Peloton Interactive Inc.

TEST REPORT

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Radio Spectrum
TEST REPORT

Applicant:	**Peloton Interactive Inc.** **125 W 25th St, 11th Floor, New York, NY 10001**
Product:	**Peloton Console Tablet**
Model No.:	**PLTN-RB1VO**
Brand Name:	**Peloton Console**
FCC ID:	**2AA3N- RB1VO**
Test Method/ Standard:	**47 CFR FCC Part 15.247 & ANSI C63.10 2013** **KDB 558074 D01 v04** **KDB 662911 D01 v02r01**
Test By:	**Intertek Testing Services Taiwan Ltd.,** **Hsinchu Laboratory** **No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li,** **Shiang-Shan District, Hsinchu City, Taiwan**

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Revision History

Report No.	Issue Date	Revision Summary
180600461TWN-001	Sep. 11, 2018	Original report

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Summary of Test Data

Test Requirement	Applicable Rule (Section 15.247)	Result
Minimum 6 dB Bandwidth	15.247(a)(2)	Pass
Maximum Peak Conducted Output Power	15.247(b)(3)	Pass
Power Spectral Density	15.247(e)	Pass
Emissions In Non-Restricted Frequency Bands	15.247(d)	Pass
Emissions In Restricted Frequency Bands (Radiated emission measurements)	15.247(d), 15.205, 15.209	Pass
Emission On The Band Edge	15.247(d), 15.205	Pass
AC Power Line Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass

1. General Information

1.1 Identification of the EUT

Product:	Peloton Console Tablet
Model No.:	PLTN-RB1VO
Operating Frequency:	2412 MHz ~ 2462 MHz for 802.11b, 802.11g, 802.11n HT20
Channel Number:	11 channels for 2412 MHz ~ 2462 MHz
Frequency of Each Channel:	2412+5 k, k＝0 ~ 10 for 802.11b, 802.11g, 802.11n HT20
Access scheme:	DSSS, OFDM
Rated Power:	DC 12V from adapter
Power Cord:	N/A
Sample receiving date:	Jun. 28, 2018, 2018
Sample condition:	Workable
Test Date(s):	Jul. 05, 2018 ~ Jul. 23, 2018

1.2 Description of the EUT

Modulation mode	Transmit path	
	Chain 0	Chain 1
802.11b	V	V
802.11g	V	V
802.11n (HT20)	V	V

1.3 Antenna description

Antenna 1

Antenna Gain	: 2.92 dBi
Antenna Type	: PCB antenna
Connector Type	: I-Pex

Antenna 2

Antenna Gain	: 4.16 dBi
Antenna Type	: PCB antenna
Connector Type	: I-Pex

1.4 Peripherals equipment

No.	Model no.	Specification
Adapter	EA10681G-120	I/P: 100-240V~, 2.0A,50-60Hz O/P: 12V, 4.16A

1.5 Operation mode

TX mode: EUT use 「AMPAK RFTestTool.apk」 entering test mode , and Touchscreen to change different channel.
With individual verifying, the maximum output power were found out 1 Mbps data rate for 802.11b mode, 6 Mbps data rate for 802.11g mode, 6.5 Mbps data rate for 802.11n(HT20) mode , the final tests were executed under these conditions recorded in this report individually.

Chain 0

802.11b ch6 chain0		802.11g ch6 chain0		802.11n(HT20) ch6 chain0	
Data rate (Mbps)	AV (dBm)	Data rate (Mbps)	AV (dBm)	Data rate (Mbps)	AV (dBm)
1	15.44	6	16.06	MCS08	14.02
2	15.29	9	16.01	MCS09	13.98
5.5	15.21	12	15.95	MCS10	13.95
11	15.15	18	15.87	MCS11	13.92
		24	15.83	MCS12	13.86
		36	15.79	MCS13	13.83
		48	15.70	MCS14	13.78
		54	15.68	MCS15	13.74

Chain 1

802.11b ch6 chain1		802.11g ch6 chain1		802.11n(HT20) ch6 chain1	
Data rate (Mbps)	AV (dBm)	Data rate (Mbps)	AV (dBm)	Data rate (Mbps)	AV (dBm)
1	14.15	6	14.79	MCS08	12.67
2	14.02	9	14.75	MCS09	12.61
5.5	14.90	12	14.69	MCS10	12.54
11	13.83	18	14.60	MCS11	12.50
		24	14.56	MCS12	12.46
		36	14.51	MCS13	12.42
		48	14.49	MCS14	12.39
		54	14.42	MCS15	12.35

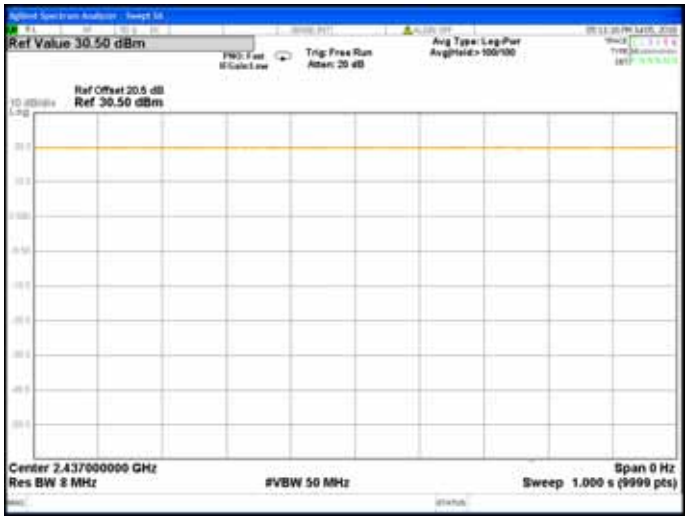
1.6 Applied test modes and channels

Test items	Mode	Data Rate (Mbps)	Channel	Antenna
Minimum 6 dB Bandwidth	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1
Maximum peak conducted output power	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1
Power Spectral Density	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1
RF Antenna Conducted Spurious	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1
Radiated spurious Emission 9kHz~1GHz	Worst Case			
Radiated Spurious Emission 1GHz~10th Harmonic	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1
Emission on the Band Edge	802.11 b	1	1, 6 , 11	Chain0、Chain1
	802.11 g	6	1, 6, 11	Chain0、Chain1
	802.11 n (HT20)	MCS8	1, 6, 11	Chain0+1

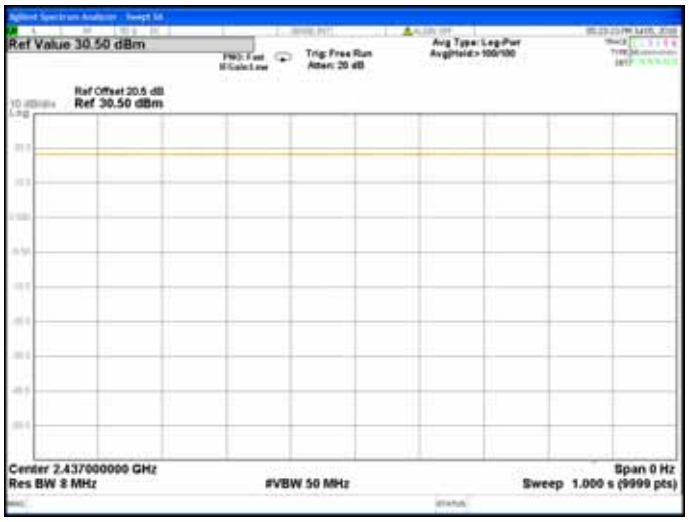
1.7 Power setting of test software

Mode	Chain	Channel	Frequency (MHz)	Data rate (Mbps)	Signal on time(s)	Total signal transmit time(s)	Duty cycle	Duty Cycle factor
802.11b	Chain 0	6	2437	1	1	1	1.000	0.000
802.11g	Chain 0	6	2437	6	1	1	1.000	0.000
802.11n (HT20)	Chain 0	6	2437	13	1	1	1.000	0.000
802.11b	Chain 1	6	2437	1	1	1	1.000	0.000
802.11g	Chain 1	6	2437	6	1	1	1.000	0.000
802.11n (HT20)	Chain 1	6	2437	13	1	1	1.000	0.000

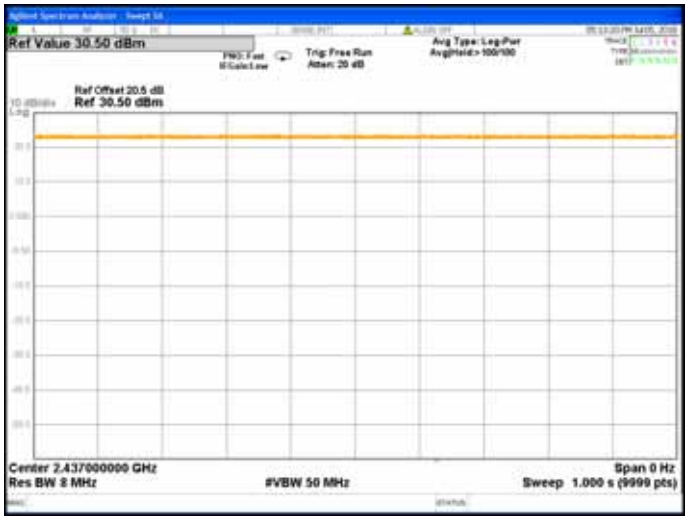
Chain0 : Ducty Cycle @ 802.11b Mode



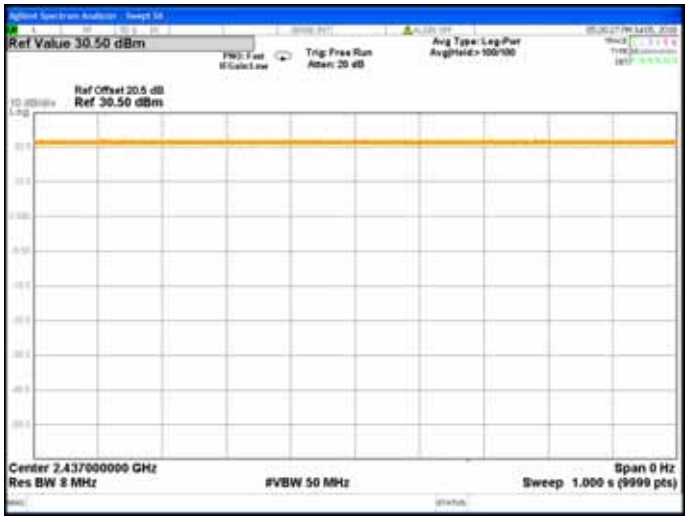
Chain1 : Ducty Cycle @ 802.11b Mode



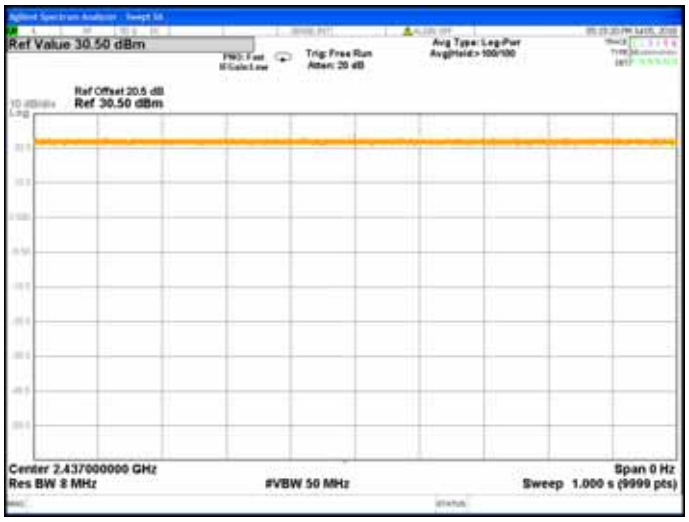
Chain0 : Ducty Cycle @ 802.11g Mode



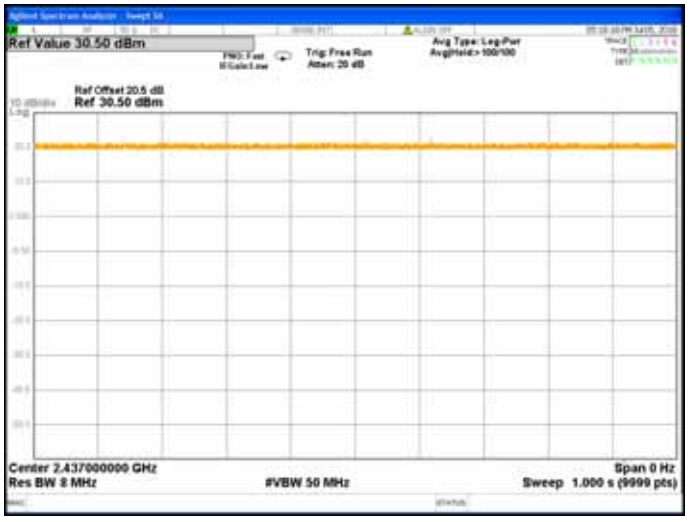
Chain1 : Ducty Cycle @ 802.11g Mode



Chain0 : Ducty Cycle @ 802.11n(HT20) Mode



Chain1 : Ducty Cycle @ 802.11n(HT20) Mode



2. Minimum 6 dB Bandwidth

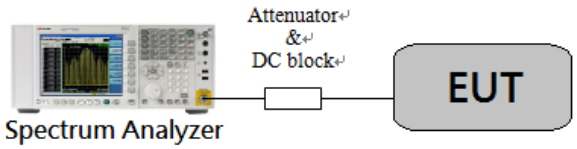
2.1 Instrument Setting

Spectrum Parameter	Setting
Detector	Peak
RBW	100kHz
VBW	≧3 x RBW
Sweep	Auto couple
Trace	Allow the trace to stabilize.
Span	Between two times and five times the occupied bandwidth
Attenuation	Auto

2.2 Test Procedure

Step 1	The transmitter output was connected to the spectrum analyzer.
Step 2	Test was performed in accordance with clause 8.1 option1 of KDB 558074 D01.
Step 3	Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

2.3 Test Diagram



2.4 Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

2.5 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/7/5

2.6 Test Results

Chain 0

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Test Result
802.11b	1	2412	7.082	>0.5	Pass
	6	2437	6.585	>0.5	Pass
	11	2462	7.097	>0.5	Pass
802.11g	1	2412	16.315	>0.5	Pass
	6	2437	16.298	>0.5	Pass
	11	2462	16.321	>0.5	Pass
802.11n(HT20)	1	2412	17.526	>0.5	Pass
	6	2437	17.549	>0.5	Pass
	11	2462	17.564	>0.5	Pass

Chain 1

Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Test Result
802.11b	1	2412	6.59	>0.5	Pass
	6	2437	7.061	>0.5	Pass
	11	2462	7.555	>0.5	Pass
802.11g	1	2412	16.343	>0.5	Pass
	6	2437	16.295	>0.5	Pass
	11	2462	16.326	>0.5	Pass
802.11n(HT20)	1	2412	17.527	>0.5	Pass
	6	2437	17.558	>0.5	Pass
	11	2462	16.716	>0.5	Pass

Chain0 : 6dB Bandwidth @ 802.11b Mode Ch 1

Chain0 : 6dB Bandwidth @ 802.11b Mode Ch 6

Chain0 : 6dB Bandwidth @ 802.11b Mode Ch11

Chain1 : 6dB Bandwidth @ 802.11b Mode Ch 1

Chain1 : 6dB Bandwidth @ 802.11b Mode Ch 6

Chain1 : 6dB Bandwidth @ 802.11b Mode Ch11

Chain0 : 6dB Bandwidth @ 802.11g Mode Ch 1

Chain0 : 6dB Bandwidth @ 802.11g Mode Ch 6

Chain0 : 6dB Bandwidth @ 802.11g Mode Ch11

Chain1 : 6dB Bandwidth @ 802.11g Mode Ch 1

Chain1 : 6dB Bandwidth @ 802.11g Mode Ch 6

Chain1 : 6dB Bandwidth @ 802.11g Mode Ch11

Chain0 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch 1

Chain0 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch 6

Chain0 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch11

Chain1 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch 1

Chain1 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch 6

Chain1 : 6dB Bandwidth @ 802.11n(HT20) Mode Ch11

3.Maximum Peak Conducted Output Power

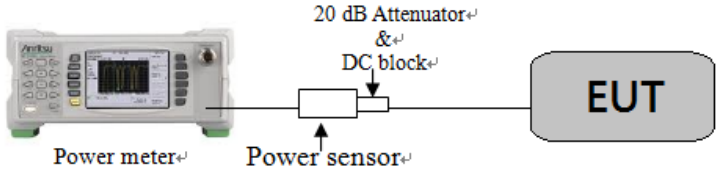
3.1 Instrument Setting

Power Meter Parameter	Setting
Bandwidth	65MHz bandwidth is greater than the EUT emission bandwidth
Detector	Peak & Average

3.2Test Procedure

Test procedures refer to clause 9.1.3 peak power meter method and clause 9.2.3.2 measurement using a gated RF average power meter of KDB 558074 D01.

3.3 Test Diagram



3.4 Limit

For systems using digital modulation in the 2400-2483.5 MHz: 1 Watt (30dBm)

3.5 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/7/5

3.6 Test Results

Single Tx

Mode	Channel	Frequency (MHz)	Output Power (AV) (dBm)	Total Power (AV) (mW)	Maximum power (PK) (dBm)	Maximum power (PK) (mW)	Limit (dBm)	Margin (dB)
802.11b Chain 0	1	2412	15.04	31.92	18.14	65.16	30	-11.86
	6	2437	15.44	34.99	18.53	71.29	30	-11.47
	11	2462	15.18	32.96	18.32	67.92	30	-11.68
802.11g Chain 0	1	2412	15.50	35.48	25.08	322.11	30	-4.92
	6	2437	16.06	40.36	25.15	327.34	30	-4.85
	11	2462	15.83	38.28	24.92	310.46	30	-5.08

Mode	Channel	Frequency (MHz)	Output Power (AV) (dBm)	Total Power (AV) (mW)	Maximum power (PK) (dBm)	Maximum power (PK) (mW)	Limit (dBm)	Margin (dB)
802.11b Chain 1	1	2412	13.97	24.95	17.09	51.17	30	-12.91
	6	2437	14.15	26.00	17.24	52.97	30	-12.76
	11	2462	14.12	25.82	17.21	52.60	30	-12.79
802.11g Chain 1	1	2412	14.64	29.11	23.13	205.59	30	-6.87
	6	2437	14.79	30.13	23.01	199.99	30	-6.99
	11	2462	14.64	29.11	22.81	190.99	30	-7.19

MIMO

Mode	Channel	Frequency (MHz)	Output Power (dBm)				Output Power (mW)				Total Power (dBm)				Limit (dBm)	Margin (dB)
			Chian 0		Chain 1		Chain 0		Chian 1		AV		PK			
			AV	PK	AV	PK	AV	PK	AV	PK	0+1 (mW)	0+1 (dBm)	0+1 (mW)	0+1 (dBm)		
802.11n (HT20)	1	2412	13.52	24.34	12.58	22.56	22.49	271.64	18.11	180.30	40.60	16.09	451.95	26.55	30	-3.45
	6	2437	14.02	24.01	12.67	21.49	25.23	251.77	18.49	140.93	43.73	16.41	392.70	25.94	30	-4.06
	11	2462	13.93	23.64	12.57	21.60	24.72	231.21	18.07	144.54	42.79	16.31	375.75	25.75	30	-4.25

4.Power Spectral Density

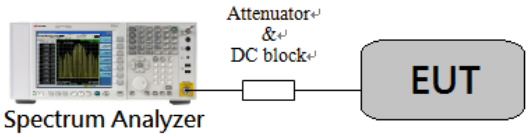
4.1 Instrument Setting

Spectrum Function	Setting
Detector	Peak
RBW	≧3 kHz
VBW	≧3 x RBW
Sweep	Auto couple
Trace	Max hold
Span	1.5 times x 6dB bandwidth
Attenuation	Auto

4.2 Test Procedure

Step 1	Test procedure refer to clause 10.2 method PKPSD (peak PSD) of KDB 558074 D01 and clause E) 2) c) of KDB 662911 D01 measure and sum spectral maxima across the outputs.
Step 2	Using the maximum conducted output power in the fundamental emission demonstrates compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
Step 3	Use the peak marker function to determine the maximum amplitude level within the RBW.

4.3 Test Diagram



4.4 Limit

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

4.5 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/7/5

4.6 Test Results

Note1: RBW Correction = 10*log(10kHz/3kHz) = 5.229
Note2: PSD in 3kHz = PSD in 10kHz – RBW Correction
Note3: Because using KDB 662911 v02r01 D01 E) 2) c), we found the peak PSD and add 10 log(N_{ANT}) dB, where N_{ANT} is the number of outputs. Before adding 10 log(N_{ANT}), each PSD was subtracted by RBW factor.

Single TX

Mode	Channel	Frequency (MHz)	RBW factor	PSD in 10kHz	PSD in 3kHz		Limit (dBm)	Margin (dB)
					(dBm)	(mW)		
802.11b (chain0)	1	2412	5.23	-1.78	-7.01	0.20	8	-15.01
	6	2437	5.23	-1.65	-6.88	0.21	8	-14.88
	11	2462	5.23	-1.72	-6.95	0.20	8	-14.95
802.11g (chain0)	1	2412	5.23	-4.51	-9.74	0.11	8	-17.74
	6	2437	5.23	-4.76	-9.99	0.10	8	-17.99
	11	2462	5.23	-3.6	-8.83	0.13	8	-16.83

Mode	Channel	Frequency (MHz)	RBW factor	PSD in 10kHz	PSD in 3kHz		Limit (dBm)	Margin (dB)
					(dBm)	(mW)		
802.11b (chain1)	1	2412	5.23	-3.88	-9.11	0.12	8	-17.11
	6	2437	5.23	-2.67	-7.90	0.16	8	-15.90
	11	2462	5.23	-3.04	-8.27	0.15	8	-16.27
802.11g (chain1)	1	2412	5.23	-4.6	-9.83	0.10	8	-17.83
	6	2437	5.23	-4.8	-10.03	0.10	8	-18.03
	11	2462	5.23	-6.02	-11.25	0.08	8	-19.25

MIMO

Mode	Channel	Freq. (MHz)	Correction Factor	PSD (dBm) in 10kHz		PSD (dBm) in 3kHz		Total PSD		MIMO		Limit (dBm)	Margin (dB)
				chain0	chain1	chain0	chain1	mW	dBm	Corr.n	Result		
802.11n (HT20)	1	2412	5.23	-5.87	-7.87	-11.10	-13.10	0.13	-8.97	3.00	-5.96	8	-13.96
	6	2437	5.23	-5.64	-5.8	-10.87	-11.03	0.16	-7.94	3.00	-4.93	8	-12.93
	11	2462	5.23	-6.18	-5.58	-11.41	-10.81	0.16	-8.09	3.00	-5.08	8	-13.08

Note: MIMO Correction: 10log(Nant)= 10log(2) = 3
Correction Factor =10log(10kHz/3kHz)

Chain0 : Power Spectral Density @ 802.11b Mode Ch 1

Chain0 : Power Spectral Density @ 802.11b Mode Ch 6

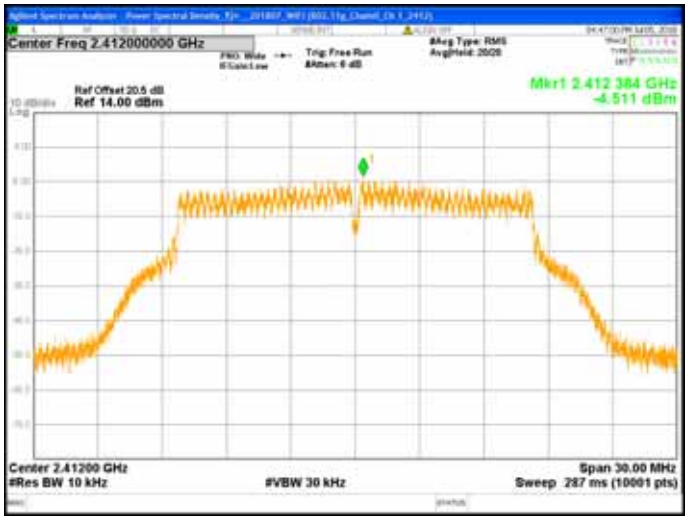
Chain0 : Power Spectral Density @ 802.11b Mode Ch11

Chain1 : Power Spectral Density @ 802.11b Mode Ch 1

Chain1 : Power Spectral Density @ 802.11b Mode Ch 6

Chain1 : Power Spectral Density @ 802.11b Mode Ch11

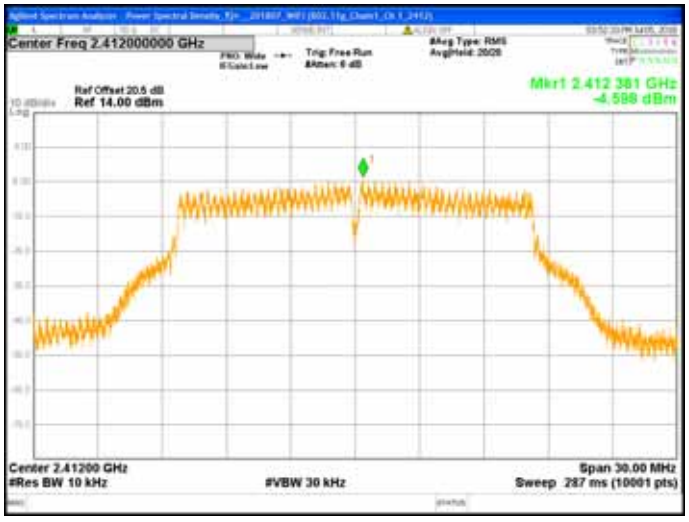
Chain0 : Power Spectral Density @ 802.11g Mode Ch 1



Chain0 : Power Spectral Density @ 802.11g Mode Ch 6

Chain0 : Power Spectral Density @ 802.11g Mode Ch11

Chain1 : Power Spectral Density @ 802.11g Mode Ch 1



Chain1 : Power Spectral Density @ 802.11g Mode Ch 6

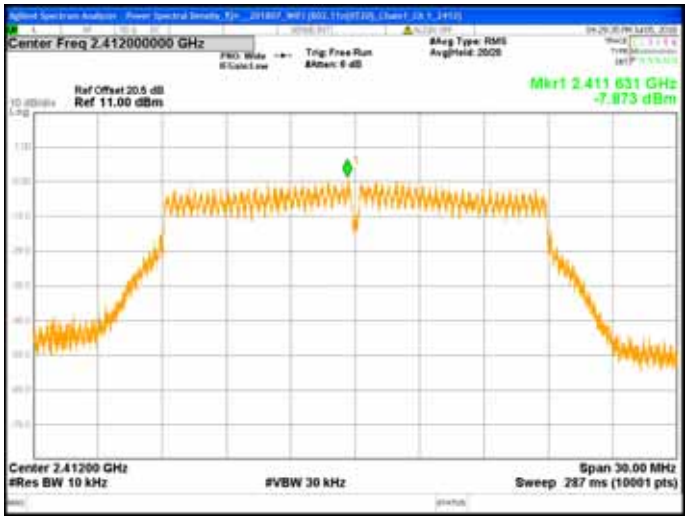
Chain1 : Power Spectral Density @ 802.11g Mode Ch11

Chain0 : Power Spectral Density @ 802.11n(HT20) Mode Ch 1

Chain0 : Power Spectral Density @ 802.11n(HT20) Mode Ch 6

Chain0 : Power Spectral Density @ 802.11n(HT20) Mode Ch11

Chain1 : Power Spectral Density @ 802.11n(HT20) Mode Ch 1



Chain1 : Power Spectral Density @ 802.11n(HT20) Mode Ch 6

Chain1 : Power Spectral Density @ 802.11n(HT20) Mode Ch11

5.Emissions in Non-Restricted Frequency Bands

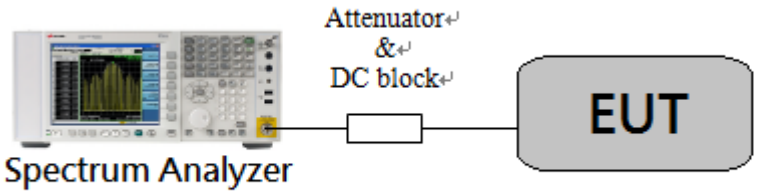
5.1 Instruments Setting

Spectrum Function	Setting (Reference Level)	Setting (Emission Level)
Detector	Peak	Peak
RBW	≧100 kHz	≧100 kHz
VBW	≧3 x RBW	≧3 x RBW
Sweep	Auto couple	Auto couple
Trace	Max hold	Max hold
Span	≧1.5 time 6dB bandwidth	
Attenuation	Auto	Auto

5.2 Test Procedure

Step 1 The procedure was used in antenna-port conducted and connected to the spectrum analyzer.
Step 2 Set instrument center frequency to center frequency.
Step 3 Use the parameter configured in clause 5.1 to measure.
Step 4 Use the peak marker function to determine the maximum amplitude level.

5.3 Test Diagram



5.4 Limit

The peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz

5.5 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/75

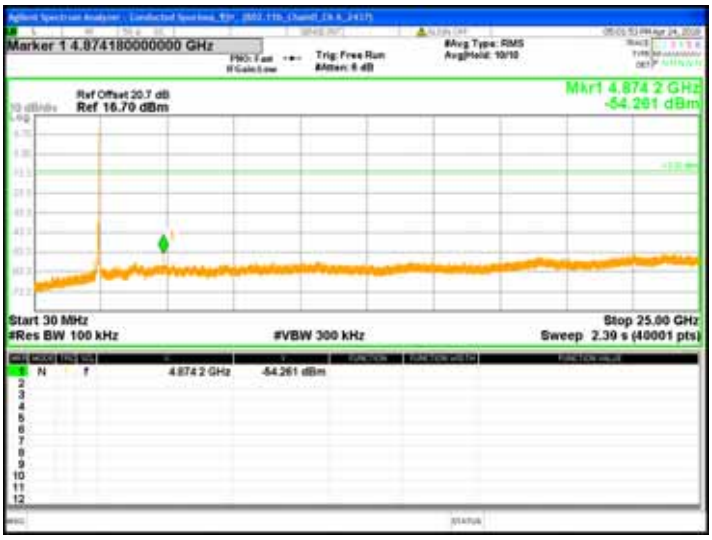
5.6 Test Results

Chain0 : Conducted Spurious @ 802.11b mode Ch 1

Chain0 : Conducted Spurious @ 802.11b mode Ch 1

Chain0 : Conducted Spurious @ 802.11b mode Ch 6

Chain0 : Conducted Spurious @ 802.11b mode Ch 6

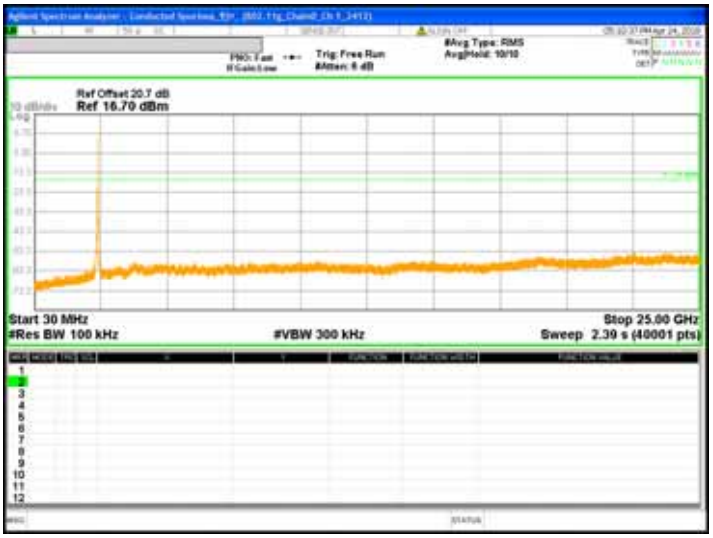


Chain0 : Conducted Spurious @ 802.11b mode Ch11

Chain0 : Conducted Spurious @ 802.11b mode Ch11

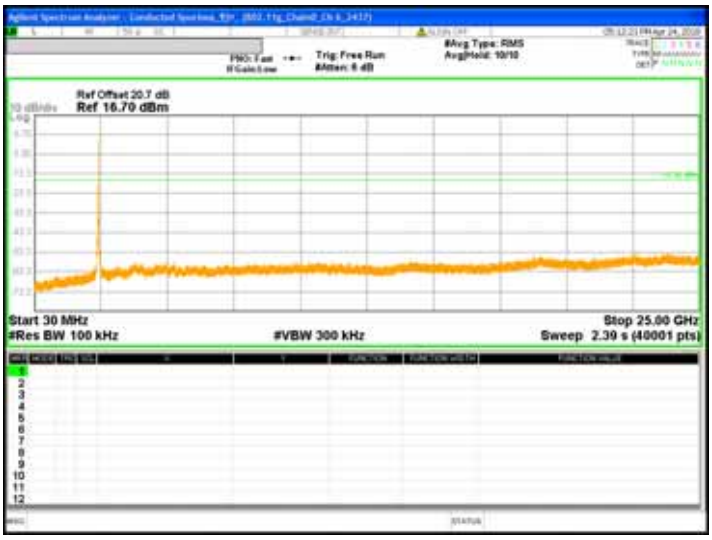
Chain0 : Conducted Spurious @ 802.11g mode Ch 1

Chain0 : Conducted Spurious @ 802.11g mode Ch 1



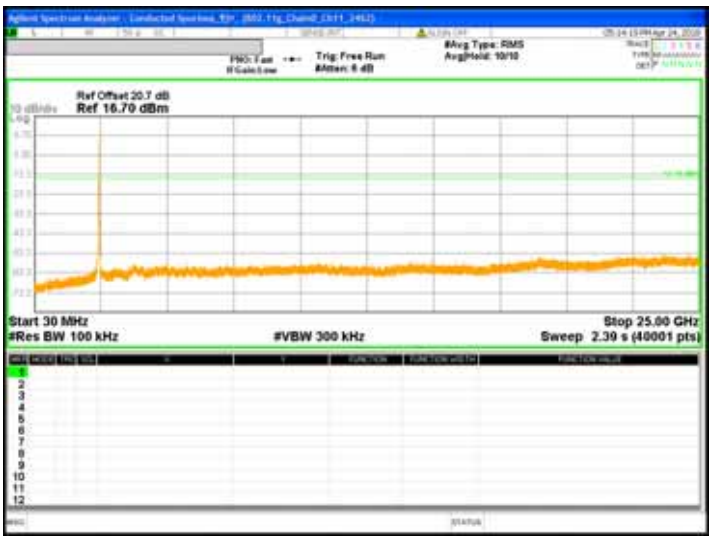
Chain0 : Conducted Spurious @ 802.11g mode Ch 6

Chain0 : Conducted Spurious @ 802.11g mode Ch 6



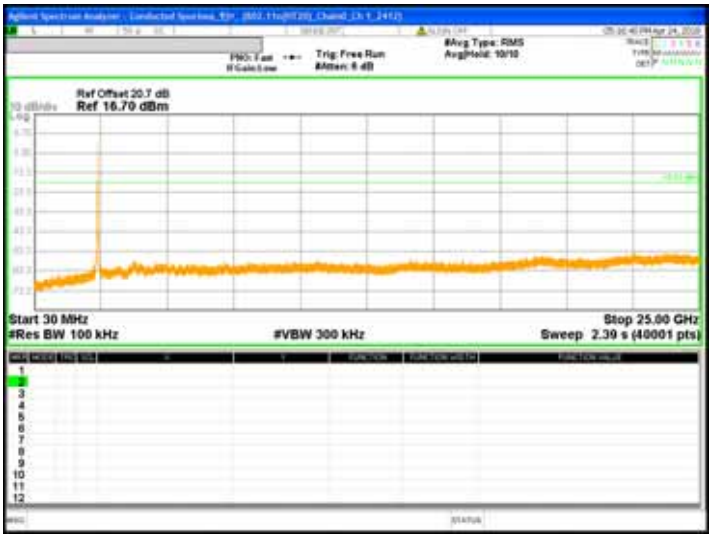
Chain0 : Conducted Spurious @ 802.11g mode Ch11

Chain0 : Conducted Spurious @ 802.11g mode Ch11



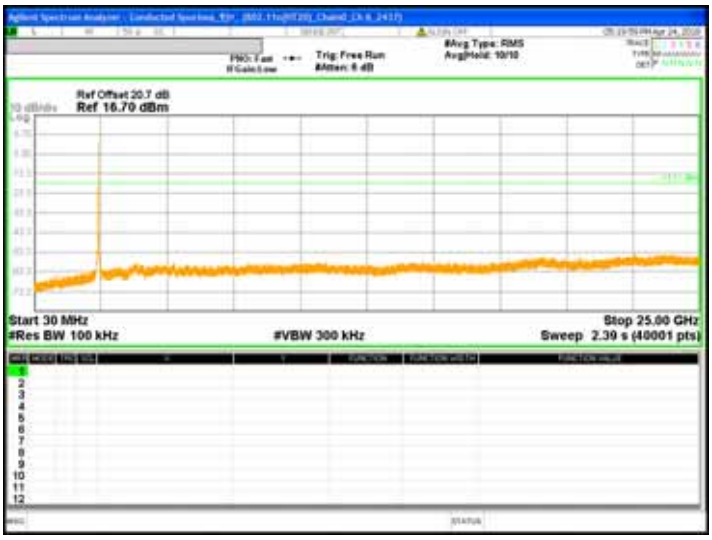
Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch 1

Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch 1



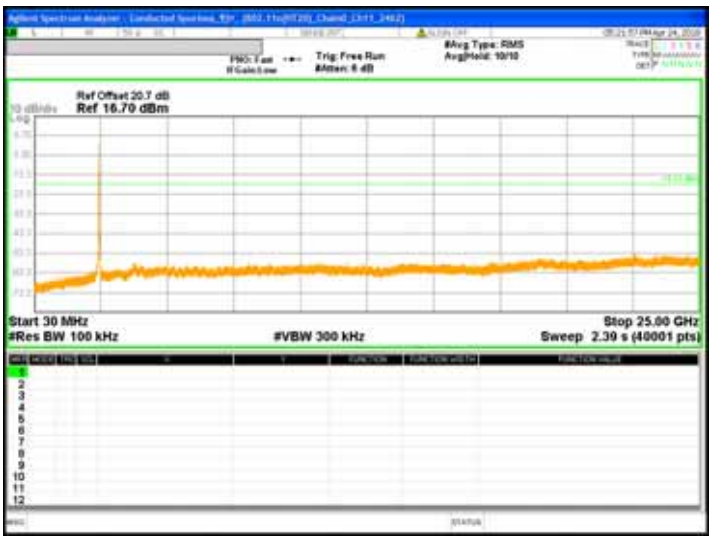
Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch 6

Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch 6



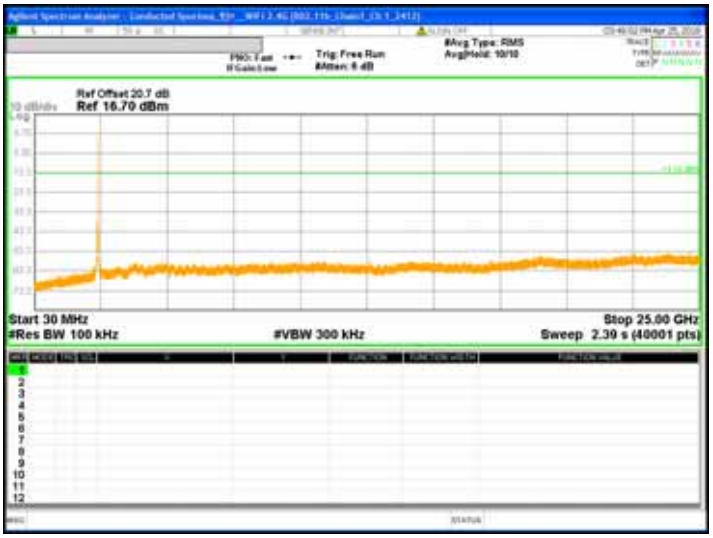
Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch11

Chain0 : Conducted Spurious @ 802.11n(HT20) mode Ch11



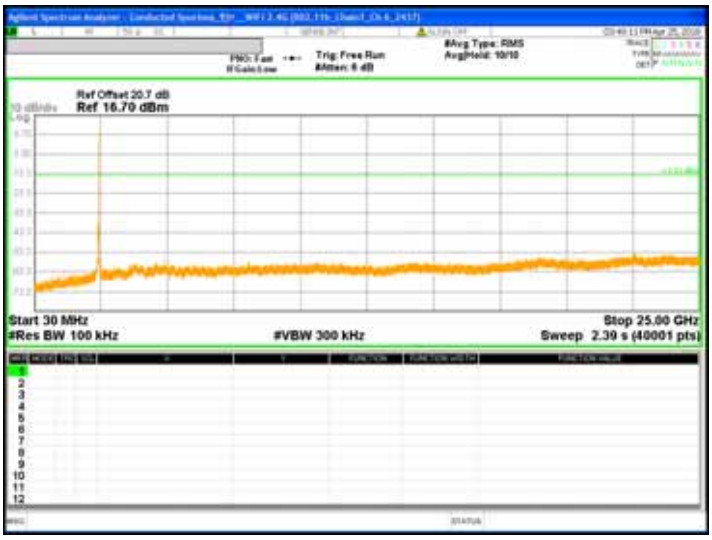
Chain1 : Conducted Spurious @ 802.11b mode Ch 1

Chain1 : Conducted Spurious @ 802.11b mode Ch 1



Chain1 : Conducted Spurious @ 802.11b mode Ch 6

Chain1 : Conducted Spurious @ 802.11b mode Ch 6

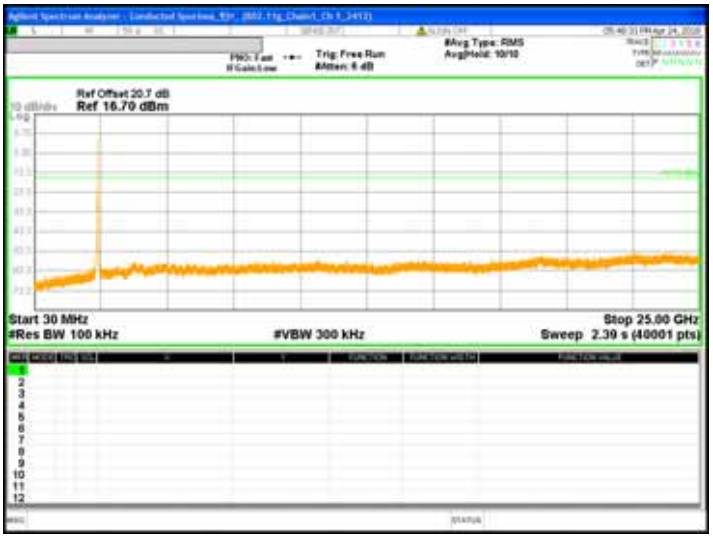


Chain1 : Conducted Spurious @ 802.11b mode Ch11

Chain1 : Conducted Spurious @ 802.11b mode Ch11

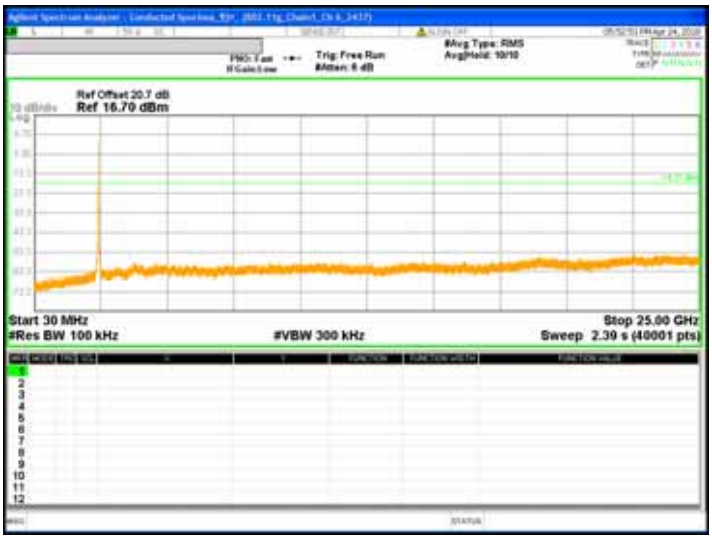
Chain1 : Conducted Spurious @ 802.11g mode Ch 1

Chain1 : Conducted Spurious @ 802.11g mode Ch 1



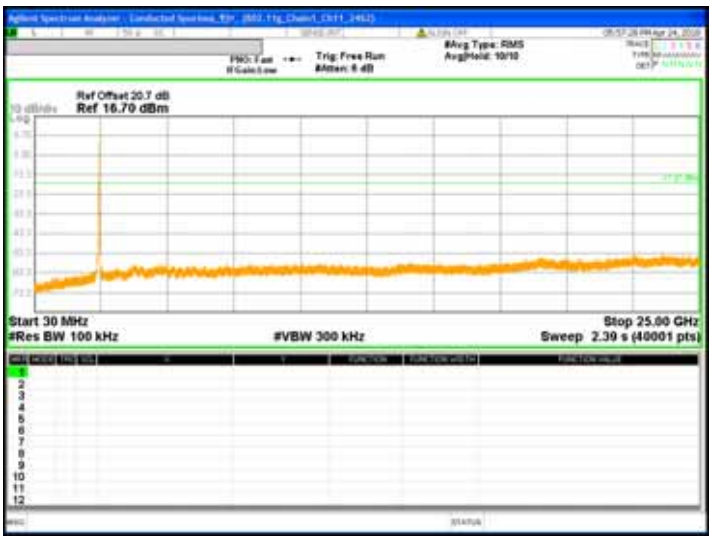
Chain1 : Conducted Spurious @ 802.11g mode Ch 6

Chain1 : Conducted Spurious @ 802.11g mode Ch 6



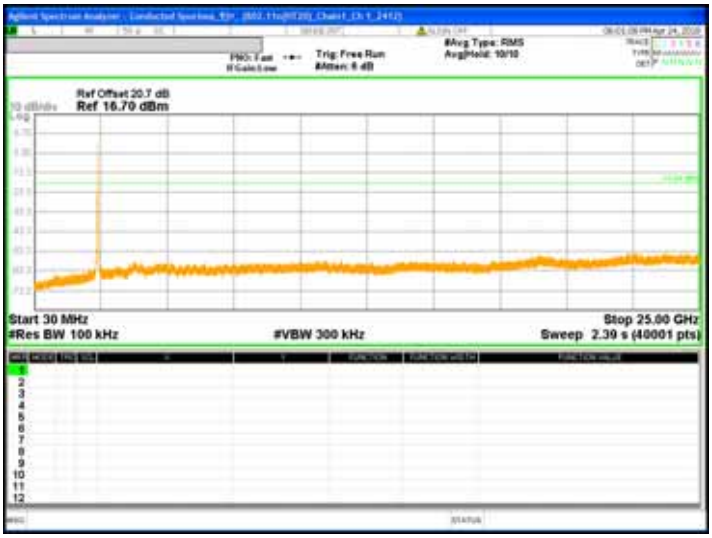
Chain1 : Conducted Spurious @ 802.11g mode Ch11

Chain1 : Conducted Spurious @ 802.11g mode Ch11



Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch 1

Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch 1

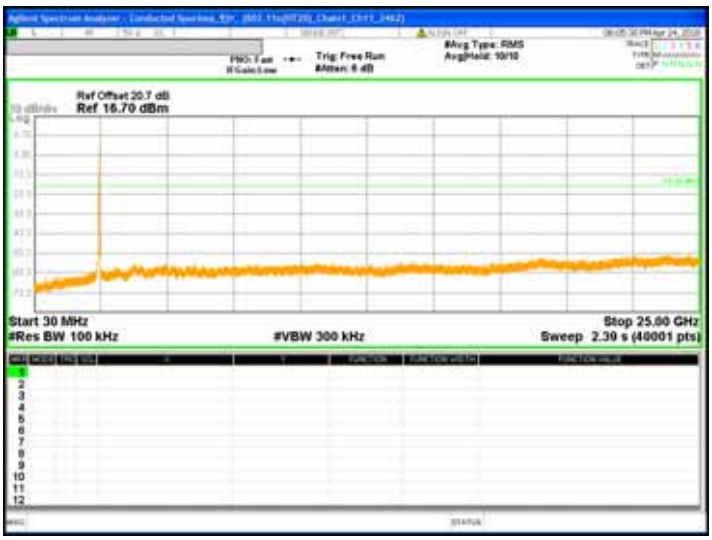


Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch 6

Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch 6

Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch11

Chain1 : Conducted Spurious @ 802.11n(HT20) mode Ch11



6.Emissions in Restricted Frequency Bands (Radiated emission measurements)

6.1 Instrument Setting

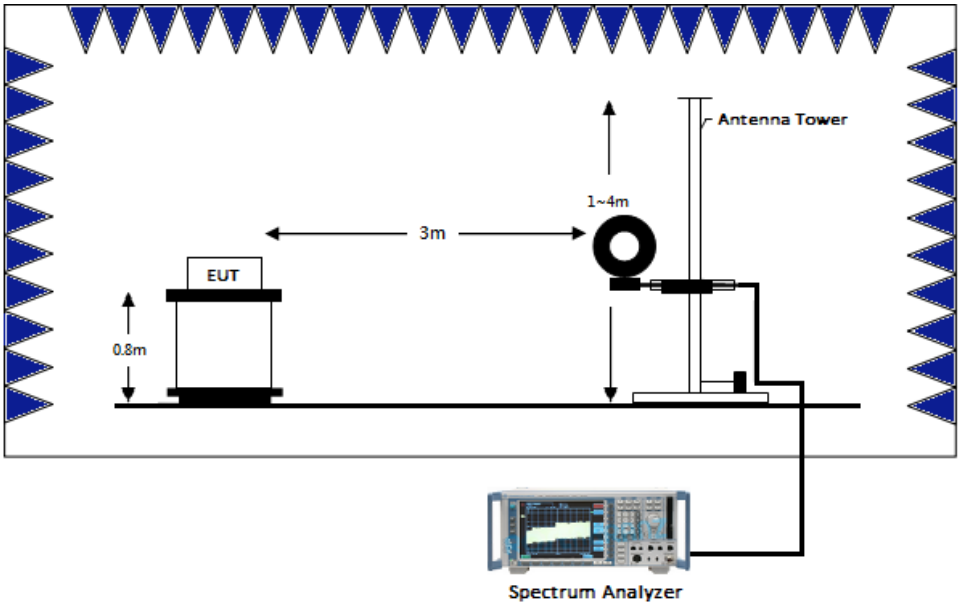
Receiver Function	Setting (Below 1GHz)	Setting (Above 1GHz)
Detector	QP	Peak and Average
RBW	9-150 kHz ; 200-300 Hz 0.15-30 MHz; 9-10 kHz 30-1000 MHz; 100-120 kHz	1MHz
VBW	≧3 x RBW	3MHz
Sweep	Auto couple	Auto couple
Start Frequency	9 kHz	1GHz
Stop Frequency	1 GHz	Tenth harmonic
Attenuation	Auto	Auto

6.2 Test Procedure

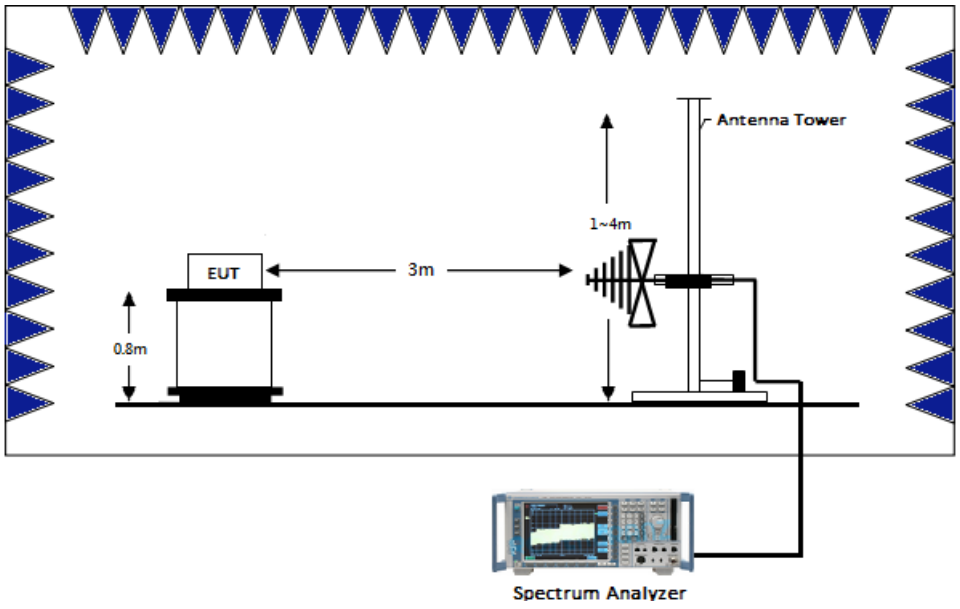
Step 1	Configure the EUT according to ANSI C63.10:2013. The EUT was placed on the top of the turntable 0.8 meter (below 1GHz) and 1.5 meter (above 1GHz) above ground. The center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
Step 2	Power on the EUT and all the companion devices. The turntable was rotated by 360 degree to find the position of the maximum emission level.
Step 3	The height of the receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of the both horizontal and vertical polarization.
Step 4	If find the frequencies above the limit or below within 3dB, the antenna tower was scan (from 1m to 4m) and then the turntable was rotated to find the maximum reading.
Step 5	Set the test-receiver system to peak or CISPR quasi-peak detector with specified bandwidth under maximum hold mode.
Step 6	For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for reading in spectrum analyzer. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
Step 7	If the emissions level of the EUT in peak mode was 3dB lower than the average limit specified then testing will be stopped and peak values of the EUT will be reported. Otherwise, the emissions which do not have 3dB margin will be measured using the quasi-peak method for below 1GHz.
Step 8	For testing above 1GHz, The emissions level of the EUT in peak mode was lower than average limit, then testing will be stopped and peak values of the EUT will be reported, otherwise, the emission will be measured in average mode again and reported.
Step 9	In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be quasi-peak measured by receiver.

6.3 Test Diagram

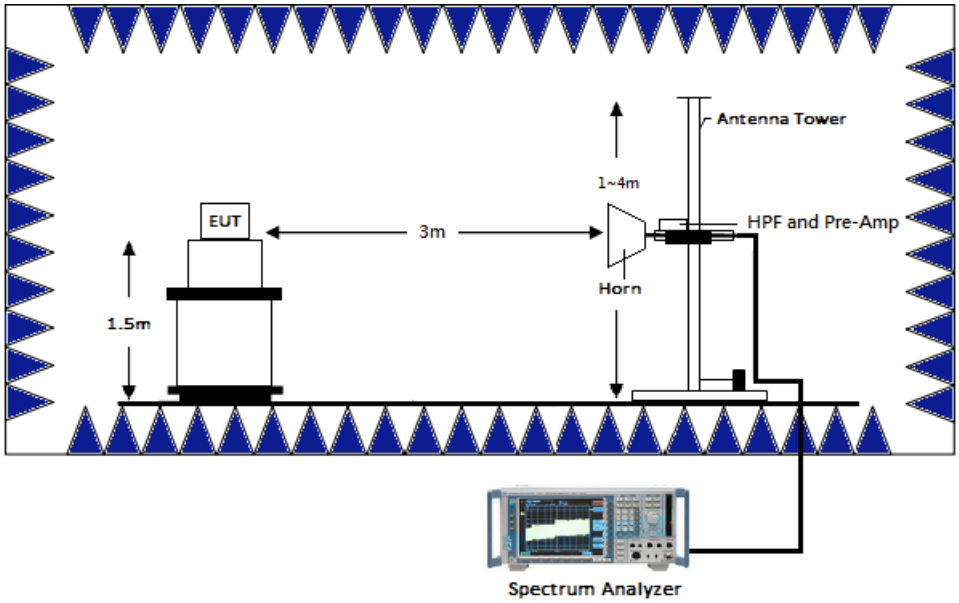
6.3.1 Radiated emission from 9kHz to 30MHz uses Loop Antenna:



6.3.2 Radiated emission below 1GHz using Bilog Antenna



6.3.3 Radiated emission above 1GHz using Horn Antenna



6.4 Limit

Frequency(MHz)	Field Strength(uV/m)	Measurement distance(m)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

6.5 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/7/23

6.6 Test Result

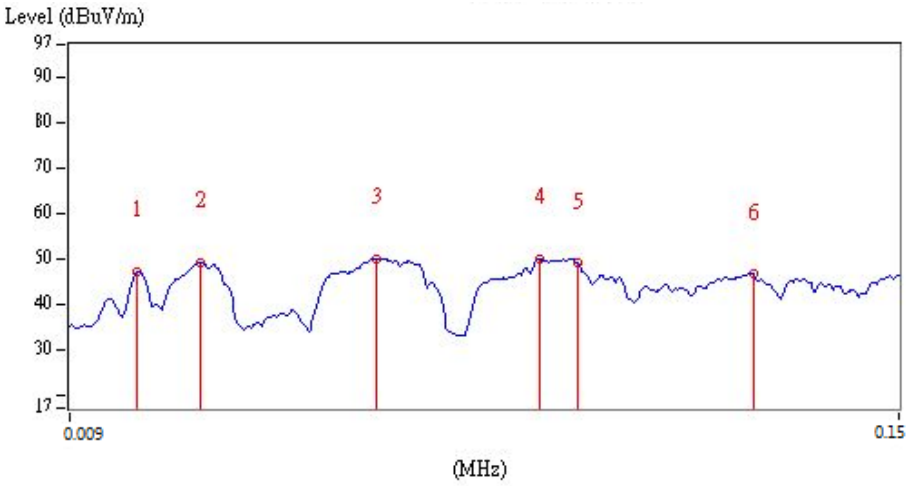
6.6.1 Measurement results: frequencies 9kHz to 30MHz

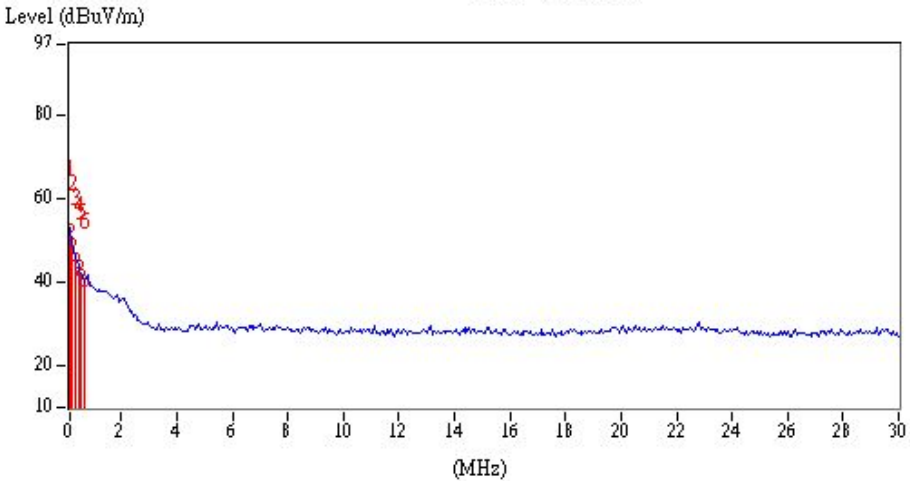
The test was performed on EUT under 802.11b/g/n continuously transmitting mode. The worst case occurred at 802.11g Channel 1, Chain0

EUT: PLTN-RB1VO

Mode	Chain	Channel	Frequency (MHz)	Detector	Factor (dB/m)	Reading (dBuV)	Corrected Reading (dBuV/m)	Limit (dBµV/m)	Margin (dB)
802.11b	Chain0	1	0.02	PK	19.26	27.87	47.13	121.58	-74.45
802.11b	Chain0	1	0.03	PK	19.51	29.52	49.03	118.06	-69.03
802.11b	Chain0	1	0.07	PK	18.97	30.99	49.96	110.70	-60.74
802.11b	Chain0	1	0.09	PK	18.81	31.09	49.90	108.52	-58.62
802.11b	Chain0	1	0.10	QP	18.77	30.08	48.85	107.60	-58.75
802.11b	Chain0	1	0.13	PK	18.74	27.75	46.49	105.33	-58.84
802.11b	Chain0	1	0.15	PK	18.73	34.13	52.86	104.08	-51.22
802.11b	Chain0	1	0.21	PK	18.73	30.68	49.41	101.16	-51.75
802.11b	Chain0	1	0.33	PK	18.75	27.30	46.05	97.23	-51.18
802.11b	Chain0	1	0.45	PK	18.67	25.67	44.34	94.54	-50.20
802.11b	Chain0	1	0.57	QP	18.63	23.61	42.24	72.49	-30.25
802.11b	Chain0	1	0.69	QP	18.61	21.48	40.09	70.83	-30.74

Remark: Corr. Factor = Antenna Factor + Cable Loss


Level (dBuV/m)
97
90
80
70
60
50
40
30
17
1
2
3
4
5
6
0.009
0.15
(MHz)

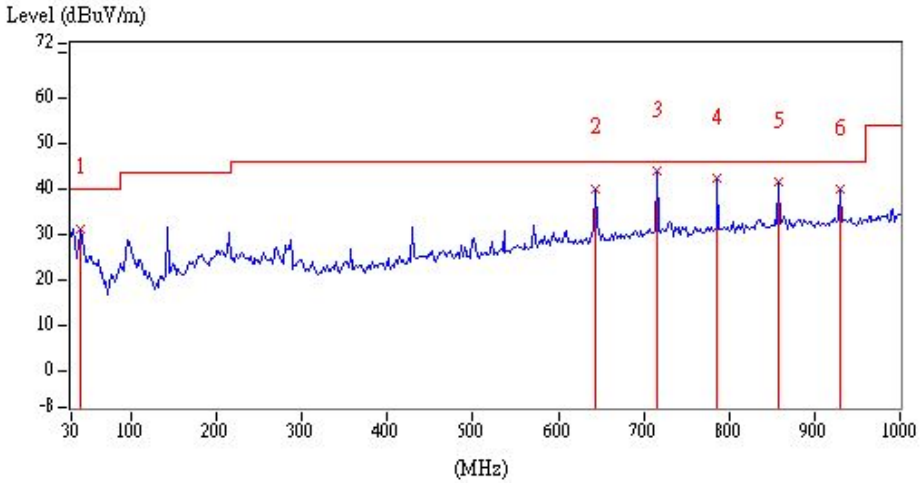

Level (dBuV/m)
97
80
60
40
20
10
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
(MHz)

6.6.1 Measurement results: frequencies below 1 GHz

The test was performed on EUT under 802.11b/g/n continuously transmitting mode. The worst case occurred at 802.11g Chain0 Channel 11

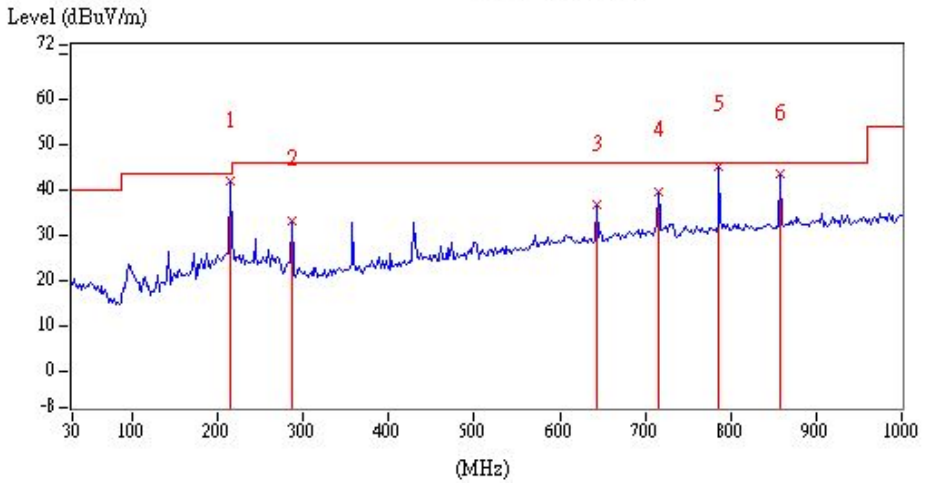
EUT: PLTN-RB1VO

Ant Polarity	Frequency (MHz)	Detector	Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3m (dBµV/m)	Margin (dB)
Vertical	41.64	QP	20.06	11.17	31.23	40.00	-8.77
Vertical	643.04	QP	29.61	10.48	40.09	46.00	-5.91
Vertical	714.82	QP	30.84	13.00	43.84	46.00	-2.16
Vertical	786.60	QP	31.95	10.25	42.20	46.00	-3.80
Vertical	858.38	QP	32.78	8.75	41.53	46.00	-4.47
Vertical	930.16	QP	33.68	6.12	39.80	46.00	-6.20



Ant Polarity	Frequency (MHz)	Detector	Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3m (dBµV/m)	Margin (dB)
Horizontal	214.30	QP	18.85	23.08	41.93	43.50	-1.57
Horizontal	286.08	QP	21.41	11.97	33.38	46.00	-12.62
Horizontal	643.04	QP	29.61	7.00	36.61	46.00	-9.39
Horizontal	714.82	QP	30.84	8.84	39.68	46.00	-6.32
Horizontal	786.60	QP	31.95	13.42	45.37	46.00	-0.63
Horizontal	858.38	QP	32.78	10.77	43.55	46.00	-2.45

Remark: Corr. Factor = Antenna Factor + Cable Loss



6.6.2 Measurement results: frequency above 1GHz to 25GHz

EUT: PLTN-RB1VO

Chain0

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3 m (dBµV/m)	Margin (dB)
802.11b_Ch1	1072	PK	V	29.21	14.28	43.49	74.00	-30.51
	1144	PK	V	29.34	25.92	55.26	74.00	-18.74
	1144	AV	V	29.34	14.43	43.77	54.00	-10.23
	1216	PK	V	29.47	16.49	45.96	74.00	-28.04
	1572	PK	V	30.85	15.36	46.21	74.00	-27.79
	4824	PK	V	5.71	34.00	39.71	74.00	-34.29
	7236	PK	V	13.05	30.79	43.84	74.00	-30.16
	1144	PK	H	29.34	18.05	47.39	74.00	-26.61
	4824	PK	H	5.71	34.00	39.71	74.00	-34.29
	7236	PK	H	13.05	30.79	43.84	74.00	-30.16
802.11b_Ch6	1072	PK	V	29.21	13.65	42.86	74.00	-31.14
	1144	PK	V	29.34	25.50	54.84	74.00	-19.16
	1144	AV	V	29.34	14.28	43.62	54.00	-10.38
	1216	PK	V	29.47	13.76	43.23	74.00	-30.77
	1572	PK	V	30.85	15.28	46.13	74.00	-27.87
	4874	PK	V	5.88	33.79	39.67	74.00	-34.33
	7311	PK	V	13.43	32.54	45.97	74.00	-28.03
	1144	PK	H	29.34	14.21	43.55	74.00	-30.45
	2437	PK	H	35.29	72.80	108.09	74.00	34.09
	4874	PK	H	5.88	32.40	38.28	74.00	-35.72
	7311	PK	H	13.43	29.01	42.44	74.00	-31.56
802.11b_Ch11	1072	PK	V	29.21	13.24	42.45	74.00	-31.55
	1144	PK	V	29.34	25.89	55.23	74.00	-18.77
	1144	AV	V	29.34	16.63	45.97	54.00	-8.03
	1216	PK	V	29.47	12.51	41.98	74.00	-32.02
	1572	PK	V	30.85	14.77	45.62	74.00	-28.38
	4924	PK	V	6.06	33.10	39.16	74.00	-34.84
	7386	PK	V	13.81	31.01	44.82	74.00	-29.18
	1144	PK	H	29.34	14.43	43.77	74.00	-30.23
	4924	PK	H	6.06	32.50	38.56	74.00	-35.44
	7386	PK	H	13.81	28.77	42.58	74.00	-31.42

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

Chain0

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)
802.11g_Ch1	1072	PK	V	29.21	11.36	40.57	74.00	-33.43
	1144	PK	V	29.34	26.71	56.05	74.00	-17.95
	1144	AV	V	29.34	16.88	46.22	54.00	-7.78
	1216	PK	V	29.47	13.85	43.32	74.00	-30.68
	1572	PK	V	30.85	16.16	47.01	74.00	-26.99
	4824	PK	V	5.71	34.33	40.04	74.00	-33.96
	7236	PK	V	13.05	30.42	43.47	74.00	-30.53
	1144	PK	H	29.34	16.73	46.07	74.00	-27.93
	4824	PK	H	5.71	33.85	39.56	74.00	-34.44
	7236	PK	H	13.05	29.00	42.05	74.00	-31.95
802.11g_Ch6	1144	PK	V	29.34	24.72	54.06	74.00	-19.94
	1144	AV	V	29.34	14.01	43.35	54.00	-10.65
	1572	PK	V	30.85	16.26	47.11	74.00	-26.89
	4874	PK	V	5.88	33.03	38.91	74.00	-35.09
	7311	PK	V	13.43	33.00	46.43	74.00	-27.57
	1144	PK	H	29.34	13.92	43.26	74.00	-30.74
	4874	PK	H	5.88	33.04	38.92	74.00	-35.08
	7311	PK	H	13.43	29.97	43.40	74.00	-30.60
802.11g_Ch11	1144	PK	V	29.34	25.53	54.87	74.00	-19.13
	1144	AV	V	29.34	14.44	43.78	54.00	-10.22
	1216	PK	V	29.47	16.36	45.83	74.00	-28.17
	1572	PK	V	30.85	16.07	46.92	74.00	-27.08
	4924	PK	V	6.06	33.72	39.78	74.00	-34.22
	7386	PK	V	13.81	30.27	44.08	74.00	-29.92
	1144	PK	H	29.34	14.20	43.54	74.00	-30.46
	4924	PK	H	6.06	32.50	38.56	74.00	-35.44
	7386	PK	H	13.81	29.71	43.52	74.00	-30.48

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

Chain1

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3 m (dBµV/m)	Margin (dB)
802.11b_Ch1	1072	PK	V	29.21	12.29	41.50	74.00	-32.50
	1144	PK	V	29.34	25.82	55.16	74.00	-18.84
	1144	AV	V	29.34	14.93	44.27	54.00	-9.73
	1216	PK	V	29.47	15.49	44.96	74.00	-29.04
	1572	PK	V	30.85	15.92	46.77	74.00	-27.23
	4824	PK	V	5.71	37.05	42.76	74.00	-31.24
	7236	PK	V	13.05	29.30	42.35	74.00	-31.65
	1144	PK	H	29.34	16.69	46.03	74.00	-27.97
	4824	PK	H	5.71	34.98	40.69	74.00	-33.31
	7236	PK	H	13.05	30.05	43.10	74.00	-30.90
802.11b_Ch6	1072	PK	V	29.21	11.95	41.16	74.00	-32.84
	1144	PK	V	29.34	26.18	55.52	74.00	-18.48
	1144	AV	V	29.34	17.92	47.26	54.00	-6.74
	1216	PK	V	29.47	16.29	45.76	74.00	-28.24
	1572	PK	V	30.85	16.66	47.51	74.00	-26.49
	4874	PK	V	5.88	34.65	40.53	74.00	-33.47
	7311	PK	V	13.43	28.74	42.17	74.00	-31.83
	1144	PK	H	29.34	14.38	43.72	74.00	-30.28
	4874	PK	H	5.88	35.16	41.04	74.00	-32.96
	7311	PK	H	13.43	30.20	43.63	74.00	-30.37
802.11b_Ch11	1072	PK	V	29.21	14.50	43.71	74.00	-30.29
	1144	PK	V	29.34	27.01	56.35	74.00	-17.65
	1144	AV	V	29.34	17.58	46.92	54.00	-7.08
	1216	PK	V	29.47	14.78	44.25	74.00	-29.75
	1572	PK	V	30.85	15.87	46.72	74.00	-27.28
	4924	PK	V	6.06	35.39	41.45	74.00	-32.55
	7386	PK	V	13.81	29.01	42.82	74.00	-31.18
	1144	PK	H	29.34	14.49	43.83	74.00	-30.17
	4924	PK	H	6.06	33.37	39.43	74.00	-34.57
	7386	PK	H	13.81	30.40	44.21	74.00	-29.79

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

Chain1

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3 m (dBµV/m)	Margin (dB)
802.11g_Ch1	1072	PK	V	29.21	11.76	40.97	74.00	-33.03
	1144	PK	V	29.34	26.87	56.21	74.00	-17.79
	1144	AV	V	29.34	17.28	46.62	54.00	-7.38
	1216	PK	V	29.47	11.36	40.83	74.00	-33.17
	1572	PK	V	30.85	15.45	46.30	74.00	-27.70
	4824	PK	V	5.71	34.63	40.34	74.00	-33.66
	7236	PK	V	13.05	29.57	42.62	74.00	-31.38
	1144	PK	H	29.34	14.70	44.04	74.00	-29.96
	4824	PK	H	5.71	34.08	39.79	74.00	-34.21
	7236	PK	H	13.05	30.49	43.54	74.00	-30.46
802.11g_Ch6	1072	PK	V	29.21	14.43	43.64	74.00	-30.36
	1144	PK	V	29.34	25.83	55.17	74.00	-18.83
	1144	AV	V	29.34	14.07	43.41	54.00	-10.59
	1216	PK	V	29.47	13.71	43.18	74.00	-30.82
	1572	PK	V	30.85	16.57	47.42	74.00	-26.58
	4874	PK	V	5.88	34.40	40.28	74.00	-33.72
	7311	PK	V	13.43	29.24	42.67	74.00	-31.33
	1144	PK	H	29.34	16.92	46.26	74.00	-27.74
	4874	PK	H	5.88	33.57	39.45	74.00	-34.55
	7311	PK	H	13.43	32.59	46.02	74.00	-27.98
802.11g_Ch11	1072	PK	V	29.21	13.24	42.45	74.00	-31.55
	1144	PK	V	29.34	26.12	55.46	74.00	-18.54
	1144	AV	V	29.34	15.04	44.38	54.00	-9.62
	1216	PK	V	29.47	16.05	45.52	74.00	-28.48
	1572	PK	V	30.85	15.78	46.63	74.00	-27.37
	4924	PK	V	6.06	32.42	38.48	74.00	-35.52
	7386	PK	V	13.81	28.73	42.54	74.00	-31.46
	1144	PK	H	29.34	14.59	43.93	74.00	-30.07
	4924	PK	H	6.06	32.38	38.44	74.00	-35.56
	7386	PK	H	13.81	32.64	46.45	74.00	-27.55

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

Chain0+1

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBµV)	Corrected Reading (dBµV/m)	Limit @ 3 m (dBµV/m)	Margin (dB)
802.11n (HT20)_Ch1	1072	PK	V	29.21	13.63	42.84	74.00	-31.16
	1144	PK	V	29.34	25.98	55.32	74.00	-18.68
	1144	AV	V	29.34	16.88	46.22	54.00	-7.78
	1216	PK	V	29.47	10.91	40.38	74.00	-33.62
	1572	PK	V	30.85	16.77	47.62	74.00	-26.38
	4824	PK	V	5.71	34.97	40.68	74.00	-33.32
	7236	PK	V	13.05	29.11	42.16	74.00	-31.84
	1144	PK	H	29.34	13.75	43.09	74.00	-30.91
	4824	PK	H	5.71	33.38	39.09	74.00	-34.91
	7236	PK	H	13.05	29.39	42.44	74.00	-31.56
802.11n (HT20)_Ch6	1072	PK	V	29.21	18.04	47.25	74.00	-26.75
	1144	PK	V	29.34	23.52	52.86	74.00	-21.14
	1216	PK	V	29.47	16.76	46.23	74.00	-27.77
	1572	PK	V	30.85	15.74	46.59	74.00	-27.41
	1788	PK	V	33.42	15.29	48.71	74.00	-25.29
	4874	PK	V	5.88	32.79	38.67	74.00	-35.33
	7311	PK	V	13.43	29.25	42.68	74.00	-31.32
	1144	PK	H	29.34	13.85	43.19	74.00	-30.81
	4874	PK	H	5.88	33.49	39.37	74.00	-34.63
	7311	PK	H	13.43	30.13	43.56	74.00	-30.44
802.11n (HT20)_Ch11	1144	PK	V	29.34	25.73	55.07	74.00	-18.93
	1144	AV	V	29.34	16.33	45.67	54.00	-8.33
	1216	PK	V	29.47	12.53	42.00	74.00	-32.00
	1572	PK	V	30.85	15.82	46.67	74.00	-27.33
	4924	PK	V	6.06	32.97	39.03	74.00	-34.97
	7386	PK	V	13.81	28.93	42.74	74.00	-31.26
	1144	PK	H	29.34	13.50	42.84	74.00	-31.16
	4924	PK	H	6.06	33.33	39.39	74.00	-34.61
	7386	PK	H	13.81	28.28	42.09	74.00	-31.91

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre_Amplifier Gain

7.Emission on Band Edge

7.1 Instrument Setting

Spectrum Function	Setting
Detector	Peak and Average
RBW	1MHz
VBW	3MHz
Sweep	Auto couple
Restrict bands	2310 MHz ~ 2390 MHz 2483.5 MHz ~ 2500 MHz
Attenuation	Auto

7.2 Test Procedure

The test procedure is the same as Emissions in Restricted Frequency Bands (Radiated emission measurements).

7.3 Operating Environment Condition

Temperature (℃) :	25
Relative Humidity (%) :	50
Atmospheric Pressure (hPa) :	1008
Test Date :	2018/04/03

7.4 Test Results

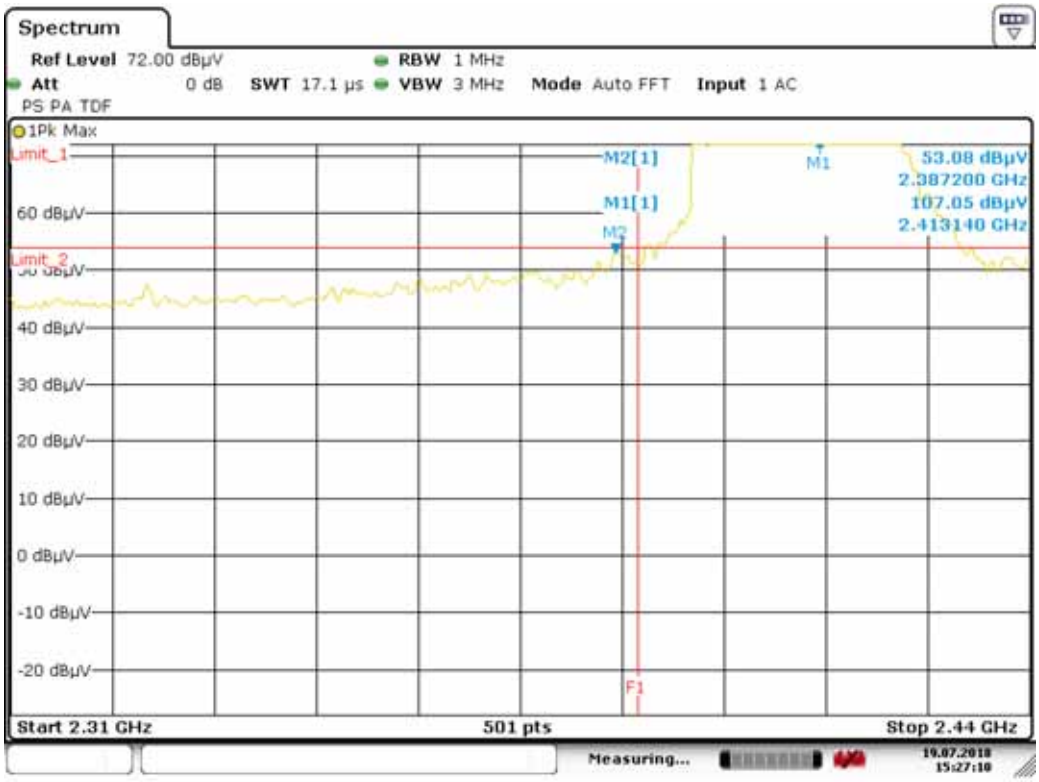
EUT: PLTN-RB1VO

Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)	Restricted band (MHz)
802.11b Chain0	2387.20	PK	V	35.37	17.71	53.08	74	-20.92	2310~2390
	2387.20	AV	V	35.37	10.65	46.02	54	-7.98	
	2484.34	PK	V	35.22	16.54	51.76	74	-22.24	2483.5~2500
	2483.50	AV	V	35.23	7.25	42.48	54	-11.52	
802.11b Chain1	2388.49	PK	V	35.37	11.78	47.15	74	-26.85	2310~2390
	2388.23	AV	V	35.37	1.85	37.22	54	-16.78	
	2491.40	PK	V	35.21	11.24	46.45	74	-27.55	2483.5~2500
	2483.50	AV	V	35.23	0.48	35.71	54	-18.29	
802.11g Chain0	2390.00	PK	V	35.36	33.80	69.16	74	-4.84	2310~2390
	2390.00	AV	V	35.36	4.51	39.87	54	-14.13	
	2483.50	PK	V	35.23	33.69	68.92	74	-5.08	2483.5~2500
	2483.74	AV	V	35.22	5.90	41.12	54	-12.88	
802.11g Chain1	2388.70	PK	V	35.37	25.33	60.70	74	-13.30	2310~2390
	2390.00	AV	V	35.36	1.16	36.52	54	-17.48	
	2483.50	PK	V	35.23	17.77	53.00	74	-21.00	2483.5~2500
	2483.98	AV	V	35.22	0.74	35.96	54	-18.04	
802.11n (HT20) Chain0+1	2389.00	PK	V	35.36	13.57	48.93	74	-25.07	2310~2390
	2390.00	AV	V	35.36	-0.62	34.74	54	-19.26	
	2497.27	PK	V	35.20	11.58	46.78	74	-27.22	2483.5~2500
	2483.50	AV	V	35.23	-0.66	34.57	54	-19.43	

Remark1: Correction Factor = Antenna Factor + Cable Loss

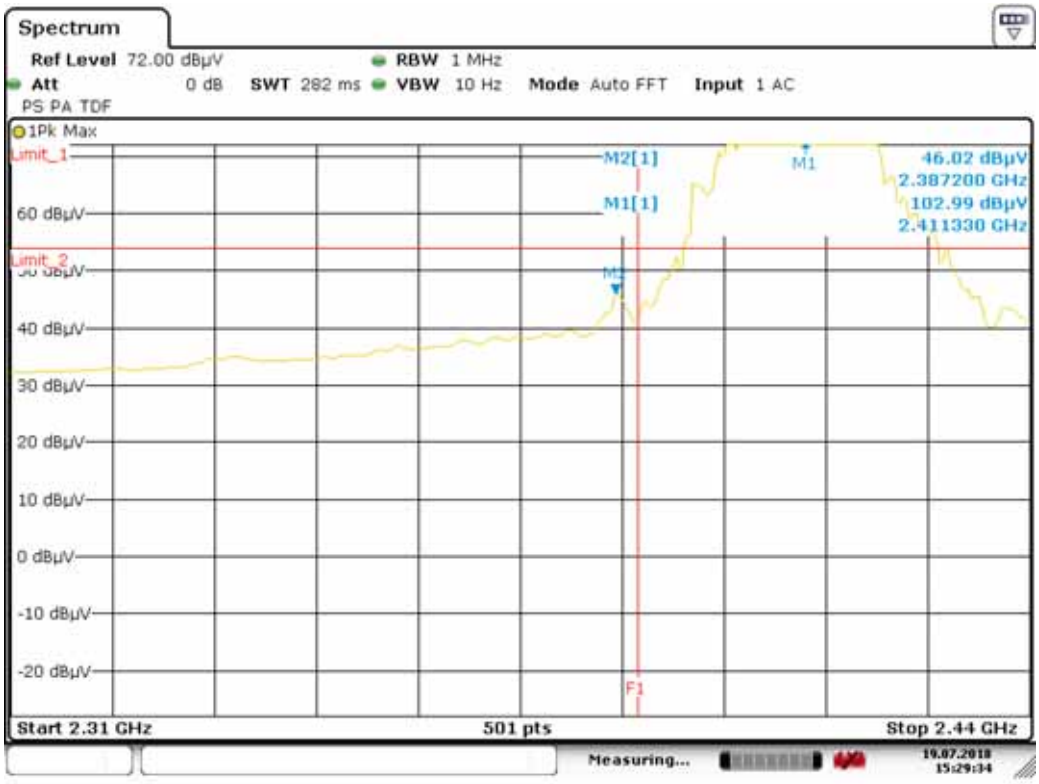
Remark2: According to the result of fundamental emission test, the worst case is 802.11b Ch11 in vertical plane of receive antenna. So we test band edge in vertical-plane situation.

Chain0 : Restricted Band Bandedge @ 802.11b Mode Ch1 PK



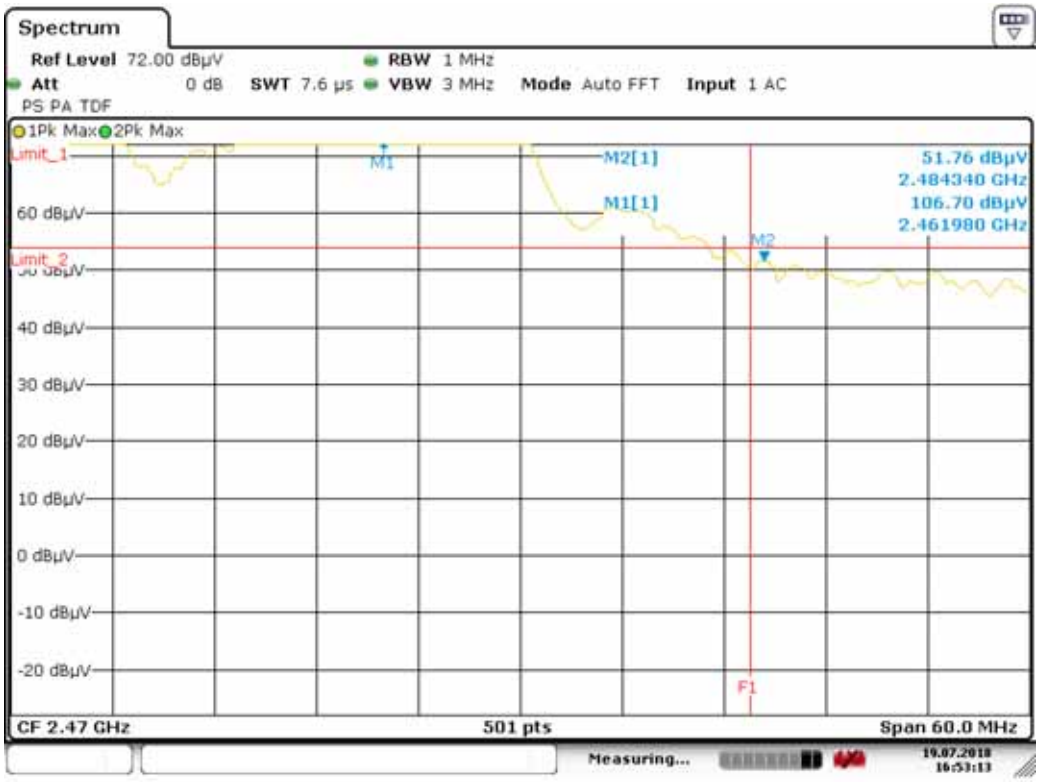
Date: 19.JUL.2018 15:27:09

Chain0 : Restricted Band Bandedge @ 802.11b Mode Ch1 AV



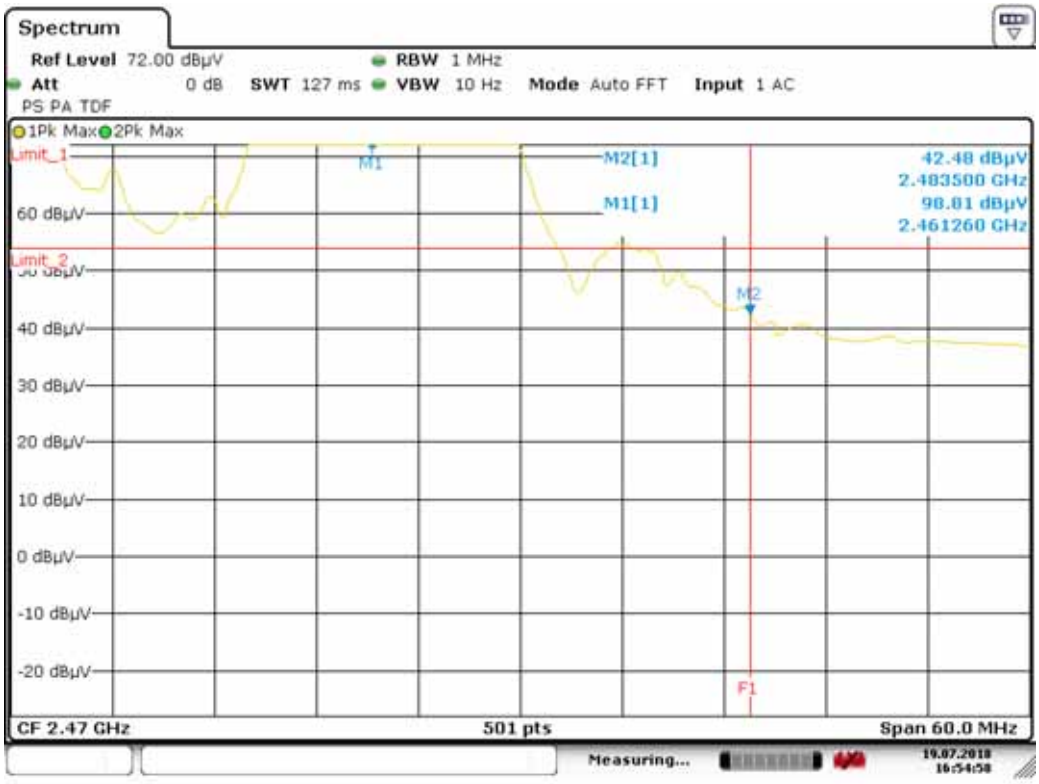
Date: 19.JUL.2018 15:29:34

Chain0 : Restricted Band Bandedge @ 802.11b Mode Ch11 PK



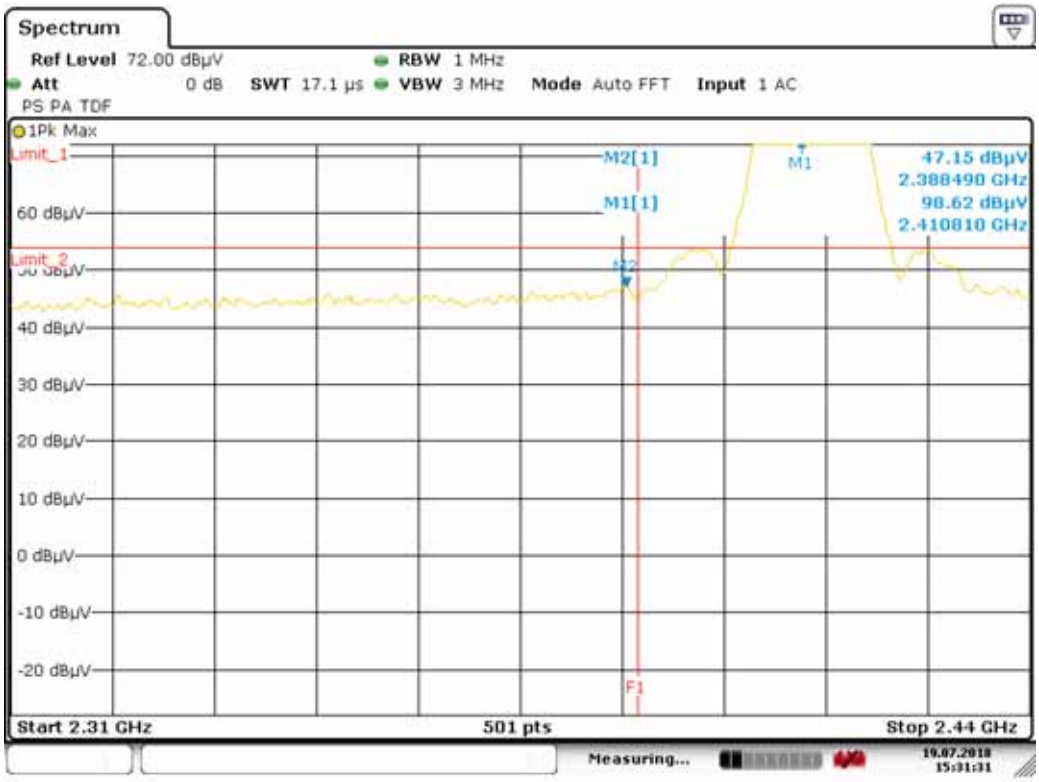
Date: 19.JUL.2018 16:53:14

Chain0 : Restricted Band Bandedge @ 802.11b Mode Ch11 AV



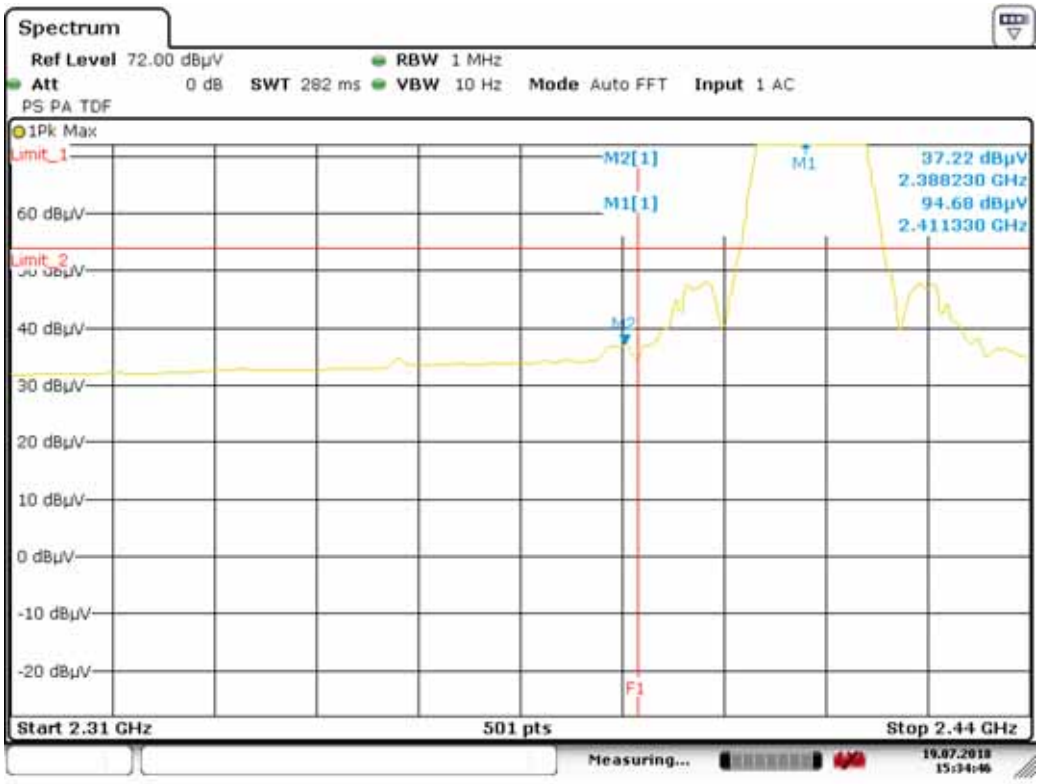
Date: 19.JUL.2018 16:54:58

Chain1 : Restricted Band Bandedge @ 802.11b Mode Ch1 PK



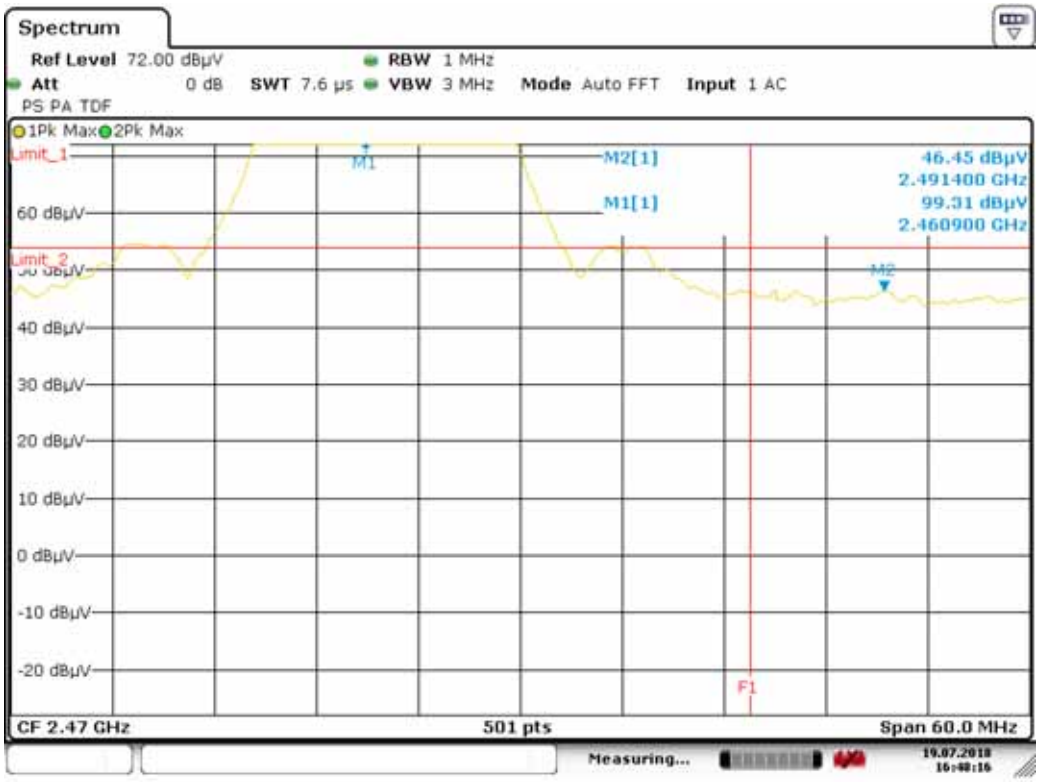
Date: 19.JUL.2018 15:31:31

Chain1 : Restricted Band Bandedge @ 802.11b Mode Ch1 AV



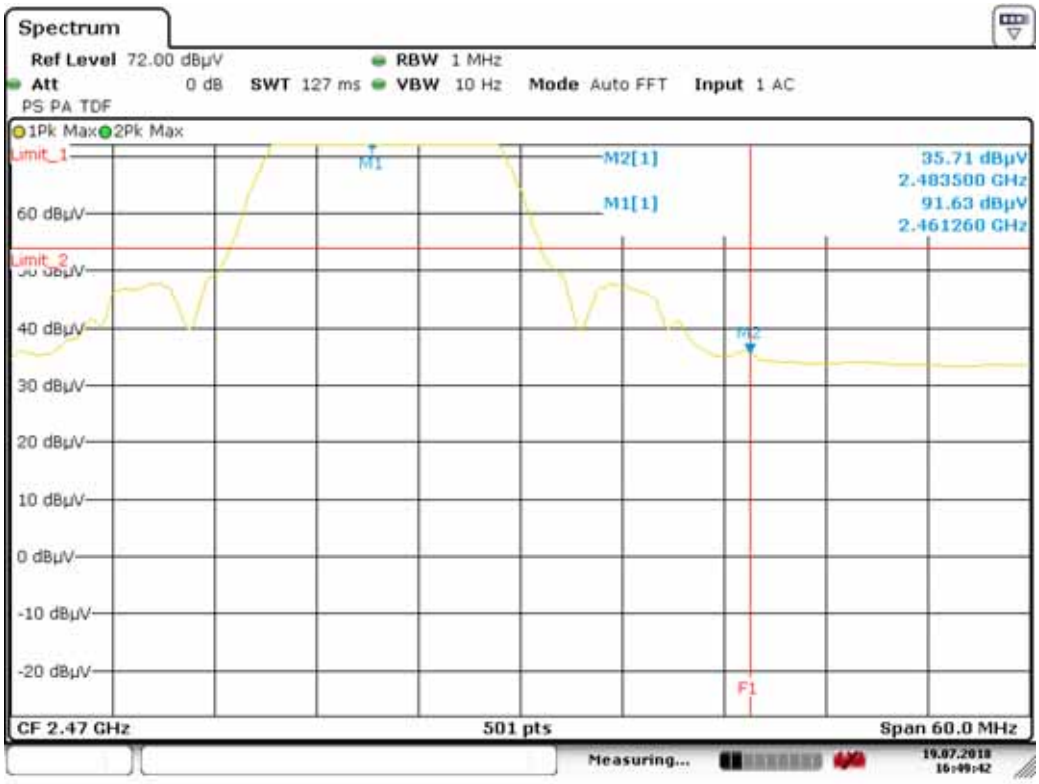
Date: 19.JUL.2018 15:34:47

Chain1 : Restricted Band Bandedge @ 802.11b Mode Ch11 PK



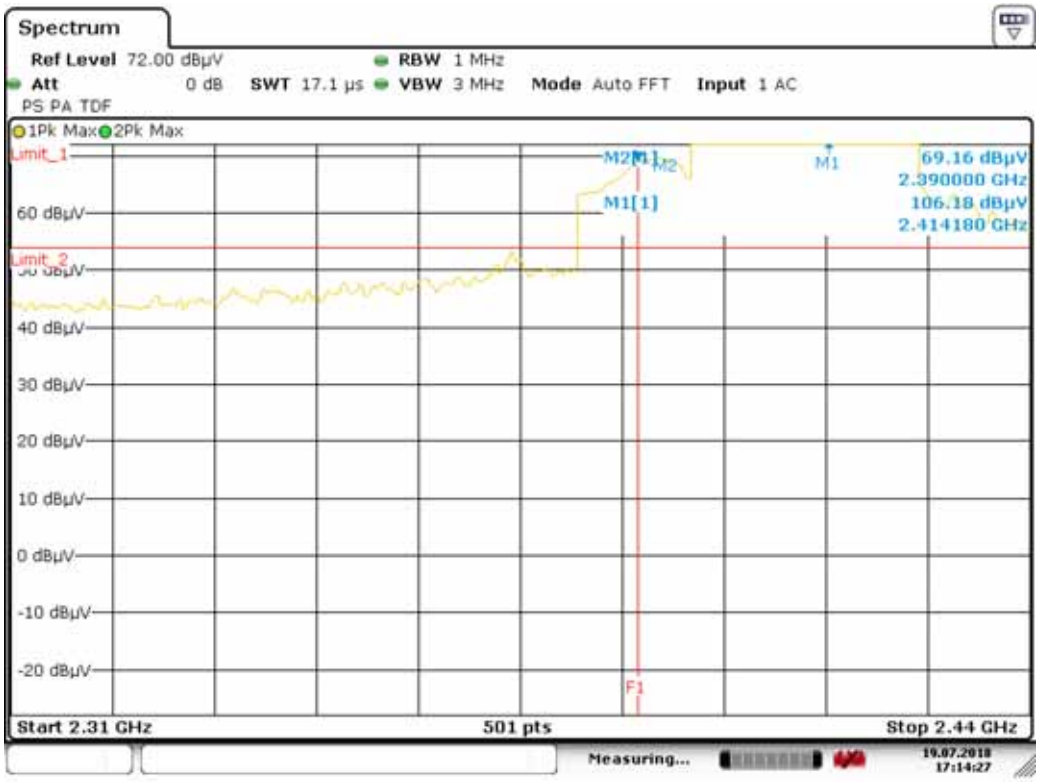
Date: 19.JUL.2018 16:48:16

Chain1 : Restricted Band Bandedge @ 802.11b Mode Ch11 AV

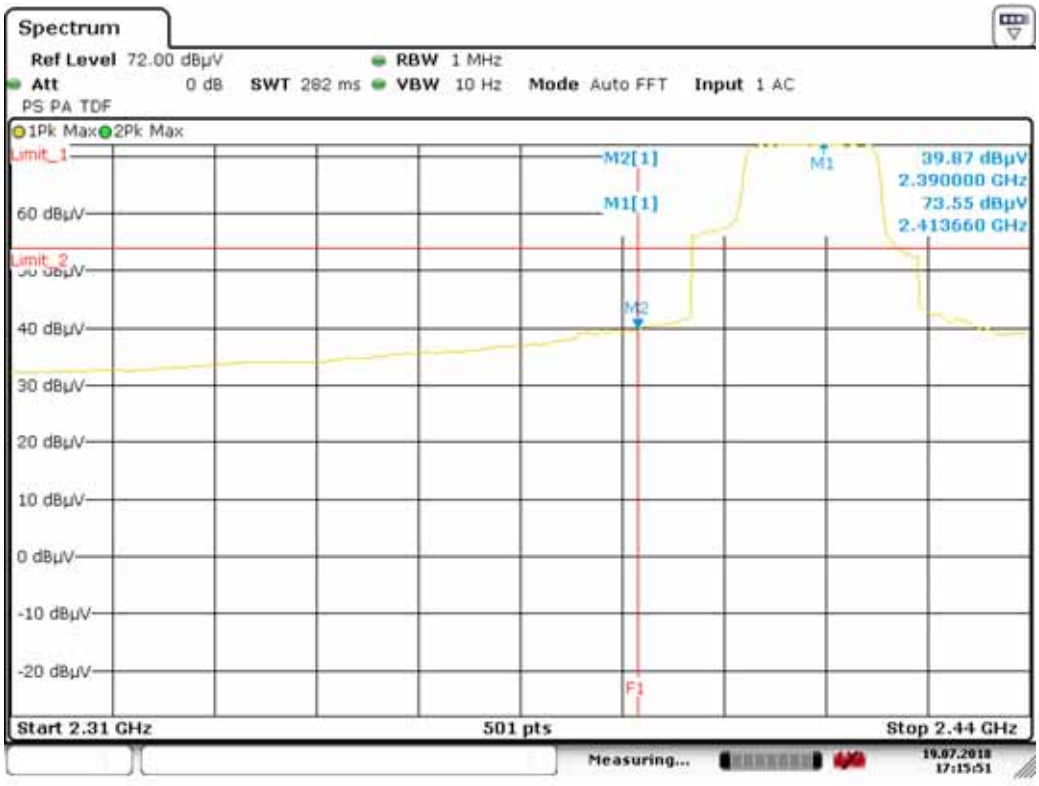


Date: 19.JUL.2018 16:49:43

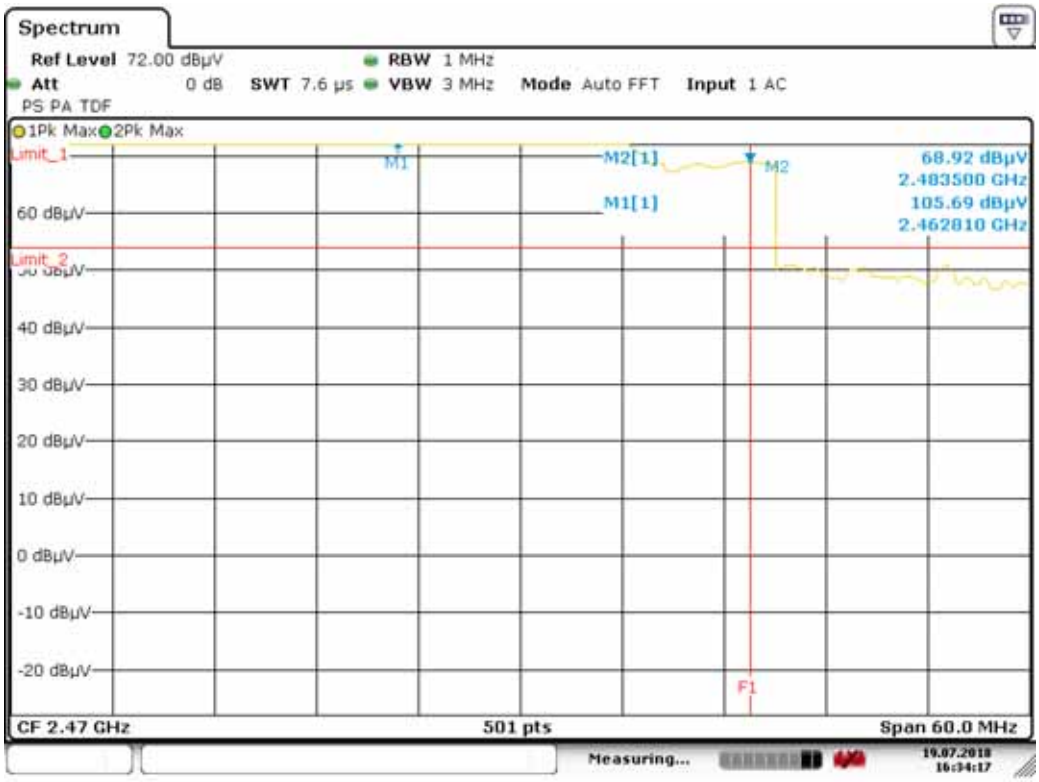
Chain0 : Restricted Band Bandedge @ 802.11g Mode Ch1 PK



Chain0 : Restricted Band Bandedge @ 802.11g Mode Ch1 AV

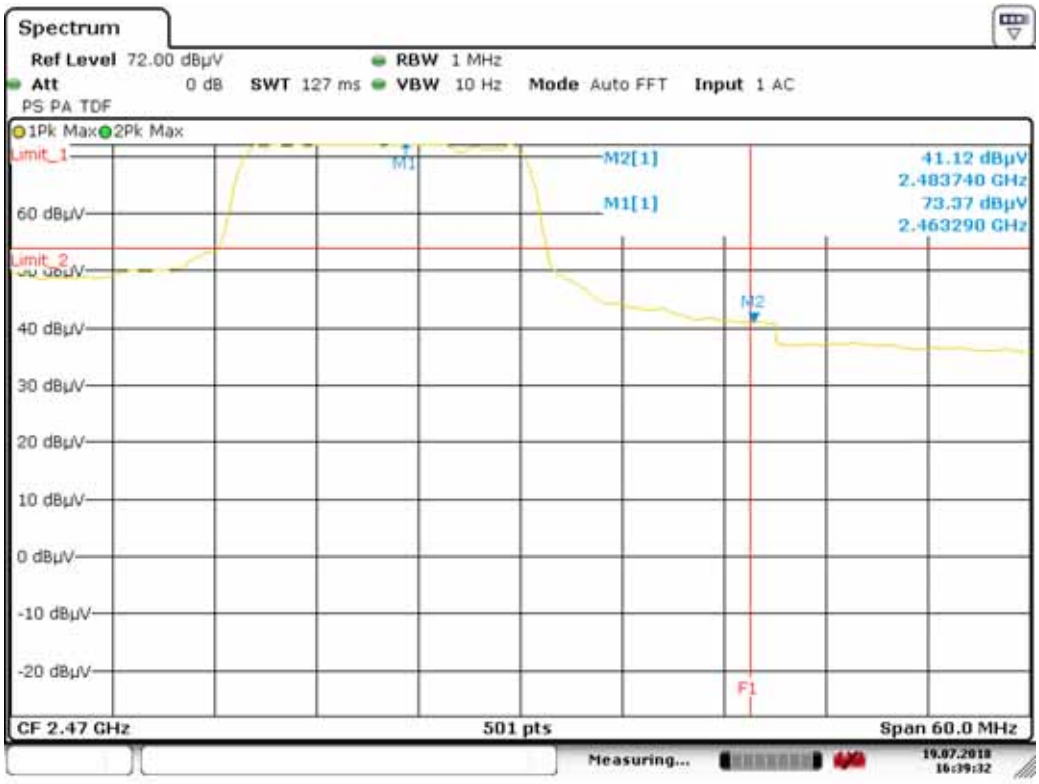


Chain0 : Restricted Band Bandedge @ 802.11g Mode Ch11 PK



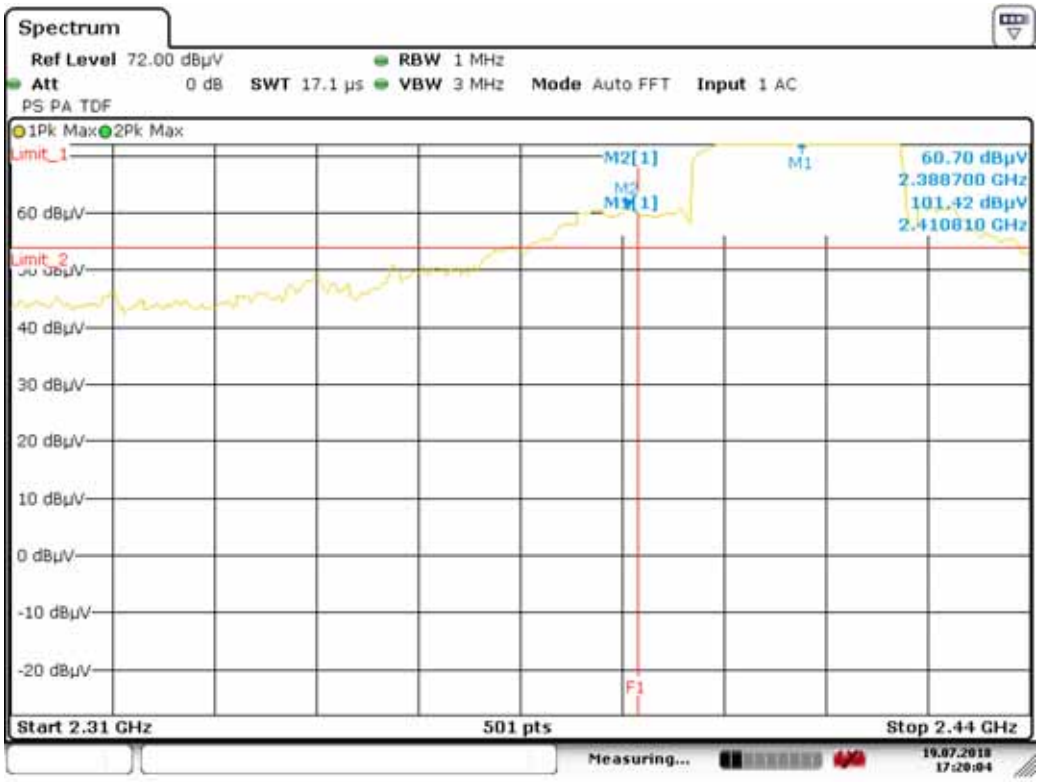
Date: 19.JUL.2018 16:34:17

Chain0 : Restricted Band Bandedge @ 802.11g Mode Ch11 AV



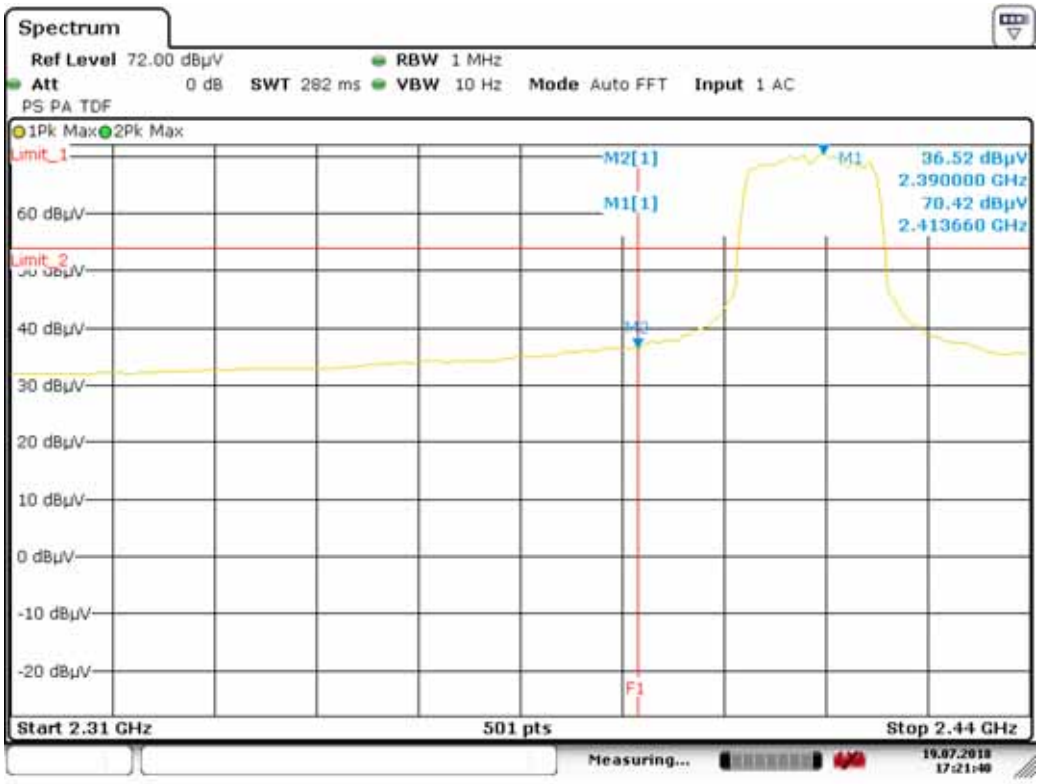
Date: 19.JUL.2018 16:39:32

Chain1 : Restricted Band Bandedge @ 802.11g Mode Ch1 PK



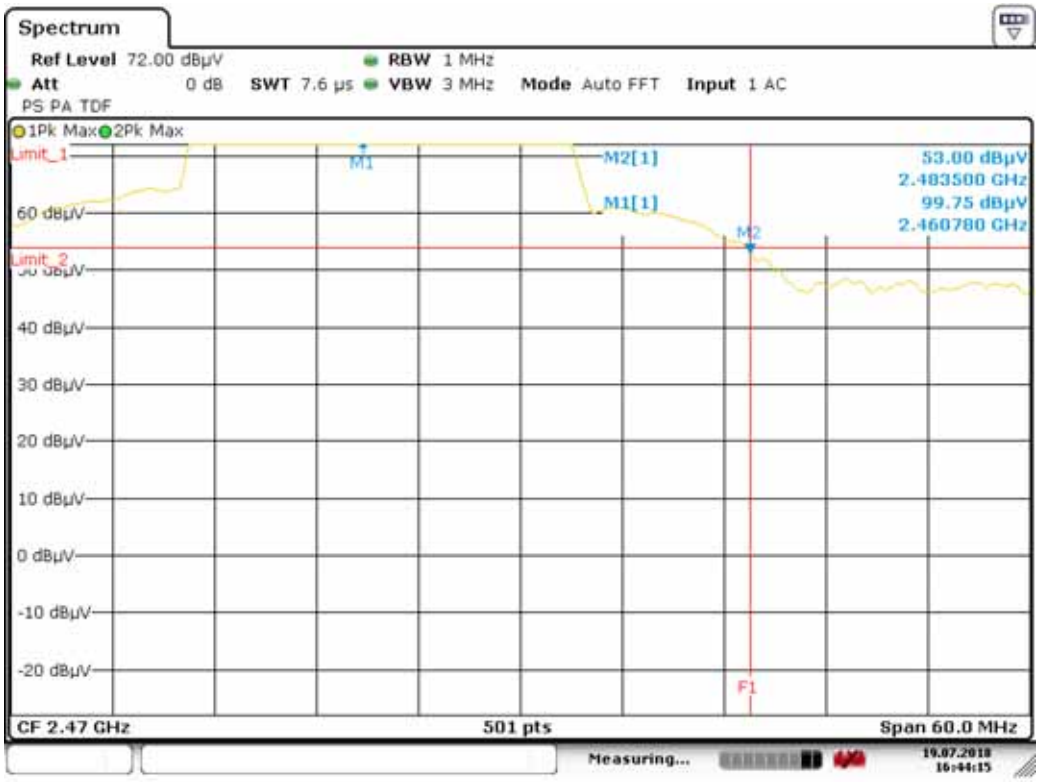
Date: 19.JUL.2018 17:20:04

Chain1 : Restricted Band Bandedge @ 802.11g Mode Ch1 AV



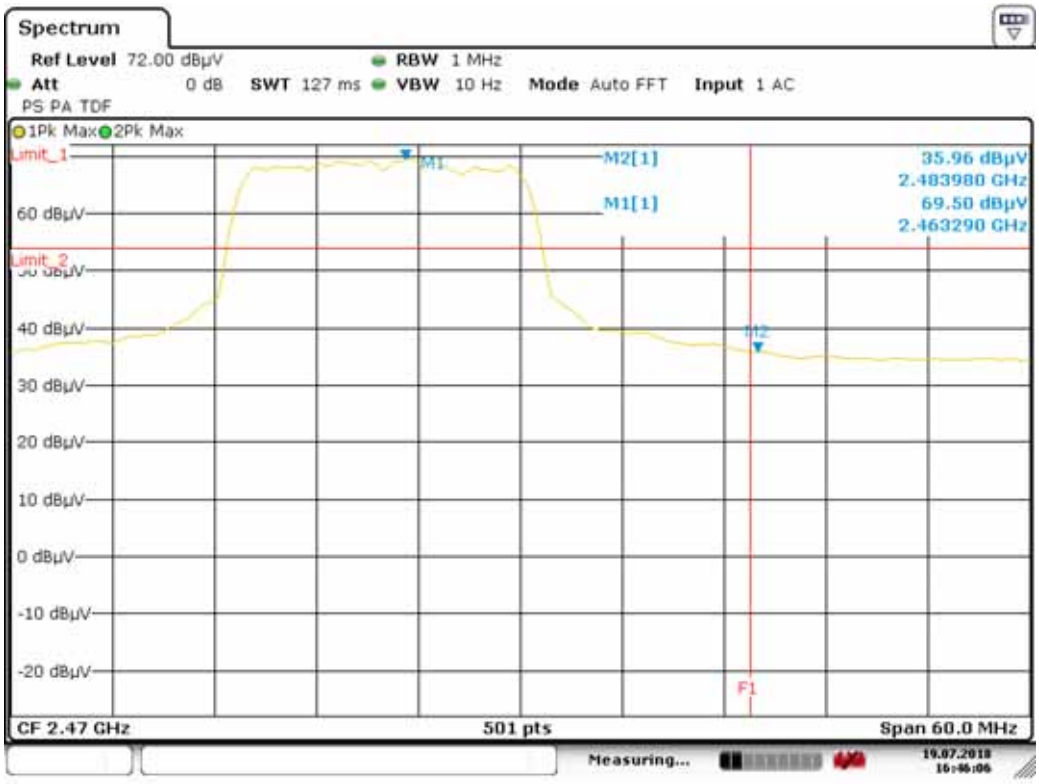
Date: 19.JUL.2018 17:21:41

Chain1 : Restricted Band Bandedge @ 802.11g Mode Ch11 PK



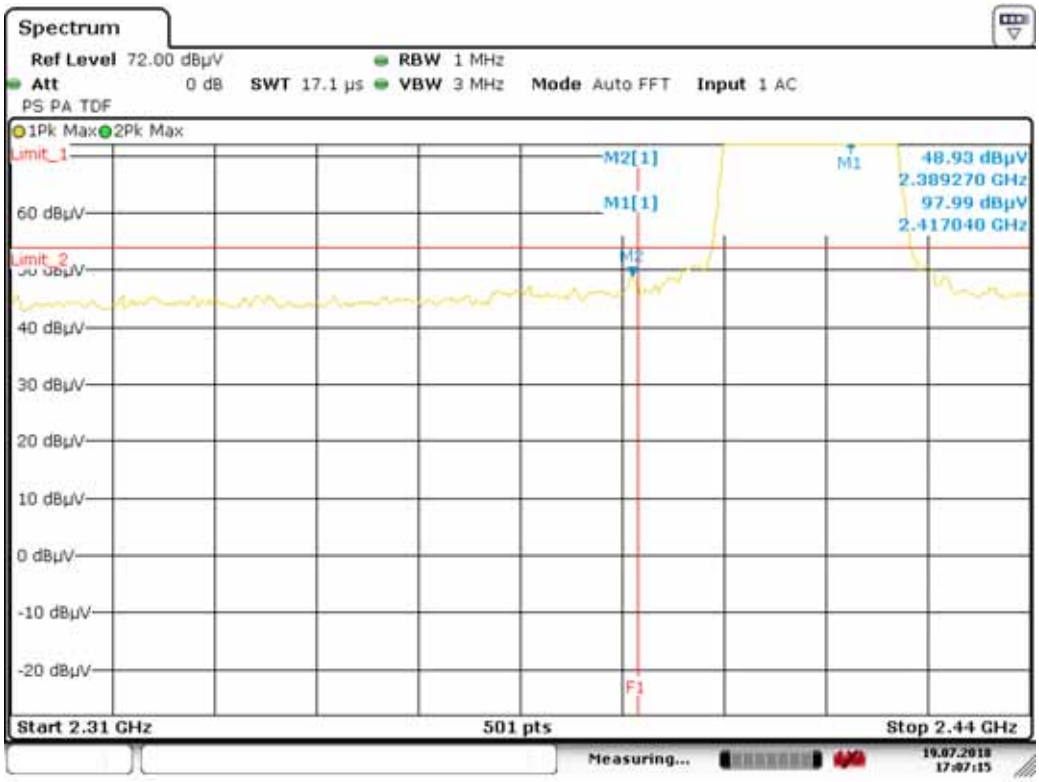
Date: 19.JUL.2018 16:44:16

Chain1 : Restricted Band Bandedge @ 802.11g Mode Ch11 AV



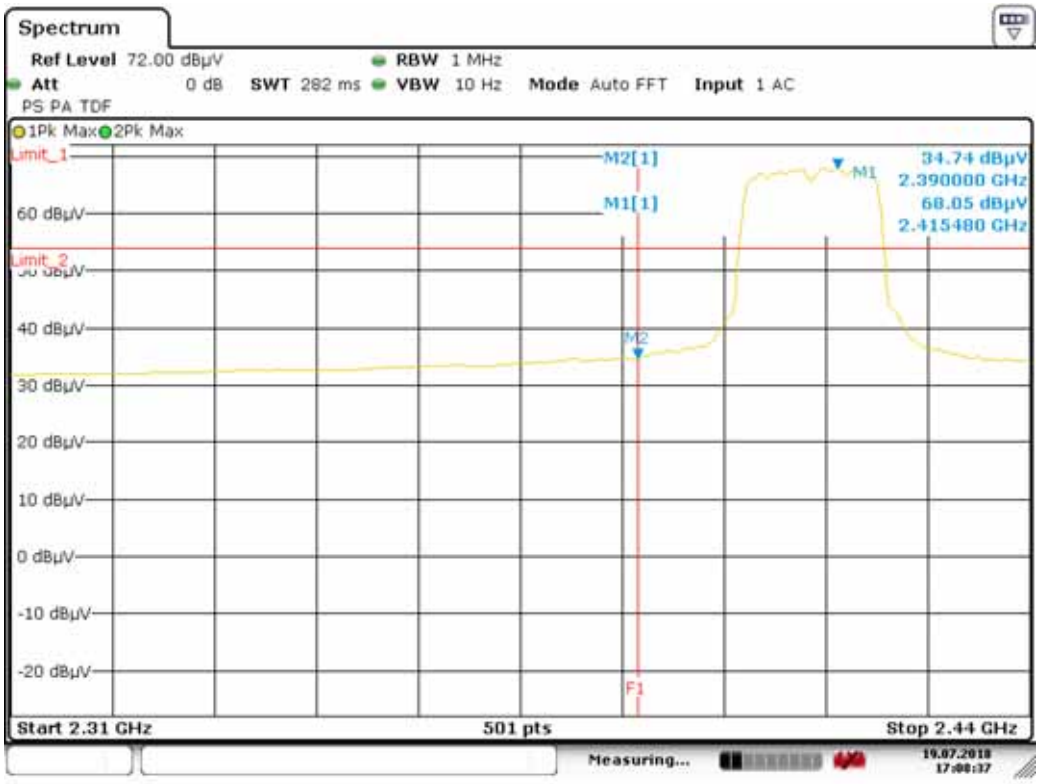
Date: 19.JUL.2018 16:46:06

Chain0+1 : Restricted Band Bandedge @ 802.11n(HT20) Mode Ch1 PK



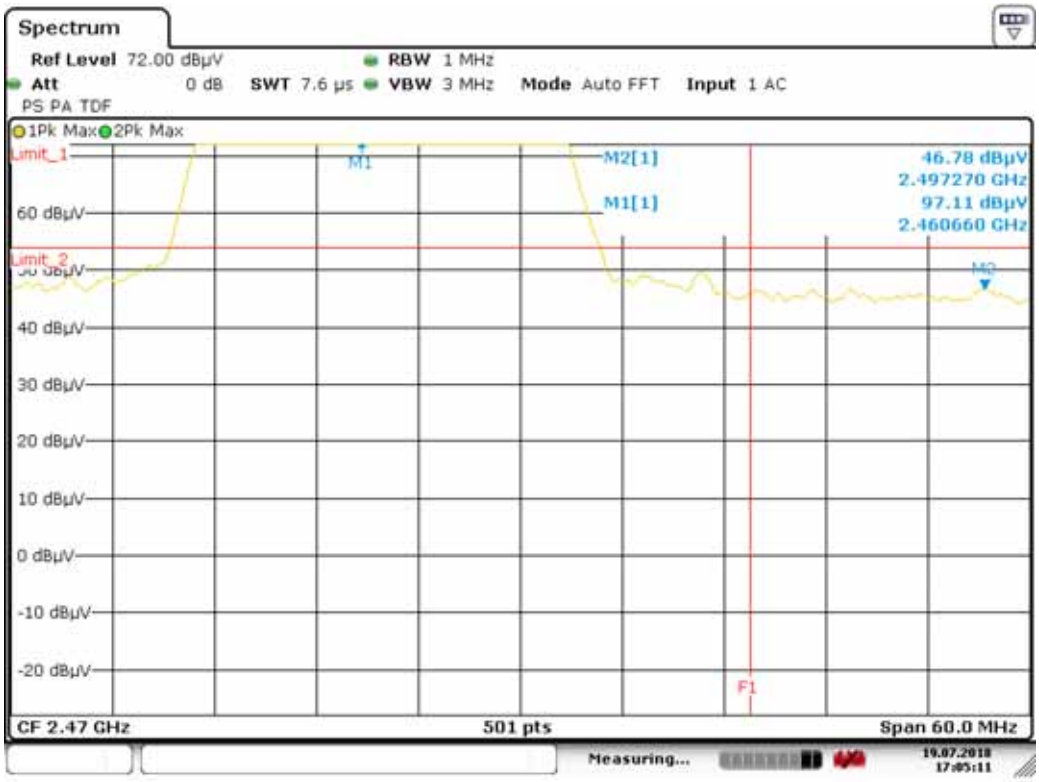
Date: 19.JUL.2018 17:07:16

Chain0+1 : Restricted Band Bandedge @ 802.11n(HT20) Mode Ch1 AV



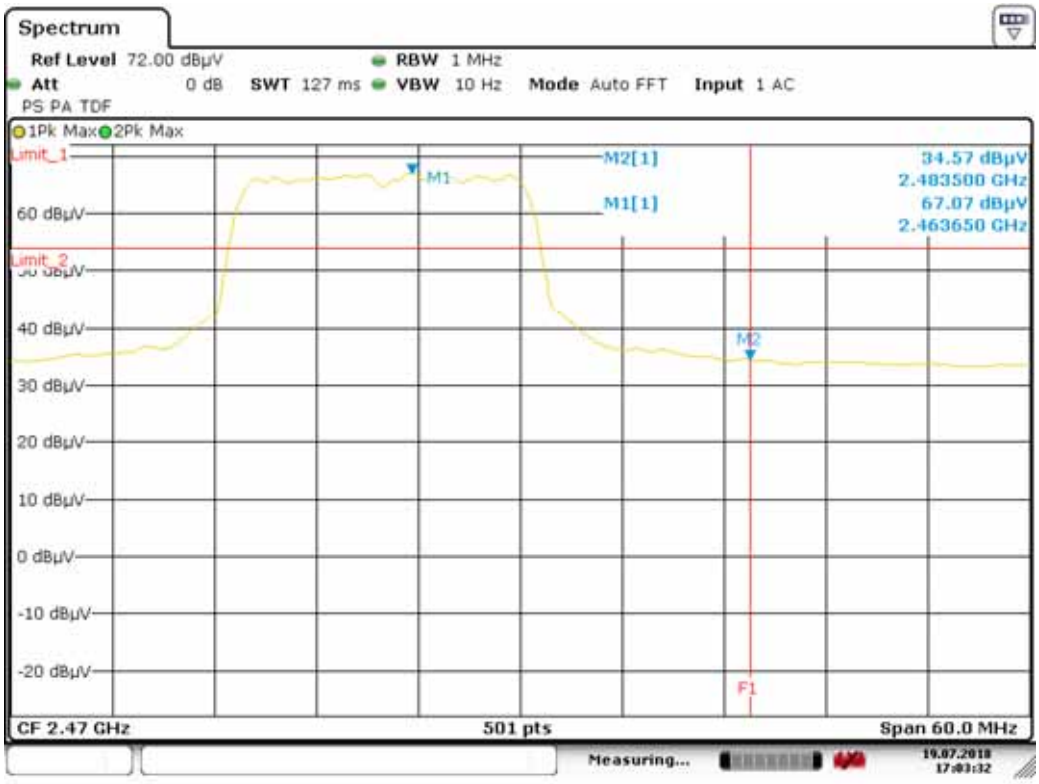
Date: 19.JUL.2018 17:08:37

Chain0+1 : Restricted Band Bandedge @ 802.11n(HT20) Mode Ch11 PK



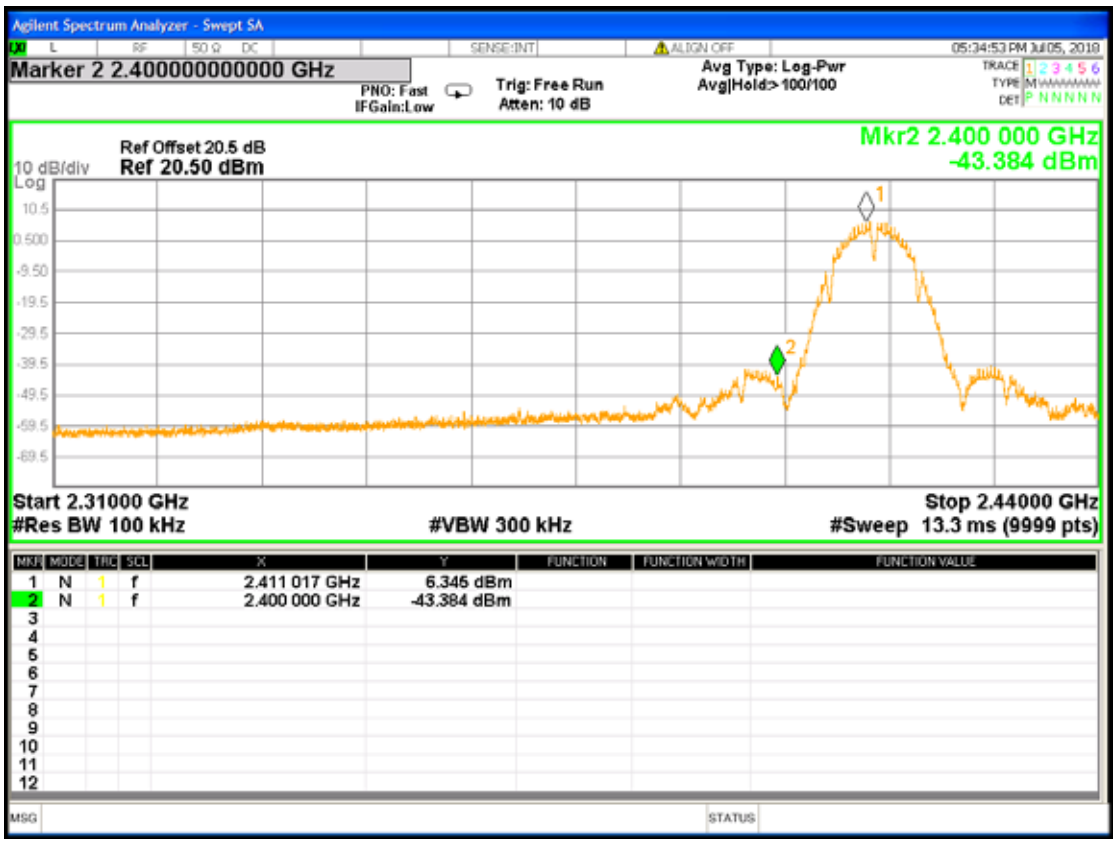
Date: 19.JUL.2018 17:05:11

Chain0+1 : Restricted Band Bandedge @ 802.11n(HT20) Mode Ch11 AV



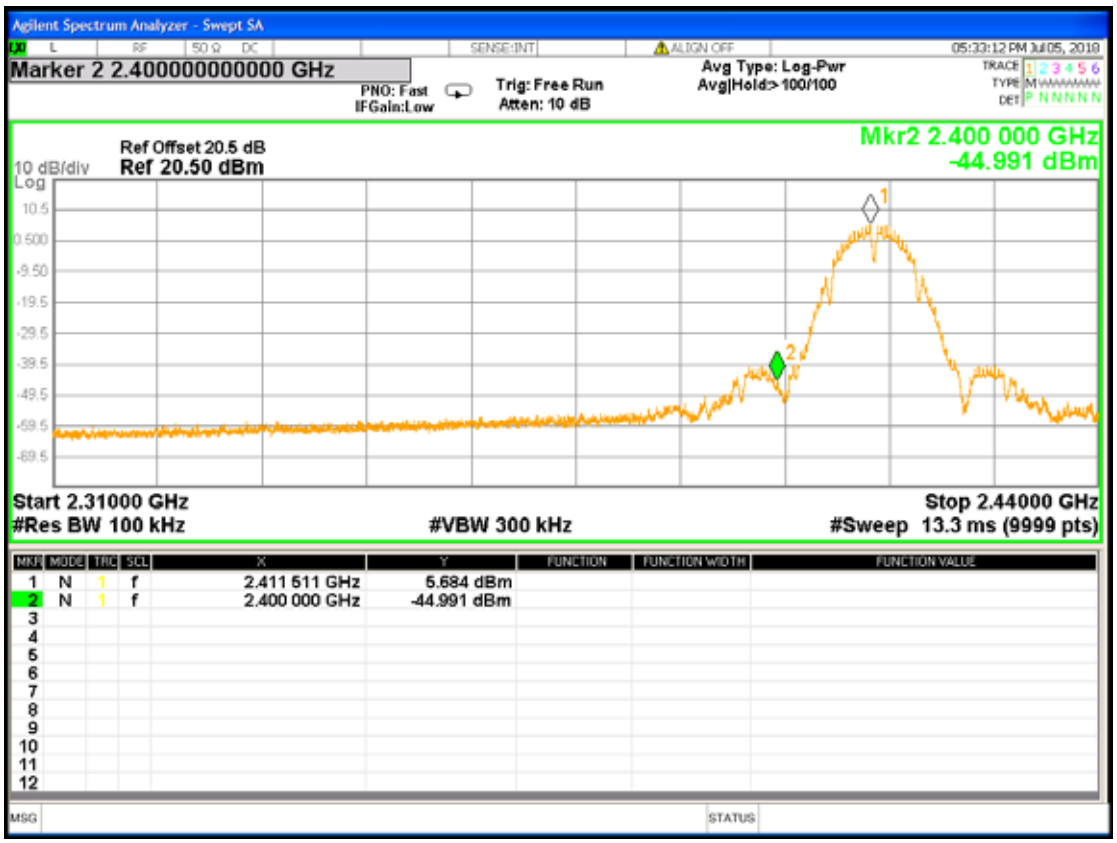
Date: 19.JUL.2018 17:03:32

Chain0 : Authorized Band Bandedge @ 802.11b Mode Ch1



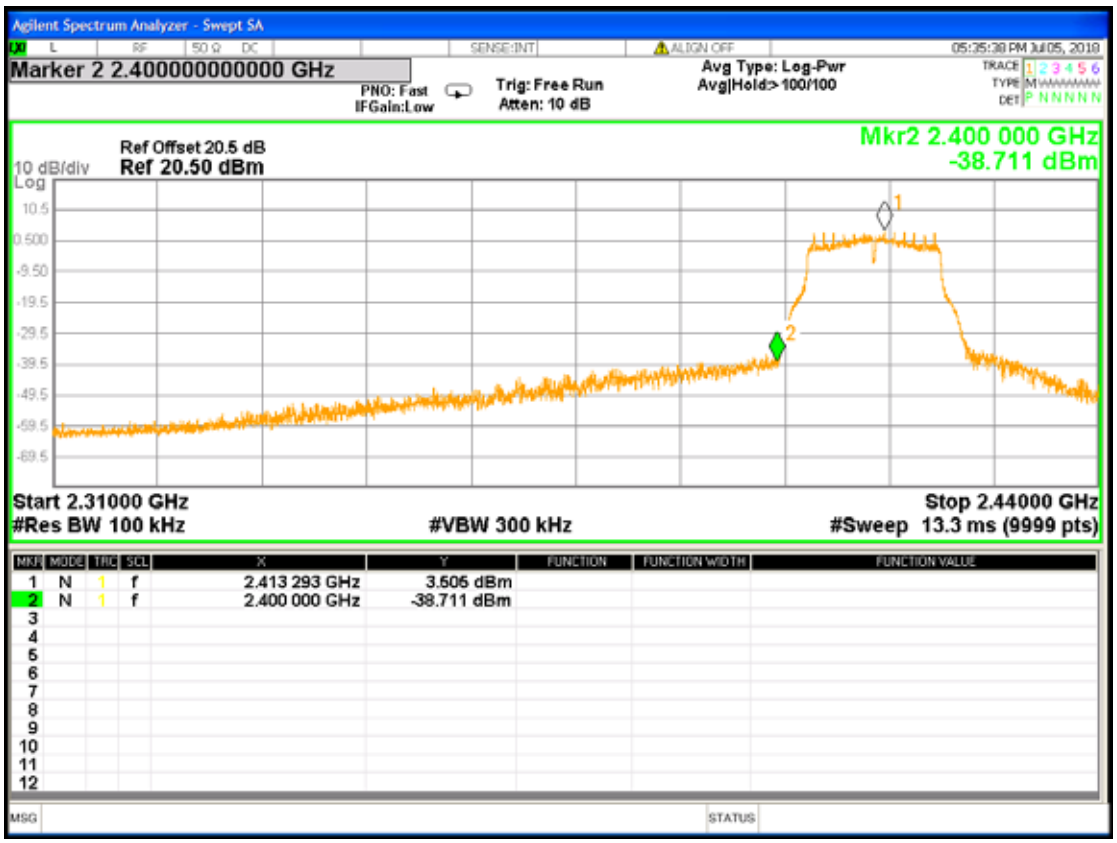
Chain0 : Authorized Band Bandedge @ 802.11b Mode Ch11

Chain1 : Authorized Band Bandedge @ 802.11b Mode Ch1

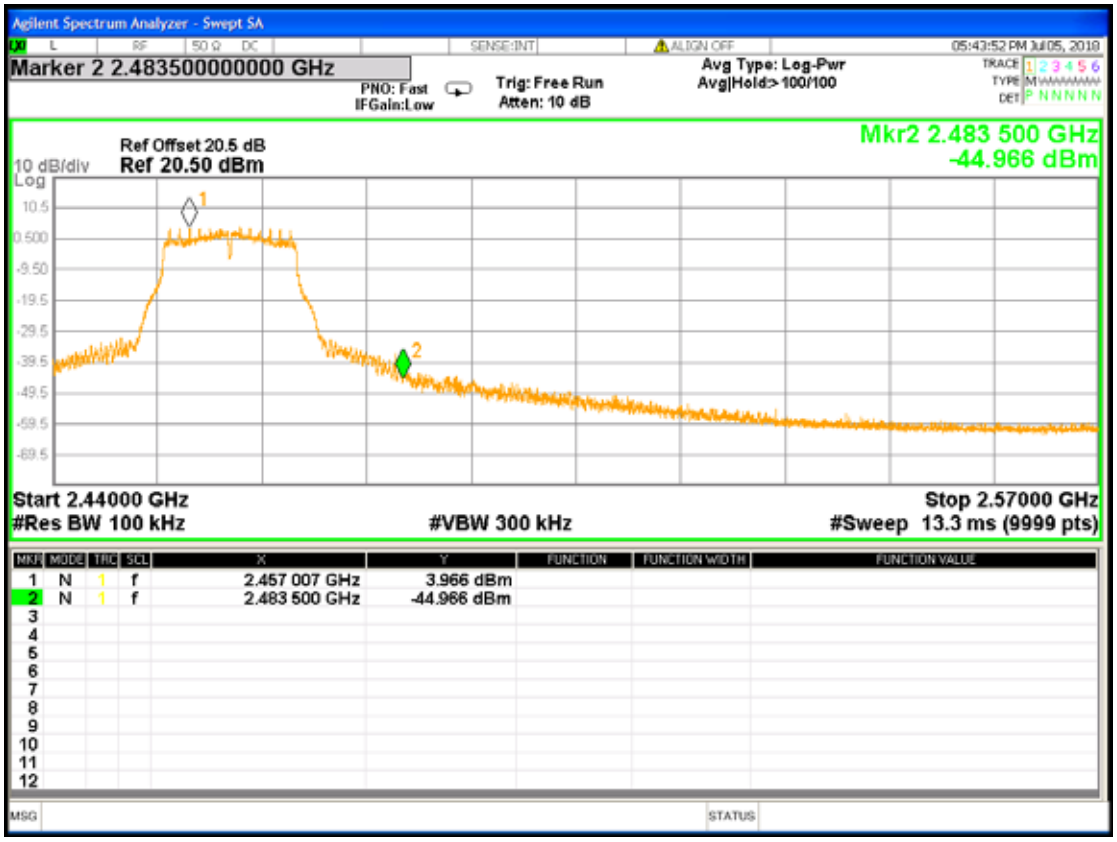


Chain1 : Authorized Band Bandedge @ 802.11b Mode Ch11

Chain0 : Authorized Band Bandedge @ 802.11g Mode Ch1

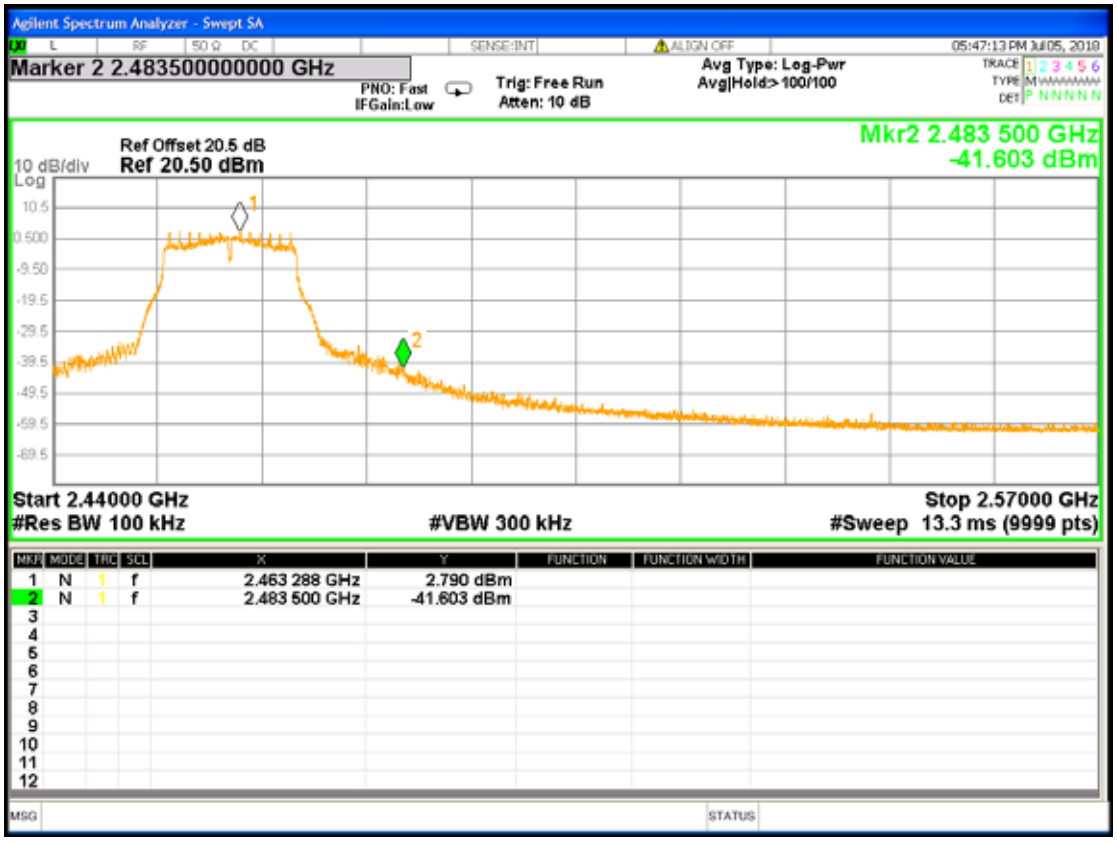


Chain0 : Authorized Band Bandedge @ 802.11g Mode Ch11

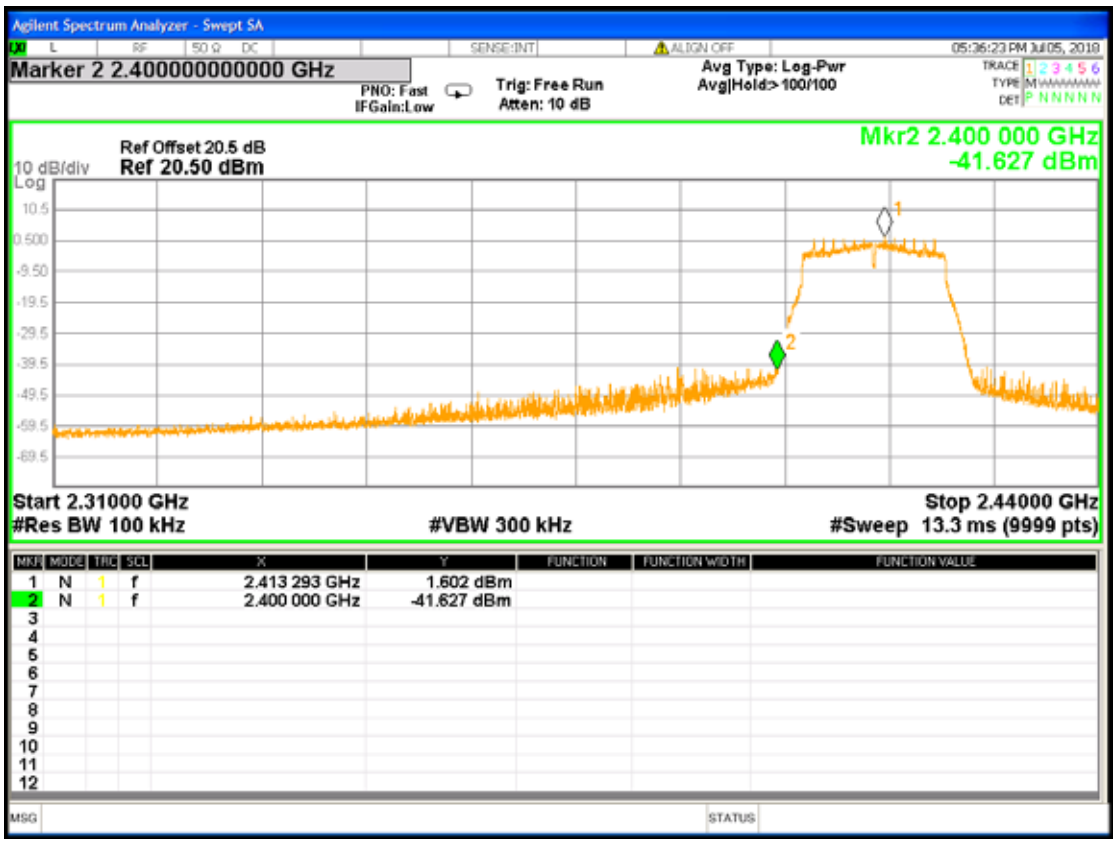


Chain1 : Authorized Band Bandedge @ 802.11g Mode Ch1

Chain1 : Authorized Band Bandedge @ 802.11g Mode Ch11

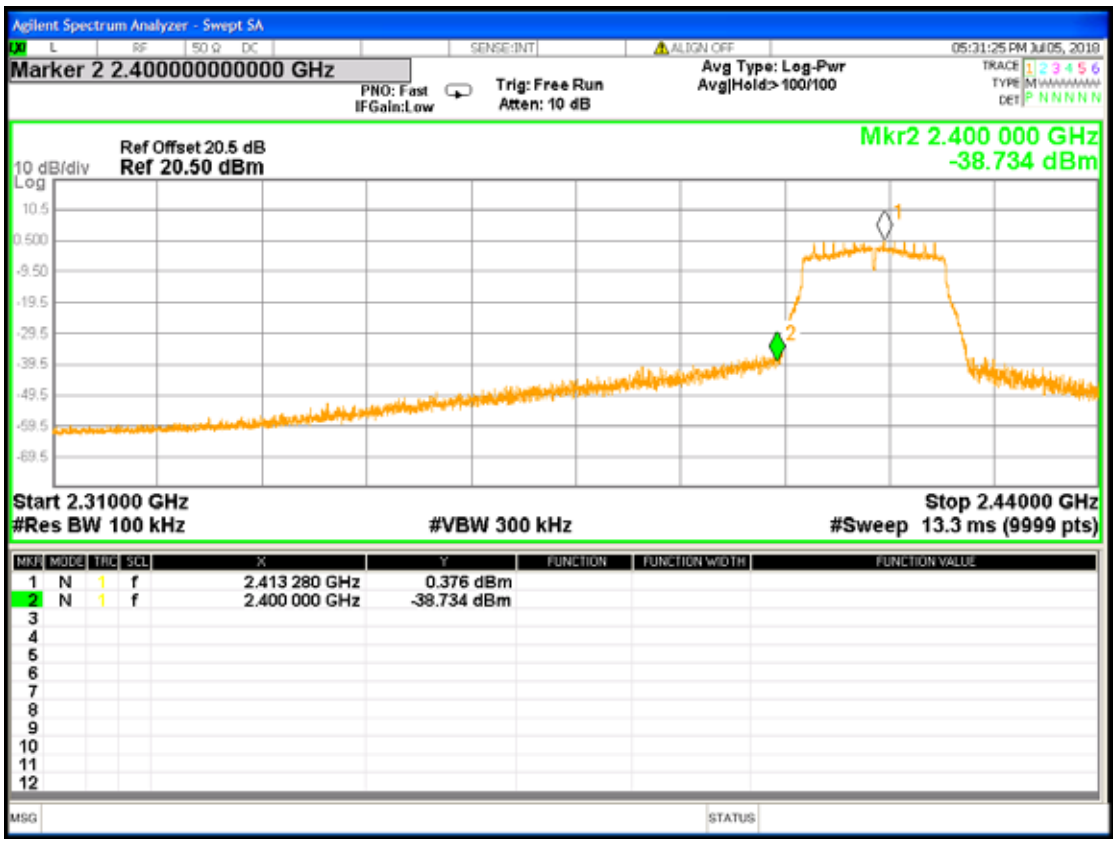


Chain0 : Authorized Band Bandedge @ 802.11n(HT20) Mode Ch1

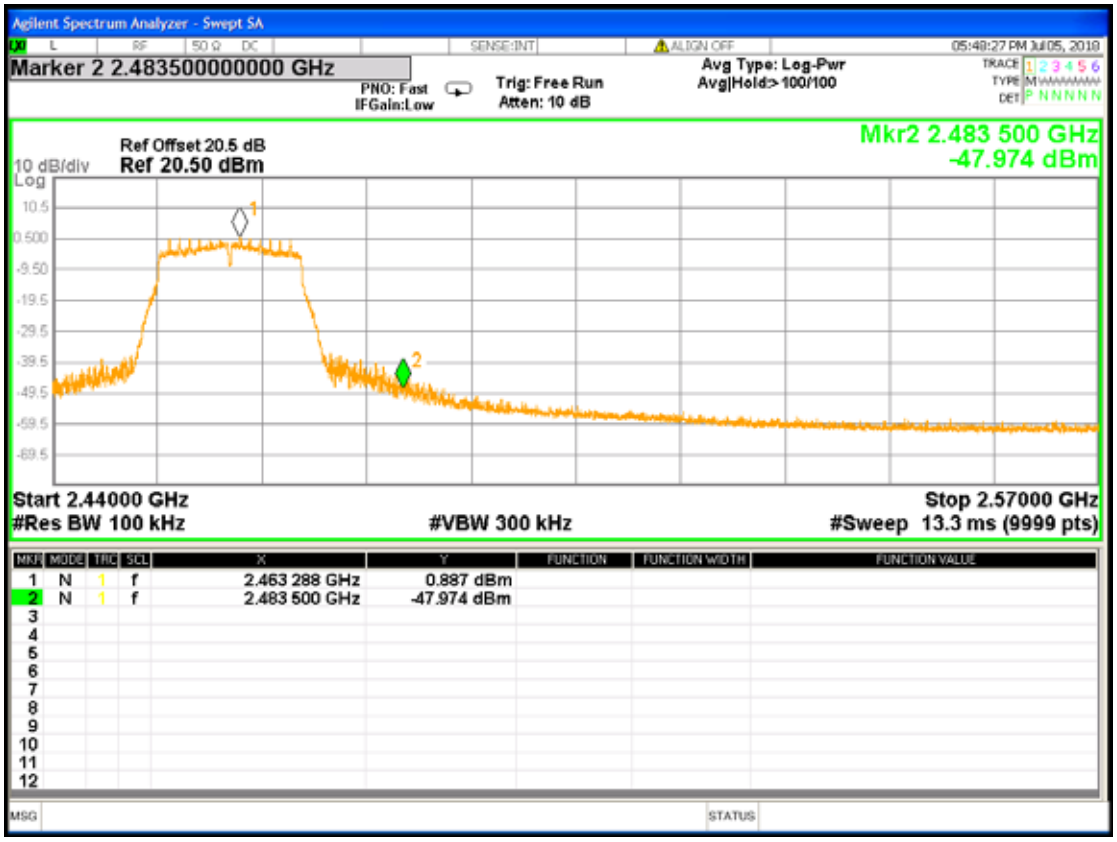


Chain0 : Authorized Band Bandedge @ 802.11n(HT20) Mode Ch11

Chain1 : Authorized Band Bandedge @ 802.11n(HT20) Mode Ch1



Chain1 : Authorized Band Bandedge @ 802.11n(HT20) Mode Ch11



8.AC Power Line Conducted Emission

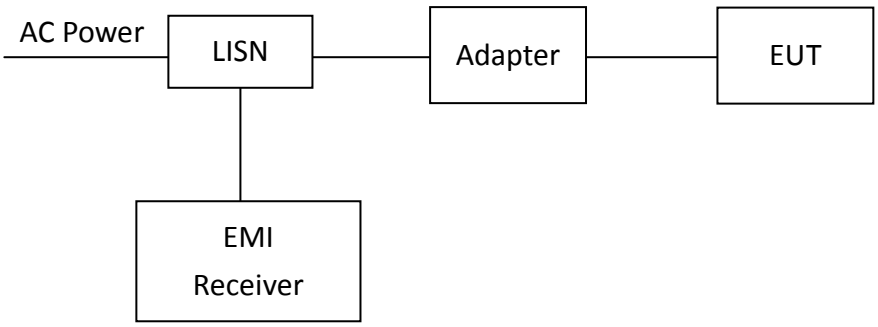
8.1 Measuring instrument setting

Receiver Function	Setting
Detector	QP
Start frequency	0.15MHz
Stop frequency	30MHz
IF bandwidth	9 kHz
Attenuation	10dB

8.2 Test Procedure

Step 1	Configure the EUT according to ANSI C63.10:2013. The EUT or host of EHT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
Step 2	Connect EUT or host of EUT to the power mains through a line impedance stabilization network.
Step 3	All the companion devices are connected to the other LISN. The LISN should provide 50Uh/50ohms coupling impedance.
Step 4	The frequency range from 150 kHz to 30MHz was searched.
Step 5	Set the test-receiver system to peak detector and specified bandwidth with maximum hold mode.
Step 6	The measurement has to be done between each power line and ground at the power terminal.

8.3 Test Diagram



8.4 Limit

Frequency (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56	56 – 46
0.50~5.00	56	46
5.00~30.0	60	50

8.5 Operating Environment Condition

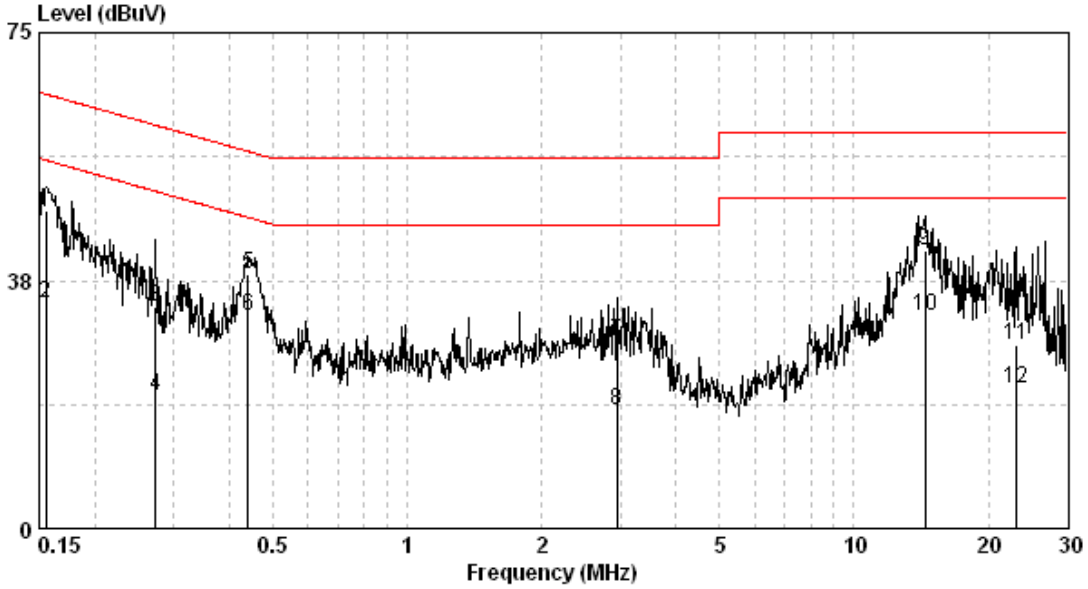
Temperature (℃) :	26
Relative Humidity (%) :	68
Atmospheric Pressure (hPa) :	1010
Test Date :	2018/07/23

8.6 Test Results

Phase: Live Line
Model No.: PLTN-RB1VO
Test Condition: Tx mode

Frequency (MHz)	Corr. Factor (dB)	Reading QP (dBuV)	Level QP (dBuV)	Limit QP (dBuV)	Reading AV (dBuV)	Level AV (dBuV)	Limit AV (dBuV)	Margin (dB) QP	Margin (dB) AV
0.156	0.08	47.94	48.02	65.69	33.97	34.05	55.69	-17.67	-21.64
0.273	0.09	33.37	33.46	61.03	19.87	19.96	51.03	-27.57	-31.07
0.440	0.10	38.40	38.50	57.07	31.93	32.03	47.07	-18.57	-15.03
2.946	0.27	28.15	28.43	56.00	17.54	17.82	46.00	-27.57	-28.18
14.440	0.92	40.97	41.90	60.00	31.33	32.25	50.00	-18.10	-17.75
23.140	1.26	26.39	27.65	60.00	19.93	21.18	50.00	-32.35	-28.82

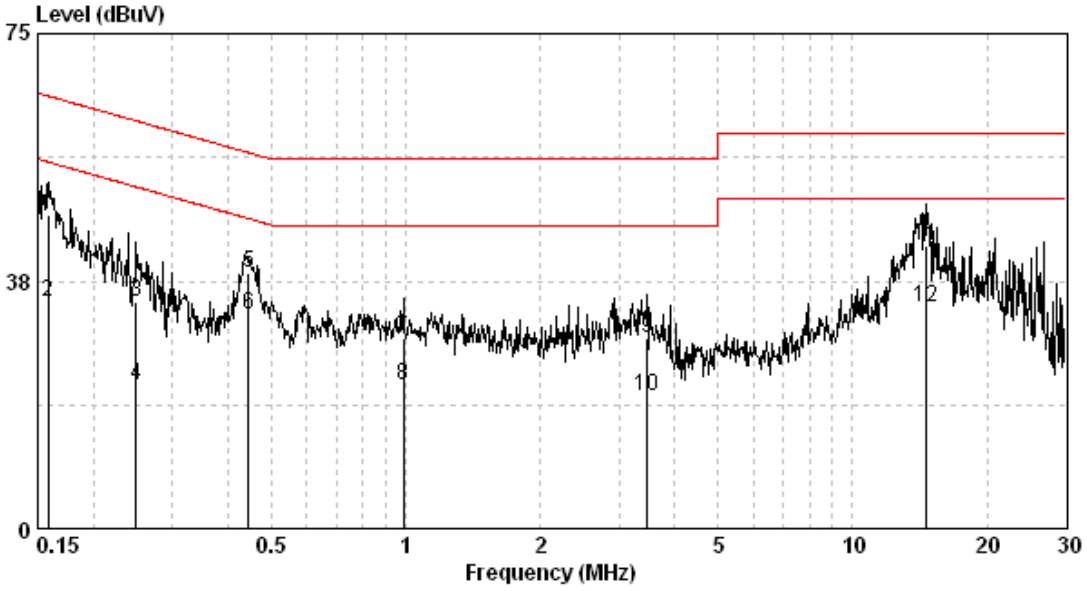
Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Level (dBuV) = Corr. Factor (dB) + Reading (dBuV)
3. Margin (dB) = Level (dBuV) – Limit (dBuV)



Phase: Neutral Line
Model No.: PLTN-RB1VO
Test Condition: Tx mode

Frequency (MHz)	Corr. Factor (dB)	Reading QP (dBuV)	Level QP (dBuV)	Limit QP (dBuV)	Reading AV (dBuV)	Level AV (dBuV)	Limit AV (dBuV)	Margin (dB) QP	Margin (dB) AV
0.158	0.08	47.50	47.58	65.56	34.20	34.28	55.56	-17.98	-21.28
0.249	0.09	34.29	34.37	61.78	21.64	21.73	51.78	-27.40	-30.05
0.444	0.10	38.55	38.65	56.98	32.42	32.52	46.98	-18.33	-14.46
0.989	0.15	28.61	28.76	56.00	21.68	21.83	46.00	-27.24	-24.17
3.472	0.28	28.45	28.73	56.00	19.91	20.19	46.00	-27.27	-25.81
14.594	0.75	42.10	42.85	60.00	32.89	33.63	50.00	-17.15	-16.37

Remark:
1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Level (dBuV) = Corr. Factor (dB) + Reading (dBuV)
3. Margin (dB) = Level (dBuV) – Limit (dBuV)



Appendix A: Test equipment list

Test Equipment/ Test site	Brand	Model No.	Serial No.	Calibration Date	Next Calibration Date
ESCI EMI Test Receiver	Rohde & Schwarz	ESCI	100018	2017/11/21	2018/11/20
Spectrum Analyzer	Rohde & Schwarz	FSP30	100245	2018/02/23	2019/02/22
Horn Antenna (1-18G)	SHWARZBECK	BBHA 9120 D	9120D-456	2018/01/23	2019/01/22
Horn Antenna (14-42G)	SHWARZBECK	BBHA 9170	BBHA9170159	2017/09/04	2020/09/02
Broadband Antenna	SHWARZBECK	VULB 9168	9168-172	2018/04/23	2019/04/22
Pre-Amplifier	EMC Co.	EMC12635SE	980205	2017/11/28	2018/11/27
Pre-Amplifier	MITEQ	JS4-26004000--27-8A	828825	2017/08/23	2018/08/22
Power Meter	Anritsu	ML2495A	0844001	2017/10/18	2018/10/17
Power Sensor	Anritsu	MA2411B	0738452	2017/10/18	2018/10/17
Signal Analyzer	Agilent	N9030A	MY51380492	2017/08/29	2018/08/28
966-2(A) Cable 9kHz~26.5GHz	SUHNER	SMA / EX 100	N/A	2017/08/15	2018/08/14
966-2(B) Cable 9kHz~26.5GHz	SUHNER	SUCOFLEX 104P	CB0005	2017/08/15	2018/08/14
RF Cable 9kHz~26.5GHz	SUHNER	SUCOFLEX 102	CB0006	2018/05/03	2019/05/02

Note: No Calibration Required (NCR).

Test Equipment/ Test site	Brand	Model No.	Serial No.	Calibration Date	Next Calibration Date
966-2_3m Semi-Anechoic Chamber	966_2	CEM-966_2	N/A	2018/03/05	2019/03/04
966-2_3m Semi-Anechoic Chamber	966_2	CEM-966_2	N/A	2018/03/28	2019/03/27
High Pass Filter	Wainwright	WHKX3.0/ 18G-12SS	N/A	2018/06/01	2019/05/31
Active Loop Antenna	SCHWARZBECK MESS-ELEKTRONIC	FMZB1519	1519-067	2018/04/17	2019/04/16
Active Loop Antenna	SCHWARZBECK MESS-ELEKTRONIC	FMZB1519	1519-067	2018/04/17	2019/04/16
EMI Test Receiver	R&S	ESR7	101822	2018/06/12	2019/06/11
Two-Line V-Network	R&S	ENV216	101160	2018/07/24	2019/07/23
Two-Line -V-Network	R&S	ESH3-Z5	838979/014	2017/09/13	2018/09/12
CON-2 Shielded Room	N/A	N/A	N/A	NCR	NCR
CON-2 Cable	SUHNER	EMCCFD300-BM-NM-6000	170502	2018/05/07	2019/05/06
Test software	Audix	e3	4.20040112L	NCR	NCR

Note: No Calibration Required (NCR).

Appendix B: Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of *k*=2.

Item	Uncertainty
Vertically polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m	5.14 dB
Horizontally polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m	5.22 dB
Vertically polarized Radiated disturbances from 1GHz~18GHz in a semi-anechoic chamber at a distance of 3m	3.64 dB
Horizontally polarized Radiated disturbances from 1GHz~18GHz in a semi-anechoic chamber at a distance of 3m	3.64 dB
Vertically polarized Radiated disturbances from 18GHz~40GHz in a semi-anechoic chamber at a distance of 3m	2.68 dB
Horizontally polarized Radiated disturbances from 18GHz~40GHz in a semi-anechoic chamber at a distance of 3m	2.68 dB
Radiated disturbances from 9kHz~30MHz in a semi-anechoic chamber at a distance of 3m	3.54 dB
Emission on the Band Edge Test	3.64 dB
Minimum 6dB Bandwidth	0.85 dB
Maximum Conducted Output Power	0.42 dB
Power Spectral Density	0.85 dB
Emissions In Non-Restricted Frequency Bands	0.85 dB
AC Power Line Conducted Emission	2.48 dB