



RF TEST REPORT

Report No.: 20251017G27691X-W2

Product Name: Mobile Printer

Model No.: MT620, MT620 Pro

Applicant: Xiamen Hanin Co.,Ltd.

Address: Room 305A, Angye Building, Pioneer Park, Torch High-tech Zone,
Xiamen City, Fujian Province, P.R. China.

Dates of Testing: 10/28/2025 - 11/06/2025

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No.43, Shahe Road, Xili Street,
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Test Report

Product: Mobile Printer

Applicant.....: Xiamen Hanin Co.,Ltd.

Applicant Address.....: Room 305A, Angye Building, Pioneer Park, Torch High-tech Zone, Xiamen City, Fujian Province, P.R. China.

Manufacturer: Xiamen Hanin Co.,Ltd.

Manufacturer Address: Room 305A, Angye Building, Pioneer Park, Torch High-tech Zone, Xiamen City, Fujian Province, P.R. China.

Factory: Xiamen Hanin Co.,Ltd.

Factory Address: No. 96, RongYuan Road, Tong'an District, Xiamen City, Fujian Province, P.R. China.

Test Standards: Article 2 paragraph 1 item (19)
MIC Notice No.88 Appendix No.43

Test Result: Pass

Tested by: Carl Wei 2025.11.06

Carl Wei, Test Engineer

Reviewed by: Sun Jiaohui 2025.11.06

Sun Jiaohui, Senior Engineer

Approved by: Wang Shijie 2025.11.06

Wang Shijie, Manager

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Change History		
Issue	Date	Reason for change
1.0	2025.11.06	First edition



1. General Information

1.1. Description of EUT

Product Name:	Mobile Printer
Model No.	MT620, MT620 Pro
Hardware Version:	MT610-MBA
Software Version:	MT610-MBA_V1
Power Supply:	Rechargeable Li-ion Battery DC7.4V/2000mAh
EUT supports Radios application:	Bluetooth LE
Frequency Range:	2402 MHz~2480 MHz
Bit Rate of Transmitter:	1 Mbps
Channel Number:	40
Modulation Type:	GFSK
Antenna Type:	Internal Antenna
Antenna Gain:	-2.33 dBi

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

Note 2: The two EUT models have different battery specifications; their print head specifications also differ, resulting in different printing resolutions. The MT620 is 203 dpi, and the M620 Pro is 300 dpi. This difference will not affect the test results.

1.2. Test Standards and Results

The EUT has been tested according to MIC Notice No.88 Appendix No.43.

No.	Identity	Document Title
1	MIC Notice No.88 Appendix No.43	Radio Frequency Devices

Test detailed items/section required by MIC rules and results are as below:

Part	Section in MIC	Description	Result
2.1	Section 3	Frequency Error	PASS
2.2	Section 4	Occupied Bandwidth	PASS
2.3	Section 6	Antenna Power and deviation Measurement	PASS
2.4	Section 5	Unwanted Emission Intensity	PASS
2.5	Section 7	Secondary Radiated Rmissions of Receiver	PASS
2.6	Section 10	Transmitting antenna absolute gain	PASS
2.7	Section 11	Main lobe width of transmitting antenna	PASS
2.8	Section 12	Radio Interference Prevention Capability	PASS
2.9	Note 2	Construction Protection Confirmation	PASS

Note 1: MIC Notice No.88 Appendix No.43.

Note 2: MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20.

1.3. Table for Carrier Frequency

40 channels are provided for Bluetooth LE.

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

Note: Channels 0, 19 and 39 were selected for 1M PHY as the low, mid and high channels for testing.

1.4. Test environment

Operating Environment	
Temperature	23.5℃
Humidity	57 % RH
Atmospheric Pressure	1010 mbar

For extreme voltage test, we have tested the relationship between the external power supply and RF IC powersupply. Base on the test results, only the normal voltage was selected to perform all items. The details information as below:

External power supply	Test Point	Deviation from normal	Deviation
7.40 Vdc	3.3 Vdc	---	---
6.66 Vdc	3.3 Vdc	0.00 Vdc	0.00%
8.14 Vdc	3.3 Vdc	0.00 Vdc	0.00%
Note: The chip voltage regulation is 3.3 Vdc.			

1.5. Test Modes

Test Items	Modulation Type	Data Rate	Channel
Frequency Error	Un-modulation	/	L/M/H
Occupied Bandwidth and Spread Bandwidth / Factor	GFSK	1Mbps	L/M/H
Antenna Power and deviation Measurement	GFSK	1Mbps	L/M/H
Unwanted Emission Intensity	GFSK	1Mbps	L/M/H
Secondary Radiated Rmissions of Receiver	GFSK	1Mbps	L/M/H
Transmitting antenna absolute gain	GFSK	1Mbps	L/M/H
Main lobe width of transmitting antenna	GFSK	1Mbps	L/M/H
Radio Interference Prevention Capability	GFSK	1Mbps	L/M/H



1.6. Measurement Uncertainty

Test Items	Uncertainty	Remark
Frequency Error / 99% Bandwidth	$\pm 1.75 \times 10^{-6}$	Confidence levels of 95%
Antenna Power	± 0.849 dB	Confidence levels of 95%
TX-RX Spurious Emissions	± 0.614 dB	Confidence levels of 95%
Transmission Antenna Gain	± 2.49 dB	Confidence levels of 95%
Temperature	$\pm 0.8^{\circ}\text{C}$	Confidence levels of 95%
Humidity	$\pm 4.1\%$	Confidence levels of 95%
DC / AC Power Source	$\pm 0.04\%$	Confidence levels of 95%

1.7. Accreditation Certificate

☒ CCIC-SET Lab 1

Address: Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

ISED Registration: 11185A, CAB number: CN0064

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

☐ CCIC-SET Lab 4

Address: No.125, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province, China

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

2. Transmitter Results

2.1. Frequency Error Measurement

2.1.1. Limits

Item	Limits
Frequency Tolerance	$\leq \pm 50$ ppm

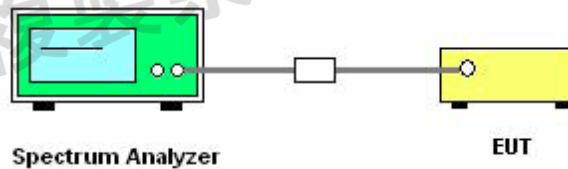
2.1.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.1.3. Test Procedures

- 1 Frequency accuracy of SA shall be less than 10% of limits tolerance (5 ppm).
- 2 Setting of SA is following as: RBW: 10 kHz / VBW: 10 kHz / Span: 1 MHz.
- 3 Center Frequency: The center frequency of testing for EUT.
- 4 Sweep time: Auto.
- 5 Sweep mode: Continuous sweep.
- 6 Detect mode: Positive peak.
- 7 Trace mode: Max hold.
- 8 EUT have transmitted absence of modulation signal and fixed channelize. f is using the mark cursor to mark the peak frequency value, f_c is declaring of channel frequency. Then the frequency error formula is $(f-f_c)/f_c \times 10^6$ ppm and the limit is less than ± 50 ppm.

2.1.4. Test Setup Layout



2.1.5. Test Setup Deviation

There is no deviation with the original standard.

2.1.6. Test Setup Deviation

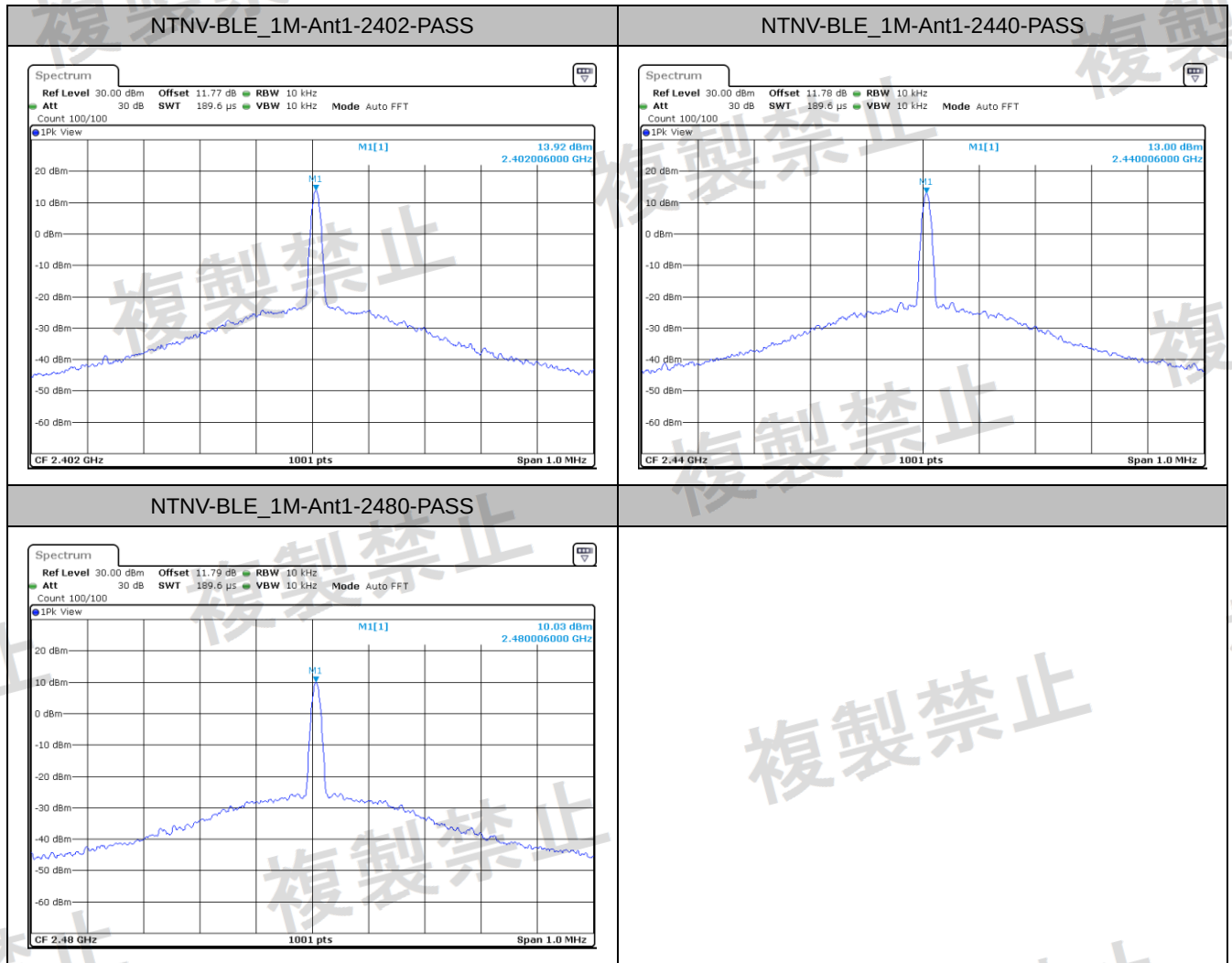
The EUT was placed on the test table and programmed in un-modulation function.

**2.1.7. Test Results of Frequency Error**

Test Mode	Antenna	Freq[MHz]	Center Freq[MHz]	Result[ppm]	Limit[ppm]	Verdict
BLE_1M	Ant1	2402	2402.006	2.49792	±50	PASS
BLE_1M	Ant1	2440	2440.006	2.45902	±50	PASS
BLE_1M	Ant1	2480	2480.006	2.41936	±50	PASS



Test Graphs



2.2. Occupied Bandwidth

2.2.1. Limits

Item	Limits
Occupied Bandwidth	≤ 26 MHz

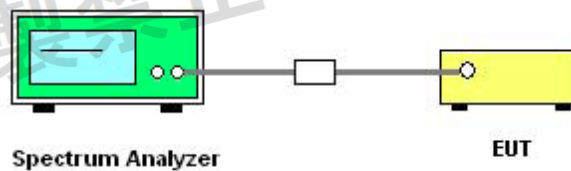
2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Procedures

- Setting of SA is following as: RBW: 300 kHz / VBW: 300 kHz / Span: 3 MHz / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
- EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26 MHz (For DSSS or OFDM Device) or 83.5 MHz (For FHSS Device).

2.2.4. Test Setup Layout



2.2.5. Test Deviation

There is no deviation with the original standard.

2.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

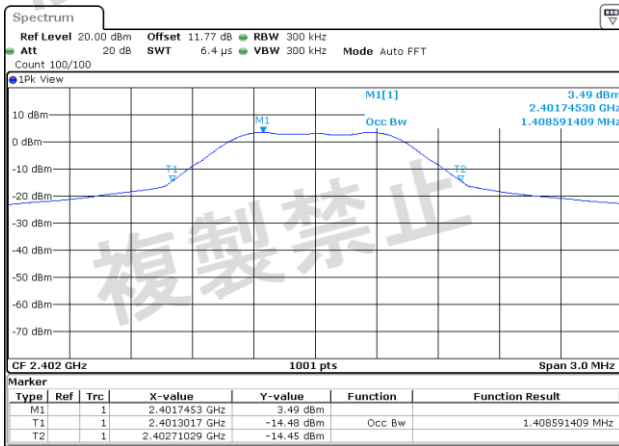
**2.2.7. Test Result of Occupied Bandwidth**

Test Mode	Antenna	Freq[MHz]	Result[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.409	≤26	PASS
BLE_1M	Ant1	2440	1.427	≤26	PASS
BLE_1M	Ant1	2480	1.409	≤26	PASS

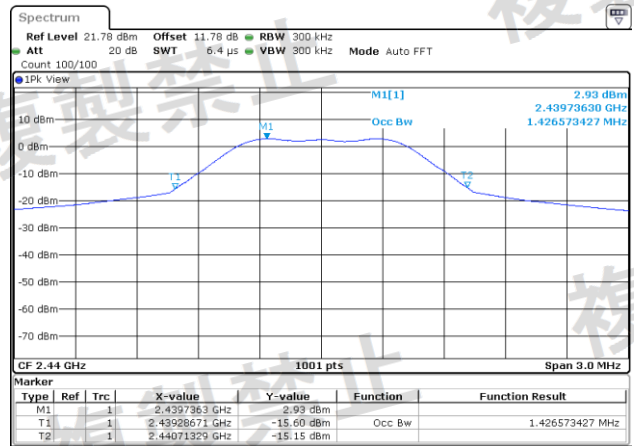


Test Graphs

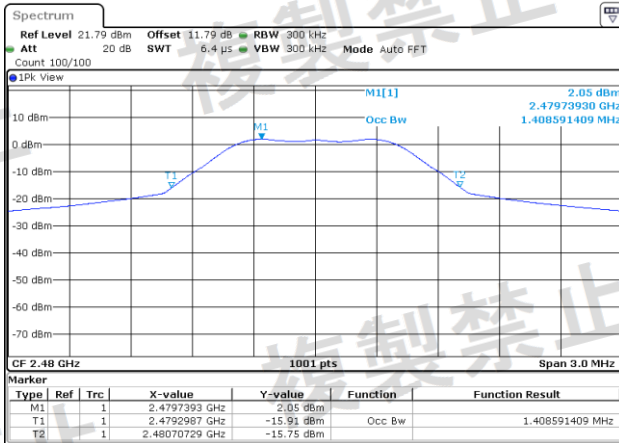
NTNV-BLE_1M-Ant1-2402-PASS



NTNV-BLE_1M-Ant1-2440-PASS



NTNV-BLE_1M-Ant1-2480-PASS



2.3. Antenna Power and deviation Measurement

2.3.1. Limits

Item	Limits
Antenna Power	$\leq 10 \text{ mW}$
Antenna Power deviation	+20%

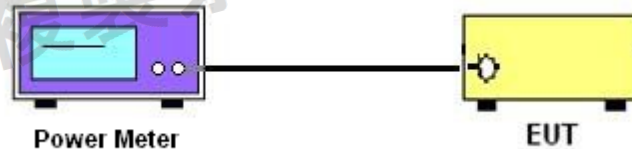
2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Procedure

- 1 Connect the EUT's RF output port to the power meter input port to measure the total power.
- 2 Calculated the Maximum deviation and recorded the results.
Deviation = (Antenna Power - Rated Output Power) / Rated Output Power * 100%.

2.3.4. Test Setup



2.3.5. Test Deviation

There is no deviation with the original standard.

2.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



2.3.7. Test Result of Antenna Power and deviation

Antenna Power:

Test Mode	Antenna	Freq[MHz]	Power[dBm]	Power[mW]	Limit[mW]	Verdict
BLE_1M	Ant1	2402	1.63	2.1219	≤10	PASS
BLE_1M	Ant1	2440	1.64	2.1484	≤10	PASS
BLE_1M	Ant1	2480	1.47	1.6732	≤10	PASS

Antenna Power Deviation:

Test Mode	Antenna	Freq[MHz]	Power[mW]	Rated Power[mW]	Result[%]	Limit[%]	Verdict
BLE_1M	Ant1	2402	2.1219	3.0	-29.27	+20	PASS
BLE_1M	Ant1	2440	2.1484	3.0	-28.39	+20	PASS
BLE_1M	Ant1	2480	1.6732	3.0	-44.23	+20	PASS

Note: The Rated Power is 3.0 mW, which declared by manufacturer.

2.4. Unwanted Emission Intensity Measurement

2.4.1. Limits

Item	Limits
Unwanted Emission Intensity	$\leq 2.5 \mu\text{W}$ ($f < 2387 \text{ MHz}$; $f > 2496.5 \text{ MHz}$) $\leq 25 \mu\text{W}$ ($2387 \text{ MHz} \leq f < 2400 \text{ MHz}$) and ($2483.5 \text{ MHz} < f \leq 2496.5 \text{ MHz}$)

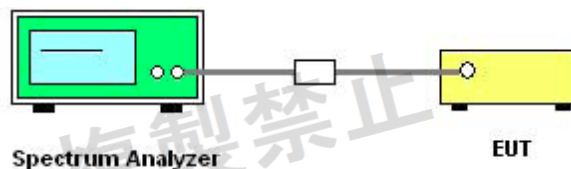
2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.4.3. Test Procedures

- 1 EUT have transmitted the maximum modulation signal and fixed channelize.
- 2 Setting of SA is following as: RBW:1 MHz / VBW:1 MHz/ Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
- 3 Setting of SA is following as 30 MHz and stop frequency 1000 MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
- 4 Setting of SA is following as 1000 MHz and stop frequency 2387 MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
- 5 SA adjusted to start frequency 2387 MHz and stop frequency 2400 MHz. Then to mark peak reading value + cable loss shall be less than 25 μW .
- 6 SA adjusted to start frequency 2483.5 MHz and stop frequency 2496.5 MHz Then to mark peak reading value + cable loss shall be less than 25 μW .
- 7 SA adjusted to start frequency 2496.5 MHz and stop frequency 12500 MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
- 8 If the Result Value is over the requirement, take total sum of 1 MHz band centered at the spur frequency like ACLP measurement as Result Value.

2.4.4. Test Setup Layout



2.4.5. Test Deviation

There is no deviation with the original standard.

2.4.6. EUT Operation during Test

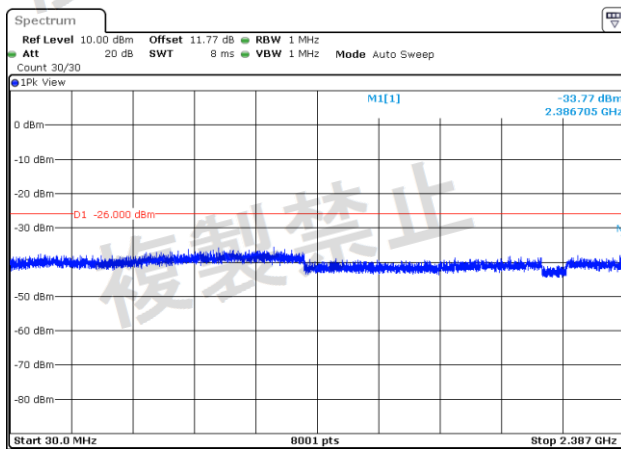
The EUT was programmed to be in continuously transmitting mode.

2.4.7. Test Result of Unwanted Emission Intensity

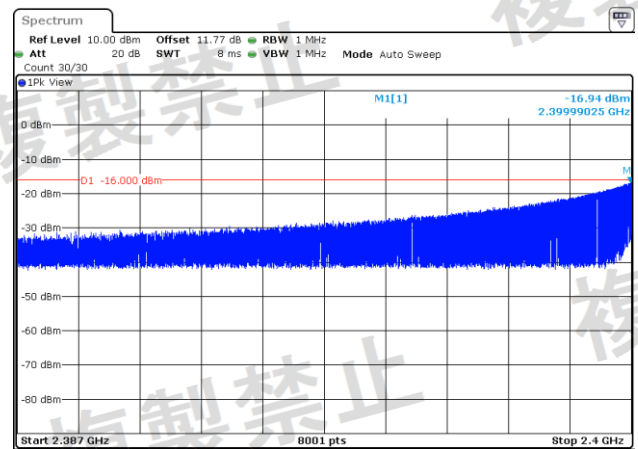
Test Mode	Antenna	Freq. [MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
BLE_1M	Ant1	2402	30~2387	2386.71	-33.77	0.41976	≤2.5	PASS
BLE_1M	Ant1	2402	2387~2400	2399.99	-16.94	20.23019	≤25	PASS
BLE_1M	Ant1	2402	2483.5~2496.5	2494.70	-37.28	0.18707	≤25	PASS
BLE_1M	Ant1	2402	2496.5~13000	6920.27	-33.15	0.48417	≤2.5	PASS
BLE_1M	Ant1	2440	30~2387	957.48	-35.27	0.29717	≤2.5	PASS
BLE_1M	Ant1	2440	2387~2400	2392.84	-36.59	0.21928	≤25	PASS
BLE_1M	Ant1	2440	2483.5~2496.5	2488.60	-36.89	0.20464	≤25	PASS
BLE_1M	Ant1	2440	2496.5~13000	6962.81	-33.52	0.44463	≤2.5	PASS
BLE_1M	Ant1	2480	30~2387	1046.16	-36.12	0.24434	≤2.5	PASS
BLE_1M	Ant1	2480	2387~2400	2392.90	-37.49	0.17824	≤25	PASS
BLE_1M	Ant1	2480	2483.5~2496.5	2483.54	-29.52	1.11686	≤25	PASS
BLE_1M	Ant1	2480	2496.5~13000	5889.30	-33.85	0.41210	≤2.5	PASS

Test Graphs

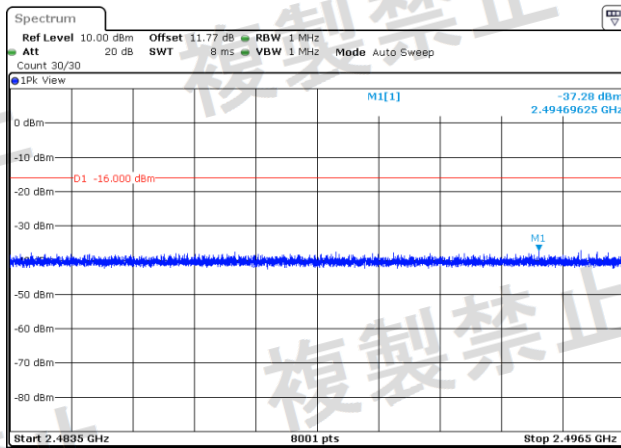
NTNV-BLE_1M-Ant1-2402-30~2387-PASS



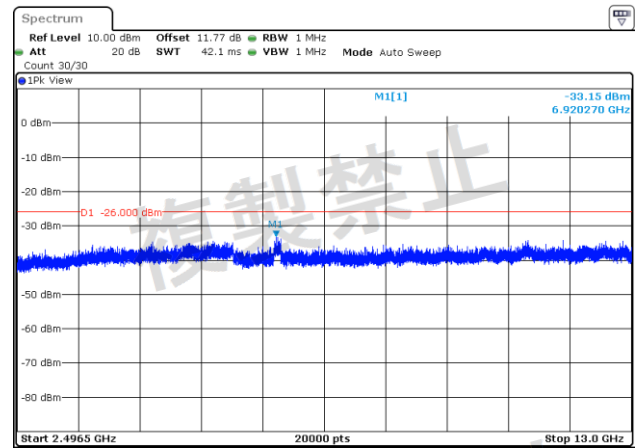
NTNV-BLE_1M-Ant1-2402-2387~2400-PASS



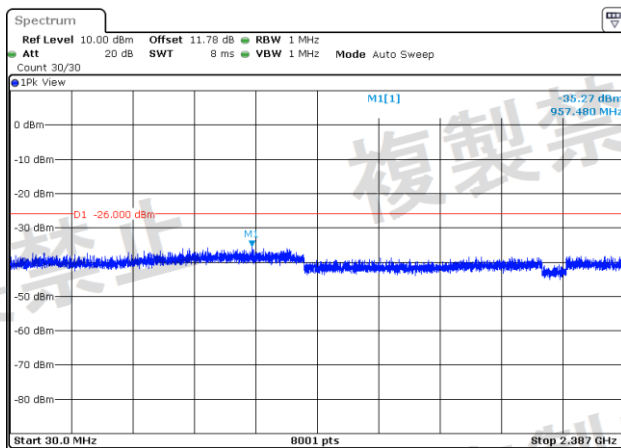
NTNV-BLE_1M-Ant1-2402-2483.5~2496.5-PASS



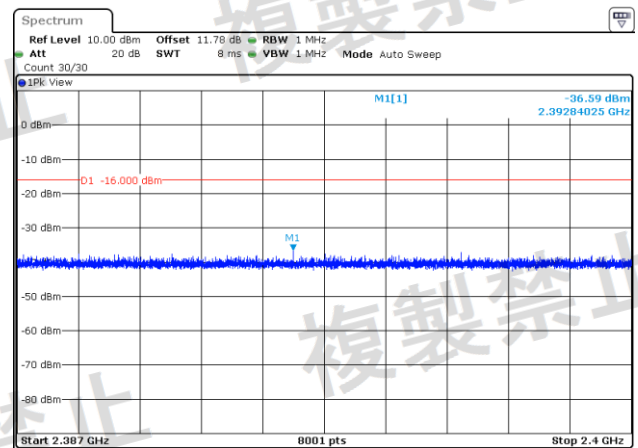
NTNV-BLE_1M-Ant1-2402-2496.5~13000-PASS



NTNV-BLE_1M-Ant1-2440-30~2387-PASS

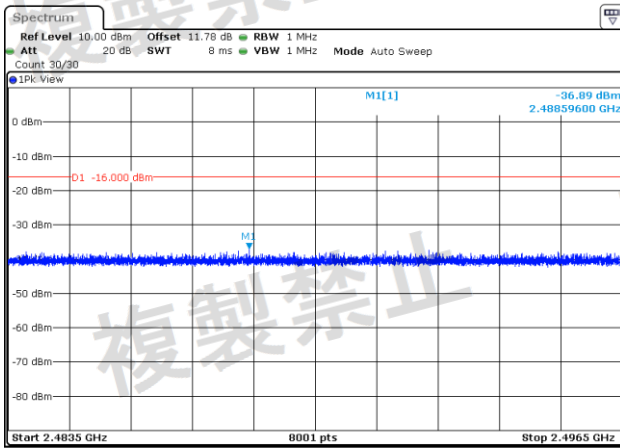


NTNV-BLE_1M-Ant1-2440-2387~2400-PASS

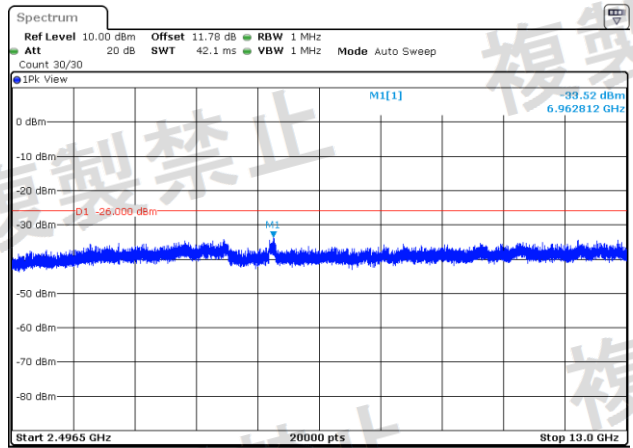




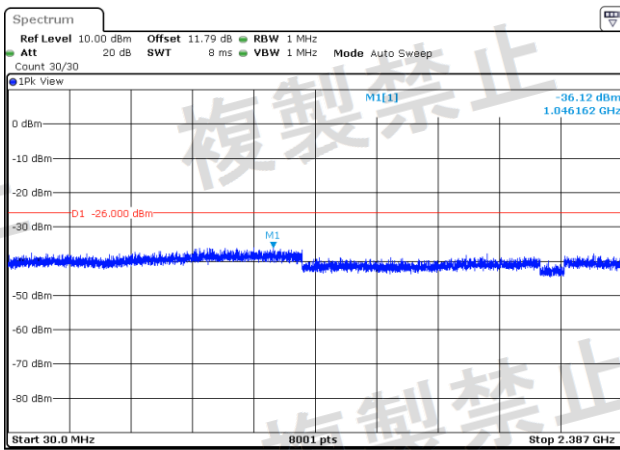
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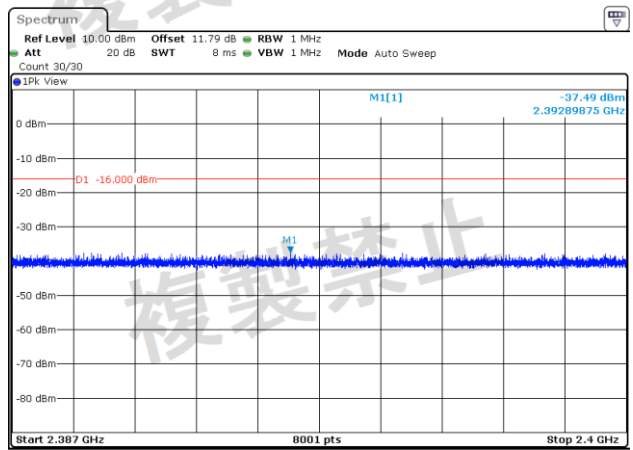
NTNV-BLE_1M-Ant1-2440-2496.5~13000-PASS



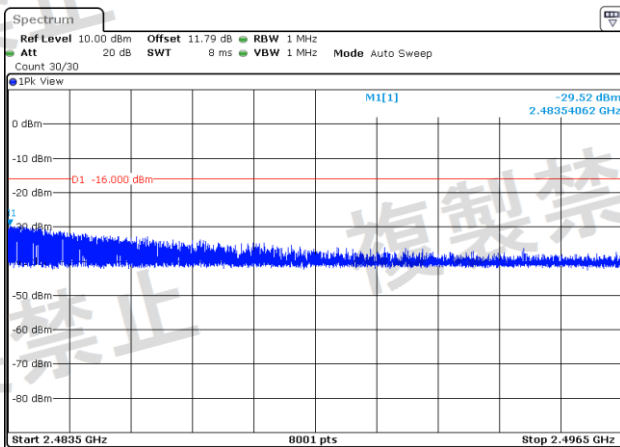
NTNV-BLE_1M-Ant1-2480-30~2387-PASS



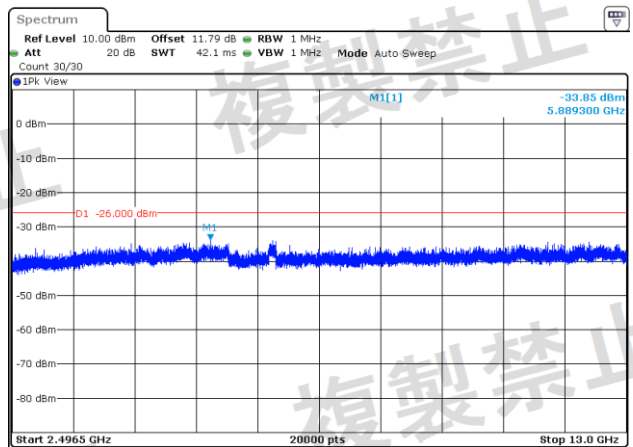
NTNV-BLE_1M-Ant1-2480-2387~2400-PASS



NTNV-BLE_1M-Ant1-2480-2483.5~2496.5-PASS



NTNV-BLE_1M-Ant1-2480-2496.5~13000-PASS



2.5. Secondary Radiated Emissions of Receiver Measurement

2.5.1. Limits

Item	Limits
RX Spurious Emission	$\leq 4 \text{ nW}$ ($f < 1 \text{ GHz}$); $\leq 20 \text{ nW}$ ($1 \text{ GHz} \leq f < 10 \text{ GHz}$); $\leq 20 \text{ nW}$ ($f > 10 \text{ GHz}$)

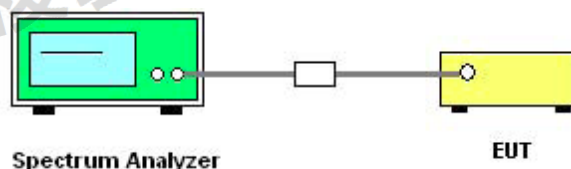
2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.5.3. Test Procedures

- 1 EUT has the continuous reception mode and fixed only one channelize.
- 2 Setting of SA is following as RBW / VBW: 100 kHz (below 1 GHz emissions) / 1 MHz (above 1 GHz emissions) / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
- 3 SA set RBW: 100 kHz and VBW: 100 kHz. Then adjust to start frequency 30 MHz and stop frequency 1000 MHz. Search to mark peak reading value + cable loss shall be less than 4 nW.
- 4 SA set RBW: 1 MHz and VBW: 1 MHz. Then adjust to start frequency 1000 MHz and stop frequency 10000 MHz. Search to mark peak reading value + cable loss shall be less than 20 nW.
- 5 SA set RBW: 1 MHz and VBW: 1 MHz. Then adjust to start frequency 10000 MHz and stop frequency 12500 MHz. Search to mark peak reading value + cable loss shall be less than 20 nW.
- 6 If power level of lower emissions are more than 1/10 of limit (0.4 nW for $f < 1 \text{ GHz}$, 2 nW for $f \geq 1 \text{ GHz}$), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.

2.5.4. Test Setup Layout



2.5.5. Test Deviation

There is no deviation with the original standard.

2.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.5.7. Test Result of Secondary Radiated Rmissions of Receiver

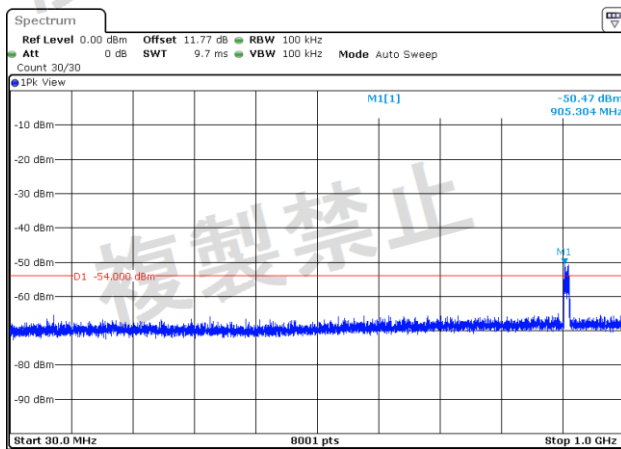
Test Mode	Antenna	Freq. [MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
BLE_1M	Ant1	2402	30~1000	905.3	-50.47	8.97429	≤4	See table below
BLE_1M	Ant1	2402	1000~13000	6980.5	-53.51	4.45656	≤20	See table below
BLE_1M	Ant1	2440	30~1000	905.55	-41.34	73.45139	≤4	See table below
BLE_1M	Ant1	2440	1000~13000	12246.96	-53.52	4.44631	≤20	See table below
BLE_1M	Ant1	2480	30~1000	912.34	-44.29	37.23917	≤4	See table below
BLE_1M	Ant1	2480	1000~13000	11256.91	-53.91	4.06443	≤20	See table below

Step2:

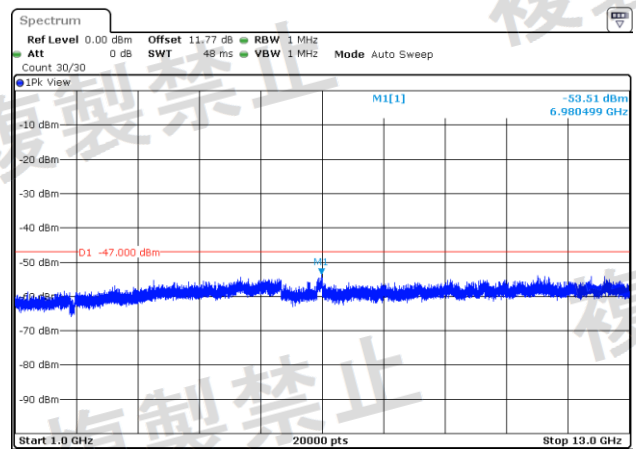
Test Mode	Antenna	Freq. [MHz]	Freq. [MHz]	Result [dBm]	Result [μW]	Limit [μW]	Verdict
BLE_1M	Ant1	2402	907.05	-61.11	0.77446	≤4	PASS
BLE_1M	Ant1	2402	6991.84	-63.62	0.43451	≤20	PASS
BLE_1M	Ant1	2440	905.95	-60.97	0.79983	≤4	PASS
BLE_1M	Ant1	2440	12198.18	-64.42	0.36141	≤20	PASS
BLE_1M	Ant1	2480	960.37	-76.21	0.02393	≤4	PASS
BLE_1M	Ant1	2480	11237.24	-64.75	0.33497	≤20	PASS

Test Graphs

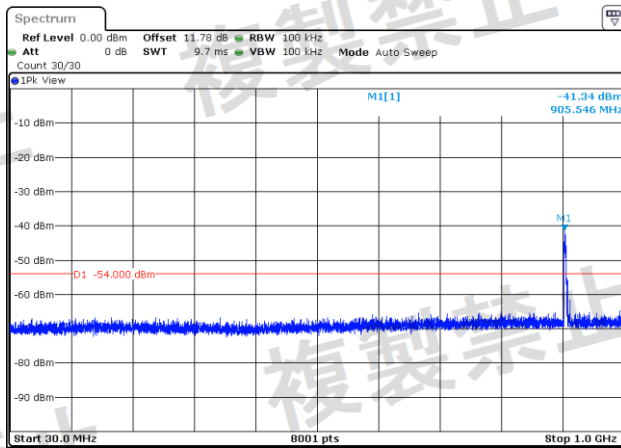
NTNV-BLE_1M-Ant1-2402-30~1000-See table below



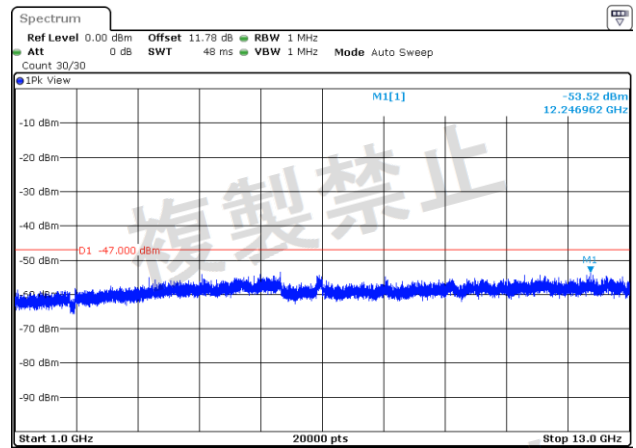
NTNV-BLE_1M-Ant1-2402-1000~13000-See table below



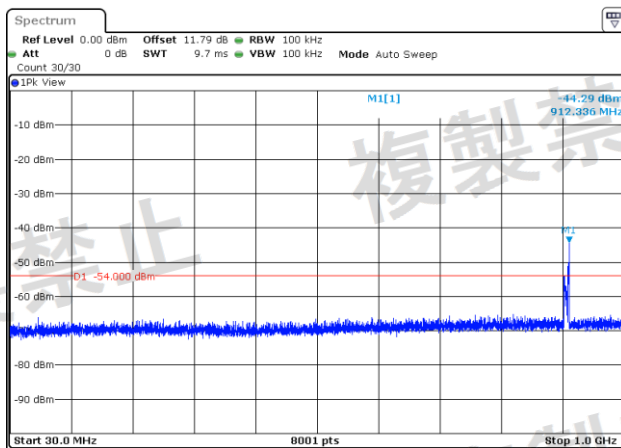
NTNV-BLE_1M-Ant1-2440-30~1000-See table below



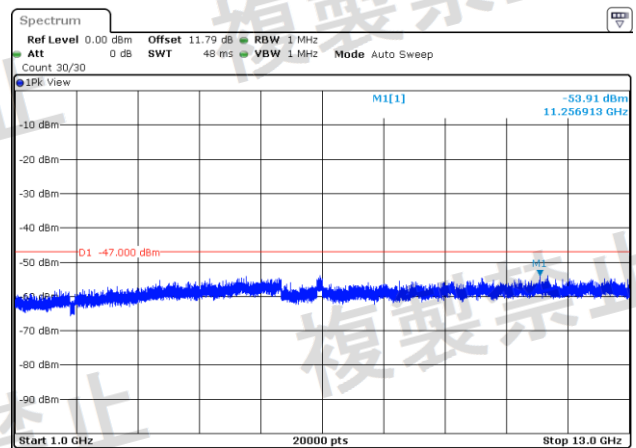
NTNV-BLE_1M-Ant1-2440-1000~13000-See table below



NTNV-BLE_1M-Ant1-2480-30~1000-See table below

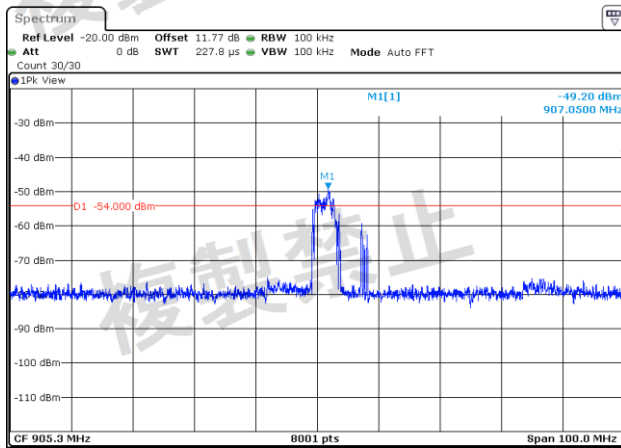


NTNV-BLE_1M-Ant1-2480-1000~13000-See table below

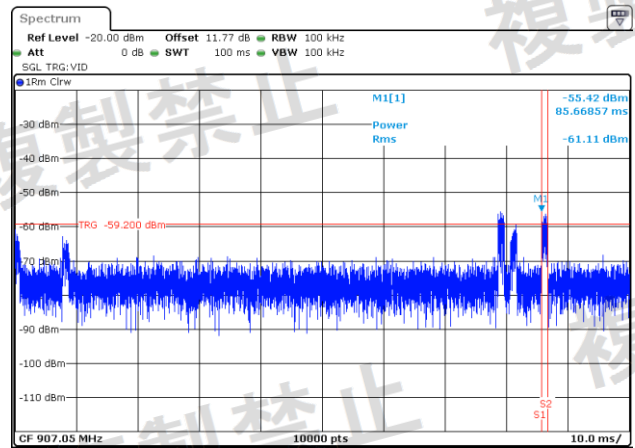


Step2:

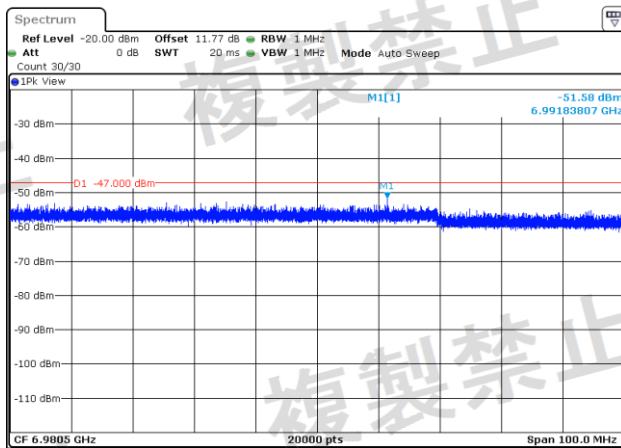
NTNV-BLE_1M-Ant1-2402-30~1000-PASS



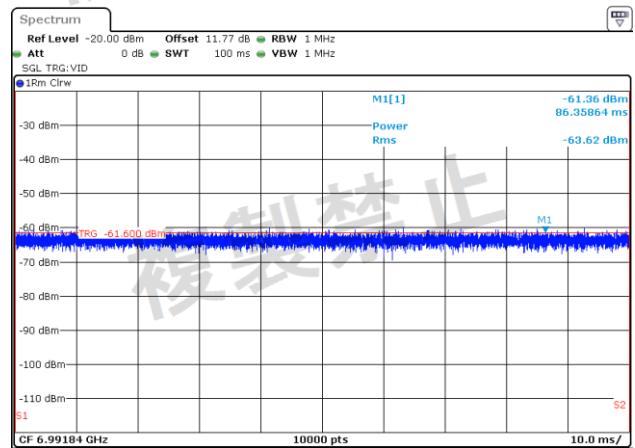
NTNV-BLE_1M-Ant1-2402-30~1000-PASS



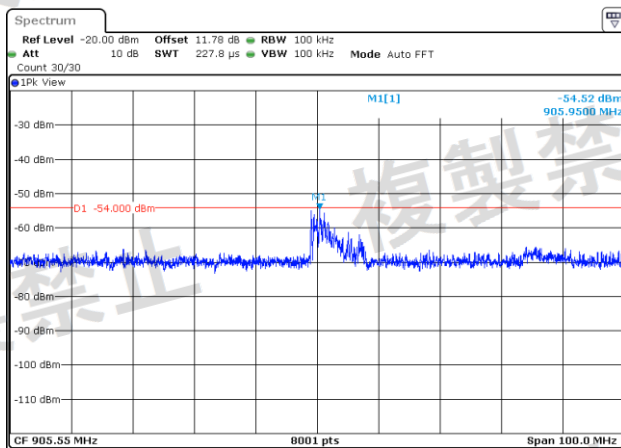
NTNV-BLE_1M-Ant1-2402-1000~13000-PASS



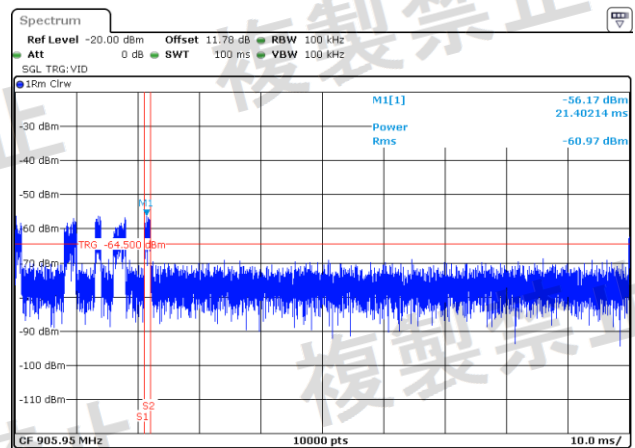
NTNV-BLE_1M-Ant1-2402-1000~13000-PASS

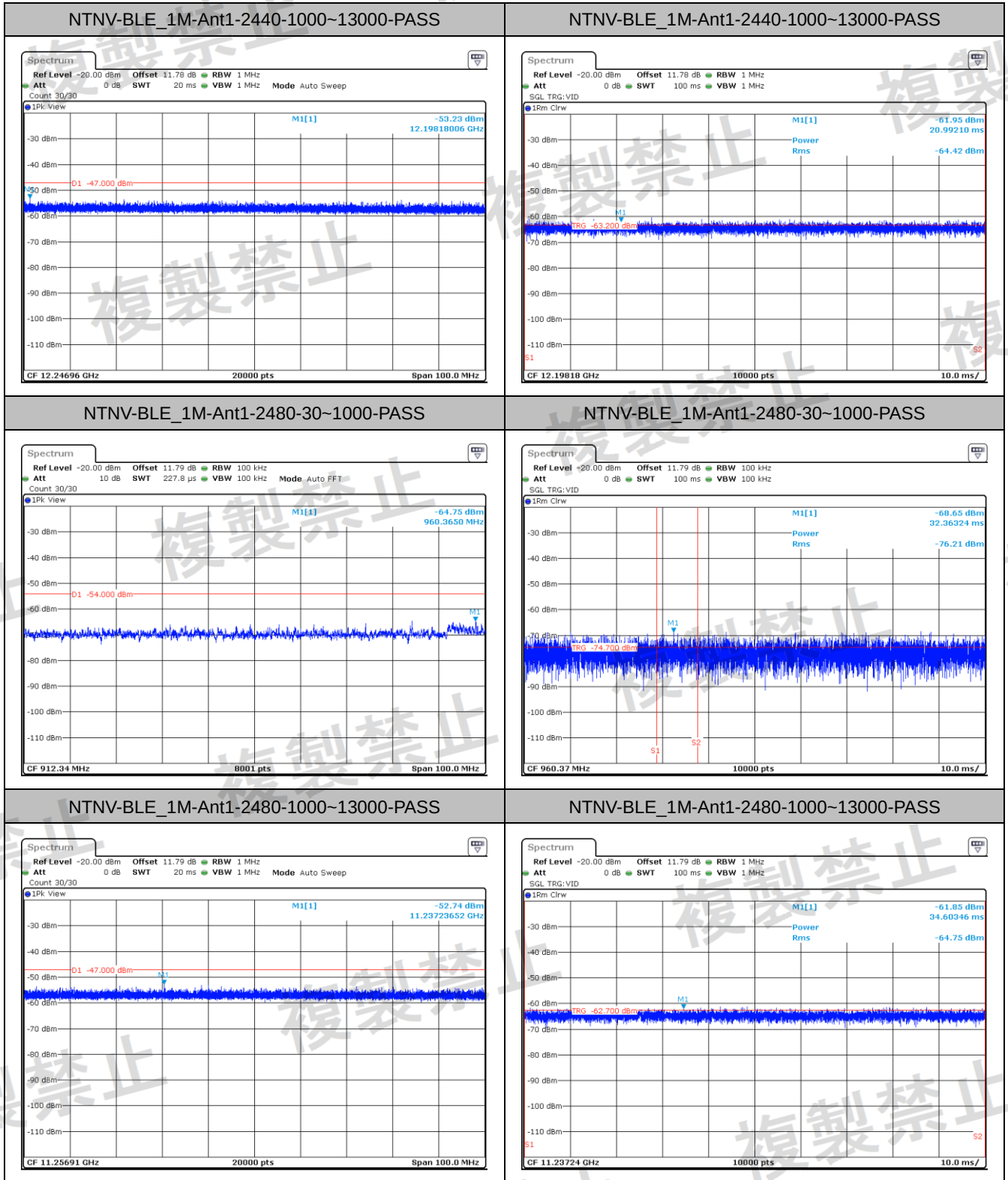


NTNV-BLE_1M-Ant1-2440-30~1000-PASS



NTNV-BLE_1M-Ant1-2440-30~1000-PASS





2.6. Transmitting antenna absolute gain Measurement

2.6.1. Limits

Item	Limits
Transmitting antenna absolute gain	Max. EIRP ≤ 12.14 dBm/MHz (Other from 2400 MHz~2483.5 MHz)

2.6.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

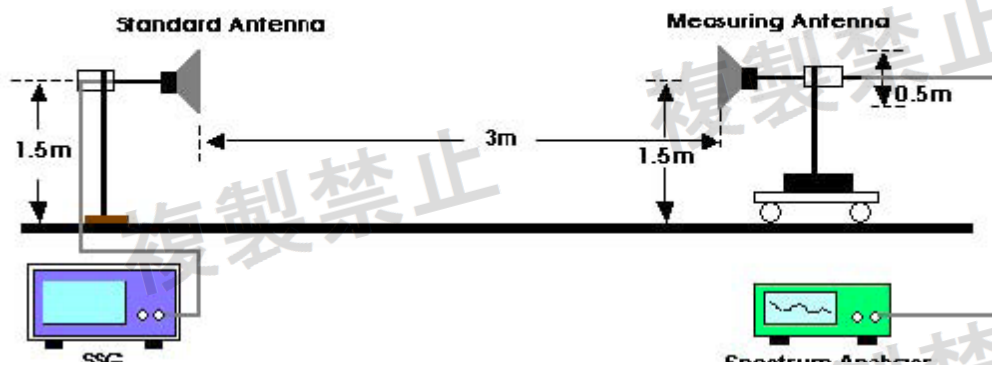
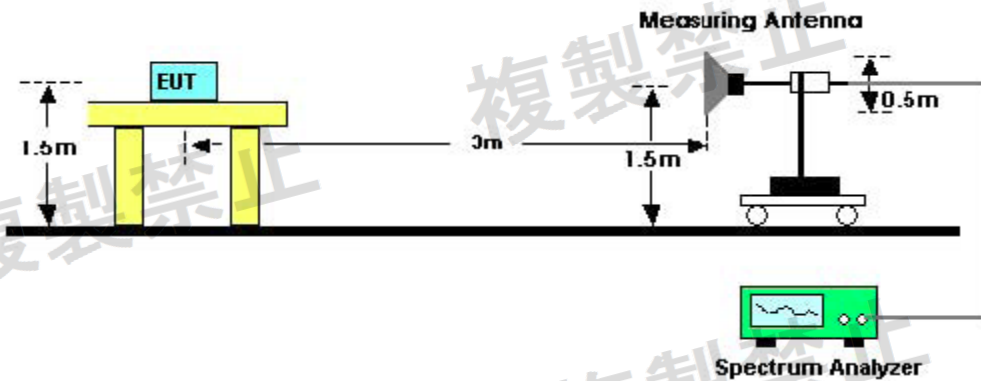
2.6.3. Test Procedures

The following are the settings for the spectrum analyzer:

Spectrum Parameter	Setting
RBW/VBW	1 MHz / 1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
Frequency range	2400 MHz~2483.5 MHz

- 1 Set EUT ad measuring antenna at the same height and roughly facing each other.
- 2 Move the measuring antenna height up and down within ± 50 cm of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read sa “E”.
- 3 Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal.
- 4 Swing the replacing antenna give a maximum receiving level.
- 5 Move the measuring antenna height up and down within ± 50 cm of replacing antenna height and swing it to find the maximum receiving level.
- 6 Set SSG output power at Pt to give the equivalent output level of “E” or caluate Pt with SSG output which gives the nearest of “E” and difference (± 1 dB). Record the Pt.
- 7 Calculate EIRP by the formula below $EIRP = G_t - L + P_t$.
Gt: gain of replacing antenna (dBi)
L: feeder loss between SSG and replacing antenna
Pt: Output power of the SSG
- 8 If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

2.6.4. Test Setup Layout



2.6.5. Test Deviation

There is no deviation with the original standard.

2.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

**2.6.7. Test Results of Transmitting antenna absolute gain**

Test Mode	Antenna	Freq[MHz]	Power[dBm]	EIRP[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.63	-0.70	≤12.14	PASS
BLE_1M	Ant1	2440	1.64	-0.69	≤12.14	PASS
BLE_1M	Ant1	2480	1.47	-0.86	≤12.14	PASS

Note: The maximum EIRP less than 12.14 dBm/MHz, so the test not requirement.

2.7. Main lobe width of transmitting antenna Measurement

2.7.1. Limits

Item	Limits
Main lobe width of transmitting antenna	Main lobe width of transmitting antenna: $\leq 360^\circ / A$ $A = \text{E.I.R.P.} / (2.14 \text{ dBi} + \text{"Antenna Power (Limit)" of each modulation method (*3 mW/MHz, 10 mW/MHz, etc.)})$ $1 \leq A \leq 10$ (Shall be 1 when A is lower than 1.)
Note: It is unnecessary to testing, when a E.I.R.P. is less than the variable E.I.R.P. limit of minimum (DSSS: 12.14 dBm/MHz or less, FHSS (2427 - 2470.75 MHz): 6.91 dBm/MHz or less, etc.).	

2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.7.3. Test Procedure

The following are the settings for the spectrum analyzer:

Spectrum Parameter	Setting
RBW	1 MHz
VBW	1 kHz
Span	0 Hz
Detector	Peak
Trace	Max Hold

- 1 Set EUT and measuring antenna at the same height and roughly facing each other.
- 2 Set the parameters of the spectrum analyzer according to the table, tune reference level to observe receiving signal position.
- 3 Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
- 4 Move the measuring antenna height up and down within ± 50 cm of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E".
- 5 Using the equivalent isotropic radiation power (P_E) which was already measured, calculate the allowable main lobe width (Θ_0) concerning horizontal and vertical planes.

Allowable main lobe width (Θ_0) = $360/A$ here.

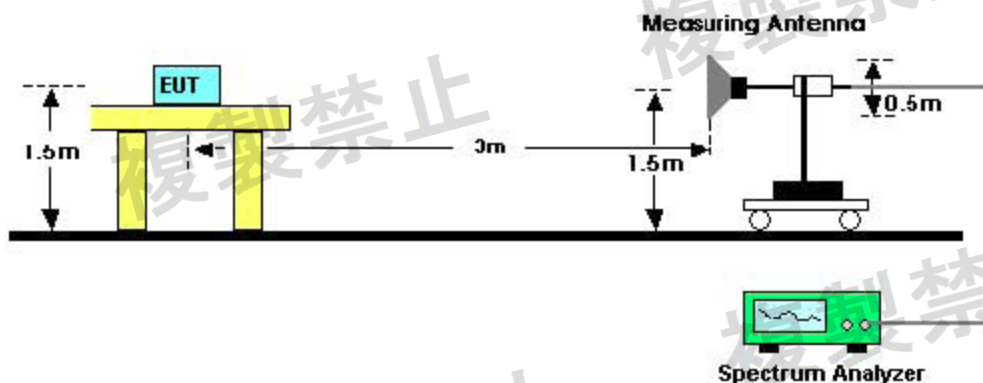
Θ_0 : Allowable main lobe width of the transmitting antenna of the radio equipment (half-width) ($^\circ$).

P_E : Equivalent isotropic radiation power of the radio equipment (dBm).

A : This is calculated as the equivalent isotropic radiation power divided by absolute gain 2.14 dBi of transmitting antenna being fed by average antenna power 10 mW (10 mW/MHz for the orthogonal frequency division multiplexing system, the direct diffusion system, the frequency hopping system, the compound system of direct diffusion and frequency hopping, and the compound system of orthogonal frequency division multiplexing and frequency hopping).

- 6 Rotating the radio equipment horizontally a round as possible, confirm that the receiving power at the side lobes except main lobe width (Θ_0) is lower than 3 dB or more of the maximum receiving power “E”.
- 7 Once put the radio equipment back to the state (3). Inclining the radio equipment vertically as far as possible (more than 90 degree; it may be possible to measure referring “6. Other conditions”), confirm that the receiving power at the side lobes except main lobe width (Θ_0) is lower than 3 dB or more of the maximum receiving power “E”.

2.7.4. Test Setup Layout



2.7.5. Test Deviation

There is no deviation with the original standard.

2.7.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.7.7. Test Results of Main lobe width of transmitting antenna

The EIRP of EUT is less than 12.14 dBm/MHz, so this test item is not applicable.

2.8. Radio Interference Prevention Capability Measurement

2.8.1. Limits

1. The demodulator shall be able to demodulate the transmitting signal from the radio equipment and to display contents of the identification code.
2. The opposite equipment shall be able to transmit the identification code as same as the transmitting signal from the radio equipment.

2.8.2. Measuring Instruments

N/A.

2.8.3. Test Procedure

- 1 In the case that the EUT has the function of automatically transmitting the identification code:
 - a. Transmit the predetermined identification codes form EUT.
 - b. Check the transmitted identification codes with the demodulator.
- 2 In the case of receiving the identification code:
 - a. Transmit the predetermined identification codes form the counterpart.
 - b. Check if communication is normal.
 - c. Transmit the signals other than predetermined ID codes form the counterpart.
 - d. check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

2.8.4. Test Setup Layout



2.8.5. Test Deviation

There is no deviation with the original standard.

2.8.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



2.8.7. Test Results of Radio Interference Prevention Capability

Please refer to below plot:

MT620-0AC3
D0:23:81:B3:0A:C3

Test Result : Good

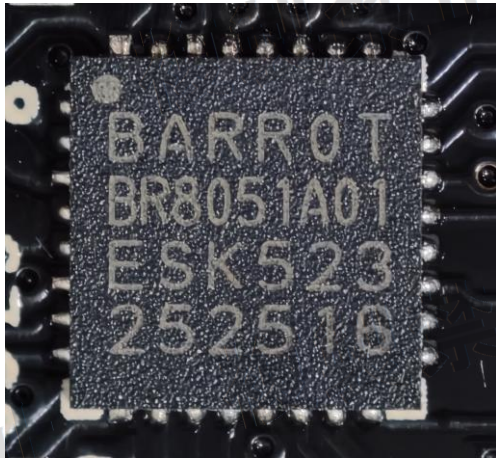
2.9. Construction Protection Confirmation Method

2.9.1. Limits

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

2.9.2. Confirmation Method

The RF and modulation portions are protected against illegal modification as following method:

Protected Method	Description
Special RF Module case	Package with chip pin distance of less than 1.5mm on RF module.
	

3. Test Equipments list

Description	Manufacturer	Model	Serial No.	Cal. Date	Due Date	Cal. Infor.	
						Method	Body
Spectrum Analyzer	R&S	FSV-40	A140801886	2025.07.16	2026.07.15	C	GRG
Automatic Control Unit	Tonscend	JS0806-2	A240604416	2024.12.05	2025.12.04	C	GRG
Power Meter	R&S	NRP2	A140401673	2025.06.03	2026.06.02	C	GRG
EMI Test Receiver	R&S	ESW26	A180502935	2025.04.24	2026.04.23	C	GRG
Double Ridge Horn Antenna	ETC	MCTD-1209	A150402241	2023.05.16	2026.05.15	C	GRG
Anechoic Chamber	Albatross	SAC-5MAC(EM C12.8*6.8*6.4m)	A0304210	2023.08.01	2026.07.31	C	GRG

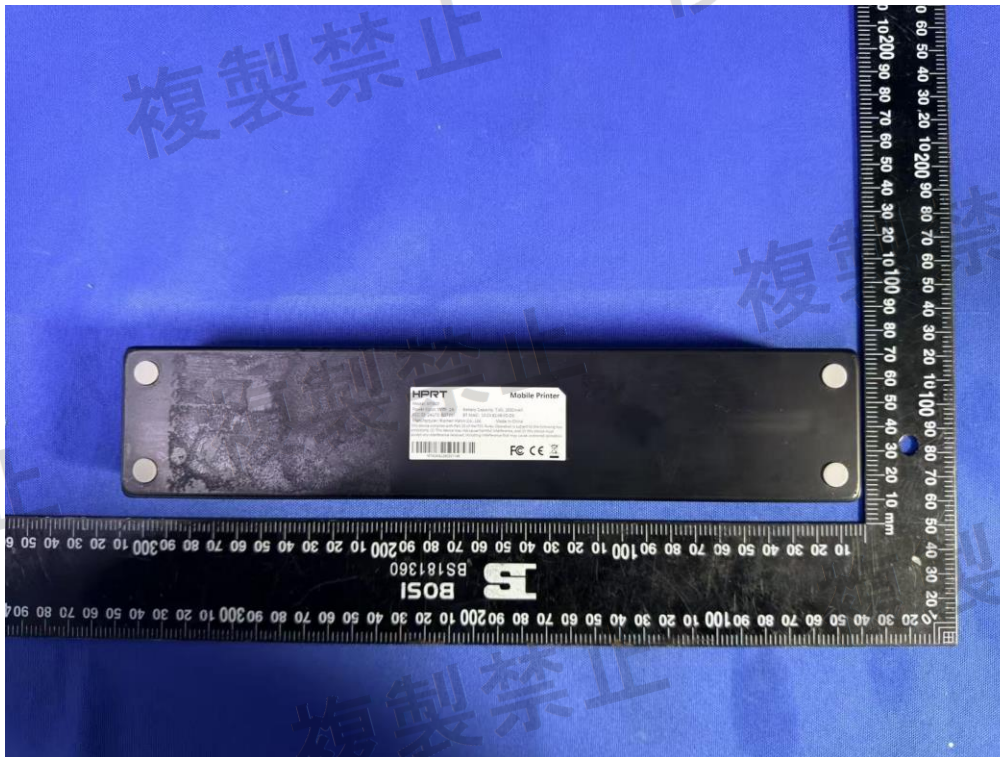
Note:

Calibration Method:

- Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18 paragraph (1)
- Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act(Act No. 51 of 1992)
- Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph
- (d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (c).

The calibration corresponds to c described above.

GRG is the short name of Guang Zhou GRG Metrology & Test Co.,Ltd

Annex A Photos of the EUT

Annex B Photos of Test Setup



****END OF REPORT****