FCC Test Report (WLAN)

Report No.:	RF160715E05
FCC ID:	UZ7AP7622
Test Model:	AP-7622
Received Date:	July 15, 2016
Test Date:	Sep. 13 to 29, 2016
Issued Date:	Oct. 28, 2016
Applicant:	Zebra Technologies Corporation
Address:	One Zebra Plaza, Holtsville, NY,11742, USA
Manufacturer:	Zebra Technologies Corporation
Address:	One Zebra Plaza, Holtsville, NY,11742, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF160715E05	Original release.	Oct. 28, 2016

1 Certificate of Conformity

Product:	Access Point
Brand:	ZEBRA
Test Model:	AP-7622
Sample Status:	ENGINEERING SAMPLE
Applicant:	Zebra Technologies Corporation
Test Date:	Sep. 13 to 29, 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 : Wendy Wu , **Date:** Oct. 28, 2016

Wendy Wu / Specialist

Approved by : , **Date:** Oct. 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 -13.90dB at 23.28125MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.1dB at 2483.50MHz, 2390.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.43 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.72 dB
	6GHz ~ 18GHz	4.00 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 (WLAN)

Product	Access Point
Brand	ZEBRA
Test Model	AP-7622
Status of EUT	ENGINEERING SAMPLE
SW Version	esdk 5.0.9.1
HW Version	ZEBRA_ASPEN-C_BCM47452_V20_D1_20160603_fischer.brd
Power Supply Rating	12Vdc from power adapter or 55Vdc from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 mode in 2.4GHz band
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 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:** 327.242mW **Beamforming Mode:** 121.377mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 205.313mW **Beamforming Mode:** 155.046mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 293.877mW **Beamforming Mode:** 293.877mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. There are WLAN, BT technology used for the EUT.
2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4GHz-Chain0)	WLAN (5GHz-Chain1)	BT
2	WLAN (2.4GHz-Chain1)	WLAN (5GHz-Chain0)	BT
3	WLAN (2.4GHz-Chain0)	WLAN (2.4GHz-Chain1)	BT
4	WLAN (5GHz-Chain0)	WLAN (5GHz-Chain1)	BT
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

3. The EUT must be supplied with a power adapter and POE as following table:

Adapter (Only for test not for sale)		
Brand	Model No.	Spec.
HIPRO	HP-A0502R3D	Input: 100-240Vac, 50-60Hz, 2.4A Output: 12Vdc, 4.16A DC output cable (Unshielded, 1.8m with one core)
POE(Only for test not for sale)		
Brand	Model No.	Spec.
Symbol	PD-9001GR/AT/AC	Input: 100-240Vac, 50/60Hz, 0.67A Output: 55Vdc, 0.6A P/N : AP-PSBIAS-2P3-ATR
From above adapters and POE, the spurious emission above 1GHz worst case was found in **POE**. Therefore only the test data of the modes were recorded in this report individually.		

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

No.	PCB Chain No	Brand	Model	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector type
1	Chain 0	NA	NA	3.64	2.4~2.4835GHz	Monopole	i-pex(MHF)
				4.14	5.15~5.25GHz	Monopole	i-pex(MHF)
				4.33	5.25~5.35GHz	Monopole	i-pex(MHF)
				4.66	5.47~5.725GHz	Monopole	i-pex(MHF)
				4.85	5.725~5.85GHz	Monopole	i-pex(MHF)
2	Chain 1	NA	NA	2.65	2.4~2.4835GHz	Monopole	i-pex(MHF)
				4.5	5.15~5.25GHz	Monopole	i-pex(MHF)
				5.77	5.25~5.35GHz	Monopole	i-pex(MHF)
				5.54	5.47~5.725GHz	Monopole	i-pex(MHF)
				4.78	5.725~5.85GHz	Monopole	i-pex(MHF)
3	BT	NA	NA	2.42	2.4~2.483GHz	Monopole	i-pex(MHF)

5. The EUT incorporates a MIMO function:

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

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)
3. The EUT support diversity parameter for 1TX mode, the 1TX output power will remain the same as per chain of 2TX parameter, and all test items were performed by 2TX mode.

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

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20), VHT20:

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), VHT40:

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
2	-	√	√	-	Power from adapter

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**.

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)
802.11b	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

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)
802.11b	1 to 11	6	DSSS	DBPSK	1

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

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 (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

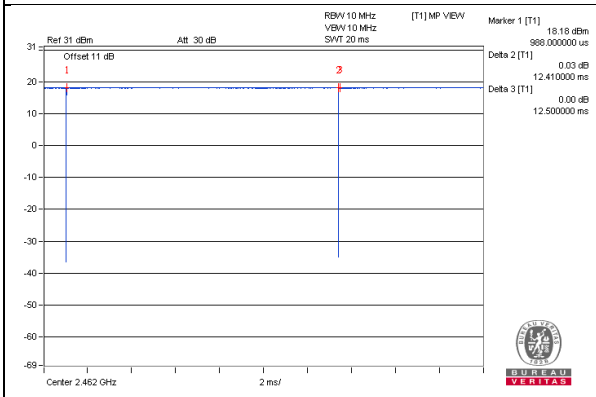
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 69%RH	120Vac, 60Hz	Weiwei Lo
RE<1G	28deg. C, 65%RH	120Vac, 60Hz	Andy Ho
PLC	25deg. C, 70%RH	120Vac, 60Hz	Barry Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

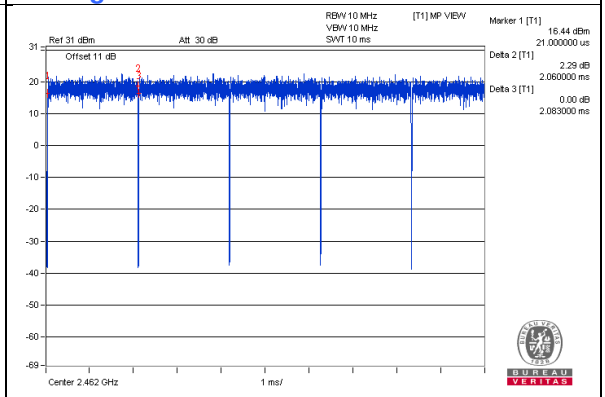
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11b: Duty cycle = 12.41/12.5 = 0.993
802.11g: Duty cycle = 2.06/2.083 = 0.989
802.11n (HT20): Duty cycle = 1.919/1.941 = 0.989
802.11n (HT40): Duty cycle = 0.949/0.964 = 0.984

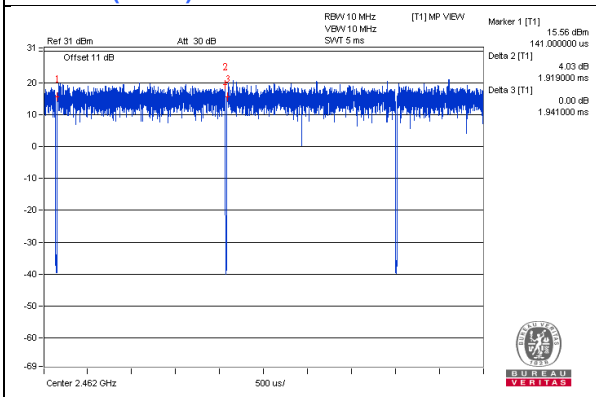
802.11b



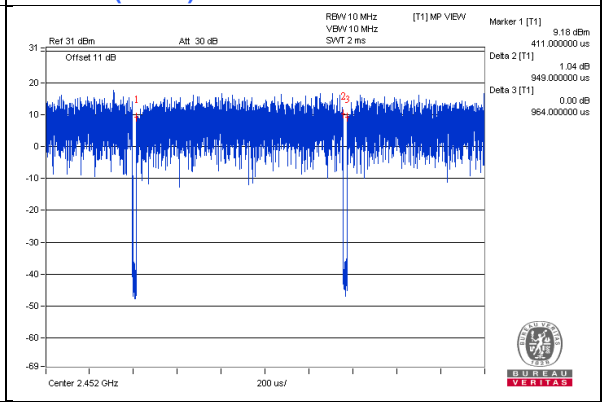
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6440	F9LYQ32	FCC DoC	Provided by Lab
B.	POE Adapter	Symbol	PD-9001GR/AT/AC	NA	NA	Supplied by client

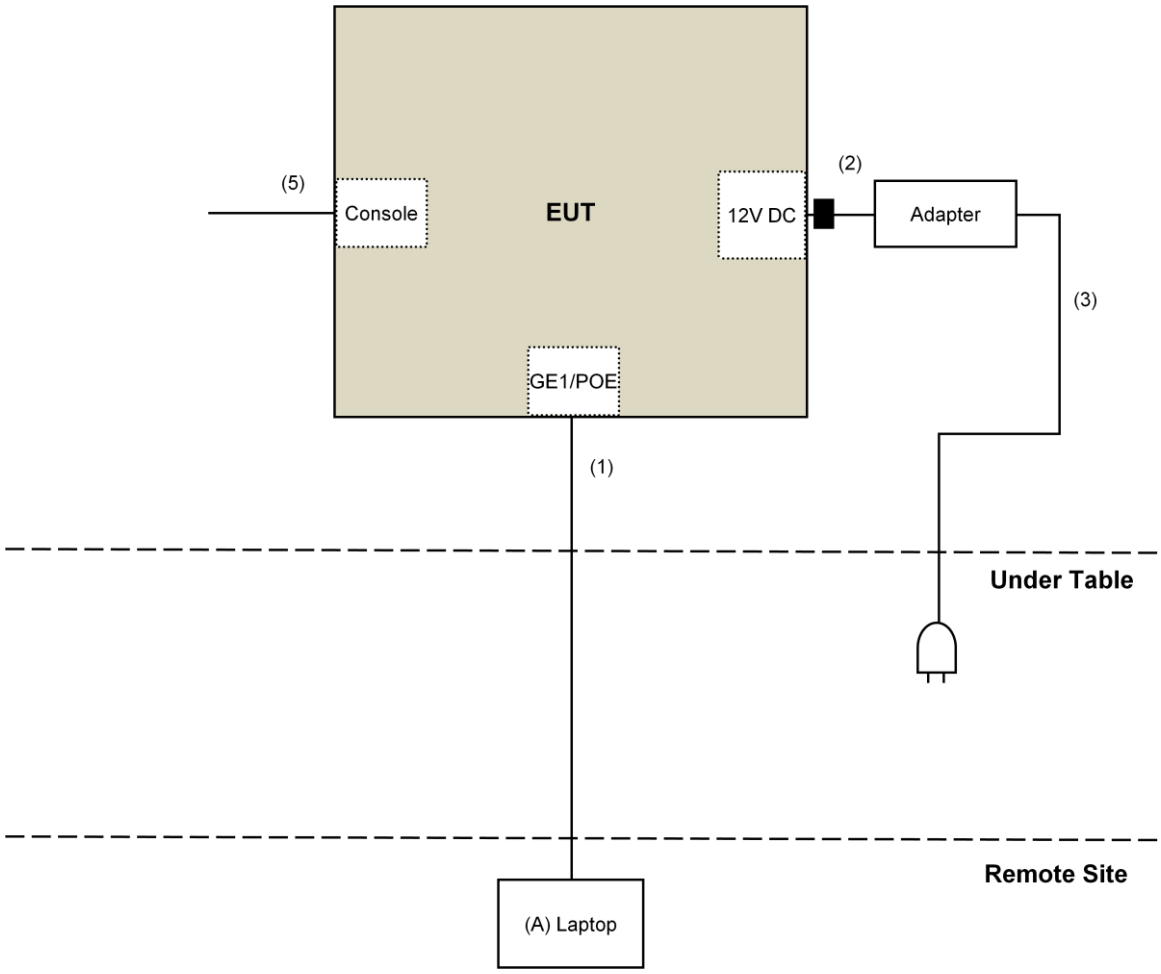
Note:

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

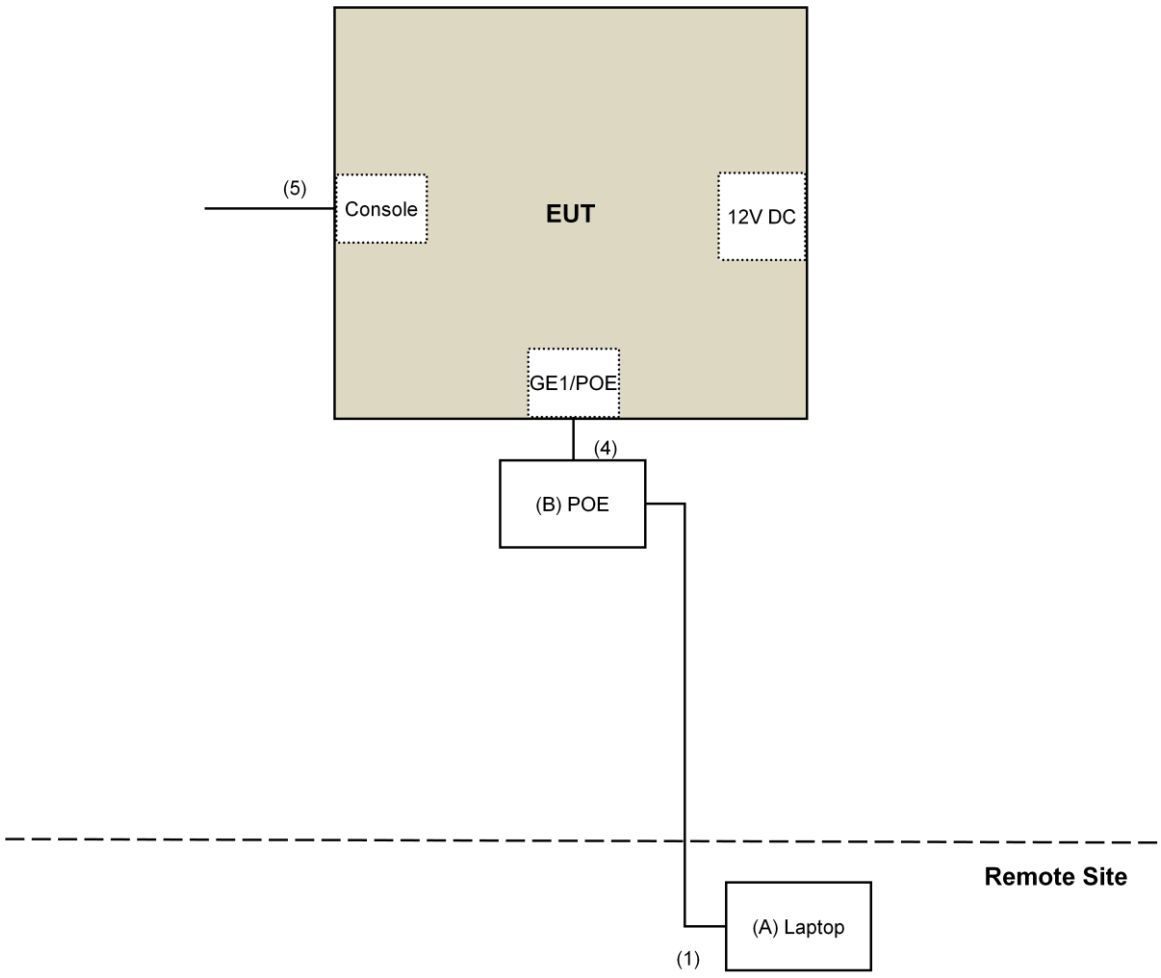
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	DC Cable	1	1.8	No	1	Supplied by client
3.	AC Cable	1	1.8	No	0	Provided by Lab
4.	RJ-45 Cable	1	3	No	0	Provided by Lab
5.	Console Cable	1	1.5	No	0	Provided by Lab

3.4.1 Configuration of System under Test

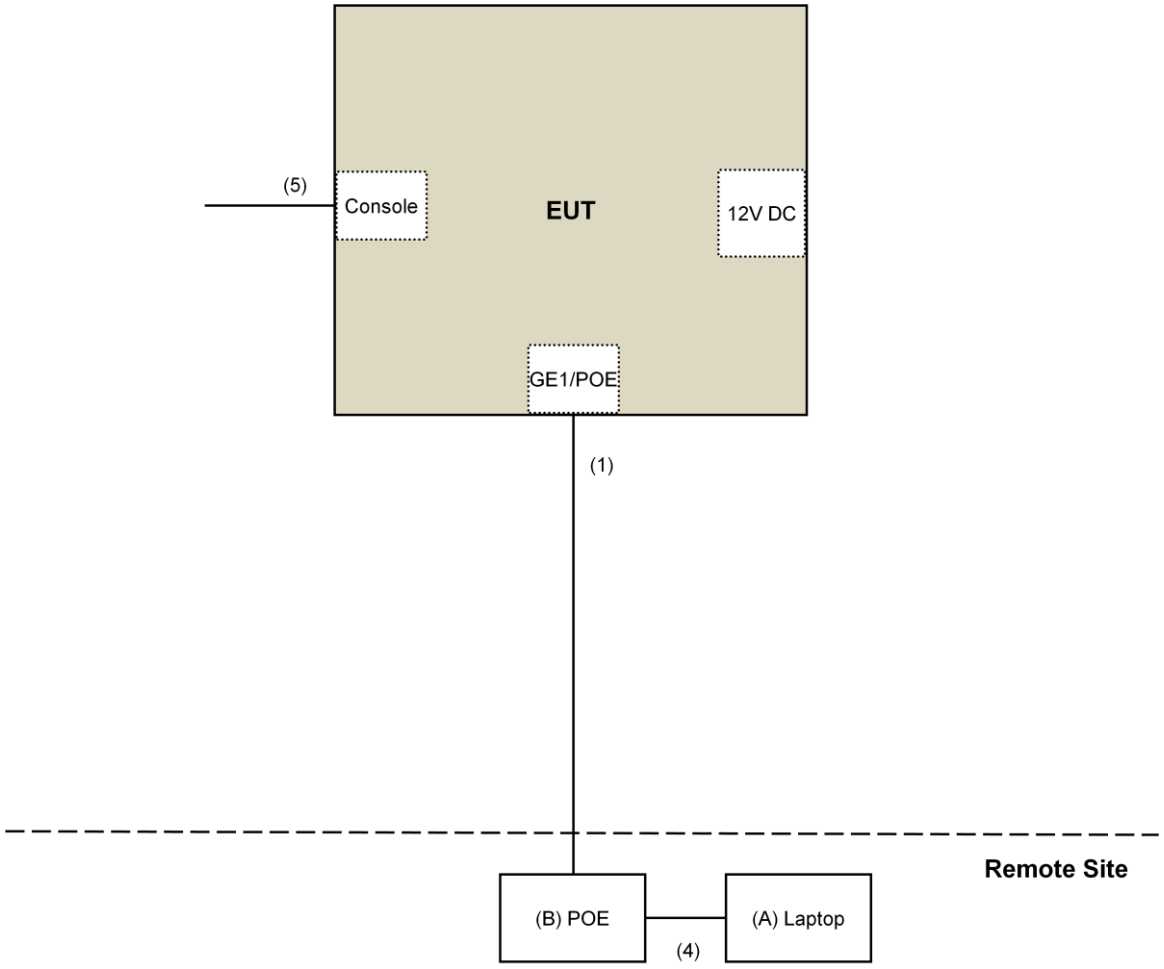
Adapter Mode:



POE Mode (for Conduction test)



POE Mode (for other test)



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
KDB 558074 D01 DTS Meas Guidance v03r05
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30dB below the highest level of the desired power:

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

NOTE:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	Dec. 16, 2015	Dec. 15, 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-04	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Jan. 07, 2016	Jan. 06, 2017
RF Cable	8D-FB	CHHCAB-001-1 CHHCAB-001-2	Oct. 04, 2015	Oct. 03, 2016
	RF-141	CHHCAB-004	Oct. 04, 2015	Oct. 03, 2016
Horn_Antenna FT-RF	HA-07M18G-NF	0000220091110	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 27, 2015	Oct. 26, 2016
RF Cable	NA	131206 131213 131215 SNMY23685/4	Jan. 15, 2016	Jan. 14, 2017
Spectrum Analyzer Agilent	E4446A	MY48250254	Nov. 25, 2015	Nov. 24, 2016
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Dec. 11, 2015	Dec. 10, 2016
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Jan. 18, 2016	Jan. 17, 2017
RF Cable	SUCOFLEX 102	36442/2 36434/2	Dec. 10, 2015	Dec.09, 2016
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table CT	CM100	NA	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-WD02	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. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Sep. 16 to 29, 2016

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

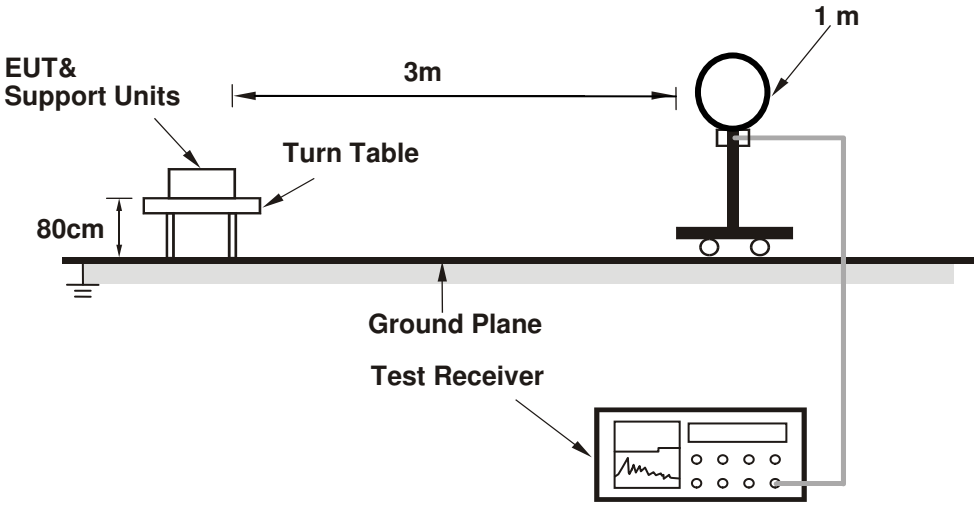
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

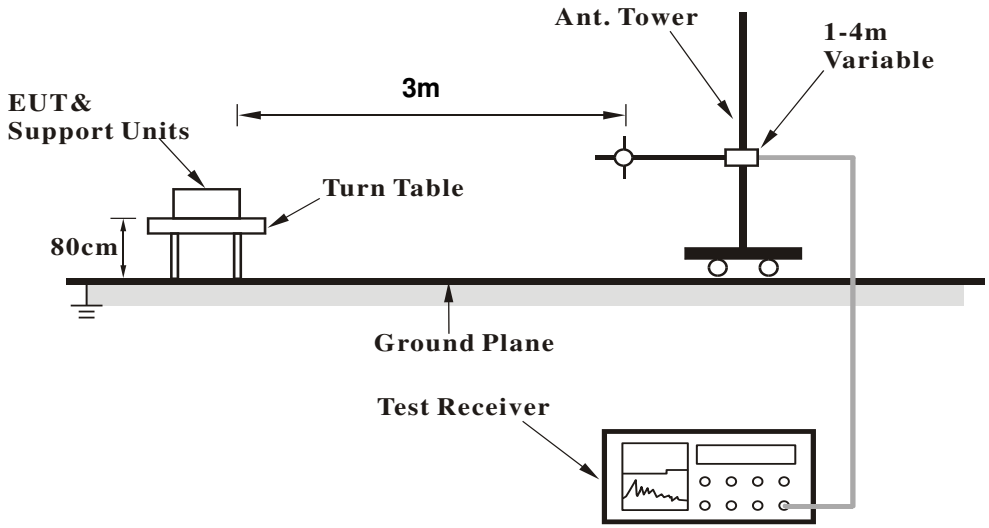
No deviation.

4.1.5 Test Setup

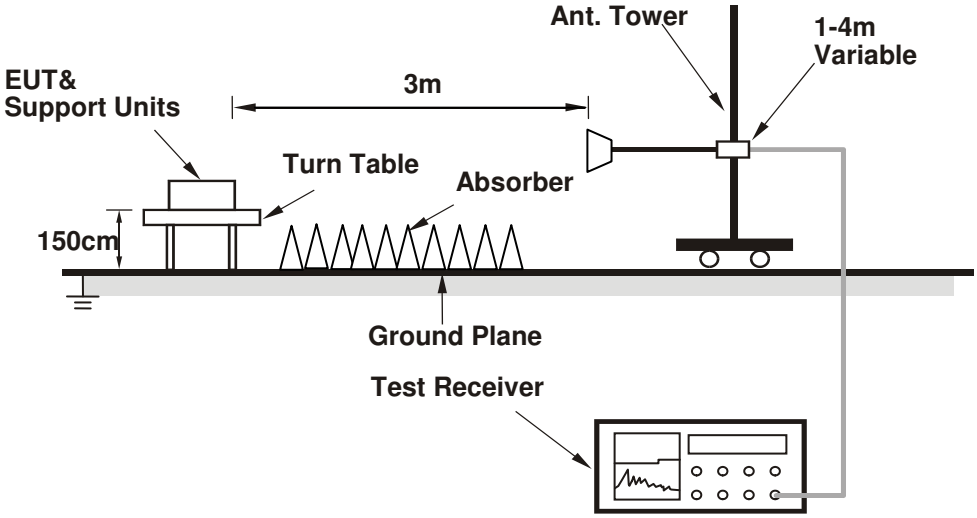
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop which is placed on remote site.
b. Contorlling software (MTool_2.0.2.7.exe) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2387.00	60.2 PK	74.0	-13.8	1.50 H	312	59.3	0.9
2	2387.00	52.7 AV	54.0	-1.3	1.50 H	312	51.8	0.9
3	*2412.00	115.8 PK			1.50 H	312	114.7	1.1
4	*2412.00	113.3 AV			1.50 H	312	112.2	1.1
5	4824.00	50.6 PK	74.0	-23.4	1.42 H	300	39.9	10.7
6	4824.00	42.2 AV	54.0	-11.8	1.42 H	300	31.5	10.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2387.00	54.8 PK	74.0	-19.2	1.72 V	11	53.9	0.9
2	2387.00	46.6 AV	54.0	-7.4	1.72 V	11	45.7	0.9
3	*2412.00	111.4 PK			1.72 V	11	110.3	1.1
4	*2412.00	107.5 AV			1.72 V	11	106.4	1.1
5	4824.00	52.1 PK	74.0	-21.9	2.02 V	145	41.4	10.7
6	4824.00	44.9 AV	54.0	-9.1	2.02 V	145	34.2	10.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.6 PK	74.0	-17.4	1.26 H	317	55.7	0.9
2	2390.00	48.6 AV	54.0	-5.4	1.26 H	317	47.7	0.9
3	*2437.00	119.6 PK			1.26 H	317	118.5	1.1
4	*2437.00	117.0 AV			1.26 H	317	115.9	1.1
5	2483.50	57.7 PK	74.0	-16.3	1.26 H	317	56.4	1.3
6	2483.50	47.4 AV	54.0	-6.6	1.26 H	317	46.1	1.3
7	4874.00	55.3 PK	74.0	-18.7	1.42 H	302	44.6	10.7
8	4874.00	48.2 AV	54.0	-5.8	1.42 H	302	37.5	10.7
9	7311.00	60.6 PK	74.0	-13.4	2.40 H	301	45.4	15.2
10	7311.00	50.4 AV	54.0	-3.6	2.40 H	301	35.2	15.2
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	51.2 PK	74.0	-22.8	1.66 V	18	50.3	0.9
2	2390.00	42.5 AV	54.0	-11.5	1.66 V	18	41.6	0.9
3	*2437.00	115.2 PK			1.66 V	18	114.1	1.1
4	*2437.00	111.2 AV			1.66 V	18	110.1	1.1
5	2483.50	52.3 PK	74.0	-21.7	1.66 V	18	51.0	1.3
6	2483.50	41.3 AV	54.0	-12.7	1.66 V	18	40.0	1.3
7	4874.00	54.9 PK	74.0	-19.1	1.00 V	180	44.2	10.7
8	4874.00	48.8 AV	54.0	-5.2	1.00 V	180	38.1	10.7
9	7311.00	58.5 PK	74.0	-15.5	1.50 V	232	43.3	15.2
10	7311.00	49.1 AV	54.0	-4.9	1.50 V	232	33.9	15.2

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	115.1 PK			1.70 H	321	114.0	1.1
2	*2462.00	112.5 AV			1.70 H	321	111.4	1.1
3	2483.50	61.5 PK	74.0	-12.5	1.70 H	321	60.2	1.3
4	**2483.50**	**52.9 AV**	**54.0**	**-1.1**	**1.70 H**	**321**	**51.6**	**1.3**
5	4924.00	50.1 PK	74.0	-23.9	1.44 H	140	39.3	10.8
6	4924.00	44.2 AV	54.0	-9.8	1.44 H	140	33.4	10.8
7	7386.00	54.0 PK	74.0	-20.0	1.34 H	309	38.5	15.5
8	7386.00	44.9 AV	54.0	-9.1	1.34 H	309	29.4	15.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.7 PK			1.65 V	18	109.6	1.1
2	*2462.00	106.7 AV			1.65 V	18	105.6	1.1
3	2483.50	56.1 PK	74.0	-17.9	1.65 V	18	54.8	1.3
4	2483.50	46.8 AV	54.0	-7.2	1.65 V	18	45.5	1.3
5	4924.00	49.9 PK	74.0	-24.1	1.70 V	150	39.1	10.8
6	4924.00	44.3 AV	54.0	-9.7	1.70 V	150	33.5	10.8
7	7386.00	53.3 PK	74.0	-20.7	1.55 V	243	37.8	15.5
8	7386.00	43.9 AV	54.0	-10.1	1.55 V	243	28.4	15.5

REMARKS:

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

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**	**72.9 PK**	**74.0**	**-1.1**	**2.09 H**	**312**	**72.0**	**0.9**
2	2390.00	48.3 AV	54.0	-5.7	2.09 H	312	47.4	0.9
3	*2412.00	115.3 PK			2.09 H	312	114.2	1.1
4	*2412.00	105.2 AV			2.09 H	312	104.1	1.1
5	4824.00	49.9 PK	74.0	-24.1	1.39 H	130	39.2	10.7
6	4824.00	43.7 AV	54.0	-10.3	1.39 H	130	33.0	10.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.69 V	26	66.6	0.9
2	2390.00	42.2 AV	54.0	-11.8	1.69 V	26	41.3	0.9
3	*2412.00	110.9 PK			1.69 V	26	109.8	1.1
4	*2412.00	99.4 AV			1.69 V	26	98.3	1.1
5	4824.00	49.3 PK	74.0	-24.7	1.74 V	161	38.6	10.7
6	4824.00	43.3 AV	54.0	-10.7	1.74 V	161	32.6	10.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.8 PK	74.0	-1.2	1.50 H	311	71.9	0.9
2	2390.00	49.1 AV	54.0	-4.9	1.50 H	311	48.2	0.9
3	*2437.00	118.1 PK			1.50 H	311	117.0	1.1
4	*2437.00	107.6 AV			1.50 H	311	106.5	1.1
5	2483.50	70.2 PK	74.0	-3.8	1.50 H	311	68.9	1.3
6	2483.50	47.3 AV	54.0	-6.7	1.50 H	311	46.0	1.3
7	4874.00	49.7 PK	74.0	-24.3	1.39 H	140	39.0	10.7
8	4874.00	43.7 AV	54.0	-10.3	1.39 H	140	33.0	10.7
9	7311.00	54.5 PK	74.0	-19.5	1.36 H	313	39.3	15.2
10	7311.00	45.3 AV	54.0	-8.7	1.36 H	313	30.1	15.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.3 PK	74.0	-6.7	1.62 V	360	66.4	0.9
2	2390.00	43.7 AV	54.0	-10.3	1.62 V	360	42.8	0.9
3	*2437.00	113.7 PK			1.62 V	360	112.6	1.1
4	*2437.00	101.5 AV			1.62 V	360	100.4	1.1
5	2483.50	64.8 PK	74.0	-9.2	1.62 V	360	63.5	1.3
6	2483.50	41.2 AV	54.0	-12.8	1.62 V	360	39.9	1.3
7	4874.00	49.7 PK	74.0	-24.3	1.69 V	175	39.0	10.7
8	4874.00	43.8 AV	54.0	-10.2	1.69 V	175	33.1	10.7
9	7311.00	53.7 PK	74.0	-20.3	1.59 V	246	38.5	15.2
10	7311.00	43.8 AV	54.0	-10.2	1.59 V	246	28.6	15.2

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	117.9 PK			1.91 H	316	116.8	1.1
2	*2462.00	107.6 AV			1.91 H	316	106.5	1.1
3	**2483.50**	**72.9 PK**	**74.0**	**-1.1**	**1.91 H**	**316**	**71.6**	**1.3**
4	2483.50	50.4 AV	54.0	-3.6	1.91 H	316	49.1	1.3
5	4924.00	50.0 PK	74.0	-24.0	1.40 H	140	39.2	10.8
6	4924.00	43.9 AV	54.0	-10.1	1.40 H	140	33.1	10.8
7	7386.00	53.6 PK	74.0	-20.4	1.38 H	313	38.1	15.5
8	7386.00	44.4 AV	54.0	-9.6	1.38 H	313	28.9	15.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.8 PK			1.65 V	360	110.7	1.1
2	*2462.00	102.0 AV			1.65 V	360	100.9	1.1
3	2483.50	67.8 PK	74.0	-6.2	1.65 V	360	66.5	1.3
4	2483.50	45.6 AV	54.0	-8.4	1.65 V	360	44.3	1.3
5	4924.00	49.4 PK	74.0	-24.6	1.75 V	164	38.6	10.8
6	4924.00	43.8 AV	54.0	-10.2	1.75 V	164	33.0	10.8
7	7386.00	53.2 PK	74.0	-20.8	1.53 V	236	37.7	15.5
8	7386.00	43.5 AV	54.0	-10.5	1.53 V	236	28.0	15.5

REMARKS:

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

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	72.7 PK	74.0	-1.3	2.02 H	304	71.8	0.9
2	2390.00	48.0 AV	54.0	-6.0	2.02 H	304	47.1	0.9
3	*2412.00	114.6 PK			2.02 H	304	113.5	1.1
4	*2412.00	104.3 AV			2.02 H	304	103.2	1.1
5	4824.00	50.2 PK	74.0	-23.8	1.36 H	149	39.5	10.7
6	4824.00	44.0 AV	54.0	-10.0	1.36 H	149	33.3	10.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.3 PK	74.0	-6.7	1.64 V	360	66.4	0.9
2	2390.00	41.9 AV	54.0	-12.1	1.64 V	360	41.0	0.9
3	*2412.00	110.2 PK			1.64 V	360	109.1	1.1
4	*2412.00	98.5 AV			1.64 V	360	97.4	1.1
5	4824.00	49.1 PK	74.0	-24.9	1.78 V	169	38.4	10.7
6	4824.00	43.4 AV	54.0	-10.6	1.78 V	169	32.7	10.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**2390.00**	**72.9 PK**	**74.0**	**-1.1**	**2.22 H**	**306**	**72.0**	**0.9**
2	2390.00	48.2 AV	54.0	-5.8	2.22 H	306	47.3	0.9
3	*2437.00	117.8 PK			2.22 H	306	116.7	1.1
4	*2437.00	108.1 AV			2.22 H	306	107.0	1.1
5	2483.50	70.8 PK	74.0	-3.2	2.22 H	306	69.5	1.3
6	2483.50	45.9 AV	54.0	-8.1	2.22 H	306	44.6	1.3
7	4874.00	49.8 PK	74.0	-24.2	1.36 H	152	39.1	10.7
8	4874.00	43.6 AV	54.0	-10.4	1.36 H	152	32.9	10.7
9	7311.00	53.7 PK	74.0	-20.3	1.35 H	315	38.5	15.2
10	7311.00	44.7 AV	54.0	-9.3	1.35 H	315	29.5	15.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.65 V	360	66.6	0.9
2	2390.00	42.1 AV	54.0	-11.9	1.65 V	360	41.2	0.9
3	*2437.00	113.4 PK			1.65 V	360	112.3	1.1
4	*2437.00	102.3 AV			1.65 V	360	101.2	1.1
5	2483.50	65.4 PK	74.0	-8.6	1.65 V	360	64.1	1.3
6	2483.50	39.8 AV	54.0	-14.2	1.65 V	360	38.5	1.3
7	4874.00	49.3 PK	74.0	-24.7	1.77 V	150	38.6	10.7
8	4874.00	43.6 AV	54.0	-10.4	1.77 V	150	32.9	10.7
9	7311.00	53.0 PK	74.0	-21.0	1.54 V	247	37.8	15.2
10	7311.00	43.4 AV	54.0	-10.6	1.54 V	247	28.2	15.2

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	115.6 PK			1.86 H	304	114.5	1.1
2	*2462.00	105.2 AV			1.86 H	304	104.1	1.1
3	2483.50	72.8 PK	74.0	-1.2	1.86 H	304	71.5	1.3
4	2483.50	48.8 AV	54.0	-5.2	1.86 H	304	47.5	1.3
5	4924.00	49.8 PK	74.0	-24.2	1.36 H	160	39.0	10.8
6	4924.00	43.8 AV	54.0	-10.2	1.36 H	160	33.0	10.8
7	7386.00	53.2 PK	74.0	-20.8	1.34 H	321	37.7	15.5
8	7386.00	44.3 AV	54.0	-9.7	1.34 H	321	28.8	15.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.2 PK			1.69 V	360	110.1	1.1
2	*2462.00	99.4 AV			1.69 V	360	98.3	1.1
3	2483.50	67.4 PK	74.0	-6.6	1.69 V	360	66.1	1.3
4	2483.50	42.7 AV	54.0	-11.3	1.69 V	360	41.4	1.3
5	4924.00	49.5 PK	74.0	-24.5	1.71 V	145	38.7	10.8
6	4924.00	43.6 AV	54.0	-10.4	1.71 V	145	32.8	10.8
7	7386.00	53.5 PK	74.0	-20.5	1.51 V	258	38.0	15.5
8	7386.00	43.6 AV	54.0	-10.4	1.51 V	258	28.1	15.5

REMARKS:

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

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**	**72.9 PK**	**74.0**	**-1.1**	**1.50 H**	**315**	**72.0**	**0.9**
2	2390.00	49.2 AV	54.0	-4.8	1.50 H	315	48.3	0.9
3	*2422.00	111.9 PK			1.50 H	315	110.9	1.0
4	*2422.00	100.7 AV			1.50 H	315	99.7	1.0
5	4844.00	49.8 PK	74.0	-24.2	1.38 H	167	39.0	10.8
6	4844.00	44.1 AV	54.0	-9.9	1.38 H	167	33.3	10.8
7	7266.00	52.9 PK	74.0	-21.1	1.37 H	329	37.8	15.1
8	7266.00	43.9 AV	54.0	-10.1	1.37 H	329	28.8	15.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.72 V	360	66.6	0.9
2	2390.00	43.1 AV	54.0	-10.9	1.72 V	360	42.2	0.9
3	*2422.00	106.5 PK			1.72 V	360	105.5	1.0
4	*2422.00	94.6 AV			1.72 V	360	93.6	1.0
5	4844.00	49.8 PK	74.0	-24.2	1.66 V	147	39.0	10.8
6	4844.00	44.0 AV	54.0	-10.0	1.66 V	147	33.2	10.8
7	7266.00	53.4 PK	74.0	-20.6	1.51 V	269	38.3	15.1
8	7266.00	43.8 AV	54.0	-10.2	1.51 V	269	28.7	15.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.3 PK	74.0	-2.7	2.02 H	309	70.4	0.9
2	2390.00	48.3 AV	54.0	-5.7	2.02 H	309	47.4	0.9
3	*2437.00	112.8 PK			2.02 H	309	111.7	1.1
4	*2437.00	102.3 AV			2.02 H	309	101.2	1.1
5	**2483.50**	**72.9 PK**	**74.0**	**-1.1**	**2.02 H**	**309**	**71.6**	**1.3**
6	2483.50	49.2 AV	54.0	-4.8	2.02 H	309	47.9	1.3
7	4874.00	49.8 PK	74.0	-24.2	1.37 H	147	39.1	10.7
8	4874.00	43.7 AV	54.0	-10.3	1.37 H	147	33.0	10.7
9	7311.00	53.2 PK	74.0	-20.8	1.31 H	332	38.0	15.2
10	7311.00	44.2 AV	54.0	-9.8	1.31 H	332	29.0	15.2
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	65.9 PK	74.0	-8.1	1.70 V	354	65.0	0.9
2	2390.00	42.2 AV	54.0	-11.8	1.70 V	354	41.3	0.9
3	*2437.00	107.4 PK			1.70 V	354	106.3	1.1
4	*2437.00	96.2 AV			1.70 V	354	95.1	1.1
5	2483.50	67.5 PK	74.0	-6.5	1.70 V	354	66.2	1.3
6	2483.50	43.1 AV	54.0	-10.9	1.70 V	354	41.8	1.3
7	4874.00	49.5 PK	74.0	-24.5	1.65 V	142	38.8	10.7
8	4874.00	43.6 AV	54.0	-10.4	1.65 V	142	32.9	10.7
9	7311.00	53.4 PK	74.0	-20.6	1.54 V	269	38.2	15.2
10	7311.00	43.7 AV	54.0	-10.3	1.54 V	269	28.5	15.2

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	110.9 PK			2.25 H	314	109.8	1.1
2	*2452.00	99.8 AV			2.25 H	314	98.7	1.1
3	2483.50	72.8 PK	74.0	-1.2	2.25 H	314	71.5	1.3
4	2483.50	50.7 AV	54.0	-3.3	2.25 H	314	49.4	1.3
5	4904.00	49.2 PK	74.0	-24.8	1.32 H	152	38.4	10.8
6	4904.00	43.4 AV	54.0	-10.6	1.32 H	152	32.6	10.8
7	7356.00	52.7 PK	74.0	-21.3	1.38 H	331	37.3	15.4
8	7356.00	43.8 AV	54.0	-10.2	1.38 H	331	28.4	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.5 PK			1.69 V	360	105.4	1.1
2	*2452.00	94.0 AV			1.69 V	360	92.9	1.1
3	2483.50	67.4 PK	74.0	-6.6	1.69 V	360	66.1	1.3
4	2483.50	44.6 AV	54.0	-9.4	1.69 V	360	43.3	1.3
5	4904.00	49.3 PK	74.0	-24.7	1.64 V	143	38.5	10.8
6	4904.00	43.8 AV	54.0	-10.2	1.64 V	143	33.0	10.8
7	7356.00	53.0 PK	74.0	-21.0	1.49 V	281	37.6	15.4
8	7356.00	43.4 AV	54.0	-10.6	1.49 V	281	28.0	15.4

REMARKS:

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

Below 1GHz Data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.17	29.4 QP	40.0	-10.6	1.98 H	104	37.9	-8.5
2	150.31	25.0 QP	43.5	-18.5	1.00 H	273	32.7	-7.7
3	204.42	23.8 QP	43.5	-19.7	1.00 H	37	34.6	-10.8
4	517.73	31.5 QP	46.0	-14.5	1.00 H	280	32.7	-1.2
5	625.09	38.2 QP	46.0	-7.8	1.52 H	312	36.9	1.3
6	949.78	37.8 QP	46.0	-8.2	1.00 H	251	30.9	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.94	35.7 QP	40.0	-4.3	1.95 V	296	44.8	-9.1
2	93.84	30.1 QP	43.5	-13.4	1.55 V	61	43.5	-13.4
3	375.05	30.2 QP	46.0	-15.8	1.00 V	232	34.9	-4.7
4	625.07	37.9 QP	46.0	-8.1	1.03 V	193	36.6	1.3
5	874.93	36.8 QP	46.0	-9.2	1.00 V	308	31.6	5.2
6	1000.00	40.2 QP	54.0	-13.8	1.44 V	48	32.7	7.5

REMARKS:

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.72	29.1 QP	40.0	-10.9	2.06 H	99	37.6	-8.5
2	149.95	24.8 QP	43.5	-18.7	1.01 H	286	32.5	-7.7
3	204.85	24.2 QP	43.5	-19.3	1.00 H	56	35.0	-10.8
4	517.56	31.5 QP	46.0	-14.5	1.00 H	298	32.7	-1.2
5	624.93	37.9 QP	46.0	-8.1	1.45 H	298	36.6	1.3
6	949.65	37.4 QP	46.0	-8.6	1.00 H	229	30.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.29	36.0 QP	40.0	-4.0	2.03 V	302	45.0	-9.0
2	94.00	30.4 QP	43.5	-13.1	1.54 V	51	43.8	-13.4
3	374.99	30.6 QP	46.0	-15.4	1.05 V	227	35.3	-4.7
4	624.91	38.0 QP	46.0	-8.0	1.03 V	179	36.7	1.3
5	875.06	37.1 QP	46.0	-8.9	1.00 V	310	31.9	5.2
6	1000.00	39.8 QP	54.0	-14.2	1.46 V	72	32.3	7.5

REMARKS:

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.90	29.4 QP	40.0	-10.6	2.06 H	107	37.9	-8.5
2	150.44	24.5 QP	43.5	-19.0	1.00 H	292	32.2	-7.7
3	204.44	23.8 QP	43.5	-19.7	1.02 H	54	34.6	-10.8
4	517.54	31.5 QP	46.0	-14.5	1.03 H	282	32.7	-1.2
5	624.91	38.1 QP	46.0	-7.9	1.48 H	300	36.8	1.3
6	949.87	37.5 QP	46.0	-8.5	1.05 H	244	30.6	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.16	36.0 QP	40.0	-4.0	1.98 V	301	45.0	-9.0
2	93.89	30.2 QP	43.5	-13.3	1.52 V	51	43.6	-13.4
3	374.90	30.2 QP	46.0	-15.8	1.00 V	250	34.9	-4.7
4	624.98	38.1 QP	46.0	-7.9	1.01 V	179	36.8	1.3
5	874.90	36.8 QP	46.0	-9.2	1.00 V	315	31.6	5.2
6	1000.00	40.1 QP	54.0	-13.9	1.51 V	70	32.6	7.5

REMARKS:

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

802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.02	29.2 QP	40.0	-10.8	2.05 H	124	37.7	-8.5
2	150.29	24.9 QP	43.5	-18.6	1.00 H	284	32.6	-7.7
3	204.99	23.8 QP	43.5	-19.7	1.03 H	48	34.6	-10.8
4	517.56	31.8 QP	46.0	-14.2	1.06 H	283	33.0	-1.2
5	625.01	38.4 QP	46.0	-7.6	1.48 H	319	37.1	1.3
6	949.44	37.7 QP	46.0	-8.3	1.05 H	231	30.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.22	36.0 QP	40.0	-4.0	2.03 V	312	45.0	-9.0
2	93.99	30.2 QP	43.5	-13.3	1.51 V	48	43.6	-13.4
3	375.07	30.7 QP	46.0	-15.3	1.00 V	248	35.4	-4.7
4	624.91	37.7 QP	46.0	-8.3	1.03 V	183	36.4	1.3
5	875.04	37.1 QP	46.0	-8.9	1.00 V	302	31.9	5.2
6	1000.00	39.7 QP	54.0	-14.3	1.44 V	67	32.2	7.5

REMARKS:

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.90	29.2 QP	40.0	-10.8	1.96 H	94	37.7	-8.5
2	150.11	24.7 QP	43.5	-18.8	1.00 H	292	32.4	-7.7
3	204.73	24.2 QP	43.5	-19.3	1.06 H	67	35.0	-10.8
4	517.47	31.8 QP	46.0	-14.2	1.00 H	294	33.0	-1.2
5	624.96	38.0 QP	46.0	-8.0	1.55 H	306	36.7	1.3
6	949.91	37.7 QP	46.0	-8.3	1.00 H	236	30.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.48	35.6 QP	40.0	-4.4	1.99 V	308	44.6	-9.0
2	93.68	30.5 QP	43.5	-13.0	1.55 V	66	43.9	-13.4
3	374.96	30.5 QP	46.0	-15.5	1.02 V	258	35.2	-4.7
4	625.07	38.3 QP	46.0	-7.7	1.02 V	186	37.0	1.3
5	875.00	36.6 QP	46.0	-9.4	1.03 V	323	31.4	5.2
6	1000.00	40.1 QP	54.0	-13.9	1.45 V	75	32.6	7.5

REMARKS:

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.79	29.2 QP	40.0	-10.8	2.03 H	99	37.7	-8.5
2	150.31	24.6 QP	43.5	-18.9	1.00 H	274	32.3	-7.7
3	204.91	24.1 QP	43.5	-19.4	1.00 H	57	34.9	-10.8
4	517.90	31.4 QP	46.0	-14.6	1.00 H	297	32.6	-1.2
5	625.01	37.9 QP	46.0	-8.1	1.49 H	306	36.6	1.3
6	949.55	37.4 QP	46.0	-8.6	1.03 H	257	30.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.09	36.1 QP	40.0	-3.9	2.02 V	309	45.2	-9.1
2	93.64	30.5 QP	43.5	-13.0	1.52 V	73	43.9	-13.4
3	374.97	30.1 QP	46.0	-15.9	1.00 V	228	34.8	-4.7
4	624.97	38.2 QP	46.0	-7.8	1.02 V	176	36.9	1.3
5	874.98	37.2 QP	46.0	-8.8	1.00 V	293	32.0	5.2
6	1000.00	39.8 QP	54.0	-14.2	1.53 V	70	32.3	7.5

REMARKS:

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

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.85	29.1 QP	40.0	-10.9	1.95 H	106	37.6	-8.5
2	150.23	24.5 QP	43.5	-19.0	1.00 H	283	32.2	-7.7
3	204.45	23.8 QP	43.5	-19.7	1.00 H	53	34.6	-10.8
4	517.78	31.8 QP	46.0	-14.2	1.04 H	287	33.0	-1.2
5	624.91	37.8 QP	46.0	-8.2	1.44 H	322	36.5	1.3
6	949.47	37.7 QP	46.0	-8.3	1.00 H	237	30.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.20	35.6 QP	40.0	-4.4	2.05 V	301	44.6	-9.0
2	93.53	30.2 QP	43.5	-13.3	1.45 V	66	43.6	-13.4
3	374.93	30.3 QP	46.0	-15.7	1.00 V	246	35.0	-4.7
4	625.01	37.9 QP	46.0	-8.1	1.00 V	177	36.6	1.3
5	874.99	37.1 QP	46.0	-8.9	1.00 V	311	31.9	5.2
6	1000.00	40.1 QP	54.0	-13.9	1.53 V	63	32.6	7.5

REMARKS:

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.17	29.2 QP	40.0	-10.8	1.95 H	123	37.7	-8.5
2	150.38	24.8 QP	43.5	-18.7	1.00 H	272	32.5	-7.7
3	204.55	24.2 QP	43.5	-19.3	1.00 H	63	35.0	-10.8
4	518.02	31.9 QP	46.0	-14.1	1.00 H	277	33.1	-1.2
5	625.08	38.2 QP	46.0	-7.8	1.54 H	321	36.9	1.3
6	949.71	37.3 QP	46.0	-8.7	1.01 H	241	30.4	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.19	35.9 QP	40.0	-4.1	2.03 V	297	44.9	-9.0
2	93.87	30.1 QP	43.5	-13.4	1.51 V	61	43.5	-13.4
3	374.92	30.6 QP	46.0	-15.4	1.00 V	227	35.3	-4.7
4	625.10	38.0 QP	46.0	-8.0	1.06 V	180	36.7	1.3
5	874.97	37.1 QP	46.0	-8.9	1.05 V	295	31.9	5.2
6	1000.00	40.0 QP	54.0	-14.0	1.44 V	52	32.5	7.5

REMARKS:

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.87	29.1 QP	40.0	-10.9	2.01 H	102	37.6	-8.5
2	150.46	24.6 QP	43.5	-18.9	1.00 H	301	32.3	-7.7
3	204.92	24.2 QP	43.5	-19.3	1.02 H	61	35.0	-10.8
4	517.60	32.0 QP	46.0	-14.0	1.00 H	287	33.2	-1.2
5	625.06	37.9 QP	46.0	-8.1	1.45 H	319	36.6	1.3
6	949.48	37.2 QP	46.0	-8.8	1.01 H	230	30.3	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.51	35.7 QP	40.0	-4.3	2.05 V	310	44.7	-9.0
2	93.88	30.4 QP	43.5	-13.1	1.48 V	45	43.8	-13.4
3	375.04	30.1 QP	46.0	-15.9	1.00 V	256	34.8	-4.7
4	625.07	38.3 QP	46.0	-7.7	1.00 V	172	37.0	1.3
5	874.99	37.2 QP	46.0	-8.8	1.01 V	318	32.0	5.2
6	1000.00	39.7 QP	54.0	-14.3	1.47 V	72	32.2	7.5

REMARKS:

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

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.03	29.4 QP	40.0	-10.6	2.04 H	124	37.9	-8.5
2	150.10	24.8 QP	43.5	-18.7	1.05 H	300	32.5	-7.7
3	204.65	23.7 QP	43.5	-19.8	1.05 H	62	34.5	-10.8
4	517.63	31.6 QP	46.0	-14.4	1.02 H	287	32.8	-1.2
5	624.96	37.9 QP	46.0	-8.1	1.55 H	327	36.6	1.3
6	949.90	37.7 QP	46.0	-8.3	1.00 H	257	30.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.44	35.8 QP	40.0	-4.2	1.97 V	295	44.8	-9.0
2	93.73	30.5 QP	43.5	-13.0	1.56 V	67	43.9	-13.4
3	374.95	30.2 QP	46.0	-15.8	1.00 V	258	34.9	-4.7
4	624.99	38.2 QP	46.0	-7.8	1.06 V	197	36.9	1.3
5	874.95	36.7 QP	46.0	-9.3	1.00 V	314	31.5	5.2
6	1000.00	40.0 QP	54.0	-14.0	1.44 V	69	32.5	7.5

REMARKS:

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.69	29.2 QP	40.0	-10.8	2.06 H	108	37.7	-8.5
2	149.97	24.9 QP	43.5	-18.6	1.00 H	301	32.6	-7.7
3	204.73	24.0 QP	43.5	-19.5	1.00 H	48	34.8	-10.8
4	517.53	31.9 QP	46.0	-14.1	1.01 H	287	33.1	-1.2
5	625.05	38.3 QP	46.0	-7.7	1.45 H	302	37.0	1.3
6	949.92	37.4 QP	46.0	-8.6	1.00 H	250	30.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.97	36.0 QP	40.0	-4.0	1.95 V	312	45.1	-9.1
2	93.53	30.3 QP	43.5	-13.2	1.55 V	69	43.7	-13.4
3	375.09	30.5 QP	46.0	-15.5	1.00 V	253	35.2	-4.7
4	625.09	38.0 QP	46.0	-8.0	1.00 V	183	36.7	1.3
5	875.05	36.8 QP	46.0	-9.2	1.06 V	322	31.6	5.2
6	1000.00	40.0 QP	54.0	-14.0	1.52 V	65	32.5	7.5

REMARKS:

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

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.87	28.9 QP	40.0	-11.1	2.02 H	110	37.4	-8.5
2	150.02	24.4 QP	43.5	-19.1	1.00 H	278	32.1	-7.7
3	204.53	24.0 QP	43.5	-19.5	1.00 H	46	34.8	-10.8
4	517.61	31.5 QP	46.0	-14.5	1.04 H	293	32.7	-1.2
5	624.98	38.3 QP	46.0	-7.7	1.50 H	320	37.0	1.3
6	949.40	37.4 QP	46.0	-8.6	1.00 H	238	30.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.22	35.6 QP	40.0	-4.4	1.96 V	295	44.6	-9.0
2	94.00	30.4 QP	43.5	-13.1	1.55 V	54	43.8	-13.4
3	374.91	30.2 QP	46.0	-15.8	1.04 V	242	34.9	-4.7
4	624.97	38.2 QP	46.0	-7.8	1.00 V	199	36.9	1.3
5	875.08	36.6 QP	46.0	-9.4	1.00 V	324	31.4	5.2
6	1000.00	39.7 QP	54.0	-14.3	1.52 V	62	32.2	7.5

REMARKS:

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

4.1.8 Test Results (Mode 2)

Below 1GHz Data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.21	30.6 QP	40.0	-9.4	1.51 H	222	39.1	-8.5
2	150.02	26.5 QP	43.5	-17.0	1.00 H	137	34.2	-7.7
3	204.60	26.0 QP	43.5	-17.5	1.57 H	216	36.8	-10.8
4	517.77	32.8 QP	46.0	-13.2	1.50 H	256	34.0	-1.2
5	625.04	39.2 QP	46.0	-6.8	1.50 H	219	37.9	1.3
6	949.49	38.6 QP	46.0	-7.4	1.53 H	138	31.7	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.28	33.3 QP	40.0	-6.7	1.55 V	278	42.3	-9.0
2	94.10	33.6 QP	43.5	-9.9	1.04 V	263	47.0	-13.4
3	375.10	32.2 QP	46.0	-13.8	1.52 V	228	36.9	-4.7
4	517.35	29.9 QP	46.0	-16.1	1.47 V	309	31.1	-1.2
5	624.92	40.5 QP	46.0	-5.5	1.41 V	231	39.2	1.3
6	875.05	39.1 QP	46.0	-6.9	1.00 V	252	33.9	5.2

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.96	30.3 QP	40.0	-9.7	1.49 H	234	38.8	-8.5
2	150.21	26.4 QP	43.5	-17.1	1.00 H	159	34.1	-7.7
3	204.86	25.8 QP	43.5	-17.7	1.45 H	227	36.6	-10.8
4	517.81	32.5 QP	46.0	-13.5	1.45 H	243	33.7	-1.2
5	625.03	39.1 QP	46.0	-6.9	1.55 H	241	37.8	1.3
6	949.68	38.7 QP	46.0	-7.3	1.49 H	136	31.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.48	33.7 QP	40.0	-6.3	1.56 V	279	42.7	-9.0
2	93.93	33.5 QP	43.5	-10.0	1.00 V	268	46.9	-13.4
3	375.02	32.1 QP	46.0	-13.9	1.48 V	219	36.8	-4.7
4	517.47	29.8 QP	46.0	-16.2	1.50 V	299	31.0	-1.2
5	625.05	40.1 QP	46.0	-5.9	1.31 V	240	38.8	1.3
6	875.02	39.1 QP	46.0	-6.9	1.00 V	268	33.9	5.2

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.05	30.4 QP	40.0	-9.6	1.49 H	214	38.9	-8.5
2	150.08	26.6 QP	43.5	-16.9	1.03 H	157	34.3	-7.7
3	204.90	26.2 QP	43.5	-17.3	1.56 H	216	37.0	-10.8
4	517.86	32.7 QP	46.0	-13.3	1.51 H	245	33.9	-1.2
5	625.09	39.4 QP	46.0	-6.6	1.46 H	220	38.1	1.3
6	949.65	38.7 QP	46.0	-7.3	1.46 H	119	31.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.17	33.5 QP	40.0	-6.5	1.55 V	257	42.5	-9.0
2	93.67	33.1 QP	43.5	-10.4	1.06 V	258	46.5	-13.4
3	375.01	32.4 QP	46.0	-13.6	1.44 V	221	37.1	-4.7
4	517.84	30.0 QP	46.0	-16.0	1.45 V	291	31.2	-1.2
5	625.03	40.4 QP	46.0	-5.6	1.32 V	238	39.1	1.3
6	874.90	38.7 QP	46.0	-7.3	1.05 V	276	33.5	5.2

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

802.11g

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.96	30.6 QP	40.0	-9.4	1.49 H	216	39.1	-8.5
2	150.48	26.8 QP	43.5	-16.7	1.00 H	140	34.5	-7.7
3	204.78	26.2 QP	43.5	-17.3	1.55 H	214	37.0	-10.8
4	517.65	32.5 QP	46.0	-13.5	1.45 H	257	33.7	-1.2
5	624.98	39.4 QP	46.0	-6.6	1.47 H	233	38.1	1.3
6	949.56	38.4 QP	46.0	-7.6	1.54 H	131	31.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.14	33.8 QP	40.0	-6.2	1.46 V	276	42.8	-9.0
2	93.55	33.4 QP	43.5	-10.1	1.00 V	268	46.8	-13.4
3	374.91	32.5 QP	46.0	-13.5	1.49 V	228	37.2	-4.7
4	517.80	29.7 QP	46.0	-16.3	1.51 V	306	30.9	-1.2
5	624.95	40.2 QP	46.0	-5.8	1.31 V	221	38.9	1.3
6	875.08	38.8 QP	46.0	-7.2	1.00 V	277	33.6	5.2

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.67	30.7 QP	40.0	-9.3	1.44 H	224	39.2	-8.5
2	149.99	26.9 QP	43.5	-16.6	1.00 H	142	34.6	-7.7
3	204.98	25.8 QP	43.5	-17.7	1.49 H	217	36.6	-10.8
4	517.68	32.3 QP	46.0	-13.7	1.53 H	229	33.5	-1.2
5	624.95	39.1 QP	46.0	-6.9	1.53 H	218	37.8	1.3
6	949.54	38.7 QP	46.0	-7.3	1.52 H	144	31.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.47	33.5 QP	40.0	-6.5	1.45 V	262	42.5	-9.0
2	93.79	33.3 QP	43.5	-10.2	1.05 V	264	46.7	-13.4
3	375.02	32.3 QP	46.0	-13.7	1.53 V	233	37.0	-4.7
4	517.34	29.7 QP	46.0	-16.3	1.50 V	305	30.9	-1.2
5	625.05	40.1 QP	46.0	-5.9	1.33 V	216	38.8	1.3
6	874.91	38.7 QP	46.0	-7.3	1.04 V	271	33.5	5.2

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.77	30.5 QP	40.0	-9.5	1.53 H	225	39.0	-8.5
2	150.01	26.5 QP	43.5	-17.0	1.04 H	149	34.2	-7.7
3	204.55	26.1 QP	43.5	-17.4	1.52 H	234	36.9	-10.8
4	517.58	32.3 QP	46.0	-13.7	1.45 H	237	33.5	-1.2
5	625.09	38.9 QP	46.0	-7.1	1.52 H	224	37.6	1.3
6	949.84	38.6 QP	46.0	-7.4	1.47 H	126	31.7	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.02	33.9 QP	40.0	-6.1	1.50 V	274	43.0	-9.1
2	93.79	33.3 QP	43.5	-10.2	1.00 V	252	46.7	-13.4
3	374.93	32.6 QP	46.0	-13.4	1.55 V	242	37.3	-4.7
4	517.61	29.9 QP	46.0	-16.1	1.50 V	290	31.1	-1.2
5	624.93	40.0 QP	46.0	-6.0	1.31 V	215	38.7	1.3
6	875.00	38.7 QP	46.0	-7.3	1.00 V	269	33.5	5.2

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

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.99	30.5 QP	40.0	-9.5	1.47 H	218	39.0	-8.5
2	150.46	26.8 QP	43.5	-16.7	1.00 H	138	34.5	-7.7
3	204.52	26.0 QP	43.5	-17.5	1.48 H	239	36.8	-10.8
4	517.73	32.8 QP	46.0	-13.2	1.46 H	248	34.0	-1.2
5	624.92	39.4 QP	46.0	-6.6	1.52 H	220	38.1	1.3
6	949.85	38.4 QP	46.0	-7.6	1.56 H	122	31.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.97	33.9 QP	40.0	-6.1	1.53 V	273	43.0	-9.1
2	93.79	33.4 QP	43.5	-10.1	1.02 V	279	46.8	-13.4
3	375.04	32.3 QP	46.0	-13.7	1.53 V	219	37.0	-4.7
4	517.67	30.0 QP	46.0	-16.0	1.46 V	315	31.2	-1.2
5	624.97	40.3 QP	46.0	-5.7	1.36 V	212	39.0	1.3
6	874.93	39.0 QP	46.0	-7.0	1.06 V	267	33.8	5.2

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.15	30.7 QP	40.0	-9.3	1.55 H	223	39.2	-8.5
2	149.92	26.7 QP	43.5	-16.8	1.00 H	130	34.4	-7.7
3	204.42	25.7 QP	43.5	-17.8	1.54 H	236	36.5	-10.8
4	517.58	32.3 QP	46.0	-13.7	1.47 H	244	33.5	-1.2
5	625.00	38.9 QP	46.0	-7.1	1.44 H	221	37.6	1.3
6	949.87	38.5 QP	46.0	-7.5	1.51 H	128	31.6	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.30	33.6 QP	40.0	-6.4	1.52 V	250	42.6	-9.0
2	93.67	33.3 QP	43.5	-10.2	1.00 V	268	46.7	-13.4
3	375.07	32.1 QP	46.0	-13.9	1.55 V	236	36.8	-4.7
4	517.30	29.9 QP	46.0	-16.1	1.49 V	315	31.1	-1.2
5	624.92	40.4 QP	46.0	-5.6	1.32 V	213	39.1	1.3
6	875.03	38.9 QP	46.0	-7.1	1.05 V	267	33.7	5.2

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

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.79	30.4 QP	40.0	-9.6	1.51 H	224	38.9	-8.5
2	149.91	26.7 QP	43.5	-16.8	1.00 H	148	34.4	-7.7
3	204.68	26.3 QP	43.5	-17.2	1.53 H	239	37.1	-10.8
4	517.45	32.7 QP	46.0	-13.3	1.45 H	254	33.9	-1.2
5	625.03	39.3 QP	46.0	-6.7	1.47 H	228	38.0	1.3
6	949.60	38.4 QP	46.0	-7.6	1.53 H	139	31.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.43	33.4 QP	40.0	-6.6	1.55 V	259	42.4	-9.0
2	93.90	33.2 QP	43.5	-10.3	1.04 V	259	46.6	-13.4
3	374.92	32.2 QP	46.0	-13.8	1.56 V	234	36.9	-4.7
4	517.83	29.9 QP	46.0	-16.1	1.53 V	288	31.1	-1.2
5	624.94	40.2 QP	46.0	-5.8	1.40 V	212	38.9	1.3
6	874.96	38.9 QP	46.0	-7.1	1.00 V	274	33.7	5.2

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

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.06	30.5 QP	40.0	-9.5	1.50 H	234	39.0	-8.5
2	150.10	26.8 QP	43.5	-16.7	1.00 H	144	34.5	-7.7
3	204.75	26.1 QP	43.5	-17.4	1.54 H	233	36.9	-10.8
4	517.72	32.7 QP	46.0	-13.3	1.55 H	246	33.9	-1.2
5	625.05	39.1 QP	46.0	-6.9	1.50 H	231	37.8	1.3
6	949.42	38.4 QP	46.0	-7.6	1.54 H	132	31.5	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.93	33.8 QP	40.0	-6.2	1.48 V	275	42.9	-9.1
2	93.74	33.6 QP	43.5	-9.9	1.03 V	260	47.0	-13.4
3	375.01	32.6 QP	46.0	-13.4	1.50 V	237	37.3	-4.7
4	517.82	30.0 QP	46.0	-16.0	1.48 V	292	31.2	-1.2
5	624.92	39.9 QP	46.0	-6.1	1.34 V	242	38.6	1.3
6	874.98	38.6 QP	46.0	-7.4	1.00 V	263	33.4	5.2

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.84	30.5 QP	40.0	-9.5	1.54 H	222	39.0	-8.5
2	150.14	26.4 QP	43.5	-17.1	1.00 H	129	34.1	-7.7
3	204.72	26.2 QP	43.5	-17.3	1.51 H	226	37.0	-10.8
4	517.89	32.5 QP	46.0	-13.5	1.48 H	243	33.7	-1.2
5	625.06	39.3 QP	46.0	-6.7	1.45 H	231	38.0	1.3
6	949.70	38.7 QP	46.0	-7.3	1.54 H	133	31.8	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.40	33.6 QP	40.0	-6.4	1.53 V	278	42.6	-9.0
2	93.76	33.6 QP	43.5	-9.9	1.00 V	270	47.0	-13.4
3	374.96	32.3 QP	46.0	-13.7	1.50 V	239	37.0	-4.7
4	517.57	29.8 QP	46.0	-16.2	1.53 V	299	31.0	-1.2
5	624.98	40.0 QP	46.0	-6.0	1.37 V	228	38.7	1.3
6	874.98	39.1 QP	46.0	-6.9	1.00 V	249	33.9	5.2

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

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.17	30.5 QP	40.0	-9.5	1.54 H	235	39.0	-8.5
2	150.18	26.7 QP	43.5	-16.8	1.01 H	154	34.4	-7.7
3	204.72	26.2 QP	43.5	-17.3	1.55 H	212	37.0	-10.8
4	517.44	32.7 QP	46.0	-13.3	1.53 H	232	33.9	-1.2
5	624.96	39.3 QP	46.0	-6.7	1.46 H	219	38.0	1.3
6	949.49	38.5 QP	46.0	-7.5	1.51 H	132	31.6	6.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.16	33.3 QP	40.0	-6.7	1.50 V	272	42.3	-9.0
2	93.68	33.5 QP	43.5	-10.0	1.00 V	258	46.9	-13.4
3	375.06	32.4 QP	46.0	-13.6	1.46 V	230	37.1	-4.7
4	517.62	30.1 QP	46.0	-15.9	1.55 V	316	31.3	-1.2
5	625.01	40.3 QP	46.0	-5.7	1.42 V	213	39.0	1.3
6	874.96	39.2 QP	46.0	-6.8	1.01 V	253	34.0	5.2

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	100375	May 09, 2016	May 08, 2017
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Aug. 31, 2016	Aug. 30, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-003	Sep. 13, 2016	Sep. 12, 2017
50 ohms Terminator	N/A	04	Nov. 18, 2015	Nov. 17, 2016
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2015	Sep. 30, 2016
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:
1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Sep. 13, 2016

4.2.3 Test Procedures

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

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

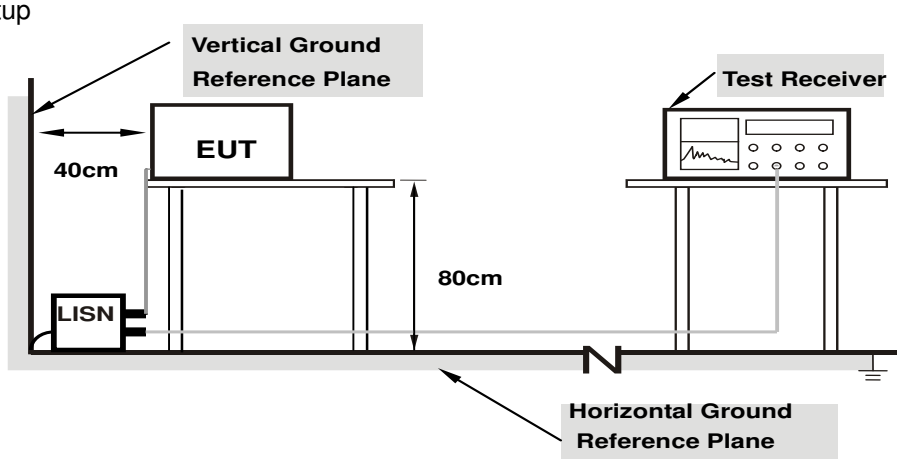
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

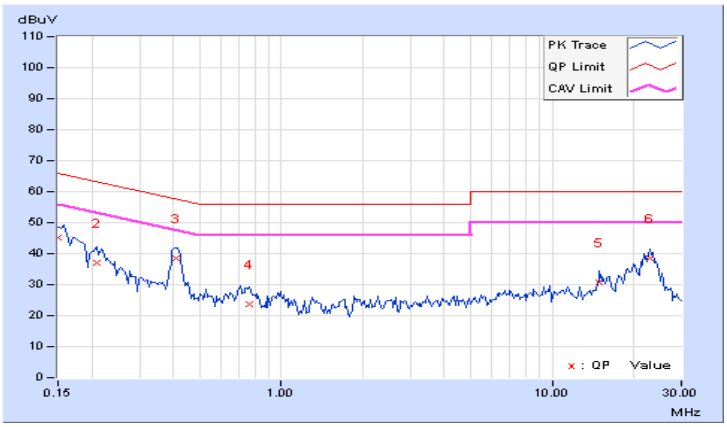
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.31	34.81	22.46	45.12	32.77	66.00	56.00	-20.88	-23.23
2	0.20859	10.24	26.70	16.09	36.94	26.33	63.26	53.26	-26.32	-26.93
3	0.40781	10.25	28.44	21.52	38.69	31.77	57.69	47.69	-19.00	-15.92
4	0.76328	10.17	13.46	7.65	23.63	17.82	56.00	46.00	-32.37	-28.18
5	14.90234	10.77	20.13	14.70	30.90	25.47	60.00	50.00	-29.10	-24.53
6	22.96875	11.03	27.31	23.78	38.34	34.81	60.00	50.00	-21.66	-15.19

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

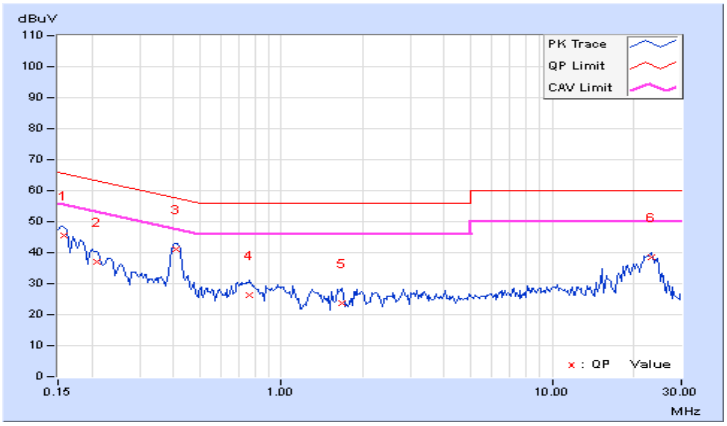


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.34	35.22	25.71	45.56	36.05	65.58	55.58	-20.02	-19.53
2	0.20859	10.19	26.80	17.53	36.99	27.72	63.26	53.26	-26.27	-25.54
3	0.40781	10.23	30.74	23.54	40.97	33.77	57.69	47.69	-16.72	-13.92
4	0.76719	10.22	16.07	10.33	26.29	20.55	56.00	46.00	-29.71	-25.45
5	1.66797	10.20	13.32	8.67	23.52	18.87	56.00	46.00	-32.48	-27.13
6	**23.28125**	**11.07**	**27.41**	**25.03**	**38.48**	**36.10**	**60.00**	**50.00**	**-21.52**	**-13.90**

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



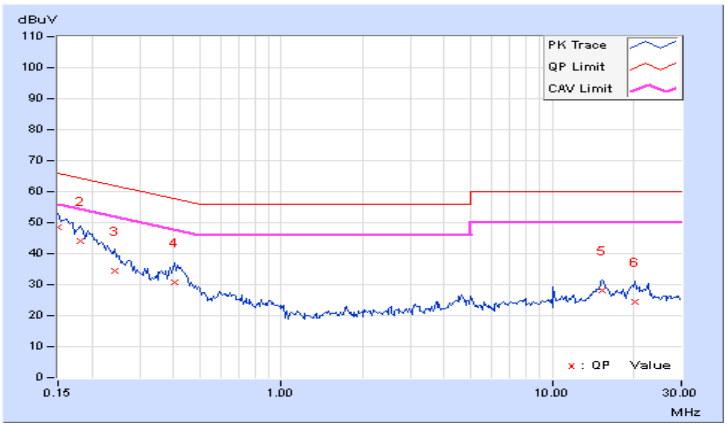
4.2.8 Test Results (Mode 2)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.31	38.39	22.69	48.70	33.00	66.00	56.00	-17.30	-23.00
2	0.18125	10.27	33.93	19.60	44.20	29.87	64.43	54.43	-20.23	-24.56
3	0.24375	10.24	24.37	9.02	34.61	19.26	61.97	51.97	-27.36	-32.71
4	0.40391	10.25	20.52	13.84	30.77	24.09	57.77	47.77	-27.00	-23.68
5	15.31963	10.79	17.36	9.33	28.15	20.12	60.00	50.00	-31.85	-29.88
6	20.25781	10.95	13.59	11.69	24.54	22.64	60.00	50.00	-35.46	-27.36

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

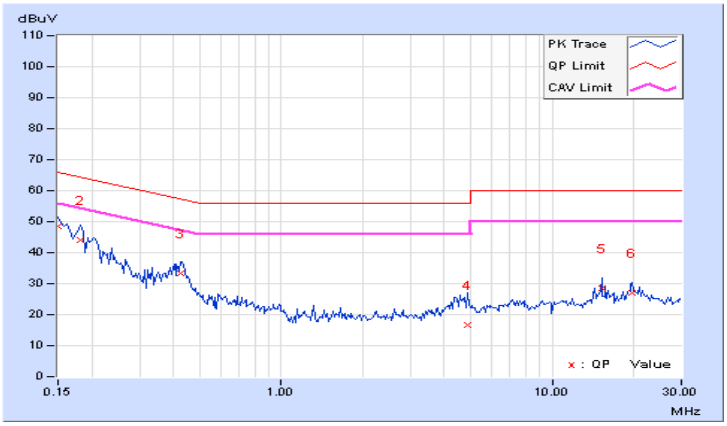


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.36	38.17	23.53	48.53	33.89	66.00	56.00	-17.47	-22.11
2	0.18125	10.26	33.89	19.98	44.15	30.24	64.43	54.43	-20.28	-24.19
3	0.42344	10.23	23.24	16.68	33.47	26.91	57.38	47.38	-23.91	-20.47
4	4.86328	10.49	6.09	-1.85	16.58	8.64	56.00	46.00	-39.42	-37.36
5	15.26172	10.82	17.58	11.34	28.40	22.16	60.00	50.00	-31.60	-27.84
6	19.70703	10.96	15.94	13.22	26.90	24.18	60.00	50.00	-33.10	-25.82

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.

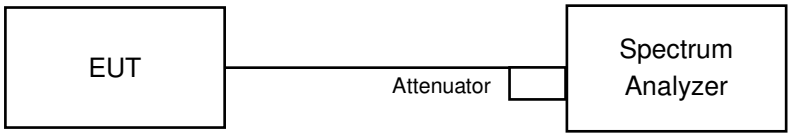


4.3 6dB Bandwidth Measurement

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		
1	2412	7.58	7.12	0.5	Pass
6	2437	8.07	7.60	0.5	Pass
11	2462	7.13	7.13	0.5	Pass

802.11g

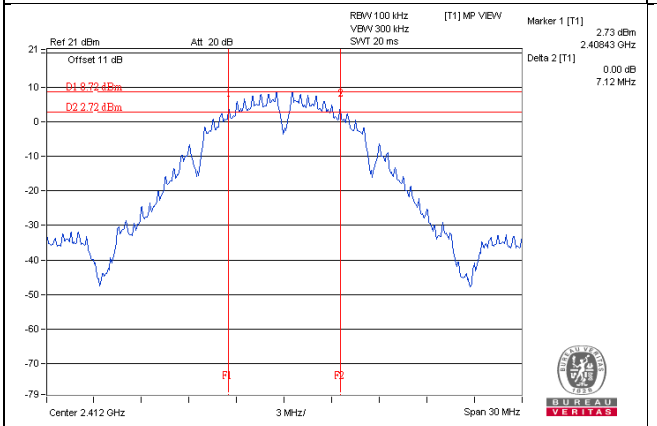
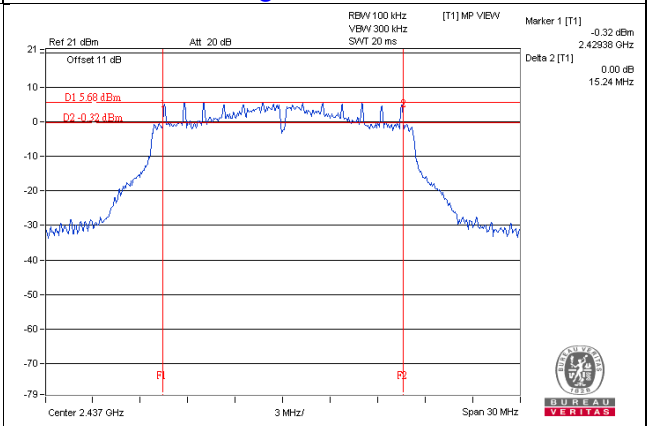
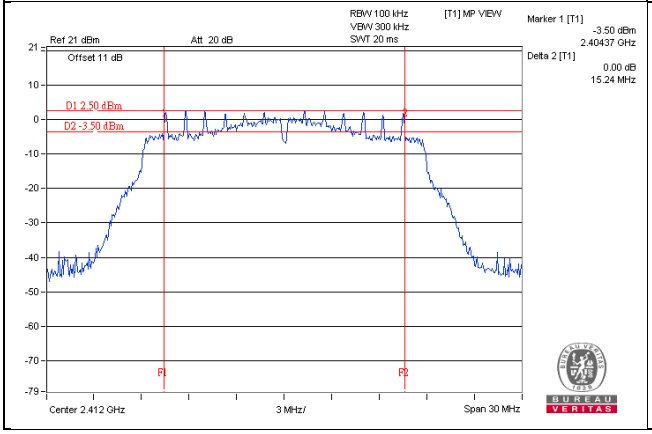
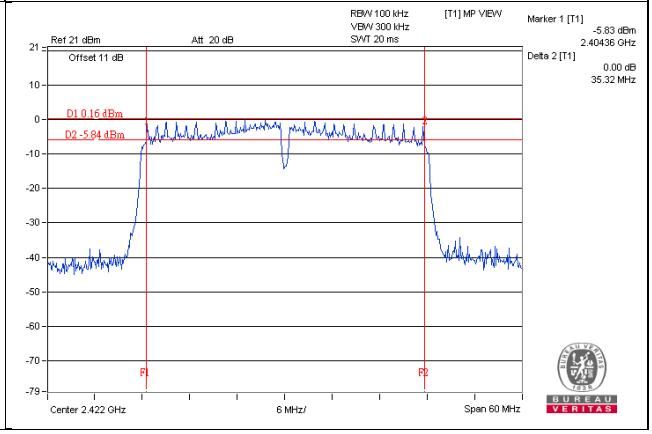
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.78	15.47	0.5	Pass
6	2437	15.81	15.24	0.5	Pass
11	2462	15.78	15.48	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.27	15.24	0.5	Pass
6	2437	15.51	15.27	0.5	Pass
11	2462	15.76	15.25	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.32	35.39	0.5	Pass
6	2437	35.47	35.44	0.5	Pass
9	2452	35.32	35.46	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH1	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 1 : CH1	**802.11n (HT40) / Chain 0 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

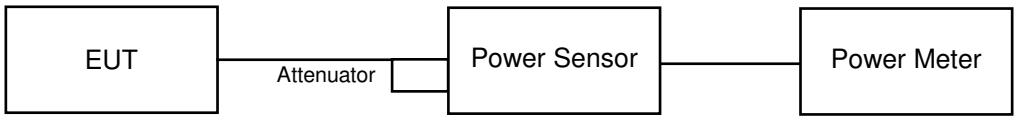
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

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

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	16.51	17.10	96.057	19.83	30.00	Pass
6	2437	21.86	22.40	327.242	25.15	30.00	Pass
11	2462	15.86	16.53	83.526	19.22	30.00	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	13.59	14.25	49.463	16.94	30.00	Pass
6	2437	17.31	17.43	109.162	20.38	30.00	Pass
11	2462	15.59	15.61	72.616	18.61	30.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	13.62	13.87	47.392	16.76	30.00	Pass
6	2437	17.51	18.13	121.377	20.84	30.00	Pass
11	2462	13.80	14.04	49.339	16.93	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2412	13.45	13.22	43.12	16.35	30.00	Pass
6	2437	14.73	15.20	62.83	17.98	30.00	Pass
9	2462	12.81	13.15	39.753	15.99	30.00	Pass

Beamforming Mode

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	13.62	13.87	47.392	16.76	29.83	Pass
6	2437	17.51	18.13	121.377	20.84	29.83	Pass
11	2462	13.80	14.04	49.339	16.93	29.83	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power limit shall be reduced to 30-(6.17-6) = 29.83dBm.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2412	13.45	13.22	43.12	16.35	29.83	Pass
6	2437	14.73	15.20	62.83	17.98	29.83	Pass
9	2462	12.81	13.15	39.753	15.99	29.83	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power limit shall be reduced to 30-(6.17-6) = 29.83dBm.

※Add test for each data rate output power (require by manufacturer):

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			
		Data rate			
		1Mbps	2Mbps	5.5Mbps	11Mbps
1	2412	19.83	19.70	19.62	19.57
6	2437	25.15	25.11	25.03	25.02
11	2462	19.22	19.03	19.14	18.99

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)							
		Data rate							
		6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	2412	16.94	16.82	16.91	16.78	16.86	16.78	16.72	16.84
6	2437	20.38	20.17	20.22	20.32	20.14	20.08	19.86	19.88
11	2462	18.61	18.58	18.56	18.48	18.48	18.55	18.46	18.41

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)							
		Data rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	2412	16.76	16.59	16.51	16.35	16.26	16.42	16.37	16.42
6	2437	20.84	20.66	20.45	20.39	20.41	20.22	20.06	19.90
11	2462	16.93	16.87	16.80	16.62	16.70	16.50	16.29	16.31

802.11n (HT40)

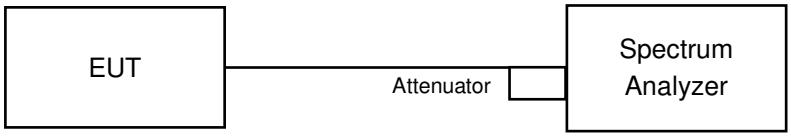
Chan.	Chan. Freq. (MHz)	Average Power (dBm)							
		Data rate							
		MCS8	MCS9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15
3	2412	16.35	16.18	15.97	15.79	15.88	16.09	16.16	15.96
6	2437	17.98	17.85	17.76	17.73	17.94	17.84	17.90	17.76
9	2462	15.99	15.78	15.95	15.95	15.90	15.85	15.89	15.70

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/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-12.89	3.01	-9.88	7.83	Pass
	6	2437	-9.02	3.01	-6.01	7.83	Pass
	11	2462	-14.80	3.01	-11.79	7.83	Pass
1	1	2412	-13.54	3.01	-10.53	7.83	Pass
	6	2437	-8.69	3.01	-5.68	7.83	Pass
	11	2462	-14.41	3.01	-11.40	7.83	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power density limit shall be reduced to 8-(6.17-6) = 7.83dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.27	3.01	-13.26	7.83	Pass
	6	2437	-12.55	3.01	-9.54	7.83	Pass
	11	2462	-14.46	3.01	-11.45	7.83	Pass
1	1	2412	-15.72	3.01	-12.71	7.83	Pass
	6	2437	-12.09	3.01	-9.08	7.83	Pass
	11	2462	-14.61	3.01	-11.60	7.83	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power density limit shall be reduced to 8-(6.17-6) = 7.83dBm.

802.11n (HT20)

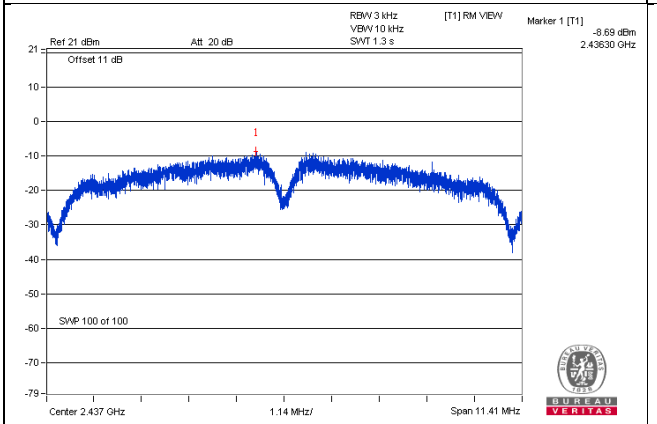
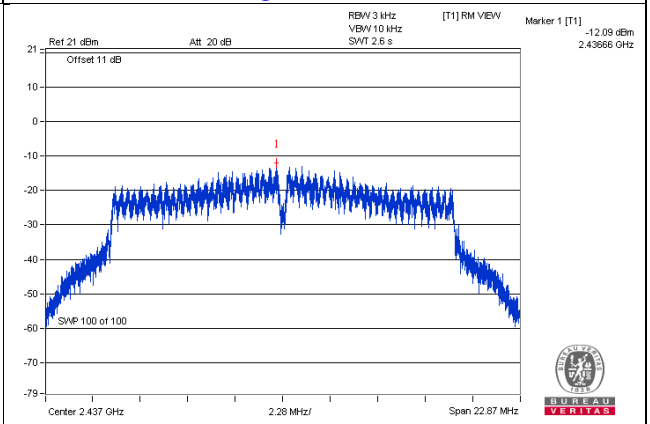
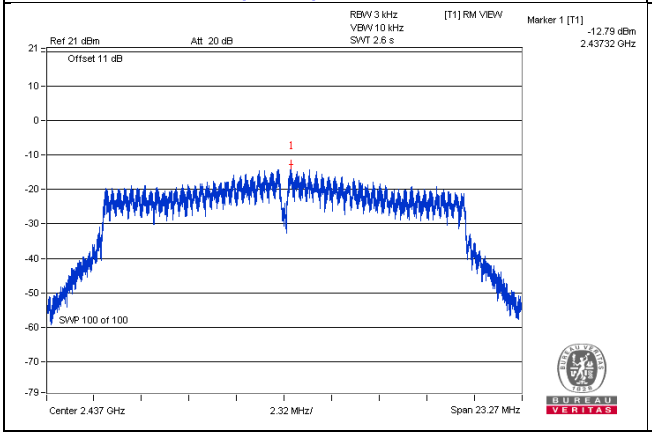
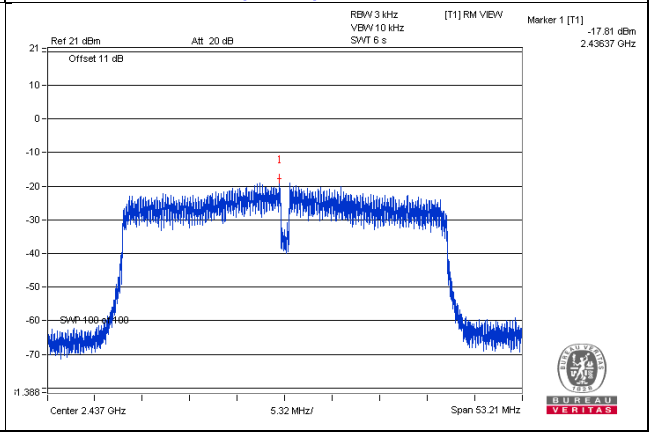
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-17.57	3.01	-14.56	7.83	Pass
	6	2437	-12.79	3.01	-9.78	7.83	Pass
	11	2462	-16.60	3.01	-13.59	7.83	Pass
1	1	2412	-17.53	3.01	-14.52	7.83	Pass
	6	2437	-13.29	3.01	-10.28	7.83	Pass
	11	2462	-17.08	3.01	-14.07	7.83	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power density limit shall be reduced to 8-(6.17-6) = 7.83dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-19.71	3.01	-16.70	7.83	Pass
	6	2437	-17.81	3.01	-14.80	7.83	Pass
	9	2452	-20.78	3.01	-17.77	7.83	Pass
1	3	2422	-19.60	3.01	-16.59	7.83	Pass
	6	2437	-18.11	3.01	-15.10	7.83	Pass
	9	2452	-20.70	3.01	-17.69	7.83	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.17dBi > 6dBi , so the power density limit shall be reduced to 8-(6.17-6) = 7.83dBm.

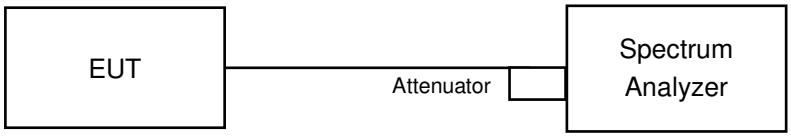
Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH6	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 0 : CH6	**802.11n (HT40) / Chain 0 : CH6**
	

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

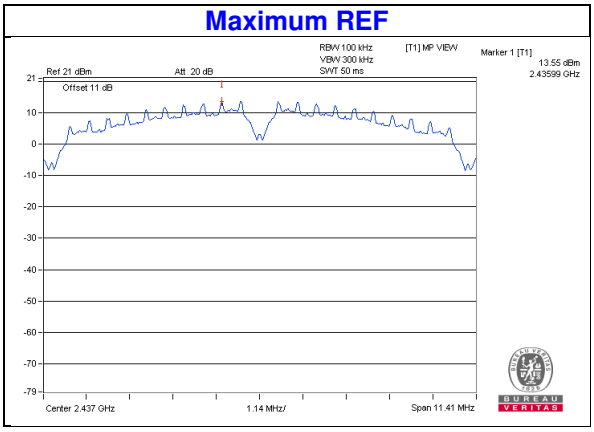
Same as Item 4.3.6

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 30dBoffset below D1. It shows compliance with the requirement.

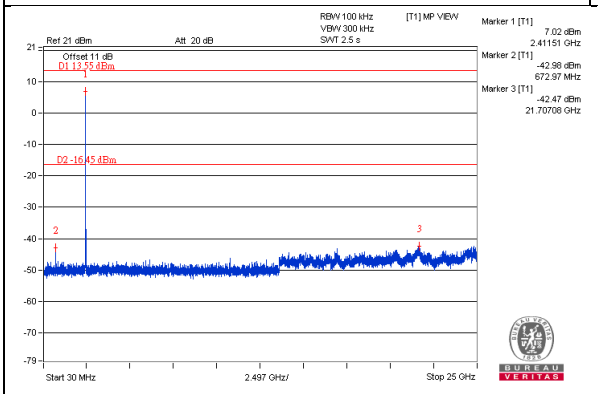
802.11b

Maximum REF

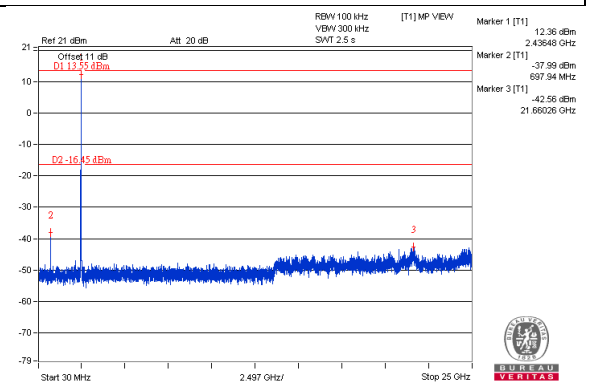


CHAIN 0

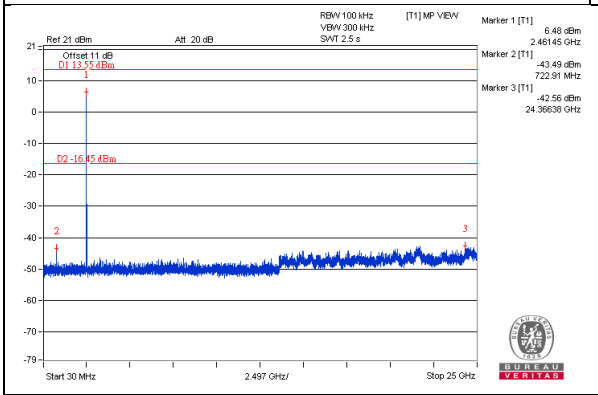
CH 1



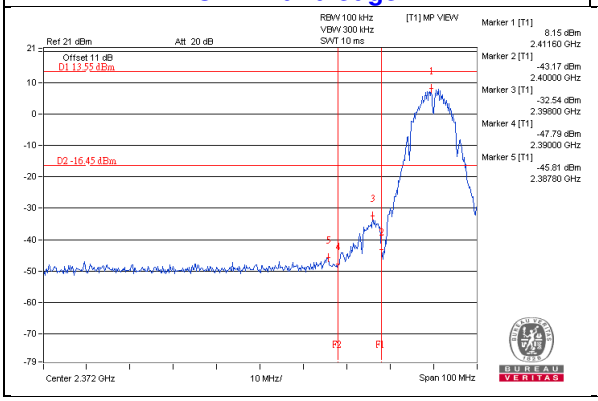
CH 6



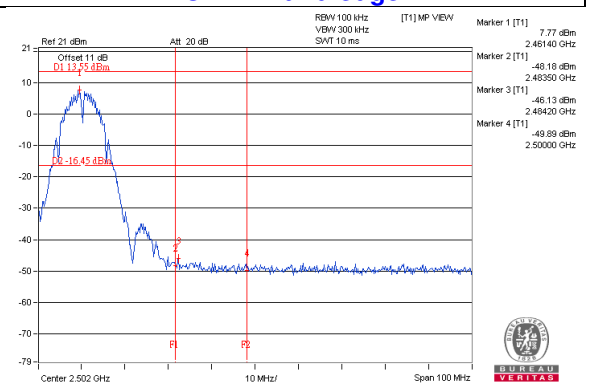
CH 11



CH 1 Band edge

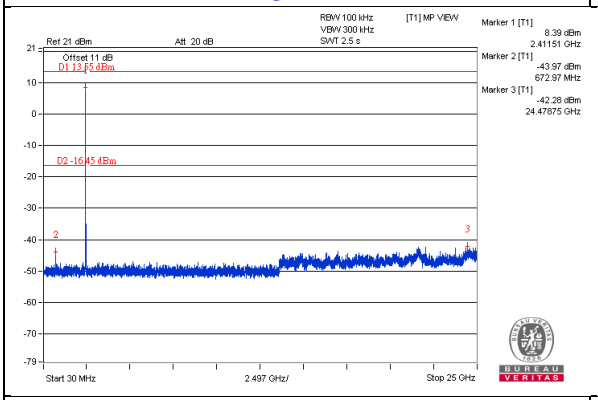


CH 11 Band edge

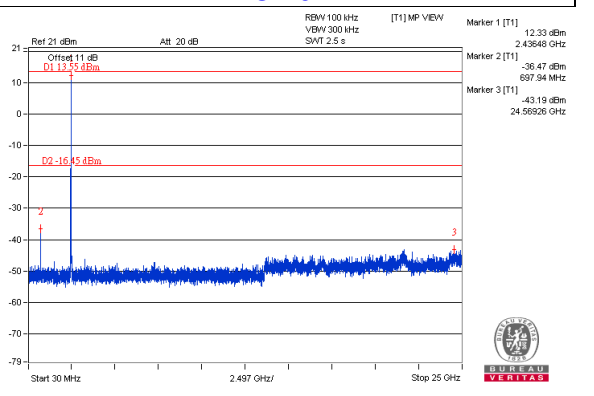


CHAIN 1

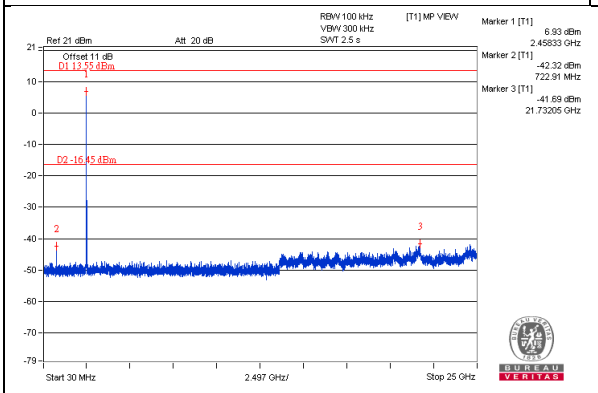
CH 1



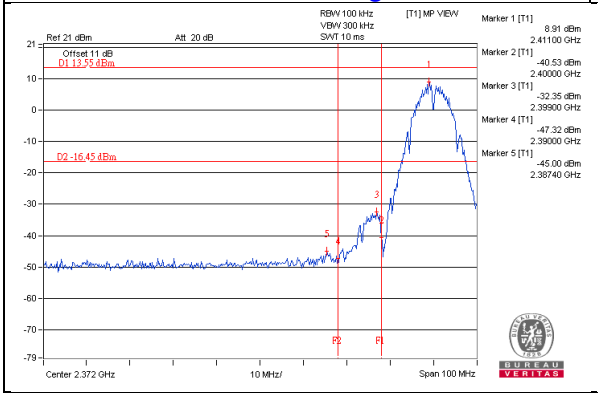
CH 6



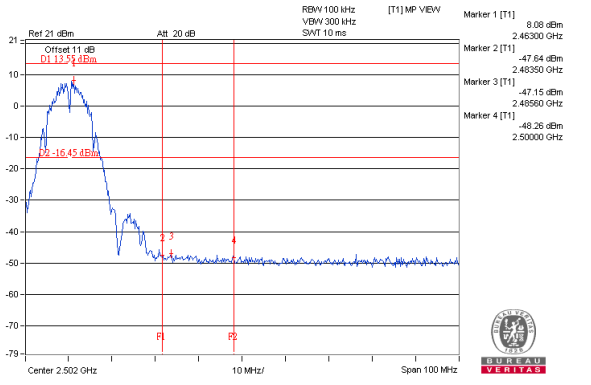
CH 11



CH 1 Band edge

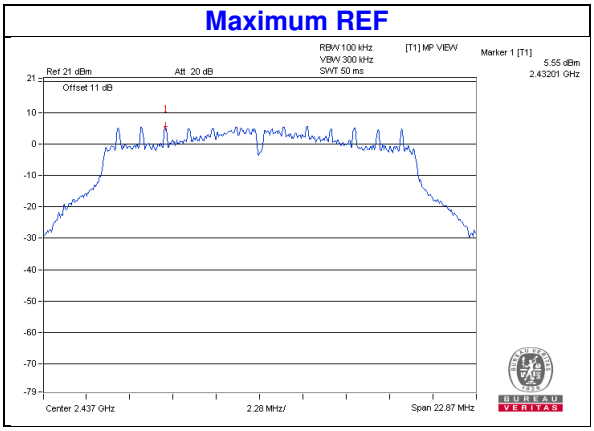


CH 11 Band edge



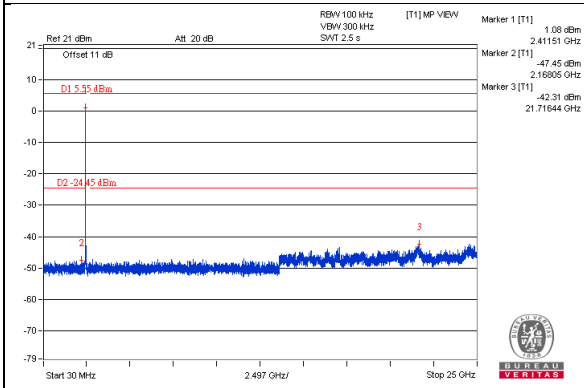
802.11g

Maximum REF

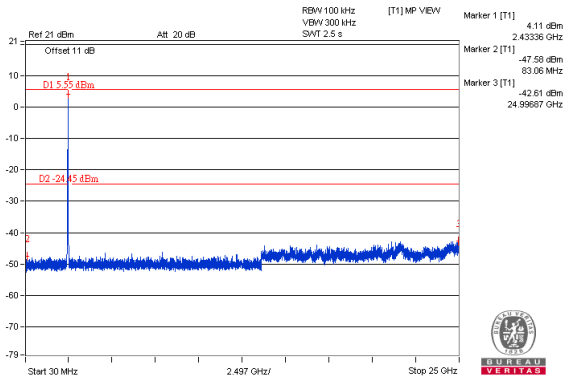


CHAIN 0

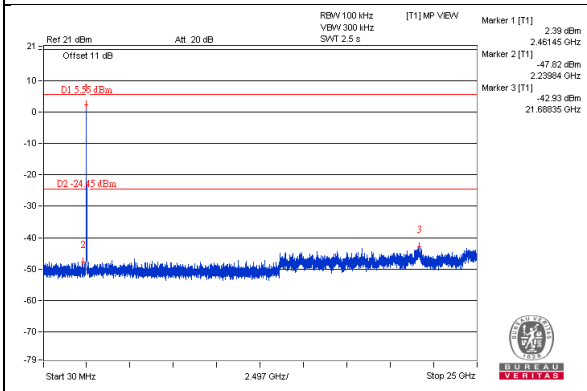
CH 1



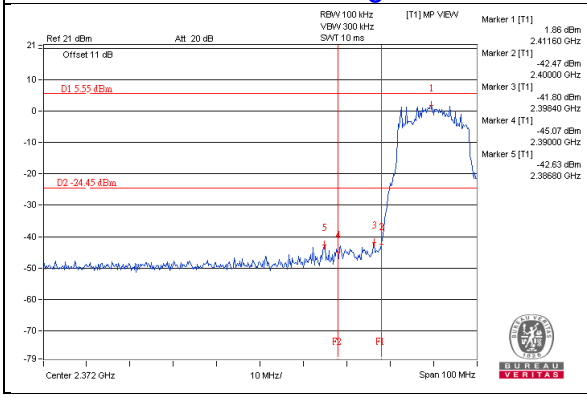
CH 6



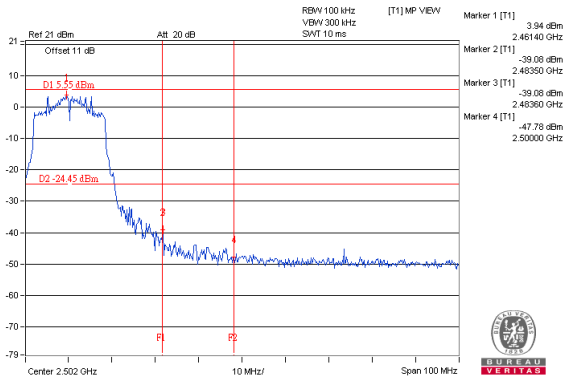
CH 11



CH 1 Band edge

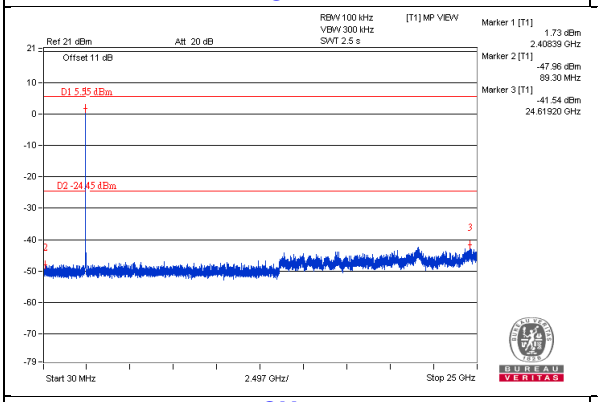


CH 11 Band edge

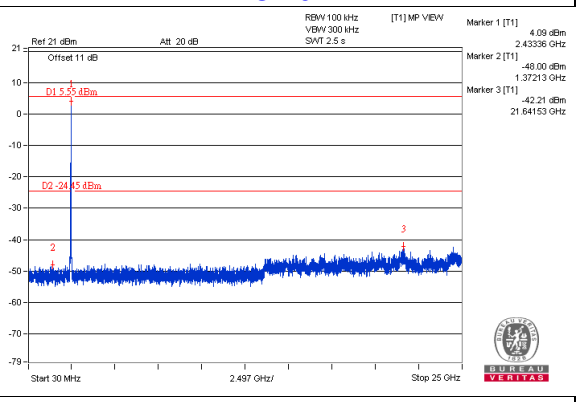


CHAIN 1

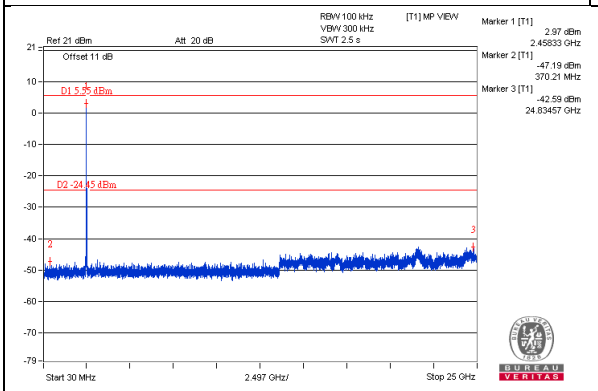
CH 1



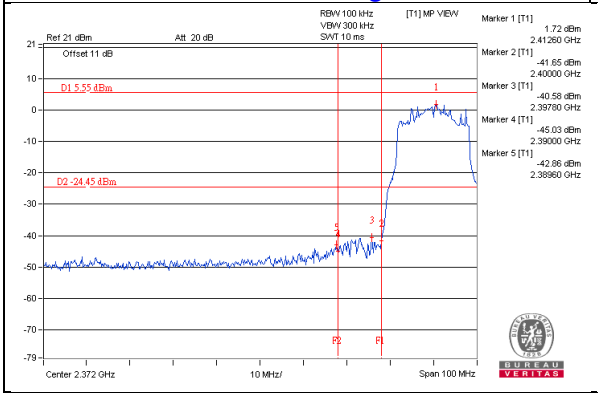
CH 6



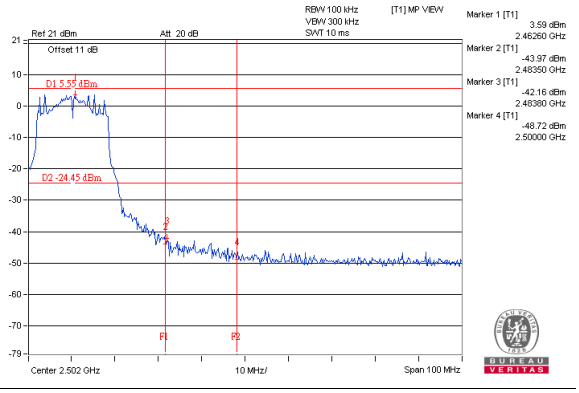
CH 11



CH 1 Band edge

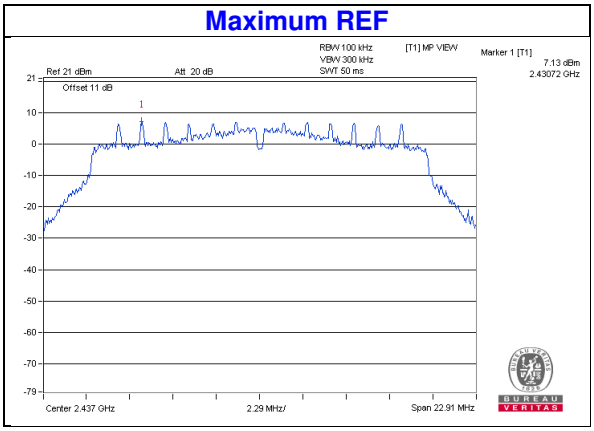


CH 11 Band edge



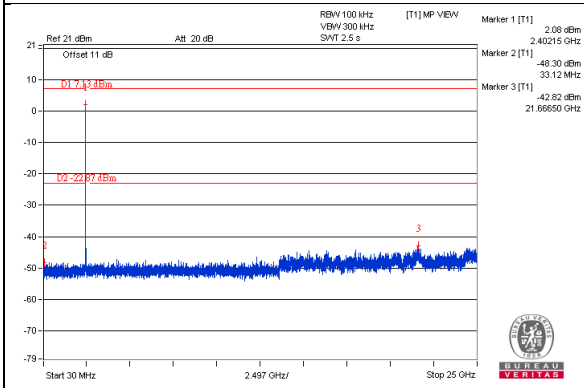
802.11n (HT20)

Maximum REF

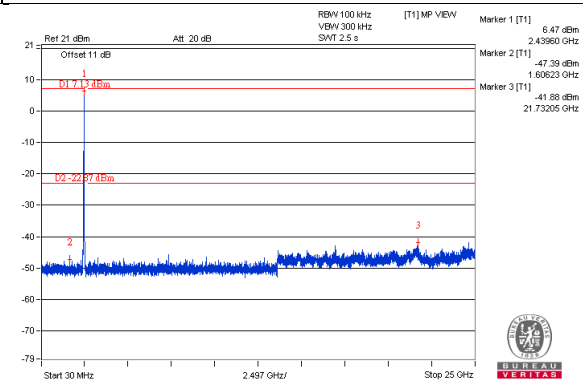


CHAIN 0

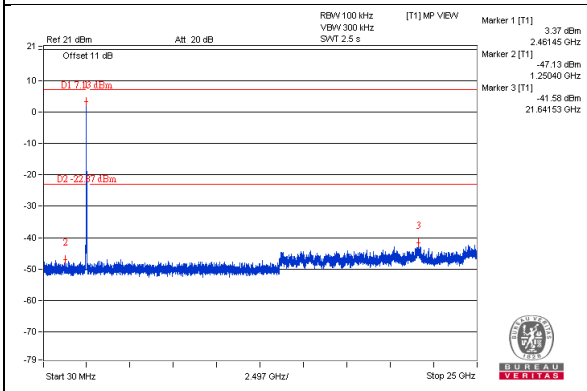
CH 1



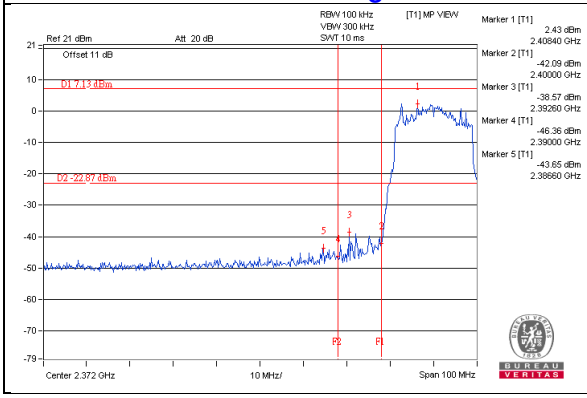
CH 6



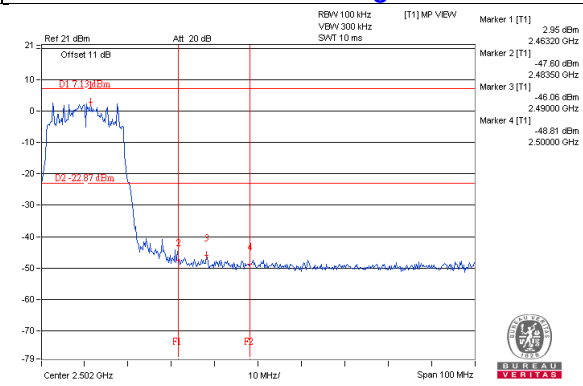
CH 11



CH 1 Band edge

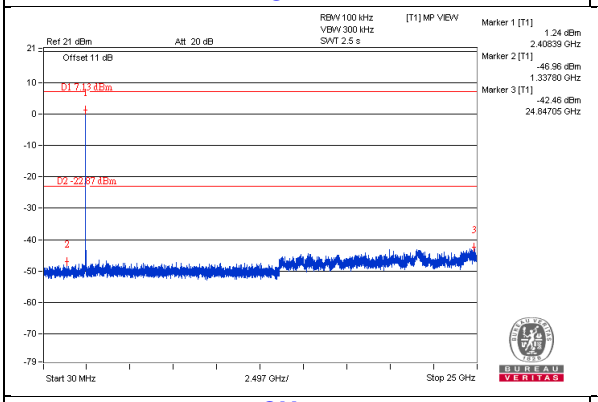


CH 11 Band edge

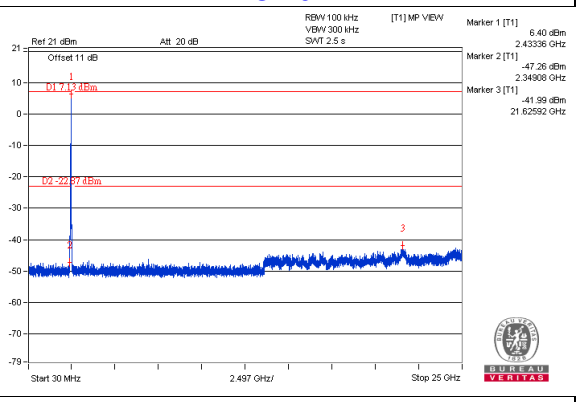


CHAIN 1

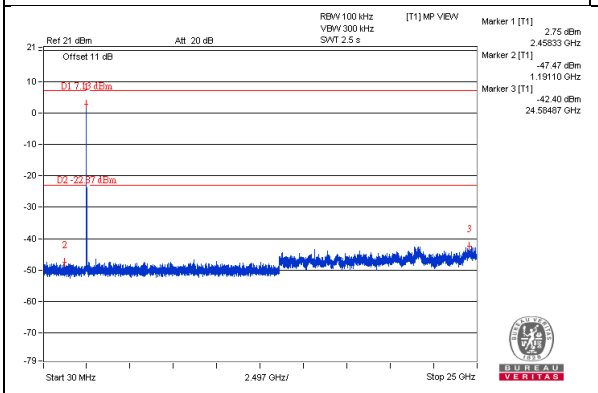
CH 1



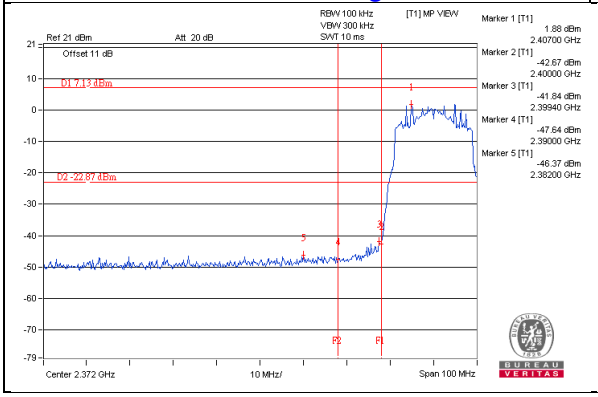
CH 6



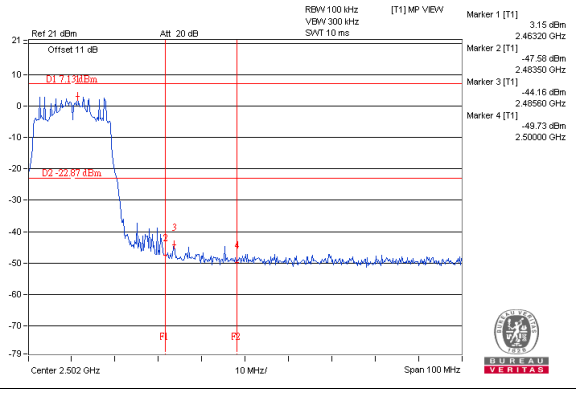
CH 11



CH 1 Band edge

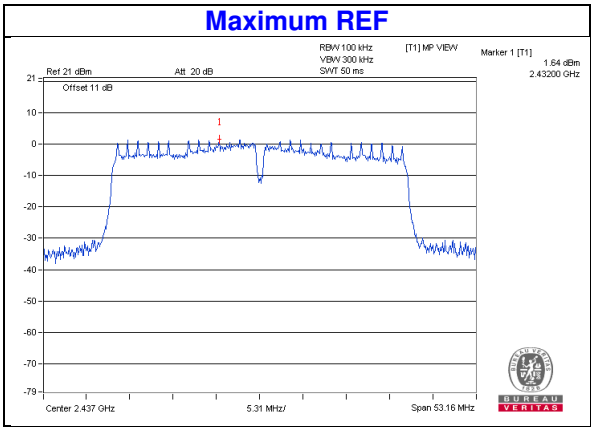


CH 11 Band edge



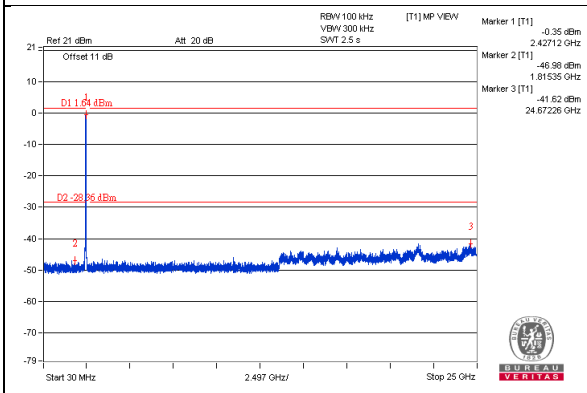
802.11n (HT40)

Maximum REF

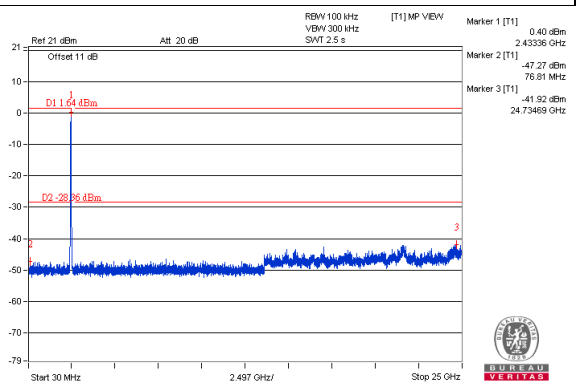


CHAIN 0

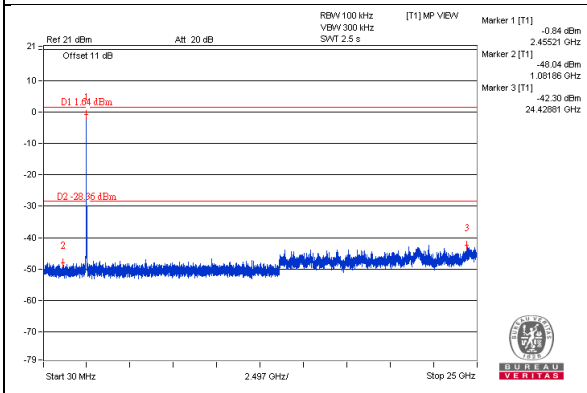
CH 3



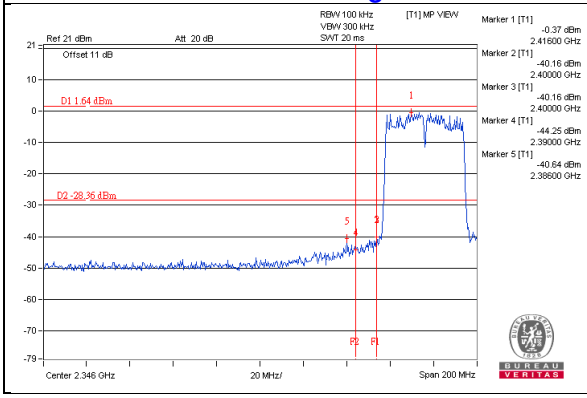
CH 6



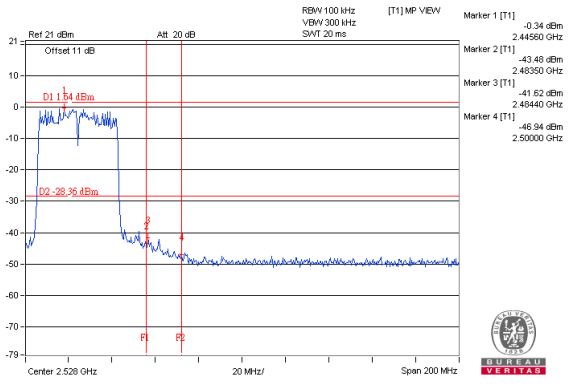
CH 9



CH 3 Band edge

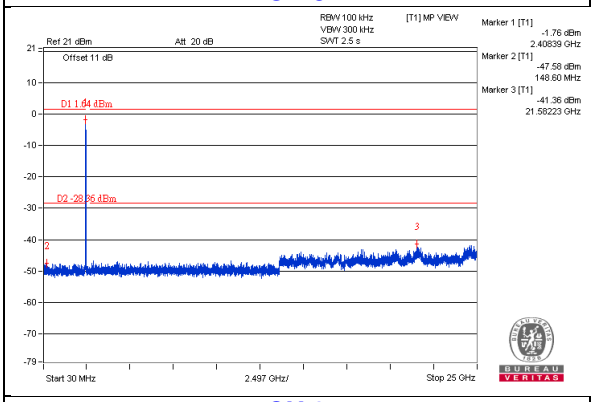


CH 9 Band edge

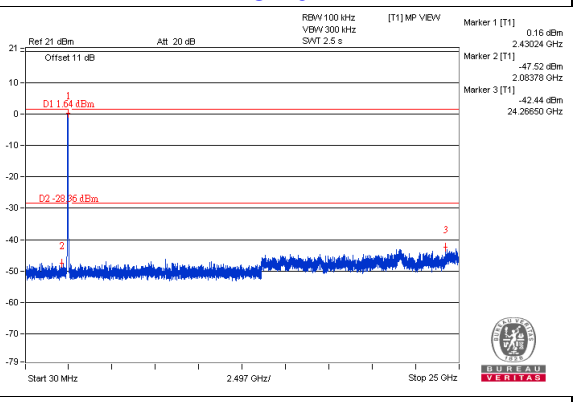


CHAIN 1

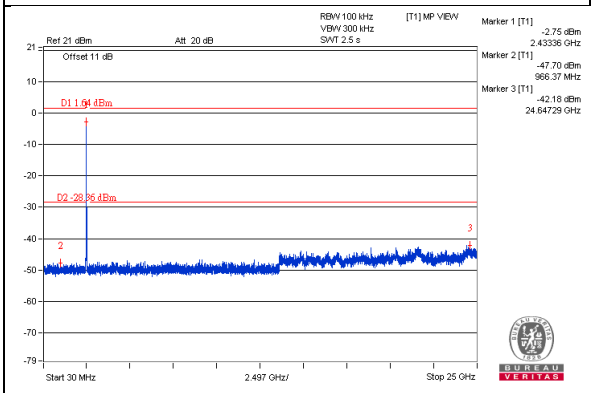
CH 3



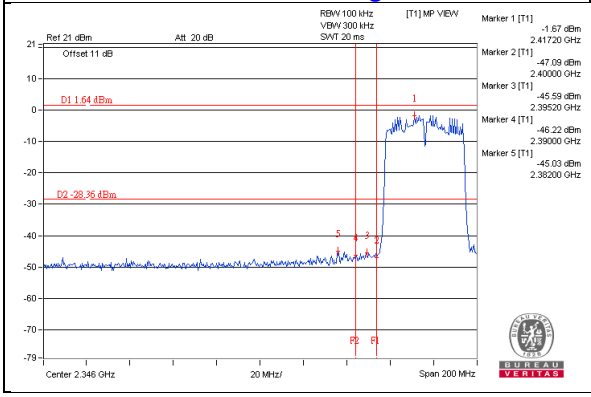
CH 6



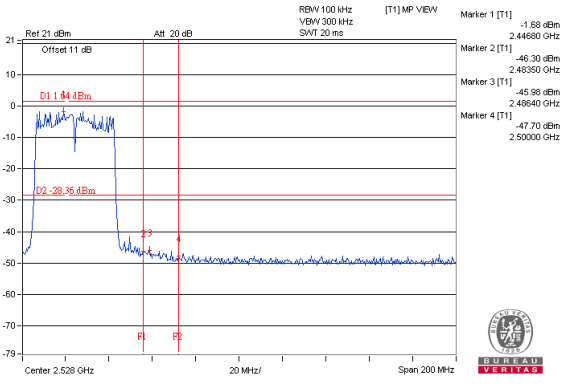
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

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

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

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

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

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

--- END ---