

FCC AND ISED CERTIFICATION TEST REPORT

FOR

Applicant	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Wireless Speaker
Model No.	:	L42ms
Trade Mark	:	JBL
FCC ID	:	APIJBLL42MS
IC	:	6132A-JBLL42MS
Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

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

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REPORT

Table of Contents

	Test report declares.....	4
1.	Summary of Test Results.....	6
2.	General Test Information	7
2.1.	Description of EUT	7
2.2.	Accessories of EUT.....	8
2.3.	Assistant equipment used for test.....	8
2.4.	Block diagram of EUT configuration for test	8
2.5.	Deviations of test standard.....	8
2.6.	Test environment conditions	9
2.7.	Test laboratory	9
2.8.	Measurement uncertainty.....	9
3.	Equipment Used During Test.....	10
4.	6dB Bandwidth	12
4.1.	Block diagram of test setup.....	12
4.2.	Limits	12
4.3.	Test procedure	12
4.4.	Test result.....	12
4.5.	Test graphs	13
5.	99% Bandwidth	19
5.1.	Block diagram of test setup.....	19
5.2.	Limits	19
5.3.	Test procedure	19
5.4.	Test Result	20
5.5.	Test Graphs.....	21
6.	Conducted Output Power.....	27
6.1.	Block diagram of test setup.....	27
6.2.	Limits	27
6.3.	Test procedure	27
6.4.	Test result average	28
7.	Power Spectral Density.....	29
7.1.	Block diagram of test setup.....	29
7.2.	Limits	29
7.3.	Test procedure	29
7.4.	Test result.....	30
7.5.	Test graphs	31
8.	Band Edge Compliance (Conducted Method)	37
8.1.	Block diagram of test setup.....	37

8.2.	Limits	37
8.3.	Test procedure	37
8.4.	Test result.....	37
8.5.	Test graphs	38
9.	RF Conducted Spurious Emissions	42
9.1.	Block diagram of test setup.....	42
9.2.	Limits	42
9.3.	Test procedure	42
9.4.	Test result.....	43
9.5.	Test graphs	44
10.	Duty Cycle	62
10.1.	Block diagram of test setup.....	62
10.2.	Limit.....	62
10.3.	Test procedure	62
10.4.	Test result.....	63
10.5.	Test graphs	64
11.	Radiated Spurious Emissions	70
11.1.	Block diagram of test setup.....	70
11.2.	Limit.....	71
11.3.	Test procedure	73
11.4.	Test result.....	74
12.	Radiated Band Edge Compliance	83
12.1.	Block diagram of test setup.....	83
12.2.	Limit.....	83
12.3.	Test procedure	83
12.4.	Test result.....	83
13.	Power Line Conducted Emission	104
13.1.	Block diagram of test setup.....	104
13.2.	Power Line Conducted Emission Limits	104
13.3.	Test procedure	104
13.4.	Test result.....	105
14.	Antenna Requirements	108
14.1.	Limit.....	108
14.2.	Result	108
15.	Test Setup Photograph	109
16.	Photos of the EUT	111

Test Report Declare

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Trade Mark	:	JBL
Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023.

Test procedure used: ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021), 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-RE23060623-2E03		
Date of Receipt:	Jul. 21, 2023	Date of Test:	Jul. 21, 2023 ~ Aug. 26, 2023

Prepared By:

Bobo Chen

Bobo Chen/Engineer

Approved By:

Damon Hu

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	Aug. 26, 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(a)(2) RSS-247 Issue 3 clause 5.2(a)	PASS
Conducted Output Power	FCC Part 15: 15.247(b)(3) RSS-247 Issue 3 clause 5.4(d)	PASS
Power Spectral Density	FCC Part 15: 15.247(e) RSS-247 Issue 3 clause 5.2(b)	PASS
Band-edge and Spurious Emissions (Conducted)	FCC Part 15: 15.247(d) RSS-247 Issue 3 clause 5.5	PASS
Radiated Spurious Emissions	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	PASS
Radiated 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	PASS
Power Line Conducted Emission	FCC Part 15: 15.207(a) RSS-Gen Issue 5 clause 8.8	PASS
Antenna requirement	FCC Part 15: 15.203 RSS-Gen Issue 5 clause 6.8	PASS

2. General Test Information

2.1. Description of EUT

EUT Name	: Wireless Speaker
Model Number	: L42ms
Product difference	: This product comes in different appearance colors, only the color difference, the product circuit design, layout, components used and internal wiring are the same
EUT function description	: Please reference user manual of this device
Power supply	: AC 100-240V ~ 50/60Hz
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
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: 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
Antenna	: Antenna 1: PIFA antenna, Maximum PK gain: 4.03 dBi Antenna 2: PIFA antenna, Maximum PK gain: 3.66 dBi
Sample Number	: S23060623-10 for conductive S23060623-11 for radiation

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

Note 2: “☑” means to be chosen or applicable; “☐” means don't to be chosen or not applicable;
This note applies to entire report.

Antenna information			
	Ant1 gain	Ant2 gain	Directional gain
IEEE 802.11b	4.03	3.66	/
IEEE 802.11g	4.03	3.66	/
IEEE 802.11n HT20	4.03	3.66	3.85
Note: This EUT supports STBC, any transmit signals are uncorrelated with each other. So the Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10})/2]$ dBi			

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	/	/

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	Harman	N/A	Length: 1.75m, unshielded	N/A
Remote control	Harman	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: PuTTY.exe

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)
	ANT1	ANT2			
IEEE 802.11b	Default	Default	1	LCH: CH1	2412
	Default	Default	1	MCH: CH6	2437
	Default	Default	1	HCH: CH11	2462
IEEE 802.11g	13	13	6	LCH: CH1	2412
	13	13	6	MCH: CH6	2437
	13	13	6	HCH: CH11	2462
IEEE 802.11n HT20	12	12	MCS 8	LCH: CH1	2412
	12	12	MCS 8	MCH: CH6	2437
	12	12	MCS 8	HCH: CH11	2462

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

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 (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.	

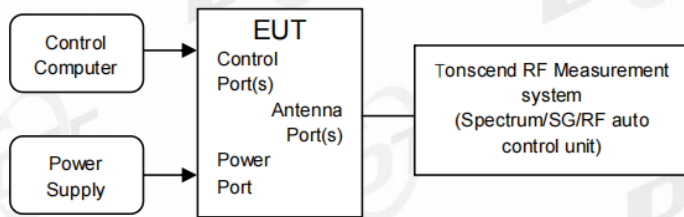
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 4#)					
Signal & Spectrum analyzer	R&S	FSV3044	101173	Apr. 23, 2023	1 Year
Wideband Radio Communication tester	R&S	CMW500	168801	Apr. 27, 2023	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Apr. 27, 2023	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 28, 2022	1 Year
RF Control Unit	Tonscend	JS0806-2	2118060485	Apr. 27, 2023	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 15, 2023	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.3.2.22	N/A	N/A
☑Radiation 3#chamber					
EMI Test Receiver	R&S	ESU26	100472	Apr. 23, 2023	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Apr. 23, 2023	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 12, 2023	2 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120 D	02468	Sep. 29, 2022	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Apr. 26, 2023	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Jul. 15, 2023	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Apr. 27, 2023	1 Year
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5M	4.5M+8M+1.5M	Apr. 21, 2023	1 Year
RF Cable	Yuhu Technology	JCTB810-NJ-NJ-9M+ ZT26S-SMAJ-SMAJ-1M	21123964	Apr. 23, 2023	1 Year
Micro-Tronics filters	REBES	BRM50702	G555	N/A	N/A
Micro-Tronics filters	REBES	BRM50716	G392	N/A	N/A
High Pass filter	XB	XBLBQ-GTA67	210820-2-3	N/A	N/A
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
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year

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 Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	8.04	2407.96	2416.00	0.5	PASS
	Ant2	2412	7.08	2408.44	2415.52	0.5	PASS
	Ant1	2437	7.56	2433.44	2441.00	0.5	PASS
	Ant2	2437	7.56	2433.44	2441.00	0.5	PASS
	Ant1	2462	7.56	2458.44	2466.00	0.5	PASS
	Ant2	2462	7.56	2458.44	2466.00	0.5	PASS
11G	Ant1	2412	16.36	2403.80	2420.16	0.5	PASS
	Ant2	2412	16.36	2403.80	2420.16	0.5	PASS
	Ant1	2437	16.36	2428.80	2445.16	0.5	PASS
	Ant2	2437	16.36	2428.80	2445.16	0.5	PASS
	Ant1	2462	16.36	2453.80	2470.16	0.5	PASS
	Ant2	2462	16.36	2453.80	2470.16	0.5	PASS
11N20MIMO	Ant1	2412	17.60	2403.16	2420.76	0.5	PASS
	Ant2	2412	17.60	2403.16	2420.76	0.5	PASS
	Ant1	2437	17.56	2428.20	2445.76	0.5	PASS
	Ant2	2437	17.60	2428.16	2445.76	0.5	PASS
	Ant1	2462	17.56	2453.20	2470.76	0.5	PASS
	Ant2	2462	17.60	2453.16	2470.76	0.5	PASS

4.5. Test graphs



11B_Ant2_2437



11B_Ant1_2462



11B_Ant2_2462



11G_Ant1_2412



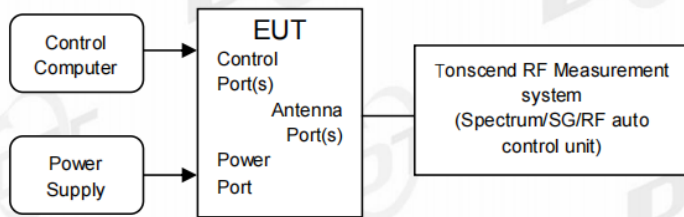






5. 99% Bandwidth

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:

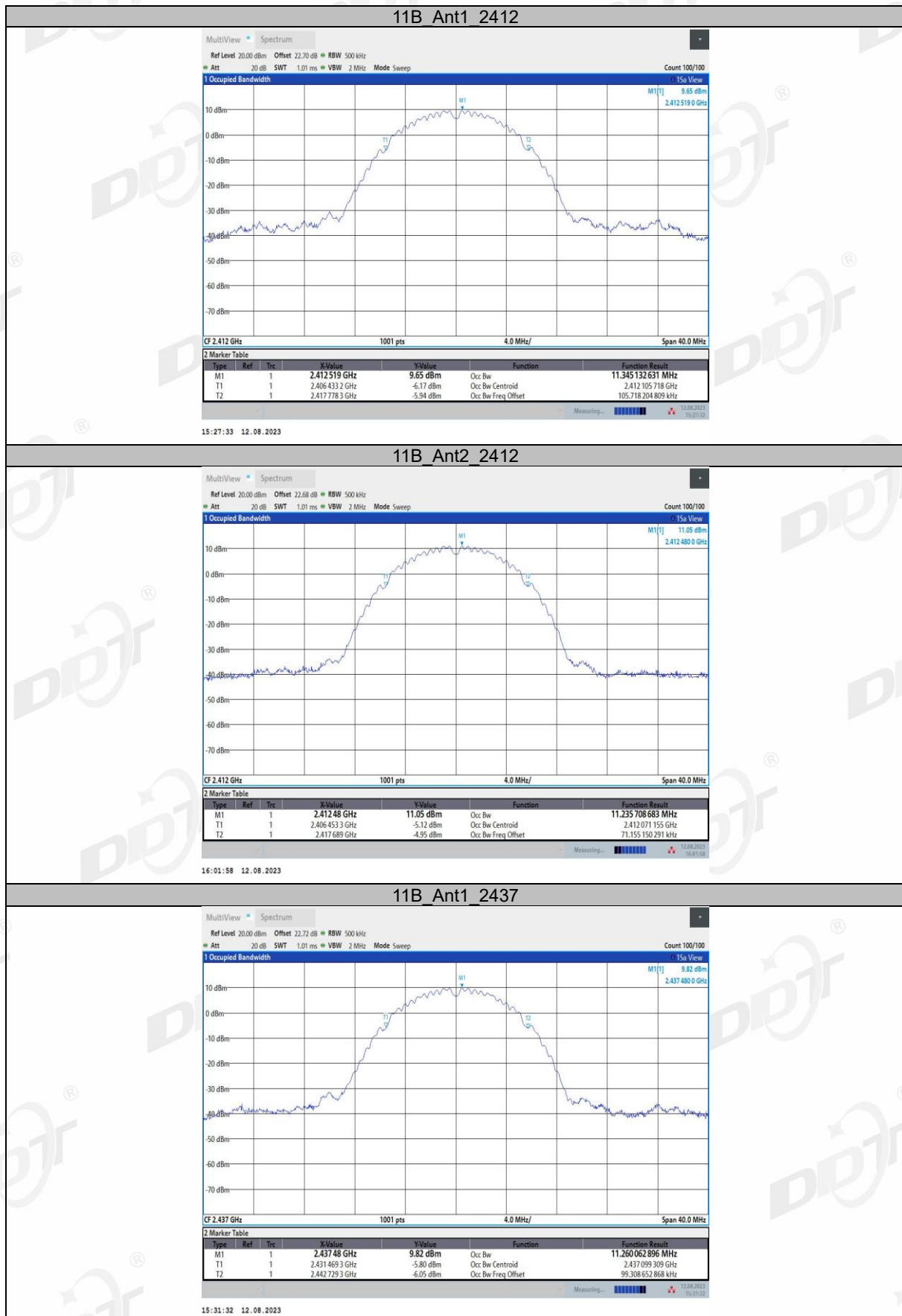
RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 1.5 times and 5.0 times the OBW
Detector Mode:	peak
Sweep time:	auto
Trace mode	max hold

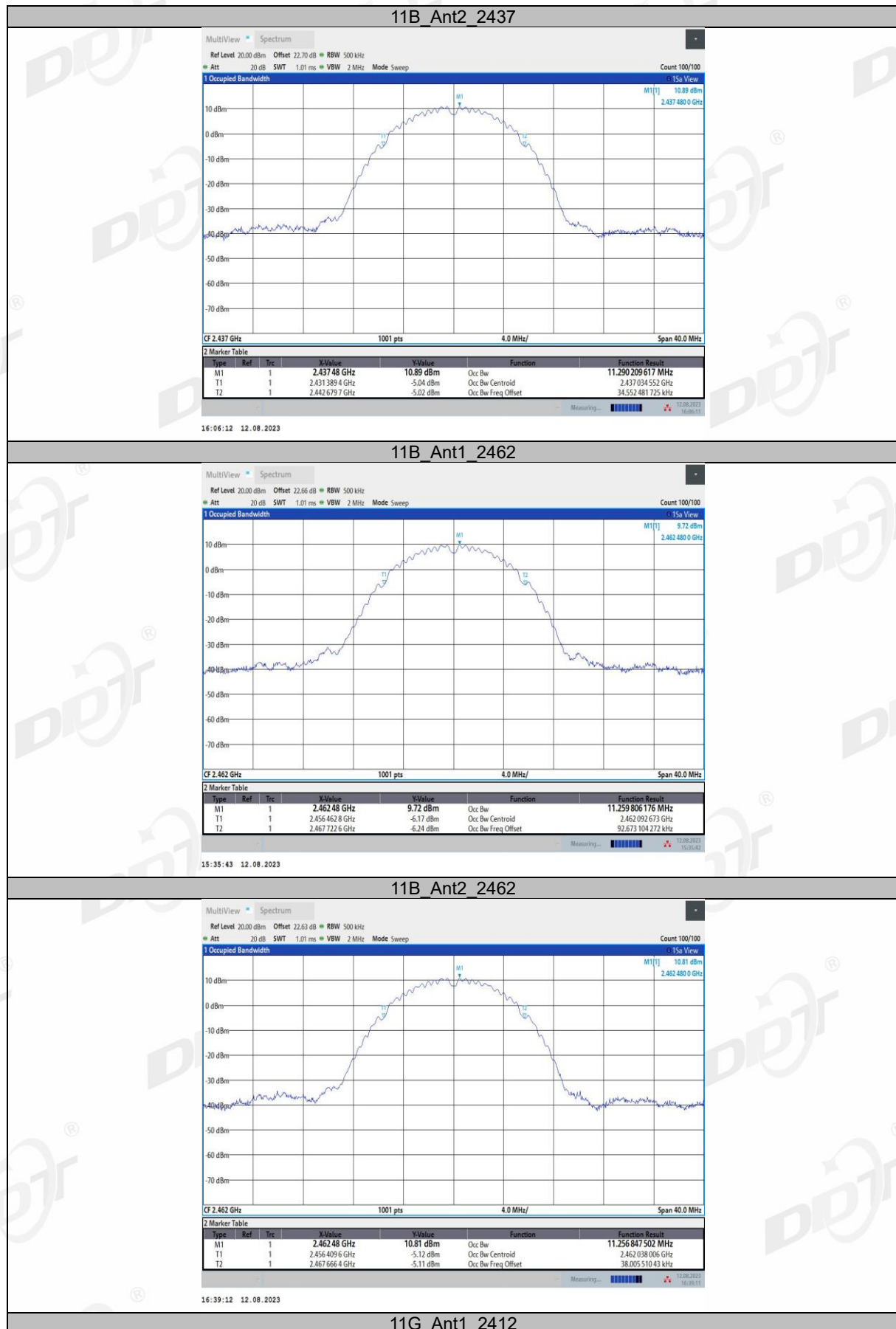
Allow the trace to stabilize, measure the 99% bandwidth of signal, and record the results in the report.

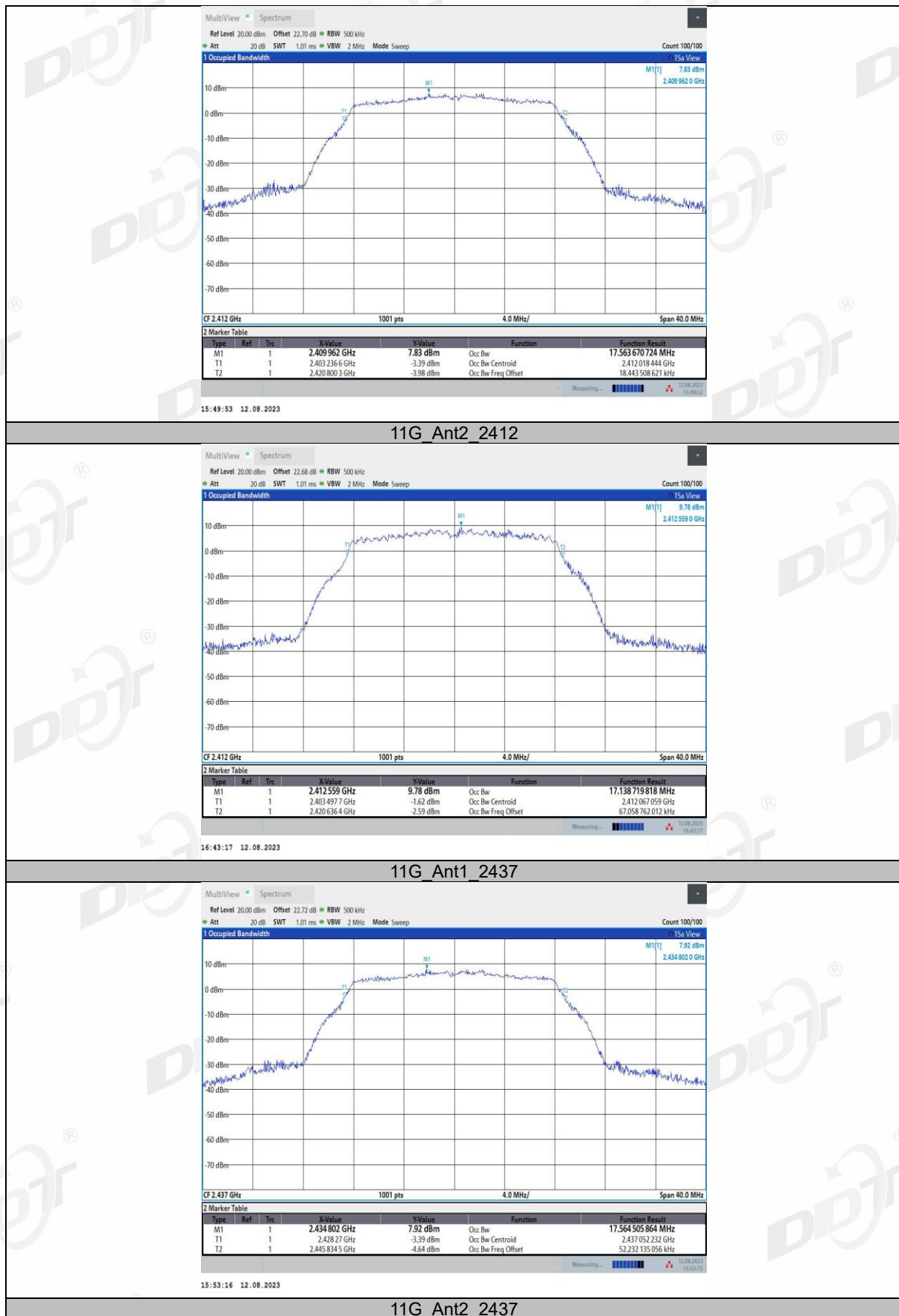
5.4. Test Result

Test Mode	Antenna	Channel Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	11.345	2406.4332	2417.7783	---	---
	Ant2	2412	11.236	2406.4533	2417.6890	---	---
	Ant1	2437	11.26	2431.4693	2442.7293	---	---
	Ant2	2437	11.29	2431.3894	2442.6797	---	---
	Ant1	2462	11.26	2456.4628	2467.7226	---	---
	Ant2	2462	11.257	2456.4096	2467.6664	---	---
11G	Ant1	2412	17.564	2403.2366	2420.8003	---	---
	Ant2	2412	17.139	2403.4977	2420.6364	---	---
	Ant1	2437	17.565	2428.2700	2445.8345	---	---
	Ant2	2437	17.167	2428.4701	2445.6368	---	---
	Ant1	2462	17.567	2453.2191	2470.7861	---	---
	Ant2	2462	17.206	2453.4501	2470.6559	---	---
11N20MIMO	Ant1	2412	18.497	2402.7706	2421.2680	---	---
	Ant2	2412	18.051	2402.9703	2421.0213	---	---
	Ant1	2437	18.518	2427.7813	2446.2997	---	---
	Ant2	2437	18.067	2427.9558	2446.0228	---	---
	Ant1	2462	18.571	2452.7370	2471.3076	---	---
	Ant2	2462	18.053	2452.9710	2471.0238	---	---

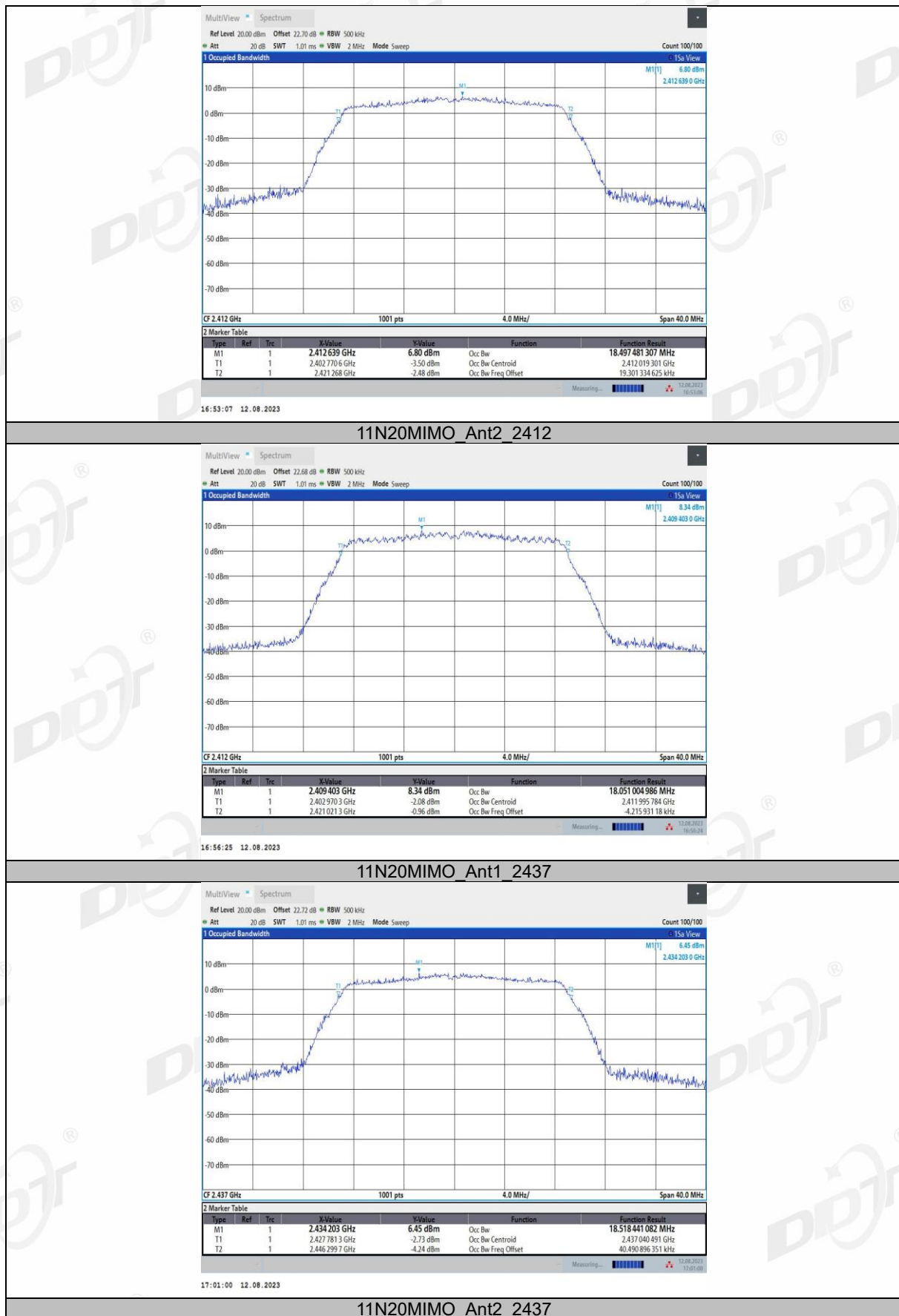
5.5. Test Graphs







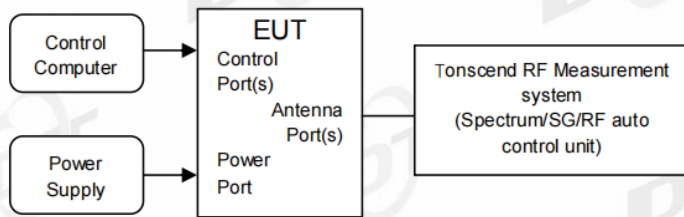






6. Conducted Output Power

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.

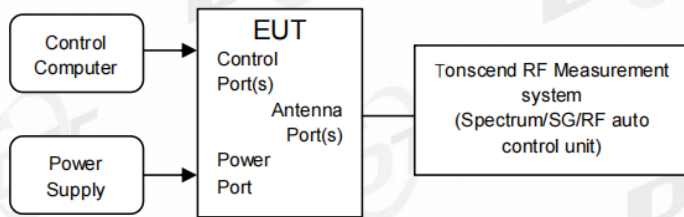
6.4. Test result average

Test Mode	Ant.	Frequency [MHz]	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11B	Ant1	2412	17.79	100.00	0.00	17.79	≤30	21.82	≤36	PASS
	Ant2	2412	19.13	100.00	0.00	19.13	≤30	22.79	≤36	PASS
	Ant1	2437	18.04	100.00	0.00	18.04	≤30	22.07	≤36	PASS
	Ant2	2437	19.09	100.00	0.00	19.09	≤30	22.75	≤36	PASS
	Ant1	2462	17.83	100.00	0.00	17.83	≤30	21.86	≤36	PASS
	Ant2	2462	19.01	100.00	0.00	19.01	≤30	22.67	≤36	PASS
11G	Ant1	2412	14.20	99.04	0.04	14.24	≤30	18.27	≤36	PASS
	Ant2	2412	14.40	99.04	0.04	14.44	≤30	18.10	≤36	PASS
	Ant1	2437	14.06	99.04	0.04	14.10	≤30	18.13	≤36	PASS
	Ant2	2437	14.62	99.04	0.04	14.66	≤30	18.32	≤36	PASS
	Ant1	2462	13.70	99.04	0.04	13.74	≤30	17.77	≤36	PASS
	Ant2	2462	14.50	99.04	0.04	14.54	≤30	18.20	≤36	PASS
11N20MIMO	Ant1	2412	13.36	98.97	0.04	13.40	≤30	17.43	≤36	PASS
	Ant2	2412	13.35	98.97	0.04	13.39	≤30	17.05	≤36	PASS
	total	2412	---	---	---	16.41	≤30	20.26	≤36	PASS
	Ant1	2437	13.04	98.97	0.04	13.08	≤30	17.11	≤36	PASS
	Ant2	2437	13.41	98.97	0.04	13.45	≤30	17.11	≤36	PASS
	total	2437	---	---	---	16.28	≤30	20.13	≤36	PASS
	Ant1	2462	12.89	98.97	0.04	12.93	≤30	16.96	≤36	PASS
	Ant2	2462	13.29	98.97	0.04	13.33	≤30	16.99	≤36	PASS
	total	2462	---	---	---	16.14	≤30	19.99	≤36	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:

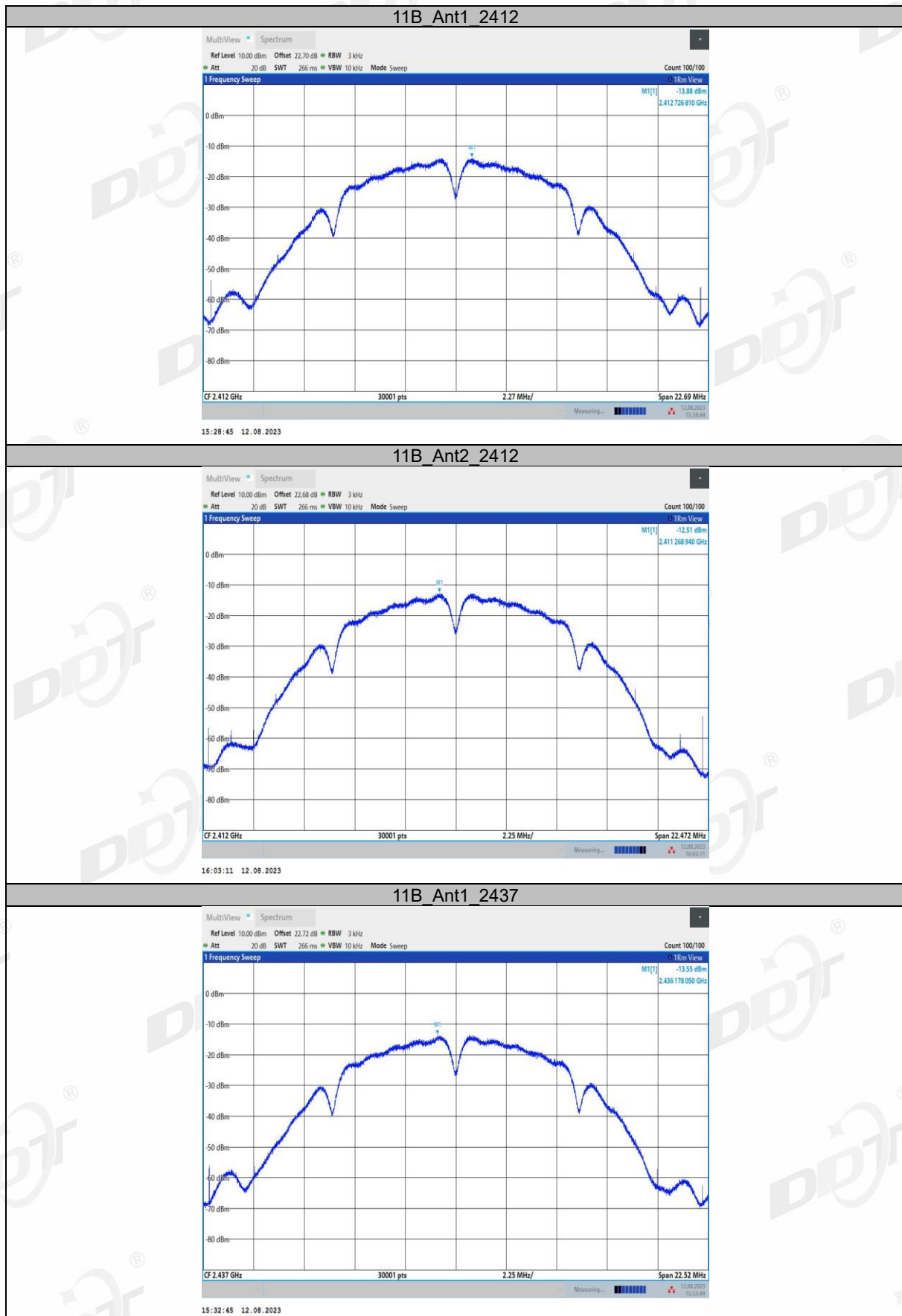
Center frequency	DTS Channel center frequency
RBW:	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	RMS
Sweep time:	auto
Trace mode	max hold
	Employ trace averaging (rms)
Trace	mode over a minimum of 100 traces.
 - (5) Add $[10 \log (1 / D)]$, 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

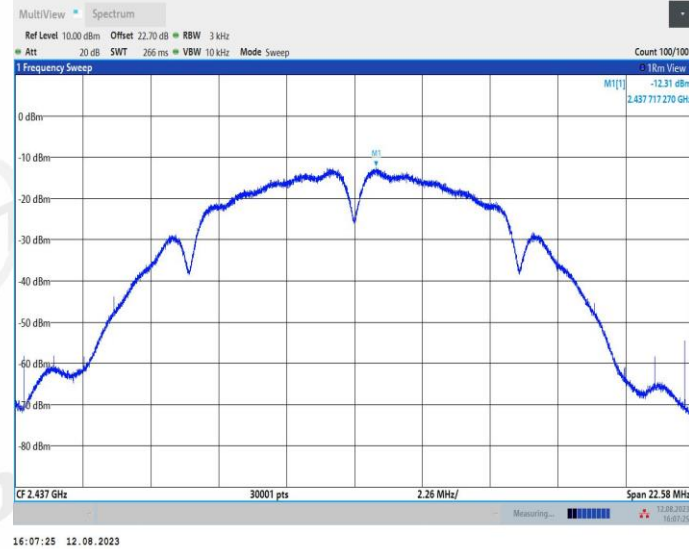
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-13.88	≤8.00	PASS
	Ant2	2412	-12.51	≤8.00	PASS
	Ant1	2437	-13.55	≤8.00	PASS
	Ant2	2437	-12.31	≤8.00	PASS
	Ant1	2462	-13.87	≤8.00	PASS
	Ant2	2462	-12.32	≤8.00	PASS
11G	Ant1	2412	-18.49	≤8.00	PASS
	Ant2	2412	-18.36	≤8.00	PASS
	Ant1	2437	-18.68	≤8.00	PASS
	Ant2	2437	-18.63	≤8.00	PASS
	Ant1	2462	-19.10	≤8.00	PASS
	Ant2	2462	-18.33	≤8.00	PASS
11N20MIMO	Ant1	2412	-20.68	≤8.00	PASS
	Ant2	2412	-20.95	≤8.00	PASS
	total	2412	-17.80	≤8.00	PASS
	Ant1	2437	-20.77	≤8.00	PASS
	Ant2	2437	-20.84	≤8.00	PASS
	total	2437	-17.79	≤8.00	PASS
	Ant1	2462	-21.01	≤8.00	PASS
	Ant2	2462	-21.01	≤8.00	PASS
	total	2462	-18.00	≤8.00	PASS

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

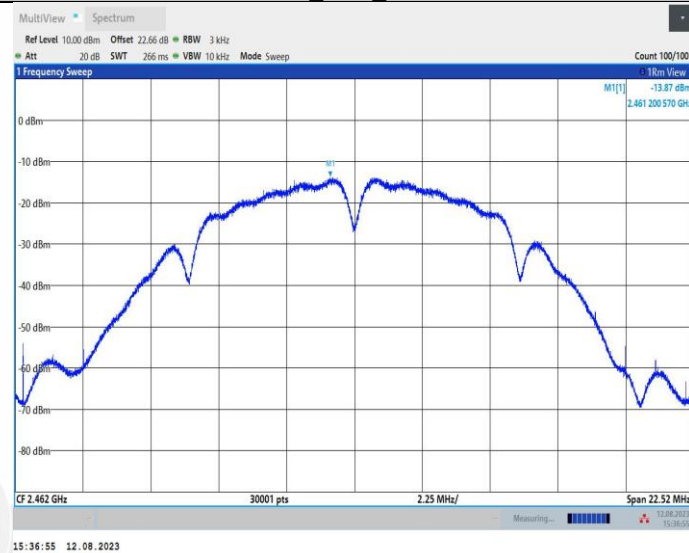
7.5. Test graphs



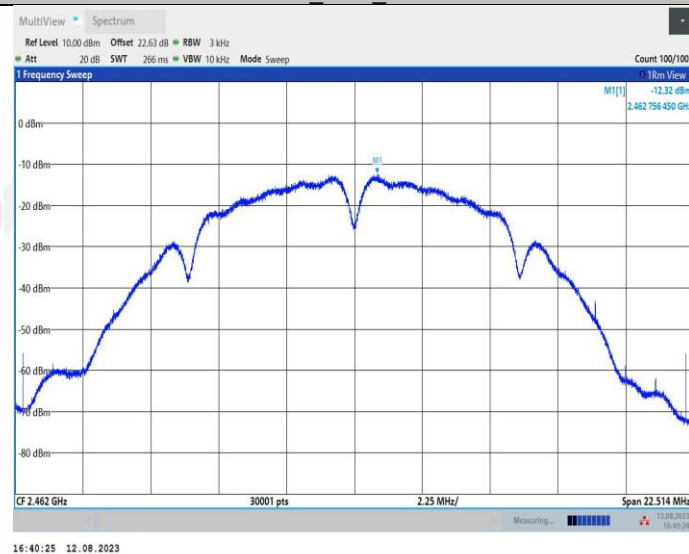
11B_Ant2_2437



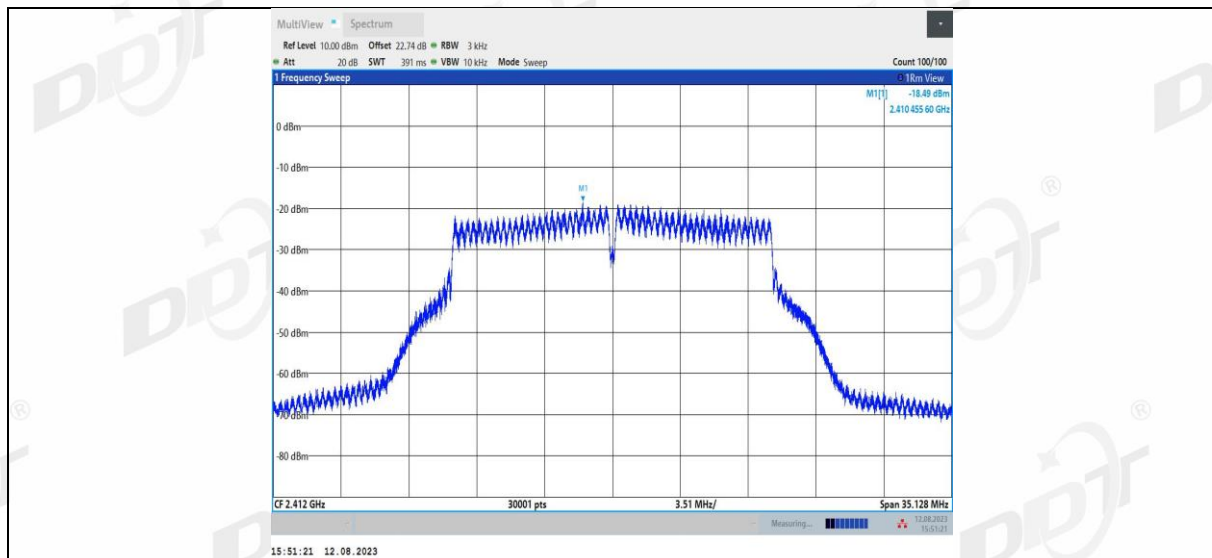
11B_Ant1_2462



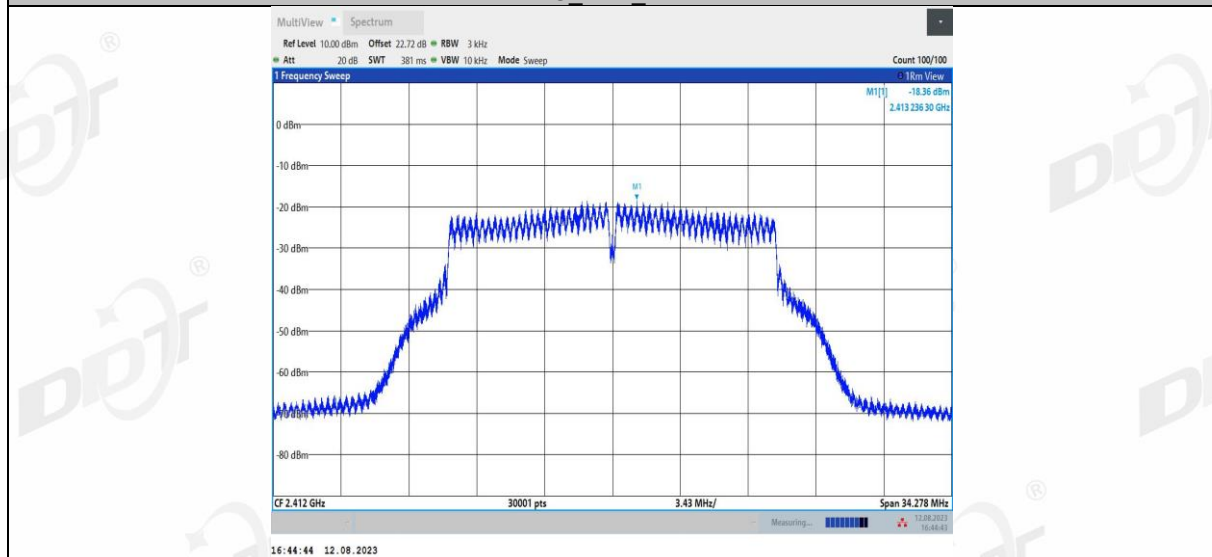
11B_Ant2_2462



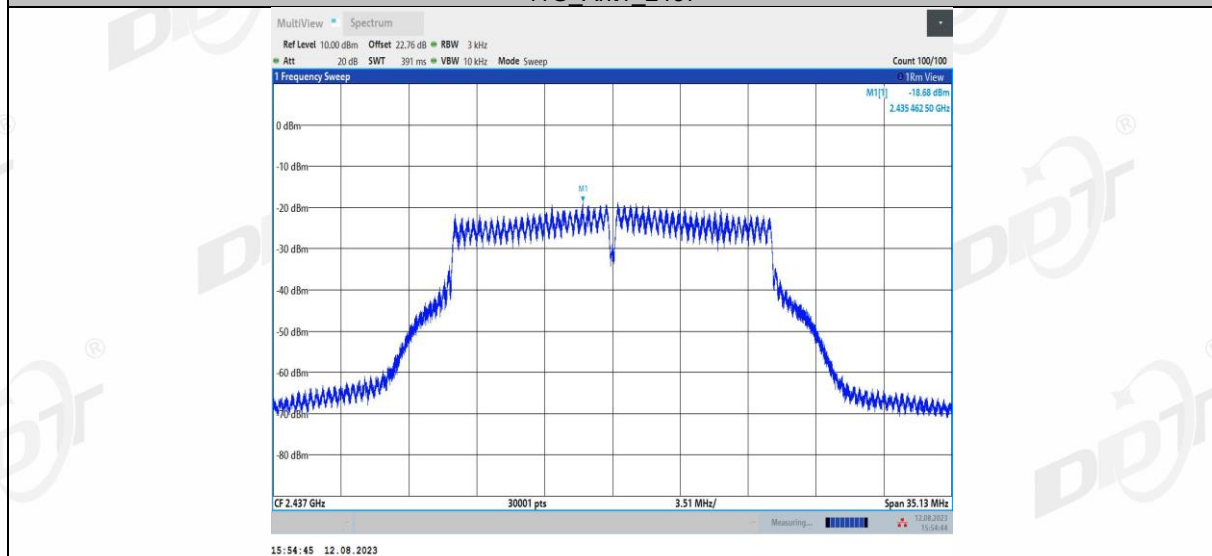
11G_Ant1_2412



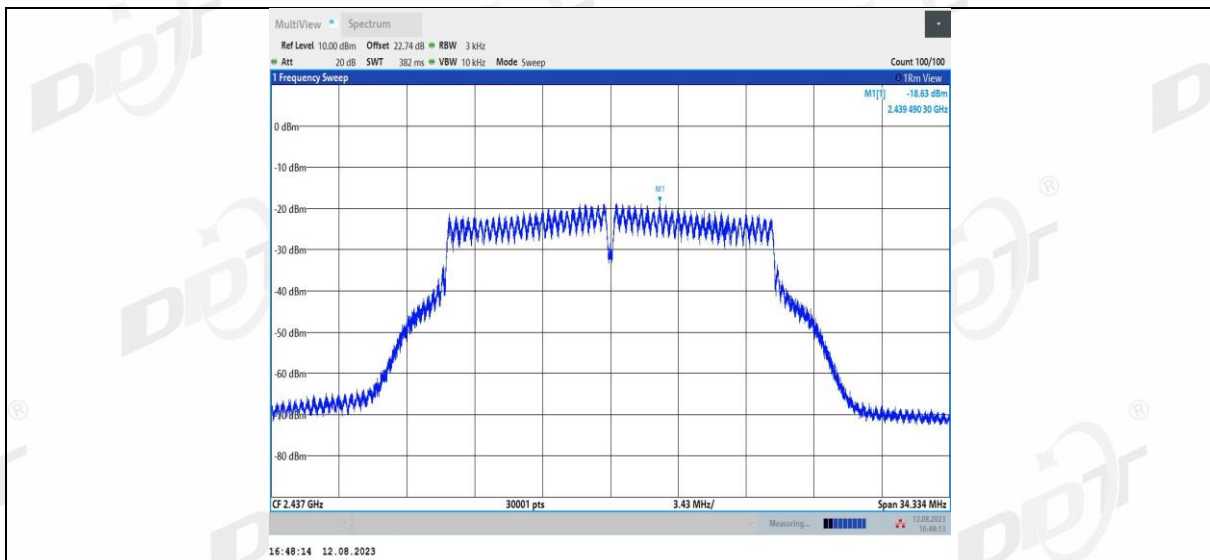
11G_Ant2_2412



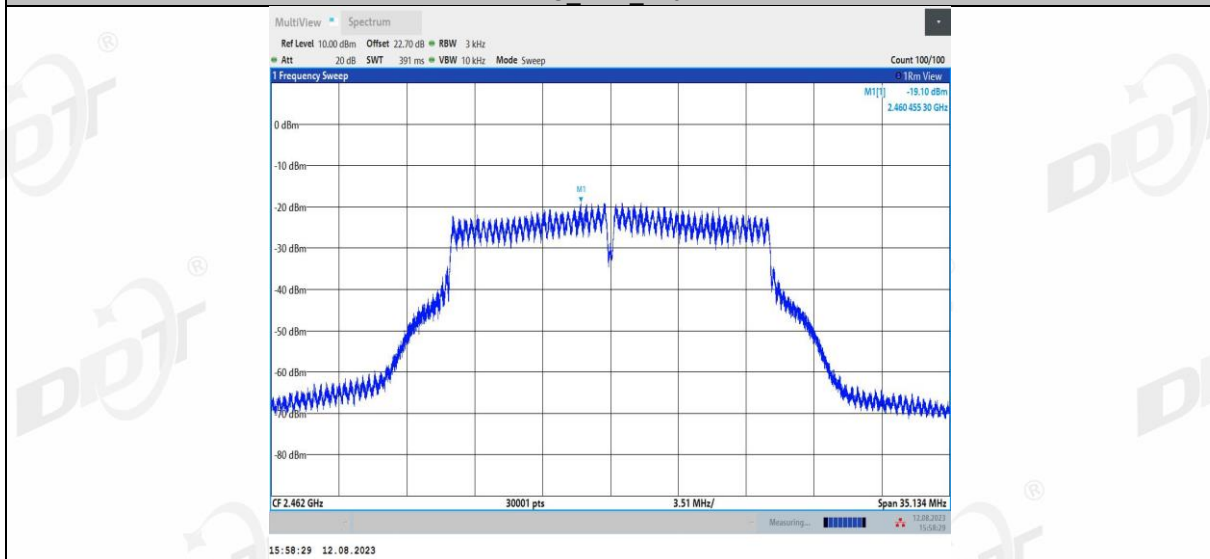
11G_Ant1_2437



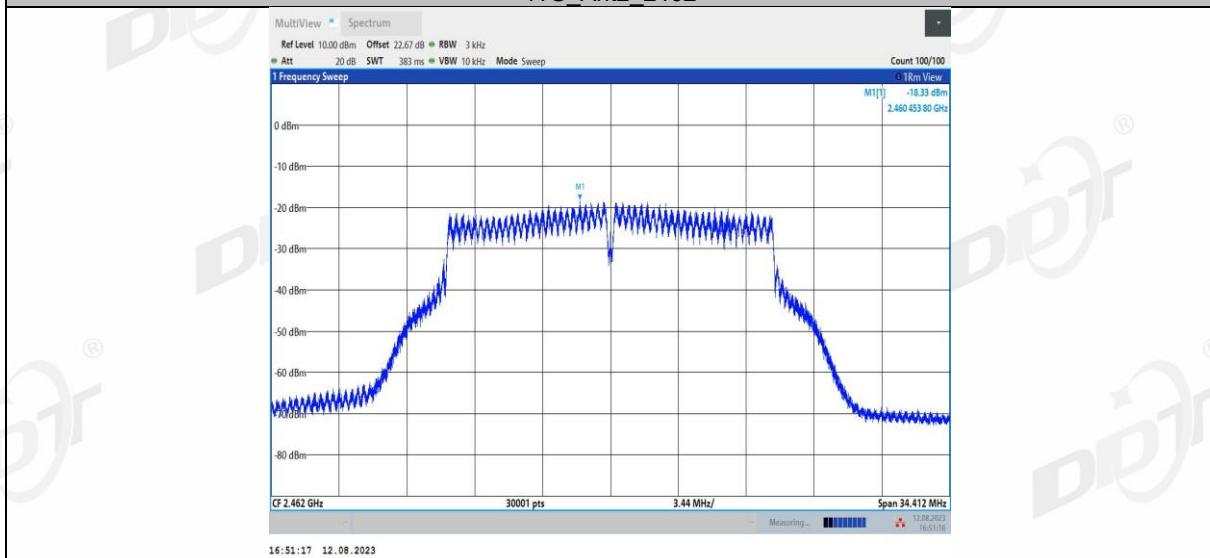
11G_Ant2_2437



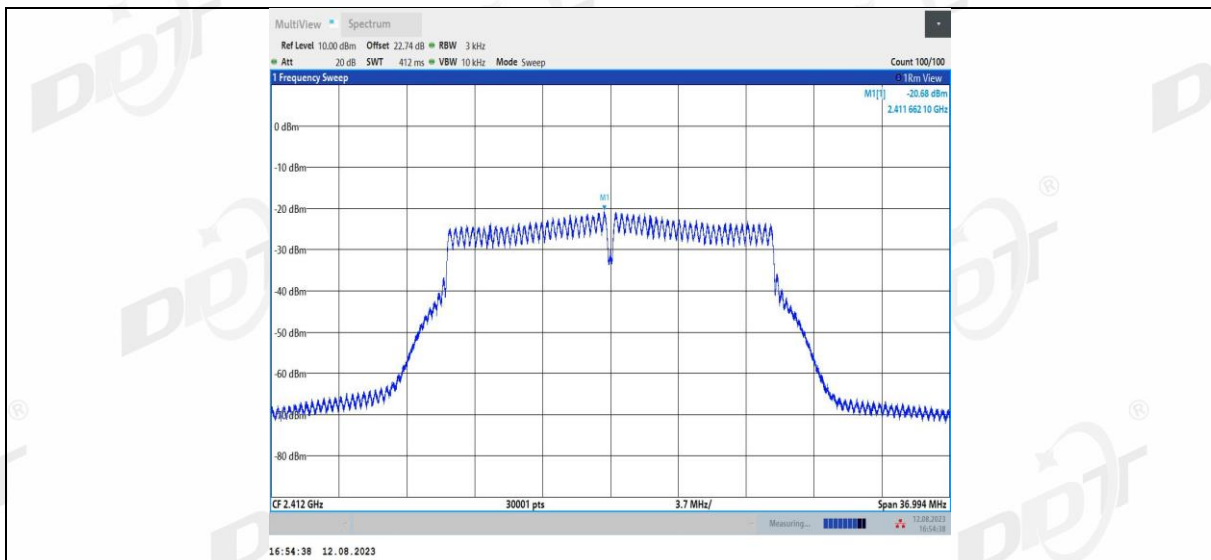
11G_Ant1_2462



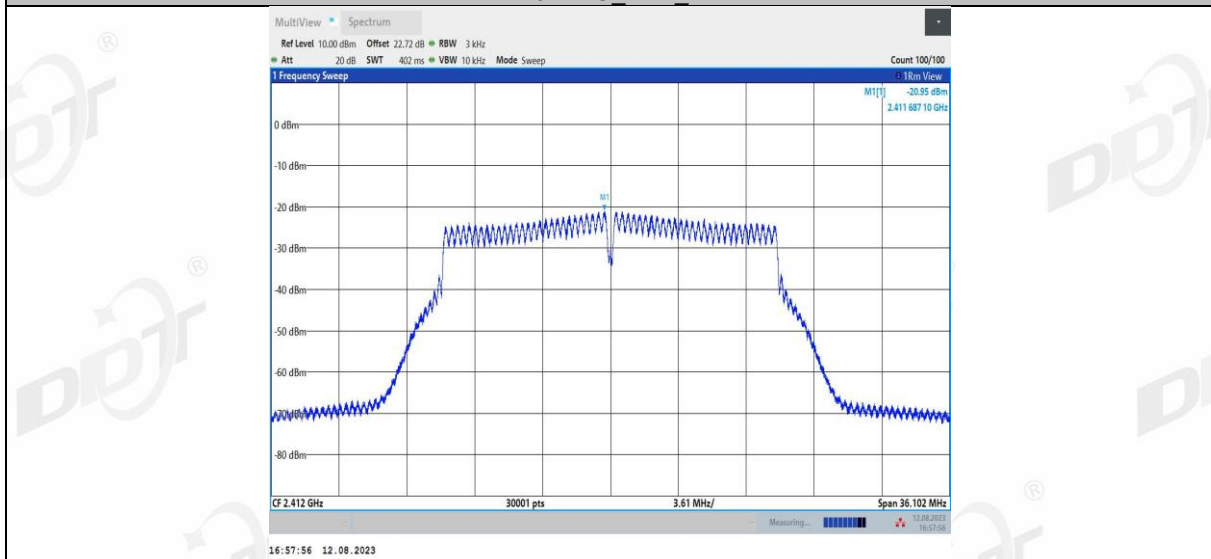
11G_Ant2_2462



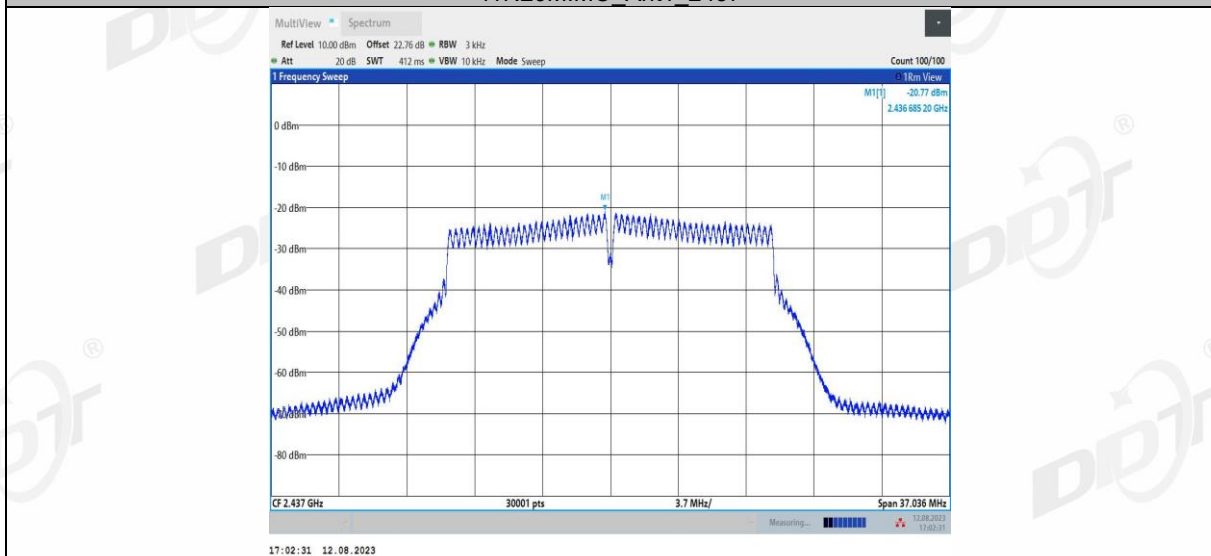
11N20MIMO_Ant1_2412



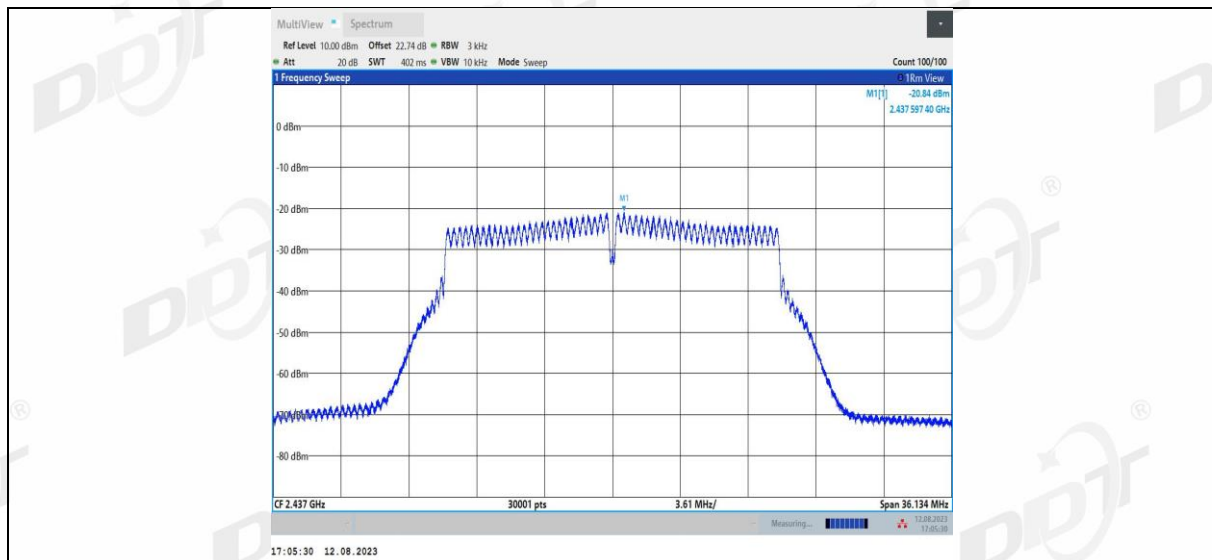
11N20MIMO_Ant2_2412



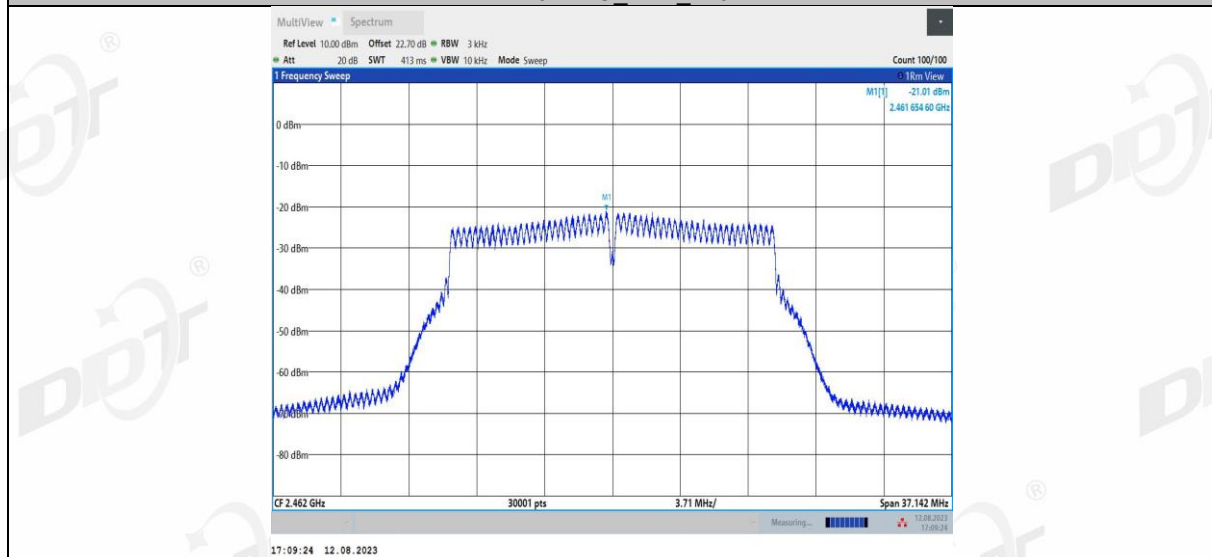
11N20MIMO_Ant1_2437



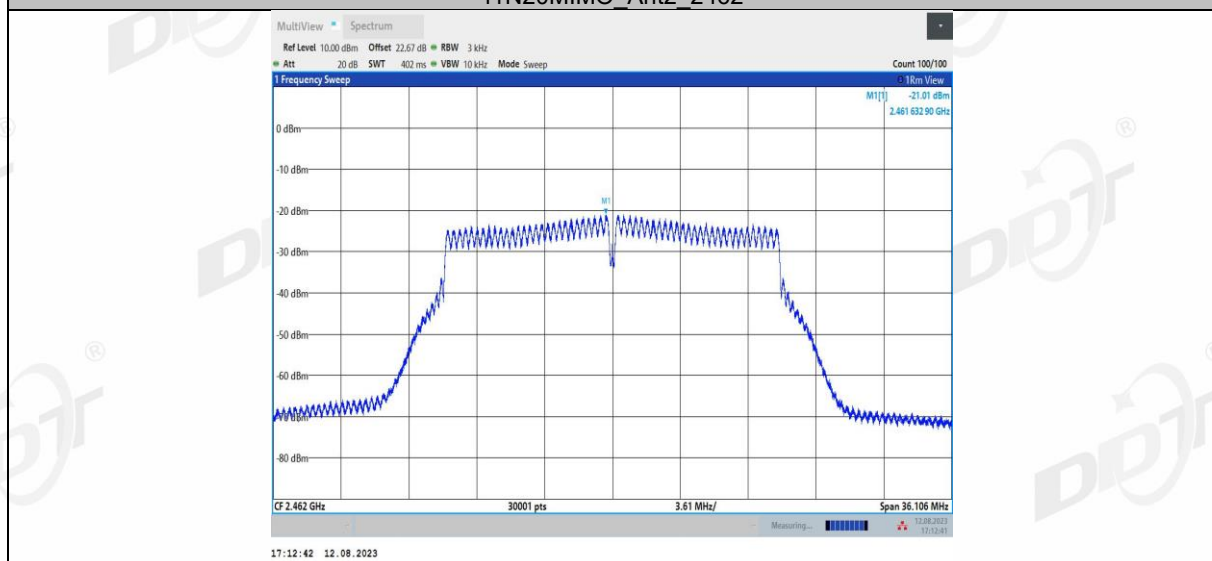
11N20MIMO_Ant2_2437



11N20MIMO_Ant1_2462

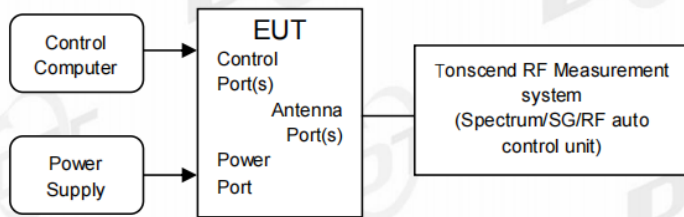


11N20MIMO_Ant2_2462



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

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	/	/	/
	CH11	Pass		/	/