

FCC AND ISCED CERTIFICATION TEST REPORT

FOR

Applicant	:	Edifier International Limited
Address	:	P.O. Box 6264 General Post Office Hong Kong
Equipment under Test	:	Wireless Speaker
Model No.	:	EDF100008
Trade Mark	:	EDIFIER
FCC ID	:	Z9G-EDF112
IC	:	10004A-EDF112
Manufacturer	:	Beijing Edifier Technology Co., Ltd.
Address	:	8th floor, ZuoAn Building, NO.68 BeiSiHuanXiLu, Haidian District, Beijing 100080, CHINA

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

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

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

REPORT

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Test Report Declare

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Test Standard Used: FCC Rules and Regulations Part 15 Subpart C, 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

We Declare:

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

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

Report No:	DDT-R21030302-2E4		
Date of Receipt:	Mar. 02, 2021	Date of Test:	Mar. 02, 2021~ Apr. 20, 2021

Prepared By:

Ella Gong

Ella Gong/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. 20, 2021	

1. Summary of test results

The EUT have been tested according to the applicable standards as referenced below.

Description of Test Item	Standard	Verdict
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	Pass

2. General Test Information

2.1. Description of EUT

EUT* Name	: Wireless Speaker
Model Number	: EDF100008
EUT function description	: Please reference user manual of this device
Power supply	: 100-240V ~ 50/60Hz 300mA
Radio Technology	: IEEE 802.11a/n/ac
FCC 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, 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	: Dedicated FPC antenna, maximum PK gain: 2.65 dBi
Sample Type	: Series production
Serial Number	: 636000243682 for conductive 636000245215 for radiation

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

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

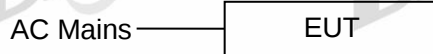
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	N/A	N/A	N/A	Length: 173mm, unshielded

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	Lenovo Beijing Co. Ltd.	ThinkPad	FCC/CE	TP00015A
Wireless LAN Access Point	HUAWEI	AP6050	21500829352SC5000371	FCC ID: QISAP6050DN6150DN

2.4. Block diagram of EUT configuration for test



Run a special test software “Adb.exe” provided by manufacturer to control EUT work in Continuous Tx mode, and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	78	6	Low: CH36	5180
	78	6	Middle: CH40	5200
	78	6	High: CH48	5240
	78	6	Low: CH52	5260
	78	6	Middle: CH56	5280
	78	6	High: CH64	5320
	78	6	Low: CH100	5500
	78	6	Middle: CH116	5580
	78	6	High: CH140	5700
	78	6	Low: CH149	5745
	86	6	Middle: CH157	5785
	78	6	High: CH165	5825
IEEE 802.11n HT20	78	MCS 0	Low: CH36	5180
	78	MCS 0	Middle: CH40	5200
	78	MCS 0	High: CH48	5240
	78	MCS 0	Low: CH52	5260
	78	MCS 0	Middle: CH56	5280
	78	MCS 0	High: CH64	5320
	78	MCS 0	Low: CH100	5500
	78	MCS 0	Middle: CH116	5580
	78	MCS 0	High: CH140	5700
	78	MCS 0	Low: CH149	5745
	78	MCS 0	Middle: CH157	5785
	78	MCS 0	High: CH165	5825
IEEE 802.11n HT40	78	MCS 0	Low: CH38	5190
	78	MCS 0	Middle: CH46	5230

	78	MCS 0	High: CH54	5270
	70	MCS 0	Low: CH62	5310
	78	MCS 0	Middle: CH102	5510
	78	MCS 0	High: CH110	5550
	78	MCS 0	Low: CH134	5670
	78	MCS 0	Middle: CH151	5755
	78	MCS 0	High: CH159	5795
IEEE 802.11ac HT20	78	MCS 0	Low: CH36	5180
	78	MCS 0	Middle: CH40	5200
	78	MCS 0	High: CH48	5240
	78	MCS 0	Low: CH52	5260
	78	MCS 0	Middle: CH56	5280
	78	MCS 0	High: CH64	5320
	78	MCS 0	Low: CH100	5500
	78	MCS 0	Middle: CH116	5580
	78	MCS 0	High: CH140	5700
	78	MCS 0	Low: CH149	5745
	78	MCS 0	Middle: CH157	5785
	78	MCS 0	High: CH165	5825
IEEE 802.11ac HT40	78	MCS 0	Low: CH38	5190
	78	MCS 0	Middle: CH46	5230
	78	MCS 0	High: CH54	5270
	70	MCS 0	Low: CH62	5310
	78	MCS 0	Middle: CH102	5510
	78	MCS 0	High: CH110	5550
	78	MCS 0	Low: CH134	5670
	78	MCS 0	Middle: CH151	5755
	78	MCS 0	High: CH159	5795
IEEE 802.11ac HT80	78	MCS 0	CH42	5210
	70	MCS 0	CH58	5290
	78	MCS 0	CH106	5530
	78	MCS 0	CH122	5610
	78	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.	

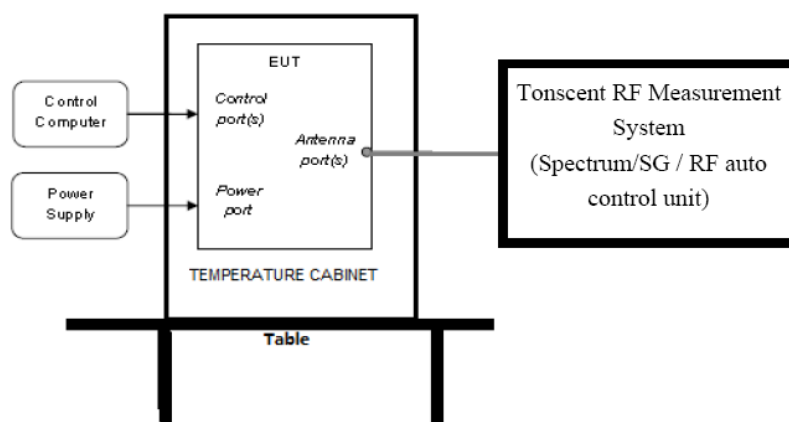
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☐ RF Connected Test (Tonscend RF Measurement System 1#)					
Spectrum analyzer	R&S	FSU26	101272	Jul. 01, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 24, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150010	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150011	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Apr. 25, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
☒ RF Connected Test (Tonscend RF Measurement System 2#)					
Spectrum analyzer	R&S	FSU26	200071	Sep. 25, 2020	1 Year
Spectrum analyzer	Agilent	N9020D	MY49100362	Sep. 28, 2020	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	Jul. 01, 2020	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Apr. 25, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 28, 2020	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Jul. 01, 2020	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
☐ Radiation 1#chamber					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 18, 2020	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Nov. 13, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Apr. 11, 2021	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Sep. 28, 2020	1 Year
RF Cable	HUBSER	CP-X2+ CP-	W11.03+	Sep. 24, 2020	1 Year

		X1	W12.02		
RF Cable	N/A	5m+6m+1m	06270619	Sep. 30, 2020	1 Year
MI Cable	HUBSER	C10-01-01-1M	1091629	Sep. 30, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☒ Radiation 2#chamber					
EMI Test Receiver	R&S	ESCI	101364	Sep. 28, 2020	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Nov. 13, 2020	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Nov. 18, 2020	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 11, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Apr. 11, 2021	1 Year
Pre-amplifier	TERA-MW	TRLA-0040G35	101303	Sep. 28, 2020	1 Year
RF Cable	N/A	14+1.5m	06270619	Sep. 28, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☒ Power Line Conducted Emissions Test 1#					
EMI Test Receiver	R&S	ESU8	100316	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101109	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 24, 2020	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 24, 2020	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
☐ Power Line Conducted Emissions Test 2#					
Test Receiver	R&S	ESPI	101761	Sep. 24, 2020	1 Year
LISN 1	R&S	ENV216	101170	Sep. 28, 2020	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 28, 2020	1 Year
Pulse Limiter	R&S	KH43101	431011801568-12#	Jul. 01, 2020	1 Year
CE Cable 2	HUBSER	N/A	W11.02	Sep. 24, 2020	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 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 [MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	21.360	5169.360	5190.720	---	PASS
		5200	21.360	5189.360	5210.720	---	PASS
		5240	21.720	5229.200	5250.920	---	PASS
		5260	23.760	5248.760	5272.520	---	PASS
		5280	24.040	5268.400	5292.440	---	PASS
		5320	23.080	5309.360	5332.440	---	PASS
		5500	21.440	5489.320	5510.760	---	PASS
		5580	22.160	5568.600	5590.760	---	PASS
		5700	21.520	5689.320	5710.840	---	PASS
		5745	21.480	5734.360	5755.840	---	PASS
		5785	23.800	5773.720	5797.520	---	PASS
		5825	21.600	5814.320	5835.920	---	PASS
11N20SISO	Ant1	5180	21.520	5169.280	5190.800	---	PASS
		5200	21.600	5189.240	5210.840	---	PASS
		5240	22.400	5229.000	5251.400	---	PASS
		5260	26.680	5248.120	5274.800	---	PASS
		5280	25.560	5267.760	5293.320	---	PASS
		5320	24.880	5309.160	5334.040	---	PASS
		5500	21.640	5489.280	5510.920	---	PASS
		5580	22.040	5568.960	5591.000	---	PASS
		5700	23.480	5688.120	5711.600	---	PASS
		5745	21.880	5734.040	5755.920	---	PASS
		5785	21.600	5774.320	5795.920	---	PASS
		5825	21.720	5814.280	5836.000	---	PASS
11N40SISO	Ant1	5190	40.320	5170.080	5210.400	---	PASS
		5230	40.320	5209.840	5250.160	---	PASS
		5270	59.840	5248.480	5308.320	---	PASS
		5310	46.960	5289.920	5336.880	---	PASS
		5510	40.240	5490.080	5530.320	---	PASS
		5550	40.560	5529.920	5570.480	---	PASS
		5670	40.400	5649.920	5690.320	---	PASS
		5755	40.640	5734.920	5775.560	---	PASS
		5795	40.160	5775.080	5815.240	---	PASS
11AC20SISO	Ant1	5180	22.080	5169.320	5191.400	---	PASS
		5200	21.560	5189.280	5210.840	---	PASS
		5240	22.840	5228.560	5251.400	---	PASS
		5260	26.520	5248.760	5275.280	---	PASS
		5280	26.360	5267.640	5294.000	---	PASS
		5320	23.720	5309.280	5333.000	---	PASS
		5500	21.640	5489.240	5510.880	---	PASS
		5580	23.960	5566.800	5590.760	---	PASS
		5700	21.840	5689.120	5710.960	---	PASS
		5745	21.680	5734.160	5755.840	---	PASS
		5785	21.400	5774.400	5795.800	---	PASS
		5825	21.680	5814.200	5835.880	---	PASS
11AC40SISO	Ant1	5190	40.320	5170.000	5210.320	---	PASS
		5230	41.360	5209.840	5251.200	---	PASS
		5270	57.120	5249.280	5306.400	---	PASS

		5310	41.920	5290.000	5331.920	---	PASS
		5510	40.400	5489.840	5530.240	---	PASS
		5550	40.560	5529.840	5570.400	---	PASS
		5670	40.320	5649.920	5690.240	---	PASS
		5755	40.400	5734.840	5775.240	---	PASS
		5795	40.000	5775.160	5815.160	---	PASS
11AC80SISO	Ant1	5210	81.760	5169.360	5251.120	---	PASS
		5290	91.360	5248.880	5340.240	---	PASS
		5530	81.760	5489.360	5571.120	---	PASS
		5610	82.080	5569.040	5651.120	---	PASS
		5775	100.960	5733.880	5834.840	---	PASS

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.16	5171.480	5188.640	---	PASS
		5200	17.16	5191.480	5208.640	---	PASS
		5240	17.52	5231.280	5248.800	---	PASS
		5260	17.6	5251.320	5268.920	---	PASS
		5280	17.6	5271.160	5288.760	---	PASS
		5320	17.32	5311.400	5328.720	---	PASS
		5500	17.24	5491.400	5508.640	---	PASS
		5580	17.52	5571.120	5588.640	---	PASS
		5700	17.36	5691.320	5708.680	---	PASS
		5745	17.28	5736.320	5753.600	---	PASS
		5785	17.12	5776.560	5793.680	---	PASS
		5825	17.4	5816.360	5833.760	---	PASS
11N20SISO	Ant1	5180	18.08	5171.040	5189.120	---	PASS
		5200	18.2	5191.000	5209.200	---	PASS
		5240	18.48	5230.840	5249.320	---	PASS
		5260	18.56	5250.920	5269.480	---	PASS
		5280	18.4	5270.880	5289.280	---	PASS
		5320	18.36	5310.960	5329.320	---	PASS
		5500	18.2	5490.960	5509.160	---	PASS
		5580	18.24	5570.880	5589.120	---	PASS
		5700	18.52	5690.760	5709.280	---	PASS
		5745	18.28	5735.880	5754.160	---	PASS
		5785	18.08	5776.120	5794.200	---	PASS
		5825	18.32	5815.960	5834.280	---	PASS
11N40SISO	Ant1	5190	36.72	5171.840	5208.560	---	PASS
		5230	36.8	5211.680	5248.480	---	PASS
		5270	37.6	5251.680	5289.280	---	PASS
		5310	36.96	5291.760	5328.720	---	PASS
		5510	36.88	5491.680	5528.560	---	PASS
		5550	36.96	5531.600	5568.560	---	PASS
		5670	36.88	5651.680	5688.560	---	PASS
		5755	36.8	5736.680	5773.480	---	PASS
		5795	36.48	5777.000	5813.480	---	PASS
		5825	36.48	5777.000	5813.480	---	PASS
11AC20SISO	Ant1	5180	18.24	5170.960	5189.200	---	PASS
		5200	18.24	5190.960	5209.200	---	PASS
		5240	18.36	5230.880	5249.240	---	PASS
		5260	18.4	5250.960	5269.360	---	PASS
		5280	18.4	5270.880	5289.280	---	PASS

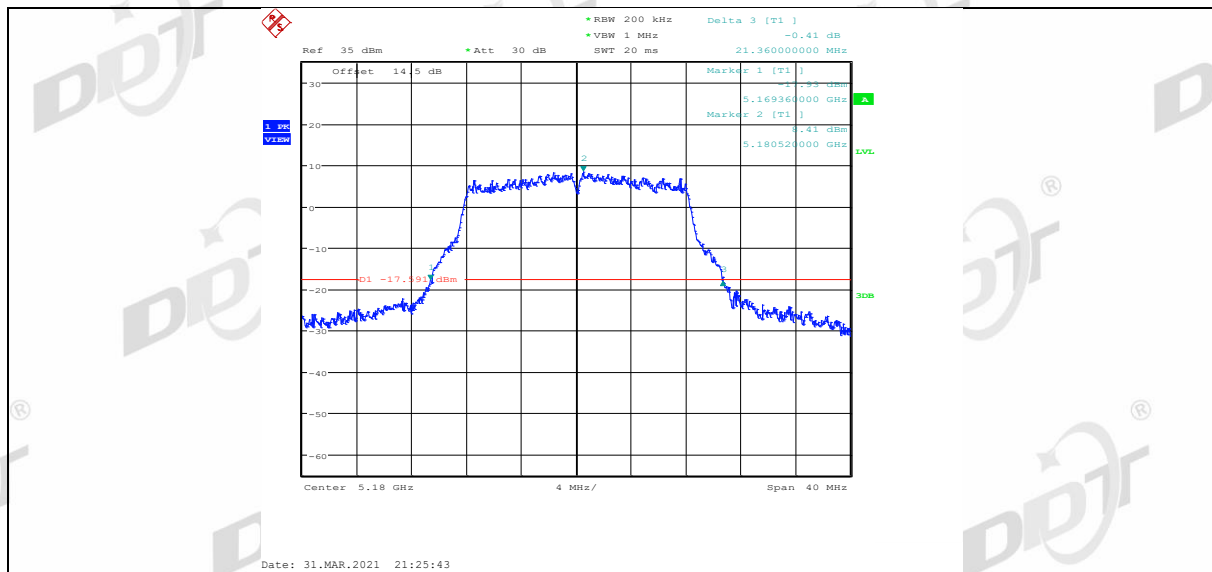
		5320	18.4	5310.920	5329.320	---	PASS
		5500	18.24	5490.960	5509.200	---	PASS
		5580	18.28	5570.840	5589.120	---	PASS
		5700	18.36	5690.840	5709.200	---	PASS
		5745	18.28	5735.880	5754.160	---	PASS
		5785	18.16	5776.080	5794.240	---	PASS
		5825	18.36	5815.920	5834.280	---	PASS
11AC40SISO	Ant1	5190	36.72	5171.840	5208.560	---	PASS
		5230	36.88	5211.680	5248.560	---	PASS
		5270	37.36	5251.760	5289.120	---	PASS
		5310	36.88	5291.760	5328.640	---	PASS
		5510	36.8	5491.680	5528.480	---	PASS
		5550	36.96	5531.600	5568.560	---	PASS
		5670	36.8	5651.760	5688.560	---	PASS
11AC80SISO	Ant1	5755	36.8	5736.680	5773.480	---	PASS
		5795	36.64	5776.920	5813.560	---	PASS
		5210	75.68	5172.240	5247.920	---	PASS
		5290	75.68	5252.400	5328.080	---	PASS
		5530	75.68	5492.240	5567.920	---	PASS
		5610	75.52	5572.240	5647.760	---	PASS
		5775	76.16	5737.240	5813.400	---	PASS

TestMode	Antenna	Channel	6db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5745	16.360	5736.880	5753.240	0.5	PASS
		5785	16.160	5777.120	5793.280	0.5	PASS
		5825	16.400	5816.880	5833.280	0.5	PASS
11N20SISO	Ant1	5745	17.280	5736.240	5753.520	0.5	PASS
		5785	16.720	5777.160	5793.880	0.5	PASS
		5825	17.640	5816.240	5833.880	0.5	PASS
11N40SISO	Ant1	5755	36.240	5736.840	5773.080	0.5	PASS
		5795	35.920	5777.400	5813.320	0.5	PASS
11AC20SISO	Ant1	5745	17.640	5736.240	5753.880	0.5	PASS
		5785	16.440	5777.440	5793.880	0.5	PASS
		5825	17.360	5816.520	5833.880	0.5	PASS
11AC40SISO	Ant1	5755	36.080	5736.840	5772.920	0.5	PASS
		5795	35.920	5777.400	5813.320	0.5	PASS
11AC80SISO	Ant1	5775	75.520	5737.240	5812.760	0.5	PASS

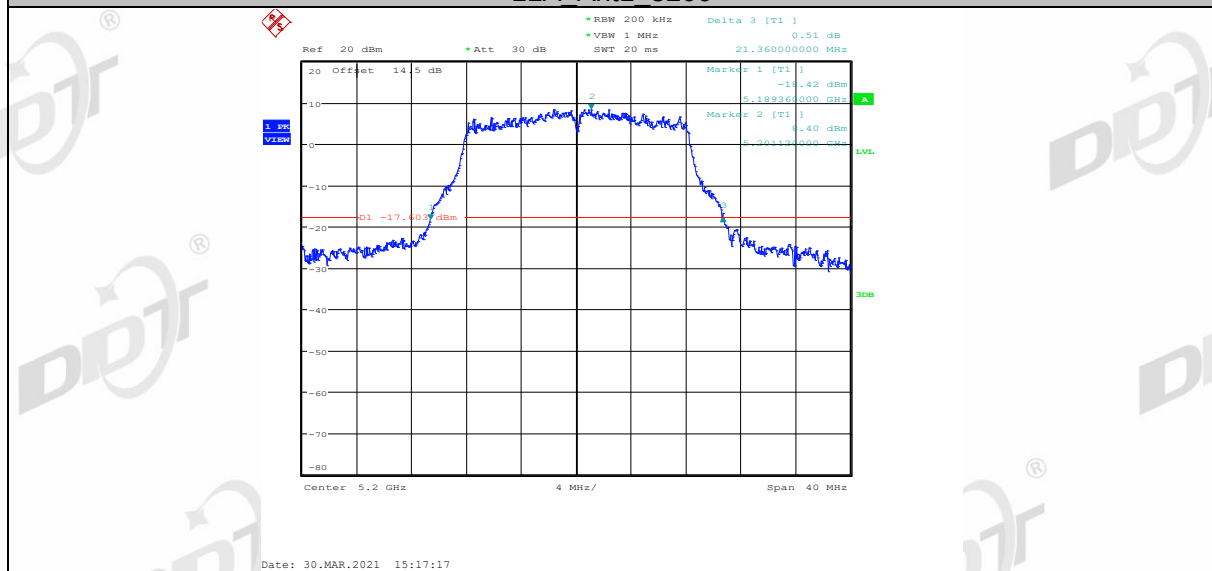
4.5. Original test data

26 dB Bandwidth:

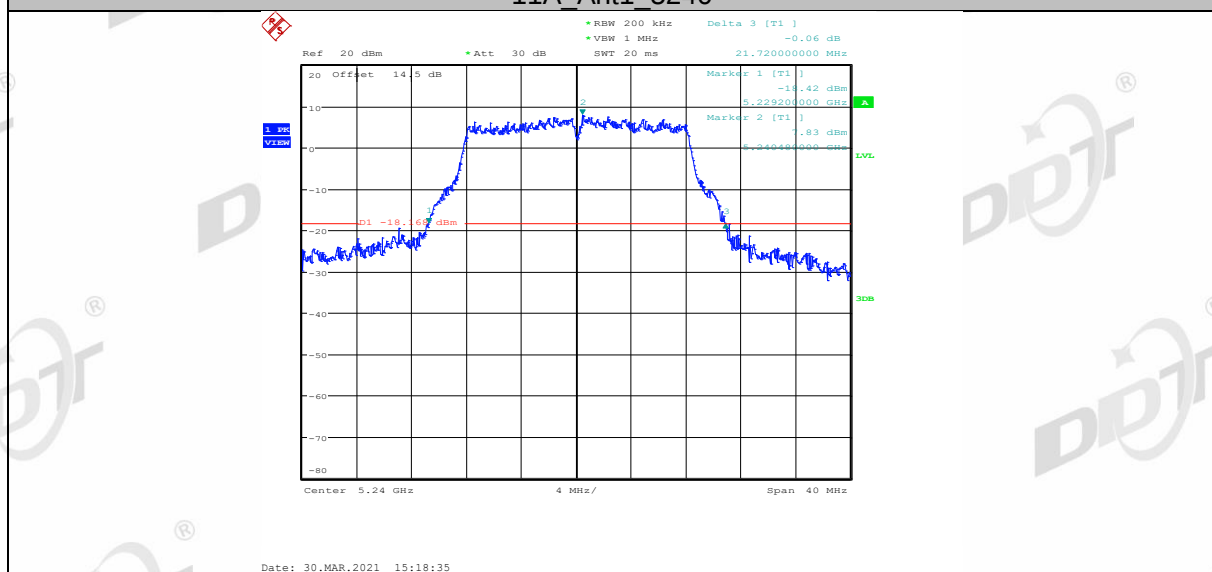
11A Ant1 5180



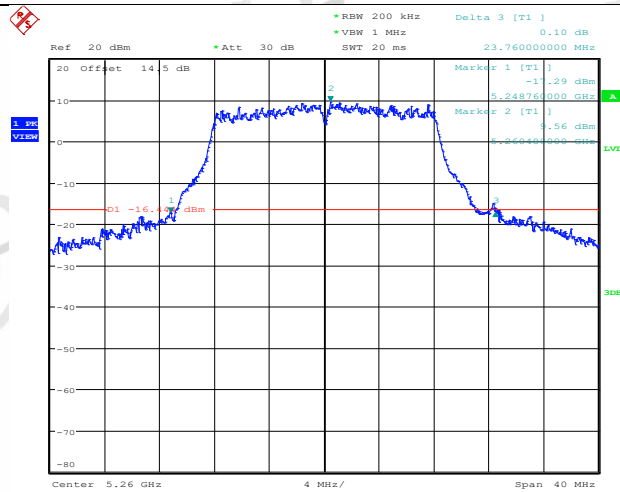
11A Ant1 5200



11A Ant1 5240

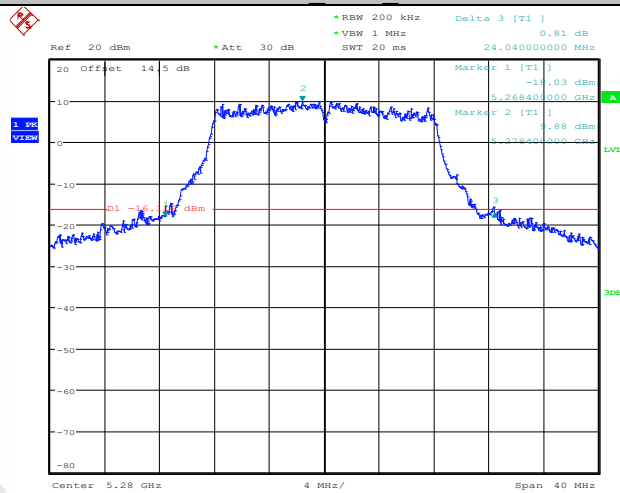


11A Ant1 5260



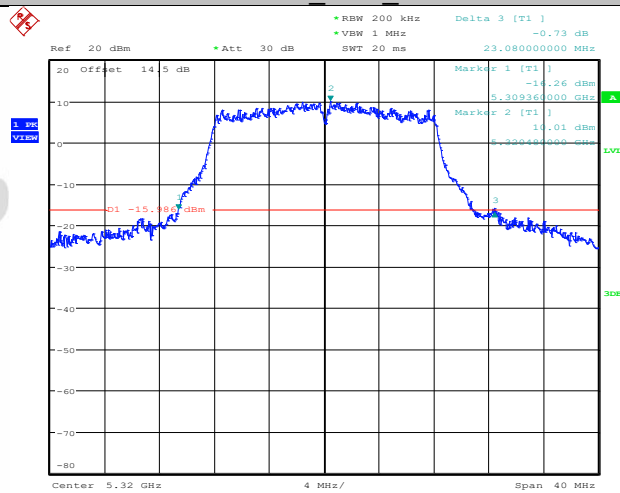
Date: 30.MAR.2021 15:20:29

11A Ant1 5280



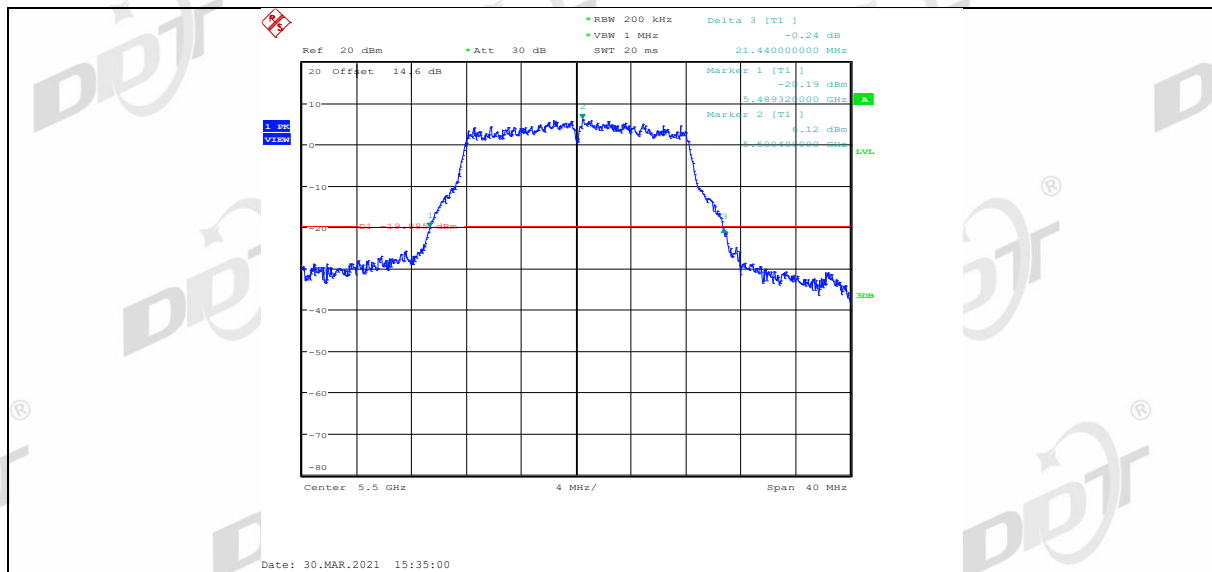
Date: 30.MAR.2021 15:21:33

11A Ant1 5320

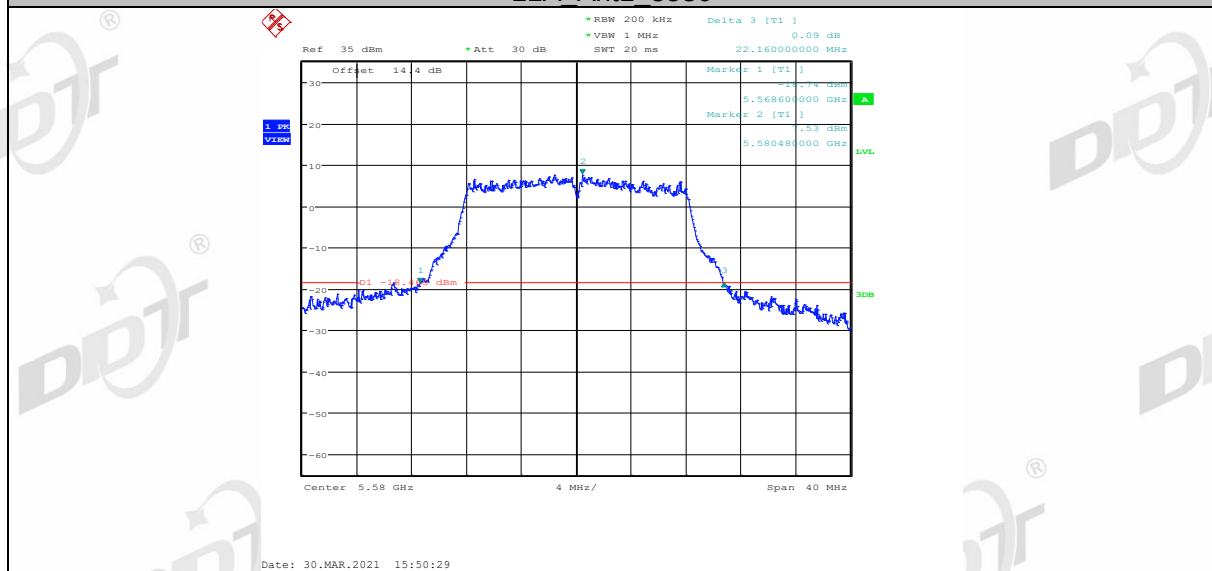


Date: 30.MAR.2021 15:33:47

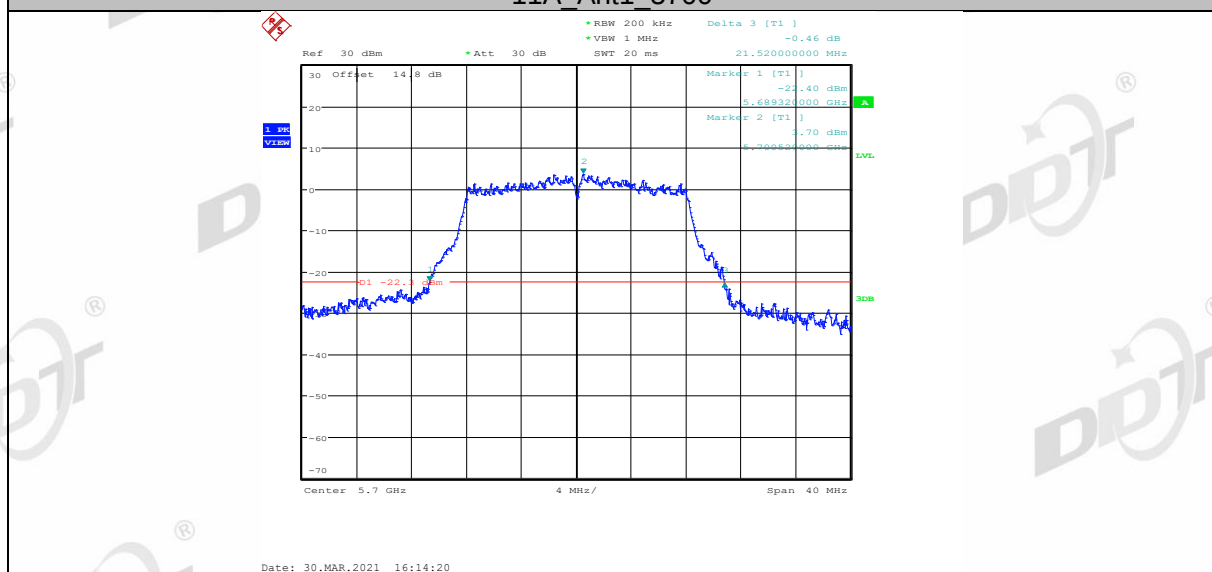
11A Ant1 5500



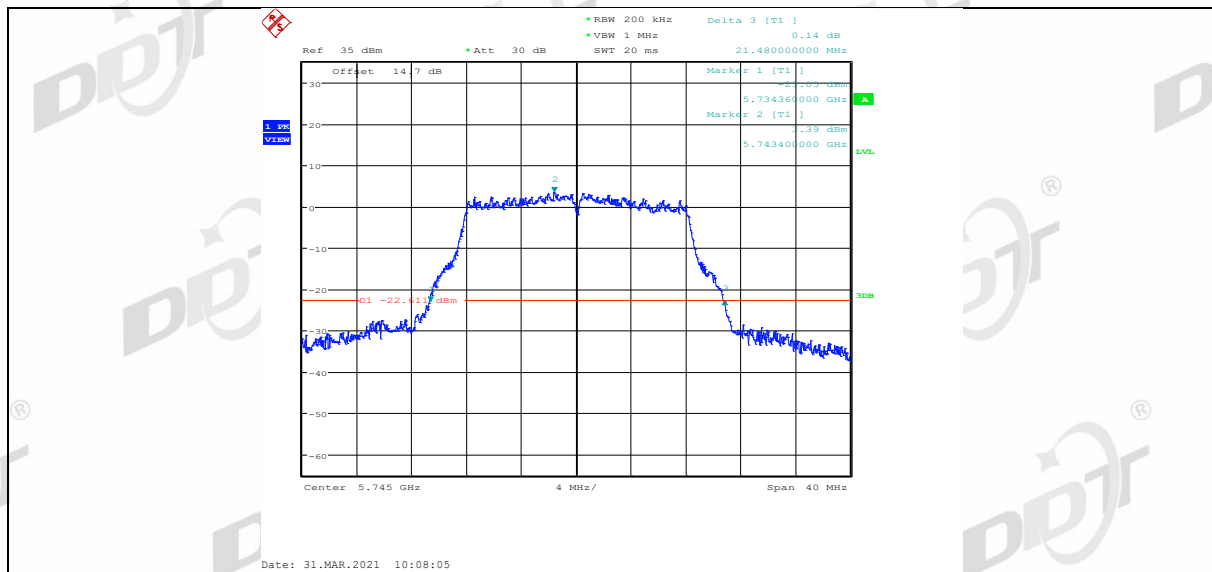
11A Ant1 5580



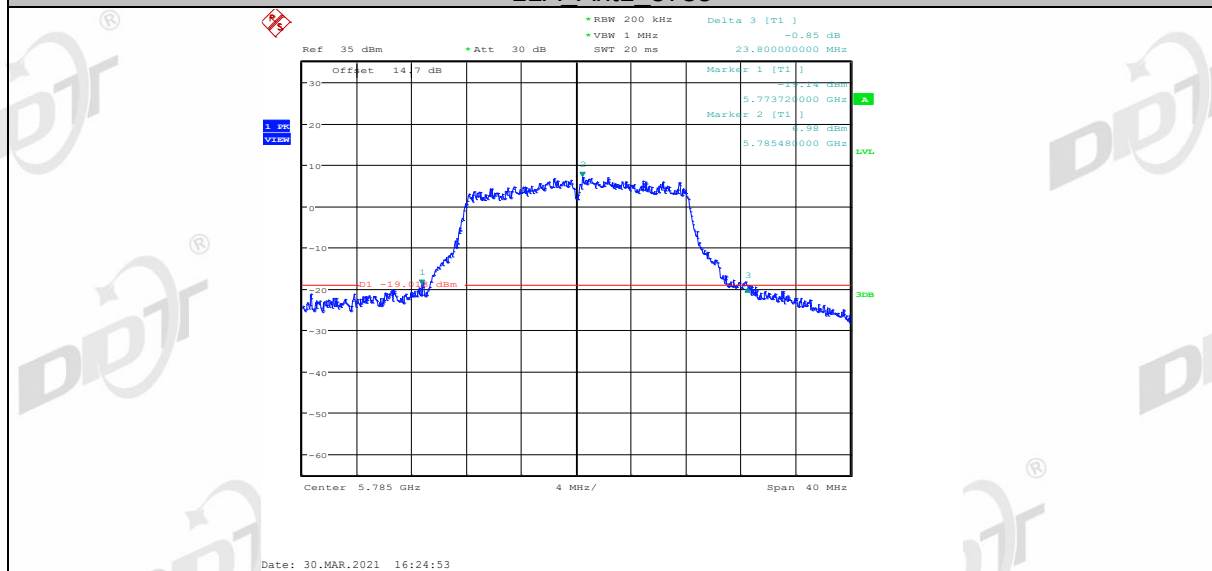
11A Ant1 5700



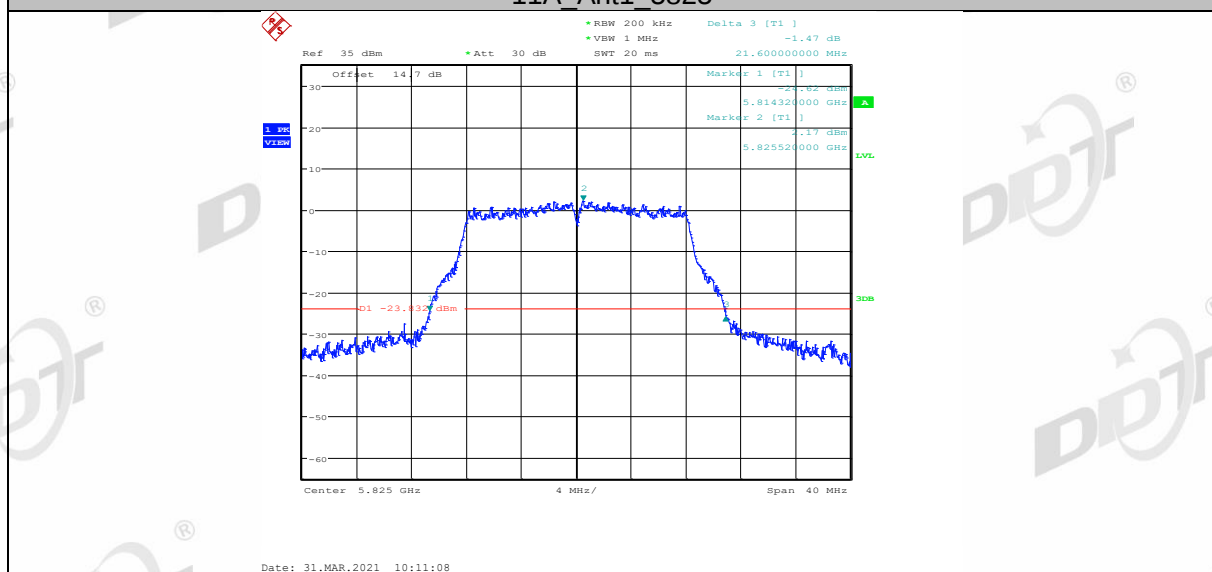
11A Ant1 5745



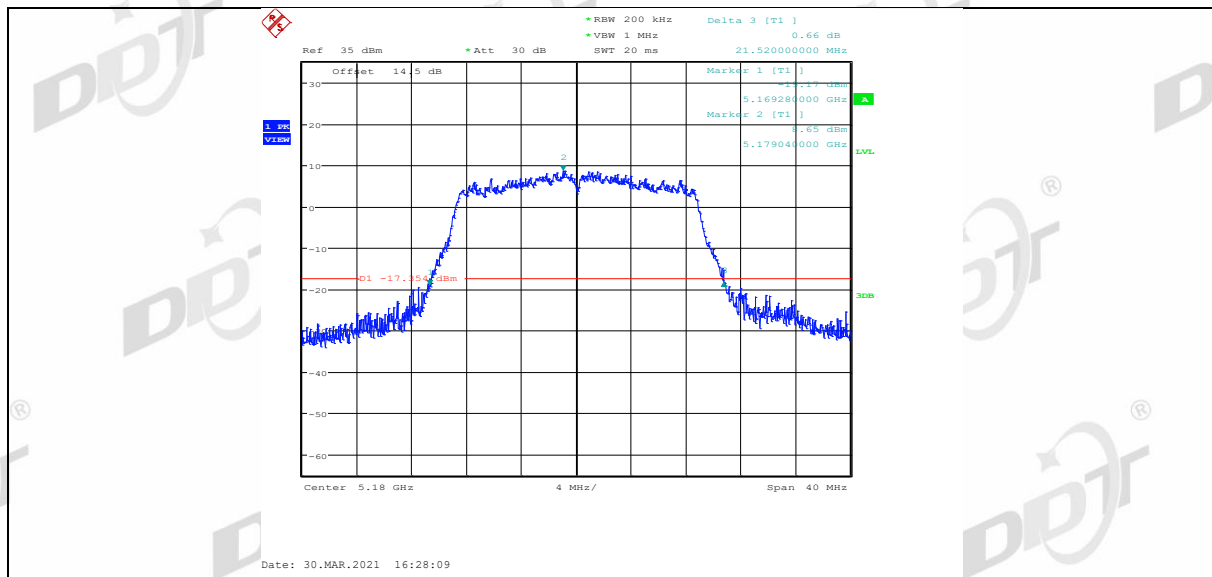
11A Ant1 5785



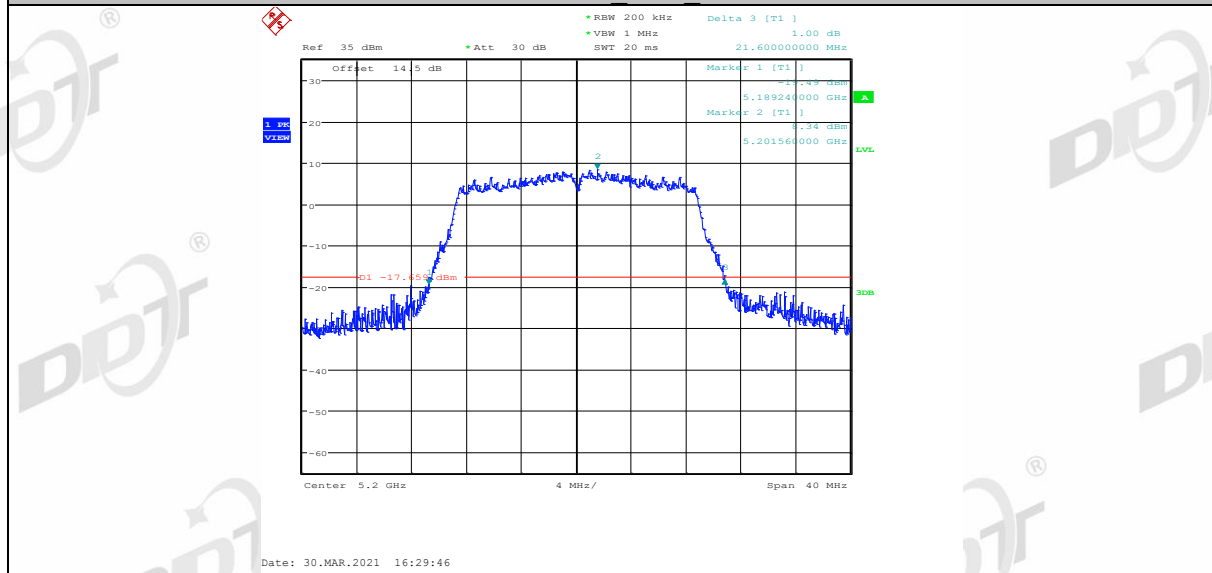
11A Ant1 5825



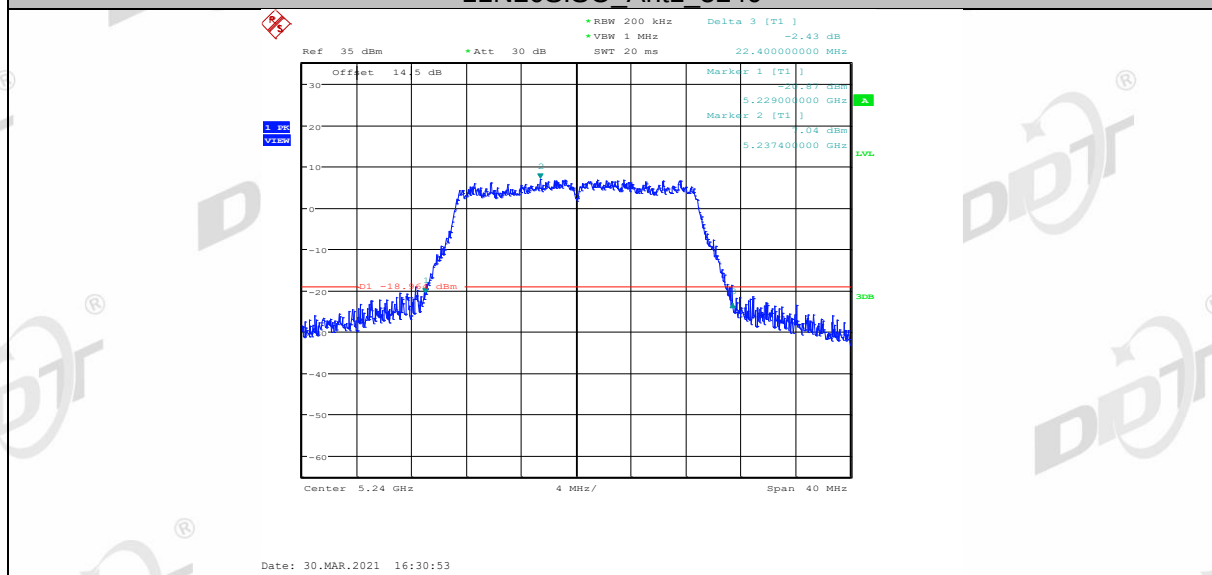
11N20SISO Ant1 5180



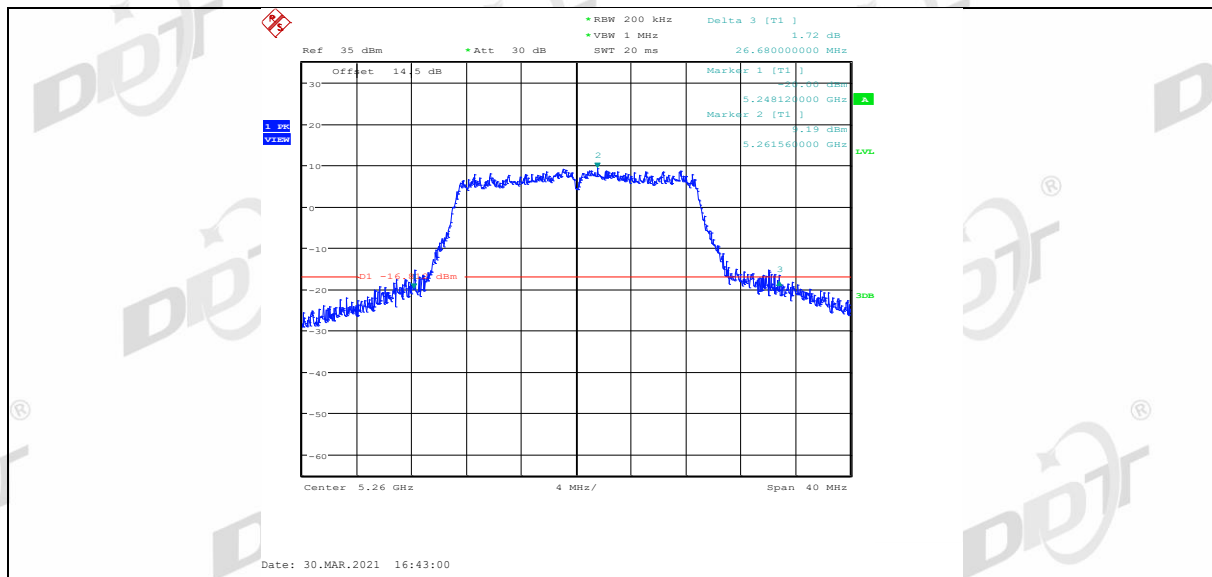
11N20SISO Ant1 5200



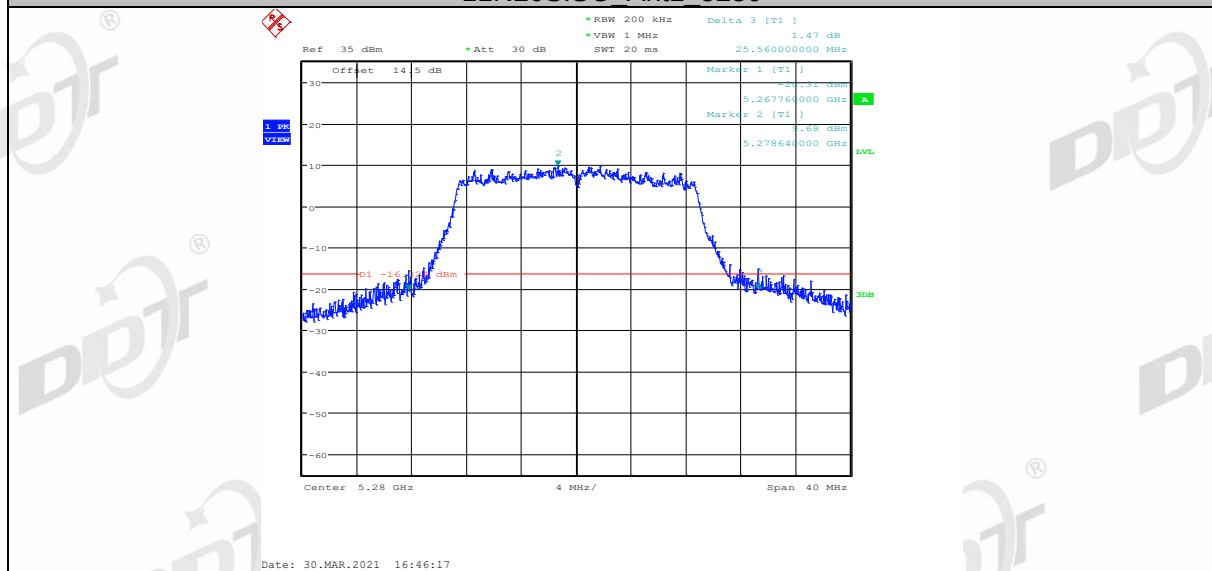
11N20SISO Ant1 5240



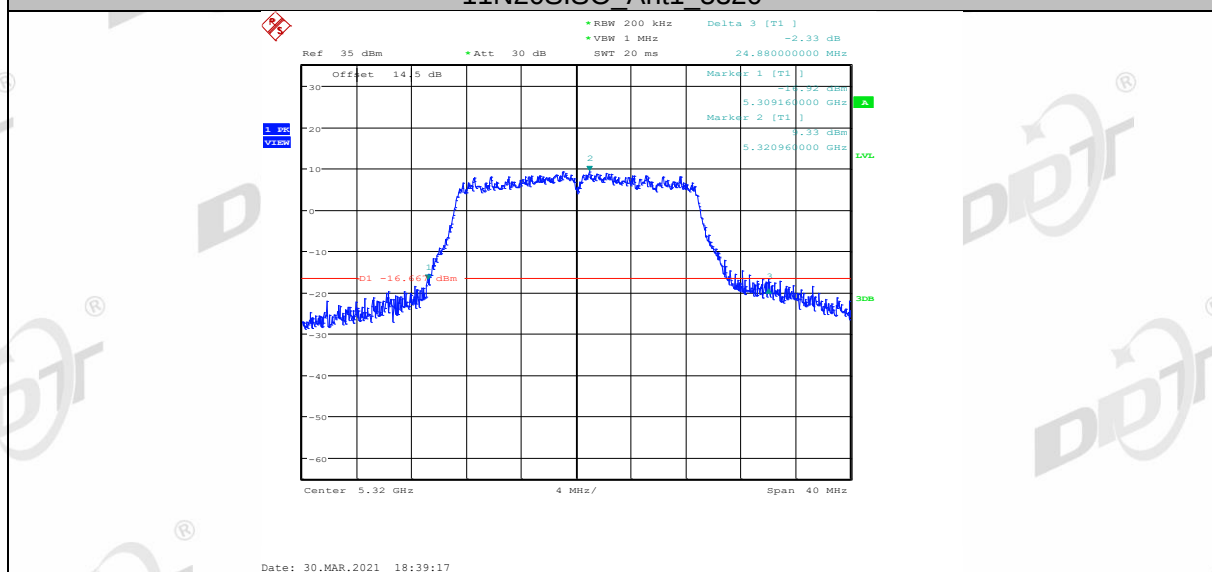
11N20SISO Ant1 5260



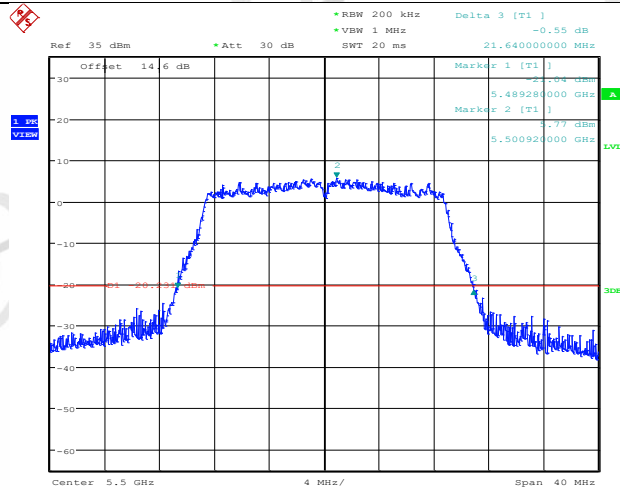
11N20SISO Ant1 5280



11N20SISO Ant1 5320

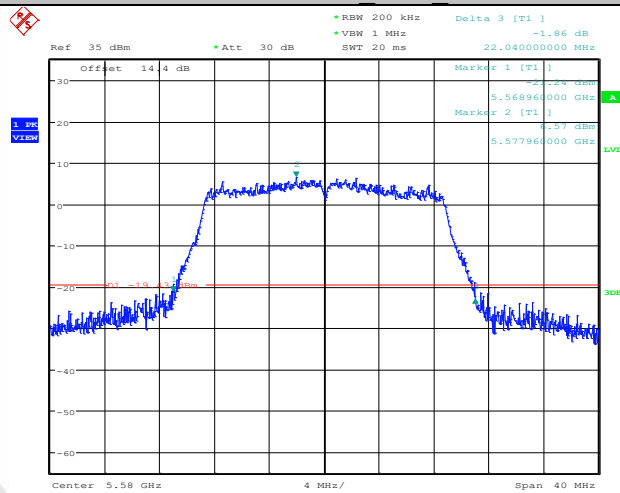


11N20SISO Ant1 5500



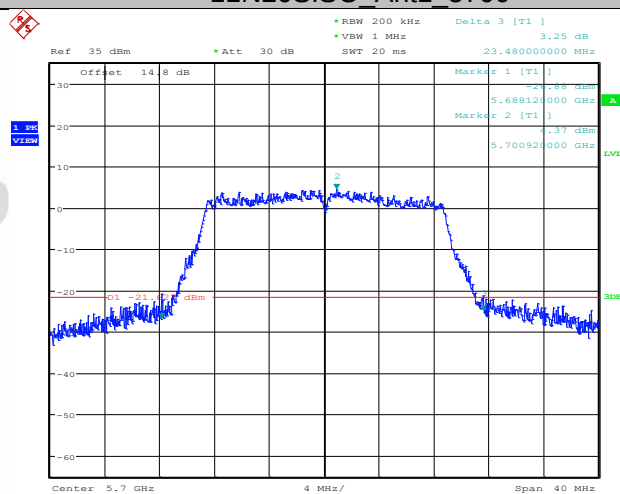
Date: 30.MAR.2021 18:42:23

11N20SISO Ant1 5580



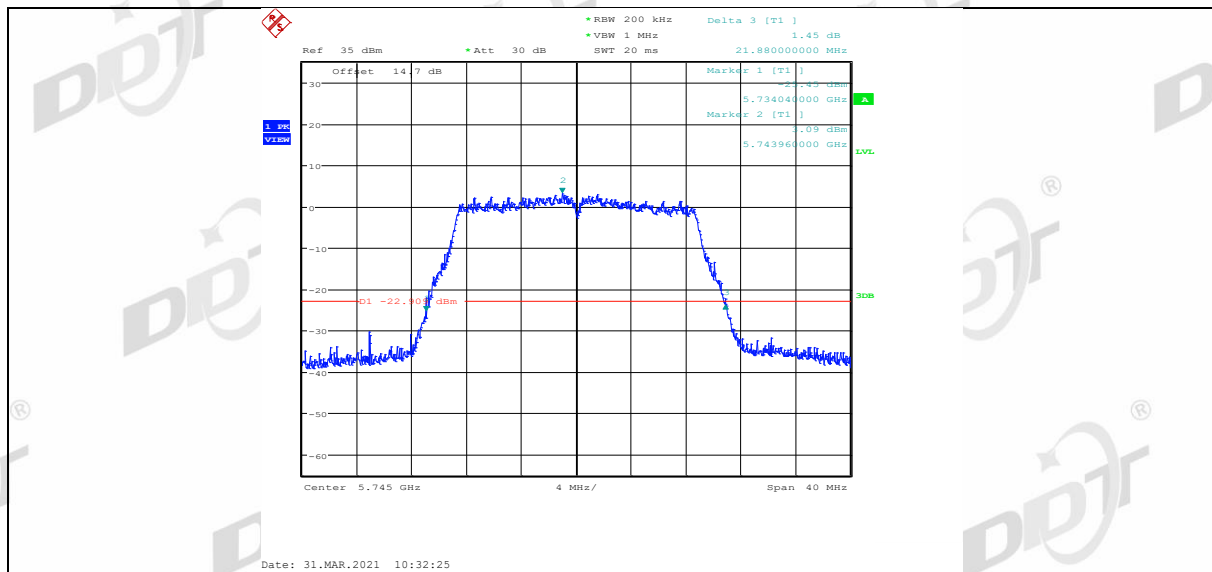
Date: 30.MAR.2021 18:43:55

11N20SISO Ant1 5700

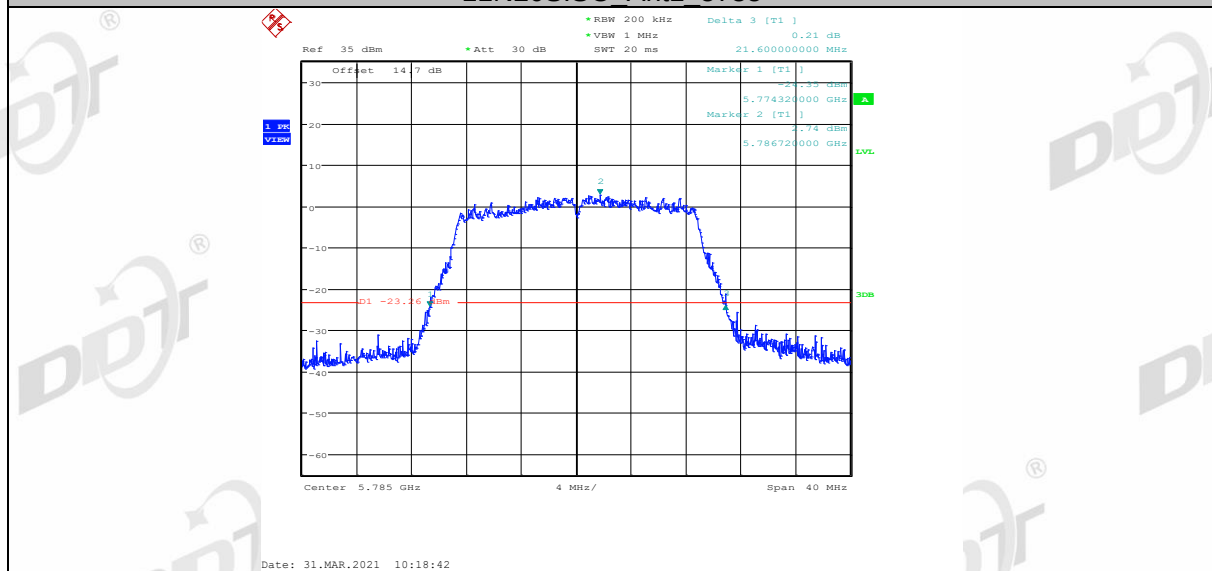


Date: 30.MAR.2021 19:16:01

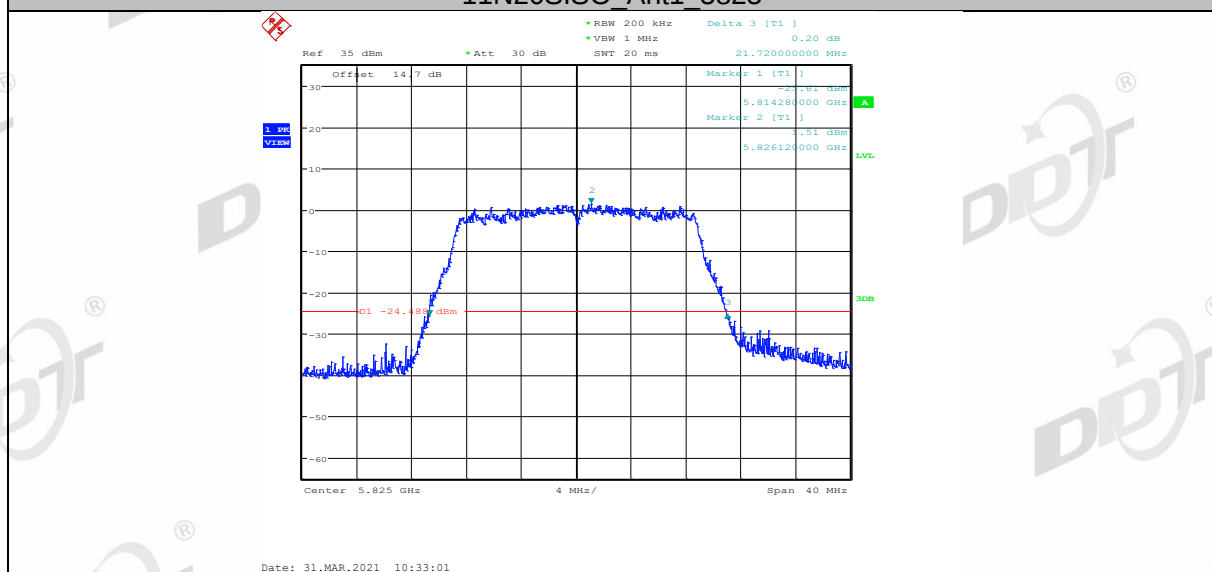
11N20SISO Ant1 5745



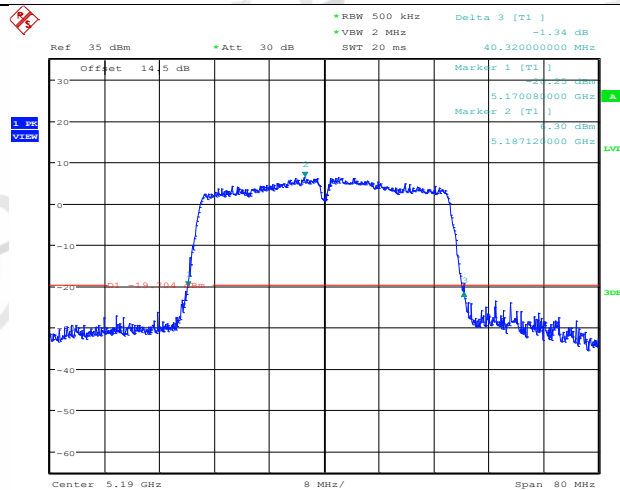
11N20SISO Ant1 5785



11N20SISO Ant1 5825

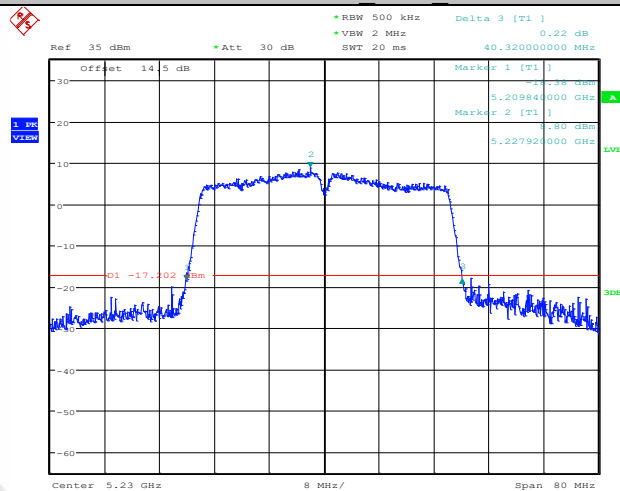


11N40SISO Ant1 5190



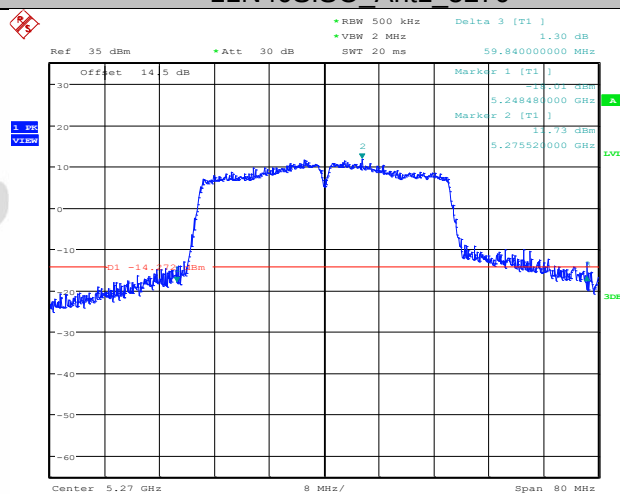
Date: 30.MAR.2021 21:51:05

11N40SISO Ant1 5230



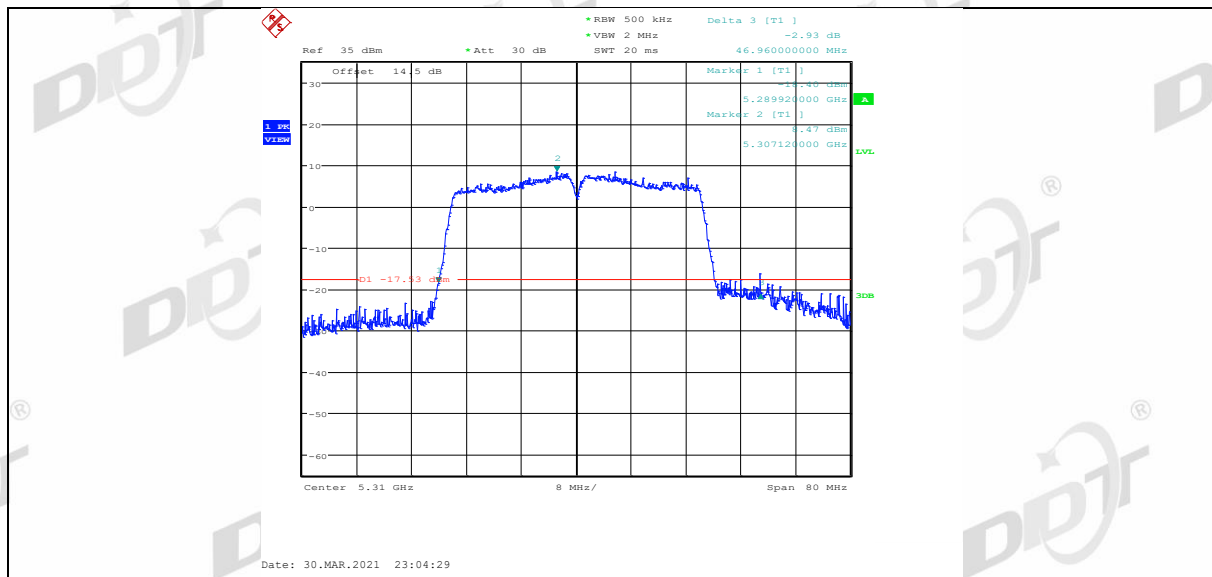
Date: 31.MAR.2021 12:37:33

11N40SISO Ant1 5270

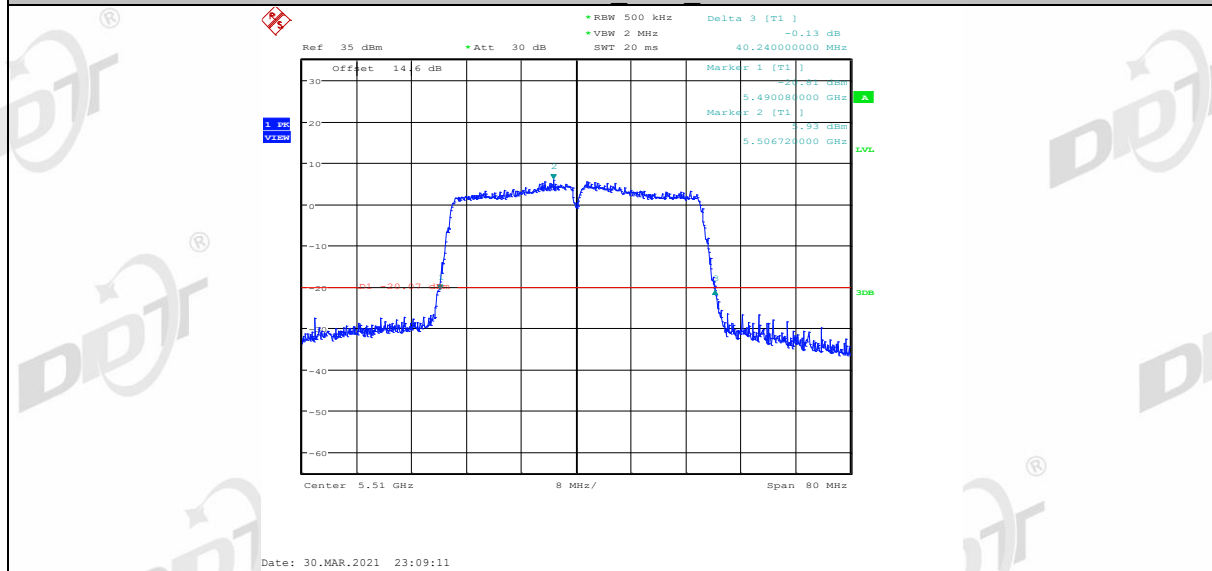


Date: 30.MAR.2021 22:52:46

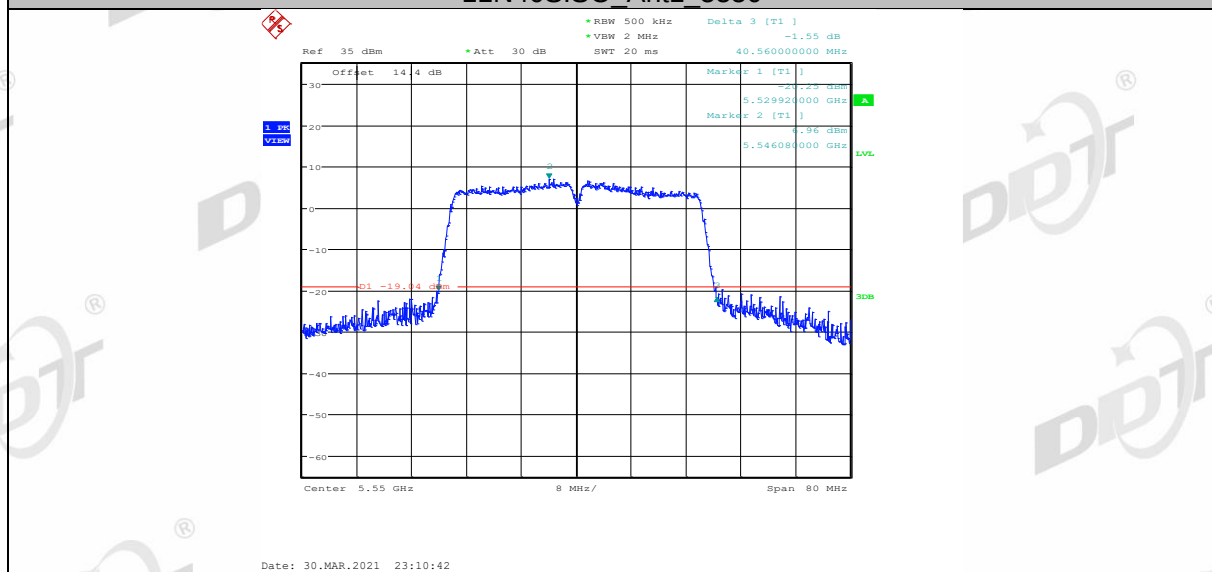
11N40SISO Ant1 5310



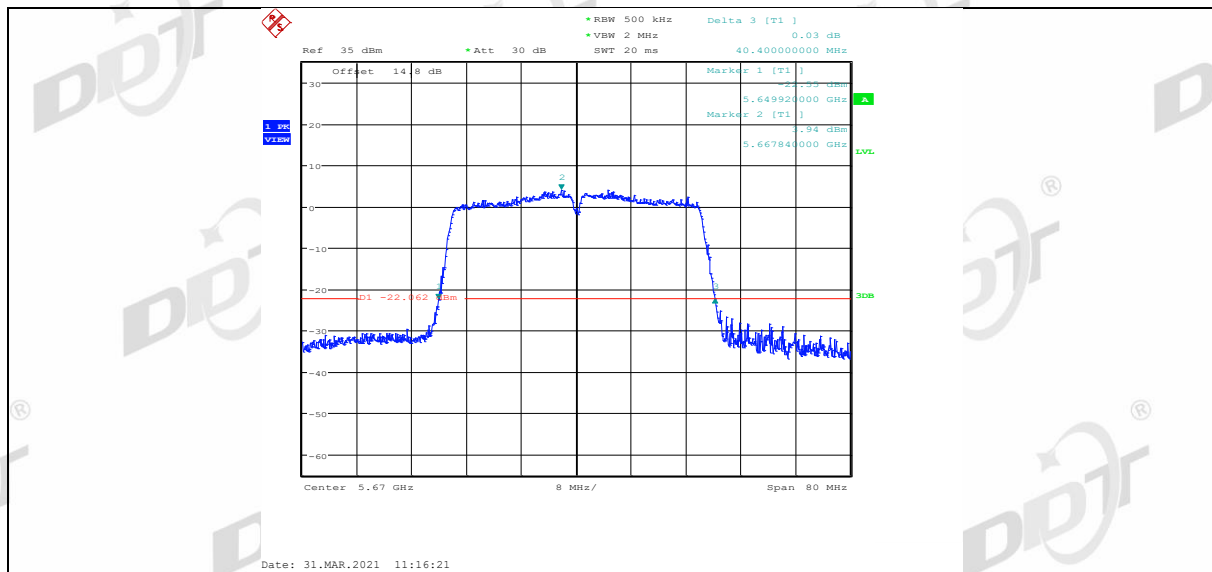
11N40SISO Ant1 5510



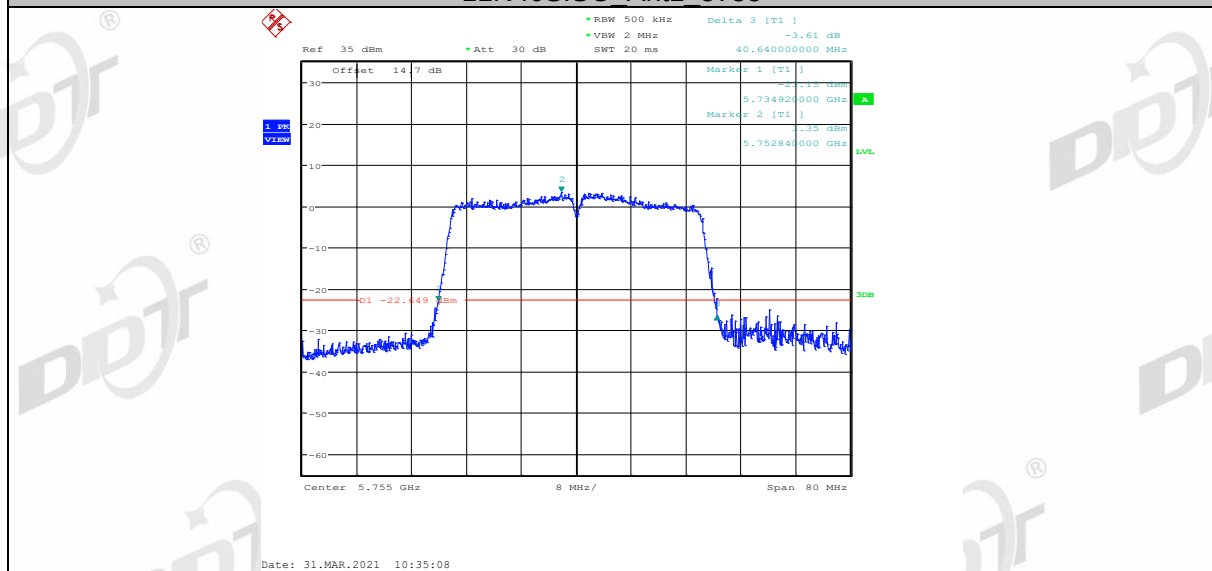
11N40SISO Ant1 5550



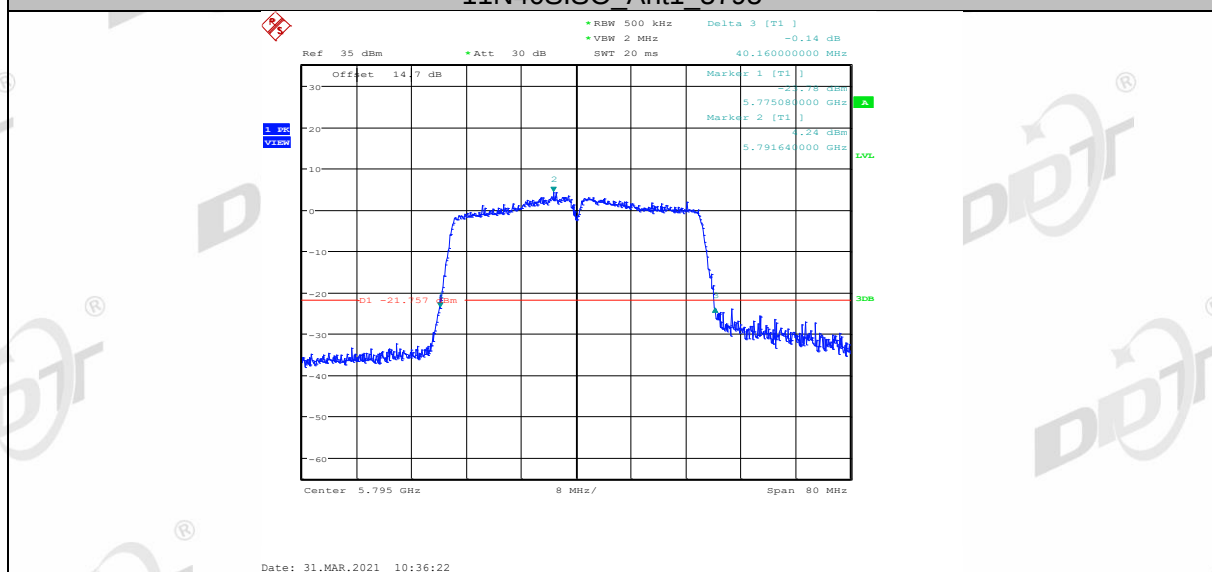
11N40SISO Ant1 5670



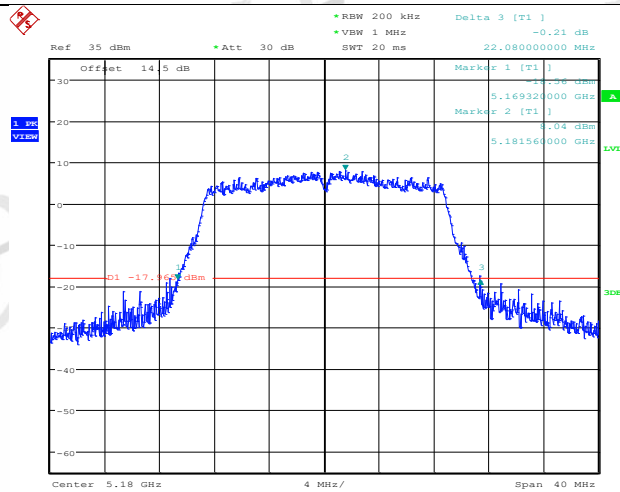
11N40SISO_Ant1_5755



11N40SISO_Ant1_5795

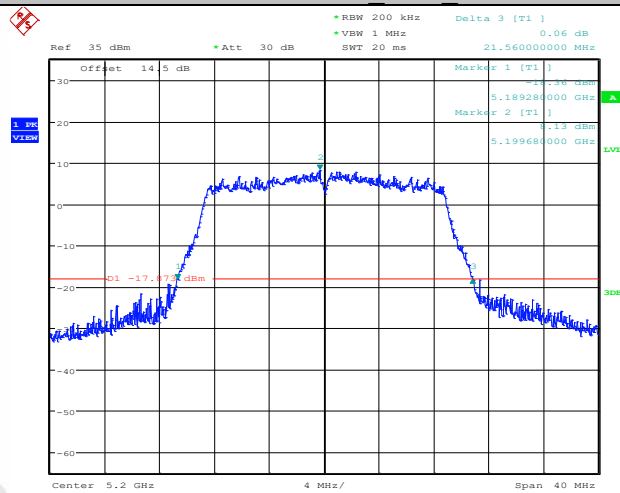


11AC20SISO_Ant1_5180



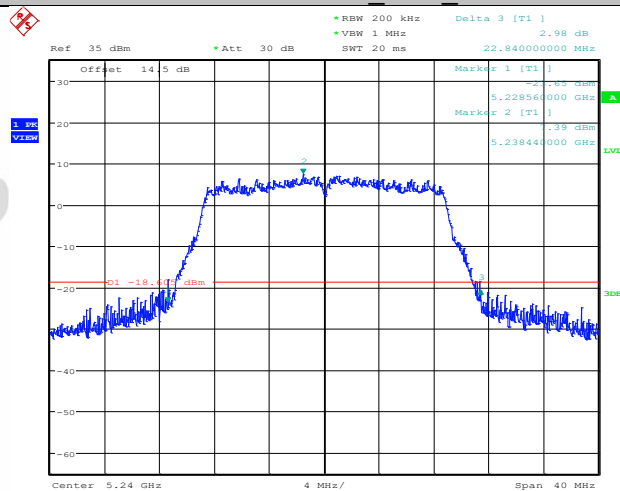
Date: 30.MAR.2021 23:24:37

11AC20SISO_Ant1_5200



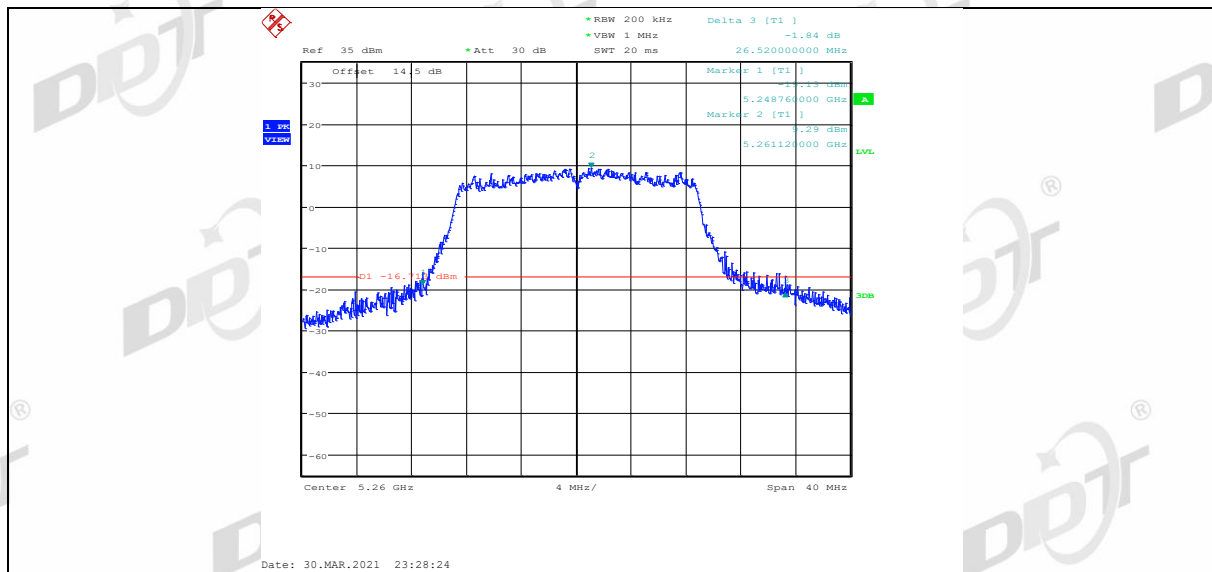
Date: 30.MAR.2021 23:26:05

11AC20SISO_Ant1_5240

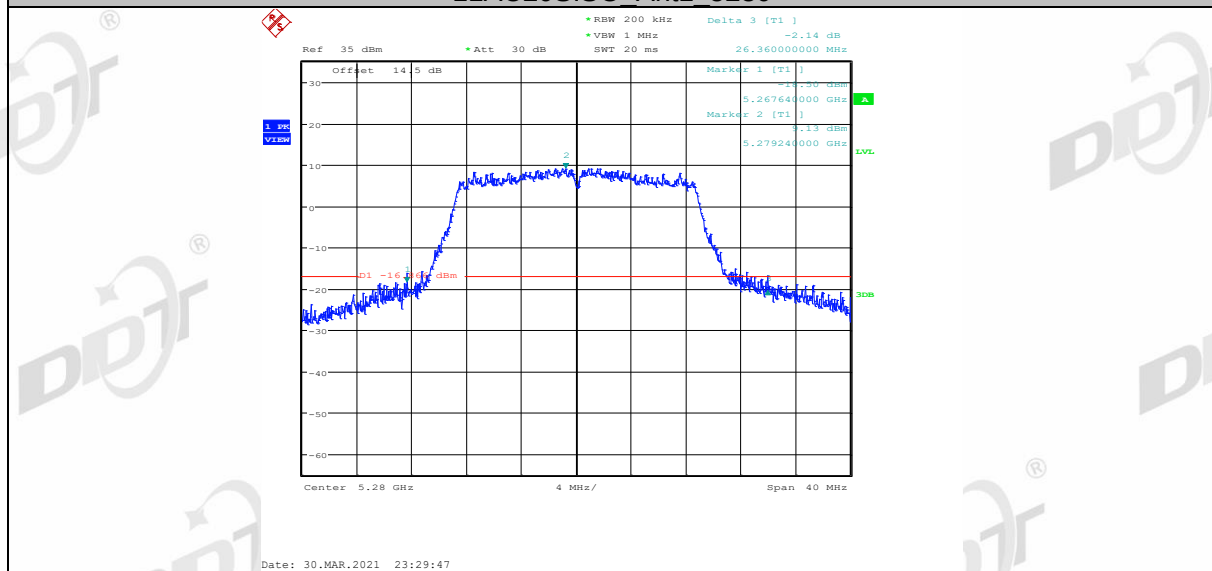


Date: 30.MAR.2021 23:27:06

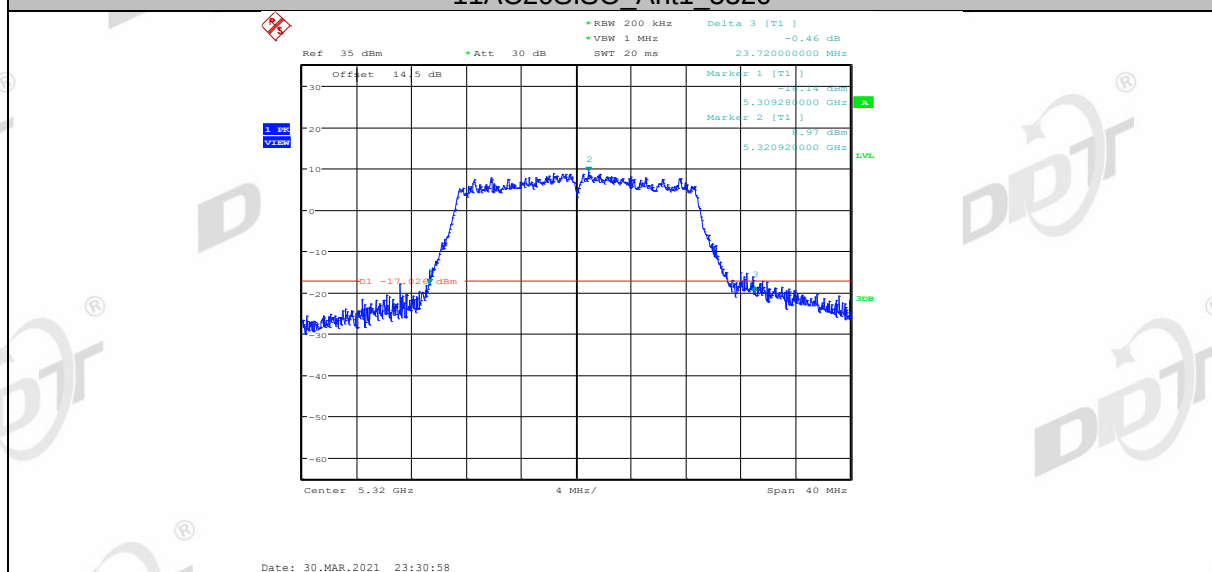
11AC20SISO_Ant1_5260



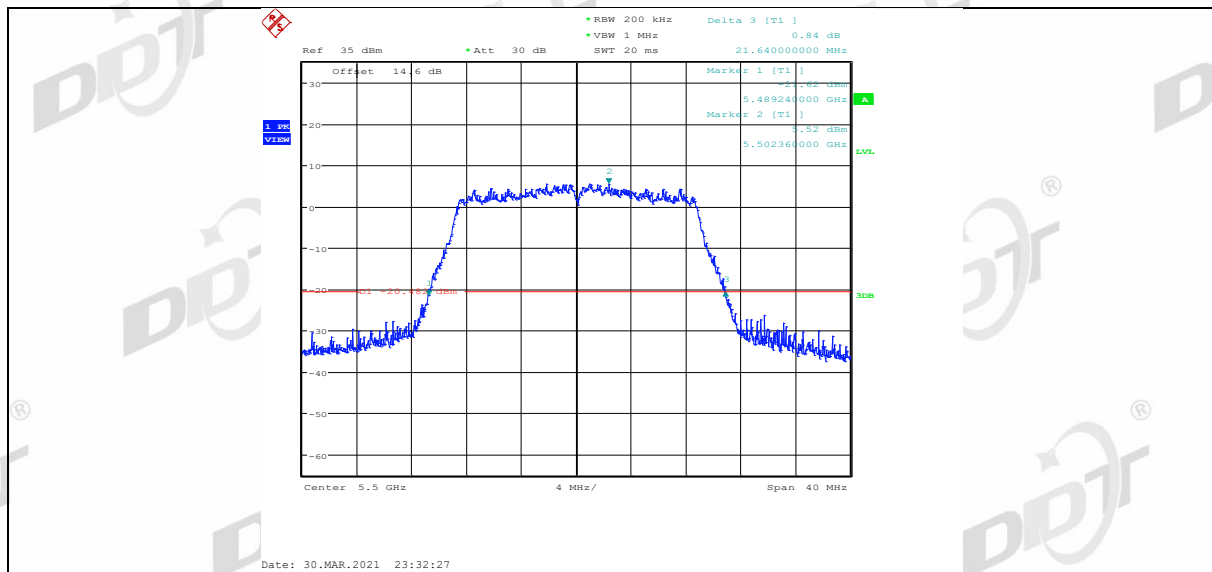
11AC20SISO_Ant1_5280



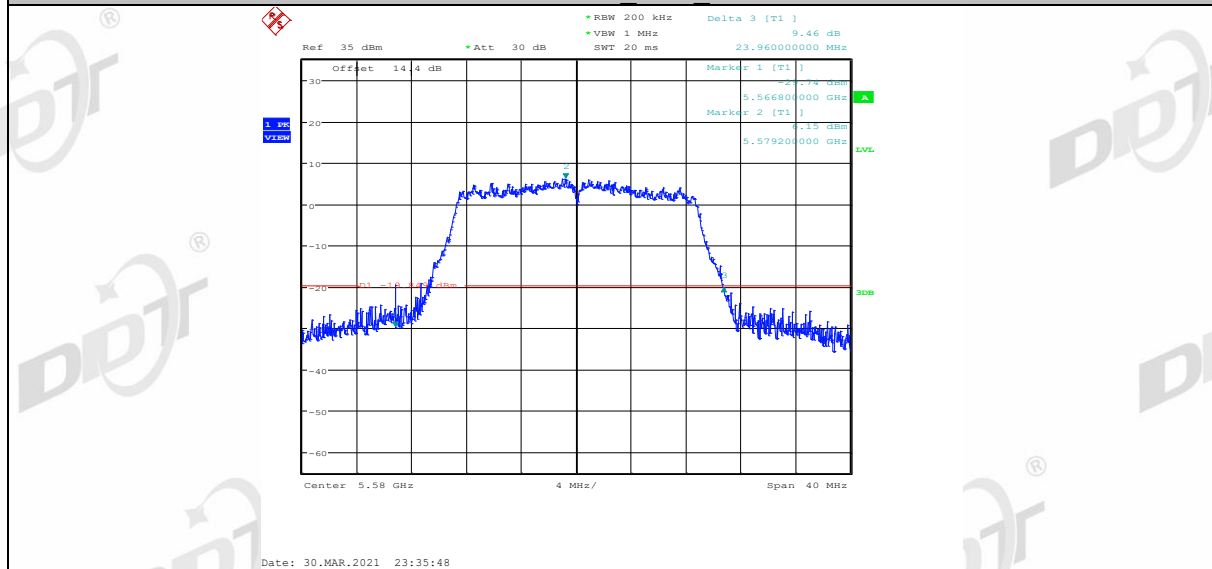
11AC20SISO_Ant1_5320



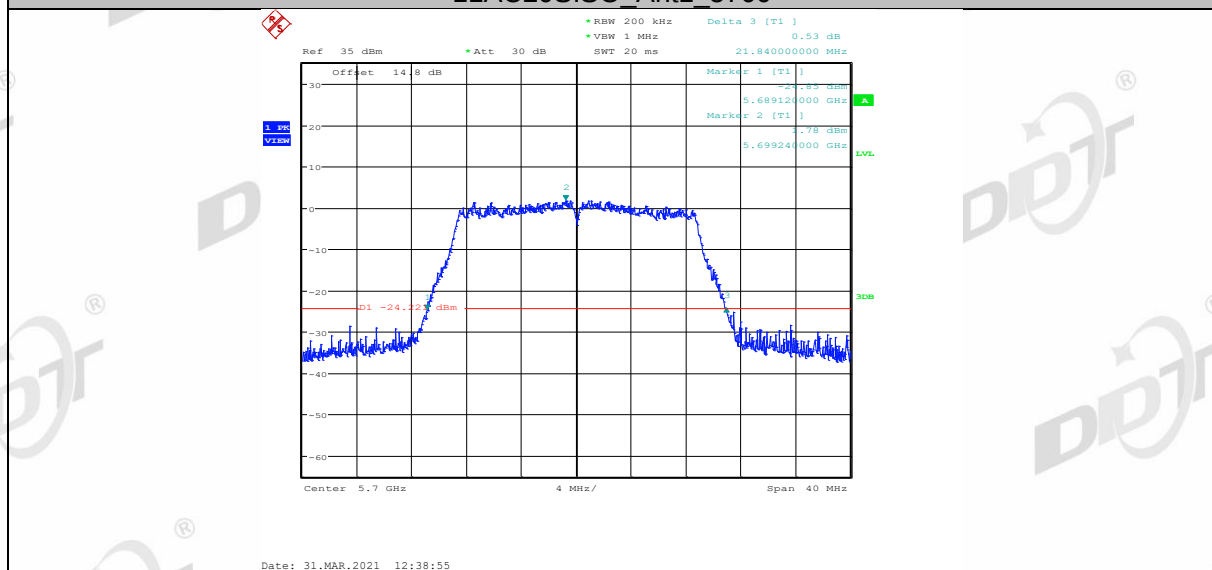
11AC20SISO_Ant1_5500



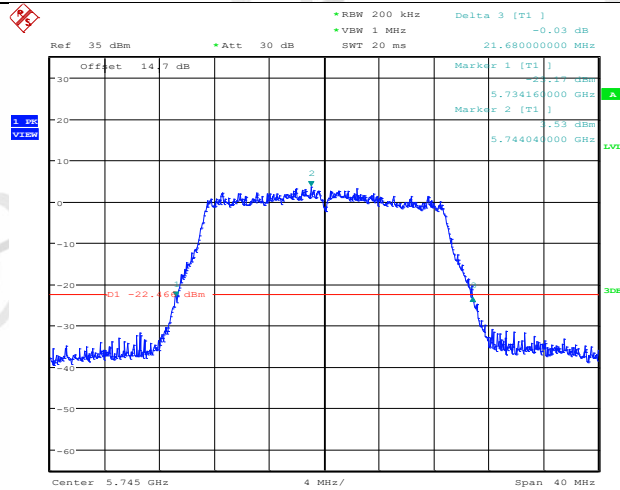
11AC20SISO_Ant1_5580



11AC20SISO_Ant1_5700

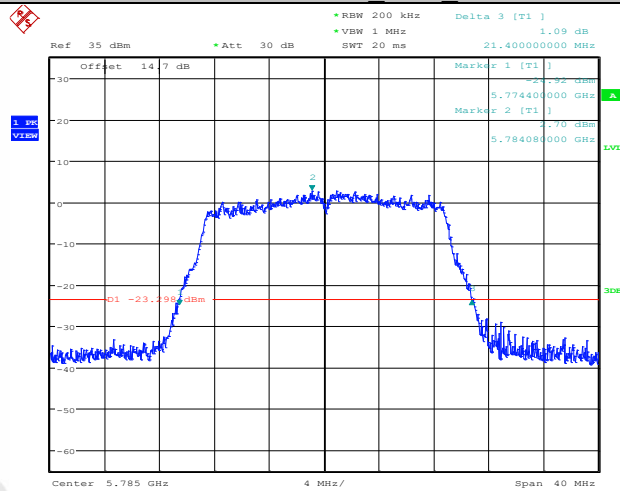


11AC20SISO_Ant1_5745



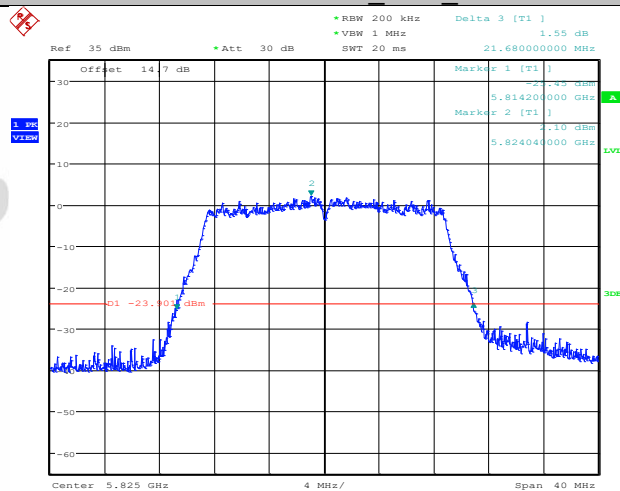
Date: 31.MAR.2021 10:37:36

11AC20SISO Ant1 5785



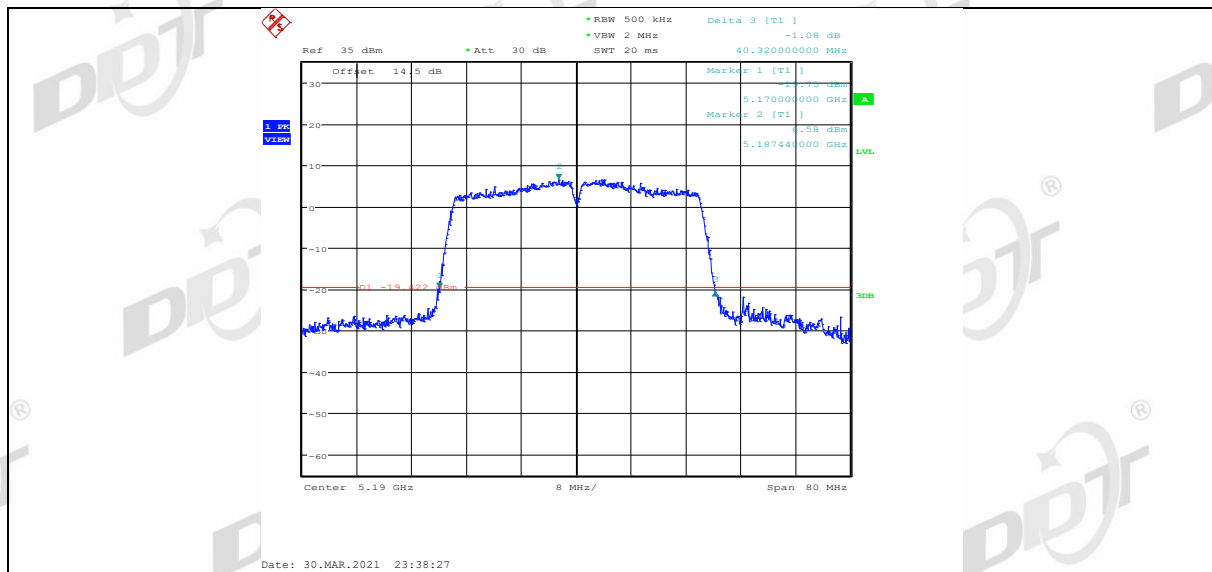
Date: 31.MAR.2021 10:39:03

11AC20SISO Ant1 5825

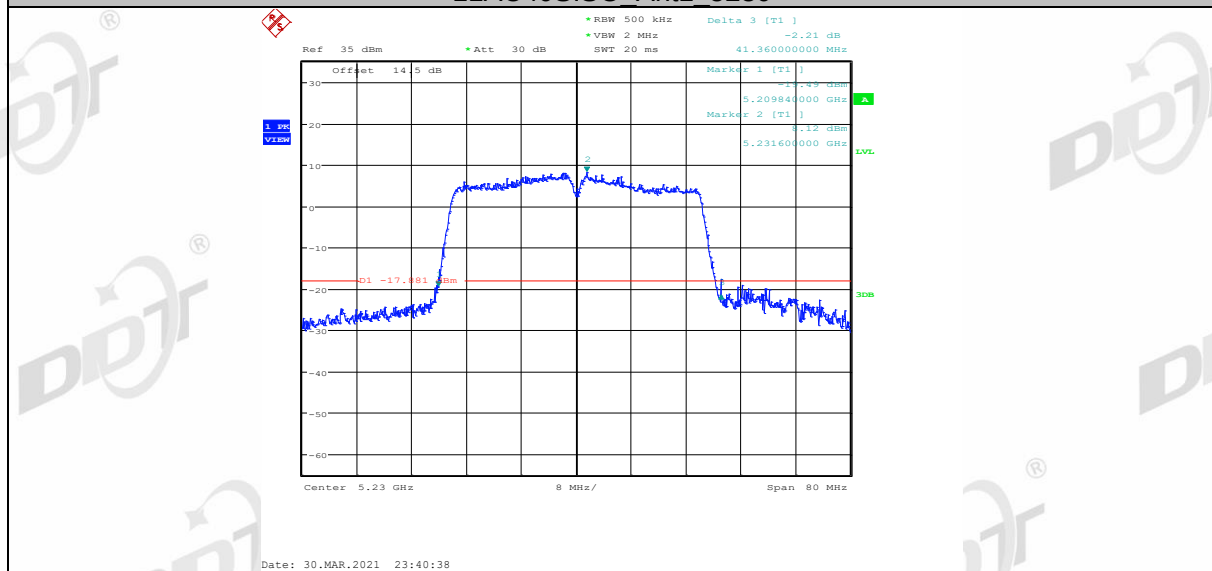


Date: 31.MAR.2021 10:40:22

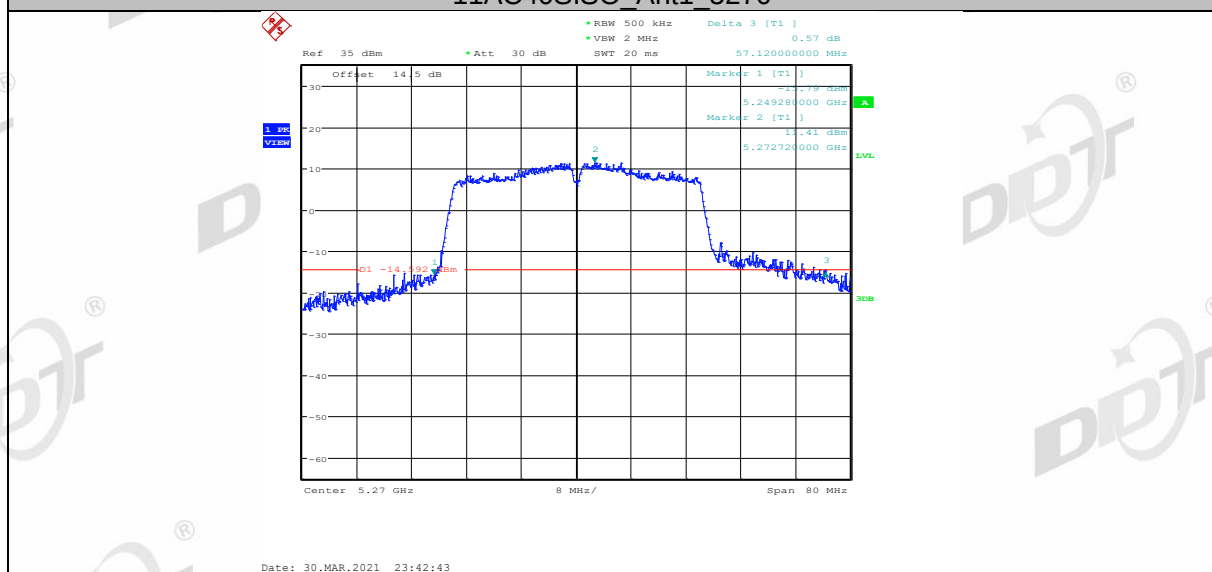
11AC40SISO Ant1 5190



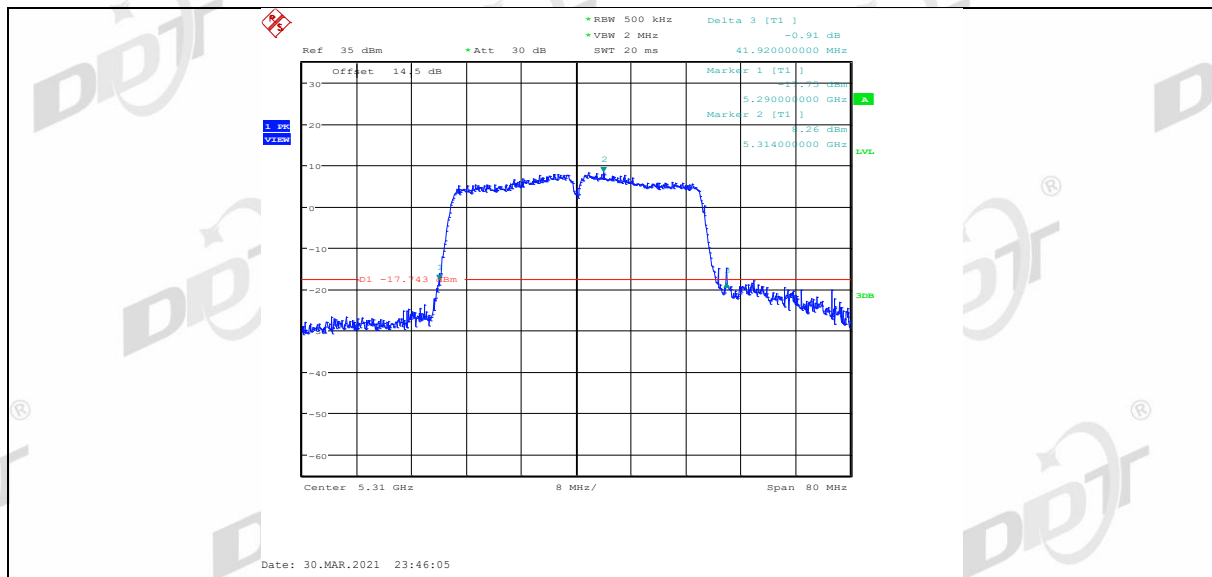
11AC40SISO_Ant1_5230



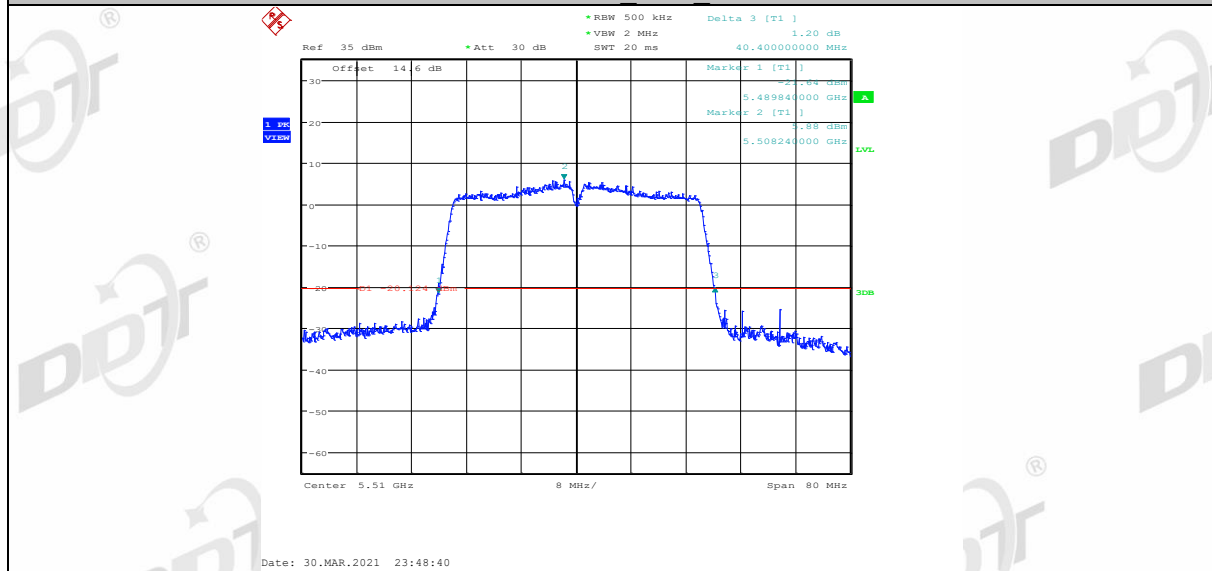
11AC40SISO_Ant1_5270



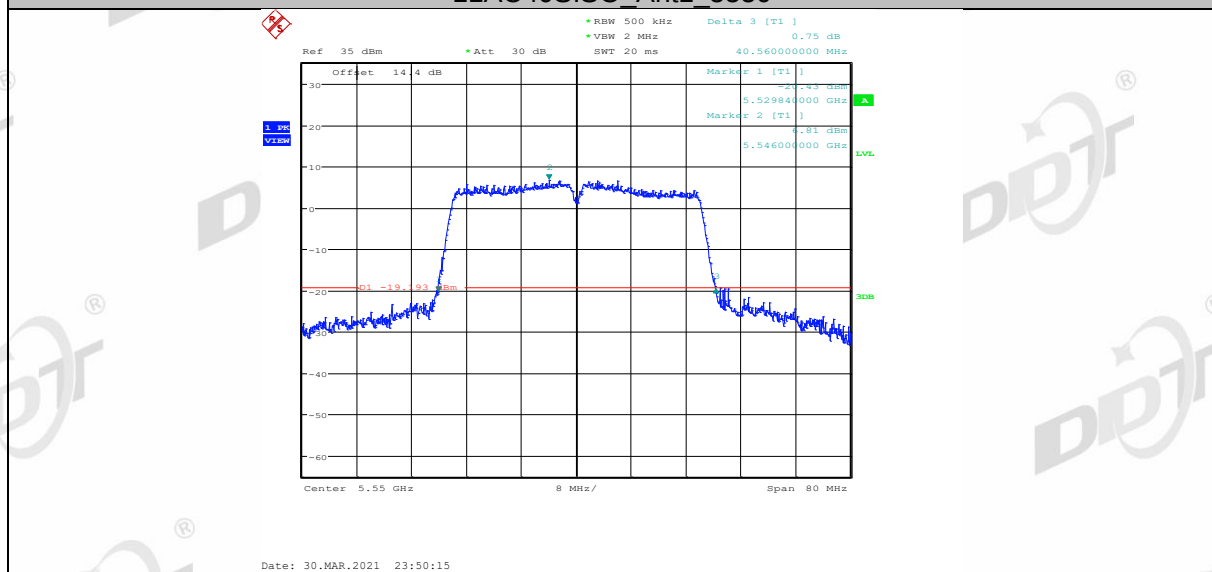
11AC40SISO_Ant1_5310



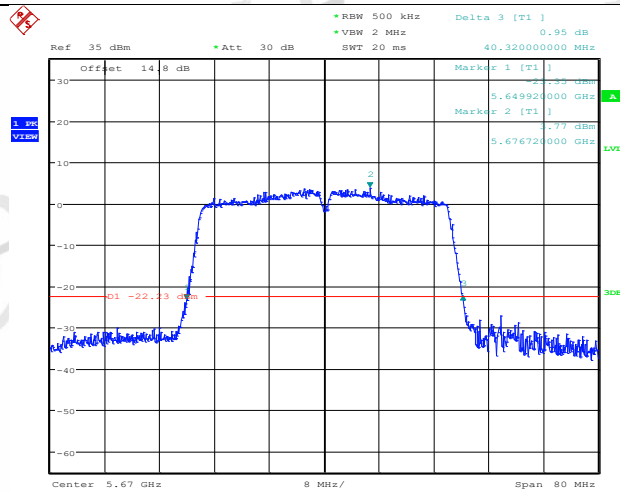
11AC40SISO_Ant1_5510



11AC40SISO_Ant1_5550

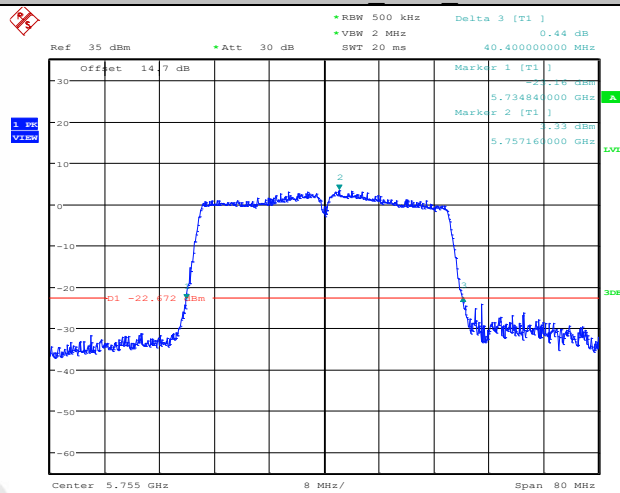


11AC40SISO_Ant1_5670



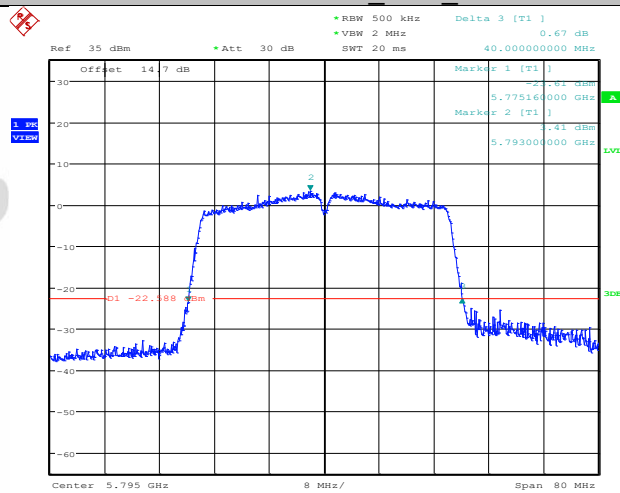
Date: 31.MAR.2021 11:17:02

11AC40SISO_Ant1_5755



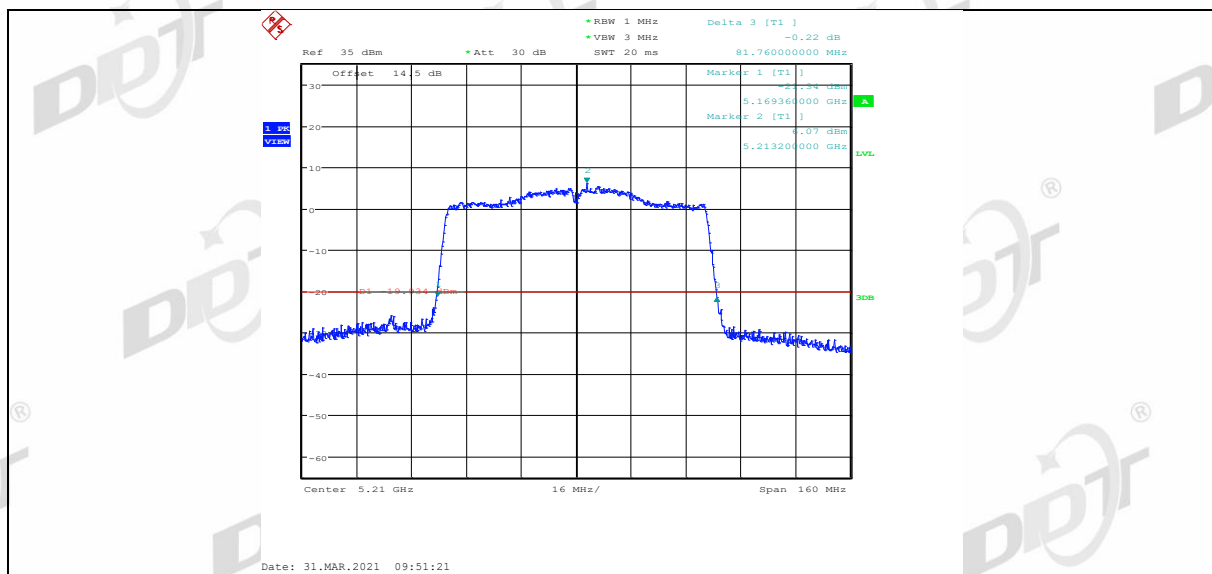
Date: 31.MAR.2021 10:41:52

11AC40SISO_Ant1_5795

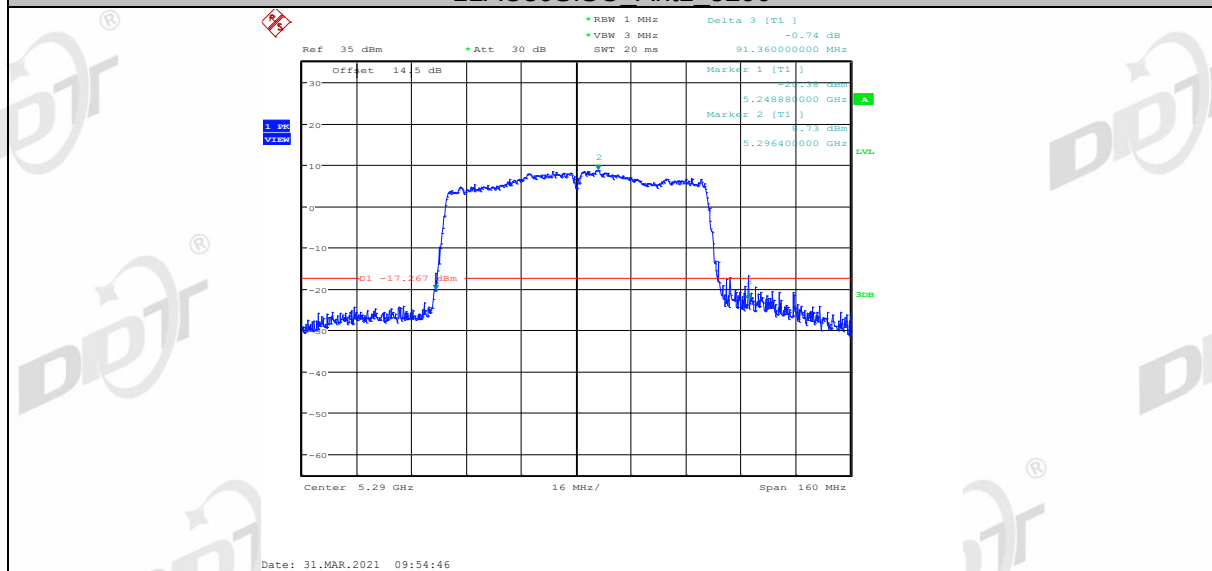


Date: 31.MAR.2021 10:43:09

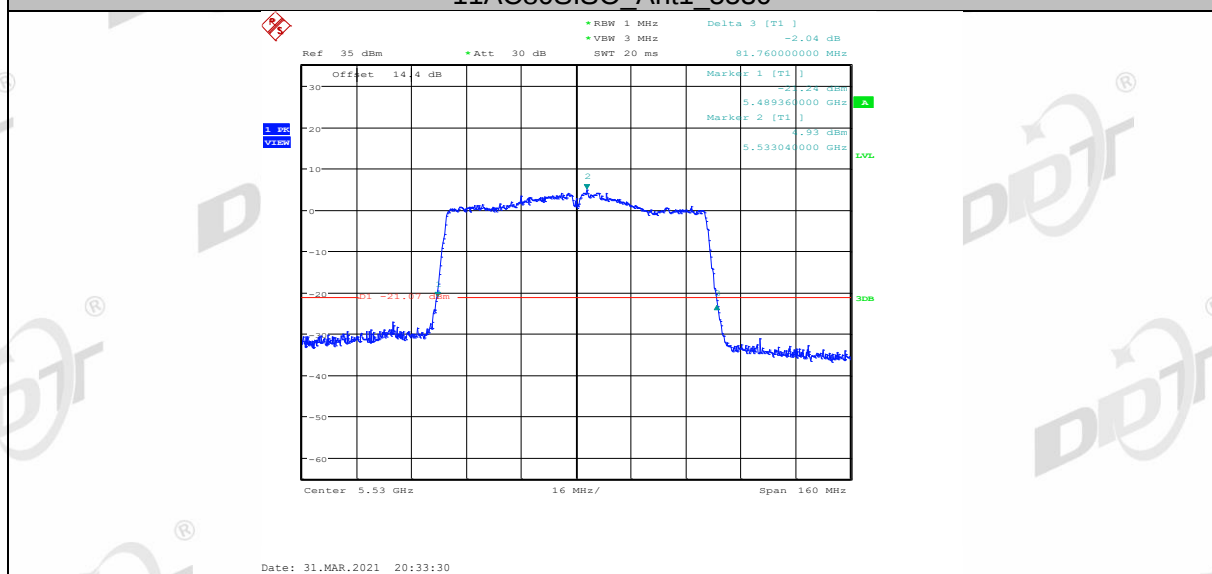
11AC80SISO_Ant1_5210



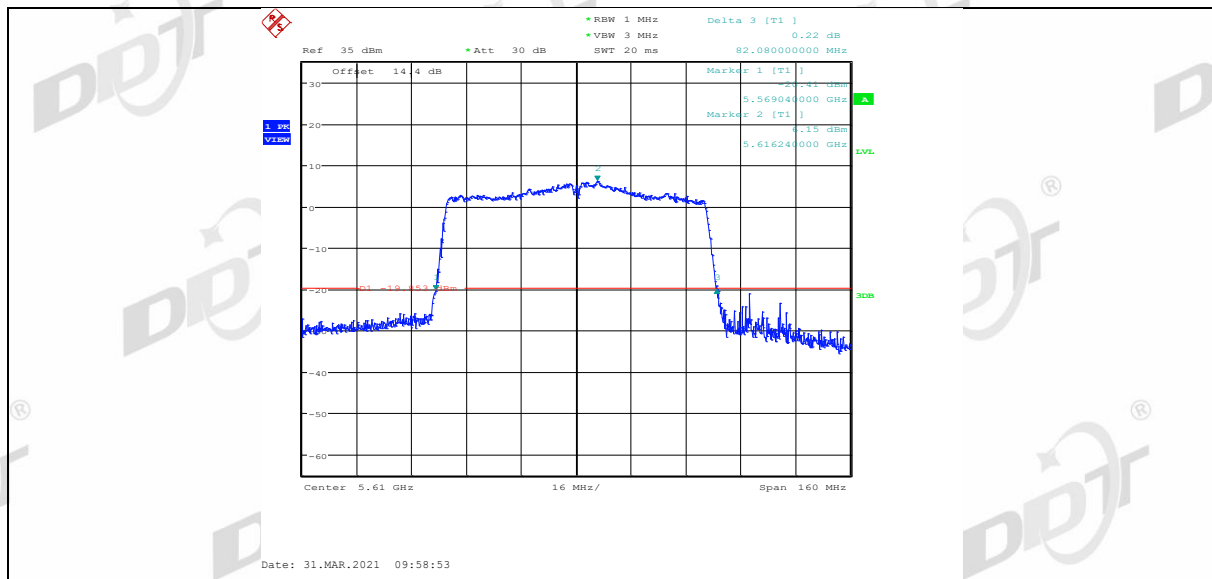
11AC80SISO_Ant1_5290



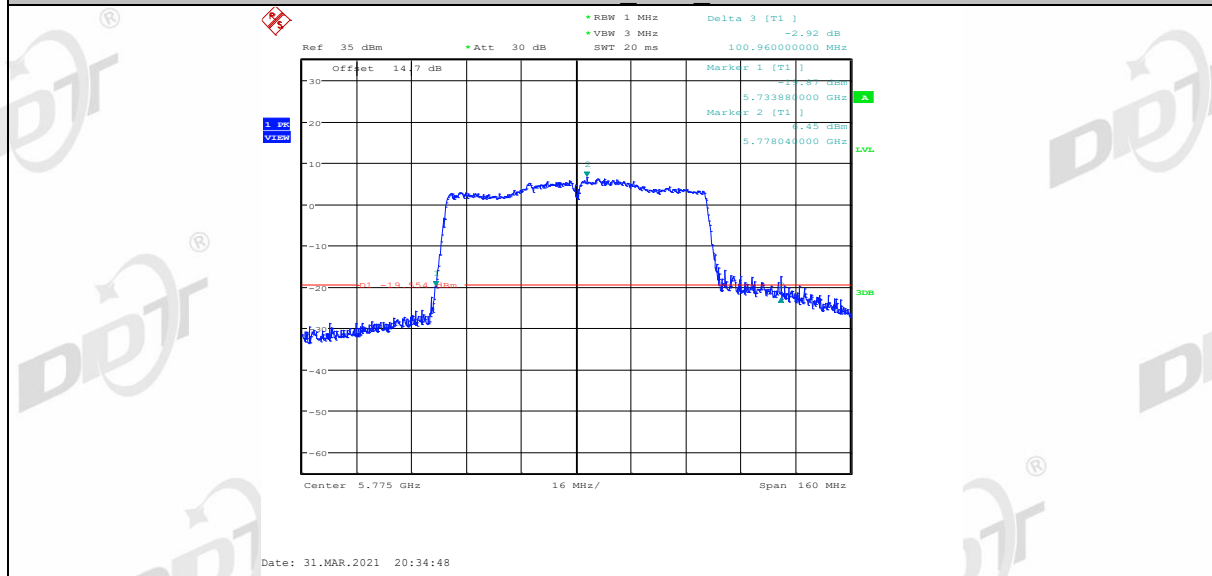
11AC80SISO_Ant1_5530



11AC80SISO_Ant1_5610

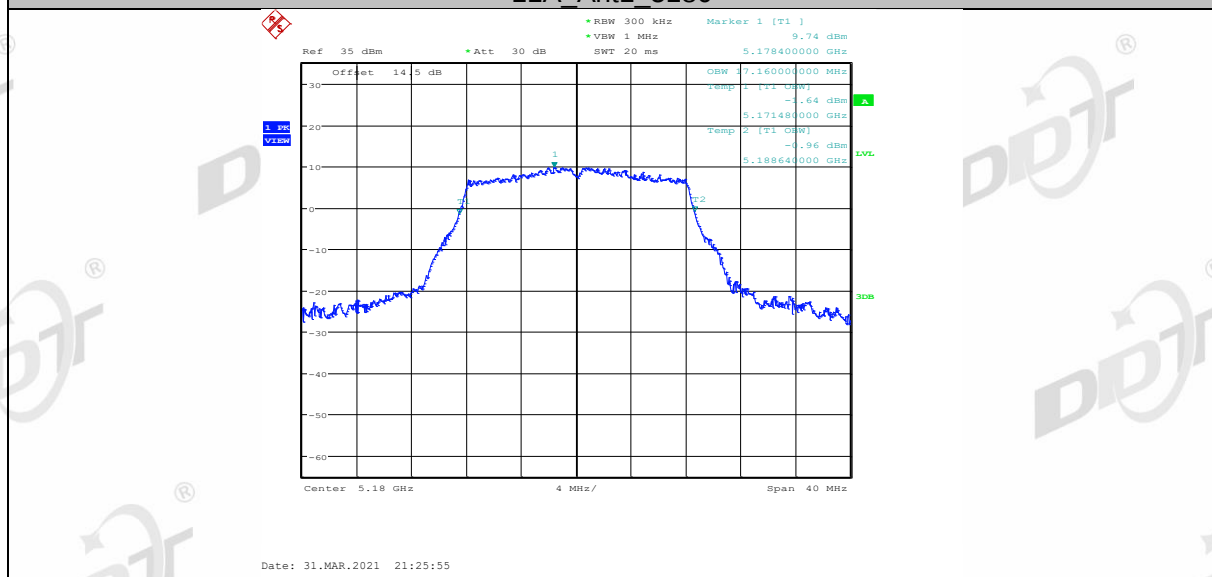


11AC80SISO Ant1 5775

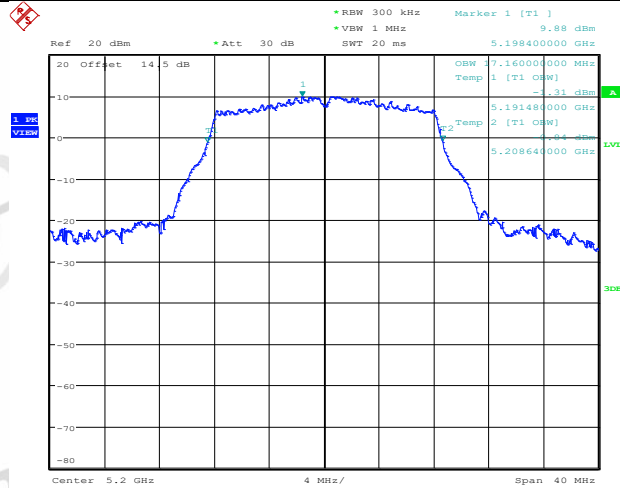


99% Bandwidth

11A_Ant1_5180

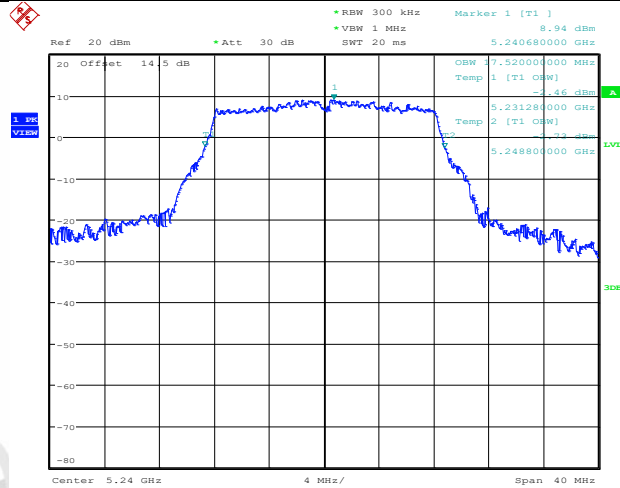


11A_Ant1_5200



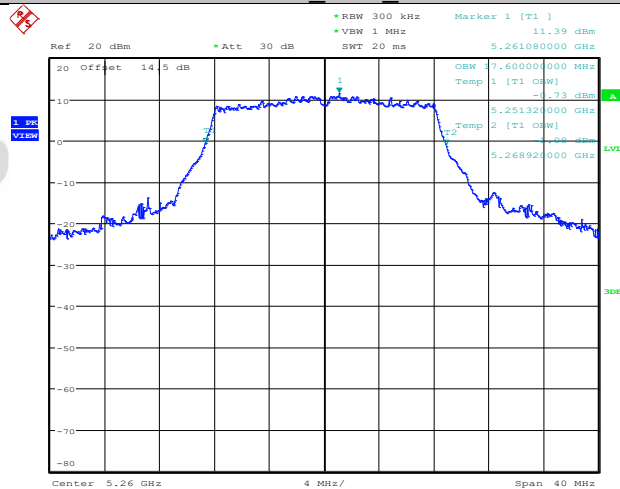
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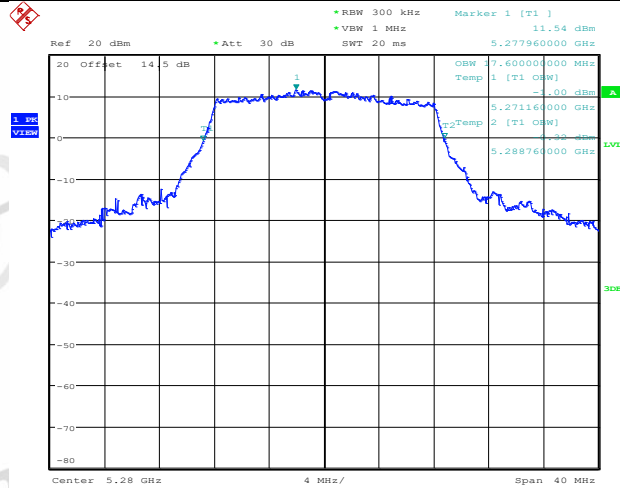
Date: 30.MAR.2021 15:18:46

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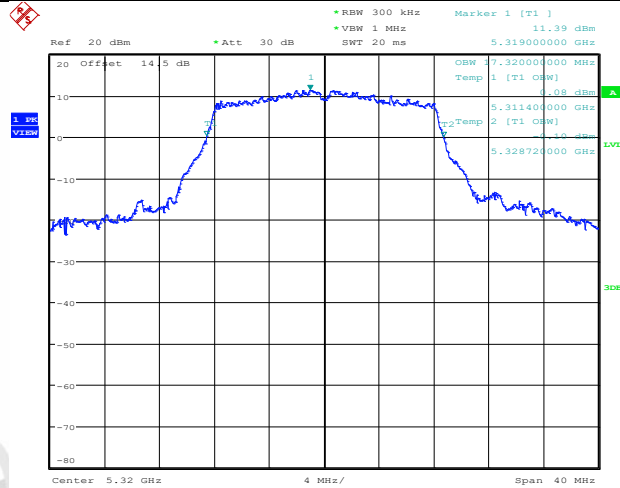
Date: 30.MAR.2021 15:20:39

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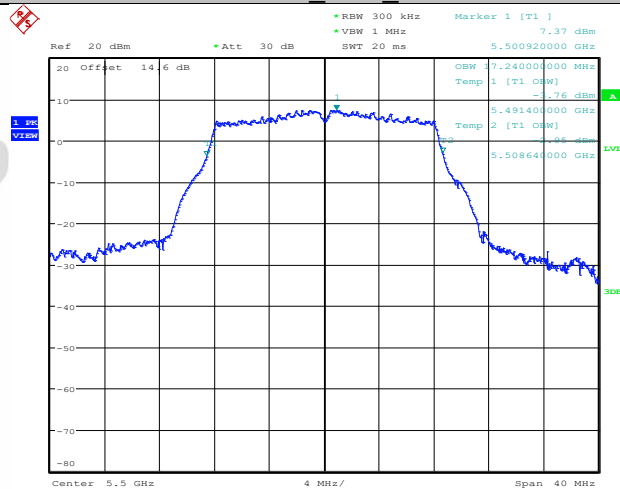
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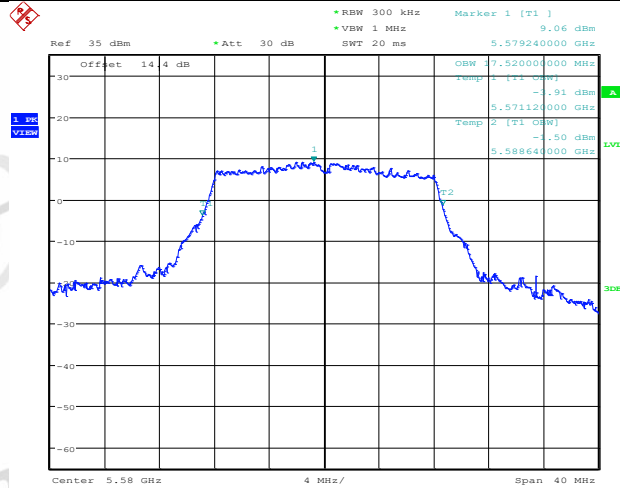
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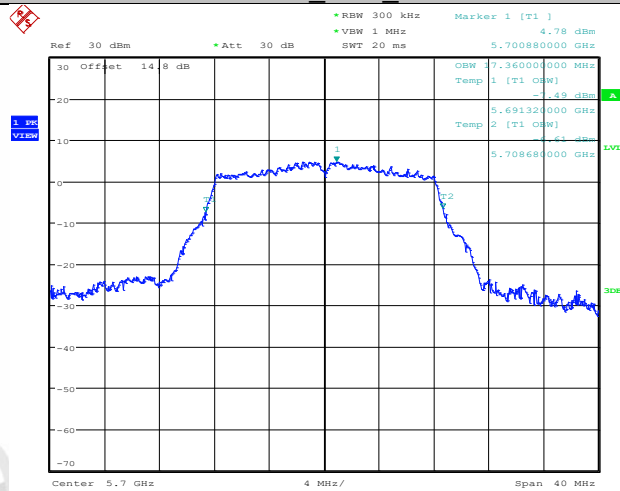
Date: 30.MAR.2021 15:35:10

11A_Ant1_5580



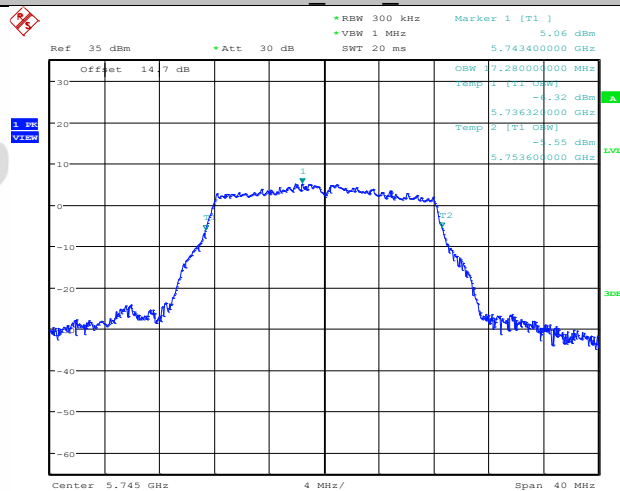
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11A_Ant1_5700



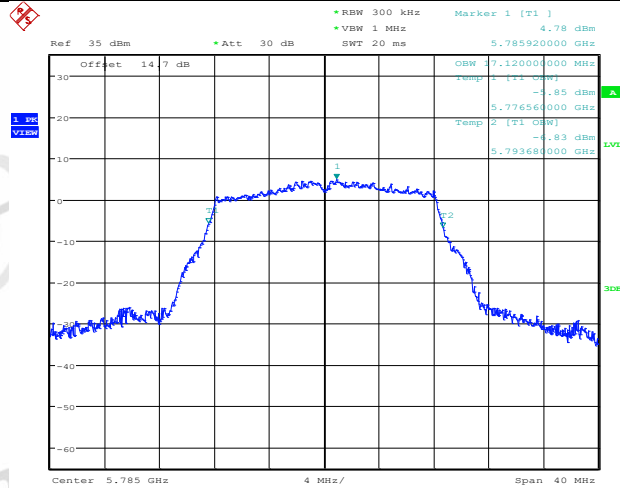
Date: 30.MAR.2021 16:14:31

11A_Ant1_5745



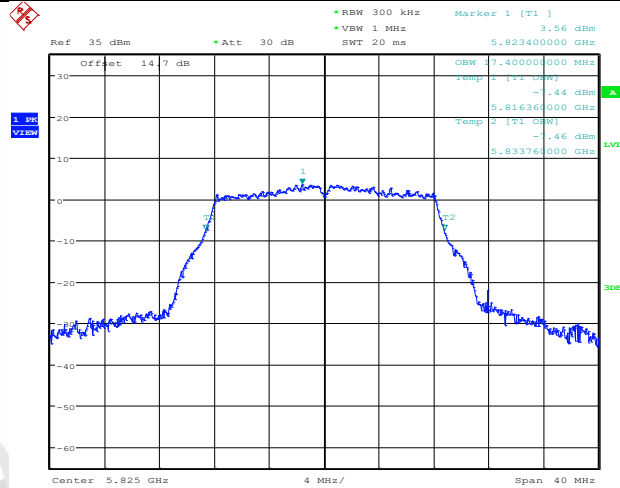
Date: 31.MAR.2021 10:08:24

11A_Ant1_5785



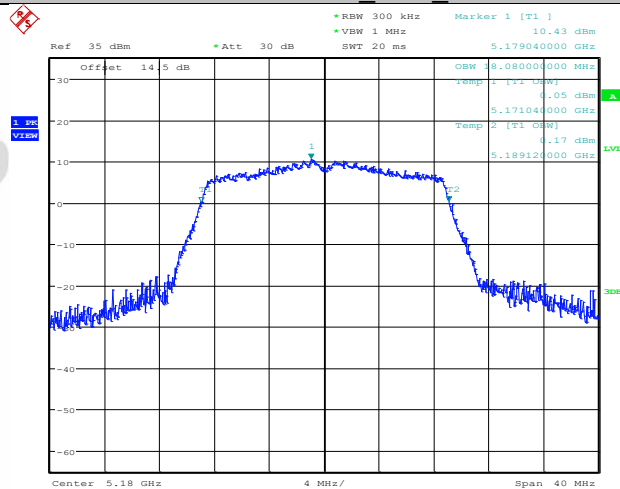
Date: 31.MAR.2021 10:10:06

11A_Ant1_5825

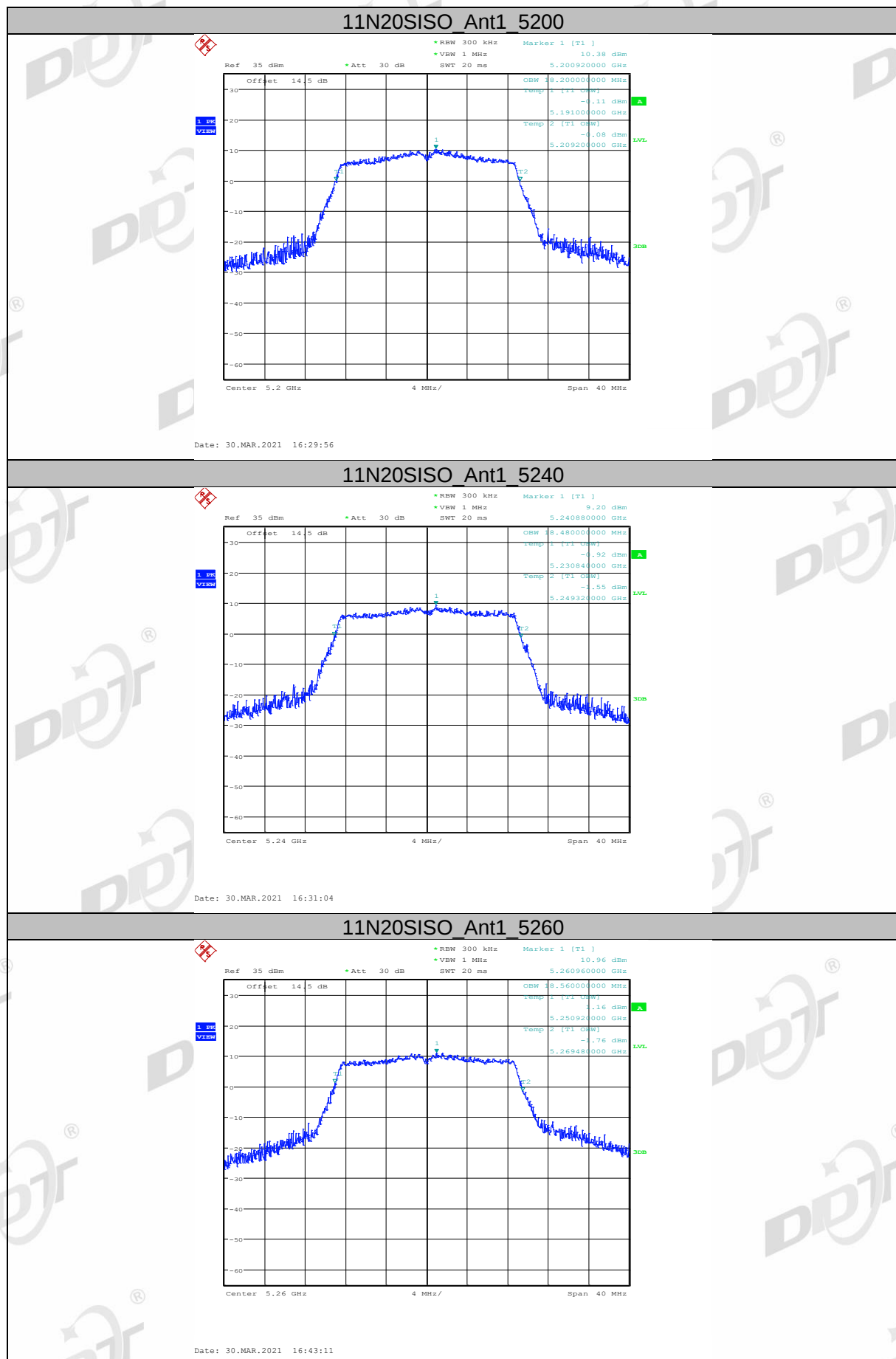


Date: 31.MAR.2021 10:11:28

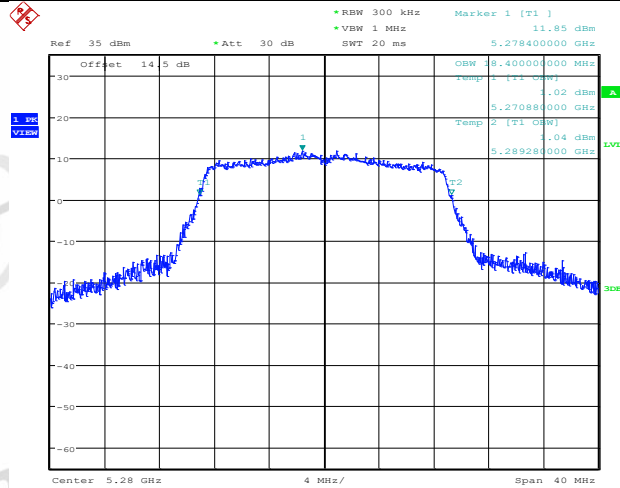
11N20SISO_Ant1_5180



Date: 30.MAR.2021 16:28:19

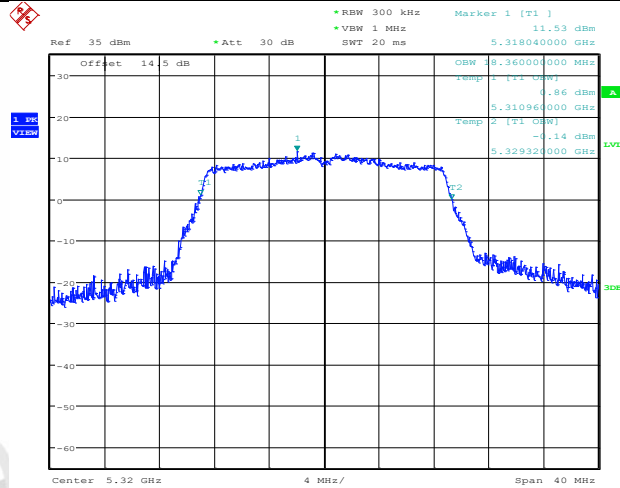


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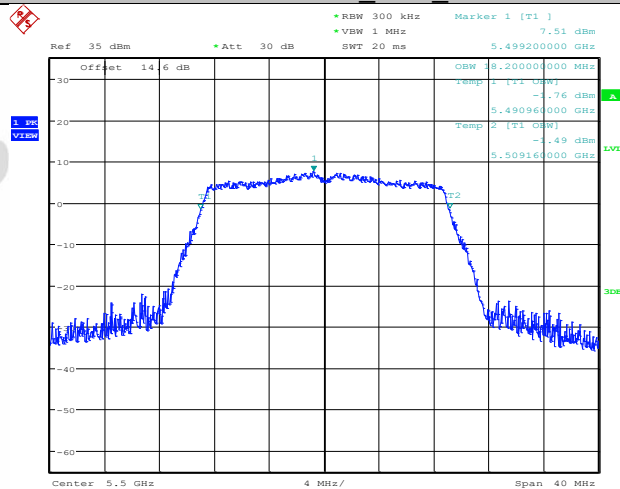
Date: 30.MAR.2021 16:46:27

11N20SISO_Ant1_5320

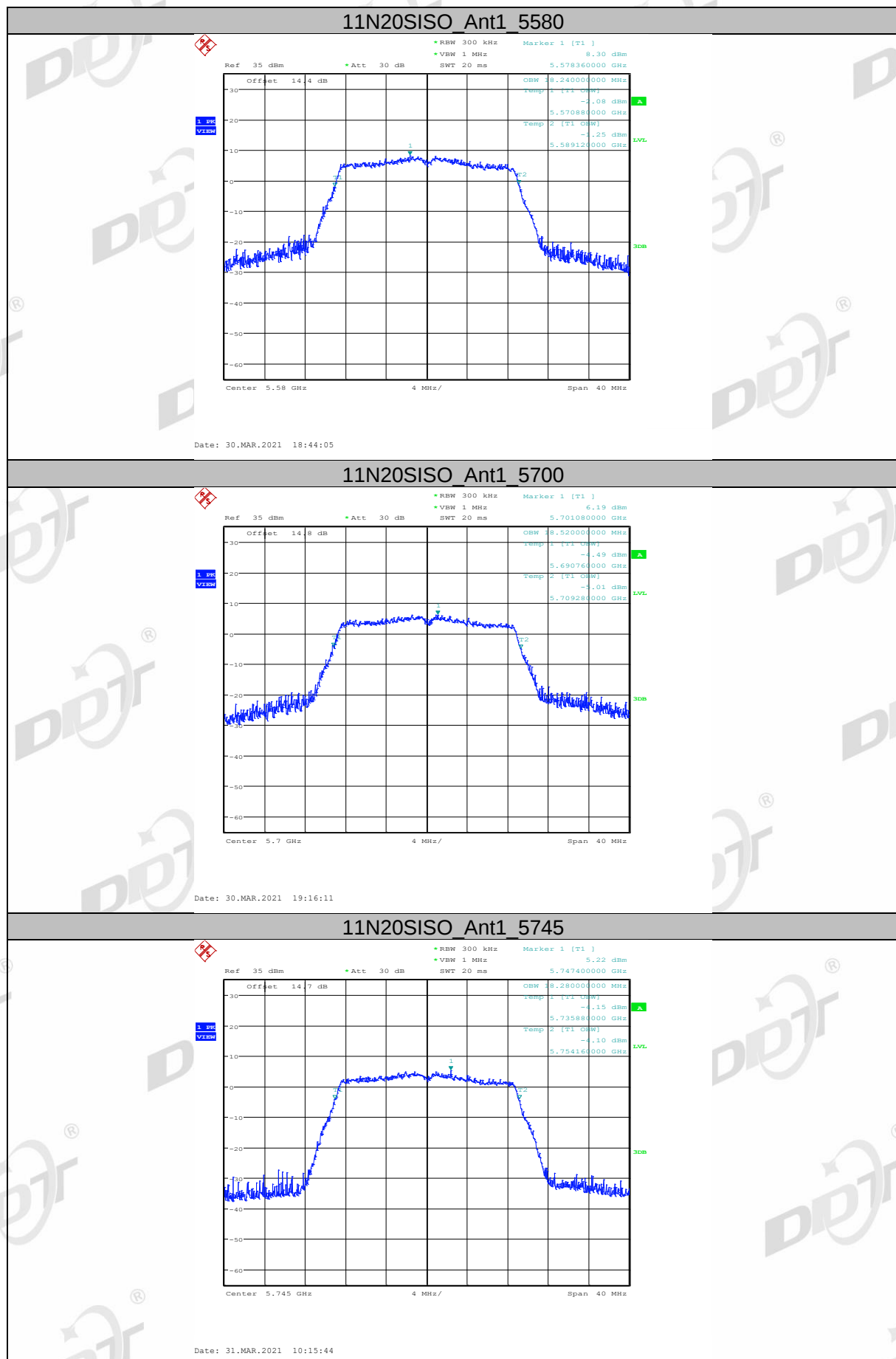


Date: 30.MAR.2021 18:39:28

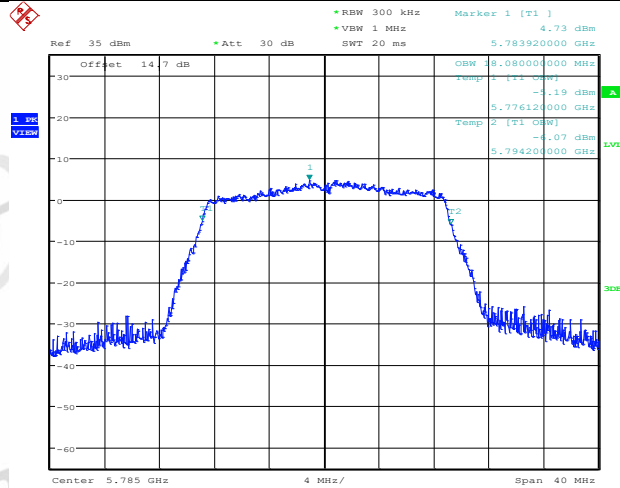
11N20SISO_Ant1_5500



Date: 30.MAR.2021 18:42:33

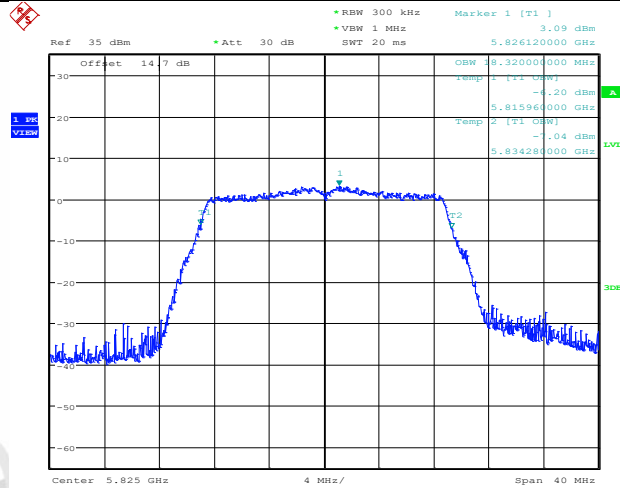


11N20SISO_Ant1_5785



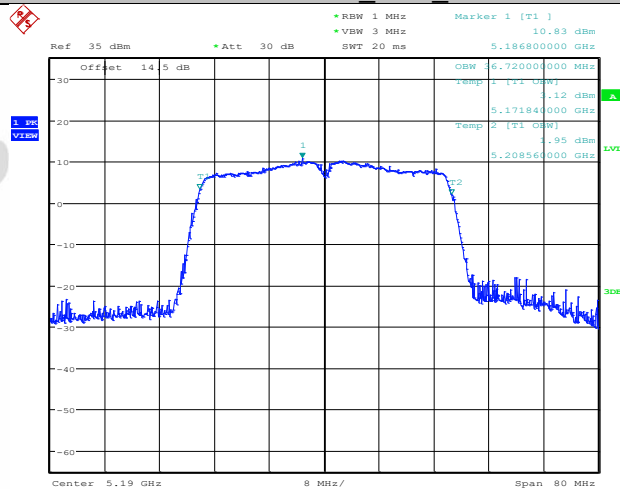
Date: 31.MAR.2021 10:19:02

11N20SISO_Ant1_5825

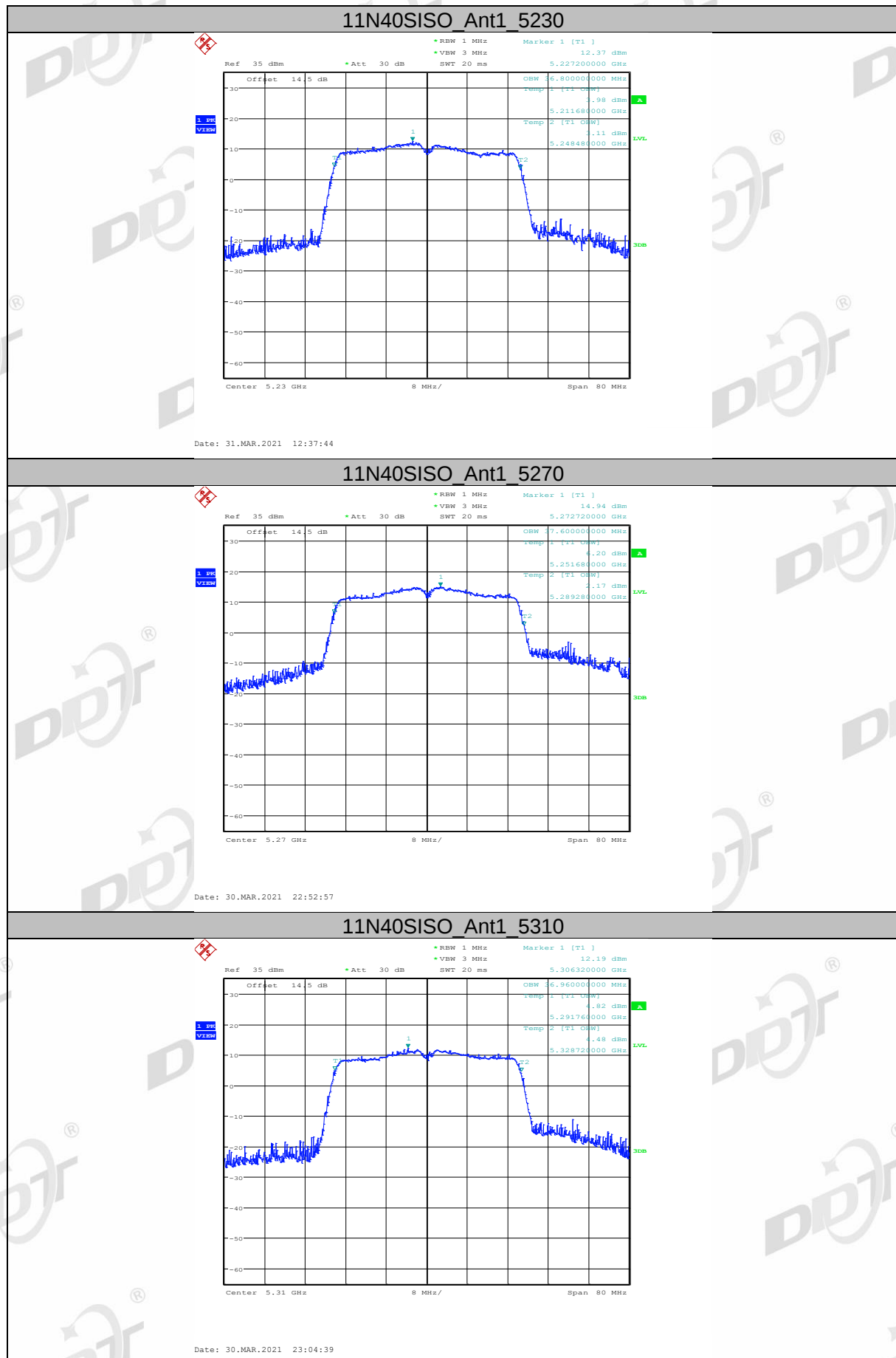


Date: 31.MAR.2021 10:33:21

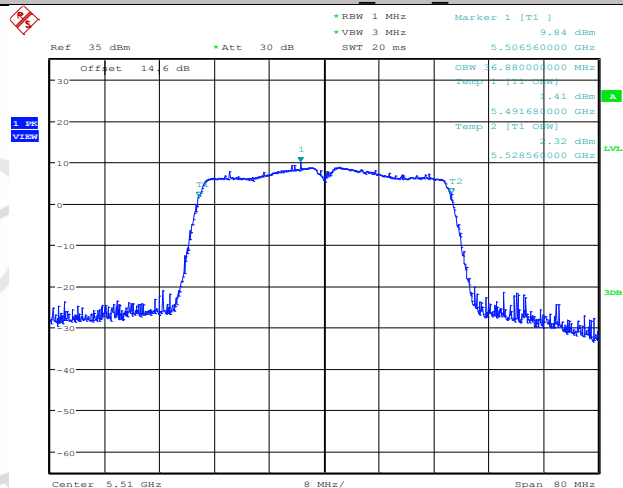
11N40SISO_Ant1_5190



Date: 30.MAR.2021 21:51:15

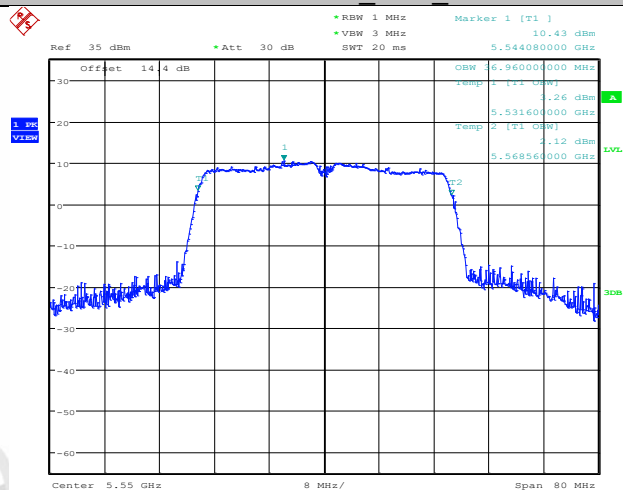


11N40SISO_Ant1_5510



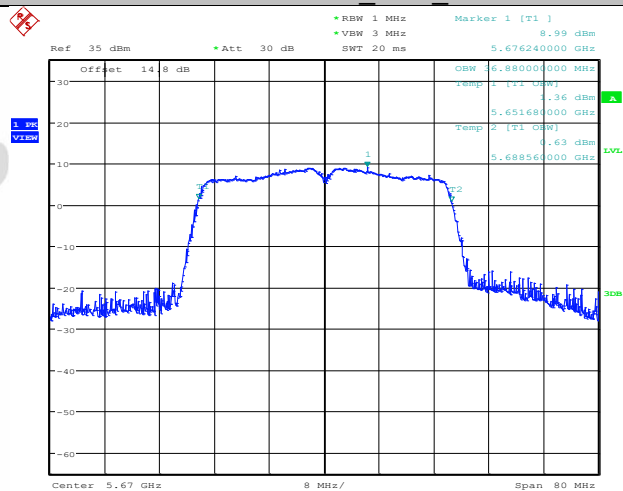
Date: 30.MAR.2021 23:09:22

11N40SISO_Ant1_5550

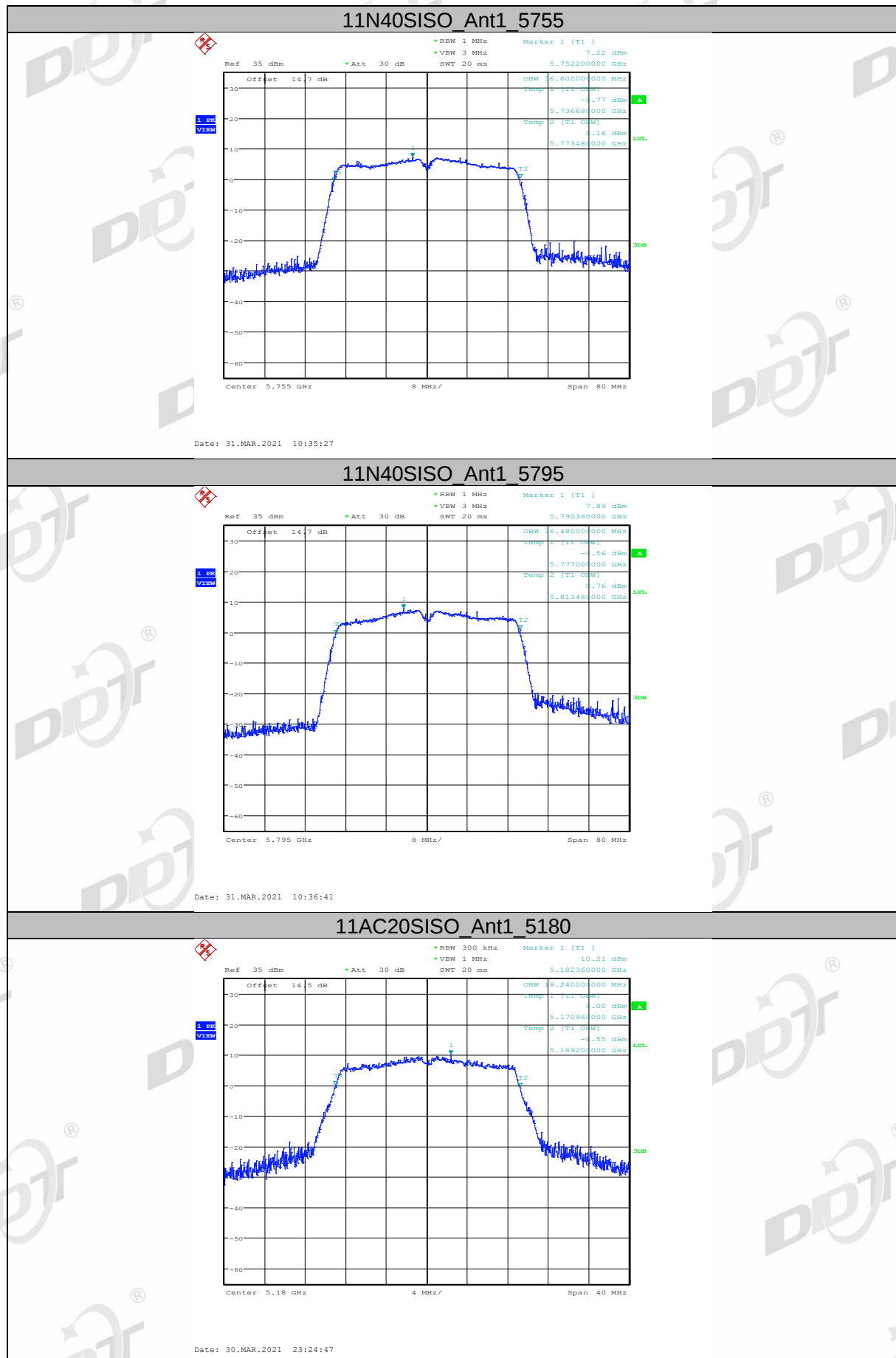


Date: 30.MAR.2021 23:10:53

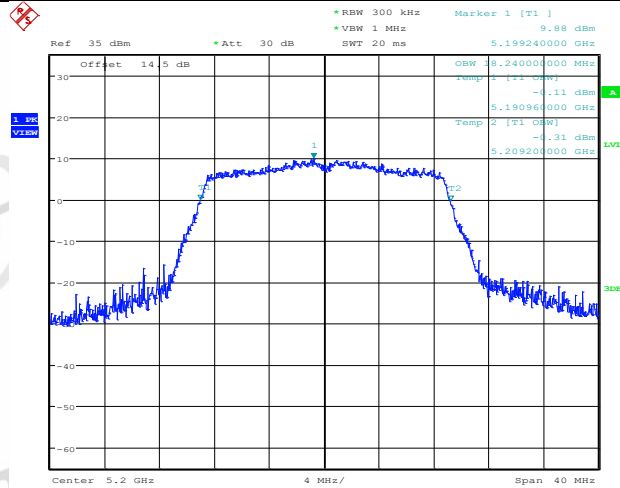
11N40SISO_Ant1_5670



Date: 30.MAR.2021 23:17:00

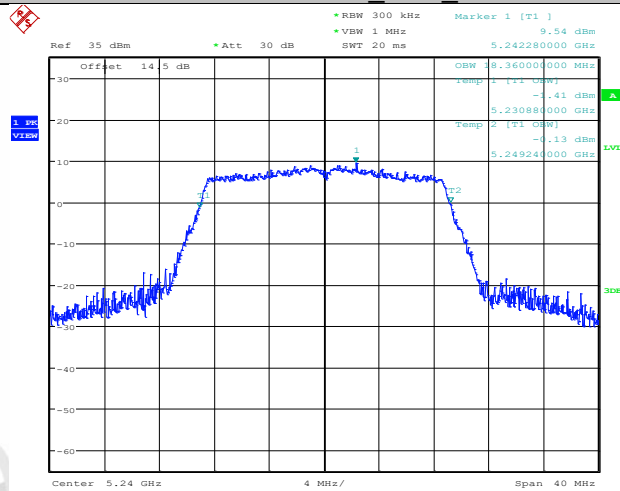


11AC20SISO_Ant1_5200



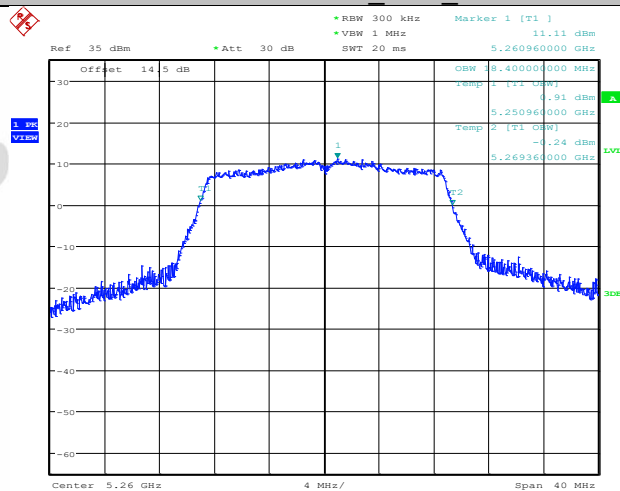
Date: 30.MAR.2021 23:26:16

11AC20SISO_Ant1_5240



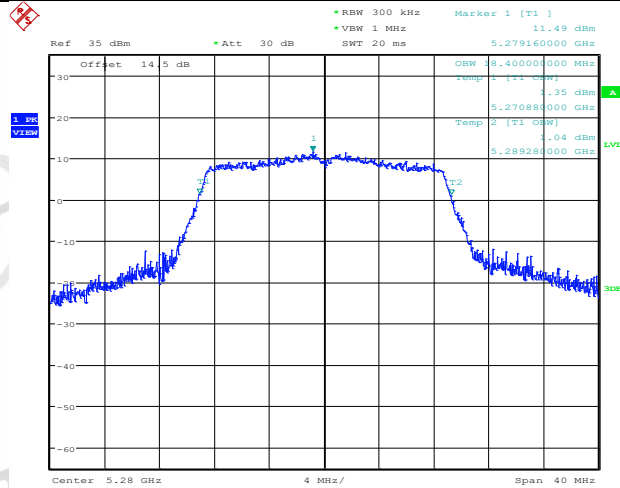
Date: 30.MAR.2021 23:27:16

11AC20SISO_Ant1_5260



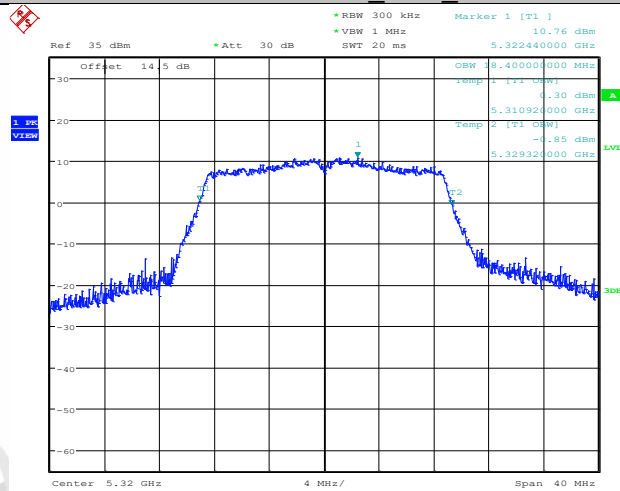
Date: 30.MAR.2021 23:28:35

11AC20SISO_Ant1_5280



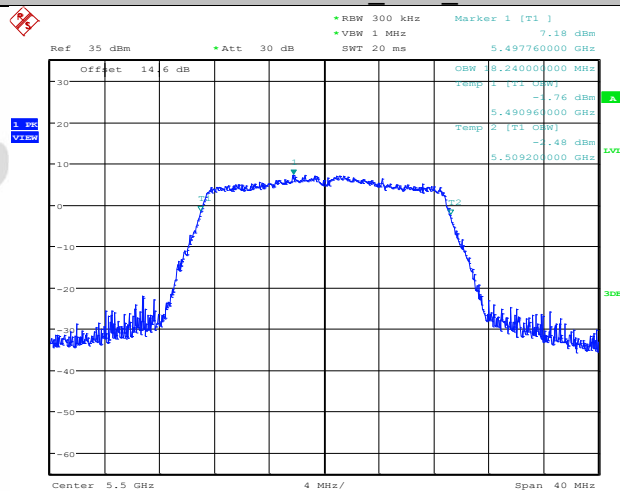
Date: 30.MAR.2021 23:29:58

11AC20SISO_Ant1_5320



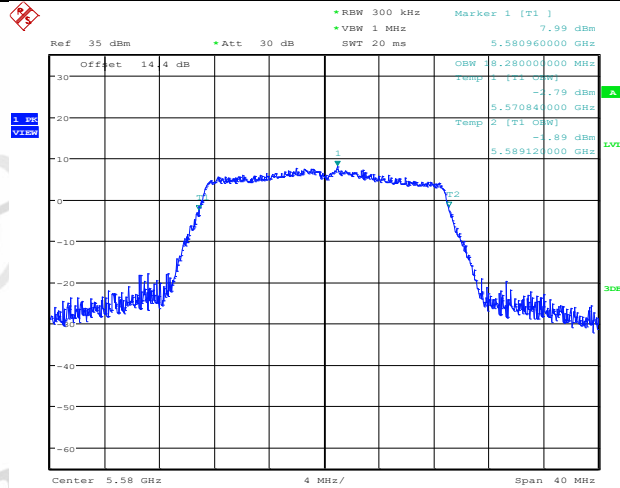
Date: 30.MAR.2021 23:31:08

11AC20SISO_Ant1_5500



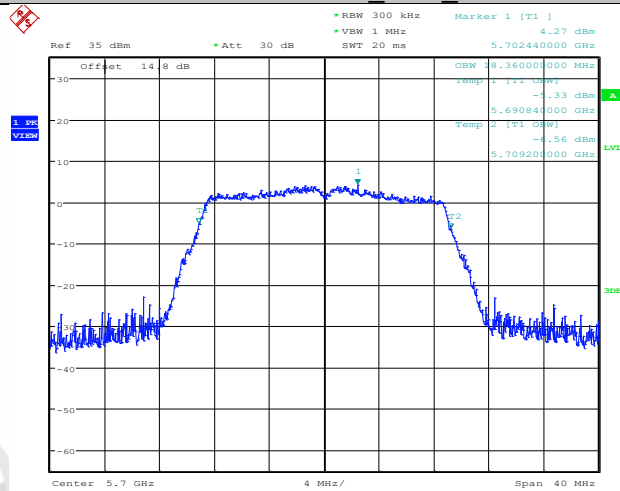
Date: 30.MAR.2021 23:32:38

11AC20SISO_Ant1_5580



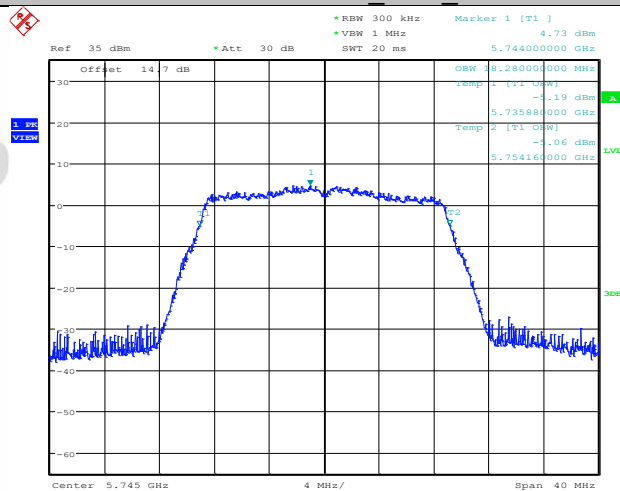
Date: 30.MAR.2021 23:35:58

11AC20SISO_Ant1_5700



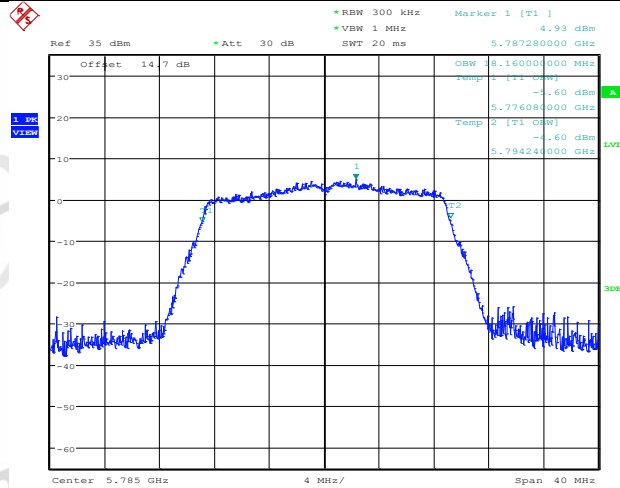
Date: 30.MAR.2021 23:37:03

11AC20SISO_Ant1_5745



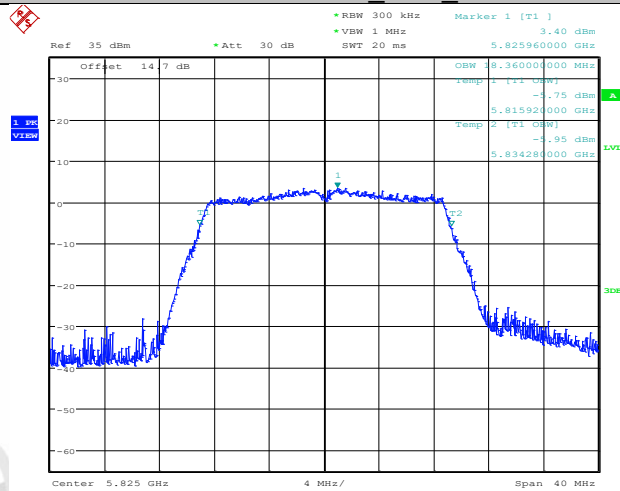
Date: 31.MAR.2021 10:37:56

11AC20SISO_Ant1_5785



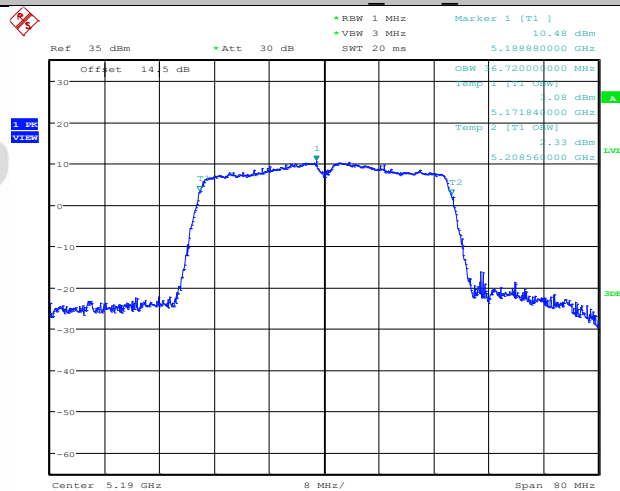
Date: 31.MAR.2021 10:39:23

11AC20SISO_Ant1_5825



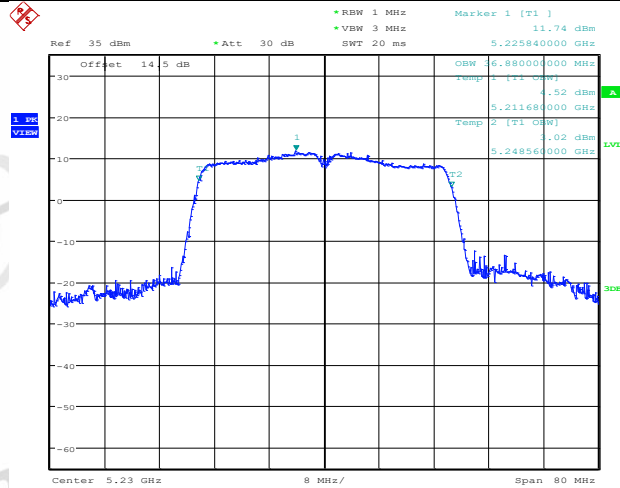
Date: 31.MAR.2021 10:40:41

11AC40SISO_Ant1_5190



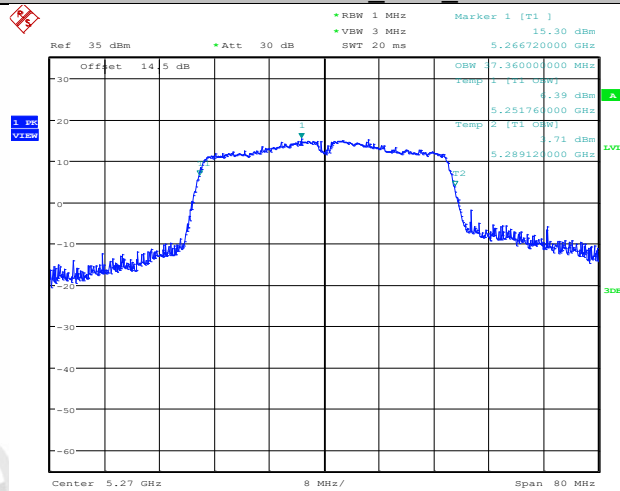
Date: 30.MAR.2021 23:38:37

11AC40SISO_Ant1_5230



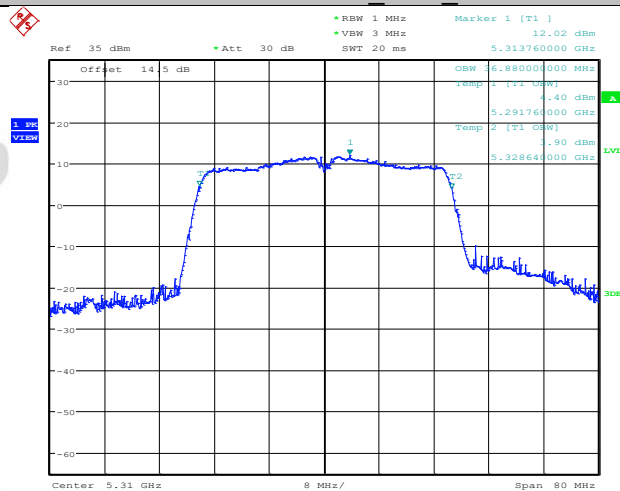
Date: 30.MAR.2021 23:40:48

11AC40SISO_Ant1_5270



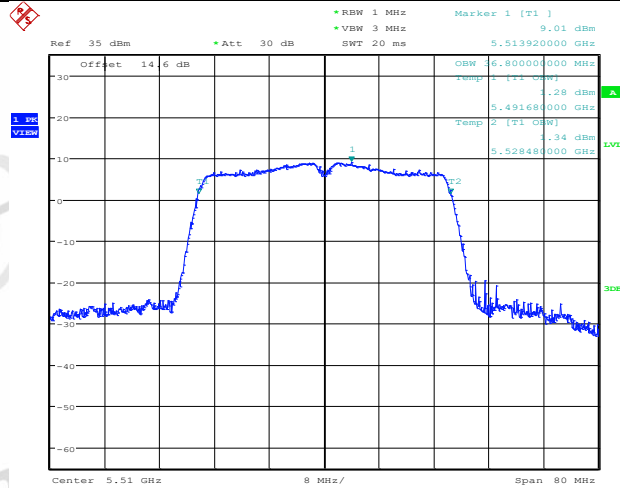
Date: 30.MAR.2021 23:42:53

11AC40SISO_Ant1_5310



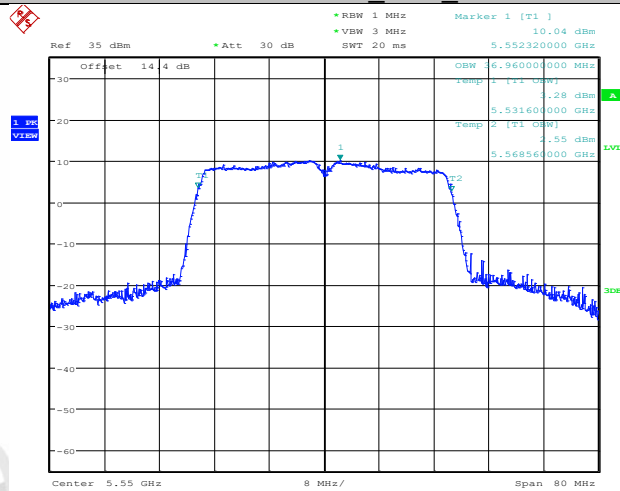
Date: 30.MAR.2021 23:46:15

11AC40SISO_Ant1_5510



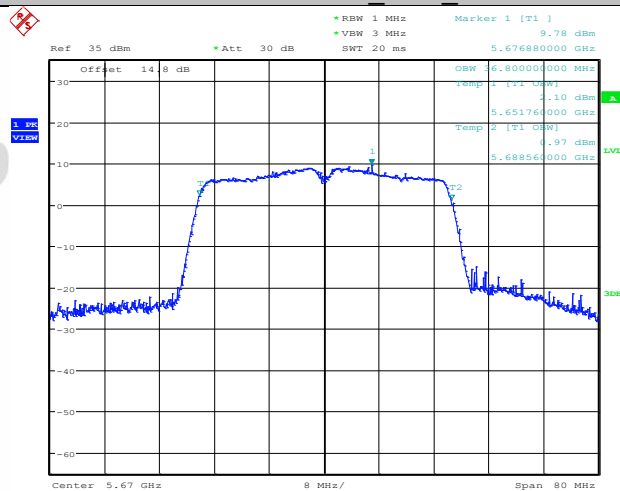
Date: 30.MAR.2021 23:48:50

11AC40SISO_Ant1_5550



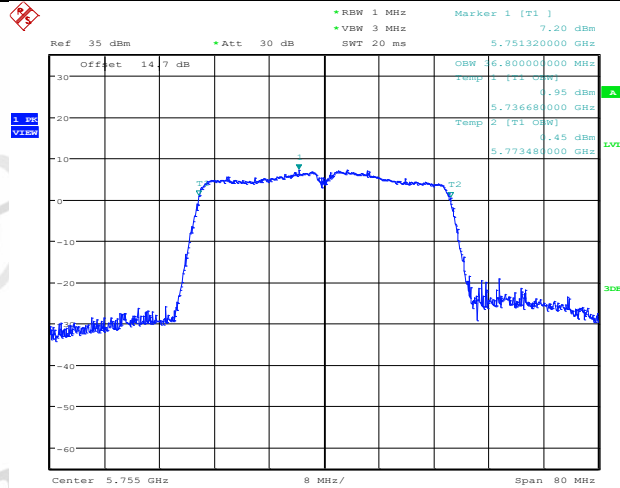
Date: 30.MAR.2021 23:50:25

11AC40SISO_Ant1_5670



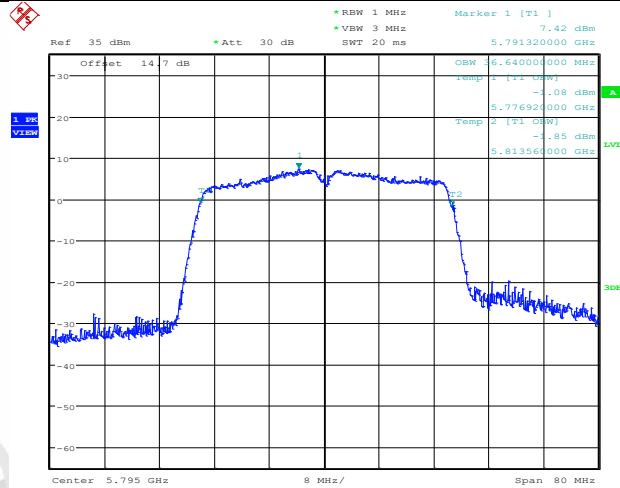
Date: 30.MAR.2021 23:52:12

11AC40SISO_Ant1_5755



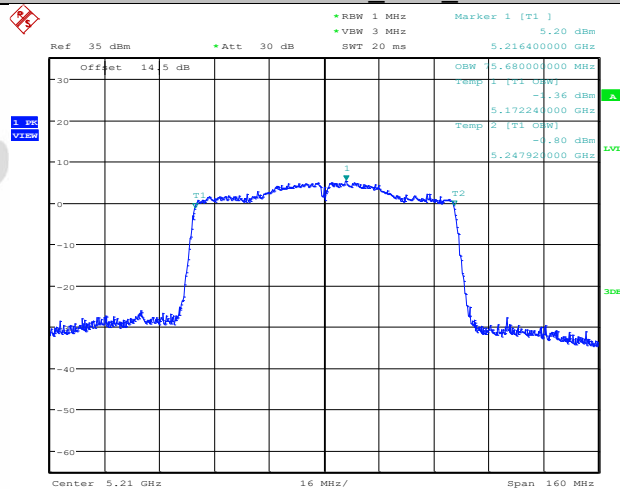
Date: 31.MAR.2021 10:42:11

11AC40SISO_Ant1_5795



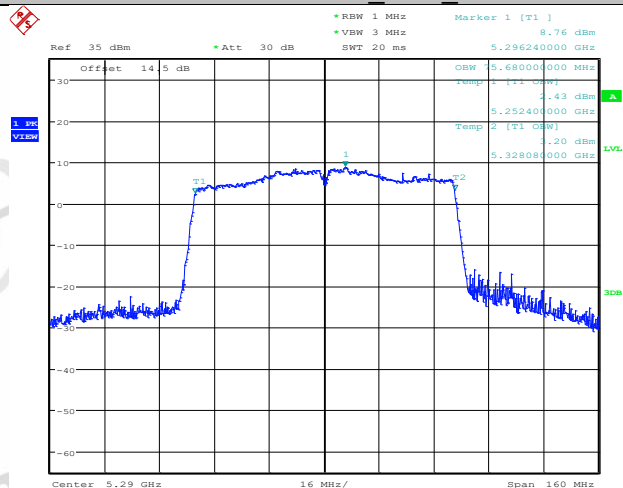
Date: 31.MAR.2021 10:43:29

11AC80SISO_Ant1_5210



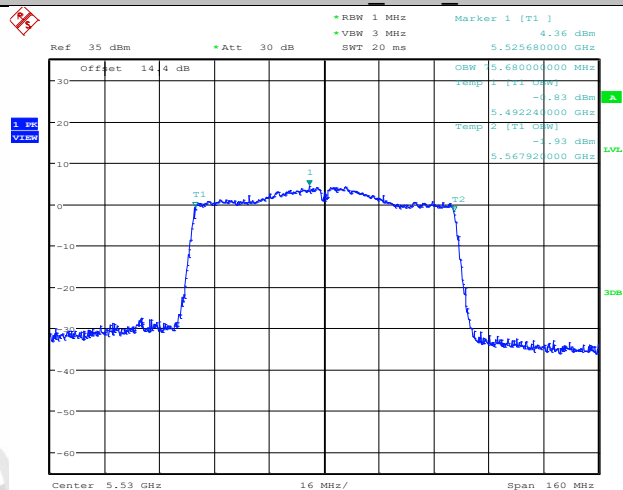
Date: 31.MAR.2021 09:51:33

11AC80SISO_Ant1_5290



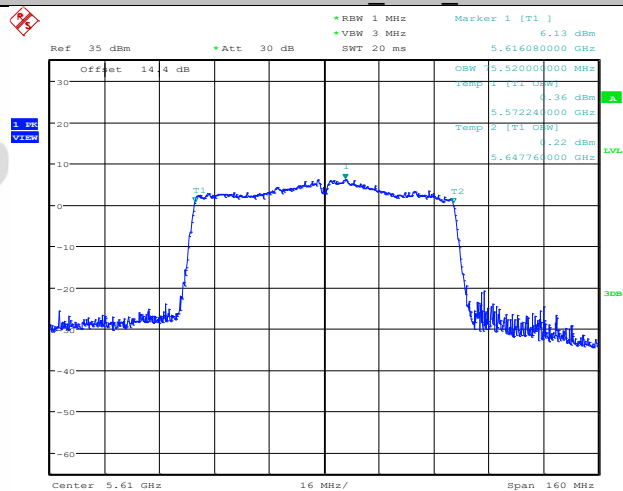
Date: 31.MAR.2021 09:54:56

11AC80SISO_Ant1_5530

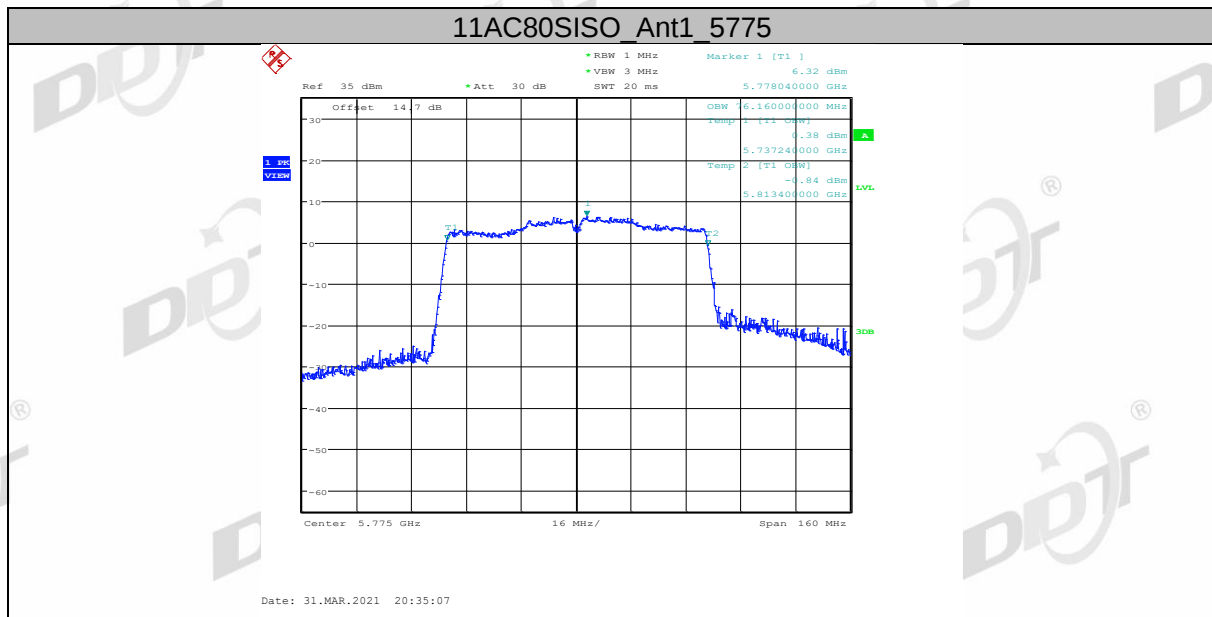


Date: 31.MAR.2021 20:33:41

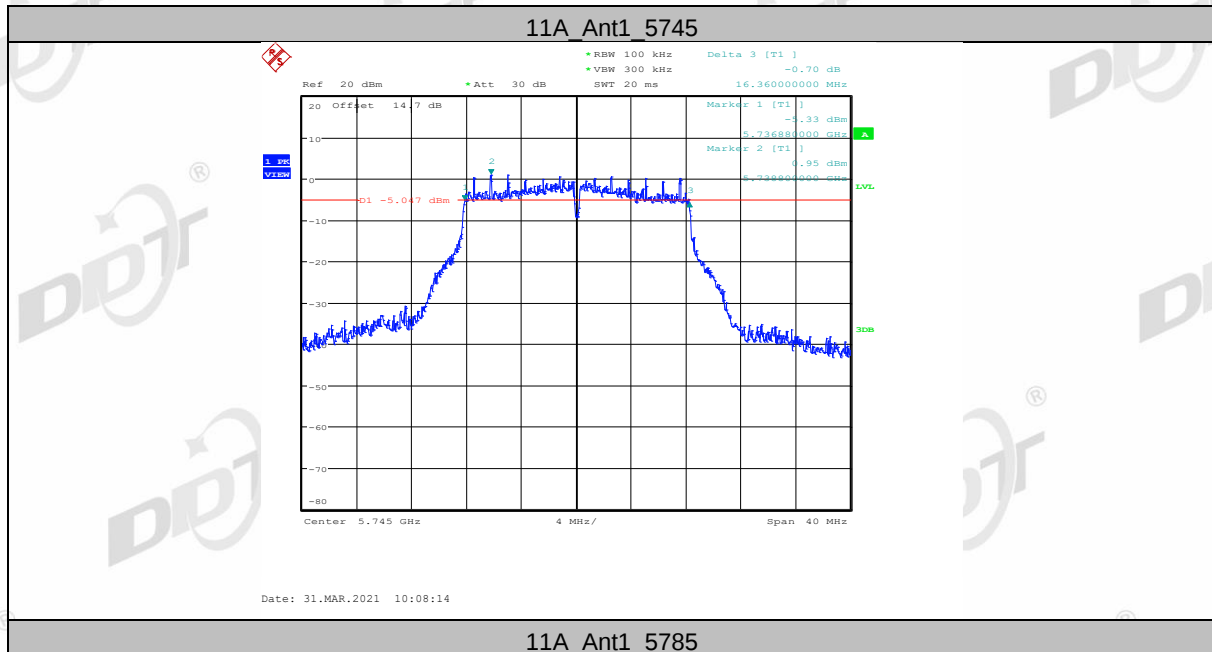
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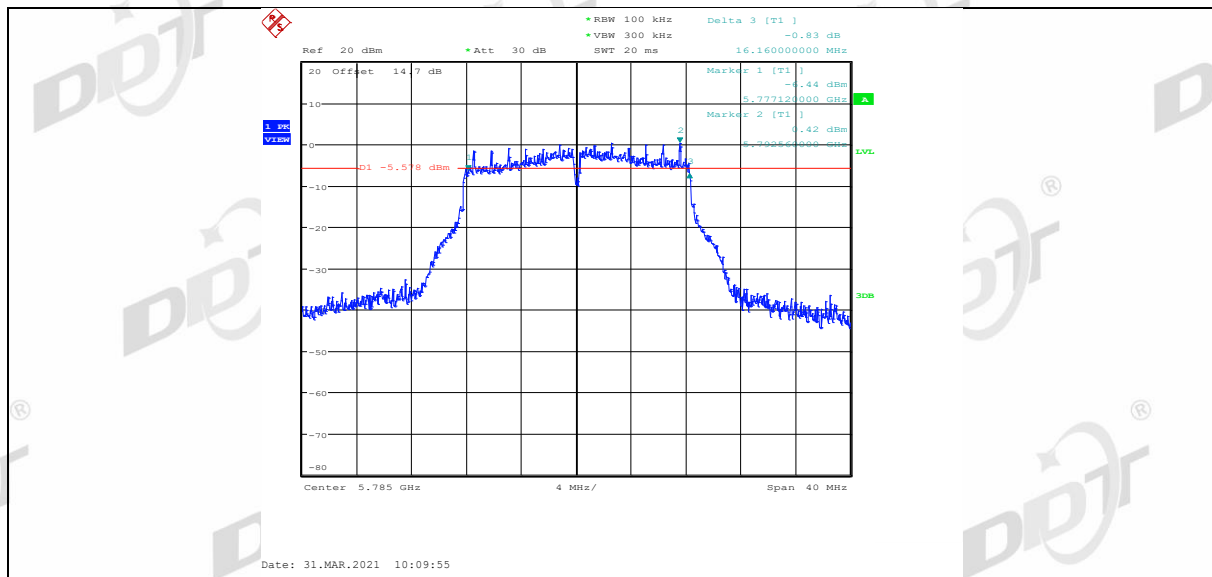


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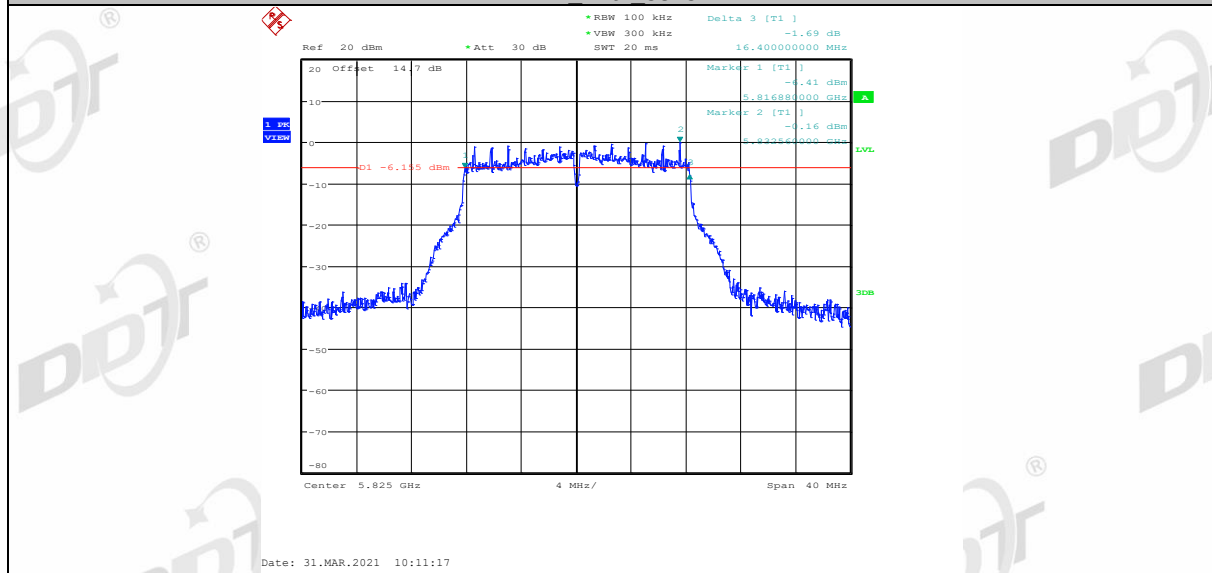


6 dB Bandwidth:

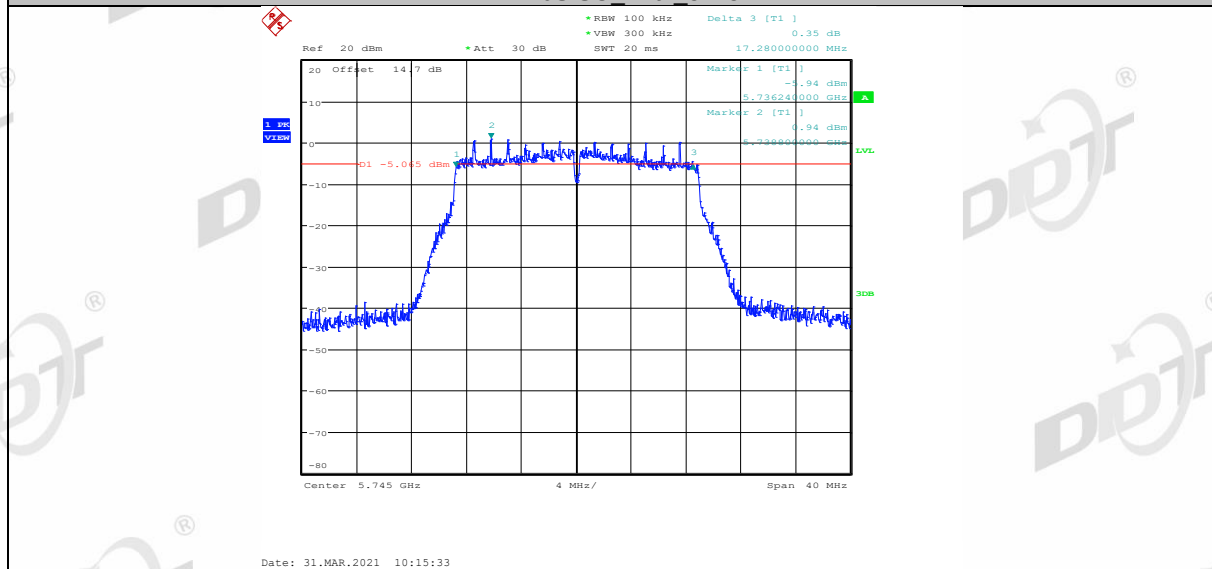




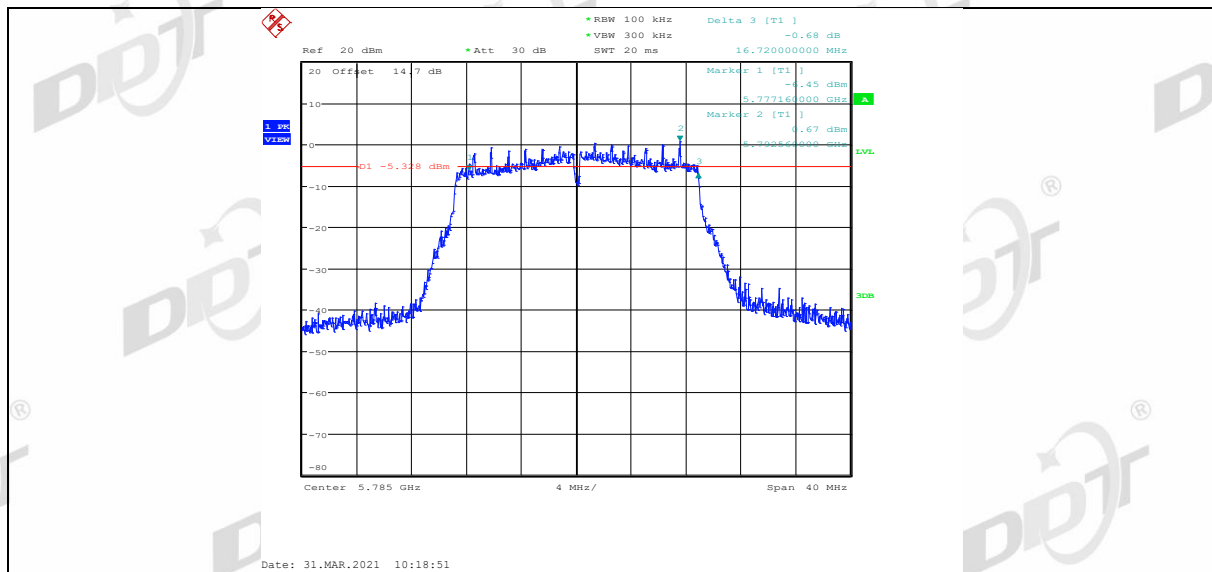
11A Ant1 5825



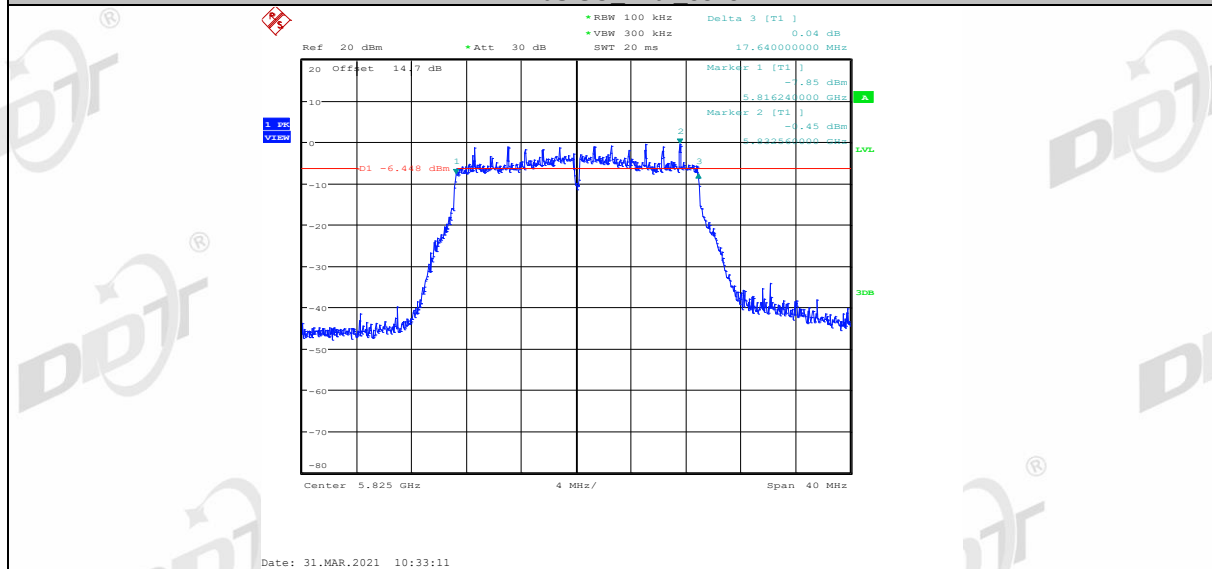
11N20SISO Ant1 5745



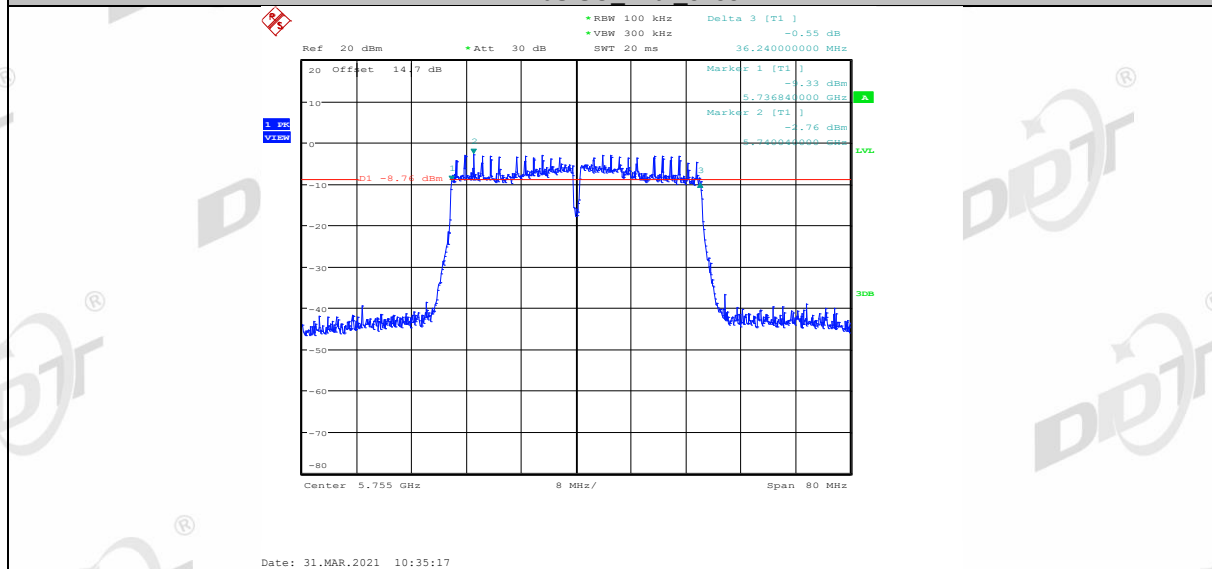
11N20SISO Ant1 5785



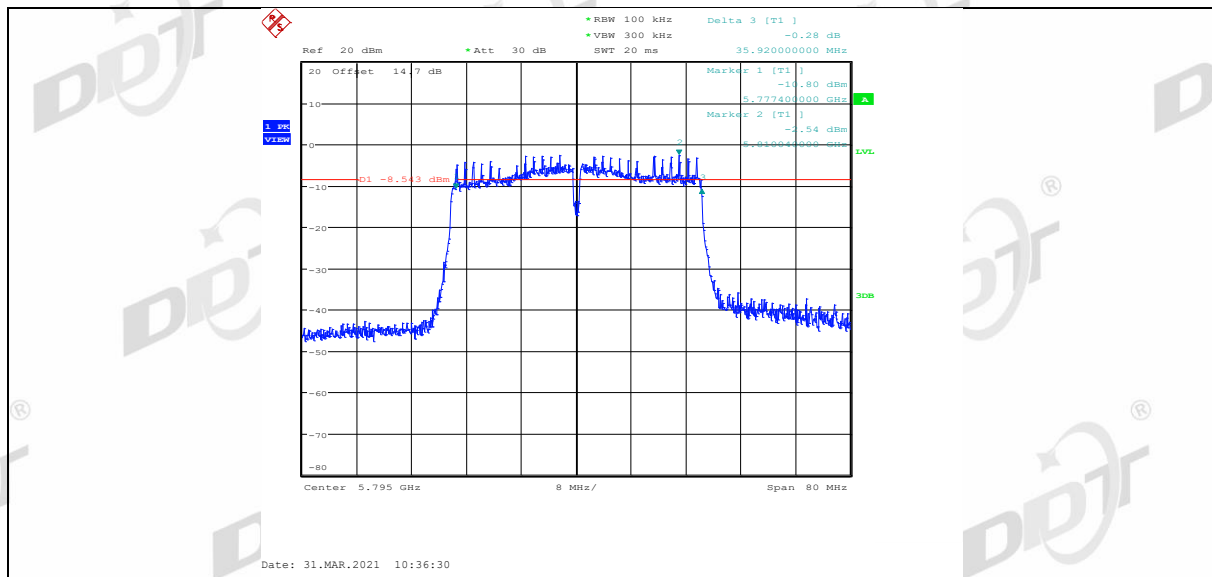
11N20SISO Ant1 5825



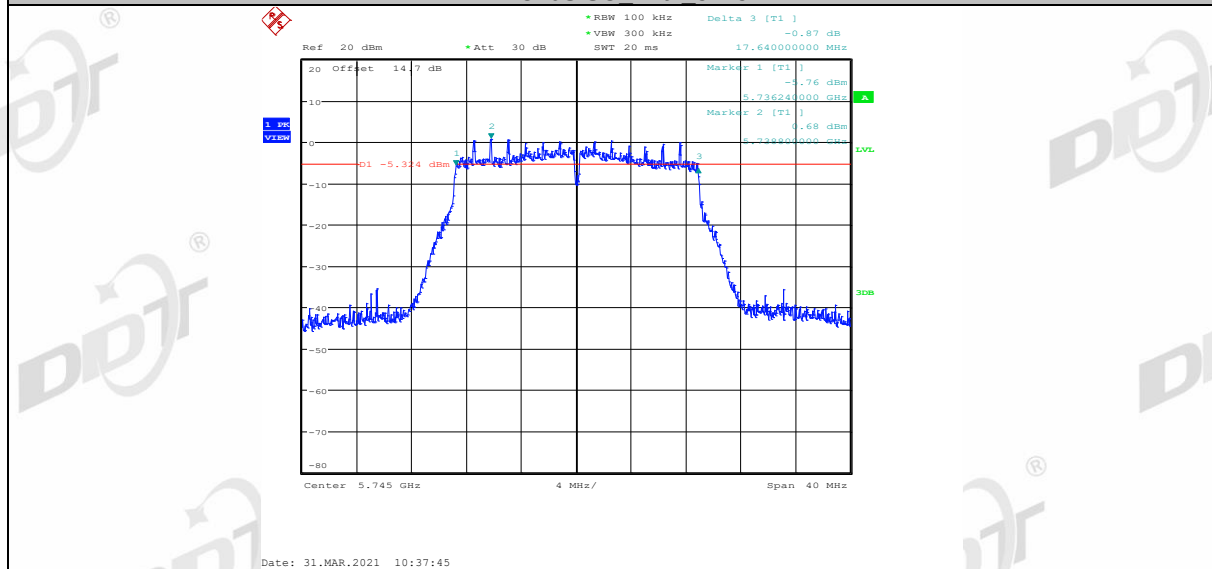
11N40SISO Ant1 5755



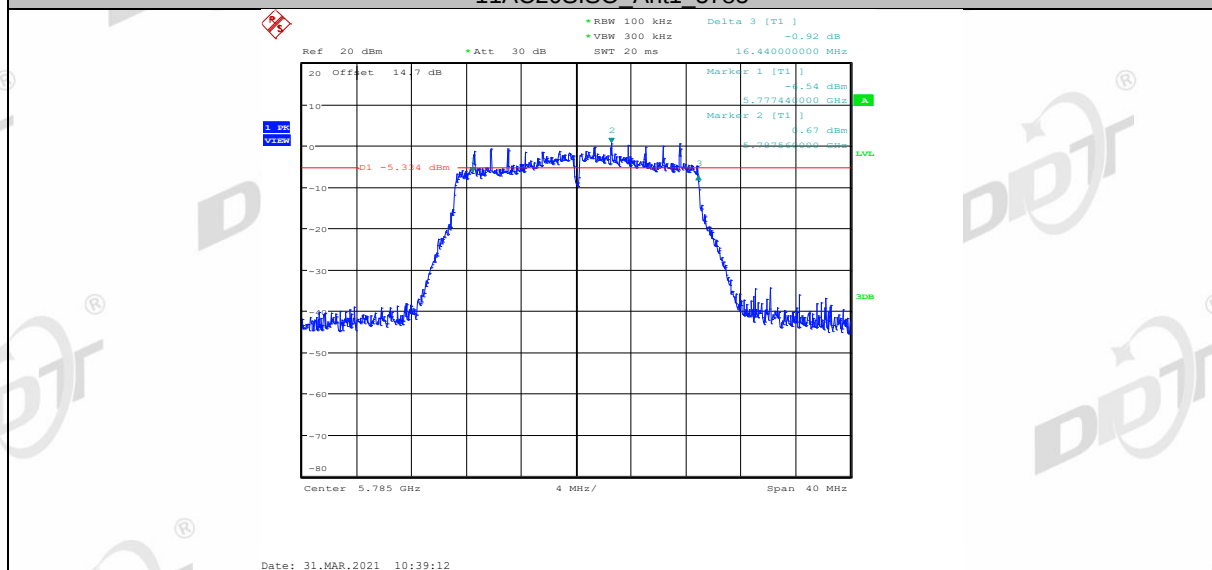
11N40SISO Ant1 5795



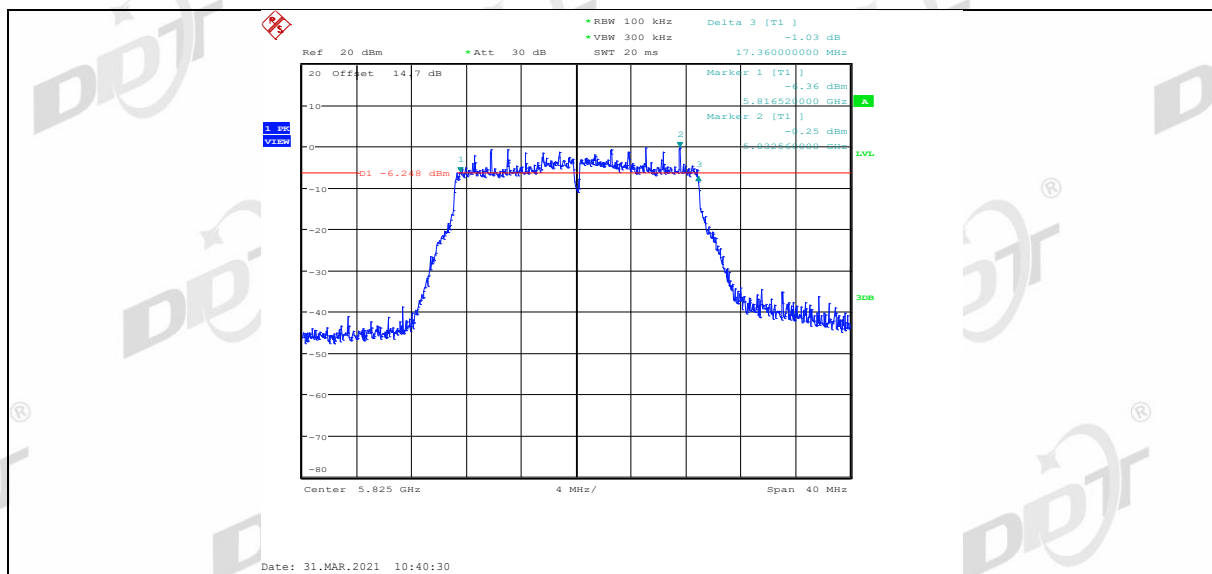
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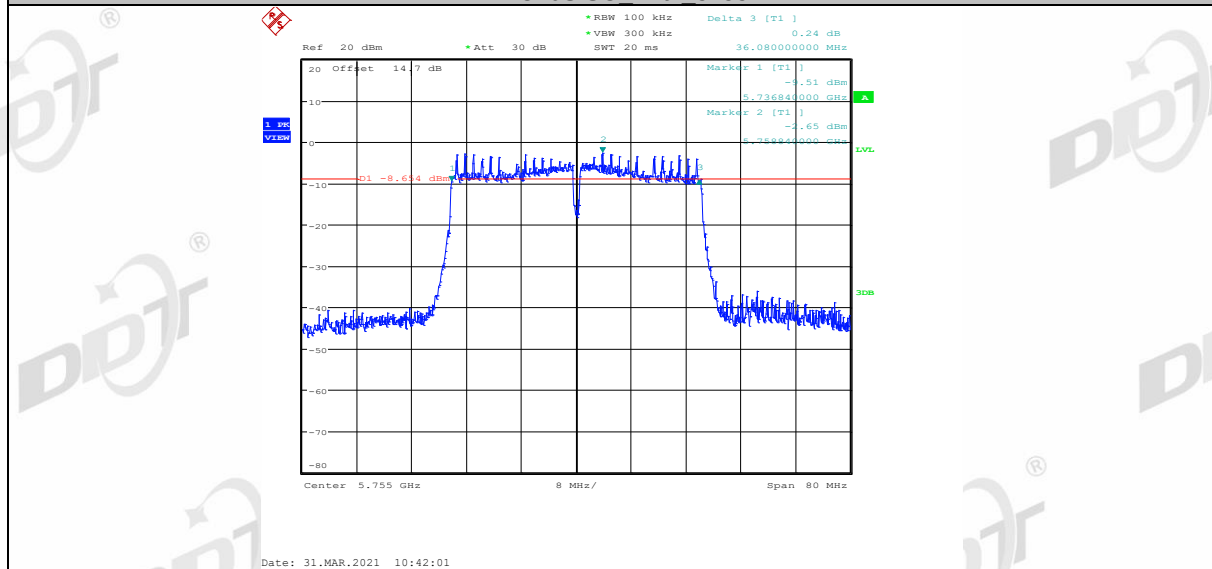
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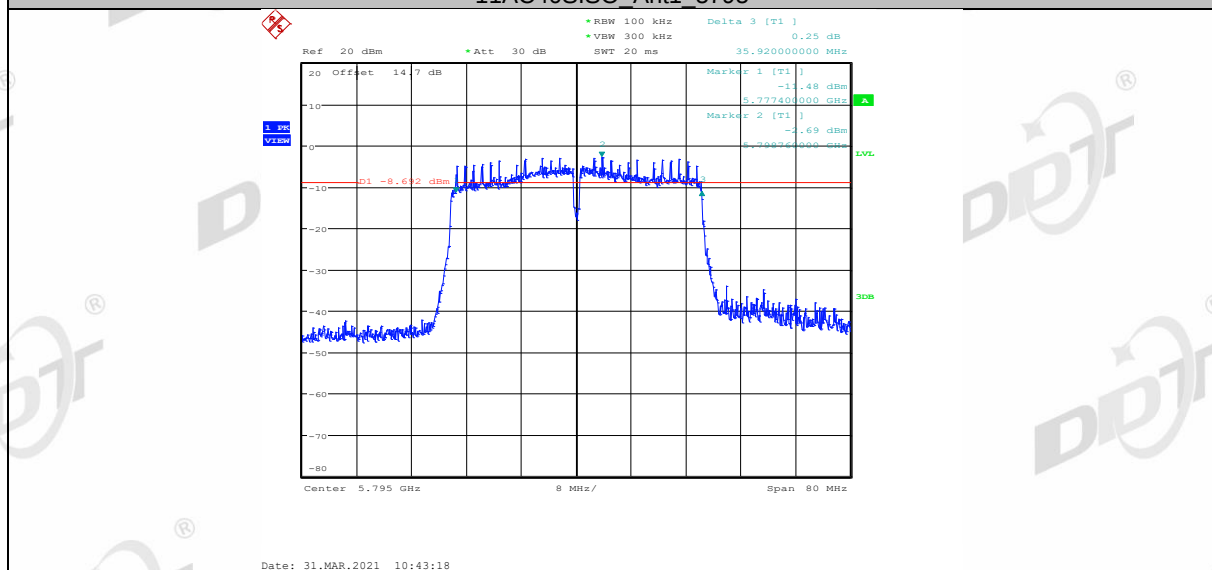
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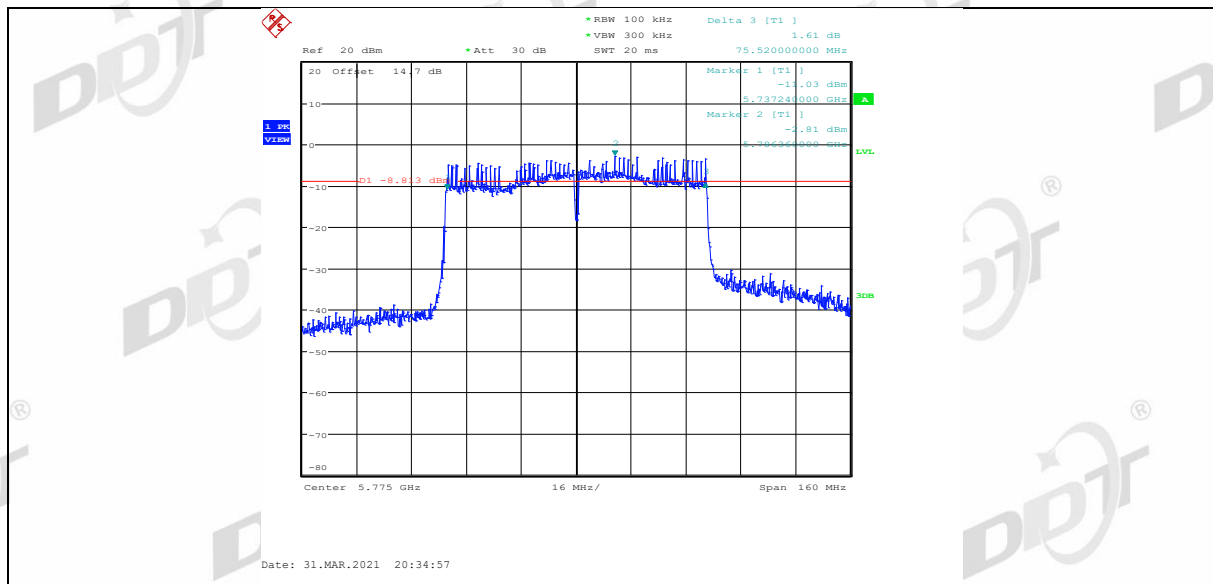
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775



5. Maximum Output Power

5.1. Block diagram of test setup

Same as section 4.1

5.2. Limits

FCC Part15, Subpart E		
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 $10 + 10 \log_{10} B$	
	For FCC: 250 mW (24 dBm) or $11 + 10 \log_{10} B$	5250-5350
	For RSS: For conducted output power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$	
	For RSS: e.i.r.p. power: not exceed 1.0 W (30 dBm) or $17 + 10 \log_{10} B$	
	For FCC: 250 mW (24 dBm) or $11 + 10 \log_{10} B$	For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725
	For RSS: For conducted output power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$	
	For RSS: e.i.r.p. power: not exceed 1.0 W (30 dBm) or $17 + 10 \log_{10} B$	5725-5850
	1 Watt (30 dBm)	

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 6.66 dBi.
 The Output Power limit is the above limits-(6.66-6)

5.3. Test procedure

- (1) Connect each EUT's antenna output to power meter by RF cable and attenuator
- (2) Add each antenna port's results to get the total output power of EUT.

5.4. Test result

(5150-5250)

Test Mode	Ant	Test Channel	Output Power (dBm)	EIRP (dBm)	FCC LIMIT (dBm)	ISED LIMIT (dBm)
11A	ANT1	5180	16.03	18.68	24	22.35
11A	ANT1	5200	16.64	19.29	24	22.35
11A	ANT1	5240	15.98	18.63	24	22.44
11N20MIMO	ANT1	5180	15.57	18.22	24	22.57
11N20MIMO	ANT1	5200	16.04	18.69	24	22.60
11N20MIMO	ANT1	5240	15.44	18.09	24	22.67
11N40MIMO	ANT1	5190	13.87	16.52	24	23.00
11N40MIMO	ANT1	5230	14.45	17.10	24	23.00
11AC20MIMO	ANT1	5180	15.68	18.33	24	22.61

11AC20MIMO	ANT1	5200	16.25	18.90	24	22.61
11AC20MIMO	ANT1	5240	15.70	18.35	24	22.64
11AC40MIMO	ANT1	5190	13.80	16.45	24	23.00
11AC40MIMO	ANT1	5230	14.44	17.09	24	23.00
11AC80MIMO	ANT1	5210	10.75	13.40	24	23.00

(5250-5350)

Test Mode	Ant	Test Channel	Output Power (dBm)	LIMIT (dBm)
11A	ANT1	5260	18.05	23.46
11A	ANT1	5300	17.77	23.46
11A	ANT1	5320	17.41	23.39
11N20MIMO	ANT1	5260	17.60	23.69
11N20MIMO	ANT1	5300	17.35	23.65
11N20MIMO	ANT1	5320	16.94	23.64
11N40MIMO	ANT1	5270	18.09	24.00
11N40MIMO	ANT1	5310	14.79	24.00
11AC20MIMO	ANT1	5260	17.70	23.65
11AC20MIMO	ANT1	5300	17.20	23.65
11AC20MIMO	ANT1	5320	16.95	23.65
11AC40MIMO	ANT1	5270	18.25	24.00
11AC40MIMO	ANT1	5310	14.51	24.00
11AC80MIMO	ANT1	5290	14.25	24.00

(5470-5725)

Test Mode	Ant	Test Channel	Output Power (dBm)	LIMIT (dBm)
11A	ANT1	5500	14.09	23.37
11A	ANT1	5580	14.67	23.44
11A	ANT1	5700	11.92	23.40
11N20MIMO	ANT1	5500	13.44	23.60
11N20MIMO	ANT1	5580	13.18	23.61
11N20MIMO	ANT1	5700	13.25	23.68
11N40MIMO	ANT1	5510	12.09	24.00
11N40MIMO	ANT1	5550	14.37	24.00
11N40MIMO	ANT1	5670	12.38	24.00
11AC20MIMO	ANT1	5500	13.49	23.61
11AC20MIMO	ANT1	5580	13.26	23.62
11AC20MIMO	ANT1	5700	11.39	23.64
11AC40MIMO	ANT1	5510	12.22	24.00

11AC40MIMO	ANT1	5550	14.48	24.00
11AC40MIMO	ANT1	5670	12.50	24.00
11AC80MIMO	ANT1	5530	10.31	24.00
11AC80MIMO	ANT1	5610	12.00	24.00

(5725-5850)

Test Mode	Ant	Test Channel	Output Power (dBm)	LIMIT (dBm)
11A	ANT1	5745	11.59	30
11A	ANT1	5785	9.00	30
11A	ANT1	5825	11.70	30
11N20MIMO	ANT1	5745	11.34	30
11N20MIMO	ANT1	5785	8.67	30
11N20MIMO	ANT1	5825	11.15	30
11N40MIMO	ANT1	5755	10.61	30
11N40MIMO	ANT1	5795	8.77	30
11AC20MIMO	ANT1	5745	11.25	30
11AC20MIMO	ANT1	5785	8.59	30
11AC20MIMO	ANT1	5825	11.19	30
11AC40MIMO	ANT1	5755	10.70	30
11AC40MIMO	ANT1	5795	8.73	30
11AC80MIMO	ANT1	5775	11.91	30

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 For RSS eirp: 10 dBm/MHz	5150-5250
	11 dBm/MHz	5250-5350
	11 dBm/MHz	For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725
	30 dBm/500 kHz	5725-5850
	Note: For 802.11n and 802.11ac, the EUT incorporates a MIMO function. The Antenna directional gain is 6.66 dBi. The Power Spectral Density limit is the above limits-(6.66-6)	

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, 5250 MHz~5350 MHz, 5470 MHz~5725 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

Note:

1. For UNII-3, according to KDB publication 789033 D02 General U-NII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1 MHz and VBW at 3 MHz if the spectrum analyzer does not have 500 kHz RBW.
 2. The value measured with RBW=1MHz is to be added with $10\log(500\text{kHz}/1\text{MHz})$ which is - 3dB. For example, if the measured value is +10 dBm using RBW=1 MHz (that is +10 dBm/MHz), then the converted value will be +7 dBm/500 kHz.
- Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

6.4. Test result

(5150-5250)

Test Mode	Ant	Test Channel	PSD (dBm/MHz)	PSD eirp (dBm/MHz)	FCC Limit (dBm/MHz)	ISED Limit (dBm/MHz)	Verdict
11A	ANT1	5180	6.98	9.63	11	10	Pass
11A	ANT1	5200	6.88	9.53	11	10	Pass
11A	ANT1	5240	6.39	9.04	11	10	Pass
11N20MIMO	ANT1	5180	6.23	8.88	11	10	Pass
11N20MIMO	ANT1	5200	6.89	9.54	11	10	Pass
11N20MIMO	ANT1	5240	6.16	8.81	11	10	Pass
11N40MIMO	ANT1	5190	1.45	4.10	11	10	Pass
11N40MIMO	ANT1	5230	2.79	5.44	11	10	Pass
11AC20MIMO	ANT1	5180	6.68	9.33	11	10	Pass
11AC20MIMO	ANT1	5200	6.86	9.51	11	10	Pass
11AC20MIMO	ANT1	5240	6.12	8.77	11	10	Pass
11AC40MIMO	ANT1	5190	1.55	4.20	11	10	Pass
11AC40MIMO	ANT1	5230	2.69	5.34	11	10	Pass
11AC80MIMO	ANT1	5210	-3.62	-0.97	11	10	Pass

(5250-5350, 5470-5725)

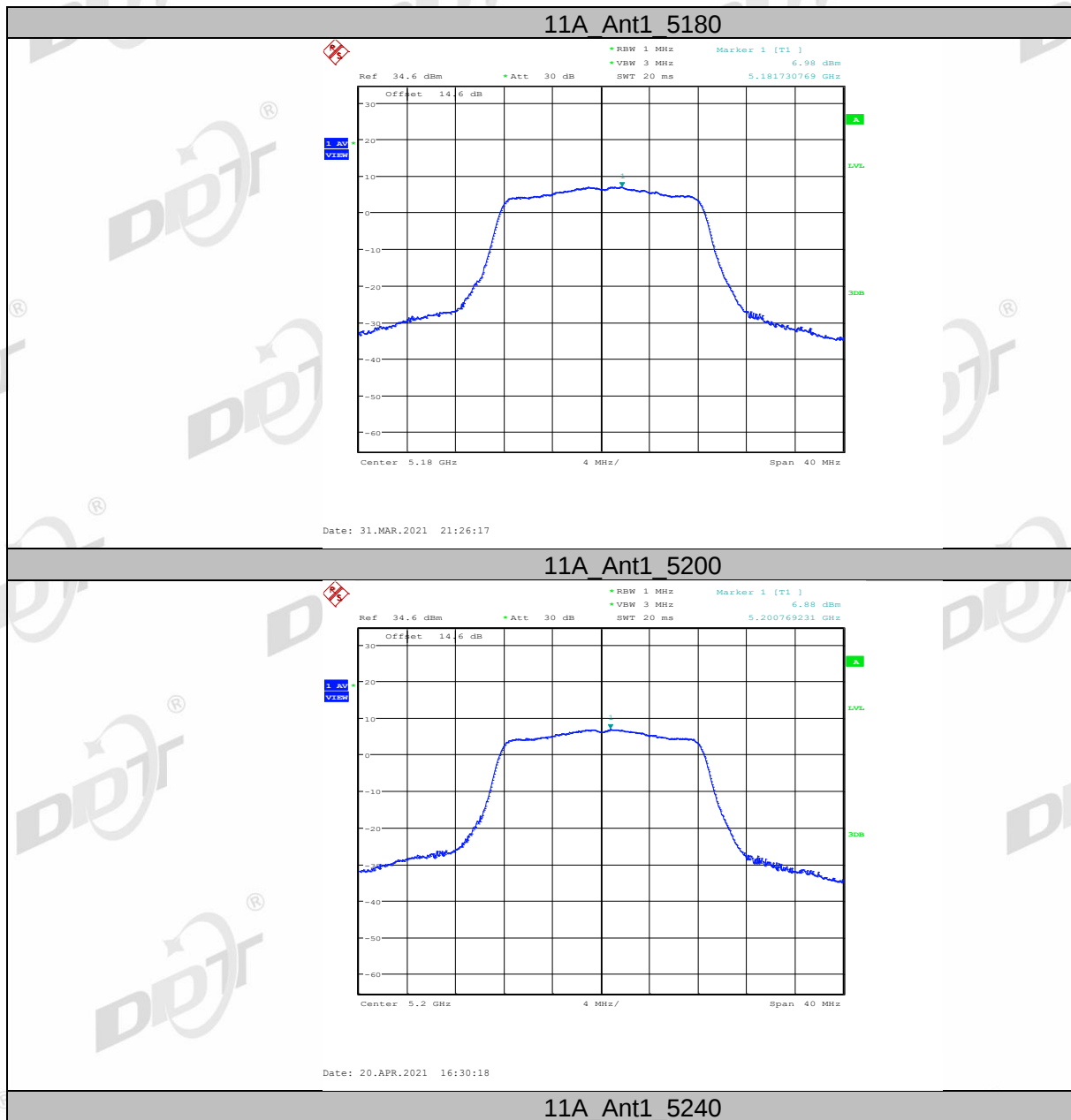
Test Mode	Ant	Test Channel	PSD (dBm/MHz)	FCC Limit (dBm/MHz)	Verdict
11A	ANT1	5260	8.25	11	Pass
11A	ANT1	5300	8.71	11	Pass
11A	ANT1	5320	8.66	11	Pass
11A	ANT1	5500	4.76	11	Pass
11A	ANT1	5580	6.04	11	Pass
11A	ANT1	5700	2.11	11	Pass
11N20MIMO	ANT1	5260	8.22	11	Pass
11N20MIMO	ANT1	5300	8.58	11	Pass
11N20MIMO	ANT1	5320	8.16	11	Pass
11N20MIMO	ANT1	5500	4.60	11	Pass

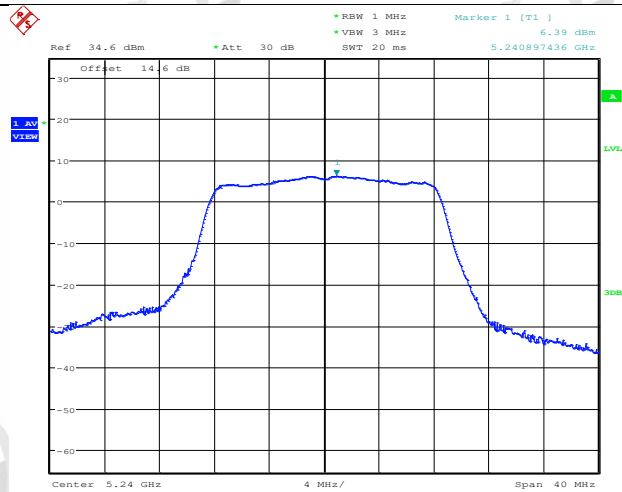
11N20MIMO	ANT1	5580	5.26	11	Pass
11N20MIMO	ANT1	5700	3.11	11	Pass
11N40MIMO	ANT1	5270	6.05	11	Pass
11N40MIMO	ANT1	5310	2.75	11	Pass
11N40MIMO	ANT1	5510	0.12	11	Pass
11N40MIMO	ANT1	5550	1.40	11	Pass
11N40MIMO	ANT1	5670	0.17	11	Pass
11AC20MIMO	ANT1	5260	8.17	11	Pass
11AC20MIMO	ANT1	5300	8.22	11	Pass
11AC20MIMO	ANT1	5320	7.53	11	Pass
11AC20MIMO	ANT1	5500	4.23	11	Pass
11AC20MIMO	ANT1	5580	4.50	11	Pass
11AC20MIMO	ANT1	5700	0.71	11	Pass
11AC40MIMO	ANT1	5270	6.43	11	Pass
11AC40MIMO	ANT1	5310	3.08	11	Pass
11AC40MIMO	ANT1	5510	0.41	11	Pass
11AC40MIMO	ANT1	5550	1.64	11	Pass
11AC40MIMO	ANT1	5670	0.14	11	Pass
11AC80MIMO	ANT1	5290	0.07	11	Pass
11AC80MIMO	ANT1	5530	-4.48	11	Pass
11AC80MIMO	ANT1	5610	-2.57	11	Pass

(5725-5850)

Test Mode	Test Channel	Ant	PSD (dBm/1MHz)	Limit (dBm/1MHz)	Verdict
11A	ANT1	5745	-0.14	30	Pass
11A	ANT1	5785	-0.37	30	Pass
11A	ANT1	5825	-1.71	30	Pass
11N20MIMO	ANT1	5745	0.05	30	Pass
11N20MIMO	ANT1	5785	-0.42	30	Pass
11N20MIMO	ANT1	5825	-1.62	30	Pass
11N40MIMO	ANT1	5755	-4.11	30	Pass
11N40MIMO	ANT1	5795	-4.00	30	Pass
11AC20MIMO	ANT1	5745	-0.36	30	Pass
11AC20MIMO	ANT1	5785	-0.64	30	Pass
11AC20MIMO	ANT1	5825	-1.44	30	Pass
11AC40MIMO	ANT1	5755	-4.02	30	Pass
11AC40MIMO	ANT1	5795	-3.99	30	Pass
11AC80MIMO	ANT1	5775	-6.00	30	Pass

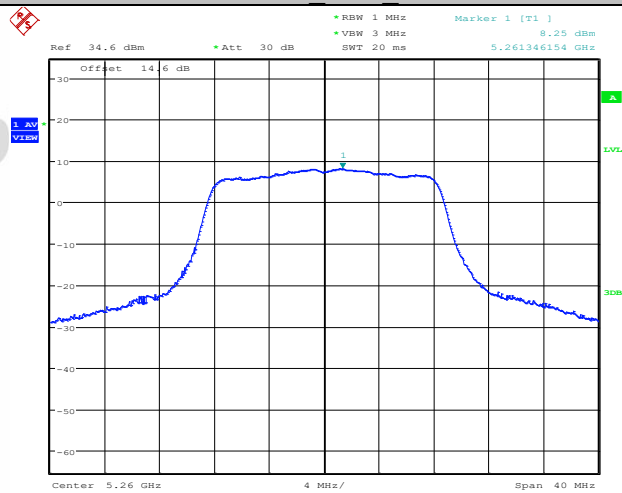
6.5. Original test data





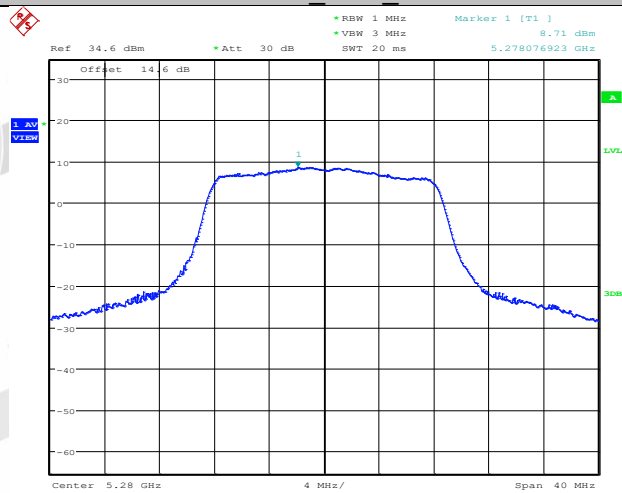
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11A_Ant1_5260



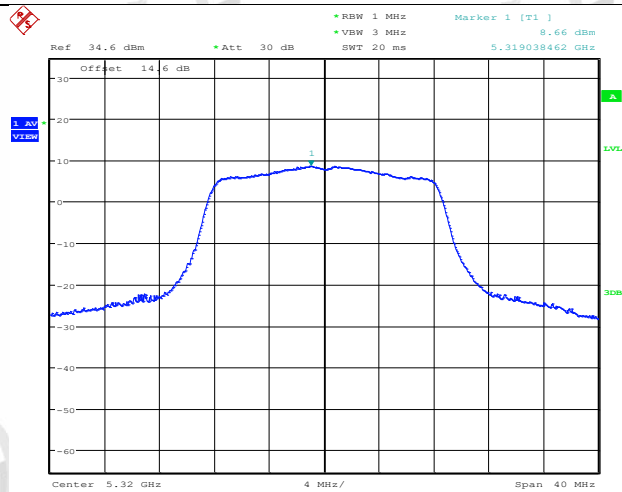
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11A_Ant1_5280



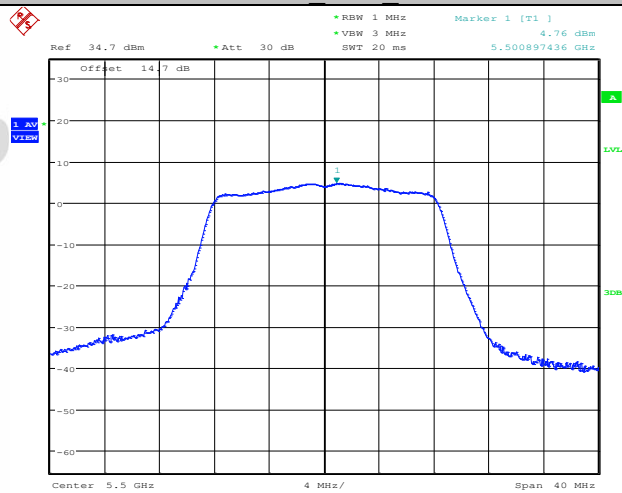
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11A_Ant1_5320



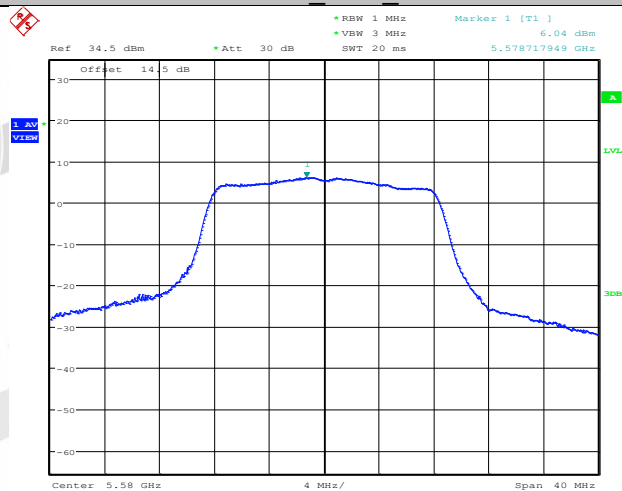
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11A Ant1 5500



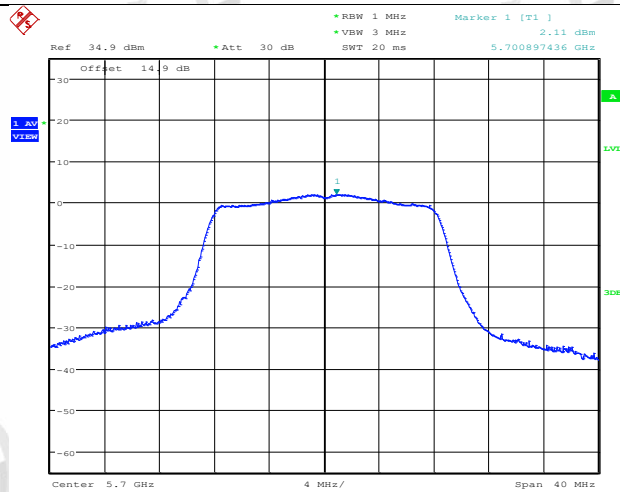
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11A Ant1 5580



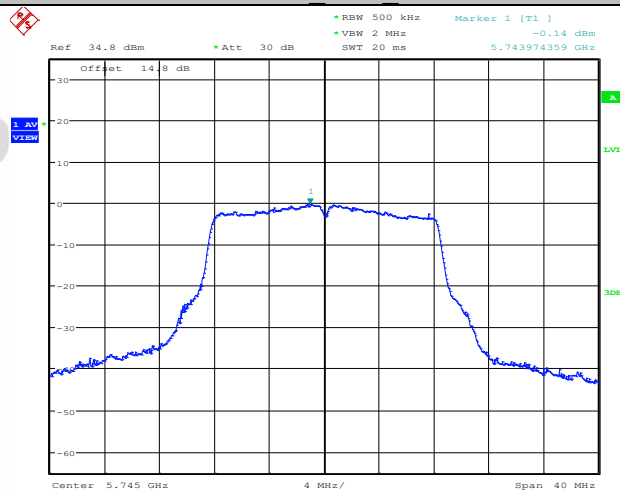
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11A Ant1 5700



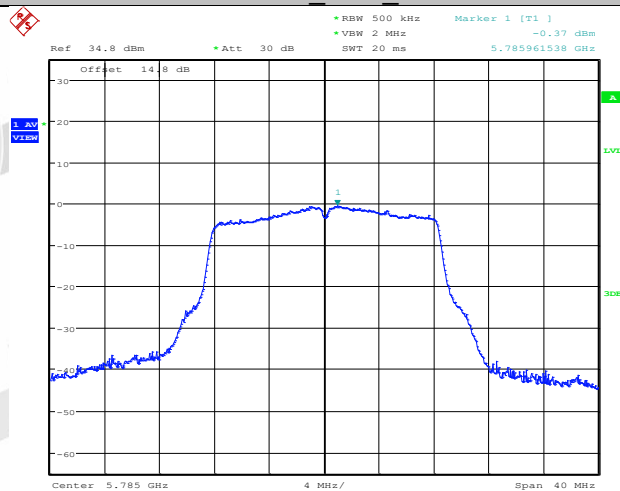
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11A_Ant1_5745



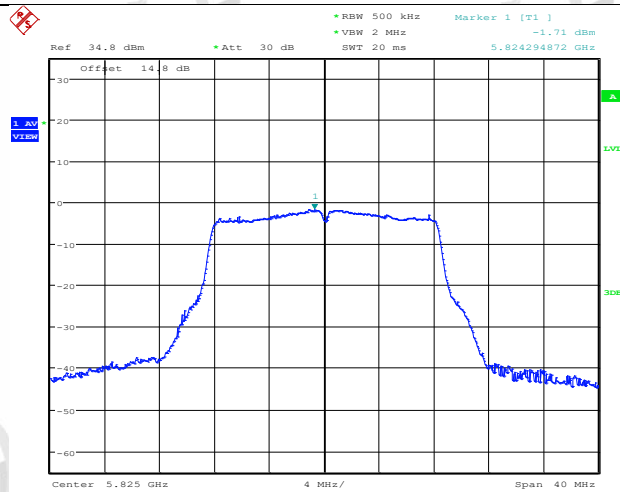
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11A_Ant1_5785



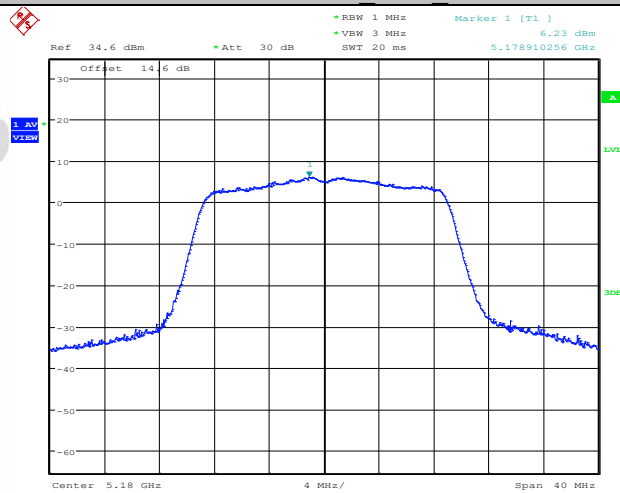
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11A_Ant1_5825



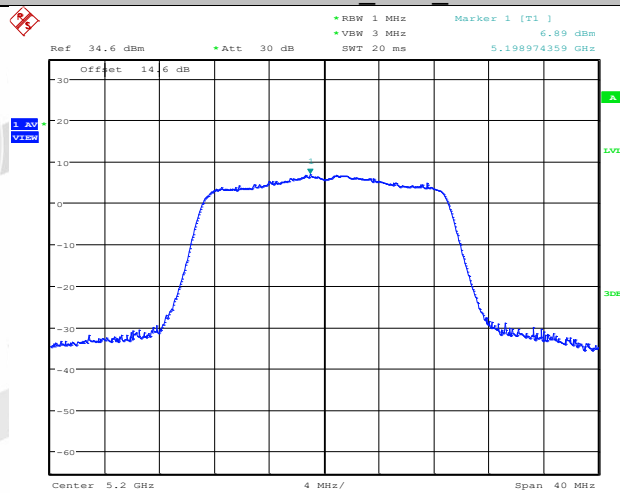
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11N20SISO_Ant1_5180



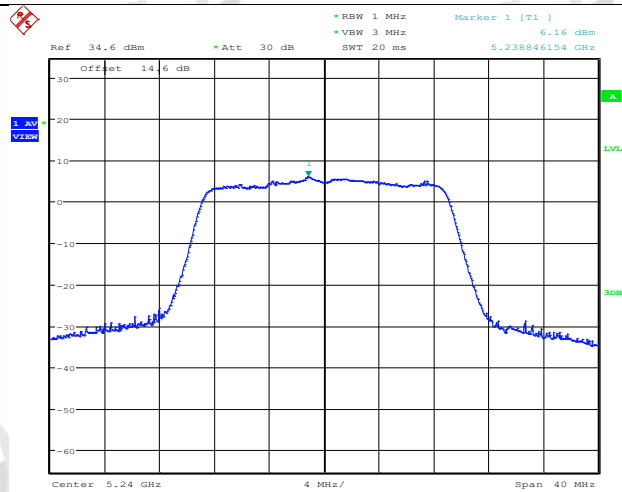
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11N20SISO_Ant1_5200



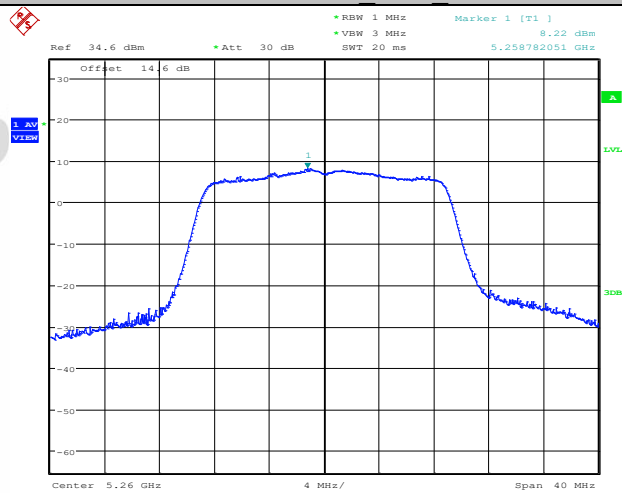
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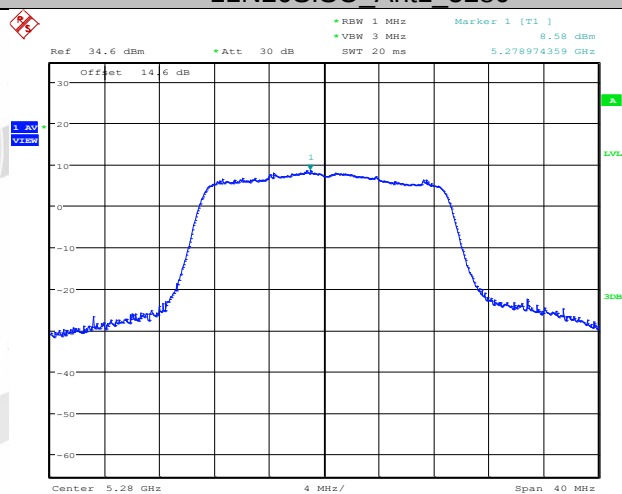
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11N20SISO_Ant1_5260



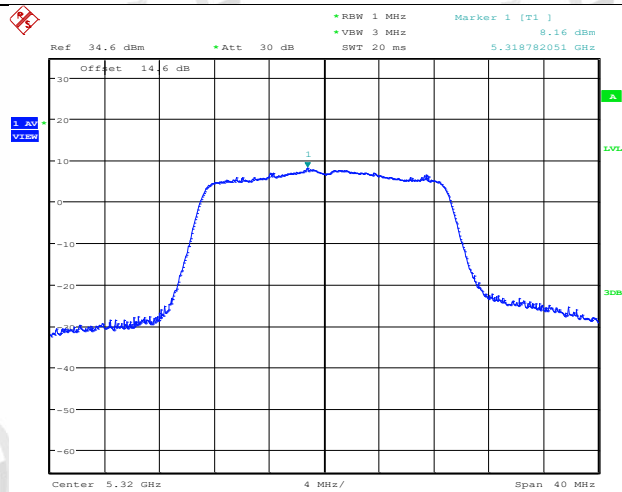
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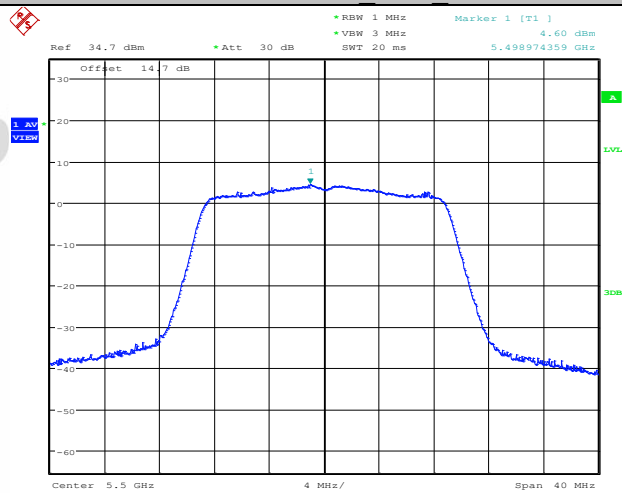
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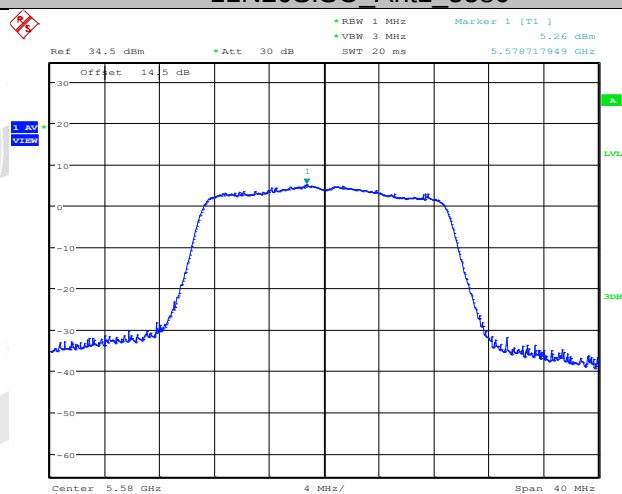
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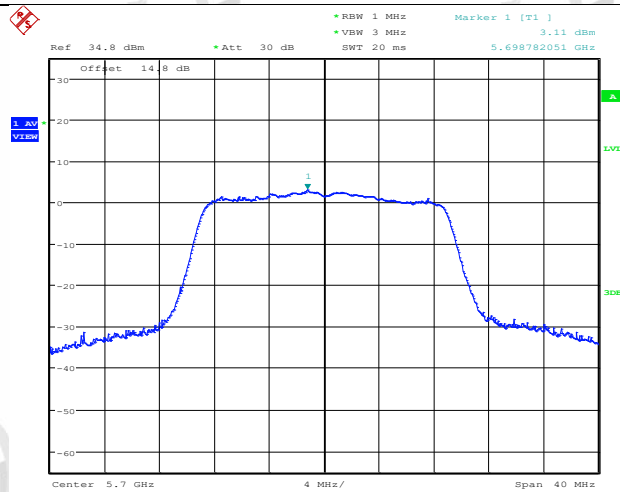
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11N20SISO_Ant1_5580



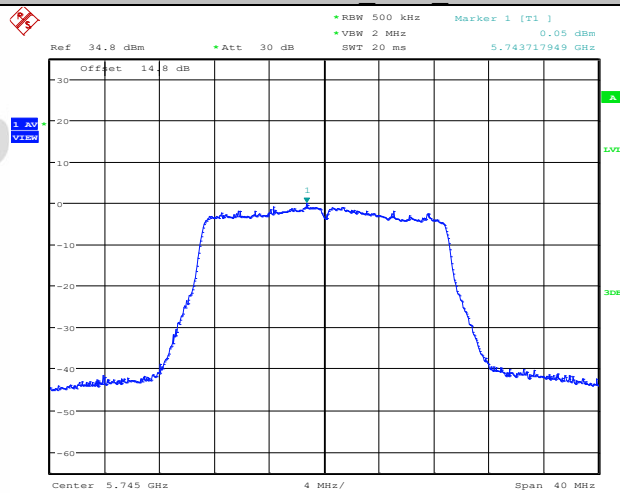
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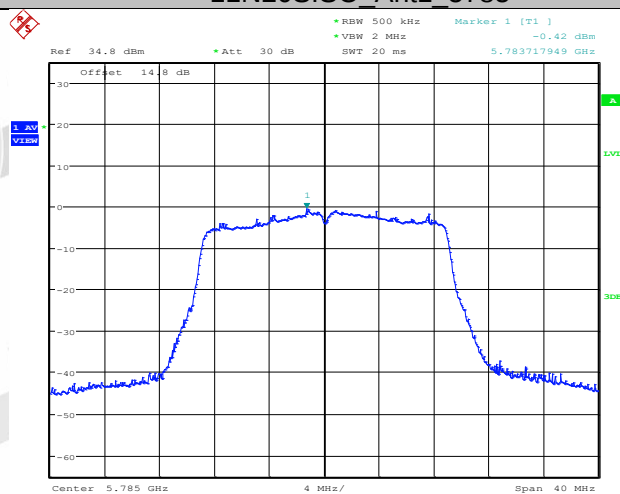
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11N20SISO_Ant1_5745



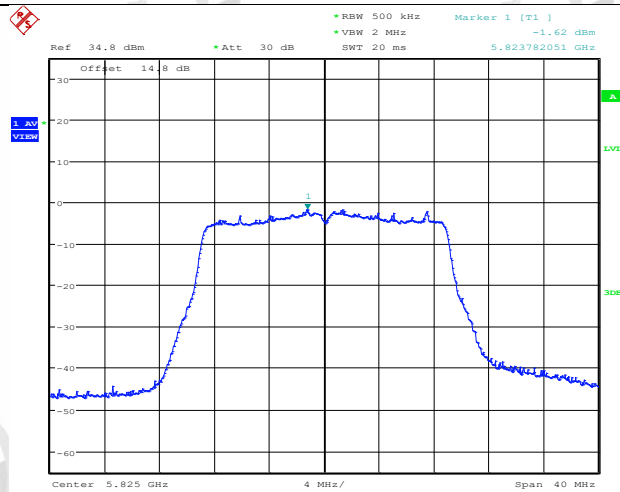
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11N20SISO_Ant1_5785



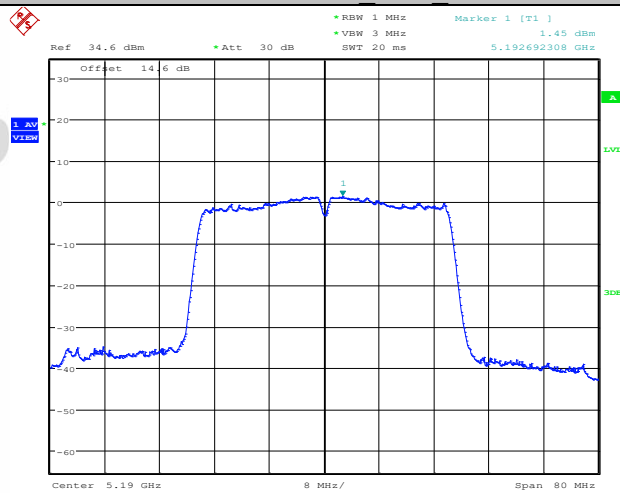
Date: 31.MAR.2021 10:19:28

11N20SISO_Ant1_5825



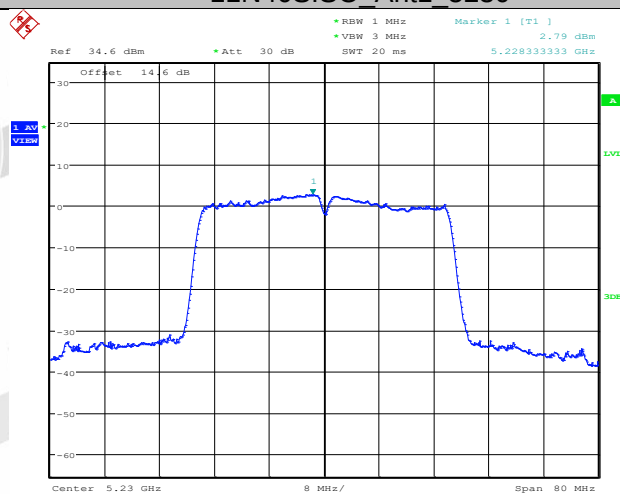
Date: 31.MAR.2021 10:33:45

11N40SISO_Ant1_5190



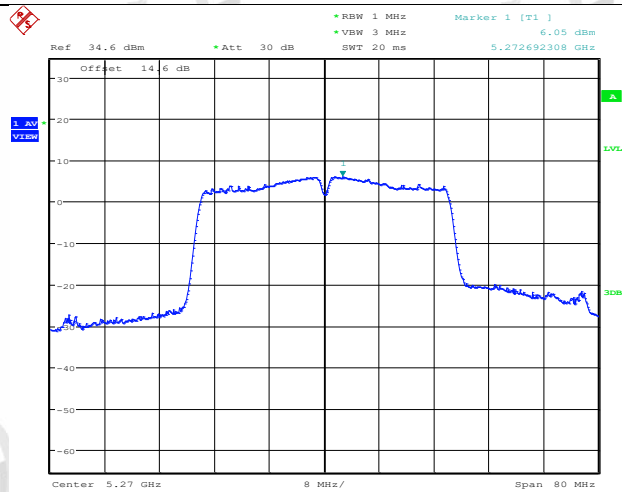
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11N40SISO_Ant1_5230



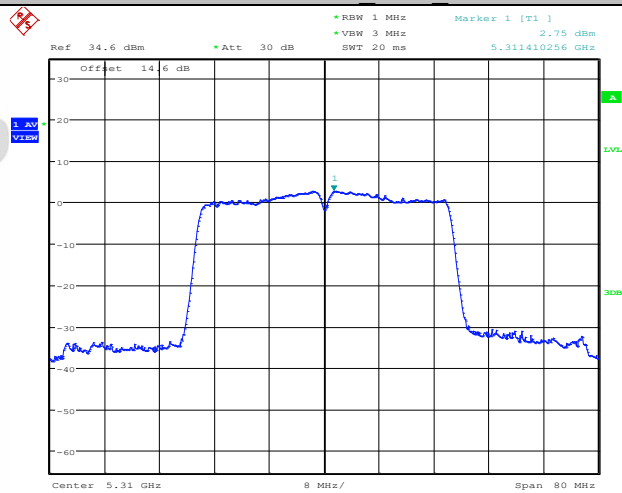
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11N40SISO_Ant1_5270



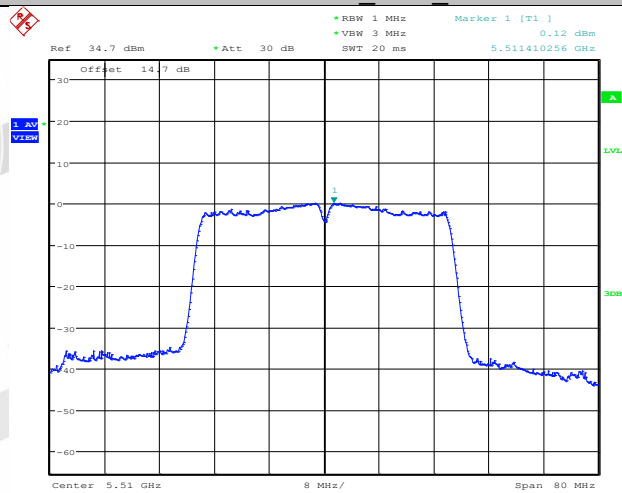
Date: 30.MAR.2021 22:54:11

11N40SISO_Ant1_5310



Date: 30.MAR.2021 23:05:05

11N40SISO_Ant1_5510



Date: 30.MAR.2021 23:09:44

11N40SISO_Ant1_5550



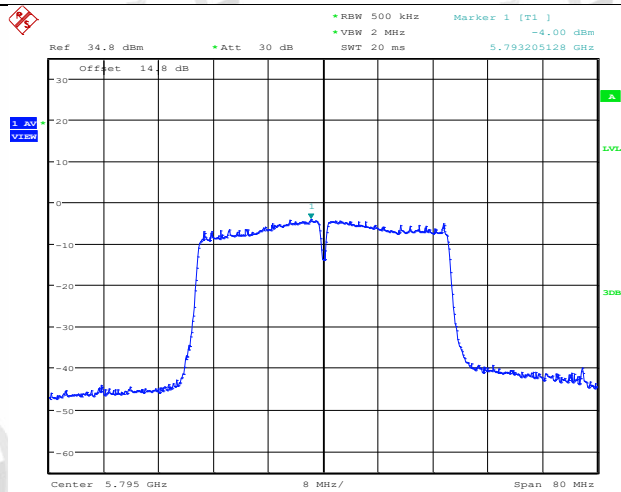
11N40SISO Ant1 5670



11N40SISO Ant1 5755

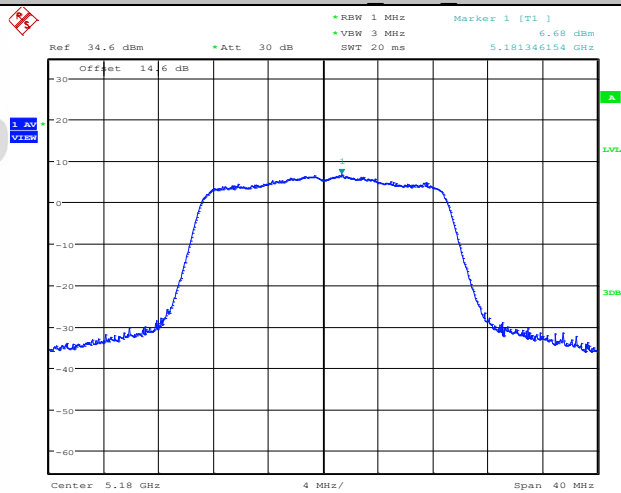


11N40SISO Ant1 5795



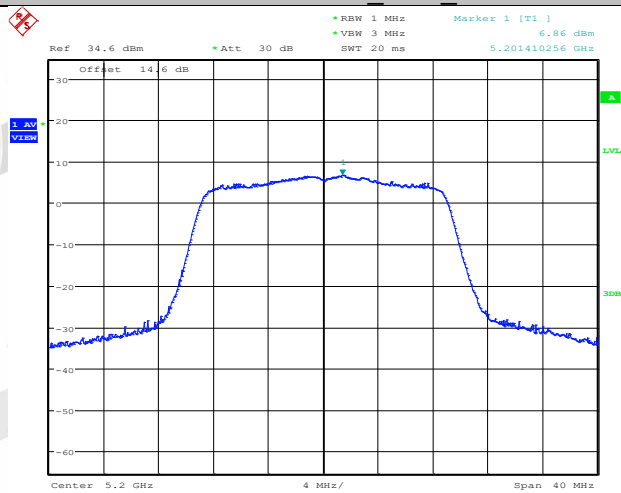
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11AC20SISO Ant1 5180



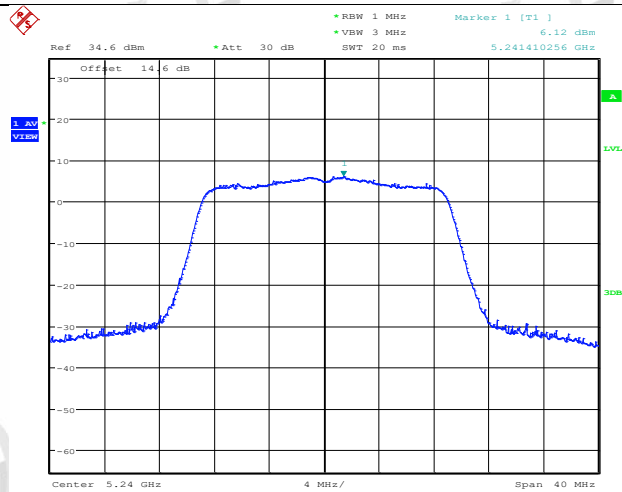
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11AC20SISO Ant1 5200



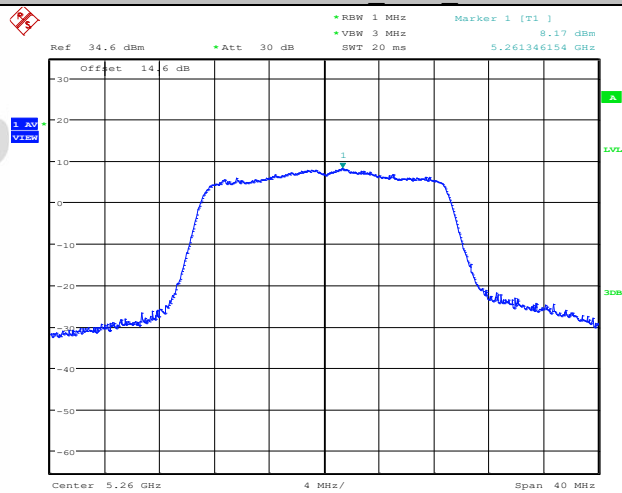
Date: 30.MAR.2021 23:26:39

11AC20SISO Ant1 5240



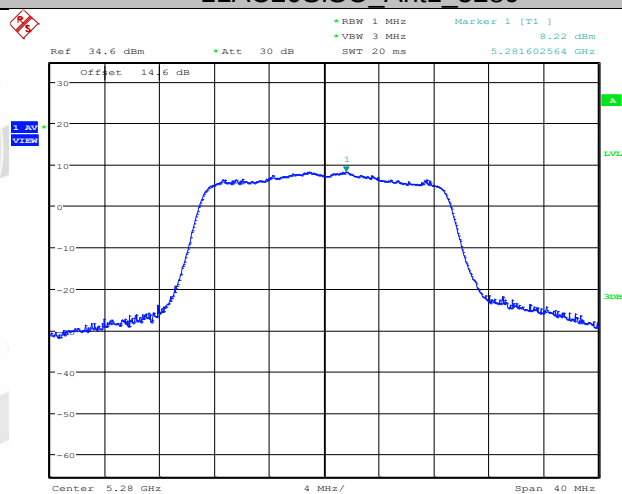
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11AC20SISO Ant1 5260



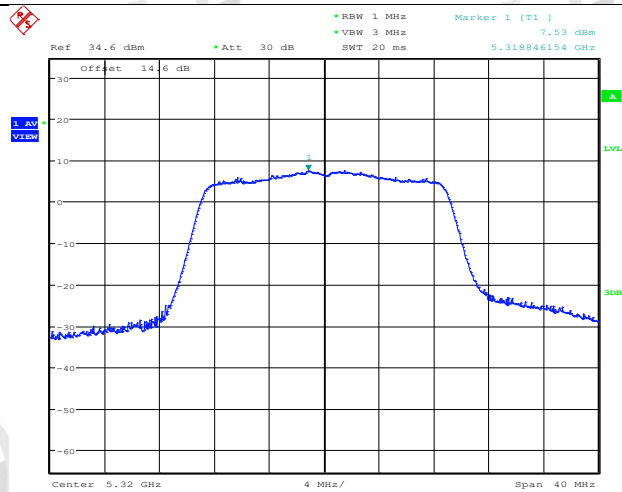
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11AC20SISO Ant1 5280



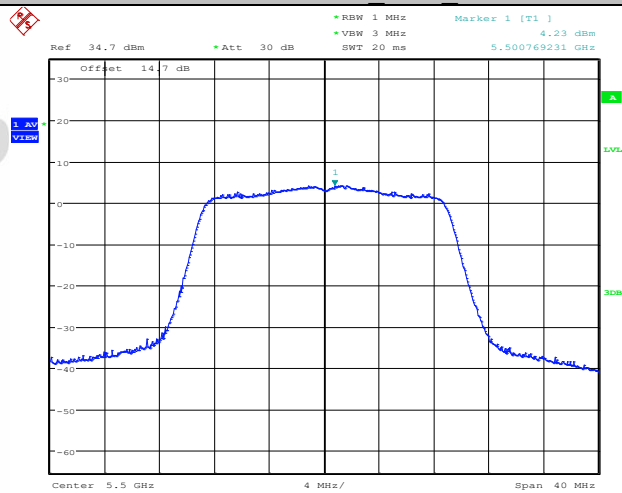
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11AC20SISO Ant1 5320



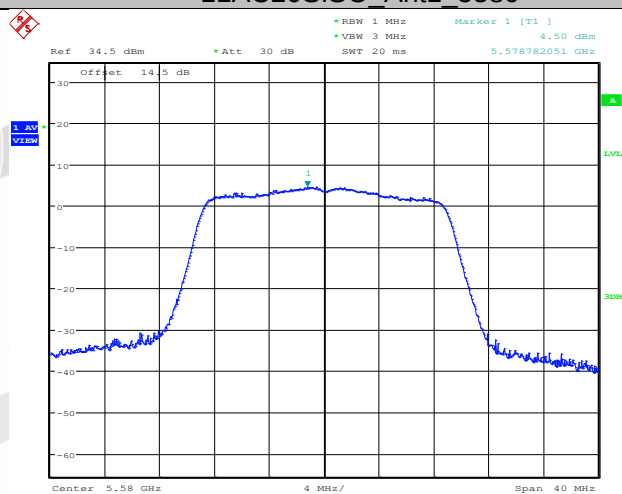
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11AC20SISO Ant1 5500



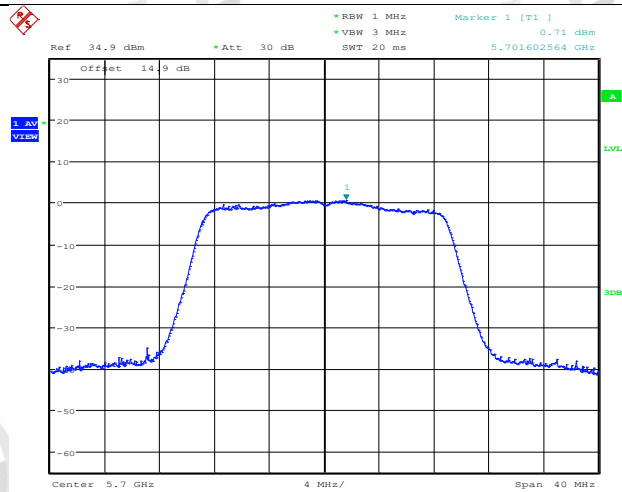
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11AC20SISO Ant1 5580



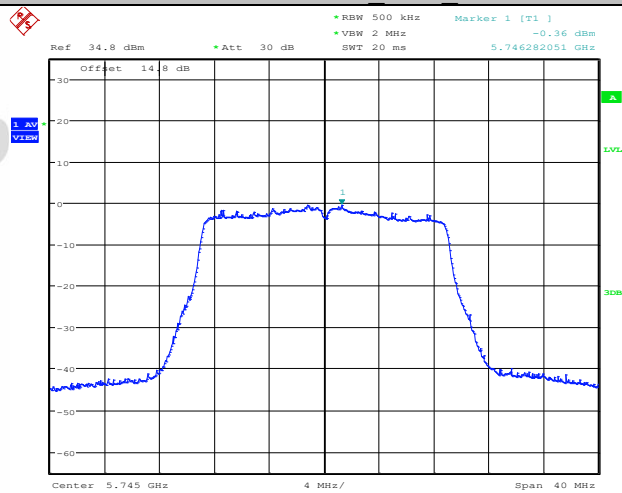
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11AC20SISO Ant1 5700



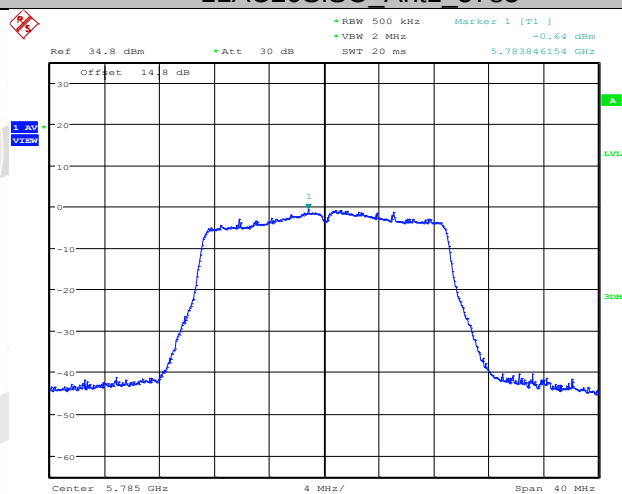
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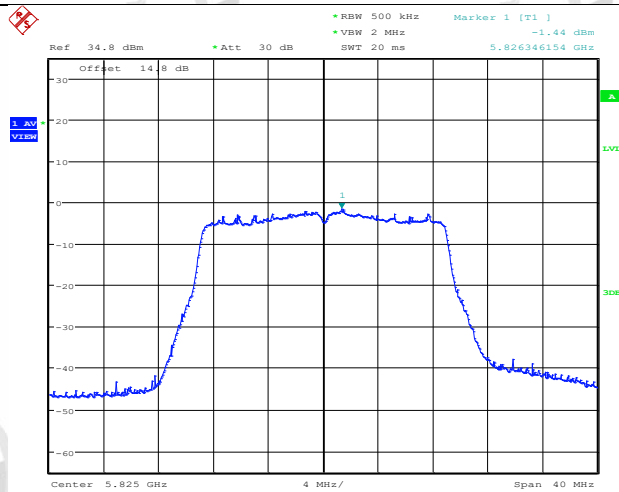
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11AC20SISO Ant1 5785



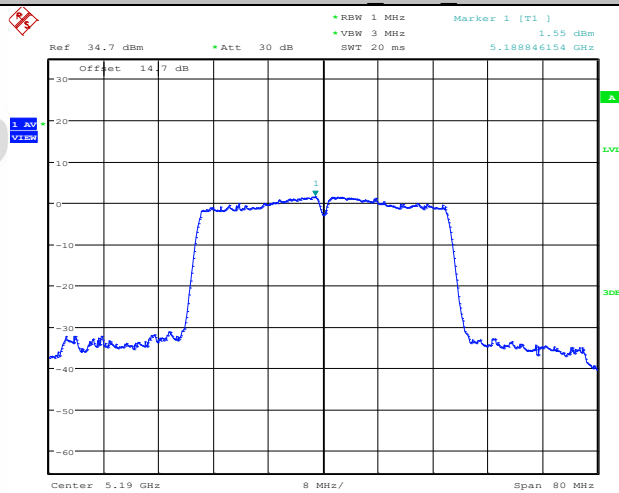
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11AC20SISO Ant1 5825



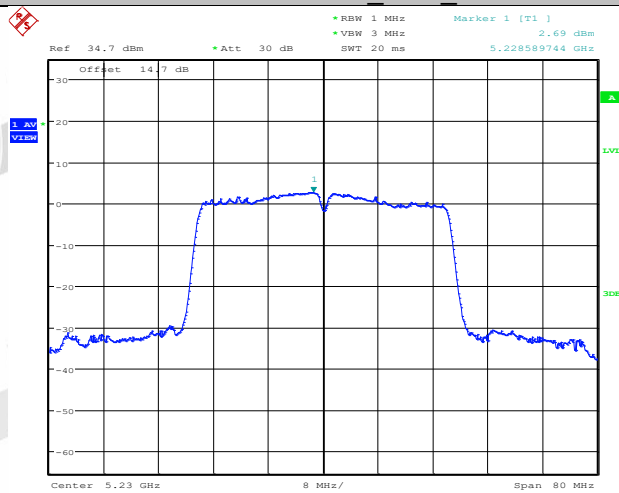
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11AC40SISO Ant1 5190



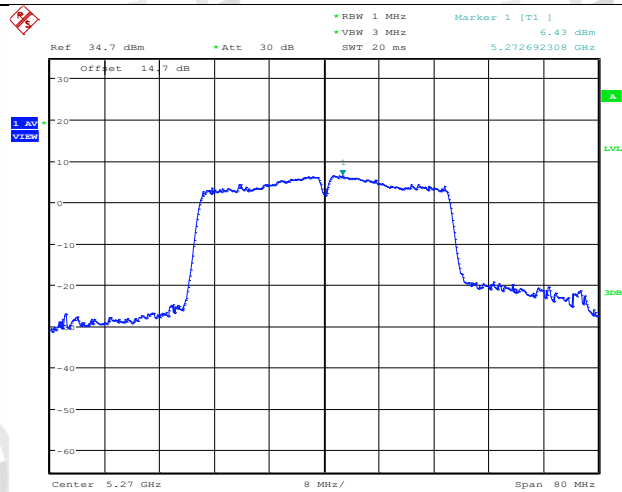
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11AC40SISO Ant1 5230



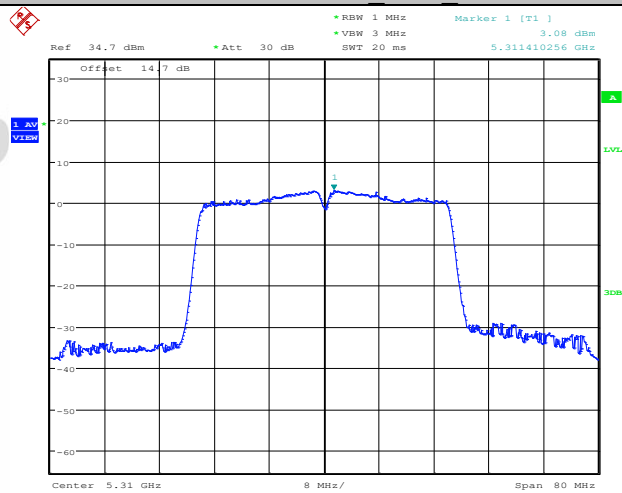
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11AC40SISO Ant1 5270



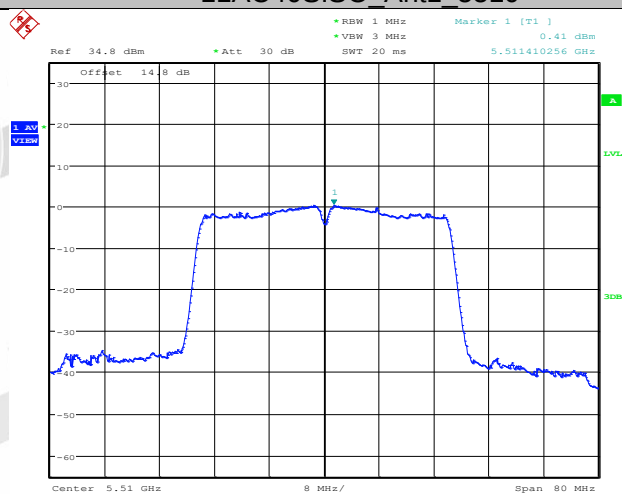
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11AC40SISO Ant1 5310



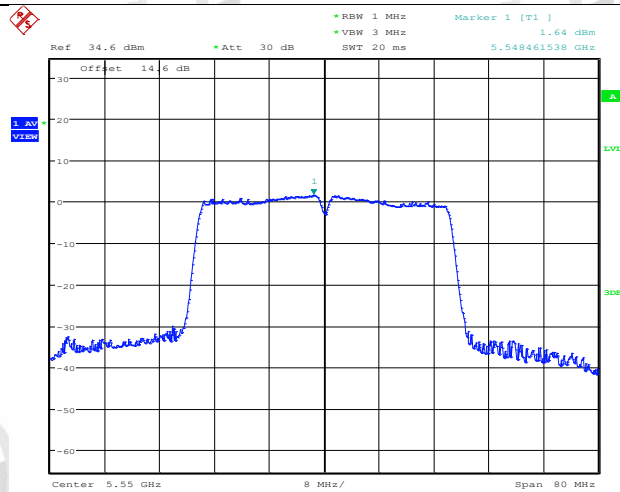
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11AC40SISO Ant1 5510



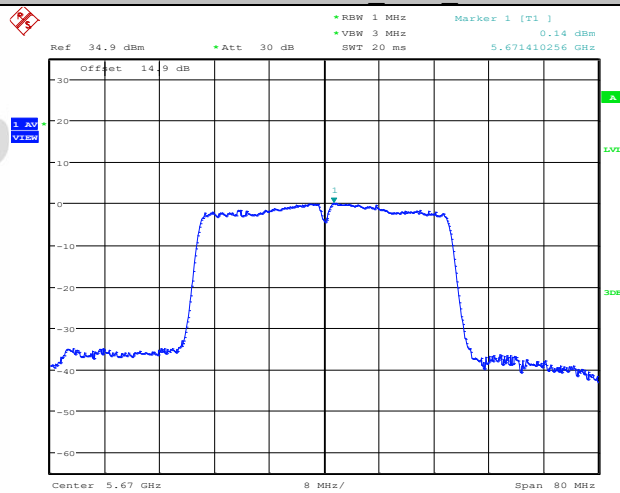
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11AC40SISO Ant1 5550



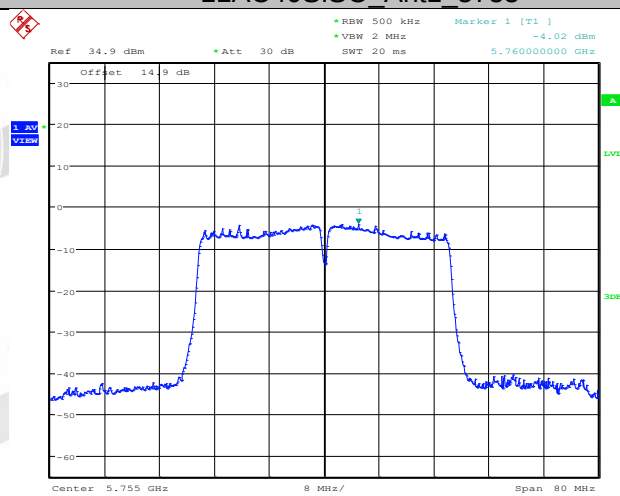
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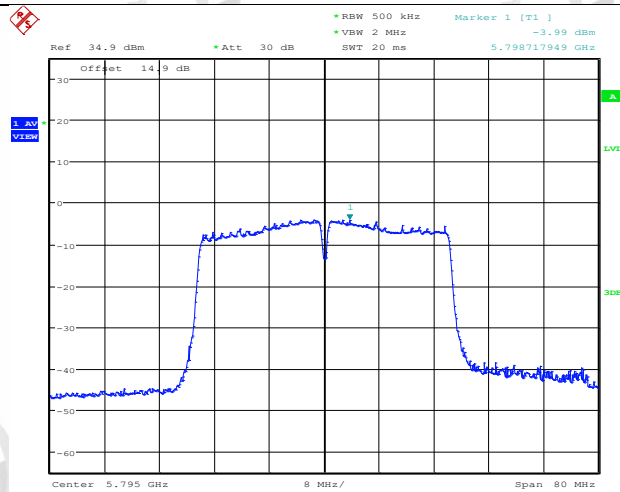
Date: 30.MAR.2021 23:52:35

11AC40SISO_Ant1_5755



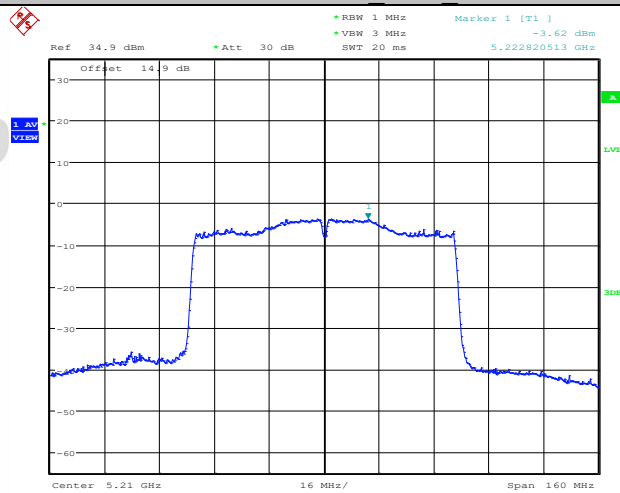
Date: 31.MAR.2021 10:42:34

11AC40SISO_Ant1_5795



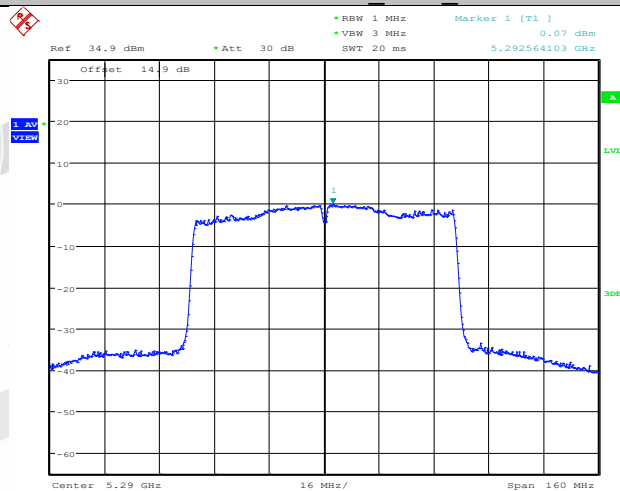
Date: 31.MAR.2021 10:43:51

11AC80SISO Ant1 5210



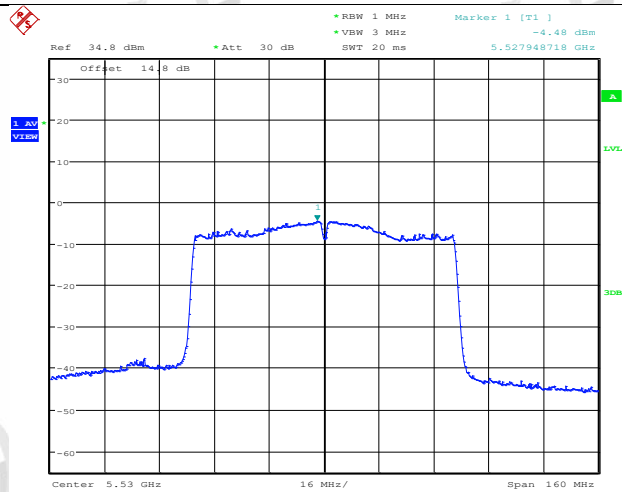
Date: 31.MAR.2021 09:51:56

11AC80SISO Ant1 5290



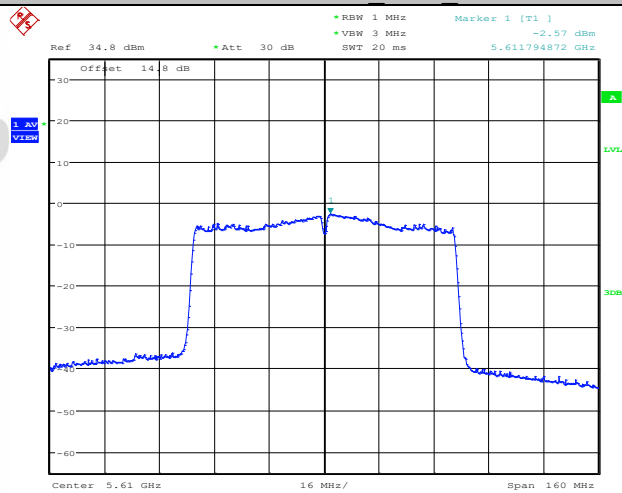
Date: 31.MAR.2021 09:55:20

11AC80SISO Ant1 5530



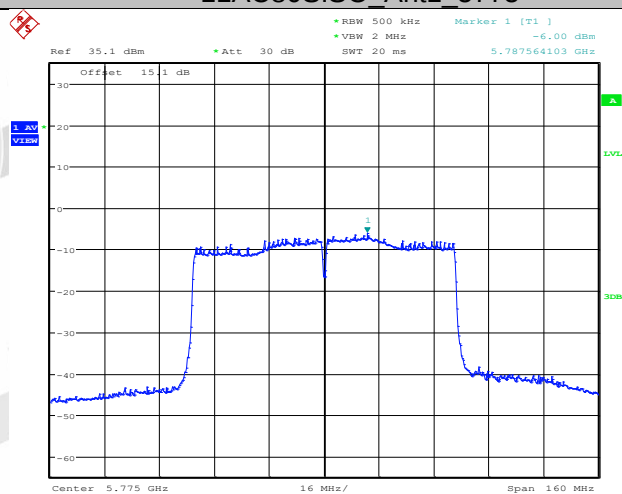
Date: 31.MAR.2021 20:34:06

11AC80SISO Ant1 5610



Date: 31.MAR.2021 09:59:25

11AC80SISO Ant1 5775



Date: 31.MAR.2021 10:46:21

7. Frequency Stability Measurement

7.1. Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

7.2. Measuring Instruments

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

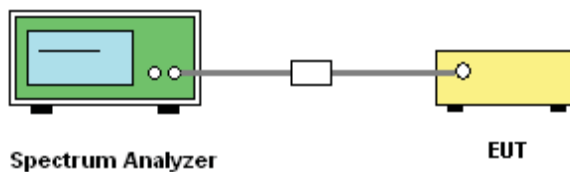
7.3. Test procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.

(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

7.4. Test setup



7.5. Test result

TestMod e	Antenn a	Channe l	Voltage		Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdic t
			Voltage [Vdc]	Tempe rature (°C)				
11A	Ant1	5180	NV	NT	43000	8.301158	20	PASS
			LV	NT	43000	8.301158	20	PASS
			HV	NT	43000	8.301158	20	PASS
		5200	NV	NT	44000	8.461538	20	PASS
			LV	NT	44000	8.461538	20	PASS
			HV	NT	44000	8.461538	20	PASS
		5240	NV	NT	44000	8.396947	20	PASS
			LV	NT	44000	8.396947	20	PASS
			HV	NT	44000	8.396947	20	PASS
		5260	NV	NT	44000	8.365019	20	PASS
			LV	NT	44000	8.365019	20	PASS
			HV	NT	44000	8.365019	20	PASS
		5280	NV	NT	45000	8.522727	20	PASS
			LV	NT	45000	8.522727	20	PASS
			HV	NT	45000	8.522727	20	PASS

11N20SI SO	Ant1	5320	NV	NT	45000	8.458647	20	PASS
			LV	NT	45000	8.458647	20	PASS
			HV	NT	45000	8.458647	20	PASS
		5500	NV	NT	47000	8.545455	20	PASS
			LV	NT	46000	8.363636	20	PASS
			HV	NT	46000	8.363636	20	PASS
		5580	NV	NT	48000	8.602151	20	PASS
			LV	NT	48000	8.602151	20	PASS
			HV	NT	47000	8.422939	20	PASS
		5700	NV	NT	48000	8.421053	20	PASS
			LV	NT	49000	8.596491	20	PASS
			HV	NT	48000	8.421053	20	PASS
		5745	NV	NT	49000	8.529156	20	PASS
			LV	NT	49000	8.529156	20	PASS
			HV	NT	49000	8.529156	20	PASS
		5785	NV	NT	49000	8.470182	20	PASS
			LV	NT	50000	8.643042	20	PASS
			HV	NT	49000	8.470182	20	PASS
		5825	NV	NT	50000	8.583691	20	PASS
			LV	NT	50000	8.583691	20	PASS
			HV	NT	50000	8.583691	20	PASS
		5180	NV	NT	44000	8.494208	20	PASS
			LV	NT	44000	8.494208	20	PASS
			HV	NT	44000	8.494208	20	PASS
		5200	NV	NT	45000	8.653846	20	PASS
			LV	NT	45000	8.653846	20	PASS
			HV	NT	45000	8.653846	20	PASS
		5240	NV	NT	45000	8.587786	20	PASS
			LV	NT	45000	8.587786	20	PASS
			HV	NT	45000	8.587786	20	PASS
		5260	NV	NT	45000	8.555133	20	PASS
			LV	NT	45000	8.555133	20	PASS
			HV	NT	45000	8.555133	20	PASS
		5280	NV	NT	46000	8.712121	20	PASS
			LV	NT	45000	8.522727	20	PASS
			HV	NT	45000	8.522727	20	PASS
		5320	NV	NT	46000	8.646617	20	PASS
			LV	NT	46000	8.646617	20	PASS
			HV	NT	46000	8.646617	20	PASS
		5500	NV	NT	48000	8.727273	20	PASS
			LV	NT	48000	8.727273	20	PASS
			HV	NT	47000	8.545455	20	PASS
		5580	NV	NT	48000	8.602151	20	PASS
			LV	NT	48000	8.602151	20	PASS
			HV	NT	48000	8.602151	20	PASS
		5700	NV	NT	49000	8.596491	20	PASS
			LV	NT	49000	8.596491	20	PASS
			HV	NT	49000	8.596491	20	PASS
		5745	NV	NT	50000	8.70322	20	PASS
			LV	NT	50000	8.70322	20	PASS
			HV	NT	50000	8.70322	20	PASS

		5785	NV	NT	50000	8.643042	20	PASS
			LV	NT	50000	8.643042	20	PASS
			HV	NT	50000	8.643042	20	PASS
		5825	NV	NT	51000	8.755365	20	PASS
			LV	NT	51000	8.755365	20	PASS
			HV	NT	51000	8.755365	20	PASS
		5190	NV	NT	46000	8.863198	20	PASS
			LV	NT	46000	8.863198	20	PASS
			HV	NT	46000	8.863198	20	PASS
11N40SI SO	Ant1	5230	NV	NT	46000	8.795411	20	PASS
			LV	NT	46000	8.795411	20	PASS
			HV	NT	46000	8.795411	20	PASS
		5270	NV	NT	46000	8.728653	20	PASS
			LV	NT	46000	8.728653	20	PASS
			HV	NT	46000	8.728653	20	PASS
		5310	NV	NT	47000	8.851224	20	PASS
			LV	NT	47000	8.851224	20	PASS
			HV	NT	47000	8.851224	20	PASS
		5510	NV	NT	48000	8.711434	20	PASS
			LV	NT	49000	8.892922	20	PASS
			HV	NT	49000	8.892922	20	PASS
		5550	NV	NT	49000	8.828829	20	PASS
			LV	NT	49000	8.828829	20	PASS
			HV	NT	49000	8.828829	20	PASS
		5670	NV	NT	59000	10.405644	20	PASS
			LV	NT	59000	10.405644	20	PASS
			HV	NT	59000	10.405644	20	PASS
		5755	NV	NT	51000	8.861859	20	PASS
			LV	NT	51000	8.861859	20	PASS
			HV	NT	51000	8.861859	20	PASS
		5795	NV	NT	51000	8.80069	20	PASS
			LV	NT	51000	8.80069	20	PASS
			HV	NT	51000	8.80069	20	PASS
11AC20 SISO	Ant1	5180	NV	NT	45000	8.687259	20	PASS
			LV	NT	45000	8.687259	20	PASS
			HV	NT	45000	8.687259	20	PASS
		5200	NV	NT	45000	8.653846	20	PASS
			LV	NT	45000	8.653846	20	PASS
			HV	NT	45000	8.653846	20	PASS
		5240	NV	NT	46000	8.778626	20	PASS
			LV	NT	45000	8.587786	20	PASS
			HV	NT	46000	8.778626	20	PASS
		5260	NV	NT	46000	8.745247	20	PASS
			LV	NT	46000	8.745247	20	PASS
			HV	NT	46000	8.745247	20	PASS
		5280	NV	NT	46000	8.712121	20	PASS
			LV	NT	46000	8.712121	20	PASS
			HV	NT	46000	8.712121	20	PASS
		5320	NV	NT	46000	8.646617	20	PASS
			LV	NT	46000	8.646617	20	PASS
			HV	NT	46000	8.646617	20	PASS

		5500	NV	NT	48000	8.727273	20	PASS
			LV	NT	48000	8.727273	20	PASS
			HV	NT	48000	8.727273	20	PASS
		5580	NV	NT	49000	8.781362	20	PASS
			LV	NT	49000	8.781362	20	PASS
			HV	NT	49000	8.781362	20	PASS
		5700	NV	NT	50000	8.77193	20	PASS
			LV	NT	50000	8.77193	20	PASS
			HV	NT	50000	8.77193	20	PASS
		5745	NV	NT	50000	8.70322	20	PASS
			LV	NT	50000	8.70322	20	PASS
			HV	NT	51000	8.877285	20	PASS
		5785	NV	NT	51000	8.815903	20	PASS
			LV	NT	51000	8.815903	20	PASS
			HV	NT	51000	8.815903	20	PASS
		5825	NV	NT	51000	8.755365	20	PASS
			LV	NT	51000	8.755365	20	PASS
			HV	NT	51000	8.755365	20	PASS
11AC40 SISO	Ant1	5190	NV	NT	46000	8.863198	20	PASS
			LV	NT	46000	8.863198	20	PASS
			HV	NT	46000	8.863198	20	PASS
		5230	NV	NT	46000	8.795411	20	PASS
			LV	NT	46000	8.795411	20	PASS
			HV	NT	46000	8.795411	20	PASS
		5270	NV	NT	46000	8.728653	20	PASS
			LV	NT	47000	8.918406	20	PASS
			HV	NT	46000	8.728653	20	PASS
		5310	NV	NT	47000	8.851224	20	PASS
			LV	NT	47000	8.851224	20	PASS
			HV	NT	47000	8.851224	20	PASS
		5510	NV	NT	49000	8.892922	20	PASS
			LV	NT	49000	8.892922	20	PASS
			HV	NT	49000	8.892922	20	PASS
		5550	NV	NT	49000	8.828829	20	PASS
			LV	NT	49000	8.828829	20	PASS
			HV	NT	49000	8.828829	20	PASS
		5670	NV	NT	50000	8.818342	20	PASS
			LV	NT	50000	8.818342	20	PASS
			HV	NT	50000	8.818342	20	PASS
		5755	NV	NT	51000	8.861859	20	PASS
			LV	NT	51000	8.861859	20	PASS
			HV	NT	51000	8.861859	20	PASS
		5795	NV	NT	51000	8.80069	20	PASS
			LV	NT	52000	8.973253	20	PASS
			HV	NT	51000	8.80069	20	PASS
11AC80 SISO	Ant1	5210	NV	NT	46000	8.829175	20	PASS
			LV	NT	46000	8.829175	20	PASS
			HV	NT	46000	8.829175	20	PASS
		5290	NV	NT	47000	8.884688	20	PASS
			LV	NT	47000	8.884688	20	PASS
			HV	NT	47000	8.884688	20	PASS

		5530	NV	NT	51000	9.222423	20	PASS
			LV	NT	50000	9.041591	20	PASS
			HV	NT	50000	9.041591	20	PASS
		5610	NV	NT	49000	8.734403	20	PASS
			LV	NT	49000	8.734403	20	PASS
			HV	NT	49000	8.734403	20	PASS
		5775	NV	NT	49000	8.484848	20	PASS
			LV	NT	49000	8.484848	20	PASS
			HV	NT	49000	8.484848	20	PASS

Temperature								
TestMod e	Antenn a	Channe l	Voltage [Vdc]	Tempe rature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdic t
11A	Ant1	5180	NV	-30	44000	8.494208	20	PASS
			NV	-20	44000	8.494208	20	PASS
			NV	-10	43000	8.301158	20	PASS
			NV	0	43000	8.301158	20	PASS
			NV	10	44000	8.494208	20	PASS
			NV	20	43000	8.301158	20	PASS
			NV	30	44000	8.494208	20	PASS
			NV	40	43000	8.301158	20	PASS
		5200	NV	50	44000	8.494208	20	PASS
			NV	-30	44000	8.461538	20	PASS
			NV	-20	44000	8.461538	20	PASS
			NV	-10	44000	8.461538	20	PASS
			NV	0	44000	8.461538	20	PASS
			NV	10	44000	8.461538	20	PASS
			NV	20	44000	8.461538	20	PASS
			NV	30	44000	8.461538	20	PASS
			NV	40	44000	8.461538	20	PASS
			NV	50	44000	8.461538	20	PASS
		5240	NV	-30	44000	8.396947	20	PASS
			NV	-20	44000	8.396947	20	PASS
			NV	-10	44000	8.396947	20	PASS
			NV	0	44000	8.396947	20	PASS
			NV	10	44000	8.396947	20	PASS
			NV	20	44000	8.396947	20	PASS
			NV	30	44000	8.396947	20	PASS
			NV	40	44000	8.396947	20	PASS
			NV	50	44000	8.396947	20	PASS
		5260	NV	-30	44000	8.365019	20	PASS
			NV	-20	44000	8.365019	20	PASS
			NV	-10	44000	8.365019	20	PASS
			NV	0	44000	8.365019	20	PASS
			NV	10	44000	8.365019	20	PASS
			NV	20	44000	8.365019	20	PASS
			NV	30	44000	8.365019	20	PASS
			NV	40	44000	8.365019	20	PASS
			NV	50	44000	8.365019	20	PASS
		5280	NV	-30	45000	8.522727	20	PASS
			NV	-20	45000	8.522727	20	PASS

			NV	-10	44000	8.333333	20	PASS
			NV	0	45000	8.522727	20	PASS
			NV	10	45000	8.522727	20	PASS
			NV	20	45000	8.522727	20	PASS
			NV	30	45000	8.522727	20	PASS
			NV	40	44000	8.333333	20	PASS
			NV	50	44000	8.333333	20	PASS
		5320	NV	-30	45000	8.458647	20	PASS
			NV	-20	45000	8.458647	20	PASS
			NV	-10	45000	8.458647	20	PASS
			NV	0	45000	8.458647	20	PASS
			NV	10	45000	8.458647	20	PASS
			NV	20	45000	8.458647	20	PASS
			NV	30	45000	8.458647	20	PASS
		5500	NV	40	45000	8.458647	20	PASS
			NV	50	45000	8.458647	20	PASS
			NV	-30	47000	8.545455	20	PASS
			NV	-20	47000	8.545455	20	PASS
			NV	-10	47000	8.545455	20	PASS
			NV	0	47000	8.545455	20	PASS
			NV	10	47000	8.545455	20	PASS
		5580	NV	20	47000	8.545455	20	PASS
			NV	30	47000	8.545455	20	PASS
			NV	40	47000	8.545455	20	PASS
			NV	50	47000	8.545455	20	PASS
			NV	-30	47000	8.422939	20	PASS
			NV	-20	48000	8.602151	20	PASS
			NV	-10	47000	8.422939	20	PASS
		5700	NV	0	47000	8.422939	20	PASS
			NV	10	47000	8.422939	20	PASS
			NV	20	47000	8.422939	20	PASS
			NV	30	47000	8.422939	20	PASS
			NV	40	47000	8.422939	20	PASS
			NV	50	47000	8.422939	20	PASS
			NV	-30	48000	8.421053	20	PASS
		5745	NV	-20	49000	8.596491	20	PASS
			NV	-10	48000	8.421053	20	PASS
			NV	0	48000	8.421053	20	PASS
			NV	10	48000	8.421053	20	PASS
			NV	20	49000	8.596491	20	PASS
			NV	30	48000	8.421053	20	PASS
			NV	40	49000	8.596491	20	PASS
			NV	50	49000	8.596491	20	PASS
			NV	-30	49000	8.529156	20	PASS
			NV	-20	49000	8.529156	20	PASS
			NV	-10	49000	8.529156	20	PASS
			NV	0	49000	8.529156	20	PASS
			NV	10	49000	8.529156	20	PASS
			NV	20	49000	8.529156	20	PASS
			NV	30	49000	8.529156	20	PASS
			NV	40	49000	8.529156	20	PASS

11N20SI SO	Ant1	5785	NV	50	49000	8.529156	20	PASS
			NV	-30	49000	8.470182	20	PASS
			NV	-20	49000	8.470182	20	PASS
			NV	-10	49000	8.470182	20	PASS
			NV	0	49000	8.470182	20	PASS
			NV	10	50000	8.643042	20	PASS
			NV	20	49000	8.470182	20	PASS
			NV	30	49000	8.470182	20	PASS
			NV	40	49000	8.470182	20	PASS
			NV	50	49000	8.470182	20	PASS
		5825	NV	-30	50000	8.583691	20	PASS
			NV	-20	50000	8.583691	20	PASS
			NV	-10	50000	8.583691	20	PASS
			NV	0	50000	8.583691	20	PASS
			NV	10	50000	8.583691	20	PASS
			NV	20	50000	8.583691	20	PASS
			NV	30	50000	8.583691	20	PASS
			NV	40	50000	8.583691	20	PASS
			NV	50	50000	8.583691	20	PASS
		5180	NV	-30	44000	8.494208	20	PASS
			NV	-20	44000	8.494208	20	PASS
			NV	-10	44000	8.494208	20	PASS
			NV	0	44000	8.494208	20	PASS
			NV	10	44000	8.494208	20	PASS
			NV	20	44000	8.494208	20	PASS
			NV	30	44000	8.494208	20	PASS
			NV	40	44000	8.494208	20	PASS
			NV	50	44000	8.494208	20	PASS
		5200	NV	-30	45000	8.653846	20	PASS
			NV	-20	45000	8.653846	20	PASS
			NV	-10	45000	8.653846	20	PASS
			NV	0	45000	8.653846	20	PASS
			NV	10	45000	8.653846	20	PASS
			NV	20	45000	8.653846	20	PASS
			NV	30	45000	8.653846	20	PASS
			NV	40	45000	8.653846	20	PASS
			NV	50	45000	8.653846	20	PASS
		5240	NV	-30	45000	8.587786	20	PASS
			NV	-20	45000	8.587786	20	PASS
			NV	-10	45000	8.587786	20	PASS
			NV	0	45000	8.587786	20	PASS
			NV	10	45000	8.587786	20	PASS
			NV	20	45000	8.587786	20	PASS
			NV	30	45000	8.587786	20	PASS
			NV	40	45000	8.587786	20	PASS
			NV	50	45000	8.587786	20	PASS
		5260	NV	-30	45000	8.555133	20	PASS
			NV	-20	45000	8.555133	20	PASS
			NV	-10	45000	8.555133	20	PASS
			NV	0	45000	8.555133	20	PASS
			NV	10	45000	8.555133	20	PASS

			NV	20	45000	8.555133	20	PASS
			NV	30	45000	8.555133	20	PASS
			NV	40	45000	8.555133	20	PASS
			NV	50	45000	8.555133	20	PASS
5280			NV	-30	45000	8.522727	20	PASS
			NV	-20	45000	8.522727	20	PASS
			NV	-10	45000	8.522727	20	PASS
			NV	0	45000	8.522727	20	PASS
			NV	10	45000	8.522727	20	PASS
			NV	20	45000	8.522727	20	PASS
			NV	30	46000	8.712121	20	PASS
			NV	40	45000	8.522727	20	PASS
			NV	50	45000	8.522727	20	PASS
			NV	-30	46000	8.646617	20	PASS
			NV	-20	46000	8.646617	20	PASS
			NV	-10	46000	8.646617	20	PASS
5320			NV	0	46000	8.646617	20	PASS
			NV	10	46000	8.646617	20	PASS
			NV	20	46000	8.646617	20	PASS
			NV	30	46000	8.646617	20	PASS
			NV	40	46000	8.646617	20	PASS
			NV	50	46000	8.646617	20	PASS
			NV	-30	47000	8.545455	20	PASS
			NV	-20	47000	8.545455	20	PASS
5500			NV	-10	48000	8.727273	20	PASS
			NV	0	48000	8.727273	20	PASS
			NV	10	48000	8.727273	20	PASS
			NV	20	48000	8.727273	20	PASS
			NV	30	48000	8.727273	20	PASS
			NV	40	48000	8.727273	20	PASS
			NV	50	48000	8.727273	20	PASS
			NV	-30	48000	8.602151	20	PASS
5580			NV	-20	48000	8.602151	20	PASS
			NV	-10	48000	8.602151	20	PASS
			NV	0	48000	8.602151	20	PASS
			NV	10	48000	8.602151	20	PASS
			NV	20	48000	8.602151	20	PASS
			NV	30	48000	8.602151	20	PASS
			NV	40	48000	8.602151	20	PASS
			NV	50	48000	8.602151	20	PASS
5700			NV	-30	49000	8.596491	20	PASS
			NV	-20	49000	8.596491	20	PASS
			NV	-10	49000	8.596491	20	PASS
			NV	0	49000	8.596491	20	PASS
			NV	10	49000	8.596491	20	PASS
			NV	20	50000	8.77193	20	PASS
			NV	30	49000	8.596491	20	PASS
			NV	40	49000	8.596491	20	PASS
5745			NV	50	49000	8.596491	20	PASS
			NV	-30	50000	8.70322	20	PASS
			NV	-20	50000	8.70322	20	PASS

11N40SI SO	Ant1	5785	NV	-10	50000	8.70322	20	PASS
			NV	0	50000	8.70322	20	PASS
			NV	10	50000	8.70322	20	PASS
			NV	20	50000	8.70322	20	PASS
			NV	30	50000	8.70322	20	PASS
			NV	40	50000	8.70322	20	PASS
			NV	50	50000	8.70322	20	PASS
			NV	-30	50000	8.643042	20	PASS
			NV	-20	50000	8.643042	20	PASS
			NV	-10	50000	8.643042	20	PASS
			NV	0	50000	8.643042	20	PASS
			NV	10	50000	8.643042	20	PASS
			NV	20	50000	8.643042	20	PASS
			NV	30	50000	8.643042	20	PASS
			NV	40	50000	8.643042	20	PASS
			NV	50	50000	8.643042	20	PASS
		5825	NV	-30	51000	8.755365	20	PASS
			NV	-20	51000	8.755365	20	PASS
			NV	-10	51000	8.755365	20	PASS
			NV	0	51000	8.755365	20	PASS
			NV	10	51000	8.755365	20	PASS
			NV	20	51000	8.755365	20	PASS
			NV	30	51000	8.755365	20	PASS
			NV	40	51000	8.755365	20	PASS
			NV	50	51000	8.755365	20	PASS
		5190	NV	-30	46000	8.863198	20	PASS
			NV	-20	46000	8.863198	20	PASS
			NV	-10	45000	8.67052	20	PASS
			NV	0	46000	8.863198	20	PASS
			NV	10	45000	8.67052	20	PASS
			NV	20	45000	8.67052	20	PASS
			NV	30	46000	8.863198	20	PASS
			NV	40	46000	8.863198	20	PASS
			NV	50	46000	8.863198	20	PASS
		5230	NV	-30	46000	8.795411	20	PASS
			NV	-20	46000	8.795411	20	PASS
			NV	-10	46000	8.795411	20	PASS
			NV	0	46000	8.795411	20	PASS
			NV	10	46000	8.795411	20	PASS
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		5270	NV	-30	46000	8.728653	20	PASS
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			NV	-10	46000	8.728653	20	PASS
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			NV	10	46000	8.728653	20	PASS
			NV	20	46000	8.728653	20	PASS
			NV	30	46000	8.728653	20	PASS
			NV	40	46000	8.728653	20	PASS

				NV	50	46000	8.728653	20	PASS
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				NV	-20	47000	8.851224	20	PASS
				NV	-10	47000	8.851224	20	PASS
				NV	0	47000	8.851224	20	PASS
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				NV	40	47000	8.851224	20	PASS
				NV	50	47000	8.851224	20	PASS
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				NV	0	49000	8.828829	20	PASS
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				NV	50	49000	8.828829	20	PASS
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				NV	50	51000	8.861859	20	PASS
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				NV	-10	51000	8.80069	20	PASS
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				NV	20	51000	8.80069	20	PASS
				NV	30	51000	8.80069	20	PASS
				NV	40	51000	8.80069	20	PASS
				NV	50	51000	8.80069	20	PASS
			5795	NV	-30	51000	8.80069	20	PASS
				NV	-20	51000	8.80069	20	PASS
				NV	-10	51000	8.80069	20	PASS
				NV	0	51000	8.80069	20	PASS
				NV	10	51000	8.80069	20	PASS

			NV	20	51000	8.80069	20	PASS
			NV	30	51000	8.80069	20	PASS
			NV	40	51000	8.80069	20	PASS
			NV	50	51000	8.80069	20	PASS
11AC20 SISO	Ant1	5180	NV	-30	45000	8.687259	20	PASS
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			NV	-10	45000	8.687259	20	PASS
			NV	0	45000	8.687259	20	PASS
			NV	10	45000	8.687259	20	PASS
			NV	20	45000	8.687259	20	PASS
			NV	30	45000	8.687259	20	PASS
			NV	40	45000	8.687259	20	PASS
			NV	50	45000	8.687259	20	PASS
			NV	-30	45000	8.653846	20	PASS
		5200	NV	-20	45000	8.653846	20	PASS
			NV	-10	45000	8.653846	20	PASS
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			NV	10	45000	8.653846	20	PASS
			NV	20	45000	8.653846	20	PASS
			NV	30	45000	8.653846	20	PASS
			NV	40	45000	8.653846	20	PASS
			NV	50	45000	8.653846	20	PASS
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			NV	-20	46000	8.778626	20	PASS
			NV	-10	45000	8.587786	20	PASS
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			NV	40	46000	8.778626	20	PASS
			NV	50	46000	8.778626	20	PASS
		5260	NV	-30	46000	8.745247	20	PASS
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			NV	-10	46000	8.745247	20	PASS
			NV	0	46000	8.745247	20	PASS
			NV	10	46000	8.745247	20	PASS
			NV	20	46000	8.745247	20	PASS
			NV	30	46000	8.745247	20	PASS
			NV	40	46000	8.745247	20	PASS
			NV	50	46000	8.745247	20	PASS
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			NV	-10	46000	8.712121	20	PASS
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		5500	NV	-30	48000	8.727273	20	PASS
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			NV	0	48000	8.727273	20	PASS
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			NV	20	48000	8.727273	20	PASS
			NV	30	48000	8.727273	20	PASS
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			NV	-20	49000	8.781362	20	PASS
			NV	-10	49000	8.781362	20	PASS
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			NV	10	49000	8.781362	20	PASS
		5700	NV	20	49000	8.781362	20	PASS
			NV	30	49000	8.781362	20	PASS
			NV	40	49000	8.781362	20	PASS
			NV	50	49000	8.781362	20	PASS
			NV	-30	50000	8.77193	20	PASS
			NV	-20	50000	8.77193	20	PASS
			NV	-10	50000	8.77193	20	PASS
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			NV	10	50000	8.77193	20	PASS
			NV	20	50000	8.77193	20	PASS
			NV	30	50000	8.77193	20	PASS
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			NV	50	50000	8.77193	20	PASS
			NV	-30	50000	8.70322	20	PASS
		5785	NV	-20	50000	8.70322	20	PASS
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			NV	0	50000	8.70322	20	PASS
			NV	10	51000	8.877285	20	PASS
			NV	20	50000	8.70322	20	PASS
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			NV	40	50000	8.70322	20	PASS
			NV	50	50000	8.70322	20	PASS
			NV	-30	51000	8.815903	20	PASS
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			NV	20	51000	8.815903	20	PASS
			NV	30	51000	8.815903	20	PASS
			NV	40	51000	8.815903	20	PASS

		5825	NV	50	51000	8.815903	20	PASS
			NV	-30	51000	8.755365	20	PASS
			NV	-20	51000	8.755365	20	PASS
			NV	-10	51000	8.755365	20	PASS
			NV	0	51000	8.755365	20	PASS
			NV	10	51000	8.755365	20	PASS
			NV	20	51000	8.755365	20	PASS
			NV	30	51000	8.755365	20	PASS
			NV	40	51000	8.755365	20	PASS
			NV	50	51000	8.755365	20	PASS
11AC40 SISO	Ant1	5190	NV	-30	46000	8.863198	20	PASS
			NV	-20	46000	8.863198	20	PASS
			NV	-10	46000	8.863198	20	PASS
			NV	0	46000	8.863198	20	PASS
			NV	10	46000	8.863198	20	PASS
			NV	20	46000	8.863198	20	PASS
			NV	30	46000	8.863198	20	PASS
			NV	40	46000	8.863198	20	PASS
			NV	50	46000	8.863198	20	PASS
			NV	-30	46000	8.795411	20	PASS
		5230	NV	-20	46000	8.795411	20	PASS
			NV	-10	46000	8.795411	20	PASS
			NV	0	46000	8.795411	20	PASS
			NV	10	46000	8.795411	20	PASS
			NV	20	46000	8.795411	20	PASS
			NV	30	46000	8.795411	20	PASS
			NV	40	46000	8.795411	20	PASS
			NV	50	46000	8.795411	20	PASS
			NV	-30	47000	8.918406	20	PASS
		5270	NV	-20	47000	8.918406	20	PASS
			NV	-10	46000	8.728653	20	PASS
			NV	0	46000	8.728653	20	PASS
			NV	10	47000	8.918406	20	PASS
			NV	20	46000	8.728653	20	PASS
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			NV	40	46000	8.728653	20	PASS
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			NV	-30	47000	8.851224	20	PASS
		5310	NV	-20	47000	8.851224	20	PASS
			NV	-10	47000	8.851224	20	PASS
			NV	0	47000	8.851224	20	PASS
			NV	10	47000	8.851224	20	PASS
			NV	20	47000	8.851224	20	PASS
			NV	30	47000	8.851224	20	PASS
			NV	40	47000	8.851224	20	PASS
			NV	50	47000	8.851224	20	PASS
			NV	-30	49000	8.892922	20	PASS
		5510	NV	-20	49000	8.892922	20	PASS
			NV	-10	49000	8.892922	20	PASS
			NV	0	49000	8.892922	20	PASS
			NV	10	49000	8.892922	20	PASS
			NV	10	49000	8.892922	20	PASS

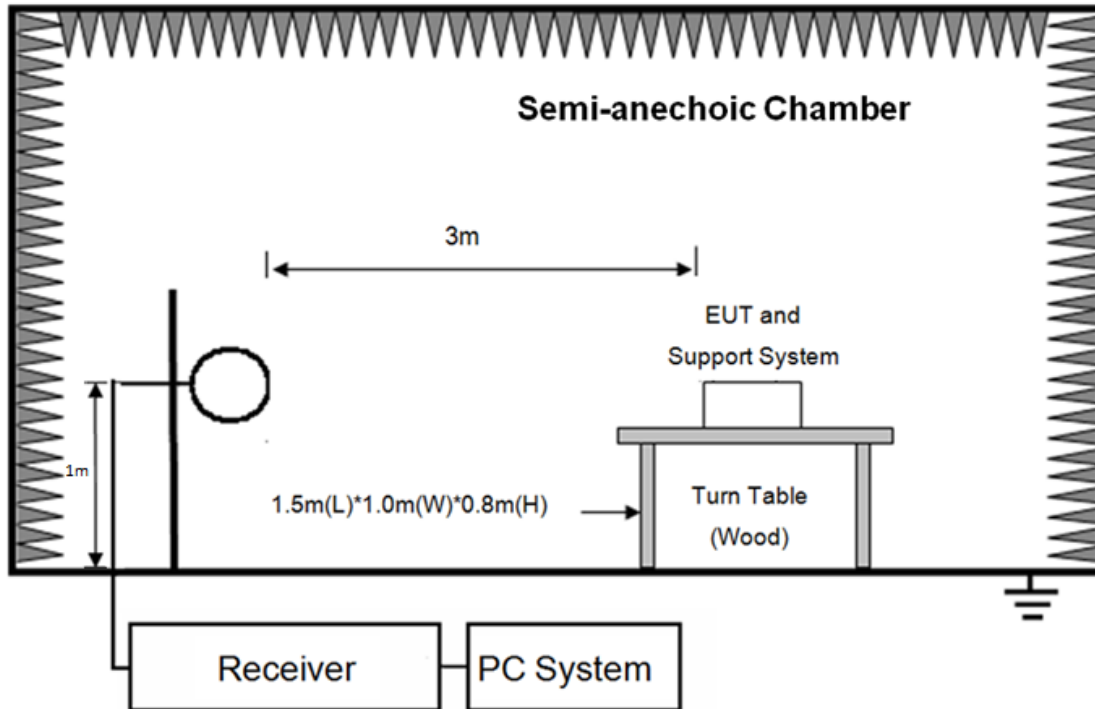
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			NV	40	49000	8.892922	20	PASS
			NV	50	49000	8.892922	20	PASS
		5550	NV	-30	49000	8.828829	20	PASS
			NV	-20	49000	8.828829	20	PASS
			NV	-10	49000	8.828829	20	PASS
			NV	0	49000	8.828829	20	PASS
			NV	10	49000	8.828829	20	PASS
			NV	20	49000	8.828829	20	PASS
			NV	30	49000	8.828829	20	PASS
			NV	40	49000	8.828829	20	PASS
			NV	50	49000	8.828829	20	PASS
		5670	NV	-30	50000	8.818342	20	PASS
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			NV	-10	50000	8.818342	20	PASS
			NV	0	50000	8.818342	20	PASS
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			NV	20	50000	8.818342	20	PASS
			NV	30	50000	8.818342	20	PASS
			NV	40	50000	8.818342	20	PASS
			NV	50	51000	8.994709	20	PASS
		5755	NV	-30	51000	8.861859	20	PASS
			NV	-20	51000	8.861859	20	PASS
			NV	-10	51000	8.861859	20	PASS
			NV	0	51000	8.861859	20	PASS
			NV	10	51000	8.861859	20	PASS
			NV	20	51000	8.861859	20	PASS
			NV	30	51000	8.861859	20	PASS
			NV	40	51000	8.861859	20	PASS
		5795	NV	50	51000	8.861859	20	PASS
			NV	-30	52000	8.973253	20	PASS
			NV	-20	51000	8.80069	20	PASS
			NV	-10	51000	8.80069	20	PASS
			NV	0	51000	8.80069	20	PASS
			NV	10	52000	8.973253	20	PASS
			NV	20	51000	8.80069	20	PASS
			NV	30	52000	8.973253	20	PASS
			NV	40	52000	8.973253	20	PASS
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11AC80 SISO	Ant1	5210	NV	-30	46000	8.829175	20	PASS
			NV	-20	46000	8.829175	20	PASS
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			NV	20	46000	8.829175	20	PASS
			NV	30	46000	8.829175	20	PASS
			NV	40	46000	8.829175	20	PASS
		5290	NV	50	46000	8.829175	20	PASS
			NV	-30	47000	8.884688	20	PASS
			NV	-20	47000	8.884688	20	PASS

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			NV	0	47000	8.884688	20	PASS
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			NV	20	47000	8.884688	20	PASS
			NV	30	47000	8.884688	20	PASS
			NV	40	47000	8.884688	20	PASS
			NV	50	47000	8.884688	20	PASS
		5530	NV	-30	50000	9.041591	20	PASS
			NV	-20	50000	9.041591	20	PASS
			NV	-10	49000	8.860759	20	PASS
			NV	0	49000	8.860759	20	PASS
			NV	10	49000	8.860759	20	PASS
			NV	20	49000	8.860759	20	PASS
			NV	30	49000	8.860759	20	PASS
		5610	NV	40	49000	8.860759	20	PASS
			NV	50	49000	8.860759	20	PASS
			NV	-30	49000	8.734403	20	PASS
			NV	-20	49000	8.734403	20	PASS
			NV	-10	49000	8.734403	20	PASS
			NV	0	49000	8.734403	20	PASS
			NV	10	48000	8.55615	20	PASS
		5775	NV	20	48000	8.55615	20	PASS
			NV	30	48000	8.55615	20	PASS
			NV	40	48000	8.55615	20	PASS
			NV	50	48000	8.55615	20	PASS
			NV	-30	49000	8.484848	20	PASS
			NV	-20	49000	8.484848	20	PASS
			NV	-10	49000	8.484848	20	PASS
			NV	0	49000	8.484848	20	PASS
			NV	10	49000	8.484848	20	PASS
			NV	20	49000	8.484848	20	PASS
			NV	30	49000	8.484848	20	PASS
			NV	40	49000	8.484848	20	PASS
			NV	50	49000	8.484848	20	PASS

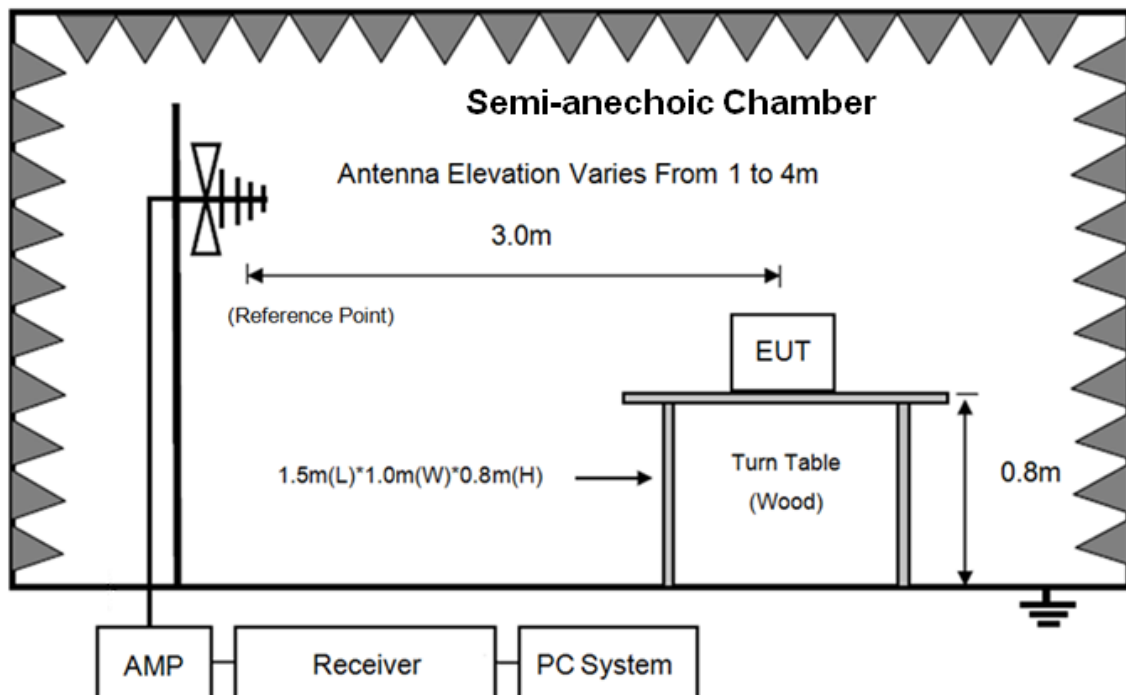
8. Emissions in restricted frequency bands

8.1. Block diagram of test setup

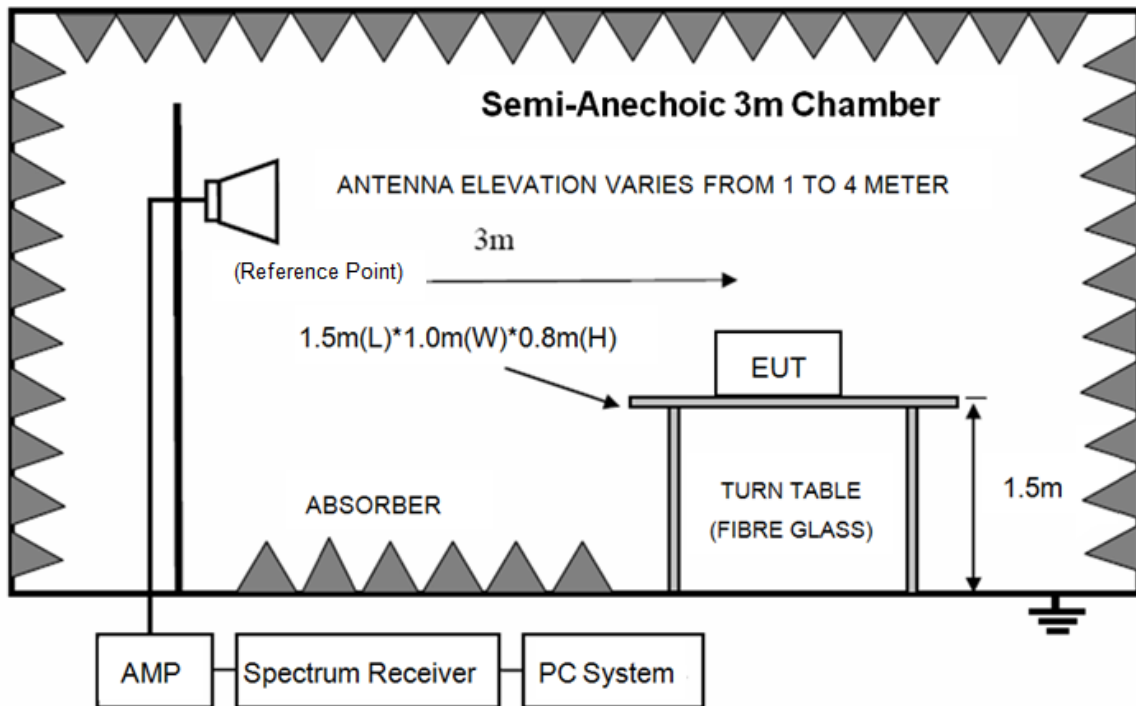
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz – 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

8.2. Limit

8.3.1 FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.1775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.2075	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6

8.3.2 FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V}/\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V}/\text{m}) + 40\text{Log}(30\text{m}/3\text{m})$$

8.3.3 Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions or comply with 15.209 limits.

8.3. Test procedure

- (1) EUT height should be 0.8 m for below 1 GHz at a semi - anechoic chamber while EUT height should be 1.5 m for above 1GHz at full chamber or semi - anechoic chamber ground with absorbers
- (2) Setup EUT and assistant system according clause 2.3 and 8.2
- (3) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test distance
9 kHz-30 MHz	Active Loop antenna	3 m
30 MHz-1 GHz	Trilog Broadband Antenna	3 m
1 GHz-18 GHz	Double Ridged Horn Antenna(1GHz-18GHz)	3 m
18 GHz-40 GHz	Horn Antenna(18GHz-40GHz)	1 m

According ANSI C63.10:2013 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical

axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. for measurement above 30 MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(4) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 40 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 40 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so below final test was performed with frequency range from 30 MHz to 18 GHz.

(5) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(6) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9-90 kHz, 110-490 kHz, for emissions from 9 kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(7) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW

Frequency band	RBW
9 kHz-150 kHz	200 Hz
150 kHz-30 MHz	9 kHz
30 MHz-1 GHz	120 kHz

(8) For emissions above 1 GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3MHz for Peak measure, the RBW is set at 1 MHz, VBW is set at 10 Hz for AV value.

8.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9kHz to 40GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 11a mode.

Note3: For below test data, when the limit tabular marked “/” means this frequency point is the fundamental emission and no need comply with this limit.