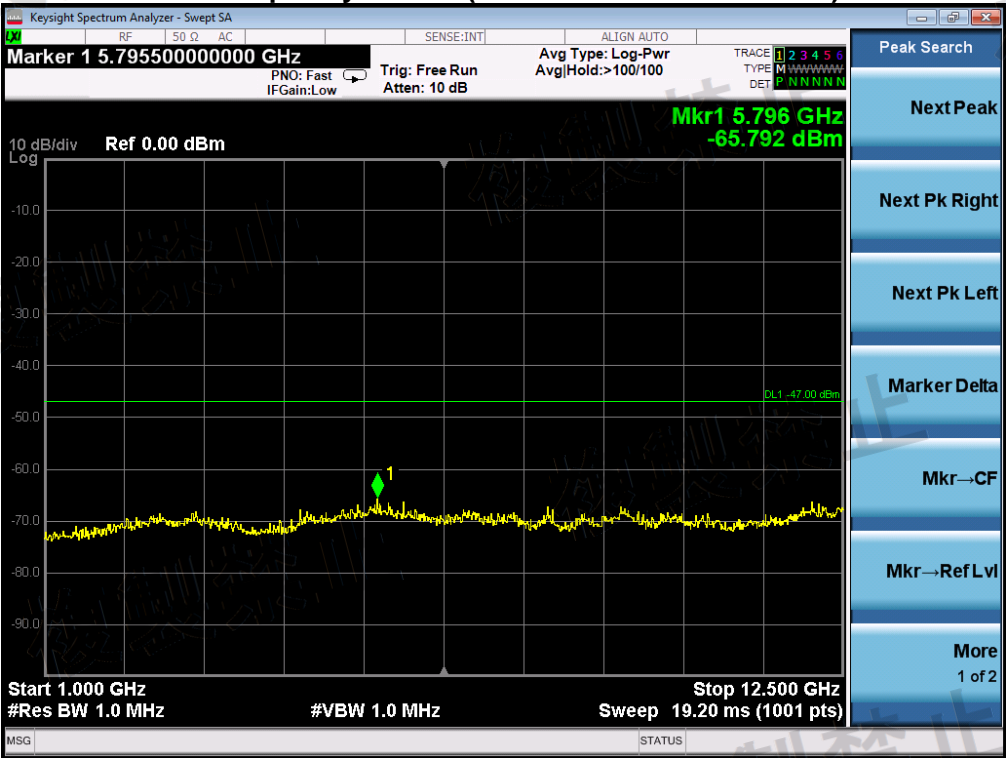
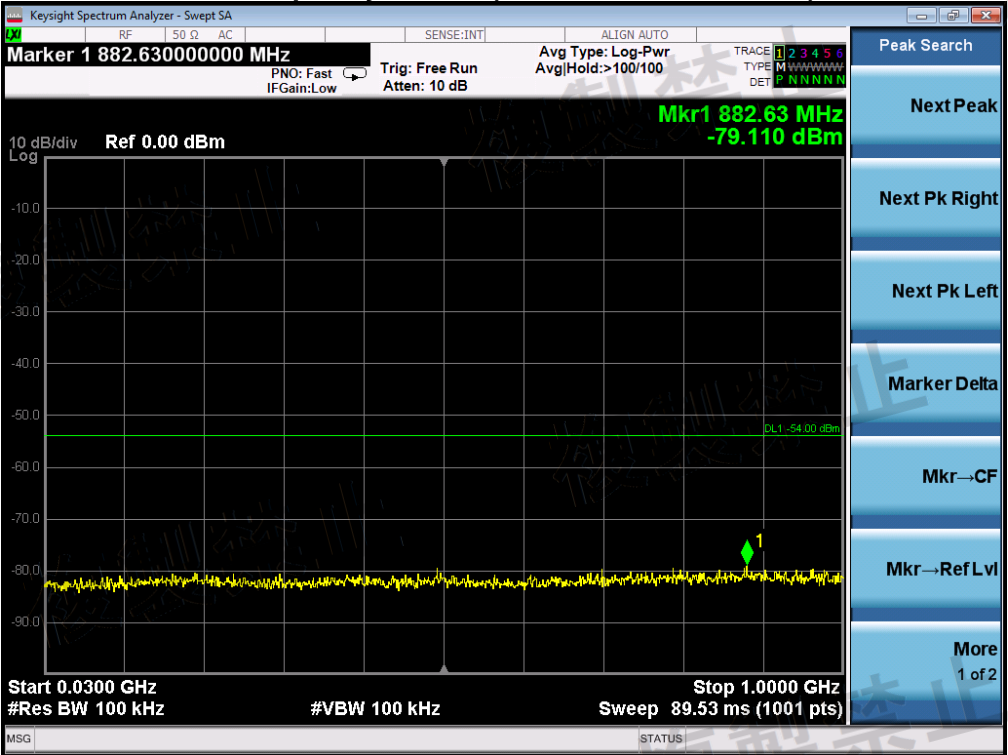


RX-Frequency Band 2 (1000 MHz \leq f < 12500 MHz)

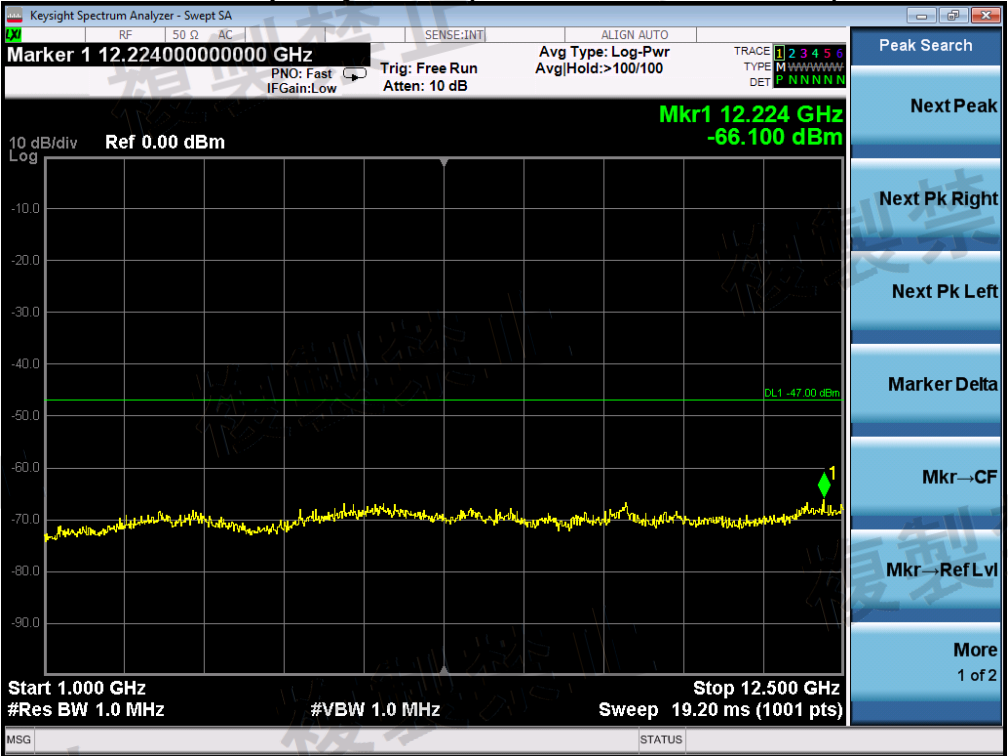


Test Voltage: 3.33V

RX-Frequency Band 1 ($30\text{ MHz} \leq f < 1000\text{ MHz}$)

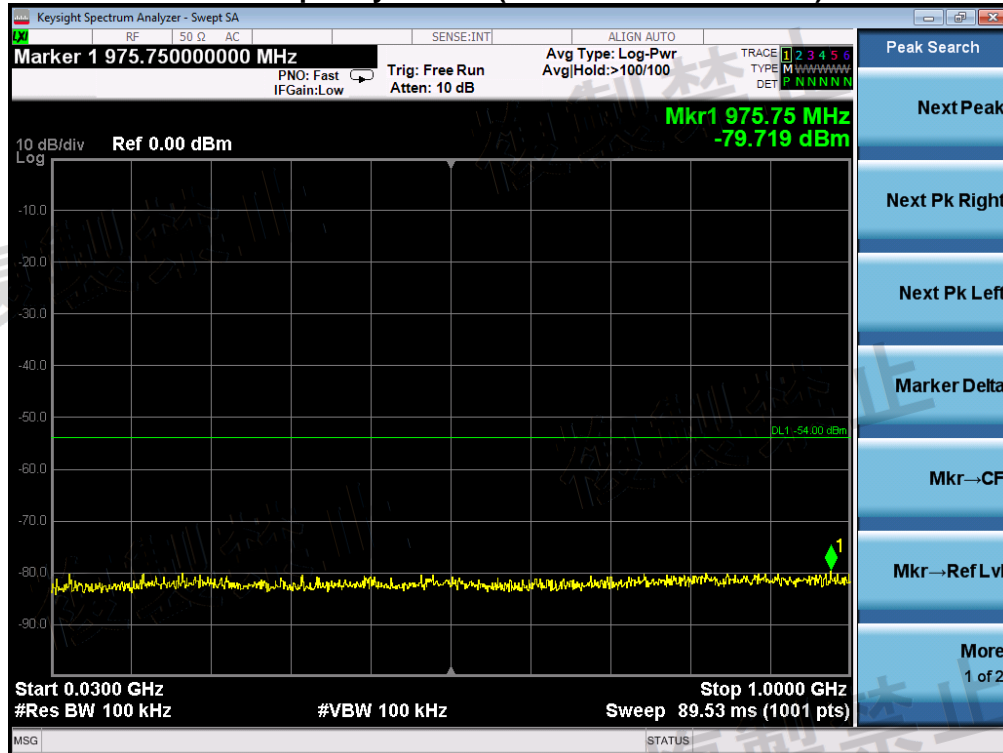


RX-Frequency Band 2 ($1000\text{ MHz} \leq f < 12500\text{ MHz}$)

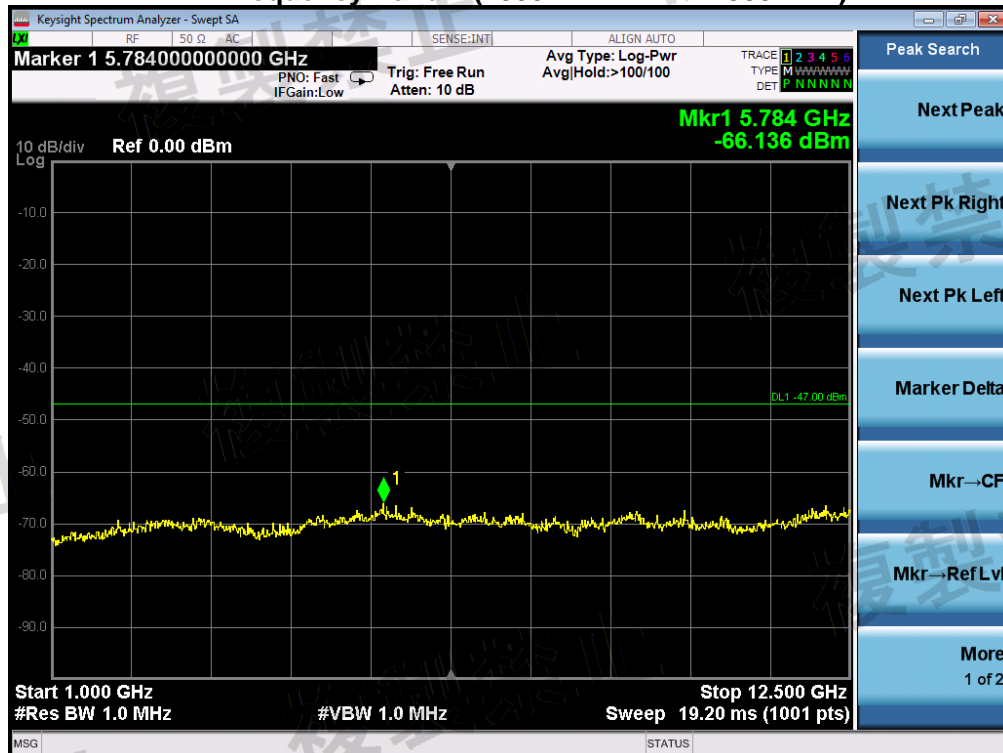


Test Voltage: 4.07V

RX-Frequency Band 1 (30 MHz \leq f < 1000 MHz)



RX-Frequency Band 2 (1000 MHz \leq f < 12500 MHz)



5.6. TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER) MEASUREMENT

5.6.1. LIMIT

Item	Limits
EIRP Power Density	$\leq 6.91\text{dBm/MHz}$ (FH form 2427 - 2470.75 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	

5.6.2. MEASURING INSTRUMENTS AND SETTING

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

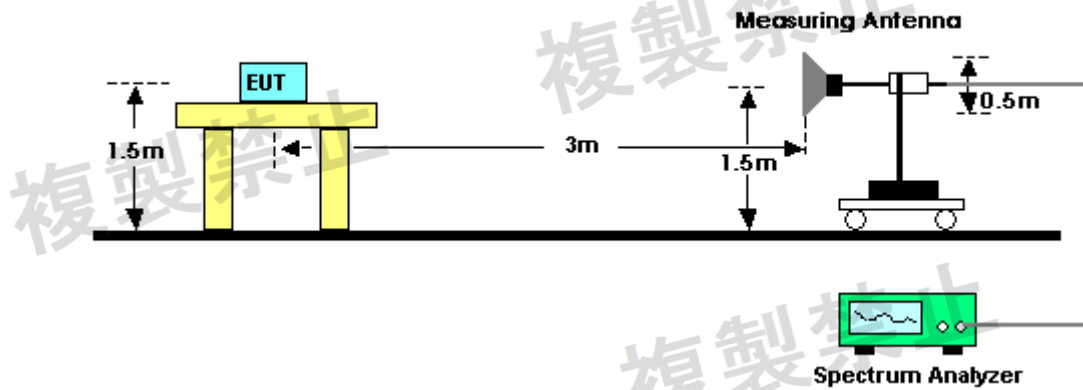
Spectrum Parameter	Setting
Attenuation	Auto
RBW/VBW	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.6.3. TEST PROCEDURES

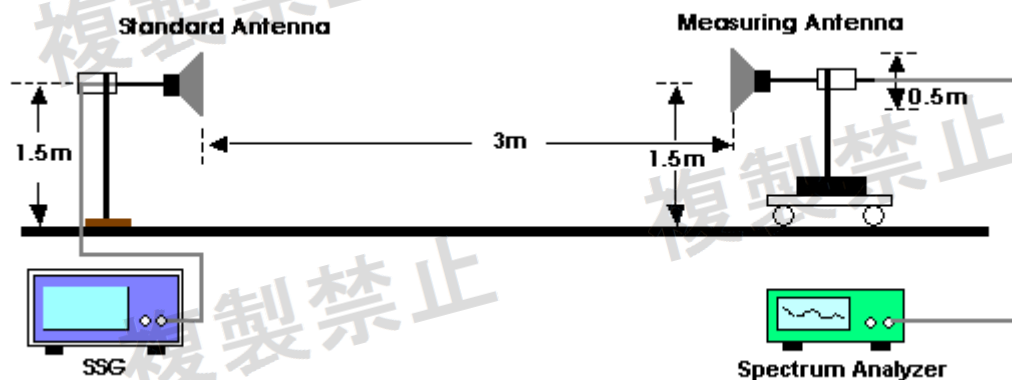
1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
3. Remove 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 $\pm 50\text{cm}$ of replacing antenna height and swing it to find the maximum receiving level.
6. Set SSG output power at P_t to give the equivalent output level of "E" or calculate P_t with SSG output which gives the nearest of "E" and difference ($\pm 1\text{dB}$). Record the P_t .
7. Calculate EIRP by the formula below $\text{EIRP} = G_t - L + P_t$.
 G_t : gain of replacing antenna (dBi)
 L : feeder loss between SSG and replacing antenna
 P_t : 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.

5.6.4. TEST SETUP LAYOUT

For EUT radiation measurement



For standard antenna measurement



5.6.5. TEST DEVIATION

There is no deviation with the original standard.

5.6.6. EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.6.7. RESULTS OF TRANSMISSION ANTENNA GAIN

Note: refer to section 5.6.1 the test item is not applicable.

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

5.7.1. 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	

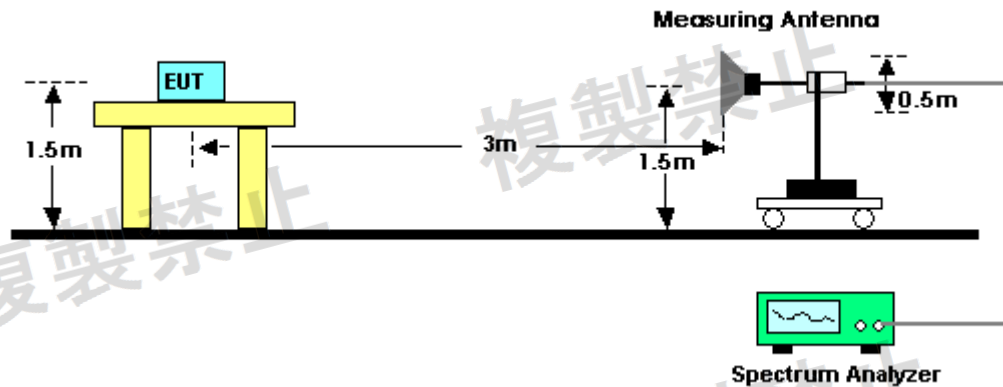
5.7.2. MEASURING INSTRUMENTS AND SETTING

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

5.7.3. TEST PROCEDURES

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.7.2 and 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 $\pm 50\text{cm}$ 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"
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 $A=1$).
 $A = \{\text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM}\}$ or
 $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$

5.7.4. TEST SETUP LAYOUT



5.7.5. TEST DEVIATION

There is no deviation with the original standard.

5.7.6. EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.7.7. TEST RESULT OF TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH)

Note: refer to section 5.7.1 the test item is not applicable.

5.8. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

5.8.1. LIMIT

Item	Limits
Identification code	≥ 48 bits

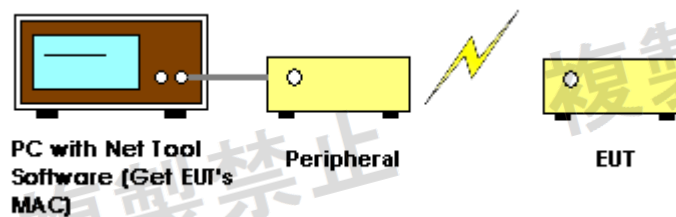
5.8.2. MEASURING ID CODE SOFTWARE

Item	Limits
MAC IP List	MAC Scan

5.8.3. TEST PROCEDURES

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

5.8.4. TEST SETUP LAYOUT



5.8.5. TEST DEVIATION

There is no deviation with the original standard.

5.8.6. EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

5.8.7. TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILITY

EUT:	iW99A	Test Date:	Aug. 14, 2018
Temperature:	25°C	Tested by:	Max
Humidity:	55 % RH	Operation Mode:	IEEE 802.11 B/G/N
Test result:	CONFORM		

5.9. CARRIER SENSE FUNCTION MEASUREMENT

5.9.1. LIMIT

Conform the carrier sense function for occupied bandwidth 38MHz equipment only.

5.9.2. MEASURING INSTRUMENTS AND SETTING

1. Condition of equipment of same type of radio equipment to be tested is as follows. It shall be able to perform communication with the radio equipment to be tested.
2. Standard signal generator setting up

Spectrum Parameter	Setting
Carrier frequency	Center frequency of occupied bandwidth of the equipment to be tested
Modulation	No Modulation
Output Level	Value enough to confirm interference detecting function (Value lower than transmission level of the equipment to be tested)

3. Spectrum analyzer setting up

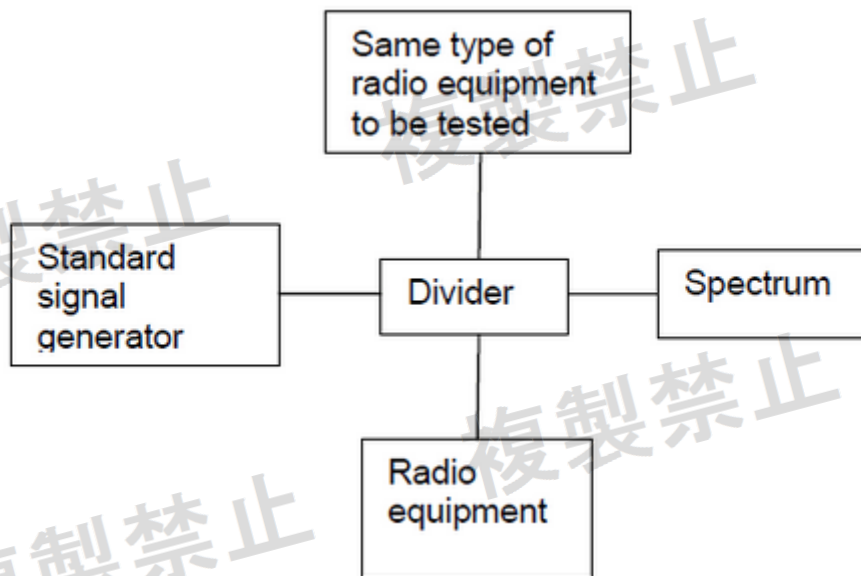
Spectrum Parameter	Setting
Carrier frequency	Center frequency of occupied bandwidth of the equipment to be tested
Sweep bandwidth	More than occupied bandwidth of the equipment to be tested
RBW	1MHz
VBW	1MHz
Trigger condition	Free run
Detection mode	Positive peak

4. Set the radio equipment and the same type to be equipment into communication condition.

5.9.3. TEST PROCEDURES

1. Under OFF condition at output the standard signal generator, confirm transmission condition of radio equipment to be tested by means of the spectrum analyzer with its marker point.
2. Set the carrier frequency to center frequency of occupied bandwidth of the equipment to be tested, then put ON condition at output the standard signal generator, confirm no transmission condition of radio equipment to be tested by means of the spectrum analyzer with its marker point.

5.9.4. TEST SETUP LAYOUT



5.9.5. TEST DEVIATION

There is no deviation with the original standard.

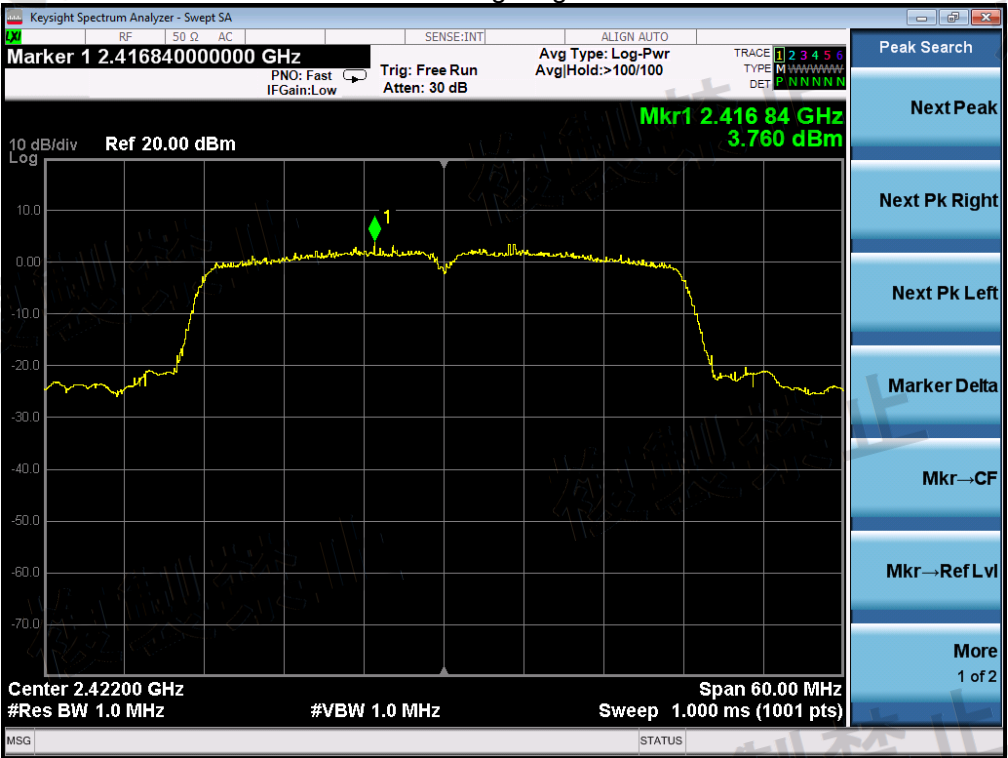
5.9.6. EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

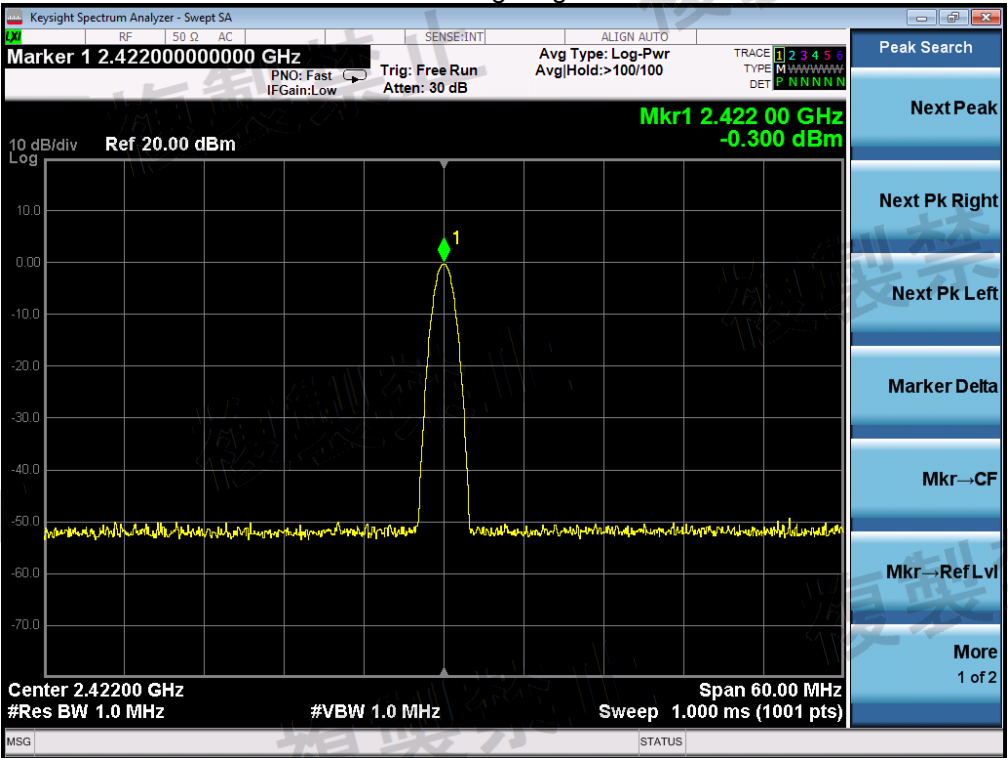
5.9.7. TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILIT

EUT:	iW99A	Test Date:	Aug. 14, 2018
Temperature:	25°C	Tested by:	Max
Humidity:	55 % RH	Operation Mode:	IEEE 802.11 N40
Test result:	CONFORM		

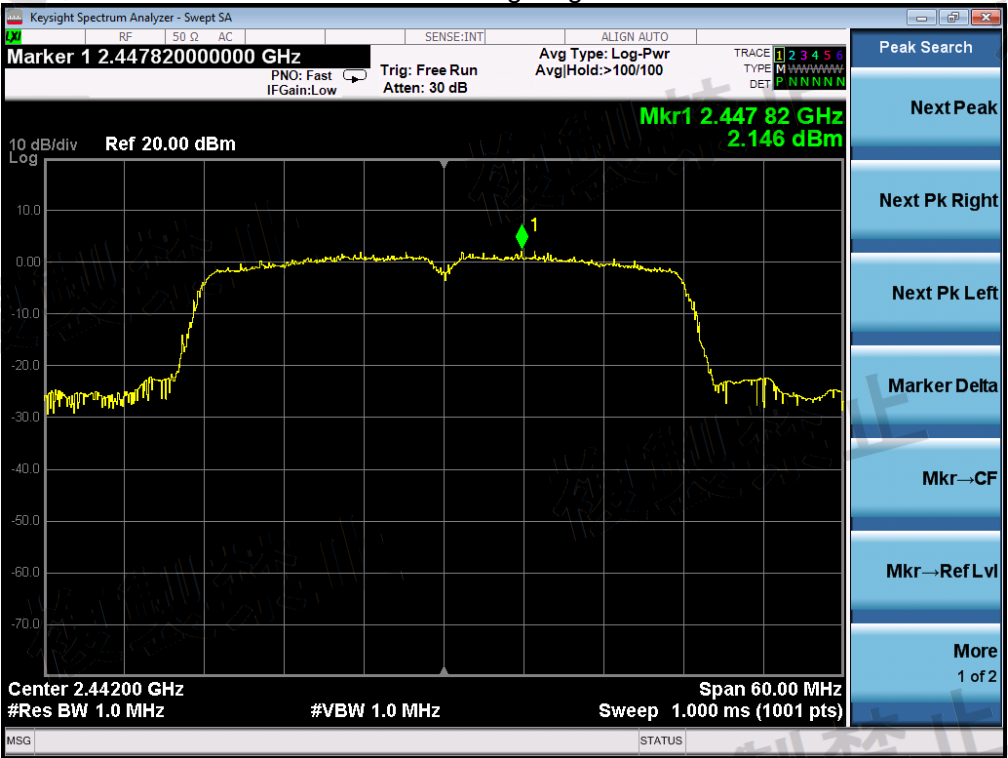
Low Channel-signal generator off



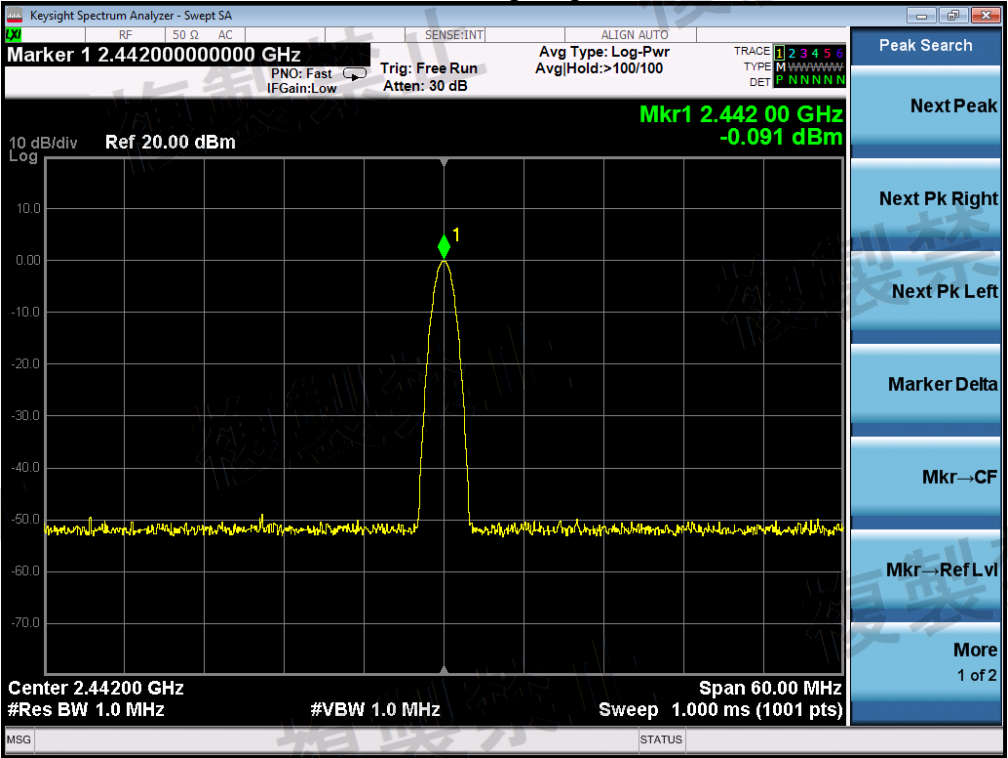
Low Channel-signal generator on



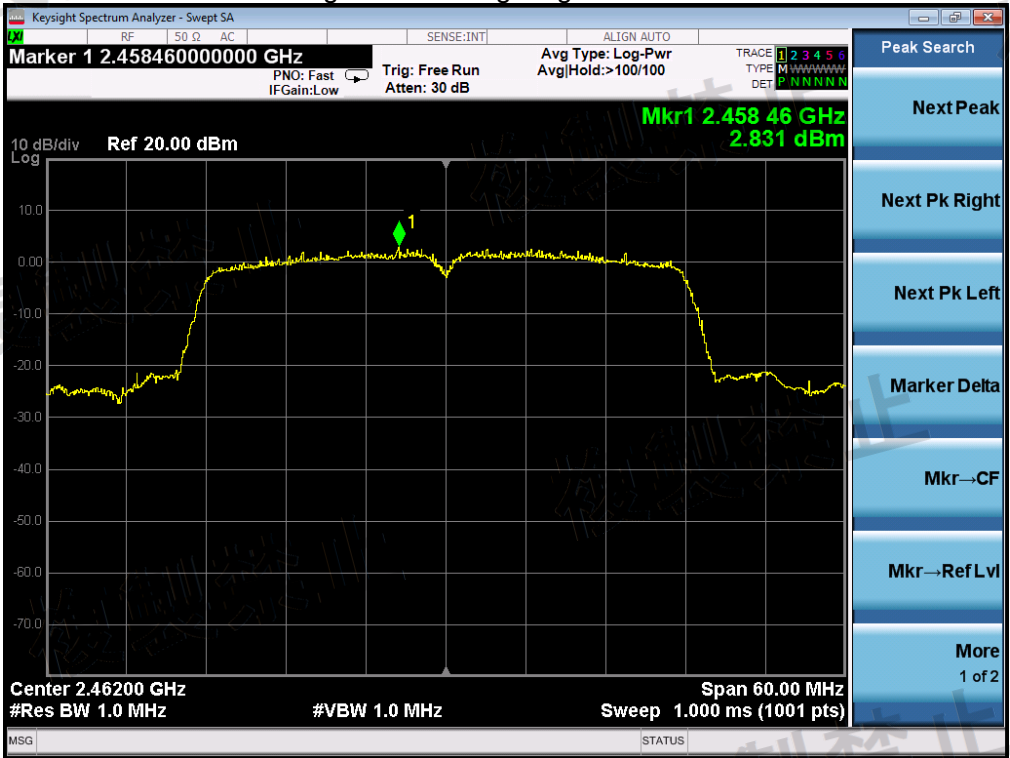
Middle Channel-signal generator off



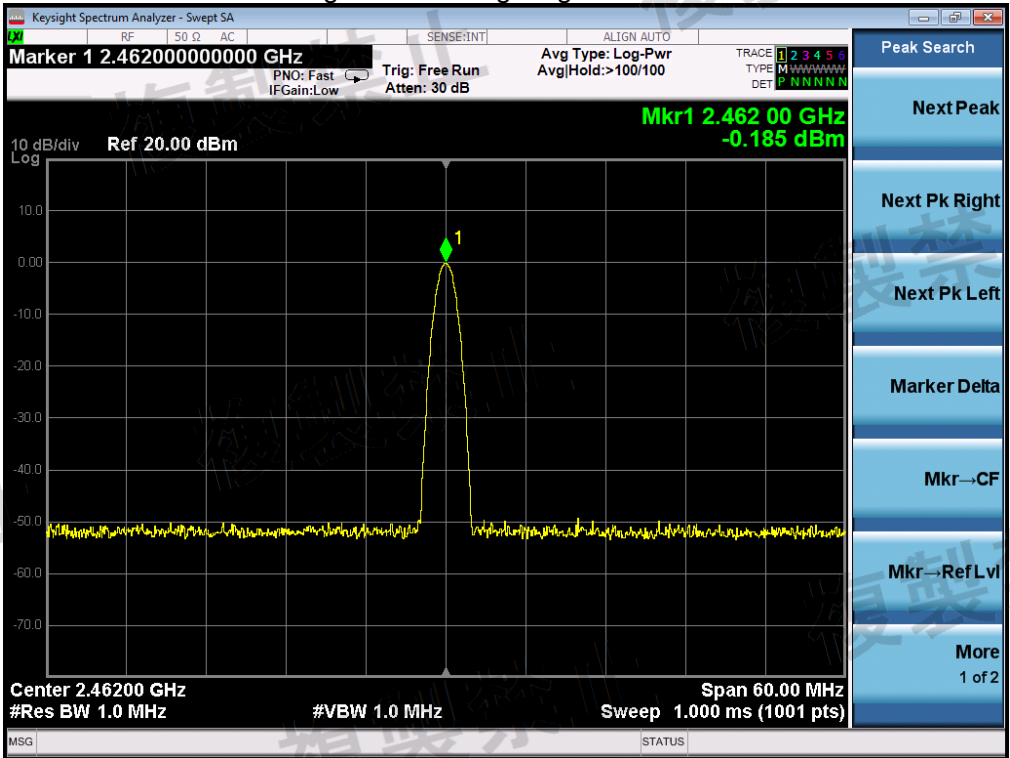
Middle Channel-signal generator on



High Channel-signal generator off



High Channel-signal generator on



5.10. CONSTRUCTION PROTECTION CONFIRMATION METHOD

5.10.1. LIMIT

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

5.10.2. CONFIRMATION METHOD

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

Protected Method	Description
IC Package	Wifi Module Package of RF (RTL8189FTV) and Modulation (TX; 26MHz) portions is BGA type.
Shield case	RF and Modulation components are covered within case of EUT
User manual	we will add some warning statements on the user manual to against illegal modification

APPENDIX A: PHOTOGRAPHS OF THE TEST SETUP

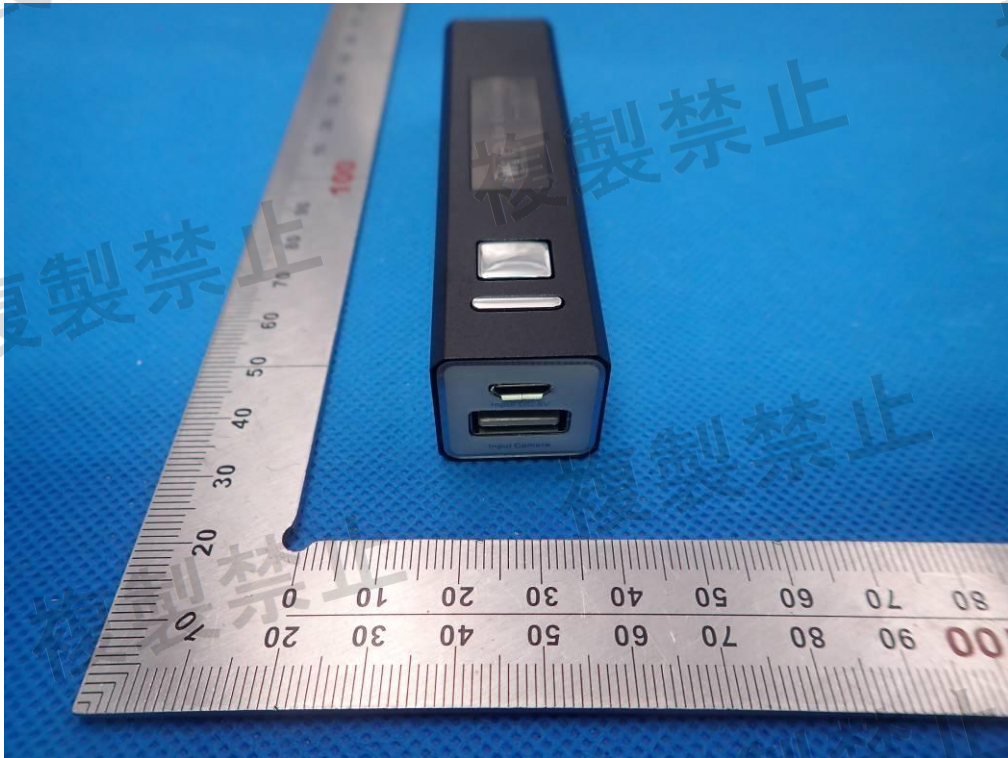


APPENDIX B: PHOTOGRAPHS OF THE EUT

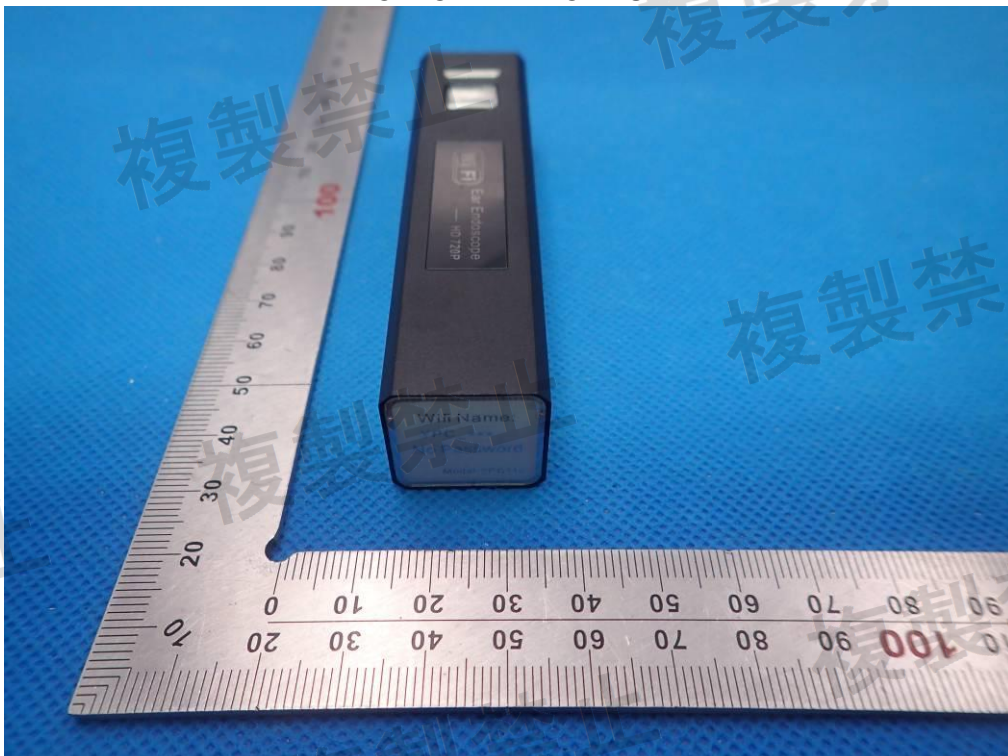
ALL VEIW OF EUT



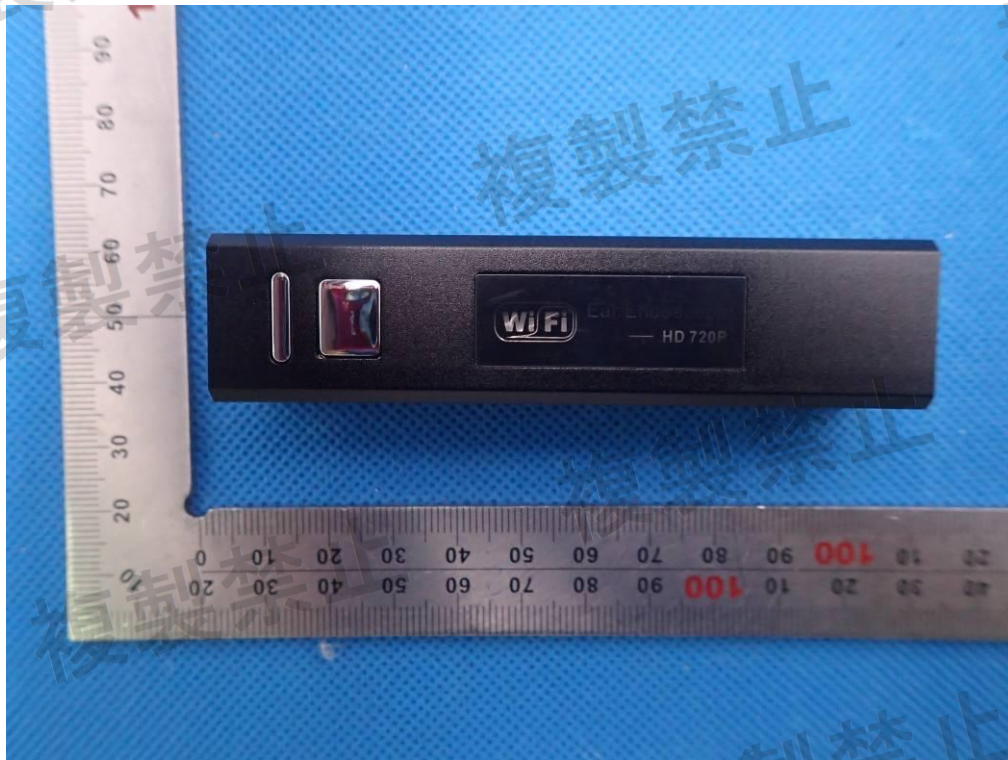
TOP VIEW OF EUT



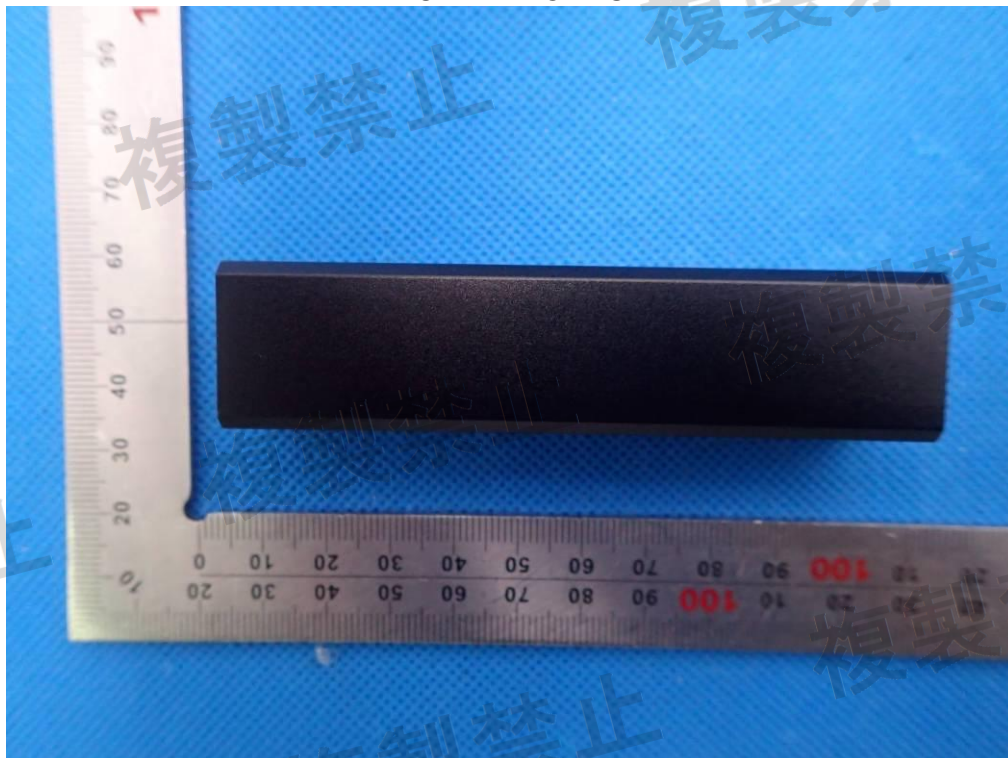
BOTTOM VIEW OF EUT



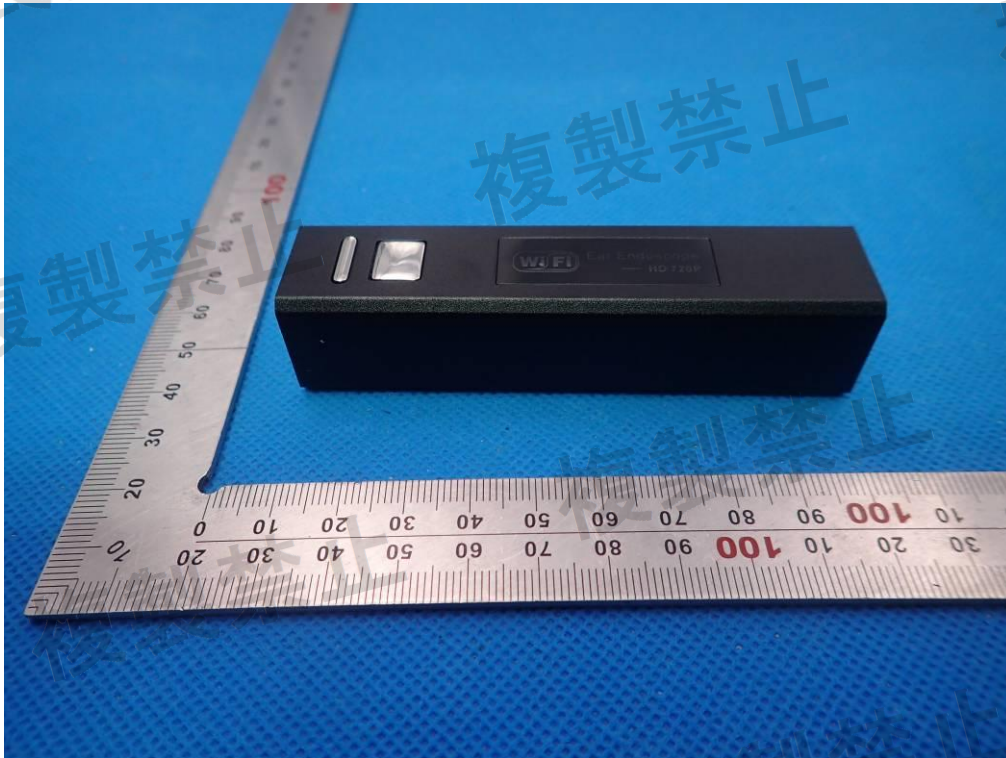
FRONT VIEW OF EUT



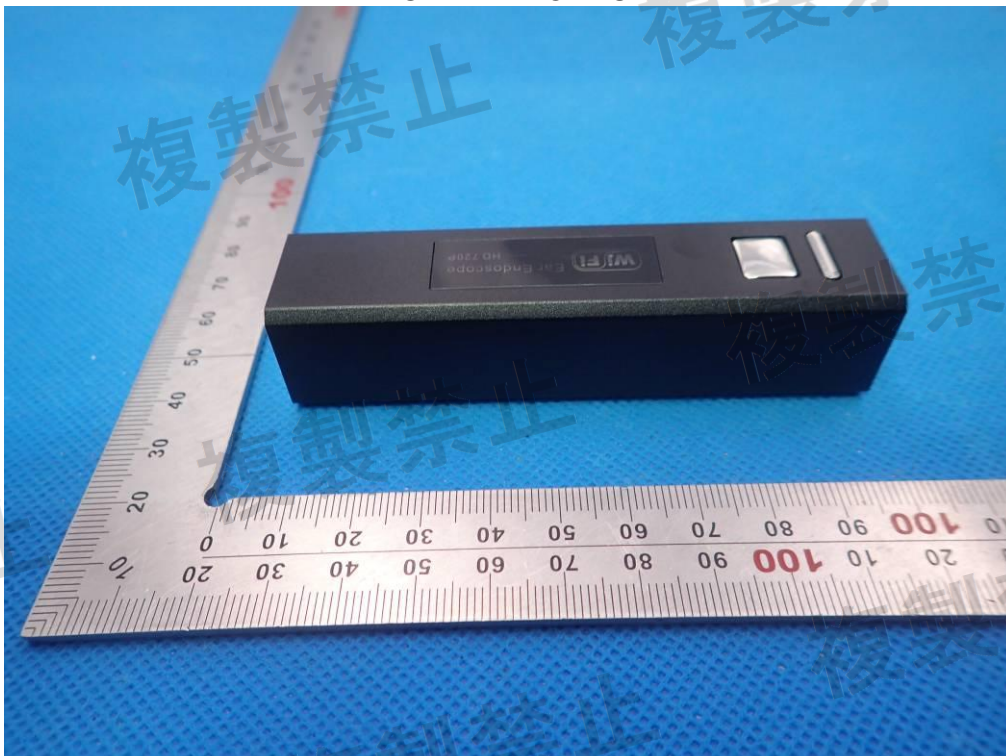
BACK VIEW OF EUT



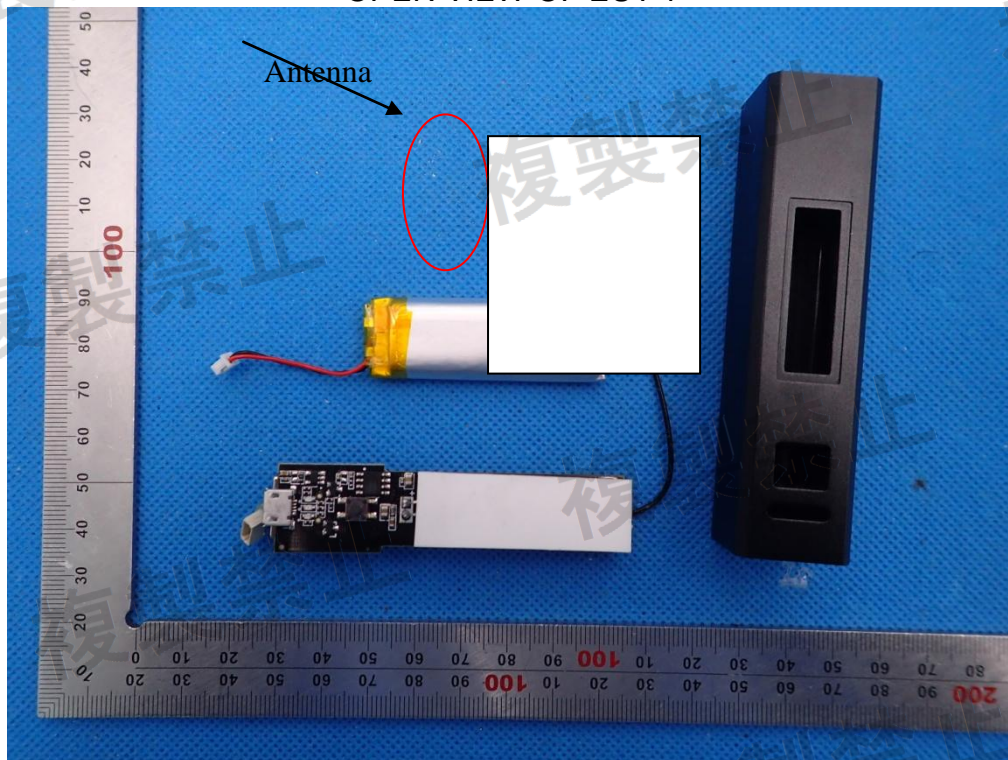
LEFT VIEW OF EUT



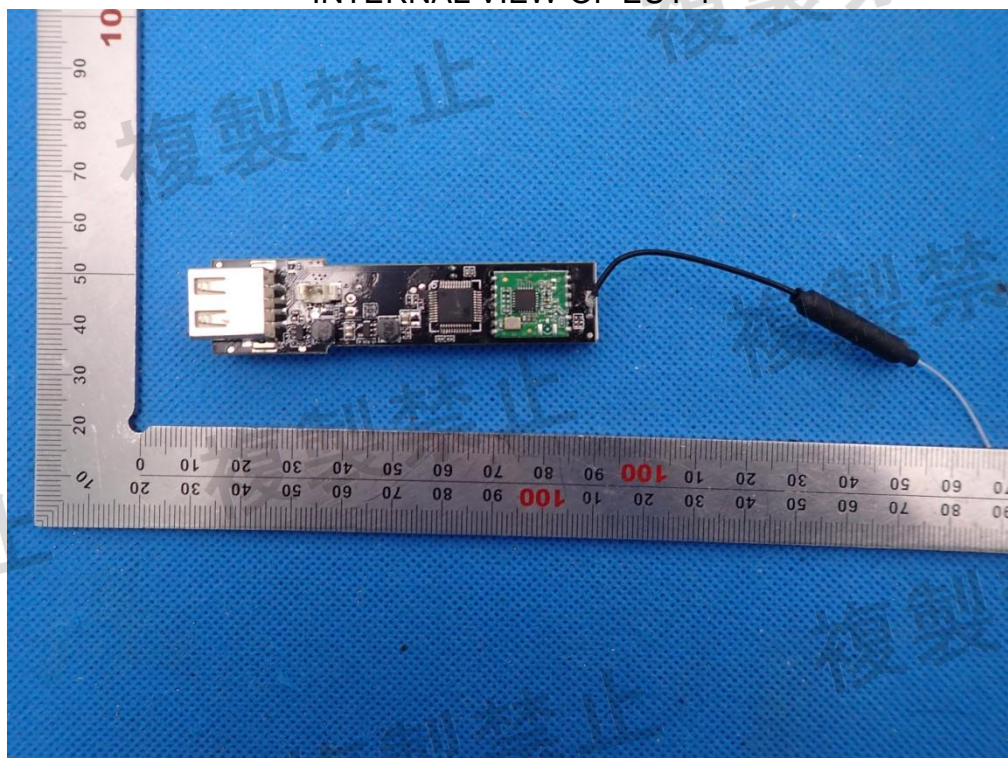
RIGHT VIEW OF EUT



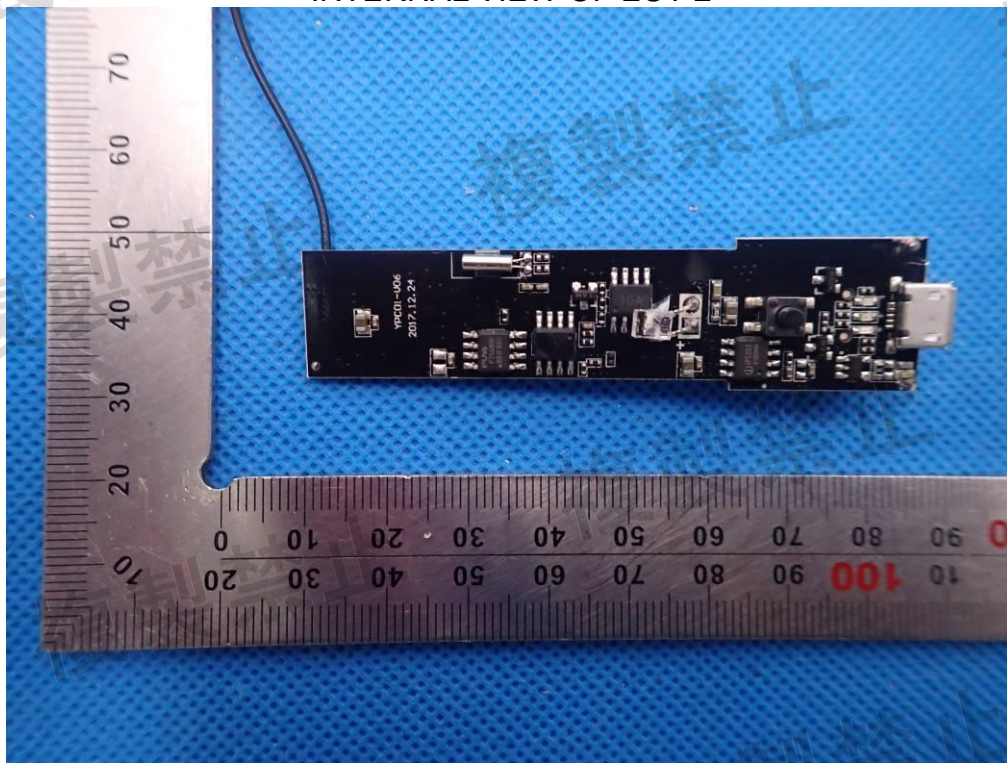
OPEN VIEW OF EUT 1



INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



-----END OF REPORT-----