

FCC AND ISED CERTIFICATION TEST REPORT

FOR

Applicant	:	XGIMI Technology Co., Ltd
Address	:	Building No.4, Zone A, No.1129, Shijicheng Road, Chengdu High-tech Zone, Sichuan Pilot Free Trade Zone, China
Equipment under Test	:	Projector
Model No.	:	XK03T, XK04T
Trade Mark	:	XGIMI
FCC ID	:	2AFENXK03T
IC	:	27045-XK03T
Manufacturer	:	XGIMI Technology Co., Ltd
Address	:	Building No.4, Zone A, No.1129, Shijicheng Road, Chengdu High-tech Zone, Sichuan Pilot Free Trade Zone, China

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

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park,
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REPORT

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Test Report Declare

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Equipment under Test	:	Projector
Model No	:	XK03T, XK04T
Trade Mark	:	XGIMI
Manufacturer	:	XGIMI Technology Co., Ltd
Address	:	Building No.4, Zone A, No.1129, Shijicheng Road, Chengdu High-tech Zone, Sichuan Pilot Free Trade Zone, China

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 2 February 2017.

Test procedure used: ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, 558074 D01 15.247 Meas Guidance v05r02, 662911 D01 Multiple Transmitter Output v02r01

We Declare:

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

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

Report No.:	DDT-R22122619-2E09		
Date of Receipt:	Dec. 26, 2022	Date of Test:	Dec. 26, 2022~ Feb. 15, 2023

Prepared By:

Jacky Huang

Jacky Huang/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	Feb. 20, 2023	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Results
6dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.247 ANSI C63.10:2013 RSS-247 Issue 2	Pass
Conducted Peak Output Power	FCC Part 15: 15.247 ANSI C63.10:2013 RSS-247 Issue 2	Pass
Power Spectral Density	FCC Part 15:15.247 ANSI C63.10:2013 RSS-247 Issue 2	Pass
Band-edge and Spurious Emissions (Conducted)	FCC Part 15: 15.209 FCC Part 15: 15.247 ANSI C63.10: 2013 RSS-247 Issue 2 RSS-Gen Issue 5	Pass
Radiated Spurious Emissions	FCC Part 15: 15.247 ANSI C63.10:2013 RSS-247 Issue 2 RSS-Gen Issue 5	Pass
Radiated Band Edge Compliance	FCC Part 15: 15.209 FCC Part 15: 15.247 ANSI C63.10: 2013 RSS-247 Issue 2 RSS-Gen Issue 5	Pass
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10: 2013 RSS-Gen Issue 5	Pass
Antenna requirement	FCC Part 15: 15.203 RSS-Gen Issue 5	Pass

2. General Test Information

2.1. Description of EUT

EUT* Name	: Projector
Model Number	: XK03T, XK04T
Model Differences	: XK03T and XK04T are mainly in appearance (XK04T with TOF camera), resolution (XK03T is 720P, XK04T is 1080P), optical machine, driver plate, hardware version and main plate material number are different, other places and wireless parts are completely consistent. According exploratory explorer test, the difference between the two models only affects Radiated Spurious Emissions (below 1G) and Power Line Conducted Emission, so only these two items were tested on both models, the rest of the items tested only the worse model XK03T.
EUT function description	: Please reference user manual of this device
Power supply	: DC 20V from external switching power supply
Radio Technology	: IEEE 802.11b/g/n
Operation frequency	: IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412MHz-2462MHz IEEE 802.11n HT40: 2422MHz-2452MHz
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	: IEEE 802.11b: up to 11 Mbps IEEE 802.11g: up to 54 Mbps IEEE 802.11n HT20: up to 144.4 Mbps IEEE 802.11n HT40: up to 300 Mbps
Antenna Type	: Antenna 1: FPC antenna, Maximum PK gain: 2.7 dBi Antenna 2: FPC antenna, Maximum PK gain: 3.1dBi
Sample Number	: S22122619-09 for conducted, S22122619-17 and S22122619-18 for radiated

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

Note 2: EUT does not support beamforming and Simultaneous emission with 5G RLAN.

Antenna information			
	Ant1 gain	Ant2 gain	Directional gain
IEEE 802.11b	2.7	3.1	/
IEEE 802.11g	2.7	3.1	/
IEEE 802.11n HT20	2.7	3.1	2.9
IEEE 802.11n HT40	2.7	3.1	2.9

Note: Directional gain = $10 \log[(10G1/10 + 10G2/10 + \dots + 10GN/10)/NANT]$ dBi. The output signals of EUT are considered completely uncorrelated according to KDB 662911 D01, part F.

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	/	/

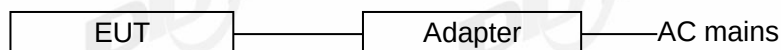
2.2. Accessories of EUT

Assistant equipment	Manufacturer	Model number	Serial No.	Other
Switching power supply	Huizhou Golden Lake Industrial Co., Ltd.	S065ARU200 0325	N/A	Input: 100-240V~, 50/60Hz, 1.8A MAX Output: 5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3.25A
Remote	XGIMI Technology Co., Ltd	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



Test software: WCN Combo Tool

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

The pathloss of external cable: 0.5dB (According to the manufacturer's claims).

Tested mode, channel, and data rate information				
Mode	Setting Tx Power	data rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11b	21	1	LCH: CH1	2412
	21	1	MCH: CH6	2437
	21	1	HCH: CH11	2462
IEEE 802.11g	1C	6	LCH: CH1	2412
	1C	6	MCH: CH6	2437
	1C	6	HCH: CH11	2462
IEEE 802.11n HT20	1D	MCS 8	LCH: CH1	2412
	1D	MCS 8	MCH: CH6	2437
	1D	MCS 8	HCH: CH11	2462
IEEE 802.11n HT40	1D	MCS 8	LCH: CH3	2422
	1D	MCS 8	MCH: CH6	2437
	1D	MCS 8	HCH: CH9	2452

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:	+15 °C to +35 °C
Humidity range:	20% to 75%
Pressure range:	86 kPa to 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, R-20155, G-20118

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum Analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz); 1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz); 1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 × 10 ⁻⁸ (Antenna couple method) 5.5 × 10 ⁻⁸ (Conducted method)
Conducted Spurious Emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz); 1.40 dB (3.6 GHz ≤ f < 8 GHz) 1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for Radio Frequency (RBW<20 KHz)	3×10 ⁻⁸
Temperature	0.4 °C
Humidity	2 %
Uncertainty for Radiation Emission Test (9khz -30 Mhz)	3.44 dB
Uncertainty for Radiation Emission Test (30 Mhz-1 Ghz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission Test (1 Ghz-40 Ghz)	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.

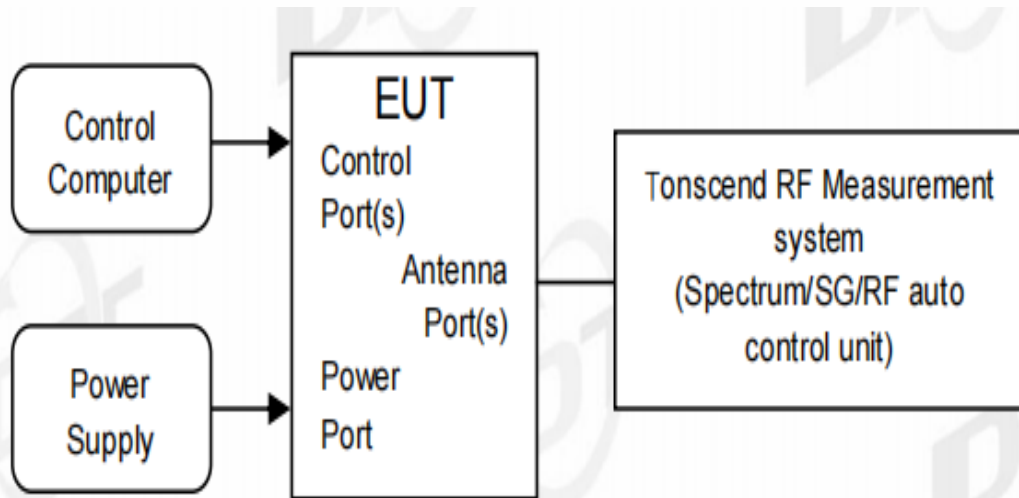
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 4#)					
MXA Signal Analyzer	Agilent	N9020A	MY49100362	Aug. 26, 2022	1 Year
Signal & Spectrum analyzer	R&S	FSV3044	101173	Apr. 13, 2022	1 Year
Wideband Radio Communication tester	R&S	CMW500	120259	May 26, 2022	1 Year
MXG Vector Signal Generator	Agilent	N5182B	MY59100192	May 18, 2022	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 28, 2022	1 Year
RF Control Unit	Tonscend	JS0806-2	21I8060485	May 28, 2022	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.6.88.0346	N/A	N/A
☑Radiation 3#chamber					
EMI Test Receiver	R&S	ESU	100472	May 18, 2022	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 18, 2022	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	Sep. 29, 2022	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Aug. 17, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Apr. 11, 2022	1 Year
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5M+ JCT26S-NJ-NJ-1.5M	4.5M+8M+1.5M+1.5M	Aug.17, 2022	1 Year
RF Cable	Yuhu Technology	JCTB810-NJ-NJ-9M	21123964	May 19, 2022	1 Year
RF Cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	21073466	Aug.17, 2022	1 Year
Test software	Tonscend	JS32-RE	V 5.0.0.1	N/A	N/A

☑Power Line Conducted Emissions Test 1#					
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year
LISN 1	R&S	ENV216	101109	Aug. 26, 2022	1 Year
LISN 2	R&S	ESH2-Z5	100309	Aug. 26, 2022	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Aug. 26, 2022	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Aug. 26, 2022	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 6dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz

4.3. Test procedure

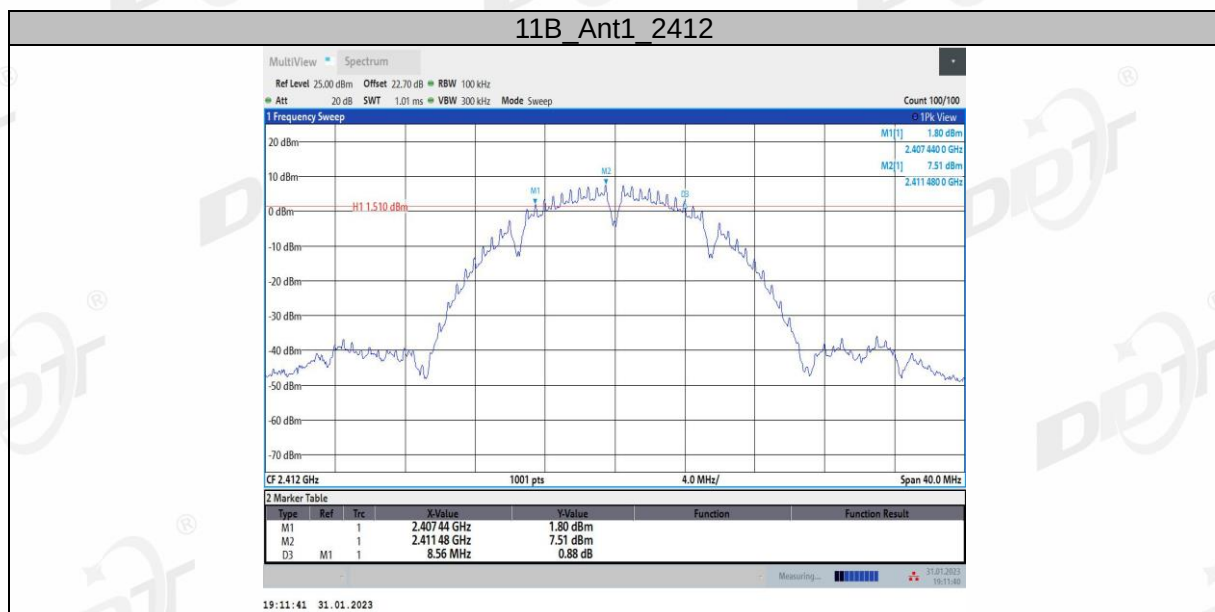
- (1) The test according to ANSI C63.10-2013 clause 11.8.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously
- (4) Use the following spectrum analyzer settings for 6 dB Bandwidth:

RBW:	100 kHz
VBW:	$\geq [3 \times \text{RBW}]$
Detector Mode:	peak
Sweep time:	auto
Trace mode	max hold
- (5) Allow the trace to stabilize, measure the 6 dB bandwidth of signal, and record the results in the report.

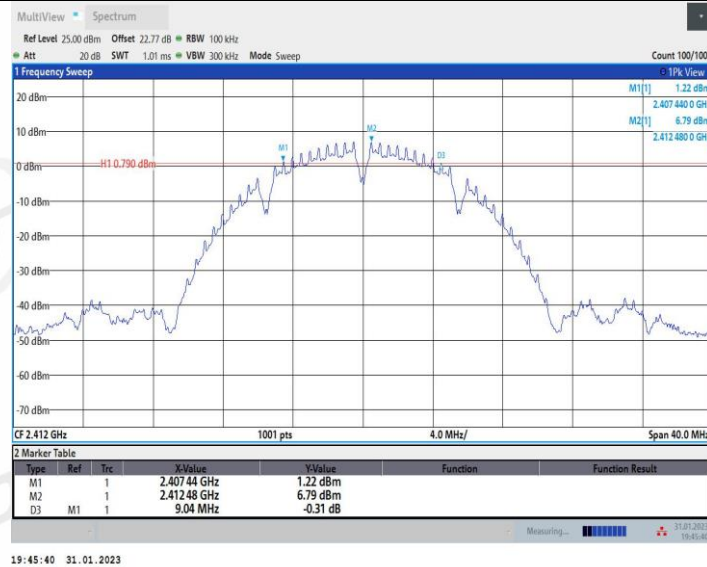
4.4. Test result

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	8.56	2407.44	2416.00	0.5	PASS
	Ant2	2412	9.04	2407.44	2416.48	0.5	PASS
	Ant1	2437	9.04	2432.44	2441.48	0.5	PASS
	Ant2	2437	9.04	2432.44	2441.48	0.5	PASS
	Ant1	2462	8.56	2457.44	2466.00	0.5	PASS
	Ant2	2462	9.04	2457.44	2466.48	0.5	PASS
11G	Ant1	2412	15.12	2404.40	2419.52	0.5	PASS
	Ant2	2412	15.12	2404.40	2419.52	0.5	PASS
	Ant1	2437	15.12	2429.40	2444.52	0.5	PASS
	Ant2	2437	15.32	2429.40	2444.72	0.5	PASS
	Ant1	2462	15.12	2454.40	2469.52	0.5	PASS
	Ant2	2462	15.32	2454.40	2469.72	0.5	PASS
11N20MIMO	Ant1	2412	15.12	2404.40	2419.52	0.5	PASS
	Ant2	2412	16.32	2403.80	2420.12	0.5	PASS
	Ant1	2437	15.12	2429.40	2444.52	0.5	PASS
	Ant2	2437	16.32	2428.80	2445.12	0.5	PASS
	Ant1	2462	15.12	2454.40	2469.52	0.5	PASS
	Ant2	2462	16.32	2453.80	2470.12	0.5	PASS
11N40MIMO	Ant1	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant2	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant1	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant2	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant1	2452	35.12	2434.48	2469.60	0.5	PASS
	Ant2	2452	35.12	2434.48	2469.60	0.5	PASS

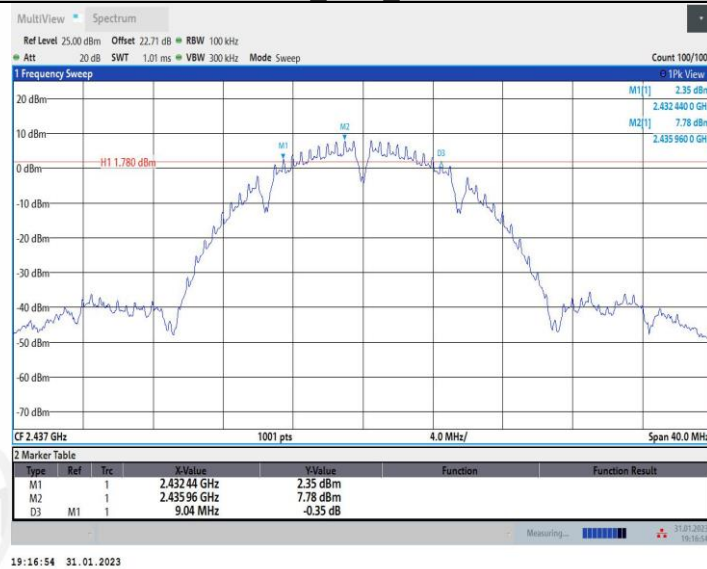
4.5. Test graphs



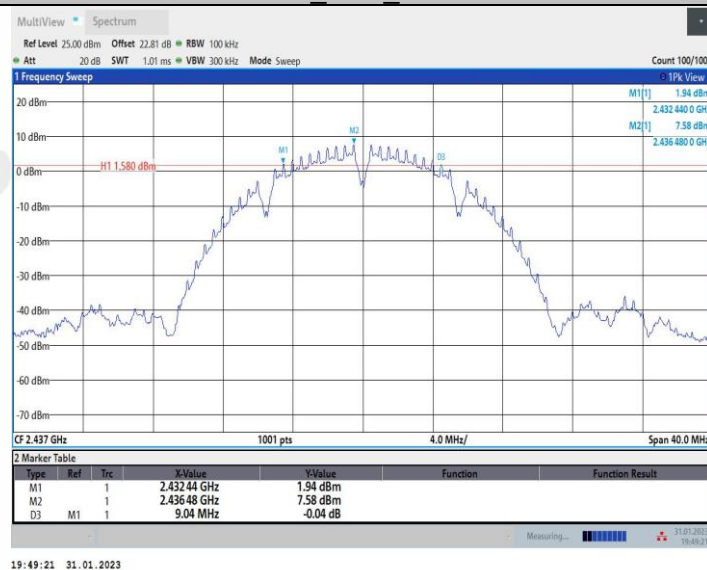
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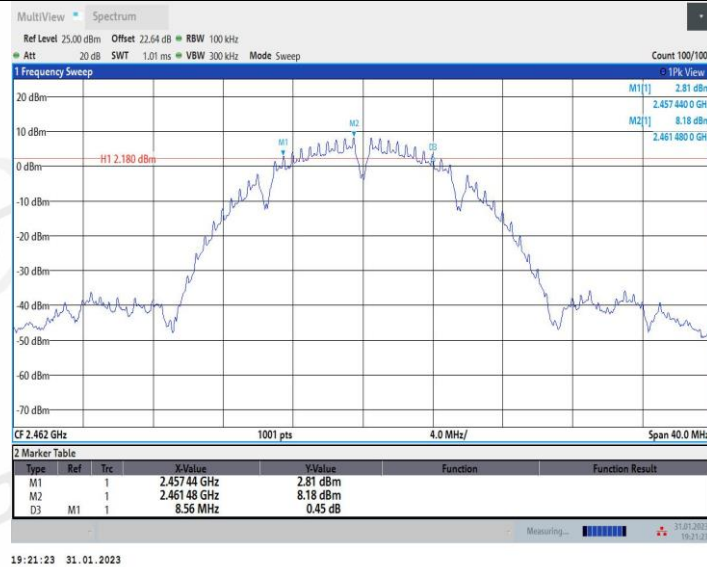
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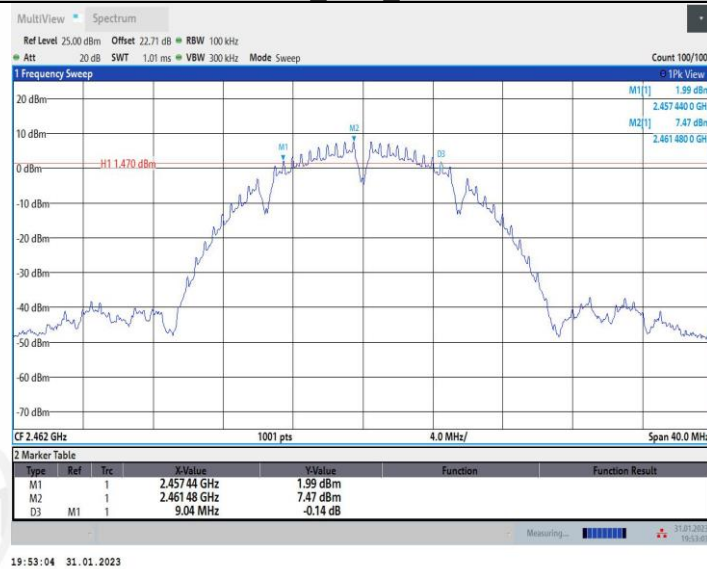
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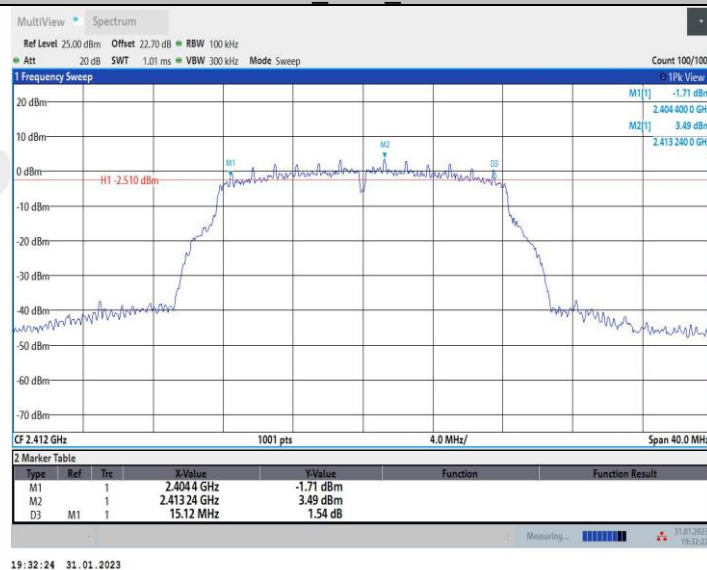
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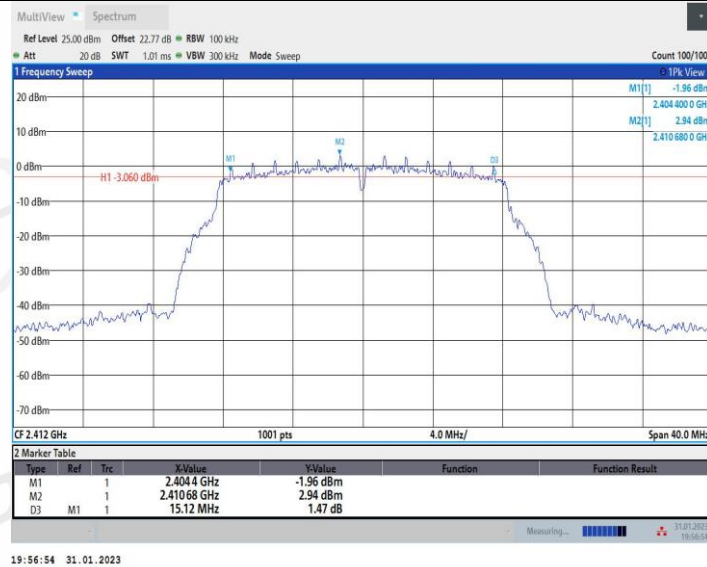
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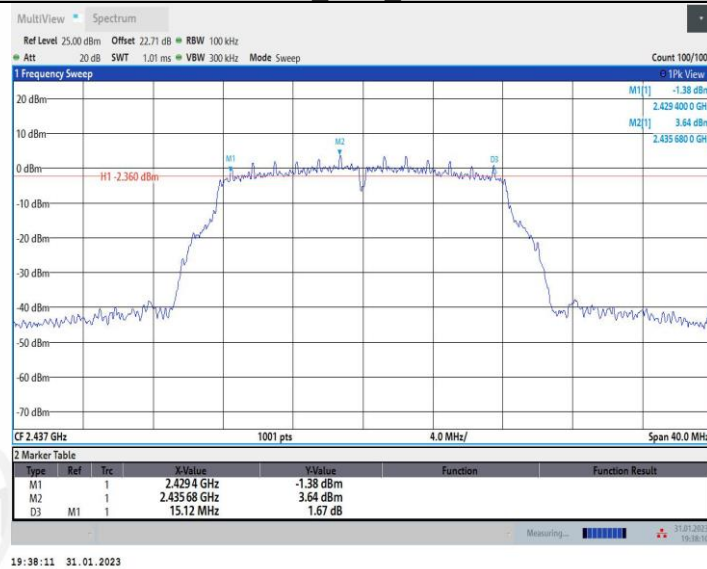
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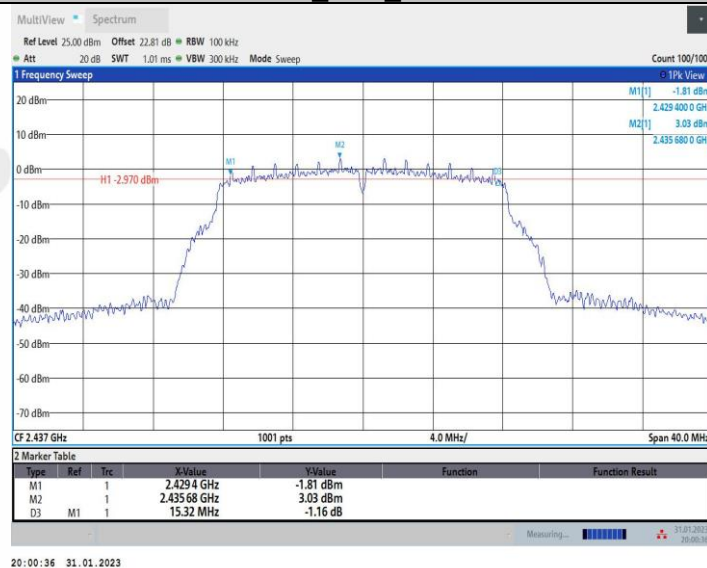
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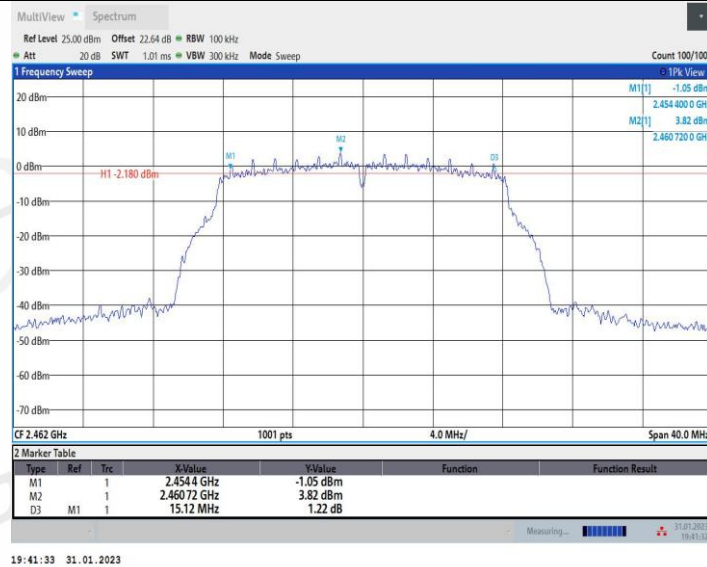
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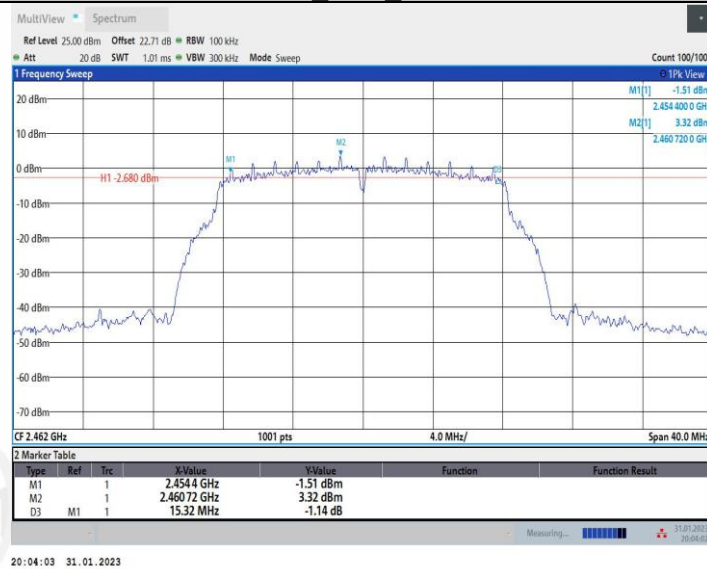
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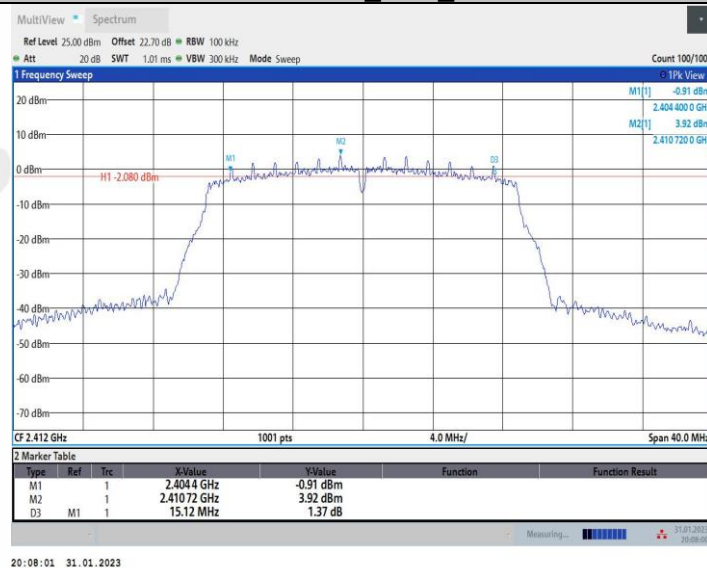
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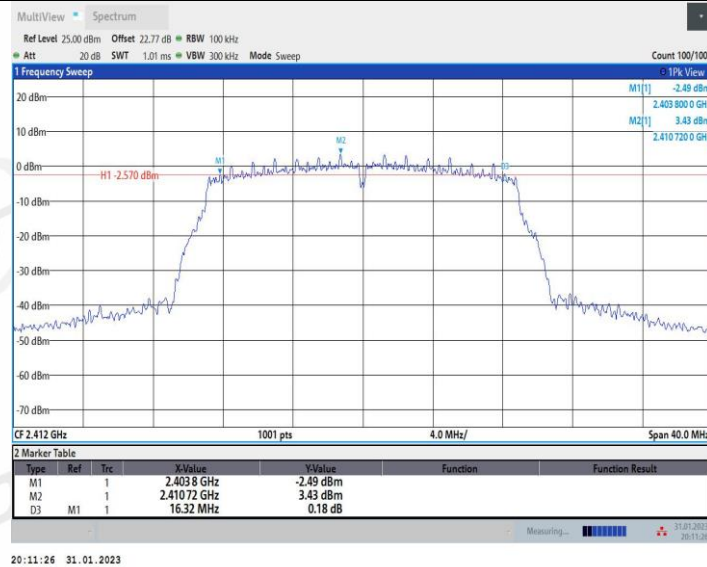
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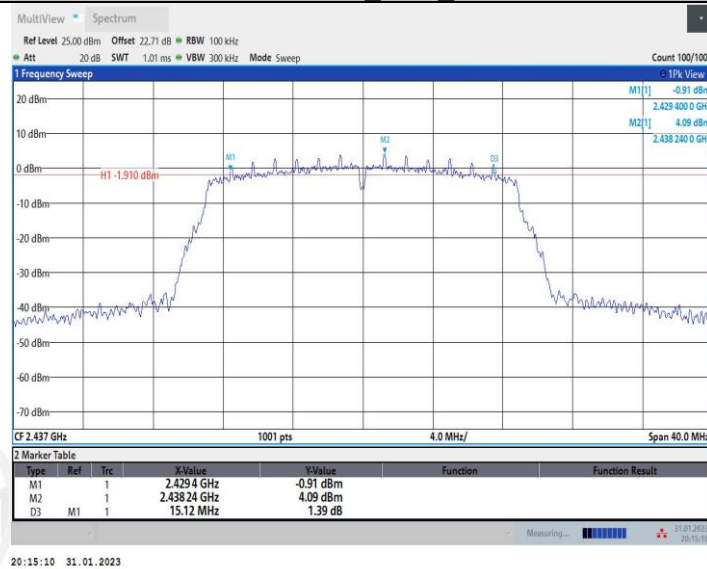
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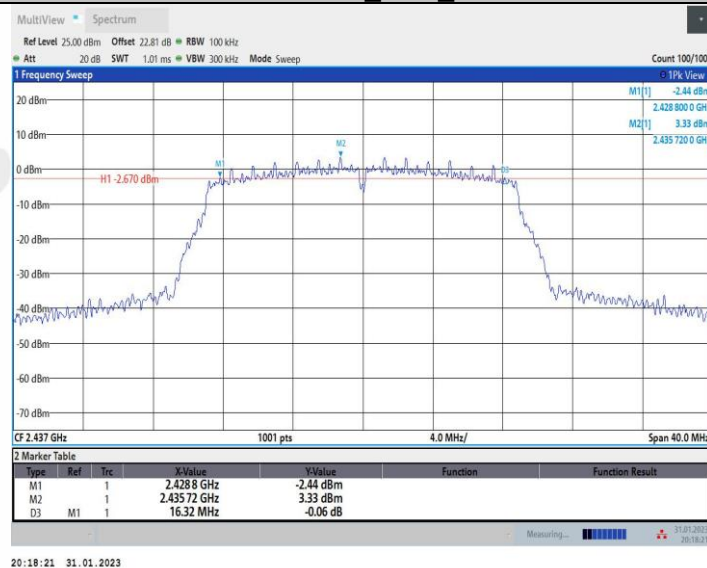
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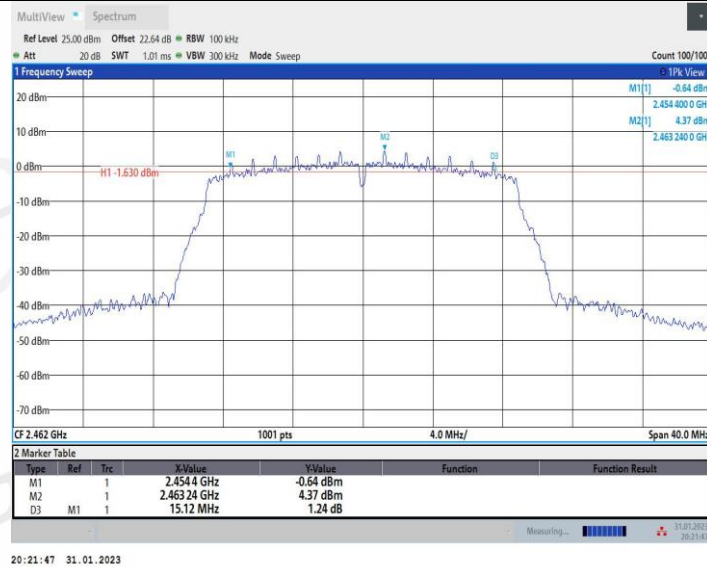
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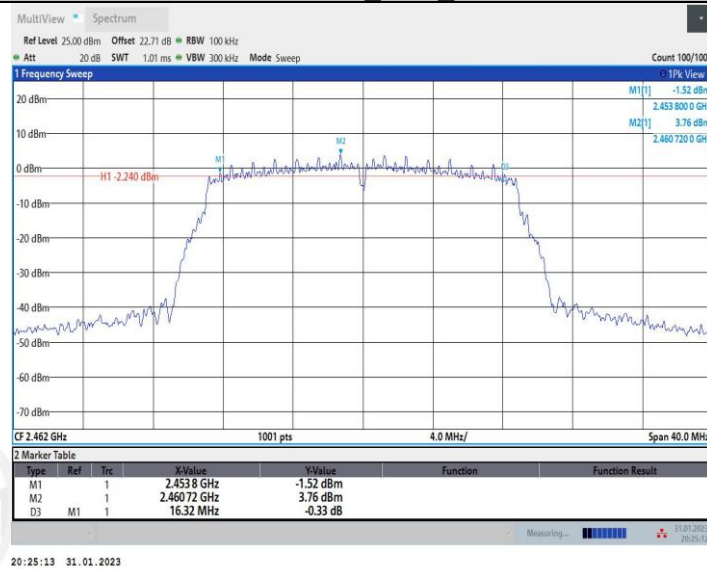
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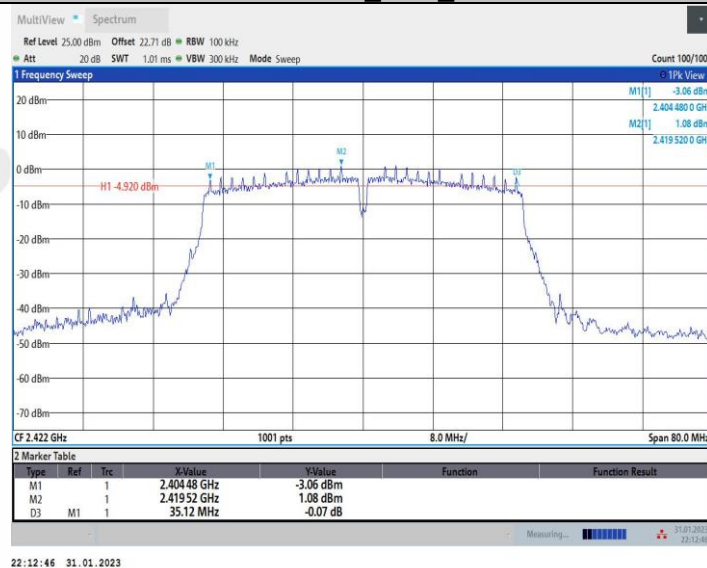
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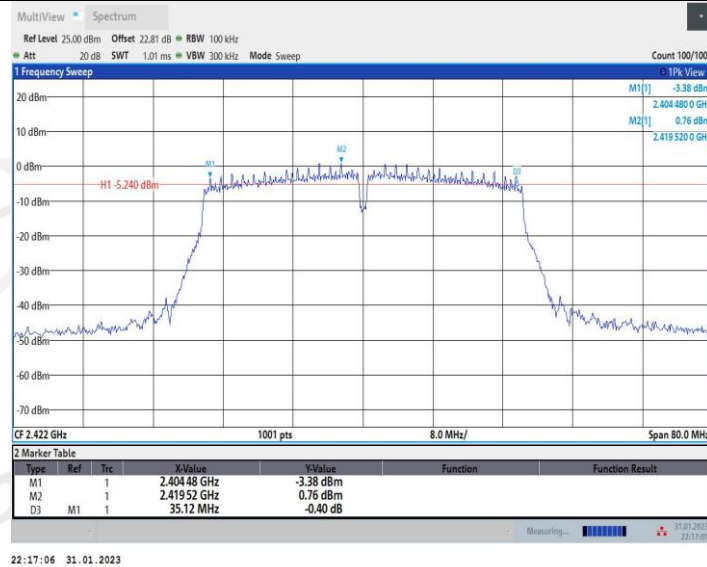
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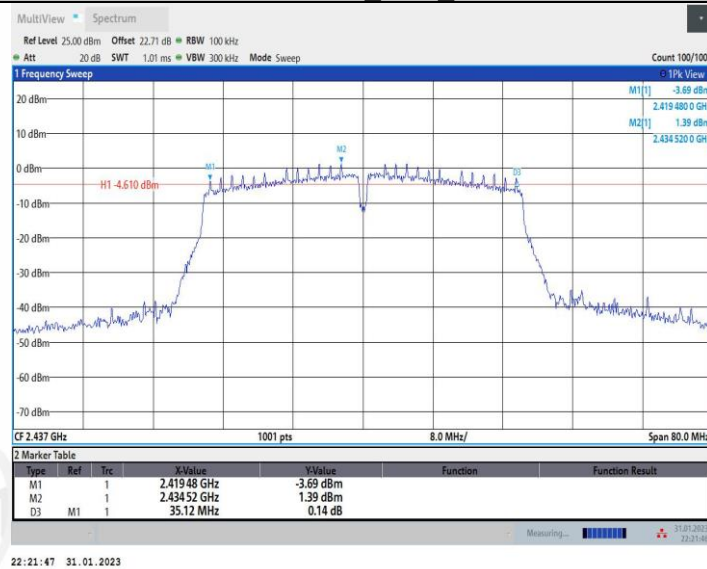
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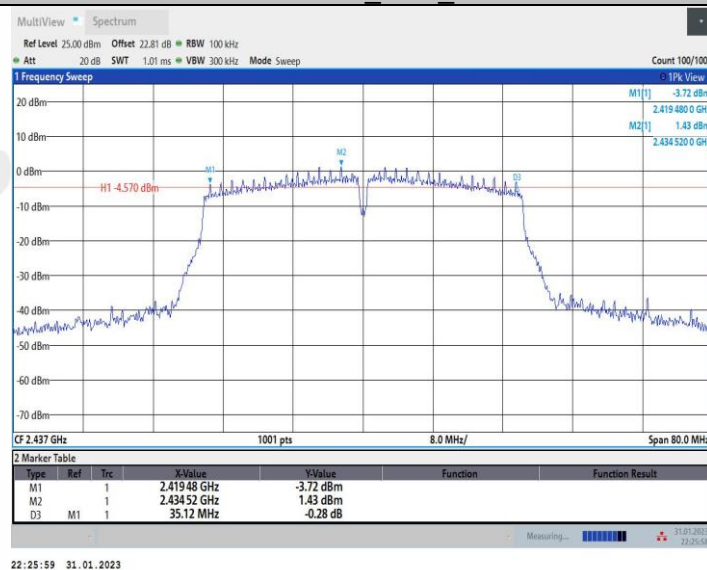
11N40MIMO_Ant2_2422



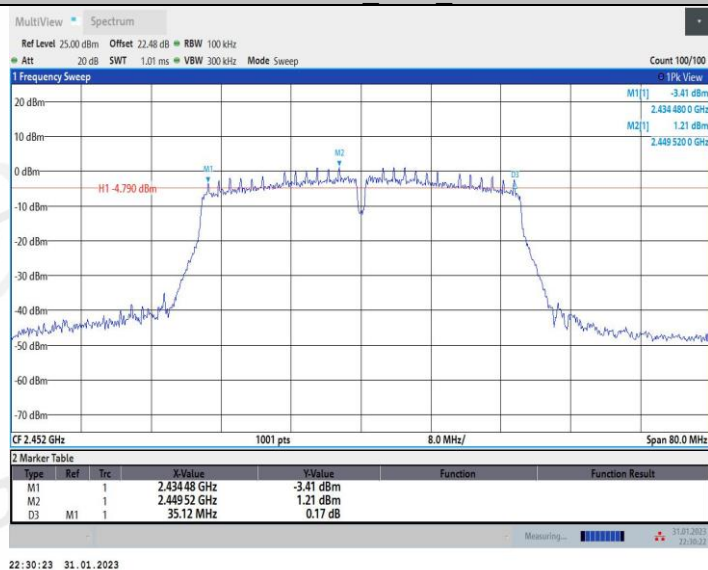
11N40MIMO_Ant1_2437



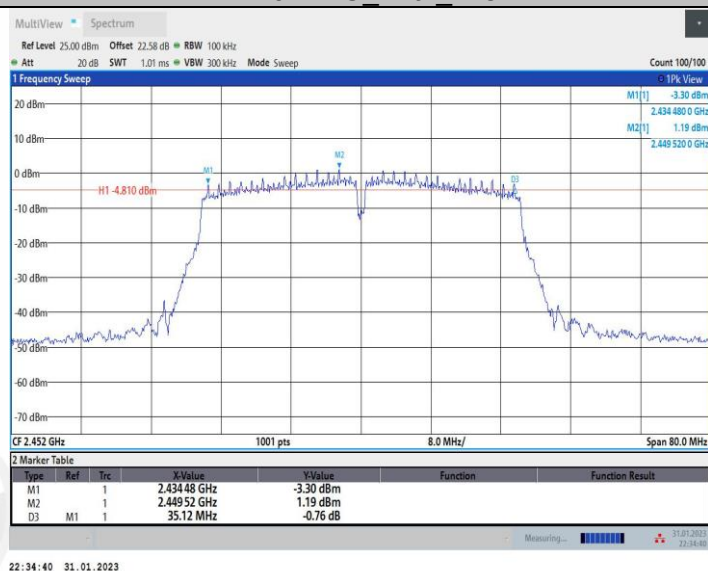
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452

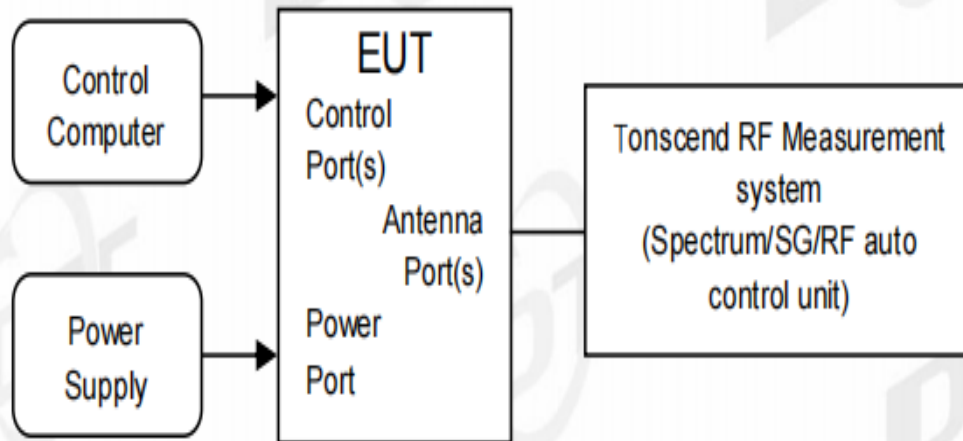


11N40MIMO_Ant2_2452



5. 99% Bandwidth

5.1. Block diagram of test setup



5.2. Limits

Just for Report.

5.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 6.9.3.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously
- (4) Use the following spectrum analyzer settings for the 99% Bandwidth:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 1.5 times and 5.0 times the OBW
Detector Mode:	peak
Sweep time:	auto
Trace mode	max hold
- (5) Allow the trace to stabilize, measure the 99% bandwidth of signal, and record the results in the report.

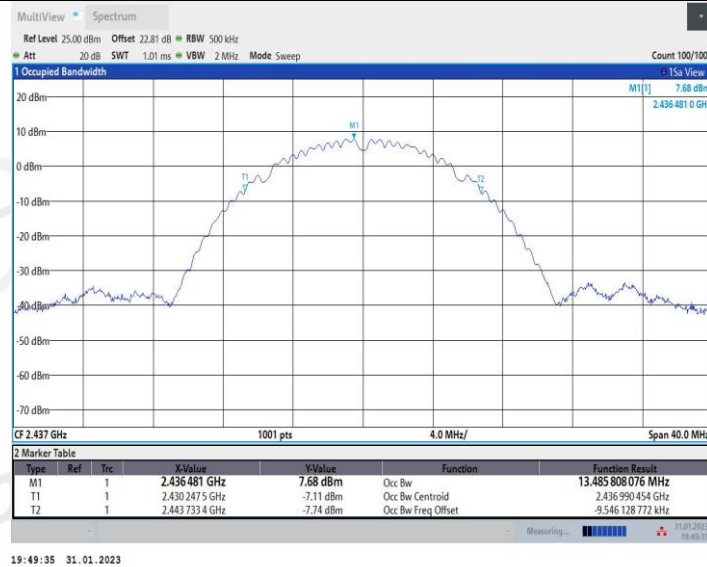
5.4. Test result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	13.391	2405.2471	2418.6383	---	---
	Ant2	2412	13.447	2405.2440	2418.6906	---	---
	Ant1	2437	13.437	2430.2438	2443.6811	---	---
	Ant2	2437	13.486	2430.2475	2443.7334	---	---
	Ant1	2462	13.461	2455.1984	2468.6589	---	---
	Ant2	2462	13.439	2455.2482	2468.6873	---	---
11G	Ant1	2412	17.111	2403.4506	2420.5617	---	---
	Ant2	2412	17.086	2403.4527	2420.5389	---	---
	Ant1	2437	17.188	2428.4122	2445.5999	---	---
	Ant2	2437	17.143	2428.4164	2445.5592	---	---
	Ant1	2462	17.096	2453.4357	2470.5318	---	---
	Ant2	2462	17.083	2453.4469	2470.5303	---	---
11N20MIMO	Ant1	2412	17.995	2402.9804	2420.9755	---	---
	Ant2	2412	17.76	2403.0887	2420.8488	---	---
	Ant1	2437	18.017	2427.9753	2445.9918	---	---
	Ant2	2437	17.773	2428.1170	2445.8896	---	---
	Ant1	2462	18.005	2452.9769	2470.9821	---	---
	Ant2	2462	17.766	2453.0832	2470.8496	---	---
11N40MIMO	Ant1	2422	36.335	2403.8598	2440.1951	---	---
	Ant2	2422	36.314	2403.8283	2440.1427	---	---
	Ant1	2437	36.181	2418.9155	2455.0964	---	---
	Ant2	2437	36.109	2418.9269	2455.0361	---	---
	Ant1	2452	36.232	2433.8842	2470.1159	---	---
	Ant2	2452	36.203	2433.8975	2470.1004	---	---

5.5. Test graphs

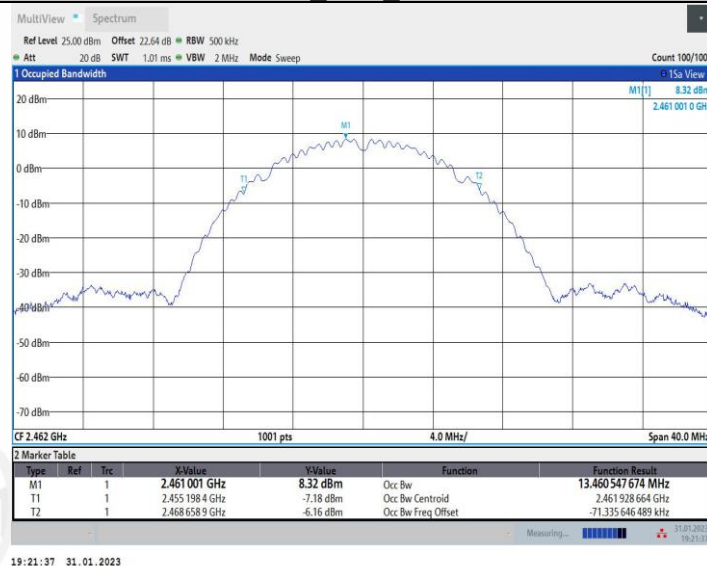


11B_Ant2_2437



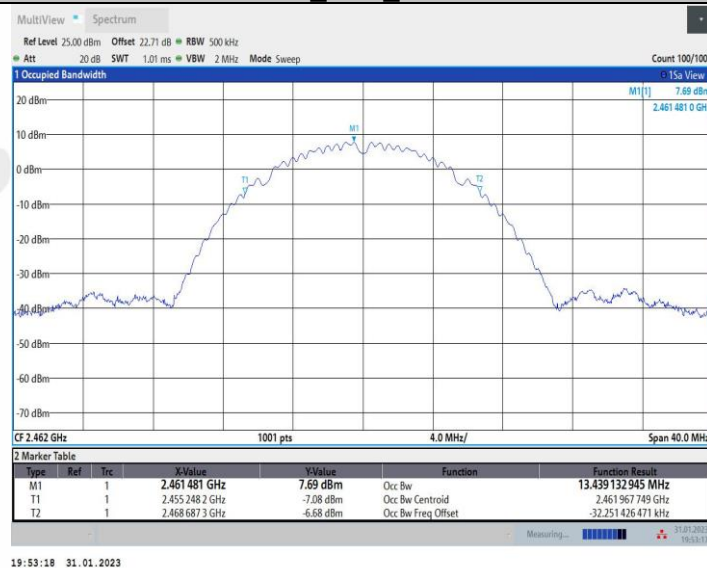
19:49:35 31.01.2023

11B_Ant1_2462



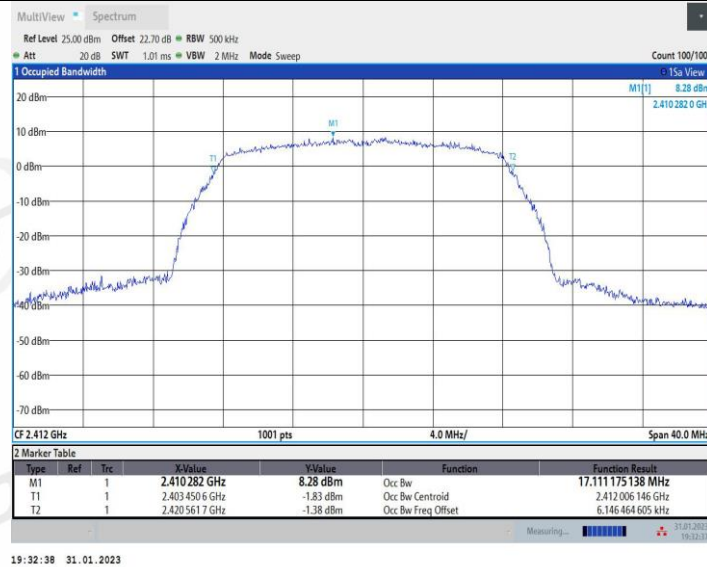
19:21:37 31.01.2023

11B_Ant2_2462

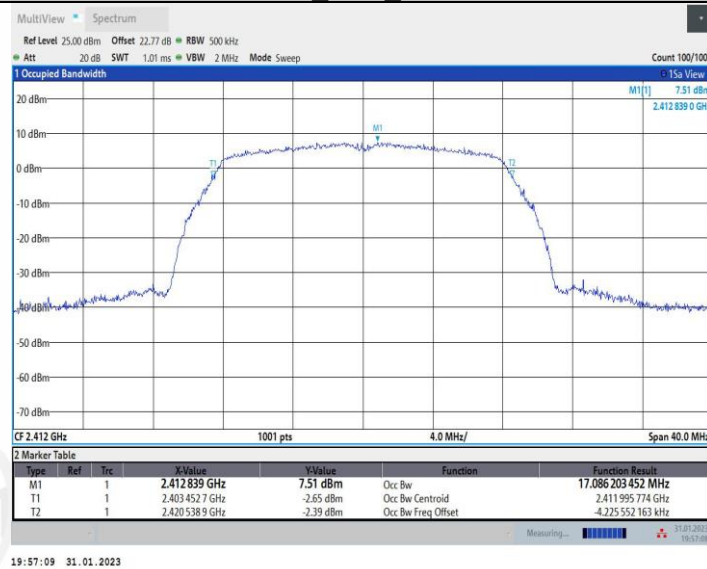


19:53:18 31.01.2023

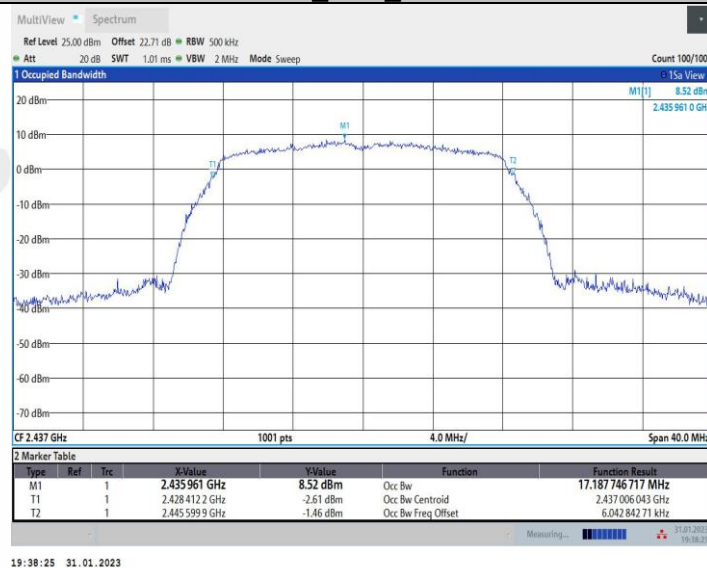
11G_Ant1_2412



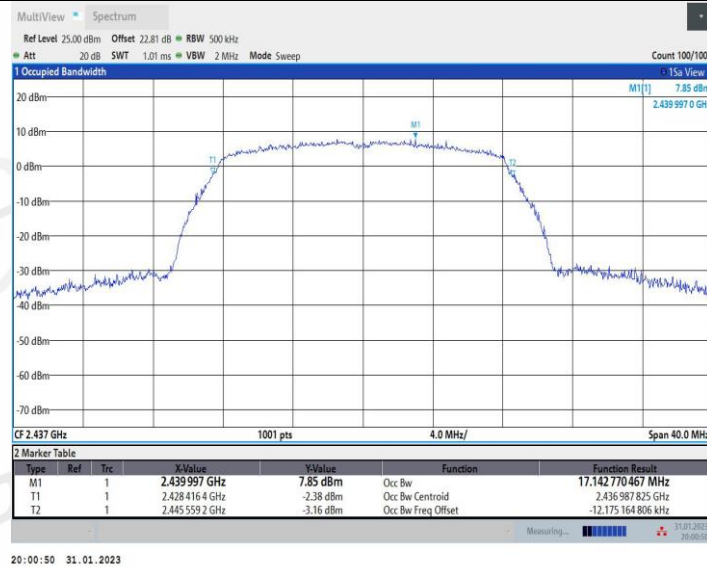
11G_Ant2_2412



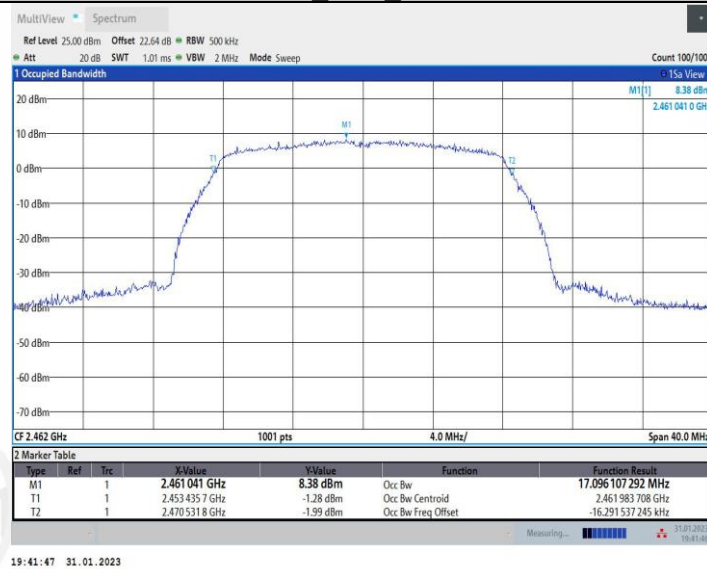
11G_Ant1_2437



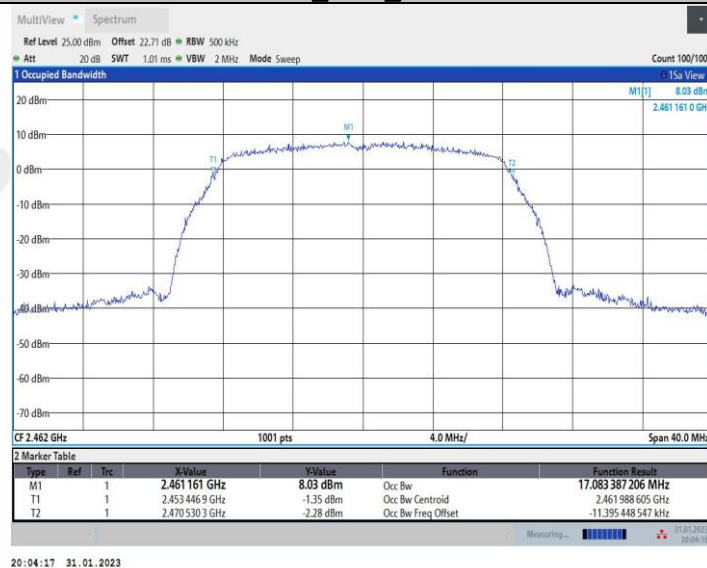
11G_Ant2_2437



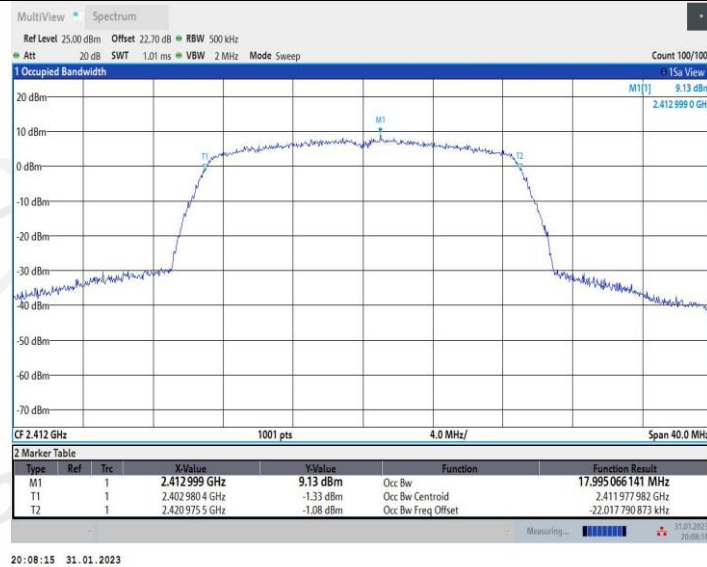
11G_Ant1_2462



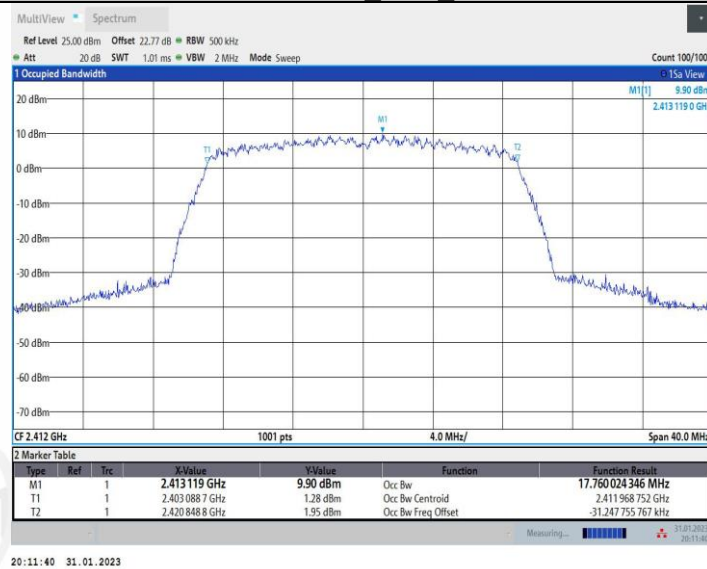
11G_Ant2_2462



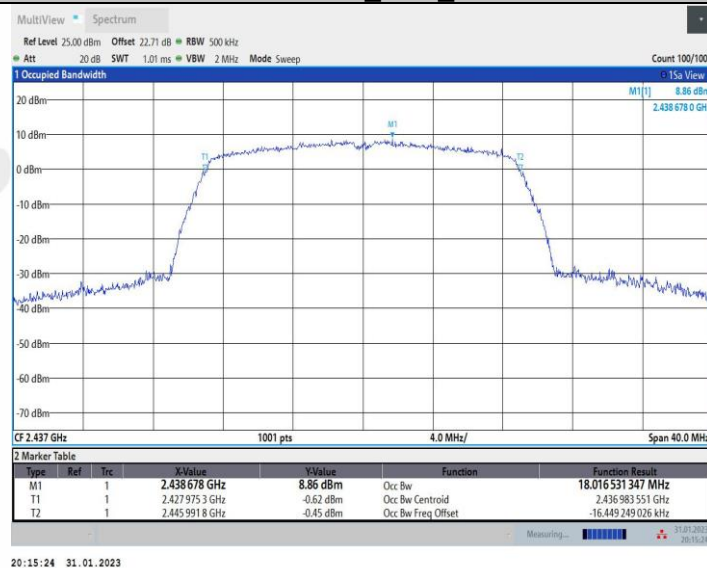
11N20MIMO_Ant1_2412



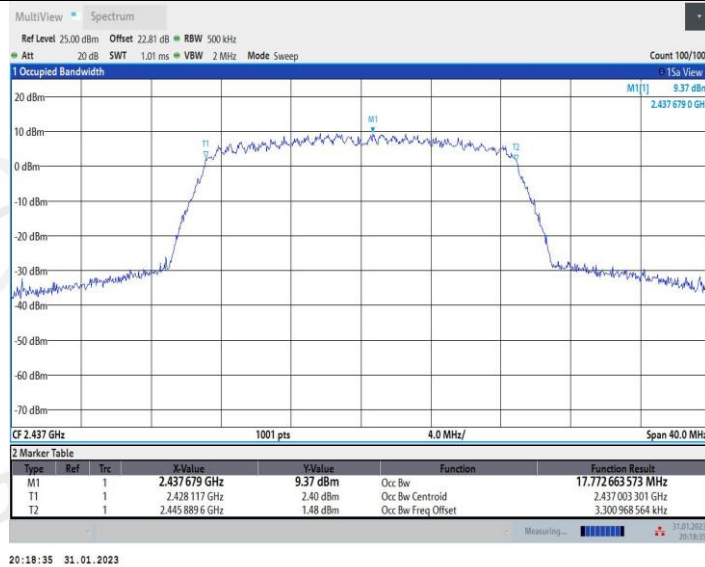
11N20MIMO_Ant2_2412



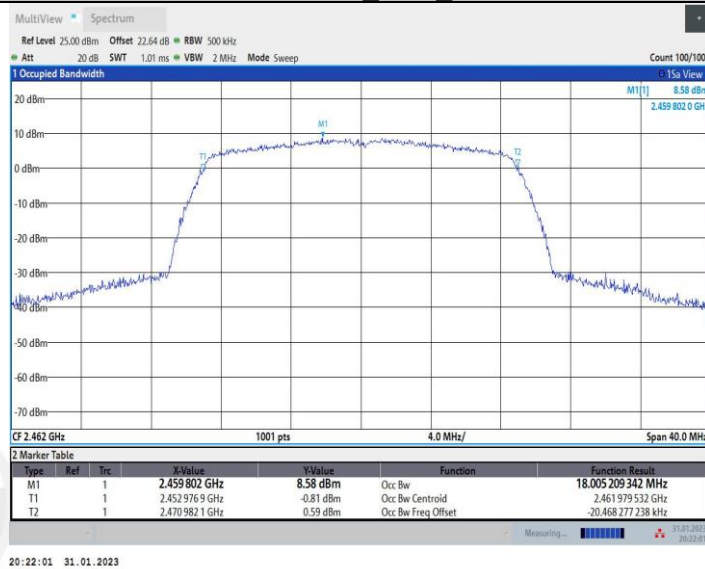
11N20MIMO_Ant1_2437



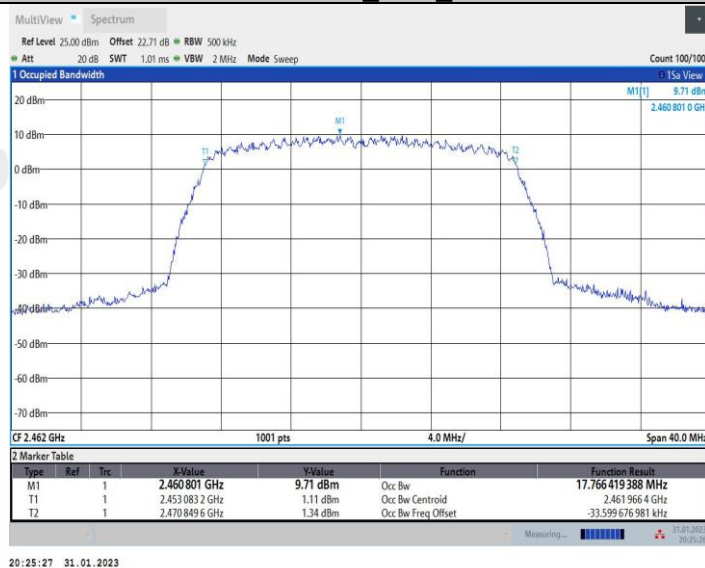
11N20MIMO_Ant2_2437



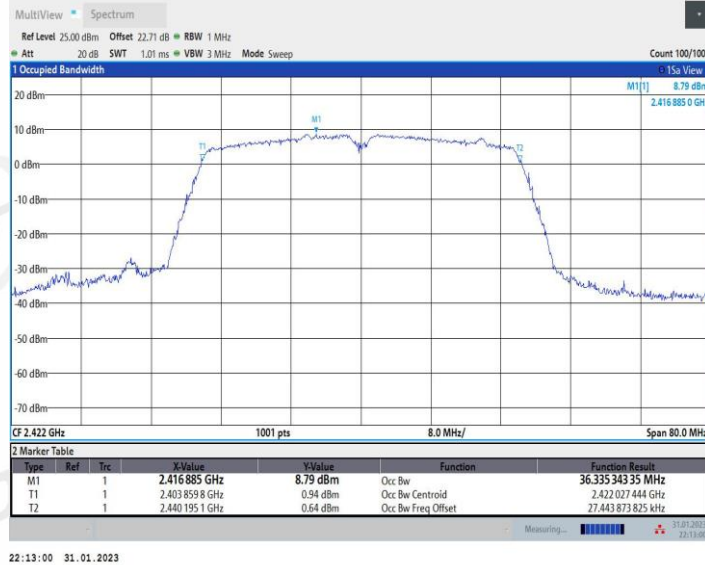
11N20MIMO_Ant1_2462



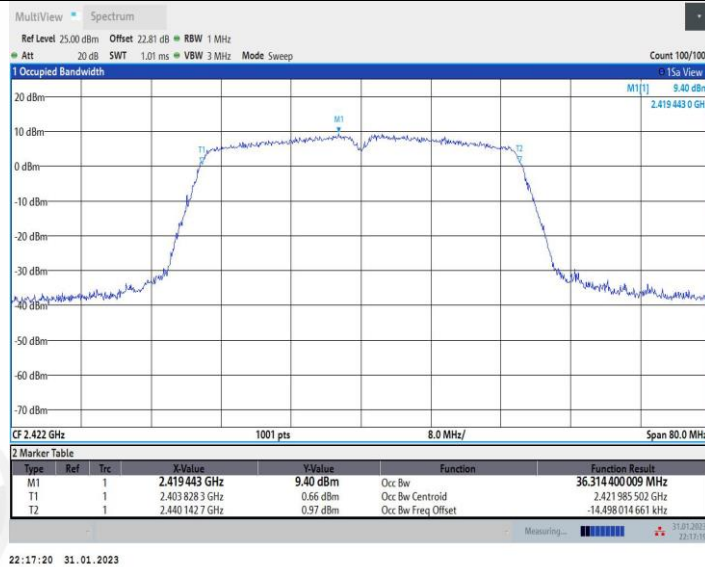
11N20MIMO_Ant2_2462



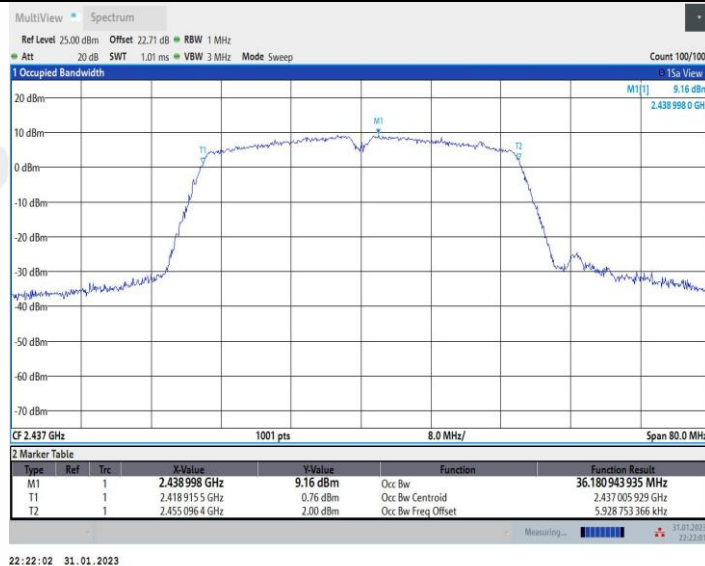
11N40MIMO_Ant1_2422



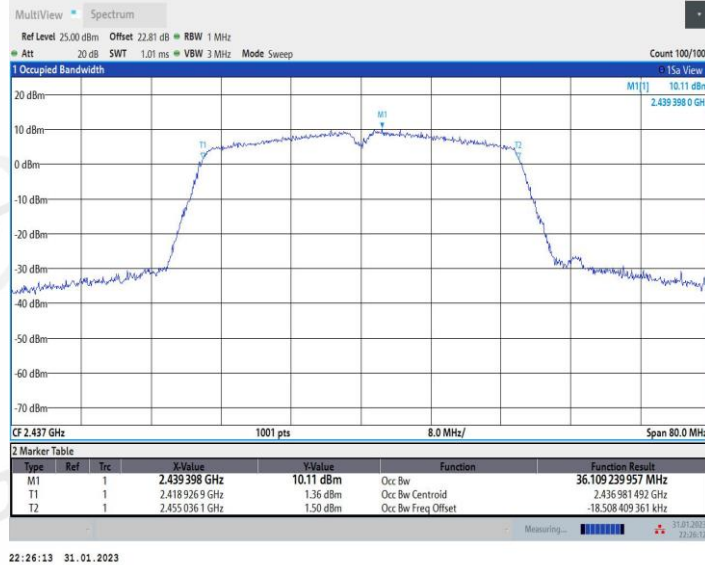
11N40MIMO_Ant2_2422



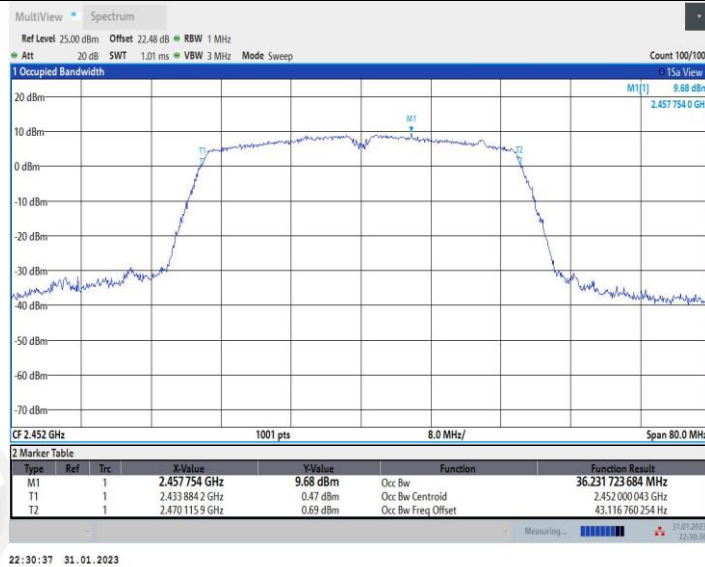
11N40MIMO_Ant1_2437



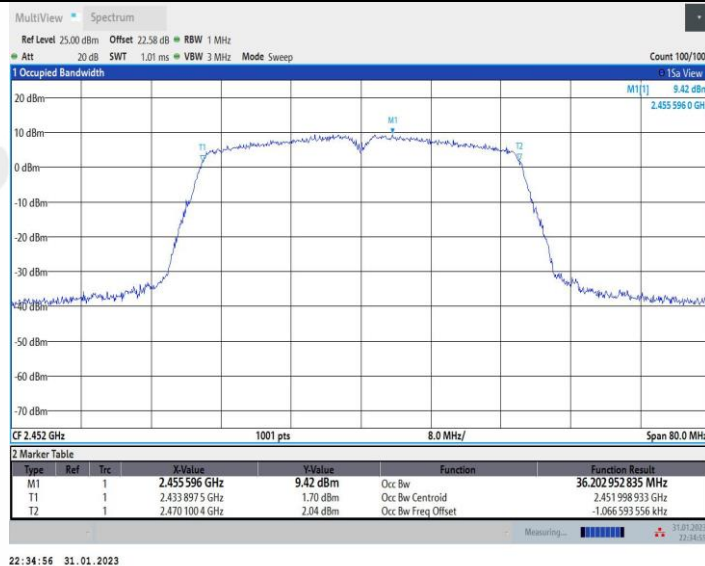
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452

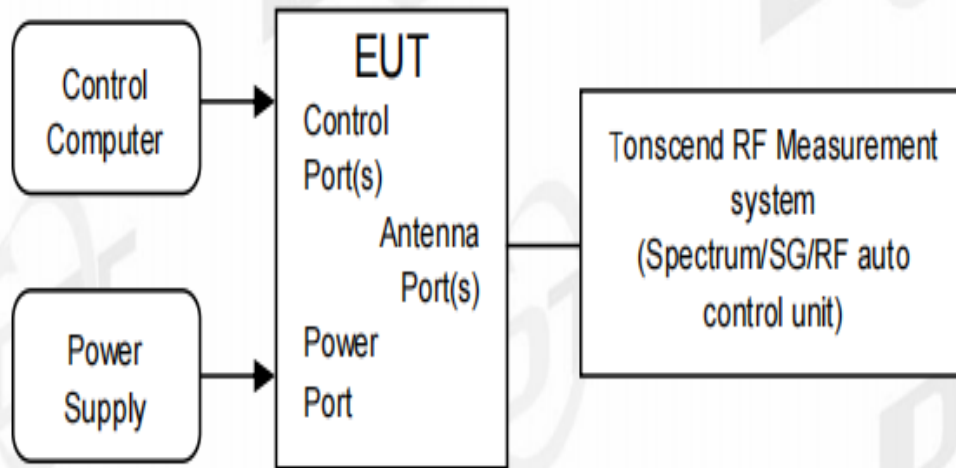


11N40MIMO_Ant2_2452



6. Conducted Output Power

6.1. Block diagram of test setup



6.2. Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 11.9.2.3.
- (2) Connect EUT's antenna output to RF power meter by RF cable, the path loss was compensated to the results.
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously, If the transmitter does not transmit continuously, measure the duty cycle, D, of the transmitter output signal.
- (4) Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
- (5) Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle.
- (6) Record the RF average power of each antenna port.

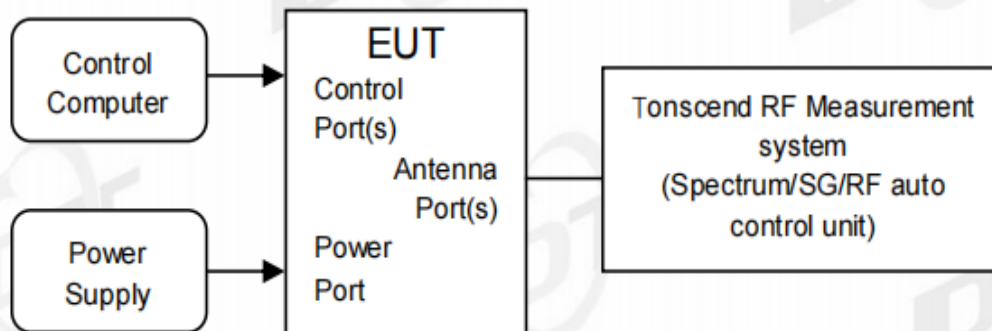
6.4. Test result average

Test Mode	Antenna	Frequency [MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	16.80	99.29	0.03	16.83	≤30.00	19.53	≤36.00	PASS
	Ant2	2412	16.49	99.29	0.03	16.52	≤30.00	19.62	≤36.00	PASS
	Ant1	2437	17.31	99.29	0.03	17.34	≤30.00	20.04	≤36.00	PASS
	Ant2	2437	16.89	99.05	0.04	16.93	≤30.00	20.03	≤36.00	PASS
	Ant1	2462	17.21	99.29	0.03	17.24	≤30.00	19.94	≤36.00	PASS
	Ant2	2462	16.73	99.29	0.03	16.76	≤30.00	19.86	≤36.00	PASS
11G	Ant1	2412	14.77	95.24	0.21	14.98	≤30.00	17.68	≤36.00	PASS
	Ant2	2412	14.48	95.24	0.21	14.69	≤30.00	17.79	≤36.00	PASS
	Ant1	2437	14.80	95.21	0.21	15.01	≤30.00	17.71	≤36.00	PASS
	Ant2	2437	14.43	95.24	0.21	14.64	≤30.00	17.74	≤36.00	PASS
	Ant1	2462	14.93	95.21	0.21	15.14	≤30.00	17.84	≤36.00	PASS
	Ant2	2462	14.52	95.24	0.21	14.73	≤30.00	17.83	≤36.00	PASS
11N20 MIMO	Ant1	2412	14.93	90.67	0.43	15.36	≤30.00	18.06	≤36.00	PASS
	Ant2	2412	14.76	89.33	0.49	15.25	≤30.00	18.35	≤36.00	PASS
	total	2412	---	---	---	18.32	≤30.00	21.22	≤36.00	PASS
	Ant1	2437	15.09	90.54	0.43	15.52	≤30.00	18.22	≤36.00	PASS
	Ant2	2437	14.45	90.54	0.43	14.88	≤30.00	17.98	≤36.00	PASS
	total	2437	---	---	---	18.22	≤30.00	21.11	≤36.00	PASS
	Ant1	2462	15.17	89.33	0.49	15.66	≤30.00	18.36	≤36.00	PASS
	Ant2	2462	14.85	90.54	0.43	15.28	≤30.00	18.38	≤36.00	PASS
	total	2462	---	---	---	18.48	≤30.00	21.38	≤36.00	PASS
11N40 MIMO	Ant1	2422	14.90	83.33	0.79	15.69	≤30.00	18.39	≤36.00	PASS
	Ant2	2422	14.69	83.33	0.79	15.48	≤30.00	18.58	≤36.00	PASS
	total	2422	---	---	---	18.60	≤30.00	21.50	≤36.00	PASS
	Ant1	2437	15.07	80.95	0.92	15.99	≤30.00	18.69	≤36.00	PASS
	Ant2	2437	14.78	80.95	0.92	15.70	≤30.00	18.80	≤36.00	PASS
	total	2437	---	---	---	18.86	≤30.00	21.76	≤36.00	PASS
	Ant1	2452	15.18	80.95	0.92	16.10	≤30.00	18.80	≤36.00	PASS
	Ant2	2452	14.78	80.95	0.92	15.70	≤30.00	18.80	≤36.00	PASS
	total	2452	---	---	---	18.91	≤30.00	21.81	≤36.00	PASS

Note: EIRP (dBm)=Conducted Output Power (dBm)+ Antenna Gain (dBi)

7. Power Spectral Density

7.1. Block diagram of test setup



7.2. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

7.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 11.10.5.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
- (4) Use the following spectrum analyzer settings for Power Spectral Density measurement:

Center frequency	DTS Channel center frequency
RBW:	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	RMS
Sweep time:	auto
Trace mode	max hold
Trace	Employ trace averaging (rms) mode over a minimum of 100 traces.

- (5) Add $[10 \log (1 / D)]$, where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time.

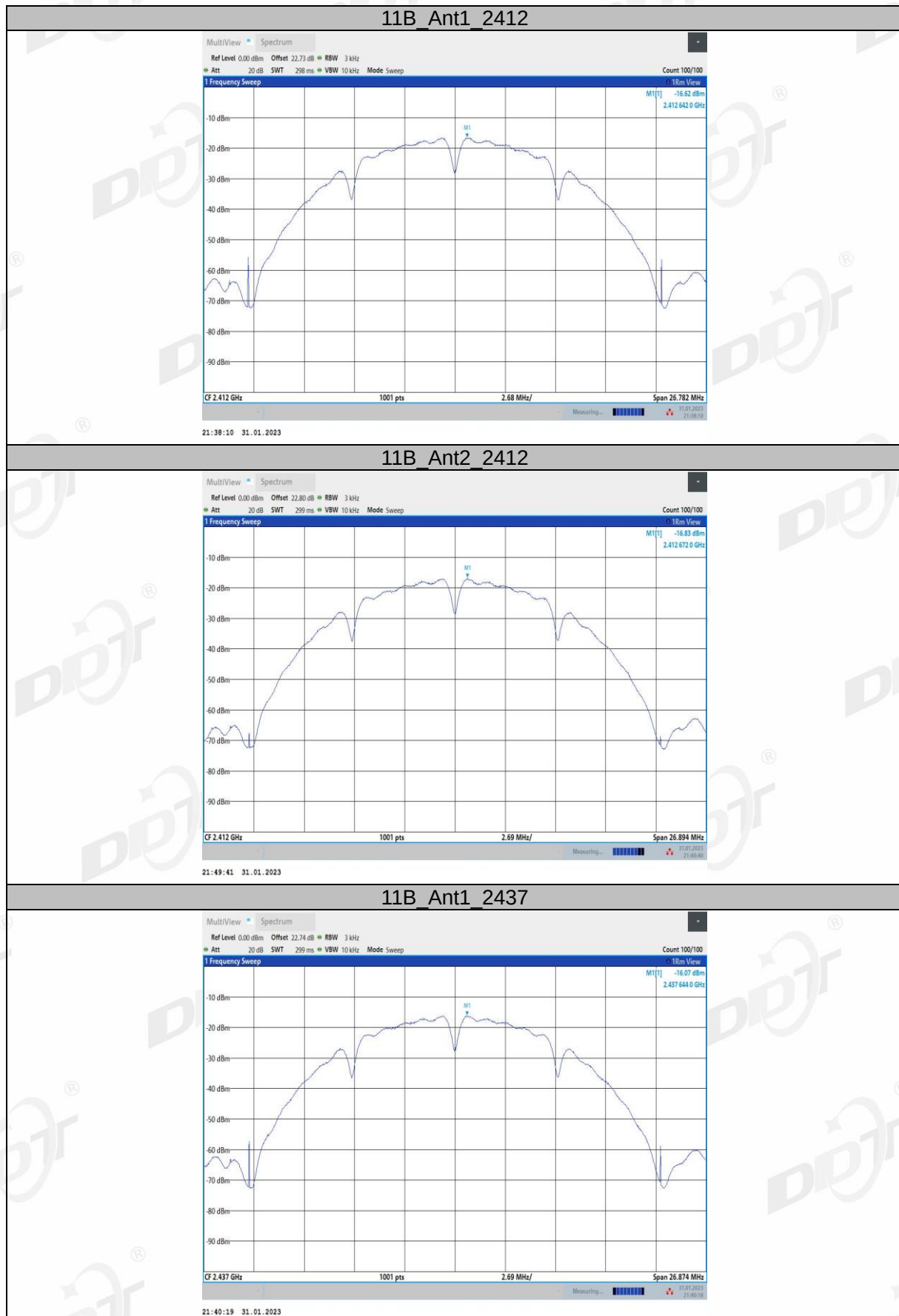
Note: If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.4. Test result

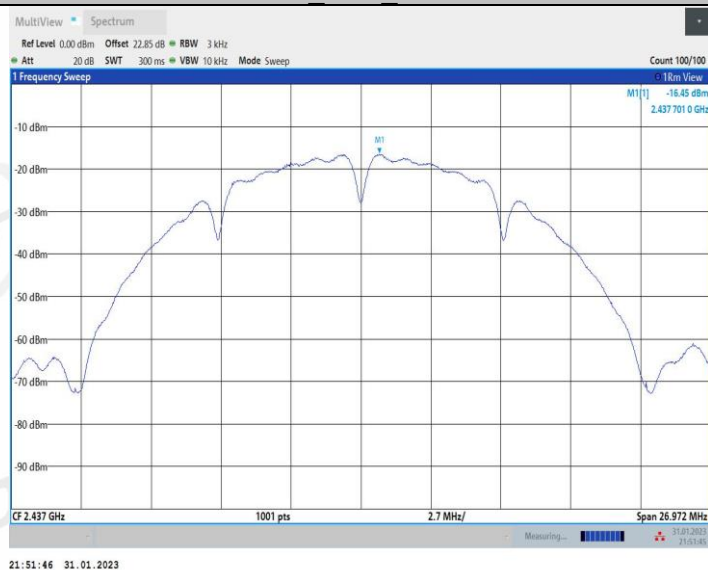
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-16.62	≤8.00	PASS
	Ant2	2412	-16.83	≤8.00	PASS
	Ant1	2437	-16.07	≤8.00	PASS
	Ant2	2437	-16.45	≤8.00	PASS
	Ant1	2462	-15.78	≤8.00	PASS
	Ant2	2462	-16.2	≤8.00	PASS
11G	Ant1	2412	-20.29	≤8.00	PASS
	Ant2	2412	-20.65	≤8.00	PASS
	Ant1	2437	-20.12	≤8.00	PASS
	Ant2	2437	-20.64	≤8.00	PASS
	Ant1	2462	-19.96	≤8.00	PASS
	Ant2	2462	-20.38	≤8.00	PASS
11N20MIMO	Ant1	2412	-20.12	≤8.00	PASS
	Ant2	2412	-19.53	≤8.00	PASS
	total	2412	-16.80	≤8.00	PASS
	Ant1	2437	-20.01	≤8.00	PASS
	Ant2	2437	-19.92	≤8.00	PASS
	total	2437	-16.95	≤8.00	PASS
	Ant1	2462	-19.41	≤8.00	PASS
	Ant2	2462	-19.1	≤8.00	PASS
	total	2462	-16.24	≤8.00	PASS
11N40MIMO	Ant1	2422	-22.41	≤8.00	PASS
	Ant2	2422	-22.67	≤8.00	PASS
	total	2422	-19.53	≤8.00	PASS
	Ant1	2437	-21.48	≤8.00	PASS
	Ant2	2437	-21.72	≤8.00	PASS
	total	2437	-18.59	≤8.00	PASS
	Ant1	2452	-21.78	≤8.00	PASS
	Ant2	2452	-21.83	≤8.00	PASS
	total	2452	-18.79	≤8.00	PASS

Note: The Duty Cycle Factor is compensated in the graph.

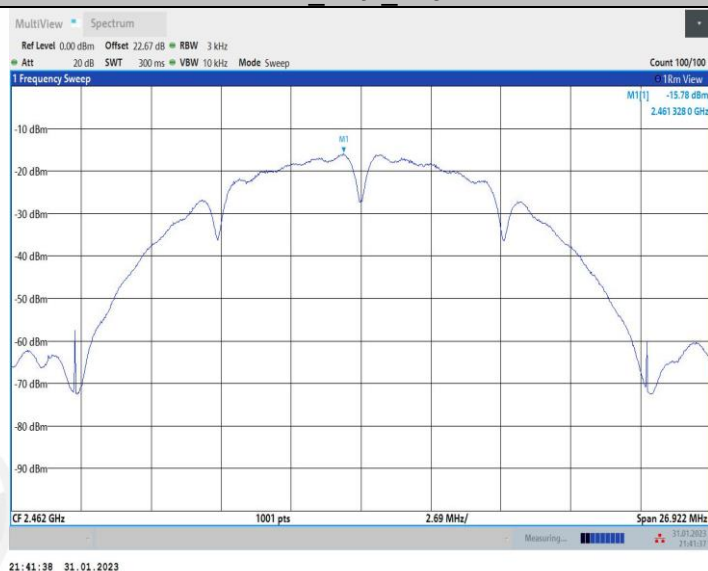
7.5. Test graphs



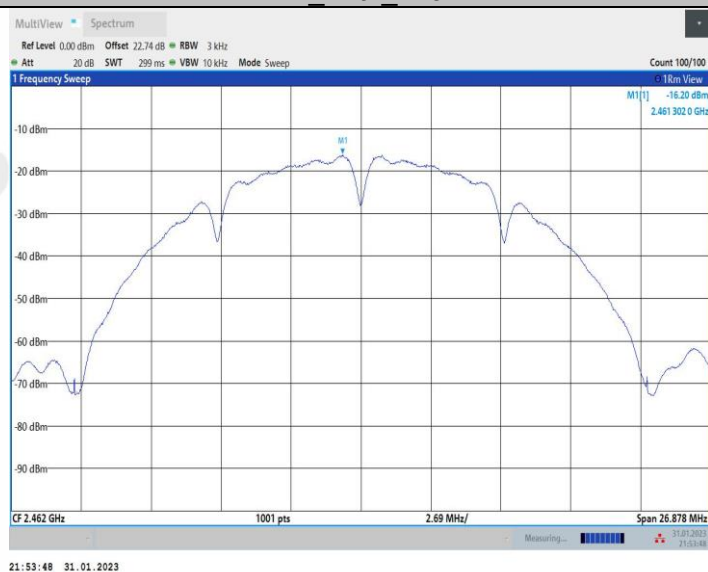
11B_Ant2_2437



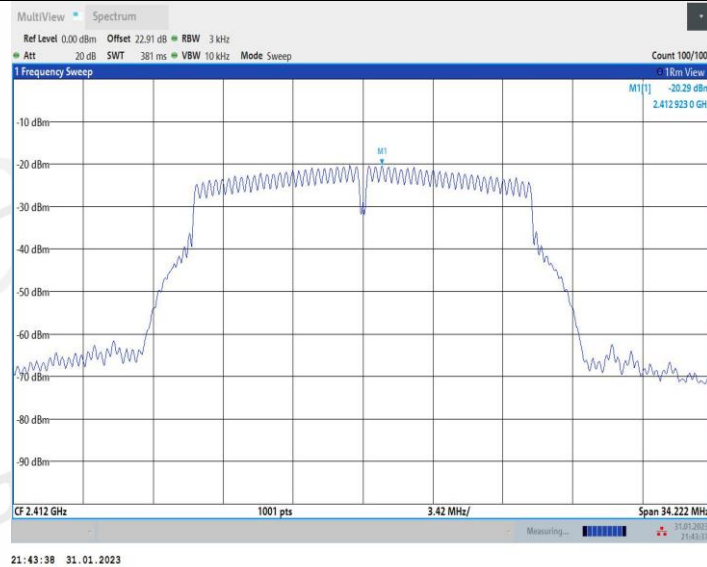
11B_Ant1_2462



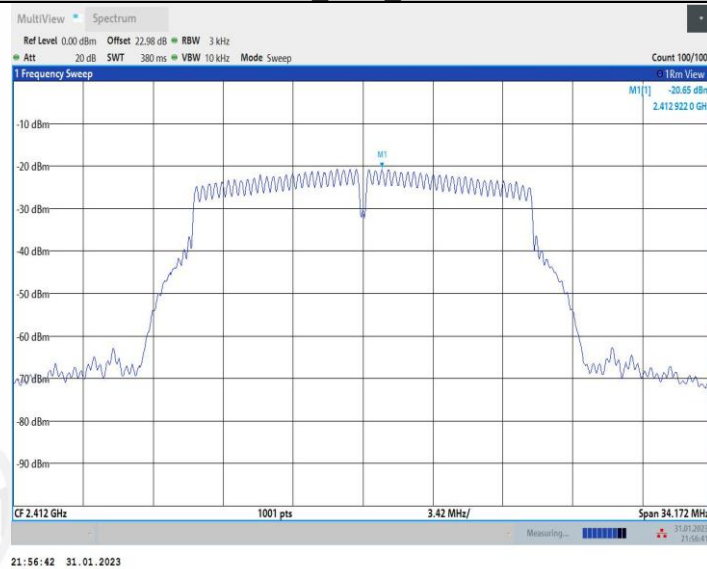
11B_Ant2_2462



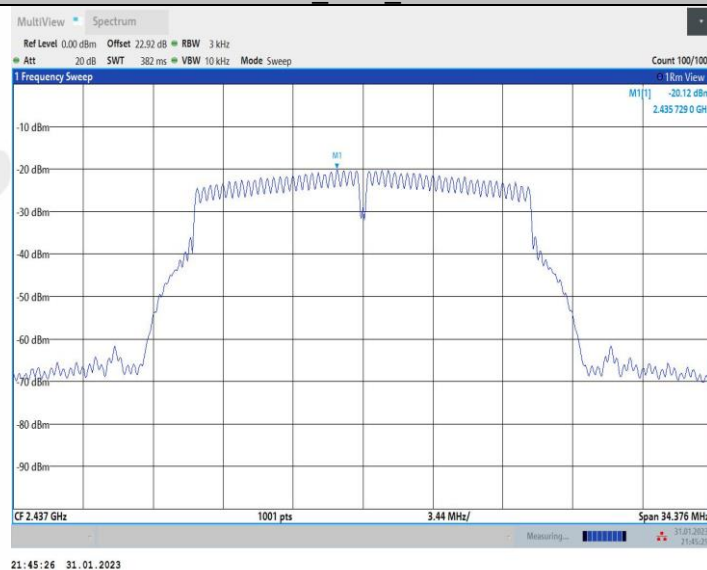
11G_Ant1_2412



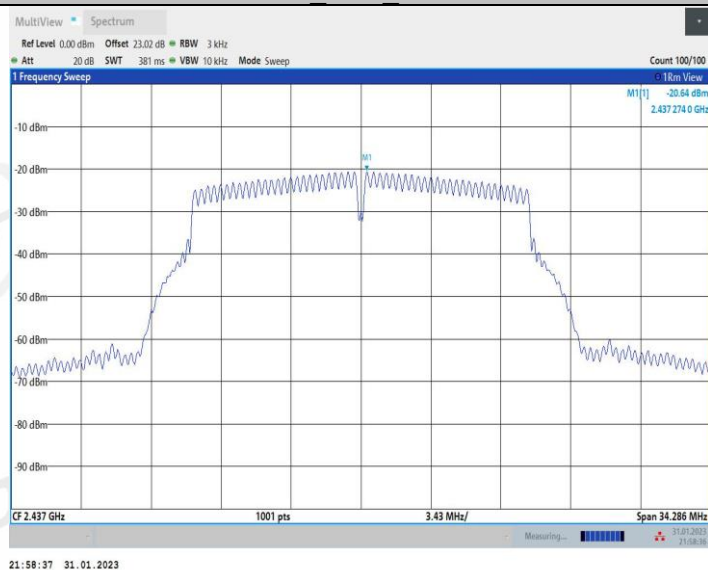
11G_Ant2_2412



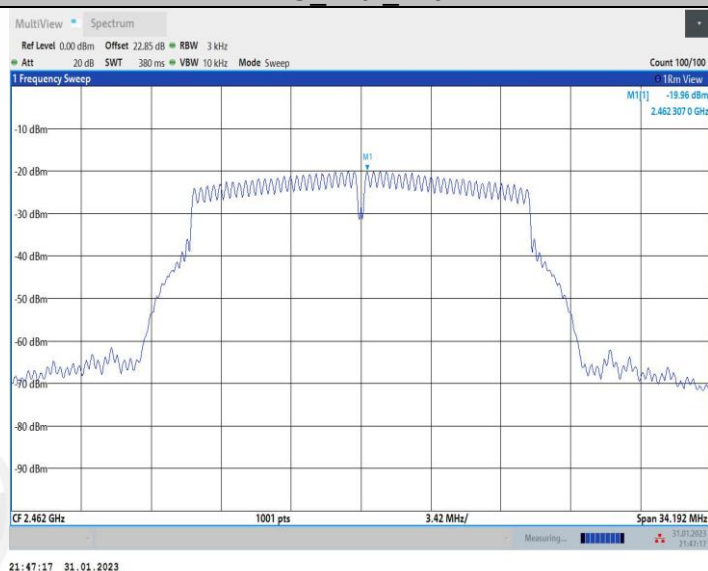
11G_Ant1_2437



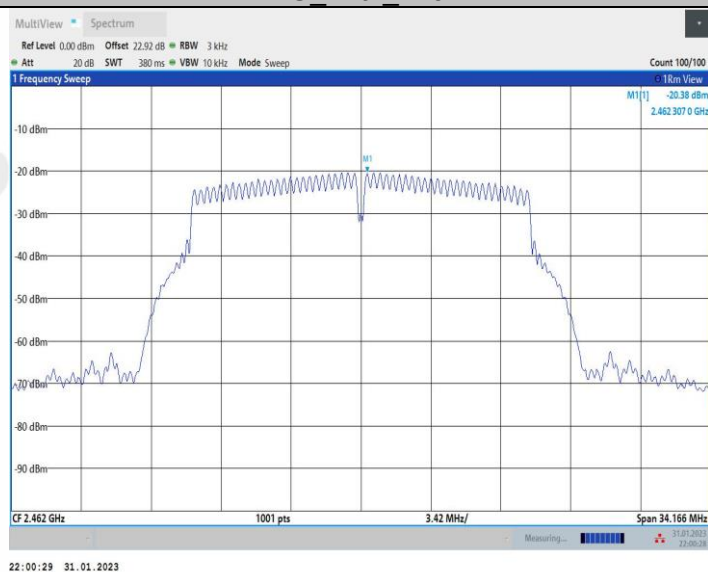
11G_Ant2_2437



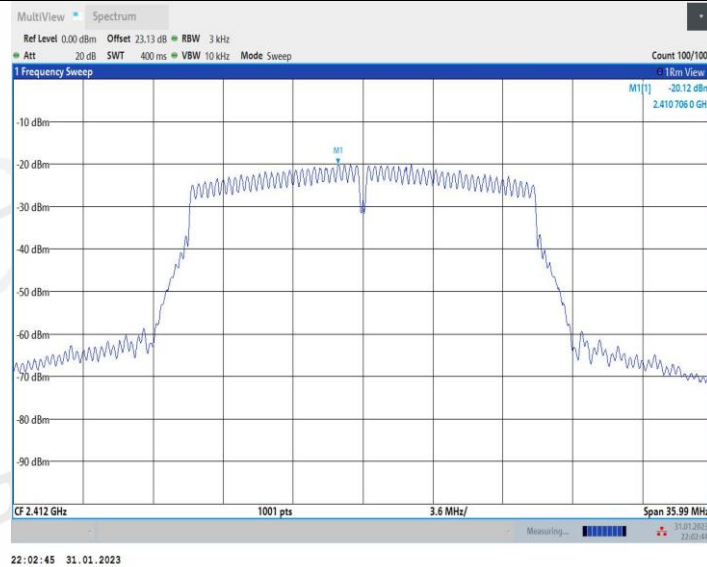
11G_Ant1_2462



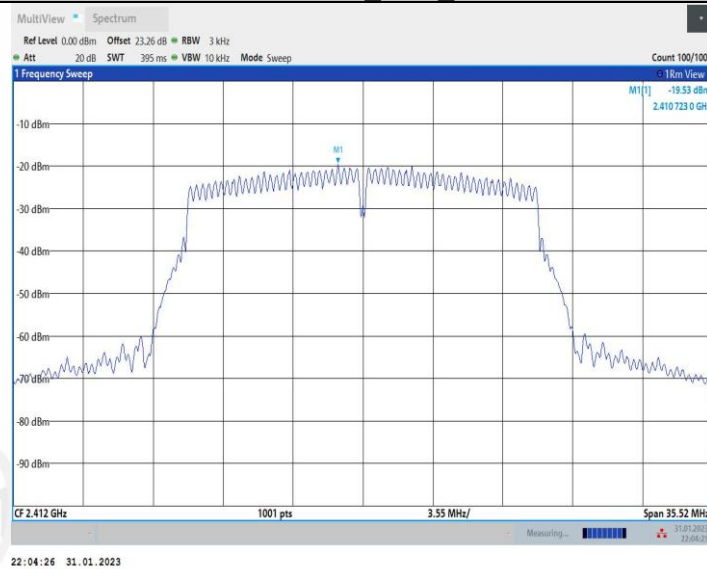
11G_Ant2_2462



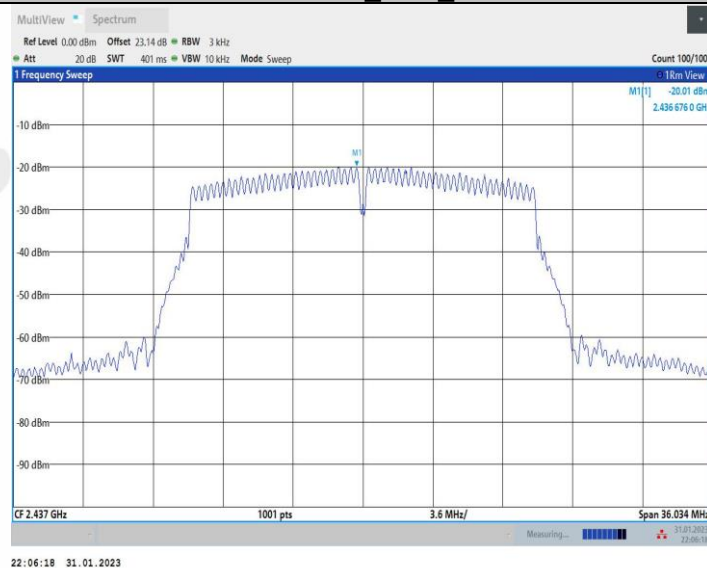
11N20MIMO_Ant1_2412



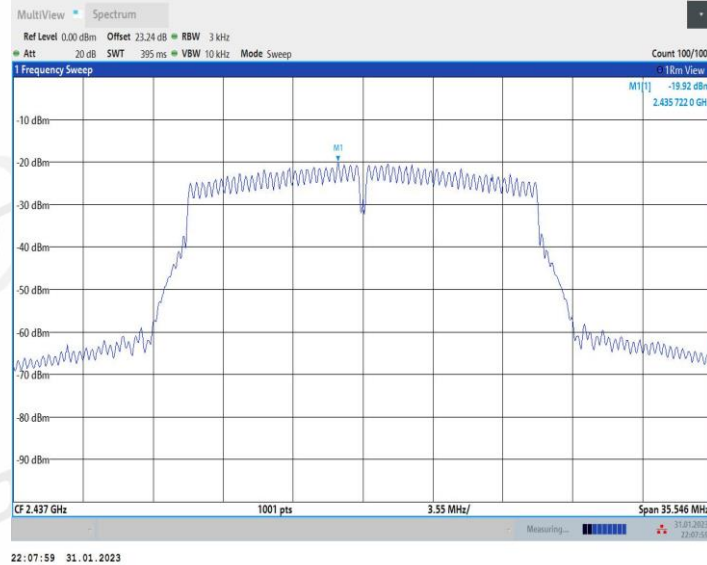
11N20MIMO_Ant2_2412



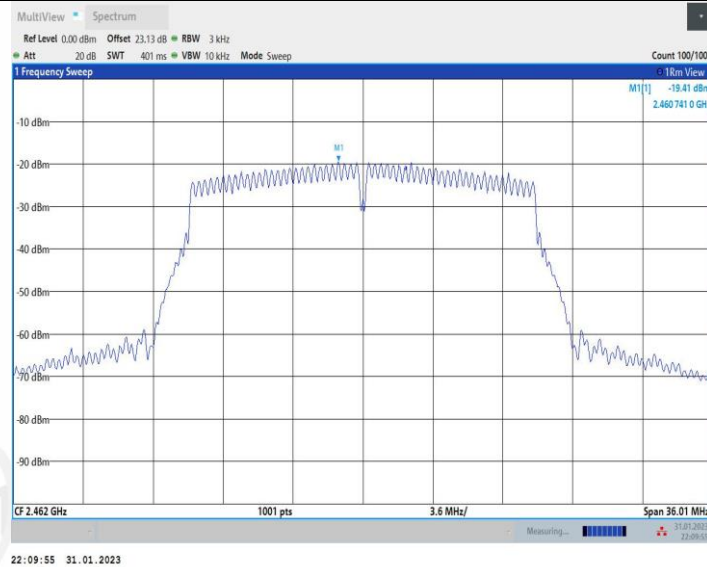
11N20MIMO_Ant1_2437



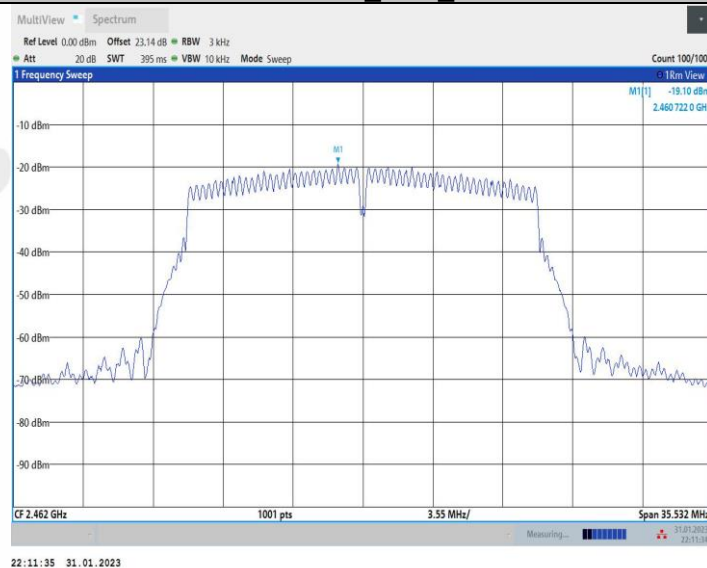
11N20MIMO_Ant2_2437



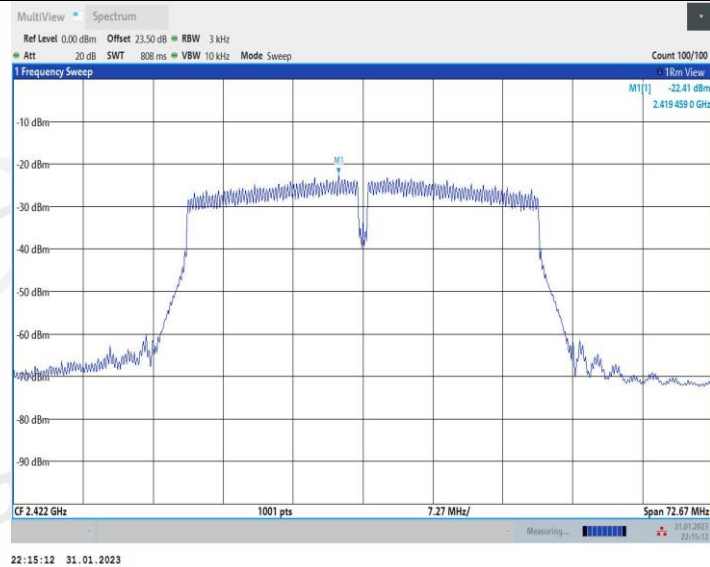
11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462

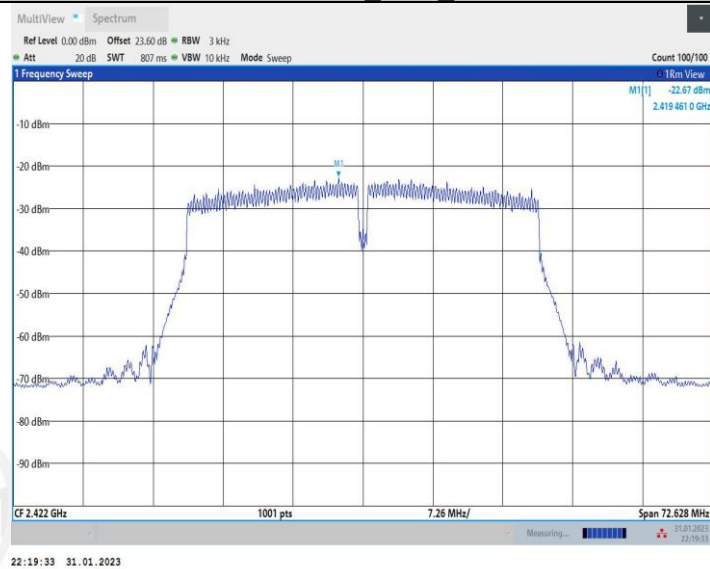


11N40MIMO_Ant1_2422



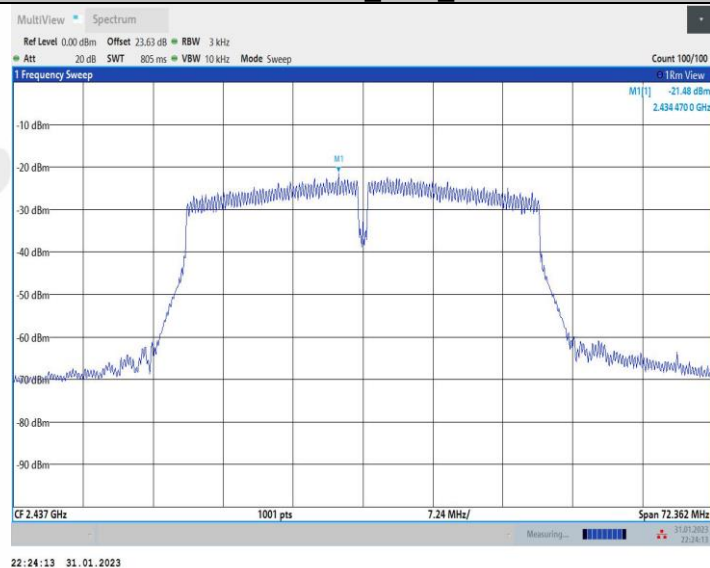
22:15:12 31.01.2023

11N40MIMO_Ant2_2422



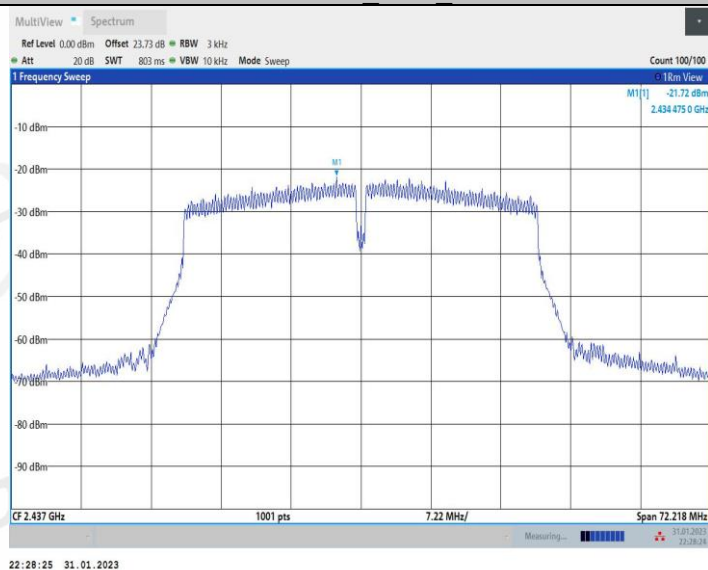
22:19:33 31.01.2023

11N40MIMO_Ant1_2437

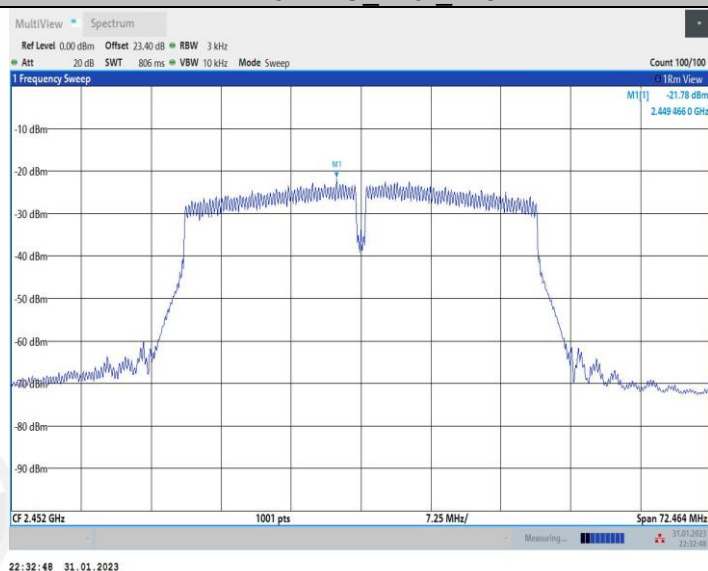


22:24:13 31.01.2023

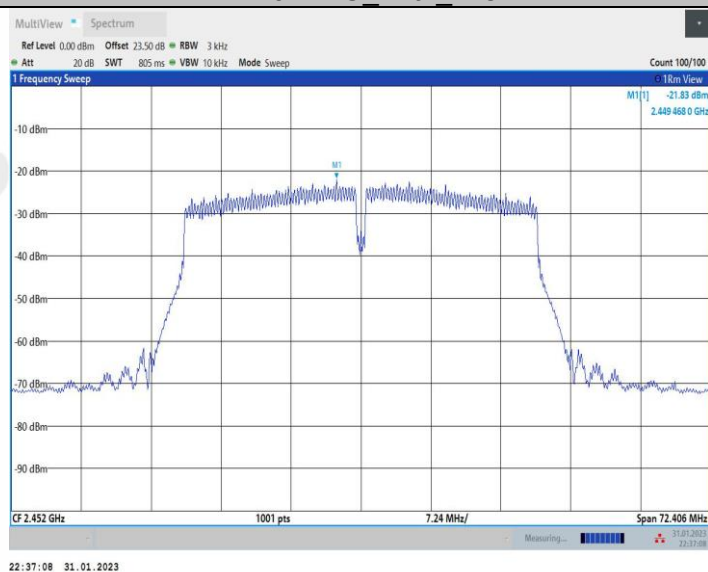
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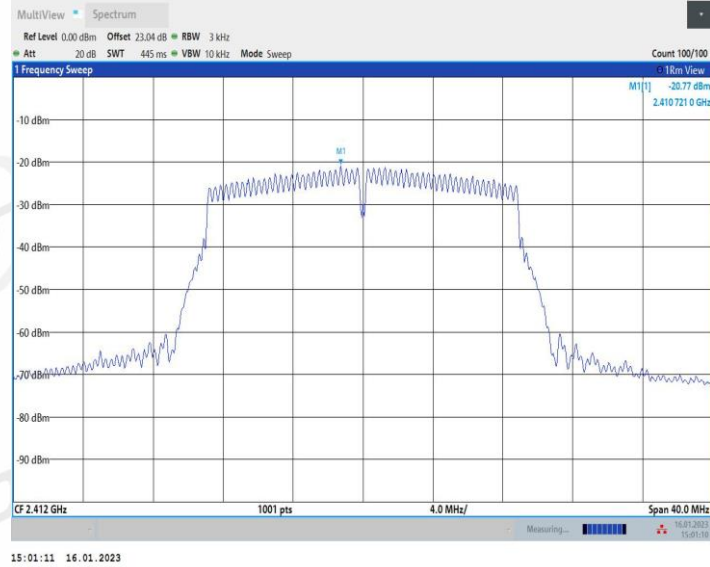
11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452



11AX20MIMO_Ant1_2412



11AX20MIMO_Ant2_2412

