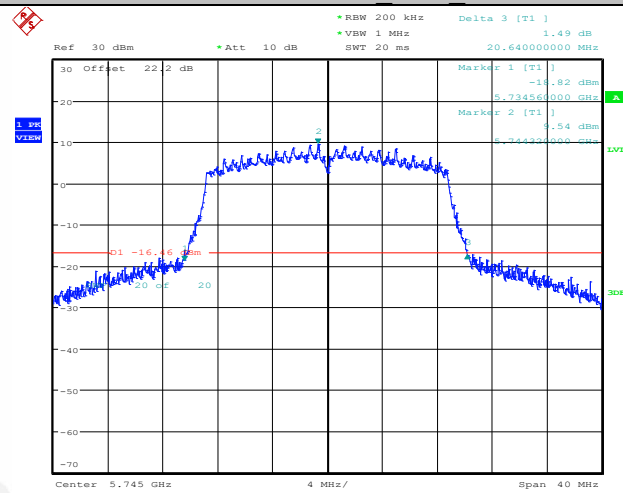
Date: 25.MAR.2022 08:48:15

11AC20MIMO Ant1 5745



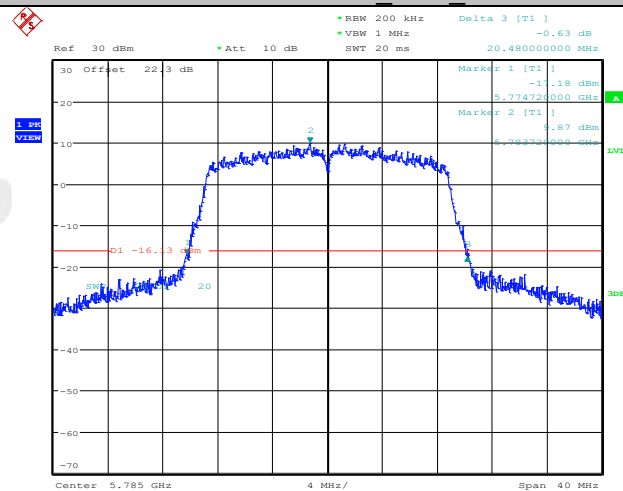
Date: 25.MAR.2022 08:55:00

11AC20MIMO_Ant2_5745



Date: 25.MAR.2022 08:58:51

11AC20MIMO_Ant1_5785



Date: 25.MAR.2022 09:03:45

11AC20MIMO_Ant2_5785



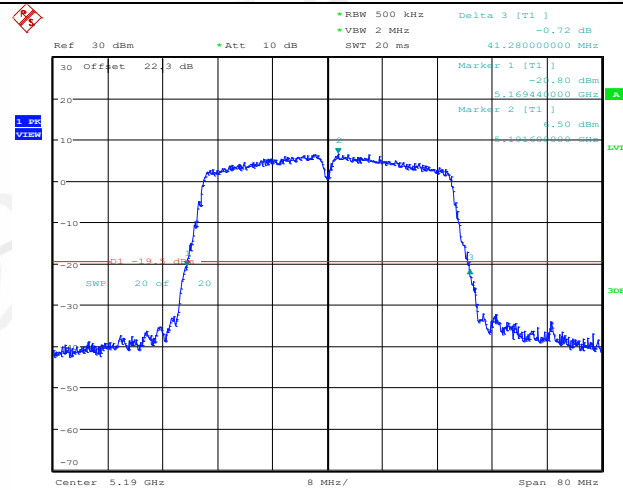
11AC20MIMO Ant1 5825



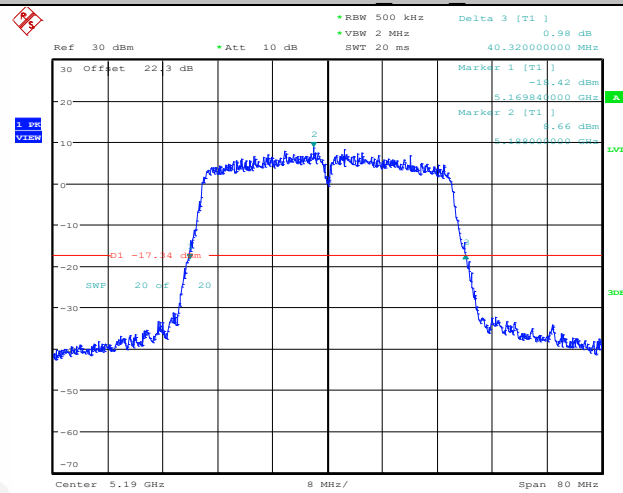
11AC20MIMO Ant2 5825



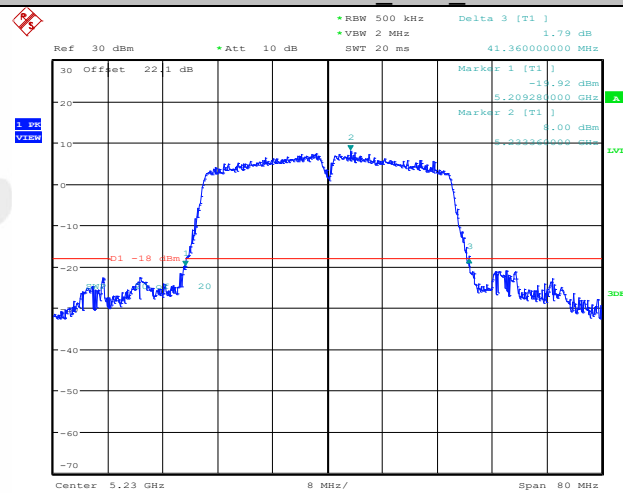
11AC40MIMO Ant1 5190



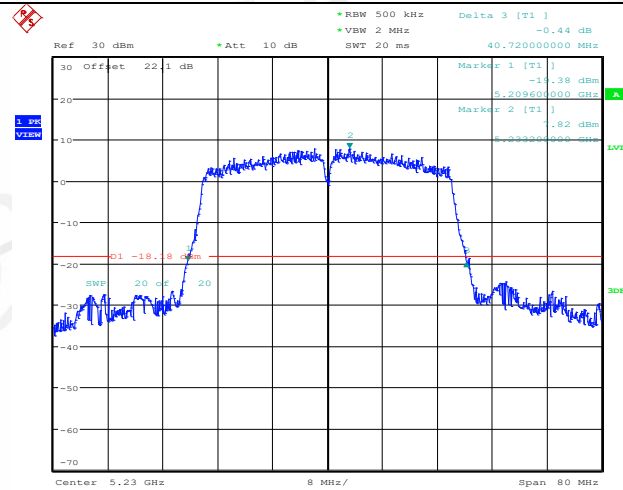
11AC40MIMO_Ant2_5190



11AC40MIMO_Ant1_5230

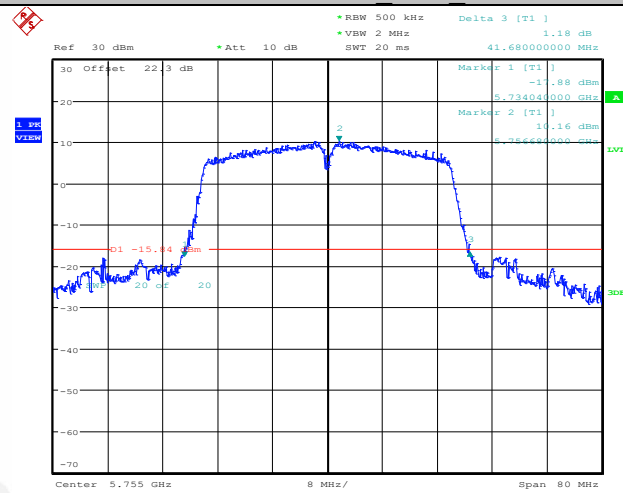


11AC40MIMO_Ant2_5230



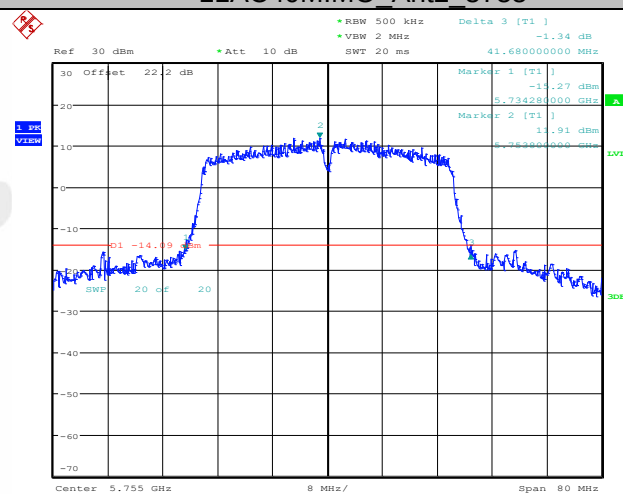
Date: 25.MAR.2022 09:33:36

11AC40MIMO_Ant1_5755



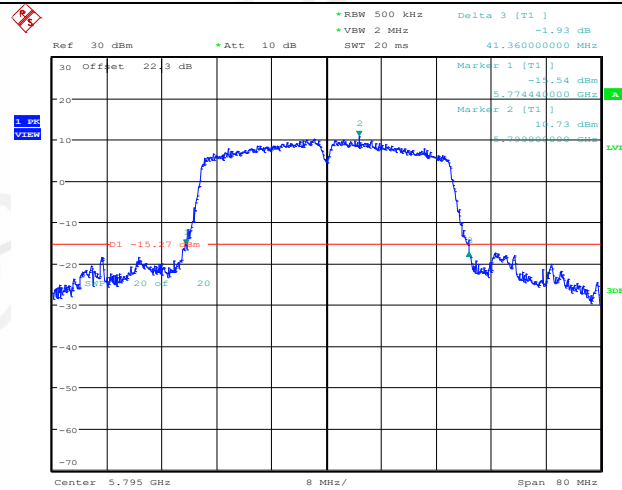
Date: 25.MAR.2022 09:37:27

11AC40MIMO_Ant2_5755

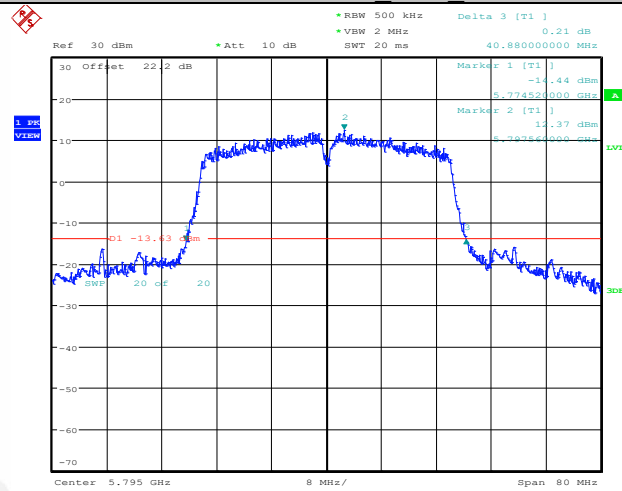


Date: 25.MAR.2022 09:41:18

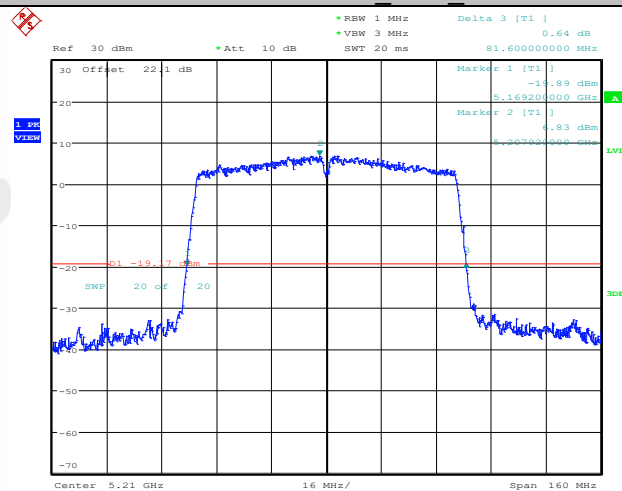
11AC40MIMO_Ant1_5795



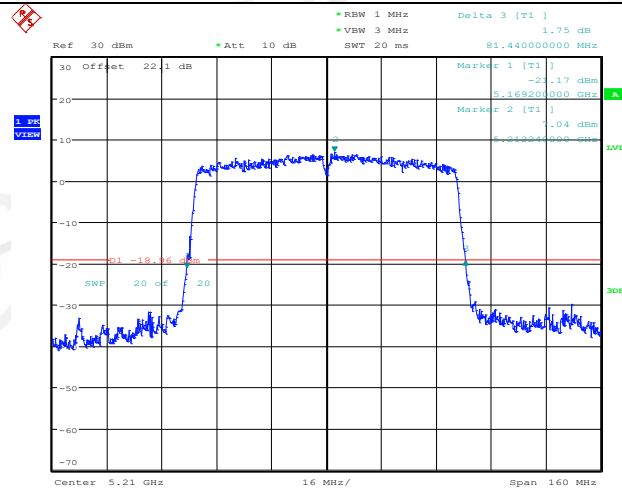
11AC40MIMO Ant2 5795



11AC80MIMO Ant1 5210

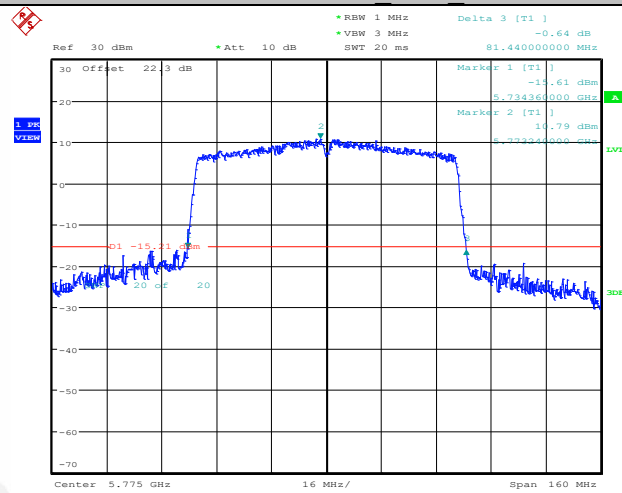


11AC80MIMO Ant2 5210



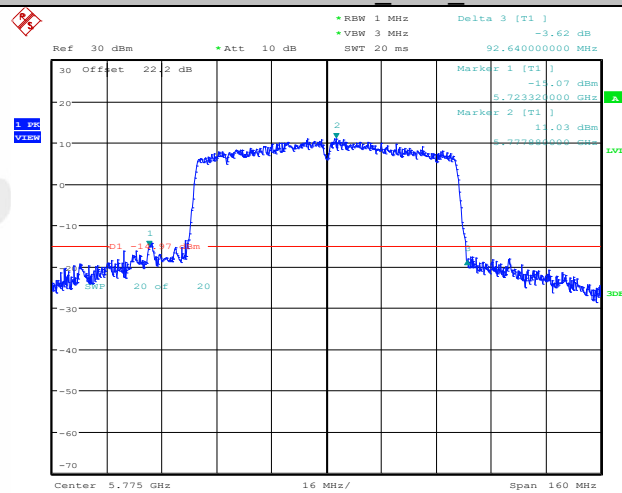
Date: 25.MAR.2022 09:59:28

11AC80MIMO Ant1 5775



Date: 25.MAR.2022 10:05:04

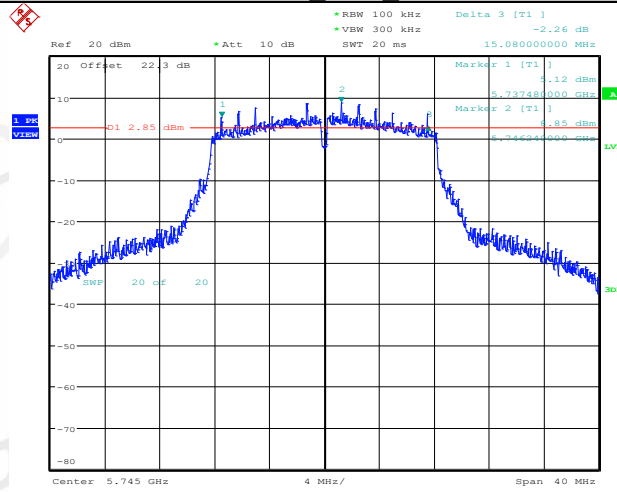
11AC80MIMO Ant2 5775



Date: 25.MAR.2022 10:10:06

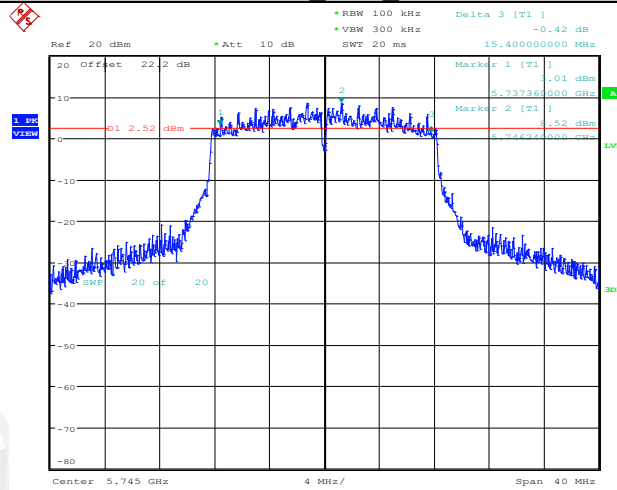
6db EBW:

11A_Ant1_5745



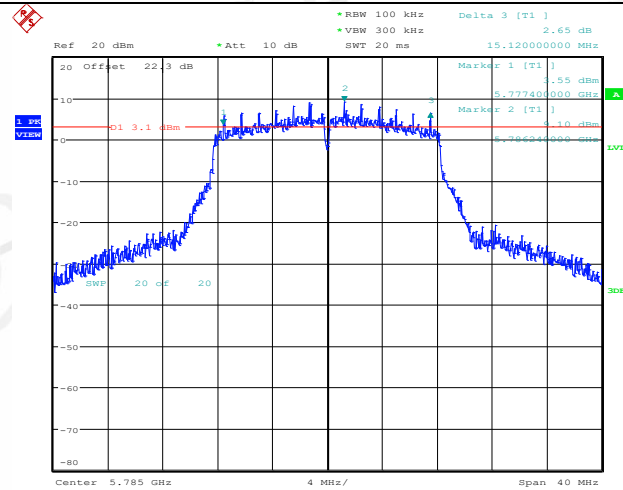
Date: 24.MAR.2022 18:10:36

11A_Ant2_5745



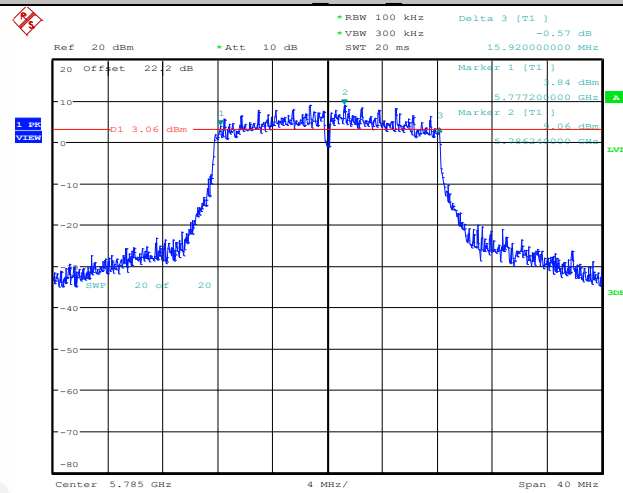
Date: 24.MAR.2022 19:53:24

11A_Ant1_5785



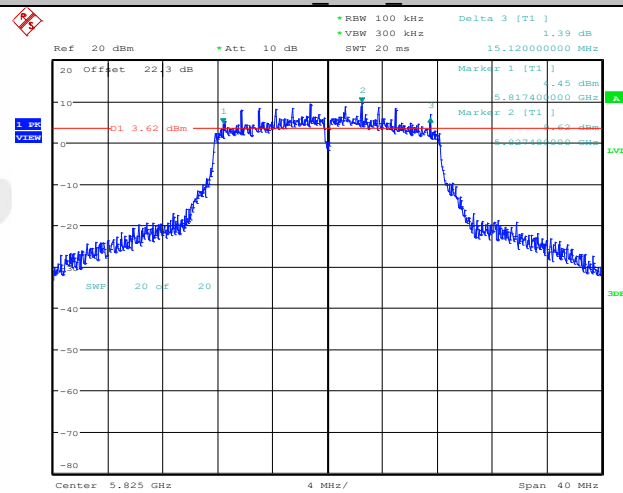
Date: 24.MAR.2022 19:19:36

11A Ant2 5785



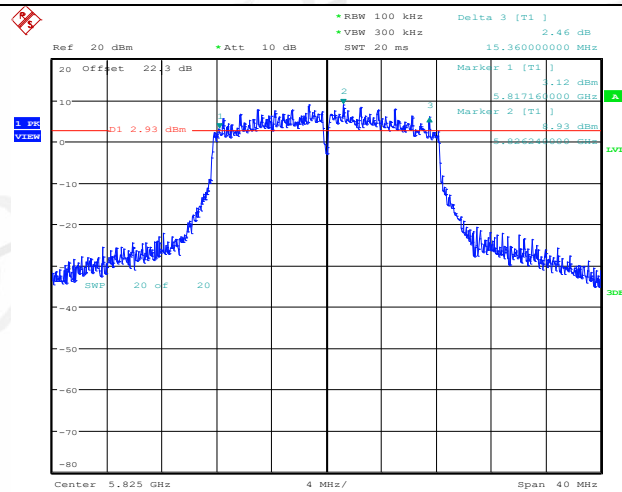
Date: 24.MAR.2022 19:57:43

11A Ant1 5825



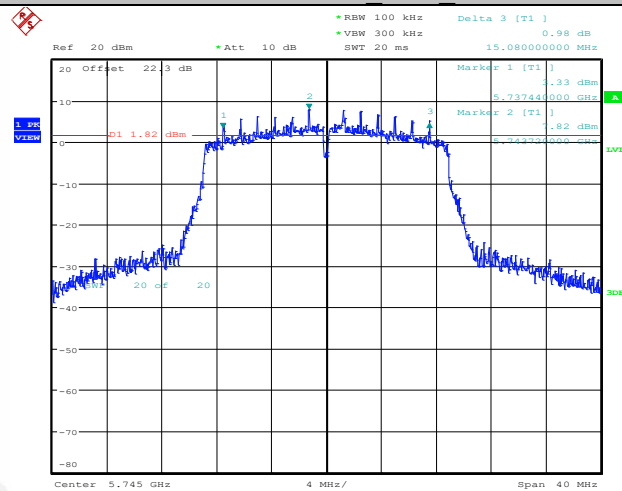
Date: 24.MAR.2022 19:23:37

11A Ant2 5825



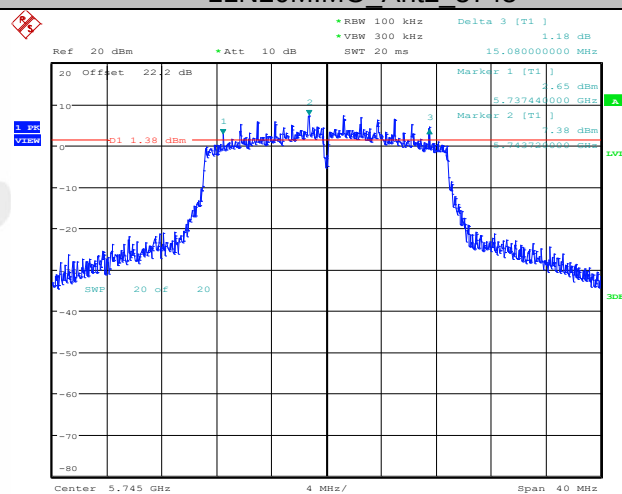
Date: 24.MAR.2022 20:01:46

11N20MIMO_Ant1_5745



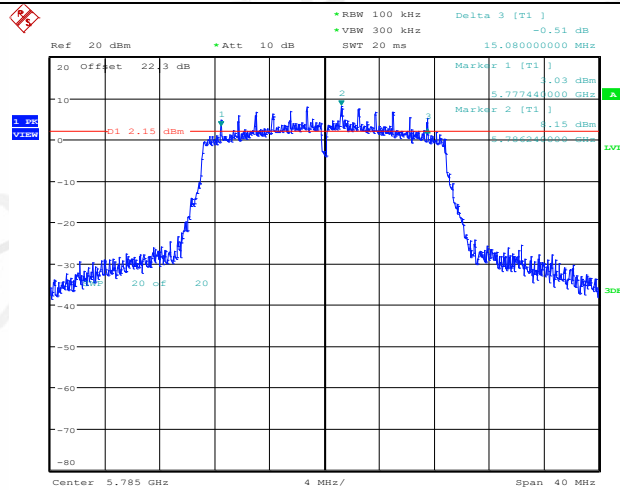
Date: 24.MAR.2022 20:29:22

11N20MIMO Ant2 5745



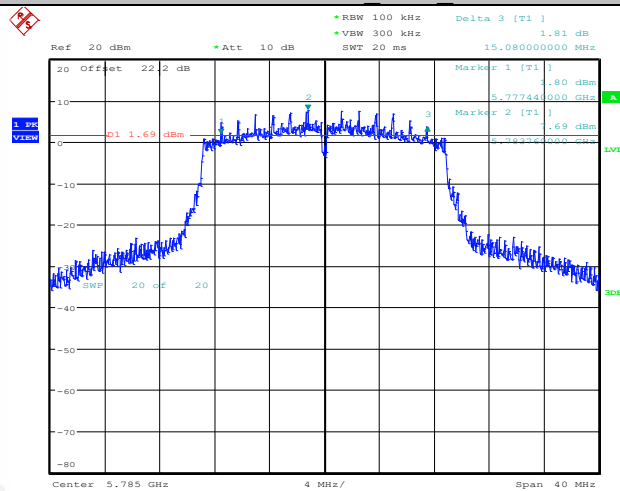
Date: 24.MAR.2022 20:33:16

11N20MIMO Ant1 5785



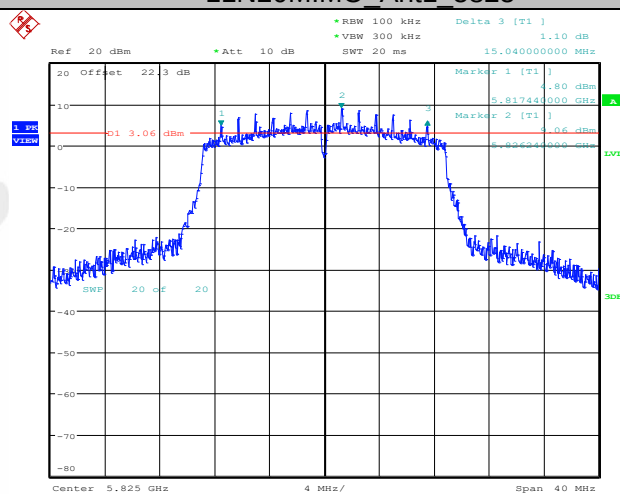
Date: 24.MAR.2022 20:37:34

11N20MIMO_Ant2_5785



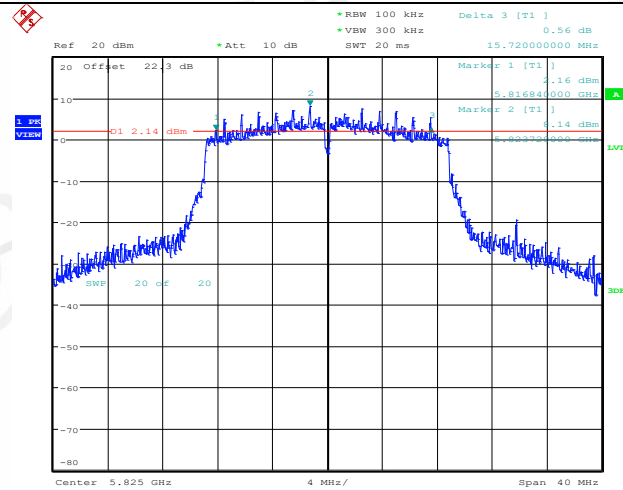
Date: 24.MAR.2022 20:41:07

11N20MIMO Ant1 5825

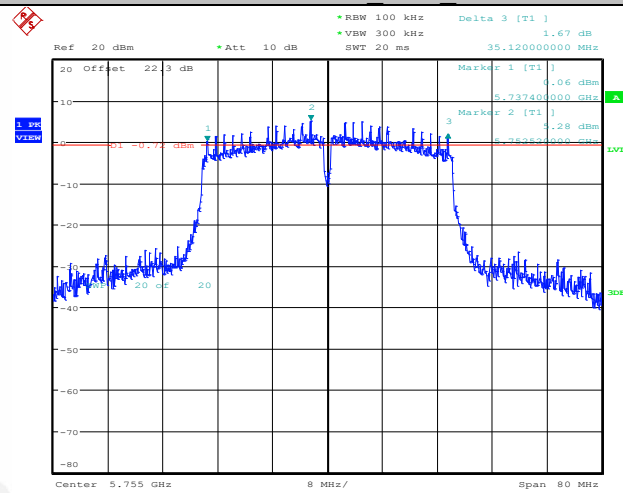


Date: 24.MAR.2022 20:45:26

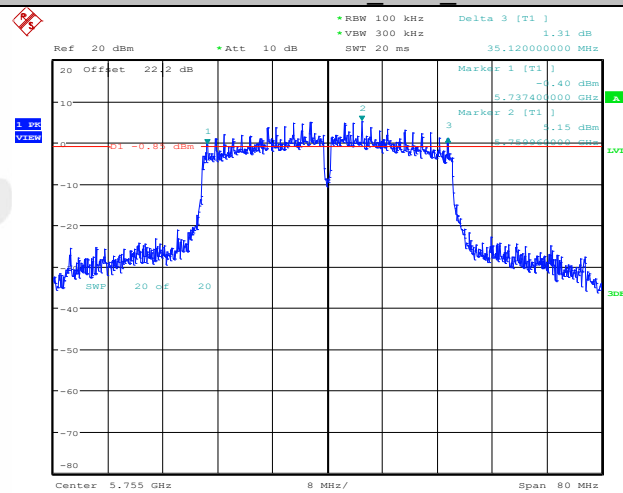
11N20MIMO Ant2 5825



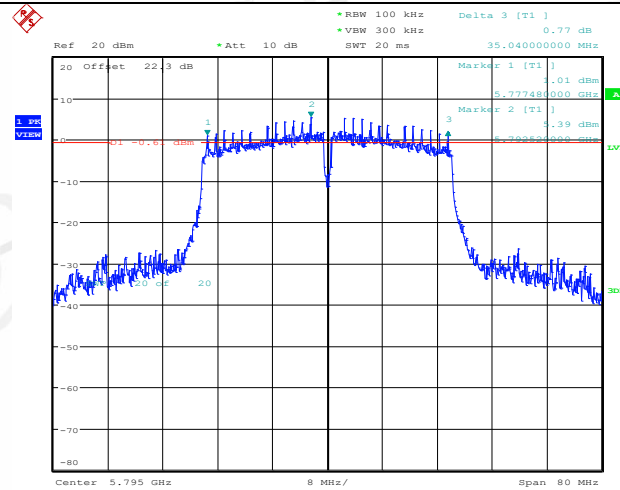
11N40MIMO_Ant1_5755



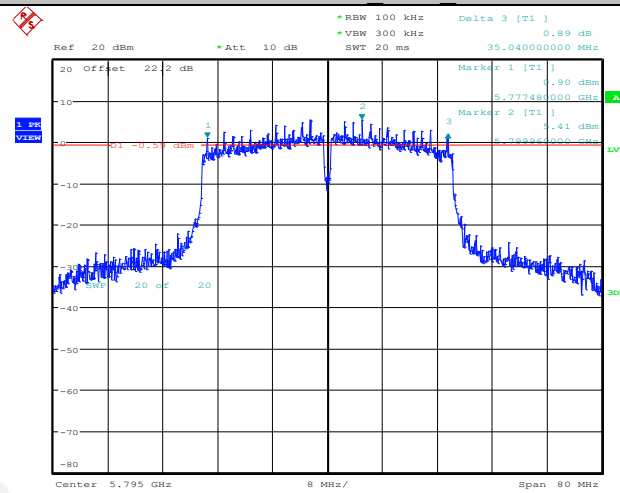
11N40MIMO_Ant2_5755



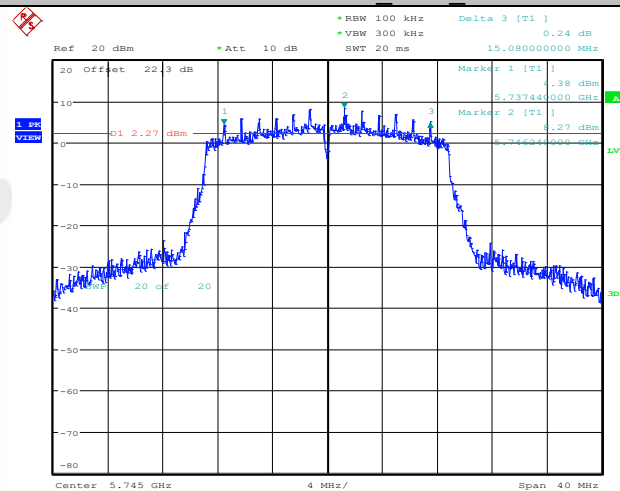
11N40MIMO_Ant1_5795



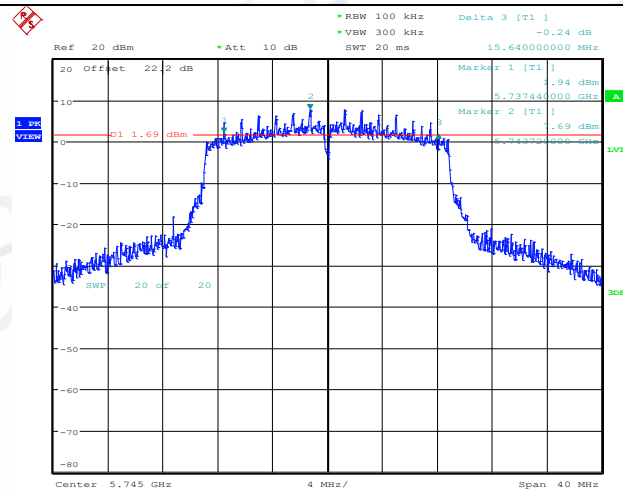
11N40MIMO_Ant2_5795



11AC20MIMO_Ant1_5745

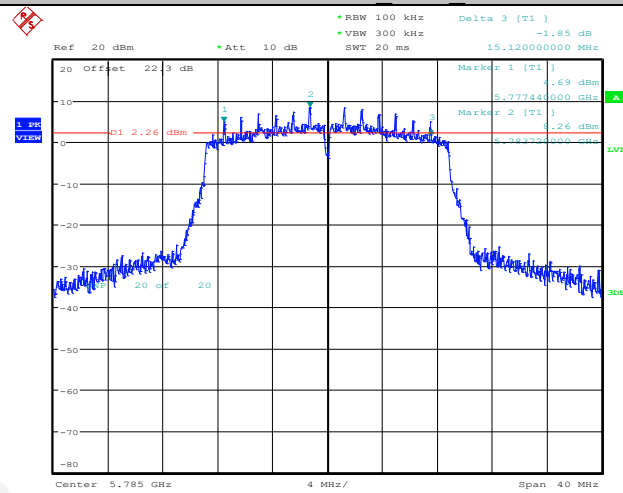


11AC20MIMO_Ant2_5745



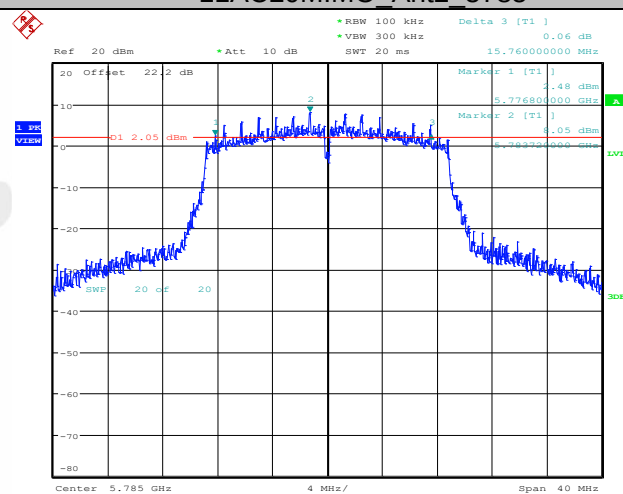
Date: 25.MAR.2022 08:59:03

11AC20MIMO_Ant1_5785



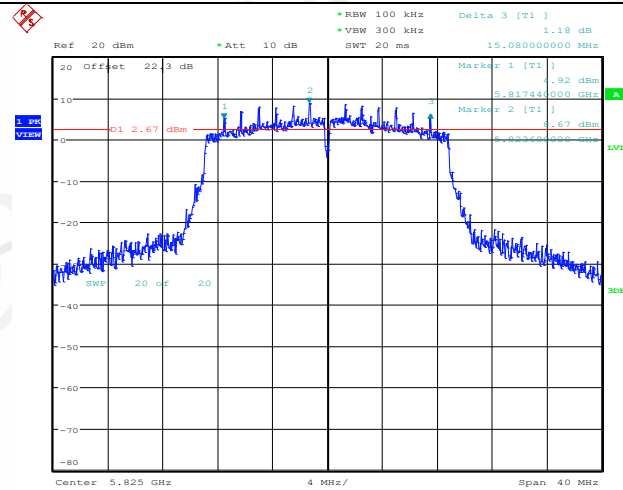
Date: 25.MAR.2022 09:03:57

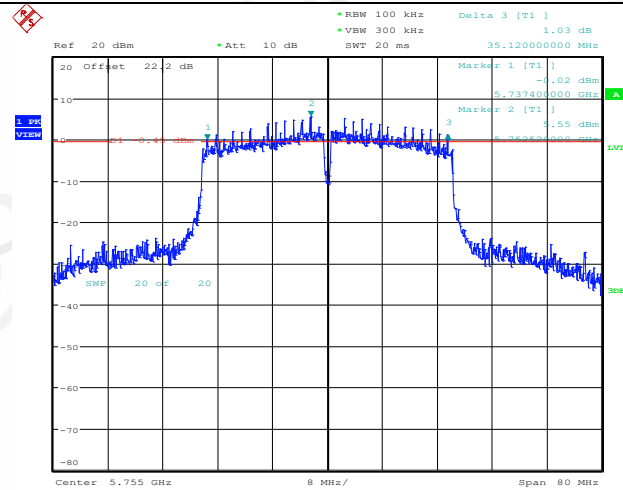
11AC20MIMO Ant2 5785



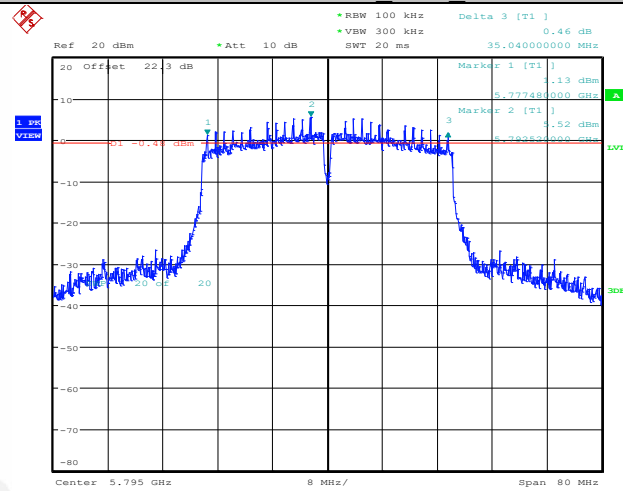
Date: 25.MAR.2022 09:07:30

11AC20MIMO Ant1 5825

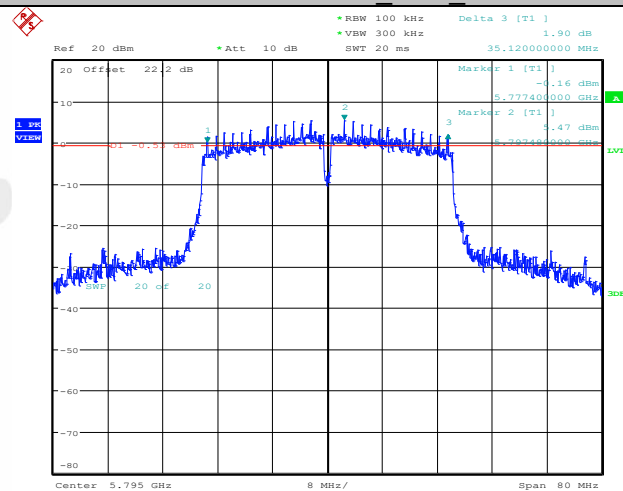




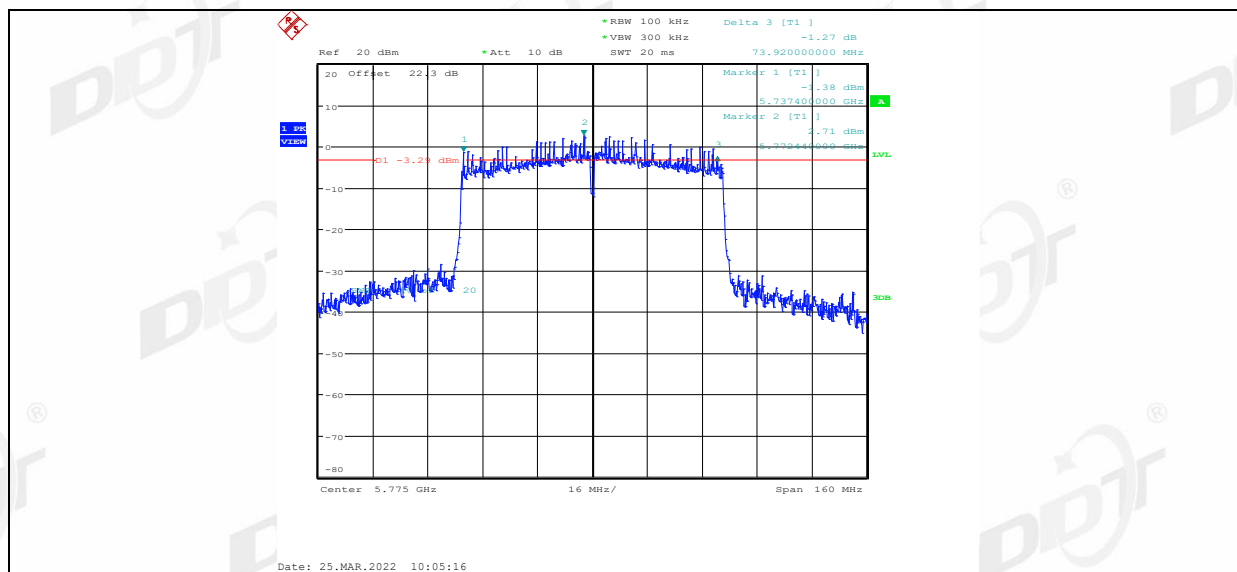
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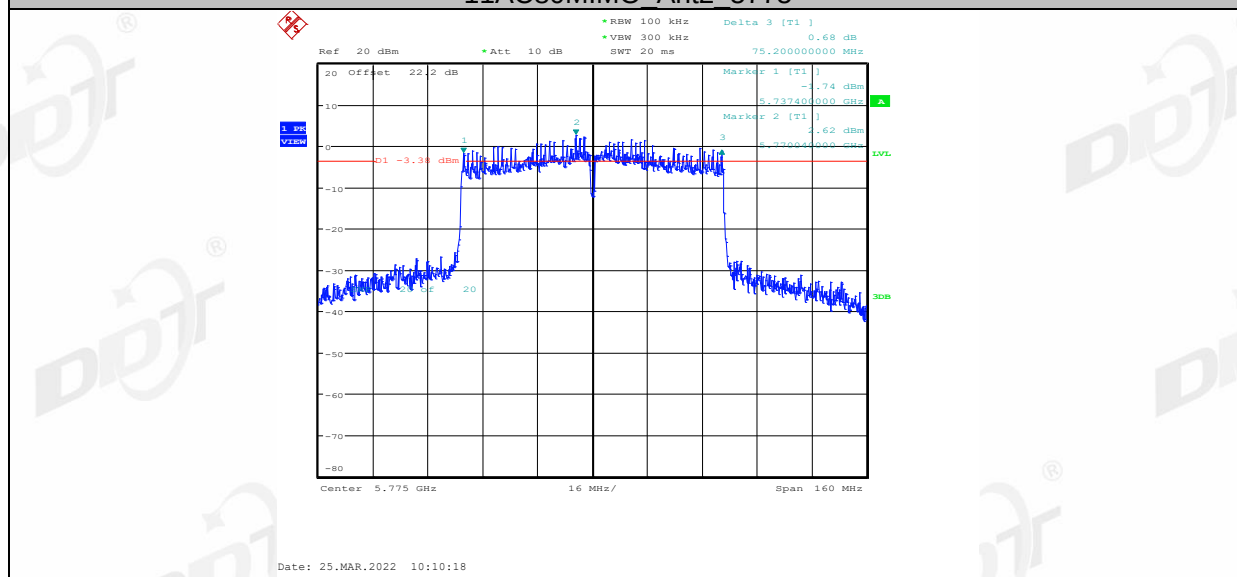
11AC40MIMO_Ant2_5795



11AC80MIMO_Ant1_5775



11AC80MIMO Ant2 5775



5. Maximum Output Power

5.1. Block diagram of test setup

Same as section 4.1

5.2. Limits

FCC Part15, Subpart E/ RSS-247		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	For FCC client devices: 250 mW (24 dBm)	5150-5250
	For RSS: e.i.r.p. power: not exceed 200 mW (23 dBm) or $10 + 10 \log_{10} B$, whichever is less	
	1 Watt (30 dBm)	5725-5850
Note: 1. For FCC: B=26 bandwidth; For ISDE: B=99% bandwidth. Note: 2. For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 5.86 dBi.		

5.3. Test Procedure

Connect each EUT's antenna output to power sensor by RF cable and attenuator

Measure the output power by power sensor.

5.4. Test Result

Test Mode	Antenna	Channel	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	16.30	<=24	Pass
	Ant2	5180	14.21	<=24	Pass
	Ant1	5200	16.20	<=24	Pass
	Ant2	5200	14.46	<=24	Pass
	Ant1	5240	17.18	<=24	Pass
	Ant2	5240	14.64	<=24	Pass
	Ant1	5745	19.50	<=30	Pass
	Ant2	5745	19.76	<=30	Pass
	Ant1	5785	19.68	<=30	Pass
	Ant2	5785	19.96	<=30	Pass
	Ant1	5825	20.24	<=30	Pass
	Ant2	5825	20.18	<=30	Pass
11N20MIMO	Ant1	5180	13.47	<=24	Pass
	Ant2	5180	13.03	<=24	Pass
	total	5180	16.27	<=24	Pass
	Ant1	5200	13.12	<=24	Pass
	Ant2	5200	13.20	<=24	Pass
	total	5200	16.17	<=24	Pass
	Ant1	5240	14.23	<=24	Pass
	Ant2	5240	13.18	<=24	Pass
	total	5240	16.75	<=24	Pass
	Ant1	5745	18.49	<=30	Pass
	Ant2	5745	18.34	<=30	Pass
	total	5745	21.43	<=30	Pass
	Ant1	5785	18.51	<=30	Pass
	Ant2	5785	18.76	<=30	Pass
	total	5785	21.65	<=30	Pass
	Ant1	5825	19.36	<=30	Pass
	Ant2	5825	18.72	<=30	Pass
	total	5825	22.06	<=30	Pass
11N40MIMO	Ant1	5190	15.37	<=24	Pass
	Ant2	5190	15.16	<=24	Pass
	total	5190	18.28	<=24	Pass
	Ant1	5230	16.26	<=24	Pass
	Ant2	5230	15.18	<=24	Pass
	total	5230	18.76	<=24	Pass
	Ant1	5755	18.55	<=30	Pass
	Ant2	5755	18.80	<=30	Pass
	total	5755	21.69	<=30	Pass
	Ant1	5795	18.69	<=30	Pass
	Ant2	5795	19.02	<=30	Pass
	total	5795	21.87	<=30	Pass
11AC20MIMO	Ant1	5180	12.53	<=24	Pass
	Ant2	5180	12.25	<=24	Pass
	total	5180	15.40	<=24	Pass
	Ant1	5200	12.45	<=24	Pass
	Ant2	5200	12.38	<=24	Pass

	total	5200	15.43	<=24	Pass
	Ant1	5240	13.33	<=24	Pass
	Ant2	5240	12.29	<=24	Pass
	total	5240	15.85	<=24	Pass
	Ant1	5745	18.46	<=30	Pass
	Ant2	5745	18.46	<=30	Pass
	total	5745	21.47	<=30	Pass
	Ant1	5785	18.61	<=30	Pass
	Ant2	5785	18.79	<=30	Pass
	total	5785	21.71	<=30	Pass
	Ant1	5825	19.45	<=30	Pass
	Ant2	5825	18.62	<=30	Pass
	total	5825	22.07	<=30	Pass
11AC40MIMO	Ant1	5190	15.33	<=24	Pass
	Ant2	5190	15.25	<=24	Pass
	total	5190	18.30	<=24	Pass
	Ant1	5230	16.28	<=24	Pass
	Ant2	5230	15.26	<=24	Pass
	total	5230	18.81	<=24	Pass
	Ant1	5755	18.75	<=30	Pass
	Ant2	5755	18.89	<=30	Pass
	total	5755	21.83	<=30	Pass
	Ant1	5795	18.80	<=30	Pass
	Ant2	5795	19.12	<=30	Pass
	total	5795	21.97	<=30	Pass
11AC80MIMO	Ant1	5210	15.45	<=24	Pass
	Ant2	5210	15.28	<=24	Pass
	total	5210	18.38	<=24	Pass
	Ant1	5775	18.77	<=30	Pass
	Ant2	5775	18.87	<=30	Pass
	total	5775	21.83	<=30	Pass

WB800D+W7613E

Test Mode	Antenna	Channel	Result [dBm]	Limit [dBm]	Verdict
11A	total	5180	17.96	<=24	Pass
	total	5200	17.89	<=24	Pass
	total	5240	18.52	<=24	Pass
	total	5745	20.68	<=30	Pass
	total	5785	20.66	<=30	Pass
	total	5825	20.74	<=30	Pass
11N20MIMO	total	5180	17.84	<=24	Pass
	total	5200	17.73	<=24	Pass
	total	5240	18.27	<=24	Pass
	total	5745	22.19	<=30	Pass
	total	5785	22.18	<=30	Pass
	total	5825	22.45	<=30	Pass
11N40MIMO	total	5190	19.36	<=24	Pass
	total	5230	19.75	<=24	Pass
	total	5755	22.29	<=30	Pass
	total	5795	22.32	<=30	Pass
11AC20MIMO	total	5180	17.37	<=24	Pass

	total	5200	17.27	<=24	Pass
	total	5240	17.61	<=24	Pass
	total	5745	22.11	<=30	Pass
	total	5785	22.20	<=30	Pass
	total	5825	22.44	<=30	Pass
11AC40MIMO	total	5190	19.35	<=24	Pass
	total	5230	19.77	<=24	Pass
	total	5755	22.32	<=30	Pass
	total	5795	22.40	<=30	Pass

Test Mode	Antenna	Channel	EIRP [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	19.15	<=24	Pass
	Ant2	5180	17.06	<=24	Pass
	Ant1	5200	19.05	<=24	Pass
	Ant2	5200	17.31	<=24	Pass
	Ant1	5240	20.03	<=24	Pass
	Ant2	5240	17.49	<=24	Pass
	Ant1	5745	22.35	<=30	Pass
	Ant2	5745	22.61	<=30	Pass
	Ant1	5785	22.53	<=30	Pass
	Ant2	5785	22.81	<=30	Pass
	Ant1	5825	23.09	<=30	Pass
	Ant2	5825	23.03	<=30	Pass
11N20MIMO	Ant1	5180	16.32	<=24	Pass
	Ant2	5180	15.88	<=24	Pass
	total	5180	19.12	<=24	Pass
	Ant1	5200	15.97	<=24	Pass
	Ant2	5200	16.05	<=24	Pass
	total	5200	19.02	<=24	Pass
	Ant1	5240	17.08	<=24	Pass
	Ant2	5240	16.03	<=24	Pass
	total	5240	19.60	<=24	Pass
	Ant1	5745	21.34	<=30	Pass
	Ant2	5745	21.19	<=30	Pass
	total	5745	24.28	<=30	Pass
	Ant1	5785	21.36	<=30	Pass
	Ant2	5785	21.61	<=30	Pass
	total	5785	24.50	<=30	Pass
	Ant1	5825	22.21	<=30	Pass
	Ant2	5825	21.57	<=30	Pass
	total	5825	24.91	<=30	Pass
11N40MIMO	Ant1	5190	18.22	<=24	Pass
	Ant2	5190	18.01	<=24	Pass
	total	5190	21.13	<=24	Pass
	Ant1	5230	19.11	<=24	Pass
	Ant2	5230	18.03	<=24	Pass
	total	5230	21.61	<=24	Pass
	Ant1	5755	21.40	<=30	Pass
	Ant2	5755	21.65	<=30	Pass
	total	5755	24.54	<=30	Pass

	Ant1	5795	21.54	<=30	Pass
	Ant2	5795	21.87	<=30	Pass
	total	5795	24.72	<=30	Pass
11AC20MIMO	Ant1	5180	15.38	<=24	Pass
	Ant2	5180	15.10	<=24	Pass
	total	5180	18.25	<=24	Pass
	Ant1	5200	15.30	<=24	Pass
	Ant2	5200	15.23	<=24	Pass
	total	5200	18.28	<=24	Pass
	Ant1	5240	16.18	<=24	Pass
	Ant2	5240	15.14	<=24	Pass
	total	5240	18.70	<=24	Pass
	Ant1	5745	21.31	<=30	Pass
	Ant2	5745	21.31	<=30	Pass
	total	5745	24.32	<=30	Pass
	Ant1	5785	21.46	<=30	Pass
	Ant2	5785	21.64	<=30	Pass
	total	5785	24.56	<=30	Pass
	Ant1	5825	22.30	<=30	Pass
	Ant2	5825	21.47	<=30	Pass
	total	5825	24.92	<=30	Pass
11AC40MIMO	Ant1	5190	18.18	<=24	Pass
	Ant2	5190	18.10	<=24	Pass
	total	5190	21.15	<=24	Pass
	Ant1	5230	19.13	<=24	Pass
	Ant2	5230	18.11	<=24	Pass
	total	5230	21.66	<=24	Pass
	Ant1	5755	21.60	<=30	Pass
	Ant2	5755	21.74	<=30	Pass
	total	5755	24.68	<=30	Pass
	Ant1	5795	21.65	<=30	Pass
	Ant2	5795	21.97	<=30	Pass
	total	5795	24.82	<=30	Pass
11AC80MIMO	Ant1	5210	18.30	<=24	Pass
	Ant2	5210	18.13	<=24	Pass
	total	5210	21.23	<=24	Pass
	Ant1	5775	21.62	<=30	Pass
	Ant2	5775	21.72	<=30	Pass
	total	5775	24.68	<=30	Pass

WB800D+W7613E

Test Mode	Antenna	Channel	EIRP [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	20.81	<=24	Pass
	Ant1	5200	20.74	<=24	Pass
	Ant1	5240	21.37	<=24	Pass
	Ant1	5745	23.53	<=30	Pass
	Ant1	5785	23.51	<=30	Pass
	Ant1	5825	23.59	<=30	Pass
11N20MIMO	total	5180	20.69	<=24	Pass
	total	5200	20.58	<=24	Pass
	total	5240	21.12	<=24	Pass

	total	5745	25.04	≤ 30	Pass
	total	5785	25.03	≤ 30	Pass
	total	5825	25.30	≤ 30	Pass
11N40MIMO	total	5190	22.21	≤ 24	Pass
	total	5230	22.60	≤ 24	Pass
	total	5755	25.14	≤ 30	Pass
	total	5795	25.17	≤ 30	Pass
11AC20MIMO	total	5180	20.22	≤ 24	Pass
	total	5200	20.12	≤ 24	Pass
	total	5240	20.46	≤ 24	Pass
	total	5745	24.96	≤ 30	Pass
	total	5785	25.05	≤ 30	Pass
11AC40MIMO	total	5825	25.29	≤ 30	Pass
	total	5190	22.20	≤ 24	Pass
	total	5230	22.62	≤ 24	Pass
	total	5755	25.17	≤ 30	Pass
	total	5795	25.25	≤ 30	Pass

6. Power Spectral Density

6.1. Block diagram of test setup

Same with 4.1

6.2. Limits

FCC Part15, Subpart E/ RSS-247		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	For FCC: Other than Mobile and portable:17 dBm/MHz Mobile and portable client devices:11 dBm/MHz	5150-5250
	For RSS eirp:10 dBm/MHz	
	30 dBm/500 kHz	5725-5850
Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 5.86 dBi.		

6.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyser and use the following settings:

5150 MHz~5250 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz-5850 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

6.4. Test Result

Test Mode	Antenna	Channel	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	6.52	≤ 11	Pass
	Ant2	5180	6.06	≤ 11	Pass
	Ant1	5200	6.62	≤ 11	Pass
	Ant2	5200	6.26	≤ 11	Pass
	Ant1	5240	7.06	≤ 11	Pass
	Ant2	5240	5.89	≤ 11	Pass
11N20MIMO	Ant1	5180	3.54	≤ 11	Pass
	Ant2	5180	3.48	≤ 11	Pass
	total	5180	6.52	≤ 11	Pass
	Ant1	5200	3.46	≤ 11	Pass
	Ant2	5200	3.64	≤ 11	Pass
	total	5200	6.56	≤ 11	Pass
	Ant1	5240	4.42	≤ 11	Pass
	Ant2	5240	3.47	≤ 11	Pass
	total	5240	6.98	≤ 11	Pass
11N40MIMO	Ant1	5190	3.09	≤ 11	Pass
	Ant2	5190	3.22	≤ 11	Pass
	total	5190	6.17	≤ 11	Pass
	Ant1	5230	3.73	≤ 11	Pass
	Ant2	5230	2.68	≤ 11	Pass
	total	5230	6.25	≤ 11	Pass
11AC20MIMO	Ant1	5180	3.12	≤ 11	Pass
	Ant2	5180	2.97	≤ 11	Pass
	total	5180	6.06	≤ 11	Pass
	Ant1	5200	3.04	≤ 11	Pass
	Ant2	5200	3.37	≤ 11	Pass
	total	5200	6.22	≤ 11	Pass
	Ant1	5240	3.38	≤ 11	Pass
	Ant2	5240	2.72	≤ 11	Pass
	total	5240	6.07	≤ 11	Pass
11AC40MIMO	Ant1	5190	3.16	≤ 11	Pass
	Ant2	5190	2.92	≤ 11	Pass
	total	5190	6.05	≤ 11	Pass
	Ant1	5230	3.62	≤ 11	Pass
	Ant2	5230	3.04	≤ 11	Pass
	total	5230	6.35	≤ 11	Pass
11AC80MIMO	Ant1	5210	0.55	≤ 11	Pass
	Ant2	5210	0.02	≤ 11	Pass
	total	5210	3.30	≤ 11	Pass

(5725-5850)

Test Mode	Antenna	Channel	Result [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
11A	Ant1	5745	6.92	≤ 30	Pass
	Ant2	5745	9.41	≤ 30	Pass
	Ant1	5785	8.13	≤ 30	Pass
	Ant2	5785	9.46	≤ 30	Pass

	Ant1	5825	8.34	<=30	Pass
	Ant2	5825	9.85	<=30	Pass
11N20MIMO	Ant1	5745	7.23	<=30	Pass
	Ant2	5745	7.01	<=30	Pass
	total	5745	10.13	<=30	Pass
	Ant1	5785	7.52	<=30	Pass
	Ant2	5785	7.22	<=30	Pass
	total	5785	10.38	<=30	Pass
	Ant1	5825	7.89	<=30	Pass
	Ant2	5825	7.40	<=30	Pass
	total	5825	10.66	<=30	Pass
11N40MIMO	Ant1	5755	4.15	<=30	Pass
	Ant2	5755	4.57	<=30	Pass
	total	5755	7.38	<=30	Pass
	Ant1	5795	4.43	<=30	Pass
	Ant2	5795	4.92	<=30	Pass
	total	5795	7.69	<=30	Pass
11AC20MIMO	Ant1	5745	7.03	<=30	Pass
	Ant2	5745	6.61	<=30	Pass
	total	5745	9.84	<=30	Pass
	Ant1	5785	7.34	<=30	Pass
	Ant2	5785	6.96	<=30	Pass
	total	5785	10.16	<=30	Pass
	Ant1	5825	7.79	<=30	Pass
	Ant2	5825	7.25	<=30	Pass
	total	5825	10.54	<=30	Pass
11AC40MIMO	Ant1	5755	4.55	<=30	Pass
	Ant2	5755	4.77	<=30	Pass
	total	5755	7.67	<=30	Pass
	Ant1	5795	4.49	<=30	Pass
	Ant2	5795	4.83	<=30	Pass
	total	5795	7.67	<=30	Pass
11AC80MIMO	Ant1	5775	2.32	<=30	Pass
	Ant2	5775	2.20	<=30	Pass
	total	5775	5.27	<=30	Pass

WB800D+W7613E

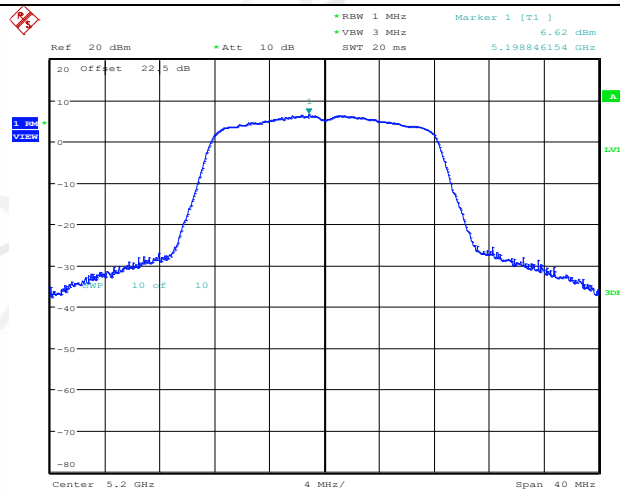
Test Mode	Antenna	Channel	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	total	5180	7.62	<=11	Pass
	total	5200	7.96	<=11	Pass
	total	5240	8.19	<=11	Pass
11N20MIMO	total	5180	7.81	<=11	Pass
	total	5200	7.85	<=11	Pass
	total	5240	8.19	<=11	Pass
11N40MIMO	total	5190	6.98	<=11	Pass
	total	5230	7.06	<=11	Pass
11AC20MIMO	total	5180	7.47	<=11	Pass
	total	5200	7.65	<=11	Pass
	total	5240	7.44	<=11	Pass
11AC40MIMO	total	5190	6.87	<=11	Pass
	total	5230	7.08	<=11	Pass

(5725-5850)

Test Mode	Antenna	Channel	Result [dBm/500kHz]	Limit [dBm/500kHz]	Verdict
11A	total	5745	9.92	<=30	Pass
	total	5785	9.87	<=30	Pass
	total	5825	10.15	<=30	Pass
11N20MIMO	total	5745	10.76	<=30	Pass
	total	5785	10.89	<=30	Pass
	total	5825	10.96	<=30	Pass
11N40MIMO	total	5755	7.89	<=30	Pass
	total	5795	8.10	<=30	Pass
11AC20MIMO	total	5745	10.44	<=30	Pass
	total	5785	10.58	<=30	Pass
	total	5825	10.84	<=30	Pass
11AC40MIMO	total	5755	8.14	<=30	Pass
	total	5795	8.06	<=30	Pass

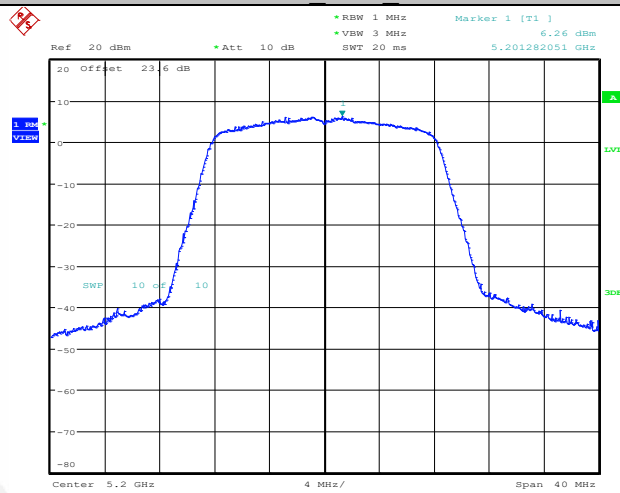
6.5. Original test data





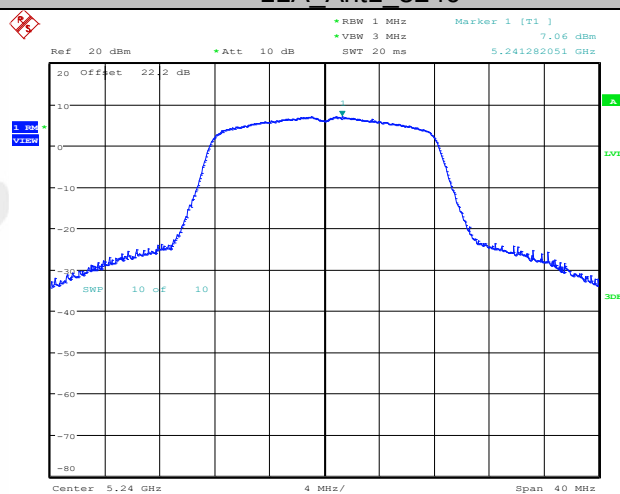
Date: 24.MAR.2022 18:00:51

11A Ant2 5200



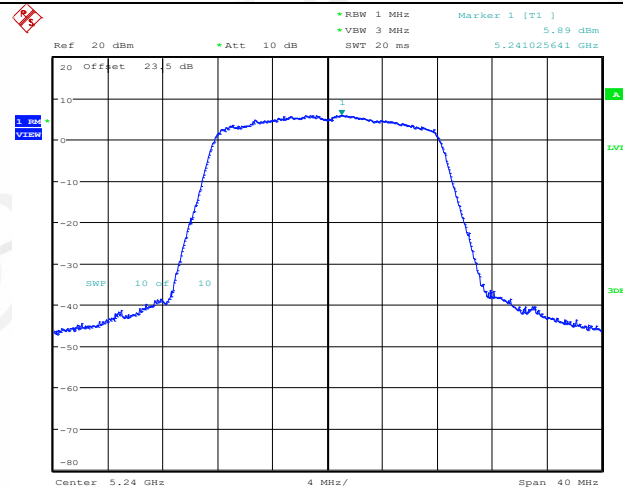
Date: 24.MAR.2022 19:48:50

11A Ant1 5240



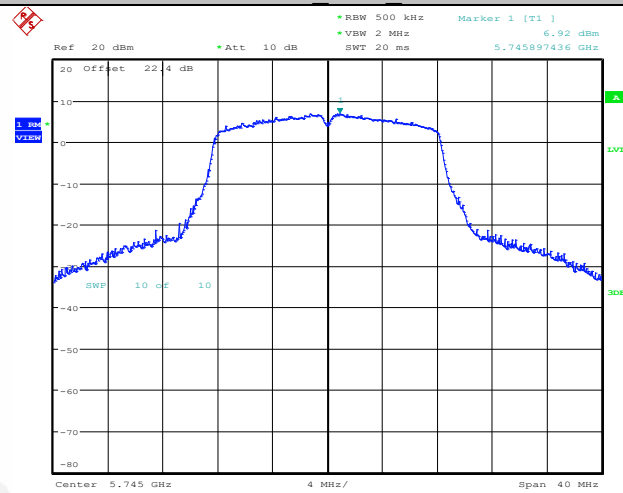
Date: 24.MAR.2022 18:06:21

11A Ant2 5240



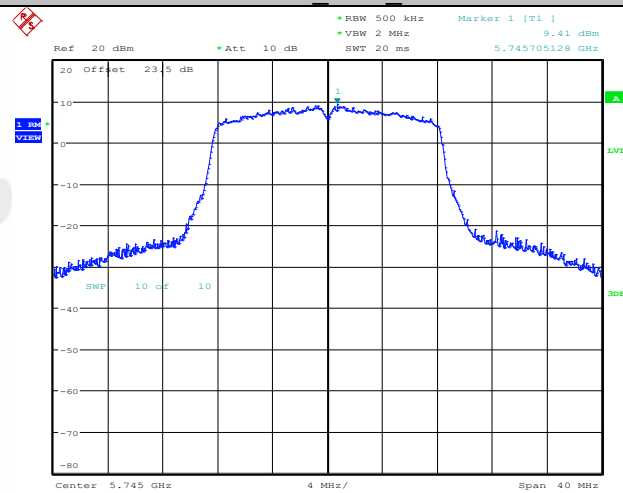
Date: 24.MAR.2022 19:50:40

11A Ant1 5745



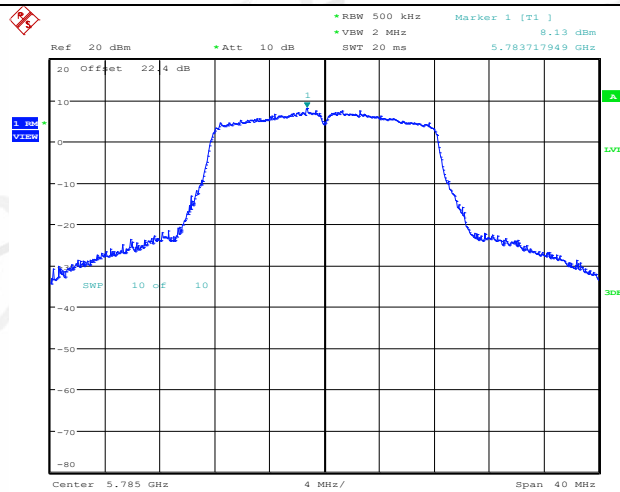
Date: 24.MAR.2022 18:15:44

11A Ant2 5745



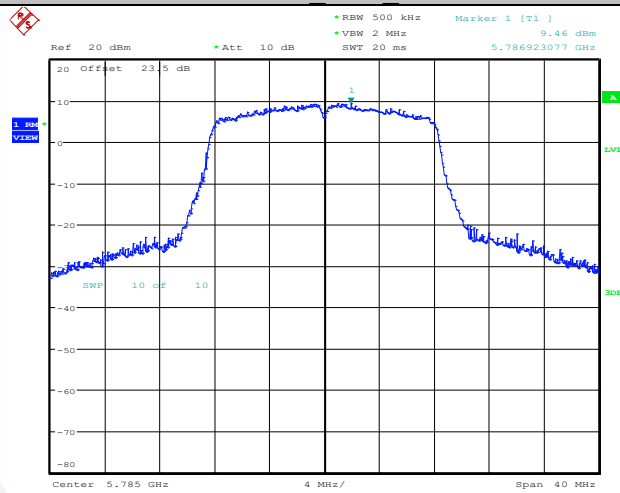
Date: 24.MAR.2022 19:54:42

11A Ant1 5785



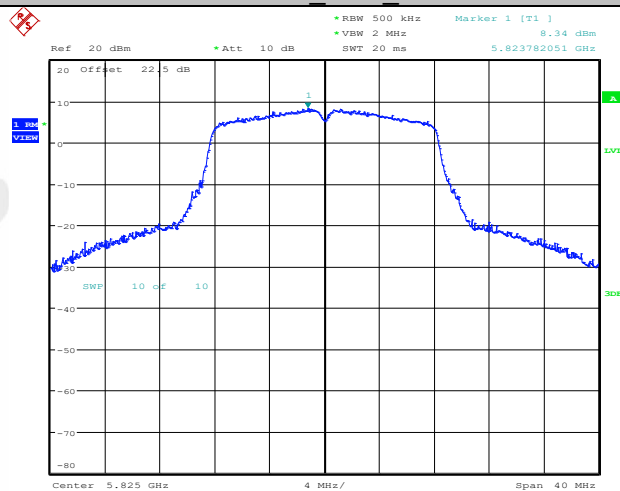
Date: 24.MAR.2022 19:20:54

11A Ant2 5785



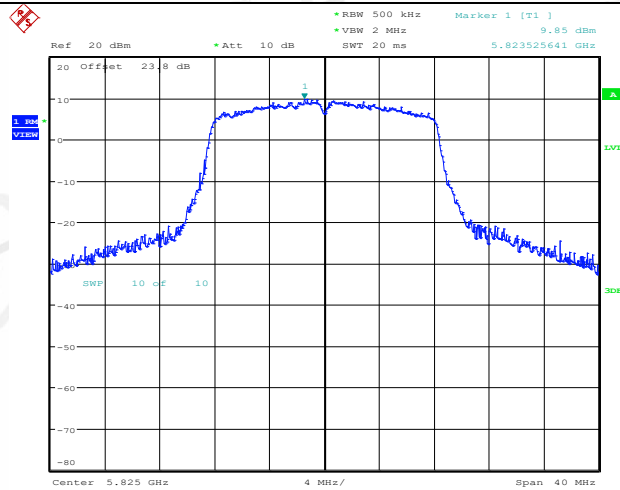
Date: 24.MAR.2022 19:59:00

11A Ant1 5825



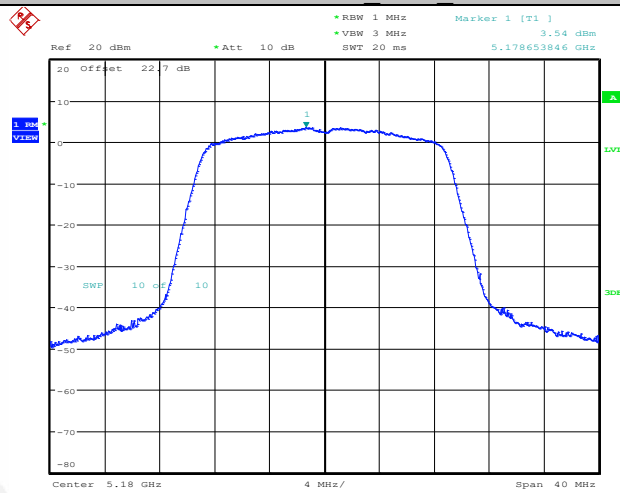
Date: 24.MAR.2022 19:24:57

11A Ant2 5825



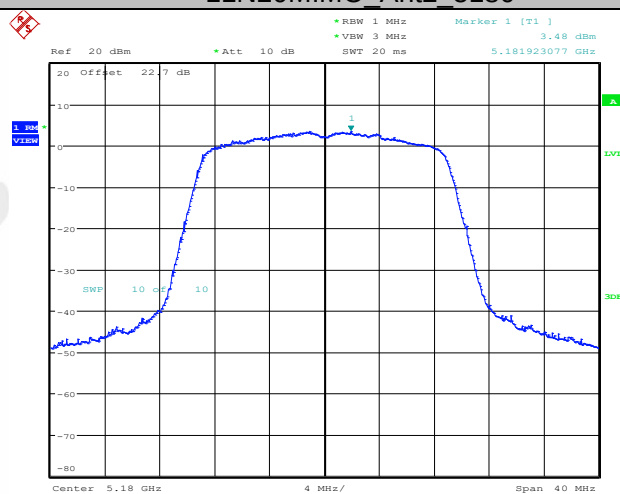
Date: 24.MAR.2022 20:03:04

11N20MIMO Ant1 5180



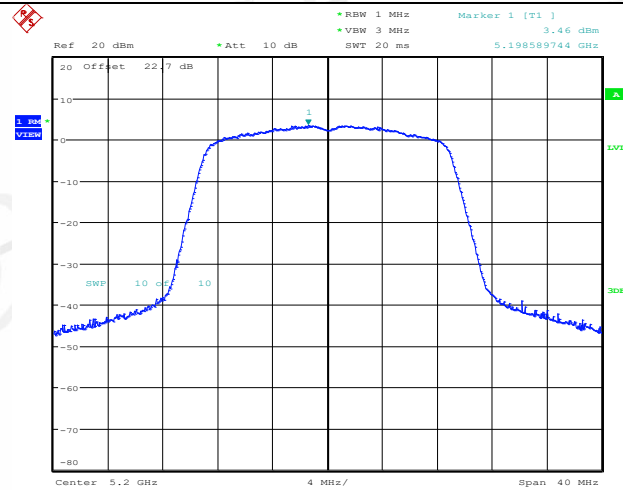
Date: 24.MAR.2022 20:07:20

11N20MIMO Ant2 5180



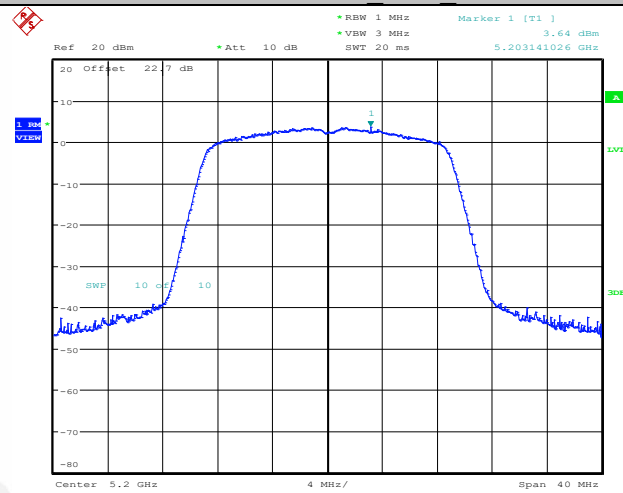
Date: 24.MAR.2022 20:10:57

11N20MIMO Ant1 5200



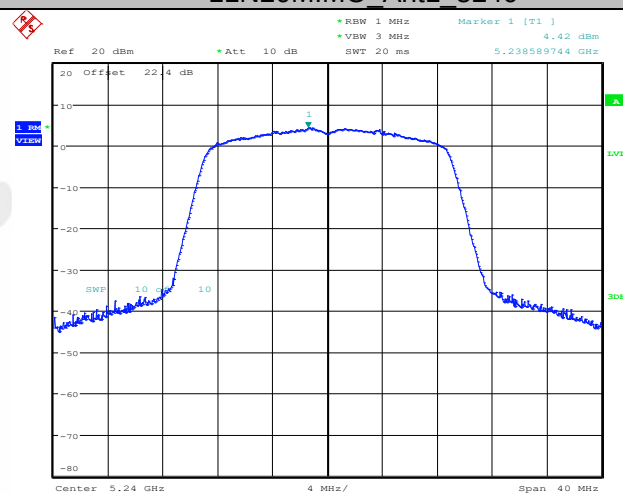
Date: 24.MAR.2022 20:15:47

11N20MIMO Ant2 5200



Date: 24.MAR.2022 20:19:07

11N20MIMO Ant1 5240



Date: 24.MAR.2022 20:22:35

11N20MIMO Ant2 5240