

### 12.3 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
RB/VB	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 12.4 Test procedure

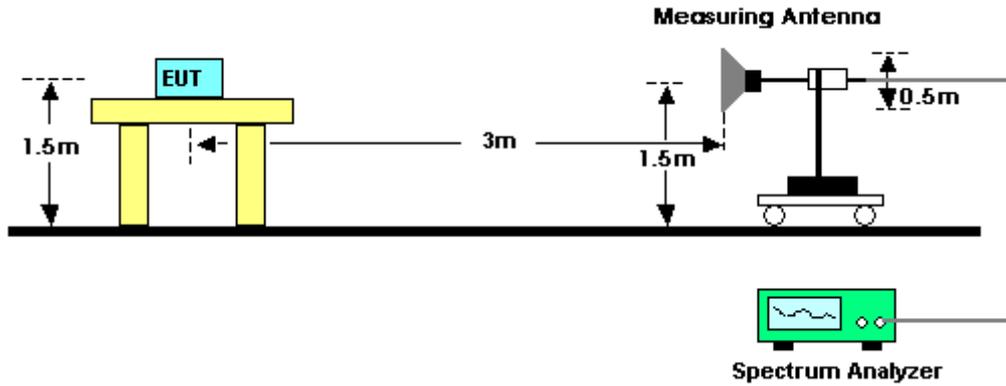
1. Set EUT ad measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within  $\pm 50\text{cm}$  of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read sa "E".
3. Remove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

### 12.5 Test Result

Note: This test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less

### 13. Transmission Radiation Angle Width (3db Beamwidth) Measurement

#### 13.1 Block Diagram Of Test Setup



#### 13.2 Limit

Item	Limits
3dB antenna beam width	$360/A$ (If $A < 1$ ; then $A = 1$ )
Note: $A = E.I.R.P. / (2.14\text{dBi} + \text{"Antenna Power (limit)" of each modulation method (*3mW/MHz, 10mW/MHz, etc.)})$	

#### 13.3 Measuring Instruments And Setting

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

#### 13.4 Test procedure

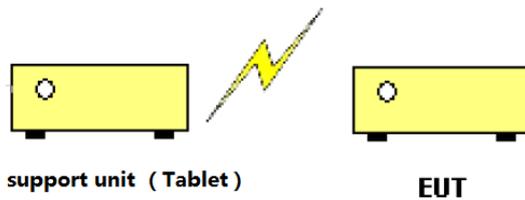
1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.7.2 and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. 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  $A = 1$ ).

#### 13.5 Test Result

N/A

## 14. Radio Interference Prevention Capability Measurement

### 14.1 Block Diagram Of Test Setup



### 14.2 Limit

Item	Limits
Identification code	≥48 bits

### 14.3 Measuring Instruments And Setting

Item	Limits
MAC IP List	MAC Scan

### 14.4 Test procedure

1. In the case that the EUT has the function of automatically transmitting the identification code:
  - a. Transmit the predetermined identification codes form EUT.
  - b. Check the transmitted identification codes with the demodulator.
2. In the case of receiving the identification 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.

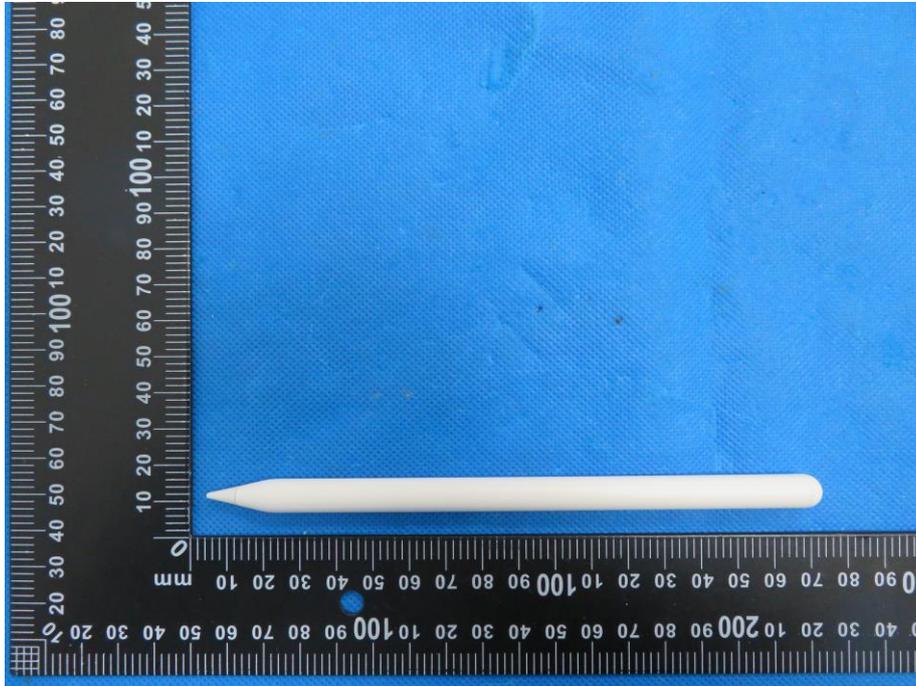
### 14.5 Test Result

Temperature:	25°C		
Humidity:	55 % RH	Test Voltage	DC 3.7V
Operation Mode:	GFSK		

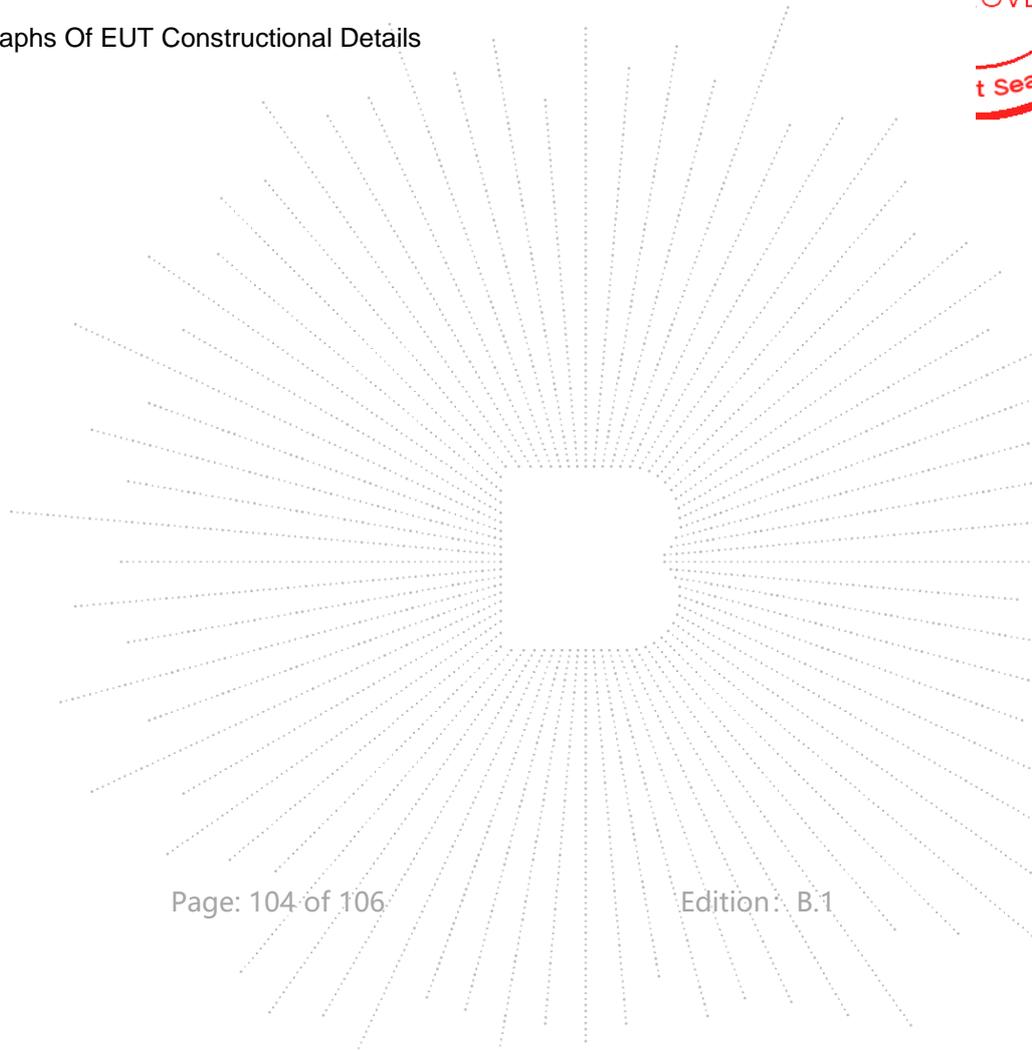
Bluetooth Device Address: E6:5B:90:11:E8:01

### 15. EUT Photographs

EUT Photo



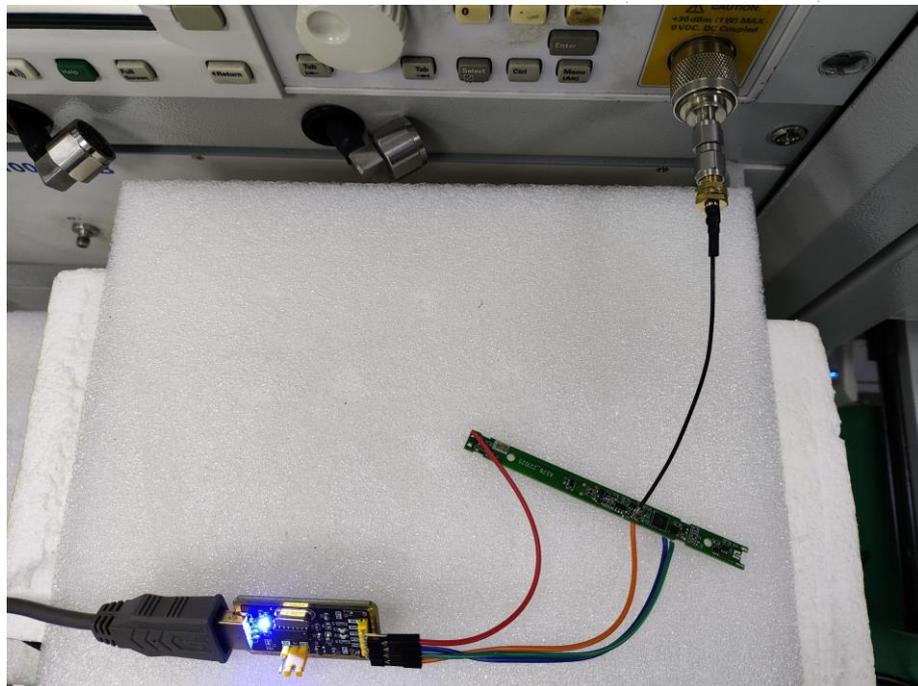
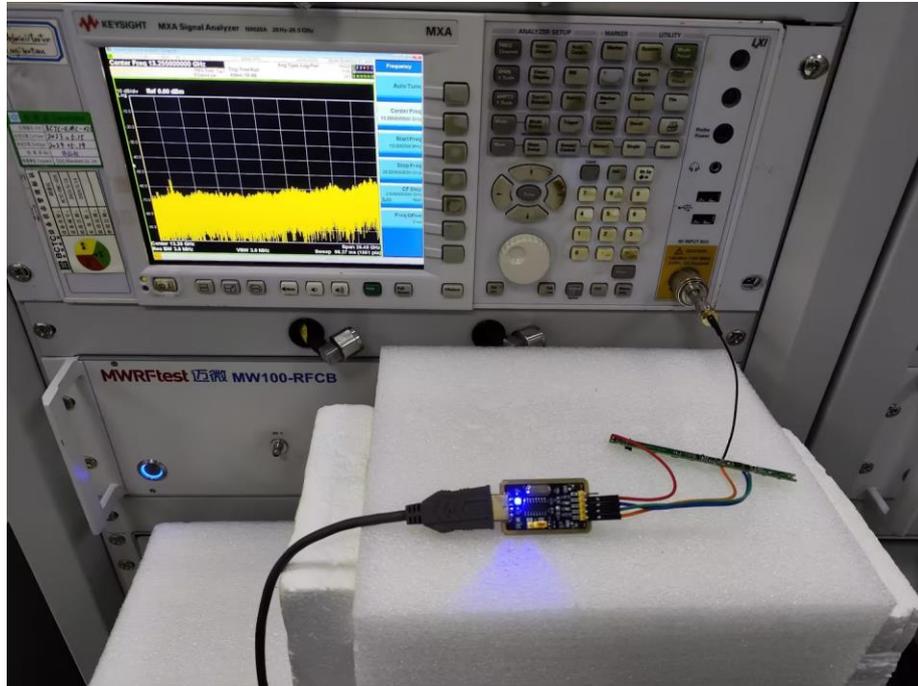
NOTE: Appendix-Photographs Of EUT Constructional Details



TEC  
TC  
OVB  
t See

## 16. EUT Test Setup Photographs

### Measurement Photos



**STATEMENT**

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

## Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: <http://www.chnbctc.com>E-Mail: [bctc@bctc-lab.com.cn](mailto:bctc@bctc-lab.com.cn)

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