Report No.: ET-26052132E01

# MIC TEST REPORT

| | |
|---|---|
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| Address of Applicant: | Room 2209, AGI Cloud Tower, Unit 1, Heping Times Square, Heping Road, Qinghua Community, Longhua Subdistrict, Longhua District, Shenzhen City China |
| Manufacturer: | Hubei Yingzhong Information Technology Co., Ltd. |
| Address of Manufacturer: | 88 Chongli Road, High-tech Development Zone, Xiaogan City, Hubei Province |
| Factory: | Hubei Yingzhong Information Technology Co., Ltd. |
| Address of Factory: | 88 Chongli Road, High-tech Development Zone, Xiaogan City, Hubei Province |
| Product Name: | MINI PC |
| Model No.: | AT100,AT101,AT102,AT103,AT104,AT105,AT106,AT107,AT108, AT109,AT110,AT111,AT112,AT113,AT114,AT115 |
| Trade Mark: | N/A |
| Applicable standards: | MIC notification No. 88 of 2004, annex 43<br>Article 2, Paragraph 1, Item 19 |
| Date of Test: | May.19, 2026-May.28, 2026 |
| Date of report issued: | May.29, 2026 |

Remark:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## Prepared By

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|---|---|---|
| Project Engineer | Project Manager | Authorized Signature |

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| Report Revision History | | |
|---|---|---|
| Report No. | Description | Issue Date |
| ET-26052132E01 | Original | May.29, 2026 |
| | | |
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# 1 Test Summary

| Item | Description of Test | Result | Test by |
|---|---|---|---|
| 1 | Frequency Tolerance | Pass | Yvan Fan |
| 2 | Antenna Power | Pass | Yvan Fan |
| 3 | Tolerances for Antenna Power | Pass | Yvan Fan |
| 4 | Occupied Bandwidth | Pass | Yvan Fan |
| 5 | Unwanted Emission Strength | Pass | Yvan Fan |
| 6 | E.I.R.P | Pass | Yvan Fan |
| 7 | Secondary Radiated Emission Strength | Pass | Yvan Fan |
| 8 | Carrier sensing function(1) | N/A,note2 | / |
| 9 | Carrier sensing function(2) | N/A,note3 | / |
| 10 | Antenna Absolute Gain | Pass | Yvan Fan |
| 11 | Half power beam angle | N/A,note1 | / |
| 12 | Interference Prevention Function | Pass | Yvan Fan |

note1: Not Applicable.
Note 2: Application to transmitting devices which E.I.R.P. is less than [2.14dBi+antenna power limit] and the shortage of E.I.R.P. is compensated by the antenna power.
Note 3: Application to transmitting devices with OFDM modulation and the occupied bandwidth greater than 26MHz.

*Pass: The EUT complies with the essential requirements in the standard.*

*Note: Compliance determination rules*

*1).The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacturer. If measurement uncertainty is taken into account, the applicant/manufacturer will bear all possible risks of non-compliance.*

*2).The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"*

**Measurement Uncertainty**

| Test Item | Measurement Uncertainty | Notes |
|---|---|---|
| Bandwidth | ±0.72% | (1) |
| Antenna Power | ±0.67dB | (1) |
| Frequency Tolerance | ±6x10-7 | (1) |
| Conducted spurious emission | ±0.64dB | (1) |
| Spurious emissions,radiated((>1G) | ±4.16dB | (1) |
| Spurious emissions,radiated(<1G) | ±4.88dB | (1) |

*Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.*

# 2 General Information

## 2.1 General Description of EUT

| | |
|---|---|
| Product Name: | MINI PC |
| Model No.: | AT100,AT101,AT102,AT103,AT104,AT105,AT106,AT107,AT108,AT109,AT110,AT111,AT112,AT113,AT114,AT115 |
| Difference of Model: | All models have the same electrical design (i.e. circuit design, PCB layout, RF module/circuit, antenna type and position, components on PCB, etc.), mechanical structure and design are the same, only the model name and color are different |
| Test model No.: | AT100 |
| Hardware version: | N/A |
| Software version: | N/A |
| Sample(s) Status | Engineer sample |
| Frequency range: | 2402MHz-2480MHz |
| Modulation technology: | GFSK |
| Antenna Type: | FPC antenna |
| Antenna gain: | 4.58dBi (Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.) |
| Battery: | N/A |
| Power supply: | DC 19V 3.42A |
| Adapter: | Model: GM61-190342-1C, GM61-190342-6C<br>INPUT:AC 100-240V 50/60Hz 1.5A<br>Output: DC 19.0V 3.42A 64.98W |

*Remark: For more details, refer to the user's manual of the EUT.*

## 2.2 Operation Channel List

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---|---|---|---|---|---|
| 0 | 2402MHz | 10 | 2422MHz | 20 | 2442MHz |
| 1 | 2404MHz | 11 | 2424MHz | 21 | 2444MHz |
| --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- |
| 8 | 2418MHz | 18 | 2438MHz | 38 | 2478MHz |
| 9 | 2420MHz | 19 | 2440MHz | 39 | 2480MHz |

## 2.3 Test Frequency Channel

| | |
|---|---|
| Low | 2402MHz |
| Middle | 2440MHz |
| High | 2480MHz |

## 2.4 Test mode

| | |
|---|---|
| Transmitting mode | Keep the EUT in continuously TX/RX mode |
| *Remark: The test software was used to control EUT work in Continuous TX and RX mode, and select test channel, the test voltage was tuned from 90% to 110% of the nominal rated supply voltage.* | |

## 2.5 Description of Support Units

| No. | Description | Manufacturer | Model | Serial Number |
|---|---|---|---|---|
| 1 | / | / | / | / |
| 2 | / | / | / | / |
| 3 | / | / | / | / |

## 2.6 Environmental conditions

| | |
|---|---|
| Temperature range: | 23.7℃ |
| Humidity range: | 47% |
| Pressure range: | 101.6kPa |

## 2.7 Test voltage

| Voltage Fluctuation test | Normal Voltage | +10% of Normal Voltage | -10% of Normal Voltage |
|---|---|---|---|
| DC Power | 19V | 20.9V | 17.1V |
| RF Chip | 3.3V | 3.3V | 3.3V |

Note:

Voltage Variation (%) = (Output high or Low Voltage - Output Normal Voltage)/ Output Normal Voltage* 100

During the input supply voltage to the EUT from the power source is varied by +/- 10%, fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%, so only operated in normal voltage to test all regulations.

## 2.8 Test Facility

| | |
|---|---|
| Test laboratory: | Shenzhen ETR Standard Technology Co., Ltd. |
| CNAS Registration No.: | L11864 |
| Laboratory location: | No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |

## 2.9 Additional Instructions

| | |
|---|---|
| Test Software | Manufacturer's special orders |
| Power level setup | Default |

# 3 Test Instruments list

| Item | Equipment name | Manufacturer | Model | Serial No. | Calibration date | Due date |
|---|---|---|---|---|---|---|
| 1 | Spectrum analyzer | KEYSIGHT | N9020A | MY55370280 | 2026.03.05 | 2027.3.04 |
| 2 | Power detector | MWRFtest | MW100-PSB | MW201020JYT | 2026.3.05 | 2027.3.04 |
| 3 | Signal generator | Agilent | N5182A | MY49060455 | 2026.3.05 | 2027.3.04 |
| 4 | Oscilloscope | Tektronix | TDS3032B | B03245 | 2026.03.05 | 2027.3.04 |
| 5 | DC Power Supply | LongWei | PS-305DF | 170804961 | 2026.3.05 | 2027.3.04 |
| 6 | Power Sensor | Keysight | U2021XA | MY54111006 | 2026.3.05 | 2027.3.04 |

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

2. Power detector includes built-in attenuator

3. Test Instruments Calibration Information

| Used | Calibration Company: Abbrevation | Full Name of-calibration company |
|---|---|---|
| ☒ | CCIC | CCIC(Shenzhen)Metrology & Testing service Co. Ltds |
| ☒ | SHITONG | GUANGDONG SHITONG MEASURED INSTRUMENTS SERVICE CO.,LTD. |
| Calibration Information (Article 24-2, Paragraph 4 ofthe Radio Act) | | |
| ☐ | (a) Calibration, conducted by the National institute of information and communication Technology (NICT)or a designated calibration agency under Article 102-18-1 of the Radio-Act | |
| ☐ | (b)Calibration conducted based on the regulations of Article 135 -or-144 of the Measurement Acte | |
| ☒ | (c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 -of-the Radio Acte | |
| ☐ | (d)Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a)through (c) above. | |

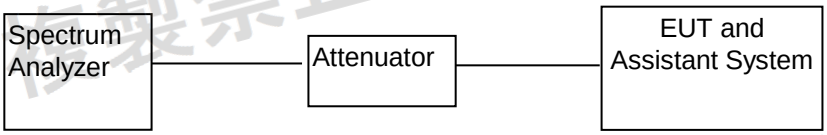
# 4 Test results and Measurement Data

## 4.1 Frequency Tolerance

### 4.1.1 Limit

+/- 50ppm.

### 4.1.2 Block diagram of test setup




### 4.1.3 Test Procedures

(1) Configure EUT and assistant system according clause 2.3 and 4.3

(2) Set EUT work in carrier Tx mode as described in clause 2.4

(3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the channel under test.

Resolution BW: 10 KHz.

Video BW: 10 KHz.

Span: 1MHz.

Detector: Peak.

Trace Mode: Max Hold.

(4)When the trace is complete, find the peak value of the power envelope and record the frequency.

(5) Calculate frequency tolerance.

Tolerance (MHz)= Measured Frequency (MHz)- Centre Frequency (MHz)

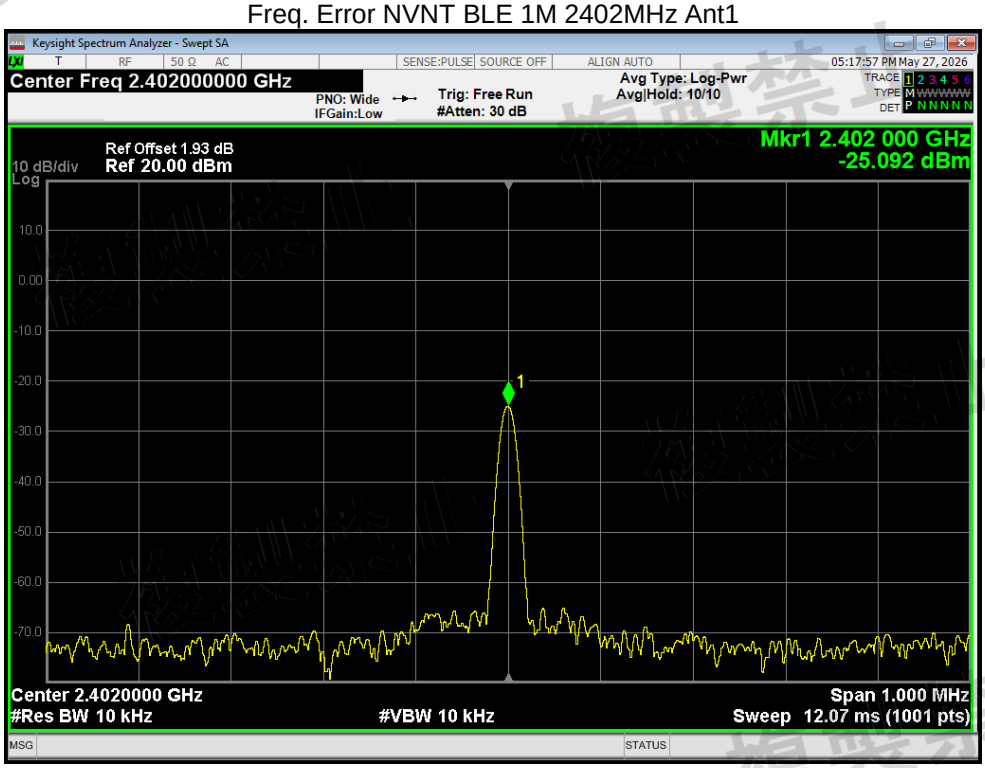
Frequency tolerance (ppm)= Tolerance (MHz)/ Centre Frequency (MHz) $\times 10^6$ (ppm)

### 4.1.4 Test Result

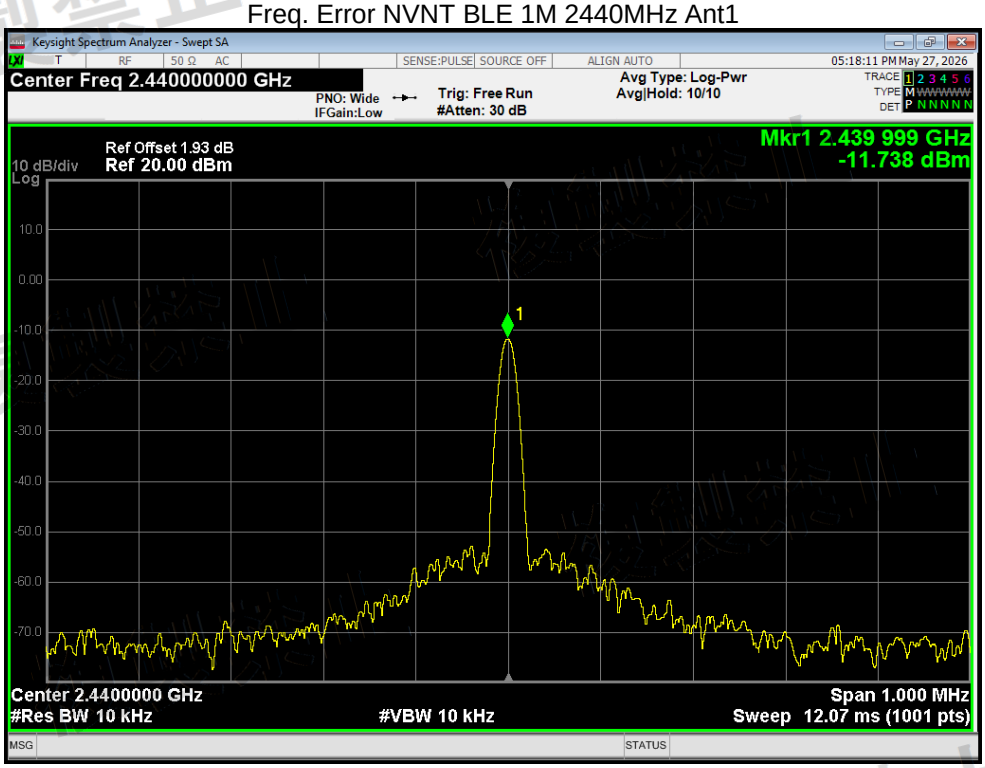
| Mode | CH | Measured | Tolerance | Result | Limit |
|---|---|---|---|---|---|
| | | MHz | MHz | ppm | ppm (+/-) |
| Carrier Tx Mode | CH0: 2402MHz | 2402 | 0 | 0 | 50 |
| | CH19:2440MHz | 2439.999 | -0.001 | -0.41 | 50 |
| | CH39:2480MHz | 2480 | 0 | 0 | 50 |
| Conclusion：PASS | | | | | |

Test plots:

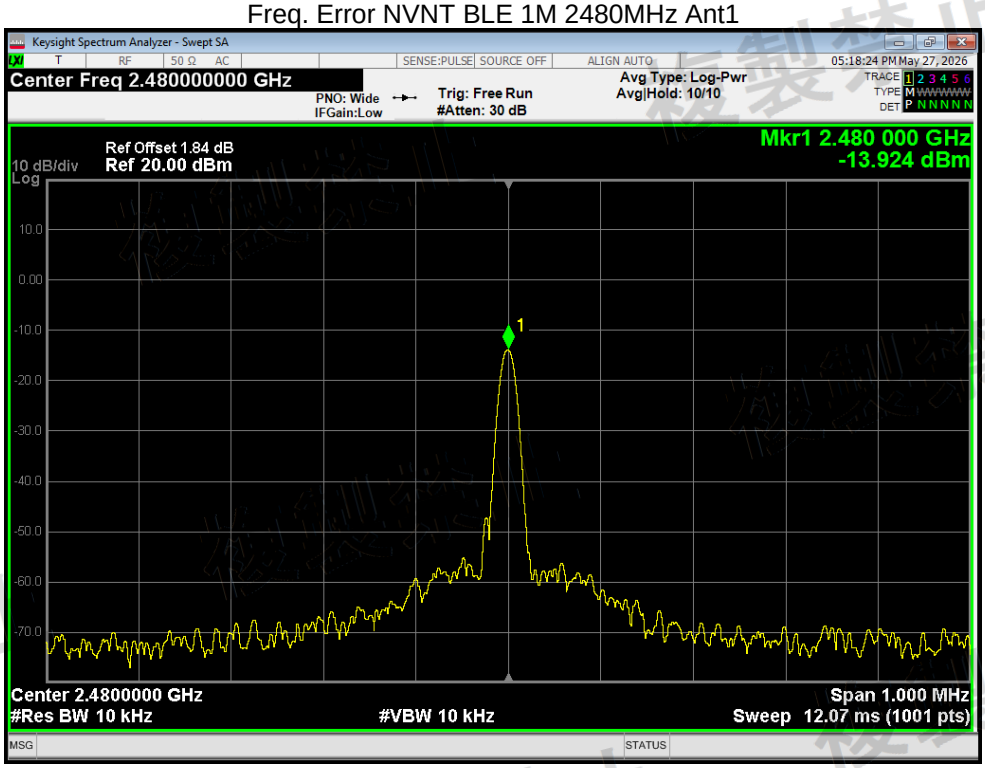
Freq. Error NVNT BLE 1M 2402MHz Ant1



Freq. Error NVNT BLE 1M 2440MHz Ant1




Freq. Error NVNT BLE 1M 2480MHz Ant1

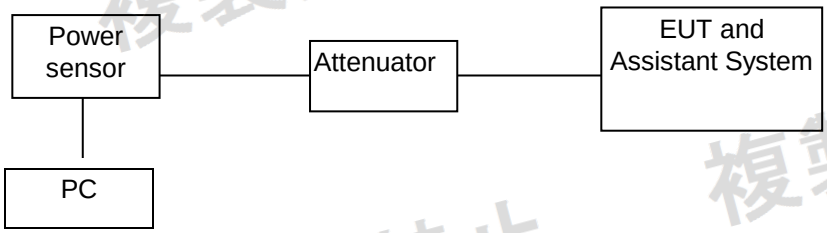


## 4.2 Antenna power and Antenna Power Tolerance &E.I.R.P

### 4.2.1 Limit

| Item | Limits |
|---|---|
| Antenna Power Density | (1)FHSS<br>2427-2470.75MHz: 3mW/MHz or less<br>2400-2483.5MHz: 10mW/MHz or less<br>(2) DSSS ,OFDM<br>Occupied Bandwidth Within 26MHz: 10mW/MHz or less<br>Occupied Bandwidth 26- 40MHz: 5mW/MHz or less<br>(3) Other : 10mW |
| Antenna Power Tolerance | +20% |
| E.I.R.P | 12.14dBm |

### 4.2.2 Block diagram of test setup




### 4.2.3 Test Procedure

(1) Configure EUT and assistant system according clause 2.3 and 4.3

(2) Set EUT work in carrier Tx mode as described in clause 2.4

(3) Connected the EUT's antenna port to the power sensor by suitable attenuator.

(4) Reading power sensor value and recorded.

### 4.2.4 Test Result

| Mode | Frequency (MHz) | Output power (dBm) | Output power (mW) | Power Limit (mW) | Antenna power tolerance (%) | Limit of antenna power tolerance (%) |
|---|---|---|---|---|---|---|
| GFSK | 2402 | 0.07 | 1.02 | 10 | -49 | 20% |
| | 2440 | 1.10 | 1.29 | 10 | -35.5 | |
| | 2480 | -0.17 | 0.96 | 10 | -52 | |
| Result | Pass<br>The declared output power is 2mW | | | | | |

E.I.R.P

| Mode | Frequency (MHz) | Output power (dBm) | Antenna Gain (dBi) | E.I.R.P (dBm) | Limit (dBm) |
|---|---|---|---|---|---|
| GFSK | 2402 | 0.07 | 4.58 | 4.65 | 12.14 |
| | 2440 | 1.10 | 4.58 | 5.68 | 12.14 |
| | 2480 | -0.17 | 4.58 | 4.41 | 12.14 |
| Result | Pass | | | | |

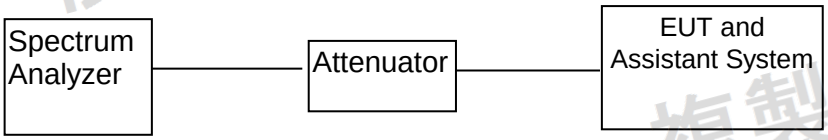
## 4.3 Occupied Frequency Bandwidth

### 4.3.1 Limits

| Item | Limits |
|---|---|
| Occupied Band Width: | FH : Within 83.5MHz<br>OFDM1,DSSS ：Within 26MHz<br>OFDM2(802.11n40):26-40MHz<br>Other: Within 26MHz; |

Permissible value for occupied bandwidth using the FH system, a hybrid system combining DS and FH systems, or a hybrid system combining FH and OFDM systems shall be 83.5 MHz or less, while necessary bandwidth (minimum occupied bandwidth sufficient to ensure information transmission of required quality at a required transmission rate for the system used under specified conditions for a given emission type) using a system other than any of the above shall be 26 MHz or less.

### 4.3.2 Block diagram of test setup




### 4.3.3 Test Procedures

(1) Configure EUT and assistant system according clause 2.3 and 5.3

(2) Set EUT work in test mode as described in clause 2.4

(3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the channel under test.

Resolution BW: 300 KHz

Video BW: 300 KHz

Span: Wide enough to cover the complete power envelope of the signal of the EUT.

Detector: Peak.

Trace Mode: Max Hold.

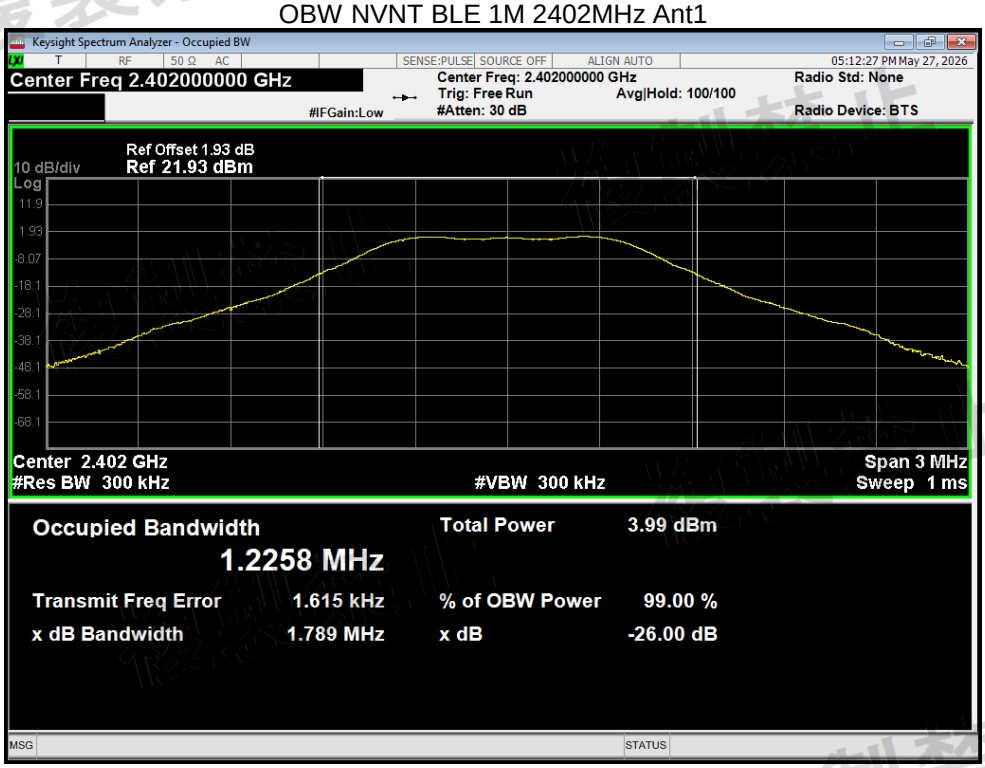
(4) When the trace is complete, measure the occupied bandwidth (99% bandwidth) with spectrum analyzer's bandwidth measure function.

### 4.3.4 Test Result

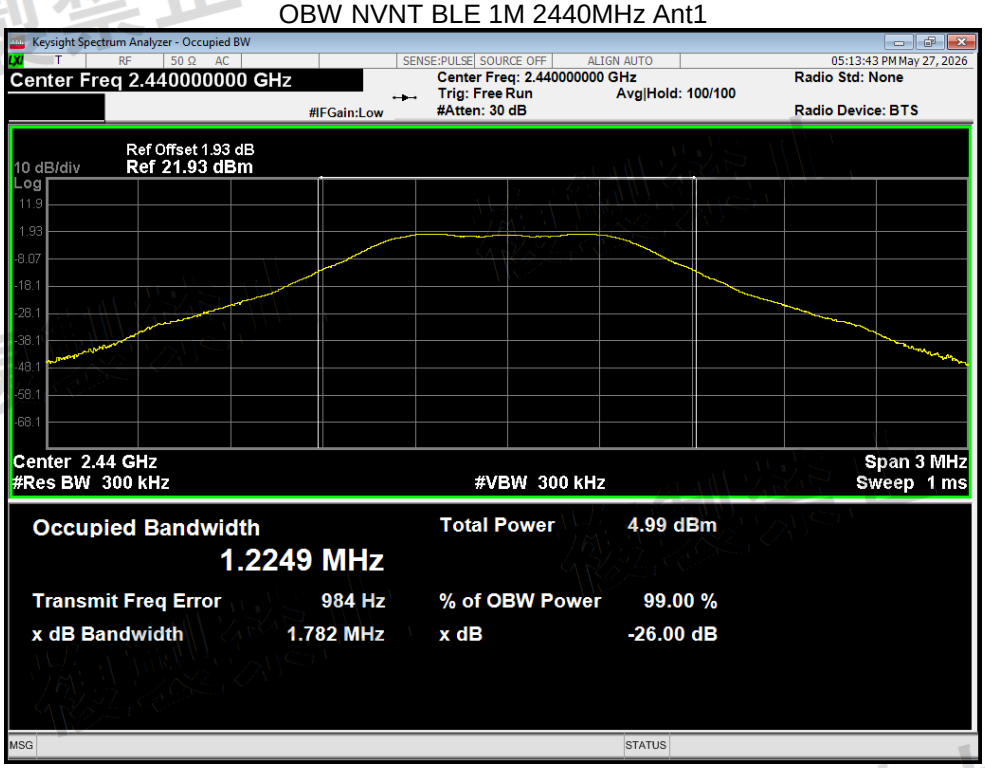
| Mode | Condition | CH | Result (MHz) | Limit (MHz) |
|---|---|---|---|---|
| GFSK | Normal | CH0 | 1.2258 | ≦26 |
| | | CH19 | 1.2249 | ≦26 |
| | | CH39 | 1.2253 | ≦26 |
| Conclusion：PASS | | | | |

Test plots:

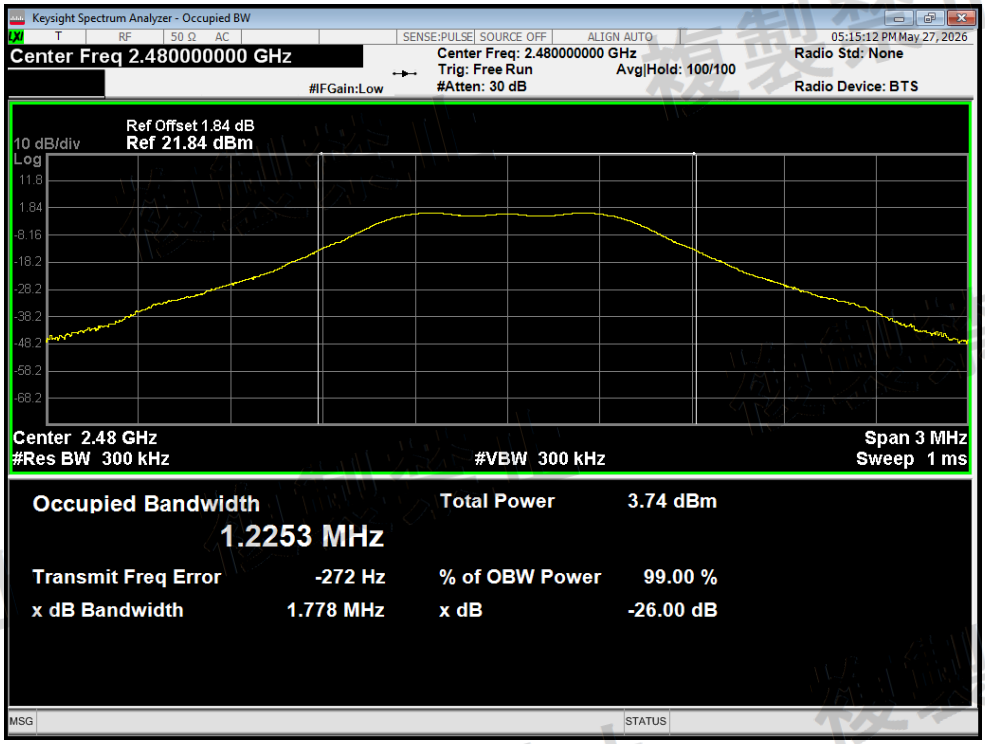
OBW NVNT BLE 1M 2402MHz Ant1



OBW NVNT BLE 1M 2440MHz Ant1




OBW NVNT BLE 1M 2480MHz Ant1



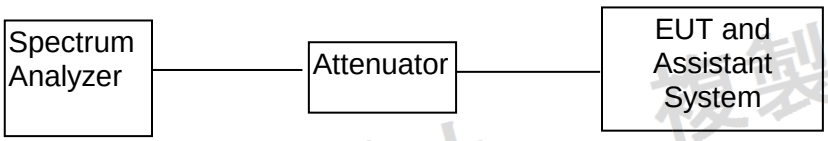
## 4.4 Unwanted Emission Strength (conducted)

### 4.4.1 Limits

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

| | |
|---|---|
| Unwanted Emission Strength | ≦2.5 μW/MHz (30MHz≦f≦1000MHz) |
| | ≦2.5 μW/MHz (1000MHz<f≦2387MHz) |
| | ≦25 μW/MHz (2387MHz<f≦2400MHz) |
| | ≦25 μW/MHz (2483.5MHz≦f<2496.5MHz) |
| | ≦2.5 μW/MHz (2496.5MHz≦f<12500MHz) |
| *Note: 30MHz-2387 MHz: 2.5 μW (-26 dBm)/MHz or less. When 30M~1GHz, RBW is set to 100kHz, The limit should be reduced by 10log(1M/100k) accordingly. Then limit=-26dBm-10log(1M/100k)=-36dBm/MHz=0.25μW/MHz* | |

### 4.4.2 Block Diagram of Test Setup




### 4.4.3 Test Procedures

(1) Configure EUT and assistant system according clause 2.3 and 7.3

(2) Set EUT work in test mode as described in clause 2.4

(3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

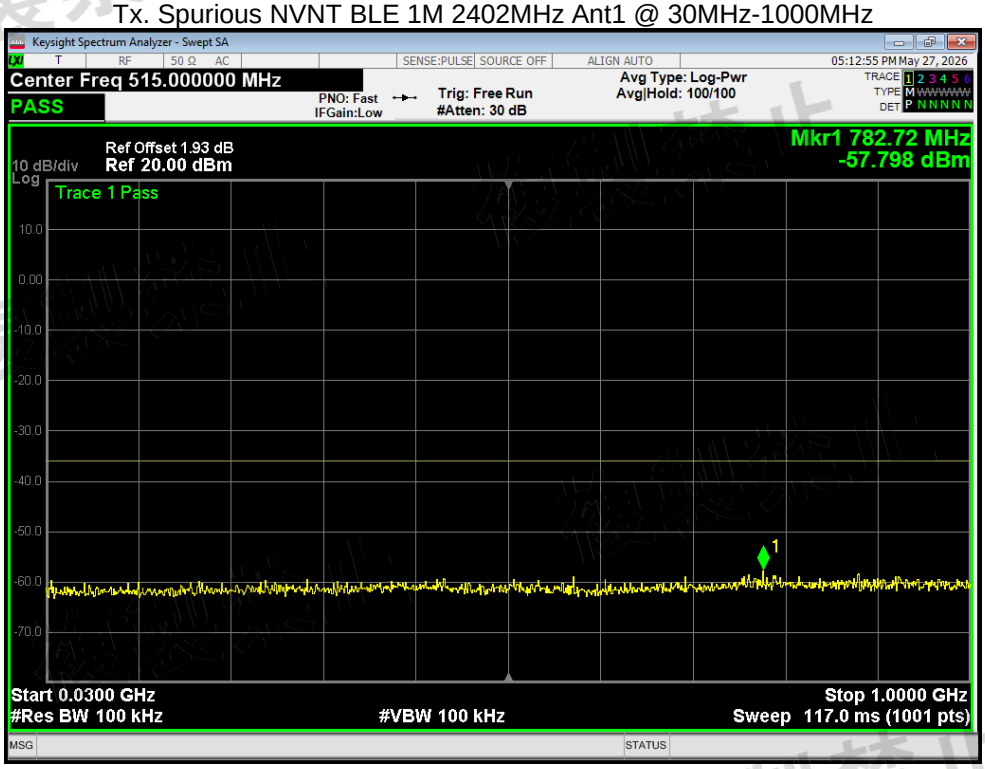
Resolution BW: Below 1GHz RB:100KHz
Above 1GHz RB:1MHz
Video BW: Below 1GHz RB:100KHz
Above 1GHz RB:1MHz
Detector: Peak.
Trace Mode: Max Hold.

(4)All the emissions from 30MHz to 13GHz were measured and record.

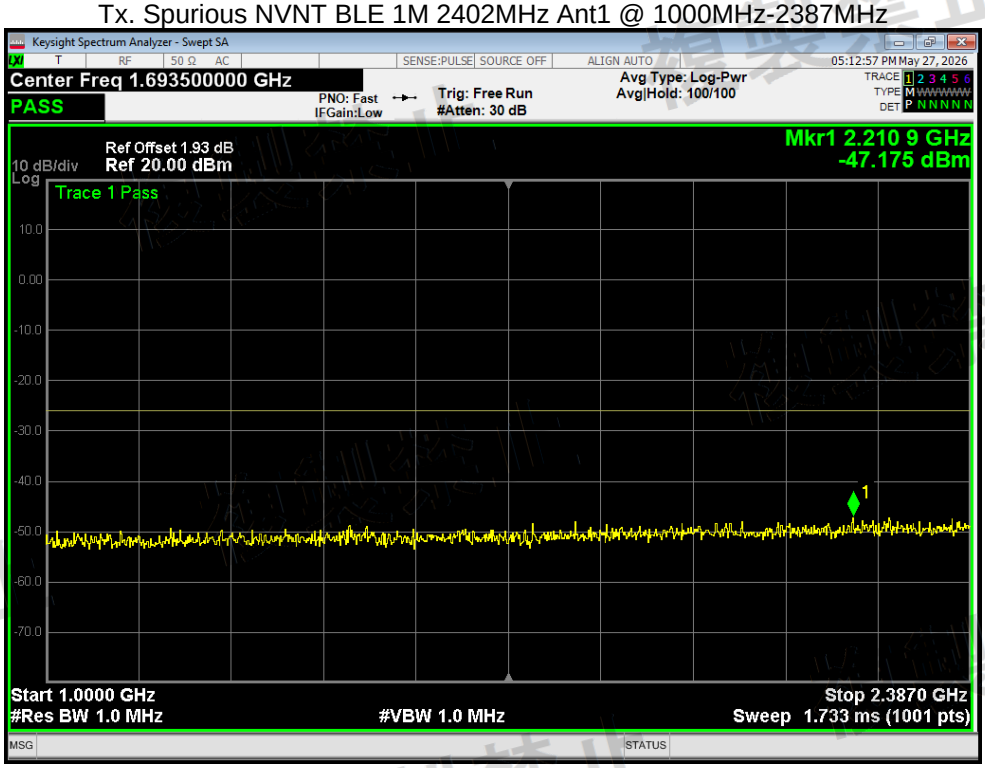
| Condition | Mode | Frequency (MHz) | Range (MHz) | Emission Frequency (MHz) | Max Value (dBm) | Max Value (μW/MHz) | Limit (μW /MHz) | Verdict |
|---|---|---|---|---|---|---|---|---|
| NVNT | BLE | 2402 | 30-1000 | 782.72 | -47.798 | 0.017 | 2.5 | Pass |
| NVNT | BLE | 2402 | 1000-2387 | 2210.851 | -47.175 | 0.019 | 2.5 | Pass |
| NVNT | BLE | 2402 | 2387-2400 | 2400 | -36.706 | 0.214 | 25 | Pass |
| NVNT | BLE | 2402 | 2483.5-2496.5 | 2489.493 | -46.458 | 0.023 | 25 | Pass |
| NVNT | BLE | 2402 | 2496.5-13000 | 2517.507 | -42.791 | 0.053 | 2.5 | Pass |
| NVNT | BLE | 2440 | 30-1000 | 736.16 | -48.394 | 0.014 | 2.5 | Pass |
| NVNT | BLE | 2440 | 1000-2387 | 2258.009 | -46.612 | 0.022 | 2.5 | Pass |
| NVNT | BLE | 2440 | 2387-2400 | 2390.809 | -47.013 | 0.020 | 25 | Pass |
| NVNT | BLE | 2440 | 2483.5-2496.5 | 2491.248 | -46.564 | 0.022 | 25 | Pass |
| NVNT | BLE | 2440 | 2496.5-13000 | 2612.038 | -46.034 | 0.025 | 2.5 | Pass |
| NVNT | BLE | 2480 | 30-1000 | 787.57 | -48.251 | 0.015 | 2.5 | Pass |
| NVNT | BLE | 2480 | 1000-2387 | 2266.331 | -47.345 | 0.018 | 2.5 | Pass |
| NVNT | BLE | 2480 | 2387-2400 | 2397.803 | -46.493 | 0.022 | 25 | Pass |
| NVNT | BLE | 2480 | 2483.5-2496.5 | 2484.228 | -43.858 | 0.041 | 25 | Pass |
| NVNT | BLE | 2480 | 2496.5-13000 | 3011.172 | -46.116 | 0.024 | 2.5 | Pass |

NOET: For 30M-1G final test result (dBm/MHz) = test values + 10*log(1000kHz/100kHz)

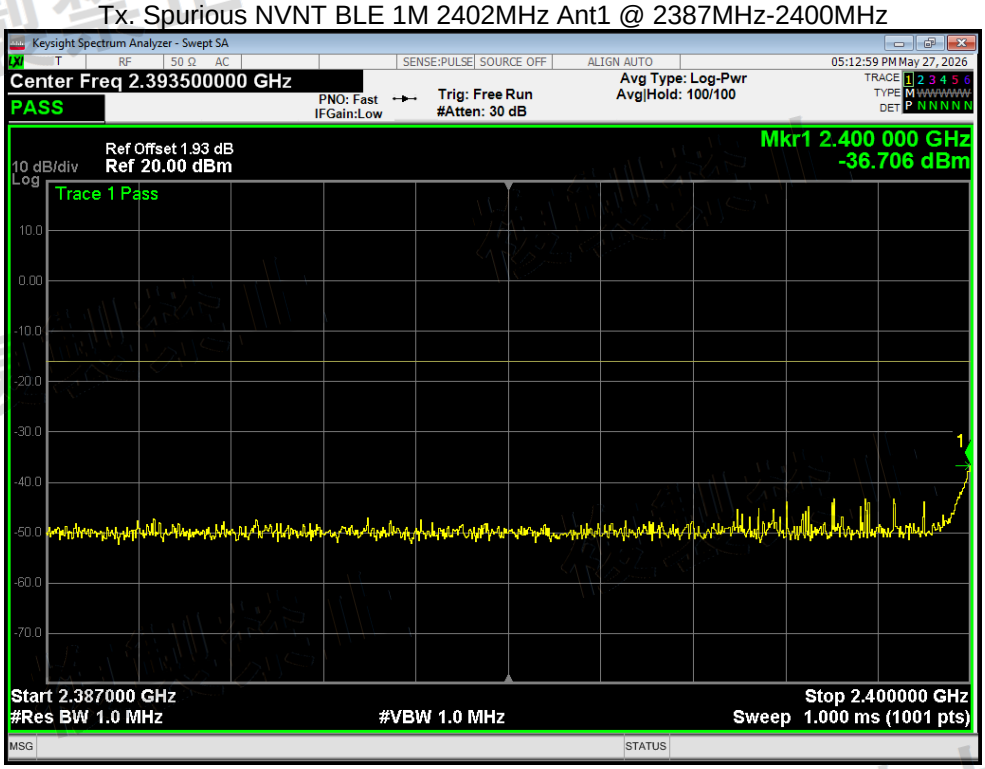
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 30MHz-1000MHz



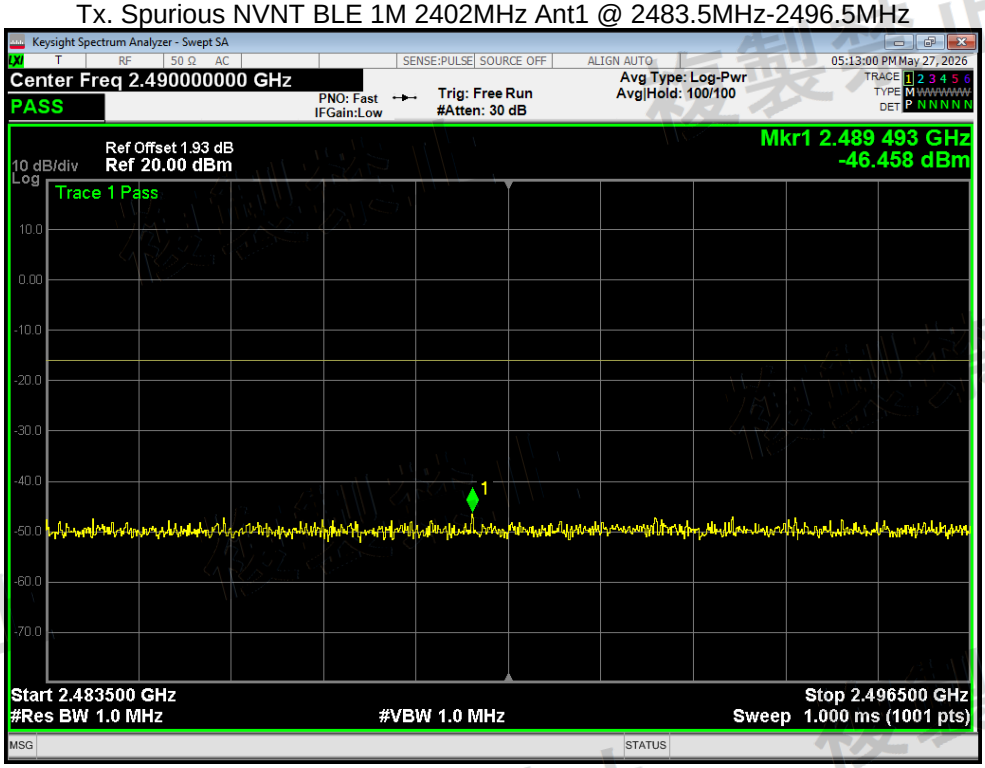

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 1000MHz-2387MHz



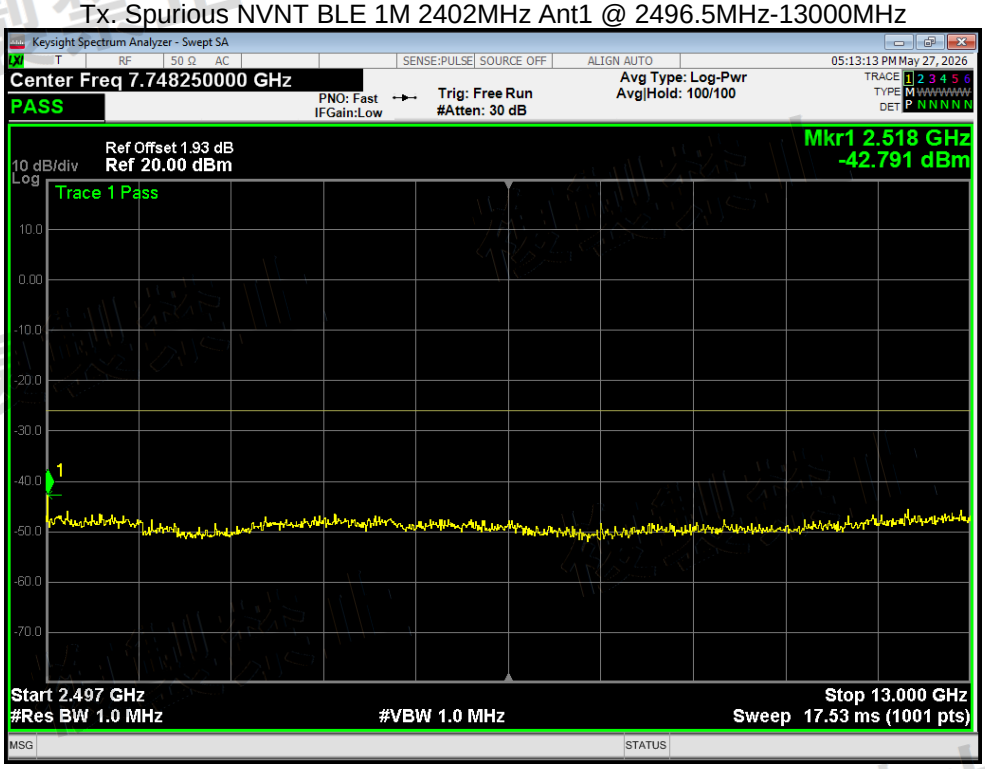
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2387MHz-2400MHz



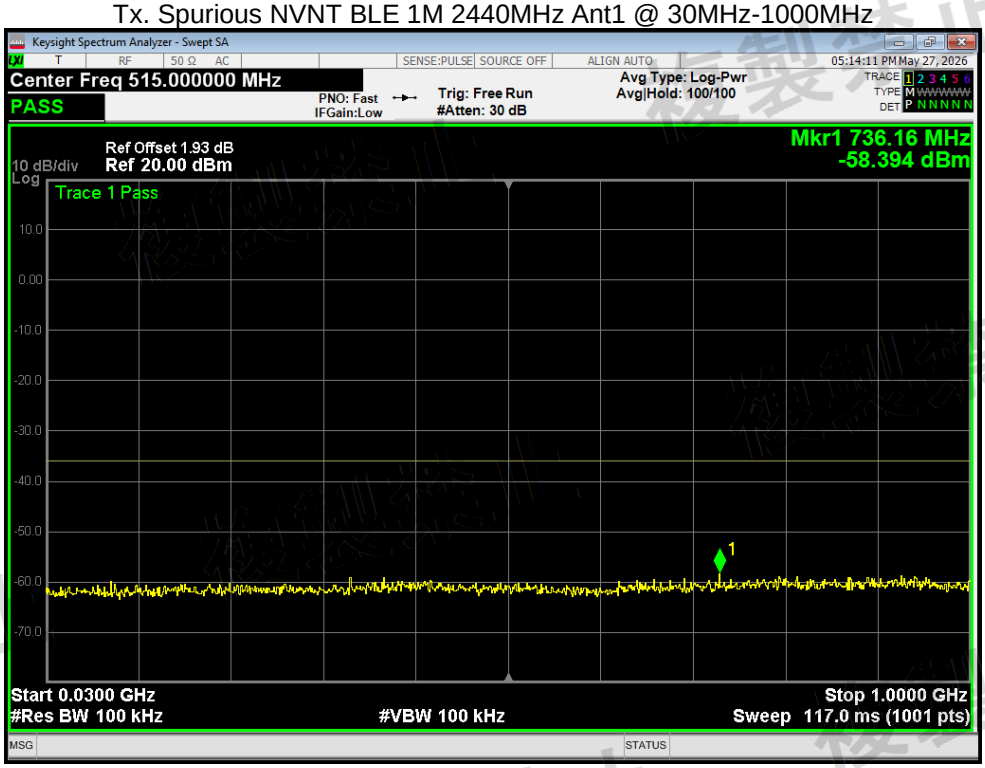

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2483.5MHz-2496.5MHz



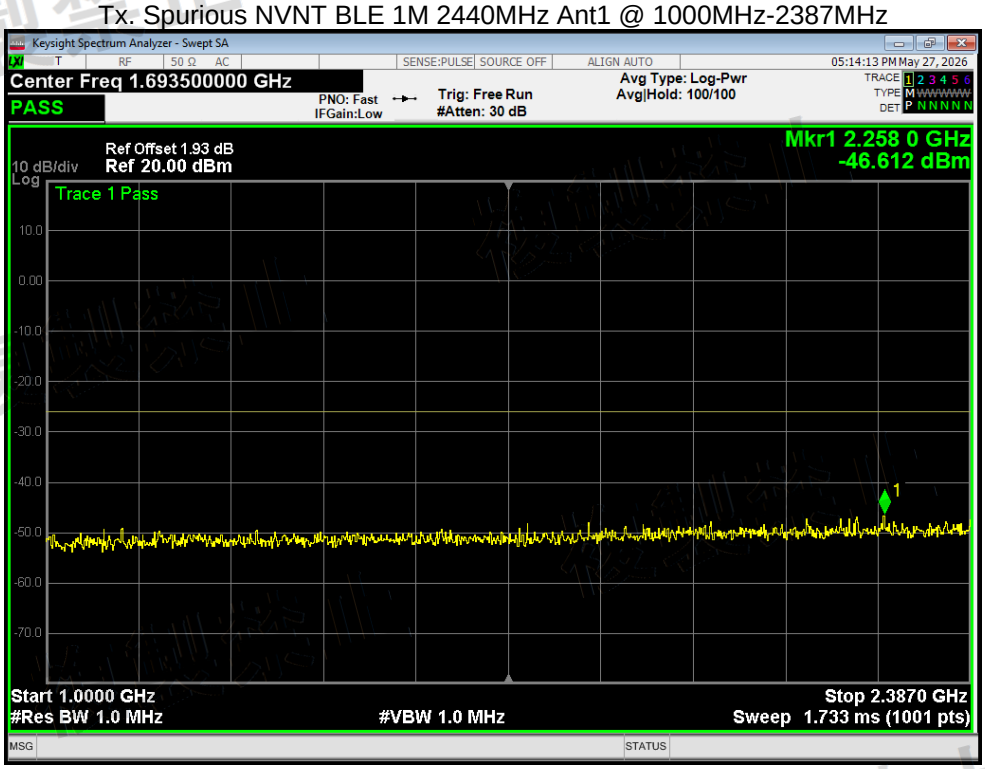
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2496.5MHz-13000MHz



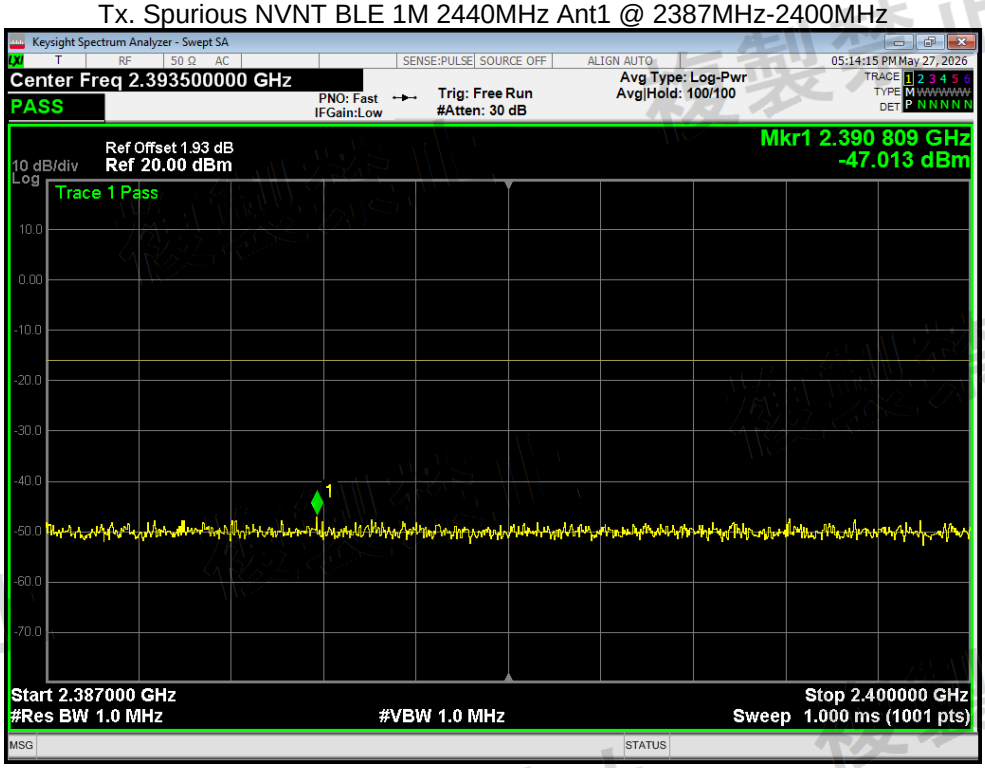

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 30MHz-1000MHz



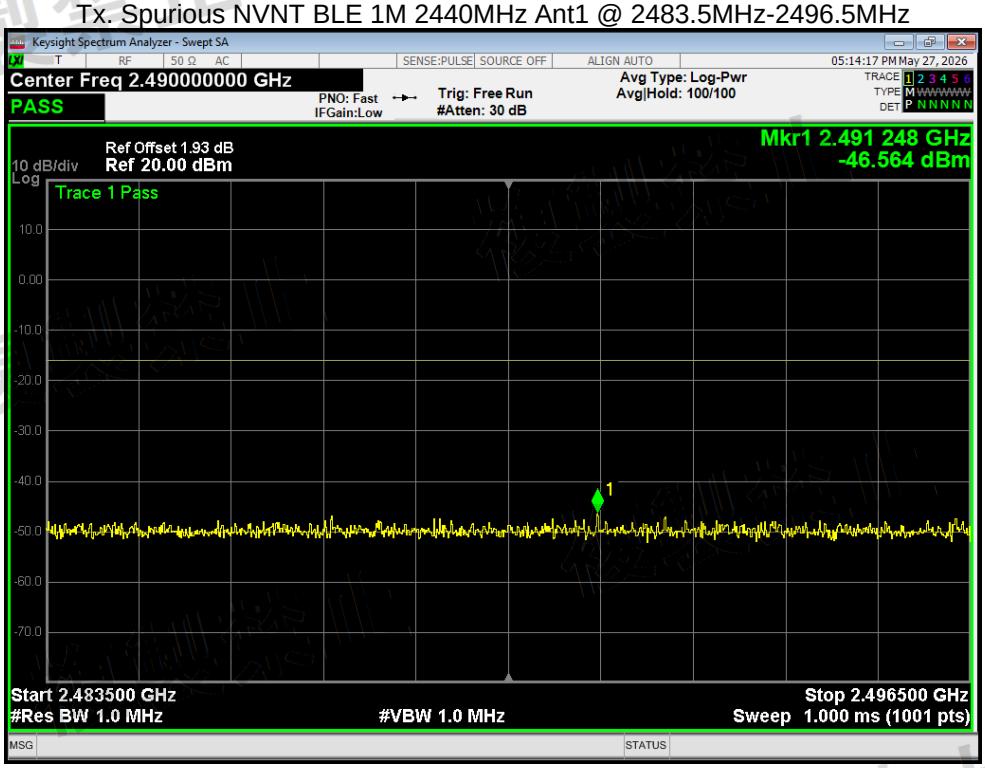
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 1000MHz-2387MHz



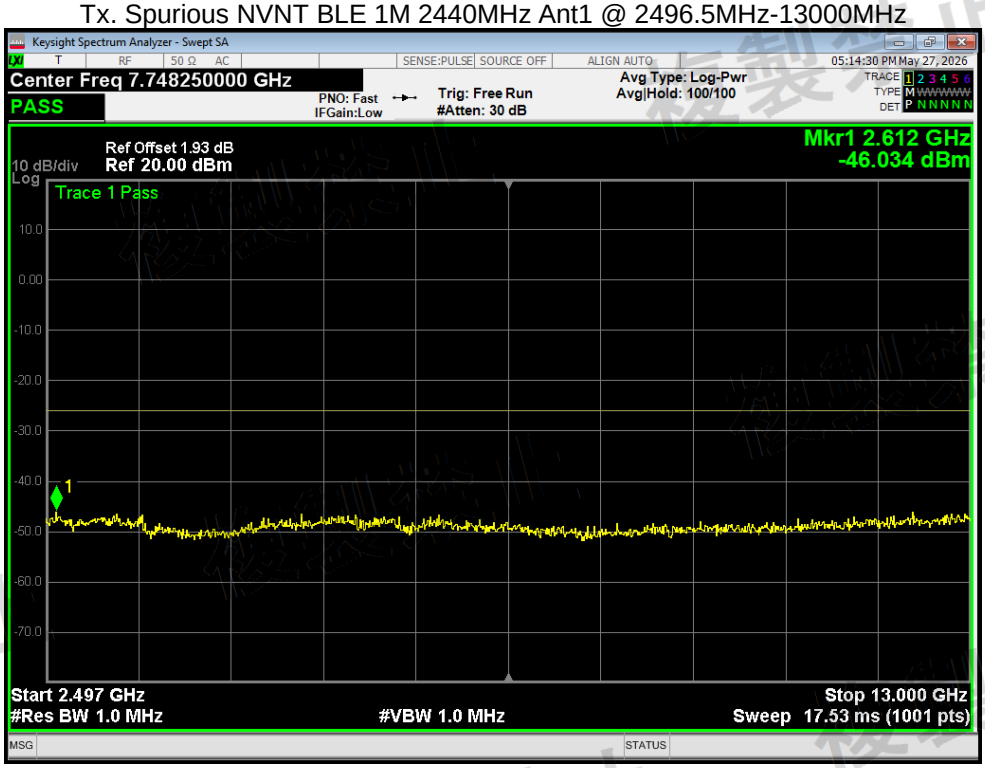

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2387MHz-2400MHz



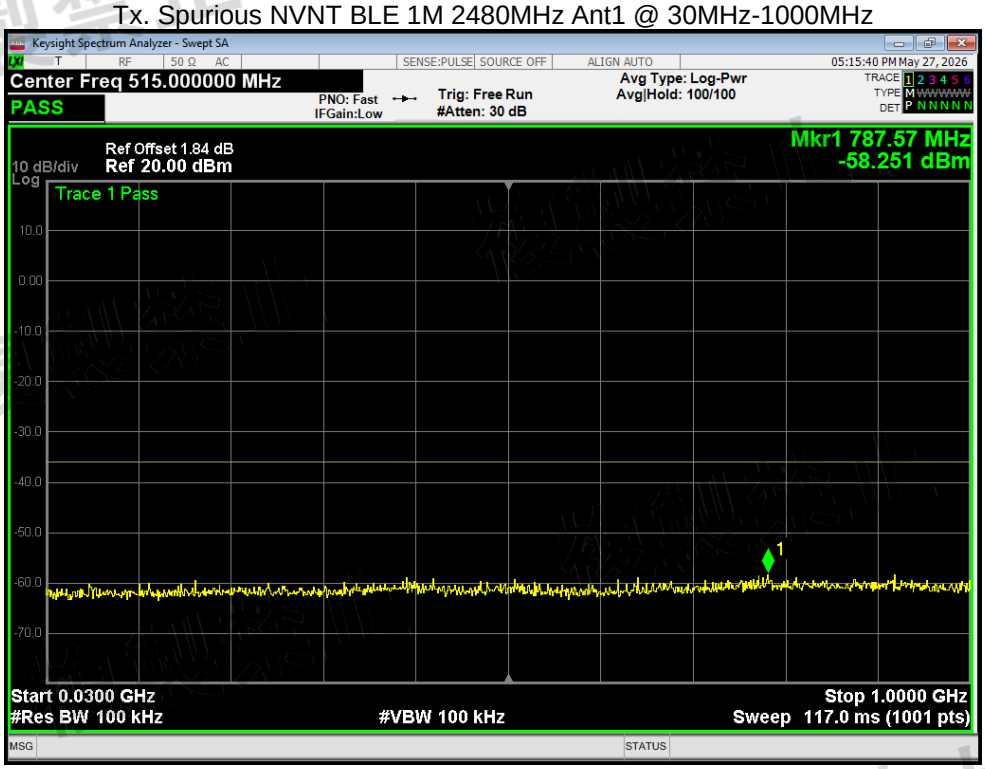
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2483.5MHz-2496.5MHz



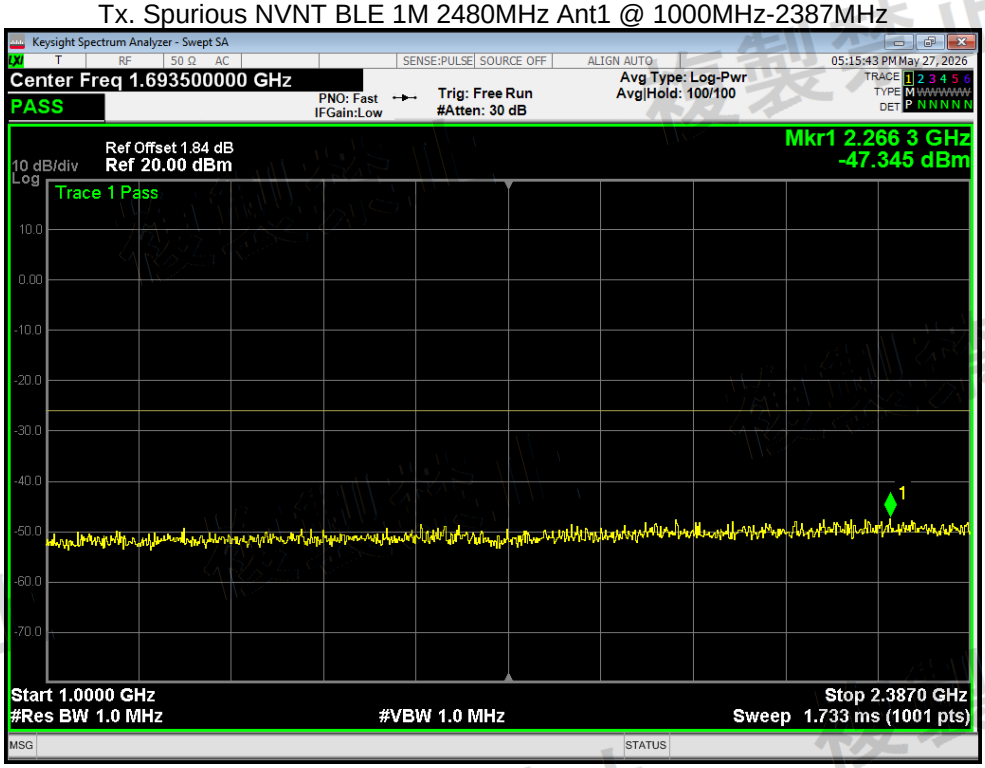

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2496.5MHz-13000MHz



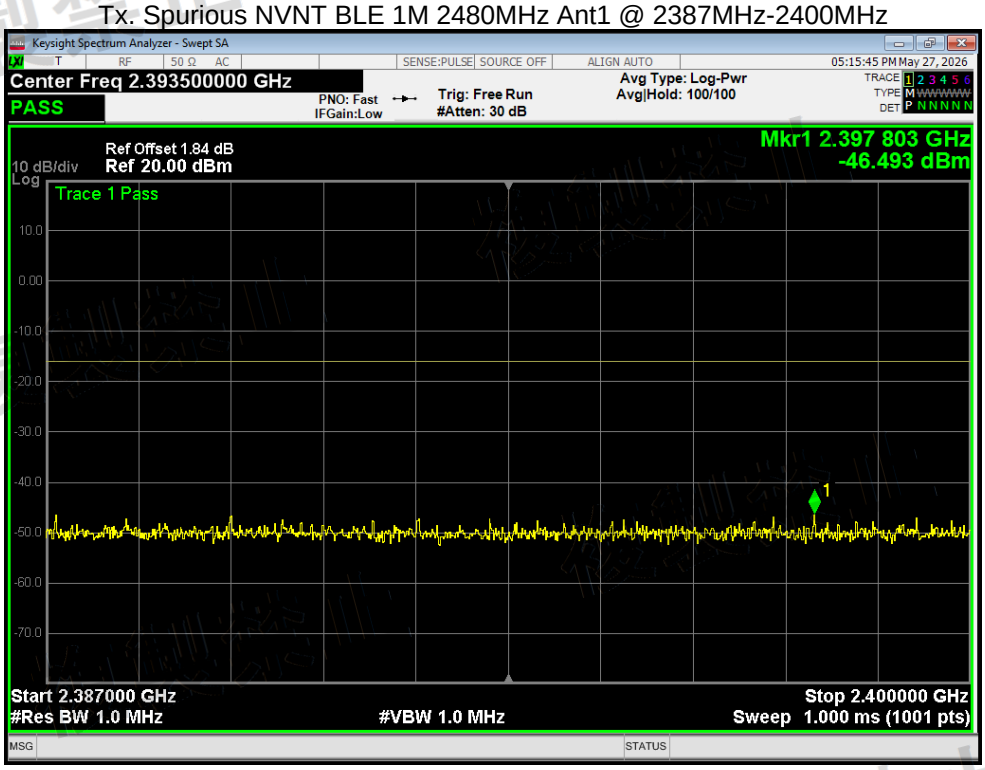
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 30MHz-1000MHz



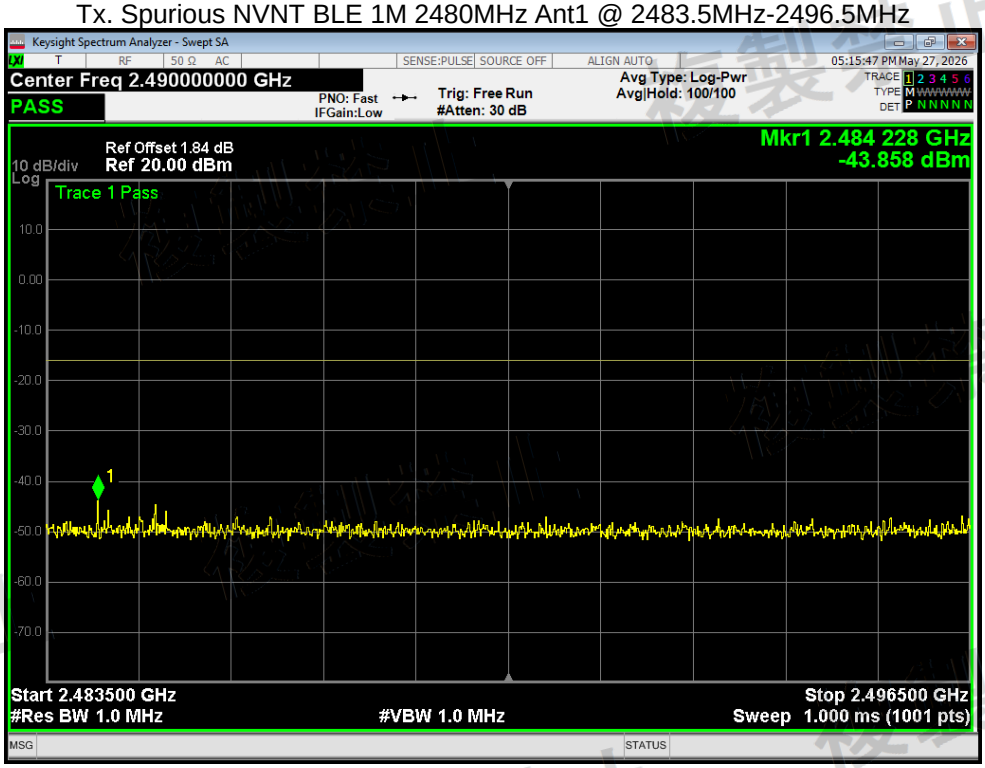

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 1000MHz-2387MHz



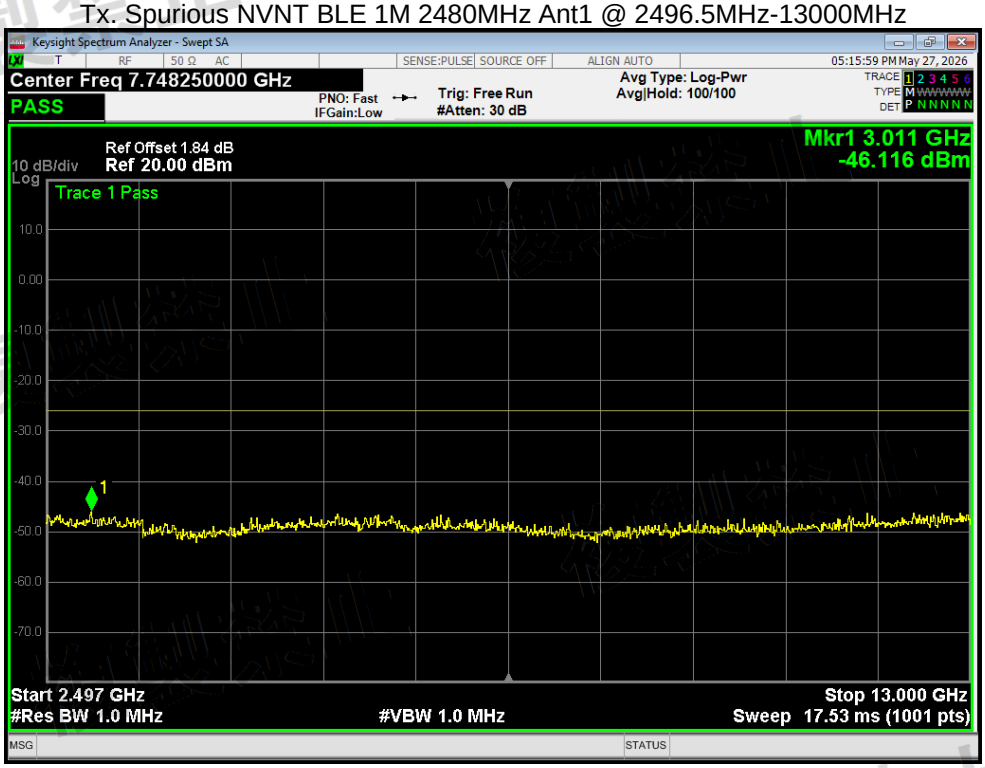
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 2387MHz-2400MHz




Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 2483.5MHz-2496.5MHz



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 2496.5MHz-13000MHz

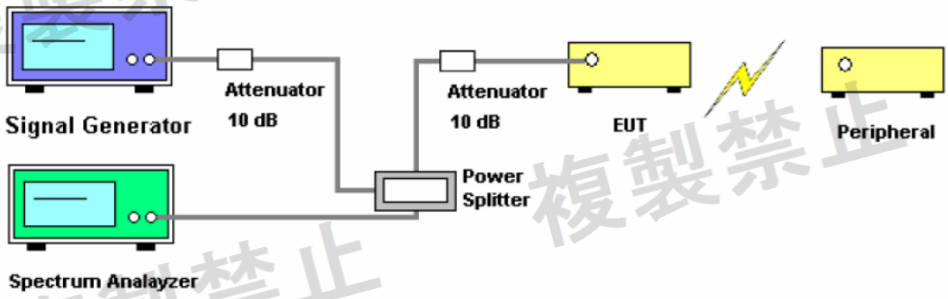


## 4.5 Carrier sensing function

### 4.5.1 Limit

EUT stop RF transmission signal after carrier inject to EUT.

### 4.5.2 Block diagram of test setup




### 4.5.3 Test Procedure

1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is (on 22.79+G-20*log(f)dBm)(G is the antenna gain, f is the test frequency).
2. turn off the RF signal of the SG.
3. EUT have transmitted the maximum modulation signal and fixed channelize.
4. Setting of SA :RBW/VBW=1MHz/1MHz,Span=50MHz,Sweep time=Auto, Sweep mode=continuous, Detect mode=positive peak
5. SG RF signal on.
6. EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous transmitted signal.

### 4.5.4 Test Result

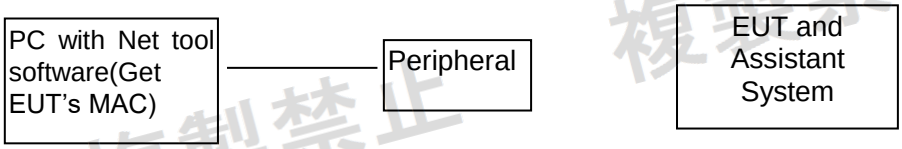
N/A

## 4.6 Interference prevention function

### 4.6.1 Limits

When conducting wireless communications that transmit data or other information" : A function that automatically sends or receives an identification codeWhen pertorming radiolocaton work: A functon that alows you to distinguish between reflected waves of radio waves transmited by your own station and radioyaves tansmited by other adio statons y detfvna the moduaton method and other characterstics ot receve radio waves. (However, f t aso nas the functon otransmitting signals for data transmission, both functions shall be included)

### 4.6.2 Block Diagram of Test Setup




### 4.6.3 Test Procedures

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 ocde: 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 idnetification codes are different from the predetermined ones.

### 4.6.4 Test Result

| | | | |
|---|---|---|---|
| EUT: | MINI PC | Pressure: | 1012 hPa |
| Temperature: | 25.3°C | Humidity: | 52%RH |
| MAC | F8:B5:4D:59:09:24 | | |
| Test result: | PASS | | |

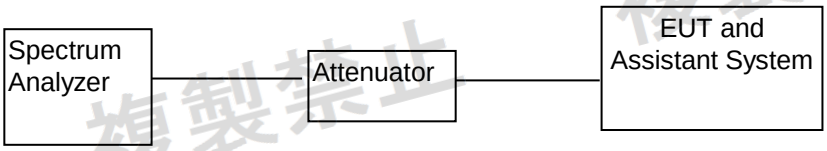
## 4.7 Secondary Radiated Emissions

### 4.7.1 Limits

| Item | Limits |
|---|---|
| RX Spurious Emission: | ≦4nW (f<1GHz) |
| | ≦20nW (1GHz≦f) |

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4 nW or less at a frequency below 1 GHz and 20 nW or less at a frequency of 1 GHz or higher as measured using the circuit.

### 4.7.2 Block diagram of test setup



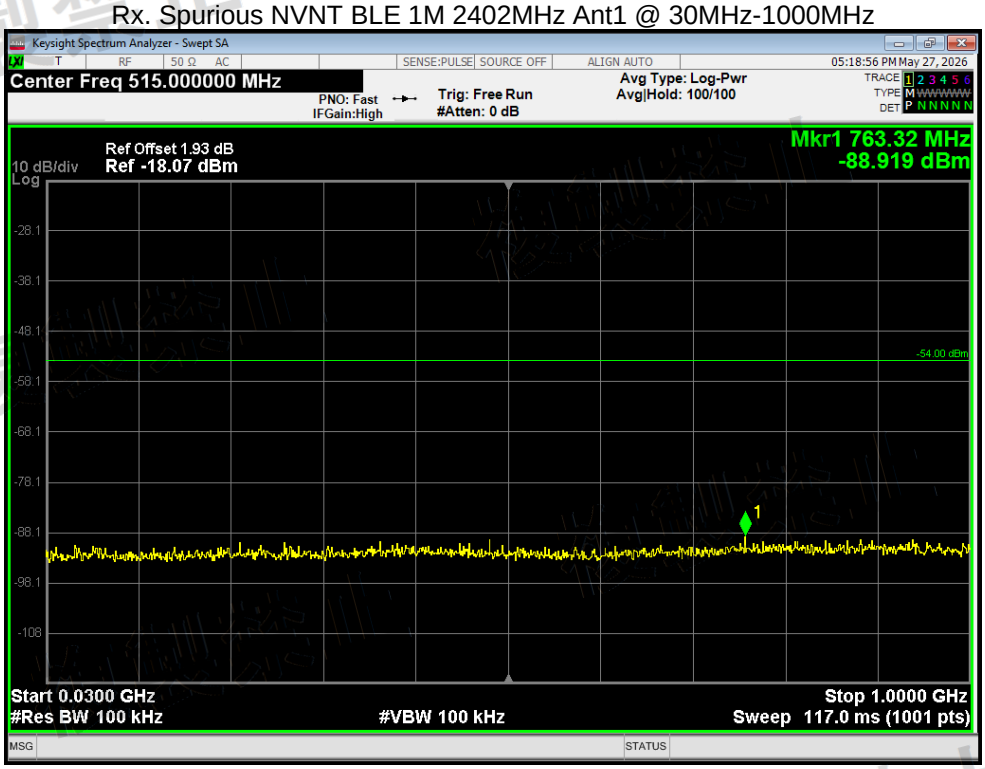

### 4.7.3 Test Procedure

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) /
   AT: Auto / Ref: Auto / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
3. SA set RB: 100kHz and VB: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
4. SA set RB: 1MHz and VB: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW
5. If power level of lower emissions are more than 1/10 of limit (.0.4nW for f < 1GHz, 2nW for f >= 1GHz), 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.

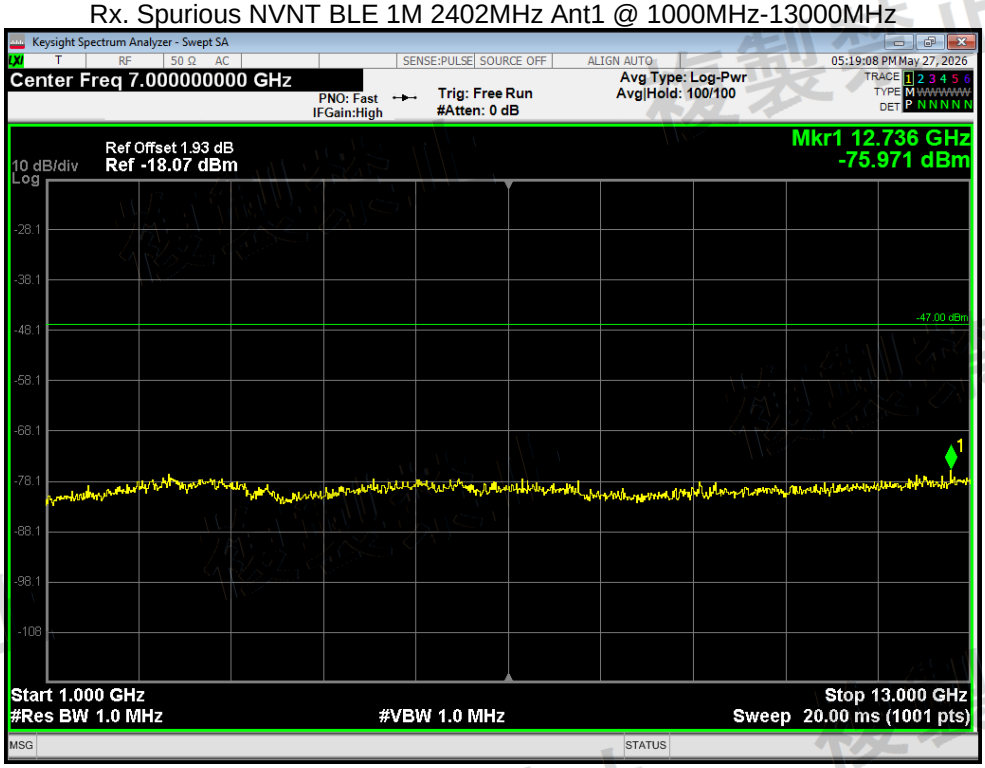
### 4.7.4 Test result

| Condition | Mode | Frequency (MHz) | Range (MHz) | Emission Frequency (MHz) | Max Value (dBm) | Max Value (nW) | Limit (nW) | Verdict |
|---|---|---|---|---|---|---|---|---|
| NVNT | BLE | 2402 | 30-1000 | 763.32 | -88.919 | 0.001 | 4 | Pass |
| NVNT | BLE | 2402 | 1000-13000 | 12736 | -75.971 | 0.253 | 20 | Pass |
| NVNT | BLE | 2440 | 30-1000 | 963.14 | -89.491 | 0.001 | 4 | Pass |
| NVNT | BLE | 2440 | 1000-13000 | 12748 | -76.666 | 0.022 | 20 | Pass |
| NVNT | BLE | 2480 | 30-1000 | 862.26 | -89.44 | 0.001 | 4 | Pass |
| NVNT | BLE | 2480 | 1000-13000 | 12484 | -76.862 | 0.021 | 20 | Pass |

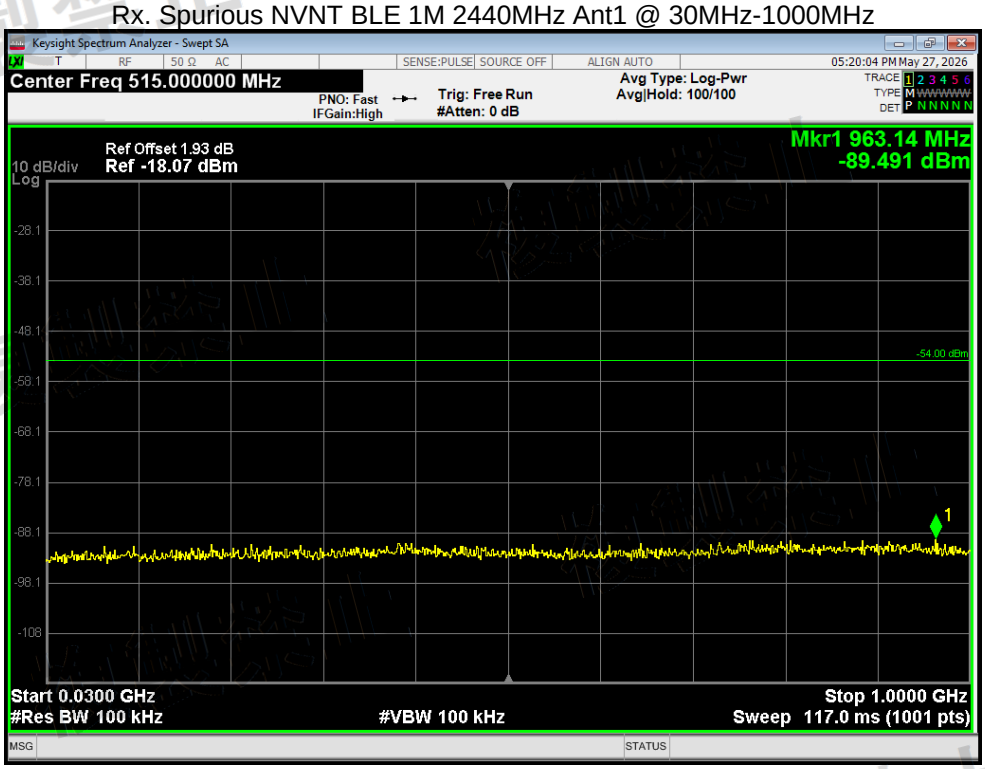
Rx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 30MHz-1000MHz



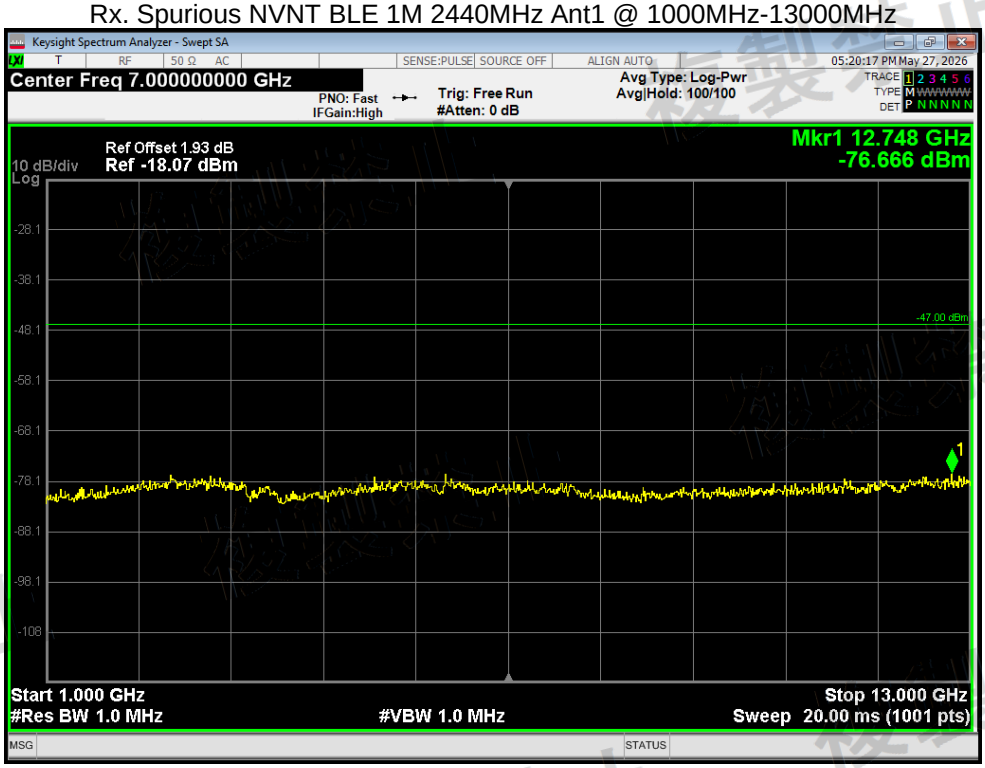

Rx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 1000MHz-13000MHz



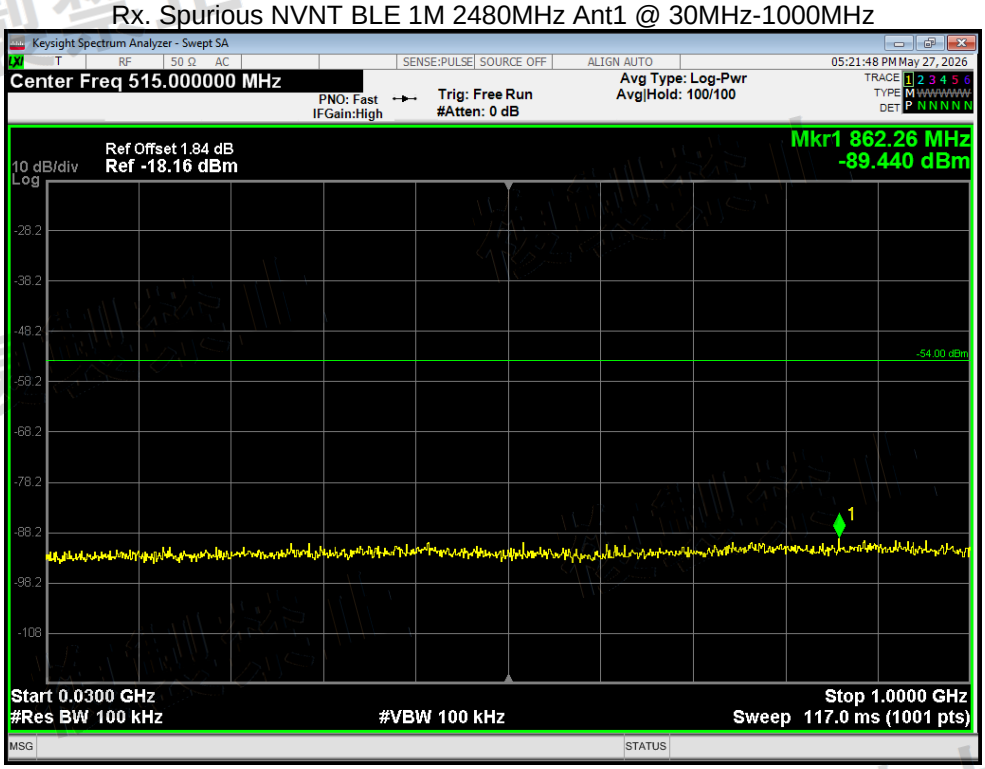
Rx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 30MHz-1000MHz



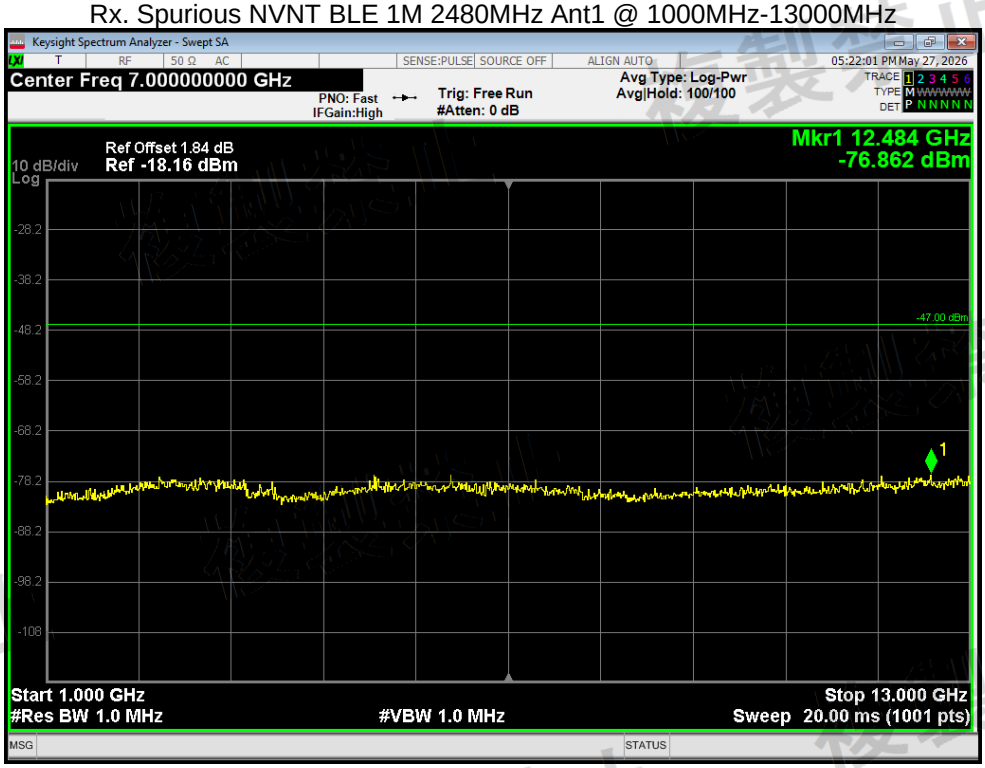

Rx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 1000MHz-13000MHz



Rx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 30MHz-1000MHz




Rx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 1000MHz-13000MHz

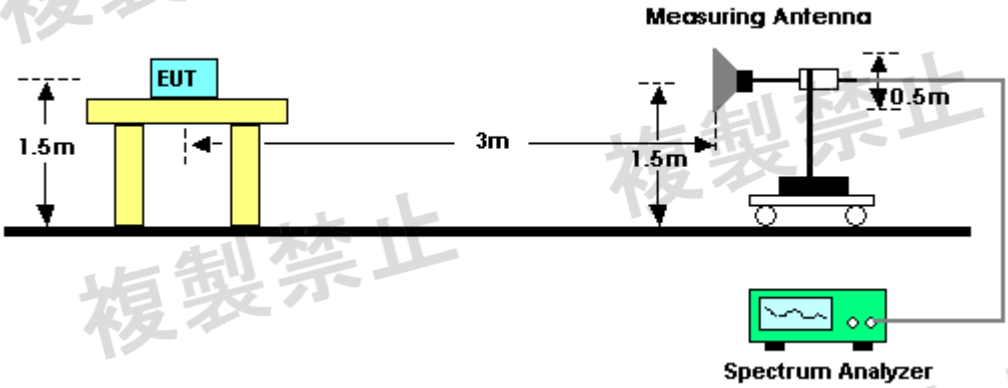


## 4.8 Antenna Absolute Gain Measurement

### 4.8.1 Limit

12.14dBi or less (when an EIRP is less than a limit, the shortage shall be compensated for By the gain of the transmitting antenna)

### 4.8.2 Block diagram of test setup




### 4.8.3 Test Procedure

**Step 1**

Set the test equipment at test frequency, and in continuous transmitting mode or intermittent burst mode (constant frequency and constant burst time). Stop the spread.

**Step 2**

Set the height and direction of test equipment and measurement antenna approximately facing each other.

**Step 3**

In the frequency derived in D), change the height of the measurement antenna from the ground by ±50cm with a central focus on the antenna of test equipment. Search the location that the power is maximum by adjusting the direction of measurement antenna. Set the indicator of spectrum analyzer at this point as “E”.

**Step 4**

Remove the test equipment from the turntable, set the opening of substitution antenna at the same location as the opening of the test equipment, and receive by outputting radio wave of the same frequency from the standard signal generator for substitution.

**Step 5**

Adjust at the maximum power point, turning the substitution antenna.

**Step 6**

Change the height of the measurement antenna from the ground by ±50cm with a central focus on the substitution antenna, and adjust the direction of measurement antenna to the location that the received power is maximum.

**Step 7**

Adjust output of standard signal generator and record the power Ps that is equal to “E”. Or record Ps by counting backward from the difference with “E” as the close value to “E” (within ±1dB).

**Step 8**

EIRP is derived from the following calculating formula:

$EIRP = G_S – L_F + P_S$

$G_S$; Absolute gain of substitution antenna (dBi).

$L_F$; Loss of electric supply line between standard signal generator and substitution antenna (dB).

$P_S$; Output of standard signal generator (dBm).

**Step 9**

Spectrum Analyzer as below:

Centre Frequency: centre frequency of the channel Under test.

Frequency Span: 0Hz

Resolution BW: 1MHz

Video BW: 3MHz

Detector: Peak.

Sweep mode: Continuous sweep

### 4.8.4 Test Result

N/A.

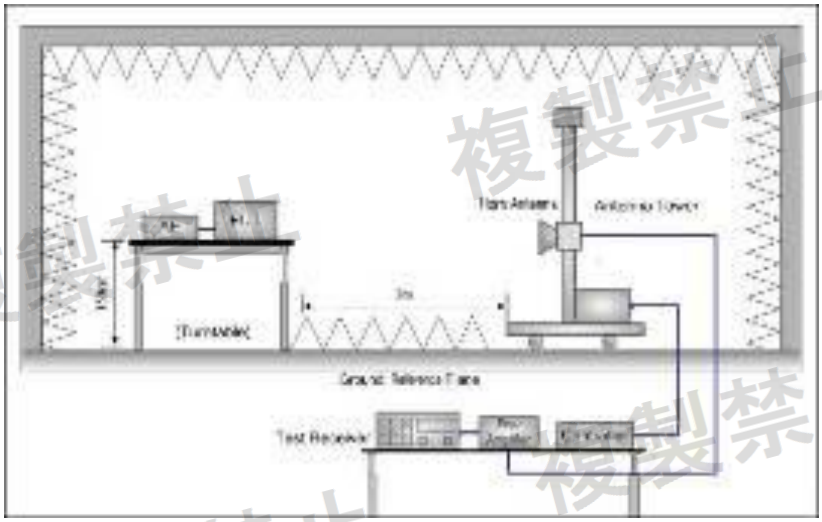
The EIRP less than 12.14dBm.

## 4.9 Half Power Beam Angle

### 4.9.1 Limit

| Item | Limits |
|---|---|
| 3dB antenna beam width | 360/A (If A<1; then A=1) A = {EIRP Power [mW] / 16.36 for DS, OFDM} or A = {EIRP Power [mW] / 4.9 for FH} |

### 4.9.2 Block diagram of test setup



### 4.9.3 Test Procedure

*1. Set EUT and measuring antenna at the same height and roughly facing each other.*
*2. Set spectrum analyzer with RBW=1 MHz, VBW=1 KHz, Y scale=5 dB, Detector=Peak, Trace mode=Max Hold, and tune reference level to observe receiving signal position.*
*3. Rotate directions of the EUT horizontally and erotically to find the maximum receiving power.*
*4. Move the measuring antenna height up and down within ± 50cm 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. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.*
*6. Calculate 3dB antenna beam width by the formula below 360/A (If A<1; then A=1). A = {EIRP Power [mW] / 16.36 for DS, OFDM} or A = {EIRP Power [mW] / 4.9 for FH}*

### 4.9.4 Test Result

*N/A.*

*The EIRP less than 12.14dBm.*

# 5 Test Setup Photo

Reference to the file No.: ET-26052132SP for details.

# 6 EUT Constructional Details

Reference to the file No.: ET-26052132EP and ET-26052132IP for details.

------End------