

7. CHANNEL BANDWIDTH& 99% OCCUPY BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D0115.247 Meas Guidancev05r02

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX b Mode		

Ant A						
Test CH	Result					
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(KHz)	Result
Lowest	8.322	15.11	16.60	35.09	>500	Pass
Middle	8.322	15.13	16.01	35.08		
Highest	8.321	15.69	16.60	35.08		

Ant B						
Test CH	Result					
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(KHz)	Result
Lowest	8.318	15.11	16.10	35.09	>500	Pass
Middle	8.319	15.11	15.11	35.07		
Highest	8.230	15.11	15.11	35.08		

Ant A

Test plot as follows:

802.11b

Lowest channel



Middle channel



Highest channel



802.11g
Lowest channel



Middle channel



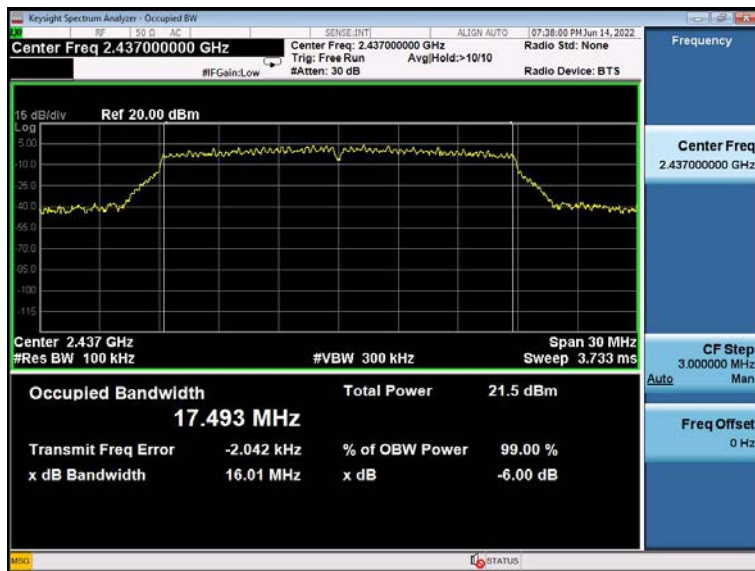
Highest channel



802.11n20
Lowest channel



Middle channel



Highest channel



802.11n40
Lowest channel



Middle channel



Highest channel



Ant B

Test plot as follows:

802.11b

Lowest channel



Middle channel



Highest channel



802.11g
Lowest channel



Middle channel



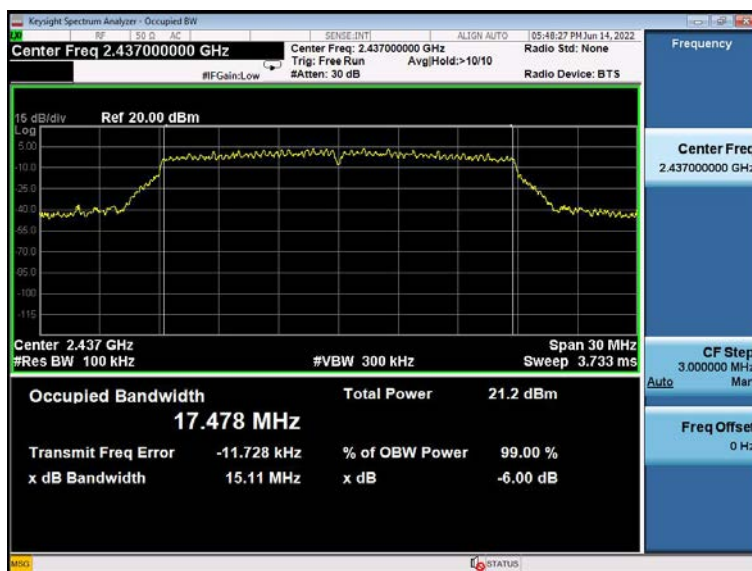
Highest channel



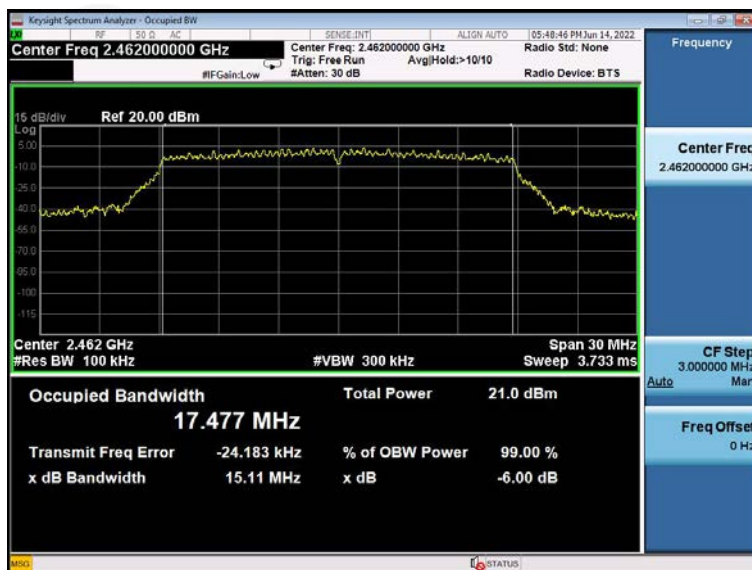
802.11n20
Lowest channel



Middle channel



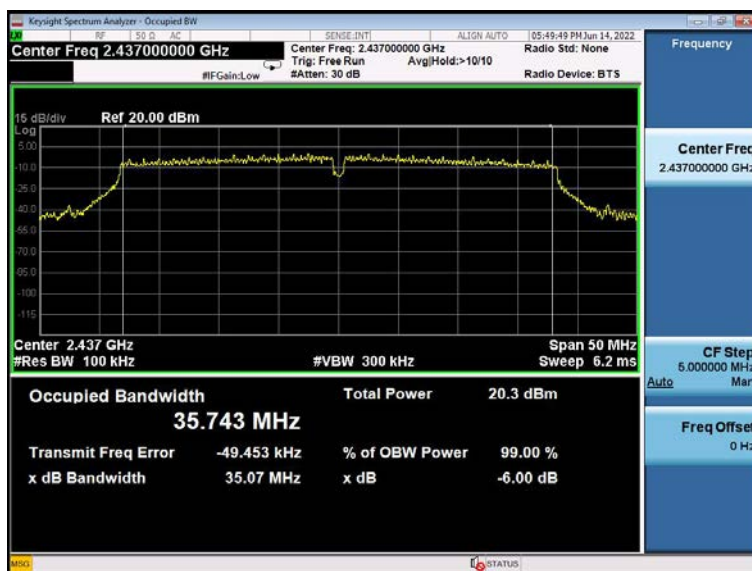
Highest channel



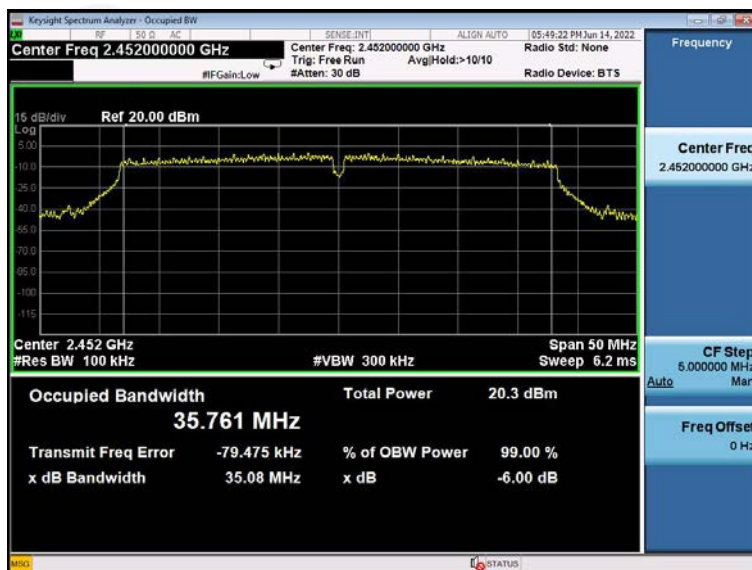
802.11n40
Lowest channel



Middle channel



Highest channel



8. PEAK OUTPUT POWER TEST

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D0115.247 Meas Guidancev05r02

8.1 APPLIED PROCEDURES/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

- a. The EUT was directly connected to the Power meter

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC 120V/60Hz

Type	Peak Output Power (dBm)				Limit(dBm)	Result
	Test CH	Ant A	Ant B	Total		
802.11b	Lowest	17.32	18.47	/	30.00	Pass
	Middle	17.34	17.66	/		
	Highest	17.40	18.10	/		
802.11g	Lowest	15.54	16.81	/	30.00	Pass
	Middle	15.51	16.37	/		
	Highest	15.76	16.59	/		
802.11n(HT20)	Lowest	15.15	15.48	18.33	28.99	Pass
	Middle	15.79	15.85	18.83		
	Highest	15.23	15.76	18.51		
802.11n(HT40)	Lowest	12.20	12.23	15.23	28.99	Pass
	Middle	12.22	12.03	15.14		
	Highest	12.42	12.21	15.33		

9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidancev05r02

9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in15.209(a).

9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

- A) Set the RBW = 100KHz.
- B) Set the VBW = 300KHz.
- C) Sweep time = auto couple.
- D) Detector function = peak.
- E) Trace mode = max hold.
- F) Allow trace to fully stabilize.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

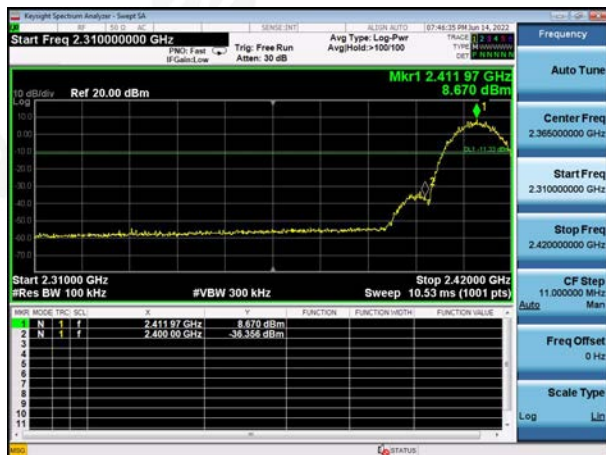
9.6 TEST RESULTS

Ant A

Test plot as follows:

Test mode:

802.11b



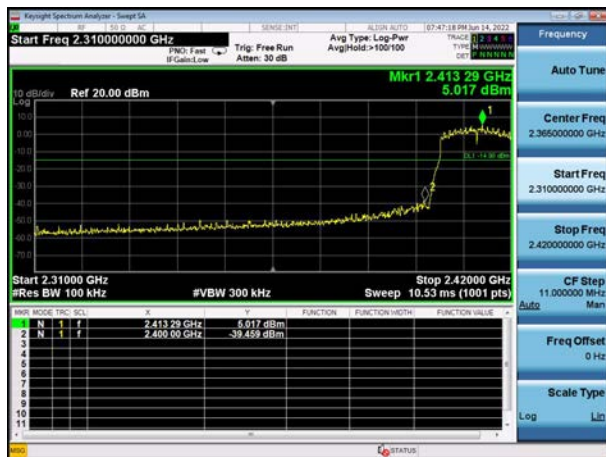
Lowest channel



Highest channel

Test mode:

802.11g



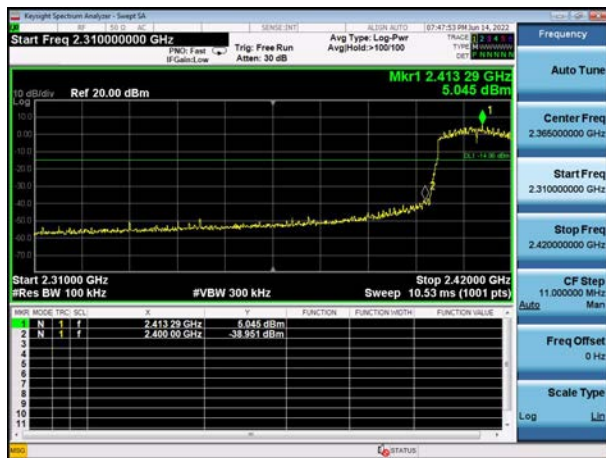
Lowest channel



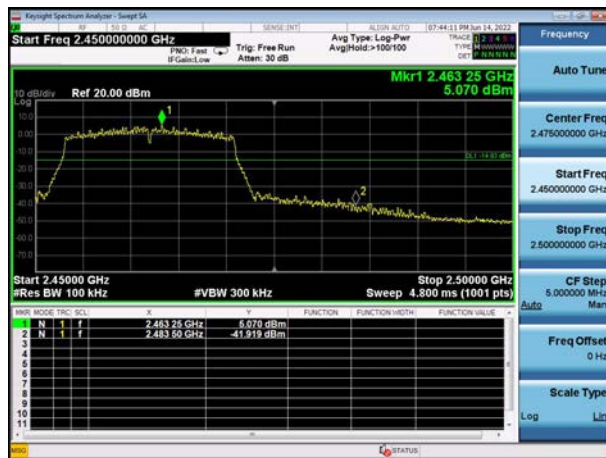
Highest channel

Test mode:

802.11n(HT20)



Lowest channel



Highest channel

Test mode:

802.11n(HT40)



Lowest channel



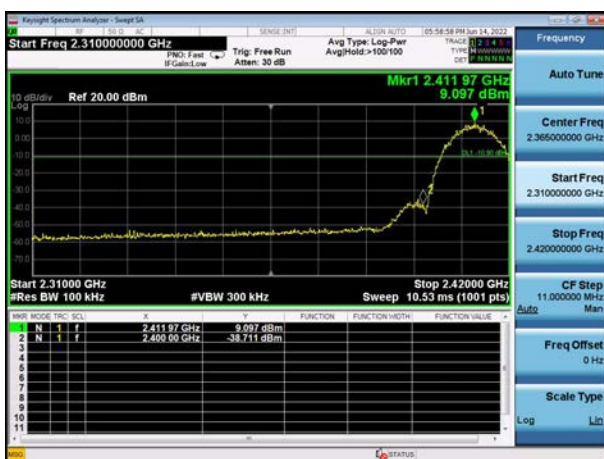
Highest channel

Ant B

Test plot as follows:

Test mode:

802.11b



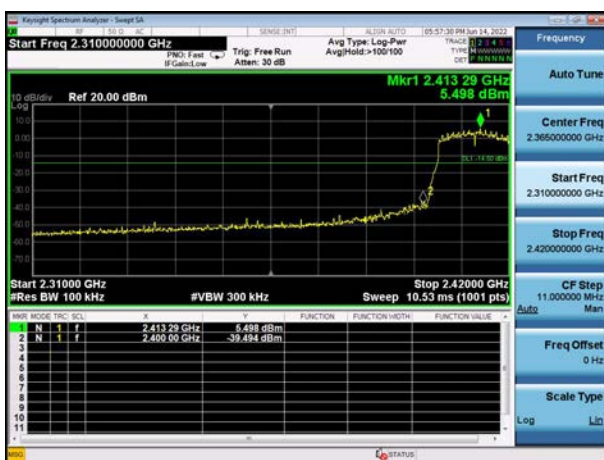
Lowest channel



Highest channel

Test mode:

802.11g



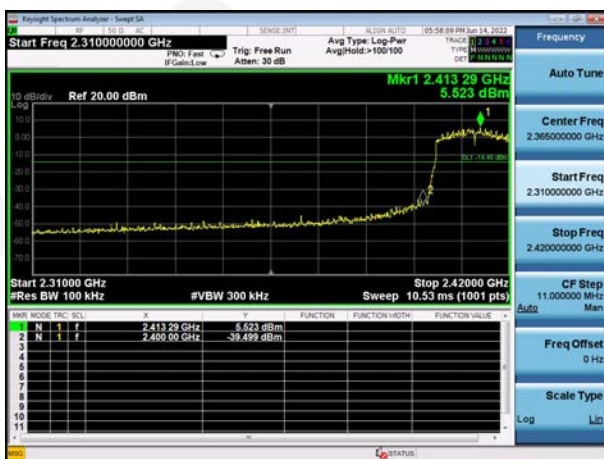
Lowest channel



Highest channel

Test mode:

802.11n(HT20)



Lowest channel



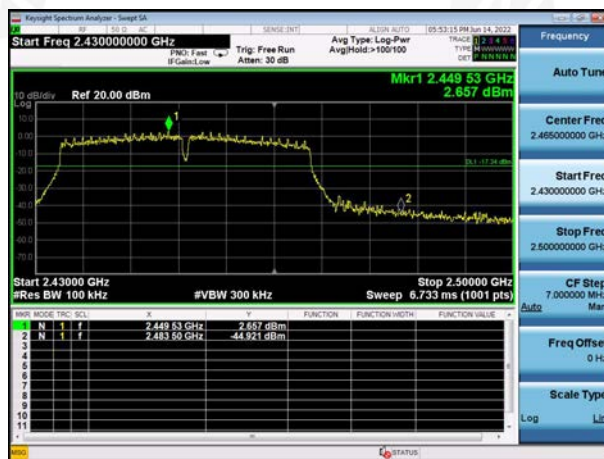
Highest channel

Test mode:

802.11n(HT40)



Lowest channel



Highest channel

Test plot as follows:

Remark: Spurious Emission all modes of 802.11b, 802.11g, 802.11n(HT20), 802.11n(HT40) were tested, only the worst result of 802.11b

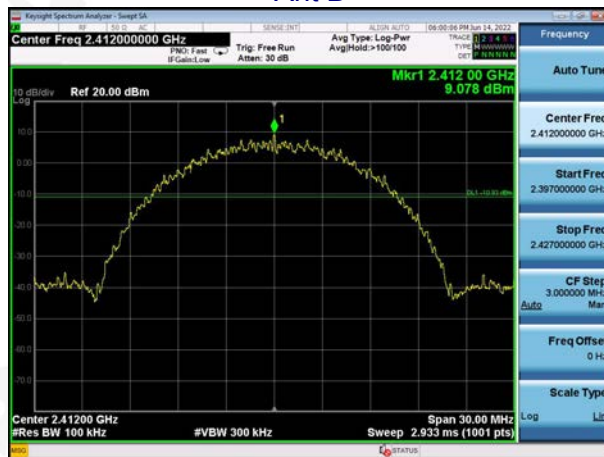
802.11b

Lowest channel

Ant A



Ant B



CH01



30MHz~3GHz



3GHz~25GHz

802.11b

Middle channel

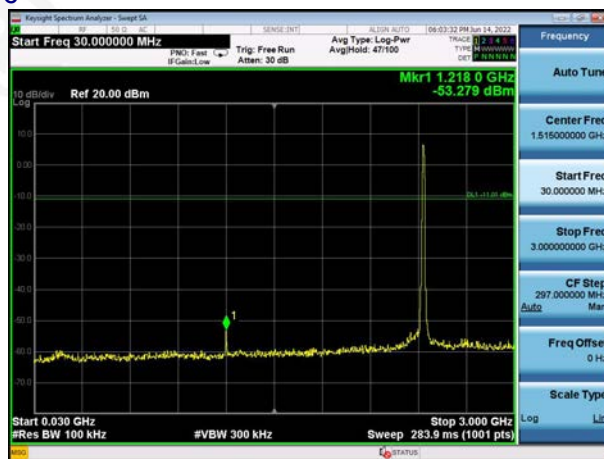
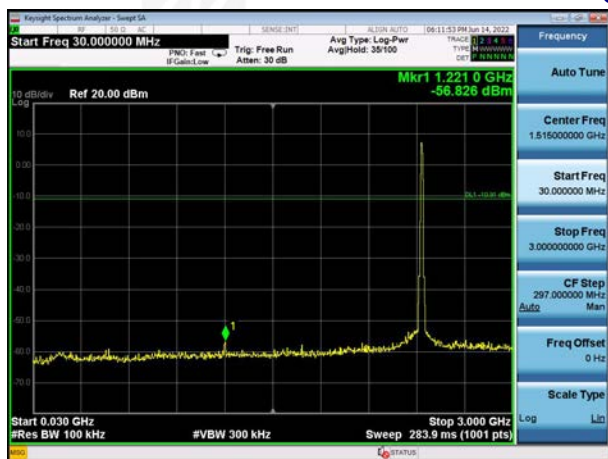
Ant A



Ant B



CH06



30MHz~3GHz



3GHz~25GHz

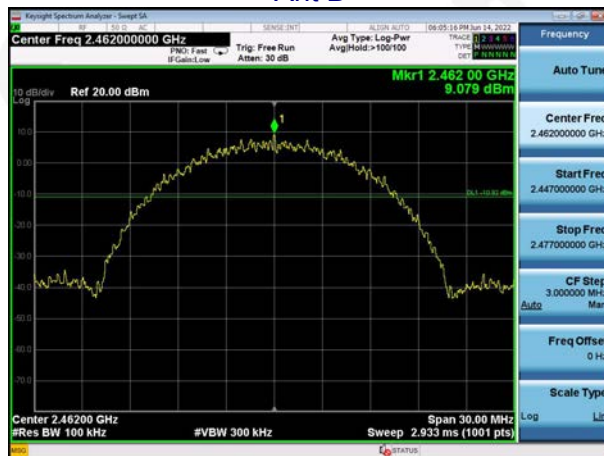
802.11b

Highest channel

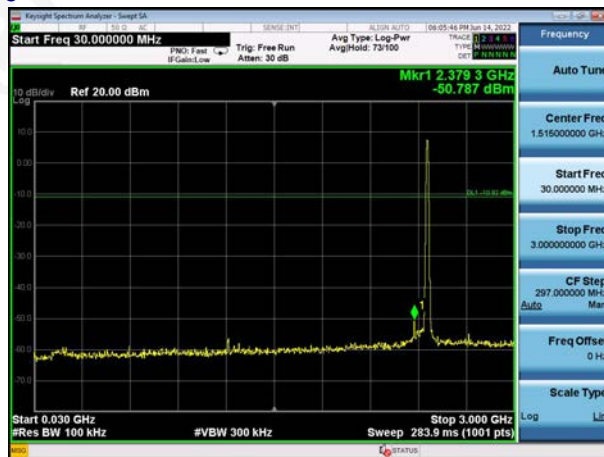
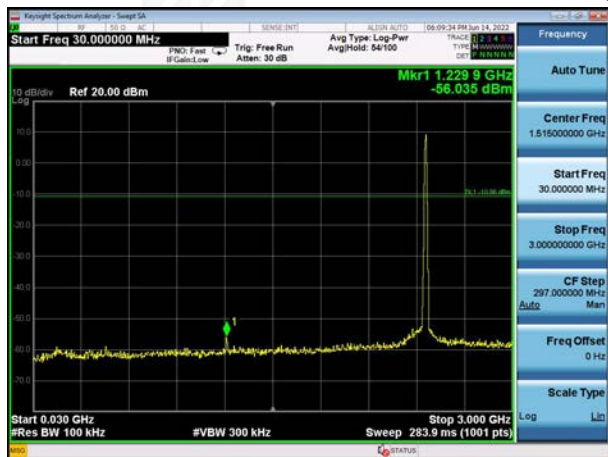
Ant A



Ant B



CH06



30MHz~3GHz



3GHz~25GHz

10. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
The antenna is External Antenna, the best case gain of the antenna is 5dBi, reference to the appendix II for details	

11. TEST SETUP PHOTO

Reference to the appendix I for details.

12. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

***** END OF REPORT *****