

FCC Test Report

Report No.: RF151109C19-3

FCC ID: QHQ-20430250

Test Model: Link Box PLUS

Received Date: Nov. 09, 2015

Test Date: Nov. 09, 2015 ~ Dec. 16, 2015

Issued Date: Dec. 29, 2015

Applicant: LAERDAL MEDICAL AS

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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(R.O.C)

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Release Control Record

Issue No.	Description	Date Issued
RF151109C19-3	Original Release	Dec. 29, 2015

1 Certificate of Conformity

Product: Link Box PLUS

Brand: Laerdal Medical AS

Test Model: Link Box PLUS

Sample Status: Identical Prototype

Applicant: LAERDAL MEDICAL AS

Test Date: Nov. 09, 2015 ~ Dec. 16, 2015

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :

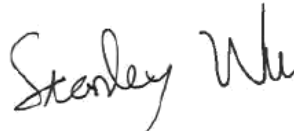


Date:

Dec. 29, 2015

Ivonne Wu / Supervisor

Approved by :



Date:

Dec. 29, 2015

Stanley Wu / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -17.96 dB at 24.00100 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -2.12 dB at 2488.00 MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Link Box PLUS
Brand	Laerdal Medical AS
Test Model	Link Box PLUS
Power Supply Rating	12 Vdc (adapter)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to MCS7
Operating Frequency	2412 ~ 2462 MHz
Number of Channel	11 for 802.11b, 802.11g, 802.11n (HT20)
Output Power	200.99 mW
Antenna Type	PCB antenna with 3.96 dBi gain
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

- The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX / 2TX
802.11n (HT20)	1TX / 2TX

- The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	FSP	FSP040-RHAN2	I/P: 100-240 Vac, 50/60 Hz, 1.5 A O/P: 12 Vdc, 3.33 A 1.15m non-shielded cable w/ one core

- The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1 GHz

RE<1G: Radiated Emission below 1 GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** for 1TX and **Y-plane** for 2TX.

NOTE: "-" means no effect.

Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0

Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	11	DSSS	DBPSK	1.0

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	11	DSSS	DBPSK	1.0

Bandedge Measurement:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 11	1, 11	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Toby Tian
APCM	25 deg. C, 65 % RH	12 Vdc	Taylor Liu

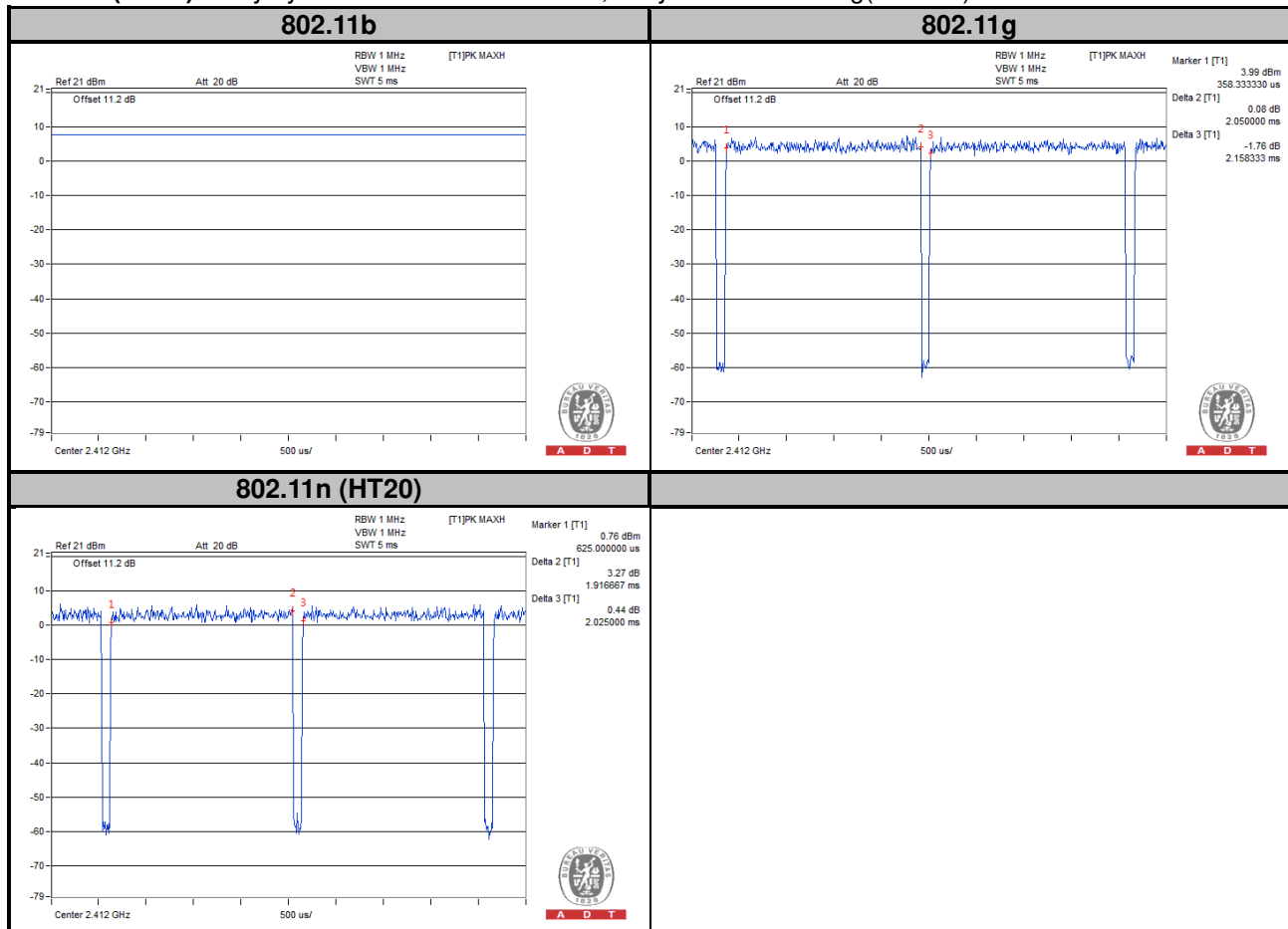
3.3 Duty Cycle of Test Signal

<1TX>

802.11b: Duty cycle of test signal is 100 %

802.11g: Duty cycle = $2.050/2.158 = 0.950$, Duty factor = $10 * \log(1/0.950) = 0.02$

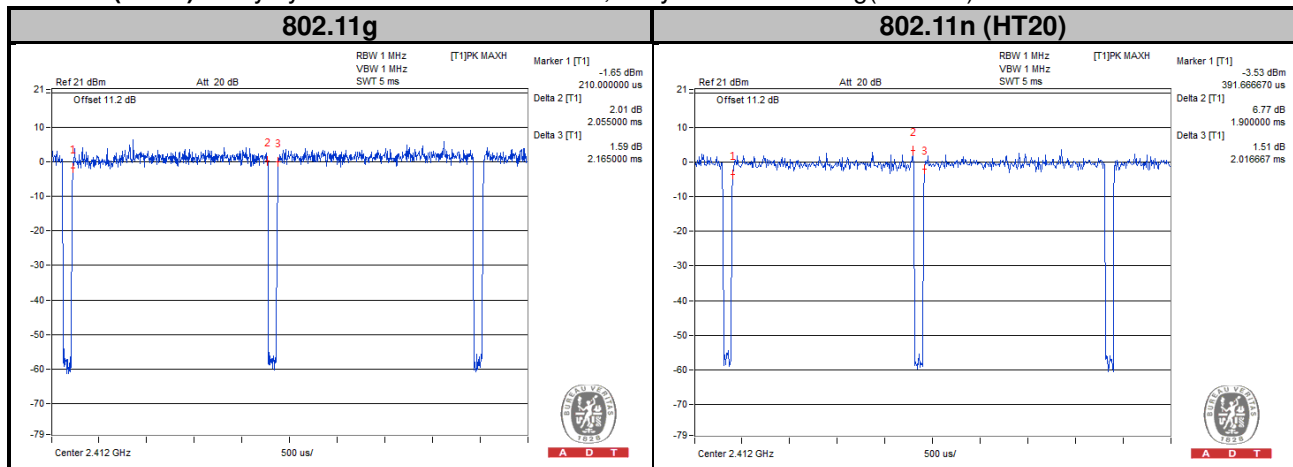
802.11n (HT20): Duty cycle = $1.917/2.025 = 0.947$, Duty factor = $10 * \log(1/0.947) = 0.24$



<2TX>

802.11g: Duty cycle = $2.055/2.165 = 0.949$, Duty factor = $10 * \log(1/0.949) = 0.23$

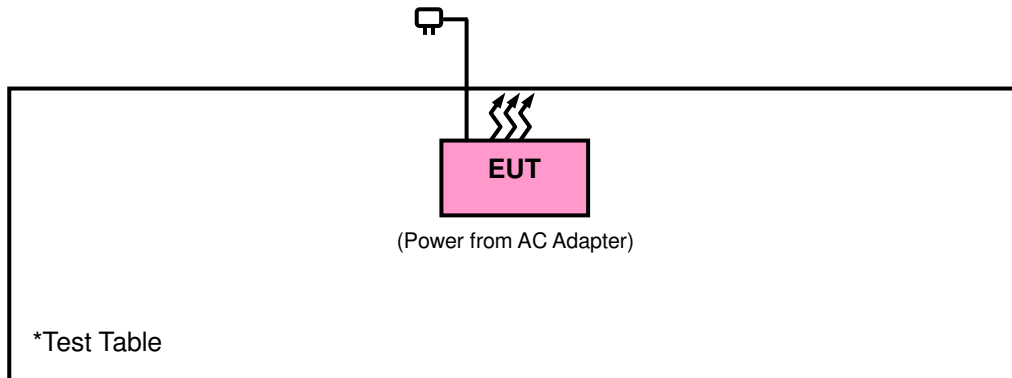
802.11n (HT20): Duty cycle = $1.900/2.017 = 0.942$, Duty factor = $10 * \log(1/0.942) = 0.26$



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance v03r03

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC).
The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2015	Jan. 21, 2016
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep. 03, 2015	Sep. 02, 2016
Spectrum Analyzer R&S	FSW26	102023	Aug. 21, 2015	Aug. 20, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 04, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 09, 2015	Feb. 09, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Feb. 04, 2015	Feb. 04, 2016
Loop Antenna	EM-6879	269	Jul. 31, 2015	Jul. 30, 2016
Preamplifier Agilent	8447D	2944A10628	Oct. 15, 2015	Oct. 14, 2016
Preamplifier EMCI	EMC 184045	980116	Jan. 09, 2015	Jan. 08, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2014	Dec. 26, 2015
Power Meter Anritsu	ML2495A	1232002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor Anritsu	MA2411B	1207325	Sep. 21, 2015	Sep. 20, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 12, 2015	Oct. 11, 2016
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 12, 2015	Oct. 11, 2016
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 12, 2015	Oct. 11, 2016
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	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 Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

4.1.3 Test Procedures

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

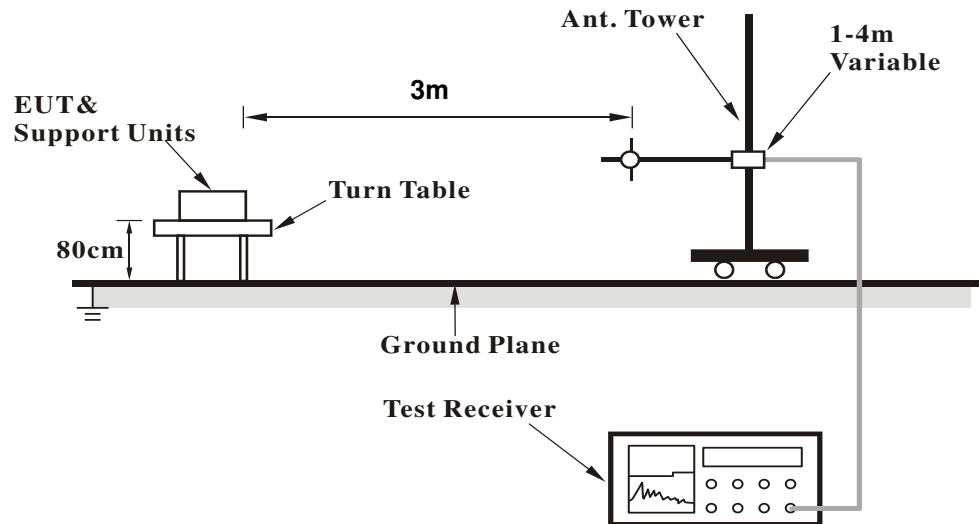
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10 Hz (Duty cycle $\geq 98 \%$) for Average detection (AV) at frequency above 1 GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

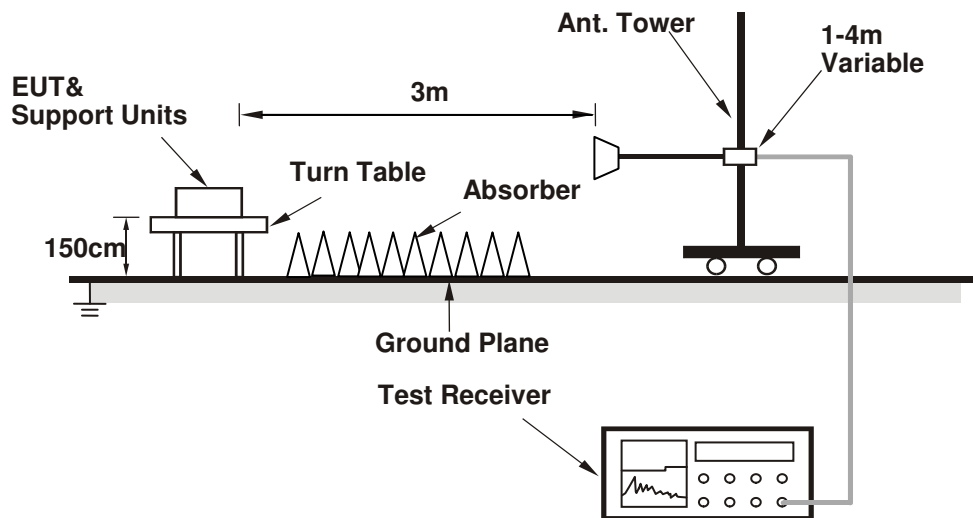
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1 GHz>



<Frequency Range above 1 GHz>



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1 GHz Data :

<1TX>

802.11b

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	50.2	56.71	54	-3.8	26.91	4.08	37.5	155	7	Average
2388	60.11	66.62	74	-13.89	26.91	4.08	37.5	155	7	Peak
2412	103.49	109.96			26.96	4.09	37.52	155	7	Average
2412	108.03	114.5			26.96	4.09	37.52	155	7	Peak
2492	37.69	43.58	54	-16.31	27.2	4.16	37.25	155	7	Average
2492	57.35	63.24	74	-16.65	27.2	4.16	37.25	155	7	Peak
4824	52.88	68.18	54	-1.12	30.99	6.79	53.08	121	131	Average
4824	56.95	72.25	74	-17.05	30.99	6.79	53.08	121	131	Peak
7236	56.11	64.27	83.49	-27.38	35.68	8.17	52.01	210	175	Average
7236	60.19	68.35	88.03	-27.84	35.68	8.17	52.01	210	175	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	40.66	47.19	54	-13.34	26.91	4.08	37.52	196	348	Average
2390	56.41	62.94	74	-17.59	26.91	4.08	37.52	196	348	Peak
2412	93.76	100.23			26.96	4.09	37.52	196	348	Average
2412	98.19	104.66			26.96	4.09	37.52	196	348	Peak
2488	34.51	40.47	54	-19.49	27.2	4.16	37.32	196	348	Average
2488	56.16	62.12	74	-17.84	27.2	4.16	37.32	196	348	Peak
4824	50.69	65.99	54	-3.31	30.99	6.79	53.08	115	183	Average
4824	53.37	68.67	74	-20.63	30.99	6.79	53.08	115	183	Peak
7236	54.32	62.48	73.76	-19.44	35.68	8.17	52.01	102	102	Average
7236	59.07	67.23	78.19	-19.12	35.68	8.17	52.01	102	102	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.
- 7236 MHz: Out of restricted band

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2366	36.76	43.38	54	-17.24	26.81	4.07	37.5	104	19	Average
2366	56.53	63.15	74	-17.47	26.81	4.07	37.5	104	19	Peak
2437	103.86	110.14			27.06	4.12	37.46	104	19	Average
2437	108.37	114.65			27.06	4.12	37.46	104	19	Peak
2496	35.33	41.22	54	-18.67	27.2	4.16	37.25	104	19	Average
2496	57.42	63.31	74	-16.58	27.2	4.16	37.25	104	19	Peak
4874	52.93	68.07	54	-1.07	31.06	6.85	53.05	191	2	Average
4874	54.98	70.12	74	-19.02	31.06	6.85	53.05	191	2	Peak
7311	52.16	59.93	54	-1.84	35.84	8.24	51.85	221	177	Average
7311	55.81	63.58	74	-18.19	35.84	8.24	51.85	221	177	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2358	33.54	40.17	54	-20.46	26.81	4.05	37.49	194	344	Average
2358	56.41	63.04	74	-17.59	26.81	4.05	37.49	194	344	Peak
2437	94.13	100.41			27.06	4.12	37.46	194	344	Average
2437	98.55	104.83			27.06	4.12	37.46	194	344	Peak
2496	33.69	39.58	54	-20.31	27.2	4.16	37.25	194	344	Average
2496	56.17	62.06	74	-17.83	27.2	4.16	37.25	194	344	Peak
4874	47.63	62.77	54	-6.37	31.06	6.85	53.05	105	182	Average
4874	50.35	65.49	74	-23.65	31.06	6.85	53.05	105	182	Peak
7311	52.19	59.96	54	-1.81	35.84	8.24	51.85	263	68	Average
7311	56.22	63.99	74	-17.78	35.84	8.24	51.85	263	68	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2362	36.68	43.31	54	-17.32	26.81	4.05	37.49	166	10	Average
2362	56.53	63.16	74	-17.47	26.81	4.05	37.49	166	10	Peak
2462	103.59	109.75			27.1	4.13	37.39	166	10	Average
2462	108.28	114.44			27.1	4.13	37.39	166	10	Peak
2488	51.88	57.84	54	-2.12	27.2	4.16	37.32	166	10	Average
2488	60.63	66.59	74	-13.37	27.2	4.16	37.32	166	10	Peak
4924	52.95	67.98	54	-1.05	31.12	6.88	53.03	194	6	Average
4924	54.67	69.7	74	-19.33	31.12	6.88	53.03	194	6	Peak
7386	51.71	58.98	54	-2.29	36.05	8.28	51.6	195	176	Average
7386	56.7	63.97	74	-17.3	36.05	8.28	51.6	195	176	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2384	33.17	39.73	54	-20.83	26.86	4.08	37.5	213	182	Average
2384	56.21	62.77	74	-17.79	26.86	4.08	37.5	213	182	Peak
2462	93.97	100.13			27.1	4.13	37.39	213	182	Average
2462	98.42	104.58			27.1	4.13	37.39	213	182	Peak
2484	41.95	47.97	54	-12.05	27.15	4.15	37.32	213	182	Average
2484	57.67	63.69	74	-16.33	27.15	4.15	37.32	213	182	Peak
4924	50.4	65.43	54	-3.6	31.12	6.88	53.03	191	21	Average
4924	52.66	67.69	74	-21.34	31.12	6.88	53.03	191	21	Peak
7386	51.79	59.06	54	-2.21	36.05	8.28	51.6	239	64	Average
7386	55.91	63.18	74	-18.09	36.05	8.28	51.6	239	64	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.

802.11g

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	52.77	59.3	54	-1.23	26.91	4.08	37.52	136	11	Average
2390	70.82	77.35	74	-3.18	26.91	4.08	37.52	136	11	Peak
2412	98.63	105.1			26.96	4.09	37.52	136	11	Average
2412	108.36	114.83			26.96	4.09	37.52	136	11	Peak
2494	40.75	46.64	54	-13.25	27.2	4.16	37.25	136	11	Average
2494	57.77	63.66	74	-16.23	27.2	4.16	37.25	136	11	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	39.45	45.98	54	-14.55	26.91	4.08	37.52	195	185	Average
2390	59.67	66.2	74	-14.33	26.91	4.08	37.52	195	185	Peak
2412	87.34	93.81			26.96	4.09	37.52	195	185	Average
2412	97.18	103.65			26.96	4.09	37.52	195	185	Peak
2500	36.15	42.04	54	-17.85	27.2	4.16	37.25	195	185	Average
2500	56.7	62.59	74	-17.3	27.2	4.16	37.25	195	185	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	41.97	48.48	54	-12.03	26.91	4.08	37.5	103	10	Average
2388	60.87	67.38	74	-13.13	26.91	4.08	37.5	103	10	Peak
2437	99.64	105.92			27.06	4.12	37.46	103	10	Average
2437	109.06	115.34			27.06	4.12	37.46	103	10	Peak
2488	45.41	51.37	54	-8.59	27.2	4.16	37.32	103	10	Average
2488	61.53	67.49	74	-12.47	27.2	4.16	37.32	103	10	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2350	35.02	41.69	54	-18.98	26.77	4.05	37.49	175	183	Average
2350	56.21	62.88	74	-17.79	26.77	4.05	37.49	175	183	Peak
2437	88.2	94.48			27.06	4.12	37.46	175	183	Average
2437	98.34	104.62			27.06	4.12	37.46	175	183	Peak
2486	37.19	43.21	54	-16.81	27.15	4.15	37.32	175	183	Average
2486	57.04	63.06	74	-16.96	27.15	4.15	37.32	175	183	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2376	38.22	44.79	54	-15.78	26.86	4.07	37.5	164	12	Average
2376	56.62	63.19	74	-17.38	26.86	4.07	37.5	164	12	Peak
2462	98.56	104.72			27.1	4.13	37.39	164	12	Average
2462	108.94	115.1			27.1	4.13	37.39	164	12	Peak
2484	50.18	56.2	54	-3.82	27.15	4.15	37.32	164	12	Average
2484	72.66	78.68	74	-1.34	27.15	4.15	37.32	164	12	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2382	34.04	40.6	54	-19.96	26.86	4.08	37.5	175	191	Average
2382	56.71	63.27	74	-17.29	26.86	4.08	37.5	175	191	Peak
2462	88.22	94.38			27.1	4.13	37.39	175	191	Average
2462	98.8	104.96			27.1	4.13	37.39	175	191	Peak
2484	41.39	47.41	54	-12.61	27.15	4.15	37.32	175	191	Average
2484	62.29	68.31	74	-11.71	27.15	4.15	37.32	175	191	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.

802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	50.45	56.98	54	-3.55	26.91	4.08	37.52	134	10	Average
2390	71.29	77.82	74	-2.71	26.91	4.08	37.52	134	10	Peak
2412	97.8	104.27			26.96	4.09	37.52	134	10	Average
2412	108.36	114.83			26.96	4.09	37.52	134	10	Peak
2484	41.32	47.34	54	-12.68	27.15	4.15	37.32	134	10	Average
2484	58.85	64.87	74	-15.15	27.15	4.15	37.32	134	10	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	40.26	46.77	54	-13.74	26.91	4.08	37.5	193	65	Average
2388	58.38	64.89	74	-15.62	26.91	4.08	37.5	193	65	Peak
2412	87.46	93.93			26.96	4.09	37.52	193	65	Average
2412	97.16	103.63			26.96	4.09	37.52	193	65	Peak
2488	35.47	41.43	54	-18.53	27.2	4.16	37.32	193	65	Average
2488	56.68	62.64	74	-17.32	27.2	4.16	37.32	193	65	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	42.08	48.61	54	-11.92	26.91	4.08	37.52	103	11	Average
2390	57.13	63.66	74	-16.87	26.91	4.08	37.52	103	11	Peak
2437	98.54	104.82			27.06	4.12	37.46	103	11	Average
2437	108.68	114.96			27.06	4.12	37.46	103	11	Peak
2484	43.68	49.7	54	-10.32	27.15	4.15	37.32	103	11	Average
2484	59	65.02	74	-15	27.15	4.15	37.32	103	11	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2378	34.56	41.13	54	-19.44	26.86	4.07	37.5	190	64	Average
2378	56.58	63.15	74	-17.42	26.86	4.07	37.5	190	64	Peak
2437	88.78	95.06			27.06	4.12	37.46	190	64	Average
2437	98.45	104.73			27.06	4.12	37.46	190	64	Peak
2500	36.66	42.55	54	-17.34	27.2	4.16	37.25	190	64	Average
2500	56.8	62.69	74	-17.2	27.2	4.16	37.25	190	64	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2368	36.99	43.61	54	-17.01	26.81	4.07	37.5	164	7	Average
2368	56.76	63.38	74	-17.24	26.81	4.07	37.5	164	7	Peak
2462	100.19	106.35			27.1	4.13	37.39	164	7	Average
2462	107.75	113.91			27.1	4.13	37.39	164	7	Peak
2484	49.86	55.88	54	-4.14	27.15	4.15	37.32	164	7	Average
2484	72.34	78.36	74	-1.66	27.15	4.15	37.32	164	7	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	34.03	40.54	54	-19.97	26.91	4.08	37.5	171	189	Average
2388	56.97	63.48	74	-17.03	26.91	4.08	37.5	171	189	Peak
2462	87.82	93.98			27.1	4.13	37.39	171	189	Average
2462	97.97	104.13			27.1	4.13	37.39	171	189	Peak
2484	41.1	47.12	54	-12.9	27.15	4.15	37.32	171	189	Average
2484	67.19	73.21	74	-6.81	27.15	4.15	37.32	171	189	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.

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EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	48.05	54.58	54	-5.95	26.91	4.08	37.52	105	26	Average
2390	68.17	74.7	74	-5.83	26.91	4.08	37.52	105	26	Peak
2412	99.03	105.5			26.96	4.09	37.52	105	26	Average
2412	109.11	115.58			26.96	4.09	37.52	105	26	Peak
2486	37.6	43.62	54	-16.4	27.15	4.15	37.32	105	26	Average
2486	57.48	63.5	74	-16.52	27.15	4.15	37.32	105	26	Peak
4824	42.87	58.17	54	-11.13	30.99	6.79	53.08	120	118	Average
4824	50.38	65.68	74	-23.62	30.99	6.79	53.08	120	118	Peak
7236	48.43	56.59	79.03	-30.6	35.68	8.17	52.01	109	29	Average
7236	58.11	66.27	89.11	-31	35.68	8.17	52.01	109	29	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	49.52	56.03	54	-4.48	26.91	4.08	37.5	181	357	Average
2388	70.11	76.62	74	-3.89	26.91	4.08	37.5	181	357	Peak
2412	99.64	106.11			26.96	4.09	37.52	181	357	Average
2412	109.92	116.39			26.96	4.09	37.52	181	357	Peak
2486	40.92	46.94	54	-13.08	27.15	4.15	37.32	181	357	Average
2486	59.59	65.61	74	-14.41	27.15	4.15	37.32	181	357	Peak
4824	45.67	60.97	54	-8.33	30.99	6.79	53.08	167	336	Average
4824	57.35	72.65	74	-16.65	30.99	6.79	53.08	167	336	Peak
7236	47.83	56.11	79.64	-31.81	35.64	8.17	52.09	175	335	Average
7236	58.66	66.94	89.92	-31.26	35.64	8.17	52.09	175	335	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.
- 7236 MHz: Out of restricted band

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	40.87	47.4	54	-13.13	26.91	4.08	37.52	103	24	Average
2390	62.56	69.09	74	-11.44	26.91	4.08	37.52	103	24	Peak
2437	100	106.28			27.06	4.12	37.46	103	24	Average
2437	109.41	115.69			27.06	4.12	37.46	103	24	Peak
2484	39.22	45.24	54	-14.78	27.15	4.15	37.32	103	24	Average
2484	58.23	64.25	74	-15.77	27.15	4.15	37.32	103	24	Peak
4874	40.5	55.64	54	-13.5	31.06	6.85	53.05	200	63	Average
4874	52.75	67.89	74	-21.25	31.06	6.85	53.05	210	57	Peak
7311	48.85	56.62	54	-5.15	35.84	8.24	51.85	210	57	Average
7311	60.17	67.94	74	-13.83	35.84	8.24	51.85	210	57	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	40.3	46.83	54	-13.7	26.91	4.08	37.52	160	357	Average
2390	62.85	69.38	74	-11.15	26.91	4.08	37.52	160	357	Peak
2437	100.1	106.38			27.06	4.12	37.46	160	357	Average
2437	109.66	115.94			27.06	4.12	37.46	160	357	Peak
2490	42.6	48.56	54	-11.4	27.2	4.16	37.32	160	357	Average
2490	60.66	66.62	74	-13.34	27.2	4.16	37.32	160	357	Peak
4874	41.14	56.28	54	-12.86	31.06	6.85	53.05	100	125	Average
4874	55.05	70.19	74	-18.95	31.06	6.85	53.05	100	125	Peak
7311	45.26	53.03	54	-8.74	35.84	8.24	51.85	100	17	Average
7311	56.77	64.54	74	-17.23	35.84	8.24	51.85	100	17	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2378	35.83	42.4	54	-18.17	26.86	4.07	37.5	100	42	Average
2378	57.96	64.53	74	-16.04	26.86	4.07	37.5	100	42	Peak
2462	95.99	102.15			27.1	4.13	37.39	100	42	Average
2462	106.06	112.22			27.1	4.13	37.39	100	42	Peak
2484	48.15	54.17	54	-5.85	27.15	4.15	37.32	100	42	Average
2484	64.52	70.54	74	-9.48	27.15	4.15	37.32	100	42	Peak
4924	41.86	56.89	54	-12.14	31.12	6.88	53.03	100	46	Average
4924	52.16	67.19	74	-21.84	31.12	6.88	53.03	100	46	Peak
7386	42.99	50.26	54	-11.01	36.05	8.28	51.6	100	261	Average
7386	55.01	62.32	74	-18.99	36.01	8.28	51.6	100	261	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2334	36.81	43.52	54	-17.19	26.72	4.04	37.47	159	360	Average
2334	57.26	63.97	74	-16.74	26.72	4.04	37.47	159	360	Peak
2462	96.98	103.14			27.1	4.13	37.39	159	360	Average
2462	106.5	112.66			27.1	4.13	37.39	159	360	Peak
2484	48.53	54.55	54	-5.47	27.15	4.15	37.32	159	360	Average
2484	64.24	70.26	74	-9.76	27.15	4.15	37.32	159	360	Peak
4924	42.42	57.45	54	-11.58	31.12	6.88	53.03	147	66	Average
4924	52.38	67.41	74	-21.62	31.12	6.88	53.03	147	66	Peak
7386	41.38	48.65	54	-12.62	36.05	8.28	51.6	100	316	Average
7386	53.23	60.5	74	-20.77	36.05	8.28	51.6	100	316	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.

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EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2388	45.2	51.71	54	-8.8	26.91	4.08	37.5	105	29	Average
2388	60.71	67.22	74	-13.29	26.91	4.08	37.5	105	29	Peak
2412	96.36	102.83			26.96	4.09	37.52	105	29	Average
2412	106.01	112.48			26.96	4.09	37.52	105	29	Peak
2486	36.06	42.08	54	-17.94	27.15	4.15	37.32	105	29	Average
2486	56.91	62.93	74	-17.09	27.15	4.15	37.32	105	29	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2390	45.51	52.04	54	-8.49	26.91	4.08	37.52	100	15	Average
2390	63.72	70.25	74	-10.28	26.91	4.08	37.52	100	15	Peak
2412	96.82	103.29			26.96	4.09	37.52	100	15	Average
2412	106.49	112.96			26.96	4.09	37.52	100	15	Peak
2490	38.09	44.05	54	-15.91	27.2	4.16	37.32	100	15	Average
2490	57.43	63.39	74	-16.57	27.2	4.16	37.32	100	15	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2412 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2384	38.31	44.87	54	-15.69	26.86	4.08	37.5	104	24	Average
2384	57.18	63.74	74	-16.82	26.86	4.08	37.5	104	24	Peak
2437	97.4	103.68			27.06	4.12	37.46	104	24	Average
2437	107.46	113.74			27.06	4.12	37.46	104	24	Peak
2490	37.25	43.21	54	-16.75	27.2	4.16	37.32	104	24	Average
2490	56.85	62.81	74	-17.15	27.2	4.16	37.32	104	24	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2386	38.12	44.63	54	-15.88	26.91	4.08	37.5	161	355	Average
2386	57.51	64.02	74	-16.49	26.91	4.08	37.5	161	355	Peak
2437	97.67	103.95			27.06	4.12	37.46	161	355	Average
2437	107.89	114.17			27.06	4.12	37.46	161	355	Peak
2500	39.79	45.68	54	-14.21	27.2	4.16	37.25	161	355	Average
2500	57.86	63.75	74	-16.14	27.2	4.16	37.25	161	355	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2437 MHz: Fundamental frequency.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2386	38.25	44.76	54	-15.75	26.91	4.08	37.5	102	25	Average
2386	57.21	63.72	74	-16.79	26.91	4.08	37.5	102	25	Peak
2462	95.03	101.19			27.1	4.13	37.39	102	25	Average
2462	106.28	112.44			27.1	4.13	37.39	102	25	Peak
2484	43.62	49.64	54	-10.38	27.15	4.15	37.32	102	25	Average
2484	60.49	66.51	74	-13.51	27.15	4.15	37.32	102	25	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
2372	37.29	43.86	54	-16.71	26.86	4.07	37.5	158	356	Average
2372	57.86	64.43	74	-16.14	26.86	4.07	37.5	158	356	Peak
2462	96.41	102.57			27.1	4.13	37.39	158	356	Average
2462	106.58	112.74			27.1	4.13	37.39	158	356	Peak
2488	45.52	51.48	54	-8.48	27.2	4.16	37.32	158	356	Average
2488	66.82	72.78	74	-7.18	27.2	4.16	37.32	158	356	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 2462 MHz: Fundamental frequency.

9 kHz ~ 30 MHz DATA:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz WORST-CASE DATA:

802.11b

EUT Test Condition		Measurement Detail	
Channel	Channel 11	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Gavin Wu

Antennal Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
35.82	17.82	35.32	40	-22.18	12.94	0.61	31.05	127	109	Peak
173.56	24.32	43.55	43.5	-19.18	11.38	1.16	31.77	124	156	Peak
234.67	20.4	39.95	46	-25.6	10.83	1.44	31.82	136	59	Peak
672.14	28.96	37.9	46	-17.04	20.48	2.4	31.82	117	354	Peak
719.67	35.08	43.17	46	-10.92	21.09	2.48	31.66	101	168	Peak
768.17	35.4	42.39	46	-10.6	21.78	2.56	31.33	140	239	Peak
Antennal Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
38.73	29.37	46.35	40	-10.63	13.39	0.63	31	123	46	Peak
49.4	25.99	43.49	40	-14.01	13.08	0.7	31.28	139	185	Peak
235.64	21.16	40.66	46	-24.84	10.87	1.44	31.81	140	305	Peak
719.67	28.19	36.28	46	-17.81	21.09	2.48	31.66	134	112	Peak
768.17	29.76	36.75	46	-16.24	21.78	2.56	31.33	114	145	Peak
864.2	28.97	35.16	46	-17.03	23.05	2.7	31.94	139	337	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

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	Nov. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2015	Feb. 25, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
Software ADT	BV ADT_Cond_ V7.3.7.3	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.

3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

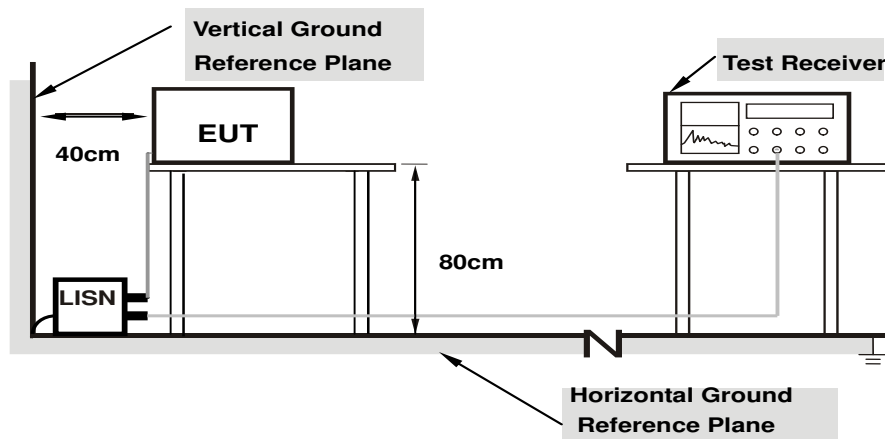
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance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

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

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

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

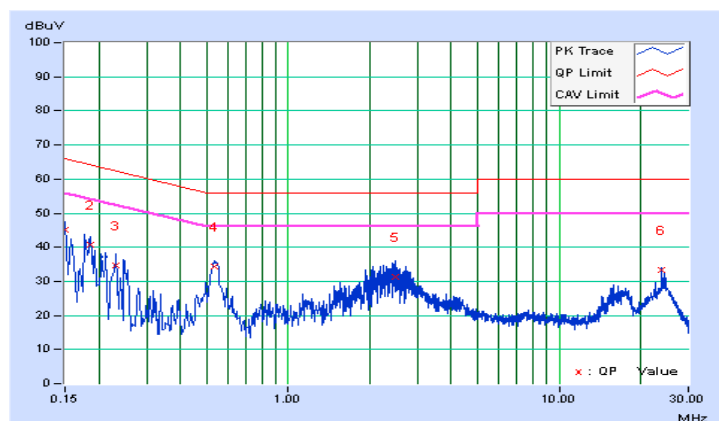
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/11/14

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	0.15000	9.82	35.22	20.82	45.04	30.64	66.00	56.00	-20.96	-25.36
2	0.18508	9.83	30.85	10.75	40.68	20.58	64.25	54.25	-23.57	-33.67
3	0.23211	9.85	24.81	12.73	34.66	22.58	62.37	52.37	-27.72	-29.80
4	0.53709	9.89	24.48	14.71	34.37	24.60	56.00	46.00	-21.63	-21.40
5	2.49209	10.03	21.42	8.97	31.45	19.00	56.00	46.00	-24.55	-27.00
6	24.00100	11.24	22.24	20.80	33.48	32.04	60.00	50.00	-26.52	-17.96

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

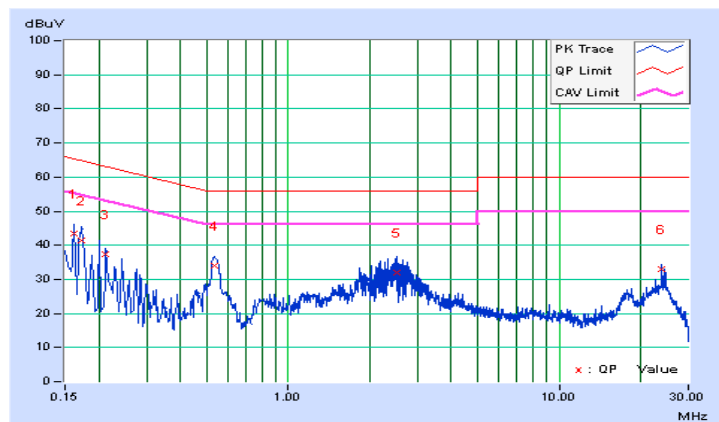


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/11/14

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	0.16173	9.82	33.77	14.01	43.59	23.83	65.37	55.37	-21.78	-31.54
2	0.17237	9.82	31.45	11.07	41.27	20.89	64.85	54.85	-23.57	-33.95
3	0.21256	9.83	27.48	8.39	37.31	18.22	63.10	53.10	-25.79	-34.88
4	0.53240	9.89	23.97	13.63	33.86	23.52	56.00	46.00	-22.14	-22.48
5	2.52337	10.03	21.99	9.50	32.02	19.53	56.00	46.00	-23.98	-26.47
6	24.00100	11.02	22.13	20.92	33.15	31.94	60.00	50.00	-26.85	-18.06

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

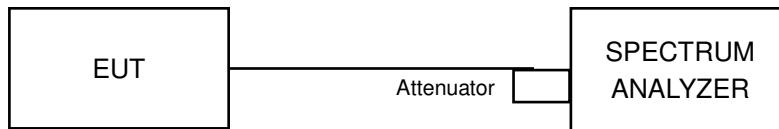


4.3 6 dB Bandwidth Measurement

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

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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 Result

<1TX>

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.10	0.5	Pass
6	2437	8.12	0.5	Pass
11	2462	8.12	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.46	0.5	Pass
6	2437	15.49	0.5	Pass
11	2462	15.57	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	15.15	0.5	Pass
6	2437	15.18	0.5	Pass
11	2462	15.34	0.5	Pass

<2TX>

802.11g

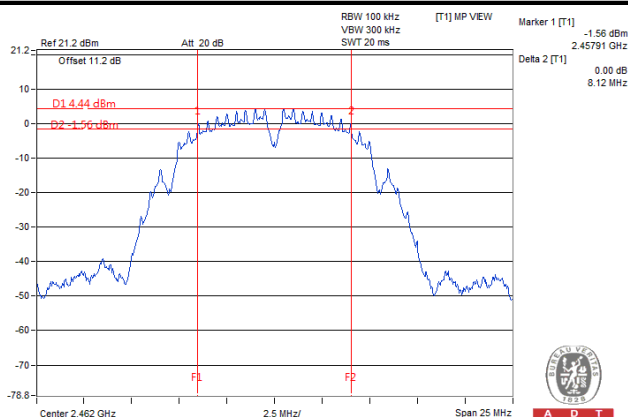
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.47	15.81	0.5	Pass
6	2437	15.68	15.80	0.5	Pass
11	2462	15.65	15.50	0.5	Pass

802.11n (HT20)

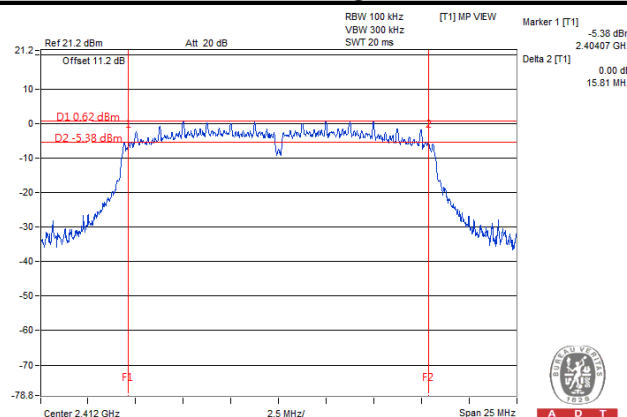
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.34	16.34	0.5	Pass
6	2437	15.18	16.35	0.5	Pass
11	2462	15.15	16.34	0.5	Pass

Spectrum Plot of Worst Value

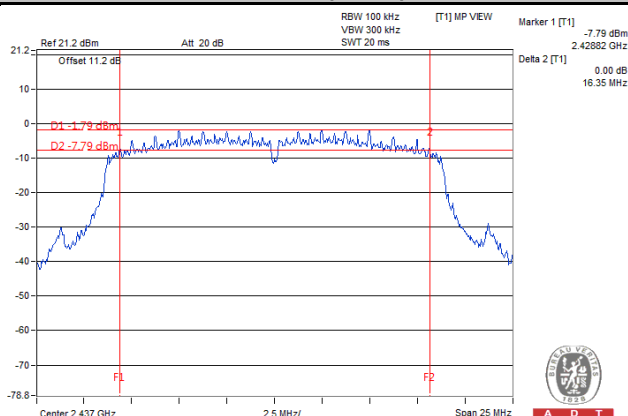
802.11b



802.11g



802.11n (HT20)



4.4 Conducted Output Power Measurement

4.4.1 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,

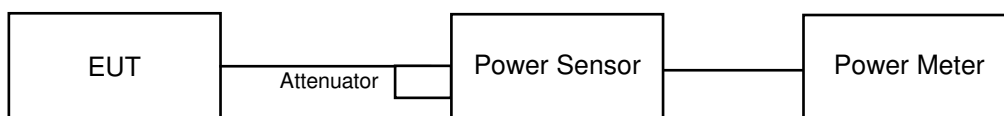
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

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 $NANT \geq 5$.

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

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

4.4.7 Test Results

<1TX>

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	66.07	18.2	30	Pass
6	2437	53.33	17.27	30	Pass
11	2462	51.17	17.09	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	129.42	21.12	30	Pass
6	2437	132.13	21.21	30	Pass
11	2462	114.29	20.58	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	125.31	20.98	30	Pass
6	2437	118.85	20.75	30	Pass
11	2462	107.40	20.31	30	Pass

<2TX>

802.11g

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	20.25	19.78	200.99	23.03	30	Pass
6	2437	19.84	19.31	181.69	22.59	30	Pass
11	2462	18.62	18.90	150.40	21.77	30	Pass

802.11n (HT20)

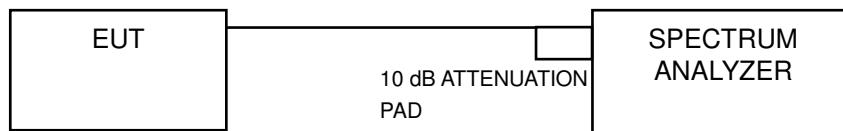
Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.26	18.78	159.84	22.04	30	Pass
6	2437	18.88	17.97	139.93	21.46	30	Pass
11	2462	18.45	17.99	132.93	21.24	30	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8 dBm.

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 Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

<1TX>

802.11b

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Pass / Fail
1	2412	-7.93	8	Pass
6	2437	-10.35	8	Pass
11	2462	-10.00	8	Pass

802.11g

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Pass / Fail
1	2412	-12.13	8	Pass
6	2437	-12.61	8	Pass
11	2462	-14.50	8	Pass

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Pass / Fail
1	2412	-12.80	8	Pass
6	2437	-14.24	8	Pass
11	2462	-14.55	8	Pass

<2TX>

802.11g

TX Chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	1	2412	-15.75	3.01	-12.74	7.03	Pass
	6	2437	-16.09	3.01	-13.08	7.03	Pass
	11	2462	-19.20	3.01	-16.19	7.03	Pass
1	1	2412	-13.81	3.01	-10.80	7.03	Pass
	6	2437	-14.31	3.01	-11.30	7.03	Pass
	11	2462	-16.80	3.01	-13.79	7.03	Pass

NOTE: Directional gain = 3.96 dBi + 10log(2) = 6.97 dBi > 6 dBi , so the power density limit shall be reduced to 8-(6.97-6) = 7.03 dBm.

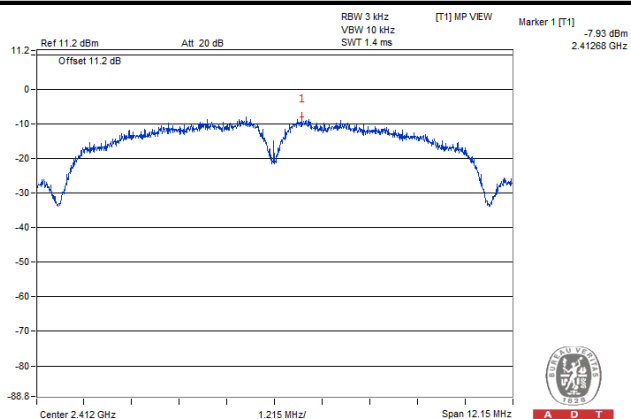
802.11n (HT20)

TX Chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	1	2412	-16.66	3.01	-13.65	7.03	Pass
	6	2437	-17.88	3.01	-14.87	7.03	Pass
	11	2462	-20.10	3.01	-17.09	7.03	Pass
1	1	2412	-15.62	3.01	-12.61	7.03	Pass
	6	2437	-15.40	3.01	-12.39	7.03	Pass
	11	2462	-17.58	3.01	-14.57	7.03	Pass

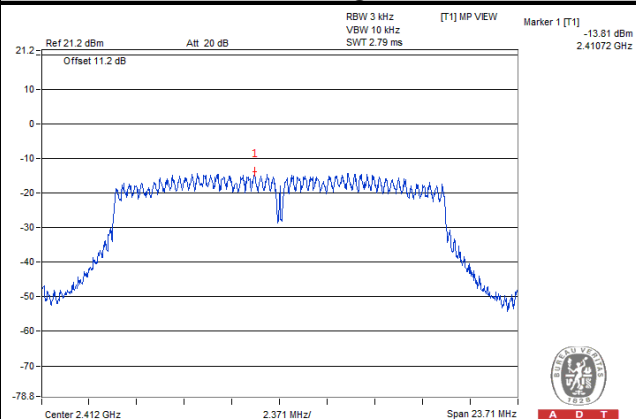
NOTE: Directional gain = 3.96 dBi + 10log(2) = 6.97 dBi > 6 dBi , so the power density limit shall be reduced to 8-(6.97-6) = 7.03 dBm.

Spectrum Plot of Worst Value

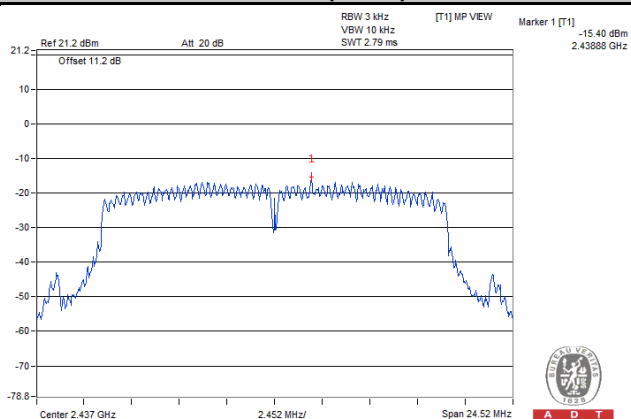
802.11b



802.11g



802.11n (HT20)

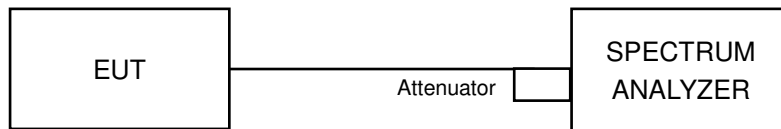


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

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

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 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 OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 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.

4.6.5 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.

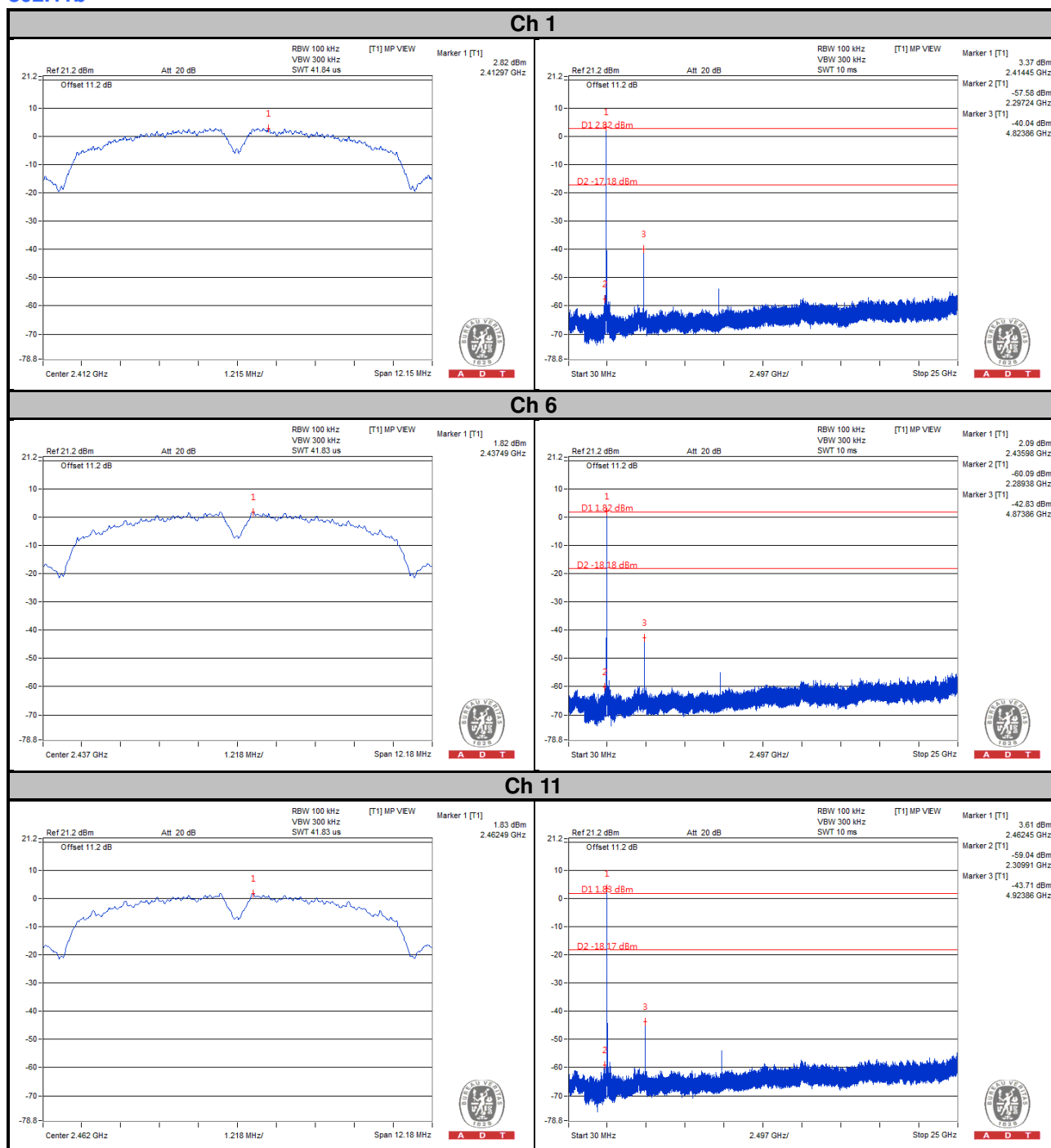
4.6.7 Test Results

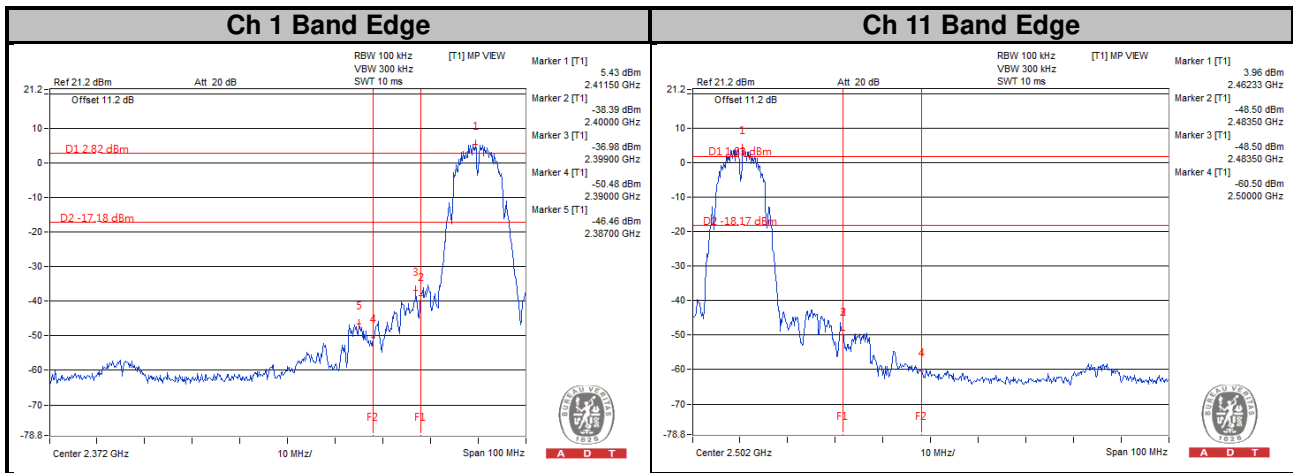
The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20 dB offset below D1. It shows compliance with the requirement.

<1TX>

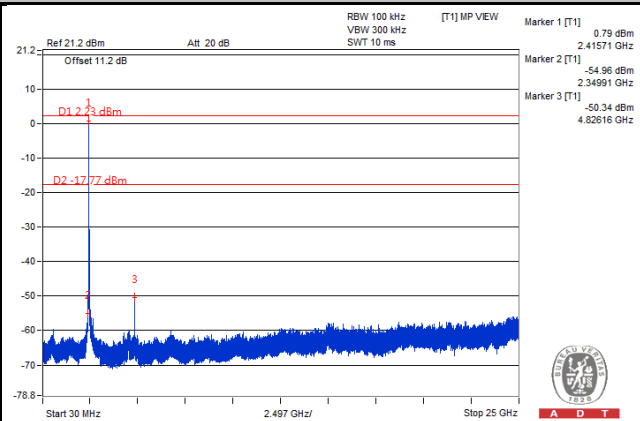
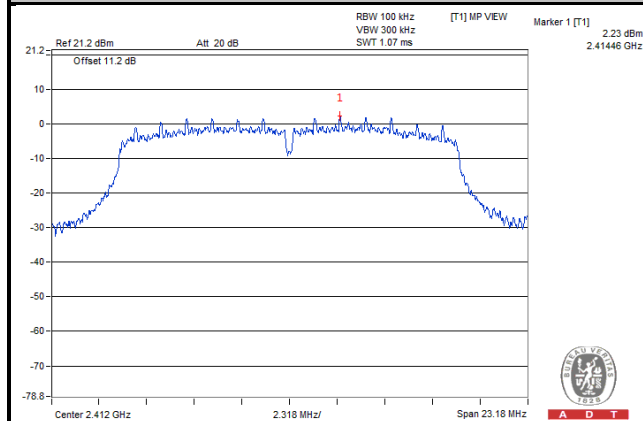
802.11b



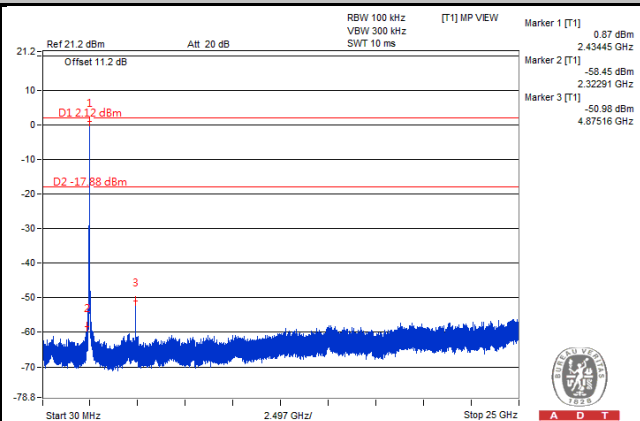
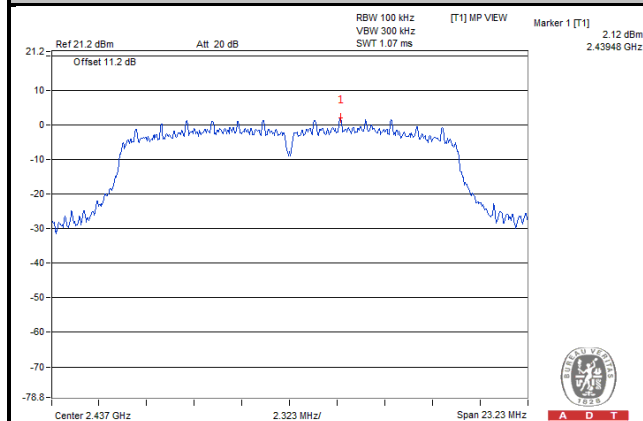


802.11g

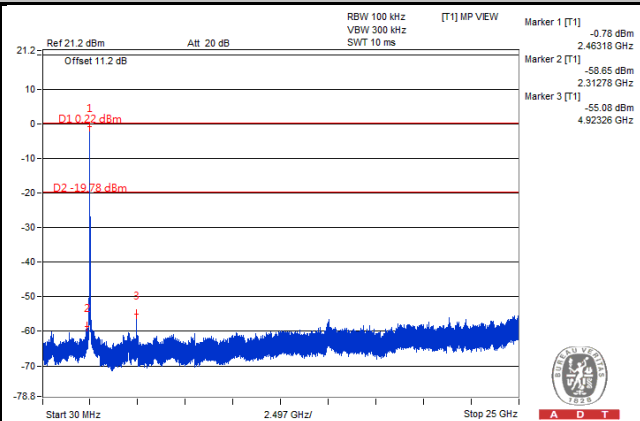
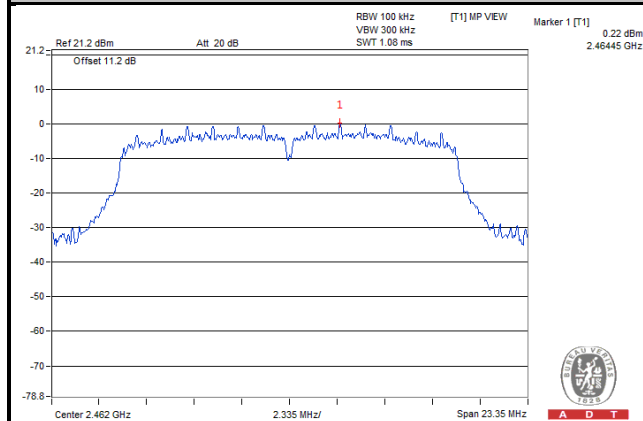
Ch 1

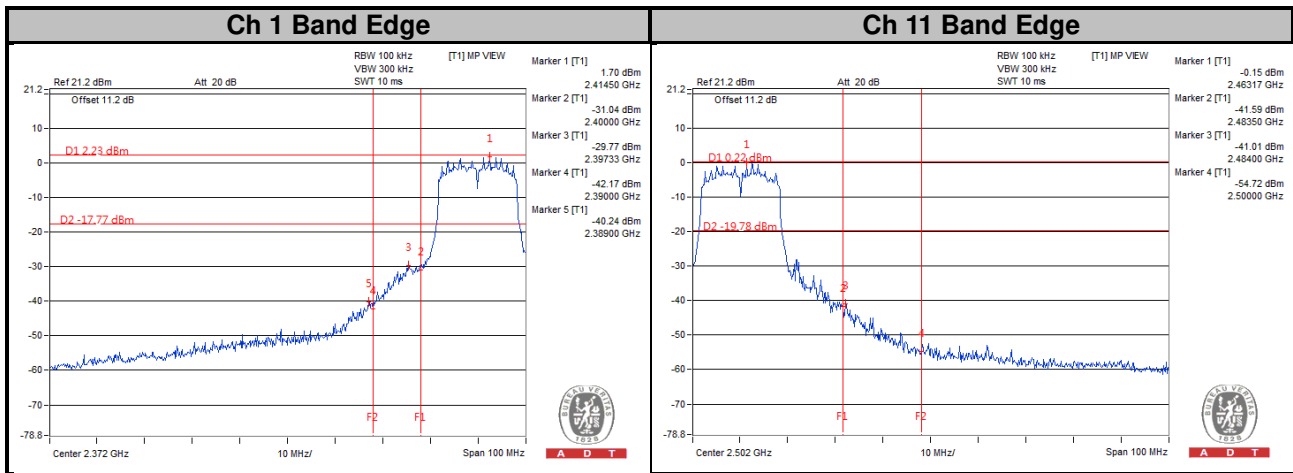


Ch 6



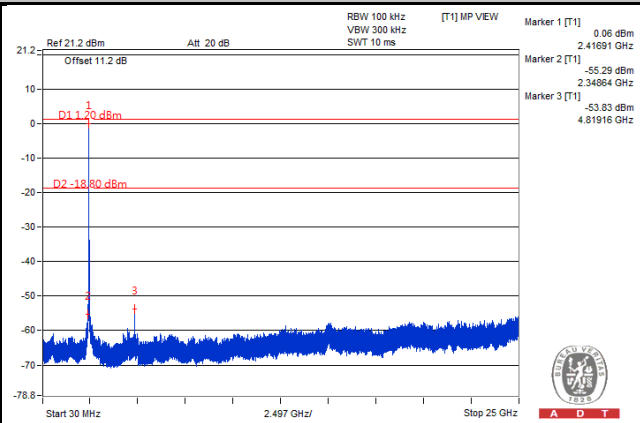
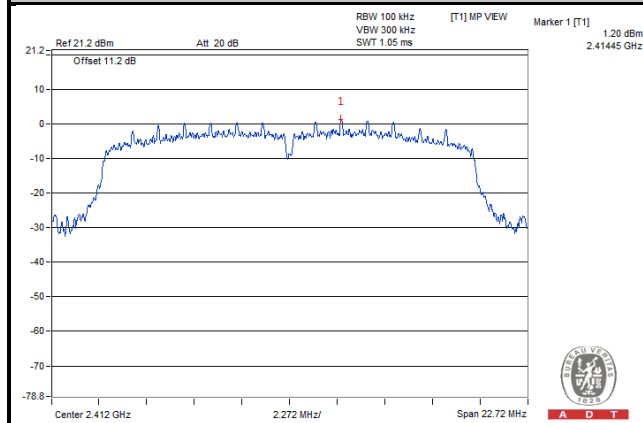
Ch 11



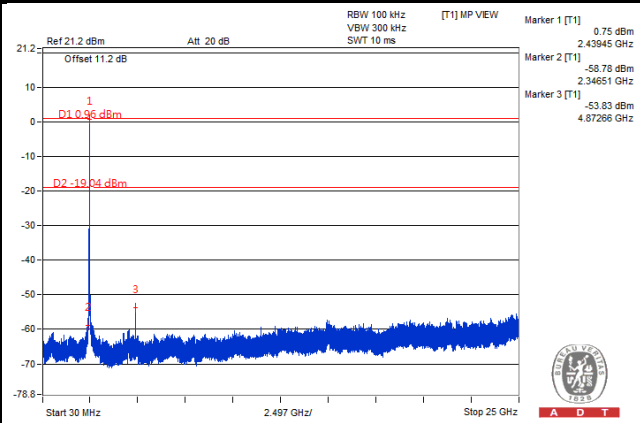
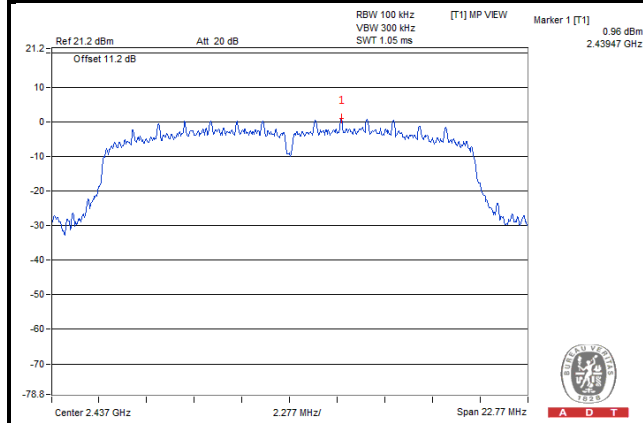


802.11n (HT20)

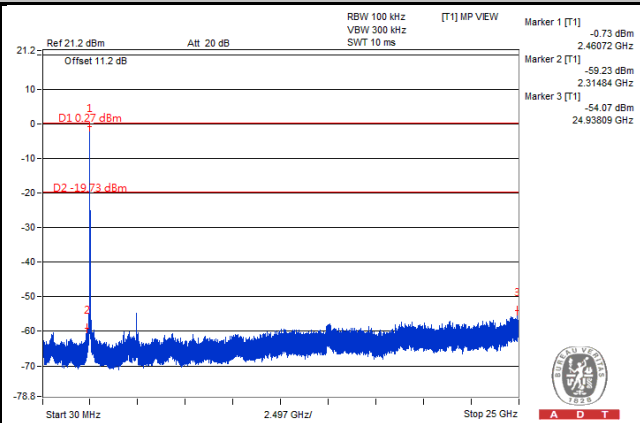
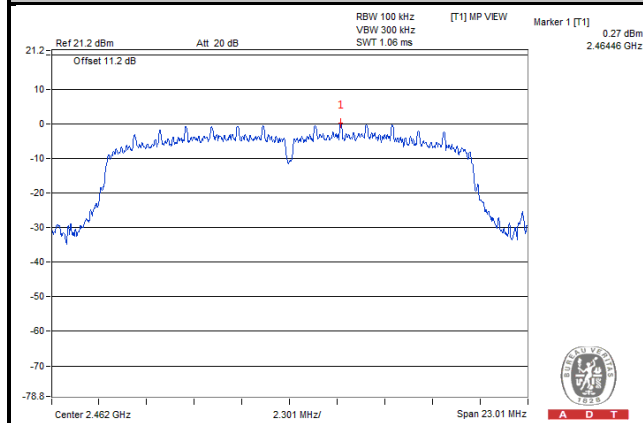
Ch 1

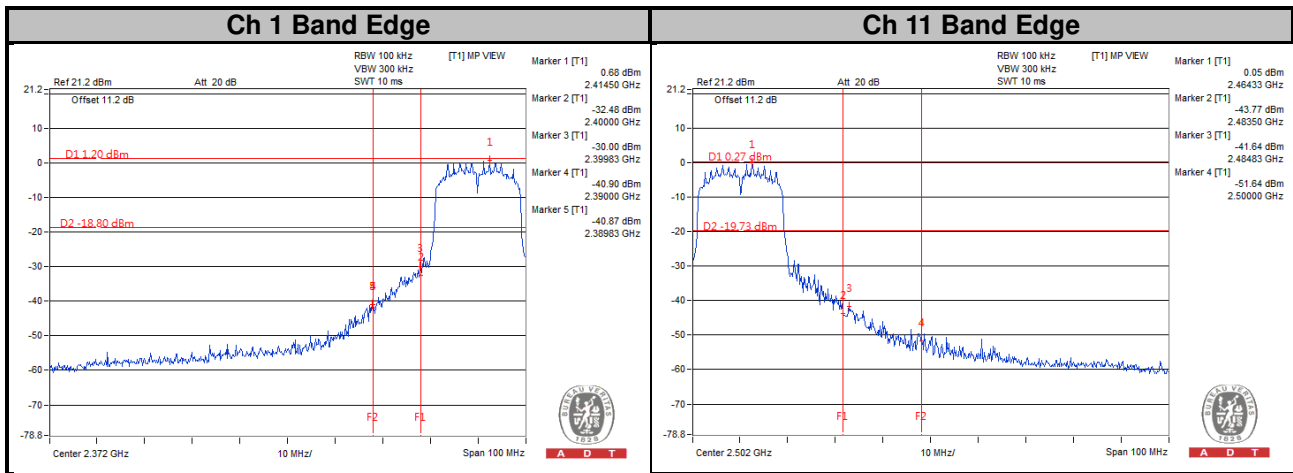


Ch 6



Ch 11



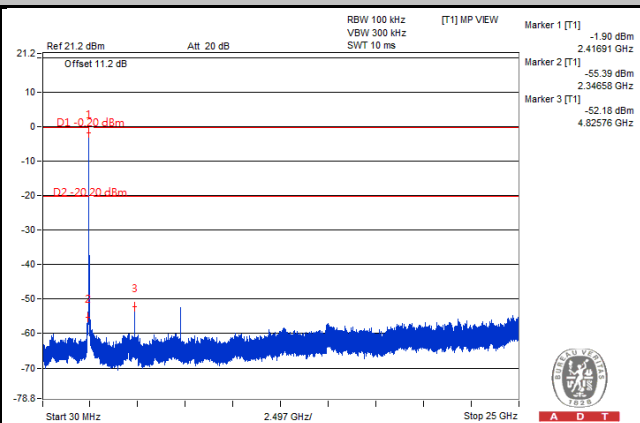
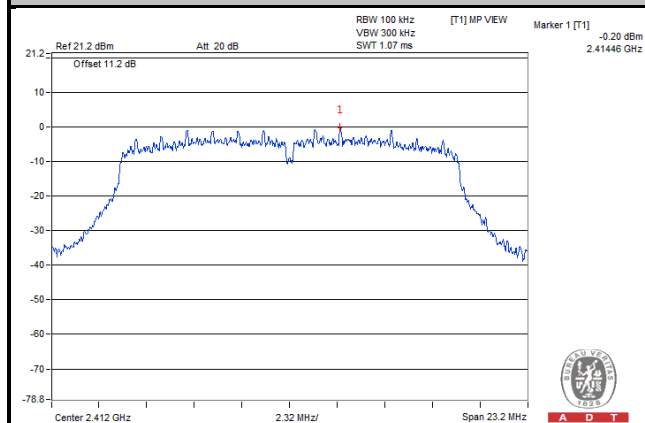


<2TX>

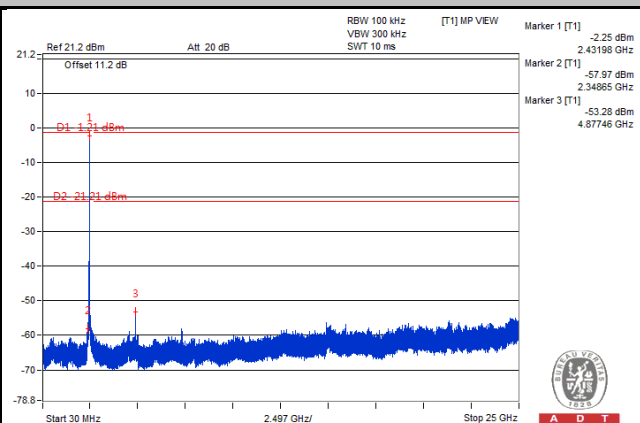
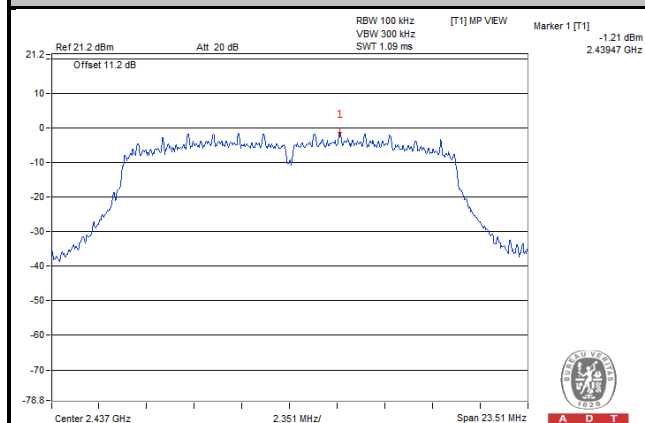
802.11g

CHAIN 0

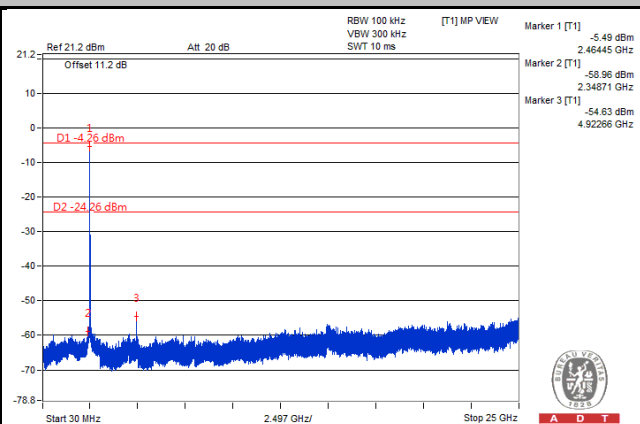
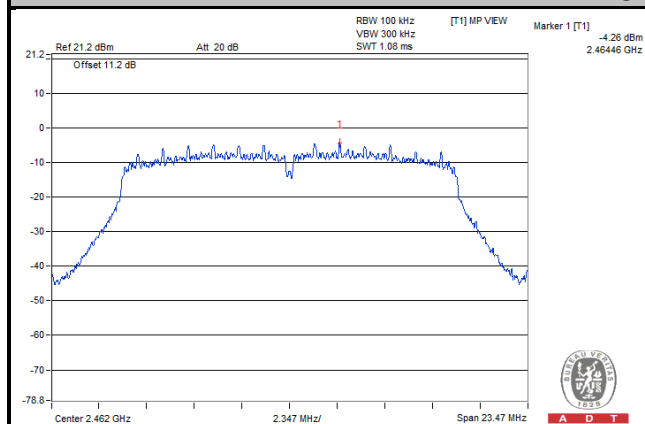
Ch 1

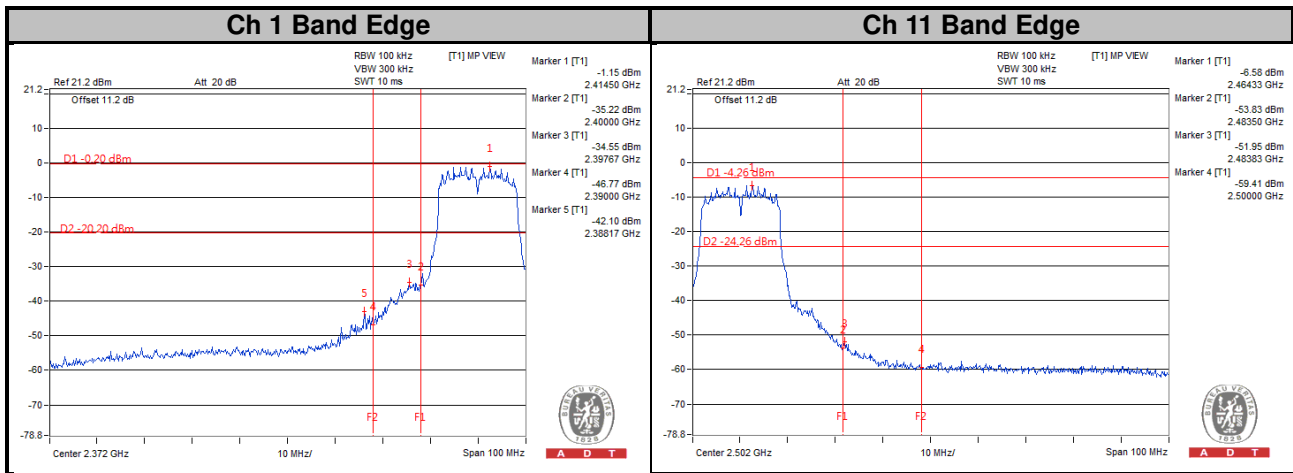


Ch 6



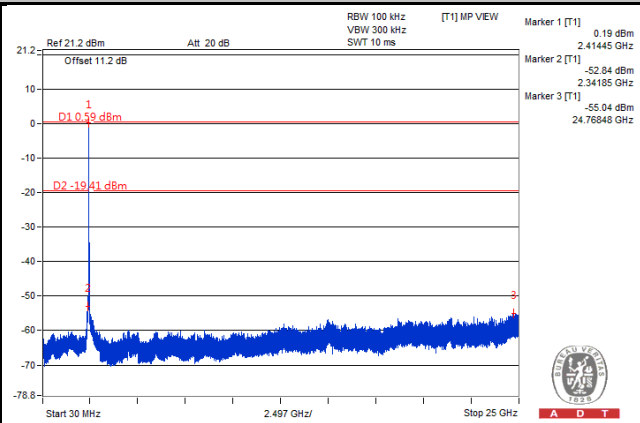
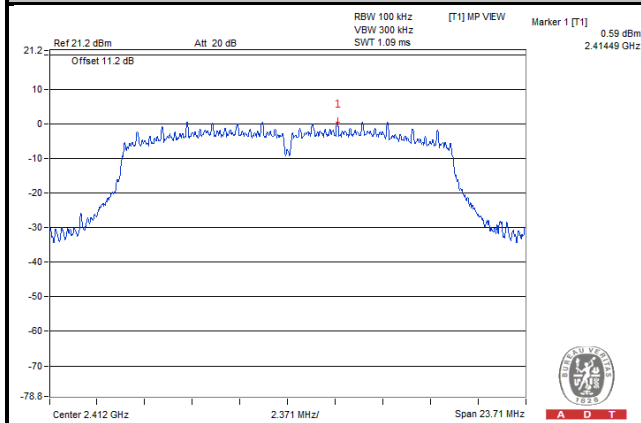
Ch 11



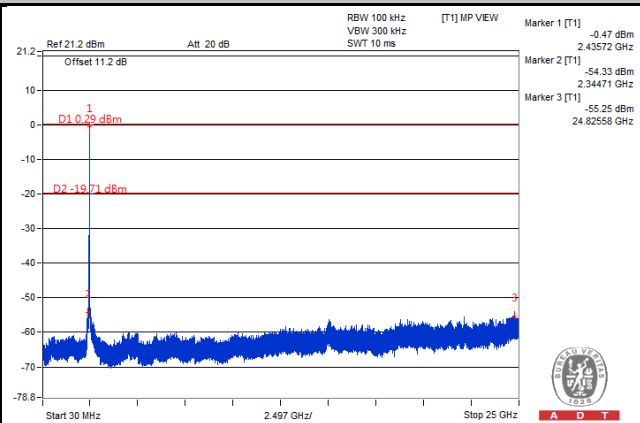
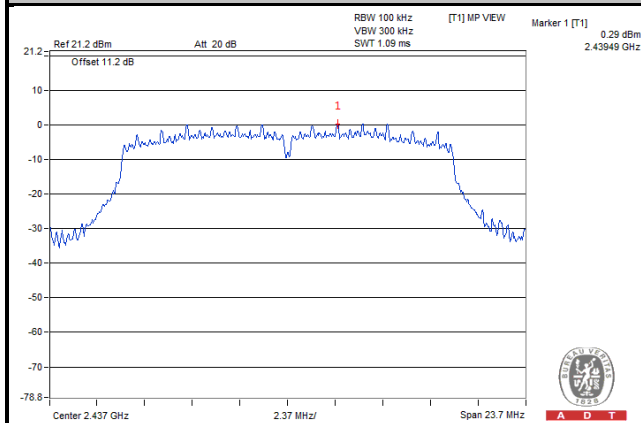


CHAIN 1

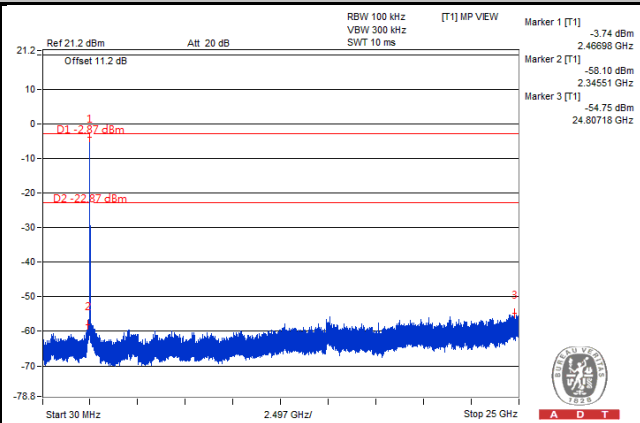
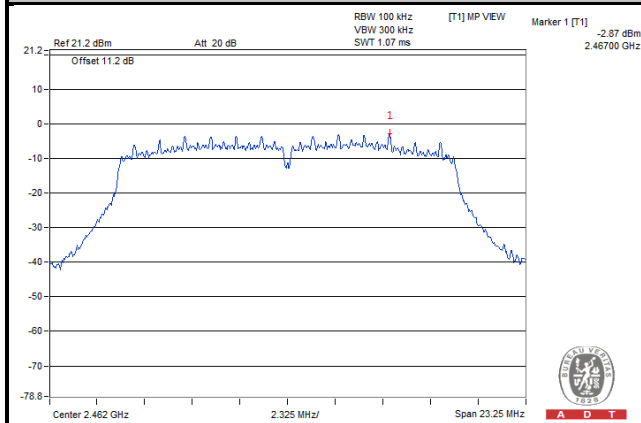
Ch 1

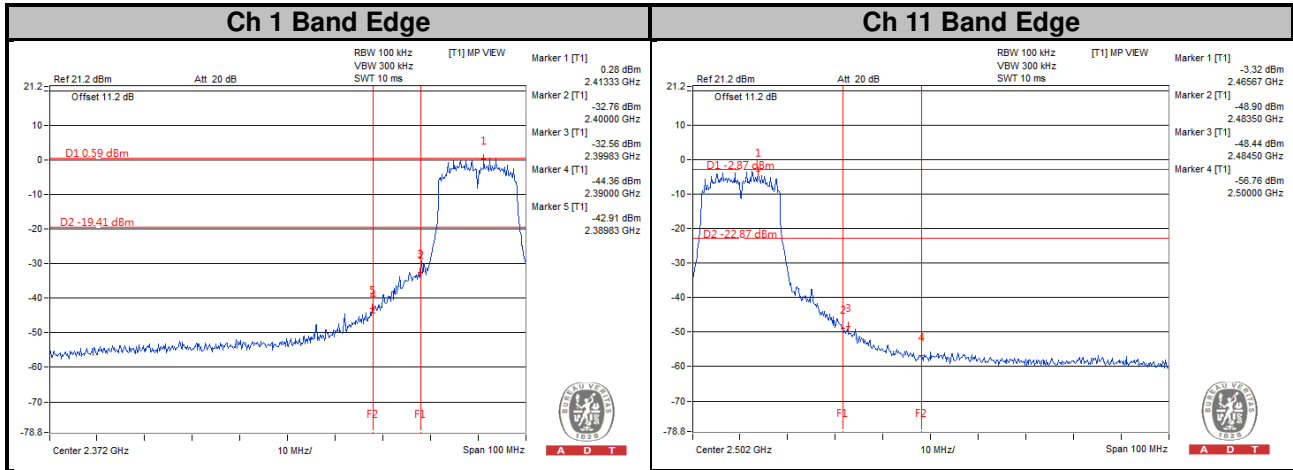


Ch 6



Ch 11

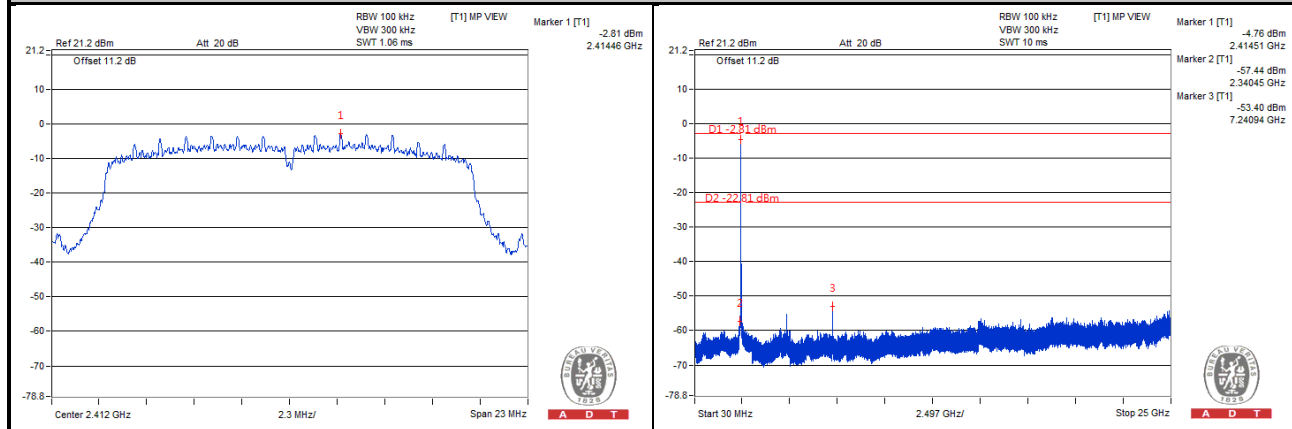




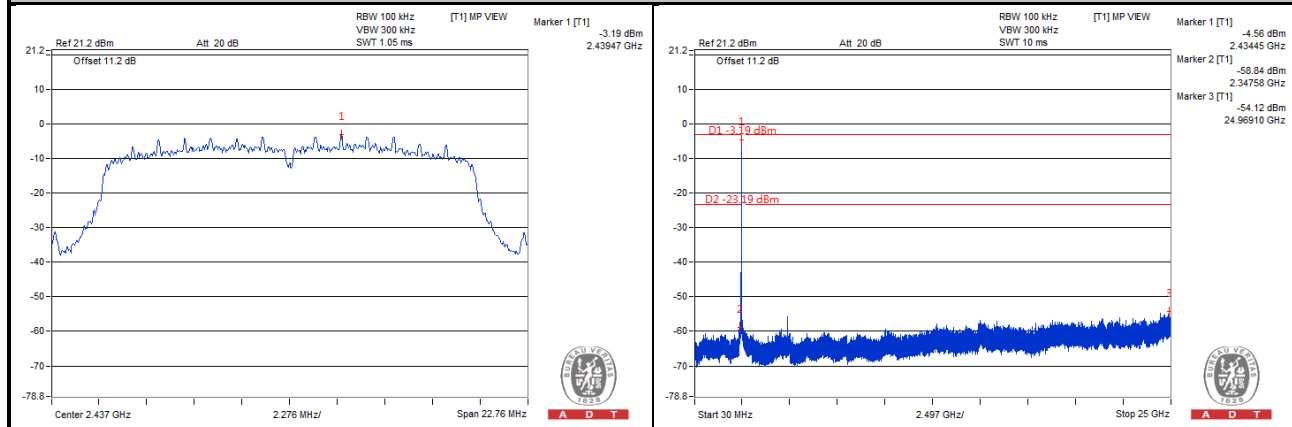
802.11n (HT20)

CHAIN 0

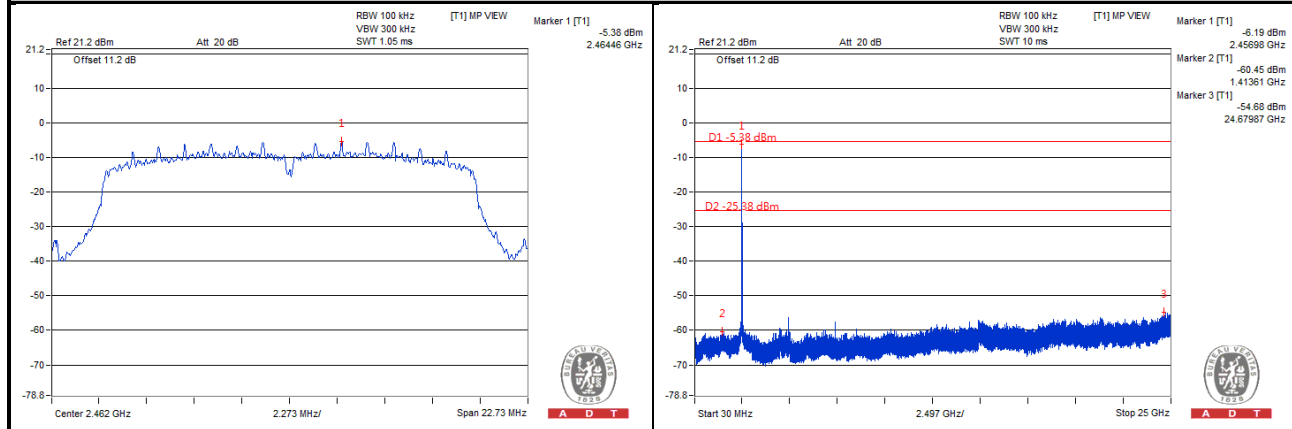
Ch 1

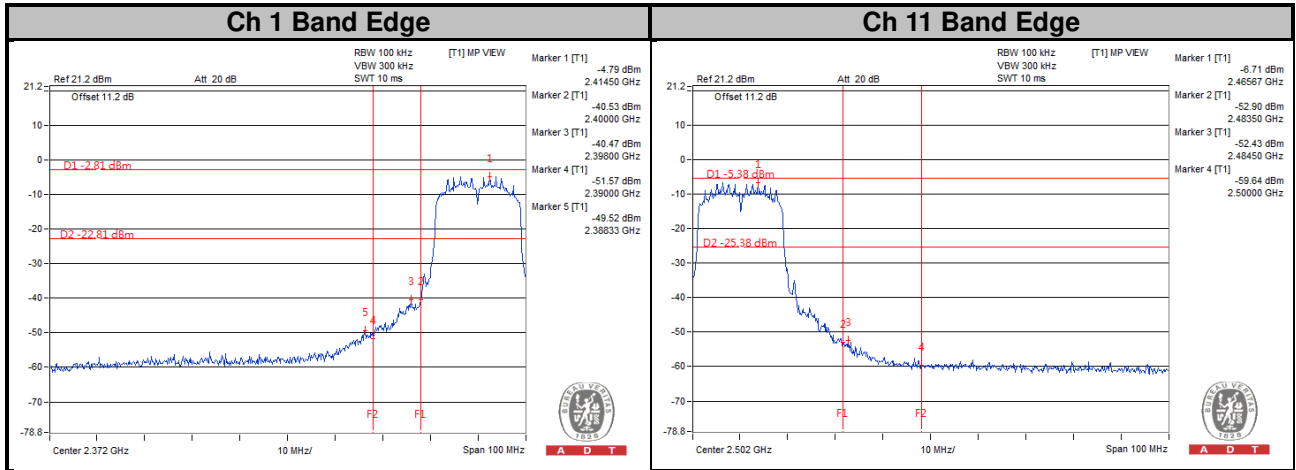


Ch 6



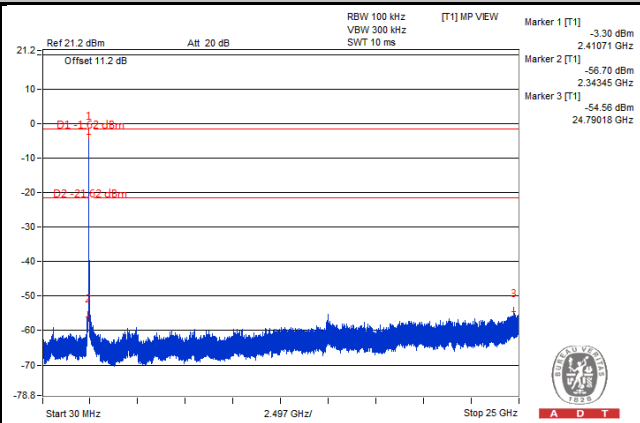
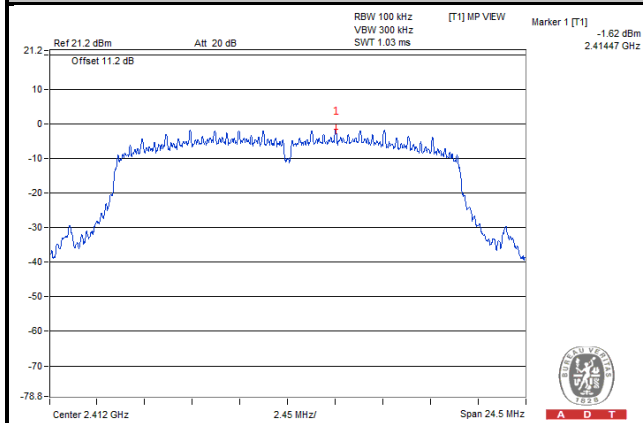
Ch 11



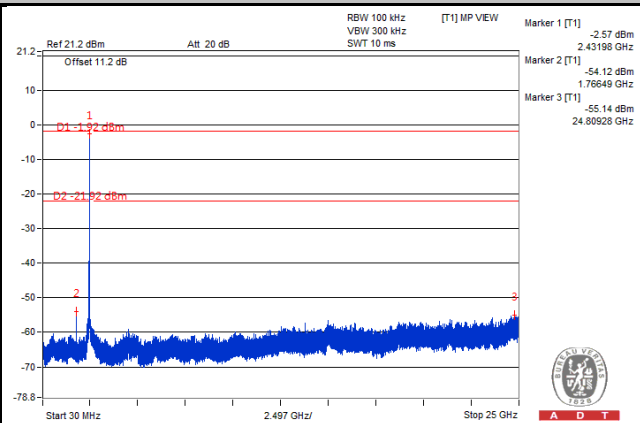
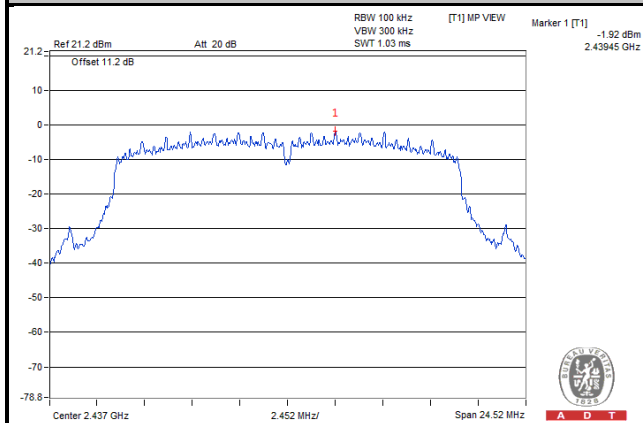


CHAIN 1

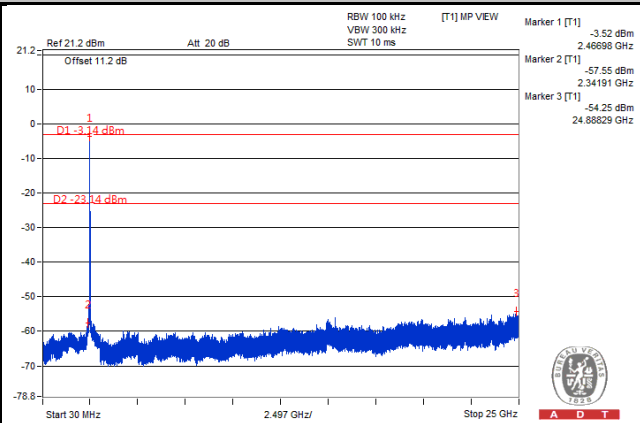
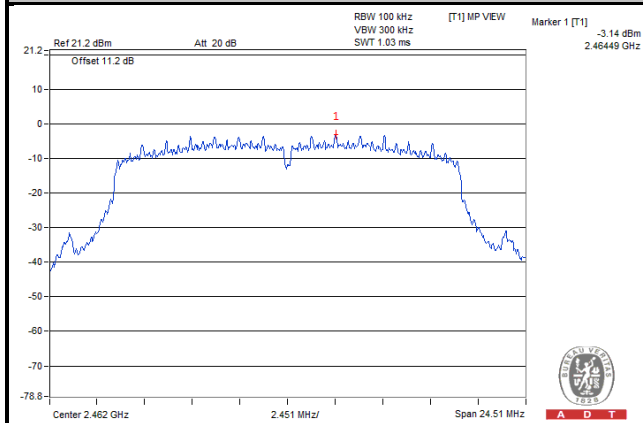
Ch 1

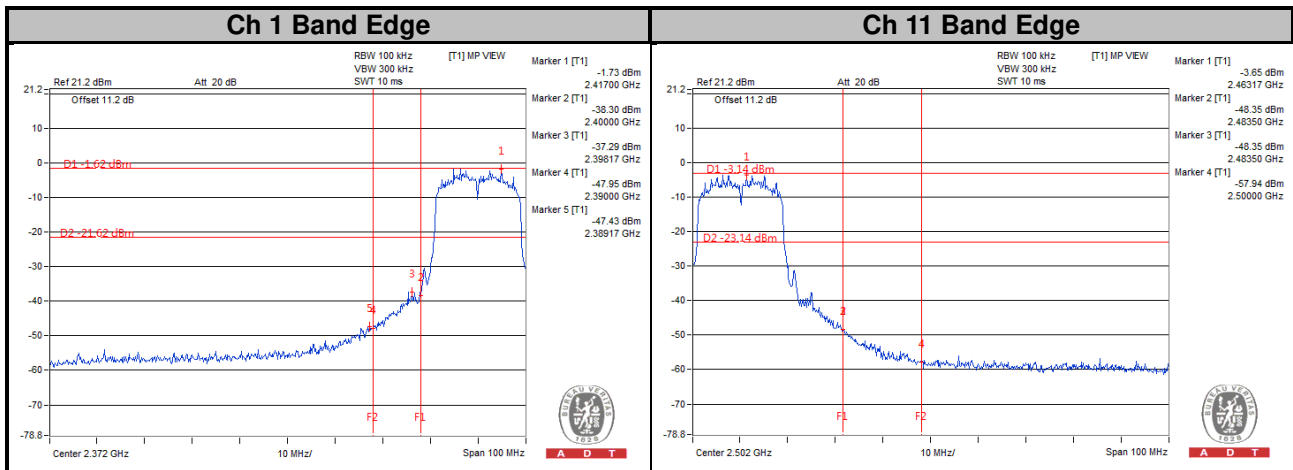


Ch 6



Ch 11





5 Pictures of Test Arrangements

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

Appendix – Information on 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 accredited and approved according to ISO/IEC 17025.

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

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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.

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