FCC Test Report

Report No.:	RF170405E08
FCC ID:	I88NBG6604
Test Model:	NBG6604
Series Model:	NBG6602
Received Date:	Apr. 08, 2017
Test Date:	Apr. 20 to June 15, 2017
Issued Date:	July 26, 2017
Applicant:	Zyxel Communications Corporation
Address:	No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
RF170405E08	Original release.	July 26, 2017

1 Certificate of Conformity

Product:	AC1200 Dual-Band Wireless Router
Brand:	ZYXEL
Test Model:	NBG6604
Series Model:	NBG6602
Sample Status:	ENGINEERING SAMPLE
Applicant:	Zyxel Communications Corporation
Test Date:	Apr. 20 to June 15, 2017
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10: 2013

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

Prepared by : _____ , **Date:** July 26, 2017

Wendy Wu / Specialist

Approved by : _____ , **Date:** July 26, 2017

May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.01dB at 0.34909MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.6dB at 2390.00MHz, 2483.50MHz, 7311.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.32 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.14 dB
	6GHz ~ 18GHz	5.04 dB
	18GHz ~ 40GHz	5.25 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	AC1200 Dual-Band Wireless Router
Brand	ZYXEL
Test Model	NBG6604
Series Model	NBG6602
RF CPU Model No.	MTK MT7628AN
RF Chip Model No.	MTK MT7612E
FW	V1.00(ABIR. 0)b4
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** 246.397mW **5.18 ~ 5.24GHz:** **CDD Mode:** 177.813mW **Beamforming Mode:** 177.813mW **5.745 ~ 5.825GHz:** **CDD Mode:** 469.373mW **Beamforming Mode:** 469.373mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	RJ45 cable (Unshielded, 1m) x 1

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	WLAN 5GHz
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

2. All models are listed as below.

Model Name	I/O Port	Color	Remark
NBG6604	WAN (RJ45) x1 LAN (RJ45) x4 DC in x1	white	For Market request
NBG6602	WAN (RJ45) x1 LAN (RJ45) x1 DC in x1	charcoal grey	

From the above models, model: **NBG6604** was selected as representative model for the test and its data was recorded in this report.

3. The EUT uses following adapter.

Brand	Model No.	Spec.
Frecom	F12L28-120100SPAU	Input: 100-240V, 0.3A, 50/60Hz Output: 12V, 1A DC output cable (Unshielded, 1.5m)

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

2.4GHz							
Transmitter Circuit	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz toGHz)	Antenna Type	Connecter Type	Cable Length(mm)
Chain (0)	Aristotle	MiCAP-3324C	2.2	2.4~2.4835	Dipole	i-pex(MHF)	153
Chain (1)	Aristotle	MiCAP-3324C	2.55	2.4~2.4835	Dipole	i-pex(MHF)	41
5GHz							
Transmitter Circuit	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz toGHz)	Antenna Type	Connecter Type	Cable Length(mm)
Chain (0)	Aristotle	MiCAP-3324C	2.78	5.15~5.85	Dipole	i-pex(MHF)	150
Chain (1)	Aristotle	MiCAP-3324C	3	5.15~5.85	Dipole	i-pex(MHF)	43

5. The EUT incorporates a MIMO function.

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

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

6. The power setting are list as below:

Modulation Mode	Frequency (MHz)	Power Setting
802.11b	2412	24
	2437	1A
	2462	1C
802.11g	2412	1D
	2437	1E
	2462	1C
802.11n(HT20)	2412	1B
	2437	1F
	2462	1B
802.11n(HT40)	2422	16
	2437	1E
	2452	15

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

3.2 Description of Test Modes

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

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

7 channels are provided for 802.11n (HT40):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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: The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-plane**.

Radiated Emission Test (Above 1GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1	DSSS	DBPSK	1

Power Line Conducted Emission Test:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1	DSSS	DBPSK	1

Antenna Port Conducted Measurement:

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

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

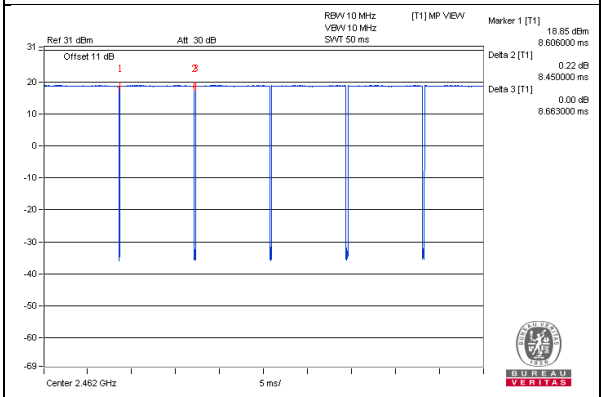
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 74%RH	120Vac, 60Hz	Terry Huang
RE<1G	24deg. C, 66%RH	120Vac, 60Hz	Rey Chen
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	23deg. C, 66%RH	120Vac, 60Hz	Robert Cheng

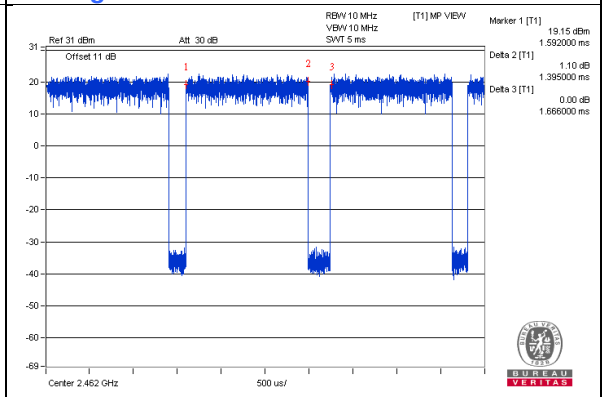
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor shall be considered.
802.11b: Duty cycle = 8.45 ms/8.663 ms = 0.975, Duty factor = 10 * log(1/0.975) = 0.11
802.11g: Duty cycle = 1.395 ms/1.666 ms = 0.937, Duty factor = 10 * log(1/0.837) = 0.77
802.11n (HT20): Duty cycle = 1.306/1.533 = 0.852, Duty factor = 10 * log(1/0.852) = 0.7
802.11n (HT40): Duty cycle = 0.648/0.81 = 0.8, Duty factor = 10 * log(1/0.8) = 0.97

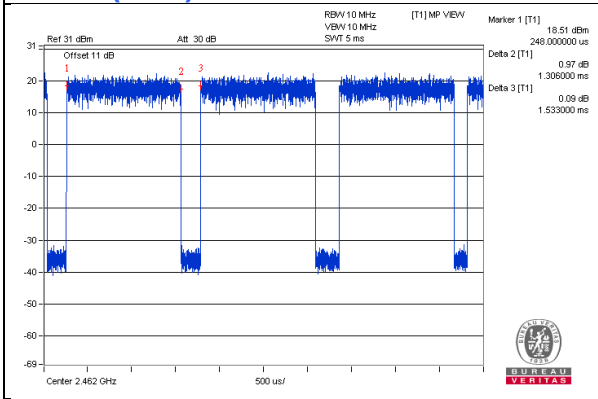
802.11b



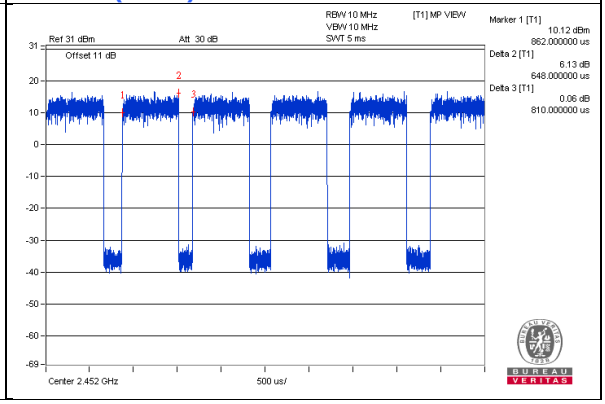
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

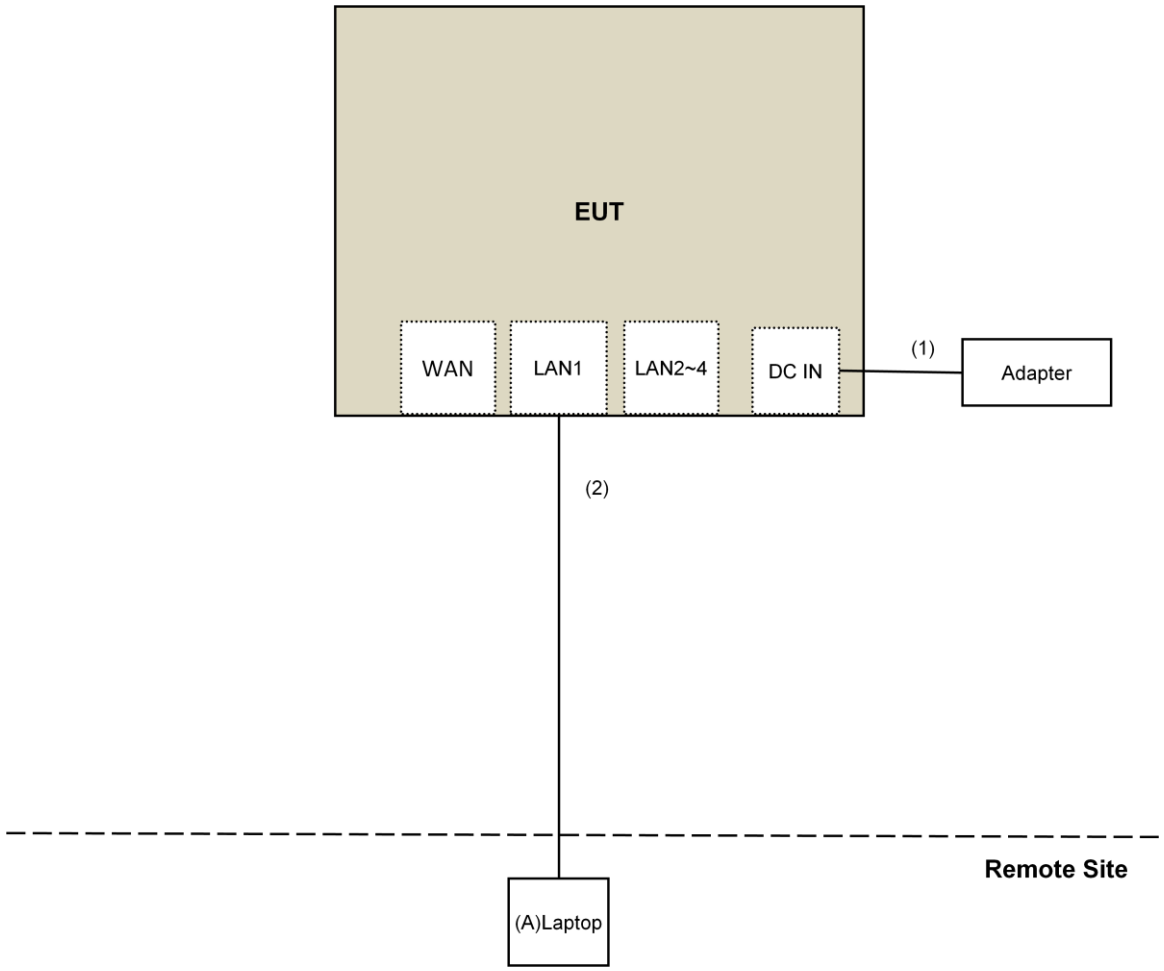
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

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

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

3.4.1 Configuration of System under Test



Note: The test configuration was defined by the client requirement.

3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
KDB 558074 D01 DTS Meas Guidance v04
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

4.1.2 Test Instruments

For below 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	Aug. 18, 2016	Aug. 17, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 07, 2016	May 06, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Dec. 29, 2016	Dec. 28, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 05, 2016	Oct. 04, 2017
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The CANADA Site Registration No. is 20331-1
5 Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Apr. 20, 2017

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	Aug. 18, 2016	Aug. 17, 2017
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 28, 2016	Dec. 27, 2017
Pre-Amplifier EMCI	EMC12630SE	980384	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160922 150317 150322	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Spectrum Analyzer Keysight	N9030A	MY54490520	July 29, 2016	July 28, 2017
Pre-Amplifier EMCI	EMC184045SE	980386	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSv40	100964	June 28, 2016	June 27, 2017
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018

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 966 Chamber No. 3.
3. The CANADA Site Registration No. is 20331-1
4. Tested Date: June 14 to 15, 2017

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:

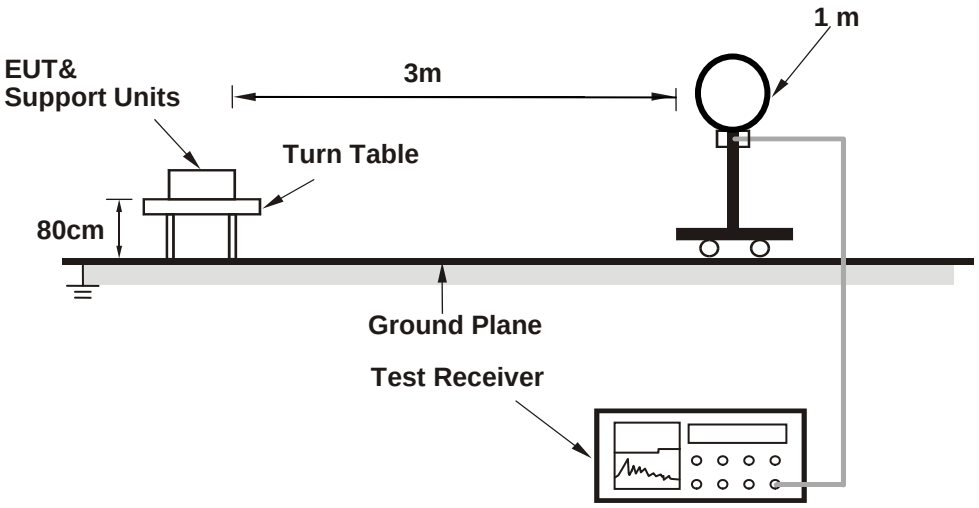
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Average detection (AV) at frequency above 1GHz. If duty cycle of test signal is < 98%, the duty factor need added to measured value.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

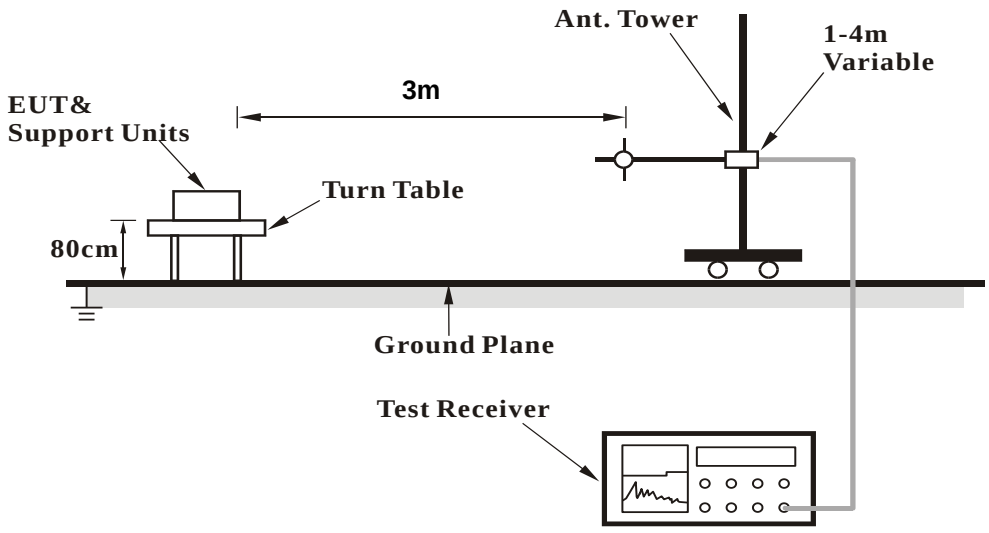
No deviation.

4.1.5 Test Setup

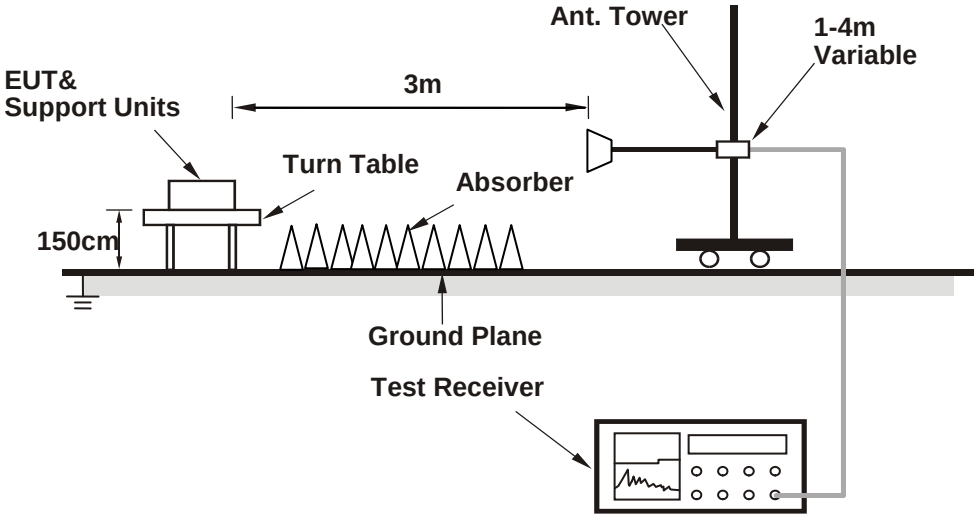
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop which is placed on remote site.
b. Contorlling software (QATool_0.0.0.96) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	56.1 PK	74.0	-17.9	3.09 H	181	57.7	-1.6
2	2390.00	43.7 AV	54.0	-10.3	3.09 H	181	45.3	-1.6
3	*2412.00	107.0 PK			3.09 H	181	108.5	-1.5
4	*2412.00	104.2 AV			3.09 H	181	105.7	-1.5
5	4824.00	50.0 PK	74.0	-24.0	2.05 H	208	47.0	3.0
6	4824.00	48.9 AV	54.0	-5.1	2.05 H	208	45.9	3.0
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	61.7 PK	74.0	-12.3	1.92 V	346	63.3	-1.6
2	**2390.00**	**53.4 AV**	**54.0**	**-0.6**	**1.92 V**	**346**	**55.0**	**-1.6**
3	*2412.00	115.4 PK			1.92 V	346	116.9	-1.5
4	*2412.00	112.6 AV			1.92 V	346	114.1	-1.5
5	4824.00	44.9 PK	74.0	-29.1	1.39 V	359	41.9	3.0
6	4824.00	42.4 AV	54.0	-11.6	1.39 V	359	39.4	3.0

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	103.0 PK			3.05 H	183	104.5	-1.5
2	*2437.00	100.3 AV			3.05 H	183	101.8	-1.5
3	4874.00	44.0 PK	74.0	-30.0	2.06 H	198	40.8	3.2
4	4874.00	40.1 AV	54.0	-13.9	2.06 H	198	36.9	3.2
5	7311.00	57.1 PK	74.0	-16.9	2.22 H	160	48.2	8.9
6	**7311.00**	**53.4 AV**	**54.0**	**-0.6**	**2.22 H**	**160**	**44.5**	**8.9**
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	*2437.00	111.4 PK			1.96 V	344	112.9	-1.5
2	*2437.00	108.7 AV			1.96 V	344	110.2	-1.5
3	4874.00	40.0 PK	74.0	-34.0	1.38 V	360	36.8	3.2
4	4874.00	35.1 AV	54.0	-18.9	1.38 V	360	31.9	3.2
5	7311.00	49.3 PK	74.0	-24.7	1.34 V	112	40.4	8.9
6	7311.00	44.2 AV	54.0	-9.8	1.34 V	112	35.3	8.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.2 PK			3.04 H	178	105.6	-1.4
2	*2462.00	101.2 AV			3.04 H	178	102.6	-1.4
3	2483.50	55.1 PK	74.0	-18.9	3.04 H	178	56.5	-1.4
4	2483.50	37.2 AV	54.0	-16.8	3.04 H	178	38.6	-1.4
5	4924.00	44.5 PK	74.0	-29.5	2.05 H	183	41.2	3.3
6	4924.00	40.3 AV	54.0	-13.7	2.05 H	183	37.0	3.3
7	7386.00	57.0 PK	74.0	-17.0	2.20 H	150	47.9	9.1
8	7386.00	53.3 AV	54.0	-0.7	2.20 H	150	44.2	9.1
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			2.00 V	350	114.0	-1.4
2	*2462.00	109.6 AV			2.00 V	350	111.0	-1.4
3	2483.50	60.5 PK	74.0	-13.5	2.00 V	350	61.9	-1.4
4	2483.50	46.5 AV	54.0	-7.5	2.00 V	350	47.9	-1.4
5	4924.00	40.4 PK	74.0	-33.6	1.36 V	357	37.1	3.3
6	4924.00	35.4 AV	54.0	-18.6	1.36 V	357	32.1	3.3
7	7386.00	49.5 PK	74.0	-24.5	1.31 V	106	40.4	9.1
8	7386.00	44.6 AV	54.0	-9.4	1.31 V	106	35.5	9.1

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	58.1 PK	74.0	-15.9	1.49 H	30	59.7	-1.6
2	2390.00	45.6 AV	54.0	-8.4	1.49 H	30	47.2	-1.6
3	*2412.00	108.6 PK			1.49 H	30	110.1	-1.5
4	*2412.00	99.2 AV			1.49 H	30	100.7	-1.5
5	4824.00	49.8 PK	74.0	-24.2	1.09 H	115	46.8	3.0
6	4824.00	36.6 AV	54.0	-17.4	1.09 H	115	33.6	3.0
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	63.9 PK	74.0	-10.1	2.31 V	158	65.5	-1.6
2	2390.00	52.9 AV	54.0	-1.1	2.31 V	158	54.5	-1.6
3	*2412.00	116.8 PK			2.31 V	158	118.3	-1.5
4	*2412.00	107.3 AV			2.31 V	158	108.8	-1.5
5	4824.00	41.8 PK	74.0	-32.2	1.60 V	262	38.8	3.0
6	4824.00	29.5 AV	54.0	-24.5	1.60 V	262	26.5	3.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	47.7 PK	74.0	-26.3	1.48 H	43	49.3	-1.6
2	2390.00	36.2 AV	54.0	-17.8	1.48 H	43	37.8	-1.6
3	*2437.00	108.7 PK			1.48 H	43	110.2	-1.5
4	*2437.00	99.2 AV			1.48 H	43	100.7	-1.5
5	2483.50	57.3 PK	74.0	-16.7	1.48 H	43	58.7	-1.4
6	2483.50	46.4 AV	54.0	-7.6	1.48 H	43	47.8	-1.4
7	4874.00	49.5 PK	74.0	-24.5	1.04 H	119	46.3	3.2
8	4874.00	36.6 AV	54.0	-17.4	1.04 H	119	33.4	3.2
9	7311.00	66.6 PK	74.0	-7.4	2.29 H	161	57.7	8.9
10	7311.00	53.0 AV	54.0	-1.0	2.29 H	161	44.1	8.9
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	49.8 PK	74.0	-24.2	2.12 V	157	51.4	-1.6
2	2390.00	38.2 AV	54.0	-15.8	2.12 V	157	39.8	-1.6
3	*2437.00	117.1 PK			2.12 V	157	118.6	-1.5
4	*2437.00	107.6 AV			2.12 V	157	109.1	-1.5
5	2483.50	59.4 PK	74.0	-14.6	2.12 V	157	60.8	-1.4
6	2483.50	48.5 AV	54.0	-5.5	2.12 V	157	49.9	-1.4
7	4874.00	42.1 PK	74.0	-31.9	1.56 V	272	38.9	3.2
8	4874.00	29.5 AV	54.0	-24.5	1.56 V	272	26.3	3.2
9	7311.00	62.1 PK	74.0	-11.9	2.63 V	204	53.2	8.9
10	7311.00	47.9 AV	54.0	-6.1	2.63 V	204	39.0	8.9

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 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	107.4 PK			1.45 H	29	108.8	-1.4
2	*2462.00	97.3 AV			1.45 H	29	98.7	-1.4
3	2483.50	60.8 PK	74.0	-13.2	1.45 H	29	62.2	-1.4
4	2483.50	43.4 AV	54.0	-10.6	1.45 H	29	44.8	-1.4
5	4924.00	48.9 PK	74.0	-25.1	1.09 H	128	45.6	3.3
6	4924.00	36.0 AV	54.0	-18.0	1.09 H	128	32.7	3.3
7	7386.00	66.0 PK	74.0	-8.0	2.34 H	167	56.9	9.1
8	7386.00	52.8 AV	54.0	-1.2	2.34 H	167	43.7	9.1
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	114.4 PK			1.86 V	190	115.8	-1.4
2	*2462.00	105.7 AV			1.86 V	190	107.1	-1.4
3	2483.50	66.4 PK	74.0	-7.6	1.86 V	190	67.8	-1.4
4	2483.50	53.1 AV	54.0	-0.9	1.86 V	190	54.5	-1.4
5	4924.00	42.4 PK	74.0	-31.6	1.59 V	280	39.1	3.3
6	4924.00	29.8 AV	54.0	-24.2	1.59 V	280	26.5	3.3
7	7386.00	61.7 PK	74.0	-12.3	2.59 V	196	52.6	9.1
8	7386.00	47.5 AV	54.0	-6.5	2.59 V	196	38.4	9.1

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.

802.11n (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	58.2 PK	74.0	-15.8	1.49 H	45	59.8	-1.6
2	2390.00	43.6 AV	54.0	-10.4	1.49 H	45	45.2	-1.6
3	*2412.00	106.1 PK			1.49 H	45	107.6	-1.5
4	*2412.00	95.9 AV			1.49 H	45	97.4	-1.5
5	4824.00	50.0 PK	74.0	-24.0	1.09 H	113	47.0	3.0
6	4824.00	37.2 AV	54.0	-16.8	1.09 H	113	34.2	3.0
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	66.7 PK	74.0	-7.3	1.67 V	205	68.3	-1.6
2	2390.00	53.3 AV	54.0	-0.7	1.67 V	205	54.9	-1.6
3	*2412.00	114.3 PK			1.67 V	205	115.8	-1.5
4	*2412.00	104.3 AV			1.67 V	205	105.8	-1.5
5	4824.00	41.8 PK	74.0	-32.2	1.58 V	278	38.8	3.0
6	4824.00	30.4 AV	54.0	-23.6	1.58 V	278	27.4	3.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.0 PK	74.0	-18.0	1.48 H	56	57.6	-1.6
2	2390.00	44.1 AV	54.0	-9.9	1.48 H	56	45.7	-1.6
3	*2437.00	109.4 PK			1.48 H	56	110.9	-1.5
4	*2437.00	98.0 AV			1.48 H	56	99.5	-1.5
5	2483.50	57.2 PK	74.0	-16.8	1.48 H	56	58.6	-1.4
6	2483.50	45.5 AV	54.0	-8.5	1.48 H	56	46.9	-1.4
7	4874.00	49.9 PK	74.0	-24.1	1.08 H	104	46.7	3.2
8	4874.00	37.0 AV	54.0	-17.0	1.08 H	104	33.8	3.2
9	7311.00	68.0 PK	74.0	-6.0	2.40 H	161	59.1	8.9
10	7311.00	53.3 AV	54.0	-0.7	2.40 H	161	44.4	8.9
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	59.2 PK	74.0	-14.8	2.26 V	158	60.8	-1.6
2	2390.00	47.5 AV	54.0	-6.5	2.26 V	158	49.1	-1.6
3	*2437.00	116.4 PK			2.26 V	158	117.9	-1.5
4	*2437.00	106.4 AV			2.26 V	158	107.9	-1.5
5	2483.50	60.3 PK	74.0	-13.7	2.26 V	158	61.7	-1.4
6	2483.50	48.8 AV	54.0	-5.2	2.26 V	158	50.2	-1.4
7	4874.00	41.9 PK	74.0	-32.1	1.57 V	287	38.7	3.2
8	4874.00	30.3 AV	54.0	-23.7	1.57 V	287	27.1	3.2
9	7311.00	61.7 PK	74.0	-12.3	2.63 V	210	52.8	8.9
10	7311.00	47.7 AV	54.0	-6.3	2.63 V	210	38.8	8.9

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 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	107.2 PK			1.44 H	57	108.6	-1.4
2	*2462.00	96.5 AV			1.44 H	57	97.9	-1.4
3	2483.50	59.1 PK	74.0	-14.9	1.44 H	57	60.5	-1.4
4	2483.50	44.1 AV	54.0	-9.9	1.44 H	57	45.5	-1.4
5	4924.00	46.6 PK	74.0	-27.4	1.05 H	118	43.3	3.3
6	4924.00	33.1 AV	54.0	-20.9	1.05 H	118	29.8	3.3
7	7386.00	63.9 PK	74.0	-10.1	2.42 H	155	54.8	9.1
8	7386.00	48.7 AV	54.0	-5.3	2.42 H	155	39.6	9.1
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	114.4 PK			1.96 V	189	115.8	-1.4
2	*2462.00	104.9 AV			1.96 V	189	106.3	-1.4
3	2483.50	69.3 PK	74.0	-4.7	1.96 V	189	70.7	-1.4
4	**2483.50**	**53.4 AV**	**54.0**	**-0.6**	**1.96 V**	**189**	**54.8**	**-1.4**
5	4924.00	41.4 PK	74.0	-32.6	1.55 V	277	38.1	3.3
6	4924.00	30.2 AV	54.0	-23.8	1.55 V	277	26.9	3.3
7	7386.00	61.2 PK	74.0	-12.8	2.65 V	205	52.1	9.1
8	7386.00	47.5 AV	54.0	-6.5	2.65 V	205	38.4	9.1

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.

802.11n (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	1.18 H	30	61.5	-1.6
2	2390.00	48.5 AV	54.0	-5.5	1.18 H	30	50.1	-1.6
3	*2422.00	100.7 PK			1.18 H	30	102.3	-1.6
4	*2422.00	91.8 AV			1.18 H	30	93.4	-1.6
5	4844.00	39.6 PK	74.0	-34.4	1.03 H	242	36.5	3.1
6	4844.00	27.7 AV	54.0	-26.3	1.03 H	242	24.6	3.1
7	7266.00	55.8 PK	74.0	-18.2	2.46 H	166	46.9	8.9
8	7266.00	44.8 AV	54.0	-9.2	2.46 H	166	35.9	8.9
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	69.0 PK	74.0	-5.0	1.81 V	178	70.6	-1.6
2	2390.00	53.2 AV	54.0	-0.8	1.81 V	178	54.8	-1.6
3	*2422.00	108.3 PK			1.81 V	178	109.9	-1.6
4	*2422.00	100.3 AV			1.81 V	178	101.9	-1.6
5	4844.00	39.2 PK	74.0	-34.8	1.56 V	284	36.1	3.1
6	4844.00	27.4 AV	54.0	-26.6	1.56 V	284	24.3	3.1
7	7266.00	48.3 PK	74.0	-25.7	1.27 V	115	39.4	8.9
8	7266.00	37.1 AV	54.0	-16.9	1.27 V	115	28.2	8.9

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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.6 PK	74.0	-18.4	1.21 H	37	57.2	-1.6
2	2390.00	43.1 AV	54.0	-10.9	1.21 H	37	44.7	-1.6
3	*2437.00	104.6 PK			1.21 H	37	106.1	-1.5
4	*2437.00	95.2 AV			1.21 H	37	96.7	-1.5
5	2483.50	60.0 PK	74.0	-14.0	1.21 H	37	61.4	-1.4
6	2483.50	45.2 AV	54.0	-8.8	1.21 H	37	46.6	-1.4
7	4874.00	39.9 PK	74.0	-34.1	1.01 H	251	36.7	3.2
8	4874.00	27.8 AV	54.0	-26.2	1.01 H	251	24.6	3.2
9	7311.00	62.5 PK	74.0	-11.5	2.28 H	163	53.6	8.9
10	7311.00	50.3 AV	54.0	-3.7	2.28 H	163	41.4	8.9
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	63.9 PK	74.0	-10.1	1.70 V	169	65.5	-1.6
2	2390.00	51.5 AV	54.0	-2.5	1.70 V	169	53.1	-1.6
3	*2437.00	112.5 PK			1.70 V	169	114.0	-1.5
4	*2437.00	103.6 AV			1.70 V	169	105.1	-1.5
5	2483.50	65.8 PK	74.0	-8.2	1.70 V	169	67.2	-1.4
6	2483.50	53.3 AV	54.0	-0.7	1.70 V	169	54.7	-1.4
7	4874.00	39.2 PK	74.0	-34.8	1.57 V	271	36.0	3.2
8	4874.00	27.3 AV	54.0	-26.7	1.57 V	271	24.1	3.2
9	7311.00	48.4 PK	74.0	-25.6	1.33 V	121	39.5	8.9
10	7311.00	37.0 AV	54.0	-17.0	1.33 V	121	28.1	8.9

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 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	100.4 PK			1.24 H	38	101.9	-1.5
2	*2452.00	90.7 AV			1.24 H	38	92.2	-1.5
3	2483.50	62.8 PK	74.0	-11.2	1.24 H	38	64.2	-1.4
4	2483.50	43.4 AV	54.0	-10.6	1.24 H	38	44.8	-1.4
5	4904.00	40.0 PK	74.0	-34.0	1.02 H	256	36.8	3.2
6	4904.00	27.6 AV	54.0	-26.4	1.02 H	256	24.4	3.2
7	7356.00	62.3 PK	74.0	-11.7	2.27 H	167	53.2	9.1
8	7356.00	50.2 AV	54.0	-3.8	2.27 H	167	41.1	9.1
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	*2452.00	108.8 PK			1.97 V	190	110.3	-1.5
2	*2452.00	99.1 AV			1.97 V	190	100.6	-1.5
3	2483.50	67.9 PK	74.0	-6.1	1.97 V	190	69.3	-1.4
4	2483.50	52.8 AV	54.0	-1.2	1.97 V	190	54.2	-1.4
5	4904.00	39.1 PK	74.0	-34.9	1.61 V	279	35.9	3.2
6	4904.00	27.4 AV	54.0	-26.6	1.61 V	279	24.2	3.2
7	7356.00	48.4 PK	74.0	-25.6	1.33 V	120	39.3	9.1
8	7356.00	36.9 AV	54.0	-17.1	1.33 V	120	27.8	9.1

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.

Below 1GHz Data:

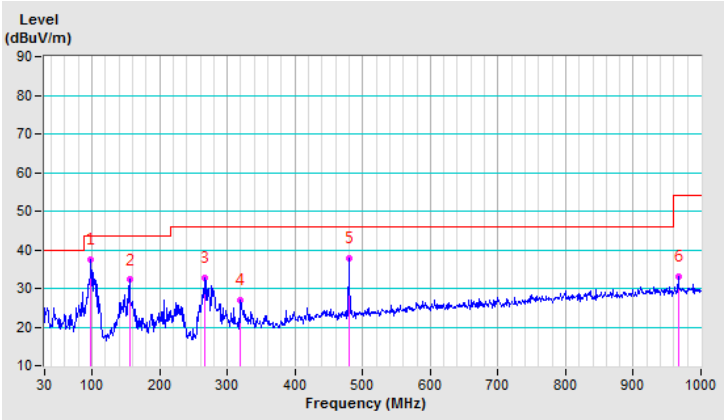
802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	98.41	37.4 QP	43.5	-6.1	2.00 H	252	50.4	-13.0
2	155.59	32.2 QP	43.5	-11.3	2.00 H	92	40.6	-8.4
3	266.19	32.8 QP	46.0	-13.2	1.00 H	304	41.6	-8.8
4	320.01	27.0 QP	46.0	-19.0	3.00 H	295	33.6	-6.6
5	480.01	37.9 QP	46.0	-8.1	2.00 H	30	41.0	-3.1
6	966.68	33.0 QP	54.0	-21.0	1.00 H	187	28.1	4.9

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

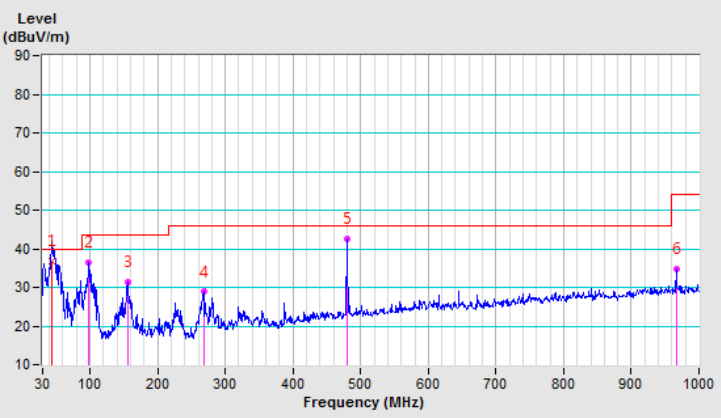


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	43.80	36.8 QP	40.0	-3.2	1.00 V	173	45.2	-8.4
2	98.46	36.4 QP	43.5	-7.1	1.00 V	274	49.4	-13.0
3	155.66	31.5 QP	43.5	-12.0	1.00 V	118	39.9	-8.4
4	268.30	28.8 QP	46.0	-17.2	2.00 V	322	37.5	-8.7
5	480.01	42.6 QP	46.0	-3.4	1.00 V	175	45.7	-3.1
6	966.66	34.7 QP	54.0	-19.3	1.00 V	106	29.9	4.8

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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
50 ohms Terminator	N/A	EMC-02	Sep. 29, 2016	Sep. 28, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3 Tested Date: May 19, 2017

4.2.3 Test Procedures

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

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

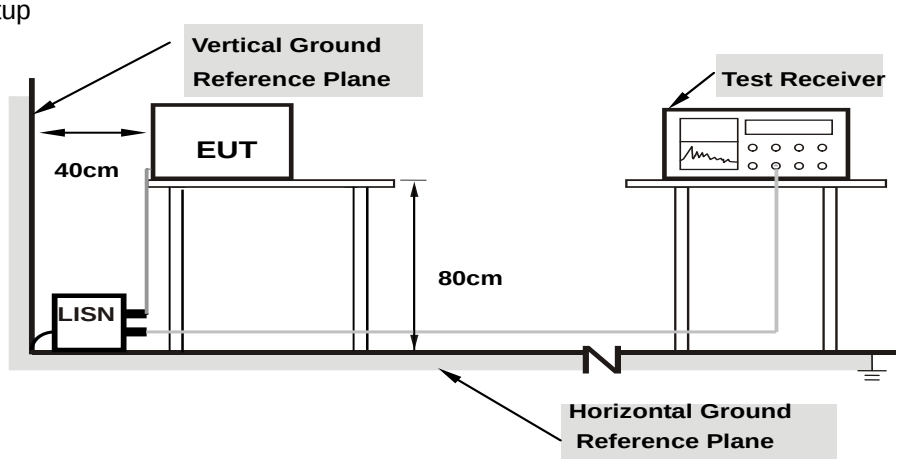
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

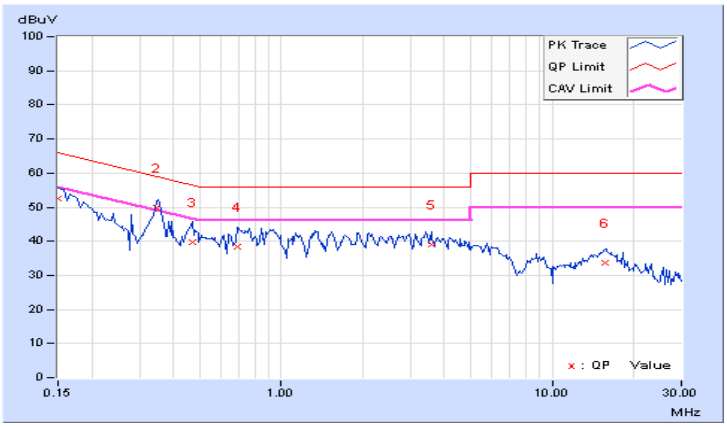
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.20	42.36	31.60	52.56	41.80	66.00	56.00	-13.44	-14.20
2	**0.34909**	**10.23**	**39.63**	**34.74**	**49.86**	**44.97**	**58.98**	**48.98**	**-9.12**	**-4.01**
3	0.47031	10.25	29.33	22.19	39.58	32.44	56.51	46.51	-16.93	-14.07
4	0.68906	10.27	28.06	21.38	38.33	31.65	56.00	46.00	-17.67	-14.35
5	3.58203	10.31	28.63	21.78	38.94	32.09	56.00	46.00	-17.06	-13.91
6	15.60938	11.35	22.48	15.44	33.83	26.79	60.00	50.00	-26.17	-23.21

REMARKS:

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

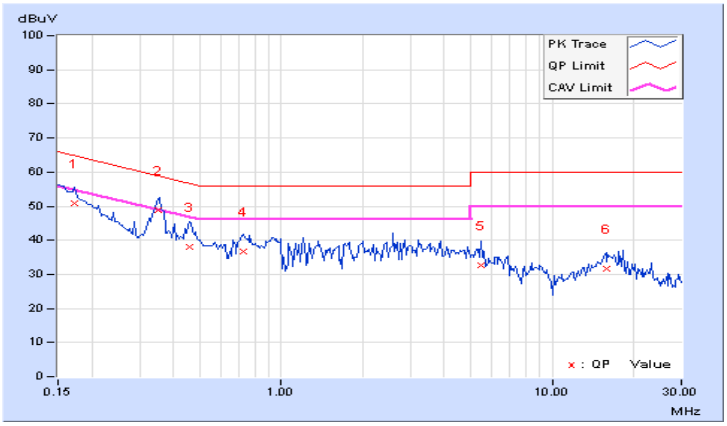


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	10.18	40.65	29.29	50.83	39.47	64.79	54.79	-13.96	-15.32
2	0.35297	10.22	38.62	32.47	48.84	42.69	58.89	48.89	-10.05	-6.20
3	0.45859	10.24	27.64	18.05	37.88	28.29	56.72	46.72	-18.84	-18.43
4	0.72813	10.25	26.54	20.57	36.79	30.82	56.00	46.00	-19.21	-15.18
5	5.49609	10.32	22.44	15.55	32.76	25.87	60.00	50.00	-27.24	-24.13
6	15.82813	11.14	20.48	13.77	31.62	24.91	60.00	50.00	-28.38	-25.09

REMARKS:

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

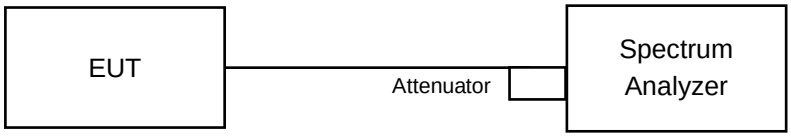


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	9.61	10.03	0.5	PASS
6	2437	9.13	9.60	0.5	PASS
11	2462	10.09	10.04	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.17	15.16	0.5	PASS
6	2437	15.17	15.19	0.5	PASS
11	2462	15.17	15.18	0.5	PASS

802.11n (HT20)

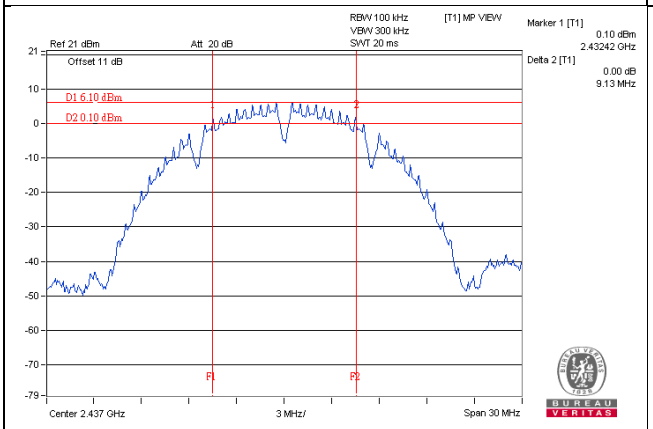
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.17	15.16	0.5	Pass
6	2437	15.17	15.74	0.5	Pass
11	2462	15.11	15.73	0.5	Pass

802.11n (HT40)

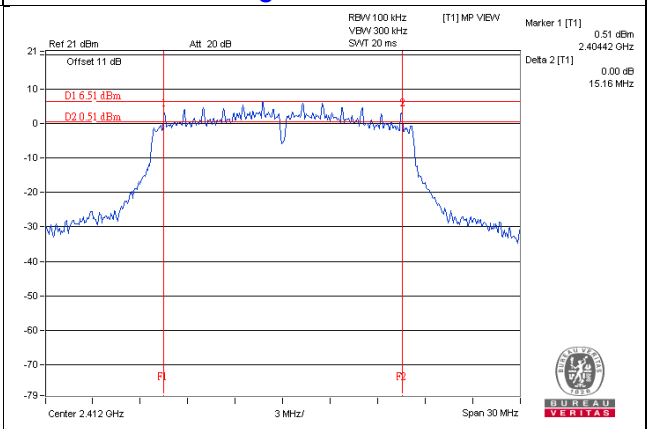
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.09	35.09	0.5	Pass
6	2437	33.91	35.13	0.5	Pass
9	2452	35.14	35.19	0.5	Pass

Spectrum Plot of Worst Value

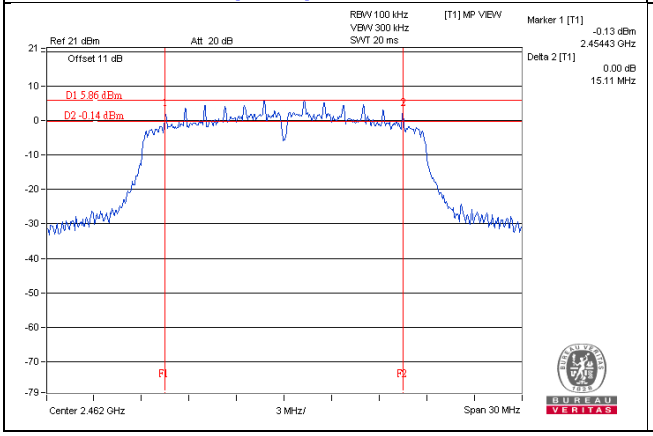
802.11b / Chain 0 : CH6



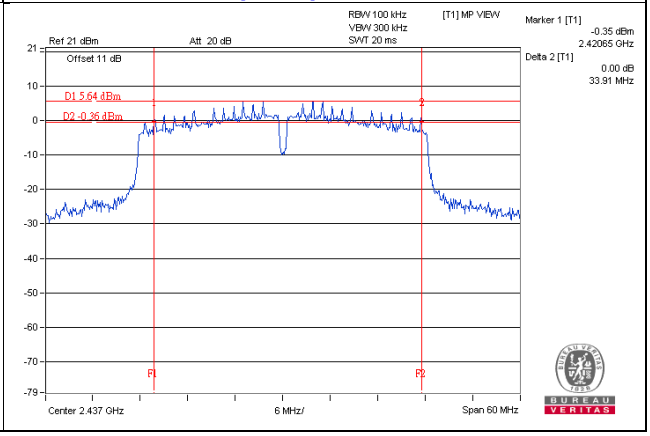
802.11g / Chain 1 : CH1



802.11n (HT20) / Chain 0 : CH11



802.11n (HT40) / Chain 0 : CH6



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

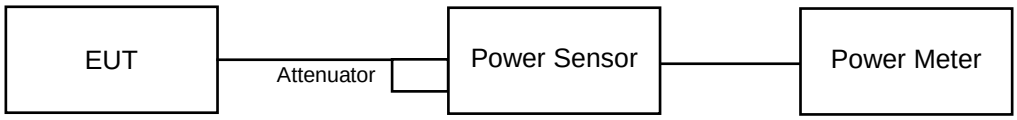
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

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

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

802.11b

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.00	20.81	246.397	23.92	30	Pass
6	2437	15.90	15.51	74.468	18.72	30	Pass
11	2462	16.68	16.31	89.315	19.51	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	17.60	17.25	110.632	20.44	30	Pass
6	2437	17.75	17.63	117.509	20.70	30	Pass
11	2462	16.60	16.59	91.313	19.61	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	16.12	16.14	82.041	19.14	30	Pass
6	2437	18.00	17.95	125.469	20.99	30	Pass
11	2462	16.54	16.24	87.155	19.40	30	Pass

802.11n (HT40)

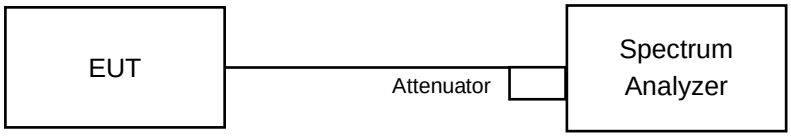
Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	13.89	13.29	45.821	16.61	30	Pass
6	2437	17.45	17.30	109.293	20.39	30	Pass
9	2452	12.97	12.51	37.639	15.76	30	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a) 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 W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-10.93	3.01	0.11	-7.81	8.00	Pass
	6	2437	-15.82	3.01	0.11	-12.70	8.00	Pass
	11	2462	-15.35	3.01	0.11	-12.23	8.00	Pass
1	1	2412	-10.93	3.01	0.11	-7.81	8.00	Pass
	6	2437	-15.81	3.01	0.11	-12.69	8.00	Pass
	11	2462	-14.34	3.01	0.11	-11.22	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.39dBi < 6dBi , so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11g

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-15.10	3.01	0.77	-11.32	8.00	Pass
	6	2437	-14.59	3.01	0.77	-10.81	8.00	Pass
	11	2462	-15.52	3.01	0.77	-11.74	8.00	Pass
1	1	2412	-15.68	3.01	0.77	-11.90	8.00	Pass
	6	2437	-15.02	3.01	0.77	-11.24	8.00	Pass
	11	2462	-15.23	3.01	0.77	-11.45	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.39dBi < 6dBi , so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-14.98	3.01	0.70	-11.27	8.00	Pass
	6	2437	-14.28	3.01	0.70	-10.57	8.00	Pass
	11	2462	-16.28	3.01	0.70	-12.57	8.00	Pass
1	1	2412	-15.70	3.01	0.70	-11.99	8.00	Pass
	6	2437	-13.45	3.01	0.70	-9.74	8.00	Pass
	11	2462	-15.05	3.01	0.70	-11.34	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.39dBi < 6dBi , so the power density limit shall not be reduced.

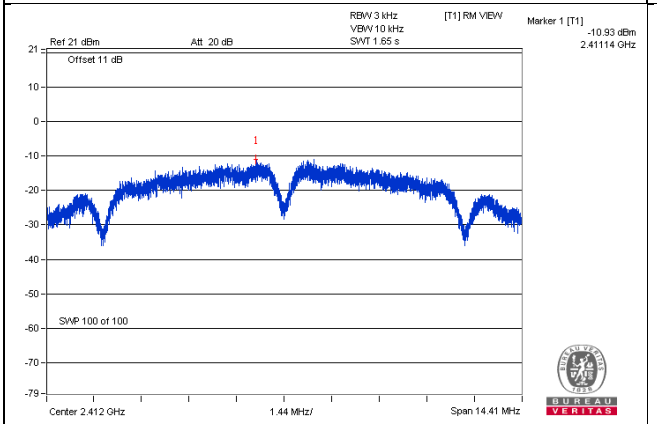
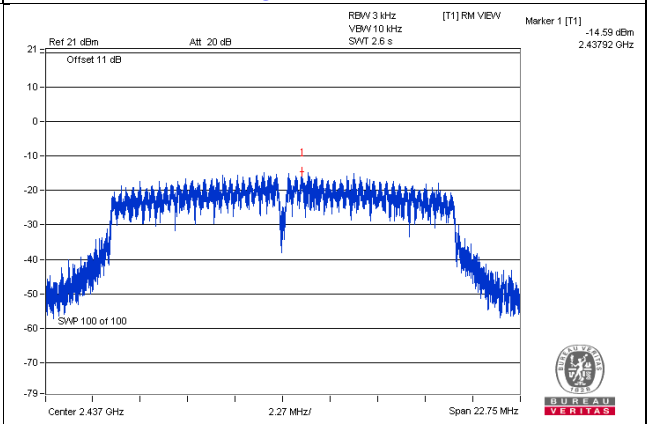
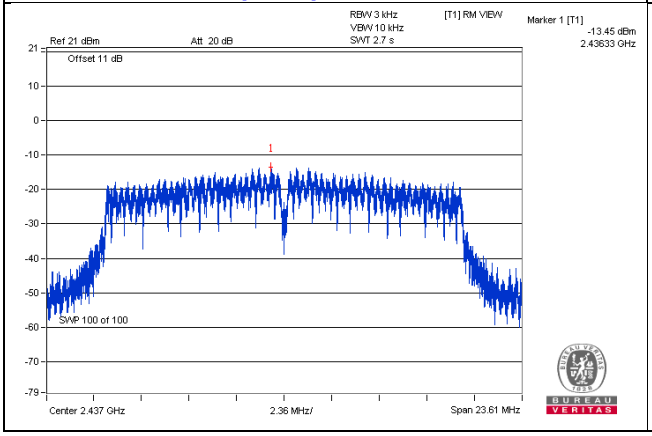
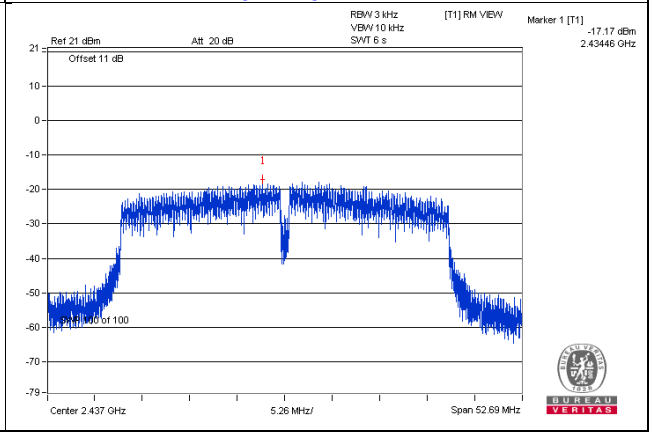
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-19.70	3.01	0.97	-15.72	8.00	Pass
	6	2437	-17.46	3.01	0.97	-13.48	8.00	Pass
	9	2452	-20.80	3.01	0.97	-16.82	8.00	Pass
1	3	2422	-21.11	3.01	0.97	-17.13	8.00	Pass
	6	2437	-17.17	3.01	0.97	-13.19	8.00	Pass
	9	2452	-21.29	3.01	0.97	-17.31	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.39dBi < 6dBi , so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

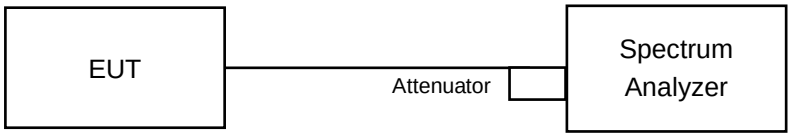
Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 0 : CH6**
	
802.11n (HT20) / Chain 1 : CH6	**802.11n (HT40) / Chain 1 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

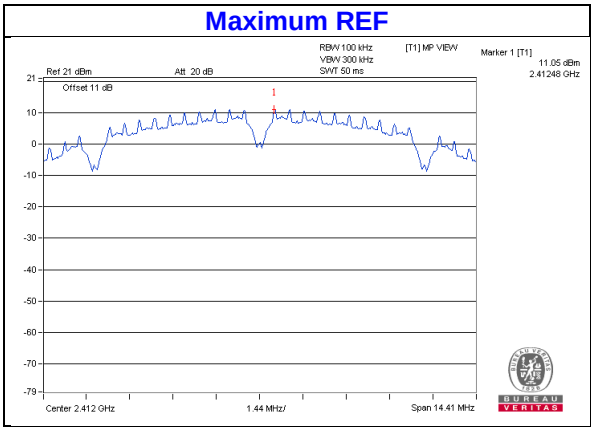
Same as Item 4.3.6

4.6.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dBoffset below D1. It shows compliance with the requirement.

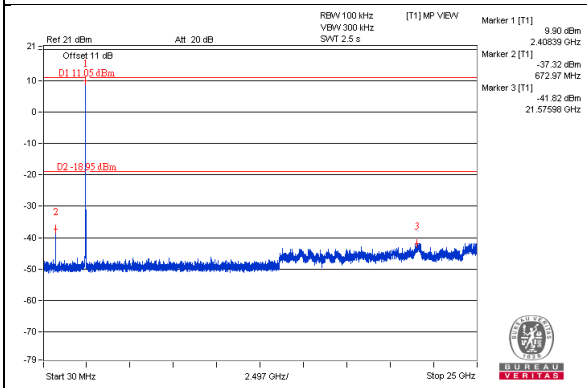
802.11b

Maximum REF

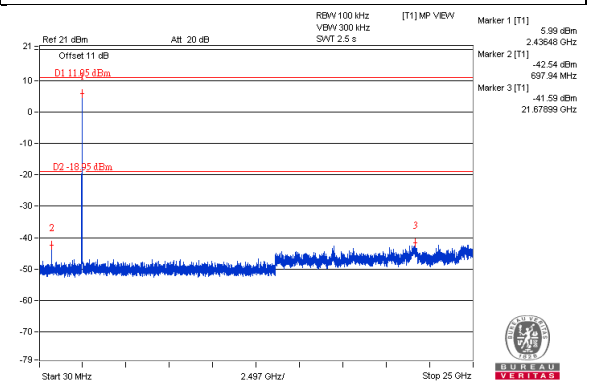


CHAIN 0

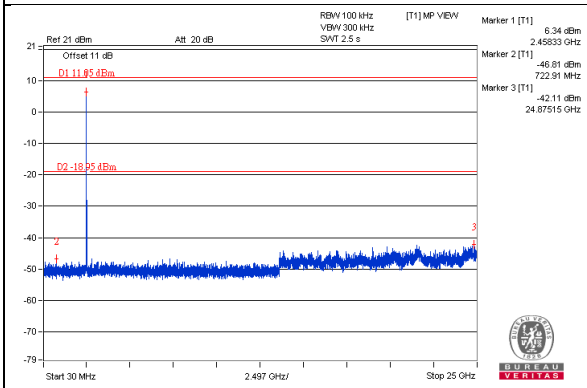
CH 1



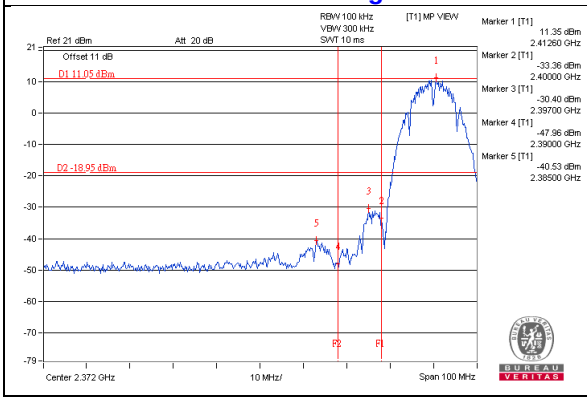
CH 6



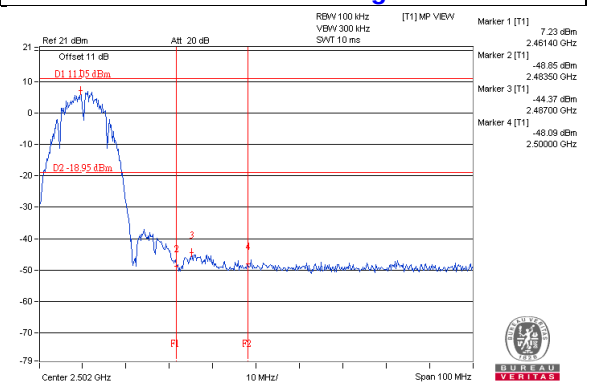
CH 11



CH 1 Band edge

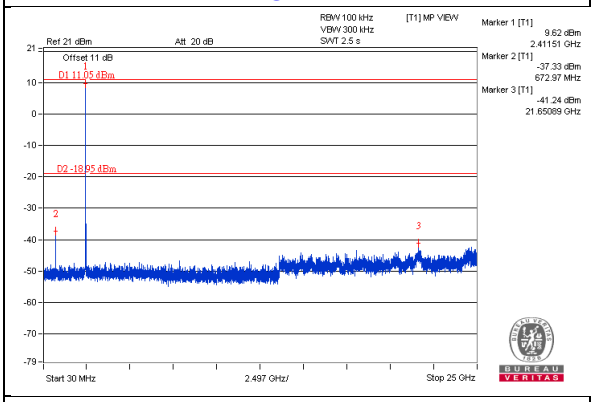


CH 11 Band edge

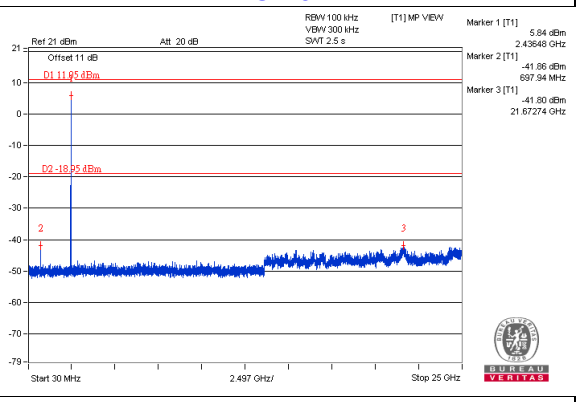


CHAIN 1

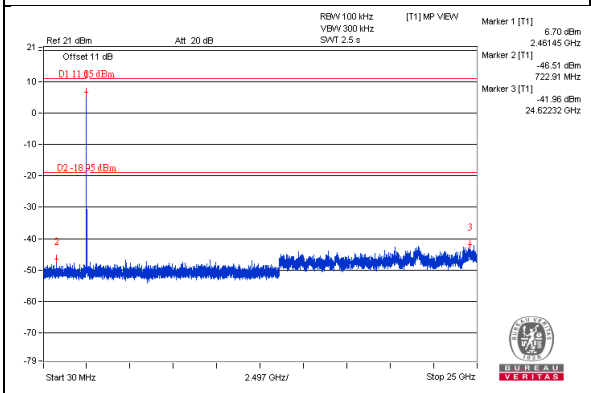
CH 1



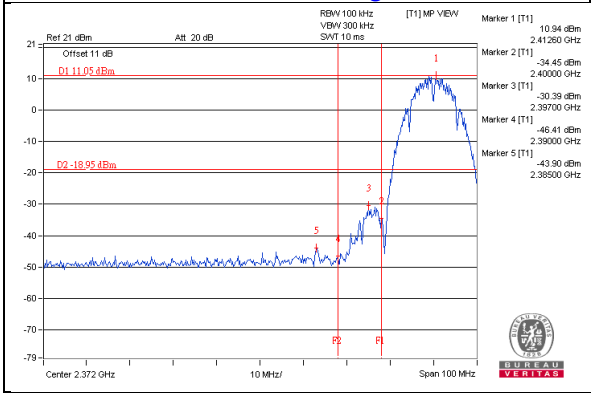
CH 6



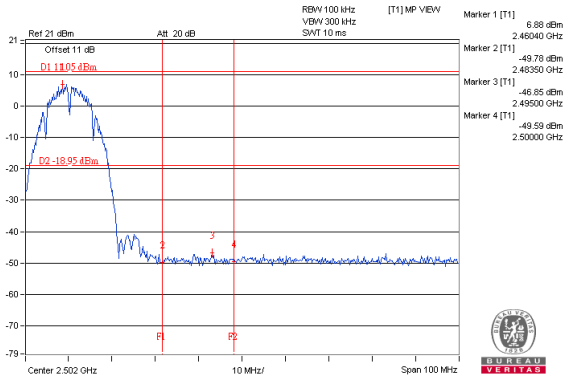
CH 11



CH 1 Band edge

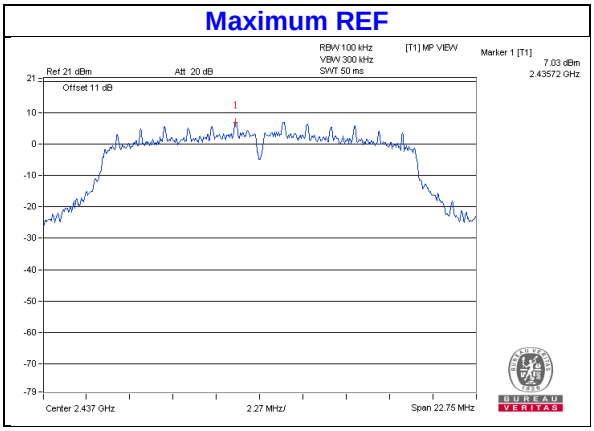


CH 11 Band edge



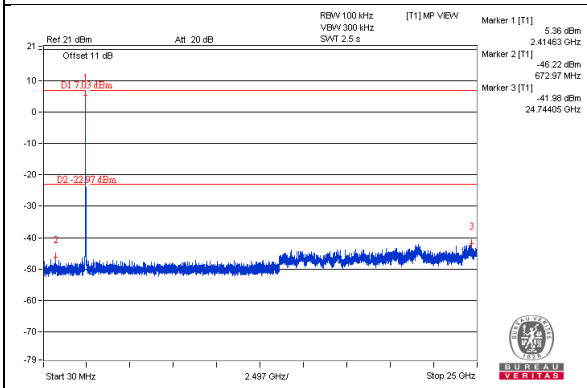
802.11g

Maximum REF

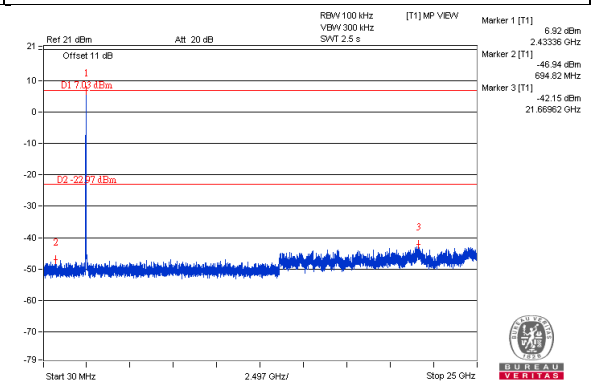


CHAIN 0

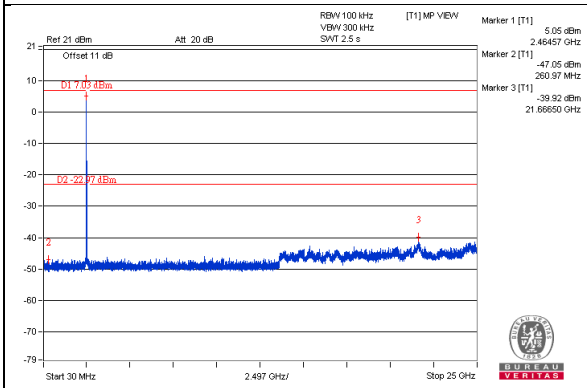
CH 1



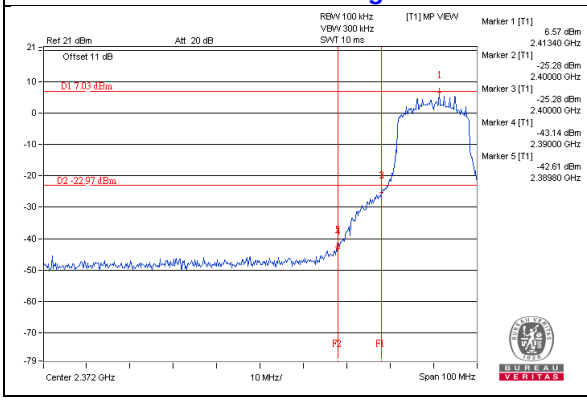
CH 6



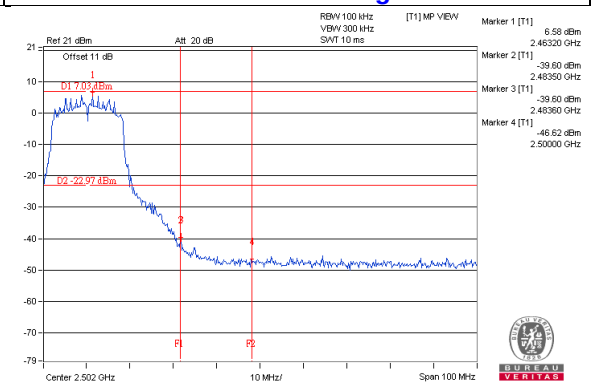
CH 11



CH 1 Band edge

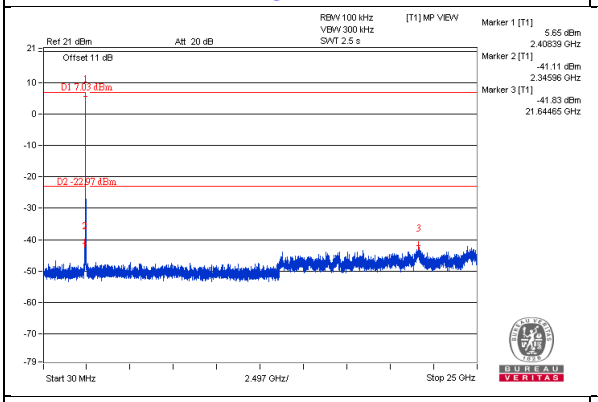


CH 11 Band edge

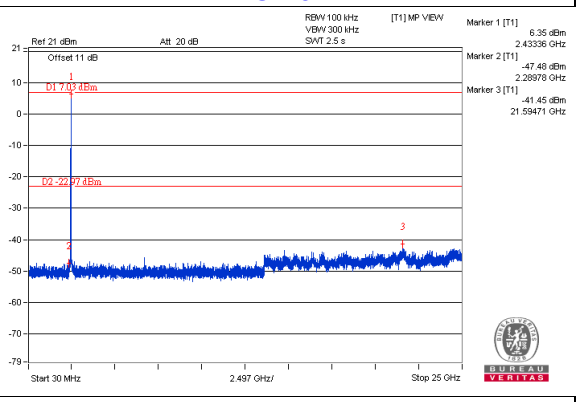


CHAIN 1

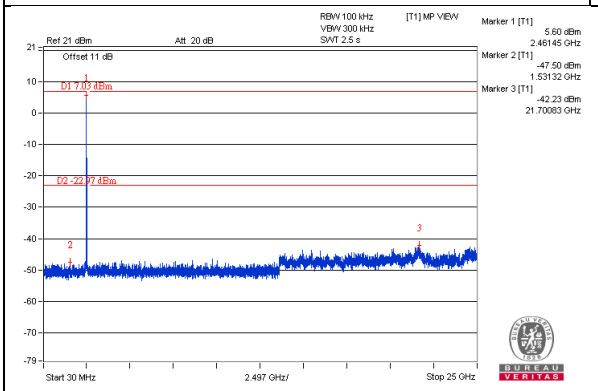
CH 1



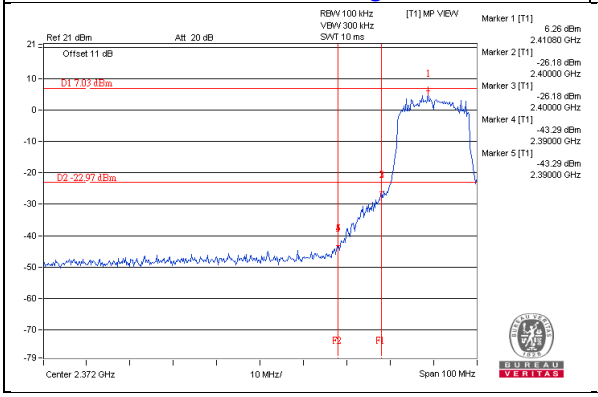
CH 6



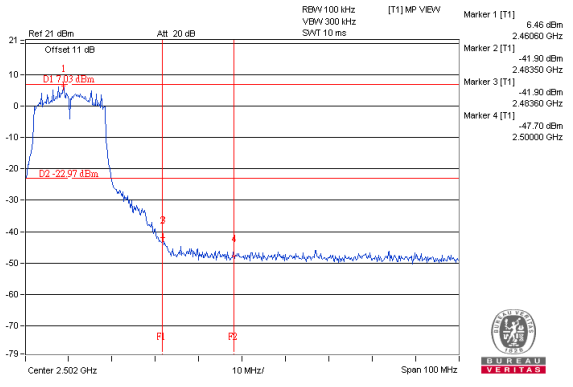
CH 11



CH 1 Band edge

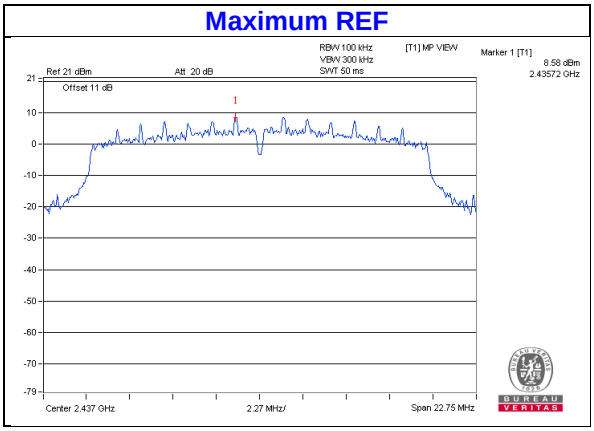


CH 11 Band edge



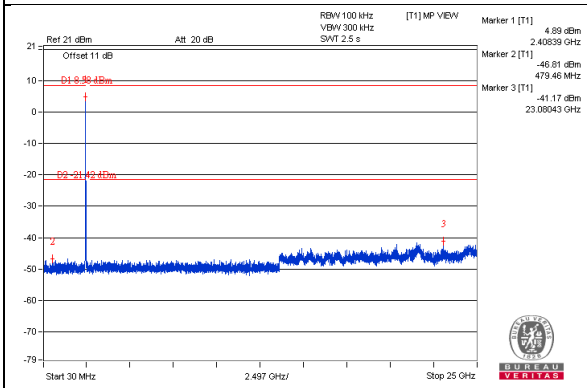
802.11n (HT20)

Maximum REF

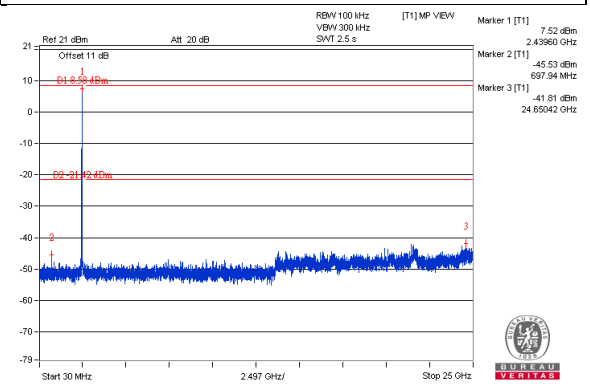


CHAIN 0

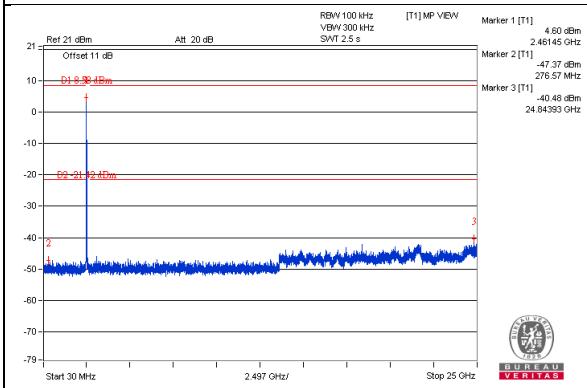
CH 1



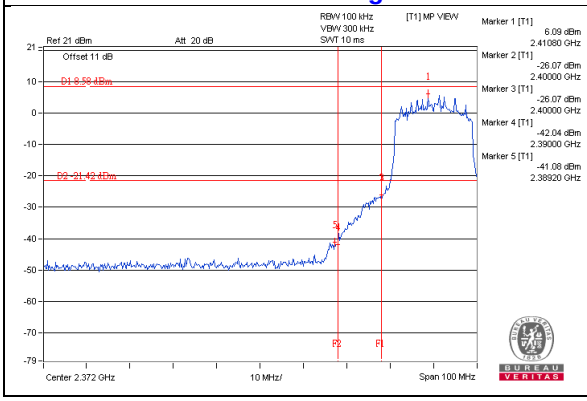
CH 6



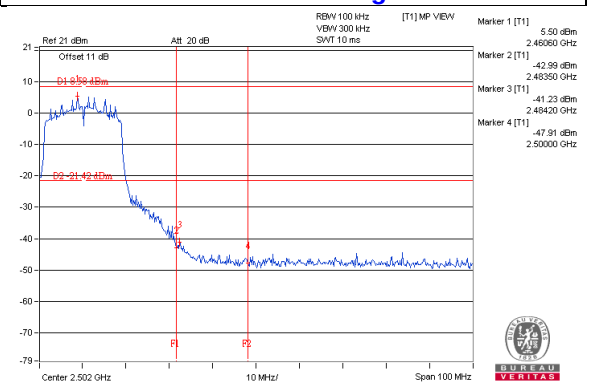
CH 11



CH 1 Band edge

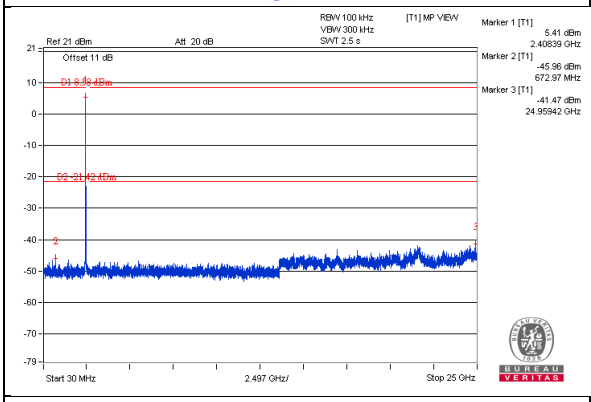


CH 11 Band edge

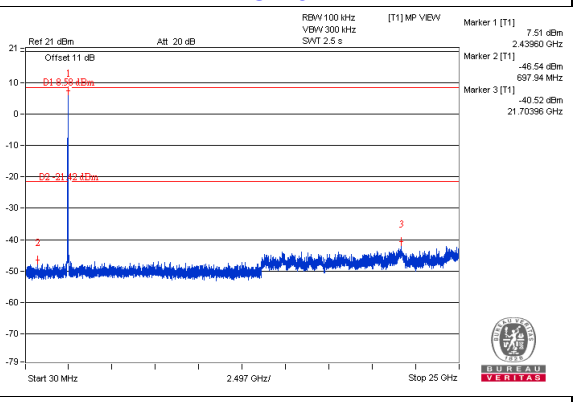


CHAIN 1

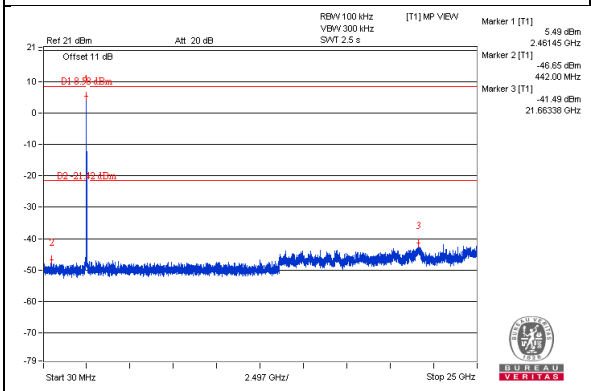
CH 1



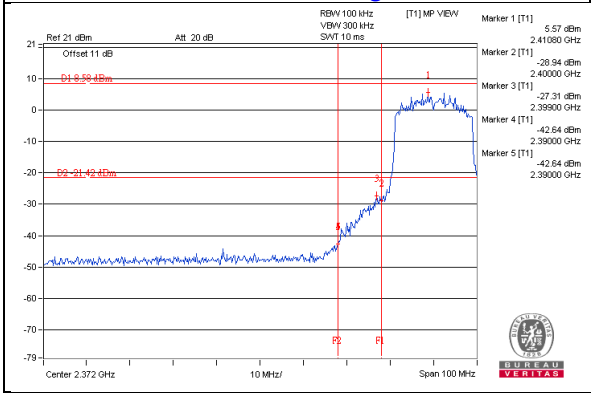
CH 6



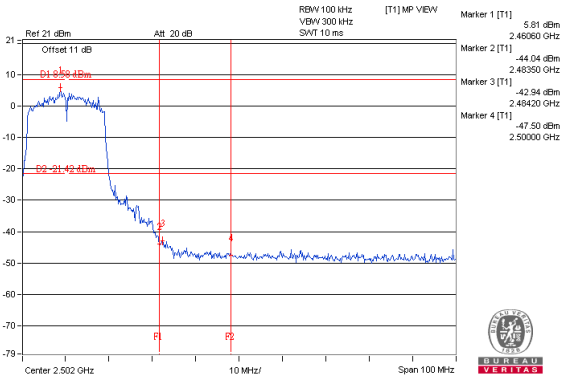
CH 11



CH 1 Band edge

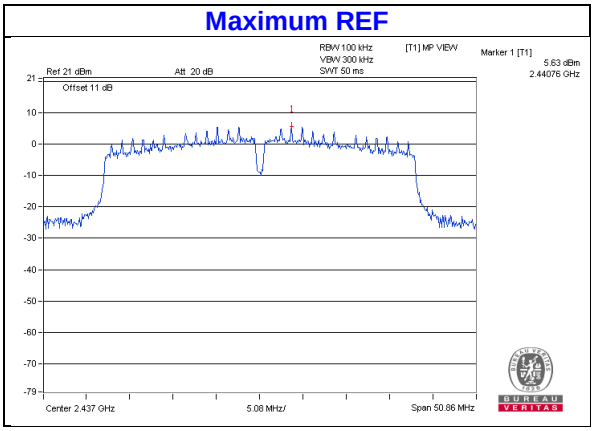


CH 11 Band edge



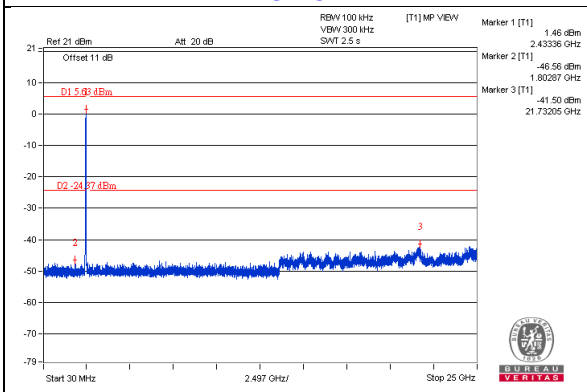
802.11n (HT40)

Maximum REF

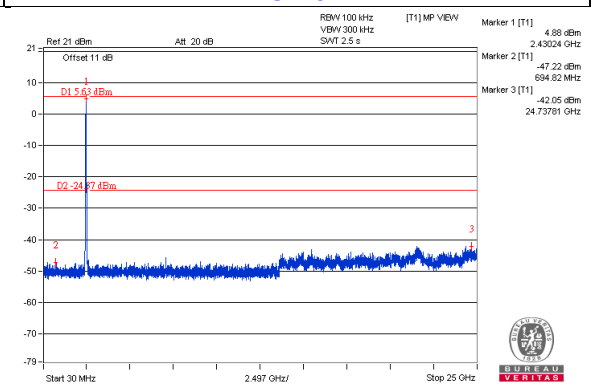


CHAIN 0

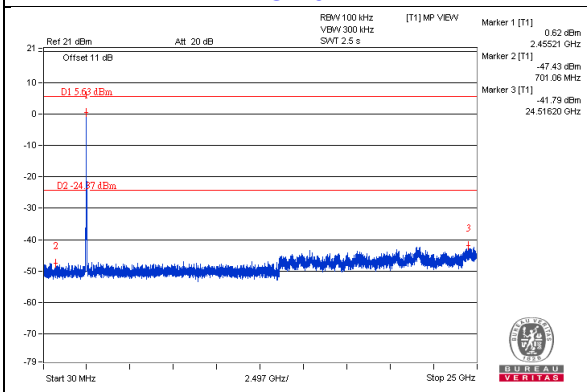
CH 3



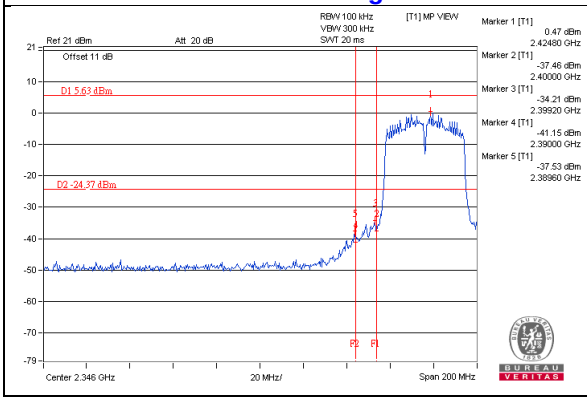
CH 6



CH 9



CH 3 Band edge



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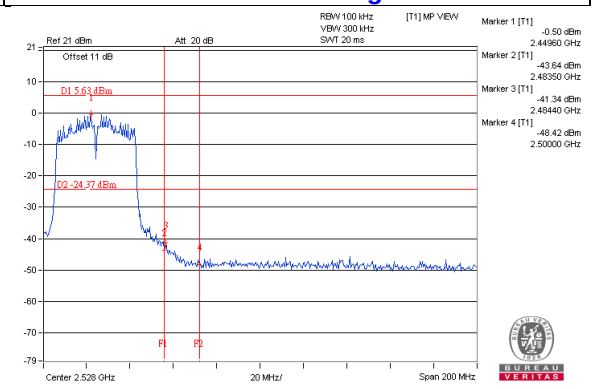
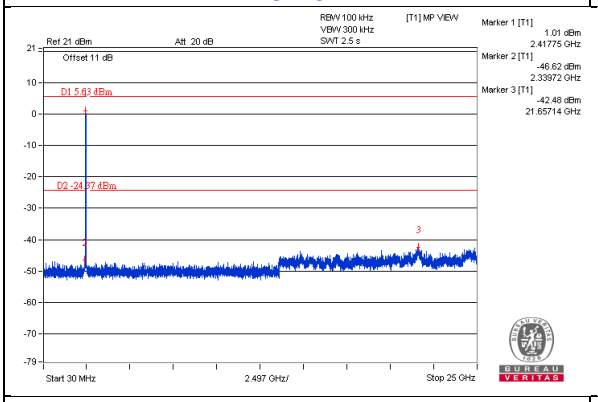
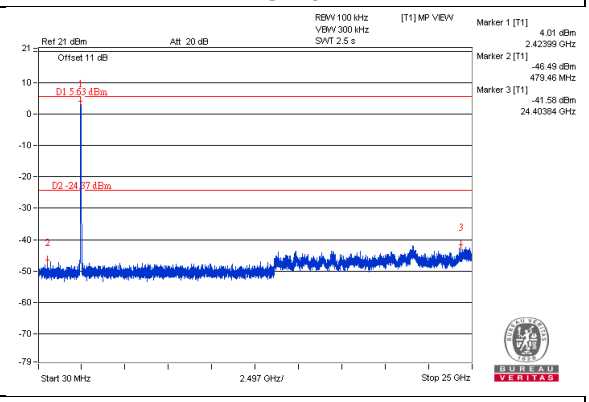


CHAIN 1

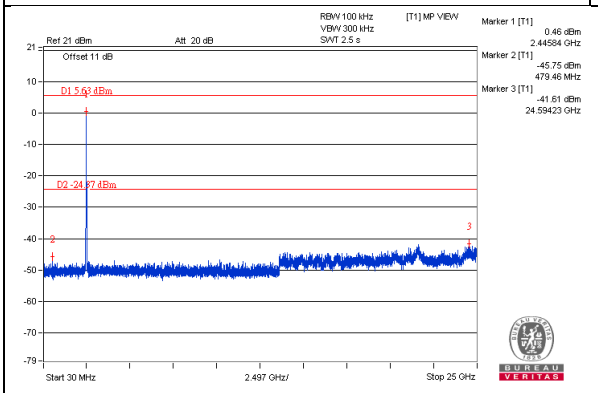
CH 3



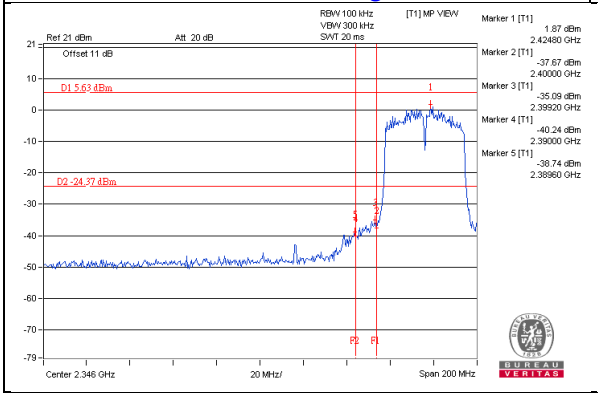
CH 6



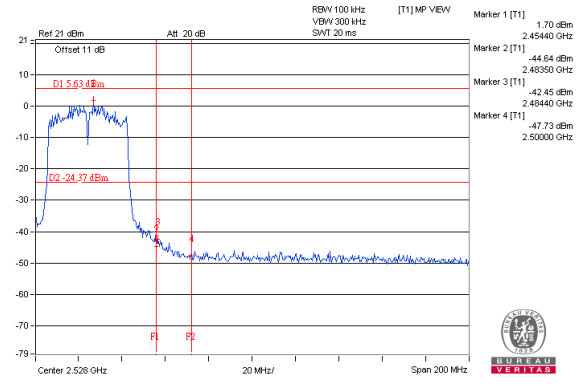
CH 9



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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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