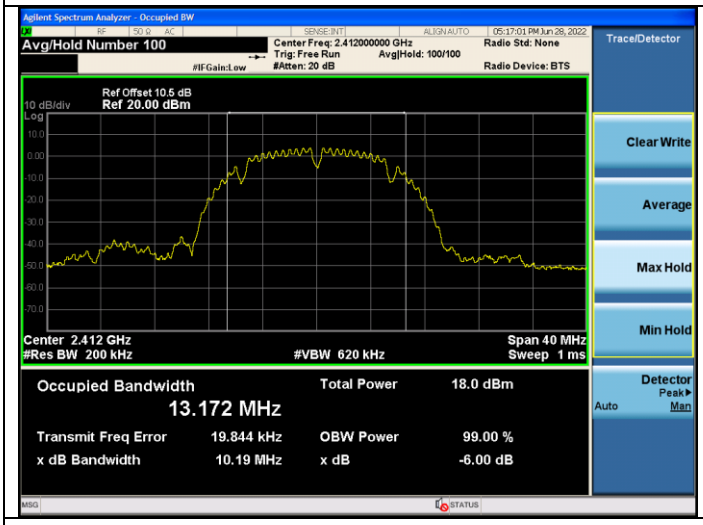
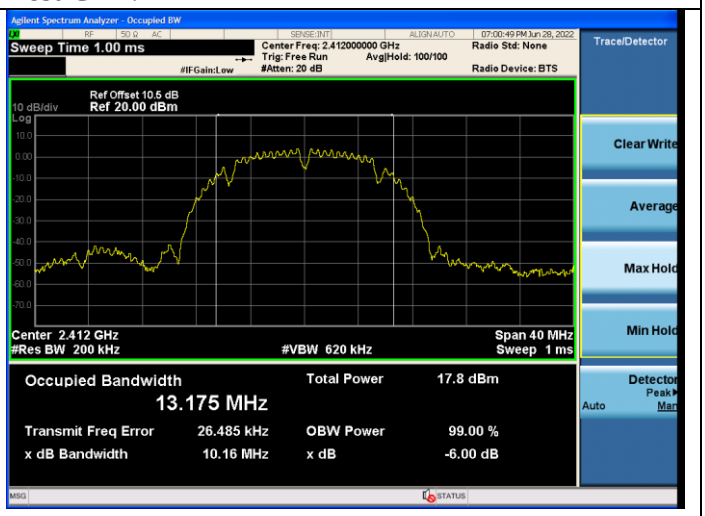
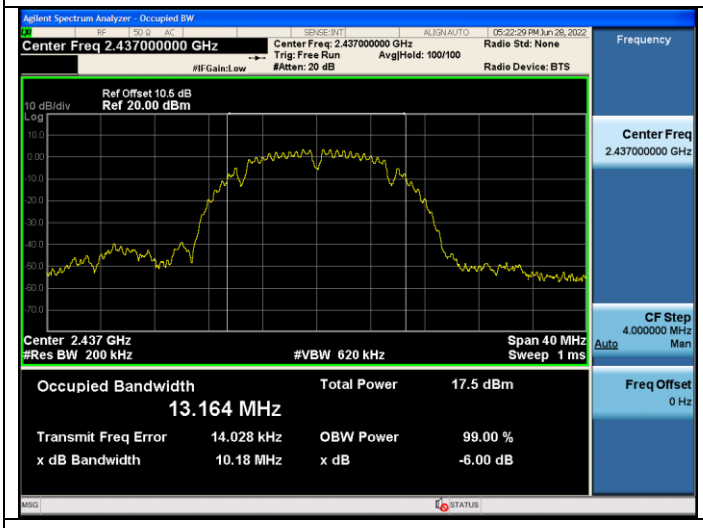
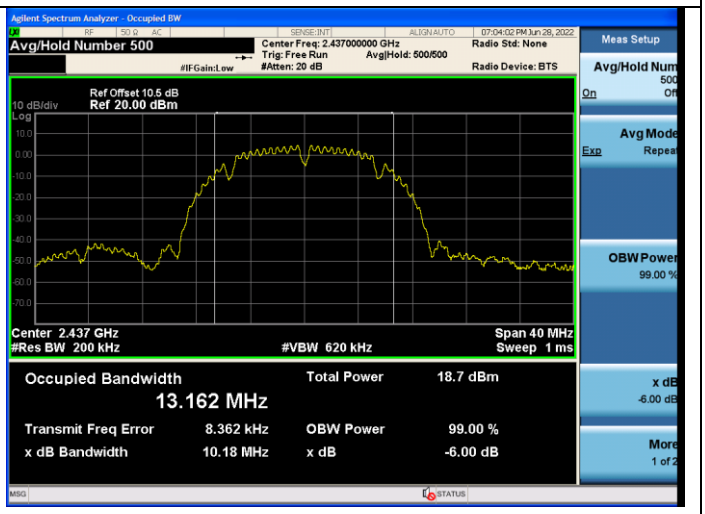
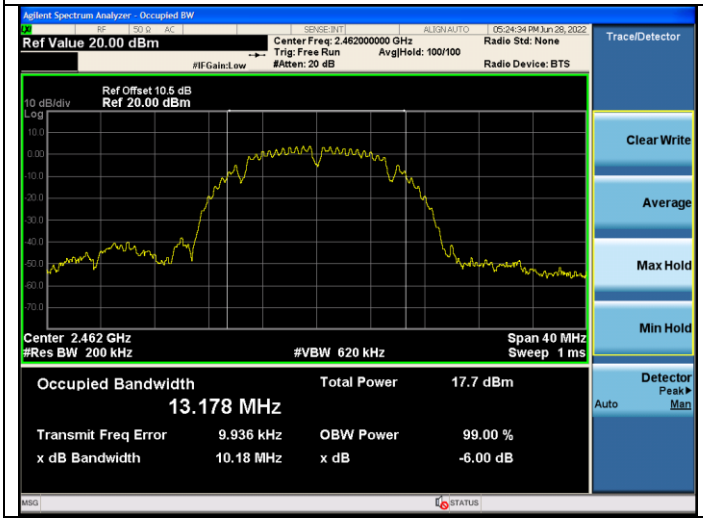
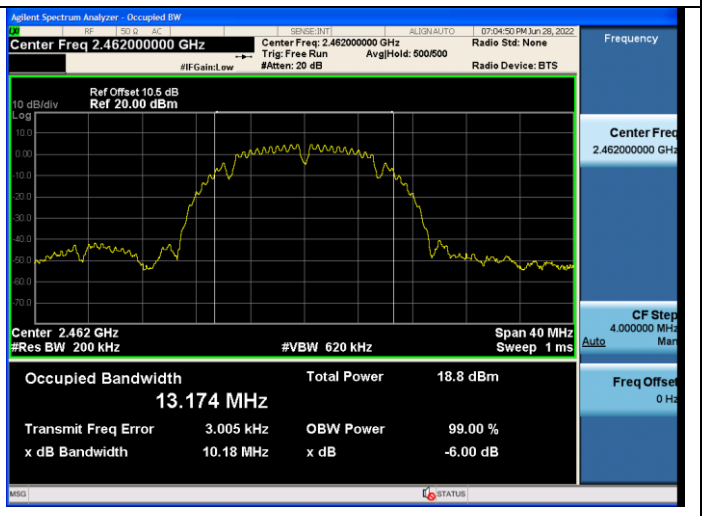
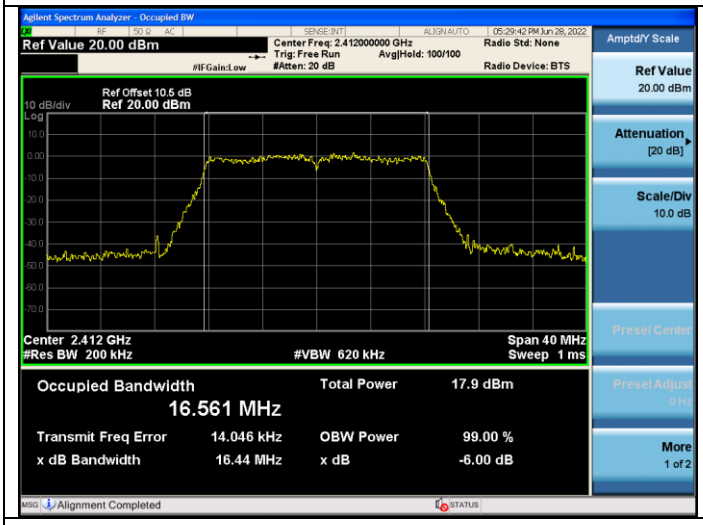
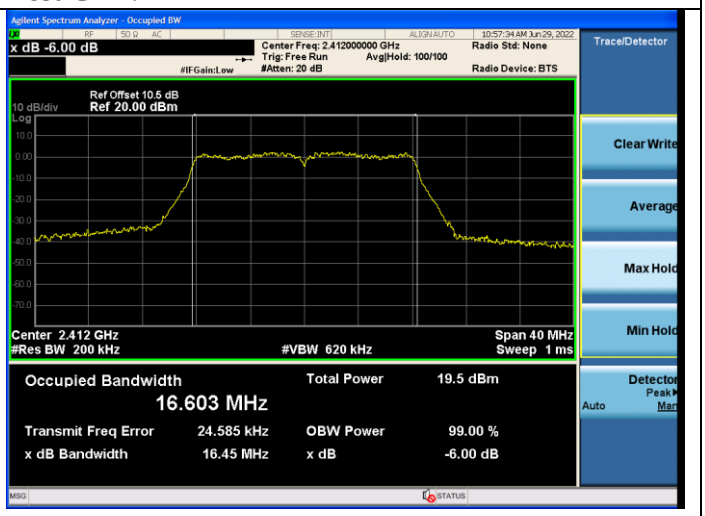
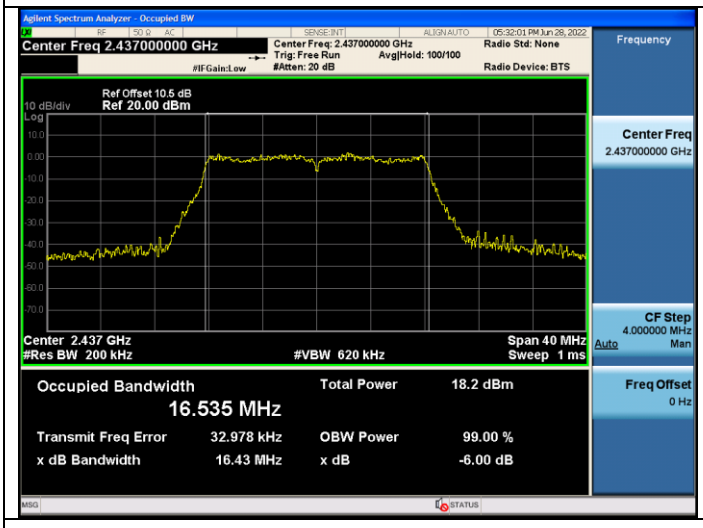
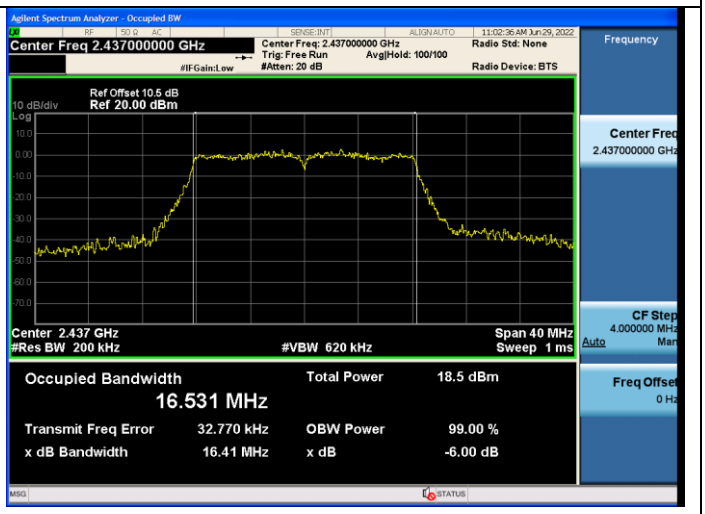
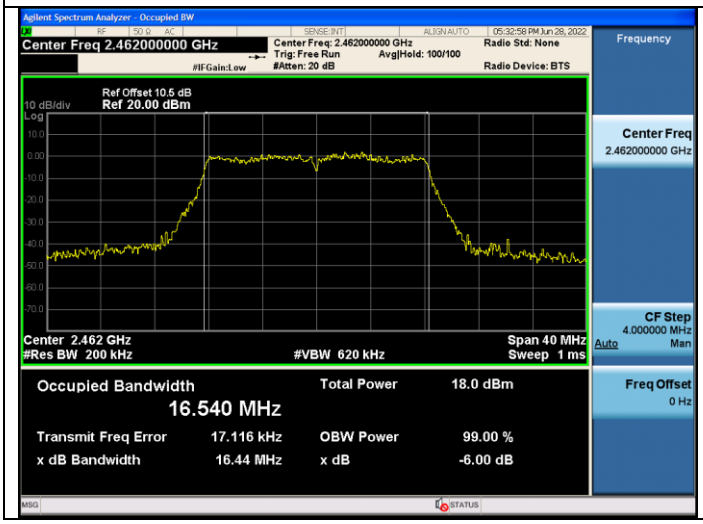
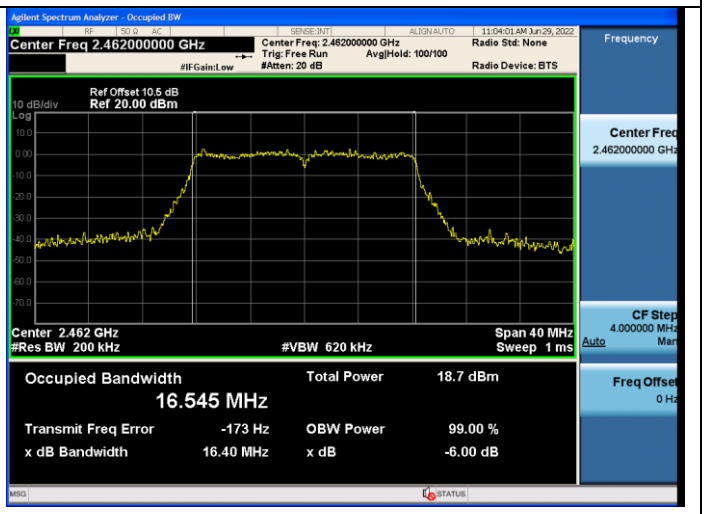
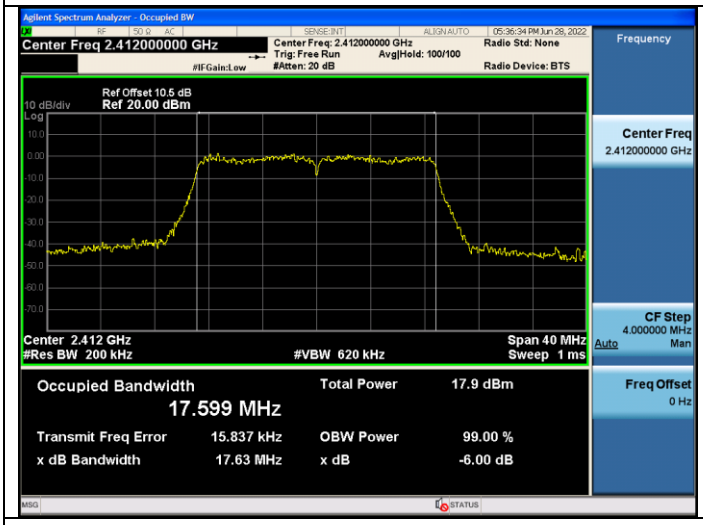
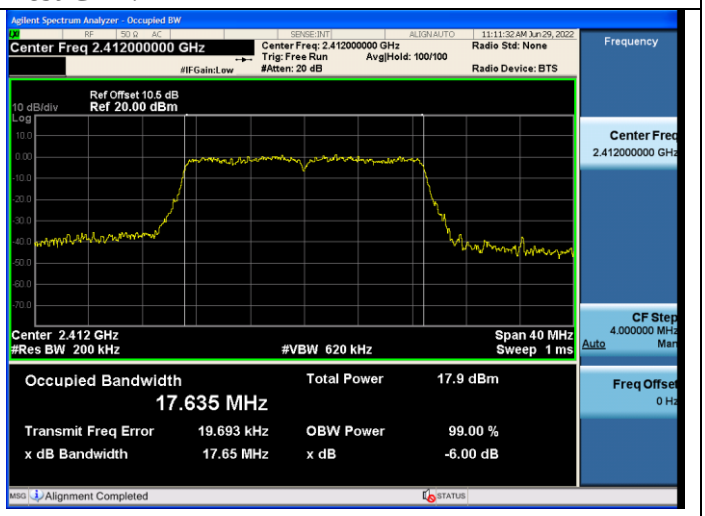
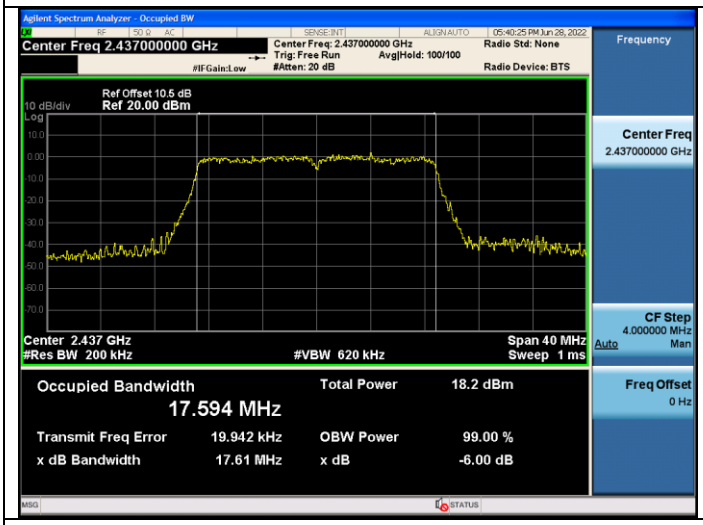
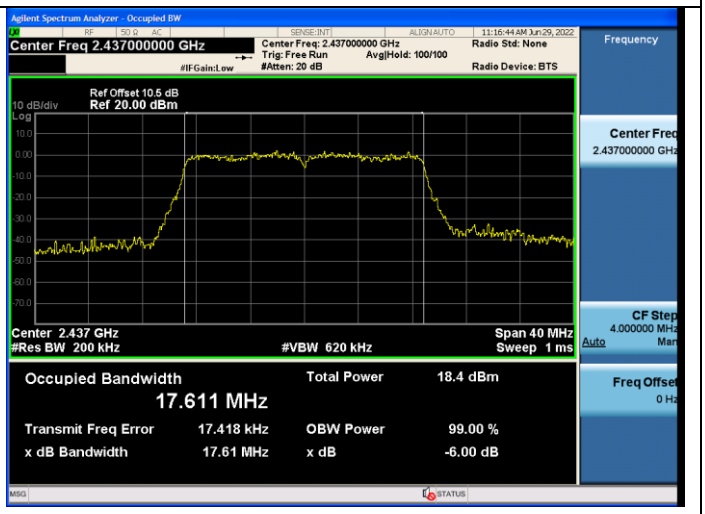
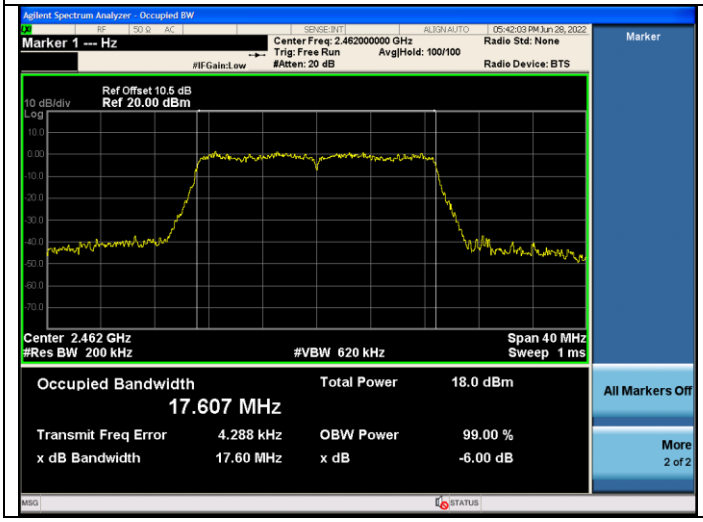
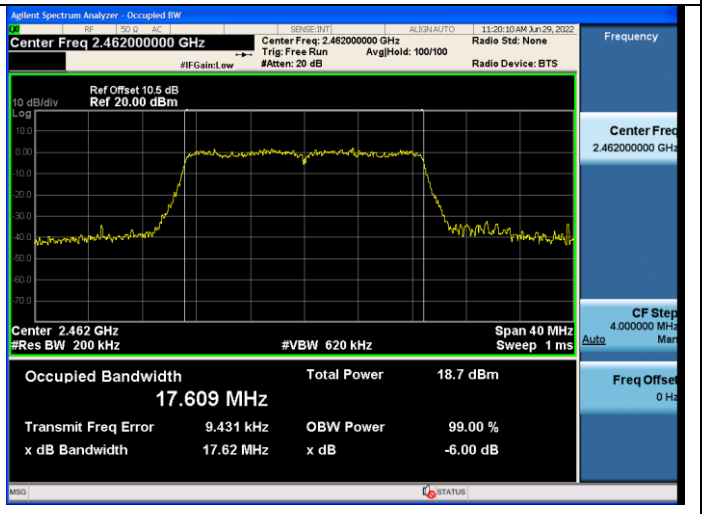
ANT1:	**ANT2:**
Test Mode: IEEE 802.11b Test CH1: 2412MHz	Test Mode: IEEE 802.11b Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11g Test CH1: 2412MHz	Test Mode: IEEE 802.11g Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz	Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
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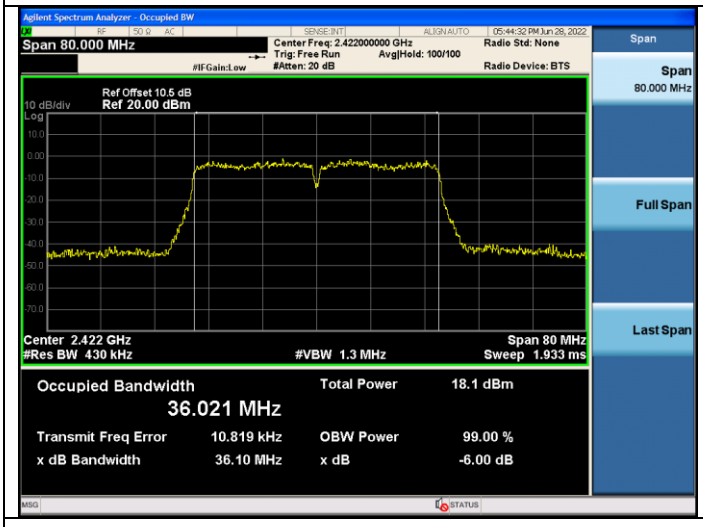
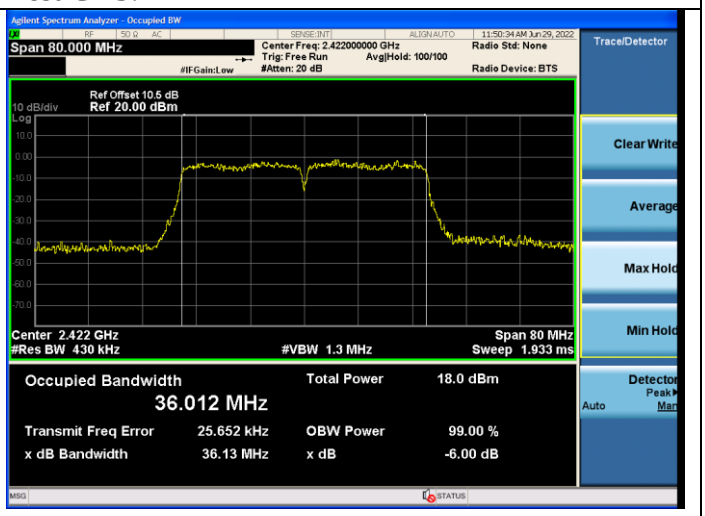
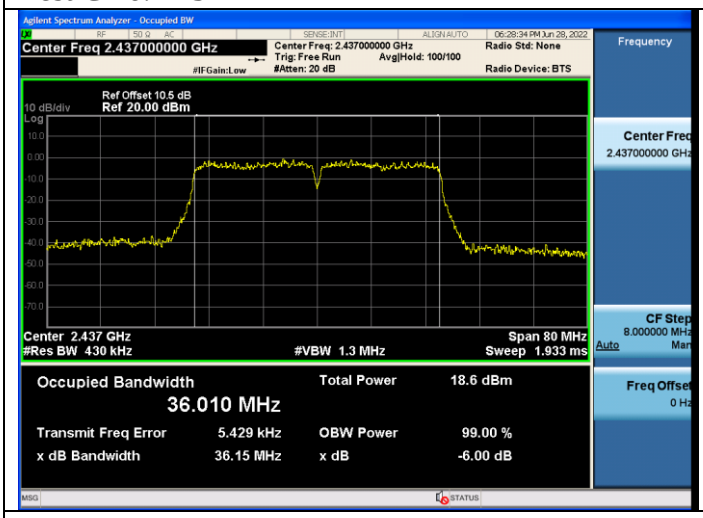
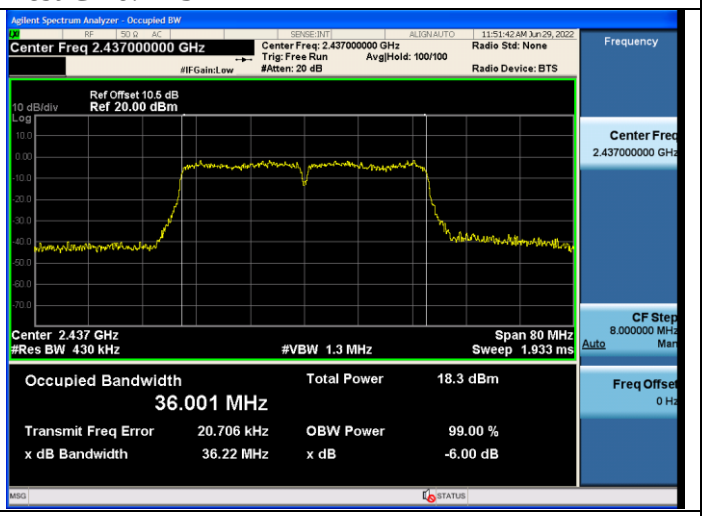
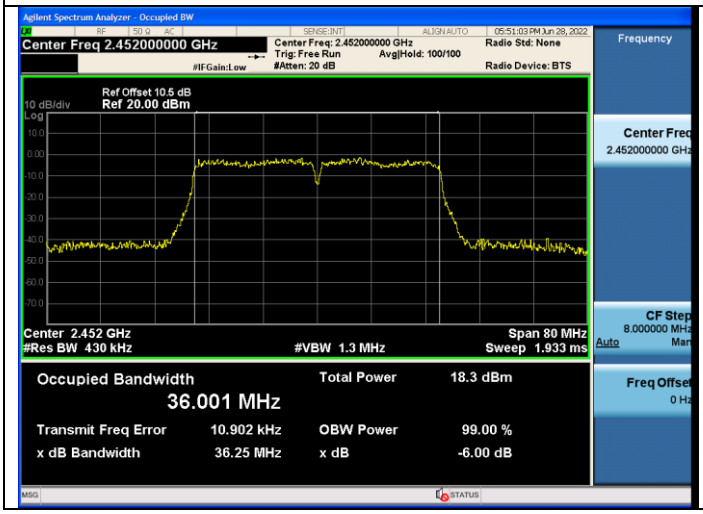
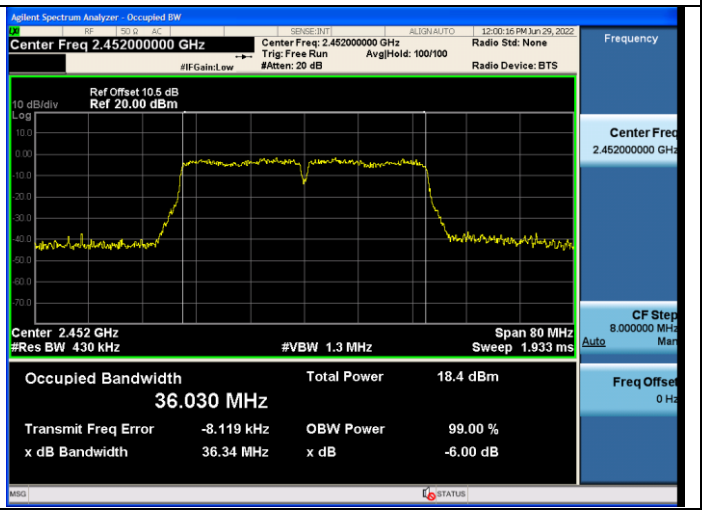
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH9: 2452MHz	Test CH9: 2452MHz
	

8. OUTPUT POWER TEST

8.1.Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), 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. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

8.2.Test Procedure

1, Connected the EUT's antenna port to measure device by 20dB attenuator.

2, Use the test method descried in ANSI C63.10 clause 11.9.2.2.2 Method AVGSA-1.

1) Set span to at least 1.5 times the OBW.
2) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
3) Set VBW ≥ [3 × RBW].
4) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
5) Sweep time = auto.
6) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
7) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
8) Trace average at least 100 traces in power averaging (rms) mode.
9) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

8.3.Test Results

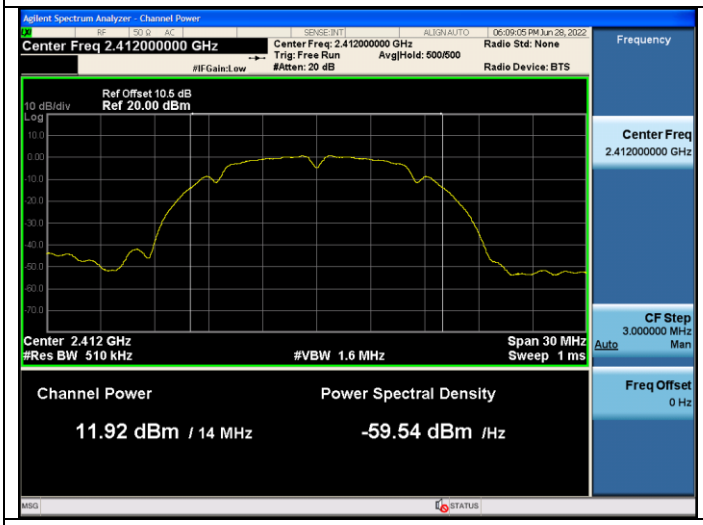
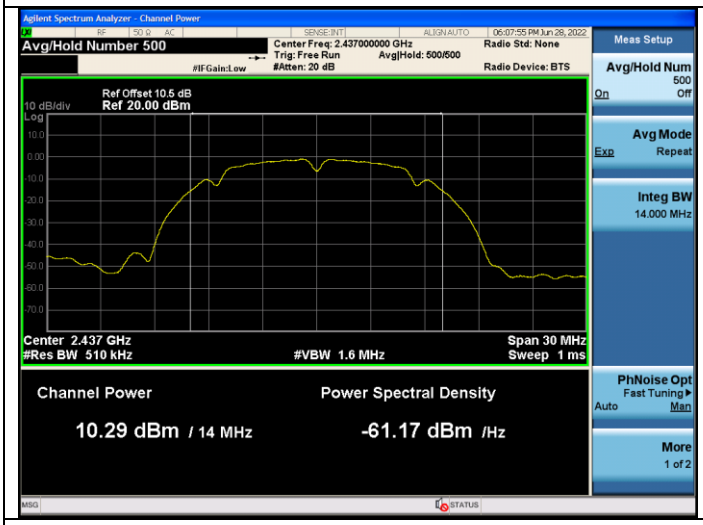
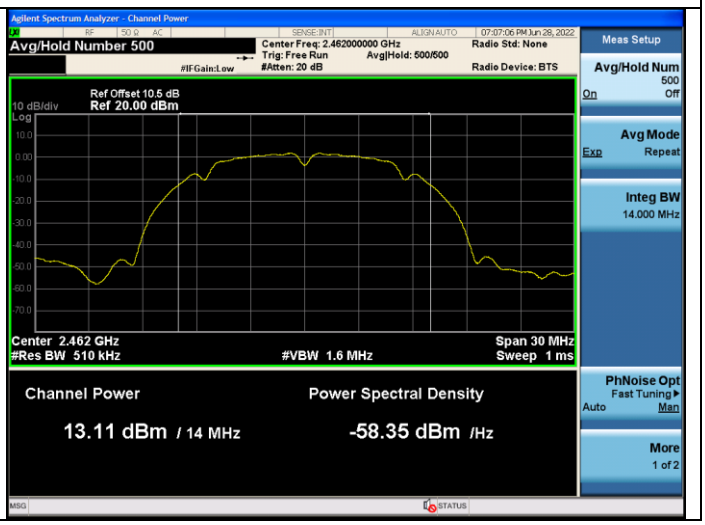
EUT: Truck Infotainment Unit		
M/N: Service Entertainment Module 2.5		
Test date: 2022-6-28~07-13	Pressure: 102.1±1.0 kpa	Humidity: 53.2±3.0%
Tested by: Xinyao	Test site: RF site	Temperature: 22.3±0.6℃

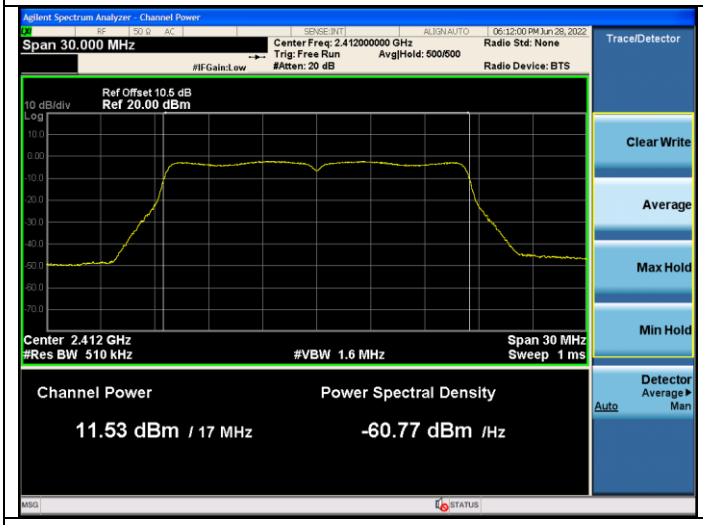
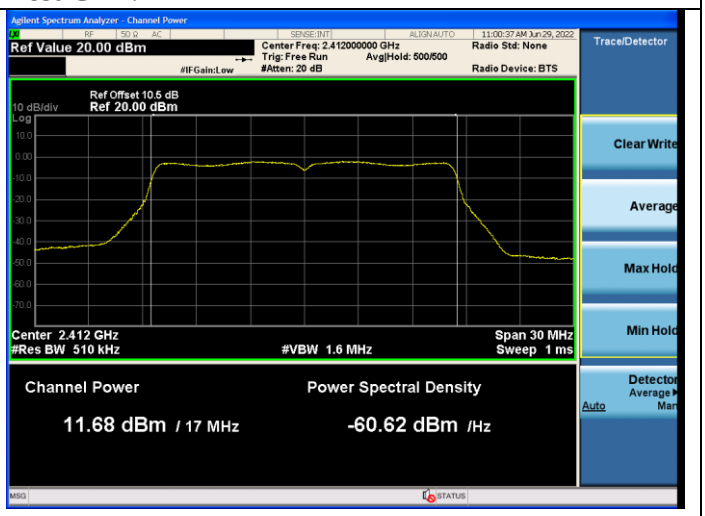
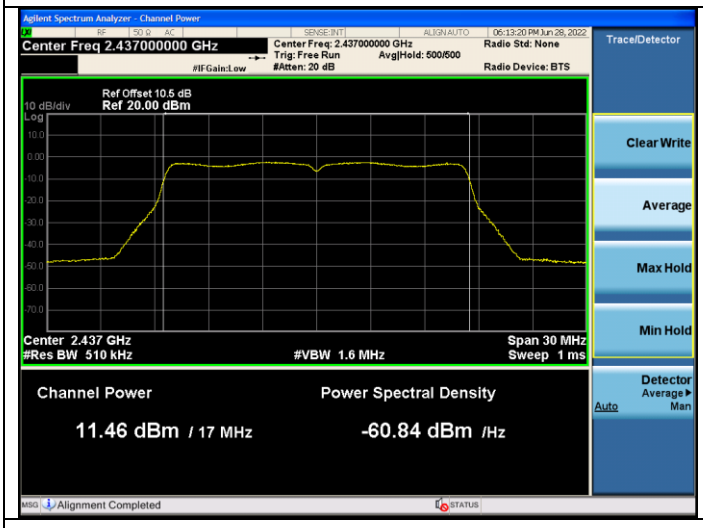
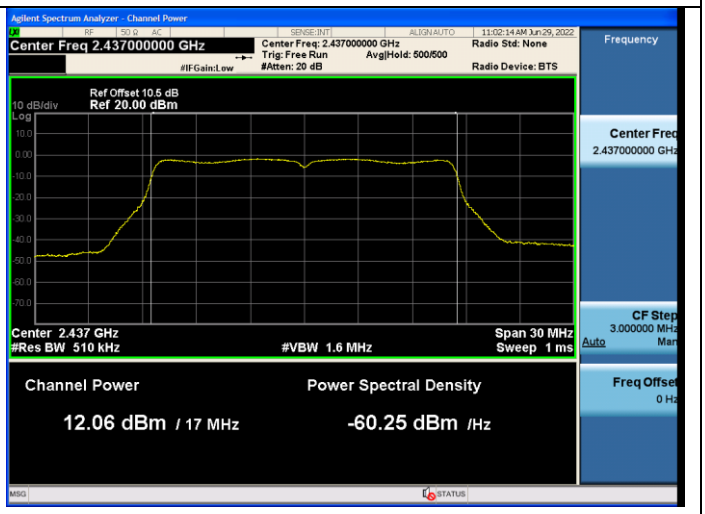
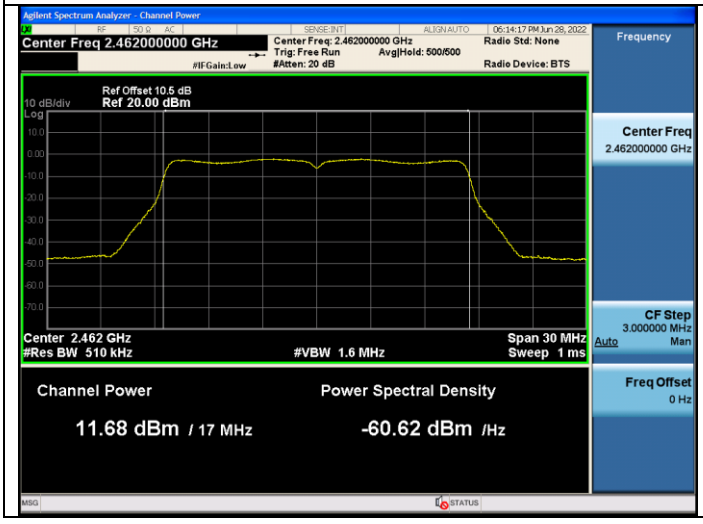
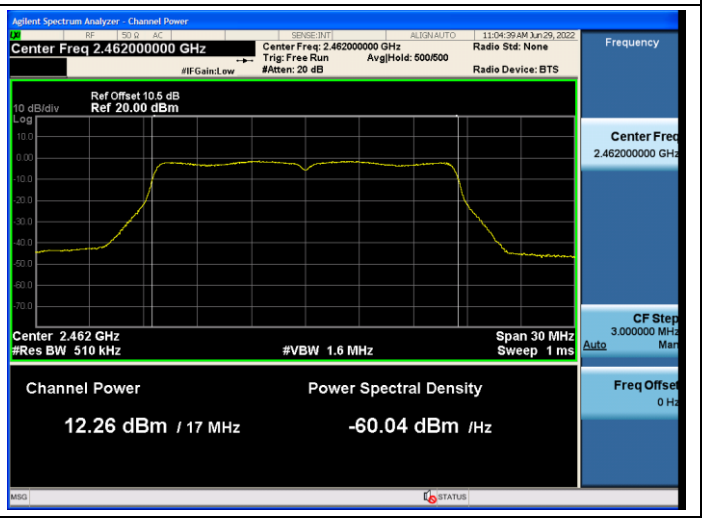
Test Mode	CH	Power Setting		Output Power(dBm)			Limit (dBm)
		ANT1	ANT2	ANT1	ANT2	Total	
11b	CH1	12	12	11.92	12.28	N/A	30
	CH6	12	12	10.29	12.88	N/A	
	CH11	12	12	12.11	13.11	N/A	
11g	CH1	12	12	11.53	11.68	N/A	30
	CH6	12	12	11.46	12.06	N/A	
	CH11	12	12	11.68	12.26	N/A	
11n HT20 (SISO)	CH1	11	11	10.61	10.41	N/A	30
	CH6	11	11	11.04	10.82	N/A	
	CH11	11	11	10.83	11.53	N/A	
11n HT20 (MIMO)	CH1	9	9	9.00	7.88	11.49	30
	CH6	9	9	8.87	8.41	11.66	
	CH11	9	9	9.02	9.03	12.04	
11n HT40 (SISO)	CH3	10	10	9.63	8.88	N/A	30
	CH6	10	10	9.65	9.33	N/A	
	CH9	10	10	9.43	9.66	N/A	
11n HT40 (MIMO)	CH3	9	9	8.46	7.48	11.01	30
	CH6	9	9	8.56	7.96	11.28	
	CH9	9	9	8.54	8.35	11.46	
Conclusion:Pass							

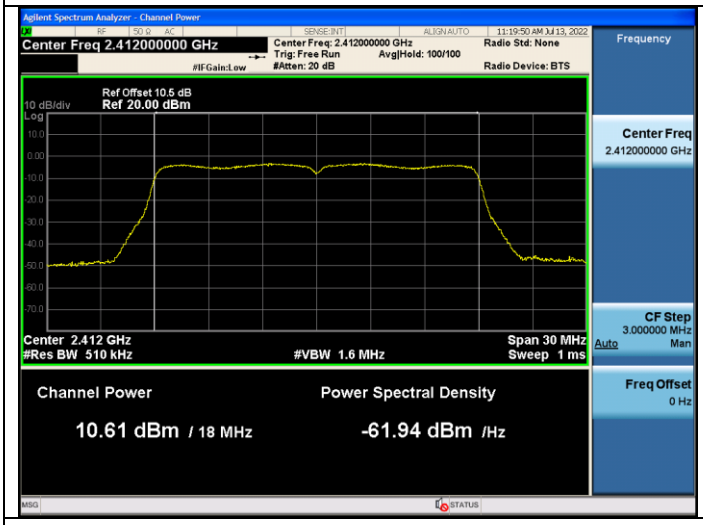
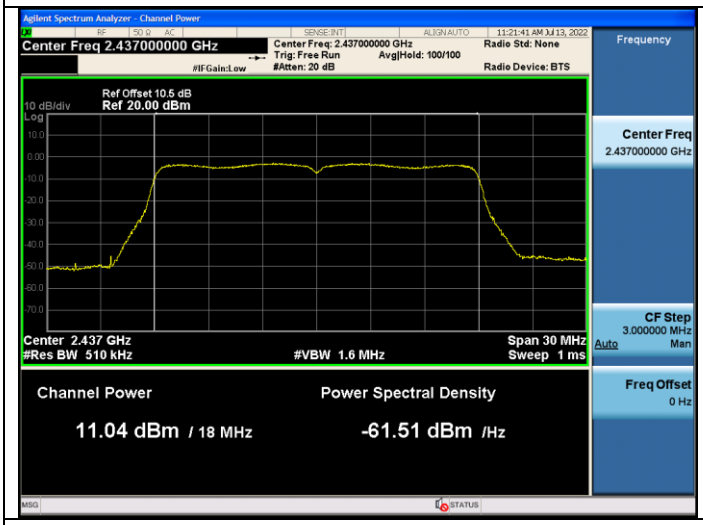
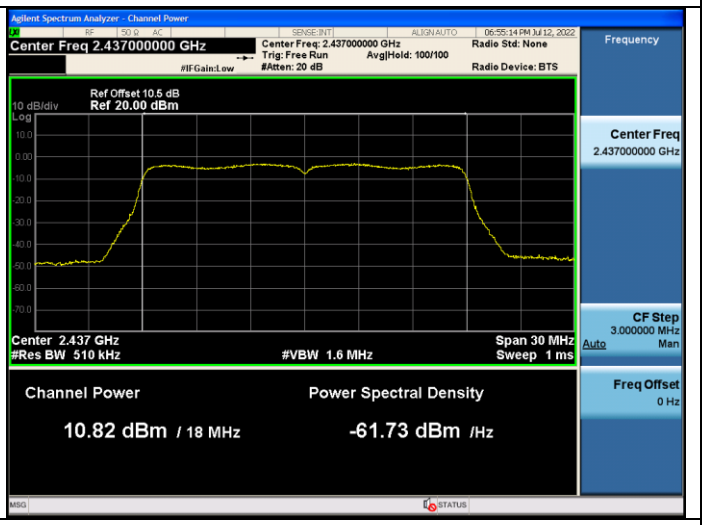
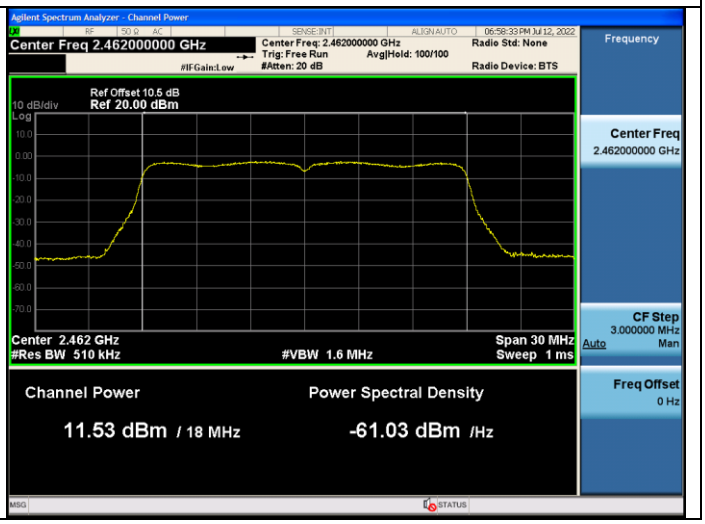
Note: 1. For 11n HT20/11n HT40 Mode

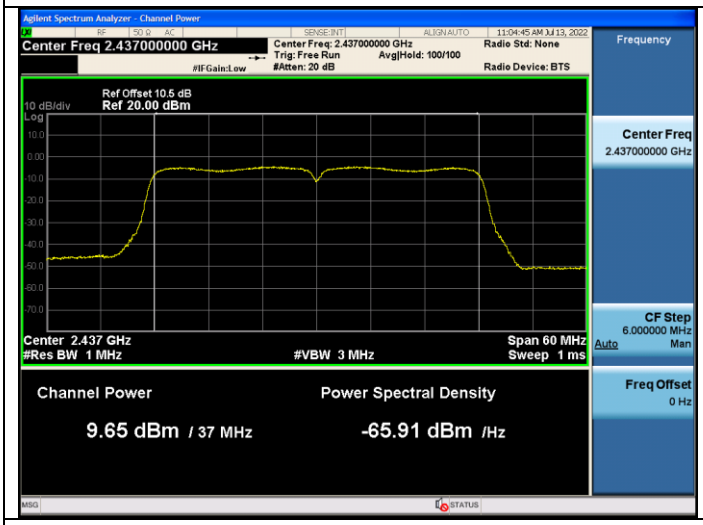
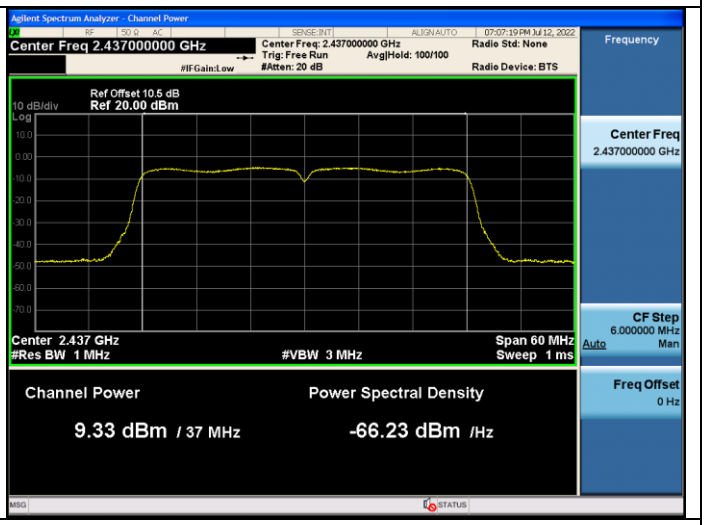
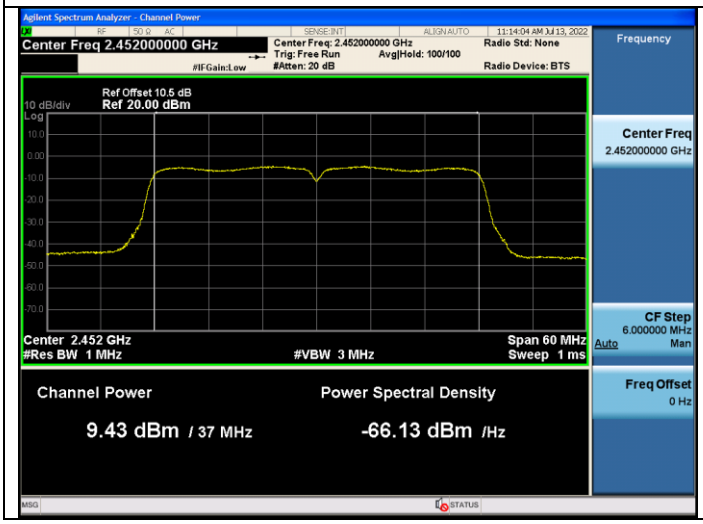
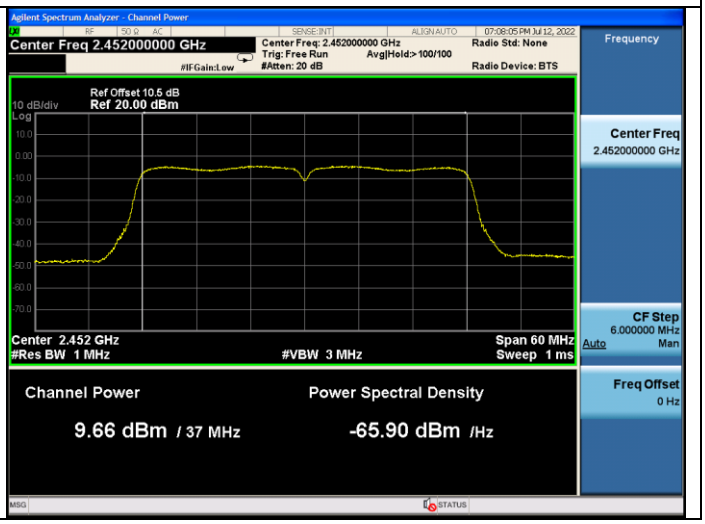
Directional Gain= 10 log($10^{2.23/10}$+$10^{2.23/10}$/2)dBi=2.23dBi < 6dBi.

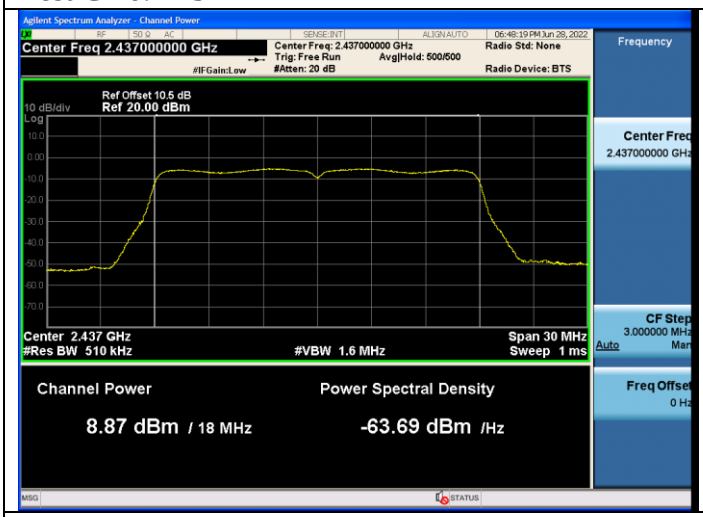
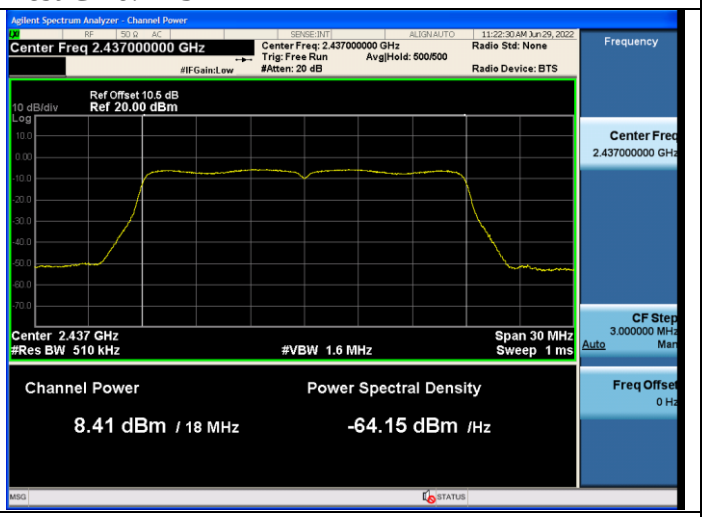
2. The transmit signals are uncorrelated.

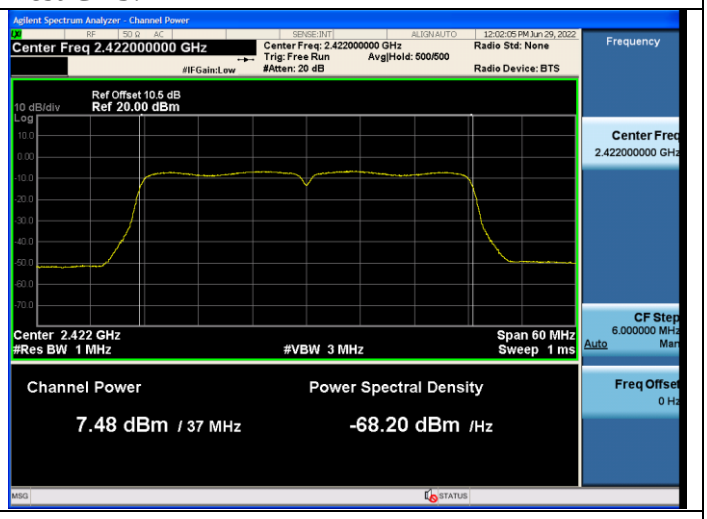
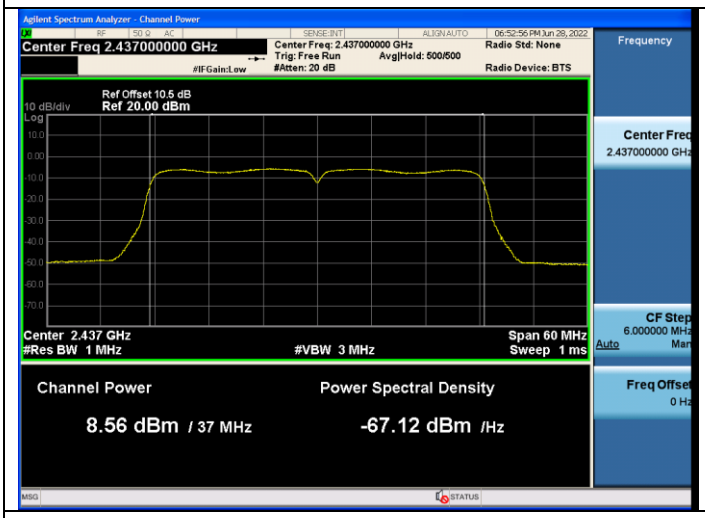
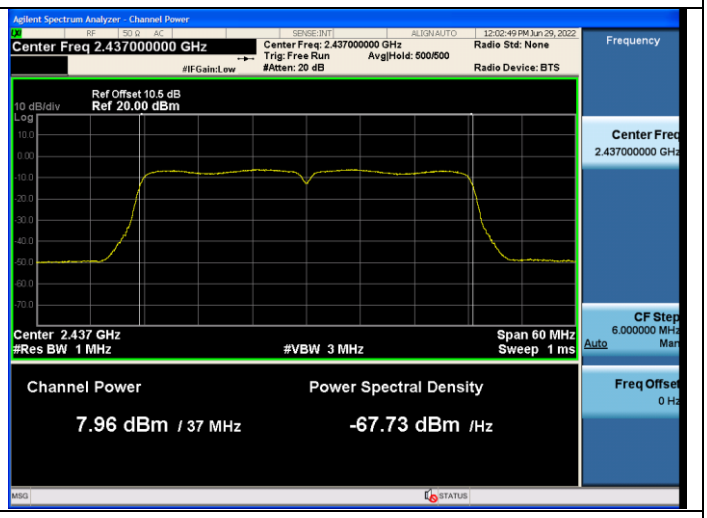
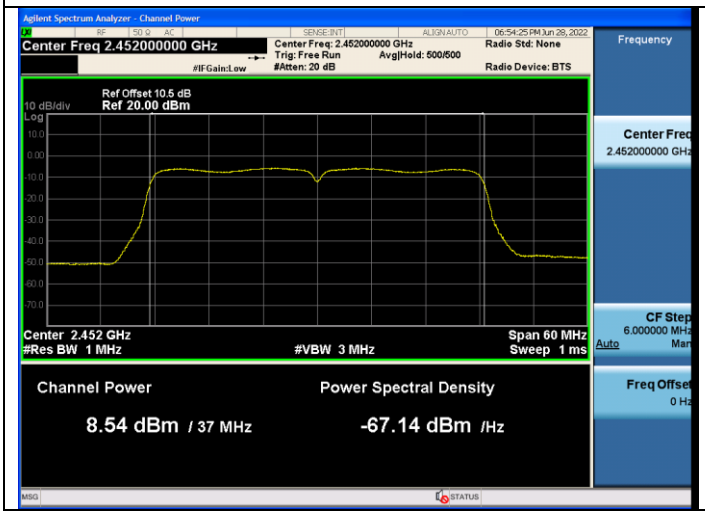
SISO	
ANT1:	**ANT2:**
Test Mode: IEEE 802.11b Test CH1: 2412MHz	Test Mode: IEEE 802.11b Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11g Test CH1: 2412MHz	Test Mode: IEEE 802.11g Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz	Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11n HT40 Test CH3: 2422MHz	Test Mode: IEEE 802.11n HT40 Test CH3: 2422MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH9: 2452MHz	Test CH9: 2452MHz
	

MIMO	
ANT1:	**ANT2:**
Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz	Test Mode: IEEE 802.11n HT20 Test CH1: 2412MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH11: 2462MHz	Test CH11: 2462MHz
	

ANT1:	**ANT2:**
Test Mode: IEEE 802.11n HT40 Test CH3: 2422MHz	Test Mode: IEEE 802.11n HT40 Test CH3: 2422MHz
	
Test CH6: 2437MHz	Test CH6: 2437MHz
	
Test CH9: 2452MHz	Test CH9: 2452MHz
	

9. POWER SPECTRAL DENSITY TEST

9.1.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,22	1 Year
2.	RF Cable	Mini-Circults	CBL-1M-SMSM+	No.4	Oct.11,21	1 Year

9.2.Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

9.3.Test Procedure

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 DTS bandwidth.
c) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.

9.4.Test Results

EUT: Truck Infotainment Unit		
M/N: Service Entertainment Module 2.5		
Test date: 2022-6-29~07-22	Pressure: 102.1 ±1.0 kpa	Humidity: 53.2 ±3.0%
Tested by: Xinyao	Test site: RF site	Temperature: 22.3 ±0.6℃

Test Mode	CH	Power Spectral Density(dBm/3KHz)			Limit (dBm/3KHz)
		ANT1	ANT2	Total	
11b	CH1	-10.982	-10.701	N/A	8
	CH6	-10.904	-10.342	N/A	
	CH11	-11.459	-10.093	N/A	
11g	CH1	-13.698	-14.139	N/A	8
	CH6	-13.850	-13.966	N/A	
	CH11	-13.611	-13.336	N/A	
11n HT20	CH1	-15.830	-16.897	-13.321	8
	CH6	-16.073	-17.223	-13.600	
	CH11	-16.028	-17.389	-13.645	
11n HT40	CH3	-18.877	-19.621	-16.223	8
	CH6	-18.912	-19.718	-16.286	
	CH9	-18.620	-19.046	-15.817	
Conclusion:Pass					

Note: 1. For 11n HT20/11n HT40 Mode

Directional Gain= 10 log($10^{2.23/10}$+$10^{2.23/10}$/2)dBi=2.23dBi < 6dBi.

2. The transmit signals are uncorrelated.