

TEST REPORT

Applicant:	Phase SAS	
Address:	1 Cours de l'Île Seguin, 92100 Boulogne Billancourt, France	
Manufacturer:	DONGGUAN GUAN CHAN PLASTICELECTRIC TECHNOLOGY LTD.	
Address:	ROOM 101, BUILDING 4, NO.1, SHANGXING ROAD, SHANGJIAO, CHANGAN TOWN, DONGGUAN CITY GUANGDONG PROVINCE	
Factory:	DONGGUAN GUAN CHAN PLASTICELECTRIC TECHNOLOGY LTD.	
Address:	ROOM 101, BUILDING 4, NO.1, SHANGXING ROAD, SHANGJIAO, CHANGAN TOWN, DONGGUAN CITY GUANGDONG PROVINCE	
E.U.T.:	Phase Pro	
Model Number:	PH-PRO-U-01	
Trade mark:	Phase SAS	
Date of Receipt:	2025-02-07	Date of Test: 2025-02-07 to 2025-02-12
Test Specification:	Article 2 Paragraph 1, item 19 MIC Notice No.88 Appendix No.43	
Equipment Rule:	MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20	
Prepared by:	Approved & Authorized Signer:	
		
Jerry Hu/ Engineer	Frank Shen/ Manager	
Issue Date: 2026-05-08		
Other Aspects: None		
Abbreviations: N/A=not applicable E.U.T.=equipment under tested		
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Dongguan Lepont Testing Service Co., Ltd.		

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1. GENERAL PRODUCT INFORMATION

1.1 PRODUCT FUNCTION

Refer to Technical Construction Form and User Manual.

1.2 TEST DESCRIPTION OF DEVICE (EUT)

Product Name:	Phase Pro
Model No.:	PH-PRO-U-01
Test Model No:	PH-PRO-U-01
Difference:	N/A
Serial No.:	N/A
Test sample(s) ID:	LP24100055C01-S001
Sample(s) Status	Engineer sample
Hardware:	V1.10
Software:	V1.0
Operation Frequency:	2402MHz-2480MHz
Channel numbers:	40
Channel separation:	2MHz
Modulation type:	GFSK
Antenna Type:	Chip Antenna for Remote PCB Antenna for Receiver(Ant.1&Ant.2)
Antenna gain:	2.2dBi for Remote 3.3dBi for Receiver Ant.1 1.6dBi for Receiver Ant.2
Power supply :	Receiver: DC 5V form USB-B (Supplied by PC USB)
	Remote: DC 3.7V form battery, 3.7V 400mAh(Nominal voltage)

2. TEST SET-UP AND OPERATION MODES

2.1 INDEPENDENT OPERATION MODES

Test mode	Low channel	Middle channel	High channel
GFSK(TX)	2402MHz	2440MHz	2480MHz
GFSK(RX)	2402MHz	2440MHz	2480MHz

Note: For the test results, the EUT had been tested with all conditions. But only the worst case (Mode A) was shown in test report except the RF output power test was shown all conditions.

2.2 FREQUENCY AND CHANNEL LIST

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2472
36	2474	37	2476	38	2478	39	2480

2.3 TEST SOFTWARE

Software	Description
BT_Tool.exe	Set the COM Port Test Tool to set the corresponding Test conditions

2.4 GENERAL CONDITION

Ambient Condition:	Temperature	Humidity
	22.4℃	51.2 %RH

2.5 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT

OUTSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID	Trade name	Date Cable	Power Cord
1.	Lap top	Xiaoxin Pro IA5HR	PF490VB0	N/A	Lenovo	N/A	N/A
2.	Com Tool	USB TTL	V2.2	/	GZU	/	/
INSIDE SUPPORT EQUIPMENT							
No.	Equipment	Model	Serial No.	FCC ID	Trade name	Date Cable	Power Cord
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. TEST STANDARDS AND SITES

3.1 DESCRIPTION OF STANDARDS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

MIC Notice No.88 Appendix No.43			
Transmitter Parameters			
Description	Clause	Result	Remark
Antenna Power	3.2 (2)	Pass	---
Tolerances for Antenna Power	3.2 (3)	Pass	---
Frequency Tolerance	3.2 (4)	Pass	---
Transmission Rate	3.2 (5)	N/A	---
Spurious emission intensity	3.2 (6)	Pass	---
Occupied Frequency Bandwidth	3.2 (7)	Pass	---
Spread Bandwidth	3.2 (8)	N/A	---
Process Gain	3.2 (9)	N/A	---
Number of Carriers	3.2 (10)	N/A	---
Dwell Time	3.2 (11)	N/A	---
Transmission Antenna Gain (EIRP Measurement)	3.6 (2)b	PASS	
Transmission Radiation Angle Width (3dB Bandwidth)	3.6 (2)b	Note1	
Receiver Parameters			
Secondary Radiated Emissions	3.3 (1)	Pass	---
Controlling equipment			
Interference prevention function	3.4.1 (1)	Pass	---
Note: N/A is an abbreviation for Not Applicable. Note1: means the max EIRP= 4.323dBm + 2.2dBi= 6.523dBm is less than 12.14dBm, the test is not applicable.			

3.2 LIST OF TEST AND MEASUREMENT INSTRUMENTS

For RF test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Rohde & Schwarz	FSV40	101412	Jan. 07, 2025	1 Year	LEP-E076	☒
Spectrum analyzer	Agilent	N9020A	MY49100060	Jan. 07, 2025	1 Year	LEP-E020	☒
Vector source	Agilent	N5182A	MY47420382	Jan. 07, 2025	1 Year	LEP-E021	☒
Analog signal source	Agilent	N5171B	MY51350292	Jan. 07, 2025	1 Year	LEP-E022	☒
All instrument	Rohde & Schwarz	CMW 500	1201.002K50	Jan. 07, 2025	1 Year	LEP-E019	☒
High and low temperature chamber	Math-mart	MT-1202-40	LEP-E041	Jan. 07, 2025	1 Year	LEP-E041	☒
control unit	Tonscend	JS0806-2	10165	Jan. 07, 2025	1 Year	LEP-E034	☒
Testing software	Tonscend	JSTS1120-3	Ver 2.6.77.0518	N/A	N/A	N/A	☒

Remark: The internal power meter of the control unit

Note: C: 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 (1).

- (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.
- (b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).
- (c) 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 (1).
- (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) From JRL Article 24-2, paragraph 4, Item 2.

3.3 MEASUREMENT UNCERTAINTY

Parameter	UNCERTAINTY
Uncertainty for Conduction Spurious emission test	2.10 dB
Uncertainty for Output power test	0.94 dB
Uncertainty for Power density test	2.10 dB
Uncertainty for Frequency range test	1×10 ⁻⁶
Uncertainty for Bandwidth test	1×10 ⁻⁶
Uncertainty for DC power test	0.042 %
Temperature	±0.8℃
Humidity	±3.2%
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.4 TEST FACILITY

EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L10100.
The Laboratory has been assessed and proved to be in compliance with A2LA
The Certificate Registration Number is 6901.01
FCC Designation No.: CN1351
Test Firm Registration No.: 397428
ISED CAB identifier: CN0151
Test Firm Registration No.: 20133

Test Location (Others) : Dongguan Lepont Testing Service Co., Ltd.

Address : Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China

3.5 POWER SUPPLY OF TEST

A power supply with the rated voltage and also the rated voltage $\pm 10\%$ shall be used. However when it was confirmed that input voltage variation at the radio unit (except power supply section) in the radio equipment to be tested is less than $\pm 1\%$ against a variation of $\pm 10\%$ at the input voltage from the external power supply to the radio equipment, the test may be done for the rated voltage only and when the radio equipment was designed so as to be operated in a specified voltage variation limit within $\pm 10\%$, and which is indicated in the installation specification with the upper and the lower limits, the test shall be done for the rated voltage and the specified upper and lower limits of voltage.

Test conditions	Input Voltage (Vdc)	Voltage at the input of the RF circuit	Tolerances %
Vnormal	3.7	3.3V	0%
Vmin(-10%)	3.3	3.3V	0%
Vmax(+10%)	4.07	3.3V	0%

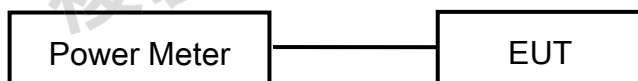
Note 1: When the input voltage is reduced or increased by 10%, RF IC input variation is less than $\pm 1\%$. So the following test items are conducted in the normal voltage.

4. ANTENNA POWER ERROR MEASUREMENT

4.1 LIMIT

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

4.2 TEST SETUP



4.3 MEASURING OPERATION PROCEDURES

- Connect the high frequency power meter to the attenuator and measure the total power.
- Set the antenna power as follows:
 C.Continuous waves: • Use a fast power sensor suitable for 2.4 GHz and capable of minimum 1 MS/s.
 Use the following settings:
 - Sample speed 1 MS/s or faster.
 - The samples shall represent the RMS power of the signal.

4.4 TEST RESULT

Test Mode	Test Fre. (MHz)	Antenna Power (dBm)	Antenna Power (mW)	Declared Rated Power (mW)	Antenna Power Tolerance (%)	Limit		Result
						Conducted Antenna Power (mW)	Antenna Power Tolerance (%)	
GFSK	2402	4.323	2.706	5	-45.88	≤ 10	+20	Pass
	2440	3.860	2.432		-51.36			Pass
	2480	2.929	1.963		-60.74			Pass

Note:

- Conducted Antenna Power (mW)= $10^{(\text{Conducted Antenna Power (dBm)}/10)}$.
- Antenna Power Tolerance (%)= $[(\text{Conducted Antenna Power (mW)}-\text{Declared Rated Power(mW)})/\text{Declared Rated Power (mW)}]\times 100$.

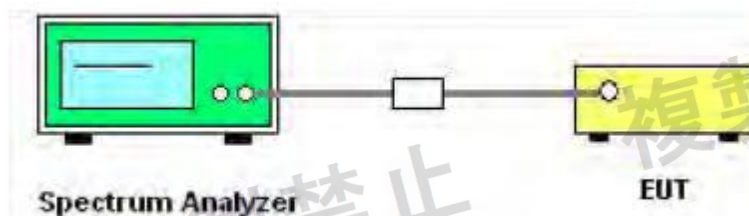
5. FREQUENCY ERROR MEASUREMENT

5.1 LIMIT

According to Radio Law of Japan item 19 of Article 2 Paragraph 1, Clause 3.2 (4), the Tolerance of frequency: $\pm 50\text{ppm}$.

Limit
Tolerance of frequency: $\pm 50\text{ppm}$

5.2 TEST SETUP



5.3 MEASURING EQUIPMENT CONDITIONS

Spectrum Parameters	Setting
RBW	10KHz
VBW	10KHz
Span	1MHz
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

5.4 MEASURING OPERATION PROCEDURES

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 5.3.
- EUT have transmitted absence of modulation signal and fixed channelize.
- Use the marking function to mark the peak frequency values
- Repeat above procedures until all frequency were measured.
- Record the results in the test report.

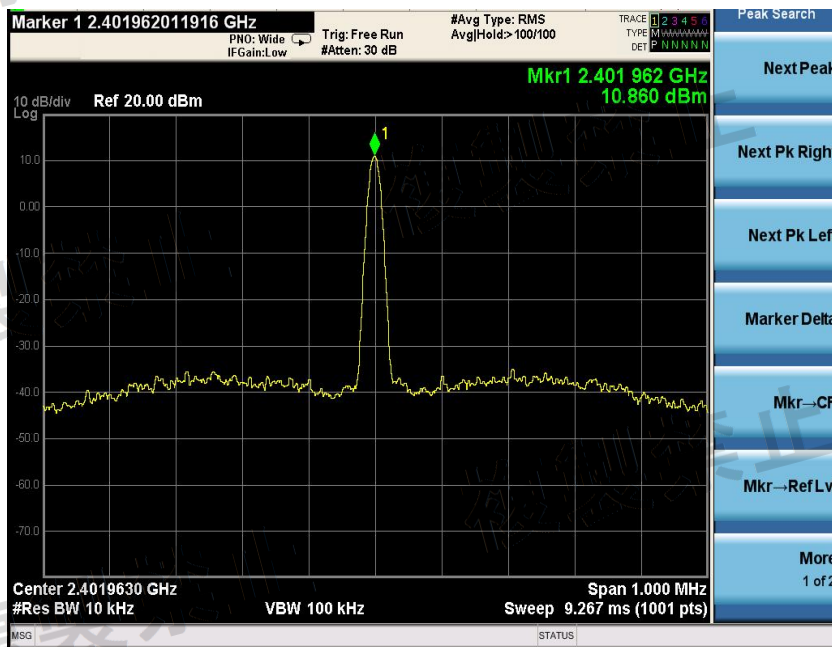
5.5 TEST RESULT

Test Mode	Test Frequency (MHz)	Test Result (MHz)	Tolerance (MHz)	Tolerance (ppm)	Limit(ppm)
GFSK	2402	2401.962	-0.038	-15.8	±50
	2440	2439.963	-0.037	-15.1	±50
	2480	2479.962	-0.038	-15.3	±50

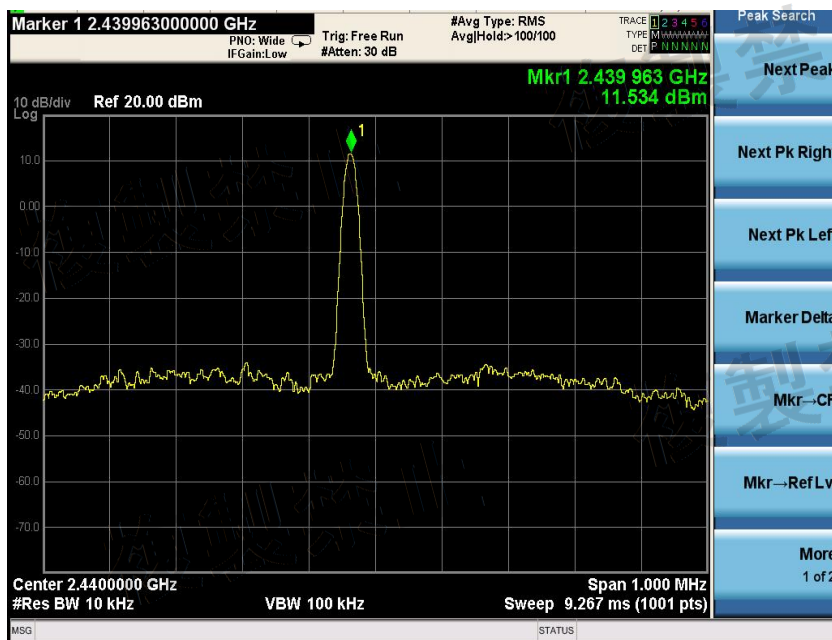
Note: We test the high, medium, and low voltage mode and recorded the worst-case test values below.

Note :Frequency Tolerance(ppm)=[(Measured Frequency(MHz)-Test Frequency(MHz))/Test Frequency(MHz)] $\times 10^6$

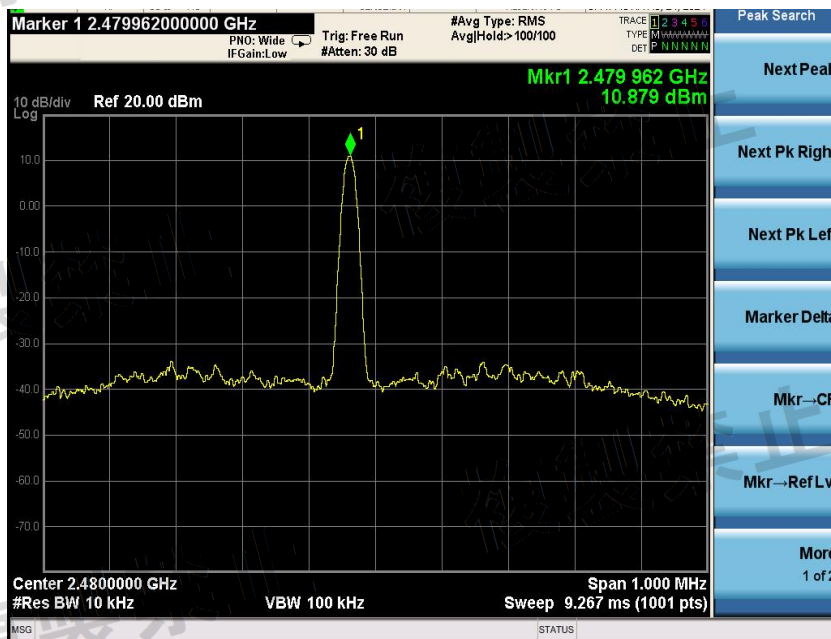
Low Channel 2402MHz



Middle Channel: 2440MHz



HIGH Channel: 2480MHz



6. OCCUPIED FREQUENCY BANDWIDTH

6.1 LIMIT

Item	Limits
Occupied Band Width(99%)	$FH \leq 83.5\text{MHz}$ $FH + DS \leq 83.5\text{MHz}$ $FH + \text{OFDM} \leq 83.5\text{MHz}$ $\text{OFDM}, DS \leq 40\text{MHz}$ Other: $\leq 26\text{MHz}$
Spread-spectrum Bandwidth(90%)	$\geq 500\text{KHz}$ (FH, DS)

6.2 TEST SETUP



6.3 MEASURING EQUIPMENT CONDITIONS

Spectrum Parameter	Setting
Attenuation	20dB
Span Frequency	3 MHz
Reference level	10 dBm
RB/VB	300KHz / 300KHz
Detector	Peak
Trace	Max hold
Sweep Time	Auto

6.4 MEASURING OPERATION PROCEDURES

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 6.3
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the 99% power bandwidth function to measure occupied bandwidth.
- Repeat step a to c, use the 90% power bandwidth function to measure spread bandwidth.
- Repeat above procedures until all channels were measured.
- Record the results in the test report.

6.5 TEST RESULT

Test Mode	Frequency (MHz)	Measured 99% Occupied Frequency Bandwidth (MHz)	Limit (MHz)	Conclusion
GFSK	2402	2.1506	≤ 26	Pass
	2440	2.1484	≤ 26	Pass
	2480	2.1465	≤ 26	Pass

Occupied Frequency Bandwidth(99%)-Low Channel



Occupied Frequency Bandwidth(99%)-Middle Channel



Occupied Frequency Bandwidth(99%)-HIGH Channel



7. UNWANTED EMISSION INTENSITY MEASUREMENT

7.1 LIMIT

Item	Limits
Spurious Emission Intensity	30MHz~1000MHz: $\leq 0.25\mu\text{W}/100\text{KHz}(-36\text{dBm}/100\text{KHz})$
	1000MHz~2387MHz: $\leq 2.5\mu\text{W}/\text{MHz}(-26\text{dBm}/\text{MHz})$
	2387MHz~2400MHz: $\leq 25\mu\text{W}/\text{MHz}(-16\text{dBm}/\text{MHz})$
	2483.5MHz~2496.5MHz: $\leq 25\mu\text{W}/\text{MHz}(-16\text{dBm}/\text{MHz})$
	2496.5 MHz~12.5GHz: $\leq 2.5\mu\text{W}/\text{MHz}(-26\text{dBm}/\text{MHz})$

7.2 TEST SETUP



7.3 MEASURING EQUIPMENT CONDITIONS

Spectrum Parameter	Setting
Attenuation	Auto
RB/VB	100 kHz / 100 kHz (Below 1GHz)
	1 MHz / 1 MHz (1 GHz or higher)
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

7.4 MEASURING OPERATION PROCEDURES

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 7.3
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission.
- Repeat above procedures until all channels were measured.
- Record the results in the test report.

Test Data(worst case):

Channel	Band(GHz)	Frequency(GHz)	Max Value (dBm/MHz)	Limit (dBm/MHz)
2402	0.03-1	0.90494	-44.584	-26
	1-2.387	0.2387	-56.754	-26
	2.387-2.4	2.4000	-29.019	-16
	2.4835-2.4965	2.49546	-57.588	-16
	2.4965-12.5	3.2000	-53.291	-26
2440	0.03-1	0.83316	-47.535	-26
	1-2.387	2.3842	-59.593	-26
	2.387-2.4	2.399844	-50.635	-16
	2.4835-2.4965	2.487439	-57.426	-16
	2.4965-12.5	3.253	-54.316	-26
2480	0.03-1	0.82443	-47.346	-26
	1-2.387	1.9016	-42.365	-26
	2.387-2.4	2.399883	-51.487	-16
	2.4835-2.4965	2.483968	-37.127	-16
	2.4965-12.5	3.305	-55.242	-26

Note:in the 30Mz to 1GHz frequency band,the RBW used for the measurement is 100kHz.
 Its measurement results need to added 10dB (according to the formula as follow)

$$B=A+10 \log RBW_{ref} / RBW_{measured}$$

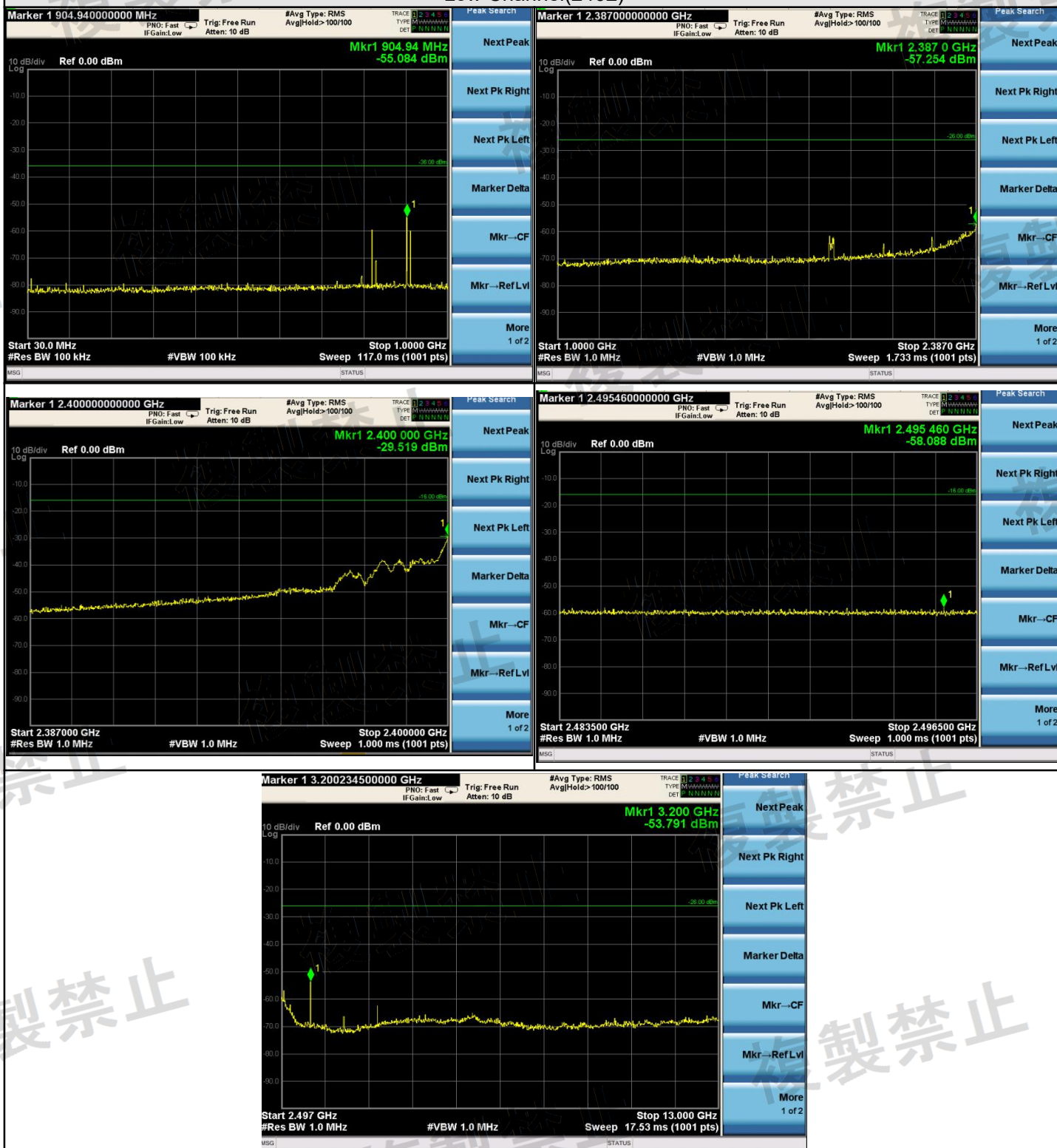
A is the measured value at the narrower measurement bandwidth $RBW_{measured}$

B is the corresponding value at RBW_{ref}

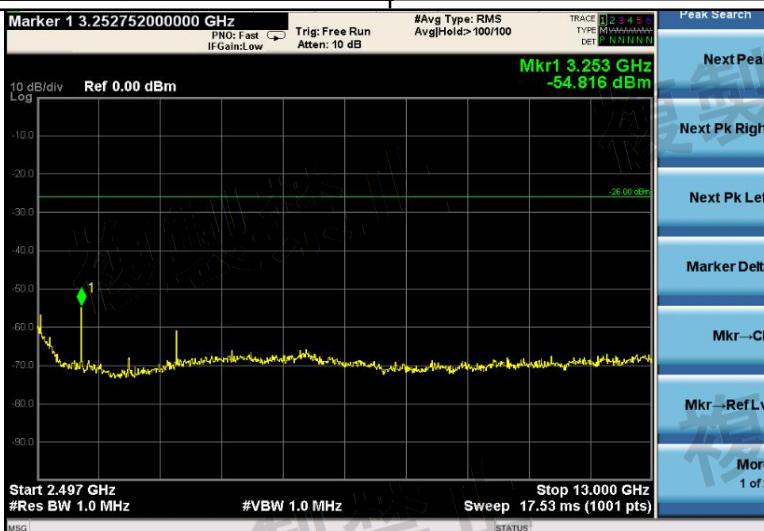
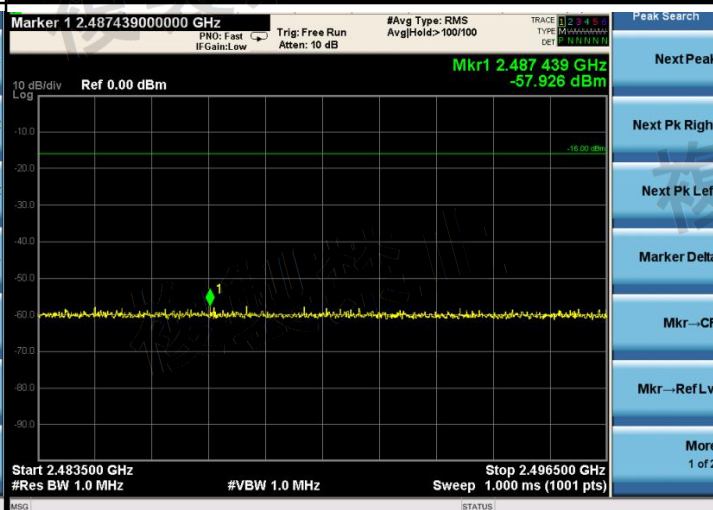
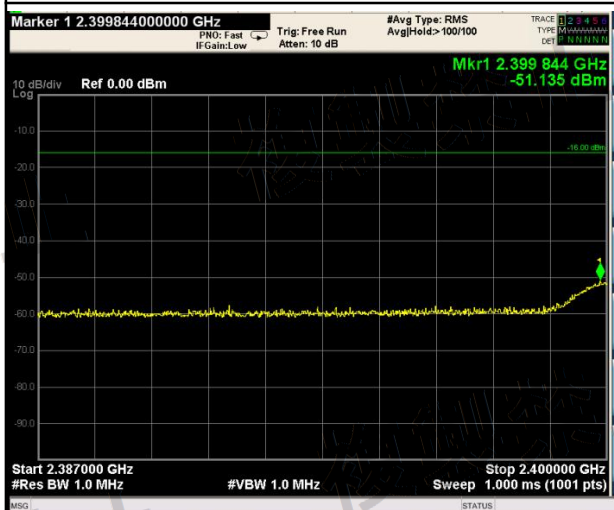
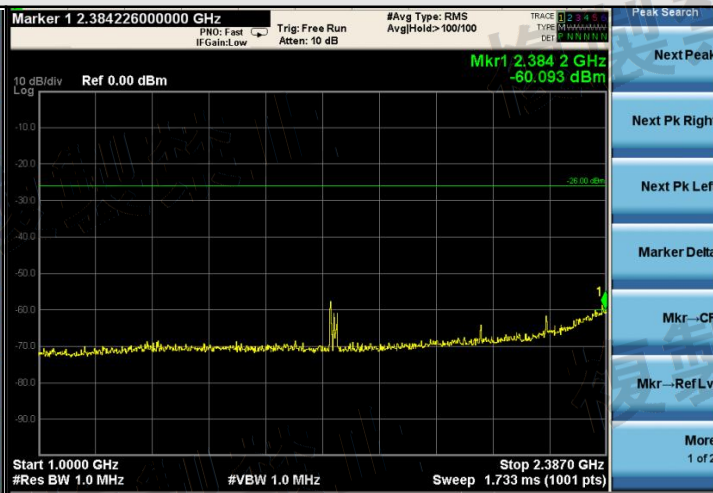
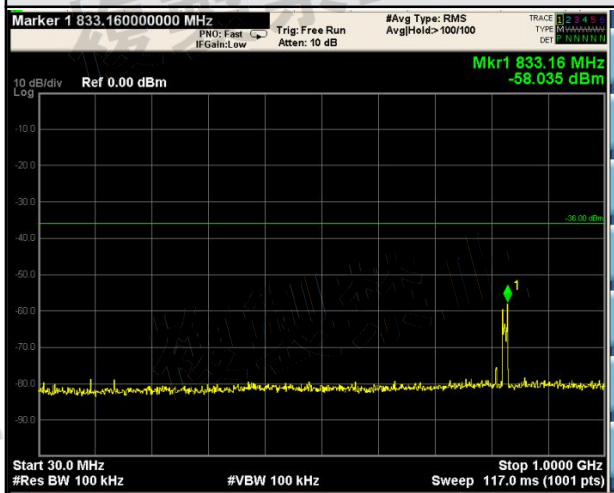
Note: the test RF cable loss is 0.5 dB that had added the result.

7.5 TEST RESULT

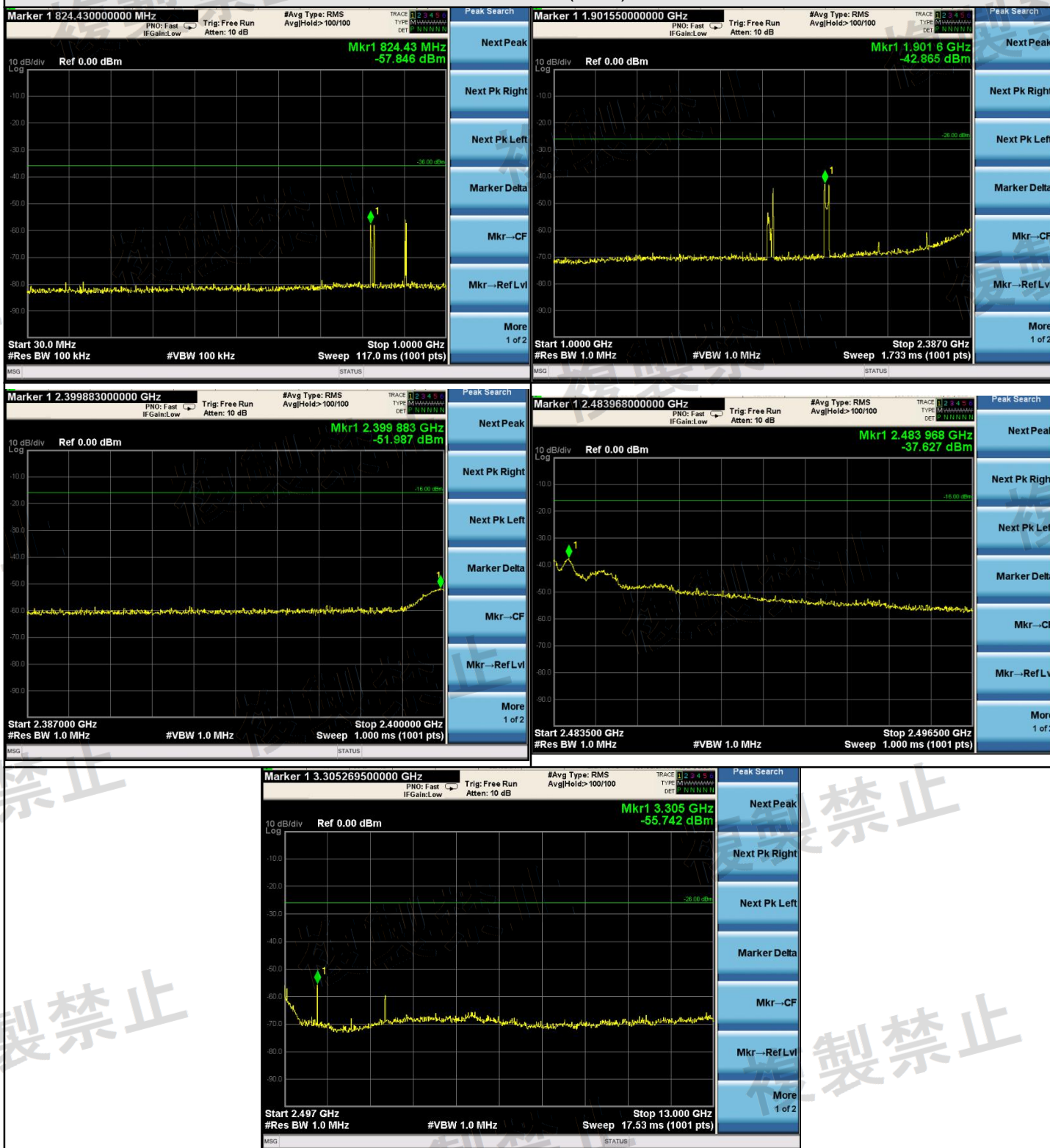
Low Channel(2402)



MIDDLE Channel(2440)



HIGH Channel(2480)

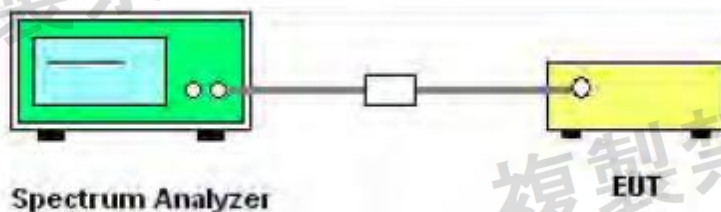


8. SECONDARY RADIATED EMISSIONS

8.1 LIMIT

Item	Limits
RX Spurious Emission	Below 1GHz $\leq$ 4nW (-54dBm)
	1 GHz or higher $\leq$ 20nW (-47dBm)

8.2 TEST SETUP



8.3 MEASURING EQUIPMENT CONDITIONS

Spectrum Parameter	Setting
Attenuation	Auto
RB/VB	100 kHz / 100 kHz (Below 1GHz) 1 MHz / 1 MHz (1 GHz or higher)
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

8.4 MEASURING OPERATION PROCEDURES

- EUT have transmitted the maximum modulation signal and fixed channelize.
- Setting of SA is following as: RB:100KHz / VB:100KHz(Below 1G), RB:1MHz / VB:1MHz(Above1G)
- AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- Setting of SA is following as 30MHz and stop frequency 1000MHz Then to mark peak reading value + cable loss shall be less than 4nW.
- SA adjusted to start frequency 1000MHz and stop frequency 12500MHz. Then to mark peak reading value + cable loss shall be less than 20nW.

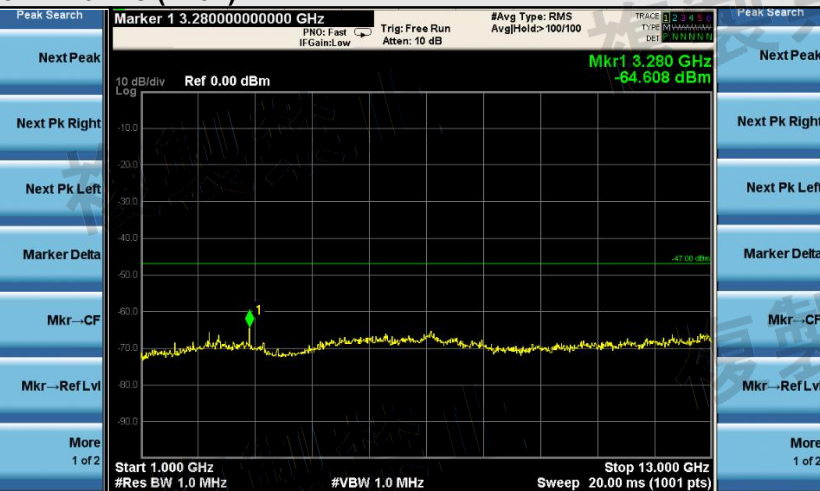
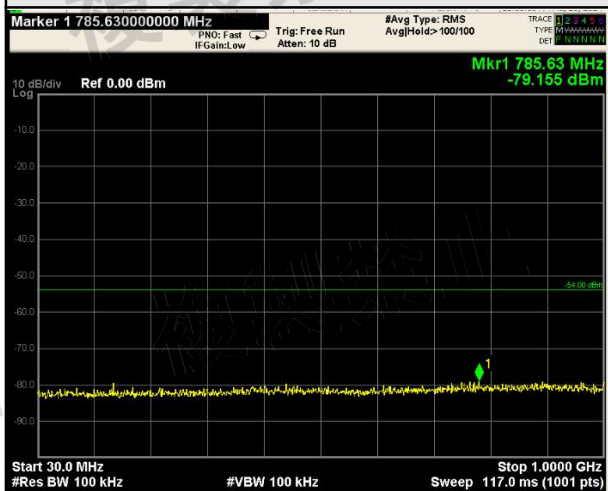
Test Data(worst case):

Channel	Band(GHz)	Frequency(GHz)	Max Value (dBm)	Limit (dBm)
2402	0.03-1	0.78563	-78.655	-54
	1-12.5	3.280	-64.108	-47
2440	0.03-1	0.85450	-78.600	-54
	1-12.5	2.416	-63.845	-47
2480	0.03-1	0.81861	-78.681	-54
	1-12.5	3.280	-63.744	-47

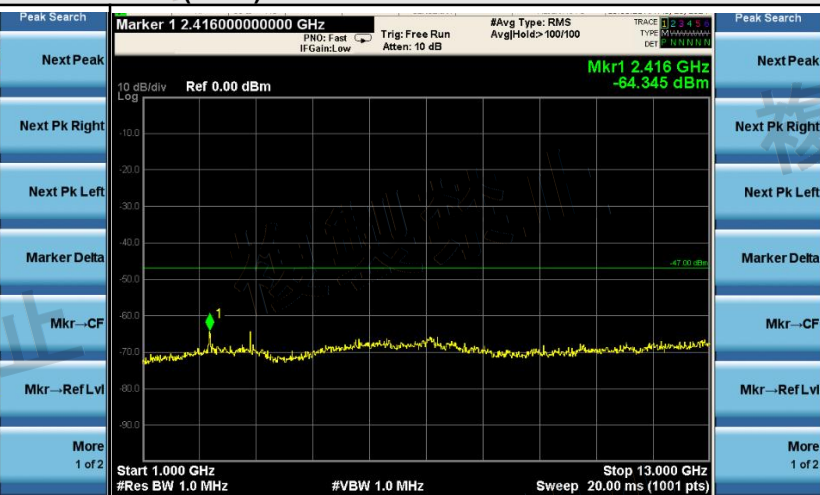
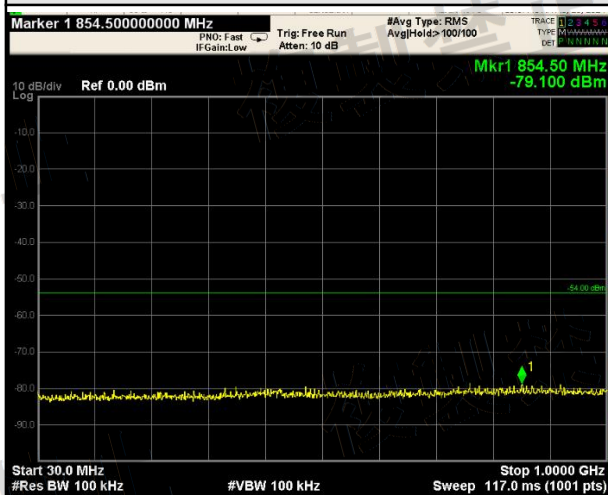
Note: the test RF cable loss is 0.5 dB that had added the result.

8.5 TEST RESULT

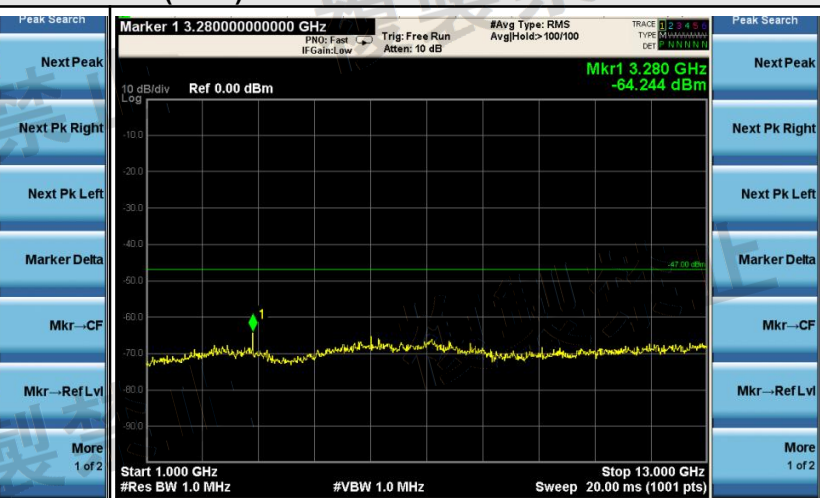
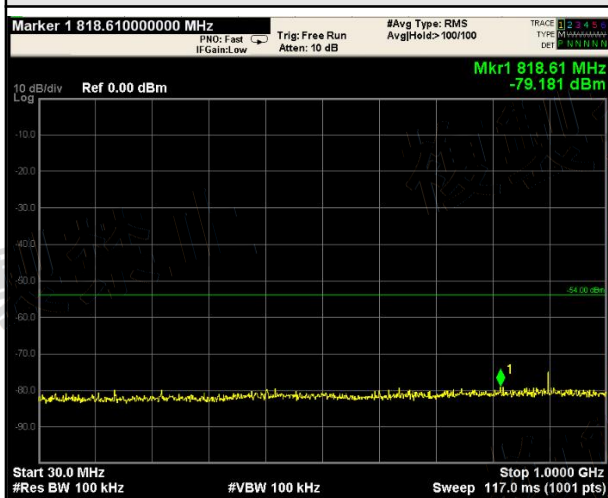
Low Channel(2402)



MIDDLE Channel(2440)



HIGH Channel(2480)

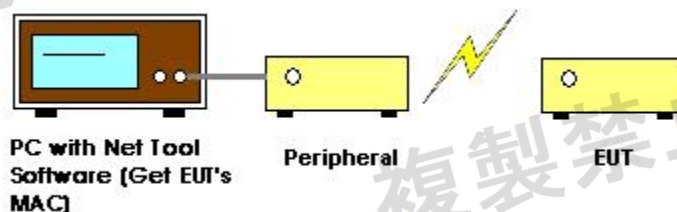


9. INTERFERENCE PREVENTION FUNCTION

9.1 LIMIT

Item	Limits
Identification Code	≥48bits

9.2 TEST SETUP



9.3 MEASURING REQUIREMENT

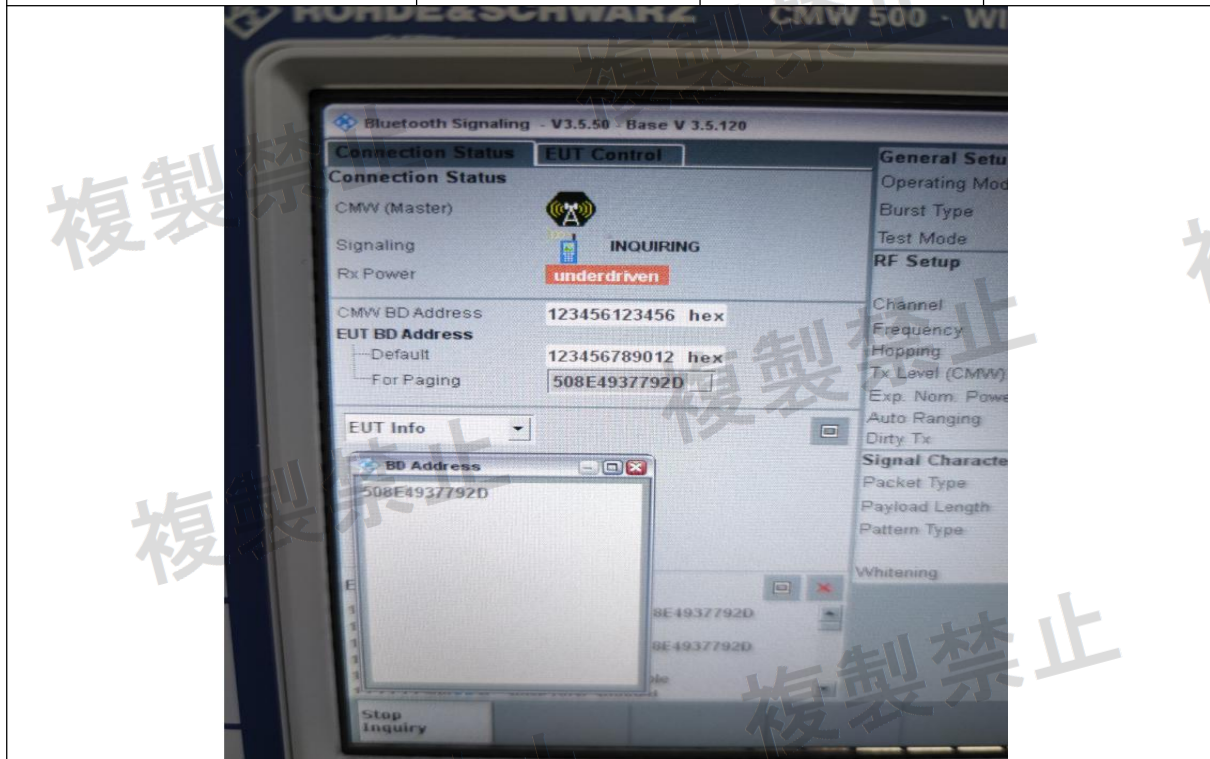
1. The demodulator shall be able to demodulate the transmitting signal from the radio equipment and to display contents of the identification code.
2. The opposite equipment shall be able to transmit the identification code as same as the transmitting signal from the radio equipment

9.4 MEASURING OPERATION PROCEDURES

1. The radio equipment with automatic transmitting function of identification code
 - A. Transmit the assigned identification code from the radio equipment.
 - B. Confirm the identification code received by the demodulator.
2. The radio equipment with automatic receiving function of identification code
 - A. Transmit the assigned identification code from the opposite equipment.
 - B. Confirm that the usual communication is available.
 - C. Transmit the identification code distinct from the assigned one from the opposite equipment.
 - D. Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.

9.5 TEST RESULT

Identification Code	Length(bits)	Limit(bits)	Result
50:8E:49:37:79:2D	48	≥48	Pass



10. TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER)

10.1 LIMIT

Item	Limits
EIRP Power Density	$\leq 6.91\text{dBm/MHz}$ (FH form 2427 - 2474.75 MHz) $\leq 12.14\text{dBm/MHz}$ (OFDM,DS from 2400~2483.5MHz) $\leq 12.14\text{dBm}$ (Other from 2400~2483.5MHz)
Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less	

10.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of spectrum analyzer.

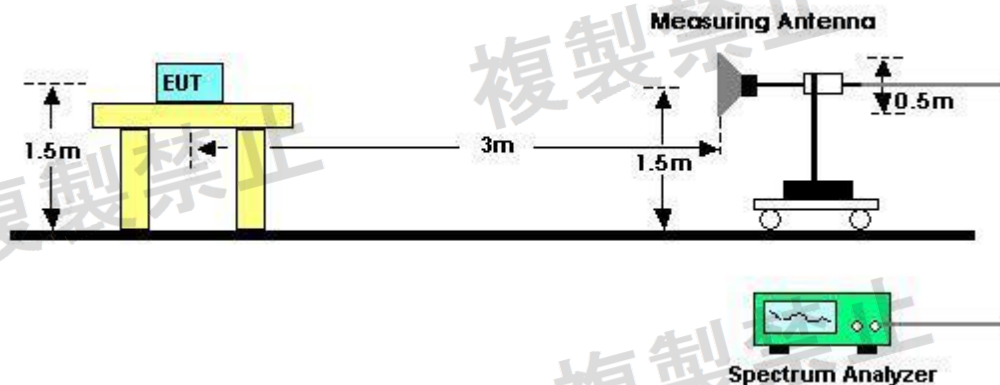
Spectrum Parameter	Setting
Attenuation	Auto
RBW/VBW	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

10.3 TEST PROCEDURES

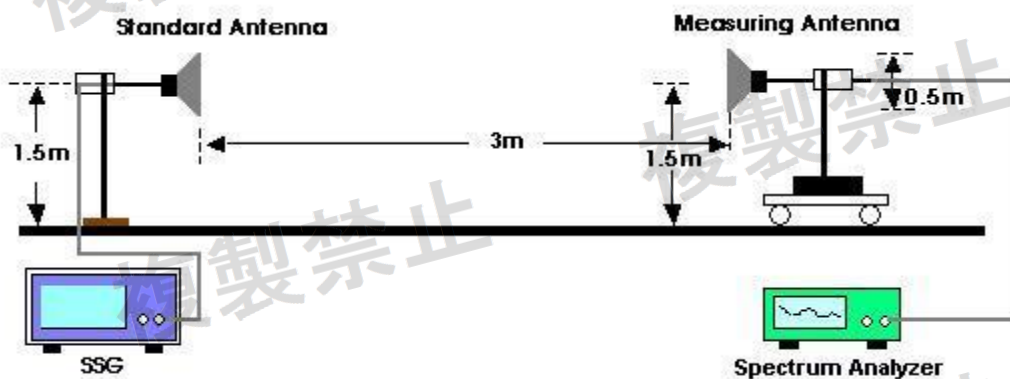
- a. Set EUT and measuring antenna at the same height and roughly facing each other.
- b. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
- c. 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
- d. Swing the replacing antenna give a maximum receiving level.
- e. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of replacing antenna height and swing it to find the maximum receiving level.
- f. Set SSG output power at Pt to give the equivalent output level of "E" or calculate
- g. Pt with SSG output which gives the nearest of "E" and difference ($\pm 1\text{dB}$). Record the Pt.
- h. Calculate EIRP by the formula below $\text{EIRP} = G_t - L + P_t$.
Gt: gain of replacing antenna (dBi)
L: feLeo loss between SSG and replacing antenna
Pt: Output power of the SSG
- i. 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.

10.4 TEST SETUP LAYOUT

For EUT radiation measurement



For standard antenna measurement



10.5 TEST RESULTS

EIRP evaluation:

Test Mode	Test Frequency (MHZ)	Antenna Power(dBm)	Antenna Power(mW)	Antenna gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
GFSK	2402	4.323	2.706	2.2	6.523	12.14	Pass
	2440	3.860	2.432	2.2	6.060	12.14	Pass
	2480	2.929	1.963	2.2	5.129	12.14	Pass

Note: Antenna Power(EIRP)(dBm)=Antenna Power(dBm)+Antenna gain(dBi)

Since the calculated EIRP is lower than 12.14 dBm, there is no need to test

11. TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH) MEASUREMENT

11.1 LIMIT

Item	Limits
3dB antenna beam width	$360/A$ (If $A < 1$; then $A = 1$) $A = \{\text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM}\}$ or $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$
Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less	

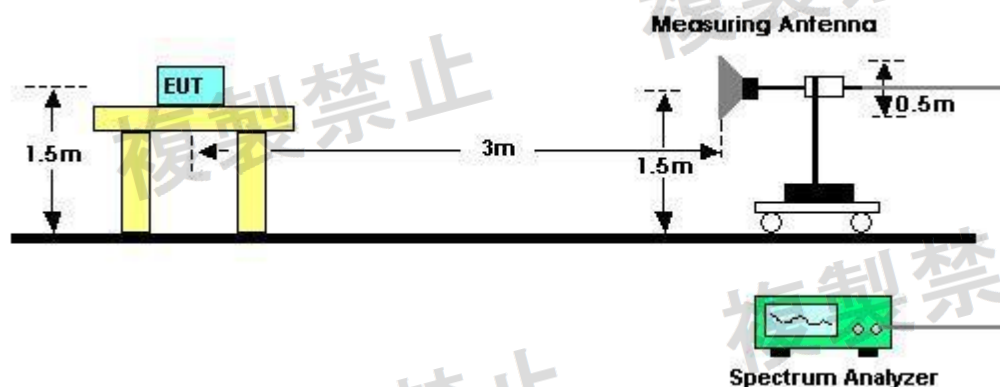
11.2 MEASURING INSTRUMENTS AND SETTING

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RBW	1 MHz
VBW	1 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

11.3 TEST PROCEDURES

- Set EUT and measuring antenna at the same height and roughly facing each other.
- Set spectrum analyzer with condition in section 4.7.2 and tune reference level to observe receiving signal position.
- Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
- Move the measuring antenna height up and down within $\pm 50\text{cm}$ 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"
- Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
- Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$).
 $A = \{\text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM}\}$ or $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$

11.4 TEST SETUP LAYOUT



11.5 TEST RESULTS

N/A

Since the EIRP is lower than 12.14 dBm, this test is not applicable.

---END---