4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 04, 2020	Dec. 03, 2021
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 04, 2020	Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 25, 2021	Feb. 24, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).
3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

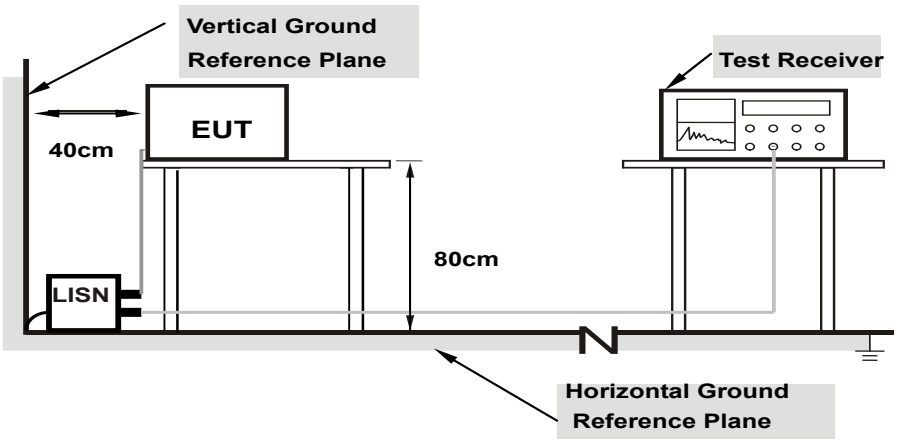
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

a. Placed the EUT on a testing table.
b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

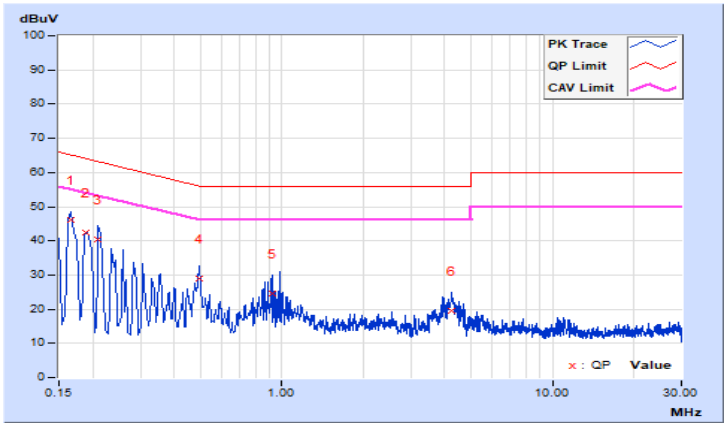
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22℃, 66%RH
Tested by	Jones Chang	Test Date	2021/7/28

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16579	9.71	36.43	17.81	46.14	27.52	65.17	55.17	-19.03	-27.65
2	0.18814	9.71	32.73	15.30	42.44	25.01	64.12	54.12	-21.68	-29.11
3	0.21000	9.71	30.82	12.31	40.53	22.02	63.21	53.21	-22.68	-31.19
4	0.49400	9.73	19.31	12.58	29.04	22.31	56.10	46.10	-27.06	-23.79
5	0.91800	9.76	14.90	1.52	24.66	11.28	56.00	46.00	-31.34	-34.72
6	4.23400	9.79	9.80	0.44	19.59	10.23	56.00	46.00	-36.41	-35.77

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

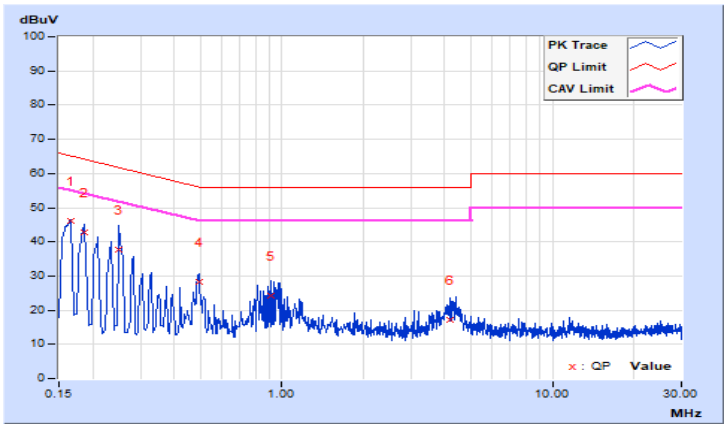


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	22℃, 66%RH
Tested by	Jones Chang	Test Date	2021/7/28

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.16600**	**9.77**	**36.38**	**17.24**	**46.15**	**27.01**	**65.16**	**55.16**	**-19.01**	**-28.15**
2	0.18568	9.77	32.96	14.12	42.73	23.89	64.23	54.23	-21.50	-30.34
3	0.25000	9.77	27.96	11.99	37.73	21.76	61.76	51.76	-24.03	-30.00
4	0.49216	9.79	18.46	10.09	28.25	19.88	56.13	46.13	-27.88	-26.25
5	0.91000	9.82	14.36	1.91	24.18	11.73	56.00	46.00	-31.82	-34.27
6	4.16200	9.85	7.42	1.20	17.27	11.05	56.00	46.00	-38.73	-34.95

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

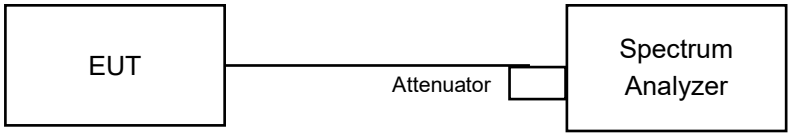


4.3 6 dB Bandwidth Measurement

4.3.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

SISO

Chain A

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.60	0.5	Pass
2	2417	8.14	0.5	Pass
6	2437	7.63	0.5	Pass
10	2457	8.13	0.5	Pass
11	2462	7.64	0.5	Pass
12	2467	8.14	0.5	Pass
13	2472	8.14	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.11	0.5	Pass
2	2417	15.11	0.5	Pass
6	2437	15.12	0.5	Pass
10	2457	15.12	0.5	Pass
11	2462	15.05	0.5	Pass
12	2467	15.04	0.5	Pass
13	2472	15.15	0.5	Pass

802.11n (VHT20)

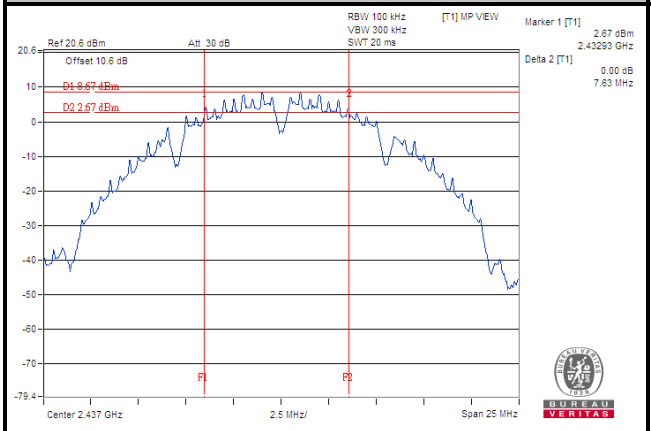
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.07	0.5	Pass
2	2417	15.07	0.5	Pass
6	2437	15.12	0.5	Pass
10	2457	15.09	0.5	Pass
11	2462	15.06	0.5	Pass
12	2467	15.08	0.5	Pass
13	2472	15.07	0.5	Pass

802.11n (VHT40)

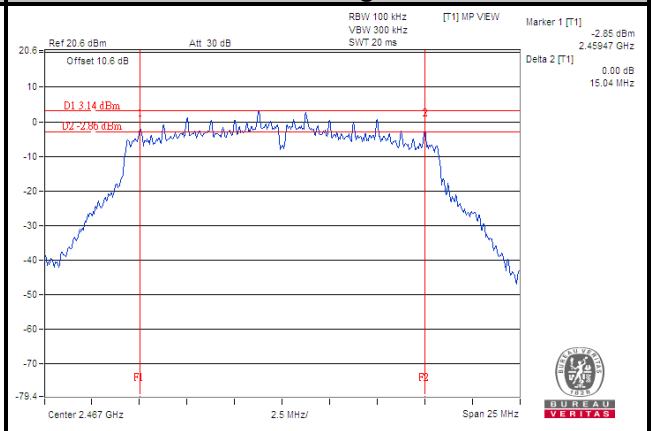
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	33.89	0.5	Pass
4	2427	33.92	0.5	Pass
5	2432	35.09	0.5	Pass
6	2437	35.01	0.5	Pass
7	2442	28.90	0.5	Pass
8	2447	32.57	0.5	Pass
9	2452	28.88	0.5	Pass
10	2457	30.04	0.5	Pass
11	2462	28.87	0.5	Pass

Spectrum Plot of Worst Value

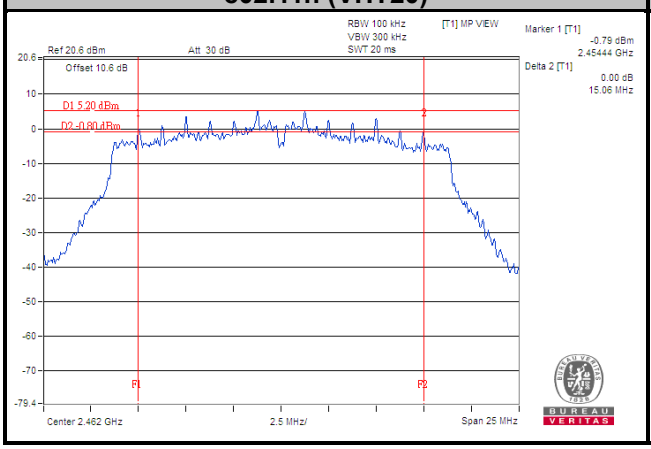
802.11b



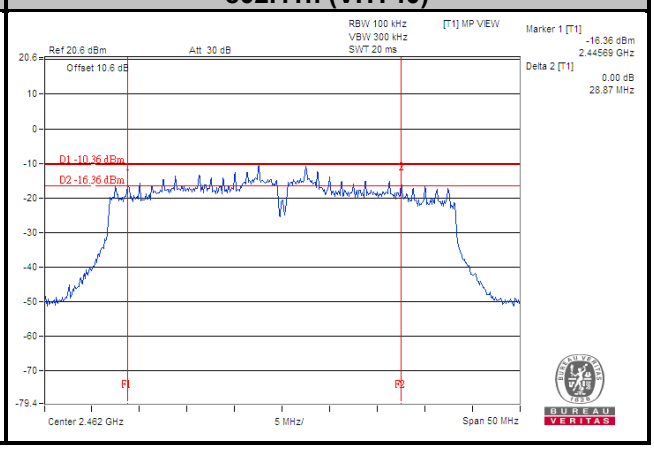
802.11g



802.11n (VHT20)



802.11n (VHT40)



SISO

Chain B

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	7.64	0.5	Pass
2	2417	8.14	0.5	Pass
6	2437	8.14	0.5	Pass
10	2457	7.64	0.5	Pass
11	2462	9.13	0.5	Pass
12	2467	8.13	0.5	Pass
13	2472	8.14	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.11	0.5	Pass
2	2417	15.13	0.5	Pass
6	2437	15.08	0.5	Pass
10	2457	15.11	0.5	Pass
11	2462	15.08	0.5	Pass
12	2467	13.83	0.5	Pass
13	2472	15.13	0.5	Pass

802.11n (VHT20)

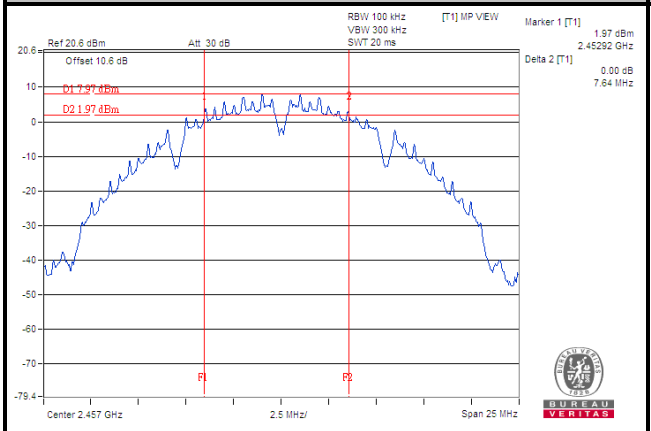
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.11	0.5	Pass
2	2417	15.08	0.5	Pass
6	2437	15.11	0.5	Pass
10	2457	15.07	0.5	Pass
11	2462	15.12	0.5	Pass
12	2467	13.82	0.5	Pass
13	2472	15.13	0.5	Pass

802.11n (VHT40)

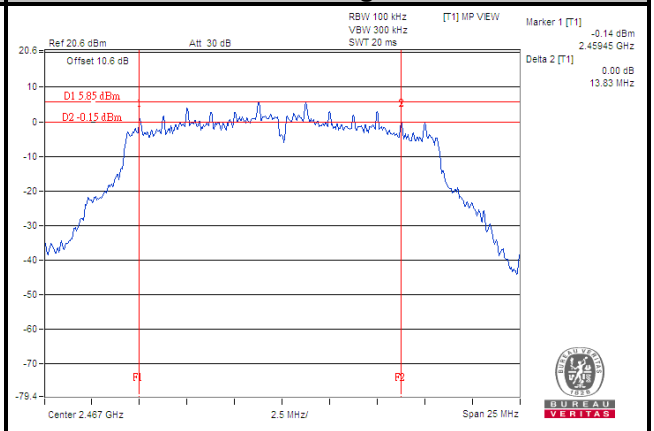
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	30.13	0.5	Pass
4	2427	27.61	0.5	Pass
5	2432	31.34	0.5	Pass
6	2437	31.37	0.5	Pass
7	2442	35.11	0.5	Pass
8	2447	32.65	0.5	Pass
9	2452	30.16	0.5	Pass
10	2457	28.91	0.5	Pass
11	2462	30.04	0.5	Pass

Spectrum Plot of Worst Value

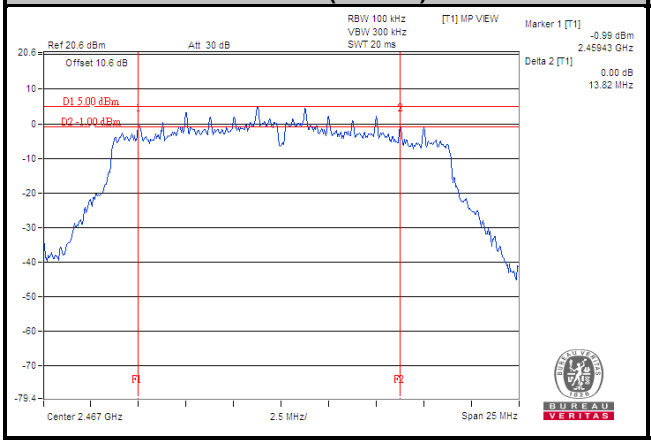
802.11b



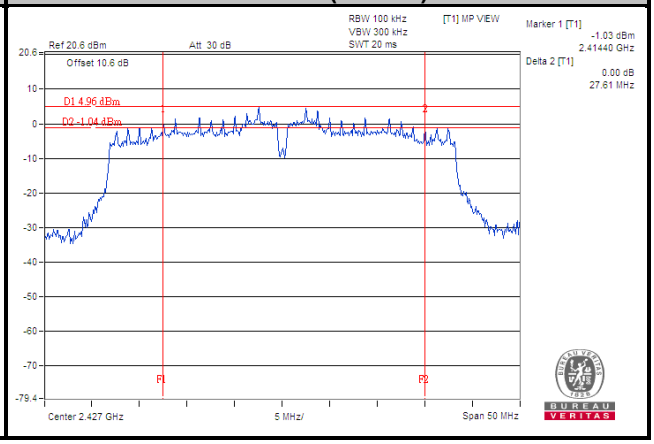
802.11g



802.11n (VHT20)



802.11n (VHT40)



MIMO

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain A	Chain B		
1	2412	8.13	8.09	0.5	Pass
2	2417	8.14	8.14	0.5	Pass
6	2437	8.13	7.64	0.5	Pass
10	2457	7.64	8.14	0.5	Pass
11	2462	8.13	7.65	0.5	Pass
12	2467	7.65	9.07	0.5	Pass
13	2472	8.14	7.63	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain A	Chain B		
1	2412	13.87	15.12	0.5	Pass
2	2417	15.14	15.13	0.5	Pass
6	2437	15.12	15.11	0.5	Pass
10	2457	15.13	15.12	0.5	Pass
11	2462	15.06	15.07	0.5	Pass
12	2467	15.07	15.10	0.5	Pass
13	2472	15.13	15.12	0.5	Pass

802.11n (VHT20)

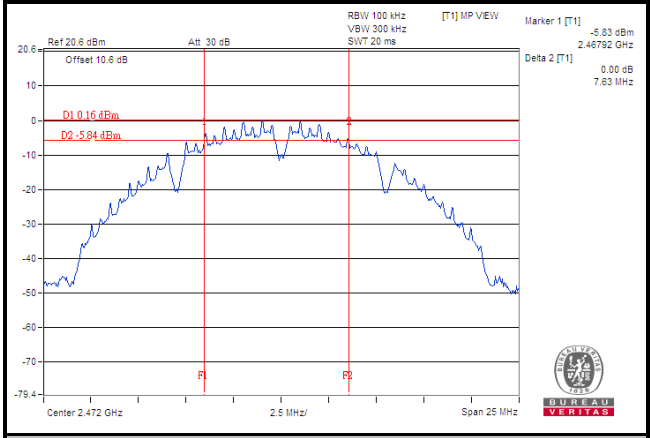
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain A	Chain B		
1	2412	13.88	13.89	0.5	Pass
2	2417	15.12	15.07	0.5	Pass
6	2437	15.12	15.11	0.5	Pass
10	2457	15.11	15.09	0.5	Pass
11	2462	15.12	15.07	0.5	Pass
12	2467	15.09	15.12	0.5	Pass
13	2472	15.13	15.12	0.5	Pass

802.11n (VHT40)

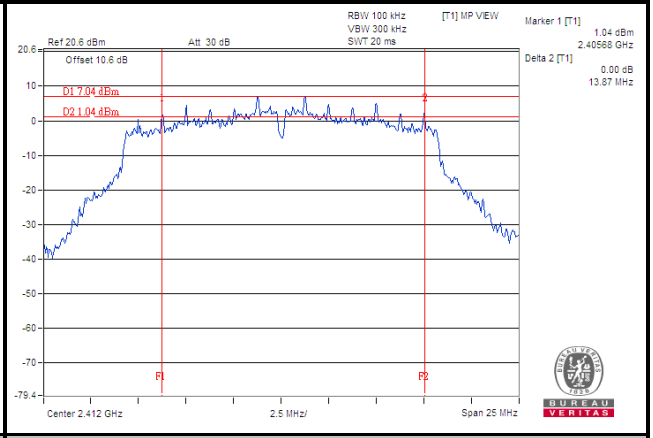
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain A	Chain B		
3	2422	30.05	30.12	0.5	Pass
4	2427	33.81	27.61	0.5	Pass
5	2432	35.06	31.33	0.5	Pass
6	2437	31.33	31.33	0.5	Pass
7	2442	28.92	33.86	0.5	Pass
8	2447	32.57	32.56	0.5	Pass
9	2452	28.87	32.66	0.5	Pass
10	2457	30.10	30.04	0.5	Pass
11	2462	30.12	28.87	0.5	Pass

Spectrum Plot of Worst Value

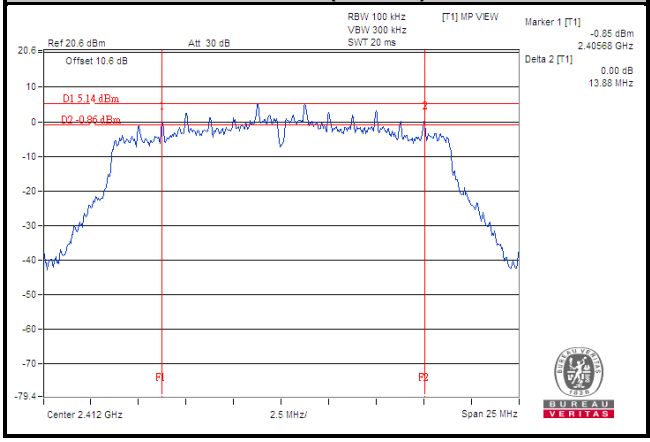
802.11b



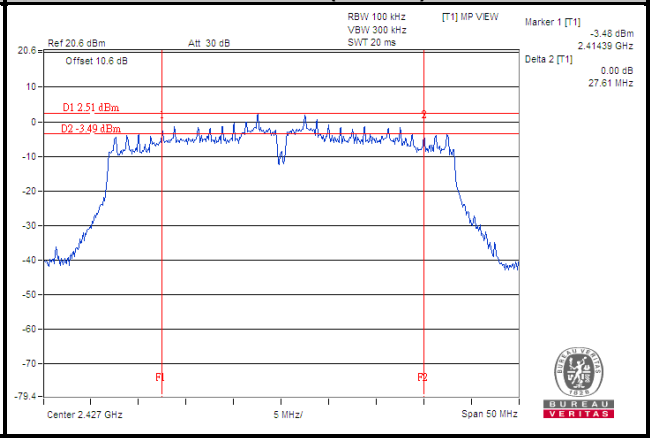
802.11g



802.11n (VHT20)

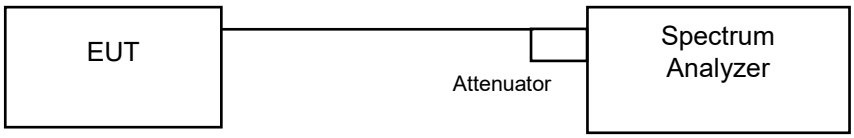


802.11n (VHT40)



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1 % to 5 % of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.4 Deviation from Test Standard

No deviation.

4.4.5 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.4.6 Test Results

SISO

Chain A

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	13.74	Pass
2	2417	13.83	Pass
6	2437	13.92	Pass
10	2457	13.80	Pass
11	2462	13.92	Pass
12	2467	14.08	Pass
13	2472	14.04	Pass

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	16.56	Pass
2	2417	16.69	Pass
6	2437	16.56	Pass
10	2457	16.44	Pass
11	2462	16.34	Pass
12	2467	16.44	Pass
13	2472	16.44	Pass

802.11n (VHT20)

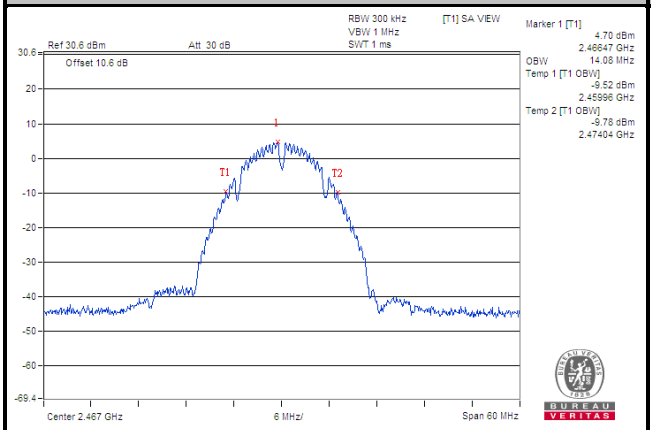
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	17.56	Pass
2	2417	17.64	Pass
6	2437	17.64	Pass
10	2457	17.64	Pass
11	2462	17.48	Pass
12	2467	17.64	Pass
13	2472	17.64	Pass

802.11n (VHT40)

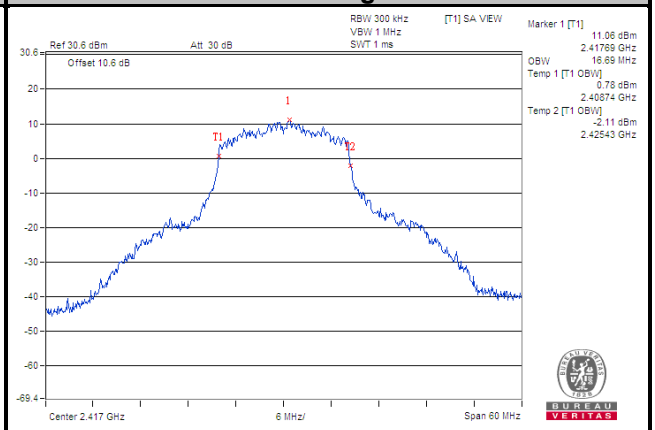
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
3	2422	36.12	Pass
4	2427	36.12	Pass
5	2432	36.24	Pass
6	2437	36.18	Pass
7	2442	36.12	Pass
8	2447	36.12	Pass
9	2452	36.00	Pass
10	2457	35.92	Pass
11	2462	36.12	Pass

Spectrum Plot of Worst Value

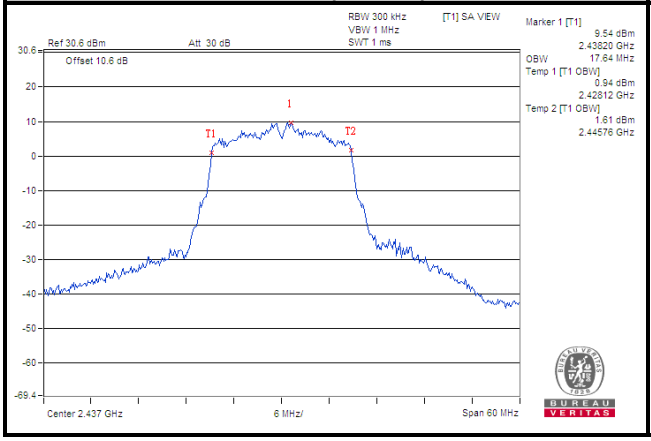
802.11b



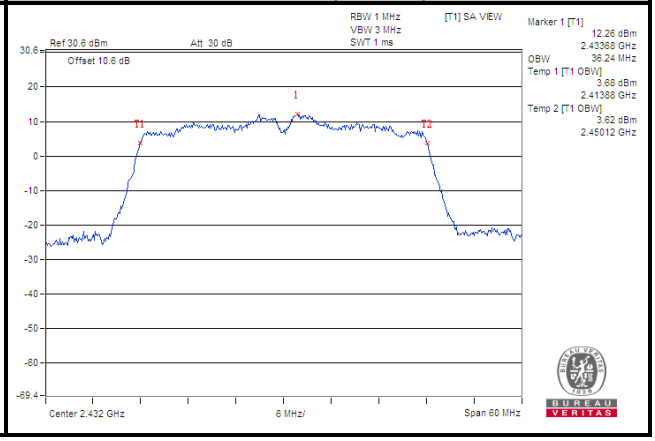
802.11g



802.11n (VHT20)



802.11n (VHT40)



SISO

Chain B

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	13.91	Pass
2	2417	13.92	Pass
6	2437	13.80	Pass
10	2457	13.92	Pass
11	2462	13.92	Pass
12	2467	13.74	Pass
13	2472	14.16	Pass

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	16.80	Pass
2	2417	16.78	Pass
6	2437	16.56	Pass
10	2457	16.56	Pass
11	2462	16.43	Pass
12	2467	16.32	Pass
13	2472	16.44	Pass

802.11n (VHT20)

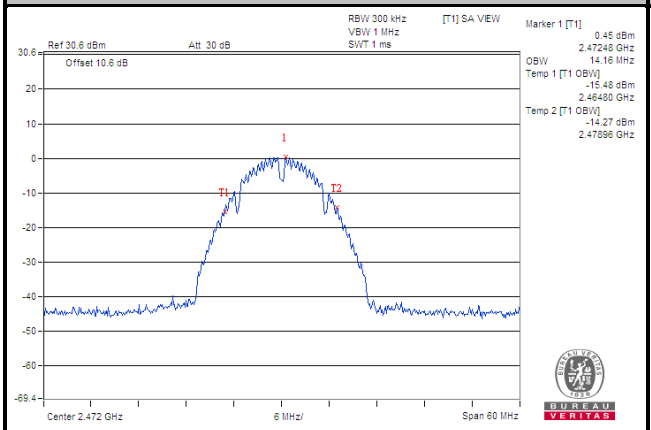
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
1	2412	17.76	Pass
2	2417	17.76	Pass
6	2437	17.64	Pass
10	2457	17.64	Pass
11	2462	17.64	Pass
12	2467	17.52	Pass
13	2472	17.76	Pass

802.11n (VHT40)

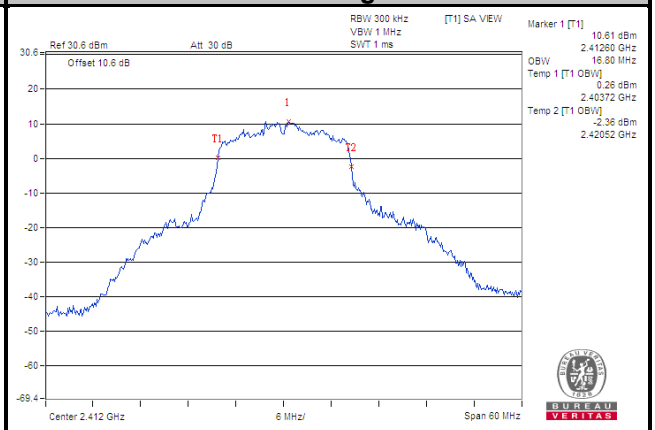
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	Pass / Fail
3	2422	36.12	Pass
4	2427	36.12	Pass
5	2432	36.12	Pass
6	2437	36.24	Pass
7	2442	36.18	Pass
8	2447	36.00	Pass
9	2452	36.12	Pass
10	2457	36.12	Pass
11	2462	36.00	Pass

Spectrum Plot of Worst Value

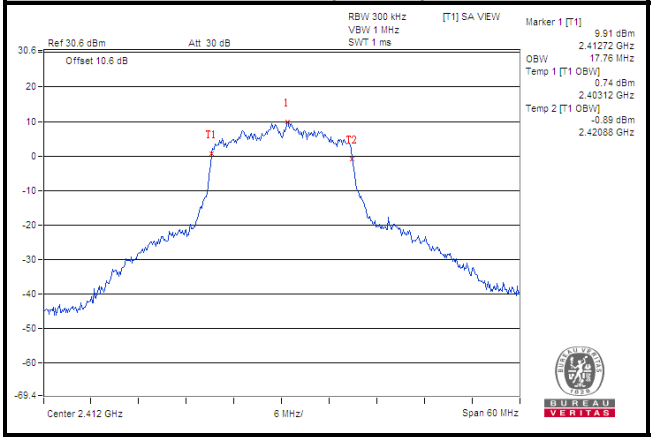
802.11b



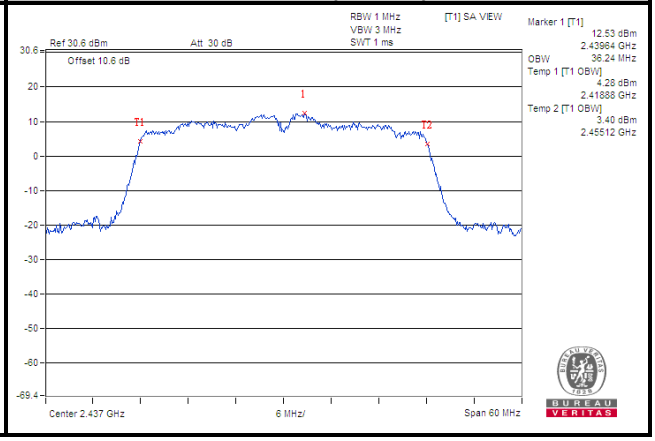
802.11g



802.11n (VHT20)



802.11n (VHT40)



MIMO

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		Pass / Fail
		Chain A	Chain B	
1	2412	13.74	13.91	Pass
2	2417	13.92	13.92	Pass
6	2437	13.92	13.80	Pass
10	2457	13.80	13.92	Pass
11	2462	13.92	13.92	Pass
12	2467	13.91	13.91	Pass
13	2472	14.04	14.16	Pass

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		Pass / Fail
		Chain A	Chain B	
1	2412	16.32	16.44	Pass
2	2417	16.78	16.78	Pass
6	2437	16.56	16.56	Pass
10	2457	16.44	16.56	Pass
11	2462	16.43	16.34	Pass
12	2467	16.44	16.44	Pass
13	2472	16.44	16.56	Pass

802.11n (VHT20)

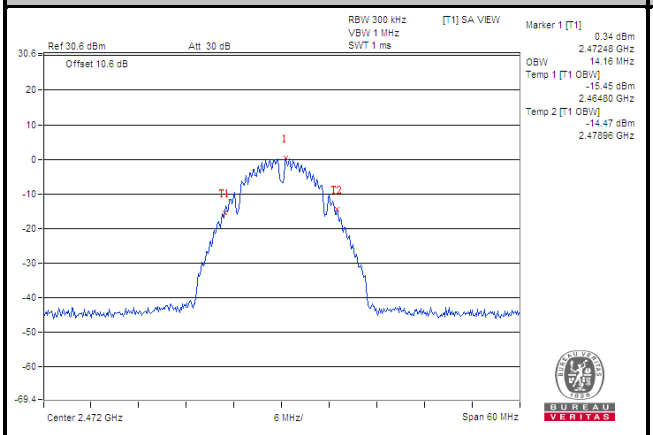
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		Pass / Fail
		Chain A	Chain B	
1	2412	17.52	17.52	Pass
2	2417	17.64	17.76	Pass
6	2437	17.64	17.64	Pass
10	2457	17.56	17.64	Pass
11	2462	17.64	17.64	Pass
12	2467	17.64	17.64	Pass
13	2472	17.64	17.64	Pass

802.11n (VHT40)

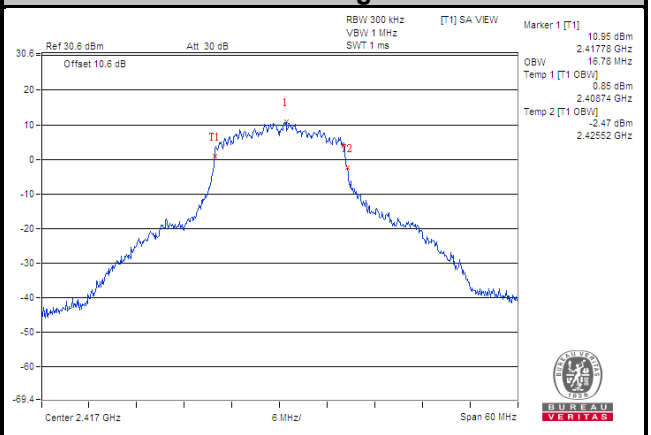
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		Pass / Fail
		Chain A	Chain B	
3	2422	36.00	36.00	Pass
4	2427	36.00	35.91	Pass
5	2432	36.24	36.12	Pass
6	2437	36.00	36.00	Pass
7	2442	36.00	36.12	Pass
8	2447	36.12	36.12	Pass
9	2452	36.00	36.12	Pass
10	2457	36.00	36.00	Pass
11	2462	36.00	36.24	Pass

Spectrum Plot of Worst Value

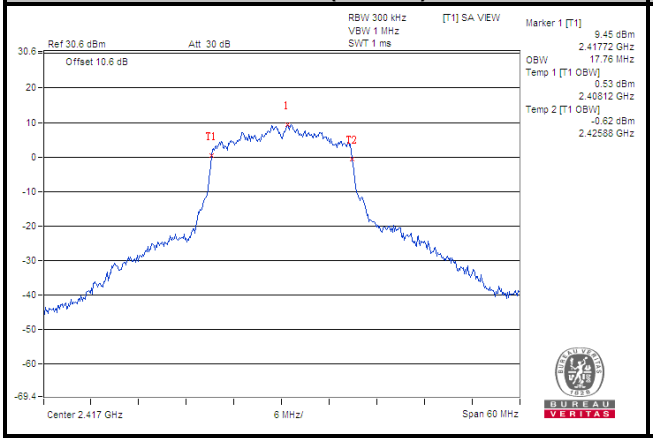
802.11b



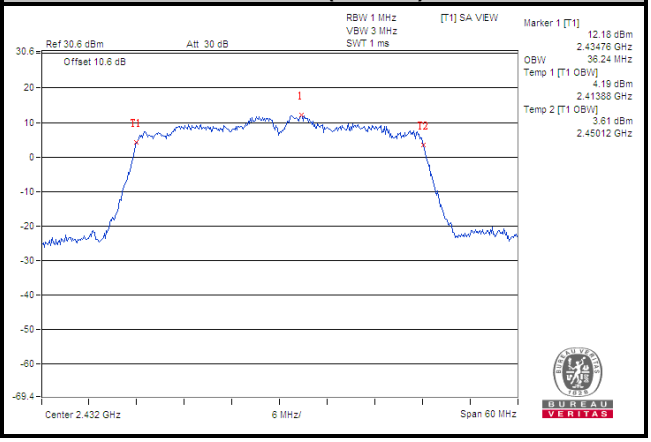
802.11g



802.11n (VHT20)



802.11n (VHT40)



4.5 Conducted Output Power Measurement

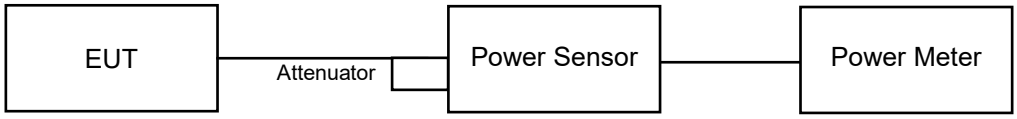
4.5.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)
Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20 MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.5.7 Test Results

SISO

Chain A

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	54.702	17.38	30	Pass
2	2417	54.075	17.33	30	Pass
6	2437	54.828	17.39	30	Pass
10	2457	54.075	17.33	30	Pass
11	2462	54.325	17.35	30	Pass
12	2467	22.542	13.53	30	Pass
13	2472	9.683	9.86	30	Pass

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	61.094	17.86	30	Pass
2	2417	**68.391**	**18.35**	30	Pass
6	2437	68.077	18.33	30	Pass
10	2457	61.094	17.86	30	Pass
11	2462	30.832	14.89	30	Pass
12	2467	20.512	13.12	30	Pass
13	2472	2.6	4.15	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	41.783	16.21	30	Pass
2	2417	53.703	17.30	30	Pass
6	2437	52.723	17.22	30	Pass
10	2457	53.211	17.26	30	Pass
11	2462	29.717	14.73	30	Pass
12	2467	16.982	12.30	30	Pass
13	2472	1.786	2.52	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	26.424	14.22	30	Pass
4	2427	42.267	16.26	30	Pass
5	2432	52.966	17.24	30	Pass
6	2437	33.343	15.23	30	Pass
7	2442	53.211	17.26	30	Pass
8	2447	22.909	13.60	30	Pass
9	2452	14.521	11.62	30	Pass
10	2457	12.162	10.85	30	Pass
11	2462	1.82	2.60	30	Pass

802.11n (VHT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	42.073	16.24	30	Pass
2	2417	54.075	17.33	30	Pass
6	2437	53.088	17.25	30	Pass
10	2457	53.58	17.29	30	Pass
11	2462	29.854	14.75	30	Pass
12	2467	17.219	12.36	30	Pass
13	2472	1.799	2.55	30	Pass

802.11n (VHT40)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	26.669	14.26	30	Pass
4	2427	42.462	16.28	30	Pass
5	2432	53.58	17.29	30	Pass
6	2437	33.497	15.25	30	Pass
7	2442	53.703	17.30	30	Pass
8	2447	23.878	13.78	30	Pass
9	2452	14.588	11.64	30	Pass
10	2457	12.218	10.87	30	Pass
11	2462	1.837	2.64	30	Pass

SISO

Chain B

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	58.884	17.70	30	Pass
2	2417	59.156	17.72	30	Pass
6	2437	58.614	17.68	30	Pass
10	2457	58.749	17.69	30	Pass
11	2462	59.02	17.71	30	Pass
12	2467	27.669	14.42	30	Pass
13	2472	9.594	9.82	30	Pass

802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	52.36	17.19	30	Pass
2	2417	73.282	18.65	30	Pass
6	2437	73.621	18.67	30	Pass
10	2457	**73.961**	**18.69**	30	Pass
11	2462	46.559	16.68	30	Pass
12	2467	35.237	15.47	30	Pass
13	2472	3.614	5.58	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	59.566	17.75	30	Pass
2	2417	59.293	17.73	30	Pass
6	2437	59.02	17.71	30	Pass
10	2457	59.429	17.74	30	Pass
11	2462	47.315	16.75	30	Pass
12	2467	27.733	14.43	30	Pass
13	2472	2.661	4.25	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	27.416	14.38	30	Pass
4	2427	53.951	17.32	30	Pass
5	2432	53.703	17.30	30	Pass
6	2437	54.325	17.35	30	Pass
7	2442	53.456	17.28	30	Pass
8	2447	30.339	14.82	30	Pass
9	2452	18.836	12.75	30	Pass
10	2457	19.634	12.93	30	Pass
11	2462	2.415	3.83	30	Pass

802.11n (VHT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	59.979	17.78	30	Pass
2	2417	59.704	17.76	30	Pass
6	2437	59.566	17.75	30	Pass
10	2457	59.841	17.77	30	Pass
11	2462	47.643	16.78	30	Pass
12	2467	27.861	14.45	30	Pass
13	2472	2.679	4.28	30	Pass

802.11n (VHT40)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
3	2422	27.669	14.42	30	Pass
4	2427	54.325	17.35	30	Pass
5	2432	54.075	17.33	30	Pass
6	2437	54.702	17.38	30	Pass
7	2442	53.827	17.31	30	Pass
8	2447	30.479	14.84	30	Pass
9	2452	18.967	12.78	30	Pass
10	2457	19.815	12.97	30	Pass
11	2462	2.438	3.87	30	Pass

MIMO

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
1	2412	17.37	17.58	111.855	20.49	30	Pass
2	2417	17.38	17.55	111.587	20.48	30	Pass
6	2437	17.42	17.63	113.151	20.54	30	Pass
10	2457	17.38	17.59	112.113	20.50	30	Pass
11	2462	17.33	17.60	111.619	20.48	30	Pass
12	2467	11.17	11.15	26.123	14.17	30	Pass
13	2472	9.84	9.72	19.014	12.79	30	Pass

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
1	2412	16.55	16.84	93.491	19.71	30	Pass
2	2417	18.35	18.50	139.186	21.44	30	Pass
6	2437	18.41	18.55	**140.957**	**21.49**	30	Pass
10	2457	18.33	18.42	137.579	21.39	30	Pass
11	2462	13.90	13.90	49.094	16.91	30	Pass
12	2467	9.42	9.77	18.234	12.61	30	Pass
13	2472	4.98	4.84	6.196	7.92	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
1	2412	14.64	14.70	58.619	17.68	30	Pass
2	2417	17.10	17.52	107.78	20.33	30	Pass
6	2437	17.08	17.53	107.674	20.32	30	Pass
10	2457	15.13	15.52	68.229	18.34	30	Pass
11	2462	14.05	14.20	51.712	17.14	30	Pass
12	2467	9.85	9.82	19.255	12.85	30	Pass
13	2472	2.00	1.52	3.004	4.78	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
3	2422	13.47	13.52	44.724	16.51	30	Pass
4	2427	14.72	14.77	59.64	17.76	30	Pass
5	2432	17.18	17.32	106.191	20.26	30	Pass
6	2437	14.80	14.86	60.819	17.84	30	Pass
7	2442	17.24	17.30	106.67	20.28	30	Pass
8	2447	11.21	11.30	26.703	14.27	30	Pass
9	2452	10.75	10.95	24.33	13.86	30	Pass
10	2457	8.88	8.97	15.615	11.94	30	Pass
11	2462	2.20	1.56	3.092	4.90	30	Pass

802.11n (VHT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
1	2412	14.67	14.73	59.026	17.71	30	Pass
2	2417	17.12	17.55	108.408	20.35	30	Pass
6	2437	17.12	17.55	108.408	20.35	30	Pass
10	2457	15.15	15.54	68.544	18.36	30	Pass
11	2462	14.09	14.22	52.069	17.17	30	Pass
12	2467	9.87	9.84	19.343	12.87	30	Pass
13	2472	2.01	1.54	3.014	4.79	30	Pass

802.11n (VHT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain A	Chain B				
3	2422	13.50	13.54	44.982	16.53	30	Pass
4	2427	14.74	14.81	60.054	17.79	30	Pass
5	2432	17.21	17.34	106.802	20.29	30	Pass
6	2437	14.83	14.88	61.17	17.87	30	Pass
7	2442	17.27	17.33	107.409	20.31	30	Pass
8	2447	11.24	11.32	26.856	14.29	30	Pass
9	2452	10.77	10.97	24.442	13.88	30	Pass
10	2457	8.91	8.99	15.705	11.96	30	Pass
11	2462	2.22	1.58	3.106	4.92	30	Pass

4.6 Power Spectral Density Measurement

4.6.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.6.2 Test Setup

4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

For Average Power (Duty cycle ≥ 98%)

a. Set instrument center frequency to DTS channel center frequency.
b. Set span to at least 1.5 times the OBW.
c. Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d. Set VBW ≥3 x RBW.
e. Detector = power averaging (RMS) or sample detector (when RMS not available).
f. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g. Sweep time = auto couple.
h. Employ trace averaging (RMS) mode over a minimum of 100 traces.
i. Use the peak marker function to determine the maximum amplitude level.

For Average Power (Duty cycle < 98%)

a. Measure the duty cycle (x).

b. Set instrument center frequency to DTS channel center frequency.

c. Set span to at least 1.5 times the OBW.

d. Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.

e. Set VBW ≥3 x RBW.

f. Detector = power averaging (RMS) or sample detector (when RMS not available).

g. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.

h. Sweep time = auto couple.

i. Do not use sweep triggering. Allow sweep to “free run”.

j. Employ trace averaging (RMS) mode over a minimum of 100 traces.

k. Use the peak marker function to determine the maximum amplitude level.

l. Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.6.7 Test Results

SISO

Chain A

802.11b

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-16.93	8	Pass
2	2417	-17.30	8	Pass
6	2437	-16.58	8	Pass
10	2457	-17.21	8	Pass
11	2462	-16.55	8	Pass
12	2467	-21.19	8	Pass
13	2472	-25.37	8	Pass

802.11g

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-16.93	0.13	-16.8	8	Pass
2	2417	-16.83	0.13	-16.7	8	Pass
6	2437	-16.54	0.13	-16.41	8	Pass
10	2457	-18.05	0.13	-17.92	8	Pass
11	2462	-20.8	0.13	-20.67	8	Pass
12	2467	-22.52	0.13	-22.39	8	Pass
13	2472	-32.75	0.13	-32.62	8	Pass

802.11n (VHT20)

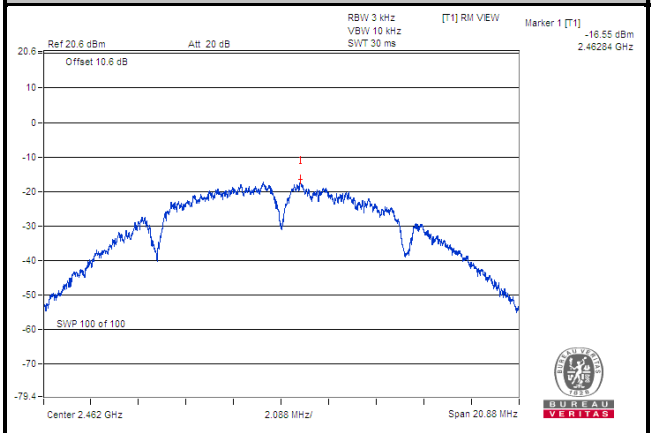
Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-18.36	0.09	-18.27	8	Pass
2	2417	-18.52	0.09	-18.43	8	Pass
6	2437	-18.35	0.09	-18.26	8	Pass
10	2457	-19.48	0.09	-19.39	8	Pass
11	2462	-20.77	0.09	-20.68	8	Pass
12	2467	-22.41	0.09	-22.32	8	Pass
13	2472	-34.75	0.09	-34.66	8	Pass

802.11n (VHT40)

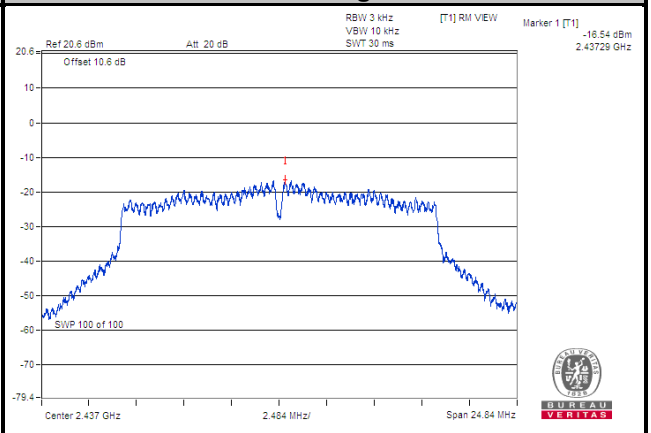
Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
3	2422	-24.96	0.25	-24.71	8	Pass
4	2427	-22.22	0.25	-21.97	8	Pass
5	2432	-22.04	0.25	-21.79	8	Pass
6	2437	-23.16	0.25	-22.91	8	Pass
7	2442	-20.77	0.25	-20.52	8	Pass
8	2447	-24.73	0.25	-24.48	8	Pass
9	2452	-25.06	0.25	-24.81	8	Pass
10	2457	-28.86	0.25	-28.61	8	Pass
11	2462	-37.03	0.25	-36.78	8	Pass

Spectrum Plot of Worst Value

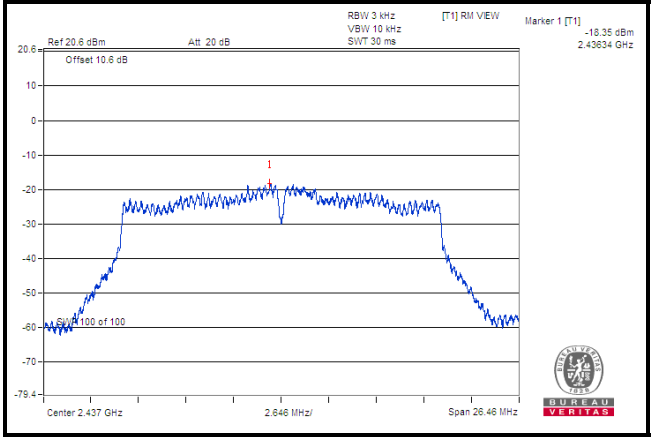
802.11b



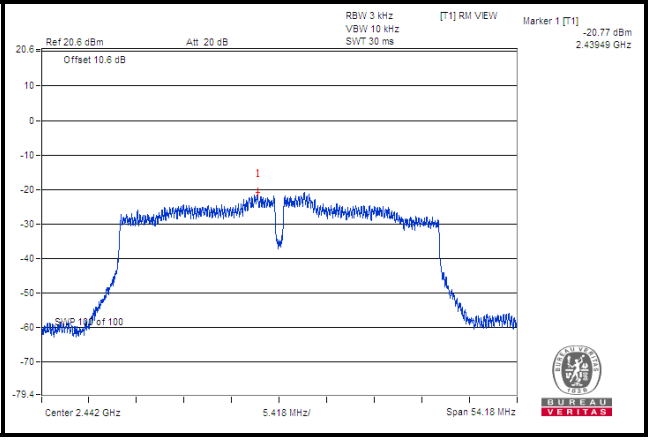
802.11g



802.11n (VHT20)



802.11n (VHT40)



SISO

Chain B

802.11b

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-16.60	8	Pass
2	2417	-17.48	8	Pass
6	2437	-17.26	8	Pass
10	2457	-17.10	8	Pass
11	2462	-16.88	8	Pass
12	2467	-20.72	8	Pass
13	2472	-25.15	8	Pass

802.11g

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-17.05	0.10	-16.95	8	Pass
2	2417	-16.84	0.10	-16.74	8	Pass
6	2437	-16.94	0.10	-16.84	8	Pass
10	2457	-17.49	0.10	-17.39	8	Pass
11	2462	-19.28	0.10	-19.18	8	Pass
12	2467	-20.68	0.10	-20.58	8	Pass
13	2472	-30.11	0.10	-30.01	8	Pass

802.11n (VHT20)

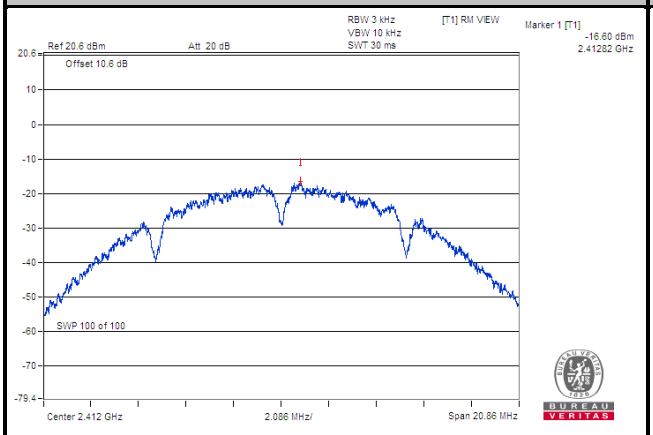
Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-18.09	0.09	-18	8	Pass
2	2417	-18.43	0.09	-18.34	8	Pass
6	2437	-18.29	0.09	-18.2	8	Pass
10	2457	-18.86	0.09	-18.77	8	Pass
11	2462	-18.38	0.09	-18.29	8	Pass
12	2467	-21.88	0.09	-21.79	8	Pass
13	2472	-31.5	0.09	-31.41	8	Pass

802.11n (VHT40)

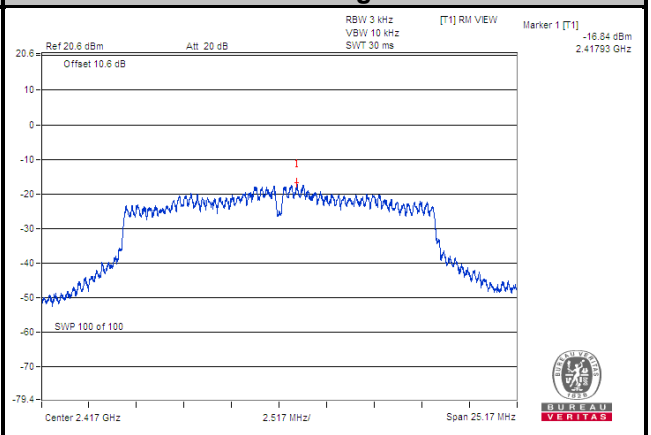
Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
3	2422	-24.26	0.25	-24.01	8	Pass
4	2427	-21.26	0.25	-21.01	8	Pass
5	2432	-21.33	0.25	-21.08	8	Pass
6	2437	-21.55	0.25	-21.3	8	Pass
7	2442	-21.49	0.25	-21.24	8	Pass
8	2447	-24.75	0.25	-24.5	8	Pass
9	2452	-25.4	0.25	-25.15	8	Pass
10	2457	-26.02	0.25	-25.77	8	Pass
11	2462	-35.3	0.25	-35.05	8	Pass

Spectrum Plot of Worst Value

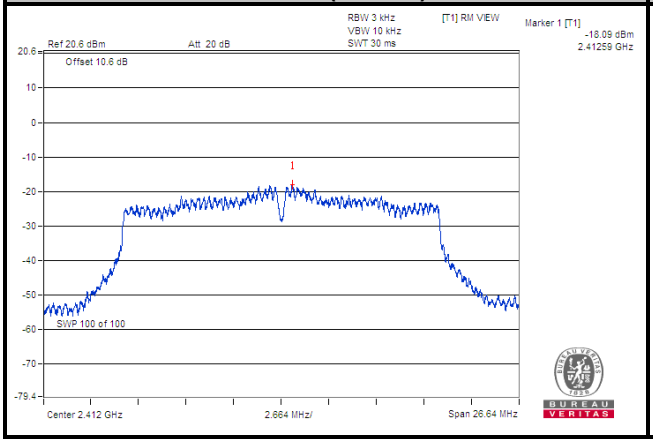
802.11b



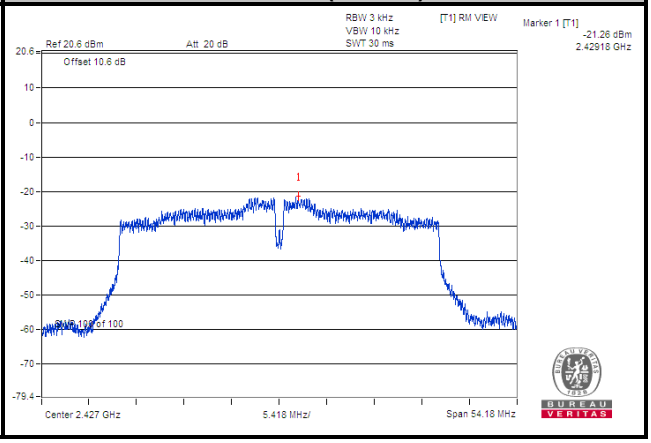
802.11g



802.11n (VHT20)



802.11n (VHT40)



MIMO

802.11b

TX Chain	Channel	Freq. (MHz)	PSD (dBm/3 kHz)	10 log (N=2) dB	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
A	1	2412	-17.25	3.01	-14.24	8	Pass
	2	2417	-17.17	3.01	-14.16	8	Pass
	6	2437	-17.25	3.01	-14.24	8	Pass
	10	2457	-17.7	3.01	-14.69	8	Pass
	11	2462	-18.34	3.01	-15.33	8	Pass
	12	2467	-24.02	3.01	-21.01	8	Pass
	13	2472	-24.66	3.01	-21.65	8	Pass
B	1	2412	-16.7	3.01	-13.69	8	Pass
	2	2417	-17.37	3.01	-14.36	8	Pass
	6	2437	-17.8	3.01	-14.79	8	Pass
	10	2457	-17.52	3.01	-14.51	8	Pass
	11	2462	-16.7	3.01	-13.69	8	Pass
	12	2467	-23.61	3.01	-20.6	8	Pass
	13	2472	-25.12	3.01	-22.11	8	Pass

NOTE:

1. Uncorrelated, Directional gain = 10 log[$(10^{G1/10} + 10^{G2/10})^2$ / 2]= 5.61 dBi < 6 dBi, so the limit no need to reduced.

2. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.

802.11g

TX Chain	Channel	Freq. (MHz)	PSD (dBm/3 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
A	1	2412	-18.92	3.01	0.13	-15.78	8	Pass
	2	2417	-17.37	3.01	0.13	-14.23	8	Pass
	6	2437	-17.44	3.01	0.13	-14.3	8	Pass
	10	2457	-18.21	3.01	0.13	-15.07	8	Pass
	11	2462	-22.27	3.01	0.13	-19.13	8	Pass
	12	2467	-26.89	3.01	0.13	-23.75	8	Pass
	13	2472	-31.4	3.01	0.13	-28.26	8	Pass
B	1	2412	-19.36	3.01	0.13	-16.22	8	Pass
	2	2417	-17.07	3.01	0.13	-13.93	8	Pass
	6	2437	-17.22	3.01	0.13	-14.08	8	Pass
	10	2457	-17.12	3.01	0.13	-13.98	8	Pass
	11	2462	-21.67	3.01	0.13	-18.53	8	Pass
	12	2467	-26.54	3.01	0.13	-23.4	8	Pass
	13	2472	-31.07	3.01	0.13	-27.93	8	Pass

NOTE:

1. Uncorrelated, Directional gain = 10 log[$(10^{G1/10} + 10^{G2/10})^2 / 2$]= 5.61 dBi < 6 dBi, so the limit no need to reduced.
2. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.

802.11n (VHT20)

TX Chain	Channel	Freq. (MHz)	PSD (dBm/3 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
A	1	2412	-21.18	3.01	0.09	-18.08	8	Pass
	2	2417	-18.89	3.01	0.09	-15.79	8	Pass
	6	2437	-18.33	3.01	0.09	-15.23	8	Pass
	10	2457	-20.68	3.01	0.09	-17.58	8	Pass
	11	2462	-22.08	3.01	0.09	-18.98	8	Pass
	12	2467	-26.99	3.01	0.09	-23.89	8	Pass
	13	2472	-35.24	3.01	0.09	-32.14	8	Pass
B	1	2412	-21.72	3.01	0.09	-18.62	8	Pass
	2	2417	-18.51	3.01	0.09	-15.41	8	Pass
	6	2437	-18.76	3.01	0.09	-15.66	8	Pass
	10	2457	-17.86	3.01	0.09	-14.76	8	Pass
	11	2462	-21.16	3.01	0.09	-18.06	8	Pass
	12	2467	-24.94	3.01	0.09	-21.84	8	Pass
	13	2472	-30.5	3.01	0.09	-27.4	8	Pass

NOTE:

1. Uncorrelated, Directional gain = 10 log[$(10^{G1/10} + 10^{G2/10})^2 / 2$]= 5.61 dBi < 6 dBi, so the limit no need to reduced.
2. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.

802.11n (VHT40)

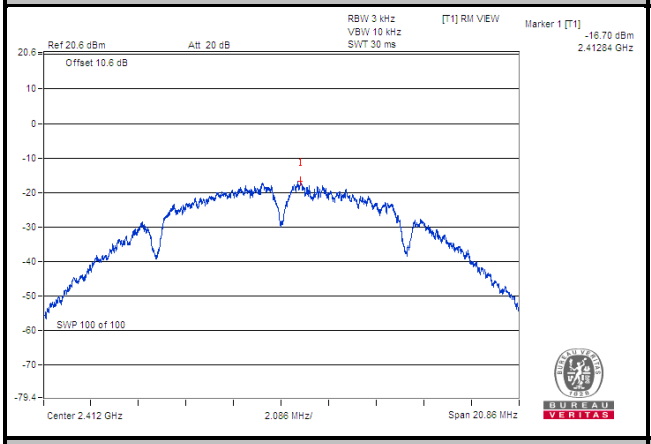
TX Chain	Channel	Freq. (MHz)	PSD (dBm/3 kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
A	3	2422	-25.7	3.01	0.25	-22.44	8	Pass
	4	2427	-23.94	3.01	0.25	-20.68	8	Pass
	5	2432	-21.89	3.01	0.25	-18.63	8	Pass
	6	2437	-24.48	3.01	0.25	-21.22	8	Pass
	7	2442	-21.15	3.01	0.25	-17.89	8	Pass
	8	2447	-28	3.01	0.25	-24.74	8	Pass
	9	2452	-26.77	3.01	0.25	-23.51	8	Pass
	10	2457	-30.53	3.01	0.25	-27.27	8	Pass
	11	2462	-37.15	3.01	0.25	-33.89	8	Pass
B	3	2422	-25.72	3.01	0.25	-22.46	8	Pass
	4	2427	-24.35	3.01	0.25	-21.09	8	Pass
	5	2432	-21.32	3.01	0.25	-18.06	8	Pass
	6	2437	-24.31	3.01	0.25	-21.05	8	Pass
	7	2442	-21.21	3.01	0.25	-17.95	8	Pass
	8	2447	-28	3.01	0.25	-24.74	8	Pass
	9	2452	-26.96	3.01	0.25	-23.7	8	Pass
	10	2457	-30.4	3.01	0.25	-27.14	8	Pass
	11	2462	-36.56	3.01	0.25	-33.3	8	Pass

NOTE:

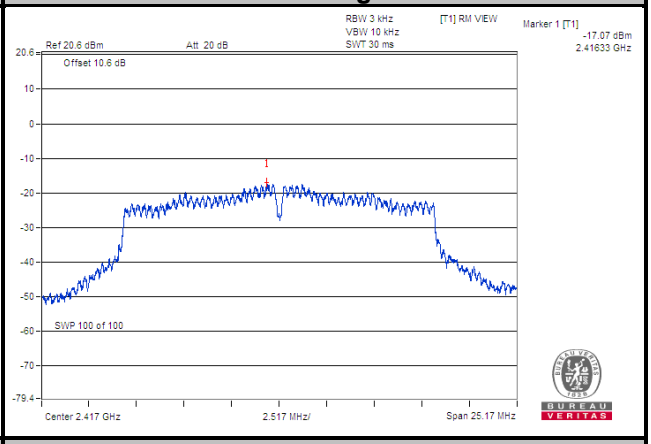
1. Uncorrelated, Directional gain = 10 log[$(10^{G1/10} + 10^{G2/10})^2$ / 2]= 5.61 dBi < 6 dBi, so the limit no need to reduced.
2. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.

Spectrum Plot of Worst Value

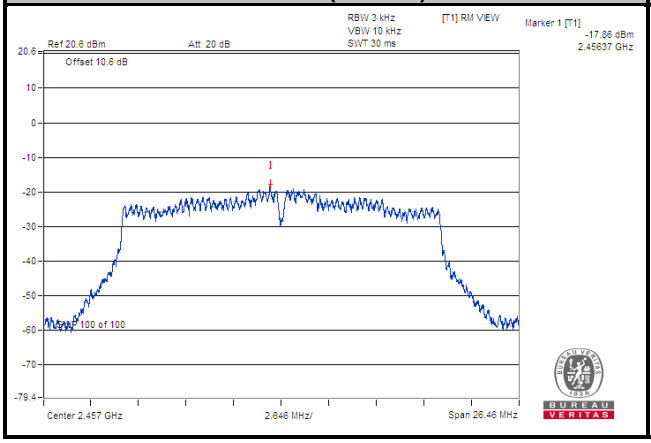
802.11b



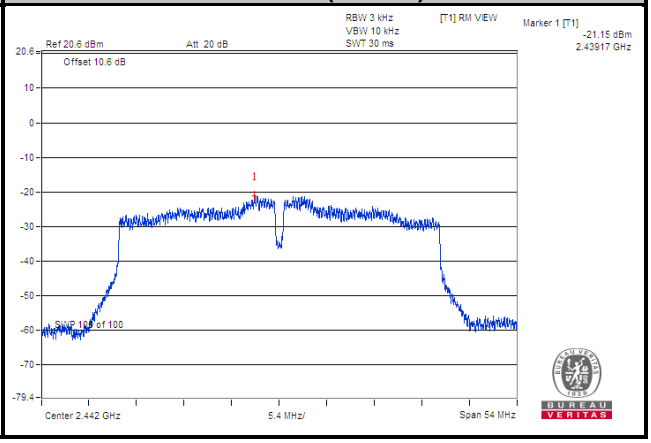
802.11g



802.11n (VHT20)



802.11n (VHT40)

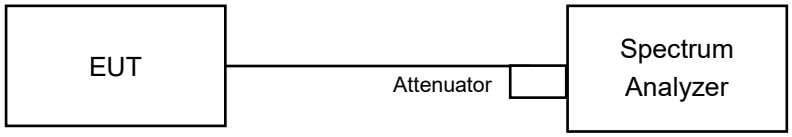


4.7 Conducted Out of Band Emission Measurement

4.7.1 Limits of Conducted Out of Band Emission Measurement

Below -30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

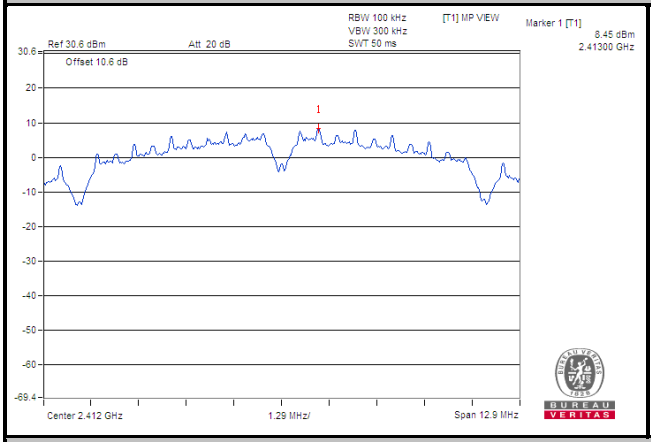
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 30 dB offset below D1. It shows compliance with the requirement.

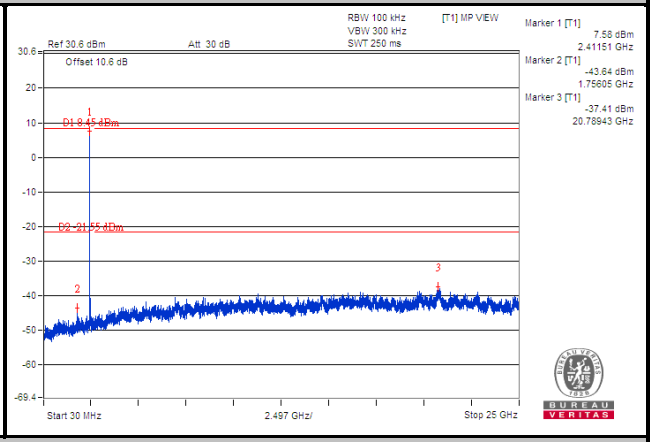
SISO

Chain A

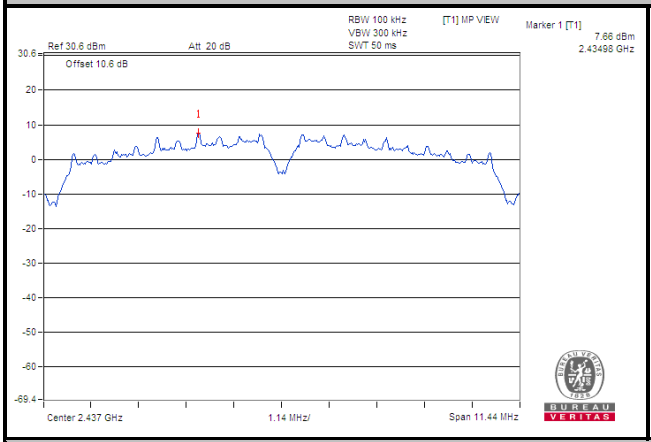
802.11b

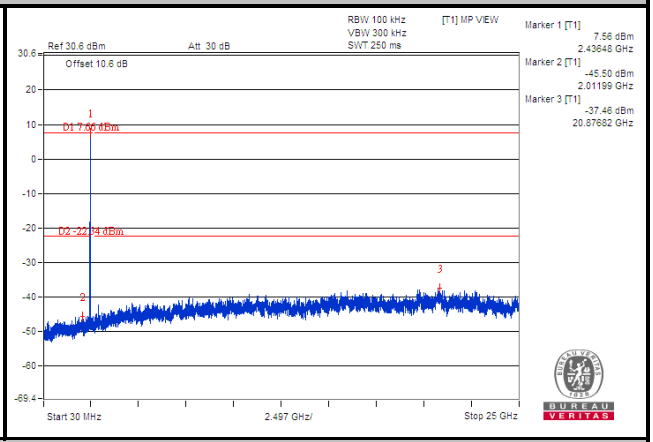
Ch 1



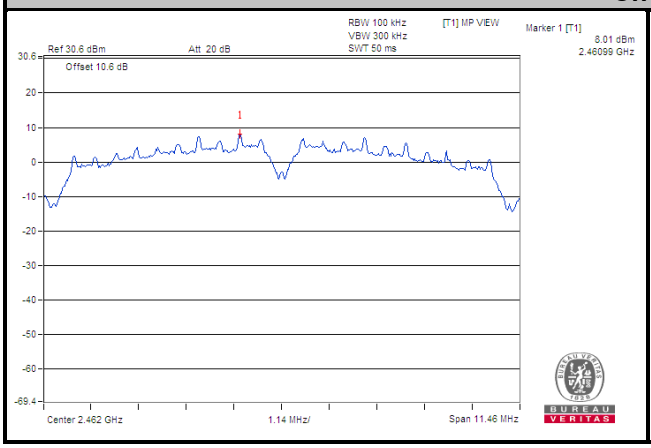


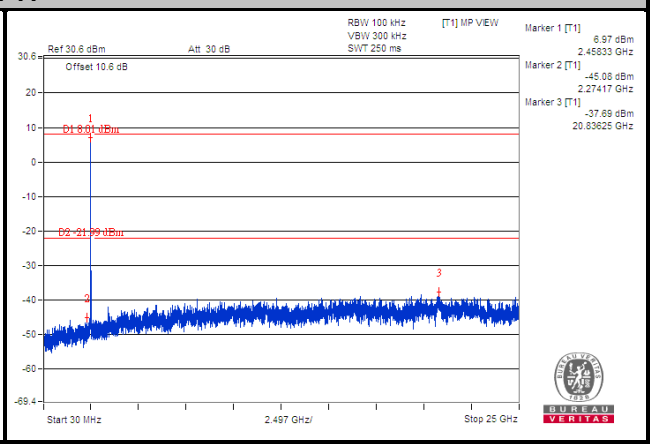
Ch 6



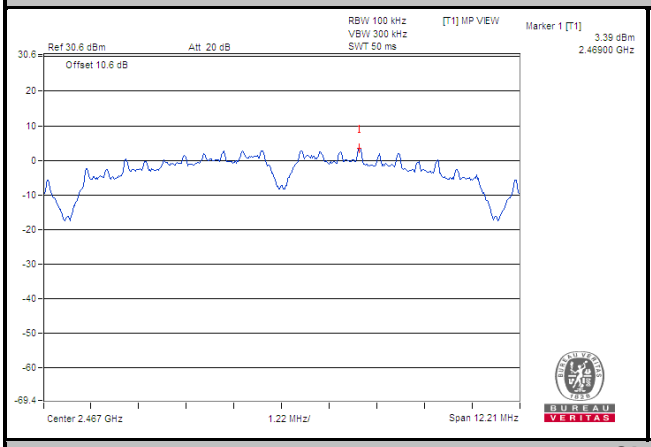


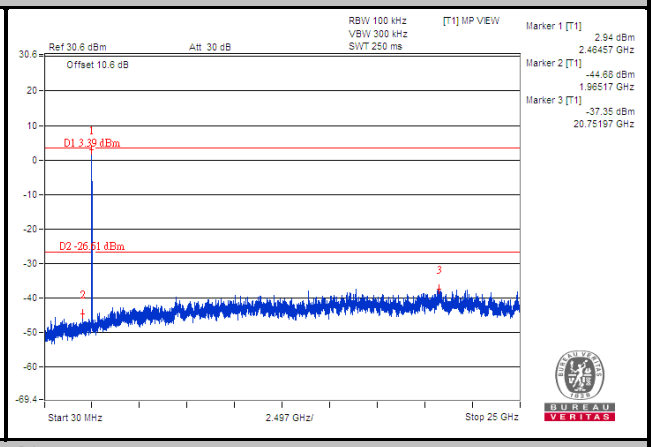
Ch 11



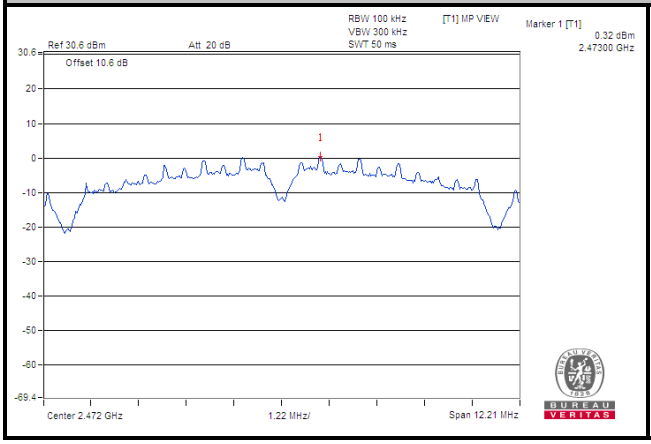


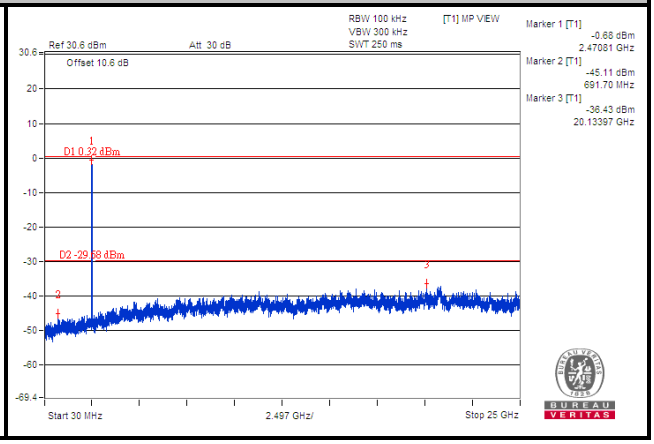
Ch 12

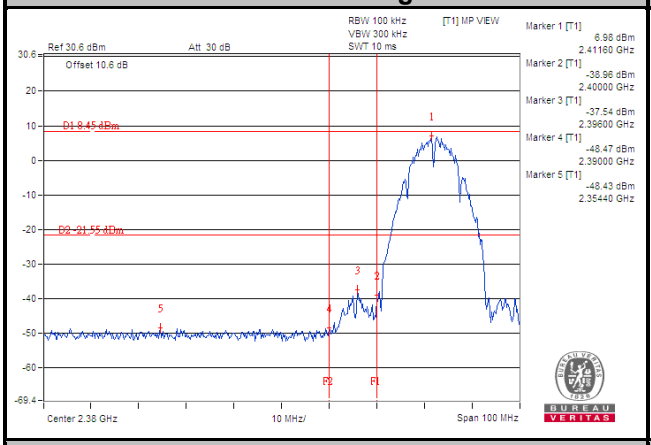
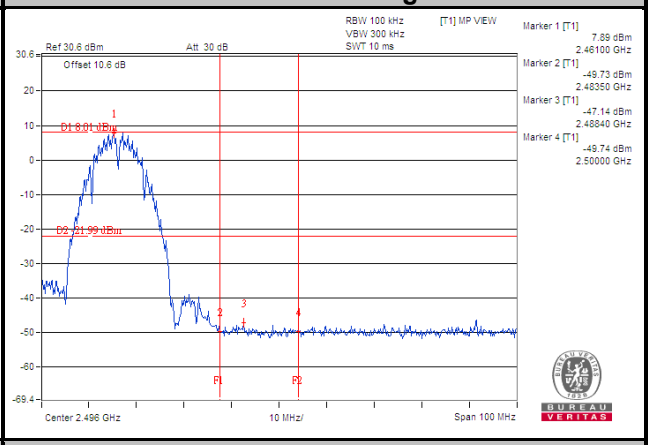
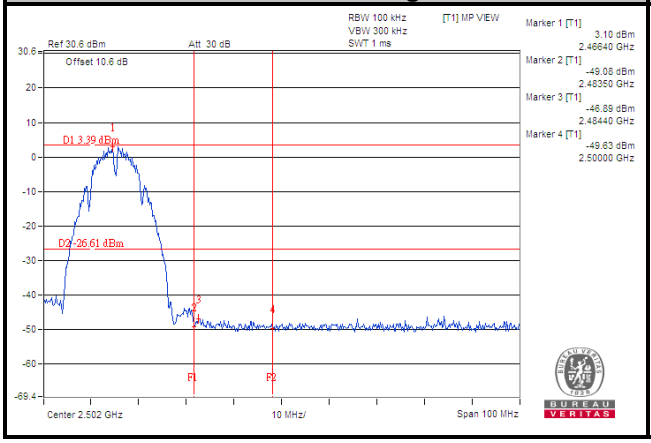
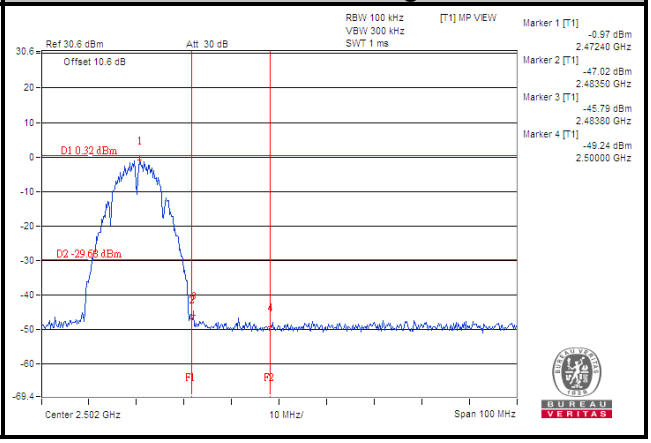

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
3.39 dBm
2.46900 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
1.22 MHz/
Span 12.21 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
2.94 dBm
2.46457 GHz
Marker 2 [T1]
-44.68 dBm
1.96517 GHz
Marker 3 [T1]
-37.35 dBm
20.75197 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 3.39 dBm
D2 -26.61 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.32 dBm
2.47300 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
1.22 MHz/
Span 12.21 MHz

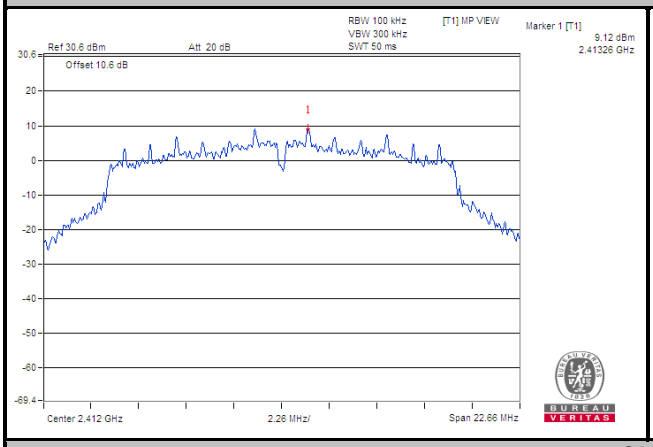

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-0.68 dBm
2.47081 GHz
Marker 2 [T1]
-45.11 dBm
691.70 MHz
Marker 3 [T1]
-36.43 dBm
20.13397 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.32 dBm
D2 -29.68 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

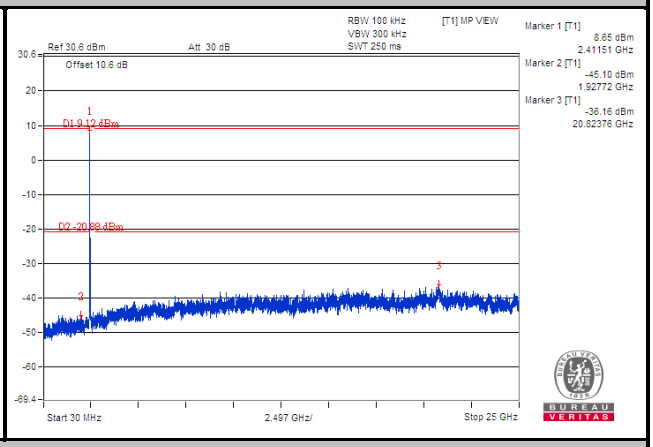
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

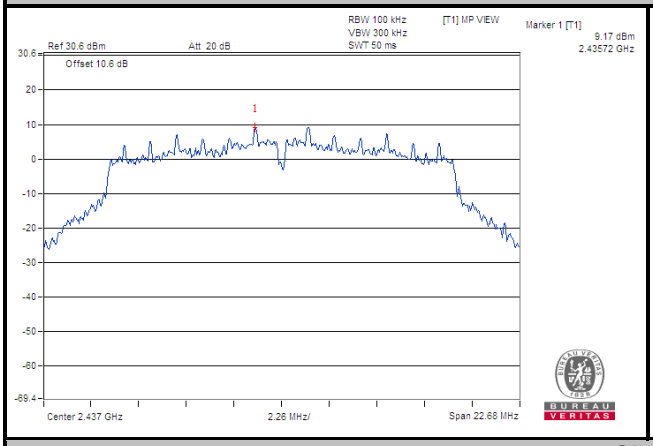
802.11g

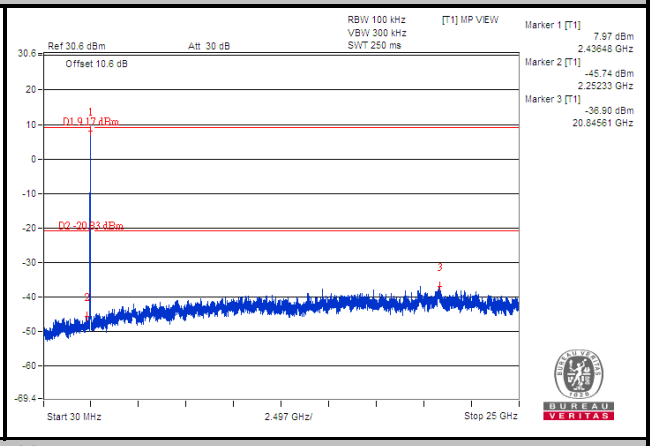
Ch 1



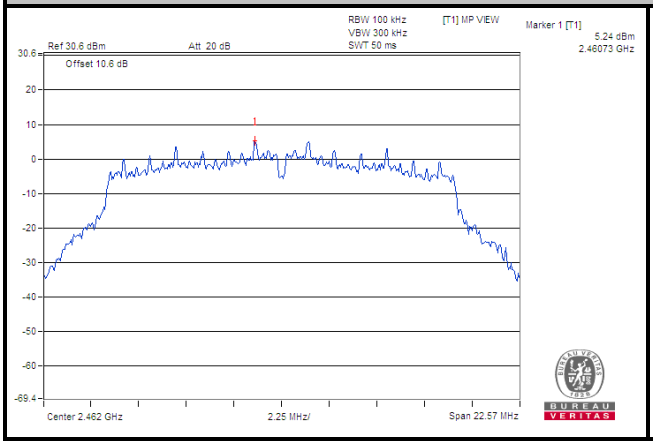


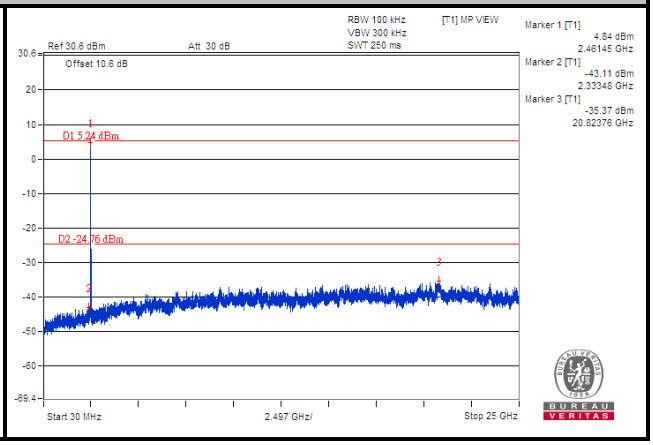
Ch 6



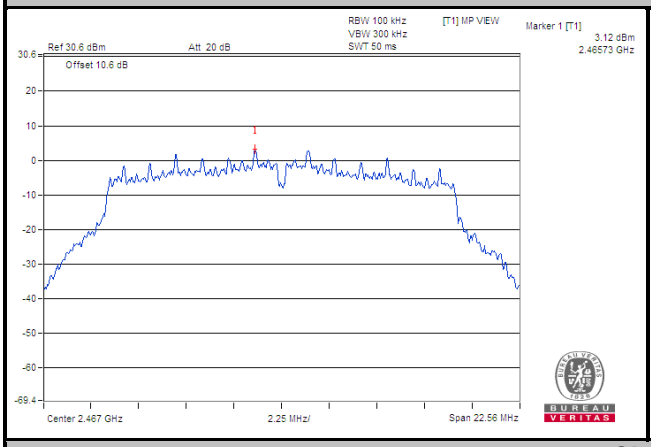


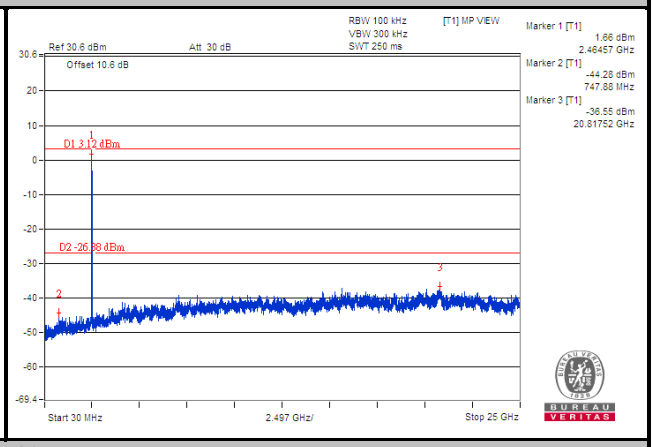
Ch 11



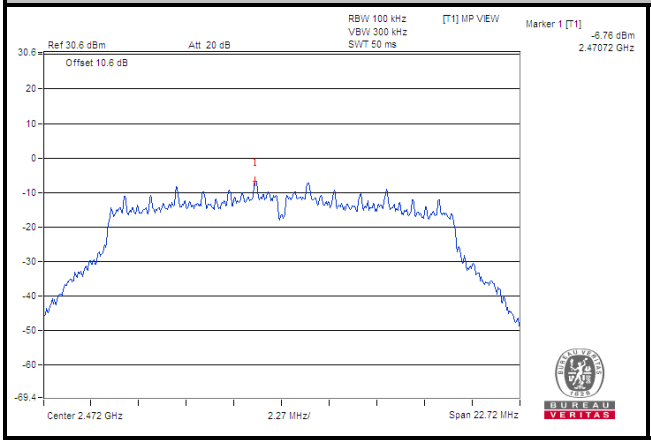


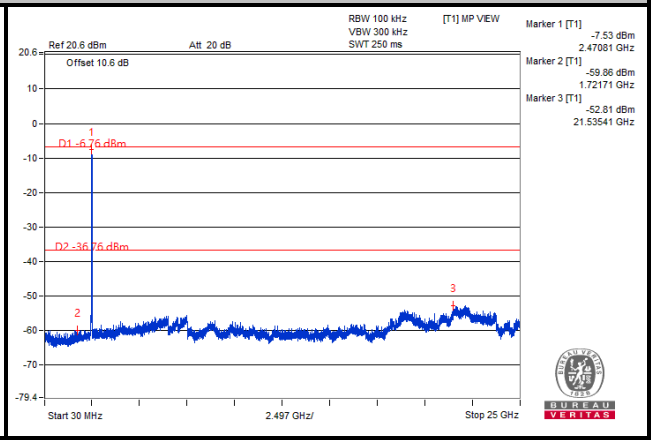
Ch 12

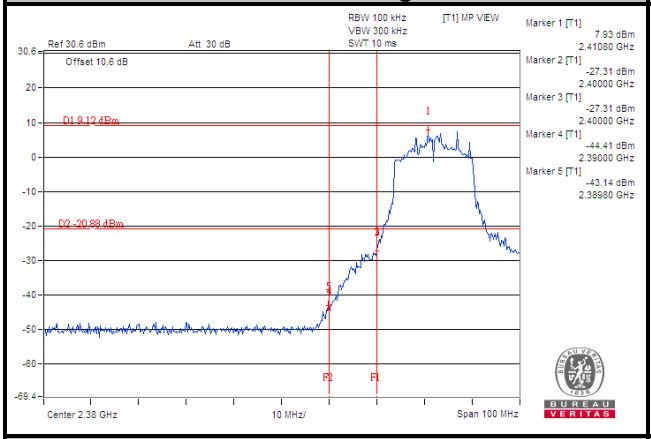
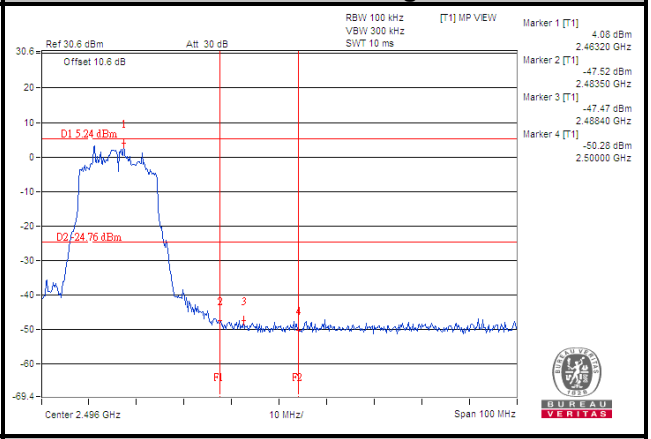
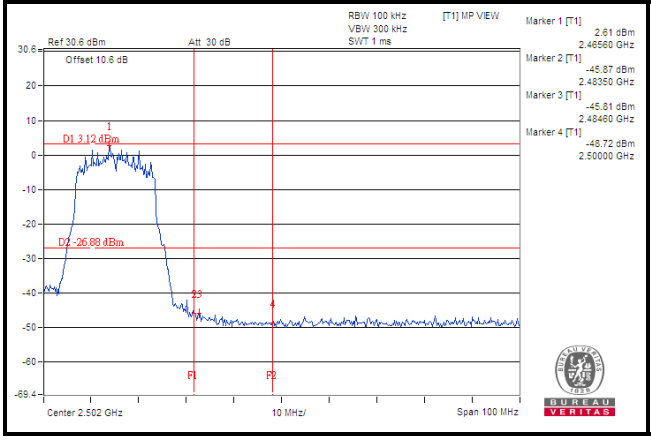
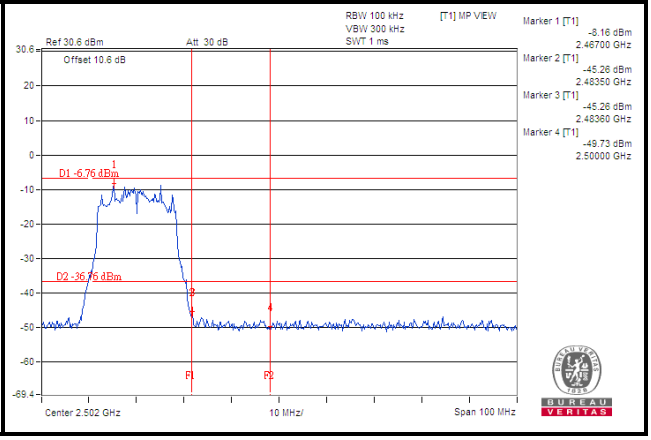

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
3.12 dBm
2.46573 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.25 MHz/
Span 22.56 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
1.66 dBm
2.46457 GHz
Marker 2 [T1]
-44.28 dBm
747.88 MHz
Marker 3 [T1]
-36.55 dBm
20.81752 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 3.12 dBm
D2 -26.88 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-6.76 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.27 MHz/
Span 22.72 MHz

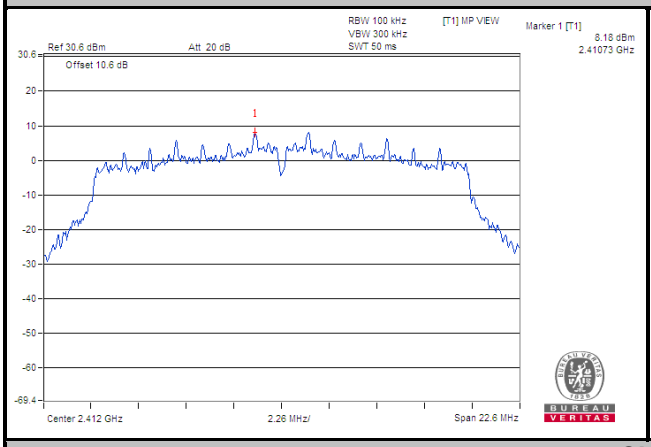

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-7.53 dBm
2.47081 GHz
Marker 2 [T1]
-59.86 dBm
1.72171 GHz
Marker 3 [T1]
-52.81 dBm
21.53541 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -6.76 dBm
D2 -36.76 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

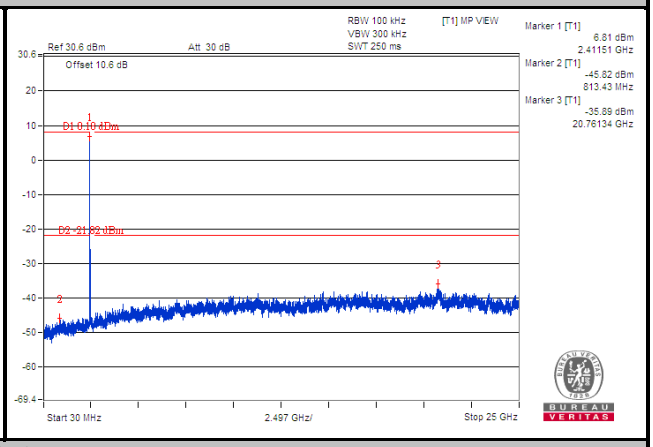
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

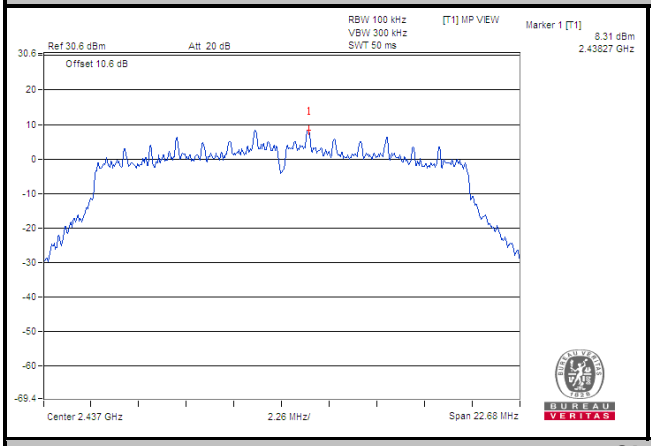
802.11n (VHT20)

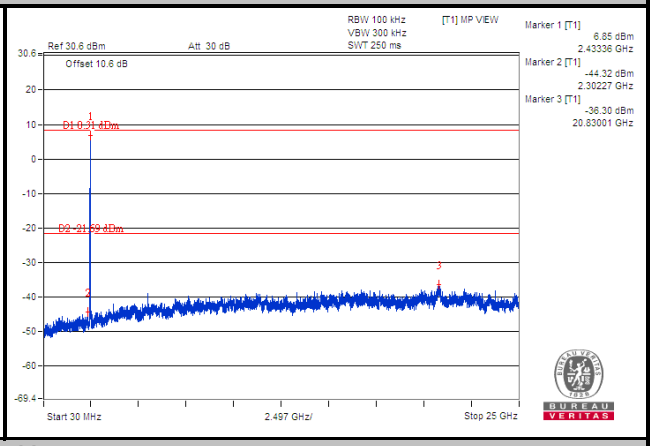
Ch 1



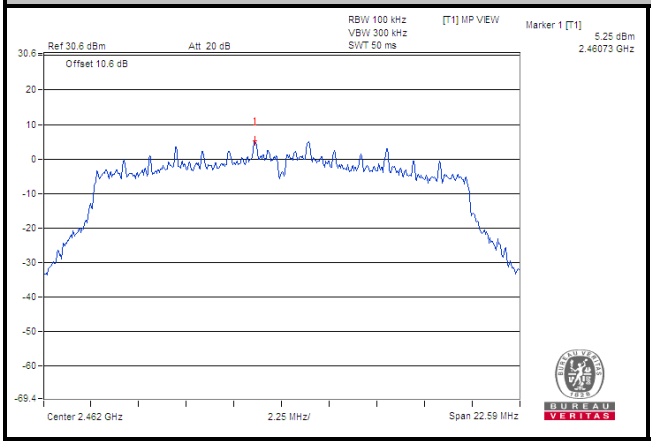


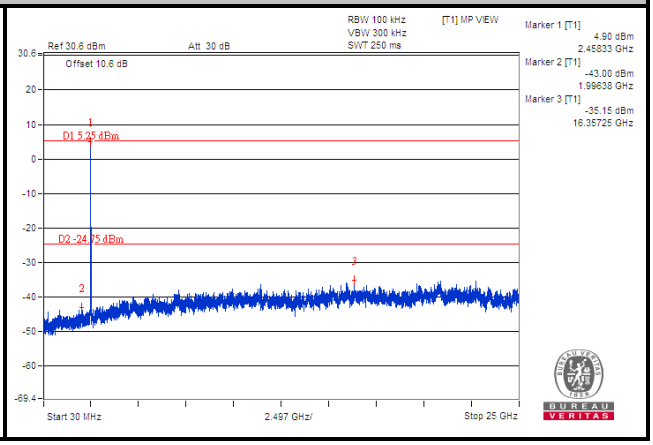
Ch 6



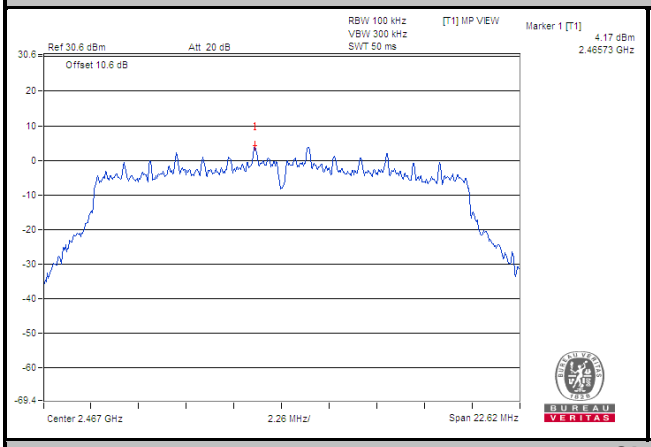


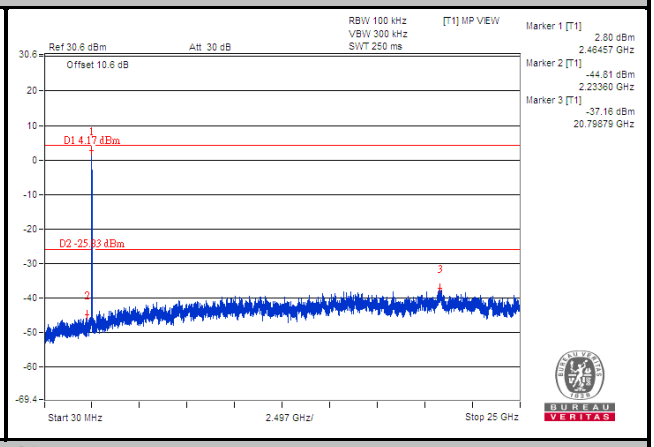
Ch 11



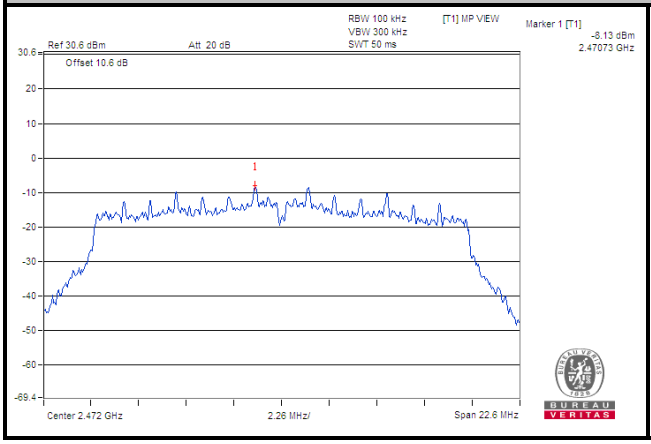


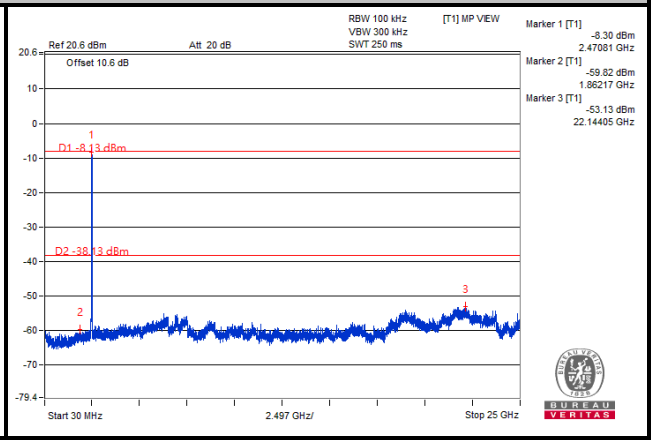
Ch 12

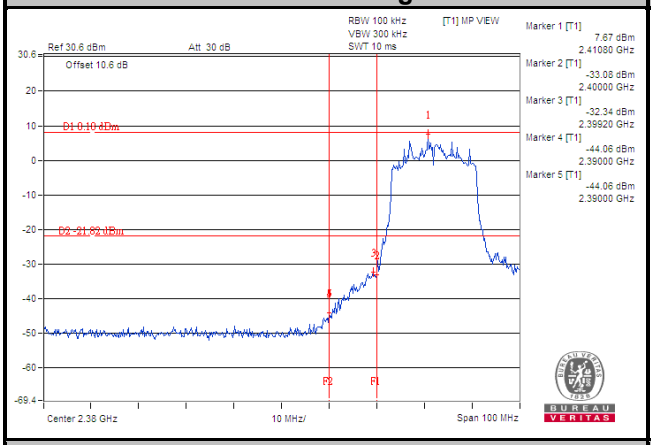
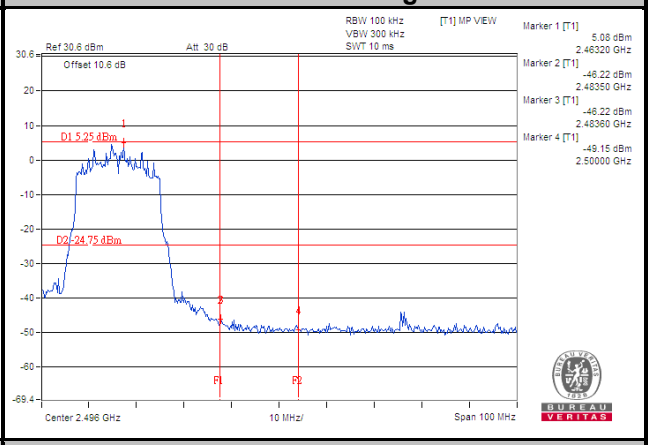
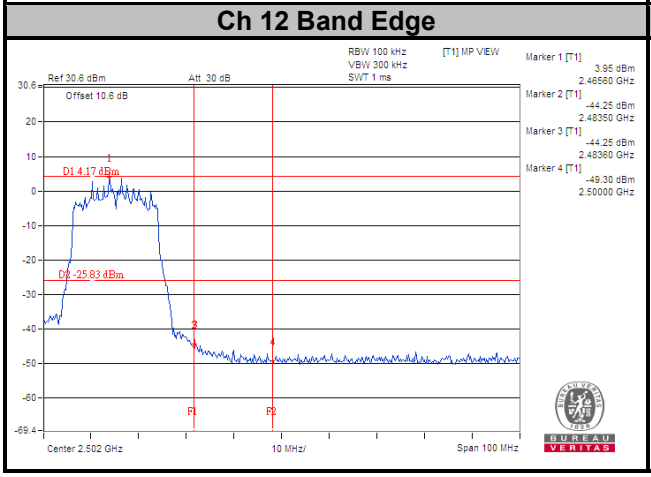
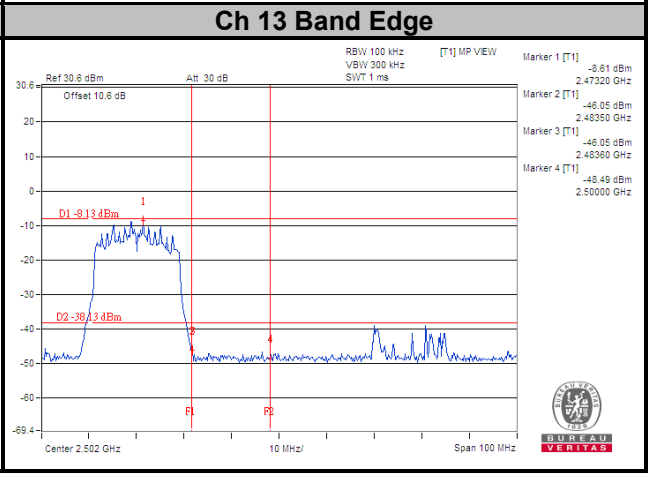

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
4.17 dBm
2.46573 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.26 MHz/
Span 22.62 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
2.80 dBm
2.46457 GHz
Marker 2 [T1]
-44.81 dBm
2.23360 GHz
Marker 3 [T1]
-37.16 dBm
20.79879 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 4.17 dBm
D2 -25.83 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-8.13 dBm
2.47073 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.6 MHz

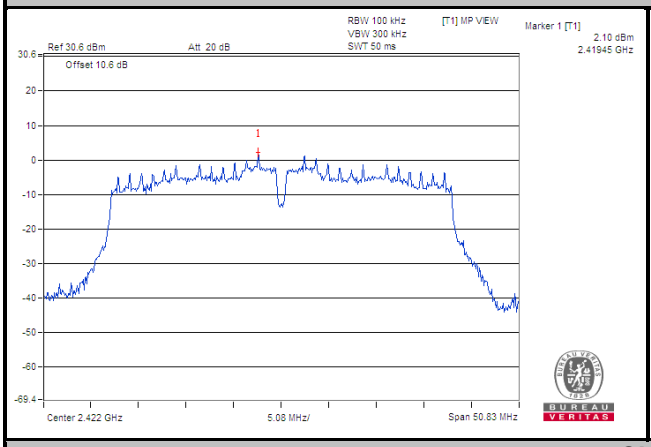

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-8.30 dBm
2.47081 GHz
Marker 2 [T1]
-59.82 dBm
1.86217 GHz
Marker 3 [T1]
-53.13 dBm
22.14405 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -8.13 dBm
D2 -38.13 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

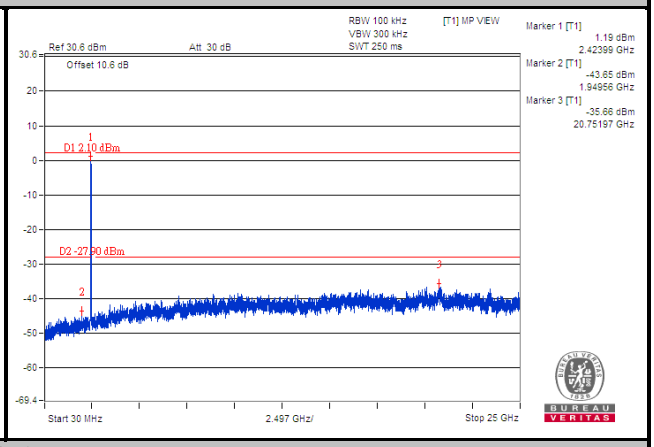
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

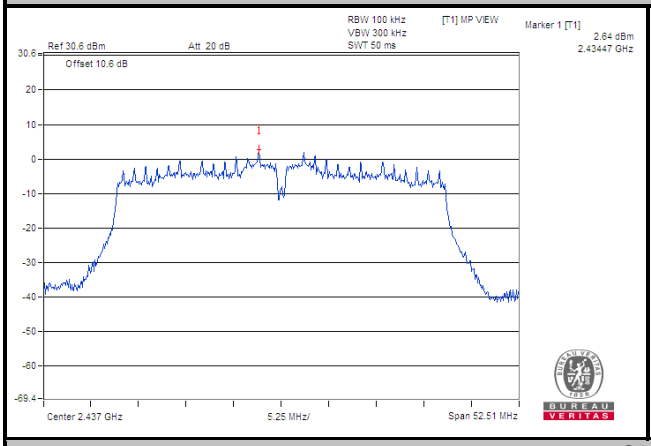
802.11n (VHT40)

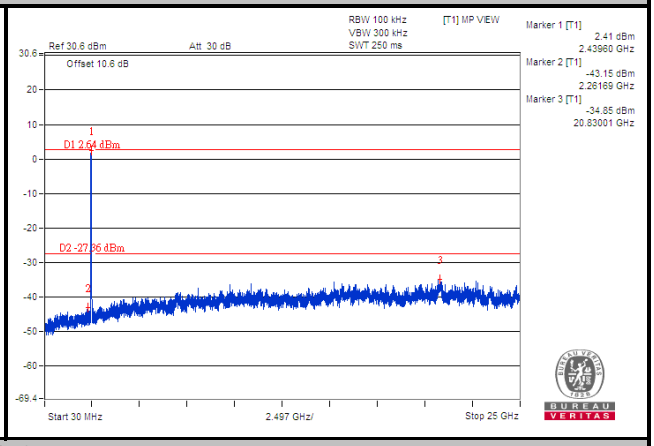
Ch 3



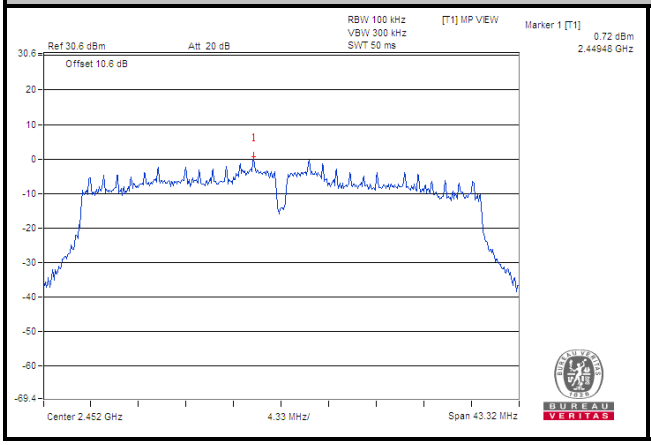


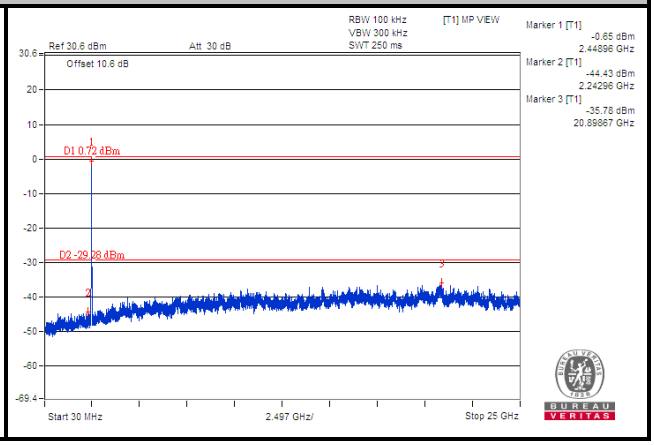
Ch 6



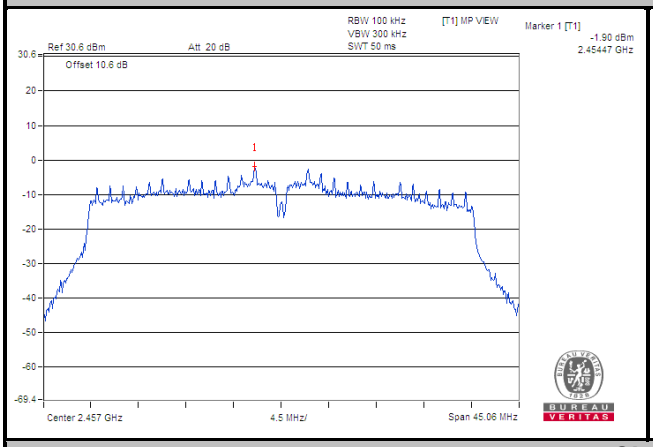


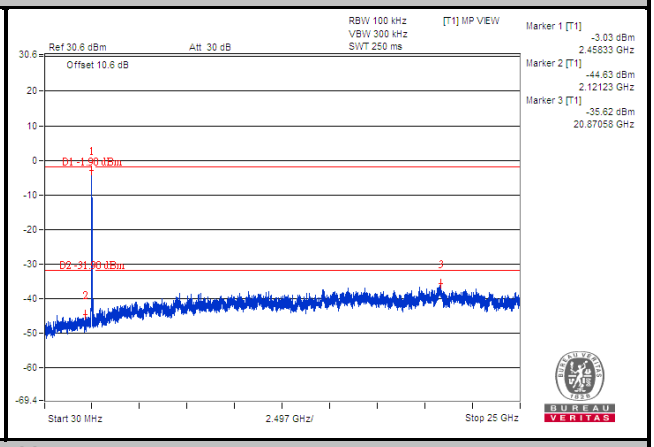
Ch 9



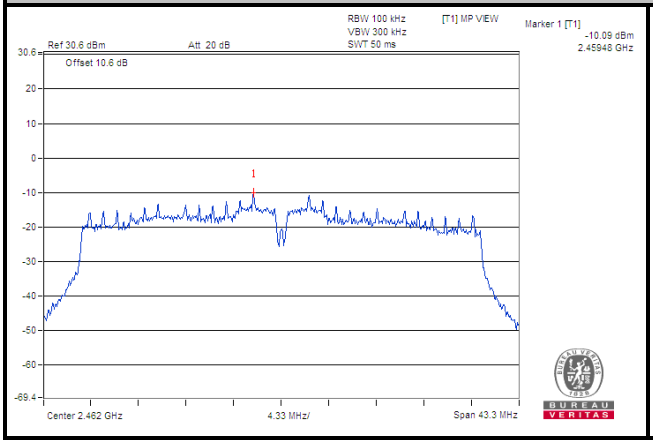


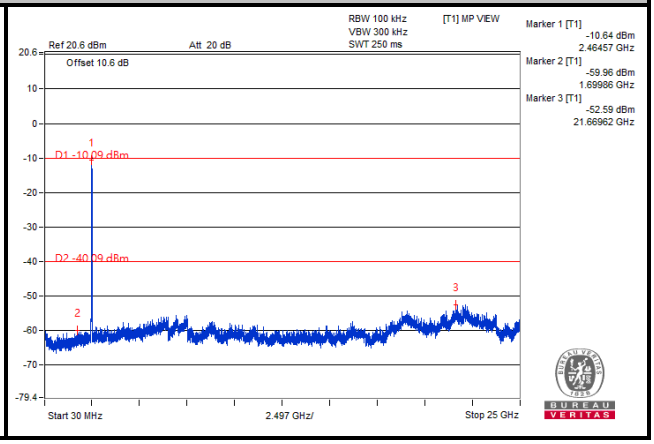
Ch 10

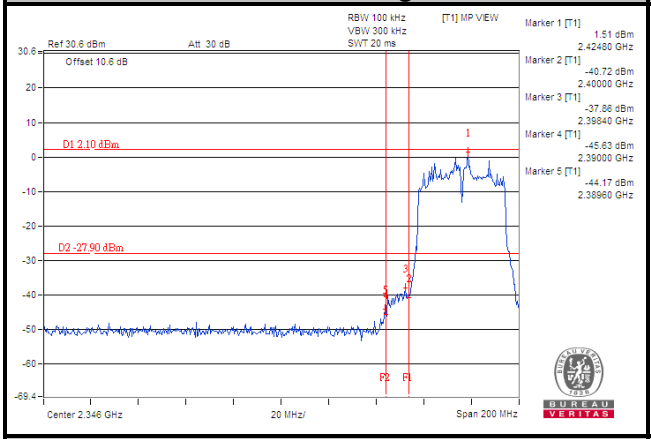
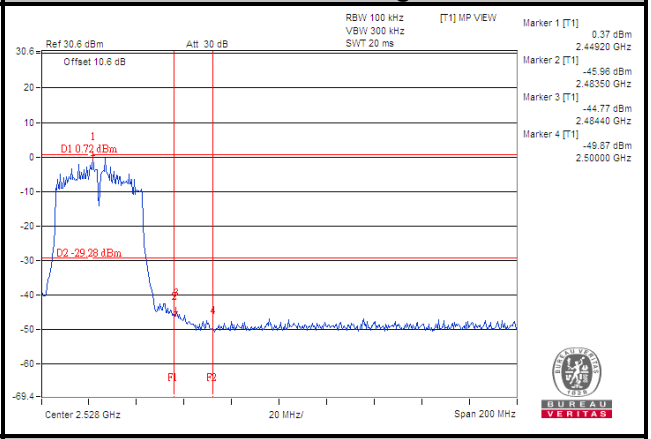
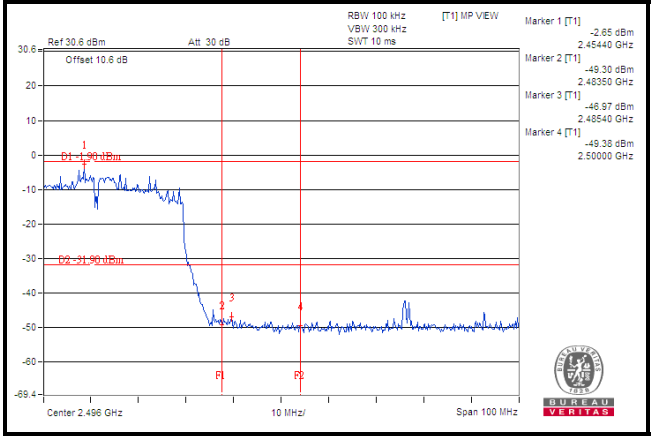
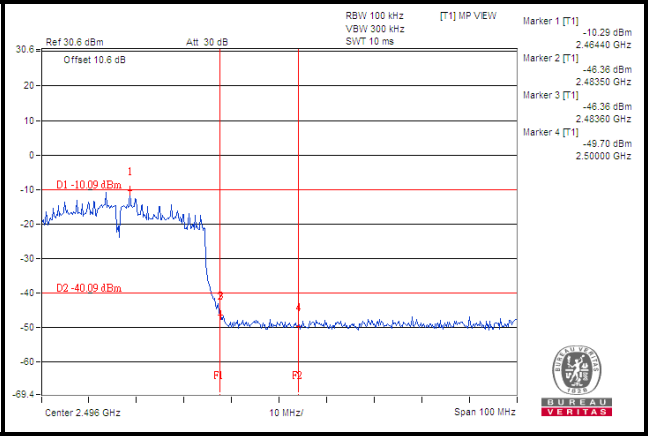

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-1.90 dBm
2.45447 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.457 GHz
4.5 MHz/
Span 45.06 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-3.03 dBm
2.45833 GHz
Marker 2 [T1]
-44.63 dBm
2.12123 GHz
Marker 3 [T1]
-35.62 dBm
20.87058 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 11


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-10.09 dBm
2.45948 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.462 GHz
4.33 MHz/
Span 43.3 MHz

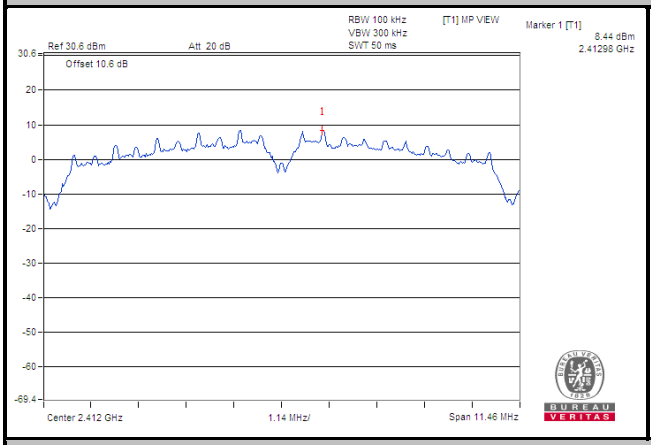

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-10.64 dBm
2.46457 GHz
Marker 2 [T1]
-59.96 dBm
1.69986 GHz
Marker 3 [T1]
-52.59 dBm
21.66962 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -10.09 dBm
D2 -40.09 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

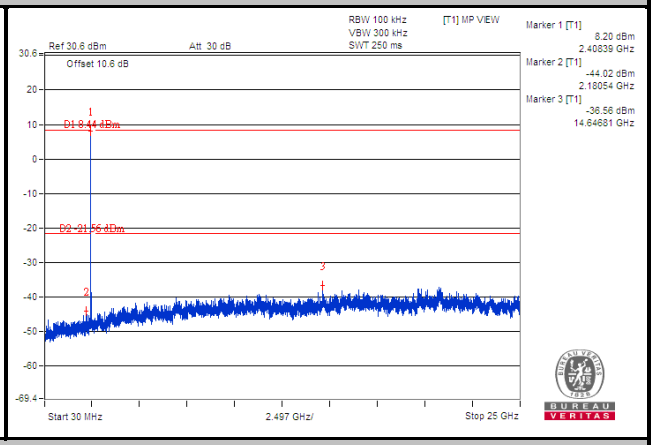
Ch 3 Band Edge	Ch 9 Band Edge
	
Ch 10 Band Edge	**Ch 11 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

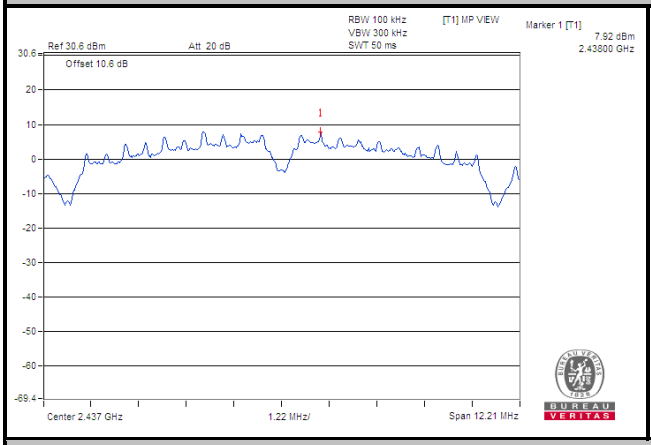
SISO
Chain B
802.11b

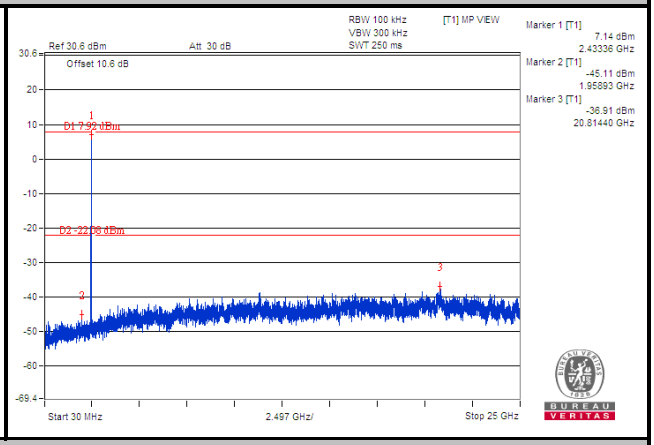
Ch 1



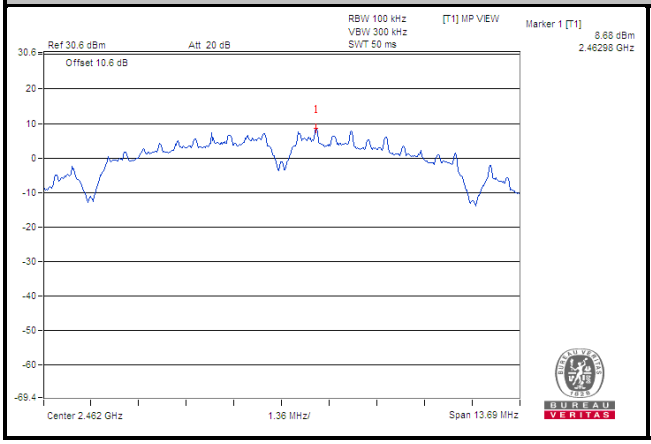


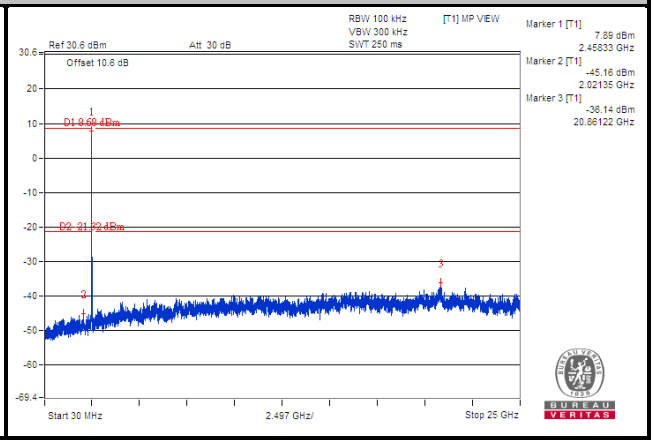
Ch 6



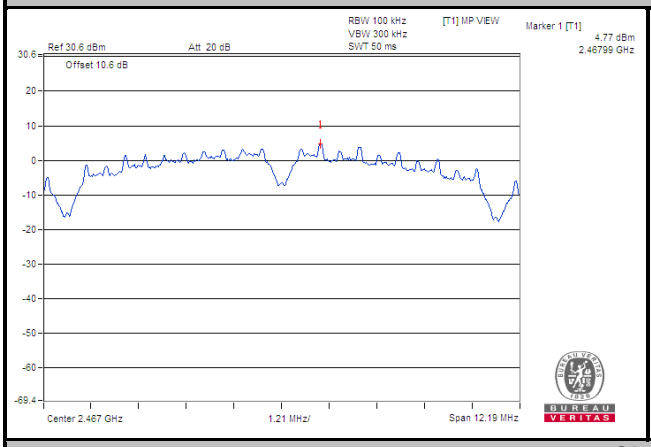


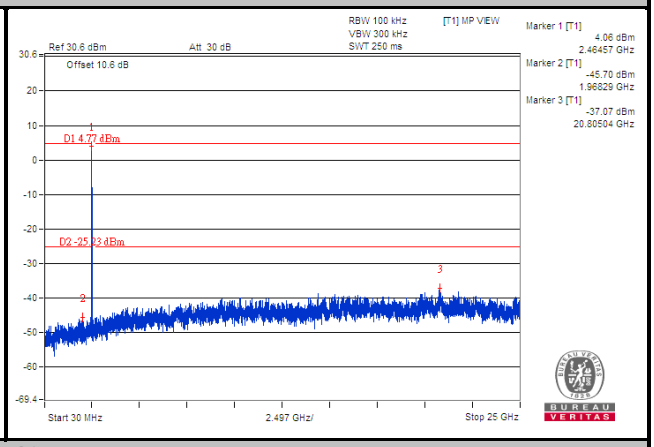
Ch 11



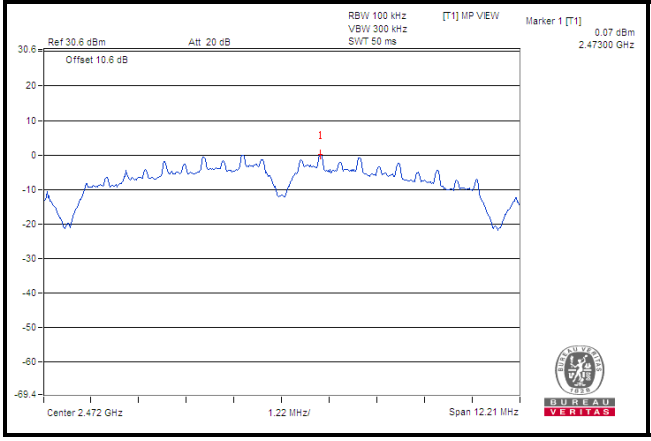


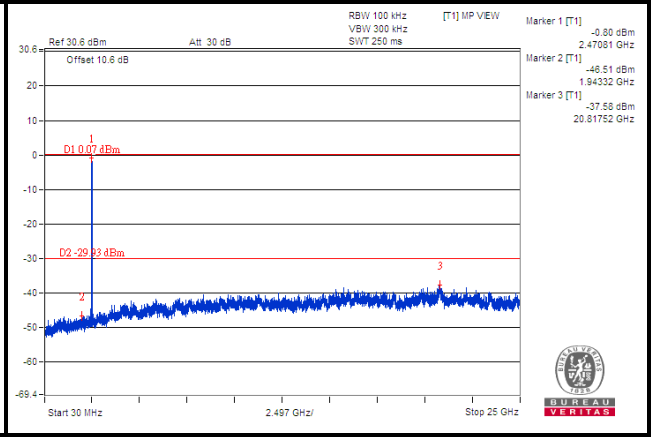
Ch 12

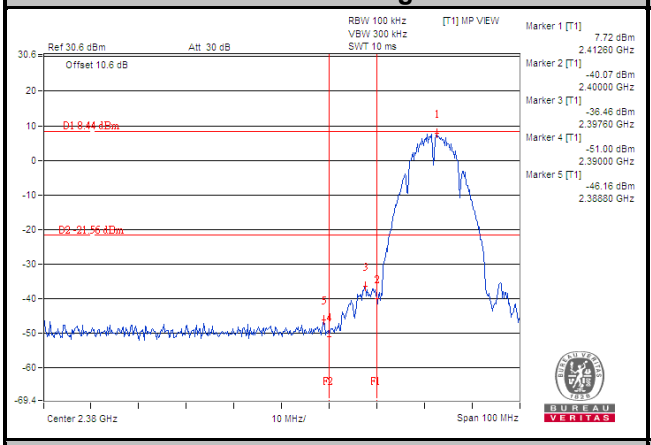
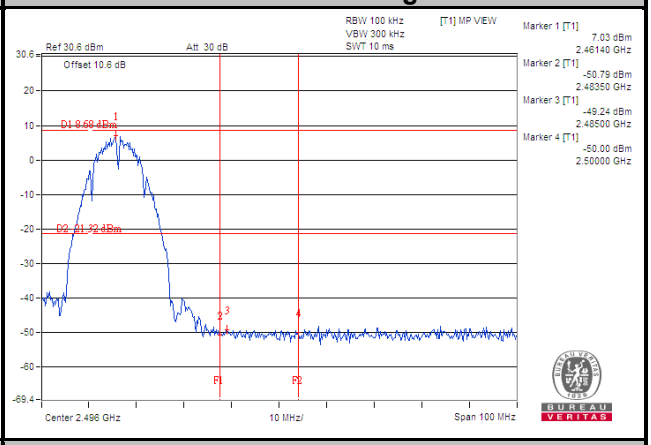
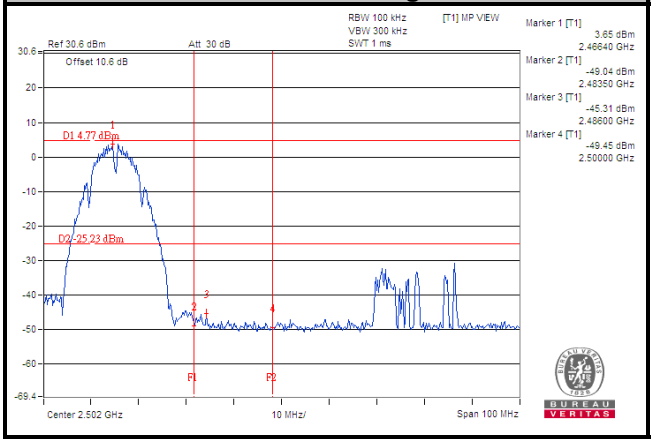
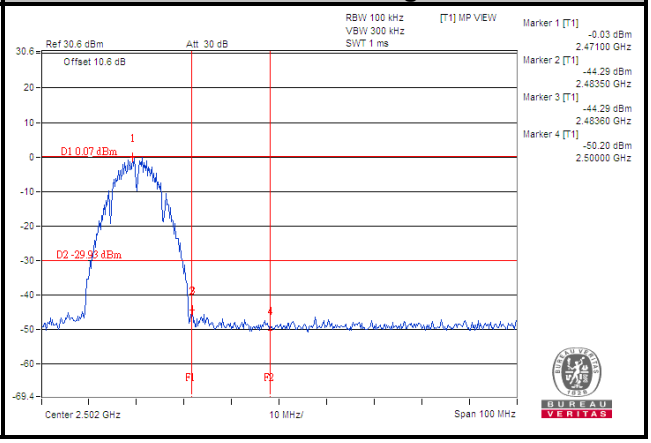

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
4.77 dBm
2.46799 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
1.21 MHz/
Span 12.19 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
4.06 dBm
2.46457 GHz
Marker 2 [T1]
-45.70 dBm
1.96829 GHz
Marker 3 [T1]
-37.07 dBm
20.80504 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 4.77 dBm
D2 -25.23 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.07 dBm
2.47300 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
1.22 MHz/
Span 12.21 MHz

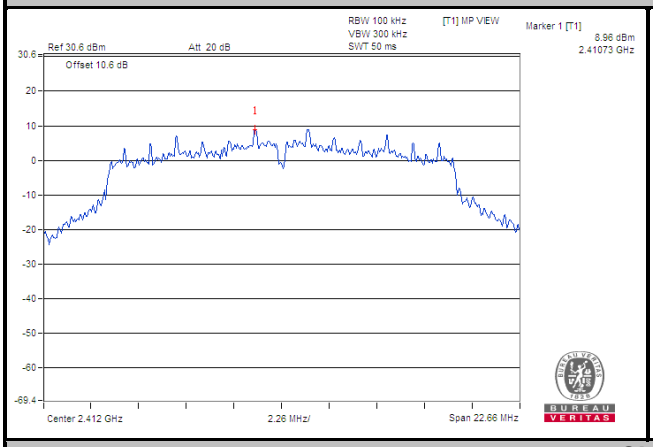

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-0.80 dBm
2.47081 GHz
Marker 2 [T1]
-46.51 dBm
1.94332 GHz
Marker 3 [T1]
-37.58 dBm
20.81752 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.07 dBm
D2 -29.93 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

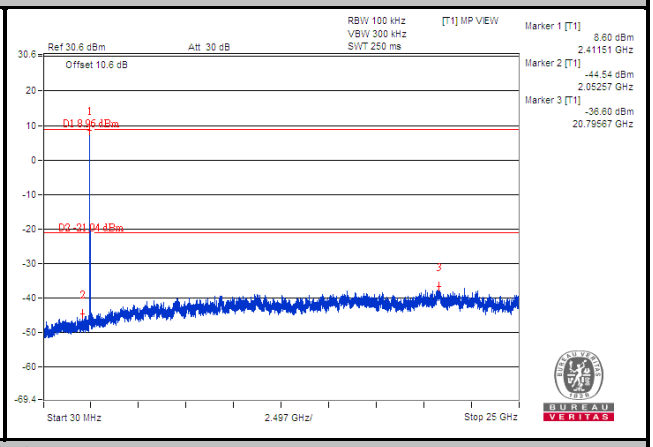
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

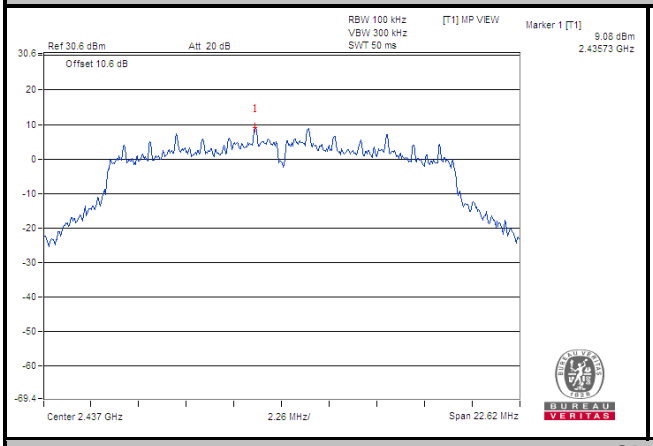
802.11g

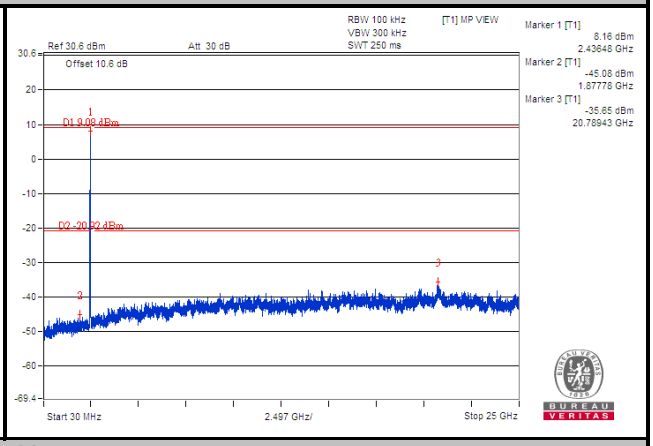
Ch 1



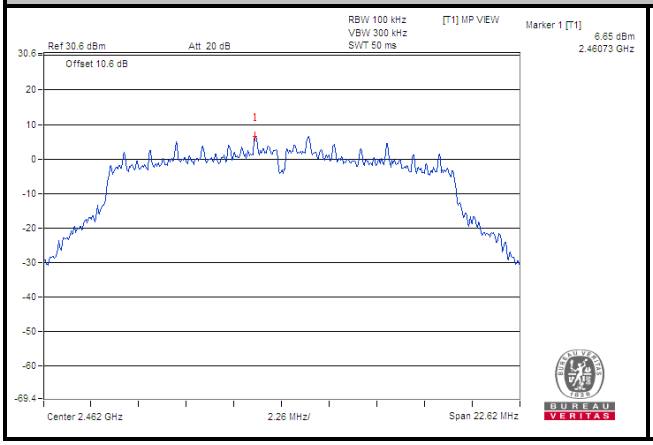


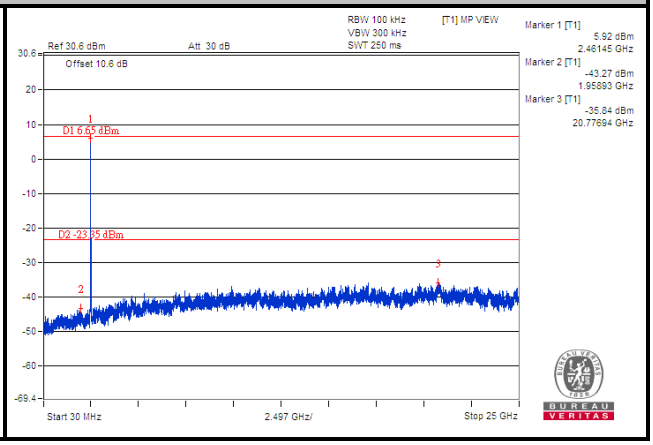
Ch 6



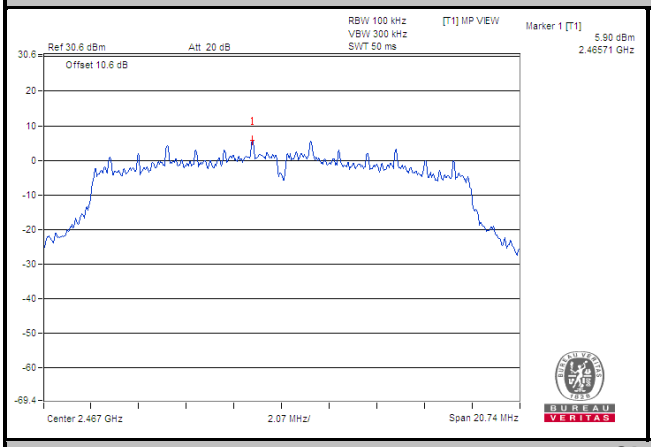


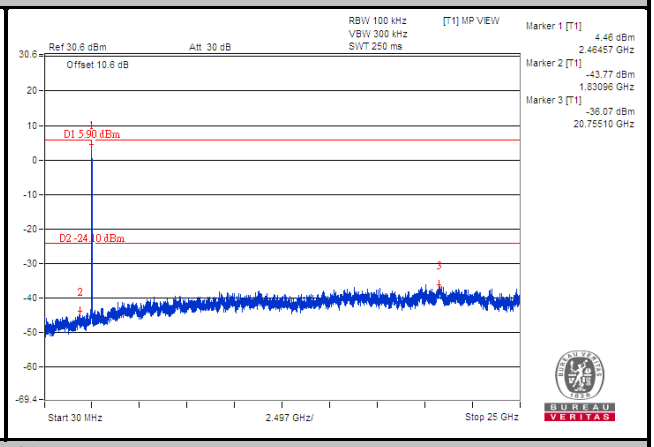
Ch 11



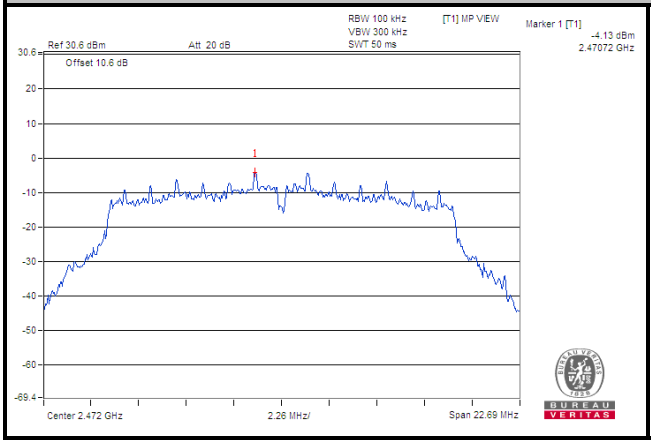


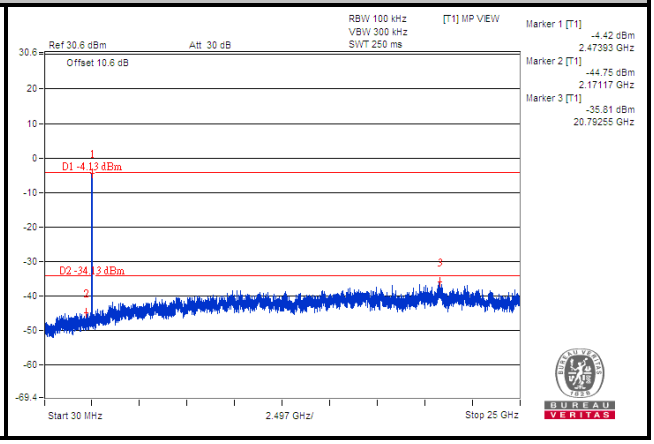
Ch 12

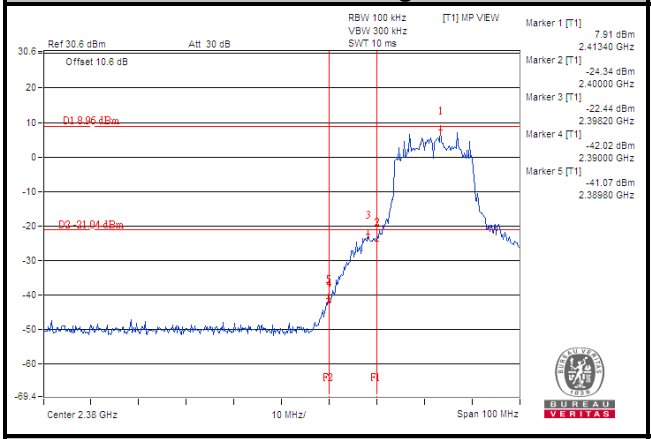
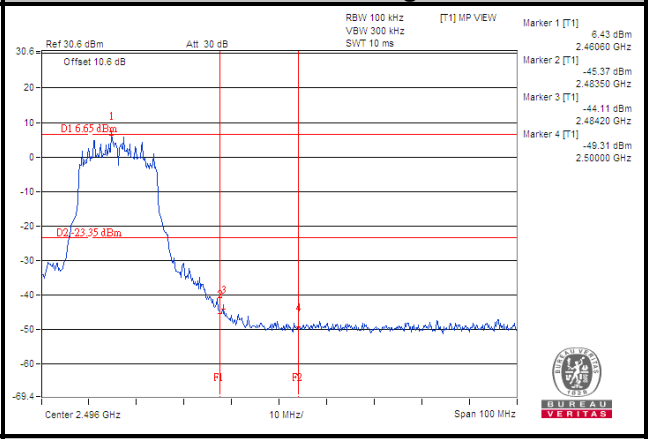
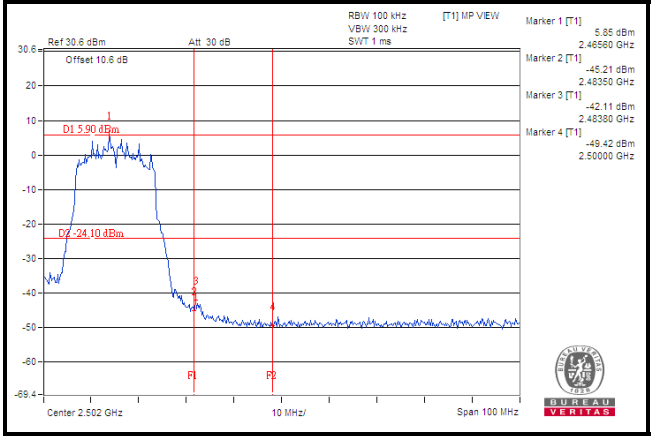
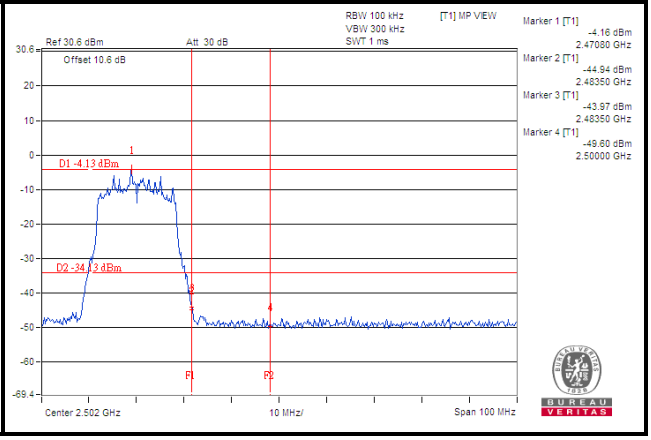

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
5.90 dBm
2.46571 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.07 MHz/
Span 20.74 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
4.46 dBm
2.46457 GHz
Marker 2 [T1]
-43.77 dBm
1.83096 GHz
Marker 3 [T1]
-36.07 dBm
20.75510 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 5.90 dBm
D2 -24.10 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-4.13 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.69 MHz

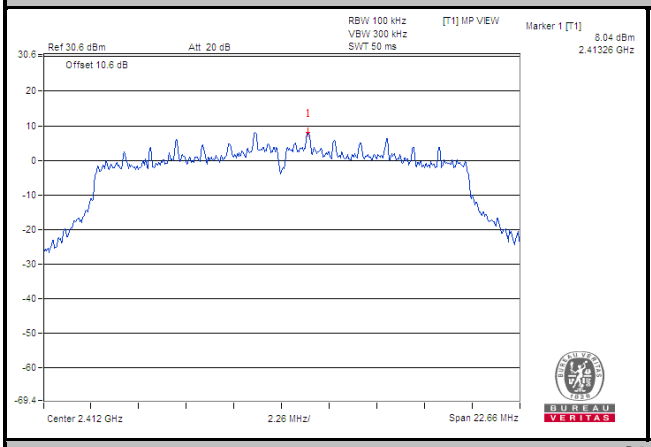

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-4.42 dBm
2.47393 GHz
Marker 2 [T1]
-44.75 dBm
2.17117 GHz
Marker 3 [T1]
-35.81 dBm
20.79255 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -4.13 dBm
D2 -34.13 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

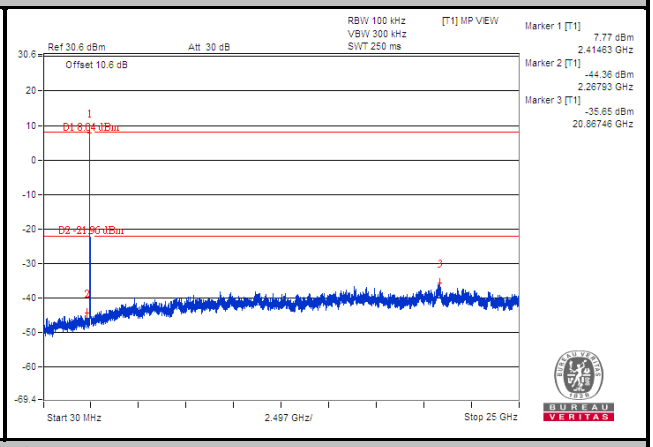
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

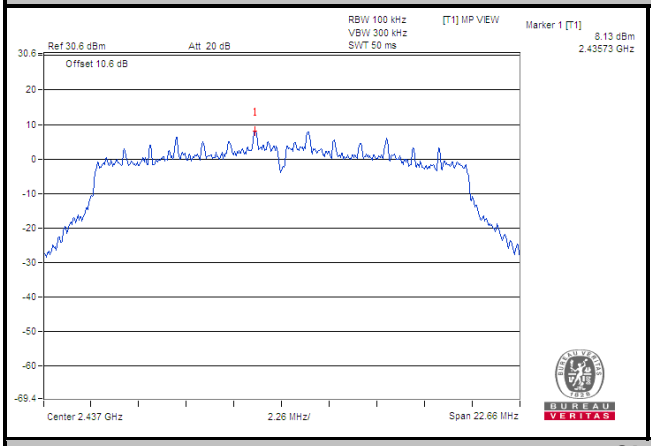
802.11n (VHT20)

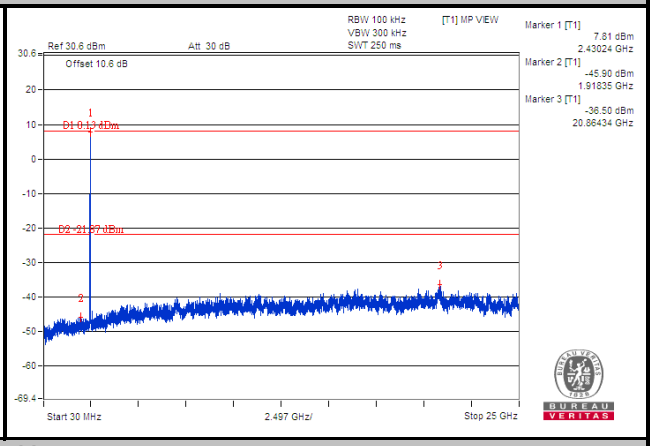
Ch 1



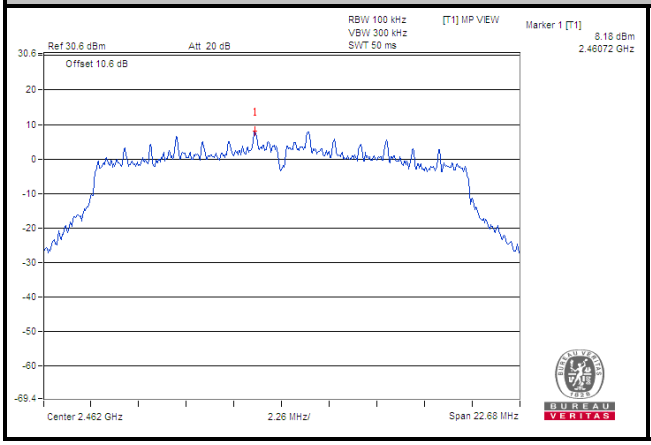


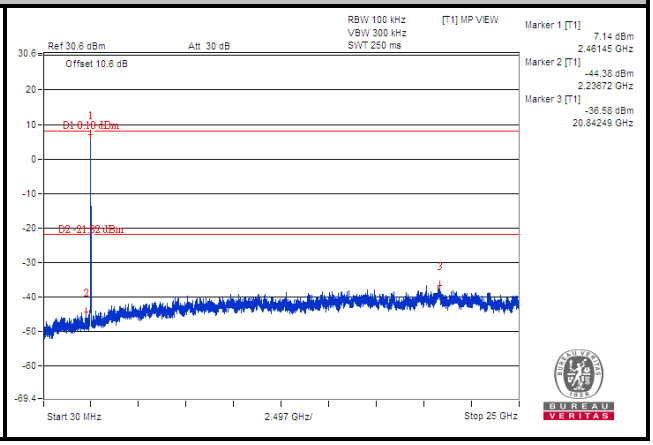
Ch 6



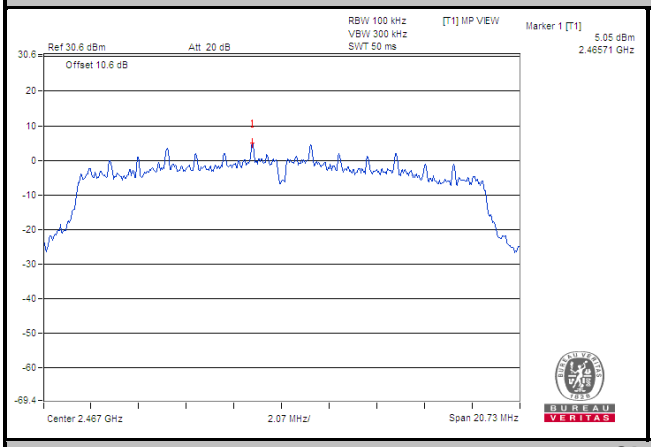


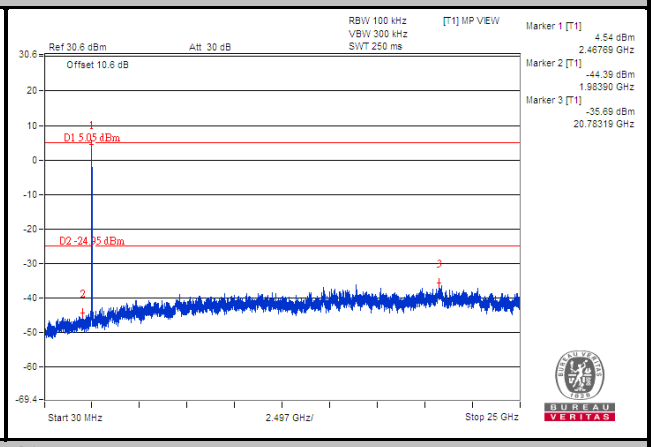
Ch 11



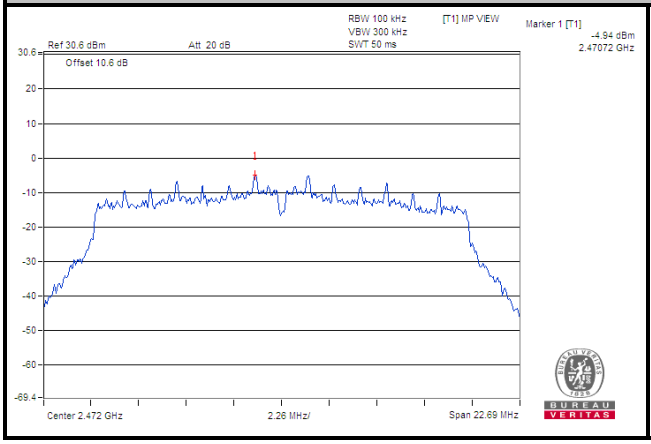


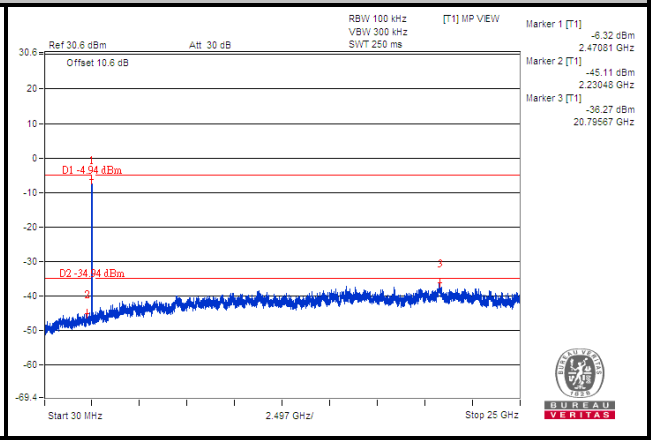
Ch 12

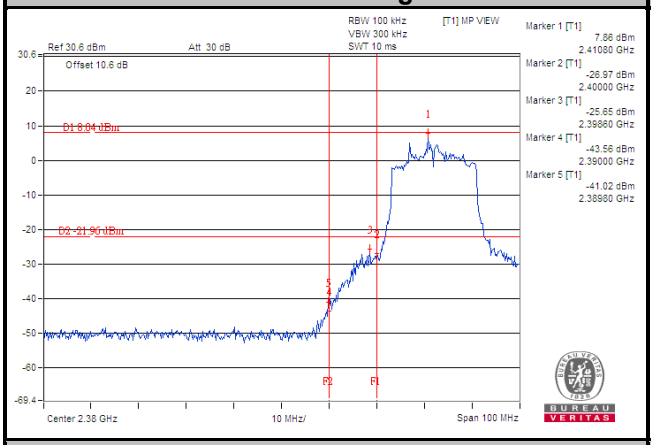
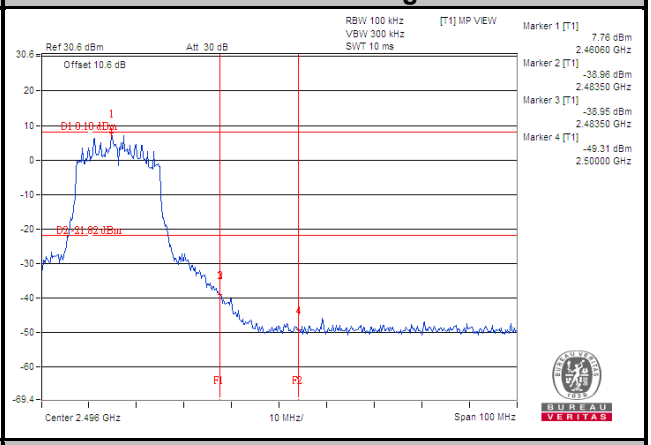
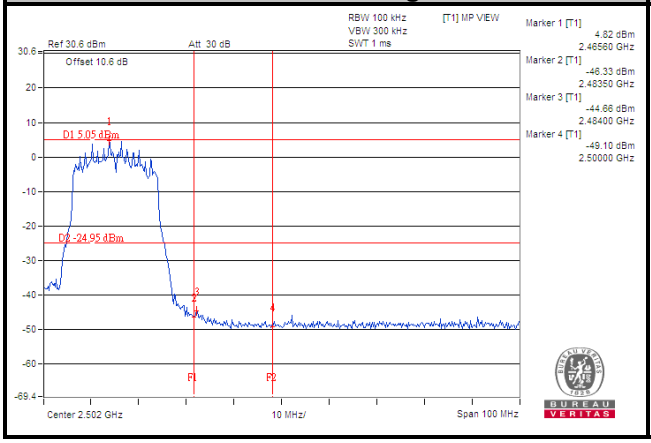
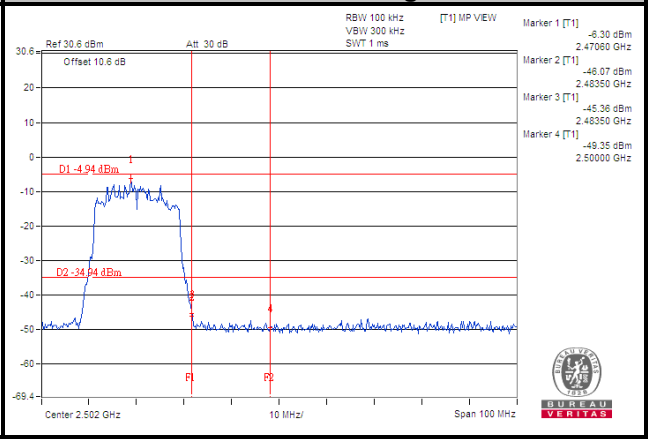

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-5.05 dBm
2.46571 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.07 MHz/
Span 20.73 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
4.54 dBm
2.46769 GHz
Marker 2 [T1]
-44.39 dBm
1.98390 GHz
Marker 3 [T1]
-35.69 dBm
20.78319 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 5.05 dBm
D2 -24.95 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-4.94 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.69 MHz

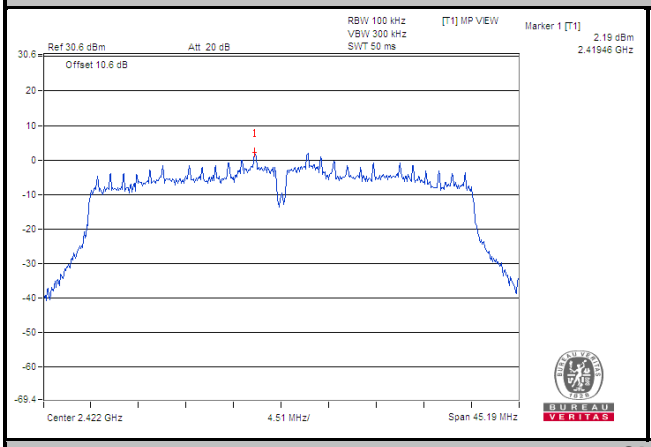

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-6.32 dBm
2.47081 GHz
Marker 2 [T1]
-45.11 dBm
2.23048 GHz
Marker 3 [T1]
-36.27 dBm
20.79567 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -4.94 dBm
D2 -34.94 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

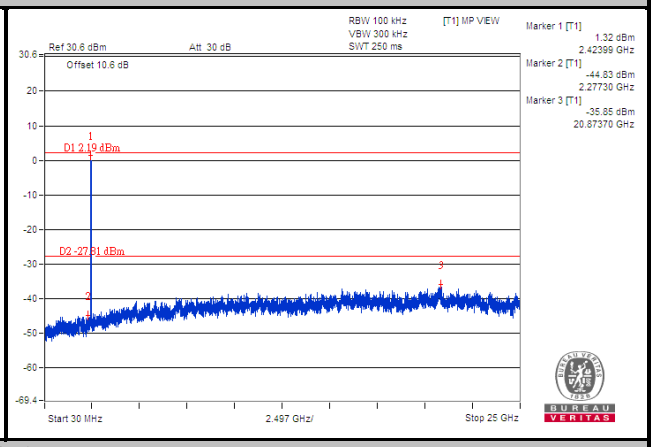
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

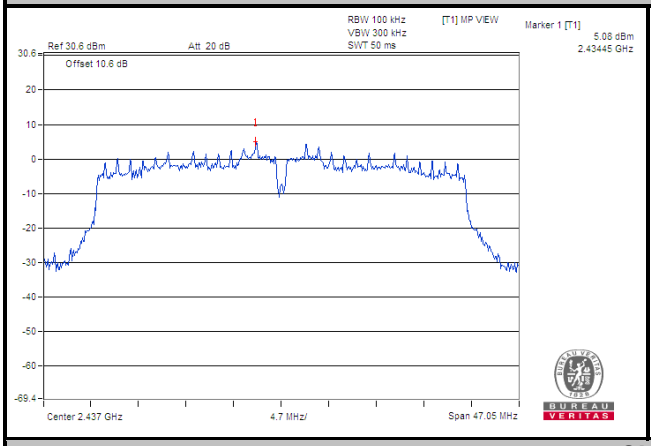
802.11n (VHT40)

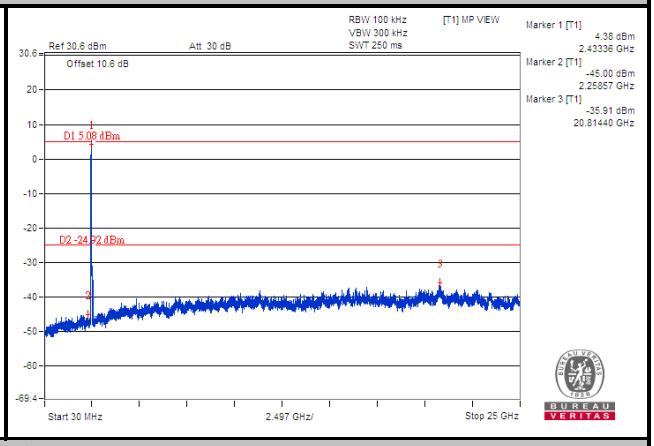
Ch 3



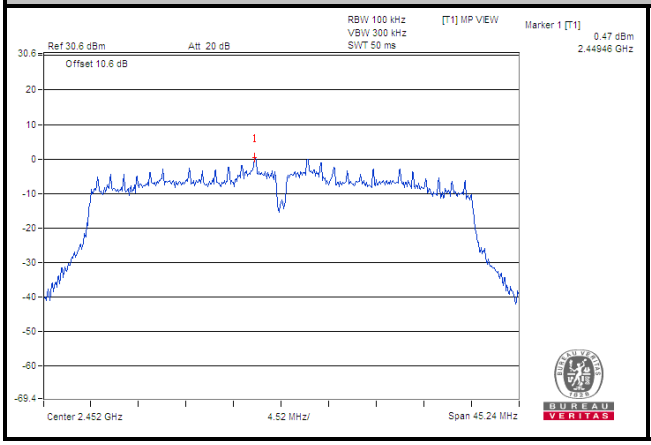


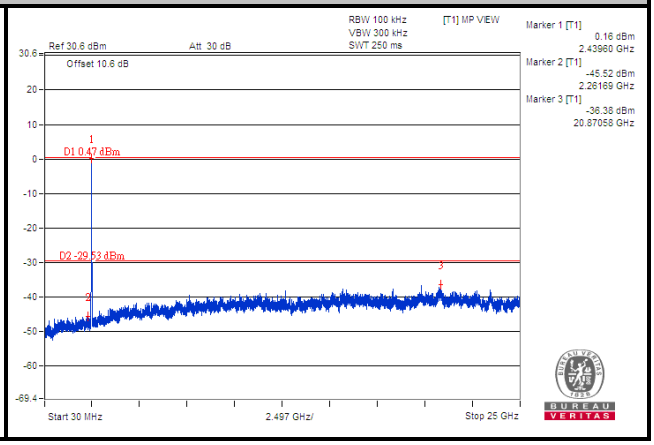
Ch 6



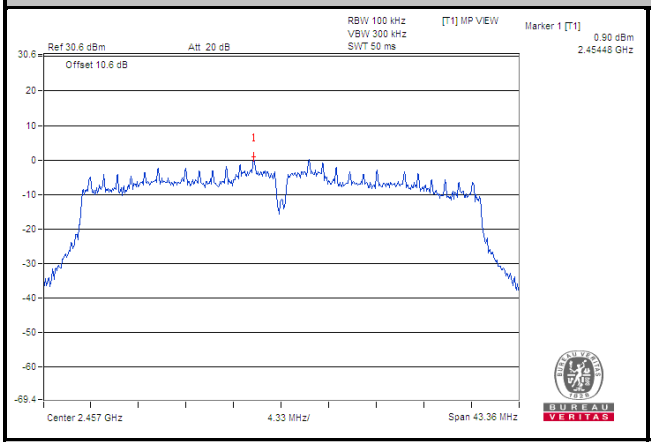


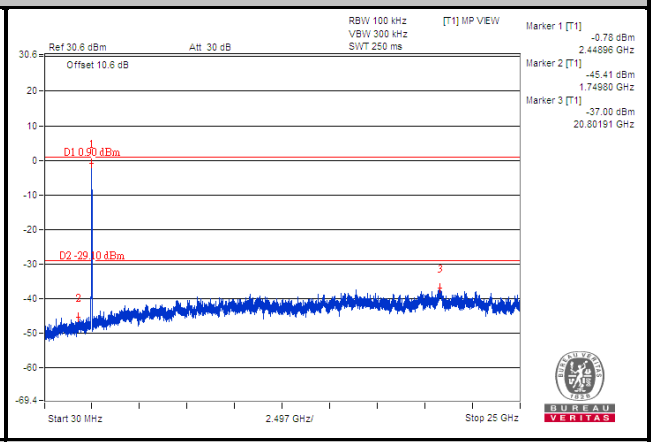
Ch 9



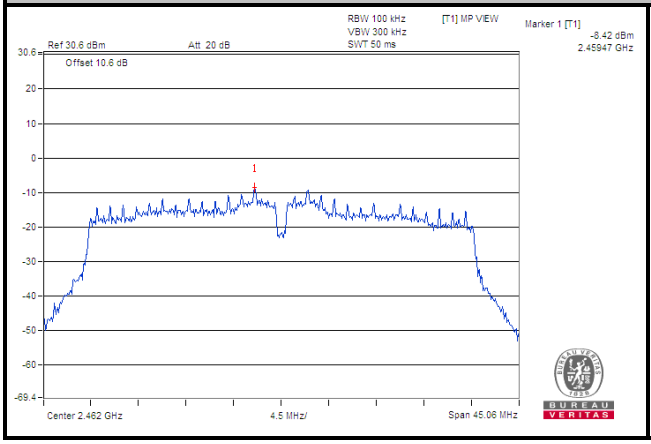


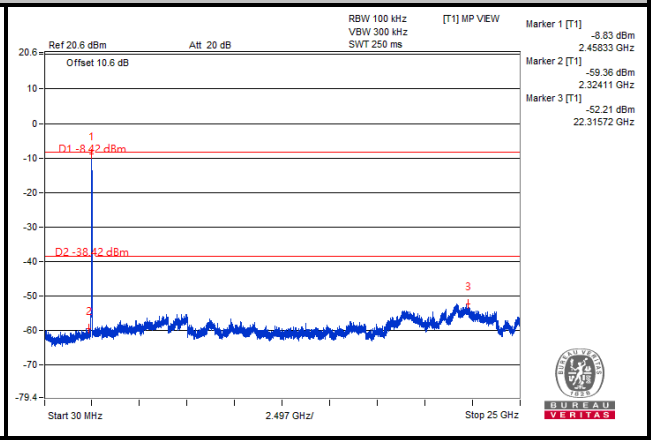
Ch 10

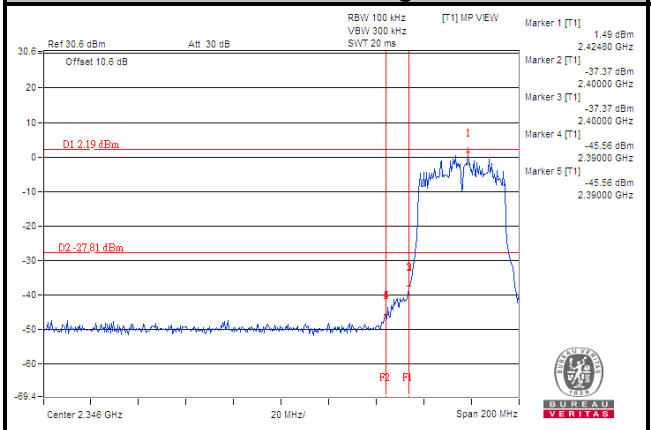
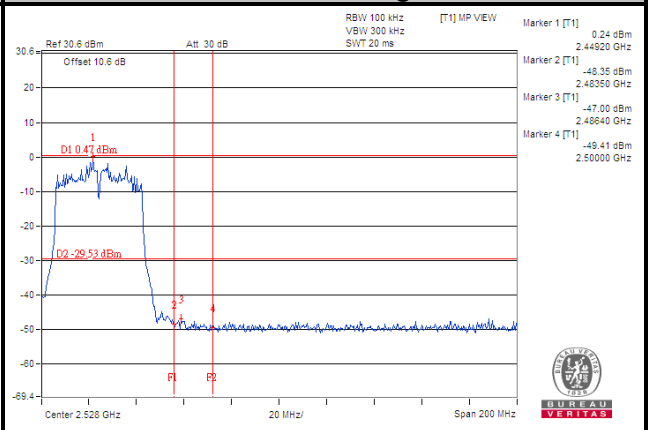
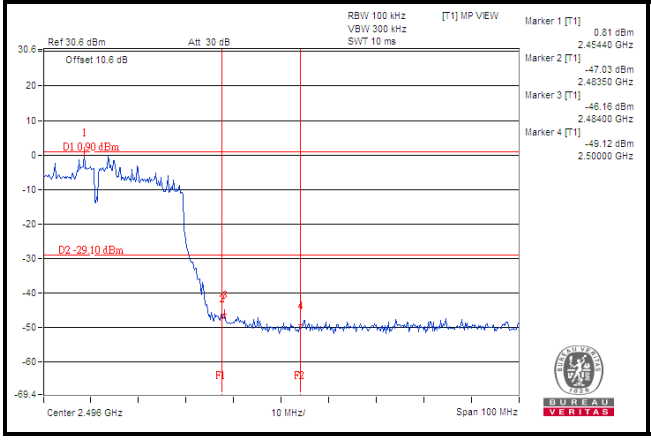
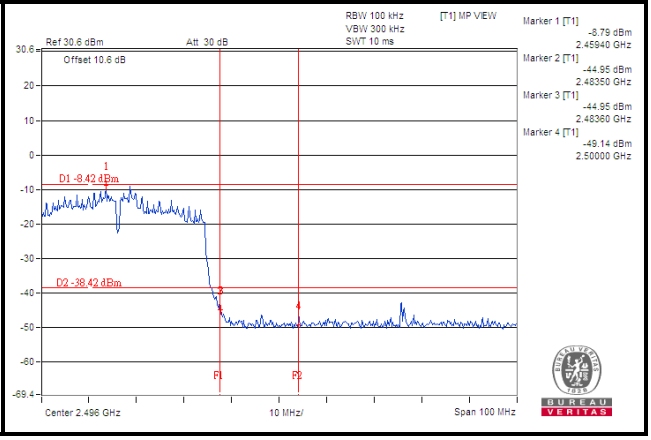

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.90 dBm
2.45448 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.457 GHz
4.33 MHz/
Span 43.36 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-0.78 dBm
2.44896 GHz
Marker 2 [T1]
-45.41 dBm
1.74980 GHz
Marker 3 [T1]
-37.00 dBm
20.80191 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.90 dBm
D2 -29.10 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 11


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-8.42 dBm
2.45947 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.462 GHz
4.5 MHz/
Span 45.06 MHz

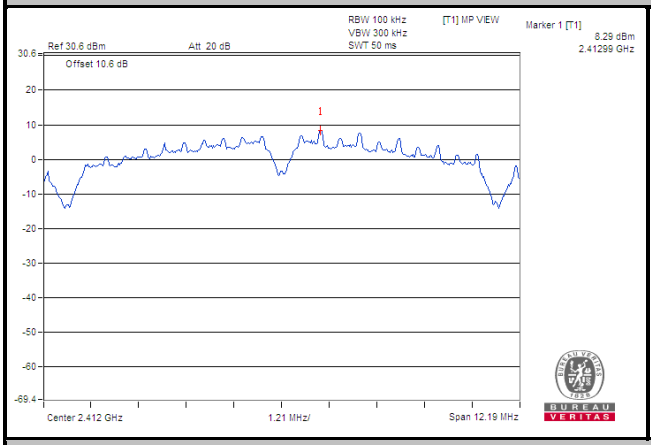

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-8.83 dBm
2.45833 GHz
Marker 2 [T1]
-59.36 dBm
2.32411 GHz
Marker 3 [T1]
-52.21 dBm
22.31572 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -8.42 dBm
D2 -38.42 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

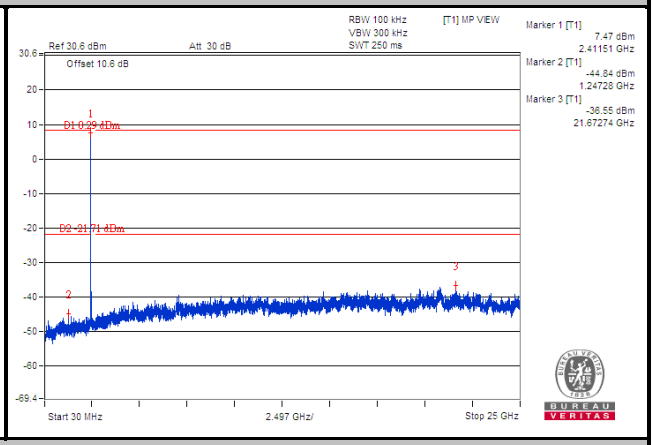
Ch 3 Band Edge	Ch 9 Band Edge
	
Ch 10 Band Edge	**Ch 11 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

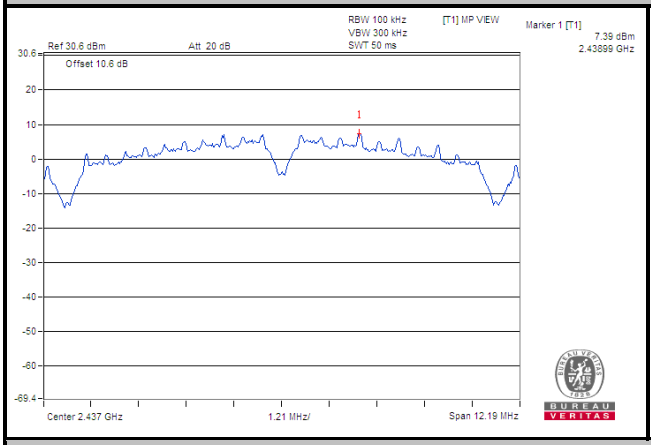
MIMO
802.11b
Chain A

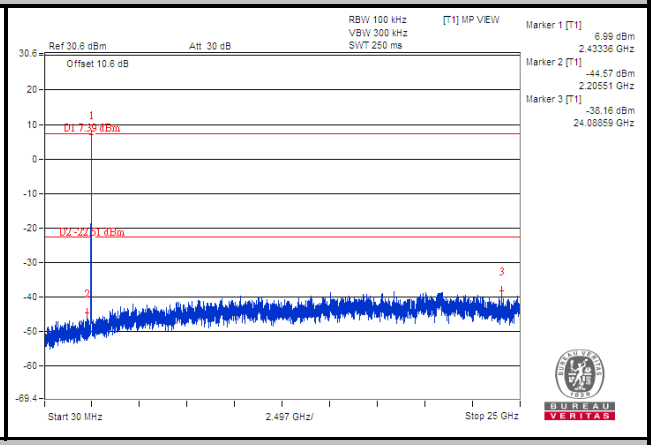
Ch 1



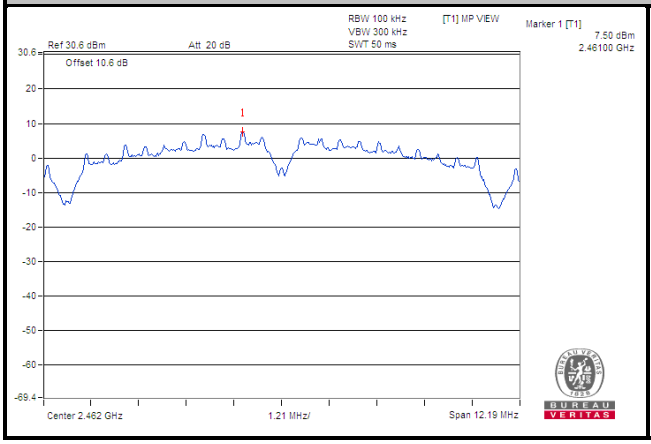


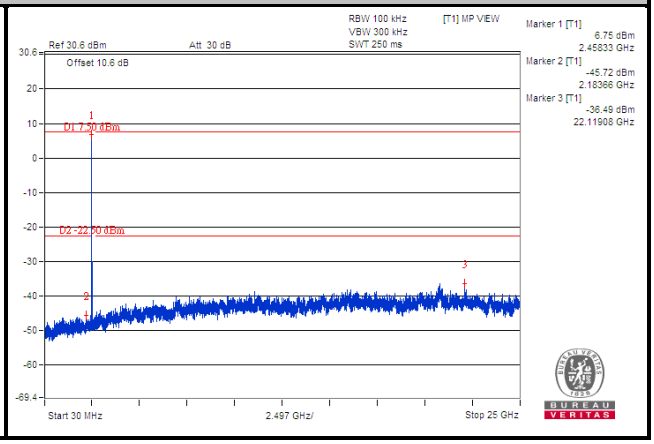
Ch 6



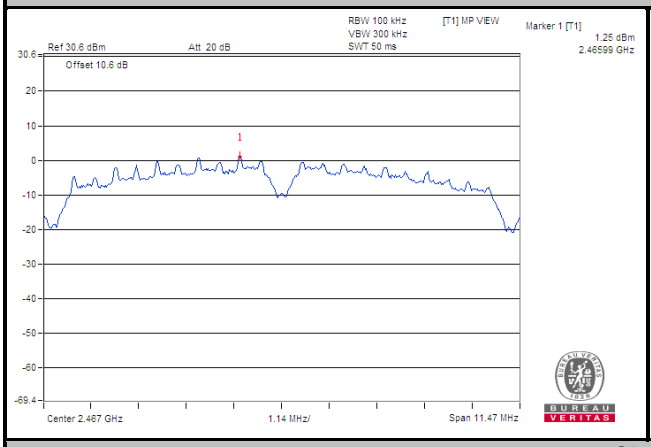


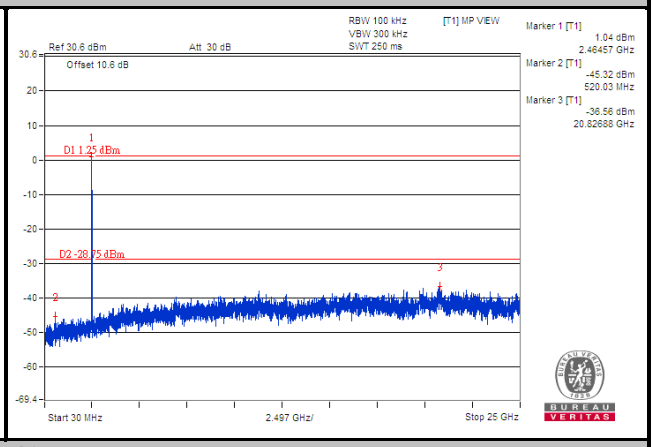
Ch 11



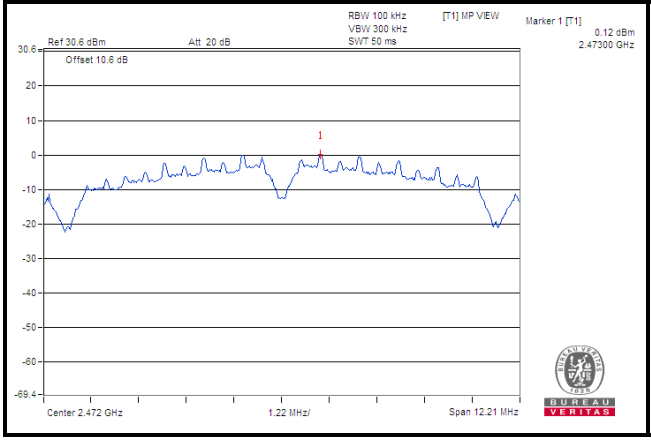


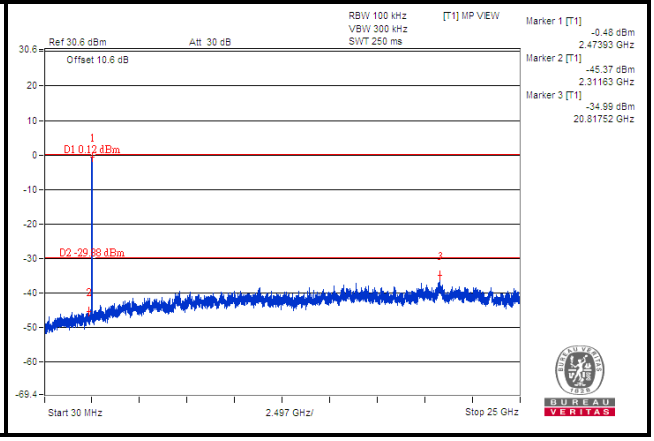
Ch 12

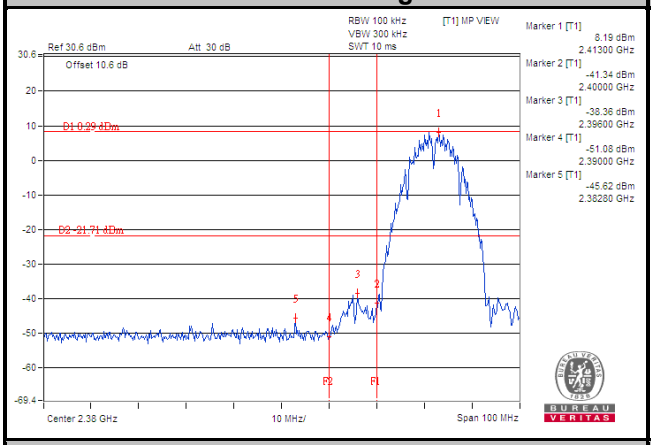
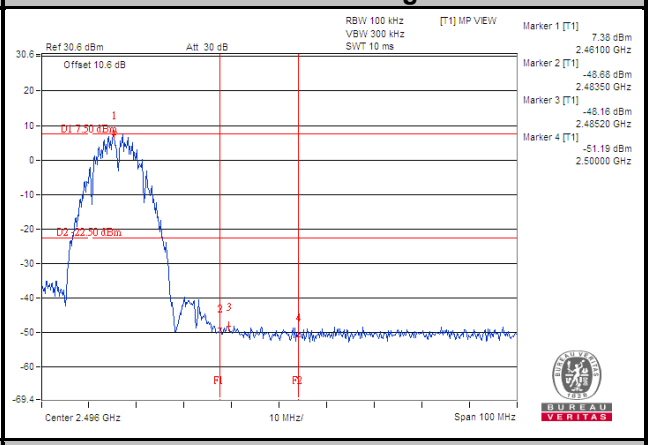
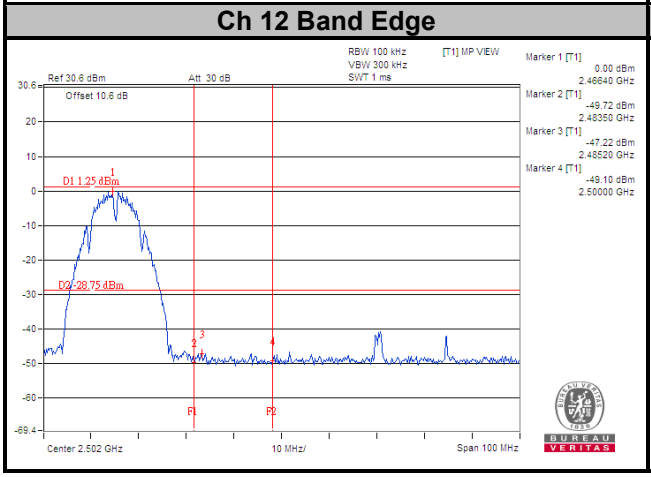
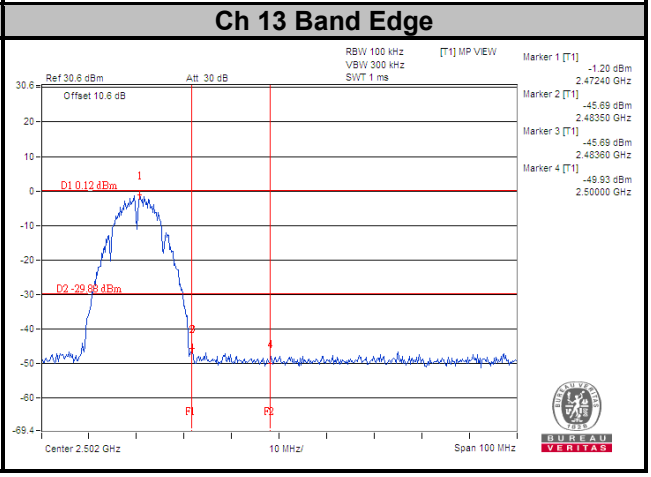

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
1.25 dBm
2.46599 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
1.14 MHz/
Span 11.47 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
1.04 dBm
2.46457 GHz
Marker 2 [T1]
-45.32 dBm
520.03 MHz
Marker 3 [T1]
-36.56 dBm
20.82688 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 1.25 dBm
D2 -28.75 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.12 dBm
2.47300 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
1.22 MHz/
Span 12.21 MHz

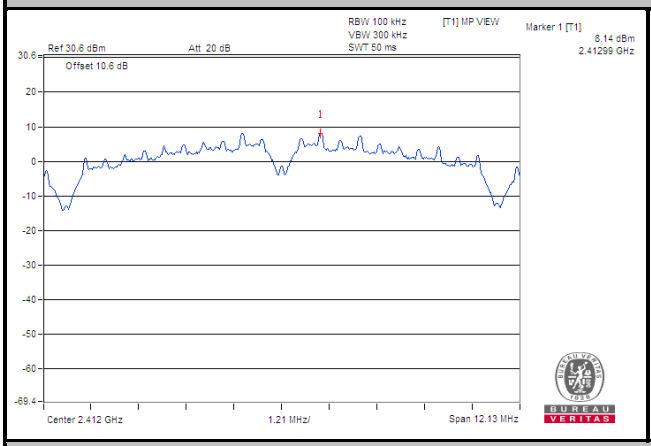

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-0.48 dBm
2.47393 GHz
Marker 2 [T1]
-45.37 dBm
2.31183 GHz
Marker 3 [T1]
-34.99 dBm
20.81752 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.12 dBm
D2 -29.88 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

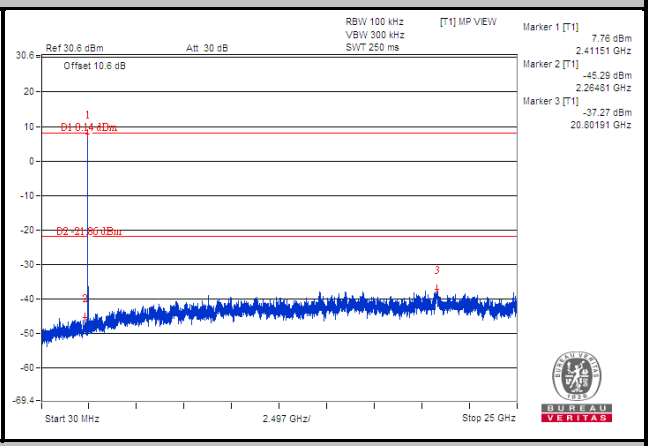
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

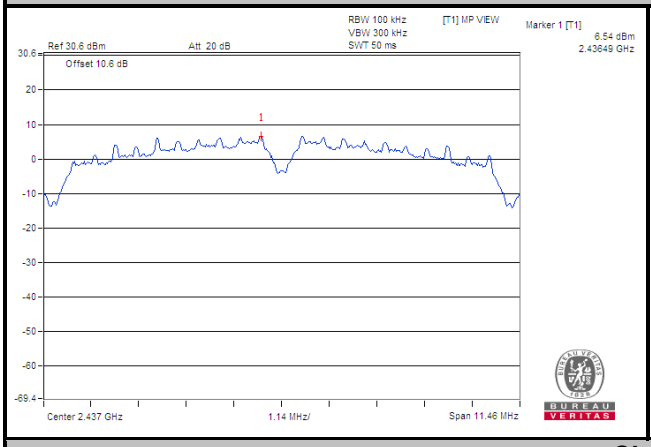
Chain B

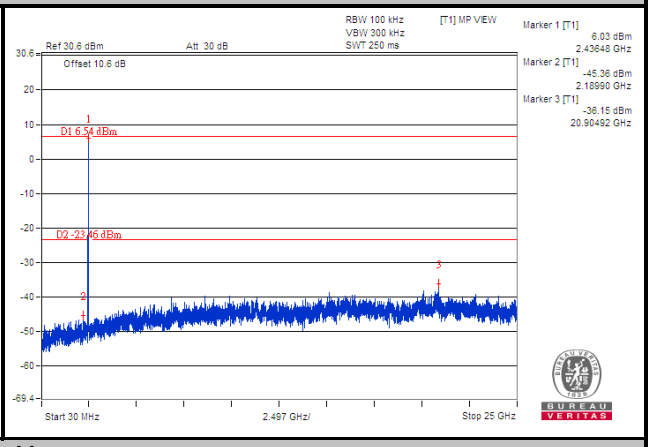
Ch 1



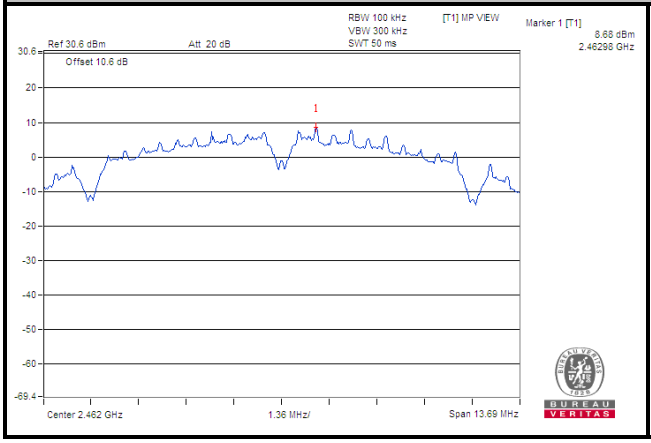


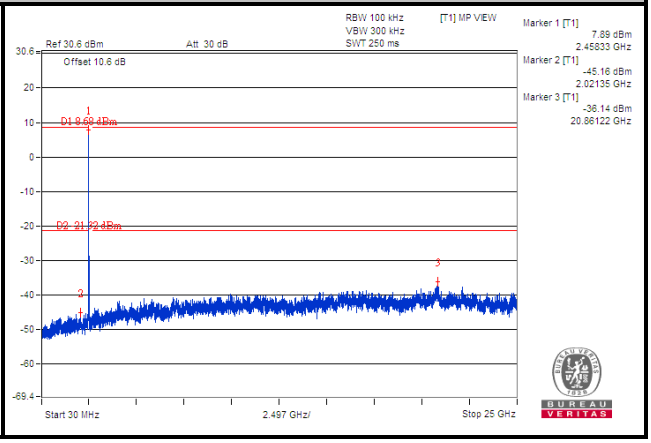
Ch 6



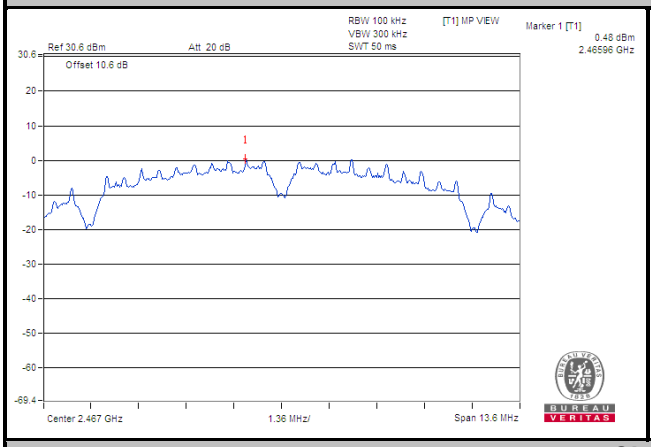


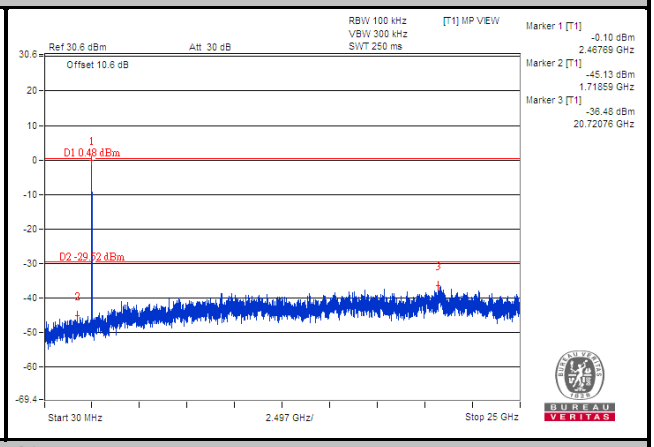
Ch 11



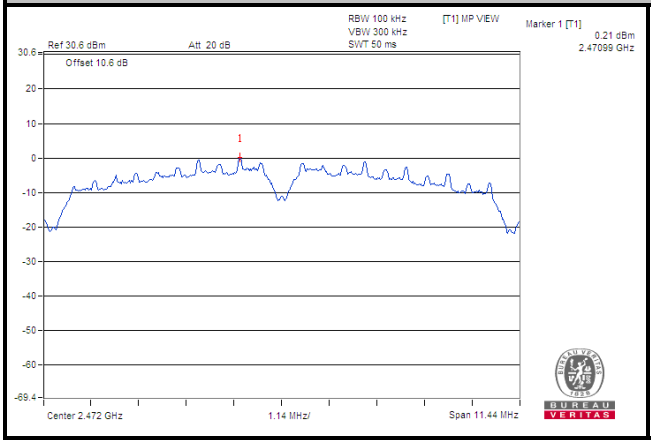


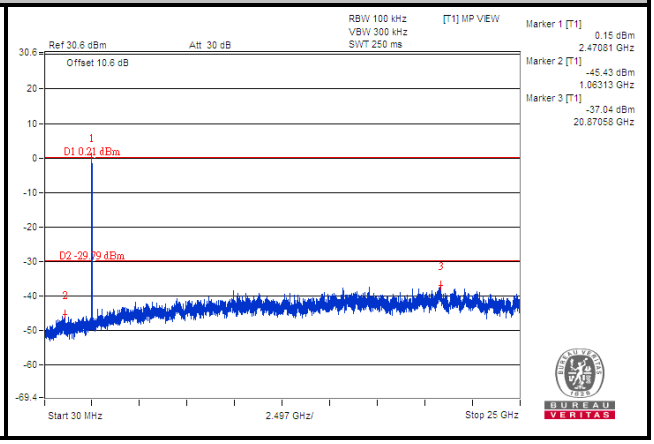
Ch 12

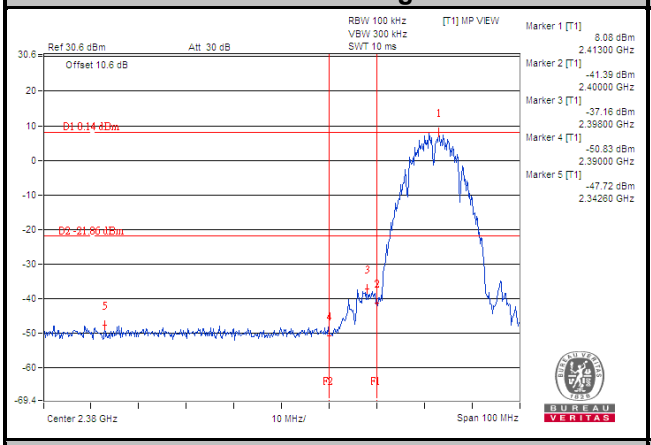
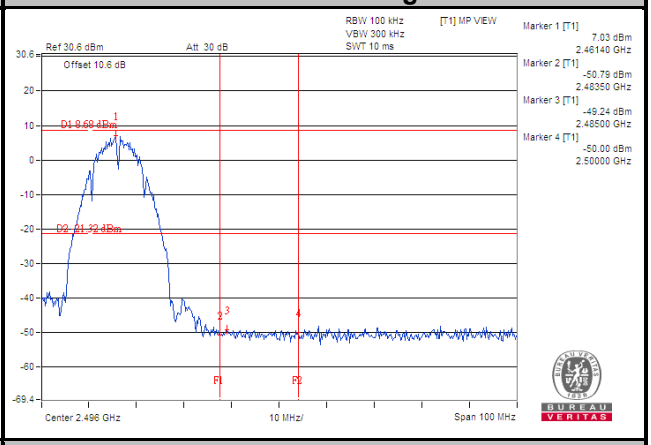
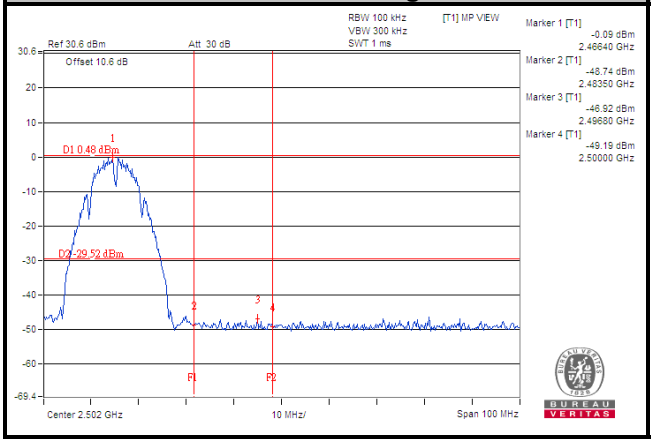
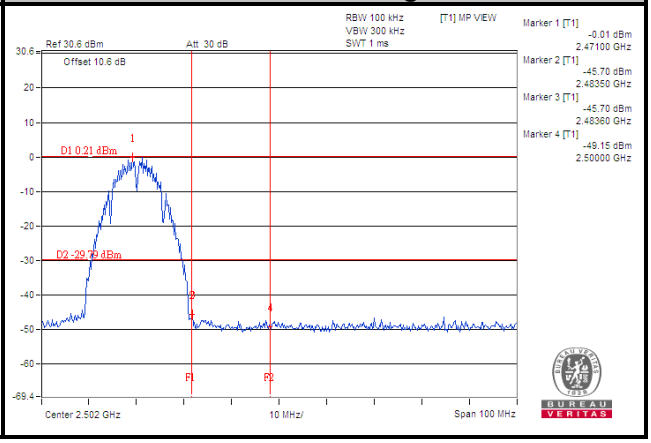

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.48 dBm
2.46596 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
1.36 MHz/
Span 13.6 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-0.10 dBm
2.46769 GHz
Marker 2 [T1]
-45.13 dBm
1.71859 GHz
Marker 3 [T1]
-36.48 dBm
20.72076 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.48 dBm
D2 -29.52 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
0.21 dBm
2.47099 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
1.14 MHz/
Span 11.44 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
0.15 dBm
2.47081 GHz
Marker 2 [T1]
-45.43 dBm
1.06313 GHz
Marker 3 [T1]
-37.04 dBm
20.87058 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 0.21 dBm
D2 -29.79 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

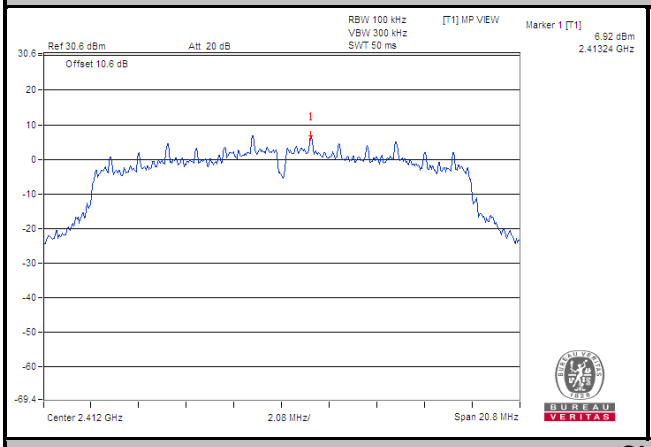
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

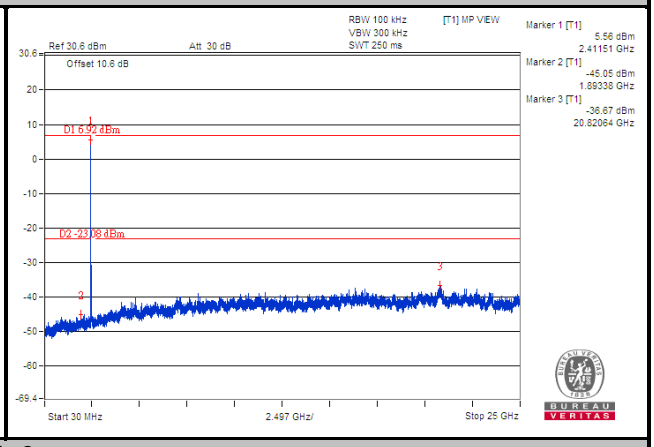
Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

802.11g

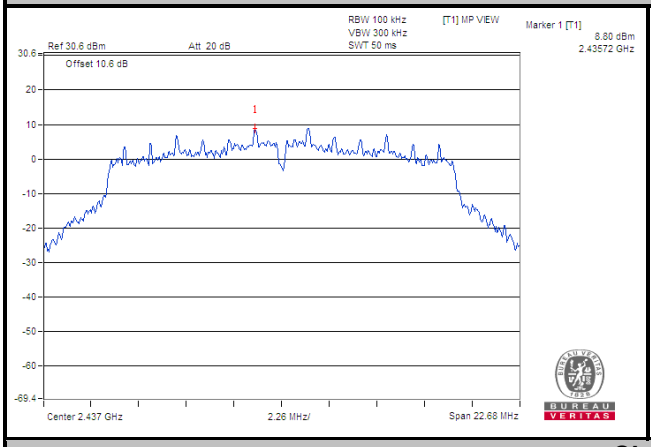
Chain A

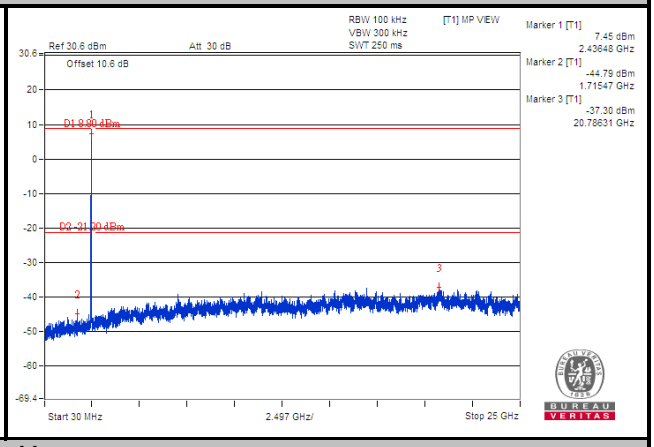
Ch 1



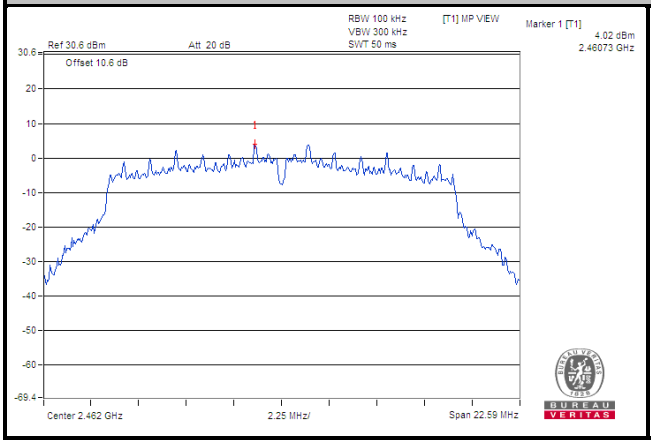


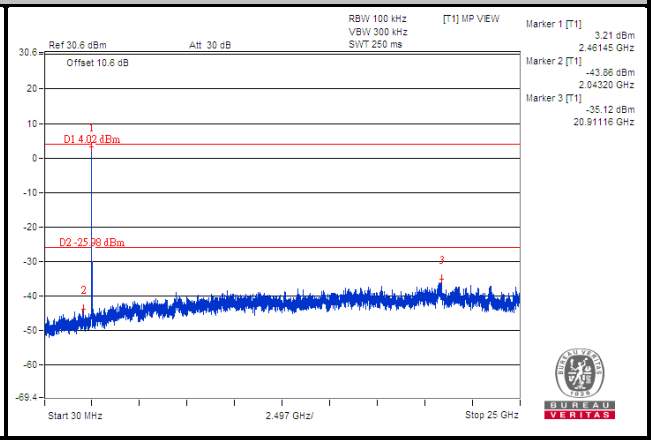
Ch 6



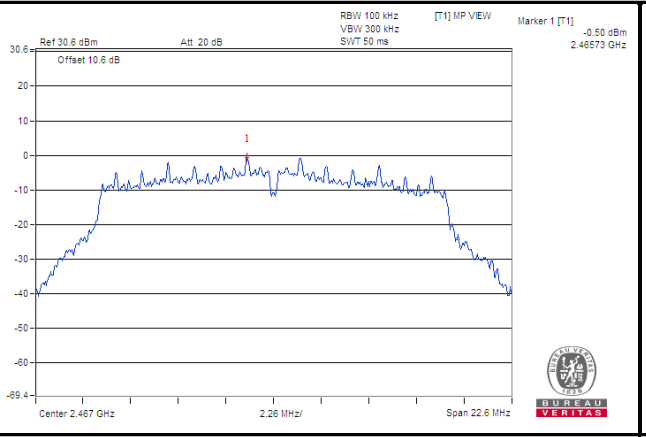


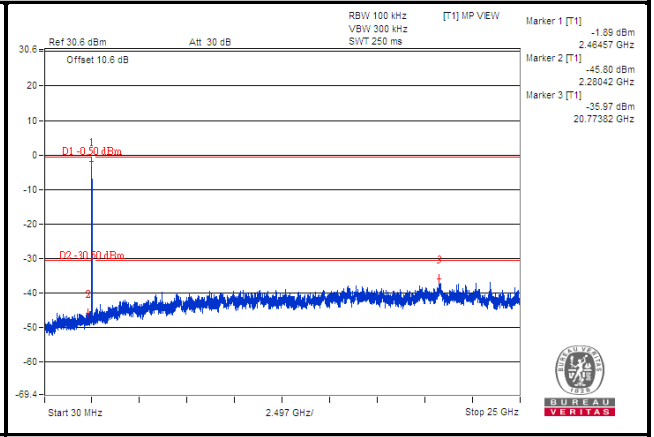
Ch 11



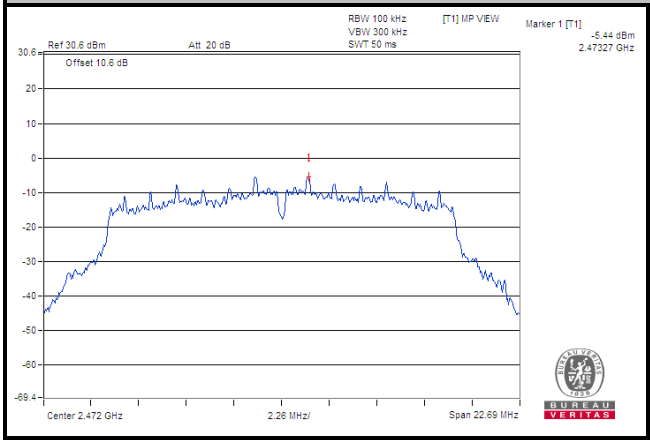


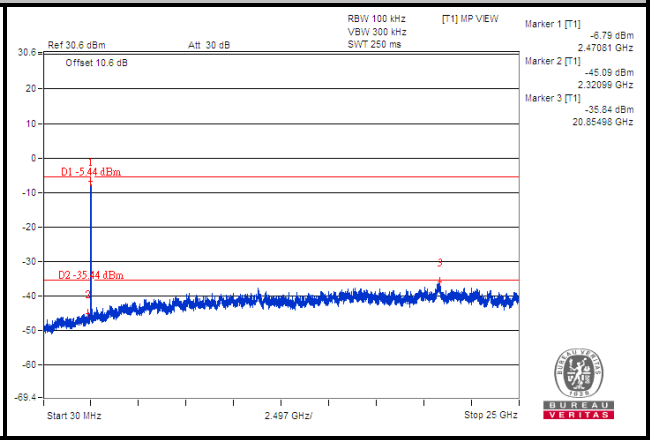
Ch 12

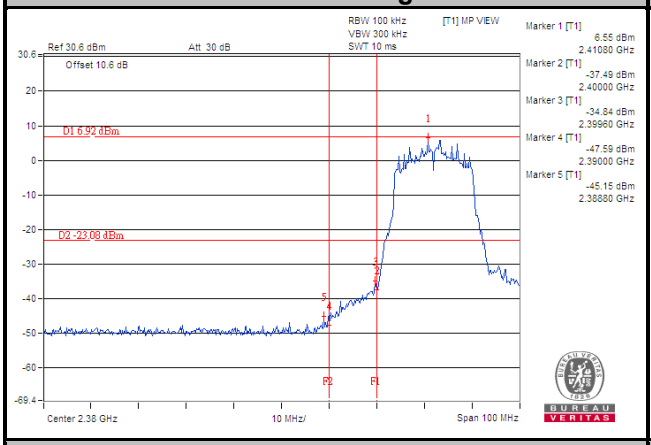
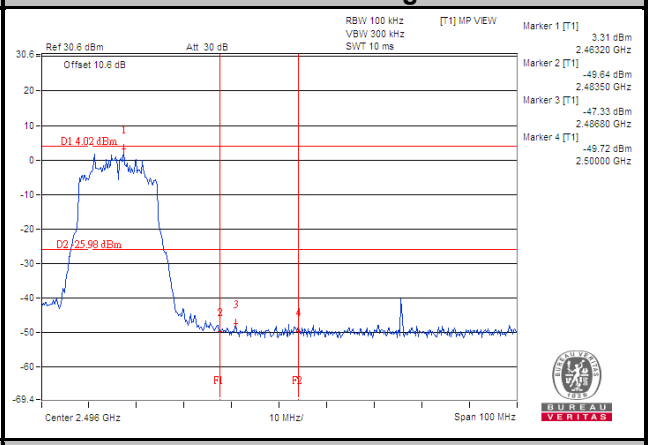
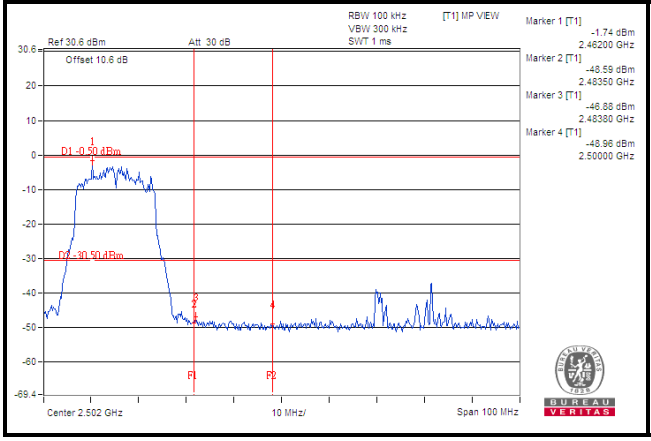
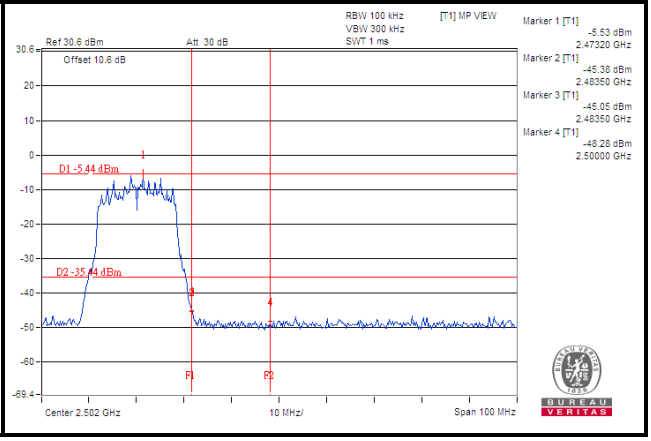

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-0.50 dBm
2.46573 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.26 MHz/
Span 22.6 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-1.89 dBm
2.46457 GHz
Marker 2 [T1]
-45.80 dBm
2.28042 GHz
Marker 3 [T1]
-35.97 dBm
20.77382 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -0.50 dBm
D2 -30.50 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-5.44 dBm
2.47327 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.69 MHz

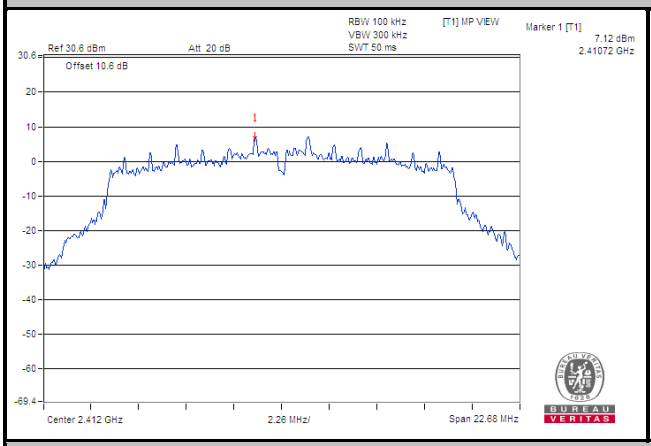

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-6.79 dBm
2.47081 GHz
Marker 2 [T1]
-45.09 dBm
2.32099 GHz
Marker 3 [T1]
-35.84 dBm
20.85498 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -5.44 dBm
D2 -35.44 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

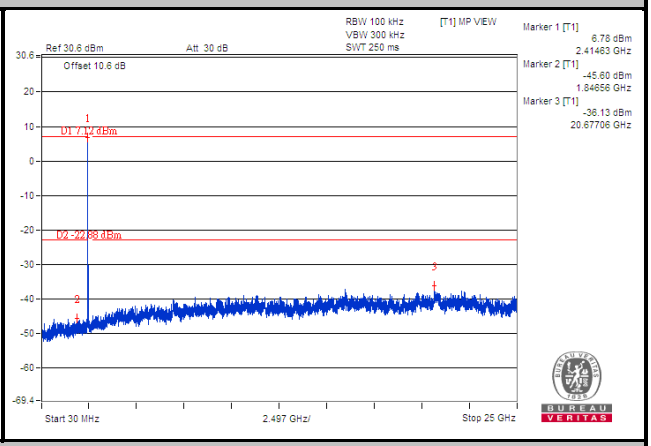
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

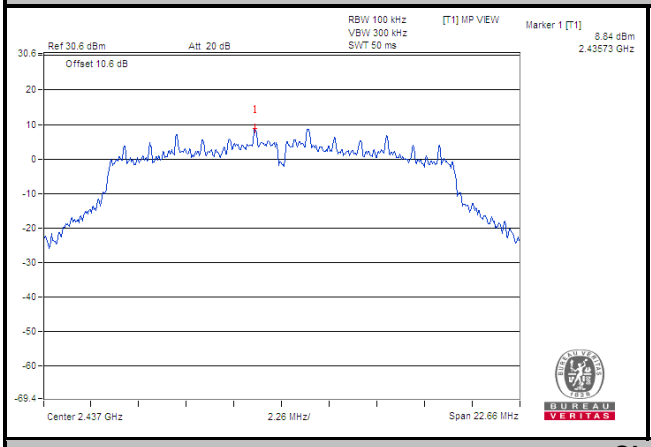
Chain B

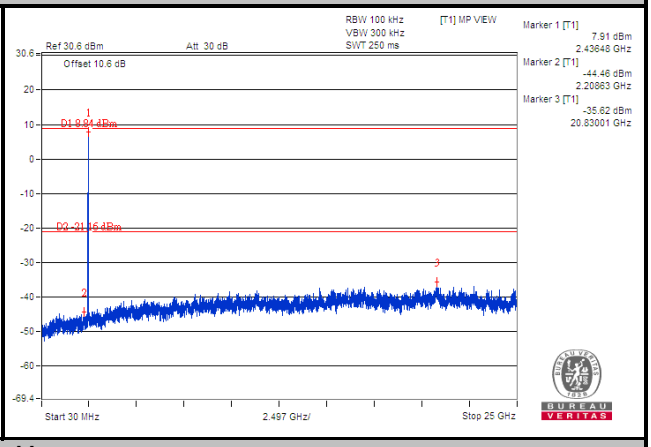
Ch 1



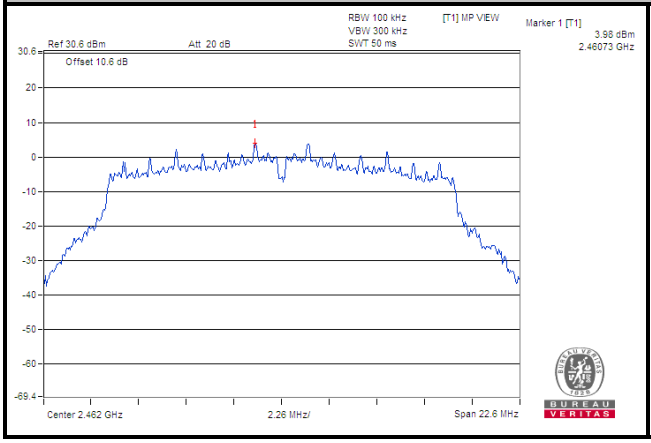


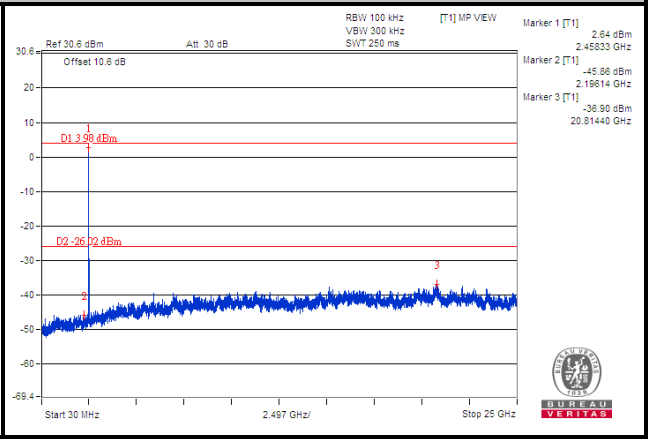
Ch 6



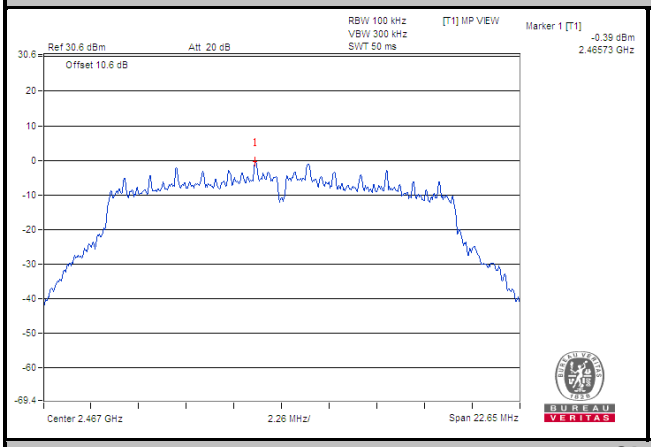


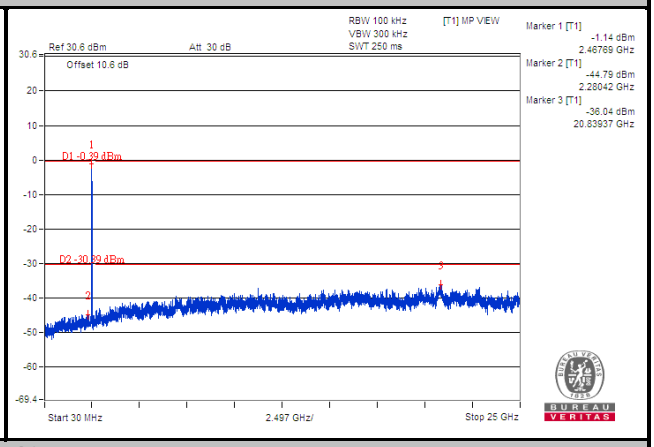
Ch 11



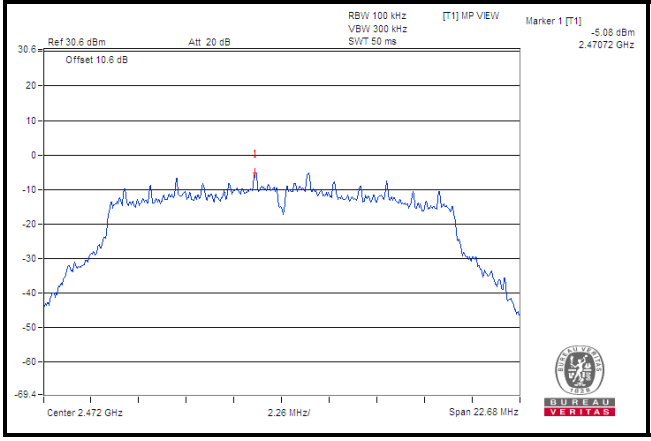


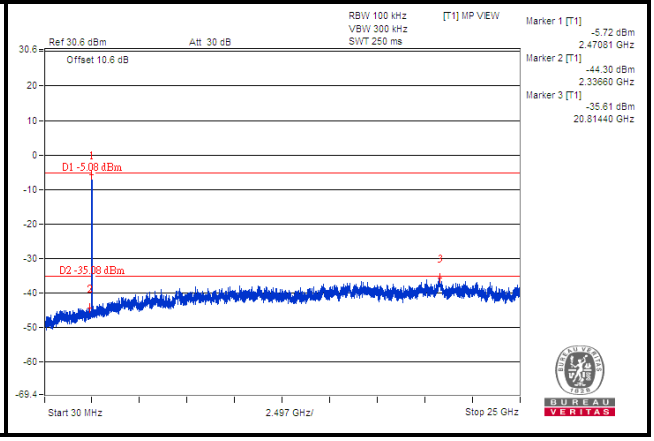
Ch 12

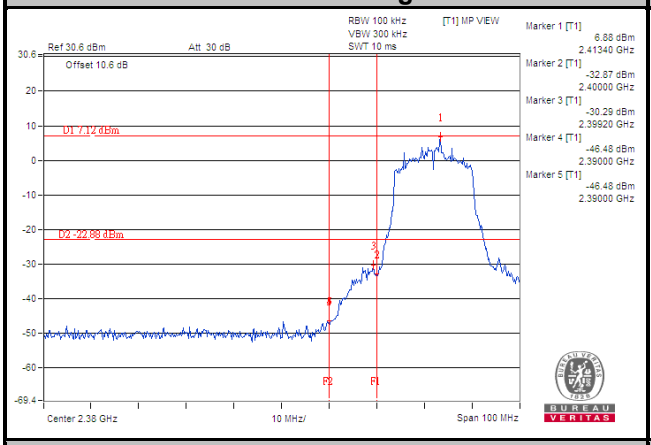
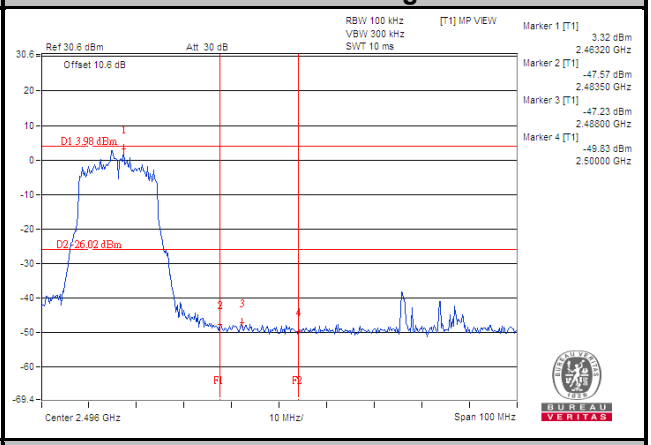
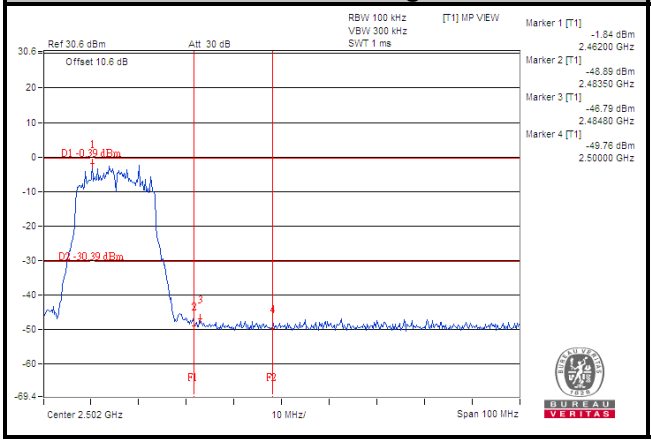
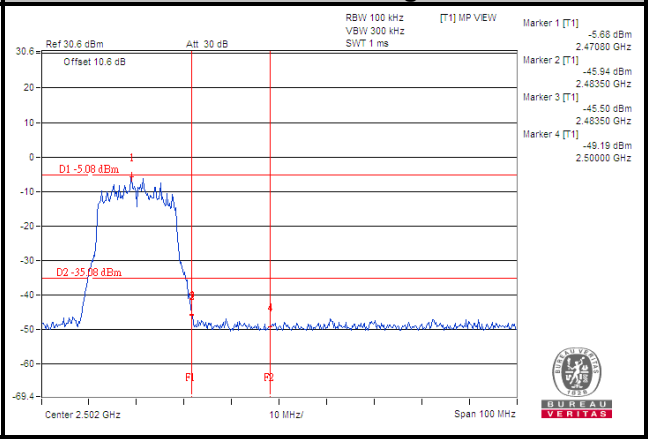

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-0.39 dBm
2.46573 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.26 MHz/
Span 22.65 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-1.14 dBm
2.46769 GHz
Marker 2 [T1]
-44.79 dBm
2.28042 GHz
Marker 3 [T1]
-36.04 dBm
20.83937 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -0.39 dBm
D2 -30.39 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-5.08 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.68 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-5.72 dBm
2.47081 GHz
Marker 2 [T1]
-44.30 dBm
2.33660 GHz
Marker 3 [T1]
-35.61 dBm
20.81440 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -5.08 dBm
D2 -35.08 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

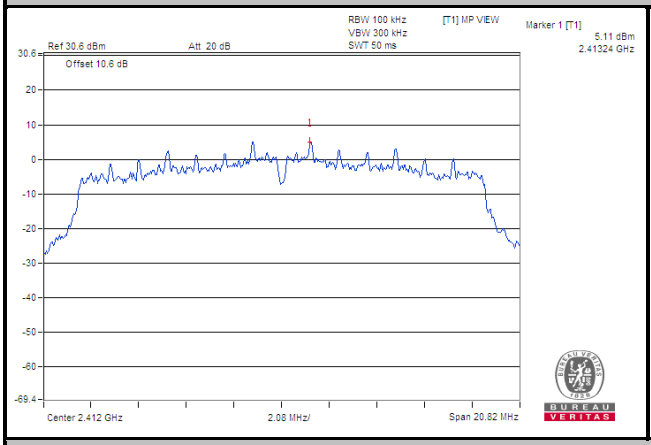
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

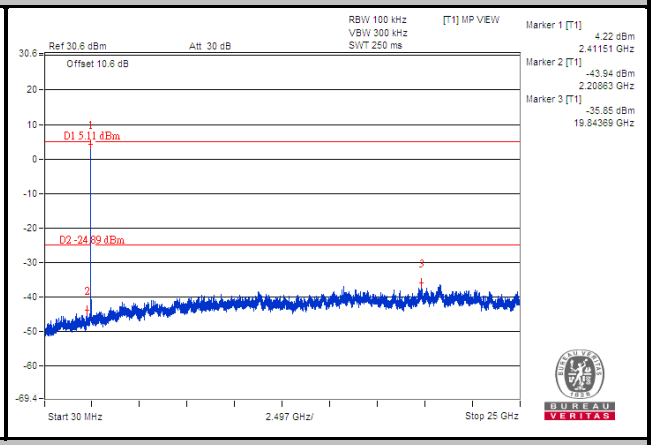
Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

802.11n (VHT20)

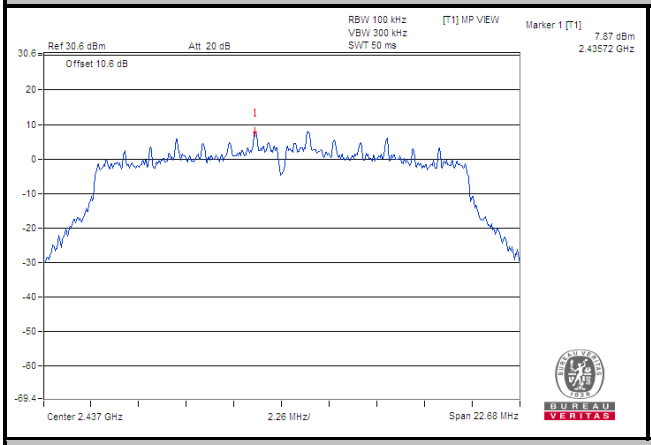
Chain A

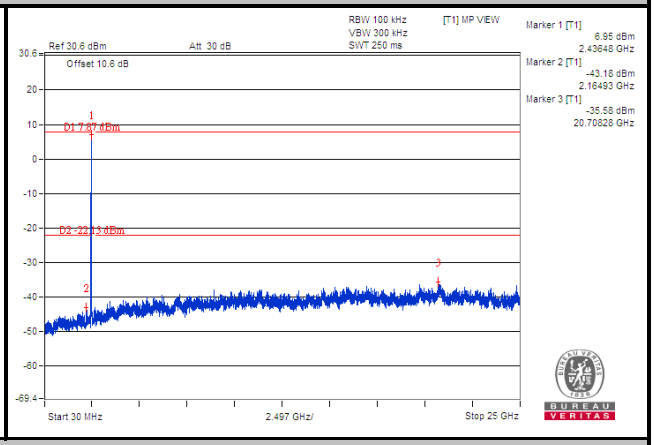
Ch 1



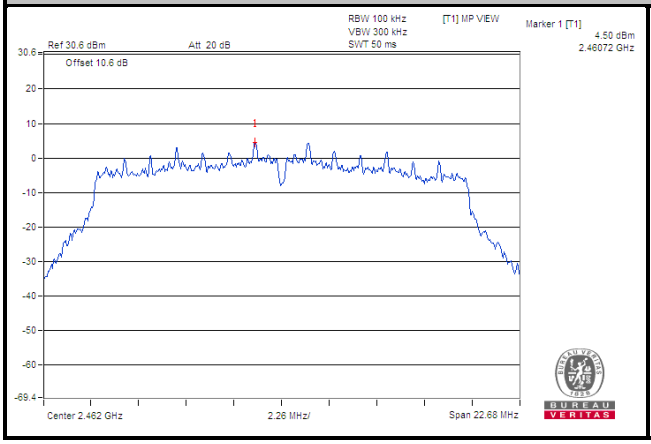


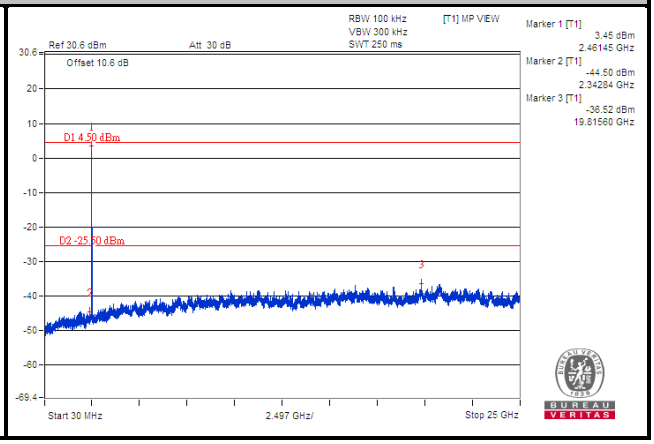
Ch 6



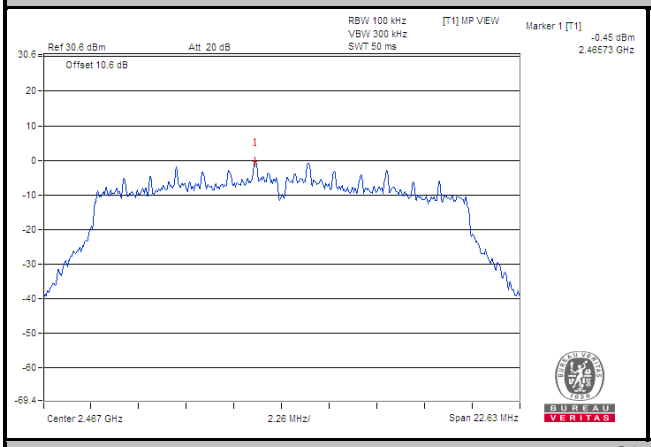


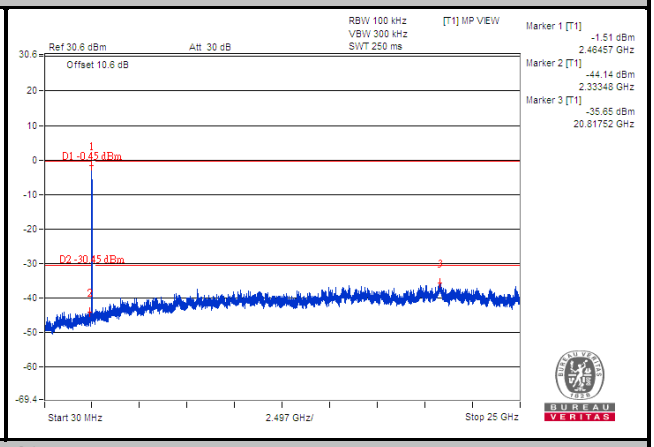
Ch 11



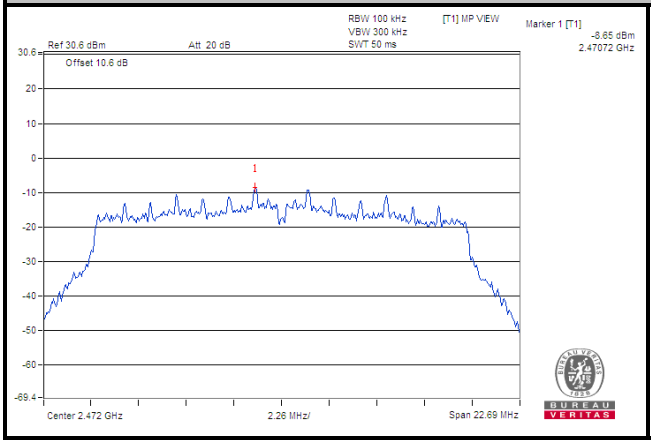


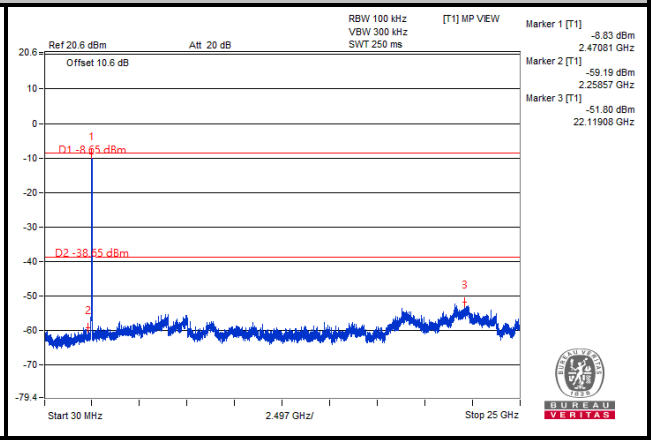
Ch 12

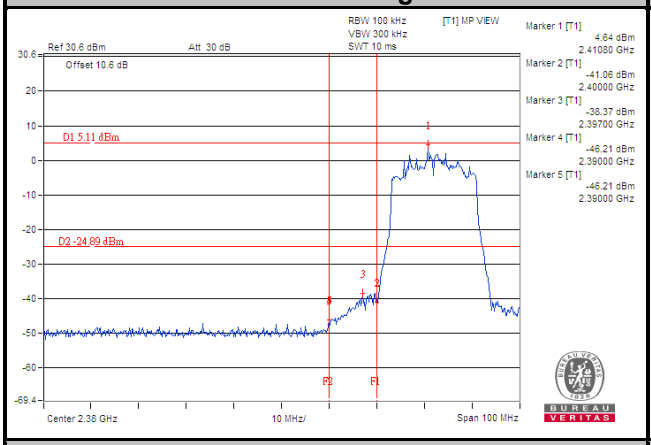
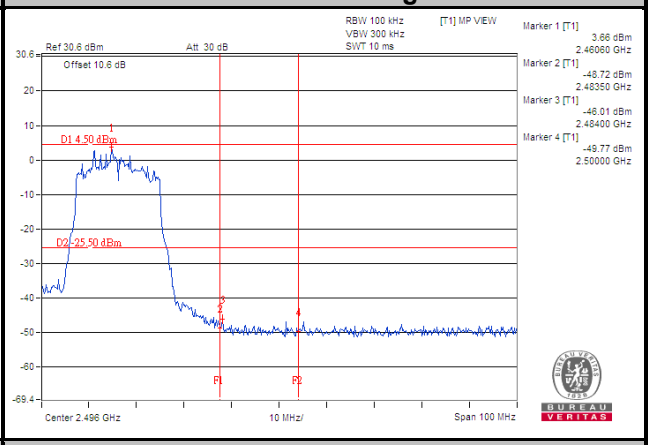
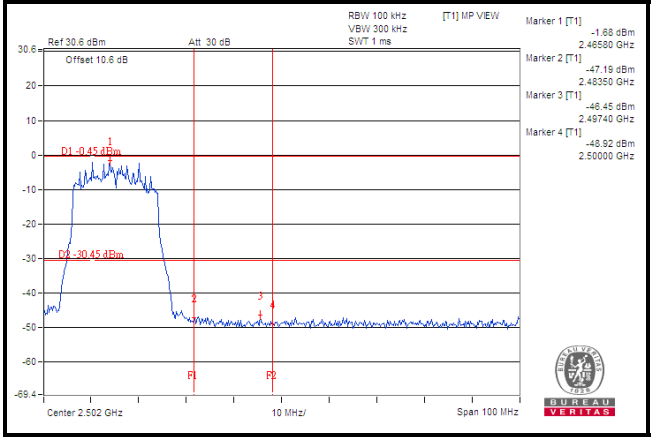
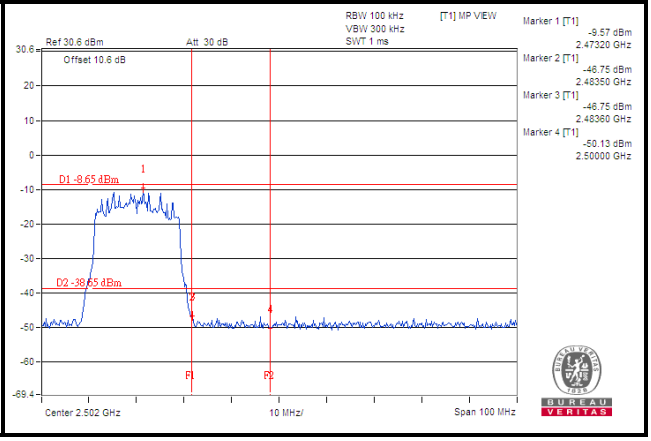

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-0.45 dBm
2.46573 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.26 MHz/
Span 22.63 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-1.51 dBm
2.46457 GHz
Marker 2 [T1]
-44.14 dBm
2.33348 GHz
Marker 3 [T1]
-35.65 dBm
20.81752 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -0.45 dBm
D2 -30.45 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-8.65 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.69 MHz

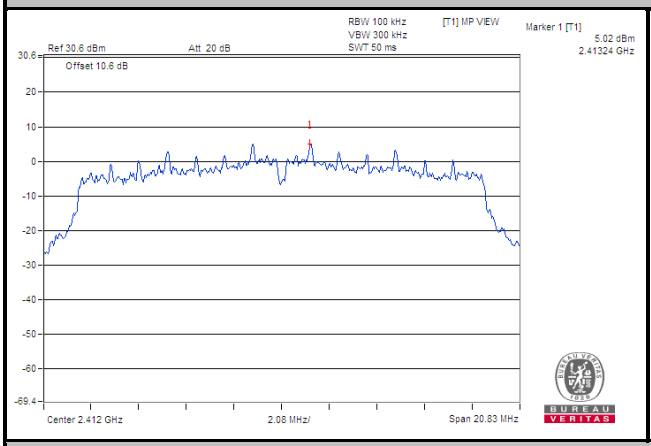

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-8.83 dBm
2.47081 GHz
Marker 2 [T1]
-59.19 dBm
2.25857 GHz
Marker 3 [T1]
-51.80 dBm
22.11908 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -8.65 dBm
D2 -38.65 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

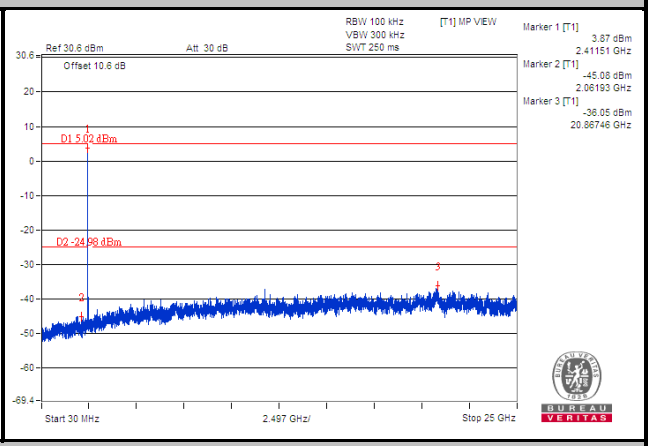
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

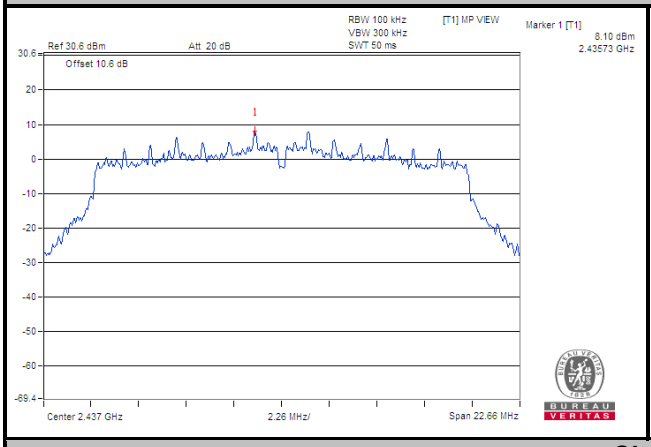
Chain B

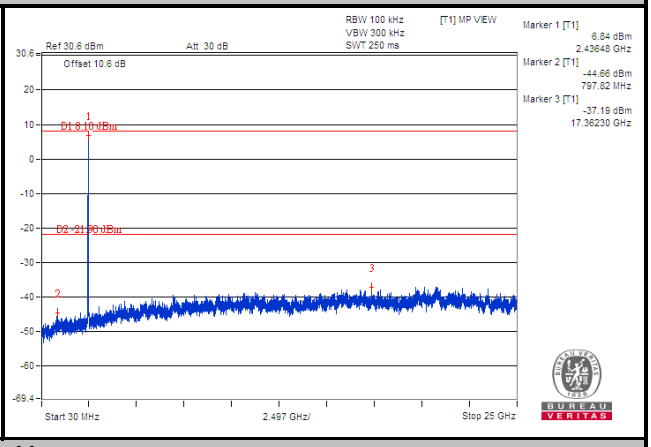
Ch 1



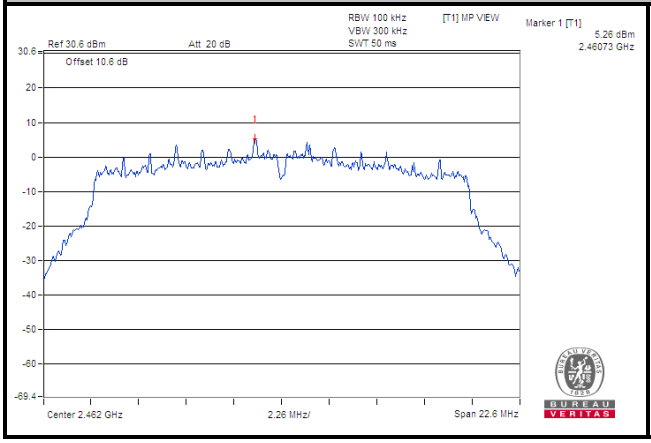


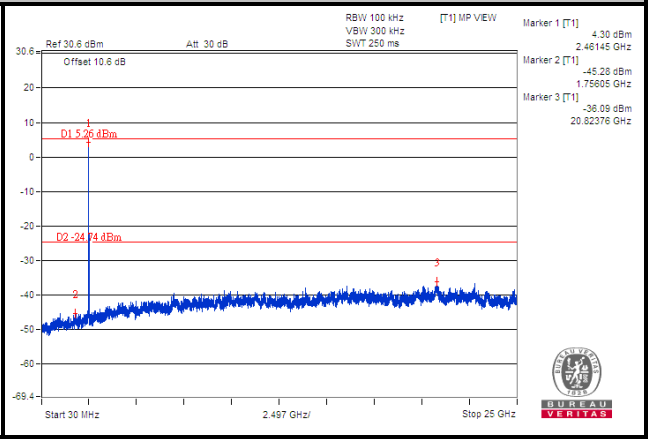
Ch 6



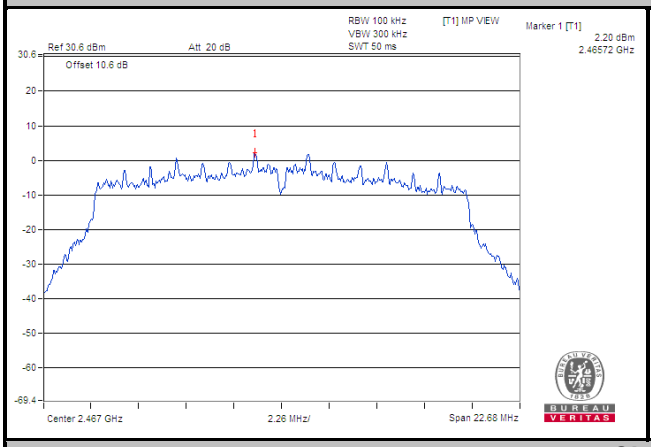


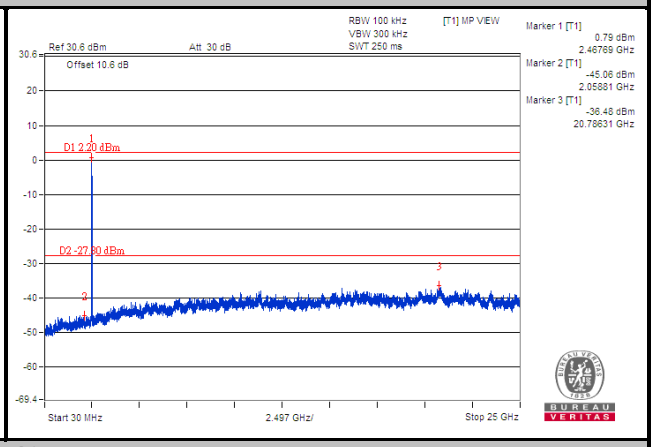
Ch 11



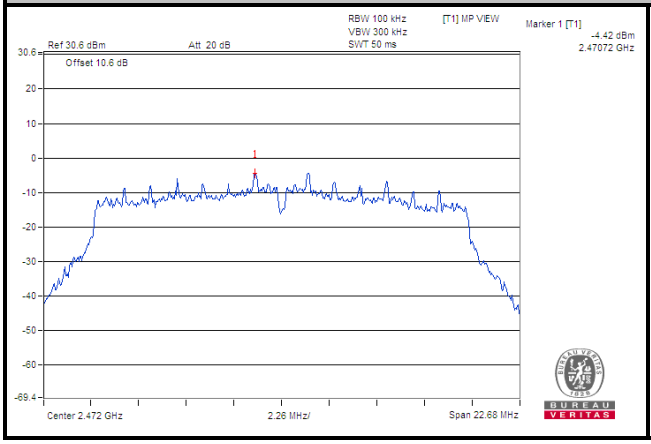


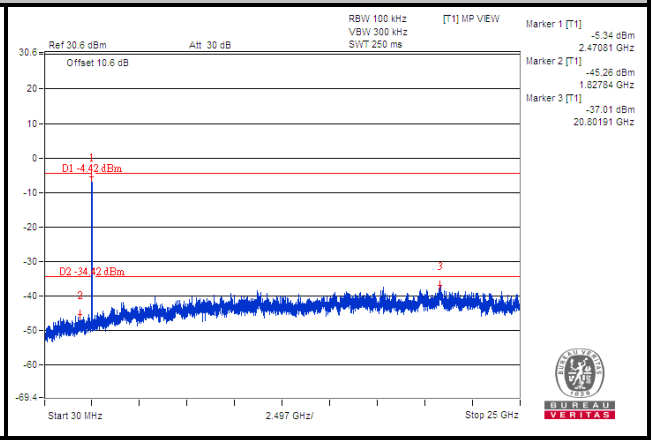
Ch 12

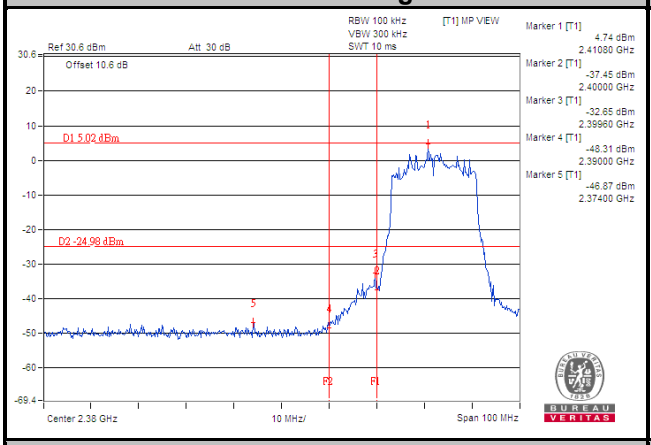
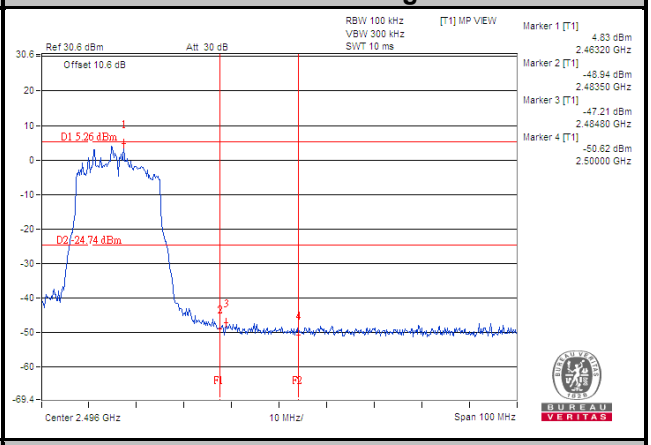
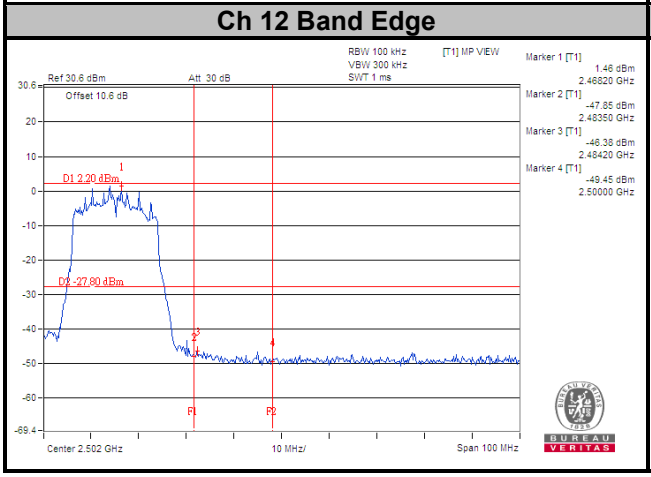
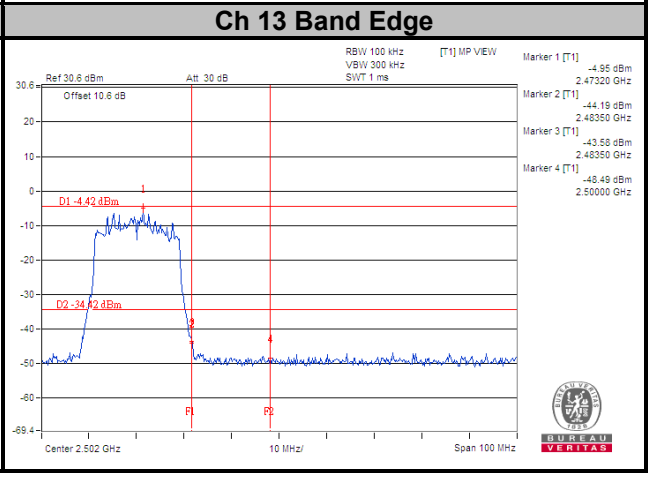

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
2.20 dBm
2.46572 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.467 GHz
2.26 MHz/
Span 22.68 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
0.79 dBm
2.46769 GHz
Marker 2 [T1]
-45.06 dBm
2.05881 GHz
Marker 3 [T1]
-36.48 dBm
20.78631 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 2.20 dBm
D2 -27.80 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 13


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-4.42 dBm
2.47072 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.472 GHz
2.26 MHz/
Span 22.68 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-5.34 dBm
2.47081 GHz
Marker 2 [T1]
-45.26 dBm
1.82784 GHz
Marker 3 [T1]
-37.01 dBm
20.80191 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -4.42 dBm
D2 -34.42 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

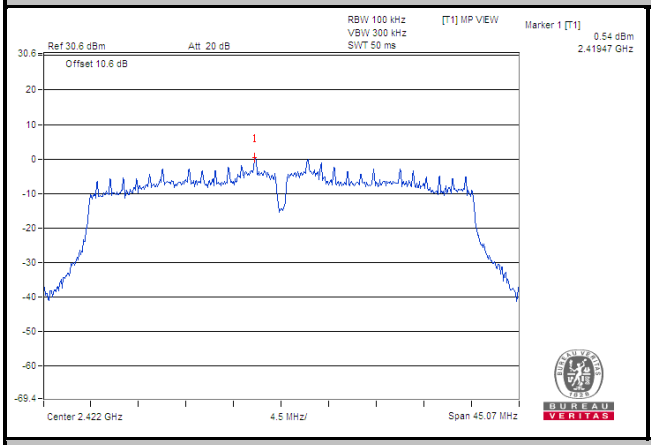
Ch 1 Band Edge	Ch 11 Band Edge
	
Ch 12 Band Edge	**Ch 13 Band Edge**
	

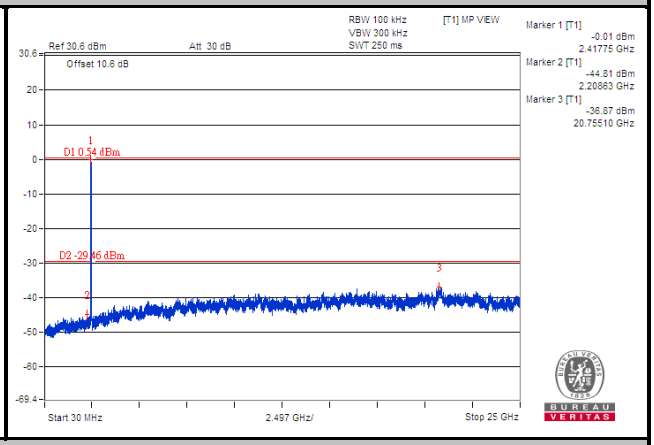
Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

802.11n (VHT40)

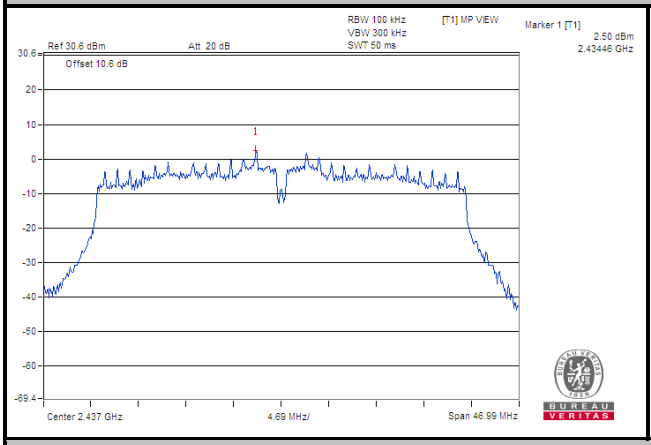
Chain A

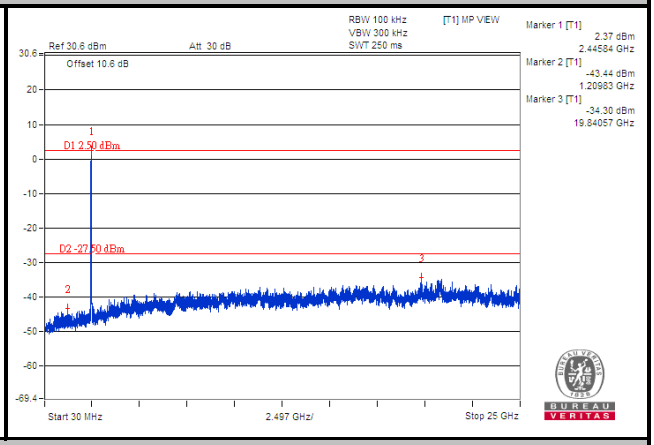
Ch 3



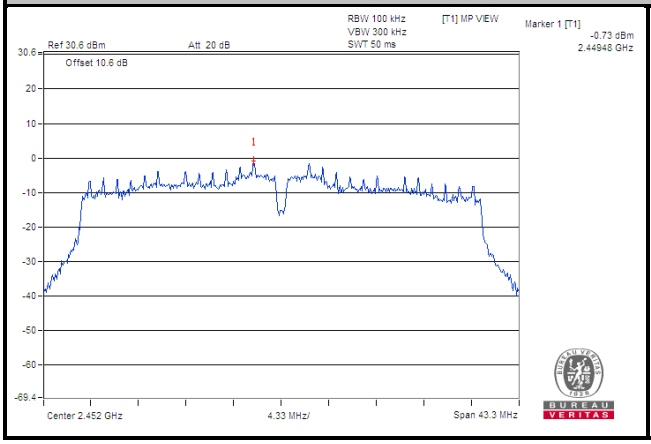


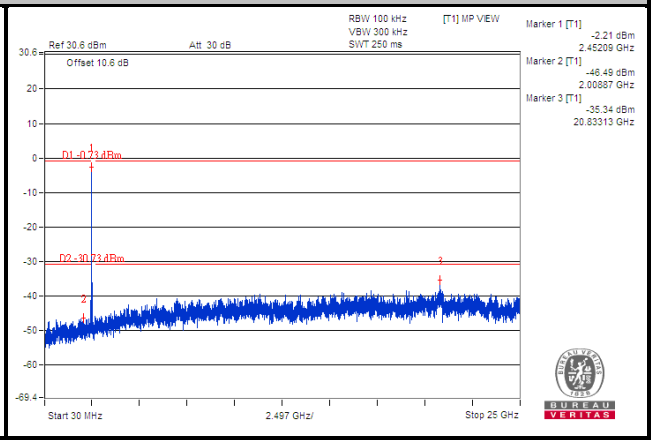
Ch 6



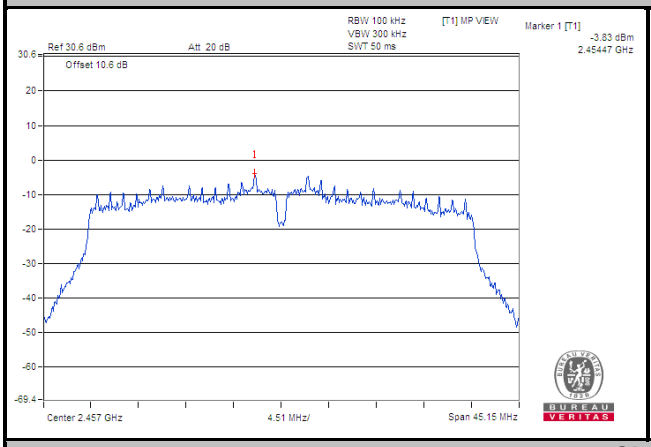


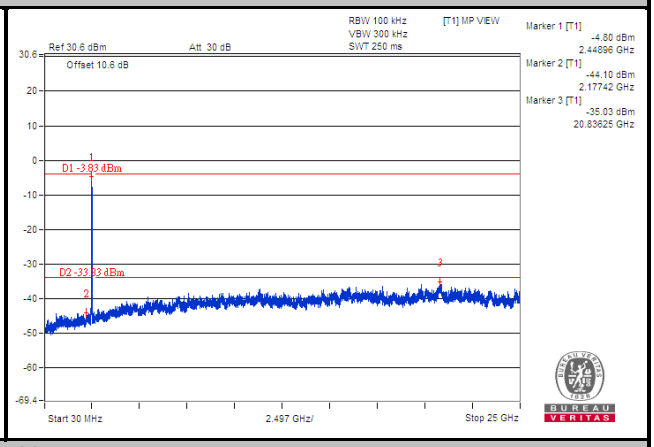
Ch 9



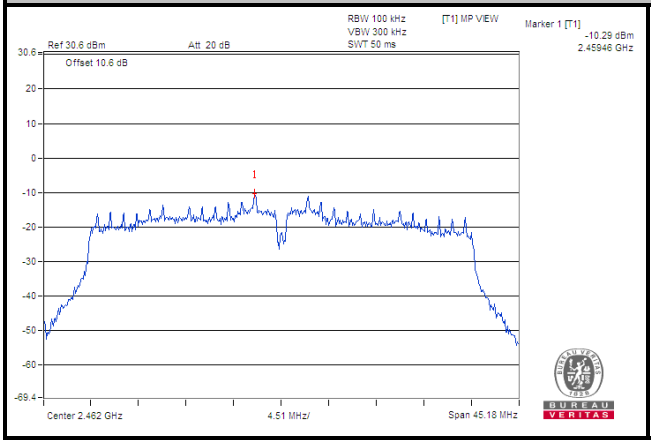


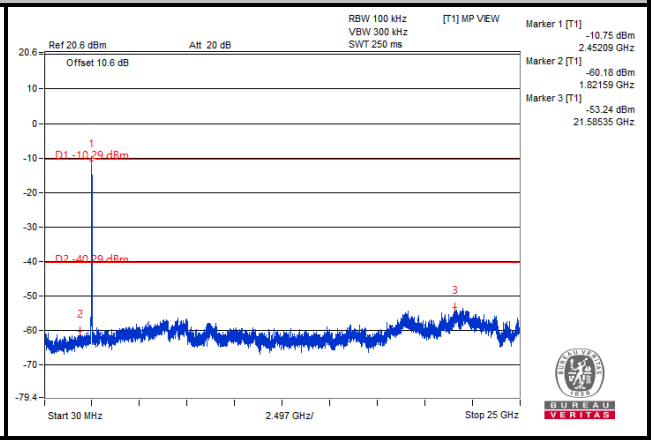
Ch 10

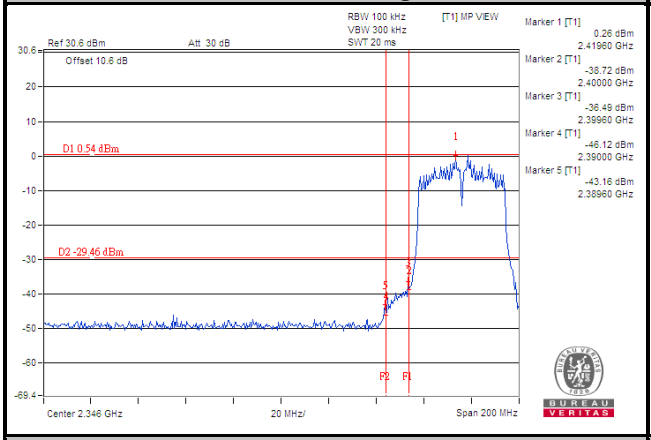
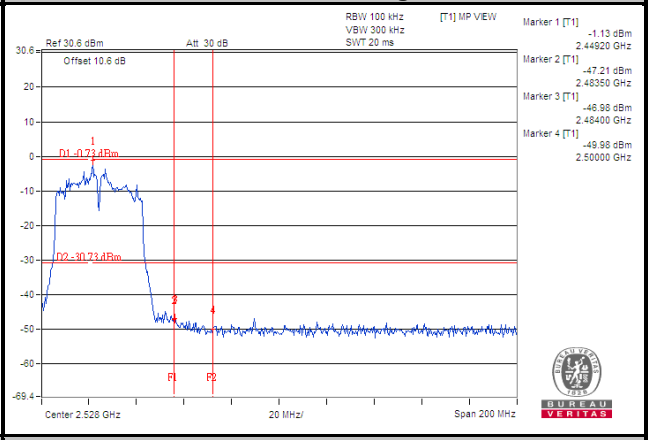
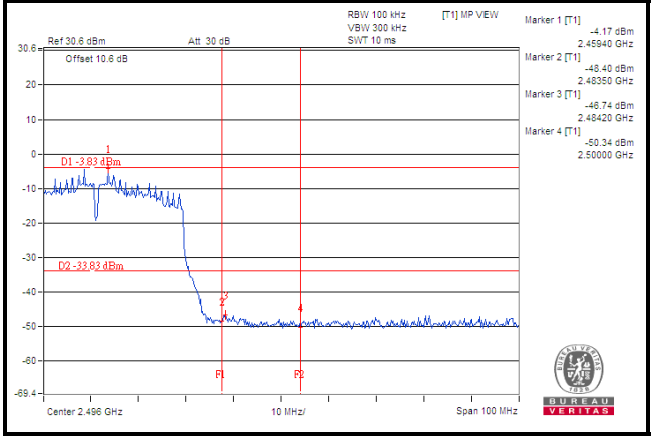
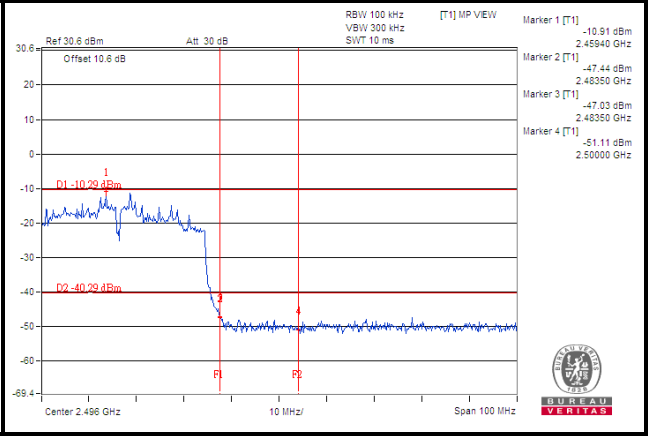

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-3.83 dBm
2.45447 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.457 GHz
4.51 MHz/
Span 45.15 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-4.80 dBm
2.44896 GHz
Marker 2 [T1]
-44.10 dBm
2.17742 GHz
Marker 3 [T1]
-35.03 dBm
20.83625 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -3.83 dBm
D2 -33.83 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 11


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-10.29 dBm
2.45946 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.462 GHz
4.51 MHz/
Span 45.18 MHz

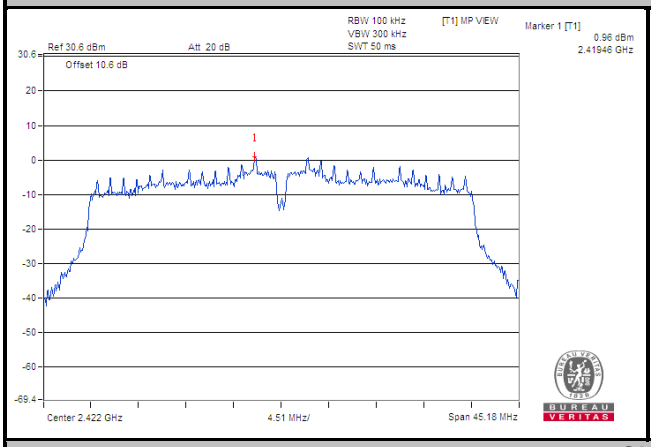

RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-10.75 dBm
2.45209 GHz
Marker 2 [T1]
-60.18 dBm
1.82159 GHz
Marker 3 [T1]
-53.24 dBm
21.58535 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -10.29 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

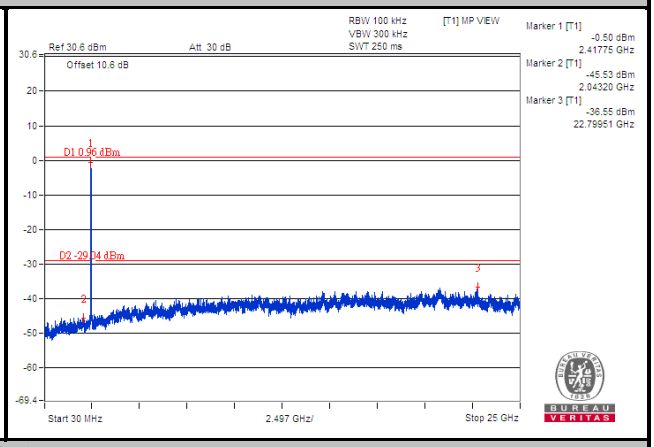
Ch 3 Band Edge	Ch 9 Band Edge
	
Ch 10 Band Edge	**Ch 11 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

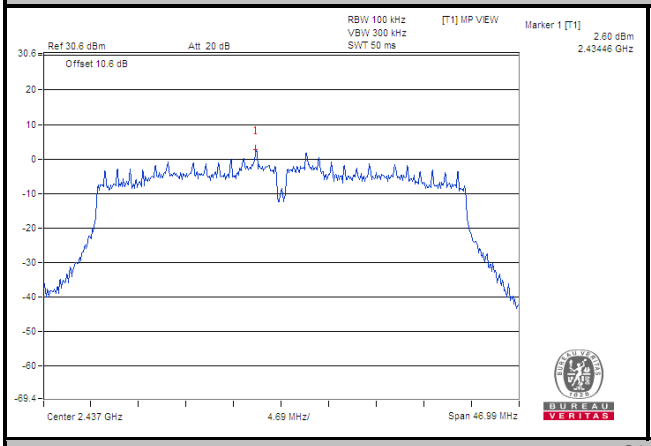
Chain B

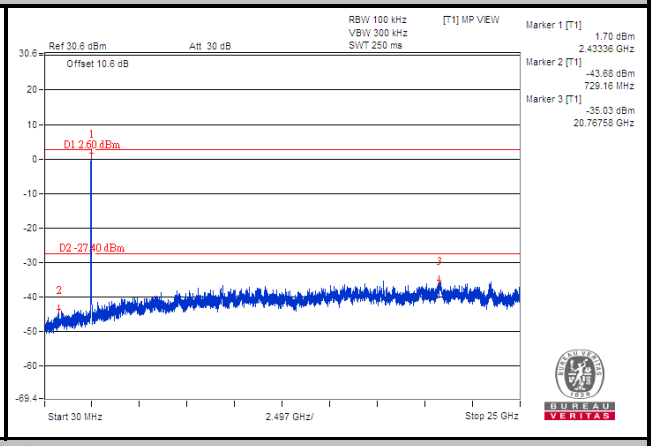
Ch 3



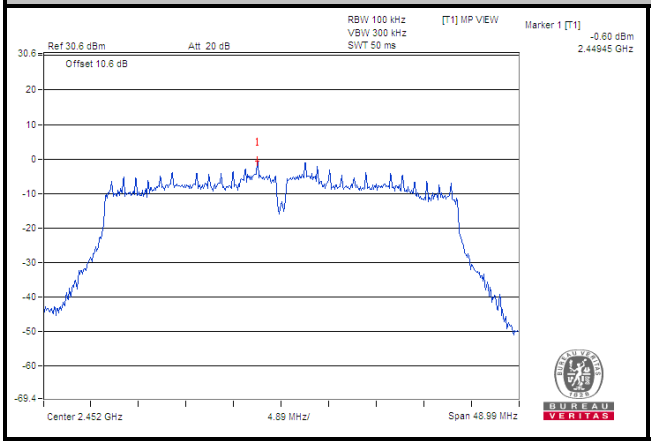


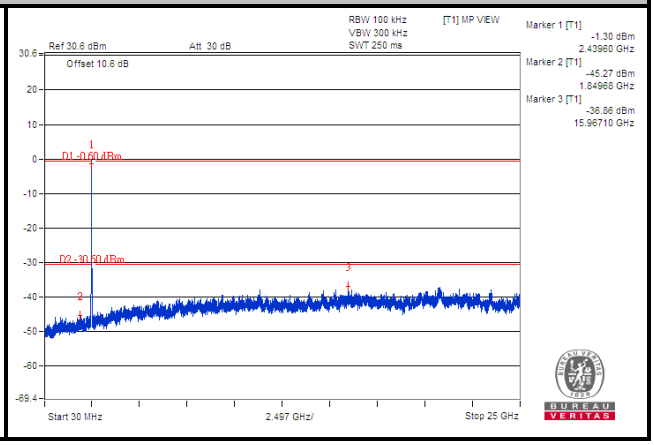
Ch 6



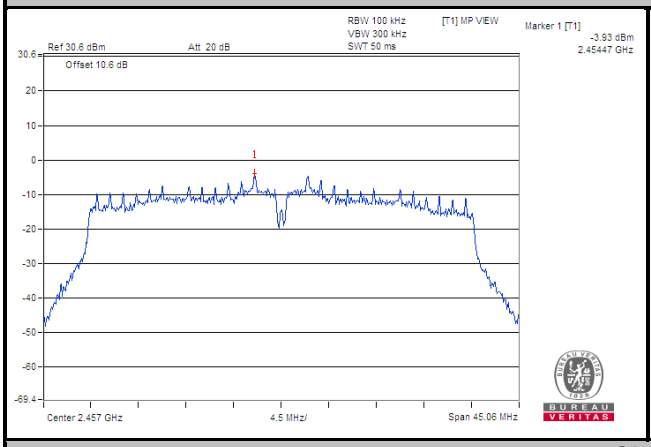


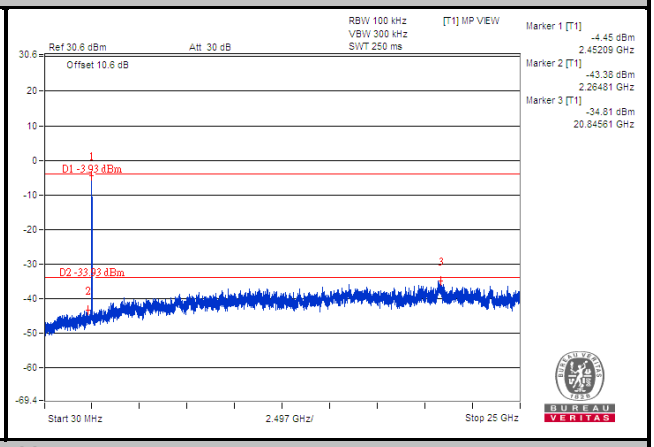
Ch 9



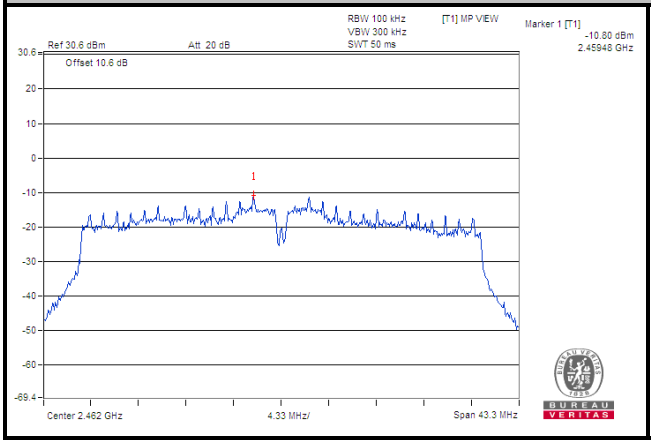


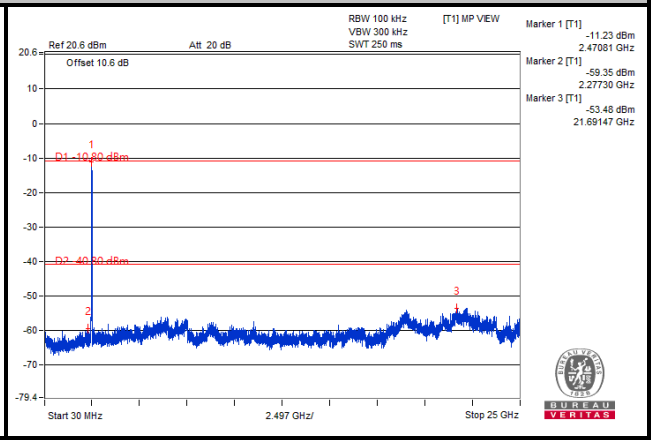
Ch 10

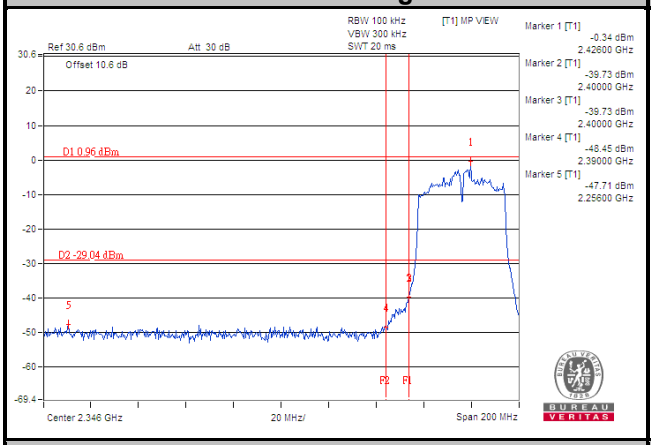
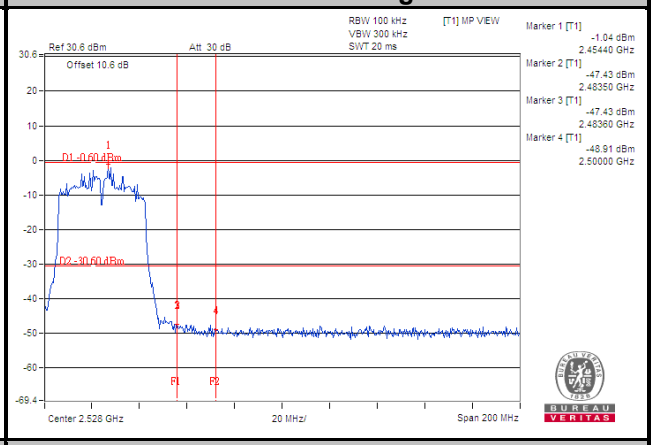
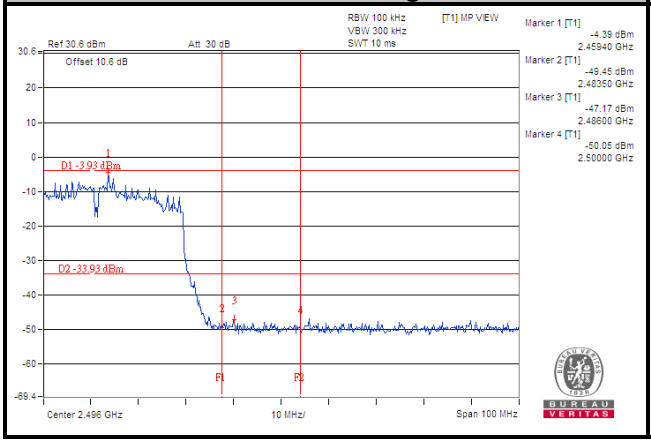
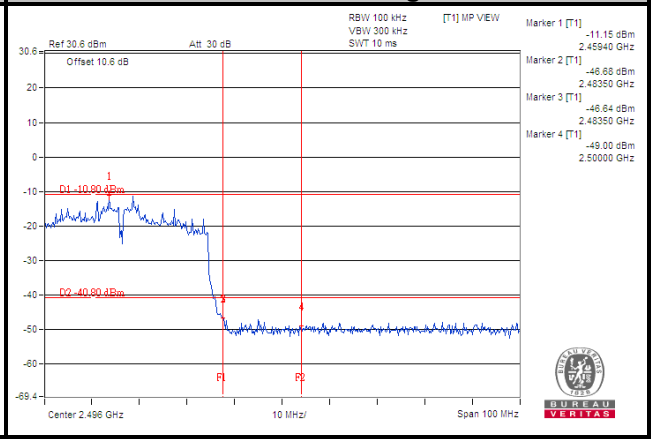

RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-3.93 dBm
2.45447 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.457 GHz
4.5 MHz/
Span 45.06 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-4.45 dBm
2.45209 GHz
Marker 2 [T1]
-43.38 dBm
2.26481 GHz
Marker 3 [T1]
-34.81 dBm
20.84561 GHz
Ref 30.6 dBm
Att 30 dB
Offset 10.6 dB
D1 -3.93 dBm
D2 -33.93 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 11


RBW 100 kHz
VBW 300 kHz
SWT 50 ms
[T1] MP VIEW
Marker 1 [T1]
-10.80 dBm
2.45948 GHz
Ref 30.6 dBm
Att 20 dB
Offset 10.6 dB
Center 2.462 GHz
4.33 MHz/
Span 43.3 MHz


RBW 100 kHz
VBW 300 kHz
SWT 250 ms
[T1] MP VIEW
Marker 1 [T1]
-11.23 dBm
2.47081 GHz
Marker 2 [T1]
-59.35 dBm
2.27730 GHz
Marker 3 [T1]
-53.48 dBm
21.69147 GHz
Ref 20.6 dBm
Att 20 dB
Offset 10.6 dB
D1 -10.80 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

Ch 3 Band Edge	Ch 9 Band Edge
	
Ch 10 Band Edge	**Ch 11 Band Edge**
	

Note: VIEW is just to prevent pulse from entering. The method is using maxhold first, wait to waveform stable then view.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

--- END ---