FCC Test Report

Report No.: RF160419E08C

FCC ID: PY326200345

Test Model: WAC740

Received Date: Apr. 19, 2016

Test Date: June 21 to July 12, 2016

Issued Date: July 28, 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

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Release Control Record

Issue No.	Description	Date Issued
RF160419E08C	Original release.	July 28, 2016

1 Certificate of Conformity

Product: ProSAFE Dual Band Wireless AC Access Point

Brand: NETGEAR

Test Model: WAC740

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: June 21 to July 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:** July 28, 2016
Wendy Wu / Specialist

Approved by : _____ , **Date:** July 28, 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 -3.09dB at 0.56222MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.10dB at 2483.5MHz, 2483.5MHz, 2387.00MHz.
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 RSMA and 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	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	ProSAFE Dual Band Wireless AC Access Point
Brand	NETGEAR
Test Model	WAC740
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter or 48-55Vdc from POE
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 600Mbps 802.11ac: up to 1733.3Mbps
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:** **CDD Mode:** 970.785mW **Beamforming Mode:** 602.839mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 819.499mW **Beamforming Mode:** 819.499mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 909.707mW **Beamforming Mode:** 909.707mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

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

Adapter				
No	Brand Name	Model No.	PN	Spec.
1	NETGEAR	2ABL030F 1	332-10758-01	Input: 100-120Vac, 50/60Hz, 0.9A Output: 12Vdc, 2.5A Power cord (Unshielded, 1.8m)
2		ADS-40FPA-12	332-10759-01	Input: 100-120Vac, 60Hz, 0.9A Output: 12Vdc, 2.5A Power cord (Unshielded, 1.8m)
POE (test only, not for sale)				
No	Brand Name	Model No.	PN	Spec.
1	Microsemi Corp.	PD-9001-10G/AC	NA	Input: 100-240Vac, 50-60Hz, 1.5A Output: 55V, 0.63A
Note: From the above adapters & POE, the radiated emission worse case was found in POE. Therefore only the test data of the mode was recorded in this report.				

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:

External Antenna									
Transmitter Circuit (For 2.4G)	Transmitter Circuit (For 5G)	Brand	Model	Antenna Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type	Cable Loss(db)	Cable Length (mm)
Chain (0)	Chain (3)	Master Wave Tech	98364PRSX004	-0.2	2.4~2.4835	Dipole	R-SMA	1	172
				0	5.15~5.25			1.5	
				0.1	5.25~5.35			1.5	
				-0.8	5.47~5.725			1.5	
				-1	5.725~5.85			1.5	
Chain (1)	Chain (2)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	175
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	
Chain (2)	Chain (1)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	145
				0.2	5.15~5.25			1.3	
				0.3	5.25~5.35			1.3	
				-0.6	5.47~5.725			1.3	
				-0.8	5.725~5.85			1.3	
Chain (3)	Chain (0)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	135
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	

Internal Antenna						
Transmitter Circuit	Brand	Model	Antenna Gain(dBi)	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type
Chain (0)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (1)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (2)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (3)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		

4. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	4TX	4RX
802.11g	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11ac (VHT20)	MCS 0~8, Nss=1	4TX	4RX
	MCS 0~8, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~8, Nss=4	4TX	4RX
802.11ac (VHT40)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX
802.11ac (VHT80)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.

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 POE + Internal antenna
2	√	√	-	-	Power from POE + External antenna
3	-	-	√	-	Power from adapter 1 + Internal antenna
4	-	-	√	-	Power from adapter 2 + Internal antenna

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 **Y-plane (Internal antenna) & X-plane (External antenna for above 1GHz) & Y-plane (External antenna for below 1GHz).**
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.

CDD Mode					
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.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

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.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

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.

CDD Mode					
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
Beamforming Mode (Nss = 1) (Output power only)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
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
Beamforming Mode (Nss = 2) (Output power only)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

Test Condition:

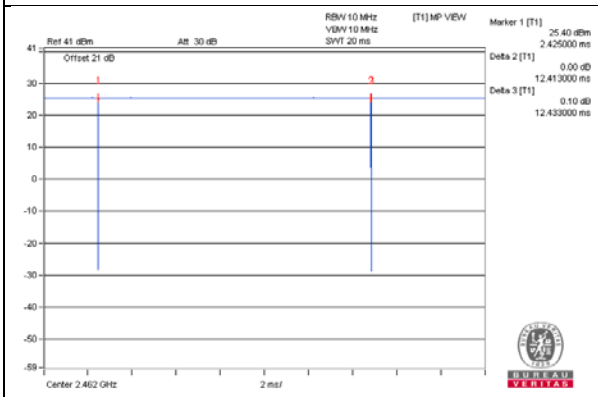
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 66%RH	120Vac, 60Hz	Russell Yeh
RE<1G	24deg. C, 66%RH	120Vac, 60Hz	Russell Yeh
PLC	26deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

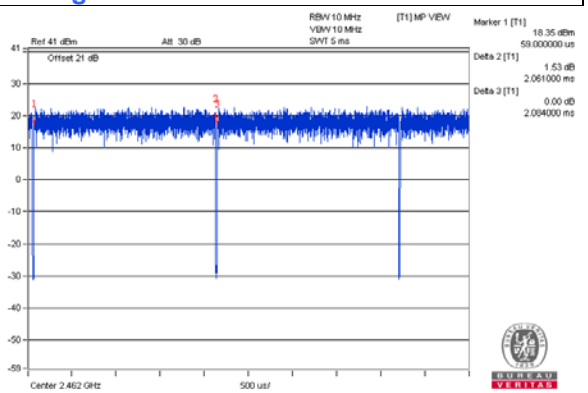
If duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11b: Duty cycle = 12.413/12.433 = 0.998
802.11g: Duty cycle = 2.061/2.084 = 0.989
802.11n (HT20): Duty cycle = 1.917/1.953 = 0.982
802.11n (HT40): Duty cycle = 1.239/1.26 = 0.983

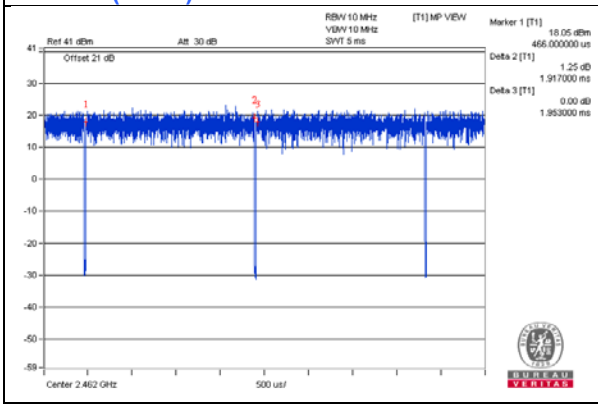
802.11b



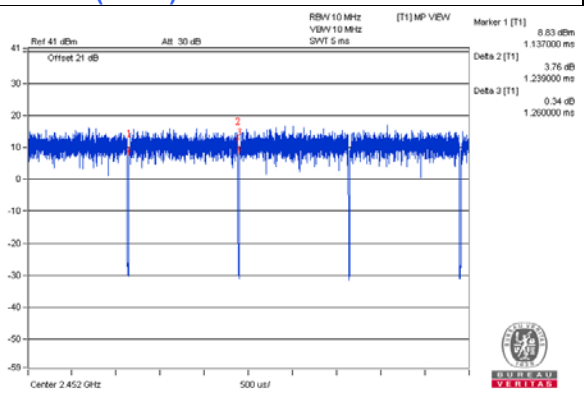
802.11g



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.	Notebook Computer	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	POE	Microsemi Corp.	PD-9001-10G/AC	NA	NA	Supplied by client
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab

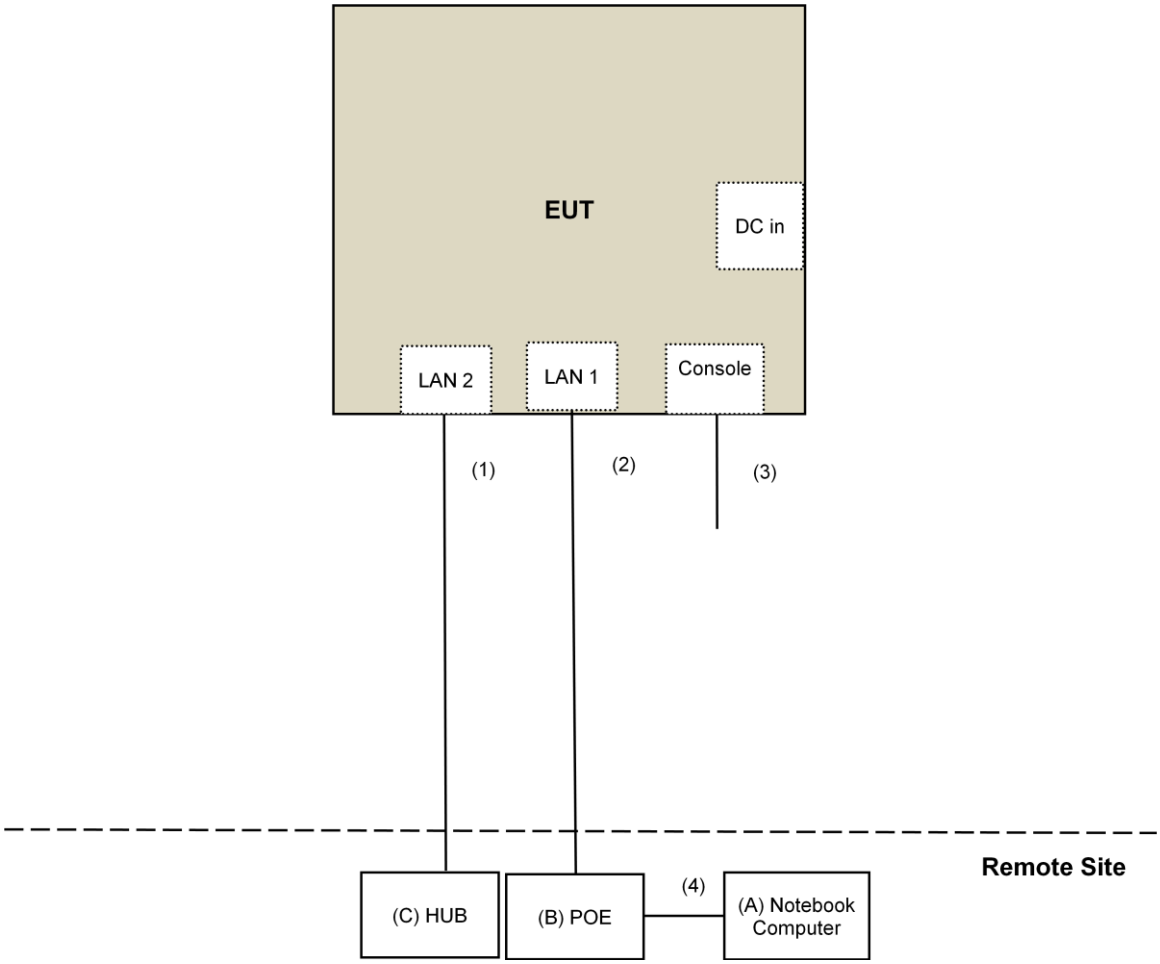
Note:

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

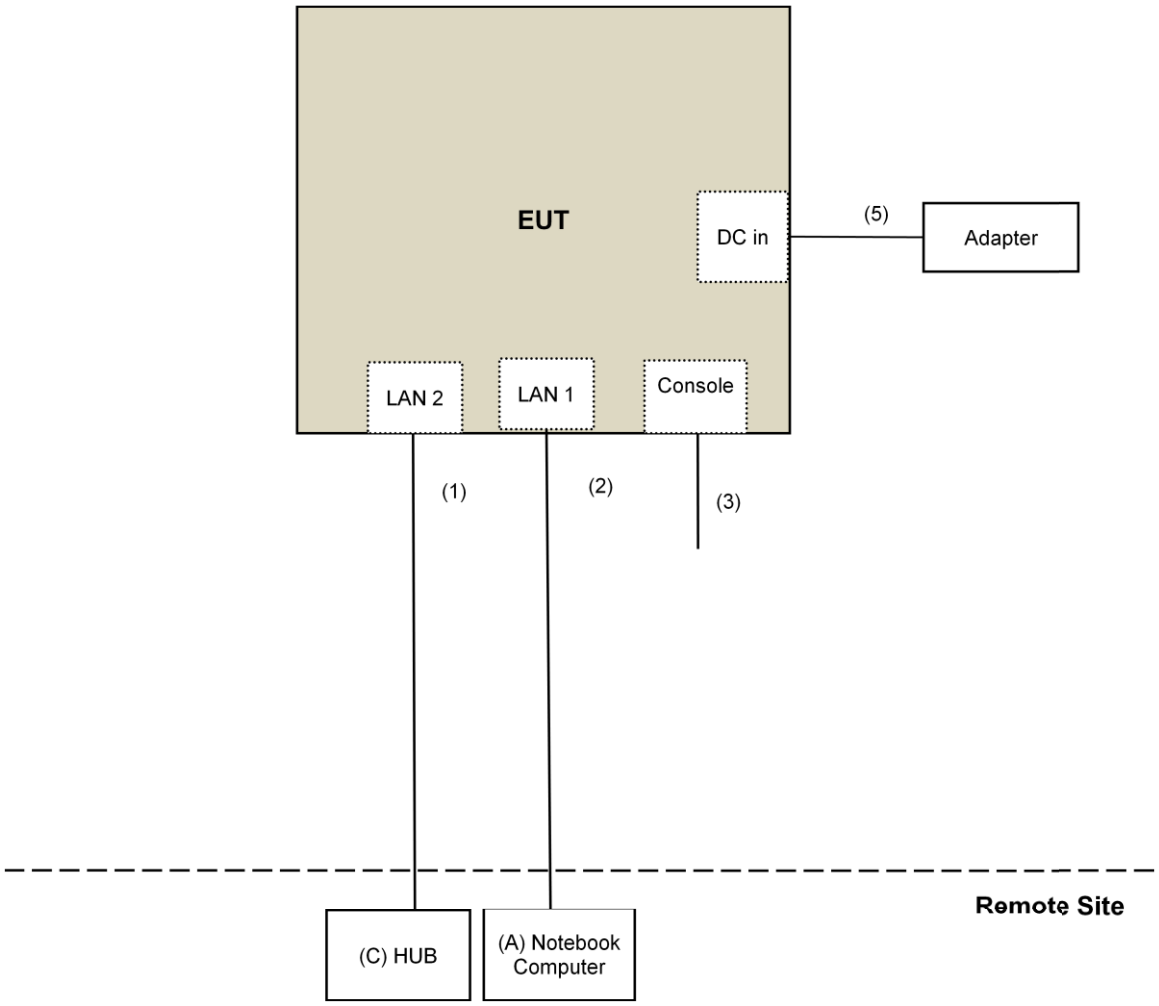
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ45 to RS232 Cable	1	1.5	No	0	Provided by Lab
4.	RJ-45 Cable	1	1	No	0	Supplied by client
5.	DC Cable	1	1.8	No	0	Supplied by client

3.4.1 Configuration of System under Test

POE Mode:



Adapter Mode:



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 Agilent	N9038A	MY54450088	July 24, 2015	July 23, 2016
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. 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: June 30 to July 11, 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:

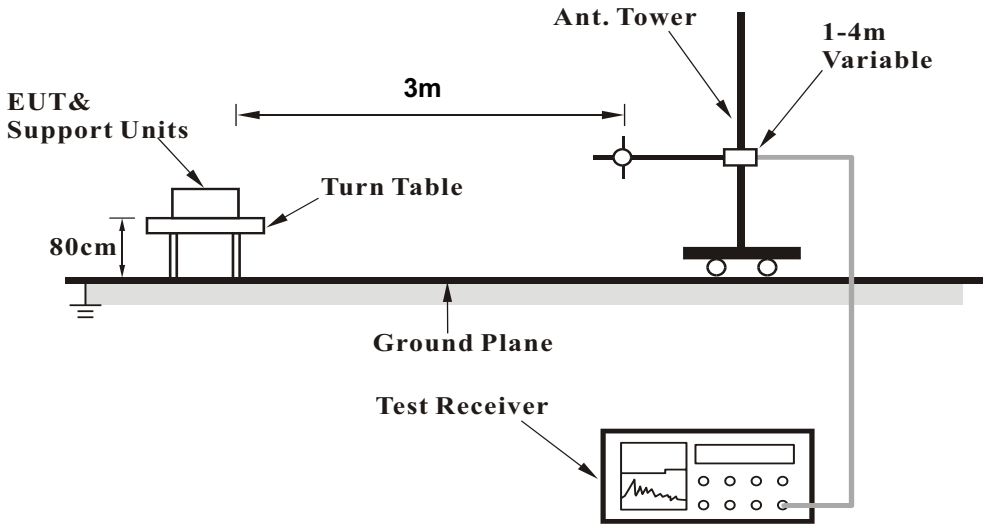
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

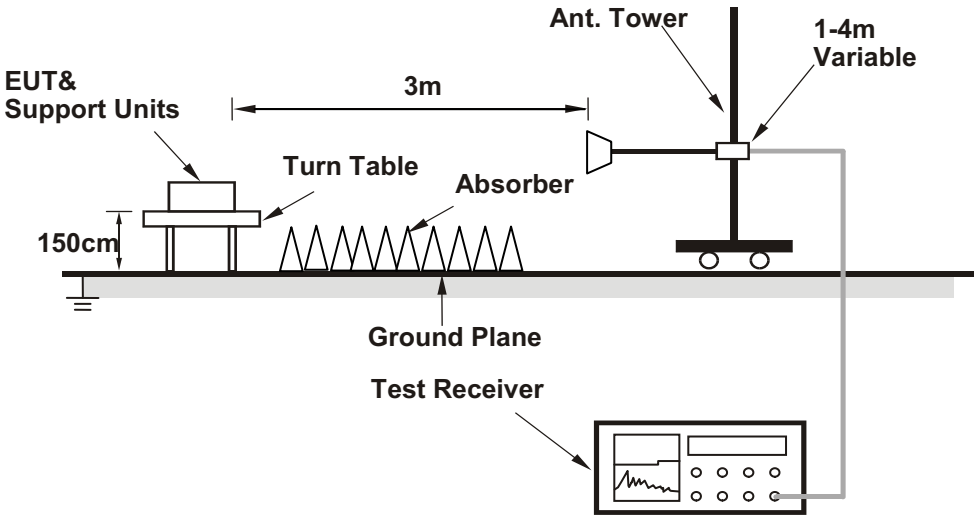
No deviation.

4.1.5 Test Set Up

<Frequency Range below 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 REL 2.0.2.7) 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	2387.00	54.10 PK	74.00	-19.90	1.94 H	203	59.70	-5.60
2	2387.00	43.20 AV	54.00	-10.80	1.94 H	203	48.80	-5.60
3	*2412.00	116.30 PK			1.94 H	203	121.80	-5.50
4	*2412.00	114.30 AV			1.94 H	203	119.80	-5.50
5	4824.00	52.50 PK	74.00	-21.50	2.04 H	193	51.60	0.90
6	4824.00	50.30 AV	54.00	-3.70	2.04 H	193	49.40	0.90
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	2387.00	56.10 PK	74.00	-17.90	3.26 V	178	61.70	-5.60
2	2387.00	45.40 AV	54.00	-8.60	3.26 V	178	51.00	-5.60
3	*2412.00	117.90 PK			3.26 V	178	123.40	-5.50
4	*2412.00	115.50 AV			3.26 V	178	121.00	-5.50
5	4824.00	55.10 PK	74.00	-18.90	1.58 V	188	54.20	0.90
6	4824.00	53.20 AV	54.00	-0.80	1.58 V	188	52.30	0.90

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	117.10 PK			2.00 H	211	122.50	-5.40
2	*2437.00	114.90 AV			2.00 H	211	120.30	-5.40
3	4874.00	52.20 PK	74.00	-21.80	2.04 H	200	51.20	1.00
4	4874.00	49.90 AV	54.00	-4.10	2.04 H	200	48.90	1.00
5	7311.00	46.80 PK	74.00	-27.20	1.00 H	225	39.20	7.60
6	7311.00	42.00 AV	54.00	-12.00	1.00 H	225	34.40	7.60
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	119.20 PK			3.18 V	182	124.60	-5.40
2	*2437.00	116.60 AV			3.18 V	182	122.00	-5.40
3	4874.00	54.50 PK	74.00	-19.50	1.68 V	186	53.50	1.00
4	4874.00	52.70 AV	54.00	-1.30	1.68 V	186	51.70	1.00
5	7311.00	47.40 PK	74.00	-26.60	1.74 V	142	39.80	7.60
6	7311.00	43.70 AV	54.00	-10.30	1.74 V	142	36.10	7.60

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	116.80 PK			1.91 H	199	122.10	-5.30
2	*2462.00	114.70 AV			1.91 H	199	120.00	-5.30
3	2483.50	58.10 PK	74.00	-15.90	1.91 H	199	63.40	-5.30
4	2483.50	47.20 AV	54.00	-6.80	1.91 H	199	52.50	-5.30
5	4924.00	51.80 PK	74.00	-22.20	2.07 H	200	50.50	1.30
6	4924.00	49.60 AV	54.00	-4.40	2.07 H	200	48.30	1.30
7	7386.00	46.70 PK	74.00	-27.30	1.01 H	238	39.00	7.70
8	7386.00	41.90 AV	54.00	-12.10	1.01 H	238	34.20	7.70
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	118.50 PK			3.13 V	173	123.80	-5.30
2	*2462.00	116.20 AV			3.13 V	173	121.50	-5.30
3	2483.50	60.50 PK	74.00	-13.50	3.13 V	173	65.80	-5.30
4	2483.50	50.20 AV	54.00	-3.80	3.13 V	173	55.50	-5.30
5	4924.00	54.70 PK	74.00	-19.30	1.68 V	200	53.40	1.30
6	4924.00	53.30 AV	54.00	-0.70	1.68 V	200	52.00	1.30
7	7386.00	47.20 PK	74.00	-26.80	1.70 V	127	39.50	7.70
8	7386.00	43.70 AV	54.00	-10.30	1.70 V	127	36.00	7.70

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	65.20 PK	74.00	-8.80	1.92 H	206	70.80	-5.60
2	2390.00	49.20 AV	54.00	-4.80	1.92 H	206	54.80	-5.60
3	*2412.00	116.60 PK			1.92 H	206	122.10	-5.50
4	*2412.00	106.40 AV			1.92 H	206	111.90	-5.50
5	4824.00	47.40 PK	74.00	-26.60	2.07 H	194	46.50	0.90
6	4824.00	35.70 AV	54.00	-18.30	2.07 H	194	34.80	0.90
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	64.40 PK	74.00	-9.60	3.27 V	179	70.00	-5.60
2	2390.00	50.60 AV	54.00	-3.40	3.27 V	179	56.20	-5.60
3	*2412.00	117.60 PK			3.27 V	179	123.10	-5.50
4	*2412.00	107.70 AV			3.27 V	179	113.20	-5.50
5	4824.00	49.00 PK	74.00	-25.00	1.64 V	197	48.10	0.90
6	4824.00	36.80 AV	54.00	-17.20	1.64 V	197	35.90	0.90

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	57.20 PK	74.00	-16.80	1.92 H	211	62.80	-5.60
2	2390.00	39.10 AV	54.00	-14.90	1.92 H	211	44.70	-5.60
3	*2437.00	122.20 PK			1.92 H	211	127.60	-5.40
4	*2437.00	112.60 AV			1.92 H	211	118.00	-5.40
5	2483.50	58.20 PK	74.00	-15.80	1.92 H	211	63.50	-5.30
6	2483.50	40.10 AV	54.00	-13.90	1.92 H	211	45.40	-5.30
7	4874.00	50.70 PK	74.00	-23.30	2.10 H	199	49.70	1.00
8	4874.00	37.90 AV	54.00	-16.10	2.10 H	199	36.90	1.00
9	7311.00	50.40 PK	74.00	-23.60	1.00 H	223	42.80	7.60
10	7311.00	38.50 AV	54.00	-15.50	1.00 H	223	30.90	7.60
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	59.70 PK	74.00	-14.30	3.20 V	175	65.30	-5.60
2	2390.00	40.40 AV	54.00	-13.60	3.20 V	175	46.00	-5.60
3	*2437.00	123.60 PK			3.20 V	175	129.00	-5.40
4	*2437.00	113.70 AV			3.20 V	175	119.10	-5.40
5	2483.50	60.30 PK	74.00	-13.70	3.20 V	175	65.60	-5.30
6	2483.50	43.20 AV	54.00	-10.80	3.20 V	175	48.50	-5.30
7	4874.00	57.00 PK	74.00	-17.00	1.68 V	189	56.00	1.00
8	4874.00	45.30 AV	54.00	-8.70	1.68 V	189	44.30	1.00
9	7311.00	51.20 PK	74.00	-22.80	1.91 V	173	43.60	7.60
10	7311.00	39.60 AV	54.00	-14.40	1.91 V	173	32.00	7.60

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	116.20 PK			1.96 H	207	121.50	-5.30
2	*2462.00	106.10 AV			1.96 H	207	111.40	-5.30
3	2483.50	65.10 PK	74.00	-8.90	1.96 H	207	70.40	-5.30
4	2483.50	48.90 AV	54.00	-5.10	1.96 H	207	54.20	-5.30
5	4924.00	46.60 PK	74.00	-27.40	2.07 H	201	45.30	1.30
6	4924.00	35.00 AV	54.00	-19.00	2.07 H	201	33.70	1.30
7	7386.00	46.80 PK	74.00	-27.20	1.04 H	210	39.10	7.70
8	7386.00	35.10 AV	54.00	-18.90	1.04 H	210	27.40	7.70
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	117.40 PK			3.14 V	174	122.70	-5.30
2	*2462.00	107.30 AV			3.14 V	174	112.60	-5.30
3	2483.50	69.20 PK	74.00	-4.80	3.14 V	174	74.50	-5.30
4	2483.50	51.40 AV	54.00	-2.60	3.14 V	174	56.70	-5.30
5	4924.00	49.90 PK	74.00	-24.10	1.68 V	179	48.60	1.30
6	4924.00	37.30 AV	54.00	-16.70	1.68 V	179	36.00	1.30
7	7386.00	48.20 PK	74.00	-25.80	1.76 V	140	40.50	7.70
8	7386.00	36.20 AV	54.00	-17.80	1.76 V	140	28.50	7.70

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	65.00 PK	74.00	-9.00	1.88 H	211	70.60	-5.60
2	2390.00	49.20 AV	54.00	-4.80	1.88 H	211	54.80	-5.60
3	*2412.00	113.10 PK			1.88 H	211	118.60	-5.50
4	*2412.00	103.50 AV			1.88 H	211	109.00	-5.50
5	4824.00	46.90 PK	74.00	-27.10	2.03 H	191	46.00	0.90
6	4824.00	35.30 AV	54.00	-18.70	2.03 H	191	34.40	0.90
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	64.60 PK	74.00	-9.40	3.23 V	177	70.20	-5.60
2	2390.00	50.70 AV	54.00	-3.30	3.23 V	177	56.30	-5.60
3	*2412.00	114.60 PK			3.23 V	177	120.10	-5.50
4	*2412.00	104.60 AV			3.23 V	177	110.10	-5.50
5	4824.00	49.20 PK	74.00	-24.80	1.62 V	201	48.30	0.90
6	4824.00	37.10 AV	54.00	-16.90	1.62 V	201	36.20	0.90

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	57.10 PK	74.00	-16.90	2.00 H	219	62.70	-5.60
2	2390.00	38.80 AV	54.00	-15.20	2.00 H	219	44.40	-5.60
3	*2437.00	122.10 PK			2.00 H	219	127.50	-5.40
4	*2437.00	112.30 AV			2.00 H	219	117.70	-5.40
5	2483.50	58.70 PK	74.00	-15.30	2.00 H	219	64.00	-5.30
6	2483.50	40.50 AV	54.00	-13.50	2.00 H	219	45.80	-5.30
7	4874.00	50.70 PK	74.00	-23.30	1.98 H	210	49.70	1.00
8	4874.00	38.00 AV	54.00	-16.00	1.98 H	210	37.00	1.00
9	7311.00	50.10 PK	74.00	-23.90	1.00 H	231	42.50	7.60
10	7311.00	38.20 AV	54.00	-15.80	1.00 H	231	30.60	7.60

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	59.50 PK	74.00	-14.50	3.22 V	181	65.10	-5.60
2	2390.00	40.10 AV	54.00	-13.90	3.22 V	181	45.70	-5.60
3	*2437.00	123.50 PK			3.22 V	181	128.90	-5.40
4	*2437.00	113.90 AV			3.22 V	181	119.30	-5.40
5	2483.50	61.00 PK	74.00	-13.00	3.22 V	181	66.30	-5.30
6	2483.50	43.60 AV	54.00	-10.40	3.22 V	181	48.90	-5.30
7	4874.00	57.20 PK	74.00	-16.80	1.73 V	194	56.20	1.00
8	4874.00	45.50 AV	54.00	-8.50	1.73 V	194	44.50	1.00
9	7311.00	51.20 PK	74.00	-22.80	1.78 V	139	43.60	7.60
10	7311.00	39.60 AV	54.00	-14.40	1.78 V	139	32.00	7.60

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	113.80 PK			1.99 H	212	119.10	-5.30
2	*2462.00	104.10 AV			1.99 H	212	109.40	-5.30
3	2483.50	64.90 PK	74.00	-9.10	1.99 H	212	70.20	-5.30
4	2483.50	48.80 AV	54.00	-5.20	1.99 H	212	54.10	-5.30
5	4924.00	47.20 PK	74.00	-26.80	2.09 H	215	45.90	1.30
6	4924.00	35.40 AV	54.00	-18.60	2.09 H	215	34.10	1.30
7	7386.00	46.10 PK	74.00	-27.90	1.00 H	230	38.40	7.70
8	7386.00	34.70 AV	54.00	-19.30	1.00 H	230	27.00	7.70
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	115.10 PK			3.18 V	175	120.40	-5.30
2	*2462.00	105.40 AV			3.18 V	175	110.70	-5.30
3	2483.50	69.50 PK	74.00	-4.50	3.18 V	175	74.80	-5.30
4	2483.50	51.60 AV	54.00	-2.40	3.18 V	175	56.90	-5.30
5	4924.00	49.20 PK	74.00	-24.80	1.66 V	196	47.90	1.30
6	4924.00	36.80 AV	54.00	-17.20	1.66 V	196	35.50	1.30
7	7386.00	48.00 PK	74.00	-26.00	1.80 V	157	40.30	7.70
8	7386.00	36.20 AV	54.00	-17.80	1.80 V	157	28.50	7.70

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	65.70 PK	74.00	-8.30	1.88 H	211	71.30	-5.60
2	2390.00	49.70 AV	54.00	-4.30	1.88 H	211	55.30	-5.60
3	*2422.00	107.10 PK			1.88 H	211	112.50	-5.40
4	*2422.00	96.10 AV			1.88 H	211	101.50	-5.40
5	4844.00	44.80 PK	74.00	-29.20	2.02 H	210	43.90	0.90
6	4844.00	31.20 AV	54.00	-22.80	2.02 H	210	30.30	0.90
7	7266.00	46.80 PK	74.00	-27.20	1.05 H	213	39.10	7.70
8	7266.00	34.80 AV	54.00	-19.20	1.05 H	213	27.10	7.70
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	67.20 PK	74.00	-6.80	3.24 V	181	72.80	-5.60
2	2390.00	51.40 AV	54.00	-2.60	3.24 V	181	57.00	-5.60
3	*2422.00	108.60 PK			3.24 V	181	114.00	-5.40
4	*2422.00	97.20 AV			3.24 V	181	102.60	-5.40
5	4844.00	44.50 PK	74.00	-29.50	1.68 V	175	43.60	0.90
6	4844.00	31.30 AV	54.00	-22.70	1.68 V	175	30.40	0.90
7	7266.00	47.70 PK	74.00	-26.30	1.79 V	146	40.00	7.70
8	7266.00	35.60 AV	54.00	-18.40	1.79 V	146	27.90	7.70

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	62.80 PK	74.00	-11.20	1.94 H	193	68.40	-5.60
2	2390.00	44.20 AV	54.00	-9.80	1.94 H	193	49.80	-5.60
3	*2437.00	111.50 PK			1.94 H	193	116.90	-5.40
4	*2437.00	100.10 AV			1.94 H	193	105.50	-5.40
5	2483.50	65.10 PK	74.00	-8.90	1.94 H	193	70.40	-5.30
6	2483.50	47.10 AV	54.00	-6.90	1.94 H	193	52.40	-5.30
7	4874.00	43.60 PK	74.00	-30.40	2.03 H	215	42.60	1.00
8	4874.00	30.40 AV	54.00	-23.60	2.03 H	215	29.40	1.00
9	7311.00	47.70 PK	74.00	-26.30	1.00 H	231	40.10	7.60
10	7311.00	35.40 AV	54.00	-18.60	1.00 H	231	27.80	7.60
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	65.20 PK	74.00	-8.80	3.27 V	175	70.80	-5.60
2	2390.00	47.20 AV	54.00	-6.80	3.27 V	175	52.80	-5.60
3	*2437.00	112.80 PK			3.27 V	175	118.20	-5.40
4	*2437.00	101.30 AV			3.27 V	175	106.70	-5.40
5	2483.50	67.80 PK	74.00	-6.20	3.27 V	175	73.10	-5.30
6	2483.50	49.90 AV	54.00	-4.10	3.27 V	175	55.20	-5.30
7	4874.00	43.80 PK	74.00	-30.20	1.70 V	188	42.80	1.00
8	4874.00	30.70 AV	54.00	-23.30	1.70 V	188	29.70	1.00
9	7311.00	47.50 PK	74.00	-26.50	1.73 V	147	39.90	7.60
10	7311.00	35.10 AV	54.00	-18.90	1.73 V	147	27.50	7.60

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	107.90 PK			1.92 H	188	113.30	-5.40
2	*2452.00	96.80 AV			1.92 H	188	102.20	-5.40
3	2483.50	65.00 PK	74.00	-9.00	1.92 H	188	70.30	-5.30
4	2483.50	48.90 AV	54.00	-5.10	1.92 H	188	54.20	-5.30
5	4904.00	44.20 PK	74.00	-29.80	2.02 H	211	43.00	1.20
6	4904.00	31.00 AV	54.00	-23.00	2.02 H	211	29.80	1.20
7	7356.00	47.50 PK	74.00	-26.50	1.00 H	228	39.80	7.70
8	7356.00	35.60 AV	54.00	-18.40	1.00 H	228	27.90	7.70
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	109.50 PK			3.21 V	175	114.90	-5.40
2	*2452.00	98.30 AV			3.21 V	175	103.70	-5.40
3	2483.50	66.10 PK	74.00	-7.90	3.21 V	175	71.40	-5.30
4	2483.50	50.30 AV	54.00	-3.70	3.21 V	175	55.60	-5.30
5	4904.00	44.40 PK	74.00	-29.60	1.71 V	197	43.20	1.20
6	4904.00	31.00 AV	54.00	-23.00	1.71 V	197	29.80	1.20
7	7356.00	47.20 PK	74.00	-26.80	1.73 V	127	39.50	7.70
8	7356.00	34.90 AV	54.00	-19.10	1.73 V	127	27.20	7.70

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:

802.11g

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	109.15	28.63 QP	43.50	-14.87	2.50 H	78	40.16	-11.53
2	124.99	30.40 QP	43.50	-13.10	2.50 H	265	40.67	-10.27
3	257.13	31.17 QP	46.00	-14.83	1.00 H	270	40.81	-9.64
4	325.83	33.56 QP	46.00	-12.44	1.00 H	56	40.67	-7.11
5	401.07	29.08 QP	46.00	-16.92	1.50 H	339	34.51	-5.43
6	608.73	29.09 QP	46.00	-16.91	1.00 H	324	29.46	-0.37
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	108.28	24.27 QP	43.50	-19.23	1.00 V	190	35.84	-11.57
2	124.99	29.46 QP	43.50	-14.04	1.00 V	360	39.73	-10.27
3	241.29	31.10 QP	46.00	-14.90	1.00 V	50	41.26	-10.16
4	331.57	38.16 QP	46.00	-7.84	1.00 V	338	45.17	-7.01
5	401.29	32.62 QP	46.00	-13.38	1.00 V	350	38.05	-5.43
6	609.58	30.72 QP	46.00	-15.28	1.00 V	4	31.08	-0.36

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	2387.00	52.50 PK	74.00	-21.50	1.13 H	166	58.10	-5.60
2	2387.00	44.30 AV	54.00	-9.70	1.13 H	166	49.90	-5.60
3	*2412.00	115.40 PK			1.13 H	166	120.90	-5.50
4	*2412.00	112.30 AV			1.13 H	166	117.80	-5.50
5	4824.00	49.30 PK	74.00	-24.70	3.20 H	295	48.40	0.90
6	4824.00	46.40 AV	54.00	-7.60	3.20 H	295	45.50	0.90
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	2387.00	61.10 PK	74.00	-12.90	2.43 V	175	66.70	-5.60
2	**2387.00**	**53.90 AV**	**54.00**	**-0.10**	**2.43 V**	**175**	**59.50**	**-5.60**
3	*2412.00	118.60 PK			2.52 V	65	124.10	-5.50
4	*2412.00	116.20 AV			2.52 V	65	121.70	-5.50
5	4824.00	55.70 PK	74.00	-18.30	1.46 V	186	54.80	0.90
6	4824.00	53.60 AV	54.00	-0.40	1.46 V	186	52.70	0.90

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	115.60 PK			1.19 H	174	121.00	-5.40
2	*2437.00	113.10 AV			1.19 H	174	118.50	-5.40
3	4874.00	48.90 PK	74.00	-25.10	3.18 H	284	47.90	1.00
4	4874.00	46.30 AV	54.00	-7.70	3.18 H	284	45.30	1.00
5	7311.00	45.60 PK	74.00	-28.40	1.42 H	360	38.00	7.60
6	7311.00	40.60 AV	54.00	-13.40	1.42 H	360	33.00	7.60
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	119.70 PK			2.47 V	177	125.10	-5.40
2	*2437.00	117.40 AV			2.47 V	177	122.80	-5.40
3	4874.00	55.30 PK	74.00	-18.70	1.63 V	205	54.30	1.00
4	4874.00	53.80 AV	54.00	-0.20	1.63 V	205	52.80	1.00
5	7311.00	49.40 PK	74.00	-24.60	2.30 V	78	41.80	7.60
6	7311.00	45.10 AV	54.00	-8.90	2.30 V	78	37.50	7.60

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	115.20 PK			1.15 H	155	120.50	-5.30
2	*2462.00	112.10 AV			1.15 H	155	117.40	-5.30
3	2483.50	53.00 PK	74.00	-21.00	1.15 H	155	58.30	-5.30
4	2483.50	44.70 AV	54.00	-9.30	1.15 H	155	50.00	-5.30
5	4924.00	49.20 PK	74.00	-24.80	3.19 H	295	47.90	1.30
6	4924.00	46.40 AV	54.00	-7.60	3.19 H	295	45.10	1.30
7	7386.00	45.40 PK	74.00	-28.60	1.45 H	354	37.70	7.70
8	7386.00	40.30 AV	54.00	-13.70	1.45 H	354	32.60	7.70
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	118.10 PK			2.38 V	180	123.40	-5.30
2	*2462.00	115.80 AV			2.38 V	180	121.10	-5.30
3	2483.50	61.80 PK	74.00	-12.20	2.38 V	180	67.10	-5.30
4	**2483.50**	**53.90 AV**	**54.00**	**-0.10**	**2.38 V**	**180**	**59.20**	**-5.30**
5	4924.00	55.50 PK	74.00	-18.50	1.65 V	191	54.20	1.30
6	4924.00	53.70 AV	54.00	-0.30	1.65 V	191	52.40	1.30
7	7386.00	49.60 PK	74.00	-24.40	2.31 V	92	41.90	7.70
8	7386.00	45.20 AV	54.00	-8.80	2.31 V	92	37.50	7.70

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	68.20 PK	74.00	-5.80	1.11 H	167	73.80	-5.60
2	2390.00	47.70 AV	54.00	-6.30	1.11 H	167	53.30	-5.60
3	*2412.00	115.10 PK			1.11 H	167	120.60	-5.50
4	*2412.00	104.10 AV			1.11 H	167	109.60	-5.50
5	4824.00	47.60 PK	74.00	-26.40	3.20 H	291	46.70	0.90
6	4824.00	33.50 AV	54.00	-20.50	3.20 H	291	32.60	0.90
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	73.60 PK	74.00	-0.40	2.48 V	147	79.20	-5.60
2	2390.00	53.70 AV	54.00	-0.30	2.48 V	147	59.30	-5.60
3	*2412.00	121.30 PK			2.48 V	147	126.80	-5.50
4	*2412.00	109.80 AV			2.48 V	147	115.30	-5.50
5	4824.00	52.80 PK	74.00	-21.20	1.68 V	183	51.90	0.90
6	4824.00	39.50 AV	54.00	-14.50	1.68 V	183	38.60	0.90

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	56.80 PK	74.00	-17.20	1.11 H	180	62.40	-5.60
2	2390.00	39.80 AV	54.00	-14.20	1.11 H	180	45.40	-5.60
3	*2437.00	120.70 PK			1.11 H	180	126.10	-5.40
4	*2437.00	110.50 AV			1.11 H	180	115.90	-5.40
5	2483.50	61.40 PK	74.00	-12.60	1.11 H	180	66.70	-5.30
6	2483.50	40.10 AV	54.00	-13.90	1.11 H	180	45.40	-5.30
7	4874.00	52.80 PK	74.00	-21.20	3.19 H	292	51.80	1.00
8	4874.00	37.90 AV	54.00	-16.10	3.19 H	292	36.90	1.00
9	7311.00	53.20 PK	74.00	-20.80	1.48 H	350	45.60	7.60
10	7311.00	38.40 AV	54.00	-15.60	1.48 H	350	30.80	7.60

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	62.90 PK	74.00	-11.10	2.29 V	74	68.50	-5.60
2	2390.00	45.30 AV	54.00	-8.70	2.29 V	74	50.90	-5.60
3	*2437.00	126.40 PK			2.29 V	74	131.80	-5.40
4	*2437.00	116.20 AV			2.29 V	74	121.60	-5.40
5	2483.50	66.20 PK	74.00	-7.80	2.29 V	74	71.50	-5.30
6	2483.50	45.10 AV	54.00	-8.90	2.29 V	74	50.40	-5.30
7	4874.00	58.60 PK	74.00	-15.40	1.63 V	178	57.60	1.00
8	4874.00	46.20 AV	54.00	-7.80	1.63 V	178	45.20	1.00
9	7311.00	53.90 PK	74.00	-20.10	2.31 V	78	46.30	7.60
10	7311.00	37.60 AV	54.00	-16.40	2.31 V	78	30.00	7.60

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	114.90 PK			1.09 H	161	120.20	-5.30
2	*2462.00	103.90 AV			1.09 H	161	109.20	-5.30
3	2483.50	68.10 PK	74.00	-5.90	1.09 H	161	73.40	-5.30
4	2483.50	47.70 AV	54.00	-6.30	1.09 H	161	53.00	-5.30
5	4924.00	47.60 PK	74.00	-26.40	3.24 H	298	46.30	1.30
6	4924.00	33.20 AV	54.00	-20.80	3.24 H	298	31.90	1.30
7	7386.00	47.30 PK	74.00	-26.70	1.44 H	349	39.60	7.70
8	7386.00	35.10 AV	54.00	-18.90	1.44 H	349	27.40	7.70
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	120.10 PK			2.49 V	62	125.40	-5.30
2	*2462.00	109.20 AV			2.49 V	62	114.50	-5.30
3	**2483.50**	**73.90 PK**	**74.00**	**-0.10**	**2.49 V**	**62**	**79.20**	**-5.30**
4	2483.50	53.10 AV	54.00	-0.90	2.49 V	62	58.40	-5.30
5	4924.00	53.10 PK	74.00	-20.90	1.60 V	193	51.80	1.30
6	4924.00	39.90 AV	54.00	-14.10	1.60 V	193	38.60	1.30
7	7386.00	47.10 PK	74.00	-26.90	2.32 V	99	39.40	7.70
8	7386.00	35.00 AV	54.00	-19.00	2.32 V	99	27.30	7.70

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	68.60 PK	74.00	-5.40	1.07 H	156	74.20	-5.60
2	2390.00	48.00 AV	54.00	-6.00	1.07 H	156	53.60	-5.60
3	*2412.00	109.70 PK			1.07 H	156	115.20	-5.50
4	*2412.00	101.60 AV			1.07 H	156	107.10	-5.50
5	4824.00	47.50 PK	74.00	-26.50	3.22 H	299	46.60	0.90
6	4824.00	32.90 AV	54.00	-21.10	3.22 H	299	32.00	0.90
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	73.80 PK	74.00	-0.20	2.19 V	204	79.40	-5.60
2	2390.00	51.30 AV	54.00	-2.70	2.19 V	204	56.90	-5.60
3	*2412.00	115.60 PK			2.19 V	204	121.10	-5.50
4	*2412.00	107.30 AV			2.19 V	204	112.80	-5.50
5	4824.00	53.10 PK	74.00	-20.90	1.68 V	193	52.20	0.90
6	4824.00	39.70 AV	54.00	-14.30	1.68 V	193	38.80	0.90

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	56.30 PK	74.00	-17.70	1.08 H	176	61.90	-5.60
2	2390.00	39.30 AV	54.00	-14.70	1.08 H	176	44.90	-5.60
3	*2437.00	119.20 PK			1.08 H	176	124.60	-5.40
4	*2437.00	108.60 AV			1.08 H	176	114.00	-5.40
5	2483.50	61.20 PK	74.00	-12.80	1.08 H	176	66.50	-5.30
6	2483.50	40.20 AV	54.00	-13.80	1.08 H	176	45.50	-5.30
7	4874.00	53.70 PK	74.00	-20.30	3.15 H	290	52.70	1.00
8	4874.00	41.00 AV	54.00	-13.00	3.15 H	290	40.00	1.00
9	7311.00	49.60 PK	74.00	-24.40	1.47 H	360	42.00	7.60
10	7311.00	37.30 AV	54.00	-16.70	1.47 H	360	29.70	7.60

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	62.80 PK	74.00	-11.20	2.20 V	105	68.40	-5.60
2	2390.00	45.20 AV	54.00	-8.80	2.20 V	105	50.80	-5.60
3	*2437.00	124.90 PK			2.20 V	105	130.30	-5.40
4	*2437.00	114.30 AV			2.20 V	105	119.70	-5.40
5	2483.50	66.20 PK	74.00	-7.80	2.20 V	105	71.50	-5.30
6	2483.50	45.80 AV	54.00	-8.20	2.20 V	105	51.10	-5.30
7	4874.00	58.10 PK	74.00	-15.90	1.65 V	187	57.10	1.00
8	4874.00	45.80 AV	54.00	-8.20	1.65 V	187	44.80	1.00
9	7311.00	54.20 PK	74.00	-19.80	2.33 V	102	46.60	7.60
10	7311.00	38.10 AV	54.00	-15.90	2.33 V	102	30.50	7.60

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	109.80 PK			1.18 H	156	115.10	-5.30
2	*2462.00	101.50 AV			1.18 H	156	106.80	-5.30
3	2483.50	68.10 PK	74.00	-5.90	1.18 H	156	73.40	-5.30
4	2483.50	47.80 AV	54.00	-6.20	1.18 H	156	53.10	-5.30
5	4924.00	48.20 PK	74.00	-25.80	3.19 H	290	46.90	1.30
6	4924.00	33.50 AV	54.00	-20.50	3.19 H	290	32.20	1.30
7	7386.00	47.00 PK	74.00	-27.00	1.42 H	353	39.30	7.70
8	7386.00	34.90 AV	54.00	-19.10	1.42 H	353	27.20	7.70
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	115.40 PK			2.20 V	163	120.70	-5.30
2	*2462.00	107.20 AV			2.20 V	163	112.50	-5.30
3	**2483.50**	**73.90 PK**	**74.00**	**-0.10**	**2.20 V**	**163**	**79.20**	**-5.30**
4	**2483.50**	**53.90 AV**	**54.00**	**-0.10**	**2.20 V**	**163**	**59.20**	**-5.30**
5	4924.00	52.70 PK	74.00	-21.30	1.70 V	182	51.40	1.30
6	4924.00	39.50 AV	54.00	-14.50	1.70 V	182	38.20	1.30
7	7386.00	46.50 PK	74.00	-27.50	2.32 V	77	38.80	7.70
8	7386.00	34.60 AV	54.00	-19.40	2.32 V	77	26.90	7.70

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	68.60 PK	74.00	-5.40	1.15 H	179	74.20	-5.60
2	2390.00	47.80 AV	54.00	-6.20	1.15 H	179	53.40	-5.60
3	*2422.00	104.20 PK			1.15 H	179	109.60	-5.40
4	*2422.00	94.10 AV			1.15 H	179	99.50	-5.40
5	4844.00	43.50 PK	74.00	-30.50	3.23 H	310	42.60	0.90
6	4844.00	30.40 AV	54.00	-23.60	3.23 H	310	29.50	0.90
7	7266.00	47.40 PK	74.00	-26.60	1.41 H	360	39.70	7.70
8	7266.00	35.10 AV	54.00	-18.90	1.41 H	360	27.40	7.70
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	69.90 PK	74.00	-4.10	2.22 V	100	75.50	-5.60
2	2390.00	53.60 AV	54.00	-0.40	2.22 V	100	59.20	-5.60
3	*2422.00	109.40 PK			2.22 V	100	114.80	-5.40
4	*2422.00	99.20 AV			2.22 V	100	104.60	-5.40
5	4844.00	43.70 PK	74.00	-30.30	1.68 V	181	42.80	0.90
6	4844.00	30.60 AV	54.00	-23.40	1.68 V	181	29.70	0.90
7	7266.00	47.50 PK	74.00	-26.50	2.34 V	94	39.80	7.70
8	7266.00	35.20 AV	54.00	-18.80	2.34 V	94	27.50	7.70

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	63.50 PK	74.00	-10.50	1.08 H	153	69.10	-5.60
2	2390.00	44.20 AV	54.00	-9.80	1.08 H	153	49.80	-5.60
3	*2437.00	105.10 PK			1.08 H	153	110.50	-5.40
4	*2437.00	96.20 AV			1.08 H	153	101.60	-5.40
5	2483.50	68.00 PK	74.00	-6.00	1.08 H	153	73.30	-5.30
6	2483.50	47.60 AV	54.00	-6.40	1.08 H	153	52.90	-5.30
7	4874.00	43.90 PK	74.00	-30.10	3.15 H	292	42.90	1.00
8	4874.00	30.90 AV	54.00	-23.10	3.15 H	292	29.90	1.00
9	7311.00	48.00 PK	74.00	-26.00	1.48 H	338	40.40	7.60
10	7311.00	35.40 AV	54.00	-18.60	1.48 H	338	27.80	7.60
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	71.20 PK	74.00	-2.80	2.11 V	165	76.80	-5.60
2	2390.00	50.70 AV	54.00	-3.30	2.11 V	165	56.30	-5.60
3	*2437.00	110.50 PK			2.11 V	165	115.90	-5.40
4	*2437.00	101.60 AV			2.11 V	165	107.00	-5.40
5	2483.50	73.60 PK	74.00	-0.40	2.11 V	165	78.90	-5.30
6	2483.50	53.80 AV	54.00	-0.20	2.11 V	165	59.10	-5.30
7	4874.00	43.50 PK	74.00	-30.50	1.65 V	179	42.50	1.00
8	4874.00	30.40 AV	54.00	-23.60	1.65 V	179	29.40	1.00
9	7311.00	48.10 PK	74.00	-25.90	2.34 V	84	40.50	7.60
10	7311.00	35.60 AV	54.00	-18.40	2.34 V	84	28.00	7.60

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	107.80 PK			1.18 H	163	113.20	-5.40
2	*2452.00	95.30 AV			1.18 H	163	100.70	-5.40
3	2486.70	68.00 PK	74.00	-6.00	1.18 H	163	73.20	-5.20
4	2486.70	47.30 AV	54.00	-6.70	1.18 H	163	52.50	-5.20
5	4904.00	43.40 PK	74.00	-30.60	3.15 H	297	42.20	1.20
6	4904.00	30.60 AV	54.00	-23.40	3.15 H	297	29.40	1.20
7	7356.00	47.20 PK	74.00	-26.80	1.42 H	353	39.50	7.70
8	7356.00	34.80 AV	54.00	-19.20	1.42 H	353	27.10	7.70
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	112.70 PK			2.10 V	163	118.10	-5.40
2	*2452.00	100.80 AV			2.10 V	163	106.20	-5.40
3	2486.70	72.60 PK	74.00	-1.40	2.10 V	163	77.80	-5.20
4	2486.70	53.80 AV	54.00	-0.20	2.10 V	163	59.00	-5.20
5	4904.00	44.30 PK	74.00	-29.70	1.63 V	199	43.10	1.20
6	4904.00	30.90 AV	54.00	-23.10	1.63 V	199	29.70	1.20
7	7356.00	47.40 PK	74.00	-26.60	2.33 V	91	39.70	7.70
8	7356.00	35.20 AV	54.00	-18.80	2.33 V	91	27.50	7.70

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:

802.11g

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	109.01	28.42 QP	43.50	-15.08	2.50 H	124	39.95	-11.53
2	125.10	30.72 QP	43.50	-12.78	2.50 H	335	41.00	-10.28
3	257.11	30.10 QP	46.00	-15.90	1.00 H	252	39.74	-9.64
4	325.83	33.84 QP	46.00	-12.16	1.00 H	61	40.95	-7.11
5	400.98	29.36 QP	46.00	-16.64	1.50 H	307	34.81	-5.45
6	608.73	29.40 QP	46.00	-16.60	1.00 H	297	29.77	-0.37
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	108.50	24.55 QP	43.50	-18.95	1.00 V	330	36.11	-11.56
2	125.40	29.66 QP	43.50	-13.84	1.00 V	217	39.94	-10.28
3	241.18	31.32 QP	46.00	-14.68	1.00 V	57	41.48	-10.16
4	331.54	38.12 QP	46.00	-7.88	1.00 V	308	45.13	-7.01
5	401.25	32.58 QP	46.00	-13.42	1.00 V	330	38.01	-5.43
6	609.54	30.47 QP	46.00	-15.53	1.00 V	360	30.83	-0.36

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	June 20, 2016	June 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: June 21, 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.

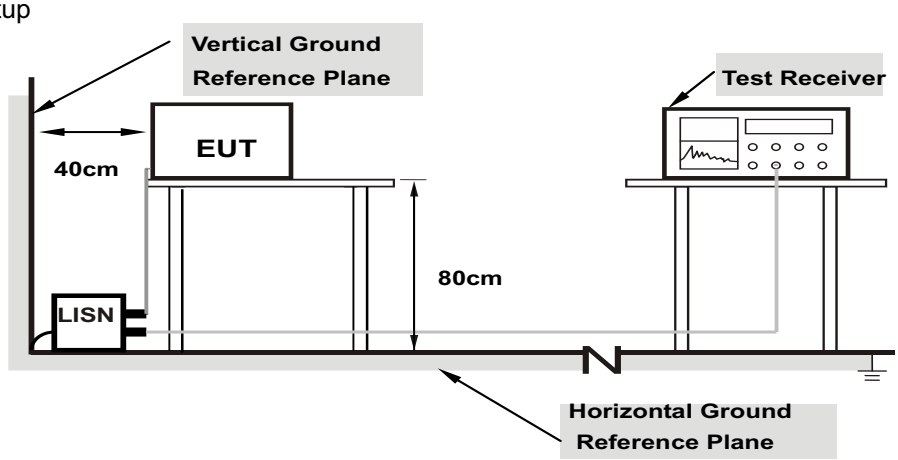
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

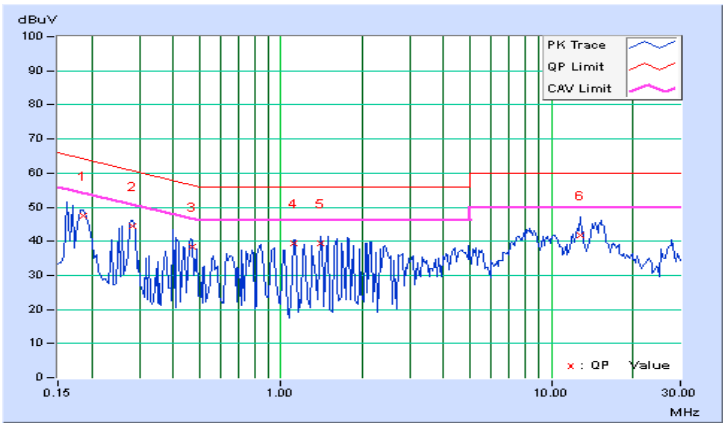
4.2.7 Test Results (Mode 1)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	10.22	37.19	37.08	47.41	47.30	64.25	54.25	-16.84	-6.95
2	0.28281	10.22	34.10	33.43	44.32	43.65	60.73	50.73	-16.41	-7.08
3	0.46887	10.22	28.33	27.84	38.55	38.06	56.53	46.53	-17.98	-8.47
4	1.12109	10.27	28.98	25.16	39.25	35.43	56.00	46.00	-16.75	-10.57
5	1.39844	10.28	29.15	23.70	39.43	33.98	56.00	46.00	-16.57	-12.02
6	12.83203	10.87	30.96	27.50	41.83	38.37	60.00	50.00	-18.17	-11.63

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

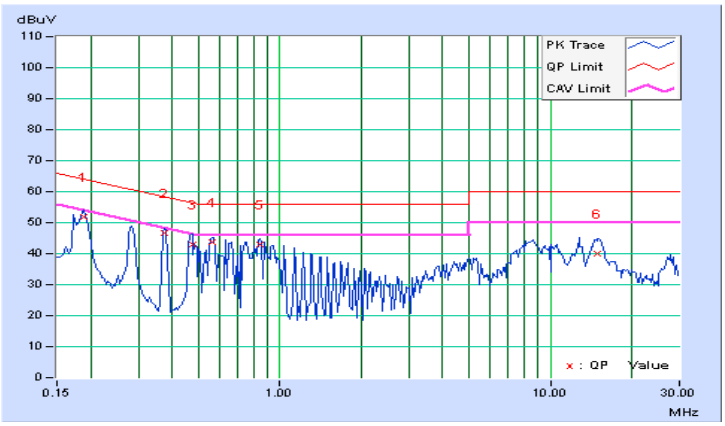


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	10.21	41.74	40.54	51.95	50.75	64.08	54.08	-12.13	-3.33
2	0.37266	10.20	36.58	35.11	46.78	45.31	58.44	48.44	-11.66	-3.13
3	0.47422	10.20	32.63	26.72	42.83	36.92	56.44	46.44	-13.60	-9.51
4	**0.56222**	**10.21**	**33.34**	**32.70**	**43.55**	**42.91**	**56.00**	**46.00**	**-12.45**	**-3.09**
5	0.84531	10.23	32.61	29.12	42.84	39.35	56.00	46.00	-13.16	-6.65
6	14.97656	10.89	29.22	19.40	40.11	30.29	60.00	50.00	-19.89	-19.71

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



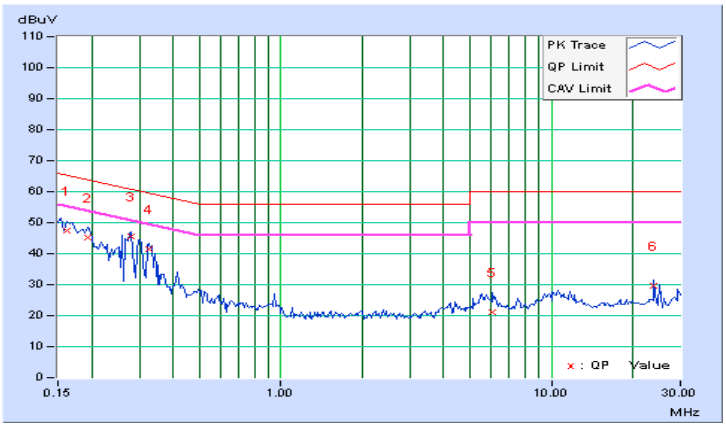
4.2.8 Test Results (Mode 3)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16278	10.21	37.10	26.65	47.31	36.86	65.32	55.32	-18.01	-18.46
2	0.19297	10.22	34.91	25.59	45.13	35.81	63.91	53.91	-18.78	-18.10
3	0.27891	10.22	35.25	31.74	45.47	41.96	60.85	50.85	-15.38	-8.89
4	0.32578	10.22	31.38	24.40	41.60	34.62	59.56	49.56	-17.96	-14.94
5	6.05078	10.40	10.62	1.59	21.02	11.99	60.00	50.00	-38.98	-38.01
6	24.00000	11.43	18.21	17.86	29.64	29.29	60.00	50.00	-30.36	-20.71

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

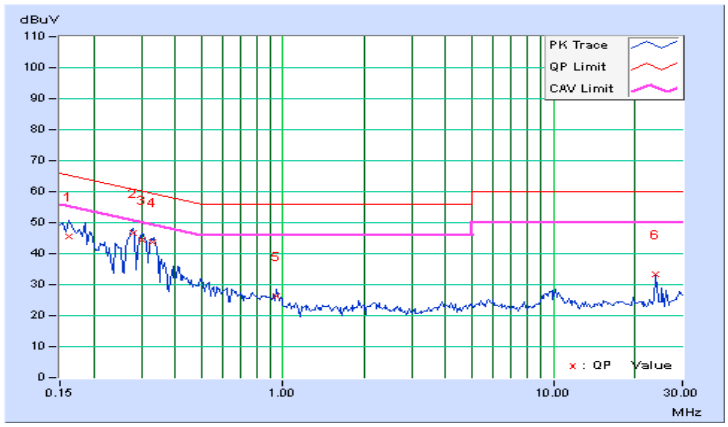


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	10.19	35.49	25.52	45.68	35.71	65.38	55.38	-19.69	-19.66
2	0.27891	10.21	36.32	33.09	46.53	43.30	60.85	50.85	-14.32	-7.55
3	0.30234	10.20	34.27	31.13	44.47	41.33	60.18	50.18	-15.70	-8.84
4	0.32822	10.20	33.51	28.57	43.71	38.77	59.50	49.50	-15.78	-10.72
5	0.95078	10.24	16.15	12.79	26.39	23.03	56.00	46.00	-29.61	-22.97
6	24.00000	11.13	22.33	21.18	33.46	32.31	60.00	50.00	-26.54	-17.69

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



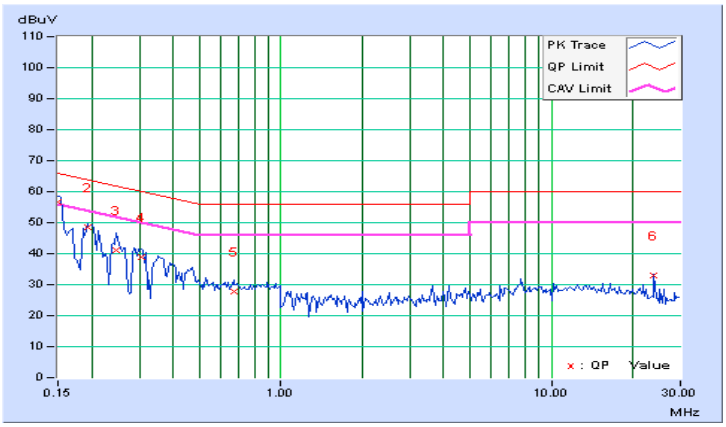
4.2.9 Test Results (Mode 4)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.21	46.44	33.25	56.65	43.46	66.00	56.00	-9.35	-12.54
2	0.19297	10.22	38.28	23.18	48.50	33.40	63.91	53.91	-15.41	-20.51
3	0.24766	10.22	30.91	16.23	41.13	26.45	61.84	51.84	-20.71	-25.39
4	0.30625	10.22	28.83	17.42	39.05	27.64	60.07	50.07	-21.02	-22.43
5	0.66953	10.24	17.63	9.49	27.87	19.73	56.00	46.00	-28.13	-26.27
6	24.00000	11.43	21.35	20.76	32.78	32.19	60.00	50.00	-27.22	-17.81

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

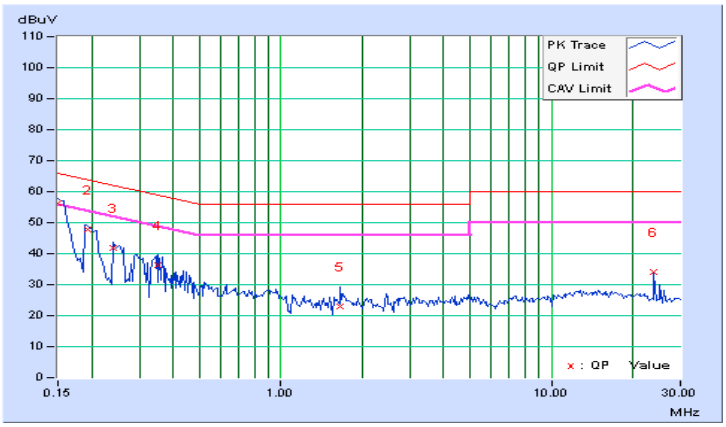


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	46.19	32.99	56.38	43.18	66.00	56.00	-9.62	-12.82
2	0.19297	10.21	37.67	22.05	47.88	32.26	63.91	53.91	-16.03	-21.65
3	0.23984	10.21	31.47	14.58	41.68	24.79	62.10	52.10	-20.42	-27.31
4	0.35313	10.20	26.22	9.82	36.42	20.02	58.89	48.89	-22.47	-28.87
5	1.65234	10.27	12.87	3.62	23.14	13.89	56.00	46.00	-32.86	-32.11
6	24.00000	11.13	22.79	22.47	33.92	33.60	60.00	50.00	-26.08	-16.40

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

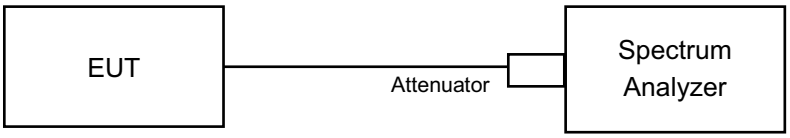


4.3 6dB Bandwidth Measurement

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 3	CHAIN 4		
1	2412	8.10	8.60	8.10	8.08	0.5	PASS
6	2437	8.12	8.10	8.10	8.58	0.5	PASS
11	2462	8.10	8.08	8.11	8.08	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 3	CHAIN 4		
1	2412	15.17	15.17	15.18	15.51	0.5	PASS
6	2437	15.20	15.22	15.20	15.18	0.5	PASS
11	2462	15.17	15.15	15.16	15.20	0.5	PASS

802.11n (HT20)

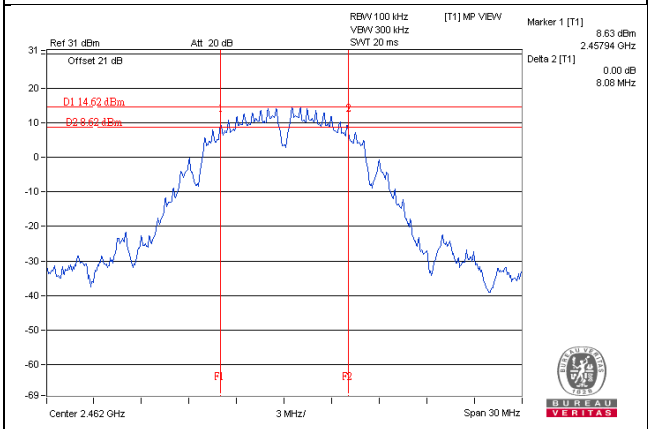
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 3	CHAIN 4		
1	2412	15.18	15.17	15.75	15.16	0.5	PASS
6	2437	15.77	15.77	15.76	15.20	0.5	PASS
11	2462	15.73	15.73	15.72	15.20	0.5	PASS

802.11n (HT40)

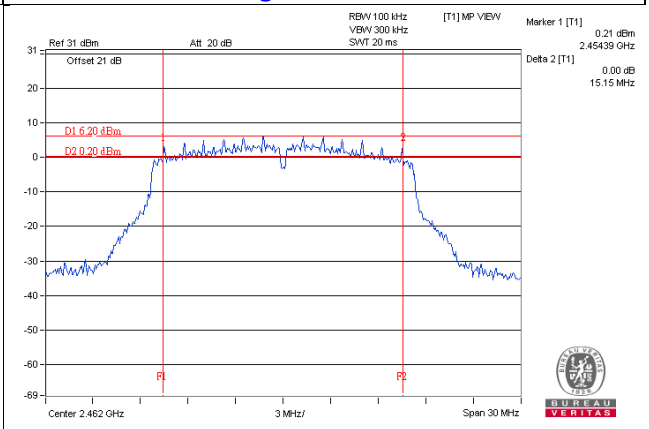
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 3	CHAIN 4		
3	2422	36.50	36.15	36.46	36.39	0.5	PASS
6	2437	36.52	36.54	36.54	36.47	0.5	PASS
9	2452	36.49	36.45	36.49	36.48	0.5	PASS

Spectrum Plot of Worst Value

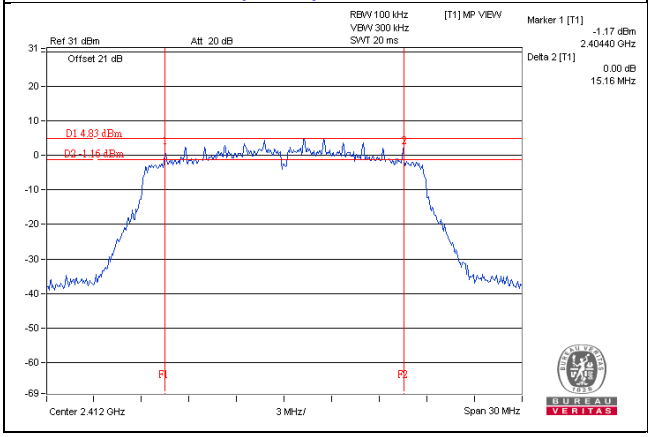
802.11b / Chain 1 : CH11



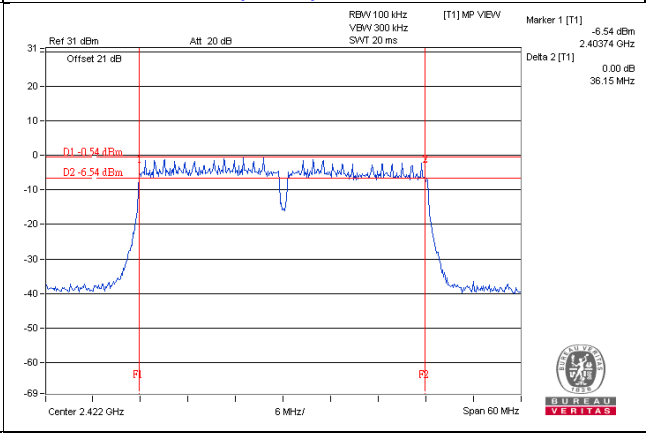
802.11g / Chain 1 : CH1



802.11n (HT20) / Chain 4 : CH1



802.11n (HT40) / Chain 1 : CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

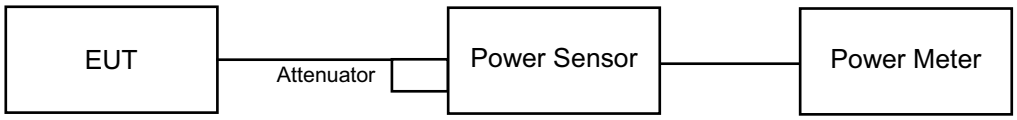
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

CDD Mode

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	22.53	22.41	22.18	22.53	697.499	28.44	30	Pass
6	2437	23.67	23.53	23.48	23.62	911.221	29.60	30	Pass
11	2462	22.06	21.54	21.48	21.83	596.265	27.75	30	Pass

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	18.21	18.46	17.94	18.19	264.515	24.22	30	Pass
6	2437	23.82	24.12	23.76	23.69	970.785	29.87	30	Pass
11	2462	16.87	17.48	16.85	16.84	201.34	23.04	30	Pass

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	15.77	16.19	15.55	15.77	152.997	21.85	30	Pass
6	2437	23.80	24.11	23.58	23.40	944.325	29.75	30	Pass
11	2462	15.63	15.94	15.47	15.59	147.284	21.68	30	Pass

802.11n (HT40)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	12.90	13.35	12.61	12.86	78.684	18.96	30	Pass
6	2437	16.54	16.70	16.17	16.37	176.607	22.47	30	Pass
9	2452	13.37	13.66	12.99	13.36	86.538	19.37	30	Pass

Beamforming Mode

Nss = 1:

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	15.77	16.19	15.55	15.77	152.997	21.85	24.98	Pass
6	2437	18.78	18.99	18.42	18.62	297.039	24.73	24.98	Pass
11	2462	15.40	15.68	15.24	15.35	139.354	21.44	24.98	Pass

Note: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power limit shall be reduced to 30-(11.02-6) = 24.98dBm.

802.11n (HT40)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	12.90	13.35	12.61	12.86	78.684	18.96	24.98	Pass
6	2437	16.54	16.70	16.17	16.37	176.607	22.47	24.98	Pass
9	2452	13.11	13.40	12.75	13.13	81.737	19.12	24.98	Pass

Note: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power limit shall be reduced to 30-(11.02-6) = 24.98dBm.

Nss = 2

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	15.77	16.19	15.55	15.77	152.997	21.85	27.99	Pass
6	2437	21.96	22.10	21.65	21.38	602.839	27.80	27.99	Pass
11	2462	15.40	15.68	15.24	15.35	139.354	21.44	27.99	Pass

Note: Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power limit shall be reduced to 30-(8.01-6) = 27.99dBm.

802.11n (HT40)

Chan.	Frequency (MHz)	Avg. Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	12.90	13.35	12.61	12.86	78.684	18.96	27.99	Pass
6	2437	16.54	16.70	16.17	16.37	176.607	22.47	27.99	Pass
9	2452	13.11	13.40	12.75	13.13	81.737	19.12	27.99	Pass

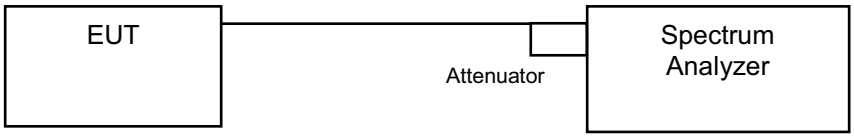
Note: Directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi , so the power limit shall be reduced to 30-(8.01-6) = 27.99dBm.

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=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-5.03	6.02	0.99	2.98	Pass
	6	2437	-4.45	6.02	1.57	2.98	Pass
	11	2462	-5.12	6.02	0.90	2.98	Pass
1	1	2412	-4.78	6.02	1.24	2.98	Pass
	6	2437	-4.02	6.02	2.00	2.98	Pass
	11	2462	-5.09	6.02	0.93	2.98	Pass
2	1	2412	-5.10	6.02	0.92	2.98	Pass
	6	2437	-4.14	6.02	1.88	2.98	Pass
	11	2462	-5.58	6.02	0.44	2.98	Pass
3	1	2412	-4.97	6.02	1.05	2.98	Pass
	6	2437	-4.80	6.02	1.22	2.98	Pass
	11	2462	-5.70	6.02	0.32	2.98	Pass

NOTE: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power density limit shall be reduced to 8-(11.02-6) = 2.98dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.77	6.02	-3.75	2.98	Pass
	6	2437	-4.14	6.02	1.88	2.98	Pass
	11	2462	-11.40	6.02	-5.38	2.98	Pass
1	1	2412	-9.69	6.02	-3.67	2.98	Pass
	6	2437	-4.59	6.02	1.43	2.98	Pass
	11	2462	-10.68	6.02	-4.66	2.98	Pass
2	1	2412	-9.71	6.02	-3.69	2.98	Pass
	6	2437	-4.13	6.02	1.89	2.98	Pass
	11	2462	-11.27	6.02	-5.25	2.98	Pass
3	1	2412	-9.96	6.02	-3.94	2.98	Pass
	6	2437	-4.30	6.02	1.72	2.98	Pass
	11	2462	-9.83	6.02	-3.81	2.98	Pass

NOTE: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power density limit shall be reduced to 8-(11.02-6) = 2.98dBm.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-13.20	6.02	-7.18	2.98	Pass
	6	2437	-5.91	6.02	0.11	2.98	Pass
	11	2462	-13.72	6.02	-7.70	2.98	Pass
1	1	2412	-13.52	6.02	-7.50	2.98	Pass
	6	2437	-5.51	6.02	0.51	2.98	Pass
	11	2462	-13.58	6.02	-7.56	2.98	Pass
2	1	2412	-14.06	6.02	-8.04	2.98	Pass
	6	2437	-6.15	6.02	-0.13	2.98	Pass
	11	2462	-13.64	6.02	-7.62	2.98	Pass
3	1	2412	-12.65	6.02	-6.63	2.98	Pass
	6	2437	-6.71	6.02	-0.69	2.98	Pass
	11	2462	-12.25	6.02	-6.23	2.98	Pass

NOTE: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power density limit shall be reduced to 8-(11.02-6) = 2.98dBm.

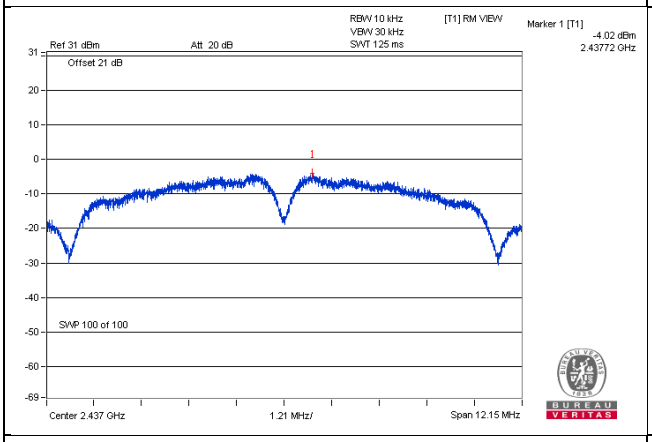
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-20.23	6.02	-14.21	2.98	Pass
	6	2437	-15.78	6.02	-9.76	2.98	Pass
	9	2452	-18.88	6.02	-12.86	2.98	Pass
1	3	2422	-19.41	6.02	-13.39	2.98	Pass
	6	2437	-16.03	6.02	-10.01	2.98	Pass
	9	2452	-18.57	6.02	-12.55	2.98	Pass
2	3	2422	-19.73	6.02	-13.71	2.98	Pass
	6	2437	-16.23	6.02	-10.21	2.98	Pass
	9	2452	-18.72	6.02	-12.70	2.98	Pass
3	3	2422	-19.41	6.02	-13.39	2.98	Pass
	6	2437	-16.01	6.02	-9.99	2.98	Pass
	9	2452	-19.60	6.02	-13.58	2.98	Pass

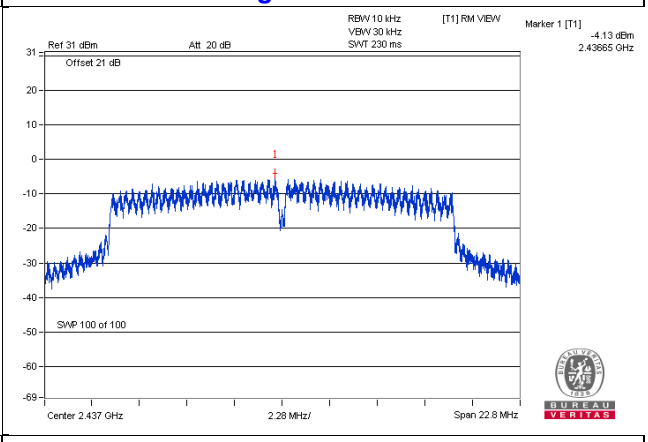
NOTE: Directional gain = 5dBi + 10log(4) = 11.02dBi > 6dBi , so the power density limit shall be reduced to 8-(11.02-6) = 2.98dBm.

Spectrum Plot of Worst Value

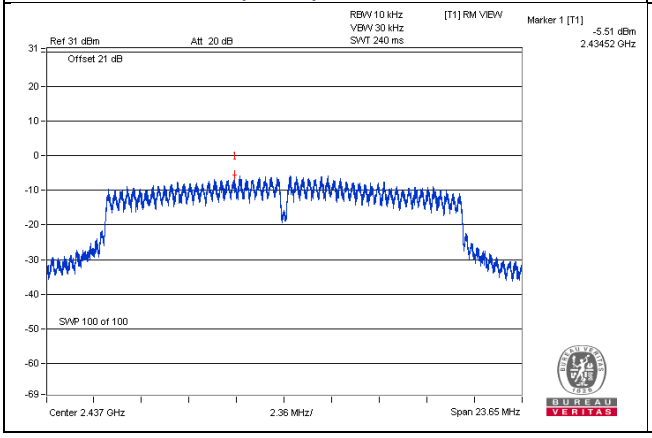
802.11b / Chain 1 : CH6



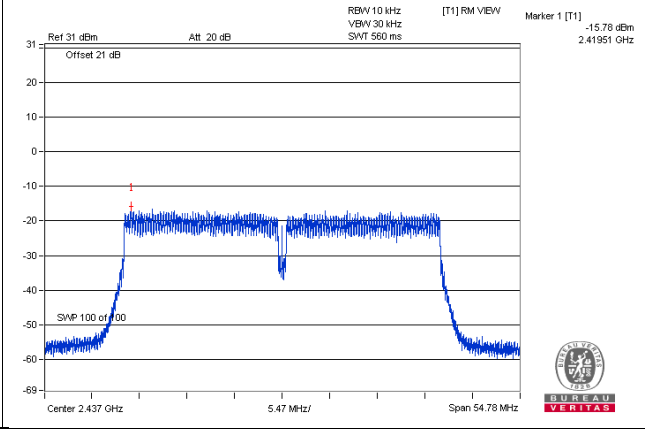
802.11g / Chain 2 : CH6



802.11n (HT20) / Chain 1 : CH6



802.11n (HT40) / Chain 0 : CH6

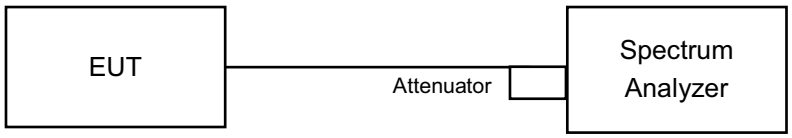


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 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

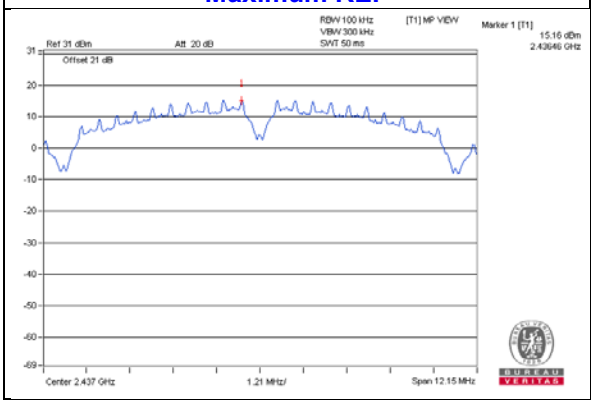
Same as Item 4.3.6

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.

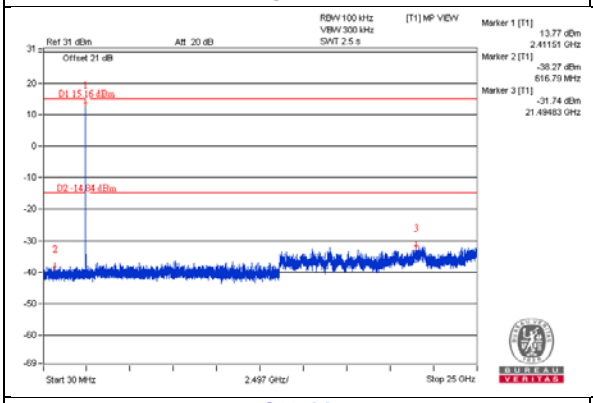
802.11b

Maximum REF

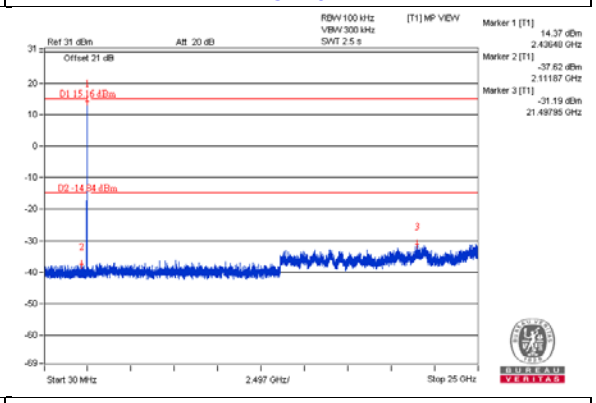


CHAIN 0

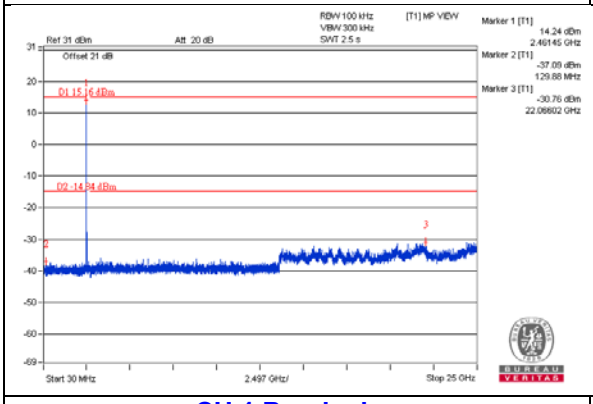
CH 1



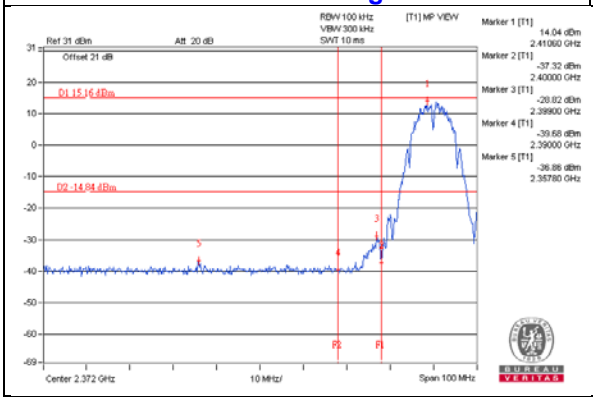
CH 6



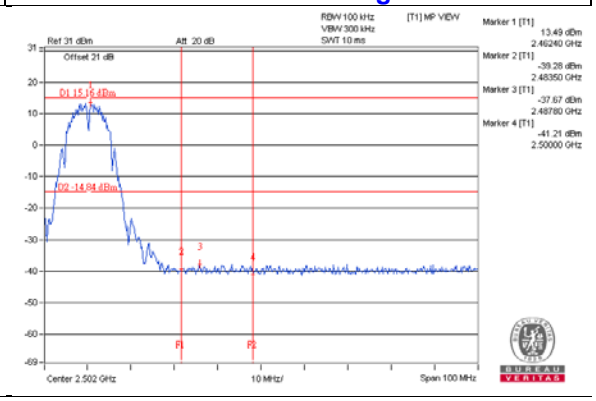
CH 11



CH 1 Band edge

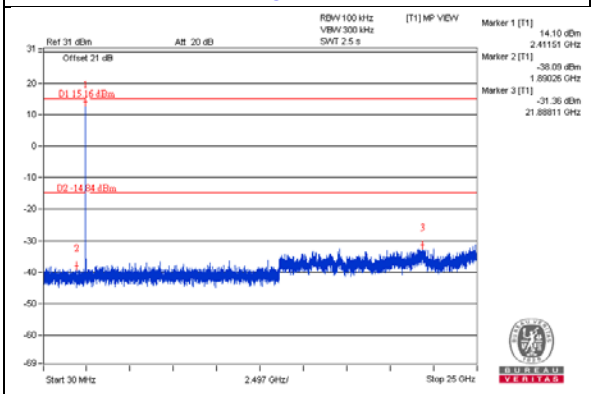


CH 11 Band edge

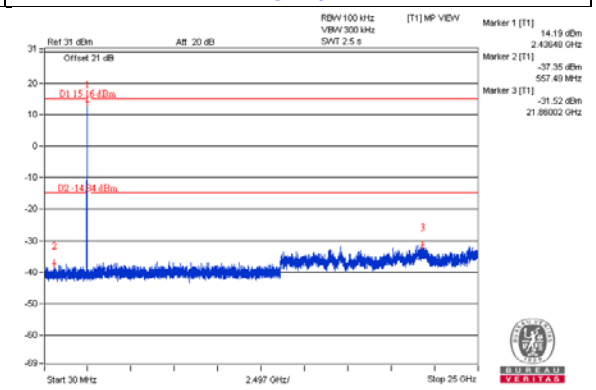


CHAIN 1

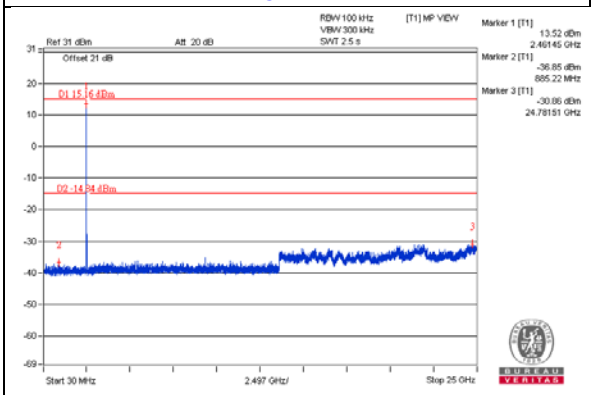
CH 1



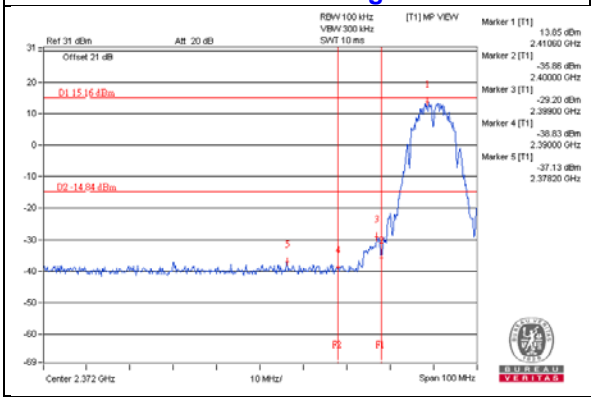
CH 6



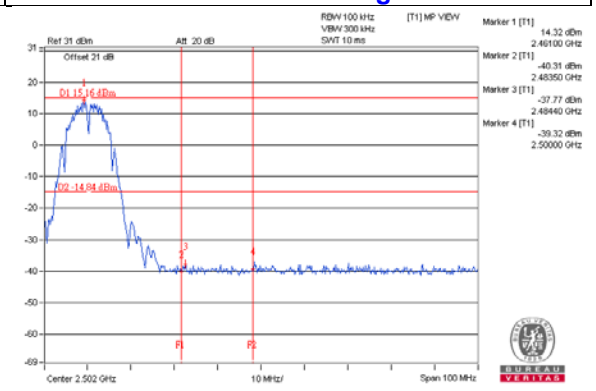
CH 11



CH 1 Band edge

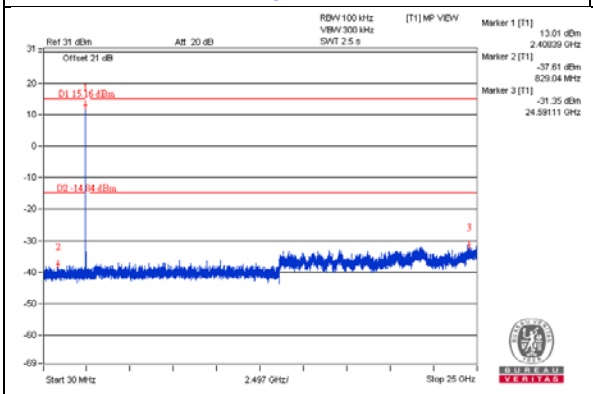


CH 11 Band edge

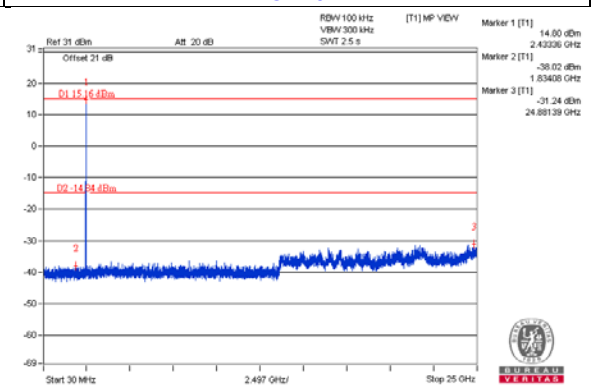


CHAIN 2

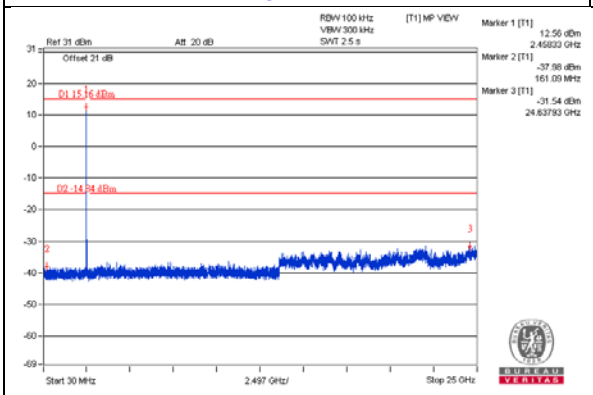
CH 1



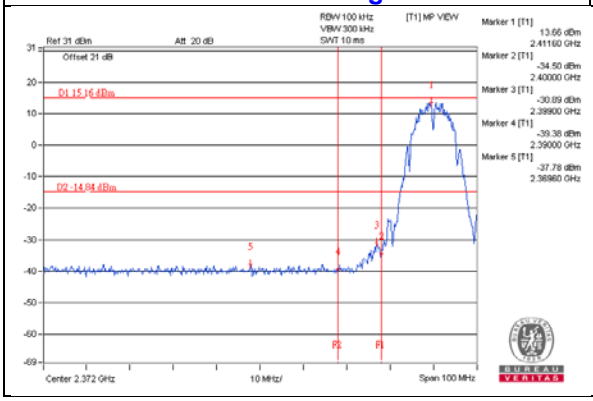
CH 6



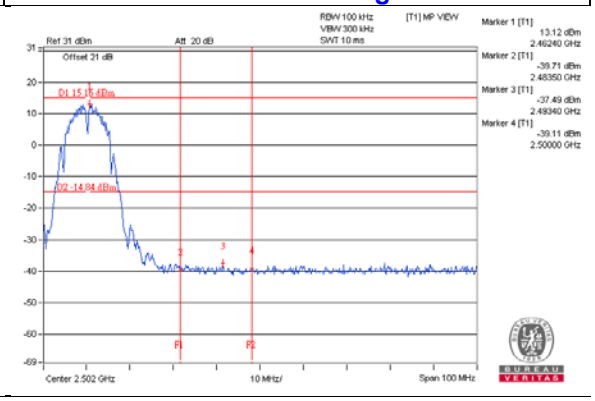
CH 11



CH 1 Band edge

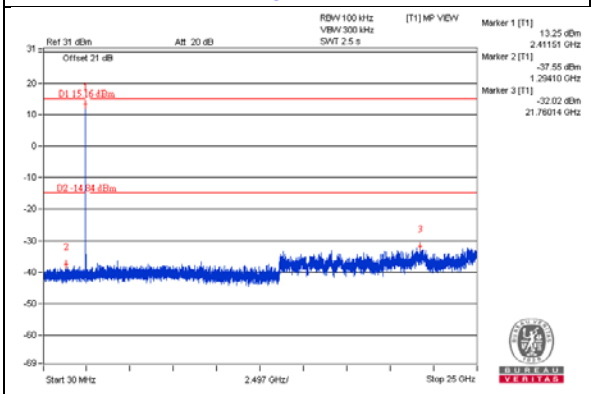


CH 11 Band edge

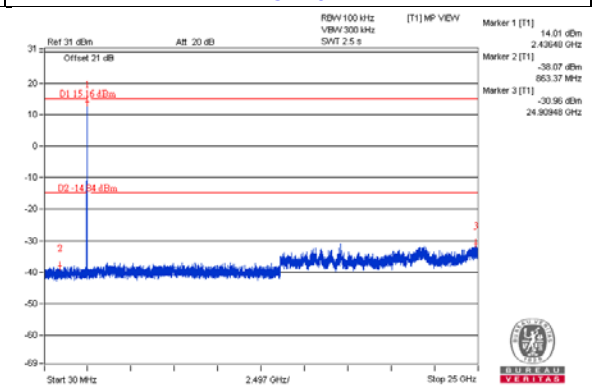


CHAIN 3

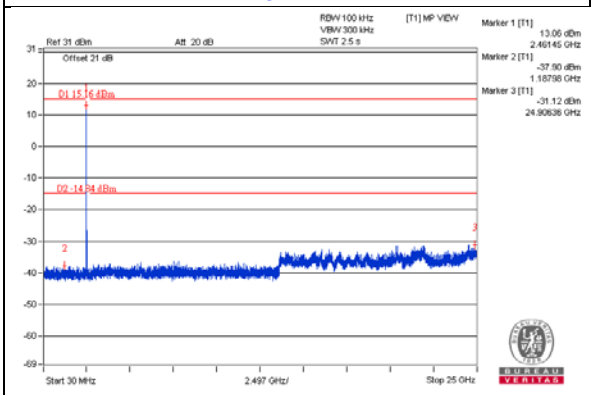
CH 1



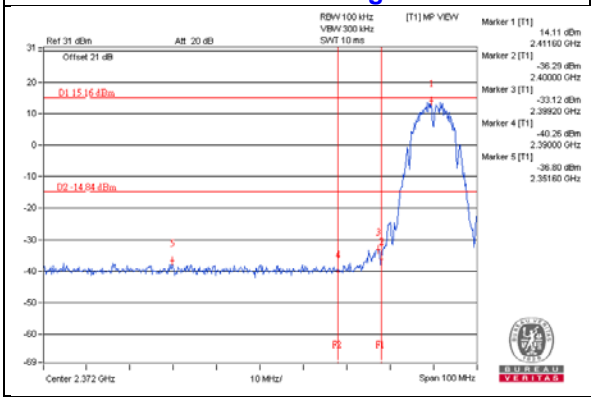
CH 6



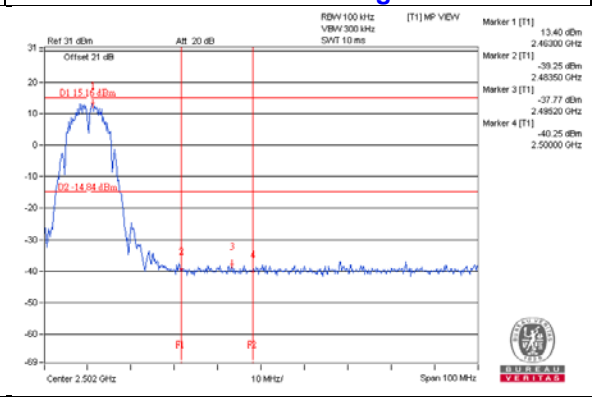
CH 11



CH 1 Band edge

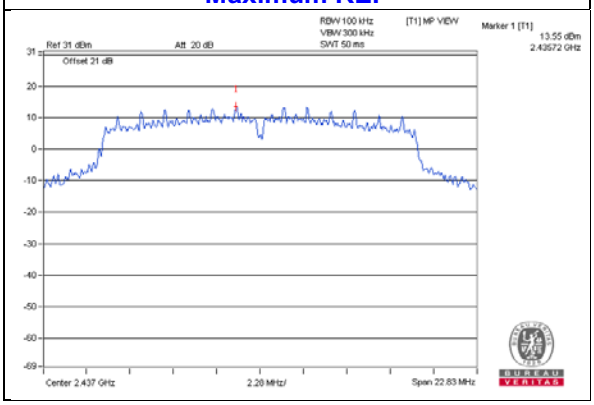


CH 11 Band edge



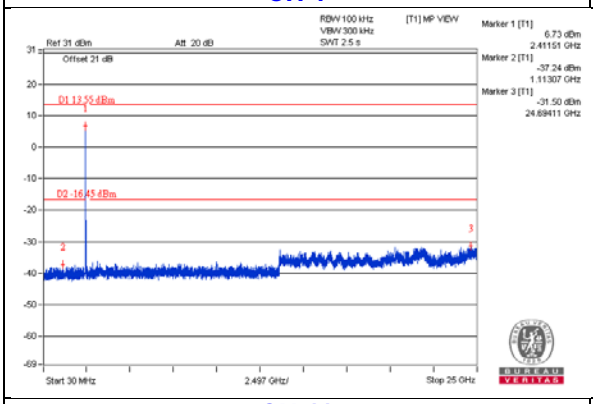
802.11g

Maximum REF

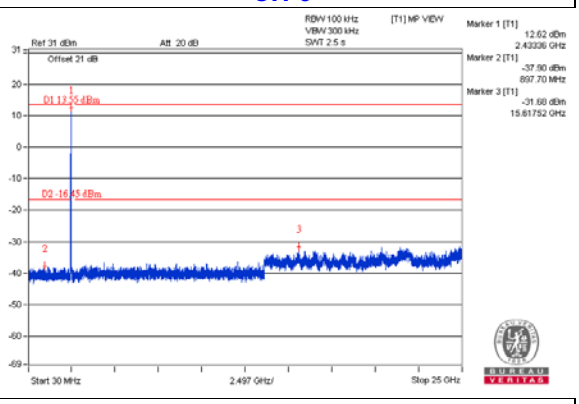


CHAIN 0

CH 1



CH 6



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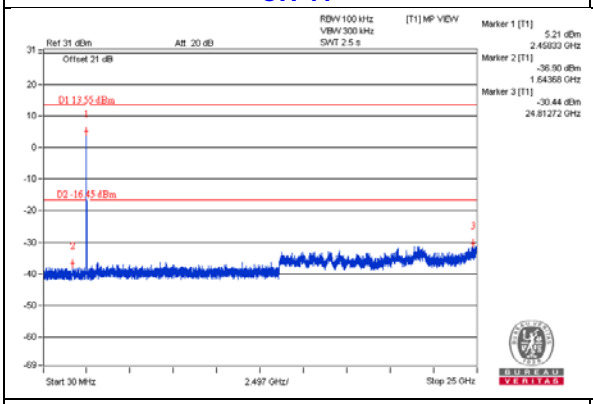
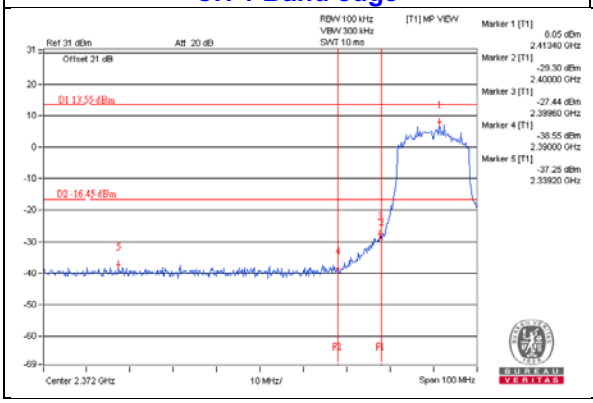


CH 1 Band edge



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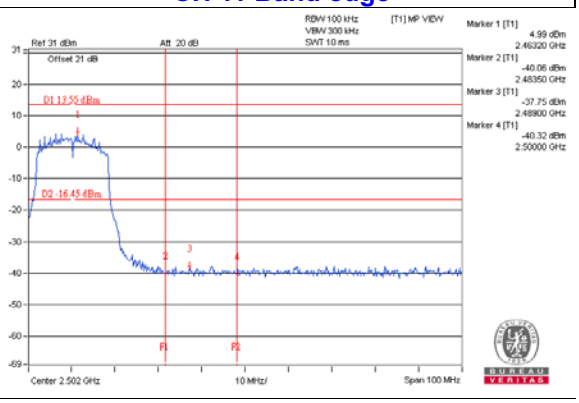
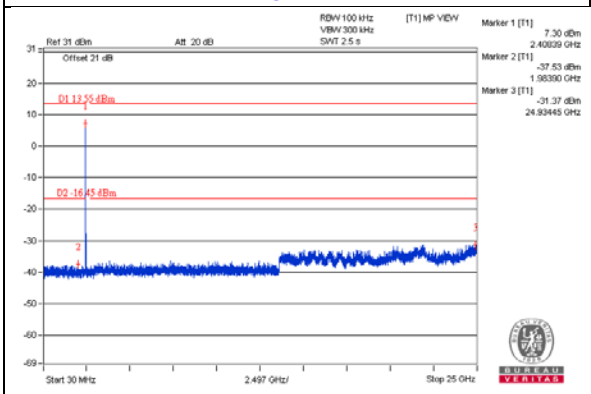


CHAIN 1

CH 1



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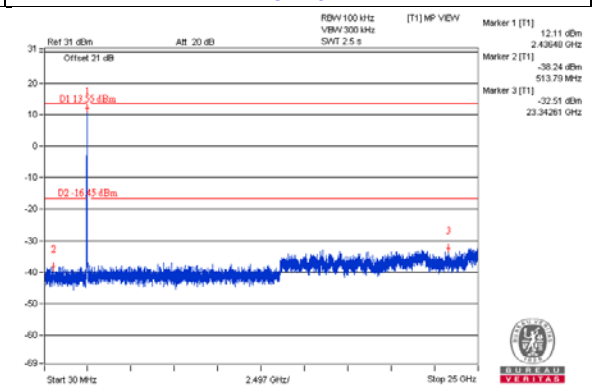

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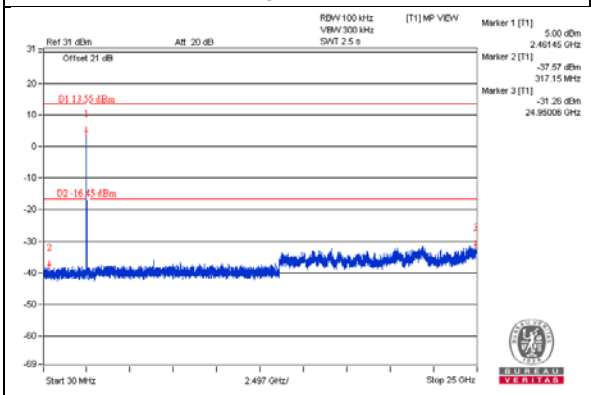

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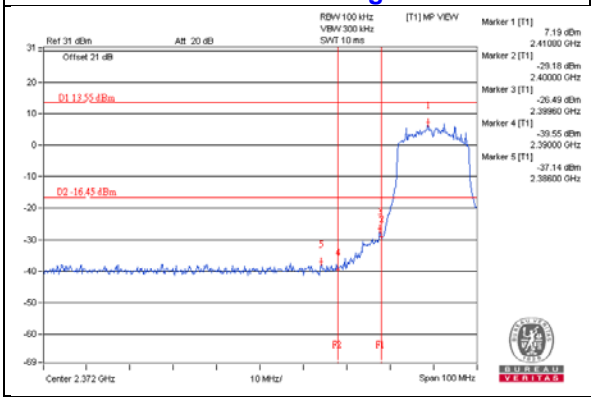

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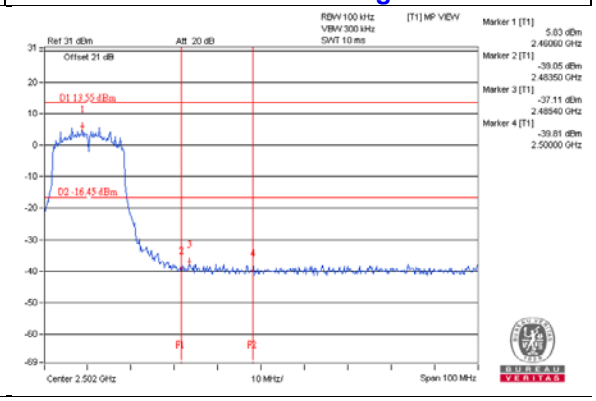

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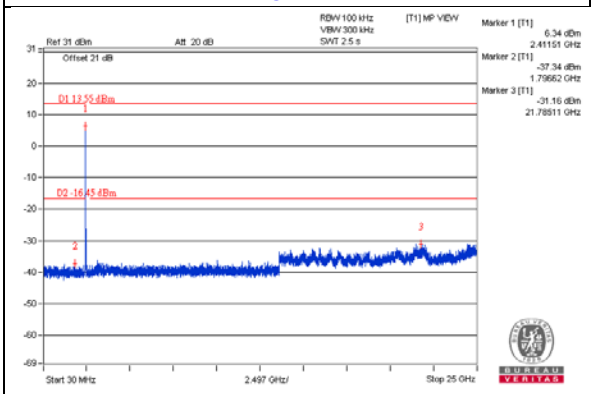

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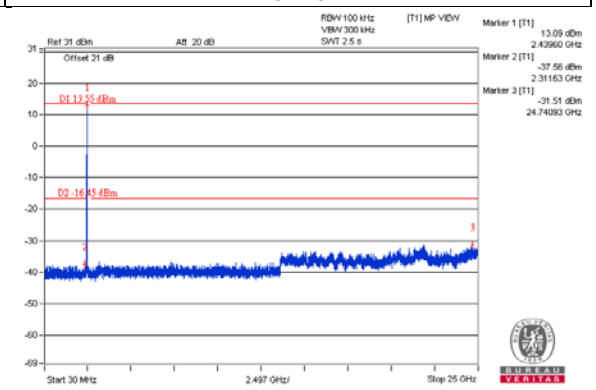

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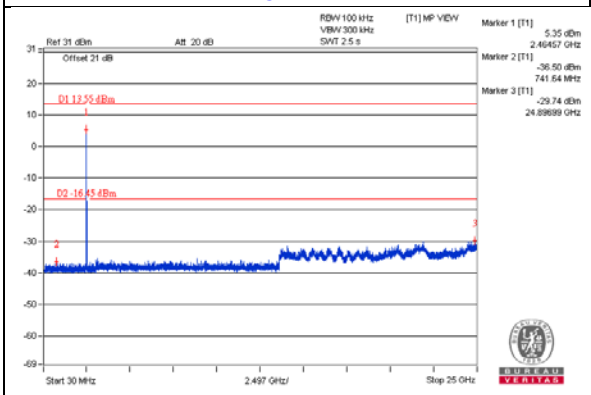

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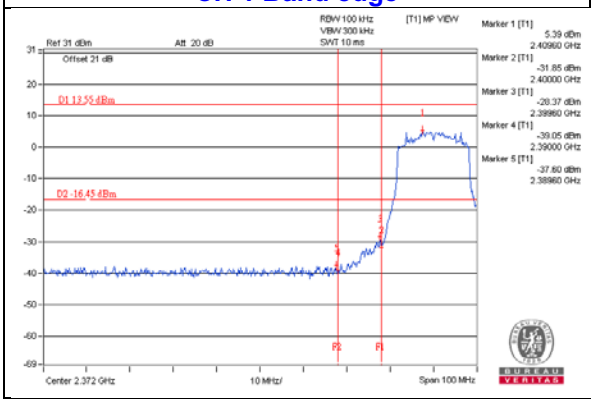

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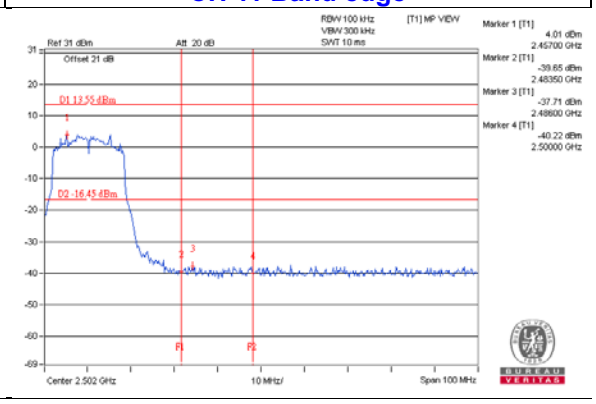

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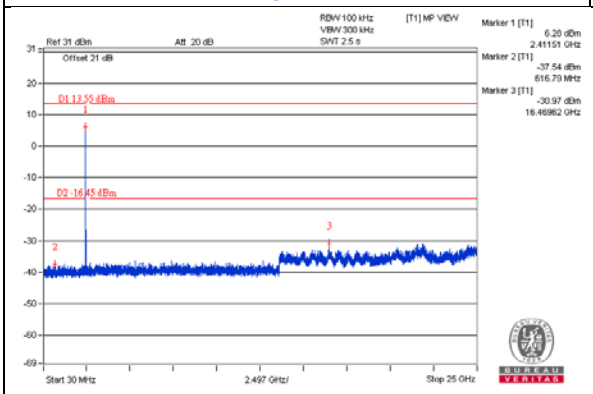

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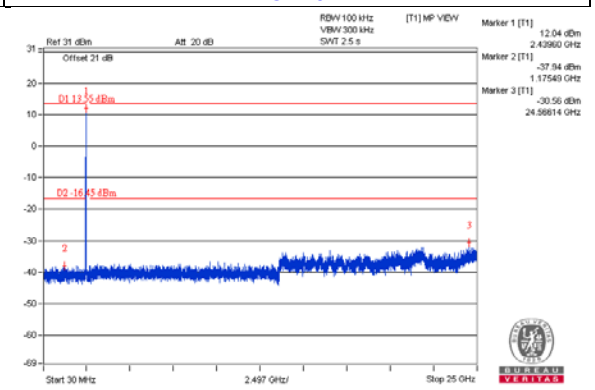

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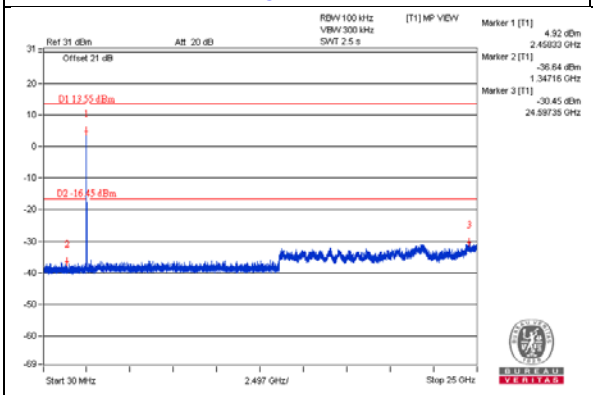

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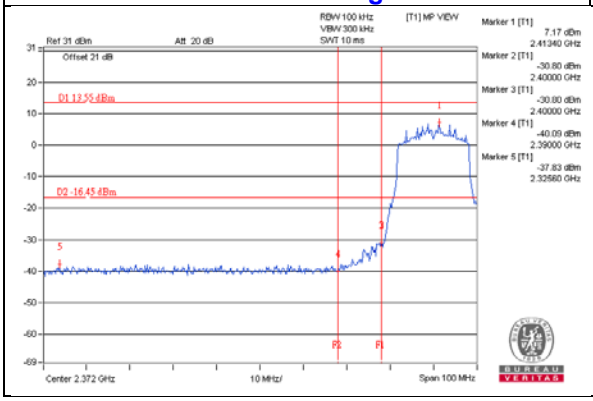

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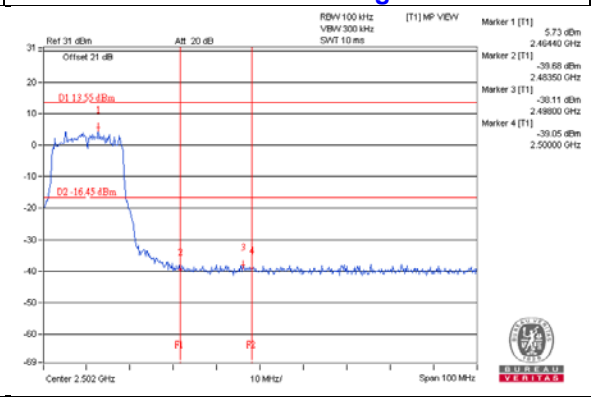

802.11n (HT20)

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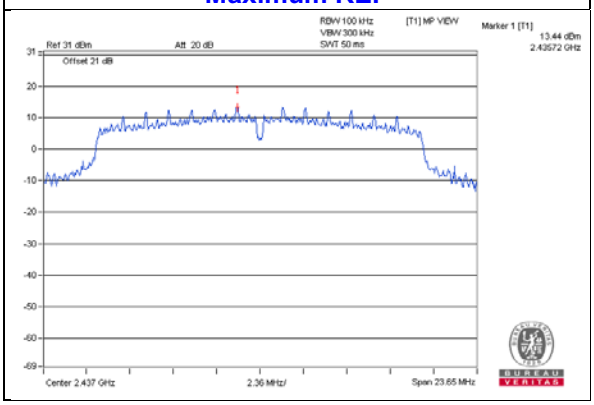

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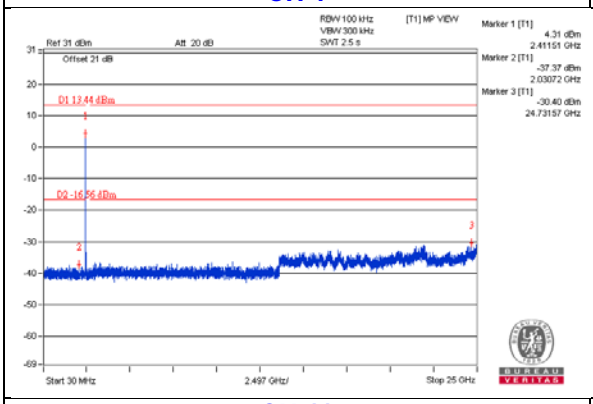

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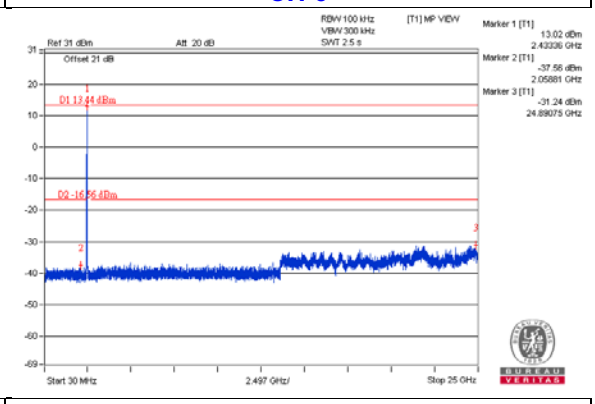

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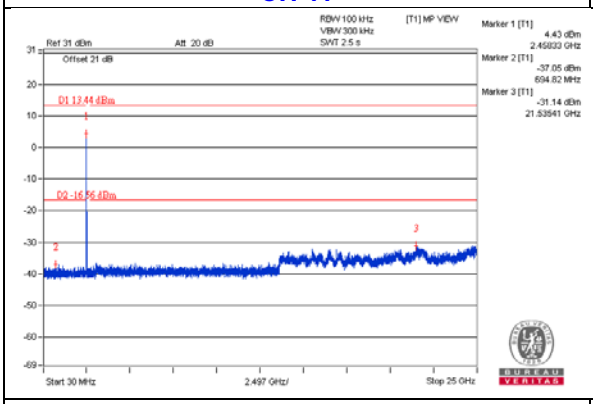

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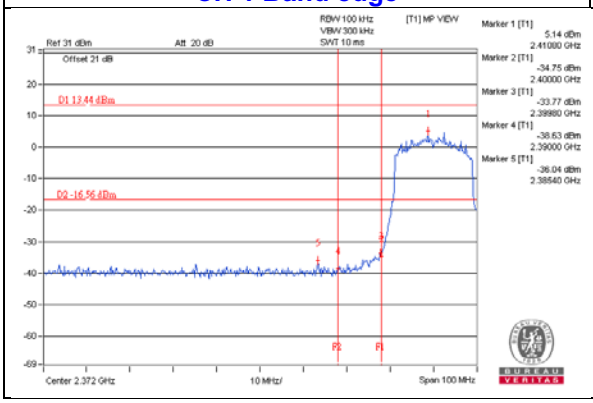

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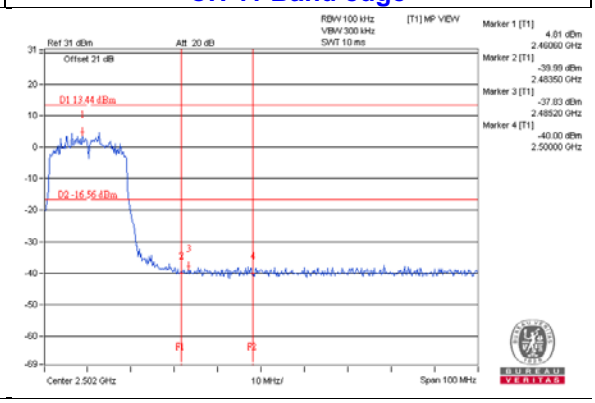

CHAIN 1

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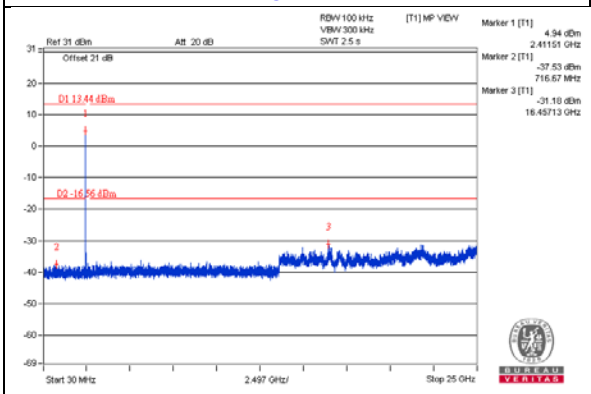

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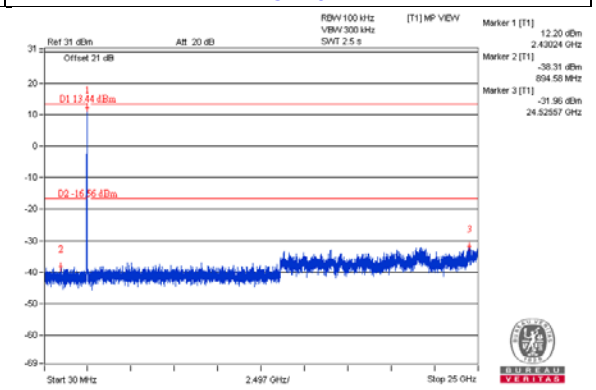

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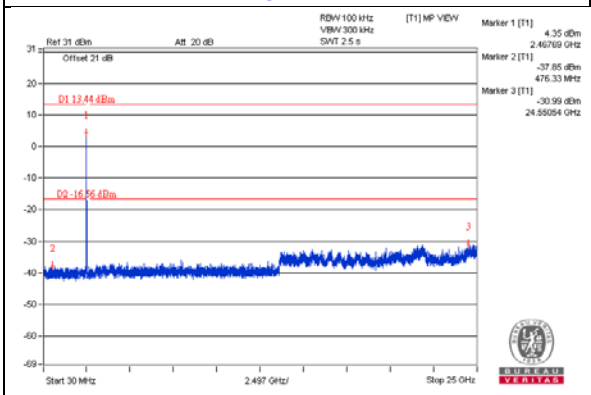

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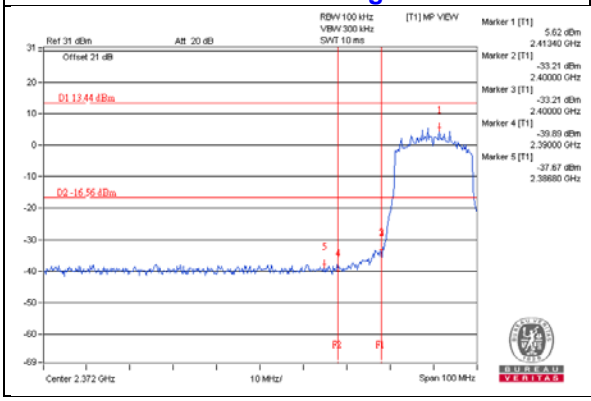

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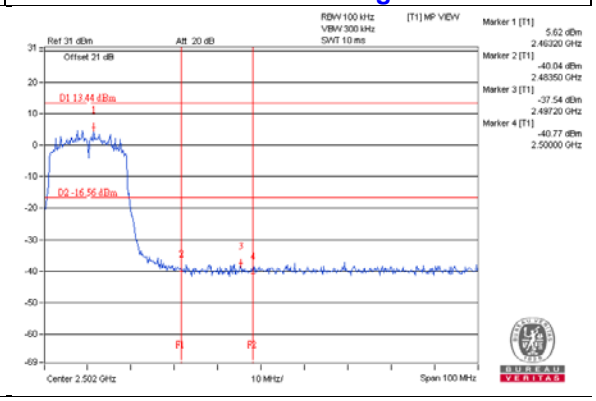
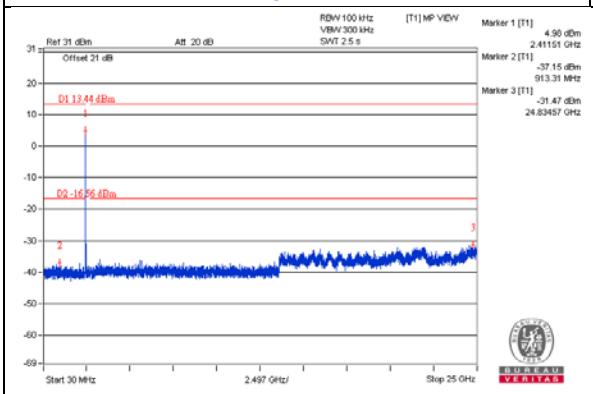


CHAIN 2

CH 1



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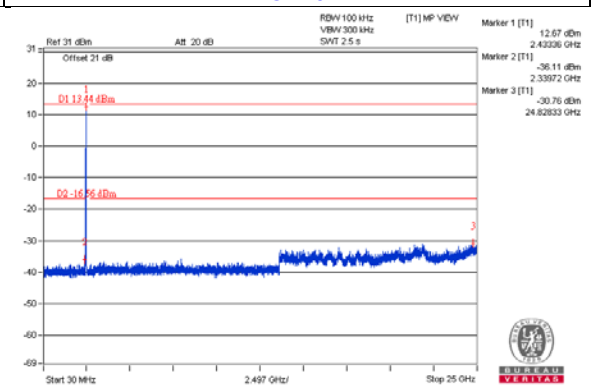

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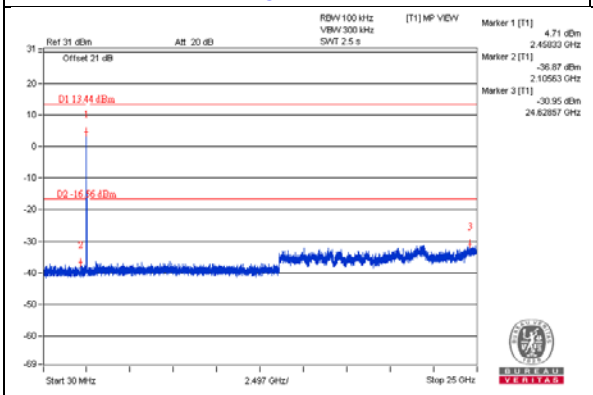

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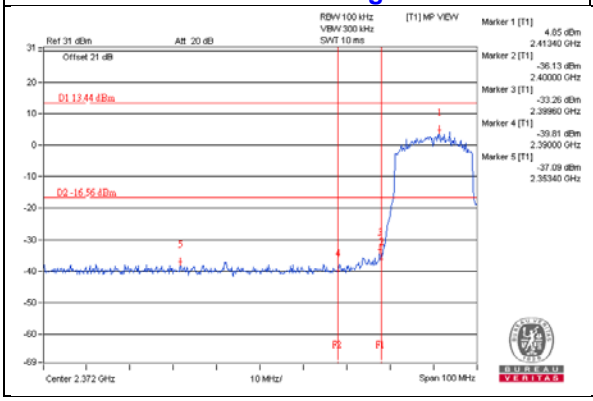
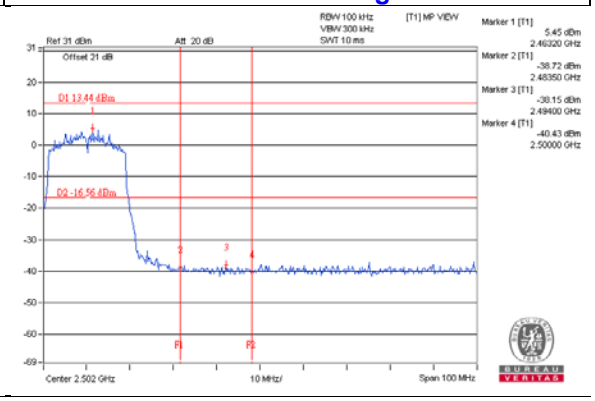
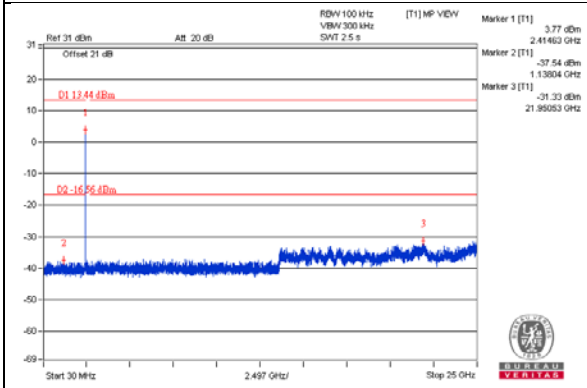


CH 11 Band edge



CHAIN 3

CH 1



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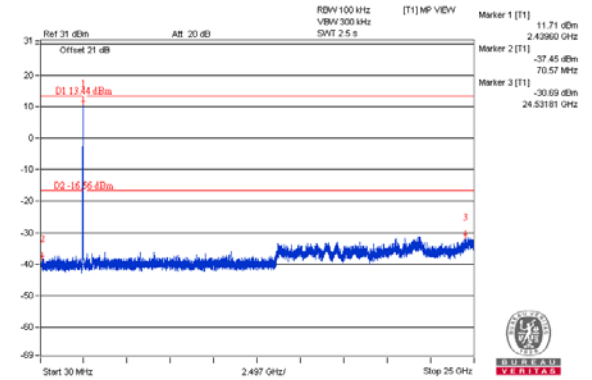

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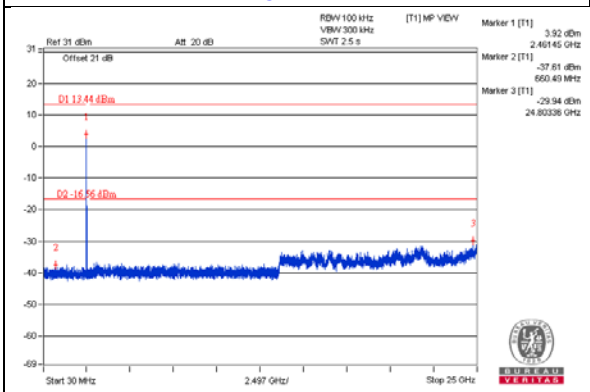

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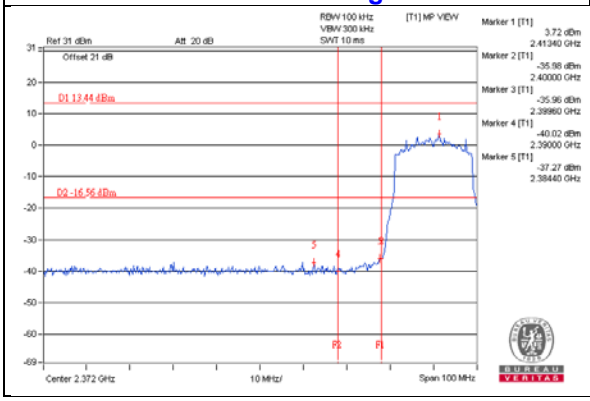

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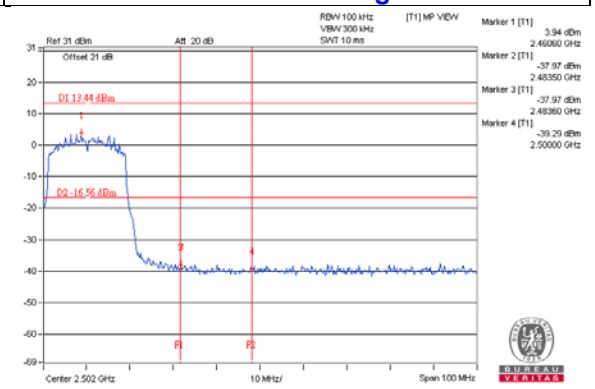
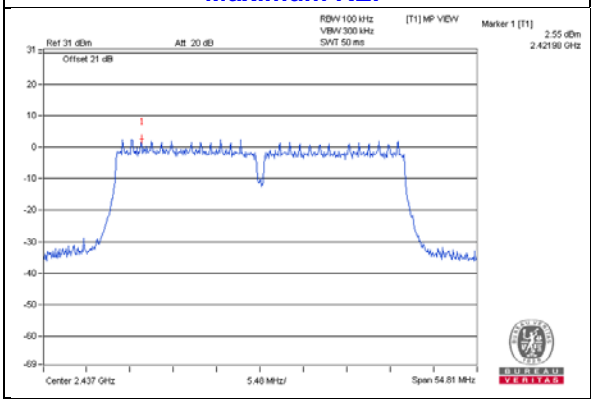


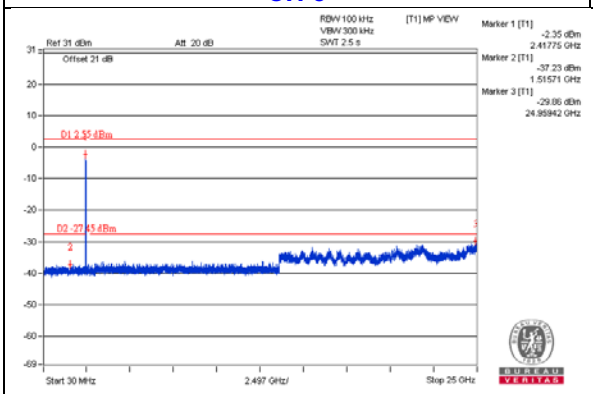
802.11n (HT40)

Maximum REF



CHAIN 0

CH 3



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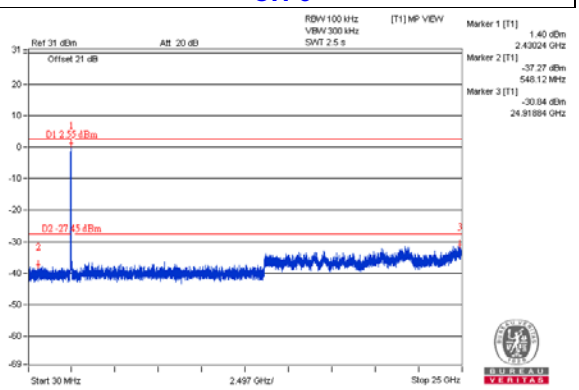

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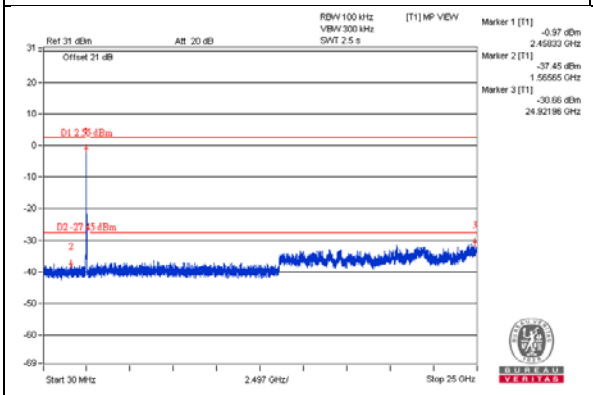
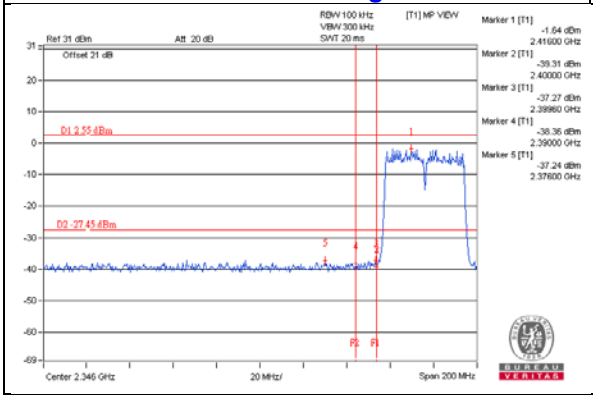
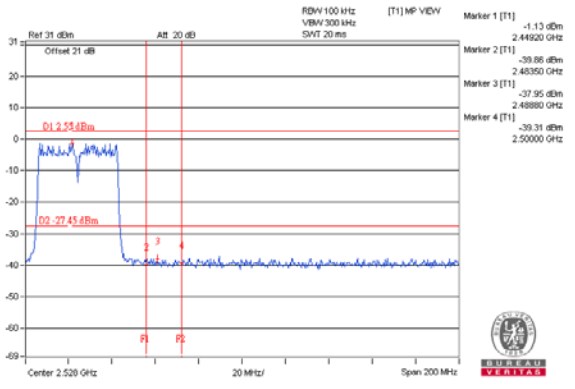


CH 3 Band edge

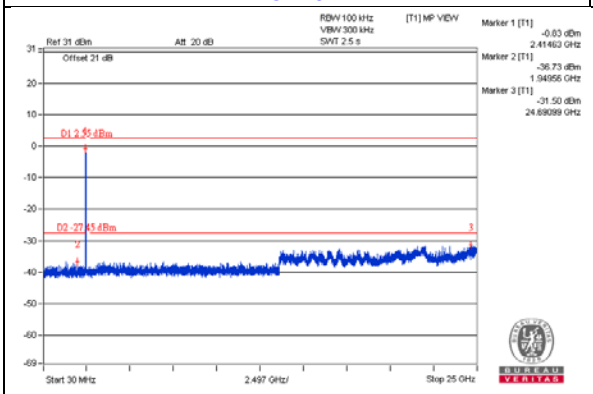


CH 9 Band edge



CHAIN 1

CH 3



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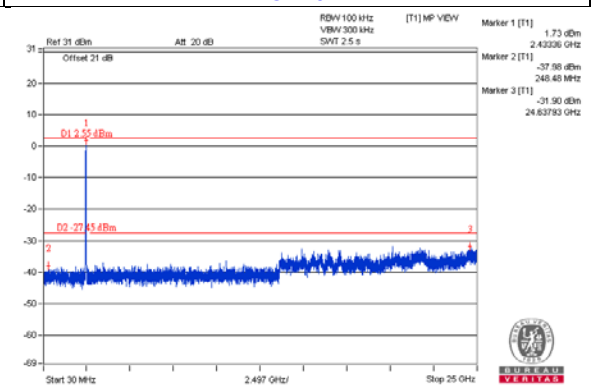

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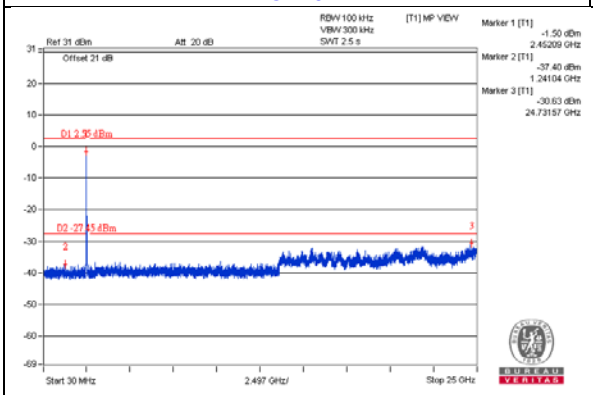

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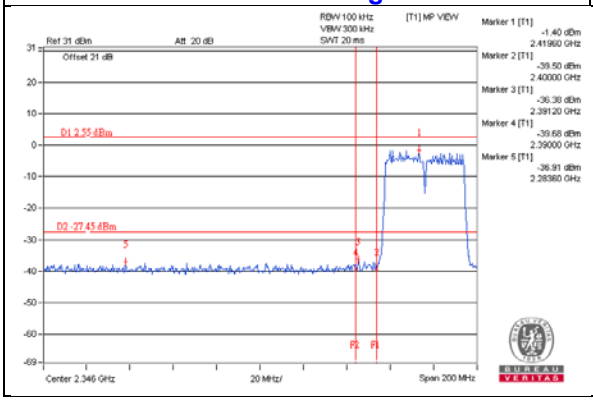

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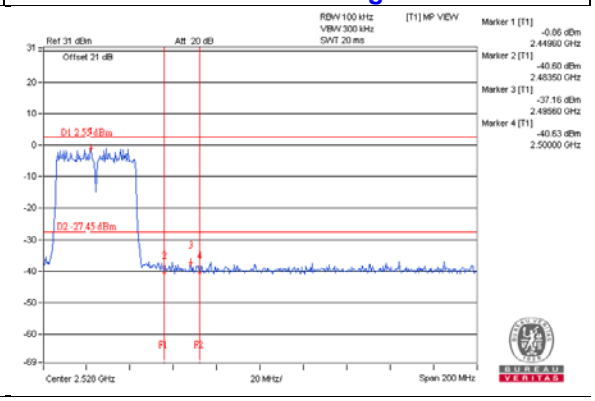
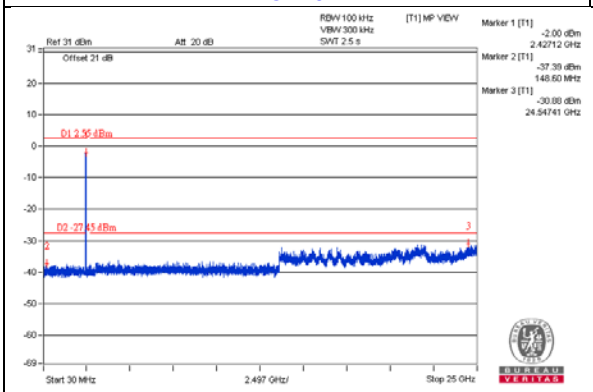


CHAIN 2

CH 3



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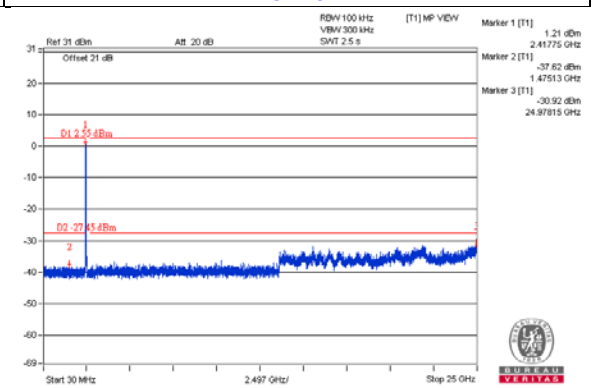

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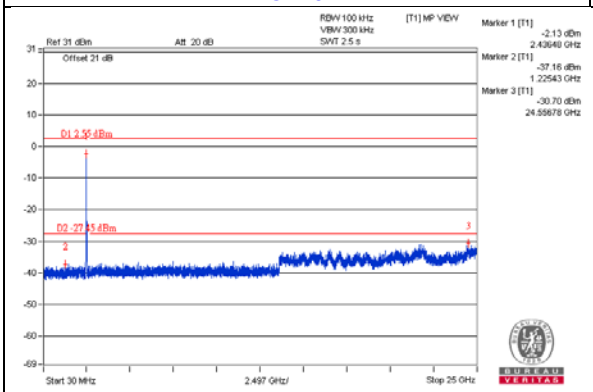
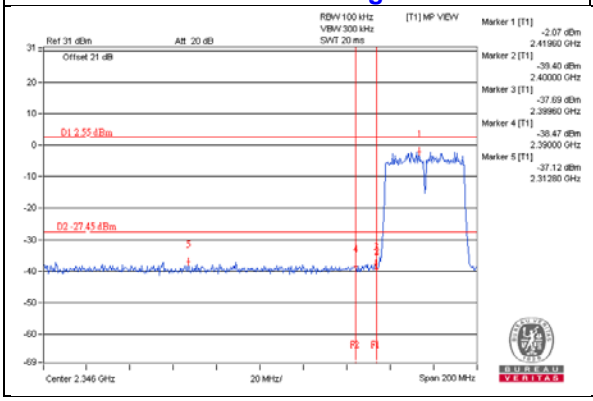


CH 3 Band edge



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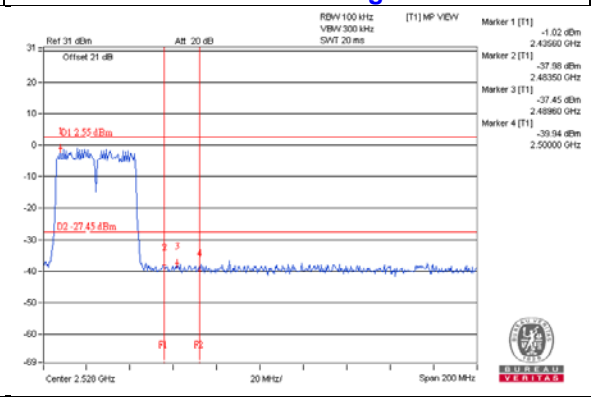
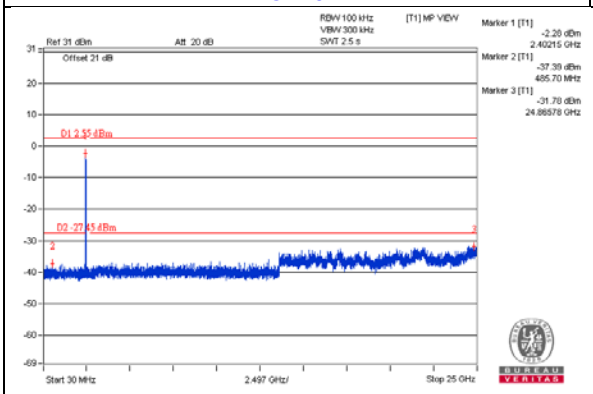
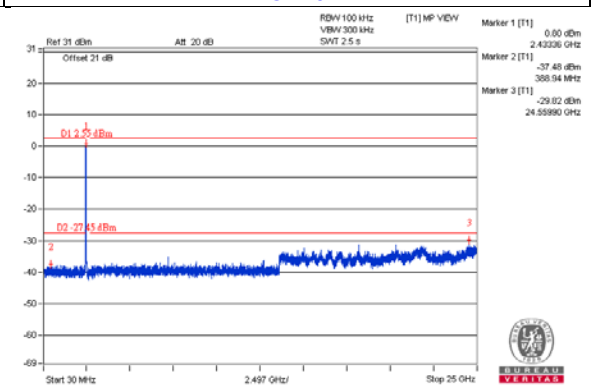


CHAIN 3

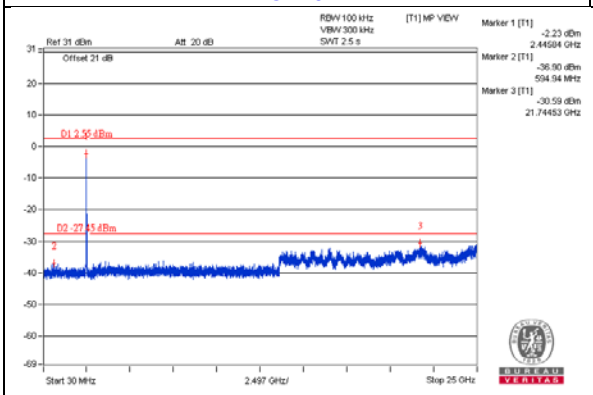
CH 3



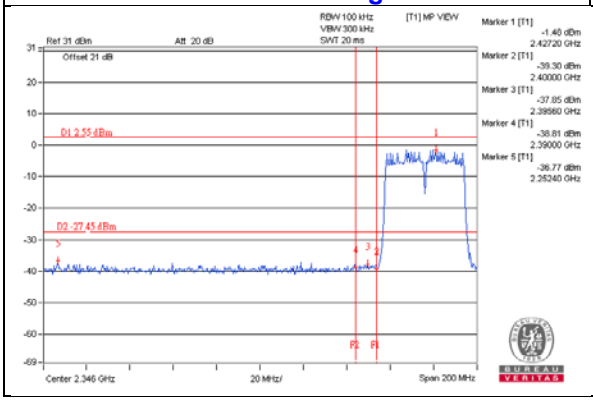
CH 6



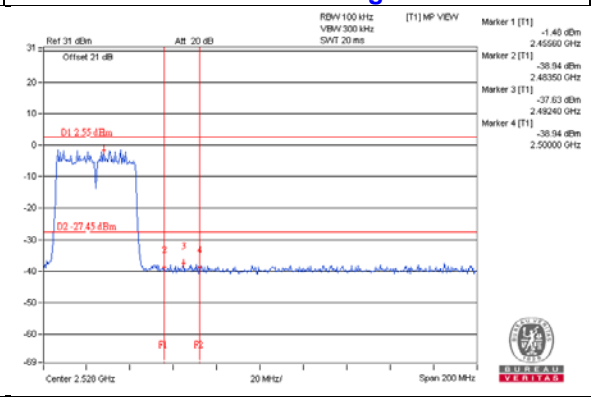
CH 9



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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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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