FCC Test Report

Report No.:	RF160707E01
FCC ID:	W59XWR1200
Test Model:	XWR-1200
Received Date:	July 07, 2016
Test Date:	July 25 to Aug. 02, 2016
Issued Date:	Aug. 23, 2016
Applicant:	Luxul Wireless
Address:	14203 Minuteman Dr Suite 201 Draper UT 84020 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Testing Laboratory
2022

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Release Control Record

Issue No.	Description	Date Issued
RF160707E01	Original release.	Aug. 23, 2016

1 Certificate of Conformity

Product:	Dual-Band AC1200 Gigabit Router
Brand:	Luxul
Test Model:	XWR-1200
Sample Status:	ENGINEERING SAMPLE
Applicant:	Luxul Wireless
Test Date:	July 25 to Aug. 02, 2016
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:** Aug. 23, 2016

Wendy Wu / Specialist

Approved by : _____ , **Date:** Aug. 23, 2016

May Chen / 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 -3.83dB at 0.41563MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz, 2390.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB 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	Antenna connector is R-SMA not a standard connector.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB
	1GHz ~ 6GHz	3.43 dB
Radiated Emissions above 1 GHz	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Dual-Band AC1200 Gigabit Router
Brand	Luxul
Test Model	XWR-1200
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC12V from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412GHz ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** 955.657mW **5.18GHz ~ 5.24GHz:** **CDD Mode:** 481.427mW **Beamforming Mode:** 481.427mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 370.019mW **Beamforming Mode:** 370.019mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	RJ45 cable x 1 (Unshielded, 31cm)

Note:

1. The EUT must be supplied from a power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.
1	LEI	MU24-Y120200-A1	Input: 100-240Vac, 0.7A, 50/60Hz Output: 12V, 2.0A DC output cable: Unshielded 1.2m
2	CWT	2ABL024F US	Input: 100/240Vac, 0.8A, 50/60Hz Output: 12V, 2.0A DC output cable: Unshielded 1.2m

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3. The antennas provided to the EUT, please refer to the following table:

Antenna No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (GHz ~ GHz)	Antenna Type	Connecter Type	Cable Length(mm)	Cable Loss(dB)
1	NA	290-20268	4	2.4~2.4835	Dipole	R-SMA	290	-0.41
			3.44	5.15~5.25				-1.01
			2.72	5.25~5.35				-1.01
			2.16	5.47~5.725				-1.01
			2.16	5.725~5.85				-1.01
2	NA	290-20268	4	2.4~2.4835	Dipole	R-SMA	290	-0.41
			3.44	5.15~5.25				-1.01
			2.72	5.25~5.35				-1.01
			2.16	5.47~5.725				-1.01
			2.16	5.725~5.85				-1.01

4. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	1TX Fixed Chain 0	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS 0~8, NSS=1	2TX	2RX
	MCS 0~8, NSS=2	2TX	2RX
802.11ac (VHT40)	MCS 0~9, NSS=1	2TX	2RX
	MCS 0~9, NSS=2	2TX	2RX
802.11ac (VHT80)	MCS 0~9, NSS=1	2TX	2RX
	MCS 0~9, NSS=2	2TX	2RX
Note: 1. All of modulation mode support beamforming function except 802.11a modulation mode and 2.4GHz band.			

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

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	-	Power from adapter 1
2	√	√	√	√	Power from adapter 2

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: 1. The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **X-plane**.
2. "-"means no effect.

Radiated Emission Test (Above 1GHz):

☒ 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

☒ 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

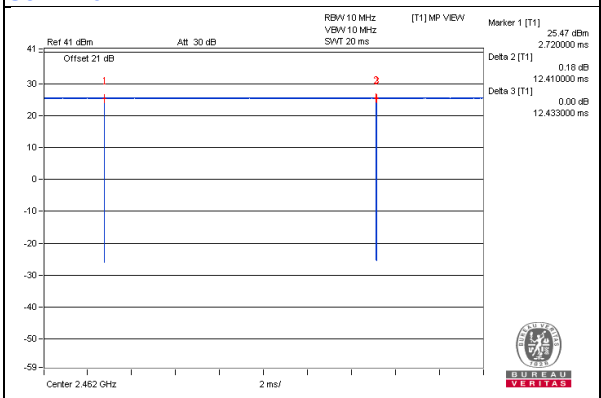
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	20deg. C, 63%RH 25deg. C, 65%RH	120Vac, 60Hz	Gary Cheng Russell Yeh
RE<1G	22deg. C, 64%RH	120Vac, 60Hz	Russell Yeh
PLC	25deg. C, 62%RH	120Vac, 60Hz	Jyunchun Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

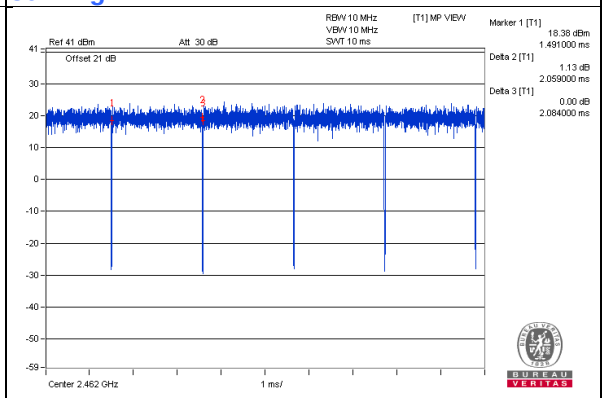
If duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11b: Duty cycle = 12.41/12.433 = 0.998
802.11g: Duty cycle = 2.059/2.084 = 0.988
802.11n (HT20): Duty cycle = 1.914/1.941 = 0.986
802.11n (HT40): Duty cycle = 1.225/1.248 = 0.982

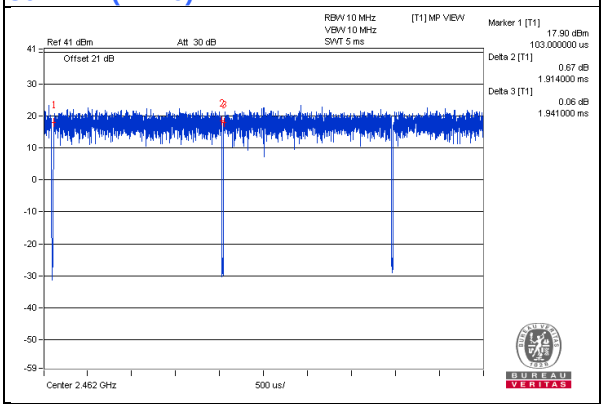
802.11b



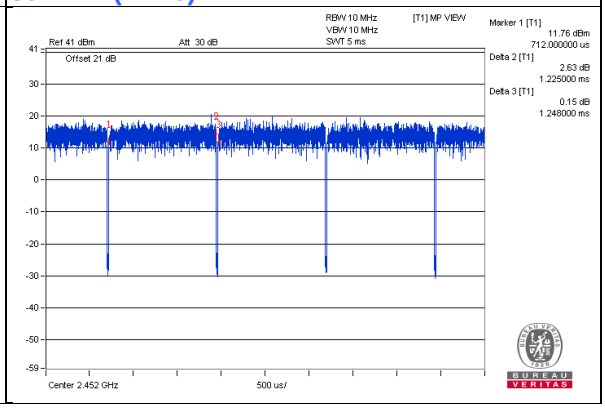
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

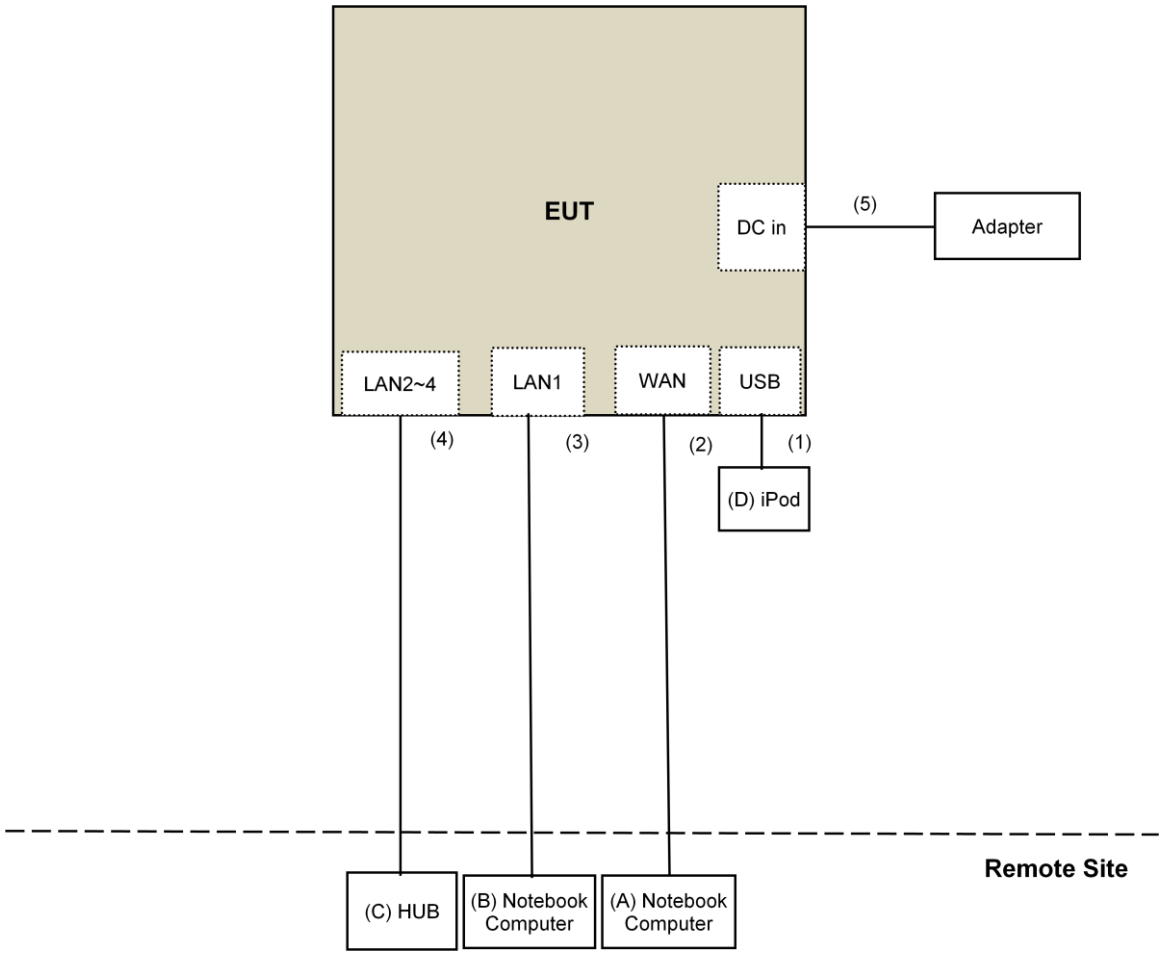
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	DELL	E5430	4YV4VY1	FCC DoC	Provided by Lab
B.	Notebook Computer	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab
D.	iPod	Apple	MC749TA/A	CC4DMFJUDFDM	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	0.1	Yes	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	RJ-45 Cable	3	10	No	0	Provided by Lab
5.	DC Cable	1	1.8	No	0	Supplied by client

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)
KDB 558074 D01 DTS Meas Guidance v03r05
KDB 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 20dB 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 1000MHz, 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 20dB under any condition of modulation.

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 20, 2016	July 19, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 02, 2016	Apr. 01, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 19, 2015	Sep. 18, 2016
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150318 150323 150324	Mar. 30, 2016	Mar. 29, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36441/2	Jan. 16, 2016	Jan. 15, 2017
Software	ADT_Radiated_V8.7.07	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSP40	100060	May 11, 2016	May 10, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 4, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 4, 2017

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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. 4.
5. The FCC Site Registration No. is 292998
6. The CANADA Site Registration No. is 20331-2
7 Tested Date: July 25 to Aug. 02, 2016

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) 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 detect 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:

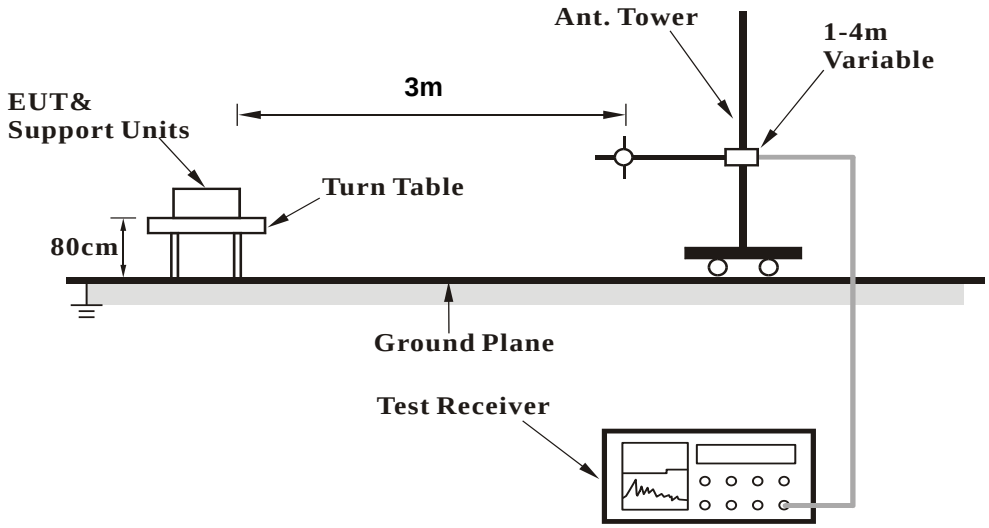
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

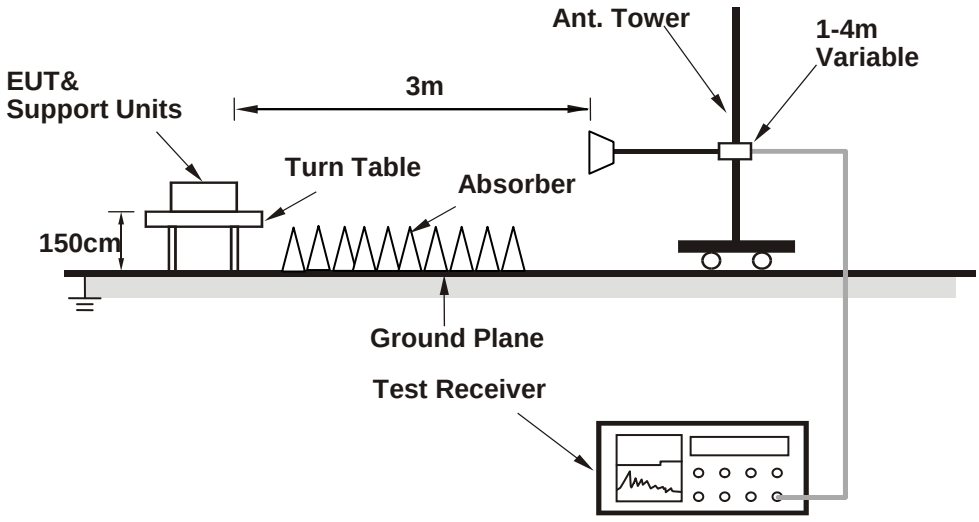
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Notebook Computer which is placed on remote site.
b. Contorlling software (Mtool 2.0.2.7.exe) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Above 1GHz Data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	53.8 PK	74.0	-20.2	1.32 H	133	59.4	-5.6
2	2390.00	41.7 AV	54.0	-12.3	1.32 H	133	47.3	-5.6
3	*2412.00	103.2 PK			1.32 H	133	108.7	-5.5
4	*2412.00	99.5 AV			1.32 H	133	105.0	-5.5
5	4824.00	46.9 PK	74.0	-27.1	3.00 H	68	46.0	0.9
6	4824.00	44.4 AV	54.0	-9.6	3.00 H	68	43.5	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.3 PK	74.0	-9.7	1.38 V	15	69.9	-5.6
2	2390.00	52.5 AV	54.0	-1.5	1.38 V	15	58.1	-5.6
3	*2412.00	114.5 PK			1.38 V	15	120.0	-5.5
4	*2412.00	109.2 AV			1.38 V	15	114.7	-5.5
5	4824.00	47.6 PK	74.0	-26.4	1.19 V	292	46.7	0.9
6	4824.00	44.8 AV	54.0	-9.2	1.19 V	292	43.9	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.0 PK			1.32 H	142	108.4	-5.4
2	*2437.00	98.7 AV			1.32 H	142	104.1	-5.4
3	4874.00	44.6 PK	74.0	-29.4	4.00 H	73	43.6	1.0
4	4874.00	42.3 AV	54.0	-11.7	4.00 H	73	41.3	1.0
5	7311.00	54.7 PK	74.0	-19.3	3.99 H	53	47.1	7.6
6	7311.00	47.8 AV	54.0	-6.2	3.99 H	53	40.2	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.5 PK			1.35 V	39	118.9	-5.4
2	*2437.00	109.1 AV			1.35 V	39	114.5	-5.4
3	4874.00	46.1 PK	74.0	-27.9	1.25 V	278	45.1	1.0
4	4874.00	43.4 AV	54.0	-10.6	1.25 V	278	42.4	1.0
5	7311.00	56.9 PK	74.0	-17.1	1.11 V	246	49.3	7.6
6	7311.00	51.2 AV	54.0	-2.8	1.11 V	246	43.6	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.2 PK			1.00 H	134	106.5	-5.3
2	*2462.00	96.8 AV			1.00 H	134	102.1	-5.3
3	2483.50	52.5 PK	74.0	-21.5	1.00 H	134	57.8	-5.3
4	2483.50	40.3 AV	54.0	-13.7	1.00 H	134	45.6	-5.3
5	4924.00	45.4 PK	74.0	-28.6	4.00 H	126	44.1	1.3
6	4924.00	42.6 AV	54.0	-11.4	4.00 H	126	41.3	1.3
7	7386.00	54.5 PK	74.0	-19.5	3.99 H	59	46.8	7.7
8	7386.00	47.9 AV	54.0	-6.1	3.99 H	59	40.2	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.5 PK			1.42 V	27	117.8	-5.3
2	*2462.00	108.9 AV			1.42 V	27	114.2	-5.3
3	2483.50	64.2 PK	74.0	-9.8	1.42 V	27	69.5	-5.3
4	2483.50	51.8 AV	54.0	-2.2	1.42 V	27	57.1	-5.3
5	4924.00	45.9 PK	74.0	-28.1	1.14 V	273	44.6	1.3
6	4924.00	43.3 AV	54.0	-10.7	1.14 V	273	42.0	1.3
7	7386.00	56.7 PK	74.0	-17.3	1.16 V	251	49.0	7.7
8	7386.00	50.8 AV	54.0	-3.2	1.16 V	251	43.1	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.9 PK	74.0	-11.1	1.33 H	157	68.5	-5.6
2	2390.00	40.7 AV	54.0	-13.3	1.33 H	157	46.3	-5.6
3	*2412.00	101.4 PK			1.33 H	157	106.9	-5.5
4	*2412.00	90.1 AV			1.33 H	157	95.6	-5.5
5	4824.00	45.2 PK	74.0	-28.8	4.00 H	80	44.3	0.9
6	4824.00	42.5 AV	54.0	-11.5	4.00 H	80	41.6	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.8 PK	74.0	-2.2	1.50 V	38	77.4	-5.6
2	2390.00	51.4 AV	54.0	-2.6	1.50 V	38	57.0	-5.6
3	*2412.00	111.9 PK			1.50 V	38	117.4	-5.5
4	*2412.00	100.4 AV			1.50 V	38	105.9	-5.5
5	4824.00	45.8 PK	74.0	-28.2	1.11 V	289	44.9	0.9
6	4824.00	43.1 AV	54.0	-10.9	1.11 V	289	42.2	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.9 PK	74.0	-17.1	1.32 H	140	62.5	-5.6
2	2390.00	40.1 AV	54.0	-13.9	1.32 H	140	45.7	-5.6
3	*2437.00	104.7 PK			1.32 H	140	110.1	-5.4
4	*2437.00	93.8 AV			1.32 H	140	99.2	-5.4
5	2483.50	61.3 PK	74.0	-12.7	1.32 H	140	66.6	-5.3
6	2483.50	42.5 AV	54.0	-11.5	1.32 H	140	47.8	-5.3
7	4874.00	44.6 PK	74.0	-29.4	4.00 H	88	43.6	1.0
8	4874.00	42.7 AV	54.0	-11.3	4.00 H	88	41.7	1.0
9	7311.00	53.5 PK	74.0	-20.5	4.00 H	59	45.9	7.6
10	7311.00	46.6 AV	54.0	-7.4	4.00 H	59	39.0	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.32 V	31	73.1	-5.6
2	2390.00	50.4 AV	54.0	-3.6	1.32 V	31	56.0	-5.6
3	*2437.00	115.4 PK			1.32 V	31	120.8	-5.4
4	*2437.00	104.3 AV			1.32 V	31	109.7	-5.4
5	2483.50	70.3 PK	74.0	-3.7	1.32 V	31	75.6	-5.3
6	2483.50	51.6 AV	54.0	-2.4	1.32 V	31	56.9	-5.3
7	4874.00	44.9 PK	74.0	-29.1	1.19 V	283	43.9	1.0
8	4874.00	43.0 AV	54.0	-11.0	1.19 V	283	42.0	1.0
9	7311.00	55.1 PK	74.0	-18.9	1.06 V	242	47.5	7.6
10	7311.00	48.2 AV	54.0	-5.8	1.06 V	242	40.6	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.1 PK			1.32 H	139	105.4	-5.3
2	*2462.00	89.3 AV			1.32 H	139	94.6	-5.3
3	2483.50	62.2 PK	74.0	-11.8	1.32 H	139	67.5	-5.3
4	2483.50	39.4 AV	54.0	-14.6	1.32 H	139	44.7	-5.3
5	4924.00	45.5 PK	74.0	-28.5	4.00 H	57	44.2	1.3
6	4924.00	42.4 AV	54.0	-11.6	4.00 H	57	41.1	1.3
7	7386.00	54.9 PK	74.0	-19.1	4.00 H	74	47.2	7.7
8	7386.00	47.8 AV	54.0	-6.2	4.00 H	74	40.1	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.3 PK			1.51 V	36	115.6	-5.3
2	*2462.00	99.3 AV			1.51 V	36	104.6	-5.3
3	2483.50	72.5 PK	74.0	-1.5	1.51 V	36	77.8	-5.3
4	2483.50	49.3 AV	54.0	-4.7	1.51 V	36	54.6	-5.3
5	4924.00	45.1 PK	74.0	-28.9	1.20 V	295	43.8	1.3
6	4924.00	42.1 AV	54.0	-11.9	1.20 V	295	40.8	1.3
7	7386.00	55.2 PK	74.0	-18.8	1.06 V	233	47.5	7.7
8	7386.00	48.0 AV	54.0	-6.0	1.06 V	233	40.3	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.9 PK	74.0	-11.1	1.32 H	137	68.5	-5.6
2	2390.00	40.1 AV	54.0	-13.9	1.32 H	137	45.7	-5.6
3	*2412.00	101.2 PK			1.32 H	137	106.7	-5.5
4	*2412.00	89.9 AV			1.32 H	137	95.4	-5.5
5	4824.00	45.5 PK	74.0	-28.5	4.00 H	97	44.6	0.9
6	4824.00	42.5 AV	54.0	-11.5	4.00 H	97	41.6	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.0 PK	74.0	-2.0	1.47 V	35	77.6	-5.6
2	2390.00	49.9 AV	54.0	-4.1	1.47 V	35	55.5	-5.6
3	*2412.00	110.7 PK			1.47 V	35	116.2	-5.5
4	*2412.00	98.7 AV			1.47 V	35	104.2	-5.5
5	4824.00	45.2 PK	74.0	-28.8	1.15 V	275	44.3	0.9
6	4824.00	43.1 AV	54.0	-10.9	1.15 V	275	42.2	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.4 PK	74.0	-16.6	1.24 H	135	63.0	-5.6
2	2390.00	40.2 AV	54.0	-13.8	1.24 H	135	45.8	-5.6
3	*2437.00	105.7 PK			1.24 H	135	111.1	-5.4
4	*2437.00	94.4 AV			1.24 H	135	99.8	-5.4
5	2483.50	61.5 PK	74.0	-12.5	1.24 H	135	66.8	-5.3
6	2483.50	42.8 AV	54.0	-11.2	1.24 H	135	48.1	-5.3
7	4874.00	46.8 PK	74.0	-27.2	3.99 H	69	45.8	1.0
8	4874.00	44.1 AV	54.0	-9.9	3.99 H	69	43.1	1.0
9	7311.00	55.9 PK	74.0	-18.1	4.00 H	42	48.3	7.6
10	7311.00	48.7 AV	54.0	-5.3	4.00 H	42	41.1	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.3 PK	74.0	-6.7	1.59 V	27	72.9	-5.6
2	2390.00	50.6 AV	54.0	-3.4	1.59 V	27	56.2	-5.6
3	*2437.00	115.3 PK			1.59 V	27	120.7	-5.4
4	*2437.00	103.8 AV			1.59 V	27	109.2	-5.4
5	2483.50	71.3 PK	74.0	-2.7	1.59 V	27	76.6	-5.3
6	2483.50	52.9 AV	54.0	-1.1	1.59 V	27	58.2	-5.3
7	4874.00	46.6 PK	74.0	-27.4	1.19 V	289	45.6	1.0
8	4874.00	44.1 AV	54.0	-9.9	1.19 V	289	43.1	1.0
9	7311.00	57.0 PK	74.0	-17.0	1.07 V	278	49.4	7.6
10	7311.00	49.6 AV	54.0	-4.4	1.07 V	278	42.0	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.4 PK			1.38 H	136	106.7	-5.3
2	*2462.00	89.6 AV			1.38 H	136	94.9	-5.3
3	2483.50	63.6 PK	74.0	-10.4	1.38 H	136	68.9	-5.3
4	2483.50	39.6 AV	54.0	-14.4	1.38 H	136	44.9	-5.3
5	4924.00	46.2 PK	74.0	-27.8	4.00 H	59	44.9	1.3
6	4924.00	43.9 AV	54.0	-10.1	4.00 H	59	42.6	1.3
7	7386.00	56.4 PK	74.0	-17.6	3.98 H	69	48.7	7.7
8	7386.00	49.1 AV	54.0	-4.9	3.98 H	69	41.4	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.8 PK			1.53 V	39	116.1	-5.3
2	*2462.00	99.4 AV			1.53 V	39	104.7	-5.3
3	2483.50	73.6 PK	74.0	-0.4	1.53 V	39	78.9	-5.3
4	2483.50	50.3 AV	54.0	-3.7	1.53 V	39	55.6	-5.3
5	4924.00	47.0 PK	74.0	-27.0	1.21 V	298	45.7	1.3
6	4924.00	44.4 AV	54.0	-9.6	1.21 V	298	43.1	1.3
7	7386.00	56.7 PK	74.0	-17.3	1.03 V	254	49.0	7.7
8	7386.00	49.8 AV	54.0	-4.2	1.03 V	254	42.1	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.9 PK	74.0	-10.1	1.26 H	149	69.5	-5.6
2	2390.00	43.8 AV	54.0	-10.2	1.26 H	149	49.4	-5.6
3	*2422.00	98.0 PK			1.26 H	149	103.4	-5.4
4	*2422.00	87.0 AV			1.26 H	149	92.4	-5.4
5	4844.00	47.1 PK	74.0	-26.9	4.00 H	79	46.2	0.9
6	4844.00	44.7 AV	54.0	-9.3	4.00 H	79	43.8	0.9
7	7266.00	55.5 PK	74.0	-18.5	4.00 H	50	47.8	7.7
8	7266.00	48.8 AV	54.0	-5.2	4.00 H	50	41.1	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.4 PK	74.0	-0.6	1.37 V	19	79.0	-5.6
2	2390.00	53.3 AV	54.0	-0.7	1.37 V	19	58.9	-5.6
3	*2422.00	107.8 PK			1.37 V	19	113.2	-5.4
4	*2422.00	97.0 AV			1.37 V	19	102.4	-5.4
5	4844.00	46.3 PK	74.0	-27.7	1.12 V	277	45.4	0.9
6	4844.00	43.6 AV	54.0	-10.4	1.12 V	277	42.7	0.9
7	7266.00	55.8 PK	74.0	-18.2	1.04 V	271	48.1	7.7
8	7266.00	48.8 AV	54.0	-5.2	1.04 V	271	41.1	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	1.32 H	143	66.4	-5.6
2	2390.00	43.0 AV	54.0	-11.0	1.32 H	143	48.6	-5.6
3	*2437.00	99.9 PK			1.32 H	143	105.3	-5.4
4	*2437.00	87.8 AV			1.32 H	143	93.2	-5.4
5	2483.50	62.7 PK	74.0	-11.3	1.32 H	143	68.0	-5.3
6	2483.50	42.8 AV	54.0	-11.2	1.32 H	143	48.1	-5.3
7	4874.00	46.4 PK	74.0	-27.6	4.00 H	79	45.4	1.0
8	4874.00	44.0 AV	54.0	-10.0	4.00 H	79	43.0	1.0
9	7311.00	56.8 PK	74.0	-17.2	4.00 H	43	49.2	7.6
10	7311.00	49.7 AV	54.0	-4.3	4.00 H	43	42.1	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.6 PK	74.0	-2.4	1.58 V	44	77.2	-5.6
2	2390.00	53.0 AV	54.0	-1.0	1.58 V	44	58.6	-5.6
3	*2437.00	110.5 PK			1.58 V	44	115.9	-5.4
4	*2437.00	98.4 AV			1.58 V	44	103.8	-5.4
5	2483.50	73.2 PK	74.0	-0.8	1.58 V	44	78.5	-5.3
6	2483.50	53.2 AV	54.0	-0.8	1.58 V	44	58.5	-5.3
7	4874.00	46.9 PK	74.0	-27.1	1.21 V	313	45.9	1.0
8	4874.00	44.2 AV	54.0	-9.8	1.21 V	313	43.2	1.0
9	7311.00	56.5 PK	74.0	-17.5	1.05 V	248	48.9	7.6
10	7311.00	49.1 AV	54.0	-4.9	1.05 V	248	41.5	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.3 PK			1.61 H	142	101.7	-5.4
2	*2452.00	85.0 AV			1.61 H	142	90.4	-5.4
3	2483.50	61.2 PK	74.0	-12.8	1.61 H	142	66.5	-5.3
4	2483.50	41.3 AV	54.0	-12.7	1.61 H	142	46.6	-5.3
5	4904.00	46.8 PK	74.0	-27.2	4.00 H	89	45.6	1.2
6	4904.00	44.3 AV	54.0	-9.7	4.00 H	89	43.1	1.2
7	7356.00	57.4 PK	74.0	-16.6	4.00 H	55	49.7	7.7
8	7356.00	49.9 AV	54.0	-4.1	4.00 H	55	42.2	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.3 PK			1.46 V	47	111.7	-5.4
2	*2452.00	94.8 AV			1.46 V	47	100.2	-5.4
3	2483.50	73.2 PK	74.0	-0.8	1.46 V	47	78.5	-5.3
4	2483.50	51.5 AV	54.0	-2.5	1.46 V	47	56.8	-5.3
5	4904.00	47.0 PK	74.0	-27.0	1.20 V	290	45.8	1.2
6	4904.00	44.4 AV	54.0	-9.6	1.20 V	290	43.2	1.2
7	7356.00	56.6 PK	74.0	-17.4	1.05 V	245	48.9	7.7
8	7356.00	49.6 AV	54.0	-4.4	1.05 V	245	41.9	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Below 1GHz Data:

802.11n (HT20)

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.44	32.4 QP	40.0	-7.6	1.50 H	234	41.4	-9.0
2	84.16	31.5 QP	40.0	-8.5	2.00 H	106	45.7	-14.2
3	158.86	28.5 QP	43.5	-15.0	1.50 H	262	37.0	-8.5
4	250.13	26.4 QP	46.0	-19.6	1.00 H	142	36.4	-10.0
5	385.23	30.6 QP	46.0	-15.4	1.00 H	306	36.5	-5.9
6	799.23	35.3 QP	46.0	-10.7	1.00 H	179	32.8	2.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	59.57	35.3 QP	40.0	-4.7	1.00 V	185	44.3	-9.0
2	156.88	33.3 QP	43.5	-10.2	1.00 V	103	41.9	-8.6
3	196.65	30.2 QP	43.5	-13.3	1.50 V	115	42.1	-11.9
4	391.09	31.6 QP	46.0	-14.4	1.50 V	316	37.2	-5.6
5	658.47	31.5 QP	46.0	-14.5	2.50 V	133	31.4	0.1
6	799.63	40.7 QP	46.0	-5.3	2.00 V	173	38.2	2.5

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.1.8 Test Results (Mode 2)

Above 1GHz Data:

802.11b

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	55.1 PK	74.0	-18.9	1.33 H	146	60.7	-5.6
2	2390.00	43.4 AV	54.0	-10.6	1.33 H	146	49.0	-5.6
3	*2412.00	104.8 PK			1.33 H	146	110.3	-5.5
4	*2412.00	100.6 AV			1.33 H	146	106.1	-5.5
5	4824.00	47.2 PK	74.0	-26.8	4.00 H	79	46.3	0.9
6	4824.00	44.7 AV	54.0	-9.3	4.00 H	79	43.8	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	65.7 PK	74.0	-8.3	1.41 V	30	71.3	-5.6
2	2390.00	53.7 AV	54.0	-0.3	1.41 V	30	59.3	-5.6
3	*2412.00	115.0 PK			1.41 V	30	120.5	-5.5
4	*2412.00	110.9 AV			1.41 V	30	116.4	-5.5
5	4824.00	47.1 PK	74.0	-26.9	1.17 V	294	46.2	0.9
6	4824.00	44.4 AV	54.0	-9.6	1.17 V	294	43.5	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.0 PK			1.33 H	131	110.4	-5.4
2	*2437.00	100.6 AV			1.33 H	131	106.0	-5.4
3	4874.00	46.8 PK	74.0	-27.2	4.00 H	86	45.8	1.0
4	4874.00	44.2 AV	54.0	-9.8	4.00 H	86	43.2	1.0
5	7311.00	56.1 PK	74.0	-17.9	4.00 H	52	48.5	7.6
6	7311.00	49.2 AV	54.0	-4.8	4.00 H	52	41.6	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	114.4 PK			1.39 V	44	119.8	-5.4
2	*2437.00	110.2 AV			1.39 V	44	115.6	-5.4
3	4874.00	47.0 PK	74.0	-27.0	1.20 V	284	46.0	1.0
4	4874.00	44.4 AV	54.0	-9.6	1.20 V	284	43.4	1.0
5	7311.00	58.7 PK	74.0	-15.3	1.05 V	250	51.1	7.6
6	7311.00	53.2 AV	54.0	-0.8	1.05 V	250	45.6	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.0 PK			1.06 H	148	107.3	-5.3
2	*2462.00	98.0 AV			1.06 H	148	103.3	-5.3
3	2483.50	54.1 PK	74.0	-19.9	1.06 H	148	59.4	-5.3
4	2483.50	42.2 AV	54.0	-11.8	1.06 H	148	47.5	-5.3
5	4924.00	46.9 PK	74.0	-27.1	4.00 H	99	45.6	1.3
6	4924.00	44.0 AV	54.0	-10.0	4.00 H	99	42.7	1.3
7	7386.00	56.3 PK	74.0	-17.7	3.99 H	44	48.6	7.7
8	7386.00	49.4 AV	54.0	-4.6	3.99 H	44	41.7	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.3 PK			1.42 V	31	119.6	-5.3
2	*2462.00	110.4 AV			1.42 V	31	115.7	-5.3
3	2483.50	65.6 PK	74.0	-8.4	1.42 V	31	70.9	-5.3
4	2483.50	53.8 AV	54.0	-0.2	1.42 V	31	59.1	-5.3
5	4924.00	47.4 PK	74.0	-26.6	1.19 V	274	46.1	1.3
6	4924.00	44.6 AV	54.0	-9.4	1.19 V	274	43.3	1.3
7	7386.00	58.5 PK	74.0	-15.5	1.09 V	247	50.8	7.7
8	7386.00	53.0 AV	54.0	-1.0	1.09 V	247	45.3	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.2 PK	74.0	-9.8	1.34 H	144	69.8	-5.6
2	2390.00	42.0 AV	54.0	-12.0	1.34 H	144	47.6	-5.6
3	*2412.00	102.3 PK			1.34 H	144	107.8	-5.5
4	*2412.00	91.2 AV			1.34 H	144	96.7	-5.5
5	4824.00	46.5 PK	74.0	-27.5	3.97 H	94	45.6	0.9
6	4824.00	43.9 AV	54.0	-10.1	3.97 H	94	43.0	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.8 PK	74.0	-0.2	1.53 V	34	79.4	-5.6
2	2390.00	53.5 AV	54.0	-0.5	1.53 V	34	59.1	-5.6
3	*2412.00	113.3 PK			1.53 V	34	118.8	-5.5
4	*2412.00	102.0 AV			1.53 V	34	107.5	-5.5
5	4824.00	47.2 PK	74.0	-26.8	1.17 V	292	46.3	0.9
6	4824.00	44.4 AV	54.0	-9.6	1.17 V	292	43.5	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	1.34 H	144	63.8	-5.6
2	2390.00	41.3 AV	54.0	-12.7	1.34 H	144	46.9	-5.6
3	*2437.00	106.4 PK			1.34 H	144	111.8	-5.4
4	*2437.00	95.3 AV			1.34 H	144	100.7	-5.4
5	2483.50	62.3 PK	74.0	-11.7	1.34 H	144	67.6	-5.3
6	2483.50	43.6 AV	54.0	-10.4	1.34 H	144	48.9	-5.3
7	4874.00	46.8 PK	74.0	-27.2	4.00 H	78	45.8	1.0
8	4874.00	44.4 AV	54.0	-9.6	4.00 H	78	43.4	1.0
9	7311.00	55.4 PK	74.0	-18.6	4.00 H	63	47.8	7.6
10	7311.00	48.8 AV	54.0	-5.2	4.00 H	63	41.2	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.9 PK	74.0	-5.1	1.32 V	37	74.5	-5.6
2	2390.00	51.8 AV	54.0	-2.2	1.32 V	37	57.4	-5.6
3	*2437.00	116.3 PK			1.32 V	37	121.7	-5.4
4	*2437.00	105.3 AV			1.32 V	37	110.7	-5.4
5	2483.50	72.4 PK	74.0	-1.6	1.32 V	37	77.7	-5.3
6	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.32 V**	**37**	**59.2**	**-5.3**
7	4874.00	46.9 PK	74.0	-27.1	1.20 V	292	45.9	1.0
8	4874.00	44.3 AV	54.0	-9.7	1.20 V	292	43.3	1.0
9	7311.00	56.7 PK	74.0	-17.3	1.05 V	256	49.1	7.6
10	7311.00	49.6 AV	54.0	-4.4	1.05 V	256	42.0	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.3 PK			1.32 H	154	106.6	-5.3
2	*2462.00	90.2 AV			1.32 H	154	95.5	-5.3
3	2483.50	63.8 PK	74.0	-10.2	1.32 H	154	69.1	-5.3
4	2483.50	40.2 AV	54.0	-13.8	1.32 H	154	45.5	-5.3
5	4924.00	46.6 PK	74.0	-27.4	3.97 H	70	45.3	1.3
6	4924.00	43.8 AV	54.0	-10.2	3.97 H	70	42.5	1.3
7	7386.00	56.3 PK	74.0	-17.7	4.00 H	61	48.6	7.7
8	7386.00	49.4 AV	54.0	-4.6	4.00 H	61	41.7	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.1 PK			1.53 V	36	116.4	-5.3
2	*2462.00	100.1 AV			1.53 V	36	105.4	-5.3
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**1.53 V**	**36**	**79.2**	**-5.3**
4	2483.50	50.2 AV	54.0	-3.8	1.53 V	36	55.5	-5.3
5	4924.00	46.2 PK	74.0	-27.8	1.15 V	289	44.9	1.3
6	4924.00	43.8 AV	54.0	-10.2	1.15 V	289	42.5	1.3
7	7386.00	56.6 PK	74.0	-17.4	1.05 V	246	48.9	7.7
8	7386.00	49.3 AV	54.0	-4.7	1.05 V	246	41.6	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.2 PK	74.0	-9.8	1.29 H	129	69.8	-5.6
2	2390.00	41.6 AV	54.0	-12.4	1.29 H	129	47.2	-5.6
3	*2412.00	102.3 PK			1.29 H	129	107.8	-5.5
4	*2412.00	91.3 AV			1.29 H	129	96.8	-5.5
5	4824.00	47.1 PK	74.0	-26.9	4.00 H	90	46.2	0.9
6	4824.00	44.8 AV	54.0	-9.2	4.00 H	90	43.9	0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**2390.00**	**73.9 PK**	**74.0**	**-0.1**	**1.49 V**	**32**	**79.5**	**-5.6**
2	2390.00	51.6 AV	54.0	-2.4	1.49 V	32	57.2	-5.6
3	*2412.00	112.0 PK			1.49 V	32	117.5	-5.5
4	*2412.00	100.9 AV			1.49 V	32	106.4	-5.5
5	4824.00	46.9 PK	74.0	-27.1	1.20 V	280	46.0	0.9
6	4824.00	44.5 AV	54.0	-9.5	1.20 V	280	43.6	0.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.1 PK	74.0	-16.9	1.30 H	141	62.7	-5.6
2	2390.00	40.1 AV	54.0	-13.9	1.30 H	141	45.7	-5.6
3	*2437.00	105.5 PK			1.30 H	141	110.9	-5.4
4	*2437.00	94.1 AV			1.30 H	141	99.5	-5.4
5	2483.50	61.9 PK	74.0	-12.1	1.30 H	141	67.2	-5.3
6	2483.50	43.3 AV	54.0	-10.7	1.30 H	141	48.6	-5.3
7	4874.00	46.8 PK	74.0	-27.2	3.99 H	76	45.8	1.0
8	4874.00	44.4 AV	54.0	-9.6	3.99 H	76	43.4	1.0
9	7311.00	55.8 PK	74.0	-18.2	3.98 H	48	48.2	7.6
10	7311.00	48.8 AV	54.0	-5.2	3.98 H	48	41.2	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.3 PK	74.0	-6.7	1.62 V	37	72.9	-5.6
2	2390.00	50.4 AV	54.0	-3.6	1.62 V	37	56.0	-5.6
3	*2437.00	115.7 PK			1.62 V	37	121.1	-5.4
4	*2437.00	104.3 AV			1.62 V	37	109.7	-5.4
5	2483.50	71.4 PK	74.0	-2.6	1.62 V	37	76.7	-5.3
6	2483.50	53.0 AV	54.0	-1.0	1.62 V	37	58.3	-5.3
7	4874.00	46.6 PK	74.0	-27.4	1.22 V	295	45.6	1.0
8	4874.00	43.8 AV	54.0	-10.2	1.22 V	295	42.8	1.0
9	7311.00	56.6 PK	74.0	-17.4	1.07 V	270	49.0	7.6
10	7311.00	49.2 AV	54.0	-4.8	1.07 V	270	41.6	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.7 PK			1.37 H	128	106.0	-5.3
2	*2462.00	89.2 AV			1.37 H	128	94.5	-5.3
3	2483.50	64.2 PK	74.0	-9.8	1.37 H	128	69.5	-5.3
4	2483.50	40.1 AV	54.0	-13.9	1.37 H	128	45.4	-5.3
5	4924.00	46.5 PK	74.0	-27.5	3.99 H	73	45.2	1.3
6	4924.00	44.1 AV	54.0	-9.9	3.99 H	73	42.8	1.3
7	7386.00	56.5 PK	74.0	-17.5	4.00 H	67	48.8	7.7
8	7386.00	49.4 AV	54.0	-4.6	4.00 H	67	41.7	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.9 PK			1.49 V	32	116.2	-5.3
2	*2462.00	99.6 AV			1.49 V	32	104.9	-5.3
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**1.49 V**	**32**	**79.2**	**-5.3**
4	2483.50	50.1 AV	54.0	-3.9	1.49 V	32	55.4	-5.3
5	4924.00	47.5 PK	74.0	-26.5	1.20 V	302	46.2	1.3
6	4924.00	44.6 AV	54.0	-9.4	1.20 V	302	43.3	1.3
7	7386.00	56.8 PK	74.0	-17.2	1.06 V	247	49.1	7.7
8	7386.00	49.6 AV	54.0	-4.4	1.06 V	247	41.9	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.5 PK	74.0	-10.5	1.29 H	148	69.1	-5.6
2	2390.00	43.5 AV	54.0	-10.5	1.29 H	148	49.1	-5.6
3	*2422.00	97.7 PK			1.29 H	148	103.1	-5.4
4	*2422.00	86.7 AV			1.29 H	148	92.1	-5.4
5	4844.00	47.3 PK	74.0	-26.7	4.00 H	78	46.4	0.9
6	4844.00	44.7 AV	54.0	-9.3	4.00 H	78	43.8	0.9
7	7266.00	55.7 PK	74.0	-18.3	4.00 H	44	48.0	7.7
8	7266.00	48.8 AV	54.0	-5.2	4.00 H	44	41.1	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.8 PK	74.0	-0.2	1.36 V	34	79.4	-5.6
2	2390.00	53.7 AV	54.0	-0.3	1.36 V	34	59.3	-5.6
3	*2422.00	107.6 PK			1.36 V	34	113.0	-5.4
4	*2422.00	96.6 AV			1.36 V	34	102.0	-5.4
5	4844.00	46.5 PK	74.0	-27.5	1.15 V	284	45.6	0.9
6	4844.00	43.9 AV	54.0	-10.1	1.15 V	284	43.0	0.9
7	7266.00	56.2 PK	74.0	-17.8	1.04 V	257	48.5	7.7
8	7266.00	49.1 AV	54.0	-4.9	1.04 V	257	41.4	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.4 PK	74.0	-12.6	1.35 H	156	67.0	-5.6
2	2390.00	43.4 AV	54.0	-10.6	1.35 H	156	49.0	-5.6
3	*2437.00	100.0 PK			1.35 H	156	105.4	-5.4
4	*2437.00	88.1 AV			1.35 H	156	93.5	-5.4
5	2483.50	62.9 PK	74.0	-11.1	1.35 H	156	68.2	-5.3
6	2483.50	43.3 AV	54.0	-10.7	1.35 H	156	48.6	-5.3
7	4874.00	46.6 PK	74.0	-27.4	4.00 H	82	45.6	1.0
8	4874.00	44.2 AV	54.0	-9.8	4.00 H	82	43.2	1.0
9	7311.00	56.3 PK	74.0	-17.7	4.00 H	53	48.7	7.6
10	7311.00	49.4 AV	54.0	-4.6	4.00 H	53	41.8	7.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.1 PK	74.0	-2.9	1.55 V	34	76.7	-5.6
2	2390.00	53.2 AV	54.0	-0.8	1.55 V	34	58.8	-5.6
3	*2437.00	110.2 PK			1.55 V	34	115.6	-5.4
4	*2437.00	98.3 AV			1.55 V	34	103.7	-5.4
5	2483.50	73.1 PK	74.0	-0.9	1.55 V	34	78.4	-5.3
6	2483.50	53.5 AV	54.0	-0.5	1.55 V	34	58.8	-5.3
7	4874.00	46.8 PK	74.0	-27.2	1.22 V	298	45.8	1.0
8	4874.00	44.2 AV	54.0	-9.8	1.22 V	298	43.2	1.0
9	7311.00	56.7 PK	74.0	-17.3	1.00 V	264	49.1	7.6
10	7311.00	49.5 AV	54.0	-4.5	1.00 V	264	41.9	7.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.1 PK			1.59 H	144	101.5	-5.4
2	*2452.00	85.1 AV			1.59 H	144	90.5	-5.4
3	2483.50	60.8 PK	74.0	-13.2	1.59 H	144	66.1	-5.3
4	2483.50	41.0 AV	54.0	-13.0	1.59 H	144	46.3	-5.3
5	4904.00	46.6 PK	74.0	-27.4	4.00 H	84	45.4	1.2
6	4904.00	43.9 AV	54.0	-10.1	4.00 H	84	42.7	1.2
7	7356.00	56.8 PK	74.0	-17.2	4.00 H	48	49.1	7.7
8	7356.00	49.6 AV	54.0	-4.4	4.00 H	48	41.9	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.8 PK			1.47 V	35	112.2	-5.4
2	*2452.00	95.3 AV			1.47 V	35	100.7	-5.4
3	2483.50	73.8 PK	74.0	-0.2	1.47 V	35	79.1	-5.3
4	2483.50	51.9 AV	54.0	-2.1	1.47 V	35	57.2	-5.3
5	4904.00	47.2 PK	74.0	-26.8	1.16 V	287	46.0	1.2
6	4904.00	44.4 AV	54.0	-9.6	1.16 V	287	43.2	1.2
7	7356.00	56.8 PK	74.0	-17.2	1.00 V	246	49.1	7.7
8	7356.00	49.9 AV	54.0	-4.1	1.00 V	246	42.2	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Below 1GHz Data:

802.11n (HT20)

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	39.50	32.5 QP	40.0	-7.5	1.50 H	244	41.5	-9.0
2	84.08	31.6 QP	40.0	-8.4	2.00 H	92	45.8	-14.2
3	158.98	28.6 QP	43.5	-14.9	1.50 H	271	37.1	-8.5
4	250.05	26.5 QP	46.0	-19.5	1.00 H	151	36.5	-10.0
5	385.11	30.7 QP	46.0	-15.3	1.00 H	313	36.6	-5.9
6	799.11	35.4 QP	46.0	-10.6	1.00 H	190	32.9	2.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	59.66	35.3 QP	40.0	-4.7	1.00 V	200	44.3	-9.0
2	156.98	33.4 QP	43.5	-10.1	1.00 V	111	42.0	-8.6
3	196.73	30.3 QP	43.5	-13.2	1.50 V	125	42.2	-11.9
4	391.18	31.7 QP	46.0	-14.3	1.50 V	303	37.3	-5.6
5	658.59	31.7 QP	46.0	-14.3	2.50 V	150	31.6	0.1
6	799.76	40.8 QP	46.0	-5.2	2.00 V	182	38.3	2.5

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. 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 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 23, 2015	Oct. 22, 2016
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 28, 2015	Oct. 27, 2016
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	Jun. 20, 2016	Jun. 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3 Tested Date: July 27, 2016

4.2.3 Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

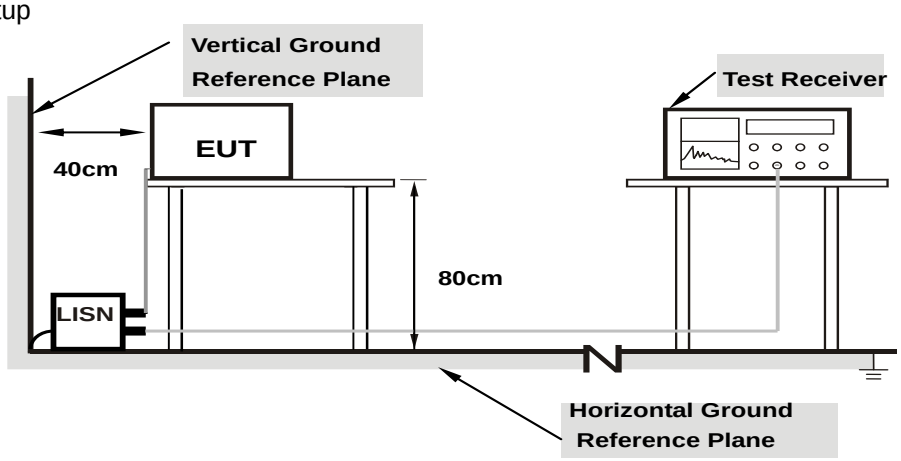
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

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

Same as 4.1.6.

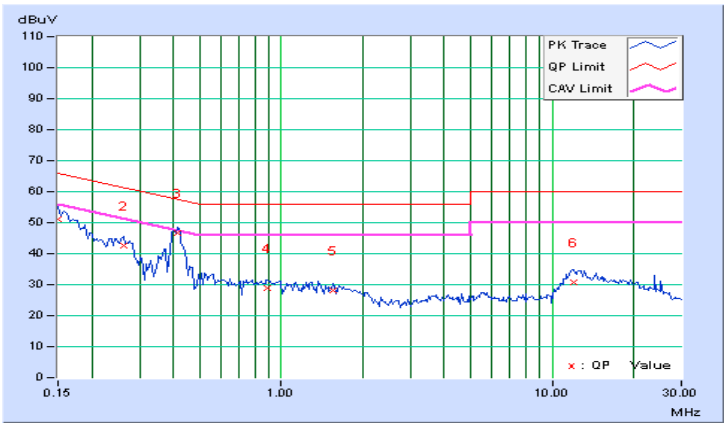
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.21	41.05	28.20	51.26	38.41	66.00	56.00	-14.74	-17.59
2	0.26328	10.22	32.24	23.62	42.46	33.84	61.33	51.33	-18.87	-17.49
3	**0.41563**	**10.22**	**36.54**	**33.48**	**46.76**	**43.70**	**57.54**	**47.54**	**-10.77**	**-3.83**
4	0.88828	10.25	18.46	12.87	28.71	23.12	56.00	46.00	-27.29	-22.88
5	1.55469	10.29	17.86	12.68	28.15	22.97	56.00	46.00	-27.85	-23.03
6	12.01172	10.80	19.96	14.85	30.76	25.65	60.00	50.00	-29.24	-24.35

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.

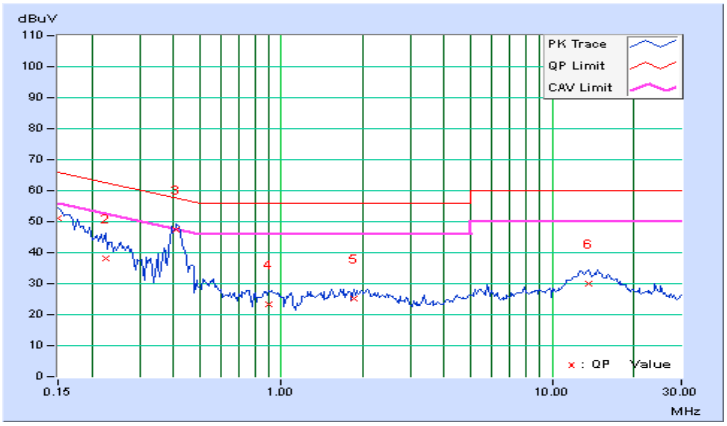


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	41.05	27.19	51.24	37.38	66.00	56.00	-14.76	-18.62
2	0.22422	10.21	28.11	16.37	38.32	26.58	62.66	52.66	-24.34	-26.08
3	0.41172	10.20	37.34	32.54	47.54	42.74	57.61	47.61	-10.07	-4.87
4	0.90391	10.23	12.95	6.61	23.18	16.84	56.00	46.00	-32.82	-29.16
5	1.85547	10.28	14.86	9.90	25.14	20.18	56.00	46.00	-30.86	-25.82
6	13.66016	10.79	19.12	14.10	29.91	24.89	60.00	50.00	-30.09	-25.11

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.



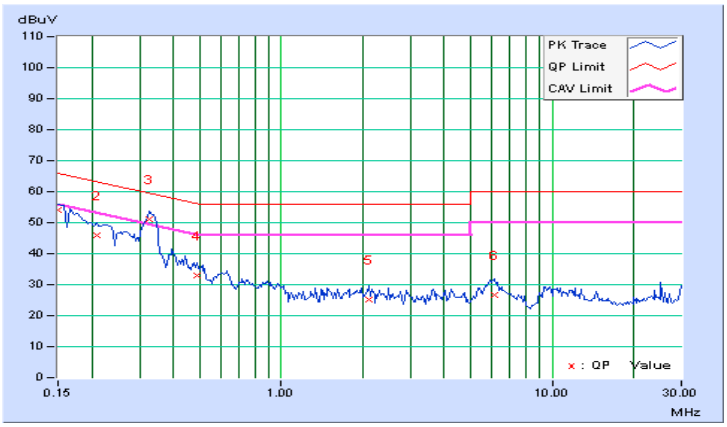
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.21	43.99	31.10	54.20	41.31	66.00	56.00	-11.80	-14.69
2	0.20859	10.22	35.83	23.53	46.05	33.75	63.26	53.26	-17.21	-19.51
3	0.32578	10.22	40.82	34.56	51.04	44.78	59.56	49.56	-8.52	-4.78
4	0.48984	10.23	22.79	16.19	33.02	26.42	56.17	46.17	-23.15	-19.75
5	2.12109	10.31	15.04	8.97	25.35	19.28	56.00	46.00	-30.65	-26.72
6	6.08984	10.40	16.45	8.57	26.85	18.97	60.00	50.00	-33.15	-31.03

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.

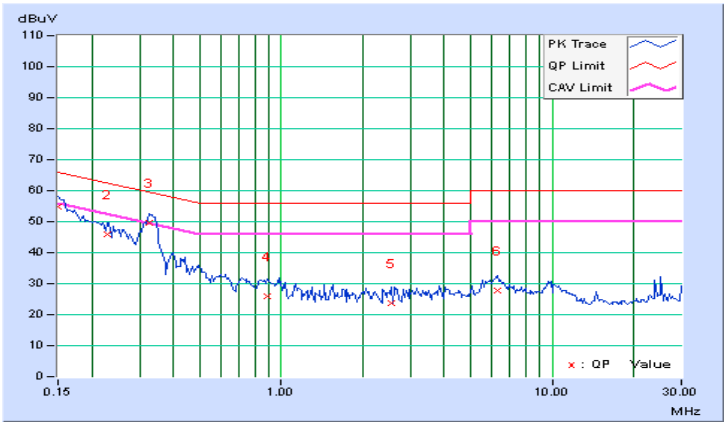


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	44.54	31.60	54.73	41.79	66.00	56.00	-11.27	-14.21
2	0.22812	10.21	35.66	24.76	45.87	34.97	62.52	52.52	-16.65	-17.55
3	0.32578	10.20	39.40	33.12	49.60	43.32	59.56	49.56	-9.95	-6.23
4	0.88828	10.23	15.77	10.69	26.00	20.92	56.00	46.00	-30.00	-25.08
5	2.54297	10.28	13.29	5.94	23.57	16.22	56.00	46.00	-32.43	-29.78
6	6.27344	10.34	17.27	10.52	27.61	20.86	60.00	50.00	-32.39	-29.14

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.

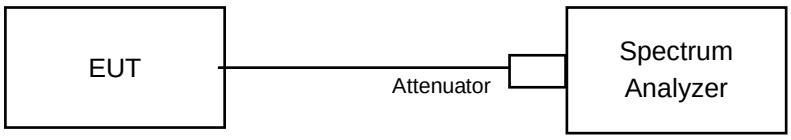


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation fromTest 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

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	9.04	0.5	PASS
6	2437	8.11	0.5	PASS
11	2462	8.12	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1		
1	2412	16.48	16.47	0.5	PASS
6	2437	16.47	16.45	0.5	PASS
11	2462	16.46	16.46	0.5	PASS

802.11n (HT20)

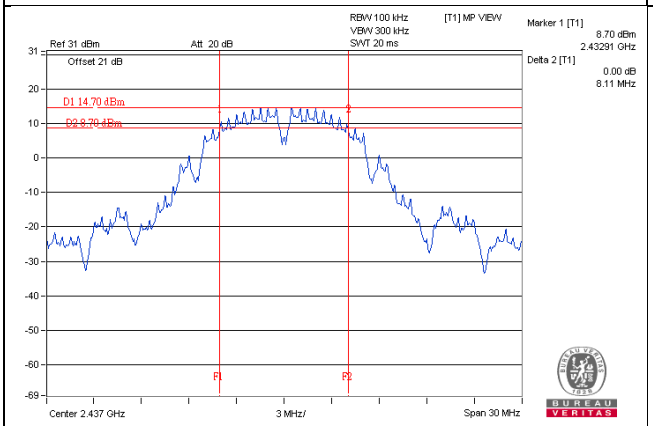
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1		
1	2412	17.64	17.67	0.5	Pass
6	2437	17.65	17.67	0.5	Pass
11	2462	17.69	17.74	0.5	Pass

802.11n (HT40)

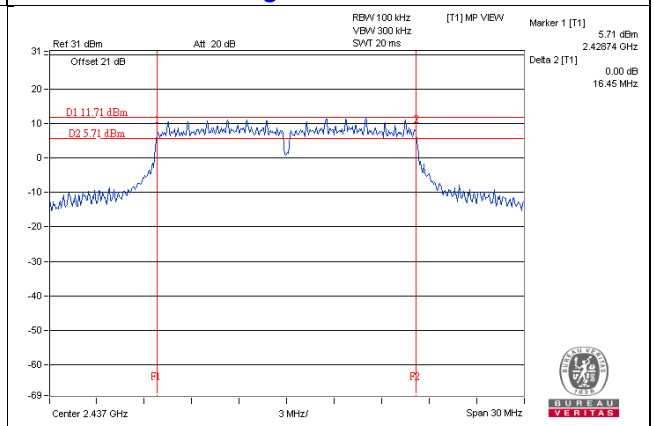
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1		
3	2422	35.83	35.88	0.5	Pass
6	2437	35.92	36.15	0.5	Pass
9	2452	35.97	36.37	0.5	Pass

Spectrum Plot of Worst Value

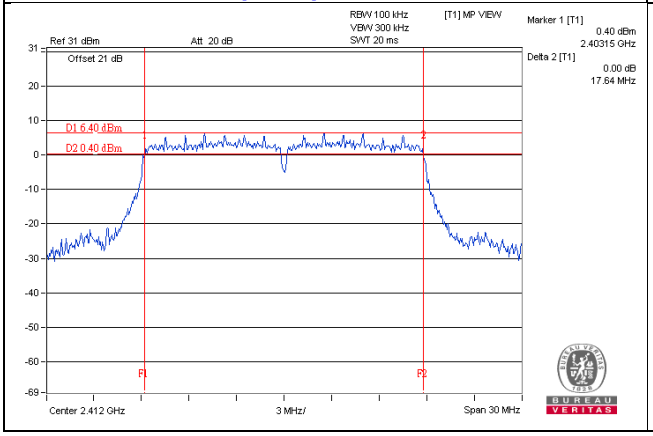
802.11b: CH6



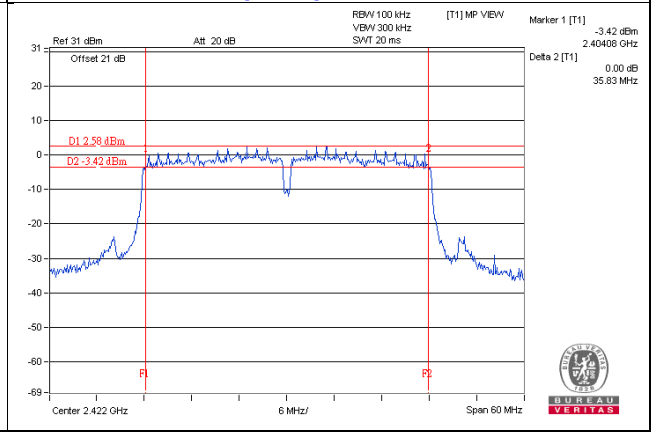
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 0 : CH1



802.11n (HT40) / Chain 0 : CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

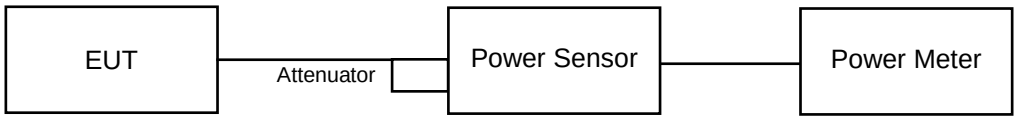
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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 $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) 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 / average power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak / average power sensor. Record the power level.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

FOR PEAK POWER

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	399.025	26.01	30	Pass
6	2437	393.55	25.95	30	Pass
11	2462	397.192	25.99	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	25.90	27.07	898.376	29.53	30	Pass
6	2437	26.09	27.14	924.05	29.66	30	Pass
11	2462	25.78	26.77	853.778	29.31	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	25.80	26.90	869.968	29.40	30	Pass
6	2437	26.10	27.39	955.657	29.80	30	Pass
11	2462	25.63	26.73	836.572	29.23	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	25.63	26.49	811.251	29.09	30	Pass
6	2437	25.91	26.91	880.85	29.45	30	Pass
9	2452	25.33	26.48	785.824	28.95	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	228.034	23.58
6	2437	229.615	23.61
11	2462	229.087	23.60

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	19.40	19.80	182.595	22.61
6	2437	22.84	22.45	368.101	25.66
11	2462	17.76	18.10	124.269	20.94

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.76	19.55	165.319	22.18
6	2437	23.03	22.47	377.513	25.77
11	2462	17.82	18.45	130.518	21.16

802.11n (HT40)

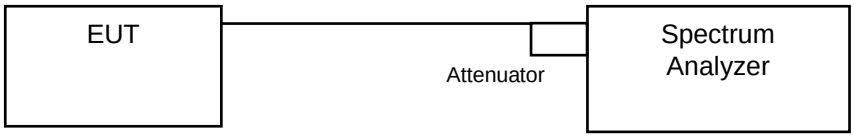
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	17.32	18.22	120.325	20.80
6	2437	19.88	20.45	208.192	23.18
9	2452	16.79	17.51	104.117	20.18

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

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

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	0.90	8	Pass
6	2437	1.56	8	Pass
11	2462	-0.52	8	Pass

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-7.37	3.01	-4.36	6.99	Pass
	6	2437	-3.24	3.01	-0.23	6.99	Pass
	11	2462	-9.02	3.01	-6.01	6.99	Pass
1	1	2412	-6.37	3.01	-3.36	6.99	Pass
	6	2437	-2.59	3.01	0.42	6.99	Pass
	11	2462	-8.63	3.01	-5.62	6.99	Pass

NOTE: Directional gain = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 8-(7.01-6) = 6.99dBm.

802.11n (HT20)

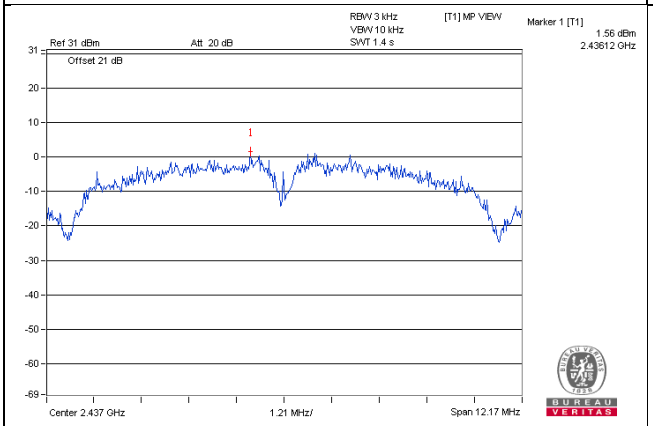
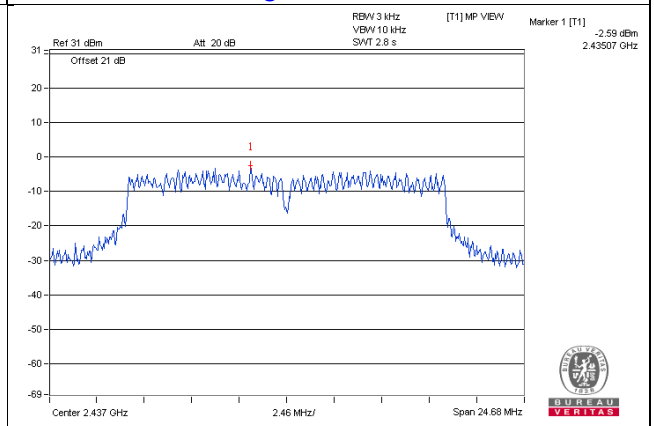
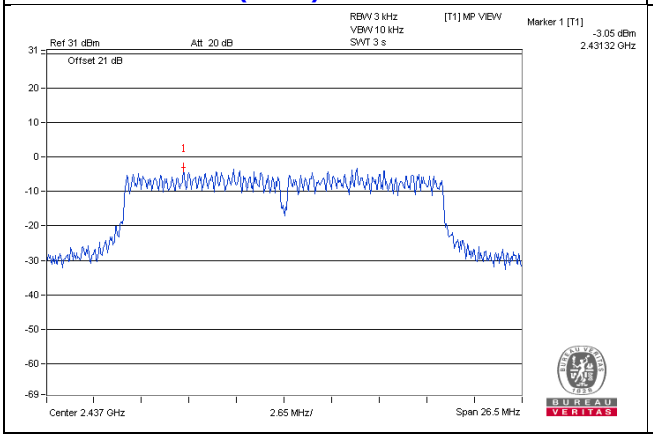
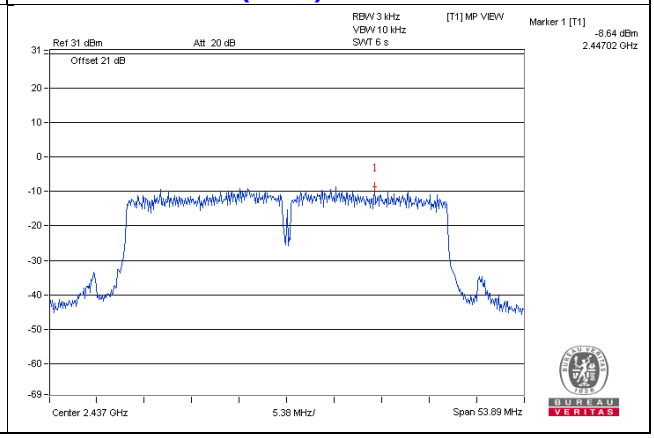
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-8.21	3.01	-5.20	6.99	Pass
	6	2437	-3.30	3.01	-0.29	6.99	Pass
	11	2462	-9.30	3.01	-6.29	6.99	Pass
1	1	2412	-7.95	3.01	-4.94	6.99	Pass
	6	2437	-3.05	3.01	-0.04	6.99	Pass
	11	2462	-8.06	3.01	-5.05	6.99	Pass

NOTE: Directional gain = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 8-(7.01-6) = 6.99dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2412	-12.23	3.01	-9.22	6.99	Pass
	6	2437	-8.64	3.01	-5.63	6.99	Pass
	9	2462	-12.35	3.01	-9.34	6.99	Pass
1	3	2412	-10.96	3.01	-7.95	6.99	Pass
	6	2437	-9.59	3.01	-6.58	6.99	Pass
	9	2462	-11.47	3.01	-8.46	6.99	Pass

NOTE: Directional gain = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 8-(7.01-6) = 6.99dBm.

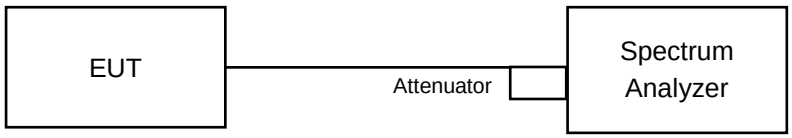
Spectrum Plot of Worst Value	
802.11b: CH6	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 1 : CH6	**802.11n (HT40) / Chain 0 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz 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 ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

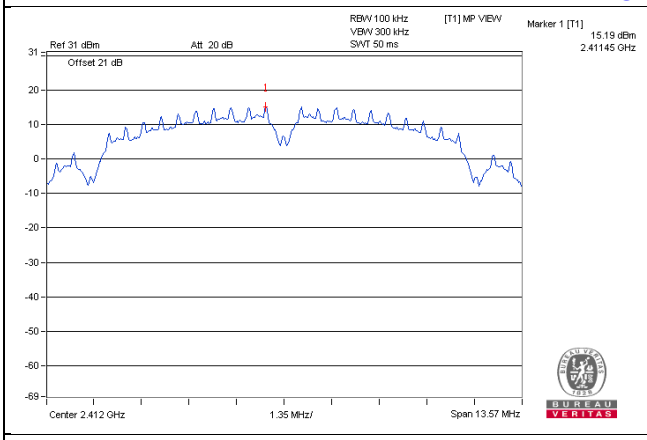
Same as Item 4.3.6

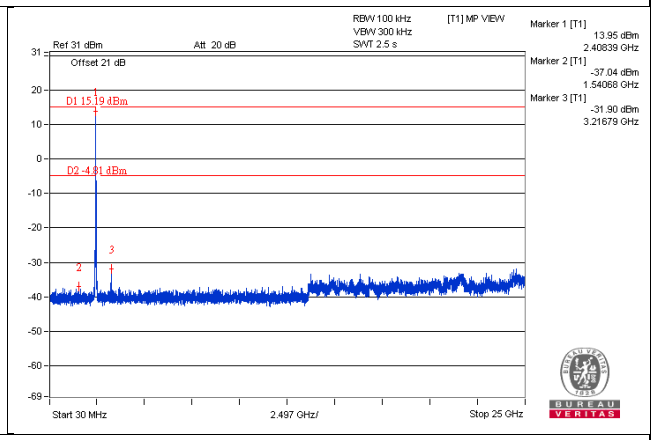
4.6.7 Test Results

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

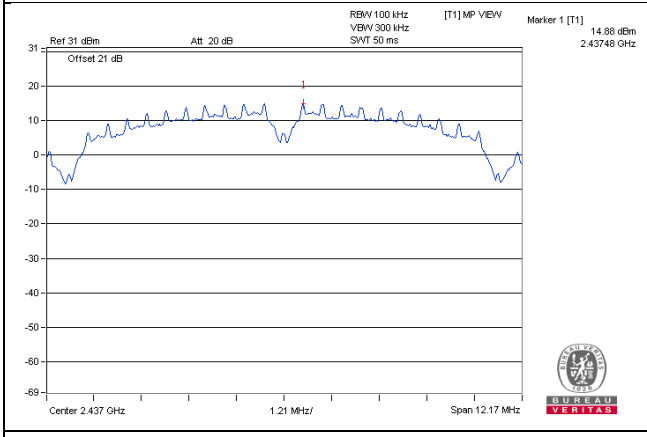
802.11b

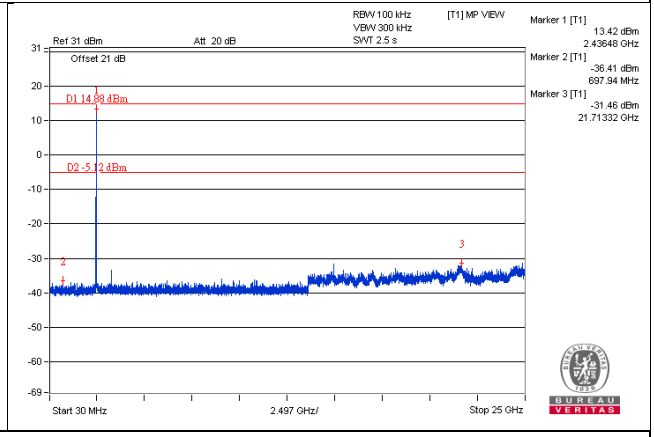
CH 1



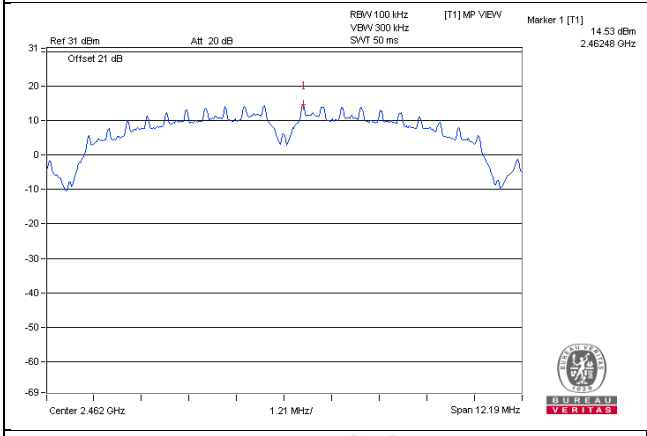


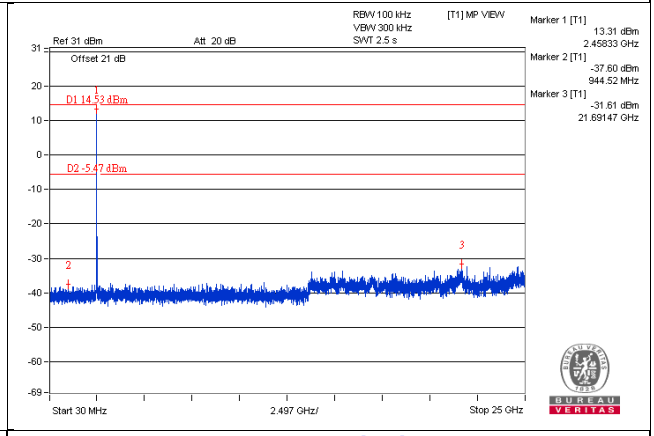
CH 6



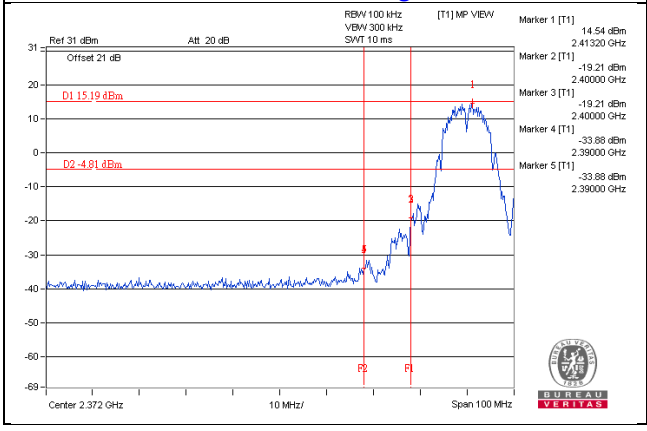


CH 11

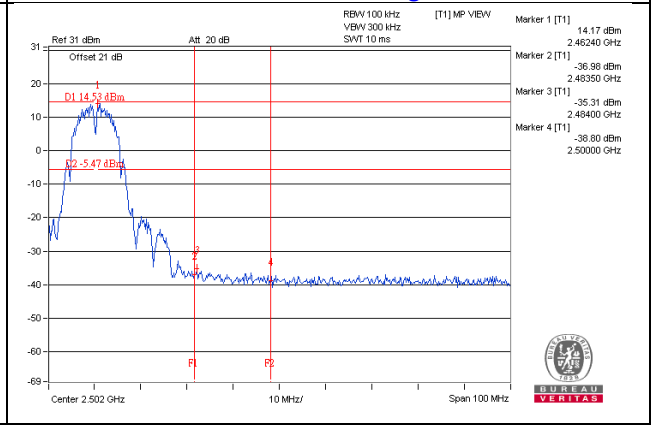




CH 1 Band edge

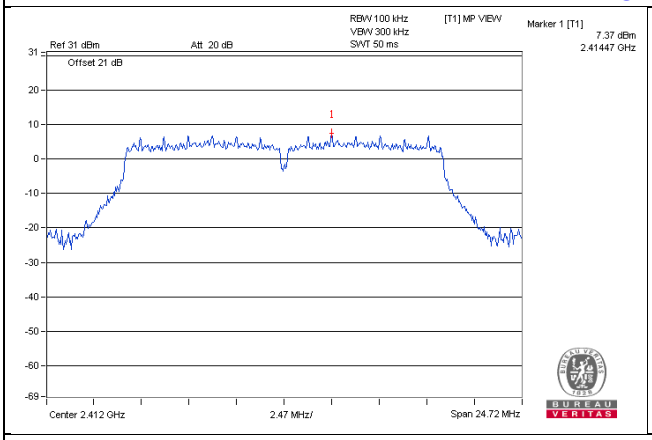


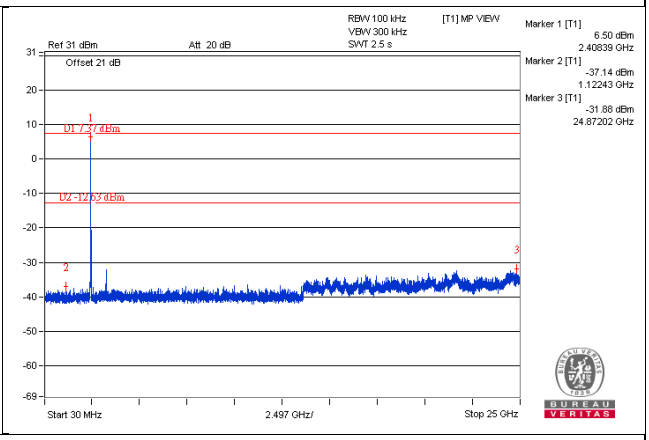
CH 11 Band edge



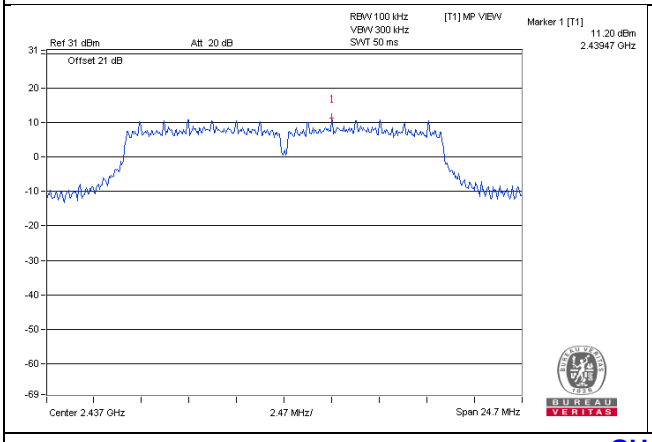
802.11g - CHAIN 0

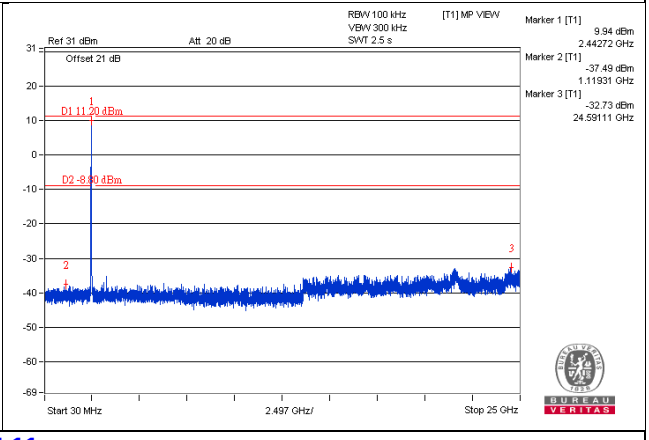
CH 1



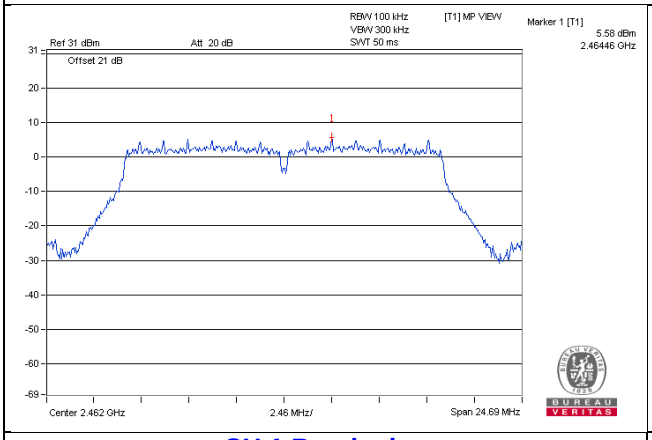


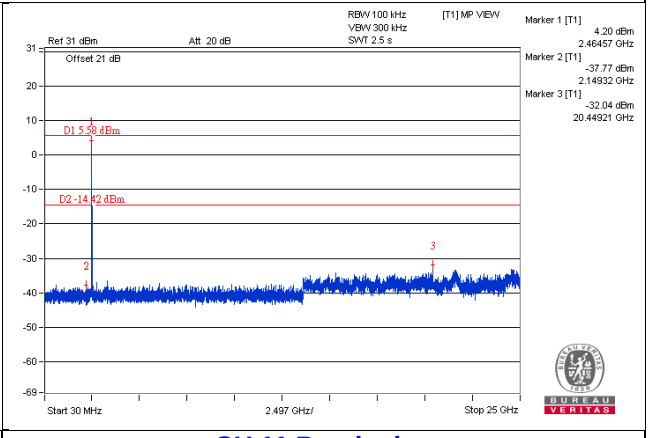
CH 6





CH 11





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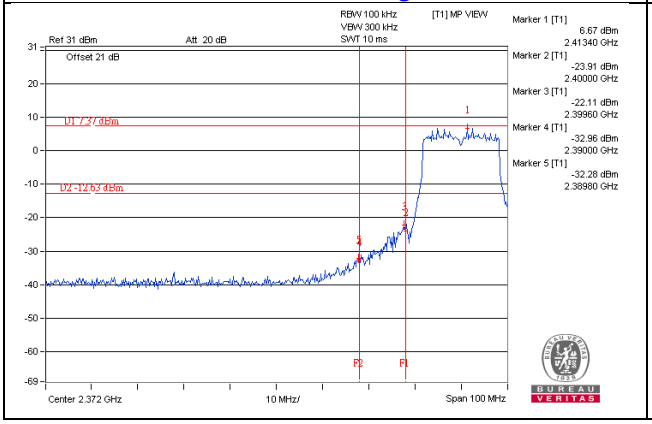

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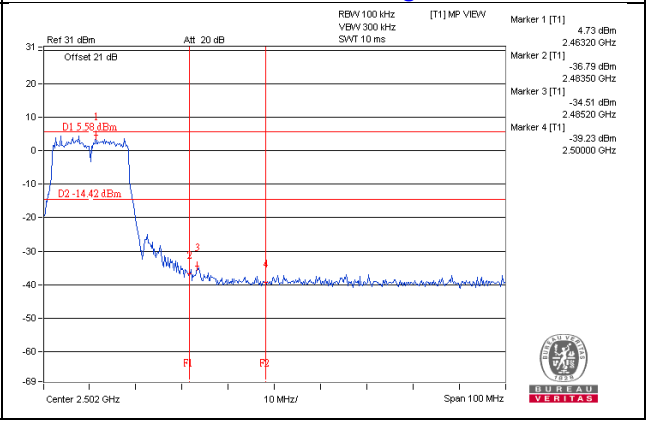
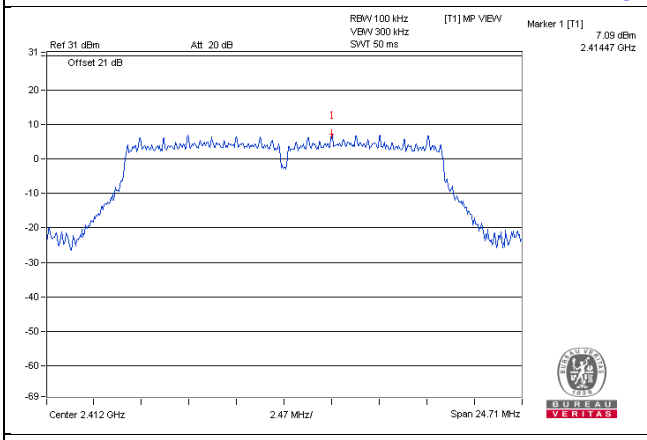
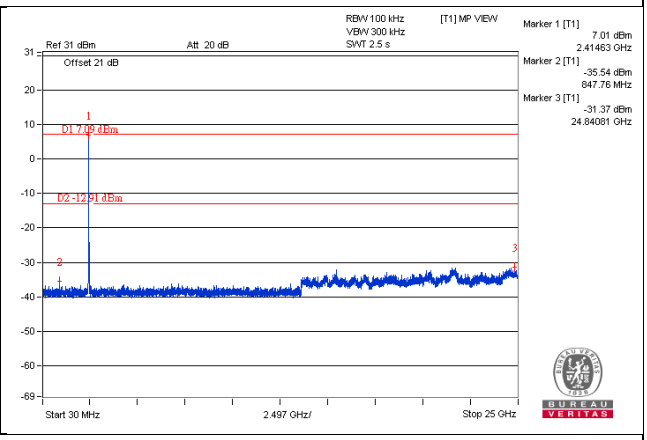


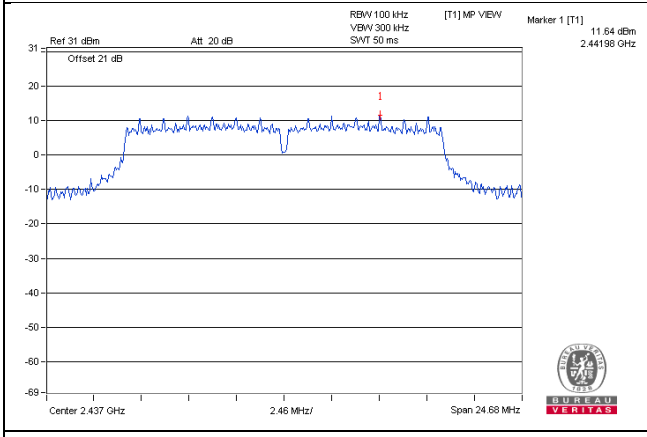
CHAIN 1

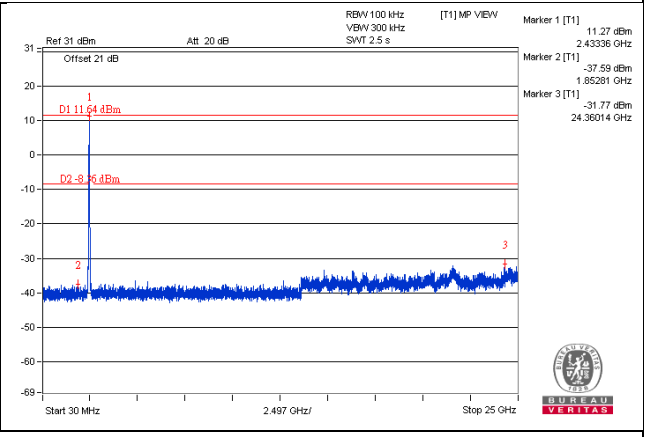
CH 1



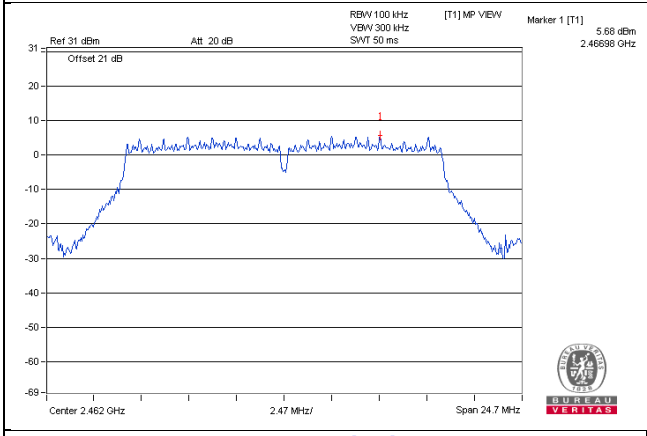


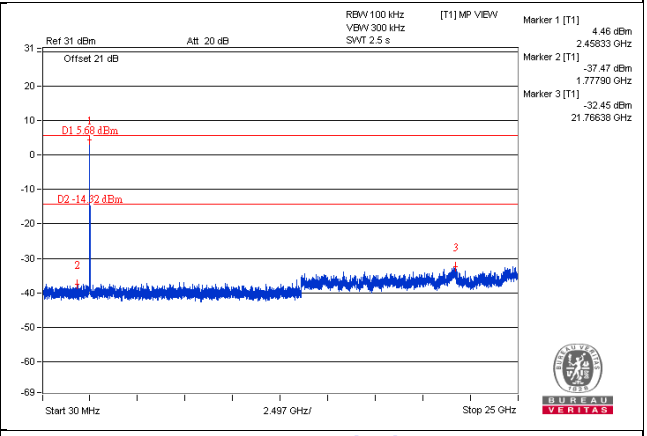
CH 6



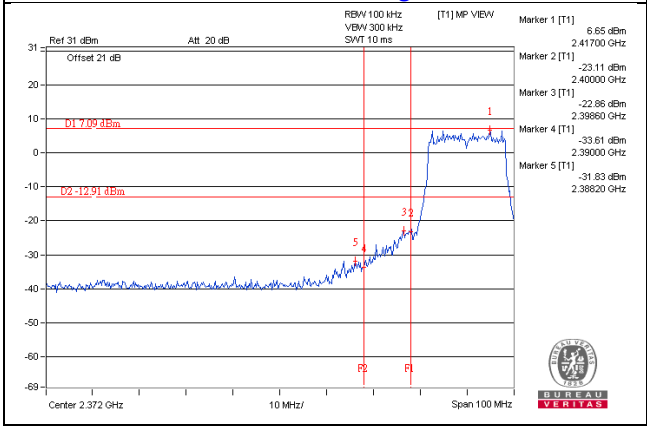


CH 11

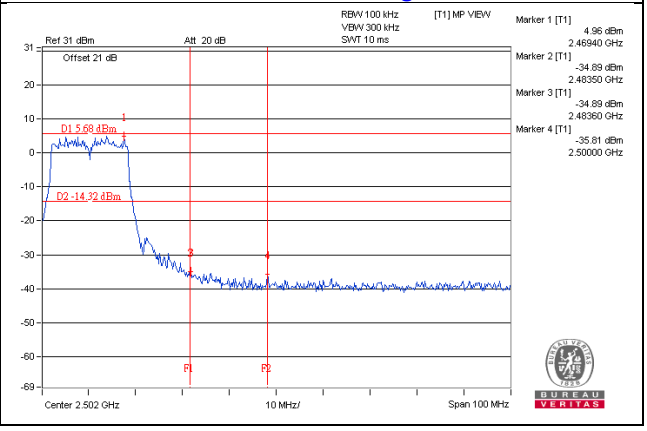




CH 1 Band edge



CH 11 Band edge



802.11n (HT20) - CHAIN 0

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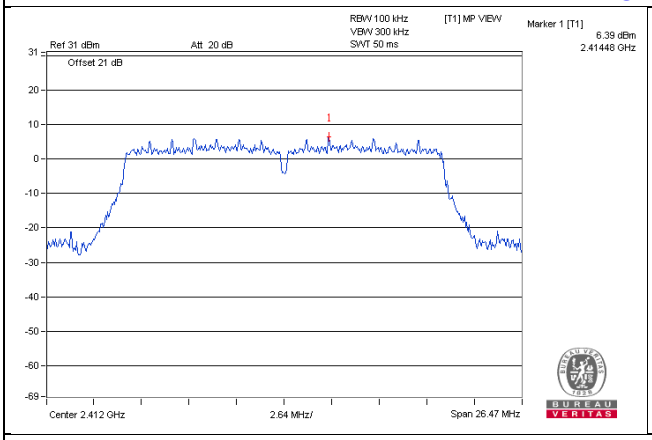
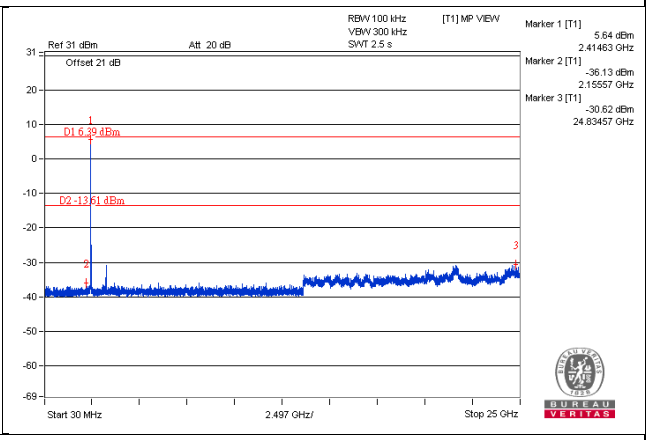
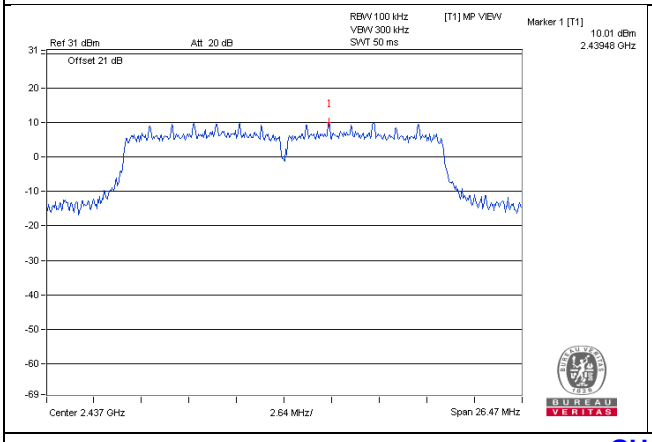
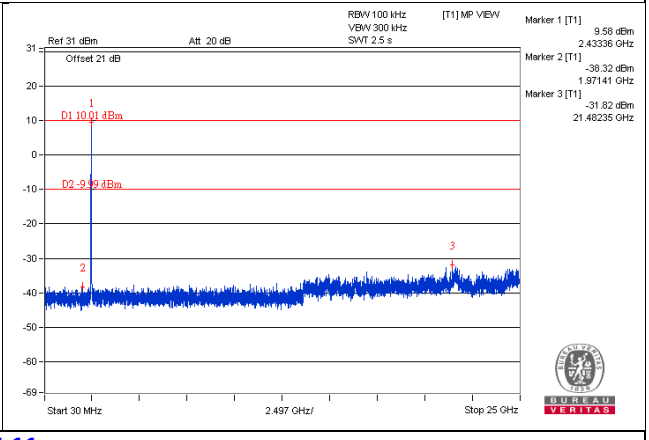


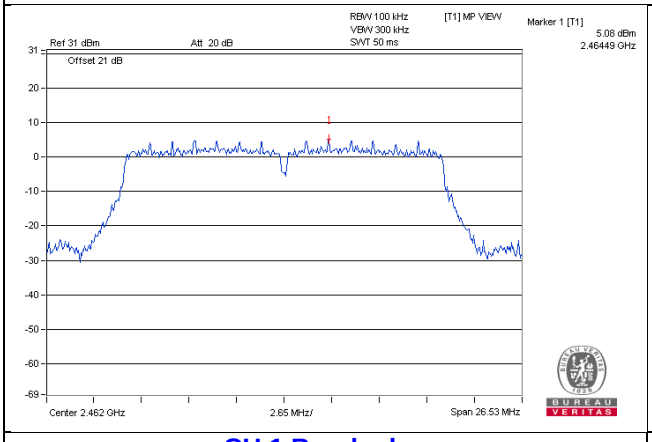


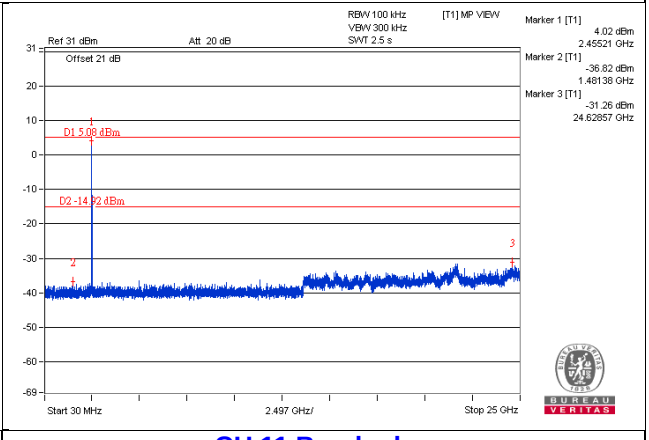
CH 6



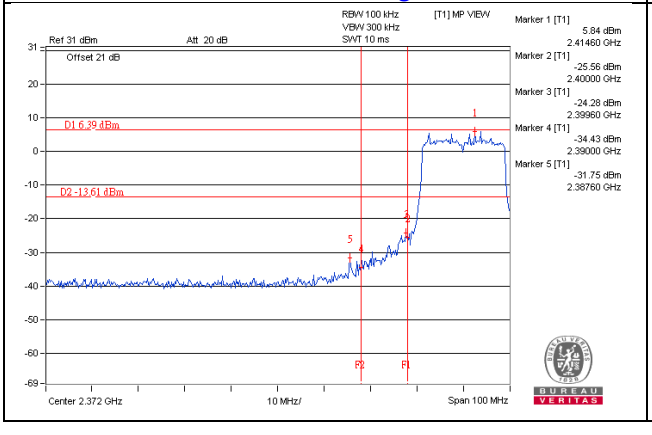


CH 11





CH 1 Band edge



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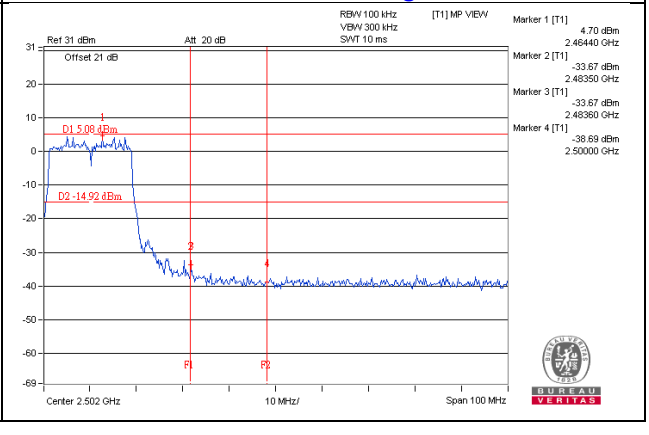
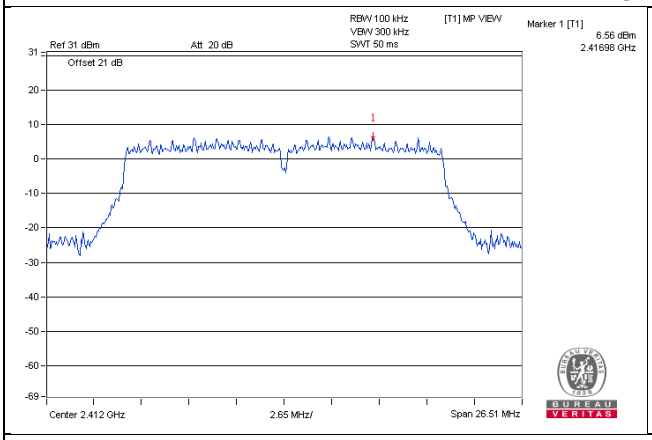
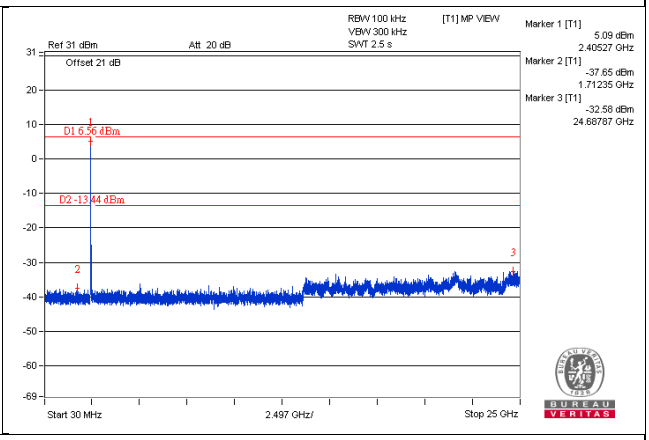


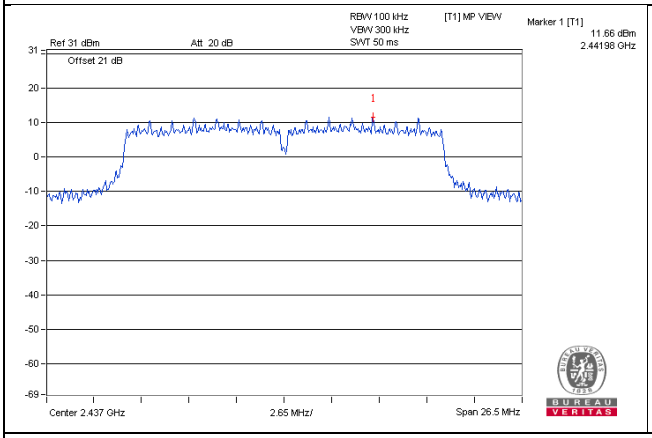
CHAIN 1

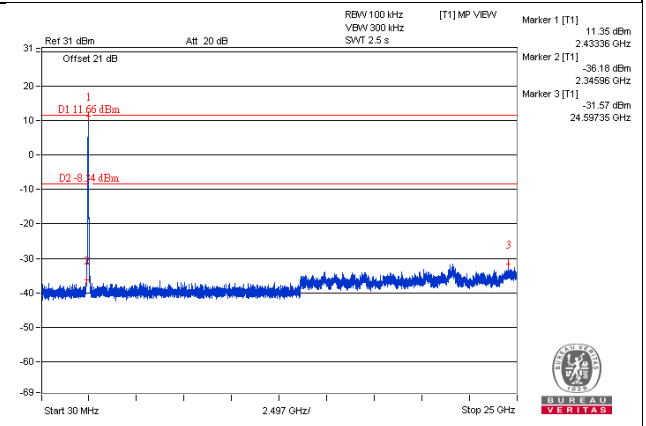
CH 1



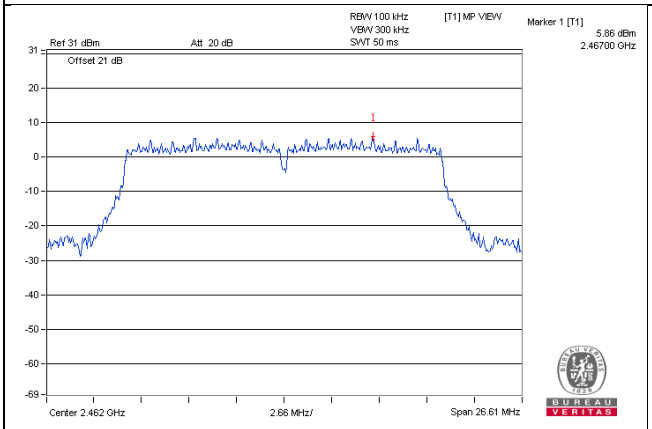


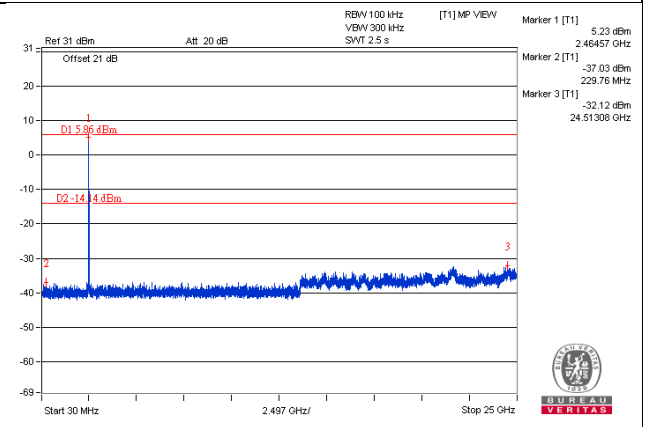
CH 6



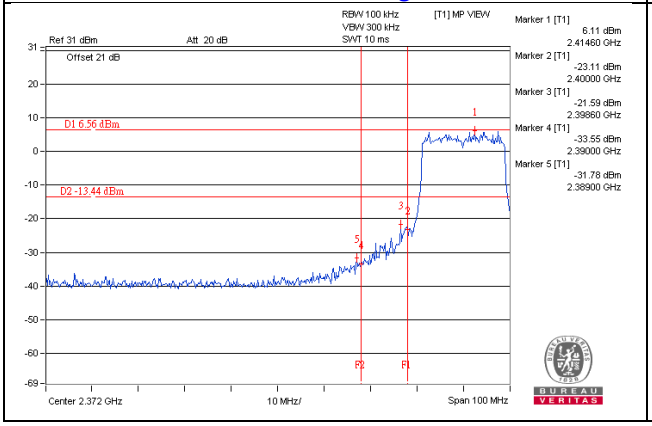


CH 11





CH 1 Band edge



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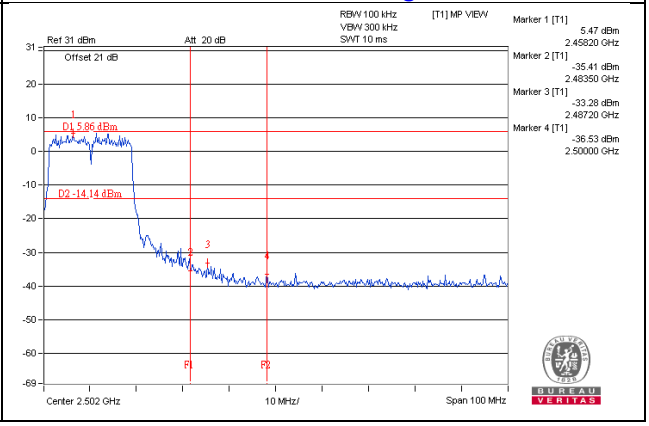
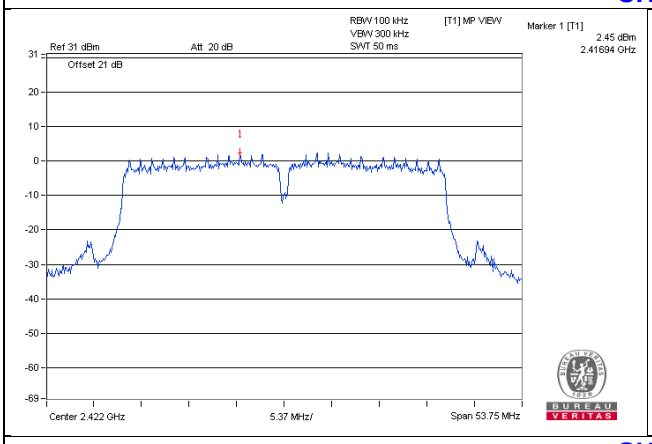
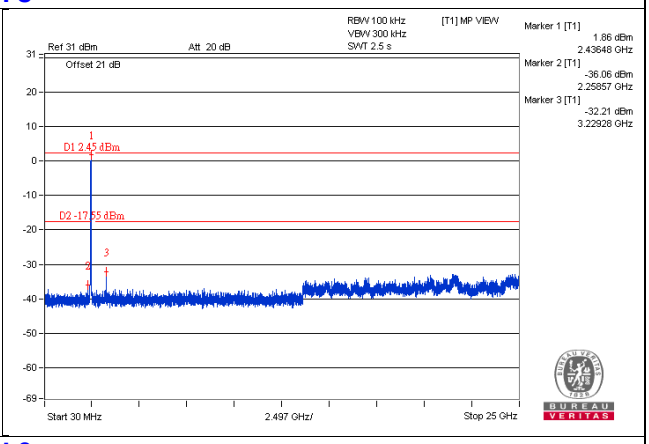


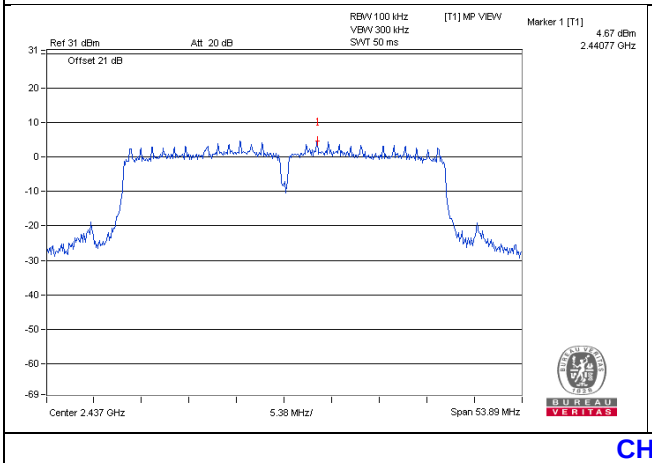
802.11n (HT40) - CHAIN 0

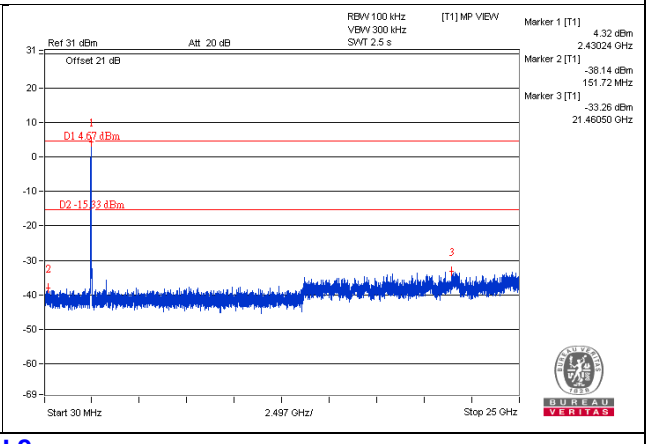
CH 3



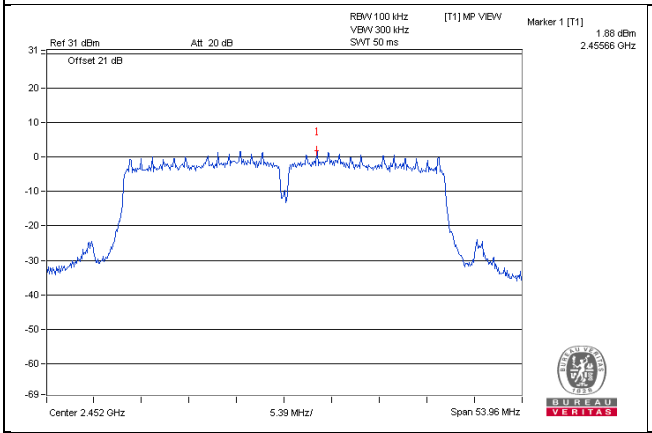


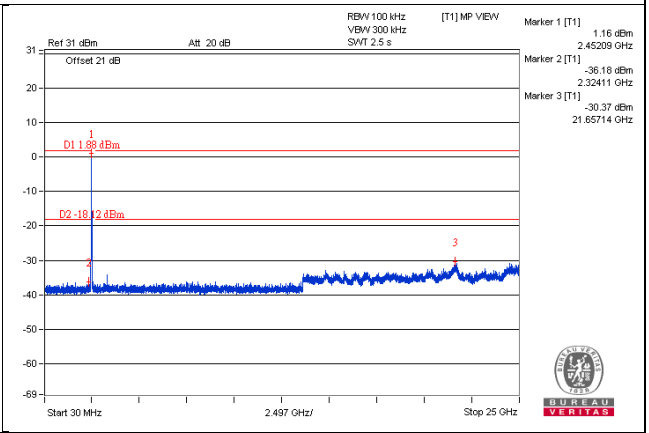
CH 6



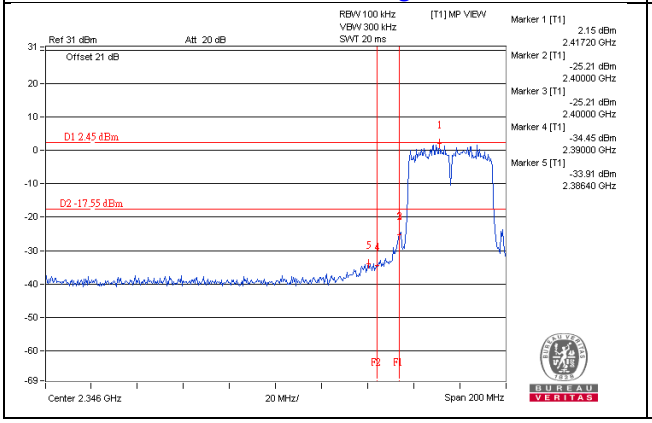


CH 9

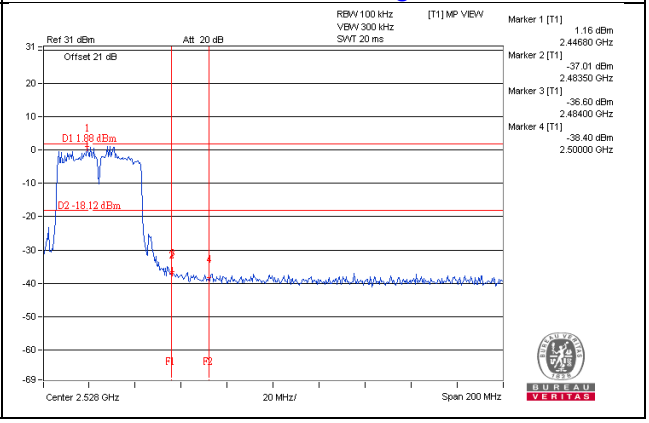




CH 3 Band edge

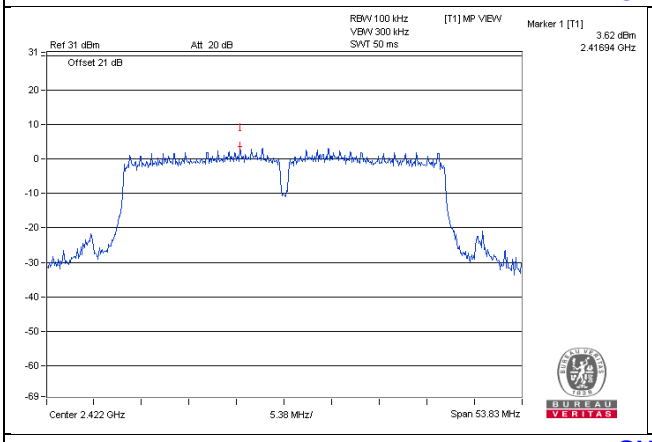


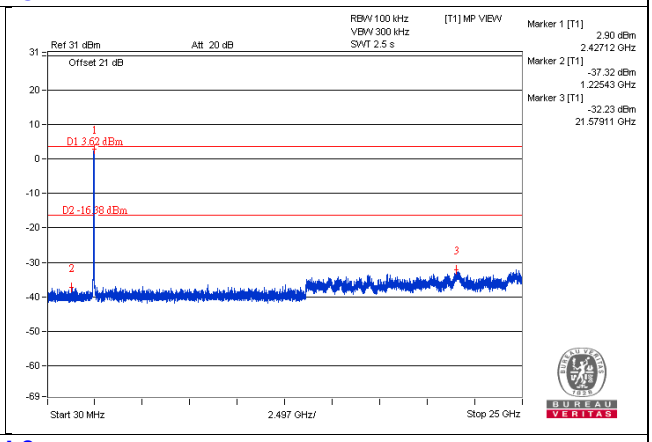
CH 9 Band edge



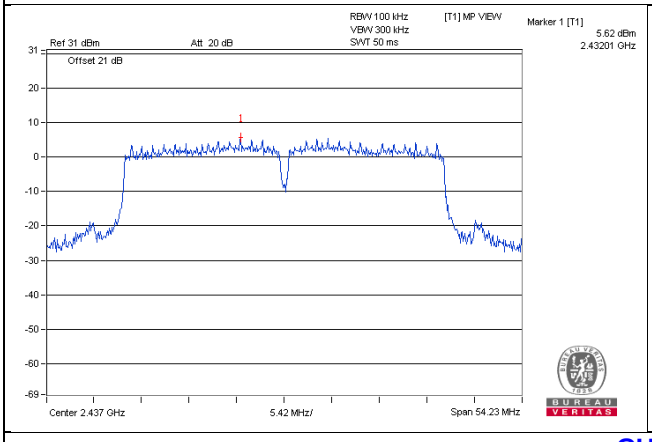
CHAIN 1

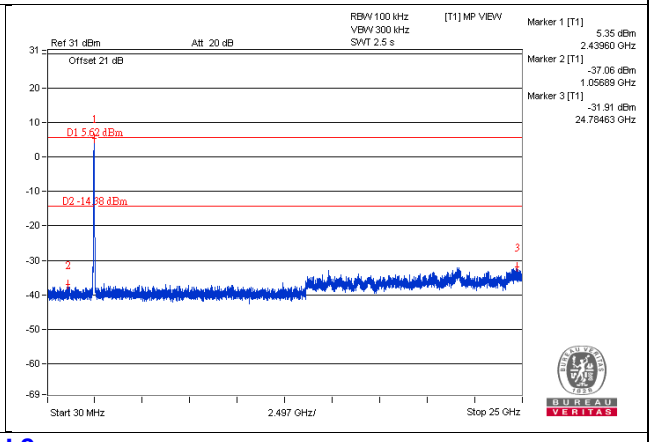
CH 3



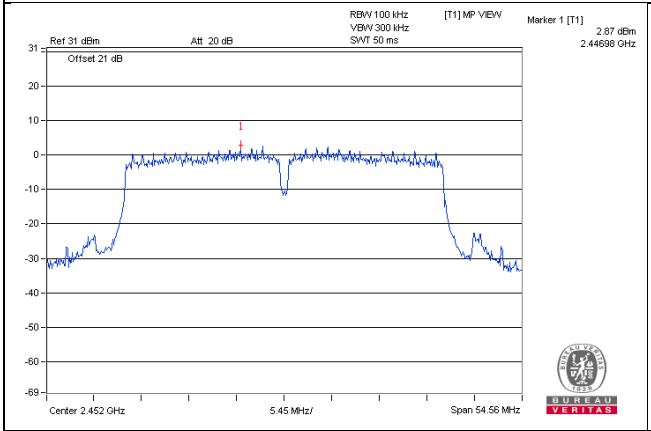


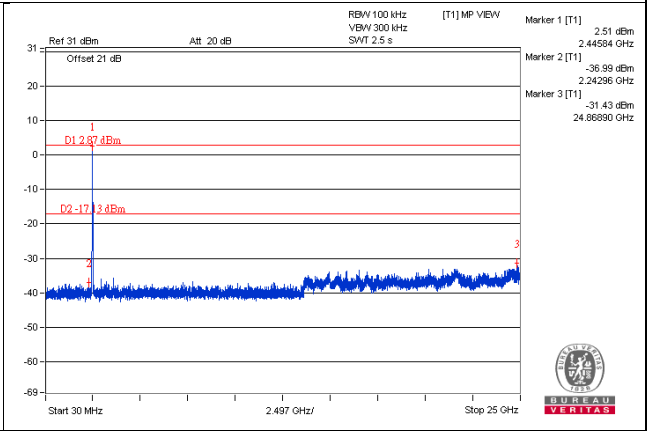
CH 6



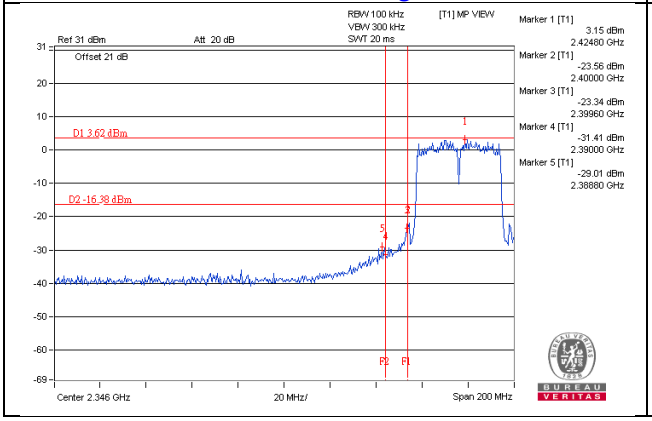


CH 9

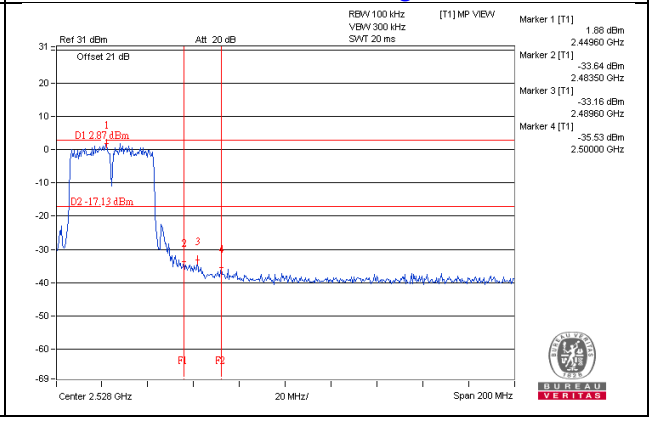




CH 3 Band edge



CH 9 Band edge



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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