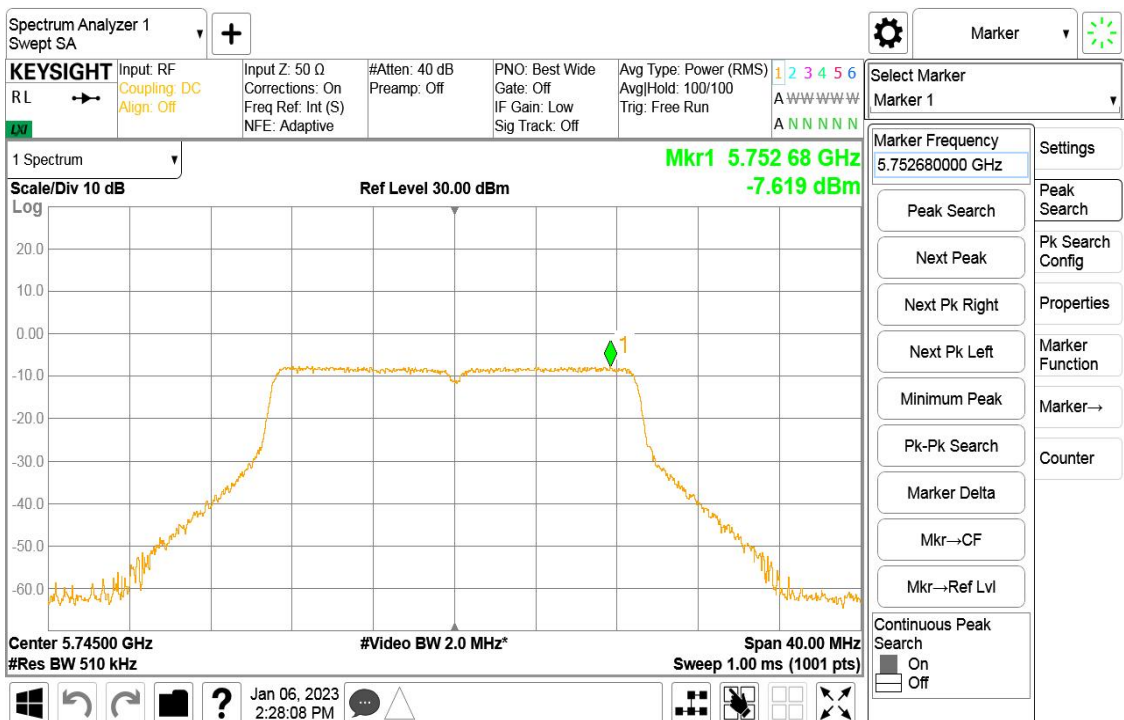


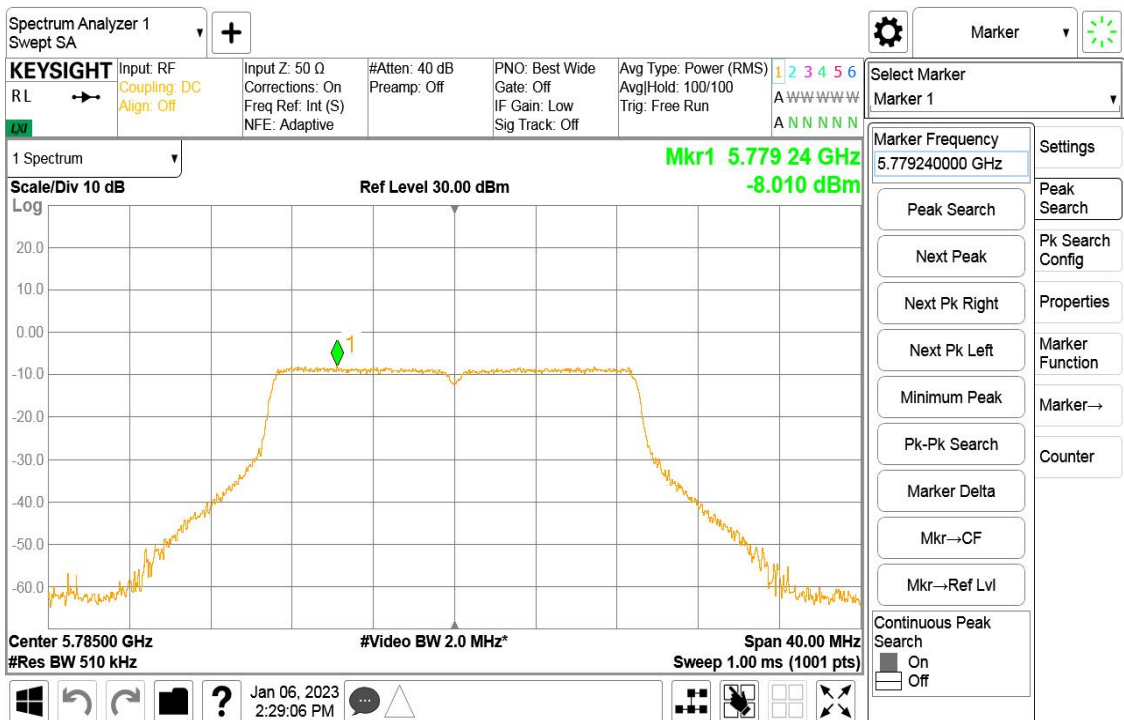
11n-40 Fig2



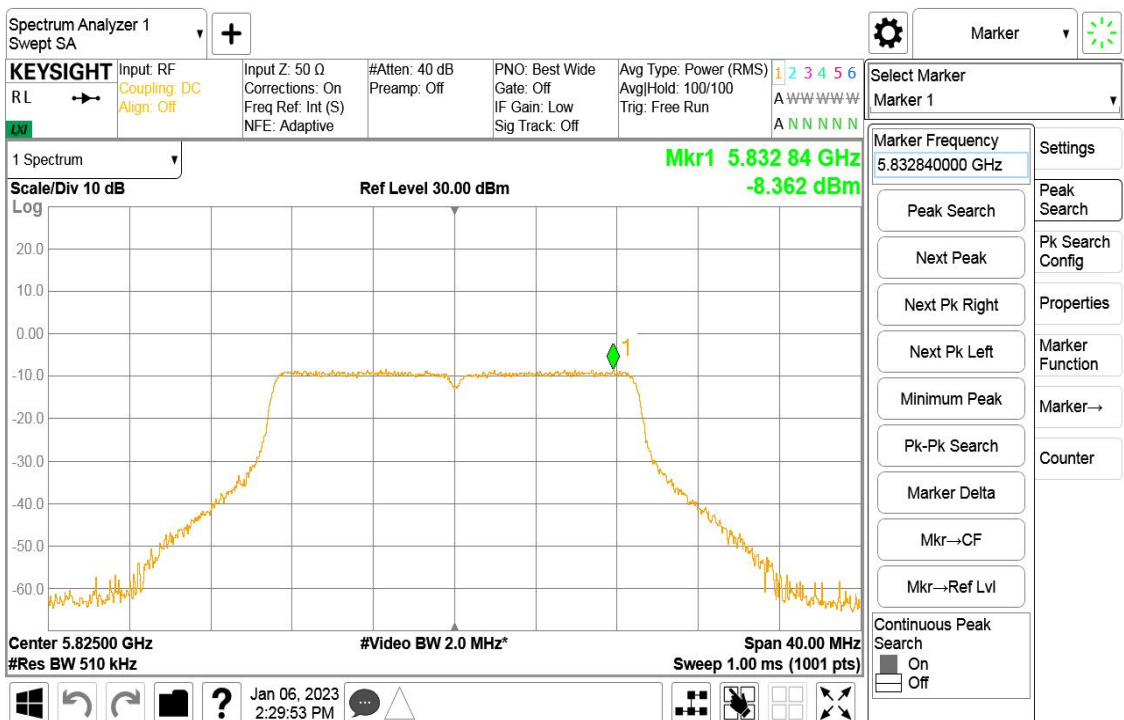
11ac-20 Fig1

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



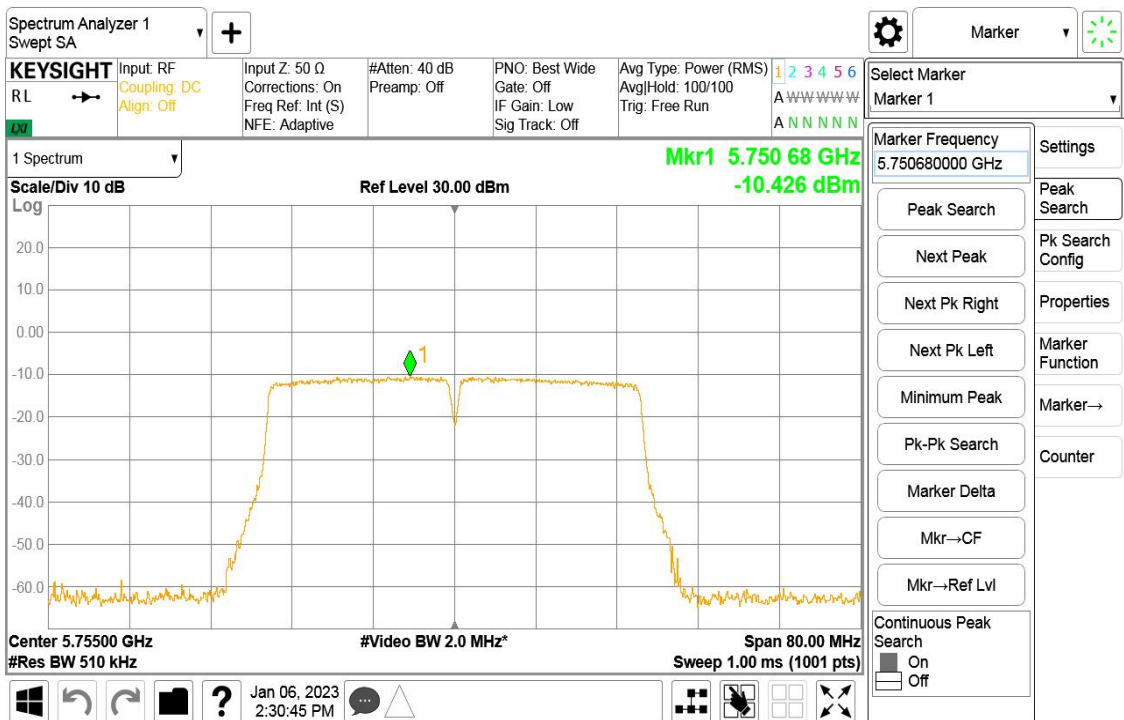
11ac-20 Fig2



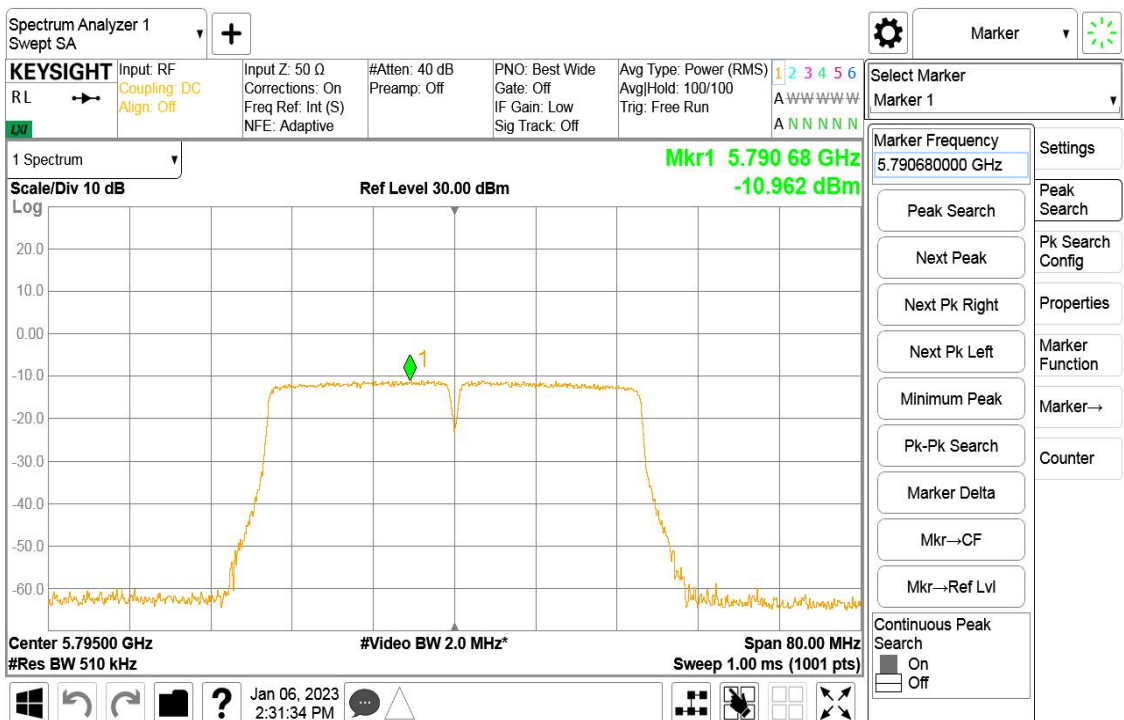
11ac-20 Fig3

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



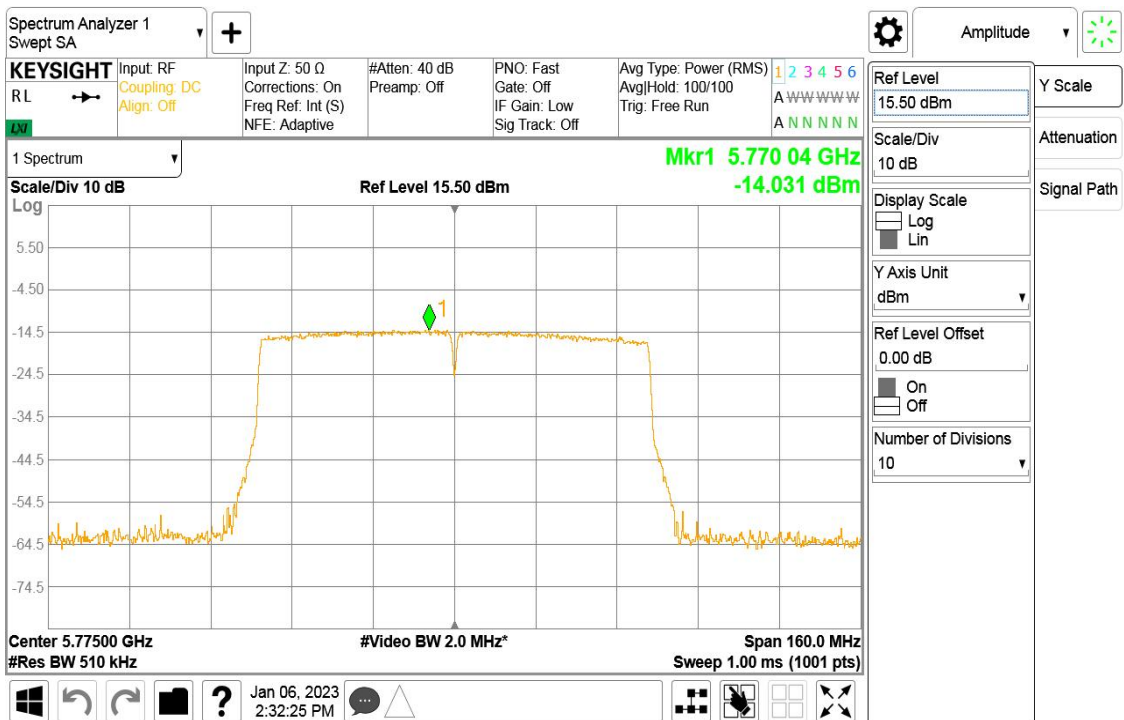
11ac-40 Fig1



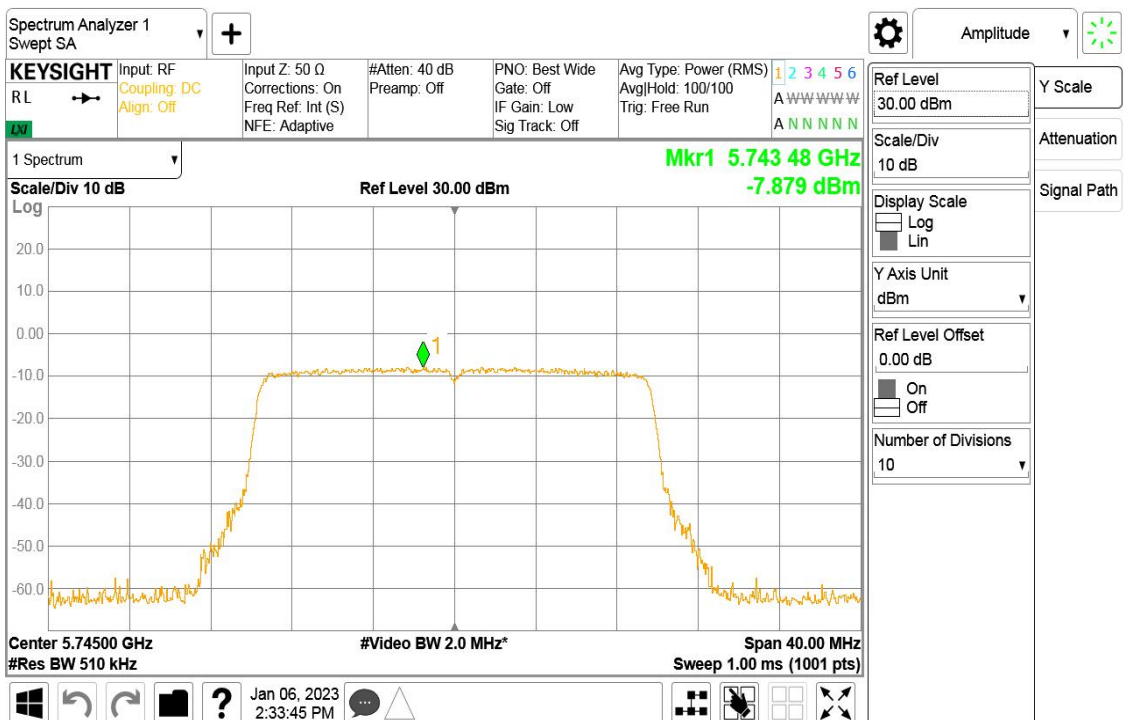
11ac-40 Fig2

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777



11ac-80 Fig1

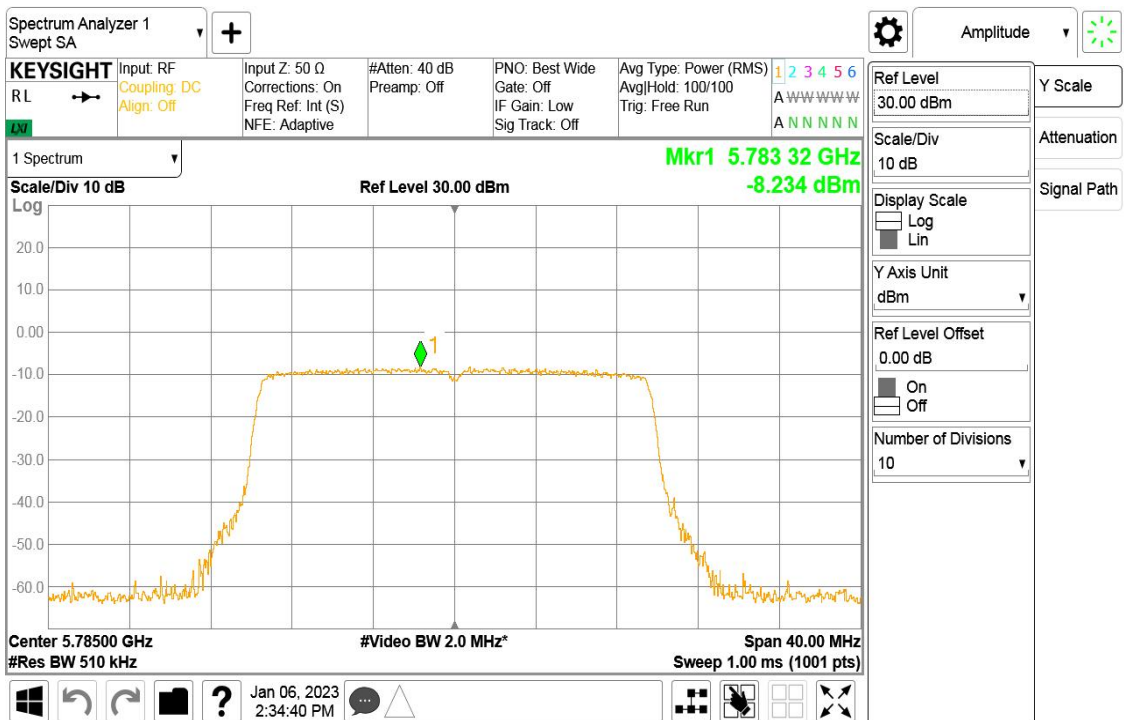


11ax-20 Fig1

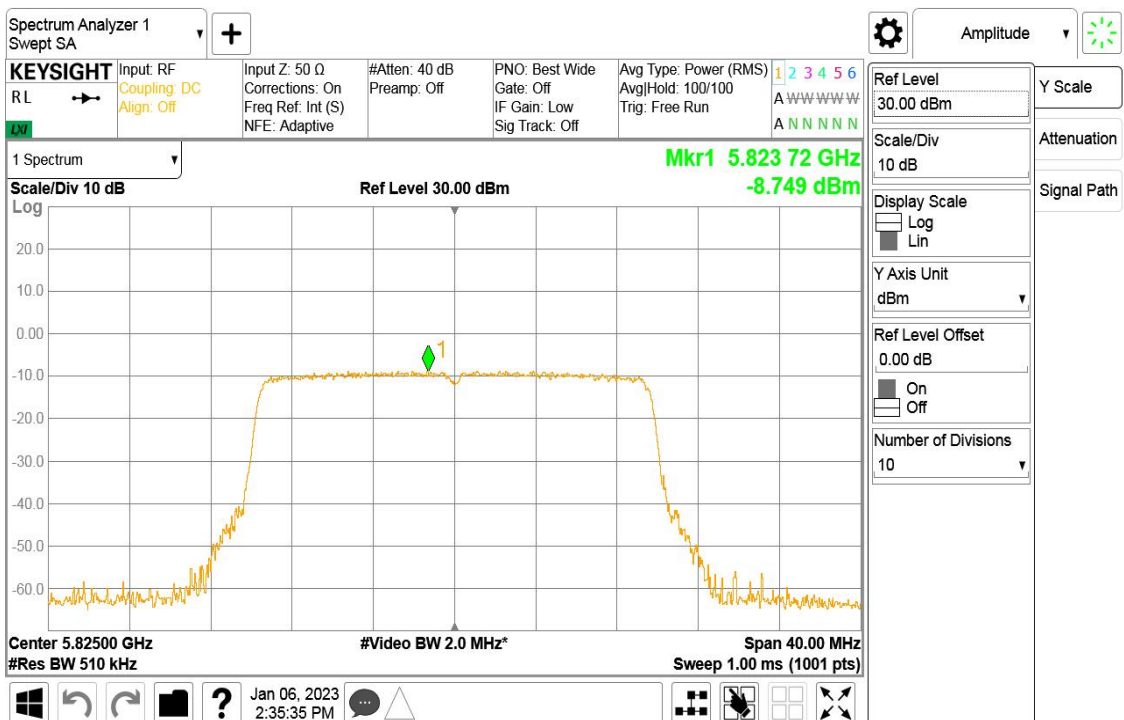
## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777





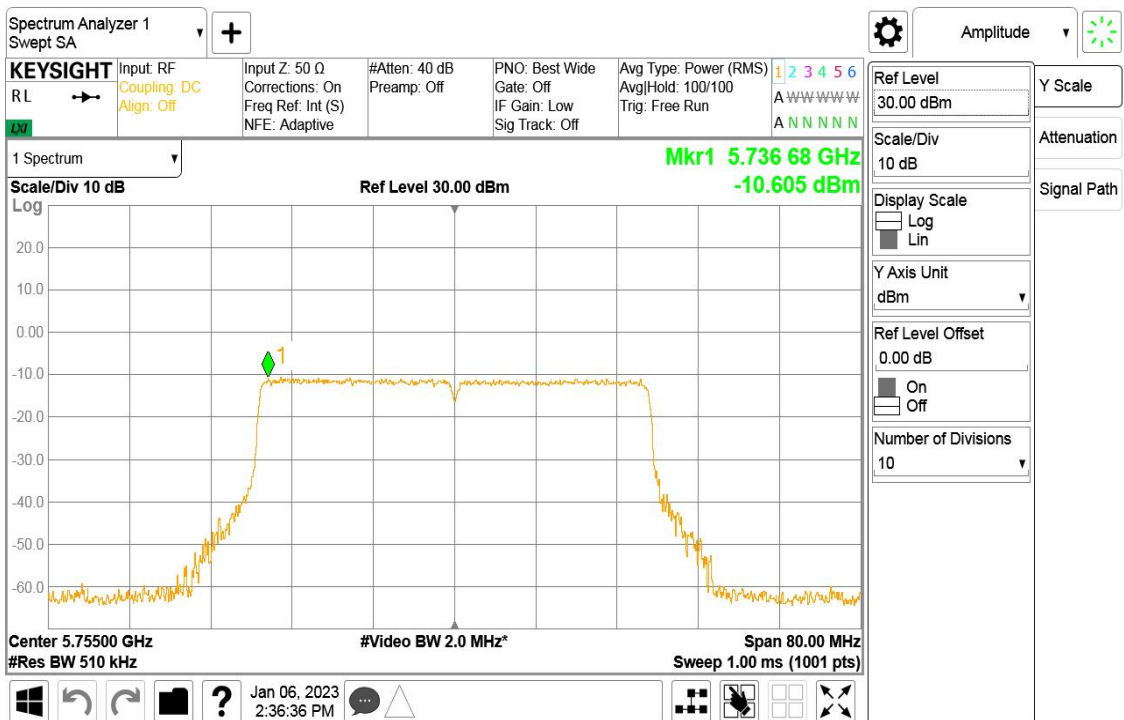
11ax-20 Fig2



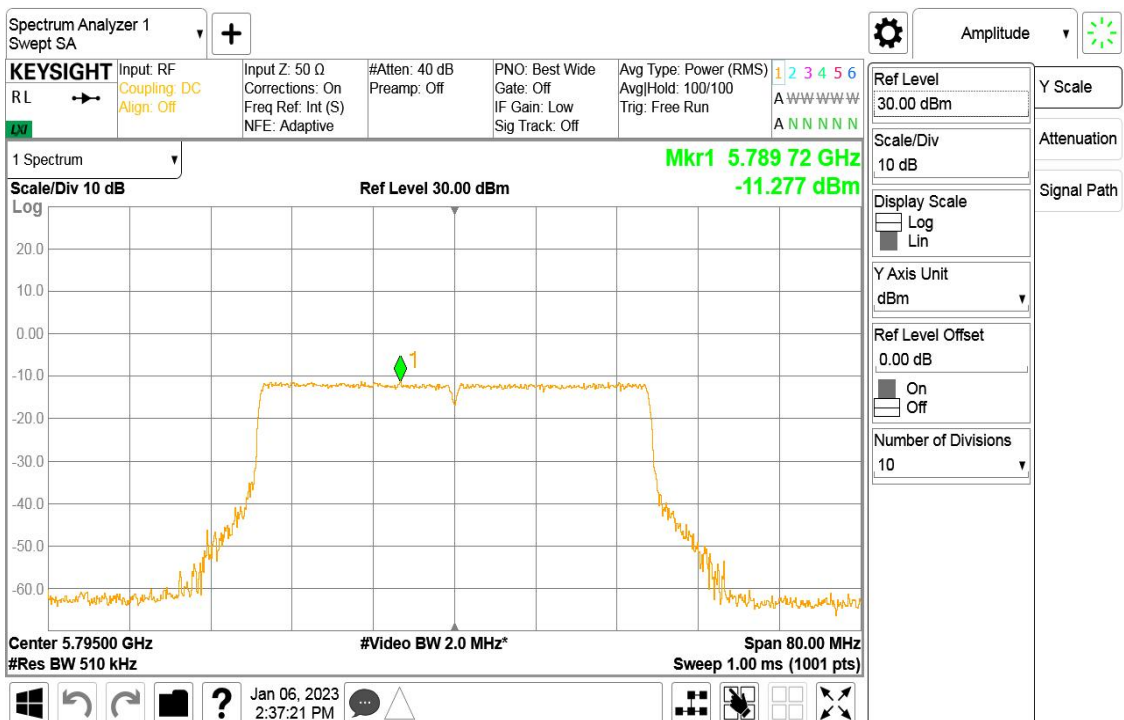
11ax-20 Fig3

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777



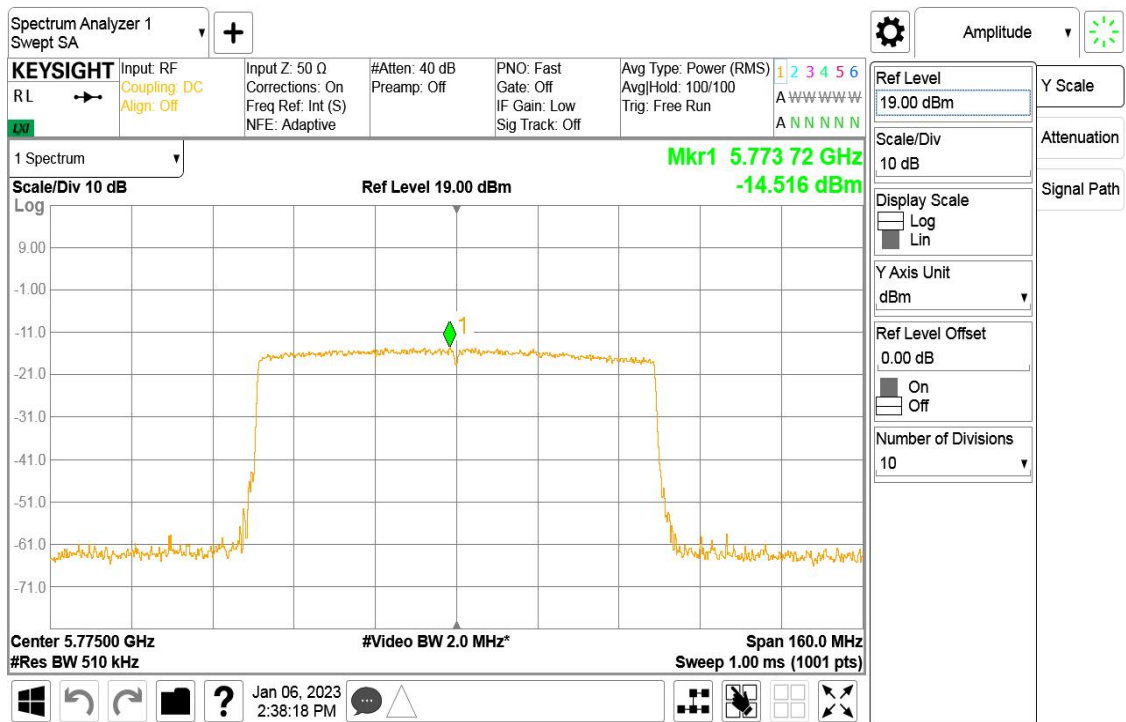
11ax-40 Fig1



11ax-40 Fig2

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



11ax-80 Fig1

### 6.5. 6dB Occupied Bandwidth

<b>Specifications:</b>	FCC Part 15.407 (e)
<b>DUT Serial Number:</b>	S1
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	Pass

#### Limit Level Construction:

Standard	Frequency (MHz)	Limit (dBm)
FCC Part 15.407 (e)	5725MHz~5850MHz	Within the 5.725~5.850 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

#### Measurement Uncertainty:

Measurement Uncertainty	±16.02KHz
-------------------------	-----------

#### Test Procedure

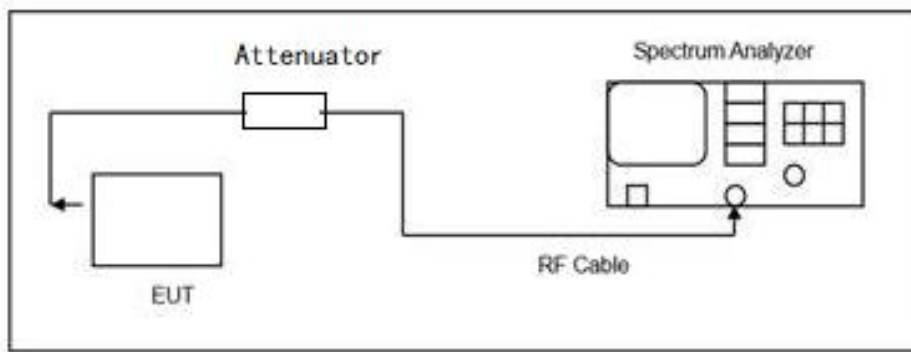
The measurement is according to KDB 789033 D02 clause I.C.2

### Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX:0086-23-88608777

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

**Test block diagram:**



**Measurement Results:**

**Chain.1**

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11a	149	Fig.1	16.51MHz	PASS
	157	Fig.2	16.50MHz	PASS
	165	Fig.3	16.51MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11n-HT20	149	Fig.1	17.77MHz	PASS
	157	Fig.2	17.74MHz	PASS
	165	Fig.3	17.75MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11n-HT40	151	Fig.1	35.97MHz	PASS
	159	Fig.2	35.70MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
------	---------	------------------------	--	------------

**Chongqing Academy of Information and Communication Technology**

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



### Report No.: I22W00019-WiFi RF-5.8GHz-Rev4

802.11ac-VHT20	149	Fig.1	17.76MHz	PASS
	157	Fig.2	17.74MHz	PASS
	165	Fig.3	17.74MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11ac-VHT40	151	Fig.1	36.37MHz	PASS
	159	Fig.2	36.06MHz	PASS

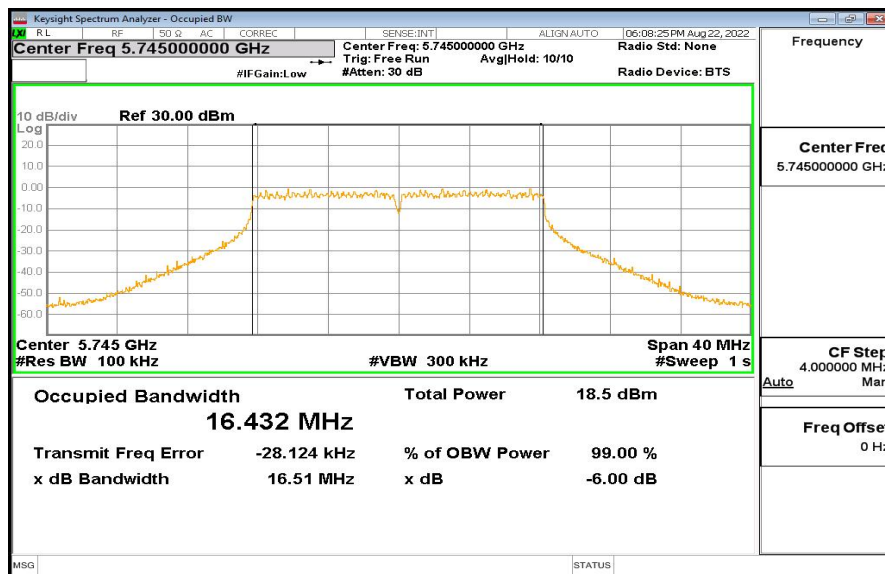
Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11ac-VHT80	155	Fig.1	75.67MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11ax-20	149	Fig.1	18.75MHz	PASS
	157	Fig.2	18.69MHz	PASS
	165	Fig.3	18.69MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11ax-40	151	Fig.1	38.17MHz	PASS
	159	Fig.2	38.13MHz	PASS

Mode	Channel	Occupied 6dB Bandwidth		Conclusion
802.11ax-80	155	Fig.1	75.69MHz	PASS

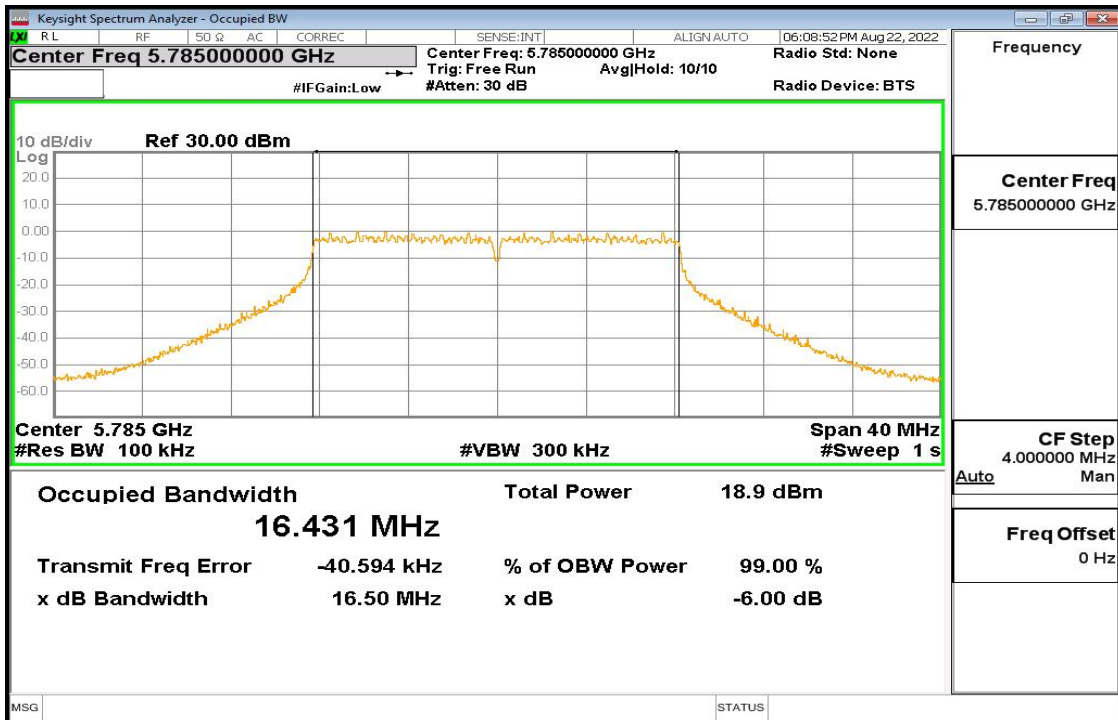
Test Picture as below:



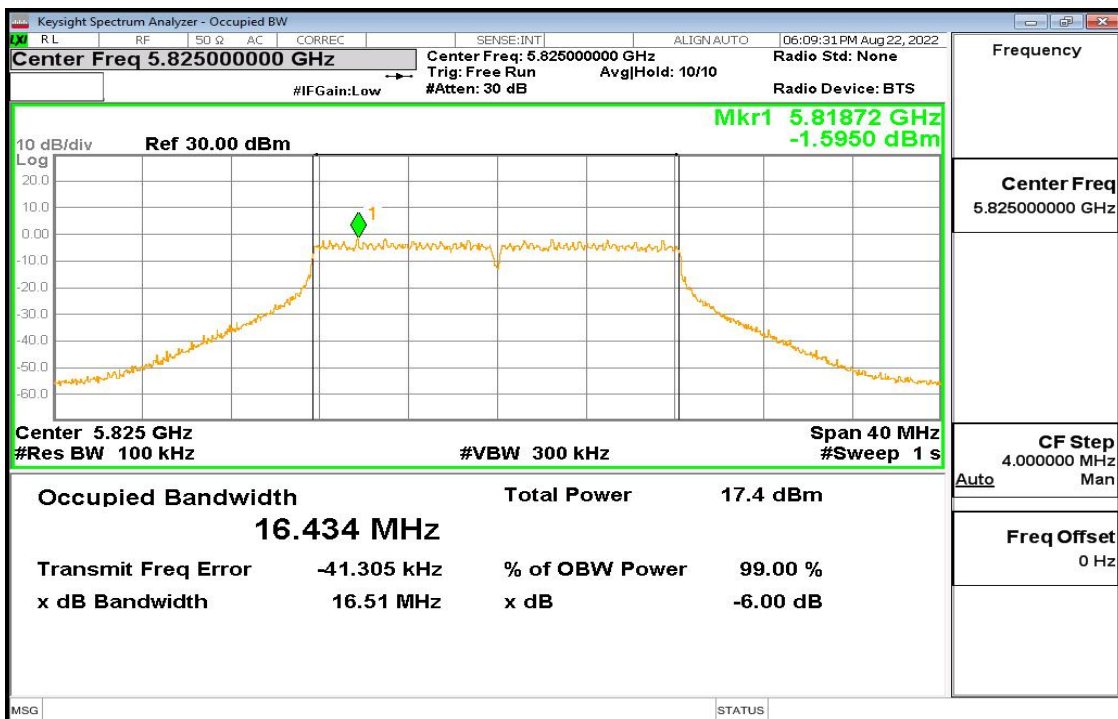
11a Fig1

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



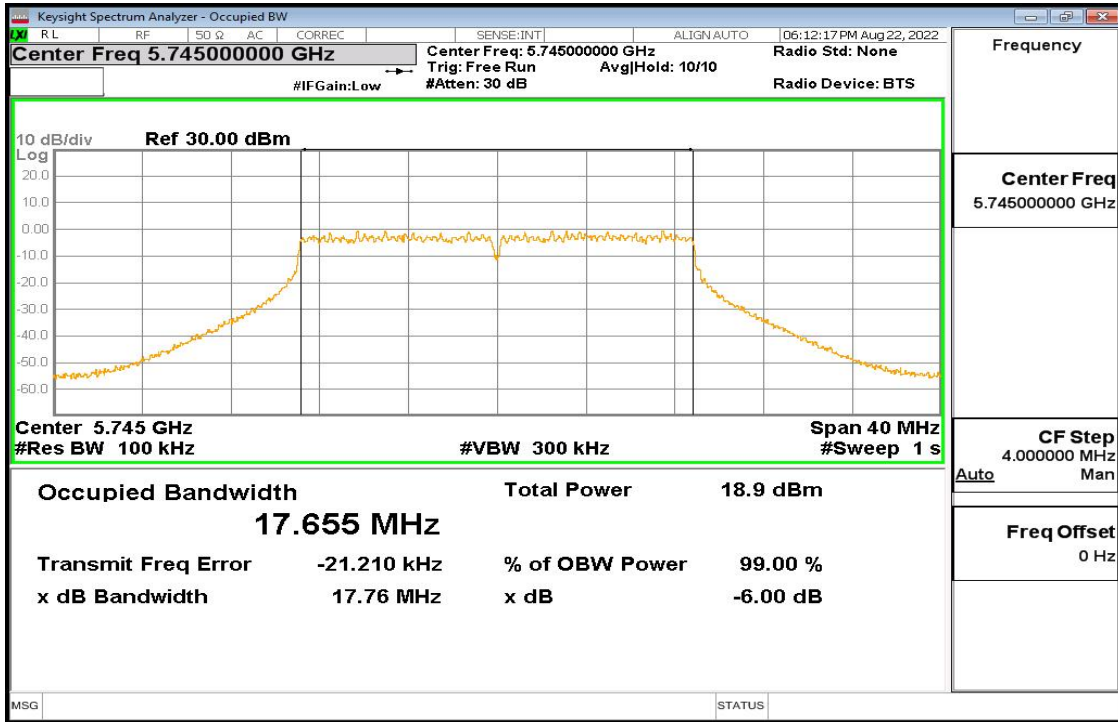
11a Fig2



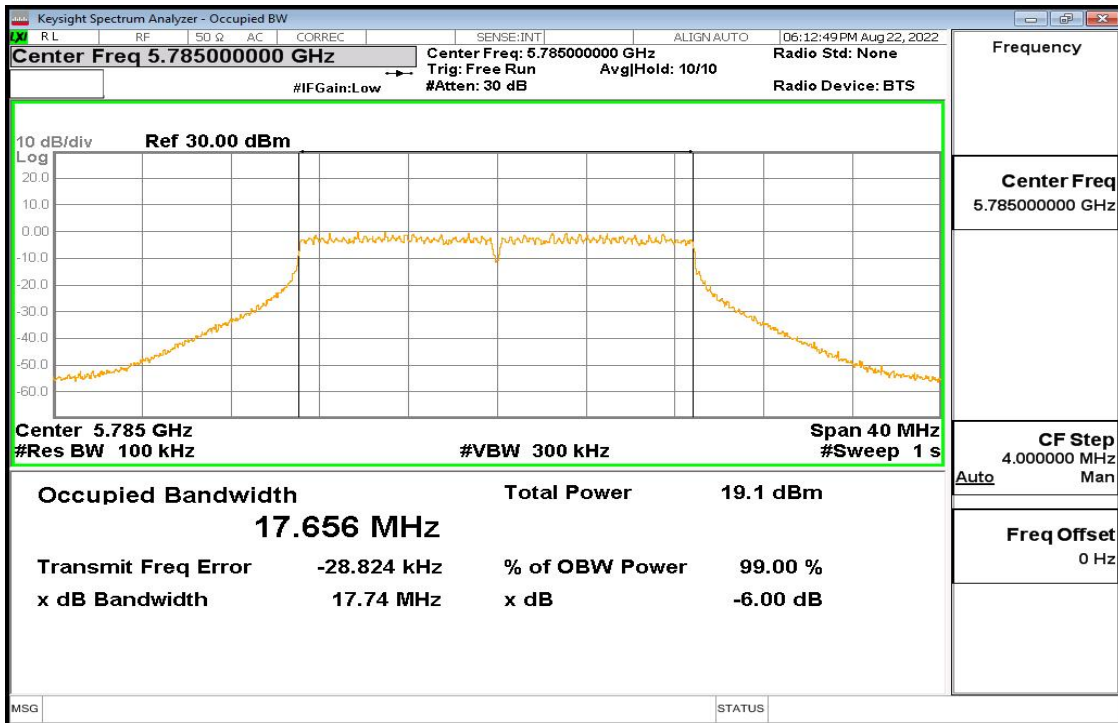
11a Fig3

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965      FAX: 0086-23-88608777



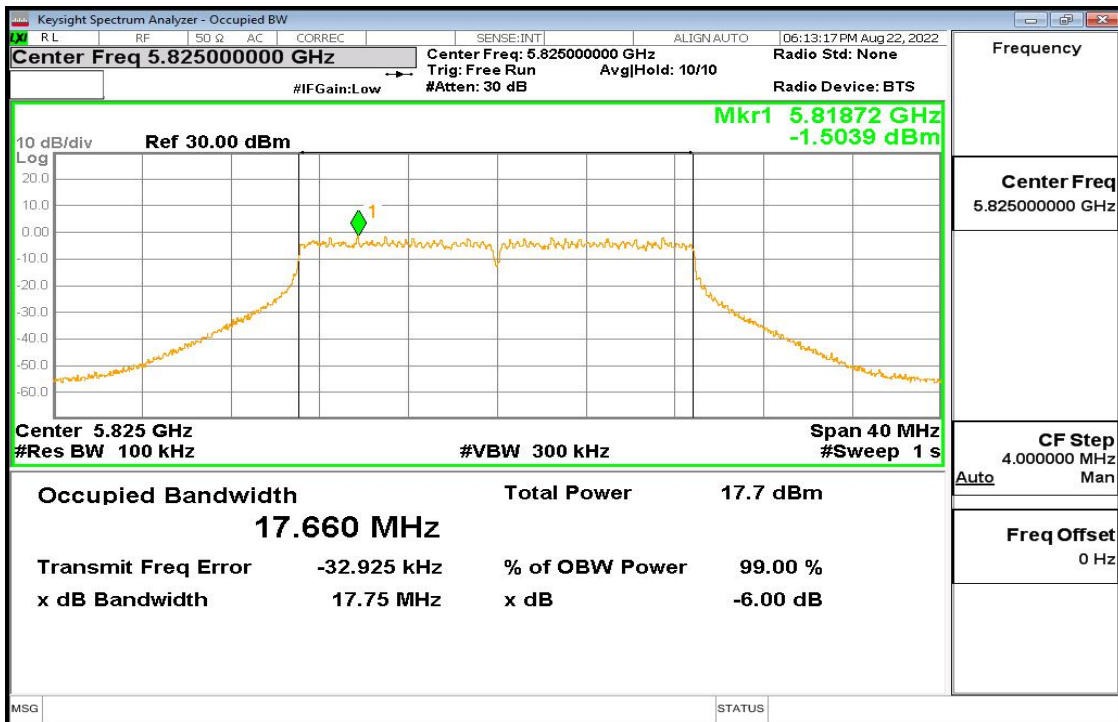
11n-20 Fig1



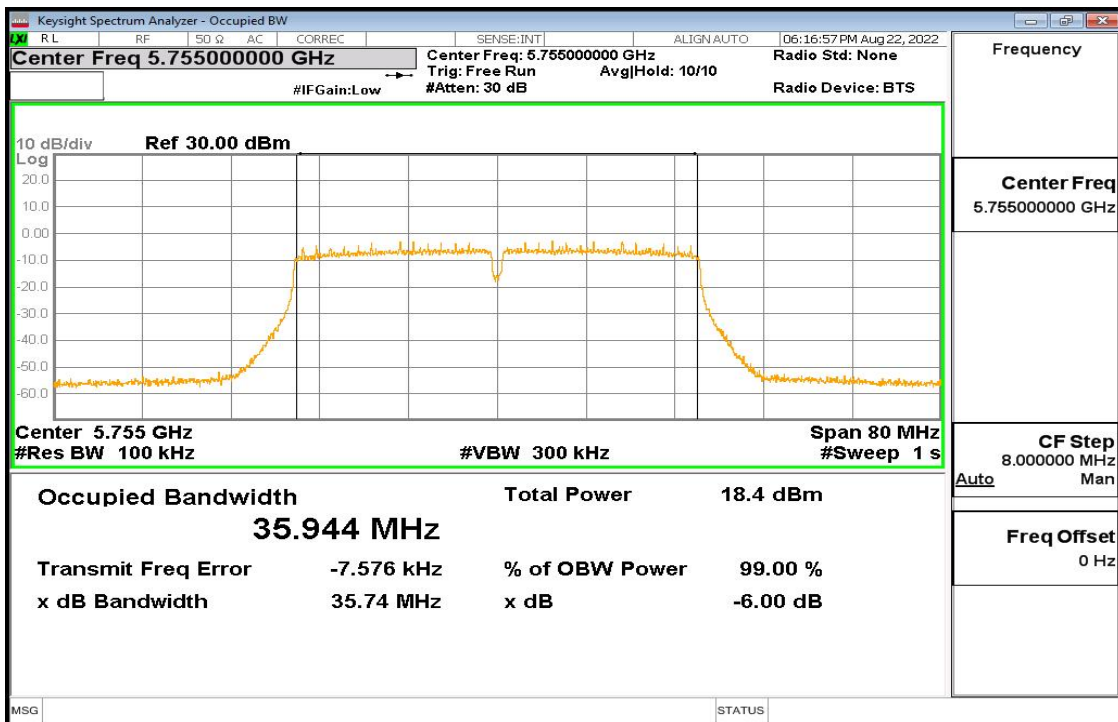
11n-20 Fig2

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



11n-20 Fig3

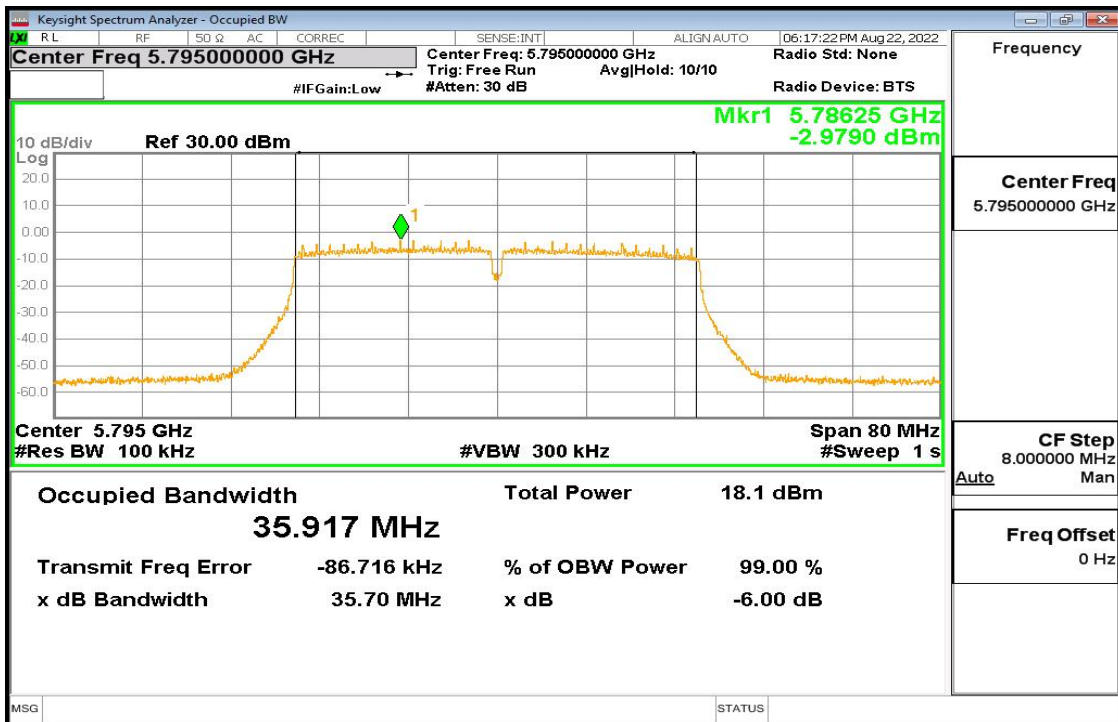


11n-40 Fig1

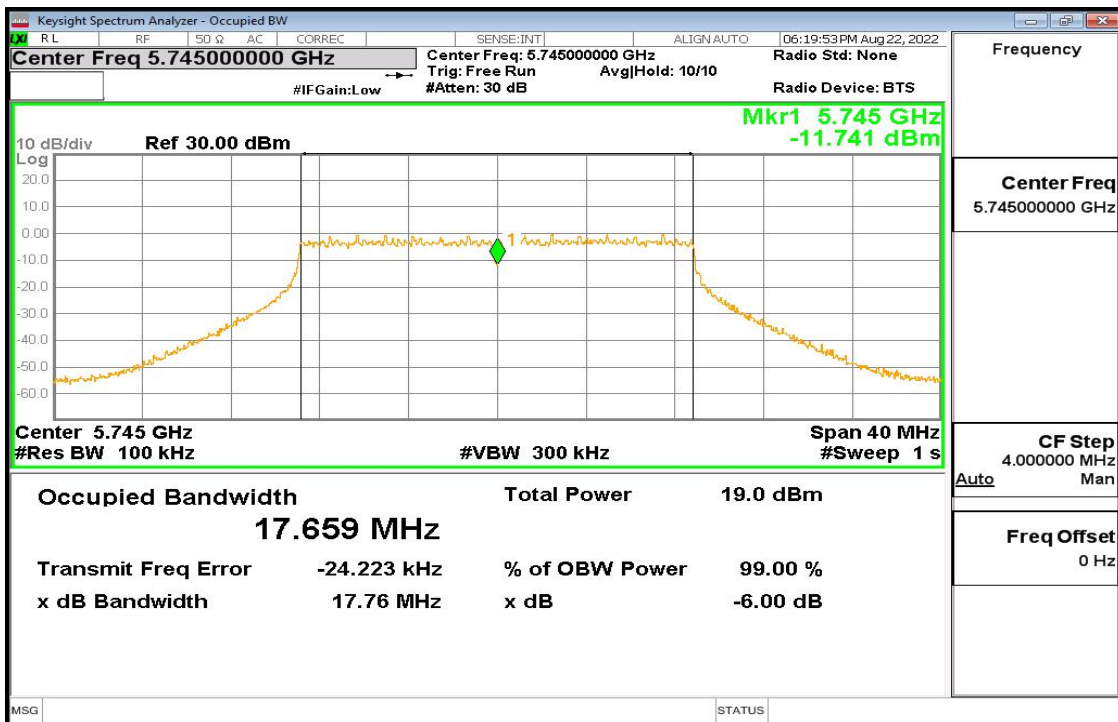
## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
Tel: 0086-23-88069965

FAX: 0086-23-88608777



11n-40 Fig2

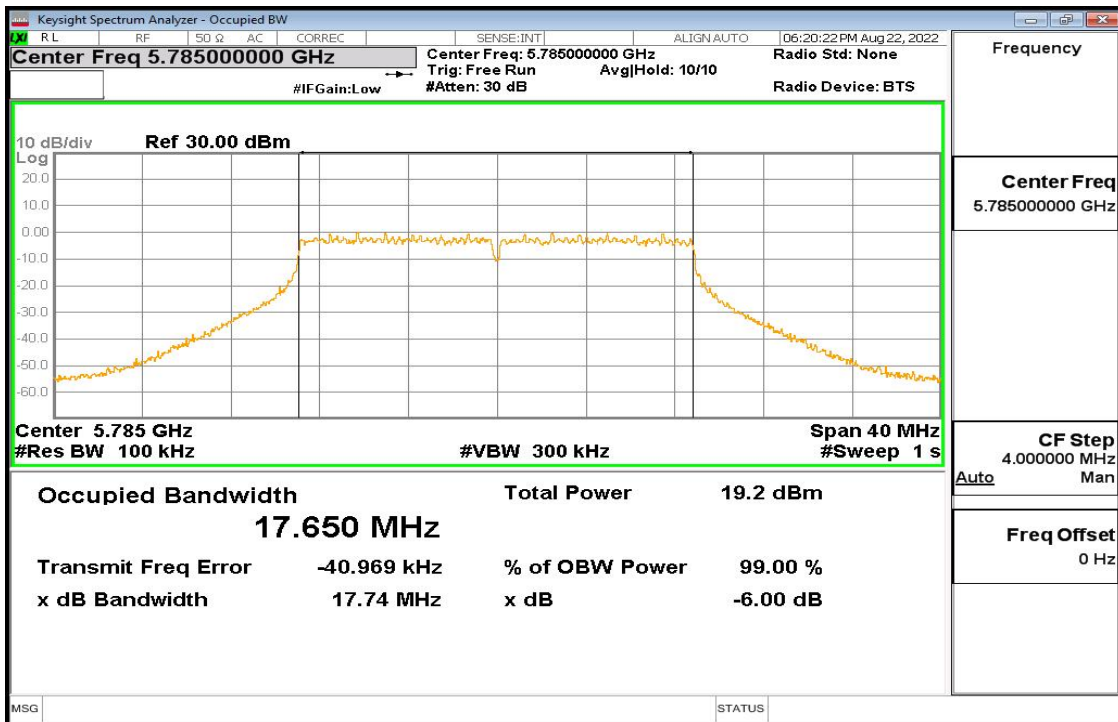


11ac-20 Fig1

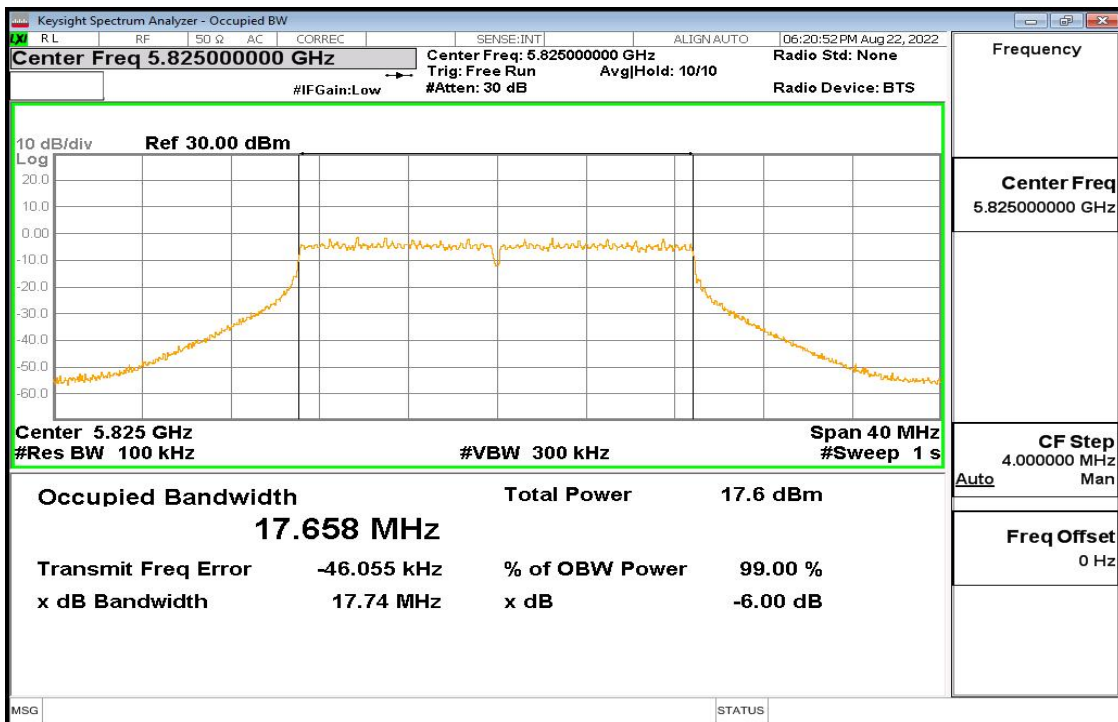
## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777





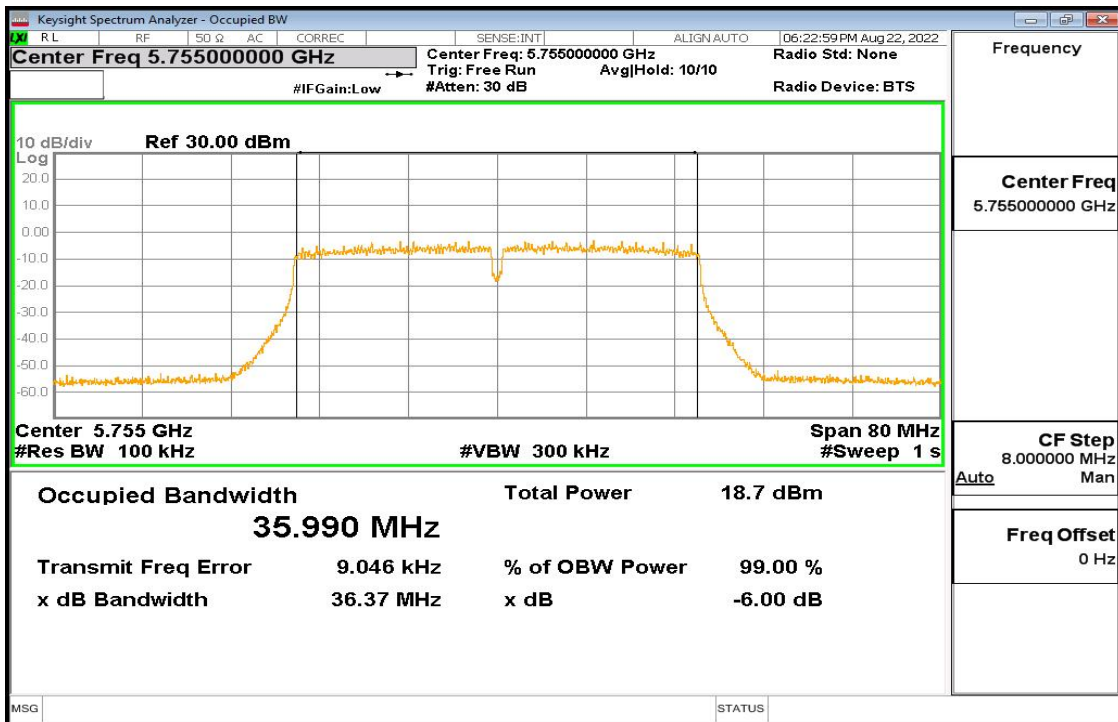
11ac-20 Fig2



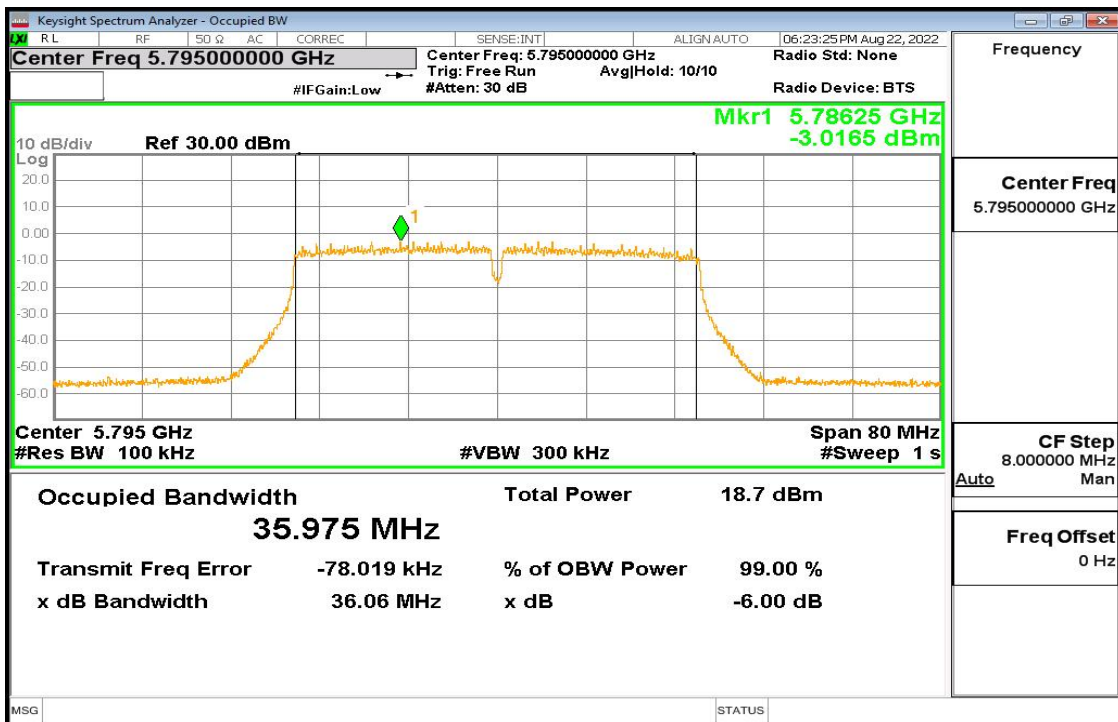
11ac-20 Fig3

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



11ac-40 Fig1

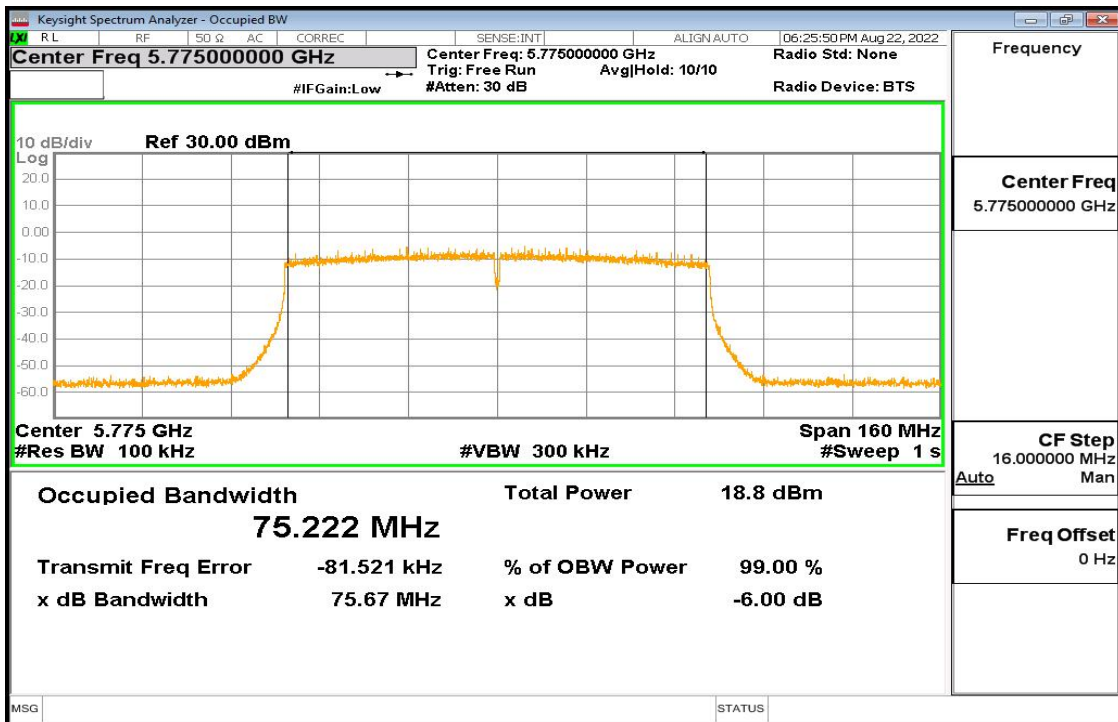


11ac-40 Fig2

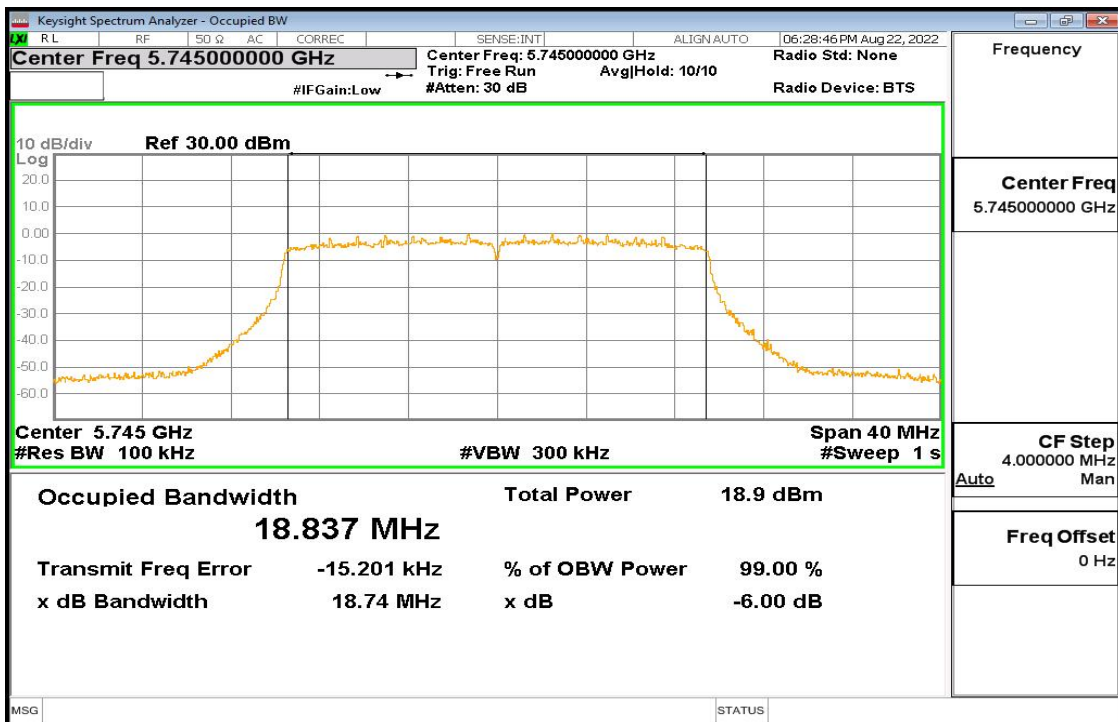
## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965

FAX: 0086-23-88608777



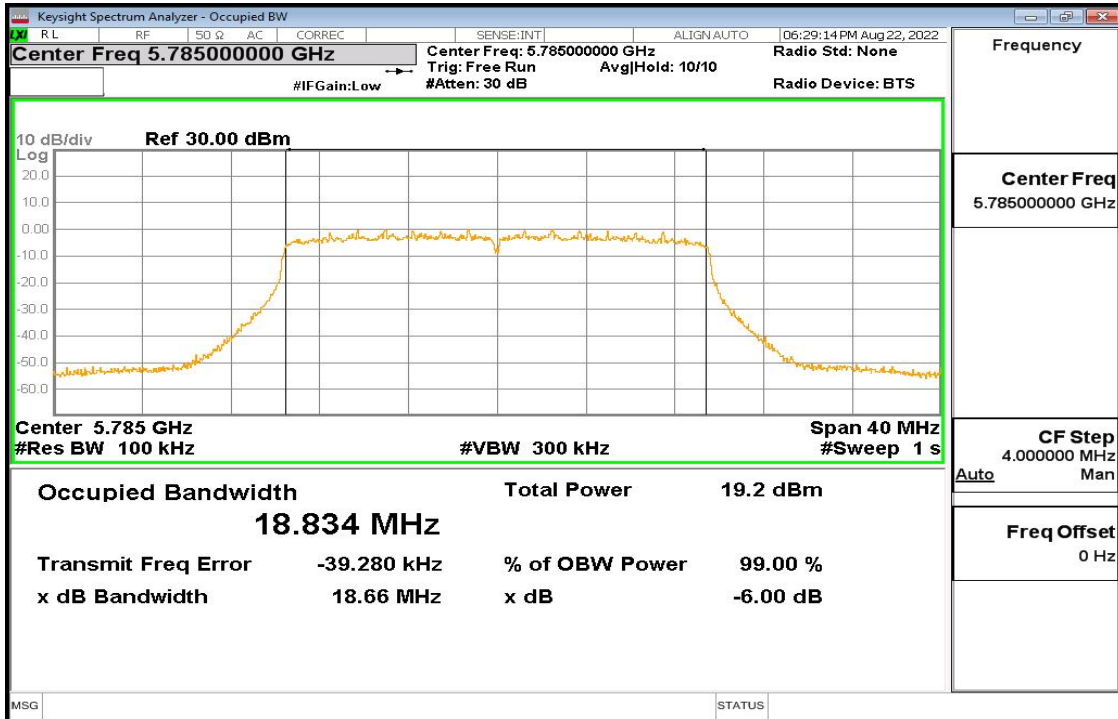
11ac-80 Fig1



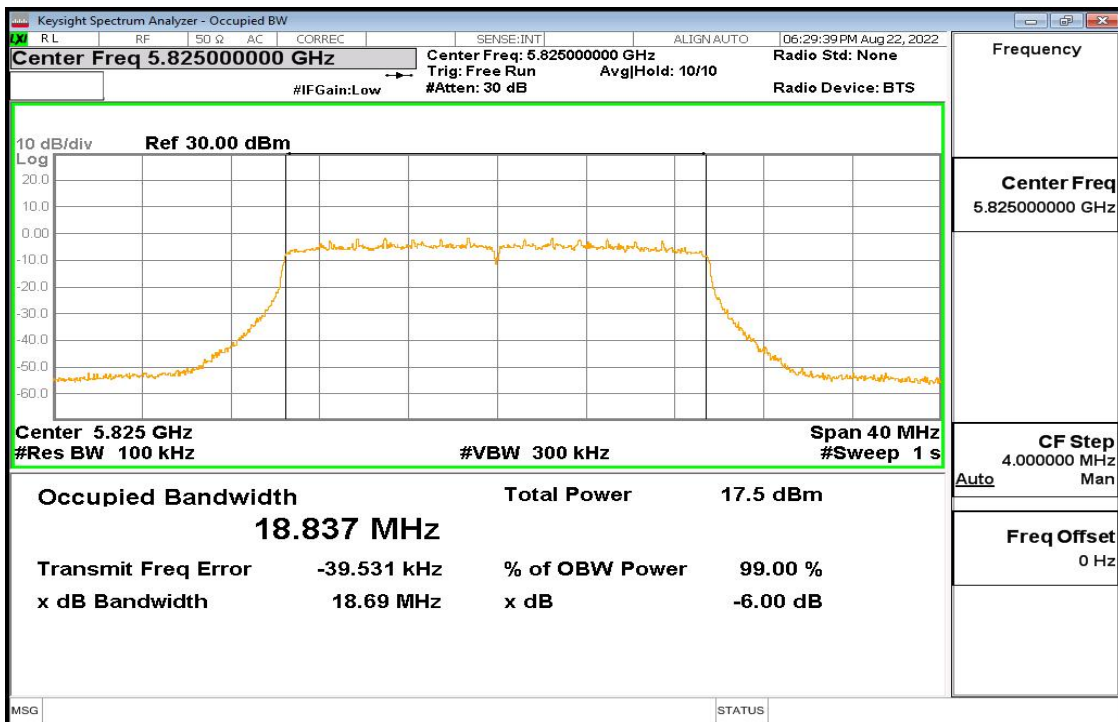
11ax-20 Fig1

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



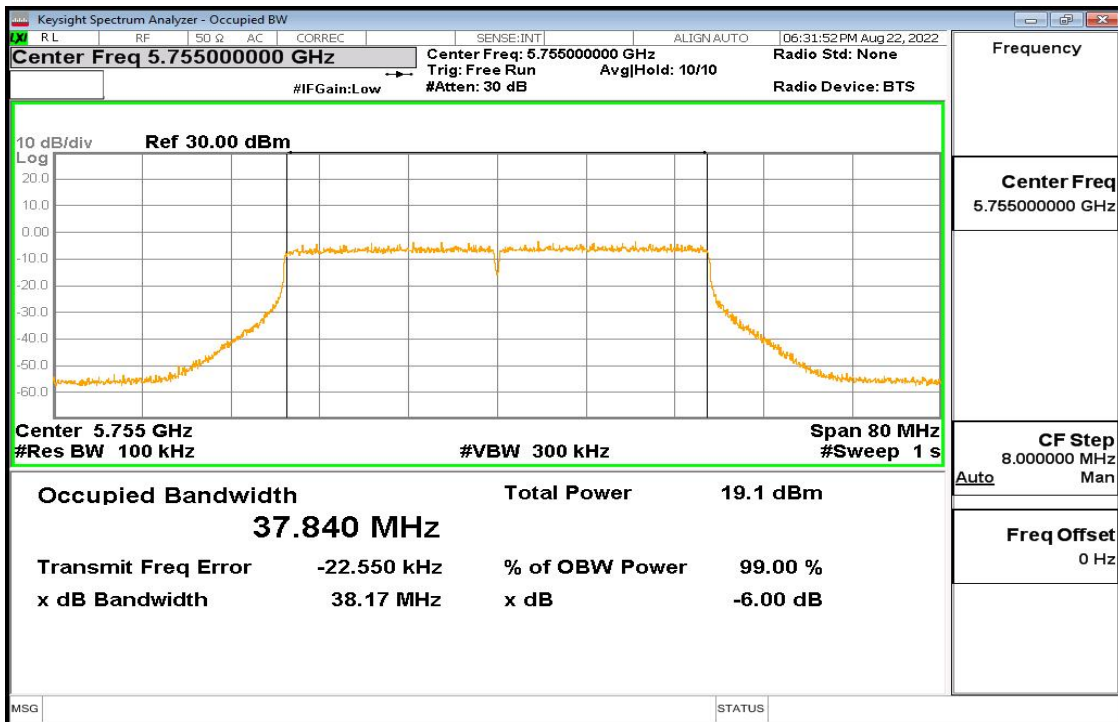
11ax-20 Fig2



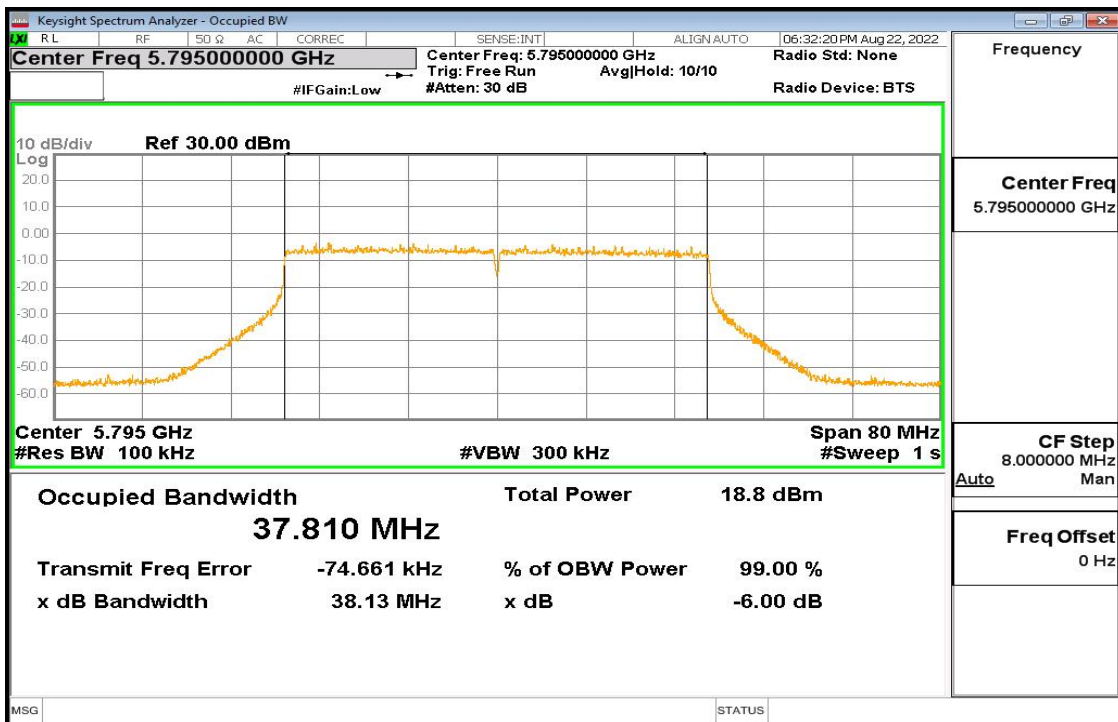
11ax-20 Fig3

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



11ax-40 Fig1



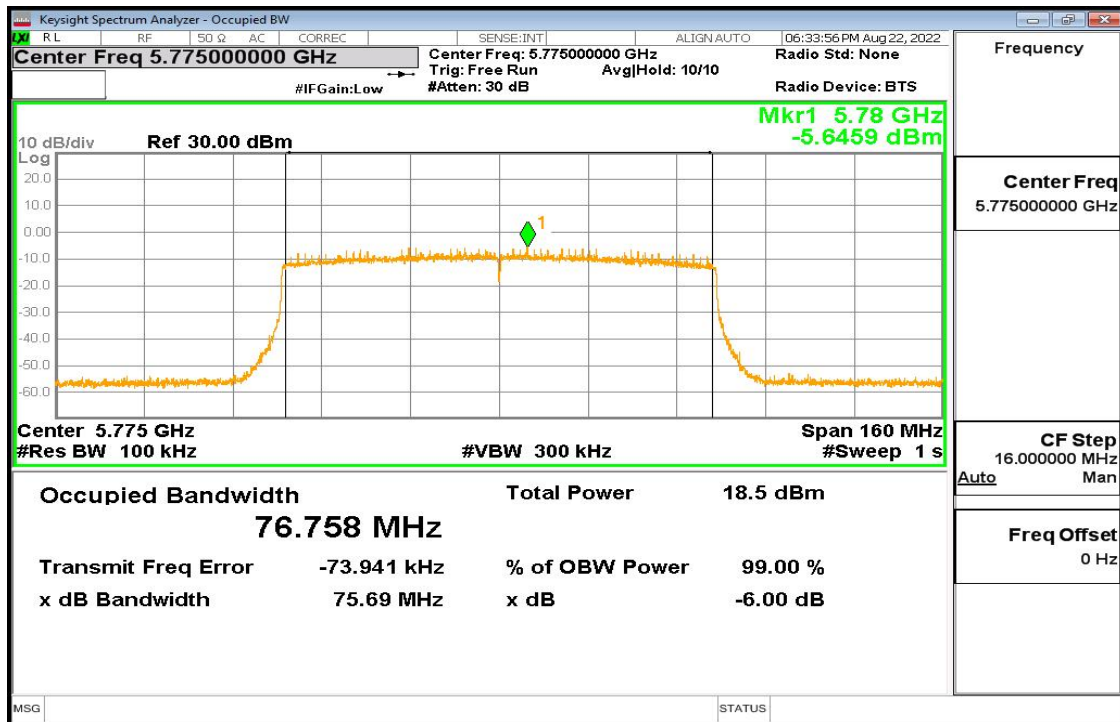
11ax-40 Fig2

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965

FAX: 0086-23-88608777





11ax-80 Fig1

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

### 6.6. Band Edges Compliance (Radiated)

<b>Specifications:</b>	FCC Part 15. 407 (b)
<b>DUT Serial Number:</b>	S2
<b>Test conditions:</b>	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	Pass

**Limit**

According to FCC Part 15.407(b)(7): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)(see §15.205(c)). According to FCC Part15.205,

**Restricted bands**

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Applicable to	Limit	
FCC Part 15. 407b(10), 15. 205, 15. 209	Field Strength at 3m	
	PK: 74 (dB μ V/m)	AV: 54 (dB μ V/m)
Applicable to	EIRP Limit	Equivalent Field Strength at 3m
15. 407 (b) (1)	PK: -27 (dBm/MHz)	PK: 68. 2 (dB μ V/m)

## Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX:0086-23-88608777

**Report No.: I22W00019-WiFi RF-5.8GHz-Rev4**

15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	Note	Note

**NOTE:**For transmitters operating in the 5.725-5.85 GHz band:

Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative limit.

15.407(b)(4)(i) All emissions shall be limited to a level of 27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5

MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu V/m, \text{ where } P \text{ is the eirp (Watts)}$$

**Measurement Uncertainty:**

Frequency Range	Uncertainty
1 GHz to 6 GHz	4.84

**Test Procedure**

1. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**Notes:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at

**Chongqing Academy of Information and Communication Technology**

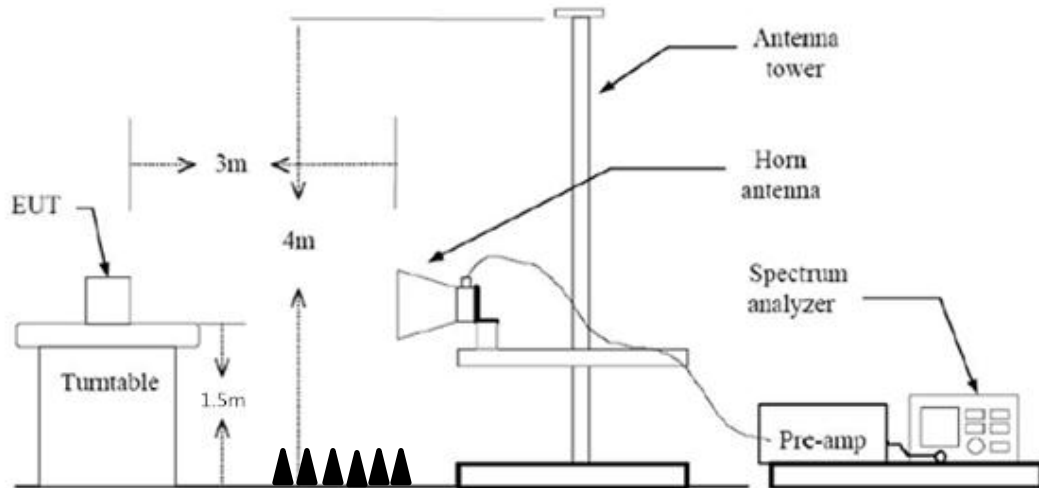
Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

4. All modes of operation were investigated and the worst-case emissions (802.11a-ant0, 802.11n/ax-MIMO mode) are reported.

**Test block diagram:**



Test Result:

**802.11a mode**

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11a	149	Fig.1	Pass
	165	Fig.2	Pass

**802.11n mode**

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11n (20M)	149	Fig.3	Pass
	165	Fig.4	Pass

mode	Channel	Test Results(dBuV/m)	Conclusion
------	---------	----------------------	------------

**Chongqing Academy of Information and Communication Technology**

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



Report No.: I22W00019-WiFi RF-5.8GHz-Rev4

802.11n (40M)	151	Fig.5	Pass
	159	Fig.6	Pass

802.11ac mode

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11ac (80M)	155	Fig.7	Pass

802.11ax mode

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11ax (20M)	149	Fig.8	Pass
	165	Fig.9	Pass

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11ax (40M)	151	Fig.10	Pass
	159	Fig.11	Pass

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11ax (80M)	155	Fig.12	Pass

Note:

All the test data shown was peak detected. Transmitter Spurious Emission-Radiated H and V are tested together.,The test is maximum hold. Therefore, the result is only one set of data.

Conclusion: PASS

Test figure as below:

### Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX:0086-23-88608777



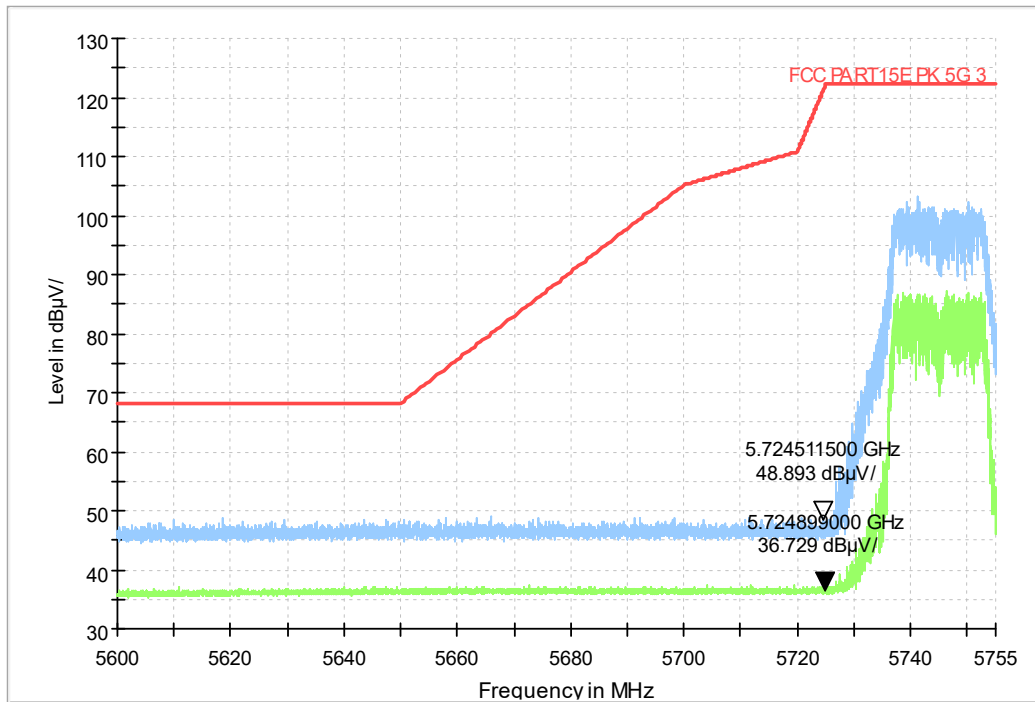


Fig.1 Frequency Band Edge: Ch149,11a 20M

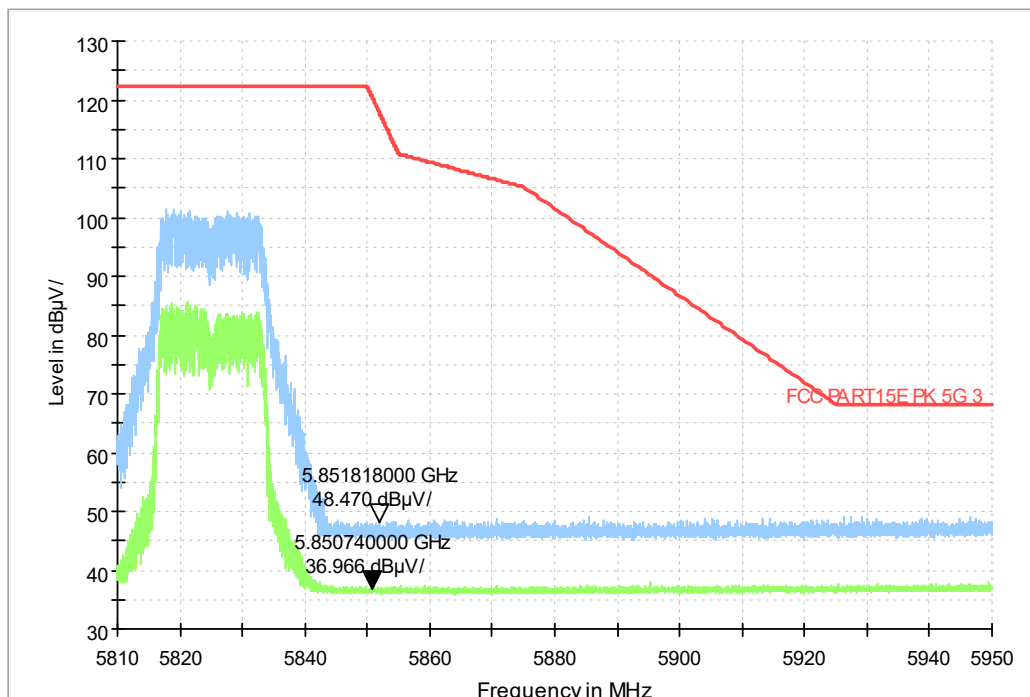


Fig.2 Frequency Band Edge: Ch165,11a 20M

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

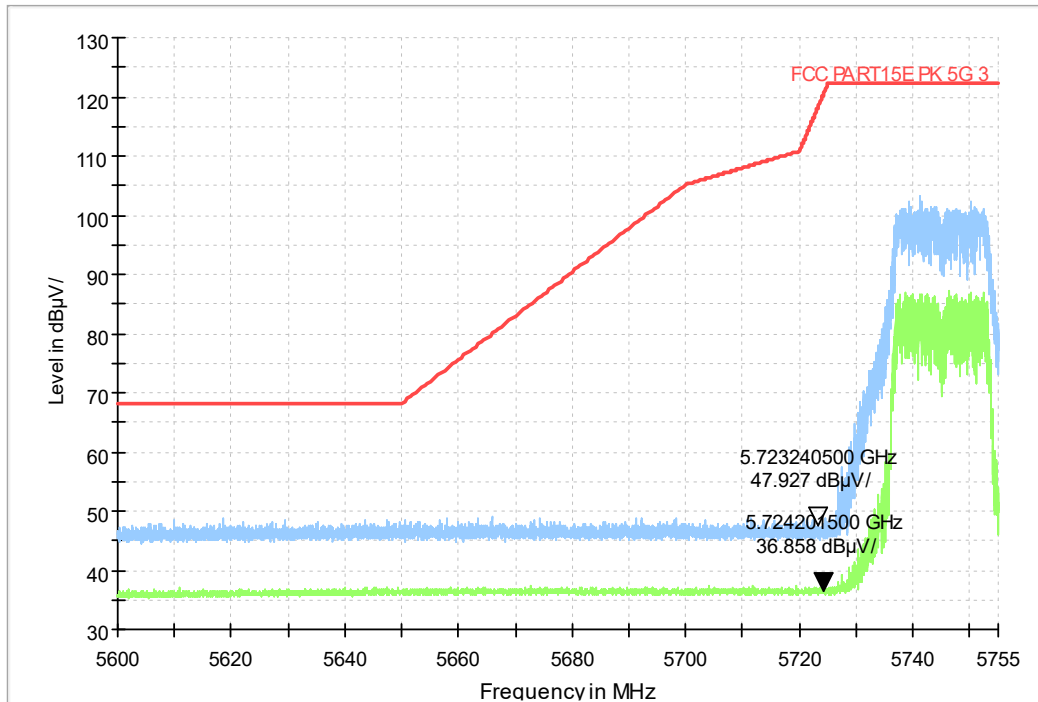


Fig.3 Frequency Band Edge: Ch149,1 In 20M

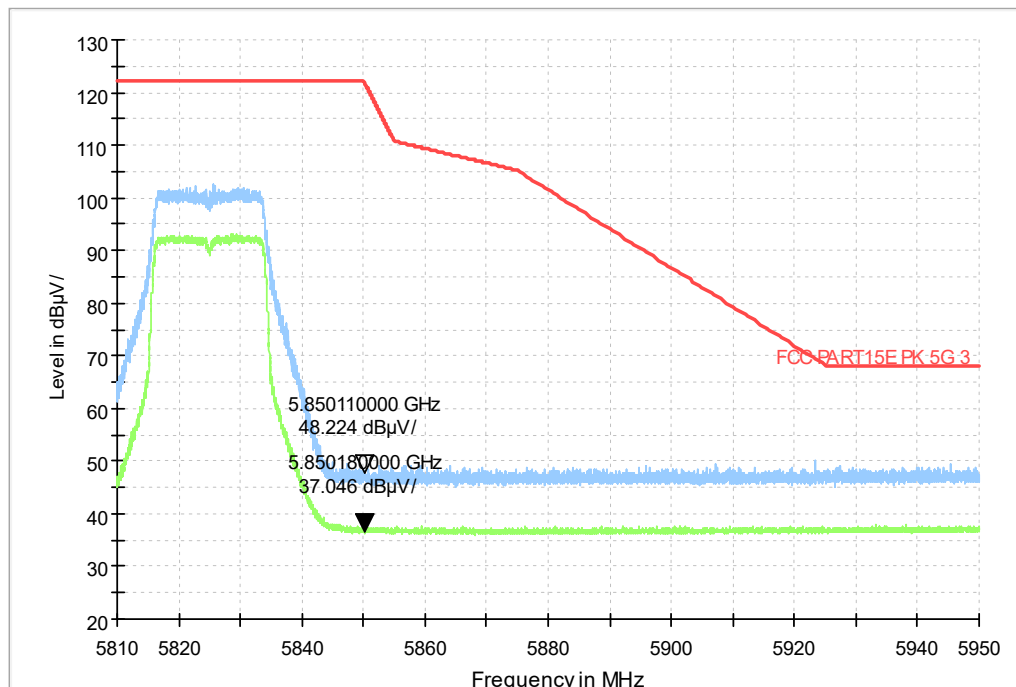


Fig.4 Frequency Band Edge: Ch165,1 In 20M

### Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
 Tel: 0086-23-88069965 FAX:0086-23-88608777

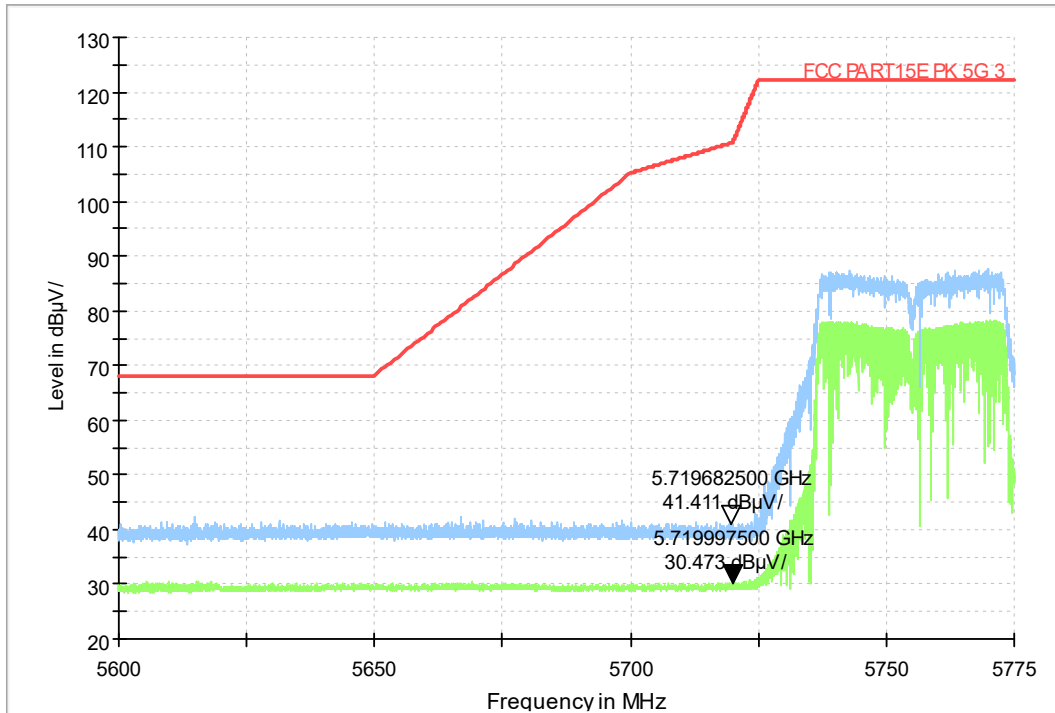


Fig.5 Frequency Band Edge: Ch151,1 In 40M

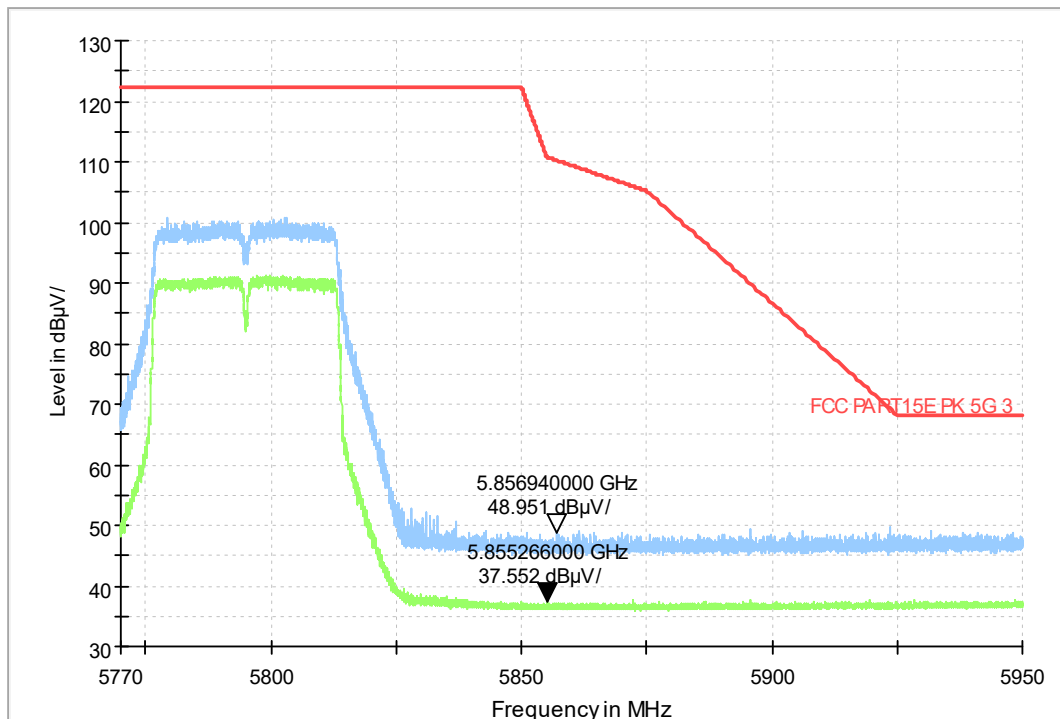


Fig.6 Frequency Band Edge: Ch159,1 In 40M

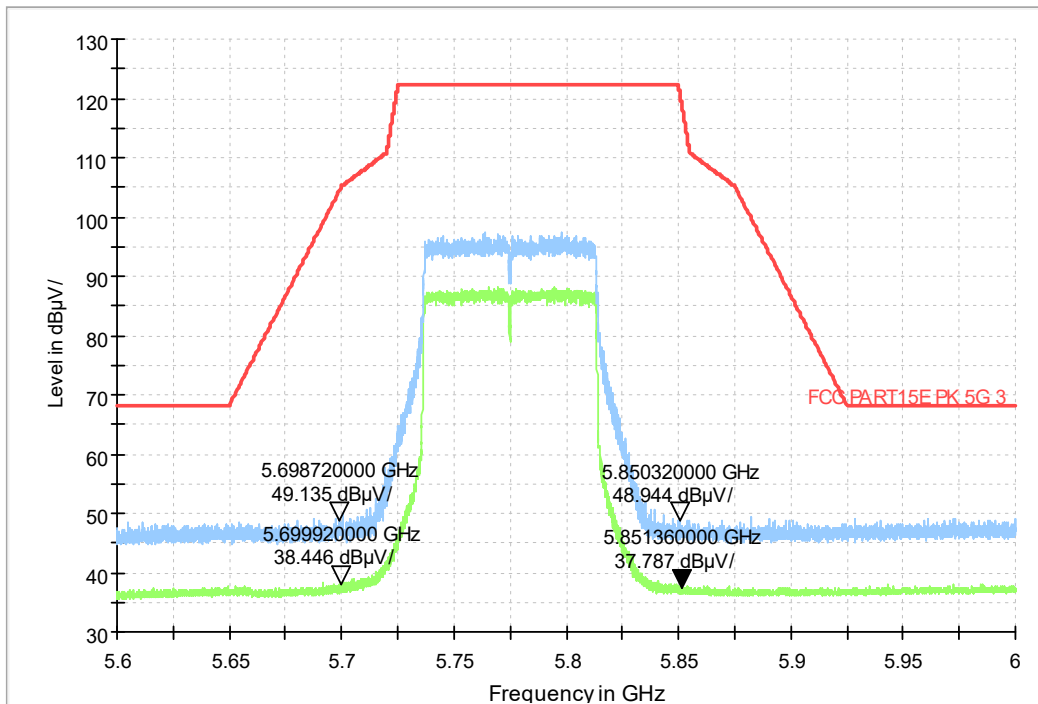


Fig.7 Frequency Band Edge: Ch155,11ac 80M

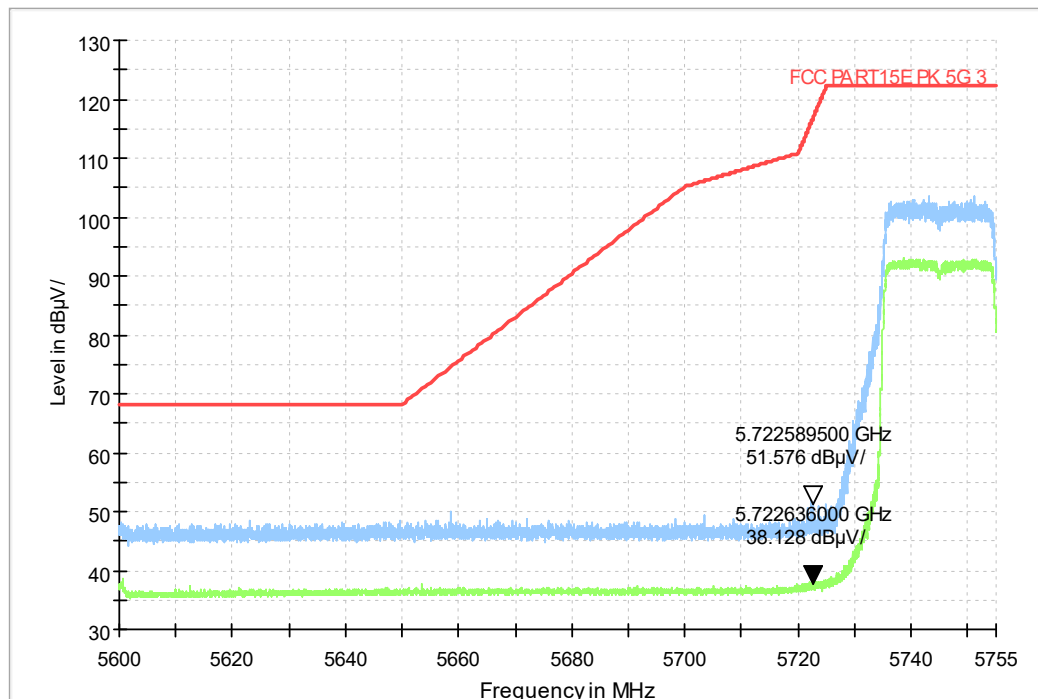


Fig.8 Frequency Band Edge: Ch149,11ax 20M

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

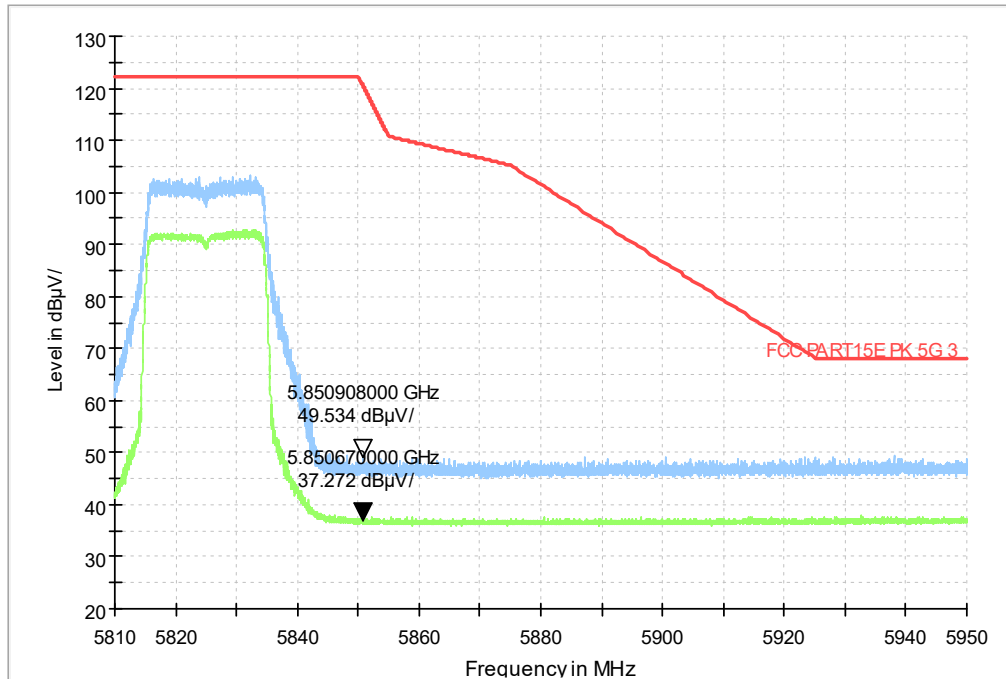


Fig.9 Frequency Band Edge: Ch165,11ax 20M

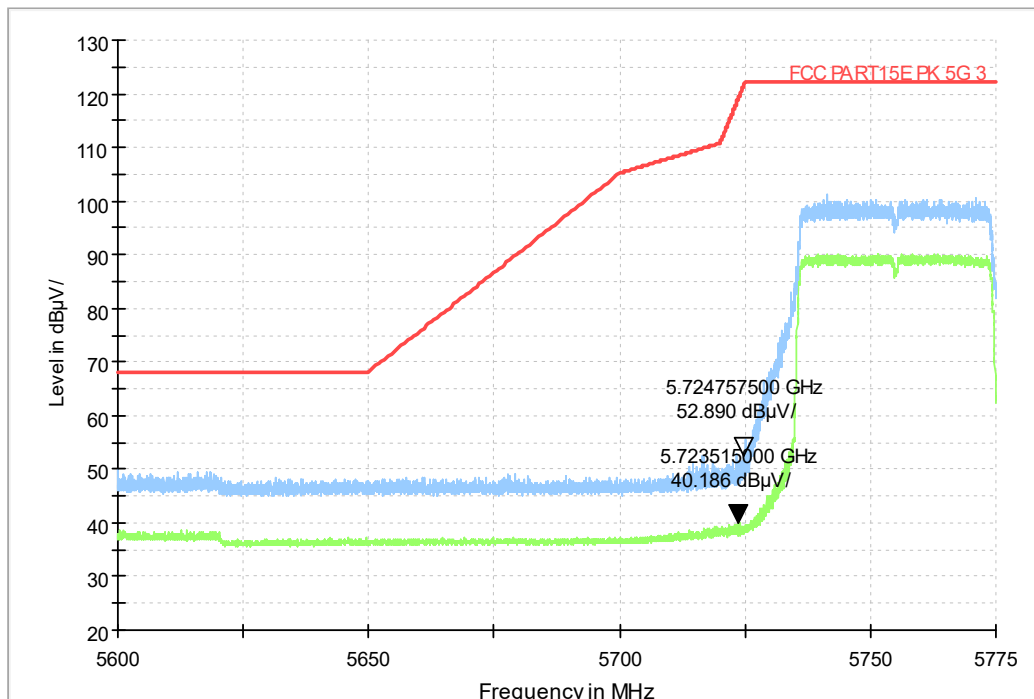


Fig.10 Frequency Band Edge: Ch151,11ax 40M

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
Tel: 0086-23-88069965 FAX: 0086-23-88608777

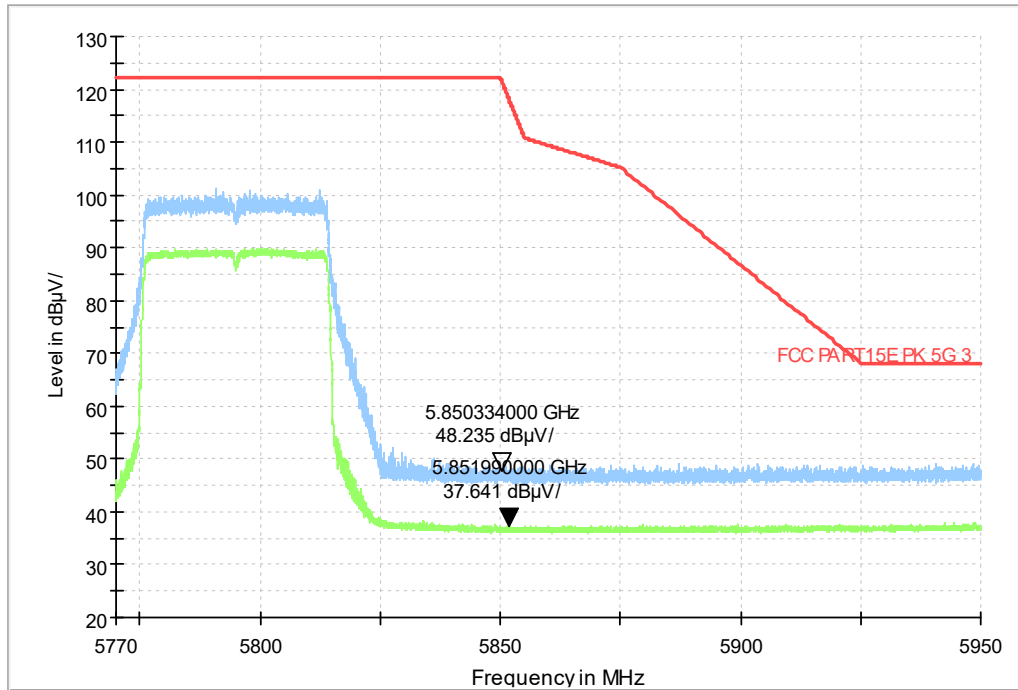


Fig.11 Frequency Band Edge: Ch159,11ax 40M

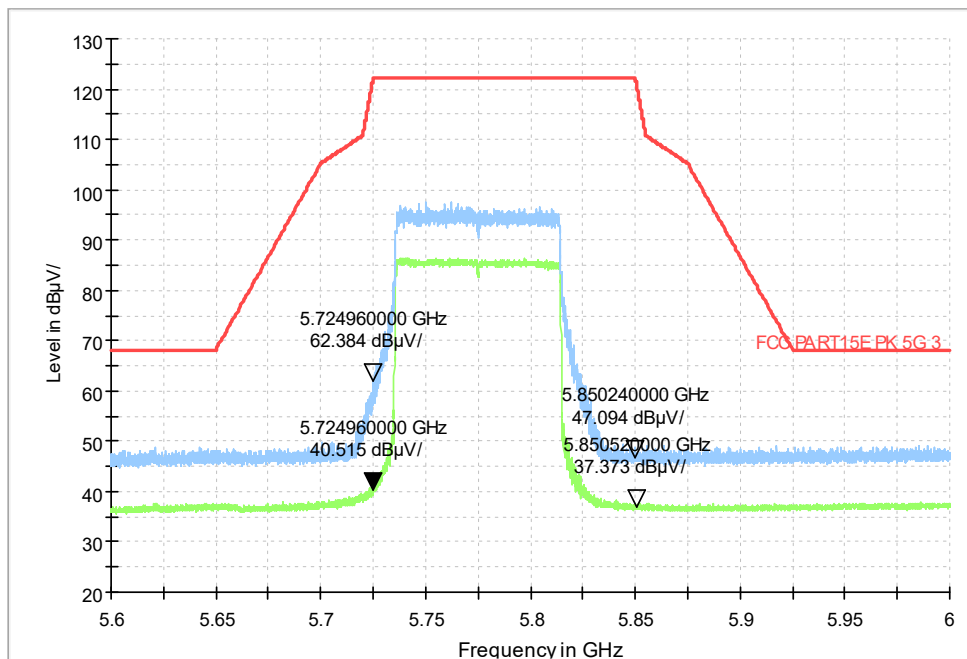


Fig.11 Frequency Band Edge: Ch155,11ax 80M

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



### 6.7. Transmitter Spurious Emission-Radiated

<b>Specifications:</b>	FCC Part 15. 407 (b)
<b>DUT Serial Number:</b>	S2
<b>Test conditions:</b>	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
<b>Test Results:</b>	Pass

**Limit**

According to FCC Part 15.407(b)(7): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)(see §15.205(c)). According to FCC Part15.205,

**Restricted bands**

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Applicable to	Limit	
FCC Part 15. 407b(10), 15. 205, 15. 209	Field Strength at 3m	
	PK: 74 (dB $\mu$ V/m)	AV: 54 (dB $\mu$ V/m)
Applicable to	EIRP Limit	Equivalent Field Strength at 3m

### Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX:0086-23-88608777



**Report No.: I22W00019-WiFi RF-5.8GHz-Rev4**

15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dB μV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	Note	Note

**NOTE:**For transmitters operating in the 5.725-5.85 GHz band:

Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative limit.

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5

MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu V/m, \text{ where } P \text{ is the eirp (Watts)}$$

**Limit in restricted band:**

Frequency of emission (MHz)	Field strength (uV/m)	Measurement distance (meters)
0.009-0.49	2400/F(kHz)	300
0.49-1.705	24000/F(kHz)	30
1.705-30	30	30

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)
30~88	100	40
88~216	150	43.5
216~960	200	46
Above 960	500	54

**Limits of Radiated Emission Measurement(Above 1000MHz)**

Frequency(MHz)	Class B(dBuV/m)(at 3M)	
	PEAK	AVERAGE

**Chongqing Academy of Information and Communication Technology**

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

Above 1000	74	54
------------	----	----

**Note:**

1. Emission level in dBuV/m= $20 \log(uV/m)$

2. Measurement was performed at an antenna to the closed point of EUT distance of meters. 3. For Frequency 9kHz~30MHz:

Distance extrapolation factor =  $40 \log(\text{Specific distance} / \text{test distance})(dB)$ ;

Limit line = Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz:

Distance extrapolation factor =  $20 \log(\text{Specific distance} / \text{test distance})(dB)$ ;

Limit line = Specific limits(dBuV) + distance extrapolation factor.

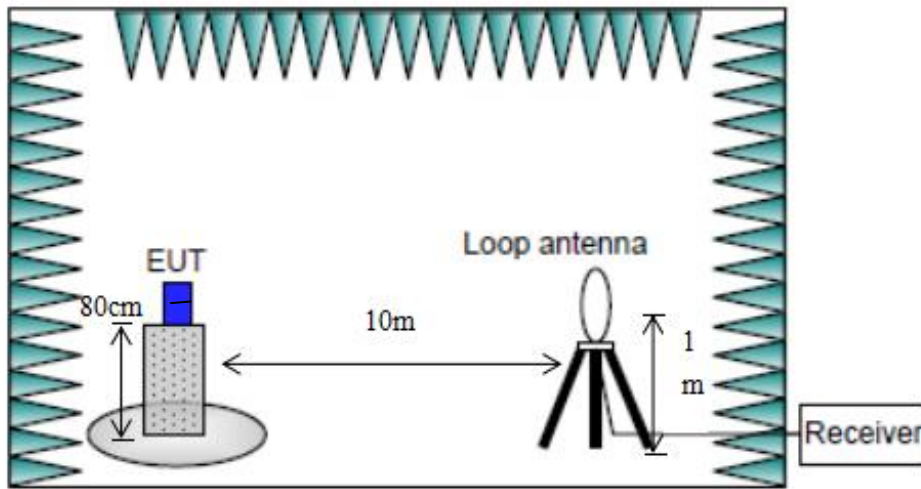
**Measurement Uncertainty:**

Frequency Range	Uncertainty
9kHz-30MHz	4.54dB
30MHz -1GHz	4.09dB
1GHz - 6GHz	4.84dB
6GHz - 18GHz	4.52dB
18GHz - 26GHz	6.19dB
26GHz - 40GHz	6.04dB

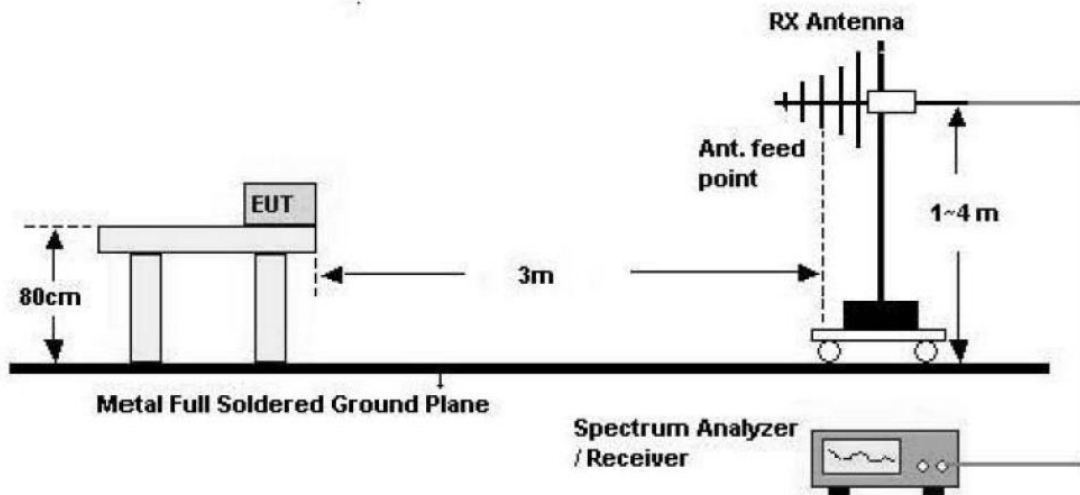
**Test Setup**

The EUT was placed in an anechoic chamber. The BLUETOOTH TESTER was used to set the TX channel and power level. The transmitter output is connected to Spectrum analyzer through a loop antenna (for frequency below 30MHz) or a Bilog antenna (for frequency 30MHz-1GHz) or a horn antenna (for frequency above 1GHz).

Below 30MHz:



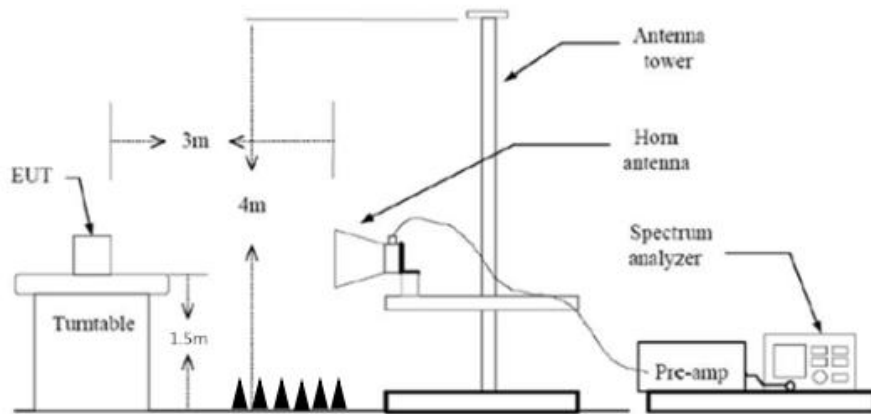
30MHz-1GHz:



Above 1GHz:

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777



**Test Procedure**

1. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**Notes:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions (802.11a-ant0, 802.11n/ax-MIMO mode) are reported.

Frequency of emission (MHz)	RBW/VBW	Sweep Time
0.009~30	10kHz/30KHz	5

**Chongqing Academy of Information and Communication Technology**

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

## Report No.: I22W00019-WiFi RF-5.8GHz-Rev4

30~1000	100KHz/300KHz	5s
1000~3000	1MHz/3MHz	3s
3000~18000	1MHz/3MHz	7s
18000~26500	1MHz/3MHz	0.5s
26500~40000	1MHz/3MHz	0.5s

**Test Result:**

A “reference path loss” is established and AR<sub>pi</sub> is the attenuation of “reference path loss”, and including the gain of receive antenna , the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

AR<sub>pi</sub>= Cable loss + Antenna Gain-Preamplifier gain

Result=PMea + AR<sub>pi</sub>

Mode	Channel	Frequency Range	Test Results	Conclusion
All channels		30MH-1GHz	Fig.1	Pass
802.11a	149	1GHz-6GHz	Fig.2	Pass
		6GHz-18GHz	Fig.3	
	157	1GHz-6GHz	Fig.4	Pass
		6GHz-18GHz	Fig.5	
	165	1GHz-6GHz	Fig.6	Pass
		6GHz-18GHz	Fig.7	
802.11n(20M)	149	1GHz-6GHz	Fig.11	Pass
		6GHz-18GHz	Fig.12	
	157	1GHz-6GHz	Fig.13	Pass
		6GHz-18GHz	Fig.14	
	165	1GHz-6GHz	Fig.15	Pass
		6GHz-18GHz	Fig.16	
802.11n(40M)	151	1GHz-6GHz	Fig.17	Pass
		6GHz-8.5GHz	Fig.18	
	159	1GHz-6GHz	Fig.19	Pass
		6GHz-18GHz	Fig.20	
802.11ac(80M)	155	1GHz-6GHz	Fig.21	Pass
		6GHz-18GHz	Fig.22	
802.11ax(20M)	149	1GHz-6GHz	Fig.23	Pass
		6GHz-18GHz	Fig.24	
	157	1GHz-6GHz	Fig.25	Pass
		6GHz-18GHz	Fig.26	

### Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336  
Tel: 0086-23-88069965 FAX:0086-23-88608777



## Report No.: I22W00019-WiFi RF-5.8GHz-Rev4

	165	1GHz-6GHz	Fig.27	Pass
		6GHz-18GHz	Fig.28	
802.11ax(40M)	151	1GHz-6GHz	Fig.29	Pass
		6GHz-18GHz	Fig.30	
	159	1GHz-6GHz	Fig.31	Pass
		6GHz-18GHz	Fig.32	
802.11ax(80M)	155	1GHz-6GHz	Fig.33	Pass
		6GHz-18GHz	Fig.34	
All channels		18GHz-26.5GHz	Fig.35	Pass
All channels		26.5GHz-40GHz	Fig.36	Pass

Note:

1) The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

Transmitter Spurious Emission-Radiated H and V are tested together, The test result is maximum hold. Therefore, the result is only one set of data.

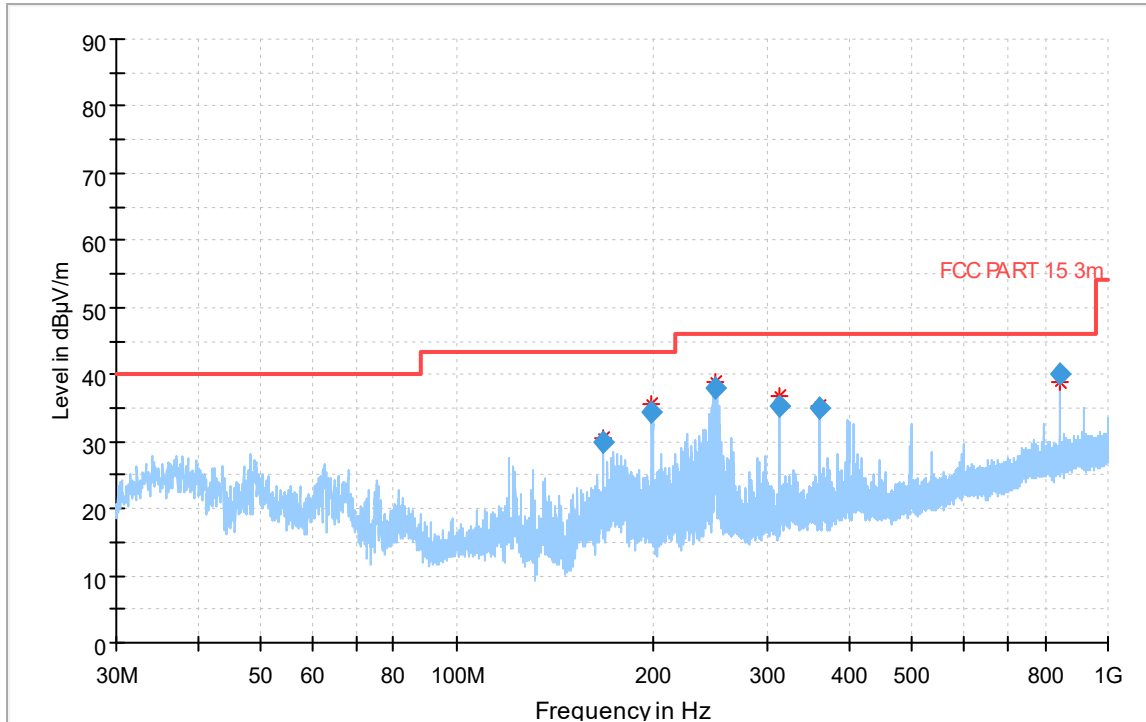
Found the emission level are attenuated 20dB below the limits for frequency range 9kHz to 30MHz, so it does not recorded in report.

The 30MHz-1GHz, 18GHz-26.5GHz and 26.5GHz-40GHz results were found as the worst case and were shown in this report.

2) All the test data shown was peak detected. Transmitter Spurious Emission-Radiated H and V are tested together., The test is maximum hold.

Therefore, the result is only one set of data.

**Conclusion: PASS**



Comment

Fig.1 Radiated emission: 30MHz-1GHz

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
167.982500	29.85	43.50	13.65	1000.	120.000	106.0	V	248.0	-15.0
199.168000	34.34	43.50	9.16	1000.	120.000	106.0	V	67.0	-12.2
249.850500	37.87	46.00	8.13	1000.	120.000	106.0	H	284.0	-10.8
312.019000	35.19	46.00	10.81	1000.	120.000	106.0	V	180.0	-9.2
359.994000	34.92	46.00	11.08	1000.	120.000	100.0	V	164.0	-8.3
844.800000	40.09	46.00	5.91	1000.	120.000	100.0	H	180.0	2.0

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

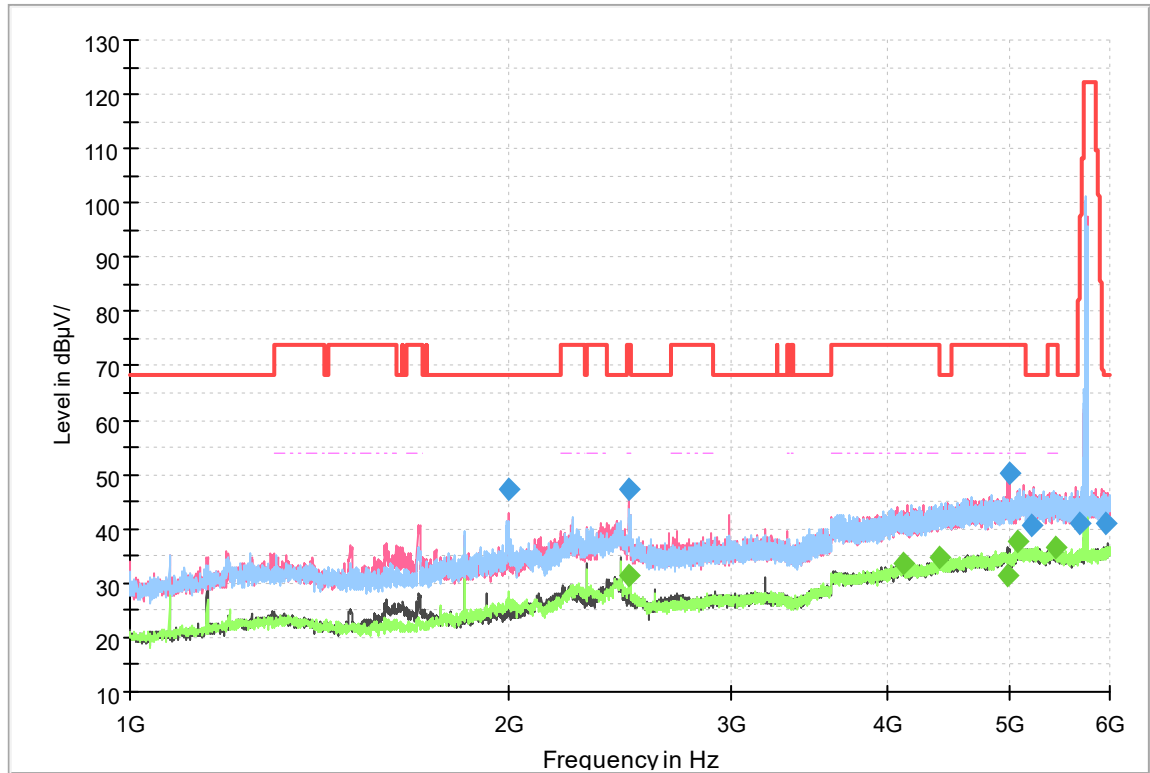


Fig.2 Radiated emission: 11a Ch149, 1GHz-6GHz

### Final\_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1997.005000	47.21	---	68.20	20.99	50.0	1000.000	200.0	V	0.0	-11.5
2490.537500	47.44	---	74.00	26.56	50.0	1000.000	200.0	V	180.0	-9.6
2491.000000	---	31.59	54.00	22.41	50.0	1000.000	200.0	H	0.0	-9.6
4108.500000	---	33.50	54.00	20.50	50.0	1000.000	200.0	V	270.0	-4.9
4388.500000	---	34.92	54.00	19.08	50.0	1000.000	200.0	H	270.0	-4.1
4985.000000	---	31.39	54.00	22.61	50.0	1000.000	200.0	V	270.0	-2.3
4995.612500	50.38	---	74.00	23.62	50.0	1000.000	200.0	V	270.0	-2.5
5075.500000	---	37.57	54.00	16.43	50.0	1000.000	200.0	H	270.0	-1.5
5199.922500	40.65	---	68.20	27.55	50.0	1000.000	200.0	V	270.0	-2.0
5438.000000	---	36.43	54.00	17.57	50.0	1000.000	200.0	H	270.0	-1.6
5669.780000	40.88	---	82.84	41.96	50.0	1000.000	200.0	V	270.0	-1.6
5954.350000	40.96	---	68.20	27.24	50.0	1000.000	200.0	V	270.0	-0.8

### Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777

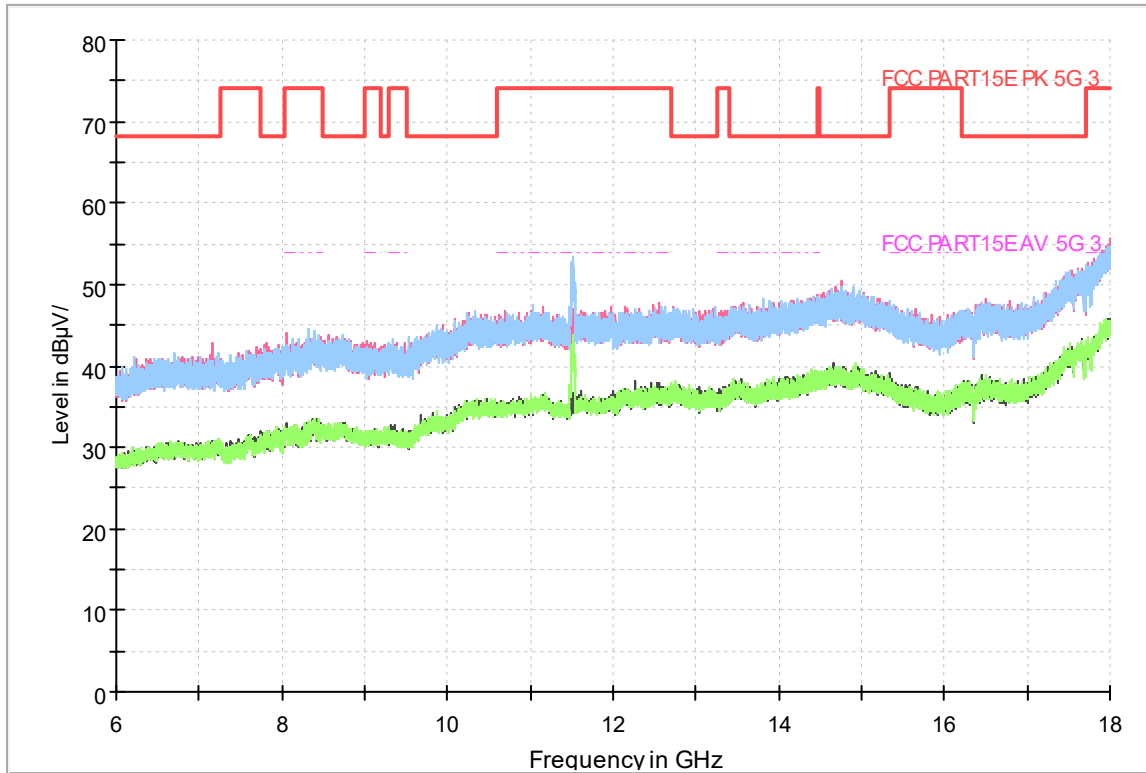


Fig.3 Radiated emission: 11a Ch149, 6GHz-18GHz

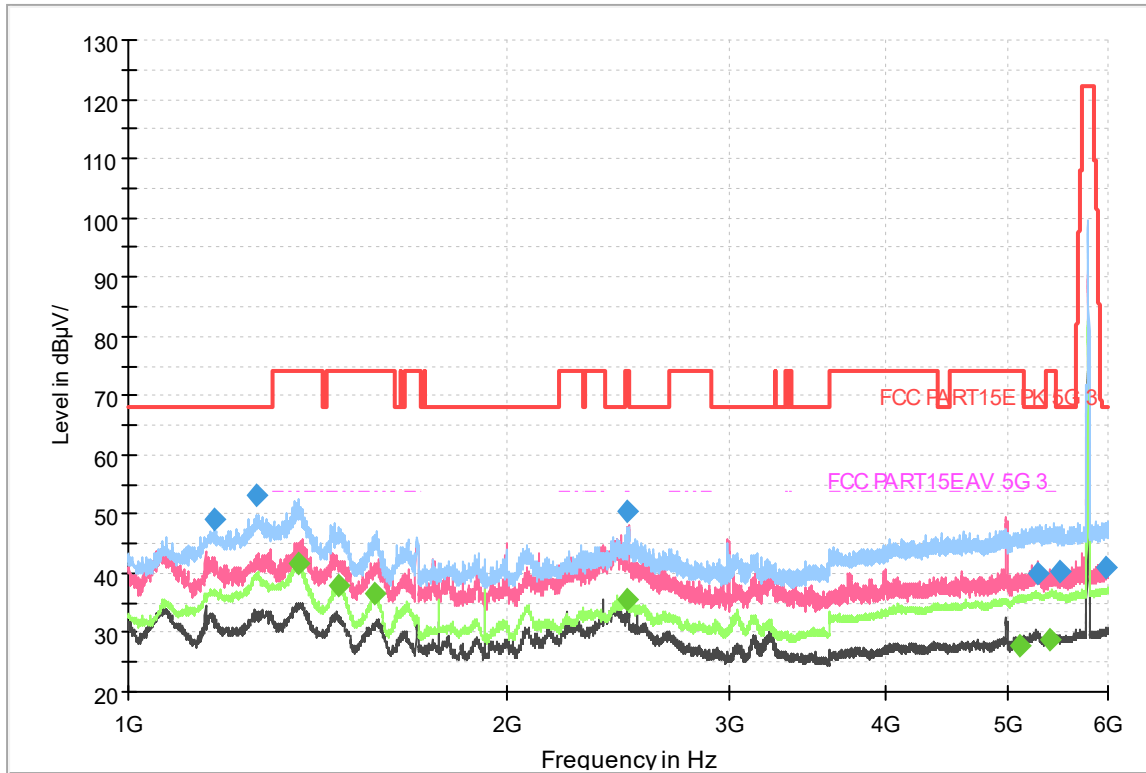


Fig.4 Radiated emission: 11a Ch157, 1GHz-6GHz

## Final\_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1169.640000	49.23	---	68.20	18.97	50.0	1000.000	200.0	H	18.0	-12.7
1266.160000	53.23	---	68.20	14.97	50.0	1000.000	200.0	H	0.0	-12.4
1364.170000	---	41.82	54.00	12.18	50.0	1000.000	200.0	H	252.0	-12.2
1467.632500	---	38.10	54.00	15.90	50.0	1000.000	200.0	H	18.0	-12.4
1570.615000	---	36.75	54.00	17.25	50.0	1000.000	200.0	H	0.0	-11.9
2489.500000	50.45	---	74.00	23.55	50.0	1000.000	200.0	H	4.0	-9.3
2493.045000	---	35.72	54.00	18.28	50.0	1000.000	200.0	H	4.0	-9.2
5111.380000	---	27.88	54.00	26.12	50.0	1000.000	200.0	H	4.0	-2.0
5281.995000	39.80	---	68.20	28.40	50.0	1000.000	200.0	H	54.0	-1.5
5400.915000	---	28.67	54.00	25.33	50.0	1000.000	200.0	H	68.0	-1.5
5495.965000	40.40	---	68.20	27.80	50.0	1000.000	200.0	H	47.0	-1.5
5981.000000	41.13	---	68.20	27.07	50.0	1000.000	200.0	H	32.0	-0.2

## Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336  
 Tel: 0086-23-88069965 FAX: 0086-23-88608777