FCC Test Report

Report No.:	RF170315E05A
FCC ID:	KA2IR842C1
Test Model:	DIR-842
Series Model:	DIR-843
Received Date:	Mar.15, 2017
Test Date:	Mar. 24 to 29, 2017
Issued Date:	June 21, 2017
Applicant:	D-Link Corporation
Address:	No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.
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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Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF170315E05A	Original release.	June 21, 2017

1 Certificate of Conformity

Product:	AC1200 Wi-Fi Gigabit Router
Brand:	D-Link
Test Model:	DIR-842
Series Model:	DIR-843
Sample Status:	ENGINEERING SAMPLE
Applicant:	D-Link Corporation
Test Date:	Mar. 24 to 29, 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 : Cindy Hsin , **Date:** June 21, 2017

Cindy Hsin / Specialist

Approved by : , **Date:** June 21, 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 -9.13dB at 0.54453MHz.
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 4824.00MHz., 4924.00MHz., 2390.00MHz, 2483.50MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	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	4.78 dB
	6GHz ~ 18GHz	4.52 dB
	18GHz ~ 40GHz	5.08 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	AC1200 Wi-Fi Gigabit Router
Brand	D-Link
Test Model	DIR-842
Series Model	DIR-843
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 802.11ac (80+80): 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): 2 802.11ac (VHT80+80): 1 set
Output Power	**2.4GHz:** **CDD Mode:** 902.536mW **5GHz:** **5.18 ~ 5.24GHz:** **CDD Mode:** 389.523mW **Beamforming Mode:** 389.523mW **5.745 ~ 5.825GHz:** **CDD Mode:** 280.182mW **Beamforming Mode:** 246.021mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. All models are listed as below.

Model	Difference
DIR-842	For marketing requirement
DIR-843	

From the above models, model: **DIR-842** was selected as representative model for the test and its data was recorded in this report.

2. 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.		

3. The EUT must be supplied with a power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.
1	Amigo	AMS159A-1201000FU	Input: 100-240Vac, 0.5A, 50/60Hz Output: 12V, 1A DC output cable(unshielded, 1.2m)
2	FRECOM	F12W8-120100SPAU	Input: 100-240Vac, 0.3A, 50/60Hz Output: 12V, 1A DC output cable(unshielded, 1.2m)
Note: From the above adapters, the radiated emissions worse case was found in Adapter 1. Therefore only the test data of the mode was recorded in this report.			

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

Antenna Set.	Brand	Model	Antenna Net. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
1	Dongguan RF electronic Co.,Ltd	RF21C02241A	3	5.15 ~ 5.85	Dipole	NA
		RF21C02242A	3	5.15 ~ 5.85		
		RF21C02243A	2	2.4 ~ 2.4835		
		RF21C02244A	2	2.4 ~ 2.4835		
Antenna Set.	Brand	Model	Antenna Net. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
2	HONGBO WIRELESS COMMUNICATION TECHNOLOGY CO., LTD	290-20305	2	2.4 ~ 2.4835	Dipole	NA
		290-20306	2	2.4 ~ 2.4835		
		290-20307	3	5.15 ~ 5.85		
		290-20308	3	5.15 ~ 5.85		
Note: 1. This report chose the Antenna Set 1 to do final test.						

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
802.11ac (VHT80+VHT80)	MCS0~9 Nss=1	1TX+1TX	1RX+1RX

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

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

3.2 Description of Test Modes

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

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	
1	√	√	√	√	Adapter 1
2	-	-	√	-	Adapter 2

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

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

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)
802.11g	1 to 11	6	OFDM	BPSK	6

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)
802.11g	1 to 11	6	OFDM	BPSK	6

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:

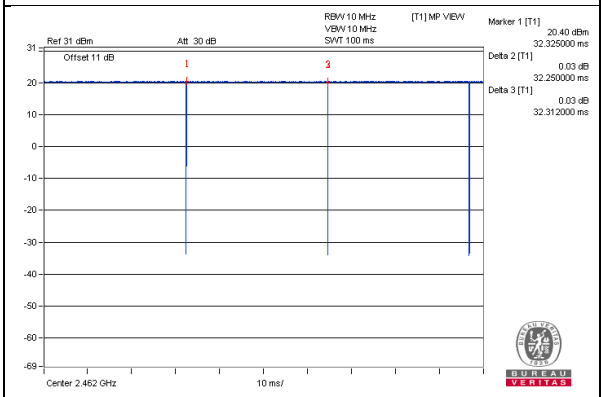
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	24deg. C, 62%RH	120Vac, 60Hz	JyunChun.Lin
RE<1G	26deg. C, 65%RH	120Vac, 60Hz	JyunChun.Lin
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	24deg. C, 64%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

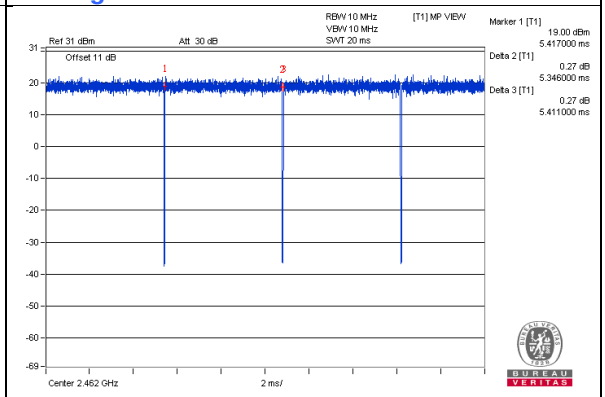
If duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11b: Duty cycle = 32.25/32.312 = 0.998
802.11g: Duty cycle = 5.346/5.411 = 0.988
802.11n (HT20): Duty cycle = 4.958/5.018 = 0.988
802.11n (HT40): Duty cycle = 2.408/2.445 = 0.985

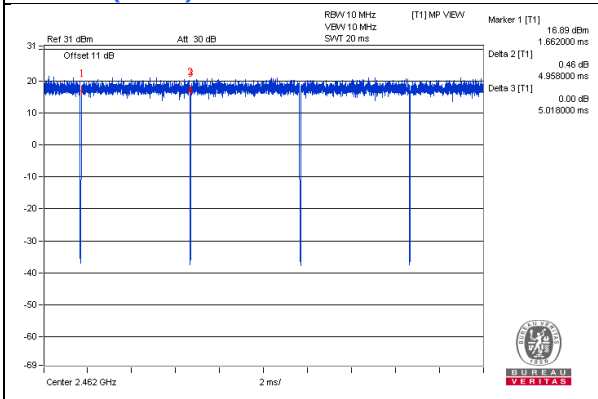
802.11b



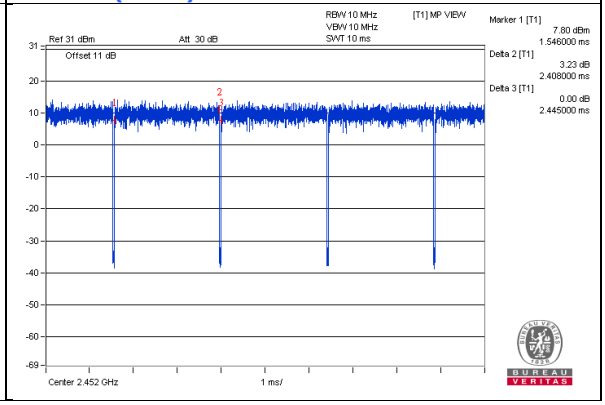
802.11g



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.

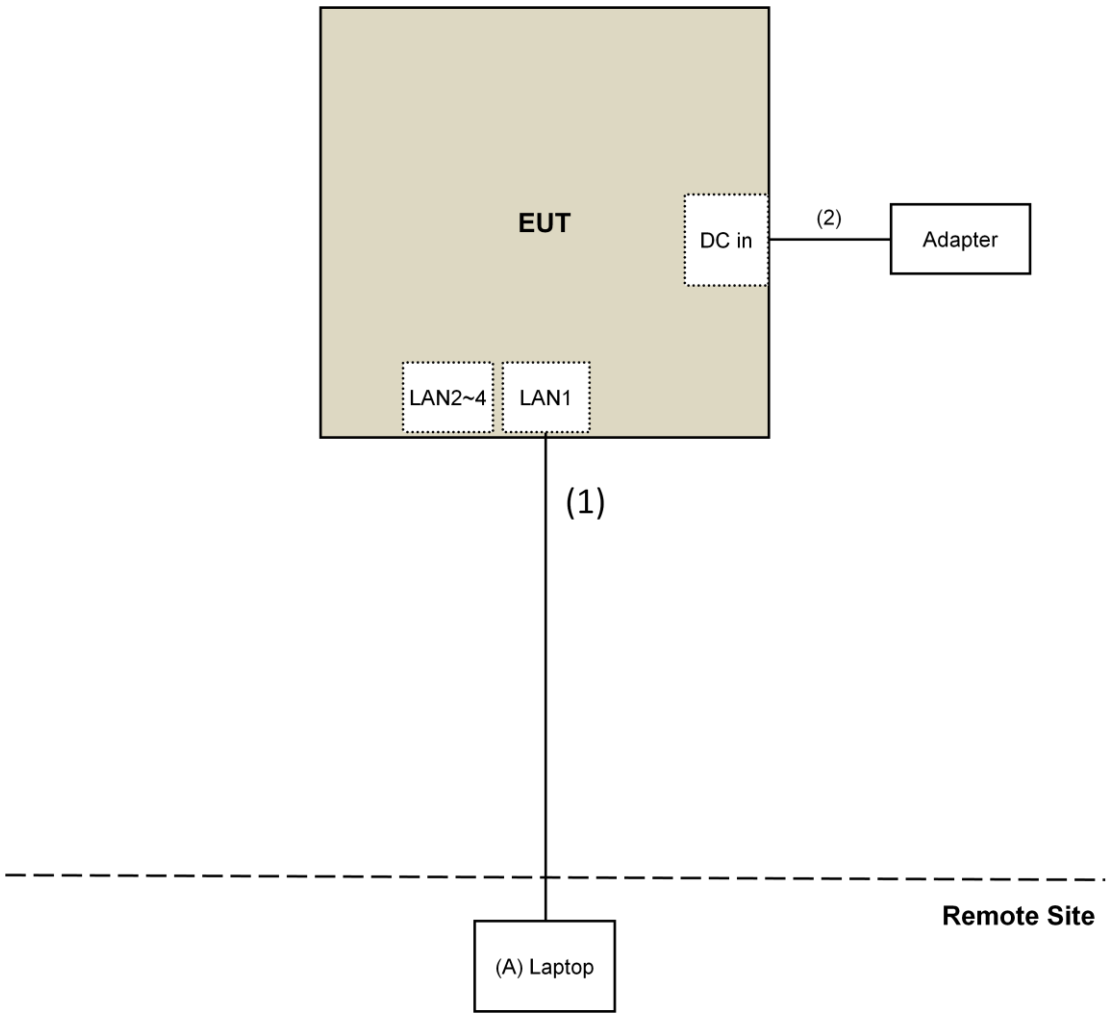
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	4YV4VY1	FCC DoC	Provided by Lab

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	1.2	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
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 20dB 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 20, 2016	July 19, 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-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. 02, 2016	Apr. 01, 2017
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-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	160923 150318 150323	Feb. 02, 2017 Mar. 30, 2016 Mar. 30, 2016	Feb. 01, 2018 Mar. 29, 2017 Mar. 29, 2017
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	June 28, 2016	June 27, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 4, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 4, 2017

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The FCC Site Registration No. is 292998
5. The CANADA Site Registration No. is 20331-2
6 Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Mar. 24 to 28, 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:

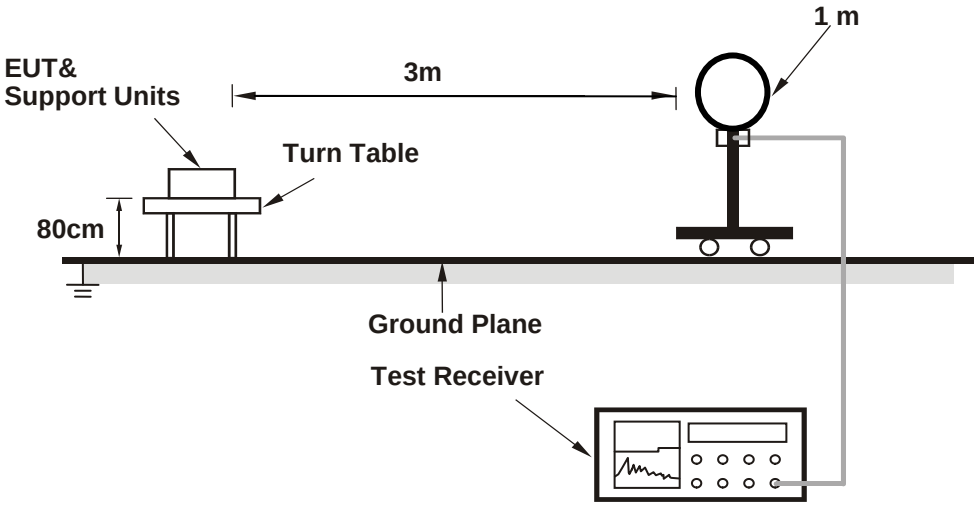
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

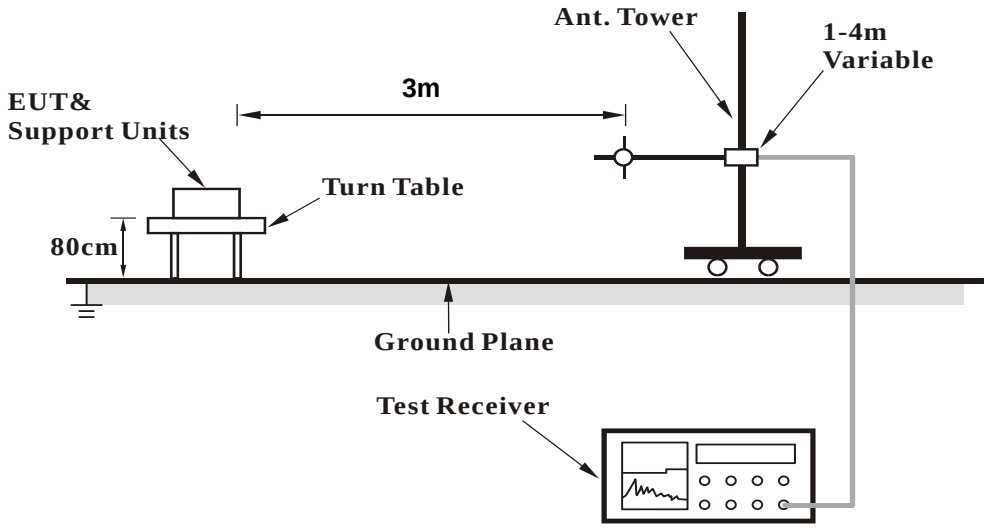
No deviation.

4.1.5 Test Setup

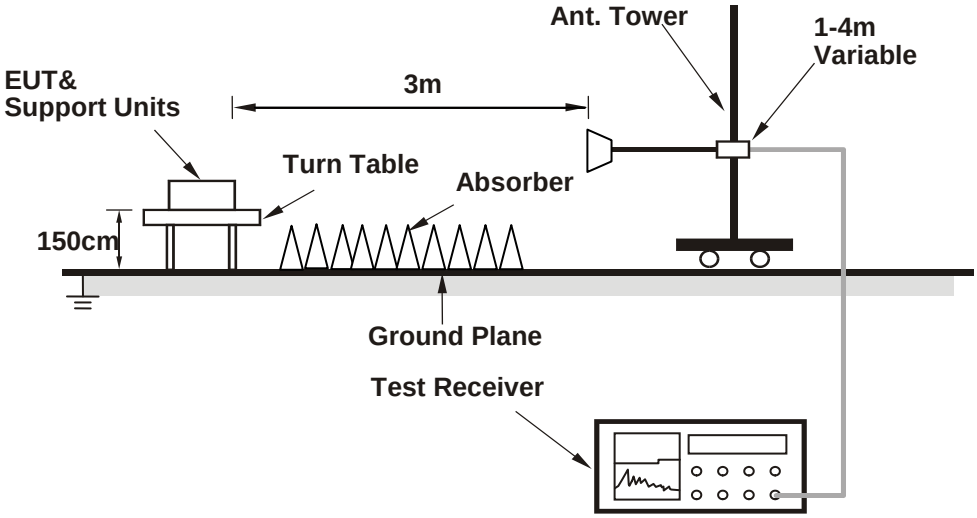
For Radiated emission below 30MHz



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 (QRCT.exe V3.0.233.0) 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	50.2 PK	74.0	-23.8	1.42 H	80	52.3	-2.1
2	2390.00	38.5 AV	54.0	-15.5	1.42 H	80	40.6	-2.1
3	*2412.00	104.5 PK			1.42 H	80	106.5	-2.0
4	*2412.00	102.2 AV			1.42 H	80	104.2	-2.0
5	4824.00	54.0 PK	74.0	-20.0	3.98 H	50	51.8	2.2
6	4824.00	51.8 AV	54.0	-2.2	3.98 H	50	49.6	2.2
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	57.9 PK	74.0	-16.1	1.80 V	72	60.0	-2.1
2	2390.00	48.0 AV	54.0	-6.0	1.80 V	72	50.1	-2.1
3	*2412.00	114.3 PK			1.80 V	72	116.3	-2.0
4	*2412.00	112.1 AV			1.80 V	72	114.1	-2.0
5	4824.00	55.5 PK	74.0	-18.5	2.58 V	228	53.3	2.2
6	**4824.00**	**53.9 AV**	**54.0**	**-0.1**	**2.58 V**	**228**	**51.7**	**2.2**

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	104.6 PK			1.46 H	75	106.5	-1.9
2	*2437.00	102.5 AV			1.46 H	75	104.4	-1.9
3	4874.00	54.1 PK	74.0	-19.9	3.98 H	63	51.8	2.3
4	4874.00	52.1 AV	54.0	-1.9	3.98 H	63	49.8	2.3
5	7311.00	44.4 PK	74.0	-29.6	1.37 H	97	36.0	8.4
6	7311.00	33.2 AV	54.0	-20.8	1.37 H	97	24.8	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	114.0 PK			2.31 V	154	115.9	-1.9
2	*2437.00	111.9 AV			2.31 V	154	113.8	-1.9
3	4874.00	55.2 PK	74.0	-18.8	2.83 V	228	52.9	2.3
4	4874.00	53.7 AV	54.0	-0.3	2.83 V	228	51.4	2.3
5	7311.00	45.1 PK	74.0	-28.9	1.50 V	171	36.7	8.4
6	7311.00	34.7 AV	54.0	-19.3	1.50 V	171	26.3	8.4

REMARKS:

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

CHANNEL	TX Channel 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	104.8 PK			1.39 H	67	106.6	-1.8
2	*2462.00	102.4 AV			1.39 H	67	104.2	-1.8
3	2483.50	49.3 PK	74.0	-24.7	1.39 H	67	51.0	-1.7
4	2483.50	37.4 AV	54.0	-16.6	1.39 H	67	39.1	-1.7
5	4924.00	54.5 PK	74.0	-19.5	3.93 H	56	52.1	2.4
6	4924.00	52.5 AV	54.0	-1.5	3.93 H	56	50.1	2.4
7	7386.00	44.2 PK	74.0	-29.8	1.42 H	91	35.7	8.5
8	7386.00	33.0 AV	54.0	-21.0	1.42 H	91	24.5	8.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.9 PK			2.12 V	148	115.7	-1.8
2	*2462.00	111.7 AV			2.12 V	148	113.5	-1.8
3	2483.50	57.9 PK	74.0	-16.1	2.12 V	148	59.6	-1.7
4	2483.50	46.9 AV	54.0	-7.1	2.12 V	148	48.6	-1.7
5	4924.00	55.7 PK	74.0	-18.3	1.77 V	148	53.3	2.4
6	**4924.00**	**53.9 AV**	**54.0**	**-0.1**	**1.77 V**	**148**	**51.5**	**2.4**
7	7386.00	44.6 PK	74.0	-29.4	1.47 V	167	36.1	8.5
8	7386.00	34.3 AV	54.0	-19.7	1.47 V	167	25.8	8.5

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	64.6 PK	74.0	-9.4	1.35 H	56	66.7	-2.1
2	2390.00	43.8 AV	54.0	-10.2	1.35 H	56	45.9	-2.1
3	*2412.00	106.5 PK			1.35 H	56	108.5	-2.0
4	*2412.00	95.8 AV			1.35 H	56	97.8	-2.0
5	4824.00	57.7 PK	74.0	-16.3	3.90 H	41	55.5	2.2
6	4824.00	44.9 AV	54.0	-9.1	3.90 H	41	42.7	2.2
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**	**73.9 PK**	**74.0**	**-0.1**	**1.65 V**	**73**	**76.0**	**-2.1**
2	2390.00	53.3 AV	54.0	-0.7	1.65 V	73	55.4	-2.1
3	*2412.00	115.6 PK			1.65 V	73	117.6	-2.0
4	*2412.00	105.1 AV			1.65 V	73	107.1	-2.0
5	4824.00	58.9 PK	74.0	-15.1	1.90 V	188	56.7	2.2
6	4824.00	46.3 AV	54.0	-7.7	1.90 V	188	44.1	2.2

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	48.3 PK	74.0	-25.7	1.30 H	64	50.4	-2.1
2	2390.00	35.7 AV	54.0	-18.3	1.30 H	64	37.8	-2.1
3	*2437.00	111.1 PK			1.30 H	64	113.0	-1.9
4	*2437.00	101.2 AV			1.30 H	64	103.1	-1.9
5	2483.50	62.3 PK	74.0	-11.7	1.30 H	64	64.0	-1.7
6	2483.50	41.1 AV	54.0	-12.9	1.30 H	64	42.8	-1.7
7	4874.00	62.2 PK	74.0	-11.8	3.95 H	56	59.9	2.3
8	4874.00	48.6 AV	54.0	-5.4	3.95 H	56	46.3	2.3
9	7311.00	51.6 PK	74.0	-22.4	1.46 H	77	43.2	8.4
10	7311.00	37.6 AV	54.0	-16.4	1.46 H	77	29.2	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.4 PK	74.0	-6.6	1.63 V	18	69.5	-2.1
2	2390.00	45.1 AV	54.0	-8.9	1.63 V	18	47.2	-2.1
3	*2437.00	120.2 PK			1.63 V	18	122.1	-1.9
4	*2437.00	110.4 AV			1.63 V	18	112.3	-1.9
5	2483.50	71.6 PK	74.0	-2.4	1.63 V	18	73.3	-1.7
6	2483.50	50.6 AV	54.0	-3.4	1.63 V	18	52.3	-1.7
7	4874.00	63.7 PK	74.0	-10.3	1.90 V	173	61.4	2.3
8	4874.00	51.1 AV	54.0	-2.9	1.90 V	173	48.8	2.3
9	7311.00	53.1 PK	74.0	-20.9	1.50 V	76	44.7	8.4
10	7311.00	39.1 AV	54.0	-14.9	1.50 V	76	30.7	8.4

REMARKS:

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

CHANNEL	TX Channel 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	105.6 PK			1.32 H	57	107.4	-1.8
2	*2462.00	95.3 AV			1.32 H	57	97.1	-1.8
3	2483.50	63.5 PK	74.0	-10.5	1.32 H	57	65.2	-1.7
4	2483.50	44.3 AV	54.0	-9.7	1.32 H	57	46.0	-1.7
5	4924.00	58.1 PK	74.0	-15.9	3.95 H	56	55.7	2.4
6	4924.00	45.2 AV	54.0	-8.8	3.95 H	56	42.8	2.4
7	7386.00	45.1 PK	74.0	-28.9	1.46 H	77	36.6	8.5
8	7386.00	31.6 AV	54.0	-22.4	1.46 H	77	23.1	8.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.6 PK			1.52 V	18	116.4	-1.8
2	*2462.00	104.4 AV			1.52 V	18	106.2	-1.8
3	2483.50	72.8 PK	74.0	-1.2	1.52 V	18	74.5	-1.7
4	2483.50	53.8 AV	54.0	-0.2	1.52 V	18	55.5	-1.7
5	4924.00	59.6 PK	74.0	-14.4	1.92 V	187	57.2	2.4
6	4924.00	46.7 AV	54.0	-7.3	1.92 V	187	44.3	2.4
7	7386.00	47.5 PK	74.0	-26.5	1.47 V	91	39.0	8.5
8	7386.00	33.1 AV	54.0	-20.9	1.47 V	91	24.6	8.5

REMARKS:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.7 PK	74.0	-11.3	1.33 H	46	64.8	-2.1
2	2390.00	43.8 AV	54.0	-10.2	1.33 H	46	45.9	-2.1
3	*2412.00	107.4 PK			1.33 H	46	109.4	-2.0
4	*2412.00	96.9 AV			1.33 H	46	98.9	-2.0
5	4824.00	57.9 PK	74.0	-16.1	3.92 H	39	55.7	2.2
6	4824.00	45.2 AV	54.0	-8.8	3.92 H	39	43.0	2.2
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	72.1 PK	74.0	-1.9	1.78 V	72	74.2	-2.1
2	2390.00	53.3 AV	54.0	-0.7	1.78 V	72	55.4	-2.1
3	*2412.00	116.3 PK			1.78 V	72	118.3	-2.0
4	*2412.00	106.2 AV			1.78 V	72	108.2	-2.0
5	4824.00	59.3 PK	74.0	-14.7	1.89 V	198	57.1	2.2
6	4824.00	46.6 AV	54.0	-7.4	1.89 V	198	44.4	2.2

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	47.8 PK	74.0	-26.2	1.32 H	54	49.9	-2.1
2	2390.00	35.2 AV	54.0	-18.8	1.32 H	54	37.3	-2.1
3	*2437.00	101.3 PK			1.32 H	54	103.2	-1.9
4	*2437.00	100.7 AV			1.32 H	54	102.6	-1.9
5	2483.50	60.5 PK	74.0	-13.5	1.32 H	54	62.2	-1.7
6	2483.50	39.8 AV	54.0	-14.2	1.32 H	54	41.5	-1.7
7	4874.00	62.1 PK	74.0	-11.9	3.97 H	47	59.8	2.3
8	4874.00	48.4 AV	54.0	-5.6	3.97 H	47	46.1	2.3
9	7311.00	51.3 PK	74.0	-22.7	1.40 H	78	42.9	8.4
10	7311.00	37.4 AV	54.0	-16.6	1.40 H	78	29.0	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	2.20 V	84	68.6	-2.1
2	2390.00	44.6 AV	54.0	-9.4	2.20 V	84	46.7	-2.1
3	*2437.00	120.3 PK			1.61 V	26	122.2	-1.9
4	*2437.00	110.0 AV			1.61 V	26	111.9	-1.9
5	2483.50	70.7 PK	74.0	-3.3	2.20 V	84	72.4	-1.7
6	2483.50	49.2 AV	54.0	-4.8	2.20 V	84	50.9	-1.7
7	4874.00	63.8 PK	74.0	-10.2	1.95 V	168	61.5	2.3
8	4874.00	51.2 AV	54.0	-2.8	1.95 V	168	48.9	2.3
9	7311.00	53.5 PK	74.0	-20.5	1.55 V	87	45.1	8.4
10	7311.00	39.2 AV	54.0	-14.8	1.55 V	87	30.8	8.4

REMARKS:

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

CHANNEL	TX Channel 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	95.5 PK			1.27 H	37	97.3	-1.8
2	*2462.00	94.6 AV			1.27 H	37	96.4	-1.8
3	2483.50	61.8 PK	74.0	-12.2	1.27 H	37	63.5	-1.7
4	2483.50	44.5 AV	54.0	-9.5	1.27 H	37	46.2	-1.7
5	4924.00	58.3 PK	74.0	-15.7	3.89 H	40	55.9	2.4
6	4924.00	45.1 AV	54.0	-8.9	3.89 H	40	42.7	2.4
7	7386.00	45.5 PK	74.0	-28.5	1.45 H	75	37.0	8.5
8	7386.00	31.8 AV	54.0	-22.2	1.45 H	75	23.3	8.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.2 PK			1.61 V	341	116.0	-1.8
2	*2462.00	103.9 AV			1.61 V	341	105.7	-1.8
3	2483.50	71.2 PK	74.0	-2.8	1.61 V	341	72.9	-1.7
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.61 V**	**341**	**55.6**	**-1.7**
5	4924.00	59.9 PK	74.0	-14.1	1.87 V	200	57.5	2.4
6	4924.00	47.2 AV	54.0	-6.8	1.87 V	200	44.8	2.4
7	7386.00	47.7 PK	74.0	-26.3	1.47 V	94	39.2	8.5
8	7386.00	33.0 AV	54.0	-21.0	1.47 V	94	24.5	8.5

REMARKS:

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

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	1.26 H	32	62.9	-2.1
2	2390.00	44.5 AV	54.0	-9.5	1.26 H	32	46.6	-2.1
3	*2422.00	92.1 PK			1.26 H	32	94.2	-2.1
4	*2422.00	91.3 AV			1.26 H	32	93.4	-2.1
5	4844.00	53.7 PK	74.0	-20.3	3.91 H	37	51.4	2.3
6	4844.00	40.8 AV	54.0	-13.2	3.91 H	37	38.5	2.3
7	7266.00	44.5 PK	74.0	-29.5	1.40 H	76	36.1	8.4
8	7266.00	31.2 AV	54.0	-22.8	1.40 H	76	22.8	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.1 PK	74.0	-3.9	1.51 V	72	72.2	-2.1
2	2390.00	53.8 AV	54.0	-0.2	1.51 V	72	55.9	-2.1
3	*2422.00	110.8 PK			1.51 V	72	112.9	-2.1
4	*2422.00	100.5 AV			1.51 V	72	102.6	-2.1
5	4844.00	55.1 PK	74.0	-18.9	1.91 V	203	52.8	2.3
6	4844.00	42.2 AV	54.0	-11.8	1.91 V	203	39.9	2.3
7	7266.00	44.6 PK	74.0	-29.4	1.46 V	99	36.2	8.4
8	7266.00	31.4 AV	54.0	-22.6	1.46 V	99	23.0	8.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.0 PK	74.0	-18.0	1.31 H	24	58.1	-2.1
2	2390.00	36.4 AV	54.0	-17.6	1.31 H	24	38.5	-2.1
3	*2437.00	95.4 PK			1.31 H	24	97.3	-1.9
4	*2437.00	94.6 AV			1.31 H	24	96.5	-1.9
5	2483.50	60.8 PK	74.0	-13.2	1.31 H	24	62.5	-1.7
6	2483.50	44.6 AV	54.0	-9.4	1.31 H	24	46.3	-1.7
7	4874.00	57.9 PK	74.0	-16.1	3.93 H	44	55.6	2.3
8	4874.00	45.1 AV	54.0	-8.9	3.93 H	44	42.8	2.3
9	7311.00	47.2 PK	74.0	-26.8	1.41 H	70	38.8	8.4
10	7311.00	32.3 AV	54.0	-21.7	1.41 H	70	23.9	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.3 PK	74.0	-8.7	1.60 V	22	67.4	-2.1
2	2390.00	45.7 AV	54.0	-8.3	1.60 V	22	47.8	-2.1
3	*2437.00	114.0 PK			1.60 V	22	115.9	-1.9
4	*2437.00	103.8 AV			1.60 V	22	105.7	-1.9
5	2483.50	70.0 PK	74.0	-4.0	1.60 V	22	71.7	-1.7
6	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.60 V**	**22**	**55.6**	**-1.7**
7	4874.00	59.4 PK	74.0	-14.6	1.95 V	211	57.1	2.3
8	4874.00	46.6 AV	54.0	-7.4	1.95 V	211	44.3	2.3
9	7311.00	48.9 PK	74.0	-25.1	1.50 V	89	40.5	8.4
10	7311.00	33.8 AV	54.0	-20.2	1.50 V	89	25.4	8.4

REMARKS:

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

CHANNEL	TX Channel 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	88.9 PK			1.31 H	21	90.7	-1.8
2	*2452.00	87.5 AV			1.31 H	21	89.3	-1.8
3	2483.50	58.9 PK	74.0	-15.1	1.31 H	21	60.6	-1.7
4	2483.50	43.8 AV	54.0	-10.2	1.31 H	21	45.5	-1.7
5	4904.00	50.7 PK	74.0	-23.3	3.91 H	29	48.3	2.4
6	4904.00	38.1 AV	54.0	-15.9	3.91 H	29	35.7	2.4
7	7356.00	43.8 PK	74.0	-30.2	1.44 H	78	35.3	8.5
8	7356.00	30.8 AV	54.0	-23.2	1.44 H	78	22.3	8.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	107.5 PK			1.56 V	21	109.3	-1.8
2	*2452.00	96.7 AV			1.56 V	21	98.5	-1.8
3	2483.50	68.2 PK	74.0	-5.8	1.56 V	21	69.9	-1.7
4	2483.50	53.3 AV	54.0	-0.7	1.56 V	21	55.0	-1.7
5	4904.00	52.1 PK	74.0	-21.9	1.93 V	217	49.7	2.4
6	4904.00	39.5 AV	54.0	-14.5	1.93 V	217	37.1	2.4
7	7356.00	44.1 PK	74.0	-29.9	1.42 V	87	35.6	8.5
8	7356.00	31.0 AV	54.0	-23.0	1.42 V	87	22.5	8.5

REMARKS:

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

Below 1GHz Data:

802.11g

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	43.85	36.8 QP	40.0	-3.2	1.00 H	360	44.7	-7.9
2	70.62	33.4 QP	40.0	-6.6	3.00 H	94	43.8	-10.4
3	116.14	38.7 QP	43.5	-4.8	1.50 H	101	49.1	-10.4
4	171.81	38.7 QP	43.5	-4.8	1.50 H	52	47.5	-8.8
5	247.30	37.5 QP	46.0	-8.5	1.50 H	0	47.3	-9.8
6	439.24	32.1 QP	46.0	-13.9	2.00 H	211	36.0	-3.9
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	73.07	37.0 QP	40.0	-3.0	1.50 V	360	47.9	-10.9
2	120.36	37.6 QP	43.5	-5.9	1.00 V	360	47.7	-10.1
3	131.58	38.0 QP	43.5	-5.5	1.00 V	360	47.3	-9.3
4	167.06	38.8 QP	43.5	-4.7	1.50 V	360	47.3	-8.5
5	248.76	35.8 QP	46.0	-10.2	1.50 V	113	45.6	-9.8
6	820.36	33.1 QP	46.0	-12.9	1.50 V	306	30.3	2.8

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: Mar. 28, 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.

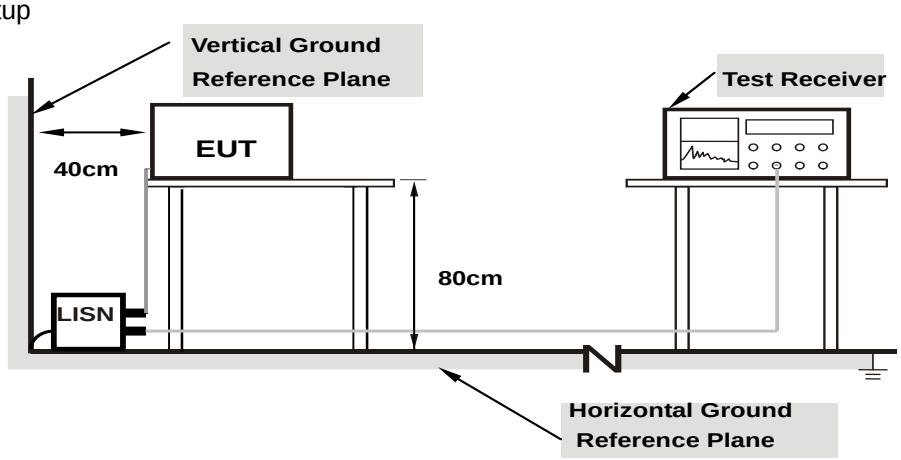
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

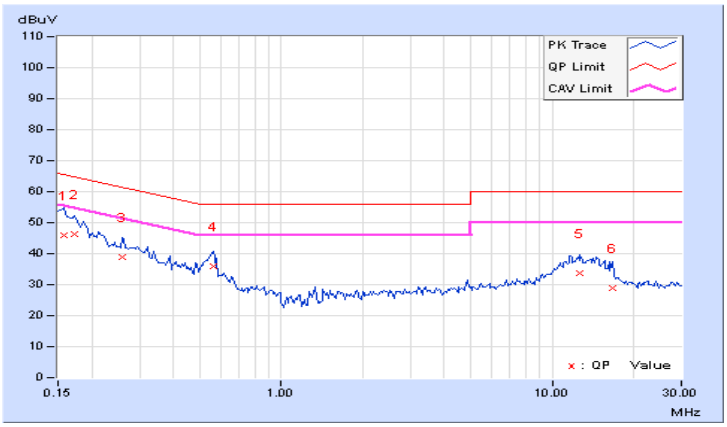
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.20	35.89	24.03	46.09	34.23	65.58	55.58	-19.49	-21.35
2	0.17344	10.20	36.23	25.25	46.43	35.45	64.79	54.79	-18.36	-19.34
3	0.25938	10.21	28.57	18.60	38.78	28.81	61.45	51.45	-22.67	-22.64
4	0.56406	10.26	25.72	18.30	35.98	28.56	56.00	46.00	-20.02	-17.44
5	12.69922	11.04	22.71	15.67	33.75	26.71	60.00	50.00	-26.25	-23.29
6	16.69141	11.44	17.39	11.01	28.83	22.45	60.00	50.00	-31.17	-27.55

REMARKS:

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

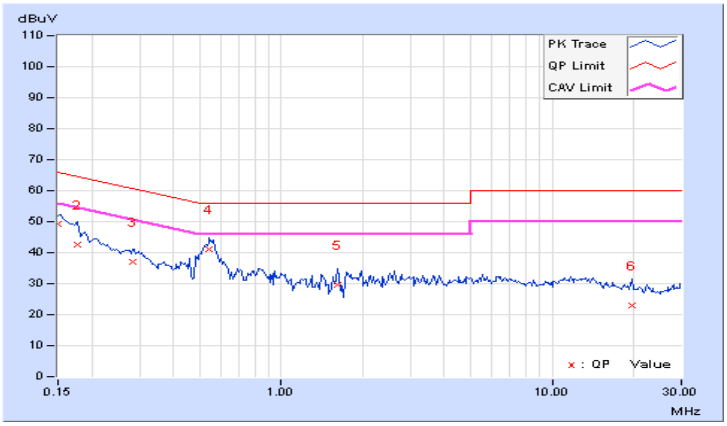


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	39.17	29.34	49.36	39.53	66.00	56.00	-16.64	-16.47
2	0.17734	10.18	32.32	19.37	42.50	29.55	64.61	54.61	-22.11	-25.06
3	0.28281	10.20	26.77	20.61	36.97	30.81	60.73	50.73	-23.76	-19.92
4	**0.54453**	**10.24**	**30.86**	**26.63**	**41.10**	**36.87**	**56.00**	**46.00**	**-14.90**	**-9.13**
5	1.62109	10.29	19.45	14.25	29.74	24.54	56.00	46.00	-26.26	-21.46
6	19.77734	11.37	11.52	7.08	22.89	18.45	60.00	50.00	-37.11	-31.55

REMARKS:

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



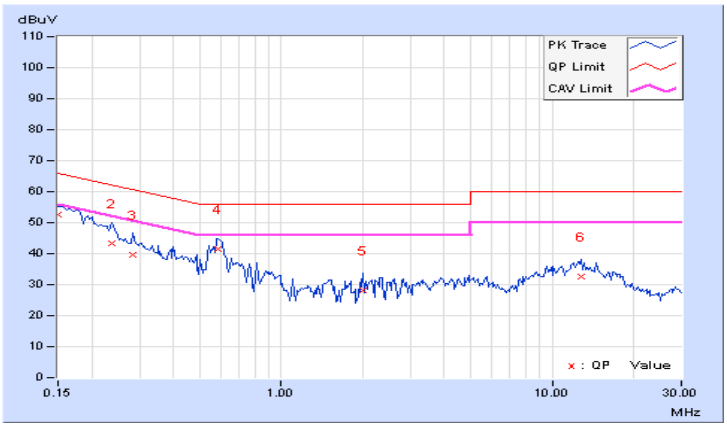
4.2.8 Test Results (Mode 2)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.20	42.52	31.45	52.72	41.65	66.00	56.00	-13.28	-14.35
2	0.23594	10.21	33.19	21.78	43.40	31.99	62.24	52.24	-18.84	-20.25
3	0.28281	10.22	29.47	17.15	39.69	27.37	60.73	50.73	-21.04	-23.36
4	0.58750	10.26	31.20	25.95	41.46	36.21	56.00	46.00	-14.54	-9.79
5	1.99219	10.29	17.93	12.85	28.22	23.14	56.00	46.00	-27.78	-22.86
6	12.82813	11.05	21.53	16.31	32.58	27.36	60.00	50.00	-27.42	-22.64

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.

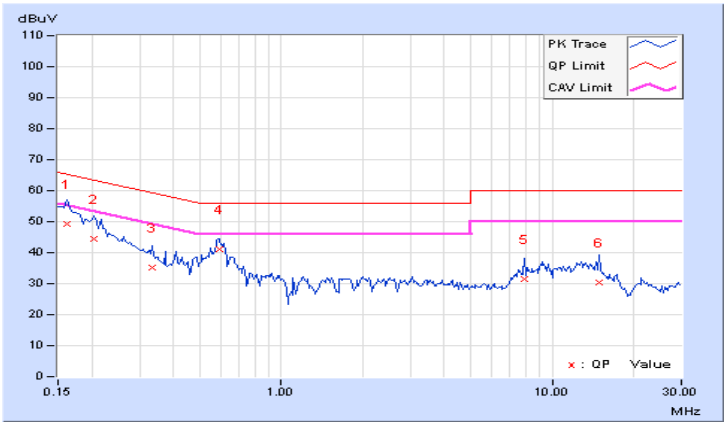


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.16172	10.19	39.24	25.31	49.43	35.50	65.38	55.38	-15.95	-19.88
2	0.20469	10.17	34.28	22.48	44.45	32.65	63.42	53.42	-18.97	-20.77
3	0.33359	10.22	24.88	14.97	35.10	25.19	59.36	49.36	-24.26	-24.17
4	0.59141	10.25	30.86	26.45	41.11	36.70	56.00	46.00	-14.89	-9.30
5	7.89063	10.49	20.82	14.68	31.31	25.17	60.00	50.00	-28.69	-24.83
6	14.95313	11.09	19.20	14.43	30.29	25.52	60.00	50.00	-29.71	-24.48

REMARKS:

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

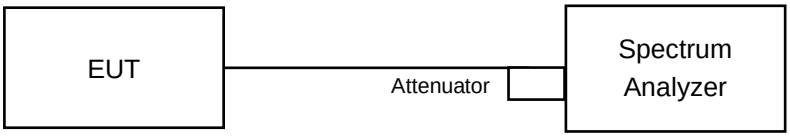


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	7.11	6.61	0.5	Pass
6	2437	6.62	6.62	0.5	Pass
11	2462	7.11	7.11	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	13.82	15.11	0.5	Pass
6	2437	15.14	15.10	0.5	Pass
11	2462	15.04	15.10	0.5	Pass

802.11n (HT20)

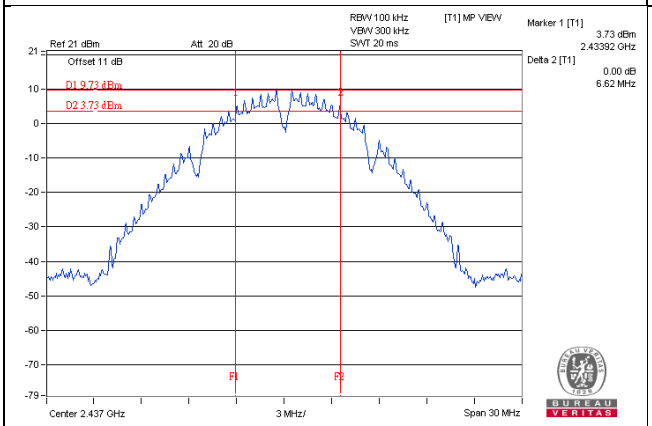
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.09	15.12	0.5	Pass
6	2437	15.14	15.08	0.5	Pass
11	2462	15.12	15.16	0.5	Pass

802.11n (HT40)

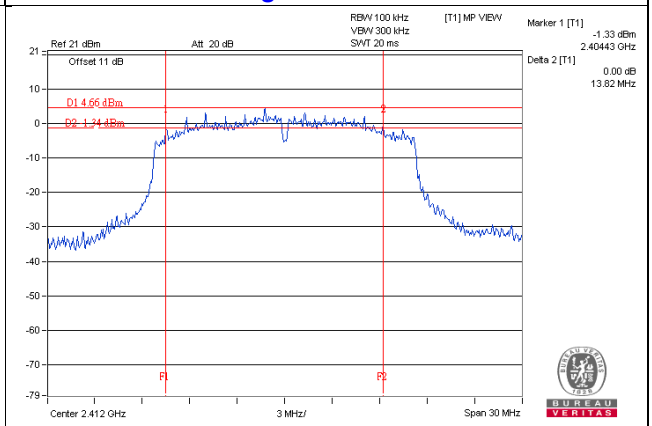
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	26.30	32.63	0.5	Pass
6	2437	27.58	32.66	0.5	Pass
9	2452	28.85	33.86	0.5	Pass

Spectrum Plot of Worst Value

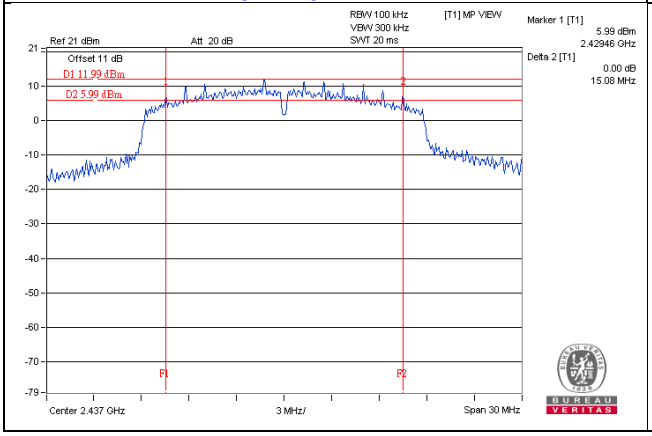
802.11b / Chain 1 : CH6



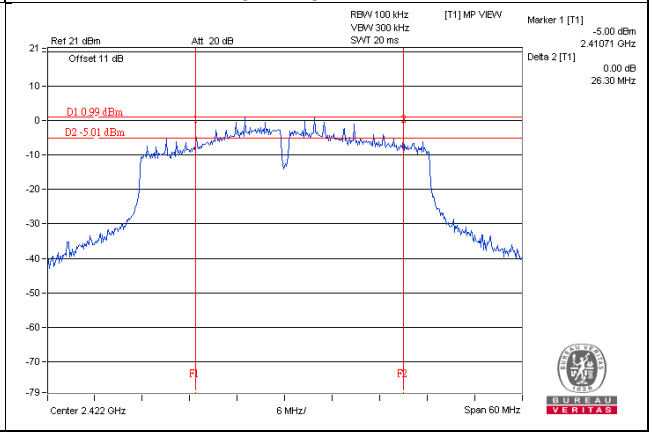
802.11g / Chain 0 : CH1



802.11n (HT20) / Chain 1 : CH6



802.11n (HT40) / Chain 0 : CH3

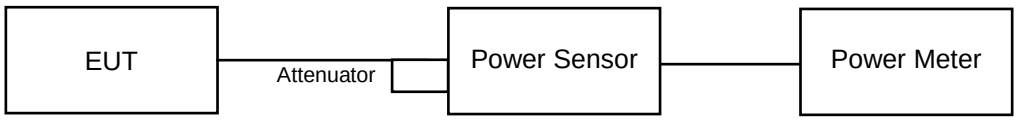


4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

A peak / average power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak / 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

FOR PEAK POWER

802.11b

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.11	18.58	153.581	21.86	30	Pass
6	2437	20.89	20.51	235.204	23.71	30	Pass
11	2462	20.48	20.16	215.439	23.33	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.18	22.48	384.981	25.85	30	Pass
6	2437	26.82	26.25	902.536	29.55	30	Pass
11	2462	22.89	23.10	398.71	26.01	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.48	22.79	412.952	26.16	30	Pass
6	2437	26.68	26.37	899.097	29.54	30	Pass
11	2462	22.62	21.84	335.567	25.26	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	20.52	20.41	222.621	23.48	30	Pass
6	2437	23.84	23.54	468.047	26.70	30	Pass
9	2452	17.31	17.52	110.321	20.43	30	Pass

FOR AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.60	15.63	72.867	18.63
6	2437	17.86	17.56	118.11	20.72
11	2462	17.53	17.30	110.327	20.43

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.00	14.51	59.872	17.77
6	2437	22.22	21.90	321.607	25.07
11	2462	15.35	15.62	70.752	18.50

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.78	15.71	75.083	18.76
6	2437	22.24	21.78	318.155	25.03
11	2462	14.67	14.52	57.623	17.61

802.11n (HT40)

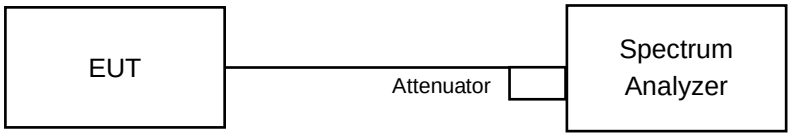
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	13.46	13.20	43.075	16.34
6	2437	17.05	17.10	101.985	20.09
9	2452	10.36	10.15	21.215	13.27

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

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	-6.28	3.01	-3.27	8.00	Pass
	6	2437	-6.20	3.01	-3.19	8.00	Pass
	11	2462	-5.24	3.01	-2.23	8.00	Pass
1	1	2412	-6.66	3.01	-3.65	8.00	Pass
	6	2437	-4.21	3.01	-1.20	8.00	Pass
	11	2462	-4.09	3.01	-1.08	8.00	Pass

Note: Directional gain = 2dBi + 10log(2) = 5.01dBi < 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	-10.28	3.01	-7.27	8.00	Pass
	6	2437	-2.04	3.01	0.97	8.00	Pass
	11	2462	-8.53	3.01	-5.52	8.00	Pass
1	1	2412	-10.78	3.01	-7.77	8.00	Pass
	6	2437	-1.39	3.01	1.62	8.00	Pass
	11	2462	-9.19	3.01	-6.18	8.00	Pass

Note: Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT20)

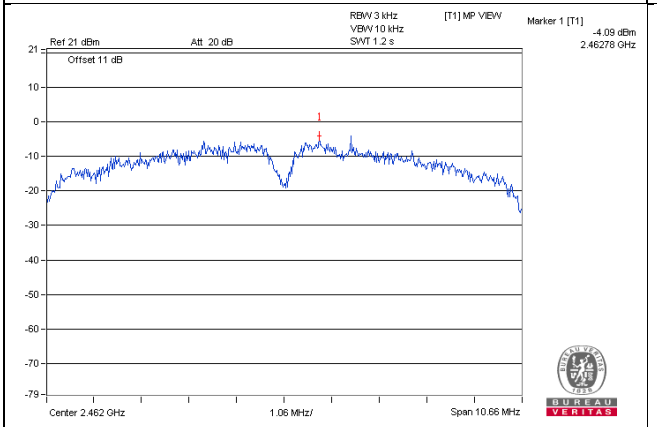
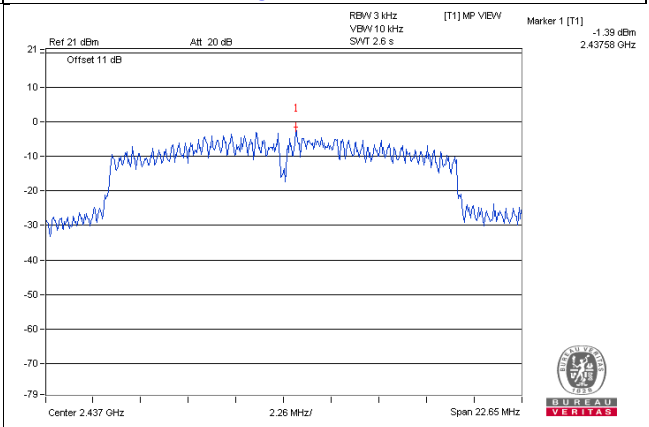
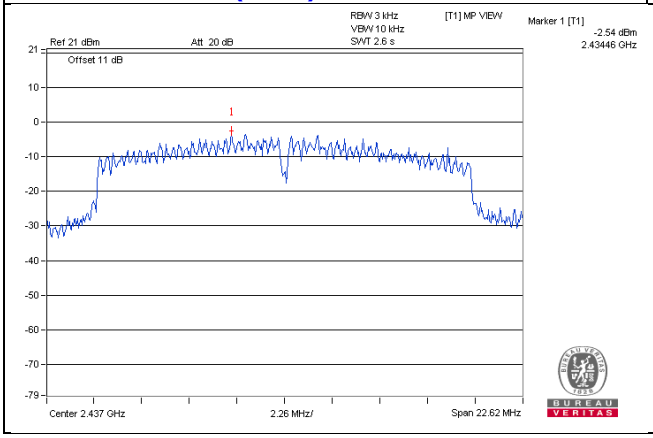
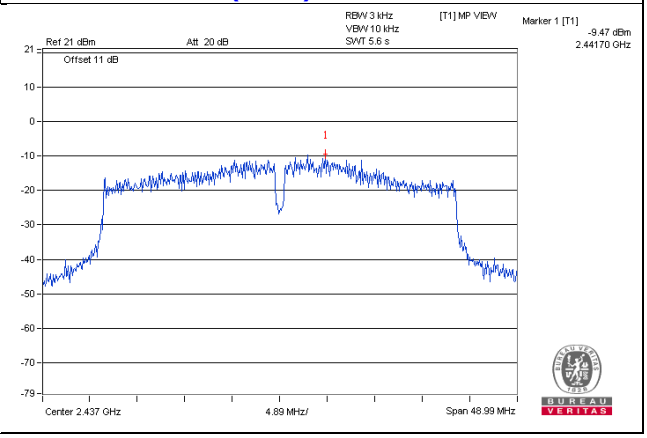
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-10.57	3.01	-7.56	8.00	Pass
	6	2437	-3.27	3.01	-0.26	8.00	Pass
	11	2462	-9.64	3.01	-6.63	8.00	Pass
1	1	2412	-9.61	3.01	-6.60	8.00	Pass
	6	2437	-2.54	3.01	0.47	8.00	Pass
	11	2462	-10.37	3.01	-7.36	8.00	Pass

Note: Directional gain = 2dBi + 10log(2) = 5.01dBi < 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	-14.00	3.01	-10.99	8.00	Pass
	6	2437	-10.25	3.01	-7.24	8.00	Pass
	9	2452	-17.25	3.01	-14.24	8.00	Pass
1	3	2422	-14.57	3.01	-11.56	8.00	Pass
	6	2437	-9.47	3.01	-6.46	8.00	Pass
	9	2452	-16.93	3.01	-13.92	8.00	Pass

NOTE: Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the power density limit shall not be reduced.

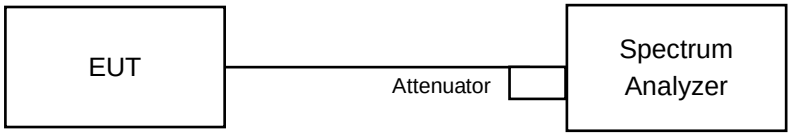
Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH 11	**802.11g / Chain 1 : CH 6**
	
802.11n (HT20) / Chain 1 : CH 6	**802.11n (HT40) / Chain 1 : CH 6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB,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

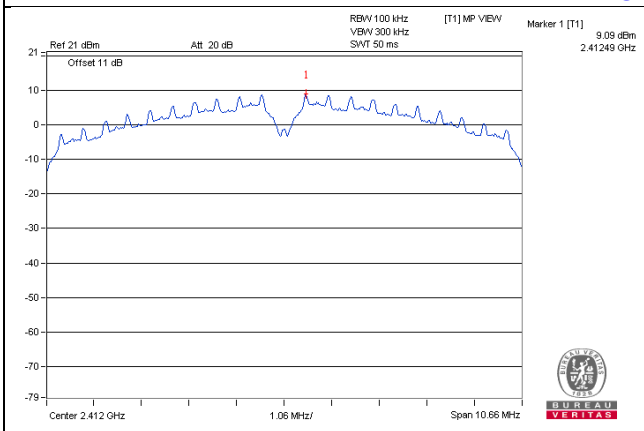
Same as Item 4.3.6

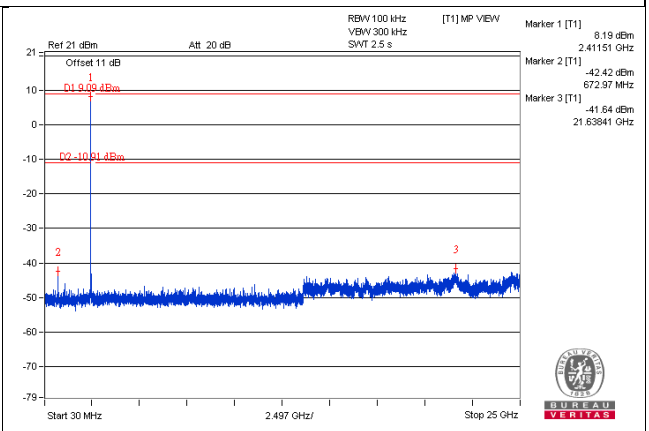
4.6.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

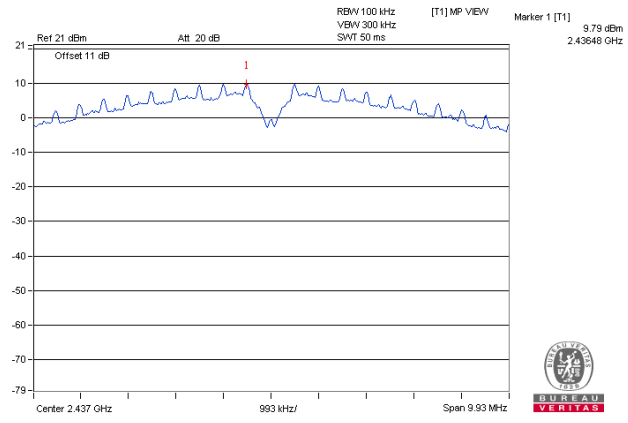
802.11b - Chain 0

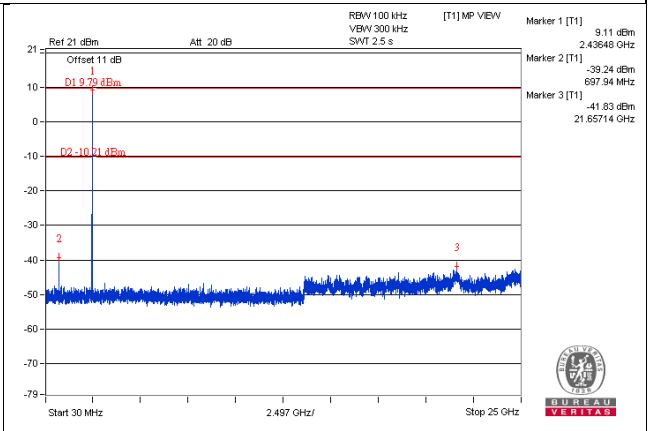
CH 1



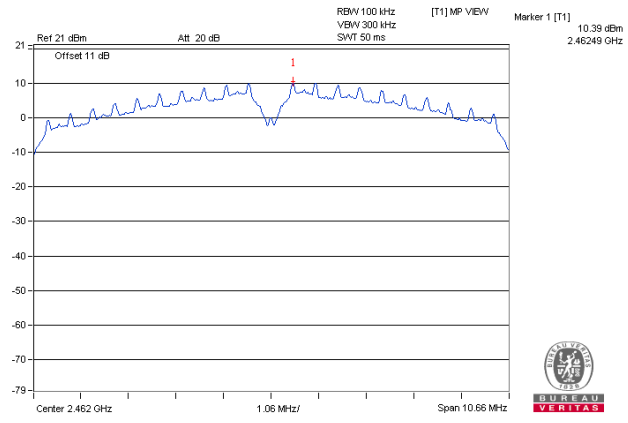


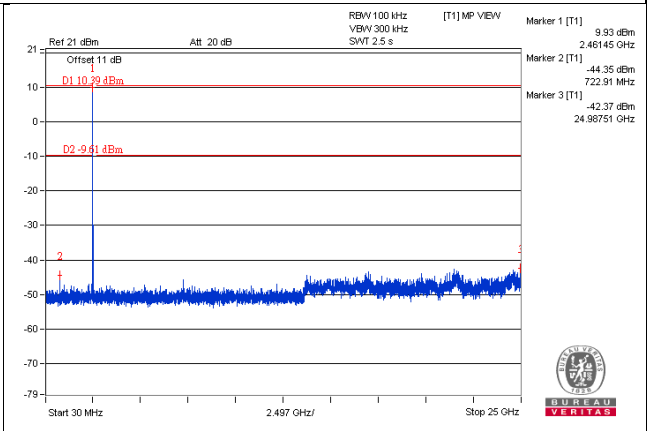
CH 6



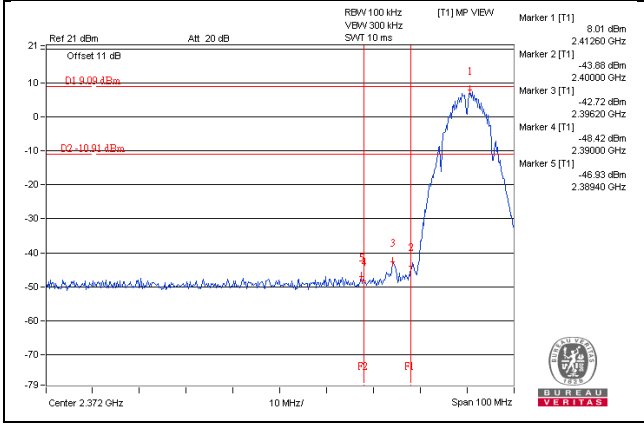


CH 11

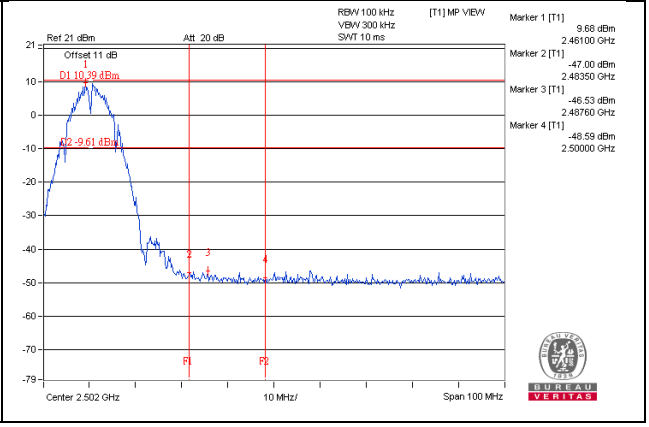




CH 1 Band edge

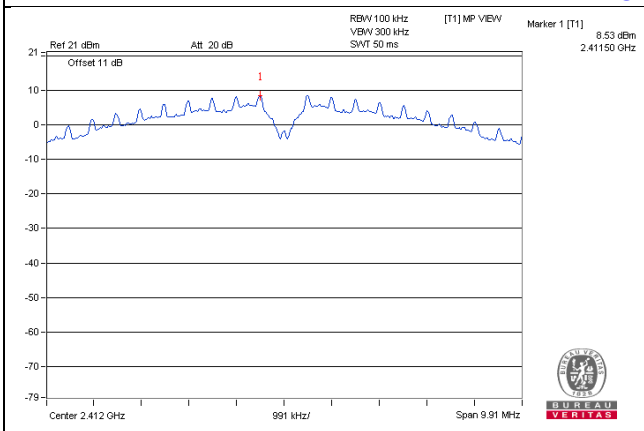


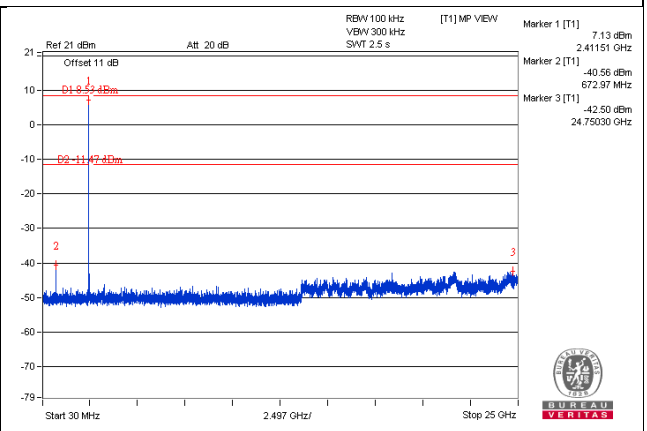
CH 11 Band edge



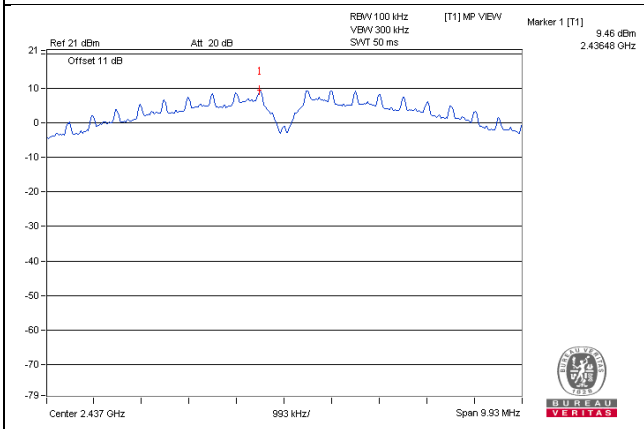
Chain 1

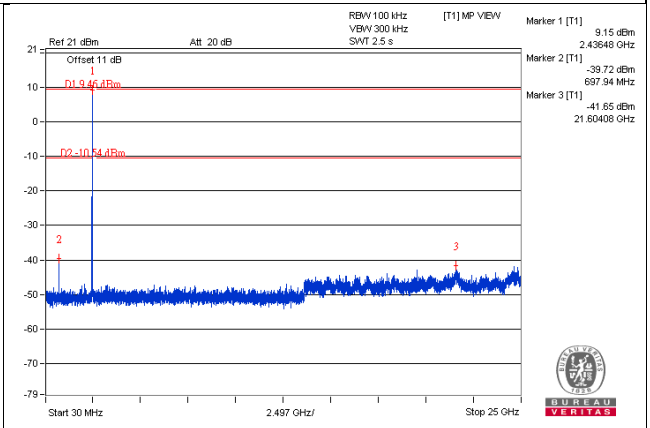
CH 1



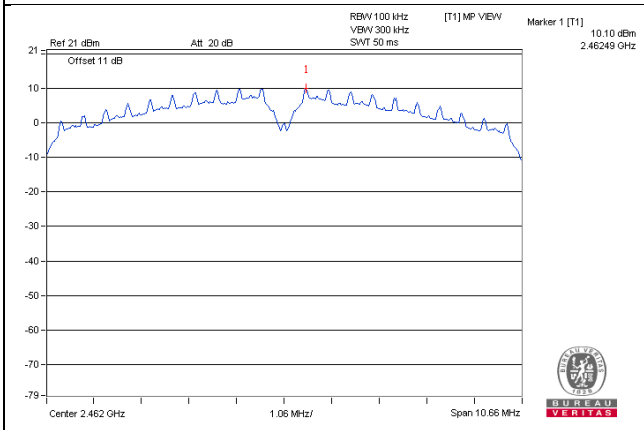


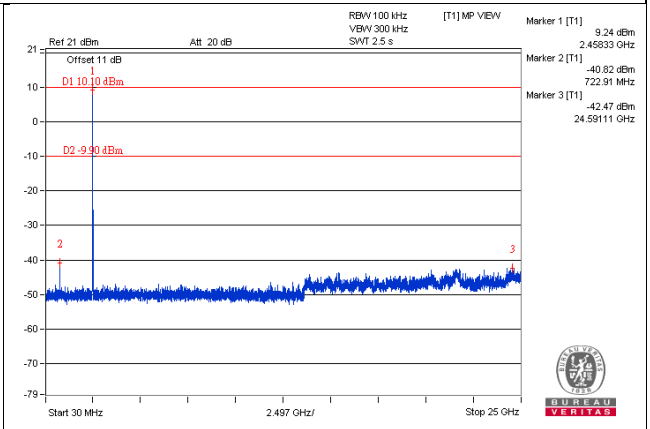
CH 6



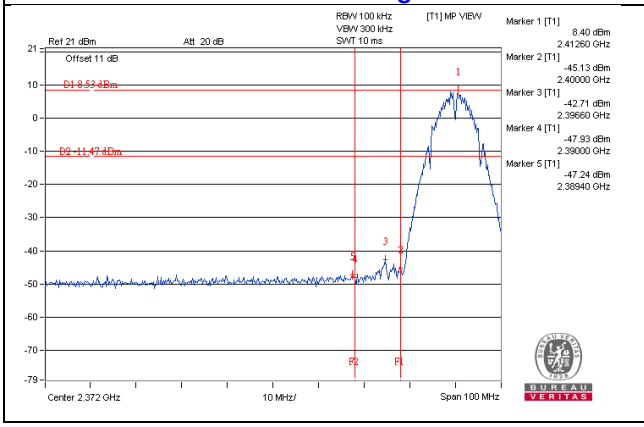


CH 11

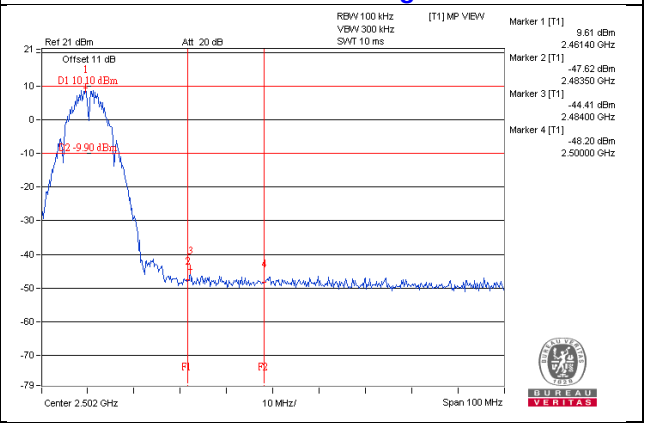




CH 1 Band edge

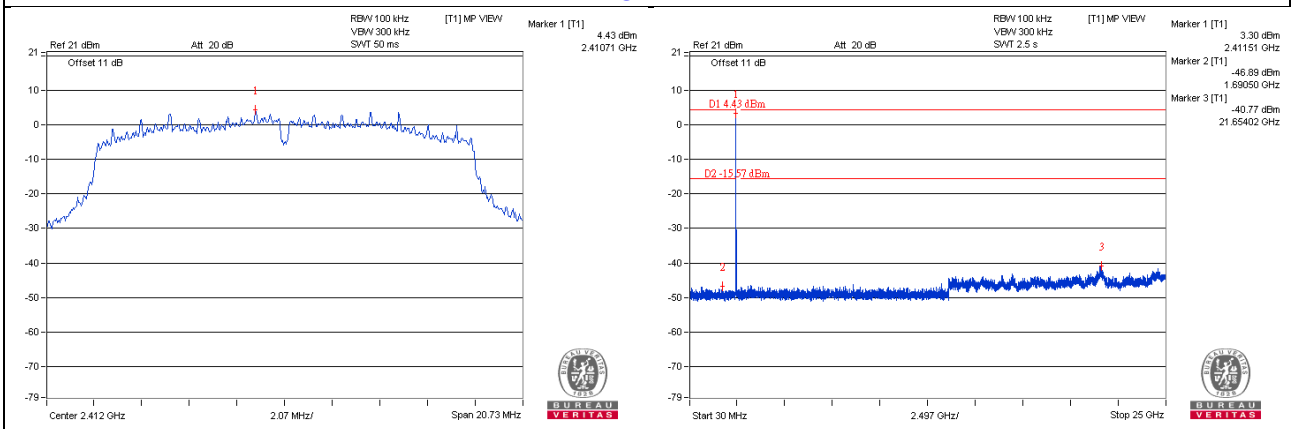


CH 11 Band edge

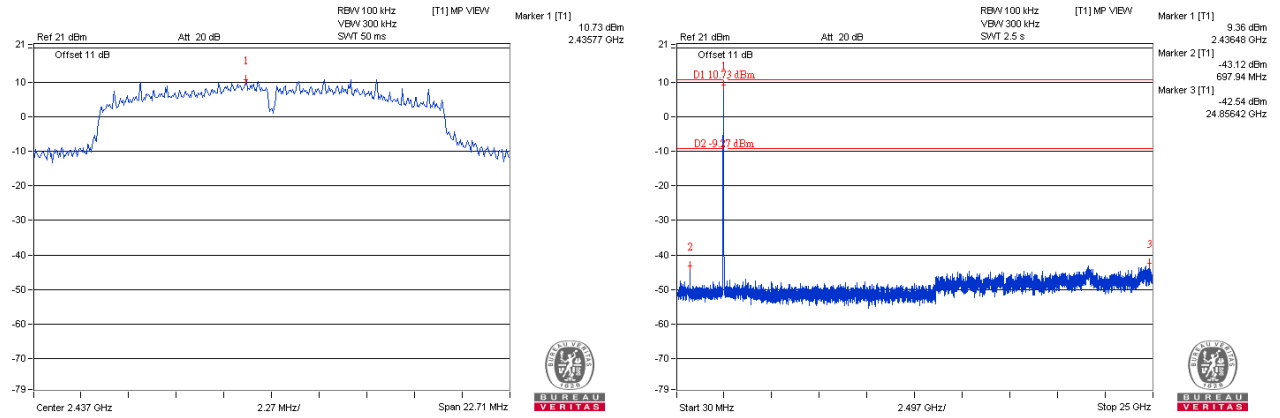


802.11g - Chain 0

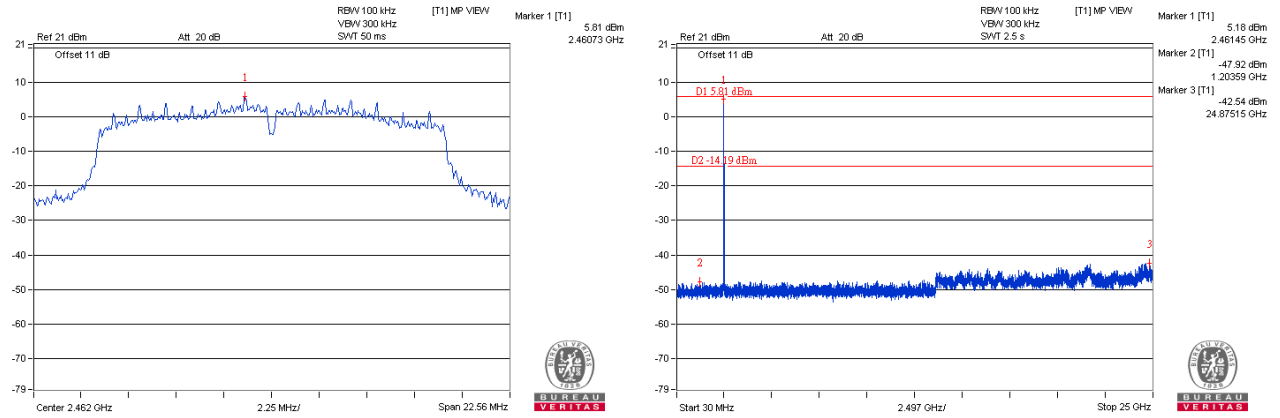
CH 1



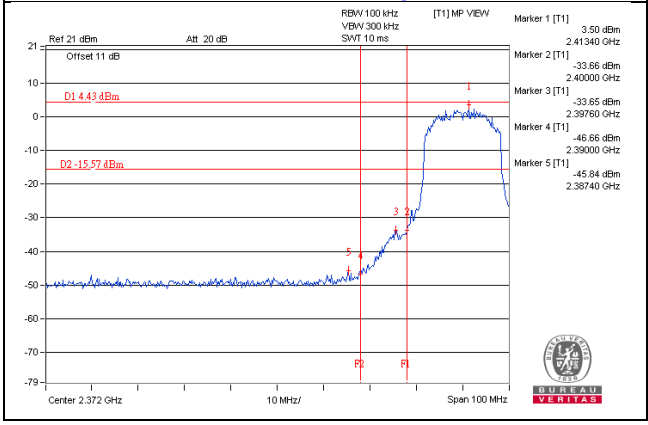
CH 6



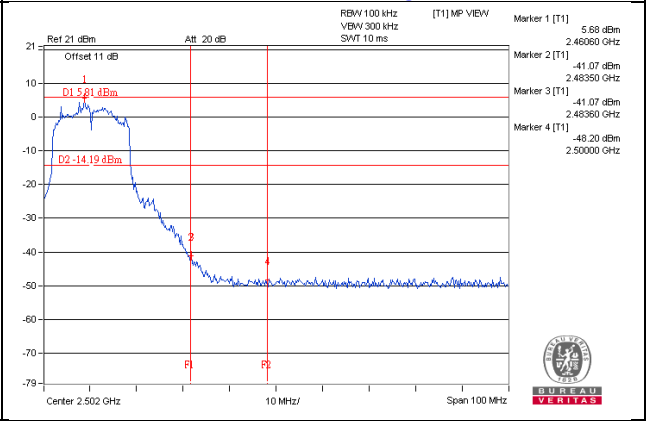
CH 11



CH 1 Band edge

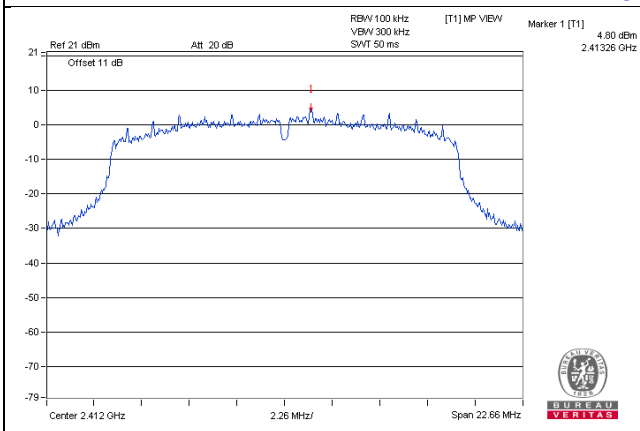


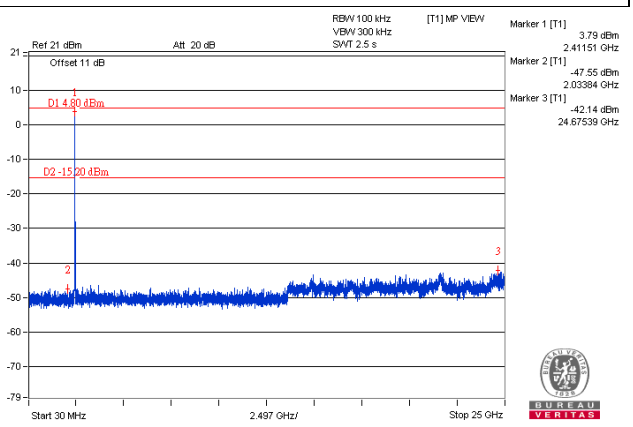
CH 11 Band edge



Chain 1

CH 1





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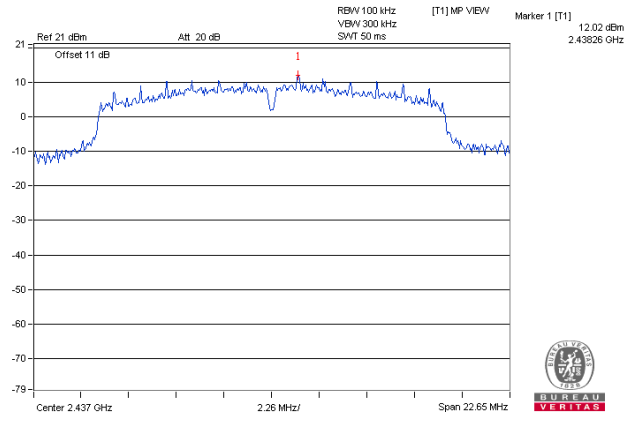
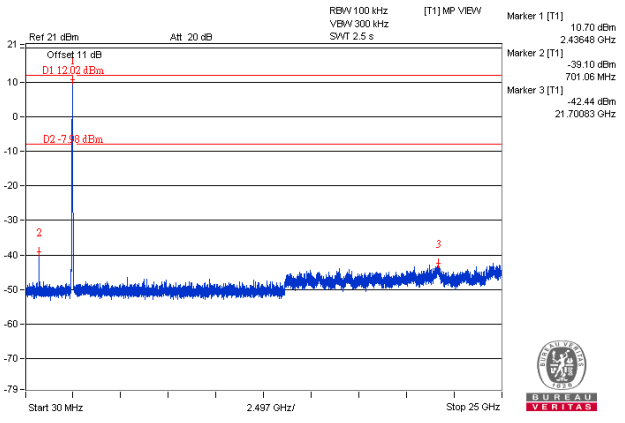
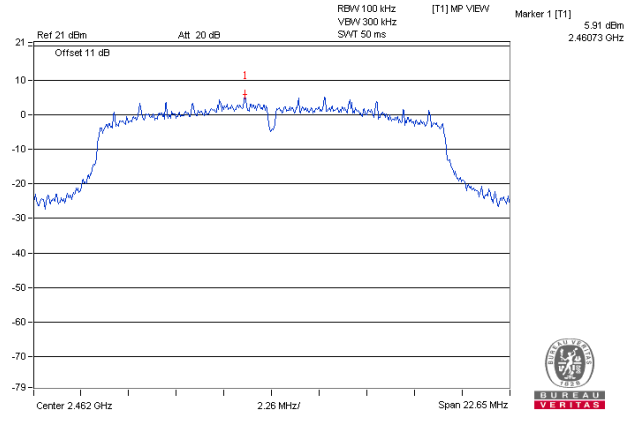
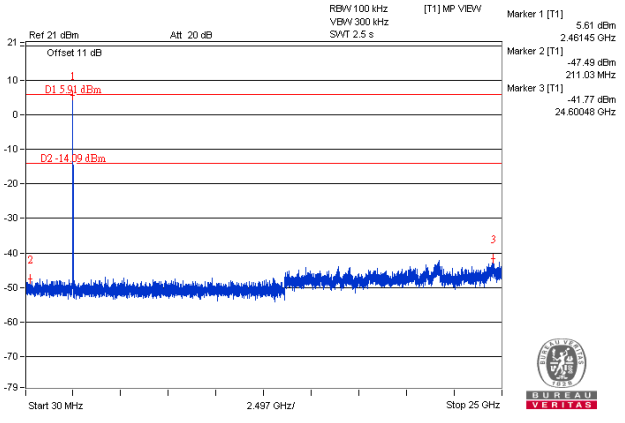


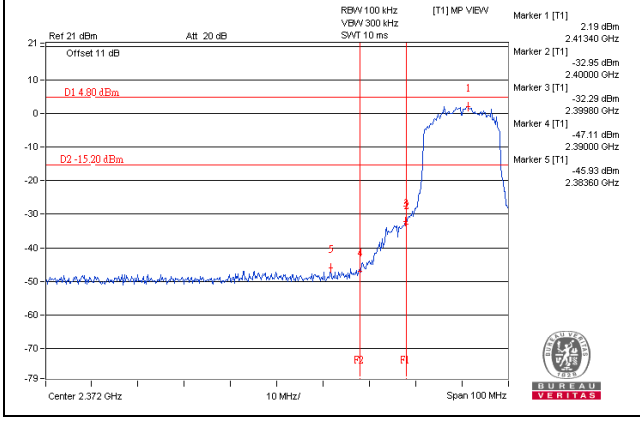


CH 11

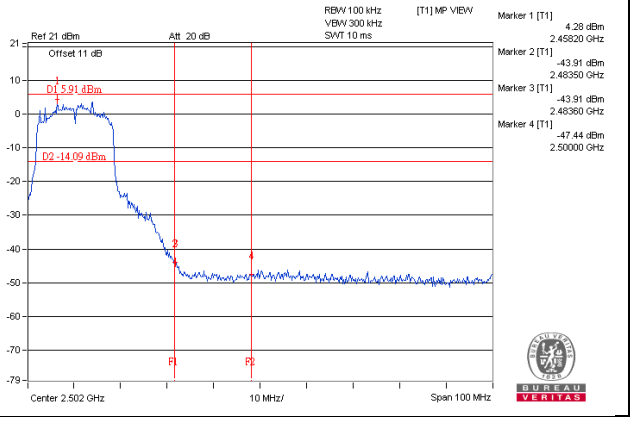




CH 1 Band edge

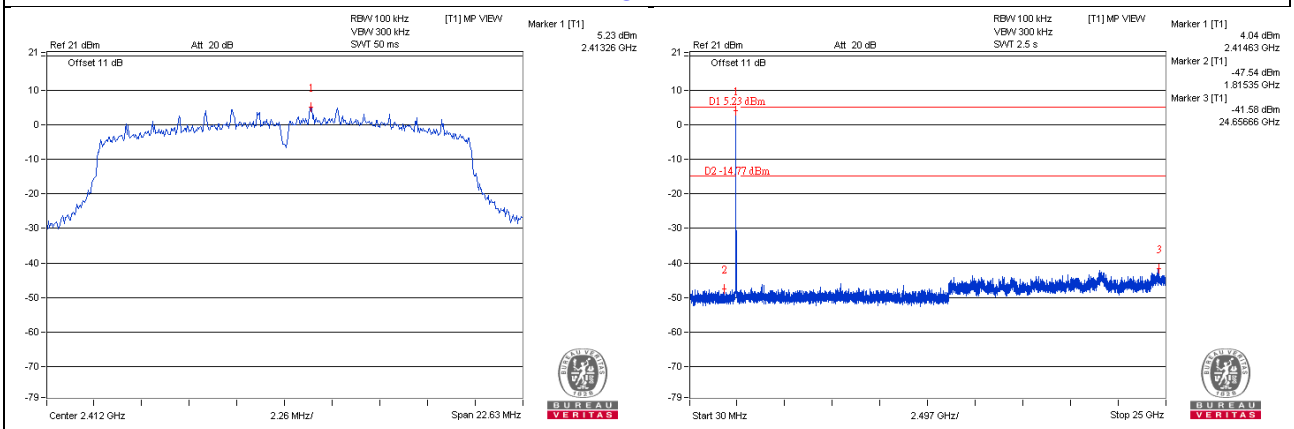


CH 11 Band edge

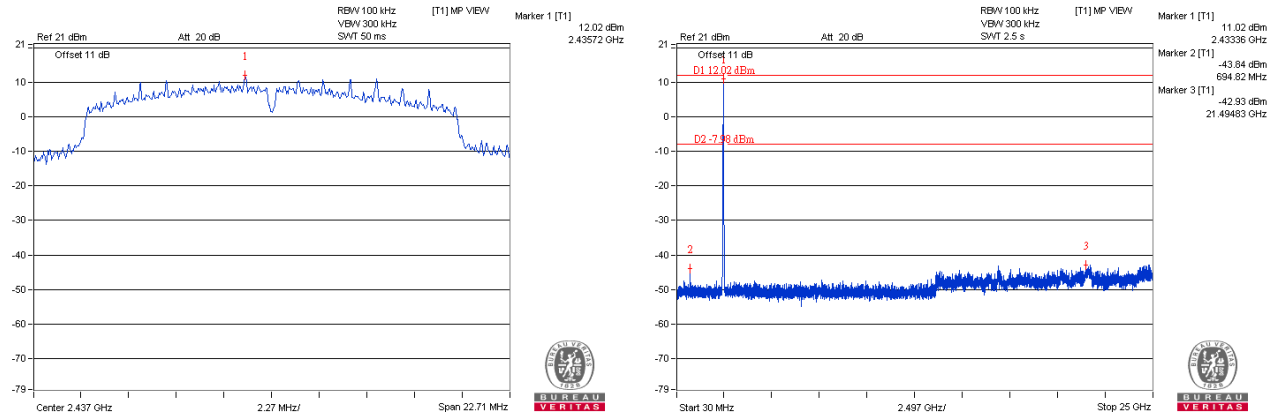


802.11n (HT20) - Chain 0

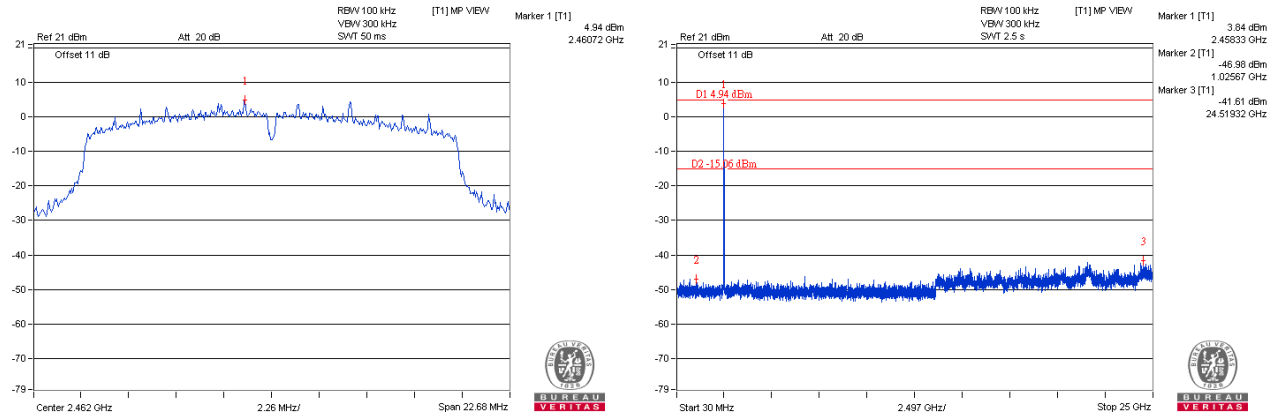
CH 1



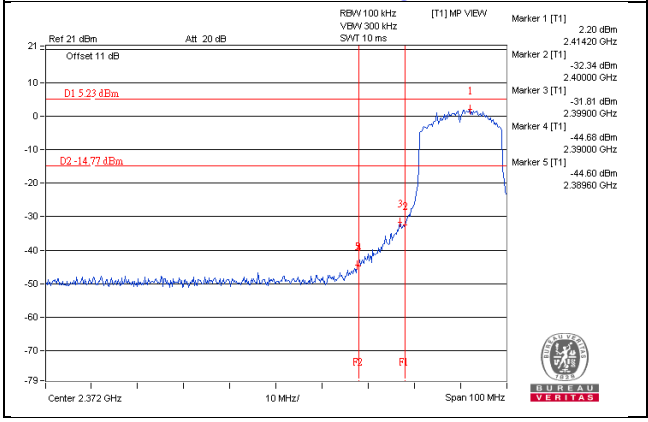
CH 6



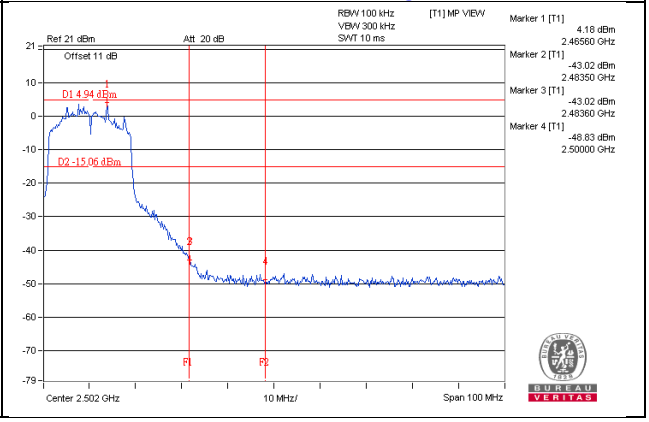
CH 11



CH 1 Band edge

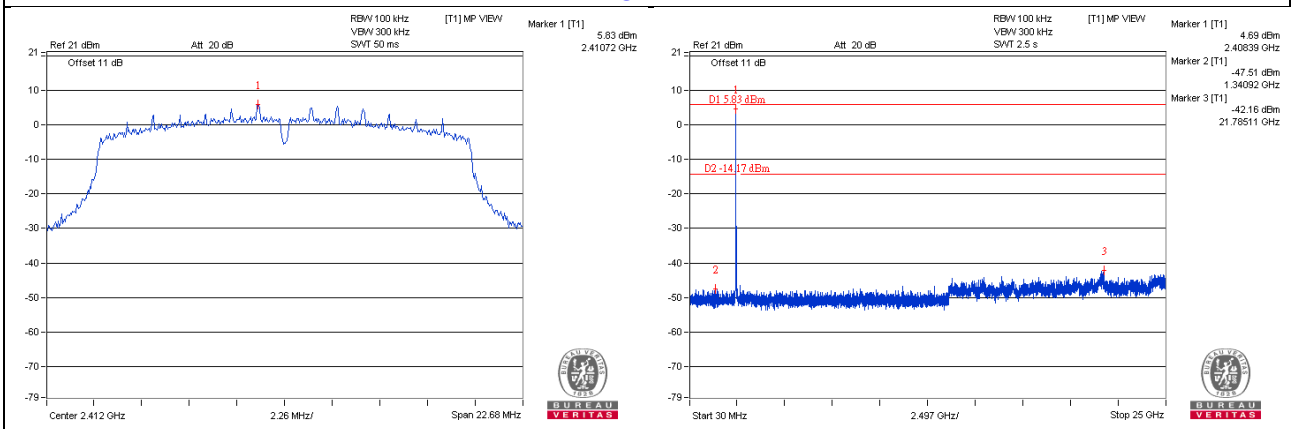


CH 11 Band edge

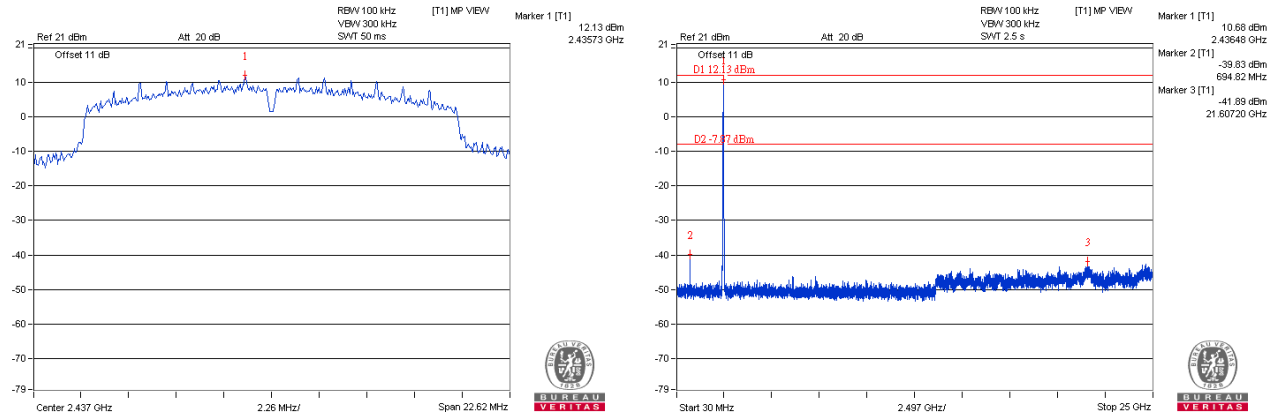


Chain 1

CH 1



CH 6



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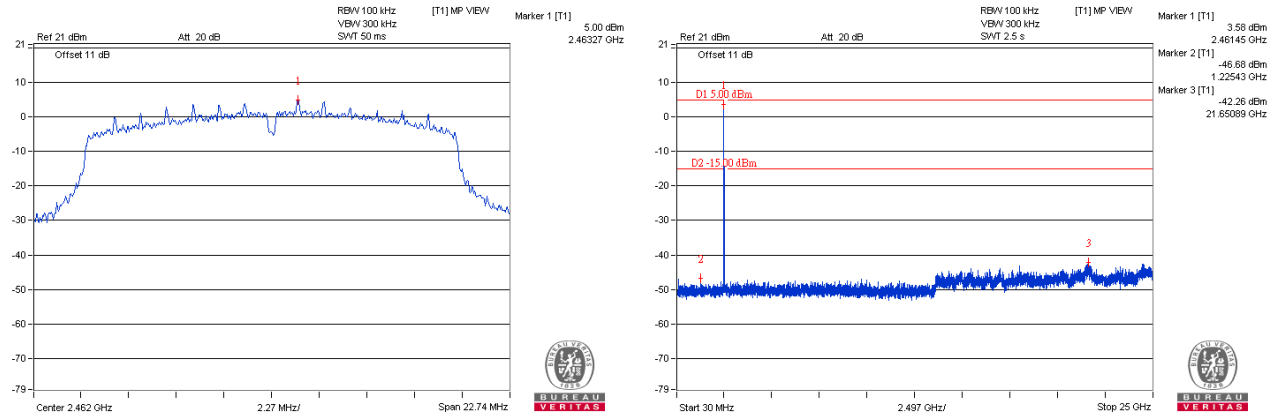
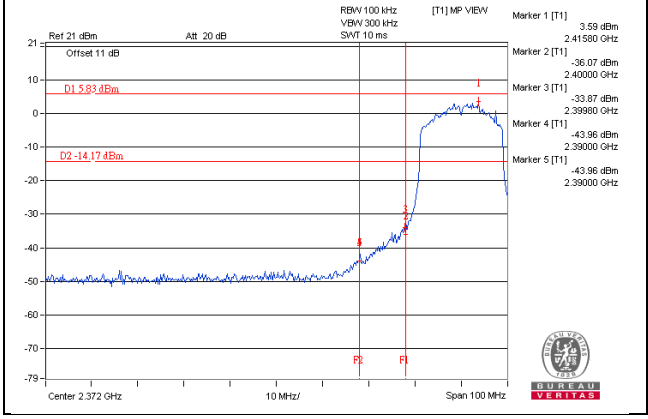
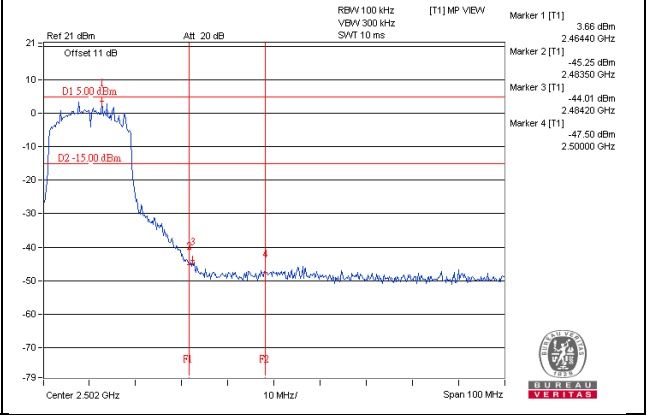


CH 1 Band edge

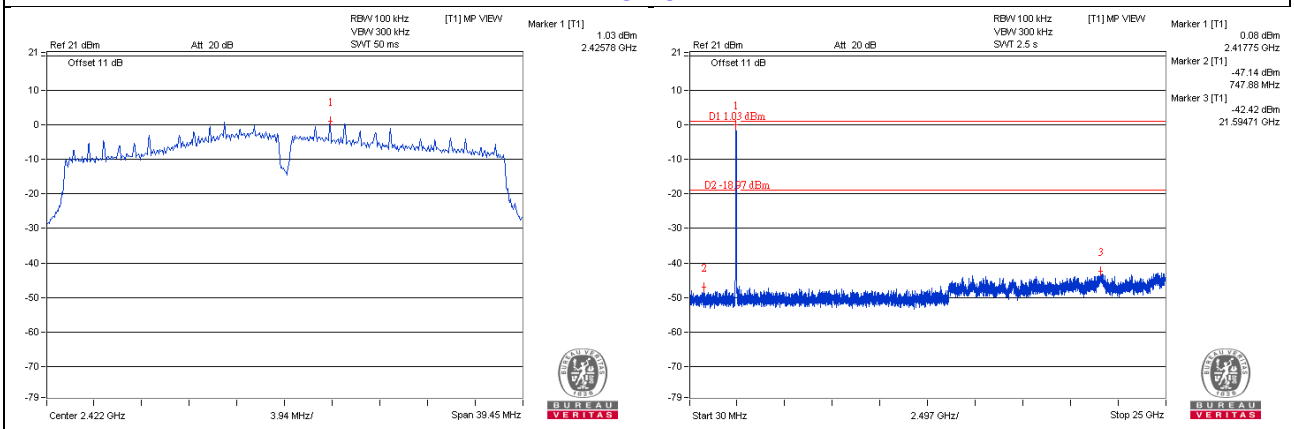


CH 11 Band edge

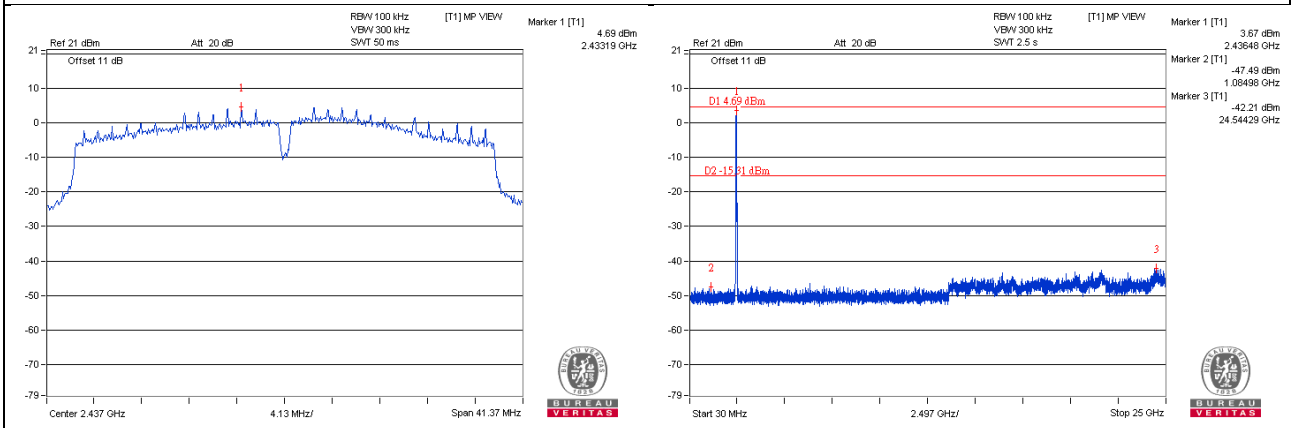


802.11n (HT40) - Chain 0

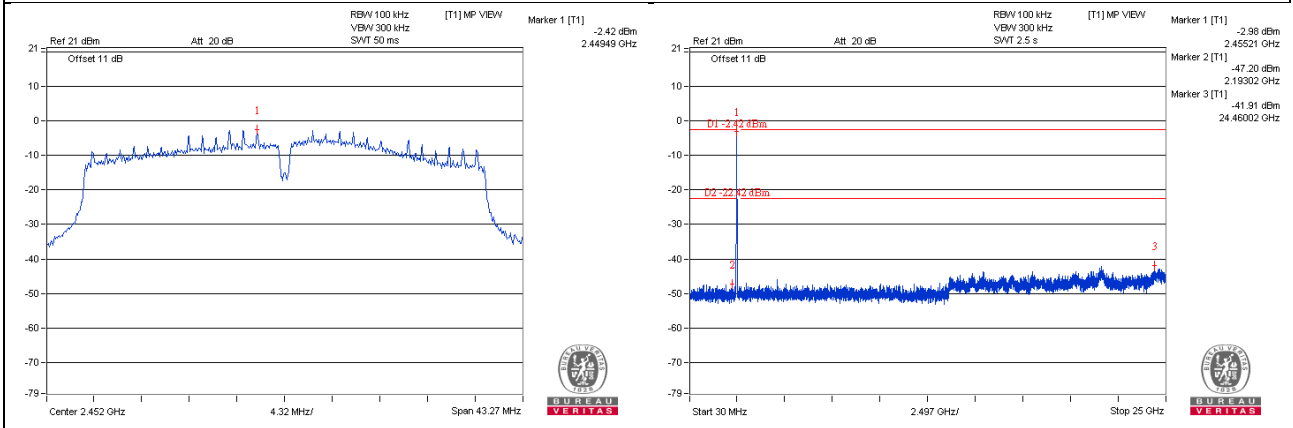
CH 3



CH 6



CH 9



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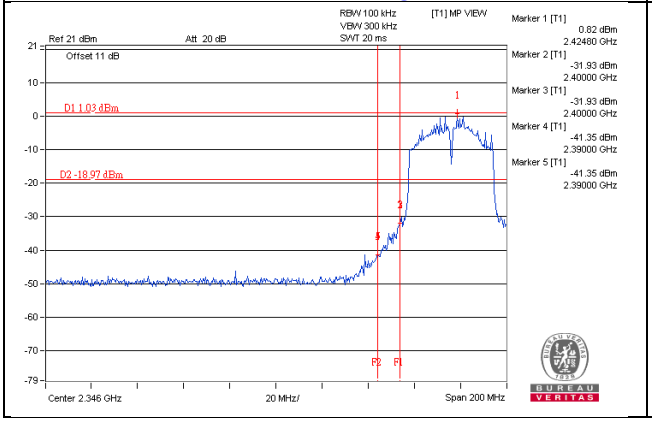

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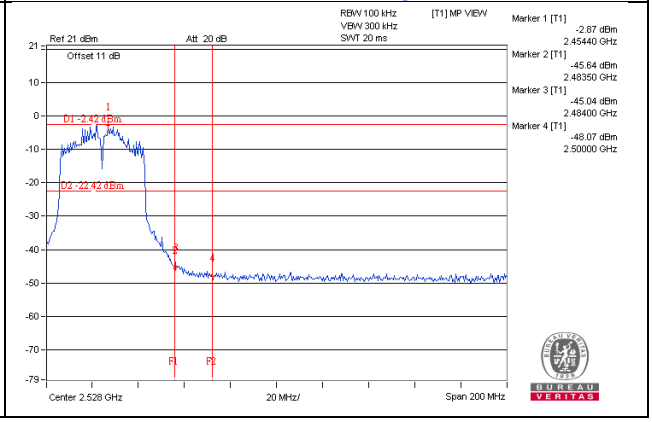
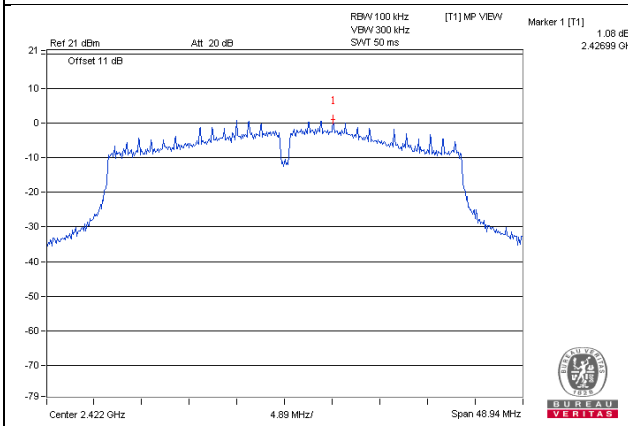
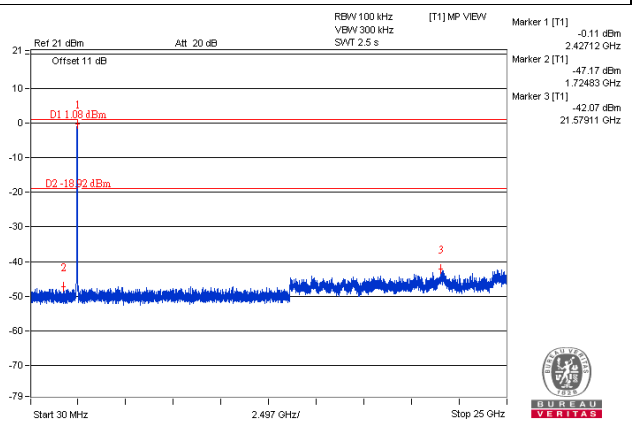


Chain 1

CH 3





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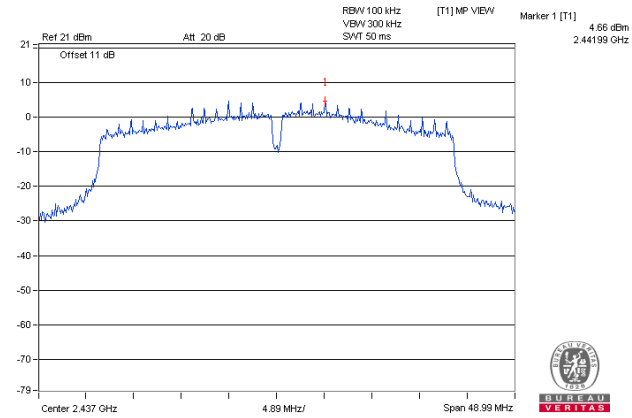
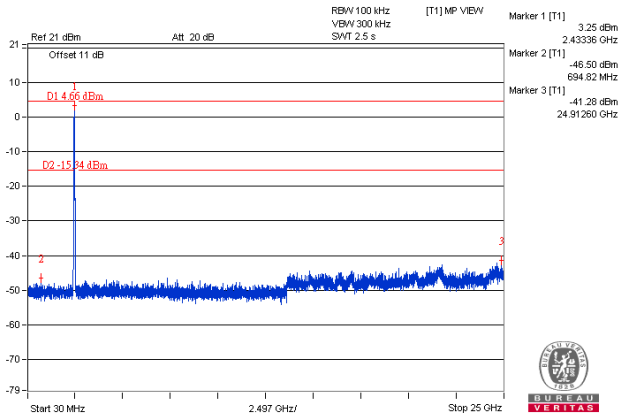
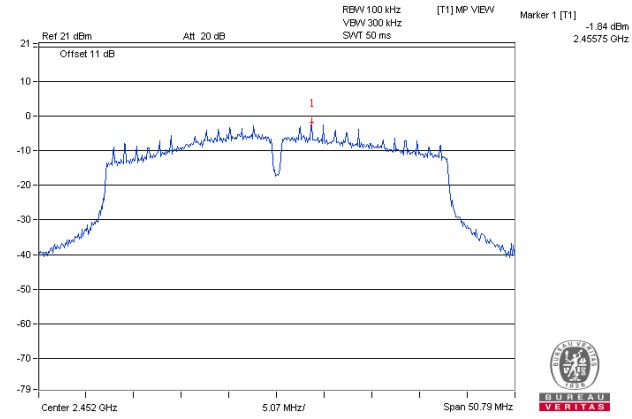
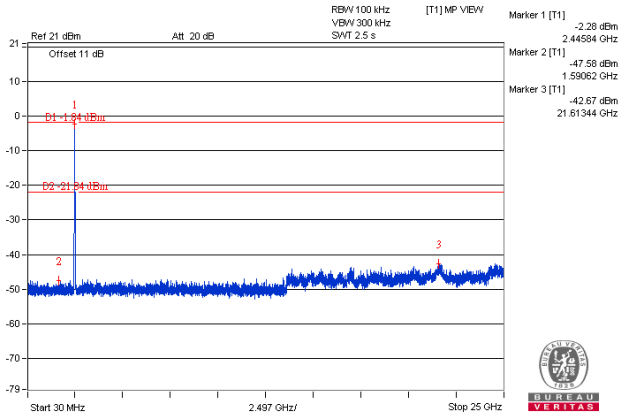


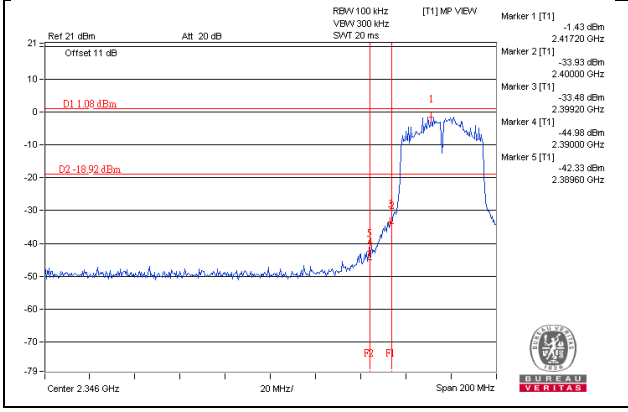


CH 9





CH 3 Band edge



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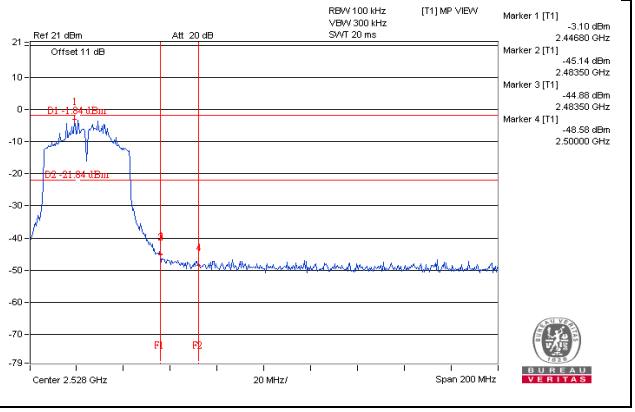

5 Pictures of Test Arrangements

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 accredited and approved according to ISO/IEC 17025.

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

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

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

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

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

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

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