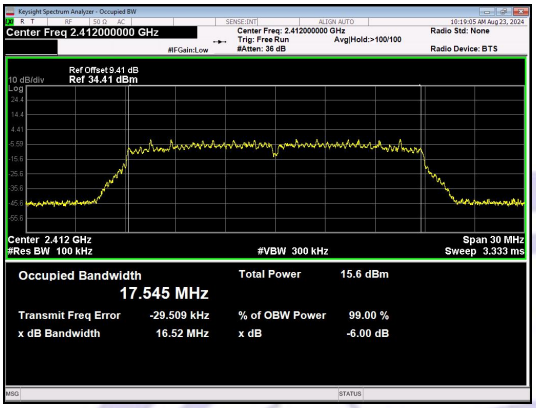
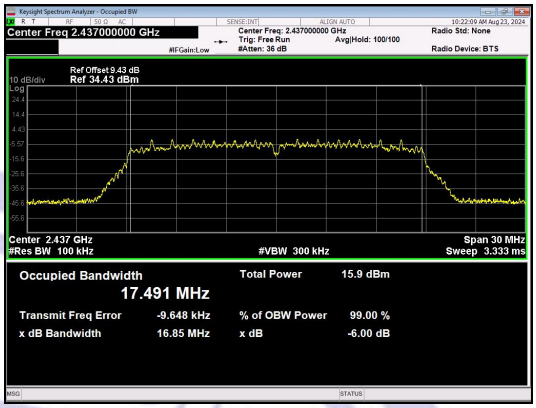


IEEE 802.11n_Channel 1_20MHz_Antenna 0



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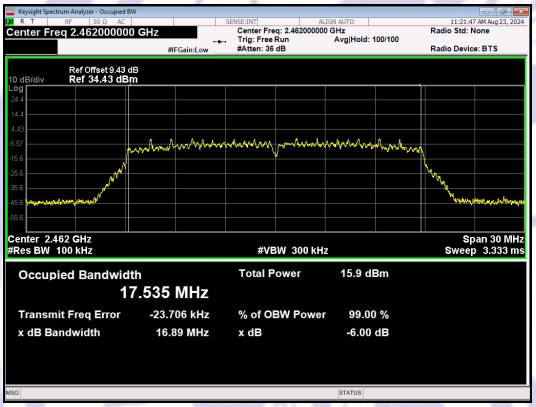

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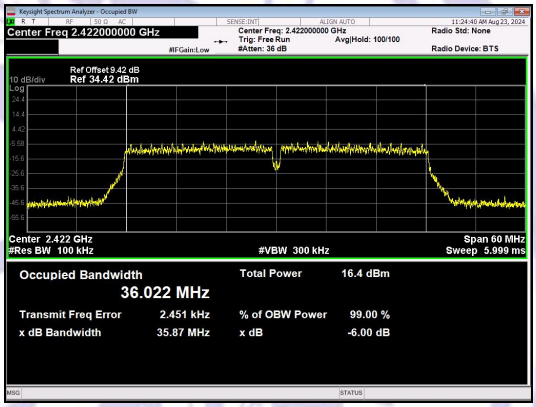

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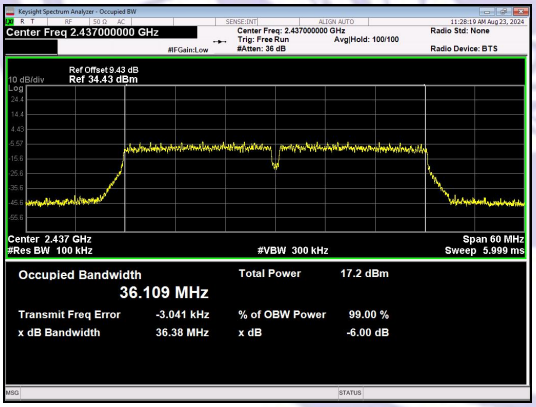

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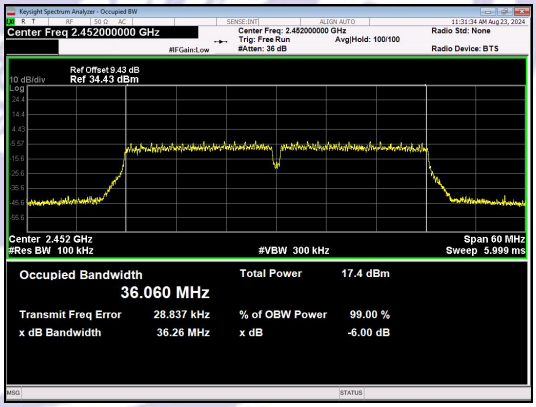

IEEE 802.11n_Channel 9_40MHz_Antenna 0

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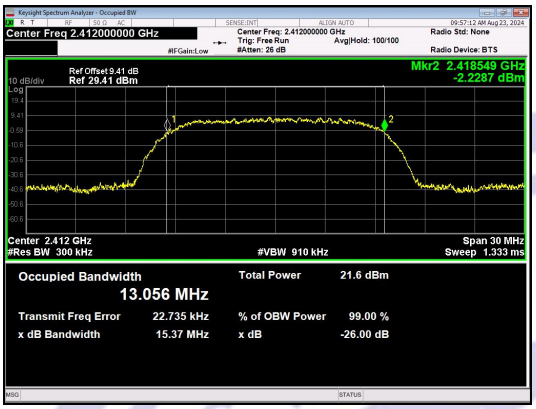
99% Bandwidth



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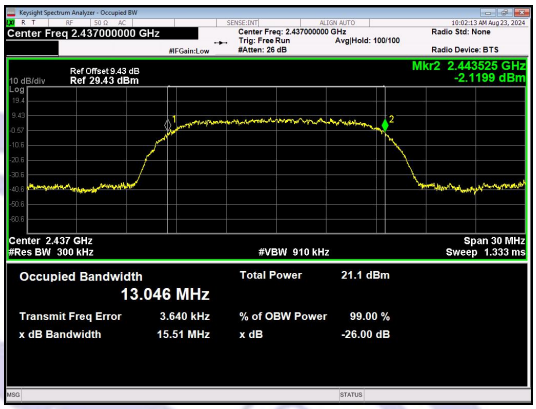
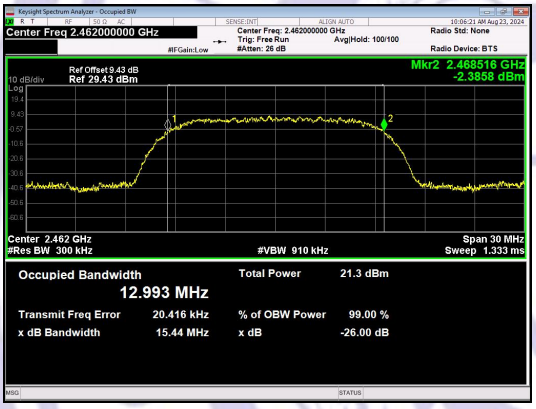


IEEE 802.11b_Channel 6_20MHz_Antenna 0



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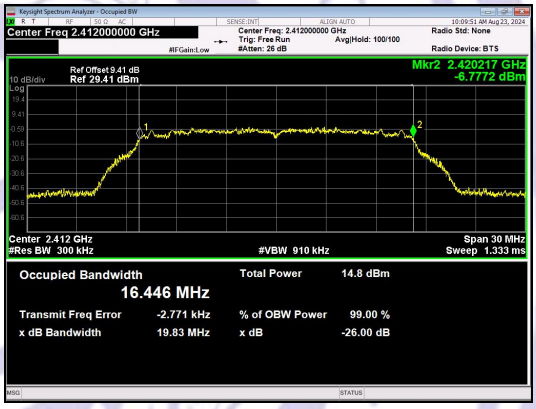

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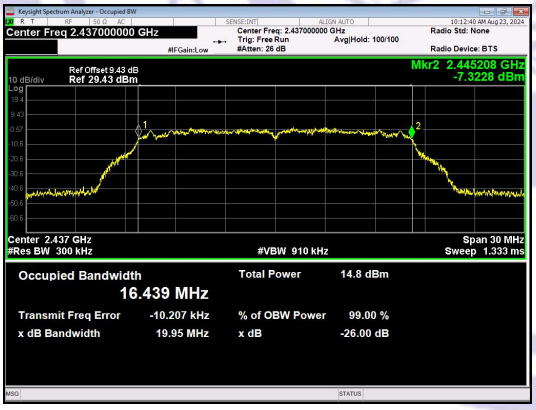
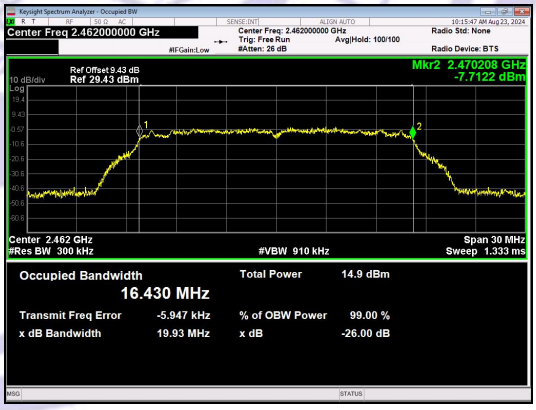


IEEE 802.11g_Channel 6_20MHz_Antenna 0



IEEE 802.11g_Channel 11_20MHz_Antenna 0

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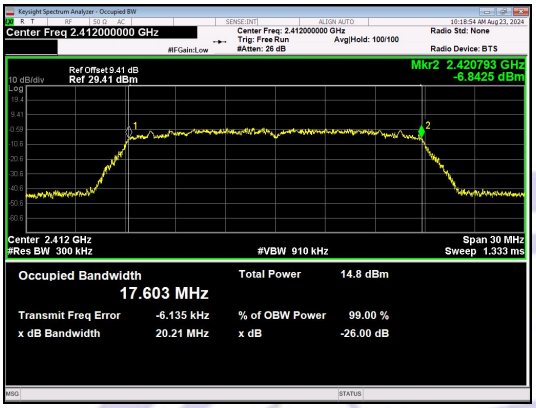
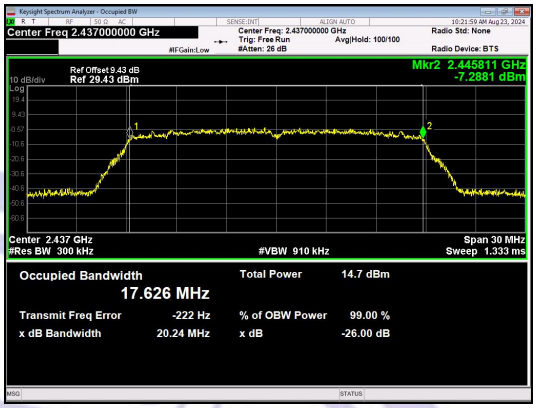
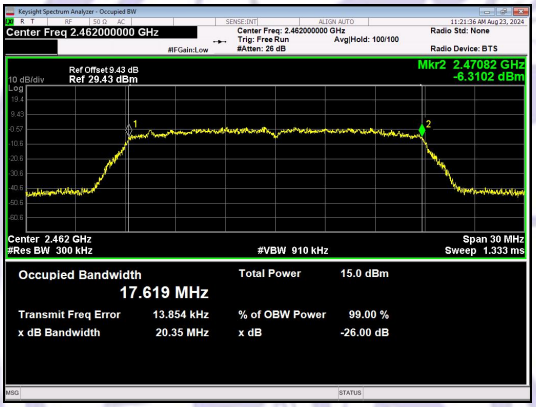


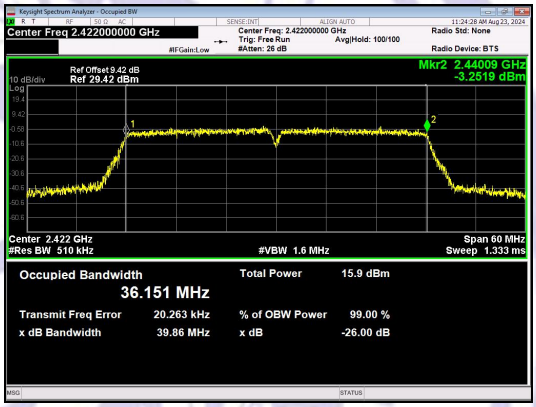
IEEE 802.11n_Channel 1_20MHz_Antenna 0



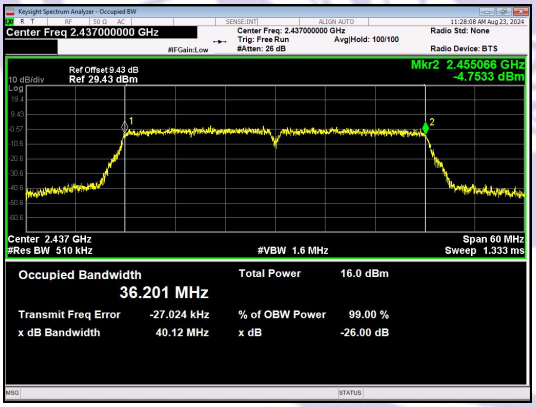
IEEE 802.11n_Channel 6_20MHz_Antenna 0



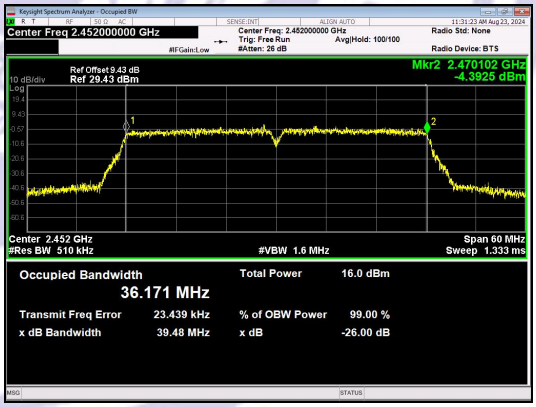
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 0

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9 Maximum Peak Output Power

Test Requirement : FCC CFR47 Part 15 Section 15.247, RSS-247 § 5.4

Test Method : ANSI C63.10:2013

Test Limit : Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

9.1 Test Procedure

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

9.2 Test Result

Mode	Test Channel	Peak Output Power (dBm)	LIMIT (dBm)	Antenna Gain （dBi）	EIRP (dBm)	EIRP Limit(dBm)	Result
802.11b	Low	20.82	30.00	3	23.82	36.02	**PASS**
	Moddle	20.51	30.00	3	23.51	36.02	**PASS**
	High	20.61	30.00	3	23.61	36.02	**PASS**
802.11g	Low	16.18	30.00	3	19.18	36.02	**PASS**
	Moddle	16.13	30.00	3	19.13	36.02	**PASS**
	High	16.37	30.00	3	19.37	36.02	**PASS**
802.11n HT20	Low	15.94	30.00	3	18.94	36.02	**PASS**
	Moddle	15.95	30.00	3	18.95	36.02	**PASS**
	High	16.34	30.00	3	19.34	36.02	**PASS**
802.11n HT40	Low	17.25	30.00	3	20.25	36.02	**PASS**
	Moddle	17.28	30.00	3	20.28	36.02	**PASS**

	High	17.28	30.00	3	20.28	36.02	**PASS**

Note:

1. For power test the duty cycle is the corresponding duty cycle on page 48 of this report in continous transmitting mode;

2. TX means Transmit, RX means Receive.

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10 Power Spectral density

Test Requirement : FCC CFR47 Part 15 Section 15.247, RSS-247 §5.2

Test Method : ANSI C63.10:2013

Test Limit : Regulation 15.247(f) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

10.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 3kHz. VBW = 9.1kHz, Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

10.2 Test Result

	Power Spectral density（dBm/3kHz）				Limit
	802.11b	802.11g	802.11n20	802.11n40	
Low Channel	-7.933	-15.738	-16.538	-19.705	8dBm/3kHz
Middle Channel	-8.225	-14.887	-16.159	-18.632	8dBm/3kHz
High Channel	-8.065	-15.161	-16.319	-19.080	8dBm/3kHz

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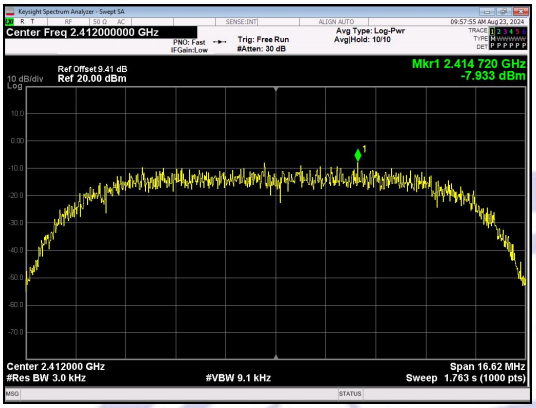
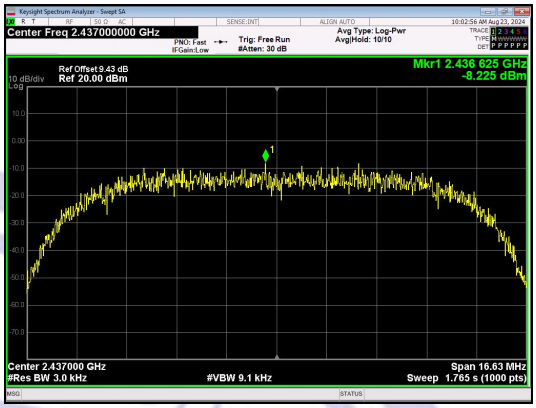
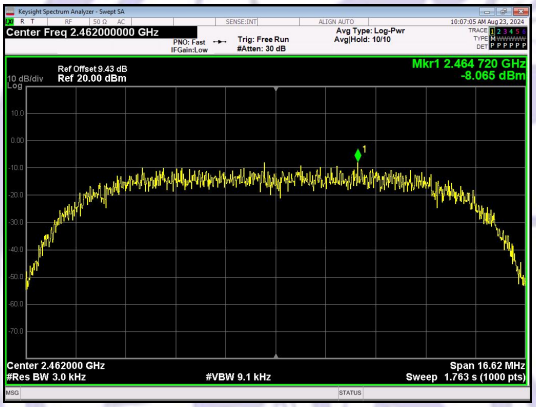


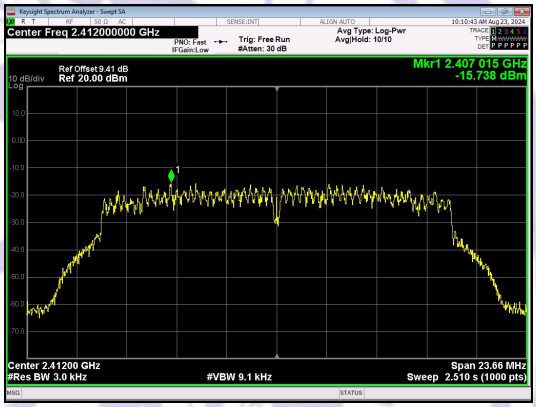
IEEE 802.11b_Channel 1_20MHz_Antenna 0



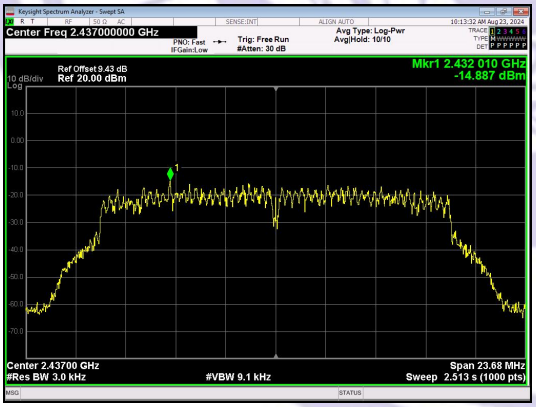
IEEE 802.11b_Channel 6_20MHz_Antenna 0



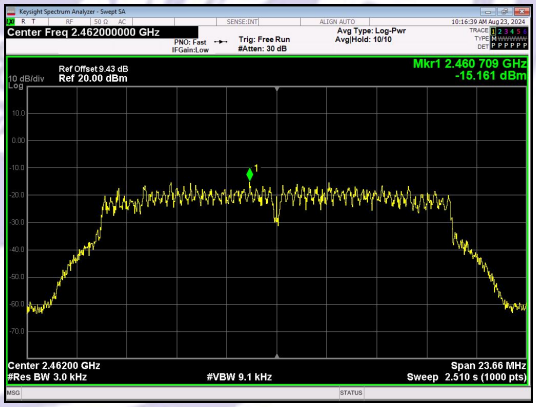
IEEE 802.11b_Channel 11_20MHz_Antenna 0



IEEE 802.11g_Channel 1_20MHz_Antenna 0



IEEE 802.11g_Channel 6_20MHz_Antenna 0



IEEE 802.11g_Channel 11_20MHz_Antenna 0

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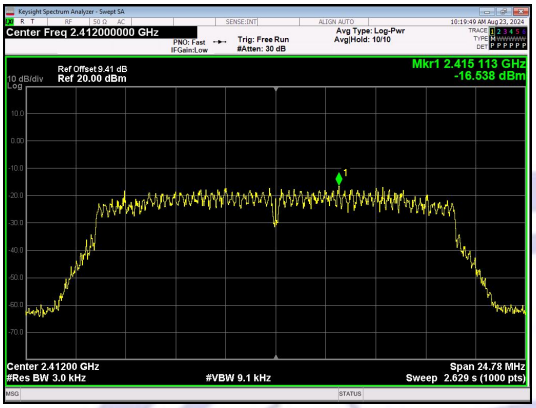
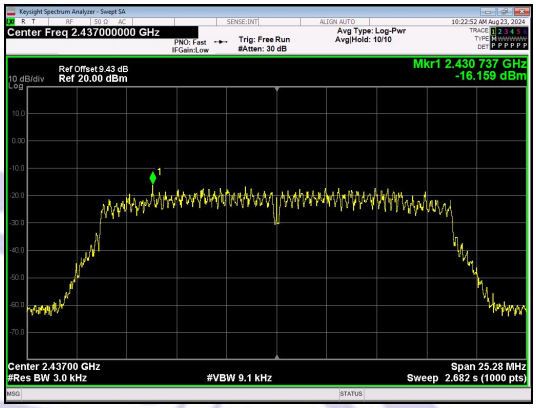
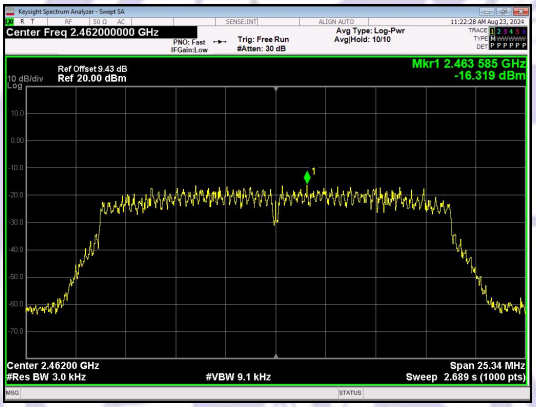


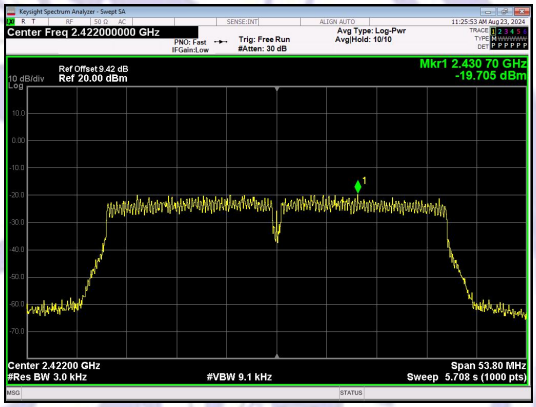
IEEE 802.11n_Channel 1_20MHz_Antenna 0



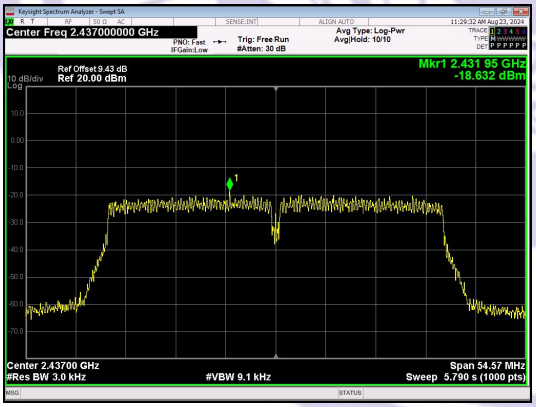
IEEE 802.11n_Channel 6_20MHz_Antenna 0



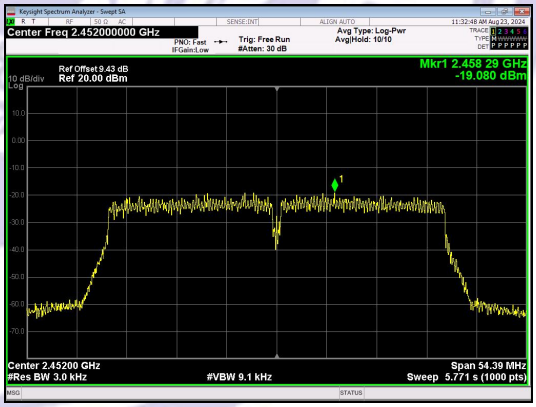
IEEE 802.11n_Channel 11_20MHz_Antenna 0



IEEE 802.11n_Channel 3_40MHz_Antenna 0



IEEE 802.11n_Channel 6_40MHz_Antenna 0



IEEE 802.11n_Channel 9_40MHz_Antenna 0

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11 On Time and Duty Cycle

11.1 Standard Applicable

None: for reporting purpose only.

11.2 Measuring Instruments and Setting

Please refer to equipment's list in this report. The following table is the setting of the spectrum analyzer.

11.3 Test Procedures

1. Set the centre frequency of the spectrum analyzer to the transmitting frequency;

2. Set the span=0MHz, RBW=8MHz, VBW=8MHz, Sweep time=40000pts;

3. Detector = RMS;

4. Trace mode = Single hold.

11.4 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

11.5 Test result

Mode	Data rates	Channel	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)
IEEE 802.11b	11	1	0	8.384	8.402	99.7905	0.9979	0.0091
		6		8.384	8.403	99.7842	0.9978	0.0096
		11		8.384	8.402	99.7905	0.9979	0.0091
IEEE 802.11g	54	1		1.396	1.411	98.9369	0.9894	0.0463
		6		1.396	1.411	98.9369	0.9894	0.0463
		11		1.396	1.410	99.0071	0.9901	0.0432
IEEE 802.11n_20	MCS 7	1		5.093	5.102	99.8223	0.9982	0.0078
		6		5.093	5.105	99.778	0.9978	0.0096
		11		5.093	5.105	99.778	0.9978	0.0096
IEEE 802.11n_40		3		2.475	3.123	79.2342	0.7923	1.0111
		6		2.475	3.123	79.2342	0.7923	1.0111
		9		2.473	3.122	79.224	0.7922	1.0117

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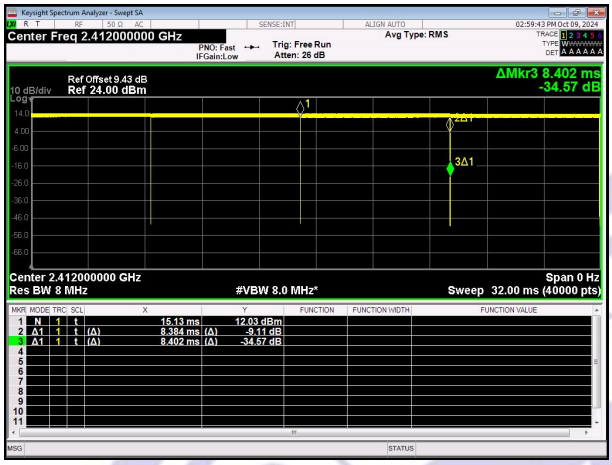
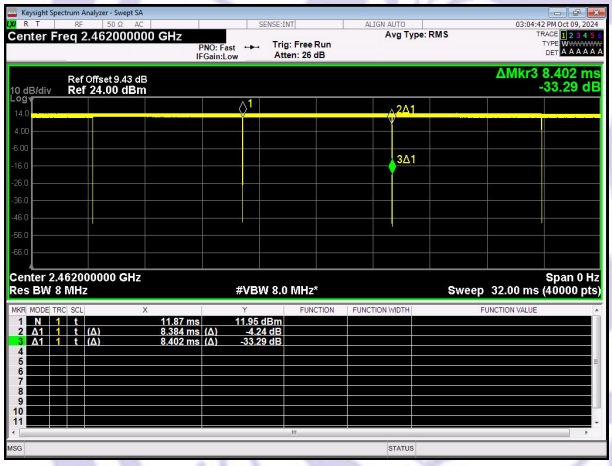


Duty Cycle

IEEE 802.11b_Channel 1_Ant.0

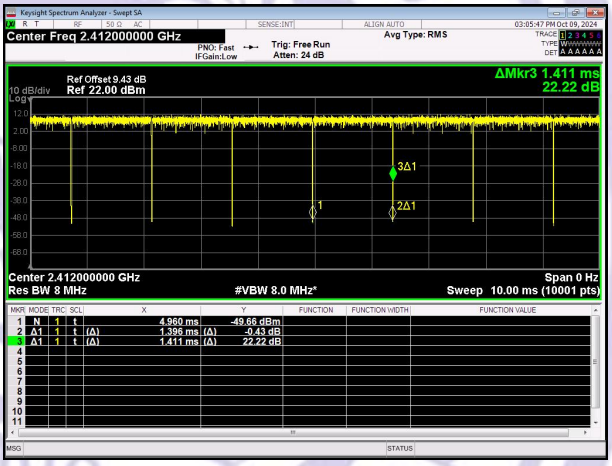
Duty Cycle

IEEE 802.11b_Channel 6_Ant.0



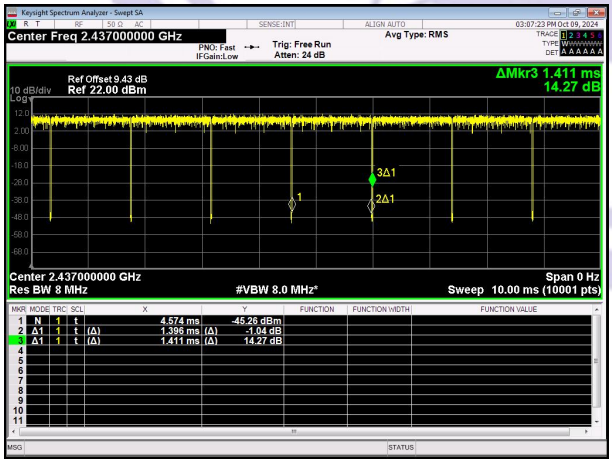
Duty Cycle

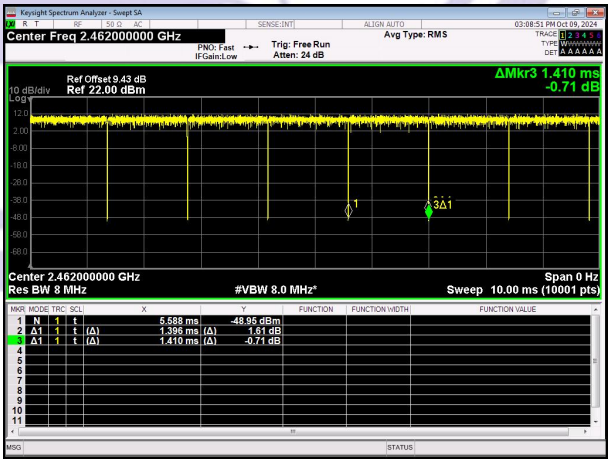
IEEE 802.11b_Channel 11_Ant.0



Duty Cycle

IEEE 802.11g_Channel 1_Ant.0





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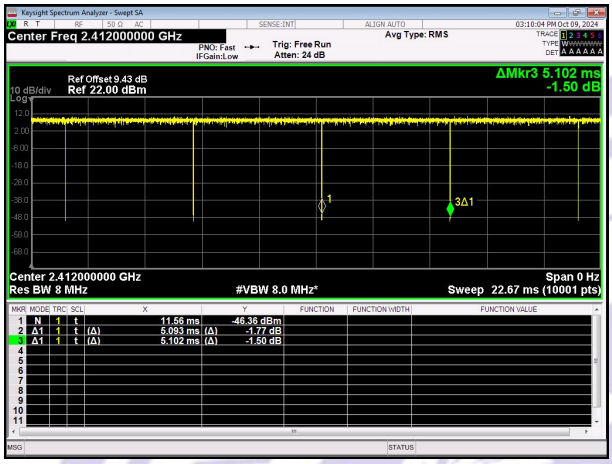
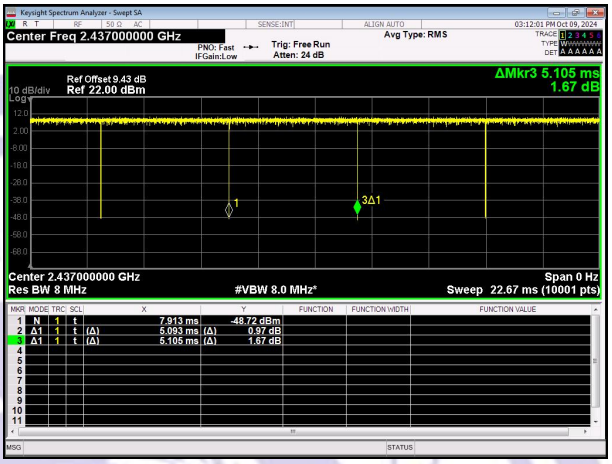
Duty Cycle IEEE 802.11g_Channel 6_Ant.0	Duty Cycle IEEE 802.11g_Channel 11_Ant.0
	
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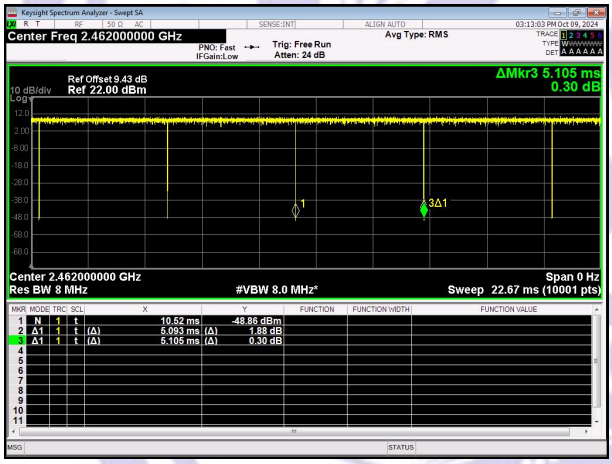	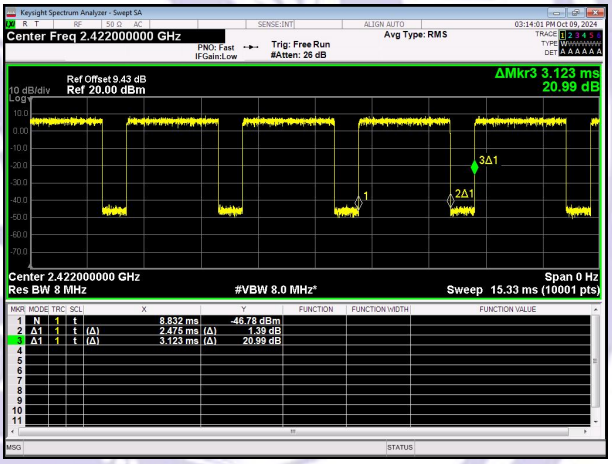
Duty Cycle IEEE 802.11n_20_Channel 11_Ant.0	Duty Cycle IEEE 802.11n_40_Channel 3_Ant.0

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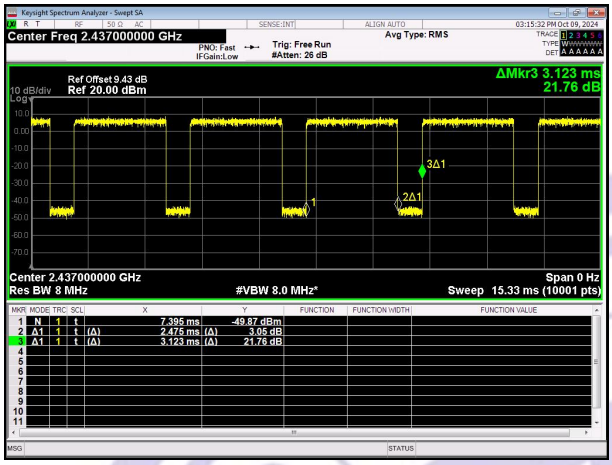
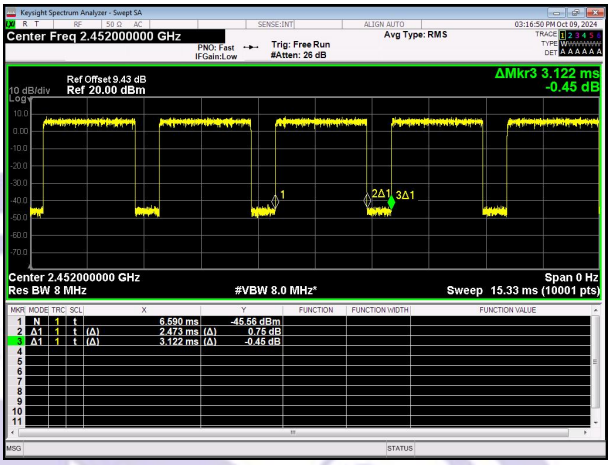


Duty Cycle

IEEE 802.11n_40_Channel 6_Ant.0



Duty Cycle

IEEE 802.11n_40_Channel 9_Ant.0

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12 Antenna Application

12.1 Antenna Requirement

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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

According to RSS-GEN section 6.8

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

12.2 Result

The EUT'S antenna, permanent attached antenna, is PCB Antenna. The antenna's gain is 3dBi and meets the requirement.

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13 Test Setup and EUT Photos

Reference to the attachment for details.

******THE END REPORT******

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