FCC Test Report

Report No.: RF170714E03

FCC ID: I88WAP6804

Test Model: WAP6804

Received Date: July 14, 2017

Test Date: Aug. 09 to 22, 2017

Issued Date: Sep. 05, 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

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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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Table of Contents

Release Control Record 4

1 Certificate of Conformity 5

2 Summary of Test Results 6

2.1 Measurement Uncertainty 6
2.2 Modification Record 6

3 General Information 7

3.1 General Description of EUT 7
3.2 Description of Test Modes 11
3.2.1 Test Mode Applicability and Tested Channel Detail 12
3.3 Duty Cycle of Test Signal 14
3.4 Description of Support Units 15
3.4.1 Configuration of System under Test 16
3.5 General Description of Applied Standards 17

4 Test Types and Results 18

4.1 Radiated Emission and Bandedge Measurement 18
4.1.1 Limits of Radiated Emission and Bandedge Measurement 18
4.1.2 Test Instruments 19
4.1.3 Test Procedures 20
4.1.4 Deviation from Test Standard 20
4.1.5 Test Setup 21
4.1.6 EUT Operating Conditions 22
4.1.7 Test Results 23
4.2 Conducted Emission Measurement 37
4.2.1 Limits of Conducted Emission Measurement 37
4.2.2 Test Instruments 37
4.2.3 Test Procedures 38
4.2.4 Deviation from Test Standard 38
4.2.5 Test Setup 38
4.2.6 EUT Operating Conditions 38
4.2.7 Test Results 39
4.3 6dB Bandwidth Measurement 41
4.3.1 Limits of 6dB Bandwidth Measurement 41
4.3.2 Test Setup 41
4.3.3 Test Instruments 41
4.3.4 Test Procedure 41
4.3.5 Deviation fromTest Standard 41
4.3.6 EUT Operating Conditions 41
4.3.7 Test Result 42
4.4 Conducted Output Power Measurement 44
4.4.1 Limits of Conducted Output Power Measurement 44
4.4.2 Test Setup 44
4.4.3 Test Instruments 44
4.4.4 Test Procedures 44
4.4.5 Deviation from Test Standard 44
4.4.6 EUT Operating Conditions 44
4.4.7 Test Results 45
4.5 Power Spectral Density Measurement 46
4.5.1 Limits of Power Spectral Density Measurement 46
4.5.2 Test Setup 46
4.5.3 Test Instruments 46
4.5.4 Test Procedure 46
4.5.5 Deviation from Test Standard 46
4.5.6 EUT Operating Condition 46

4.5.7 Test Results 47
4.6 Conducted Out of Band Emission Measurement 50
4.6.1 Limits of Conducted Out of Band Emission Measurement 50
4.6.2 Test Setup 50
4.6.3 Test Instruments 50
4.6.4 Test Procedure 50
4.6.5 Deviation from Test Standard 50
4.6.6 EUT Operating Condition 50
4.6.7 Test Results 50

5 Pictures of Test Arrangements 59

Appendix – Information on the Testing Laboratories 60

Release Control Record

Issue No.	Description	Date Issued
RF170714E03	Original release.	Sep. 05, 2017

1 Certificate of Conformity

Product: Dual-Band AC2100 Gigabit Wireless Bridge

Brand: ZYXEL

Test Model: WAP6804

Sample Status: ENGINEERING SAMPLE

Applicant: Zyxel Communications Corporation

Test Date: Aug. 09 to 22, 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:** Sep. 05, 2017
Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 05, 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 -6.16dB at 0.25156MHz.
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 2483.50MHz, 2390.00MHz, 4824.00MHz, 4924.00MHz, 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	No antenna connector is used.

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	5.30 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.16 dB
	6GHz ~ 18GHz	4.91 dB
	18GHz ~ 40GHz	5.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Dual-Band AC2100 Gigabit Wireless Bridge
Brand	ZYXEL
Test Model	WAP6804
RF CPU Model No.	QT3860BC
RF Chip Model No.	**2.4GHz:** RTL8192EE **5GHz**: QT2518B
FW	1.00(ABKH.0)b3_20170630
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 12V 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 600Mbps 802.11ac: up to 1733.3Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18~ 5.24GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.412 ~ 2.462GHz:** 484.921mW **5.18 ~ 5.24GHz** **CDD Mode / Beamforming Mode (Nss=1)** 769.216mW **Beamforming Mode (Nss=2)** 769.216mW **5.745 ~ 5.825GHz** **CDD Mode / Beamforming Mode (Nss=1)** 792.287mW **Beamforming Mode (Nss=2)** 792.287mW
Antenna Type	**2.4GHz:** Printed antenna **5GHz:** PCB antenna
Antenna Connector	**2.4GHz:** NA **5GHz:** i-pex
Accessory Device	Adapter x 1
Data Cable Supplied	Ethernet cable x 1 (Unshielded, 1.8m)

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. The EUT power needs to be supplied from power adapter, the information is as below table:

Brand	Model No.	Spec.
UMEC	UP0181D-12PA	Input: 100-240V, 0.4A, 50/60Hz (MAX) Output: 12V, 1.5A DC Cable (unshielded, 1.5m)

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

Frequency (MHz)	For 2.4GHz					
	Antenna Gain (dBi)					
	ANT_0			ANT_1		
2400-2483.5	2.46			2.7		
Frequency (MHz)	For 5GHz					
	Antenna Gain (dBi)			Antenna Gain (dBi)		
	ANT_0			ANT_1		
	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
5180	2.52	--	--	3.13	--	--
5190	--	2.49	--	--	3.33	--
5200	2.92	--	--	3.33	--	--
5210	--	--	2.77	--	--	3.48
5230	--	2.27	--	--	2.91	--
5240	1.96	--	--	2.66	--	--
5745	3.46	--	--	3.46	--	--
5755	--	3.31	--	--	3.23	--
5775	--	--	3.3	--	--	2.7
5785	3.42	--	--	2.69	--	--
5795	--	3.55	--	--	2.47	--
5825	3.33	--	--	2.92	--	--
Frequency (MHz)	Antenna Gain (dBi)			Antenna Gain (dBi)		
	ANT_2			ANT_3		
	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
5180	2.55	--	--	3.03	--	--
5190	--	2.35	--	--	3.18	--
5200	2.69	--	--	3.39	--	--
5210	--	--	3.27	--	--	3.15
5230	--	2.86	--	--	2.77	--
5240	2.92	--	--	2.89	--	--
5745	4.51	--	--	3.12	--	--
5755	--	3.83	--	--	3	--
5775	--	--	3.11	--	--	3.24
5785	3.2	--	--	3.26	--	--
5795	--	3.35	--	--	2.9	--
5825	3.96	--	--	2.92	--	--

4. The EUT incorporates a MIMO function.

For 2.4GHz					
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**		**NON-TXBF Mode**	**TXBF Mode**
802.11b	1 ~ 11Mbps	2TX	2RX	v	-
802.11g	6 ~ 54Mbps	2TX	2RX	v	-
802.11n (HT20)	MCS 0~7	2TX	2RX	v	-
	MCS 8~15	2TX	2RX	v	-
802.11n (HT40)	MCS 0~7	2TX	2RX	v	-
	MCS 8~15	2TX	2RX	v	-
For 5GHz					
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**		**NON-TXBF Mode**	**TXBF Mode**
802.11a	6 ~ 54Mbps	4TX	4RX	v	-
802.11n (HT20)	MCS 0~7	4TX	4RX	v	v
	MCS 8~15	4TX	4RX	v	v
	MCS 16~23	4TX	4RX	v	v
	MCS 24~31	4TX	4RX	v	v
802.11n (HT40)	MCS 0~7	4TX	4RX	v	v
	MCS 8~15	4TX	4RX	v	v
	MCS 16~23	4TX	4RX	v	v
	MCS 24~31	4TX	4RX	v	v
802.11ac (VHT20)	MCS0~8 Nss=1	4TX	4RX	v	v
	MCS0~8 Nss=2	4TX	4RX	v	v
	MCS0~9 Nss=3	4TX	4RX	v	v
	MCS0~8 Nss=4	4TX	4RX	v	v
802.11ac (VHT40)	MCS0~9 Nss=1	4TX	4RX	v	v
	MCS0~9 Nss=2	4TX	4RX	v	v
	MCS0~9 Nss=3	4TX	4RX	v	v
	MCS0~9 Nss=4	4TX	4RX	v	v
802.11ac (VHT80)	MCS0~9 Nss=1	4TX	4RX	v	v
	MCS0~9 Nss=2	4TX	4RX	v	v
	MCS0~9 Nss=3	4TX	4RX	v	v
	MCS0~9 Nss=4	4TX	4RX	v	v

Note:
1. All of modulation mode support beamforming function except 2.4GHz & 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.

5. The power setting are list as below:

Modulation Mode	Frequency (MHz)	Power Setting
802.11b	2412	50/50
	2437	50/50
	2462	50/50
802.11g	2412	51/51
	2437	63/63
	2462	51/51
802.11n(HT20)	2412	49/49
	2437	63/63
	2462	49/49
802.11n(HT40)	2422	45/45
	2437	49/49
	2452	42/42

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

3.2 Description of Test Modes

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

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:
1. 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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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

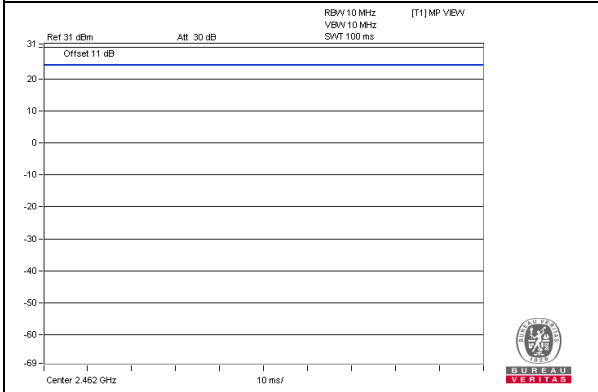
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 64%RH	120Vac, 60Hz	Rey Chen
RE<1G	23deg. C, 68%RH	120Vac, 60Hz	Rey Chen
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

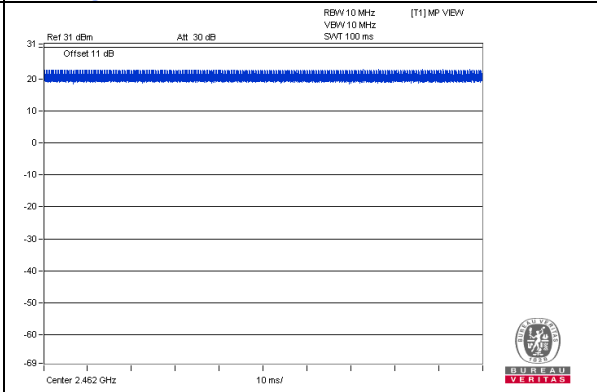
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100 %, duty factor is not required.

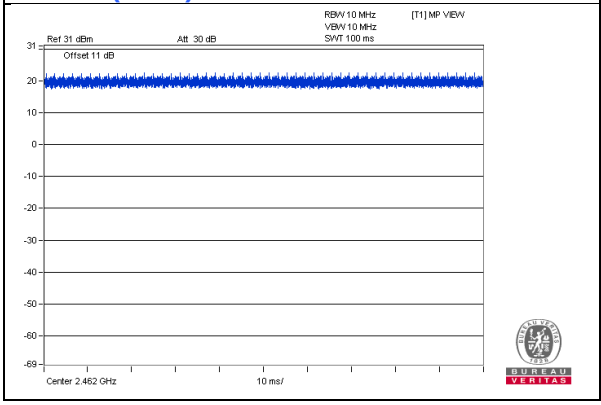
802.11b



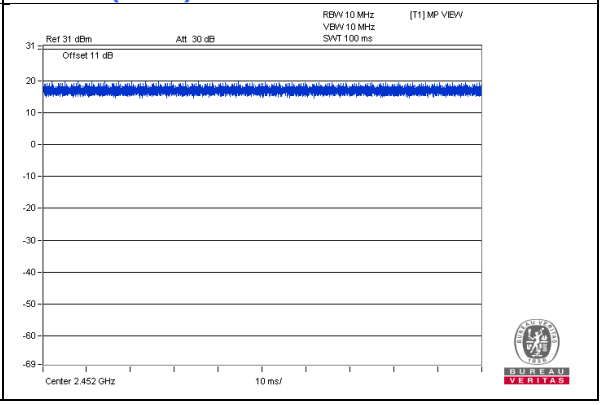
802.11g



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.

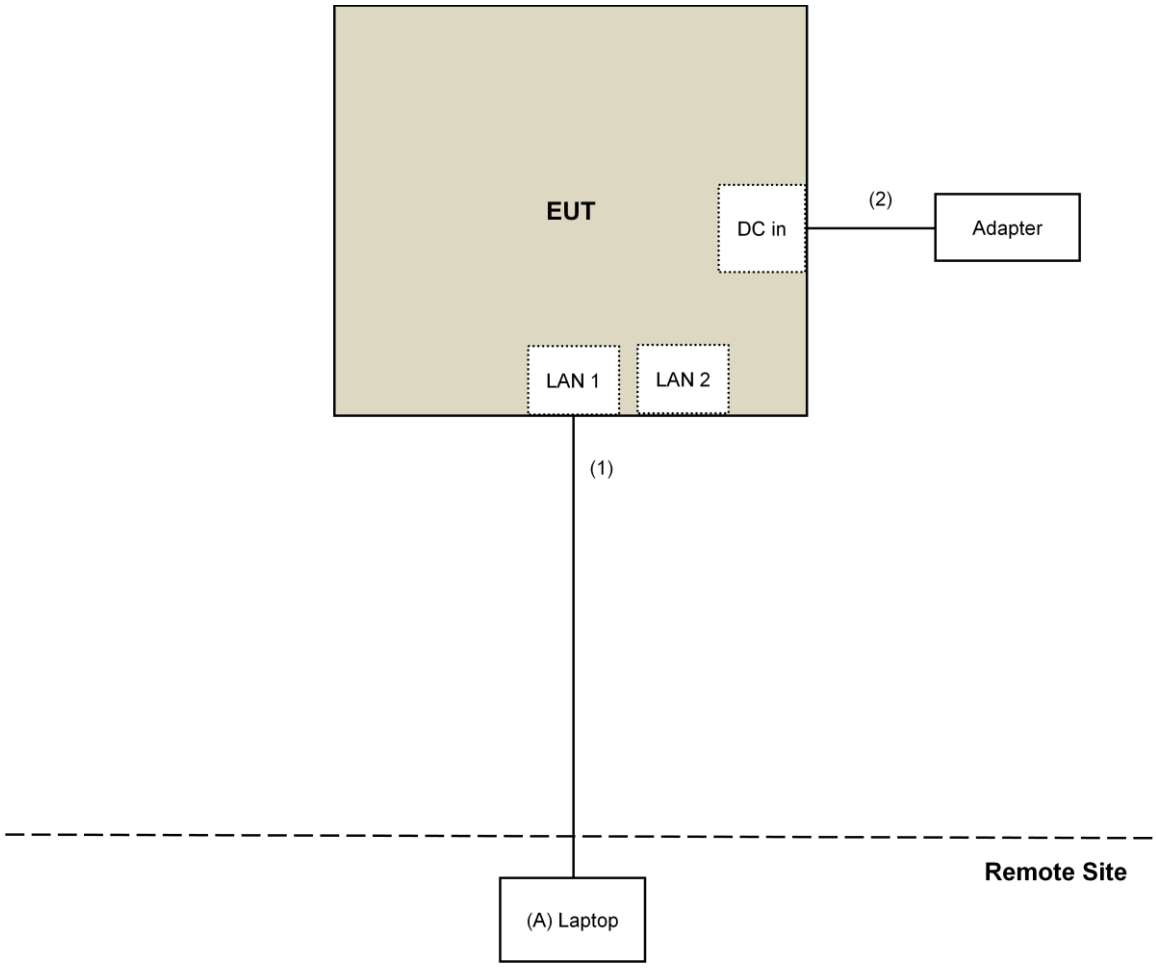
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

Note:

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

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
KDB 558074 D01 DTS Meas Guidance 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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
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-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Dec. 13, 2016	Dec. 12, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 27, 2016	Dec. 26, 2017
Pre-Amplifier EMCI	EMC12630SE	980385	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Pre-Amplifier EMCI	EMC184045SE	980387	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	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSv40	100964	July 1, 2017	June 30, 2018
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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Aug. 09 o 22, 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:

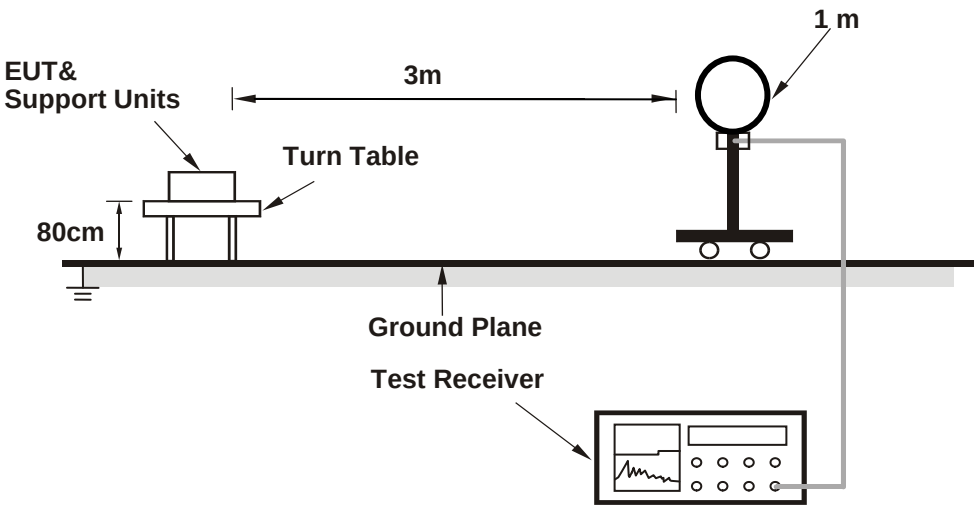
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

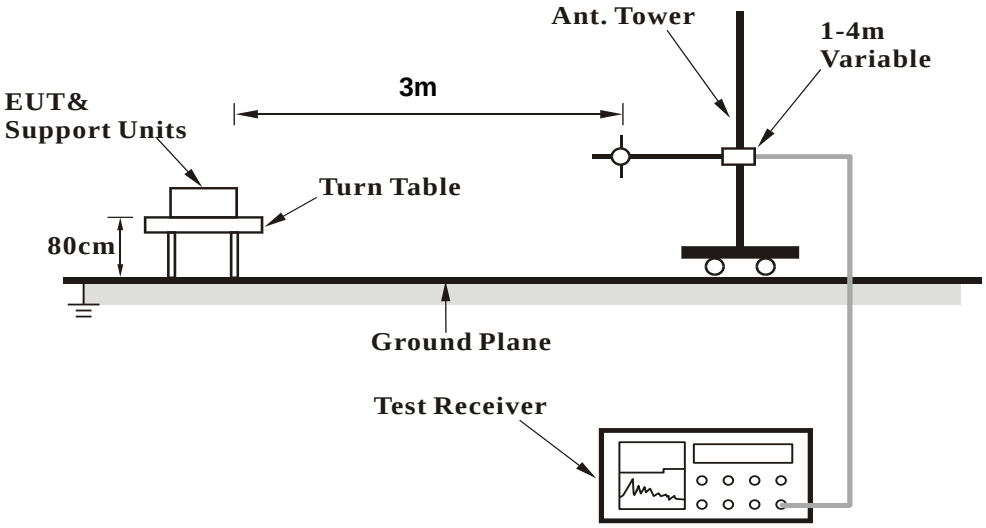
No deviation.

4.1.5 Test Setup

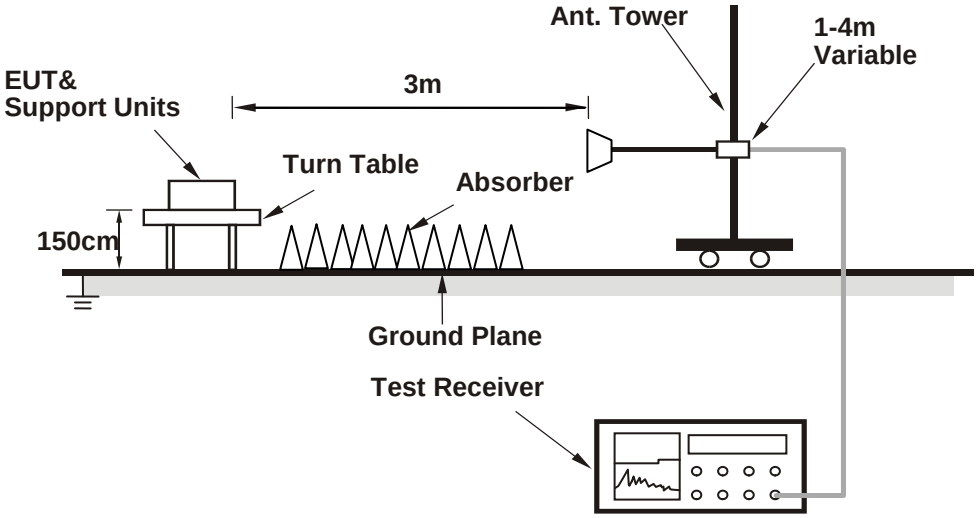
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop which is placed on remote site.
b. Contorlling software (MP TEST.exe) 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	57.7 PK	74.0	-16.3	2.34 H	46	59.0	-1.3
2	2390.00	46.1 AV	54.0	-7.9	2.34 H	46	47.4	-1.3
3	*2412.00	111.2 PK			2.34 H	46	112.3	-1.1
4	*2412.00	108.8 AV			2.34 H	46	109.9	-1.1
5	4824.00	56.1 PK	74.0	-17.9	3.01 H	299	52.9	3.2
6	**4824.00**	**53.9 AV**	**54.0**	**-0.1**	**3.01 H**	**299**	**50.7**	**3.2**
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	57.2 PK	74.0	-16.8	3.68 V	330	58.5	-1.3
2	2390.00	46.0 AV	54.0	-8.0	3.68 V	330	47.3	-1.3
3	*2412.00	111.4 PK			3.68 V	330	112.5	-1.1
4	*2412.00	109.1 AV			3.68 V	330	110.2	-1.1
5	4824.00	49.6 PK	74.0	-24.4	1.50 V	284	46.4	3.2
6	4824.00	47.1 AV	54.0	-6.9	1.50 V	284	43.9	3.2

REMARKS:

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

CHANNEL	TX Channel 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	110.9 PK			1.02 H	223	112.1	-1.2
2	*2437.00	108.0 AV			1.02 H	223	109.2	-1.2
3	4874.00	56.4 PK	74.0	-17.6	3.11 H	314	53.1	3.3
4	**4874.00**	**53.9 AV**	**54.0**	**-0.1**	**3.11 H**	**314**	**50.6**	**3.3**
5	7311.00	48.9 PK	74.0	-25.1	2.74 H	279	39.1	9.8
6	7311.00	42.3 AV	54.0	-11.7	2.74 H	279	32.5	9.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	114.5 PK			3.89 V	208	115.7	-1.2
2	*2437.00	111.9 AV			3.89 V	208	113.1	-1.2
3	4874.00	50.8 PK	74.0	-23.2	1.33 V	322	47.5	3.3
4	4874.00	48.0 AV	54.0	-6.0	1.33 V	322	44.7	3.3
5	7311.00	46.3 PK	74.0	-27.7	1.02 V	234	36.5	9.8
6	7311.00	34.8 AV	54.0	-19.2	1.02 V	234	25.0	9.8

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
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.2 PK			1.03 H	213	112.3	-1.1
2	*2462.00	108.8 AV			1.03 H	213	109.9	-1.1
3	2483.50	73.5 PK	74.0	-0.5	1.03 H	213	74.5	-1.0
4	2483.50	43.9 AV	54.0	-10.1	1.03 H	213	44.9	-1.0
5	4924.00	56.5 PK	74.0	-17.5	3.98 H	302	53.0	3.5
6	**4924.00**	**53.9 AV**	**54.0**	**-0.1**	**3.98 H**	**302**	**50.4**	**3.5**
7	7386.00	48.6 PK	74.0	-25.4	2.76 H	268	38.7	9.9
8	7386.00	41.9 AV	54.0	-12.1	2.76 H	268	32.0	9.9
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	*2462.00	114.6 PK			3.99 V	174	115.7	-1.1
2	*2462.00	112.0 AV			3.99 V	174	113.1	-1.1
3	2483.50	73.8 PK	74.0	-0.2	3.99 V	174	74.8	-1.0
4	2483.50	44.2 AV	54.0	-9.8	3.99 V	174	45.2	-1.0
5	4924.00	50.4 PK	74.0	-23.6	1.36 V	335	46.9	3.5
6	4924.00	47.9 AV	54.0	-6.1	1.36 V	335	44.4	3.5
7	7386.00	46.1 PK	74.0	-27.9	1.00 V	218	36.2	9.9
8	7386.00	34.5 AV	54.0	-19.5	1.00 V	218	24.6	9.9

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.

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	67.2 PK	74.0	-6.8	1.03 H	232	68.5	-1.3
2	2390.00	53.5 AV	54.0	-0.5	1.03 H	232	54.8	-1.3
3	*2412.00	108.6 PK			1.03 H	232	109.7	-1.1
4	*2412.00	100.0 AV			1.03 H	232	101.1	-1.1
5	4824.00	55.1 PK	74.0	-18.9	2.88 H	301	51.9	3.2
6	4824.00	42.4 AV	54.0	-11.6	2.88 H	301	39.2	3.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.6 PK	74.0	-6.4	3.66 V	198	68.9	-1.3
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**3.66 V**	**198**	**55.2**	**-1.3**
3	*2412.00	111.7 PK			3.66 V	198	112.8	-1.1
4	*2412.00	103.1 AV			3.66 V	198	104.2	-1.1
5	4824.00	52.2 PK	74.0	-21.8	1.38 V	355	49.0	3.2
6	4824.00	34.1 AV	54.0	-19.9	1.38 V	355	30.9	3.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.0 PK	74.0	-9.0	1.03 H	237	66.3	-1.3
2	2390.00	47.1 AV	54.0	-6.9	1.03 H	237	48.4	-1.3
3	*2437.00	115.7 PK			1.03 H	237	116.9	-1.2
4	*2437.00	106.2 AV			1.03 H	237	107.4	-1.2
5	2483.50	66.5 PK	74.0	-7.5	1.03 H	237	67.5	-1.0
6	2483.50	48.1 AV	54.0	-5.9	1.03 H	237	49.1	-1.0
7	4874.00	55.6 PK	74.0	-18.4	2.90 H	315	52.3	3.3
8	4874.00	42.7 AV	54.0	-11.3	2.90 H	315	39.4	3.3
9	7311.00	49.0 PK	74.0	-25.0	2.78 H	260	39.2	9.8
10	7311.00	42.2 AV	54.0	-11.8	2.78 H	260	32.4	9.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.5 PK	74.0	-8.5	3.71 V	199	66.8	-1.3
2	2390.00	47.6 AV	54.0	-6.4	3.71 V	199	48.9	-1.3
3	*2437.00	118.7 PK			3.71 V	199	119.9	-1.2
4	*2437.00	109.3 AV			3.71 V	199	110.5	-1.2
5	2483.50	66.9 PK	74.0	-7.1	3.71 V	199	67.9	-1.0
6	2483.50	48.5 AV	54.0	-5.5	3.71 V	199	49.5	-1.0
7	4874.00	52.5 PK	74.0	-21.5	1.31 V	351	49.2	3.3
8	4874.00	34.5 AV	54.0	-19.5	1.31 V	351	31.2	3.3
9	7311.00	45.9 PK	74.0	-28.1	1.01 V	210	36.1	9.8
10	7311.00	34.0 AV	54.0	-20.0	1.01 V	210	24.2	9.8

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
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	110.8 PK			1.02 H	216	111.9	-1.1
2	*2462.00	100.9 AV			1.02 H	216	102.0	-1.1
3	2483.50	69.7 PK	74.0	-4.3	1.02 H	216	70.7	-1.0
4	2483.50	53.4 AV	54.0	-0.6	1.02 H	216	54.4	-1.0
5	4924.00	55.2 PK	74.0	-18.8	2.92 H	305	51.7	3.5
6	4924.00	42.5 AV	54.0	-11.5	2.92 H	305	39.0	3.5
7	7386.00	48.6 PK	74.0	-25.4	2.83 H	258	38.7	9.9
8	7386.00	41.8 AV	54.0	-12.2	2.83 H	258	31.9	9.9
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	*2462.00	113.8 PK			3.95 V	182	114.9	-1.1
2	*2462.00	104.4 AV			3.95 V	182	105.5	-1.1
3	2483.50	70.1 PK	74.0	-3.9	3.95 V	182	71.1	-1.0
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**3.95 V**	**182**	**54.9**	**-1.0**
5	4924.00	52.1 PK	74.0	-21.9	1.36 V	350	48.6	3.5
6	4924.00	34.1 AV	54.0	-19.9	1.36 V	350	30.6	3.5
7	7386.00	45.5 PK	74.0	-28.5	1.07 V	221	35.6	9.9
8	7386.00	33.6 AV	54.0	-20.4	1.07 V	221	23.7	9.9

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.

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	67.5 PK	74.0	-6.5	1.03 H	247	68.8	-1.3
2	2390.00	53.1 AV	54.0	-0.9	1.03 H	247	54.4	-1.3
3	*2412.00	109.2 PK			1.03 H	247	110.3	-1.1
4	*2412.00	98.9 AV			1.03 H	247	100.0	-1.1
5	4824.00	55.1 PK	74.0	-18.9	2.89 H	305	51.9	3.2
6	4824.00	42.5 AV	54.0	-11.5	2.89 H	305	39.3	3.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.0 PK	74.0	-6.0	3.96 V	154	69.3	-1.3
2	2390.00	53.6 AV	54.0	-0.4	3.96 V	154	54.9	-1.3
3	*2412.00	112.2 PK			3.96 V	154	113.3	-1.1
4	*2412.00	102.0 AV			3.96 V	154	103.1	-1.1
5	4824.00	52.2 PK	74.0	-21.8	1.34 V	360	49.0	3.2
6	4824.00	33.9 AV	54.0	-20.1	1.34 V	360	30.7	3.2

REMARKS:

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

CHANNEL	TX Channel 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	68.7 PK	74.0	-5.3	1.05 H	218	70.0	-1.3
2	2390.00	48.9 AV	54.0	-5.1	1.05 H	218	50.2	-1.3
3	*2437.00	115.6 PK			1.05 H	218	116.8	-1.2
4	*2437.00	106.0 AV			1.05 H	218	107.2	-1.2
5	2483.50	66.9 PK	74.0	-7.1	1.05 H	218	67.9	-1.0
6	2483.50	49.1 AV	54.0	-4.9	1.05 H	218	50.1	-1.0
7	4874.00	56.1 PK	74.0	-17.9	2.92 H	311	52.8	3.3
8	4874.00	43.0 AV	54.0	-11.0	2.92 H	311	39.7	3.3
9	7311.00	49.1 PK	74.0	-24.9	2.77 H	268	39.3	9.8
10	7311.00	42.2 AV	54.0	-11.8	2.77 H	268	32.4	9.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.2 PK	74.0	-4.8	3.98 V	152	70.5	-1.3
2	2390.00	49.4 AV	54.0	-4.6	3.98 V	152	50.7	-1.3
3	*2437.00	118.6 PK			3.98 V	152	119.8	-1.2
4	*2437.00	109.1 AV			3.98 V	152	110.3	-1.2
5	2483.50	67.6 PK	74.0	-6.4	3.98 V	152	68.6	-1.0
6	2483.50	49.7 AV	54.0	-4.3	3.98 V	152	50.7	-1.0
7	4874.00	52.3 PK	74.0	-21.7	1.35 V	360	49.0	3.3
8	4874.00	34.3 AV	54.0	-19.7	1.35 V	360	31.0	3.3
9	7311.00	45.7 PK	74.0	-28.3	1.01 V	197	35.9	9.8
10	7311.00	33.8 AV	54.0	-20.2	1.01 V	197	24.0	9.8

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
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.7 PK			1.09 H	202	109.8	-1.1
2	*2462.00	99.4 AV			1.09 H	202	100.5	-1.1
3	2483.50	67.6 PK	74.0	-6.4	1.09 H	202	68.6	-1.0
4	2483.50	53.1 AV	54.0	-0.9	1.09 H	202	54.1	-1.0
5	4924.00	55.3 PK	74.0	-18.7	2.87 H	316	51.8	3.5
6	4924.00	42.4 AV	54.0	-11.6	2.87 H	316	38.9	3.5
7	7386.00	48.2 PK	74.0	-25.8	2.80 H	243	38.3	9.9
8	7386.00	41.4 AV	54.0	-12.6	2.80 H	243	31.5	9.9
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	*2462.00	111.7 PK			3.94 V	169	112.8	-1.1
2	*2462.00	102.5 AV			3.94 V	169	103.6	-1.1
3	2483.50	68.1 PK	74.0	-5.9	3.94 V	169	69.1	-1.0
4	2483.50	53.6 AV	54.0	-0.4	3.94 V	169	54.6	-1.0
5	4924.00	52.1 PK	74.0	-21.9	1.32 V	360	48.6	3.5
6	4924.00	33.8 AV	54.0	-20.2	1.32 V	360	30.3	3.5
7	7386.00	45.0 PK	74.0	-29.0	1.02 V	210	35.1	9.9
8	7386.00	33.3 AV	54.0	-20.7	1.02 V	210	23.4	9.9

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.

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	73.2 PK	74.0	-0.8	1.11 H	221	74.5	-1.3
2	2390.00	49.7 AV	54.0	-4.3	1.11 H	221	51.0	-1.3
3	*2422.00	102.0 PK			1.11 H	221	103.3	-1.3
4	*2422.00	93.4 AV			1.11 H	221	94.7	-1.3
5	4844.00	55.4 PK	74.0	-18.6	2.92 H	327	52.1	3.3
6	4844.00	42.6 AV	54.0	-11.4	2.92 H	327	39.3	3.3
7	7266.00	48.4 PK	74.0	-25.6	2.77 H	256	38.6	9.8
8	7266.00	41.5 AV	54.0	-12.5	2.77 H	256	31.7	9.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.7 PK	74.0	-0.3	3.99 V	168	75.0	-1.3
2	2390.00	50.2 AV	54.0	-3.8	3.99 V	168	51.5	-1.3
3	*2422.00	105.9 PK			3.99 V	168	107.2	-1.3
4	*2422.00	96.4 AV			3.99 V	168	97.7	-1.3
5	4844.00	51.2 PK	74.0	-22.8	1.27 V	360	47.9	3.3
6	4844.00	33.1 AV	54.0	-20.9	1.27 V	360	29.8	3.3
7	7266.00	44.8 PK	74.0	-29.2	1.00 V	213	35.0	9.8
8	7266.00	33.3 AV	54.0	-20.7	1.00 V	213	23.5	9.8

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
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	70.1 PK	74.0	-3.9	1.09 H	220	71.4	-1.3
2	2390.00	52.8 AV	54.0	-1.2	1.09 H	220	54.1	-1.3
3	*2437.00	105.5 PK			1.09 H	220	106.7	-1.2
4	*2437.00	95.4 AV			1.09 H	220	96.6	-1.2
5	2483.50	69.9 PK	74.0	-4.1	1.09 H	220	70.9	-1.0
6	2483.50	53.4 AV	54.0	-0.6	1.09 H	220	54.4	-1.0
7	4874.00	55.8 PK	74.0	-18.2	2.82 H	322	52.5	3.3
8	4874.00	42.8 AV	54.0	-11.2	2.82 H	322	39.5	3.3
9	7311.00	47.8 PK	74.0	-26.2	2.79 H	239	38.0	9.8
10	7311.00	41.2 AV	54.0	-12.8	2.79 H	239	31.4	9.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.7 PK	74.0	-3.3	3.99 V	173	72.0	-1.3
2	2390.00	53.3 AV	54.0	-0.7	3.99 V	173	54.6	-1.3
3	*2437.00	108.4 PK			3.99 V	173	109.6	-1.2
4	*2437.00	98.3 AV			3.99 V	173	99.5	-1.2
5	2483.50	70.4 PK	74.0	-3.6	3.99 V	173	71.4	-1.0
6	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**3.99 V**	**173**	**54.9**	**-1.0**
7	4874.00	52.0 PK	74.0	-22.0	1.31 V	354	48.7	3.3
8	4874.00	33.6 AV	54.0	-20.4	1.31 V	354	30.3	3.3
9	7311.00	45.3 PK	74.0	-28.7	1.02 V	209	35.5	9.8
10	7311.00	33.4 AV	54.0	-20.6	1.02 V	209	23.6	9.8

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
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	102.3 PK			1.02 H	221	103.4	-1.1
2	*2452.00	92.9 AV			1.02 H	221	94.0	-1.1
3	2483.50	73.3 PK	74.0	-0.7	1.02 H	221	74.3	-1.0
4	2483.50	51.5 AV	54.0	-2.5	1.02 H	221	52.5	-1.0
5	4904.00	55.3 PK	74.0	-18.7	2.82 H	307	51.8	3.5
6	4904.00	42.5 AV	54.0	-11.5	2.82 H	307	39.0	3.5
7	7356.00	48.3 PK	74.0	-25.7	2.86 H	248	38.4	9.9
8	7356.00	41.4 AV	54.0	-12.6	2.86 H	248	31.5	9.9
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	*2452.00	105.2 PK			3.99 V	167	106.3	-1.1
2	*2452.00	95.8 AV			3.99 V	167	96.9	-1.1
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**3.99 V**	**167**	**74.9**	**-1.0**
4	2483.50	52.0 AV	54.0	-2.0	3.99 V	167	53.0	-1.0
5	4904.00	51.9 PK	74.0	-22.1	1.28 V	357	48.4	3.5
6	4904.00	33.8 AV	54.0	-20.2	1.28 V	357	30.3	3.5
7	7356.00	45.1 PK	74.0	-28.9	1.03 V	212	35.2	9.9
8	7356.00	33.5 AV	54.0	-20.5	1.03 V	212	23.6	9.9

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.

Below 1GHz Data:

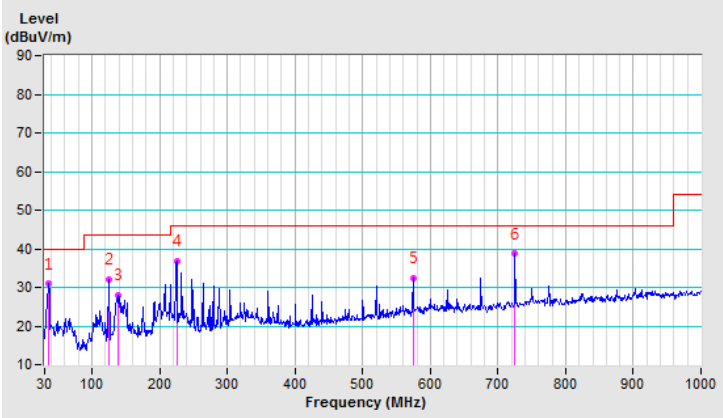
802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.16	30.9 QP	40.0	-9.1	3.00 H	5	40.2	-9.3
2	124.99	32.2 QP	43.5	-11.3	2.00 H	286	41.8	-9.6
3	137.99	28.1 QP	43.5	-15.4	2.00 H	257	36.3	-8.2
4	225.02	36.7 QP	46.0	-9.3	1.50 H	283	48.3	-11.6
5	574.99	32.3 QP	46.0	-13.7	1.50 H	119	33.6	-1.3
6	725.00	38.7 QP	46.0	-7.3	1.50 H	360	37.5	1.2

REMARKS:

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

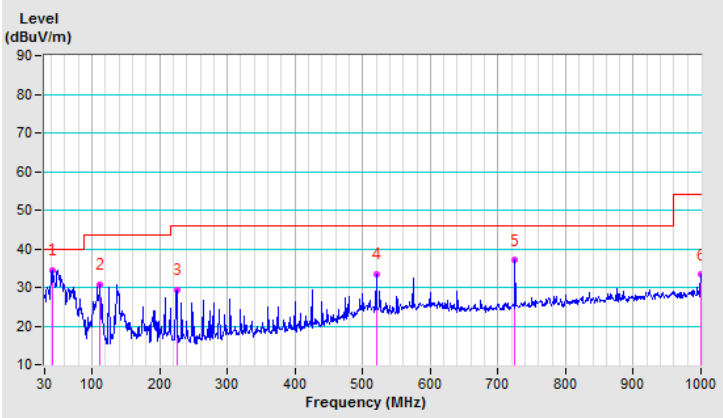


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: 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	42.27	34.5 QP	40.0	-5.5	1.00 V	41	42.7	-8.2
2	112.09	30.6 QP	43.5	-12.9	1.00 V	252	41.2	-10.6
3	224.99	29.3 QP	46.0	-16.7	1.00 V	213	41.0	-11.7
4	520.00	33.4 QP	46.0	-12.6	1.00 V	223	35.7	-2.3
5	725.00	37.0 QP	46.0	-9.0	1.00 V	325	35.8	1.2
6	1000.00	33.3 QP	54.0	-20.7	1.00 V	72	28.3	5.0

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



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 03, 2017	June 02, 2018
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 18, 2017	June 17, 2018
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: Aug. 10, 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.

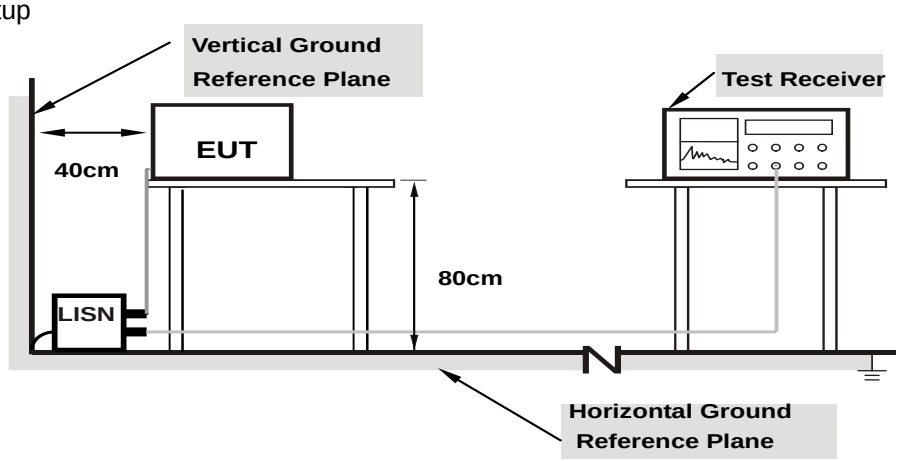
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

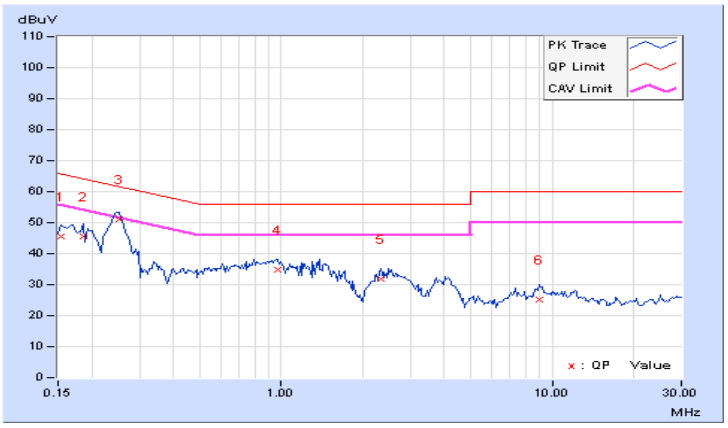
4.2.7 Test Results

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	0.15391	10.08	35.55	23.26	45.63	33.34	65.79	55.79	-20.16	-22.45
2	0.18516	10.07	35.45	27.06	45.52	37.13	64.25	54.25	-18.73	-17.12
3	**0.25156**	**10.08**	**40.97**	**35.47**	**51.05**	**45.55**	**61.71**	**51.71**	**-10.66**	**-6.16**
4	0.97031	10.16	24.77	20.40	34.93	30.56	56.00	46.00	-21.07	-15.44
5	2.33203	10.20	21.48	16.36	31.68	26.56	56.00	46.00	-24.32	-19.44
6	8.97266	10.71	14.54	9.59	25.25	20.30	60.00	50.00	-34.75	-29.70

REMARKS:

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

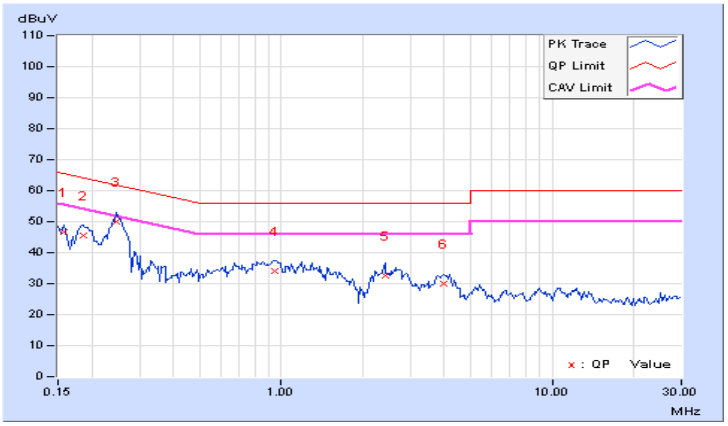


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.07	36.49	23.22	46.56	33.29	65.58	55.58	-19.02	-22.29
2	0.18516	10.05	35.49	26.35	45.54	36.40	64.25	54.25	-18.71	-17.85
3	0.24766	10.06	40.08	34.85	50.14	44.91	61.84	51.84	-11.70	-6.93
4	0.94297	10.12	24.03	19.62	34.15	29.74	56.00	46.00	-21.85	-16.26
5	2.41016	10.22	22.31	17.61	32.53	27.83	56.00	46.00	-23.47	-18.17
6	3.99219	10.27	19.58	14.41	29.85	24.68	56.00	46.00	-26.15	-21.32

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.

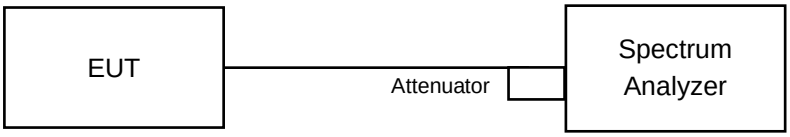


4.3 6dB Bandwidth Measurement

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	10.12	10.12	0.5	PASS
6	2437	10.10	10.10	0.5	PASS
11	2462	10.10	10.11	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.67	16.67	0.5	PASS
6	2437	16.68	16.66	0.5	PASS
11	2462	16.67	16.68	0.5	PASS

802.11n (HT20)

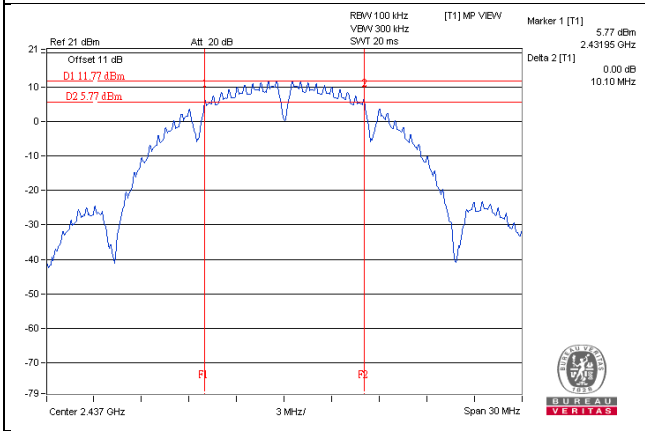
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.90	17.89	0.5	Pass
6	2437	17.90	17.90	0.5	Pass
11	2462	17.87	17.89	0.5	Pass

802.11n (HT40)

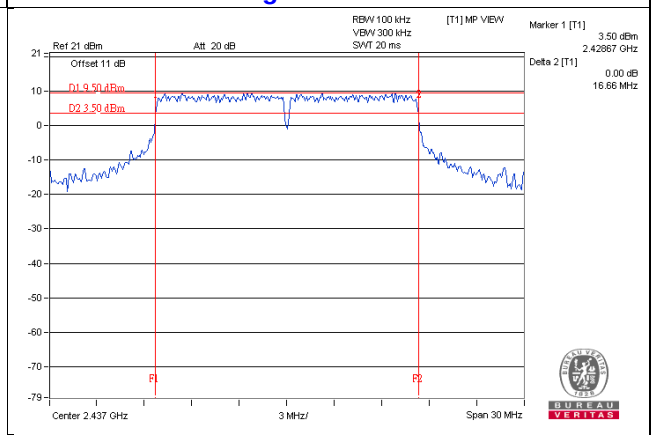
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.67	36.67	0.5	Pass
6	2437	36.68	36.67	0.5	Pass
9	2452	36.69	36.67	0.5	Pass

Spectrum Plot of Worst Value

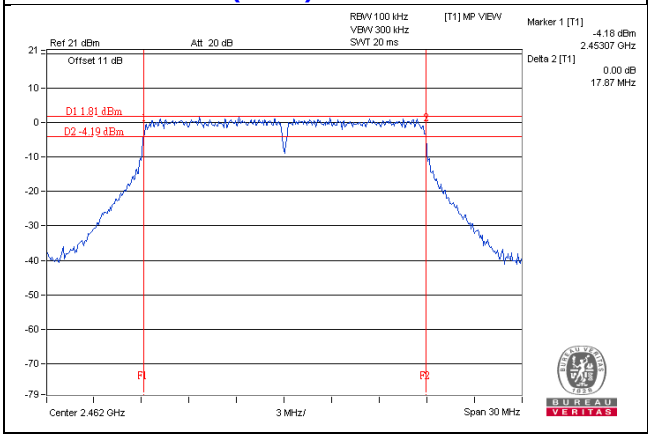
802.11b / Chain 0 : CH6



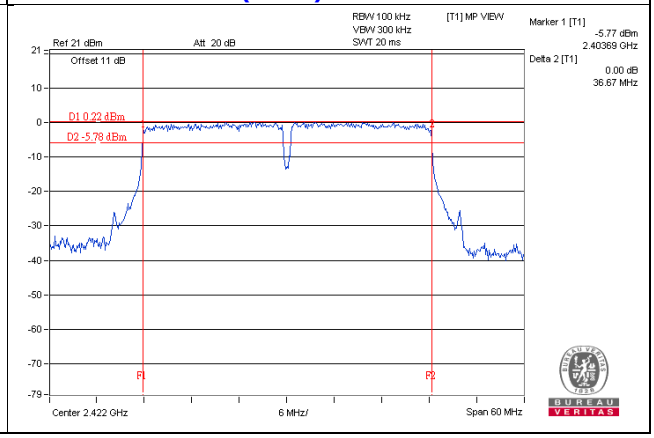
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 0 : CH11



802.11n (HT40) / Chain 0 : CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

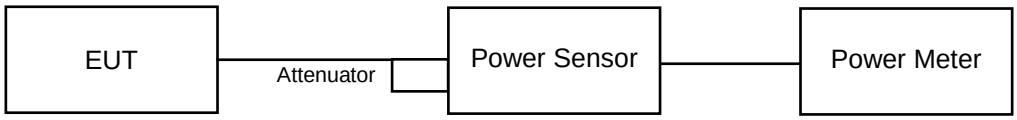
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

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

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

802.11b

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.15	22.39	337.439	25.28	30.00	Pass
6	2437	22.17	22.41	338.997	25.30	30.00	Pass
11	2462	22.45	22.55	355.679	25.51	30.00	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	17.17	17.87	113.354	20.54	30.00	Pass
6	2437	23.54	24.00	477.133	26.79	30.00	Pass
11	2462	17.38	17.91	116.504	20.66	30.00	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	16.18	16.80	89.358	19.51	30.00	Pass
6	2437	23.52	24.15	484.921	26.86	30.00	Pass
11	2462	16.23	16.92	91.18	19.60	30.00	Pass

802.11n (HT40)

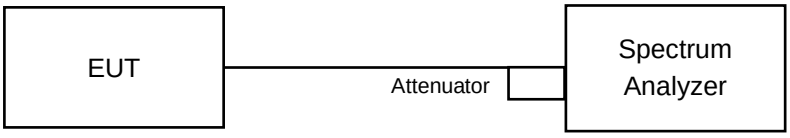
Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	18.32	18.31	135.684	21.33	30.00	Pass
6	2437	19.79	20.02	195.742	22.92	30.00	Pass
9	2452	17.52	17.58	113.774	20.56	30.00	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.72	3.01	-6.71	8.00	Pass
	6	2437	-9.88	3.01	-6.87	8.00	Pass
	11	2462	-9.79	3.01	-6.78	8.00	Pass
1	1	2412	-9.75	3.01	-6.74	8.00	Pass
	6	2437	-9.54	3.01	-6.53	8.00	Pass
	11	2462	-9.80	3.01	-6.79	8.00	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.59dBi < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-14.20	3.01	-11.19	8.00	Pass
	6	2437	-9.45	3.01	-6.44	8.00	Pass
	11	2462	-15.56	3.01	-12.55	8.00	Pass
1	1	2412	-14.93	3.01	-11.92	8.00	Pass
	6	2437	-8.71	3.01	-5.70	8.00	Pass
	11	2462	-14.56	3.01	-11.55	8.00	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.59dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.11	3.01	-13.10	8.00	Pass
	6	2437	-9.61	3.01	-6.60	8.00	Pass
	11	2462	-17.10	3.01	-14.09	8.00	Pass
1	1	2412	-15.55	3.01	-12.54	8.00	Pass
	6	2437	-9.20	3.01	-6.19	8.00	Pass
	11	2462	-15.12	3.01	-12.11	8.00	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.59dBi < 6dBi , so the power density limit shall not be reduced.

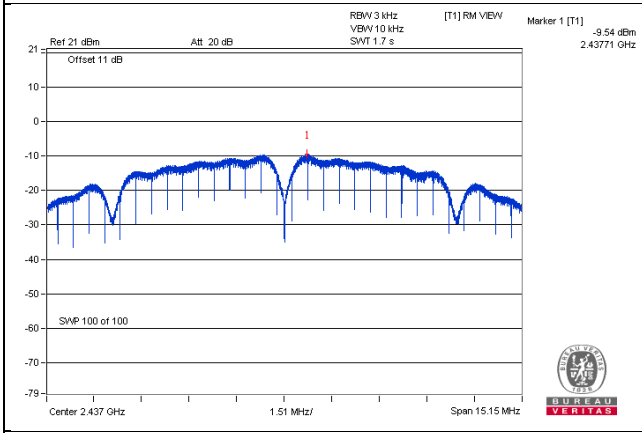
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-17.20	3.01	-14.19	8.00	Pass
	6	2437	-16.19	3.01	-13.18	8.00	Pass
	9	2452	-17.87	3.01	-14.86	8.00	Pass
1	3	2422	-17.31	3.01	-14.30	8.00	Pass
	6	2437	-16.07	3.01	-13.06	8.00	Pass
	9	2452	-18.41	3.01	-15.40	8.00	Pass

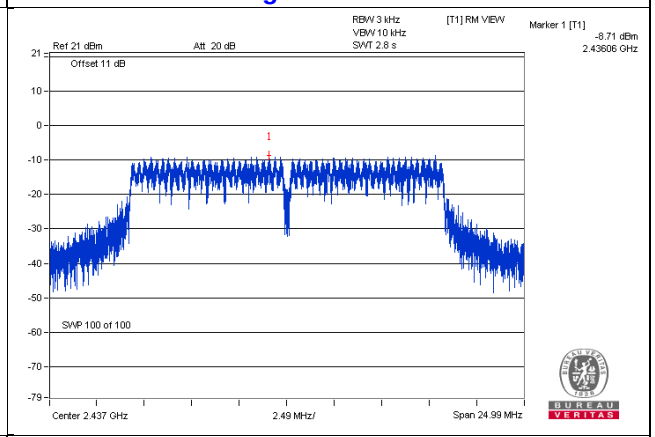
NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.59dBi < 6dBi , so the power density limit shall not be reduced.

Spectrum Plot of Worst Value

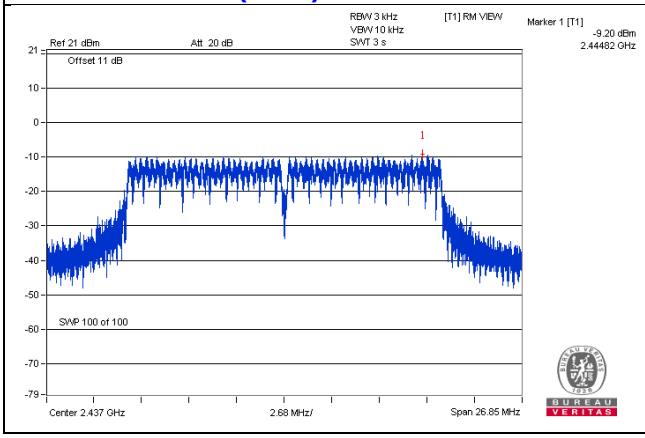
802.11b / Chain 1 : CH6



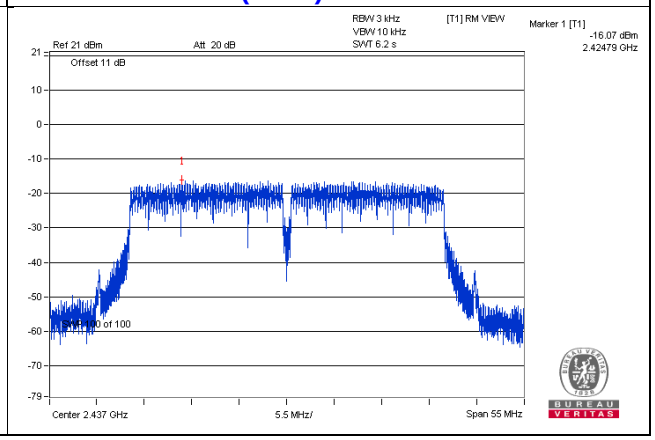
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 1 : CH6



802.11n (HT40) / Chain 1 : CH6

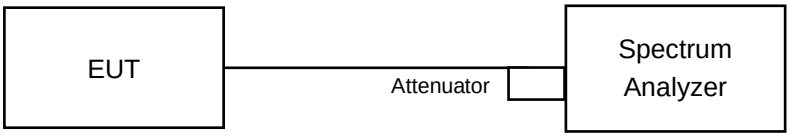


4.6 Conducted Out of Band Emission Measurement

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

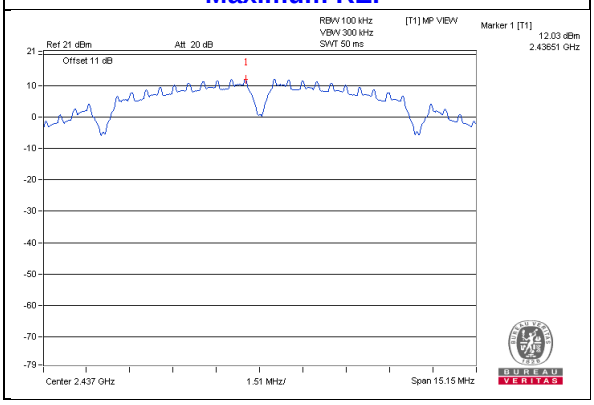
Same as Item 4.3.6

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 30dB offset below D1. It shows compliance with the requirement.

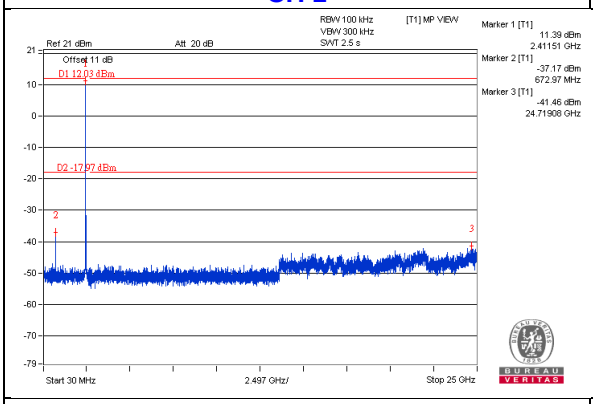
802.11b

Maximum REF

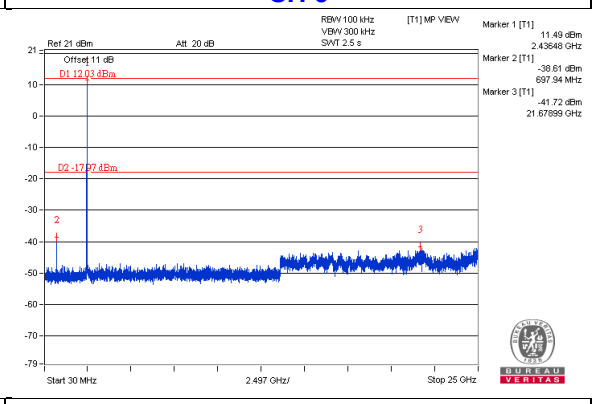


Chain 0

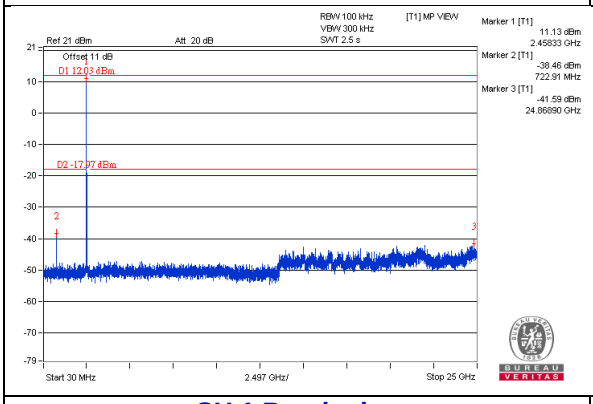
CH 1



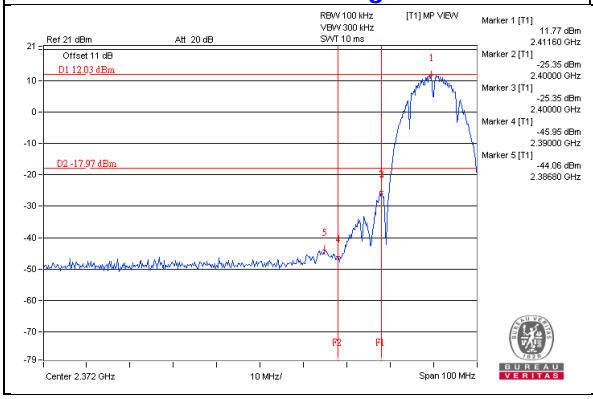
CH 6



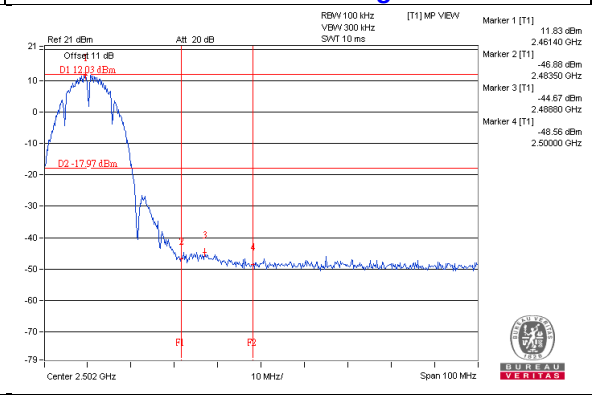
CH 11



CH 1 Band edge

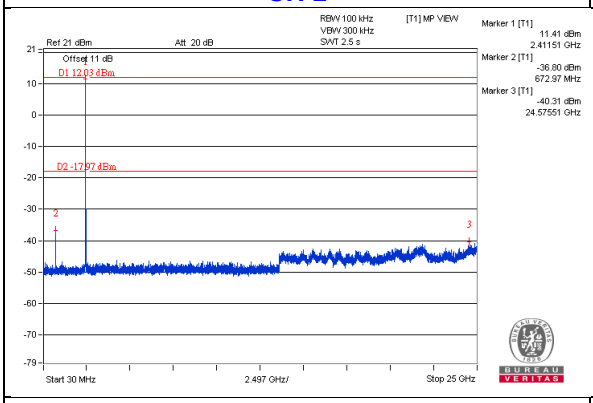


CH 11 Band edge

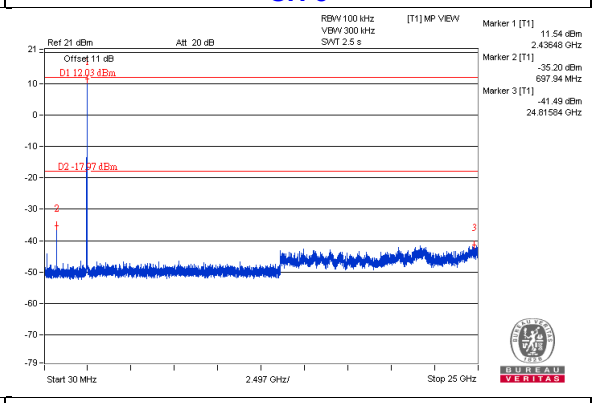


Chain 1

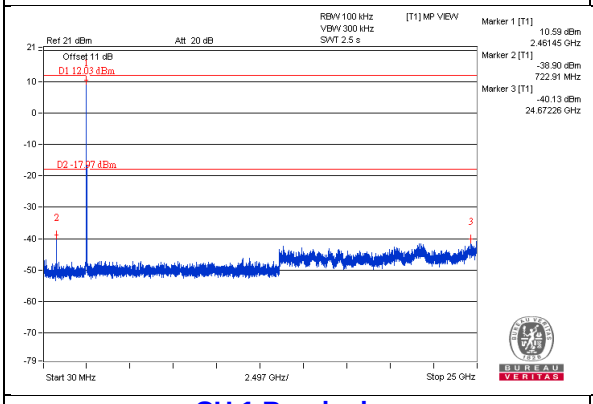
CH 1



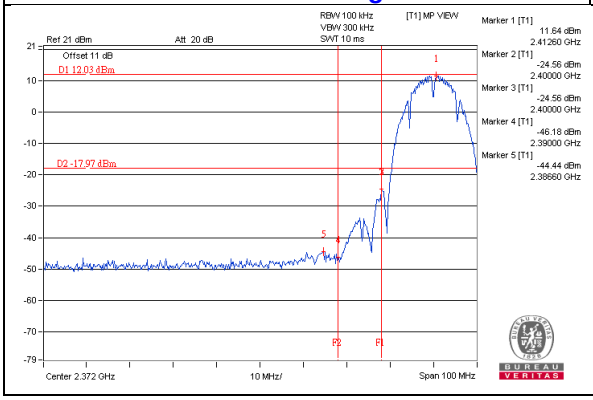
CH 6



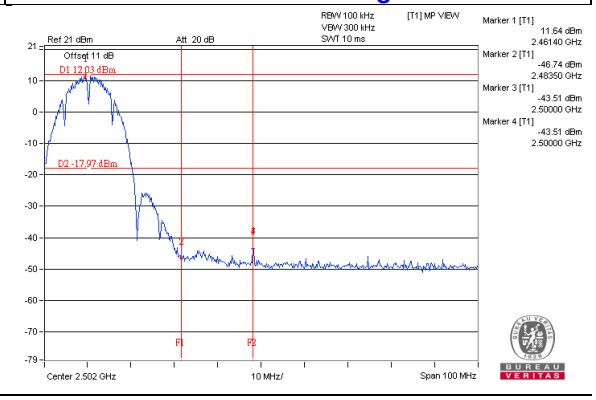
CH 11



CH 1 Band edge

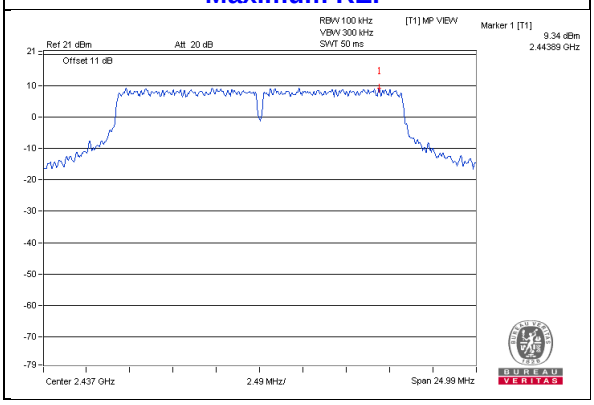


CH 11 Band edge



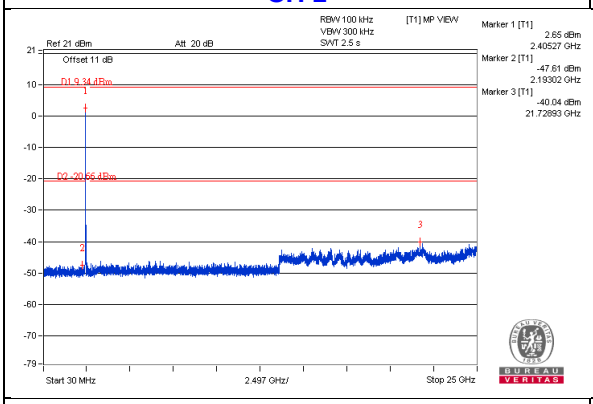
802.11g

Maximum REF

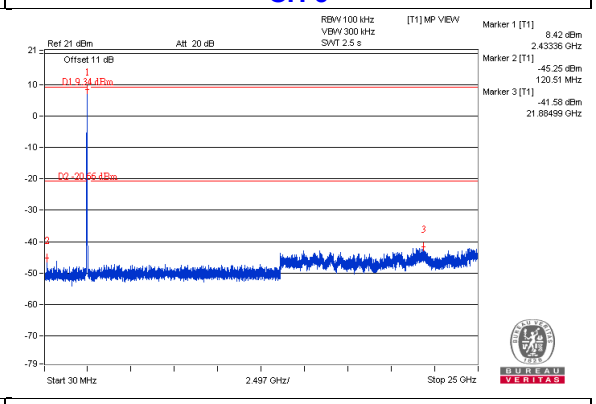


Chain 0

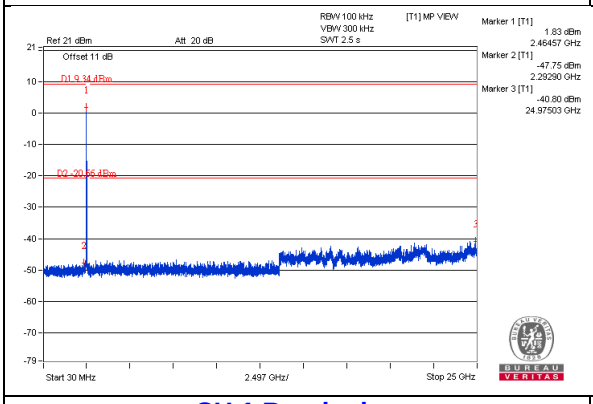
CH 1



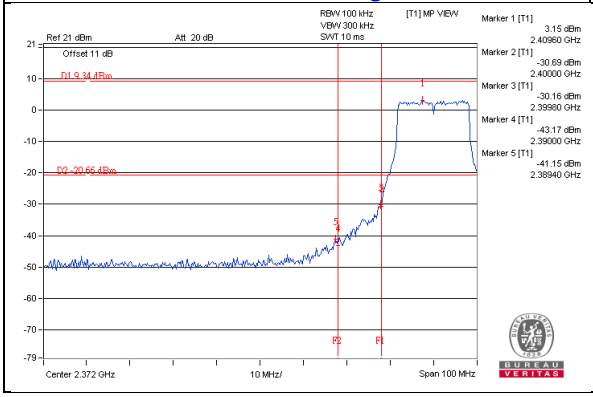
CH 6



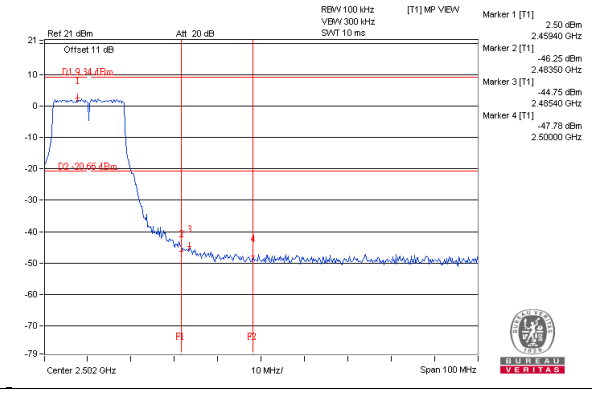
CH 11



CH 1 Band edge

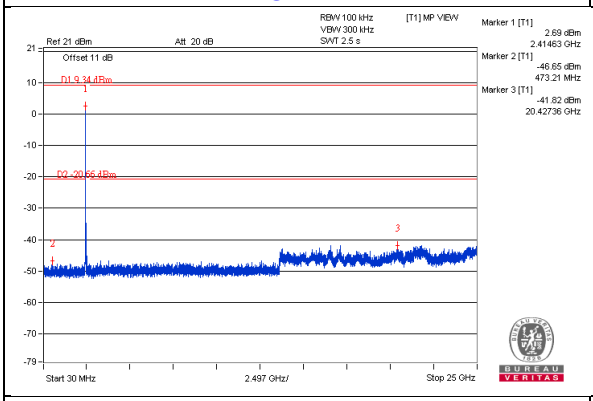


CH 11 Band edge

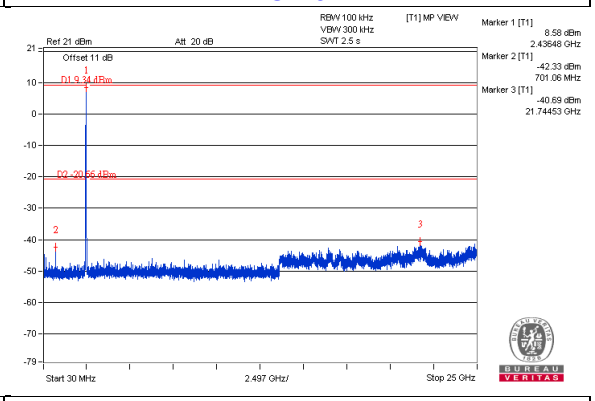


Chain 1

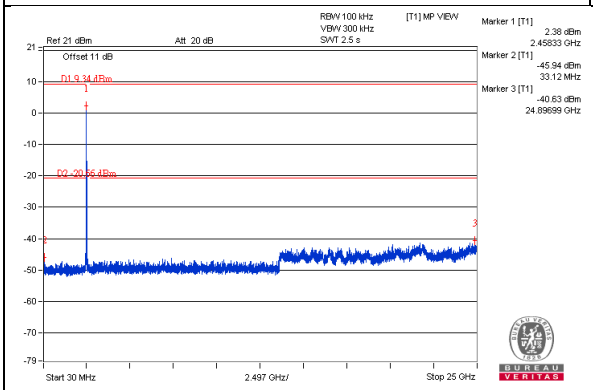
CH 1



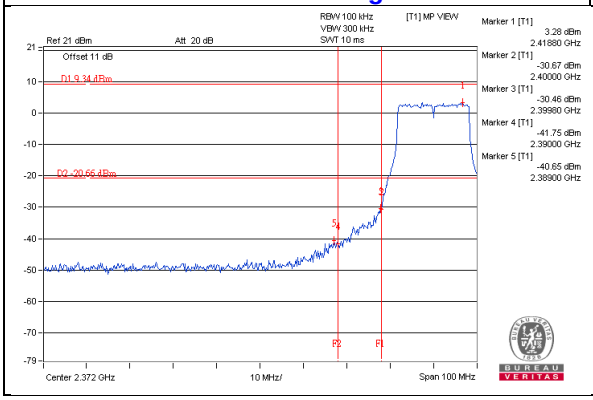
CH 6



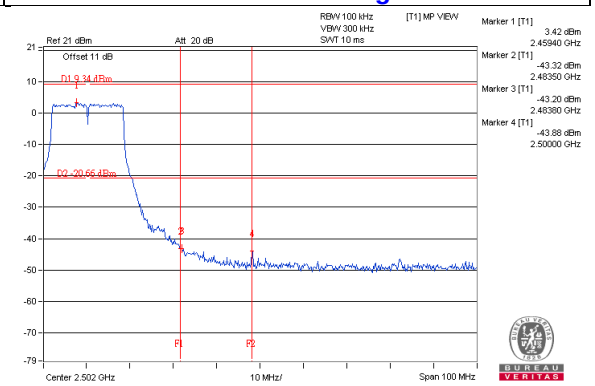
CH 11



CH 1 Band edge

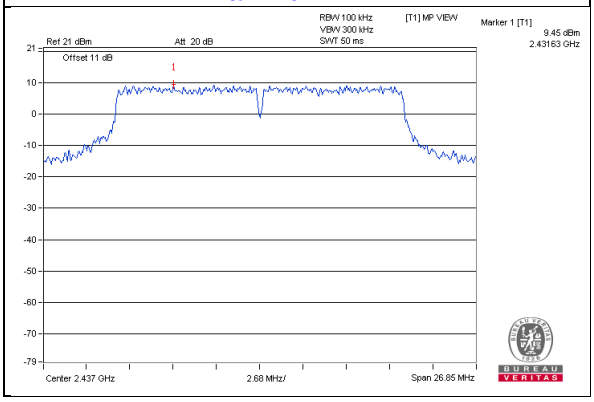


CH 11 Band edge



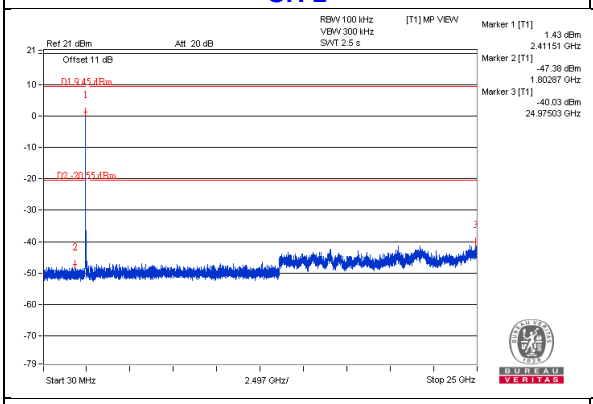
802.11n (HT20)

Maximum REF

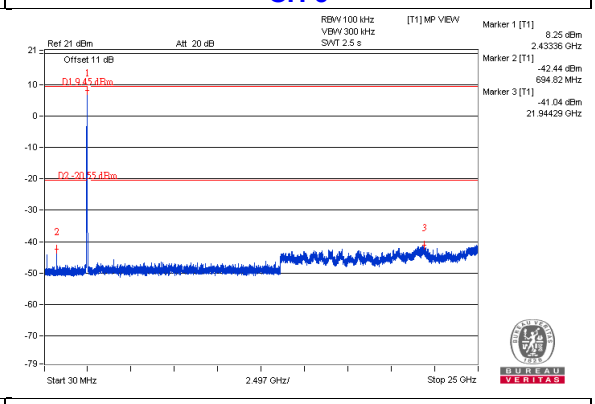


Chain 0

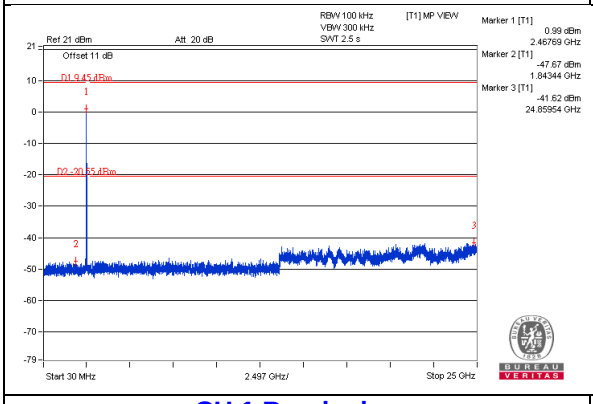
CH 1



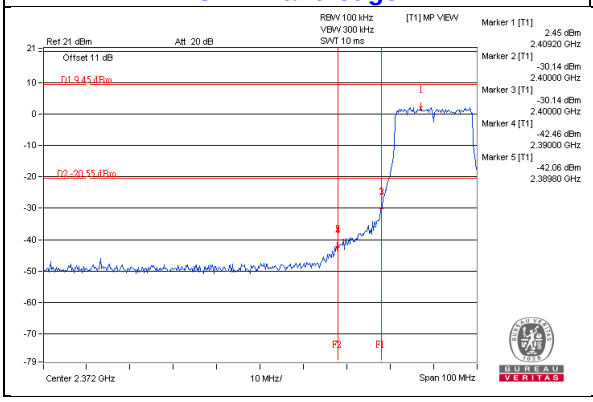
CH 6



CH 11



CH 1 Band edge



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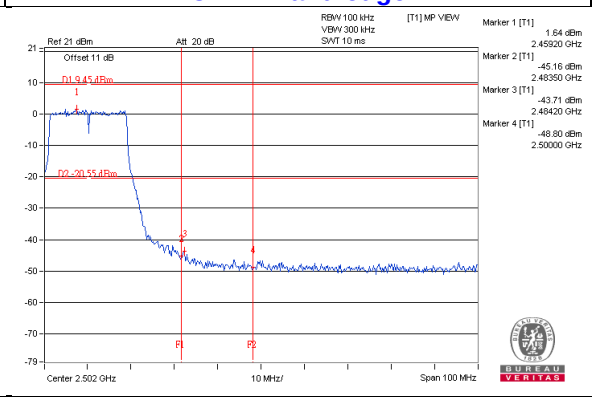
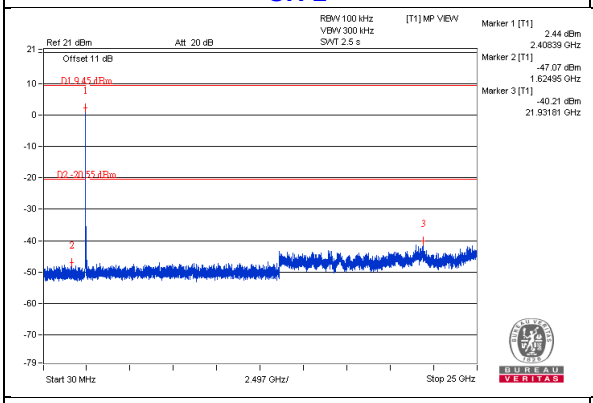


Chain 1

CH 1



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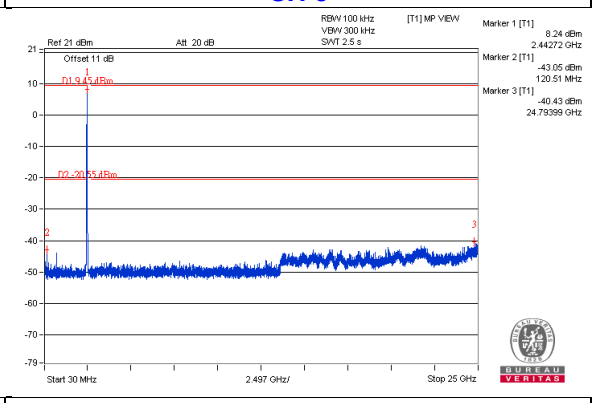

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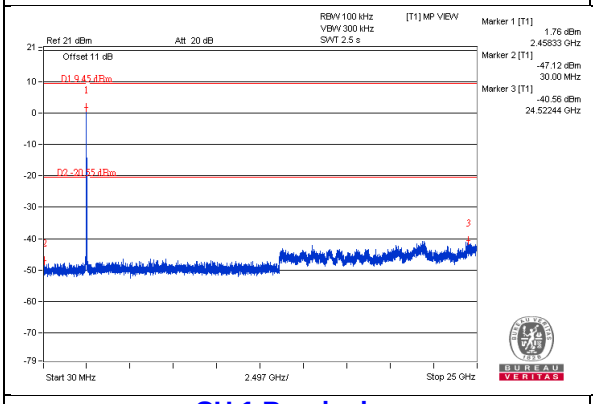
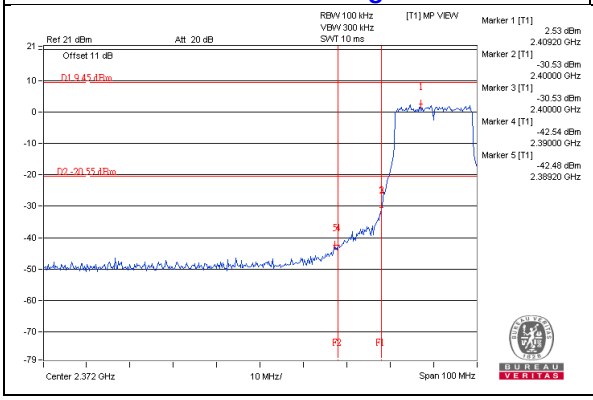


CH 1 Band edge



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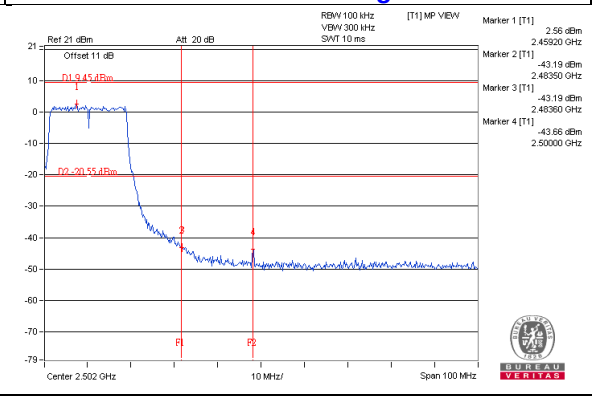
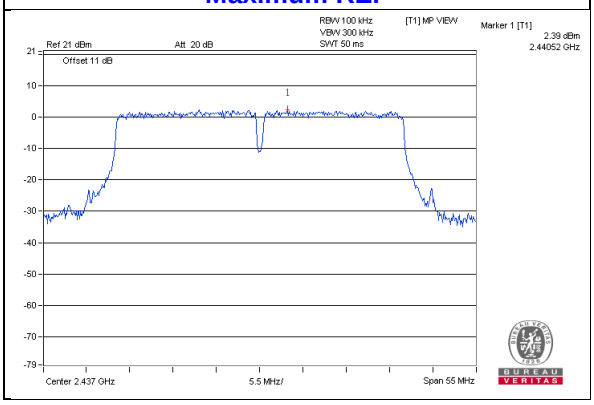


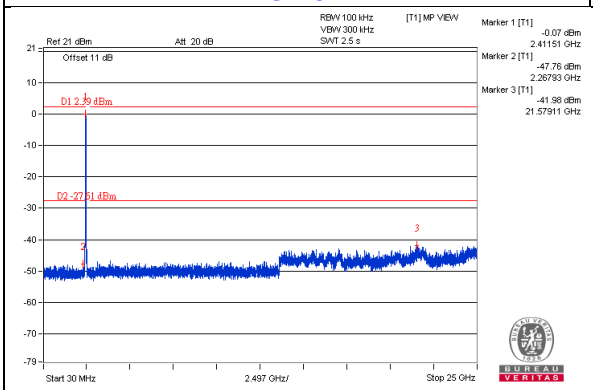
802.11n (HT40)

Maximum REF

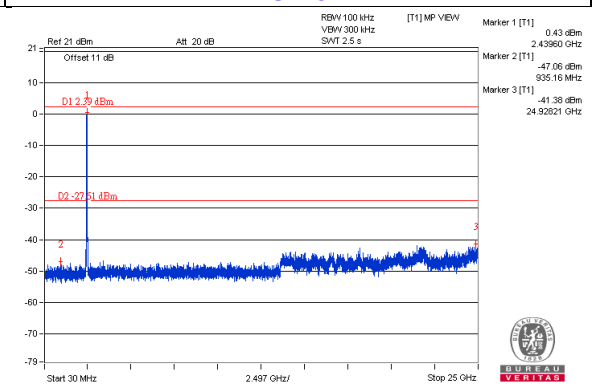


Chain 0

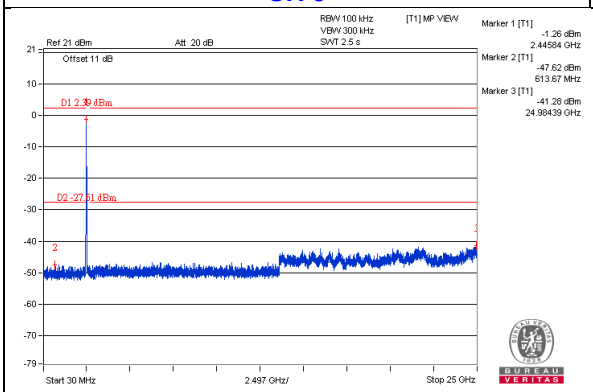
CH 3



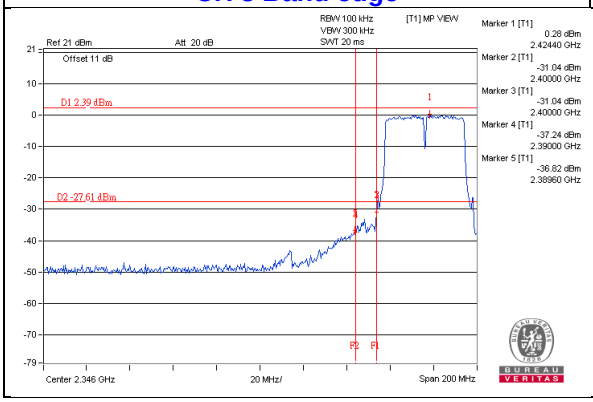
CH 6



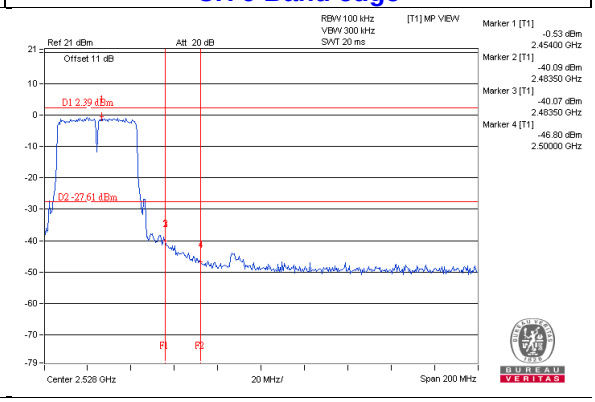
CH 9



CH 3 Band edge

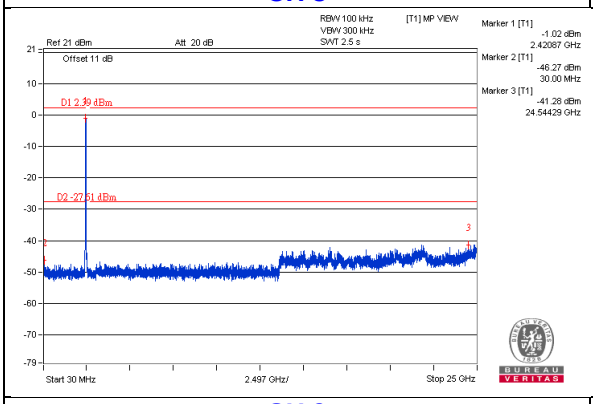


CH 9 Band edge

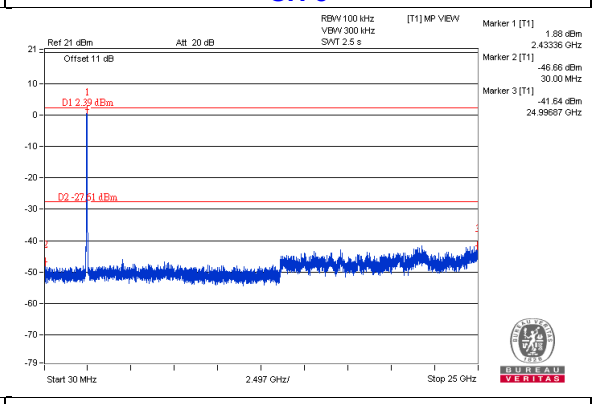


Chain 1

CH 3



CH 6



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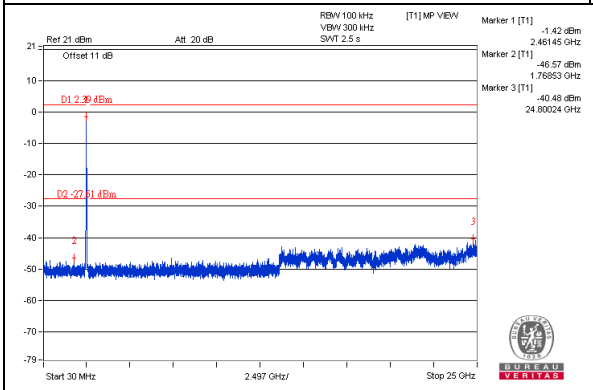

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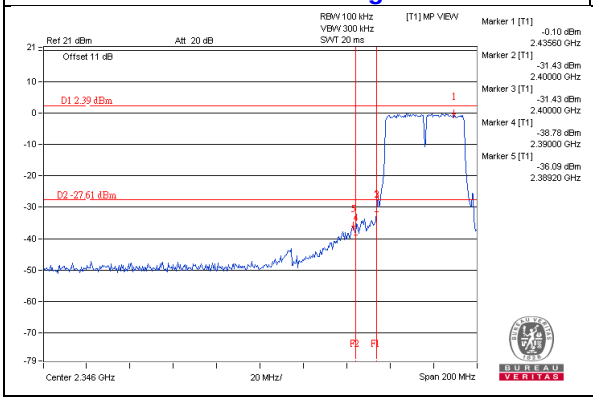

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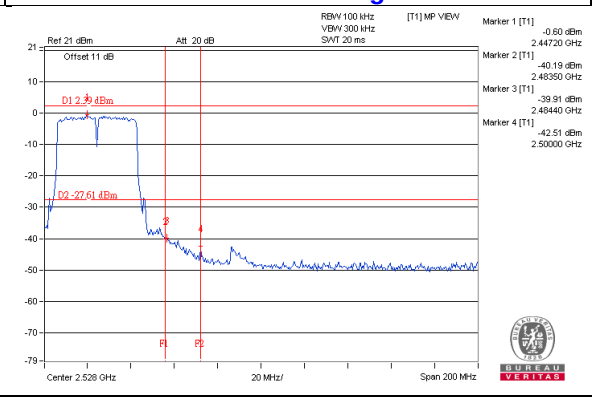

5 Pictures of Test Arrangements

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

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

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