FCC Test Report

Report No.: RF160913E02

FCC ID: PY316200342

Test Model: R6400v2

Received Date: Sep. 13, 2016

Test Date: Oct. 07 to 12, 2016

Issued Date: Oct. 19, 2016

Applicant: NETGEAR, Inc.

Address: 350 East Plumeria Drive San Jose, CA 95134

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.

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Release Control Record

Issue No.	Description	Date Issued
RF160913E02	Original release.	Oct. 19, 2016

1 Certificate of Conformity

Product: AC1750 Smart WiFi Router

Brand: NETGEAR

Test Model: R6400v2

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Oct. 07 to 12, 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:** Oct. 19, 2016
Wendy Wu / Specialist

Approved by : _____ , **Date:** Oct. 19, 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 -13.48dB at 0.30234MHz.
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 2390.00MHz, 2483.50MHz.
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 i-pex (MHF) 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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.43 dB
	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	AC1750 Smart WiFi Router
Brand	NETGEAR
Test Model	R6400v2
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc 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 450Mbps 802.11ac: up to 1300Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz and 5.745 ~ 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:** 579.66mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 664.278mW **Beamforming Mode:** 650.802mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 988.92mW **Beamforming Mode:** 984.433mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. 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.		

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

No	Brand Name	Model No.	PN	Spec.
1	NETGEAR	2ABL030F 1 NA	332-10758-01	Input: 100-120Vac, 50/60Hz, 1.0A Output: 12Vdc, 2.5A DC output cable (Unshielded, 1.8m)
2	NETGEAR	AD2067F10	332-10797-01	Input: 100-120Vac, 50/60Hz, 1.0A Output: 12Vdc, 2.5A DC output cable (Unshielded, 1.8m)
Note: From the above adapters, the radiated emission worse case was found in Adapter 2. Therefore only the test data of the mode was recorded in this report.				

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

Antenna No.	Brand	Model	Antenna Gain(dBi)	Frequency range (GHz ~ GHz)	Antenna Type	Connecter Type
98612PIPF003	NA	NA	3.4	2.4~2.4835	Dipole	I-pex (MHF)
			3.94	5.15~5.25		
			3.44	5.25~5.35		
			3.44	5.47~5.725		
			3.73	5.725~5.85		
98612PIPF004	NA	NA	3.23	2.4~2.4835	Dipole	I-pex (MHF)
			3.66	5.15~5.25		
			3.83	5.25~5.35		
			3.83	5.47~5.725		
			3.77	5.725~5.85		
98612PIPF005	NA	NA	3.36	2.4~2.4835	Dipole	I-pex (MHF)
			3.32	5.15~5.25		
			3.63	5.25~5.35		
			3.63	5.47~5.725		
			3.74	5.725~5.85		

4. The Directional gain table:

Frequency (MHz)	**Max Gain (dBi)**
2412-2462	5.65

Note:

1. Non-TxBF mode & TxBF mode antenna gain refer to KDB 662911 F 2) f) (ii)

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

5. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	3TX	3RX
802.11g	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS16~23	3TX	3RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS16~23	3TX	3RX
802.11ac (VHT20)	MCS0~8 Nss=1	3TX	3RX
	MCS0~8 Nss=2	3TX	3RX
	MCS0~9 Nss=3	3TX	3RX
802.11ac (VHT40)	MCS0~9 Nss=1	3TX	3RX
	MCS0~9 Nss=2	3TX	3RX
	MCS0~9 Nss=3	3TX	3RX
802.11ac (VHT80)	MCS0~9 Nss=1	3TX	3RX
	MCS0~9 Nss=2	3TX	3RX
	MCS0~9 Nss=3	3TX	3RX

Note:
1. All of modulation mode support beamforming function except 802.11a modulation mode and 2.4GHz band.

6. 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	-	-	√	-	With adapter 1
2	√	√	√	√	With 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)
802.11b	1 to 11	6	OFDM	BPSK	1

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)
802.11b	1 to 11	6	OFDM	BPSK	1

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:

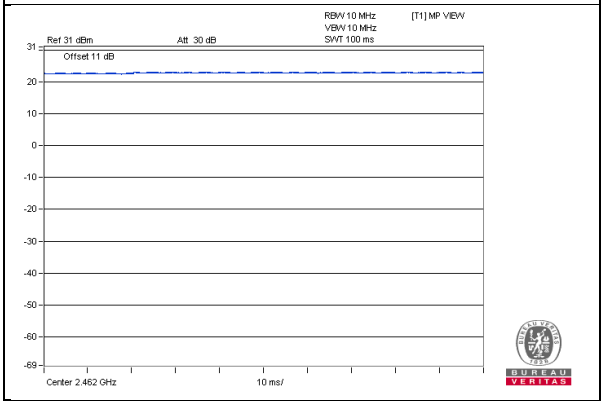
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 70%RH	120Vac, 60Hz	Robert Cheng
RE<1G	22deg. C, 65%RH	120Vac, 60Hz	Robert Cheng
PLC	25deg. C, 75%RH	120Vac, 60Hz	Barry Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Gary Cheng

3.3 Duty Cycle of Test Signal

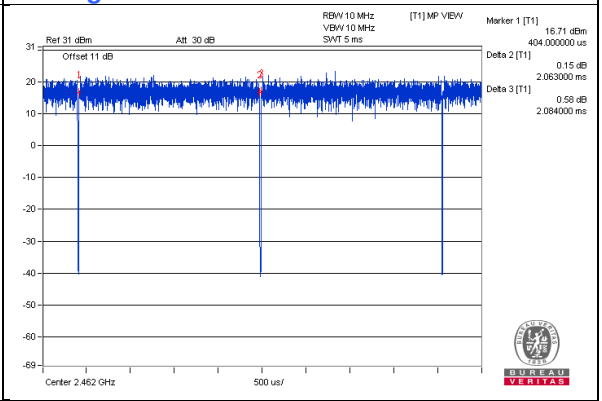
If duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11b: duty cycle of test signal is 100 %
802.11g: Duty cycle = 2.063/2.084 = 0.99
802.11n (HT20): Duty cycle = 1.919/1.914 = 0.989
802.11n (HT40): Duty cycle = 0.946/0.962 = 0.983

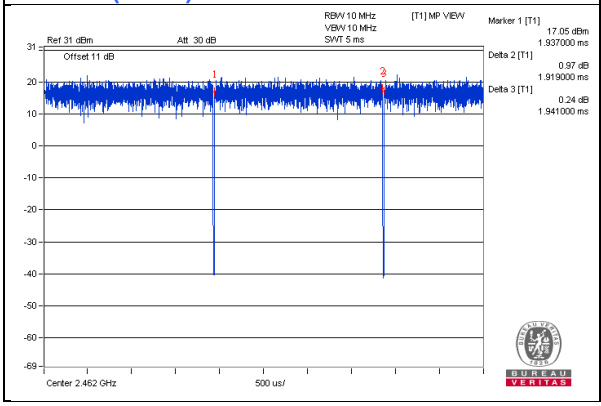
802.11b



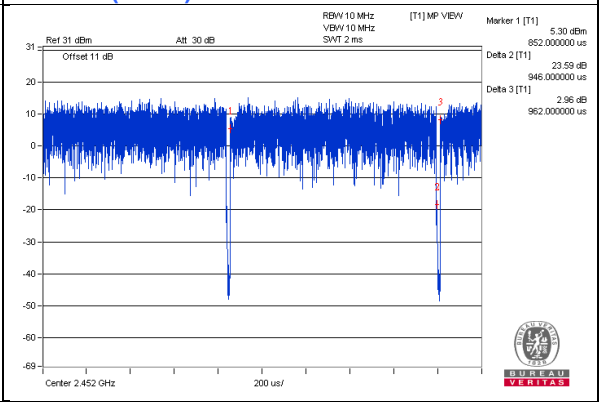
802.11g



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.	Laptop	DELL	E5430	4YV4VY1	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab
D.	iPod	Apple	MC749TA/A	CC4DN25WDFDM	NA	Provided by Lab
E.	USB Disk	Transcend(16GB)	NA	NA	NA	Provided by Lab

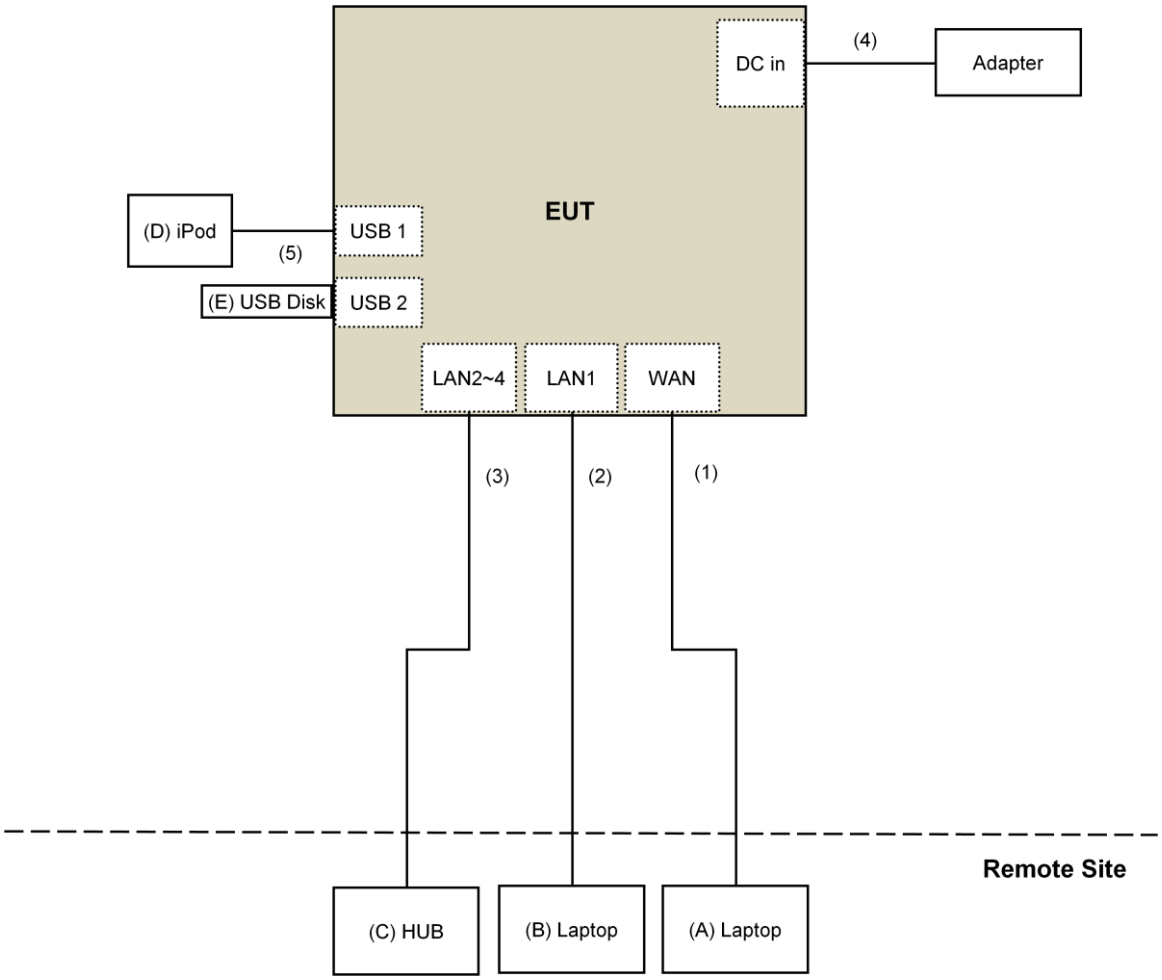
Note:

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.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	3	10	No	0	Provided by Lab
4.	DC Cable	1	1.8	No	0	Supplied by client
5.	USB Cable	1	0.1	No	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

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 30dB 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. 18, 2016	Sep. 17, 2017
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_V8.7.08	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. The test was performed in 966 Chamber No. 4.
4. The FCC Site Registration No. is 292998
5. The CANADA Site Registration No. is 20331-2
6 Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Oct. 07 to 08, 2016

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case 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.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 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:

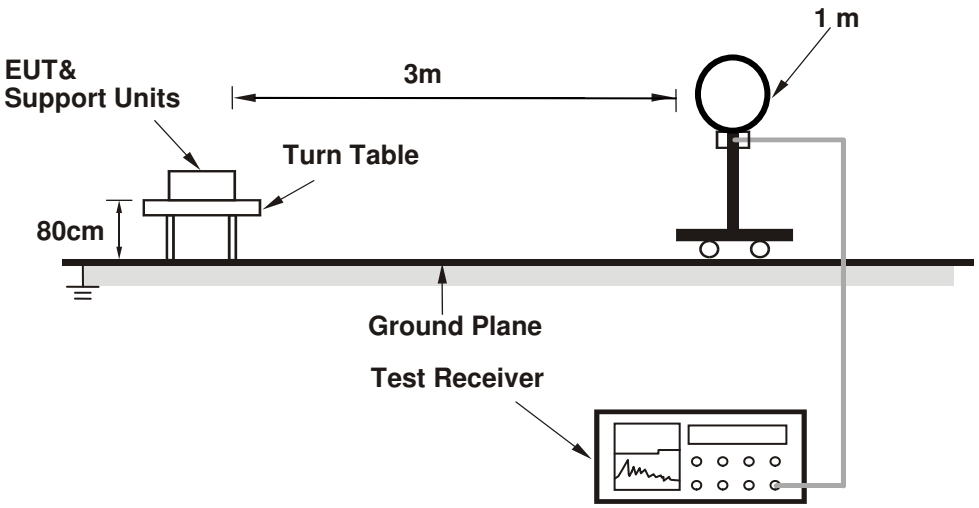
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

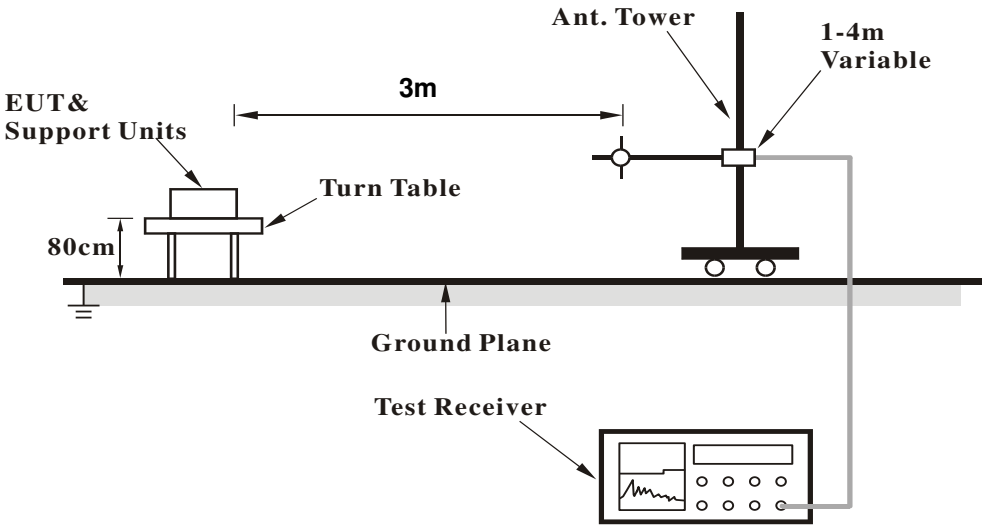
No deviation.

4.1.5 Test Setup

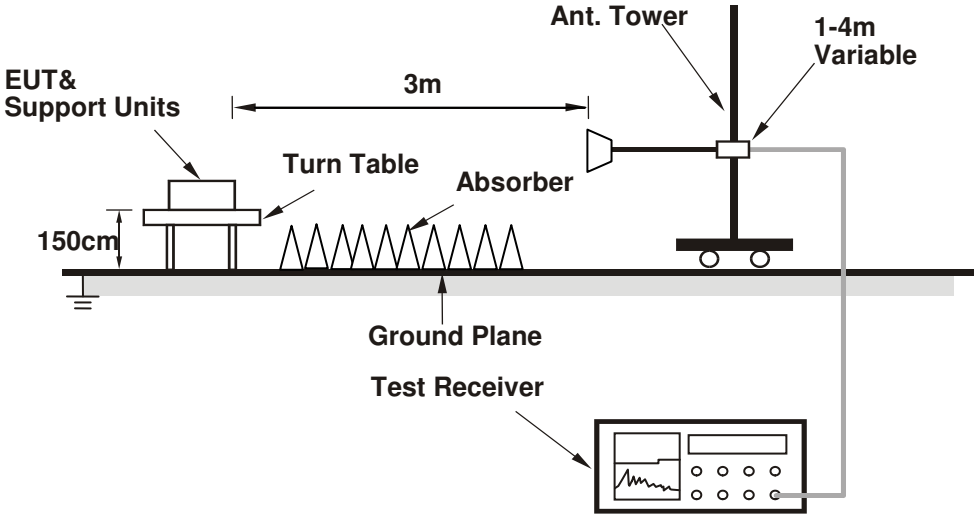
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission 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 laptop which is placed on remote site.

b. Contorlling software (Mtool 2.0.1.8.exe) has been activated to set the EUT on specific status.

4.1.7 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	53.5 PK	74.0	-20.5	1.06 H	117	59.2	-5.7
2	2390.00	44.2 AV	54.0	-9.8	1.06 H	117	49.9	-5.7
3	*2412.00	105.2 PK			1.06 H	117	110.8	-5.6
4	*2412.00	102.8 AV			1.06 H	117	108.4	-5.6
5	4824.00	53.5 PK	74.0	-20.5	1.00 H	296	52.7	0.8
6	4824.00	51.0 AV	54.0	-3.0	1.00 H	296	50.2	0.8
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	63.3 PK	74.0	-10.7	1.95 V	176	69.0	-5.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.95 V**	**176**	**59.6**	**-5.7**
3	*2412.00	115.6 PK			1.95 V	176	121.2	-5.6
4	*2412.00	113.1 AV			1.95 V	176	118.7	-5.6
5	2500.00	61.4 PK	74.0	-12.6	2.01 V	0	66.8	-5.4
6	2500.00	51.5 AV	54.0	-2.5	2.01 V	0	56.9	-5.4
7	4824.00	53.2 PK	74.0	-20.8	1.54 V	360	52.4	0.8
8	4824.00	52.1 AV	54.0	-1.9	1.54 V	360	51.3	0.8

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	2312.00	59.3 PK	74.0	-14.7	1.03 H	109	65.3	-6.0
2	2312.00	44.1 AV	54.0	-9.9	1.03 H	109	50.1	-6.0
3	*2437.00	108.9 PK			1.03 H	109	114.4	-5.5
4	*2437.00	105.7 AV			1.03 H	109	111.2	-5.5
5	2500.00	57.3 PK	74.0	-16.7	1.03 H	109	62.7	-5.4
6	2500.00	42.2 AV	54.0	-11.8	1.03 H	109	47.6	-5.4
7	4874.00	53.0 PK	74.0	-21.0	2.96 H	60	52.1	0.9
8	4874.00	50.6 AV	54.0	-3.4	2.96 H	60	49.7	0.9
9	7311.00	49.4 PK	74.0	-24.6	1.22 H	243	42.0	7.4
10	7311.00	37.4 AV	54.0	-16.6	1.22 H	243	30.0	7.4
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	2312.00	63.9 PK	74.0	-10.1	1.68 V	176	69.9	-6.0
2	2312.00	52.9 AV	54.0	-1.1	1.68 V	176	58.9	-6.0
3	*2437.00	118.8 PK			1.68 V	176	124.3	-5.5
4	*2437.00	116.2 AV			1.68 V	176	121.7	-5.5
5	2500.00	61.6 PK	74.0	-12.4	1.66 V	160	67.0	-5.4
6	2500.00	52.1 AV	54.0	-1.9	1.66 V	160	57.5	-5.4
7	4874.00	55.2 PK	74.0	-18.8	1.51 V	360	54.3	0.9
8	4874.00	53.7 AV	54.0	-0.3	1.51 V	360	52.8	0.9
9	7311.00	52.0 PK	74.0	-22.0	2.21 V	178	44.6	7.4
10	7311.00	44.6 AV	54.0	-9.4	2.21 V	178	37.2	7.4

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	105.9 PK			1.03 H	101	111.3	-5.4
2	*2462.00	103.2 AV			1.03 H	101	108.6	-5.4
3	2483.50	53.3 PK	74.0	-20.7	1.03 H	101	58.8	-5.5
4	2483.50	44.0 AV	54.0	-10.0	1.03 H	101	49.5	-5.5
5	4924.00	48.4 PK	74.0	-25.6	3.21 H	58	47.3	1.1
6	4924.00	45.0 AV	54.0	-9.0	3.21 H	58	43.9	1.1
7	7386.00	47.9 PK	74.0	-26.1	1.17 H	246	40.3	7.6
8	7386.00	35.2 AV	54.0	-18.8	1.17 H	246	27.6	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	*2462.00	116.3 PK			1.91 V	176	121.7	-5.4
2	*2462.00	113.5 AV			1.91 V	176	118.9	-5.4
3	2483.50	63.6 PK	74.0	-10.4	1.91 V	176	69.1	-5.5
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.91 V**	**176**	**59.4**	**-5.5**
5	4924.00	53.7 PK	74.0	-20.3	1.53 V	360	52.6	1.1
6	4924.00	52.5 AV	54.0	-1.5	1.53 V	360	51.4	1.1
7	7386.00	49.2 PK	74.0	-24.8	2.30 V	198	41.6	7.6
8	7386.00	41.2 AV	54.0	-12.8	2.30 V	198	33.6	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.

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	60.8 PK	74.0	-13.2	1.03 H	108	66.5	-5.7
2	2390.00	47.7 AV	54.0	-6.3	1.03 H	108	53.4	-5.7
3	*2412.00	104.9 PK			1.03 H	108	110.5	-5.6
4	*2412.00	95.8 AV			1.03 H	108	101.4	-5.6
5	4824.00	45.4 PK	74.0	-28.6	3.24 H	62	44.6	0.8
6	4824.00	31.6 AV	54.0	-22.4	3.24 H	62	30.8	0.8
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	69.5 PK	74.0	-4.5	2.20 V	360	75.2	-5.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**2.20 V**	**360**	**59.6**	**-5.7**
3	*2412.00	114.4 PK			2.20 V	360	120.0	-5.6
4	*2412.00	104.5 AV			2.20 V	360	110.1	-5.6
5	4824.00	53.1 PK	74.0	-20.9	1.57 V	360	52.3	0.8
6	4824.00	39.3 AV	54.0	-14.7	1.57 V	360	38.5	0.8

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	59.2 PK	74.0	-14.8	1.03 H	102	64.9	-5.7
2	2390.00	44.2 AV	54.0	-9.8	1.03 H	102	49.9	-5.7
3	*2437.00	110.2 PK			1.03 H	102	115.7	-5.5
4	*2437.00	100.9 AV			1.03 H	102	106.4	-5.5
5	2483.50	57.2 PK	74.0	-16.8	1.03 H	102	62.7	-5.5
6	2483.50	42.1 AV	54.0	-11.9	1.03 H	102	47.6	-5.5
7	4874.00	51.1 PK	74.0	-22.9	3.19 H	73	50.2	0.9
8	4874.00	37.1 AV	54.0	-16.9	3.19 H	73	36.2	0.9
9	7311.00	49.3 PK	74.0	-24.7	1.17 H	238	41.9	7.4
10	7311.00	37.5 AV	54.0	-16.5	1.17 H	238	30.1	7.4
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	67.1 PK	74.0	-6.9	1.50 V	166	72.8	-5.7
2	2390.00	51.2 AV	54.0	-2.8	1.50 V	166	56.9	-5.7
3	*2437.00	119.5 PK			1.50 V	166	125.0	-5.5
4	*2437.00	109.6 AV			1.50 V	166	115.1	-5.5
5	2483.50	64.9 PK	74.0	-9.1	1.50 V	166	70.4	-5.5
6	2483.50	49.3 AV	54.0	-4.7	1.50 V	166	54.8	-5.5
7	4874.00	57.0 PK	74.0	-17.0	2.24 V	185	56.1	0.9
8	4874.00	44.3 AV	54.0	-9.7	2.24 V	185	43.4	0.9
9	7311.00	56.0 PK	74.0	-18.0	2.40 V	183	48.6	7.4
10	7311.00	43.1 AV	54.0	-10.9	2.40 V	183	35.7	7.4

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	105.1 PK			1.03 H	107	110.5	-5.4
2	*2462.00	94.3 AV			1.03 H	107	99.7	-5.4
3	2483.50	60.8 PK	74.0	-13.2	1.03 H	107	66.3	-5.5
4	2483.50	47.8 AV	54.0	-6.2	1.03 H	107	53.3	-5.5
5	4924.00	45.2 PK	74.0	-28.8	3.23 H	37	44.1	1.1
6	4924.00	31.7 AV	54.0	-22.3	3.23 H	37	30.6	1.1
7	7386.00	46.6 PK	74.0	-27.4	1.10 H	244	39.0	7.6
8	7386.00	34.0 AV	54.0	-20.0	1.10 H	244	26.4	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	*2462.00	114.0 PK			1.68 V	357	119.4	-5.4
2	*2462.00	103.2 AV			1.68 V	357	108.6	-5.4
3	2483.50	66.8 PK	74.0	-7.2	1.68 V	357	72.3	-5.5
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.68 V**	**357**	**59.4**	**-5.5**
5	4924.00	53.1 PK	74.0	-20.9	1.54 V	360	52.0	1.1
6	4924.00	39.2 AV	54.0	-14.8	1.54 V	360	38.1	1.1
7	7386.00	47.9 PK	74.0	-26.1	2.34 V	185	40.3	7.6
8	7386.00	34.5 AV	54.0	-19.5	2.34 V	185	26.9	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.

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	61.1 PK	74.0	-12.9	1.03 H	100	66.8	-5.7
2	2390.00	47.9 AV	54.0	-6.1	1.03 H	100	53.6	-5.7
3	*2412.00	103.1 PK			1.03 H	100	108.7	-5.6
4	*2412.00	92.8 AV			1.03 H	100	98.4	-5.6
5	4824.00	45.5 PK	74.0	-28.5	3.19 H	50	44.7	0.8
6	4824.00	31.9 AV	54.0	-22.1	3.19 H	50	31.1	0.8
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	69.8 PK	74.0	-4.2	1.84 V	173	75.5	-5.7
2	2390.00	53.6 AV	54.0	-0.4	1.84 V	173	59.3	-5.7
3	*2412.00	112.6 PK			1.84 V	173	118.2	-5.6
4	*2412.00	102.0 AV			1.84 V	173	107.6	-5.6
5	4824.00	53.5 PK	74.0	-20.5	1.56 V	353	52.7	0.8
6	4824.00	39.4 AV	54.0	-14.6	1.56 V	353	38.6	0.8

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	59.0 PK	74.0	-15.0	1.03 H	101	64.7	-5.7
2	2390.00	44.0 AV	54.0	-10.0	1.03 H	101	49.7	-5.7
3	*2437.00	110.2 PK			1.03 H	101	115.7	-5.5
4	*2437.00	100.1 AV			1.03 H	101	105.6	-5.5
5	2483.50	57.1 PK	74.0	-16.9	1.03 H	101	62.6	-5.5
6	2483.50	41.7 AV	54.0	-12.3	1.03 H	101	47.2	-5.5
7	4874.00	51.1 PK	74.0	-22.9	3.13 H	77	50.2	0.9
8	4874.00	37.1 AV	54.0	-16.9	3.13 H	77	36.2	0.9
9	7311.00	49.0 PK	74.0	-25.0	1.25 H	246	41.6	7.4
10	7311.00	37.1 AV	54.0	-16.9	1.25 H	246	29.7	7.4
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	68.6 PK	74.0	-5.4	1.61 V	175	74.3	-5.7
2	2390.00	52.4 AV	54.0	-1.6	1.61 V	175	58.1	-5.7
3	*2437.00	120.0 PK			1.61 V	175	125.5	-5.5
4	*2437.00	109.5 AV			1.61 V	175	115.0	-5.5
5	2483.50	67.1 PK	74.0	-6.9	1.61 V	175	72.6	-5.5
6	2483.50	50.7 AV	54.0	-3.3	1.61 V	175	56.2	-5.5
7	4874.00	57.6 PK	74.0	-16.4	1.50 V	1	56.7	0.9
8	4874.00	44.8 AV	54.0	-9.2	1.50 V	1	43.9	0.9
9	7311.00	55.7 PK	74.0	-18.3	2.31 V	176	48.3	7.4
10	7311.00	42.7 AV	54.0	-11.3	2.31 V	176	35.3	7.4

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	104.8 PK			1.03 H	106	110.2	-5.4
2	*2462.00	94.5 AV			1.03 H	106	99.9	-5.4
3	2483.50	60.5 PK	74.0	-13.5	1.03 H	106	66.0	-5.5
4	2483.50	47.2 AV	54.0	-6.8	1.03 H	106	52.7	-5.5
5	4924.00	46.0 PK	74.0	-28.0	3.19 H	64	44.9	1.1
6	4924.00	32.4 AV	54.0	-21.6	3.19 H	64	31.3	1.1
7	7386.00	47.4 PK	74.0	-26.6	1.21 H	233	39.8	7.6
8	7386.00	34.7 AV	54.0	-19.3	1.21 H	233	27.1	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	*2462.00	114.1 PK			1.72 V	178	119.5	-5.4
2	*2462.00	103.8 AV			1.72 V	178	109.2	-5.4
3	2483.50	72.3 PK	74.0	-1.7	1.72 V	178	77.8	-5.5
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.72 V**	**178**	**59.4**	**-5.5**
5	4924.00	53.3 PK	74.0	-20.7	1.55 V	360	52.2	1.1
6	4924.00	39.3 AV	54.0	-14.7	1.55 V	360	38.2	1.1
7	7386.00	47.4 PK	74.0	-26.6	2.39 V	181	39.8	7.6
8	7386.00	34.0 AV	54.0	-20.0	2.39 V	181	26.4	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.

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	60.6 PK	74.0	-13.4	1.03 H	101	66.3	-5.7
2	2390.00	47.7 AV	54.0	-6.3	1.03 H	101	53.4	-5.7
3	*2422.00	96.7 PK			1.03 H	101	102.2	-5.5
4	*2422.00	86.1 AV			1.03 H	101	91.6	-5.5
5	4844.00	43.1 PK	74.0	-30.9	3.15 H	60	42.3	0.8
6	4844.00	28.6 AV	54.0	-25.4	3.15 H	60	27.8	0.8
7	7266.00	47.5 PK	74.0	-26.5	1.18 H	236	40.0	7.5
8	7266.00	34.8 AV	54.0	-19.2	1.18 H	236	27.3	7.5
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	2390.00	66.9 PK	74.0	-7.1	1.63 V	181	72.6	-5.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.63 V**	**181**	**59.6**	**-5.7**
3	*2422.00	106.1 PK			1.63 V	181	111.6	-5.5
4	*2422.00	95.4 AV			1.63 V	181	100.9	-5.5
5	4844.00	47.6 PK	74.0	-26.4	1.56 V	360	46.8	0.8
6	4844.00	33.2 AV	54.0	-20.8	1.56 V	360	32.4	0.8
7	7266.00	47.7 PK	74.0	-26.3	2.33 V	171	40.2	7.5
8	7266.00	34.4 AV	54.0	-19.6	2.33 V	171	26.9	7.5

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
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	61.8 PK	74.0	-12.2	1.03 H	103	67.5	-5.7
2	2390.00	48.3 AV	54.0	-5.7	1.03 H	103	54.0	-5.7
3	*2437.00	103.1 PK			1.03 H	103	108.6	-5.5
4	*2437.00	92.4 AV			1.03 H	103	97.9	-5.5
5	2483.50	59.2 PK	74.0	-14.8	1.03 H	103	64.7	-5.5
6	2483.50	44.3 AV	54.0	-9.7	1.03 H	103	49.8	-5.5
7	4874.00	43.3 PK	74.0	-30.7	3.21 H	69	42.4	0.9
8	4874.00	28.8 AV	54.0	-25.2	3.21 H	69	27.9	0.9
9	7311.00	47.1 PK	74.0	-26.9	1.22 H	241	39.7	7.4
10	7311.00	34.5 AV	54.0	-19.5	1.22 H	241	27.1	7.4
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	69.3 PK	74.0	-4.7	1.58 V	174	75.0	-5.7
2	2390.00	53.7 AV	54.0	-0.3	1.58 V	174	59.4	-5.7
3	*2437.00	112.1 PK			1.58 V	174	117.6	-5.5
4	*2437.00	101.6 AV			1.58 V	174	107.1	-5.5
5	2483.50	67.3 PK	74.0	-6.7	1.58 V	174	72.8	-5.5
6	2483.50	51.4 AV	54.0	-2.6	1.58 V	174	56.9	-5.5
7	4874.00	48.0 PK	74.0	-26.0	1.58 V	360	47.1	0.9
8	4874.00	33.6 AV	54.0	-20.4	1.58 V	360	32.7	0.9
9	7311.00	47.9 PK	74.0	-26.1	2.35 V	156	40.5	7.4
10	7311.00	34.9 AV	54.0	-19.1	2.35 V	156	27.5	7.4

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	99.1 PK			1.03 H	102	104.6	-5.5
2	*2452.00	88.6 AV			1.03 H	102	94.1	-5.5
3	2483.50	61.0 PK	74.0	-13.0	1.03 H	102	66.5	-5.5
4	2483.50	47.8 AV	54.0	-6.2	1.03 H	102	53.3	-5.5
5	4904.00	42.7 PK	74.0	-31.3	3.16 H	65	41.7	1.0
6	4904.00	28.1 AV	54.0	-25.9	3.16 H	65	27.1	1.0
7	7356.00	47.0 PK	74.0	-27.0	1.16 H	233	39.4	7.6
8	7356.00	34.5 AV	54.0	-19.5	1.16 H	233	26.9	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	*2452.00	108.2 PK			1.67 V	174	113.7	-5.5
2	*2452.00	97.8 AV			1.67 V	174	103.3	-5.5
3	2483.50	70.8 PK	74.0	-3.2	1.67 V	174	76.3	-5.5
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.67 V**	**174**	**59.4**	**-5.5**
5	4904.00	47.1 PK	74.0	-26.9	1.53 V	360	46.1	1.0
6	4904.00	33.0 AV	54.0	-21.0	1.53 V	360	32.0	1.0
7	7356.00	47.3 PK	74.0	-26.7	2.35 V	159	39.7	7.6
8	7356.00	34.3 AV	54.0	-19.7	2.35 V	159	26.7	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.

Below 1GHz Data:

802.11b

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	40.28	30.4 QP	40.0	-9.6	1.50 H	312	39.5	-9.1
2	65.99	30.3 QP	40.0	-9.7	1.05 H	74	40.4	-10.1
3	103.43	30.7 QP	43.5	-12.8	1.50 H	79	43.0	-12.3
4	174.36	37.7 QP	43.5	-5.8	1.50 H	110	47.3	-9.6
5	212.94	37.9 QP	43.5	-5.6	1.50 H	202	49.9	-12.0
6	375.00	35.1 QP	46.0	-10.9	1.05 H	45	41.2	-6.1
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	38.21	36.4 QP	40.0	-3.6	1.05 V	84	45.6	-9.2
2	74.33	32.5 QP	40.0	-7.5	1.05 V	353	44.3	-11.8
3	175.99	40.1 QP	43.5	-3.4	1.50 V	0	49.9	-9.8
4	211.39	36.5 QP	43.5	-7.0	1.05 V	332	48.5	-12.0
5	500.01	41.8 QP	46.0	-4.2	1.05 V	214	44.5	-2.7
6	533.33	42.7 QP	46.0	-3.3	1.05 V	96	45.0	-2.3

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	100375	May 09, 2016	May 08, 2017
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Aug. 31, 2016	Aug. 30, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-003	Sep. 13, 2016	Sep. 12, 2017
50 ohms Terminator	N/A	04	Nov. 18, 2015	Nov. 17, 2016
50 ohms Terminator	50	3	Oct. 21, 2015	Oct. 20, 2016
Software BVADT	BVADT_Cond_ V7.3.7.4	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. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Oct. 12, 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.

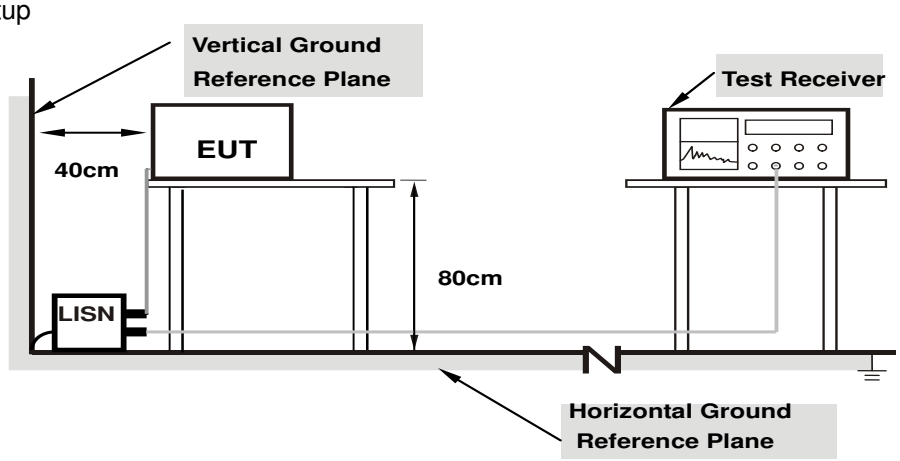
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

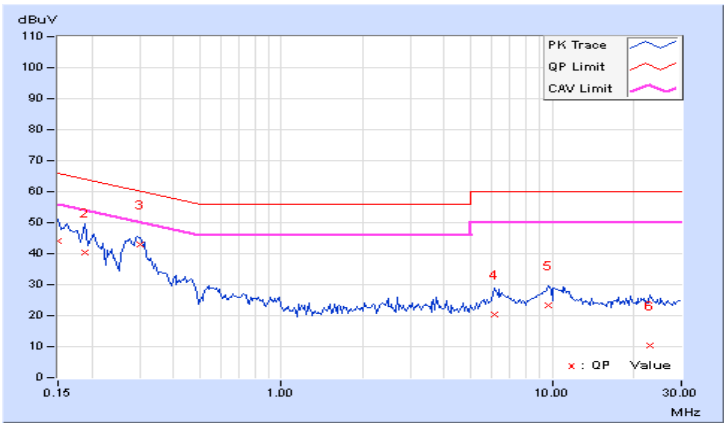
4.2.7 Test Results (Mode 1)

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	10.14	33.86	21.72	44.00	31.86	66.00	56.00	-22.00	-24.14
2	0.18906	10.12	30.20	16.55	40.32	26.67	64.08	54.08	-23.76	-27.41
3	**0.30234**	**10.11**	**32.88**	**26.59**	**42.99**	**36.70**	**60.18**	**50.18**	**-17.19**	**-13.48**
4	6.14844	10.35	9.95	2.14	20.30	12.49	60.00	50.00	-39.70	-37.51
5	9.69922	10.42	12.84	8.43	23.26	18.85	60.00	50.00	-36.74	-31.15
6	23.10547	10.92	-0.72	-3.89	10.20	7.03	60.00	50.00	-49.80	-42.97

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.

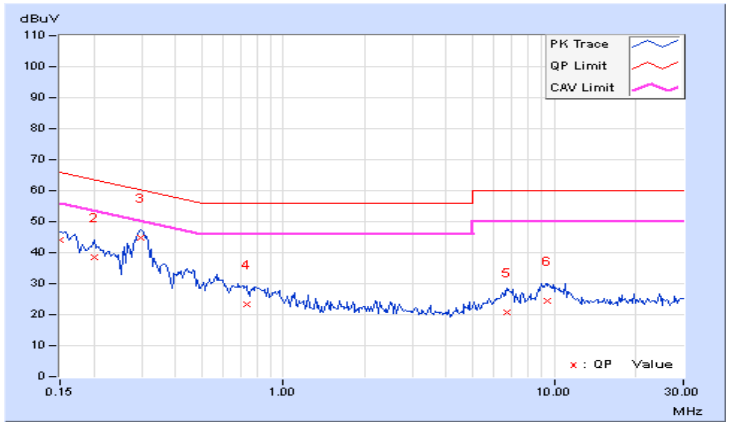


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	33.88	21.16	44.07	31.35	66.00	56.00	-21.93	-24.65
2	0.20078	10.07	28.34	17.64	38.41	27.71	63.58	53.58	-25.17	-25.87
3	0.29844	10.08	34.73	25.44	44.81	35.52	60.29	50.29	-15.48	-14.77
4	0.73203	10.16	13.20	6.08	23.36	16.24	56.00	46.00	-32.64	-29.76
5	6.71875	10.39	10.50	2.08	20.89	12.47	60.00	50.00	-39.11	-37.53
6	9.50000	10.47	13.87	9.33	24.34	19.80	60.00	50.00	-35.66	-30.20

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.



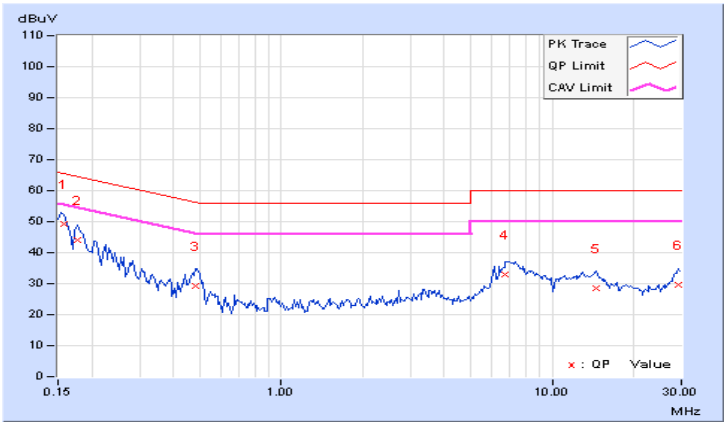
4.2.8 Test Results (Mode 2)

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	0.15781	10.14	39.12	27.18	49.26	37.32	65.58	55.58	-16.32	-18.26
2	0.17734	10.13	34.11	21.41	44.24	31.54	64.61	54.61	-20.37	-23.07
3	0.48203	10.11	19.09	12.98	29.20	23.09	56.30	46.30	-27.10	-23.21
4	6.71875	10.36	22.49	18.09	32.85	28.45	60.00	50.00	-27.15	-21.55
5	14.52734	10.62	17.72	12.85	28.34	23.47	60.00	50.00	-31.66	-26.53
6	29.19141	11.14	18.37	13.24	29.51	24.38	60.00	50.00	-30.49	-25.62

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.

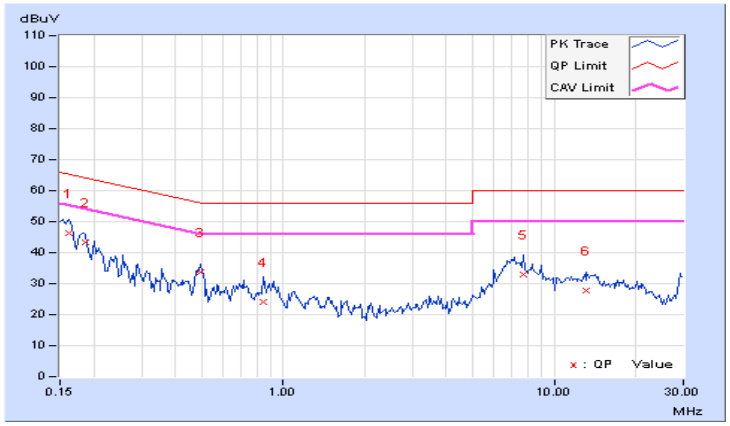


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.16172	10.16	36.25	24.18	46.41	34.34	65.38	55.38	-18.97	-21.04
2	0.18516	10.11	33.28	22.63	43.39	32.74	64.25	54.25	-20.86	-21.51
3	0.49375	10.11	23.48	18.56	33.59	28.67	56.10	46.10	-22.51	-17.43
4	0.84922	10.18	13.93	9.17	24.11	19.35	56.00	46.00	-31.89	-26.65
5	7.68359	10.42	22.40	17.66	32.82	28.08	60.00	50.00	-27.18	-21.92
6	13.21484	10.61	17.11	12.22	27.72	22.83	60.00	50.00	-32.28	-27.17

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.

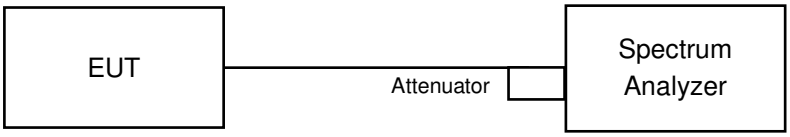


4.3 6dB Bandwidth Measurement

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
		Chain 0	Chain 1	Chain 2		
1	2412	8.15	8.13	8.15	0.5	PASS
6	2437	8.62	8.62	8.62	0.5	PASS
11	2462	8.13	8.13	8.55	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	16.47	16.48	16.46	0.5	PASS
6	2437	16.44	16.46	16.42	0.5	PASS
11	2462	16.48	16.43	16.45	0.5	PASS

802.11n (HT20)

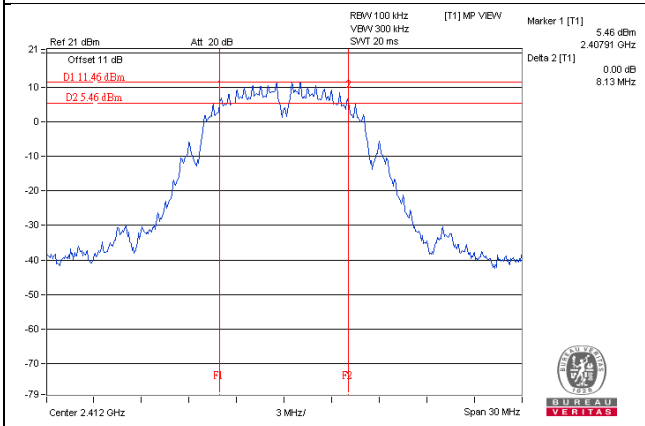
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	17.64	17.62	17.65	0.5	Pass
6	2437	17.61	17.65	17.66	0.5	Pass
11	2462	17.65	17.69	17.68	0.5	Pass

802.11n (HT40)

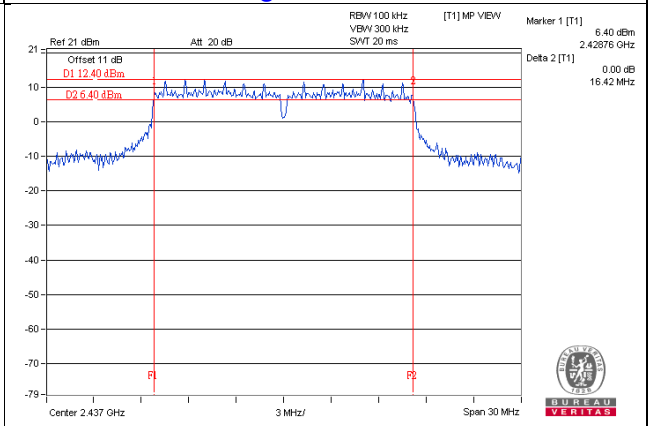
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
3	2422	36.16	35.98	35.87	0.5	Pass
6	2437	36.43	36.01	35.88	0.5	Pass
9	2452	36.18	36.46	35.97	0.5	Pass

Spectrum Plot of Worst Value

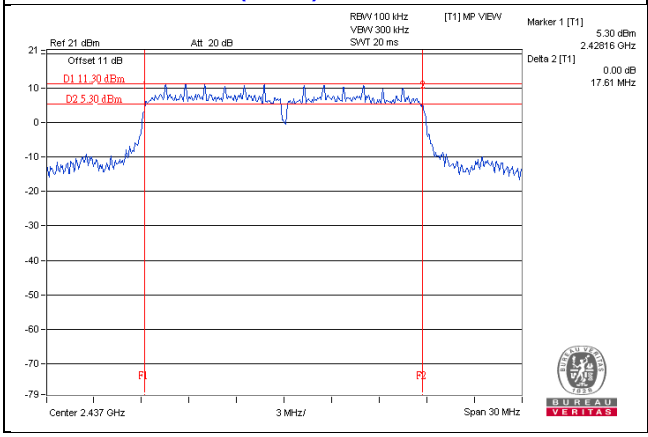
802.11b / Chain 1 : CH1



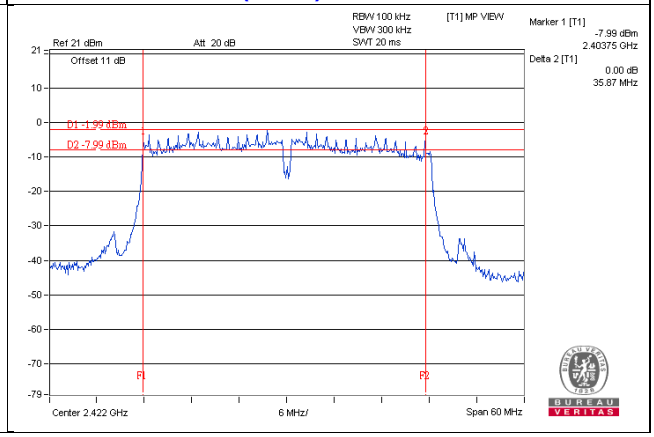
802.11g / Chain 2 : CH6



802.11n (HT20) / Chain 0 : CH6



802.11n (HT40) / Chain 2 : CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

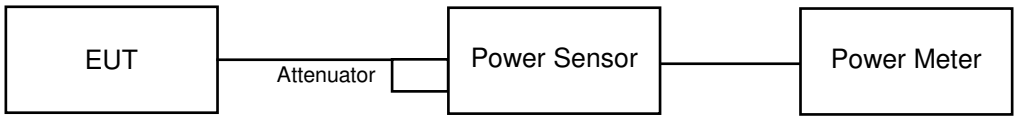
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the 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

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	19.66	19.82	19.87	285.461	24.56	30	Pass
6	2437	22.89	23.14	22.53	579.66	27.63	30	Pass
11	2462	19.35	19.44	19.42	261.499	24.17	30	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	16.61	16.86	17.00	144.462	21.60	30	Pass
6	2437	22.79	22.99	22.52	567.824	27.54	30	Pass
11	2462	15.30	15.51	15.73	106.858	20.29	30	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	14.87	14.83	15.63	97.658	19.90	30	Pass
6	2437	22.73	22.92	22.47	559.987	27.48	30	Pass
11	2462	15.28	15.18	16.29	109.25	20.38	30	Pass

802.11n (HT40)

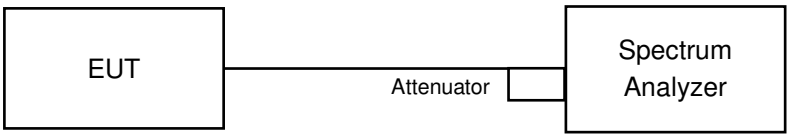
Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
3	2422	8.31	8.02	10.68	24.81	13.95	30	Pass
6	2437	14.16	14.00	16.10	91.919	19.63	30	Pass
9	2452	9.77	9.65	12.09	34.891	15.43	30	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

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

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=3) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-10.79	4.77	-6.02	8.00	Pass
	6	2437	-7.63	4.77	-2.86	8.00	Pass
	11	2462	-11.52	4.77	-6.75	8.00	Pass
1	1	2412	-10.49	4.77	-5.72	8.00	Pass
	6	2437	-7.03	4.77	-2.26	8.00	Pass
	11	2462	-11.62	4.77	-6.85	8.00	Pass
2	1	2412	-10.18	4.77	-5.41	8.00	Pass
	6	2437	-7.43	4.77	-2.66	8.00	Pass
	11	2462	-10.59	4.77	-5.82	8.00	Pass

NOTE: Directional gain = 5.65dBi < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=3) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-15.71	4.77	-10.94	8.00	Pass
	6	2437	-9.57	4.77	-4.80	8.00	Pass
	11	2462	-16.79	4.77	-12.02	8.00	Pass
1	1	2412	-15.83	4.77	-11.06	8.00	Pass
	6	2437	-10.03	4.77	-5.26	8.00	Pass
	11	2462	-17.57	4.77	-12.80	8.00	Pass
2	1	2412	-15.68	4.77	-10.91	8.00	Pass
	6	2437	-9.73	4.77	-4.96	8.00	Pass
	11	2462	-17.38	4.77	-12.61	8.00	Pass

NOTE: Directional gain = 5.65dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=3) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-18.63	4.77	-13.86	8.00	Pass
	6	2437	-10.67	4.77	-5.90	8.00	Pass
	11	2462	-17.13	4.77	-12.36	8.00	Pass
1	1	2412	-18.25	4.77	-13.48	8.00	Pass
	6	2437	-9.86	4.77	-5.09	8.00	Pass
	11	2462	-17.69	4.77	-12.92	8.00	Pass
2	1	2412	-18.13	4.77	-13.36	8.00	Pass
	6	2437	-9.82	4.77	-5.05	8.00	Pass
	11	2462	-17.93	4.77	-13.16	8.00	Pass

NOTE: Directional gain = 5.65dBi < 6dBi , so the power density limit shall not be reduced.

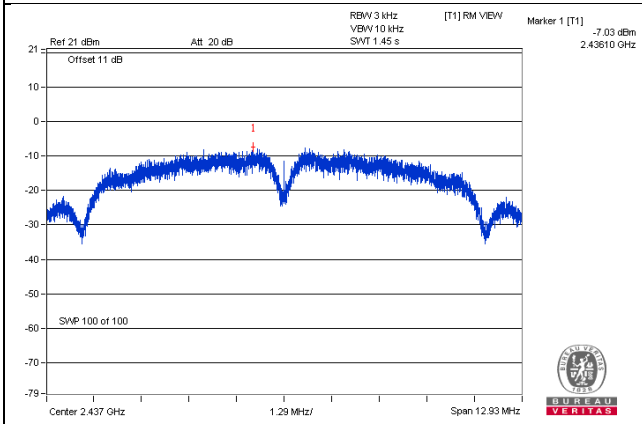
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=3) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-23.92	4.77	-19.15	8.00	Pass
	6	2437	-17.90	4.77	-13.13	8.00	Pass
	9	2452	-22.80	4.77	-18.03	8.00	Pass
1	3	2422	-23.41	4.77	-18.64	8.00	Pass
	6	2437	-19.84	4.77	-15.07	8.00	Pass
	9	2452	-22.98	4.77	-18.21	8.00	Pass
2	3	2422	-24.01	4.77	-19.24	8.00	Pass
	6	2437	-18.61	4.77	-13.84	8.00	Pass
	9	2452	-22.29	4.77	-17.52	8.00	Pass

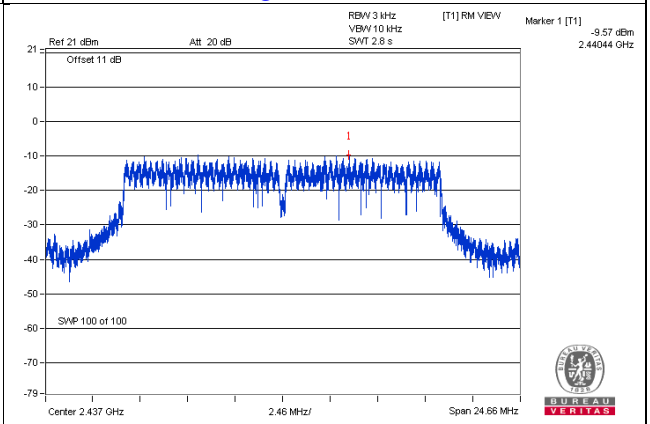
NOTE: Directional gain = 5.65dBi < 6dBi , so the power density limit shall not be reduced.

Spectrum Plot of Worst Value

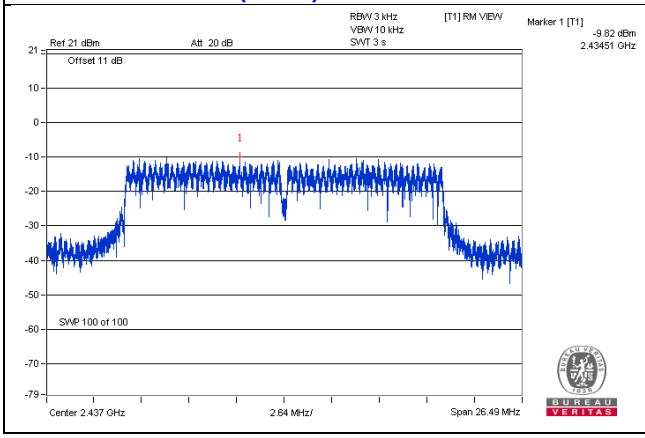
802.11b / Chain 1 : CH6



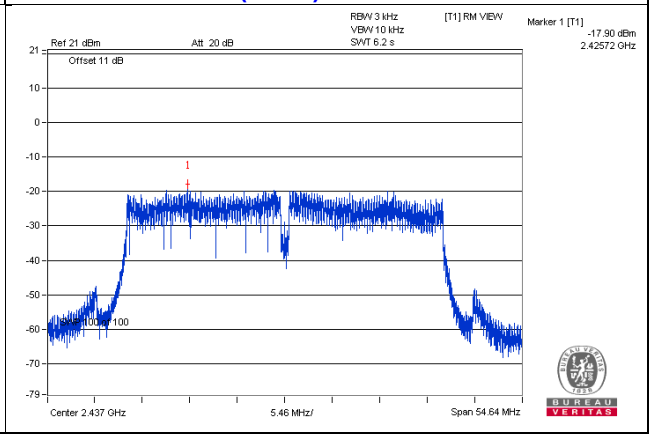
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 2 : CH6



802.11n (HT40) / Chain 0 : CH6

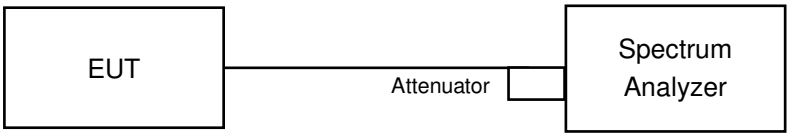


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dB 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

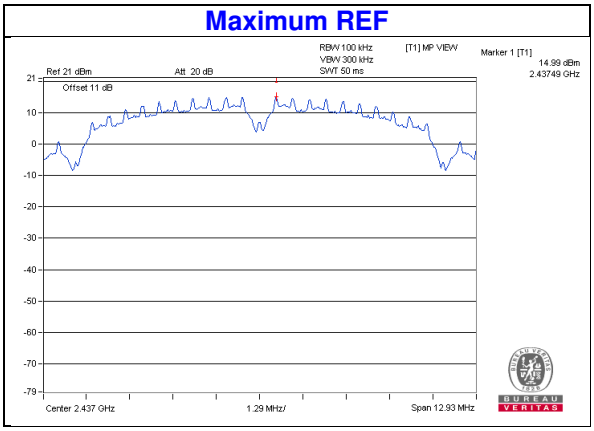
Same as Item 4.3.6

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 30dB offset below D1. It shows compliance with the requirement.

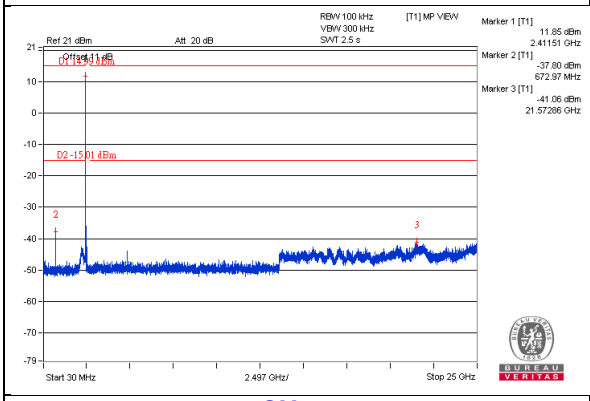
802.11b

Maximum REF

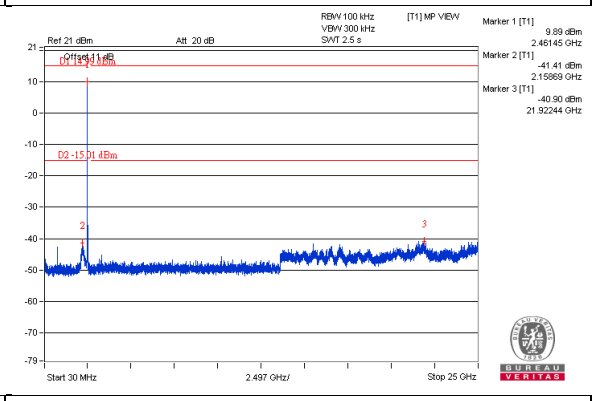


CHAIN 0

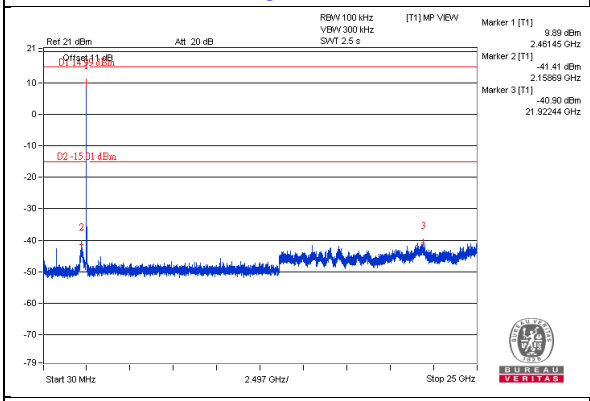
CH 1



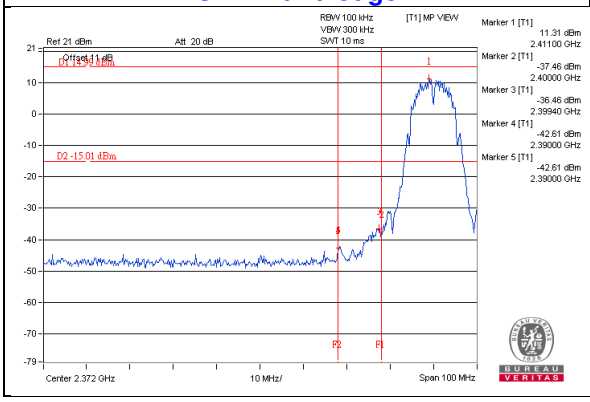
CH 6



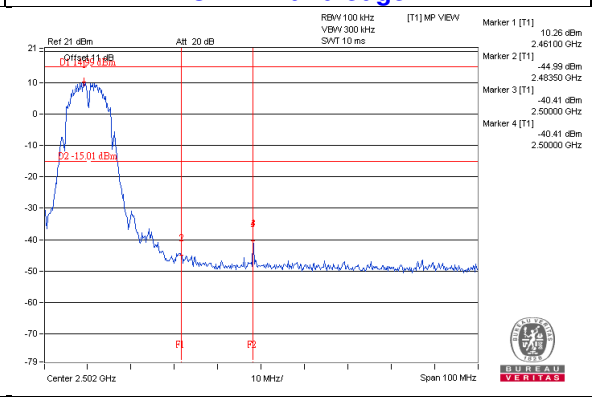
CH 11



CH 1 Band edge

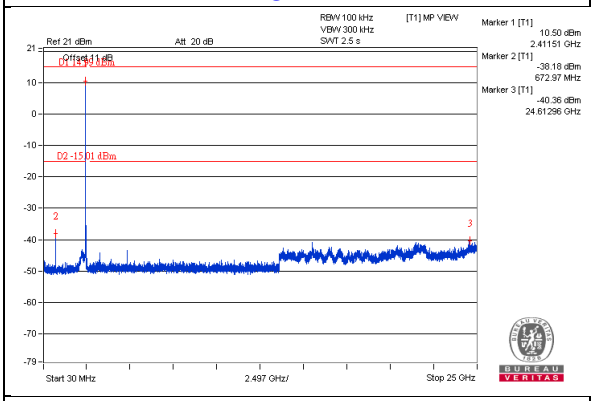


CH 11 Band edge

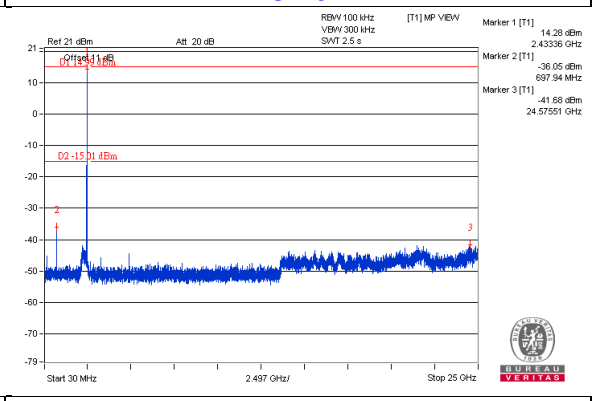


CHAIN 1

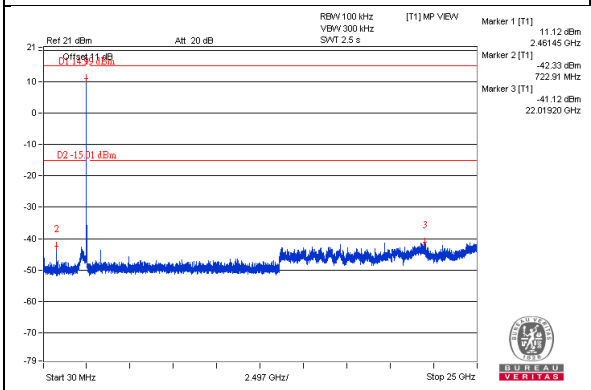
CH 1



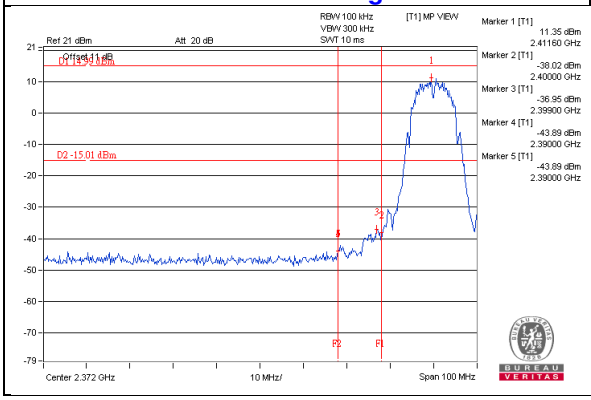
CH 6



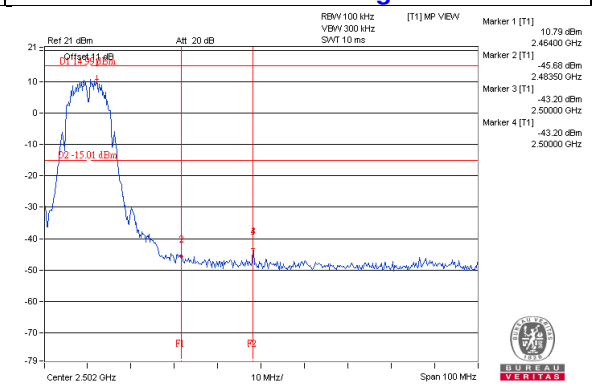
CH 11



CH 1 Band edge

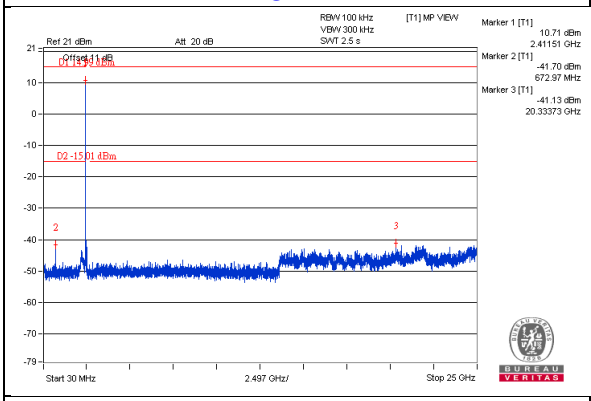


CH 11 Band edge

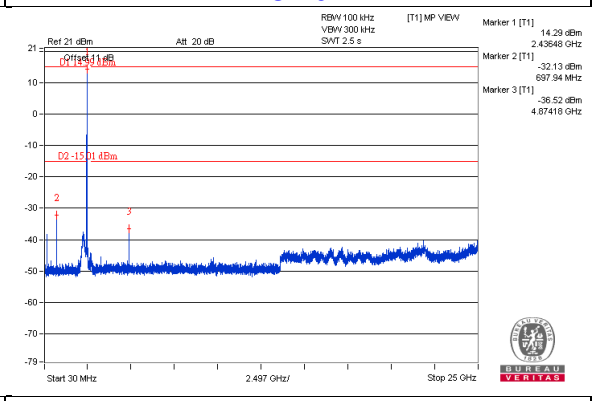


CHAIN 2

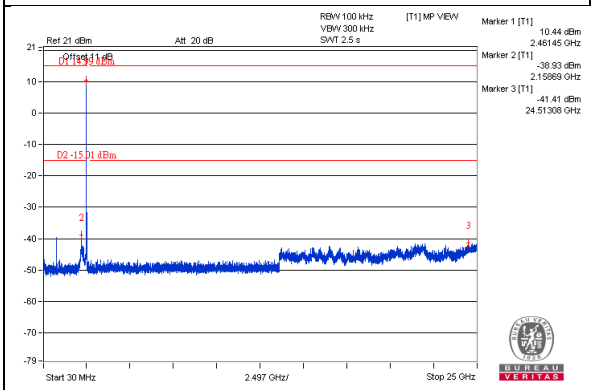
CH 1



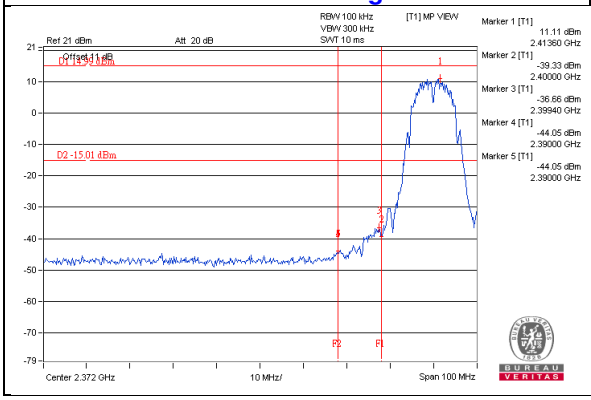
CH 6



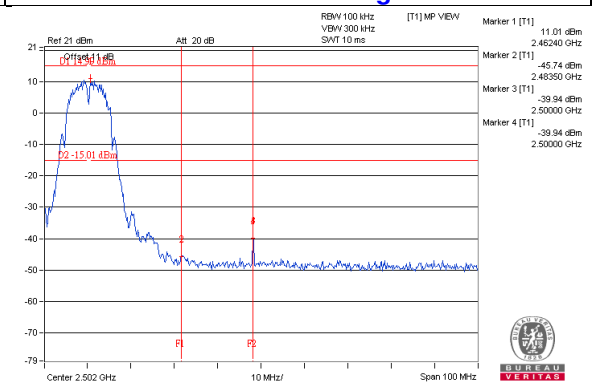
CH 11



CH 1 Band edge

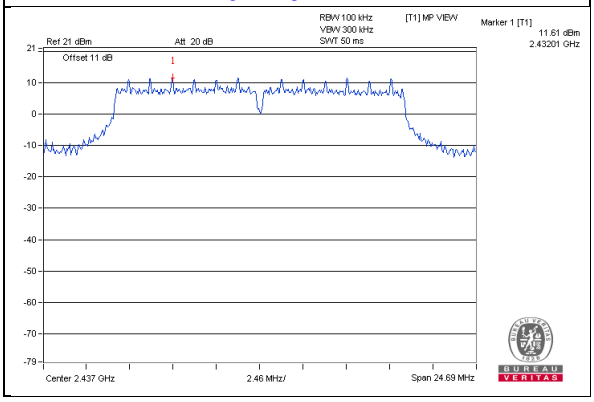


CH 11 Band edge



802.11g

Maximum REF



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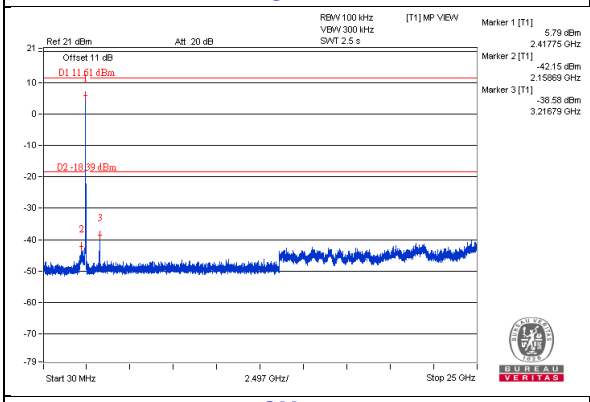
CH 1



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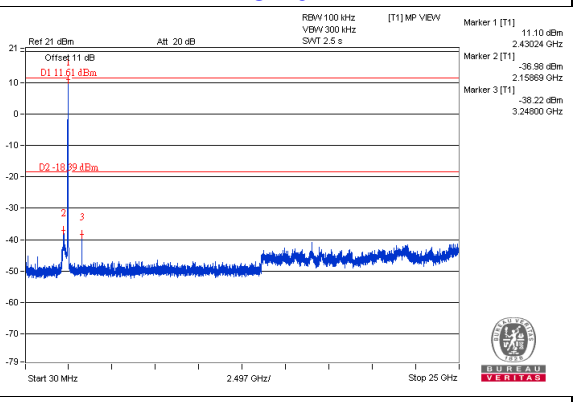

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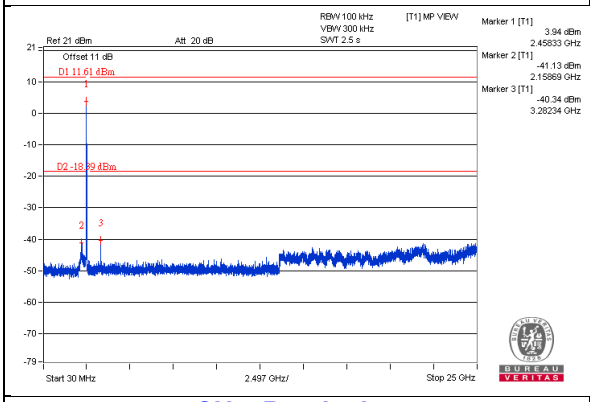

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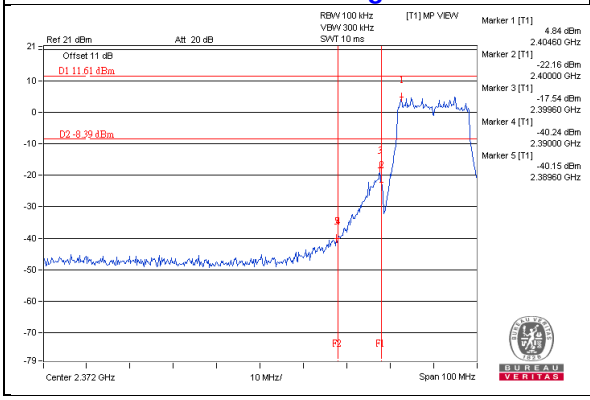

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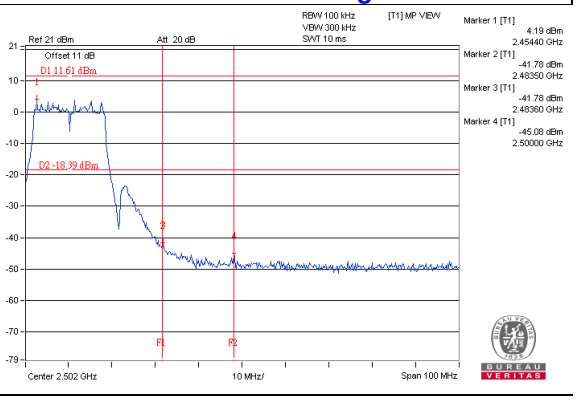

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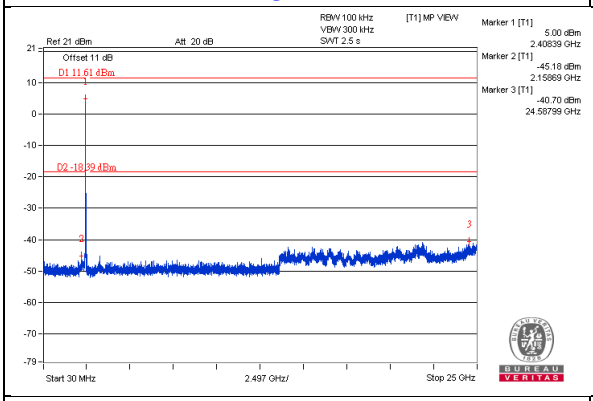
CH 1



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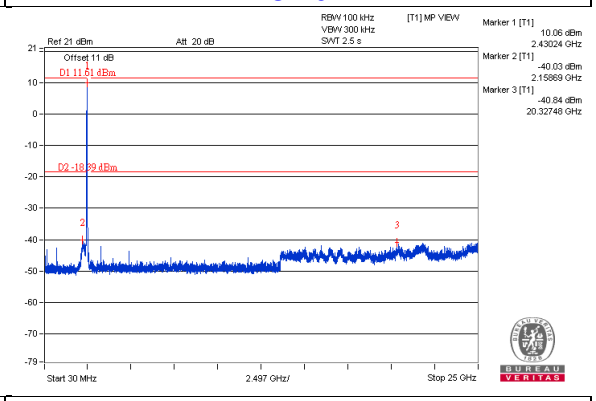

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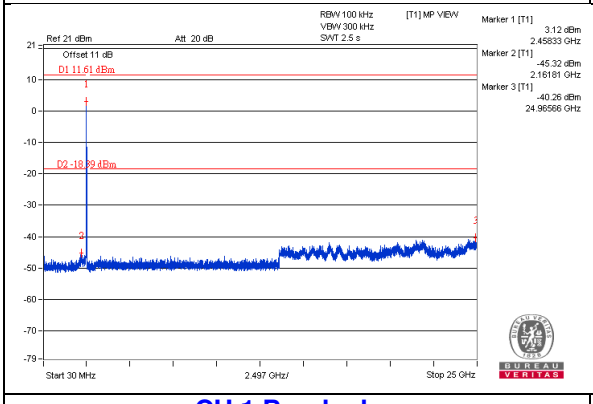

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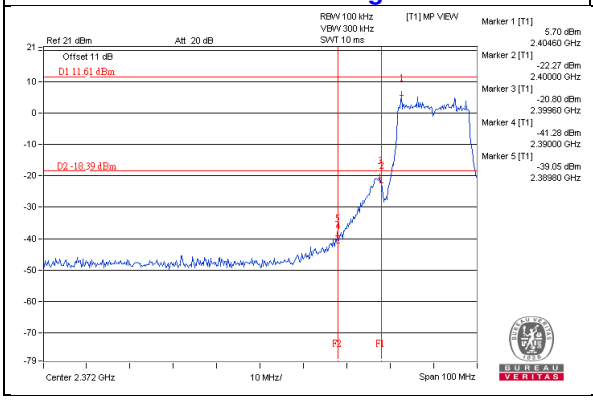

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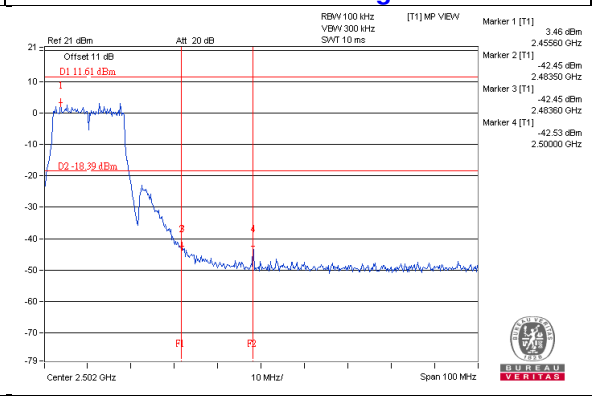
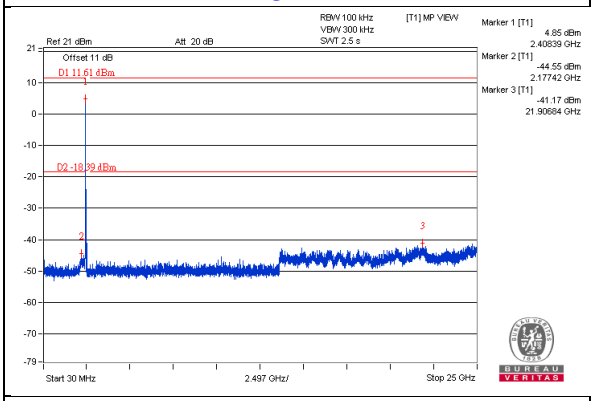


CHAIN 2

CH 1



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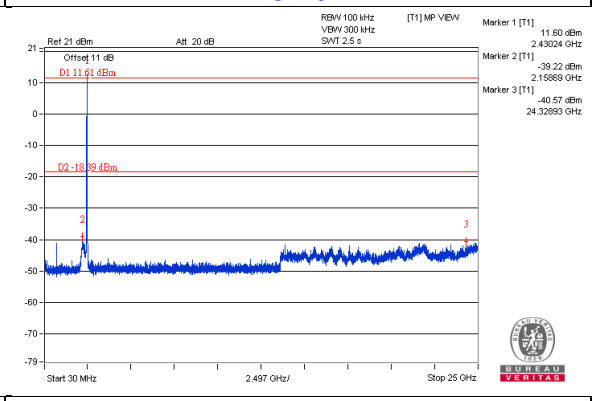

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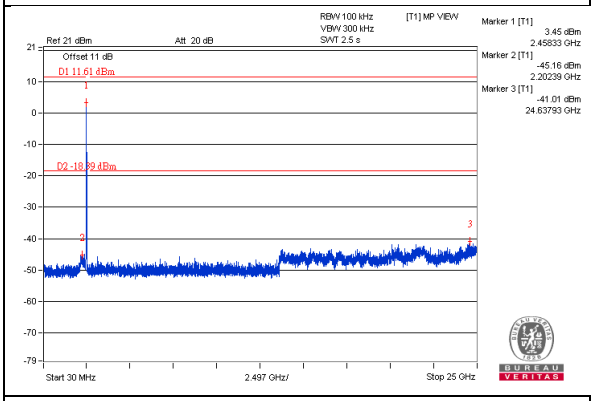

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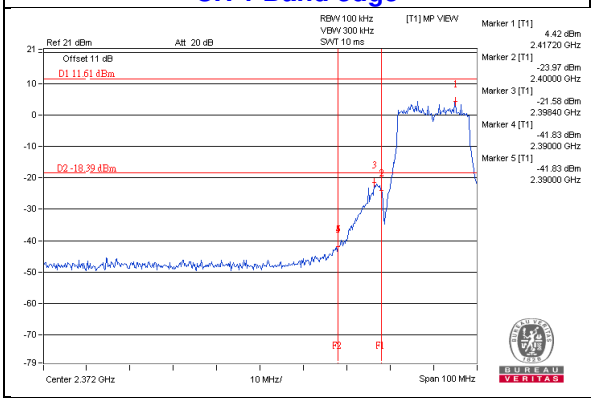

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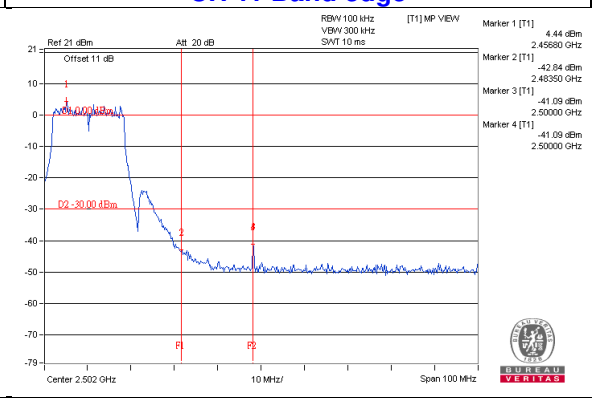

802.11n (HT20)

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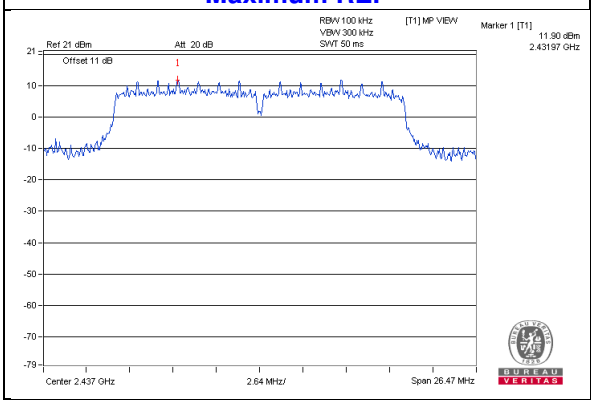

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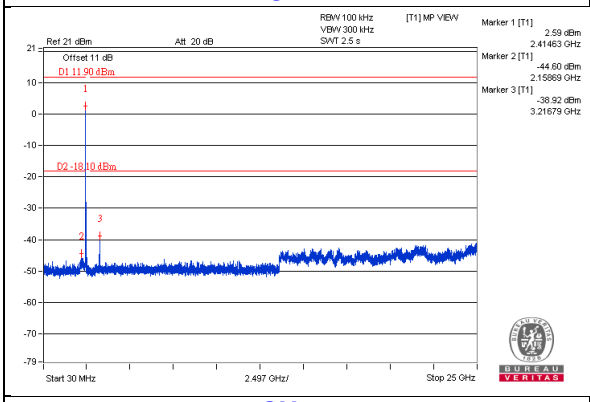

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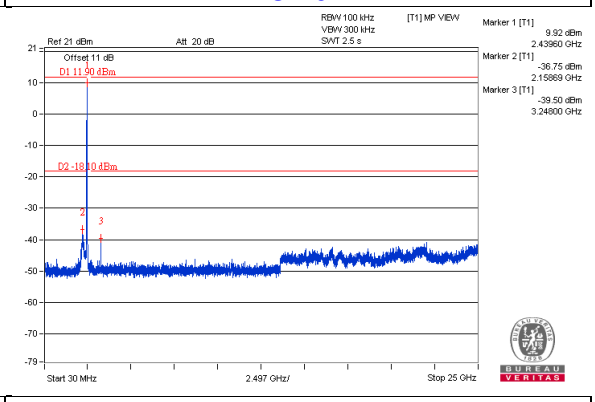

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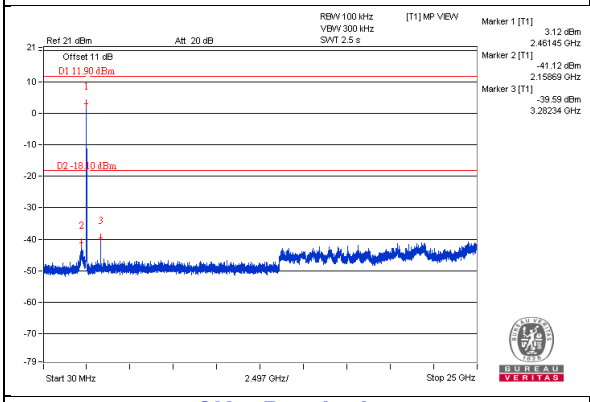

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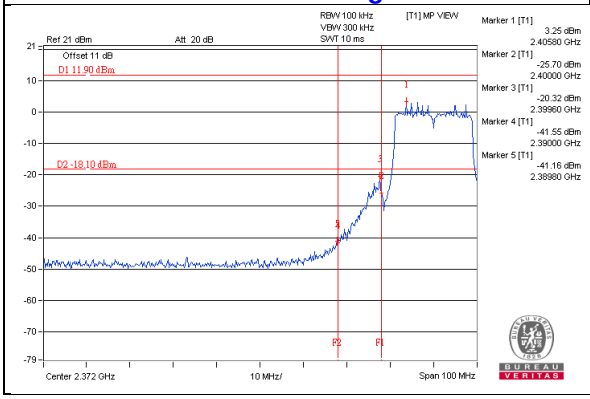

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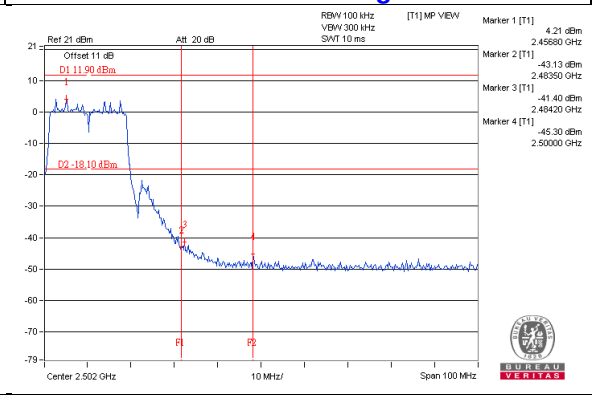
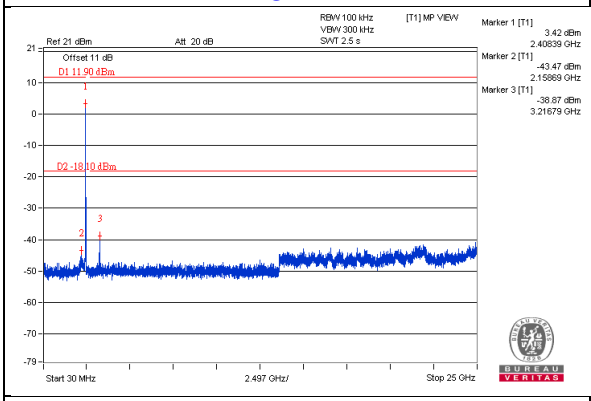


CHAIN 1

CH 1



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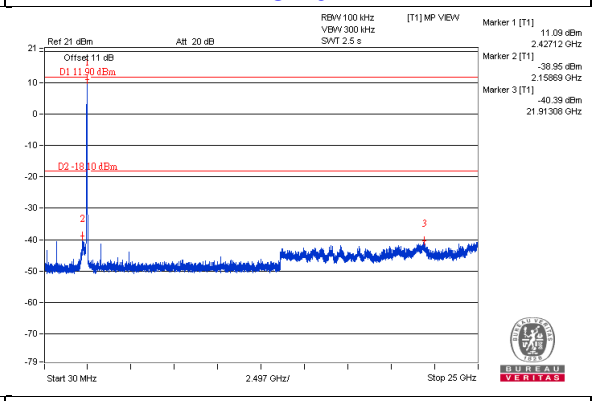

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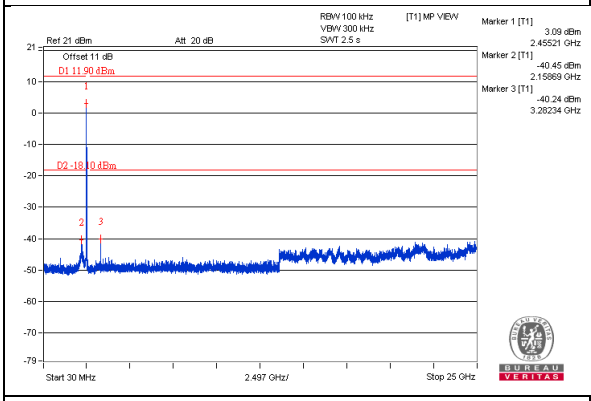

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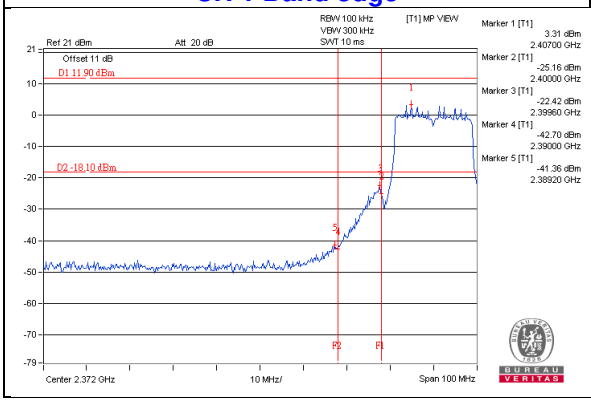

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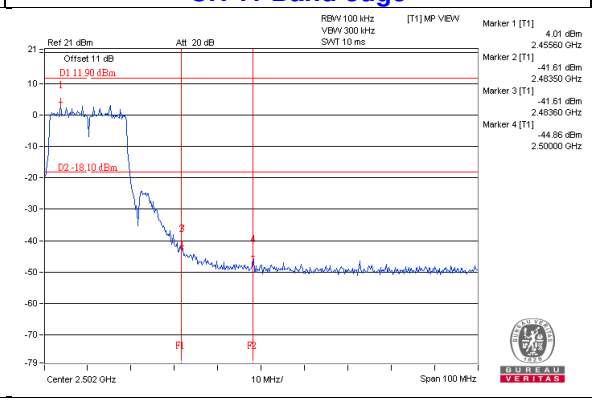
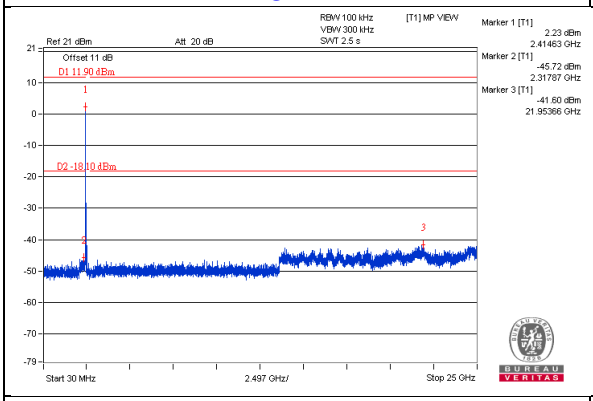


CHAIN 2

CH 1



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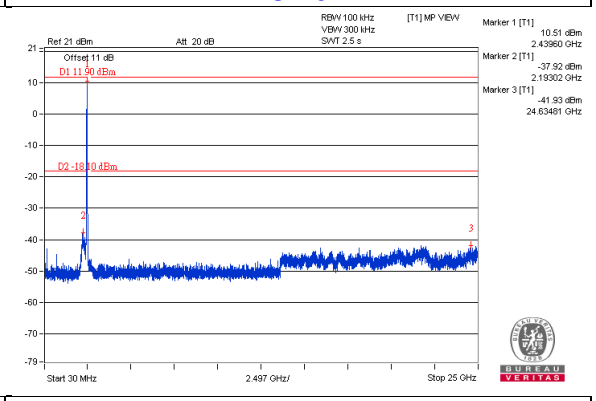

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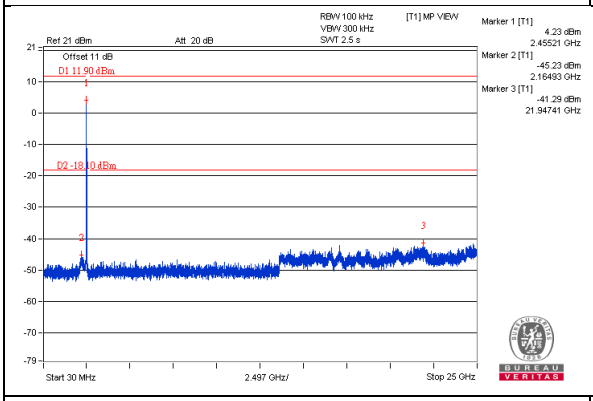

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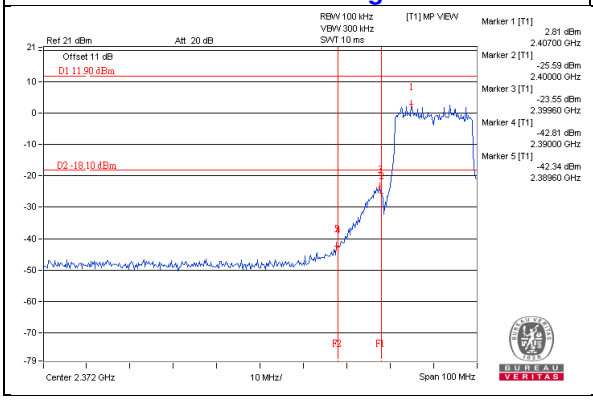

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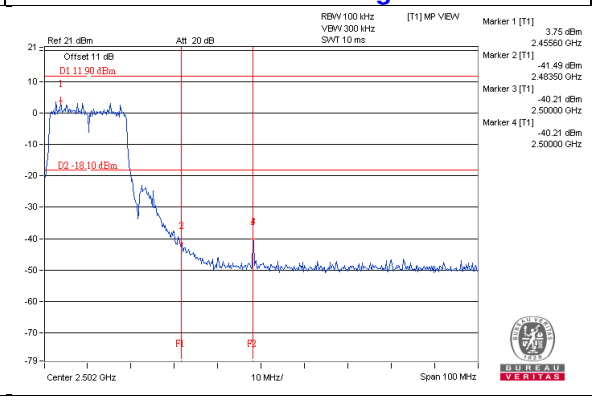

802.11n (HT40)

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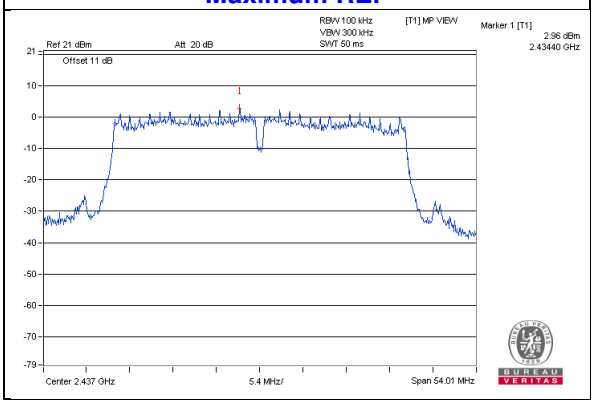
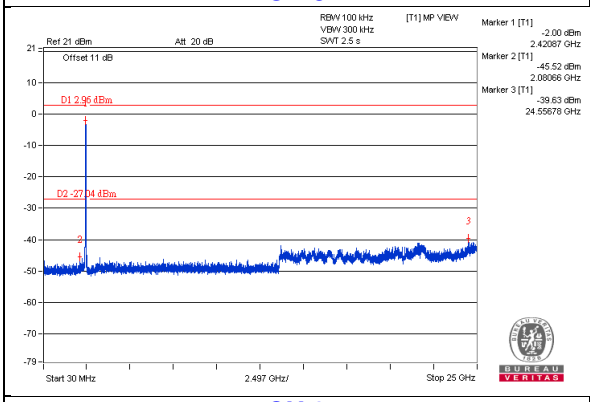


CHAIN 0

CH 3



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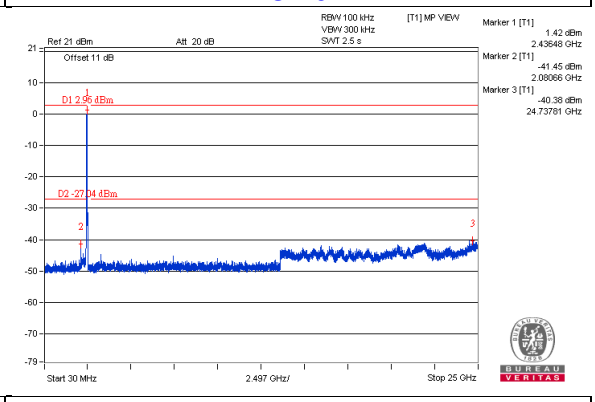

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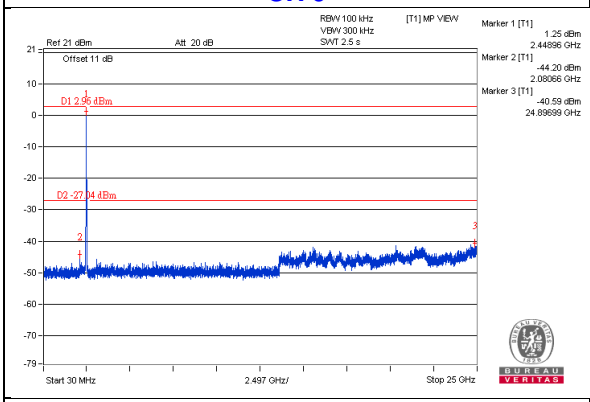

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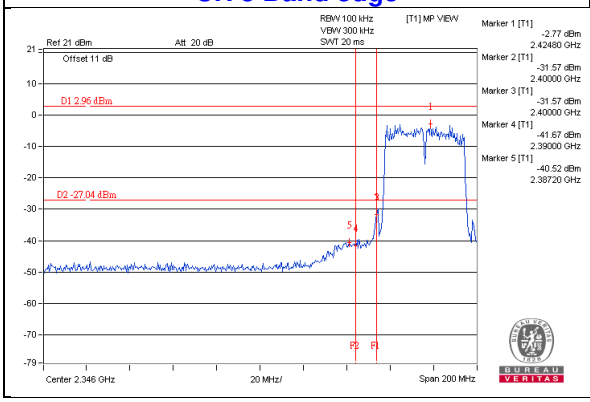
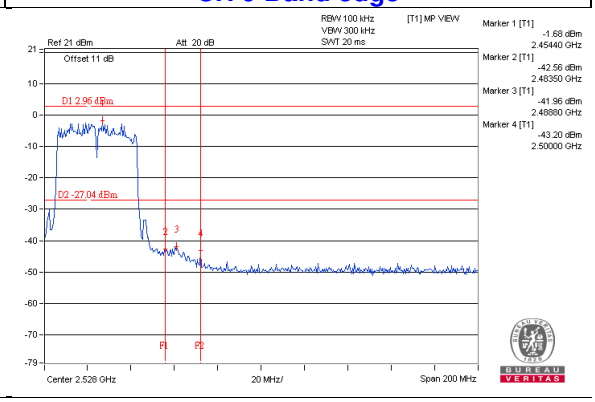
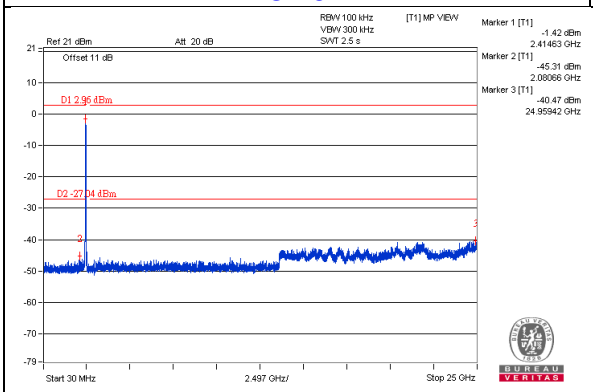


CH 9 Band edge

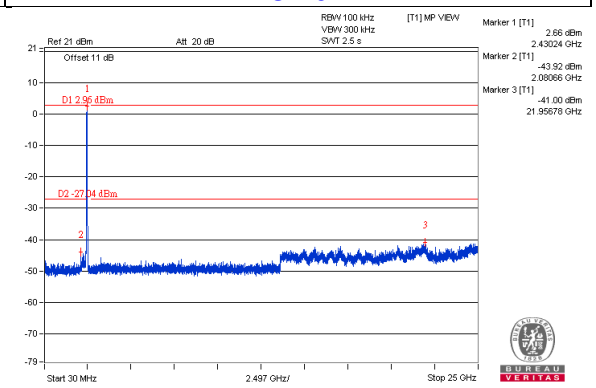


CHAIN 1

CH 3



CH 6



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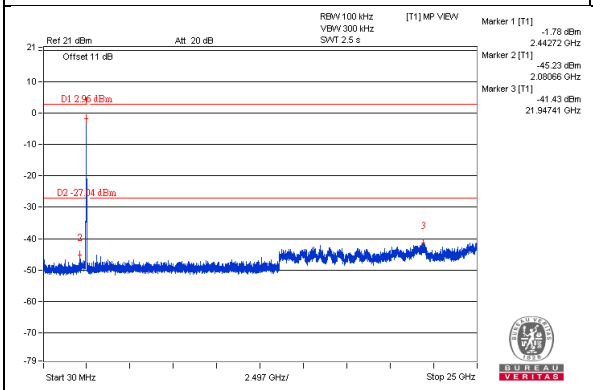

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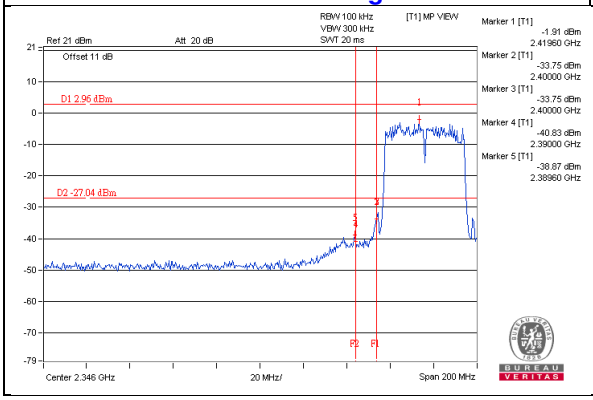

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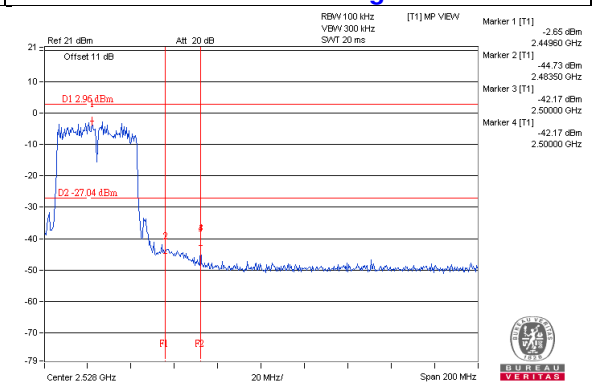
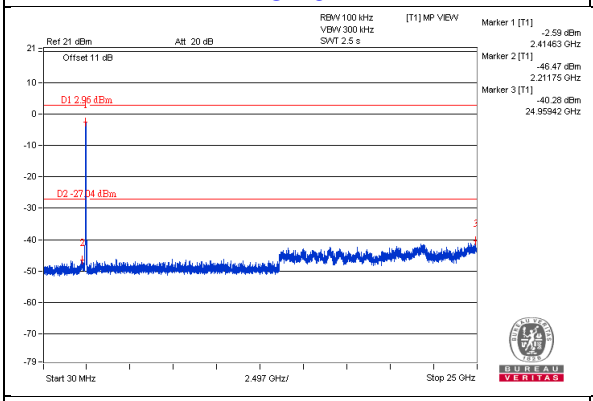
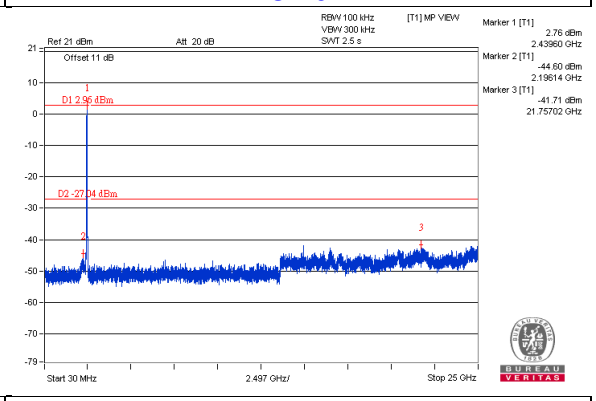


CHAIN 2

CH 3



CH 6



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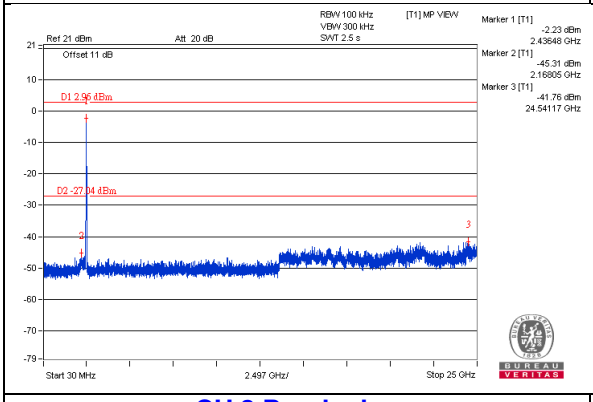
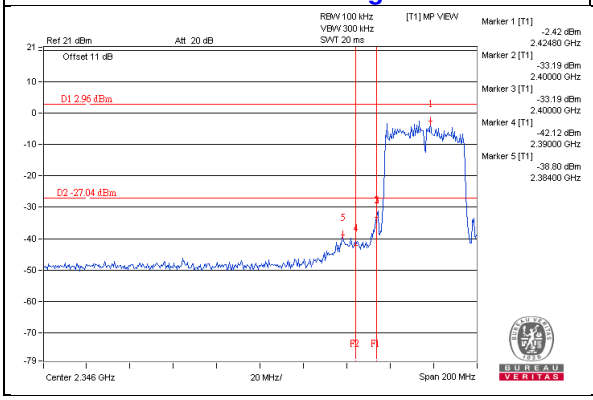
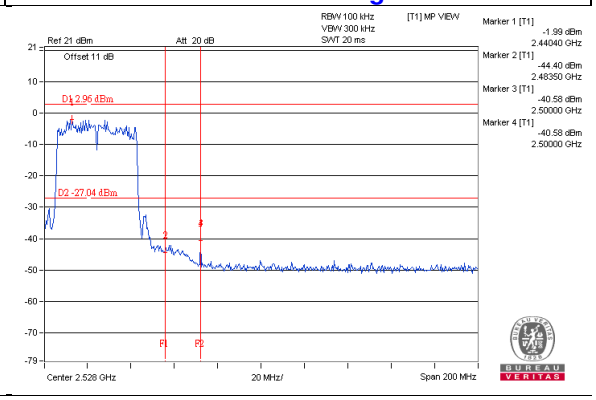


CH 3 Band edge



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:

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

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

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

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

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

--- END ---