



Product Name: Tablet	Report No: ITEZA2-202300095RF1
Product Model: T30Pro, T30, T30S, T30SE	Security Classification: Open
Version: V1.0	Total Page: 66

TIRT Testing Report

Prepared By:	Checked By:	Approved By:	
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Stone Tang	Randy Lv	Daniel Chen	

RF TEST REPORT

FCC ID: 2AX4YT30PRO

According to

47 CFR FCC Part 15, Subpart E

ANSI C63.4:2014, ANSI C63.10:2013

Equipment : Tablet
Model No. : T30Pro, T30, T30S, T30SE
Trademark : DOOGEE
Applicant : Shenzhen DOOGEE Hengtong Technology CO.,LTD
B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22,
Longhua New District, Shenzhen, China

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.
- Test date: 2023/03/01~2023/03/23

Lab: Beijing TIRT Technology Service Co.,Ltd Shenzhen

Add: 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street,
Pingshan District, Shenzhen, China

TEL: +86-0755-27087573

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History of this test report

Original Report Issue Date: 2023.03.23

- No additional attachment
- Additional attachments were issued following record

Attachment No.	Issue Date	Description

1 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	Section 15.203 Section 7.1.4 RSS-Gen Issue 5	PASS
AC Power Line Conducted Emission	Section 15.207 Section 7.2.4 RSS-GEN(8.8), ANSI C63.10	PASS
Peak Transmit Power	Section 15.407(a), RSS-247 5.4(2)	PASS
Power Spectral Density	Section 15.407(a), RSS-247 5.2(2)	PASS
Undesirable Emission	Section 15.407(b), RSS-247 5.5	PASS
Radiated Emission	Section 15.407(b)&15.209 Section 5.5 RSS-Gen(8.9), RSS-247(5.5), ANSI C63.10	PASS
Band Edge	15.205, RSS-247 Issue 2, ANSI C63.10	PASS
Frequency Stability	15.407(f), RSS-GEN(6.11)	PASS

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Frequency Stability: The manufacturer stated in the user's manual.
3. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

1.1 Measurement Uncertainty

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	±142.12 KHz
RF power conducted	±0.74 dB
RF power radiated	±3.25dB
Spurious emissions, conducted	±1.78dB
Spurious emissions, radiated (9KHz~30MHz)	±2.56dB
Spurious emissions, radiated (30MHz~1GHz)	±4.6dB
Spurious emissions, radiated (Above 1GHz)	±4.9dB
Conduction Emissions(150kHz~30MHz)	±3.1 dB
Humidity	±4.6%
Temperature	±0.7°C
Time	±1.25%

2 General Information

2.1 General Description of EUT

EUT Name : Tablet
 Model No. : T30Pro, T30, T30S, T30SE
 DIFF. : There is no difference except the name of the model. All tests are made with the T30Pro model.
 Power supply : DC 3.8V from battery or DC 11V from adapter

Radio Technology : 5G WIFI

Operation Frequency : 802.11a/n(HT20)/ac(HT20): 5180~5240MHz; 5745~5825MHz
 802.11n(HT40)/ac(HT40): 5190~5230MHz; 5755~5795MHz
 802.11ac(HT80): 5210MHz, 5775MHz

Channel separation : 20MHz for 802.11a/ 802.11ac20/ 802.11n(HT20)
 40MHz for 802.11ac40/ 802.11n(HT40)
 80MHz for 802.11ac80

Modulation technology: : IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)
 IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)
 IEEE 802.11ac: OFDM (64QAM, 16QAM, QPSK, BPSK)

Antenna Type : Internal Antenna, max gain 1.24dBi
 Antenna information is provided by applicant.

Software version : DOOGEE-T30-EEA-Android13.0-20230315
 Hardware version : M100TBR110A

Intend use environment : Residential, commercial and light industrial environment

2.2 Test mode

Transmitting mode Keep the EUT in transmitting with modulation.
 EUT was test with 99% duty cycle at its maximum power control level.

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

2.3 Test Facility

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Designation Number:	CN1309
Test Firm Registration Number:	825524
Telephone:	+86-0755-27087573

2.4 Description of Support Units

Accessories : Adapter
 Manufacturer : /
 Model : TP303C-US
 Ratings : Input: 100~240V 50/60Hz 0.7A
 : Output: 5V=3A, 9V=3A, 12V=2.5A, 15V=2A, 20V=1.5A, PPS 5-11V=3A

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.

2.7 Other Information Requested by the Customer

None.

3 Test Instruments list

Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Receiver	Rohde&Schwarz	ESIB 40	YH-TIRT-SAC-966-20220911	2023/01/05	2024/01/06
Integral Antenna	Schwarzbeck	VULB 9163	01314	2022.12.11	2024.12.10
Integral Antenna	Rohde&Schwarz	HF907	RSM2991424	2022.12.11	2024.12.10
Preamplifier	Emtrace	RP01A	'02017	2023/01/05	2024/01/06
Preamplifier	Schwarzbeck	BBV9744	00143	2023/01/05	2024/01/06
Loop Antenna	ZHINAN	ZN30900A	12024	2023/01/05	2024/01/06
Exposure Level Tester	narda	ELT-400	N-0925	2023/01/05	2024/01/06
Horn Antenna	Schwarzbeck	BBHA9170	00956	2023/01/05	2024/01/06
RF Cable	/	LMR400UF-NMMN-7.0M	/	2023/01/05	2024/01/06
RF Cable	/	SFT2050PUR-NMMN-7.0M	/	2023/01/05	2024/01/06
EMI Receiver	Rohde&Schwarz	ESR7	1316.3003K07-102611-mk	2022/11/02	2023/11/01
LISN	Rohde&Schwarz	ENV216	3560.655.12-102915-Bp	2022/11/02	2023/11/01
ISN	Schwarzbeck	ENY81	1309.8510.03	2023/01/05	2024/01/06
ISN	Schwarzbeck	ENY81-CAT6	1309.8526.03-101976-kh	2023/01/05	2024/01/06
RF Cable	\	SFT2050PUR-NMMN-2.0M	\	2023/01/05	2024/01/06
CMW500	ROHDE&SCHWARZ	CMW500	120434	2023/01/05	2024/01/06
Spectrum analyzer	ROHDE&SCHWARZ	FSU26	200732	2023/01/05	2024/01/06
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	101722	2023/01/05	2024/01/06
vector Signal Generator	KEYSIGHT	N5182B	MY56200458	2023/01/05	2024/01/06
vector Signal Generator	HEWLETT PACKARD	83752A	3610A02458	2023/01/05	2024/01/06
Filter	HEWLETT PACKARD	JS0806-F	19K8060209	2023/01/05	2024/01/06
Wireless comprehensive tester	ANRISTU	MT8821C	SN6262170409	2023/01/05	2024/01/06

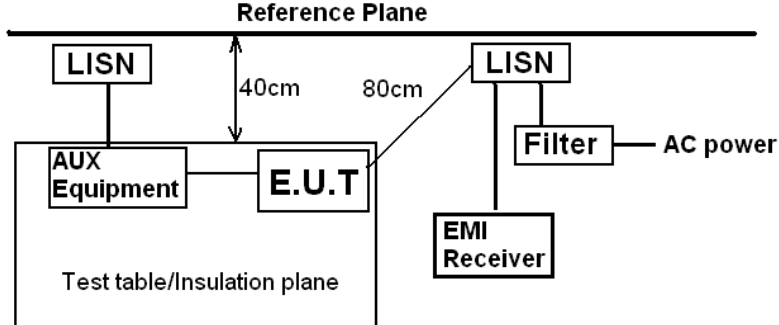
Wireless comprehensive tester	ANRISTU	MT8000A	SN6262166782	2023/01/05	2024/01/06
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4 Test results and Measurement Data

4.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The antenna is internal antenna. The best case gain of the antenna is 1.24dBi for 5.15~5.25GHz, 5.725~5.85GHz	

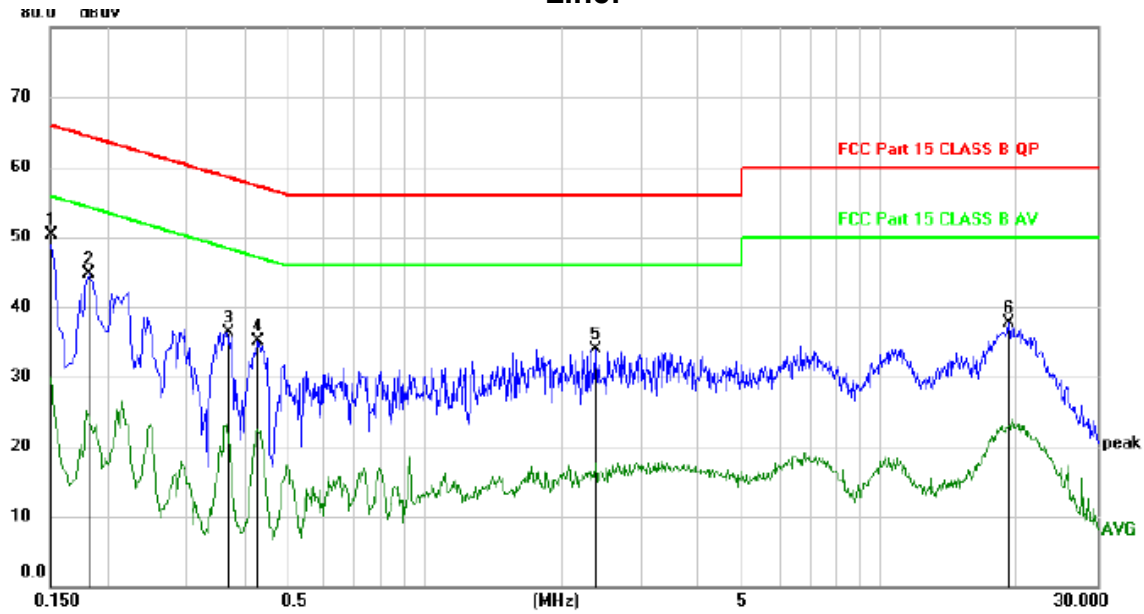
4.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.10:2013		
Test Frequency Range:	150KHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9KHz, VBW=30KHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test procedure	The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.		
Test setup:	 <i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m		
Test Instruments:	Refer to section 5.10 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Measurement Data

An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:

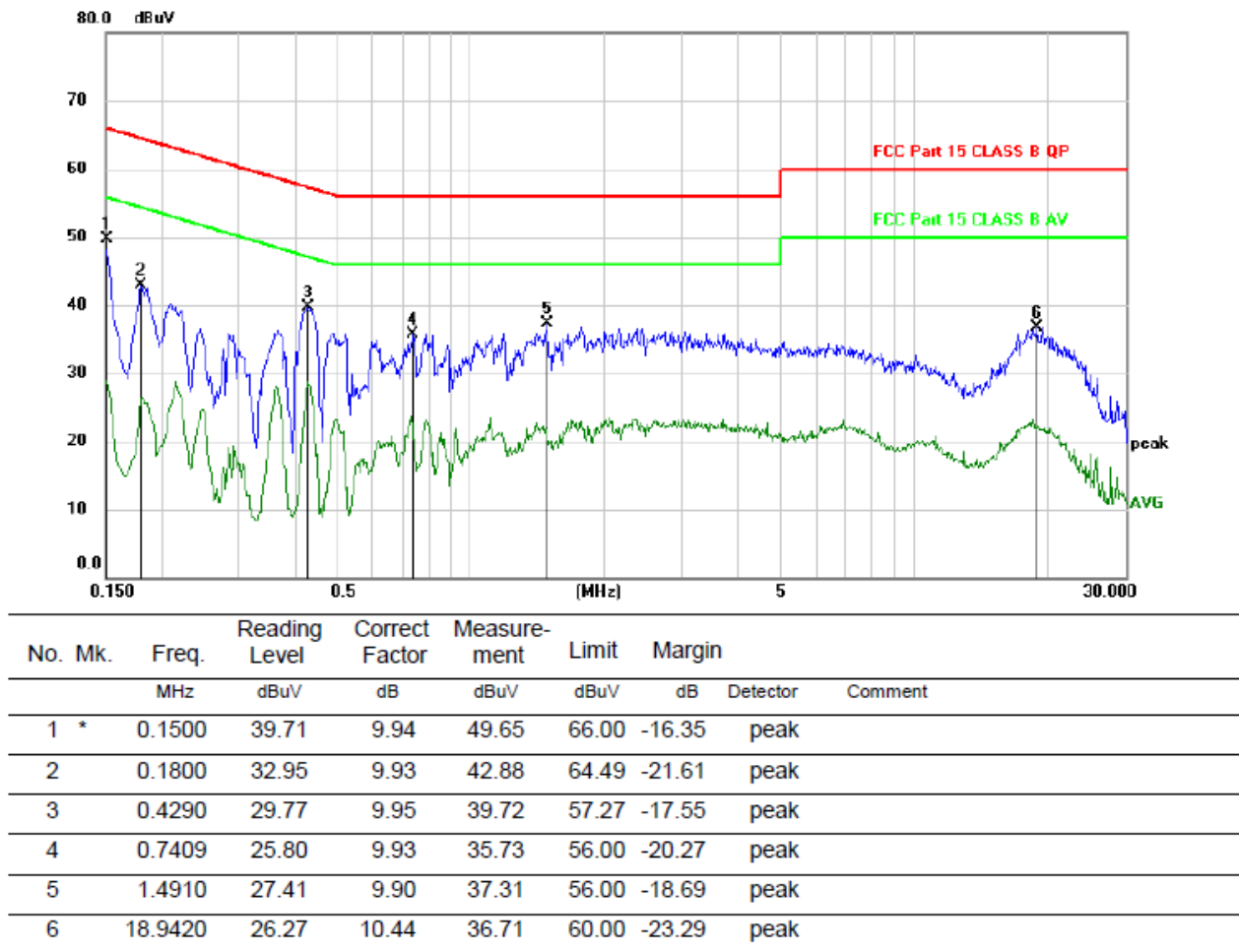


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	40.30	9.94	50.24	66.00	-15.76	peak	
2		0.1830	34.75	9.93	44.68	64.35	-19.67	peak	
3		0.3690	26.34	9.95	36.29	58.52	-22.23	peak	
4		0.4290	25.22	9.95	35.17	57.27	-22.10	peak	
5		2.3640	24.06	9.90	33.96	56.00	-22.04	peak	
6		19.1790	27.16	10.45	37.61	60.00	-22.39	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Neutral:

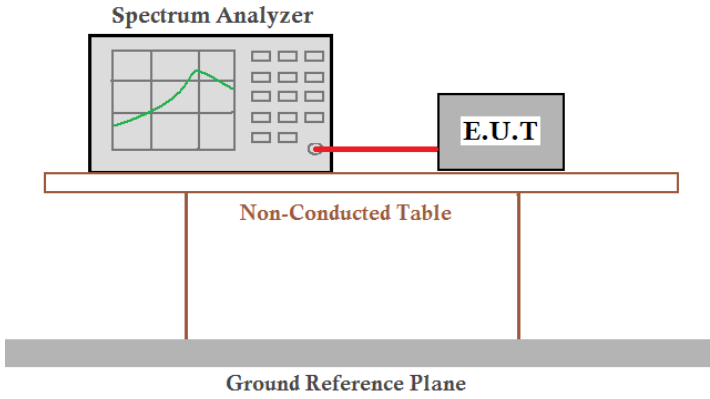
*:Maximum data x:Over limit !:over margin

(Reference Only)

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

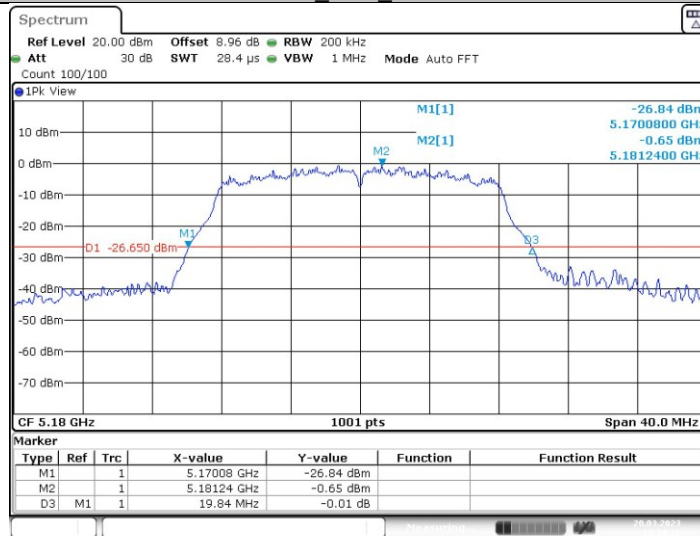
Note: All modes and channels have been tested and only the A 5240MHz mode with the worst data is listed.

4.3 Emission Bandwidth and 99% Occupied Bandwidth

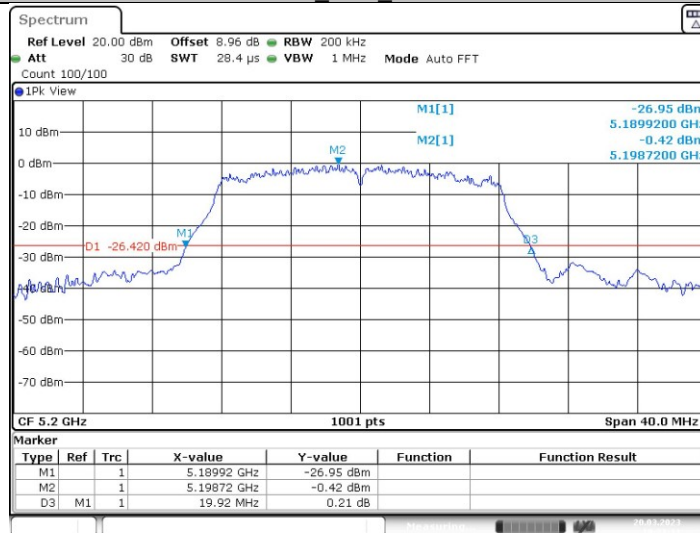
Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, shown with a grid and a green curve, is connected to an E.U.T. (Equipment Under Test) box by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs. Below the table, a horizontal grey bar represents the 'Ground Reference Plane'.
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data:**Band 1****-26dB Bandwidth**

TestMode	Antenna	Freq(MHz)	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.84	5170.08	5189.92	---	---
		5200	19.92	5189.92	5209.84	---	---
		5240	20.04	5229.88	5249.92	---	---
11N20SISO	Ant1	5180	20.28	5169.76	5190.04	---	---
		5200	20.28	5189.72	5210.00	---	---
		5240	20.32	5229.76	5250.08	---	---
11N40SISO	Ant1	5190	41.12	5169.20	5210.32	---	---
		5230	40.16	5209.84	5250.00	---	---
11AC20SISO	Ant1	5180	20.20	5169.80	5190.00	---	---
		5200	20.04	5189.96	5210.00	---	---
		5240	20.20	5229.80	5250.00	---	---
11AC40SISO	Ant1	5190	40.80	5169.44	5210.24	---	---
		5230	40.08	5209.84	5249.92	---	---
11AC80SISO	Ant1	5210	79.84	5170.16	5250.00	---	---

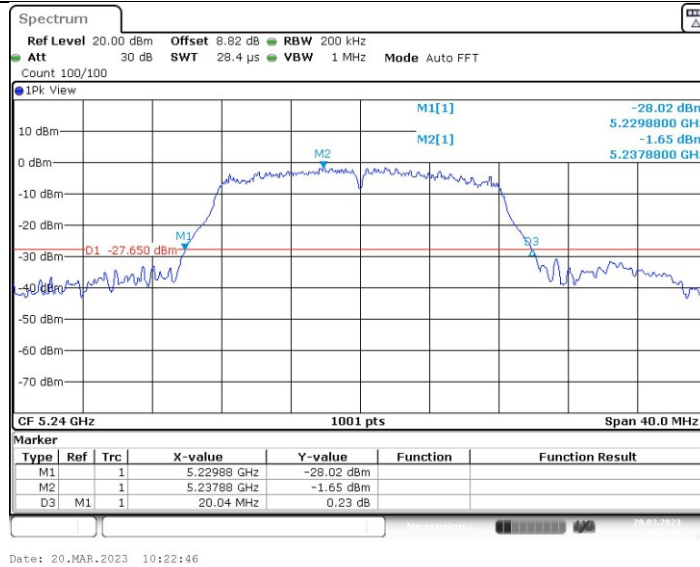
11A Ant1 5180

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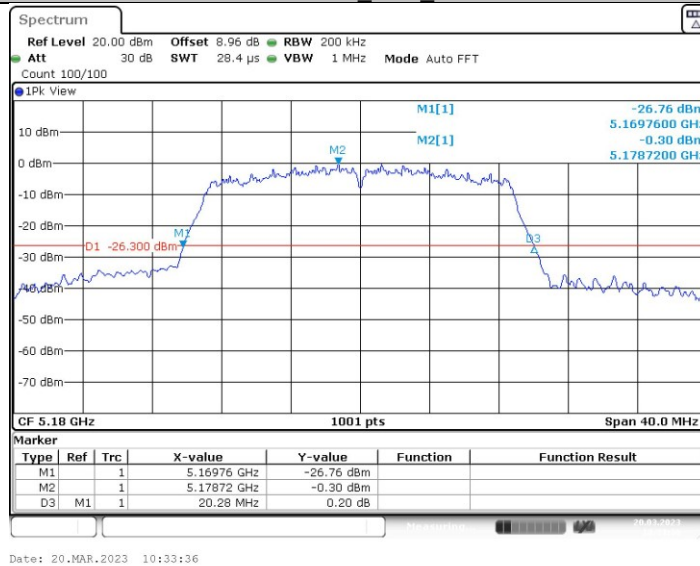
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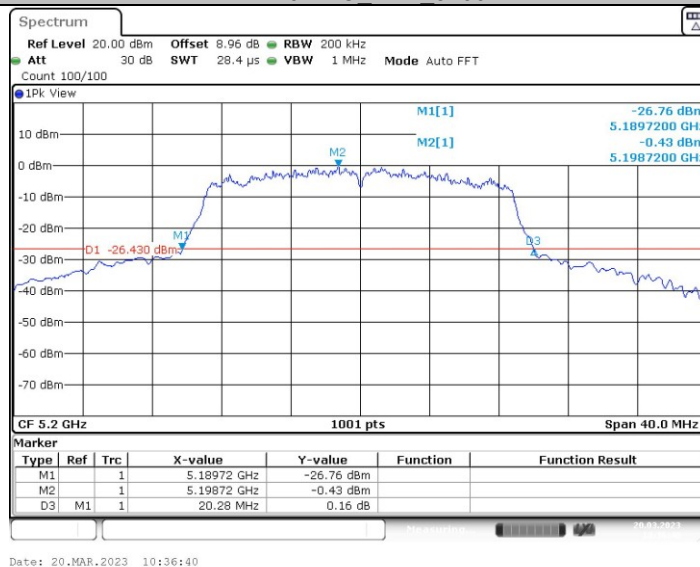
11A Ant1 5240



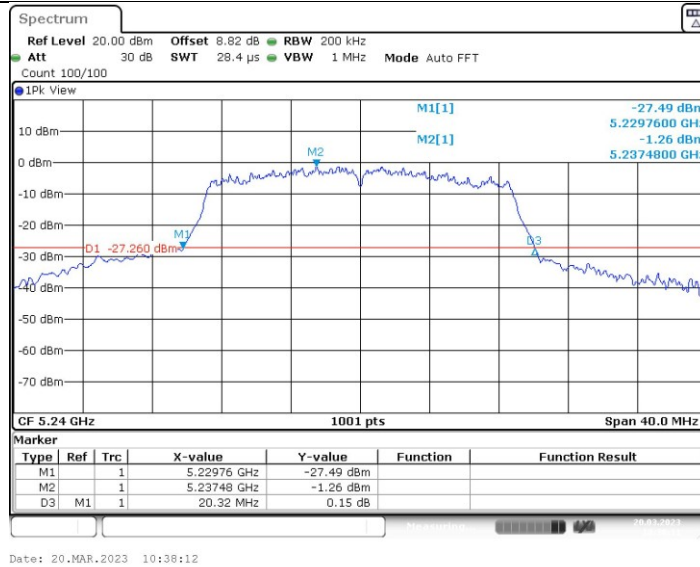
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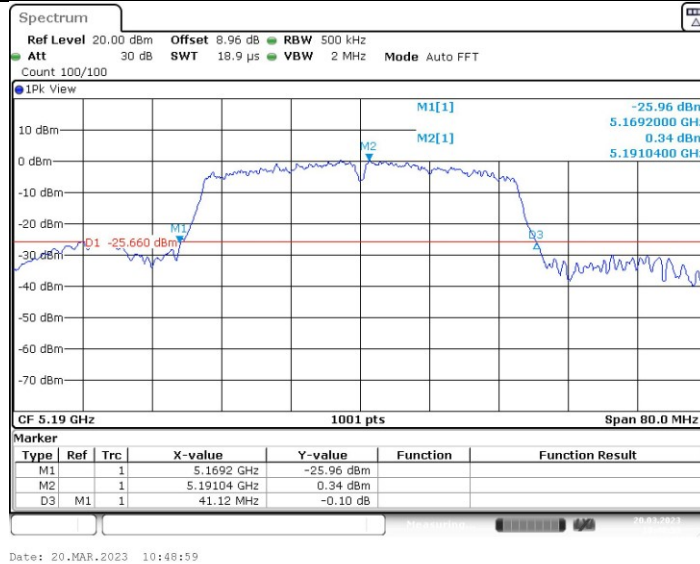
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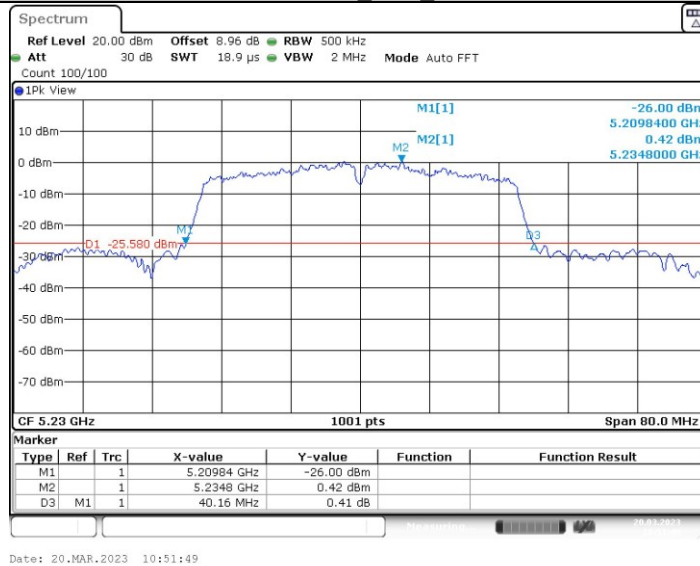
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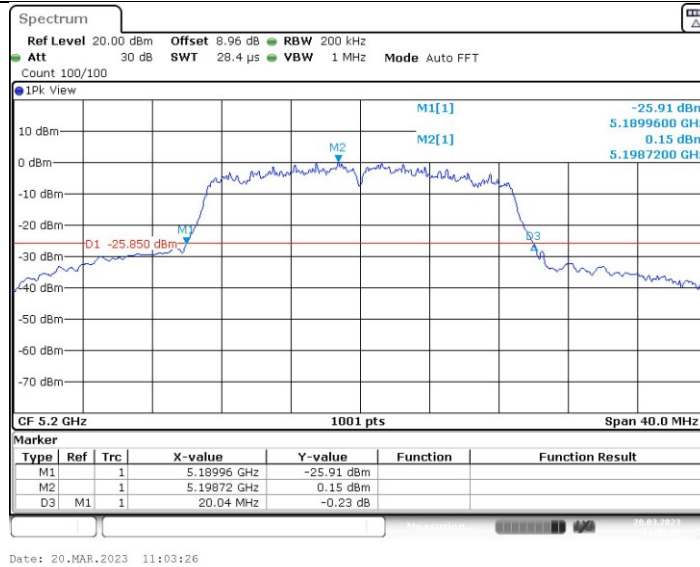
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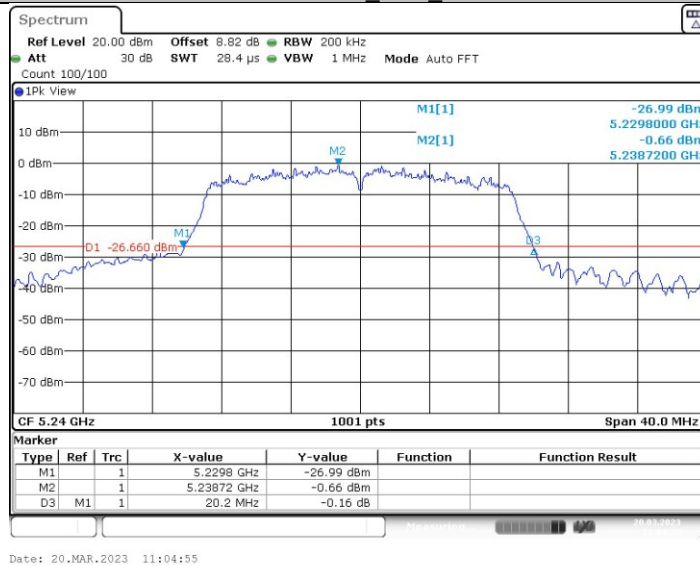
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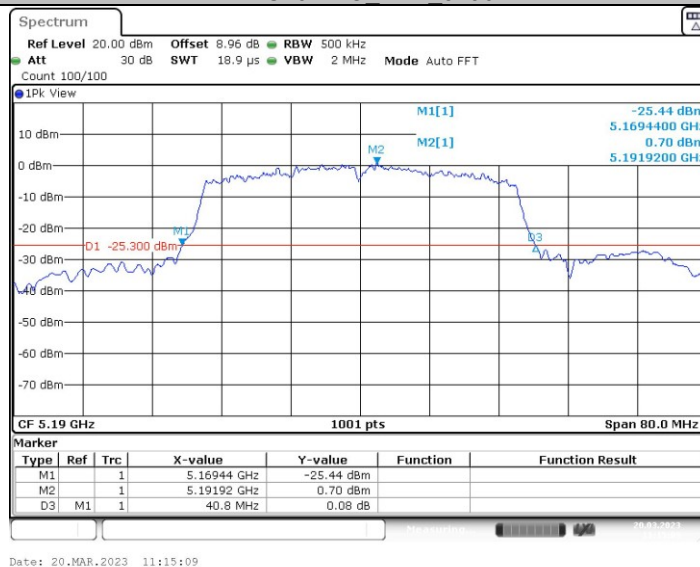
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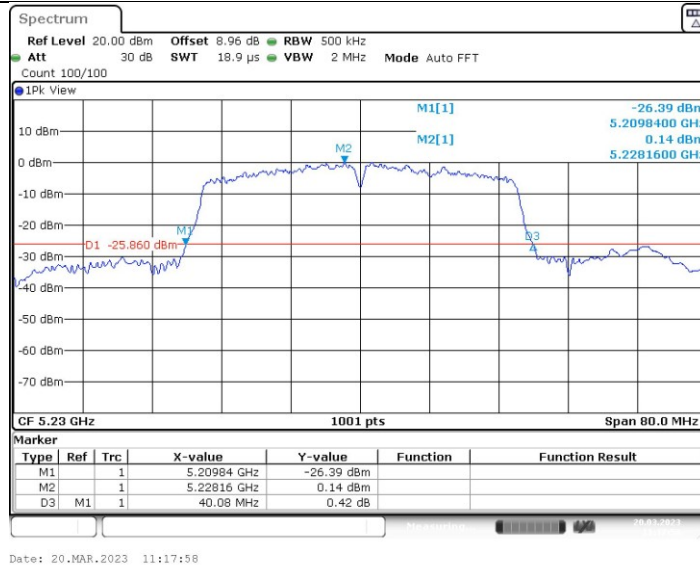
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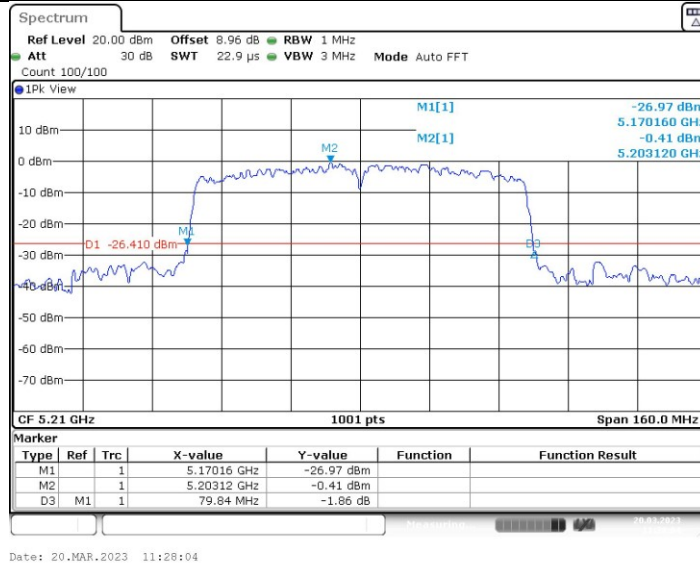
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11AC40SISO_Ant1_5230



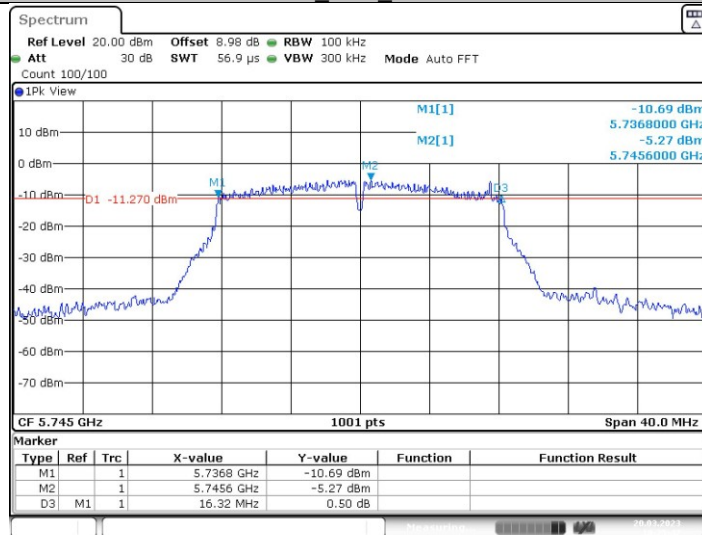
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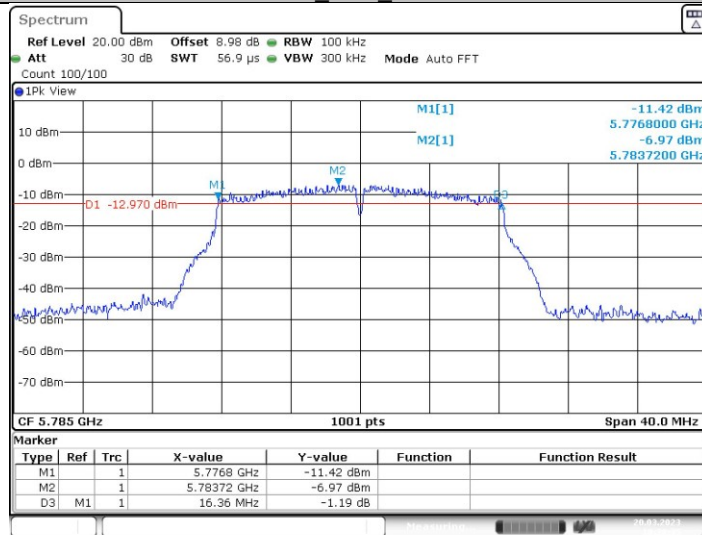
Band 4
-6dB Bandwidth

TestMode	Antenna	Freq(MHz)	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.32	5736.80	5753.12	0.5	PASS
		5785	16.36	5776.80	5793.16	0.5	PASS
		5825	16.32	5816.80	5833.12	0.5	PASS
11N20SISO	Ant1	5745	17.56	5736.20	5753.76	0.5	PASS
		5785	17.56	5776.20	5793.76	0.5	PASS
		5825	17.56	5816.20	5833.76	0.5	PASS
11N40SISO	Ant1	5755	35.12	5737.40	5772.52	0.5	PASS
		5795	35.04	5777.48	5812.52	0.5	PASS
11AC20SISO	Ant1	5745	17.56	5736.20	5753.76	0.5	PASS
		5785	17.60	5776.16	5793.76	0.5	PASS
		5825	12.64	5818.64	5831.28	0.5	PASS
11AC40SISO	Ant1	5755	35.92	5736.84	5772.76	0.5	PASS
		5795	32.56	5779.96	5812.52	0.5	PASS
11AC80SISO	Ant1	5775	75.20	5737.40	5812.60	0.5	PASS

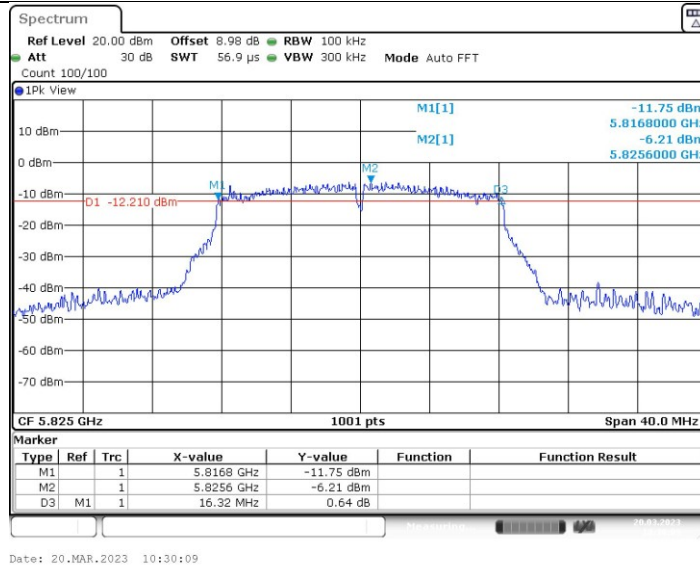
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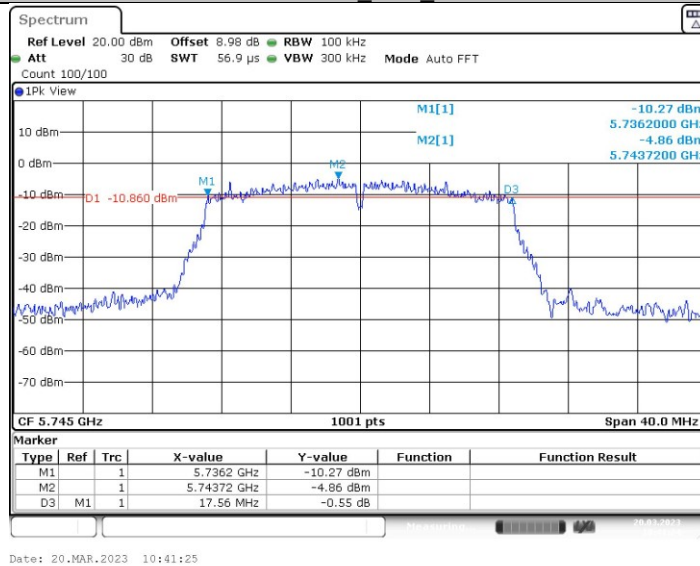
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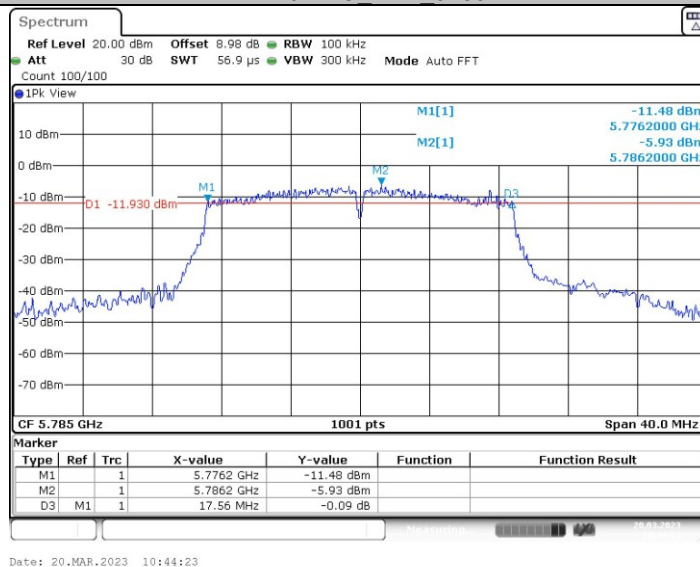
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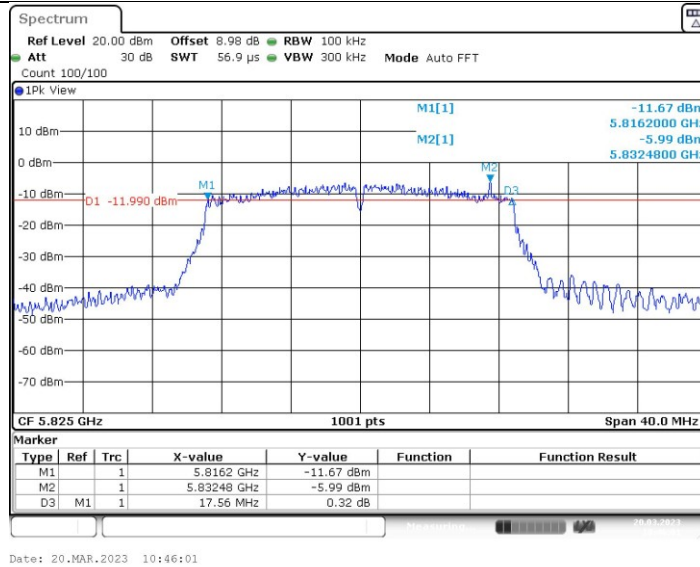
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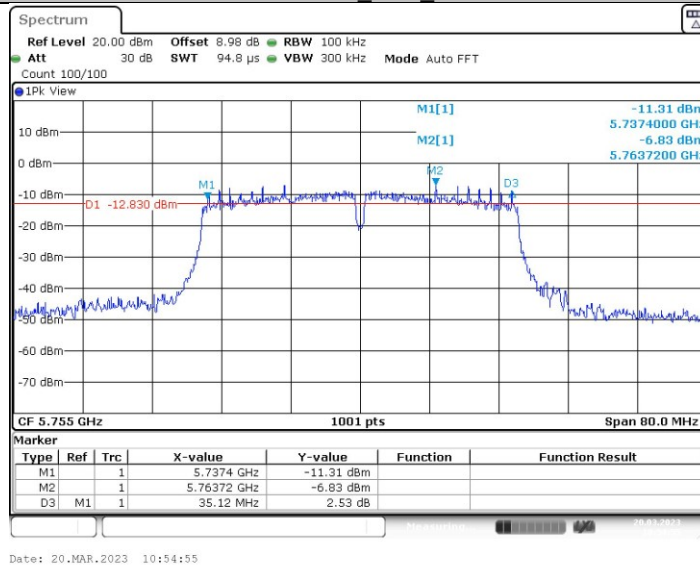
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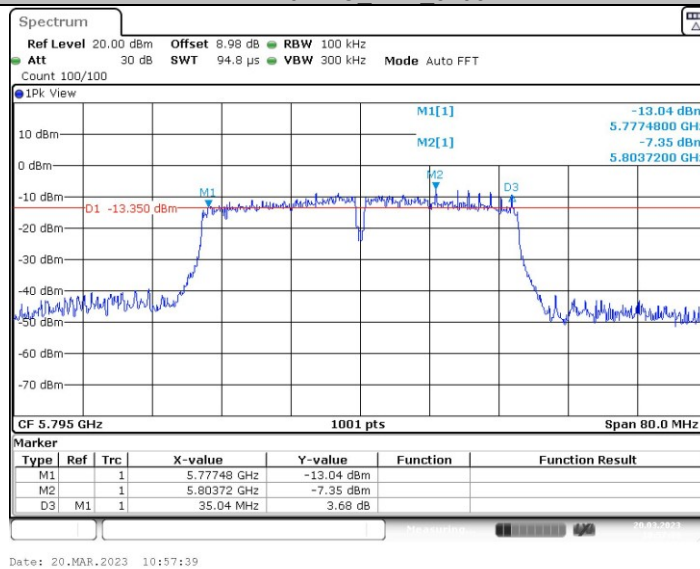
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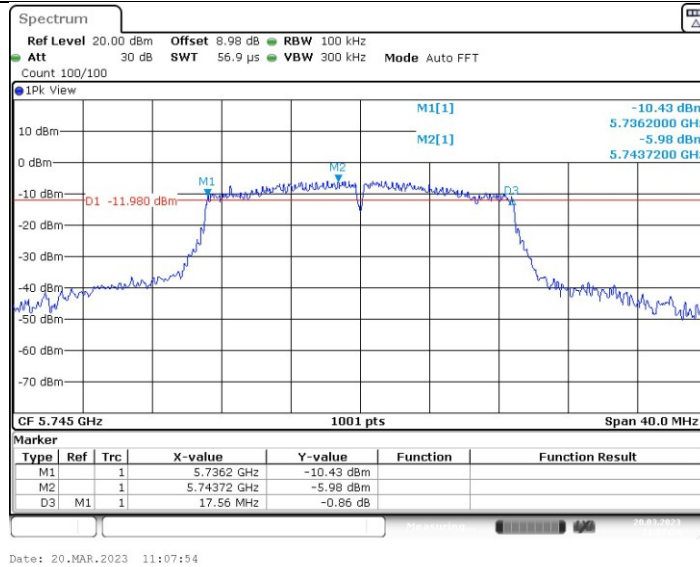
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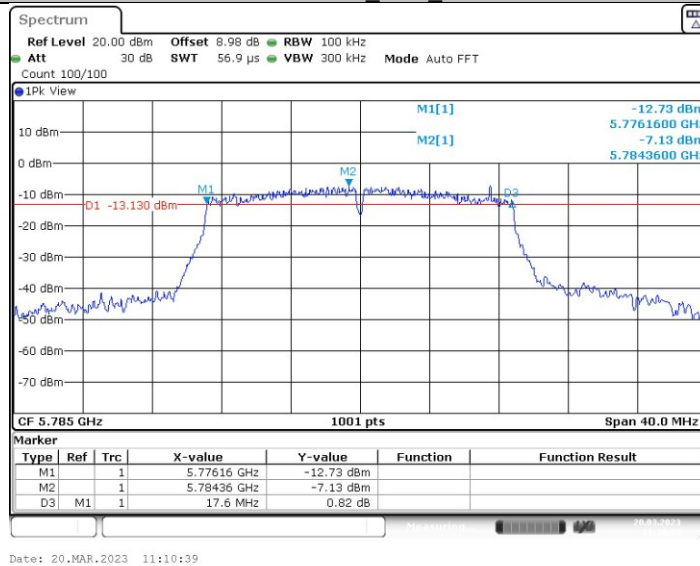
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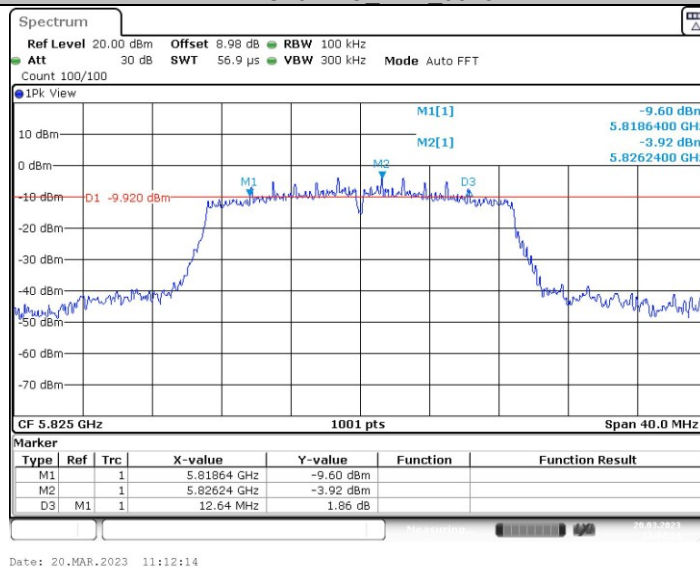
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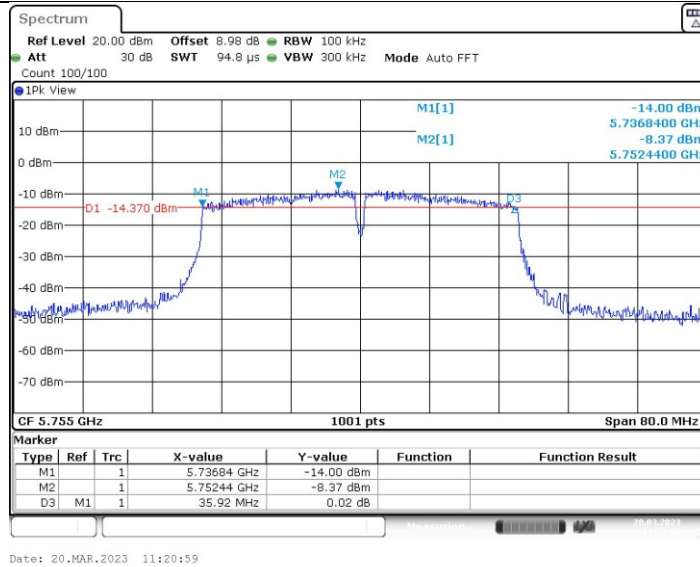
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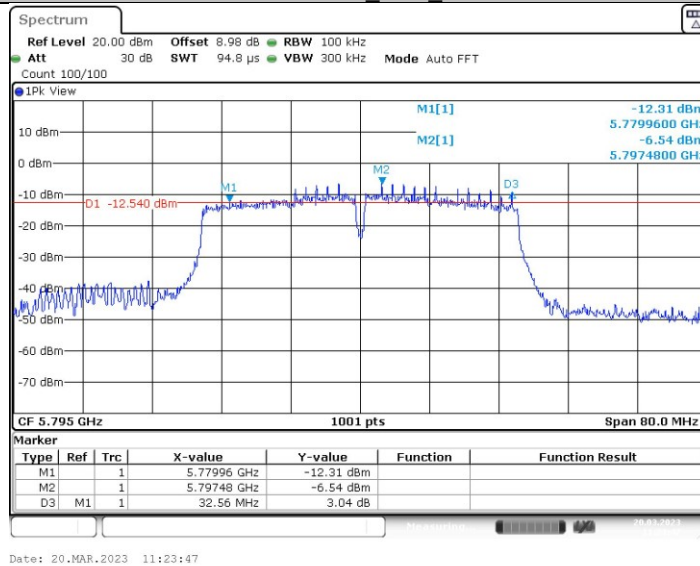
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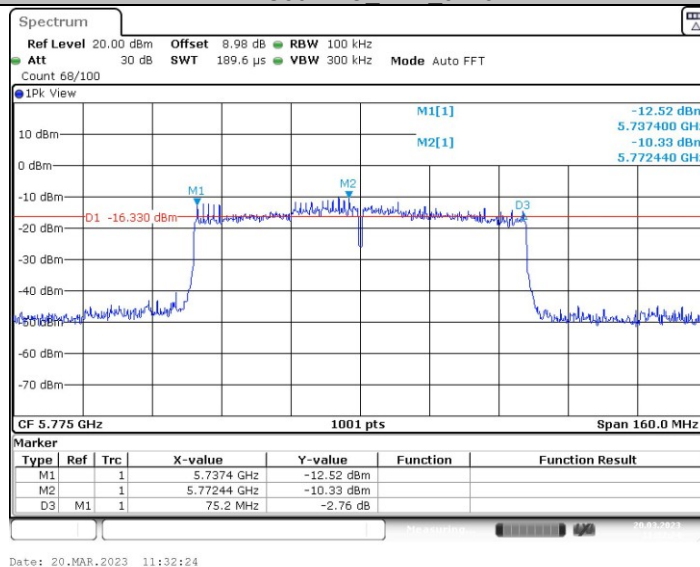
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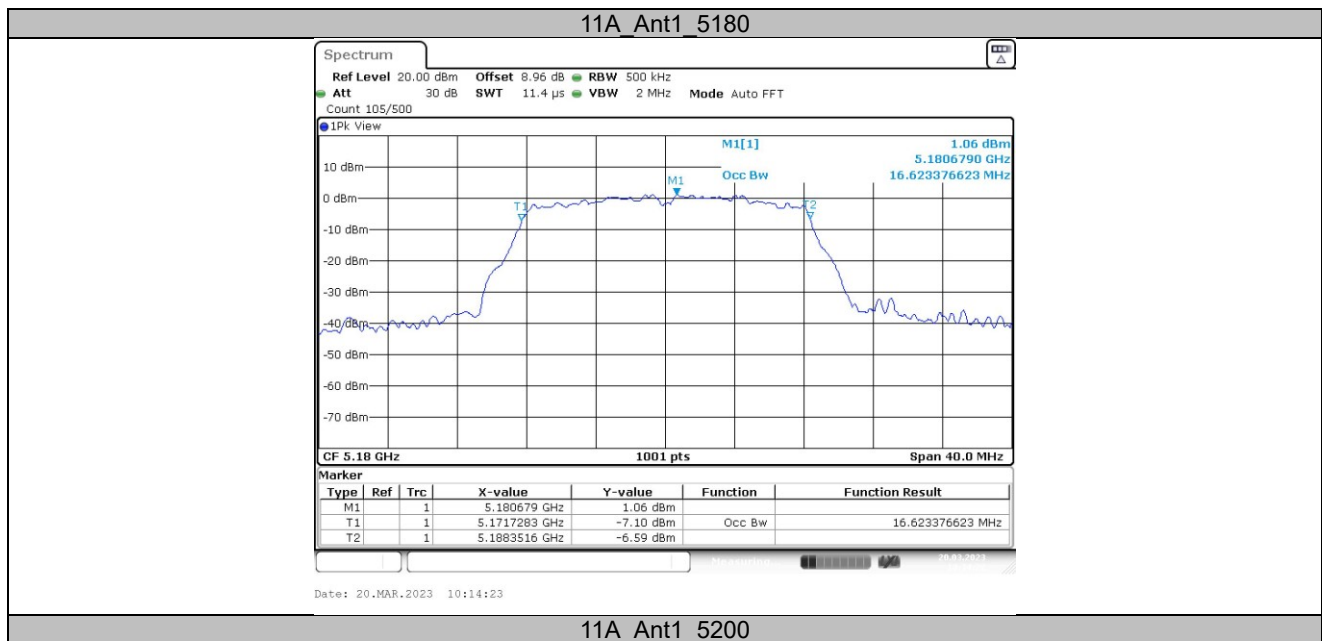


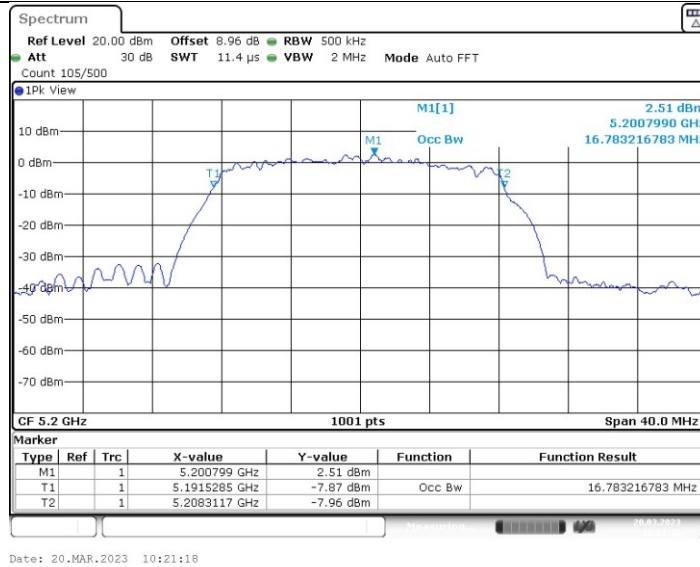
11AC80SISO_Ant1_5775



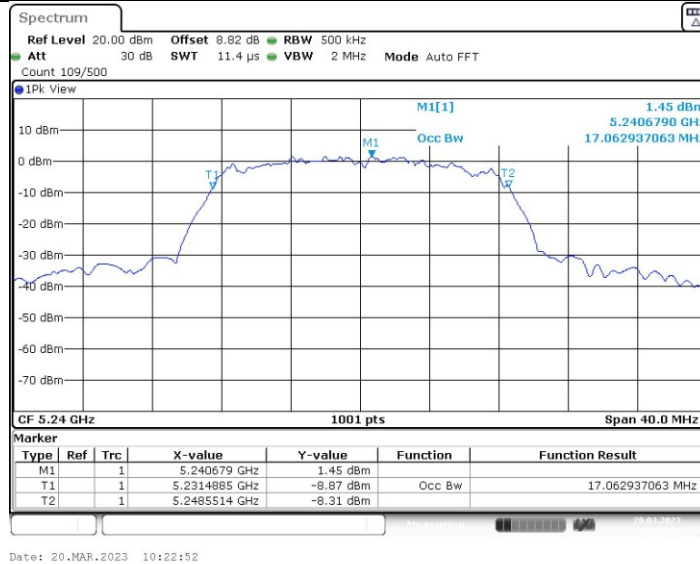
99% Occupied channel bandwidth

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.623	5171.7283	5188.3516	---	---
		5200	16.783	5191.5285	5208.3117	---	---
		5240	17.063	5231.4885	5248.5514	---	---
		5745	17.023	5736.4885	5753.5115	---	---
		5785	16.583	5776.6883	5793.2717	---	---
		5825	16.943	5816.5684	5833.5115	---	---
11N20SISO	Ant1	5180	18.062	5170.8891	5188.9510	---	---
		5200	17.782	5191.0490	5208.8312	---	---
		5240	17.902	5230.9291	5248.8312	---	---
		5745	17.822	5736.0490	5753.8711	---	---
		5785	18.182	5775.6893	5793.8711	---	---
		5825	17.782	5816.1688	5833.9510	---	---
11N40SISO	Ant1	5190	36.204	5171.9381	5208.1419	---	---
		5230	35.724	5212.0979	5247.8222	---	---
		5755	35.964	5737.0180	5772.9820	---	---
		5795	36.204	5776.8581	5813.0619	---	---
11AC20SISO	Ant1	5180	17.942	5171.0090	5188.9510	---	---
		5200	17.622	5191.1688	5208.7912	---	---
		5240	17.942	5230.9690	5248.9111	---	---
		5745	17.782	5736.1688	5753.9510	---	---
		5785	17.902	5775.9291	5793.8312	---	---
		5825	17.902	5816.0090	5833.9111	---	---
11AC40SISO	Ant1	5190	35.804	5172.0979	5207.9021	---	---
		5230	36.204	5212.0180	5248.2218	---	---
		5755	36.284	5737.0180	5773.3017	---	---
		5795	36.284	5776.6184	5812.9021	---	---
11AC80SISO	Ant1	5210	75.924	5172.2777	5248.2018	---	---
		5775	75.604	5737.1179	5812.7223	---	---

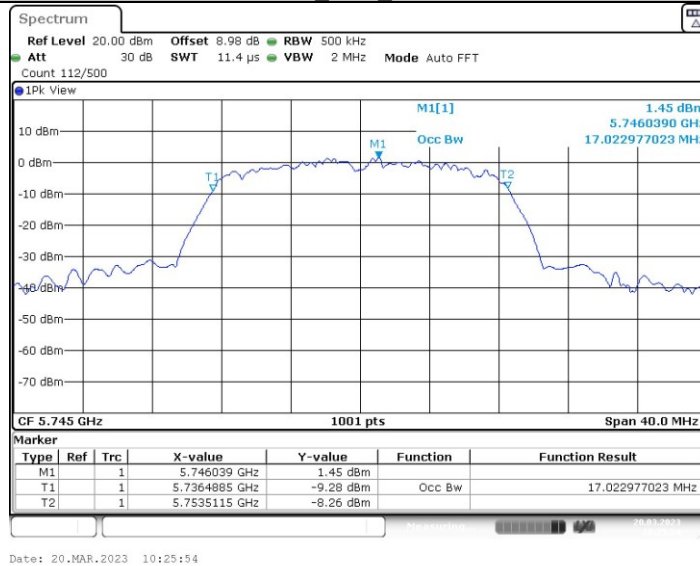




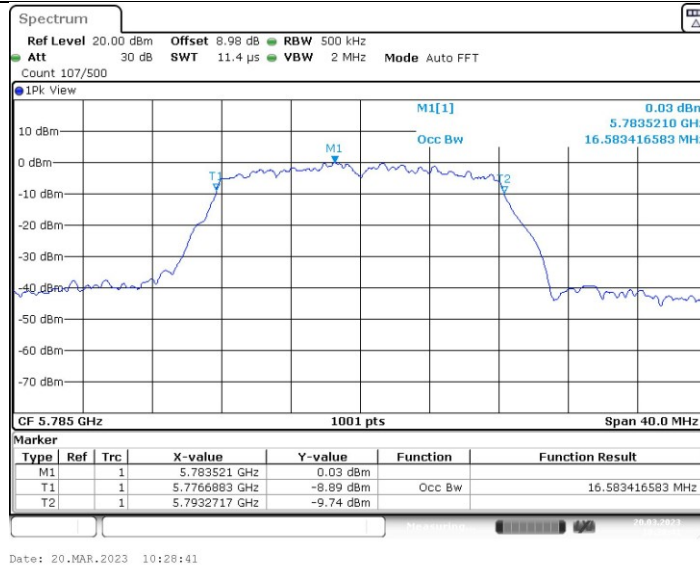
11A Ant1 5240



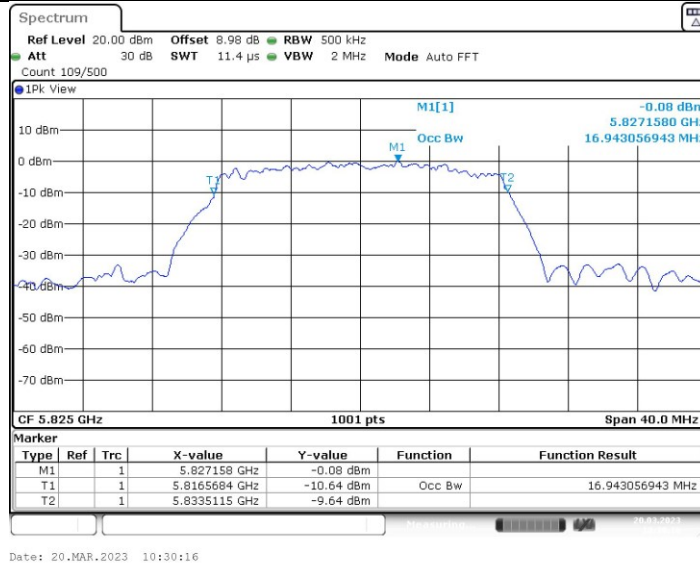
11A Ant1 5745



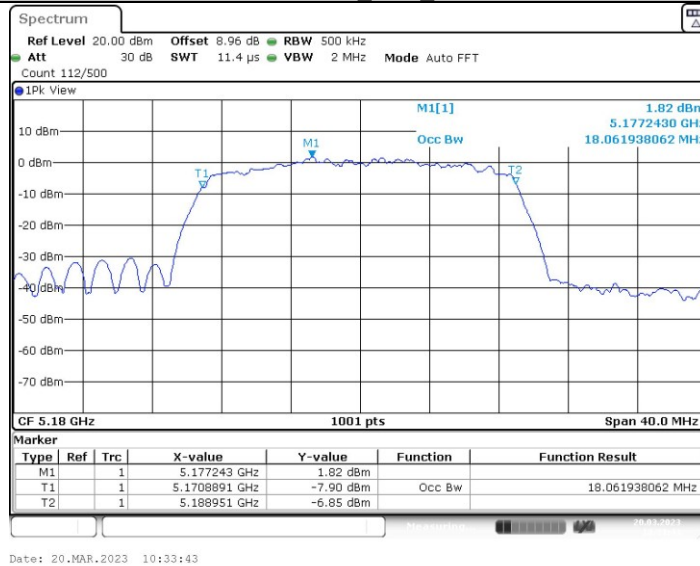
11A Ant1 5785



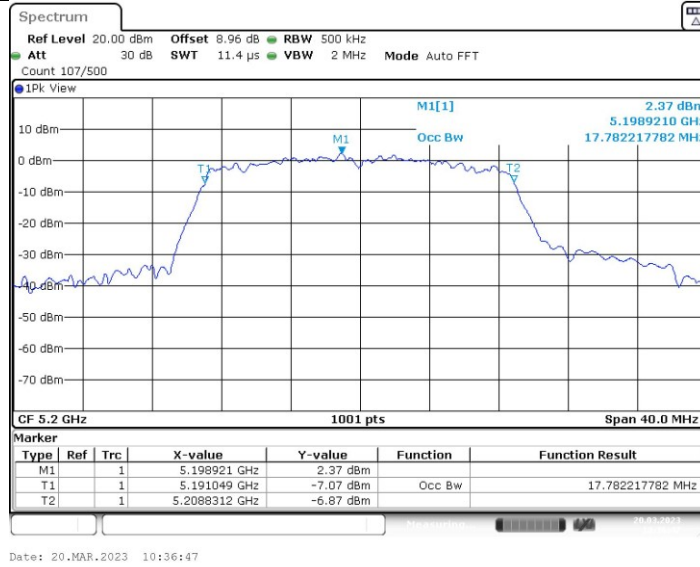
11A Ant1 5825



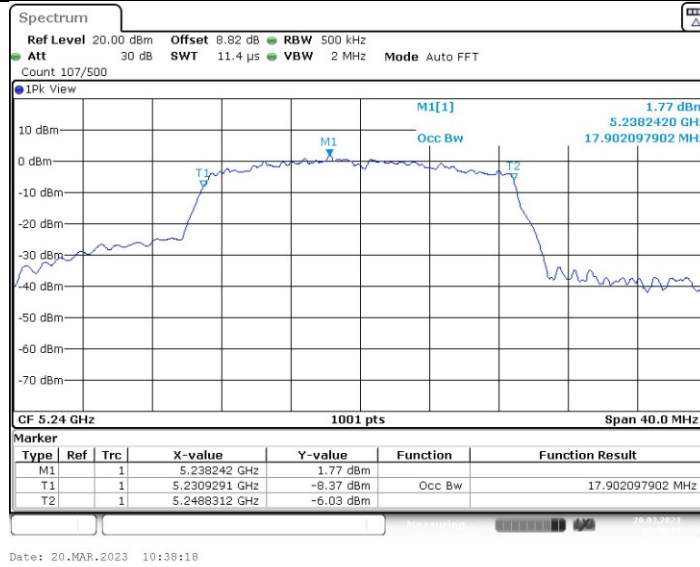
11N20SISO Ant1 5180



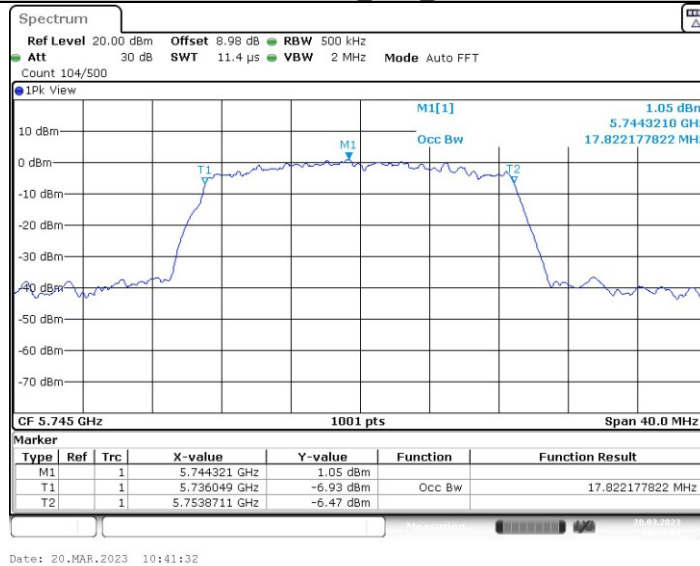
11N20SISO Ant1 5200



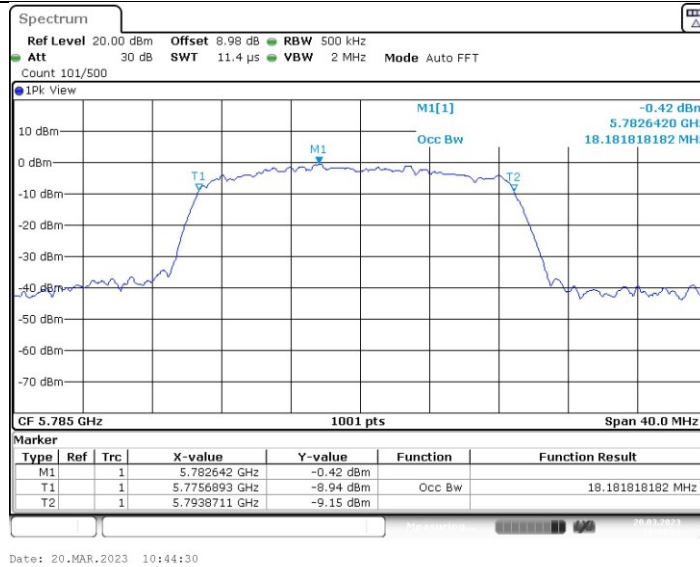
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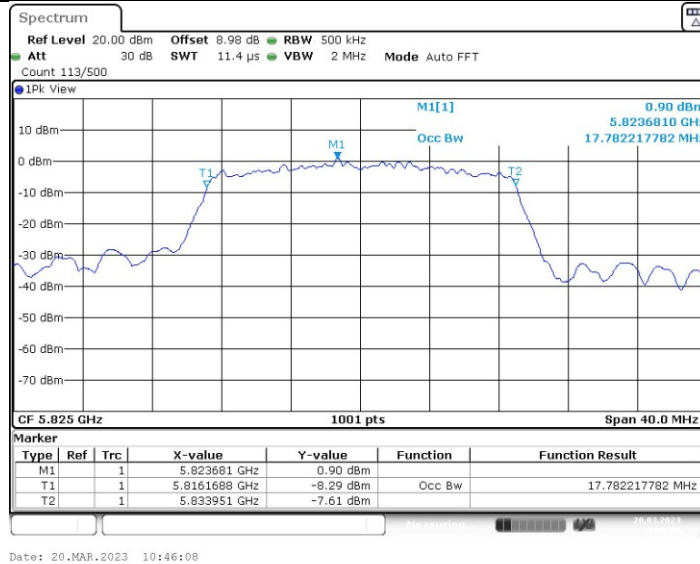
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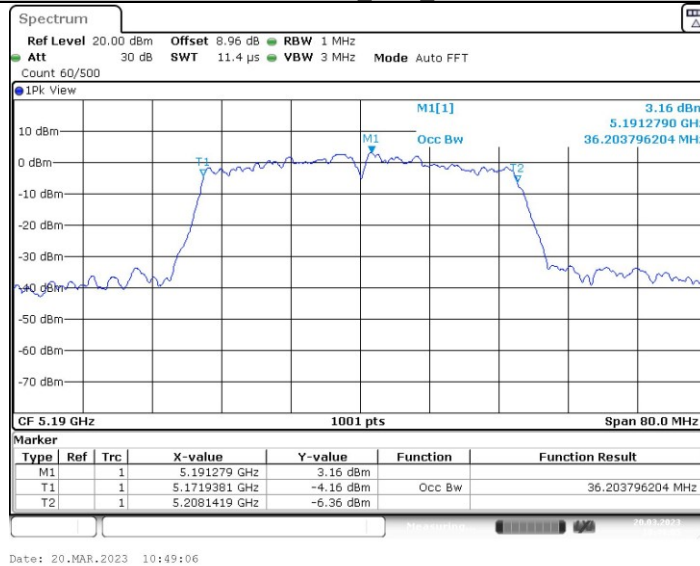
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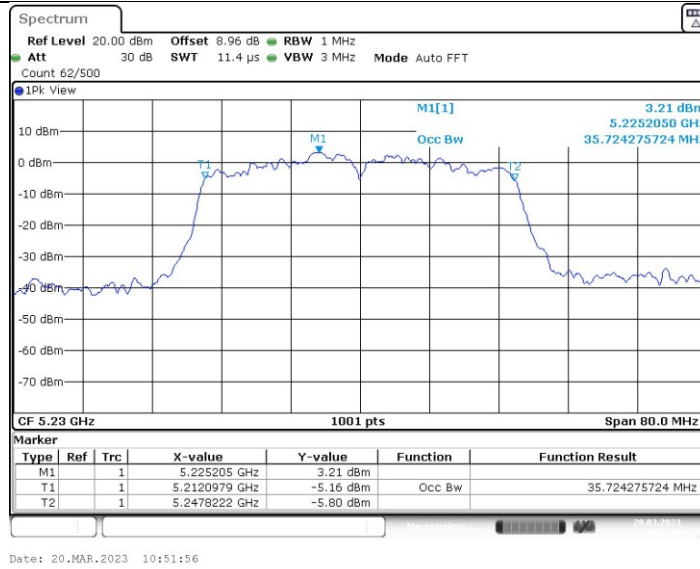
11N20SISO_Ant1_5825



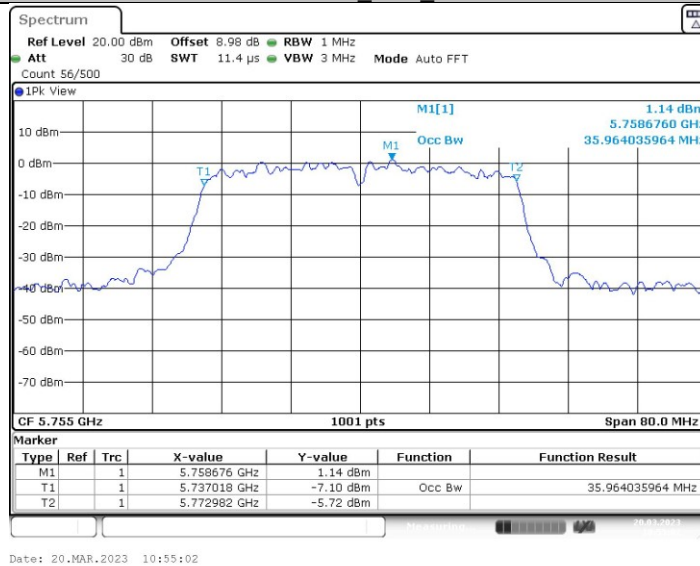
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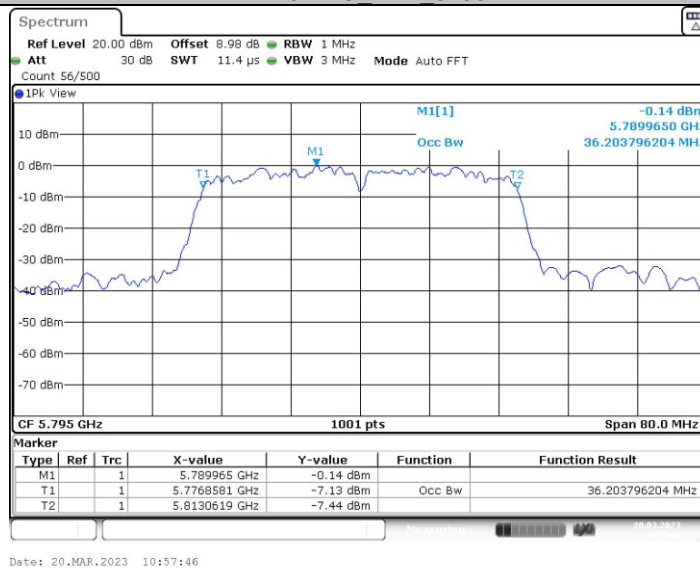
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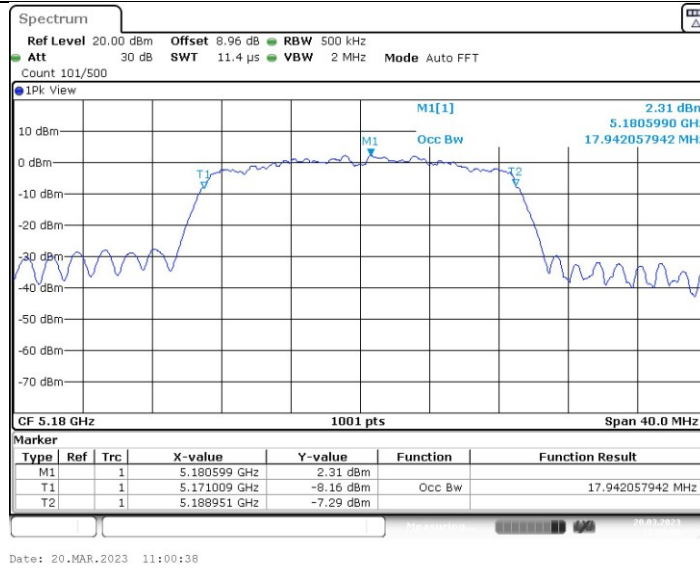
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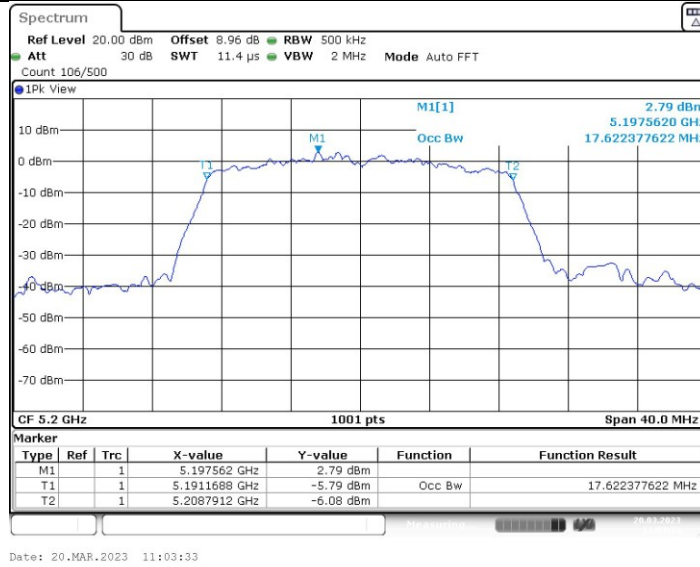
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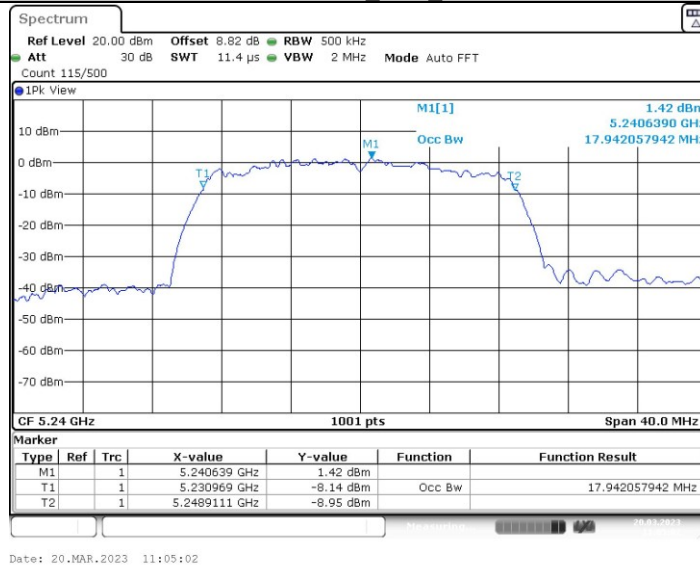
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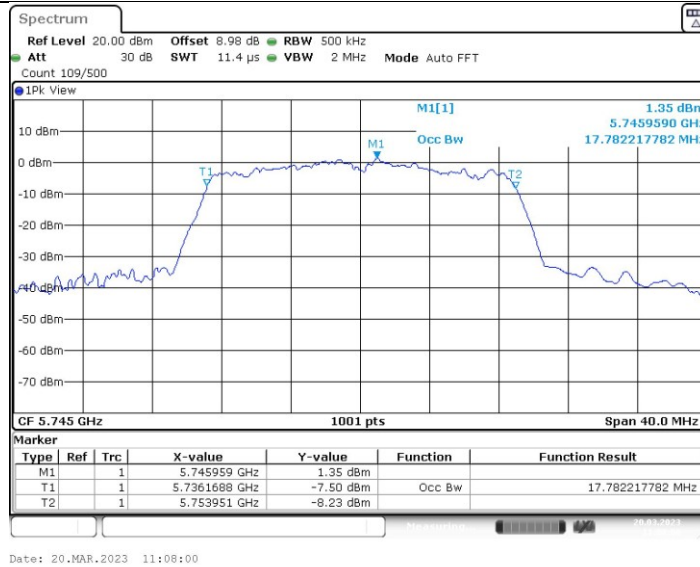
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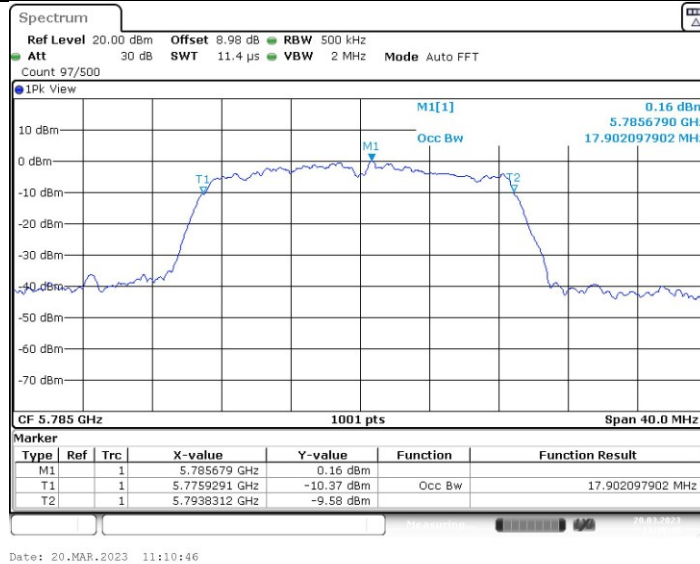
11AC20SISO_Ant1_5240



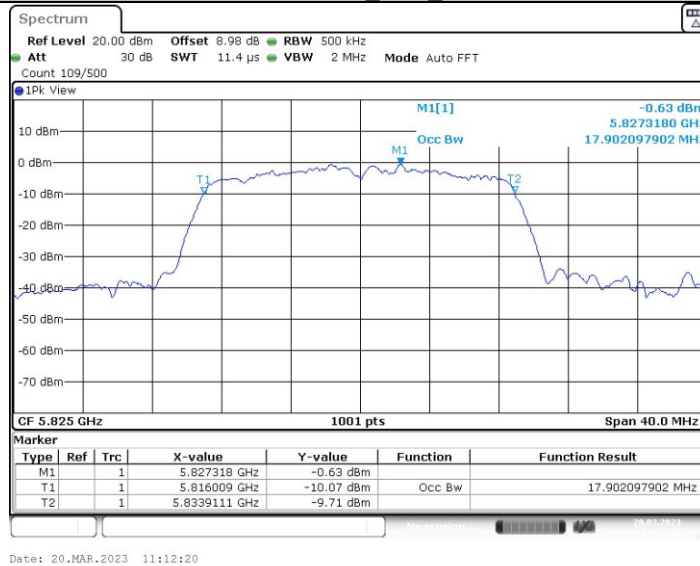
11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825



11AC40SISO_Ant1_5190