



FCC AND ISED CERTIFICATION TEST REPORT

Applicant	:	Globe Electric Company Inc.
Address of Applicant	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
Manufacturer	:	Globe Electric Company Inc.
Address of Manufacturer	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
Equipment under Test	:	Smart light dimmer
Model No.	:	GE50823
FCC ID	:	2AQUQGE50823
IC	:	8290A-GE50823
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023, ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)
Report No.	:	DDT-RE25020603-1E02
Issue Date	:	2025/05/14
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

Applicant	:	Globe Electric Company Inc.
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Equipment under Test	:	Smart light dimmer
Model No.	:	GE50823
Manufacturer	:	Globe Electric Company Inc.
Address of Manufacturer	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C,
RSS-247 Issue 3 August 2023,
ANSI C63.10:2013,
RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)

We Declare:

The equipment described above is tested by Guangdong 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 Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE25020603-1E02		
Date of Receipt:	2025/03/21	Date of Test:	2025/02/21 - 2025/05/14

Created: Tiger Mo	Reviewed: Ella Gong	Approved: Damon Hu
		
2025/05/14	2025/05/14	2025/05/14

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Version	Revision Content	Issue Date	Approved
---	Initial issue	2025/05/14	

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	6 dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.247(a)(2), RSS-247 Issue 3 clause 5.2(a), RSS-Gen Issue 5 clause 6.7	/	Pass
2	Peak Output Power	FCC Part 15: 15.247(b)(3), RSS-247 Issue 3 clause 5.4(d)	/	Pass
3	Power Spectral Density	FCC Part 15:15.247(e), RSS-247 Issue 3 clause 5.2(b)	/	Pass
4	RF Conducted Spurious Emissions	FCC Part 15: 15.247(d), RSS-247 Issue 3 clause 5.5	/	Pass
5	Radiated Emission	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d), RSS-247 Issue 3 clause 5.5, RSS-Gen Issue 5 clause 8.9, RSS-Gen Issue 5 clause 8.10	/	Pass
6	Band Edge Compliance	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d), RSS-247 Issue 3 clause 5.5, RSS-Gen Issue 5 clause 8.9, RSS-Gen Issue 5 clause 8.10	/	Pass
7	Antenna Requirement	FCC Part 15: 15.203, RSS-Gen Issue 5 clause 6.8	/	Pass
8	Power Line Conducted Emissions	FCC Part 15: 15.207(a), RSS-Gen Issue 5 clause 8.8	/	Pass
Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.				

2. General Test Information

2.1. Description of EUT

EUT Name	: Smart light dimmer
Model Number	: GE50823
Difference of model number	: /
EUT Function Description	: Please reference user manual of this device
Power Supply	: AC 120V/60Hz
Hardware Version	: DR-S2219A(Re02)
Software Version	: 1.2.3
Antenna Type	: PCB
Max Antenna Gain(dBi)	: 4.12

Radio Technology	: IEEE 802.11b/g/n
Operation frequency	: IEEE 802.11b: 2412MHz to 2462MHz IEEE 802.11g: 2412MHz to 2462MHz IEEE 802.11n HT20: 2412MHz to 2462MHz IEEE 802.11n HT40: 2422MHz to 2452MHz
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)

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

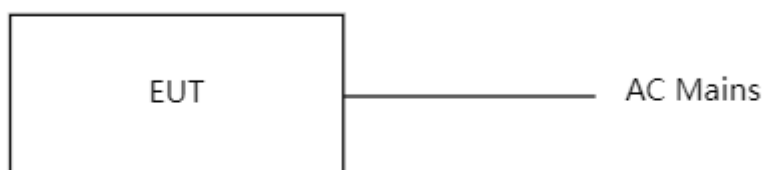
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“☒” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:

Test software: Beken Wi-Fi Test Tool v1.6.0

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, Tx Power Setting, Data rate, Channel, and Frequency				
Tested mode	Tx Power Setting	Data rate (Mbps) (see Note)	Test Channel	Frequency (MHz)
	ANT1			
IEEE 802.11b	35	1	LCH: CH1	2412
	35	1	MCH: CH6	2437
	35	1	HCH: CH11	2462
IEEE 802.11g	79	6	LCH: CH1	2412
	79	6	MCH: CH6	2437
	79	6	HCH: CH11	2462
IEEE 802.11n HT20	79	MCS 8	LCH: CH1	2412
	79	MCS 8	MCH: CH6	2437
	79	MCS 8	HCH: CH11	2462
IEEE 802.11n HT40	79	MCS 8	LCH: CH3	2422
	79	MCS 8	MCH: CH6	2437
	79	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 to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, 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-20240, G-20118

2.8. Measurement uncertainty

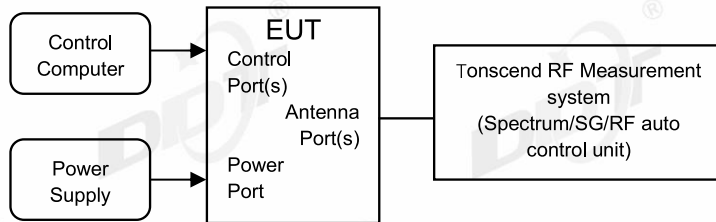
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method) 5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$) 1.66 dB ($8 \text{ GHz} \leq f < 26.5 \text{ GHz}$)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 °C
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 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	3.34dB (150KHz-30MHz) 3.72dB (9KHz-150KHz)
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 Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑RF Connected Test (RF Measurement System 3#)				
SIGNAL ANALYZER	R&S	FSV40	101407	2025/07/08
Wideband Radio Communication Tester	R&S	CMW500	117491	2026/03/28
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY62153058	2025/07/08
MXG Vector Signal Generator	Agilent	N5182A	MY48180912	2026/03/28
RF Control Unit	Tonscend	JS0806-2	20C8060230	2026/03/28
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2026/03/28
Test Software	Tonscend	JS1120-3	Ver.3.2.22	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

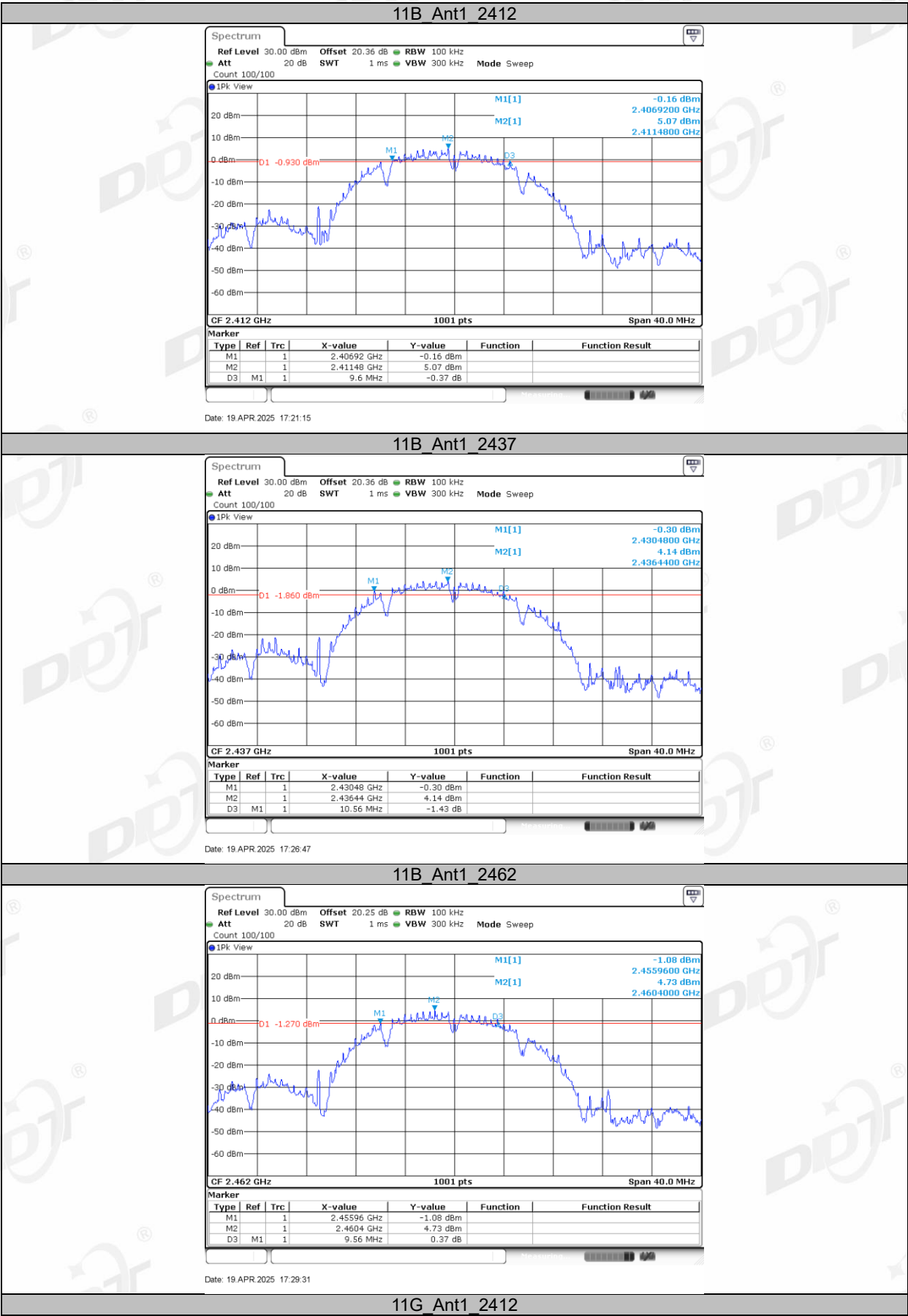
Allow the trace to stabilize, measure the 6 dB bandwidth of signal, and record the results in the report

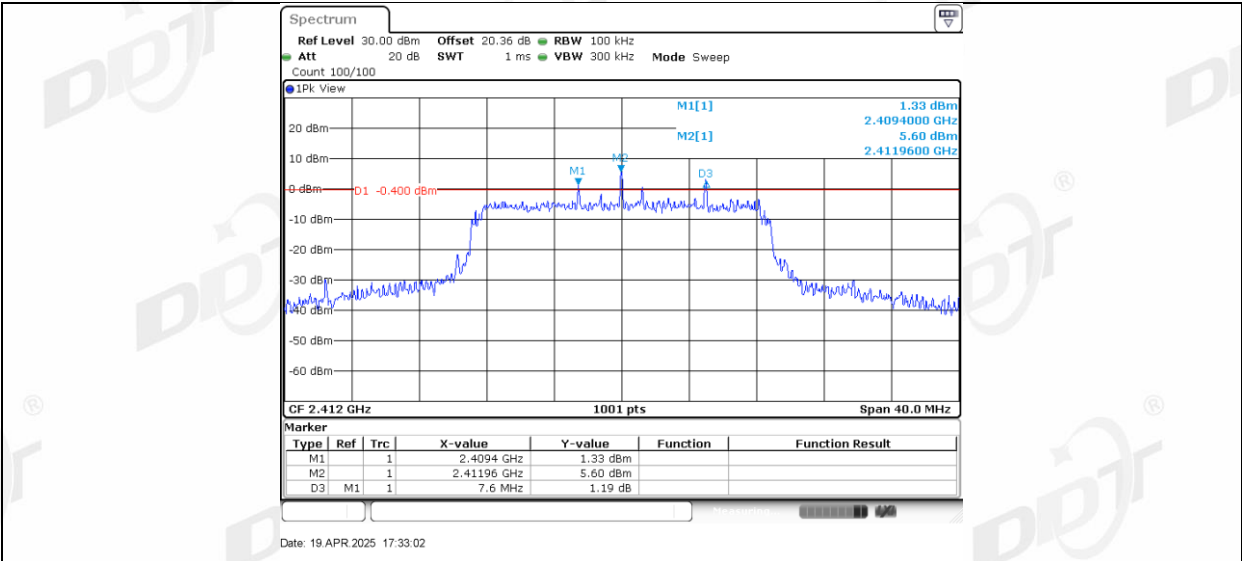
4.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.6℃,43.8%RH	Test Date:	2025.04.19
Test Power Supply:	AC 120V/60HZ	Sample Number:	S25020603-001

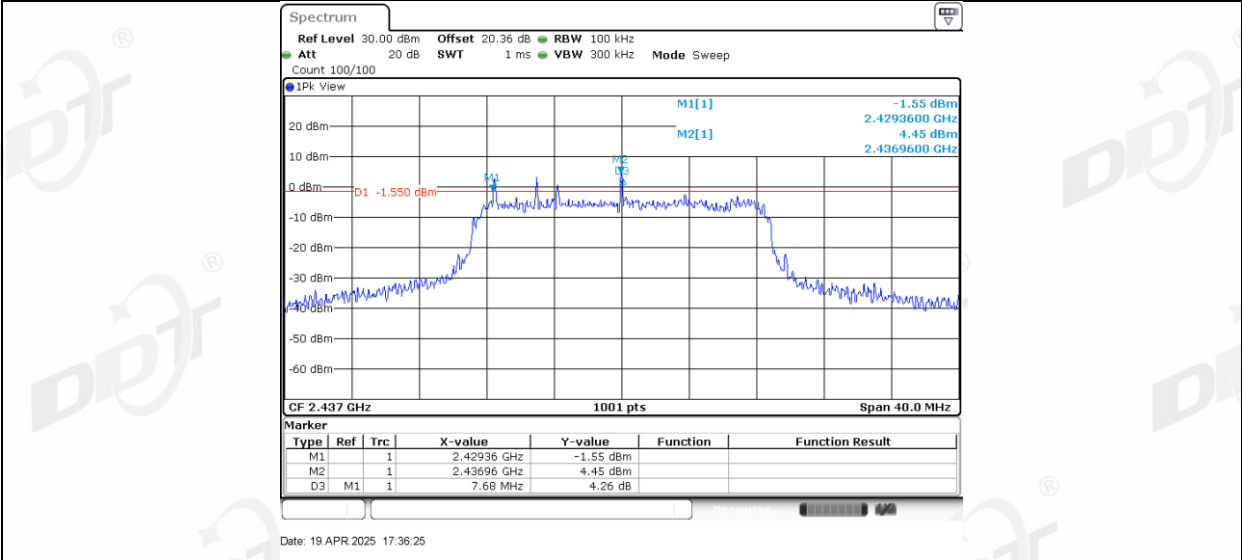
Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	9.60	2406.92	2416.52	0.5	PASS
		2437	10.56	2430.48	2441.04	0.5	PASS
		2462	9.56	2455.96	2465.52	0.5	PASS
11G	Ant1	2412	7.60	2409.40	2417.00	0.5	PASS
		2437	7.68	2429.36	2437.04	0.5	PASS
		2462	5.08	2461.88	2466.96	0.5	PASS
11N20 SISO	Ant1	2412	15.12	2404.40	2419.52	0.5	PASS
		2437	10.12	2429.40	2439.52	0.5	PASS
		2462	8.84	2454.40	2463.24	0.5	PASS
11N40 SISO	Ant1	2422	16.24	2413.20	2429.44	0.5	PASS
		2437	21.28	2428.20	2449.48	0.5	PASS
		2452	17.52	2443.20	2460.72	0.5	PASS

4.5. Test graphs

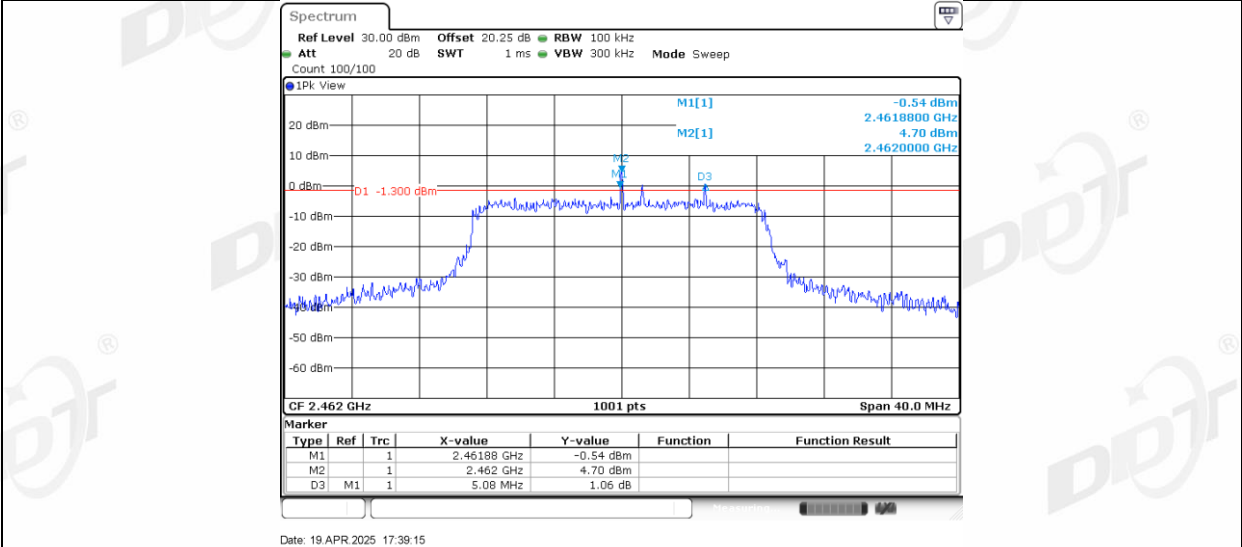




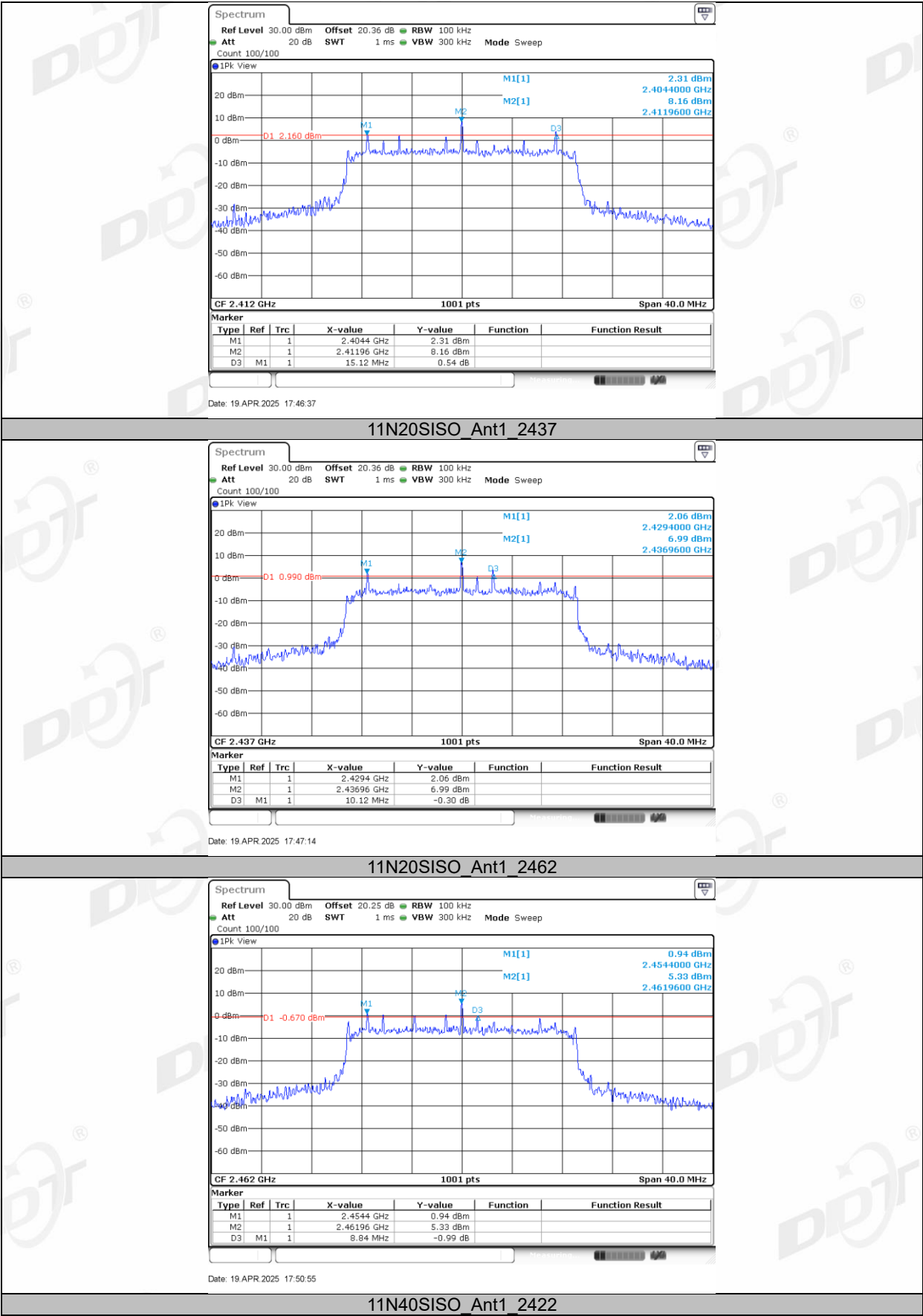
11G Ant1_2437

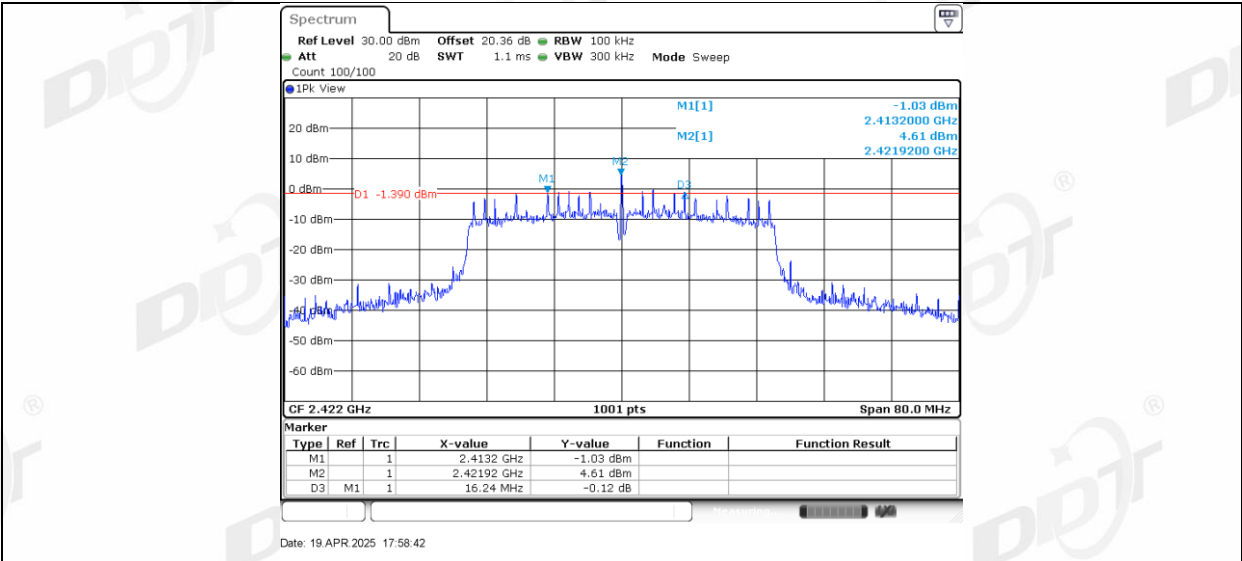


11G Ant1_2462

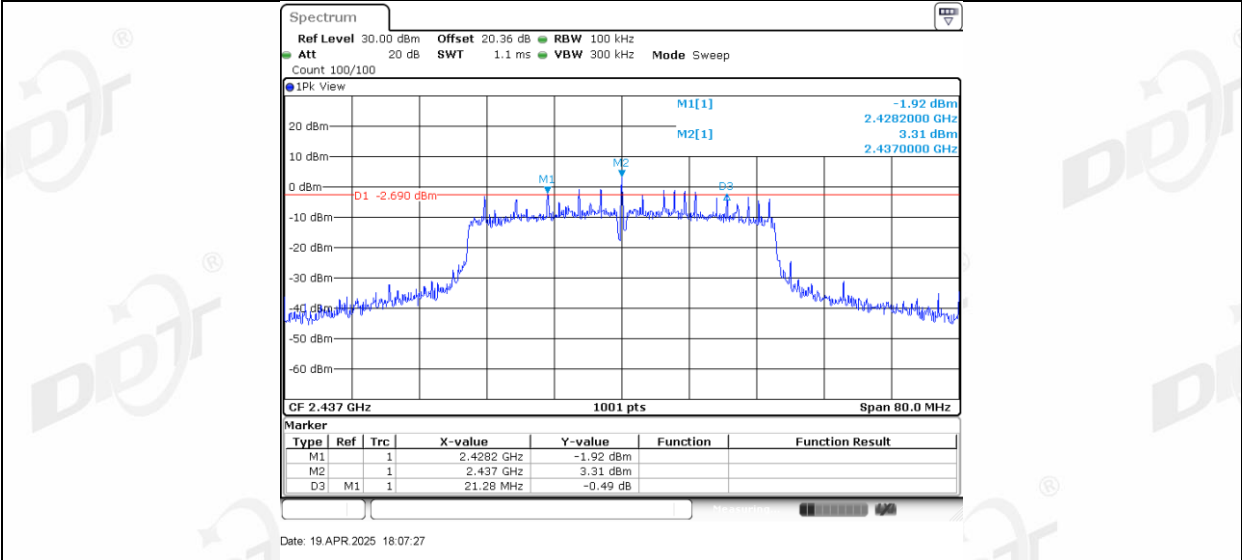


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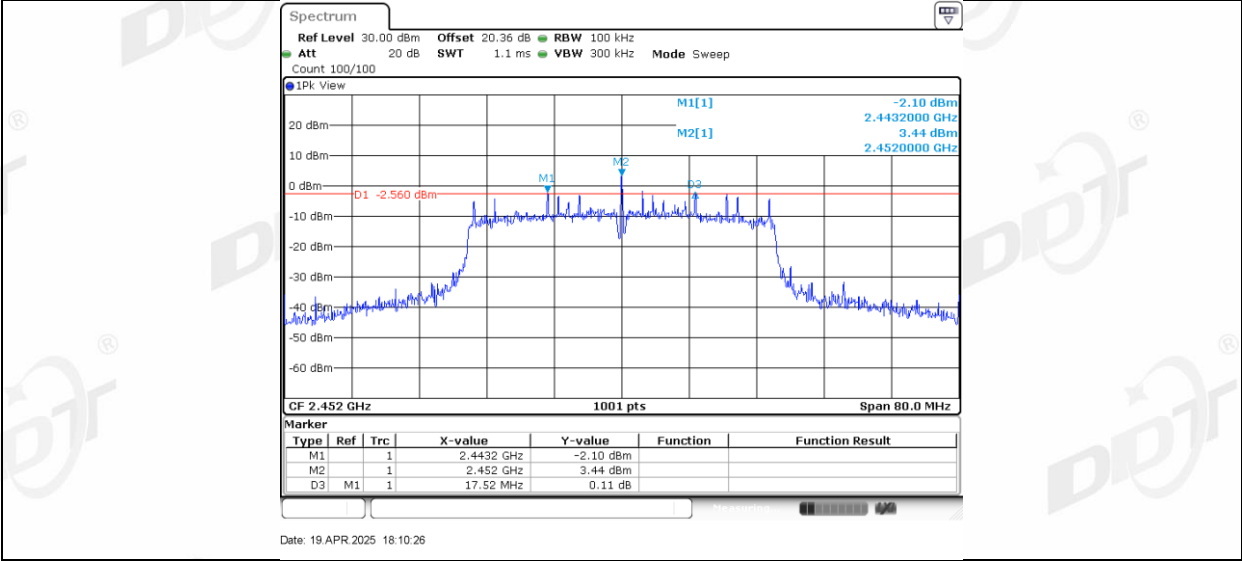




11N40SISO_Ant1_2437

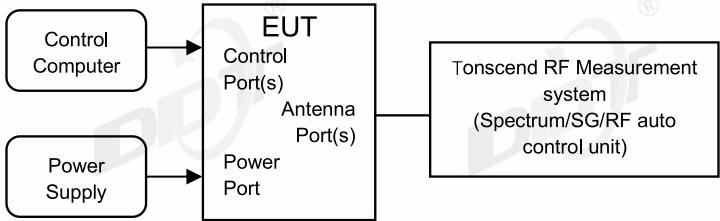


11N40SISO_Ant1_2452



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

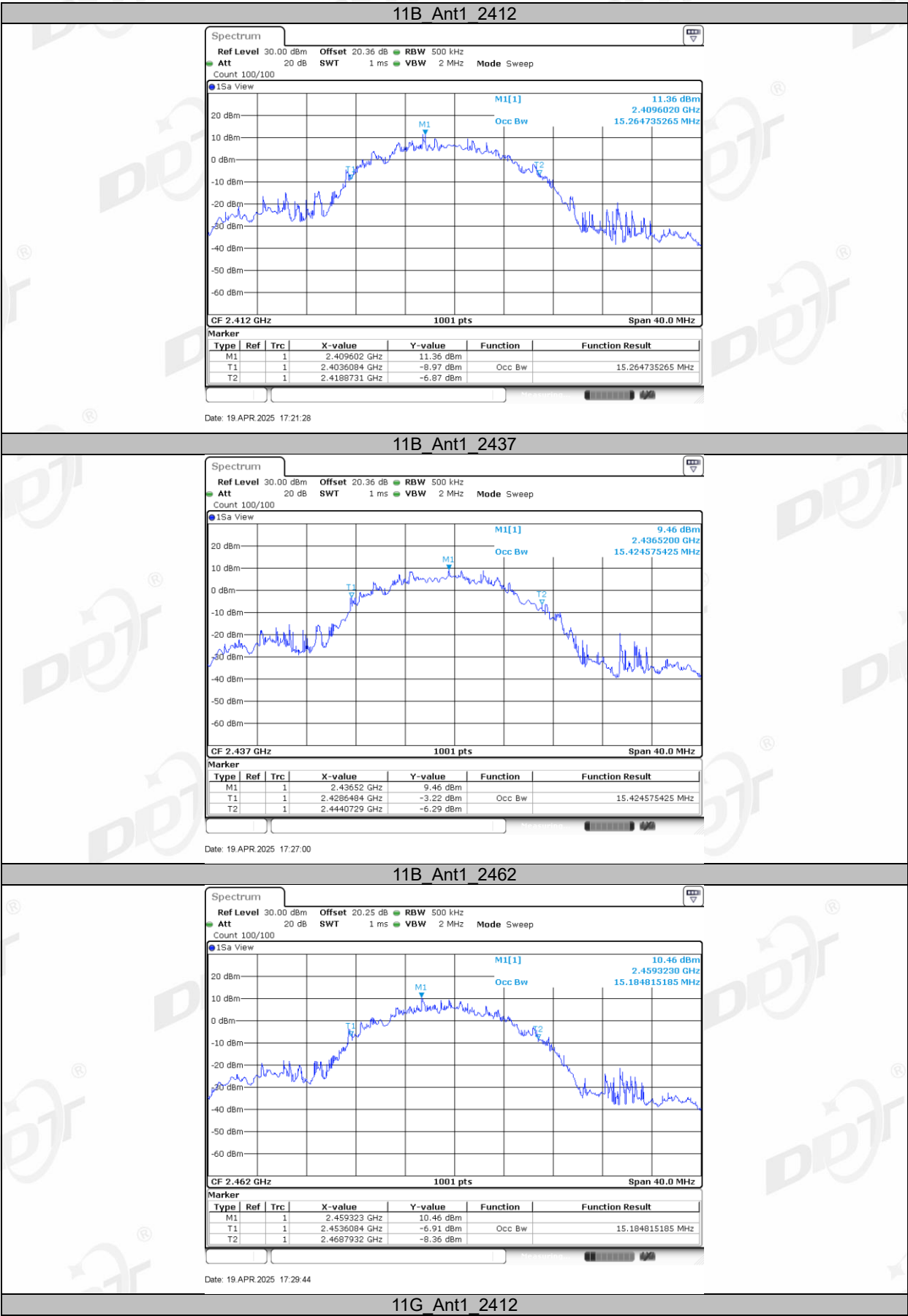
Allow the trace to stabilize, measure the 99% bandwidth of signal, and record the results in the report.

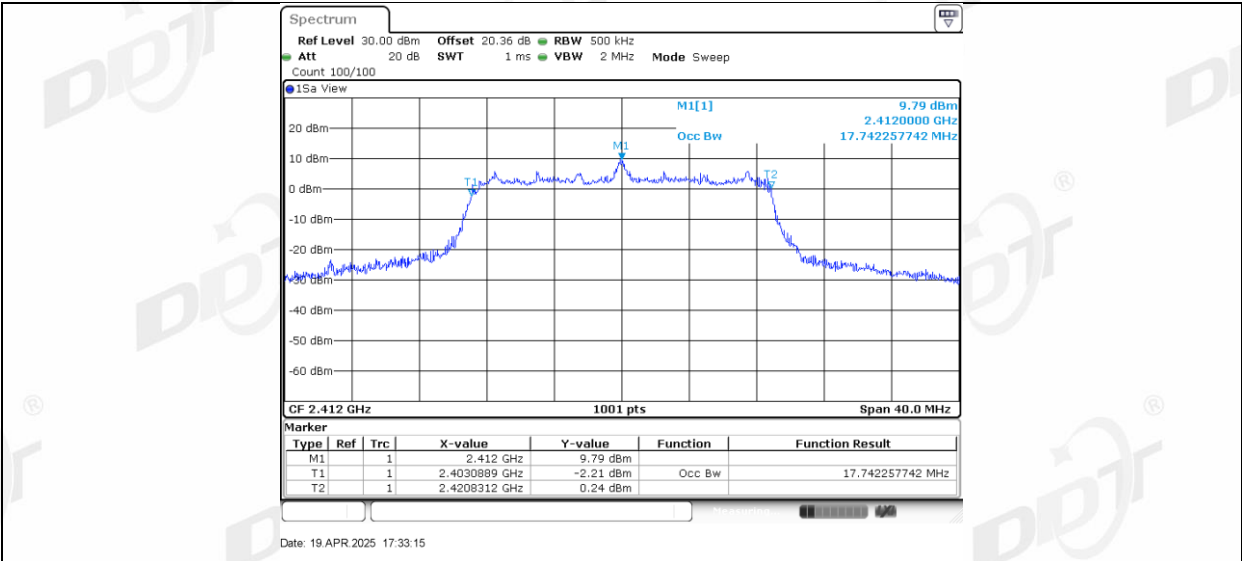
5.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.6℃,43.8%RH	Test Date:	2025.04.19
Test Power Supply:	AC 120V/60HZ	Sample Number:	S25020603-001

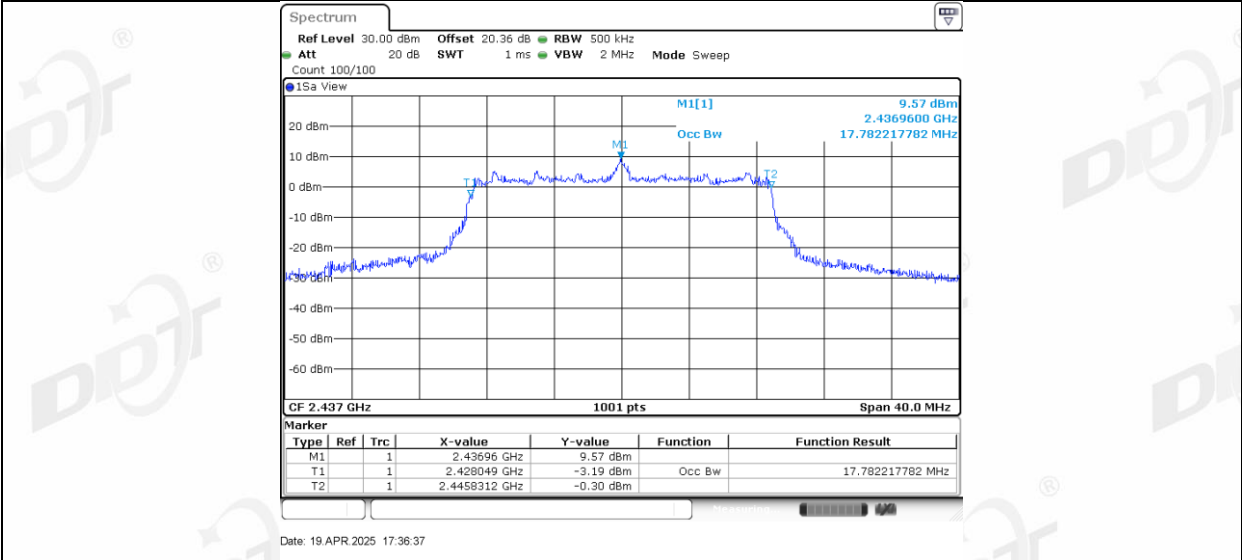
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	15.265	2403.6084	2418.8731	---	---
		2437	15.425	2428.6484	2444.0729	---	---
		2462	15.185	2453.6084	2468.7932	---	---
11G	Ant1	2412	17.742	2403.0889	2420.8312	---	---
		2437	17.782	2428.0490	2445.8312	---	---
		2462	17.662	2453.0889	2470.7512	---	---
11N20SIS O	Ant1	2412	18.621	2402.6494	2421.2707	---	---
		2437	18.661	2427.6094	2446.2707	---	---
		2462	18.581	2452.6494	2471.2308	---	---
11N40SIS O	Ant1	2422	36.204	2403.8581	2440.0619	---	---
		2437	36.364	2418.7782	2455.1419	---	---
		2452	36.284	2433.7782	2470.0619	---	---

5.5. Test graphs

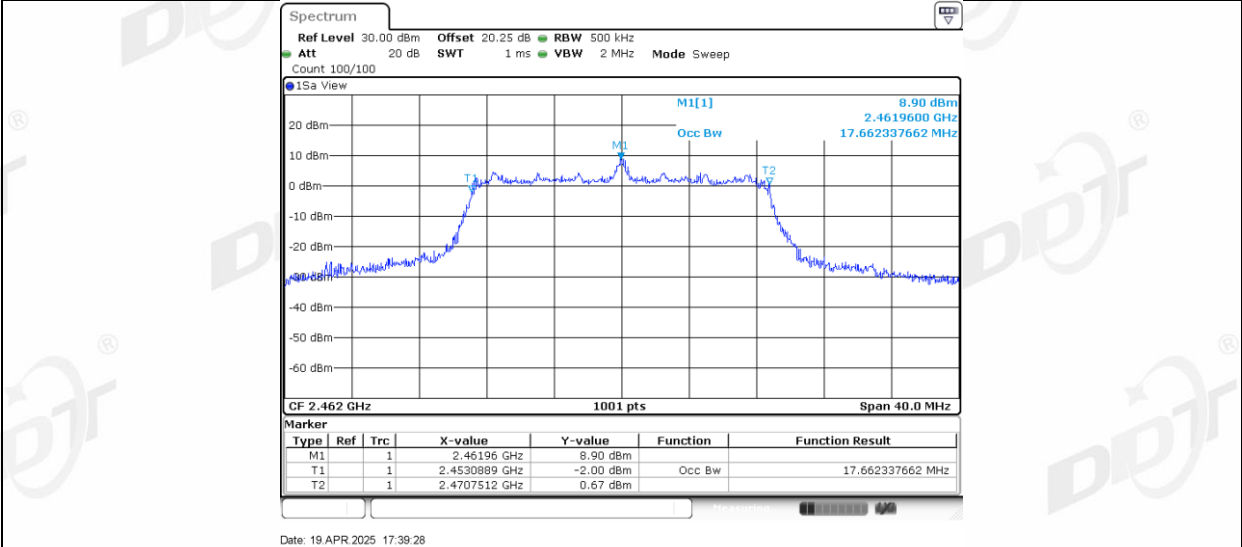




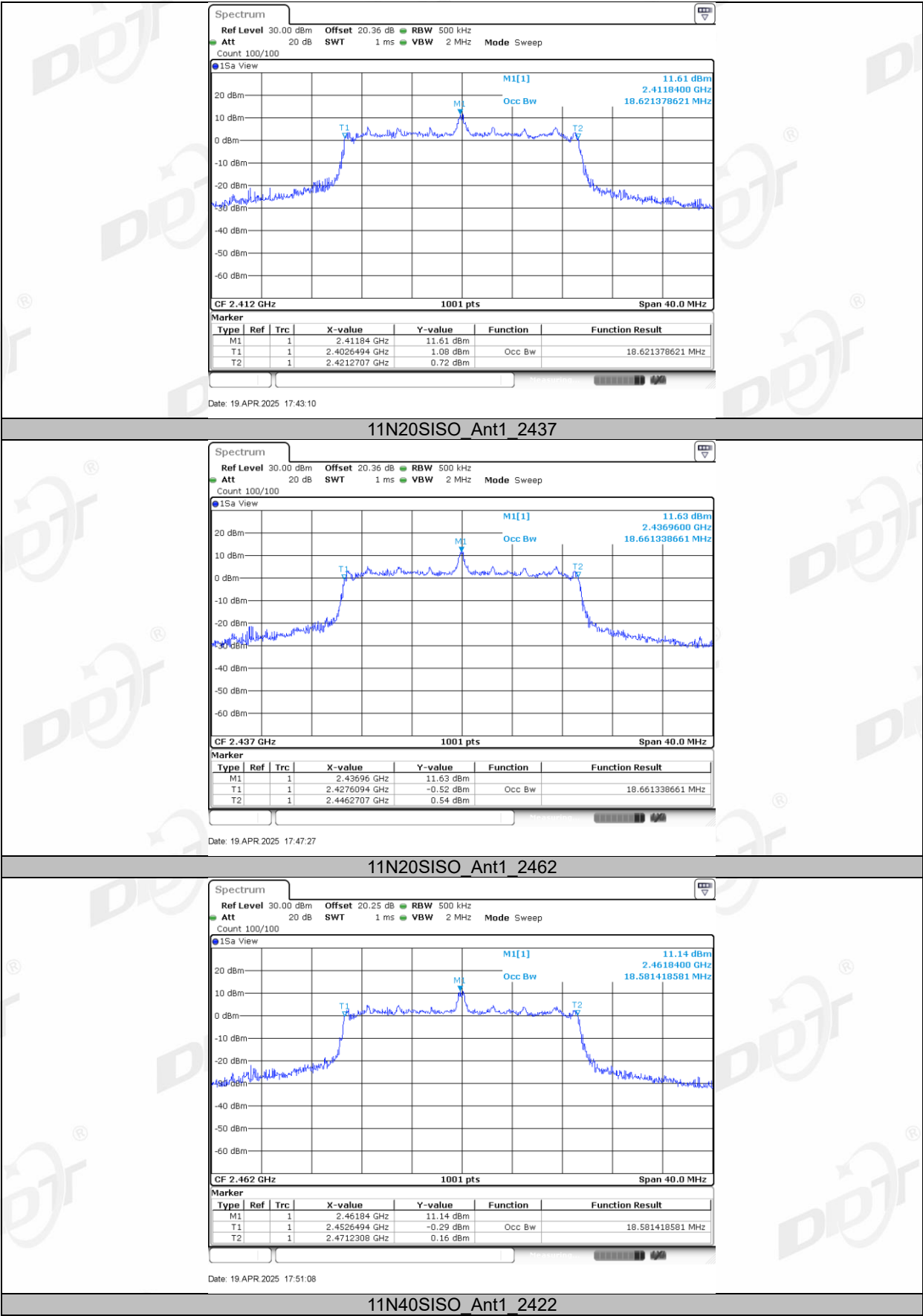
11G Ant1_2437

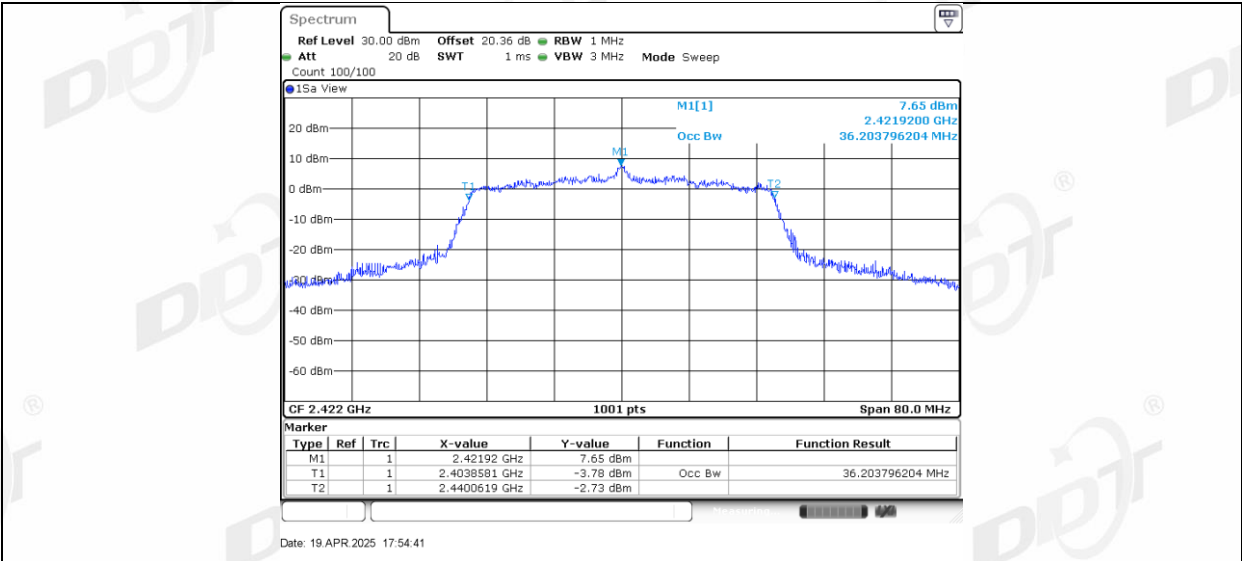


11G Ant1_2462

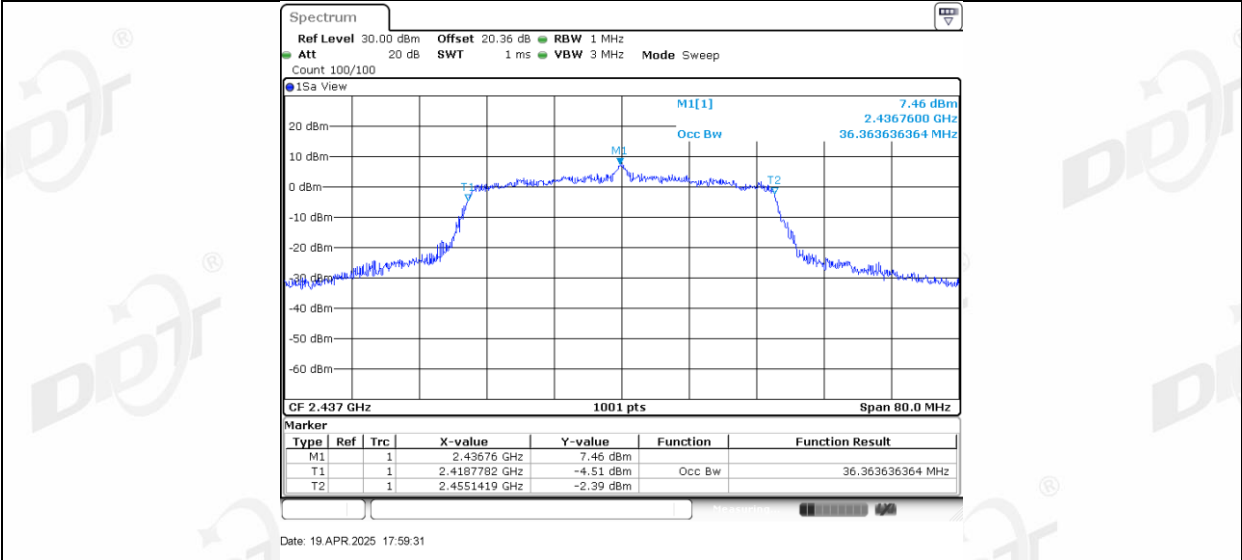


11N20SISO Ant1_2412

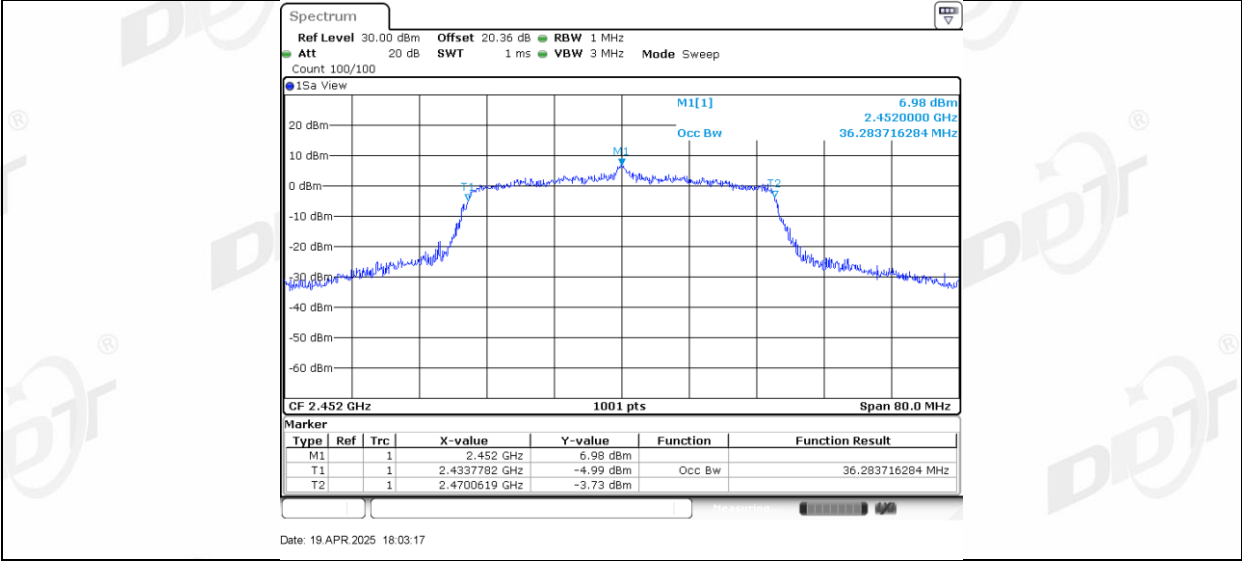




11N40SISO_Ant1_2437

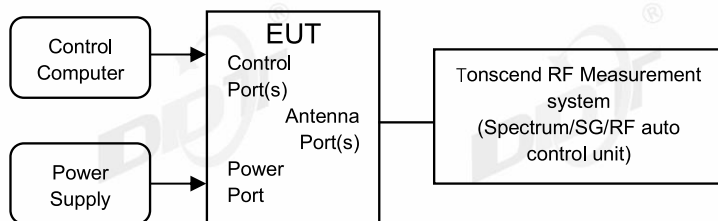


11N40SISO_Ant1_2452



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

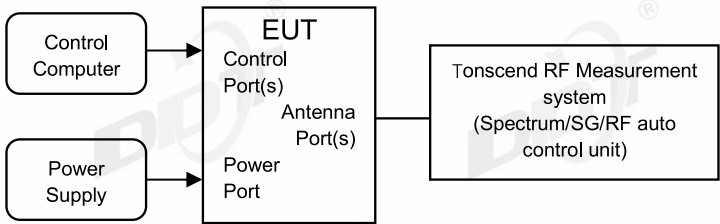
Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.6℃,43.8%RH	Test Date:	2025.04.19
Test Power Supply:	AC 120V/60HZ	Sample Number:	S25020603-001

Test Mode	Antenna	Frequency [MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dB]	Result [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	5.22	19.35	7.13	12.35	≤30.00	16.47	≤36.00	PASS
		2437	4.78	19.35	7.13	11.91	≤30.00	16.03	≤36.00	PASS
		2462	4.61	19.35	7.13	11.74	≤30.00	15.86	≤36.00	PASS
11G	Ant1	2412	2.81	10.00	10.00	12.81	≤30.00	16.93	≤36.00	PASS
		2437	2.39	10.00	10.00	12.39	≤30.00	16.51	≤36.00	PASS
		2462	1.97	10.00	10.00	11.97	≤30.00	16.09	≤36.00	PASS
11N20 SISO	Ant1	2412	2.60	9.92	10.03	12.63	≤30.00	16.75	≤36.00	PASS
		2437	2.62	9.92	10.03	12.65	≤30.00	16.77	≤36.00	PASS
		2462	2.29	9.92	10.03	12.32	≤30.00	16.44	≤36.00	PASS
11N40 SISO	Ant1	2422	1.86	9.23	10.35	12.21	≤30.00	16.33	≤36.00	PASS
		2437	1.51	9.23	10.35	11.86	≤30.00	15.98	≤36.00	PASS
		2452	1.18	9.23	10.35	11.53	≤30.00	15.65	≤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
	Employ trace averaging (rms)
Trace	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.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

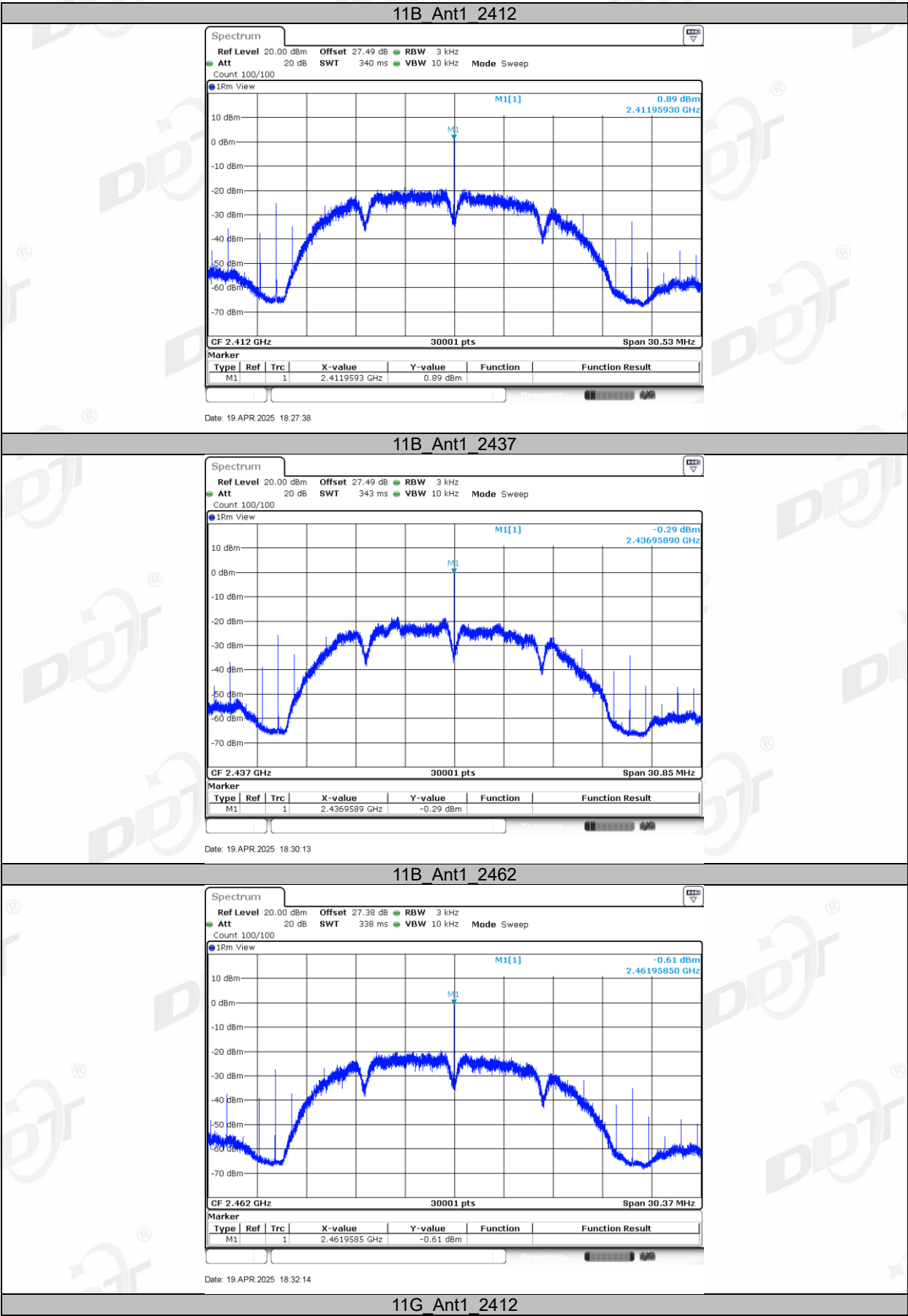
7.4. Test result

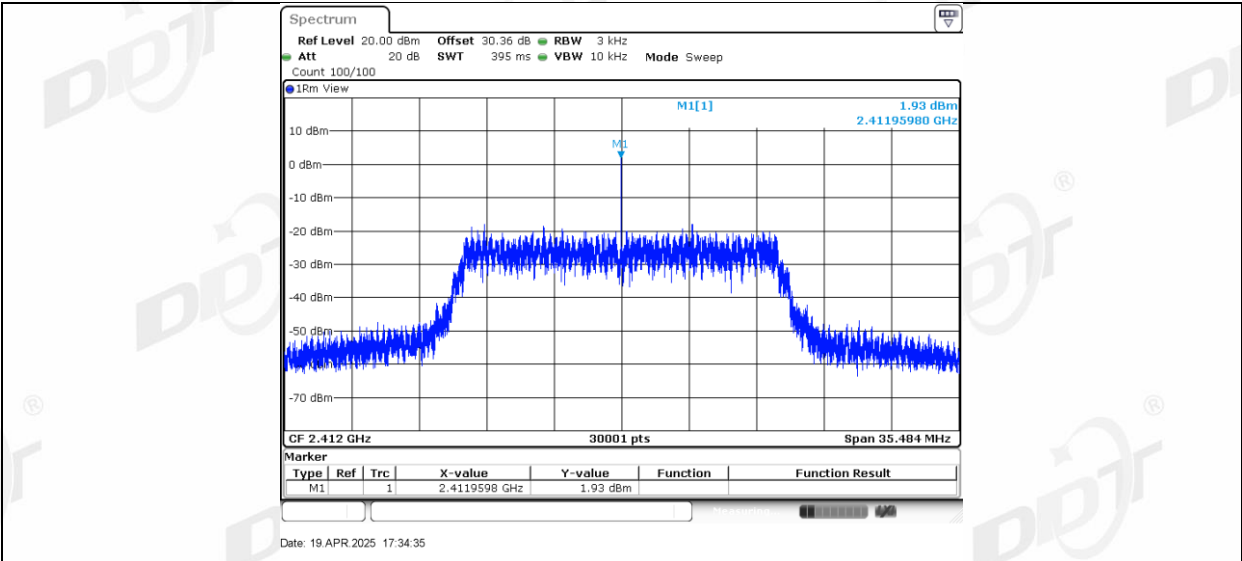
Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.6℃,43.8%RH	Test Date:	2025.04.19
Test Power Supply:	AC 120V/60HZ	Sample Number:	S25020603-001

Test Mode	Antenna	Frequency [MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	0.89	≤8.00	PASS
		2437	-0.29	≤8.00	PASS
		2462	-0.61	≤8.00	PASS
11G	Ant1	2412	1.93	≤8.00	PASS
		2437	1.79	≤8.00	PASS
		2462	1.05	≤8.00	PASS
11N20SISO	Ant1	2412	2.51	≤8.00	PASS
		2437	1.53	≤8.00	PASS
		2462	-0.04	≤8.00	PASS
11N40SISO	Ant1	2422	-11.77	≤8.00	PASS
		2437	-9.99	≤8.00	PASS
		2452	-12.58	≤8.00	PASS

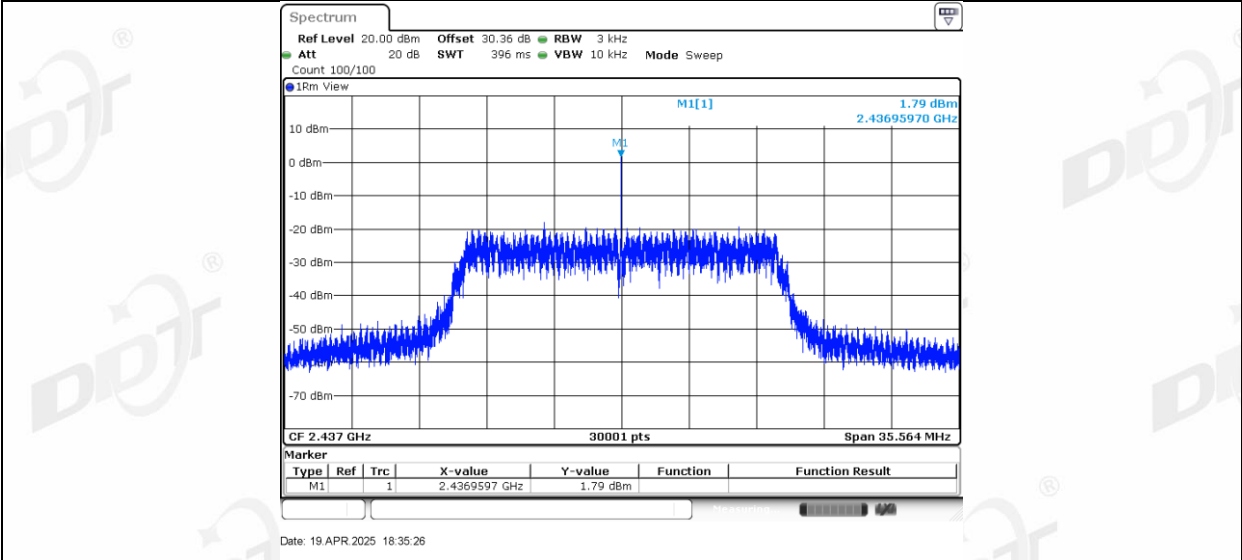
Note: The Duty Cycle Factor is compensated in the graph.

7.5. Test graphs

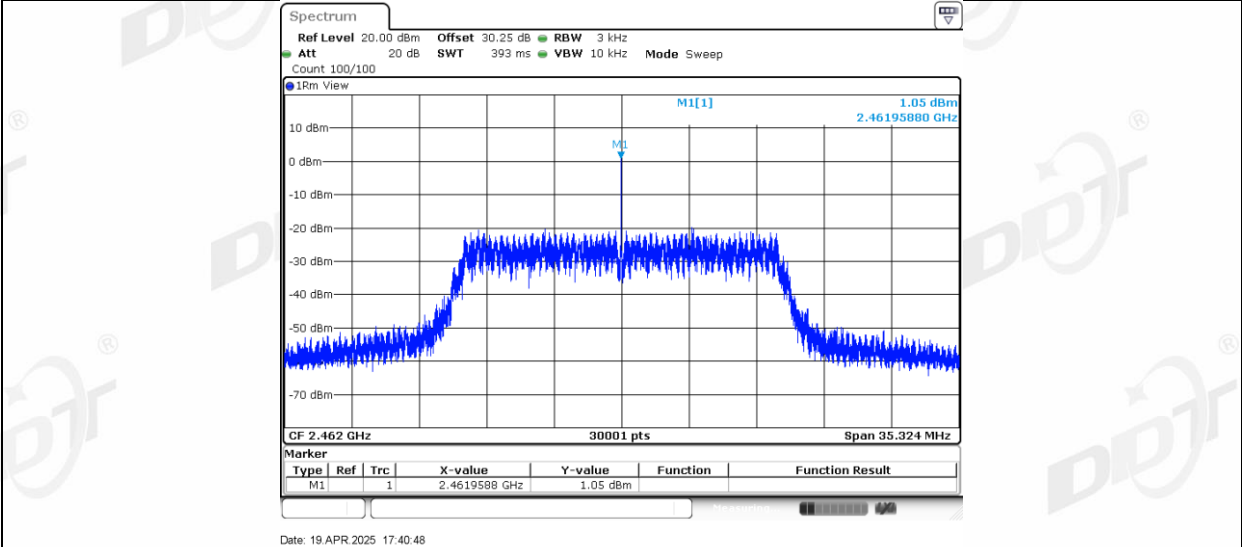




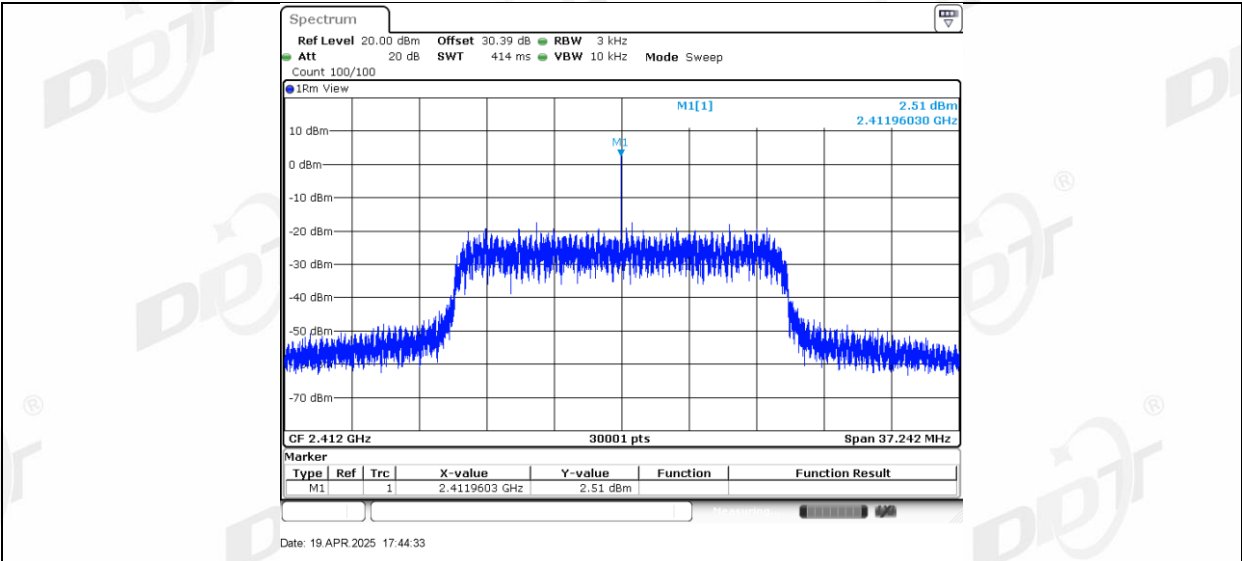
11G Ant1_2437



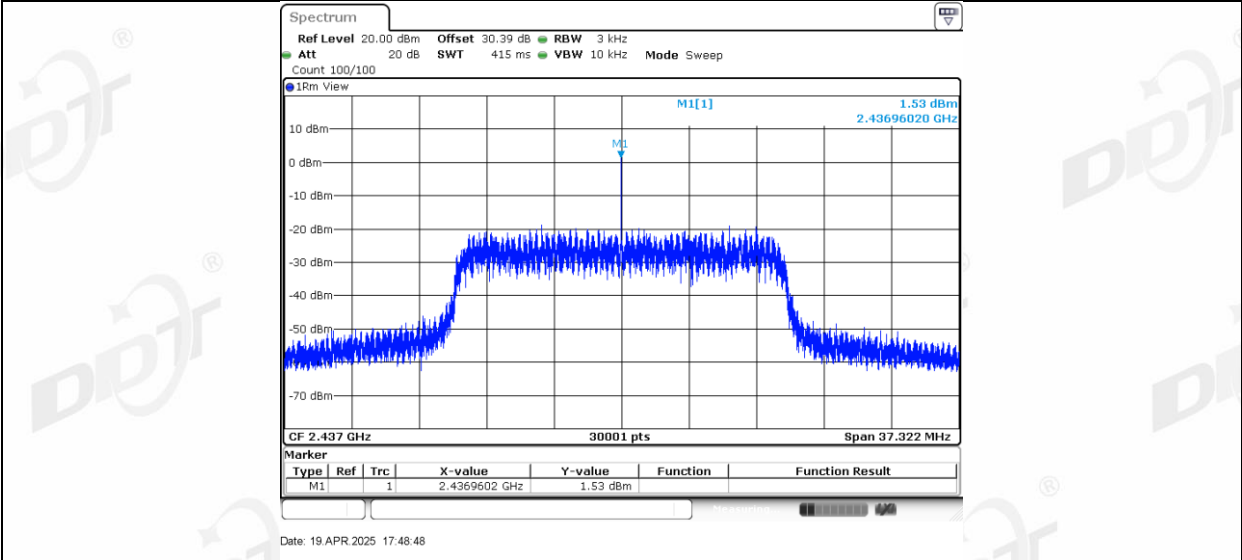
11G Ant1_2462



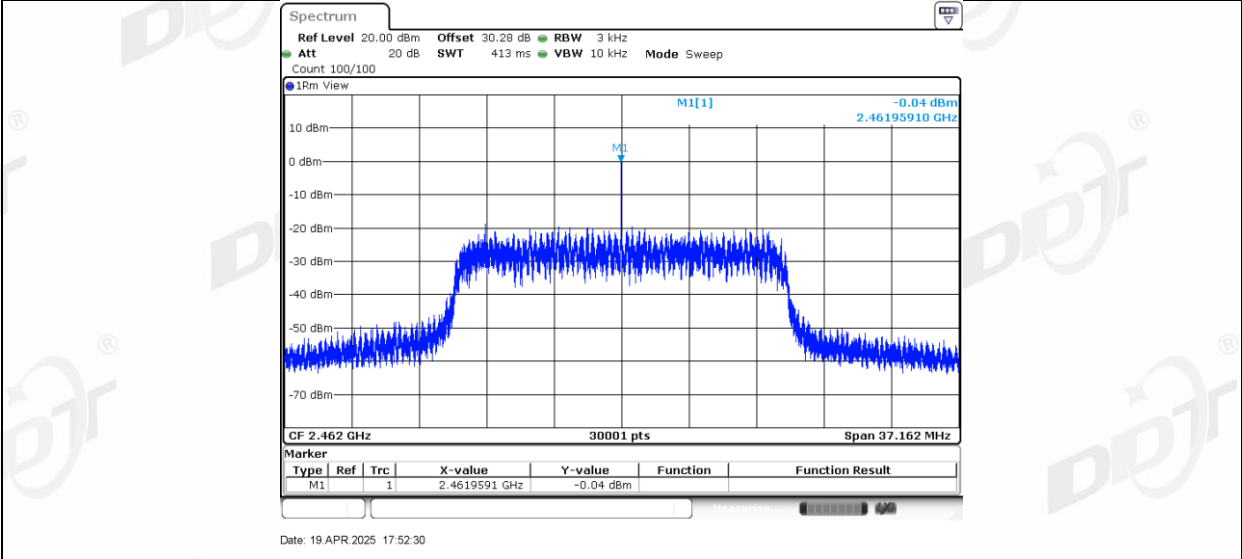
11N20SISO Ant1_2412



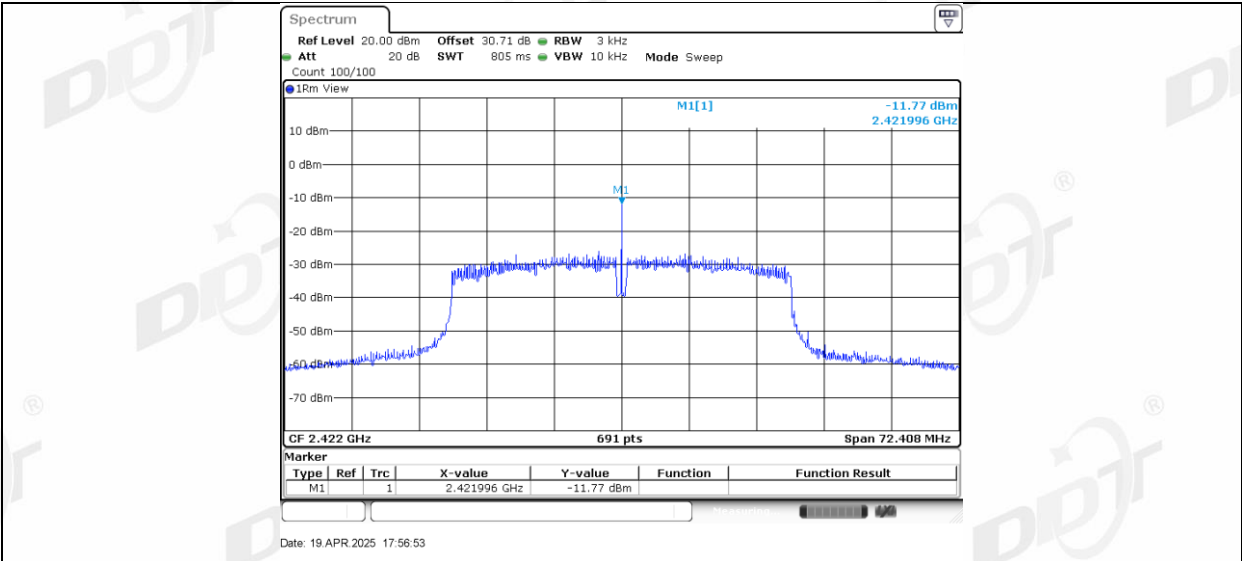
11N20SISO_Ant1_2437



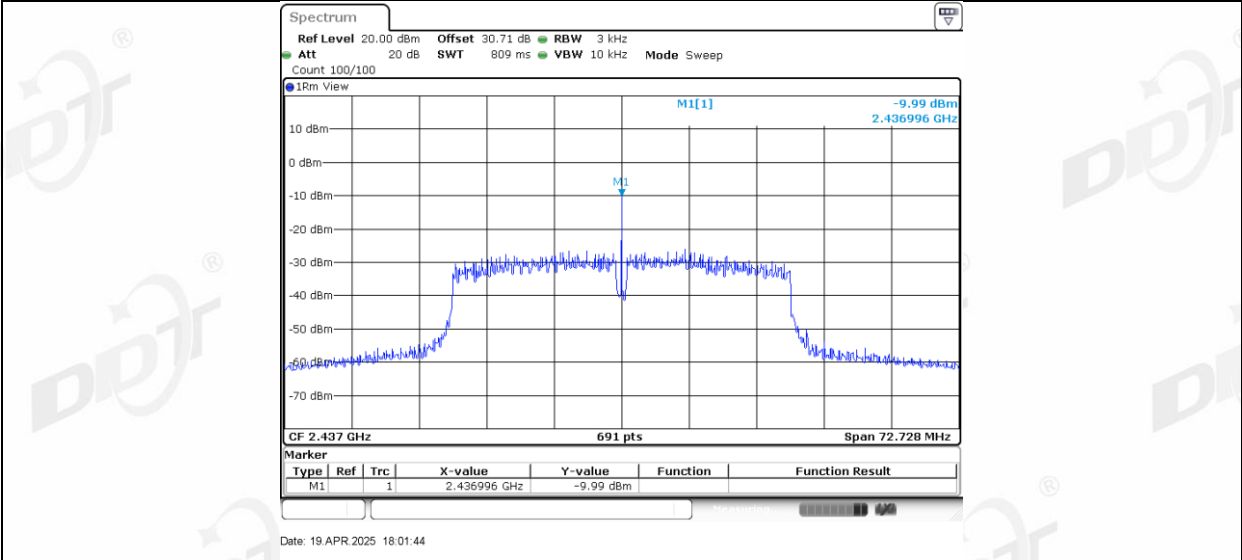
11N20SISO_Ant1_2462



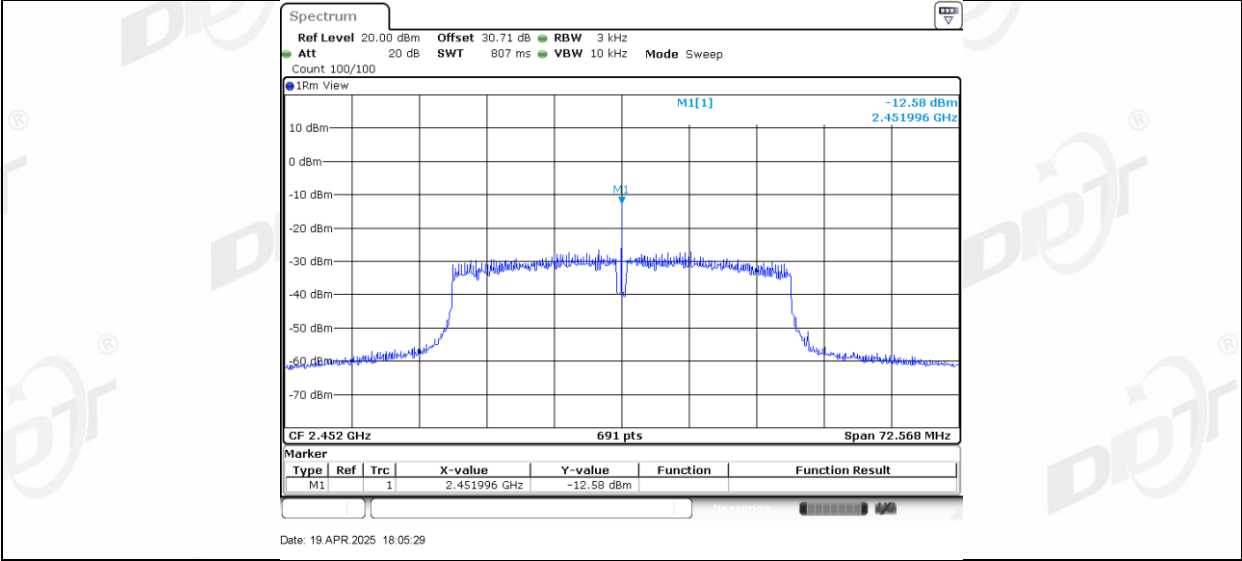
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

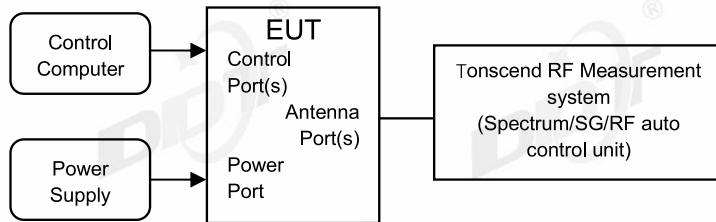


11N40SISO_Ant1_2452



8. Band Edge Compliance (Conducted Method)

8.1. Block diagram of test setup



8.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

8.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

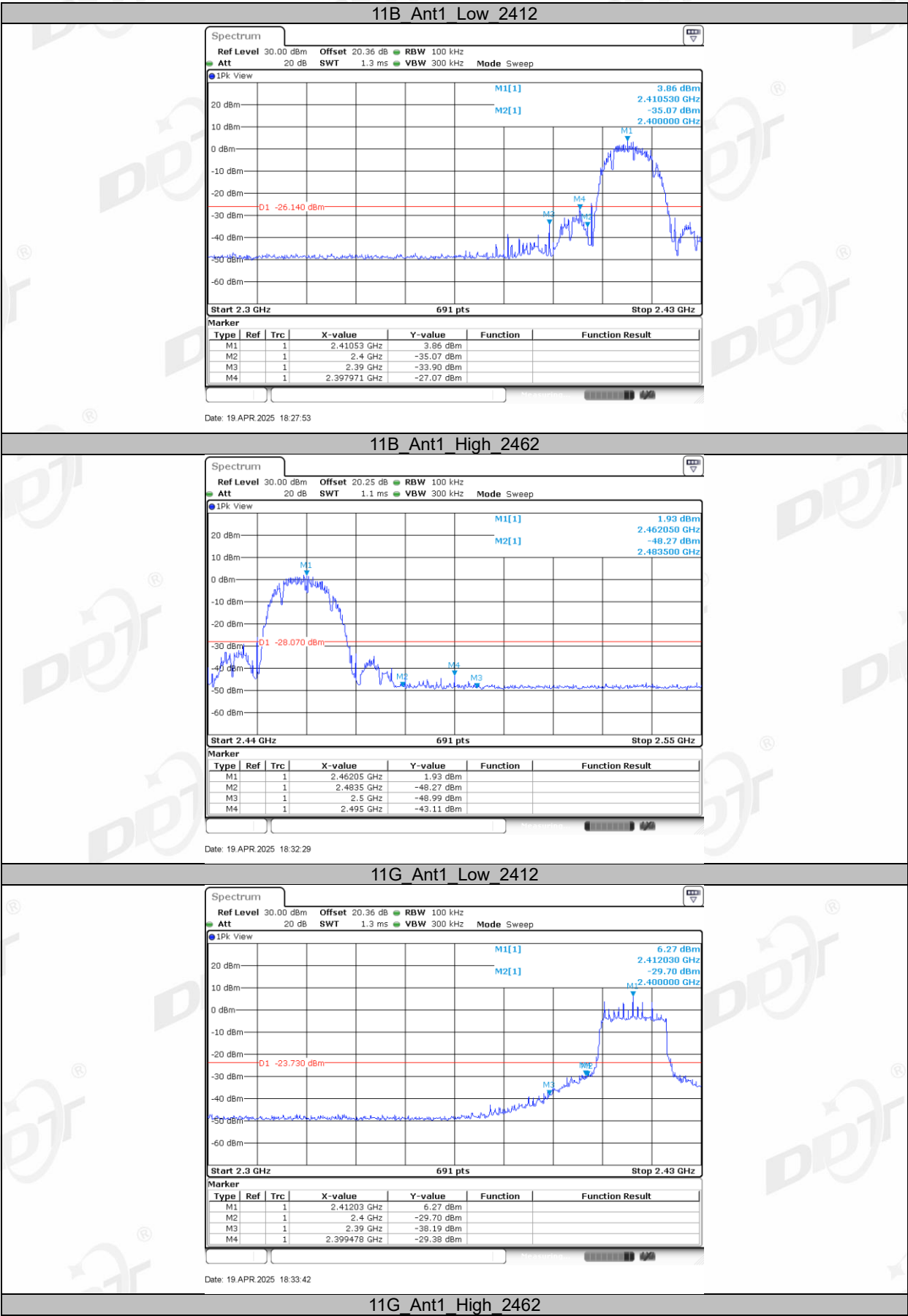
Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

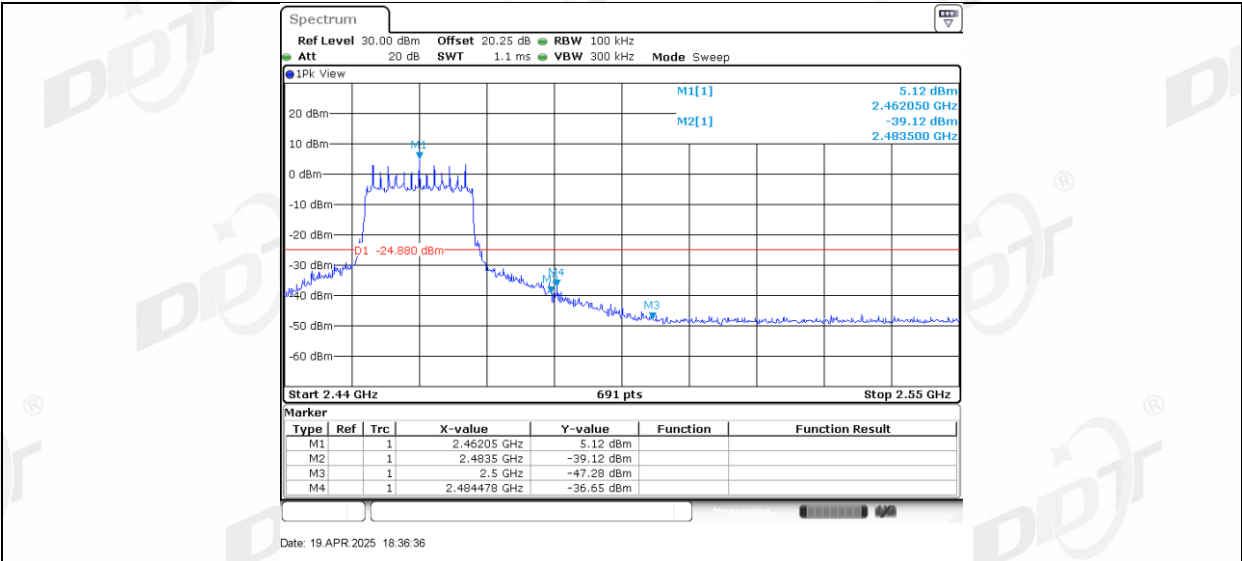
8.4. Test result

Test Engineer:	Zeng Zhongyao	Test Site:	RF Measurement System 3#
Ambient Condition:	25.6℃,43.8%RH	Test Date:	2025.04.19
Test Power Supply:	AC 120V/60HZ	Sample Number:	S25020603-001

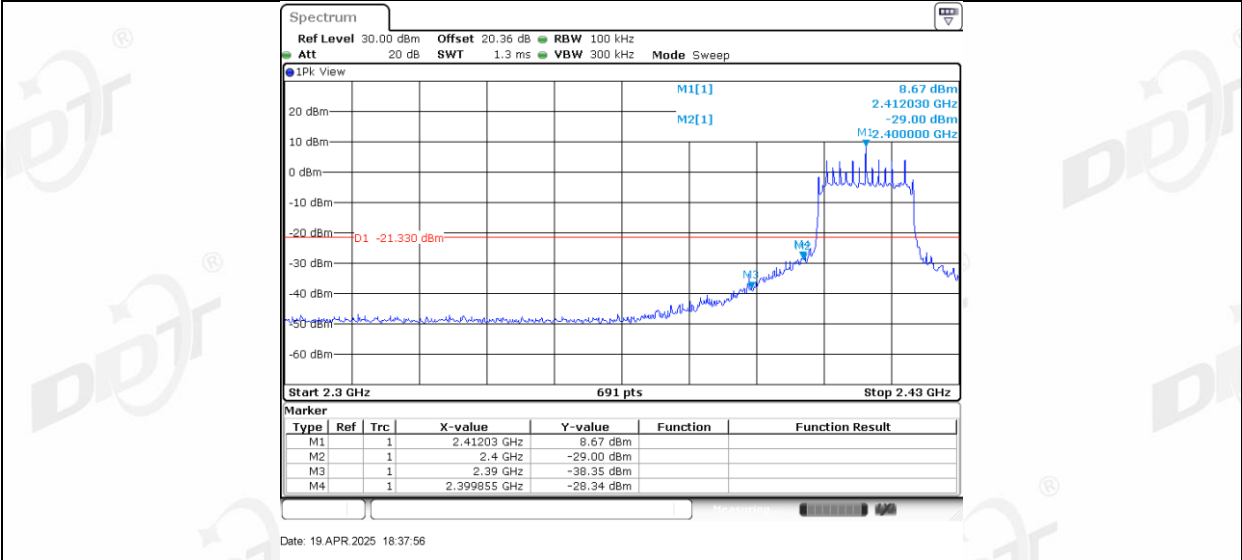
EUT Set Mode	CH or Frequency	Result(dBm)	EUT Set Mode	CH or Frequency	Result (dBm)
11b	CH1	Pass	11g	CH1	Pass
	CH11	Pass		CH11	Pass
11n HT 20	CH1	Pass	11n HT 40	CH3	Pass
	CH11	Pass		CH9	Pass

8.5. Test graphs

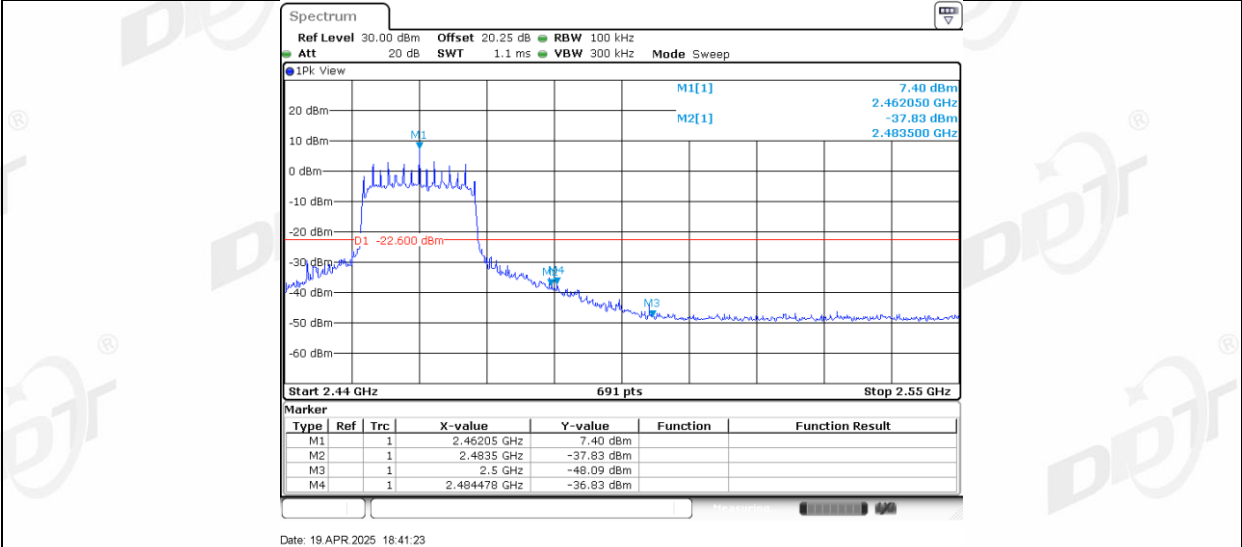




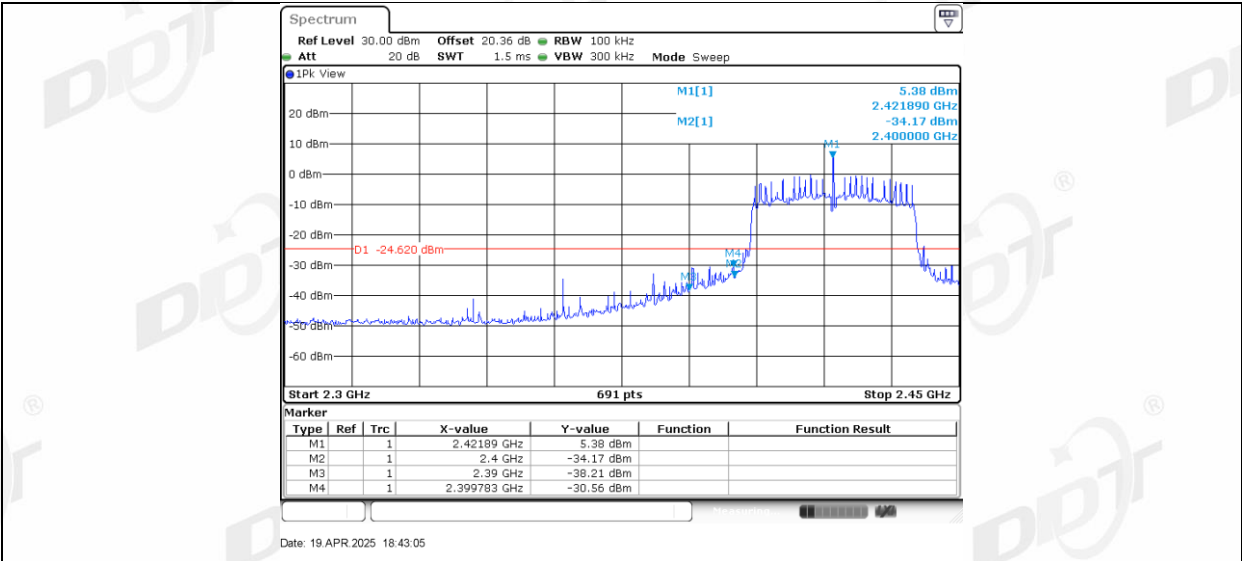
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

