



(30MHz - 1000MHz)

Temperature:	22.7(C)	Relative Humidity:	61%RH
Test Voltage:	AC 120V/60Hz	Polarization :	Horizontal
Test Mode:	Mode 1~16(Mode 16 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9658	43.43	-18.37	25.06	40.00	-14.94	QP
2	59.8588	57.16	-24.30	32.86	40.00	-7.14	QP
3	178.1324	47.14	-19.42	27.72	40.00	-12.28	QP
4	366.8231	40.74	-12.96	27.78	47.00	-19.22	QP
5	556.7744	34.02	-6.63	27.39	47.00	-19.61	QP
6	986.0715	24.58	-0.12	24.46	47.00	-22.54	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit



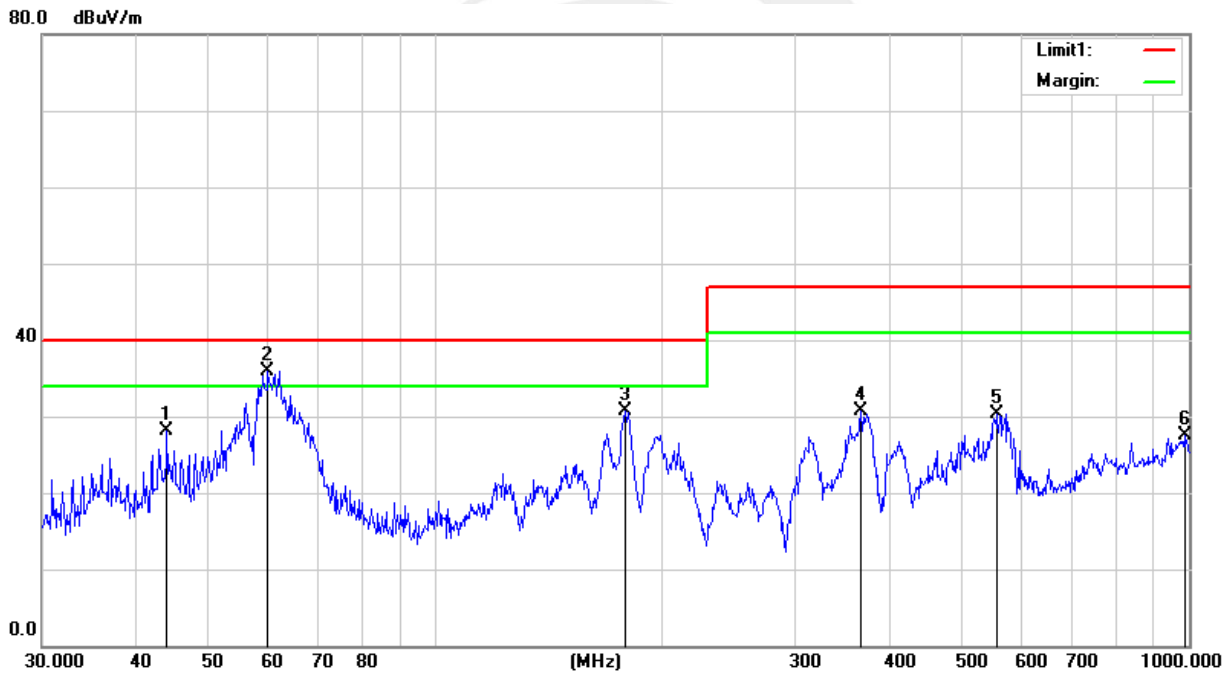


Temperature:	22.7(C)	Relative Humidity:	61%RH
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	Mode 1~16(Mode 16 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9658	46.43	-18.37	28.06	40.00	-11.94	QP
2	59.8588	60.16	-24.30	35.86	40.00	-4.14	QP
3	178.1327	50.14	-19.42	30.72	40.00	-9.28	QP
4	366.8231	43.74	-12.96	30.78	47.00	-16.22	QP
5	556.7744	37.02	-6.63	30.39	47.00	-16.61	QP
6	986.0715	27.58	-0.12	27.46	47.00	-19.54	QP

Remark:.

1. Margin = Result (Result = Reading + Factor) – Limit





(1000MHz-25GHz) Restricted band and Spurious emission Requirements

802.11n(HT20) Ant. A+B

Frequency (MHz)	Meter Reading (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Orrected Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Low Channel (2412 MHz)										
3264.73	61.91	44.70	6.70	28.20	-9.80	52.11	74.00	-21.89	PK	Vertical
3264.73	50.99	44.70	6.70	28.20	-9.80	41.19	54.00	-12.81	AV	Vertical
3264.68	61.79	44.70	6.70	28.20	-9.80	51.99	74.00	-22.01	PK	Horizontal
3264.68	49.90	44.70	6.70	28.20	-9.80	40.10	54.00	-13.90	AV	Horizontal
4824.52	58.56	44.20	9.04	31.60	-3.56	55.00	74.00	-19.00	PK	Vertical
4824.52	50.56	44.20	9.04	31.60	-3.56	47.00	54.00	-7.00	AV	Vertical
4824.51	59.27	44.20	9.04	31.60	-3.56	55.71	74.00	-18.29	PK	Horizontal
4824.51	49.83	44.20	9.04	31.60	-3.56	46.27	54.00	-7.73	AV	Horizontal
5359.87	49.24	44.20	9.86	32.00	-2.34	46.90	74.00	-27.10	PK	Vertical
5359.87	39.89	44.20	9.86	32.00	-2.34	37.55	54.00	-16.45	AV	Vertical
5359.72	48.45	44.20	9.86	32.00	-2.34	46.11	74.00	-27.89	PK	Horizontal
5359.72	38.24	44.20	9.86	32.00	-2.34	35.90	54.00	-18.10	AV	Horizontal
7235.78	54.19	43.50	11.40	35.50	3.40	57.59	74.00	-16.41	PK	Vertical
7235.78	44.71	43.50	11.40	35.50	3.40	48.11	54.00	-5.89	AV	Vertical
7235.69	53.67	43.50	11.40	35.50	3.40	57.07	74.00	-16.93	PK	Horizontal
7235.69	43.97	43.50	11.40	35.50	3.40	47.37	54.00	-6.63	AV	Horizontal
Middle Channel (2437 MHz)										
3264.73	61.34	44.70	6.70	28.20	-9.80	51.54	74.00	-22.46	PK	Vertical
3264.73	51.72	44.70	6.70	28.20	-9.80	41.92	54.00	-12.08	AV	Vertical
3264.65	61.16	44.70	6.70	28.20	-9.80	51.36	74.00	-22.64	PK	Horizontal
3264.65	50.89	44.70	6.70	28.20	-9.80	41.09	54.00	-12.91	AV	Horizontal
4874.44	58.92	44.20	9.04	31.60	-3.56	55.36	74.00	-18.64	PK	Vertical
4874.44	50.34	44.20	9.04	31.60	-3.56	46.78	54.00	-7.22	AV	Vertical
4874.34	59.14	44.20	9.04	31.60	-3.56	55.58	74.00	-18.42	PK	Horizontal
4874.34	49.61	44.20	9.04	31.60	-3.56	46.05	54.00	-7.95	AV	Horizontal
5359.63	48.84	44.20	9.86	32.00	-2.34	46.50	74.00	-27.50	PK	Vertical
5359.63	39.97	44.20	9.86	32.00	-2.34	37.63	54.00	-16.37	AV	Vertical
5359.87	48.49	44.20	9.86	32.00	-2.34	46.15	74.00	-27.85	PK	Horizontal
5359.87	38.55	44.20	9.86	32.00	-2.34	36.21	54.00	-17.79	AV	Horizontal
7310.91	53.84	43.50	11.40	35.50	3.40	57.24	74.00	-16.76	PK	Vertical
7310.91	43.68	43.50	11.40	35.50	3.40	47.08	54.00	-6.92	AV	Vertical
7310.91	54.33	43.50	11.40	35.50	3.40	57.73	74.00	-16.27	PK	Horizontal
7310.91	44.11	43.50	11.40	35.50	3.40	47.51	54.00	-6.49	AV	Horizontal



High Channel (2462 MHz)										
3264.85	61.06	44.70	6.70	28.20	-9.80	51.26	74.00	-22.74	PK	Vertical
3264.85	50.69	44.70	6.70	28.20	-9.80	40.89	54.00	-13.11	AV	Vertical
3264.57	61.29	44.70	6.70	28.20	-9.80	51.49	74.00	-22.51	PK	Horizontal
3264.57	51.05	44.70	6.70	28.20	-9.80	41.25	54.00	-12.75	AV	Horizontal
4924.30	58.23	44.20	9.04	31.60	-3.56	54.67	74.00	-19.33	PK	Vertical
4924.30	50.11	44.20	9.04	31.60	-3.56	46.55	54.00	-7.45	AV	Vertical
4924.36	59.56	44.20	9.04	31.60	-3.56	56.00	74.00	-18.00	PK	Horizontal
4924.36	49.52	44.20	9.04	31.60	-3.56	45.96	54.00	-8.04	AV	Horizontal
5359.73	49.06	44.20	9.86	32.00	-2.34	46.72	74.00	-27.28	PK	Vertical
5359.73	39.63	44.20	9.86	32.00	-2.34	37.29	54.00	-16.71	AV	Vertical
5359.77	48.25	44.20	9.86	32.00	-2.34	45.91	74.00	-28.09	PK	Horizontal
5359.77	39.26	44.20	9.86	32.00	-2.34	36.92	54.00	-17.08	AV	Horizontal
7385.93	54.40	43.50	11.40	35.50	3.40	57.80	74.00	-16.20	PK	Vertical
7385.93	43.89	43.50	11.40	35.50	3.40	47.29	54.00	-6.71	AV	Vertical
7385.82	54.09	43.50	11.40	35.50	3.40	57.49	74.00	-16.51	PK	Horizontal
7385.82	44.64	43.50	11.40	35.50	3.40	48.04	54.00	-5.96	AV	Horizontal

Remark:

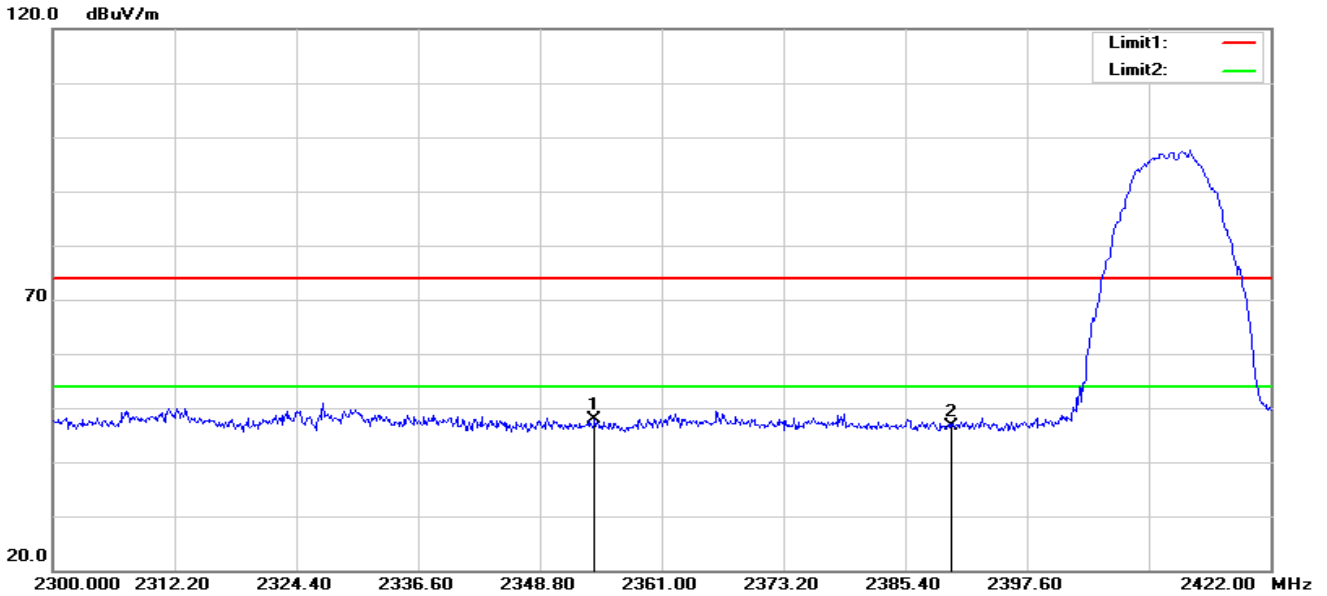
- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Scan with 802.11b, 802.11g, 802.11n (HT-20), 802.11n (HT-40) all have been tested the antenna A, antenna B and antenna A+B, the worst case is 802.11n(HT20).
Emission Level = Reading + Factor
Margin = Limit - Emission Level
- The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



3.2.6 TEST RESULTS(Restricted band Requirements)

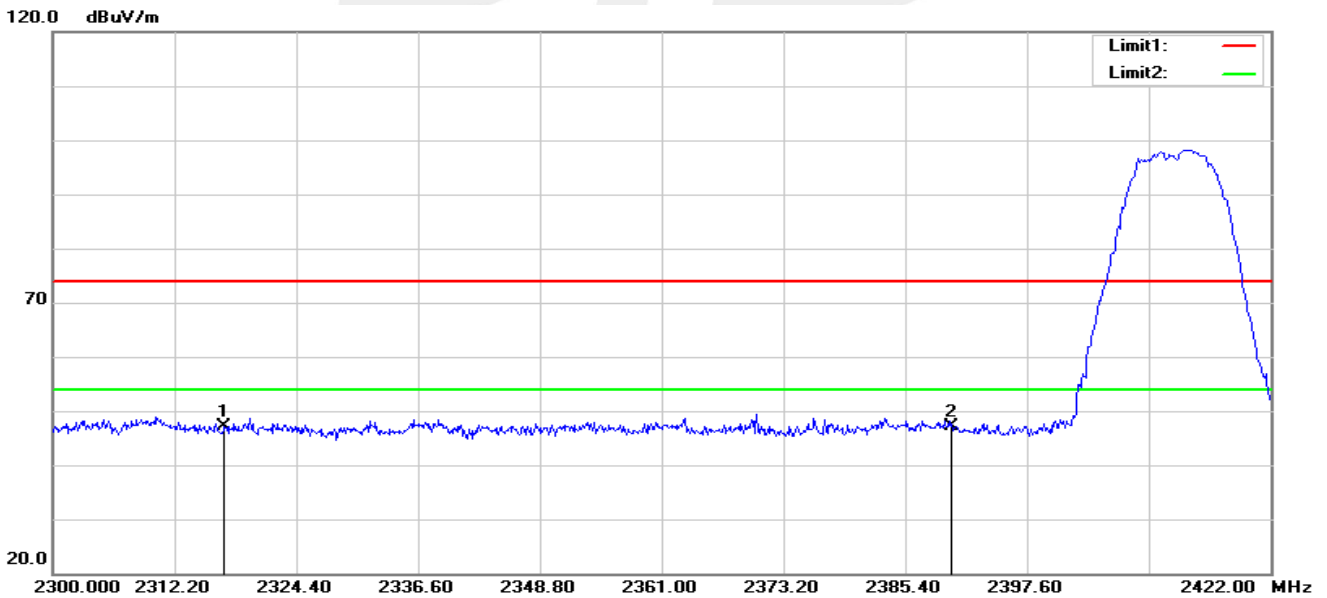
802.11b-Low

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2354.290	58.76	-10.99	47.77	74.00	-26.23	peak
2	2390.000	57.26	-10.75	46.51	74.00	-27.49	peak

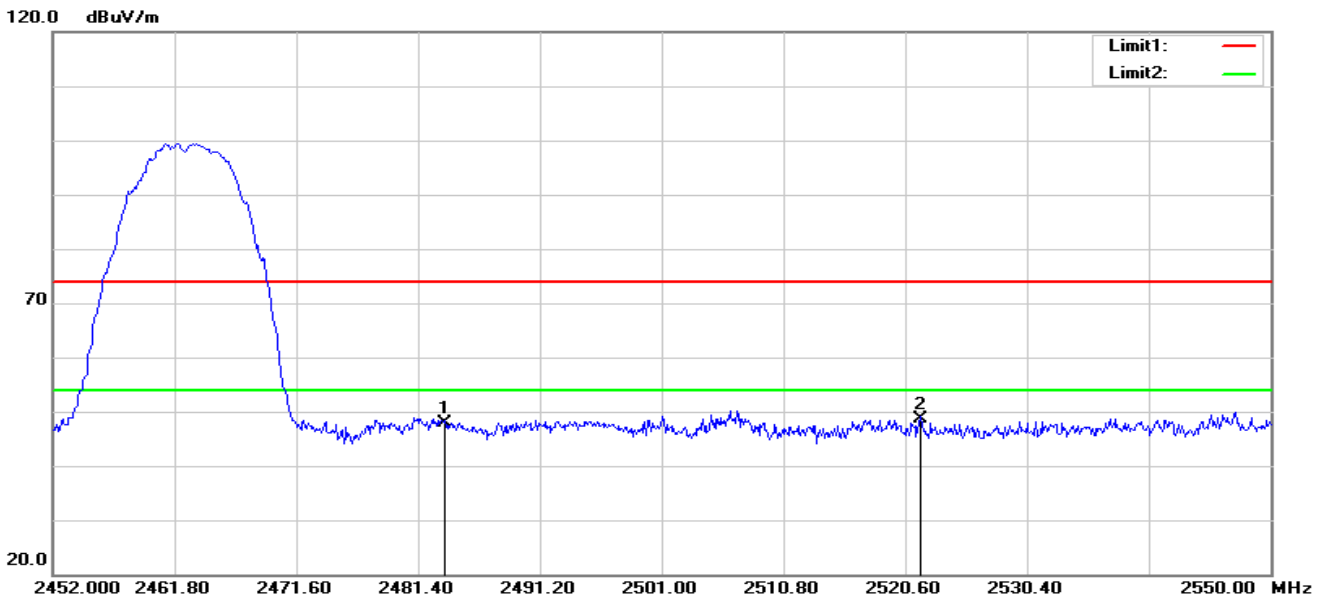
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2317.202	58.42	-11.22	47.20	74.00	-26.80	peak
2	2390.000	57.76	-10.75	47.01	74.00	-26.99	peak

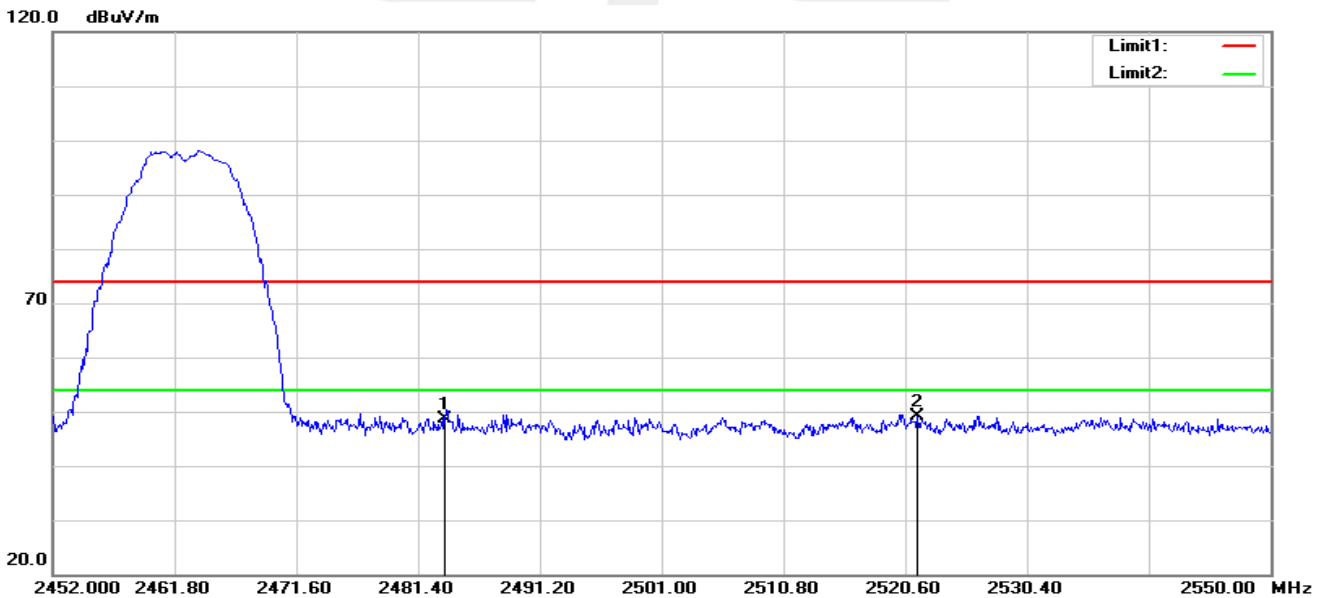


802.11b-High
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	58.08	-10.29	47.79	74.00	-26.21	peak
2	2521.874	58.73	-10.15	48.58	74.00	-25.42	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	58.87	-10.29	48.58	74.00	-25.42	peak
2	2521.580	59.39	-10.15	49.24	74.00	-24.76	peak

Note: 802.11b, 802.11g, 802.11n (HT-20), 802.11n (HT-40), all have been tested the antenna A, antenna B and antenna A+B, the worst case is 802.11b.

4.CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 LIMIT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

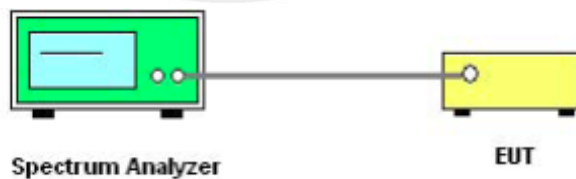
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2412 MHz Upper Band Edge: 2462to 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Adapter, is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

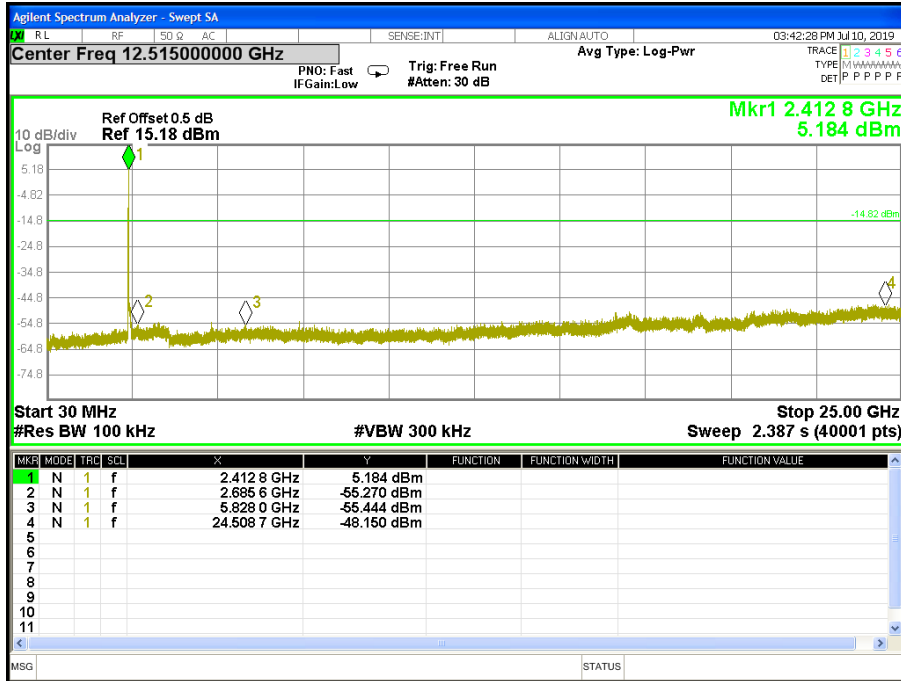


4.6 TEST RESULTS

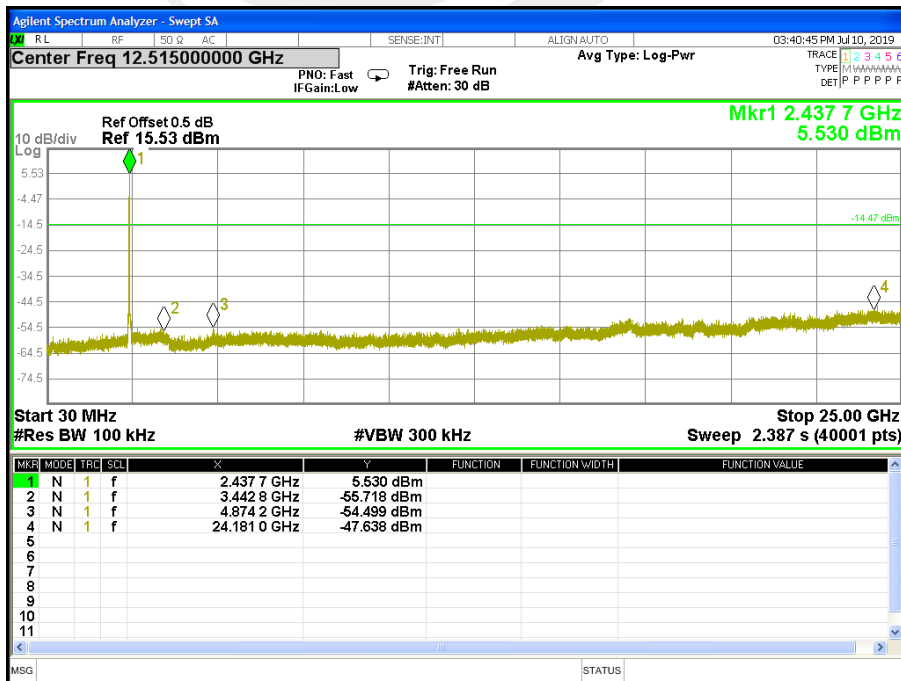
Note: Antenna A Power > Antenna B Power, Both antenna A and B have been test, Only show the worst data of Antenna A

Temperature:	25°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX b Mode /CH01, CH06, CH11

Antenna A
CH 01

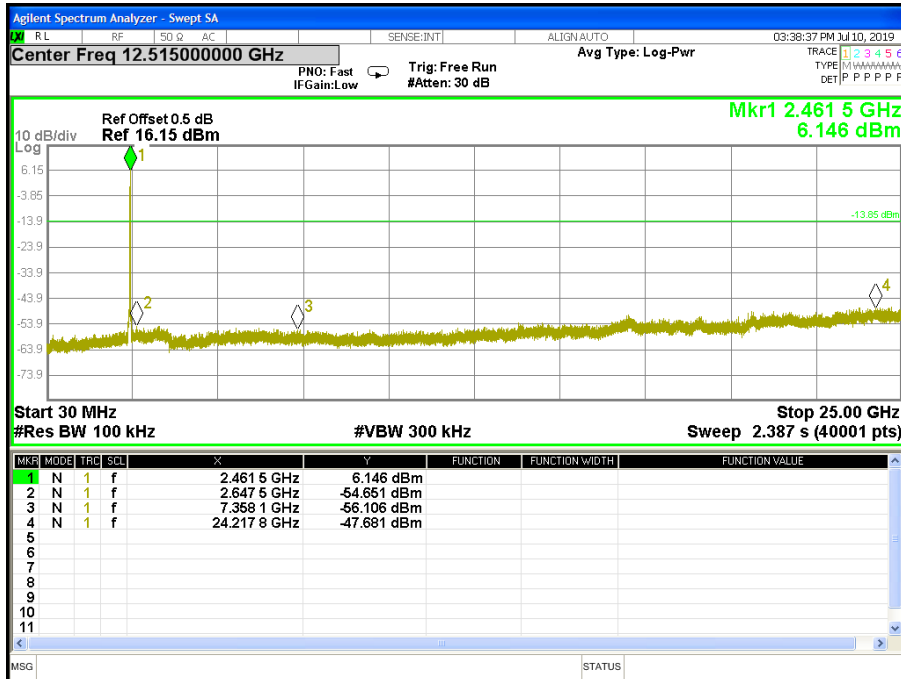


CH 06





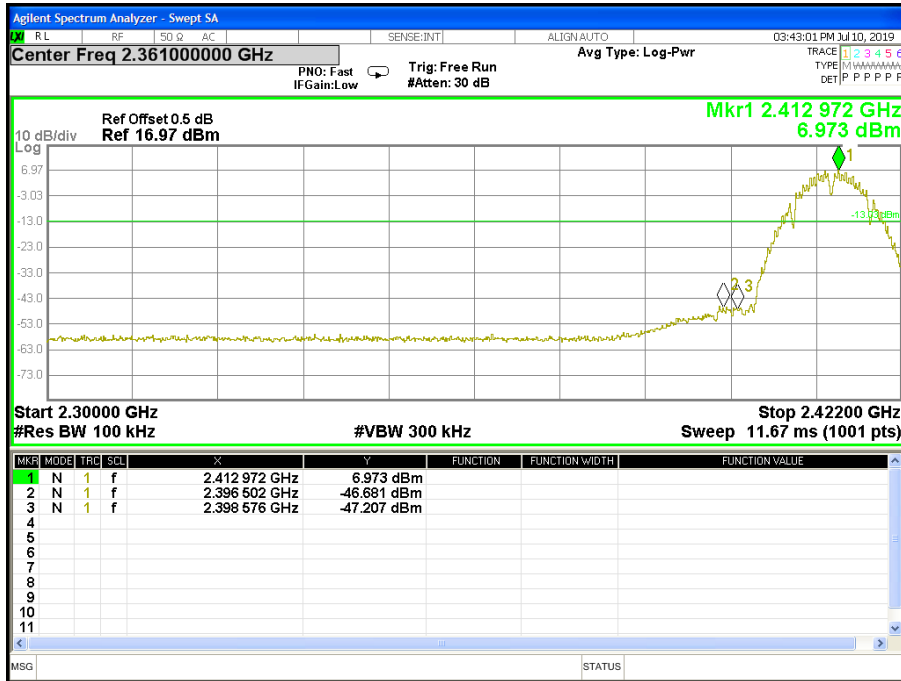
CH 11



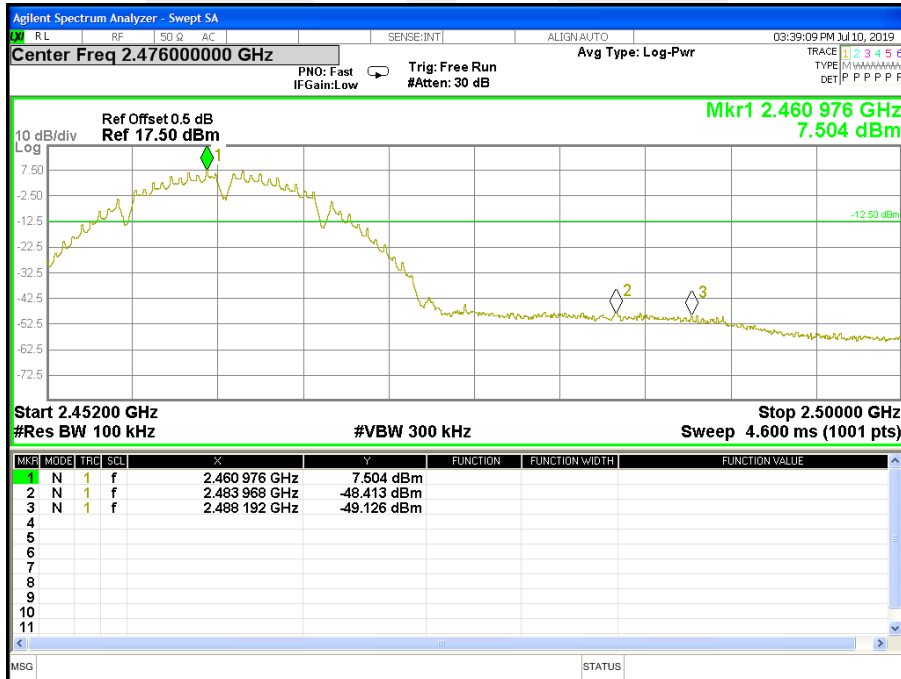


Band edge

CH 01



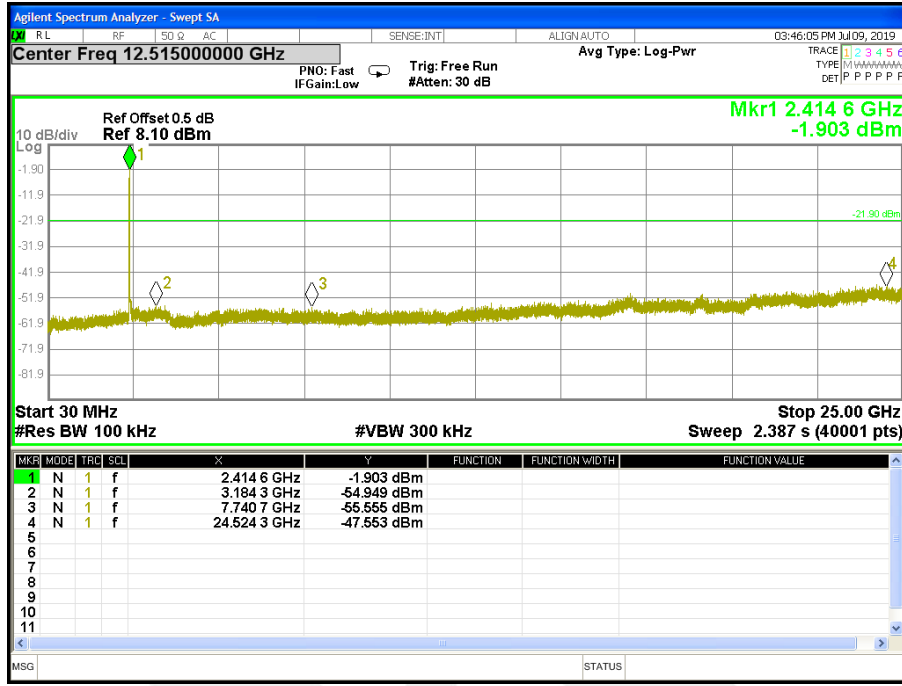
CH 11



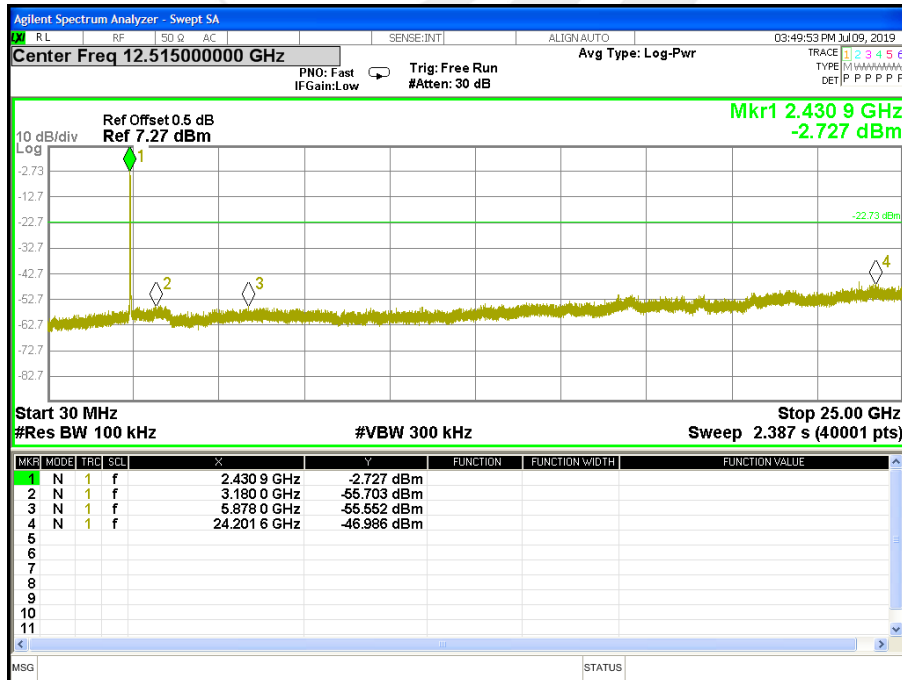


Temperature:	25°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX g Mode /CH01, CH06, CH11

Antenna A
CH 01

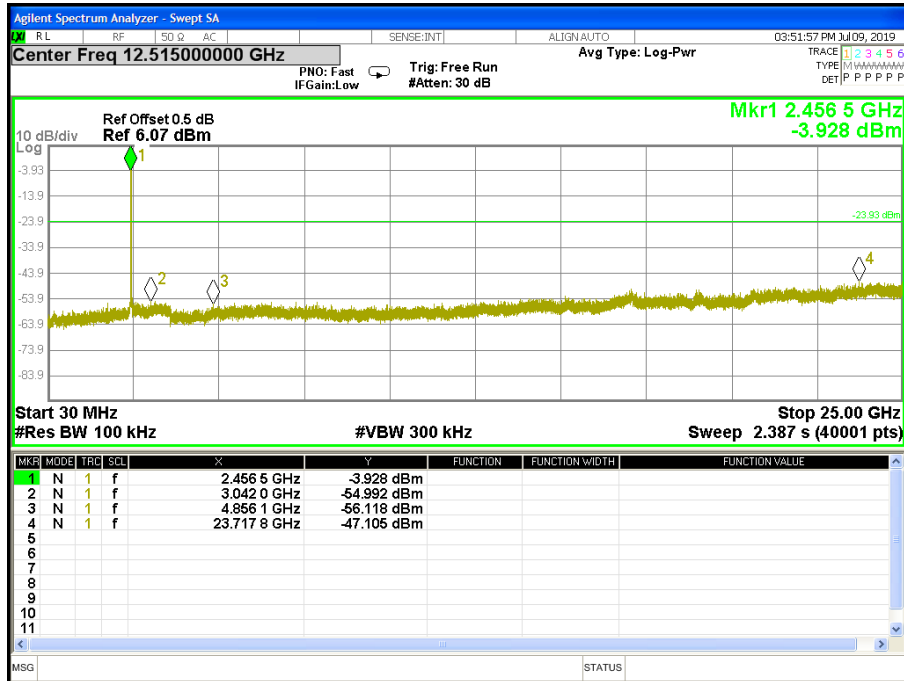


CH06





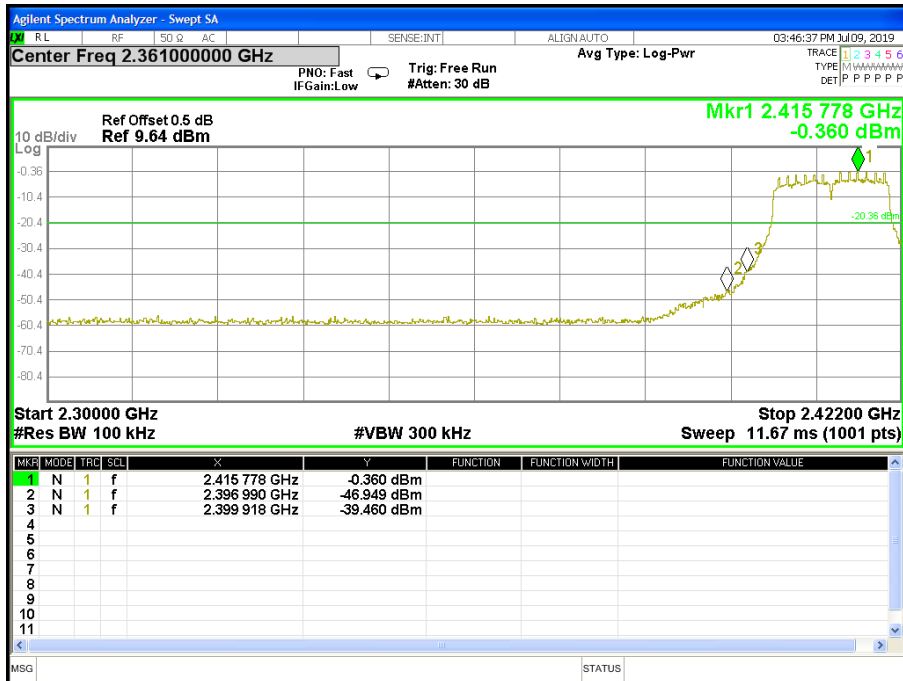
CH 11



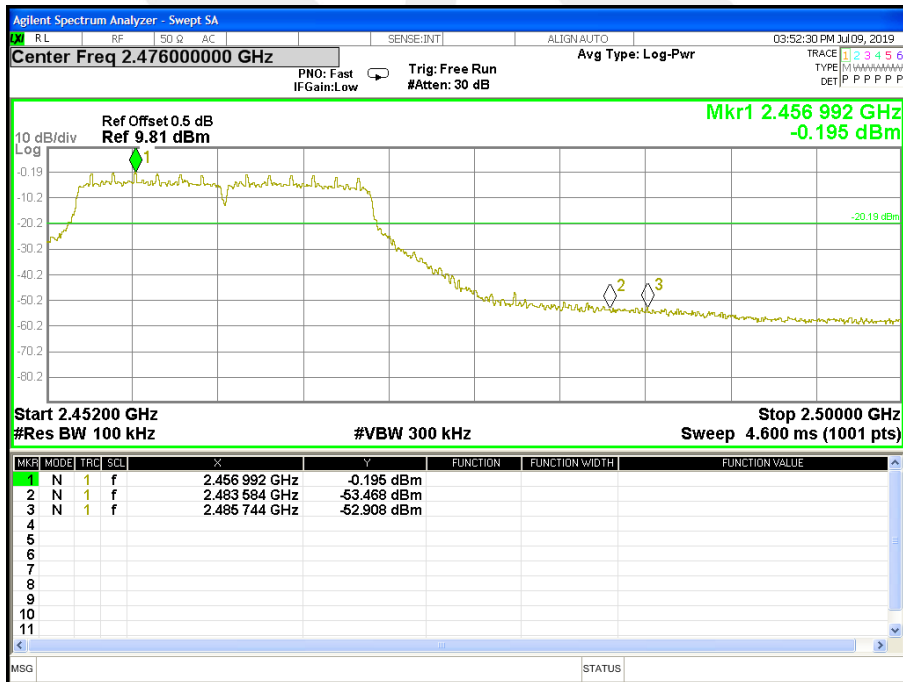


Band edge

CH 01



CH11

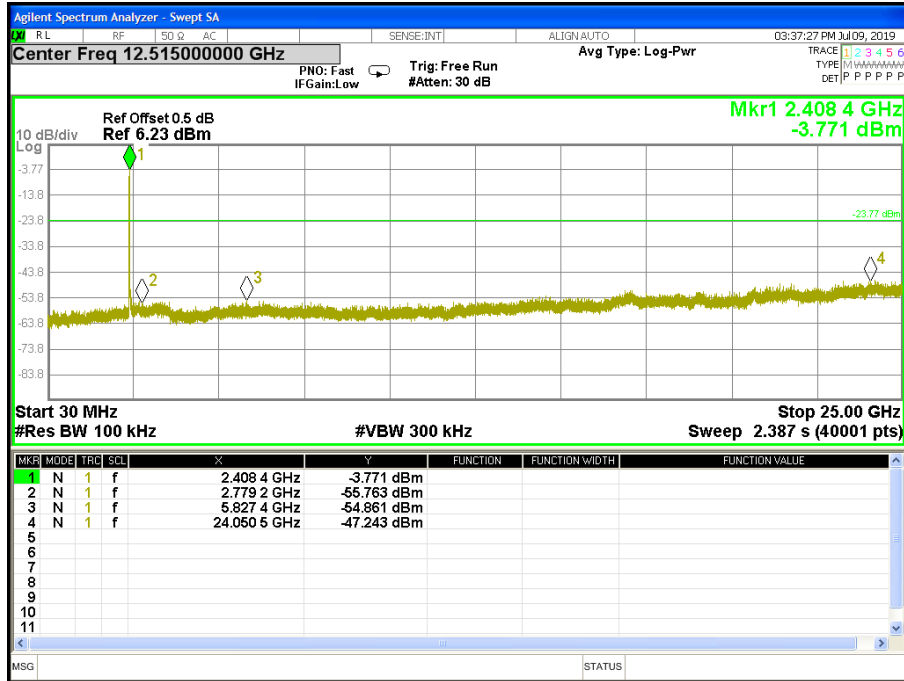




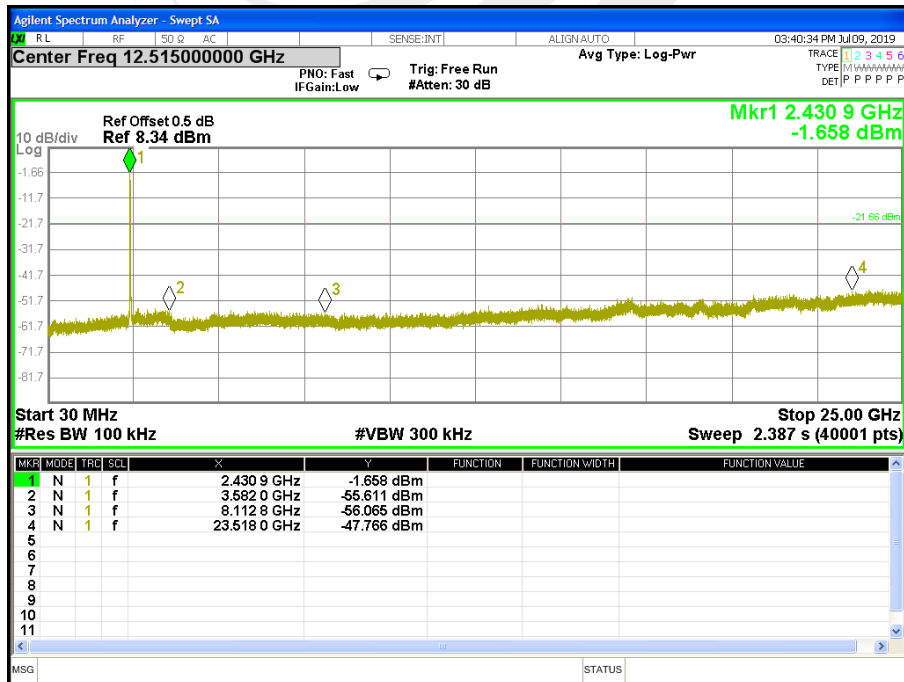
Temperature:	25°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

Antenna A

CH 01

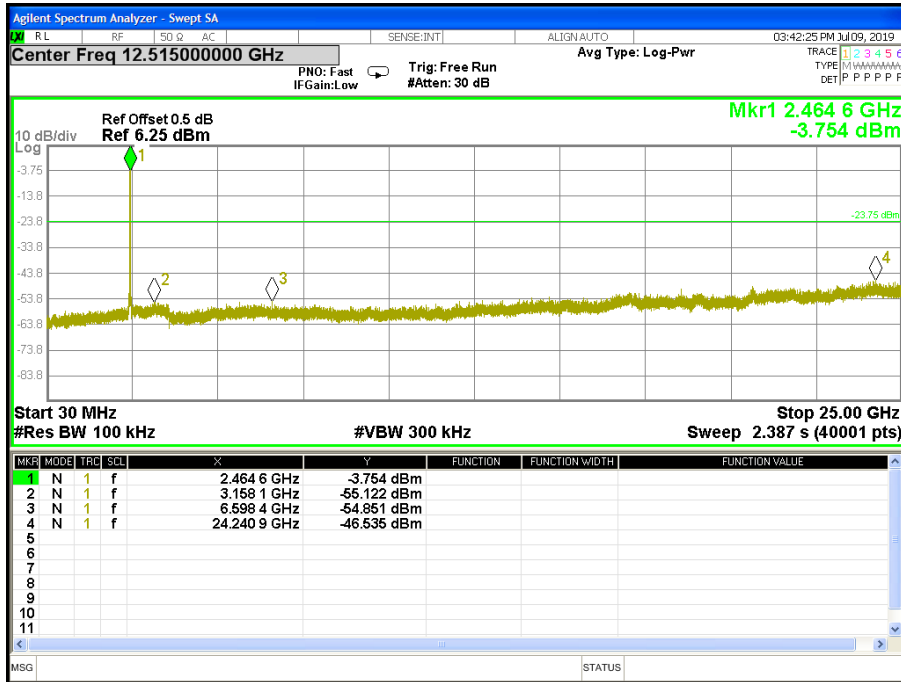


CH 06





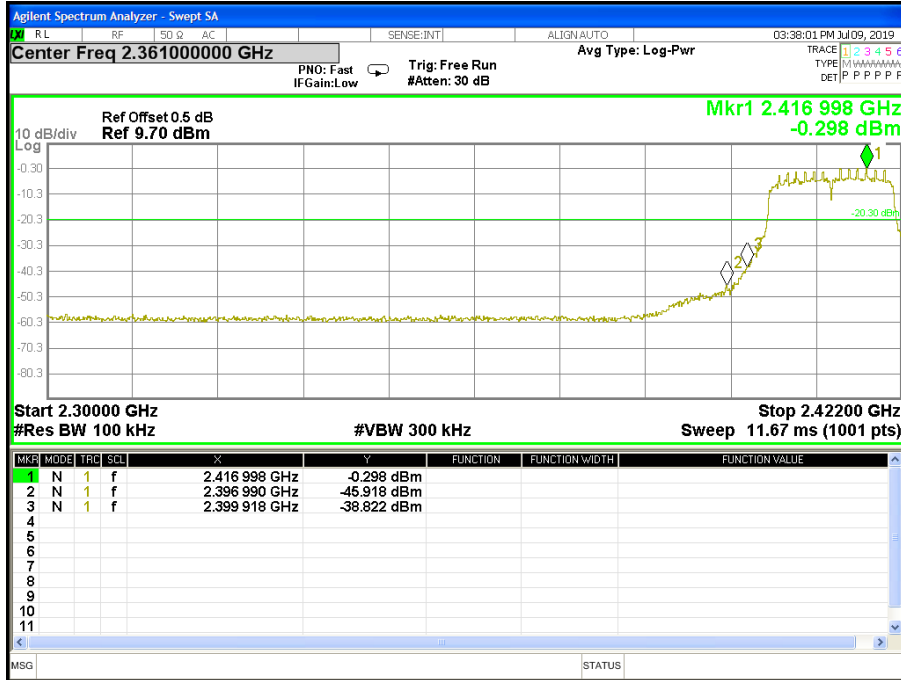
CH 11



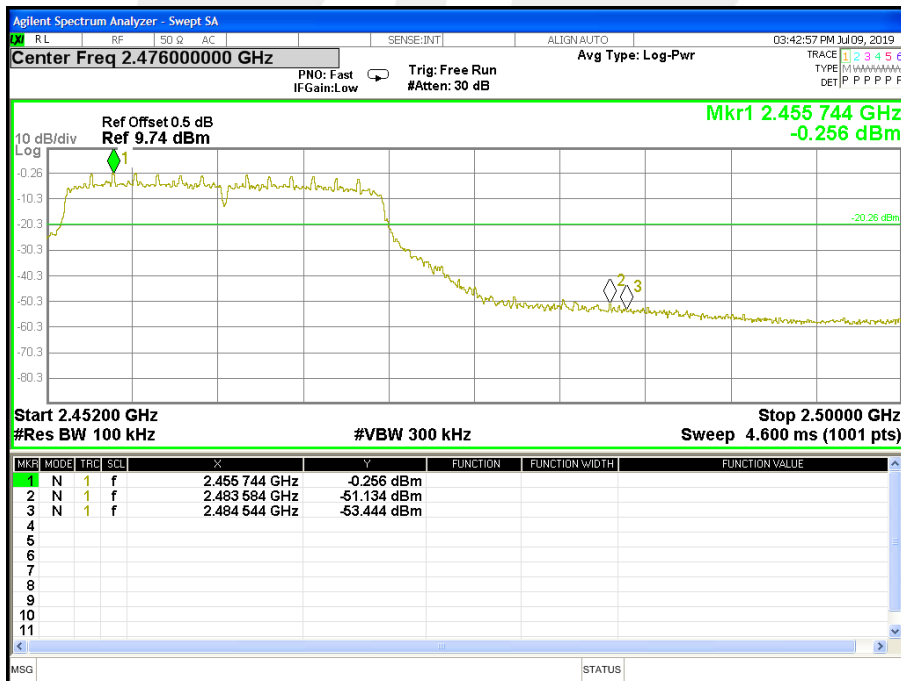


Band edge

CH 01



CH 11

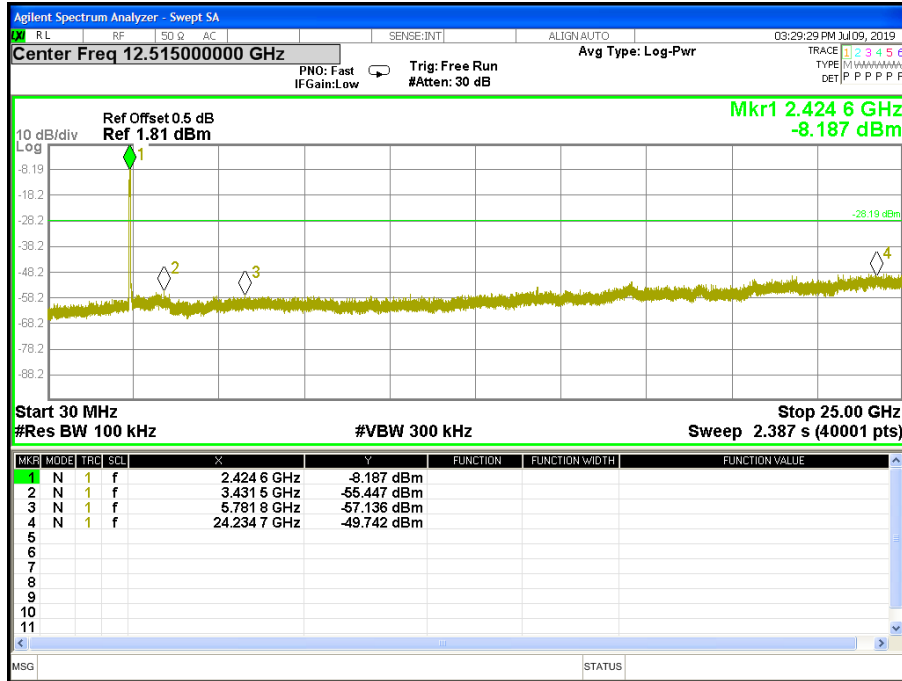




Temperature:	25°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(40M) /CH03, CH06, CH09

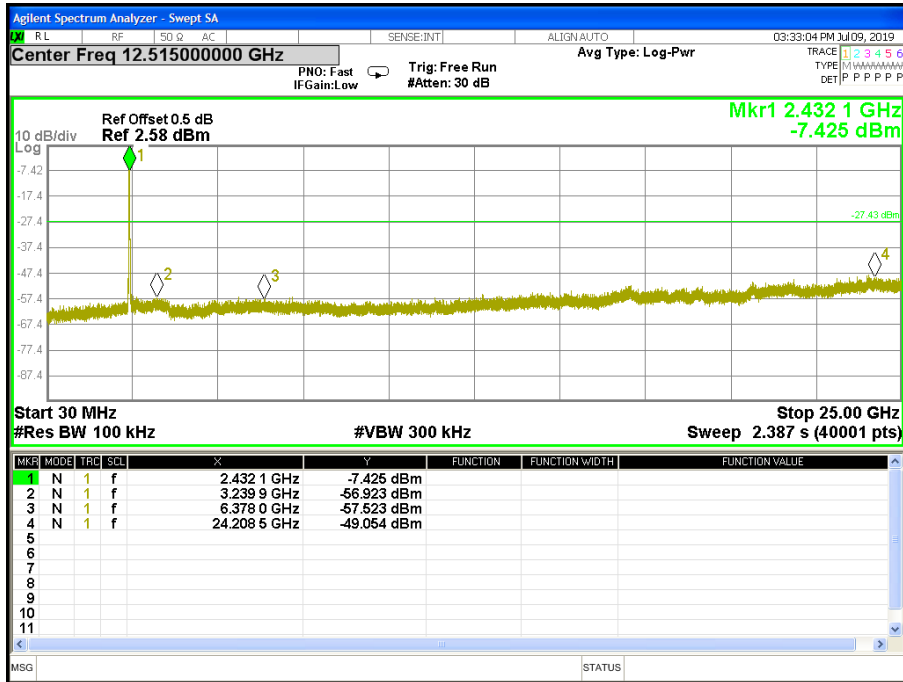
Antenna A

CH 03

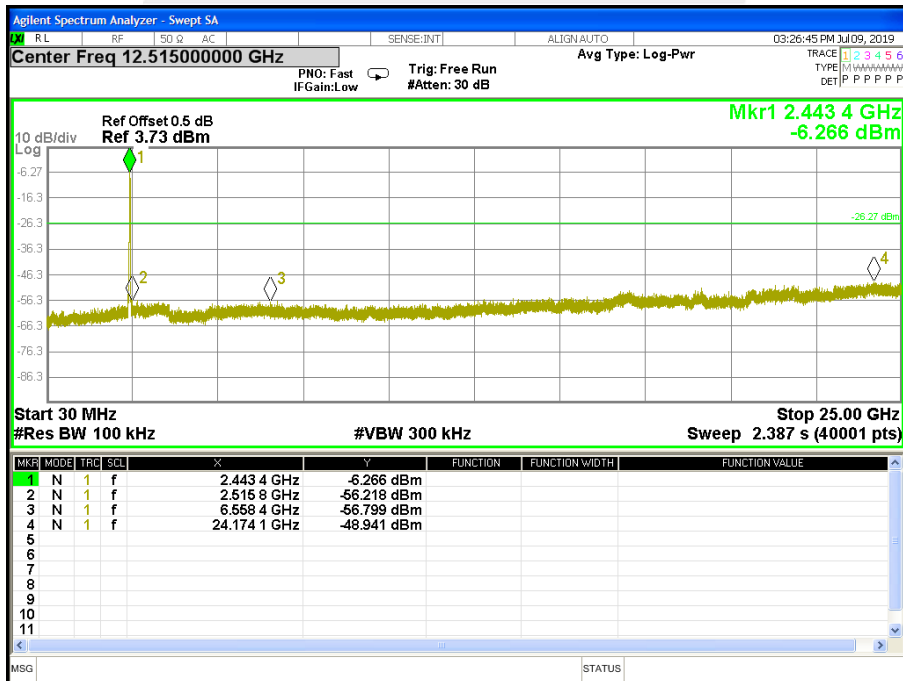




CH06



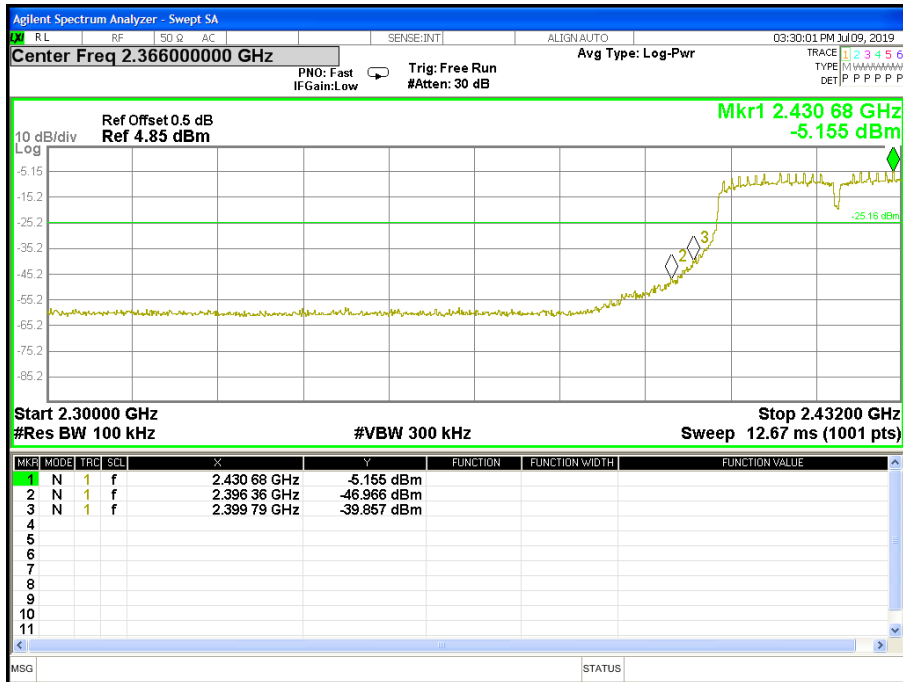
CH09



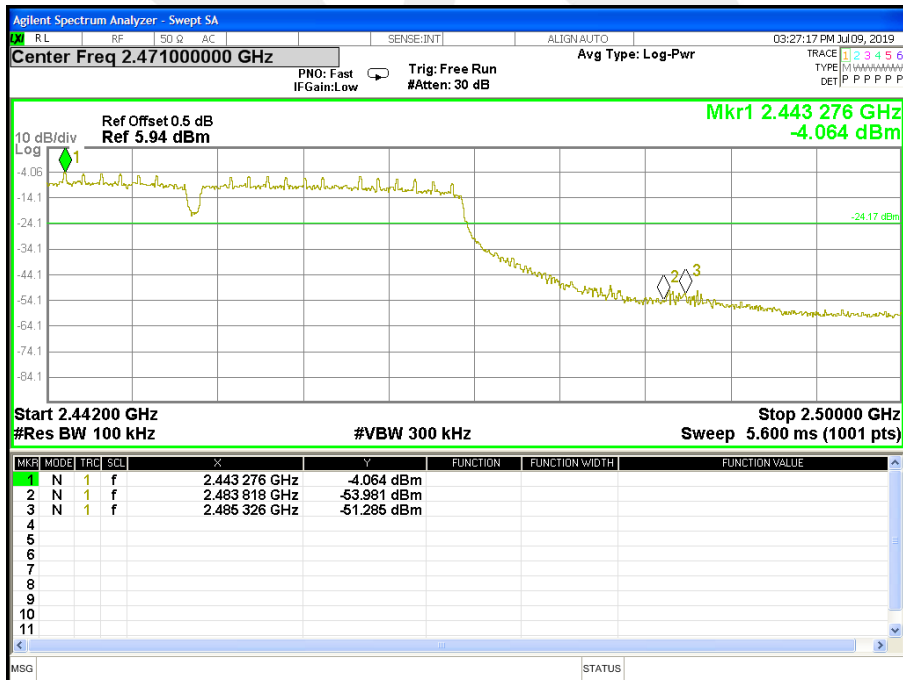


Band edge

CH03



CH 09





5. POWER SPECTRAL DENSITY TEST

5.1 LIMIT

FCC Part15.247 , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	≤ 8 dBm (RBW ≥ 3 KHz)	2400-2483.5	PASS

5.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the $100 \text{ kHz} \geq \text{RBW} \geq 3 \text{ kHz}$.
4. Set the $\text{VBW} \geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



5.6 TEST RESULTS

Note:

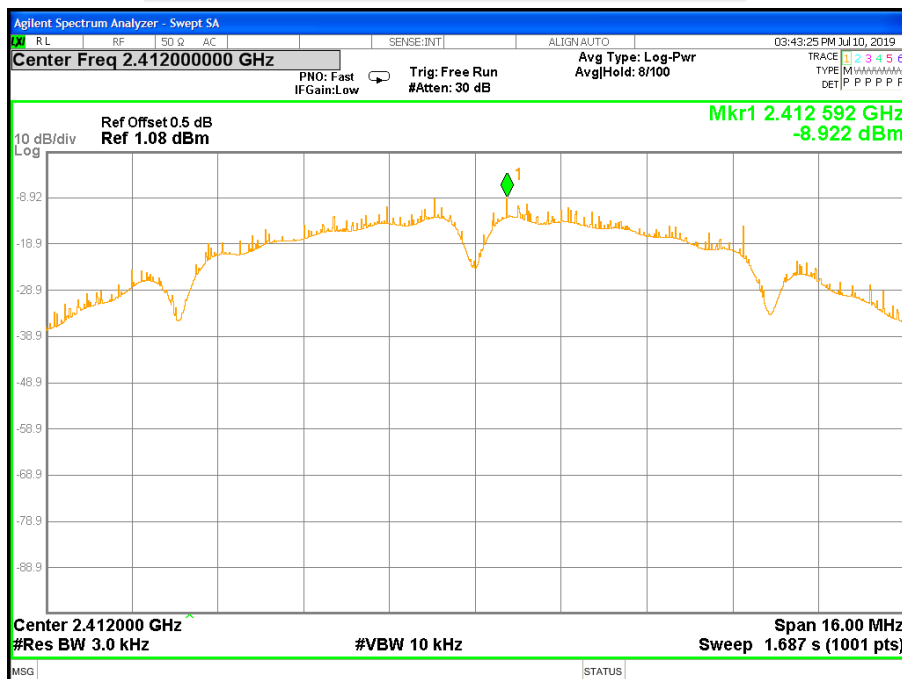
1. Antenna A Power > Antenna B Power, Both antenna A and B have been test, Only show the worst data of Antenna A
2. MIMO technology Directional gain=7.21dBi, 802.11n(HT20), 802.11n(HT40) limit will reduce 1.21dBi, the limit is 6.79dBm.

Temperature:	25°C	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX b Mode /CH01, CH06, CH11

Frequency	Power Density			Limit (dBm)	Result
	ANT A (dBm)	ANT B (dBm)	TOTAL (dBm)		
2412	-8.92	-10.57	--	8	PASS
2437	-4.08	-10.55	--	8	PASS
2462	-1.04	-2.05	--	8	PASS

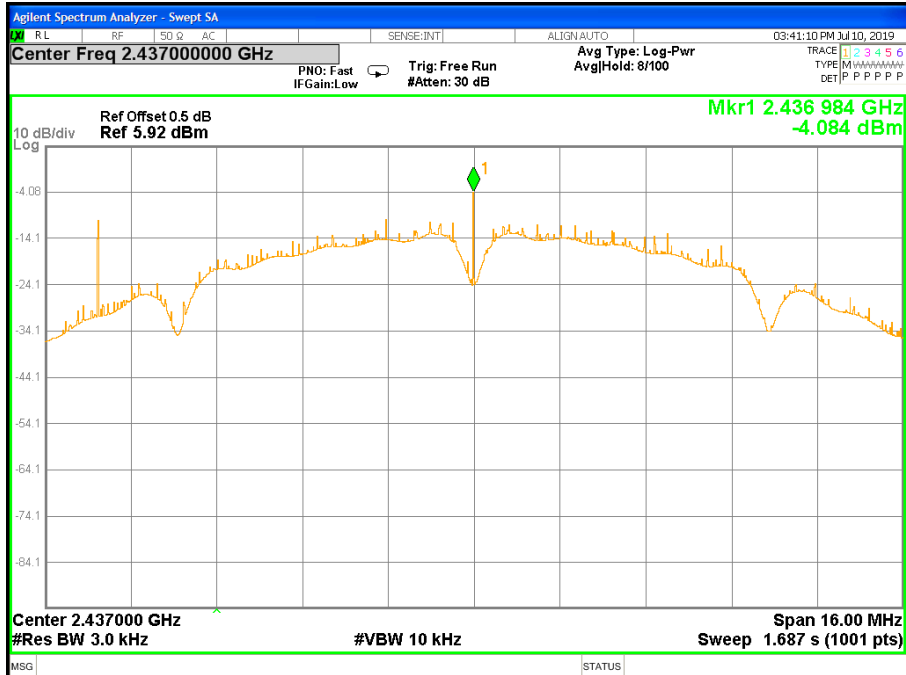
Antenna A

TX CH01





TX CH06



TX CH11

