

TEST REPORT

EUT Description	5G DIGITAL MOBILE PHONE
Brand Name	VERTU
Model Name	VTL-202502
FCC ID	2BGHD-VTL202502
IC ID	32468-VTL202502
Date of Test Start/End	2026-03-13 / 2026-05-15

Applicant	Chengdu Xiaochen Technology Co., Ltd
Address	3rd Floor,Building B6,Ganzhizhongguo Chengdu Center,No.777 Huafu Avenue Shuangliu County,Chengdu City,Sichuan Province,China
Manufacturers	Same as Application
Address	Same as Application
Factory	Same as Application
Address	Same as Application

Reference Standards	47 CFR Part 15, Subpart C 15.247 RSS-247 Issue 4, July 24, 2025 RSS-Gen Issue 5 Amendment 2 (February 2021) (see section 1)
---------------------	--

Test Report identification	RL20260313003EB
	Rev. 00
Revision Control	This test report revision replaces any previous test report revision. (see Document Changes)

Test Result: **Pass***

*The EUT complied with the test item(s) of the above standard (s), refer to the test summary for details.

Authorized for issue by:

Jim Chen

Jim Chen / Project Engineer



Jason LI / Reviewer

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

Document Changes

Status	Date of issue	Revision	Description of the performed changes
Active	2025-08-26	Rev. 00	None (original version).



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247 RSS-247 Issue 4, July 24, 2025	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4) RSS-Gen Section 6.8	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247 RSS-247 Issue 4, July 24, 2025	ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.2	47 CFR Part 15, Subpart C 15.207 RSS-Gen Section 8.8	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209 RSS-Gen Section 8.10	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209 RSS-Gen Section 8.9	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209 RSS-Gen Section 8.9	Pass
Conducted Peak Output Power		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(1) RSS-247 Section 6.3.2	Pass
Power Spectrum Density		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e) RSS-247 Section 6.3.1(b)	Pass
99% Bandwidth		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.9.3	RSS-Gen Section 6.7	Pass
Minimum 6dB Bandwidth		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(1) RSS-247 Section 6.3.1(a)	Pass

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Band Edges Measurement		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.7.2	47 CFR Part 15, Subpart C 15.247(d) RSS-247 Section 5.5	Pass
Conducted Spurious Emissions		ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 7.8.7	47 CFR Part 15, Subpart C 15.247(d) RSS-247 Section 5.5	Pass



3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	5
4 General Information	7
4.1 Details of E.U.T.	7
4.2 Power Setting of Test Software	8
4.3 Environment Parameter	8
4.4 Description of Support Units	8
4.5 Measurement Uncertainty	8
4.6 Test Location	9
4.7 Test Facility	9
4.8 Deviation from Standards	9
4.9 Abnormalities from Standard Conditions	9
5 Equipment List	10
6 Emission Test Results	14
6.1 Antenna Requirement	14
6.1.1 Test Requirement:	14
7 Radio Spectrum Matter Test Results	15
7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)	15
7.1.1 E.U.T. Operation	15
7.1.2 Test Mode Description	15
7.1.3 Test Setup Diagram	15
7.1.4 Measurement Procedure and Data	16
7.2 Radiated Emissions which fall in the restricted bands	19
7.2.1 E.U.T. Operation	19
7.2.2 Test Mode Description	19
7.2.3 Test Setup Diagram	19
7.2.4 Measurement Procedure and Data	20
7.3 Radiated Spurious Emissions Below 1GHz	25
7.3.1 E.U.T. Operation	25
7.3.2 Test Mode Description	25
7.3.3 Test Setup Diagram	25
7.3.4 Measurement Procedure and Data	26
7.4 Radiated Spurious Emissions Above 1GHz	29
7.4.1 E.U.T. Operation	29
7.4.2 Test Mode Description	29
7.4.3 Test Setup Diagram	29
7.4.4 Measurement Procedure and Data	30
7.5 Conducted Peak Output Power	35
7.5.1 E.U.T. Operation	35
7.5.2 Test Mode Description	35
7.5.3 Test Setup Diagram	35
7.5.4 Measurement Procedure and Data	35
7.6 Minimum 6dB Bandwidth	36
7.6.1 E.U.T. Operation	36
7.6.2 Test Mode Description	36



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7.6.3 Test Setup Diagram	36
7.6.4 Measurement Procedure and Data	36
7.7 99% Bandwidth	37
7.7.1 E.U.T. Operation	37
7.7.2 Test Mode Description	37
7.7.3 Test Setup Diagram	37
7.7.4 Measurement Procedure and Data	37
7.8 Power Spectrum Density	38
7.8.1 E.U.T. Operation	38
7.8.2 Test Mode Description	38
7.8.3 Test Setup Diagram	38
7.8.4 Measurement Procedure and Data	38
7.9 Conducted Band Edges Measurement	39
7.9.1 E.U.T. Operation	39
7.9.2 Test Mode Description	39
7.9.3 Test Setup Diagram	39
7.9.4 Measurement Procedure and Data	39
7.10 Conducted Spurious Emissions	40
7.10.1 E.U.T. Operation	40
7.10.2 Test Mode Description	40
7.10.3 Test Setup Diagram	40
7.10.4 Measurement Procedure and Data	40
8 Test Setup Photo	41
9 Appendix	42



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

4 General Information

4.1 Details of E.U.T.

EUT Description:	5G DIGITAL MOBILE PHONE
Model No.:	VTL-202502
Trade Mark:	VERTU
Hardware Version:	P10
Software Version:	15.0.2_6.01.01.01
Power Supply:	DC 3.83V from internal rechargeable battery which can be charge by AC/DC adapter
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.2
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Rates Type*:	☒ Provided by client
	1M/2M
Antenna Type:	PIFA Antenna
Antenna Gain*:	☒ Provided by client
	-1.7dBi(Ant4); -3.7dBi(Ant10)
Receiver Category:	☐ Category 1, ☒ Category 2, ☐ Category 3
RF Cable:	2000MHz ~ 3000MHz (1.0dB)
Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Radiolink test lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion. Remark:As above information is provided and confirmed by the applicant. Radiolink test lab is not liable to the accuracy, suitability, reliability or/and integrity of the information.	



Channel	Frequency
BLE 1M:	
The Lowest channel(CH0)	2402MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH39)	2480MHz
BLE 2M:	
The Lowest channel(CH1)	2404MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH38)	2478MHz

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

4.2 Power Setting of Test Software

Software Name	Qualcomm3 Radio Control Toolkit v4.0		
Frequency(MHz)	2402	2440	2480
GFSK 1M Setting	Default	Default	Default
Frequency(MHz)	2404	2440	2478
GFSK 2M Setting	Default	Default	Default

4.3 Environment Parameter

Environment Parameter	1020 mbar Selected Values During Tests	
Relative Humidity	38.8-50.8 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	24.5~26.8	3.83
LTNV	0	3.4
HTNV	40	4.3

Note:

NV:Normal Voltage

LV:Low Extreme Test Voltage

HV:High Extreme Test Voltage

NT:Normal Temperature

LT:Low Extreme Test Temperature

HT:High Extreme Test Temperature

4.4 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--

The EUT has been tested as an independent unit.

4.5 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 3.2\text{dB}$
Radiated Emissions which fall in the restricted bands	$\pm 3.7\text{dB}$ (Below 1GHz), $\pm 4.7\text{dB}$ (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	$\pm 3.7\text{dB}$
Radiated Spurious Emissions Above 1GHz	$\pm 4.7\text{dB}$
Conducted Peak Output Power	$\pm 0.8\text{dB}$
Minimum 6dB Bandwidth	$\pm 3\%$
Power Spectrum Density	$\pm 0.35\text{dB}$
Conducted Band Edges Measurement	$\pm 2.7\text{dB}$
Conducted Spurious Emissions	$\pm 2.7\text{dB}$

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results

– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

4.6 Test Location

All tests were performed at:

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China .

Tel: +86 0755 23080694.

No tests were sub-contracted.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

. **A2LA (Certificate No. 7572.01)**

Radiolink Testing (Shenzhen) Co., Ltd, Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7572.01.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



5 Equipment List

Transmitter unwanted emissions in the spurious domain/ Receiver spurious emissions					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Anechoic Chamber	TDK	966	RL01-01	2024/11/22	2027/11/21
Horn Antenna(1GHz-18GHz)	Schwarzbeck	BBHA 9120D	RL03-01	2025/3/28	2028/3/27
BiConiLog Antenna(30MHz-3GHz)	Schwarzbeck	VULB9163	RL03-02	2025/4/7	2028/4/6
Active Loop Antenna(9kHz-30MHz)	Schwarzbeck	FMZB 1519B	RL03-03	2025/3/28	2028/3/27
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	RL03-04	2025/3/28	2028/3/27
Horn Antenna(15GHz-40GHz)	Schwarzbeck	BBHA 9170	RL03-05	2025/3/28	2028/3/27
MXE EMI Receiver(3Hz-8.4GHz)	KEYSIGHT	N9038A	RL04-01	2025/3/31	2026/3/30
MXE EMI Receiver(3Hz-8.4GHz)	KEYSIGHT	N9038A	RL04-01	2026/4/03	2027/4/02
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2025/3/31	2026/3/30
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2026/4/3	2027/4/2
Pre-Amplifier(500MHz-18GHz)	Tonscend	TPA-011845	RL06-02	2025/3/31	2026/3/30
Pre-Amplifier(500MHz-18GHz)	Tonscend	TPA-011845	RL06-02	2026/4/3	2027/4/2
Pre-Amplifier(18GHz-26GHz)	Tonscend	TPA-182645	RL06-03	2025/3/31	2026/3/30
Pre-Amplifier(18GHz-26GHz)	Tonscend	TPA-182645	RL06-03	2026/4/3	2027/4/2
Pre-Amplifier(26GHz-40GHz)	Tonscend	TPA-184045	RL06-04	2025/3/31	2026/3/30
Pre-Amplifier(26GHz-40GHz)	Tonscend	TPA-184045	RL06-04	2026/4/3	2027/4/2
Pre-Amplifier(0.4GHz-8GHz)	TST PASS	LNA04080G30	RL06-05	2025/4/11	2026/4/10
Pre-Amplifier(0.4GHz-8GHz)	TST PASS	LNA04080G30	RL06-05	2026/4/3	2027/4/2
Attenuation Clamp(150kHz-1000MHz)	Teseq	KEMA 801A	RL07-09	2025/4/3	2026/4/2
Attenuation Clamp(150kHz-1000MHz)	Teseq	KEMA 801A	RL07-09	2026/4/13	2027/4/12
AC Power Source	Preen	KDF-11002G	RL08-03	2025/3/31	2026/3/30
AC Power Source	Preen	KDF-11002G	RL08-03	2026/4/3	2027/4/2
Intelligent Line Power Conditioner	Preen	APS-11040GG	RL08-04	2025/3/31	2026/3/30

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

Intelligent Line Power Conditioner	Preen	APS-11040GG	RL08-04	2026/4/3	2027/4/2
Coaxial Cable(9kHz-30MHz)	Radiolink	N/A	RL20-01	N/A	N/A
Coaxial Cable(30MHz-1000MHz)	Radiolink	N/A	RL20-02	N/A	N/A
Coaxial Cable(1GHz-18GHz)	Radiolink	N/A	RL20-03	N/A	N/A
Coaxial Cable(18GHz-40GHz)	Radiolink	N/A	RL20-04	N/A	N/A
Coaxial Cable(9kHz-30MHz)	Radiolink	N/A	RL20-05	N/A	N/A
Measurement Software	AUDIX	e3 V9	N/A	N/A	N/A



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	TDK	643	RL01-01	2025/03/31	2028/03/30
EMI Test Receiver	Rohde & Schwarz	ESPI-3	RL04-02	2025/04/11	2026/04/10
EMI Test Receiver	Rohde & Schwarz	ESPI-3	RL04-02	2026/04/03	2027/04/02
V-LISN(9kHz-30MHz)	Rohde & Schwarz	NSLK 8127 RC	RL07-01	2025/03/31	2026/03/30
V-LISN(9kHz-30MHz)	Rohde & Schwarz	NSLK 8127 RC	RL07-01	2026/04/03	2027/04/02
Measurement Software	AUDIX	e3 V9	N/A	N/A	N/A

RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2025/3/31	2026/3/30
EXA Signal Analyzer(10Hz-44GHz)	KEYSIGHT	N9010B	RL04-03	2026/4/3	2027/4/2
MXG Vector Signal Generator(100kHz-6GHz)	N5182A	N5182A	RL05-05	2025/3/31	2026/3/30
MXG Vector Signal Generator(100kHz-6GHz)	N5182A	N5182A	RL05-05	2026/4/3	2027/4/2
SIGNAL GENERATOR(10MHz-20GHz)	SMP22	SMP22	RL05-06	2025/3/31	2026/3/30
SIGNAL GENERATOR(10MHz-20GHz)	SMP22	SMP22	RL05-06	2026/4/3	2027/4/2
Wideband Radio Communication Tester	CMW 500	CMW 500	RL05-07	2025/3/31	2026/3/30
Wideband Radio Communication Tester	CMW 500	CMW 500	RL05-07	2026/4/3	2027/4/2
Measurement Software	TST	TSTPASS V2.0	N/A	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Electronic Hygrothermograph	deli	8838	RL02-02	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-02	2026/5/7	2027/5/6
Electronic Hygrothermograph	deli	8838	RL02-03	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-03	2026/4/23	2027/4/22
Electronic	deli	8838	RL02-04	2025/3/29	2026/3/28

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

Hygrothermograph					
Electronic Hygrothermograph	deli	8838	RL02-04	2026/4/23	2027/4/22
Electronic Hygrothermograph	deli	8838	RL02-05	2025/3/29	2026/3/28
Electronic Hygrothermograph	deli	8838	RL02-05	2026/4/8	2027/4/07
Barometer	Shanghai Mengte Instrument	DYM3	RL02-01	2025/03/31	2026/03/30
Barometer	Shanghai Mengte Instrument	DYM3	RL02-01	2026/4/8	2027/4/7



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

6 Emission Test Results

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

RSS-Gen Section 6.8

FCC requirement:

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 an 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, 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 in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC requirement:

Measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The antenna is PIFA Antenna and no consideration of replacement. The best case gain of the antenna is -1.7dBi(Ant4); -3.7dBi(Ant10).

Note:

The antenna gain are derived from the gain information report provided by the manufacturer.

Remark:

As above information is provided and confirmed by the applicant. Radiolink test lab is not liable to the accuracy, suitability, reliability or/and integrity of the information.



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207
RSS-Gen Section 8.8

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 6.2

Limit:

Frequency of emission(MHz)
0.15-0.5
0.5-5
5-30
*Decreases with the logarithm of the frequency.
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

7.1.1 E.U.T. Operation

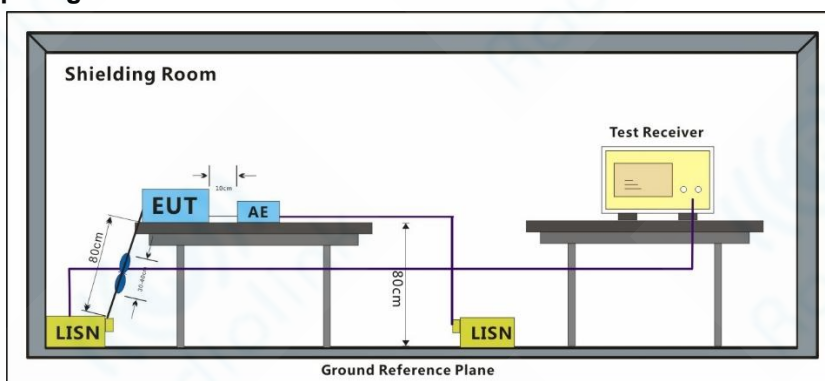
Operating Environment:

Temperature: 22.3 °C Humidity: 48 % RH Atmospheric Pressure: 1020 mbar

7.1.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.1.3 Test Setup Diagram



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

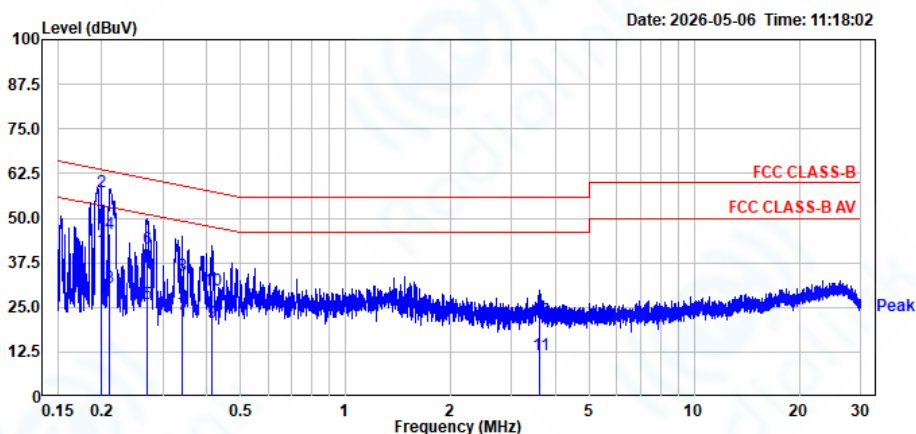
7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 50\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark : $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{LISN Factor}$



Line: Live line



Site : chamber
Condition: limit\FCC CLASS-B.csv LISN20250331 Line
: DET:Peak
EUT : VTL-202502
Mode : GSM850+Adapter+USB cable+SIM1+WIFI Idle+BT Idle+GPS RX+Front Camera On+EU
Note : RL20260000301A

Result	Freq	Level	Limit	LISN	Cable	Read	Over	Pol/Phase
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1 AV	0.200	41.19	53.61	0.10	9.92 Average	31.17	-12.42	Line
2 PP	0.200	57.37	63.61	0.10	9.92 QP	47.35	-6.24	Line
3 Pass	0.211	30.42	53.17	0.10	9.94 Average	20.38	-22.75	Line
4 Pass	0.211	45.59	63.17	0.10	9.94 QP	35.55	-17.58	Line
5 Pass	0.269	26.13	51.14	0.13	10.06 Average	15.94	-25.01	Line
6 Pass	0.269	41.45	61.14	0.13	10.06 QP	31.26	-19.69	Line
7 Pass	0.340	23.07	49.20	0.14	10.19 Average	12.74	-26.13	Line
8 Pass	0.340	34.05	59.20	0.14	10.19 QP	23.72	-25.15	Line
9 Pass	0.414	20.72	47.57	0.09	10.32 Average	10.31	-26.85	Line
10 Pass	0.414	29.84	57.57	0.09	10.32 QP	19.43	-27.73	Line
11 Pass	3.608	11.53	46.00	0.15	10.61 Average	0.77	-34.47	Line
12 Pass	3.608	21.49	56.00	0.15	10.61 QP	10.73	-34.51	Line

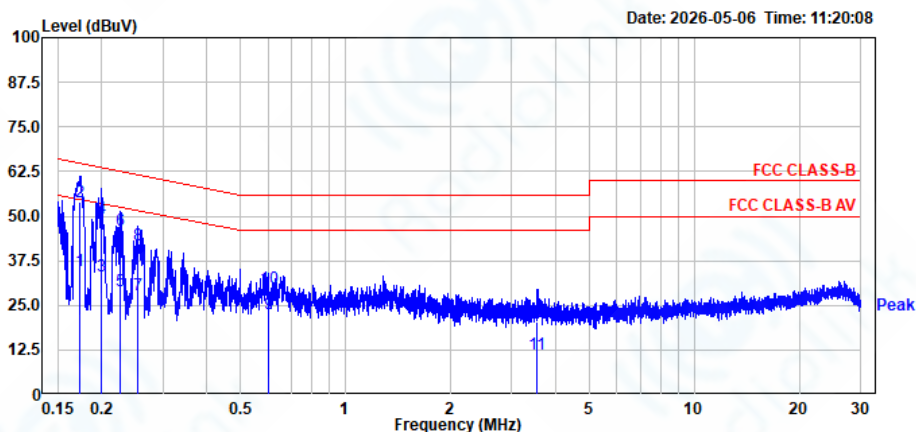


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

Line: Neutral Line



Site : chamber
Condition: limit\FCC CLASS-B.csv LISN20250331 Neutral
: DET:Peak
EUT : VTL-202502
Mode : GSM850+Adapter+USB cable+SIM1+WIFI Idle+BT Idle+GPS RX+Front Camera On+EU
Note : RL20260000301A

Result	Freq	Level	Limit	LISN	Cable	Read	Over	Pol/Phase
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1 AV	0.174	34.81	54.78	0.14	9.86 Average	24.81	-19.97 Neutral	
2 PP	0.174	54.02	64.78	0.14	9.86 QP	44.02	-10.76 Neutral	
3 Pass	0.200	33.21	53.61	0.15	9.92 Average	23.14	-20.40 Neutral	
4 Pass	0.200	49.56	63.61	0.15	9.92 QP	39.49	-14.05 Neutral	
5 Pass	0.226	29.22	52.58	0.16	9.97 Average	19.09	-23.36 Neutral	
6 Pass	0.226	46.15	62.58	0.16	9.97 QP	36.02	-16.43 Neutral	
7 Pass	0.254	27.78	51.62	0.16	10.03 Average	17.59	-23.84 Neutral	
8 Pass	0.254	41.95	61.62	0.16	10.03 QP	31.76	-19.67 Neutral	
9 Pass	0.600	22.78	46.00	0.18	10.46 Average	12.14	-23.22 Neutral	
10 Pass	0.600	30.00	56.00	0.18	10.46 QP	19.36	-26.00 Neutral	
11 Pass	3.532	11.27	46.00	0.21	10.61 Average	0.45	-34.73 Neutral	
12 Pass	3.532	20.27	56.00	0.21	10.61 QP	9.45	-35.73 Neutral	



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7.2 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
RSS-Gen Section 8.10

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 6.10.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

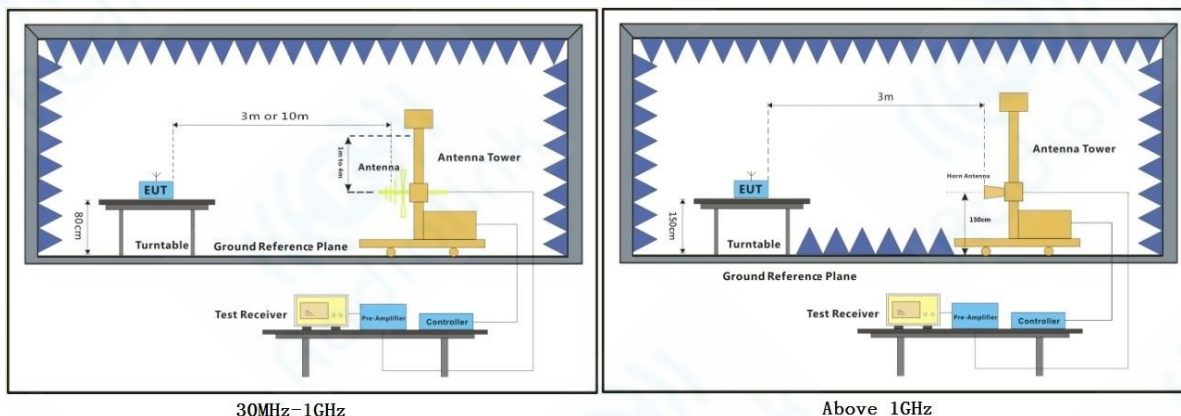
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 24.5 °C Humidity: 50.8 % RH Atmospheric Pressure: 1020 mbar

7.2.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.2.3 Test Setup Diagram



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

7.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

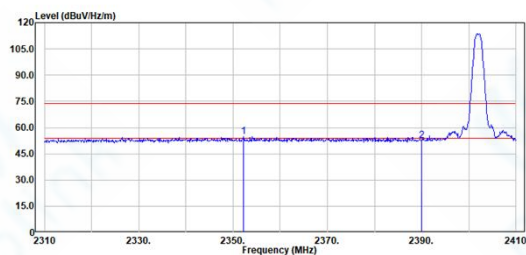
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



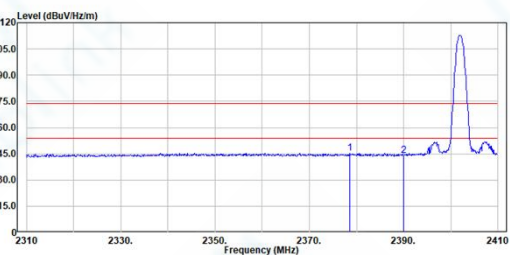
BLE_1M_TX_CH_00_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 00
Rate : 1M
Note : IMEI:358028660010991

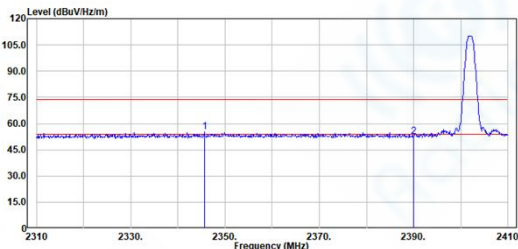
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2352.000	HORIZONTAL	57.86	54.92	74.00	-19.08	Peak	46.43	5.23	28.58
2 2390.000	HORIZONTAL	54.88	52.45	74.00	-21.55	Peak	46.43	5.24	28.28

BLE_1M_TX_CH_00_Horizontal-Avg



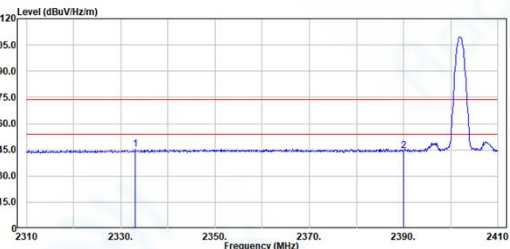
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 00
Rate : 1M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2378.500	HORIZONTAL	47.79	45.41	54.00	-8.59	Average	46.43	5.24	28.37
2 2390.000	HORIZONTAL	46.54	44.11	54.00	-9.89	Average	46.43	5.24	28.28



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 00
Rate : 1M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2345.000	VERTICAL	57.22	55.05	74.00	-18.95	Peak	46.43	5.23	28.58
2 2390.000	VERTICAL	55.14	52.71	74.00	-21.29	Peak	46.43	5.24	28.28



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 00
Rate : 1M
Note : IMEI:358028660010991

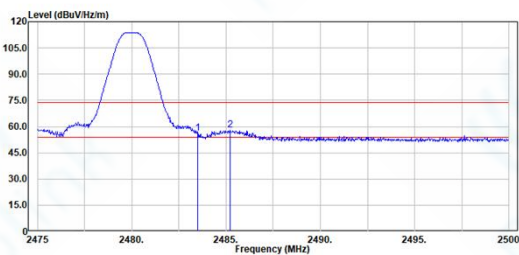
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2333.100	VERTICAL	47.78	45.43	54.00	-8.57	Average	46.43	5.23	28.46
2 2390.000	VERTICAL	46.85	44.42	54.00	-9.58	Average	46.43	5.24	28.28

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

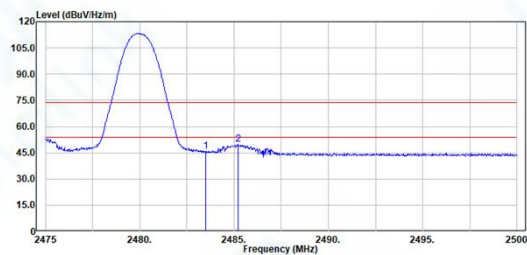
BLE_1M_TX_CH_39_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39
Rate : 1M
Note : IMEI:358028660010991

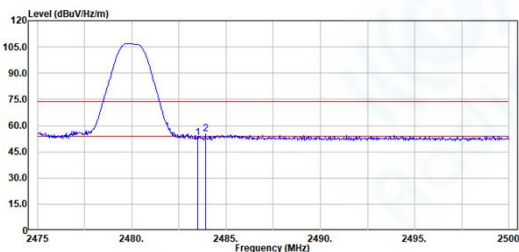
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/m	dBuV/m	dBuV/m	dB		dB	dB	dB/m
1 2483.500	HORIZONTAL	58.86	56.03	74.00	-17.97	Peak	46.41	5.27	27.86
2 2485.200	HORIZONTAL	60.69	57.84	74.00	-16.16	Peak	46.41	5.28	27.83

BLE_1M_TX_CH_39_Horizontal-Avg



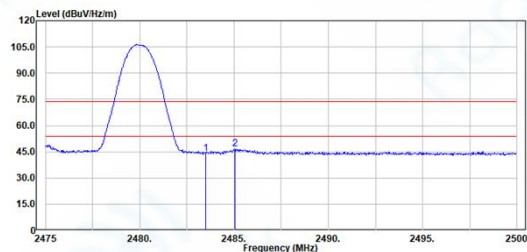
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39
Rate : 1M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/m	dBuV/m	dBuV/m	dB		dB	dB	dB/m
1 2483.500	HORIZONTAL	48.48	45.65	54.00	-8.35	Average	46.41	5.27	27.86
2 2485.200	HORIZONTAL	52.56	49.71	54.00	-4.29	Average	46.41	5.28	27.83



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39
Rate : 1M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/m	dBuV/m	dBuV/m	dB		dB	dB	dB/m
1 2483.500	VERTICAL	55.91	53.08	74.00	-20.92	Peak	46.41	5.27	27.86
2 2485.200	VERTICAL	57.86	55.02	74.00	-18.98	Peak	46.41	5.27	27.85



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39
Rate : 1M
Note : IMEI:358028660010991

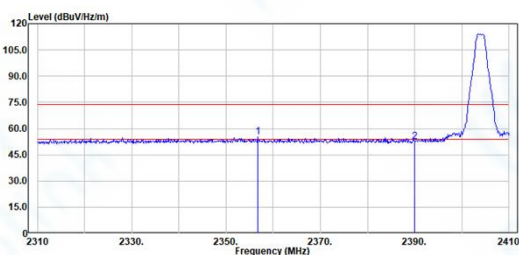
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/m	dBuV/m	dBuV/m	dB		dB	dB	dB/m
1 2483.500	VERTICAL	46.64	43.81	54.00	-10.19	Average	46.41	5.27	27.86
2 2485.200	VERTICAL	49.33	46.48	54.00	-7.52	Average	46.41	5.28	27.83

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

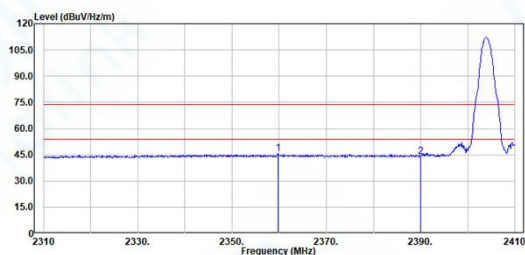
BLE_2M_TX_CH_00_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 1
Rate : 2M
Note : IMEI:358028660010991

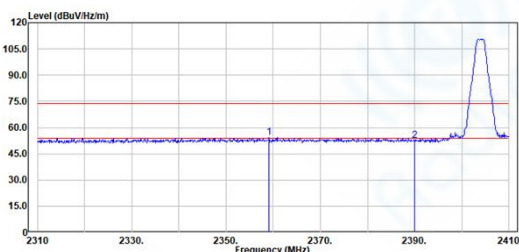
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2356.700	HORIZONTAL	57.76	55.27	74.00	-18.73	Peak	46.68	5.16	28.55
2 2390.000	HORIZONTAL	55.47	52.72	74.00	-21.28	Peak	46.68	5.17	28.28

BLE_2M_TX_CH_00_Horizontal-Avg



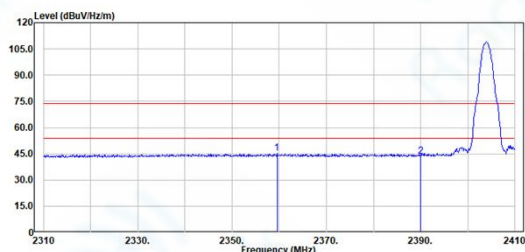
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 1
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2359.700	HORIZONTAL	48.09	45.57	54.00	-8.43	Average	46.68	5.16	28.52
2 2390.000	HORIZONTAL	46.82	44.07	54.00	-9.93	Average	46.68	5.17	28.28



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 1
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2359.100	VERTICAL	56.70	54.19	74.00	-19.81	Peak	46.68	5.16	28.53
2 2390.000	VERTICAL	55.47	52.72	74.00	-21.28	Peak	46.68	5.17	28.28

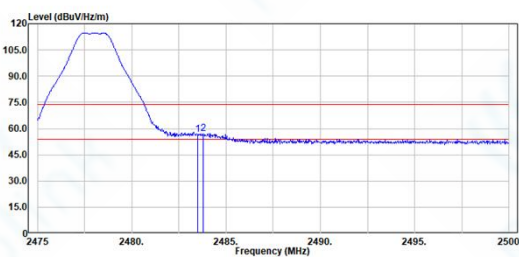


Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 1
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 2359.500	VERTICAL	47.59	45.07	54.00	-8.93	Average	46.68	5.16	28.52
2 2390.000	VERTICAL	46.21	43.46	54.00	-10.54	Average	46.68	5.17	28.28



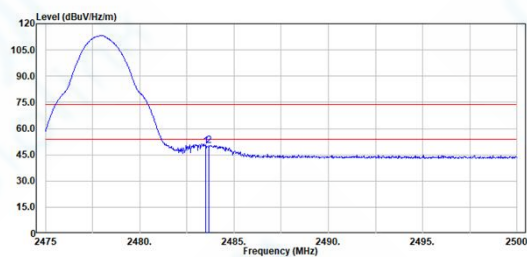
BLE_2M_TX_CH_39_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 38
Rate : 2M
Note : IMEI:358028660010991

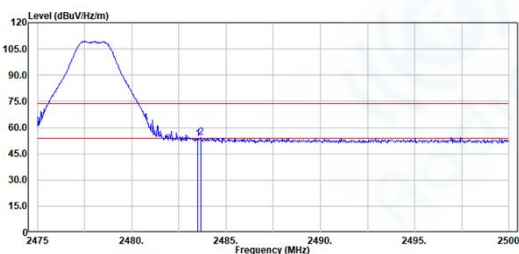
Freq	Pol/Phase	Read Level	Limit Level	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Loss Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB	dB	dB	dB/m
1 2483.500	HORIZONTAL	59.75	56.60	74.00	-17.40 Peak	46.65	5.19	27.86
2 2483.675	HORIZONTAL	60.21	57.06	74.00	-16.94 Peak	46.65	5.19	27.86

BLE_2M_TX_CH_39_Horizontal-Avg



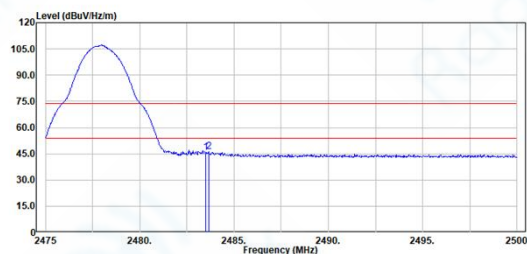
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 38
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Limit Level	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Loss Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB	dB	dB	dB/m
1 2483.500	HORIZONTAL	52.93	49.70	54.00	-4.22 Average	46.65	5.19	27.86
2 2483.675	HORIZONTAL	53.57	50.42	54.00	-3.58 Average	46.65	5.19	27.86



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 38
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Limit Level	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Loss Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB	dB	dB	dB/m
1 2483.500	VERTICAL	56.78	53.63	74.00	-20.37 Peak	46.65	5.19	27.86
2 2483.675	VERTICAL	57.35	54.20	74.00	-19.08 Peak	46.65	5.19	27.86



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT 5.0 TX_CH 38
Rate : 2M
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Limit Level	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Loss Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB	dB	dB	dB/m
1 2483.500	VERTICAL	48.71	45.56	54.00	-8.44 Average	46.65	5.19	27.86
2 2483.675	VERTICAL	49.38	46.23	54.00	-7.77 Average	46.65	5.19	27.86

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7.3 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
RSS-Gen Section 8.9

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 6.4,6.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

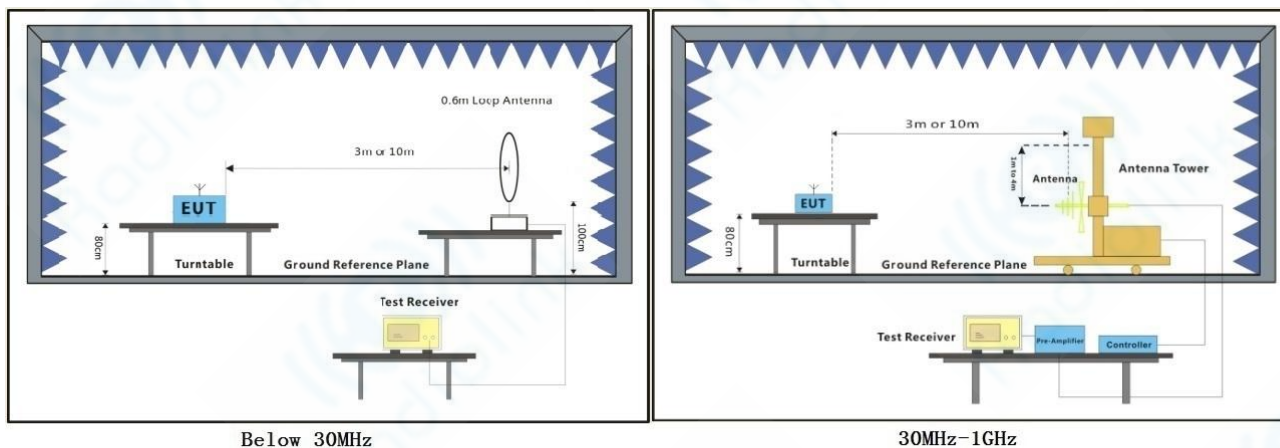
Humidity: 46.8 % RH

Atmospheric Pressure: 1020 mbar

7.3.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.3.3 Test Setup Diagram



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7.3.4 Measurement Procedure and Data

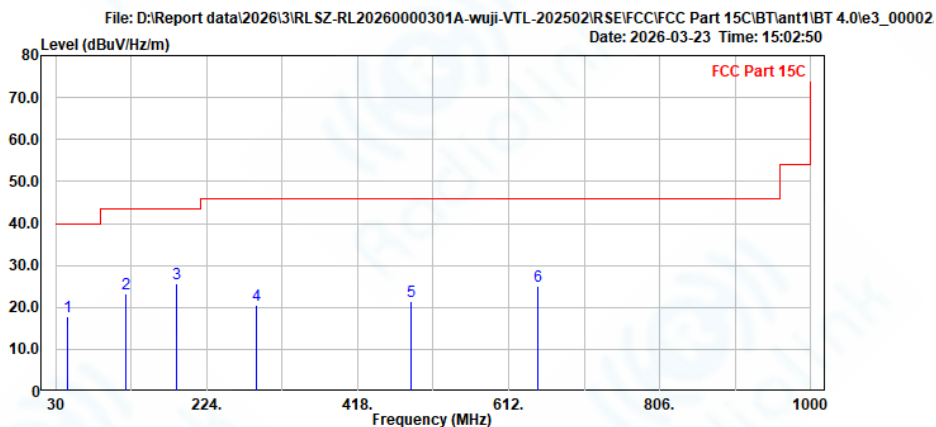
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



Polarity: Horizontal



Site : chamber
Condition: FCC Part 15C 3m ANT_VULB9163-30M-1GHz-20250411-FCC HORIZONTAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39 LF
Rate : 1M
Note : IMEI:358028660010454

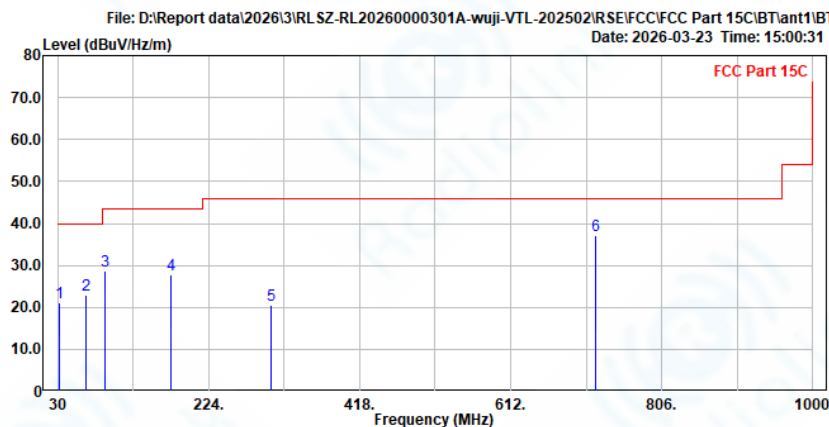
	Freq	Pol/Phase	Read Level	Level	Limit Line	Over Limit	Remark	Preamp Factor	Cable Loss	Ant Factor
	MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	45.520	HORIZONTAL	30.70	17.68	40.00	-22.32	Peak	32.00	0.89	18.09
2	120.210	HORIZONTAL	30.95	23.20	43.50	-20.30	Peak	31.88	10.30	13.83
3	185.200	HORIZONTAL	34.54	25.80	43.50	-17.70	Peak	31.81	9.12	13.95
4	288.020	HORIZONTAL	33.71	20.56	46.00	-25.44	Peak	31.89	1.58	17.16
5	485.900	HORIZONTAL	30.40	21.55	46.00	-24.45	Peak	31.80	1.83	21.12
6	649.830	HORIZONTAL	31.08	25.00	46.00	-21.00	Peak	31.90	2.28	23.54



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

Polarity: Vertical



Site : chamber
Condition: FCC Part 15C 3m ANT_VULB9163-30M-1GHz-20250411-FCC VERTICAL
EUT : VTL-202502
Mode : BT 4.0 TX_CH 39 LF
Rate : 1M
Note : IMEI:358028660010991

	Freq	Pol/Phase	Read Level	Level	Limit Line	Over Limit	Remark	Preamp Factor	Cable Loss	Ant Factor
	MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	31.940	VERTICAL	36.77	20.99	40.00	-19.01	Peak	32.00	0.83	15.39
2	65.890	VERTICAL	39.13	22.91	40.00	-17.09	Peak	32.00	0.93	14.85
3	90.140	VERTICAL	45.67	28.66	43.50	-14.84	Peak	31.95	0.94	14.00
4	175.500	VERTICAL	35.84	27.82	43.50	-15.68	Peak	31.82	10.52	13.28
5	304.510	VERTICAL	33.47	20.59	46.00	-25.41	Peak	31.90	1.60	17.42
6	721.610	VERTICAL	42.51	37.13	46.00	-8.87	Peak	31.90	2.39	24.13



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

7.4 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
RSS-Gen Section 8.9

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

7.4.1 E.U.T. Operation

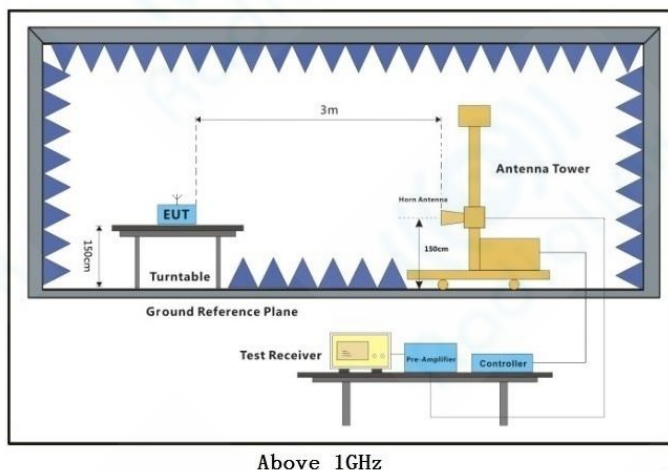
Operating Environment:

Temperature: 24.6 °C Humidity: 50.5 % RH Atmospheric Pressure: 1020 mbar

7.4.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
- 5:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.

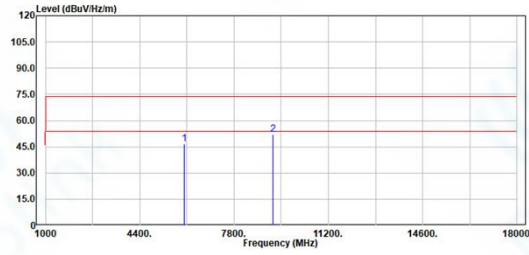


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

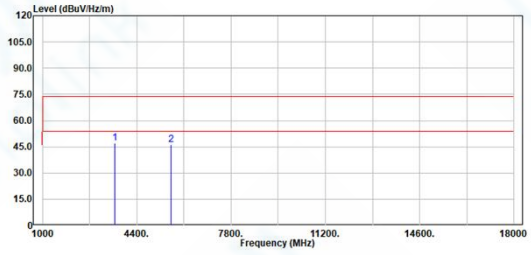
BLE_1M_TX_CH_00_Horizontal



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 00
Rate : 1M
Plan : X
Note : IMEI:358028660010991

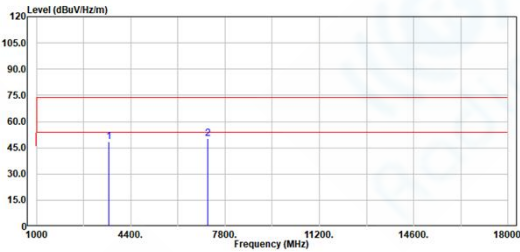
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 5993.750	HORIZONTAL	41.55	46.45	74.00	-27.55	Peak	47.07	8.54	33.33
2 9201.500	HORIZONTAL	36.20	52.06	74.00	-21.94	Peak	47.09	12.65	38.62

BLE_1M_TX_CH_19_Horizontal



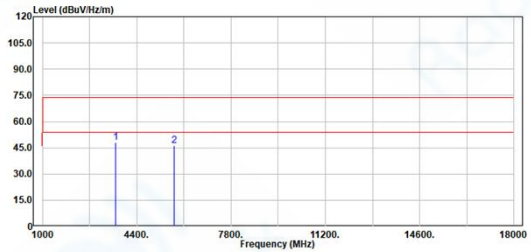
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 19
Rate : 1M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 3596.750	VERTICAL	45.24	46.99	74.00	-27.04	Peak	46.42	5.49	38.14
2 5628.000	VERTICAL	41.56	46.28	74.00	-27.72	Peak	46.55	7.58	33.12



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 00
Rate : 1M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 5993.750	VERTICAL	47.60	48.32	74.00	-25.68	Peak	46.42	5.49	38.14
2 9201.500	VERTICAL	39.13	50.41	74.00	-23.59	Peak	47.51	10.72	37.36



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 19
Rate : 1M
Plan : X
Note : IMEI:358028660010991

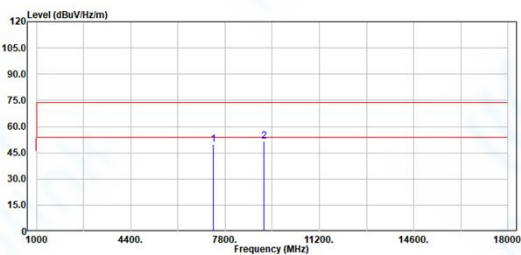
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 3596.750	VERTICAL	47.97	48.19	74.00	-25.99	Peak	46.48	5.37	29.51
2 5743.000	VERTICAL	40.62	46.29	74.00	-27.71	Peak	46.72	7.88	33.86

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

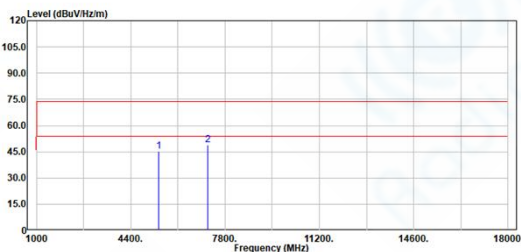
Tel: +86 0755 23080694

BLE_1M_TX_CH_39_Horizontal



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 39
Rate : 1M
Plan : X
Note : IMEI:358028660010991

	Freq	Pol/Phase	Read Level	Level	Limit	Over Limit	Remark	Preamp Factor	Cable Loss	Ant Factor
	MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	7380.250	HORIZONTAL	36.91	49.80	74.00	-24.20	Peak	47.60	11.25	36.97
2	9201.500	HORIZONTAL	35.92	51.78	74.00	-22.22	Peak	47.09	12.65	38.62



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT4.0 TX_CH 39
Rate : 1M
Plan : X
Note : IMEI:358028660010991

	Freq	Pol/Phase	Read Level	Level	Limit	Over Limit	Remark	Preamp Factor	Cable Loss	Ant Factor
	MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	5394.500	VERTICAL	42.20	45.21	74.00	-28.79	Peak	46.40	7.15	32.62
2	7100.500	VERTICAL	37.50	48.06	74.00	-25.14	Peak	47.51	10.72	37.36

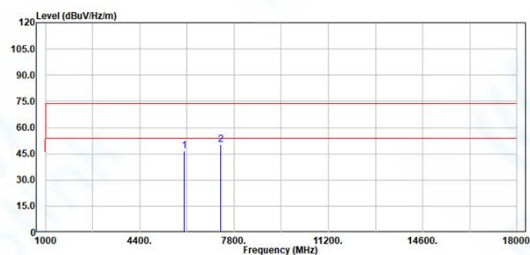


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

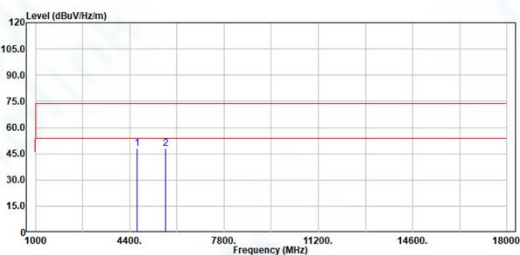
BLE_2M_TX_CH_00_Horizontal



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 00
Rate : 2M
Plan : X
Note : IMEI:358028660010991

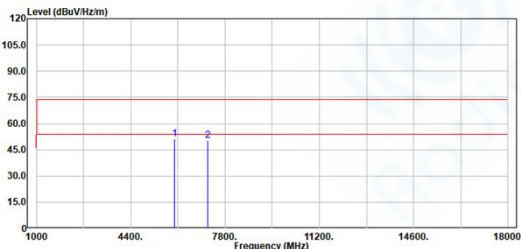
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 5993.750	HORIZONTAL	41.55	46.45	74.00	-27.55	Peak	47.07	8.54	33.33
2 7321.500	HORIZONTAL	38.25	50.41	74.00	-23.59	Peak	47.57	11.09	36.96

BLE_2M_TX_CH_19_Horizontal



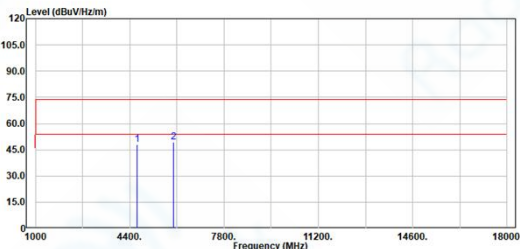
Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 19
Rate : 2M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 4653.000	VERTICAL	46.25	48.00	74.00	-25.92	Peak	46.65	6.63	31.69
2 5684.000	VERTICAL	42.64	47.85	74.00	-26.15	Peak	46.63	7.73	33.10



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 00
Rate : 2M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 5982.000	VERTICAL	43.54	50.97	74.00	-23.03	Peak	47.05	8.51	33.37
2 7180.500	VERTICAL	39.13	50.41	74.00	-23.59	Peak	47.51	10.72	37.36



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 19
Rate : 2M
Plan : X
Note : IMEI:358028660010991

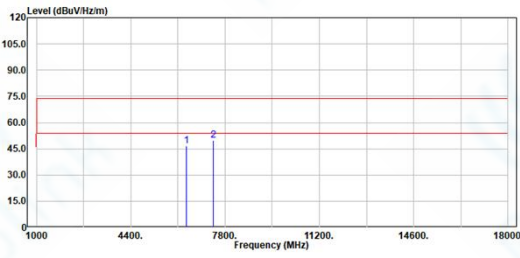
Freq	Pol/Phase	Read Level	Level	Limit	Over	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1 4653.000	VERTICAL	45.95	47.78	74.00	-26.22	Peak	46.65	6.63	31.69
2 5963.000	VERTICAL	43.95	49.20	74.00	-24.80	Peak	47.03	8.46	33.45

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

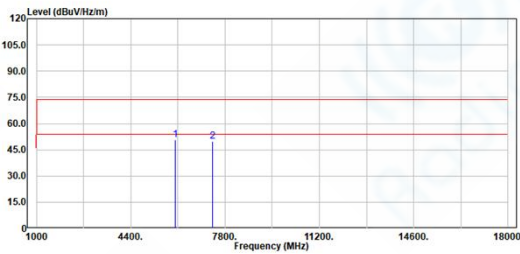
Tel: +86 0755 23080694

BLE_2M_TX_CH_39_Horizontal



Site : chamber
Condition: 3m HORIZONTAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 38
Rate : 2M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	6405.000 HORIZONTAL	38.86	46.75	74.00	-27.25	Peak	47.29	9.82	34.87
2	7300.250 HORIZONTAL	36.91	49.88	74.00	-24.28	Peak	47.60	11.25	36.97



Site : chamber
Condition: 3m VERTICAL
EUT : VTL-202502
Mode : BT5.0 TX_CH 38
Rate : 2M
Plan : X
Note : IMEI:358028660010991

Freq	Pol/Phase	Read Level	Level	Limit	Over Limit	Remark	Preamp Factor	Cable Loss Factor	Ant Factor
MHz		dBuV/H	dBuV/H	dBuV/H	dB		dB	dB	dB/m
1	5993.750 VERTICAL	45.76	50.66	74.00	-23.34	Peak	47.07	8.54	33.33
2	7345.000 VERTICAL	36.79	49.83	74.00	-24.17	Peak	47.59	11.15	37.57

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

7.5 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)
RSS-247 Section 6.3.2

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 11.9.1

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.5.1 E.U.T. Operation

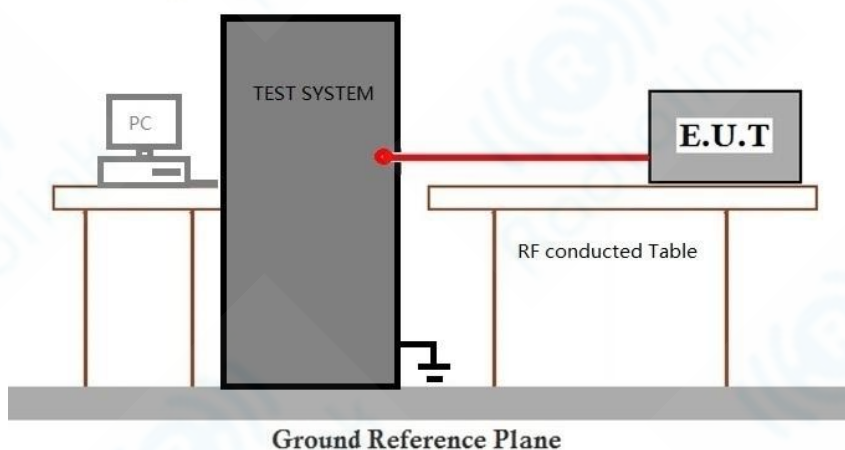
Operating Environment:
Temperature: 22.2 °C Humidity: 40.0 % RH Atmospheric Pressure: 1020 mbar

7.5.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.



7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details

7.6 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
RSS-247 Section 6.3.1(a)

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 11.8.1

Limit:
≥500 kHz

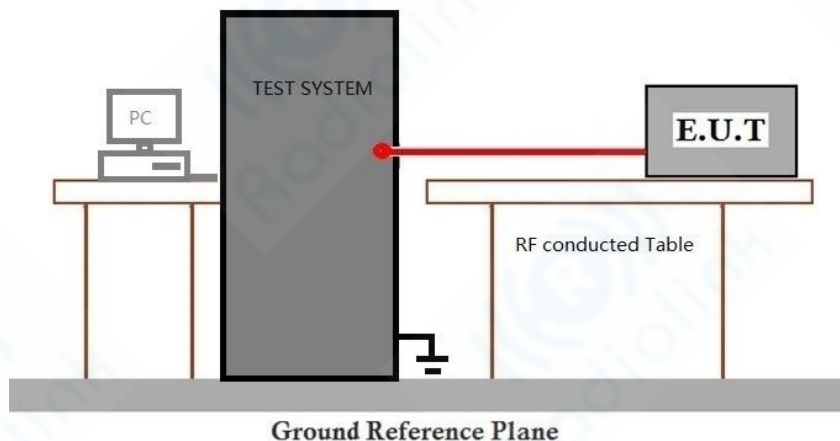
7.6.1 E.U.T. Operation

Operating Environment:
Temperature: 22.2 °C Humidity: 40.0 % RH Atmospheric Pressure: 1020 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 99% Bandwidth

Test Requirement RSS-Gen Section 6.7
Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.9.3

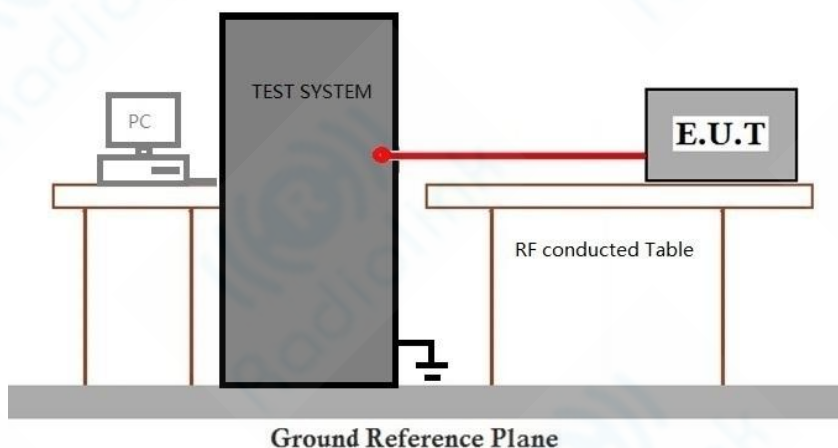
7.7.1 E.U.T. Operation

Operating Environment:
Temperature: 23.3 °C Humidity: 46.5 % RH Atmospheric Pressure: 1020 mbar

7.7.2 Test Mode Description

Mode Code	Description
1	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.8 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)
RSS-247 Clause 6.3.1(b)

Test Method: ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Section 11.10.2

Limit:

$\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission

7.8.1 E.U.T. Operation

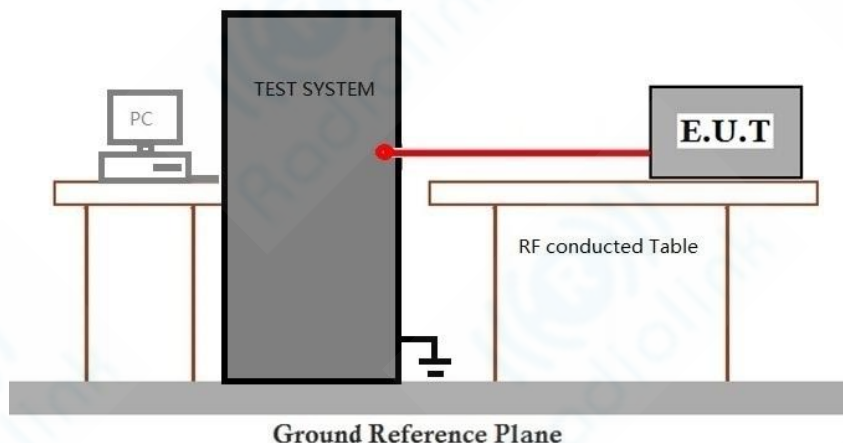
Operating Environment:

Temperature: 22.2 °C Humidity: 40.0 % RH Atmospheric Pressure: 1020 mbar

7.8.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.9 Conducted Band Edges Measurement

Test Requirement	47 CFR Part 15, Subpart C 15.247(d) RSS-247 Section 5.5
Test Method:	ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 6.10.4

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.9.1 E.U.T. Operation

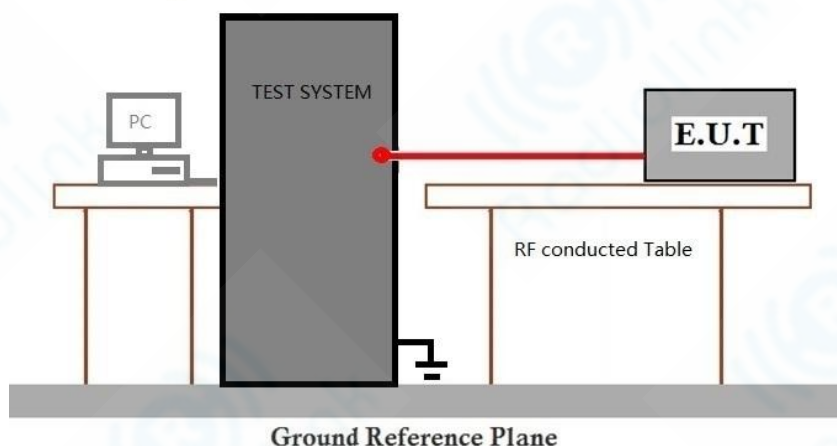
Operating Environment:

Temperature: 22.2 °C Humidity: 40.0 % RH Atmospheric Pressure: 1020 mbar

7.9.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

7.10 Conducted Spurious Emissions

Test Requirement	47 CFR Part 15, Subpart C 15.247(d) RSS-247 Section 5.5
Test Method:	ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.10.1 E.U.T. Operation

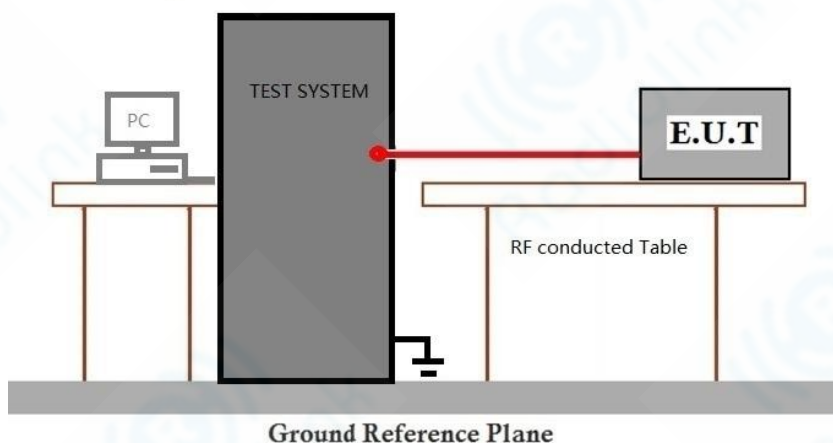
Operating Environment:

Temperature: 22.2 °C Humidity: 40.0 % RH Atmospheric Pressure: 1020 mbar

7.10.2 Test Mode Description

Mode Code	Description
1	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.10.3 Test Setup Diagram



7.10.4 Measurement Procedure and Data

Please Refer to Appendix for Details

Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

8 Test Setup Photo

Refer to Appendix A_Setup Photo (1.4)



9 Appendix

1. Duty Cycle

1.1 Test Result

1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.400	0.625	64.00	1.94	0.02
		2440	0.400	0.625	64.00	1.94	0.05
		2480	0.395	0.625	63.20	1.99	0.00
2M	SISO	2402	0.216	0.625	34.56	4.61	0.03
		2440	0.217	0.625	34.72	4.59	0.04
		2480	0.216	0.625	34.56	4.61	0.05



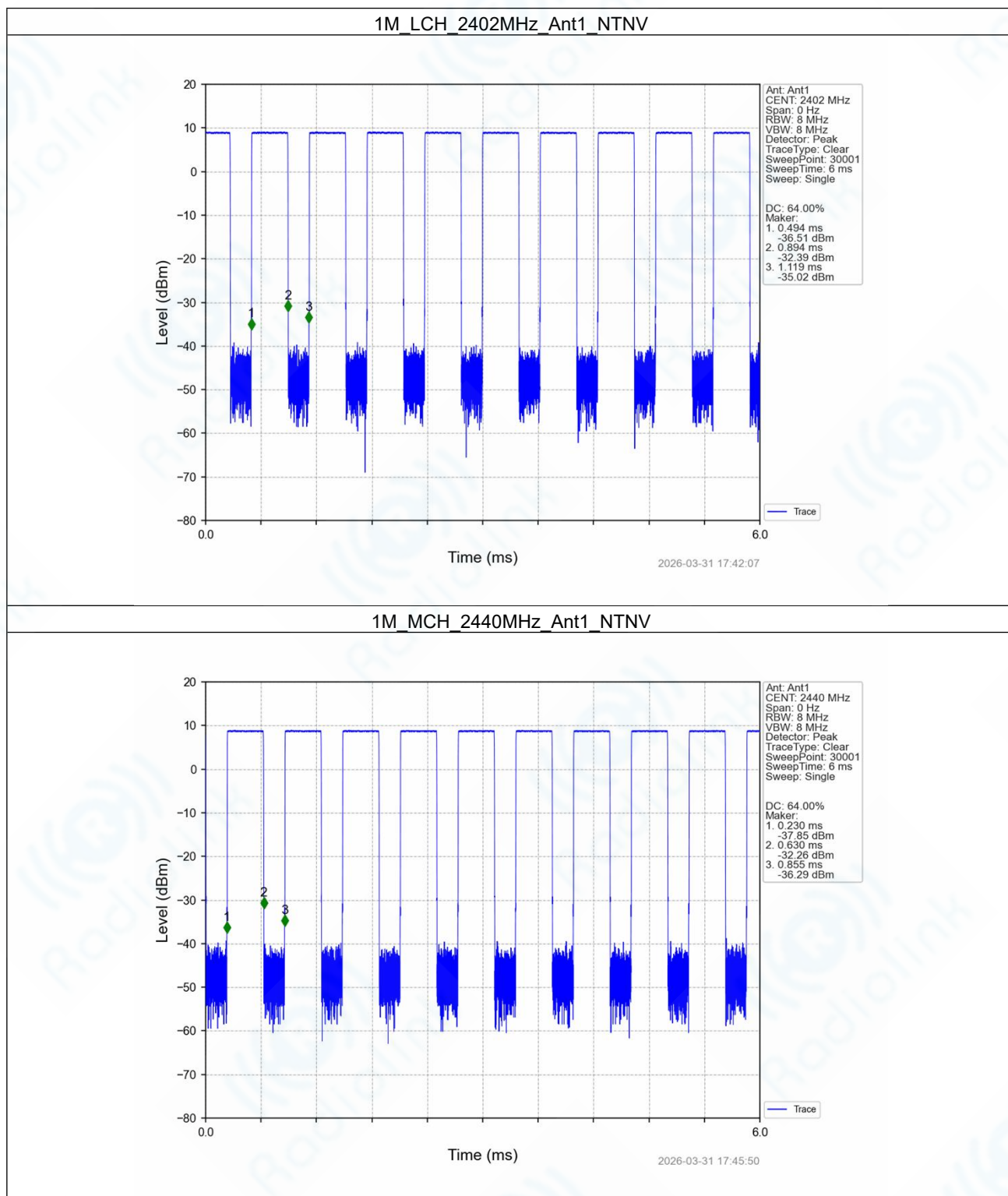
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

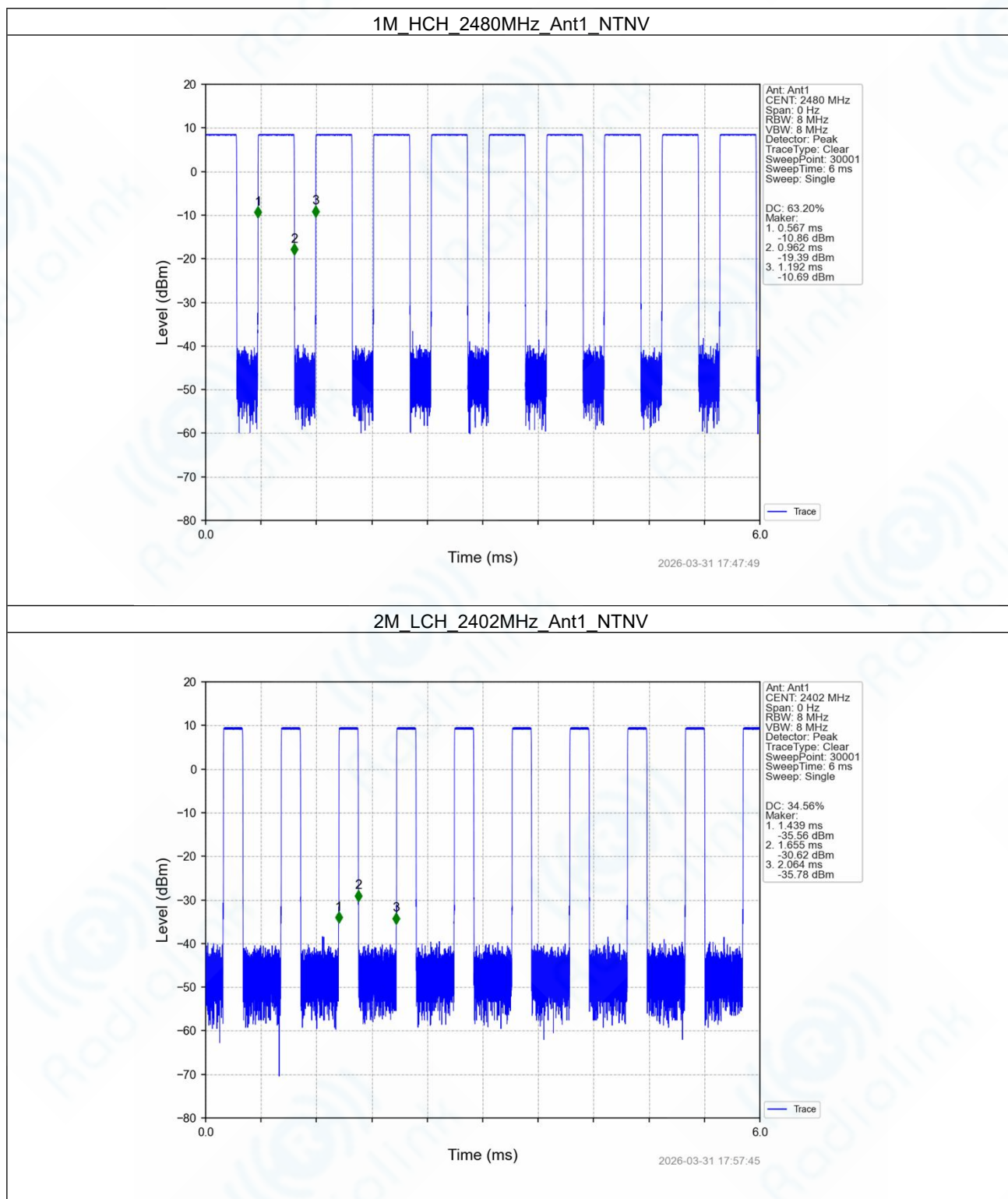
1.2 Test Graph

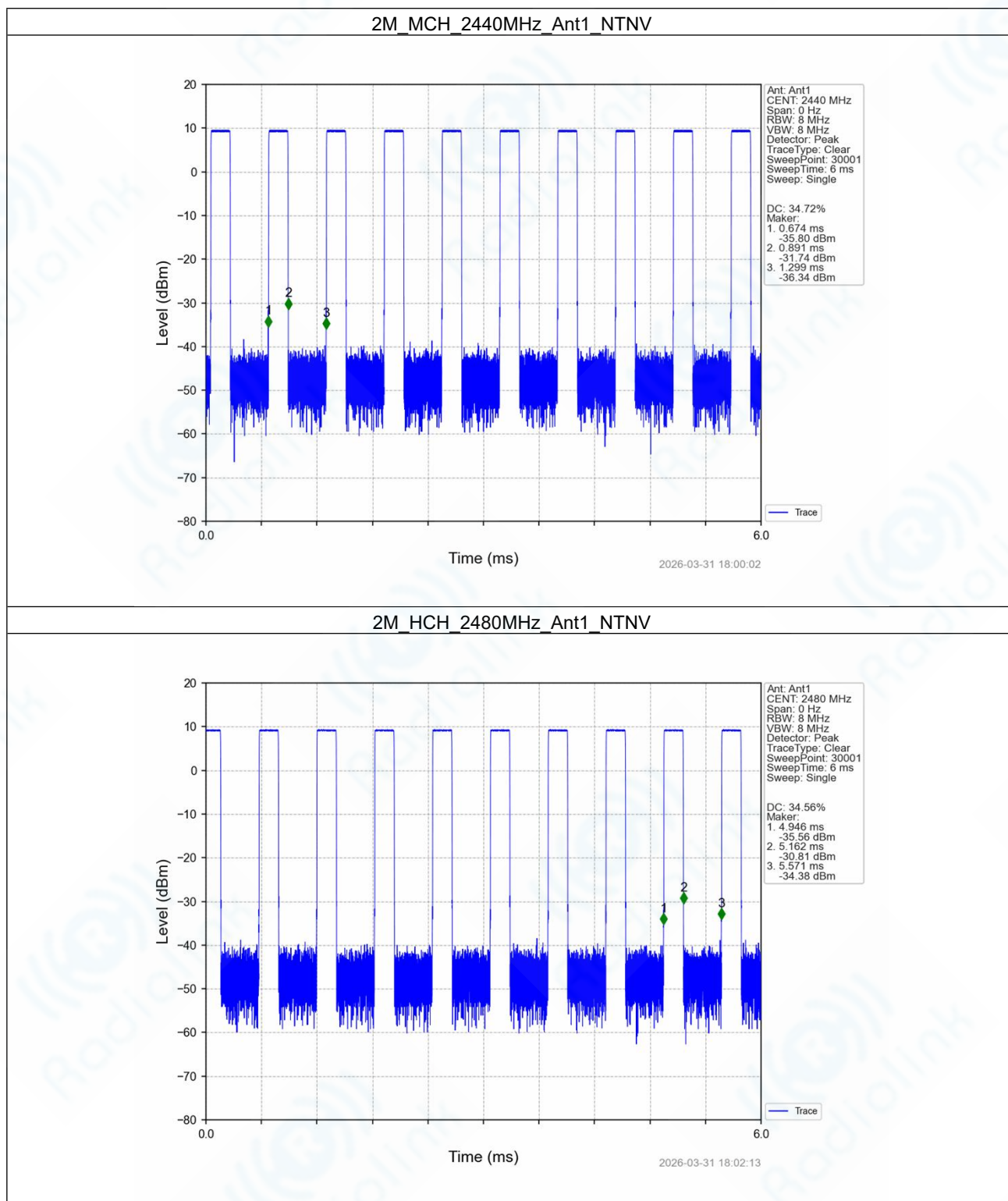
1.2.1 Ant1



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694





Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	1.022	/	Pass
		2440	1	1.023	/	Pass
		2480	1	1.021	/	Pass
2M	SISO	2402	1	2.038	/	Pass
		2440	1	2.037	/	Pass
		2480	1	2.037	/	Pass

2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.681	≥ 0.5	Pass
		2440	1	0.675	≥ 0.5	Pass
		2480	1	0.683	≥ 0.5	Pass
2M	SISO	2402	1	1.172	≥ 0.5	Pass
		2440	1	1.168	≥ 0.5	Pass
		2480	1	1.165	≥ 0.5	Pass



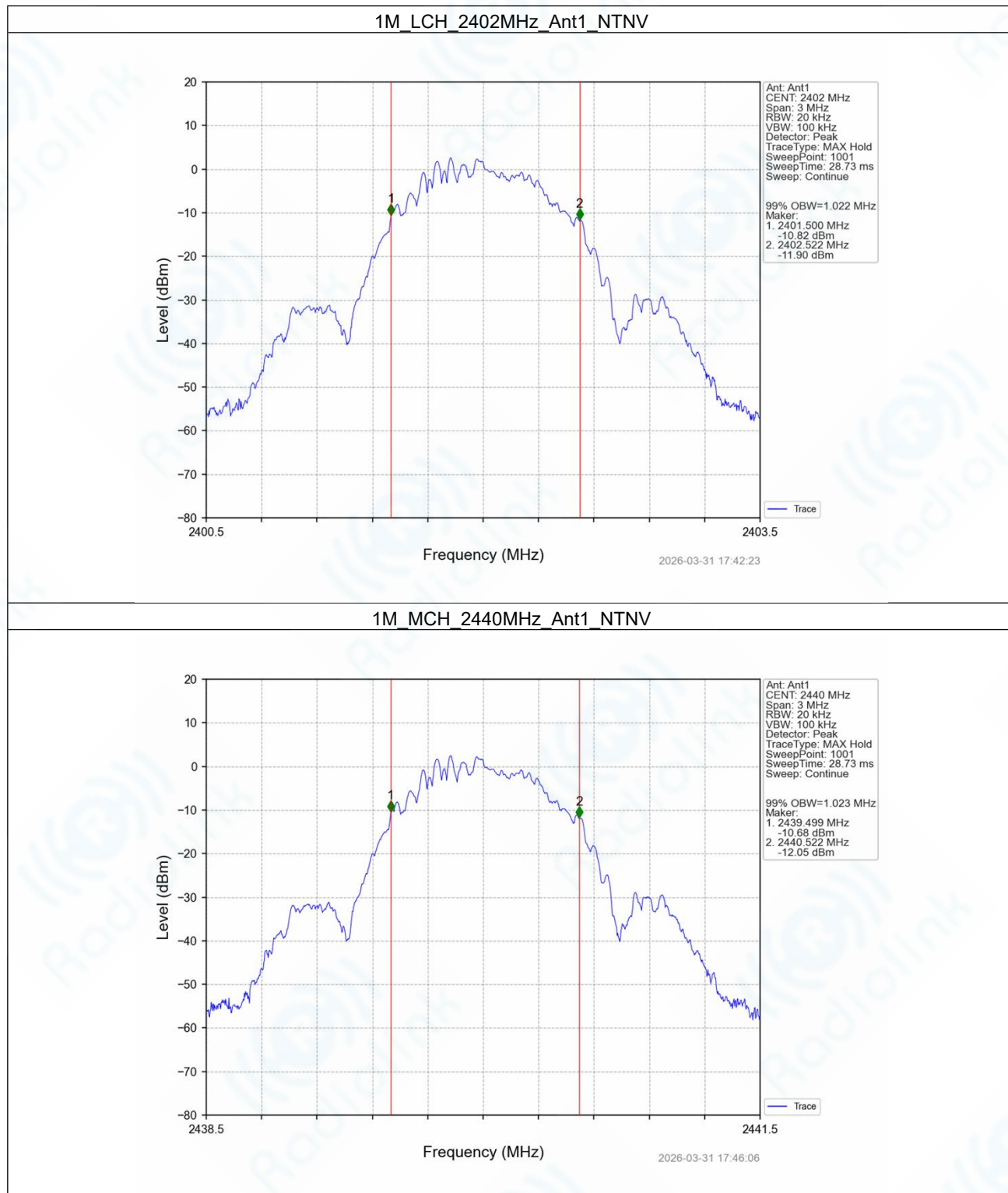
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

2.2 Test Graph

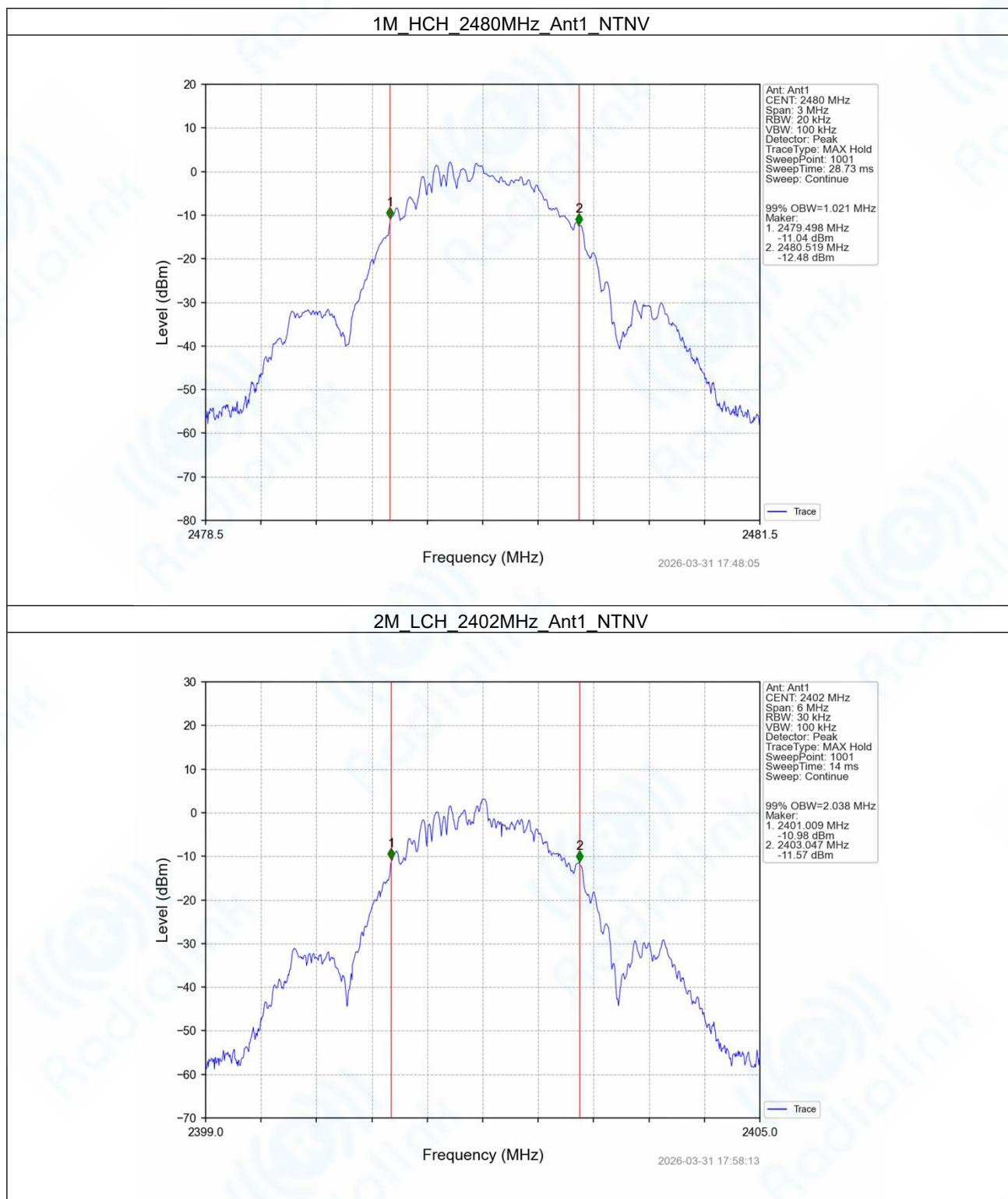
2.2.1 OBW



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

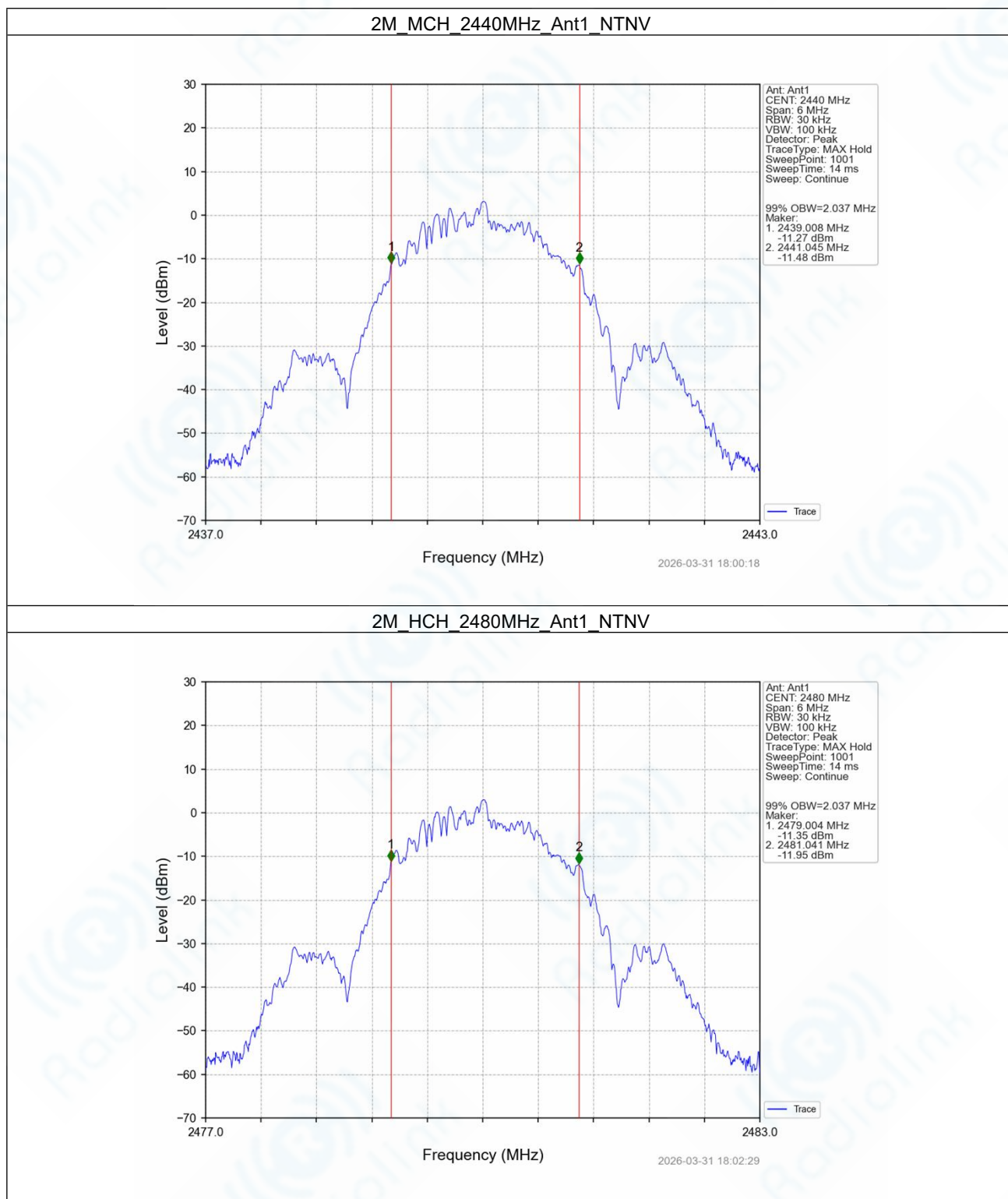
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

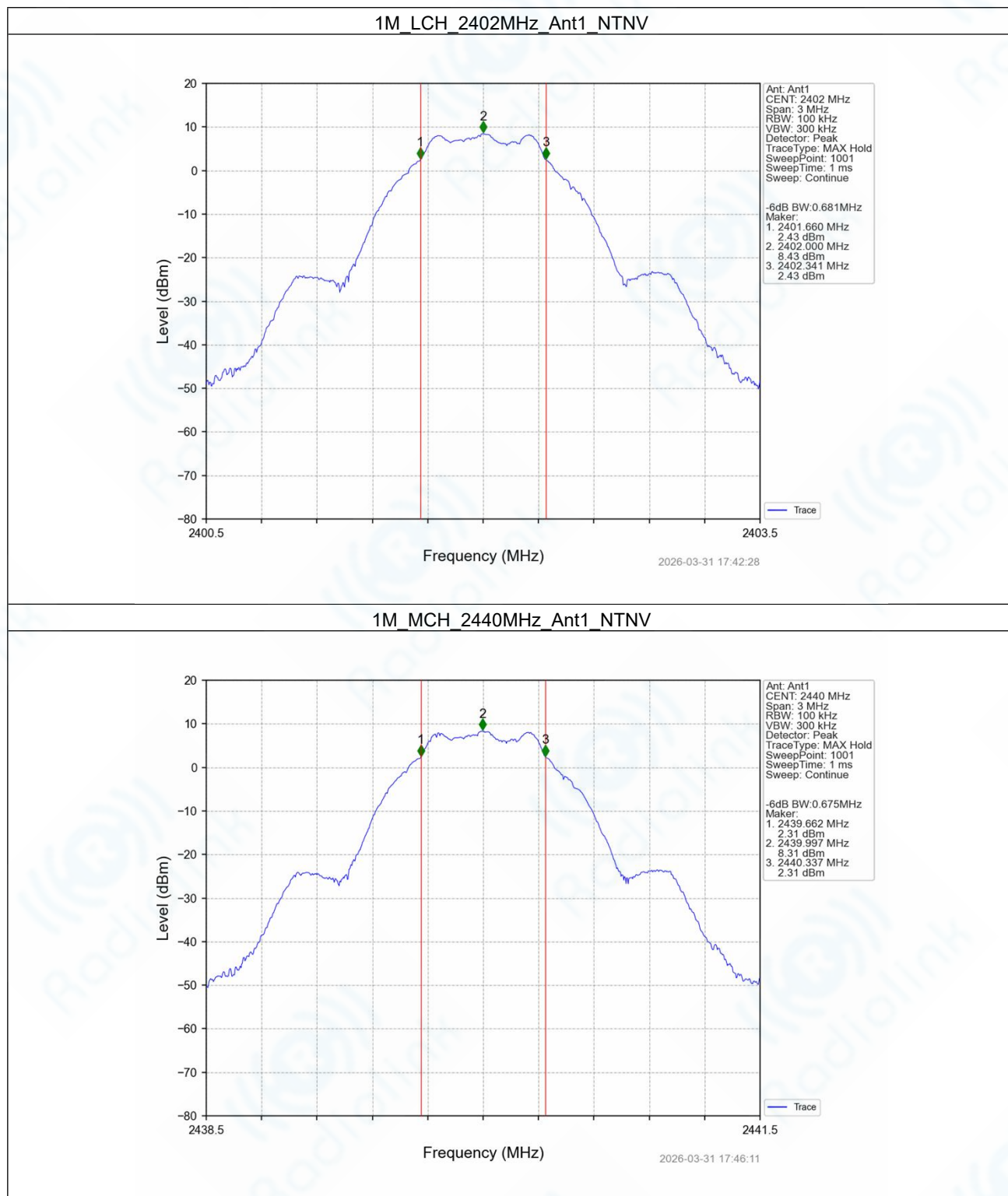
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

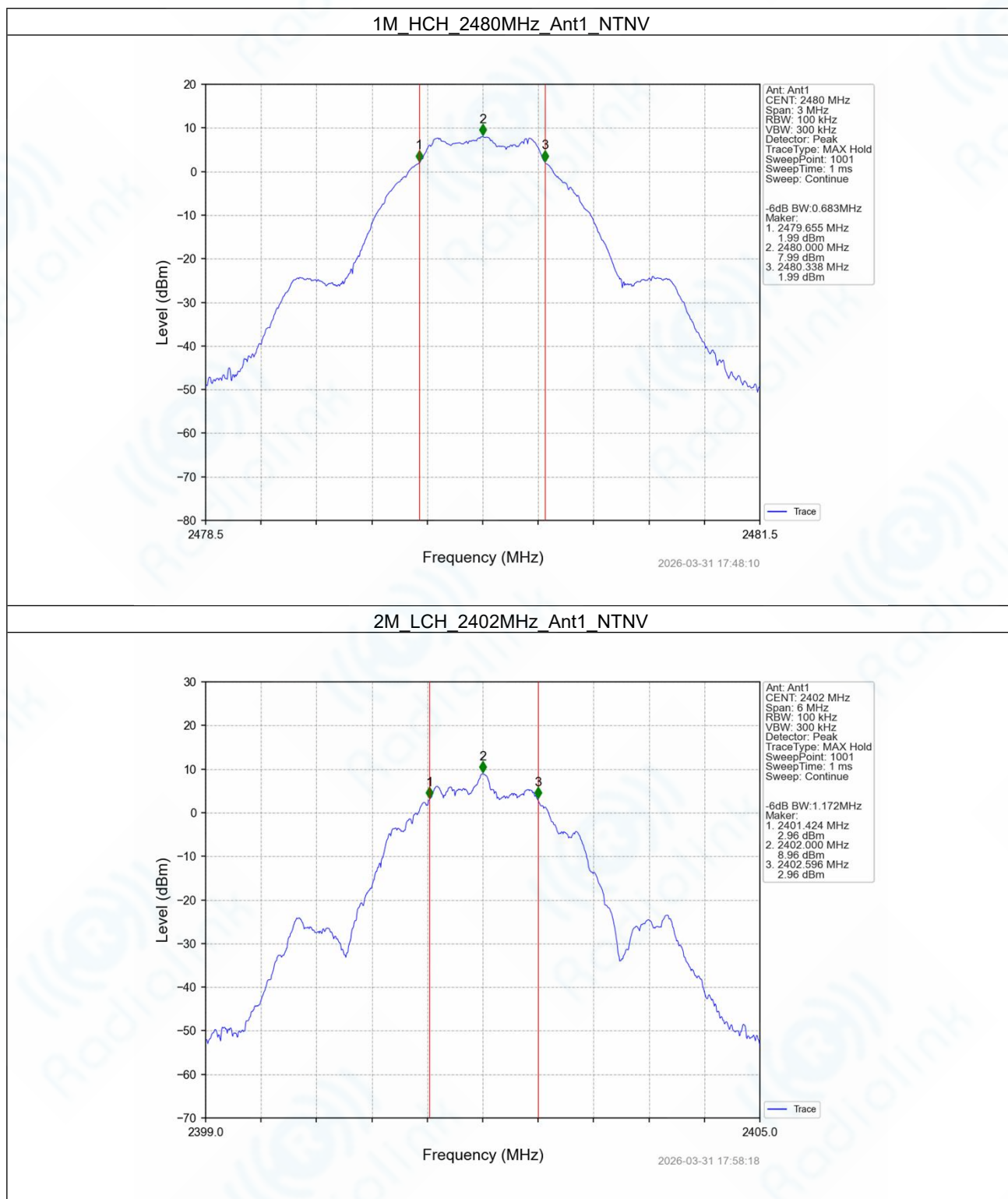
2.2.2 6dB BW



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

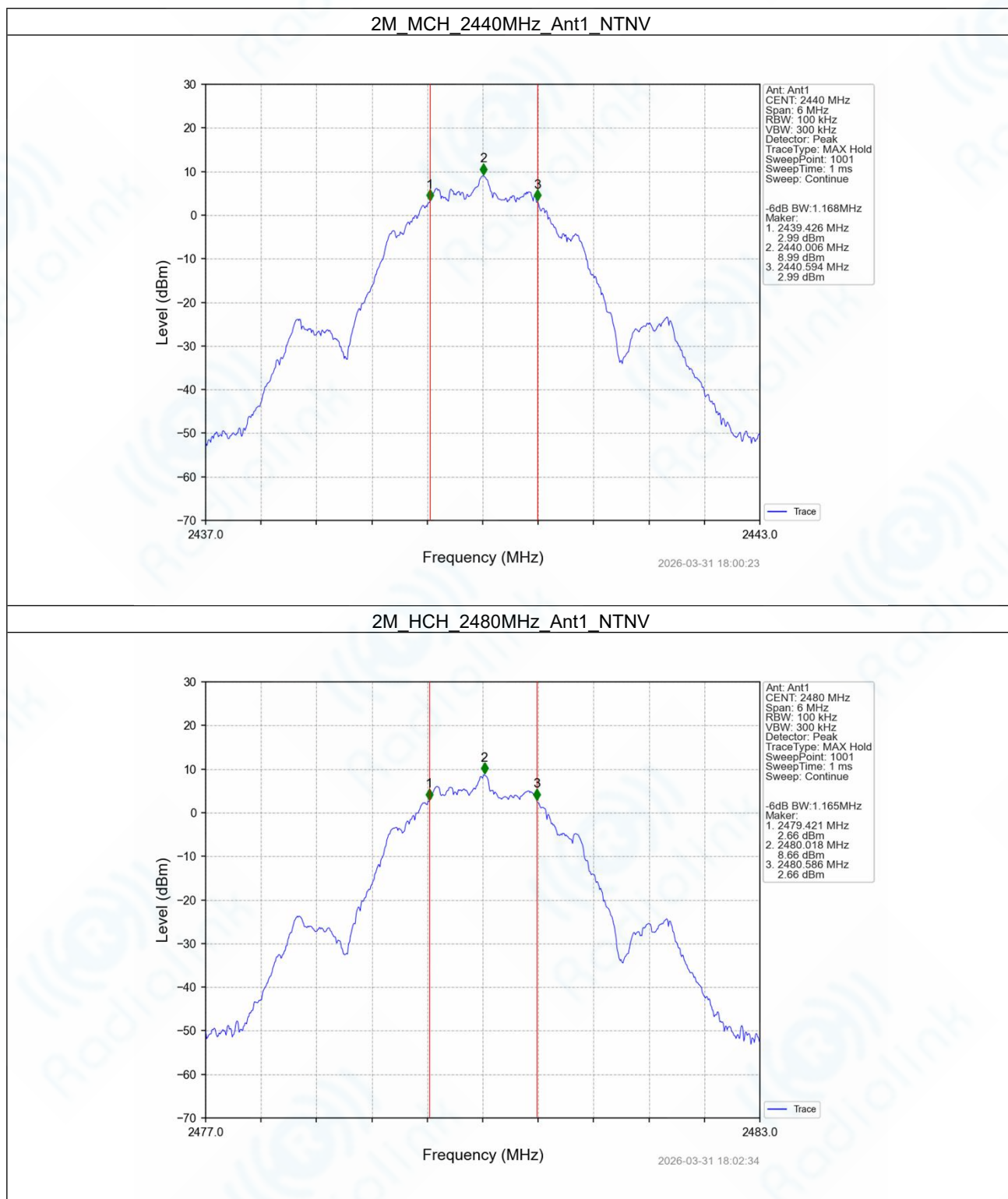
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)			Verdict
			ANT1	ANT2	Limit	
1M	SISO	2402	9.95	10.43	≤ 30	Pass
		2440	10.05	10.60	≤ 30	Pass
		2480	9.88	9.85	≤ 30	Pass
2M	SISO	2402	10.50	10.45	≤ 30	Pass
		2440	10.57	10.56	≤ 30	Pass
		2480	10.43	9.99	≤ 30	Pass

Note1: Antenna Gain: Ant1: -1.70dBi; Ant2: -3.70dBi;



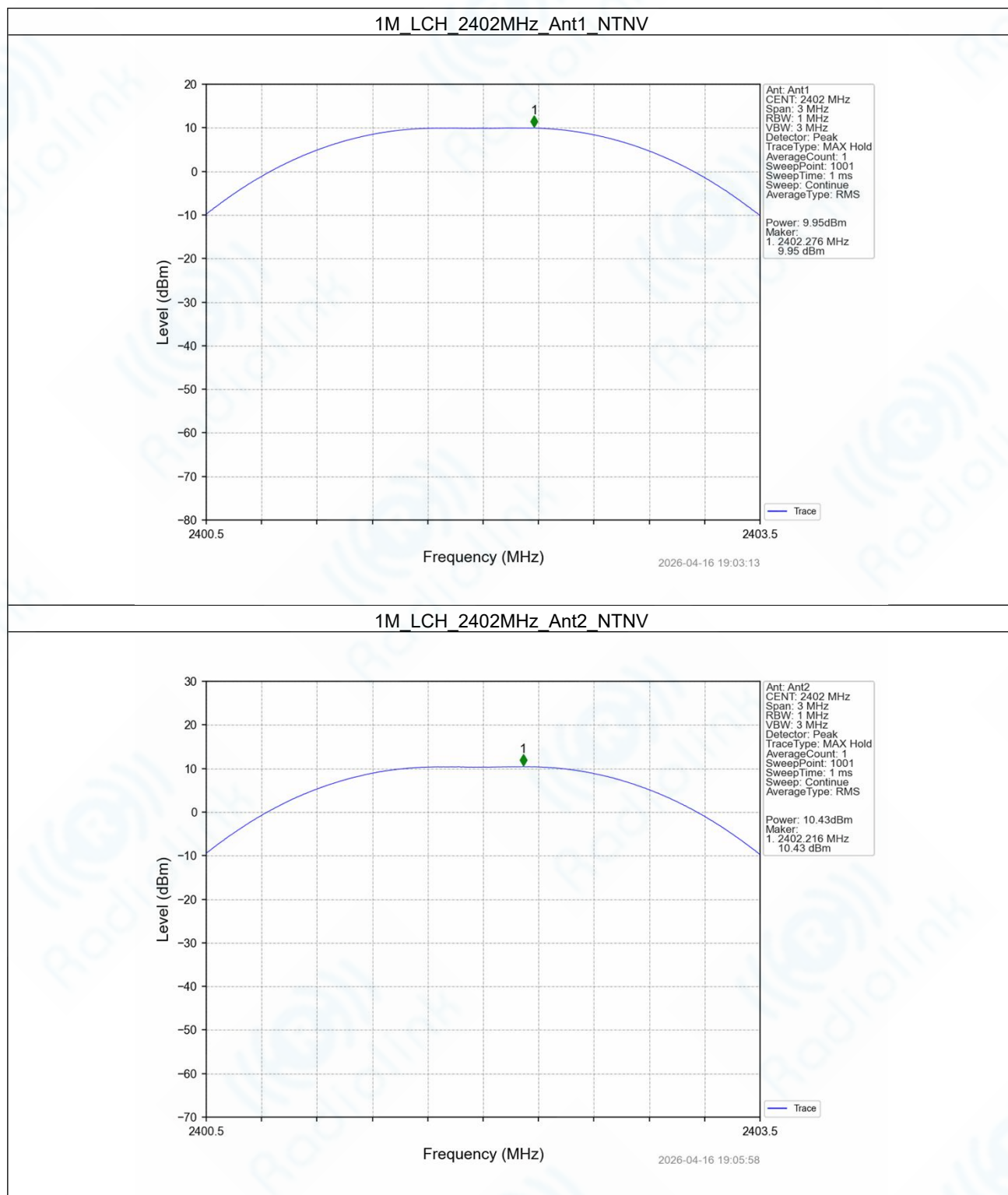
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

3.2 Test Graph

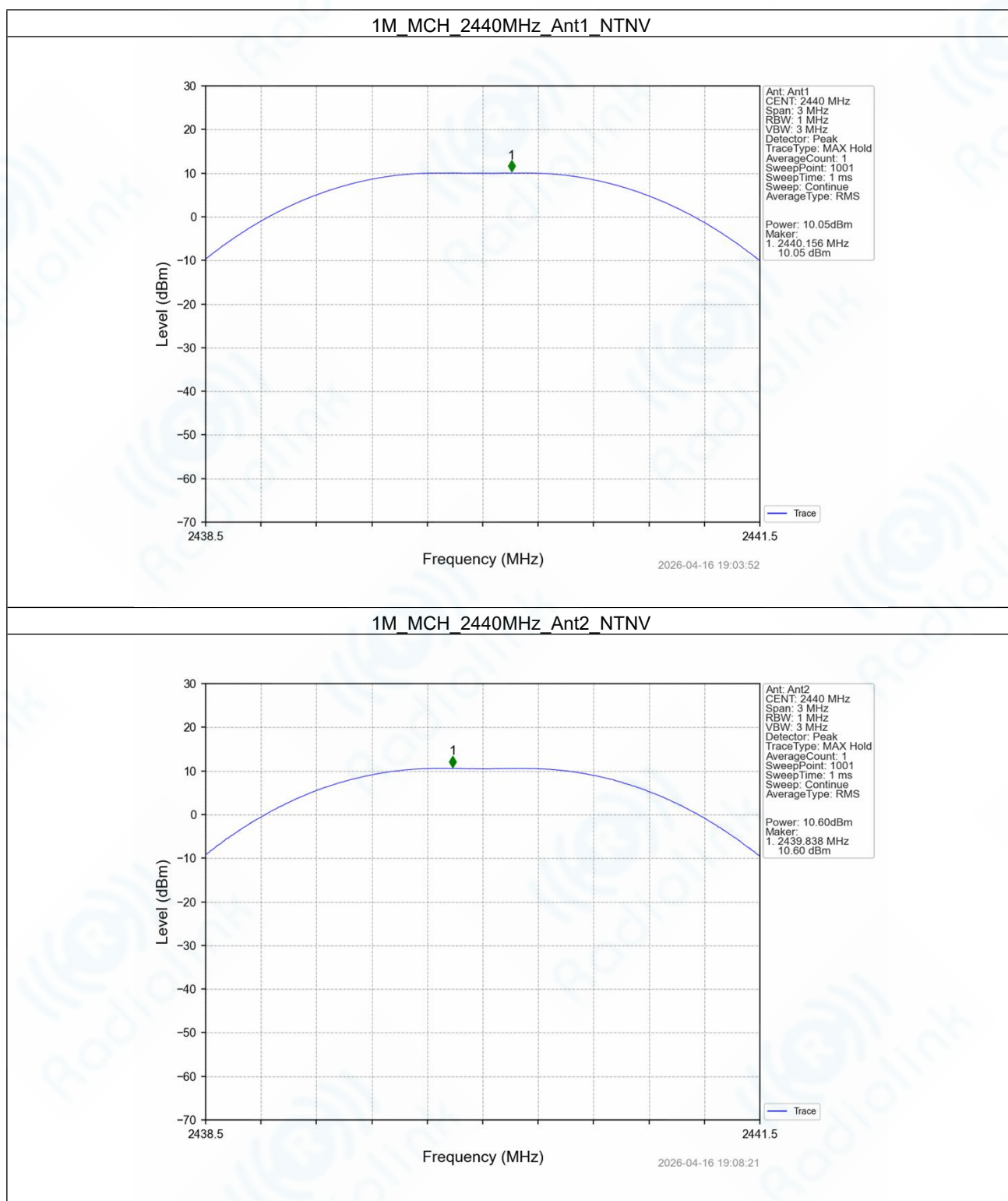
3.2.1 Power

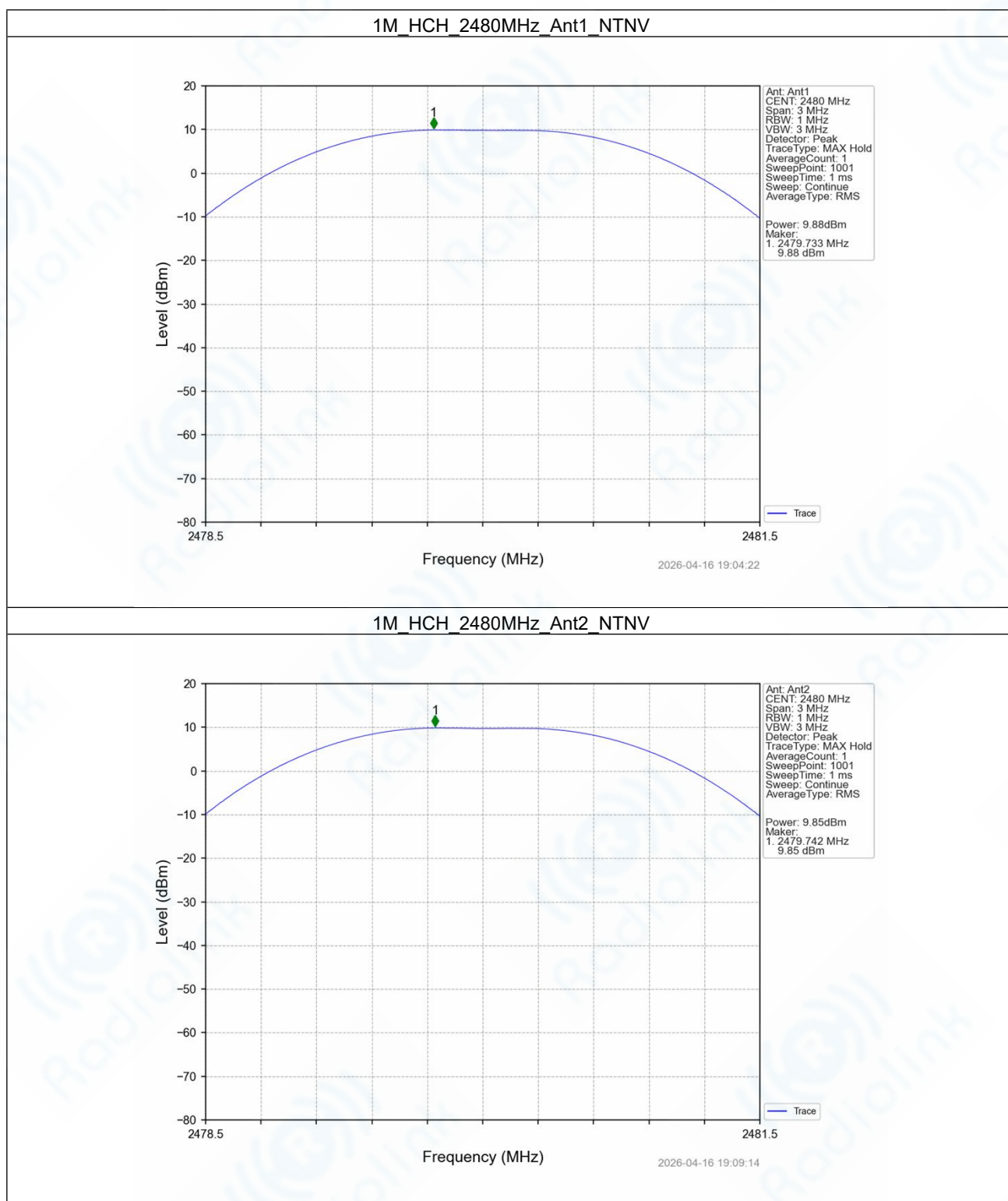


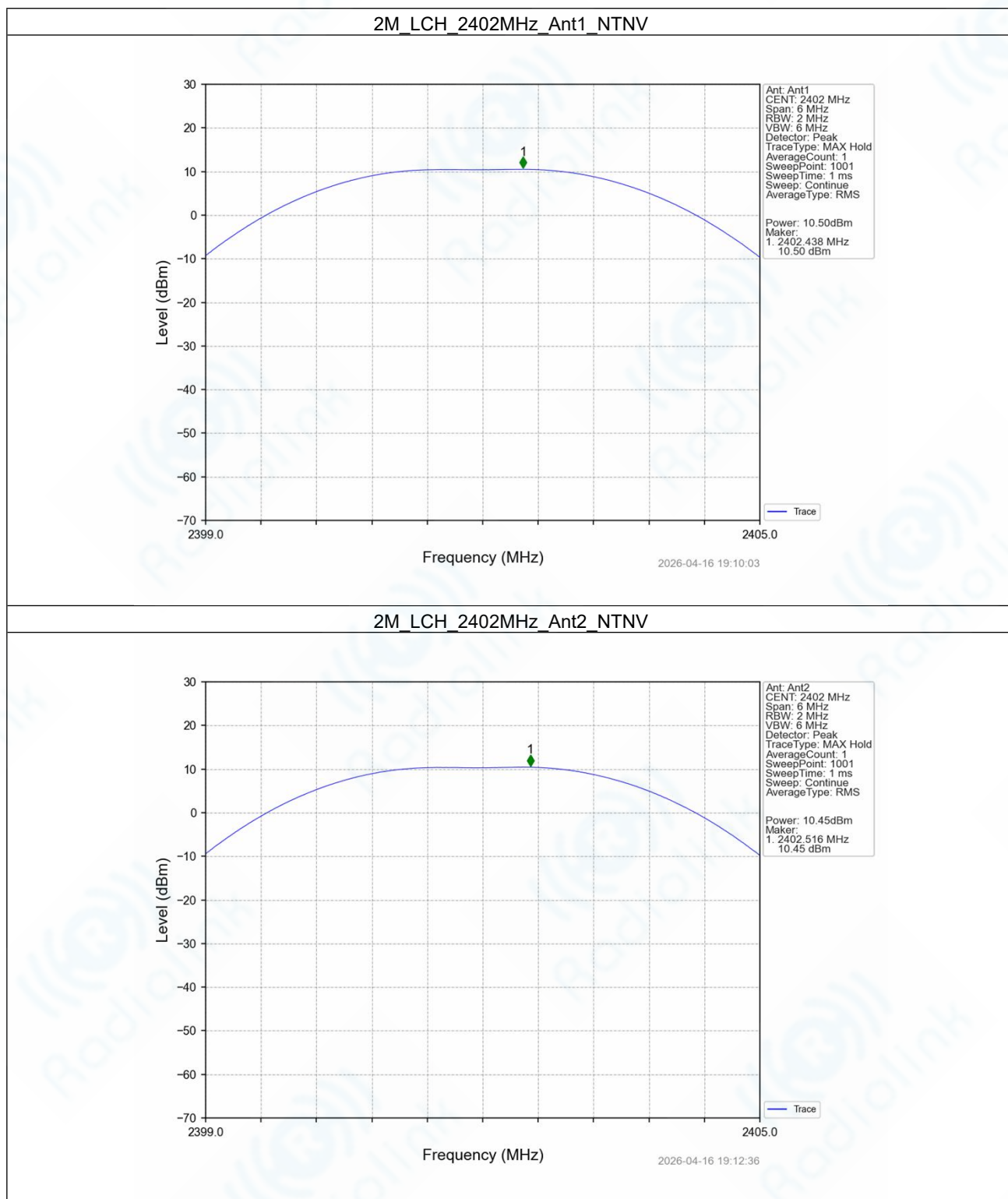
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694



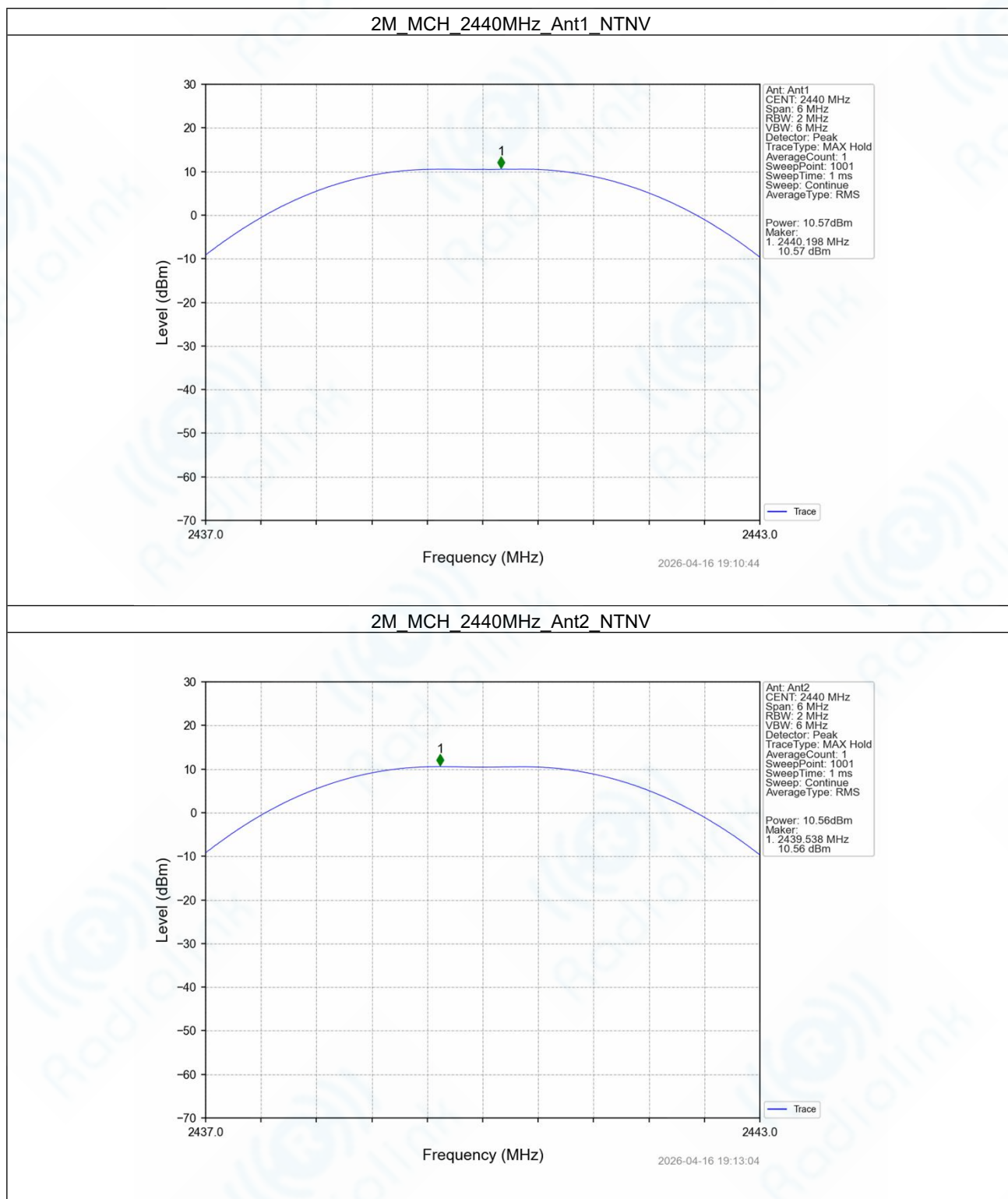




Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

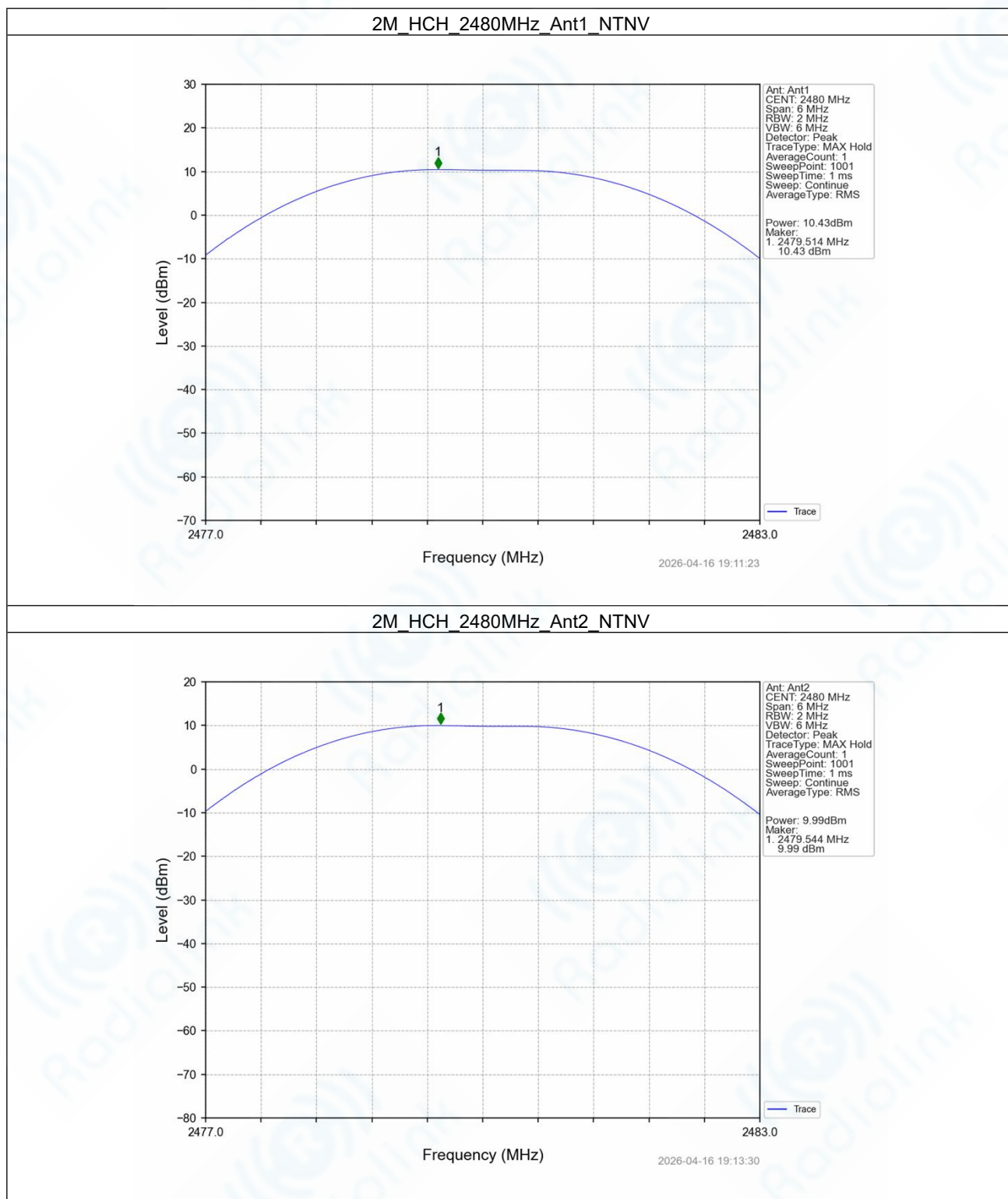
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694



4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)			Verdict
			ANT1	ANT2	Limit(dBm/3kHz)	
1M	SISO	2402	-5.66dBm/3kHz	-5.86dBm/3kHz	<=8	Pass
		2440	-6.28dBm/3kHz	-6.57dBm/3kHz	<=8	Pass
		2480	-6.92dBm/3kHz	-6.89dBm/3kHz	<=8	Pass
2M	SISO	2402	-7.48dBm/3kHz	-7.92dBm/3kHz	<=8	Pass
		2440	-8.39dBm/3kHz	-8.64dBm/3kHz	<=8	Pass
		2480	-8.85dBm/3kHz	-8.84dBm/3kHz	<=8	Pass

Note1: Antenna Gain: Ant1: -1.70dBi; Ant2: -3.70dBi;



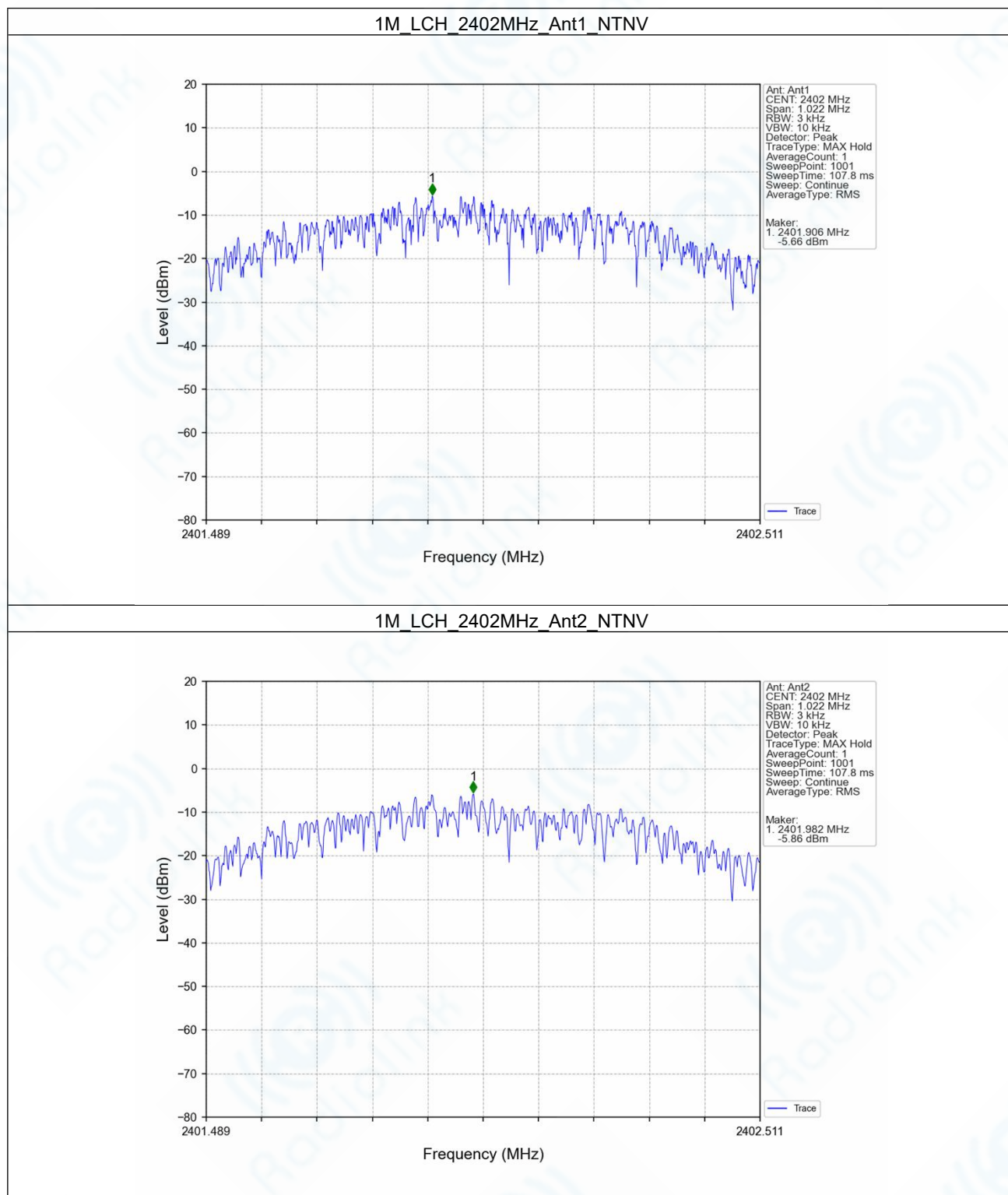
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

4.2 Test Graph

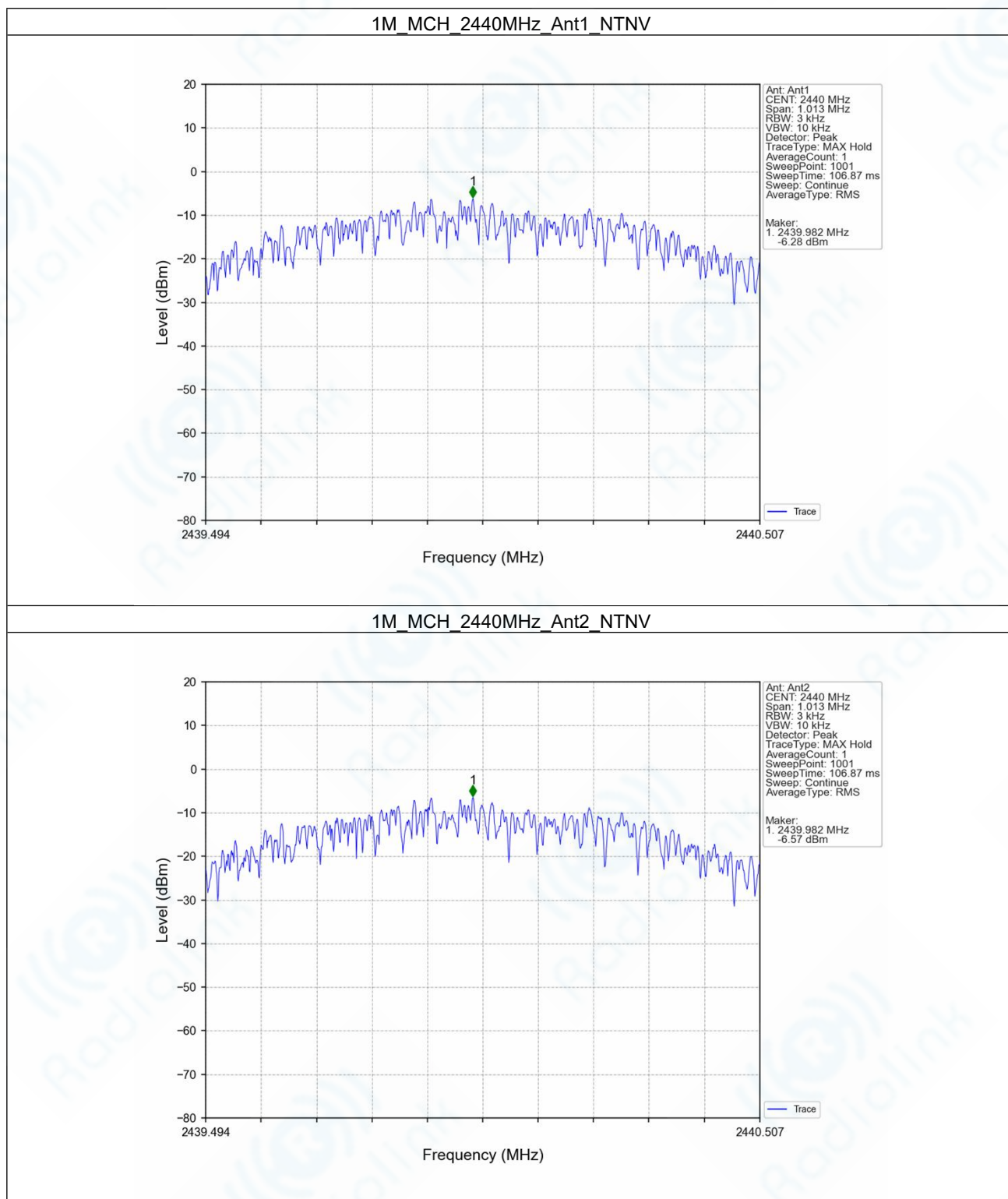
4.2.1 PSD

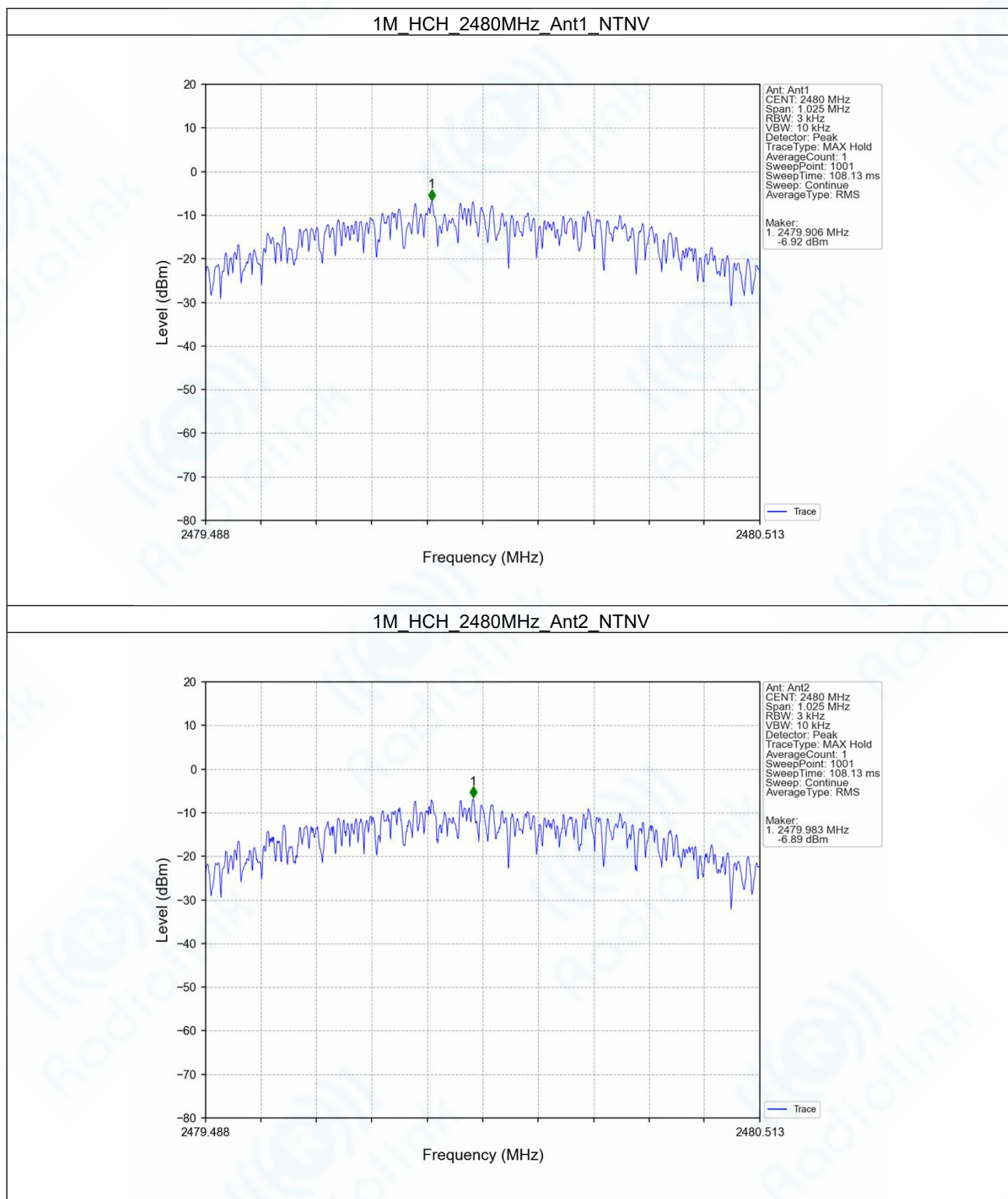


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

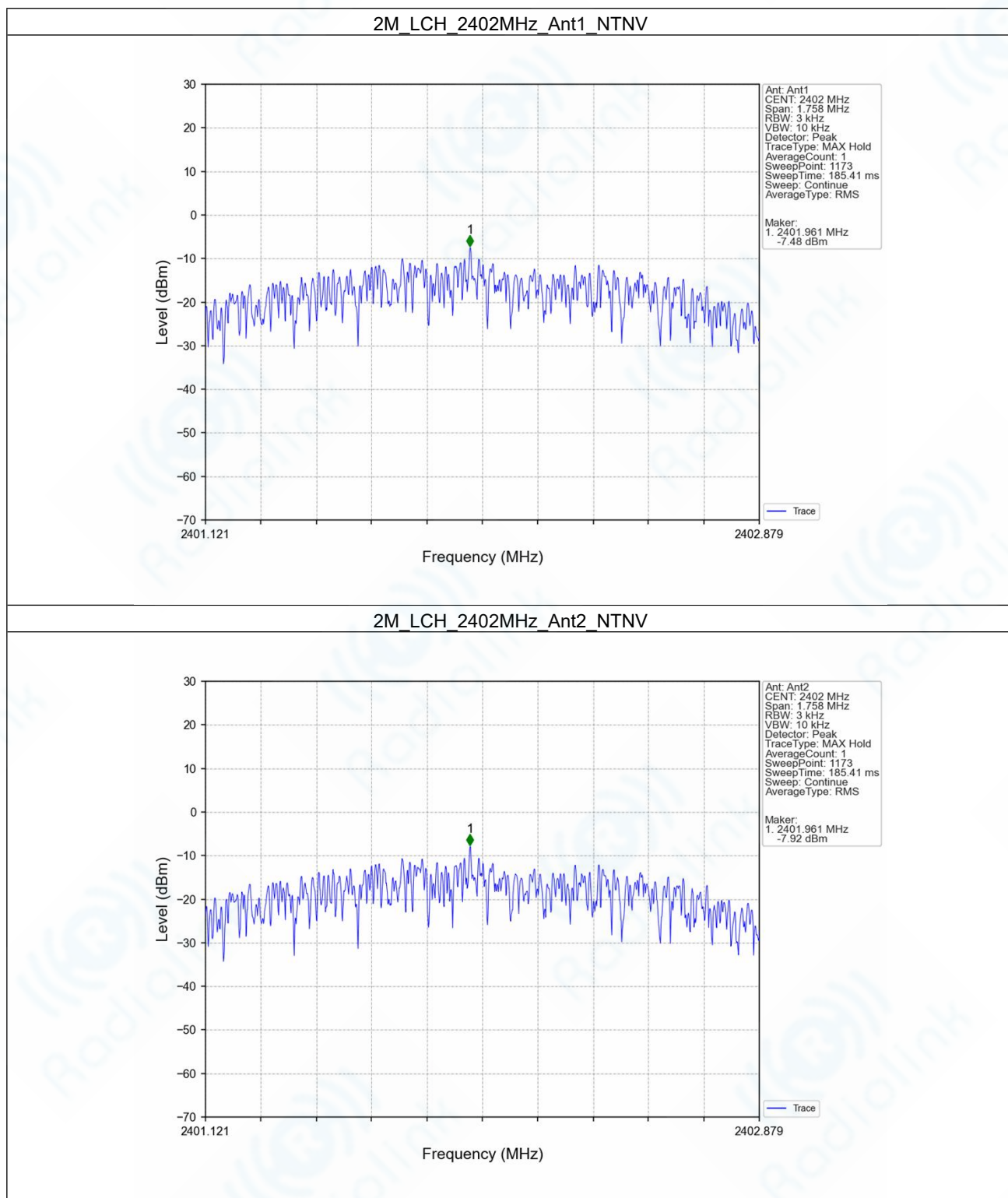




Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

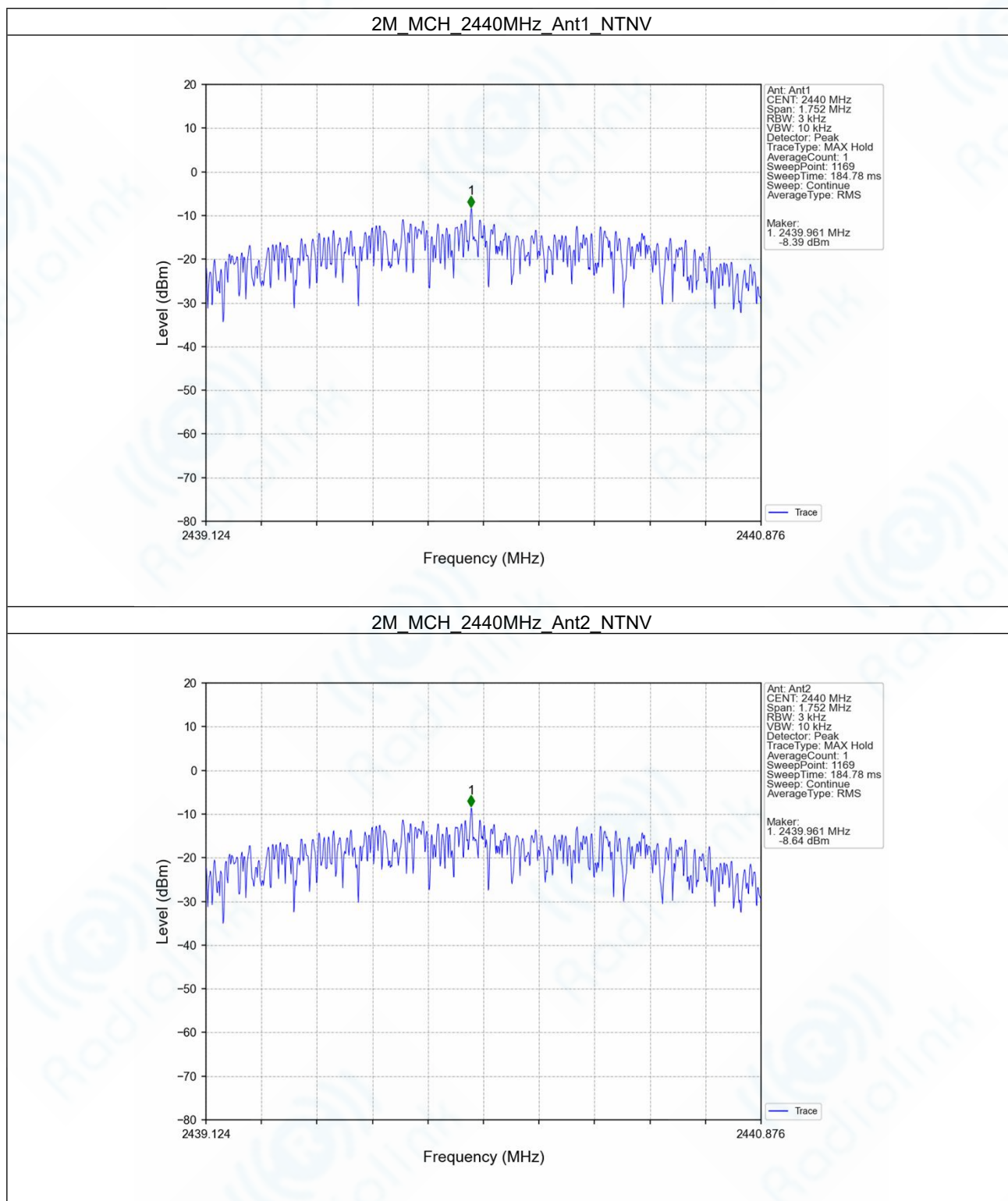
Tel: +86 0755 23080694

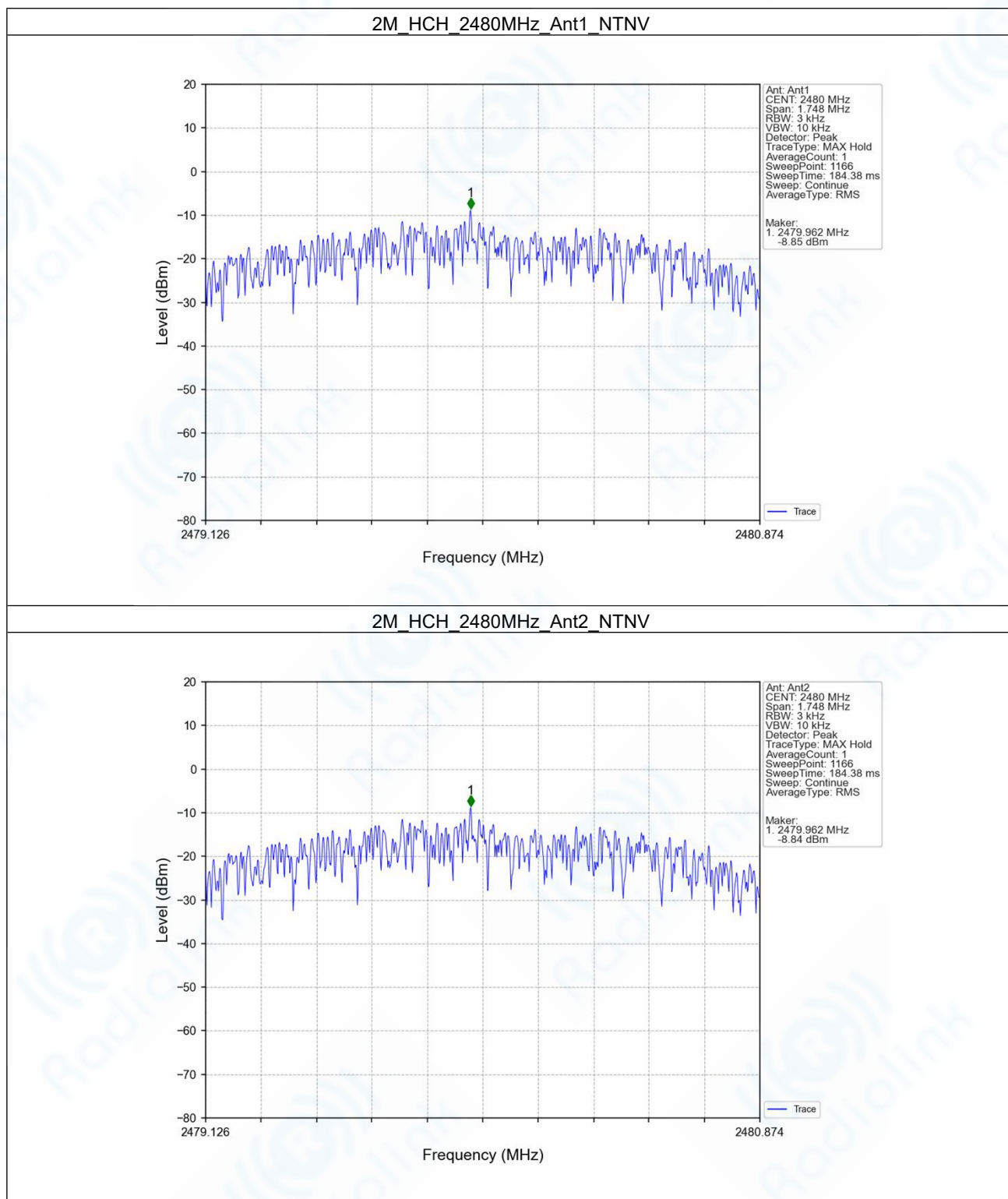


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694





Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	8.37
			2	7.90
		2440	1	8.24
			2	8.62
		2480	1	7.94
			2	7.78
2M	SISO	2402	1	8.86
			2	8.06
		2440	1	8.91
			2	8.66
		2480	1	8.70
			2	7.83

5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	8.37	-11.63	Pass
			2	7.90	-12.1	Pass
		2440	1	8.24	-11.76	Pass
			2	8.62	-11.38	Pass
		2480	1	7.94	-12.06	Pass
			2	7.78	-12.22	Pass
2M	SISO	2402	1	8.86	-11.14	Pass
			2	8.06	-11.94	Pass
		2440	1	8.91	-11.09	Pass
			2	8.66	-11.34	Pass
		2480	1	8.70	-11.3	Pass
			2	7.83	-12.17	Pass



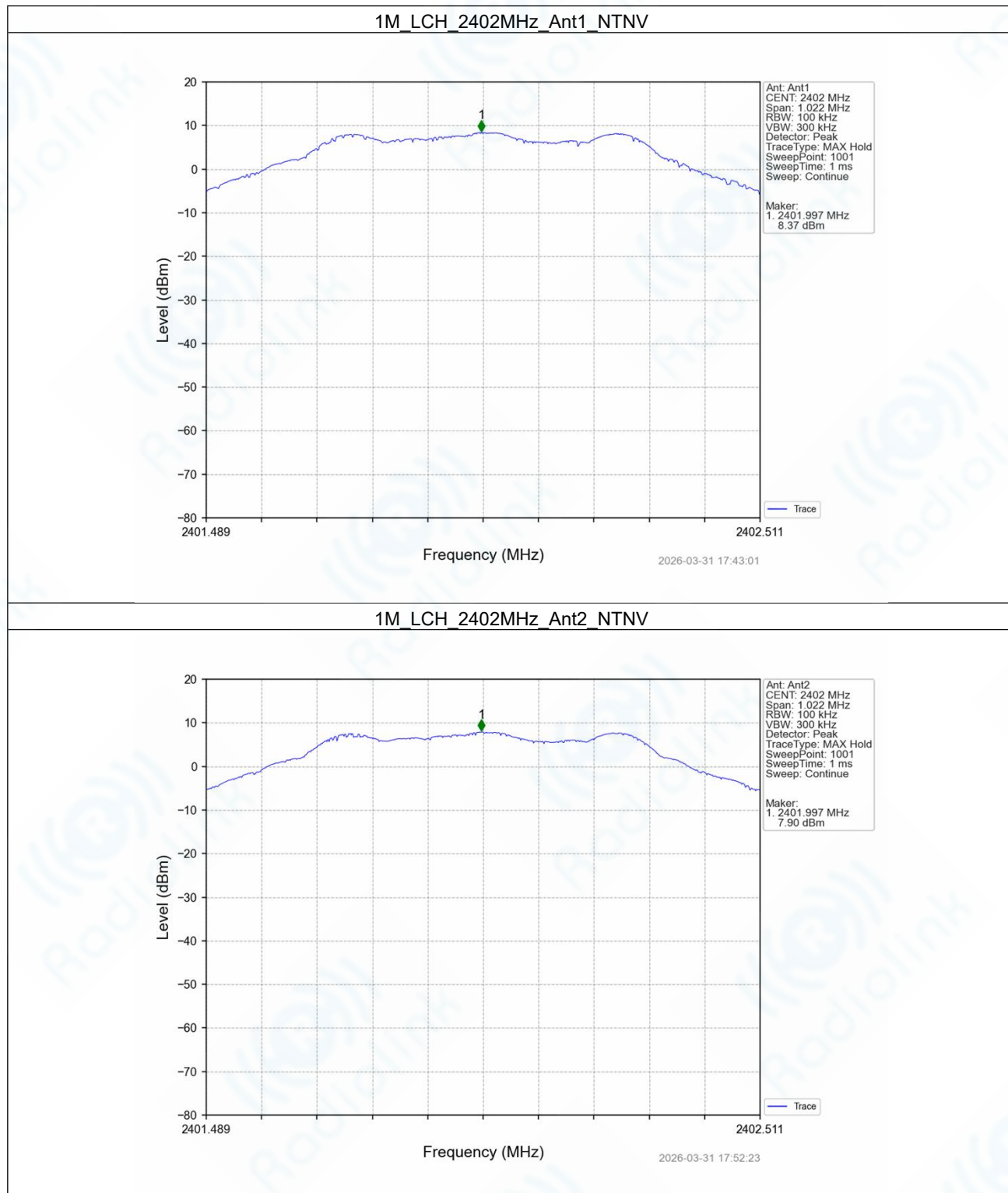
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

5.2 Test Graph

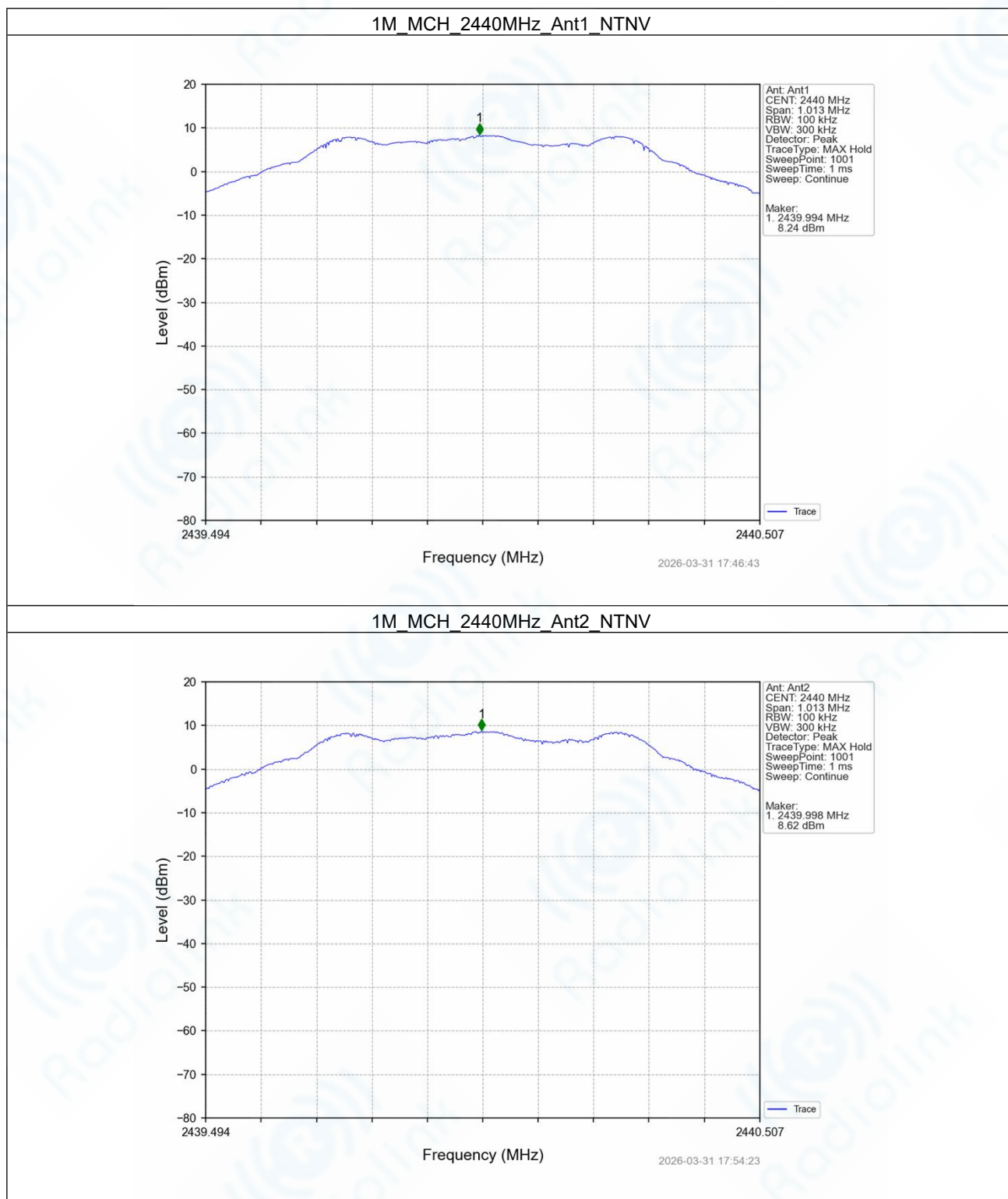
5.2.1 Ref



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

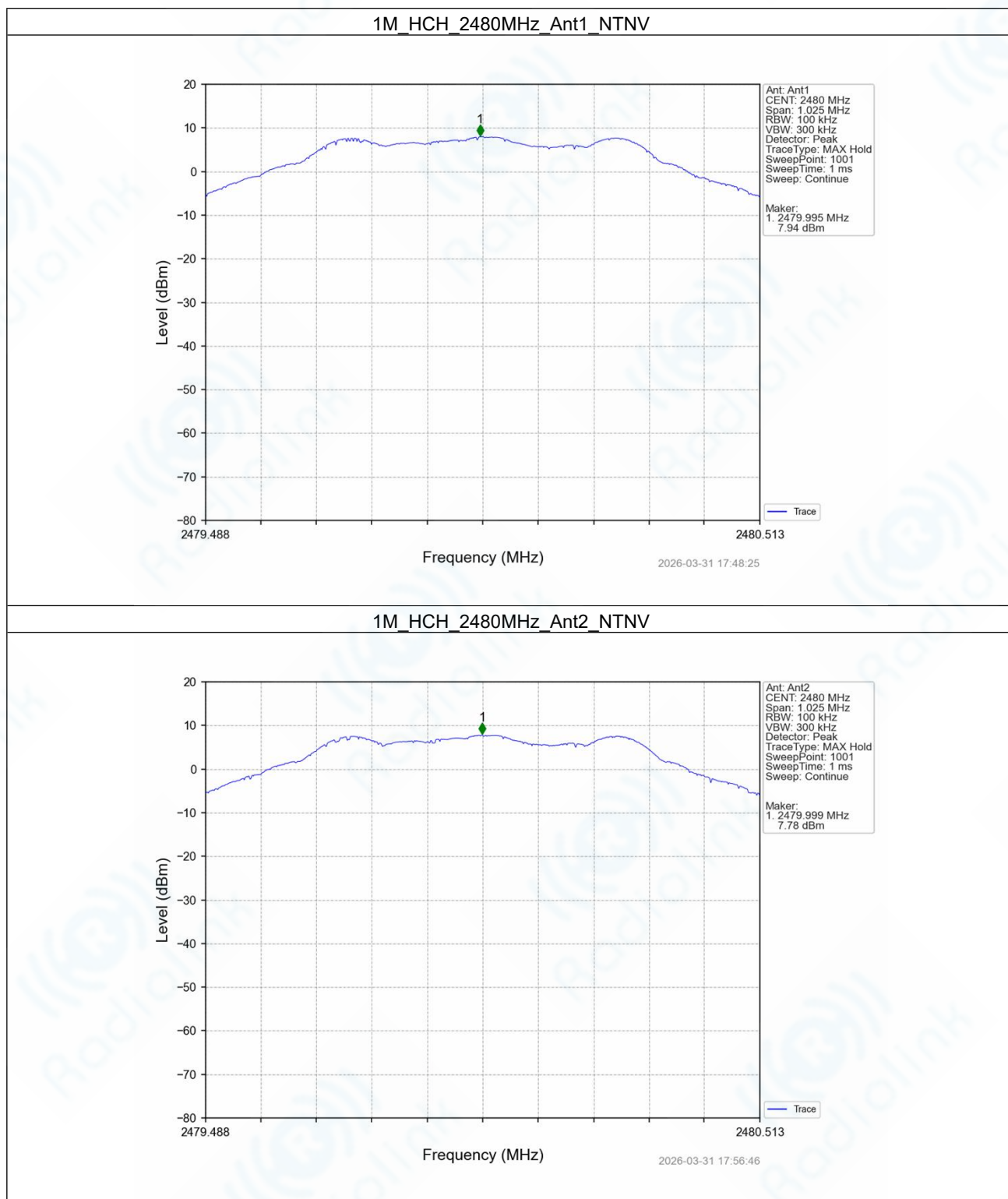
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

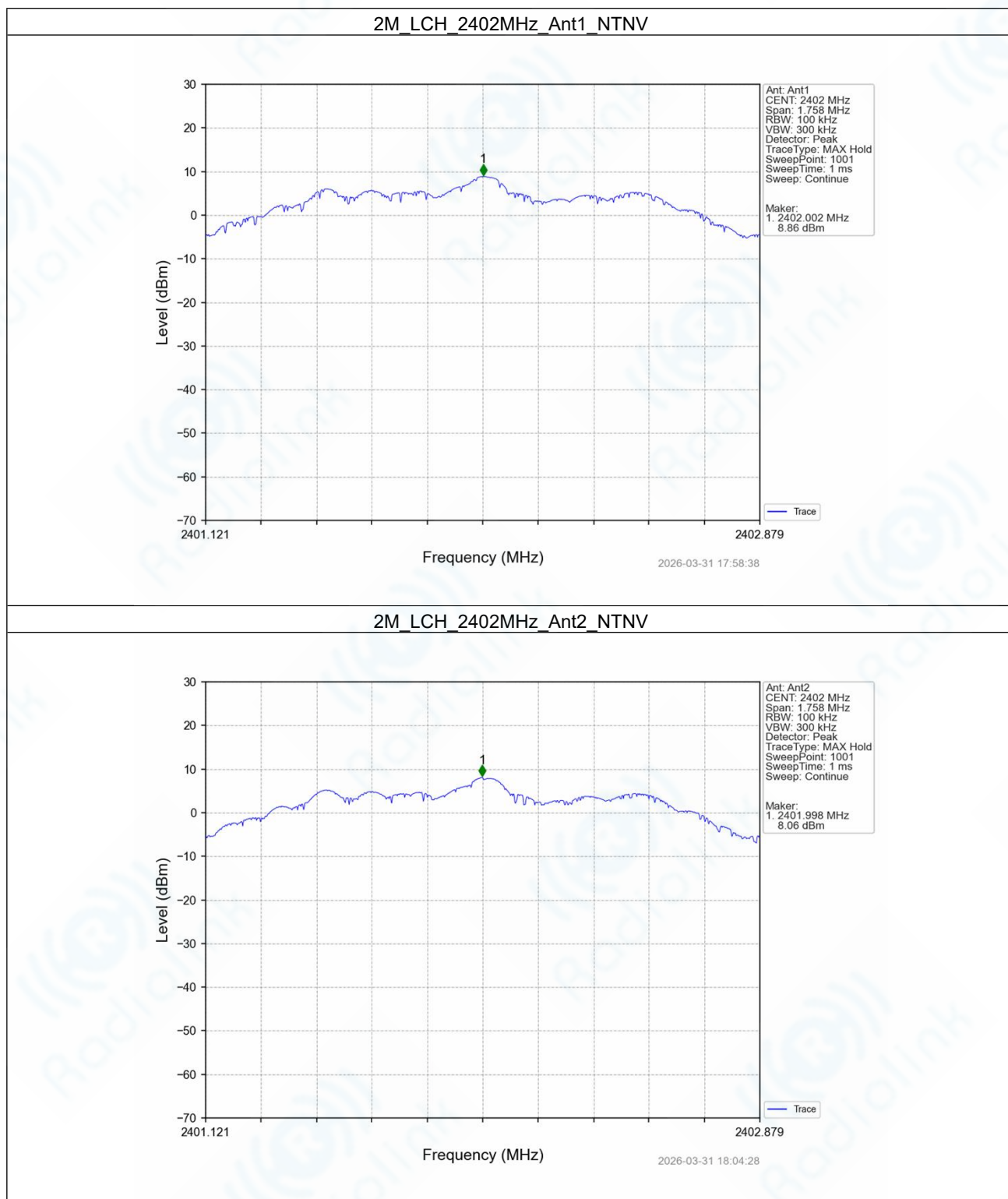
Tel: +86 0755 23080694

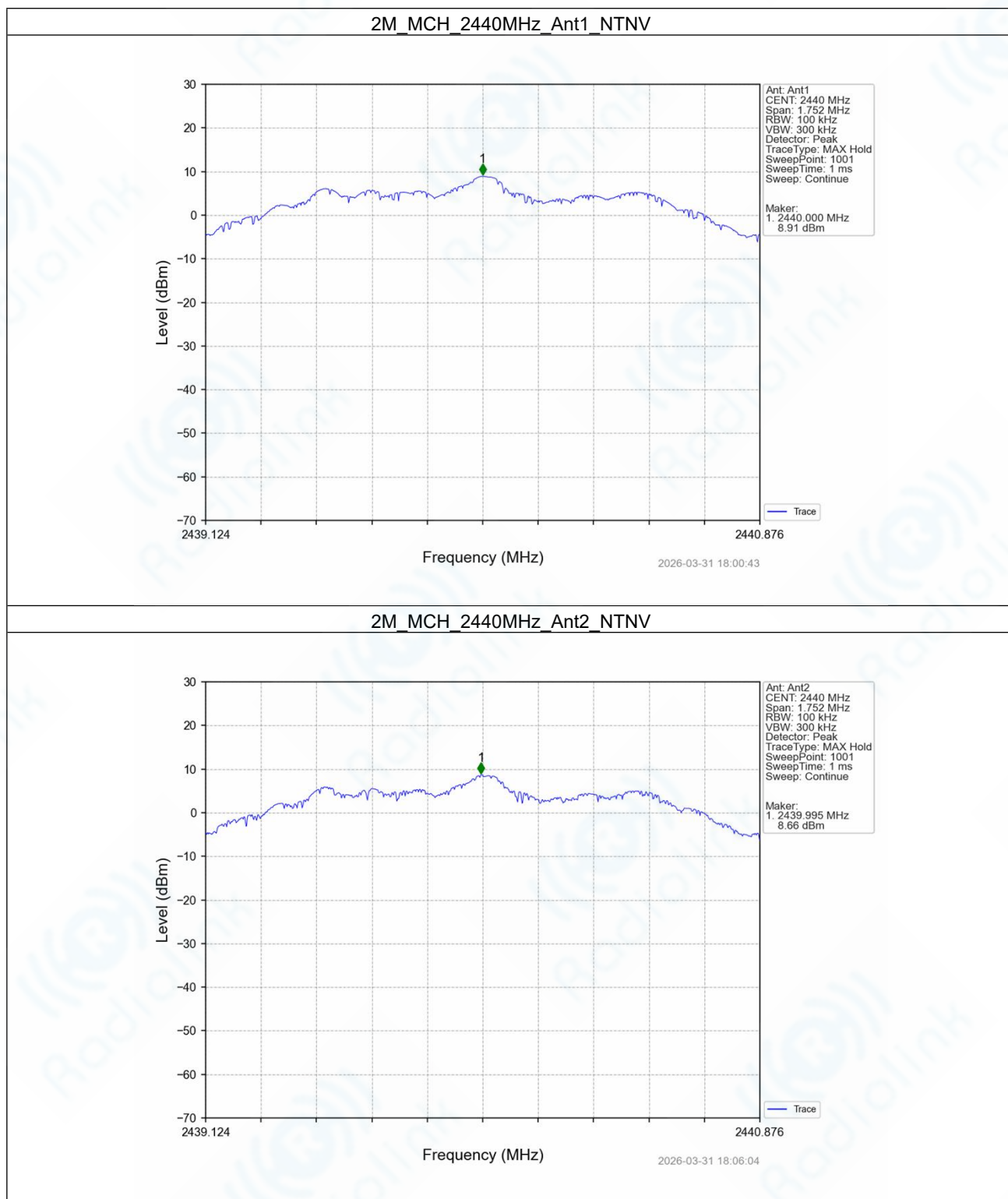


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

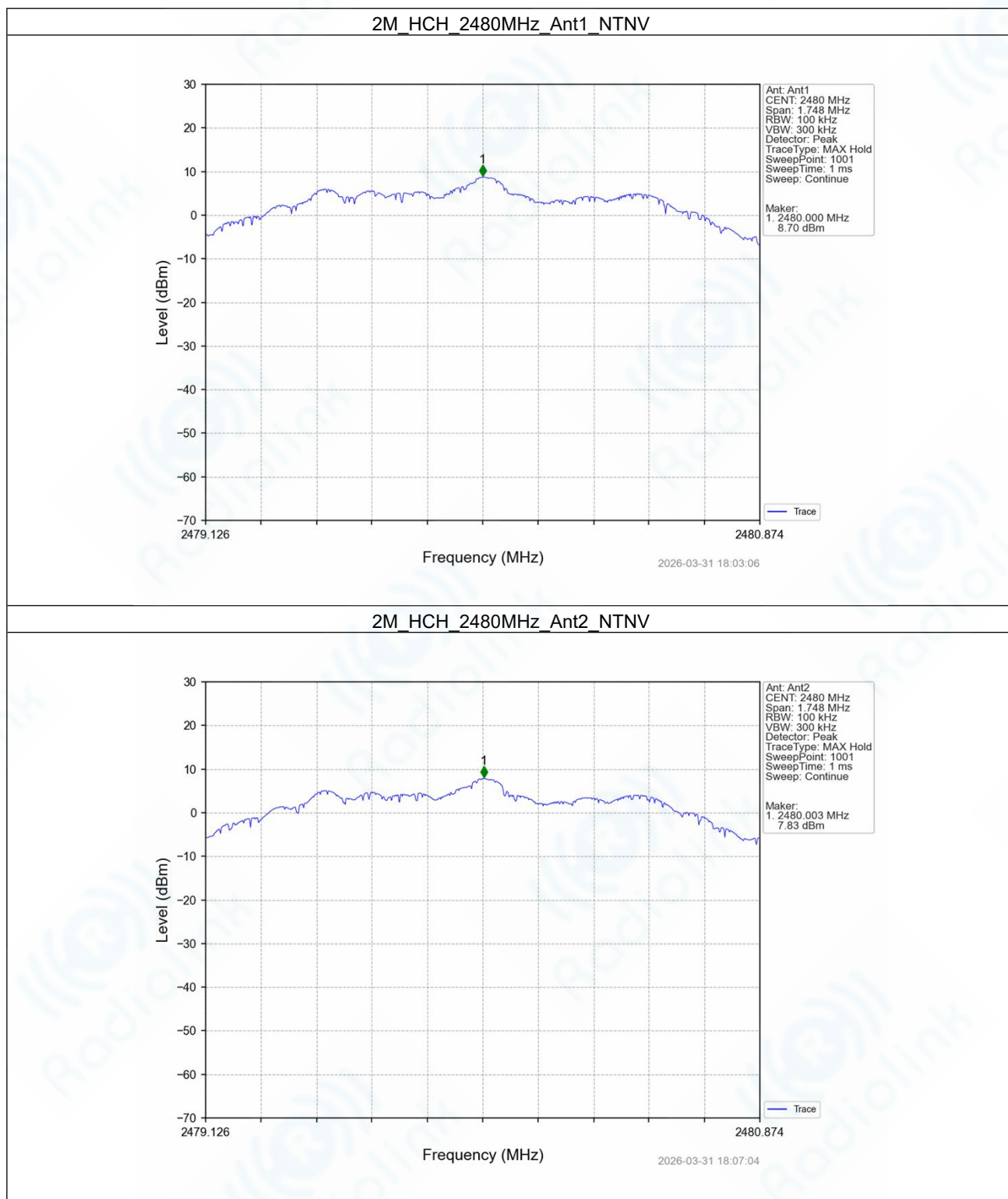




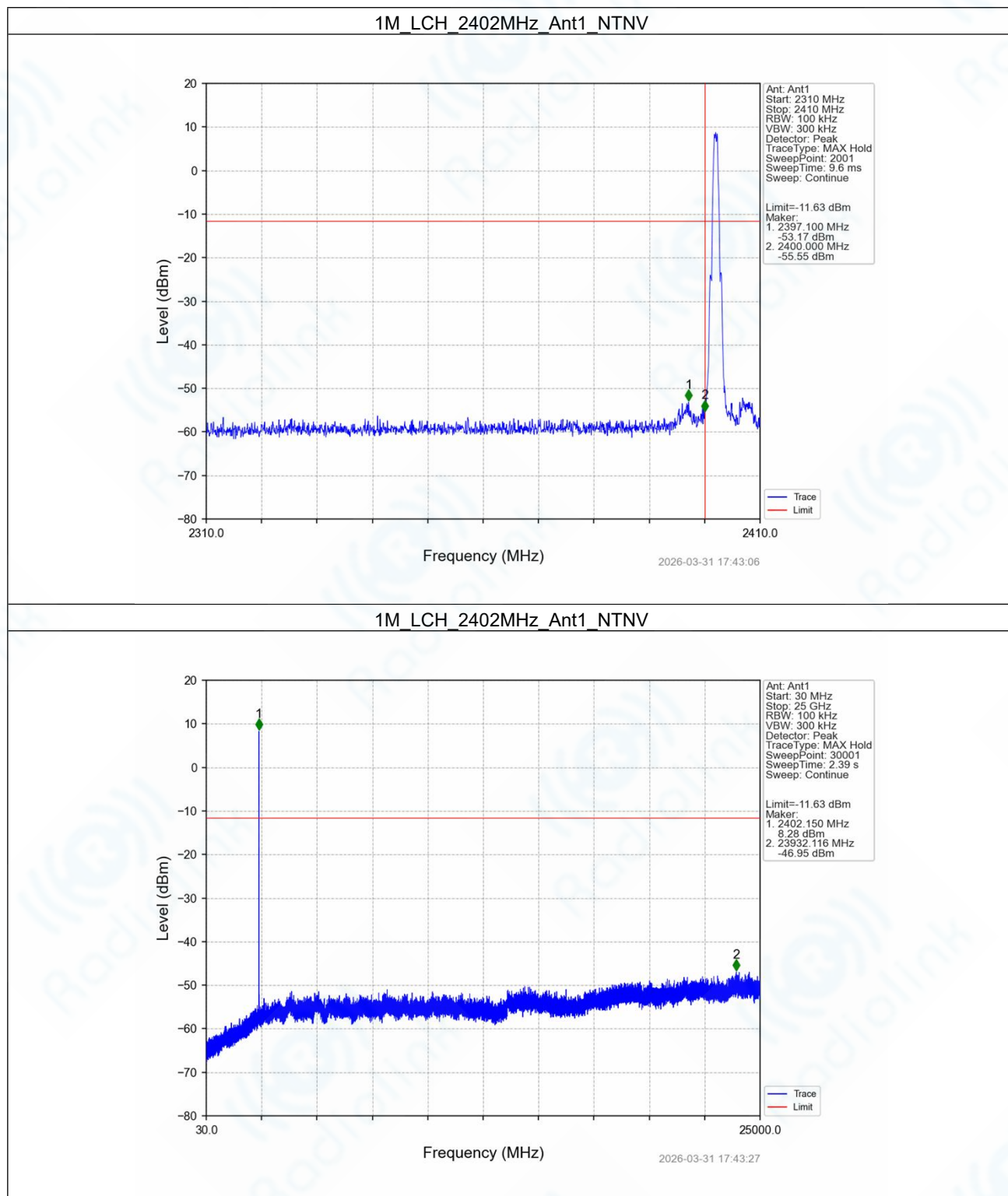
Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694



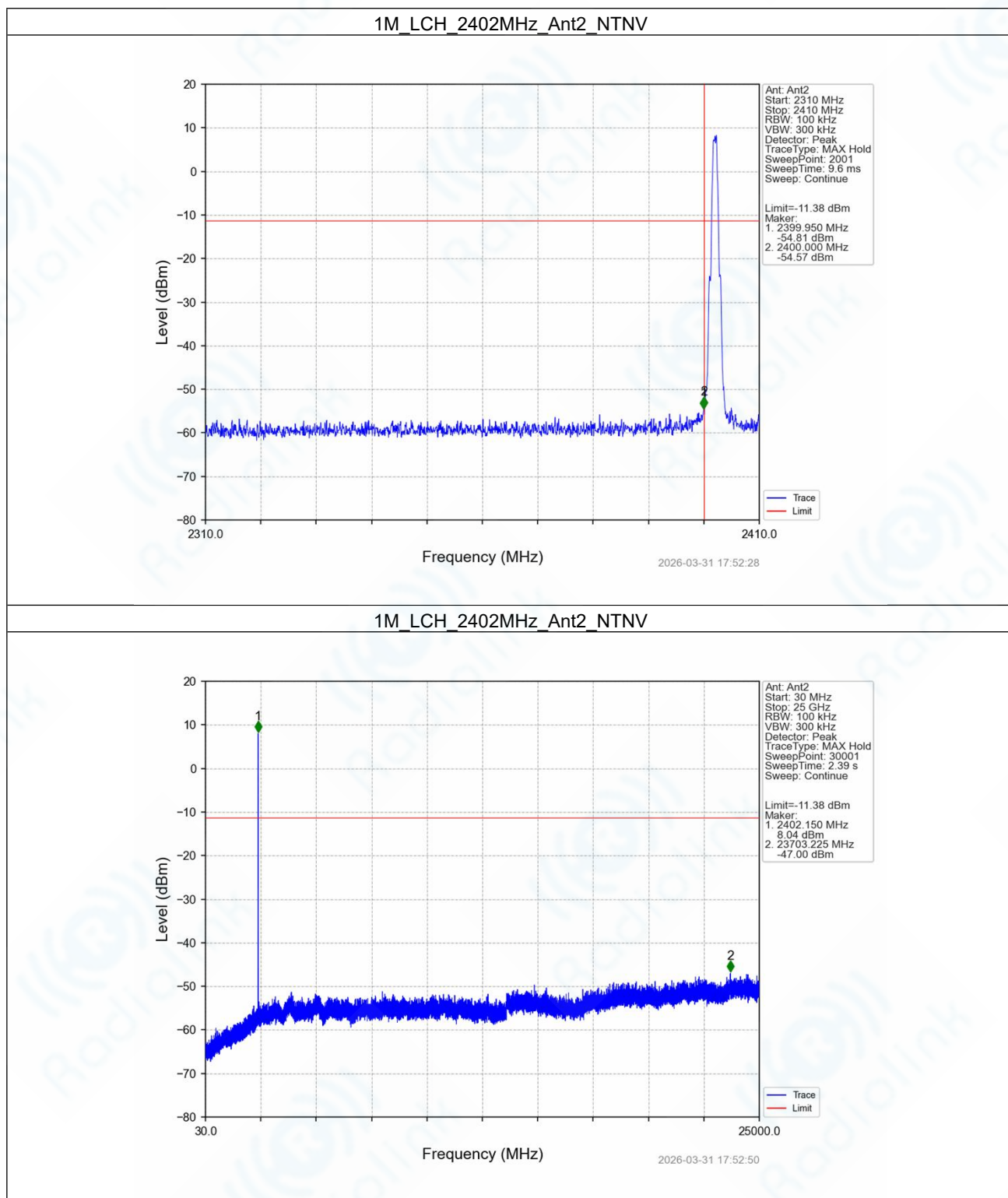
5.2.2 CSE



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

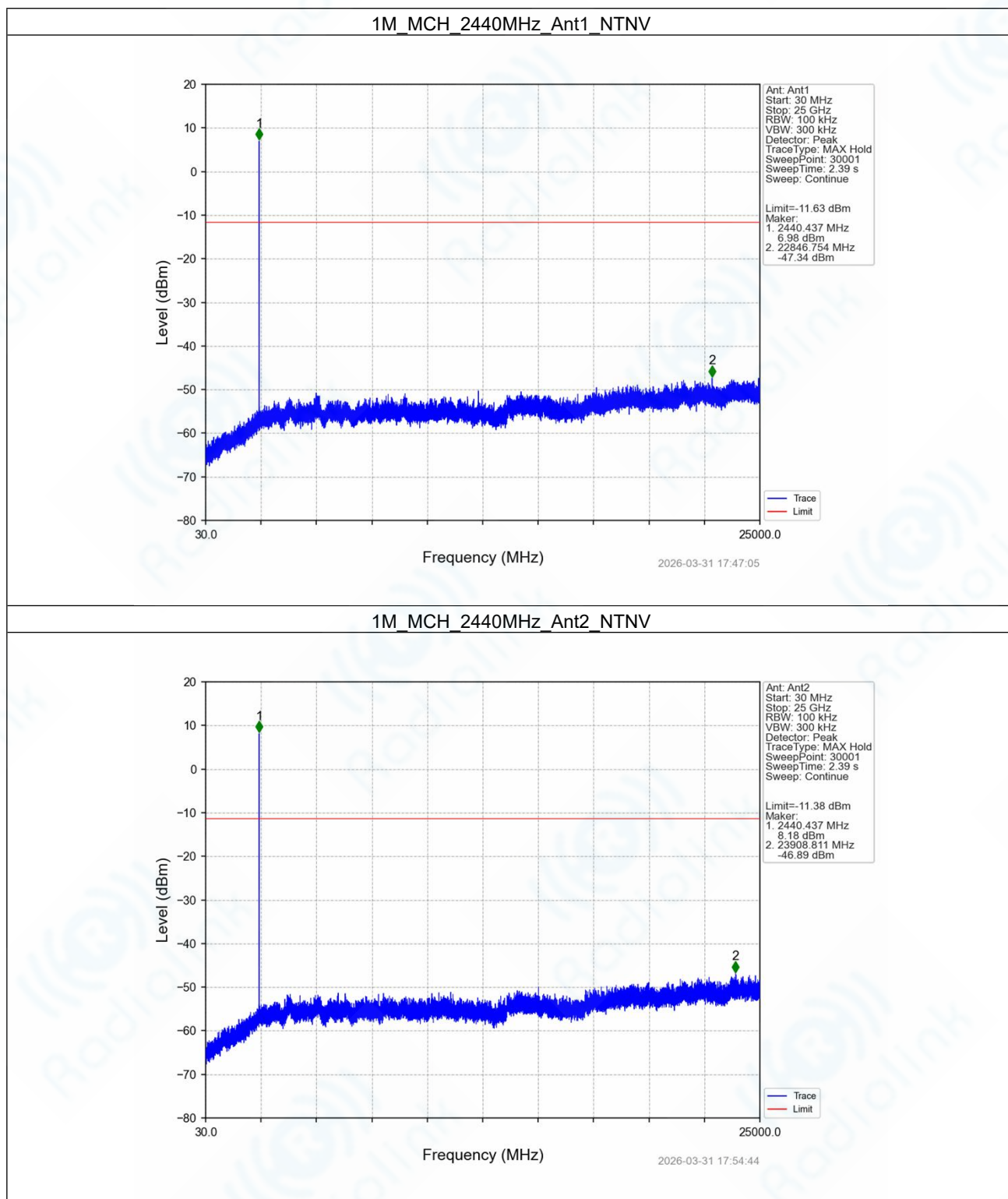
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

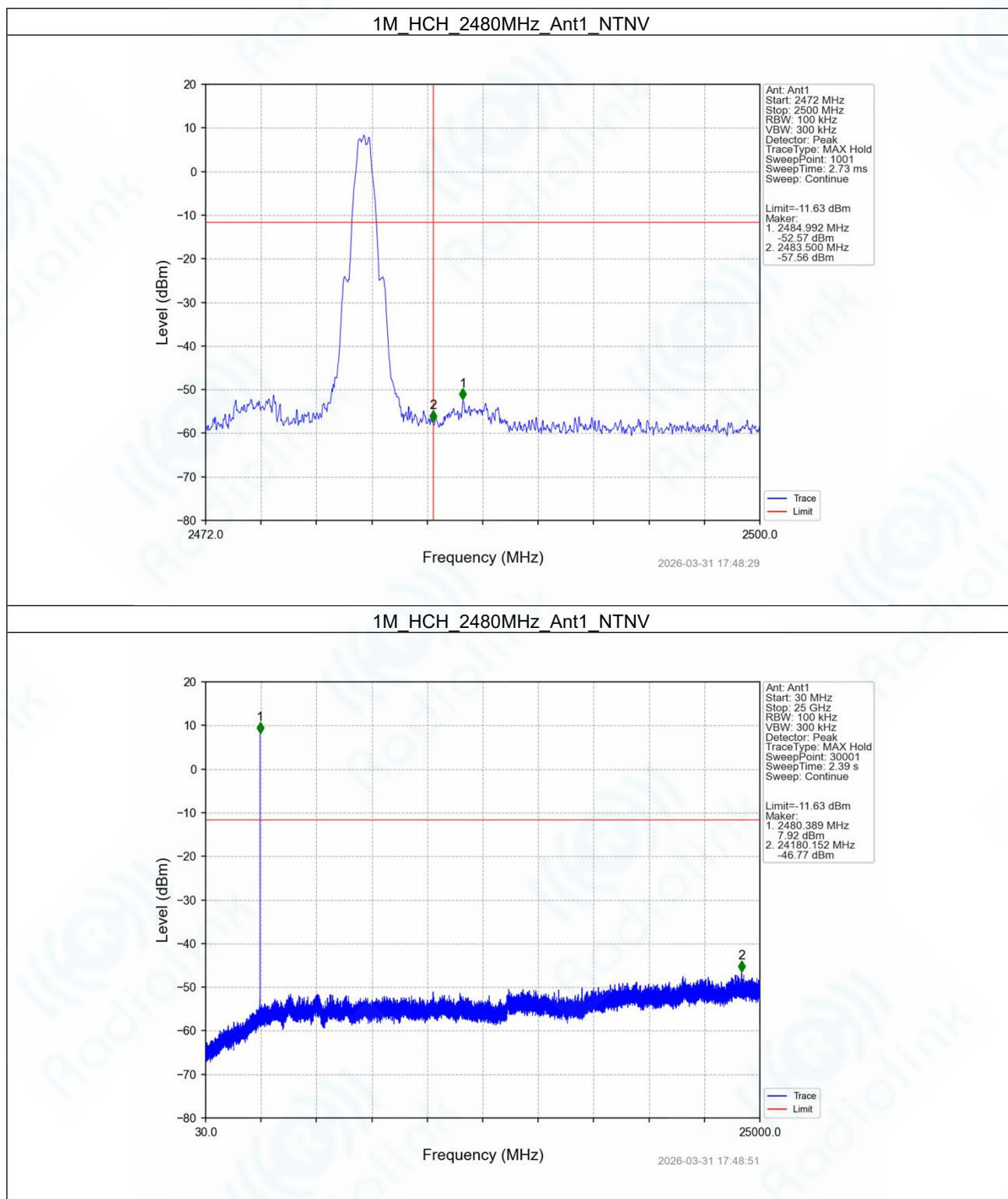
Tel: +86 0755 23080694

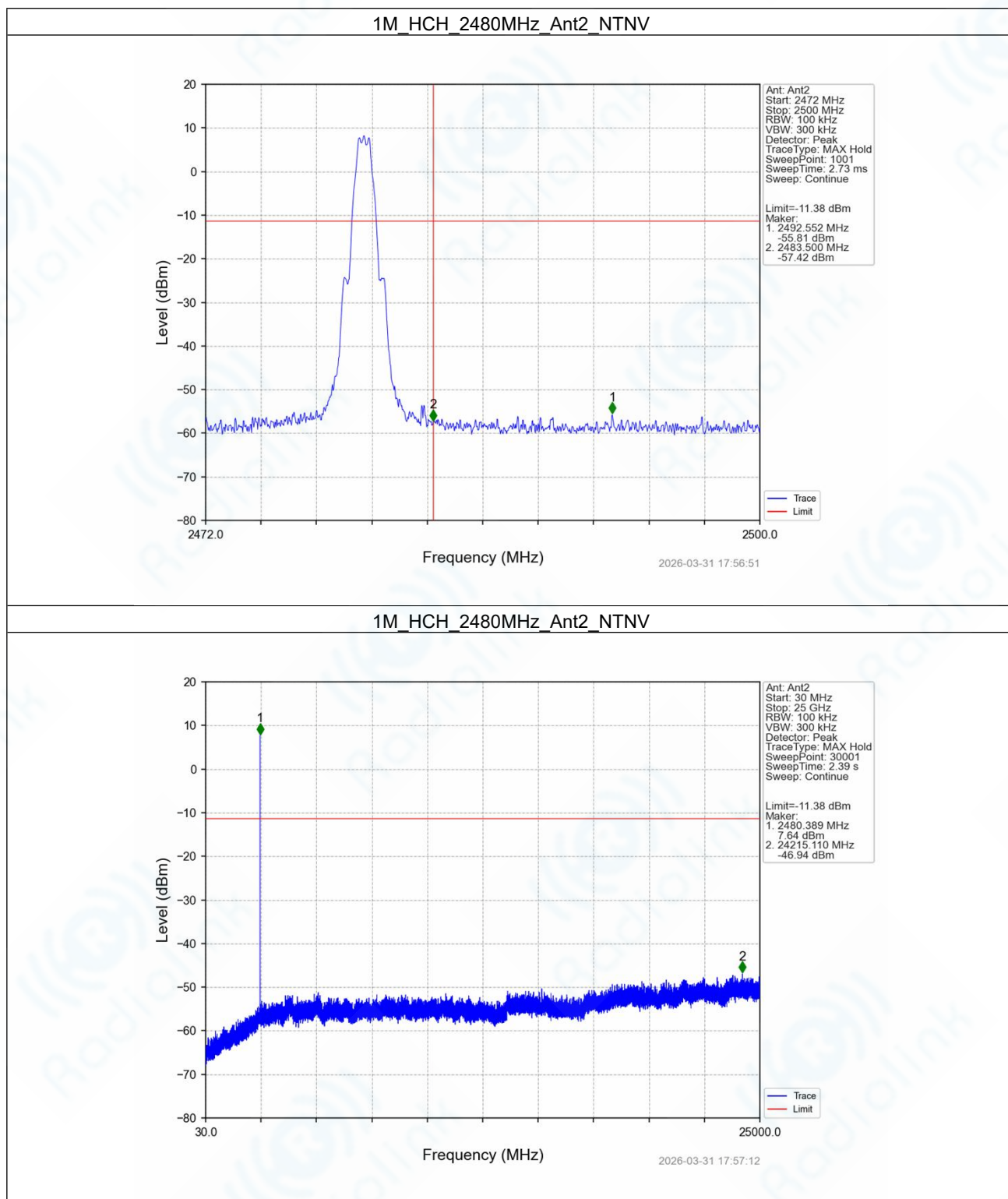


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

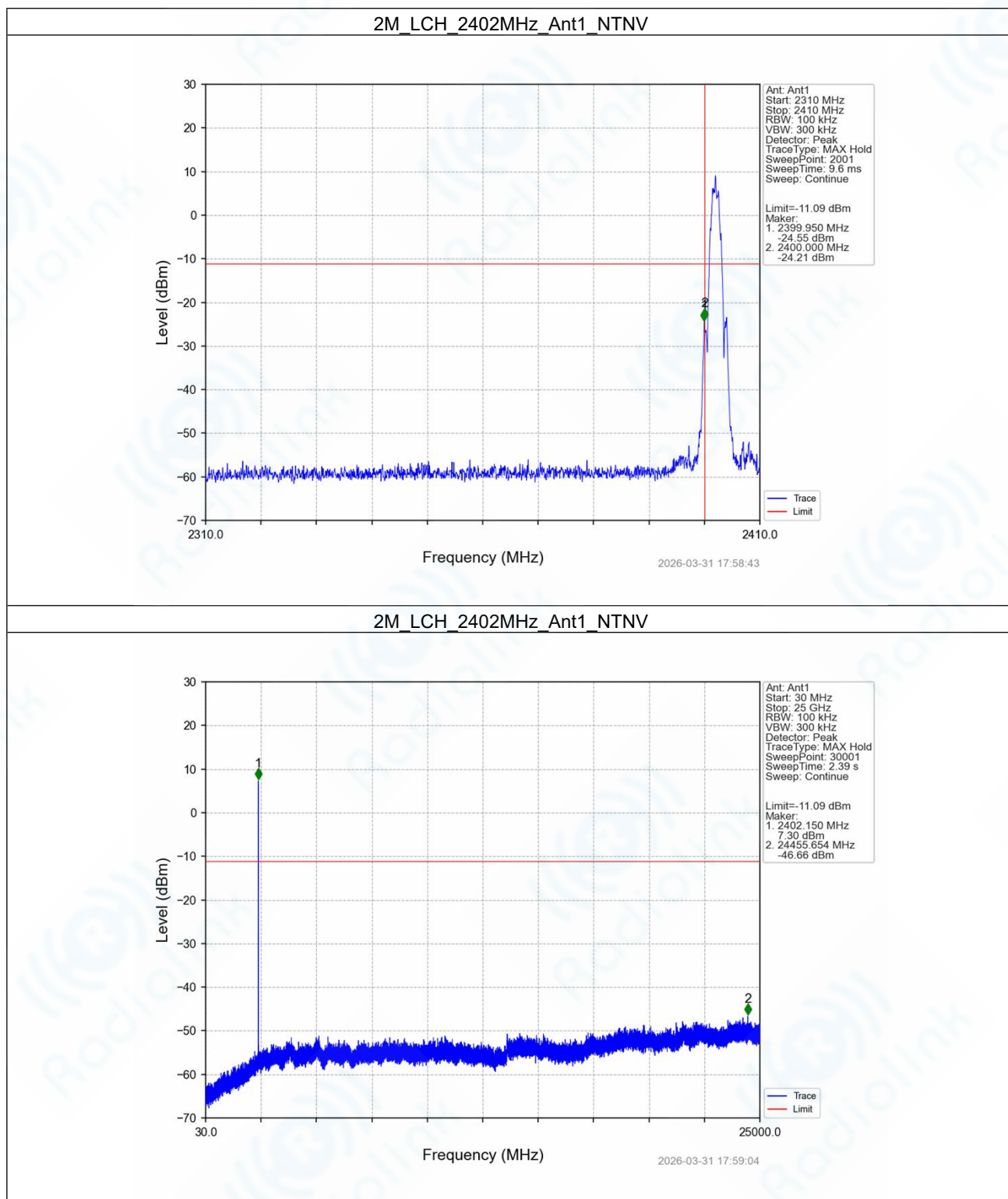
Tel: +86 0755 23080694





Radiolink Testing (Shenzhen) Co., Ltd.

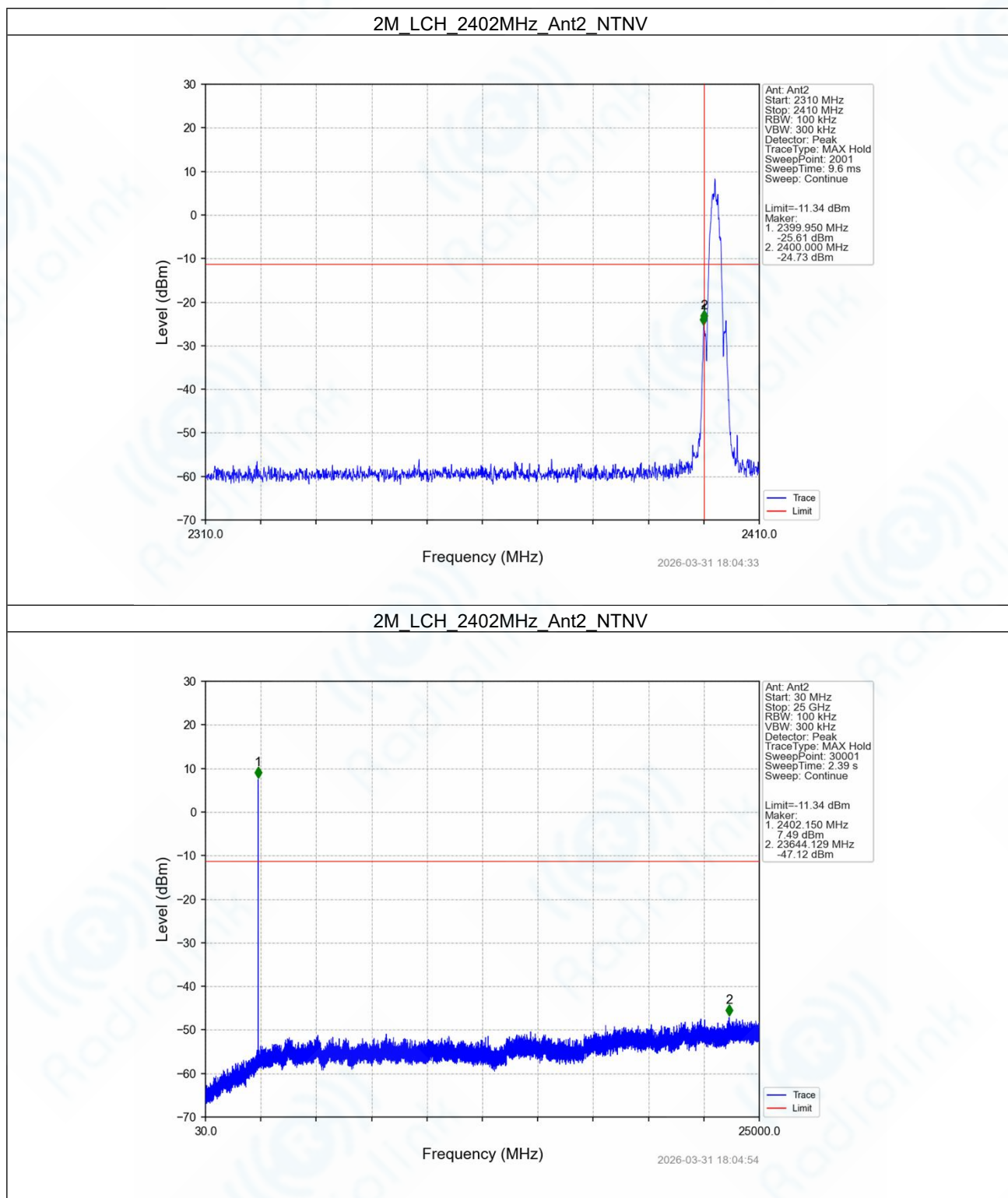
Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China
Tel: +86 0755 23080694

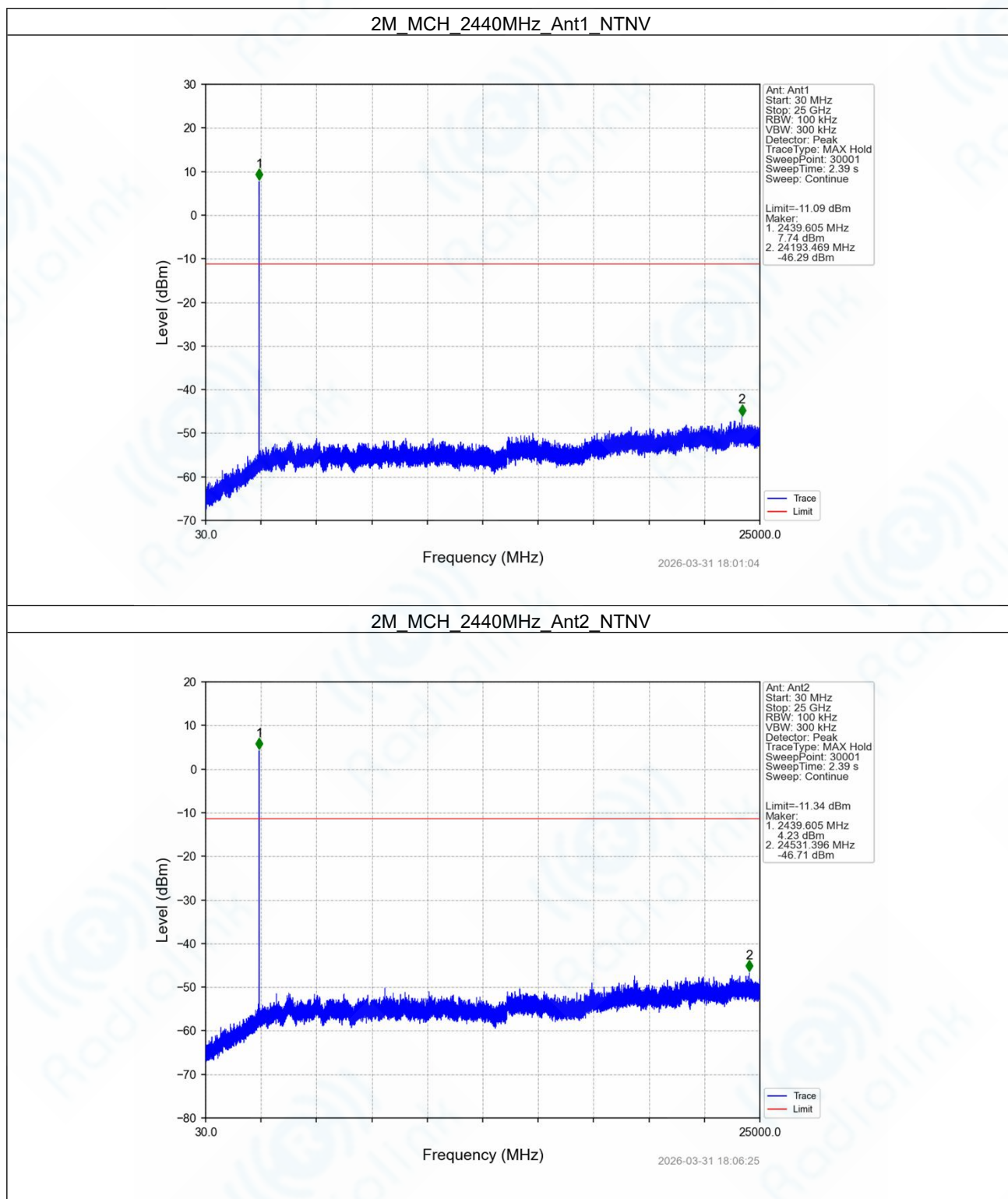


Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694

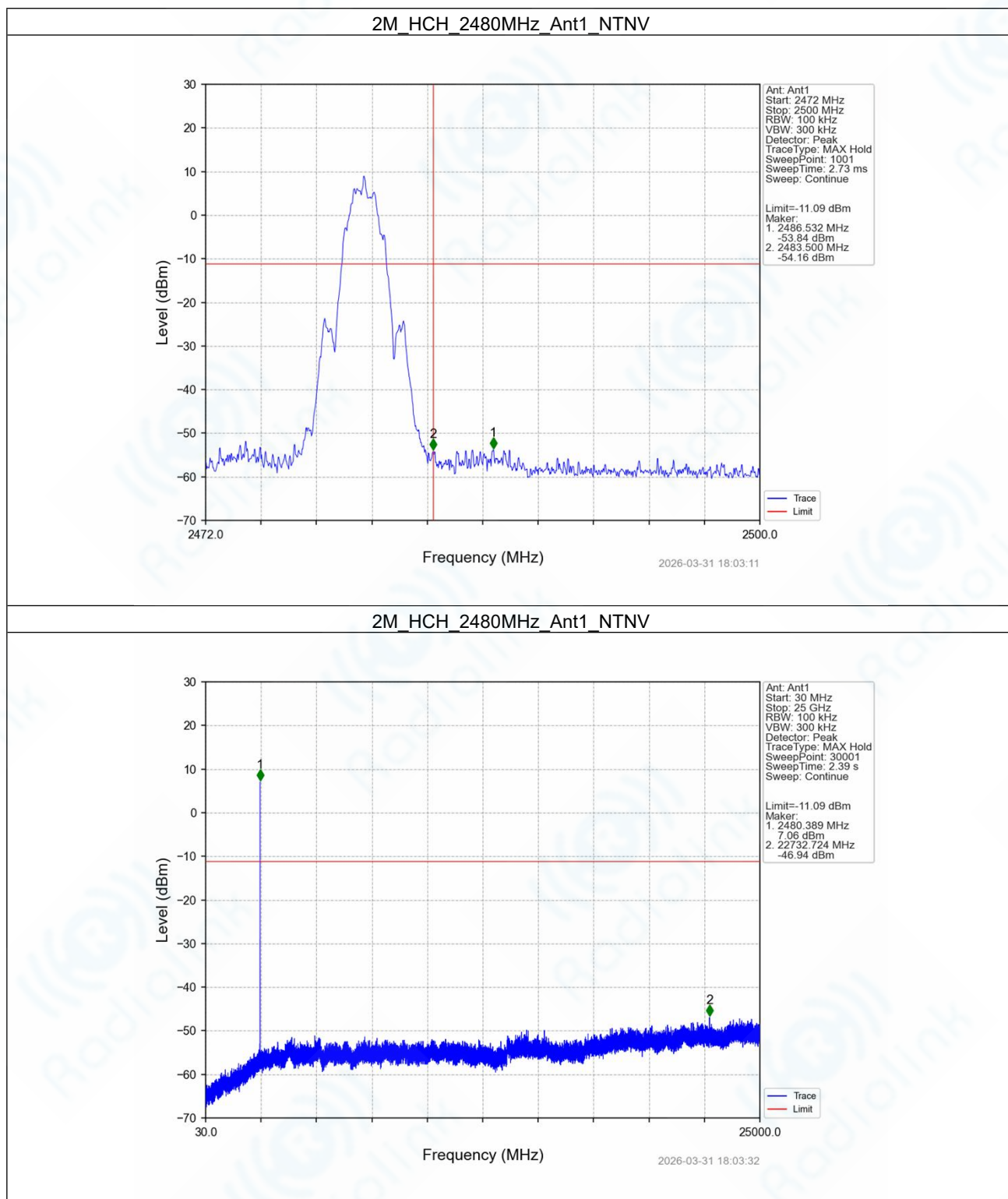




Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

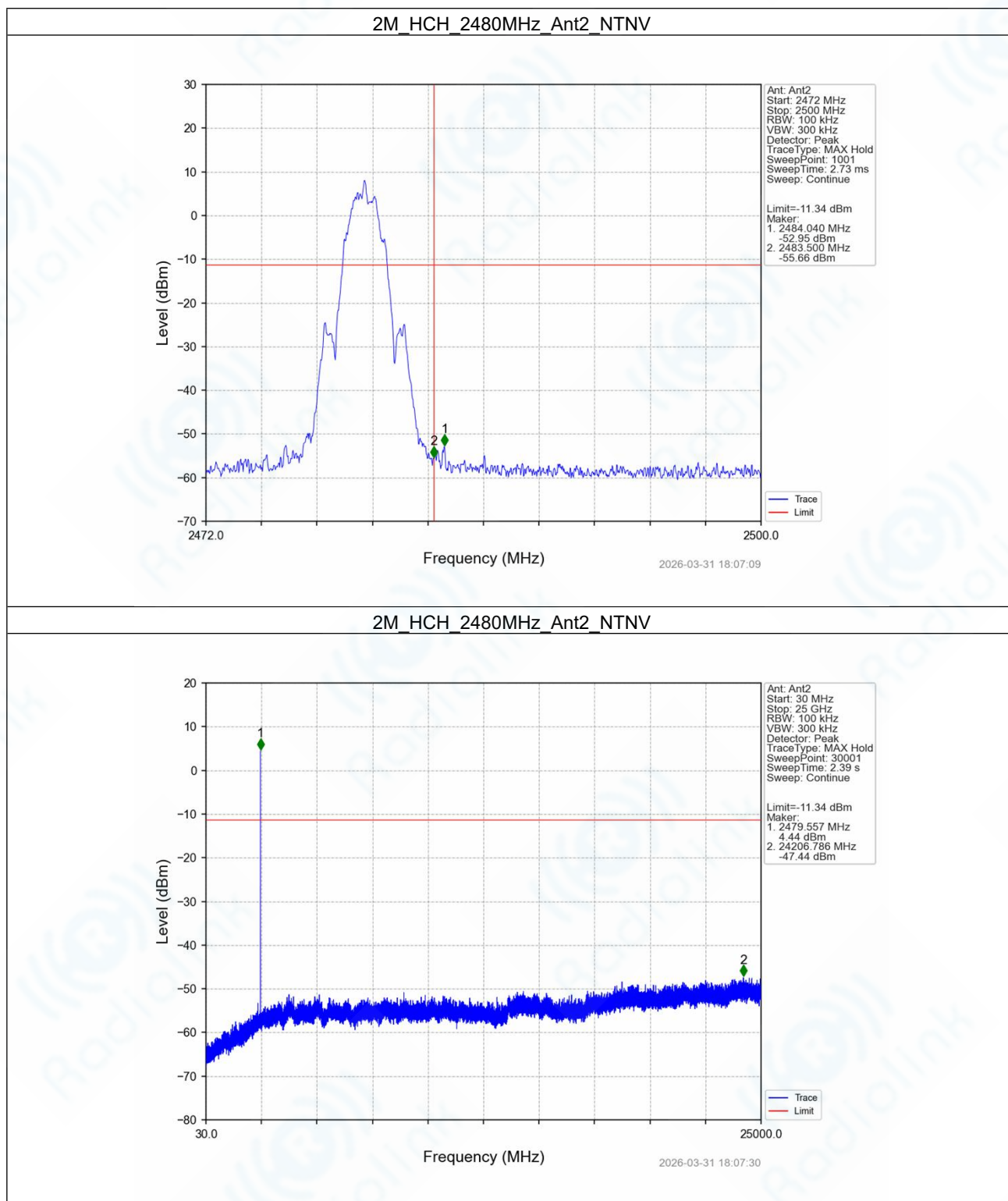
Tel: +86 0755 23080694



Radiolink Testing (Shenzhen) Co., Ltd.

Room 103, Building B, Jinghang Industrial Park, Area 71, Xingdong Community, Xin'an Subdistrict, Bao'an District,
Shenzhen, Guangdong Province, China

Tel: +86 0755 23080694



- End of the Report -