FCC PART 15E
TEST REPORT
No.24T04Z100874-011

for

COOSEA GROUP (HK) COMPANY LIMITED

Smart Phone

SL219A

FCC ID: 2A28USL219

with

Hardware Version: 1.0

Software Version: SL219A:SL219AA10013

Issued Date: 2024-05-27

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z100874-011	Rev.0	1st edition	2024-05-27

Note: the latest revision of the test report supersedes all previous version.

CONTENTS

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Conducted testing Location: CTTL(Huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Radiated testing Location: CTTL(Huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, 100191, P. R. China

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project date

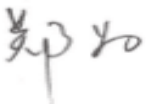
Testing Start Date: 2024-04-24

Testing End Date: 2024-05-27

1.5. Signature

Dong Jiaxuan

(Prepared this test report)



Zheng Wei

(Reviewed this test report)

Pang Shuai

(Approved this test report)

2. Client Information

2.1 Applicant Information

Company Name:	COOSEA GROUP (HK) COMPANY LIMITED
Address:	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL
Contact:	Zhao jiandong
Postal Code:	/
Email:	zhaojiandong@cooseagroup.com
Telephone:	137-5984-9661
Fax:	/

2.2 Manufacturer Information

Company Name:	COOSEA GROUP (HK) COMPANY LIMITED
Address:	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL
Contact:	Zhao jiandong
Postal Code:	/
Email:	zhaojiandong@cooseagroup.com
Telephone:	137-5984-9661
Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model name	SL219A
FCC ID	2A28USL219
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Nominal Voltage	3.8V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT21a	352357990004713	1.0	SL219AA10013	2024-04-30
UT33a	352357990007013	1.0	SL219AA10013	2024-04-30

*EUT ID: is used to identify the test sample in the lab internally.

UT21a is used for Conduction test, UT33a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	Manufacturer
AE1	Battery1	BL-A67CT	Huizhou Highpower Technology Co., Ltd.
AE2	Charger1	HJ-0502000-US	SHENZHEN HUAJIN ELECTRON CO.,LTD.
AE3	USB Cable1	FKY-24-049	ShenZhen FKY-QY Hardware&Electronics.,Ltd.

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

The Equipment under Test (EUT) is a model of Smart Phone with integrated antenna and inbuilt battery.

It consists of normal options: travel charger, USB cable.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C

humidity	2 %
DC voltages	0.003V

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

FCC Part15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	2021
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12

5. Laboratory Environment

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. Test Results

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	**P**
Peak Power Spectral Density	15.407	/	**P**
Occupied 26dB Bandwidth	15.403	/	**P**
Radiated Unwanted Emission	15.407, 15.205, 15.209	/	**P**
AC Powerline Conducted Emission	15.107, 15.207	/	**P**
99% Occupied bandwidth	/	/	**P**
Transmit Power Control	15.407	/	**NA**

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NM	Not measured, The test was not measured by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

CTTL has evaluated the test cases as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.

This report only deals with the WLAN function among the features described in section 3.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	26°C
Voltage	3.8V
Humidity	44%

7. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2024-07-04
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2025-04-06
3	LISN	ENV216	101200	R&S	1 year	2024-06-05
4	Test Receiver	ESCI	100344	R&S	1 year	2025-01-21
5	Attenuator	10dB/2W	/	Rosenberger	/	/
6	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	103015	R&S	1 year	2025-01-19
2	EMI Antenna	VULB 9163	01223	SCHWARZBECK	1 year	2024-07-19
3	EMI Antenna	3115	6914	ETS-Lindgren	1 year	2024-05-08
4	Loop Antenna	HFH2-Z2	829324/007	R&S	2 years	2026-01-05
5	EMI Antenna	3116	2663	R&S	1 year	2025-02-22

Note: The equipment was in Calibration Due date when used.

Test Software

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V11.50.00	R&S
Conducted Emission	EMC32 V8.53.0	R&S

8. Measurement Uncertainty

8.1 Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2 Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3 26dB Emission Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4 Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

8.5 Spurious Emissions

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤3.6GHz	1.22
3.6GHz ≤ f ≤8GHz	1.22
8GHz ≤ f ≤12.75GHz	1.51
12.75GHz ≤ f ≤26GHz	1.51
26GHz ≤ f ≤40GHz	1.59

8.6 Radiated Unwanted Emission

Frequency Range	Uncertainty(dB) (k=2)
9kHz-30MHz	4.92
30MHz ≤ f ≤ 1GHz	4.72
1GHz ≤ f ≤18GHz	4.84
18GHz ≤ f ≤40GHz	5.12

8.7 AC Power-line Conducted Emission

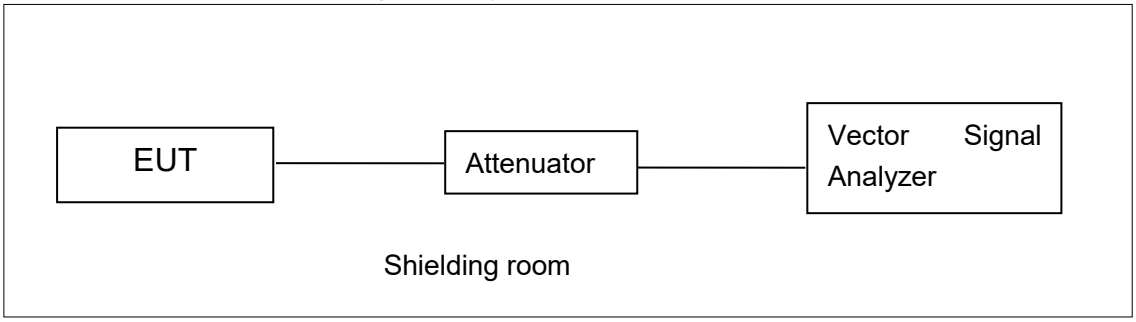
Measurement Uncertainty : 3.08dB,k=2

ANNEX A: Detailed Test Results

A.1. Measurement Method

A.1.1. Conducted Measurements

1). Connect the EUT to the test system correctly.
2). Set the EUT to the required work mode.
3). Set the EUT to the required channel.
4). Set the spectrum analyzer to start measurement.
5). Record the values. Vector Signal Analyzer



A.1.2. Radiated Emission Measurements

Measurement performed according to Clause 6.4, 6.5, 6.6 in ANSI C63.10-2013 and II.G.4, II.G.5, II.G.6 in KDB 789033.

The radiated emission test is performed in semi-anechoic chamber. The EUT was placed on a non-conductive table with 80cm above the ground plane for measurement below 1GHz and 1.5m above the ground plane for measurement above 1GHz. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated from 0° to 360°and the measurement antenna is moved from 1m to 4m to get the maximization result. The maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

A.2. Maximum output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	24dBm
	5250MHz~5350MHz	24dBm or 11+10logB
	5470MHz~5725MHz	24dBm or 11+10logB

Limit use the less value, and B is the 26dB bandwidth.

The measurementmethod SA-2 is made according to KDB 789033

A.2.1 Antenna Gain

Antenna gain is 1.5 dBi and the value is supplied by the applicant or manufacturer.

A.2.2 Maximum output Power-Conducted

EUT ID: UT21a

Measurement Results:

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	16.77	\	\	\	\	\	\	\
	5200MHz	16.92	\	\	\	\	\	\	\
	5240MHz	17.05	\	\	\	\	\	\	\
	5260MHz	16.52	\	\	\	\	\	\	\
	5280MHz	16.69	\	\	\	\	\	\	\
	5320MHz	16.56	\	\	\	\	\	\	\
	5500MHz	16.74	\	\	\	\	\	\	\
	5580MHz	16.23	\	\	\	\	\	\	\
	5700MHz	16.96	\	\	\	\	\	\	\
	5720MHz	16.20	\	\	\	\	\	\	\

The data rate 6Mbps is selected as worst condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz	15.70	\	\	\	\	\	\	\
	5200MHz	15.95	\	\	\	\	\	\	\
	5240MHz	15.89	\	\	\	\	\	\	\
	5260MHz	15.95	\	\	\	\	\	\	\
	5280MHz	15.92	\	\	\	\	\	\	\
	5320MHz	16.13	\	\	\	\	\	\	\
	5500MHz	15.46	\	\	\	\	\	\	\
	5580MHz	15.68	\	\	\	\	\	\	\
	5700MHz	16.30	\	\	\	\	\	\	\
	5720MHz	15.78	\	\	\	\	\	\	\

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11ac-VHT20 mode

Mode	Frequency	Test Result (dBm)								
		Data Rate								
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
802.11ac (VHT20)	5180MHz	14.12	\	\	\	\	\	\	\	\
	5200MHz	14.38	\	\	\	\	\	\	\	\
	5240MHz	15.24	\	\	\	\	\	\	\	\
	5260MHz	15.25	\	\	\	\	\	\	\	\
	5280MHz	15.50	\	\	\	\	\	\	\	\
	5320MHz	15.31	\	\	\	\	\	\	\	\
	5500MHz	15.61	\	\	\	\	\	\	\	\
	5580MHz	14.92	\	\	\	\	\	\	\	\
	5700MHz	15.73	\	\	\	\	\	\	\	\
	5720MHz	15.00	\	\	\	\	\	\	\	\

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz	15.57	\	\	\	\	\	\	\
	5230MHz	15.78	\	\	\	\	\	\	\
	5270MHz	15.96	\	\	\	\	\	\	\
	5310MHz	15.97	\	\	\	\	\	\	\
	5510MHz	14.37	\	\	\	\	\	\	\
	5550MHz	15.26	\	\	\	\	\	\	\
	5670MHz	15.23	\	\	\	\	\	\	\
	5710MHz	15.77	\	\	\	\	\	\	\

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11ac-VHT40 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (VHT40)	5190MHz	14.54	\	\	\	\	\	\	\	\	\
	5230MHz	14.14	\	\	\	\	\	\	\	\	\
	5270MHz	14.92	\	\	\	\	\	\	\	\	\
	5310MHz	14.82	\	\	\	\	\	\	\	\	\
	5510MHz	14.26	\	\	\	\	\	\	\	\	\
	5550MHz	14.26	\	\	\	\	\	\	\	\	\
	5670MHz	14.13	\	\	\	\	\	\	\	\	\
	5710MHz	14.67	\	\	\	\	\	\	\	\	\

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11ac-VHT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (VHT80)	5210MHz	12.87	\	\	\	\	\	\	\	\	\
	5290MHz	13.22	\	\	\	\	\	\	\	\	\
	5530MHz	13.42	\	\	\	\	\	\	\	\	\
	5610MHz	12.75	\	\	\	\	\	\	\	\	\
	5690MHz	13.30	\	\	\	\	\	\	\	\	\

The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

The duty cycle of all mode are 100%

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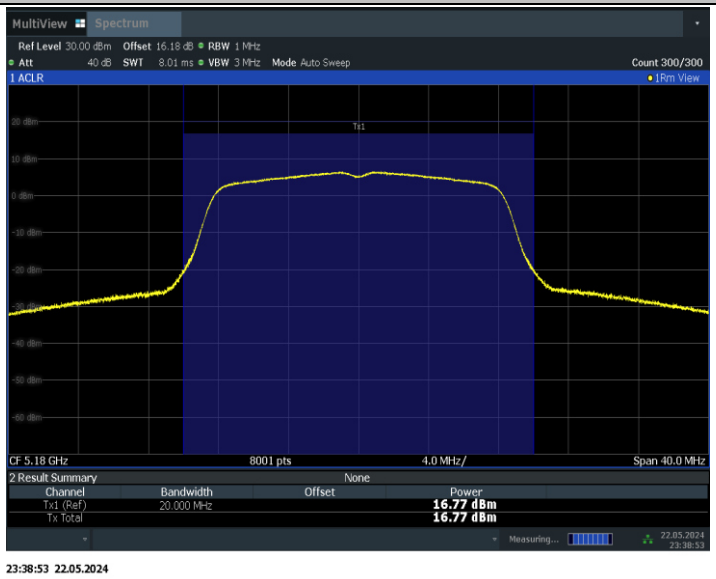

Maximum output Power

Conclusion: PASS

A.3. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	11
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

The output power measurement method Section F is made according to KDB 789033

EUT ID: UT21a

Measurement Results:

Mode	Frequency	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	6.41	P
	5200 MHz	6.76	P
	5240 MHz	6.87	P
	5260 MHz	6.50	P
	5280 MHz	6.55	P
	5320 MHz	6.51	P
	5500 MHz	6.65	P
	5580 MHz	6.00	P
	5700 MHz	6.69	P
	5720 MHz	6.74	P
802.11n HT20	5180 MHz	5.23	P
	5200 MHz	5.59	P
	5240 MHz	5.61	P
	5260 MHz	5.51	P
	5280 MHz	5.53	P
	5320 MHz	5.90	P
	5500 MHz	5.03	P
	5580 MHz	5.31	P
	5700 MHz	5.81	P
	5720 MHz	5.93	P
802.11n HT40	5190 MHz	2.26	P
	5230 MHz	2.65	P
	5270 MHz	2.49	P
	5310 MHz	2.60	P
	5510 MHz	1.06	P
	5550 MHz	2.00	P
	5670 MHz	1.68	P
	5710 MHz	2.92	P
802.11ac VHT80	5210 MHz	-3.37	P
	5290 MHz	-3.31	P

	5530 MHz	-3.22	P
	5610 MHz	-3.25	P
	5690 MHz	-3.17	P

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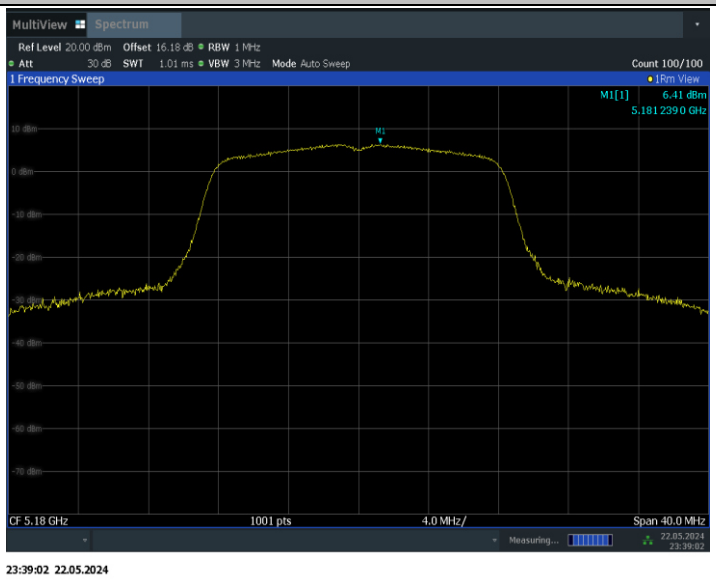

Peak Power Spectral Density

Conclusion: PASS

A.4. 26dB Emission Bandwidth (conducted)

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

EUT ID: UT21a

Measurement Result:

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	24.28	5169.76	5194.04
		5200	20.56	5189.80	5210.36
		5240	21.20	5229.84	5251.04
		5260	22.80	5249.44	5272.24
		5280	21.64	5269.92	5291.56
		5320	24.24	5308.92	5333.16
		5500	23.64	5488.60	5512.24
		5580	23.88	5567.96	5591.84
		5700	22.12	5689.52	5711.64
		5720	27.40	5706.12	5733.52
		5720	18.88	5706.12	5725
11N20SISO	Ant1	5180	21.20	5169.44	5190.64
		5200	21.84	5188.28	5210.12
		5240	21.88	5228.20	5250.08
		5260	20.28	5249.84	5270.12
		5280	20.40	5269.80	5290.20
		5320	21.00	5309.80	5330.80
		5500	20.80	5489.36	5510.16
		5580	20.92	5569.60	5590.52
		5700	20.96	5689.40	5710.36
		5720	23.40	5708.00	5731.40
		5720	17.00	5708.00	5725
11N40SISO	Ant1	5190	43.52	5169.20	5212.72
		5230	60.40	5197.84	5258.24
		5270	42.32	5249.20	5291.52
		5310	43.76	5289.20	5332.96
		5510	42.24	5488.32	5530.56
		5550	42.48	5529.12	5571.60
		5670	52.32	5649.12	5701.44
		5710	45.52	5689.12	5734.64

11AC80SISO	Ant1	5210	81.28	5169.20	5250.48
		5290	81.44	5249.36	5330.80
		5530	81.76	5488.88	5570.64
		5610	81.44	5569.20	5650.64
		5690	80.96	5649.36	5730.32

Test graphs as below:

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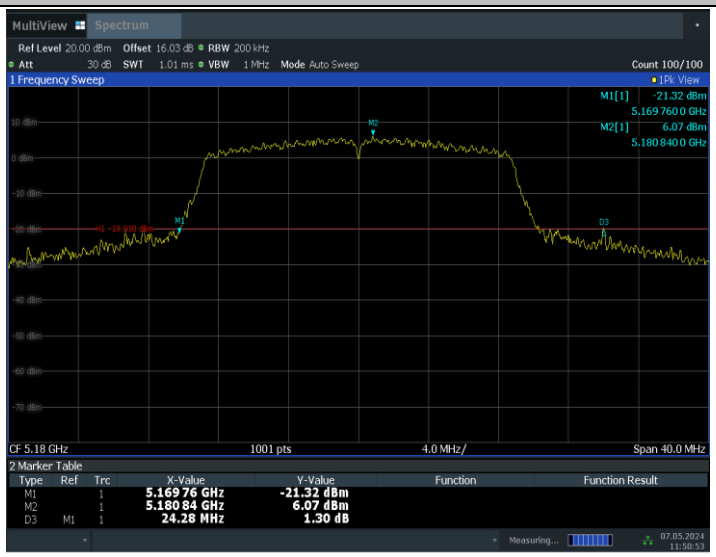

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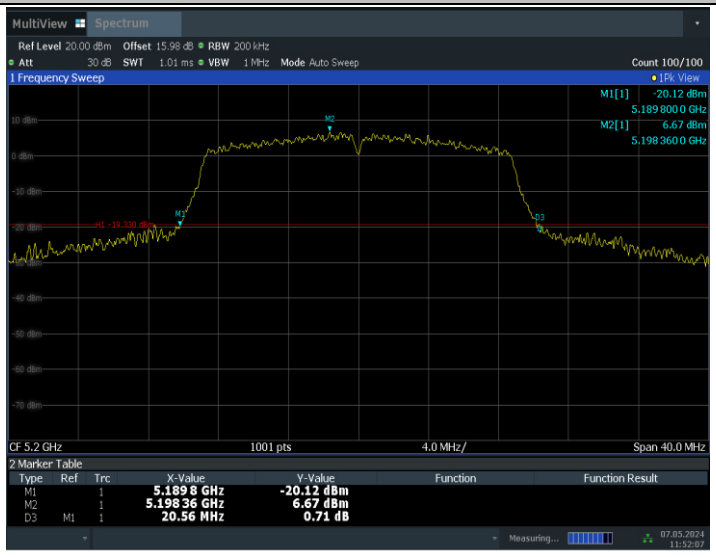

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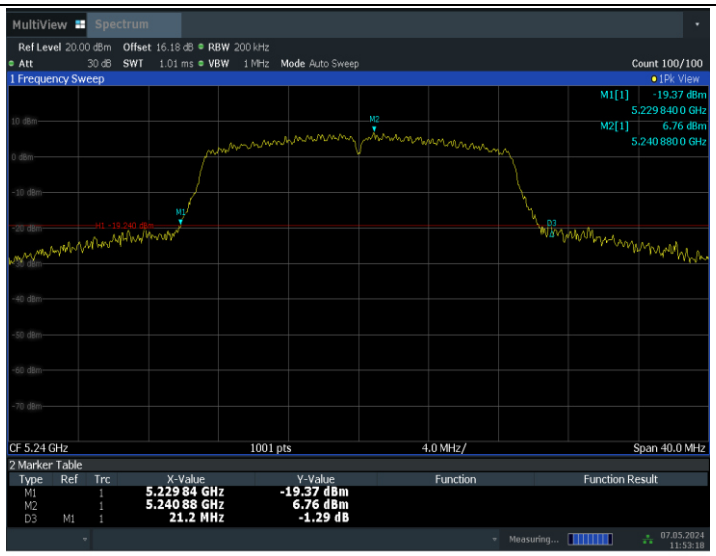

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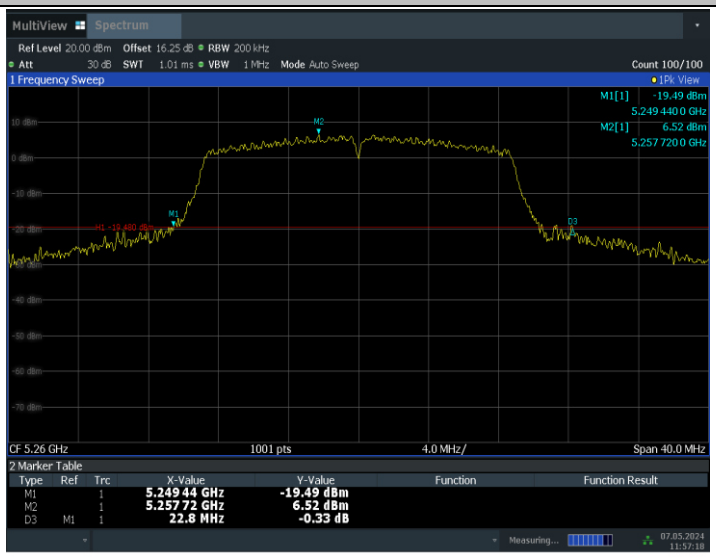

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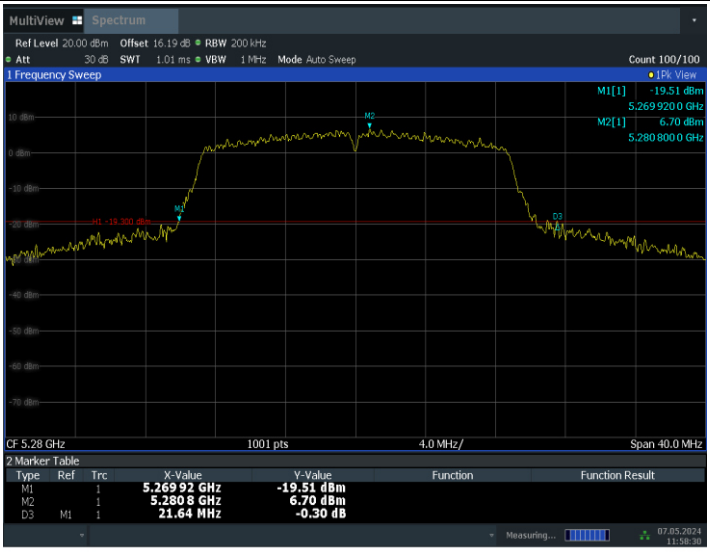

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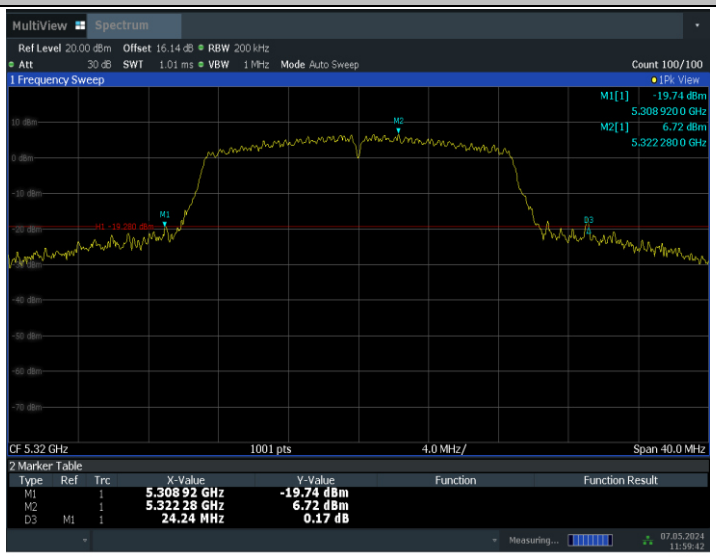 11:59:43 07.05.2024
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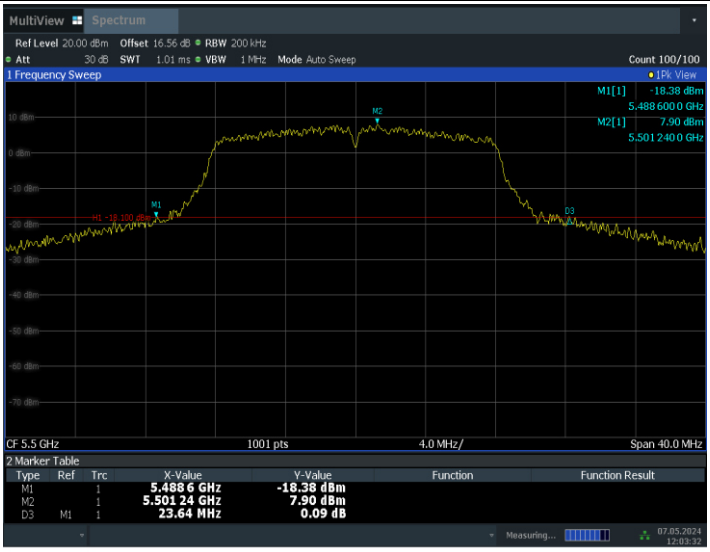 12:03:33 07.05.2024
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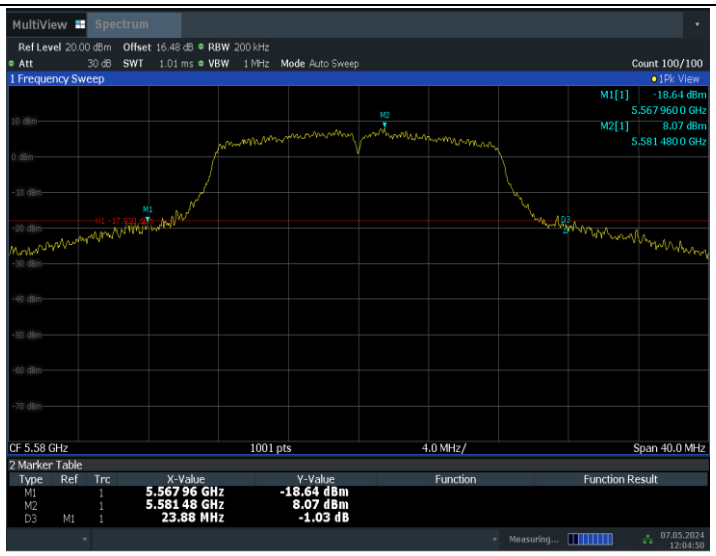

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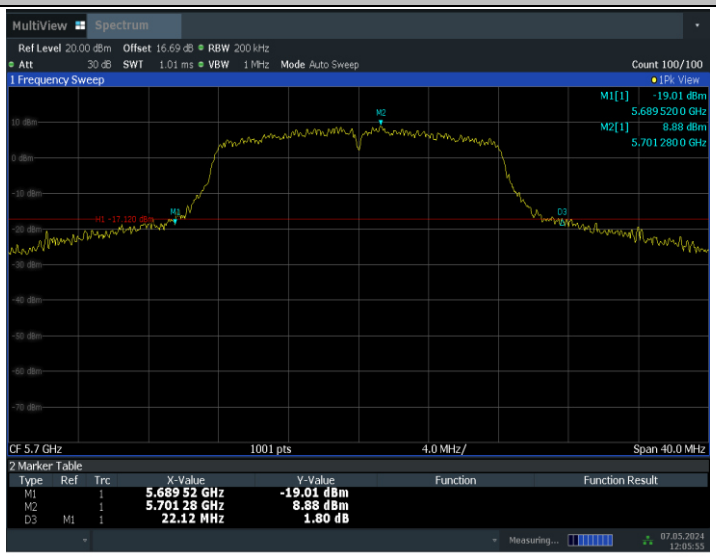

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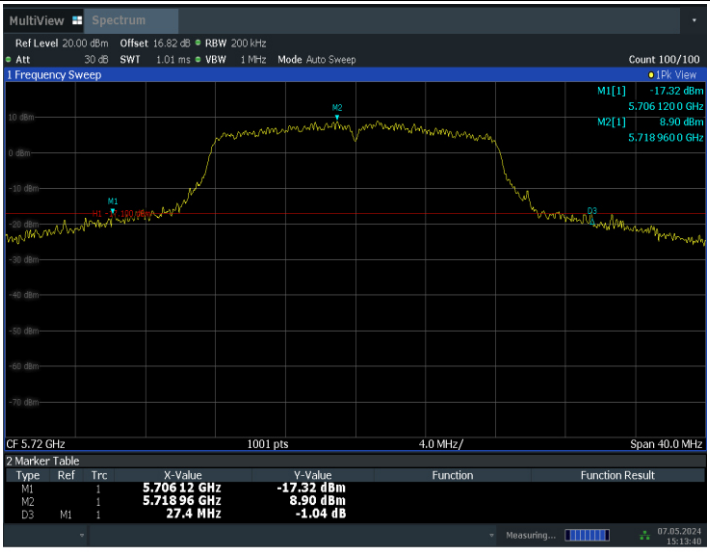

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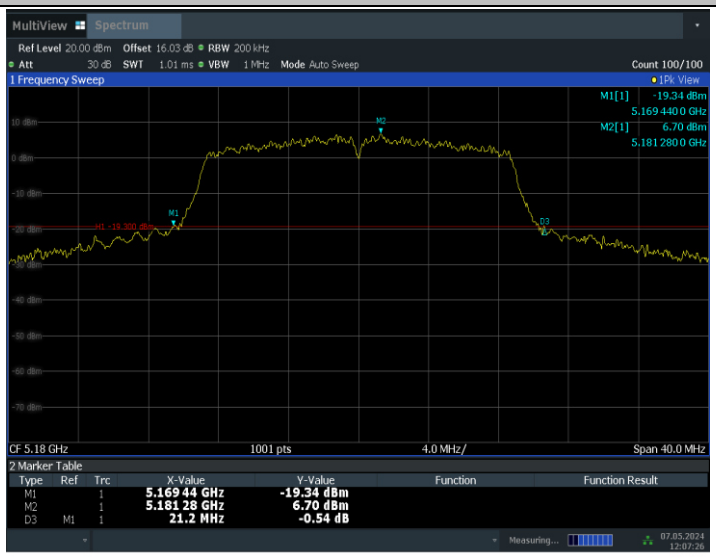 12:07:26 07.05.2024
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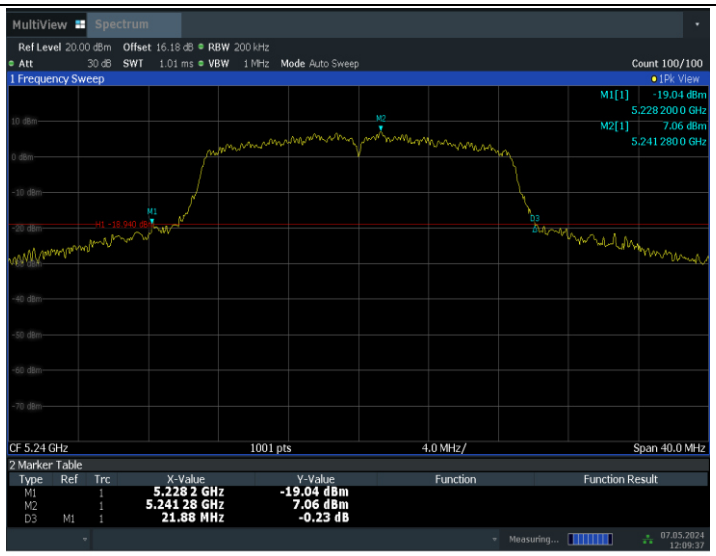

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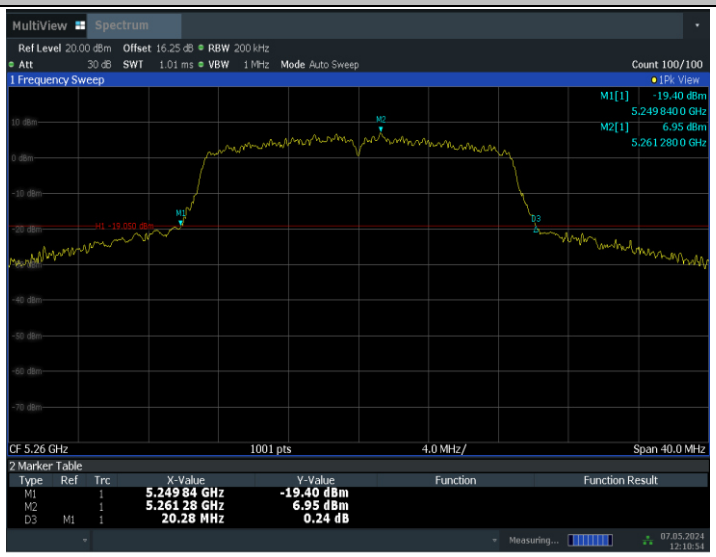

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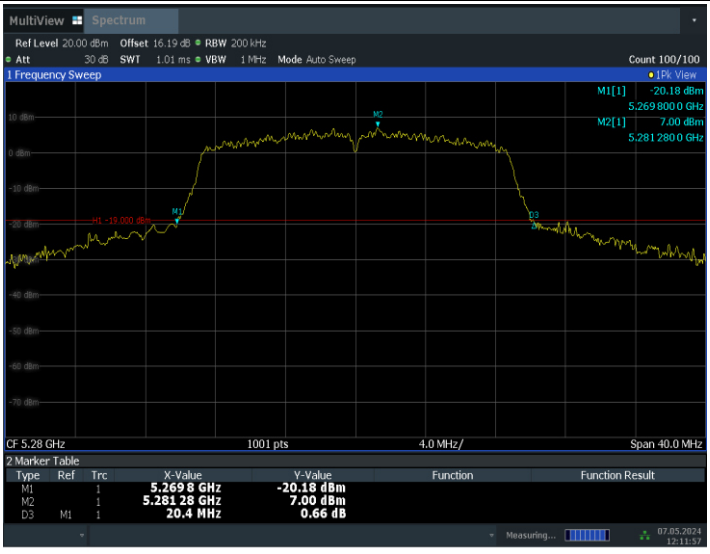

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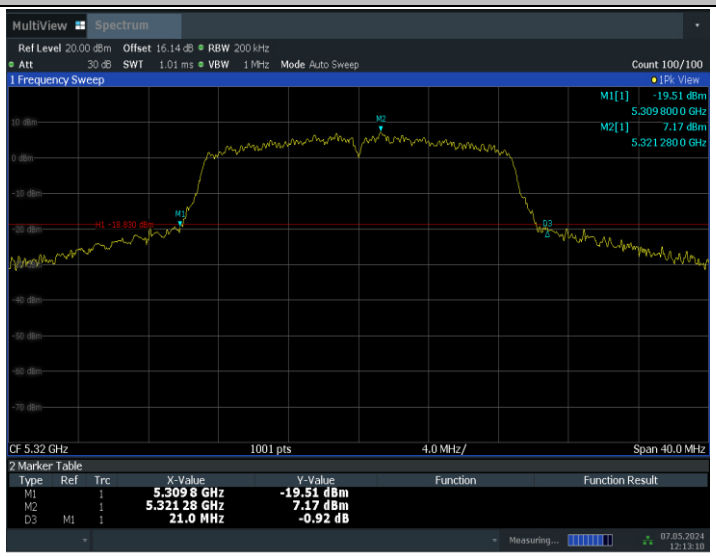 12:13:11 07.05.2024
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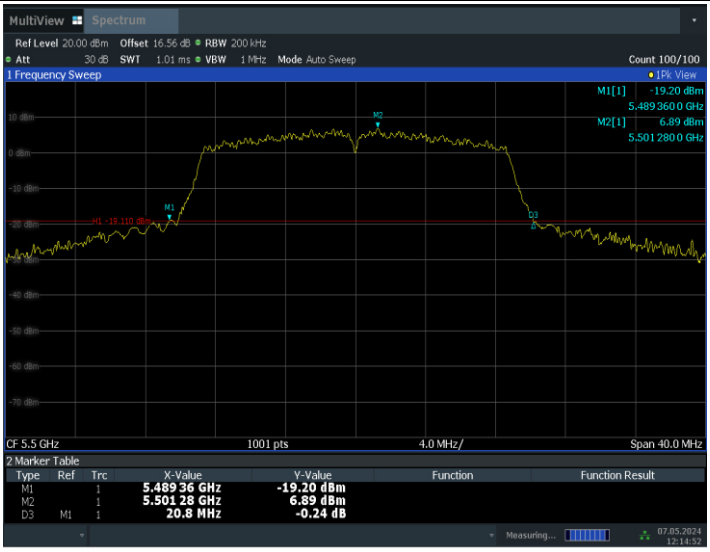 12:14:52 07.05.2024
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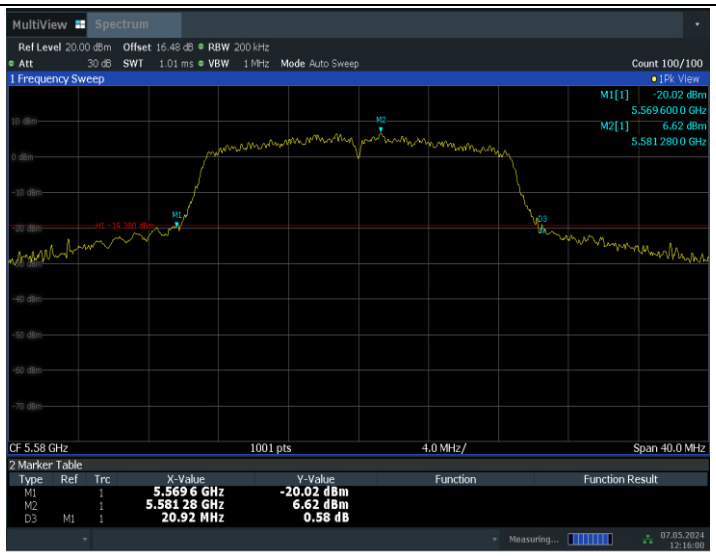

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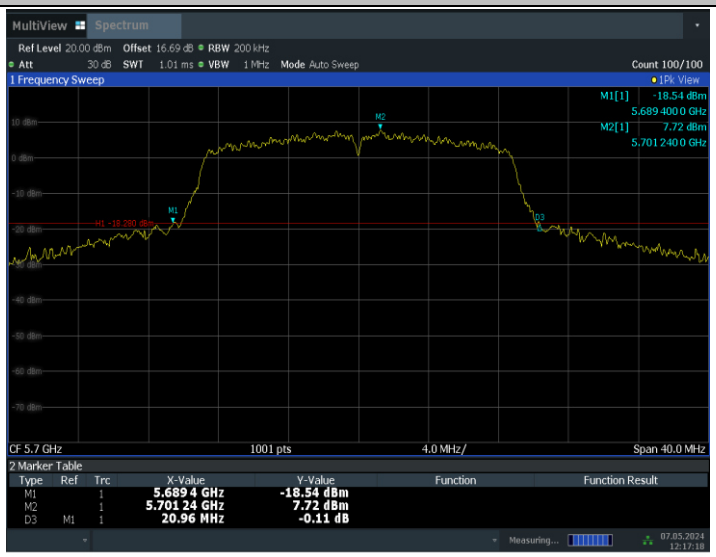

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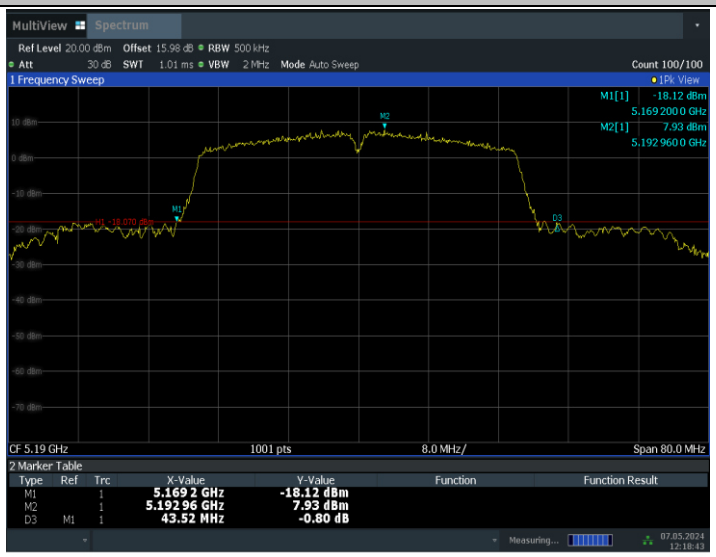 12:18:43 07.05.2024
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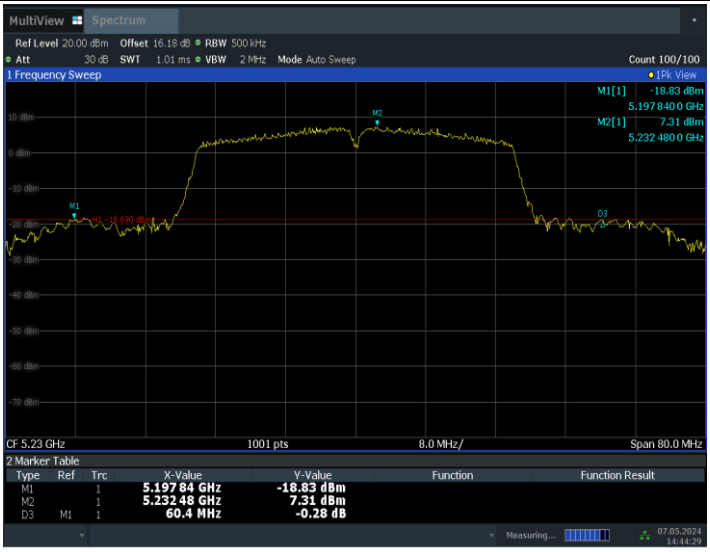 14:44:30 07.05.2024
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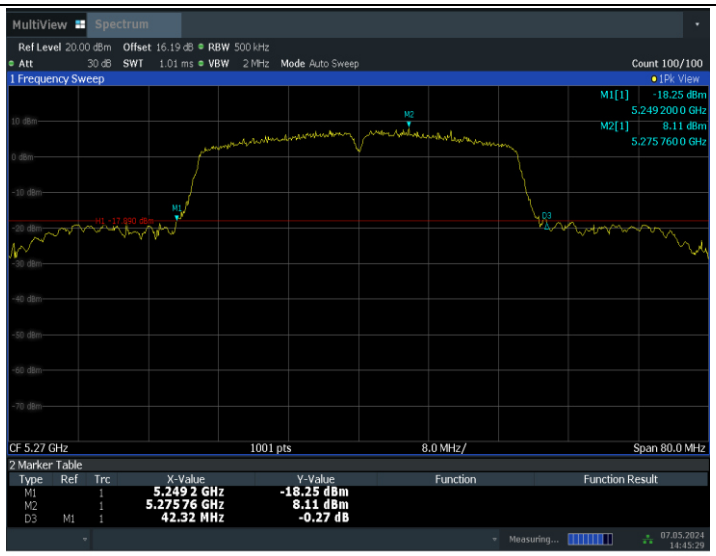

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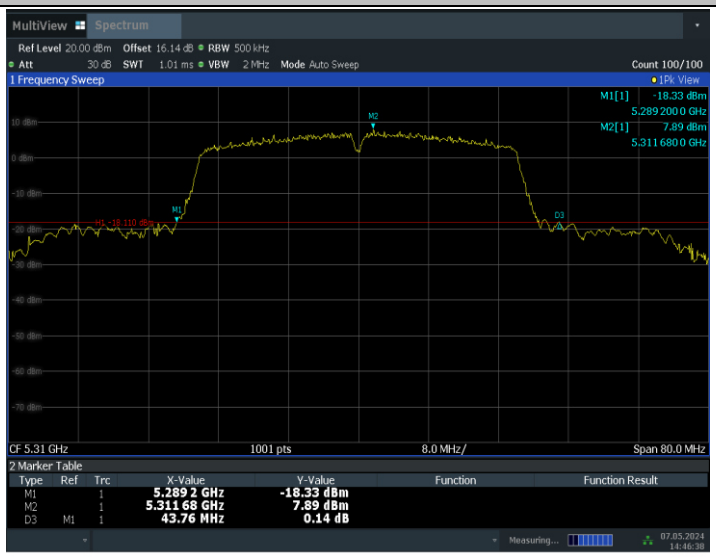

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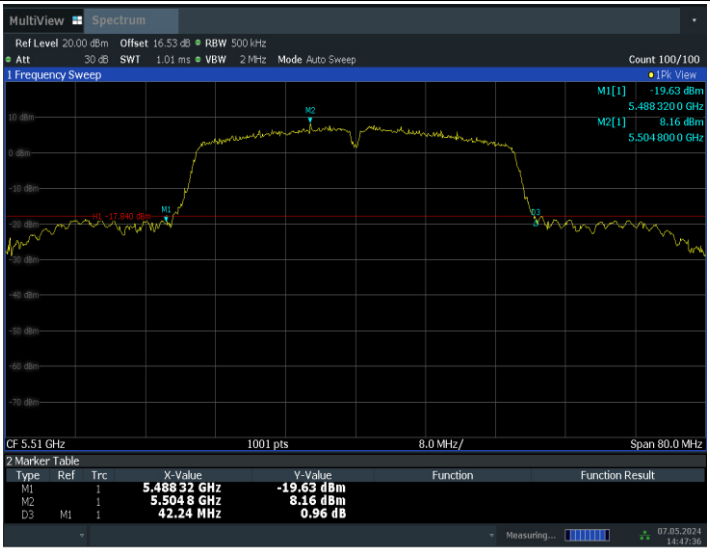

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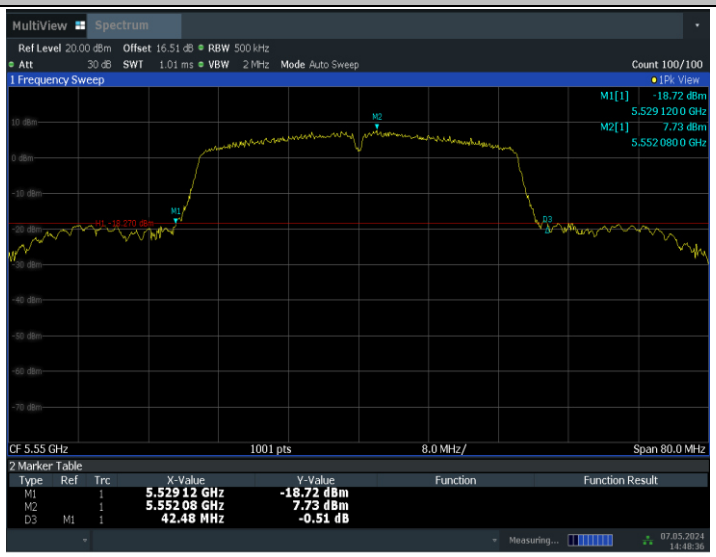 14:48:37 07.05.2024
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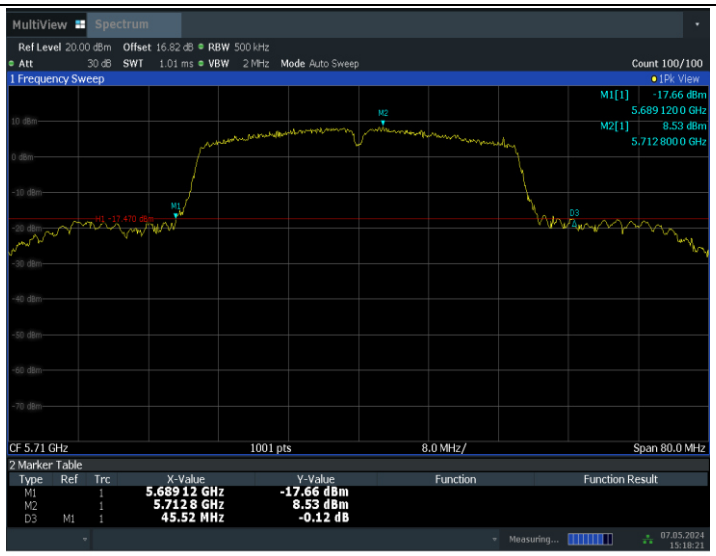

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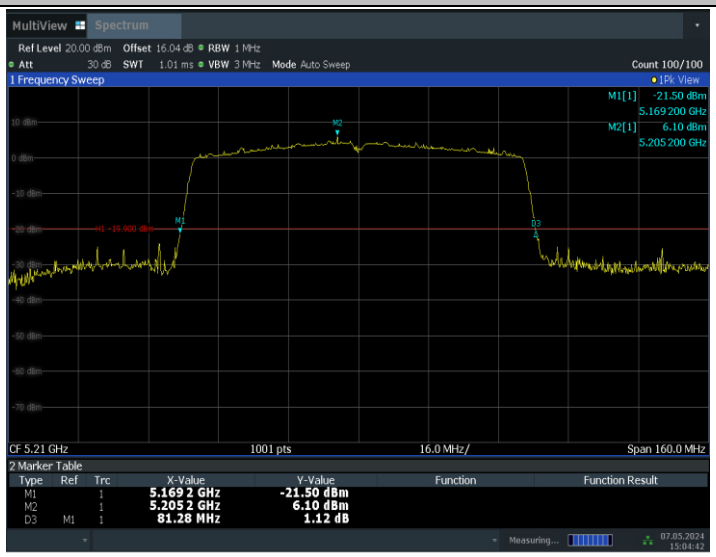

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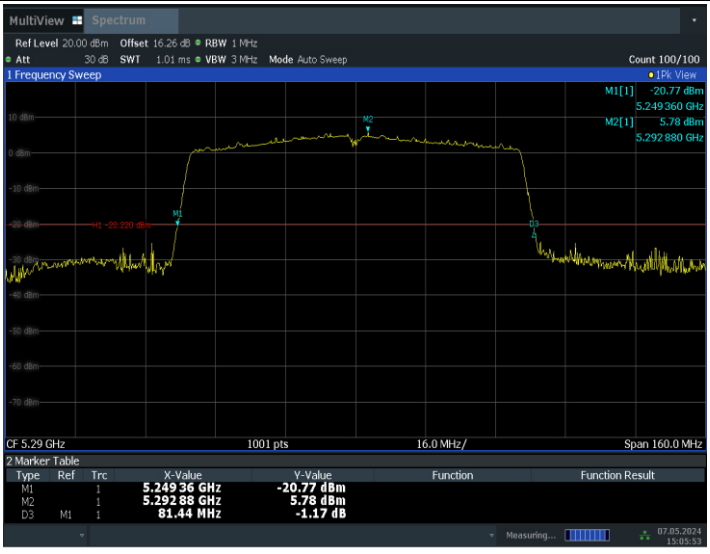

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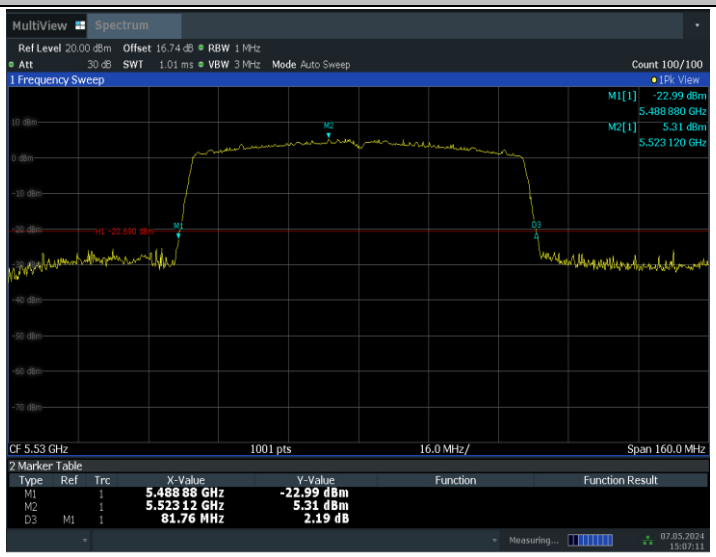 15:07:11 07.05.2024
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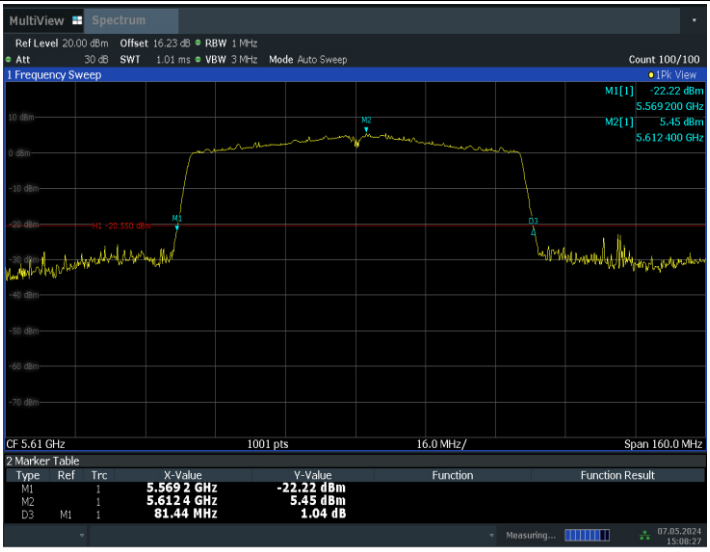 15:08:28 07.05.2024
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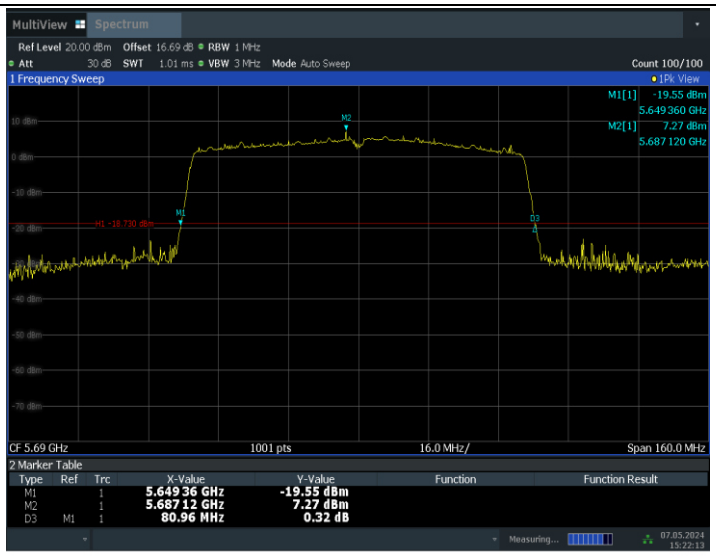

15:22:14 07.05.2024

A.5. Radiated Unwanted Emission

A.5.1 Limits

Unwanted Emissions in the unrestricted bands shall not exceed the limits that shown in 15.407:

Standard	Limit
FCC 47 CFR Part 15.407	(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Note: When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor (as defined in KDB 789033 II.G.2.d).