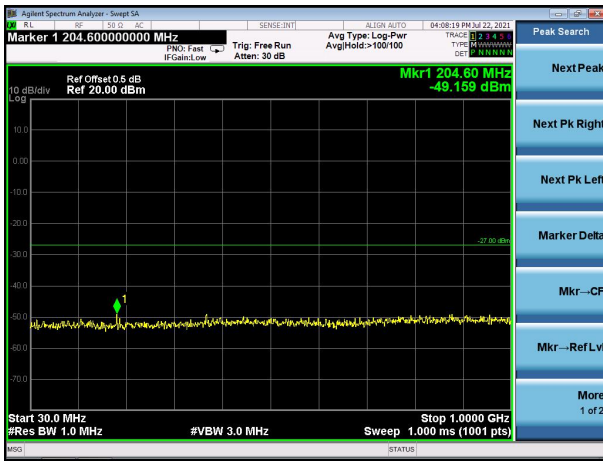
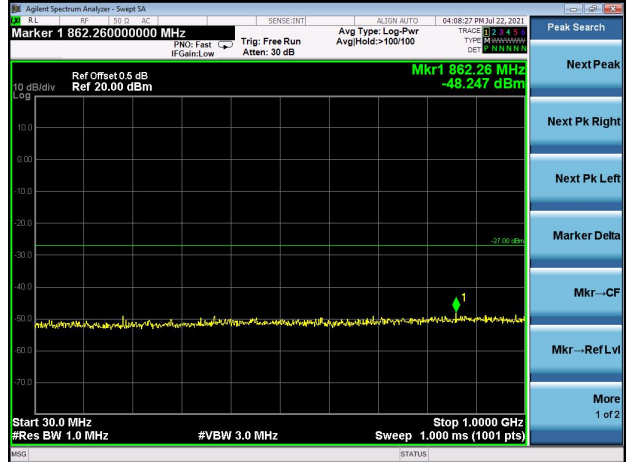


Test Plot

802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

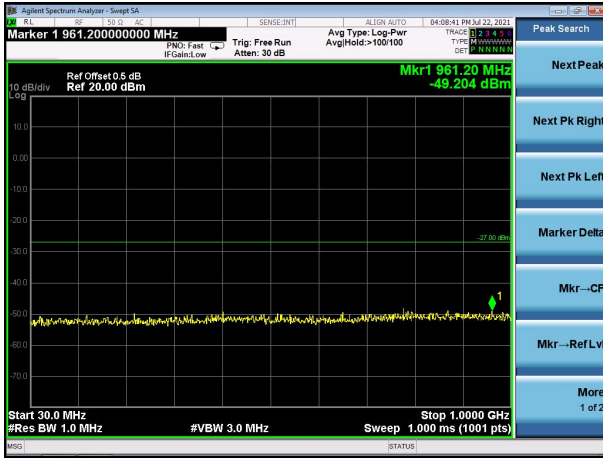


802.11ac40 on channel 151

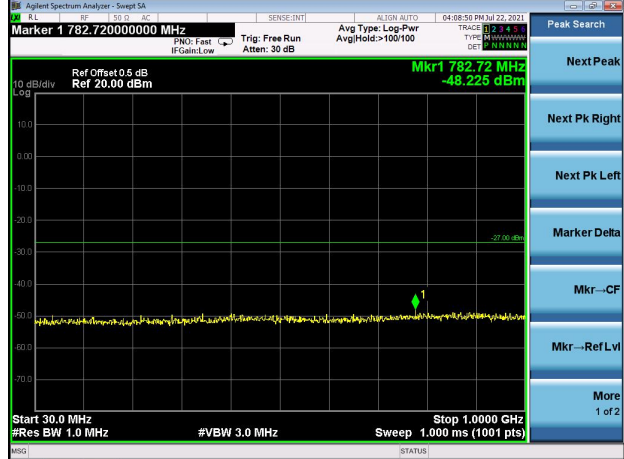


Test Plot

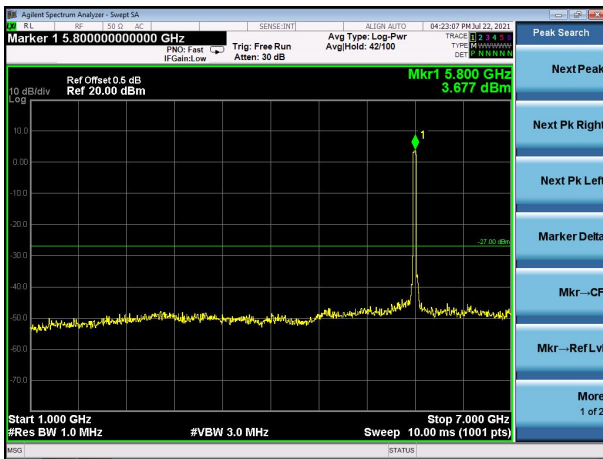
802.11ac40 on channel 159



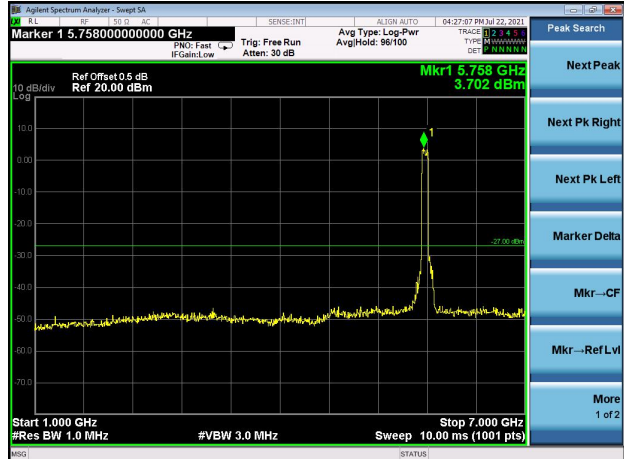
802.11ac80 on channel 151



802.11ac40 on channel 159



802.11ac80 on channel 151



802.11ac40 on channel 159



802.11ac80 on channel 151



13. FREQUENCY STABILITY MEASUREMENT

13.1 Block Diagram Of Test Setup



13.2 Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification)..

13.3 Test procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f) / f_c \times 10^6$ ppm and he limit is less than ± 20 ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $-20^\circ\text{C} \sim 70^\circ\text{C}$.

13.4 Test Result

| | | | |
|---------------|----------------------------|---------------------|-------|
| Temperature : | 26 °C | Relative Humidity : | 54% |
| Pressure : | 101kPa | Test Voltage : | DC 5V |
| Hzst Mode : | TX Frequency(5745-5825MHz) | | |

Voltage vs. Frequency Stabilit

| TEST CONDITIONS | | | | Reference Frequency: 5745MHz | | | |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C) | 20 | V nom (V) | 5V | 5745.00819 | 5745 | 0.00819 | 1.4259 |
| | | V max (V) | 5.5V | 5745.00437 | 5745 | 0.00437 | 0.7606 |
| | | V min (V) | 4.5V | 5745.01058 | 5745 | 0.01058 | 1.8423 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |

Temperature vs. Frequency Stability

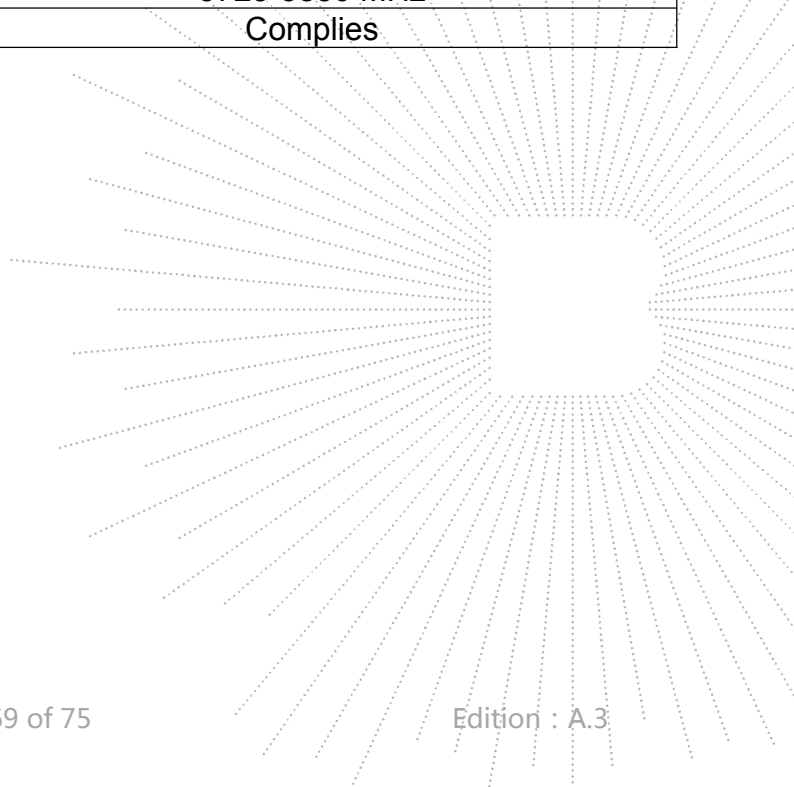
| TEST CONDITIONS | | | | Reference Frequency: 5745MHz | | | |
|-----------------|----|--------|-----|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V) | 5V | T (°C) | -20 | 5745.00129 | 5745 | 0.00129 | 0.2250 |
| | | T (°C) | -10 | 5745.00918 | 5745 | 0.00918 | 1.5977 |
| | | T (°C) | 0 | 5745.00892 | 5745 | 0.00892 | 1.5525 |
| | | T (°C) | 10 | 5745.01145 | 5745 | 0.01145 | 1.9922 |
| | | T (°C) | 20 | 5745.01256 | 5745 | 0.01256 | 2.1854 |
| | | T (°C) | 30 | 5745.00502 | 5745 | 0.00502 | 0.8737 |
| | | T (°C) | 40 | 5745.00874 | 5745 | 0.00874 | 1.5218 |
| | | T (°C) | 50 | 5745.00434 | 5745 | 0.00434 | 0.7552 |
| | | T (°C) | 60 | 5745.01100 | 5745 | 0.01100 | 1.9139 |
| | | T (°C) | 70 | 5745.00705 | 5745 | 0.00705 | 1.2278 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |

Voltage vs. Frequency Stability

| TEST CONDITIONS | | | | Reference Frequency: 5785MHz | | | |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C) | 20 | V nom (V) | 5V | 5785.00044 | 5785 | 0.00044 | 0.0768 |
| | | V max (V) | 5.5V | 5785.00631 | 5785 | 0.00631 | 1.0913 |
| | | V min (V) | 4.5V | 5785.01015 | 5785 | 0.01015 | 1.7544 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |

Temperature vs. Frequency Stability

| TEST CONDITIONS | | | | Reference Frequency: 5785MHz | | | |
|-----------------|----|--------|-----|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V) | 5V | T (°C) | -20 | 5785.01257 | 5785 | 0.01257 | 2.1737 |
| | | T (°C) | -10 | 5785.00092 | 5785 | 0.00092 | 0.1583 |
| | | T (°C) | 0 | 5785.00471 | 5785 | 0.00471 | 0.8138 |
| | | T (°C) | 10 | 5785.01113 | 5785 | 0.01113 | 1.9235 |
| | | T (°C) | 20 | 5785.01141 | 5785 | 0.01141 | 1.9718 |
| | | T (°C) | 30 | 5785.00459 | 5785 | 0.00459 | 0.7931 |
| | | T (°C) | 40 | 5785.00505 | 5785 | 0.00505 | 0.8728 |
| | | T (°C) | 50 | 5785.00814 | 5785 | 0.00814 | 1.4072 |
| | | T (°C) | 60 | 5785.01142 | 5785 | 0.01142 | 1.9738 |
| | | T (°C) | 70 | 5785.00352 | 5785 | 0.00352 | 0.6093 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |

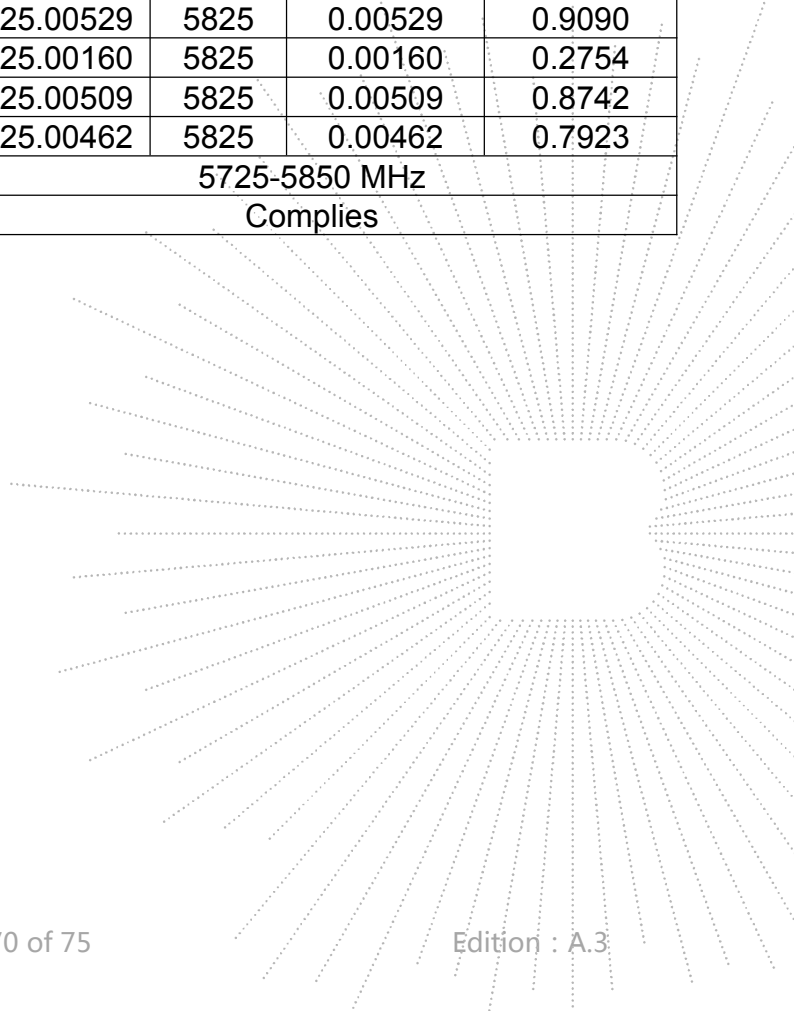


Voltage vs. Frequency Stability

| TEST CONDITIONS | | | | Reference Frequency: 5825MHz | | | |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C) | 20 | V nom (V) | 5V | 5825.00422 | 5825 | 0.00422 | 0.7252 |
| | | V max (V) | 5.5V | 5825.00662 | 5825 | 0.00662 | 1.1369 |
| | | V min (V) | 4.5V | 5825.00447 | 5825 | 0.00447 | 0.7676 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |

Temperature vs. Frequency Stability

| TEST CONDITIONS | | | | Reference Frequency: 5825MHz | | | |
|-----------------|----|--------|-----|------------------------------|------|----------------------|----------------------|
| | | | | f | fc | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V) | 5V | T (°C) | -20 | 5825.00335 | 5825 | 0.00335 | 0.5748 |
| | | T (°C) | -10 | 5825.00313 | 5825 | 0.00313 | 0.5375 |
| | | T (°C) | 0 | 5825.00380 | 5825 | 0.00380 | 0.6517 |
| | | T (°C) | 10 | 5825.00401 | 5825 | 0.00401 | 0.6888 |
| | | T (°C) | 20 | 5825.00264 | 5825 | 0.00264 | 0.4529 |
| | | T (°C) | 30 | 5825.00664 | 5825 | 0.00664 | 1.1406 |
| | | T (°C) | 40 | 5825.00529 | 5825 | 0.00529 | 0.9090 |
| | | T (°C) | 50 | 5825.00160 | 5825 | 0.00160 | 0.2754 |
| | | T (°C) | 60 | 5825.00509 | 5825 | 0.00509 | 0.8742 |
| | | T (°C) | 70 | 5825.00462 | 5825 | 0.00462 | 0.7923 |
| Limits | | | | 5725-5850 MHz | | | |
| Result | | | | Complies | | | |



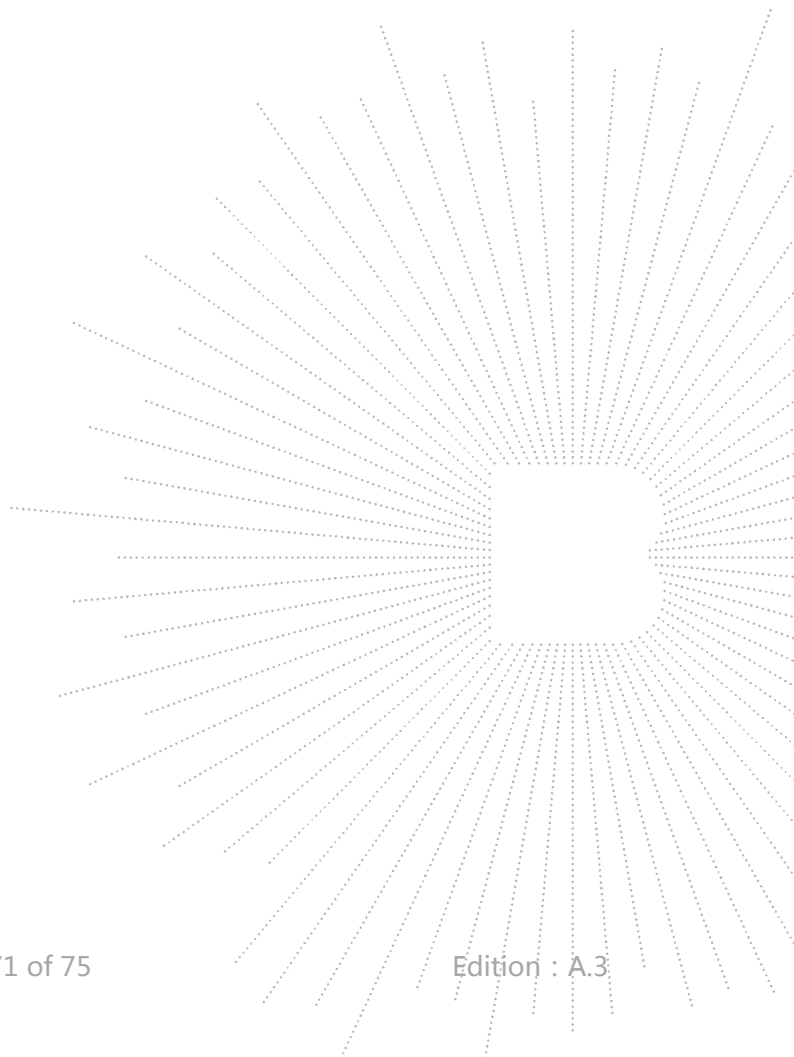
14. ANTENNA REQUIREMENT

14.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

14.2 EUT ANTENNA

The EUT antenna is External antenna (antenna gain:2.85dBi). It comply with the standard requirement.



15. EUT PHOTOGRAPHS

EUT Photo 1

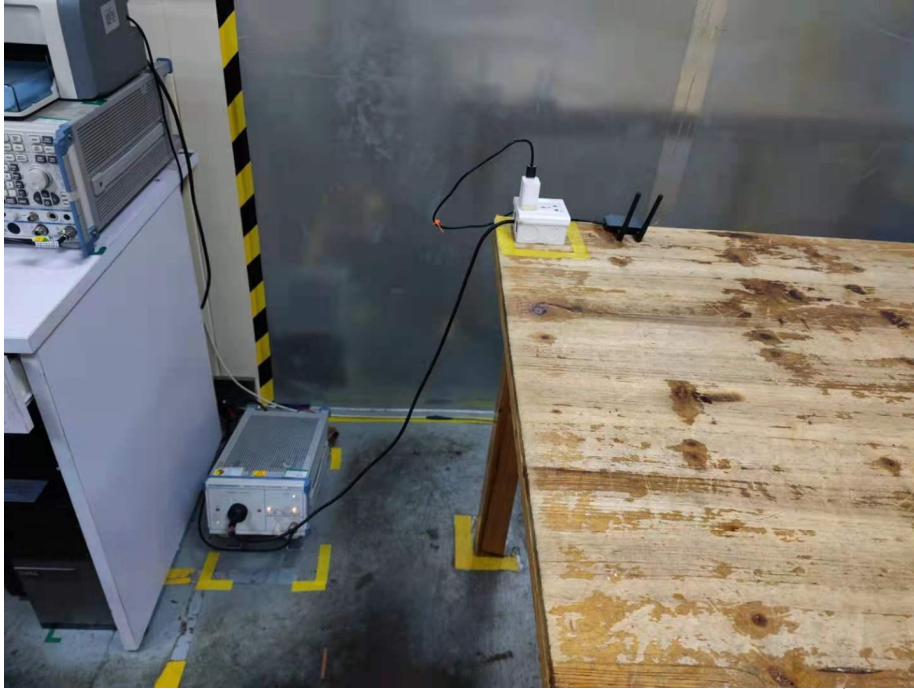


EUT Photo 2

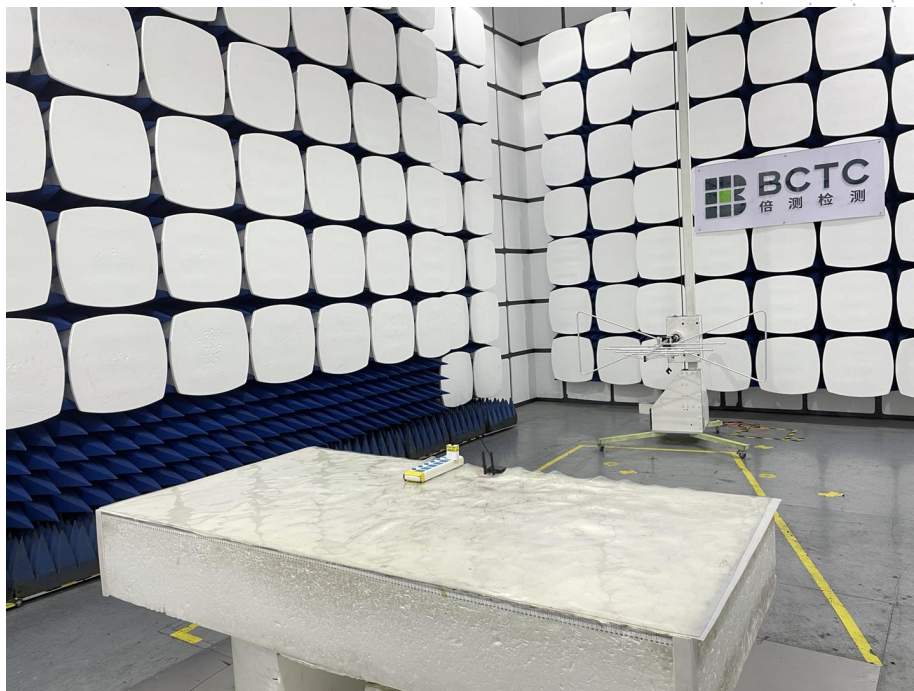


16. EUT TEST SETUP PHOTOGRAPHS

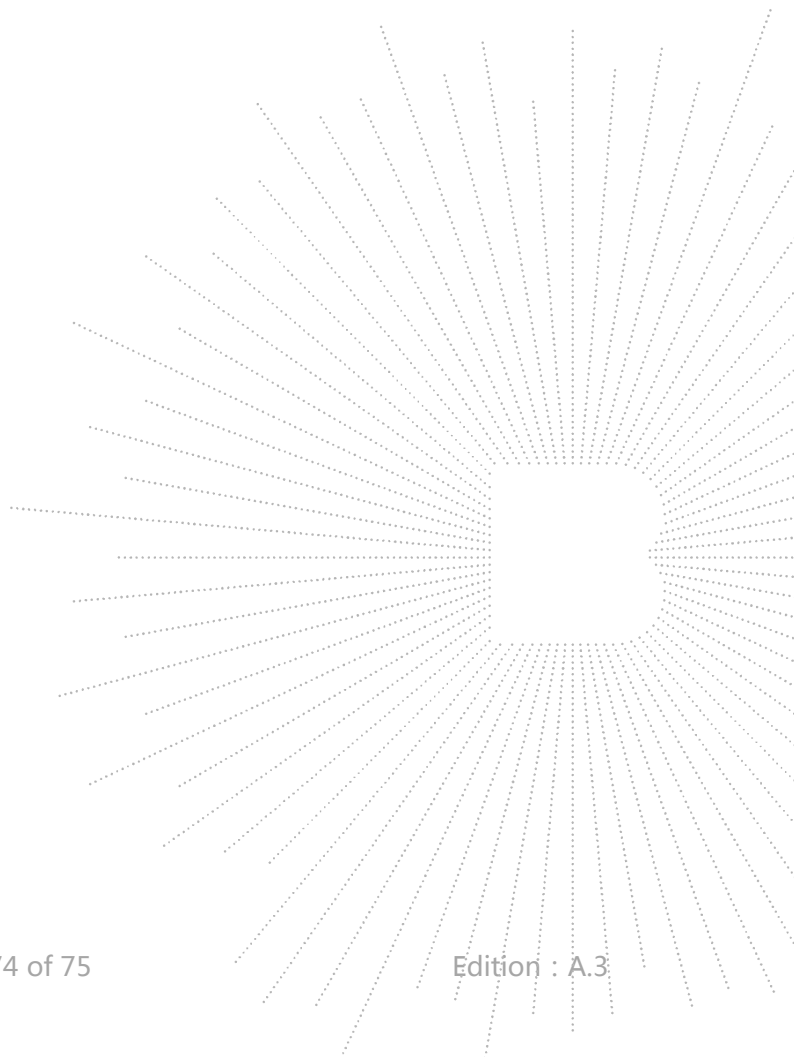
Conducted Measurement Photos



Radiated Measurement Photos



TX



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 stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to 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, Tangwei, 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

***** END *****

