

Prüfbericht-Nr.: Test report no.:	CN230Z4U 002	Auftrags-Nr.: Order no.:	168439278	Seite 1 von 20 Page 1 of 20
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2023-08-14	
Auftraggeber: Client:	SHENZHEN EVERBEST MACHINERY INDUSTRY CO.,LTD. 19th Building, 5th Region, Baiwangxin Industrial P Shenzhen China 518000			
Prüfgegenstand: Test item:	Digital Multimeter			
Bezeichnung / Typ-Nr.: Identification / Type no.:	DT-9989, DT-9889, DT-9987, DT-9970, DT- 9971, DT-9978, DT-9972, DT- 9973, DT- 9974, DT-989, DT- 989H, DT-988H, DT-987BT, DT- 898A, DT-898FC, DT-889FC, DT- 896, DT-897, DT-897FC, DT- 965BT, DT-951BT, DT-952BT, DT- 9865H, DT- 9589, DT-9959, DT- 9968BT, DT-951 (Trademark: CEM)			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	FCC CFR Title 47, Part 15: Subpart C Section 15.247			
Wareneingangsdatum: Date of sample receipt:	2023-06-01	Please refer to Photo Document		
Prüfmuster-Nr.: Test sample no.:	2305-2698			
Prüfzeitraum: Testing period:	2023-06-13 - 2023-06-14			
Ort der Prüfung: Place of testing:	Dongguan NTC Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	genehmigt von: authorized by:			
Datum: Date: 2023-08-22	Ausstellungsdatum: Issue date: 2023-08-22			
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / Other:	FCC ID: WIGDT9989			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 6dB BANDWIDTH

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth Low Energy

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

Dongguan NTC Co., Ltd.

Floor 1st, Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, 523077, China.

CNAS accreditation certification number: L5795

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 13, 2023	1 Year
2.	Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 23, 2023	1 Year
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 13, 2023	1 Year
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	Mar. 13, 2023	1 Year
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101094	Mar. 13, 2023	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-172	Mar. 23, 2022	2 Year
7.	Power Sensor	DARE	RPR3006W	15I00041SN O64	Mar. 13, 2023	1 Year
8.	Horn Antenna	COM-Power	AH-118	071078	Mar. 23, 2023	1 Year
9.	Pre-Amplifier	HP	HP 8449B	3008A00964	Mar. 13, 2023	1 Year
10.	Pre-Amplifier	HP	HP 8447D	1145A00203	Mar. 13, 2023	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB 1513	1513-272	Mar. 23, 2023	1 Year
12.	Test Receiver	Rohde & Schwarz	ESCI	101152	Mar. 13, 2023	1 Year
13.	L.I.S.N	Rohde & Schwarz	ENV 216	101317	Mar. 13, 2023	1 Year
14.	RF Switching Unit	Compliance Direction Systems Inc.	RSU-M2	38311	Mar. 13, 2023	1 Year
15.	Temporary antenna connector	TESCOM	SS402	N/A	N/A	N/A
16.	Test Software	EZ	EZ_EMC	N/A	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	±4.17 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Dongguan NTC Co., Ltd. Test facility located at Floor 1st, Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, 523077, China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUTs is a Digital Multimeter, which supports Bluetooth wireless technology.

All models are identical in circuitry and electrical, mechanical and physical construction; the only differences are the appearance and model no. for trading purpose.
When the EUT charging that wireless function can't working, the charging mode was tested in the FCC Part 15B(sDOC) report.(report no.: CN230Z4U 001)

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	Digital Multimeter
Type Designation:	DT-9989, DT-9889, DT-9987, DT-9970, DT- 9971, DT-9978, DT-9972, DT- 9973, DT-9974, DT-989, DT- 989H, DT-988H, DT-987BT, DT- 898A, DT-898FC, DT-889FC, DT- 896, DT-897, DT-897FC, DT- 965BT, DT-951BT, DT-952BT, DT- 9865H, DT-9589, DT-9959, DT- 9968BT, DT-951
Trademark:	CEM
FCC ID:	WIGDT9989
Operating Voltage:	AC100-240V, 50/60Hz input via Adapter DC 7.4V@2400mAh input via battery
Testing Voltage:	Fully charged battery
Switching Adapter:	Model: FJ-SW1261001000DU Input: 100-240V, 50/60Hz, 0.4A Max Output: 10V, 1000mA
Technical Specification of Bluetooth LE	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Channel Number:	40 channels
Channel Separation:	2MHz
Data Rate:	1Mbps
Antenna Type:	Integral antenna
Antenna Gain:	2.50 dBi

Table 4: RF Channel and Frequency of Bluetooth LE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for Bluetooth LE

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth transmitting mode

- 1) Low Channel
- 2) Middle Channel
- 3) High Channel

B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- User Manual
- Operation Description

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model DT-9989 in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 5: Auxiliary Equipment Used During Test

Description	Manufacturer	Model	S/N	Remark
Laptop	Lenovo	TP00067A	PF-0DS3YC 15/12	Adapter: Manufacturer: Delta M/N: ADLX65NLC3A I/P: AC 100-240V 50-60Hz, 1.8A O/P: DC 20V 3.25A AC Line: 1.10m unshielded DC Line: 1.15m unshielded with a core
iPhone	APPLE	MD298CH/A	DNQK31HEDTWF	---

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

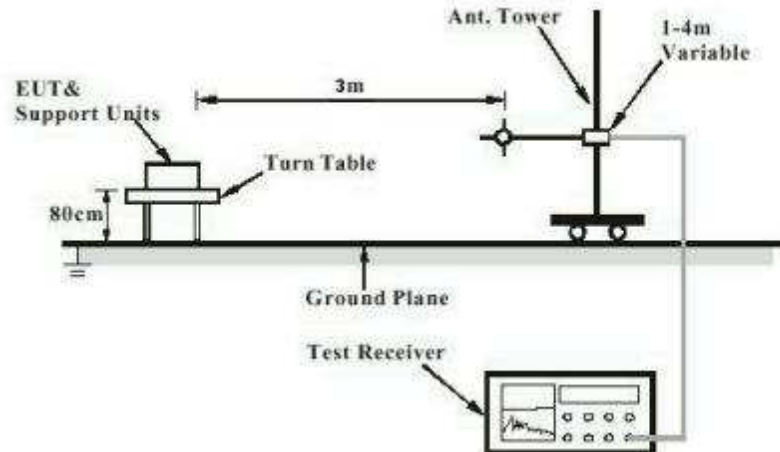


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

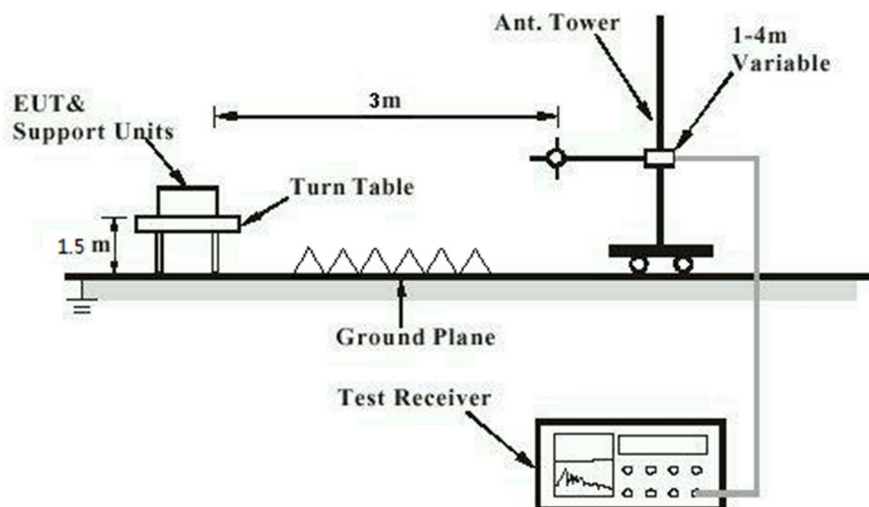


Diagram of Measurement Configuration for Mains Conduction Measurement

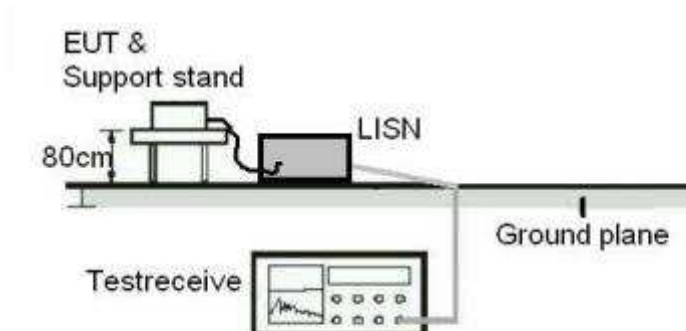
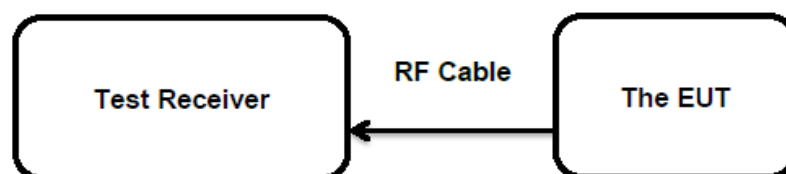


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has an Integral antenna, the directional gain of antenna is 2.50 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:
Pass
Test Specification

Test standard	: FCC Part 15.247(b)(1)&(3)
Basic standard	: ANSI C63.10: 2013
Limits	: FHSS < 0.125 Watts, DSSS < 1.0 Watts
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-06-14
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 50 %
Atmospheric pressure	: 101.1 kPa

For details refer to following test result.

Table 6: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
BLE (1 Mbps)	2402	-11.931	0.0001	< 1.0
	2440	-15.284	0.0000	
	2480	-13.555	0.0000	
Max. Measured Value		-11.931	0.0001	

Note:

- 1) The cable loss is taken into account in results.
- 2) Antenna gain(G): 2.50 dBi

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5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(e)
Basic standard	: ANSI C63.10: 2013
Limits	: < 8 dBm / 3kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-06-14
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 50 %
Atmospheric pressure	: 101.1 kPa

For the measurement records, refer to the appendix A.

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5.1.4 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)(2)
Basic standard	: ANSI C63.10: 2013
Limits	: > 500 kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-06-14
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 50 %
Atmospheric pressure	: 101.1 kPa

For the measurement records, refer to the appendix A.

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5.1.5 99% Bandwidth

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(a)
Basic standard	: ANSI C63.10: 2013
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-06-14
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 50 %
Atmospheric pressure	: 101.1 kPa

For the measurement records, refer to the appendix A.

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5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d)
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2023-06-14
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 50 %
Atmospheric pressure	: 101.1 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

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5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2023-06-13
Input voltage	: Fully charged battery
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 26 °C
Relative humidity	: 47 %
Atmospheric pressure	: 101.1 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

7 List of Tables

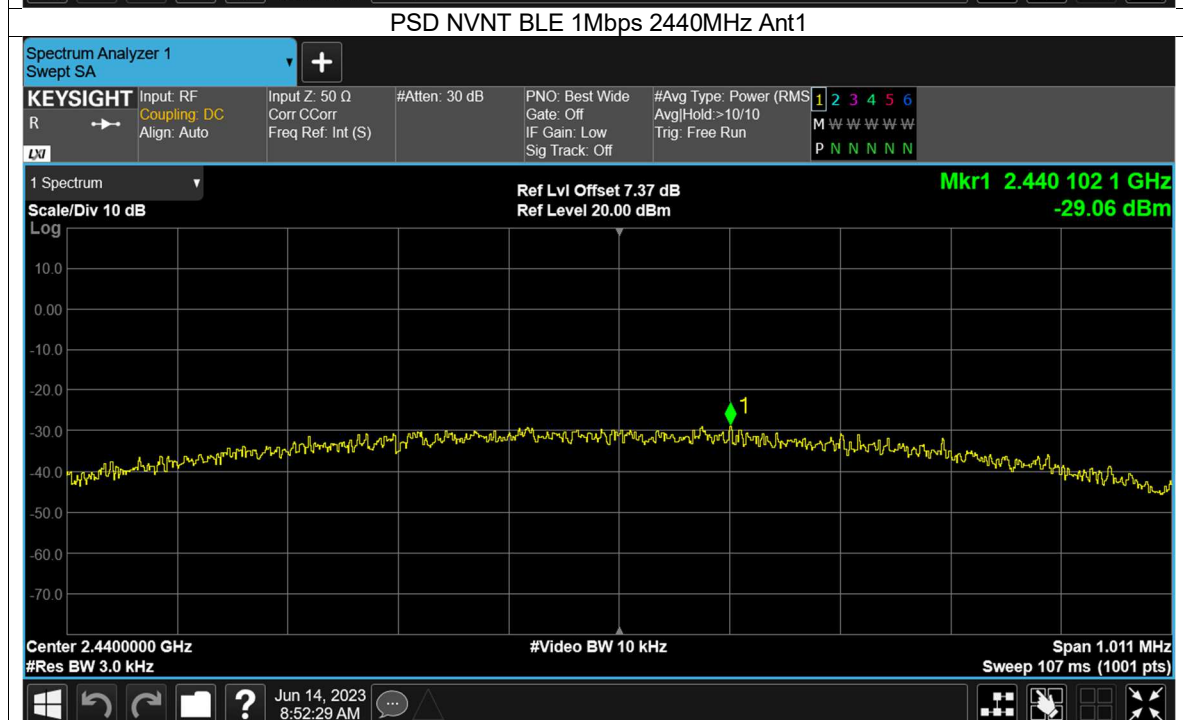
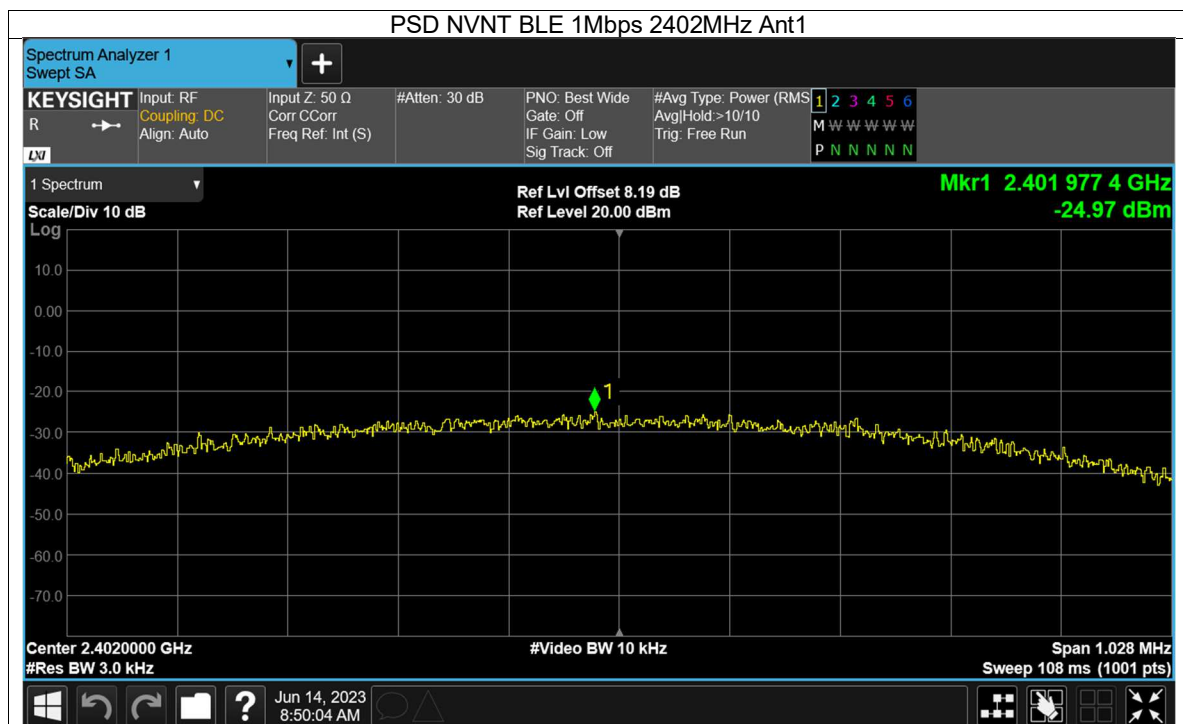
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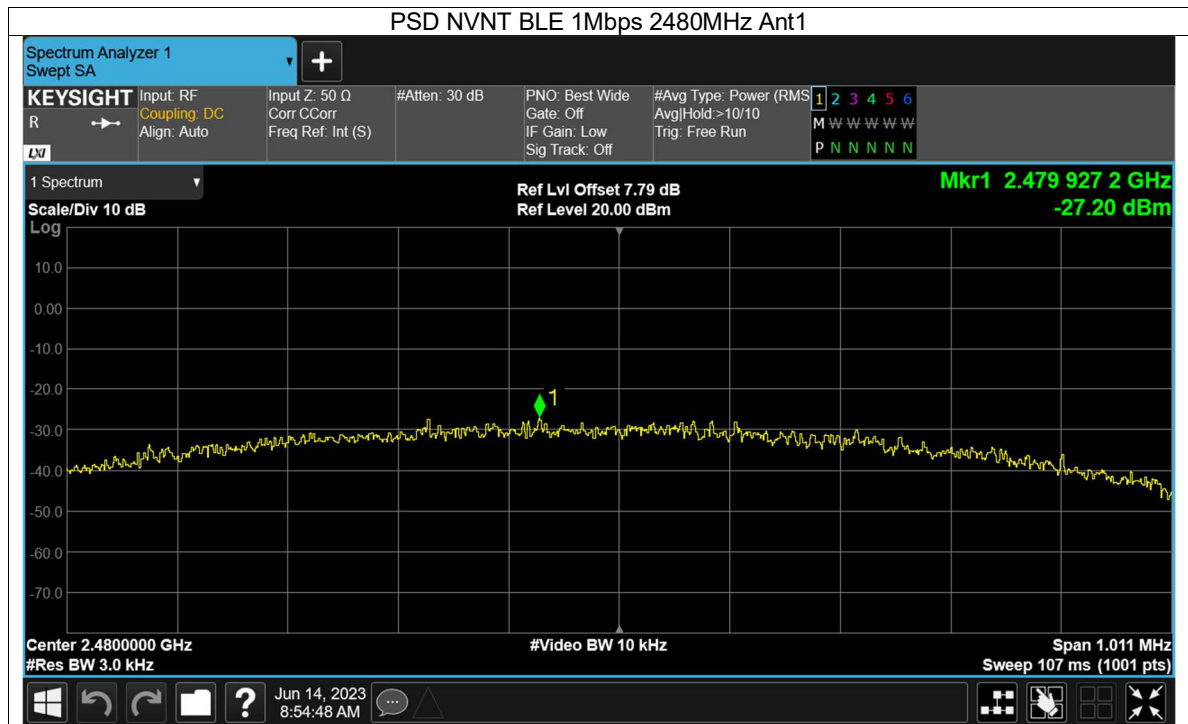
Appendix A: Test Results of Bluetooth Low Energy

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Appendix A.1: Test Results of Conducted Power Spectral Density

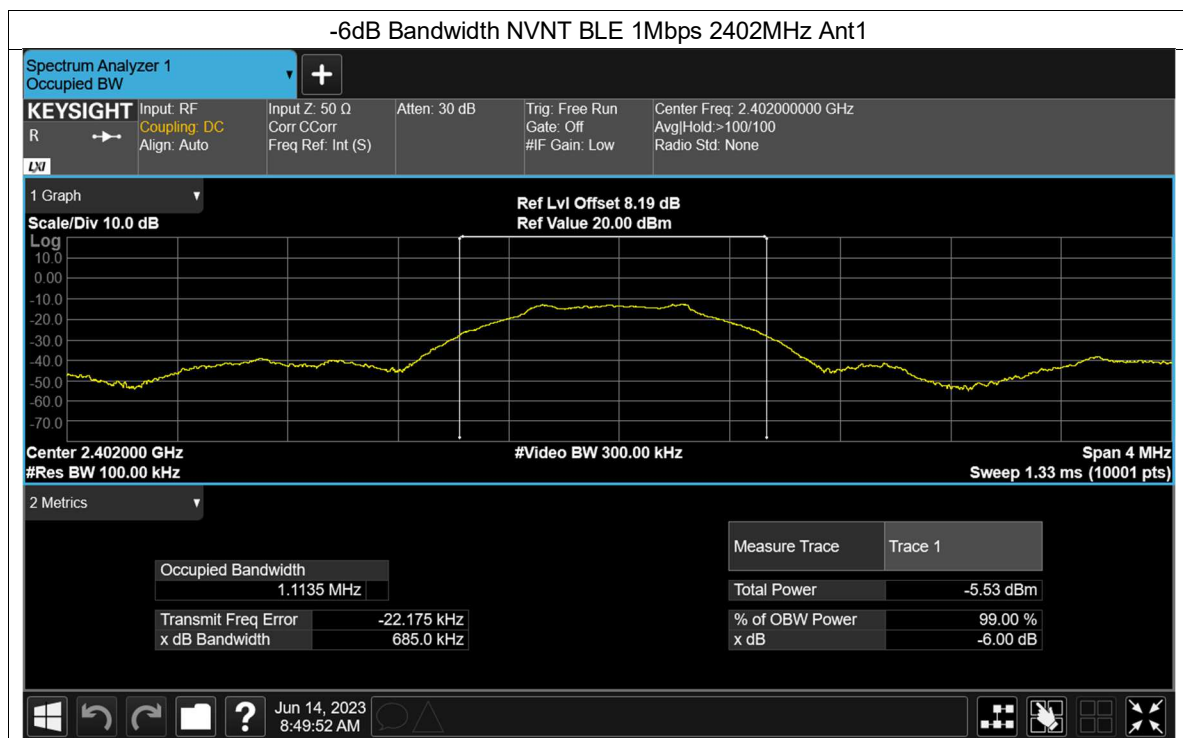
Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
BLE 1Mbps	2402	Ant1	-24.975	8	Pass
BLE 1Mbps	2440	Ant1	-29.065	8	Pass
BLE 1Mbps	2480	Ant1	-27.199	8	Pass

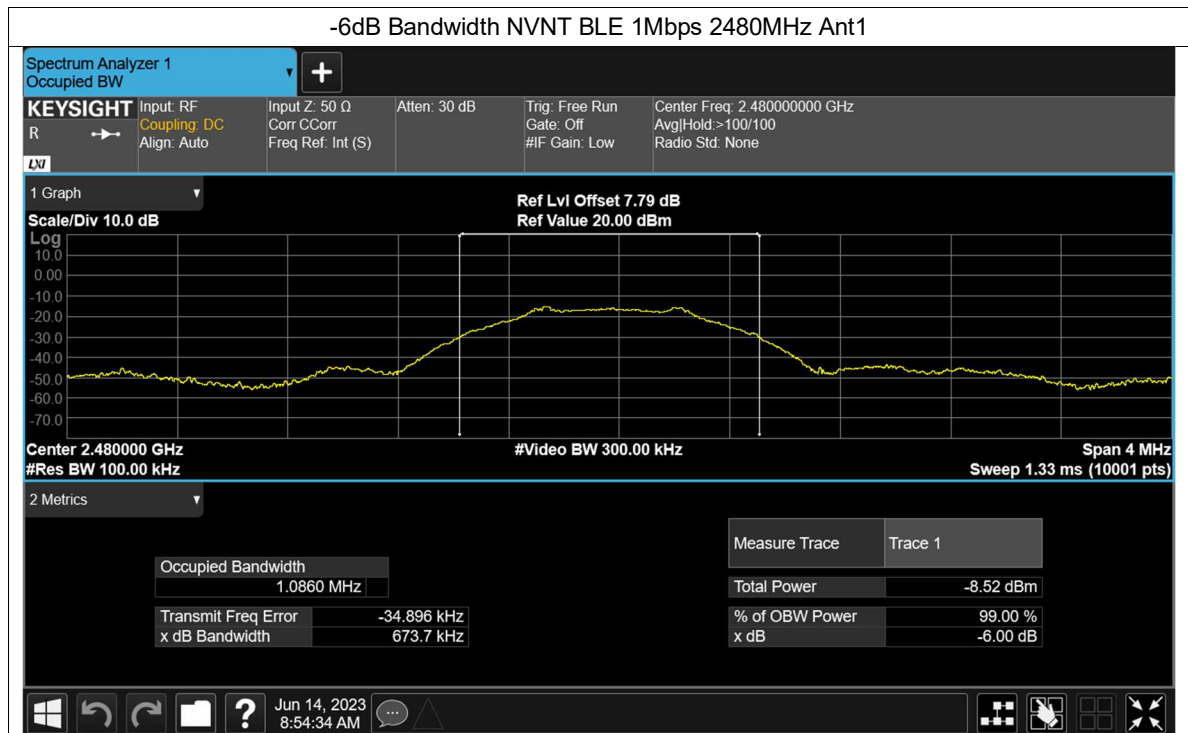




Appendix A.2: Test Results of 6dB Bandwidth

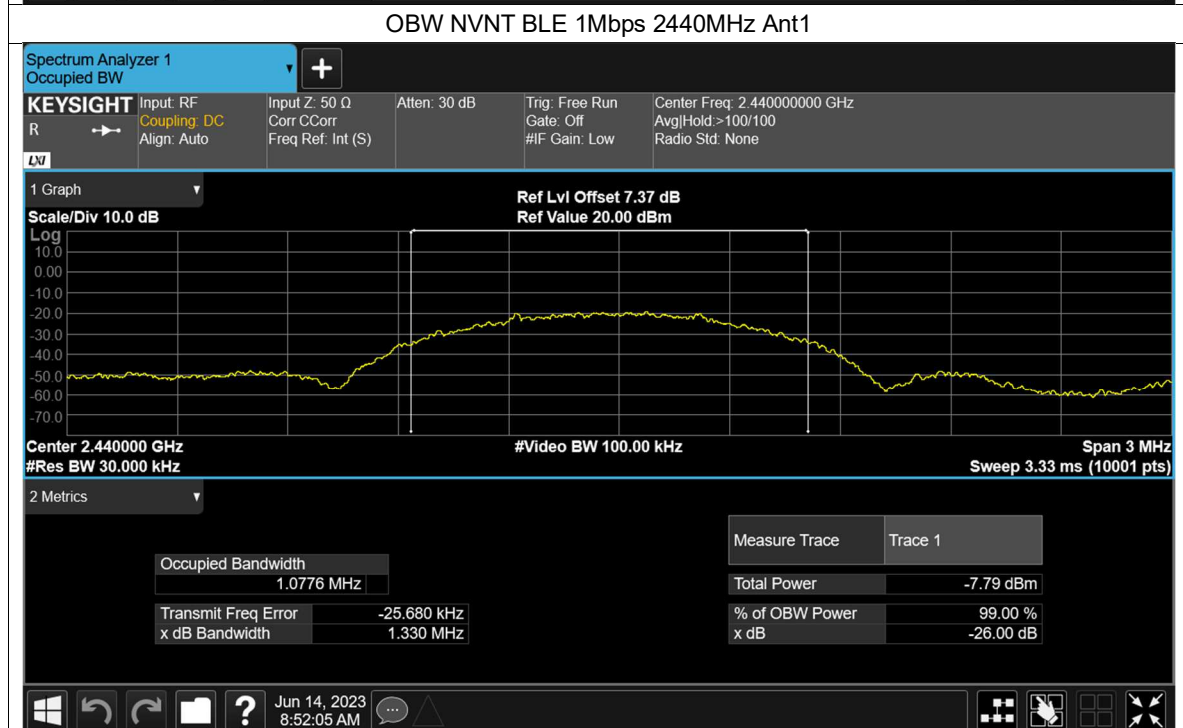
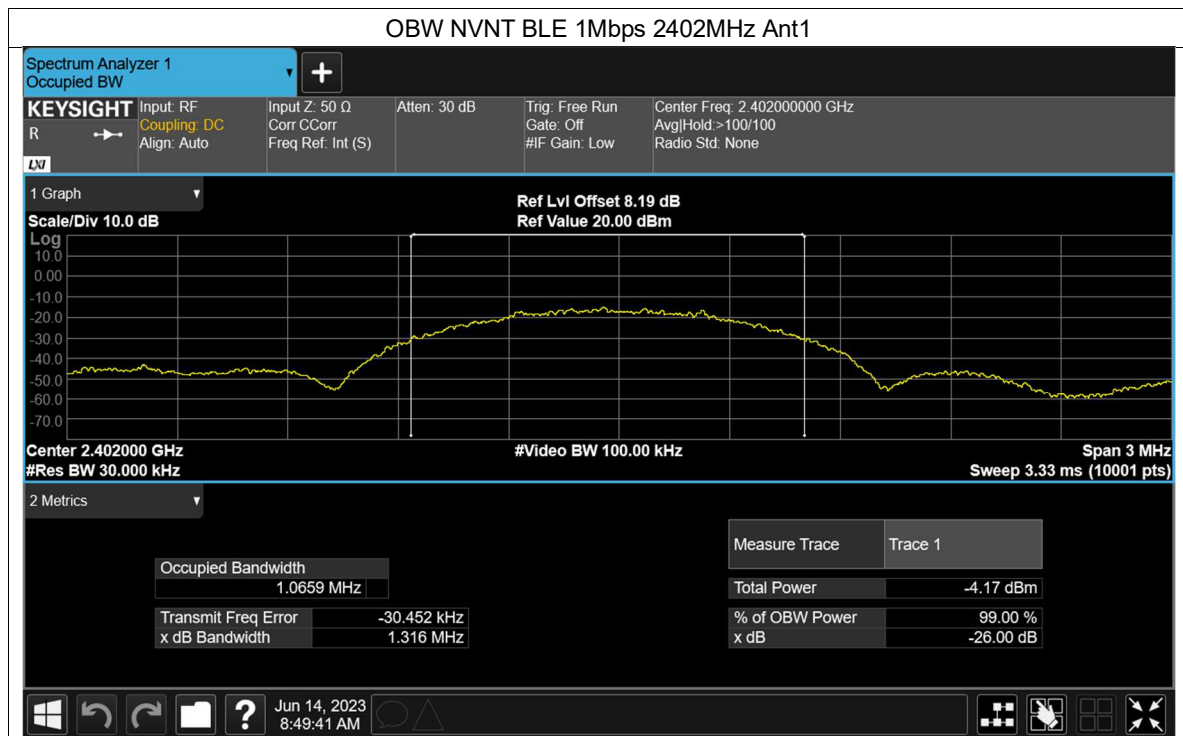
Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
BLE 1Mbps	2402	Ant1	0.685	0.5	Pass
BLE 1Mbps	2440	Ant1	0.674	0.5	Pass
BLE 1Mbps	2480	Ant1	0.674	0.5	Pass

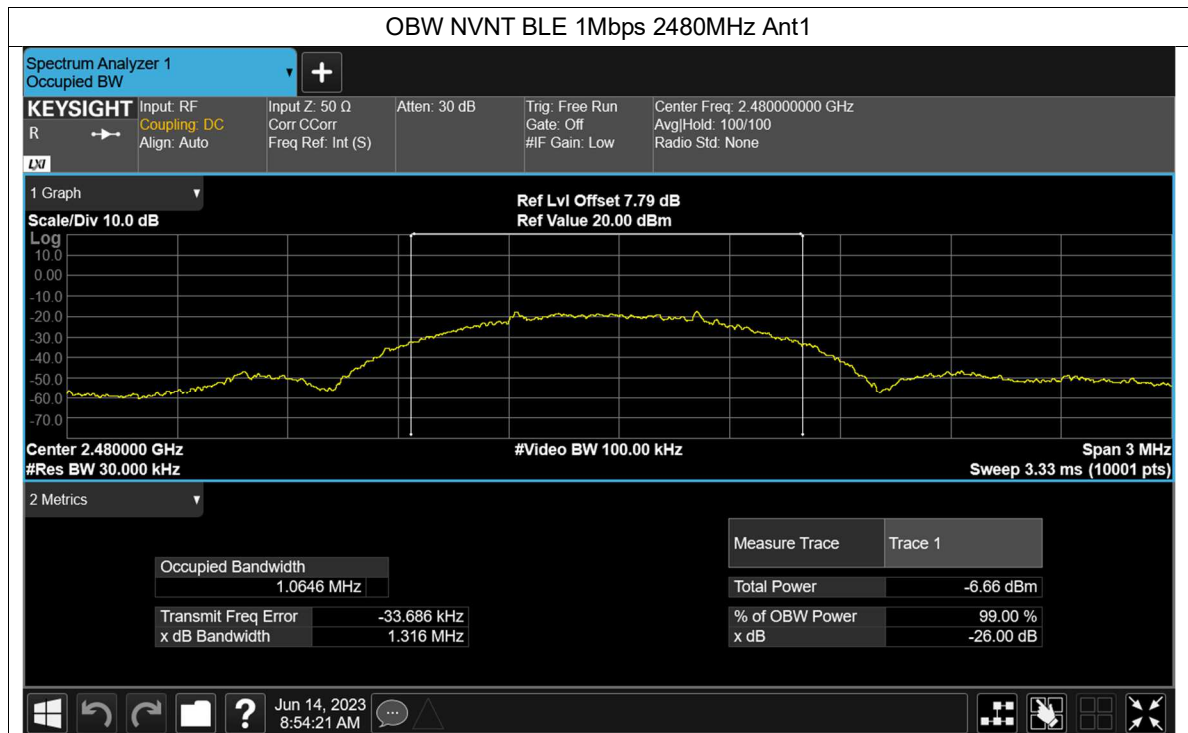




Appendix A.3: Test Results of 99% Bandwidth

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	Verdict
BLE 1Mbps	2402	Ant1	1.0659	Pass
BLE 1Mbps	2440	Ant1	1.07761	Pass
BLE 1Mbps	2480	Ant1	1.06465	Pass

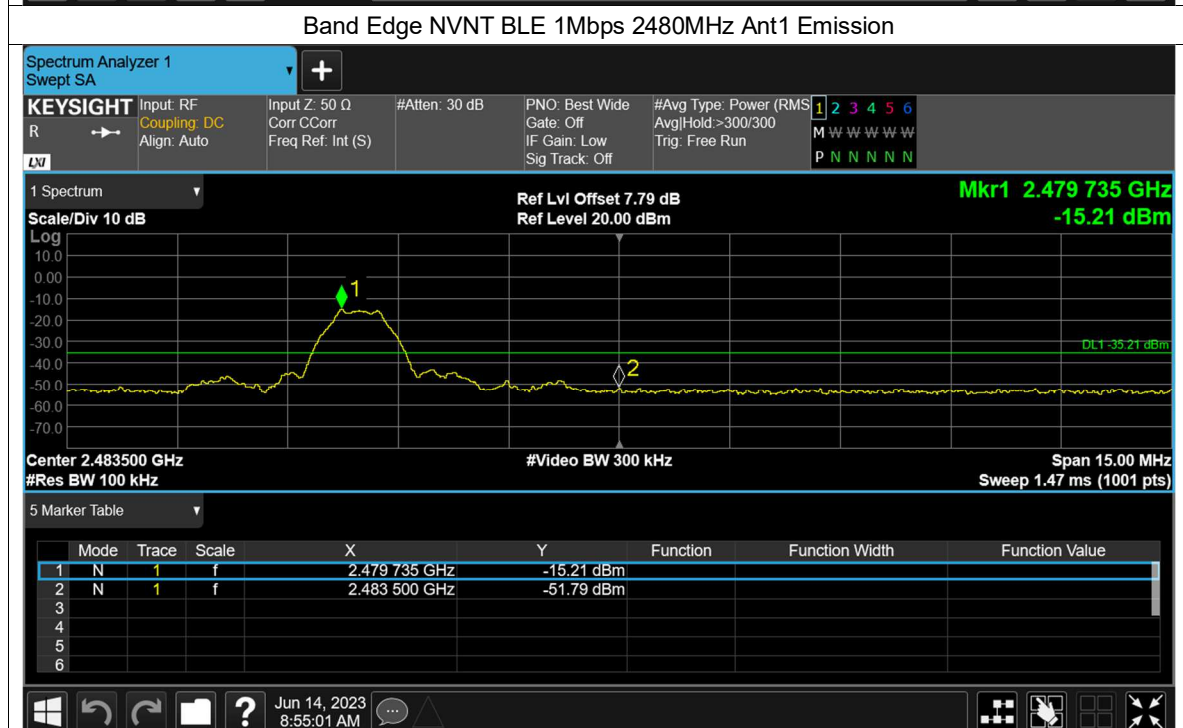
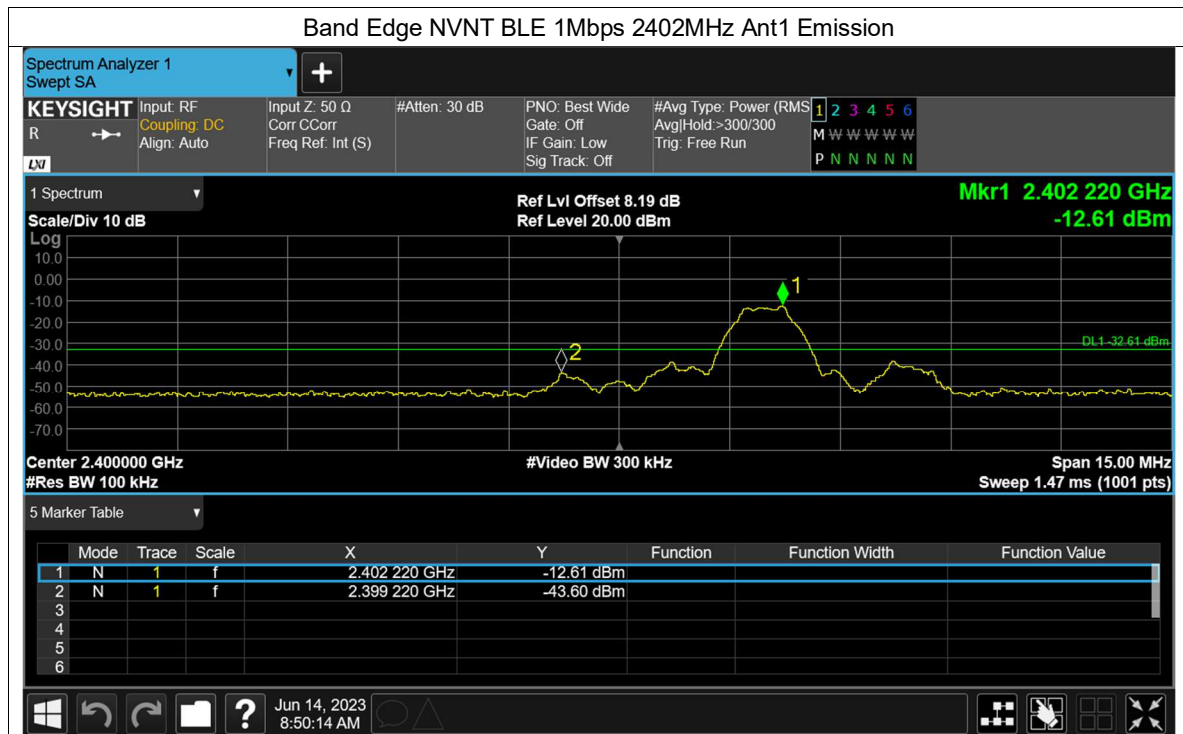




Appendix A.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

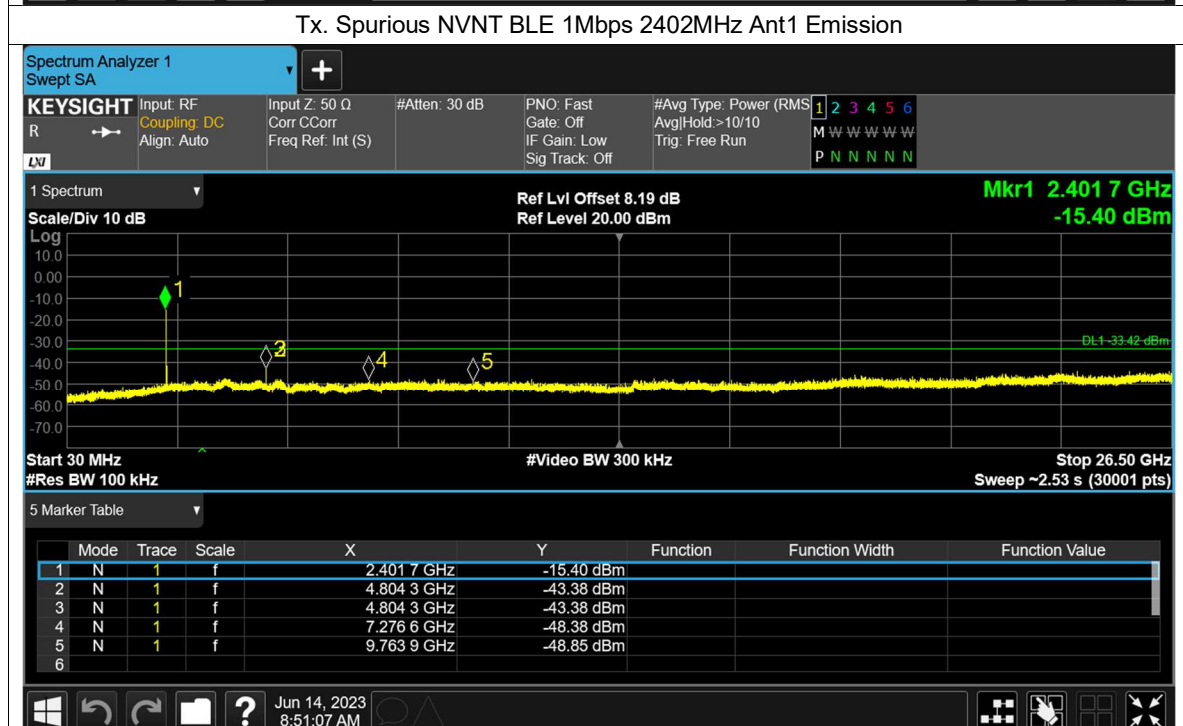
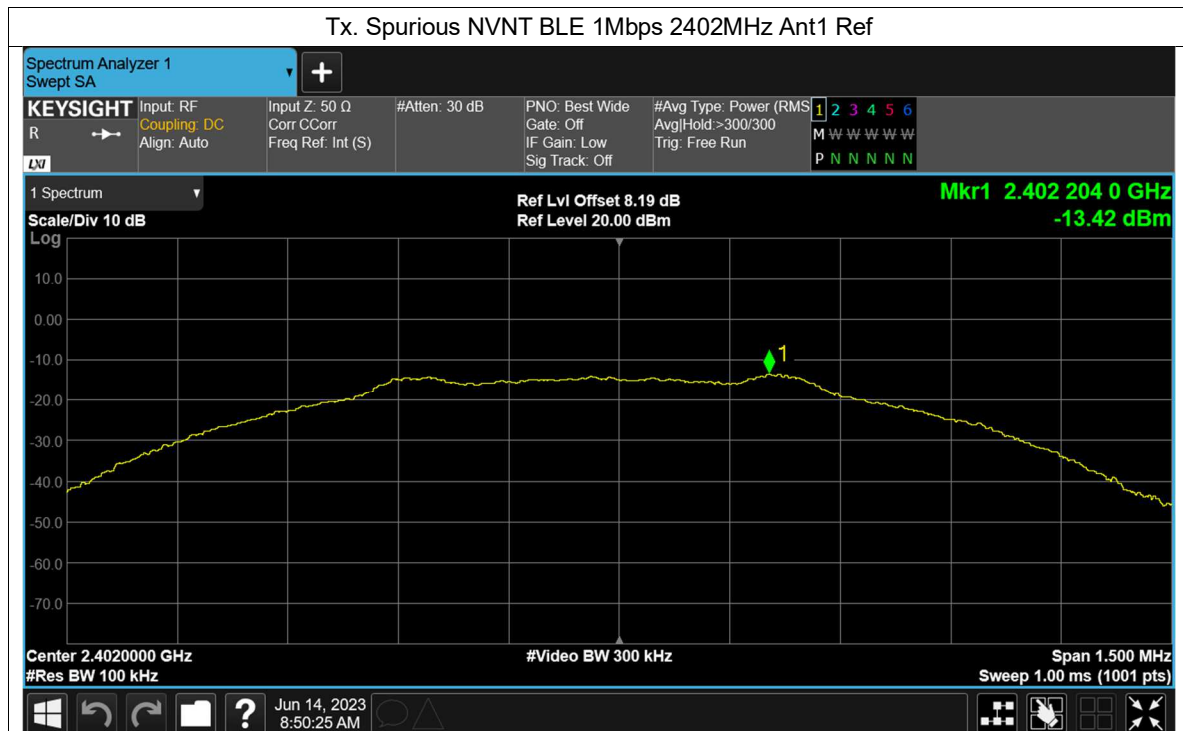
Band Edge

Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1Mbps	2402	Ant1	-30.98	-20	Pass
BLE 1Mbps	2480	Ant1	-36.58	-20	Pass

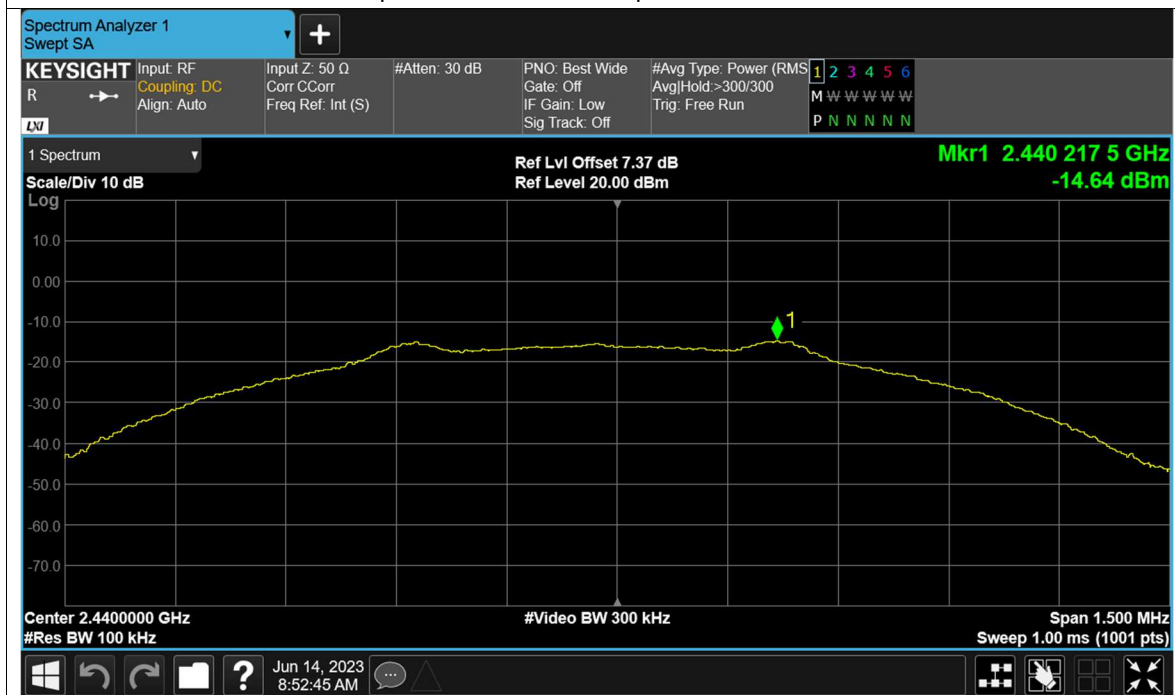


Conducted Spurious Emission

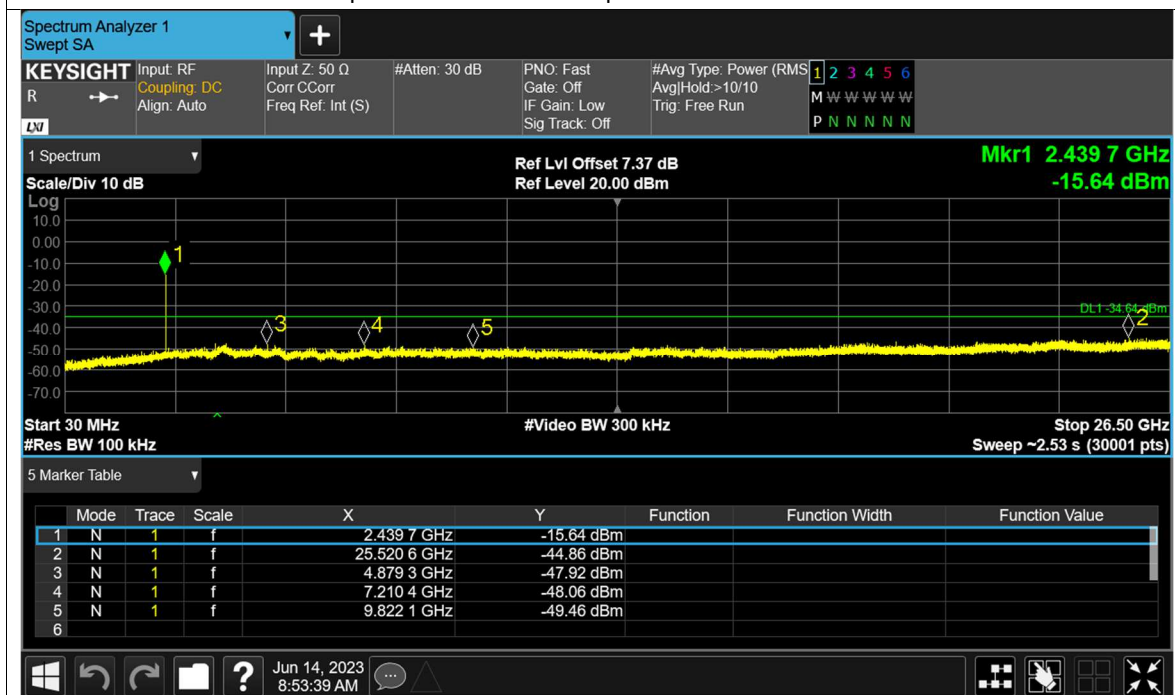
Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
BLE 1Mbps	2402	Ant1	-29.96	-20	Pass
BLE 1Mbps	2440	Ant1	-30.22	-20	Pass
BLE 1Mbps	2480	Ant1	-28.81	-20	Pass



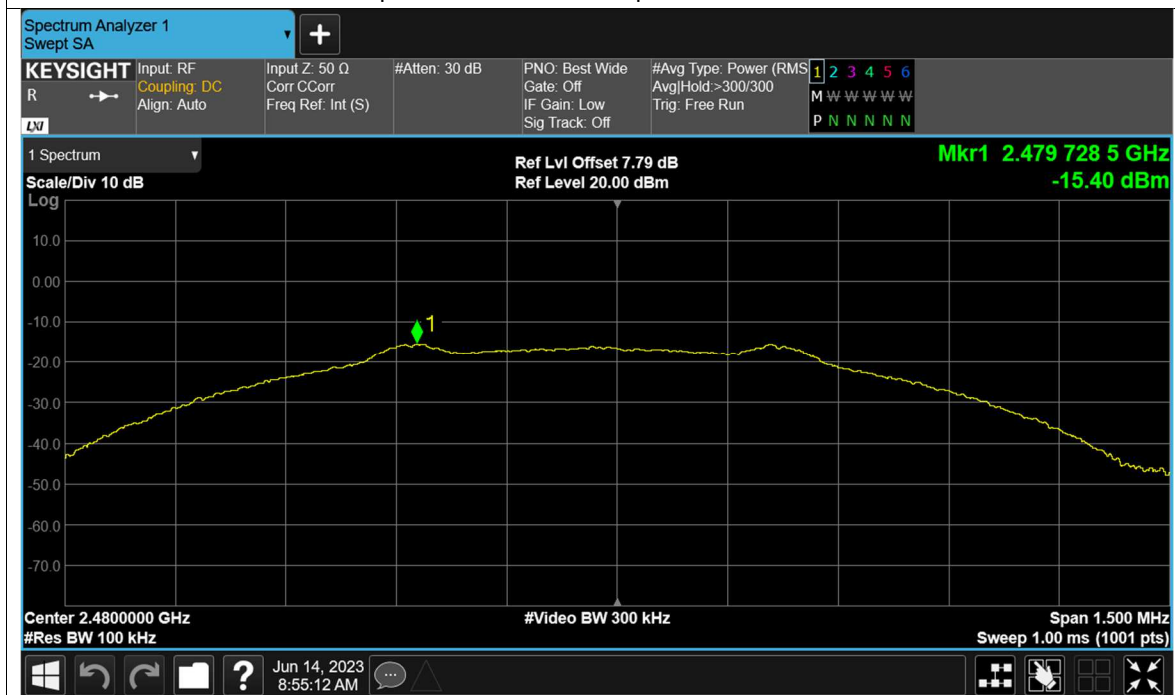
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref



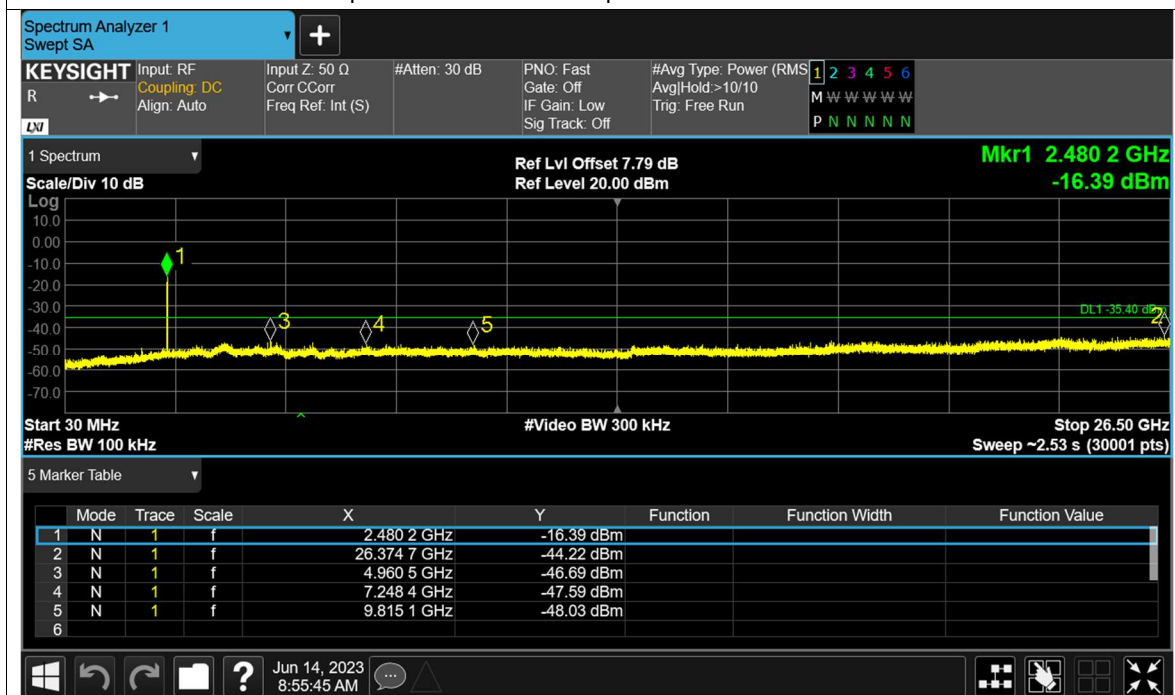
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission



Appendix A.5: Test Results of Radiated Spurious Emissions

Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber
Limit: FCC_Part 15C_3m
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note:

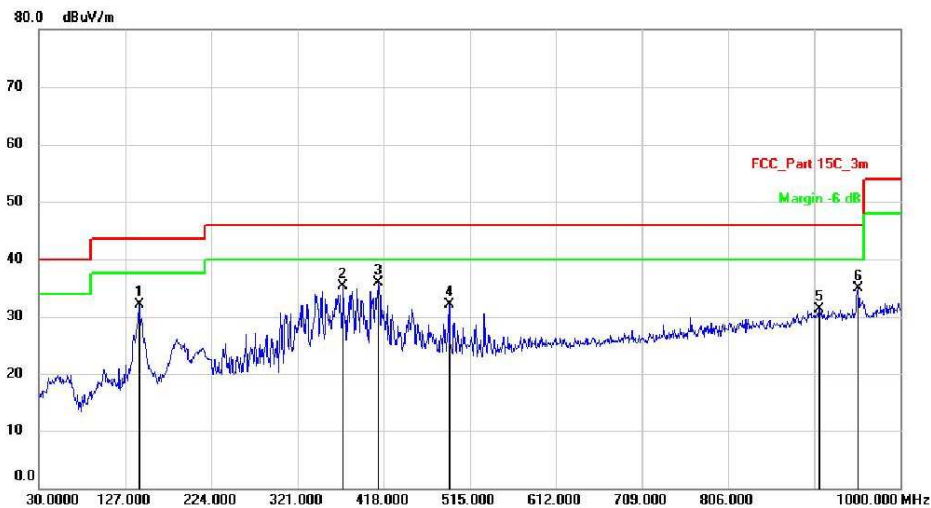
Polarization: **Horizontal**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:30:24



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
1		142.5200	43.01	-10.96	32.05	43.50	-11.45	QP	
2		372.4100	39.08	-3.84	35.24	46.00	-10.76	QP	
3	*	412.1800	38.95	-3.12	35.83	46.00	-10.17	QP	
4		491.7200	33.94	-1.88	32.06	46.00	-13.94	QP	
5		908.8200	25.06	6.21	31.27	46.00	-14.73	QP	
6		952.4700	28.60	6.28	34.88	46.00	-11.12	QP	

*:Maximum data x:Over limit !:over margin

<Reference Only



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber
Limit: FCC_Part 15C_3m
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note:

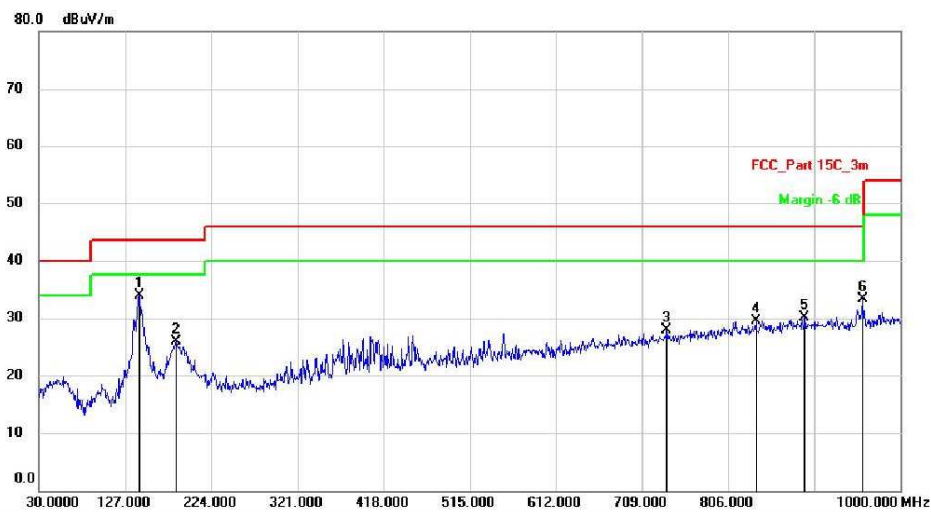
Polarization: **Vertical**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:38:05



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	142.5200	45.44	-11.56	33.88	43.50	-9.62	QP	
2		184.2300	35.14	-9.27	25.87	43.50	-17.63	QP	
3		737.1300	25.16	2.82	27.98	46.00	-18.02	QP	
4		837.0400	25.00	4.58	29.58	46.00	-16.42	QP	
5		892.3300	25.16	4.95	30.11	46.00	-15.89	QP	
6		957.3200	28.27	5.12	33.39	46.00	-12.61	QP	

*:Maximum data x:Over limit !:over margin

(Reference Only)

1GHz - 18GHz



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber
Limit: FCC_15.247_3m_Peak
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note: Low

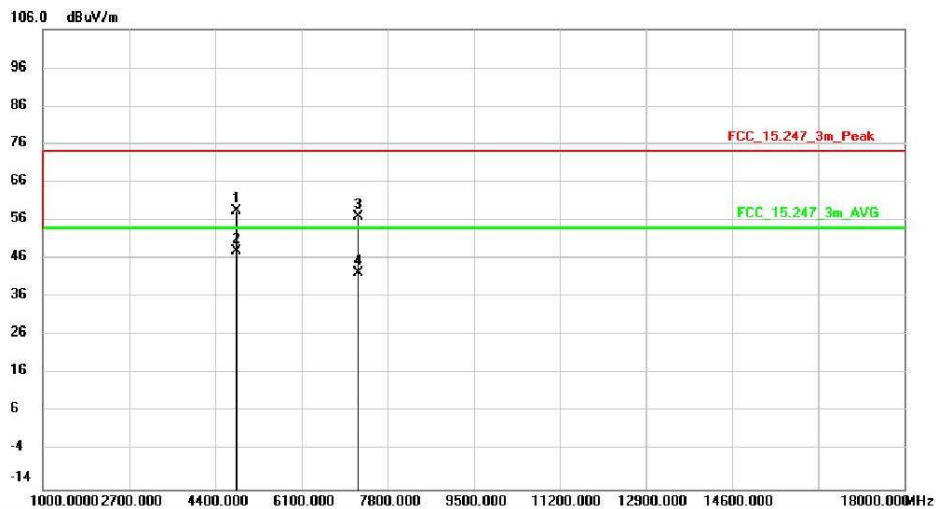
Polarization: **Vertical**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:31:41



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	52.13	6.30	58.43	74.00	-15.57	peak	
2	*	4804.000	41.60	6.30	47.90	54.00	-6.10	AVG	
3		7206.000	46.46	10.44	56.90	74.00	-17.10	peak	
4		7206.000	31.73	10.44	42.17	54.00	-11.83	AVG	

*:Maximum data x:Over limit !:over margin

⟨Reference Only



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber

Polarization: **Horizontal**

Temperature: 26

Limit: FCC_15.247_3m_Peak

Power: DC7.4V

Humidity: 47 %

EUT: Digital Multimeter

Distance: 3m

M/N: DT-9989

Mode: TX(BLE)

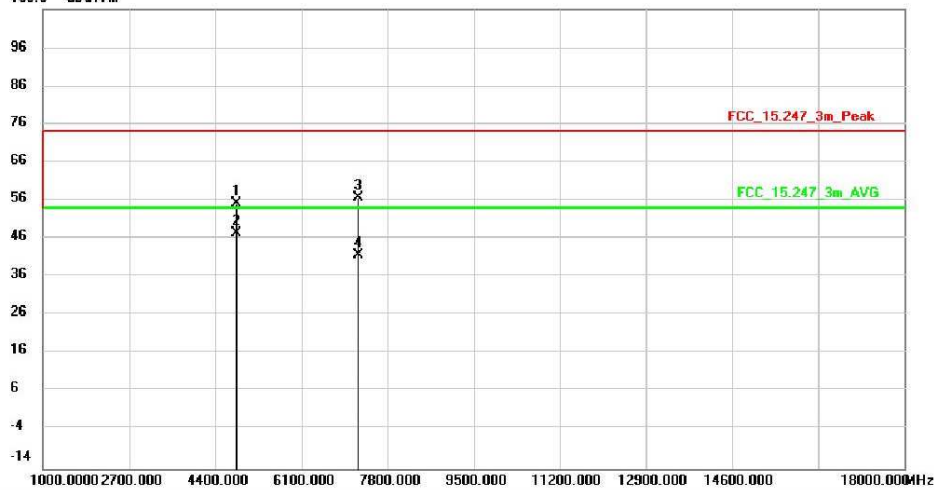
Note: Low

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:39:37

106.0 dBuV/m



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4804.000	48.99	6.30	55.29	74.00	-18.71	peak	
2	*	4804.000	41.20	6.30	47.50	54.00	-6.50	AVG	
3		7206.000	46.32	10.44	56.76	74.00	-17.24	peak	
4		7206.000	31.27	10.44	41.71	54.00	-12.29	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#4

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber

Polarization: **Horizontal**

Temperature: 26

Limit: FCC_15.247_3m_Peak

Power: DC7.4V

Humidity: 47 %

EUT: Digital Multimeter

Distance: 3m

M/N: DT-9989

Mode: TX(BLE)

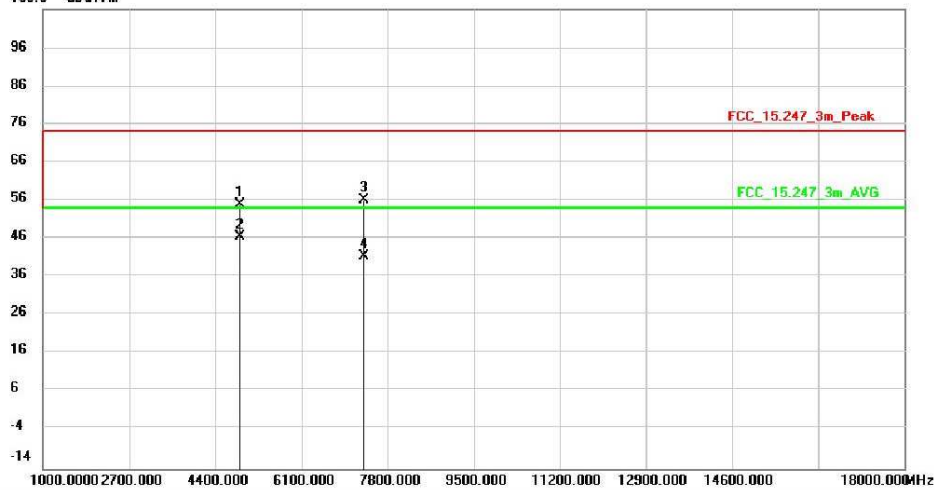
Note: Mid

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:45:52

106.0 dBuV/m



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4880.000	48.28	6.60	54.88	74.00	-19.12	peak	
2	*	4880.000	39.90	6.60	46.50	54.00	-7.50	AVG	
3		7320.000	45.50	10.55	56.05	74.00	-17.95	peak	
4		7320.000	30.65	10.55	41.20	54.00	-12.80	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#5

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber

Polarization: **Vertical**

Temperature: 26

Limit: FCC_15.247_3m_Peak

Power: DC7.4V

Humidity: 47 %

EUT: Digital Multimeter

Distance: 3m

M/N: DT-9989

Mode: TX(BLE)

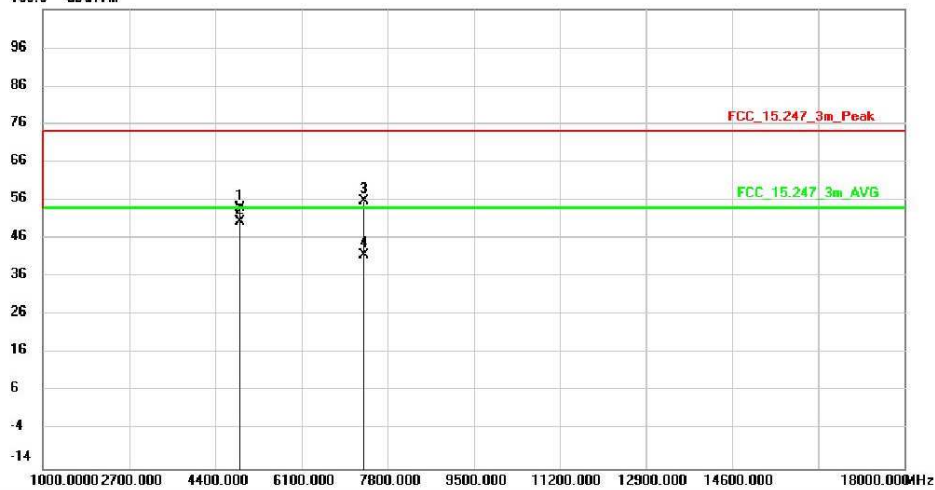
Note: Mid

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:50:08

106.0 dBuV/m



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4880.000	47.26	6.60	53.86	74.00	-20.14	peak	
2	*	4880.000	43.81	6.60	50.41	54.00	-3.59	AVG	
3		7320.000	45.21	10.55	55.76	74.00	-18.24	peak	
4		7320.000	31.14	10.55	41.69	54.00	-12.31	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#6

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber

Polarization: **Vertical**

Temperature: 26

Limit: FCC_15.247_3m_Peak

Power: DC7.4V

Humidity: 47 %

EUT: Digital Multimeter

Distance: 3m

M/N: DT-9989

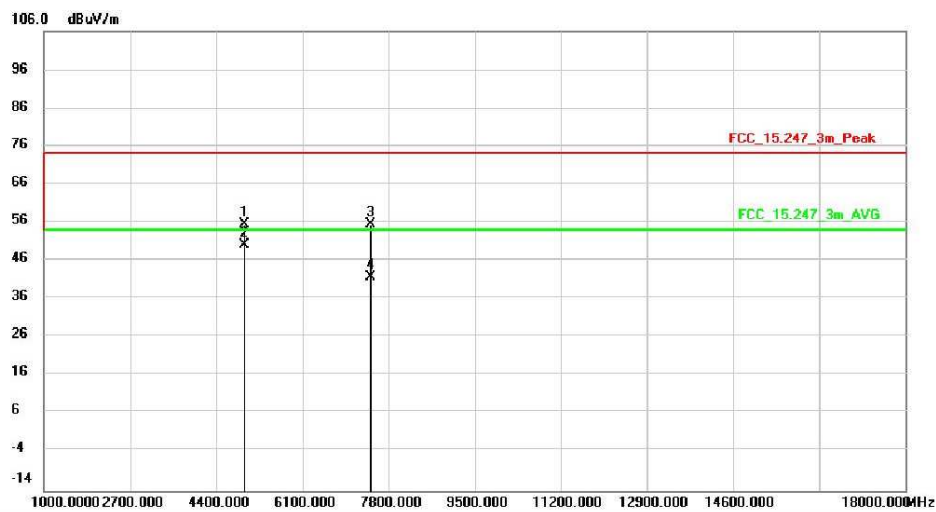
Mode: TX(BLE)

Note: High

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:03:21



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	48.59	6.89	55.48	74.00	-18.52	peak	
2	*	4960.000	43.28	6.89	50.17	54.00	-3.83	AVG	
3		7440.000	44.98	10.60	55.58	74.00	-18.42	peak	
4		7440.000	31.00	10.60	41.60	54.00	-12.40	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#7

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber

Polarization: **Horizontal**

Temperature: 26

Limit: FCC_15.247_3m_Peak

Power: DC7.4V

Humidity: 47 %

EUT: Digital Multimeter

Distance: 3m

M/N: DT-9989

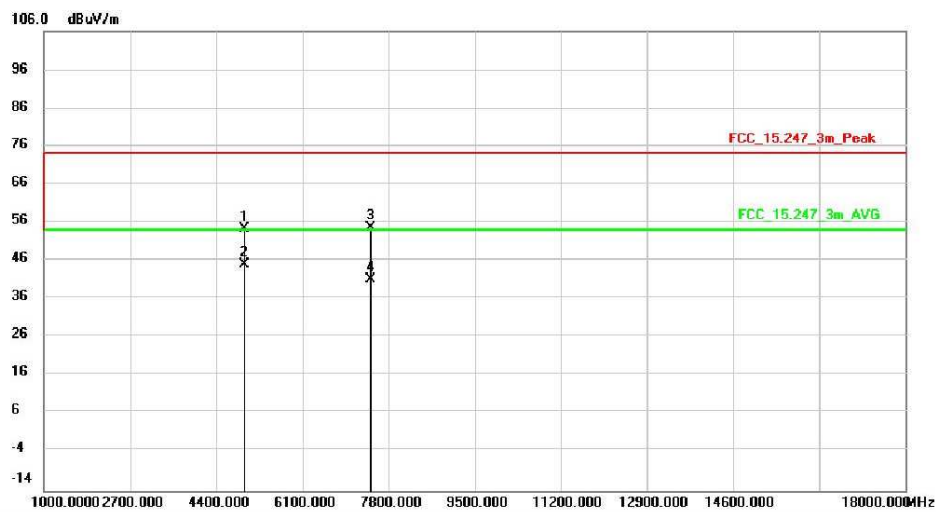
Mode: TX(BLE)

Note: High

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:10:05



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4960.000	47.32	6.89	54.21	74.00	-19.79	peak	
2	*	4960.000	38.11	6.89	45.00	54.00	-9.00	AVG	
3		7440.000	44.02	10.60	54.62	74.00	-19.38	peak	
4		7440.000	30.45	10.60	41.05	54.00	-12.95	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#8

Page: 1

Engineer Signature:

Chance

Appendix A.6: Test Results of Radiated Emissions in Restricted Bands



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber
Limit: FCC_15.247_3m_Peak
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note: Low

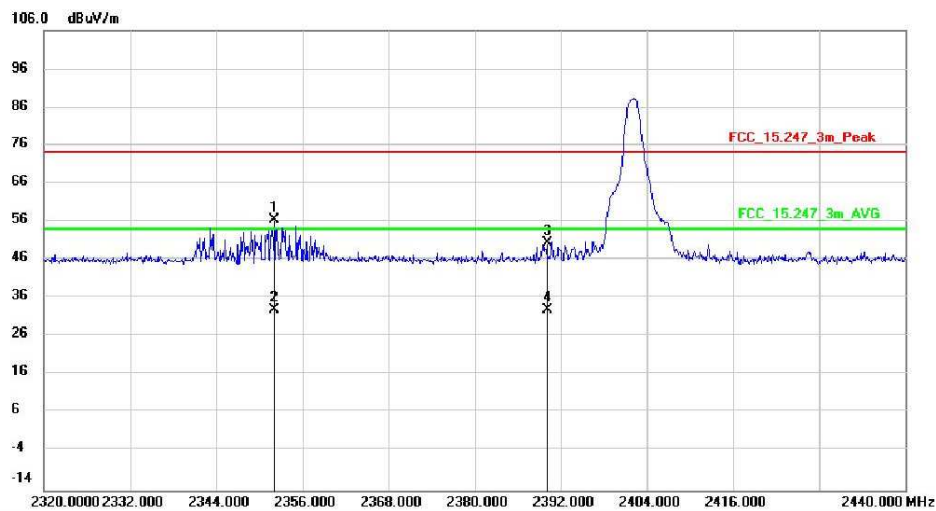
Polarization: **Horizontal**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:16:28



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2351.940	56.41	-0.01	56.40	74.00	-17.60	peak	
2		2351.940	33.08	-0.01	33.07	54.00	-20.93	AVG	
3		2390.000	50.21	0.09	50.30	74.00	-23.70	peak	
4		2390.000	32.83	0.09	32.92	54.00	-21.08	AVG	

*:Maximum data x:Over limit !:over margin

⟨Reference Only



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444
Web: www.ntc-c.com

Fax: +86-769-2202 2799

Site: 3m Chamber
Limit: FCC_15.247_3m_Peak
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note: Low

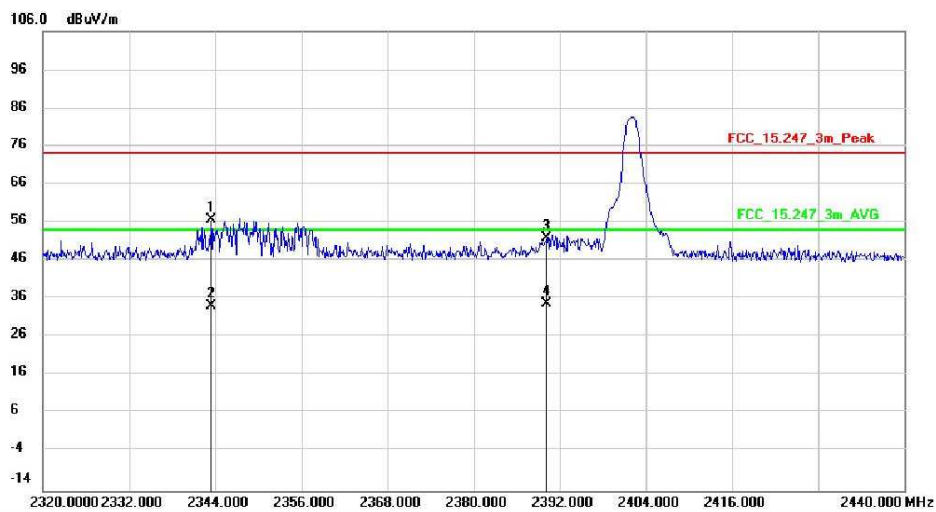
Polarization: **Vertical**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 18:24:02



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2343.340	56.67	-0.03	56.64	74.00	-17.36	peak	
2		2343.340	34.28	-0.03	34.25	54.00	-19.75	AVG	
3		2390.000	51.91	0.09	52.00	74.00	-22.00	peak	
4		2390.000	34.81	0.09	34.90	54.00	-19.10	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

File :DT-9989 去波形Data :#2

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel:+86-769-2202 2444
Web: www.ntc-c.com

Fax:+86-769-2202 2799

Site: 3m Chamber
Limit: FCC_15.247_3m_Peak
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note: High

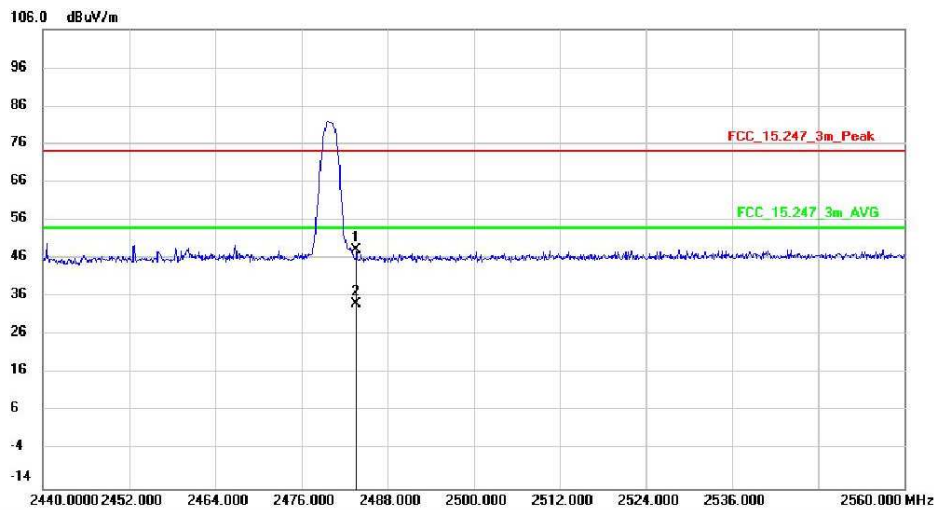
Polarization: **Horizontal**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:17:00



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	48.04	0.34	48.38	74.00	-25.62	peak	
2	*	2483.500	33.68	0.34	34.02	54.00	-19.98	AVG	

*:Maximum data x:Over limit !:over margin

<Reference Only

File :DT-9989 去波形Data :#9

Page: 1

Engineer Signature:

Chance



Dongguan NTC Co., Ltd.
Tel: +86-769-2202 2444 Fax: +86-769-2202 2799
Web: www.ntc-c.com

Site: 3m Chamber
Limit: FCC_15.247_3m_Peak
EUT: Digital Multimeter
M/N: DT-9989
Mode: TX(BLE)
Note: High

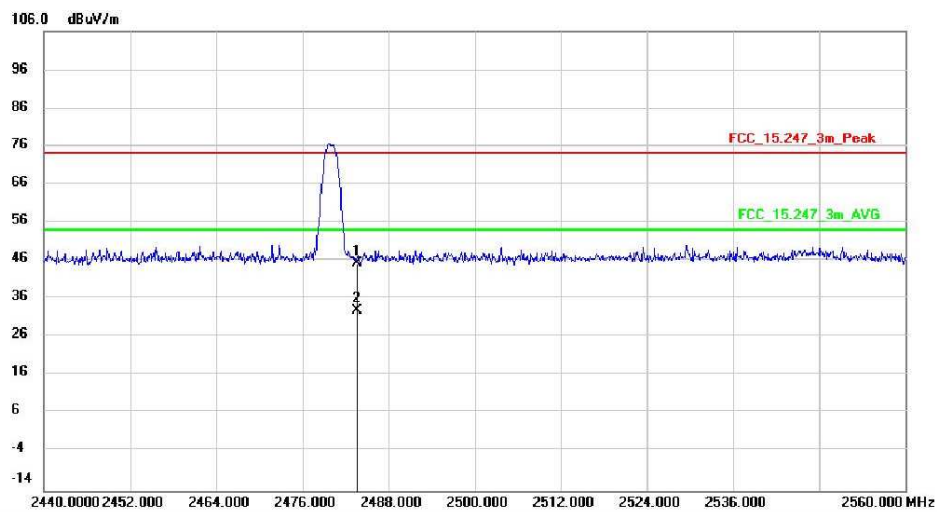
Polarization: **Vertical**
Power: DC7.4V
Distance: 3m

Temperature: 26
Humidity: 47 %

Radiated Emission Measurement

Date: 2023/6/13

Time: 19:24:18



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	44.90	0.34	45.24	74.00	-28.76	peak	
2	*	2483.500	32.71	0.34	33.05	54.00	-20.95	AVG	

*:Maximum data x:Over limit !:over margin

<Reference Only