FCC Test Report

Report No.:	RF160621C27
FCC ID:	PY316200341
Test Model:	RBR50
Series Model:	RBS50
Received Date:	Jun. 20, 2016
Test Date:	Jul. 04 ~ Aug. 19, 2016
Issued Date:	Aug. 19, 2016
Applicant:	NETGEAR, INC.
Address:	350 East Plumeria Drive San Jose, CA 95134
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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.)

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Release Control Record

Issue No.	Description	Date Issued
RF160621C27	Original release.	Aug. 19, 2016

1 Certificate of Conformity

Product:	Orbi Router (refer to item 3.1 for more details)
Brand:	NETGEAR
Test Model:	RBR50
Series Model:	RBS50
Sample Status:	Engineering sample
Applicant:	NETGEAR, INC.
Test Date:	Jul. 04 ~ Aug. 19, 2016
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Aug. 19, 2016

Polly Chien / Specialist

Approved by : _____ , **Date:** Aug. 19, 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 -14.85dB at 0.15391MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2390.00MHz, 2483.50MHz & 4874.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is I-PEX 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	3.59 dB
	200MHz ~1000MHz	3.60 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	Orbi Router (Refer to note for more details)
Brand	NETGEAR
Test Model	RBR50
Series Model	RBS50
Model Difference	Refer to note for more details
Sample Status	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 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 400Mbps
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: 907.156mW Beamforming NSS1 Mode: 891.322mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter
Cable Supplied	1.95m RJ45 non-shielded cable w/o core

Note:

1. All models are electrically identical except software firmware. Model: RBR50 is the representative for final test.

Brand	Model	Product Name	RF Module Brand / Model	Difference
NETGEAR	RBR50	Orbi Router	Dakota / IPQ-4019	software firmware: RBR50_V1.1.0.16 Master mode only
			Cascade / QCA9984	
	RBS50	Orbi Satellite	Dakota / IPQ-4019	software firmware: RBS50_V1.1.0.16 Master mode and Client mode for U-NII-3 band
			Cascade / QCA9984	
Note: RF Module Dakota / IPQ-4019 support WLAN 2.4GHz band & U-NII-1 band functionally. Cascade / QCA9984 support WLAN U-NII-3 band functionally.				

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

Band	Modulation Mode	Beamforming Mode	TX Function
2.4GHz	802.11b	Not Support	2TX
	802.11g	Not Support	2TX
	802.11n (HT20)	Support (CDD / NSS1)	2TX
	802.11n (HT40)	Support (CDD / NSS1)	2TX

* For 802.11n, CDD mode is the worst case for final radiated emission and power line conducted emission tests after pretesting CDD mode and beamforming mode.

3. The cascade module card has type C, type D and different gaskets on the following modes. Mode C was the worst case for final test.

Mode	Description
A	Type C on chain 1, 2, 3, and 4. Triangular gaskets on chain 1, 2, 3, and 4.
B	Type C on chain 1, 2, 3, and 4. Triangular gaskets on chain 1, 2, and 3. No gasket on chain 4.
C	Type C on chain 1, 2, 3, and 4. Rectangular gaskets on chain 1, 2, 3, and 4.
D	Type C on chain 1, 2, 3, and 4. Rectangular gaskets on chain 1, 2, and 3. No gasket on chain 4.
E	Type C on chain 1, 2, and 3. Type D on chain 4. Triangular gaskets on chain 1, 2, and 3. No gasket on chain 4.

4. The following antennas were provided to the EUT.

Ant. Type	Dipole
Connecter Type	I-PEX

Antenna Gain(dBi)			
Item	2.4G	5G Band 1	5G Band 4
Ant. 0			3.54
Ant. 1			3.79
Ant. 2			3.76
Ant. 3			3.79
Ant. 4	2.42	3.41	
Ant. 5	2.68	3.72	

Composite Antenna Gain(dBi)				
Item	2.4G	5G Band 1	5G Band 4	
	CDD / Beamforming NSS1	CDD / Beamforming NSS1	CDD / Beamforming NSS1	Beamforming NSS2
Ant. 0			8.068	5.058
Ant. 1				
Ant. 2				
Ant. 3				
Ant. 4	3.448	5.812		
Ant. 5				

5. The EUT uses following adapters.

Adapter 1	
Brand	NETGEAR
Model	AD2080F20
PN	332-10883-01
Input Power	100-240Vdc, 50/60Hz 1.0A
Output Power	12Vdc, 3.5A
Power Line	1.8m power cable without core attached on adapter

Adapter 2	
Brand	NETGEAR
Model	2ABN042F NA
PN	332-10888-01
Input Power	100-240Vdc, 50/60Hz 1.3A
Output Power	12Vdc, 3.5A
Power Line	1.85m power cable without core attached on adapter

6. Spurious emission of the simultaneous operation (2.4GHz and 5GHz) 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	√	-	√	√	EUT power from adapter 1
B	-	√	√	-	EUT power from adapter 2

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

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

Note:

1. The EUT was positioned on the Z-plane during testing.
2. "-"means no effect.

Radiated Emission Test (Above 1GHz):

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

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Date Rate (Mbps)
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

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)
B	802.11g	1 to 11	6	OFDM	BPSK	6.0

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	802.11g	1 to 11	6	OFDM	BPSK	6.0

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)
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

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65% RH	120Vac, 60Hz	Chris Lin
	28 deg. C, 69% RH	120Vac, 60Hz	Alan Wu
RE<1G	25 deg. C, 69% RH	120Vac, 60Hz	Matthew Yang
PLC	25 deg. C, 75% RH	120Vac, 60Hz	Chris Lin, Matthew Yang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Leo Tsai

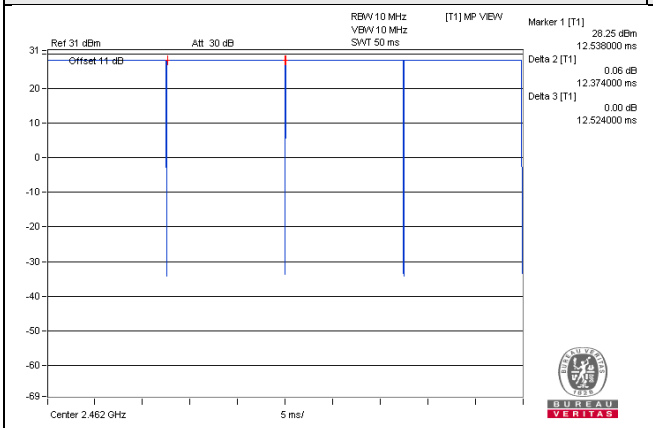
3.3 Duty Cycle of Test Signal

CDD Mode

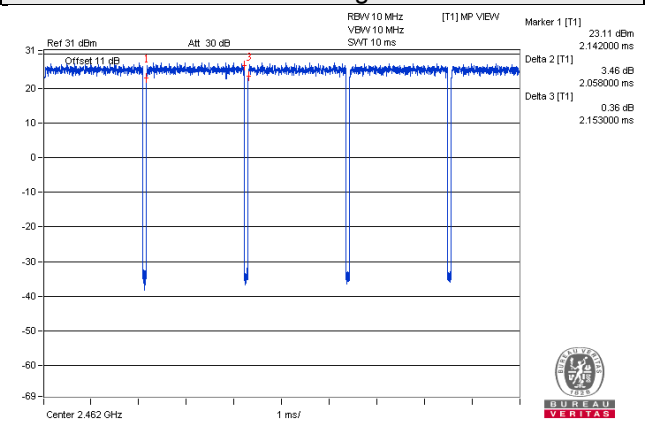
Duty cycle of test signal is ≥ 98%, duty factor is not required.
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.374/12.524 = 0.988
802.11g: Duty cycle = 2.058/2.153 =0.956, Duty factor = 10 * log(1/0.956) = 0.20
802.11n (HT20): Duty cycle = 4.995/5.098 =0.980
802.11n (HT40): Duty cycle = 2.423/2.513 =0.964, Duty factor = 10 * log(1/0.964) = 0.16

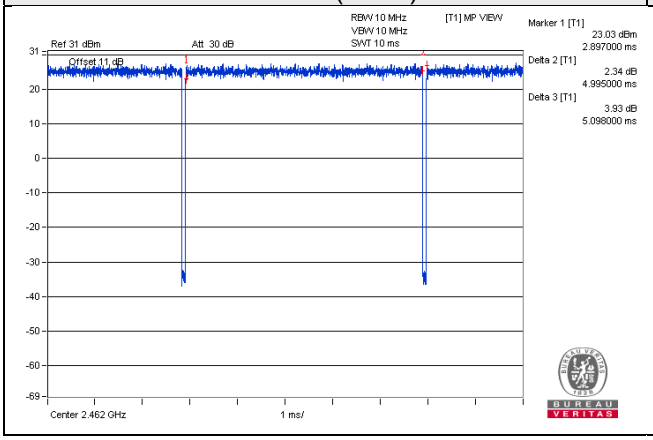
802.11b



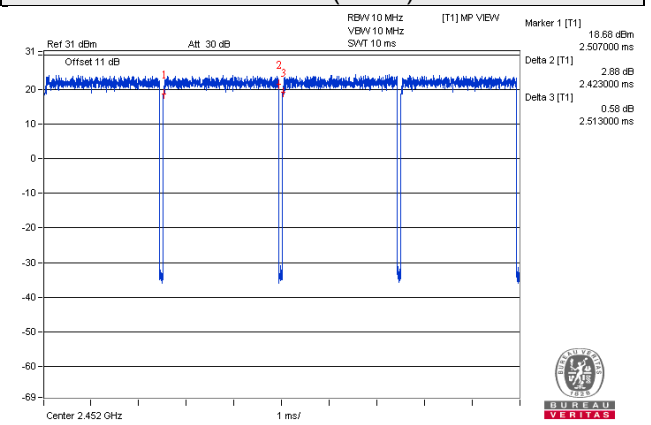
802.11g



802.11n (HT20)



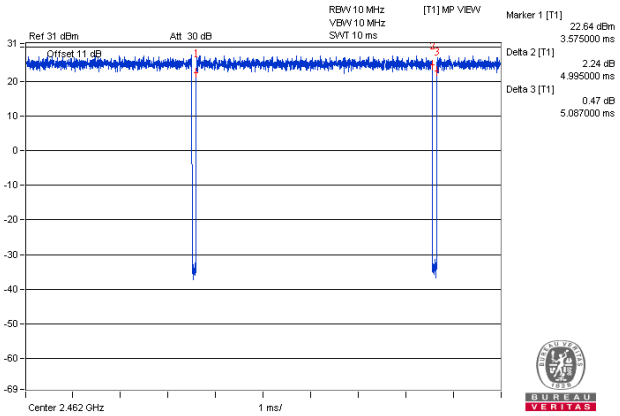
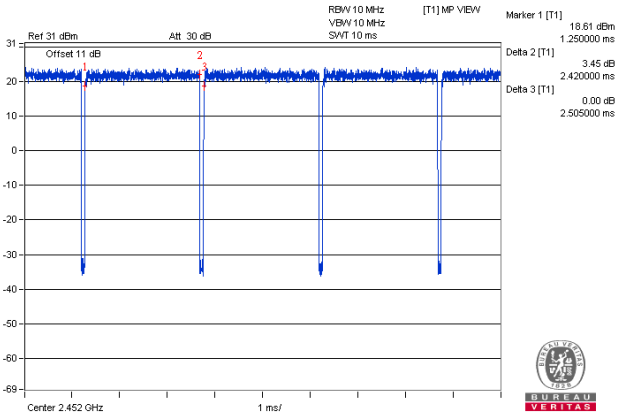
802.11n (HT40)



Beamforming NSS1 Mode

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

802.11n (HT20): Duty cycle = 4.995/5.087 =0.982
802.11n (HT40): Duty cycle = 2.420/2.505 =0.966, Duty factor = 10 * log(1/0.966) = 0.15

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.

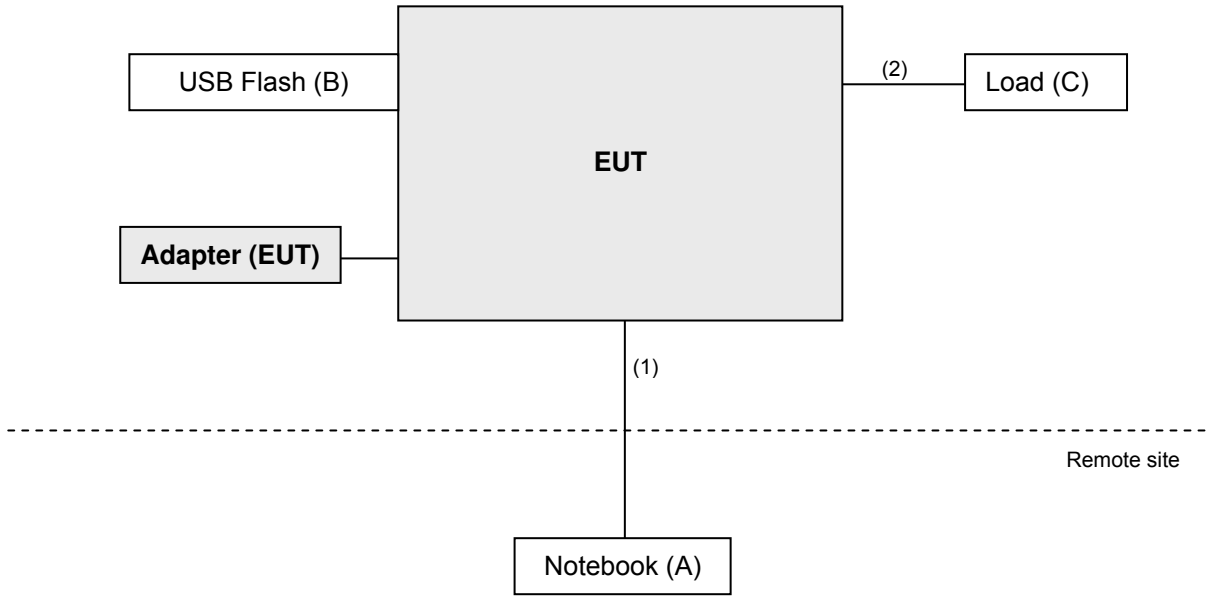
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	USB 3.0 Flash	HP	v250W	01	FCC DoC Approved	-
C.	Load	N/A	N/A	N/A	N/A	-

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	3	1.8	N	0	-
2.	RJ45	1	10	N	0	-

3.4.1 Configuration of System under Test



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 v03r05
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

Tested date: Jul. 04 ~ Jul. 15, 2016

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 12, 2015	Oct. 11, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Sep. 02, 2015	Sep. 01, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Jan. 08, 2016	Jan. 07, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2015	Aug. 08, 2016
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-02(295012+ 309220)	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	Aug. 09, 2015	Aug. 08, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021703	NA	NA
High Speed Peak Power Meter	ML2495A	1232003	Oct. 07, 2015	Oct. 06, 2016
Power Sensor	MA2411B	1207333	Oct. 07, 2015	Oct. 06, 2016

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 4.
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 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 Test Procedures

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

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

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

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

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

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

Note:

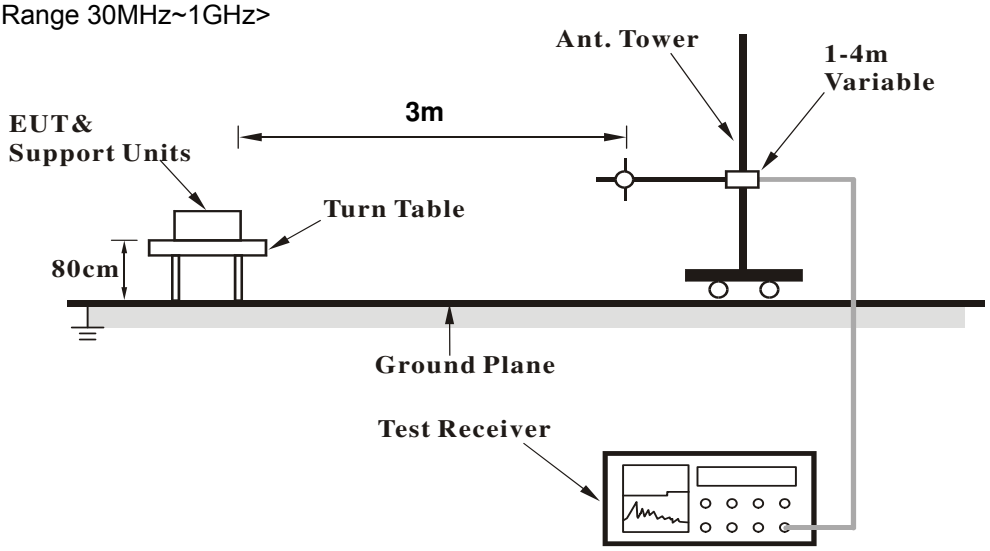
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

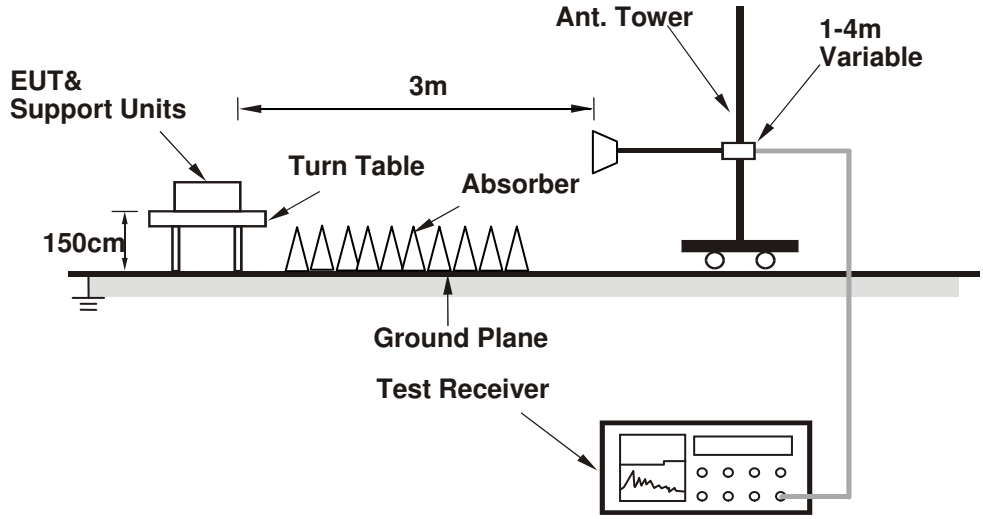
No deviation.

4.1.5 Test Set Up

<Frequency Range 30MHz~1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

a. 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：

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	56.6 PK	74.0	-17.4	1.58 H	125	24.70	31.90
2	2390.00	47.3 AV	54.0	-6.7	1.58 H	125	15.40	31.90
3	*2412.00	107.2 PK			1.58 H	125	75.10	32.10
4	*2412.00	103.2 AV			1.58 H	125	71.10	32.10
5	4824.00	57.6 PK	74.0	-16.4	1.62 H	312	51.20	6.40
6	4824.00	53.4 AV	54.0	-0.6	1.62 H	312	47.00	6.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.2 PK	74.0	-14.8	1.45 V	285	27.30	31.90
2	2390.00	52.9 AV	54.0	-1.1	1.45 V	285	21.00	31.90
3	*2412.00	116.1 PK			1.45 V	285	84.00	32.10
4	*2412.00	112.2 AV			1.45 V	285	80.10	32.10
5	4824.00	57.7 PK	74.0	-16.3	1.06 V	180	51.30	6.40
6	4824.00	53.7 AV	54.0	-0.3	1.06 V	180	47.30	6.40

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	106.1 PK			1.05 H	132	73.90	32.20
2	*2437.00	102.3 AV			1.05 H	132	70.10	32.20
3	4874.00	57.2 PK	74.0	-16.8	1.64 H	316	50.60	6.60
4	4874.00	53.5 AV	54.0	-0.5	1.64 H	316	46.90	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	115.9 PK			1.03 V	120	83.70	32.20
2	*2437.00	112.7 AV			1.03 V	120	80.50	32.20
3	4874.00	57.6 PK	74.0	-16.4	1.06 V	182	51.00	6.60
4	**4874.00**	**53.9 AV**	**54.0**	**-0.1**	**1.06 V**	**182**	**47.30**	**6.60**

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.1 PK			1.03 H	298	74.80	32.30
2	*2462.00	103.2 AV			1.03 H	298	70.90	32.30
3	2483.50	56.7 PK	74.0	-17.3	1.03 H	298	24.30	32.40
4	2483.50	47.6 AV	54.0	-6.4	1.03 H	298	15.20	32.40
5	4924.00	56.9 PK	74.0	-17.1	1.62 H	314	50.30	6.60
6	4924.00	53.5 AV	54.0	-0.5	1.62 H	314	46.90	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	116.3 PK			1.08 V	19	84.00	32.30
2	*2462.00	113.0 AV			1.08 V	19	80.70	32.30
3	2483.50	62.2 PK	74.0	-11.8	1.08 V	19	29.80	32.40
4	2483.50	53.5 AV	54.0	-0.5	1.08 V	19	21.10	32.40
5	4924.00	57.1 PK	74.0	-16.9	2.43 V	230	50.50	6.60
6	4924.00	53.7 AV	54.0	-0.3	2.43 V	230	47.10	6.60

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.4 PK	74.0	-8.6	1.04 H	300	33.50	31.90
2	2390.00	51.1 AV	54.0	-2.9	1.04 H	300	19.20	31.90
3	*2412.00	104.1 PK			1.04 H	300	72.00	32.10
4	*2412.00	94.2 AV			1.04 H	300	62.10	32.10
5	4824.00	47.2 PK	74.0	-26.8	1.05 H	15	40.80	6.40
6	4824.00	36.6 AV	54.0	-17.4	1.05 H	15	30.20	6.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.1 PK	74.0	-2.9	1.15 V	149	39.20	31.90
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.15 V**	**149**	**22.00**	**31.90**
3	*2412.00	113.9 PK			1.15 V	149	81.80	32.10
4	*2412.00	103.6 AV			1.15 V	149	71.50	32.10
5	4824.00	47.4 PK	74.0	-26.6	1.08 V	19	41.00	6.40
6	4824.00	36.8 AV	54.0	-17.2	1.08 V	19	30.40	6.40

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	109.2 PK			1.18 H	296	77.00	32.20
2	*2437.00	98.9 AV			1.18 H	296	66.70	32.20
3	4874.00	57.2 PK	74.0	-16.8	1.04 H	18	50.60	6.60
4	4874.00	42.7 AV	54.0	-11.3	1.04 H	18	36.10	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	117.6 PK			1.25 V	343	85.40	32.20
2	*2437.00	107.1 AV			1.25 V	343	74.90	32.20
3	4874.00	57.5 PK	74.0	-16.5	1.26 V	170	50.90	6.60
4	4874.00	43.4 AV	54.0	-10.6	1.26 V	170	36.80	6.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.8 PK			1.04 H	296	71.50	32.30
2	*2462.00	93.7 AV			1.04 H	296	61.40	32.30
3	2483.50	62.0 PK	74.0	-12.0	1.04 H	296	29.60	32.40
4	2483.50	47.0 AV	54.0	-7.0	1.04 H	296	14.60	32.40
5	4924.00	50.1 PK	74.0	-23.9	1.03 H	13	43.50	6.60
6	4924.00	37.0 AV	54.0	-17.0	1.03 H	13	30.40	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.6 PK			1.02 V	337	81.30	32.30
2	*2462.00	104.1 AV			1.02 V	337	71.80	32.30
3	2483.50	68.2 PK	74.0	-5.8	1.02 V	337	35.80	32.40
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.02 V**	**337**	**21.50**	**32.40**
5	4924.00	50.3 PK	74.0	-23.7	1.08 V	64	43.70	6.60
6	4924.00	37.1 AV	54.0	-16.9	1.08 V	64	30.50	6.60

REMARKS:

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

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	63.3 PK	74.0	-10.7	1.07 H	314	31.40	31.90
2	2390.00	48.8 AV	54.0	-5.2	1.07 H	314	16.90	31.90
3	*2412.00	105.1 PK			1.07 H	314	73.00	32.10
4	*2412.00	94.9 AV			1.07 H	314	62.80	32.10
5	4824.00	49.6 PK	74.0	-24.4	1.02 H	10	43.20	6.40
6	4824.00	36.7 AV	54.0	-17.3	1.02 H	10	30.30	6.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.8 PK	74.0	-7.2	1.10 V	153	34.90	31.90
2	2390.00	53.5 AV	54.0	-0.5	1.10 V	153	21.60	31.90
3	*2412.00	112.8 PK			1.10 V	153	80.70	32.10
4	*2412.00	102.4 AV			1.10 V	153	70.30	32.10
5	4824.00	50.0 PK	74.0	-24.0	1.47 V	85	43.60	6.40
6	4824.00	37.1 AV	54.0	-16.9	1.47 V	85	30.70	6.40

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	109.1 PK			1.20 H	297	76.90	32.20
2	*2437.00	98.6 AV			1.20 H	297	66.40	32.20
3	4874.00	55.0 PK	74.0	-19.0	1.01 H	15	48.40	6.60
4	4874.00	41.4 AV	54.0	-12.6	1.01 H	15	34.80	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	116.8 PK			1.11 V	334	84.60	32.20
2	*2437.00	106.7 AV			1.11 V	334	74.50	32.20
3	4874.00	55.5 PK	74.0	-18.5	1.16 V	13	48.90	6.60
4	4874.00	41.7 AV	54.0	-12.3	1.16 V	13	35.10	6.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.4 PK			1.04 H	295	71.10	32.30
2	*2462.00	93.2 AV			1.04 H	295	60.90	32.30
3	2483.50	57.6 PK	74.0	-16.4	1.04 H	295	25.20	32.40
4	2483.50	46.2 AV	54.0	-7.8	1.04 H	295	13.80	32.40
5	4924.00	49.7 PK	74.0	-24.3	1.03 H	13	43.10	6.60
6	4924.00	36.5 AV	54.0	-17.5	1.03 H	13	29.90	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.0 PK			1.12 V	330	80.70	32.30
2	*2462.00	102.3 AV			1.12 V	330	70.00	32.30
3	2483.50	70.4 PK	74.0	-3.6	1.12 V	330	38.00	32.40
4	2483.50	53.5 AV	54.0	-0.5	1.12 V	330	21.10	32.40
5	4924.00	50.2 PK	74.0	-23.8	1.62 V	98	43.60	6.60
6	4924.00	37.0 AV	54.0	-17.0	1.62 V	98	30.40	6.60

REMARKS:

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

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	59.9 PK	74.0	-14.1	1.05 H	296	28.00	31.90
2	2390.00	46.5 AV	54.0	-7.5	1.05 H	296	14.60	31.90
3	*2422.00	97.9 PK			1.05 H	296	65.80	32.10
4	*2422.00	88.2 AV			1.05 H	296	56.10	32.10
5	4844.00	48.7 PK	74.0	-25.3	1.02 H	16	42.20	6.50
6	4844.00	36.3 AV	54.0	-17.7	1.02 H	16	29.80	6.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.6 PK	74.0	-7.4	1.92 V	147	34.70	31.90
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.92 V**	**147**	**22.00**	**31.90**
3	*2422.00	105.8 PK			1.92 V	147	73.70	32.10
4	*2422.00	97.4 AV			1.92 V	147	65.30	32.10
5	4844.00	49.1 PK	74.0	-24.9	1.07 V	41	42.60	6.50
6	4844.00	36.6 AV	54.0	-17.4	1.07 V	41	30.10	6.50

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	60.1 PK	74.0	-13.9	1.21 H	312	28.20	31.90
2	2390.00	47.3 AV	54.0	-6.7	1.21 H	312	15.40	31.90
3	*2437.00	102.2 PK			1.21 H	312	70.00	32.20
4	*2437.00	92.9 AV			1.21 H	312	60.70	32.20
5	2483.50	59.1 PK	74.0	-14.9	1.21 H	312	26.70	32.40
6	2483.50	46.4 AV	54.0	-7.6	1.21 H	312	14.00	32.40
7	4874.00	49.4 PK	74.0	-24.6	1.04 H	12	42.80	6.60
8	4874.00	36.7 AV	54.0	-17.3	1.04 H	12	30.10	6.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.4 PK	74.0	-5.6	1.25 V	29	36.50	31.90
2	2390.00	53.4 AV	54.0	-0.6	1.25 V	29	21.50	31.90
3	*2437.00	111.4 PK			1.25 V	29	79.20	32.20
4	*2437.00	102.1 AV			1.25 V	29	69.90	32.20
5	2483.50	69.4 PK	74.0	-4.6	1.25 V	29	37.00	32.40
6	2483.50	53.5 AV	54.0	-0.5	1.25 V	29	21.10	32.40
7	4874.00	49.6 PK	74.0	-24.4	1.17 V	41	43.00	6.60
8	4874.00	37.0 AV	54.0	-17.0	1.17 V	41	30.40	6.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	99.7 PK			1.05 H	311	67.40	32.30
2	*2452.00	90.4 AV			1.05 H	311	58.10	32.30
3	2483.50	63.7 PK	74.0	-10.3	1.05 H	311	31.30	32.40
4	2483.50	49.0 AV	54.0	-5.0	1.05 H	311	16.60	32.40
5	4904.00	49.1 PK	74.0	-24.9	1.06 H	10	42.40	6.70
6	4904.00	36.4 AV	54.0	-17.6	1.06 H	10	29.70	6.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	109.4 PK			1.00 V	27	77.10	32.30
2	*2452.00	100.4 AV			1.00 V	27	68.10	32.30
3	2483.50	70.3 PK	74.0	-3.7	1.00 V	27	37.90	32.40
4	2483.50	53.5 AV	54.0	-0.5	1.00 V	27	21.10	32.40
5	4904.00	49.3 PK	74.0	-24.7	1.07 V	41	42.60	6.70
6	4904.00	36.8 AV	54.0	-17.2	1.07 V	41	30.10	6.70

REMARKS:

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

Below 1GHz Worst-Case Data: 802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

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	45.42	30.0 QP	40.0	-10.0	1.99 H	303	44.30	-14.30
2	124.98	31.1 QP	43.5	-12.4	1.99 H	225	46.90	-15.80
3	249.17	31.0 QP	46.0	-15.0	1.25 H	302	45.60	-14.60
4	452.91	30.7 QP	46.0	-15.3	1.99 H	170	40.90	-10.20
5	761.43	31.5 QP	46.0	-14.5	1.00 H	167	35.10	-3.60
6	961.29	40.5 QP	54.0	-13.5	1.25 H	227	41.00	-0.50
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	45.42	36.1 QP	40.0	-3.9	1.00 V	292	50.40	-14.30
2	124.98	33.2 QP	43.5	-10.3	1.24 V	247	49.00	-15.80
3	249.17	28.2 QP	46.0	-17.8	1.99 V	15	42.80	-14.60
4	577.09	29.8 QP	46.0	-16.2	1.00 V	7	37.70	-7.90
5	747.85	41.9 QP	46.0	-4.1	1.00 V	225	45.80	-3.90
6	961.29	41.4 QP	54.0	-12.6	1.24 V	177	41.90	-0.50

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

Tested date: Jul. 12 ~ Aug. 19, 2016

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Dec. 23, 2015	Dec. 22, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 11, 2016	Jan. 10, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 21, 2015	Jul. 20, 2016
			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.

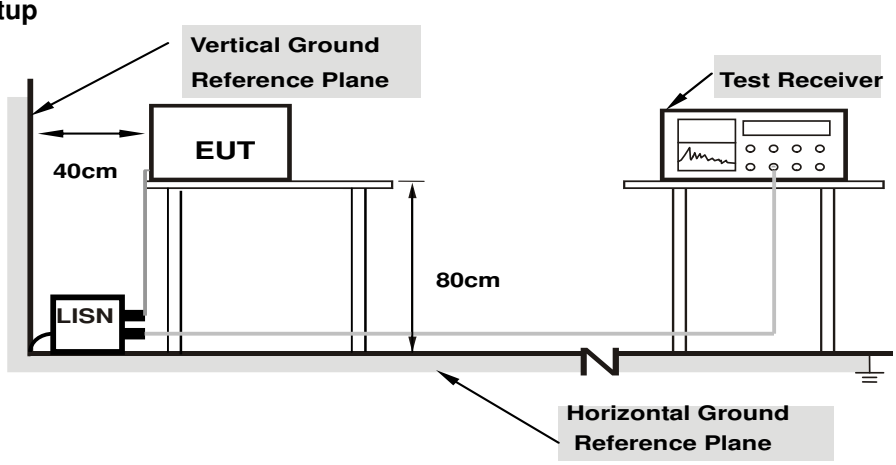
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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		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	0.21250	10.21	26.02	11.57	36.23	21.78	63.11	53.11	-26.88	-31.33
2	0.38438	10.24	22.60	16.14	32.84	26.38	58.18	48.18	-25.34	-21.80
3	0.75938	10.28	6.53	1.44	16.81	11.72	56.00	46.00	-39.19	-34.28
4	2.61328	10.39	7.08	2.20	17.47	12.59	56.00	46.00	-38.53	-33.41
5	5.85547	10.45	11.86	6.49	22.31	16.94	60.00	50.00	-37.69	-33.06
6	20.66406	10.67	-5.02	-6.50	5.65	4.17	60.00	50.00	-54.35	-45.83

REMARKS:

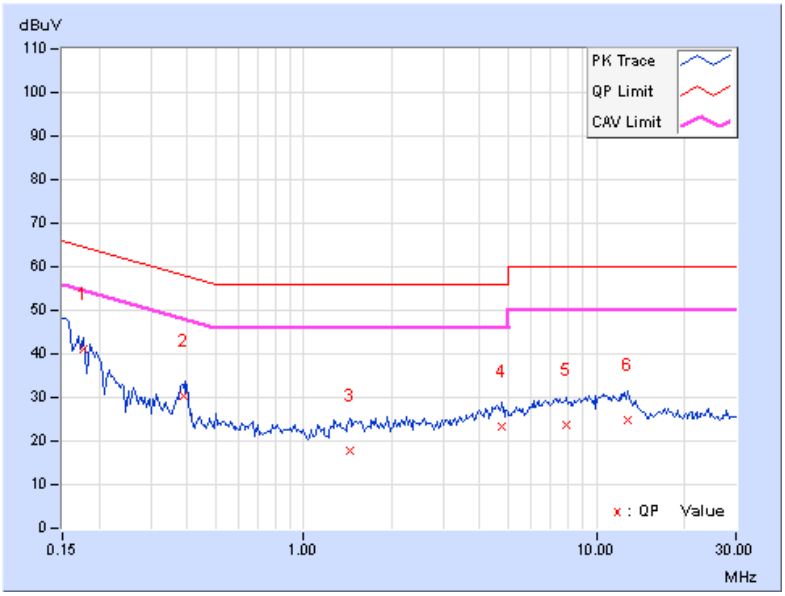
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

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	0.17734	10.20	30.78	17.75	40.98	27.95	64.61	54.61	-23.63	-26.66
2	0.38828	10.29	20.04	15.66	30.33	25.95	58.10	48.10	-27.77	-22.15
3	1.44141	10.34	7.43	1.45	17.77	11.79	56.00	46.00	-38.23	-34.21
4	4.74609	10.56	12.77	5.75	23.33	16.31	56.00	46.00	-32.67	-29.69
5	7.86328	10.59	13.06	8.04	23.65	18.63	60.00	50.00	-36.35	-31.37
6	12.83203	10.68	14.17	9.37	24.85	20.05	60.00	50.00	-35.15	-29.95

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.

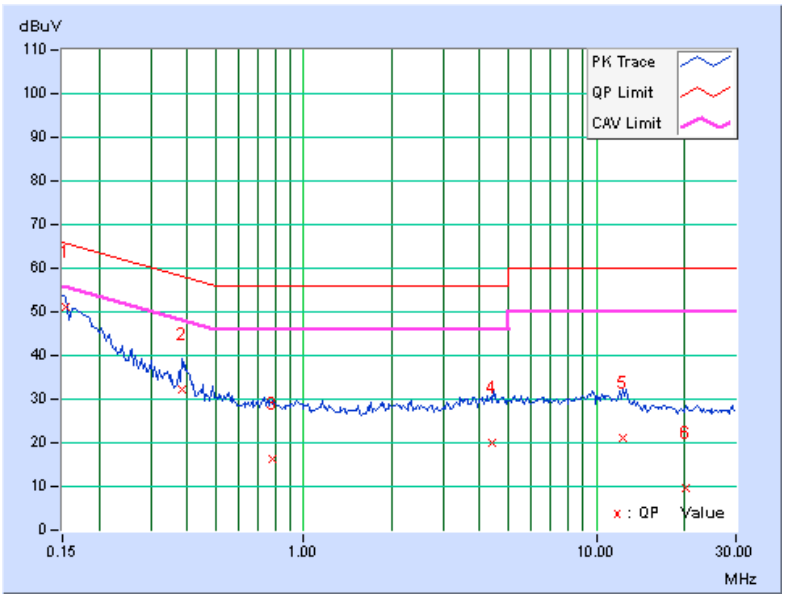


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value [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	**0.15391**	**10.12**	**40.82**	**24.14**	**50.94**	**34.26**	**65.79**	**55.79**	**-14.85**	**-21.53**
2	0.38438	10.19	21.98	11.26	32.17	21.45	58.18	48.18	-26.01	-26.73
3	0.78672	10.21	6.00	1.88	16.21	12.09	56.00	46.00	-39.79	-33.91
4	4.38672	10.36	9.82	4.08	20.18	14.44	56.00	46.00	-35.82	-31.56
5	12.34766	10.51	10.44	5.32	20.95	15.83	60.00	50.00	-39.05	-34.17
6	20.35156	10.61	-1.14	-3.00	9.47	7.61	60.00	50.00	-50.53	-42.39

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.

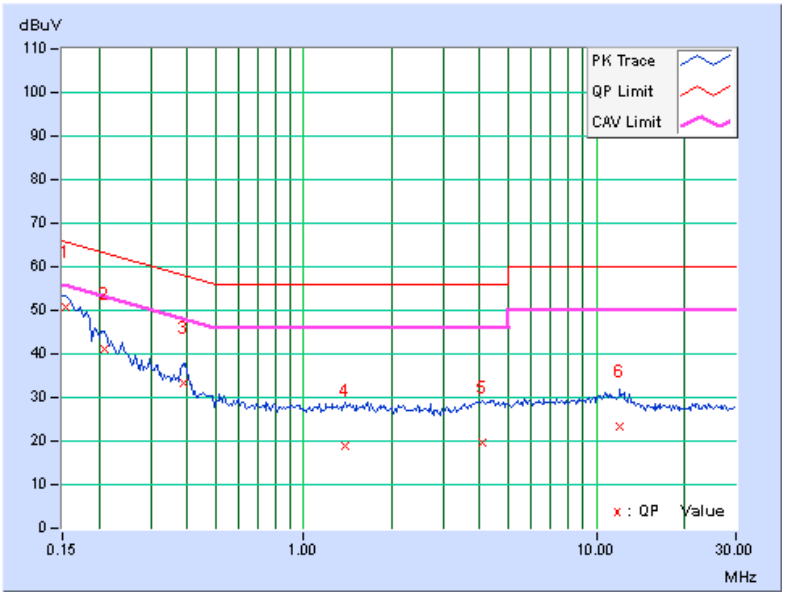


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

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	0.15391	10.13	40.58	24.06	50.71	34.19	65.79	55.79	-15.08	-21.60
2	0.20859	10.16	30.82	15.22	40.98	25.38	63.26	53.26	-22.28	-27.88
3	0.38828	10.19	23.14	13.74	33.33	23.93	58.10	48.10	-24.77	-24.17
4	1.37891	10.24	8.52	5.40	18.76	15.64	56.00	46.00	-37.24	-30.36
5	4.10547	10.39	9.20	3.94	19.59	14.33	56.00	46.00	-36.41	-31.67
6	12.03516	10.60	12.70	6.28	23.30	16.88	60.00	50.00	-36.70	-33.12

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.

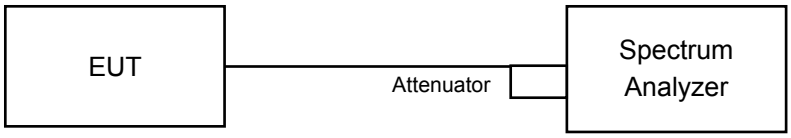


4.3 6dB Bandwidth Measurement

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

CDD Mode

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	8.11	8.12	0.5	Pass
6	2437	9.07	9.07	0.5	Pass
11	2462	9.10	8.07	0.5	Pass

802.11g

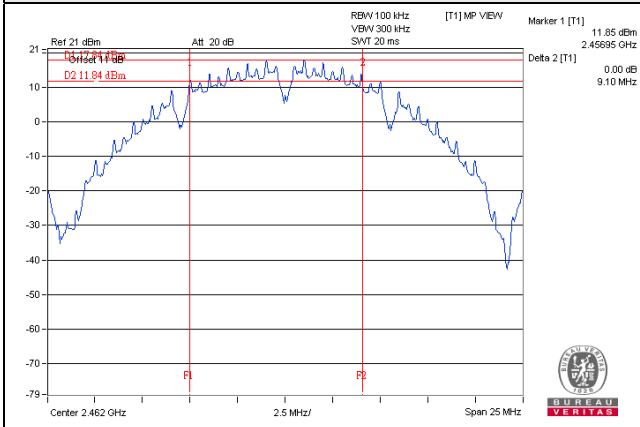
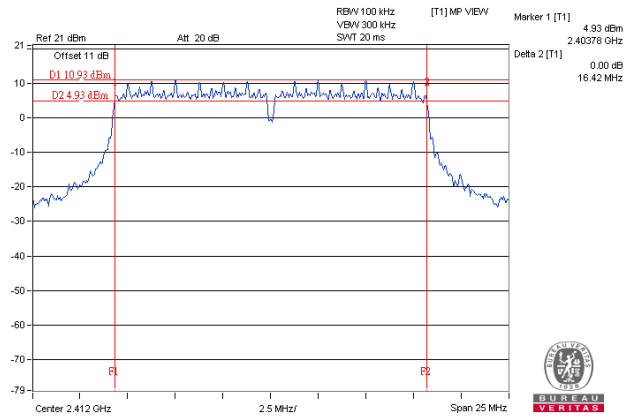
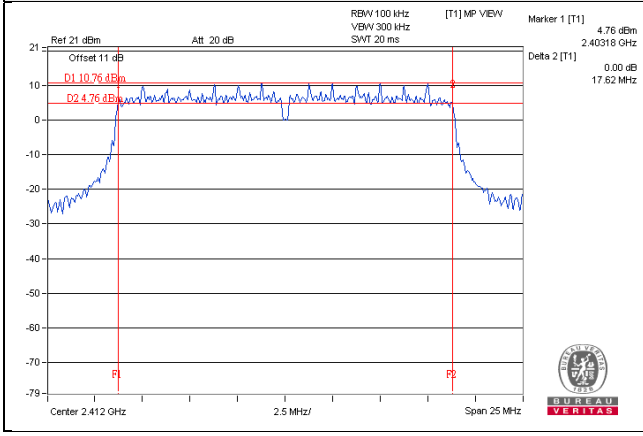
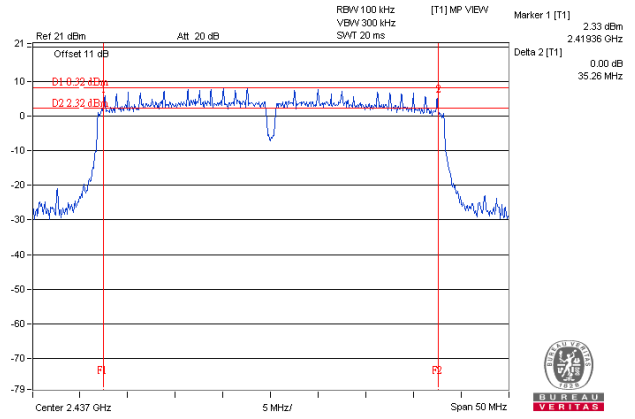
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.42	16.40	0.5	Pass
6	2437	16.35	16.34	0.5	Pass
11	2462	16.39	16.37	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.62	17.62	0.5	Pass
6	2437	17.60	17.61	0.5	Pass
11	2462	17.60	17.60	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.22	35.23	0.5	Pass
6	2437	35.26	35.23	0.5	Pass
9	2452	35.23	35.25	0.5	Pass

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

Beamforming NSS1 Mode

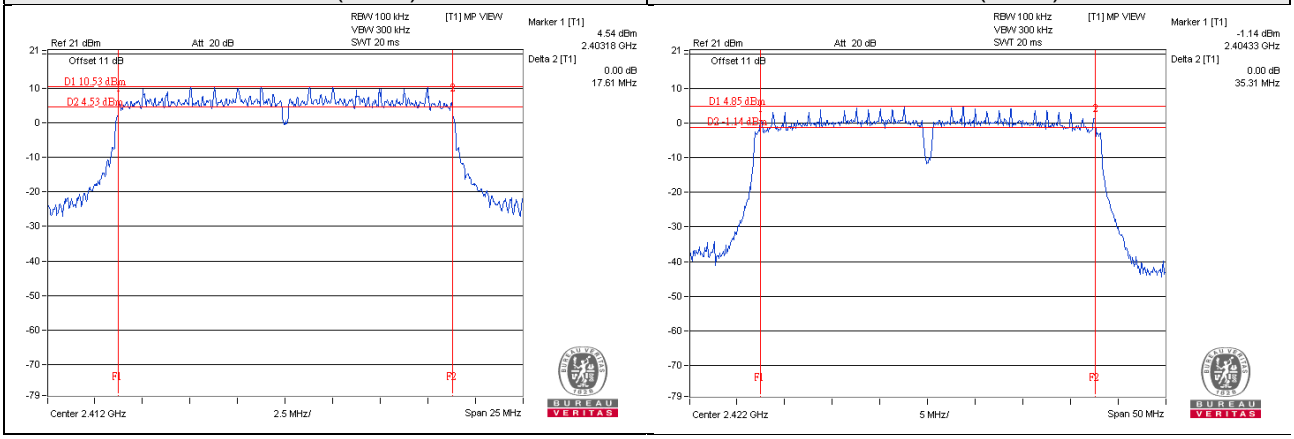
802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.59	17.61	0.5	Pass
6	2437	17.59	17.57	0.5	Pass
11	2462	17.59	17.59	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.31	35.30	0.5	Pass
6	2437	35.26	35.20	0.5	Pass
9	2452	35.21	35.26	0.5	Pass

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



4.4 Conducted Output Power Measurement

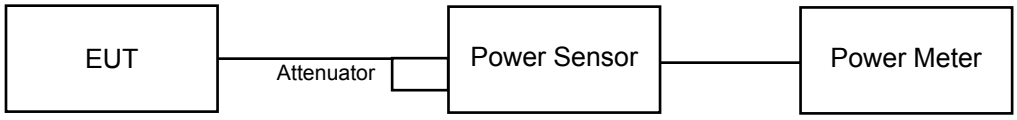
4.4.1 Limits of Conducted Output Power Measurement

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

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	25.43	25.28	686.427	28.37	30	Pass
6	2437	26.33	26.18	844.490	29.27	30	Pass
11	2462	26.11	25.97	803.686	29.05	30	Pass

802.11g

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.63	21.38	282.950	24.52	30	Pass
6	2437	26.68	26.45	**907.156**	29.58	30	Pass
11	2462	21.57	21.38	280.953	24.49	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.60	21.36	281.317	24.49	30	Pass
6	2437	26.62	26.34	889.725	29.49	30	Pass
11	2462	21.65	21.37	283.306	24.52	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.89	18.76	152.608	21.84	30	Pass
6	2437	22.08	21.72	310.030	24.91	30	Pass
9	2452	21.36	21.19	268.295	24.29	30	Pass

Beamforming NSS1 Mode

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.54	21.66	289.116	24.61	30	Pass
6	2437	26.51	26.47	**891.322**	29.50	30	Pass
11	2462	21.58	21.44	283.196	24.52	30	Pass

Note: Directional gain = 3.448dBi < 6dBi, so the power limit is not reduced.

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.74	18.93	152.980	21.85	30	Pass
6	2437	22.14	21.62	308.893	24.90	30	Pass
9	2452	21.74	21.26	282.939	24.52	30	Pass

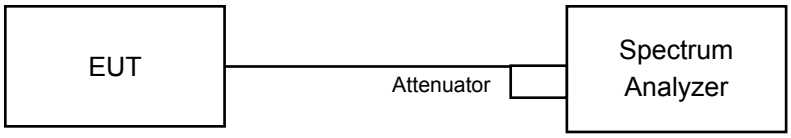
Note: Directional gain = 3.448dBi < 6dBi, so the power limit is not reduced.

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

CDD Mode

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass/Fail
0	1	2412	-1.24	3.01	1.77	8.00	Pass
	6	2437	-1.23	3.01	1.78	8.00	Pass
	11	2462	-1.06	3.01	1.95	8.00	Pass
1	1	2412	-1.41	3.01	1.60	8.00	Pass
	6	2437	-0.86	3.01	2.15	8.00	Pass
	11	2462	-0.69	3.01	2.32	8.00	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. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.

802.11g

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	1	2412	-8.03	3.01	0.20	-4.82	8.00	Pass
	6	2437	-4.35	3.01	0.20	-1.14	8.00	Pass
	11	2462	-8.44	3.01	0.20	-5.23	8.00	Pass
1	1	2412	-8.27	3.01	0.20	-5.06	8.00	Pass
	6	2437	-4.52	3.01	0.20	-1.31	8.00	Pass
	11	2462	-8.46	3.01	0.20	-5.25	8.00	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. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

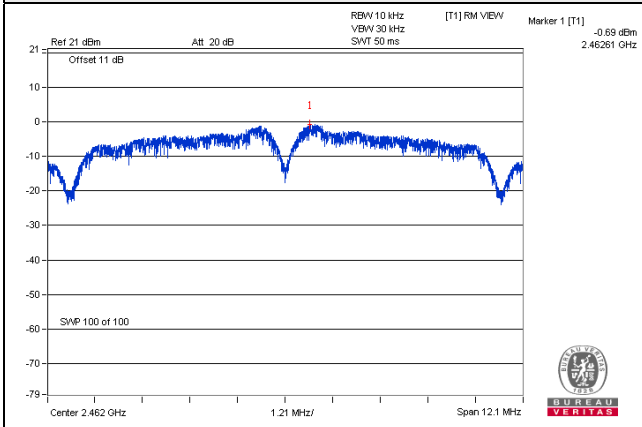
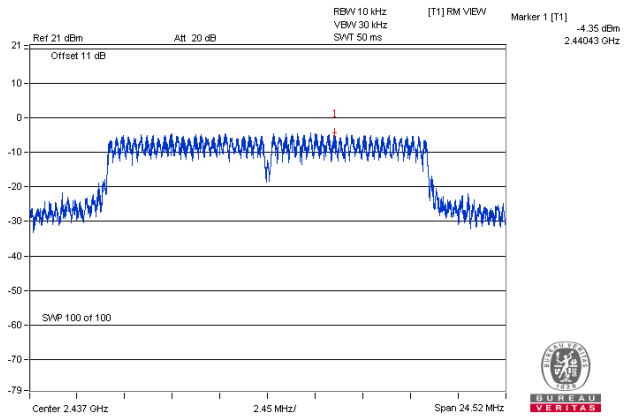
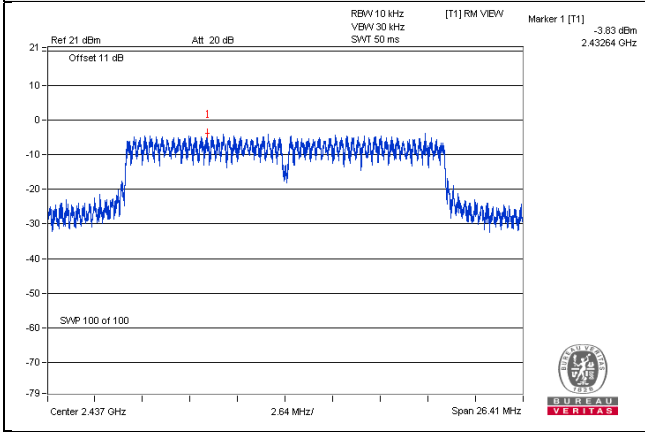
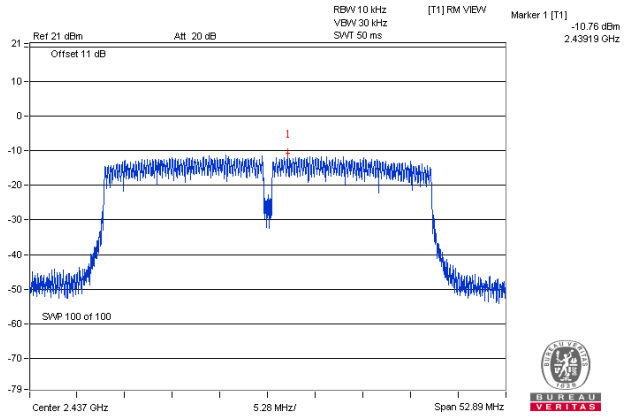
TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass/Fail
0	1	2412	-7.86	3.01	-4.85	8.00	Pass
	6	2437	-4.14	3.01	-1.13	8.00	Pass
	11	2462	-7.87	3.01	-4.86	8.00	Pass
1	1	2412	-7.75	3.01	-4.74	8.00	Pass
	6	2437	-3.83	3.01	-0.82	8.00	Pass
	11	2462	-7.44	3.01	-4.43	8.00	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. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.

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	-14.29	3.01	0.16	-11.12	8.00	Pass
	6	2437	-10.76	3.01	0.16	-7.59	8.00	Pass
	9	2452	-11.69	3.01	0.16	-8.52	8.00	Pass
1	3	2422	-14.07	3.01	0.16	-10.90	8.00	Pass
	6	2437	-11.33	3.01	0.16	-8.16	8.00	Pass
	9	2452	-11.66	3.01	0.16	-8.49	8.00	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. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.
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)
	

Beamforming NSS1 Mode

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	-7.92	3.01	-4.91	8.00	Pass
	6	2437	-4.12	3.01	-1.11	8.00	Pass
	11	2462	-8.06	3.01	-5.05	8.00	Pass
1	1	2412	-8.10	3.01	-5.09	8.00	Pass
	6	2437	-4.04	3.01	-1.03	8.00	Pass
	11	2462	-7.61	3.01	-4.60	8.00	Pass

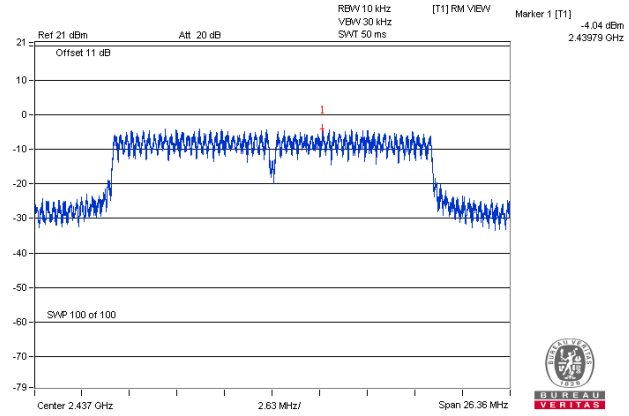
Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.

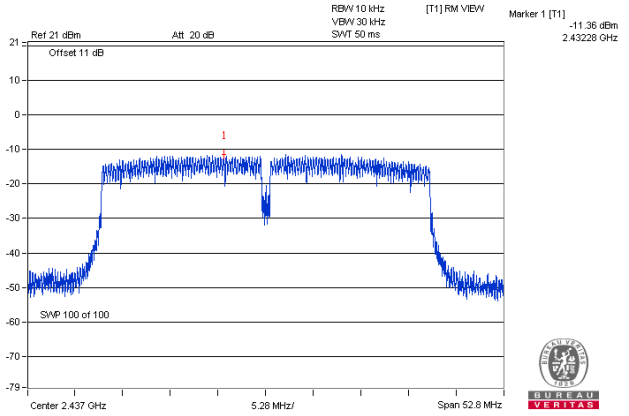
802.11n (HT40)

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	-14.21	3.01	0.15	-11.05	8.00	Pass
	6	2437	-11.51	3.01	0.15	-8.35	8.00	Pass
	9	2452	-12.40	3.01	0.15	-9.24	8.00	Pass
1	3	2422	-14.73	3.01	0.15	-11.57	8.00	Pass
	6	2437	-11.36	3.01	0.15	-8.20	8.00	Pass
	9	2452	-11.46	3.01	0.15	-8.30	8.00	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. Directional gain = 3.448dBi < 6dBi, so the limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

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



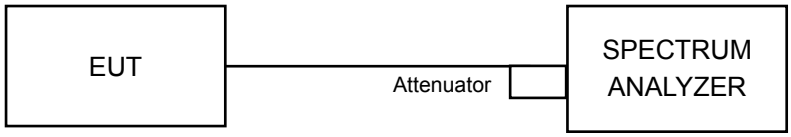


4.6 Conducted Out of Band Emission Measurement

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

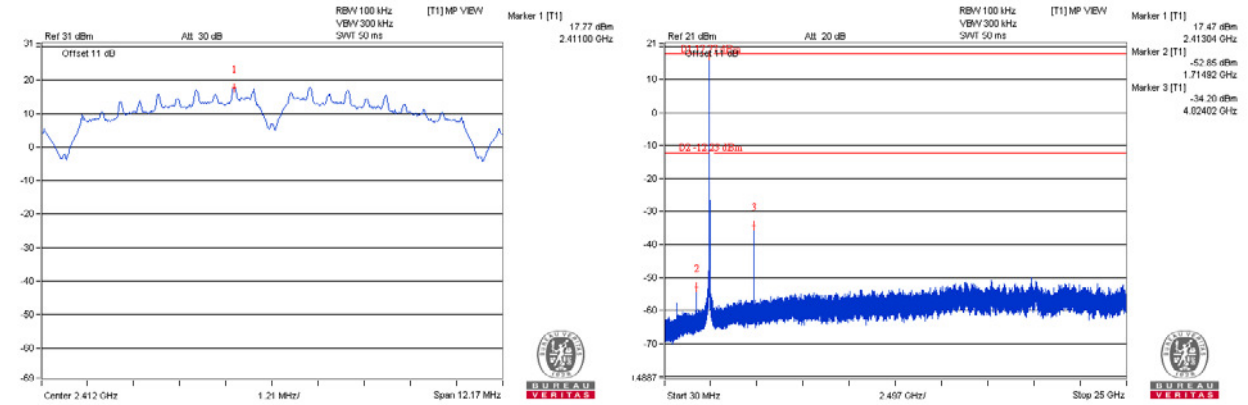
4.6.7 Test Results

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.

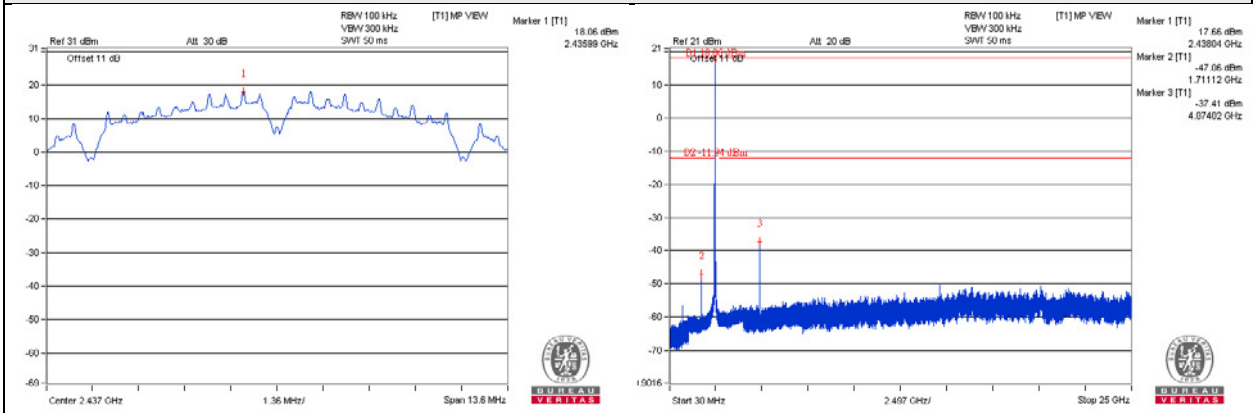
CDD Mode

802.11b_Chain 0

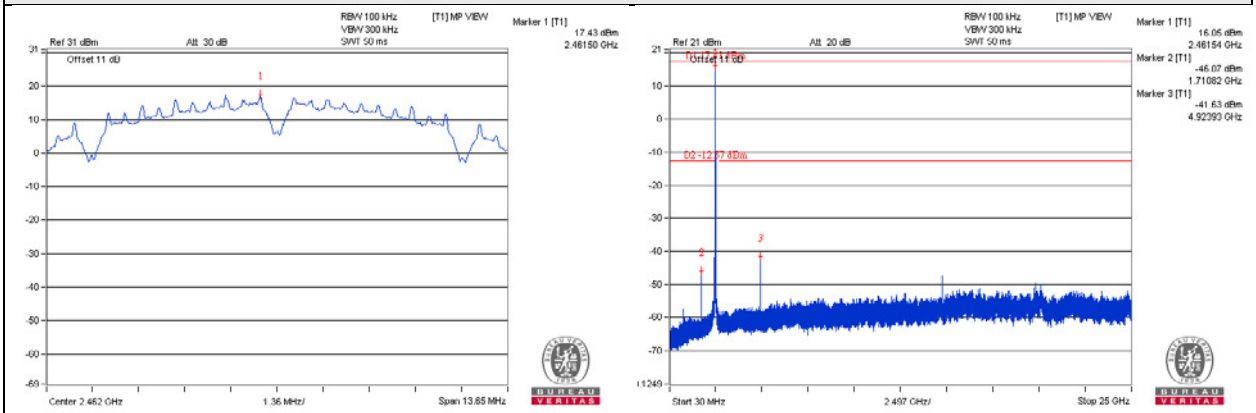
CH 1



CH 6

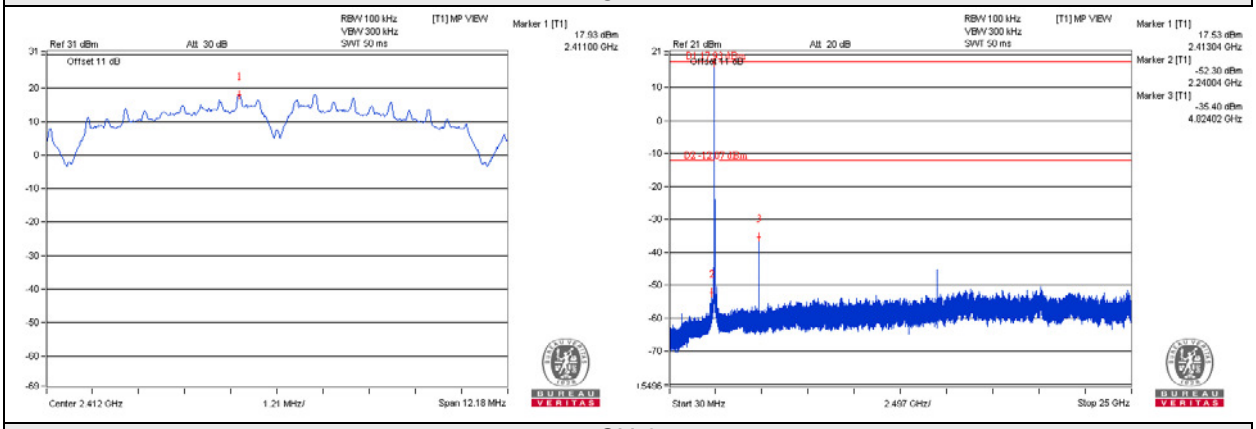


CH 11

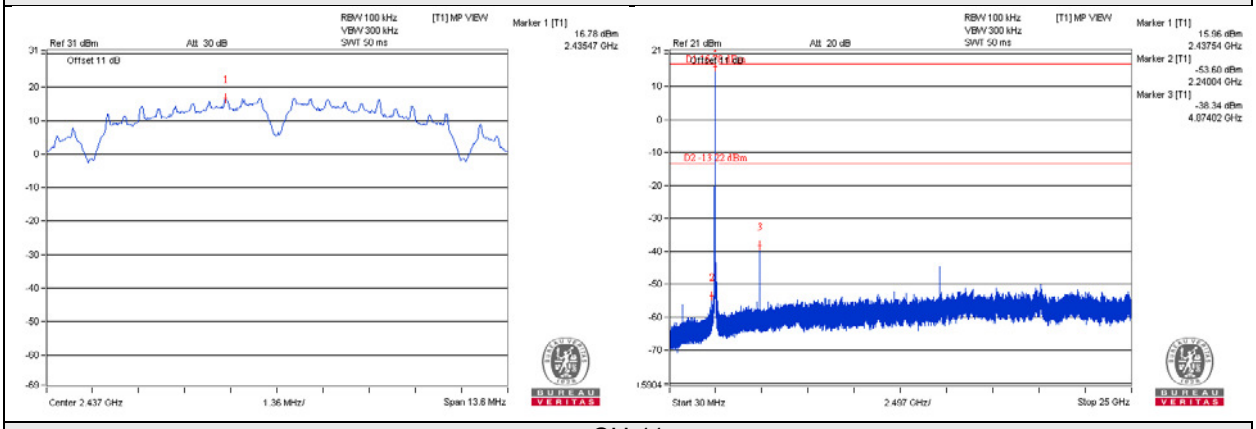


802.11b_Chain 1

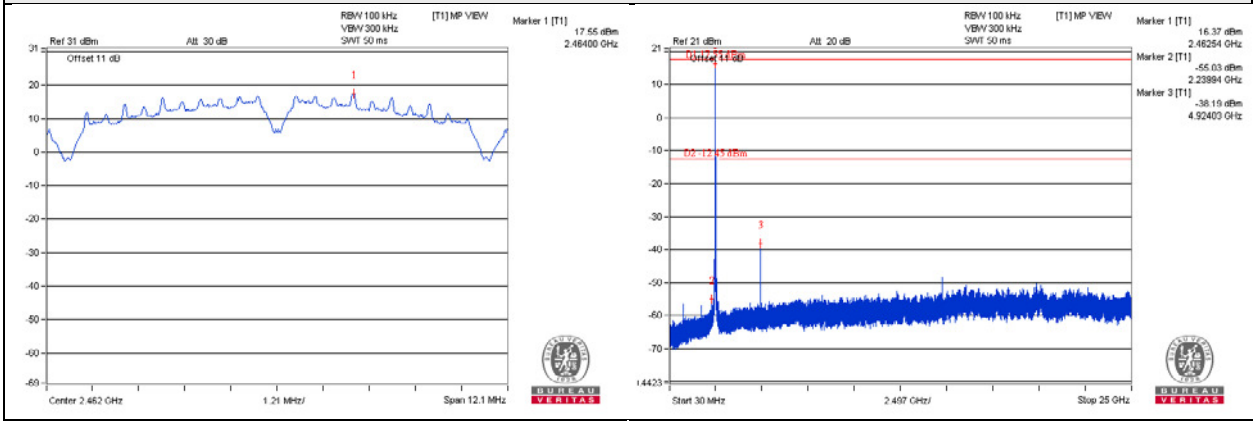
CH 1



CH 6

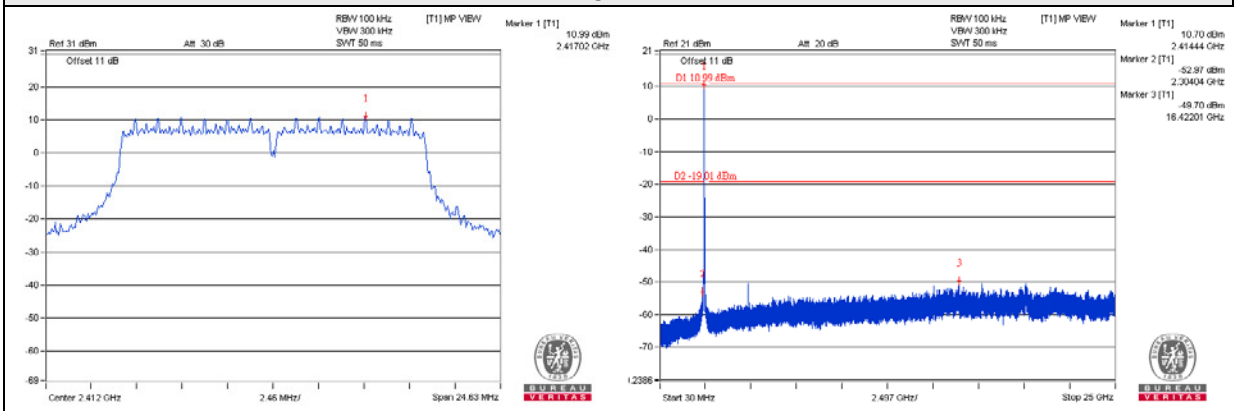


CH 11

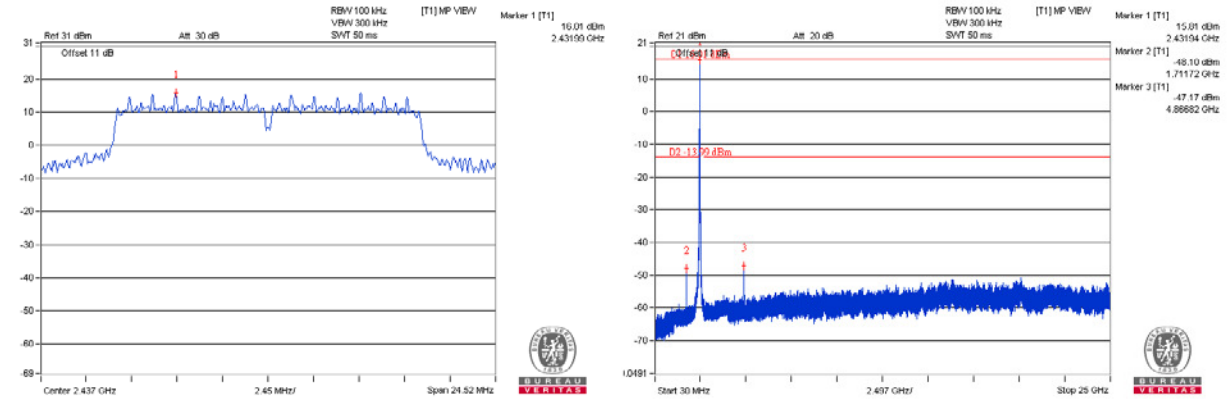


802.11g_Chain 0

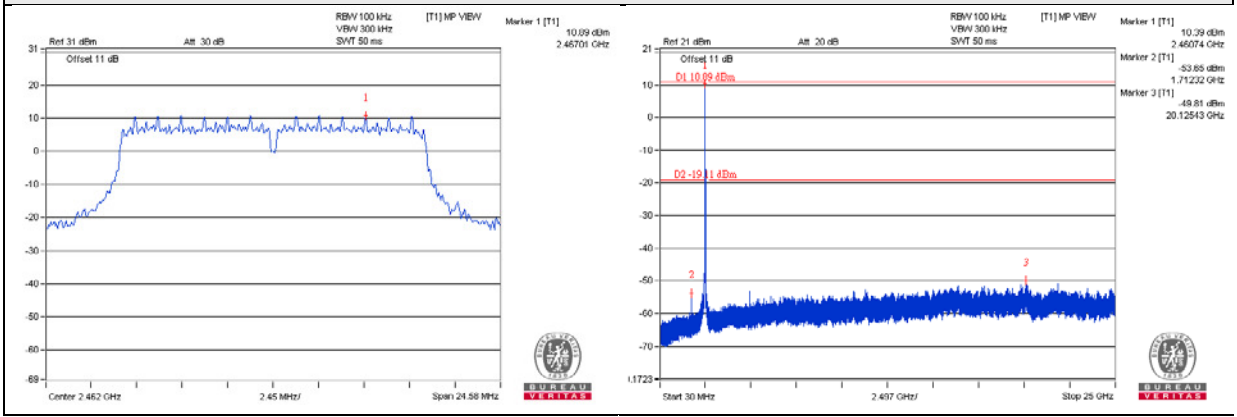
CH 1



CH 6

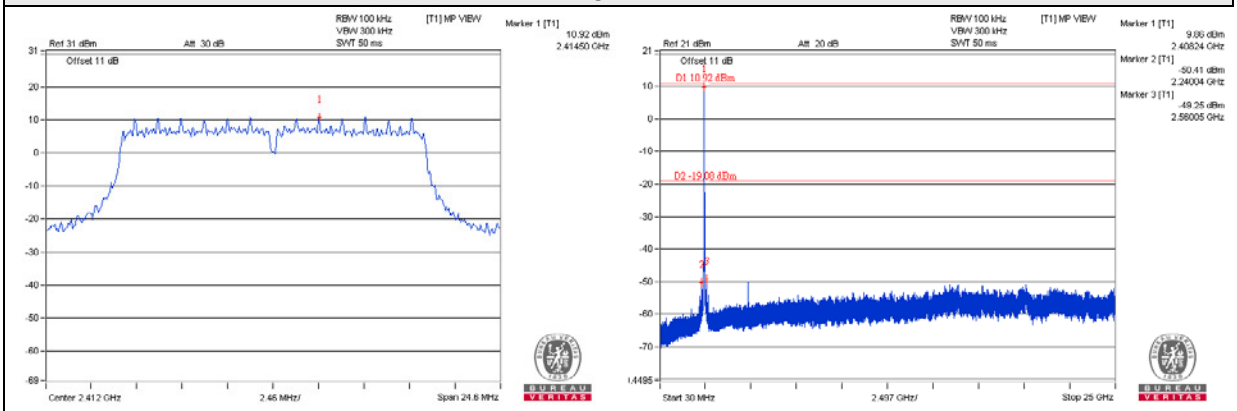


CH 11

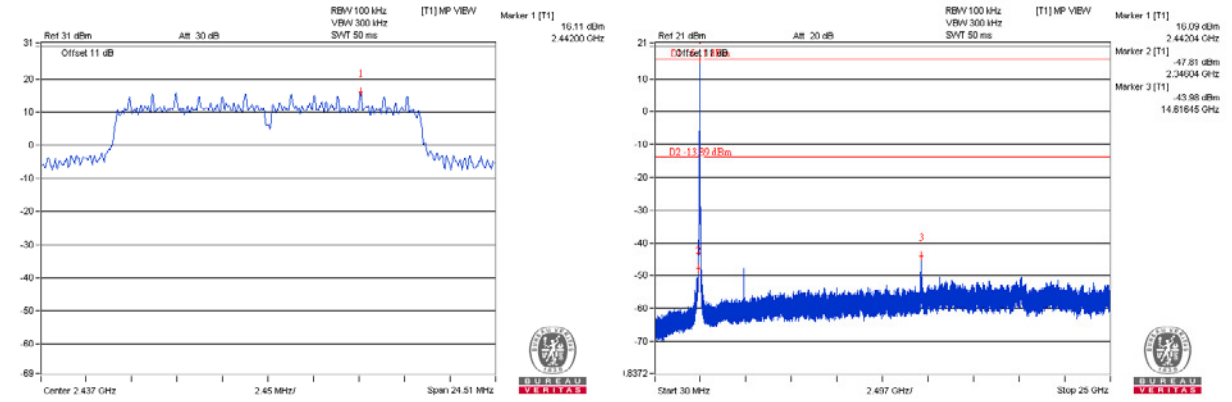


802.11g_Chain 1

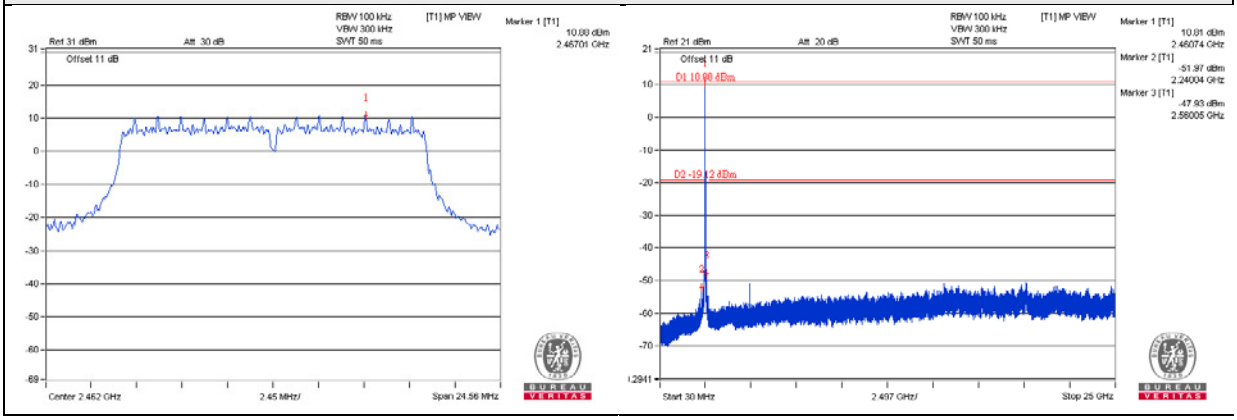
CH 1



CH 6

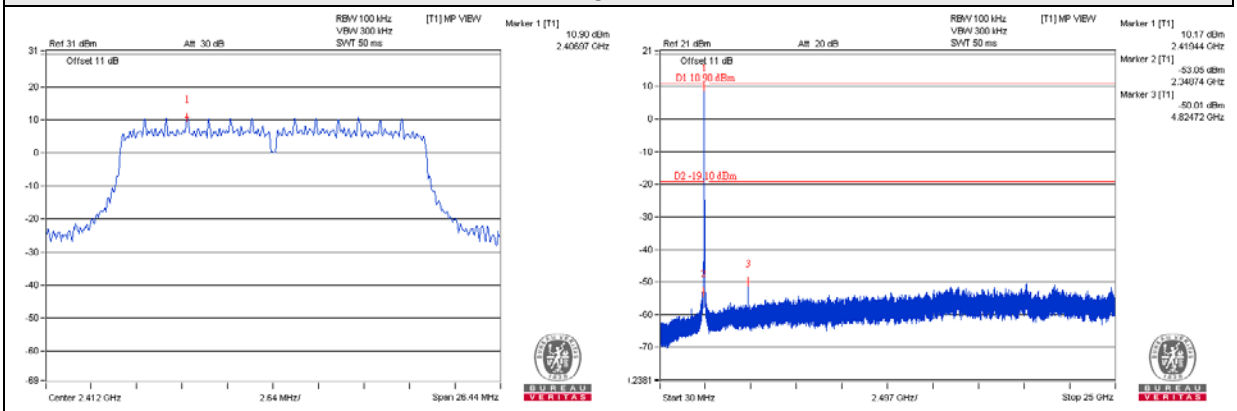


CH 11

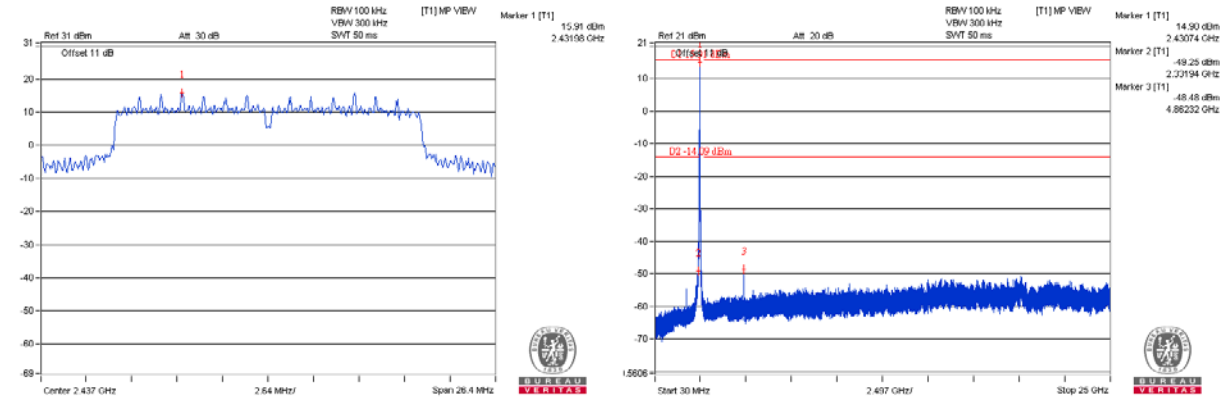


802.11n (HT20)_Chain 0

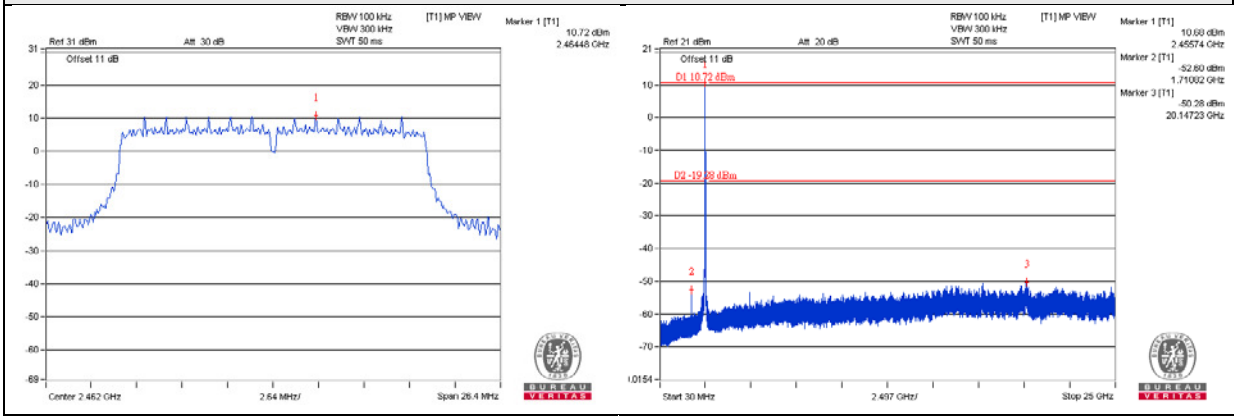
CH 1



CH 6

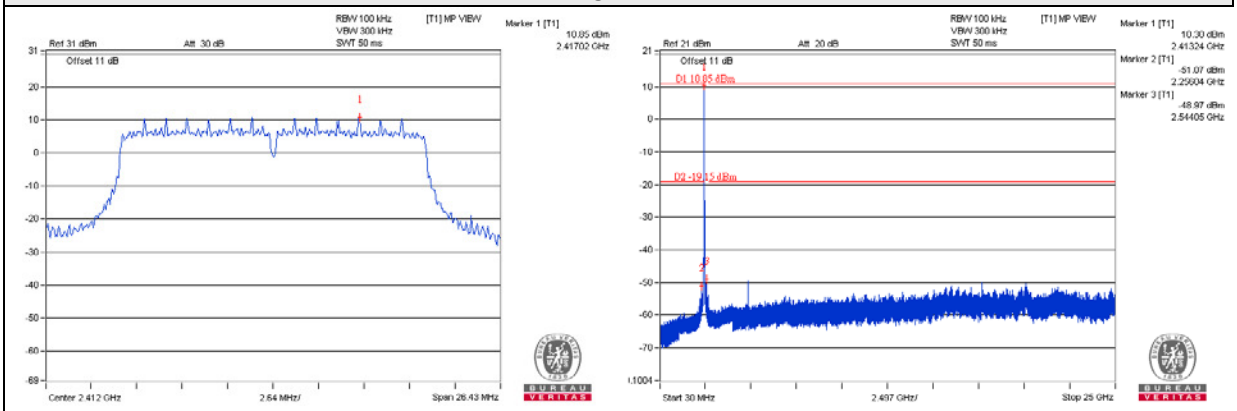


CH 11

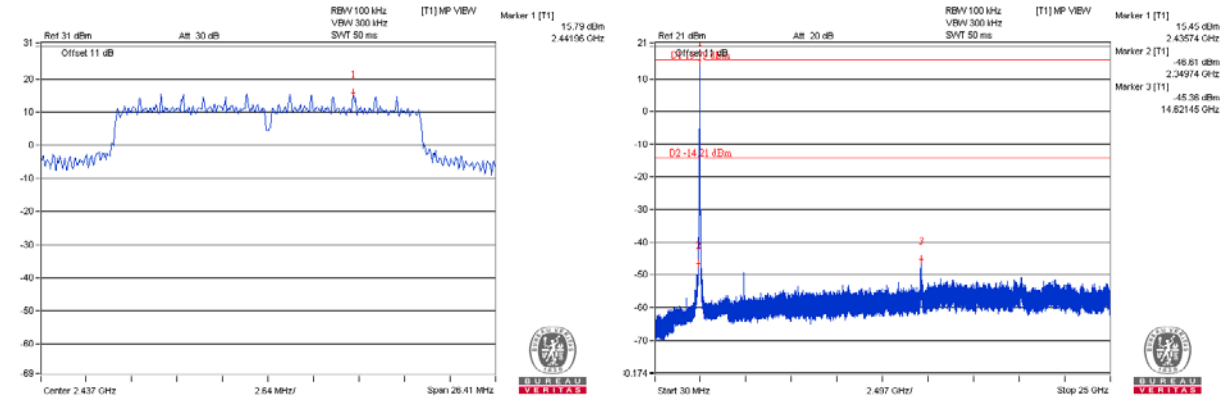


802.11n (HT20)_Chain 1

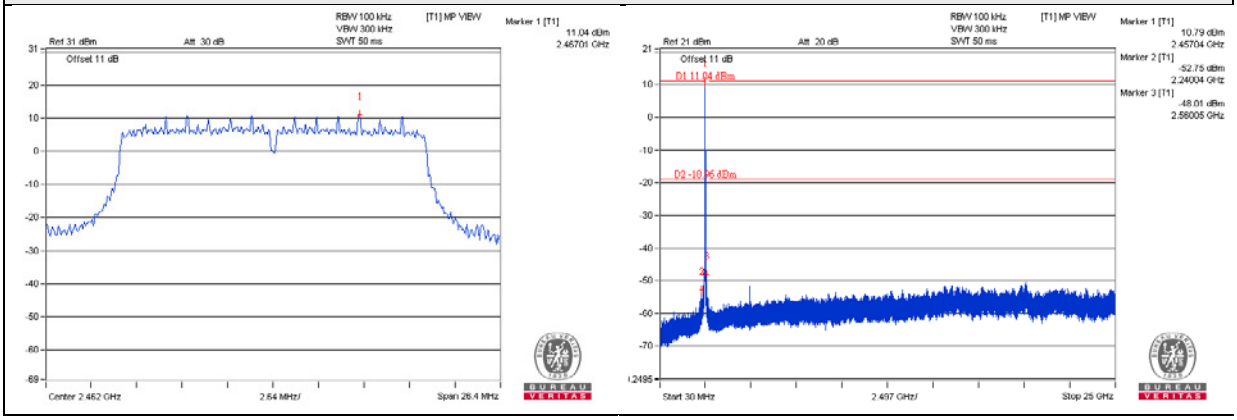
CH 1



CH 6

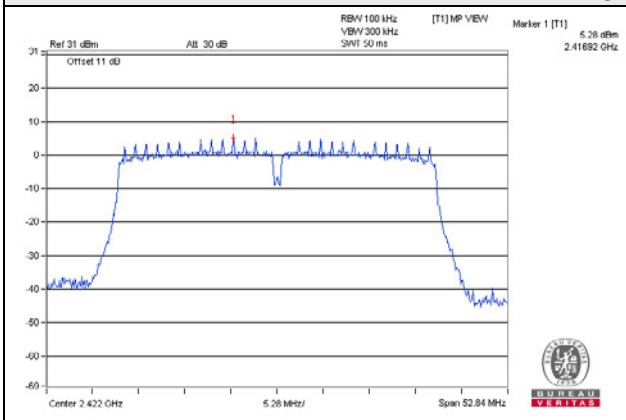


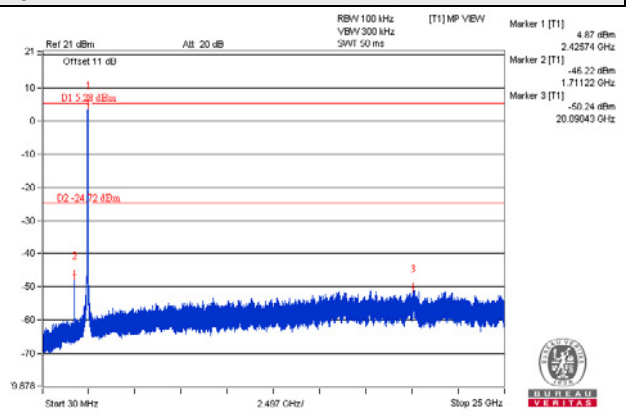
CH 11



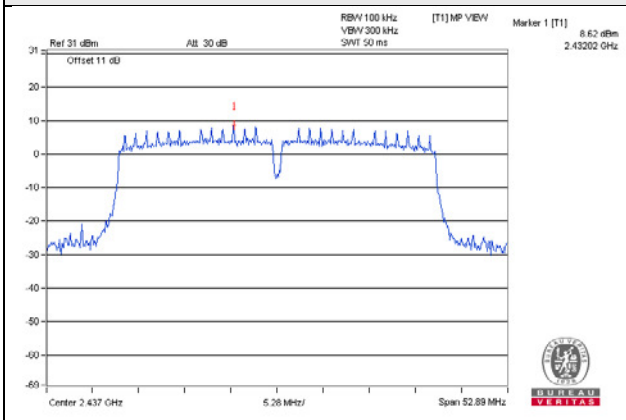
802.11n (HT40)_Chain 0

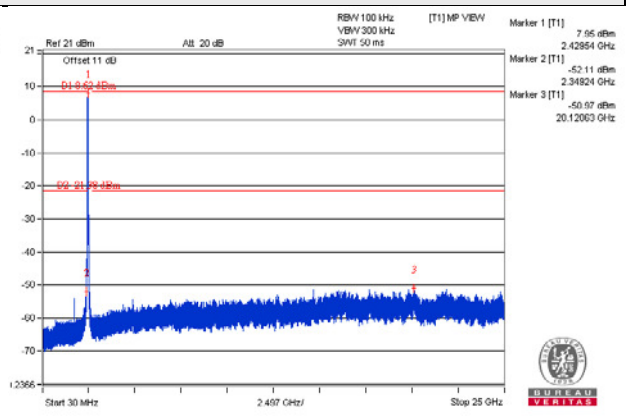
CH 3



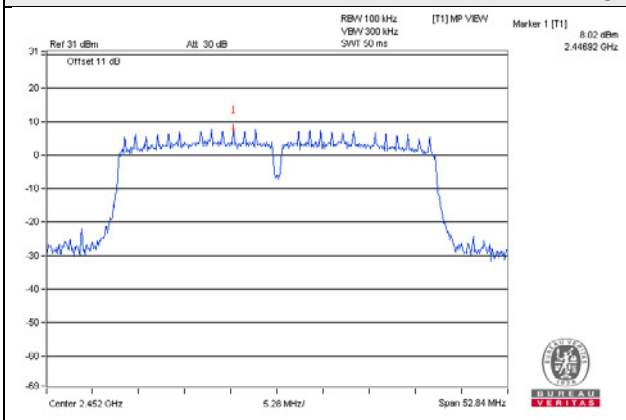


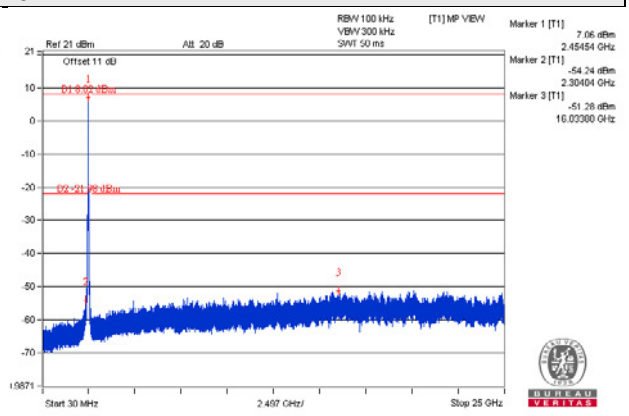
CH 6





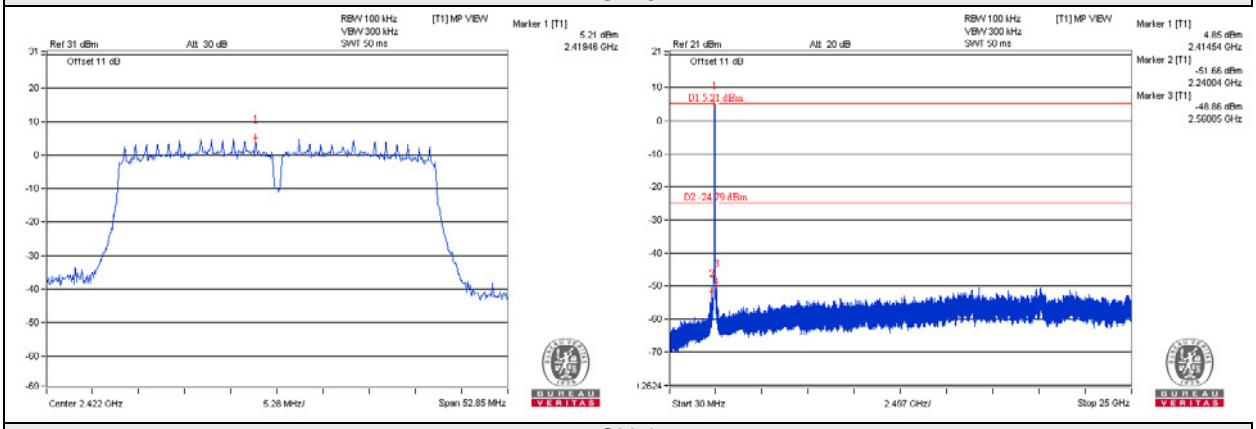
CH 9



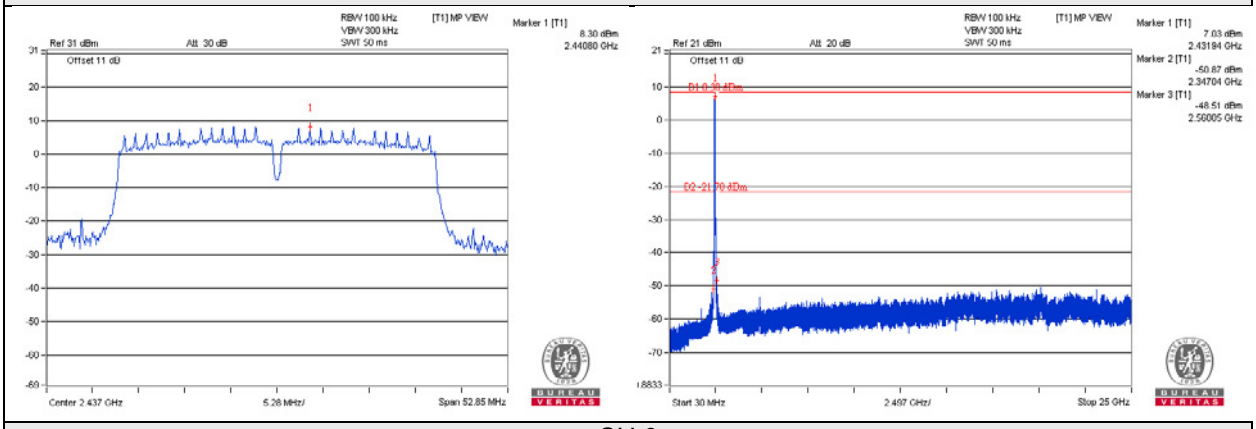


802.11n (HT40)_Chain 1

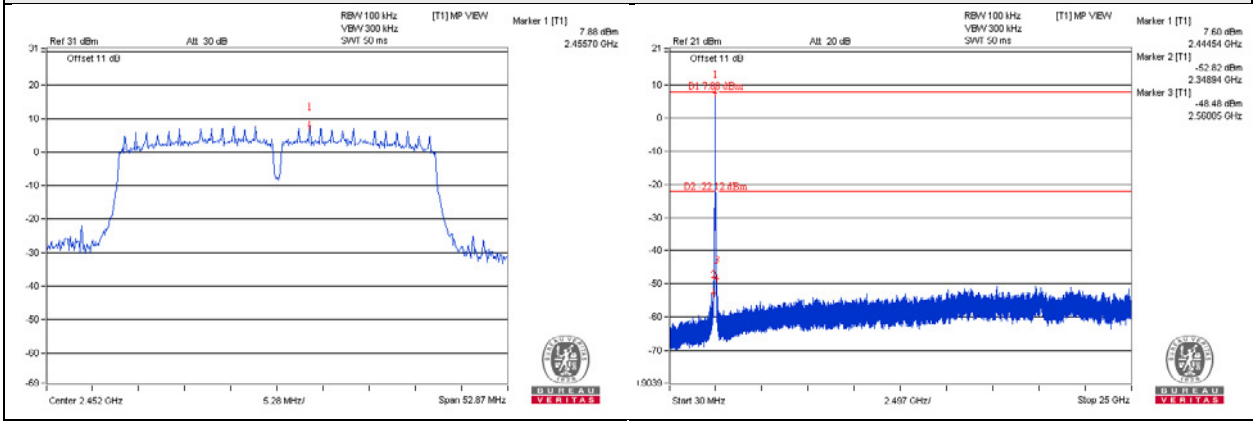
CH 3



CH 6

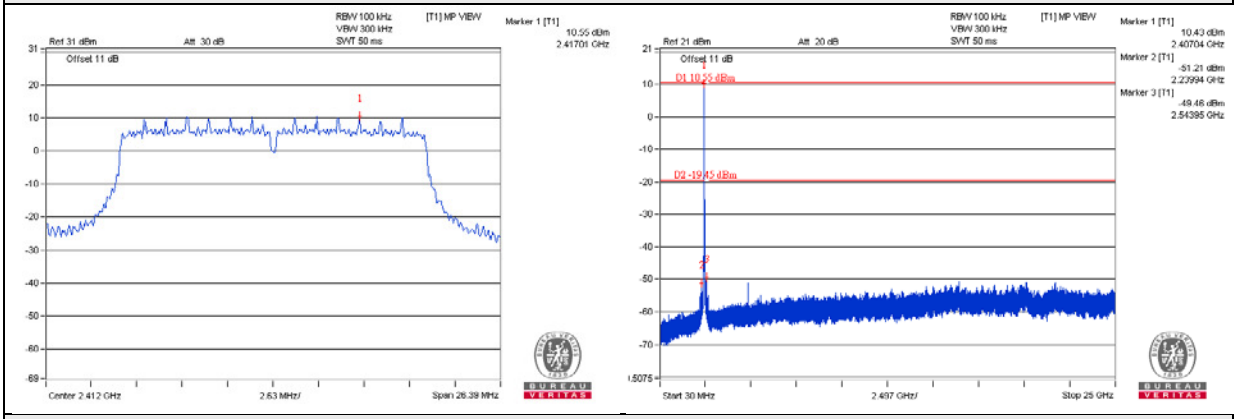
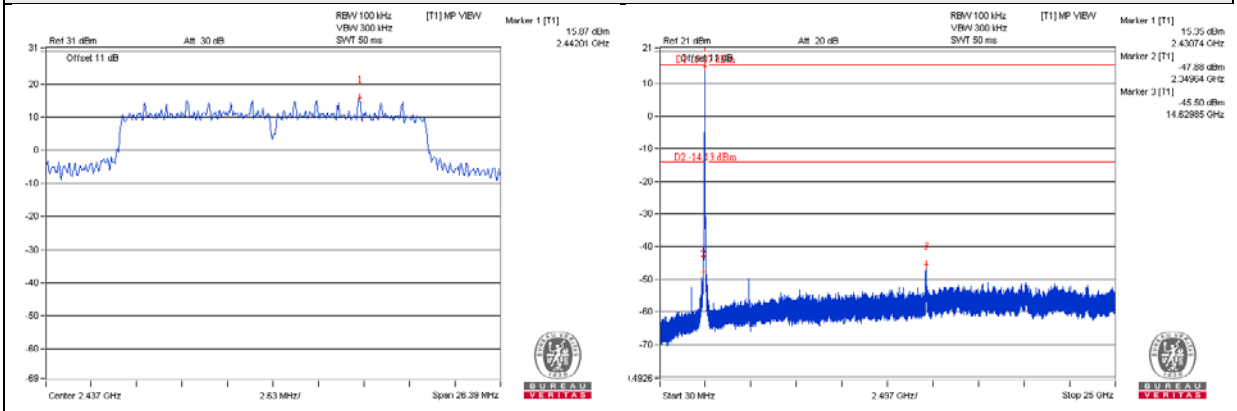
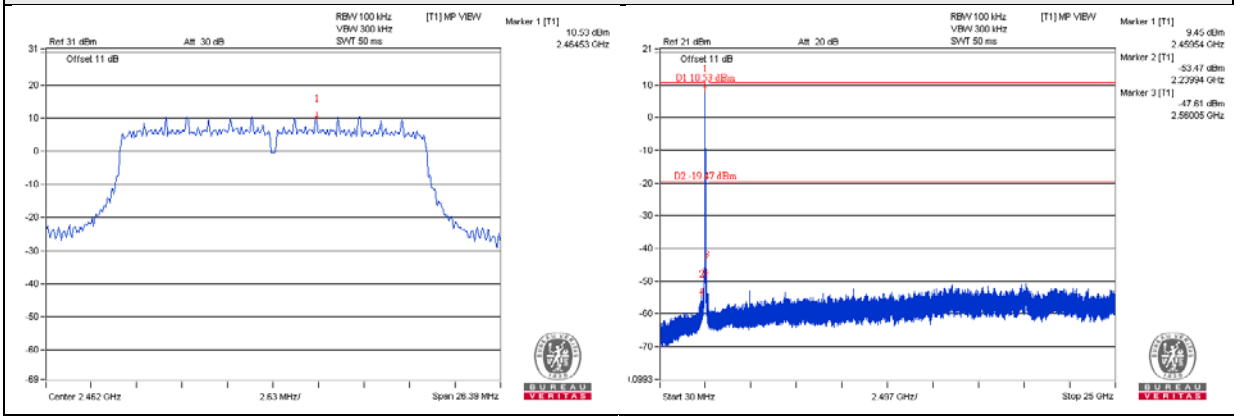


CH 9



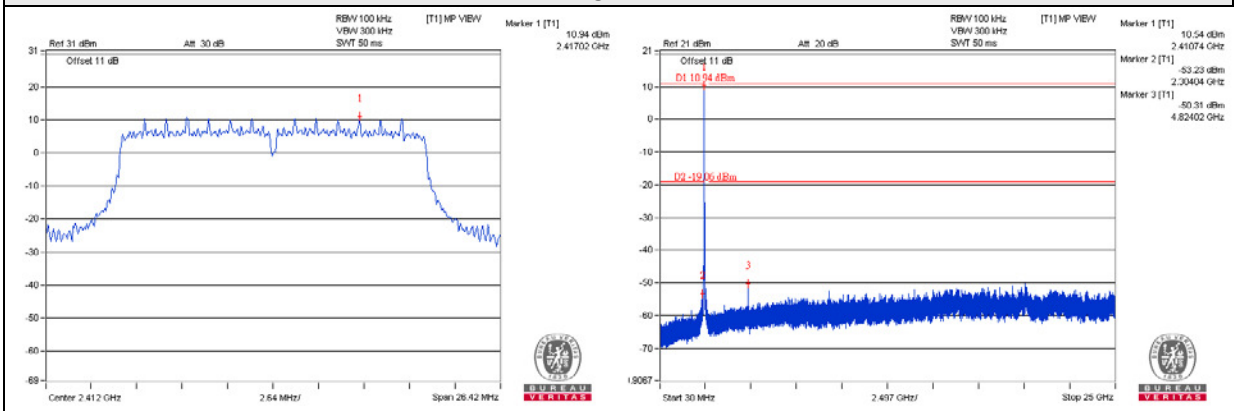
Beamforming NSS1 Mode

802.11n (HT20)_Chain 0

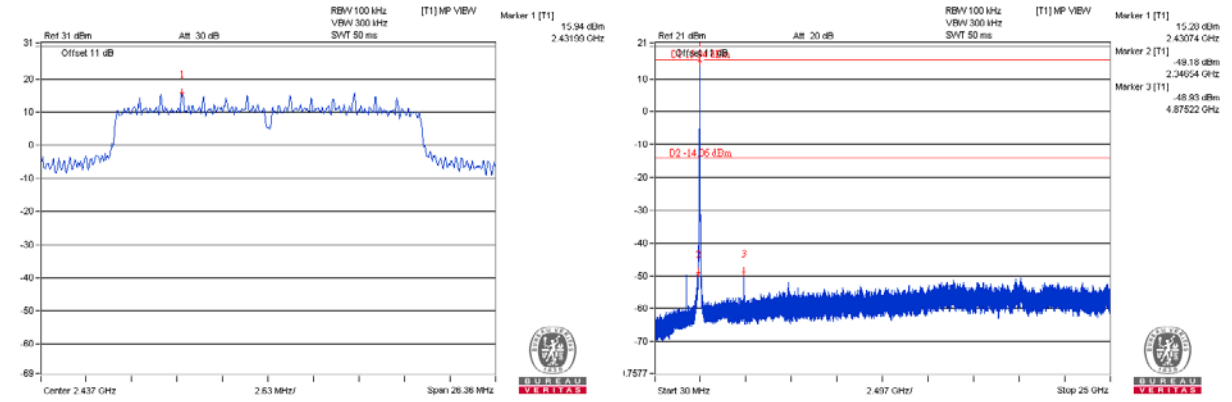
CH 1

CH 6

CH 11


802.11n (HT20)_Chain 1

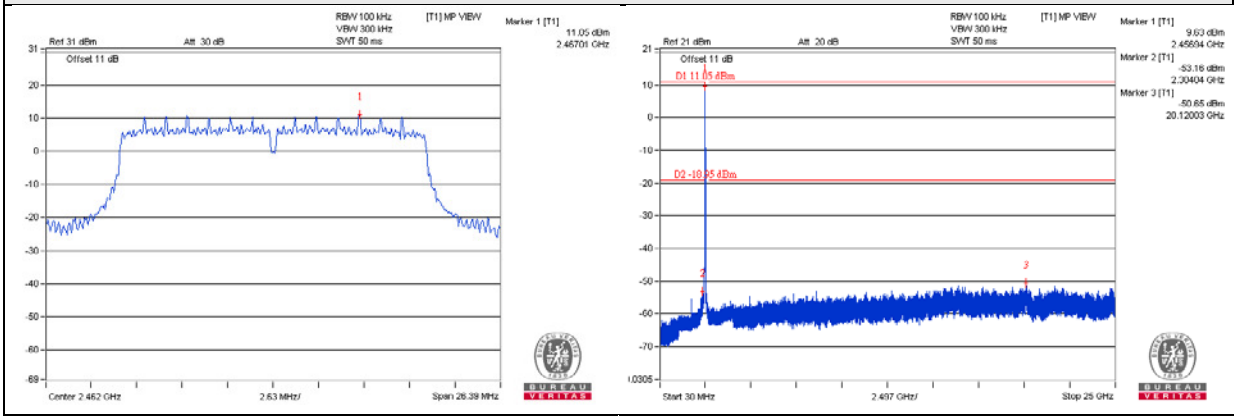
CH 1



CH 6

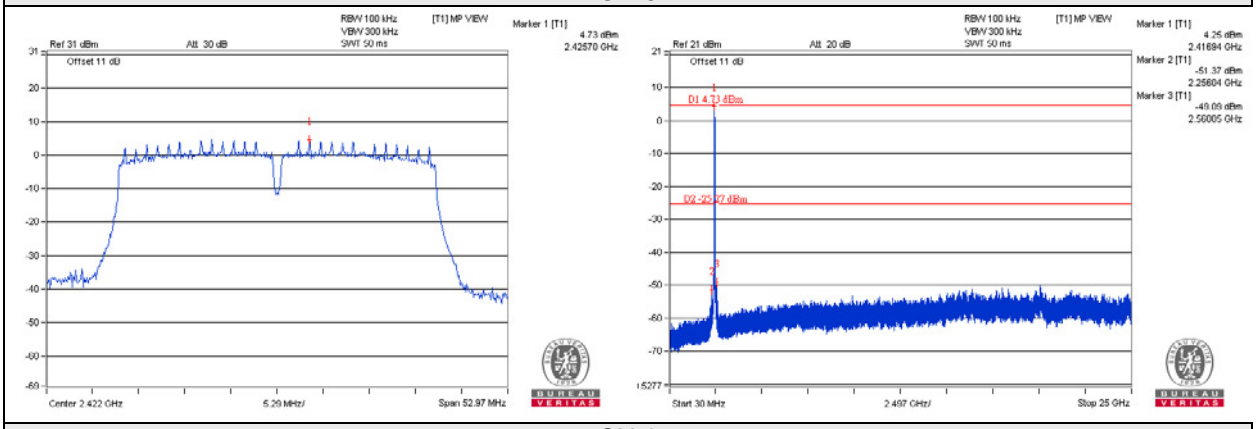


CH 11

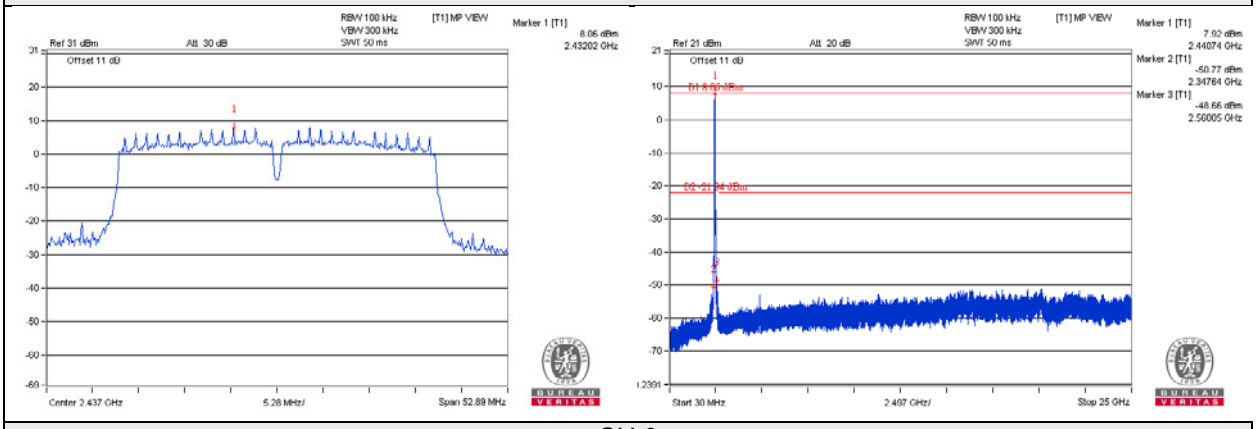


802.11n (HT40)_Chain 0

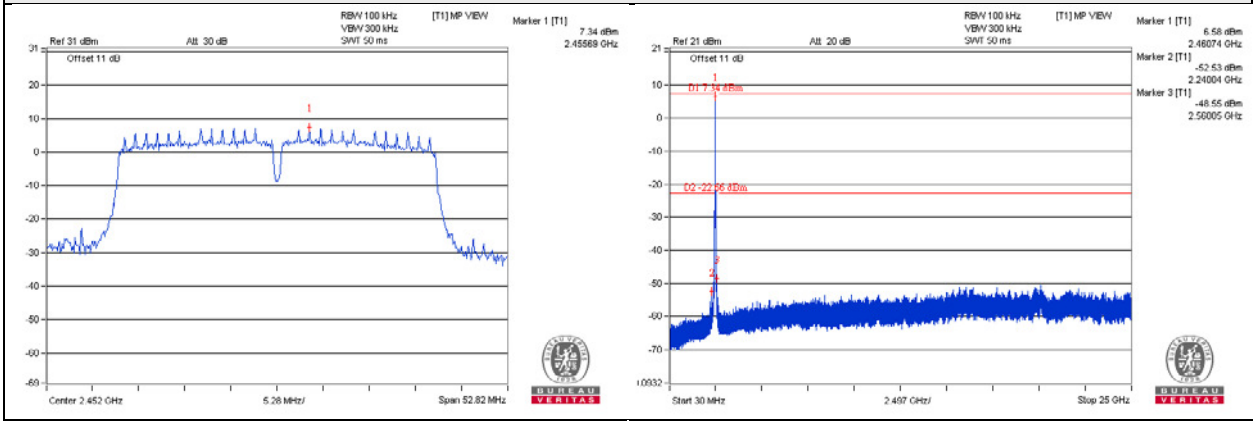
CH 3



CH 6

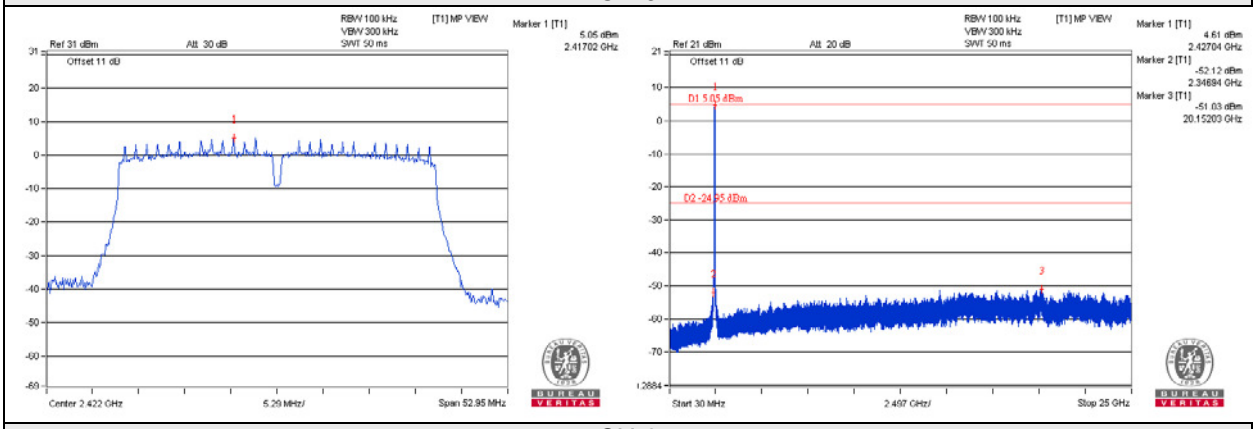


CH 9

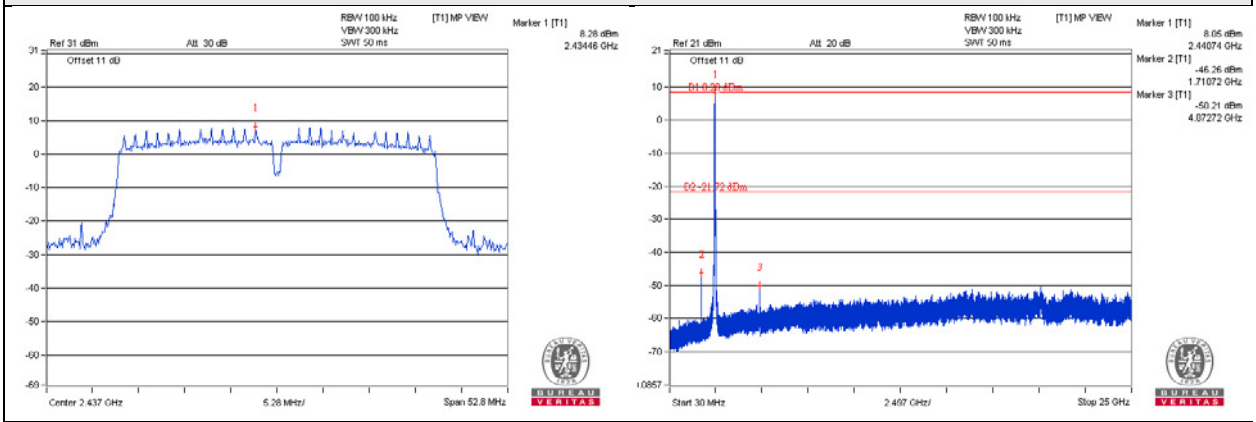


802.11n (HT40)_Chain 1

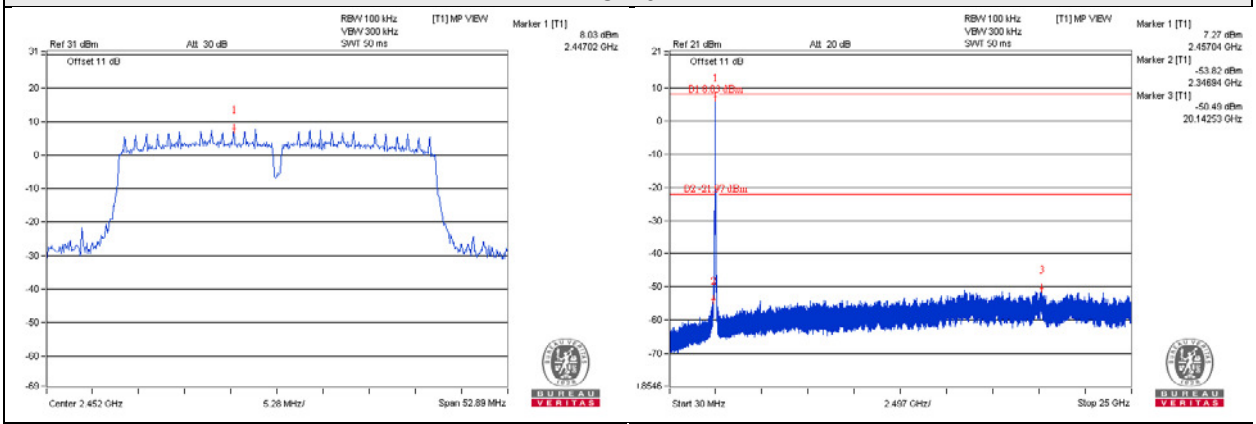
CH 3



CH 6



CH 9



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

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