

FCC TEST REPORT

For

Mobile Phone

Model Number: V2352

FCC ID: 2AUCY-V2352

Report Number : WT248000641

Test Laboratory : Shenzhen Academy of Metrology and Quality Inspection

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Revision History

No	Date	Remark
V1.0	2024.04.24	Initial issue

TEST REPORT DECLARATION

Applicant : vivo Mobile Communication Co., Ltd.
Address : No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Manufacturer : vivo Mobile Communication Co., Ltd.
Address : No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
EUT Description : Mobile Phone
Model No. : V2352
Trade mark : vivo
FCC ID : 2AUCY-V2352

Test Standards:

FCC Part 15 Subpart E

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results, unless they depend on the manufacturer information.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

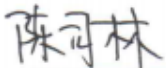
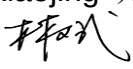
Project Engineer:	 (Chen Silin 陈司林)	Date:	<u>Apr.24, 2024</u>
Checked by:	 (Wan Xiaojing 万晓婧)	Date:	<u>Apr.24, 2024</u>
Approved by:	 (Lin Bin 林斌)	Date:	<u>Apr.24, 2024</u>

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
6dB Bandwidth	FCC §15.407 (e)	Pass
26dB Bandwidth	FCC §15.407 (a)	Pass
Maximum Peak Conducted Power	FCC §15.407 (a)	Pass
Maximum Power Spectral Density Level	FCC §15.407 (a)	Pass
Radiated Bandedge and Spurious	15.407 (b) 15.209 15.205	Pass
Conducted emission test for AC power port	15.207	Pass
Antenna Requirement	15.203	Pass

Remark: "N/A" means "Not applicable."

2. GENERAL INFORMATION

2.1. Report Information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

The lab will not be liable for any loss or damage resulting for false, inaccurate, inappropriate or incomplete product information provided by the applicant/manufacturer.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

The Laboratory is registered to perform emission tests with VCCI, and the registration number are C-20048, G20076, R-20077, R-20078 and T-20047.

The Laboratory is Accredited Testing Laboratory of American Association for Laboratory Accreditation (A2LA) and certificate number is 3292.01.

2.3.Measurement Uncertainty

Conducted Emission

9 kHz~150 kHz $U=3.7\text{dB}$ $k=2$

150 kHz~30 MHz $U=3.3\text{ dB}$ $k=2$

Radiated Emission

30 MHz~1000 MHz $U=4.3\text{dB}$ $k=2$

1 GHz~6 GHz $U=4.6\text{ dB}$ $k=2$

6 GHz~40 GHz $U=5.1\text{ dB}$ $k=2$

3. PRODUCT DESCRIPTION

NOTE: The extreme test conditions for temperature and antenna gain were declared by the manufacturer.

3.1. EUT Description

Description	:	Mobile Phone
Manufacturer	:	vivo Mobile Communication Co., Ltd.
Model Number	:	V2352
Operate Frequency	:	U-NII 1(5180~5240 MHz) U-NII 2A(5260~5320 MHz) U-NII 2C(5500~5700 MHz) U-NII 3(5745~5825 MHz)
Antenna Designation	:	IFA U-NII 1(5180~5240 MHz): 0.62 dBi U-NII 2A(5260~5320 MHz): 1.98 dBi U-NII 2C(5500~5700 MHz): 0.36 dBi U-NII 3(5745~5825 MHz): -0.69 dBi
Operating voltage	:	DC 3.7 V (Low)/ DC 3.91 V (Nominal)/ DC 4.4 V (Max)
Software Version	:	PD2365F_EX_A_14.0.5.3.W30
Hardware Version	:	MP_0.1

Remark: There are two types of shielding covers for the EUT mainboard, see the internal photos for details.

Frequency List:

Band 1		Band 2A		Band 2C		Band 3	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
36	5180	52	5260	100	5500	149	5745
40	5200	56	5280	104	5520	153	5765
44	5220	60	5300	108	5540	157	5785
48	5240	64	5320	112	5560	161	5805
				116	5580	165	5825
				120	5600		
				124	5620		
				128	5640		
				132	5660		
				136	5680		
				140	5700		

Table 2 802.11a/802.11n/802.11ac Frequency /Channel operations

Band 1		Band 2A		Band 2C		Band 3	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
				118	5590		
				126	5630		
				134	5670		

Table 3 802.11n/802.11ac (40MHz BW) Frequency /Channel operations

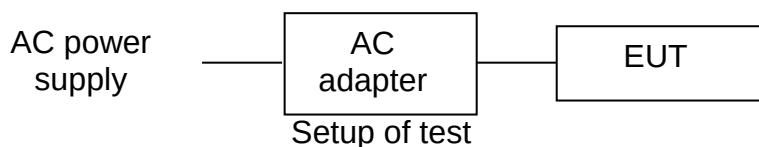
Band 1		Band 2A		Band 2C		Band 3	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
42	5210	58	5290	106	5530	155	5775
				122	5610		

Table 4 802.11ac (80MHz BW) Frequency /Channel operations

3.2.Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2AUCY-V2352 filing to comply with Section 15.207, 15.209, 15.407 of the FCC Part 15, Subpart E .

3.3.Block Diagram of EUT Configuration



3.4.Operating Condition of EUT

The Radiated spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission (X plane).

Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.

Worst-case data rates as provided by the client were:

802.11a mode: 6 Mbps

802.11n HT20 mode: MCS0

802.11n HT40 mode: MCS0

802.11ac VHT20 mode: MCS0

802.11ac VHT40 mode: MCS0

802.11ac VHT80 mode: MCS0

3.5.Directiona Antenna Gain

Directional gain need NOT to be considered.

3.6.Support Equipment List

Table 5 Support Equipment List

Name	Model No.	S/N	Manufacturer
Adapter for EUT	V4440L0A0-US	---	Dongguan Aohai Technology Co.,Ltd
Rechargeable Li-ion Polymer Battery for EUT	BA45	---	Sunwoda Electronic Co., Ltd.
USB Cable for EUT	BK-C-49-B	---	---

3.7.Test Conditions

Date of test: Apr.07, 2024- Apr.22, 2024
Date of EUT Receive: Apr.02, 2024
Temperature: 21°C-26°C
Relative Humidity: 35%-52%

3.8.Special Accessories

Not available for this EUT intended for grant.

3.9.Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 6 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB9054/05	Test Receiver	R&S	ESCI	Jun.30, 2023	1 Year
SB4357	AMN	R&S	ENV216	Aug.21, 2023	1 Year
SB9549	Shielded Room	Albatross	SR	Aug.30, 2023	1 Year
SB15044/01	Test Receiver	R&S	ESW8	Sep.12, 2023	1 Year
SB3345	Loop Antenna	Schwarzbeck	FMZB1516-113	Jan.12, 2024	1 Year
SB18856	Broadband Antenna	SCHWARZBECK	VULB9163	Sep.06, 2023	1 Year
SB9422/16	Horn Antenna	R&S	HF907	Mar.14, 2024	1 Year
SB18844	Semi Anechoic Chamber	Albatross	9×6×6(m)	Mar.19, 2024	1 Year
SB8501/09	Test Receiver	R&S	ESU40	Jan.17, 2024	1 Year
SB3435	Horn Antenna	R&S	HF906	Nov.21, 2023	1 Year
SB9058/03	Pre-Amplifier	R&S	SCU 18	Jan.16, 2024	1 Year
SB8501/11	Antenna	R&S	3160-09	Feb.22, 2023	3 Years
SB8501/12	Antenna	R&S	3160-10	Feb.22, 2023	3 Years
SB8501/16	Pre-Amplifier	R&S	SCU-26	Jan.16, 2024	1 Year
SB9059	Pre-Amplifier	R&S	SCU-40	Aug.21,2023	1 Year
SB9555/02	Fully Anechoic Chamber	Albatross	10.0×5.2×5.4(m)	Aug.15, 2023	1 Year
SB20321/01	Spectrum Analyzer	R&S	FSV3044	Apr.24, 2023	1 Year

Table 7 Test software

Name	Manufacturer	Version
Bluetooth and WiFi Test System	Shenzhen JS tonscond co.,Ltd	3.3.10

5. DUTY CYCLE

5.1.Limits of Duty Cycle

None; for reporting purposes only

5.2.Test Procedure

1. Set span = Zero
2. RBW = 20MHz
3. VBW = 30MHz,
4. Detector = Peak

5.3.Test Setup

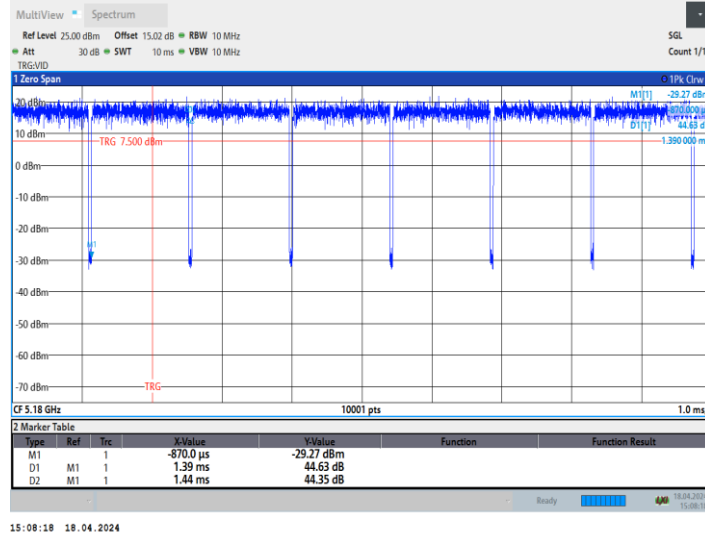


5.4.Test Data

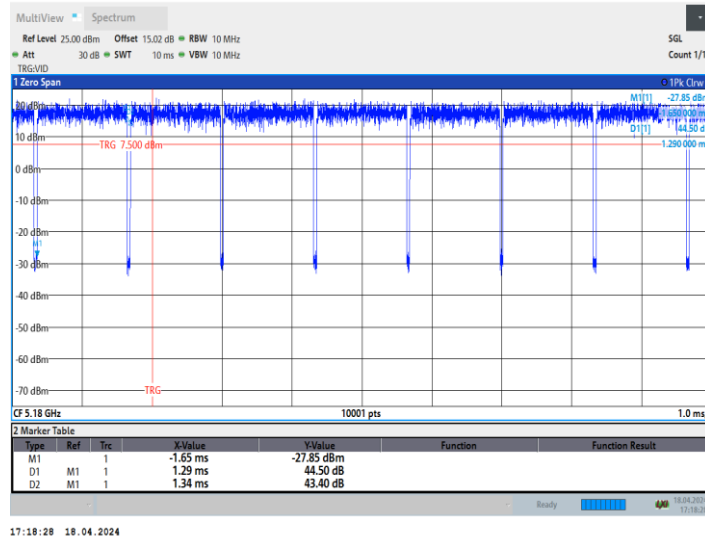
Table 8 Duty Cycle Test Data

Test Mode	On Time (ms)	Duty Cycle (%)	Duty Factor	1/T Minimum VBW (kHz)
802.11a	1.39	96.53	0.12	0.01
802.11n HT20	1.29	96.27	0.17	0.01
802.11n HT40	0.64	94.12	0.26	0.01
802.11ac VHT20	1.31	97.04	0.13	0.01
802.11ac VHT40	0.65	92.86	0.32	0.01
802.11ac VHT80	0.33	89.19	0.50	0.01

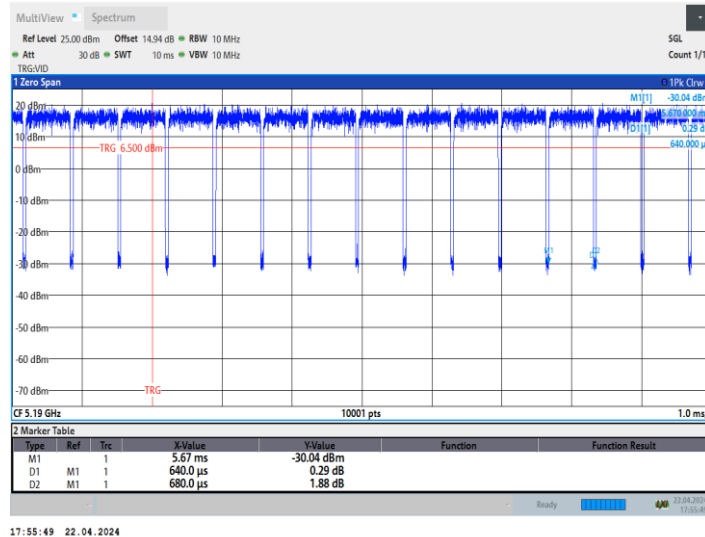
11A Ant1 5180



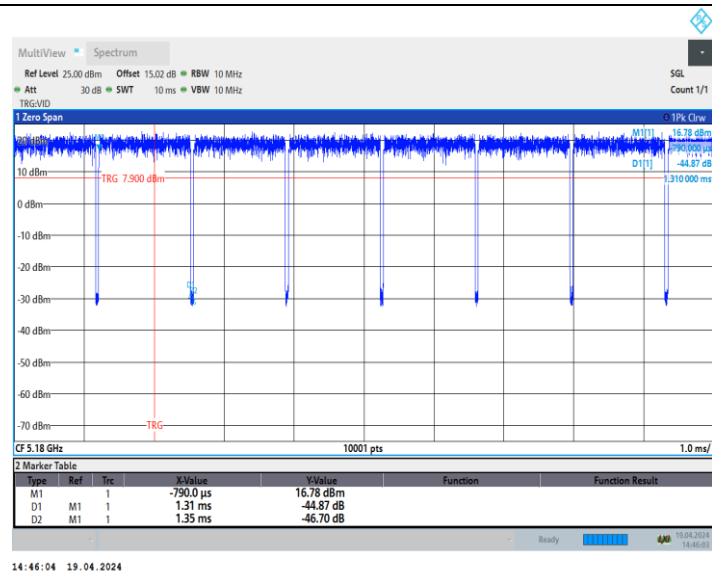
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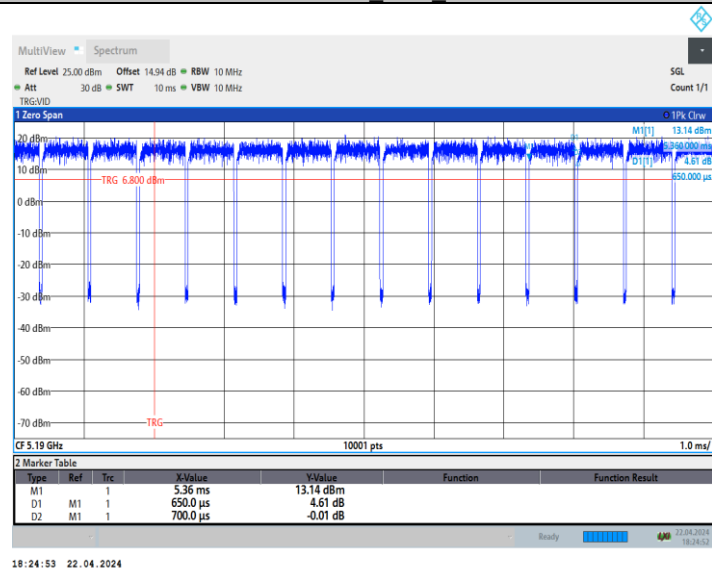
11N40SISO Ant1 5190



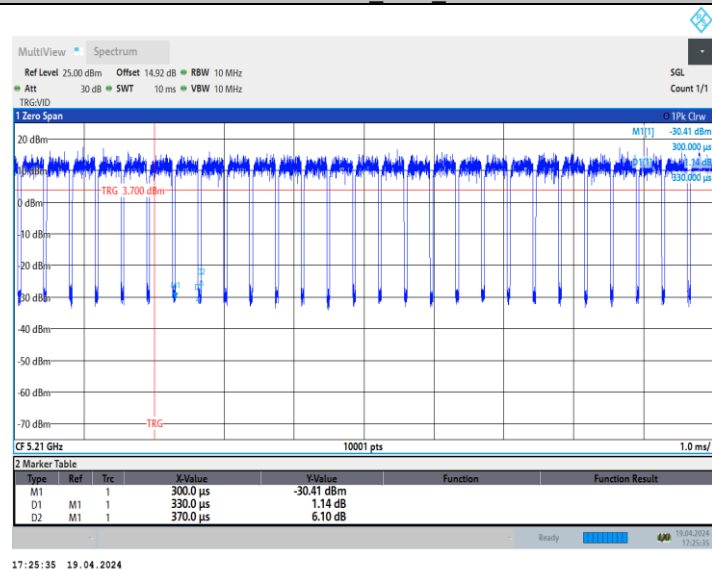
11AC20SISO Ant1 5180



11AC40SISO_Ant1_5190



11AC80SISO_Ant1_5210



6. 6DB BANDWIDTH MEASUREMENT

6.1.Limits of 6dB Bandwidth Measurement

The minimum 6 dB emission bandwidth of at least 500 kHz for the band 5.725-5.85 GHz.

6.2.Test Procedure

The transmitter output was connected to the spectrum analyzer.

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c)Detector = Peak.
- d)Trace mode = max hold.
- e)Sweep = auto couple.
- f)Allow the trace to stabilize.
- g)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 6 dB relative to the maximum level measured in the fundamental emission.

6.3.Test Setup

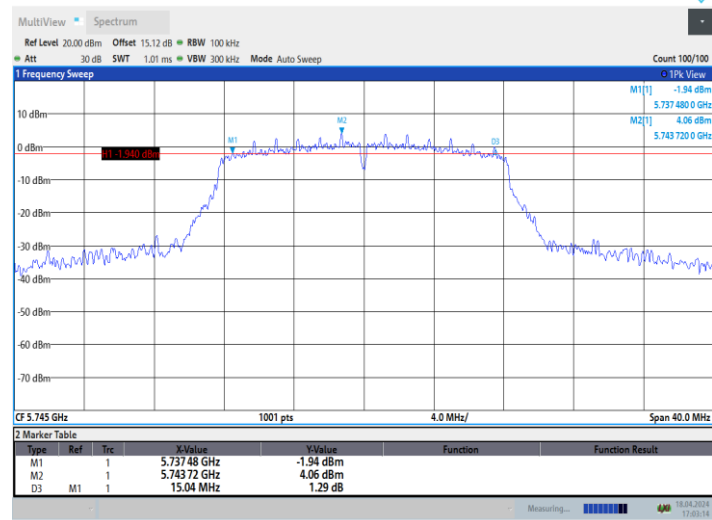


6.4.Test Data

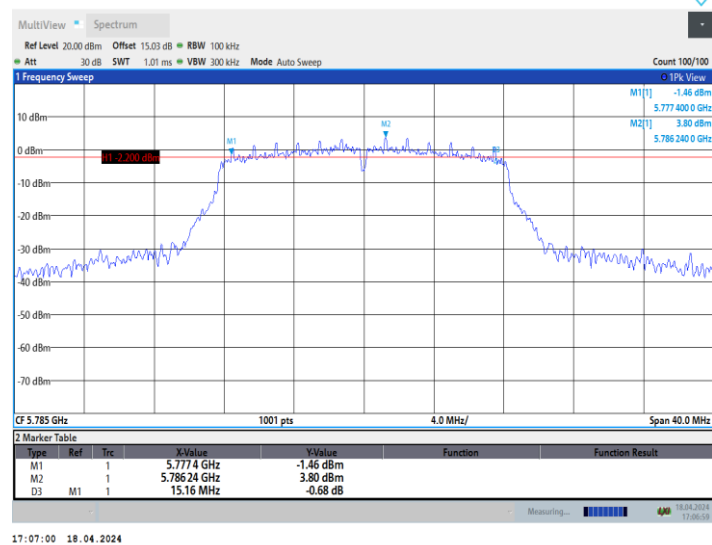
6dB Bandwidth Test Data

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.04	5737.48	5752.52	0.5	PASS
		5785	15.16	5777.40	5792.56	0.5	PASS
		5825	15.12	5817.40	5832.52	0.5	PASS
11N20SISO	Ant1	5745	15.12	5737.40	5752.52	0.5	PASS
		5785	15.16	5777.40	5792.56	0.5	PASS
		5825	15.96	5816.60	5832.56	0.5	PASS
11N40SISO	Ant1	5755	35.68	5737.24	5772.92	0.5	PASS
		5795	35.44	5777.40	5812.84	0.5	PASS
11AC20SISO	Ant1	5745	15.16	5737.40	5752.56	0.5	PASS
		5785	15.16	5777.40	5792.56	0.5	PASS
		5825	15.16	5817.40	5832.56	0.5	PASS
11AC40SISO	Ant1	5755	35.60	5737.32	5772.92	0.5	PASS
		5795	35.60	5777.24	5812.84	0.5	PASS
11AC80SISO	Ant1	5775	75.68	5737.24	5812.92	0.5	PASS

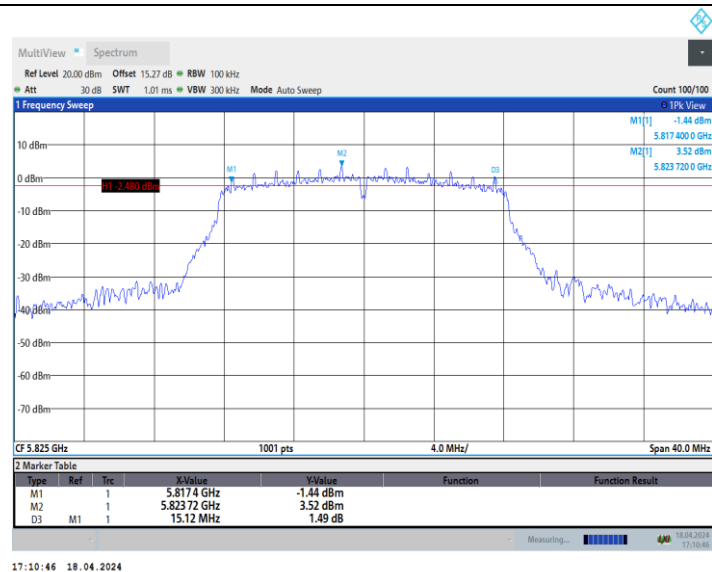
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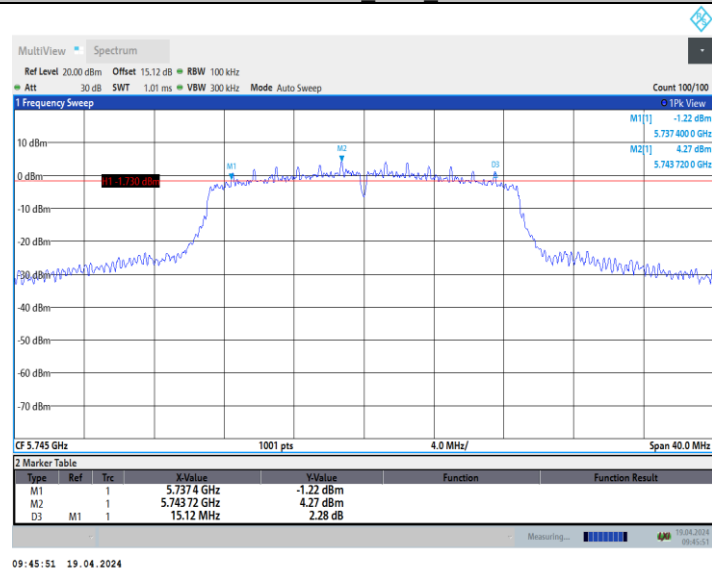
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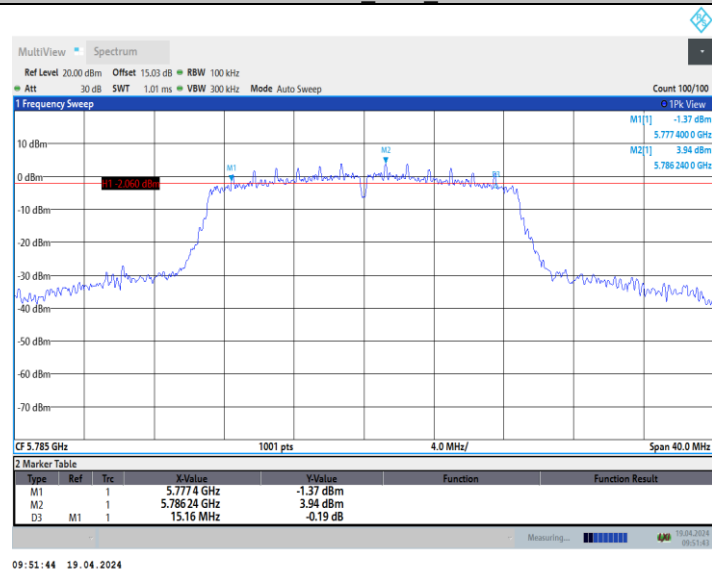
11A_Ant1_5825



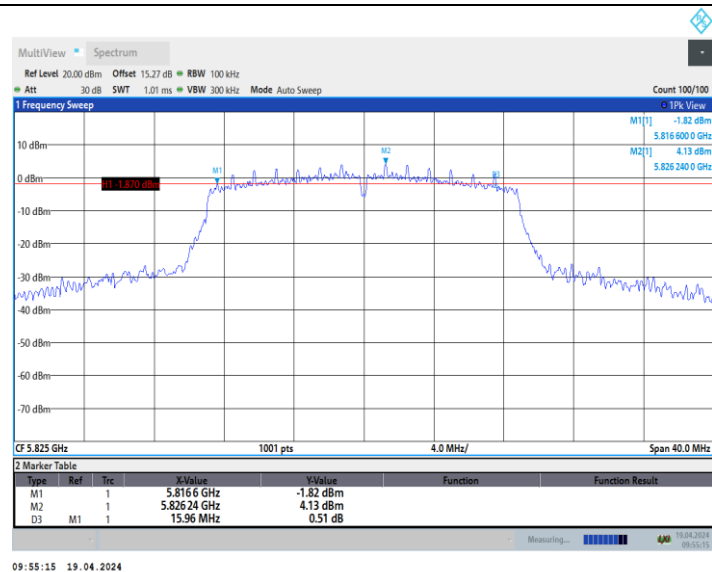
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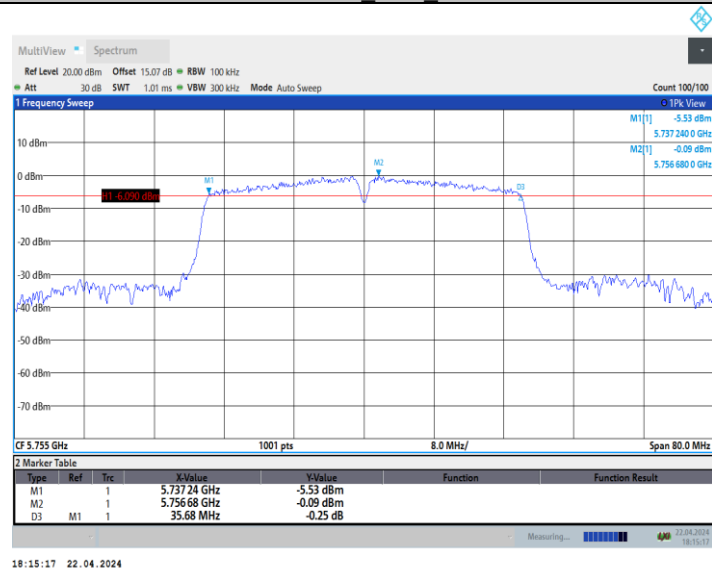
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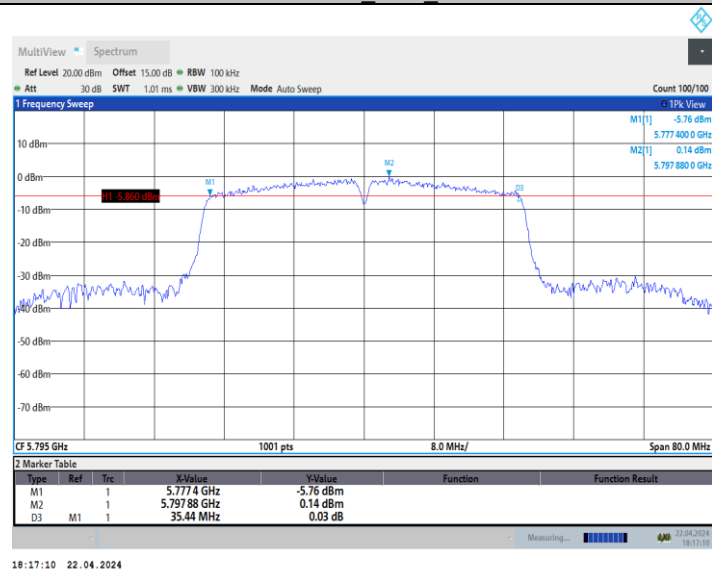
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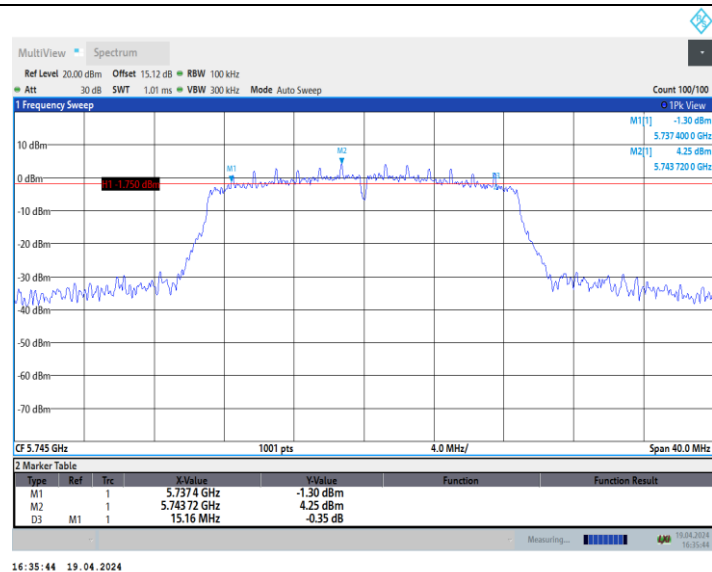
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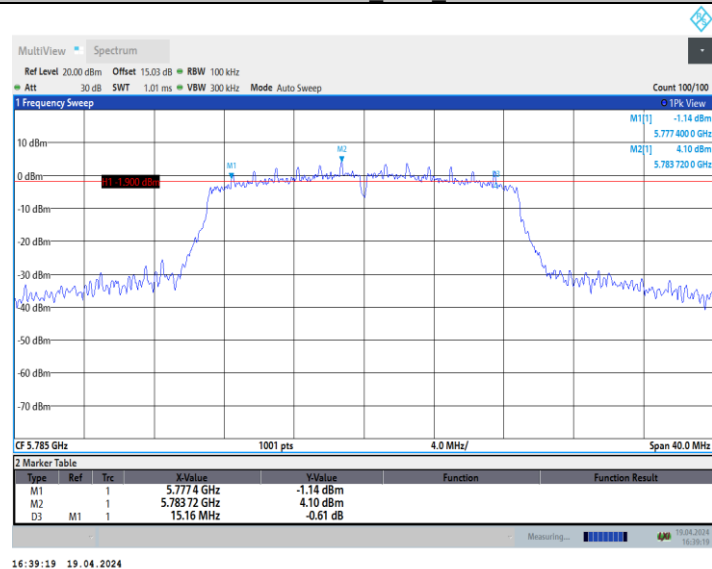
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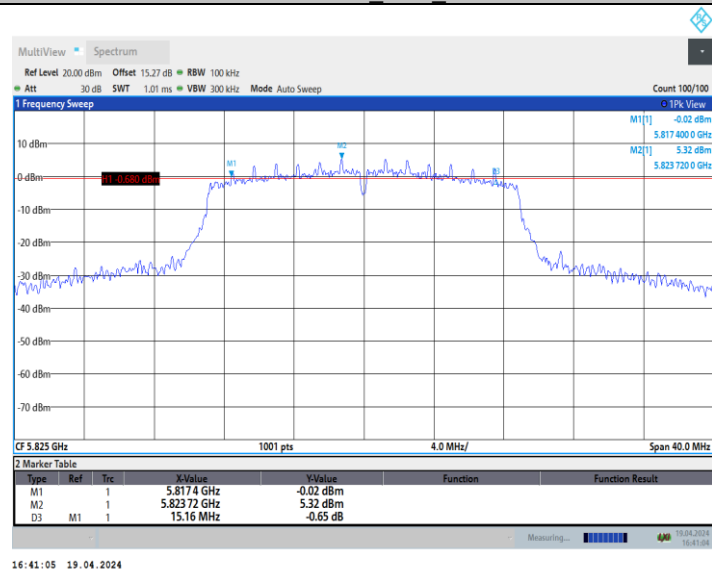
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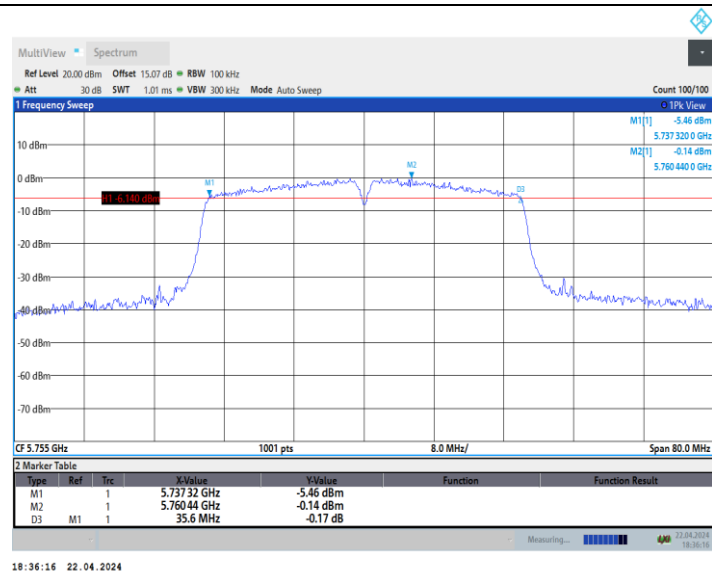
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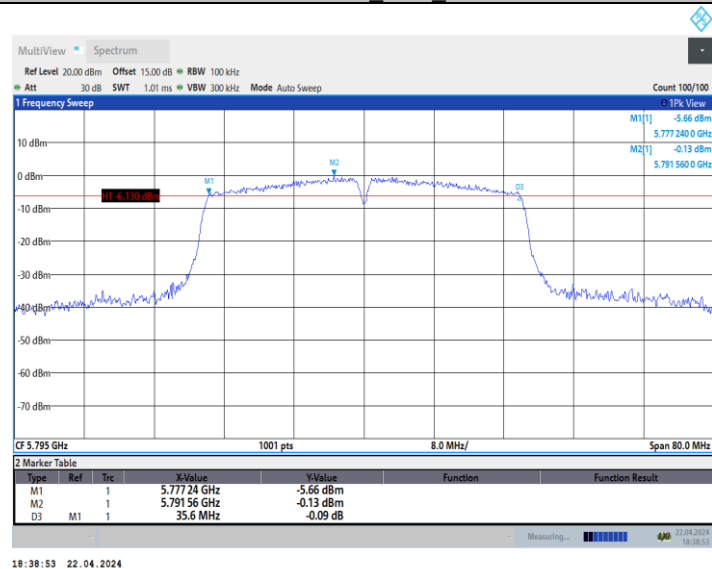
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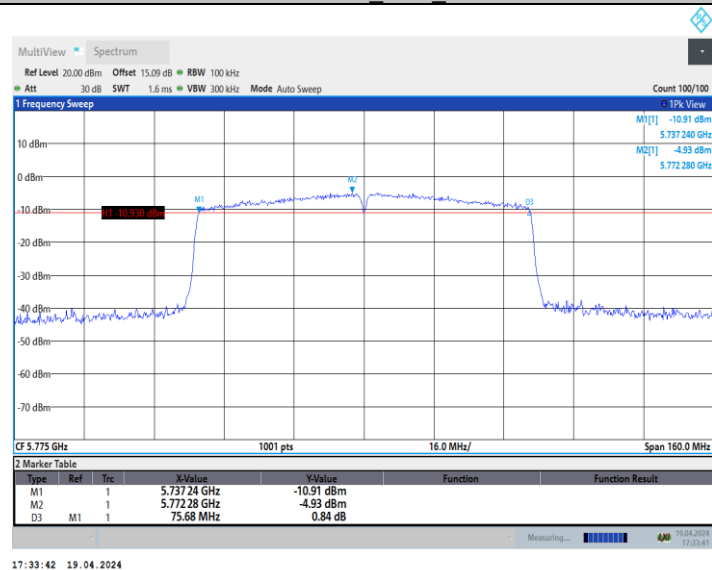
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775



7. 26DB BANDWIDTH MEASUREMENT

7.1.Limits of 26dB Bandwidth Measurement

None; for reporting purposes only.

7.2.Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

7.3.Test Setup



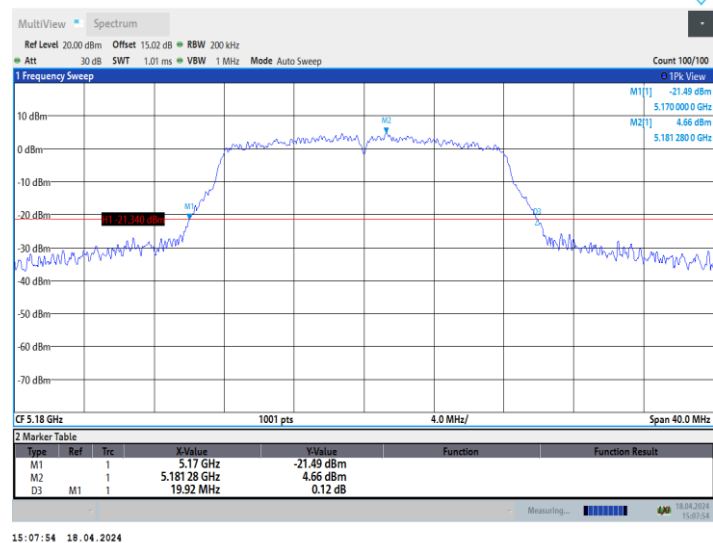
7.4. Test Data

26dB Bandwidth Test Data

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.92	5170.00	5189.92	---	---
		5200	20.04	5190.04	5210.08	---	---
		5240	20.16	5229.88	5250.04	---	---
		5260	19.92	5250.04	5269.96	---	---
		5280	19.92	5270.04	5289.96	---	---
		5320	19.88	5310.04	5329.92	---	---
		5500	19.92	5490.00	5509.92	---	---
		5600	20.00	5589.96	5609.96	---	---
		5700	20.04	5690.00	5710.04	---	---
		5745	20.00	5735.00	5755.00	---	---
		5785	19.88	5775.08	5794.96	---	---
11N20SISO	Ant1	5825	20.04	5814.96	5835.00	---	---
		5180	20.32	5169.84	5190.16	---	---
		5200	20.36	5189.88	5210.24	---	---
		5240	20.80	5229.68	5250.48	---	---
		5260	20.24	5249.84	5270.08	---	---
		5280	20.24	5269.88	5290.12	---	---
		5320	20.16	5309.96	5330.12	---	---
		5500	20.16	5489.96	5510.12	---	---
		5600	20.20	5589.88	5610.08	---	---
		5700	20.20	5689.92	5710.12	---	---
		5745	22.56	5734.64	5757.20	---	---
		5785	20.20	5774.88	5795.08	---	---

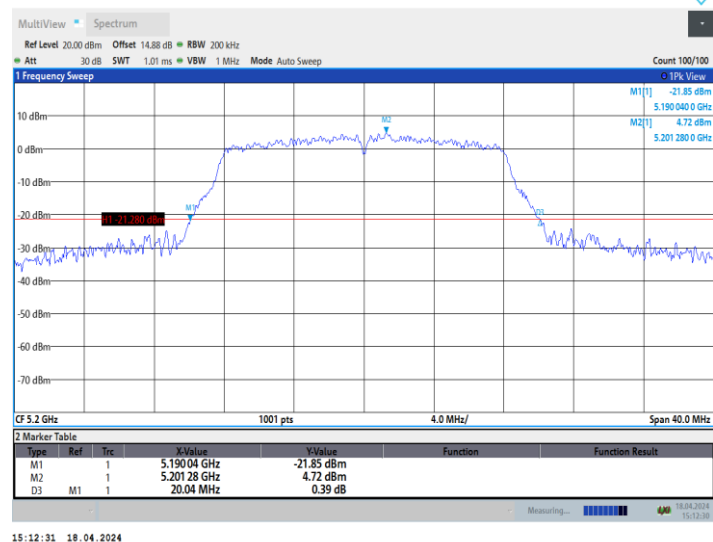
		5825	20.32	5814.76	5835.08	---	---
11N40SISO	Ant1	5190	63.25	5157.86	5221.11	---	---
		5230	45.28	5209.36	5254.64	---	---
		5270	49.76	5245.68	5295.44	---	---
		5310	57.20	5285.60	5342.80	---	---
		5510	57.44	5477.44	5534.88	---	---
		5550	40.24	5529.92	5570.16	---	---
		5590	48.32	5566.72	5615.04	---	---
		5670	50.56	5645.84	5696.40	---	---
		5755	41.60	5734.28	5775.88	---	---
		5795	40.88	5774.68	5815.56	---	---
11AC20SISO	Ant1	5180	20.56	5169.80	5190.36	---	---
		5200	22.64	5188.72	5211.36	---	---
		5240	20.36	5229.84	5250.20	---	---
		5260	20.24	5249.88	5270.12	---	---
		5280	20.16	5269.92	5290.08	---	---
		5320	20.20	5309.92	5330.12	---	---
		5500	20.28	5489.92	5510.20	---	---
		5600	20.24	5589.88	5610.12	---	---
		5700	20.16	5689.92	5710.08	---	---
		5745	20.28	5734.92	5755.20	---	---
		5785	20.20	5774.88	5795.08	---	---
		5825	21.16	5814.32	5835.48	---	---
11AC40SISO	Ant1	5190	46.24	5165.52	5211.76	---	---
		5230	40.96	5209.60	5250.56	---	---
		5270	41.28	5249.36	5290.64	---	---
		5310	41.04	5289.60	5330.64	---	---
		5510	41.20	5489.36	5530.56	---	---
		5590	41.04	5569.60	5610.64	---	---
		5670	41.20	5649.44	5690.64	---	---
		5755	41.04	5734.52	5775.56	---	---
		5795	40.96	5774.68	5815.64	---	---
11AC80SISO	Ant1	5210	81.92	5169.04	5250.96	---	---
		5290	81.92	5249.20	5331.12	---	---
		5530	81.76	5489.04	5570.80	---	---
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		5775	83.04	5734.20	5817.24	---	---

11A_Ant1_5180



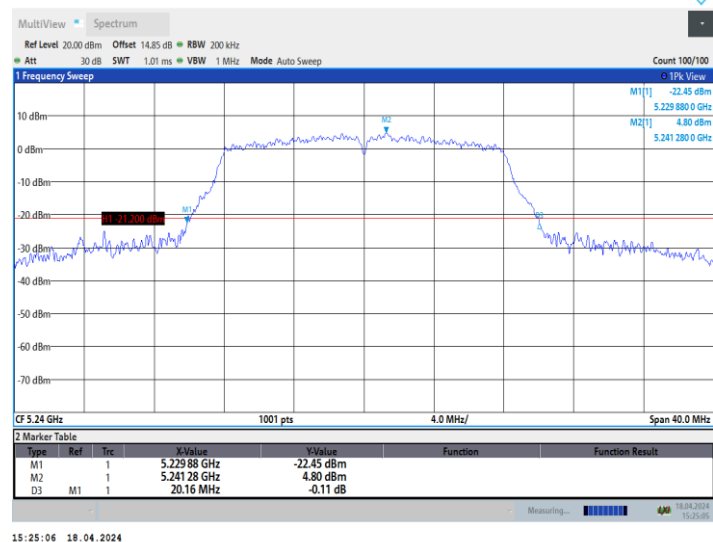
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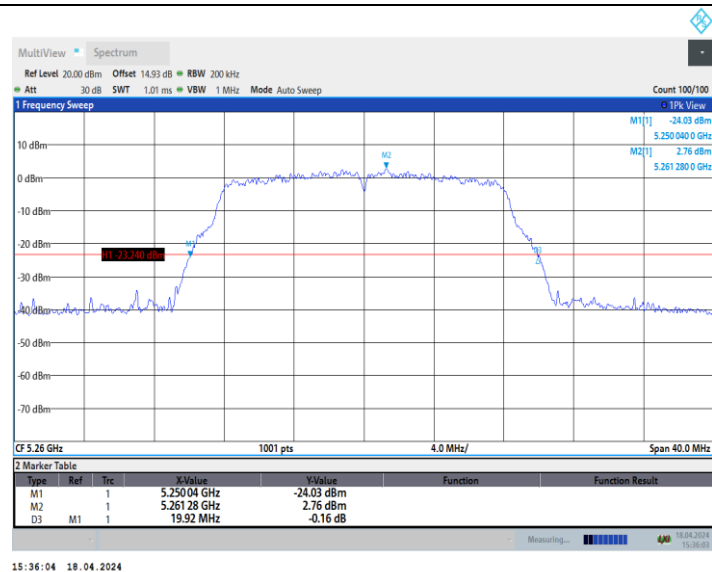
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11A_Ant1_5240

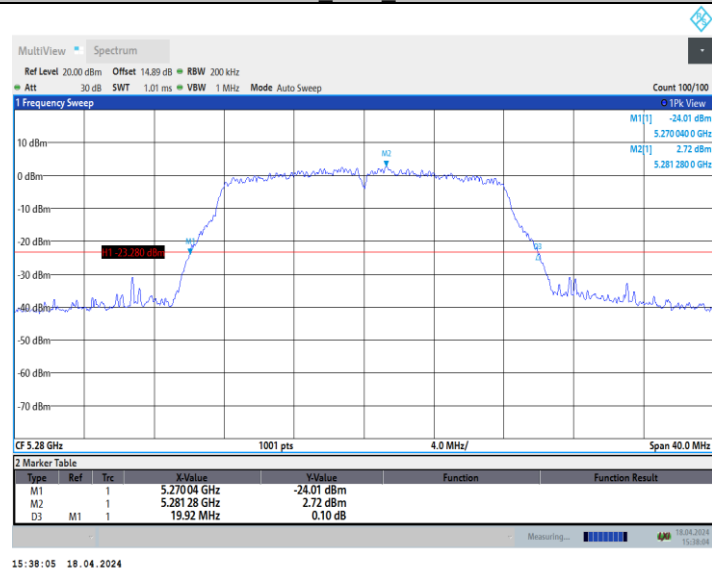


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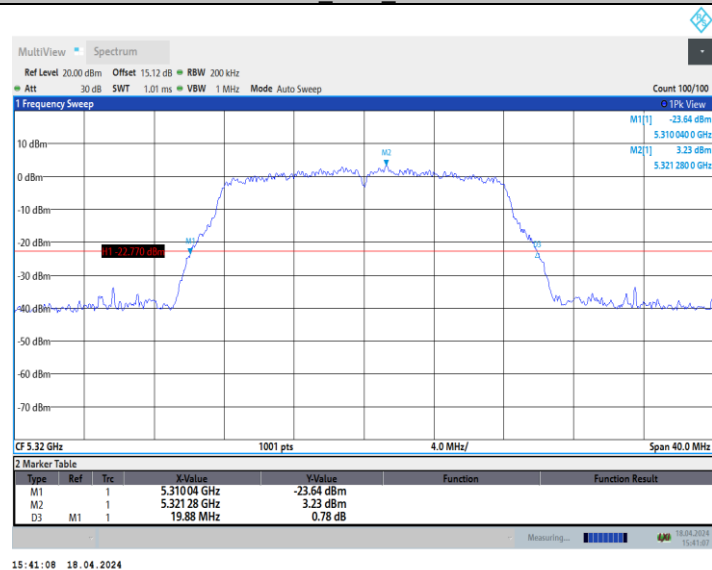
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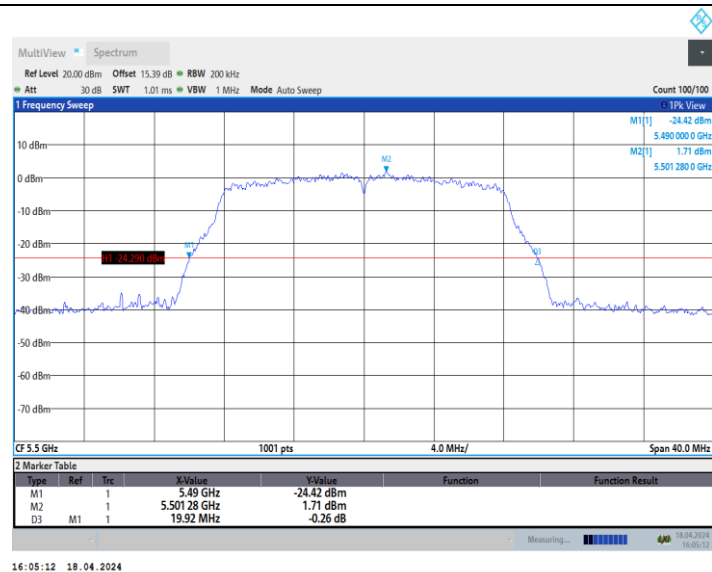
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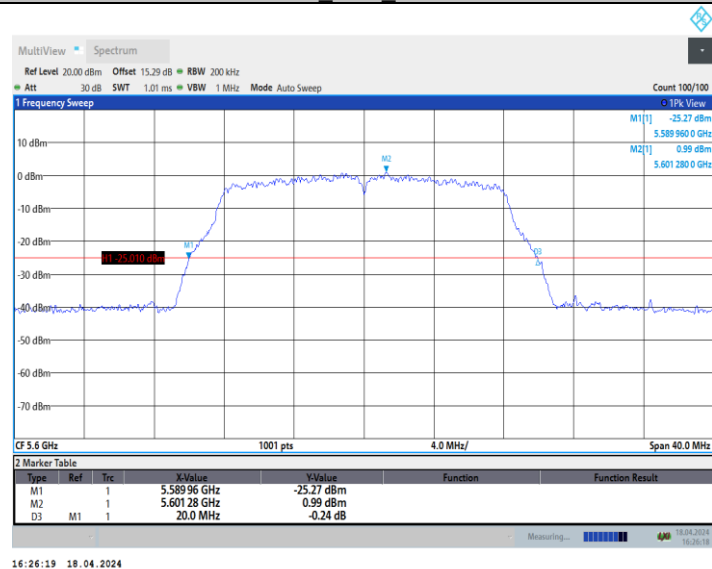
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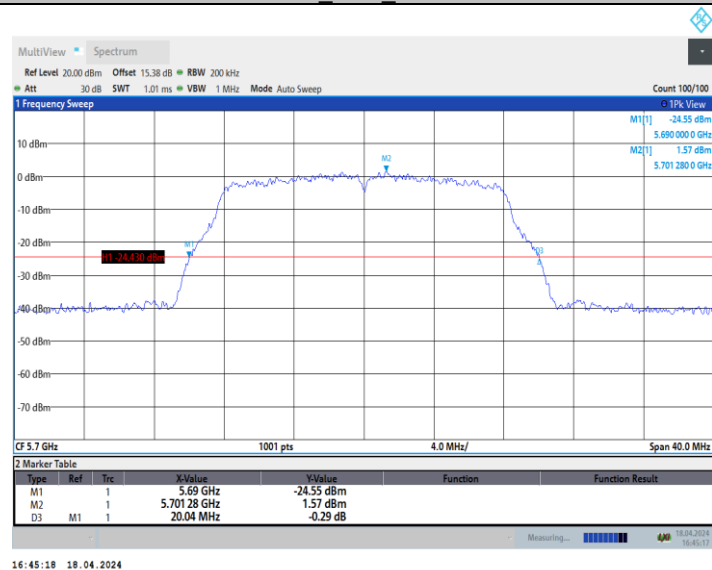
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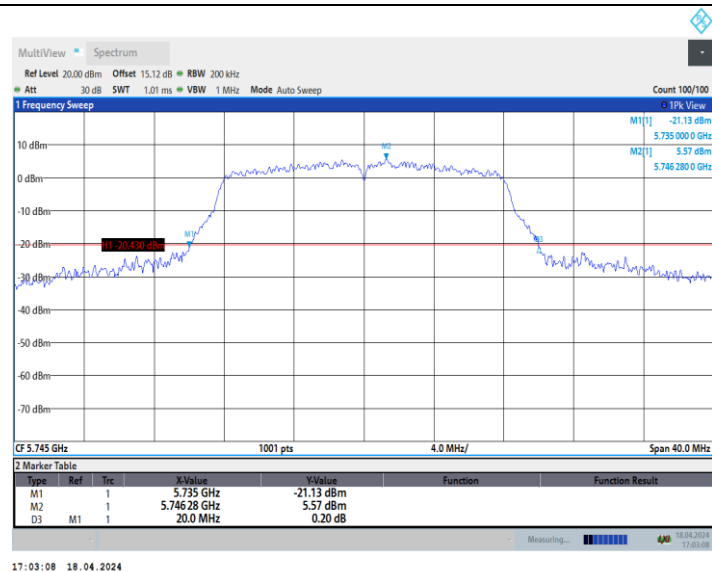
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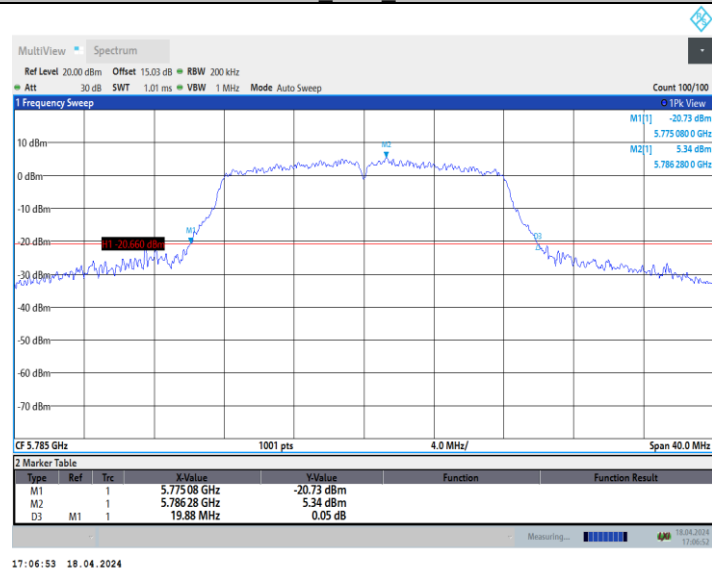
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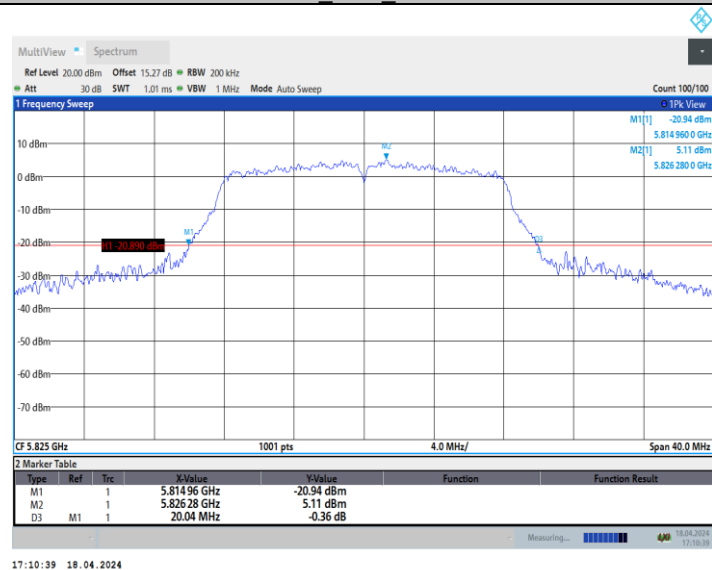
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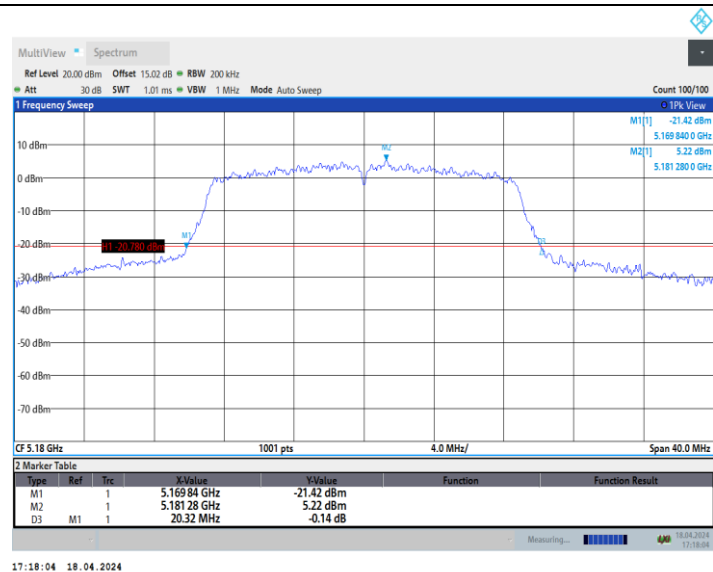
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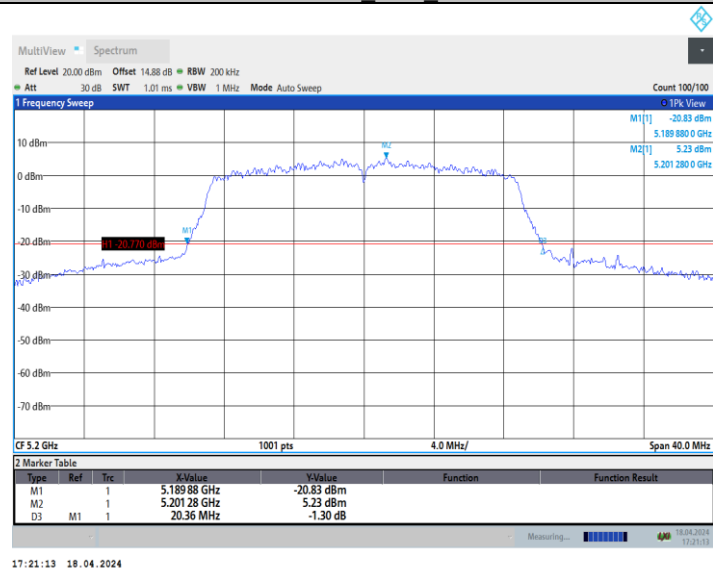
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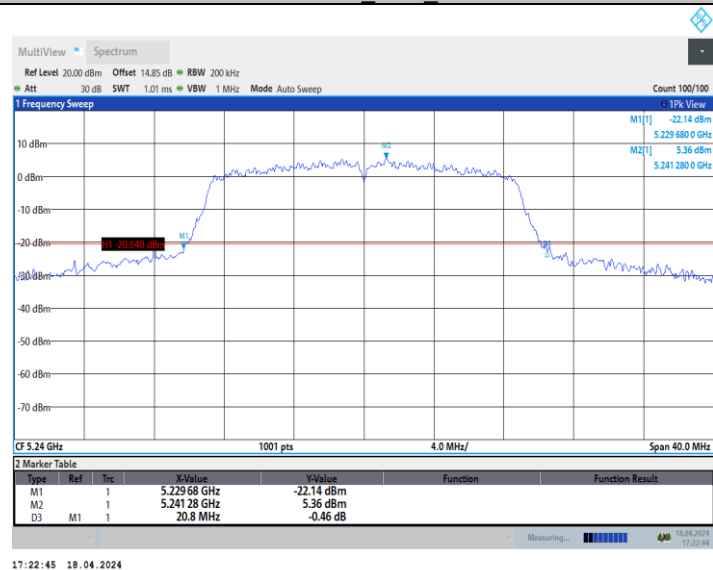
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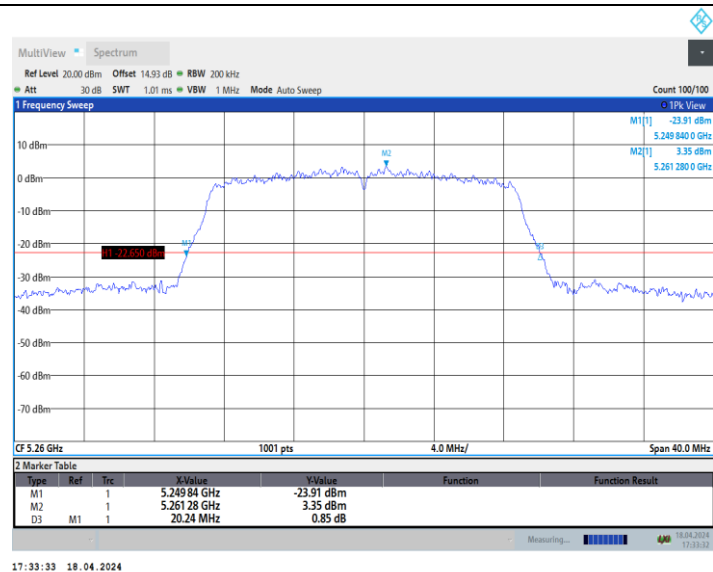
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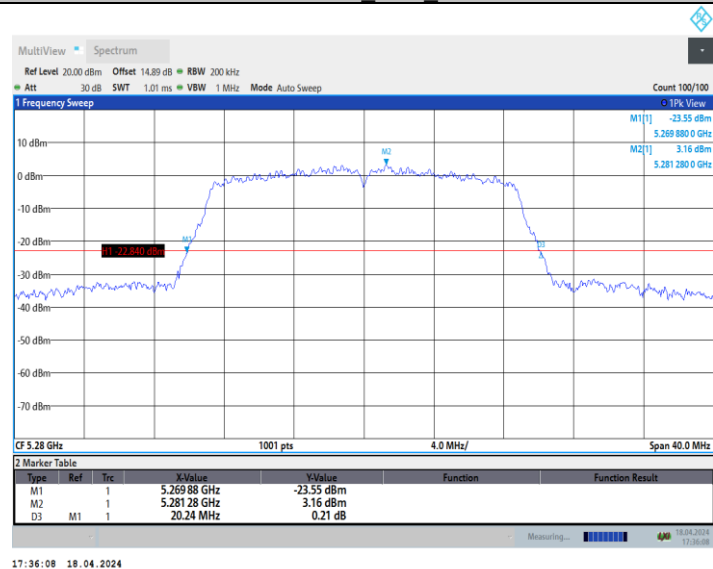
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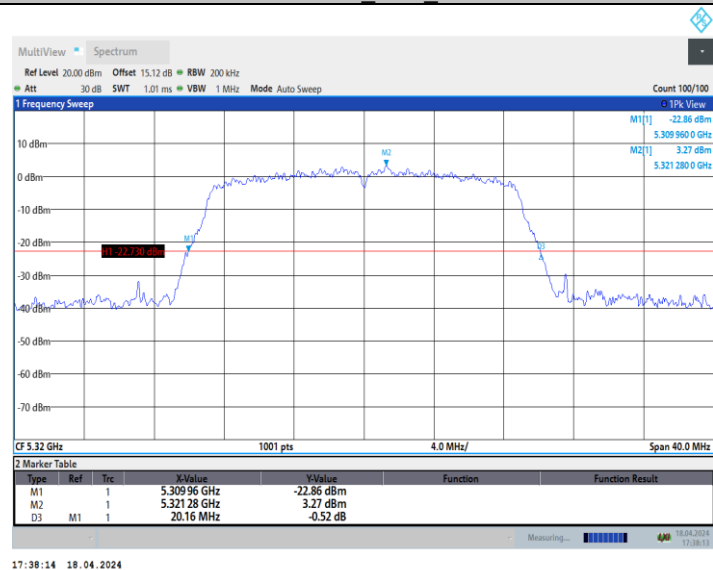
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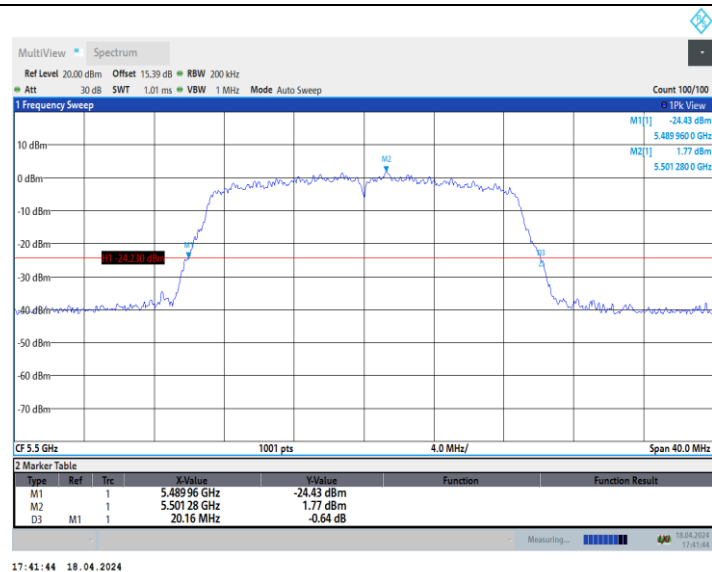
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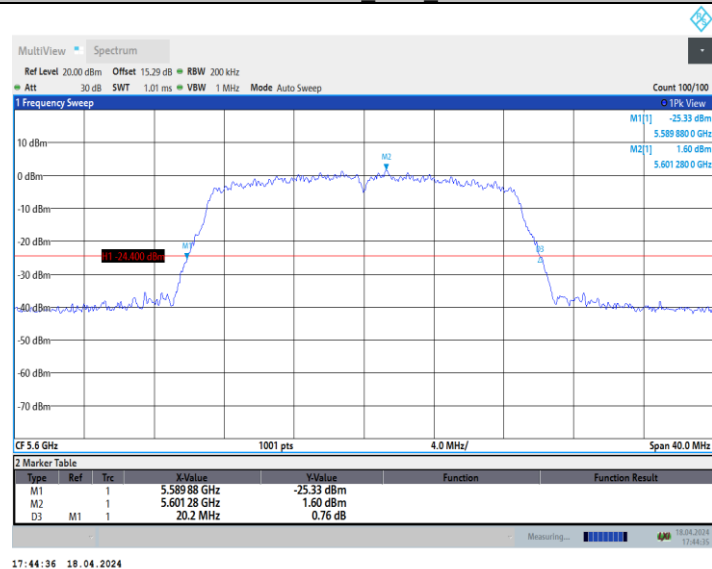
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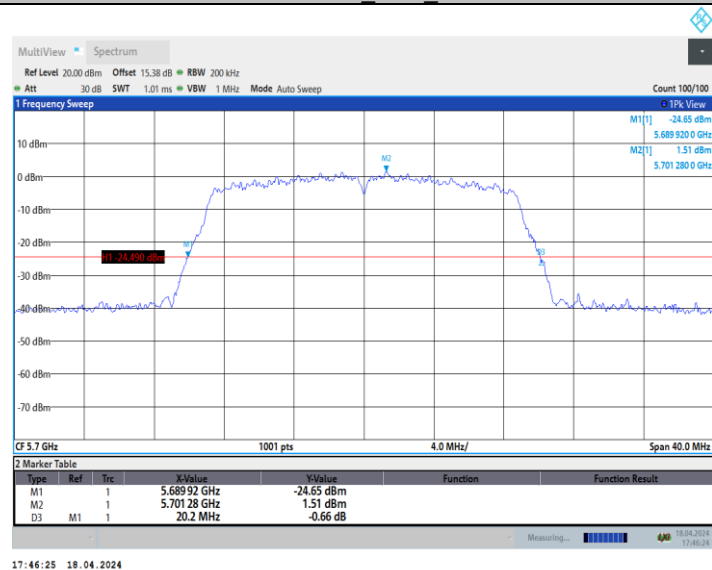
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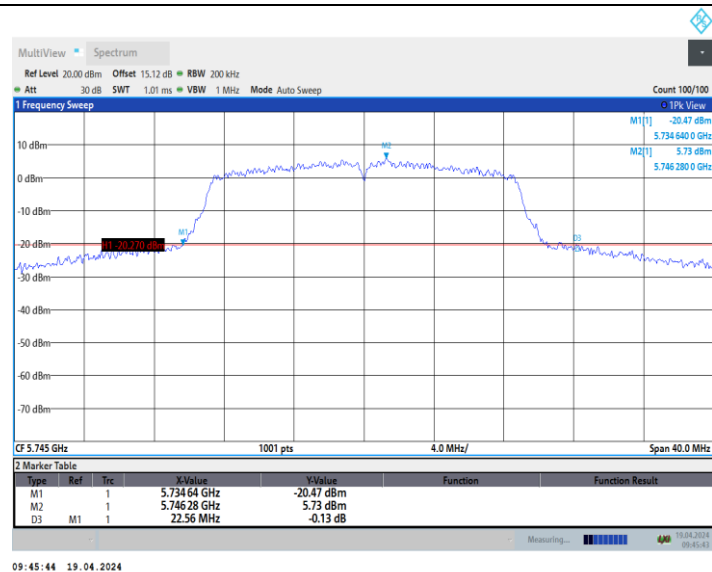
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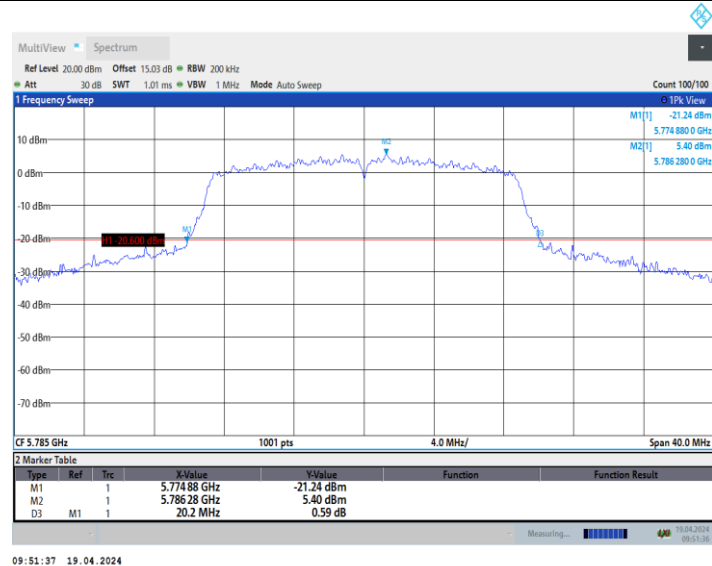
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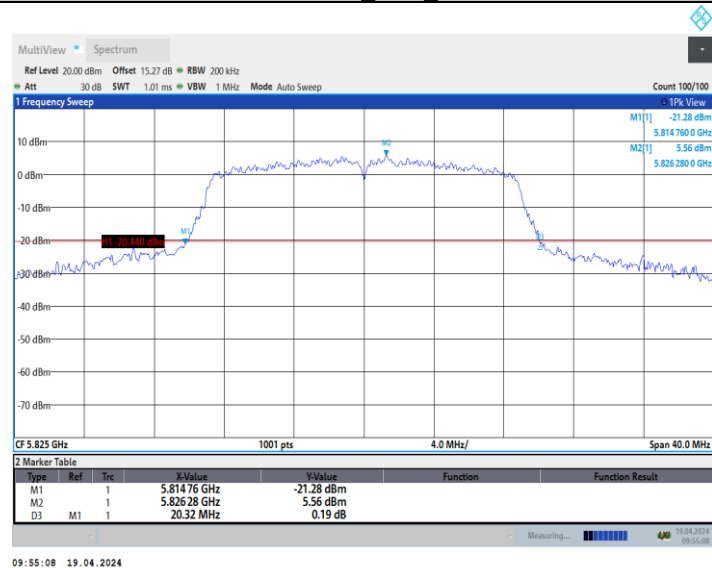
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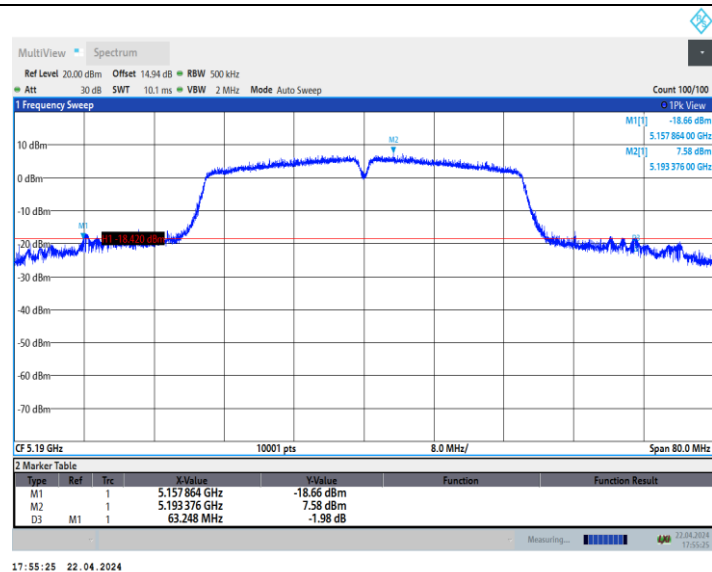
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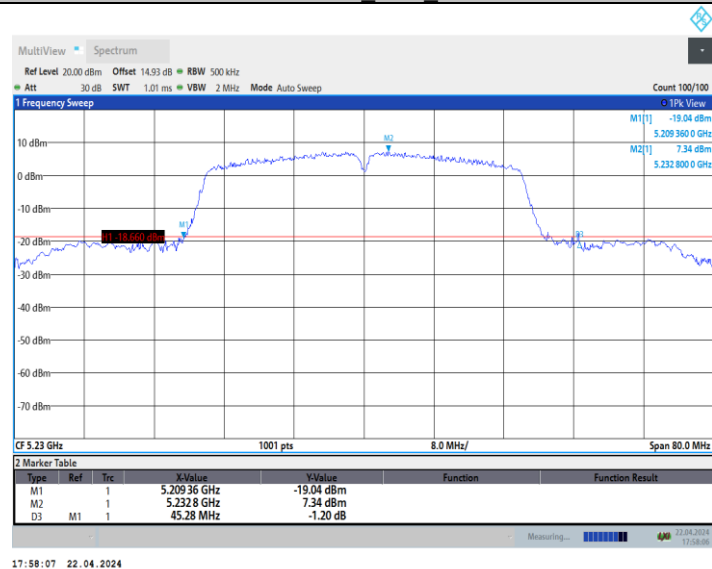
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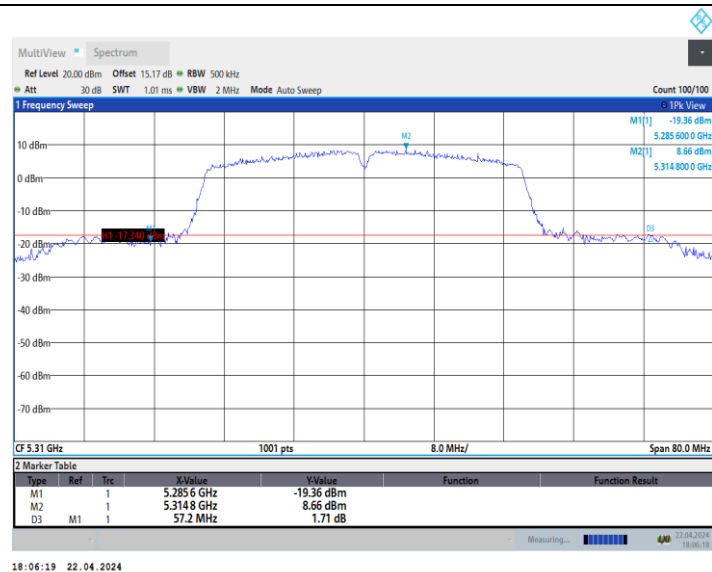
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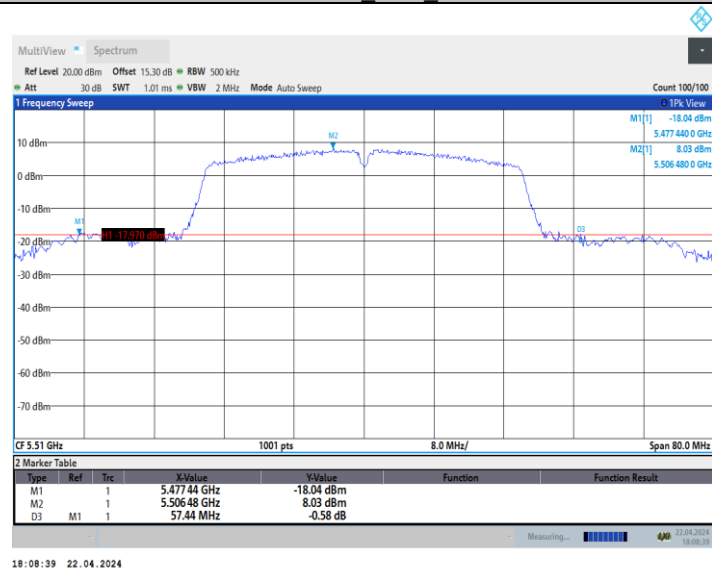
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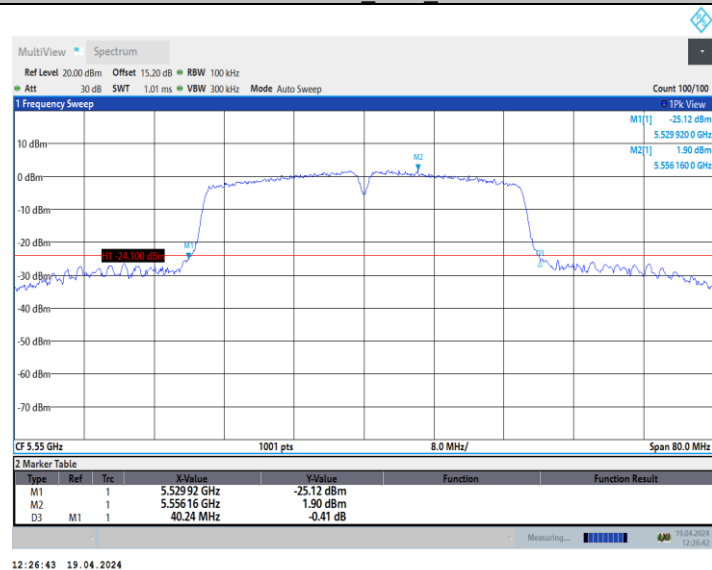
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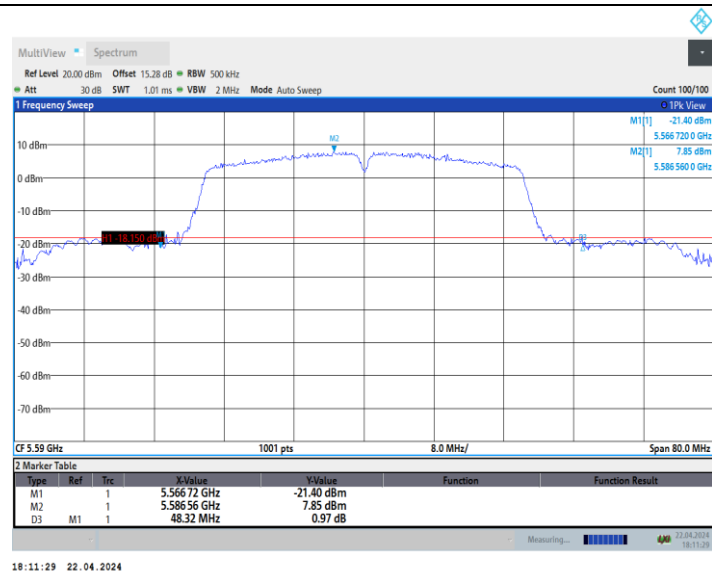
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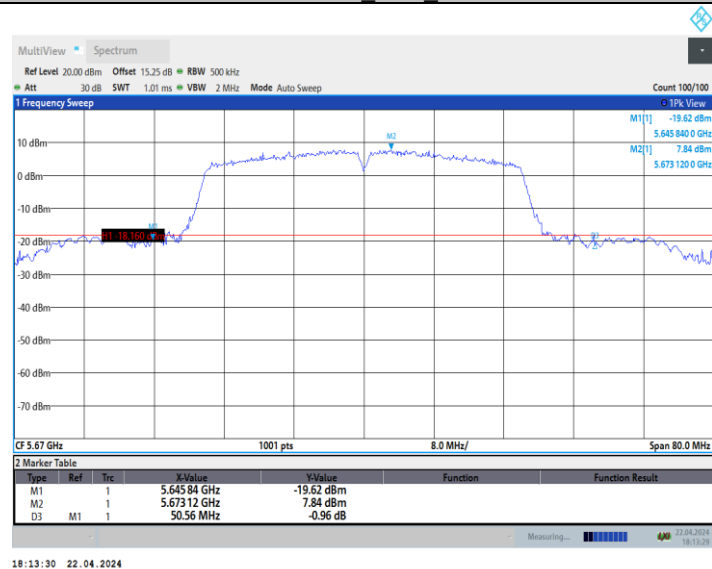
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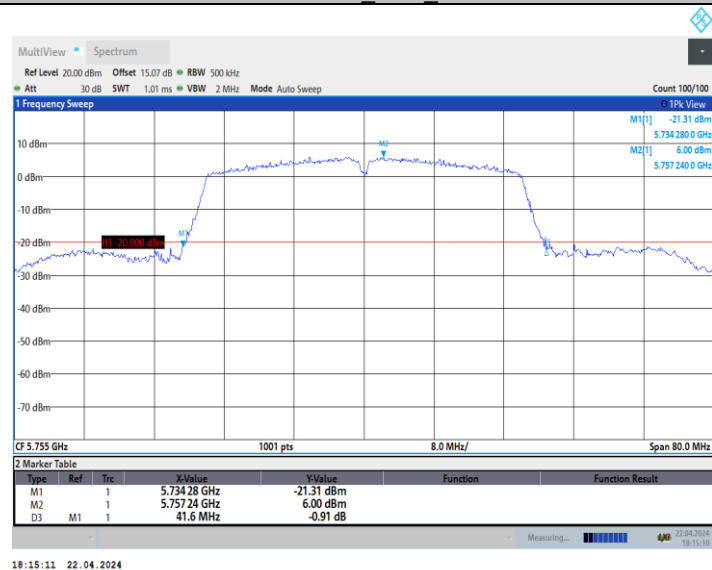
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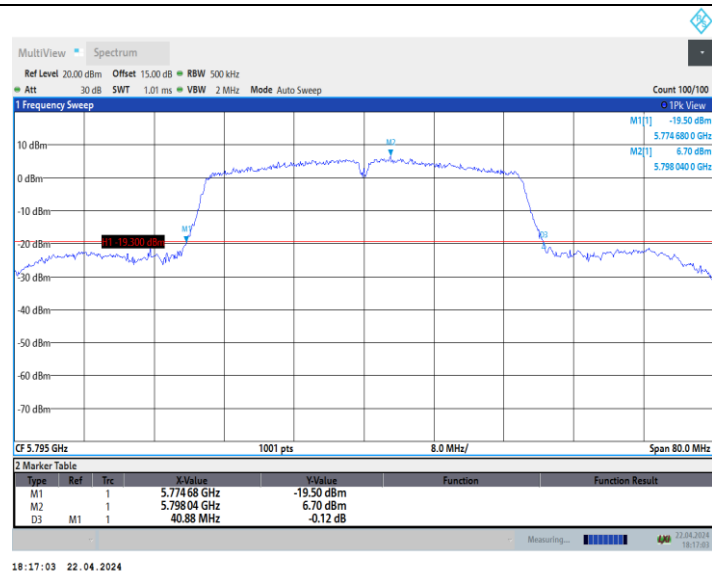
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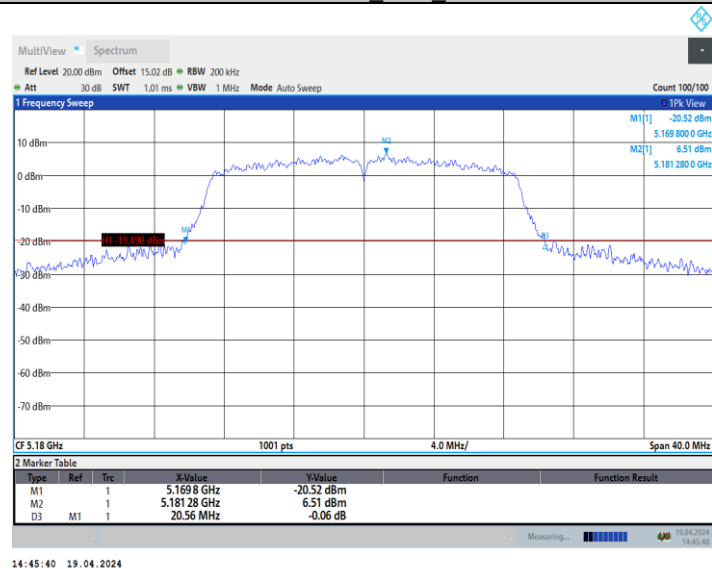
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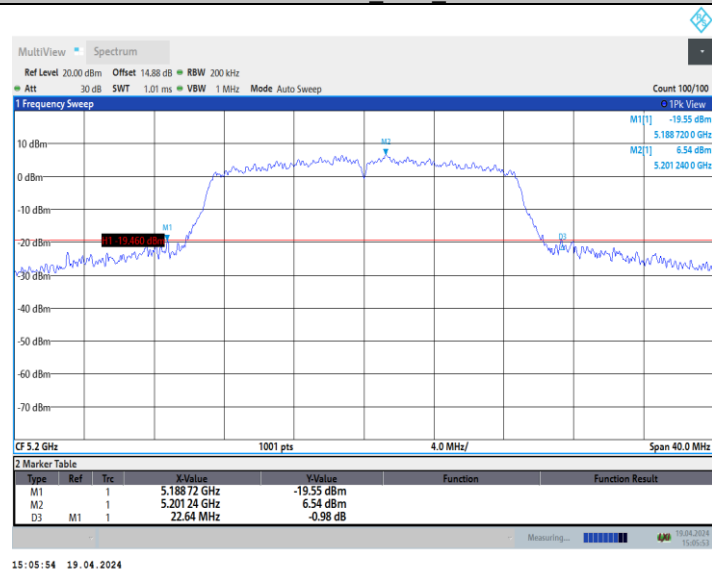
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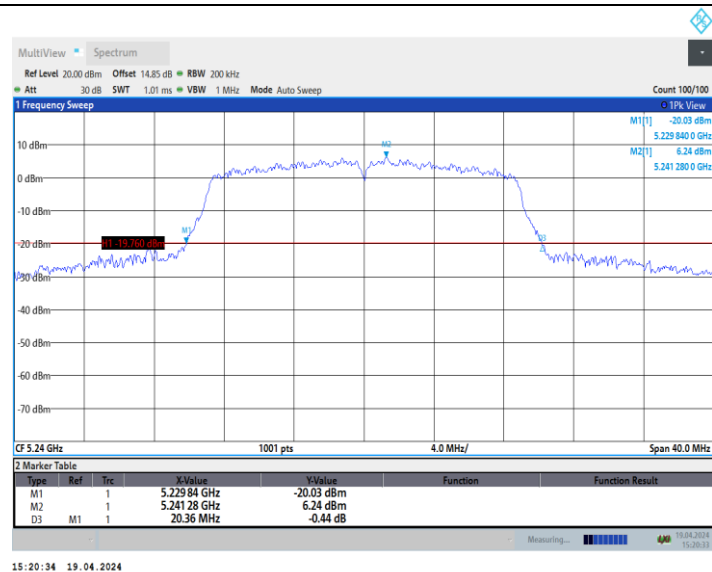
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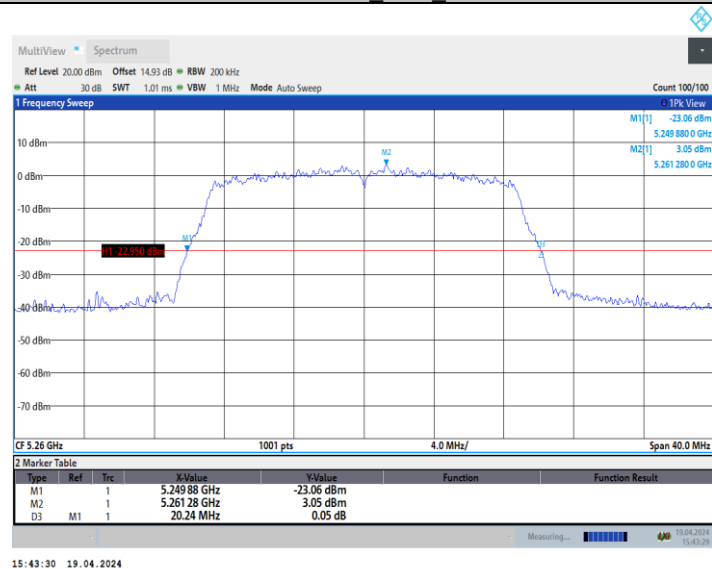
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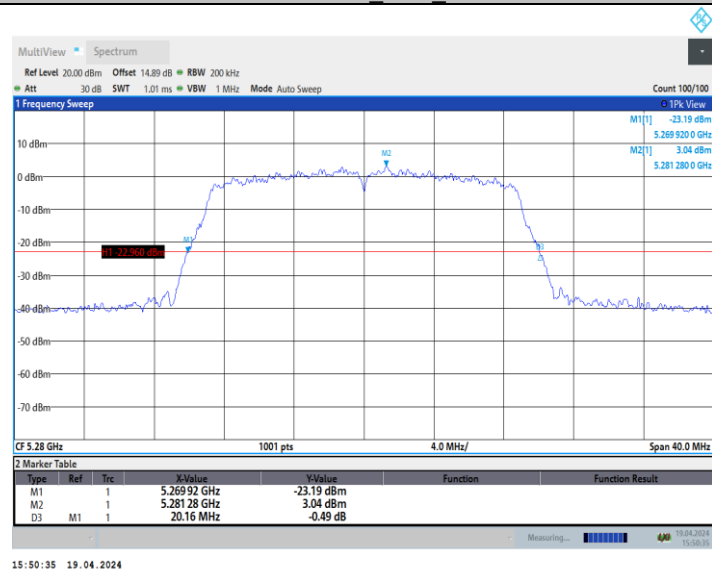
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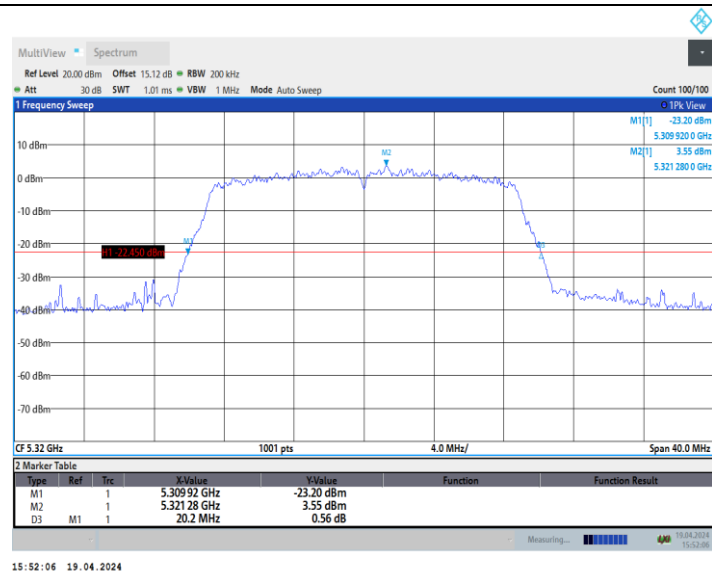
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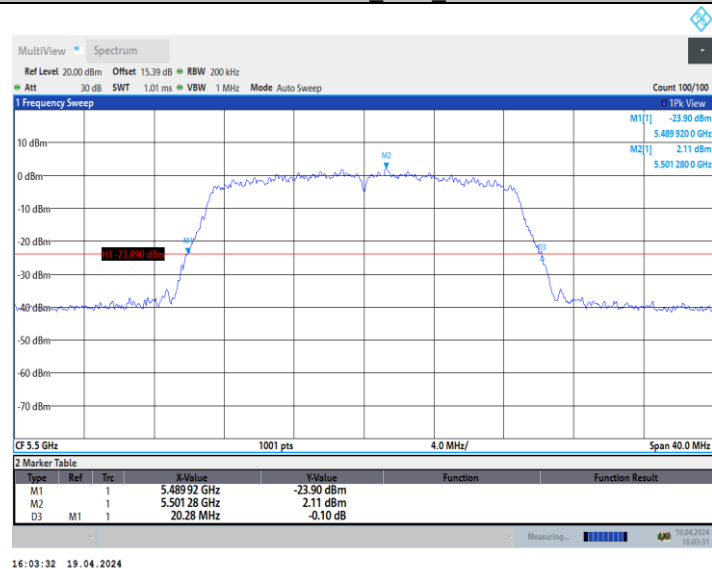
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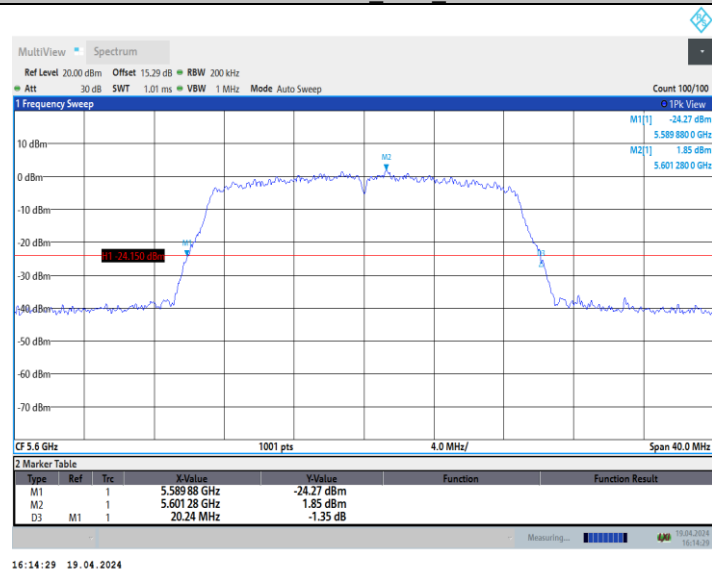
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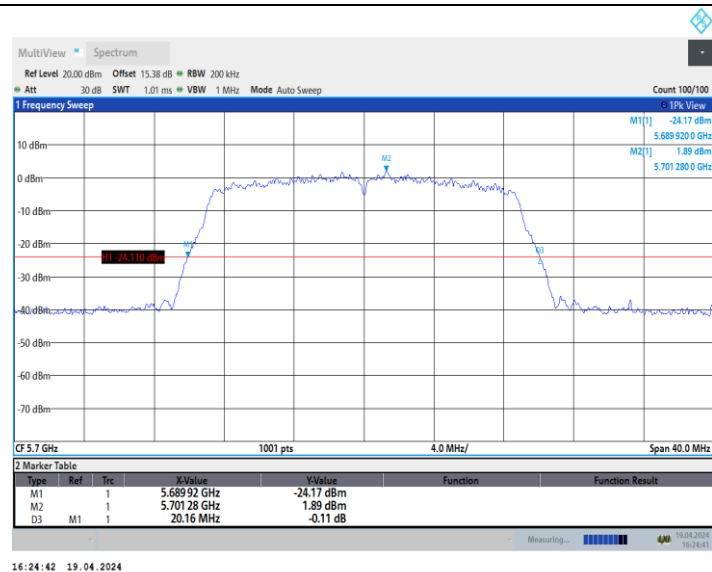
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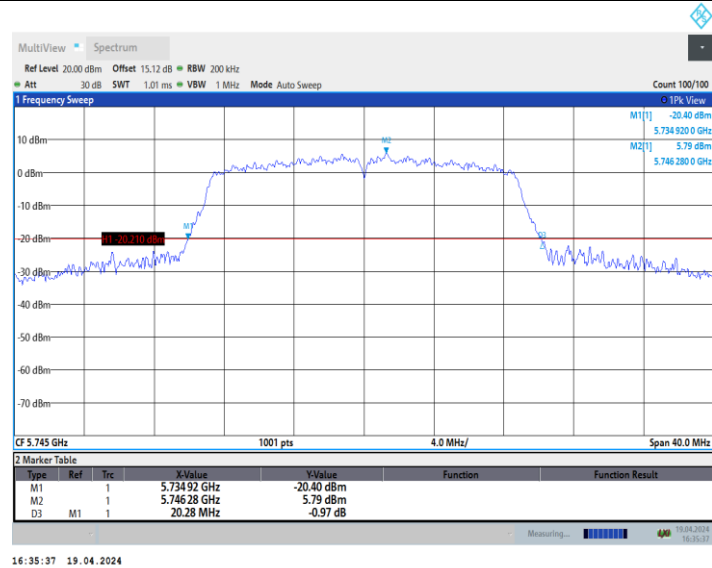
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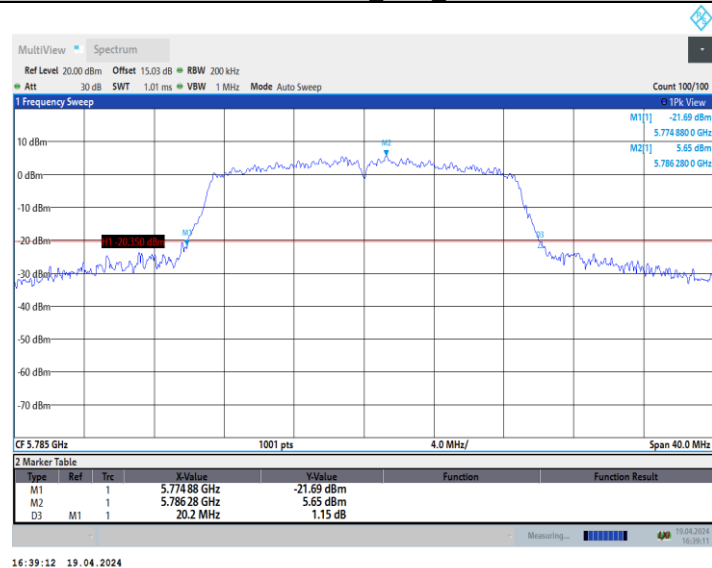
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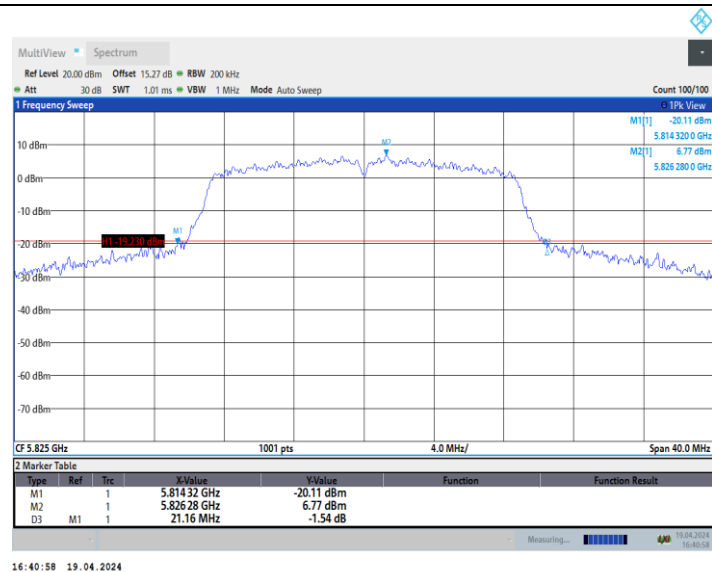
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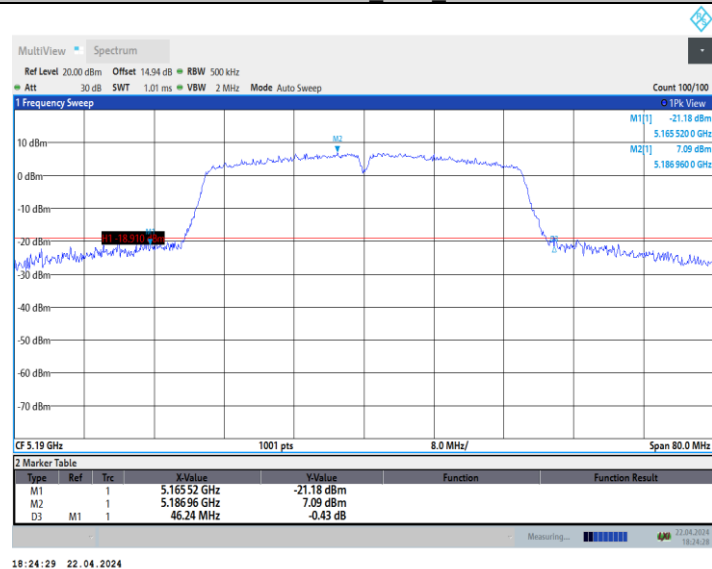
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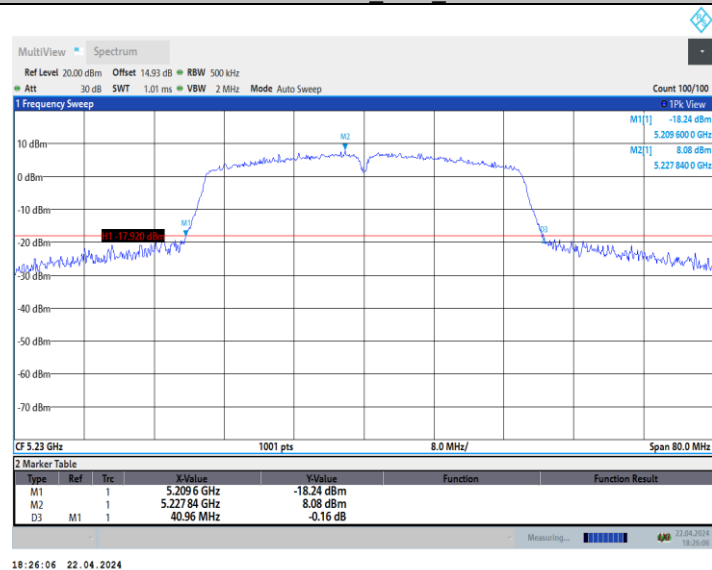
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11AC40SISO_Ant1_5230



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