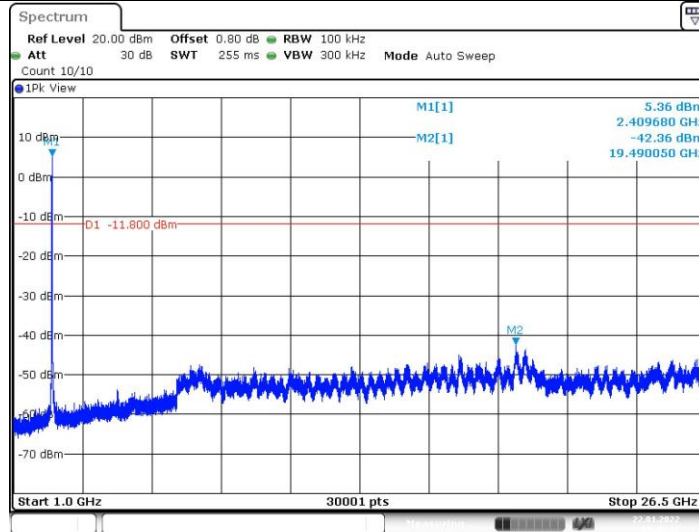
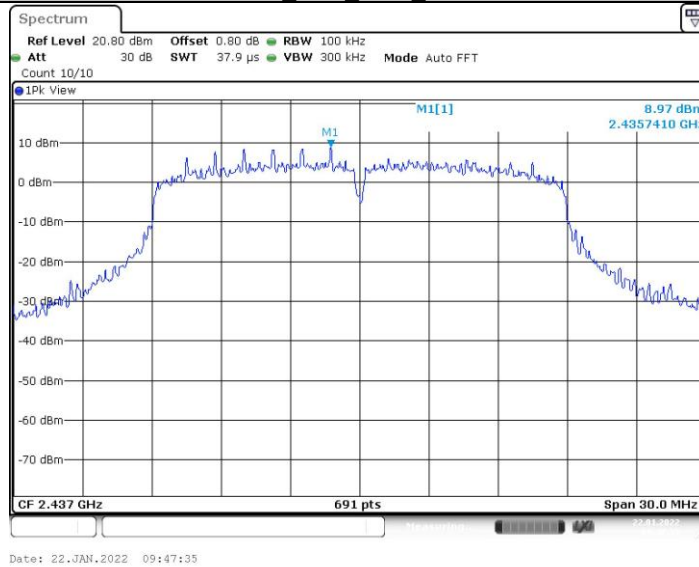




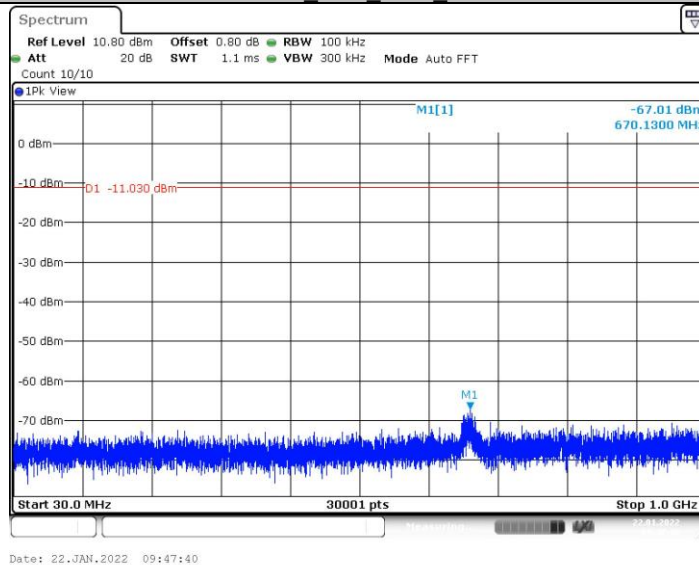
11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000



CTC Laboratories, Inc.

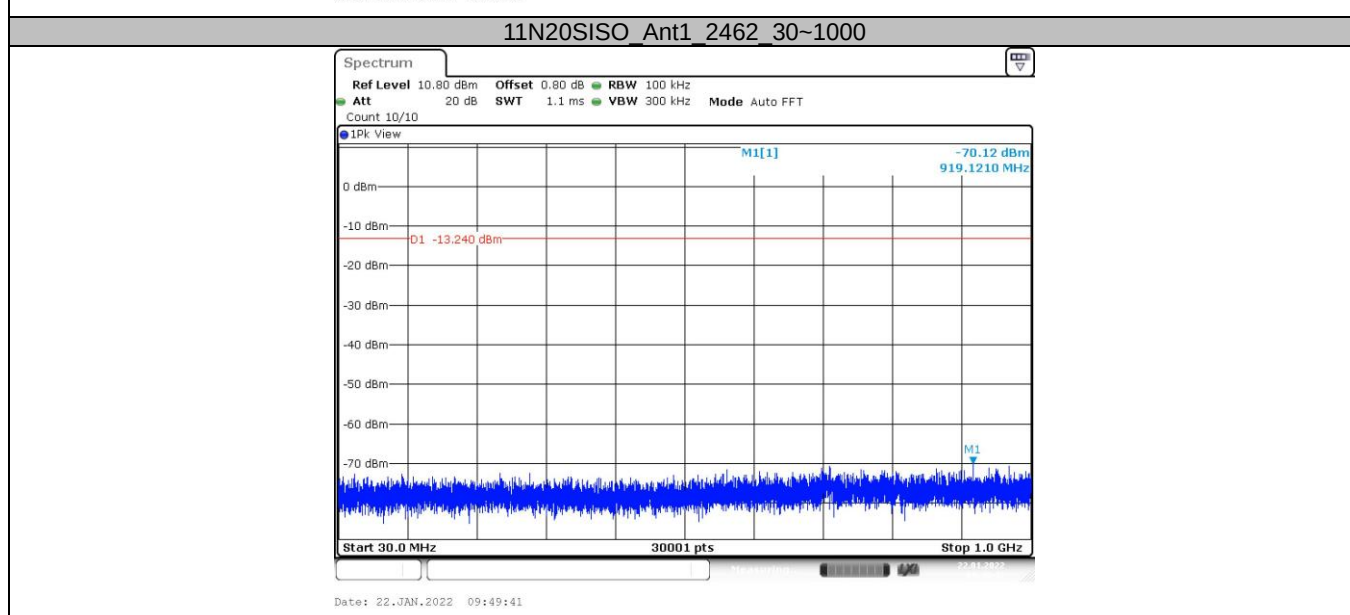
1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

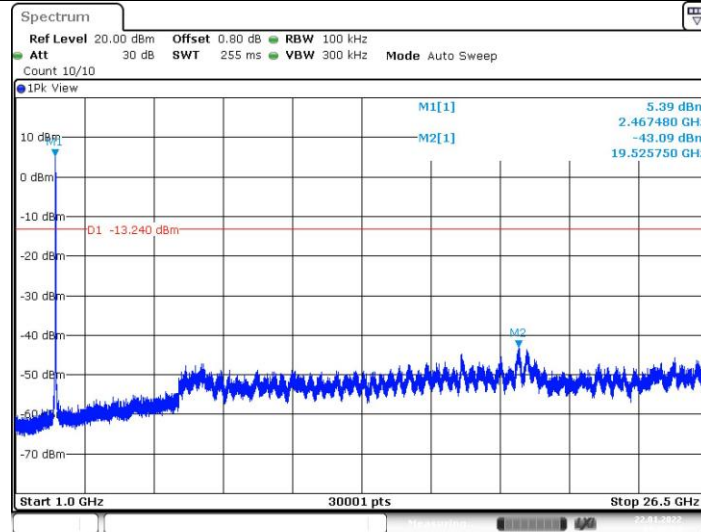
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

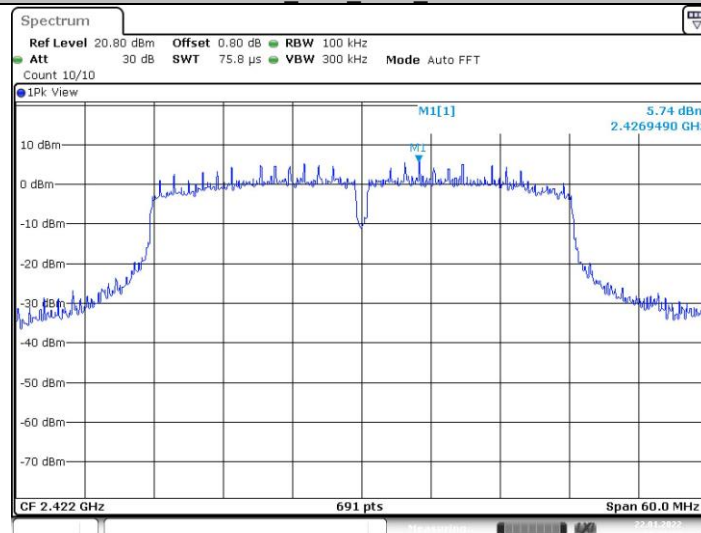


11N20SISO_Ant1_2462_1000~26500



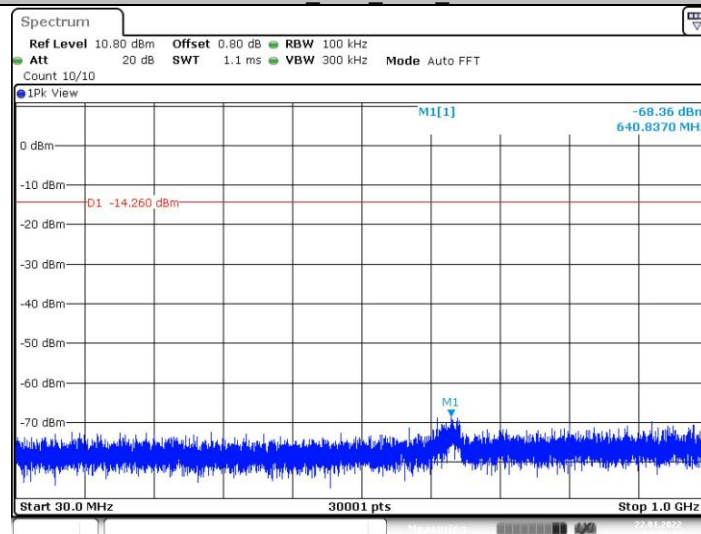
Date: 22.JAN.2022 09:50:05

11N40SISO_Ant1_2422_0~Reference



Date: 22.JAN.2022 09:51:39

11N40SISO_Ant1_2422_30~1000



Date: 22.JAN.2022 09:51:44

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

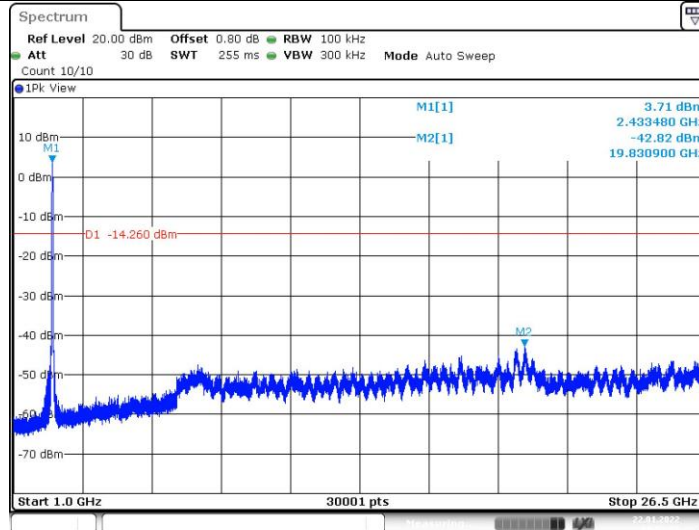
Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

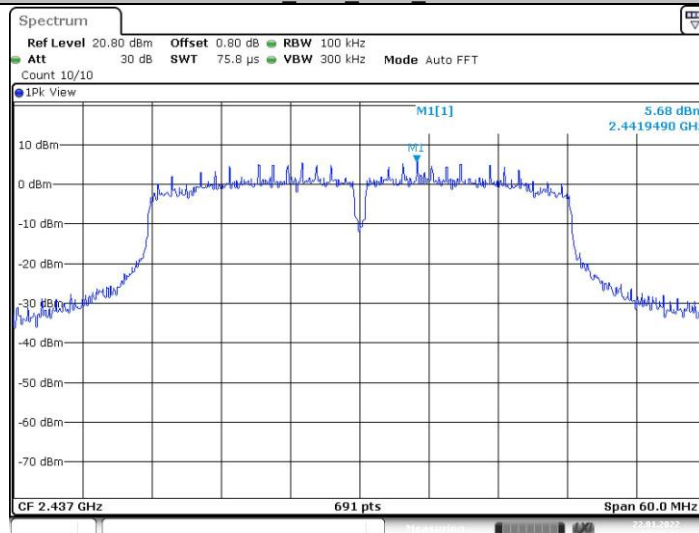


11N40SISO_Ant1_2422_1000~26500



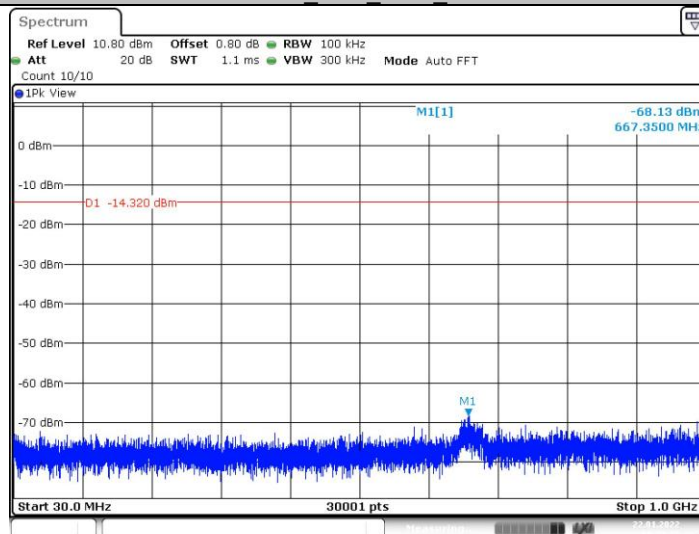
Date: 22.JAN.2022 09:52:08

11N40SISO_Ant1_2437_0~Reference



Date: 22.JAN.2022 09:53:22

11N40SISO_Ant1_2437_30~1000



Date: 22.JAN.2022 09:53:27

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

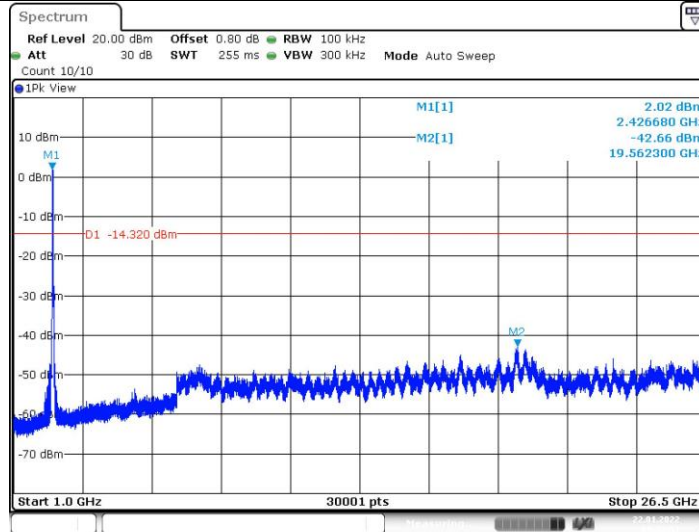
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

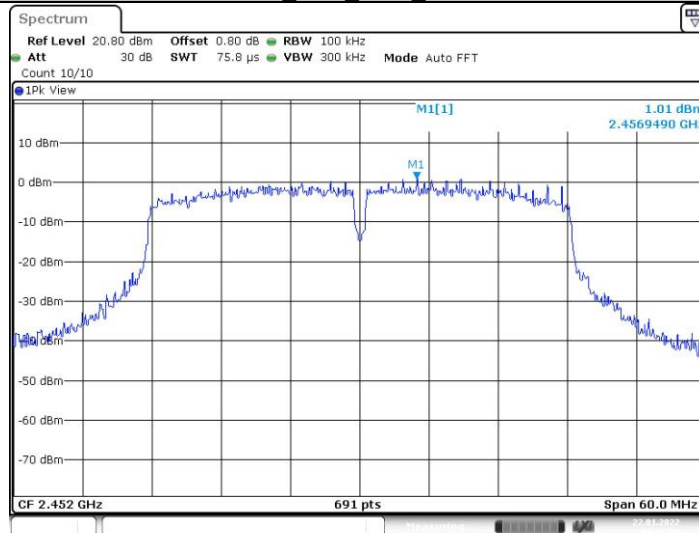
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



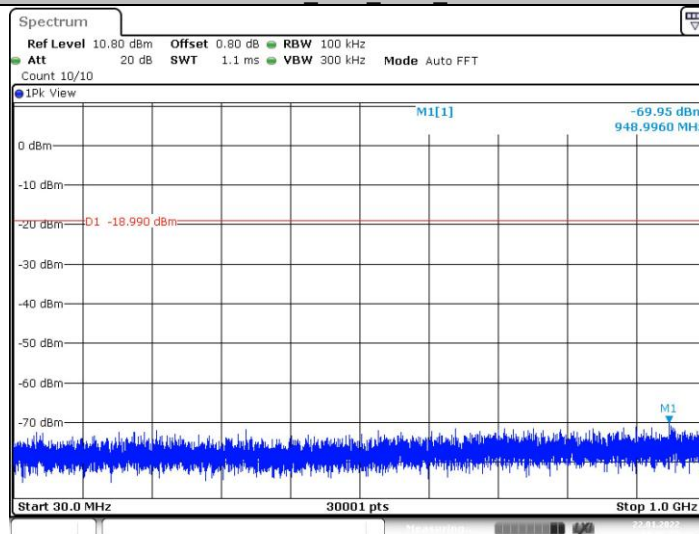
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



CTC Laboratories, Inc.

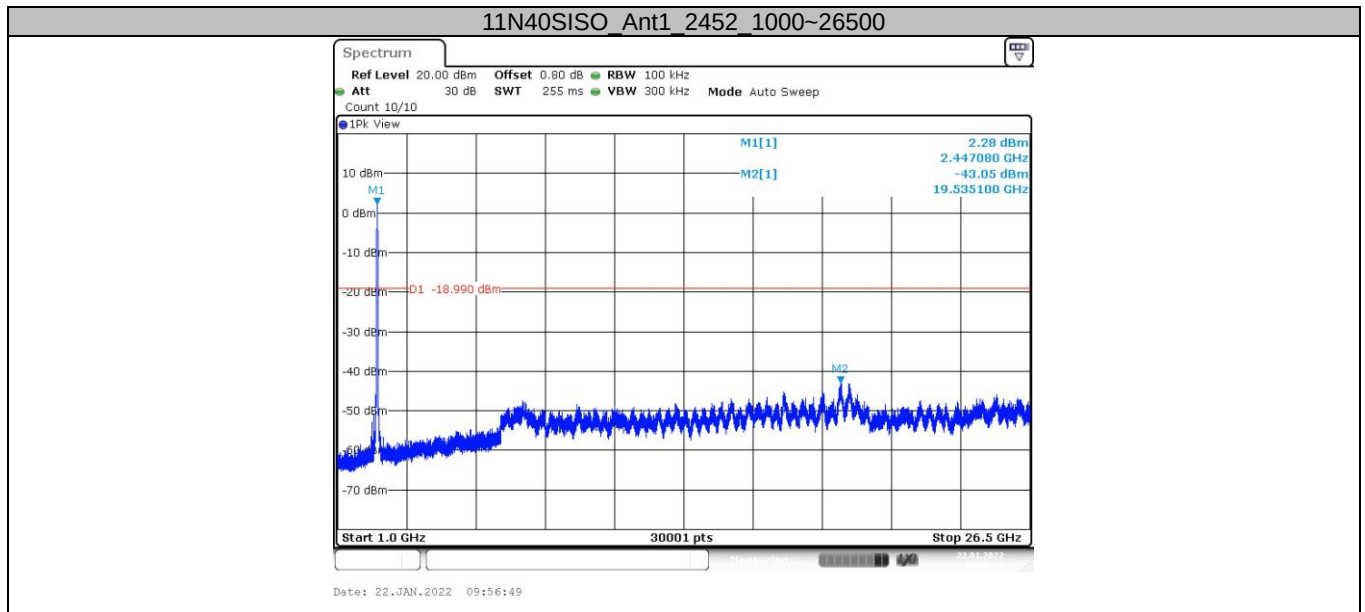
1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



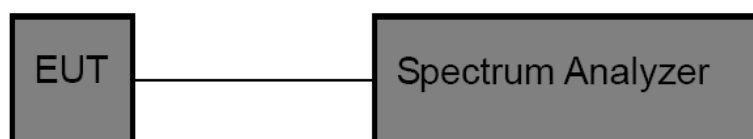
3.6. 6dB Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)/ RSS-247 5.2 (a) & RSS-Gen 6.7:

Test Item	Limit	Frequency Range(MHz)
DTS Bandwidth	≥ 500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. DTS Spectrum Setting:
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

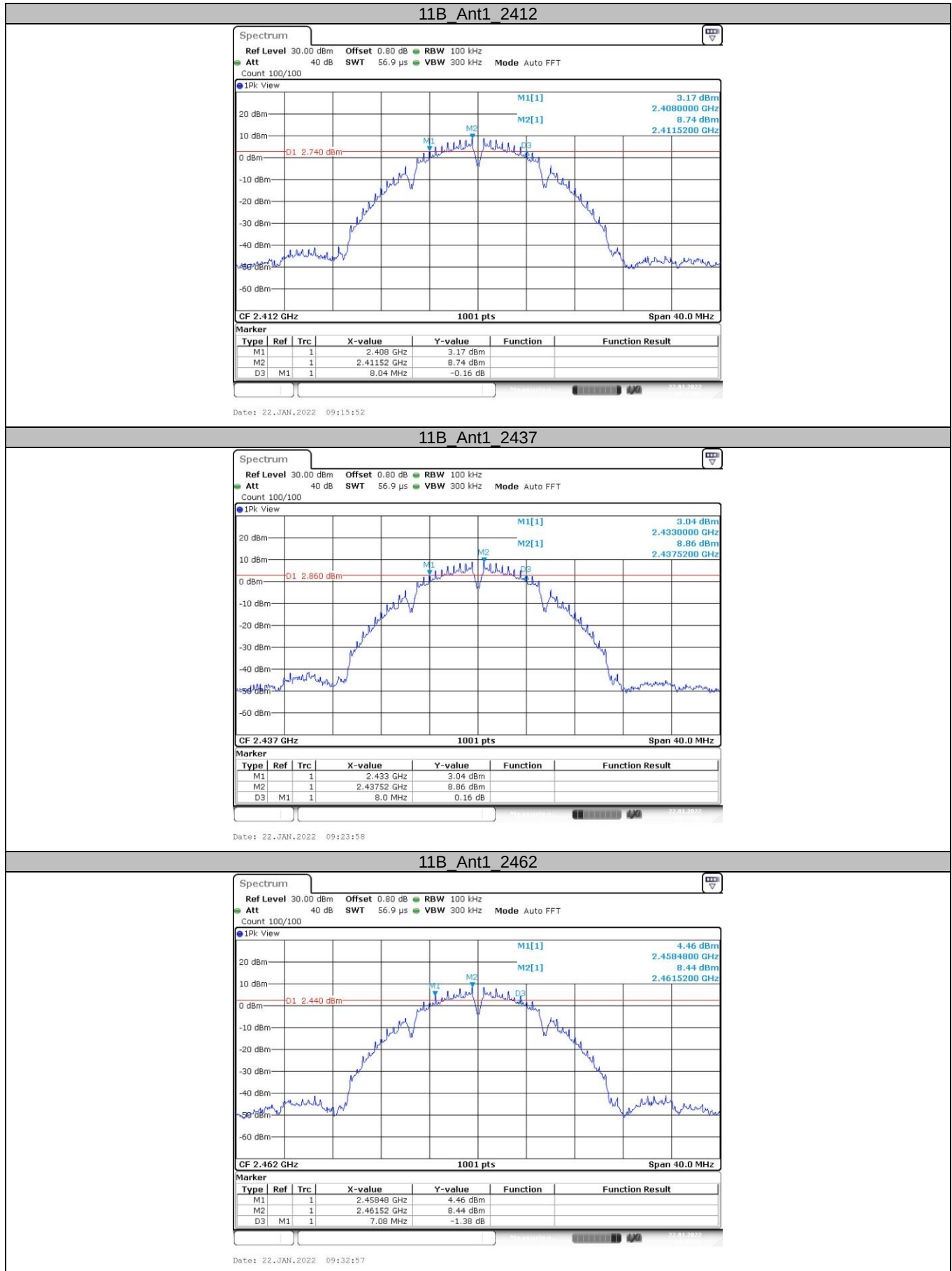
Please refer to the clause 2.4.

**Test Results**

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.04	≥0.5	PASS
		2437	8.00	≥0.5	PASS
		2462	7.08	≥0.5	PASS
11G	Ant1	2412	15.32	≥0.5	PASS
		2437	16.32	≥0.5	PASS
		2462	14.68	≥0.5	PASS
11N20SISO	Ant1	2412	15.12	≥0.5	PASS
		2437	16.68	≥0.5	PASS
		2462	15.08	≥0.5	PASS
11N40SISO	Ant1	2422	35.04	≥0.5	PASS
		2437	35.04	≥0.5	PASS
		2452	33.84	≥0.5	PASS



DTS Bandwidth:



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

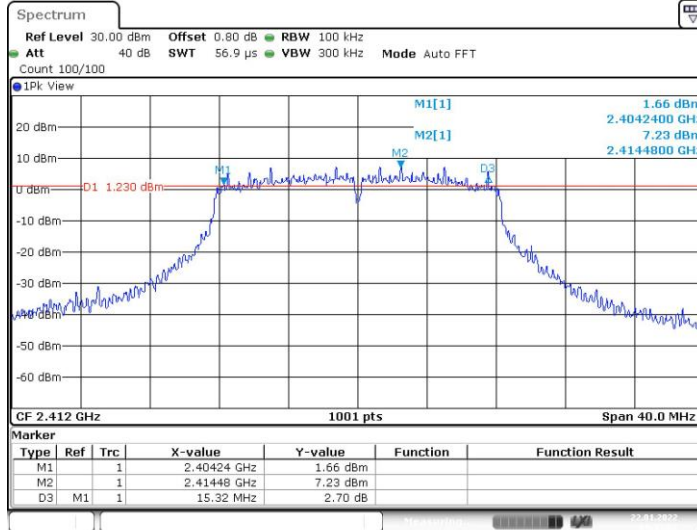
Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

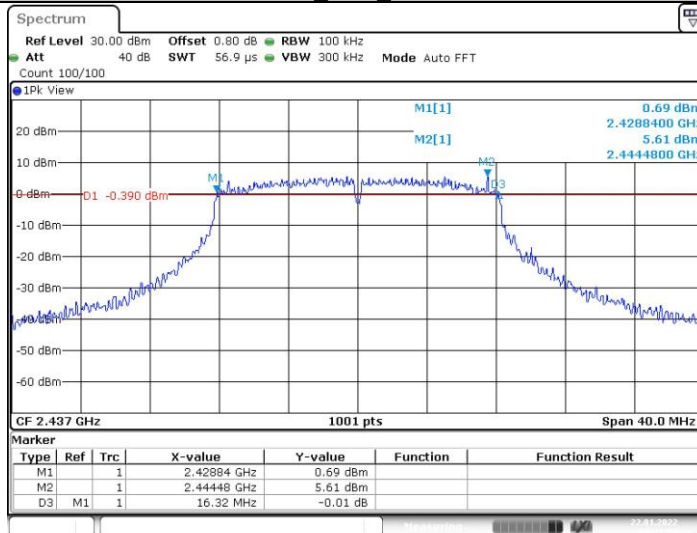


11G_Ant1_2412



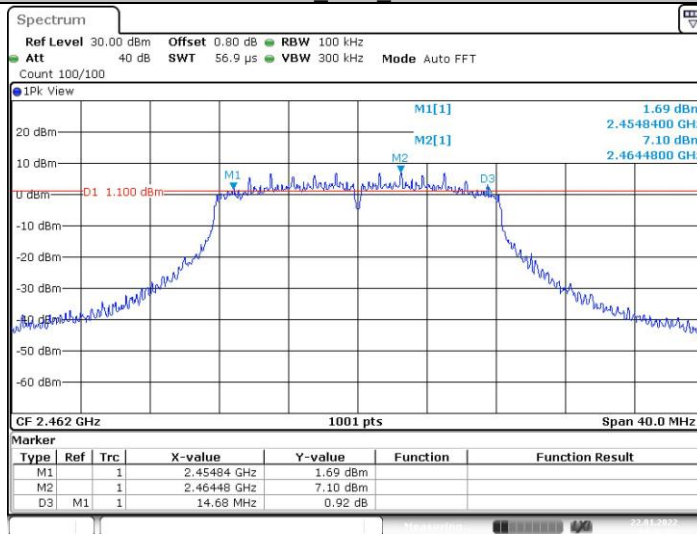
Date: 22.JAN.2022 09:35:07

11G_Ant1_2437



Date: 22.JAN.2022 09:41:04

11G_Ant1_2462



Date: 22.JAN.2022 09:42:52

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

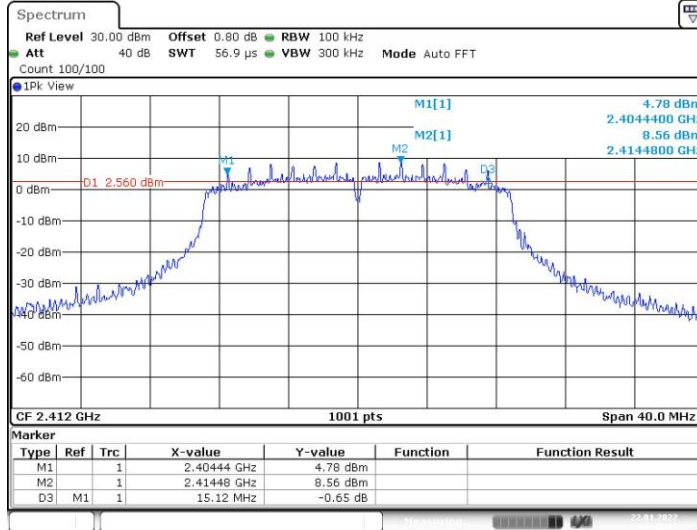
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

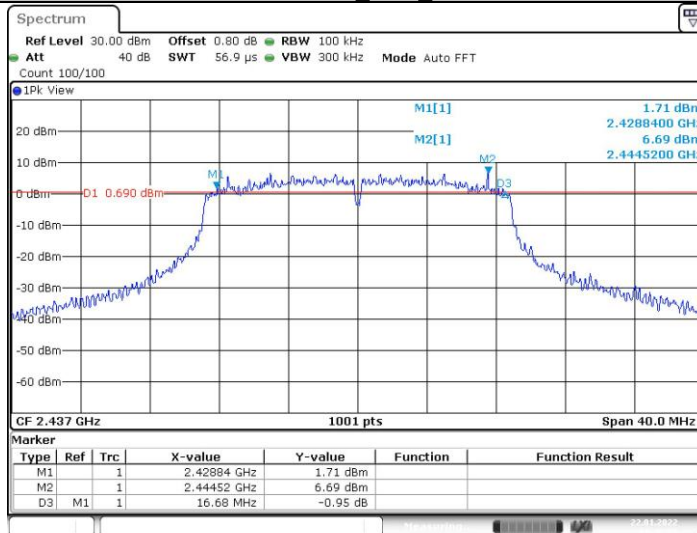
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



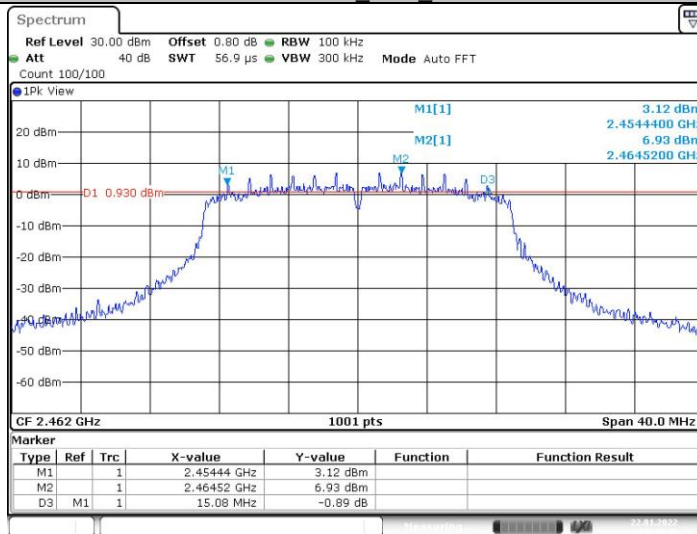
11N20SISO Ant1 2412



11N20SISO Ant1 2437



11N20SISO Ant1 2462



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

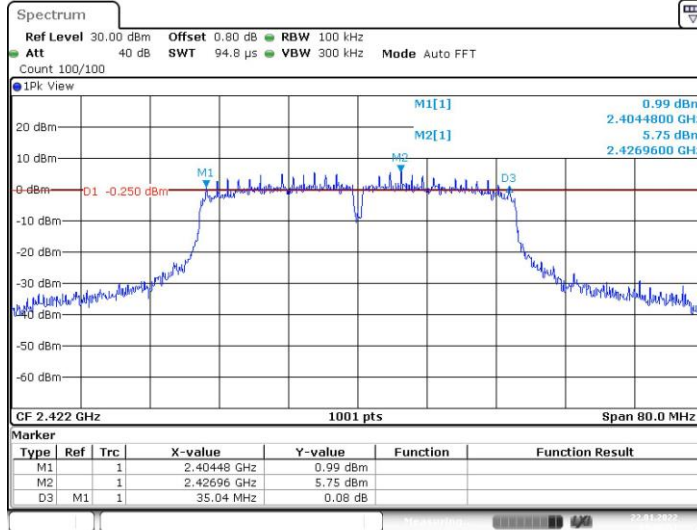
Http://www.sz-ctc.org.cn



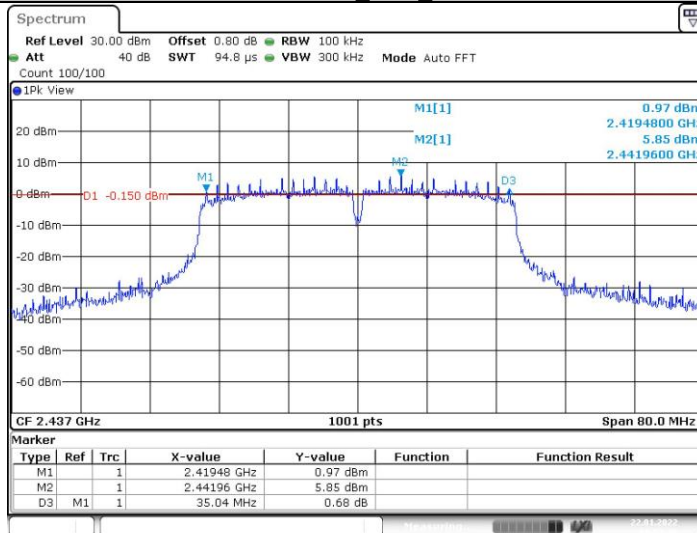
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



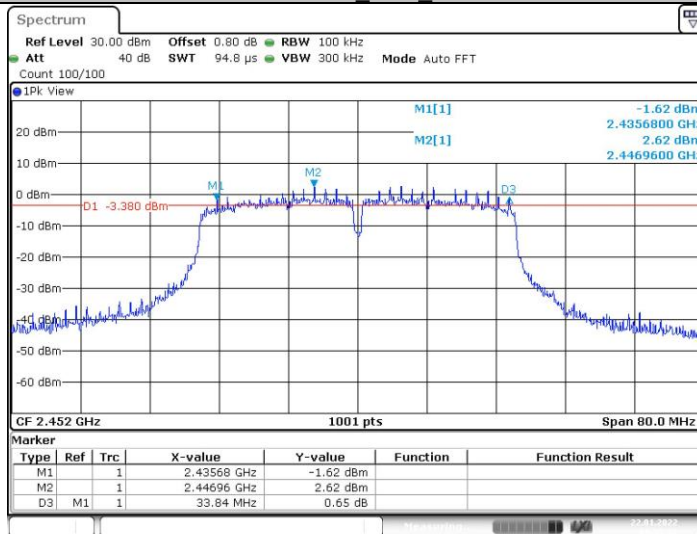
11N40SISO Ant1 2422



11N40SISO Ant1 2437



11N40SISO Ant1 2452



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

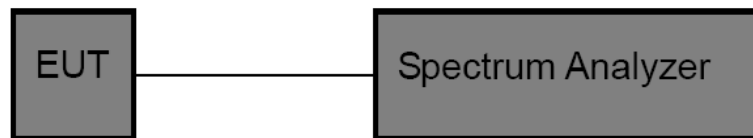
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

3.7. 99% Occupied Bandwidth

Limit

N/A

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. OCB Spectrum Setting:
 - (1) Set RBW = 1% ~ 5% occupied bandwidth.
 - (2) Set the video bandwidth (VBW) $\geq$ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

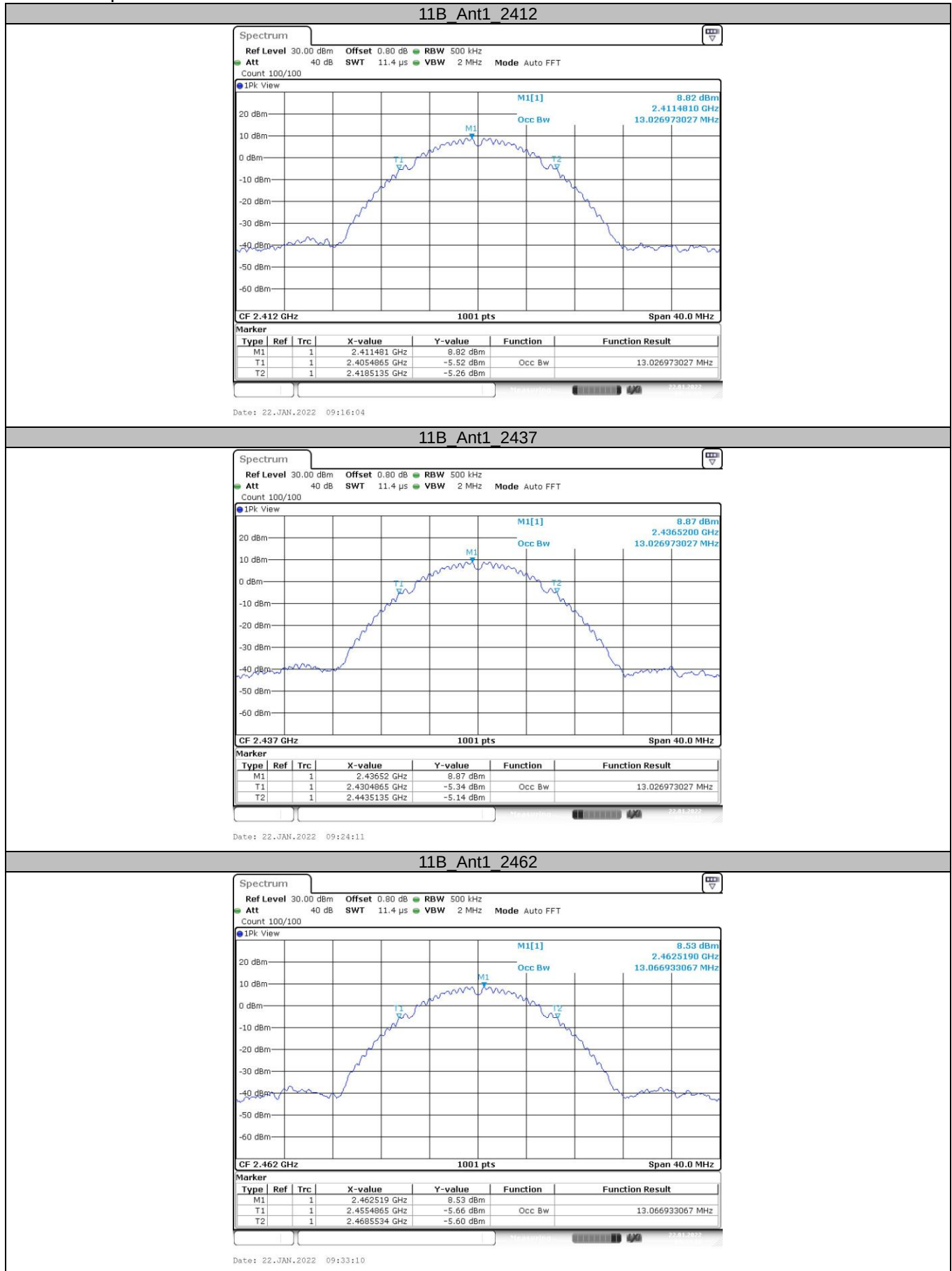
Please refer to the clause 2.4.

Test Results

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	Verdict
11B	Ant1	2412	13.027	PASS
		2437	13.027	PASS
		2462	13.067	PASS
11G	Ant1	2412	16.464	PASS
		2437	16.543	PASS
		2462	16.583	PASS
11N20SISO	Ant1	2412	17.662	PASS
		2437	17.622	PASS
		2462	17.582	PASS
11N40SISO	Ant1	2422	35.964	PASS
		2437	36.044	PASS
		2452	35.804	PASS



99% Occupied Bandwidth:



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

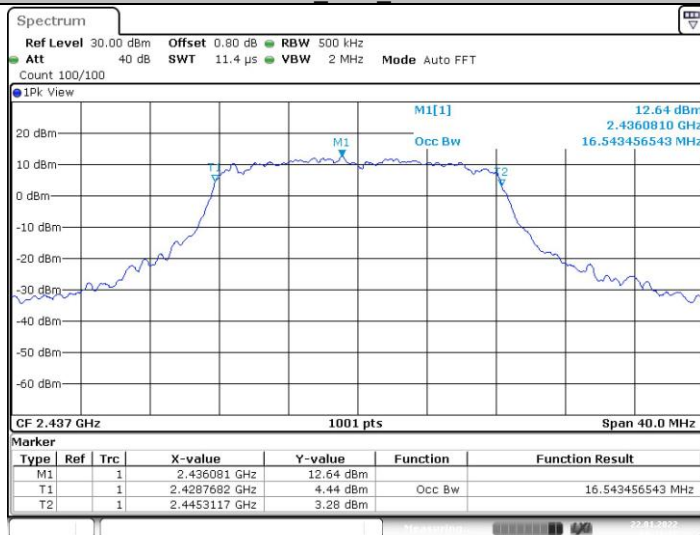


11G_Ant1_2412



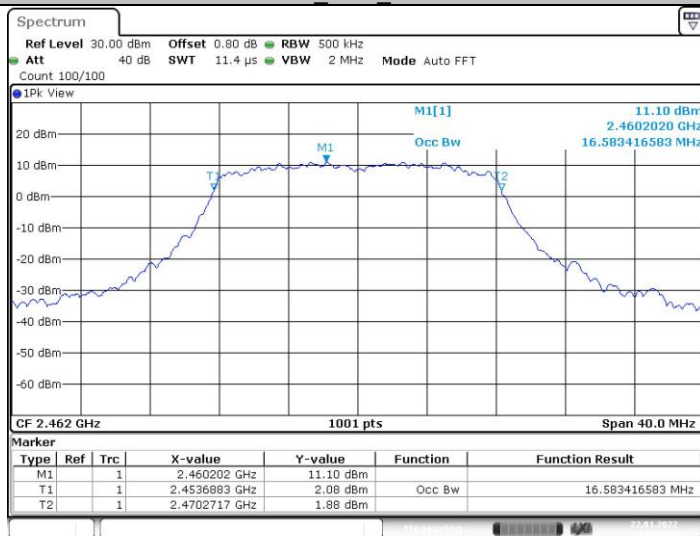
Date: 22.JAN.2022 09:35:20

11G_Ant1_2437



Date: 22.JAN.2022 09:41:17

11G_Ant1_2462



Date: 22.JAN.2022 09:43:05

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

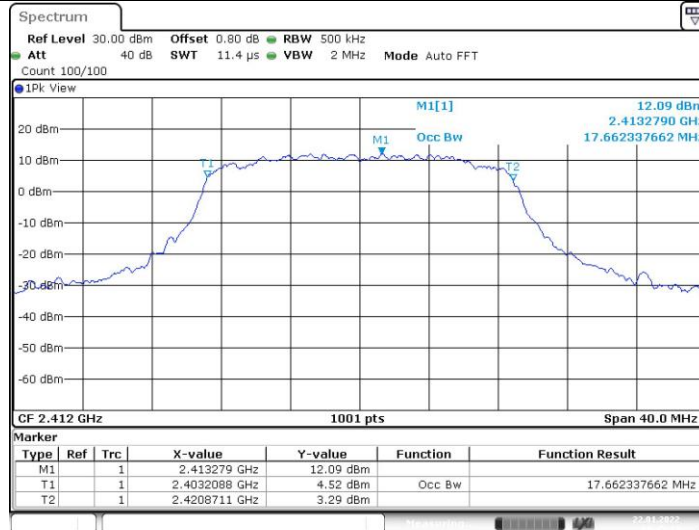
Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

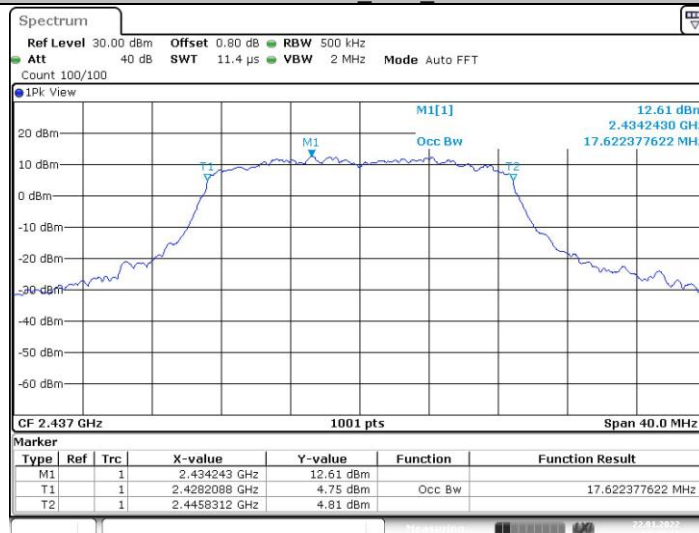


11N20SISO Ant1 2412



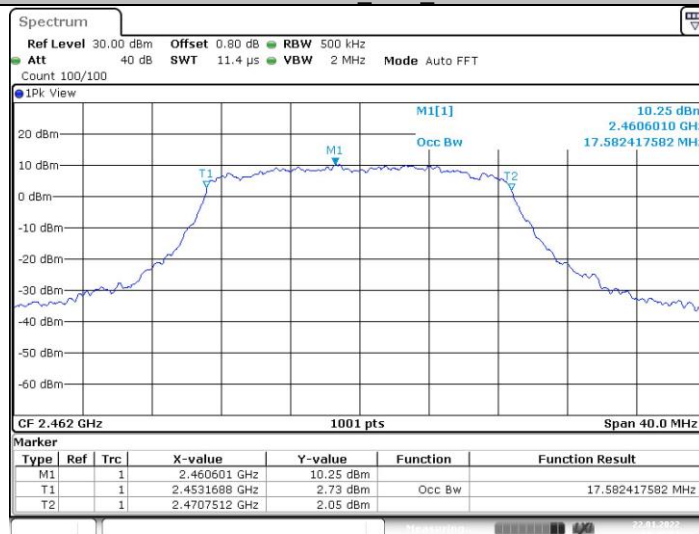
Date: 22.JAN.2022 09:45:14

11N20SISO Ant1 2437



Date: 22.JAN.2022 09:47:11

11N20SISO Ant1 2462



Date: 22.JAN.2022 09:49:01

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



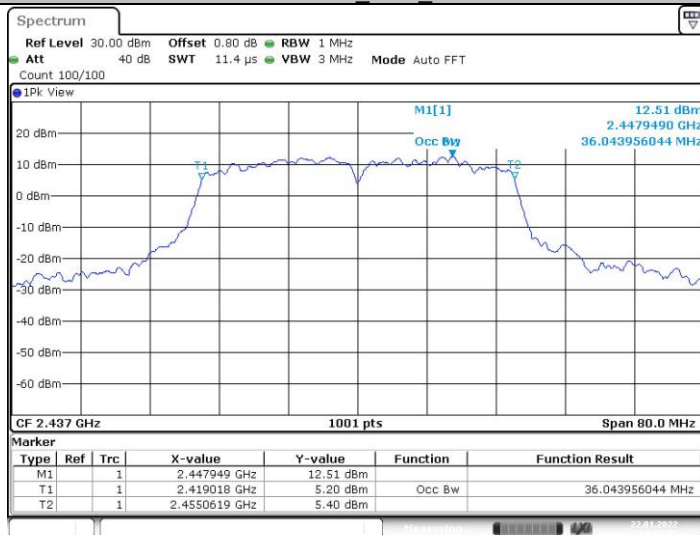
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



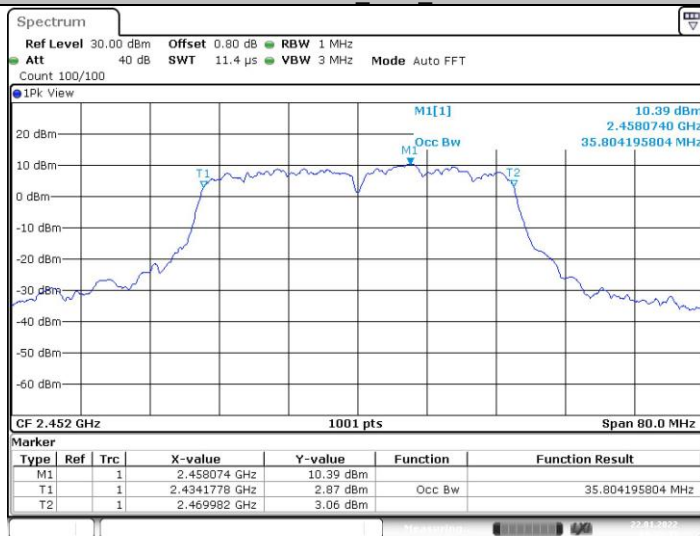
11N40SISO Ant1 2422



11N40SISO Ant1 2437



11N40SISO Ant1 2452



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

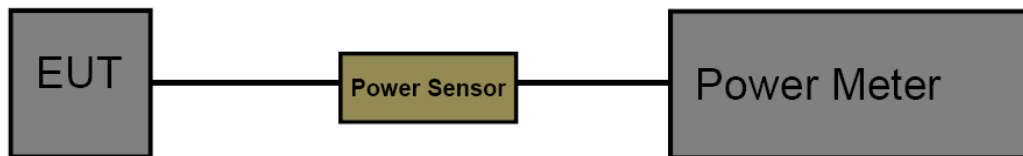
3.8. Conducted Output Power

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)/ RSS-247 5.4:

Section	Test Item	Limit	Frequency Range(MHz)
CFR 47 FCC 15.247(b)(3)	Maximum conducted output power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 (d)	EIRP	4 Watt or 36dBm	2400~2483.5

Test Configuration



Test Procedure

1. The maximum conducted output power may be measured using a broadband Peak RF power meter.
2. Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
Record the measurement data.

Test Mode

Please refer to the clause 2.4.

Test Result



Test Mode	Antenna	Frequency[MHz]	Output power [dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	19.44	≤30	PASS
		2437	19.03	≤30	PASS
		2462	19.15	≤30	PASS
11G	Ant1	2412	20.31	≤30	PASS
		2437	20.49	≤30	PASS
		2462	19.48	≤30	PASS
11N20SISO	Ant1	2412	20.00	≤30	PASS
		2437	20.67	≤30	PASS
		2462	18.58	≤30	PASS
11N40SISO	Ant1	2422	18.29	≤30	PASS
		2437	20.21	≤30	PASS
		2452	16.44	≤30	PASS

Test Mode	Antenna	Frequency [MHz]	Output power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	19.44	20.64	≤36	PASS
		2437	19.03	20.23	≤36	PASS
		2462	19.15	20.35	≤36	PASS
11G	Ant1	2412	20.31	21.51	≤36	PASS
		2437	20.49	21.69	≤36	PASS
		2462	19.48	20.68	≤36	PASS
11N20SISO	Ant1	2412	20.00	21.20	≤36	PASS
		2437	20.67	21.87	≤36	PASS
		2462	18.58	19.78	≤36	PASS
11N40SISO	Ant1	2422	18.29	19.49	≤36	PASS
		2437	20.21	21.41	≤36	PASS
		2452	16.44	17.64	≤36	PASS

Note: Test results increased RF cable loss by 0.8dB.

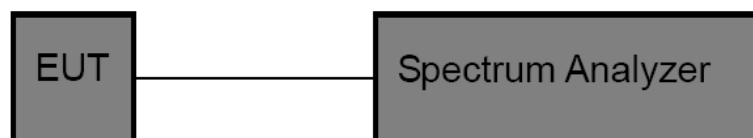
3.9. Power Spectral Density

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e)/ RSS-247 5.2 (b):

Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:
Set analyzer center frequency to DTS channel center frequency.
Set the span to 1.5 times the DTS bandwidth.
Set the RBW to: 3 kHz
Set the VBW to: 10 kHz
Detector: Avg
Sweep time: Auto
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.4.

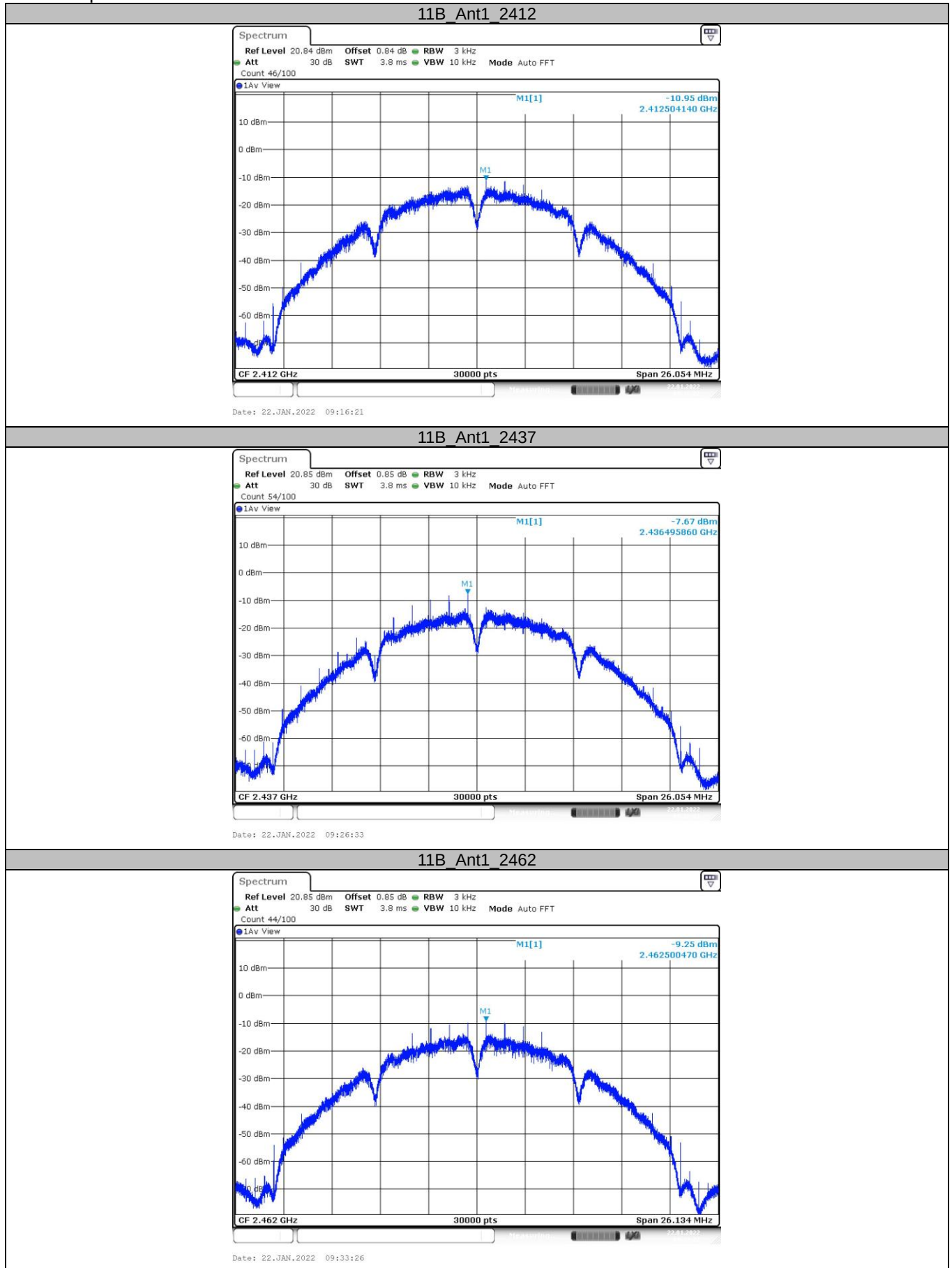
**Test Result**

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.95	≤8	PASS
		2437	-7.67	≤8	PASS
		2462	-9.25	≤8	PASS
11G	Ant1	2412	-15.41	≤8	PASS
		2437	-13.92	≤8	PASS
		2462	-16.47	≤8	PASS
11N20SISO	Ant1	2412	-15.35	≤8	PASS
		2437	-13.66	≤8	PASS
		2462	-16.78	≤8	PASS
11N40SISO	Ant1	2422	-18.45	≤8	PASS
		2437	-15.20	≤8	PASS
		2452	-19.62	≤8	PASS

Note: Duty Cycle Correction Factor = $10 \cdot \log(1/\text{duty cycle})$
The Duty Cycle Correction Factor is compensated in the graph.



Test Graphs:



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

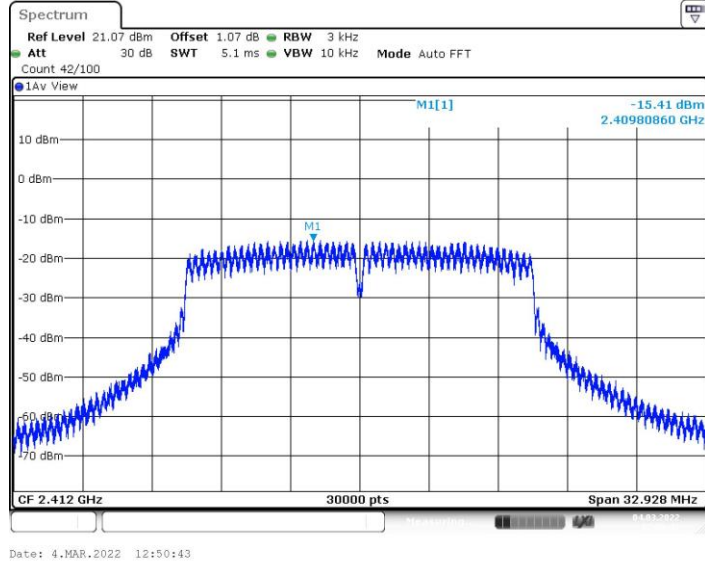
Fax: (86)755-27521011

Http://www.sz-ctc.org.cn

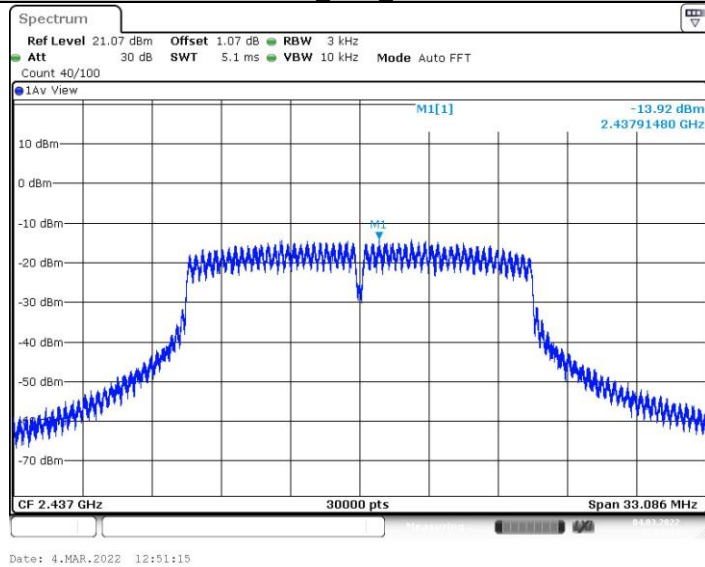
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



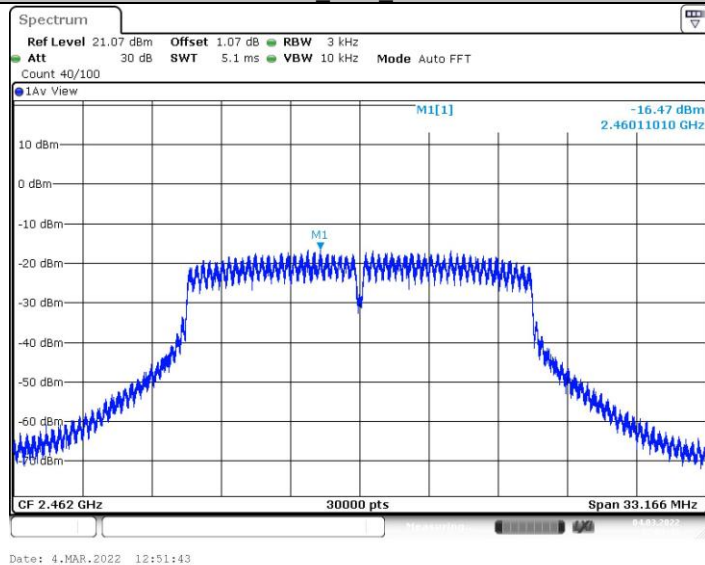
11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

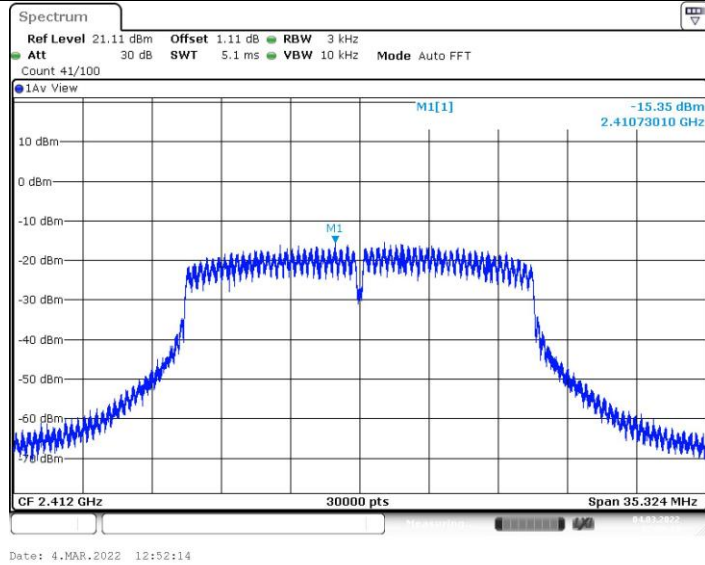
Http://www.sz-ctc.org.cn



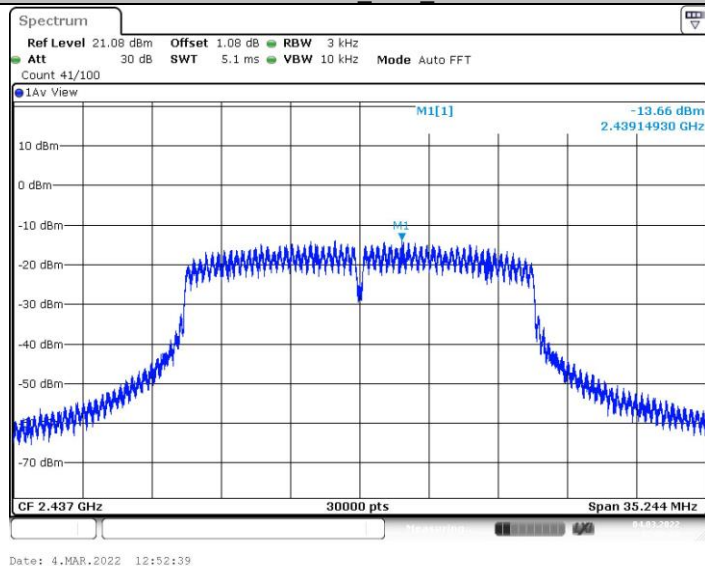
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



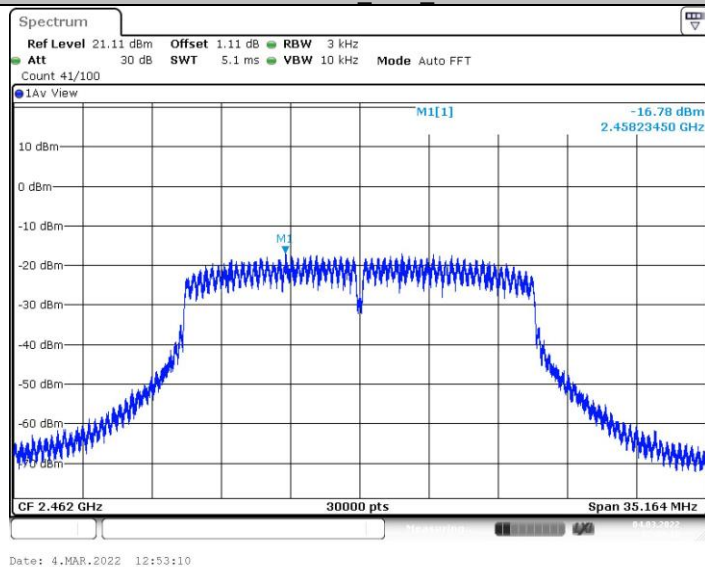
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



CTC Laboratories, Inc.

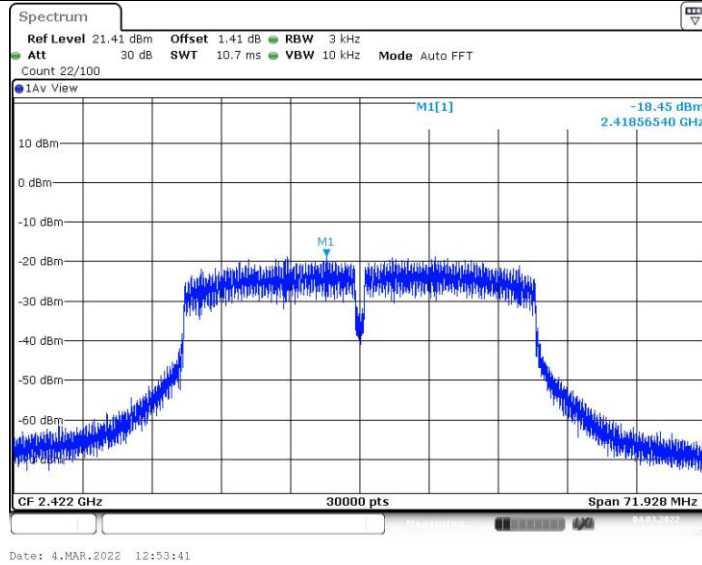
1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn



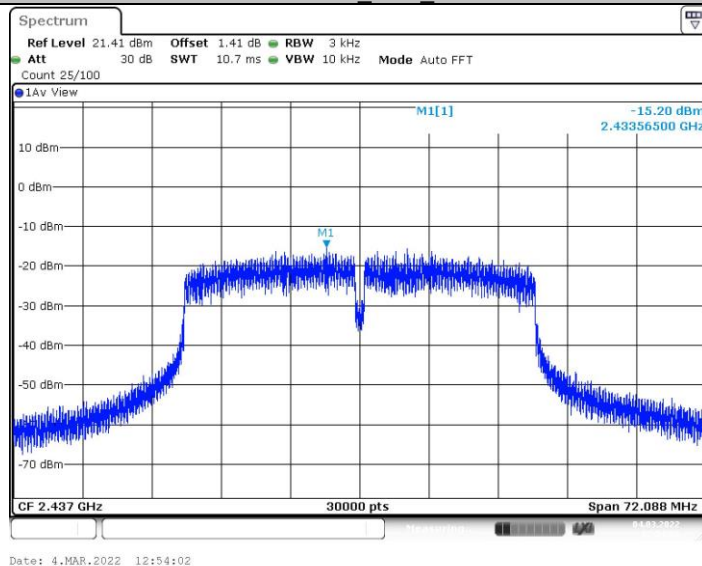
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



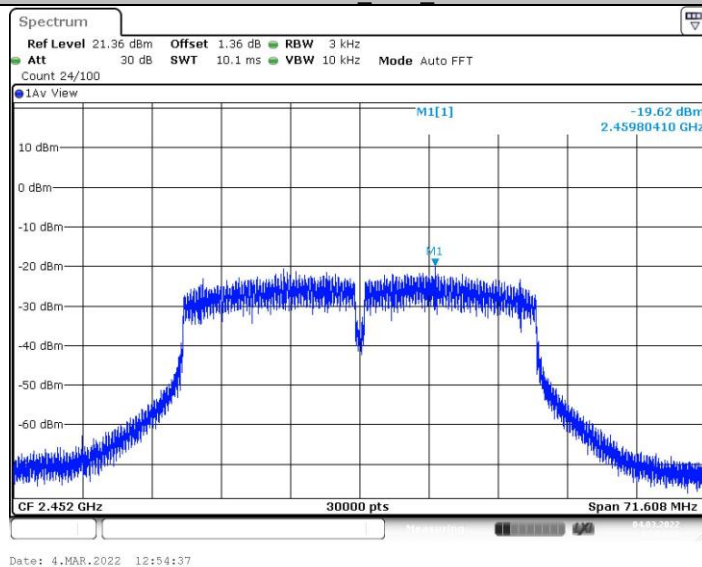
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



3.10. Antenna Requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Test Result

The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

*****THE END*****