



## 8.6 TEST RESULT

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 15V

Test Mode	Test Channel (MHz)	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b	2412	6.752	30.00	Pass
	2437	6.397		
	2462	6.131		
802.11g	2412	5.604	30.00	Pass
	2437	5.414		
	2462	5.248		
802.11n20	2412	4.406	30.00	Pass
	2437	4.04		
	2462	3.858		
802.11n40	2422	4.397	30.00	Pass
	2437	4.198		
	2452	4.156		



## 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

A. Reference level measurement, establish a reference level by using the following procedure:

- Set instrument center frequency to DTS channel center frequency.
- Set the span to  $\geq 1.5$  times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW =  $[3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

B. Emission level measurement, establish an emission level by using the following procedure:

- Set the center frequency and span to encompass frequency range to be measured.
- Set the RBW = 100 kHz.
- Set the VBW =  $[3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

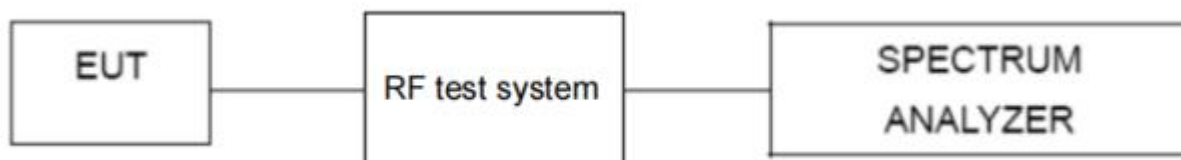
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.



### 9.3 DEVIATION FROM STANDARD

No deviation.

### 9.4 TEST SETUP



### 9.5 EUT OPERATION CONDITIONS

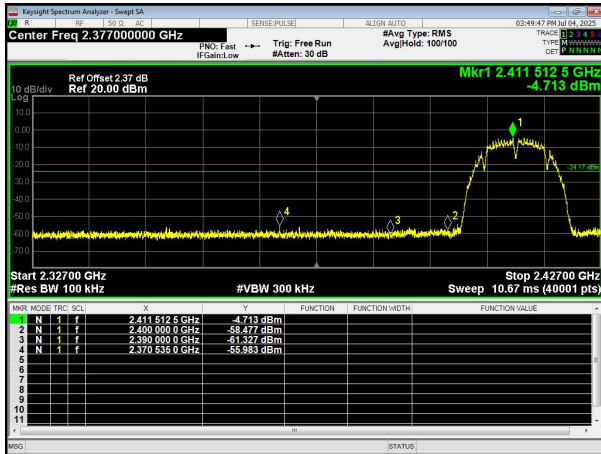
The EUT tested system was configured as the statements of 9.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 9.6 TEST RESULTS

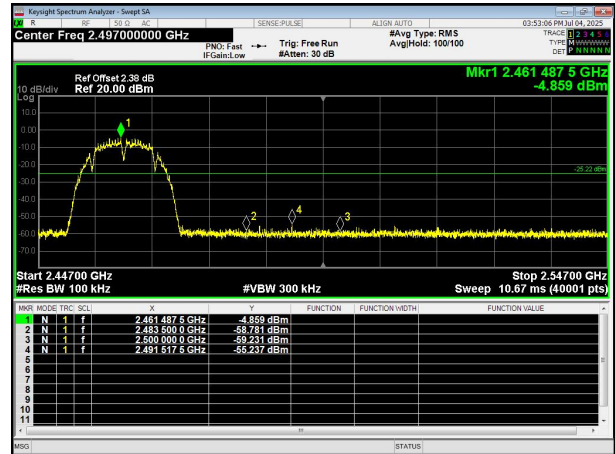


Test plot as follows:

802.11b

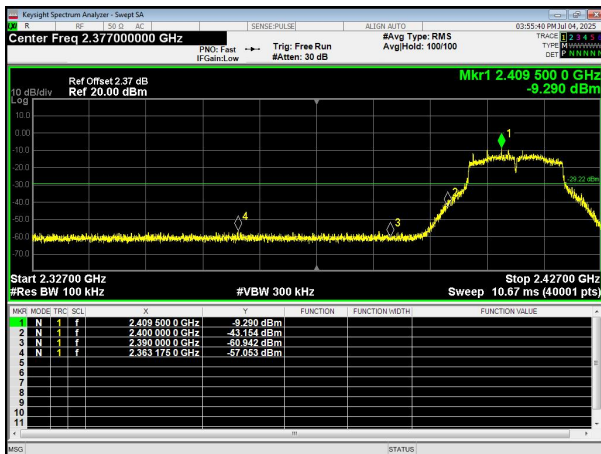


Lowest channel



Highest channel

802.11g

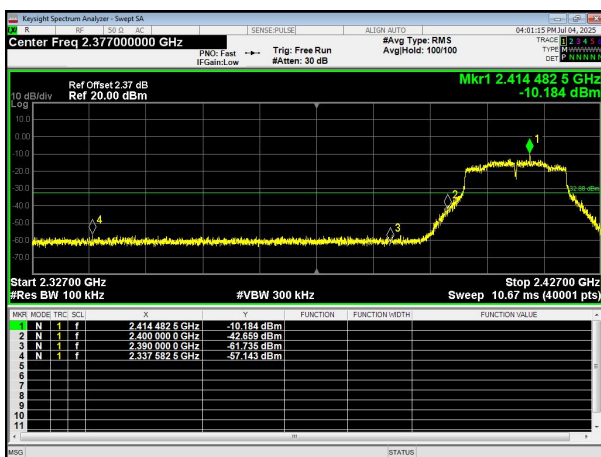


Lowest channel

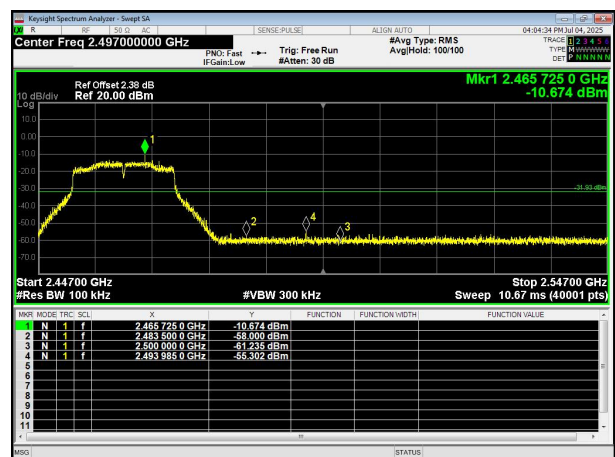


Highest channel

802.11n20



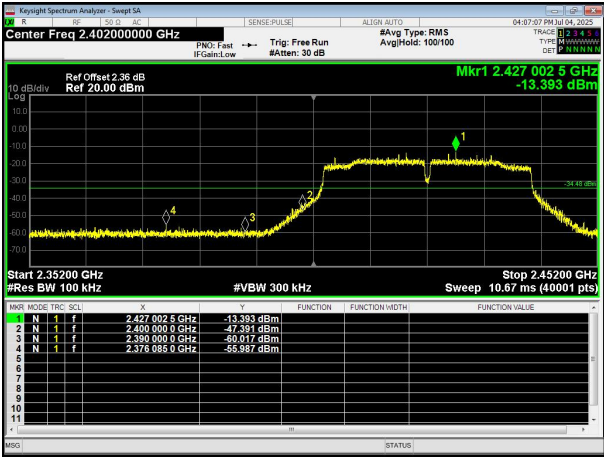
Lowest channel



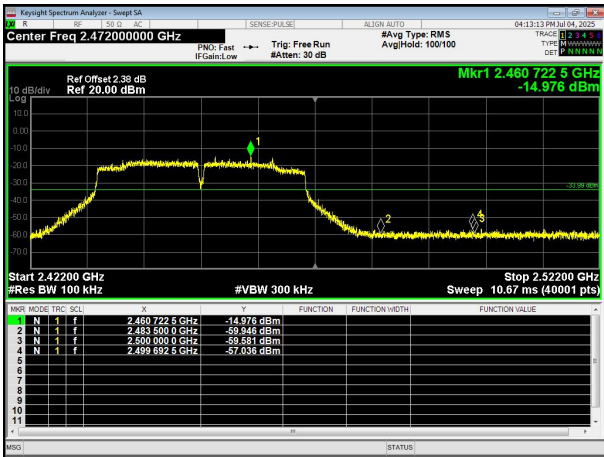
Highest channel



802.11n40



Lowest channel



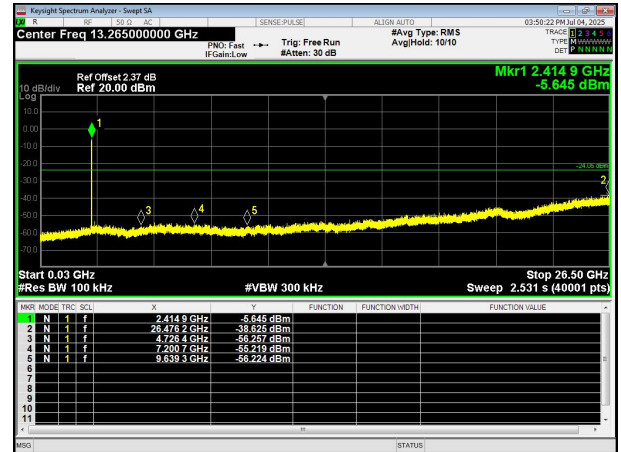
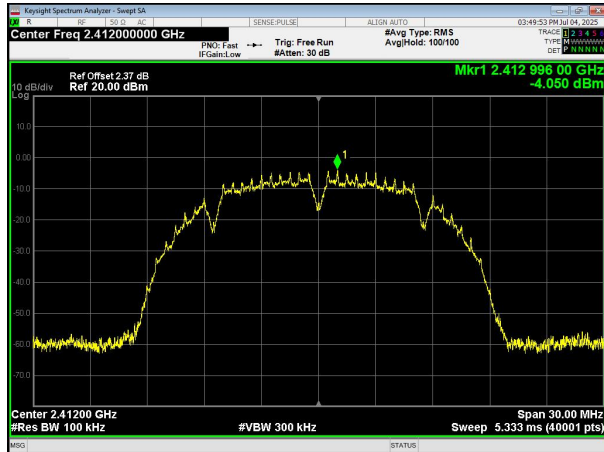
Highest channel



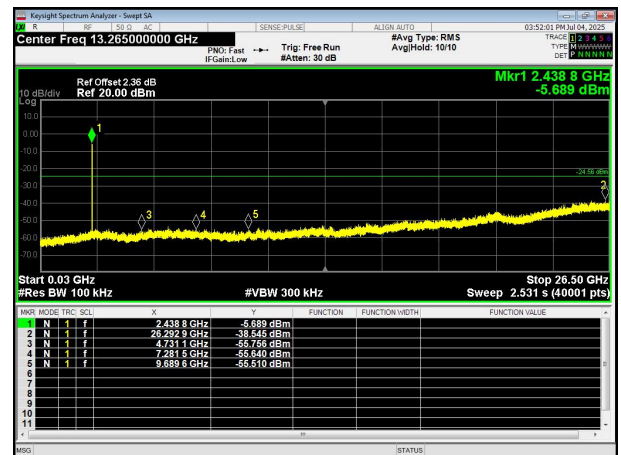
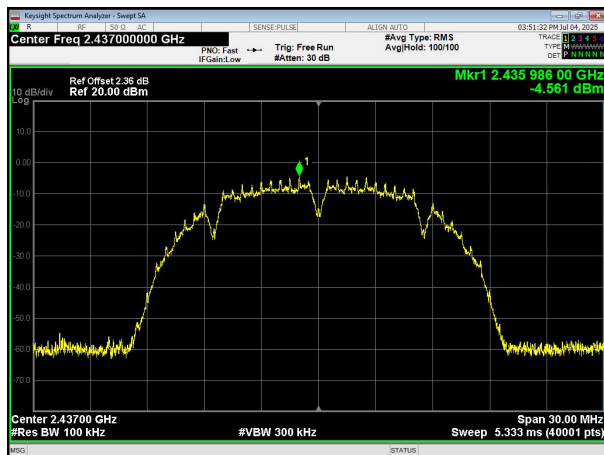
Test plot as follows:

802.11b

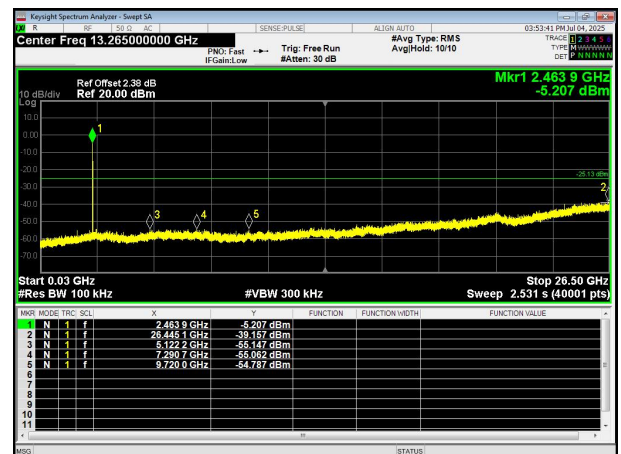
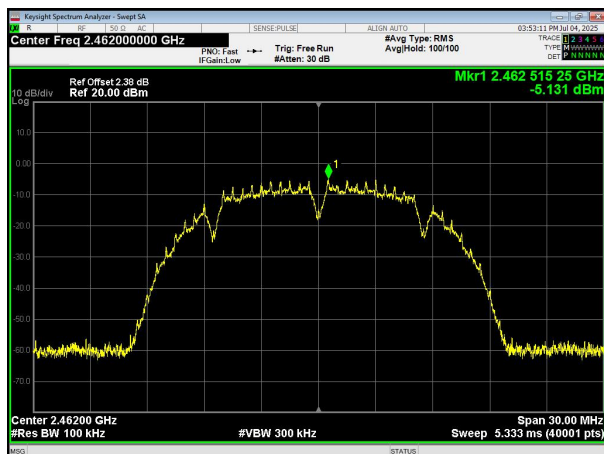
Lowest channel



Middle channel



Highest channel

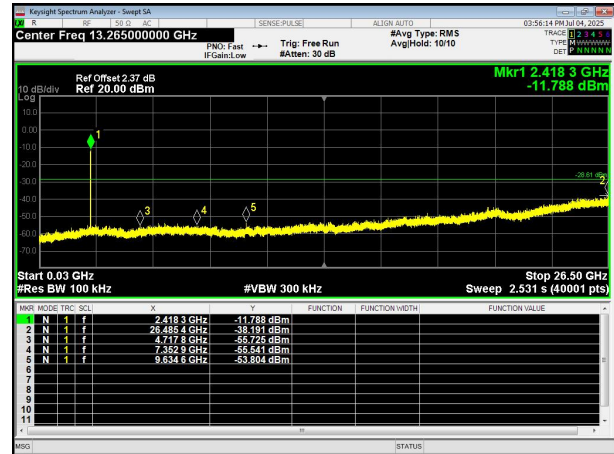
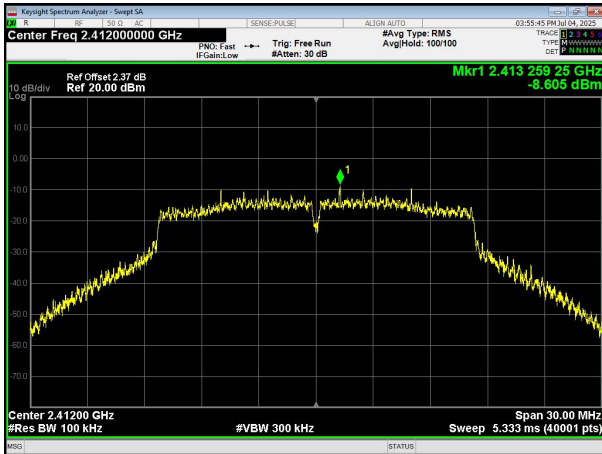




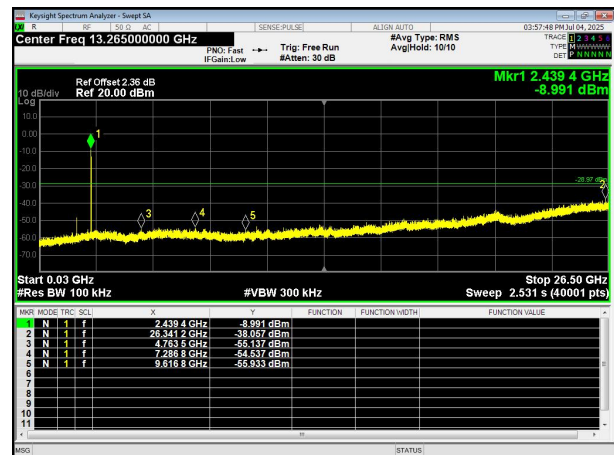
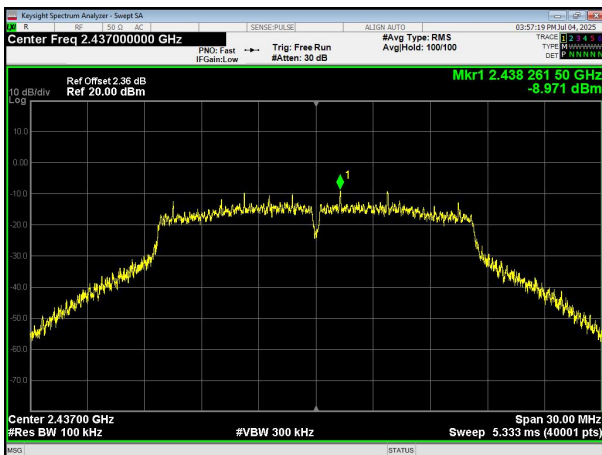


802.11g

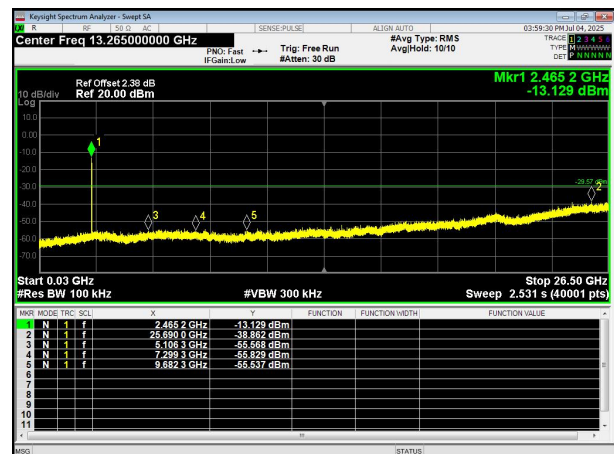
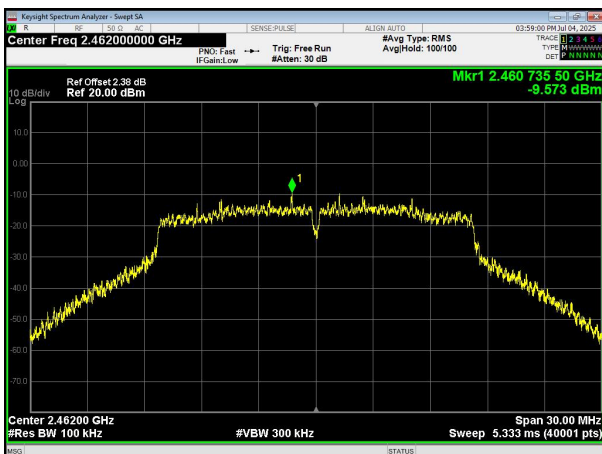
Lowest channel



Middle channel



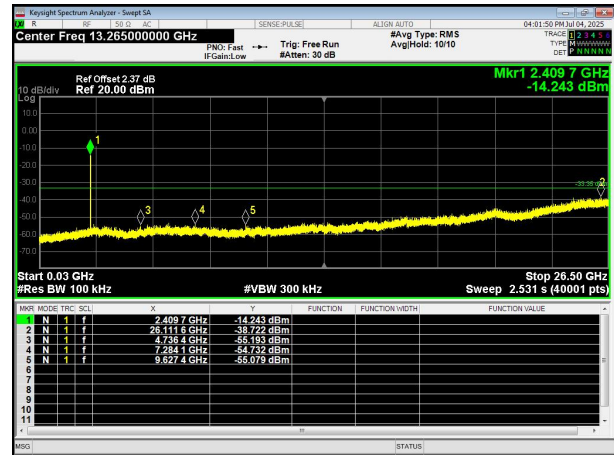
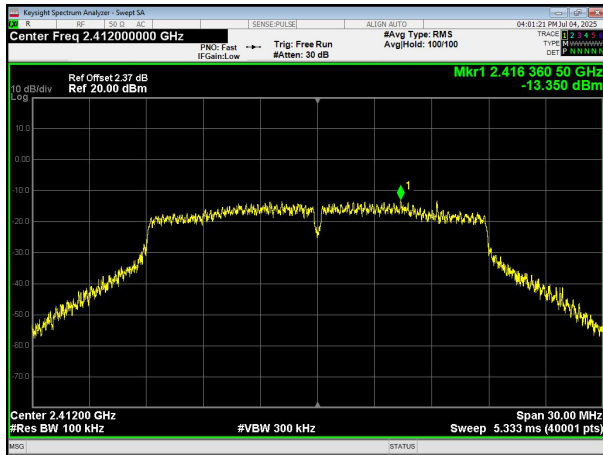
Highest channel



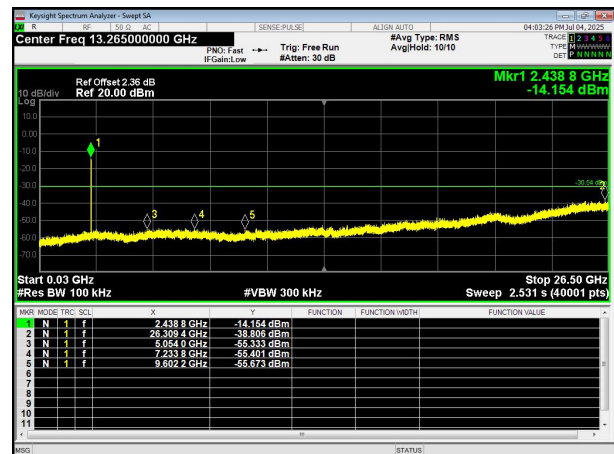
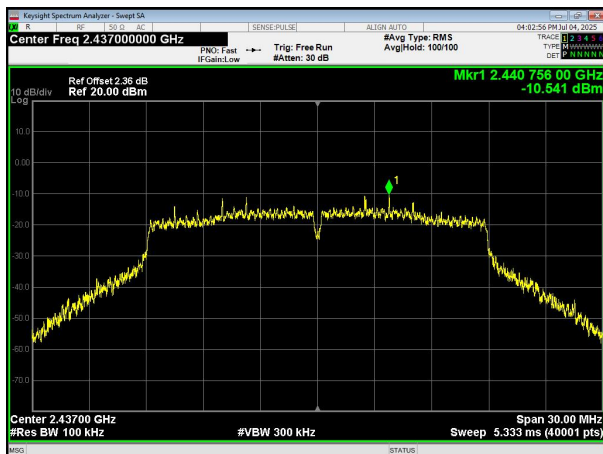


802.11n20

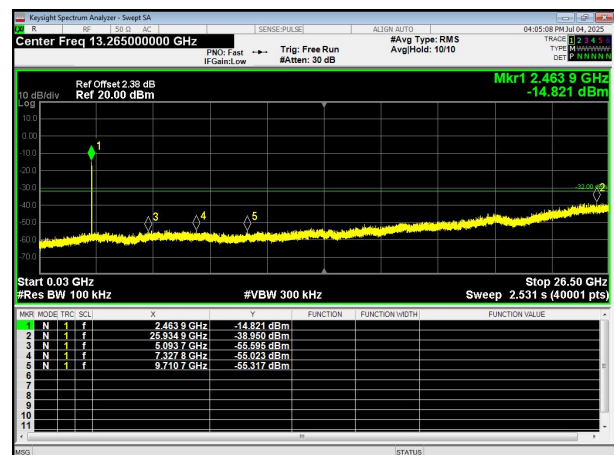
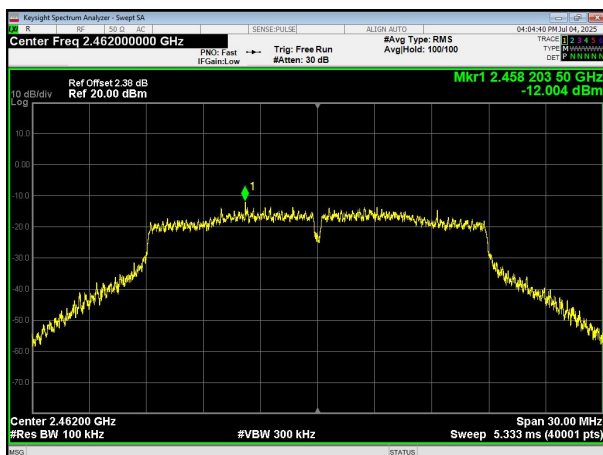
Lowest channel



Middle channel



Highest channel

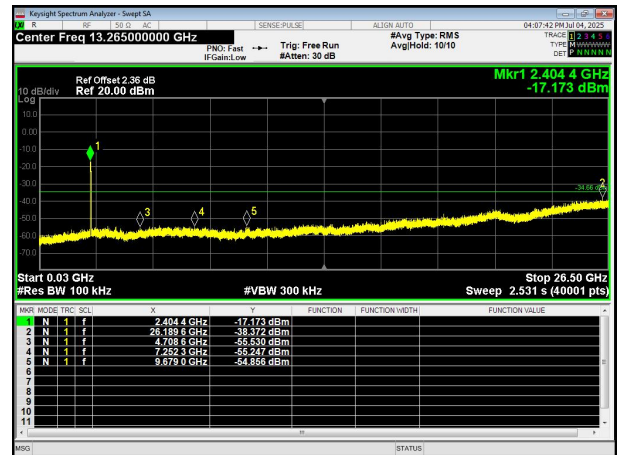
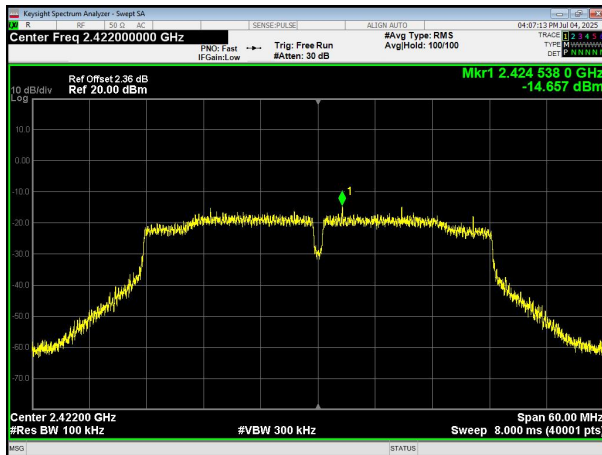




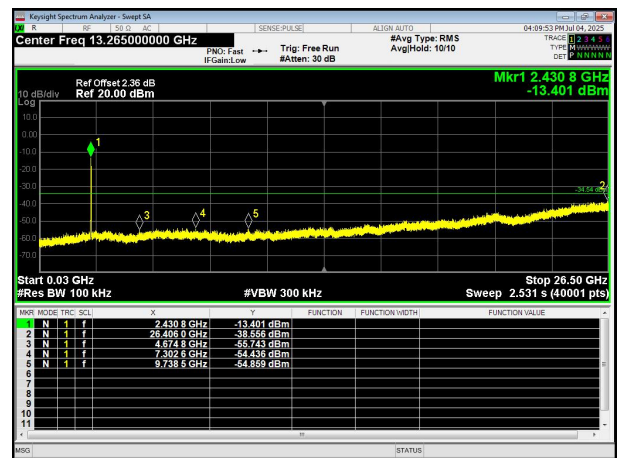
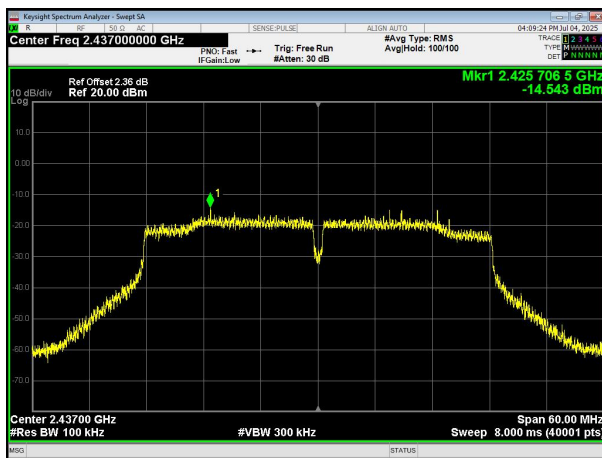


802.11n40

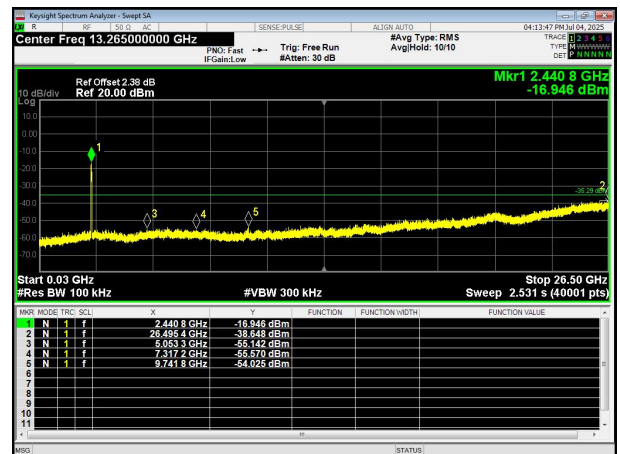
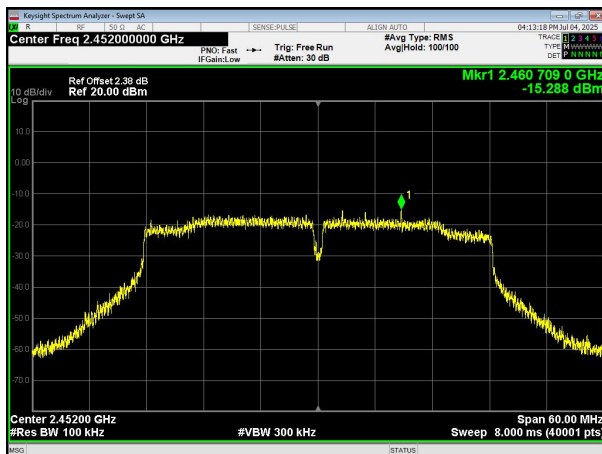
Lowest channel



Middle channel



Highest channel





## 10. DUTY CYCLE

Test Method:	ANSI C63.10:2013
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### 10.1 APPLIED PROCEDURES / LIMIT

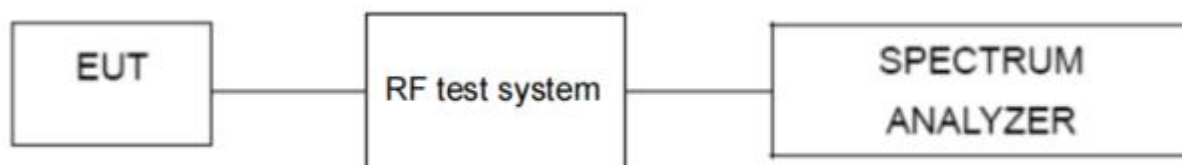
Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
  - 1) Set the center frequency of the instrument to the center frequency of the transmission.
  - 2) Set  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value.
  - 3) Set  $VBW \geq RBW$ . Set detector = peak or average.
  - 4) The zero-span measurement method shall not be used unless both RBW and VBW are  $> 50/T$  and the number of sweep points across duration  $T$  exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if  $T \leq 16.7 \mu s$ .)

### 10.2 DEVIATION FROM STANDARD

No deviation.

### 10.3 TEST SETUP

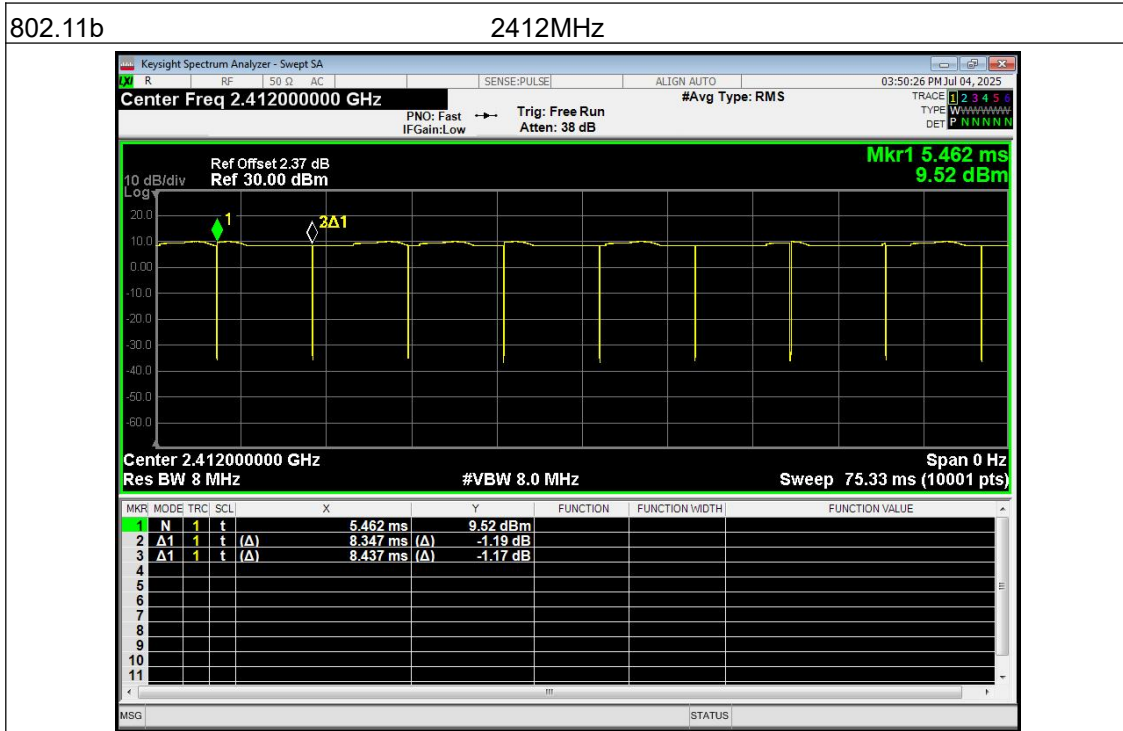




## 10.4 TEST RESULTS

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 15V

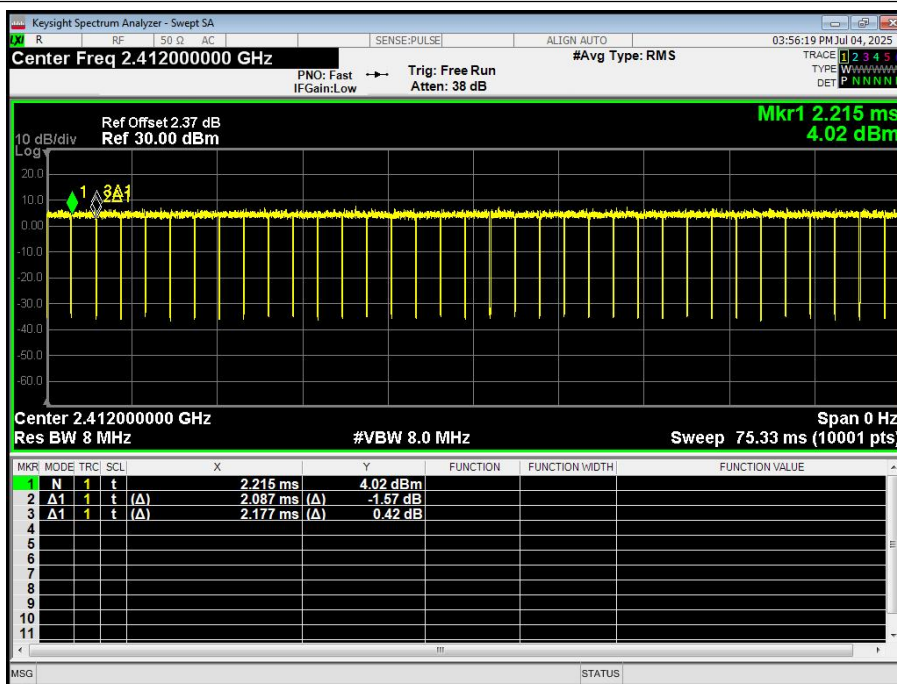
Test Mode	Test Frequency (MHz)	Duty Cycle (%)	Factor (dB)	Result
802.11b	2412	98.93	0	Pass
802.11g	2412	95.87	0.18	Pass
802.11n20	2412	98.88	0	Pass
802.11n40	2422	98.88	0	Pass





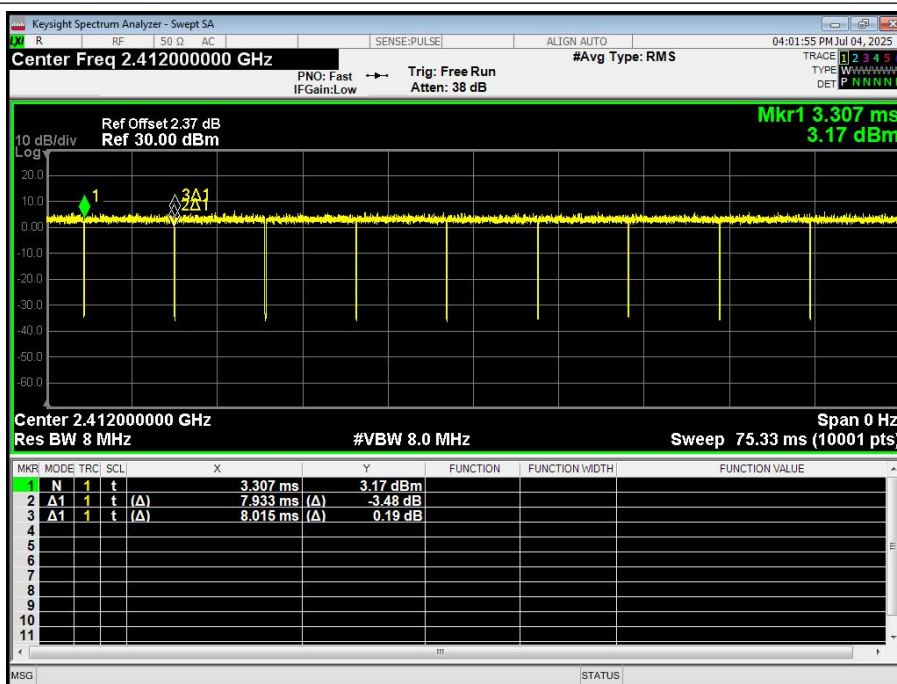
802.11g

2412MHz



802.11n20

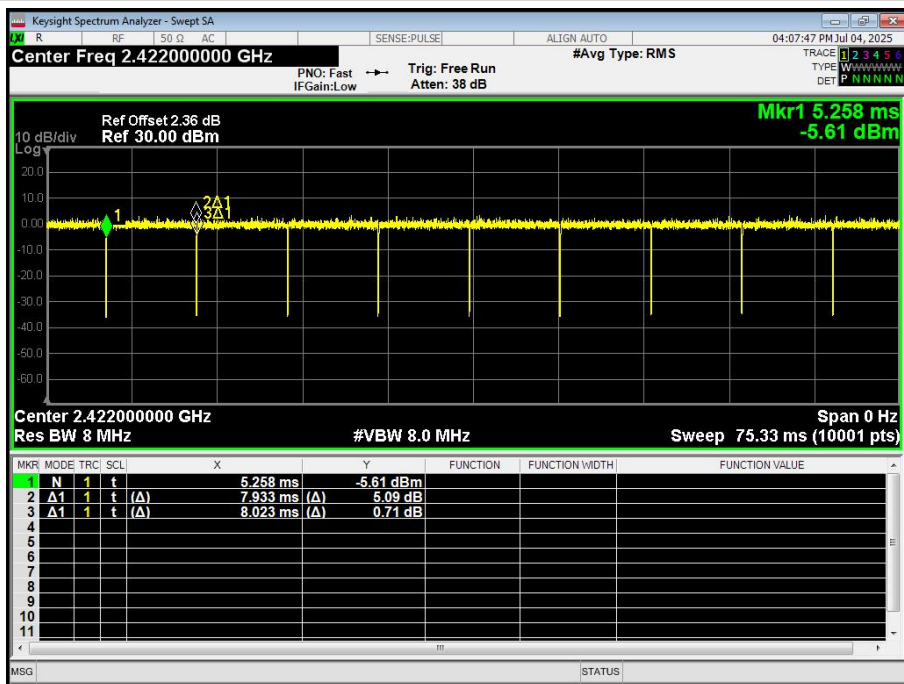
2412MHz





802.11n40

2422MHz



Note: All channel have been tested, and the report only reflects the worst case data.

Duty Cycle =  $T_{on} / T_{total} * 100\%$ ;

Duty Cycle Correction Factor =  $10\log(1/Duty\ Cycle)$ .



## 11. 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 Chip Antenna, the best case gain of the antenna is 2.95dBi, reference to the appendix II for details.	





## 12. TEST SETUP PHOTO

Reference to the appendix I for details.

## 13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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