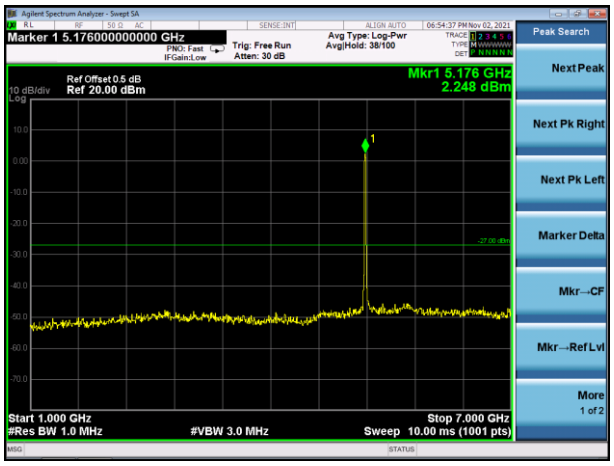
Test Plot

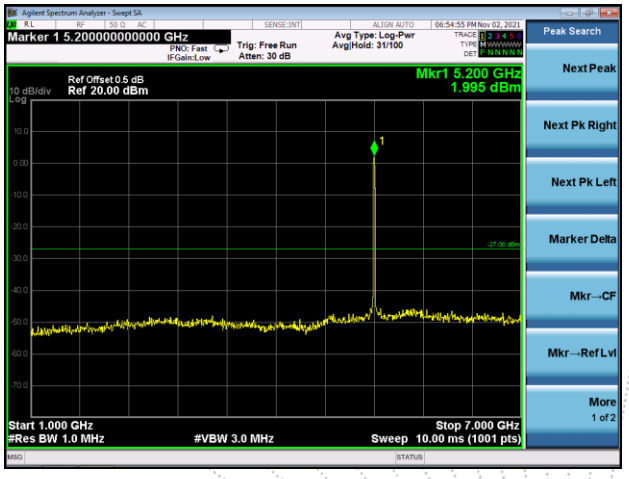
802.11ac20 on channel 36

802.11ac20 on channel 40

802.11ac20 on channel 36



802.11ac20 on channel 40



802.11ac20 on channel 36

802.11ac20 on channel 40

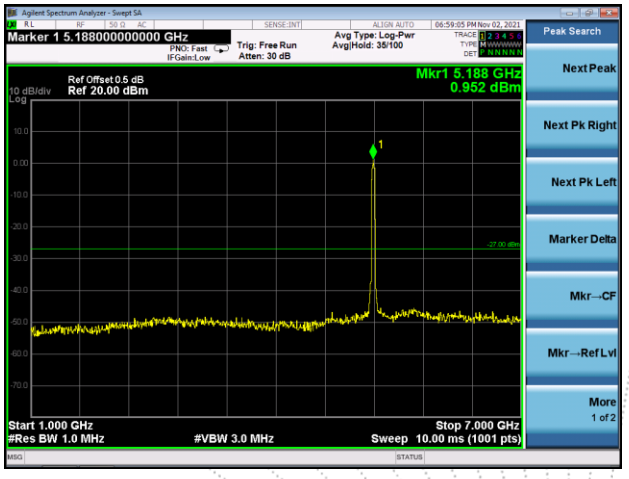
Test Plot

802.11ac20 on channel 48

802.11ac40 on channel 38

802.11ac20 on channel 48

802.11ac40 on channel 38



802.11ac20 on channel 48

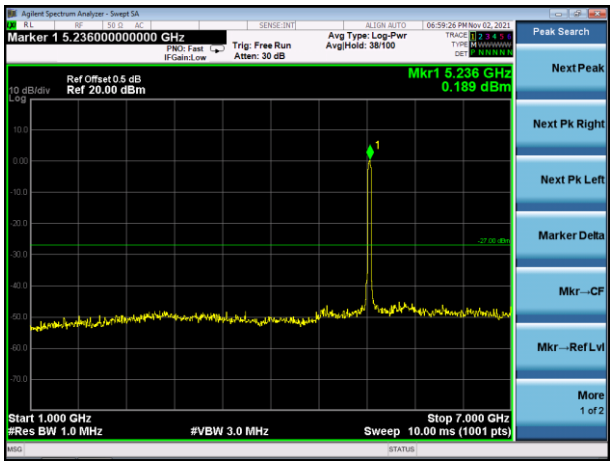
802.11ac40 on channel 38

Test Plot

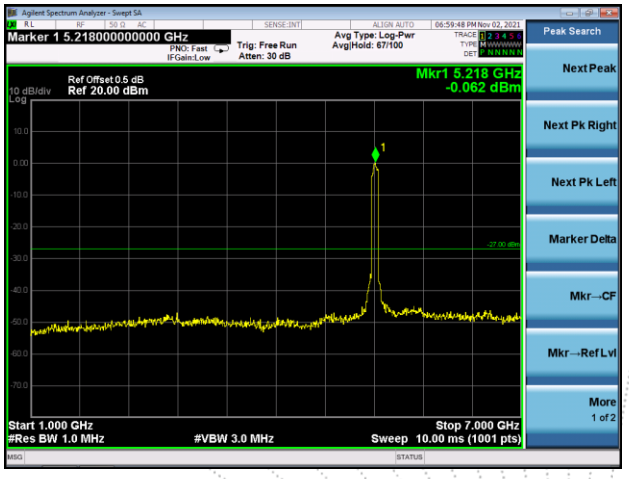
802.11ac40 on channel 46

802.11ac80 on channel 42

802.11 ac40 on channel 46



802.11 ac80 on channel 42

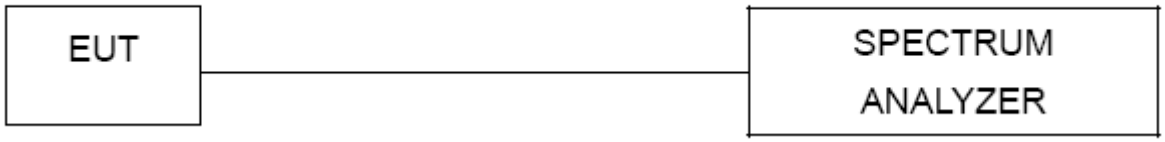


802.11 ac40 on channel 46

802.11 ac80 on channel 42

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. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and he limit is less than ±20ppm (IEEE 802.11nspecification).
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°C~70°C.

13.4 Test Result

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 9V
Test Mode ：	TX Frequency U-NII-1 (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5180.0037	5180	0.0037	0.7215
		V max (V)	5.75	5180.0152	5180	0.0152	2.9439
		V min (V)	4.25	5180.0110	5180	0.0110	2.1242
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	DC 5V	T (°C)	-20	5180.0126	5180	0.0126	2.4323
		T (°C)	-10	5180.0025	5180	0.0025	0.4818
		T (°C)	0	5180.0114	5180	0.0114	2.2006
		T (°C)	10	5180.0085	5180	0.0085	1.6439
		T (°C)	20	5180.0093	5180	0.0093	1.7952
		T (°C)	30	5180.0077	5180	0.0077	1.4807
		T (°C)	40	5180.0026	5180	0.0026	0.5075
		T (°C)	50	5180.0088	5180	0.0088	1.7037
		T (°C)	60	5180.0131	5180	0.0131	2.5225
		T (°C)	70	5180.0055	5180	0.0055	1.0522
Limits				5150-5250 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5200.0065	5200	0.0065	1.2548
		V max (V)	5.75	5200.0073	5200	0.0073	1.3958
		V min (V)	4.25	5200.0134	5200	0.0134	2.5817
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	DC 5V	T (°C)	-20	5200.00924	5200	0.00924	1.7778
		T (°C)	-10	5200.00333	5200	0.00333	0.6404
		T (°C)	0	5200.00561	5200	0.00561	1.0787
		T (°C)	10	5200.00367	5200	0.00367	0.7048
		T (°C)	20	5200.00824	5200	0.00824	1.5853
		T (°C)	30	5200.00638	5200	0.00638	1.2267
		T (°C)	40	5200.01041	5200	0.01041	2.0027
		T (°C)	50	5200.01203	5200	0.01203	2.3140
		T (°C)	60	5200.00527	5200	0.00527	1.0142
		T (°C)	70	5200.01125	5200	0.01125	2.1636
Limits				5150-5250 MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	5.00	5240.0028	5240	0.0028	0.5345
		V max (V)	5.75	5240.0047	5240	0.0047	0.8890
		V min (V)	4.25	5240.0066	5240	0.0066	1.2600
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	DC 5V	T (°C)	-20	5240.0022	5240	0.0022	0.4155
		T (°C)	-10	5240.0114	5240	0.0114	2.1764
		T (°C)	0	5240.0009	5240	0.0009	0.1811
		T (°C)	10	5240.0076	5240	0.0076	1.4421
		T (°C)	20	5240.0007	5240	0.0007	0.1317
		T (°C)	30	5240.0090	5240	0.0090	1.7087
		T (°C)	40	5240.0094	5240	0.0094	1.7901
		T (°C)	50	5240.0035	5240	0.0035	0.6727
		T (°C)	60	5240.0001	5240	0.0001	0.0111
		T (°C)	70	5240.0097	5240	0.0097	1.8466
Limits				5150-5250 MHz			
Result				Complies			

14. Antenna Requirement

14.1 Limit

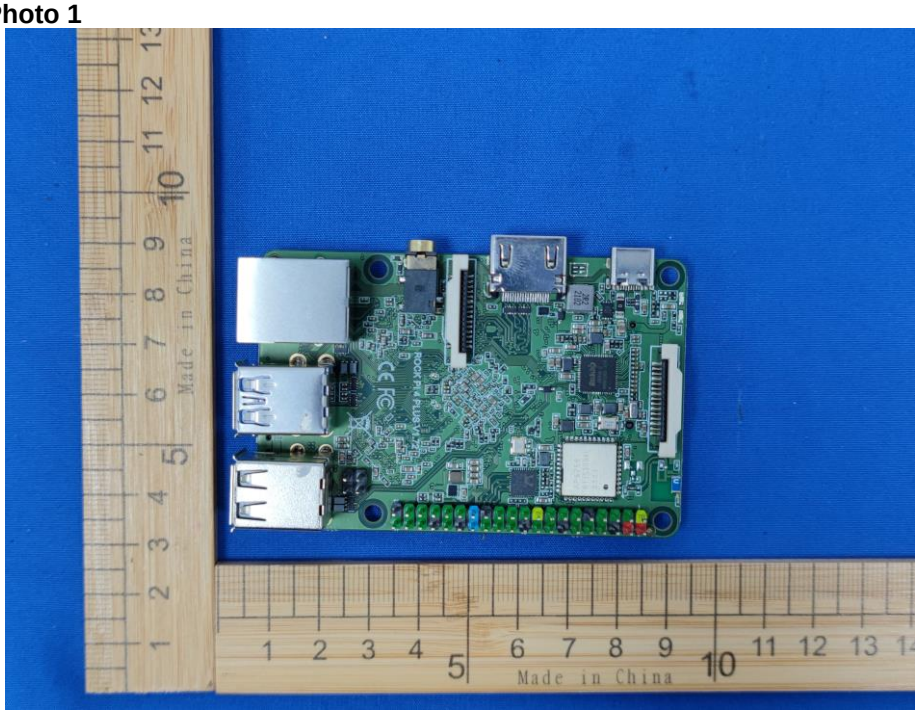
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

14.2 EUT Antenna

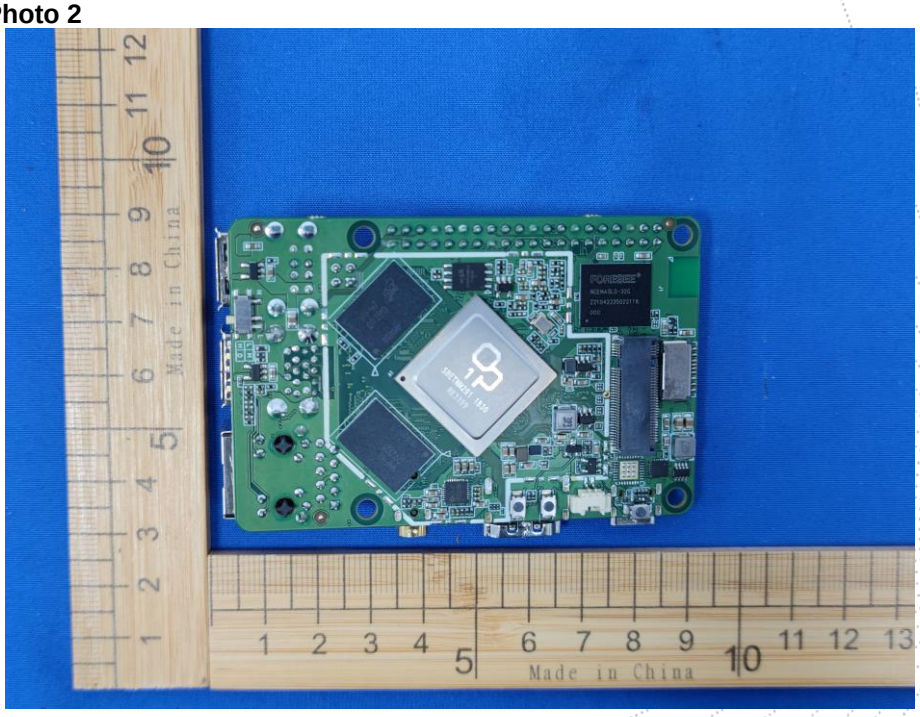
The EUT antenna is Chip Antenna (antenna gain:2dBi). It comply with the standard requirement.

15. EUT Photographs

EUT Photo 1



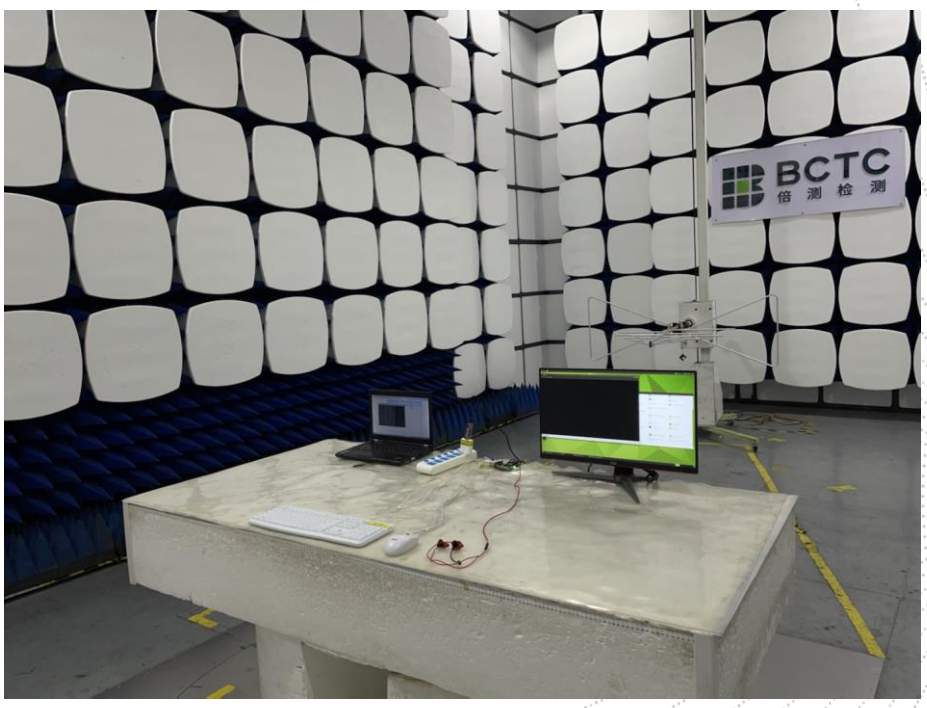
EUT Photo 2

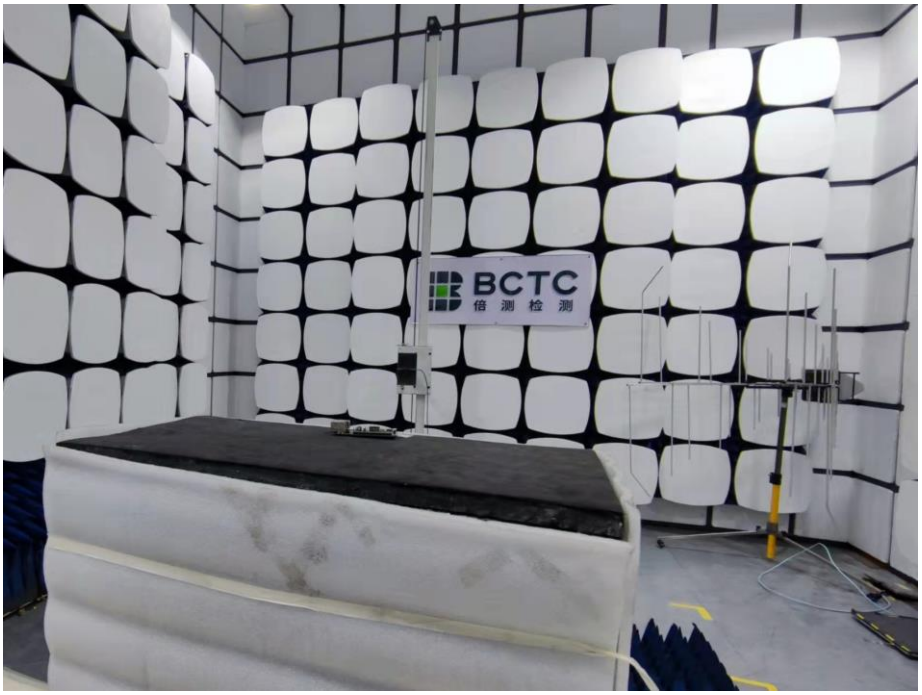


16. EUT Test Setup Photographs

Conducted Measurement Photos

Radiated Measurement Photos




BCTC
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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** ※※※※※