FCC Test Report

Report No.:	RF161026C20
FCC ID:	TVE-241BC041
Test Model:	FortiAP U221EV, FortiAP U223EV
Series Model:	FortiAP U221EVxxxxxx, FAP-U221EVxxxxxx, FORTIAP-U221EVxxxxxx, FortiAP U223EVxxxxxx, FAP-U223EVxxxxxx, FORTIAP-U223EVxxxxxx (where “x” can be used as “A-Z” or “0-9” or “-“ or blank for software changes or marketing purposes only) (refer to item 3.1 for more details)
Received Date:	Oct. 25, 2016
Test Date:	Oct. 26 ~ Dec. 28, 2016
Issued Date:	Dec. 28, 2016
Applicant:	Fortinet Inc.
Address:	899 Kifer Road Sunnyvale, CA 94086 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF161026C20	Original release	Dec. 28, 2016

1 Certificate of Conformity

Product:	Secured Wireless Access Point
Brand:	Fortinet Inc.
Test Model:	FortiAP U221EV, FortiAP U223EV
Series Model:	FortiAP U221EVxxxxxx, FAP-U221EVxxxxxx, FORTIAP-U221EVxxxxxx, FortiAP U223EVxxxxxx, FAP-U223EVxxxxxx, FORTIAP-U223EVxxxxxx (where "x" can be used as "A-Z" or "0-9" or "-" or blank for software changes or marketing purposes only) (refer to item 3.1 for more details)
Sample Status:	Engineering sample
Applicant:	Fortinet Inc.
Test Date:	Oct. 26 ~ Dec. 28, 2016
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Dec. 28, 2016

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** Dec. 28, 2016

Ken Liu / Senior 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 -5.49dB at 0.51734MHz.
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 2390.00MHz, 2483.50MHz.
15.247(d)	Antenna Port Emission	Pass	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	Pass	Meet the requirement of limit.
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is IPEX or RP SMA plug not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Secured Wireless Access Point
Brand	Fortinet Inc.
Test Model	FortiAP U221EV, FortiAP U223EV
Series Model	FortiAP U221EVxxxxxx, FAP-U221EVxxxxxx, FORTIAP-U221EVxxxxxx, FortiAP U223EVxxxxxx, FAP-U223EVxxxxxx, FORTIAP-U223EVxxxxxx (where “x” can be used as “A-Z” or “0-9” or “-“ or blank for software changes or marketing purposes only)
Model Difference	Refer to Note 1 for more details
Sample Status	Engineering sample
Power Supply Rating	12Vdc (adapter) 54Vdc (POE)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
Output Power	CDD Mode: 177.219mW Beamforming Mode: 73.070mW
Antenna Type	Refer to Note 4
Antenna Connector	Refer to Note 4
Accessory Device	Adapter
Cable Supplied	NA

Note:

1. All models are listed as below (where “x” can be used as “A-Z” or “0-9” or “-“ or blank for software changes or marketing purposes only). Model FortiAP U221EV, FortiAP U223EV are the representative for final test.

Brand	Model	Difference
Fortinet Inc.	FortiAP U221EVxxxxxx	Internal antenna
	FAP-U221EVxxxxxx	
	FORTIAP-U221EVxxxxxx	
	FortiAP U223EVxxxxxx	External antenna
	FAP-U223EVxxxxxx	
	FORTIAP-U223EVxxxxxx	

2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Band	Modulation Mode	CDD Mode	Beamforming Mode	TX Function
2.4GHz	802.11b	Support	Not Support	2TX
	802.11g	Support	Not Support	2TX
	802.11n (HT20)	Support	Support	2TX
	802.11n (HT40)	Support	Support	2TX

* For 802.11n, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

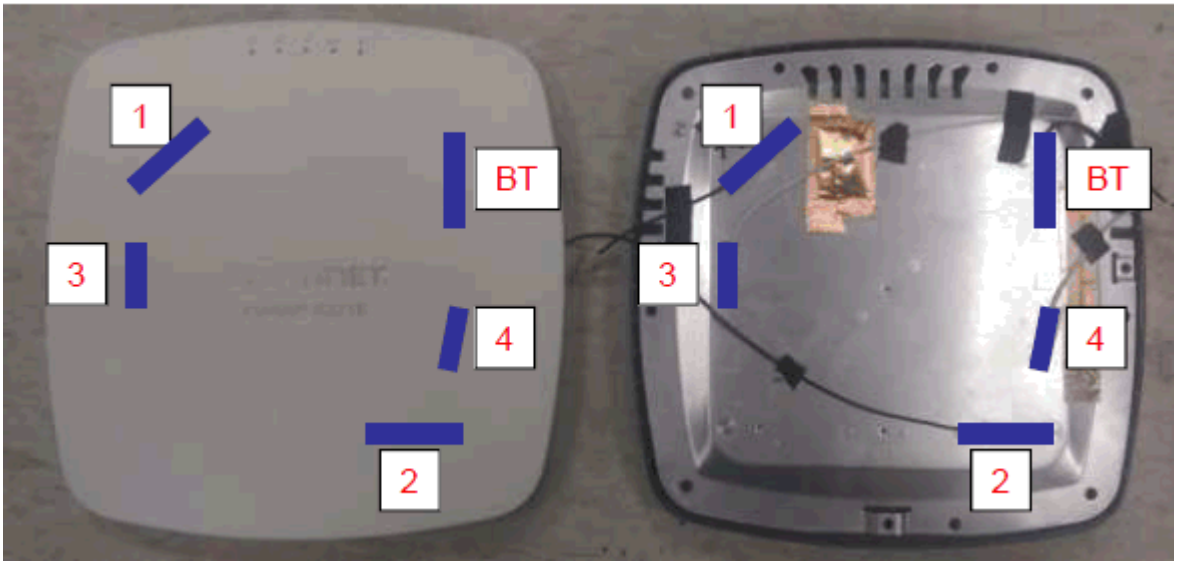
3. The EUT consumes power from the following adapter and POE (POE as support units only).

Adapter	
Brand	Asian Power Devices Inc.
Model	WA-30J12R
Input Power	100-240Vac, 50-60Hz, 0.9A Max.
Output Power	12Vdc, 2.5A
Power Line	1.8m power cable without core attached on adapter

POE (support units only)	
Brand	EnGenius
Model	EPA5006GAT
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A
Power Line	0.5m power cable without core

4. The EUT uses following antennas.

Antenna Type	PIFA	Antenna Connector	IPEX
Gain (dBi)	Frequency (MHz)		
	2400~2500	5150~5850	
WLAN Internal Ant. 1	4.36	-	
WLAN Internal Ant. 2	4.95	-	
WLAN Internal Ant. 3	-	5.64	
WLAN Internal Ant. 4	-	5.83	
BT Ant.	3.67	-	



Antenna Type	Dipole	Antenna Connector	RP SMA plug
Gain (dBi)	Frequency (MHz)		
	2400~2500	5150~5850	
WLAN External Ant.	4.58	5.35	

5. WLAN 2.4GHz and WLAN 5GHz and BT technologies can transmit at same time.
6. Spurious emission of the simultaneous operation (WLAN 2.4GHz and WLAN 5GHz and BT) has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

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

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

7 channels are provided for 802.11n (HT40):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Internal antenna, Power from adapter
B	-	√	√	-	Internal antenna, Power from POE
C	√	√	√	-	External antenna, Power from adapter
D	-	√	√	-	External antenna, Power from POE

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 3 axis.

RE<1G: The worst case was found when positioned on **Z-plane**

RE≥1G: The worst case was found when positioned on **Z-plane** (test mode A & B) and **X-plane** (test mode C & D).

2. "-" means no effect.

3. After pre-testing, test mode A was the worst for the final test.

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.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Date Rate (Mbps)
A, C	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A, C	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A, C	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A, C	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

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.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Date Rate (Mbps)
A, B, C, D	802.11b	1 to 11	1	DSSS	DBPSK	1.0

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Date Rate (Mbps)
A, B, C, D	802.11b	1 to 11	1	DSSS	DBPSK	1.0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Date Rate (Mbps)
CDD Mode						
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15.0
Beamforming Mode						
A	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

Test Condition:

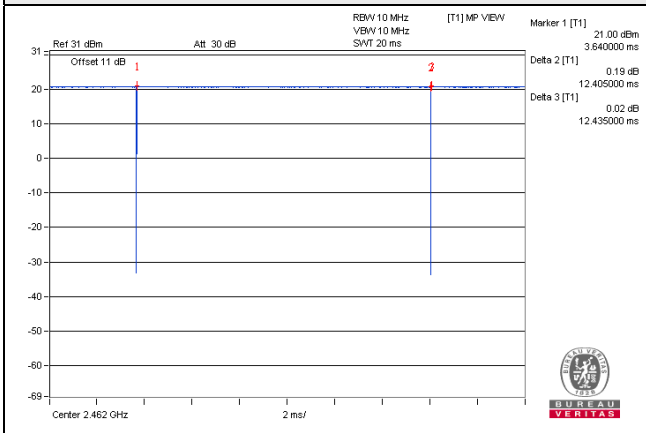
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	20 deg. C, 66% RH	120Vac, 60Hz	James Yang
RE<1G	22 deg. C, 68% RH 19 deg. C, 70% RH	120Vac, 60Hz 54Vdc (POE)	James Yang Jones Chang
PLC	20 deg. C, 66% RH 22 deg. C, 66% RH	120Vac, 60Hz 54Vdc (POE)	James Yang Jones Chang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Leo Tsai

3.3 Duty Cycle of Test Signal

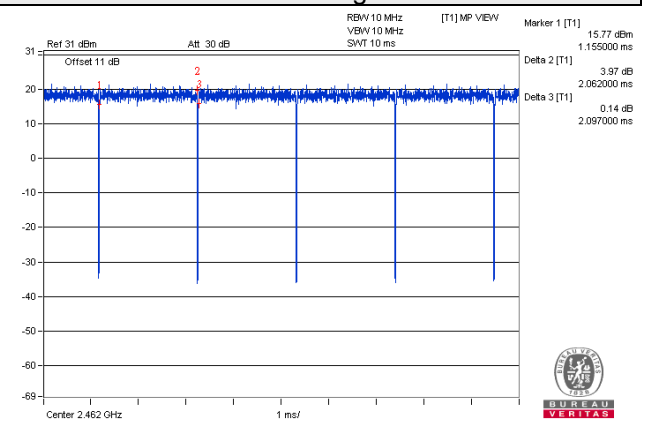
Duty cycle of test signal is ≥ 98%, duty factor is not required.
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.405/12.435 = 0.998
802.11g: Duty cycle = 2.062/2.097 = 0.983
802.11n (HT20): Duty cycle = 1.918/1.953 = 0.982
802.11n (HT40): Duty cycle = 0.932/0.977 = 0.954, Duty factor = 10 * log(1/0.954) = 0.20

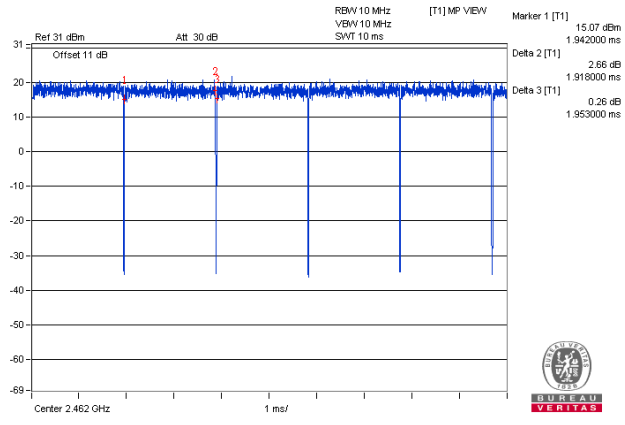
802.11b



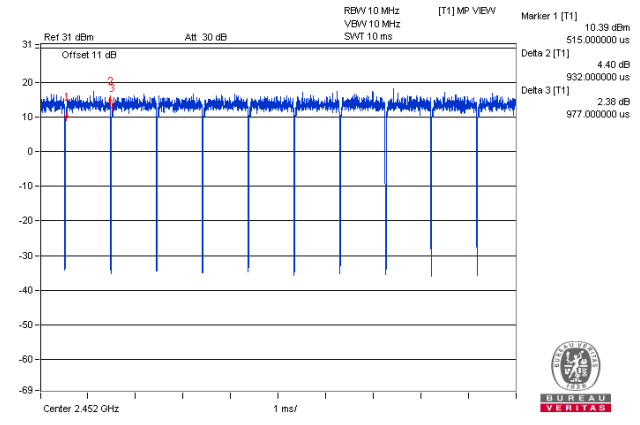
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	Flash	HP	v250W	01	NA	-
C.	POE	EnGenius	EPA5006GAT	NA	NA	Option of EUT I/P: 100-240Vac, 50-60Hz, 0.8A O/P: 54Vdc, 0.6A 0.5m power cable w/o core

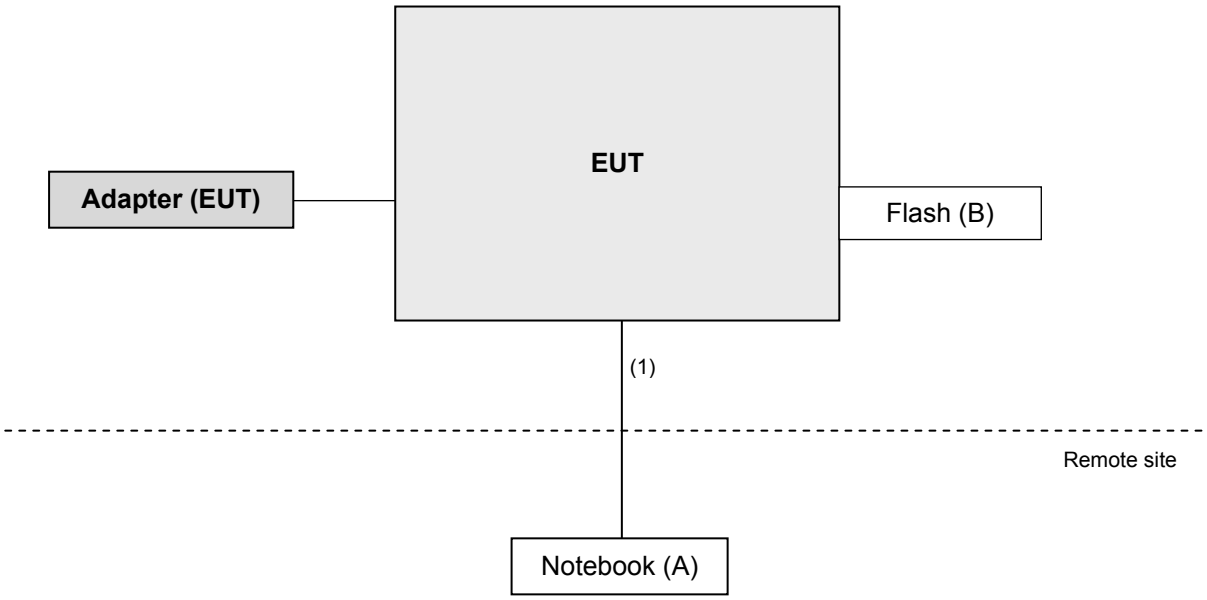
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

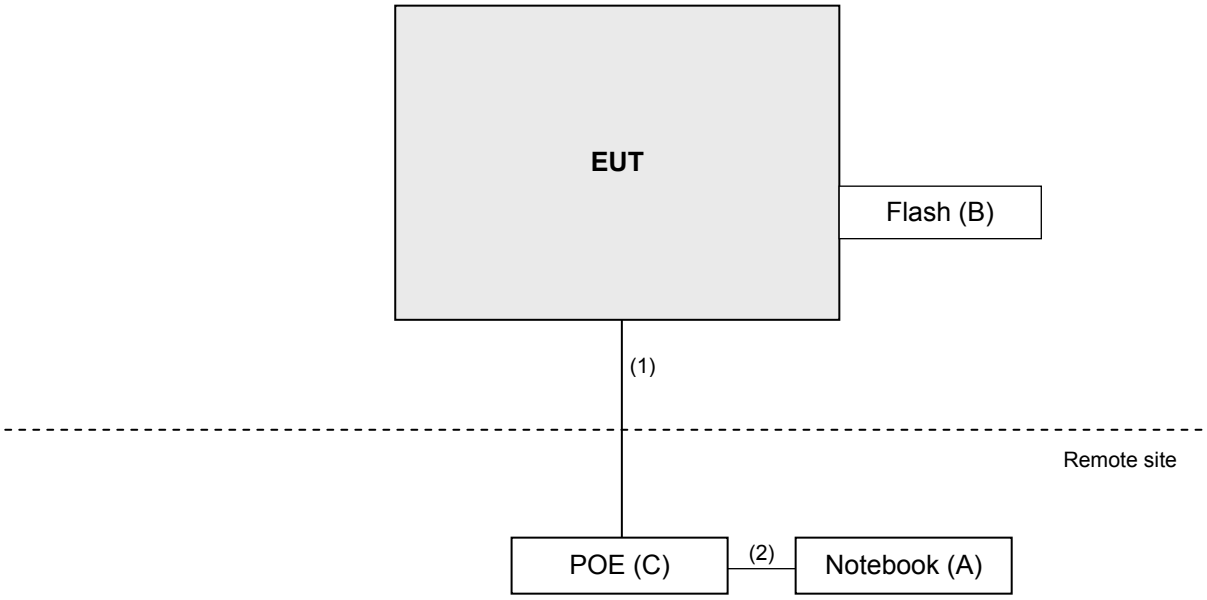
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45	1	10	N	0	-
2.	RJ45	1	1.8	N	0	-

3.4.1 Configuration of System under Test

Mode A, C



Mode B, D



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
558074 D01 DTS Meas Guidance v04
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 30dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 16, 2016	Nov. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	9120D	209	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 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 test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 988962.
5. The IC Site Registration No. is IC 7450F-3.

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:

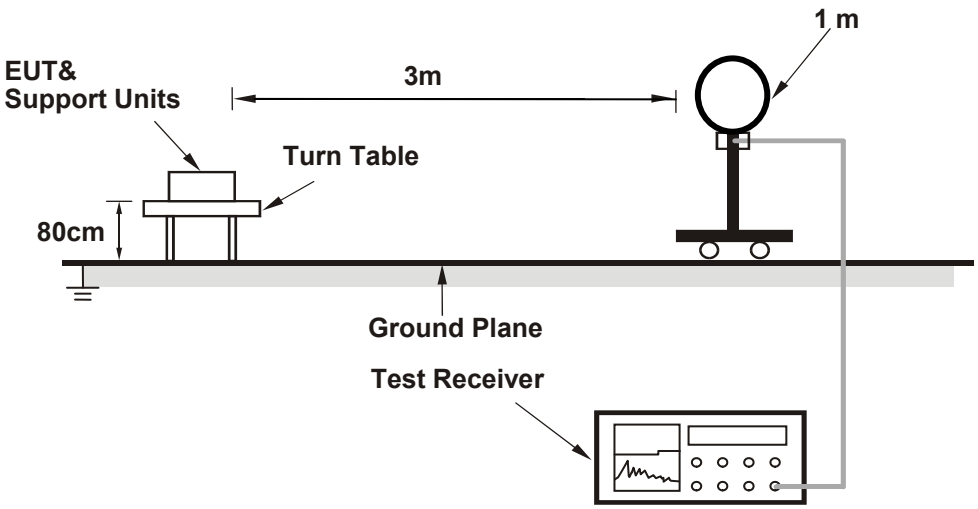
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

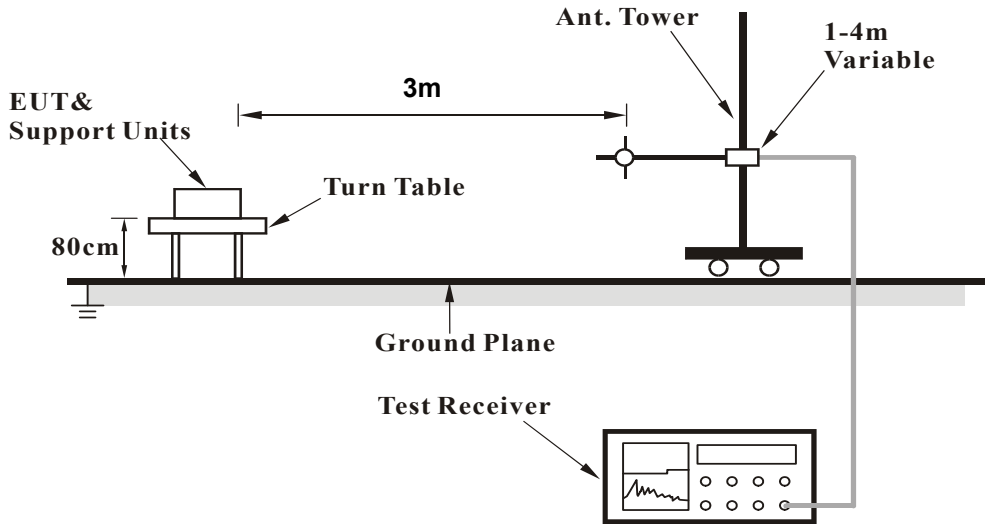
No deviation.

4.1.5 Test Set Up

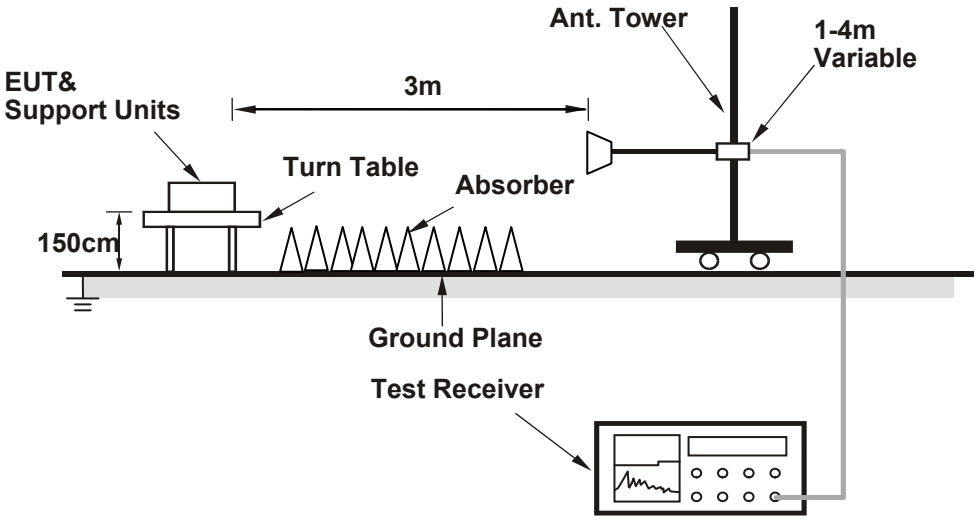
For Radiated emission below 30MHz



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. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".
e. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz Worst-Case Data：

Mode A

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.7 PK	74.0	-13.3	2.15 H	289	29.8	30.9
2	2390.00	52.7 AV	54.0	-1.3	2.15 H	289	21.8	30.9
3	*2412.00	110.4 PK			2.13 H	299	79.3	31.1
4	*2412.00	107.1 AV			2.13 H	299	76.0	31.1
5	4824.00	50.2 PK	74.0	-23.8	1.73 H	136	45.7	4.5
6	4824.00	45.2 AV	54.0	-8.8	1.73 H	136	40.7	4.5
7	#7236.00	59.2 PK	74.0	-14.8	1.79 H	221	47.3	11.9
8	#7236.00	52.4 AV	54.0	-1.6	1.79 H	221	40.5	11.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.2 PK	74.0	-16.8	1.44 V	323	26.3	30.9
2	2390.00	48.4 AV	54.0	-5.6	1.44 V	323	17.5	30.9
3	*2412.00	106.8 PK			1.68 V	325	75.7	31.1
4	*2412.00	103.2 AV			1.68 V	325	72.1	31.1
5	4824.00	47.5 PK	74.0	-26.5	1.61 V	162	43.0	4.5
6	4824.00	37.5 AV	54.0	-16.5	1.61 V	162	33.0	4.5
7	#7236.00	56.4 PK	74.0	-17.6	1.52 V	178	44.5	11.9
8	#7236.00	48.2 AV	54.0	-5.8	1.52 V	178	36.3	11.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2357.00	58.8 PK	74.0	-15.2	1.62 H	39	28.0	30.8
2	2357.00	49.9 AV	54.0	-4.1	1.62 H	39	19.1	30.8
3	*2437.00	112.7 PK			2.48 H	293	81.6	31.1
4	*2437.00	108.7 AV			2.48 H	293	77.6	31.1
5	2483.50	58.6 PK	74.0	-15.4	1.87 H	304	27.3	31.3
6	2483.50	48.6 AV	54.0	-5.4	1.87 H	304	17.3	31.3
7	4874.00	50.8 PK	74.0	-23.2	2.55 H	146	46.2	4.6
8	4874.00	45.4 AV	54.0	-8.6	2.55 H	146	40.8	4.6
9	7311.00	59.2 PK	74.0	-14.8	1.92 H	222	47.1	12.1
10	7311.00	52.6 AV	54.0	-1.4	1.92 H	222	40.5	12.1
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	56.1 PK	74.0	-17.9	1.06 V	353	25.2	30.9
2	2390.00	44.7 AV	54.0	-9.3	1.06 V	353	13.8	30.9
3	*2437.00	110.3 PK			1.00 V	340	79.2	31.1
4	*2437.00	106.4 AV			1.00 V	340	75.3	31.1
5	2483.50	56.7 PK	74.0	-17.3	1.18 V	332	25.4	31.3
6	2483.50	46.3 AV	54.0	-7.7	1.18 V	332	15.0	31.3
7	4874.00	47.7 PK	74.0	-26.3	1.54 V	165	43.1	4.6
8	4874.00	39.2 AV	54.0	-14.8	1.54 V	165	34.6	4.6
9	7311.00	57.8 PK	74.0	-16.2	1.40 V	175	45.7	12.1
10	7311.00	49.6 AV	54.0	-4.4	1.40 V	175	37.5	12.1

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 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	111.6 PK			2.21 H	301	80.4	31.2
2	*2462.00	107.8 AV			2.21 H	301	76.6	31.2
3	2483.50	61.5 PK	74.0	-12.5	2.25 H	292	30.2	31.3
4	2483.50	52.5 AV	54.0	-1.5	2.25 H	292	21.2	31.3
5	4924.00	48.7 PK	74.0	-25.3	2.41 H	141	44.2	4.5
6	4924.00	41.4 AV	54.0	-12.6	2.41 H	141	36.9	4.5
7	7386.00	59.0 PK	74.0	-15.0	2.04 H	219	46.9	12.1
8	7386.00	51.3 AV	54.0	-2.7	2.04 H	219	39.2	12.1
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	*2462.00	109.0 PK			1.20 V	337	77.8	31.2
2	*2462.00	105.4 AV			1.20 V	337	74.2	31.2
3	2483.50	59.6 PK	74.0	-14.4	1.89 V	12	28.3	31.3
4	2483.50	51.5 AV	54.0	-2.5	1.89 V	12	20.2	31.3
5	4924.00	47.0 PK	74.0	-27.0	1.83 V	167	42.5	4.5
6	4924.00	36.8 AV	54.0	-17.2	1.83 V	167	32.3	4.5
7	7386.00	57.6 PK	74.0	-16.4	1.68 V	179	45.5	12.1
8	7386.00	49.6 AV	54.0	-4.4	1.68 V	179	37.5	12.1

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.

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	70.9 PK	74.0	-3.1	1.01 H	298	40.0	30.9
2	2390.00	52.6 AV	54.0	-1.4	1.01 H	298	21.7	30.9
3	*2412.00	108.2 PK			1.88 H	292	77.1	31.1
4	*2412.00	98.7 AV			1.88 H	292	67.6	31.1
5	4824.00	46.0 PK	74.0	-28.0	1.83 H	243	41.5	4.5
6	4824.00	33.0 AV	54.0	-21.0	1.83 H	243	28.5	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.2 PK	74.0	-5.8	2.32 V	2	37.3	30.9
2	2390.00	50.3 AV	54.0	-3.7	2.32 V	2	19.4	30.9
3	*2412.00	105.9 PK			2.28 V	359	74.8	31.1
4	*2412.00	96.4 AV			2.28 V	359	65.3	31.1
5	4824.00	45.7 PK	74.0	-28.3	1.74 V	118	41.2	4.5
6	4824.00	33.1 AV	54.0	-20.9	1.74 V	118	28.6	4.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.6 PK	74.0	-8.4	1.60 H	37	34.7	30.9
2	2390.00	50.5 AV	54.0	-3.5	1.60 H	37	19.6	30.9
3	*2437.00	113.9 PK			2.33 H	286	82.8	31.1
4	*2437.00	104.0 AV			2.33 H	286	72.9	31.1
5	2483.50	66.6 PK	74.0	-7.4	2.38 H	297	35.3	31.3
6	2483.50	50.3 AV	54.0	-3.7	2.38 H	297	19.0	31.3
7	4874.00	47.1 PK	74.0	-26.9	2.61 H	229	42.5	4.6
8	4874.00	33.9 AV	54.0	-20.1	2.61 H	229	29.3	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.4 PK	74.0	-10.6	2.30 V	347	32.5	30.9
2	2390.00	47.6 AV	54.0	-6.4	2.30 V	347	16.7	30.9
3	*2437.00	113.3 PK			2.47 V	351	82.2	31.1
4	*2437.00	102.8 AV			2.47 V	351	71.7	31.1
5	2483.50	65.8 PK	74.0	-8.2	2.36 V	358	34.5	31.3
6	2483.50	48.8 AV	54.0	-5.2	2.36 V	358	17.5	31.3
7	4874.00	46.0 PK	74.0	-28.0	2.14 V	183	41.4	4.6
8	4874.00	33.1 AV	54.0	-20.9	2.14 V	183	28.5	4.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.4 PK			2.29 H	290	78.2	31.2
2	*2462.00	99.9 AV			2.29 H	290	68.7	31.2
3	2483.50	69.7 PK	74.0	-4.3	2.32 H	52	38.4	31.3
4	2483.50	52.6 AV	54.0	-1.4	2.32 H	52	21.3	31.3
5	4924.00	46.0 PK	74.0	-28.0	2.64 H	173	41.5	4.5
6	4924.00	33.3 AV	54.0	-20.7	2.64 H	173	28.8	4.5
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	106.8 PK			2.15 V	0	75.6	31.2
2	*2462.00	96.8 AV			2.15 V	0	65.6	31.2
3	2483.50	67.6 PK	74.0	-6.4	1.98 V	353	36.3	31.3
4	2483.50	50.5 AV	54.0	-3.5	1.98 V	353	19.2	31.3
5	4924.00	46.6 PK	74.0	-27.4	2.76 V	331	42.1	4.5
6	4924.00	33.1 AV	54.0	-20.9	2.76 V	331	28.6	4.5

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	70.1 PK	74.0	-3.9	1.63 H	37	39.2	30.9
2	2390.00	52.6 AV	54.0	-1.4	1.63 H	37	21.7	30.9
3	*2412.00	107.2 PK			2.07 H	292	76.1	31.1
4	*2412.00	97.7 AV			2.07 H	292	66.6	31.1
5	4824.00	47.1 PK	74.0	-26.9	1.73 H	117	42.6	4.5
6	4824.00	33.4 AV	54.0	-20.6	1.73 H	117	28.9	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.3 PK	74.0	-2.7	2.79 V	13	40.4	30.9
2	2390.00	52.4 AV	54.0	-1.6	2.79 V	13	21.5	30.9
3	*2412.00	105.9 PK			2.77 V	357	74.8	31.1
4	*2412.00	96.7 AV			2.77 V	357	65.6	31.1
5	4824.00	46.1 PK	74.0	-27.9	2.71 V	188	41.6	4.5
6	4824.00	32.8 AV	54.0	-21.2	2.71 V	188	28.3	4.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.8 PK	74.0	-8.2	1.41 H	33	34.9	30.9
2	2390.00	50.7 AV	54.0	-3.3	1.41 H	33	19.8	30.9
3	*2437.00	115.1 PK			1.93 H	297	84.0	31.1
4	*2437.00	104.7 AV			1.93 H	297	73.6	31.1
5	2483.50	69.5 PK	74.0	-4.5	2.00 H	291	38.2	31.3
6	2483.50	51.2 AV	54.0	-2.8	2.00 H	291	19.9	31.3
7	4874.00	48.6 PK	74.0	-25.4	1.62 H	151	44.0	4.6
8	4874.00	35.0 AV	54.0	-19.0	1.62 H	151	30.4	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.0 PK	74.0	-10.0	2.78 V	333	33.1	30.9
2	2390.00	49.0 AV	54.0	-5.0	2.78 V	333	18.1	30.9
3	*2437.00	112.9 PK			2.48 V	351	81.8	31.1
4	*2437.00	102.9 AV			2.48 V	351	71.8	31.1
5	2483.50	69.3 PK	74.0	-4.7	2.68 V	357	38.0	31.3
6	2483.50	50.0 AV	54.0	-4.0	2.68 V	357	18.7	31.3
7	4874.00	45.7 PK	74.0	-28.3	1.67 V	302	41.1	4.6
8	4874.00	33.3 AV	54.0	-20.7	1.67 V	302	28.7	4.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.4 PK			1.41 H	296	77.2	31.2
2	*2462.00	98.4 AV			1.41 H	296	67.2	31.2
3	2483.50	71.7 PK	74.0	-2.3	1.96 H	294	40.4	31.3
4	2483.50	52.5 AV	54.0	-1.5	1.96 H	294	21.2	31.3
5	4924.00	47.0 PK	74.0	-27.0	1.73 H	304	42.5	4.5
6	4924.00	33.5 AV	54.0	-20.5	1.73 H	304	29.0	4.5
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	107.0 PK			1.83 V	353	75.8	31.2
2	*2462.00	96.3 AV			1.83 V	353	65.1	31.2
3	2483.50	70.1 PK	74.0	-3.9	1.89 V	9	38.8	31.3
4	2483.50	52.1 AV	54.0	-1.9	1.89 V	9	20.8	31.3
5	4924.00	46.3 PK	74.0	-27.7	1.65 V	243	41.8	4.5
6	4924.00	33.2 AV	54.0	-20.8	1.65 V	243	28.7	4.5

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	64.5 PK	74.0	-9.5	1.60 H	33	33.6	30.9
2	**2390.00**	**52.9 AV**	**54.0**	**-1.1**	**1.60 H**	**33**	**22.0**	**30.9**
3	*2422.00	101.5 PK			2.11 H	285	70.4	31.1
4	*2422.00	91.7 AV			2.11 H	285	60.6	31.1
5	4844.00	46.2 PK	74.0	-27.8	2.04 H	183	41.8	4.4
6	4844.00	33.0 AV	54.0	-21.0	2.04 H	183	28.6	4.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.3 PK	74.0	-10.7	2.86 V	7	32.4	30.9
2	2390.00	50.9 AV	54.0	-3.1	2.86 V	7	20.0	30.9
3	*2422.00	100.2 PK			2.77 V	349	69.1	31.1
4	*2422.00	90.8 AV			2.77 V	349	59.7	31.1
5	4844.00	45.7 PK	74.0	-28.3	2.17 V	103	41.3	4.4
6	4844.00	32.7 AV	54.0	-21.3	2.17 V	103	28.3	4.4

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.
6. " # ": The radiated frequency is out of the restricted band.

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	69.0 PK	74.0	-5.0	2.12 H	288	38.1	30.9
2	2390.00	52.4 AV	54.0	-1.6	2.12 H	288	21.5	30.9
3	*2437.00	105.6 PK			1.98 H	291	74.5	31.1
4	*2437.00	96.1 AV			1.98 H	291	65.0	31.1
5	2483.50	68.5 PK	74.0	-5.5	2.03 H	283	37.2	31.3
6	2483.50	49.3 AV	54.0	-4.7	2.03 H	283	18.0	31.3
7	4874.00	46.8 PK	74.0	-27.2	2.08 H	219	42.2	4.6
8	4874.00	33.3 AV	54.0	-20.7	2.08 H	219	28.7	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	2.87 V	356	34.3	30.9
2	2390.00	50.9 AV	54.0	-3.1	2.87 V	356	20.0	30.9
3	*2437.00	103.4 PK			2.17 V	8	72.3	31.1
4	*2437.00	93.3 AV			2.17 V	8	62.2	31.1
5	2483.50	66.8 PK	74.0	-7.2	2.37 V	357	35.5	31.3
6	2483.50	49.8 AV	54.0	-4.2	2.37 V	357	18.5	31.3
7	4874.00	46.7 PK	74.0	-27.3	1.95 V	176	42.1	4.6
8	4874.00	33.3 AV	54.0	-20.7	1.95 V	176	28.7	4.6

REMARKS:

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

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	104.2 PK			1.85 H	292	73.0	31.2
2	*2452.00	94.4 AV			1.85 H	292	63.2	31.2
3	2483.50	67.3 PK	74.0	-6.7	2.01 H	294	36.0	31.3
4	2483.50	52.6 AV	54.0	-1.4	2.01 H	294	21.3	31.3
5	4904.00	46.5 PK	74.0	-27.5	1.86 H	291	42.0	4.5
6	4904.00	33.2 AV	54.0	-20.8	1.86 H	291	28.7	4.5
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	*2452.00	103.2 PK			2.46 V	349	72.0	31.2
2	*2452.00	93.7 AV			2.46 V	349	62.5	31.2
3	2483.50	67.1 PK	74.0	-6.9	2.89 V	7	35.8	31.3
4	2483.50	52.5 AV	54.0	-1.5	2.89 V	7	21.2	31.3
5	4904.00	46.3 PK	74.0	-27.7	2.13 V	88	41.8	4.5
6	4904.00	33.0 AV	54.0	-21.0	2.13 V	88	28.5	4.5

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.
6. " # ": The radiated frequency is out of the restricted band.

Mode C

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.8 PK	74.0	-19.2	1.68 H	225	23.9	30.9
2	2390.00	44.0 AV	54.0	-10.0	1.68 H	225	13.1	30.9
3	*2412.00	101.3 PK			2.48 H	221	70.2	31.1
4	*2412.00	97.3 AV			2.48 H	221	66.2	31.1
5	4824.00	47.4 PK	74.0	-26.6	1.46 H	357	42.9	4.5
6	4824.00	36.9 AV	54.0	-17.1	1.46 H	357	32.4	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.9 PK	74.0	-13.1	1.51 V	189	30.0	30.9
2	2390.00	52.7 AV	54.0	-1.3	1.51 V	189	21.8	30.9
3	*2412.00	112.8 PK			1.63 V	186	81.7	31.1
4	*2412.00	109.0 AV			1.63 V	186	77.9	31.1
5	4824.00	48.8 PK	74.0	-25.2	1.61 V	159	44.3	4.5
6	4824.00	39.6 AV	54.0	-14.4	1.61 V	159	35.1	4.5

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.
6. " # ": The radiated frequency is out of the restricted band.

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	2357.00	54.0 PK	74.0	-20.0	1.35 H	113	23.2	30.8
2	2357.00	43.2 AV	54.0	-10.8	1.35 H	113	12.4	30.8
3	*2437.00	102.0 PK			1.19 H	356	70.9	31.1
4	*2437.00	98.1 AV			1.19 H	356	67.0	31.1
5	4874.00	47.7 PK	74.0	-26.3	1.16 H	129	43.1	4.6
6	4874.00	37.9 AV	54.0	-16.1	1.16 H	129	33.3	4.6
7	7311.00	54.9 PK	74.0	-19.1	1.12 H	203	42.8	12.1
8	7311.00	44.1 AV	54.0	-9.9	1.12 H	203	32.0	12.1
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	2357.00	57.2 PK	74.0	-16.8	1.41 V	343	26.4	30.8
2	2357.00	47.3 AV	54.0	-6.7	1.41 V	343	16.5	30.8
3	*2437.00	113.2 PK			1.16 V	97	82.1	31.1
4	*2437.00	109.6 AV			1.16 V	97	78.5	31.1
5	4874.00	49.6 PK	74.0	-24.4	1.31 V	153	45.0	4.6
6	4874.00	42.6 AV	54.0	-11.4	1.31 V	153	38.0	4.6
7	7311.00	56.9 PK	74.0	-17.1	1.64 V	126	44.8	12.1
8	7311.00	47.3 AV	54.0	-6.7	1.64 V	126	35.2	12.1

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.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.5 PK			1.51 H	0	70.3	31.2
2	*2462.00	98.0 AV			1.51 H	0	66.8	31.2
3	2483.50	56.6 PK	74.0	-17.4	1.42 H	30	25.3	31.3
4	2483.50	45.5 AV	54.0	-8.5	1.42 H	30	14.2	31.3
5	4924.00	47.4 PK	74.0	-26.6	1.22 H	142	42.9	4.5
6	4924.00	36.0 AV	54.0	-18.0	1.22 H	142	31.5	4.5
7	7386.00	53.7 PK	74.0	-20.3	1.30 H	235	41.6	12.1
8	7386.00	43.2 AV	54.0	-10.8	1.30 H	235	31.1	12.1
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	*2462.00	112.6 PK			1.33 V	105	81.4	31.2
2	*2462.00	108.6 AV			1.33 V	105	77.4	31.2
3	2483.50	60.3 PK	74.0	-13.7	1.66 V	299	29.0	31.3
4	**2483.50**	**52.9 AV**	**54.0**	**-1.1**	**1.66 V**	**299**	**21.6**	**31.3**
5	4924.00	50.0 PK	74.0	-24.0	1.01 V	155	45.5	4.5
6	4924.00	42.6 AV	54.0	-11.4	1.01 V	155	38.1	4.5
7	7386.00	56.4 PK	74.0	-17.6	1.02 V	271	44.3	12.1
8	7386.00	47.6 AV	54.0	-6.4	1.02 V	271	35.5	12.1

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.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.6 PK	74.0	-15.4	2.07 H	23	27.7	30.9
2	2390.00	44.7 AV	54.0	-9.3	2.07 H	23	13.8	30.9
3	*2412.00	98.6 PK			2.16 H	15	67.5	31.1
4	*2412.00	88.9 AV			2.16 H	15	57.8	31.1
5	4824.00	46.1 PK	74.0	-27.9	1.62 H	99	41.6	4.5
6	4824.00	32.7 AV	54.0	-21.3	1.62 H	99	28.2	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.0 PK	74.0	-3.0	1.66 V	323	40.1	30.9
2	2390.00	52.7 AV	54.0	-1.3	1.66 V	323	21.8	30.9
3	*2412.00	107.7 PK			1.65 V	204	76.6	31.1
4	*2412.00	98.9 AV			1.65 V	204	67.8	31.1
5	4824.00	46.0 PK	74.0	-28.0	1.78 V	205	41.5	4.5
6	4824.00	33.0 AV	54.0	-21.0	1.78 V	205	28.5	4.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	102.8 PK			2.14 H	1	71.7	31.1
2	*2437.00	93.0 AV			2.14 H	1	61.9	31.1
3	4874.00	46.3 PK	74.0	-27.7	1.99 H	293	41.7	4.6
4	4874.00	33.3 AV	54.0	-20.7	1.99 H	293	28.7	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.4 PK			1.65 V	166	80.3	31.1
2	*2437.00	102.1 AV			1.65 V	166	71.0	31.1
3	4874.00	46.4 PK	74.0	-27.6	2.04 V	308	41.8	4.6
4	4874.00	33.6 AV	54.0	-20.4	2.04 V	308	29.0	4.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.0 PK			1.97 H	299	69.8	31.2
2	*2462.00	90.8 AV			1.97 H	299	59.6	31.2
3	2483.50	64.1 PK	74.0	-9.9	2.13 H	296	32.8	31.3
4	2483.50	46.9 AV	54.0	-7.1	2.13 H	296	15.6	31.3
5	4924.00	47.0 PK	74.0	-27.0	2.07 H	118	42.5	4.5
6	4924.00	33.1 AV	54.0	-20.9	2.07 H	118	28.6	4.5
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	108.7 PK			1.65 V	328	77.5	31.2
2	*2462.00	99.3 AV			1.65 V	328	68.1	31.2
3	2483.50	71.9 PK	74.0	-2.1	1.70 V	94	40.6	31.3
4	**2483.50**	**52.9 AV**	**54.0**	**-1.1**	**1.70 V**	**94**	**21.6**	**31.3**
5	4924.00	46.0 PK	74.0	-28.0	1.73 V	321	41.5	4.5
6	4924.00	33.2 AV	54.0	-20.8	1.73 V	321	28.7	4.5

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.
6. " # ": The radiated frequency is out of the restricted band.

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	60.7 PK	74.0	-13.3	2.03 H	15	29.8	30.9
2	2390.00	45.9 AV	54.0	-8.1	2.03 H	15	15.0	30.9
3	*2412.00	97.1 PK			1.95 H	18	66.0	31.1
4	*2412.00	87.2 AV			1.95 H	18	56.1	31.1
5	4824.00	45.7 PK	74.0	-28.3	2.31 H	328	41.2	4.5
6	4824.00	33.1 AV	54.0	-20.9	2.31 H	328	28.6	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.4 PK	74.0	-1.6	2.02 V	328	41.5	30.9
2	**2390.00**	**52.9 AV**	**54.0**	**-1.1**	**2.02 V**	**328**	**22.0**	**30.9**
3	*2412.00	106.5 PK			1.57 V	23	75.4	31.1
4	*2412.00	96.9 AV			1.57 V	23	65.8	31.1
5	4824.00	46.1 PK	74.0	-27.9	1.66 V	256	41.6	4.5
6	4824.00	33.1 AV	54.0	-20.9	1.66 V	256	28.6	4.5

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.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.2 PK			1.71 H	298	72.1	31.1
2	*2437.00	92.6 AV			1.71 H	298	61.5	31.1
3	4874.00	46.1 PK	74.0	-27.9	1.64 H	266	41.5	4.6
4	4874.00	33.1 AV	54.0	-20.9	1.64 H	266	28.5	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.9 PK			1.22 V	175	81.8	31.1
2	*2437.00	102.7 AV			1.22 V	175	71.6	31.1
3	4874.00	46.3 PK	74.0	-27.7	1.42 V	25	41.7	4.6
4	4874.00	33.5 AV	54.0	-20.5	1.42 V	25	28.9	4.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.2 PK			1.97 H	300	70.0	31.2
2	*2462.00	89.7 AV			1.97 H	300	58.5	31.2
3	2483.50	63.8 PK	74.0	-10.2	1.72 H	297	32.5	31.3
4	2483.50	47.3 AV	54.0	-6.7	1.72 H	297	16.0	31.3
5	4924.00	46.1 PK	74.0	-27.9	1.87 H	189	41.6	4.5
6	4924.00	33.2 AV	54.0	-20.8	1.87 H	189	28.7	4.5
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	107.9 PK			1.26 V	235	76.7	31.2
2	*2462.00	98.1 AV			1.26 V	235	66.9	31.2
3	2483.50	72.3 PK	74.0	-1.7	1.23 V	187	41.0	31.3
4	2483.50	52.8 AV	54.0	-1.2	1.23 V	187	21.5	31.3
5	4924.00	46.1 PK	74.0	-27.9	1.76 V	228	41.6	4.5
6	4924.00	33.0 AV	54.0	-21.0	1.76 V	228	28.5	4.5

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.
6. " # ": The radiated frequency is out of the restricted band.

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	57.2 PK	74.0	-16.8	1.66 H	35	26.3	30.9
2	2390.00	45.4 AV	54.0	-8.6	1.66 H	35	14.5	30.9
3	*2422.00	92.1 PK			1.60 H	30	61.0	31.1
4	*2422.00	81.0 AV			1.60 H	30	49.9	31.1
5	4844.00	45.6 PK	74.0	-28.4	2.50 H	111	41.2	4.4
6	4844.00	33.4 AV	54.0	-20.6	2.50 H	111	29.0	4.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.8 PK	74.0	-8.2	1.44 V	6	34.9	30.9
2	**2390.00**	**52.9 AV**	**54.0**	**-1.1**	**1.44 V**	**6**	**22.0**	**30.9**
3	*2422.00	103.1 PK			1.37 V	172	72.0	31.1
4	*2422.00	93.2 AV			1.37 V	172	62.1	31.1
5	4844.00	47.3 PK	74.0	-26.7	1.67 V	170	42.9	4.4
6	4844.00	32.7 AV	54.0	-21.3	1.67 V	170	28.3	4.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.8 PK	74.0	-17.2	1.71 H	300	25.9	30.9
2	2390.00	44.9 AV	54.0	-9.1	1.71 H	300	14.0	30.9
3	*2437.00	95.8 PK			1.69 H	297	64.7	31.1
4	*2437.00	85.3 AV			1.69 H	297	54.2	31.1
5	2483.50	57.5 PK	74.0	-16.5	1.62 H	281	26.2	31.3
6	2483.50	44.8 AV	54.0	-9.2	1.62 H	281	13.5	31.3
7	4874.00	46.1 PK	74.0	-27.9	1.74 H	119	41.5	4.6
8	4874.00	33.6 AV	54.0	-20.4	1.74 H	119	29.0	4.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.9 PK	74.0	-6.1	1.32 V	171	37.0	30.9
2	2390.00	52.7 AV	54.0	-1.3	1.32 V	171	21.8	30.9
3	*2437.00	106.9 PK			1.22 V	172	75.8	31.1
4	*2437.00	96.4 AV			1.22 V	172	65.3	31.1
5	2483.50	68.1 PK	74.0	-5.9	1.30 V	173	36.8	31.3
6	2483.50	48.5 AV	54.0	-5.5	1.30 V	173	17.2	31.3
7	4874.00	46.2 PK	74.0	-27.8	2.05 V	197	41.6	4.6
8	4874.00	33.0 AV	54.0	-21.0	2.05 V	197	28.4	4.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	95.9 PK			2.03 H	300	64.7	31.2
2	*2452.00	85.4 AV			2.03 H	300	54.2	31.2
3	2483.50	60.3 PK	74.0	-13.7	1.94 H	299	29.0	31.3
4	2483.50	46.3 AV	54.0	-7.7	1.94 H	299	15.0	31.3
5	4904.00	45.6 PK	74.0	-28.4	1.75 H	253	41.1	4.5
6	4904.00	32.8 AV	54.0	-21.2	1.75 H	253	28.3	4.5
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	*2452.00	104.5 PK			1.26 V	175	73.3	31.2
2	*2452.00	94.7 AV			1.26 V	175	63.5	31.2
3	2483.50	68.9 PK	74.0	-5.1	1.27 V	176	37.6	31.3
4	2483.50	52.5 AV	54.0	-1.5	1.27 V	176	21.2	31.3
5	4904.00	45.7 PK	74.0	-28.3	1.82 V	193	41.2	4.5
6	4904.00	32.8 AV	54.0	-21.2	1.82 V	193	28.3	4.5

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.

Below 1GHz Worst-Case Data:

802.11b

Mode A

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	26.0 QP	40.0	-14.0	1.49 H	197	40.6	-14.6
2	107.67	29.3 QP	43.5	-14.2	1.49 H	145	46.9	-17.6
3	300.16	22.8 QP	46.0	-23.2	1.00 H	187	34.9	-12.1
4	410.98	32.4 QP	46.0	-13.6	1.00 H	217	42.2	-9.8
5	533.47	38.0 QP	46.0	-8.0	1.49 H	21	45.4	-7.4
6	875.67	31.6 QP	46.0	-14.4	1.49 H	141	31.7	-0.1
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	107.67	30.0 QP	43.5	-13.5	1.01 V	112	47.6	-17.6
2	150.45	26.5 QP	43.5	-17.0	1.01 V	118	40.2	-13.7
3	403.20	32.5 QP	46.0	-13.5	1.50 V	12	42.6	-10.1
4	533.47	34.9 QP	46.0	-11.1	1.01 V	93	42.3	-7.4
5	694.85	26.9 QP	46.0	-19.1	1.50 V	7	30.6	-3.7
6	875.67	30.9 QP	46.0	-15.1	1.50 V	195	31.0	-0.1

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

Mode B

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	26.7 QP	40.0	-13.3	1.99 H	68	41.2	-14.5
2	115.45	27.1 QP	43.5	-16.4	1.49 H	100	43.7	-16.6
3	249.60	31.6 QP	46.0	-14.4	1.00 H	131	45.5	-13.9
4	385.70	32.6 QP	46.0	-13.4	1.99 H	138	42.9	-10.3
5	500.42	42.5 QP	46.0	-3.5	1.49 H	145	50.3	-7.8
6	624.85	32.6 QP	46.0	-13.4	1.00 H	149	37.4	-4.8
7	830.95	36.1 QP	46.0	-9.9	1.49 H	236	37.0	-0.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.72	34.2 QP	40.0	-5.8	1.00 V	309	49.1	-14.9
2	169.89	27.1 QP	43.5	-16.4	1.00 V	88	41.0	-13.9
3	249.60	28.2 QP	46.0	-17.8	1.50 V	217	42.1	-13.9
4	305.99	31.8 QP	46.0	-14.2	1.50 V	329	43.6	-11.8
5	381.82	32.2 QP	46.0	-13.8	1.00 V	217	42.5	-10.3
6	500.42	39.7 QP	46.0	-6.3	1.00 V	182	47.5	-7.8

REMARKS:

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

Mode C

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	57.12	27.8 QP	40.0	-12.2	2.00 H	243	42.4	-14.6
2	148.50	29.0 QP	43.5	-14.5	1.01 H	181	42.7	-13.7
3	405.15	31.3 QP	46.0	-14.7	2.00 H	168	41.3	-10.0
4	500.42	37.9 QP	46.0	-8.1	1.50 H	145	45.8	-7.9
5	533.47	40.4 QP	46.0	-5.6	1.01 H	124	47.8	-7.4
6	904.83	31.4 QP	46.0	-14.6	2.00 H	31	30.6	0.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.73	35.0 QP	40.0	-5.0	1.00 V	169	50.6	-15.6
2	111.56	40.9 QP	43.5	-2.6	1.99 V	57	58.0	-17.1
3	189.33	30.0 QP	43.5	-13.5	1.00 V	219	46.1	-16.1
4	500.42	35.3 QP	46.0	-10.7	1.00 V	308	43.2	-7.9
5	533.47	35.8 QP	46.0	-10.2	1.00 V	172	43.2	-7.4
6	854.28	31.6 QP	46.0	-14.4	1.49 V	335	31.9	-0.3

REMARKS:

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

Mode D

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	41.57	25.3 QP	40.0	-14.7	2.00 H	126	40.2	-14.9
2	109.62	27.2 QP	43.5	-16.3	1.00 H	272	44.5	-17.3
3	309.88	36.1 QP	46.0	-9.9	1.00 H	149	47.8	-11.7
4	500.42	37.9 QP	46.0	-8.1	1.00 H	152	45.7	-7.8
5	624.85	31.9 QP	46.0	-14.1	1.50 H	152	36.7	-4.8
6	729.84	32.5 QP	46.0	-13.5	1.00 H	8	35.3	-2.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.62	36.8 QP	40.0	-3.2	1.00 V	342	51.9	-15.1
2	107.67	26.6 QP	43.5	-16.9	1.00 V	168	44.0	-17.4
3	171.83	27.5 QP	43.5	-16.0	1.00 V	177	41.5	-14.0
4	309.88	32.1 QP	46.0	-13.9	1.00 V	105	43.8	-11.7
5	374.04	31.5 QP	46.0	-14.5	2.00 V	127	41.9	-10.4
6	500.42	36.7 QP	46.0	-9.3	1.50 V	183	44.5	-7.8

REMARKS:

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

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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 24, 2016	Oct. 23, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 11, 2016	Jan. 10, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 26, 2016	Jul. 25, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

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.

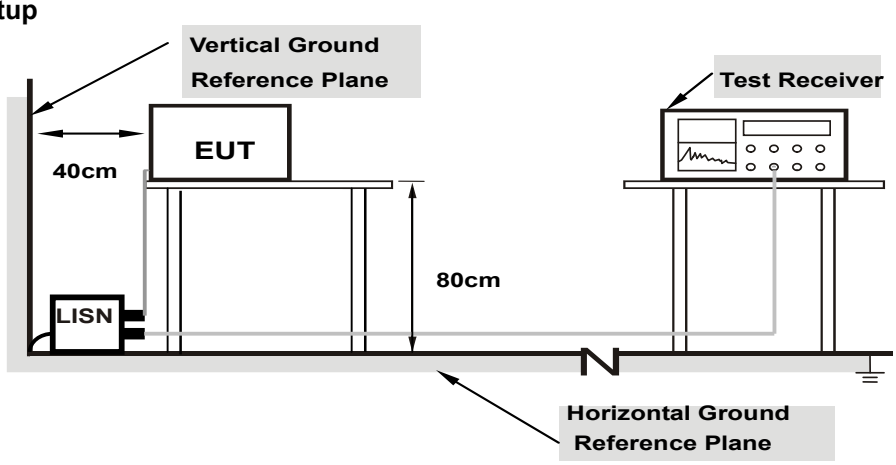
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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.

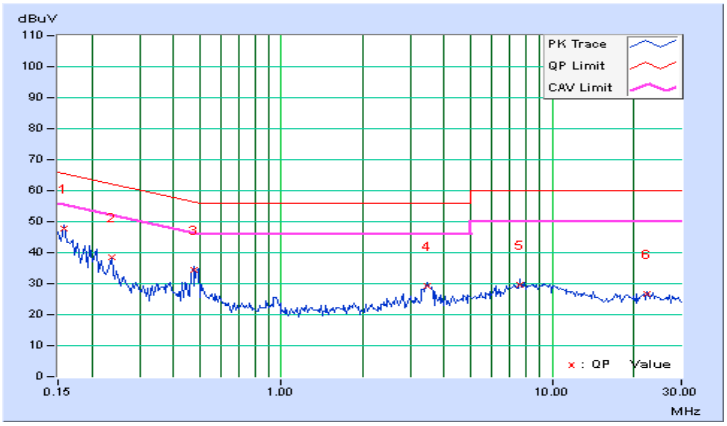
4.2.7 Test Results

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

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	10.13	37.80	20.26	47.93	30.39	65.58	55.58	-17.65	-25.19
2	0.23594	10.17	28.41	10.72	38.58	20.89	62.24	52.24	-23.66	-31.35
3	0.47422	10.19	24.13	21.01	34.32	31.20	56.44	46.44	-22.12	-15.24
4	3.46094	10.33	18.93	5.12	29.26	15.45	56.00	46.00	-26.74	-30.55
5	7.59766	10.43	19.23	9.51	29.66	19.94	60.00	50.00	-30.34	-30.06
6	22.41797	10.57	16.28	-1.03	26.85	9.54	60.00	50.00	-33.15	-40.46

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.

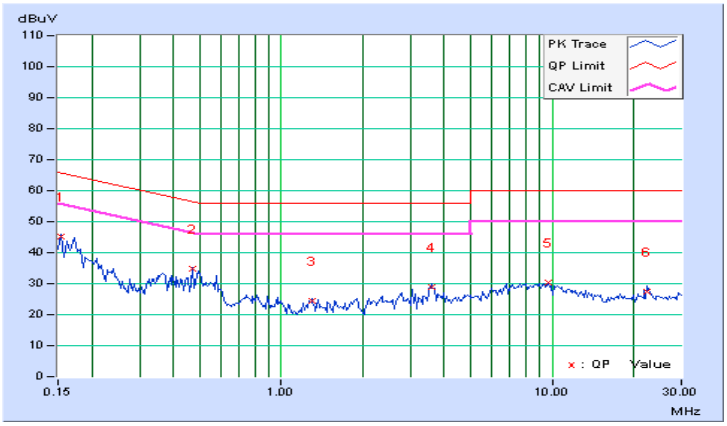


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.13	34.89	20.62	45.02	30.75	65.79	55.79	-20.77	-25.04
2	0.47031	10.19	24.53	18.61	34.72	28.80	56.51	46.51	-21.79	-17.71
3	1.29297	10.24	14.21	1.67	24.45	11.91	56.00	46.00	-31.55	-34.09
4	3.60156	10.37	18.42	5.50	28.79	15.87	56.00	46.00	-27.21	-30.13
5	9.64453	10.55	19.86	10.12	30.41	20.67	60.00	50.00	-29.59	-29.33
6	22.53906	10.72	16.52	-2.84	27.24	7.88	60.00	50.00	-32.76	-42.12

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.

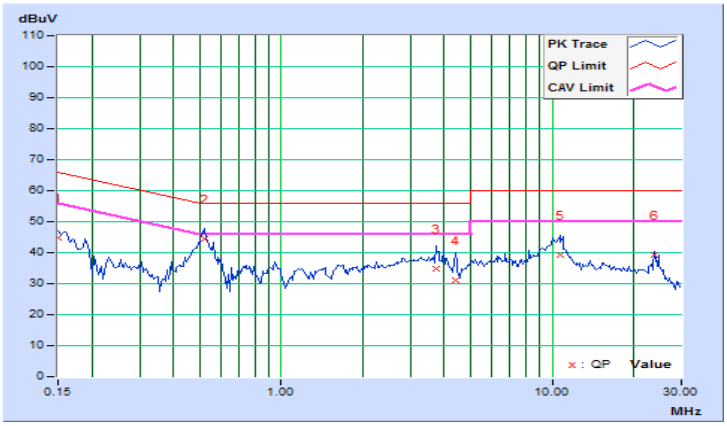


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	34.88	19.48	44.87	29.47	66.00	56.00	-21.13	-26.53
2	0.52109	10.05	34.26	29.82	44.31	39.87	56.00	46.00	-11.69	-6.13
3	3.72266	10.17	24.68	19.92	34.85	30.09	56.00	46.00	-21.15	-15.91
4	4.37891	10.18	20.98	15.10	31.16	25.28	56.00	46.00	-24.84	-20.72
5	10.66406	10.27	29.17	24.49	39.44	34.76	60.00	50.00	-20.56	-15.24
6	23.95703	10.41	28.86	28.32	39.27	38.73	60.00	50.00	-20.73	-11.27

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.

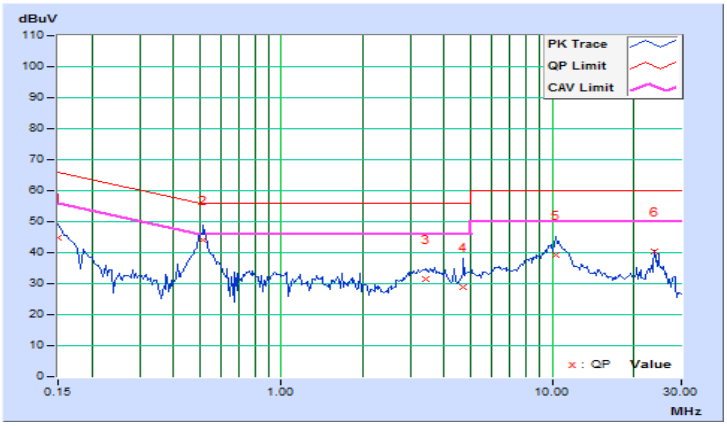


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.00	34.74	17.93	44.74	27.93	66.00	56.00	-21.26	-28.07
2	0.51719	10.10	33.98	29.80	44.08	39.90	56.00	46.00	-11.92	-6.10
3	3.43750	10.28	21.38	15.90	31.66	26.18	56.00	46.00	-24.34	-19.82
4	4.71484	10.32	18.42	12.56	28.74	22.88	56.00	46.00	-27.26	-23.12
5	10.33984	10.34	28.83	24.02	39.17	34.36	60.00	50.00	-20.83	-15.64
6	23.95703	10.60	29.59	29.50	40.19	40.10	60.00	50.00	-19.81	-9.90

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.

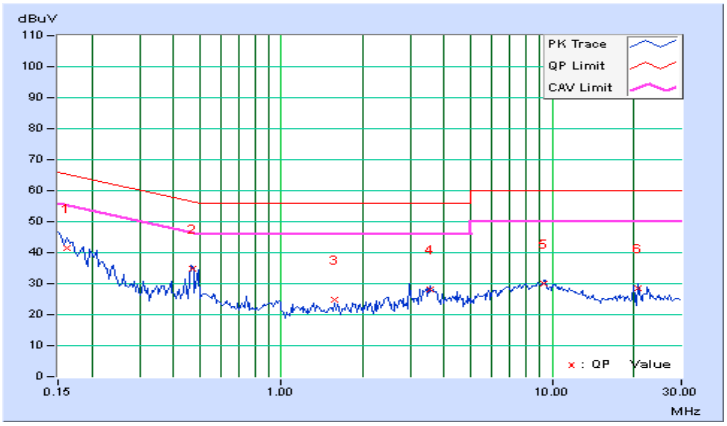


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	10.13	31.28	17.28	41.41	27.41	65.38	55.38	-23.97	-27.97
2	0.47178	10.19	24.59	22.98	34.78	33.17	56.48	46.48	-21.70	-13.31
3	1.58203	10.25	14.38	1.39	24.63	11.64	56.00	46.00	-31.37	-34.36
4	3.54297	10.33	17.84	5.34	28.17	15.67	56.00	46.00	-27.83	-30.33
5	9.33203	10.47	19.66	10.48	30.13	20.95	60.00	50.00	-29.87	-29.05
6	20.72266	10.60	17.85	2.91	28.45	13.51	60.00	50.00	-31.55	-36.49

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.

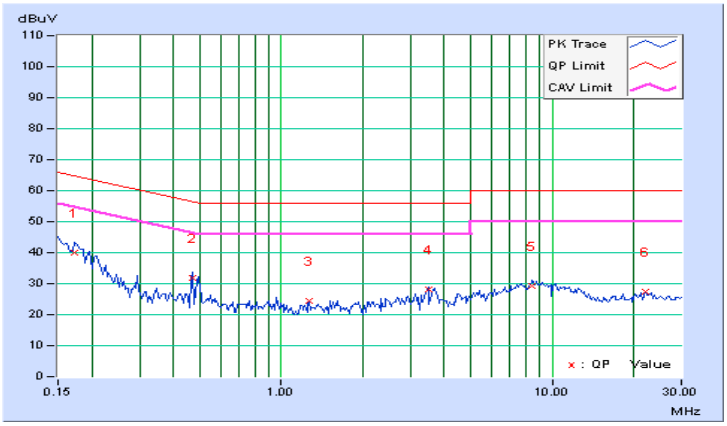


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	10.14	29.81	16.10	39.95	26.24	64.79	54.79	-24.84	-28.55
2	0.46944	10.19	21.59	18.57	31.78	28.76	56.52	46.52	-24.74	-17.76
3	1.26563	10.23	14.25	1.27	24.48	11.50	56.00	46.00	-31.52	-34.50
4	3.49219	10.37	17.82	4.64	28.19	15.01	56.00	46.00	-27.81	-30.99
5	8.41016	10.51	18.92	10.24	29.43	20.75	60.00	50.00	-30.57	-29.25
6	22.06641	10.74	16.54	-2.76	27.28	7.98	60.00	50.00	-32.72	-42.02

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.

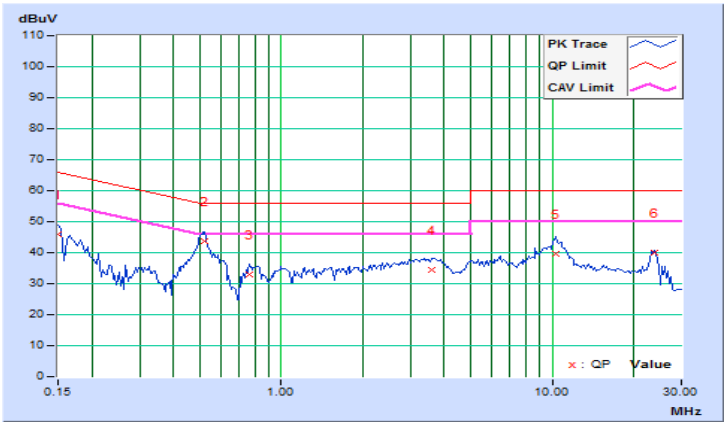


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	36.10	19.98	46.09	29.97	66.00	56.00	-19.91	-26.03
2	0.52109	10.05	33.63	29.60	43.68	39.65	56.00	46.00	-12.32	-6.35
3	0.76719	10.08	22.79	19.66	32.87	29.74	56.00	46.00	-23.13	-16.26
4	3.61328	10.17	24.42	20.01	34.59	30.18	56.00	46.00	-21.41	-15.82
5	10.37500	10.26	29.33	24.65	39.59	34.91	60.00	50.00	-20.41	-15.09
6	23.80469	10.42	29.73	29.68	40.15	40.10	60.00	50.00	-19.85	-9.90

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.

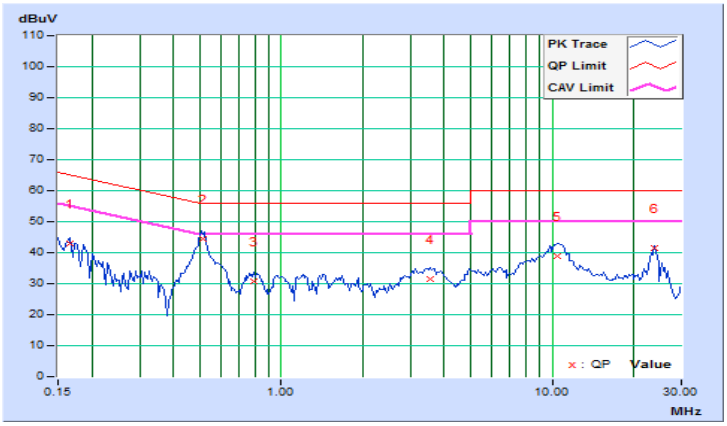


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	10.00	33.01	15.37	43.01	25.37	65.18	55.18	-22.17	-29.81
2	**0.51734**	**10.10**	**34.30**	**30.41**	**44.40**	**40.51**	**56.00**	**46.00**	**-11.60**	**-5.49**
3	0.79063	10.09	20.70	17.49	30.79	27.58	56.00	46.00	-25.21	-18.42
4	3.53516	10.29	21.22	15.78	31.51	26.07	56.00	46.00	-24.49	-19.93
5	10.47656	10.35	28.49	23.74	38.84	34.09	60.00	50.00	-21.16	-15.91
6	23.80469	10.61	30.80	30.72	41.41	41.33	60.00	50.00	-18.59	-8.67

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.

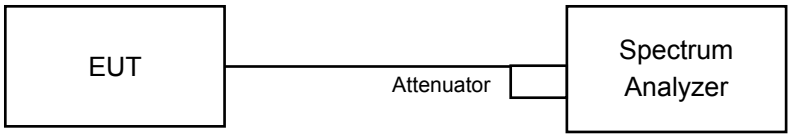


4.3 6dB Bandwidth Measurement

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 from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	9.05	8.58	0.5	Pass
6	2437	9.11	9.11	0.5	Pass
11	2462	9.08	9.02	0.5	Pass

802.11g

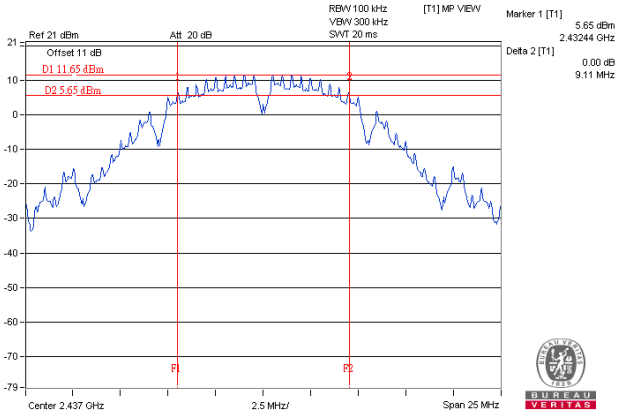
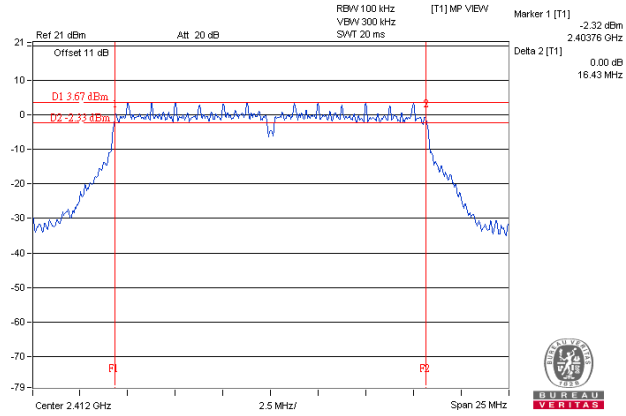
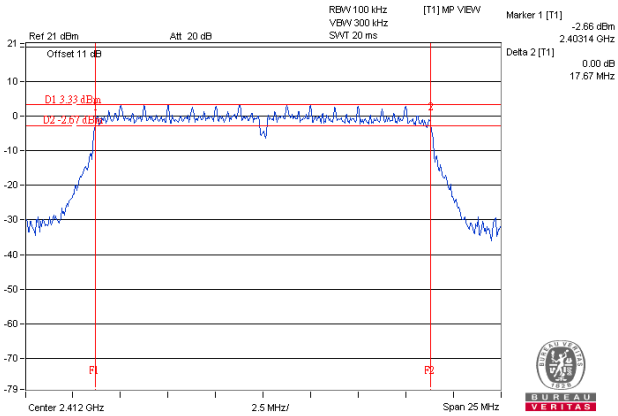
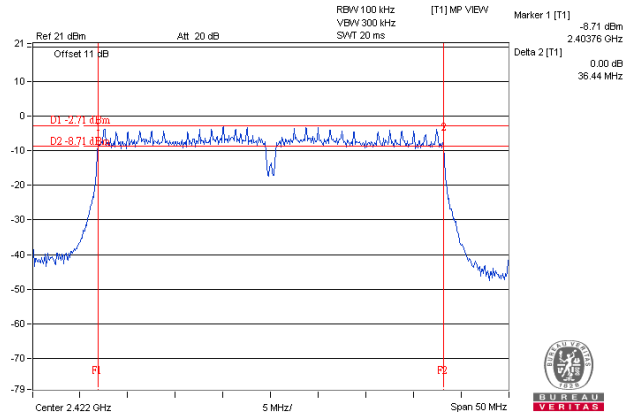
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.41	16.43	0.5	Pass
6	2437	16.38	16.38	0.5	Pass
11	2462	16.39	16.40	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.64	17.67	0.5	Pass
6	2437	17.60	17.65	0.5	Pass
11	2462	17.63	17.64	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.27	36.44	0.5	Pass
6	2437	36.35	36.40	0.5	Pass
9	2452	36.37	36.13	0.5	Pass

Spectrum Plot of Worst Value	
802.11b	802.11g
	
802.11n (HT20)	802.11n (HT40)
	

4.4 Conducted Output Power Measurement

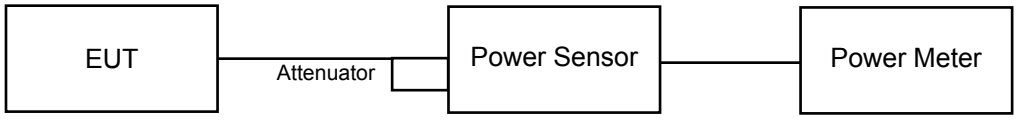
4.4.1 Limits of Conducted Output Power Measurement

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 NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
1	2412	18.43	17.42	124.871	20.96	30.00	Pass
6	2437	19.87	19.04	**177.219**	22.49	30.00	Pass
11	2462	18.53	17.67	129.764	21.13	30.00	Pass

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
1	2412	14.31	13.65	50.151	17.00	30.00	Pass
6	2437	18.93	18.13	143.176	21.56	30.00	Pass
11	2462	14.81	14.04	55.620	17.45	30.00	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
1	2412	14.11	13.34	47.340	16.75	30.00	Pass
6	2437	18.94	18.29	145.796	21.64	30.00	Pass
11	2462	14.48	13.37	49.781	16.97	30.00	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
3	2422	10.33	9.05	18.824	12.75	30.00	Pass
6	2437	14.41	13.75	51.320	17.10	30.00	Pass
9	2452	12.81	11.72	33.958	15.31	30.00	Pass

Beamforming Mode

802.11n (HT20)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
1	2412	11.11	10.34	23.726	13.75	28.04	Pass
6	2437	15.94	15.29	**73.070**	18.64	28.04	Pass
11	2462	11.48	10.37	24.949	13.97	28.04	Pass

Note: Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 30-(7.96-6) = 28.04dBm
External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi

802.11n (HT40)

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass/Fail
		Chain 0	Chain 1				
3	2422	7.33	6.05	9.435	9.75	28.04	Pass
6	2437	11.41	10.75	25.721	14.10	28.04	Pass
9	2452	9.81	8.72	17.019	12.31	28.04	Pass

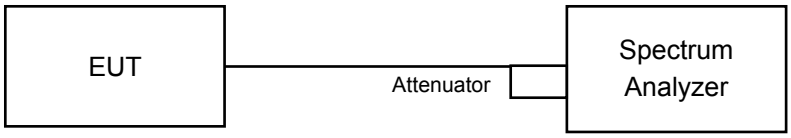
Note: Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 30-(7.96-6) = 28.04dBm
External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi

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

For AVG. power (duty cycle ≥ 98%)
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.

For AVG. power (duty cycle < 98%)
a) Measure the duty cycle (x).
b) Set instrument center frequency to DTS channel center frequency.
c) Set span to at least 1.5 times the OBW.
d) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
e) Set VBW ≥3 x RBW.
f) Detector = power averaging (RMS) or sample detector (when RMS not available).
g) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h) Sweep time = auto couple.
i) Do not use sweep triggering. Allow sweep to “free run”.
j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
k) Use the peak marker function to determine the maximum amplitude level.
l) Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

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)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass/Fail
0	1	2412	-9.64	3.01	-6.63	6.04	Pass
	6	2437	-8.29	3.01	-5.28	6.04	Pass
	11	2462	-9.86	3.01	-6.85	6.04	Pass
1	1	2412	-7.42	3.01	-4.41	6.04	Pass
	6	2437	-6.96	3.01	-3.95	6.04	Pass
	11	2462	-8.80	3.01	-5.79	6.04	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 8-(7.96-6) = 6.04dBm
   External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass/Fail
0	1	2412	-15.30	3.01	-12.29	6.04	Pass
	6	2437	-10.95	3.01	-7.94	6.04	Pass
	11	2462	-15.65	3.01	-12.64	6.04	Pass
1	1	2412	-14.43	3.01	-11.42	6.04	Pass
	6	2437	-9.33	3.01	-6.32	6.04	Pass
	11	2462	-14.13	3.01	-11.12	6.04	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 8-(7.96-6) = 6.04dBm
   External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi

802.11n (HT20)

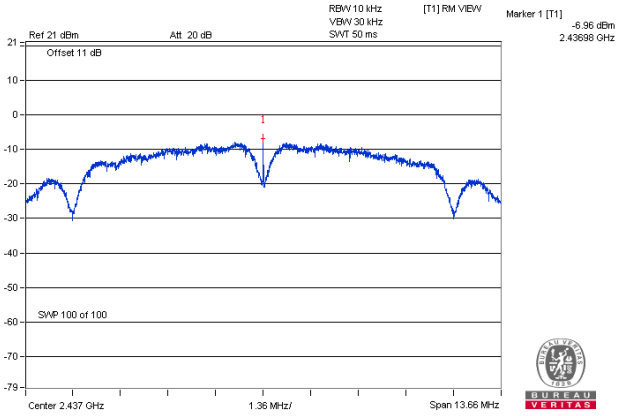
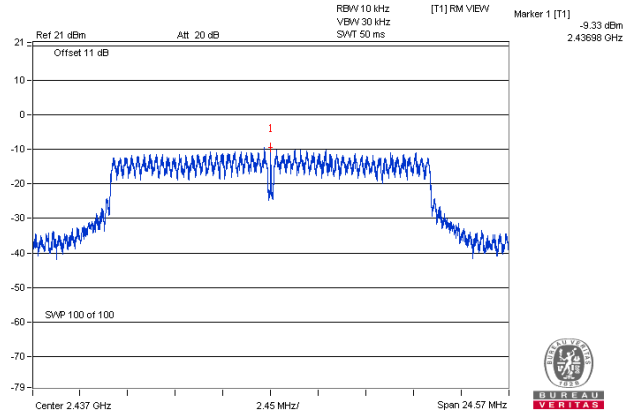
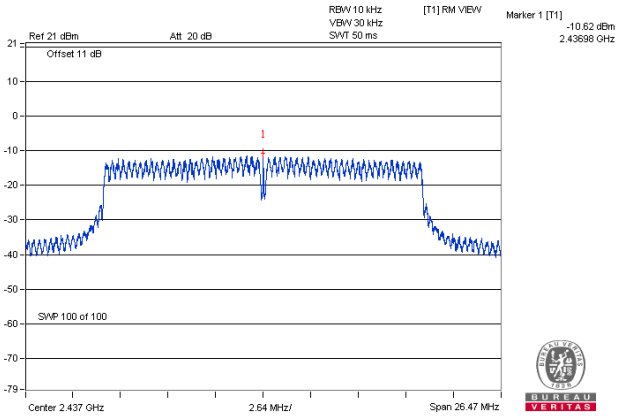
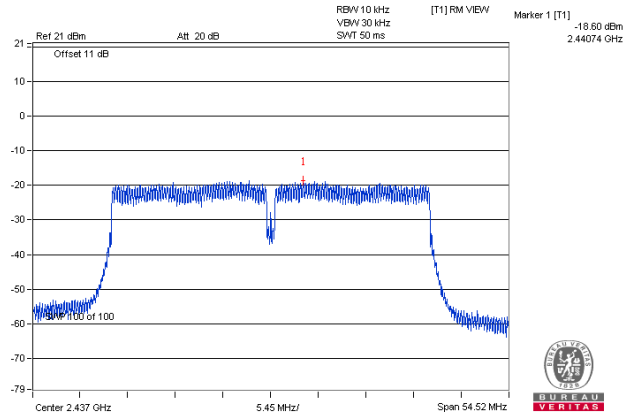
TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass/Fail
0	1	2412	-16.96	3.01	-13.95	6.04	Pass
	6	2437	-12.23	3.01	-9.22	6.04	Pass
	11	2462	-16.76	3.01	-13.75	6.04	Pass
1	1	2412	-14.41	3.01	-11.40	6.04	Pass
	6	2437	-10.62	3.01	-7.61	6.04	Pass
	11	2462	-15.42	3.01	-12.41	6.04	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 8-(7.96-6) = 6.04dBm
   External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Duty Factor	Total PSD with Duty Factor (dBm)	Limit (dBm)	Pass/Fail
0	3	2422	-22.91	3.01	0.20	-19.70	6.04	Pass
	6	2437	-18.60	3.01	0.20	-15.39	6.04	Pass
	9	2452	-20.70	3.01	0.20	-17.49	6.04	Pass
1	3	2422	-21.54	3.01	0.20	-18.33	6.04	Pass
	6	2437	-22.93	3.01	0.20	-19.72	6.04	Pass
	9	2452	-22.63	3.01	0.20	-19.42	6.04	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Internal antenna Directional gain = 4.95dBi + 10log(2) = 7.96dBi (which is the highest value to calculation) > 6dBi, so the limit shall be reduced to 8-(7.96-6) = 6.04dBm
   External antenna Directional gain = 4.58dBi + 10log(2) = 7.59dBi
3. Refer to section 3.3 for duty cycle spectrum plot.

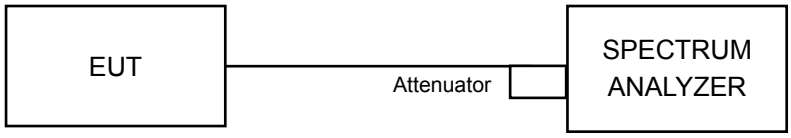
Spectrum Plot of Worst Value	
802.11b	802.11g
	
802.11n (HT20)	802.11n (HT40)
	

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 = average.
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

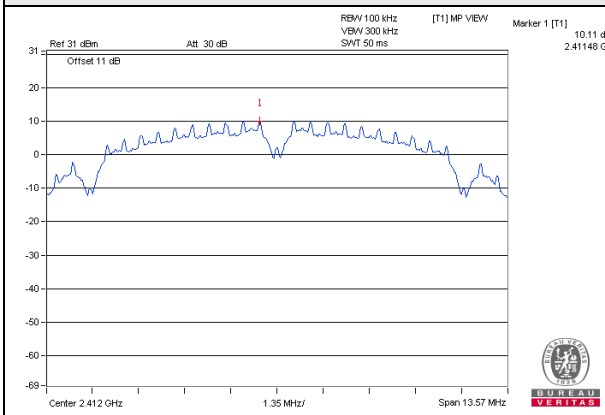
Same as item 4.3.6

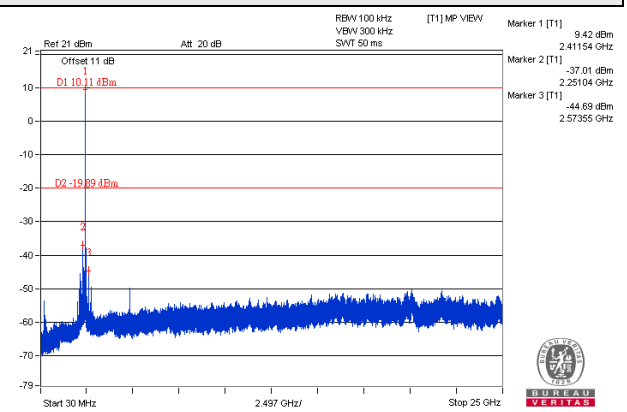
4.6.7 Test Results

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

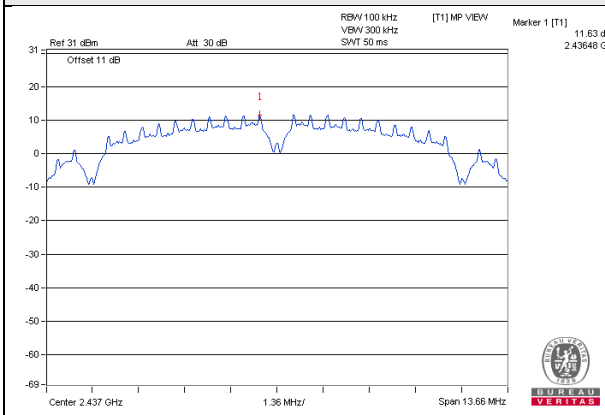
802.11b_Chain 0

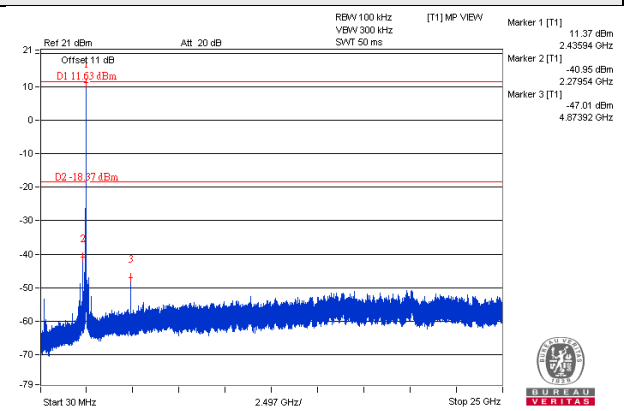
CH 1



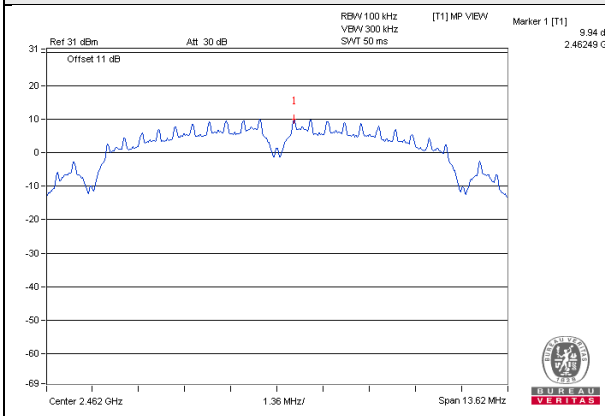


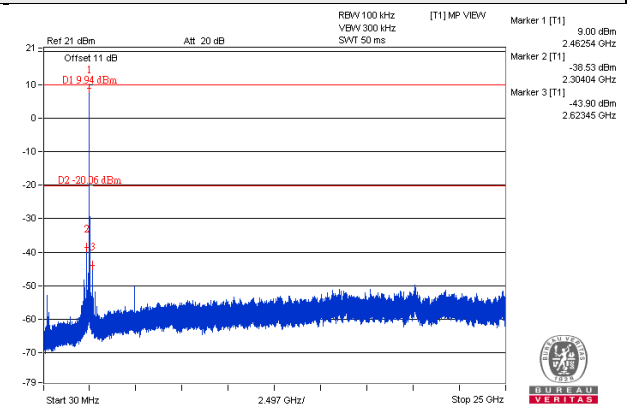
CH 6



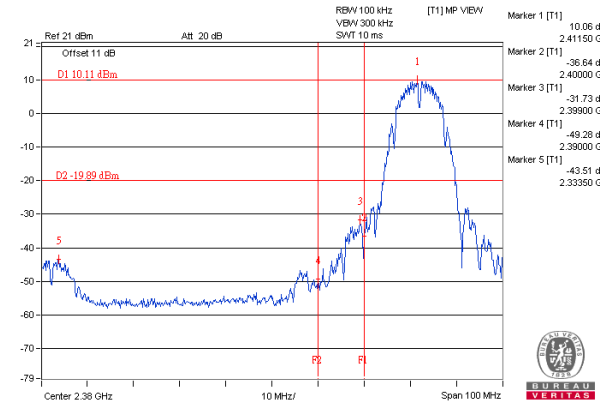


CH 11

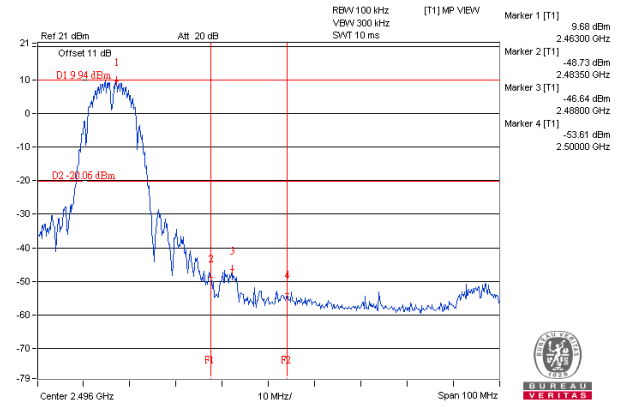




CH 1 Band edge

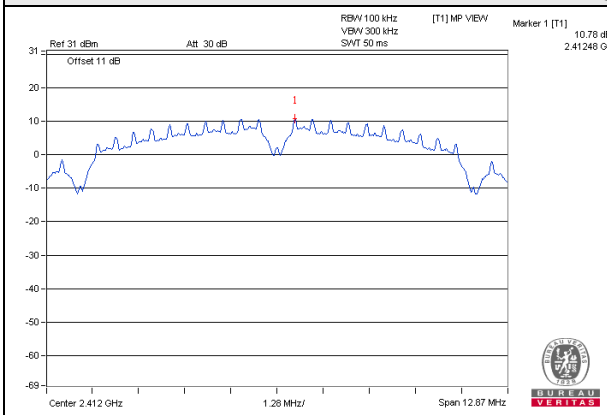


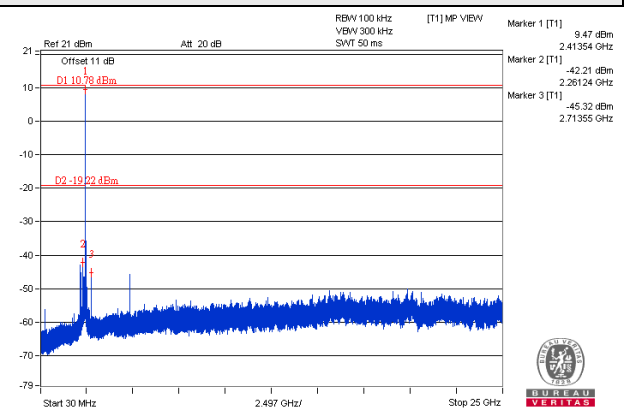
CH 11 Band edge



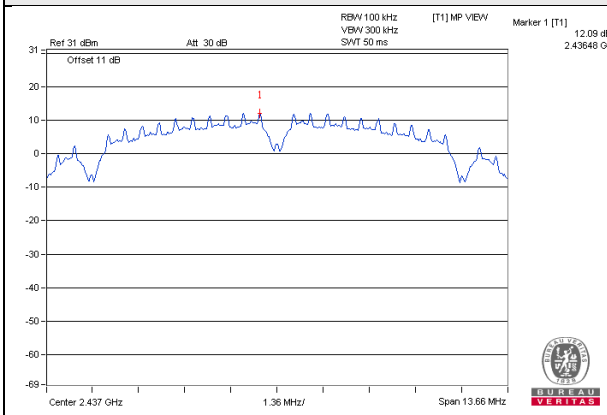
802.11b_Chain 1

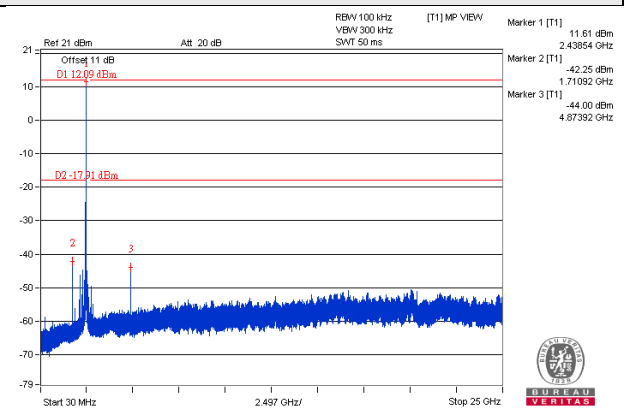
CH 1



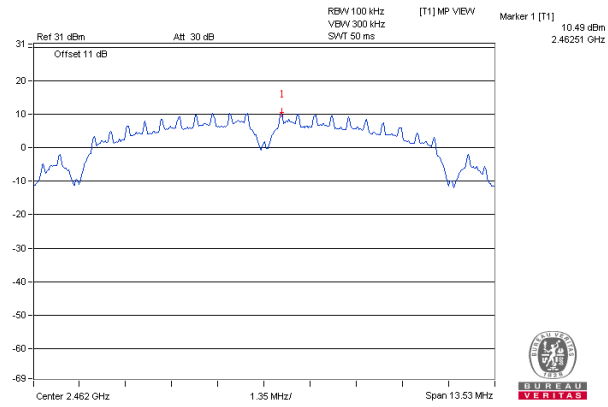


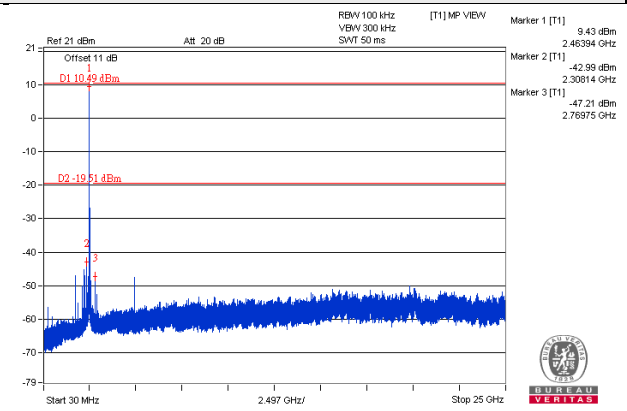
CH 6



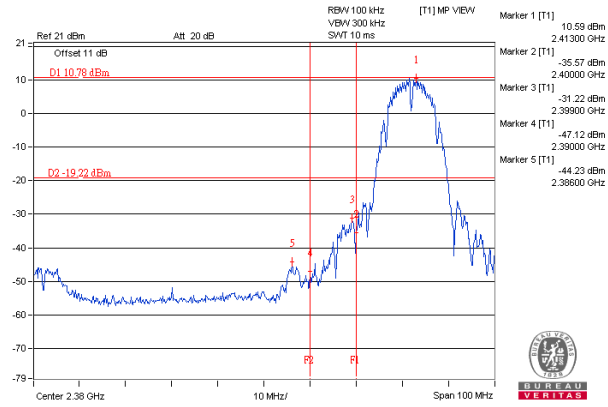


CH 11

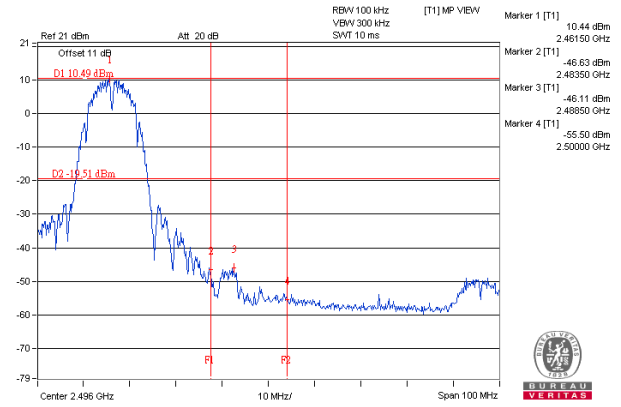




CH 1 Band edge

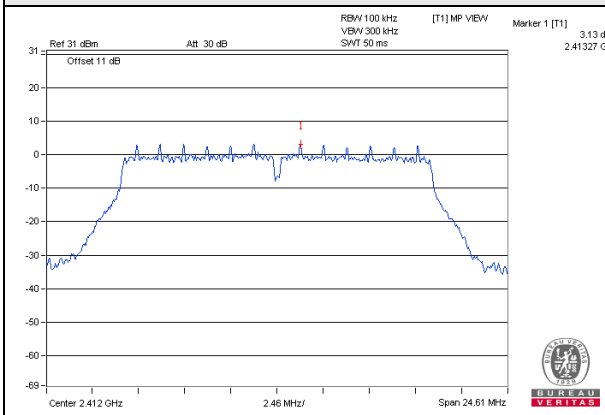


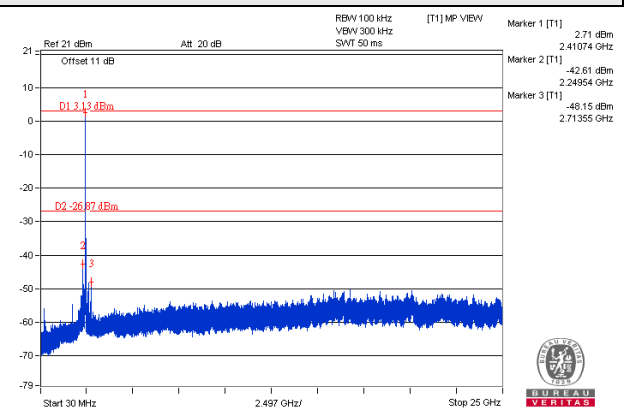
CH 11 Band edge



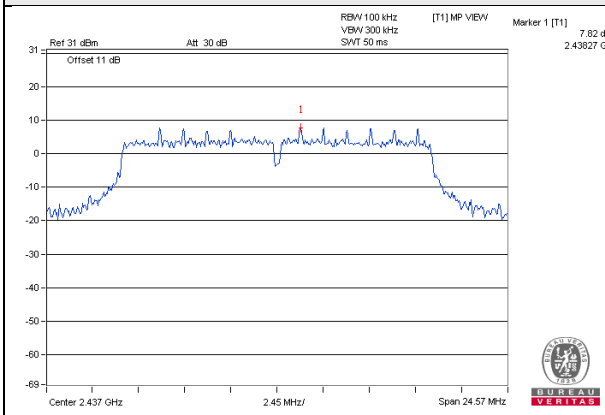
802.11g_Chain 0

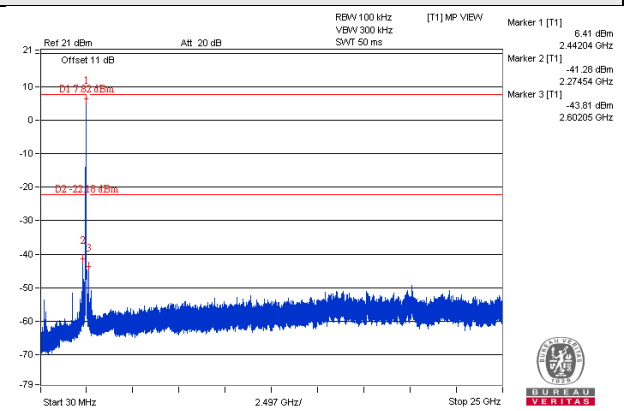
CH 1



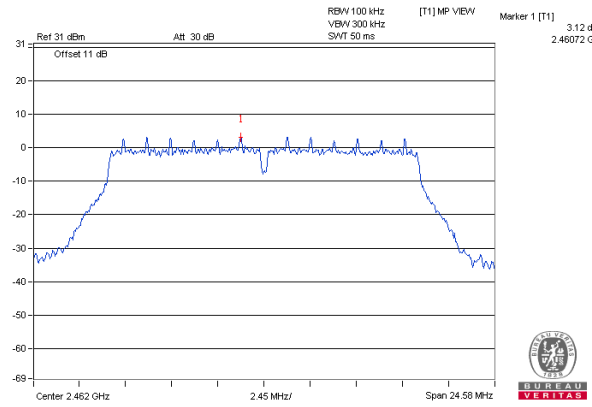


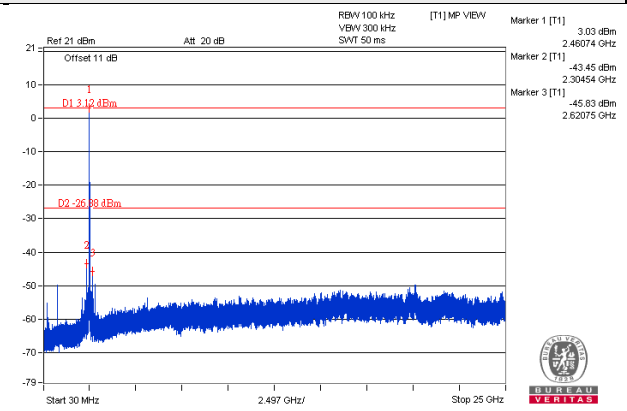
CH 6



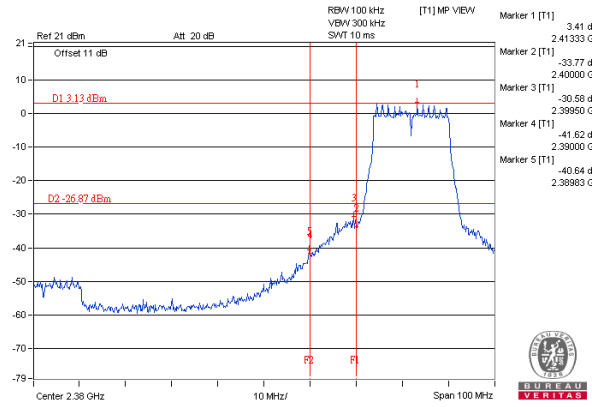


CH 11

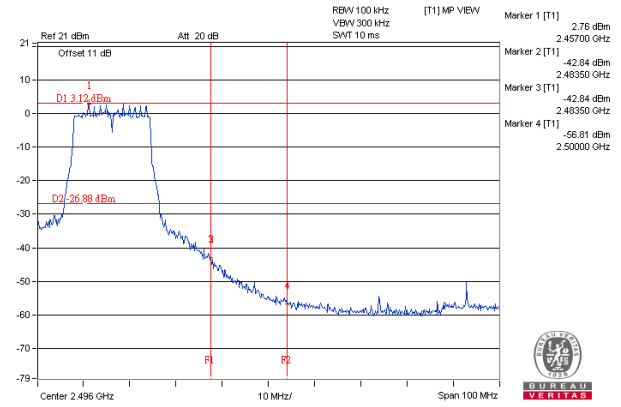




CH 1 Band edge

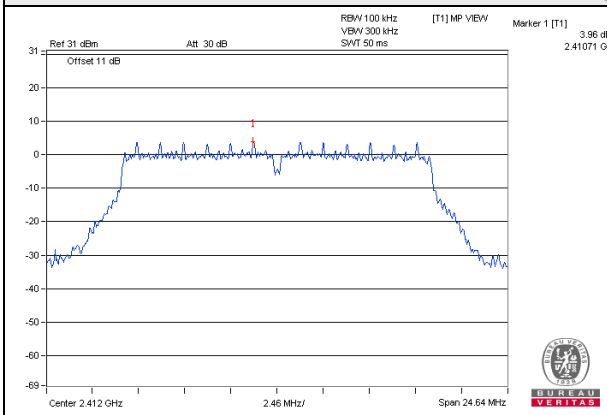


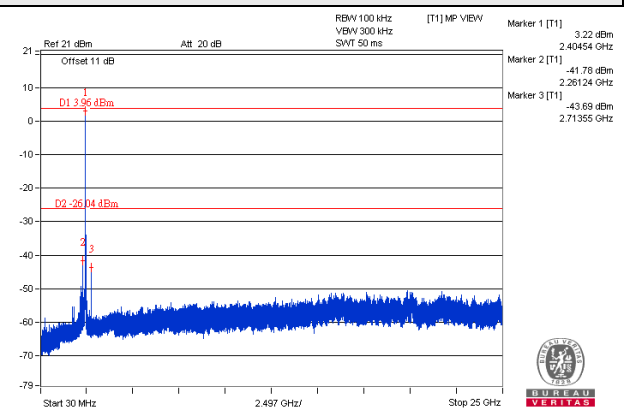
CH 11 Band edge



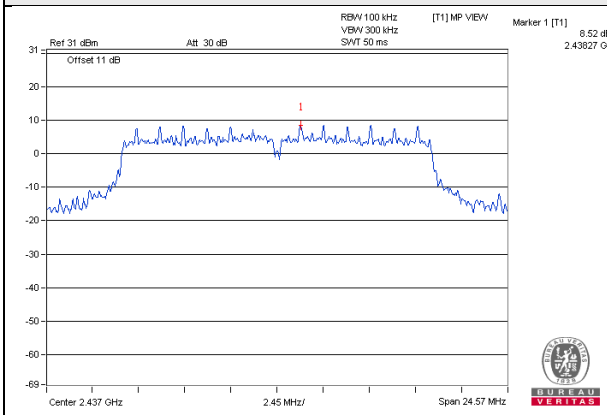
802.11g_Chain 1

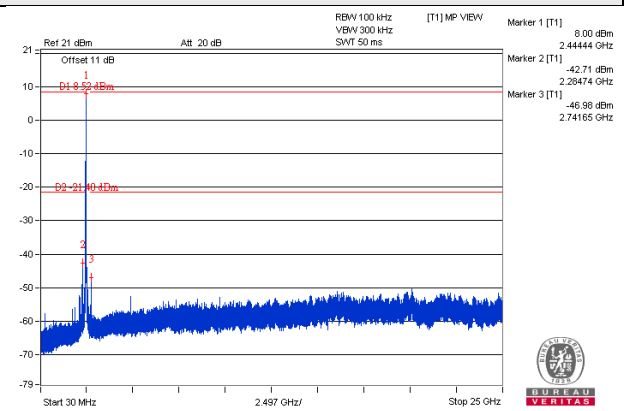
CH 1



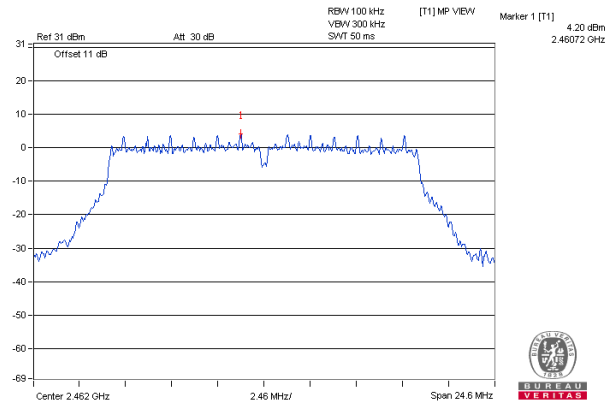


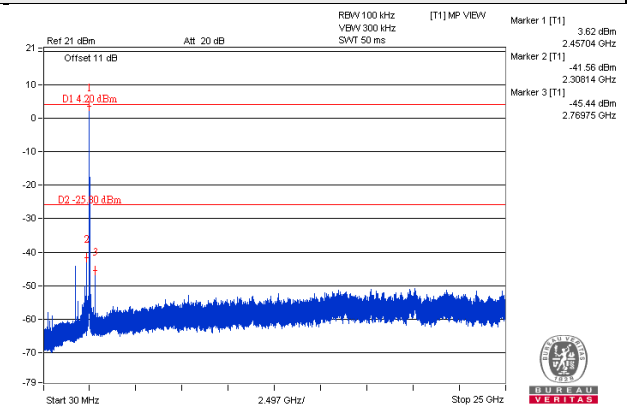
CH 6



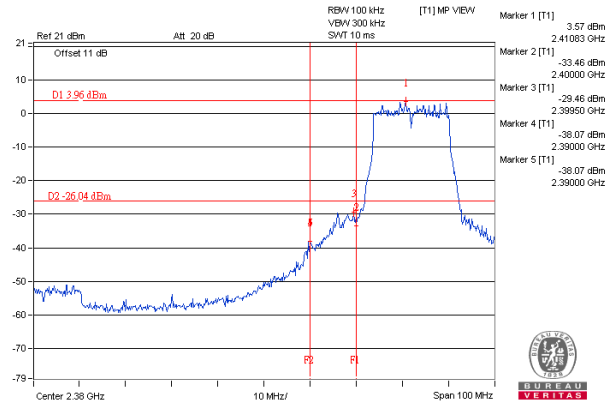


CH 11

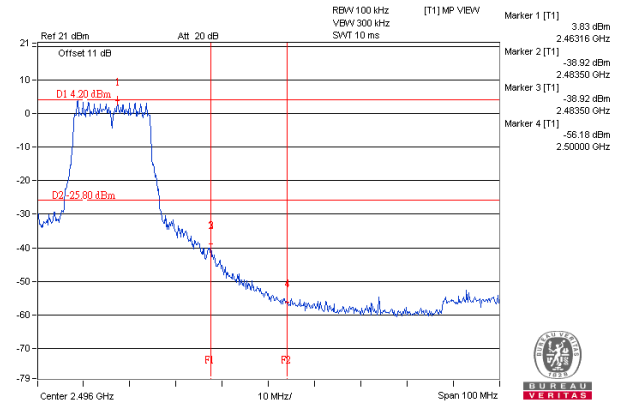




CH 1 Band edge

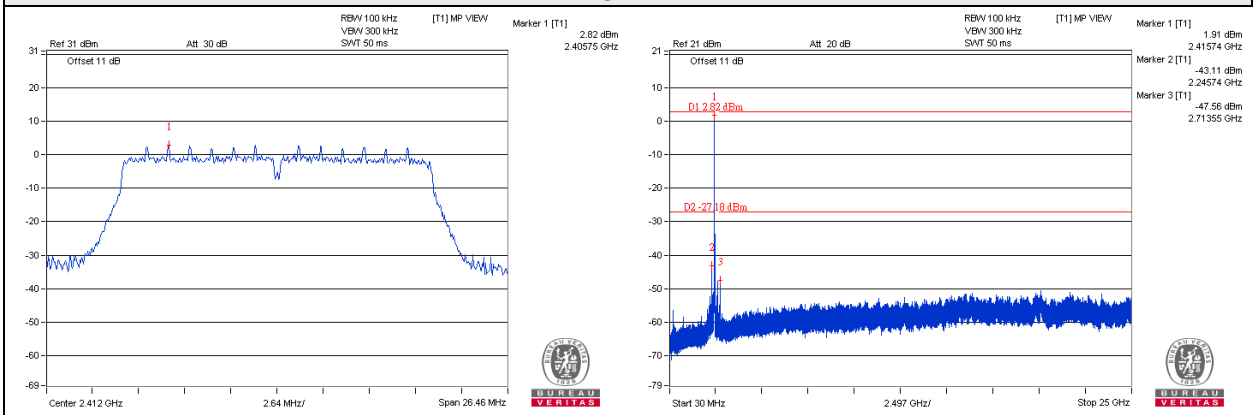


CH 11 Band edge

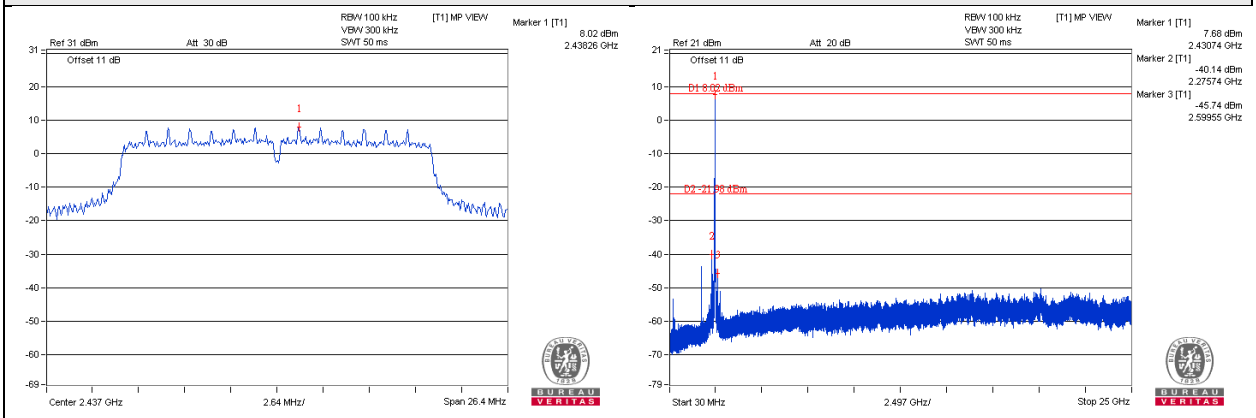


802.11n (HT20)_Chain 0

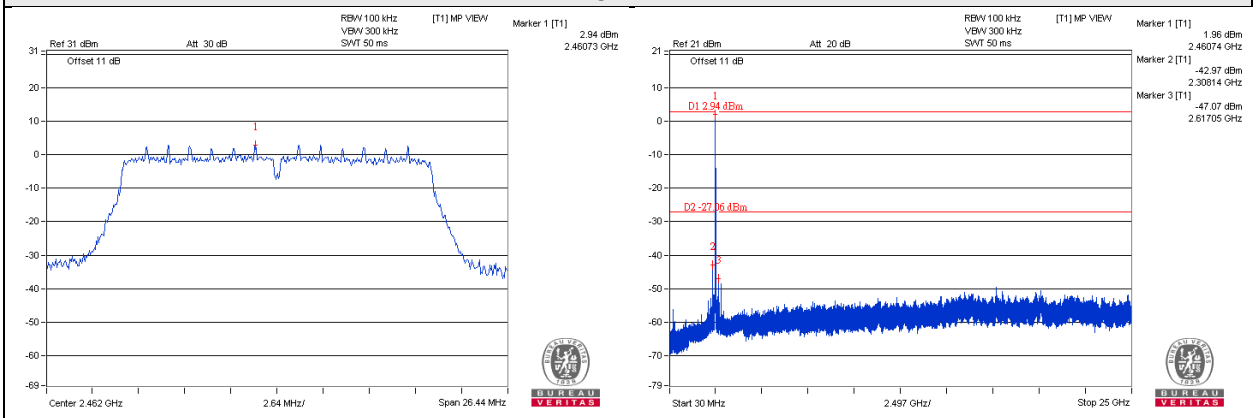
CH 1



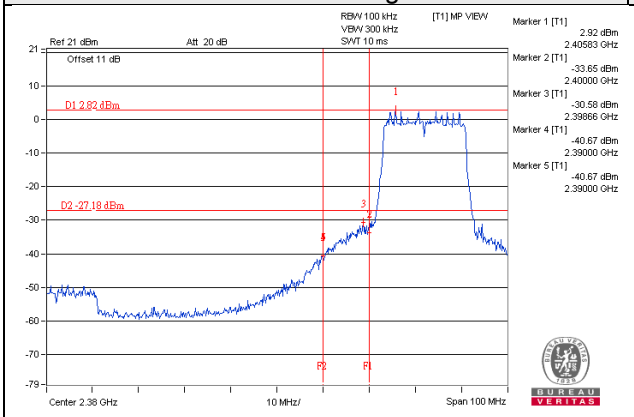
CH 6



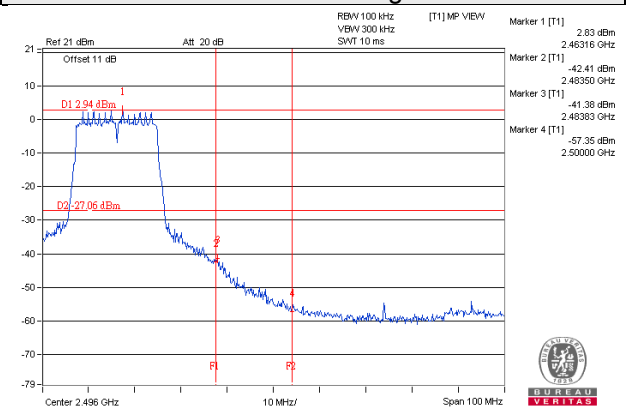
CH 11



CH 1 Band edge

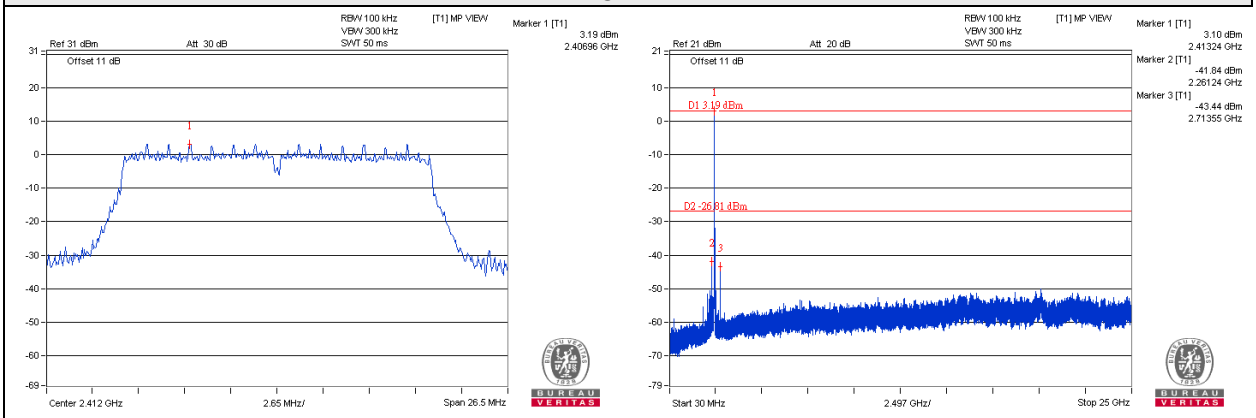


CH 11 Band edge

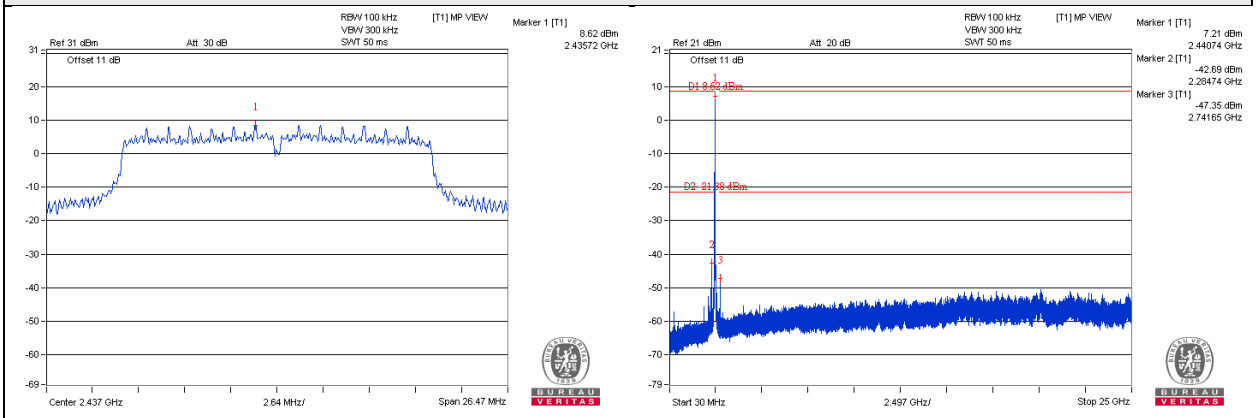


802.11n (HT20)_Chain 1

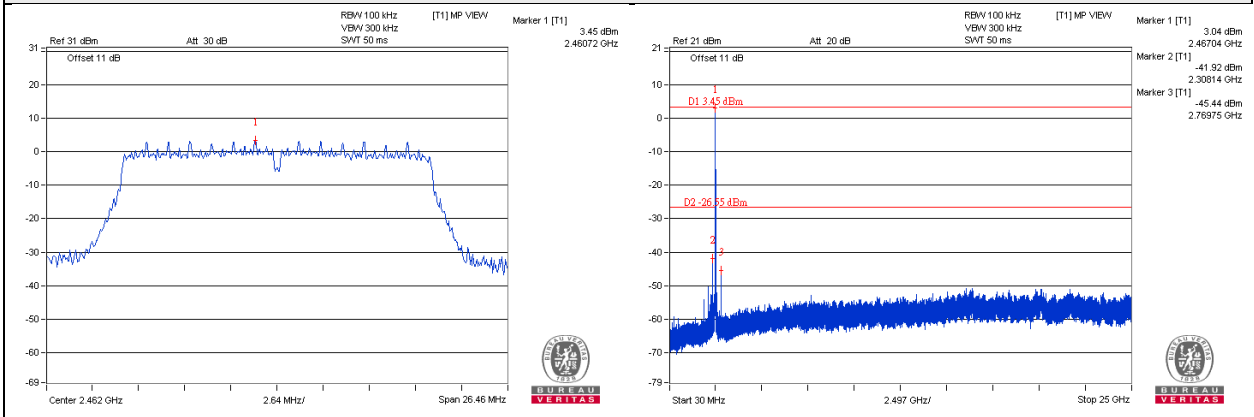
CH 1



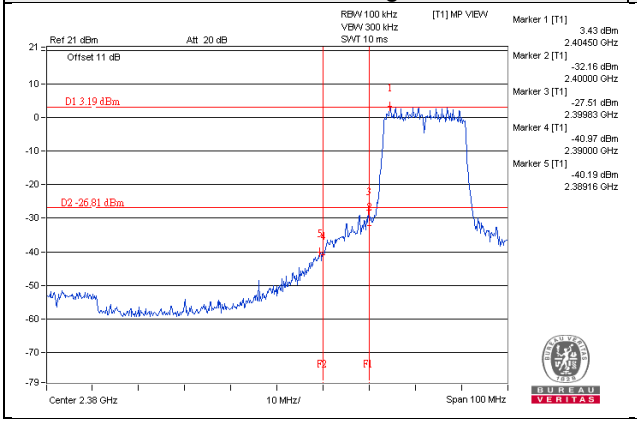
CH 6



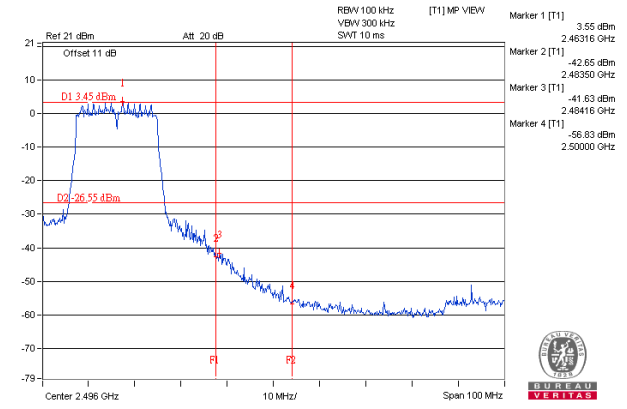
CH 11



CH 1 Band edge

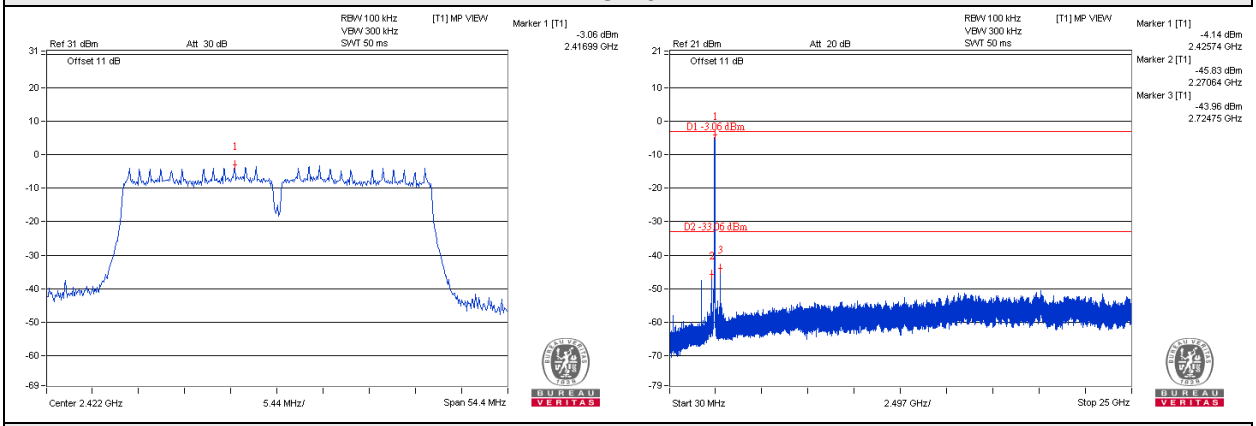


CH 11 Band edge

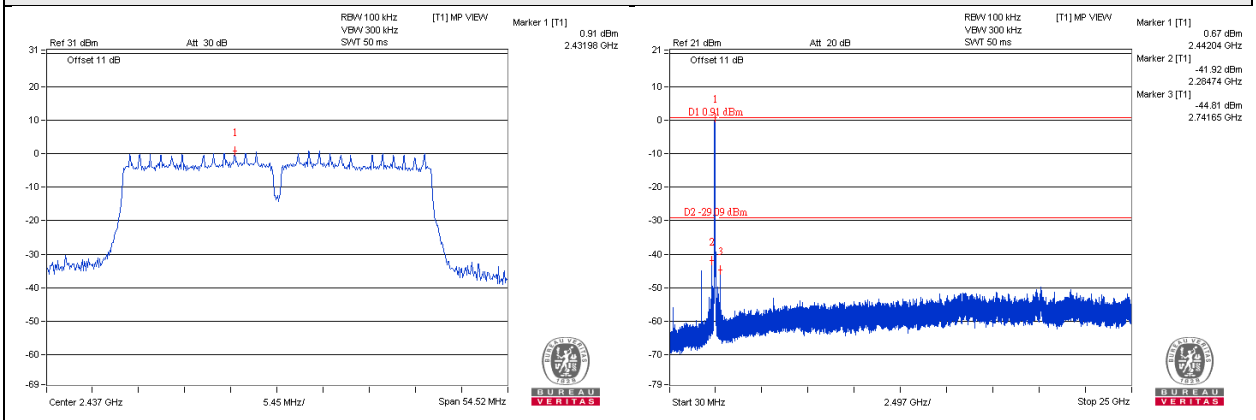


802.11n (HT40)_Chain 0

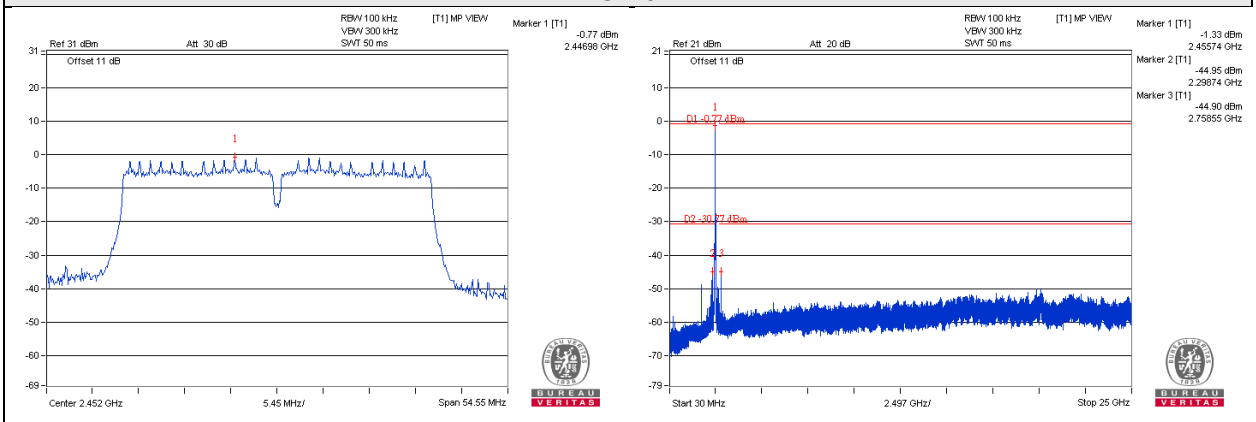
CH 3



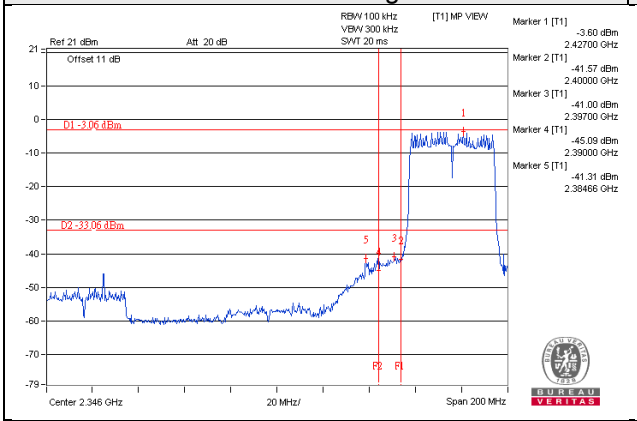
CH 6



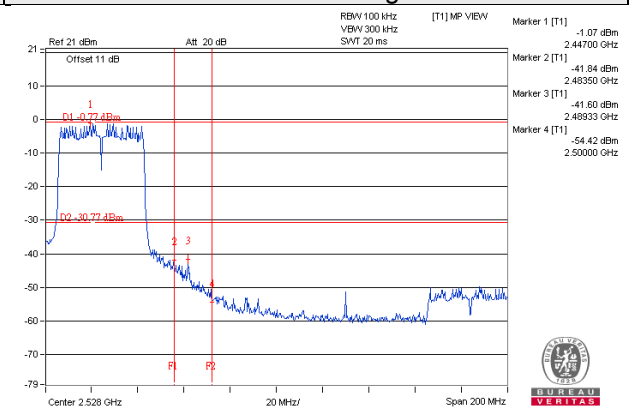
CH 9



CH 3 Band edge

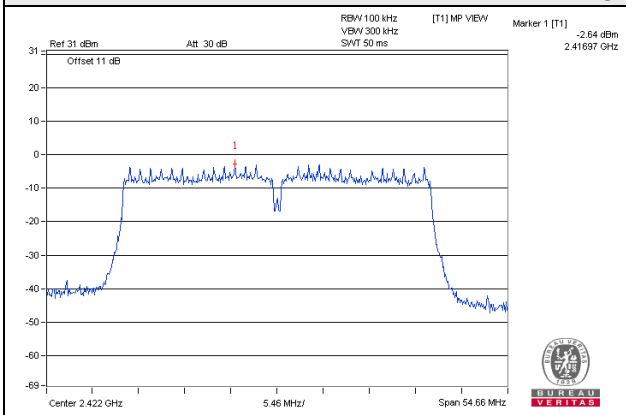


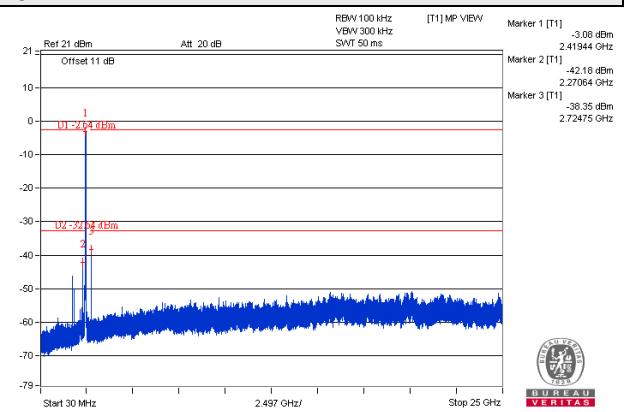
CH 9 Band edge



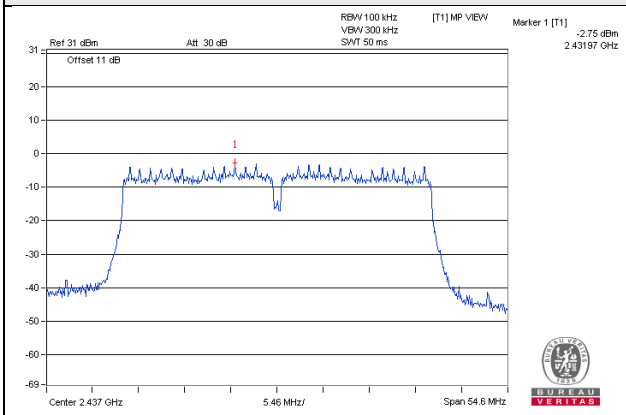
802.11n (HT40)_Chain 1

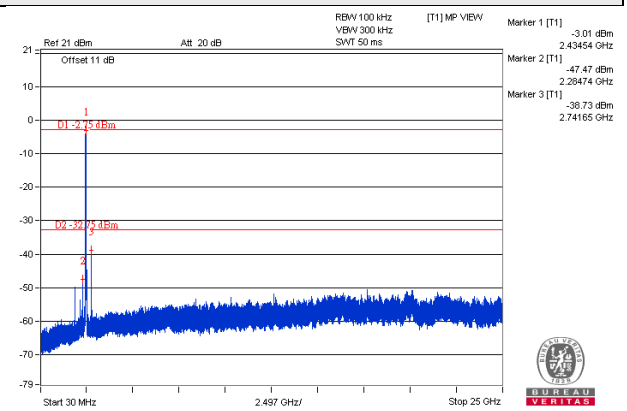
CH 3



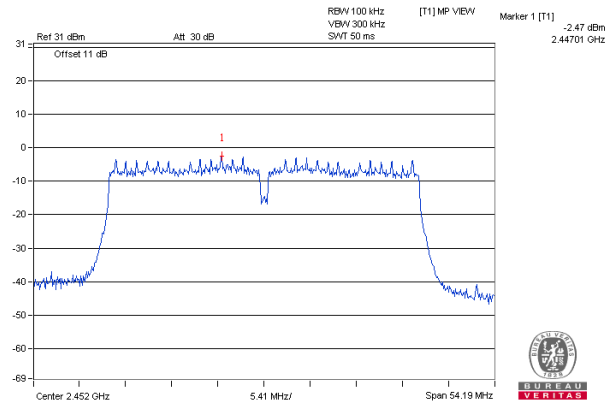


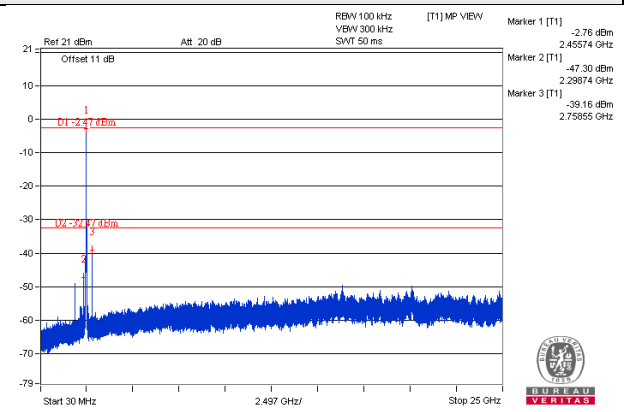
CH 6



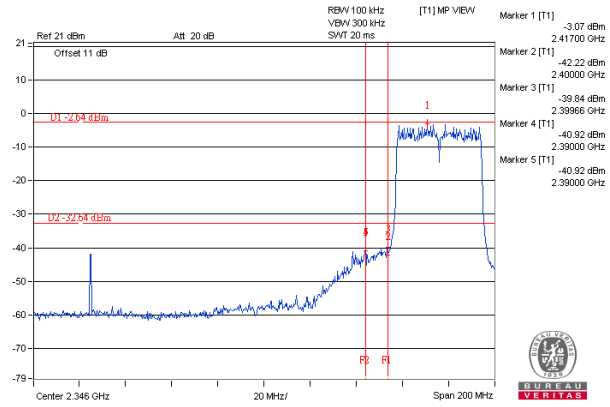


CH 9

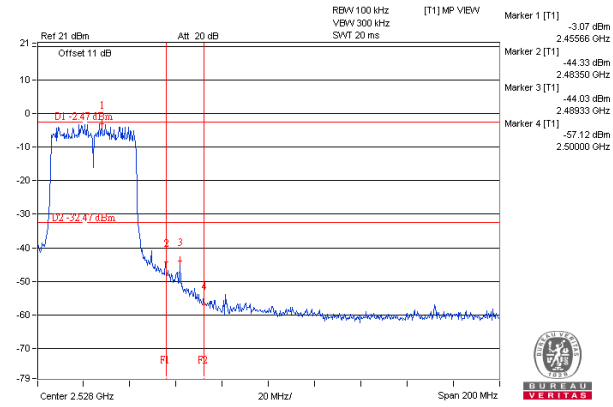




CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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

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

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