



RADIO TEST REPORT-BLE

Article 2 paragraph 1 item (8)

MIC Notice No.88 Annex 22-8

Product: Wireless Microphone

Trade Mark:  iCON

Model No.: WM3.2

Family Model: N/A

Report No.: S24093001402001

Prepared for

Guangzhou Utech Digital Co., Ltd.

No.2-1, ZhongJiaZhuang North Road, ShiGang East, Da-Long Street, Panyu District,
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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name..... Guangzhou Utech Digital Co., Ltd.

Address..... No.2-1, ZhongJiaZhuang North Road, ShiGang East, Da-Long Street, Panyu District, Guangzhou City, Guangdong Province, China

Manufacturer's Name..... Guangzhou Utech Digital Co., Ltd.

Address..... No.2-1, ZhongJiaZhuang North Road, ShiGang East, Da-Long Street, Panyu District, Guangzhou City, Guangdong Province, China

Test specification:

Standard Article 2 paragraph 1 item (8)
MIC Notice No.88 Annex 22-8

Test item description

Product name Wireless Microphone

Trademark 

Model and/or type reference : WM3.2

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with MIC requirements. And it is applicable only to the tested sample identified in the report.

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Test Sample Number..... S240930014002

Date (s) of performance of tests..... Sept. 30, 2024 ~ Apr. 01, 2025

Date of Issue..... Apr. 01, 2025

Test Result..... **Pass**

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※※Revision History※※

REV.	REPORT NO.	Page Revised	ISSUED DATE	Contents
Original	S24093001402001	Rev.01	Apr. 01, 2025	N/A
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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Standard	Method	Description of Test	Result
Article 2 paragraph 1 item (8)	Annex 22-8 section 5	Antenna power & power tolerance	Complies
	Annex 22-8 section 2	Tolerance of Frequency	Complies
	Annex 22-8 section 6	Adjacent channel leakage power	Complies
	Annex 22-8 section 3	Occupied bandwidth	Complies
	Annex 22-8 section 4	Firing strength of spurious emissions or unwanted	Complies
	/	Interference prevention function	Complies
	Annex 22-8 section 7	Limit, such as radio waves emitted by the secondary	Complies
	Article 49.14	Construction Protection Confirmation	Please refer to Japan Radio Protection Declaration

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) MIC Ordinance Regulating Radio Equipment Section 1.A of Article 49.14

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd

Add. : No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, People's Republic of China

FCC RegistrationNo.:463705; IC RegistrationNo.:9270A-1

CNAS Registration No.:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 3.2\text{dB}$
2	Radiated Emission Test	$\pm 4.7\text{dB}$
3	RF power,conducted	$\pm 0.16\text{dB}$
4	Spurious emissions,conducted	$\pm 0.21\text{dB}$
5	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
6	All emissions,radiated(>1G)	$\pm 5.0\text{dB}$
7	Radio Frequency	$\pm 1 \times 10^{-6}$
8	Occupied bandwidth	$\pm 4.7\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless Microphone	
Trade Mark		
Model Name.	WM3.2	
Family Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a Wireless Microphone	
	Operation Frequency:	808~809.75MHz
	Modulation Type:	FM
	Number Of Channel	15CH
	Antenna Designation:	Spring antenna
Channel List	Please refer to the Note 2.	
Adapter	N/A	
Battery	DC 3.7V	
Rating(s)	DC 3.7V from battery	
Hardware Version	N/A	
Software Version	N/A	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel	Frequency (MHz)
01	808.000MHz
02	808.125MHz
03	808.250MHz
04	808.375MHz
05	808.500MHz
06	808.625MHz
07	808.750MHz
08	808.875MHz
09	809.000MHz
10	809.125MHz
11	809.250MHz
12	809.375MHz
13	809.500MHz
14	809.625MHz
15	809.750MHz

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH01
Mode 2	CH08
Mode 3	CH15

For Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH08
Mode 3	CH15

2.3 TEST CONDITIONS

The EUT was tuned to a low, middle, and high channel for all tests. For all test case pre/scans were completed in all Modes to determine worst case levels.

Power Supply Voltage Fluctuation Test

Voltage Fluctuation Test	Normal Voltage	High Voltage + 10% of Normal Voltage	Low Voltage - 10% of Normal Voltage
DC Power	DC 3.7V	DC 4.07V	DC 3.33V
RF Chip	DC 3.3V	DC 3.3V	DC 3.3V

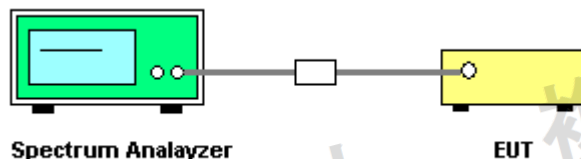
Note:

Voltage Variation (%)

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

During the input supply voltage to the EUT from the external power source is varied by +/- 10%, + / - 10% of the external power change, will not affect the voltage of the RF, so only operated in normal voltage to test all regulations.

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Wireless Microphone	WM3.2	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".

2.6EQUIPMENTS LIST FOR ALL TEST ITEMS

Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	SPECTRUM ANALYZER	AGLIENT	E4440A	MY41000130	2024.04.26	2025.04.25	1 year
2	SPECTRUM ANALYZER	AGILENT	N9020A	MY49100060	2024.04.25	2025.04.24	1 year
3	TEST RECEIVER	R&S	ESPI7	101318	2024.04.26	2025.04.25	1 year
4	50Ω COAXIAL SWITCH	ANRITSU	MP59B	6200983705	2024.04.26	2027.04.25	3 year
5	HORN ANTENNA	SCHWARZBECK	BBHA 9120 D	2816	2024.05.18	2027.05.17	3 year
6	HORN ANT	SCHWARZBECK	BBHA 9170	803	2024.05.12	2027.05.11	3 year
7	PRE-AMPLIFIER	EMC	EMC05183 5SE	980246	2024.04.25	2025.04.24	1 year
8	POWER METER	DARE	RPR3006W	15I00041SNO 84	2024.04.25	2025.04.24	1 year
9	TEMPORARY ANTENNA CONNECTOR (NOTE)	NTS	R001	N/A	N/A	N/A	N/A

Note: All the equipments for Guangzhou Lisai Calibration.
Calibration Standards:Article24-2 Paragraph4oftheRadioAct.

3. ANTENNA POWER

3.1 LIMIT

Type	Limit
800MHz Band	10mW
Tolerance	+50% to -50%

3.2 TEST PROCEDURES

1. EUT have transmitted continuous maximum power
2. Antenna Power Error is definition that actual measure antenna power tolerance between +50% to -50% power range that base on manufacturer declare the conducted power density.

3.3 TEST SETUP LAYOUT



3.4 TEST DEVIATION

There is no deviation with the original standard.

3.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULT

EUT :	Wireless Microphone	Model:	WM3.2
Temperature:	25°C	Tested by:	Allen Liu
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	Transmit		

Condition	Frequency (MHz)	Antenna	Antenna Power (dBm)	Antenna Power (mW)	Declared Power (mW)	Tolerance (%)	Upper Limit (%)	Lower Limit (%)	Verdict
NVNT	808	Ant1	9.062	8.057	9.5	-15.18	50	-50	Pass
NVNT	808.875	Ant1	9.613	9.147	9.5	-3.71	50	-50	Pass
NVNT	809.75	Ant1	9.686	9.303	9.5	-2.08	50	-50	Pass

4. FREQUENCY ERROR

4.1 LIMIT

Item	Limits
Frequency Error	±20ppm

4.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

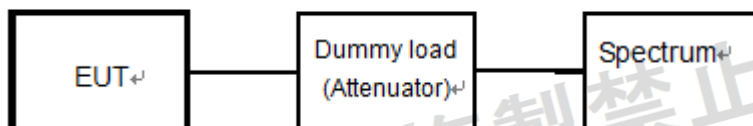
Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	1/3KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3 TEST PROCEDURES

- (1) In the case of unmodulated signal (continuous or continuous burst), measure the frequency directly by a frequency meter.
- (2) In the case of burst waves, the measurement shall be done for enough time in order to obtain the enough measuring accuracy, and the average of the measured values becomes the final value.
- (3) In the case of a test mode with a specific frequency spectrum, measure the frequency of the specific spectrum by a spectrum analyzer.
- (4) In the cases above, if the frequency equivalent to the test frequency is not directly measured in principle, it shall be obtained by necessary calculation.

In the case of modulated signal, if there is no specific spectrum measurable by a spectrum analyzer but a specific dip is observed, it is allowed to measure the frequency with the signal generator (synthesized). That is, observe a signal of the signal generator concurrently (or alternately) with the tested signal using the spectrum analyzer while setting the frequency of the signal generator to the position of the dip on the screen of the spectrum analyzer, and determine the frequency of the signal generator at the time as a measured value.

4.4 TEST SETUP LAYOUT



4.5. EUT OPERATION DURING TEST

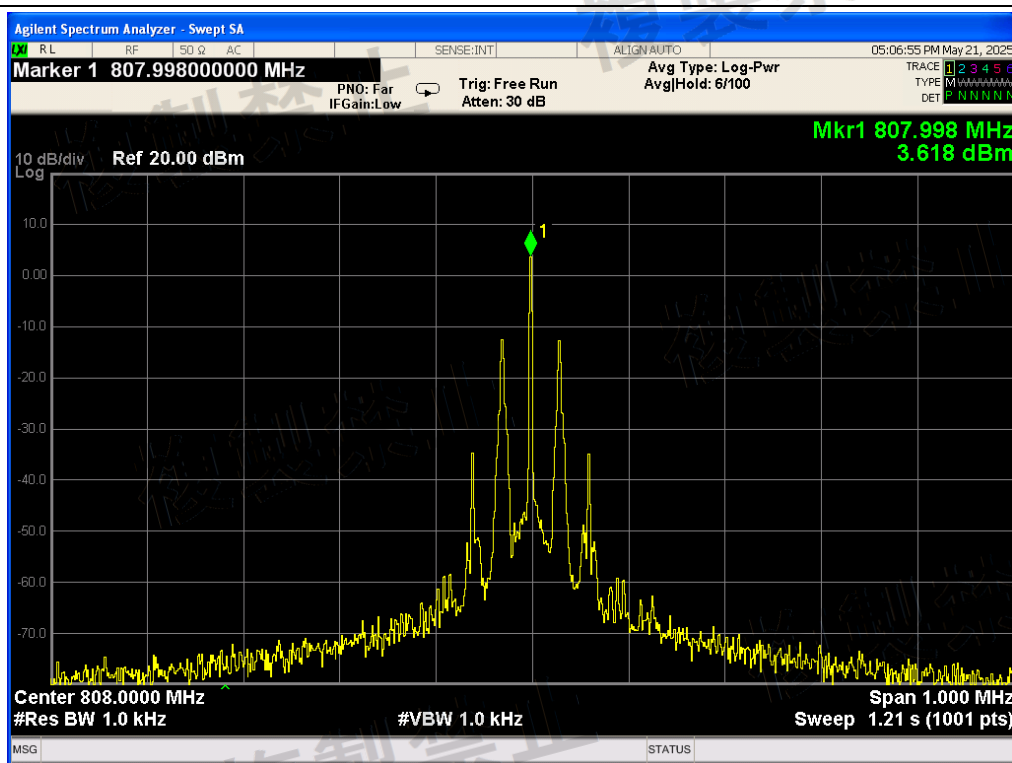
The EUT was placed on the test table and programmed in un-modulation function.

4.6 TEST RESULT

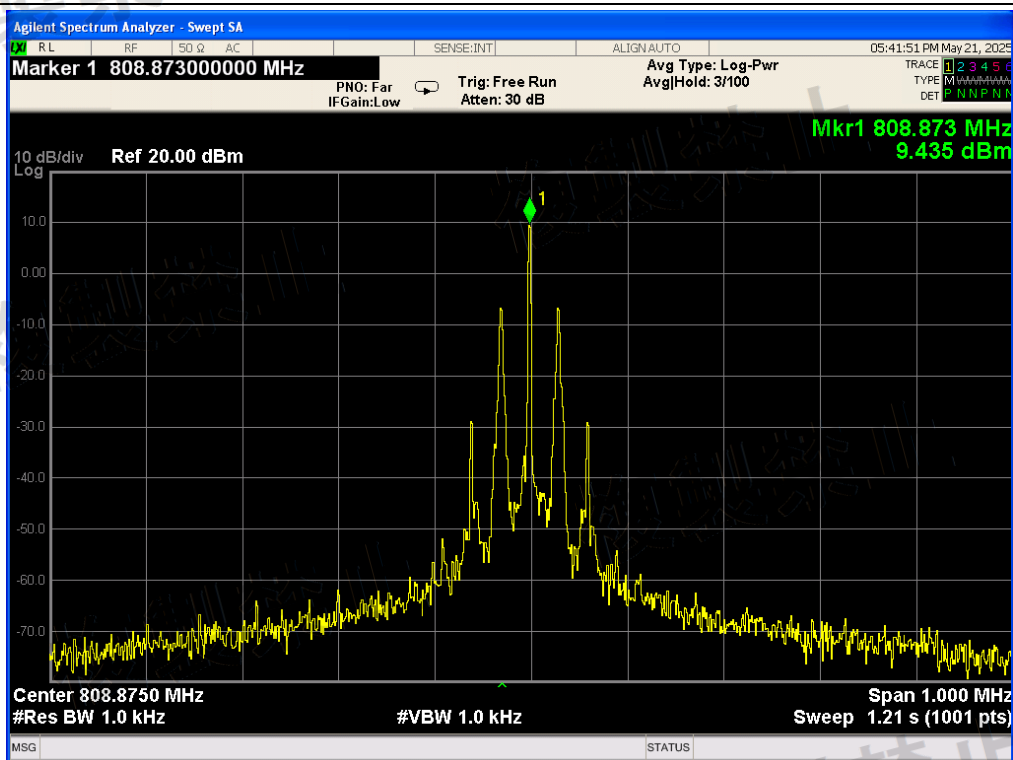
EUT :	Wireless Microphone	Model:	WM3.2
Temperature:	25°C	Tested by:	Allen Liu
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	unmodulated		

Condition	Frequency (MHz)	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	808	807.998	-2.48	20	Pass
NVNT	808.875	808.873	-2.47	20	Pass
NVNT	809.75	809.748	-2.47	20	Pass

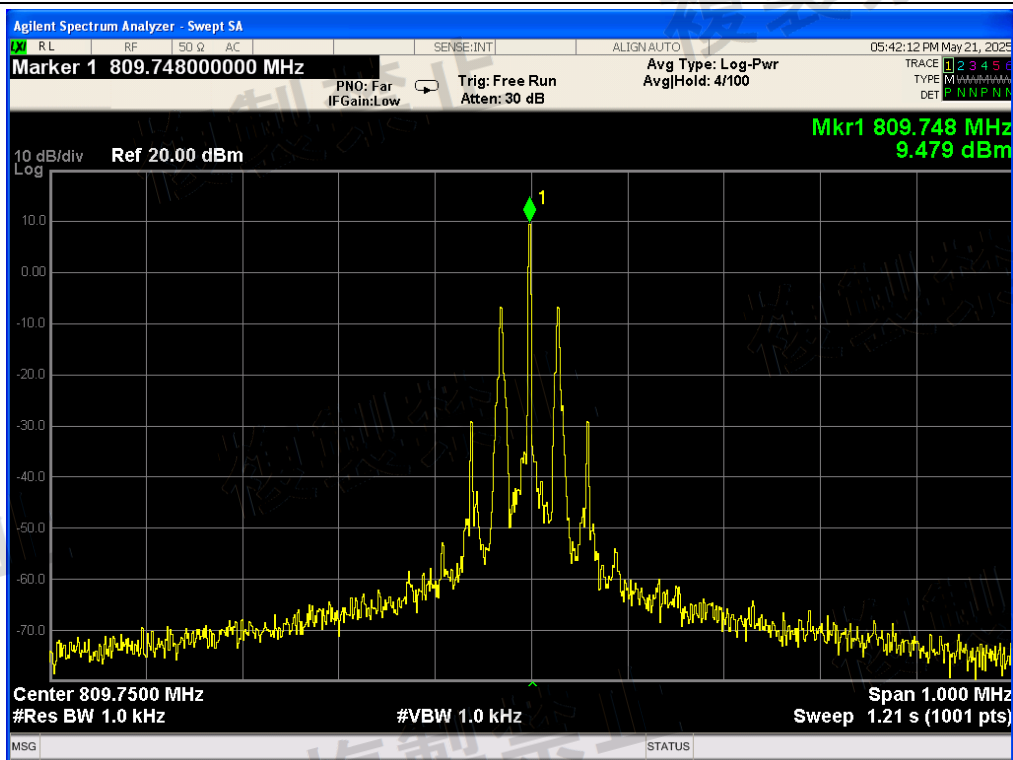
Plot on channel 01



Plot on channel 08



Plot on channel 15



5. OCCUPIED BANDWIDTH

5.1.LIMIT

According to Item 8 f Article 2 Paragraph 1 Occupied bandwidth:110KHz Reference frequency deviation:±5kHz

The target model	Modulation signal source	Reference frequency deviation	When the modulation input of occupied bandwidth measurement
70MHz band	1kHz sine wave	±3kHz	16dB increase of deviation from the input reference frequency
300MHz band	1kHz sine wave	±2.25kHz	28dB increase of deviation from the input reference frequency
Band 800MHz (analog)	1kHz sine wave	±5kHz	36dB increase of deviation from the input reference frequency
Band 800MHz (digital)	Standard coding test signal with the same bit rate of the modulation signal		

5.1.2. MEASURING INSTRUMENTS AND SETTING

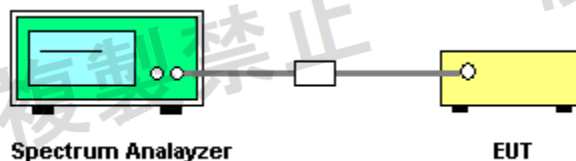
5.1.3. TEST PROCEDURES

Set the spectrum analyzer as follows :

Set EUT work in test mode as described in table above, modulate the transmitter with 1kHz sine wave at an input 36dB greater than necessary to produce 5kHz rated system deviation.

Center frequency:	The centre frequency of the channel under test.
Frequency sweep width:	Wide enough to cover the complete power envelope of the signal of the EUT.
Resolution bandwidth:	1KHz
Video bandwidth:	Equal to RBW
Sweep mode:	Continuous sweep
Detection mode:	Positive peak
Display mode:	Maximum hold

6.1.4. TEST SETUP LAYOUT



6.1.5. TEST DEVIATION

There is no deviation with the original standard.

6.1.6. EUT OPERATION DURING TEST

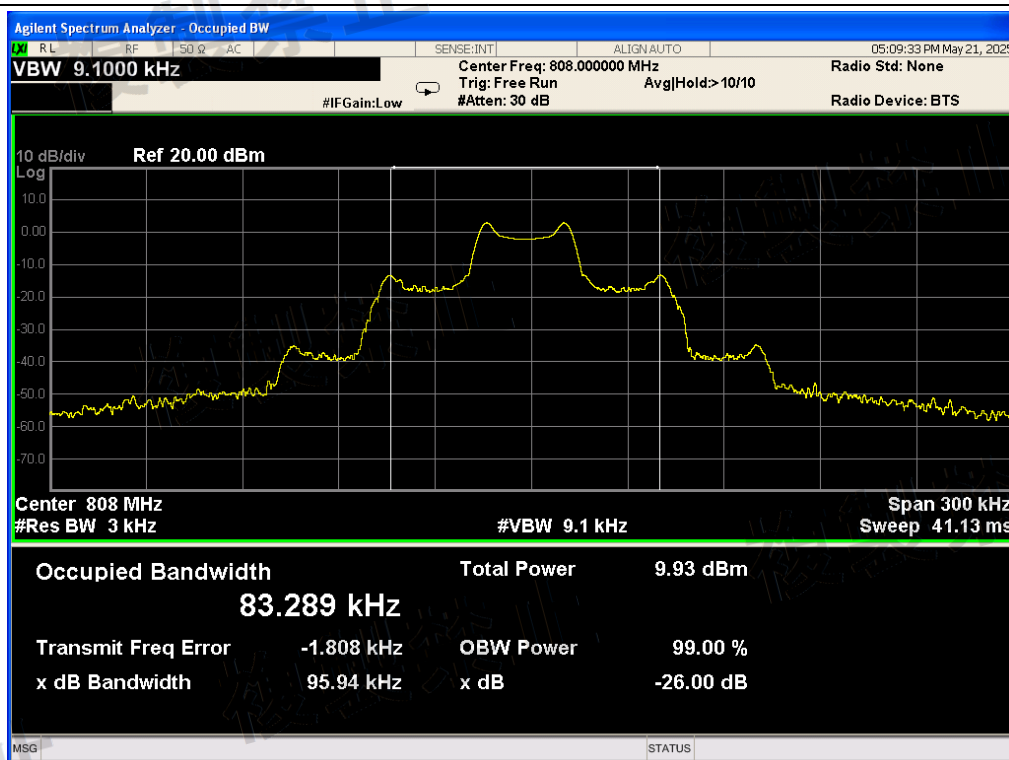
The EUT was programmed to be in continuously transmitting mode.

5.2 TEST RESULT

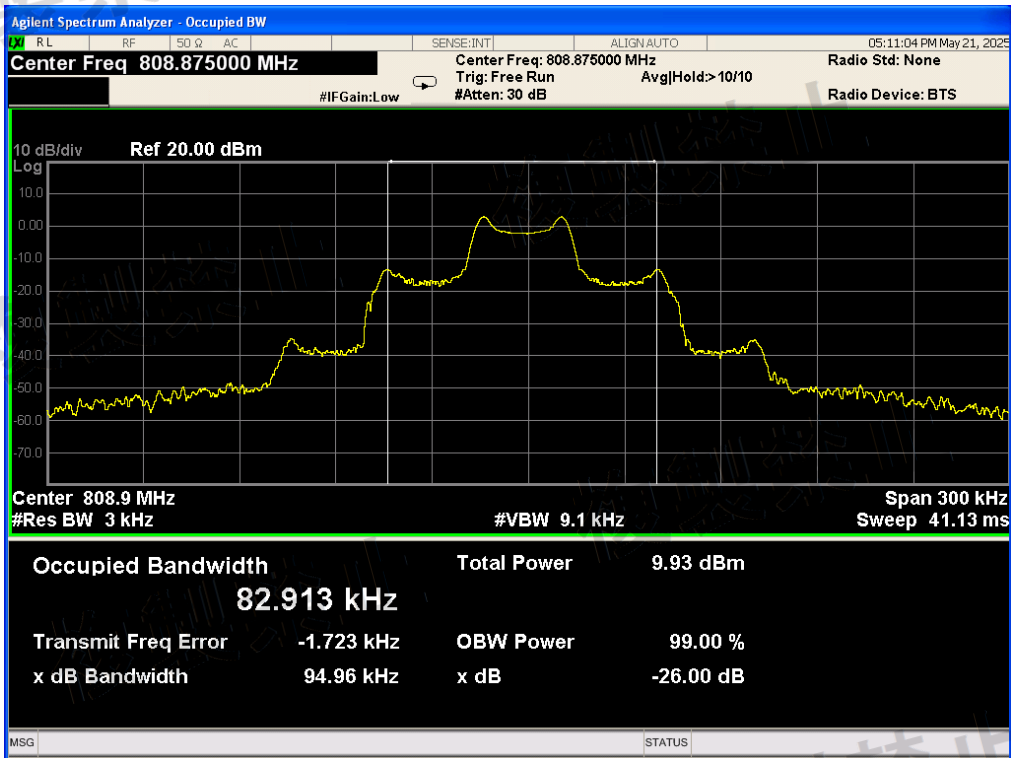
EUT:	Wireless Microphone	Model:	WM3.2
Temperature:	25°C	Tested by:	Allen Liu
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	Transmit		

Condition	Frequency (MHz)	Antenna	99% OBW (kHz)	Limit	Verdict
NVNT	808	Ant1	83.289	≤110KHz	PASS
NVNT	808.875	Ant1	82.913	≤110KHz	PASS
NVNT	809.75	Ant1	83.632	≤110KHz	PASS

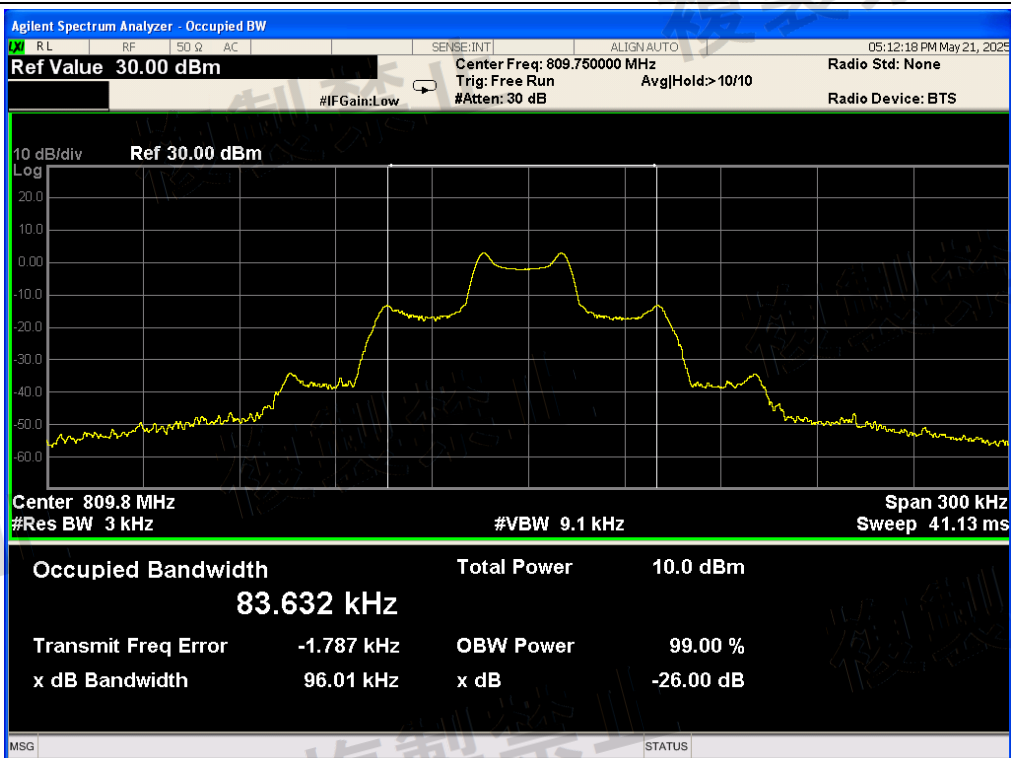
Plot on channel 01



Plot on channel 08



Plot on channel 15



6. ADJACENT CHANNEL LEAKAGE POWER

6.1 LIMIT

According to Item 8 of Article 2 Paragraph 1. The Adjacent channel leakage power shall not exceeded the following limit:

Below -60 dBc

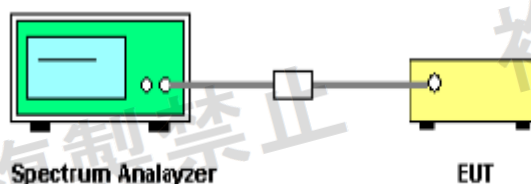
Reference frequency deviation: $\pm 5\text{kHz}$

The target model	Modulation signal source	Reference frequency deviation	When the modulation input of occupied bandwidth measurement
70MHz band	1kHz sine wave	$\pm 3\text{kHz}$	16dB increase of deviation from the input reference frequency
300MHz band	1kHz sine wave	$\pm 2.25\text{kHz}$	28dB increase of deviation from the input reference frequency
Band 800MHz (analog)	1kHz sine wave	$\pm 5\text{kHz}$	36dB increase of deviation from the input reference frequency
Band 800MHz (digital)	Standard coding test signal with the same bit rate of the modulation signal		

6.2 TEST PROCEDURES

1. Set EUT work in test mode as described in table above, modulate the transmitter with 1kHz sine wave at an input 36dB greater than necessary to produce 5kHz rated system deviation.
2. Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
RBW/VBW=0.5~2.5%*Span.
Detector: Peak.
Trace Mode: Max Hold.
3. When the trace is complete, measure the occupied bandwidth (90% bandwidth) with spectrum analyzer's bandwidth measure function.

6.3 TEST SETUP LAYOUT



6.4 TEST DEVIATION

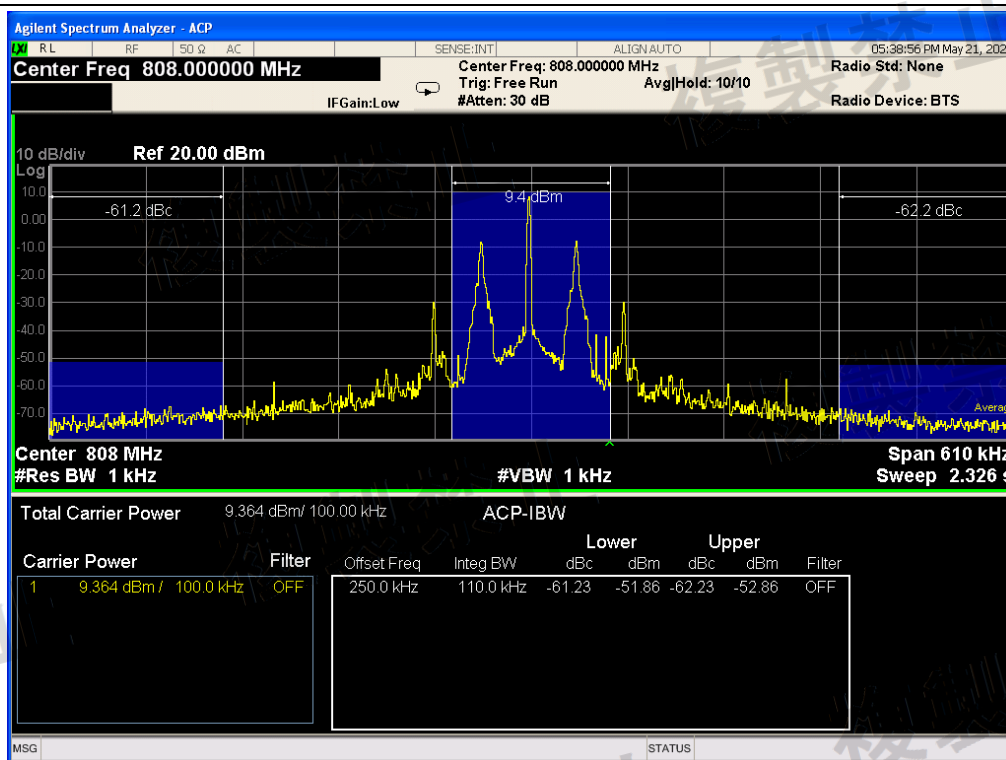
There is no deviation with the original standard.

6.5 TEST RESULT

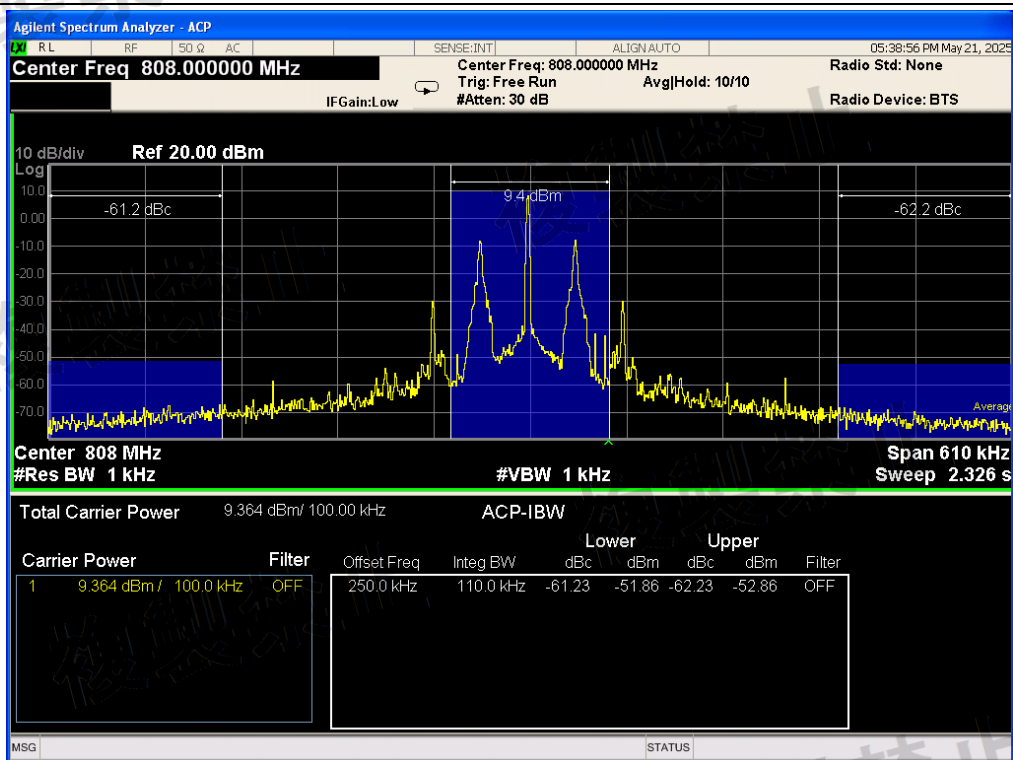
EUT :	Wireless Microphone	Model:	WM3.2
Temperature:	25°C	Tested by:	Allen Liu
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	Transmit-FM (CH01, CH08,CH15)		

Frequency Offset (kHz)	808MHz (dBc)	808.875 MHz (dBc)	809.75 MHz (dBc)	Limit (dBc)	Verdict
-250	-61.23	-61.23	-60.53	-60	Pass
+250	-62.23	-62.23	-60.72	-60	

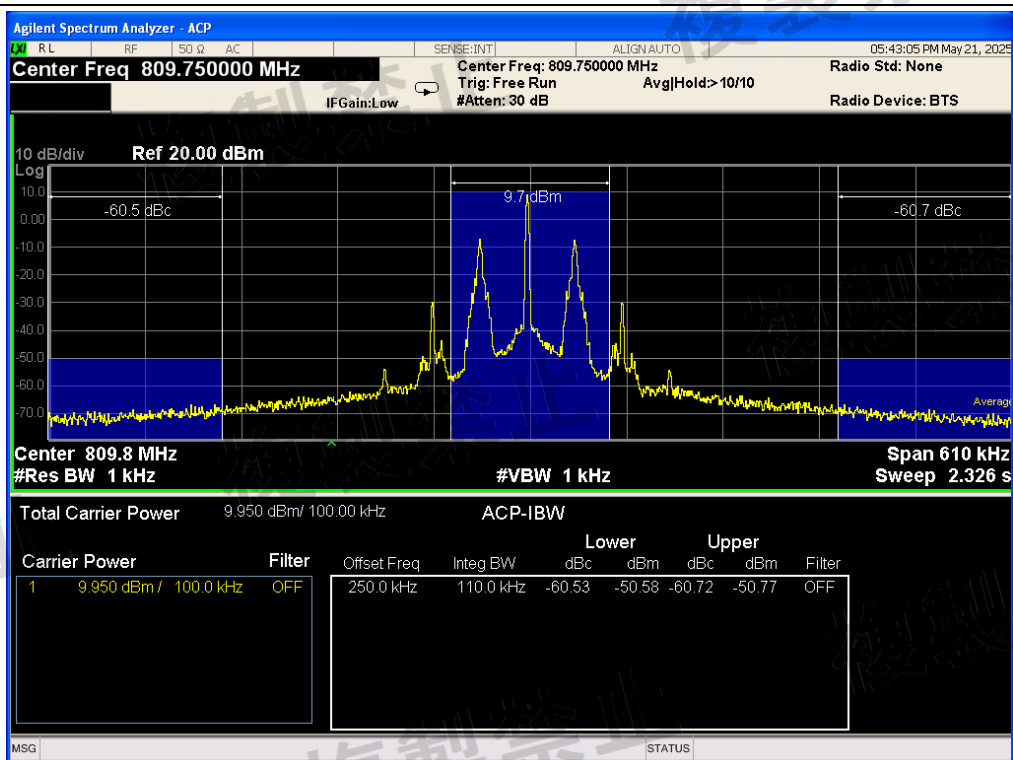
Plot on channel 01



Plot on channel 08



Plot on channel 15



7. TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

7.1 LIMIT

According to Item 8 of Article 2 Paragraph 1, The transmitter spurious emissions shall not exceeded the following limit:

Below 2.5 μ W

7.2 TEST PROCEDURES

1. EUT have the continuous reception mode and fixed only one channelize.
2. Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
Below 1GHz: RBW/VBW= 100 KHz/ 100KHz
Above 1GHz: RBW/VBW= 1MHz / 1MHz.
Detector: Peak.
Trace Mode: Max Hold.
3. All the emissions from 30MHz to 13GHz were measured and record.

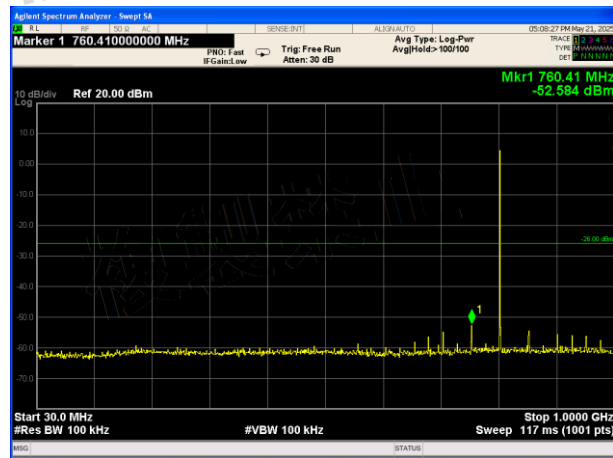
7.3 TEST RESULT

EUT :	Wireless Microphone	Model:	WM3.2
Temperature:	25℃	Tested by:	Allen Liu
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	Transmit-FM (CH01, CH08,CH15)		

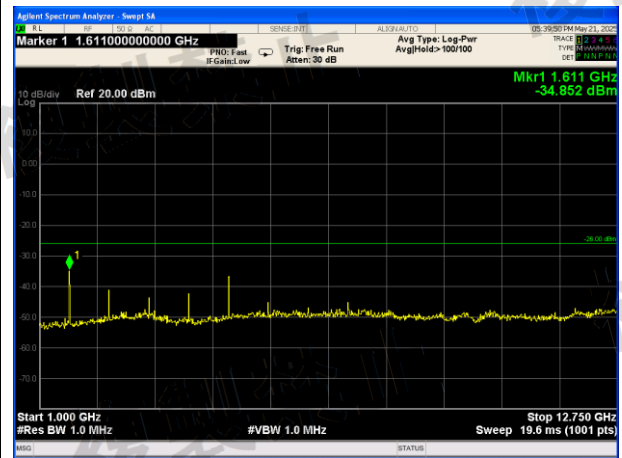
Condition	Frequency (MHz)	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Max Value (uW)	Limit Start(uW)	Limit Stop (uW)	Verdict
NVNT	808	Ant1	30-1000	760.41	-52.584	0.0055	2.5	2.5	Pass
NVNT	808	Ant1	1000-12750	1611	-34.852	0.3272	2.5	2.5	Pass
NVNT	808.875	Ant1	30-1000	856.44	-49.034	0.0125	2.5	25	Pass
NVNT	808.875	Ant1	1000-12750	1623	-35.28	0.2965	2.5	25	Pass
NVNT	809.75	Ant1	30-1000	857.41	-48.848	0.0130	2.5	2.5	Pass
NVNT	809.75	Ant1	1000-12750	2434	-39.996	0.1001	2.5	2.5	Pass

Plot on channel 01

30MHz-1000MHz

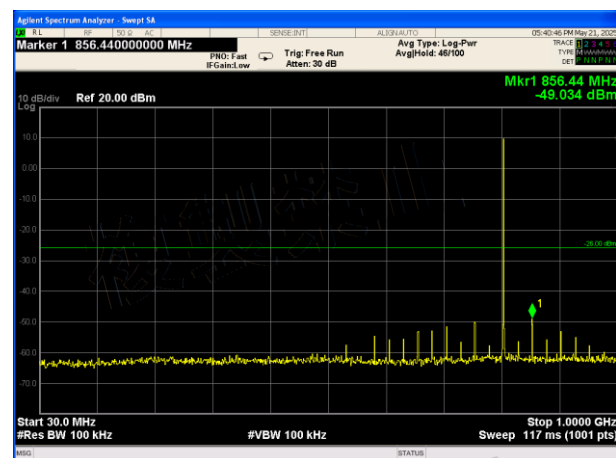


1000MHz-12.75GHz

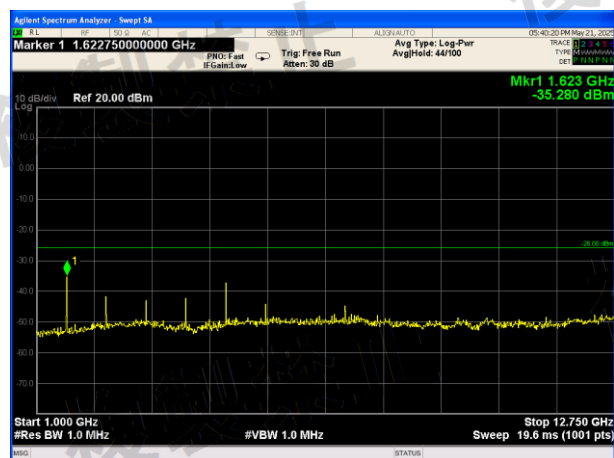


Plot on channel 08

30MHz-1000MHz

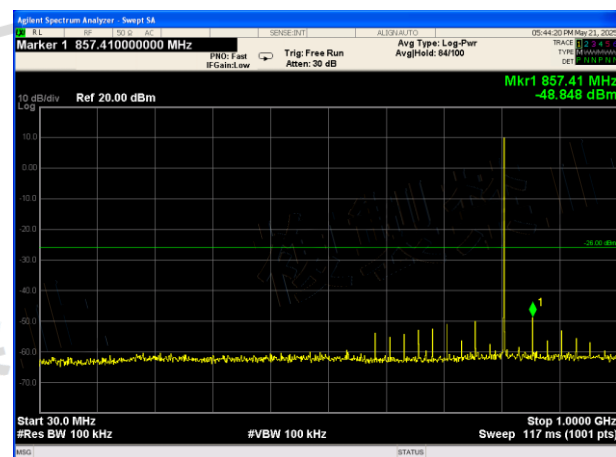


1000MHz-12.75GHz

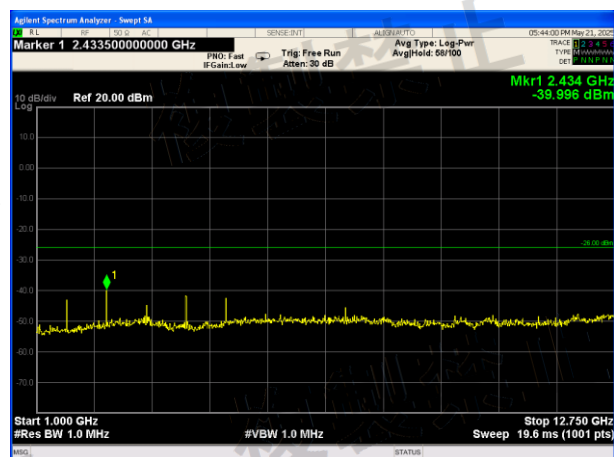


Plot on channel 15

30MHz-1000MHz



1000MHz-12.75GHz



8. LIMIT, SUCH AS RADIO WAVES EMITTED BY THE SECONDARY

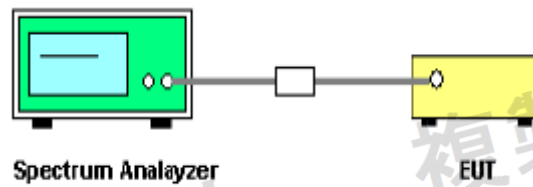
8.1 LIMIT

According to Item 8 of Article 2 Paragraph 1. The receiver spurious emissions shall not exceed the following limit: Below 4nW

8.2 TEST PROCEDURES

1. Set EUT work in test mode as described in table above, modulate the transmitter with 1kHz sine wave at an input 36dB greater than necessary to produce 5kHz rated system deviation.
2. Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
Resolution BW: 100 KHz for frequency below 1GHz and 1MHz for frequency above 1GHz
Video BW: 100 KHz for frequency below 1GHz and 1MHz for frequency above 1GHz
Detector: Peak.
Trace Mode: Max Hold.
3. All the emissions from 30MHz to 13GHz were measured and record.

8.3 TEST SETUP LAYOUT



8.4 TEST DEVIATION

There is no deviation with the original standard.

8.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Not Application; The EUT does not have receiver function.

9. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

9.1 LIMIT

- (1) A radio facility of a radio station used primarily in the same enclosure, and an identification code (which is a code for identifying the counterparty of the communication, and other than the identification signal prescribed in Article 8, paragraph (1), item (III) of the radio act) Function of automatically sending or receiving;
- (2) A function capable of easily switching the frequency by the user or stopping the radio wave.

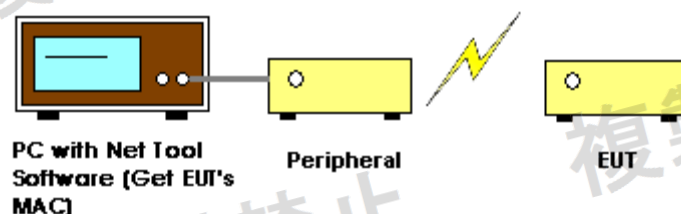
9.2 MEASURING ID CODE SOFTWARE

Item	Limits
MAC IP List	MAC Scan

9.3 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.

9.4 TEST SETUP LAYOUT



9.5 TEST DEVIATION

There is no deviation with the original standard.

9.6 EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

9.7 TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILIT

The device is one-way communication method, automatically transmit ID code (frequency list in Japan).

REPORT IS FINISHED.