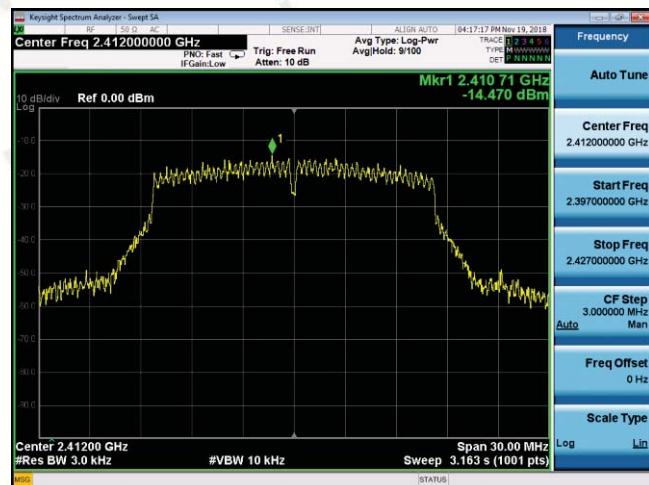


ANT C 802.11b



ANT C 802.11g



CH01



CH01



CH06



CH06



CH11



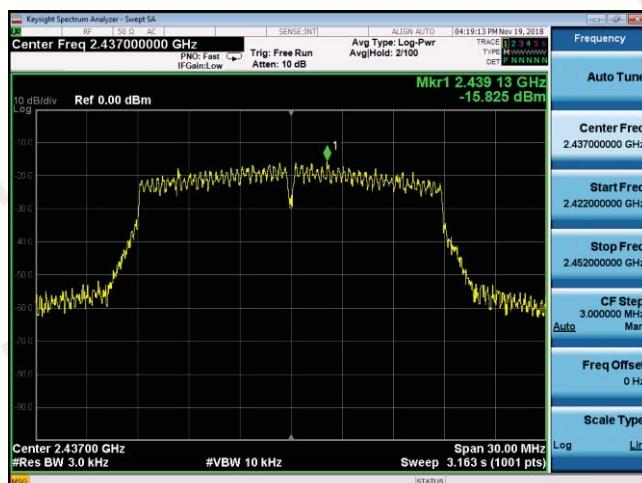
CH11

ANT C 802.11 nHT20

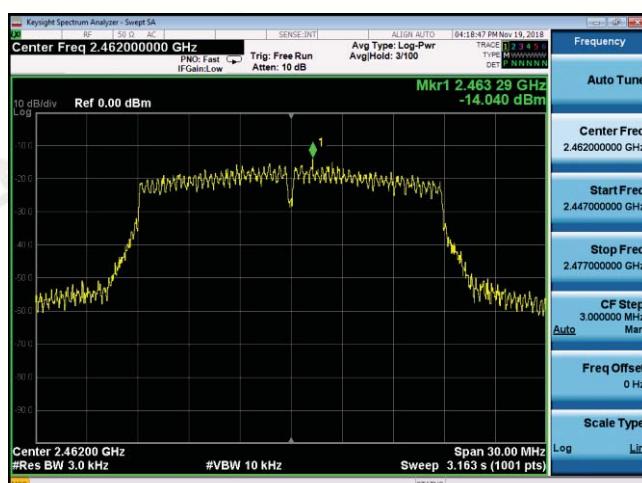
ANT D 802.11b



CH01



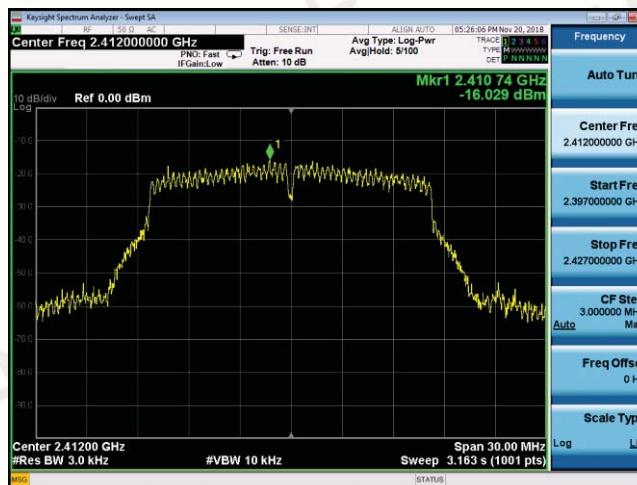
CH06



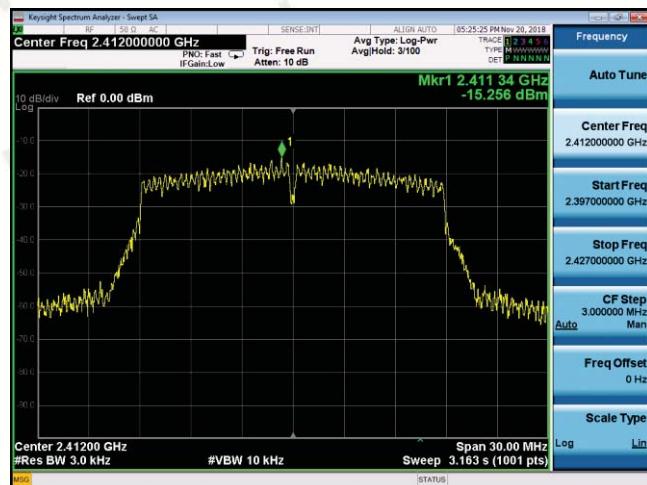
CH11

CH11

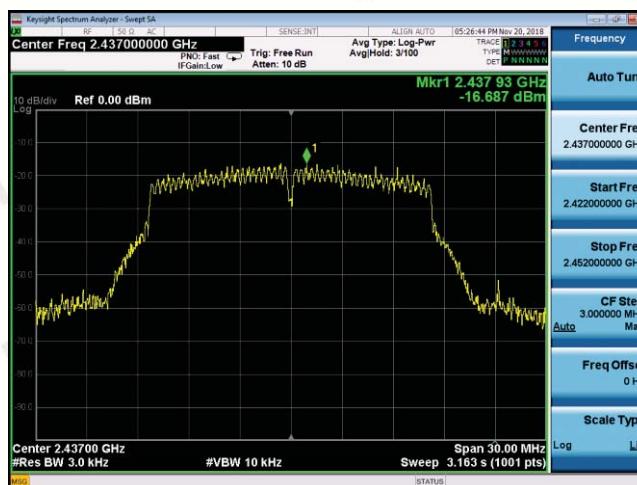
ANT C 802.11g



ANT C 802.11 nHT20



CH01



CH01



CH06



CH06



CH11



CH11



8. PEAK OUTPUT POWER TEST

8.1 Test Limit

FCC Part15(15.247), Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.

8.3 Measurement Equipment Used

Used a Power meter.

8.4 Test Result

PASS

All the test modes completed for test.

Type	Channel	Output power PK (dBm)	Output power Total (dBm)	Limit (dBm)	Result			
		ANT A	ANT B	ANT C	ANT D			
802.11b	01	12.14	12.06	12.23	11.87	18.10	28.98	Pass
	06	12.01	12.14	11.94	11.49	17.92		
	11	11.98	11.81	11.64	11.35	17.72		
802.11g	01	11.54	11.42	11.21	11.04	17.33	28.98	Pass
	06	11.65	11.34	11.05	11.31	17.36		
	11	11.96	11.24	11.34	11.65	17.58		
802.11n(HT20)	01	12.68	12.38	12.36	12.15	18.42	28.98	Pass
	06	12.11	12.14	12.47	12.31	18.28		
	11	12.36	12.68	12.30	12.14	18.40		

Note:

- 1) Measured output power at difference data rate for each mode and recorded worst case for each mode.
- 2). Test results including cable loss;
- 3). 802.11b ,802.11g mode the ANT A, ANT B, ANT C and ANT D can not TX and RX at the same time;
- 4). 802.11n(20) mode the ANT A, ANT B, ANT C and ANT D can TX and RX at the same time;
- 5). Directional gain=GANT +10log(N)dbi =1.0+10log4=7.02dbi;
- 6). For power test the duty cycle is 100% in continuous transmitting mode.
- 7).TX means Transmitter; RX means Receive.

9. OUT OF BAND EMISSIONS TEST

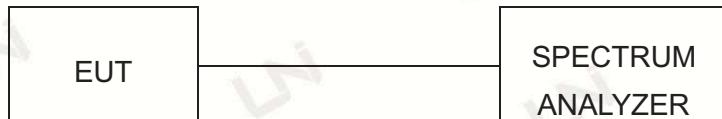
9.1 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.

9.2 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as TX operation and connect directly to the spectrum analyzer.
3. Based on FCC Part15 C Section 15.247: RBW=100KHz, VBW=300KHz.
4. Set detected by the spectrum analyzer with peak detector.

9.3 Test Setup



9.4 Test Result

PASS

ANT A

802.11b

Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	42.838	20	PASS
2483.50	59.411	20	PASS

Keylight Spectrum Analyzer - Sweep SA

Start Freq 2.31000000 GHz PNC: Fast IFGain:Low Trig: Free Run Atten: 30 dB Avg Type: Log-Pwr Avg|Hold:>100/100

Keylight Spectrum Analyzer - Sweep SA

Start Freq 2.45000000 GHz PNC: Fast IFGain:Low Trig: Free Run Atten: 30 dB Avg Type: Log-Pwr Avg|Hold:>100/100

2412

2462

802.11g

Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	30.774	20	PASS
2483.05	48.632	20	PASS

Keylight Spectrum Analyzer - Sweep SA

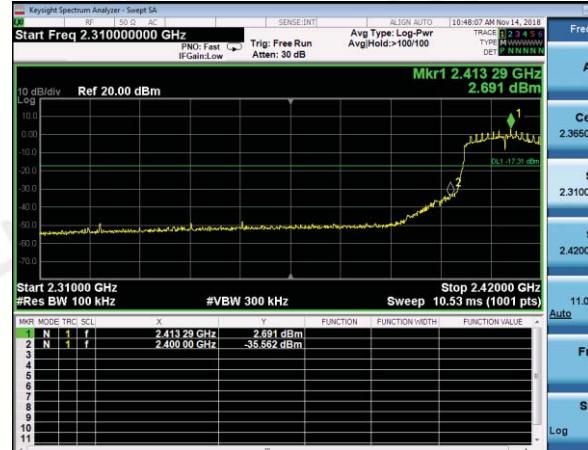
Start Freq 2.31000000 GHz PNC: Fast IFGain:Low Trig: Free Run Atten: 30 dB Avg Type: Log-Pwr Avg|Hold:>100/100

Keylight Spectrum Analyzer - Sweep SA

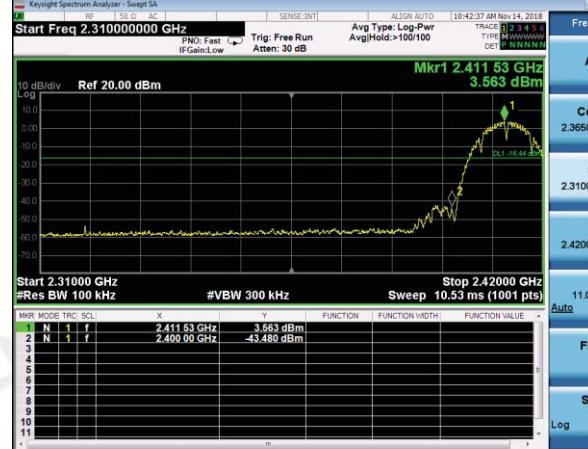
Start Freq 2.45000000 GHz PNC: Fast IFGain:Low Trig: Free Run Atten: 30 dB Avg Type: Log-Pwr Avg|Hold:>100/100

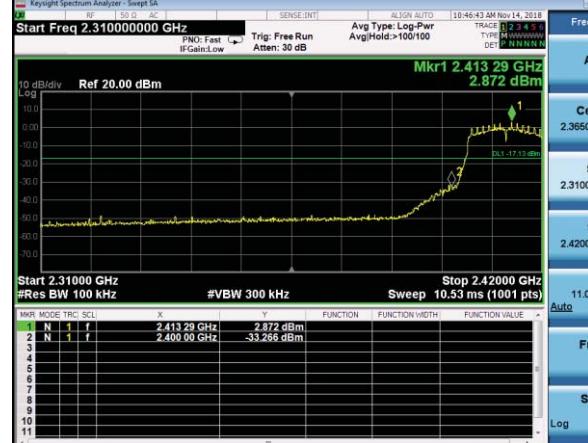
2412

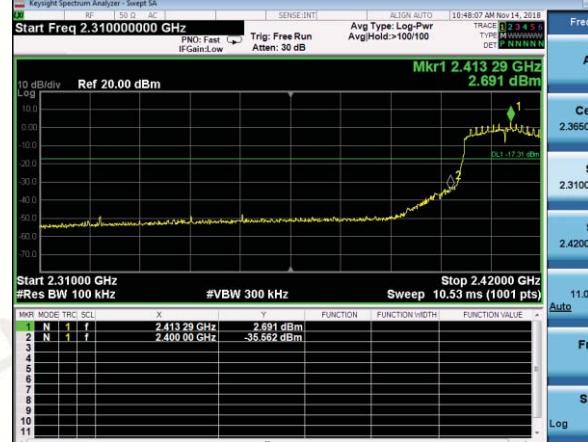
2462

802.11n HT20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	38.253	20	PASS
2483.50	49.553	20	PASS
			
2412			2462

ANT B

802.11b			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	47.043	20	PASS
2483.50	61.74	20	PASS
			
2412			2462

802.11g			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	36.138	20	PASS
2483.05	52.365	20	PASS
 Start Freq 2.31000000 GHz Stop Freq 2.42000000 GHz			 Start Freq 2.45000000 GHz Stop Freq 2.50000000 GHz
2412			2462

802.11n HT20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	38.253	20	PASS
2483.50	49.553	20	PASS
 Start Freq 2.31000000 GHz Stop Freq 2.42000000 GHz			 Start Freq 2.45000000 GHz Stop Freq 2.50000000 GHz
2412			2462

802.11b

Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	46.697	20	PASS
2483.50	60.293	20	PASS



2412

2462

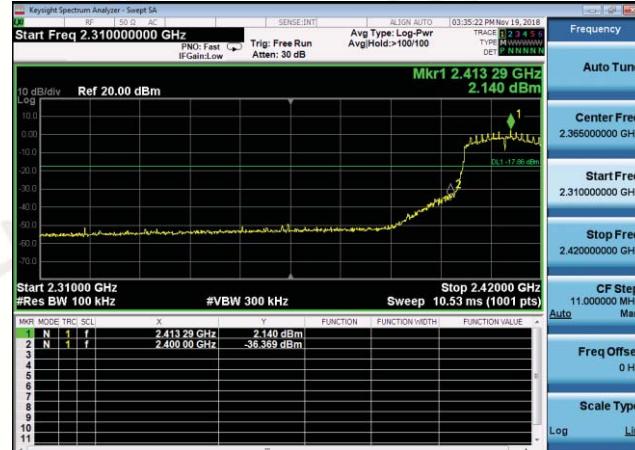
802.11g

Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	35.452	20	PASS
2483.05	53.45	20	PASS



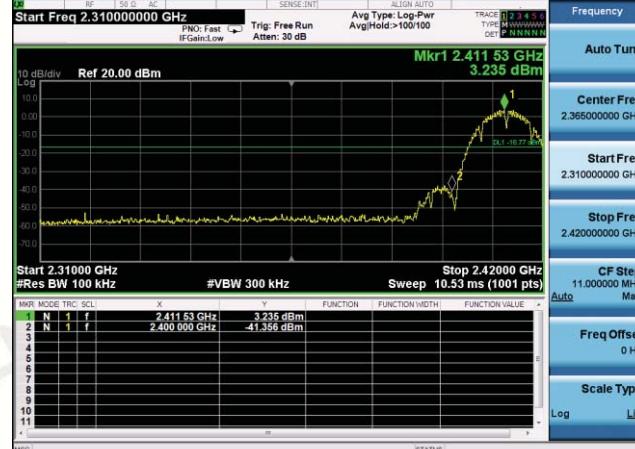
2412

2462

802.11n HT20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	38.509	20	PASS
2483.50	49.939	20	PASS
			
2412			2462

ANT D

802.11b

Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	44.591	20	PASS
2483.50	59.967	20	PASS
			
2412			2462

802.11g			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	30.026	20	PASS
2483.05	48.981	20	PASS
			
			
2412	2462		

802.11n HT20			
Frequency (MHz)	Delta Peak to Band emission (dBc)	Limit (dBc)	Verdict
2400.00	31.000	20	PASS
2483.50	44.719	20	PASS
			
			
2412	2462		

10. SPURIOUS RF CONDUCTED EMISSION

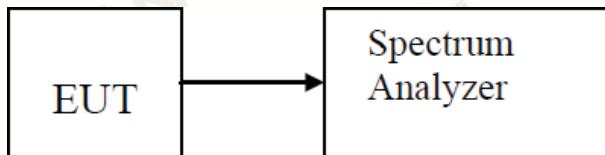
10.1 Test Limit

1. Below -20dB of the highest emission level in operating band.
2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.
3. For below 30MHz, For 9KHz-150kHz, 150K-10MHz, We use the RBW 1KHz, 10KHz, So the limit need to calculated by "10lg(BW1/BW2)". for example For 9KHz-150kHz, RBW 1KHz, The Limit= the highest emission level-20-10log(100/1)= the highest emission level-40.

10.2 Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013, For 9KHz-150kHz, Set RBW=1kHz and VBW= 3KHz; For 150KHz-10MHz, Set RBW=10kHz and VBW= 30KHz; For 10MHz-25GHz, Set RBW=100kHz and VBW= 300KHz in order to measure the peak field strength, and measure frequency range from 9KHz to 25GHz.

10.3 Test Setup



10.4 Test Result

PASS

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandwidth measurement data, and record the worst data for Antenna B in report.

Test Mode:

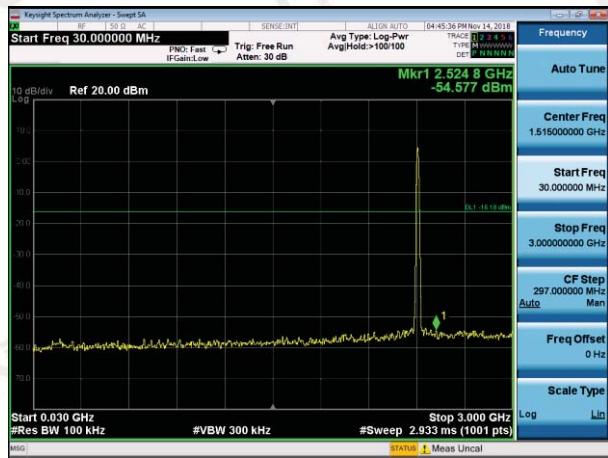
802.11b

Test channel :

01



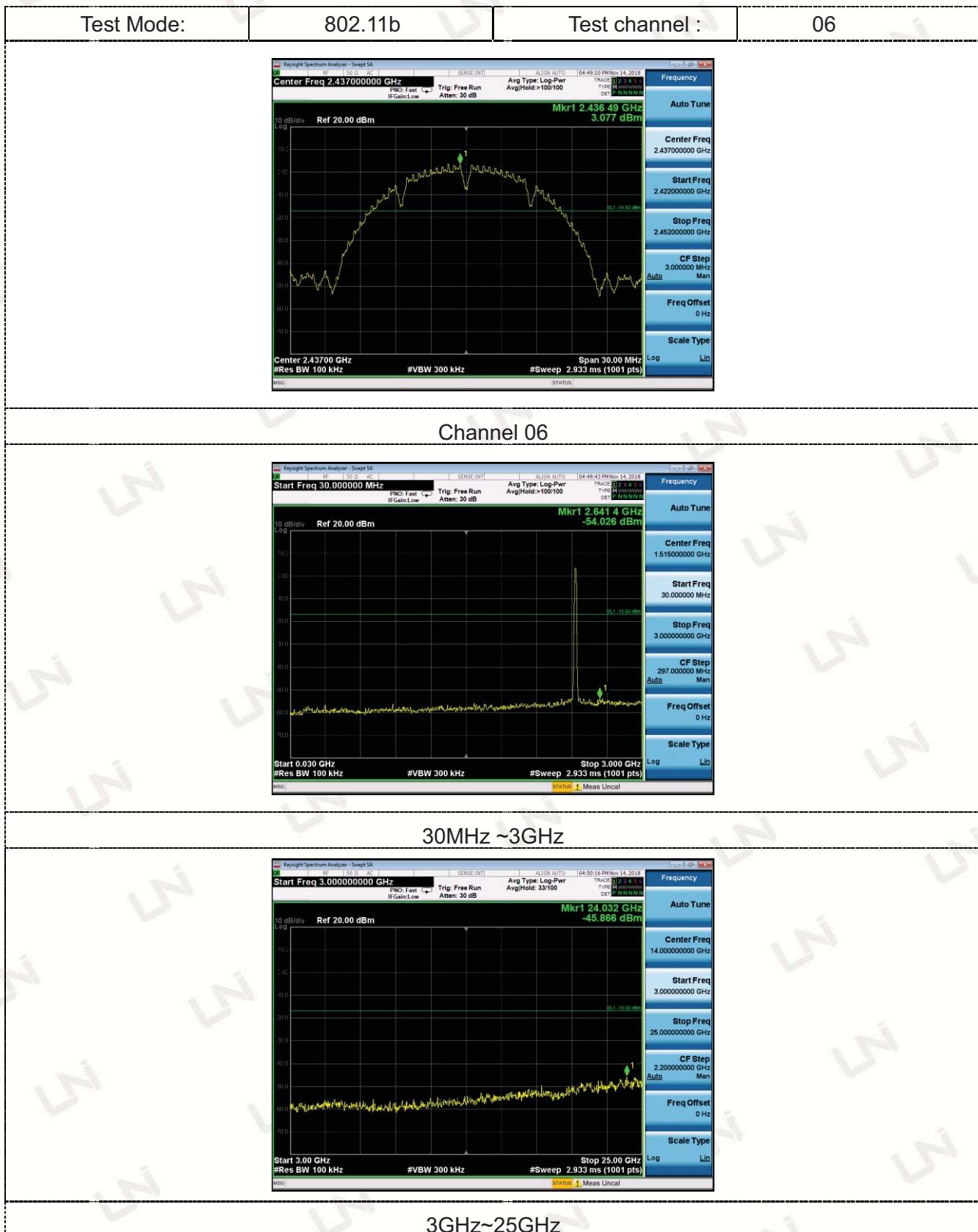
Channel 01

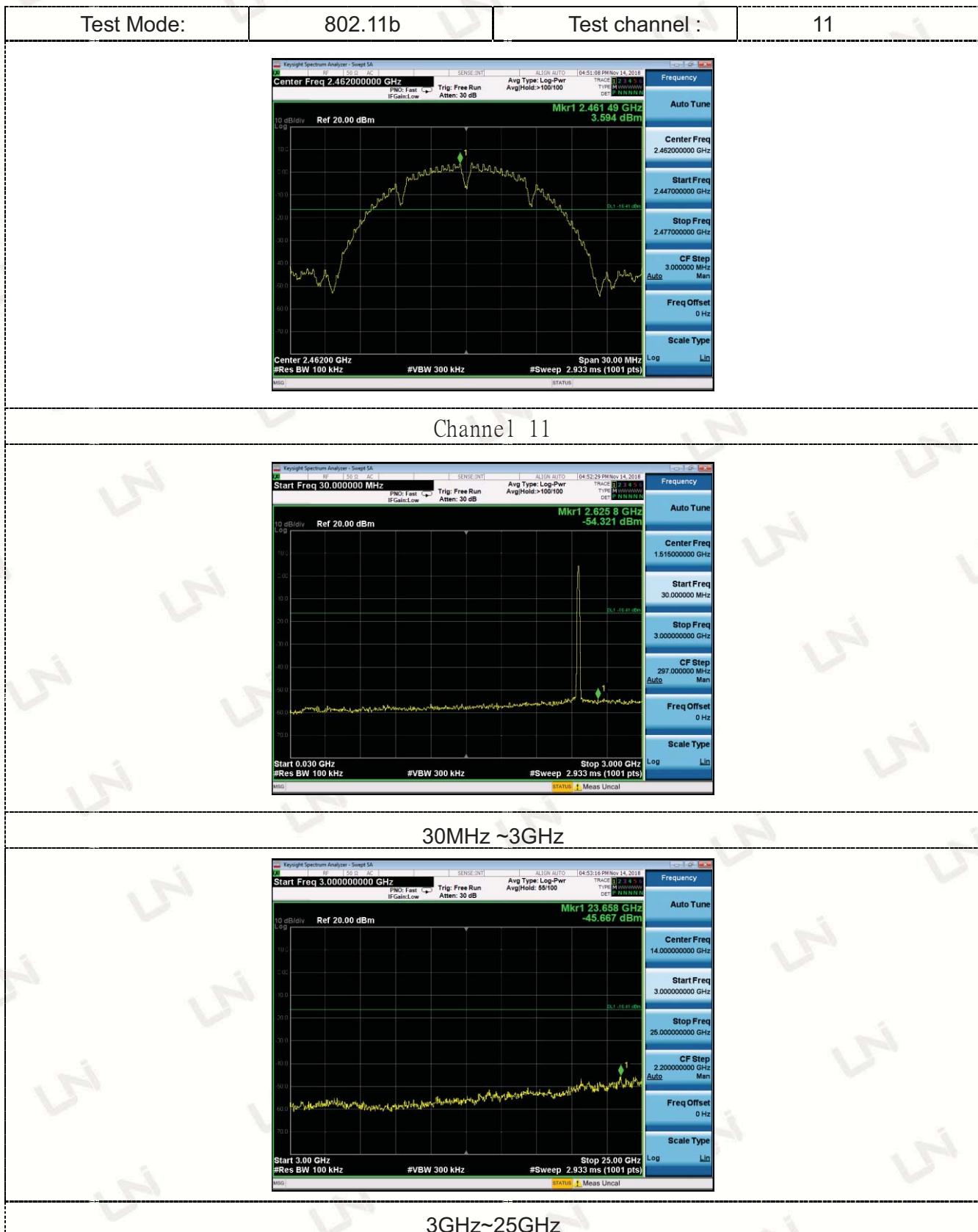


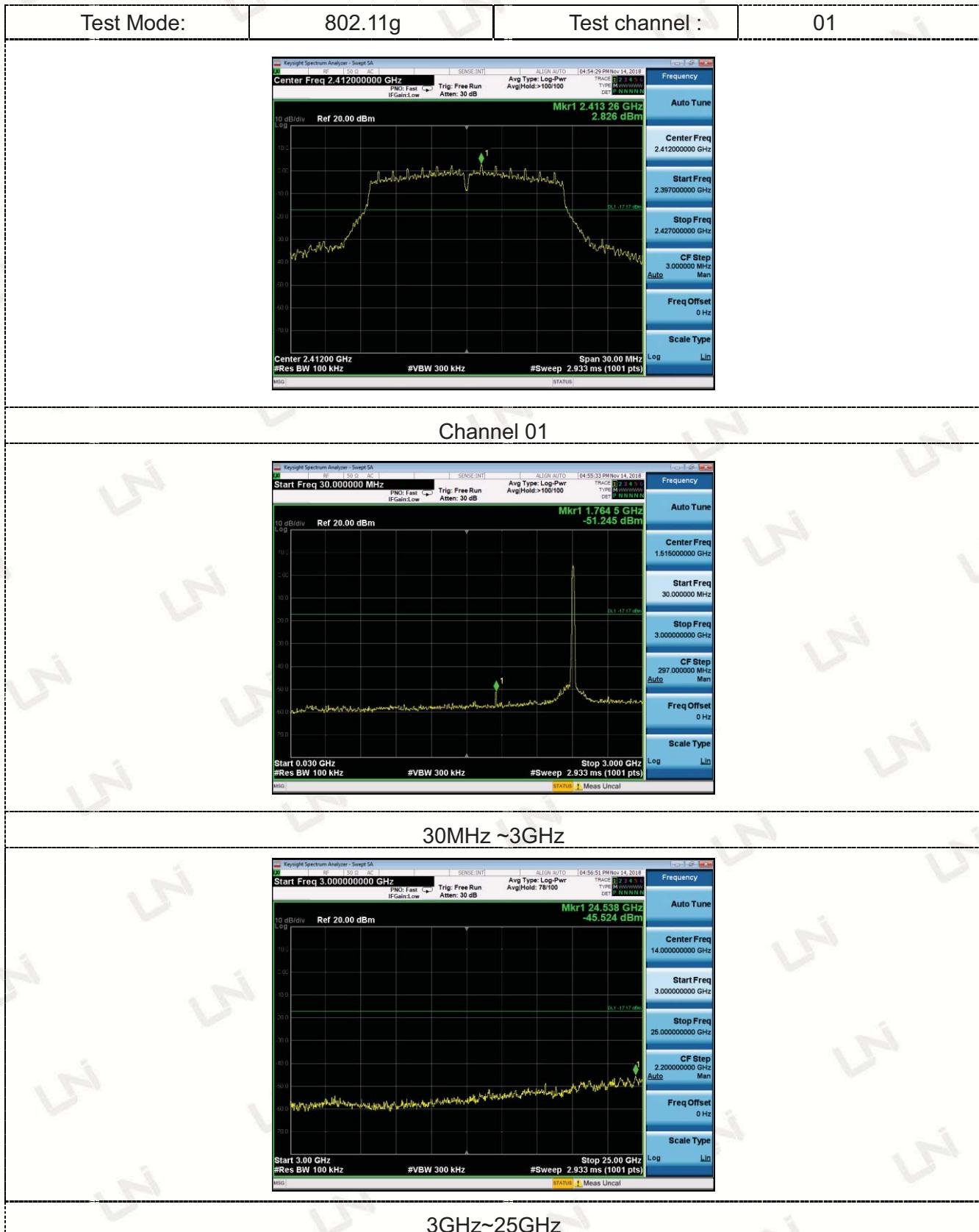
30MHz ~3GHz

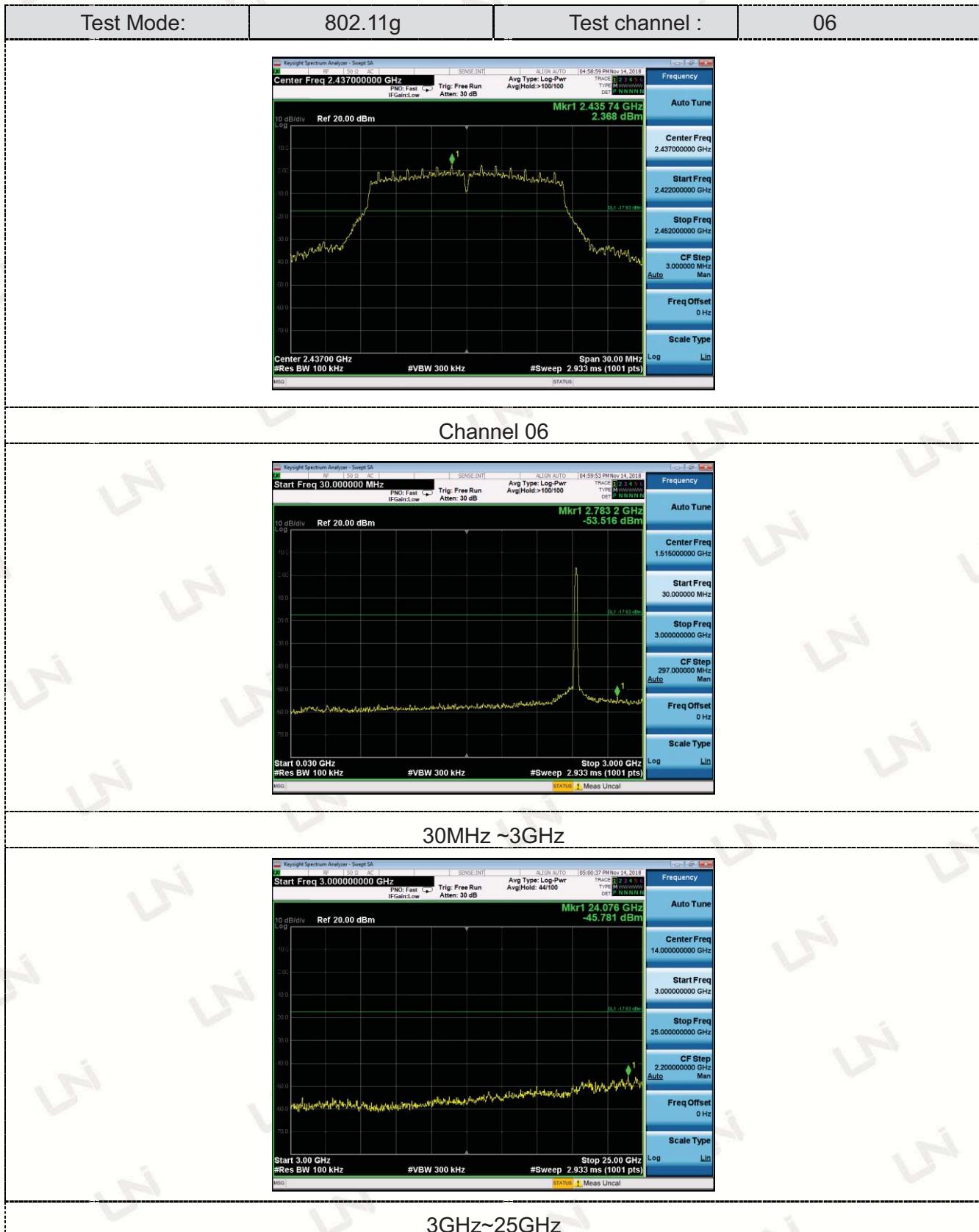


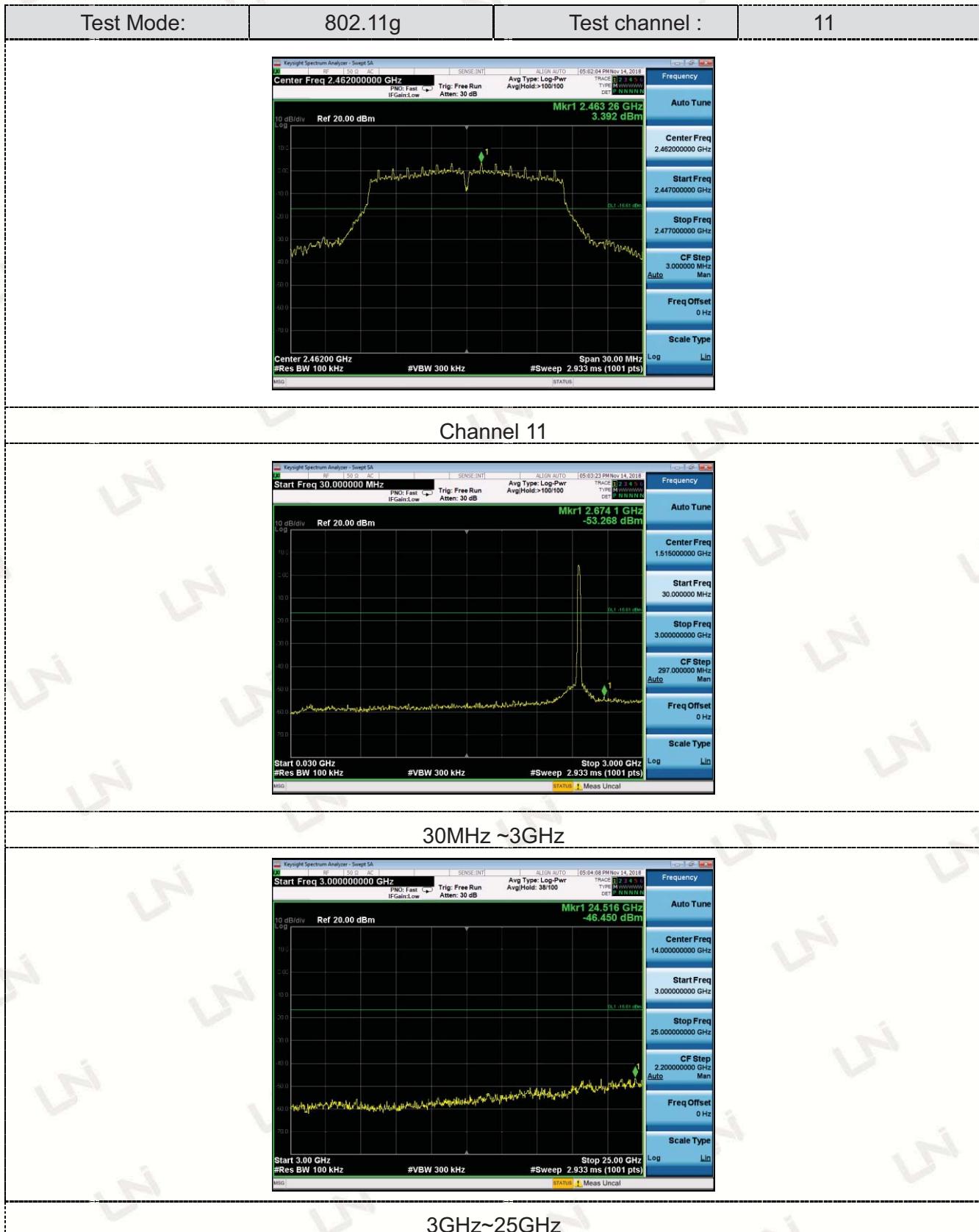
3GHz~25GHz

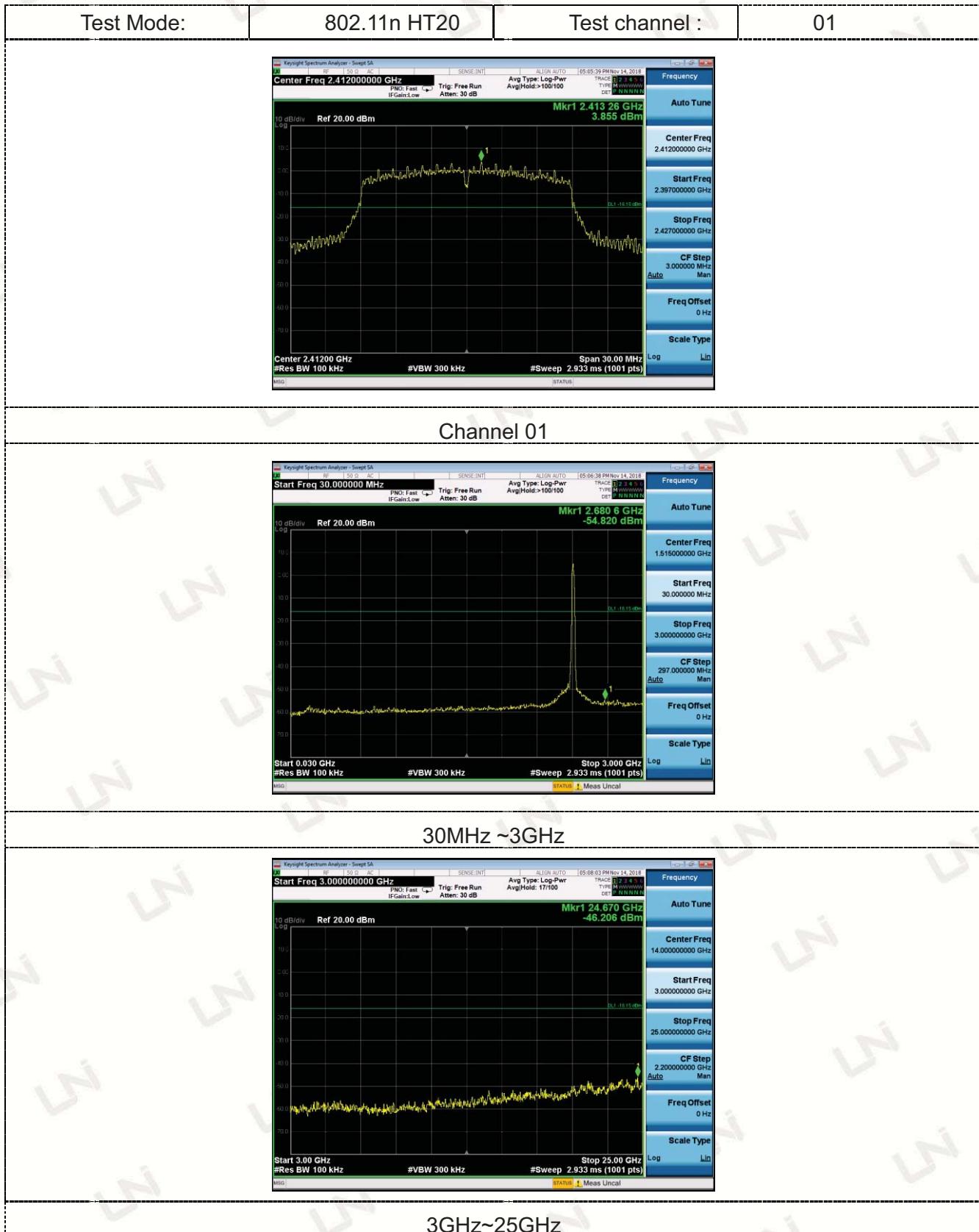


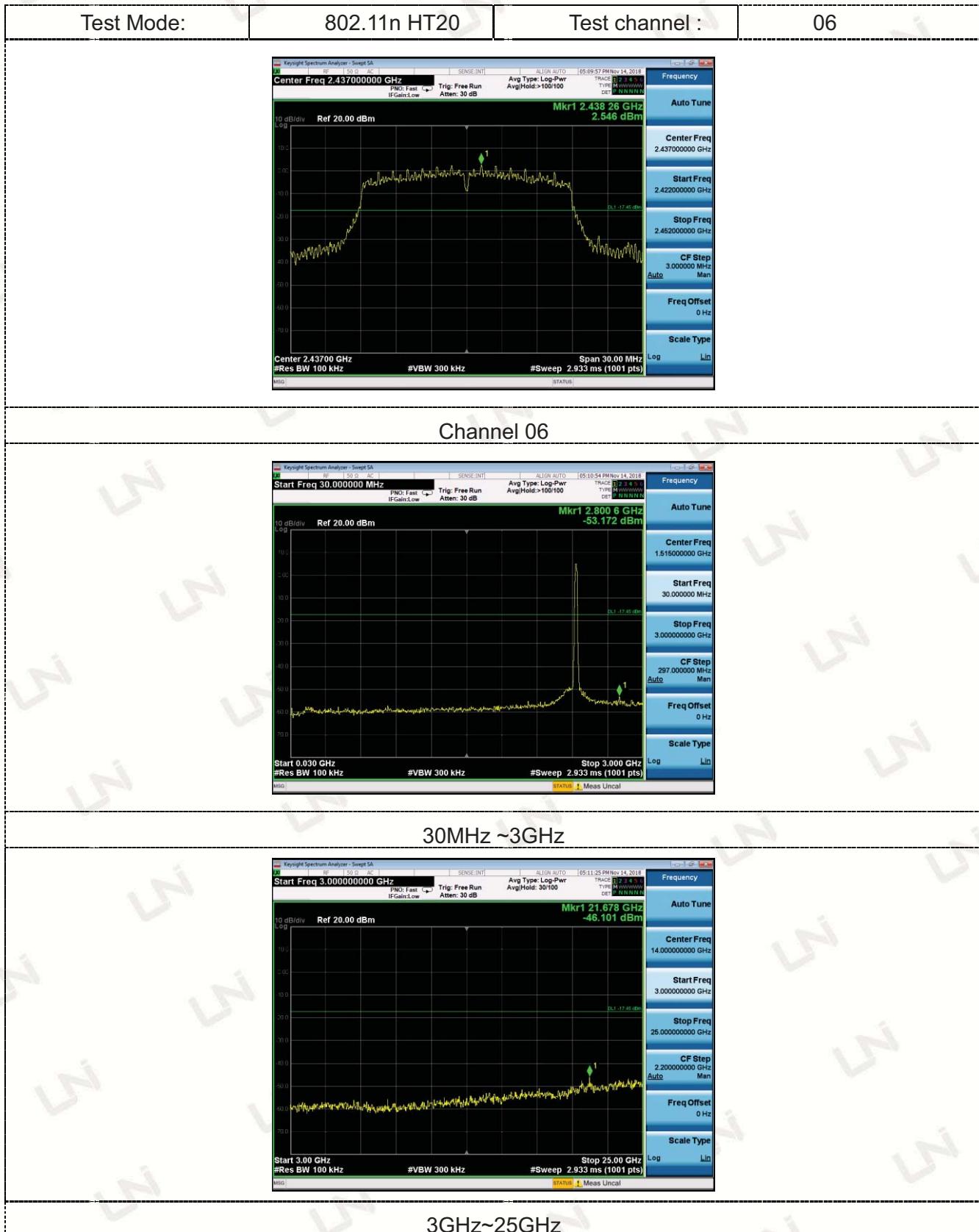


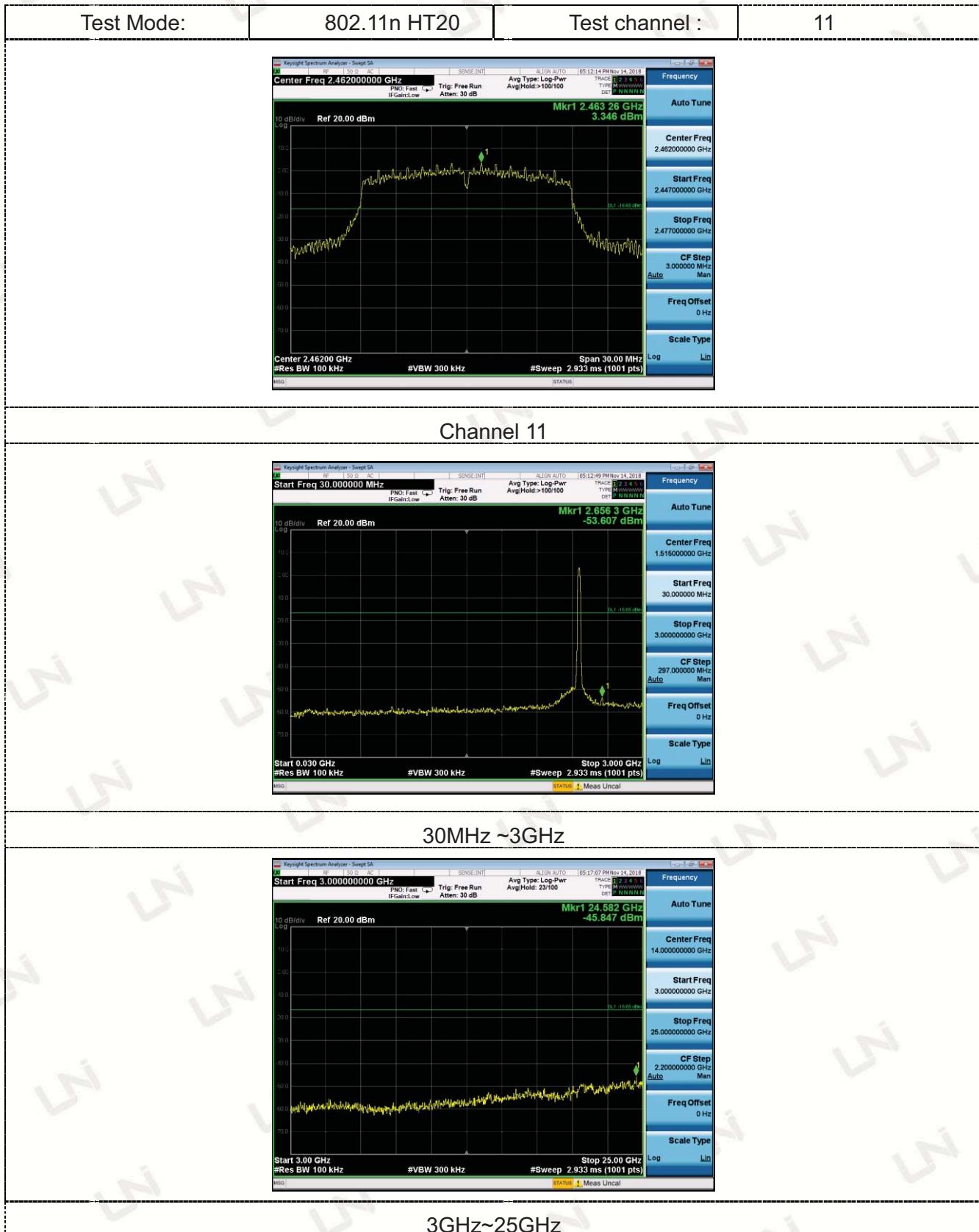












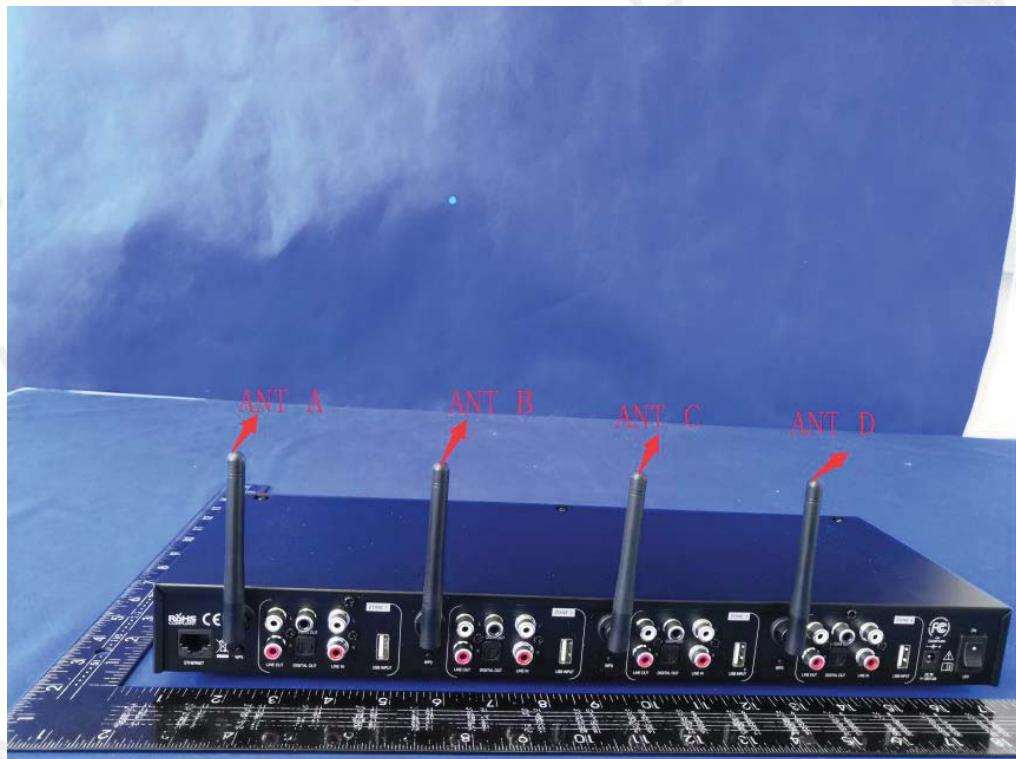
11. ANTENNA REQUIREMENT

Standard Applicable:

For intentional device, according to FCC 47 CFR Section 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.

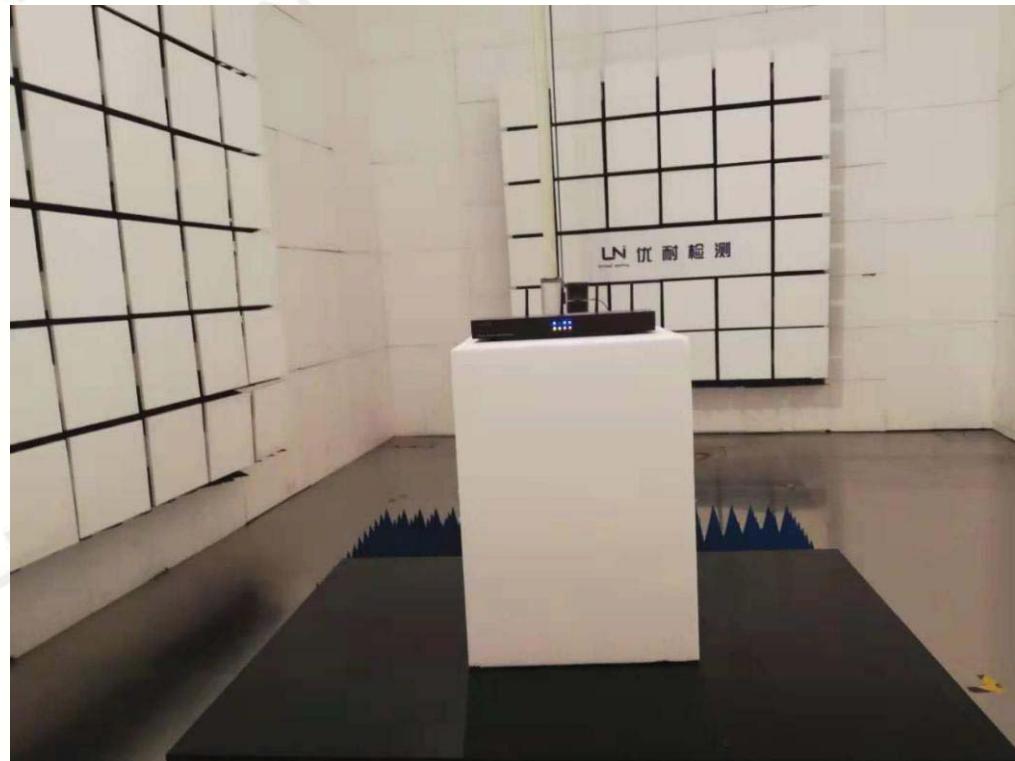
Antenna Connected Construction

The product uses four External Antennas, The gain of each antenna used for transmitting is 1.0dBi.



12. PHOTOGRAPH OF TEST

12.1 Radiated Emission



12.2 Conducted Emission



End of Report