FCC Test Report

Report No.:	RF170815E02
FCC ID:	KA2IR867A1
Test Model:	DIR-867
Received Date:	Jan. 16, 2017
Test Date:	Mar. 20 to Aug. 31, 2017
Issued Date:	Oct. 30, 2017
Applicant:	D-Link Corporation
Address:	17595 Mt. Herrmann Street Fountain Valley, CA92708 USA
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:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
RF170815E02	Original release.	Oct. 30, 2017

1 Certificate of Conformity

Product:	AC1750 MU-MIMO Wi-Fi Gigabit Router
Brand:	D-Link
Test Model:	DIR-867
Sample Status:	ENGINEERING SAMPLE
Applicant:	D-Link Corporation
Test Date:	Mar. 20 to Aug. 31, 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:** Oct. 30, 2017

Wendy Wu / Specialist

Approved by : _____ , **Date:** Oct. 30, 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 -10.75dB at 0.39609MHz.
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.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	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	AC1750 MU-MIMO Wi-Fi Gigabit Router
Brand	D-Link
Test Model	DIR-867
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 and VHT20/40 in 2.4GHz band
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 450Mbps 802.11ac: up to 1300Mbps
Operating Frequency	**2.4GHz:** 2.412GHz ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** 600.792mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 235.054mW **Beamforming Mode:** 225.152mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 549.499mW **Beamforming Mode:** 255.134mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

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 must be supplied with a power adapter as following table:

No	Brand	Model No.	Spec.
1	Frecom	F18L7-120150SPAU	AC Input: 100-240V, 0.6A, 50/60Hz DC Output: 12V, 1.5A DC Output cable: unshielded, 1.2m
2	Shenzhen Gongjin Electronics Co., Ltd	S18B72-120A150-C4	AC Input: 100-240V, 0.7A, 50/60Hz DC Output: 12V, 1.5A DC Output cable: unshielded, 1.1m
Note: From the above adapters, the worst radiated test was found in **Adapter 1**. Therefore only the test data of the modes were recorded in this report.			

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

Antenna No.	Brand	Model	Ant. Gain(dBi) Including cable loss	Frequency range (MHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	RF link	RF21C02116A	4.75	2400~2483.5	Dipole	i-pex	130
			4.96	5150~5850			
2			4.75	2400~2483.5	Dipole	i-pex	130
			4.96	5150~5850			
3		RF21C02546A	5	2400~2483.5	Dipole	i-pex	160
4		RF21C02547A	5	5150~5850	Dipole	i-pex	160

4. The EUT incorporates a MIMO function.

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

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g 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.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

5. 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), VHT20:

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), VHT40:

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

NOTE: 1.The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **X-plane**.
2."-"means no effect.

Radiated Emission Test (Above 1GHz):

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

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

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

Radiated Emission Test (Below 1GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

Power Line Conducted Emission Test:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

Antenna Port Conducted Measurement:

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

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

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

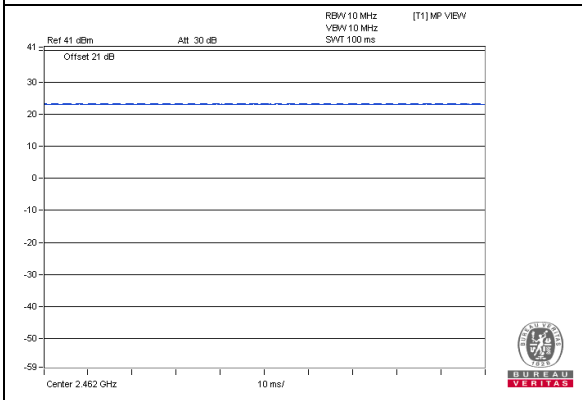
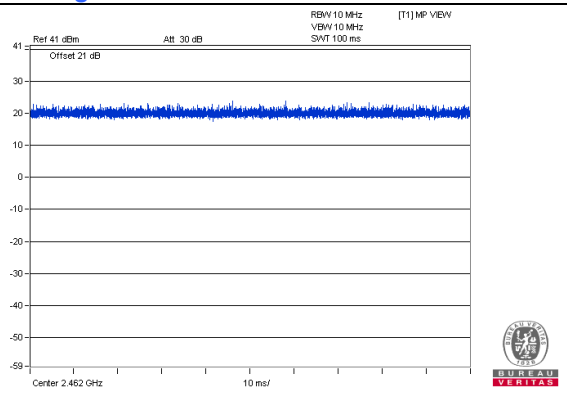
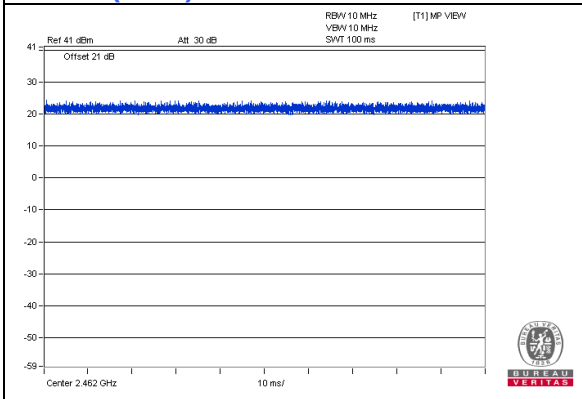
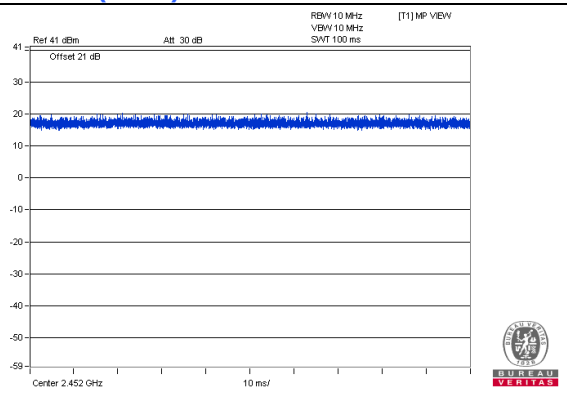
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 66%RH	120Vac, 60Hz	Jyunchun Lin
RE<1G	25deg. C, 72%RH	120Vac, 60Hz	Weiwei Lo
PLC	21deg. C, 75%RH	120Vac, 60Hz	Weiwei Lo
APCM	24deg. C, 63%RH	120Vac, 60Hz	Anderson Chen

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.

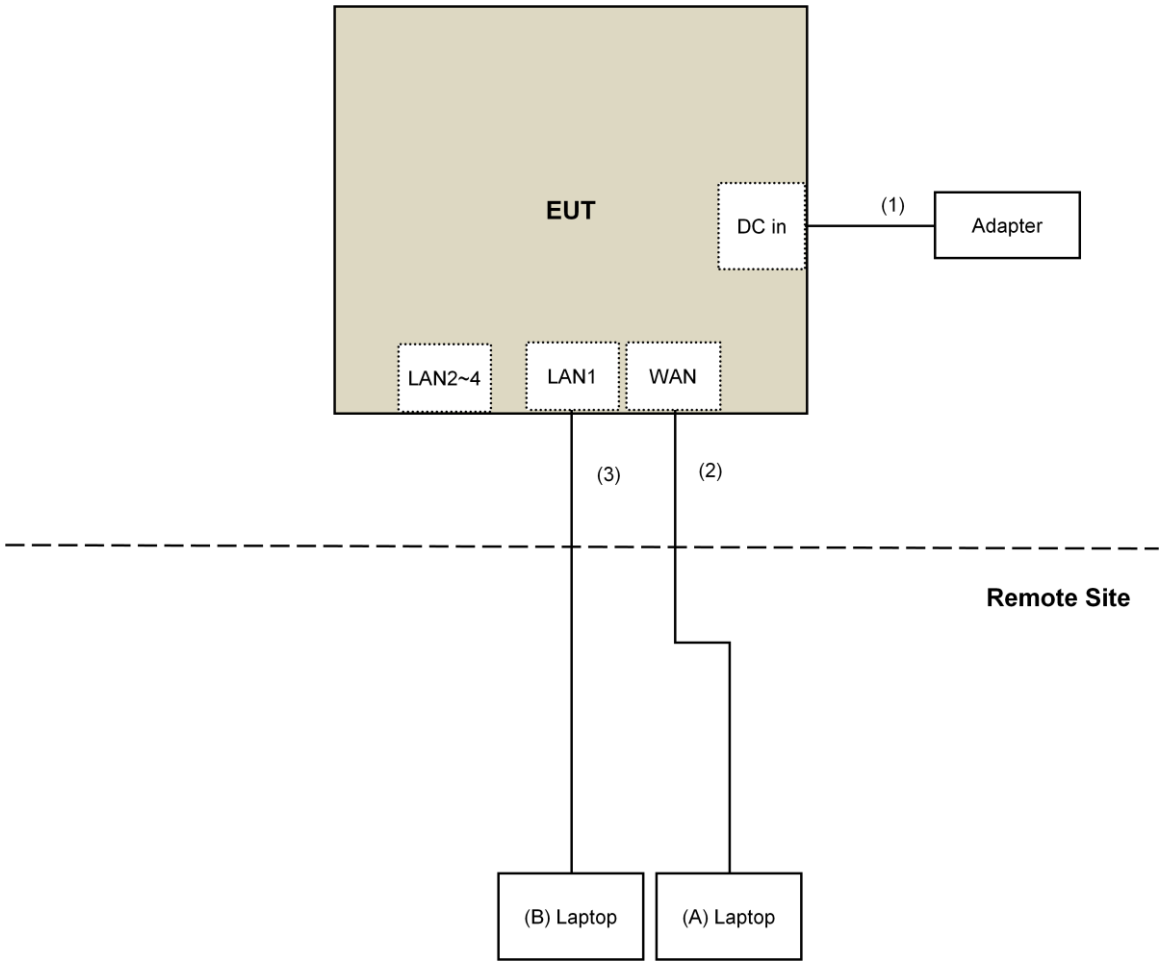
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	4YV4VY1	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

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.	DC Cable	1	1.2(For adapter 1) 1.1(For adapter 2)	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab

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

Below 1GHz:

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
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The FCC Designation Number is TW2022.
5. The CANADA Site Registration No. is 20331-2
6. Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Mar. 20, 2017.

For Other Test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
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 FCC Designation Number is TW2022.
5. The CANADA Site Registration No. is 20331-2
6. Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Aug. 30 to 31, 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:

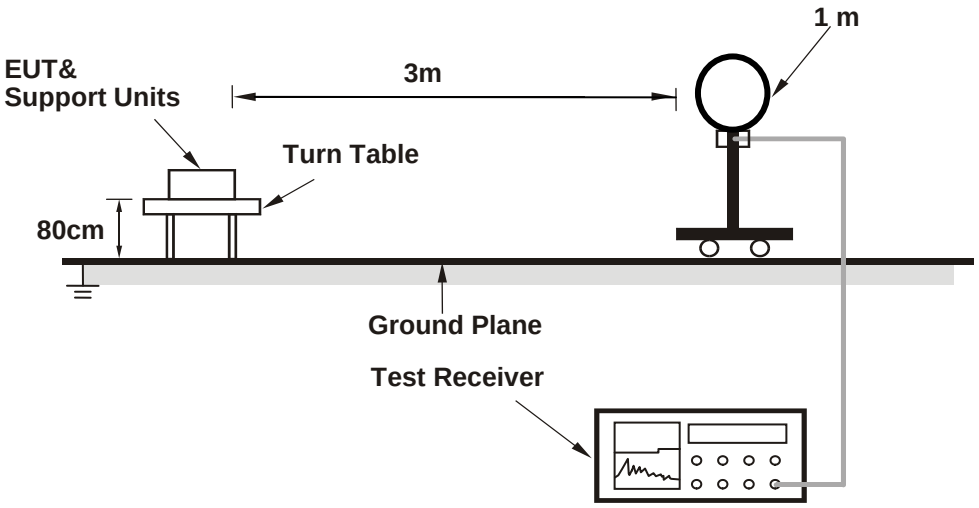
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

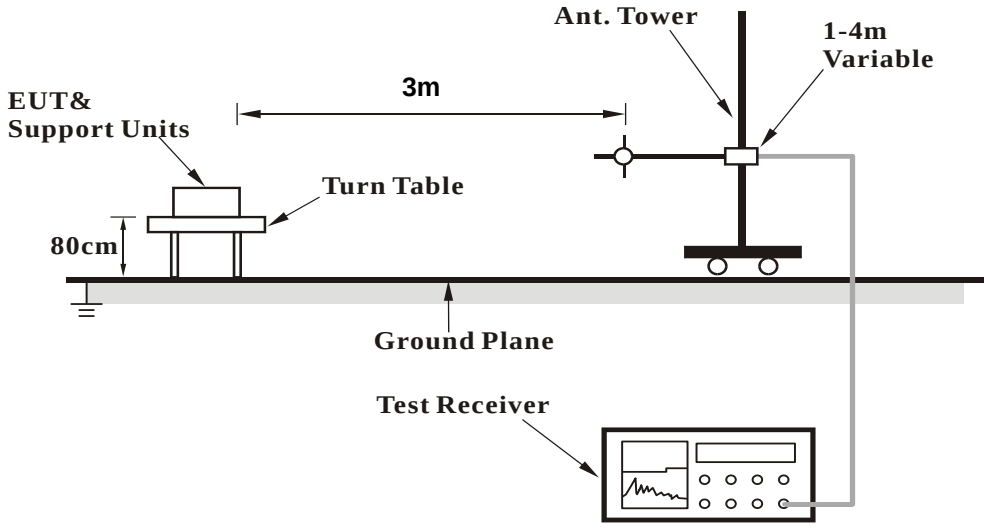
No deviation.

4.1.5 Test Setup

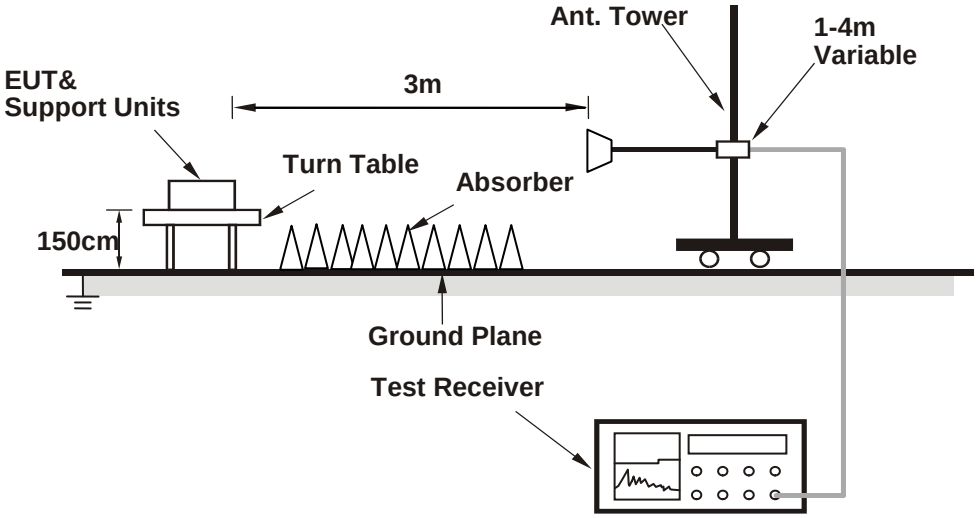
For Radiated emission below 30MHz



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 (MT7615 QA 0.0.1.73) 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	2374.00	48.3 PK	74.0	-25.7	2.65 H	70	49.7	-1.4
2	2374.00	41.3 AV	54.0	-12.7	2.65 H	70	42.7	-1.4
3	2386.00	49.5 PK	74.0	-24.5	2.65 H	70	50.8	-1.3
4	2386.00	41.9 AV	54.0	-12.1	2.65 H	70	43.2	-1.3
5	*2412.00	112.2 PK			2.65 H	70	113.3	-1.1
6	*2412.00	108.6 AV			2.65 H	70	109.7	-1.1
7	4824.00	45.8 PK	74.0	-28.2	1.13 H	9	42.6	3.2
8	4824.00	40.4 AV	54.0	-13.6	1.13 H	9	37.2	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	2374.00	59.4 PK	74.0	-14.6	1.05 V	143	60.8	-1.4
2	2374.00	52.4 AV	54.0	-1.6	1.05 V	143	53.8	-1.4
3	2386.00	61.4 PK	74.0	-12.6	1.05 V	143	62.7	-1.3
4	2386.00	53.5 AV	54.0	-0.5	1.05 V	143	54.8	-1.3
5	*2412.00	120.5 PK			1.05 V	143	121.6	-1.1
6	*2412.00	118.4 AV			1.05 V	143	119.5	-1.1
7	4824.00	48.6 PK	74.0	-25.4	1.09 V	103	45.4	3.2
8	4824.00	43.8 AV	54.0	-10.2	1.09 V	103	40.6	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	46.9 PK	74.0	-27.1	2.63 H	68	48.2	-1.3
2	2390.00	37.8 AV	54.0	-16.2	2.63 H	68	39.1	-1.3
3	*2437.00	114.1 PK			2.63 H	68	115.3	-1.2
4	*2437.00	110.5 AV			2.63 H	68	111.7	-1.2
5	2483.50	50.1 PK	74.0	-23.9	2.63 H	68	51.1	-1.0
6	2483.50	42.1 AV	54.0	-11.9	2.63 H	68	43.1	-1.0
7	4874.00	46.3 PK	74.0	-27.7	1.09 H	20	43.0	3.3
8	4874.00	40.9 AV	54.0	-13.1	1.09 H	20	37.6	3.3
9	7311.00	48.5 PK	74.0	-25.5	1.61 H	320	38.7	9.8
10	7311.00	35.7 AV	54.0	-18.3	1.61 H	320	25.9	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	59.1 PK	74.0	-14.9	1.03 V	138	60.4	-1.3
2	2390.00	49.8 AV	54.0	-4.2	1.03 V	138	51.1	-1.3
3	*2437.00	122.9 PK			1.03 V	138	124.1	-1.2
4	*2437.00	120.9 AV			1.03 V	138	122.1	-1.2
5	2483.50	61.9 PK	74.0	-12.1	1.03 V	138	62.9	-1.0
6	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.03 V**	**138**	**54.9**	**-1.0**
7	4874.00	49.6 PK	74.0	-24.4	1.01 V	109	46.3	3.3
8	4874.00	45.9 AV	54.0	-8.1	1.01 V	109	42.6	3.3
9	7311.00	47.4 PK	74.0	-26.6	1.04 V	337	37.6	9.8
10	7311.00	36.0 AV	54.0	-18.0	1.04 V	337	26.2	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	111.8 PK			2.66 H	63	112.9	-1.1
2	*2462.00	107.8 AV			2.66 H	63	108.9	-1.1
3	2483.50	49.4 PK	74.0	-24.6	2.66 H	63	50.4	-1.0
4	2483.50	41.9 AV	54.0	-12.1	2.66 H	63	42.9	-1.0
5	4924.00	47.3 PK	74.0	-26.7	1.06 H	2	43.8	3.5
6	4924.00	40.8 AV	54.0	-13.2	1.06 H	2	37.3	3.5
7	7386.00	48.4 PK	74.0	-25.6	1.45 H	328	38.5	9.9
8	7386.00	34.6 AV	54.0	-19.4	1.45 H	328	24.7	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	119.2 PK			1.03 V	120	120.3	-1.1
2	*2462.00	117.1 AV			1.03 V	120	118.2	-1.1
3	2483.50	61.0 PK	74.0	-13.0	1.03 V	120	62.0	-1.0
4	2483.50	53.2 AV	54.0	-0.8	1.03 V	120	54.2	-1.0
5	4924.00	48.7 PK	74.0	-25.3	1.03 V	101	45.2	3.5
6	4924.00	43.6 AV	54.0	-10.4	1.03 V	101	40.1	3.5
7	7386.00	47.1 PK	74.0	-26.9	1.04 V	331	37.2	9.9
8	7386.00	35.7 AV	54.0	-18.3	1.04 V	331	25.8	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	49.5 PK	74.0	-24.5	2.66 H	69	50.8	-1.3
2	2390.00	41.8 AV	54.0	-12.2	2.66 H	69	43.1	-1.3
3	*2412.00	111.1 PK			2.66 H	69	112.2	-1.1
4	*2412.00	100.3 AV			2.66 H	69	101.4	-1.1
5	4824.00	43.1 PK	74.0	-30.9	1.03 H	31	39.9	3.2
6	4824.00	32.0 AV	54.0	-22.0	1.03 H	31	28.8	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	69.5 PK	74.0	-4.5	1.08 V	128	70.8	-1.3
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**1.08 V**	**128**	**55.2**	**-1.3**
3	*2412.00	119.0 PK			1.08 V	128	120.1	-1.1
4	*2412.00	109.5 AV			1.08 V	128	110.6	-1.1
5	4824.00	47.2 PK	74.0	-26.8	1.08 V	144	44.0	3.2
6	4824.00	35.0 AV	54.0	-19.0	1.08 V	144	31.8	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	111.9 PK			2.66 H	91	113.1	-1.2
2	*2437.00	100.7 AV			2.66 H	91	101.9	-1.2
3	2483.50	50.4 PK	74.0	-23.6	2.66 H	91	51.4	-1.0
4	2483.50	42.5 AV	54.0	-11.5	2.66 H	91	43.5	-1.0
5	4817.00	46.5 PK	74.0	-27.5	2.66 H	91	43.3	3.2
6	4817.00	37.5 AV	54.0	-16.5	2.66 H	91	34.3	3.2
7	4874.00	43.5 PK	74.0	-30.5	1.09 H	29	40.2	3.3
8	4874.00	32.1 AV	54.0	-21.9	1.09 H	29	28.8	3.3
9	7311.00	46.3 PK	74.0	-27.7	2.04 H	40	36.5	9.8
10	7311.00	36.0 AV	54.0	-18.0	2.04 H	40	26.2	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	125.0 PK			1.07 V	117	126.2	-1.2
2	*2437.00	115.2 AV			1.07 V	117	116.4	-1.2
3	2483.50	69.6 PK	74.0	-4.4	1.07 V	117	70.6	-1.0
4	2483.50	51.9 AV	54.0	-2.1	1.07 V	117	52.9	-1.0
5	4817.00	63.4 PK	74.0	-10.6	1.07 V	117	60.2	3.2
6	4817.00	48.3 AV	54.0	-5.7	1.07 V	117	45.1	3.2
7	4874.00	47.5 PK	74.0	-26.5	1.09 V	123	44.2	3.3
8	4874.00	35.2 AV	54.0	-18.8	1.09 V	123	31.9	3.3
9	7311.00	47.0 PK	74.0	-27.0	1.61 V	173	37.2	9.8
10	7311.00	36.8 AV	54.0	-17.2	1.61 V	173	27.0	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			2.72 H	85	112.3	-1.1
2	*2462.00	100.3 AV			2.72 H	85	101.4	-1.1
3	2483.50	49.6 PK	74.0	-24.4	2.72 H	85	50.6	-1.0
4	2483.50	41.8 AV	54.0	-12.2	2.72 H	85	42.8	-1.0
5	4924.00	41.8 PK	74.0	-32.2	1.04 H	8	38.3	3.5
6	4924.00	31.5 AV	54.0	-22.5	1.04 H	8	28.0	3.5
7	7386.00	46.5 PK	74.0	-27.5	2.08 H	18	36.6	9.9
8	7386.00	35.7 AV	54.0	-18.3	2.08 H	18	25.8	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	118.1 PK			1.01 V	141	119.2	-1.1
2	*2462.00	109.2 AV			1.01 V	141	110.3	-1.1
3	2483.50	73.8 PK	74.0	-0.2	1.01 V	141	74.8	-1.0
4	2483.50	52.5 AV	54.0	-1.5	1.01 V	141	53.5	-1.0
5	4924.00	45.9 PK	74.0	-28.1	1.03 V	166	42.4	3.5
6	4924.00	33.8 AV	54.0	-20.2	1.03 V	166	30.3	3.5
7	7386.00	47.1 PK	74.0	-26.9	1.55 V	185	37.2	9.9
8	7386.00	36.6 AV	54.0	-17.4	1.55 V	185	26.7	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	51.0 PK	74.0	-23.0	2.72 H	56	52.3	-1.3
2	2390.00	42.4 AV	54.0	-11.6	2.72 H	56	43.7	-1.3
3	*2412.00	104.1 PK			2.72 H	56	105.2	-1.1
4	*2412.00	92.3 AV			2.72 H	56	93.4	-1.1
5	4824.00	42.4 PK	74.0	-31.6	1.03 H	33	39.2	3.2
6	4824.00	30.5 AV	54.0	-23.5	1.03 H	33	27.3	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	68.6 PK	74.0	-5.4	1.04 V	136	69.9	-1.3
2	2390.00	53.2 AV	54.0	-0.8	1.04 V	136	54.5	-1.3
3	*2412.00	110.9 PK			1.04 V	136	112.0	-1.1
4	*2412.00	100.6 AV			1.04 V	136	101.7	-1.1
5	4824.00	47.3 PK	74.0	-26.7	1.04 V	161	44.1	3.2
6	4824.00	34.9 AV	54.0	-19.1	1.04 V	161	31.7	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	*2437.00	108.7 PK			2.65 H	70	109.9	-1.2
2	*2437.00	97.4 AV			2.65 H	70	98.6	-1.2
3	2483.50	49.7 PK	74.0	-24.3	2.65 H	70	50.7	-1.0
4	2483.50	42.0 AV	54.0	-12.0	2.65 H	70	43.0	-1.0
5	4874.00	43.3 PK	74.0	-30.7	1.04 H	41	40.0	3.3
6	4874.00	31.9 AV	54.0	-22.1	1.04 H	41	28.6	3.3
7	7311.00	47.5 PK	74.0	-26.5	2.13 H	54	37.7	9.8
8	7311.00	36.4 AV	54.0	-17.6	2.13 H	54	26.6	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	116.3 PK			1.06 V	144	117.5	-1.2
2	*2437.00	106.5 AV			1.06 V	144	107.7	-1.2
3	2483.50	70.6 PK	74.0	-3.4	1.06 V	144	71.6	-1.0
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.06 V**	**144**	**54.9**	**-1.0**
5	4874.00	47.5 PK	74.0	-26.5	1.02 V	141	44.2	3.3
6	4874.00	35.1 AV	54.0	-18.9	1.02 V	141	31.8	3.3
7	7311.00	47.4 PK	74.0	-26.6	1.57 V	192	37.6	9.8
8	7311.00	37.0 AV	54.0	-17.0	1.57 V	192	27.2	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	102.9 PK			2.83 H	83	104.0	-1.1
2	*2462.00	92.0 AV			2.83 H	83	93.1	-1.1
3	2483.50	50.9 PK	74.0	-23.1	2.83 H	83	51.9	-1.0
4	2483.50	42.3 AV	54.0	-11.7	2.83 H	83	43.3	-1.0
5	4924.00	42.9 PK	74.0	-31.1	1.01 H	28	39.4	3.5
6	4924.00	31.1 AV	54.0	-22.9	1.01 H	28	27.6	3.5
7	7386.00	47.3 PK	74.0	-26.7	2.05 H	2	37.4	9.9
8	7386.00	36.7 AV	54.0	-17.3	2.05 H	2	26.8	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	109.9 PK			1.07 V	119	111.0	-1.1
2	*2462.00	100.3 AV			1.07 V	119	101.4	-1.1
3	2483.50	71.6 PK	74.0	-2.4	1.07 V	119	72.6	-1.0
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.07 V**	**119**	**54.9**	**-1.0**
5	4924.00	48.4 PK	74.0	-25.6	1.05 V	147	44.9	3.5
6	4924.00	36.2 AV	54.0	-17.8	1.05 V	147	32.7	3.5
7	7386.00	46.8 PK	74.0	-27.2	1.51 V	175	36.9	9.9
8	7386.00	36.2 AV	54.0	-17.8	1.51 V	175	26.3	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	50.2 PK	74.0	-23.8	2.76 H	74	51.5	-1.3
2	2390.00	41.7 AV	54.0	-12.3	2.76 H	74	43.0	-1.3
3	*2422.00	98.2 PK			2.76 H	74	99.5	-1.3
4	*2422.00	89.0 AV			2.76 H	74	90.3	-1.3
5	4844.00	42.3 PK	74.0	-31.7	1.08 H	35	39.0	3.3
6	4844.00	30.1 AV	54.0	-23.9	1.08 H	35	26.8	3.3
7	7266.00	47.0 PK	74.0	-27.0	1.96 H	9	37.2	9.8
8	7266.00	36.2 AV	54.0	-17.8	1.96 H	9	26.4	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	68.9 PK	74.0	-5.1	1.01 V	178	70.2	-1.3
2	2390.00	53.3 AV	54.0	-0.7	1.01 V	178	54.6	-1.3
3	*2422.00	105.1 PK			1.01 V	178	106.4	-1.3
4	*2422.00	97.2 AV			1.01 V	178	98.5	-1.3
5	4844.00	47.6 PK	74.0	-26.4	1.00 V	147	44.3	3.3
6	4844.00	35.2 AV	54.0	-18.8	1.00 V	147	31.9	3.3
7	7266.00	46.6 PK	74.0	-27.4	1.61 V	164	36.8	9.8
8	7266.00	36.3 AV	54.0	-17.7	1.61 V	164	26.5	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	*2437.00	101.5 PK			2.82 H	63	102.7	-1.2
2	*2437.00	91.9 AV			2.82 H	63	93.1	-1.2
3	2483.50	51.1 PK	74.0	-22.9	2.82 H	63	52.1	-1.0
4	2483.50	43.2 AV	54.0	-10.8	2.82 H	63	44.2	-1.0
5	4874.00	42.8 PK	74.0	-31.2	1.07 H	8	39.5	3.3
6	4874.00	32.0 AV	54.0	-22.0	1.07 H	8	28.7	3.3
7	7311.00	46.1 PK	74.0	-27.9	2.03 H	51	36.3	9.8
8	7311.00	35.9 AV	54.0	-18.1	2.03 H	51	26.1	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	107.4 PK			1.01 V	191	108.6	-1.2
2	*2437.00	98.7 AV			1.01 V	191	99.9	-1.2
3	2483.50	68.5 PK	74.0	-5.5	1.01 V	191	69.5	-1.0
4	2483.50	53.5 AV	54.0	-0.5	1.01 V	191	54.5	-1.0
5	4874.00	48.1 PK	74.0	-25.9	1.02 V	141	44.8	3.3
6	4874.00	36.2 AV	54.0	-17.8	1.02 V	141	32.9	3.3
7	7311.00	46.2 PK	74.0	-27.8	1.49 V	179	36.4	9.8
8	7311.00	36.1 AV	54.0	-17.9	1.49 V	179	26.3	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	99.9 PK			2.79 H	88	101.0	-1.1
2	*2452.00	90.1 AV			2.79 H	88	91.2	-1.1
3	2483.50	50.3 PK	74.0	-23.7	2.79 H	88	51.3	-1.0
4	2483.50	42.6 AV	54.0	-11.4	2.79 H	88	43.6	-1.0
5	4904.00	43.8 PK	74.0	-30.2	1.00 H	26	40.3	3.5
6	4904.00	31.4 AV	54.0	-22.6	1.00 H	26	27.9	3.5
7	7356.00	46.2 PK	74.0	-27.8	2.04 H	46	36.3	9.9
8	7356.00	35.6 AV	54.0	-18.4	2.04 H	46	25.7	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	106.0 PK			1.01 V	178	107.1	-1.1
2	*2452.00	97.5 AV			1.01 V	178	98.6	-1.1
3	2483.50	72.7 PK	74.0	-1.3	1.01 V	178	73.7	-1.0
4	2483.50	53.5 AV	54.0	-0.5	1.01 V	178	54.5	-1.0
5	4904.00	47.8 PK	74.0	-26.2	1.02 V	138	44.3	3.5
6	4904.00	35.7 AV	54.0	-18.3	1.02 V	138	32.2	3.5
7	7356.00	47.9 PK	74.0	-26.1	1.67 V	176	38.0	9.9
8	7356.00	37.2 AV	54.0	-16.8	1.67 V	176	27.3	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:

802.11b

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	82.09	28.4 QP	40.0	-11.6	2.00 H	95	42.4	-14.0
2	108.81	32.3 QP	43.5	-11.2	3.00 H	117	43.8	-11.5
3	147.47	33.0 QP	43.5	-10.5	2.00 H	282	41.5	-8.5
4	250.02	27.8 QP	46.0	-18.2	1.00 H	54	37.8	-10.0
5	500.04	31.9 QP	46.0	-14.1	1.00 H	329	34.6	-2.7
6	750.01	32.1 QP	46.0	-13.9	2.00 H	262	30.2	1.9
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	51.83	31.9 QP	40.0	-8.1	1.00 V	138	40.7	-8.8
2	97.80	29.4 QP	43.5	-14.1	1.00 V	259	42.7	-13.3
3	106.78	34.1 QP	43.5	-9.4	1.00 V	167	45.9	-11.8
4	147.44	31.3 QP	43.5	-12.2	2.00 V	360	39.8	-8.5
5	500.01	33.5 QP	46.0	-12.5	2.00 V	360	36.2	-2.7
6	750.03	30.3 QP	46.0	-15.7	2.00 V	216	28.4	1.9

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

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. 20, 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.

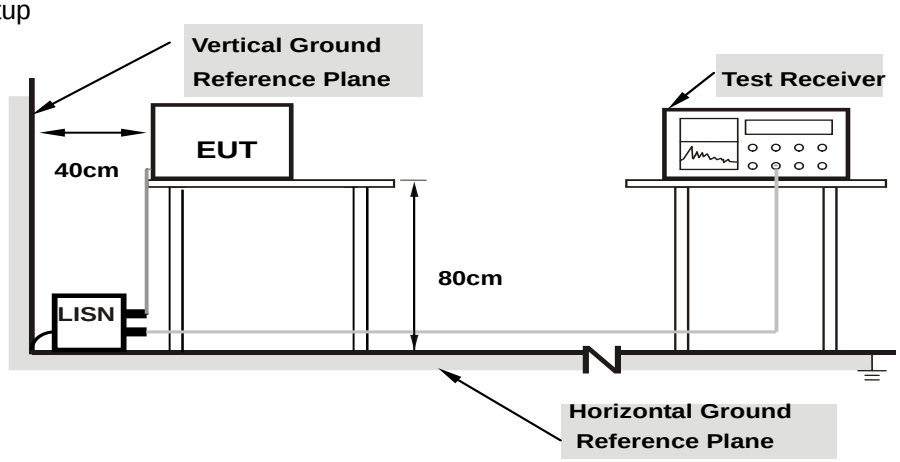
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

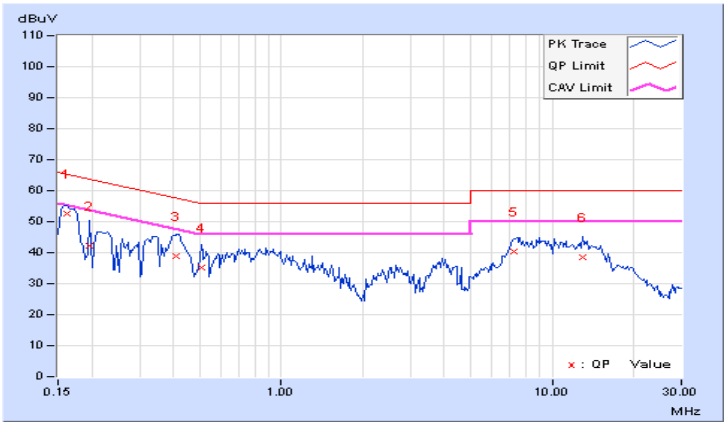
4.2.7 Test Results (Mode 1)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	10.20	42.31	29.30	52.51	39.50	65.38	55.38	-12.87	-15.88
2	0.19687	10.20	32.13	8.88	42.33	19.08	63.74	53.74	-21.41	-34.66
3	0.41172	10.24	28.48	19.64	38.72	29.88	57.61	47.61	-18.89	-17.73
4	0.50547	10.25	24.79	16.79	35.04	27.04	56.00	46.00	-20.96	-18.96
5	7.18359	10.53	29.80	23.90	40.33	34.43	60.00	50.00	-19.67	-15.57
6	12.92969	11.06	27.61	21.85	38.67	32.91	60.00	50.00	-21.33	-17.09

Remarks:

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

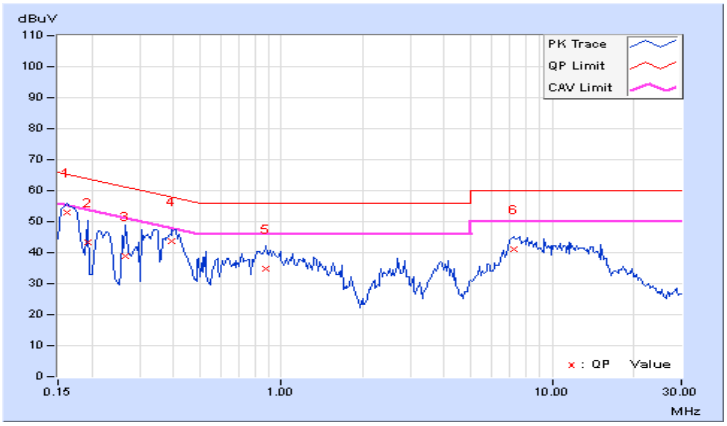


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	10.19	42.85	29.12	53.04	39.31	65.38	55.38	-12.34	-16.07
2	0.19297	10.17	33.18	8.86	43.35	19.03	63.91	53.91	-20.56	-34.88
3	0.26719	10.19	28.83	16.02	39.02	26.21	61.20	51.20	-22.18	-24.99
4	**0.39609**	**10.24**	**33.58**	**26.94**	**43.82**	**37.18**	**57.93**	**47.93**	**-14.11**	**-10.75**
5	0.87656	10.26	24.66	16.80	34.92	27.06	56.00	46.00	-21.08	-18.94
6	7.20703	10.44	30.80	24.76	41.24	35.20	60.00	50.00	-18.76	-14.80

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



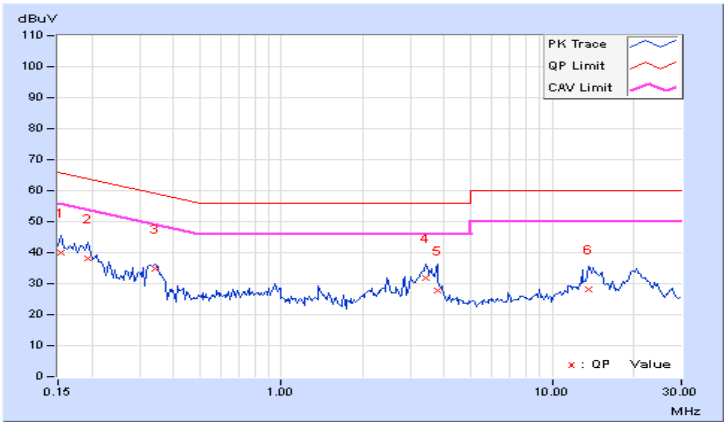
4.2.8 Test Results (Mode 2)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.20	29.85	20.33	40.05	30.53	65.79	55.79	-25.74	-25.26
2	0.19297	10.20	27.79	18.52	37.99	28.72	63.91	53.91	-25.92	-25.19
3	0.34141	10.23	24.43	21.52	34.66	31.75	59.17	49.17	-24.51	-17.42
4	3.41406	10.30	21.71	11.31	32.01	21.61	56.00	46.00	-23.99	-24.39
5	3.77734	10.31	17.39	6.14	27.70	16.45	56.00	46.00	-28.30	-29.55
6	13.64453	11.15	17.04	11.70	28.19	22.85	60.00	50.00	-31.81	-27.15

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

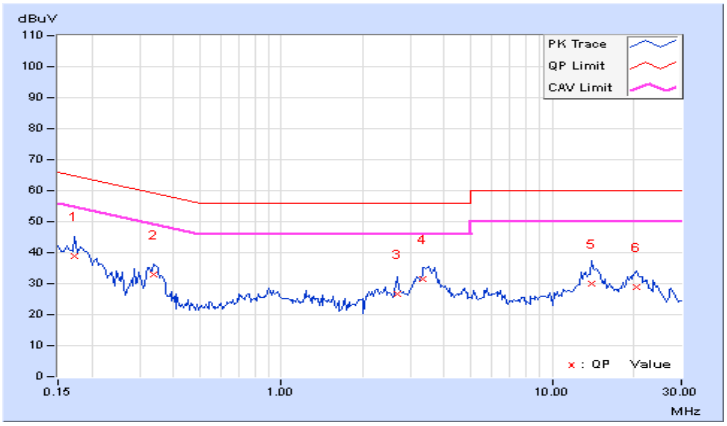


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	10.18	28.89	19.60	39.07	29.78	64.79	54.79	-25.72	-25.01
2	0.33750	10.22	22.82	15.42	33.04	25.64	59.26	49.26	-26.22	-23.62
3	2.69922	10.28	16.37	7.13	26.65	17.41	56.00	46.00	-29.35	-28.59
4	3.33984	10.25	21.28	12.21	31.53	22.46	56.00	46.00	-24.47	-23.54
5	13.93359	10.99	19.12	13.63	30.11	24.62	60.00	50.00	-29.89	-25.38
6	20.38672	11.38	17.63	10.26	29.01	21.64	60.00	50.00	-30.99	-28.36

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

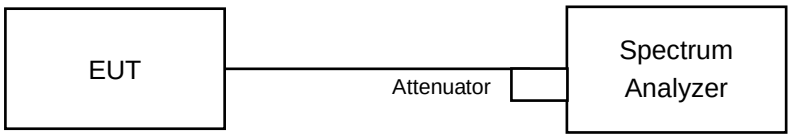


4.3 6dB Bandwidth Measurement

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	Chain 2		
1	2412	9.08	8.12	8.60	0.5	PASS
6	2437	9.11	9.10	9.57	0.5	PASS
11	2462	8.13	8.59	9.05	0.5	PASS

802.11g

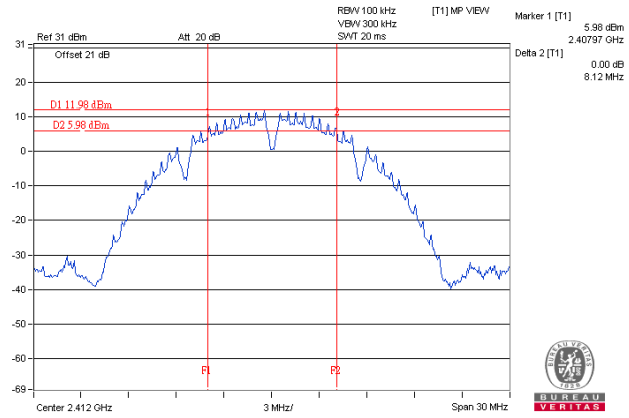
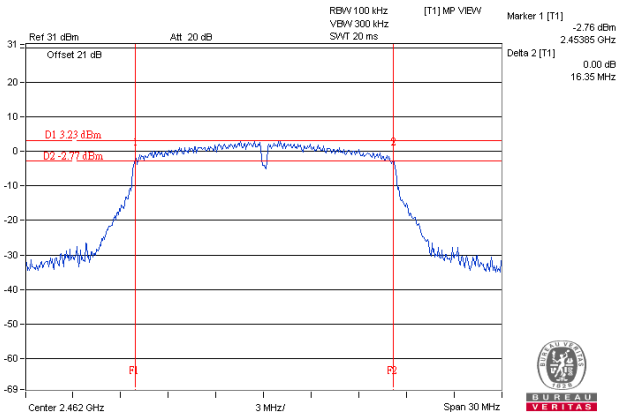
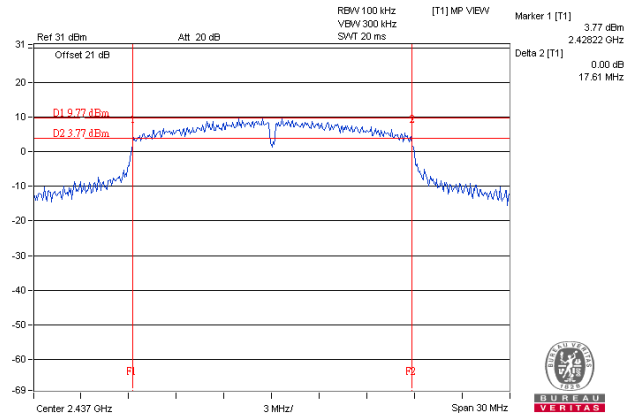
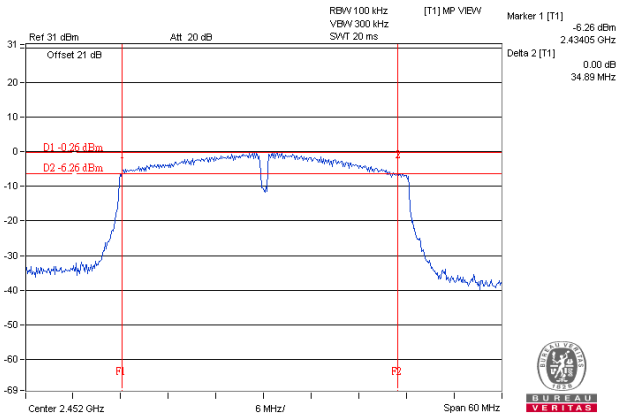
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	16.40	16.41	16.40	0.5	PASS
6	2437	16.42	16.41	16.42	0.5	PASS
11	2462	16.35	16.38	16.40	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	17.62	17.62	17.62	0.5	PASS
6	2437	17.67	17.61	17.64	0.5	PASS
11	2462	17.63	17.64	17.64	0.5	PASS

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
3	2422	35.86	35.87	35.80	0.5	PASS
6	2437	36.16	35.49	35.60	0.5	PASS
9	2452	34.89	35.87	35.14	0.5	PASS

Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH1	**802.11g / Chain 0 : CH11**
	
802.11n (HT20) / Chain 1 : CH6	**802.11n (HT40) / Chain 0 : CH9**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

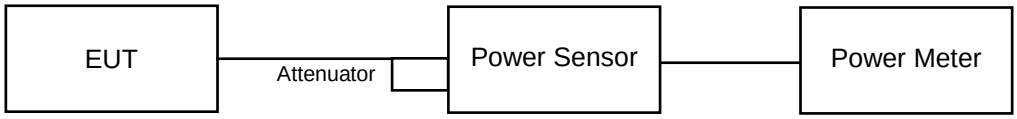
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	21.02	20.98	20.60	366.603	25.64	30	Pass
6	2437	23.18	23.05	22.81	600.792	27.79	30	Pass
11	2462	20.34	20.03	20.01	309.067	24.90	30	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	15.21	15.31	14.55	95.662	19.81	30	Pass
6	2437	22.70	22.07	22.26	515.541	27.12	30	Pass
11	2462	15.08	15.02	14.30	90.895	19.59	30	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	16.81	16.79	16.22	137.605	21.39	30	Pass
6	2437	22.65	22.04	22.13	507.338	27.05	30	Pass
11	2462	16.38	16.08	15.62	120.477	20.81	30	Pass

802.11n (HT40)

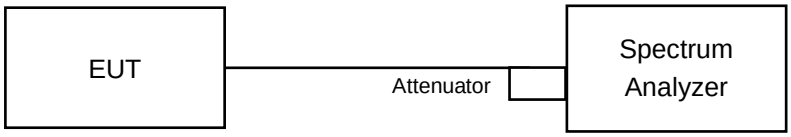
Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
3	2422	14.57	14.30	13.89	80.048	19.03	30	Pass
6	2437	16.69	16.75	16.05	134.253	21.28	30	Pass
9	2452	15.83	15.49	15.00	105.305	20.22	30	Pass

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a) 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=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.79	4.77	-5.02	4.39	Pass
	6	2437	-8.40	4.77	-3.63	4.39	Pass
	11	2462	-10.83	4.77	-6.06	4.39	Pass
1	1	2412	-10.82	4.77	-6.05	4.39	Pass
	6	2437	-7.99	4.77	-3.22	4.39	Pass
	11	2462	-11.02	4.77	-6.25	4.39	Pass
2	1	2412	-9.62	4.77	-4.85	4.39	Pass
	6	2437	-7.99	4.77	-3.22	4.39	Pass
	11	2462	-9.74	4.77	-4.97	4.39	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 9.61dBi > 6dBi, so the power density limit shall be reduced to 8-(9.61-6) = 4.39dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.66	4.77	-11.89	4.39	Pass
	6	2437	-8.93	4.77	-4.16	4.39	Pass
	11	2462	-16.89	4.77	-12.12	4.39	Pass
1	1	2412	-16.79	4.77	-12.02	4.39	Pass
	6	2437	-9.77	4.77	-5.00	4.39	Pass
	11	2462	-17.60	4.77	-12.83	4.39	Pass
2	1	2412	-16.42	4.77	-11.65	4.39	Pass
	6	2437	-10.90	4.77	-6.13	4.39	Pass
	11	2462	-18.17	4.77	-13.40	4.39	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 9.61dBi > 6dBi, so the power density limit shall be reduced to 8-(9.61-6) = 4.39dBm.

802.11n (HT20)

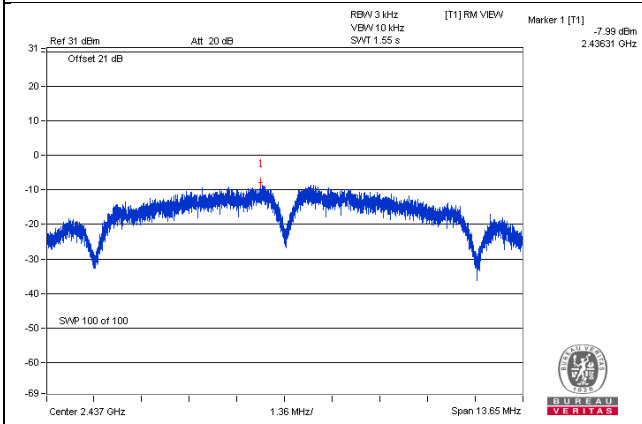
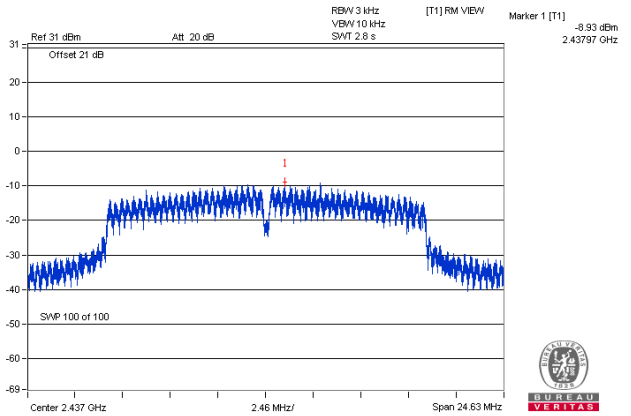
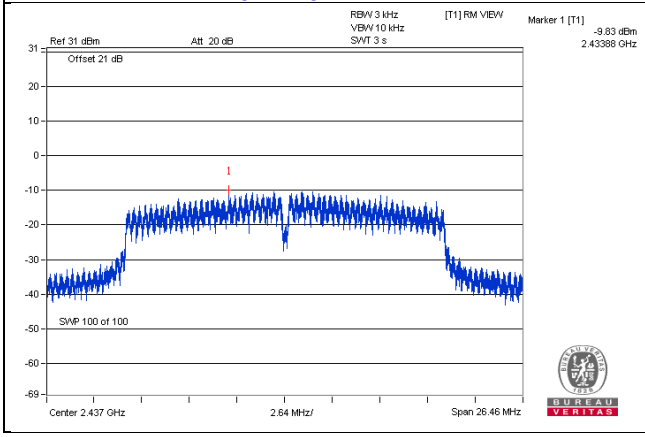
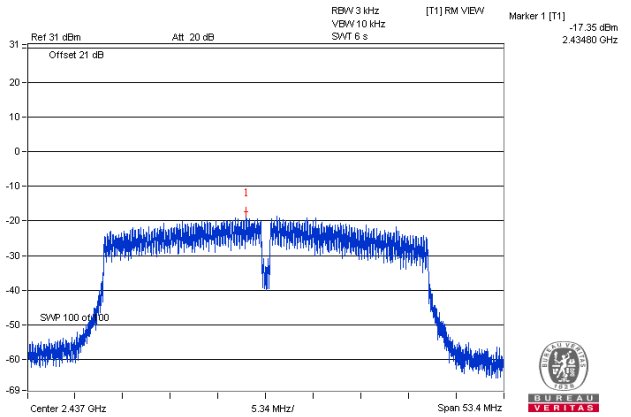
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-15.15	4.77	-10.38	4.39	Pass
	6	2437	-10.01	4.77	-5.24	4.39	Pass
	11	2462	-15.96	4.77	-11.19	4.39	Pass
1	1	2412	-16.16	4.77	-11.39	4.39	Pass
	6	2437	-9.84	4.77	-5.07	4.39	Pass
	11	2462	-16.03	4.77	-11.26	4.39	Pass
2	1	2412	-14.78	4.77	-10.01	4.39	Pass
	6	2437	-9.83	4.77	-5.06	4.39	Pass
	11	2462	-16.48	4.77	-11.71	4.39	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 9.61dBi > 6dBi, so the power density limit shall be reduced to 8-(9.61-6) = 4.39dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2412	-20.33	4.77	-15.56	4.39	Pass
	6	2437	-17.63	4.77	-12.86	4.39	Pass
	9	2462	-18.78	4.77	-14.01	4.39	Pass
1	3	2412	-20.18	4.77	-15.41	4.39	Pass
	6	2437	-18.35	4.77	-13.58	4.39	Pass
	9	2462	-19.48	4.77	-14.71	4.39	Pass
2	3	2412	-21.21	4.77	-16.44	4.39	Pass
	6	2437	-17.35	4.77	-12.58	4.39	Pass
	9	2462	-19.19	4.77	-14.42	4.39	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 9.61dBi > 6dBi, so the power density limit shall be reduced to 8-(9.61-6) = 4.39dBm.

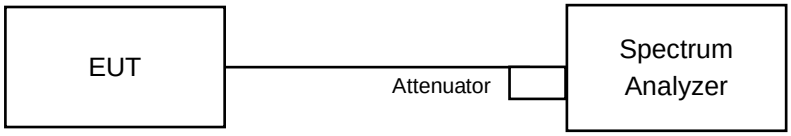
Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH6	**802.11g / Chain 0 : CH6**
	
802.11n (HT20) / Chain 2 : CH6	**802.11n (HT40) / Chain 2 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dBc 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

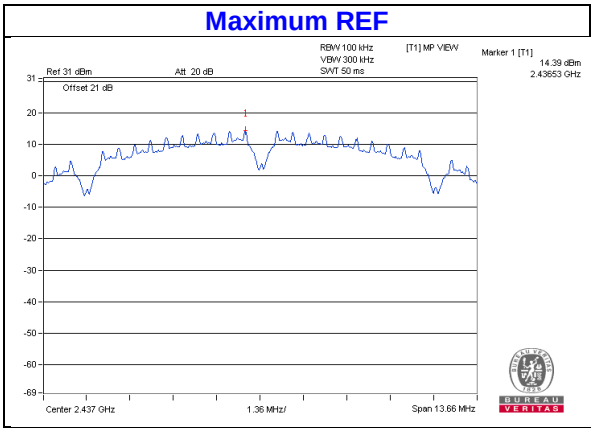
Same as Item 4.3.6

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

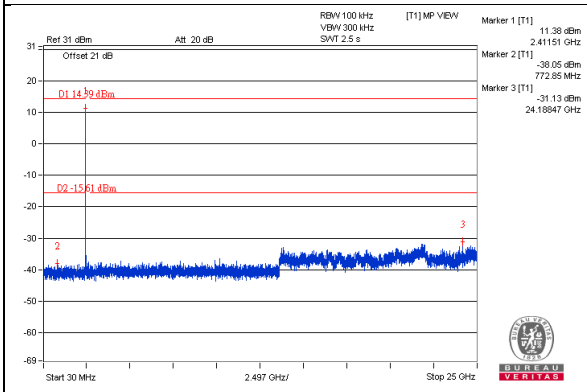
802.11b

Maximum REF

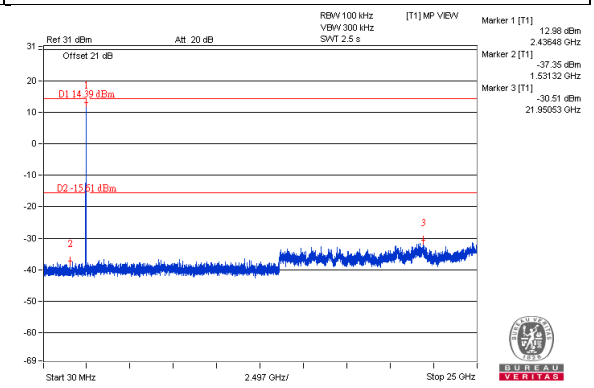


Chain 0

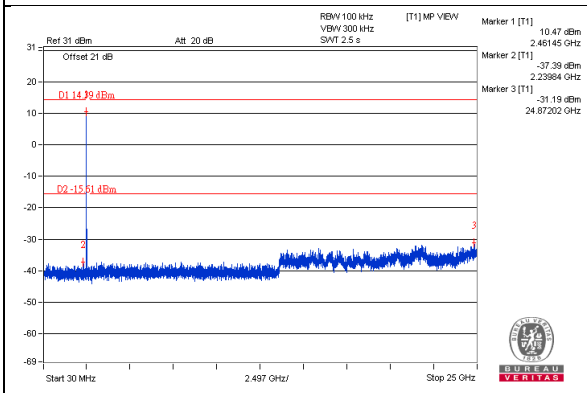
CH 1



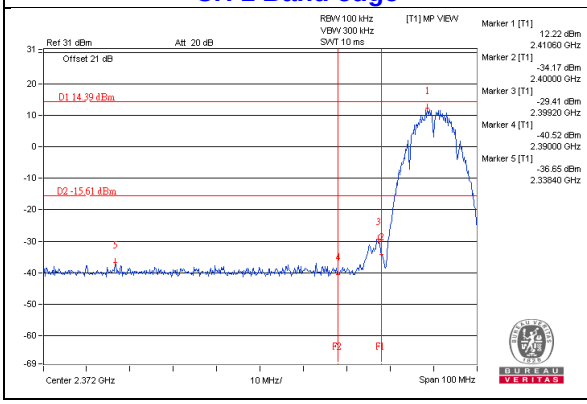
CH 6



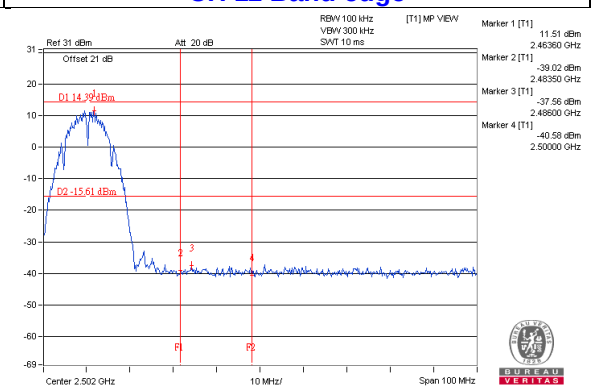
CH 11



CH 1 Band edge

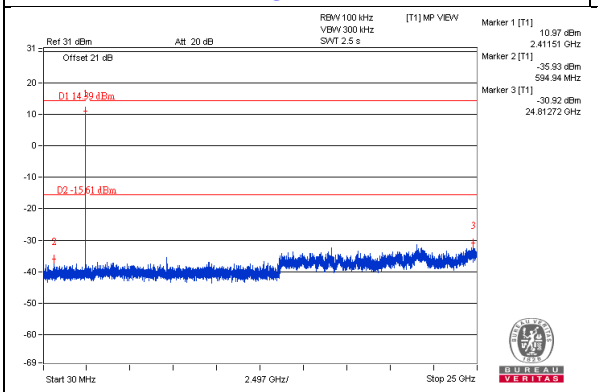


CH 11 Band edge

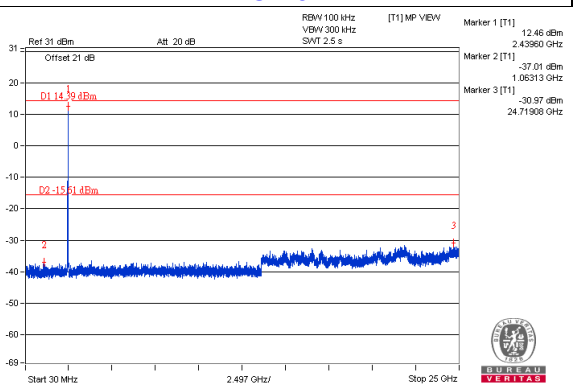


Chain 1

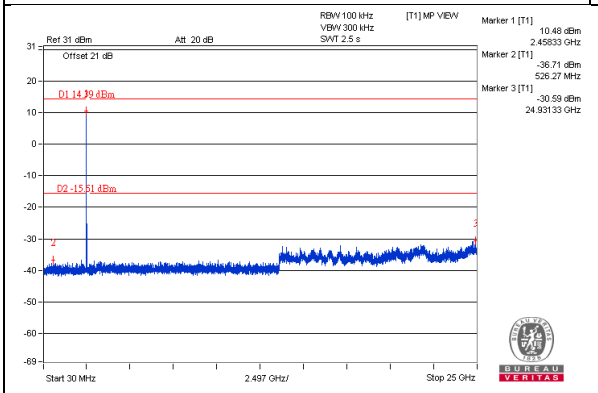
CH 1



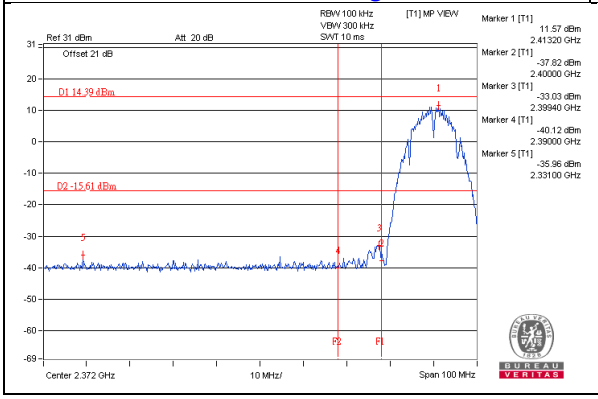
CH 6



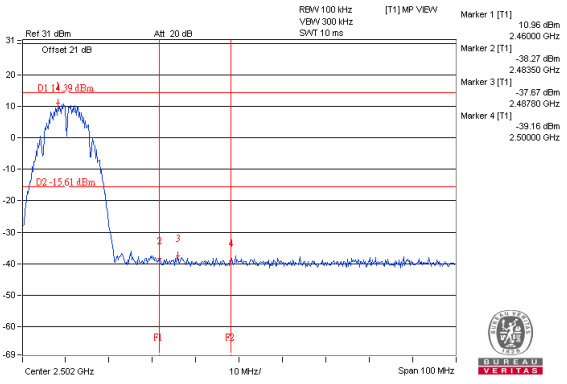
CH 11



CH 1 Band edge

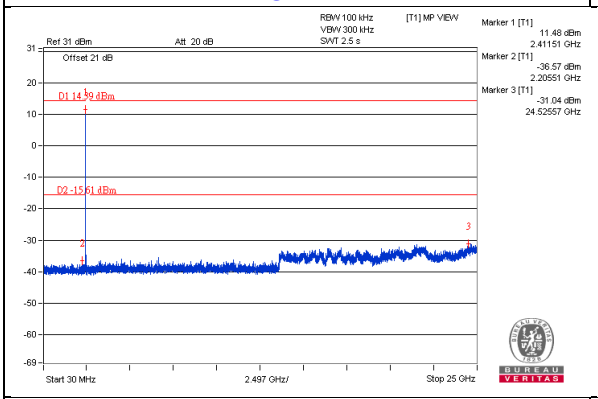


CH 11 Band edge

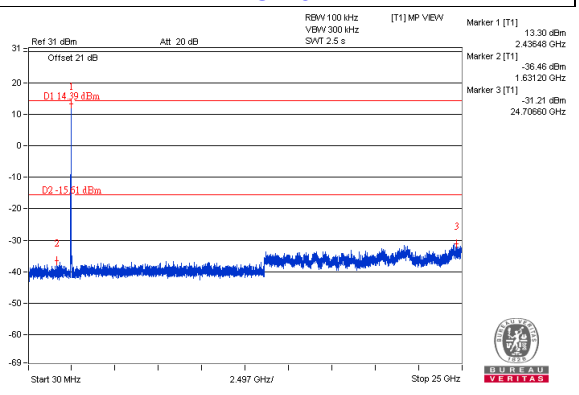


Chain 2

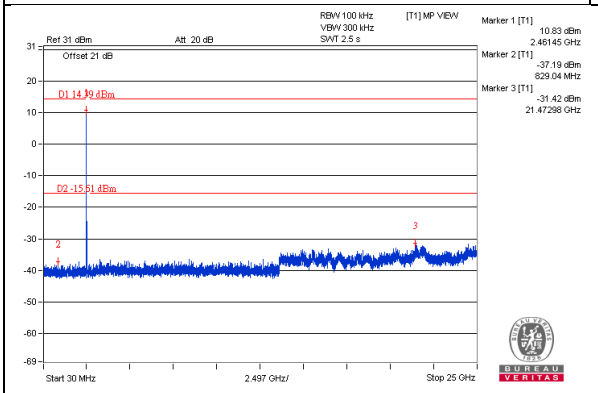
CH 1



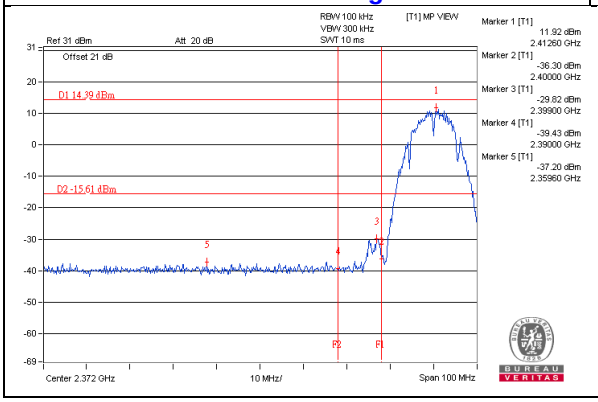
CH 6



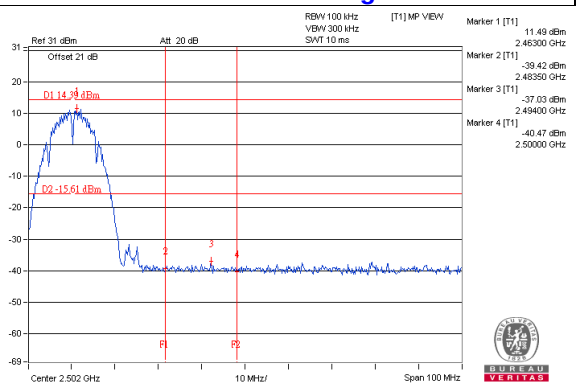
CH 11



CH 1 Band edge

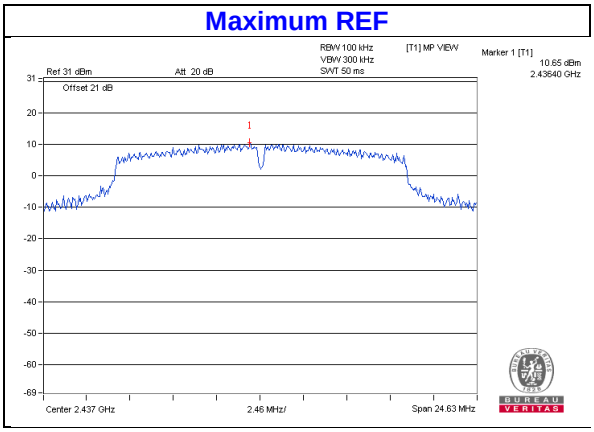


CH 11 Band edge



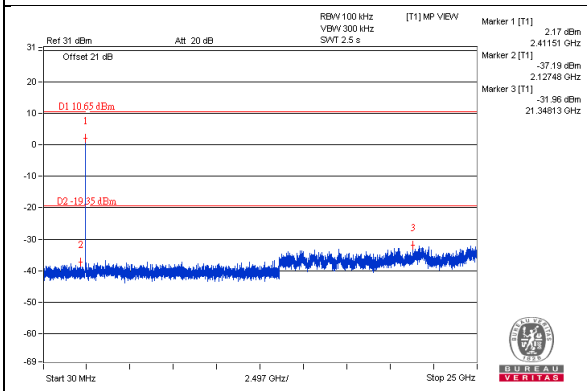
802.11g

Maximum REF

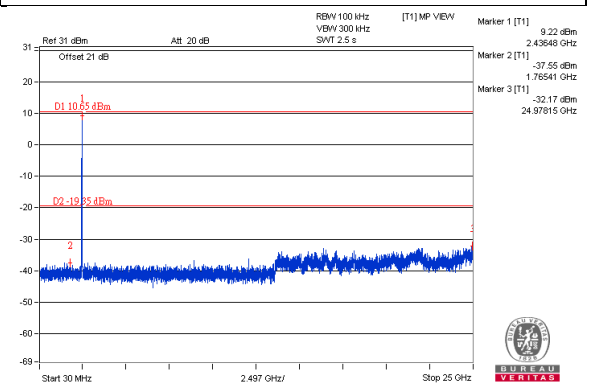


Chain 0

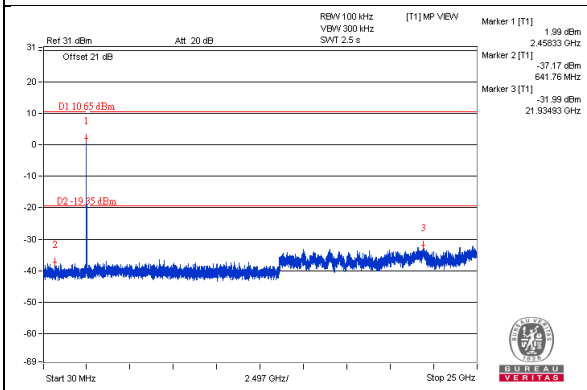
CH 1



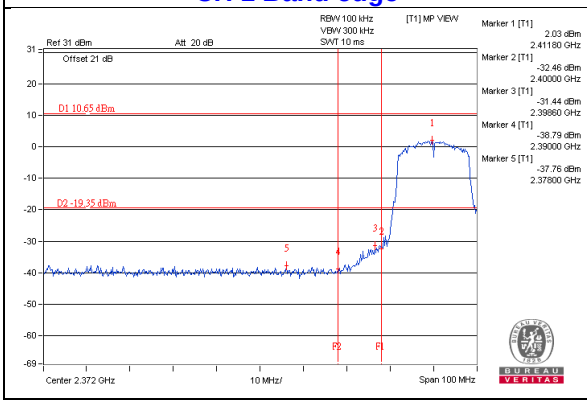
CH 6



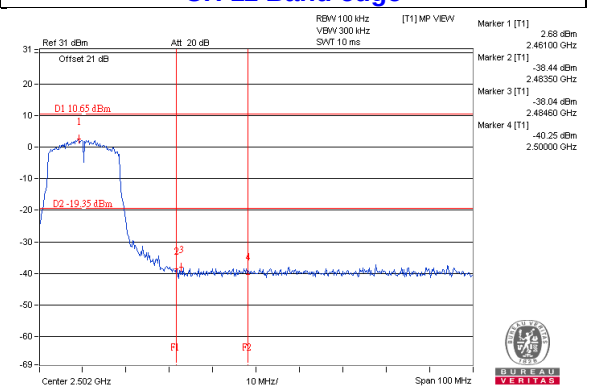
CH 11



CH 1 Band edge

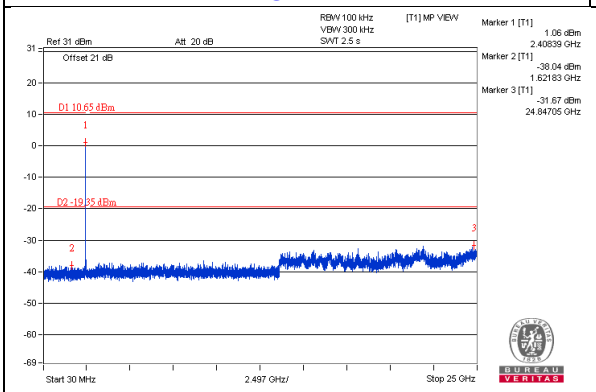


CH 11 Band edge

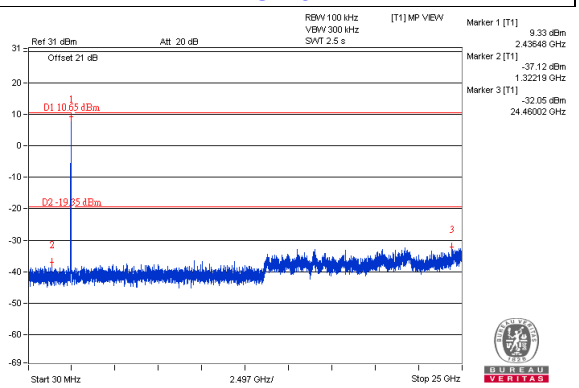


Chain 1

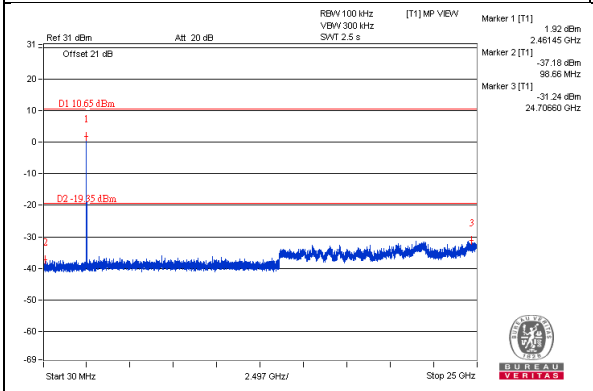
CH 1



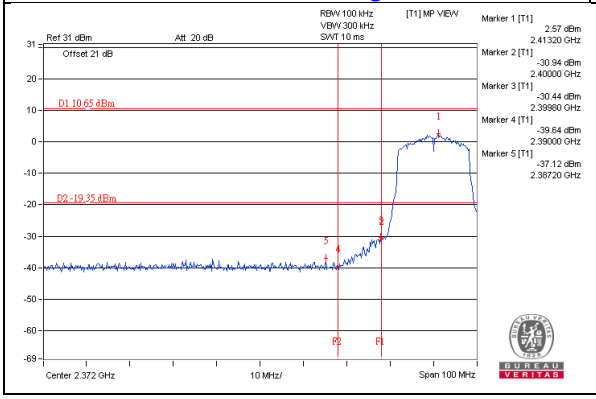
CH 6



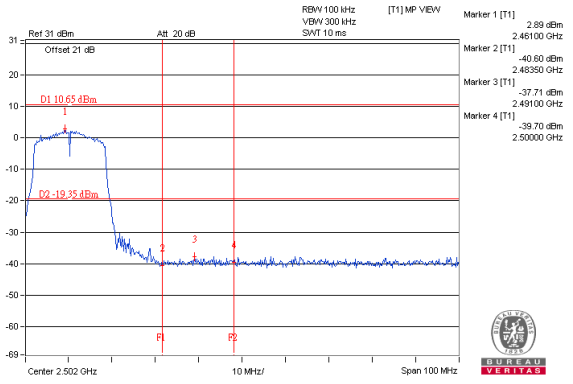
CH 11



CH 1 Band edge

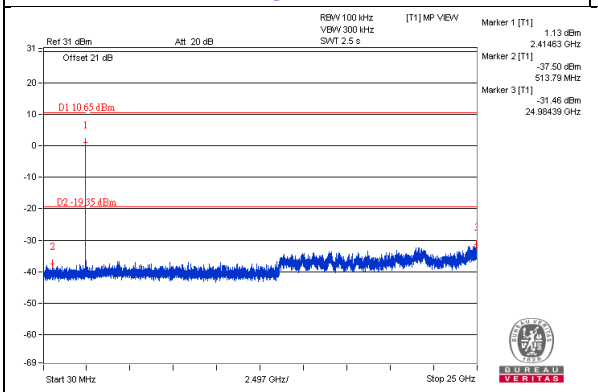


CH 11 Band edge

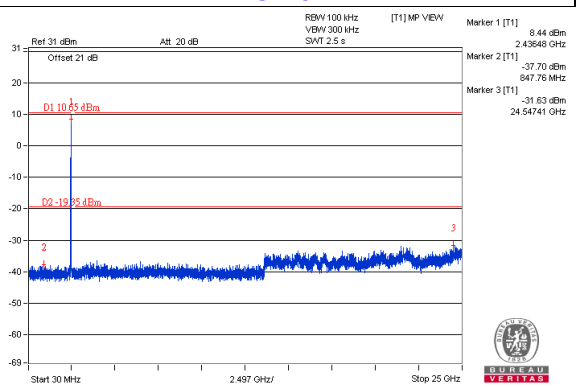


Chain 2

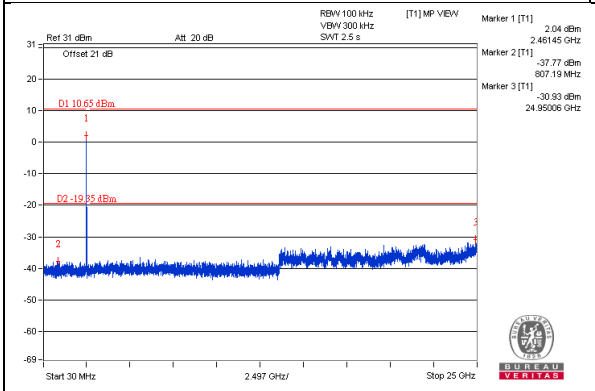
CH 1



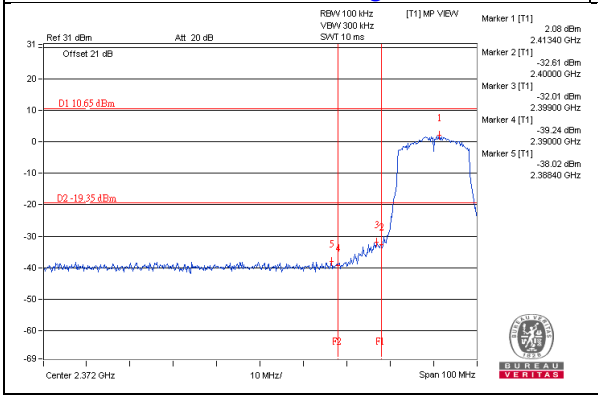
CH 6



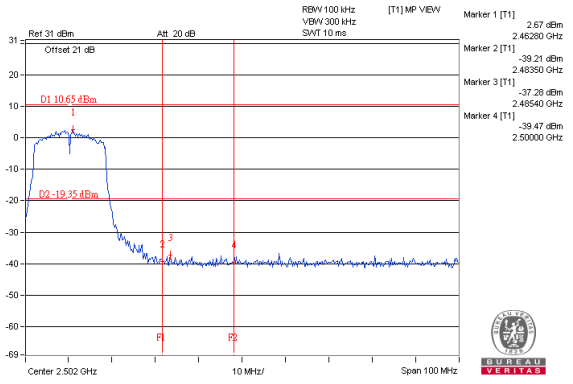
CH 11



CH 1 Band edge

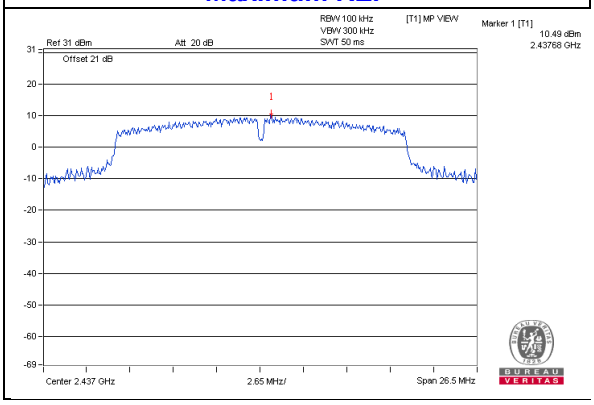


CH 11 Band edge



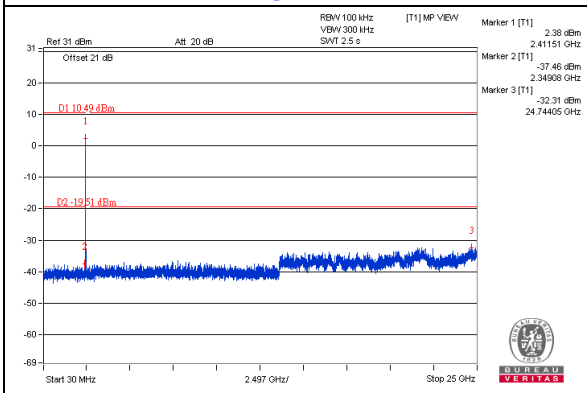
802.11n (HT20)

Maximum REF

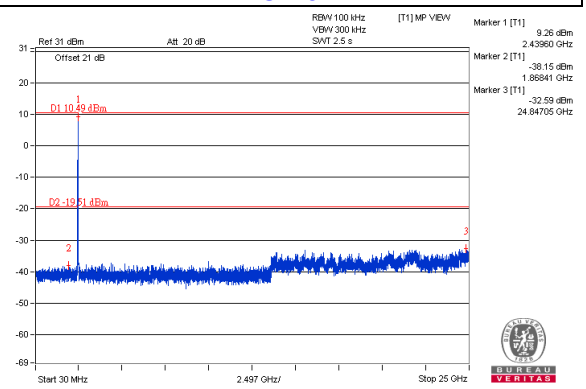


Chain 0

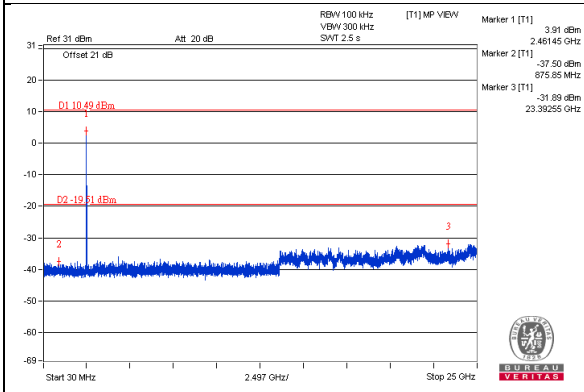
CH 1



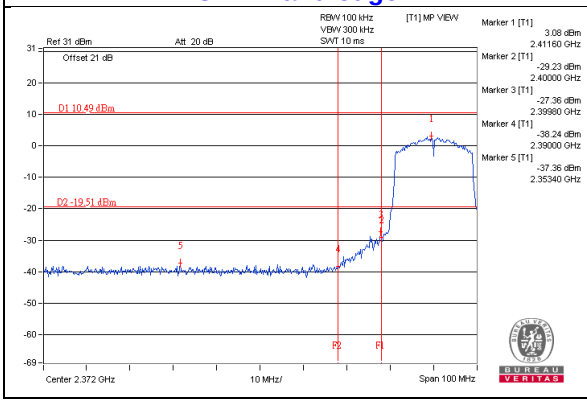
CH 6



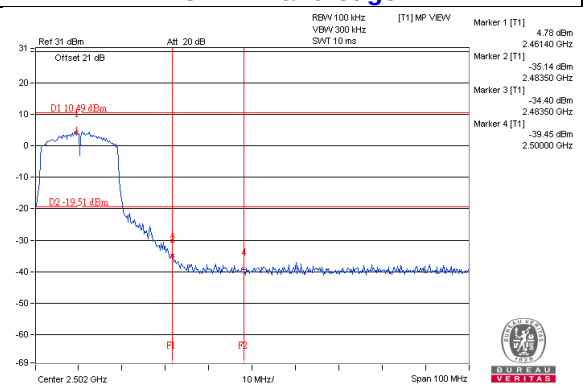
CH 11



CH 1 Band edge

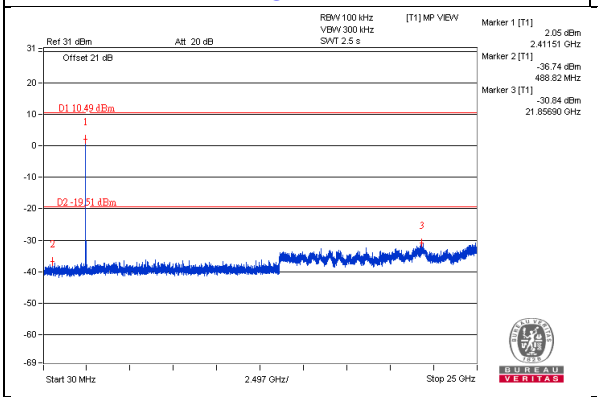


CH 11 Band edge

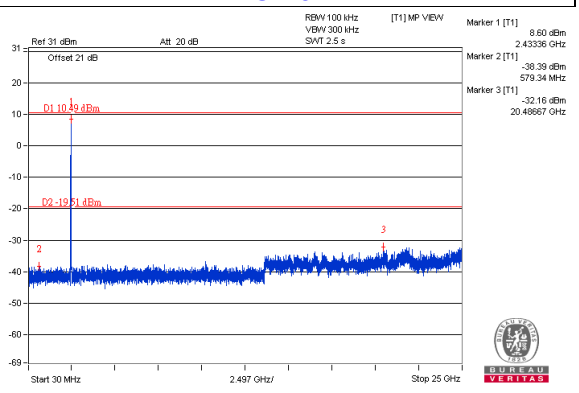


Chain 1

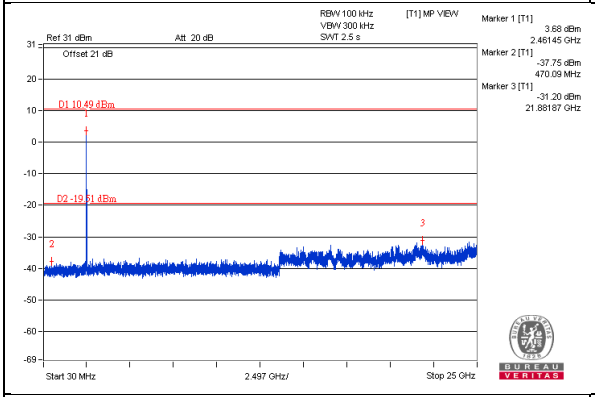
CH 1



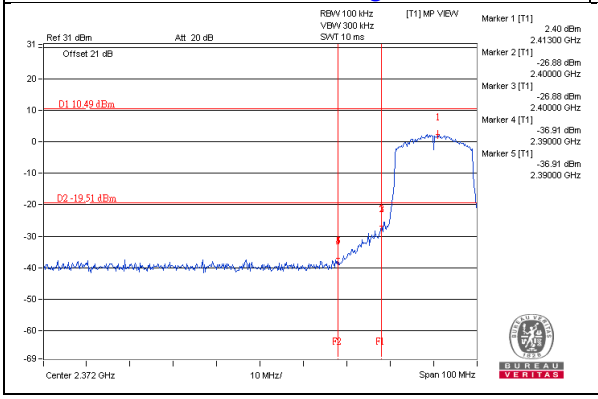
CH 6



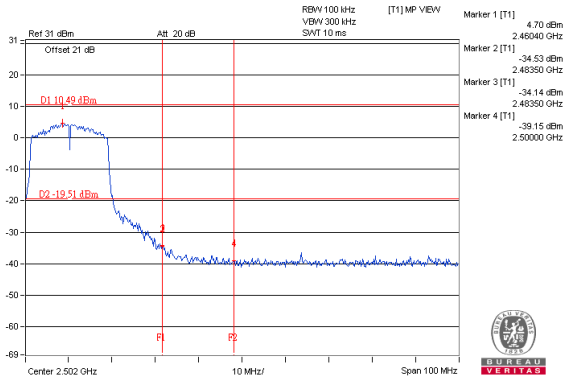
CH 11



CH 1 Band edge

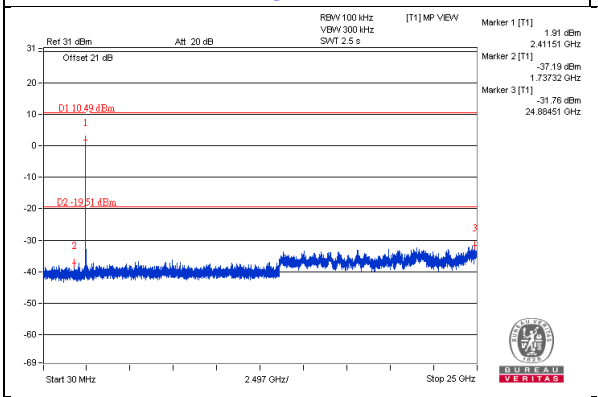


CH 11 Band edge

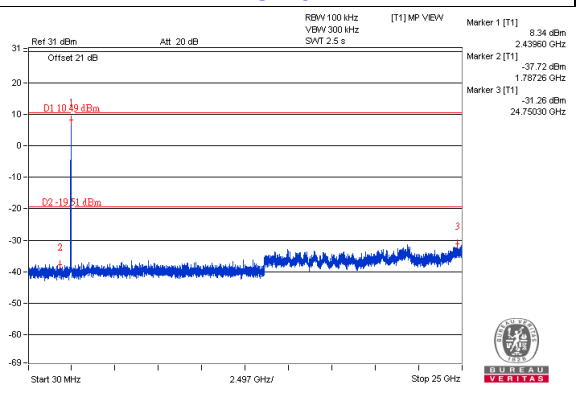


Chain 2

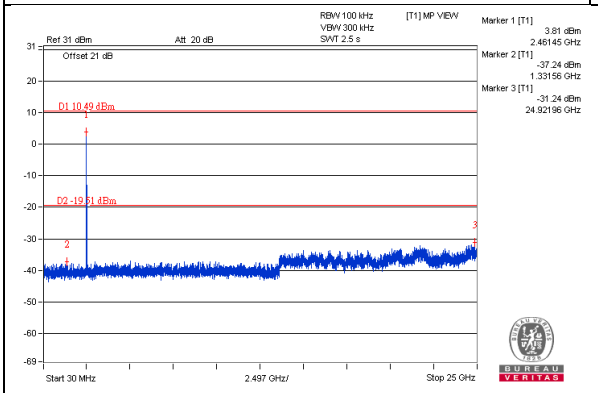
CH 1



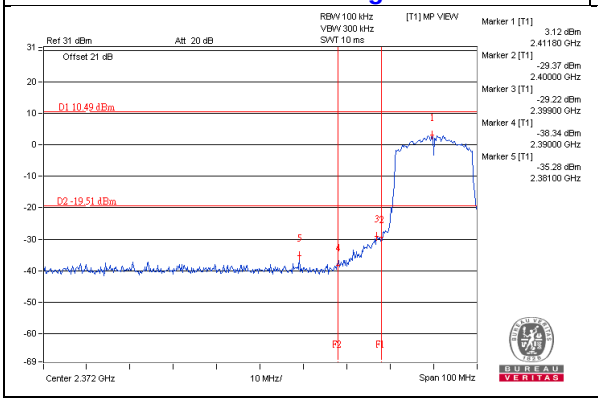
CH 6



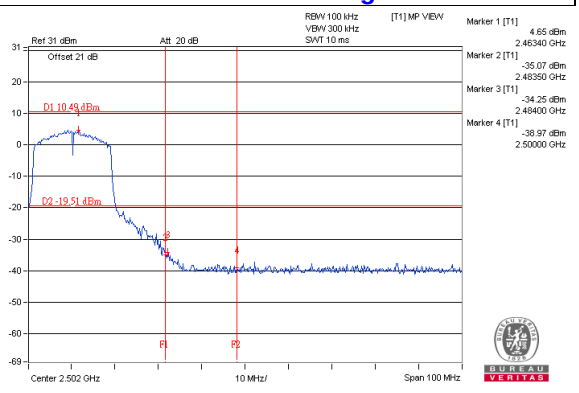
CH 11



CH 1 Band edge

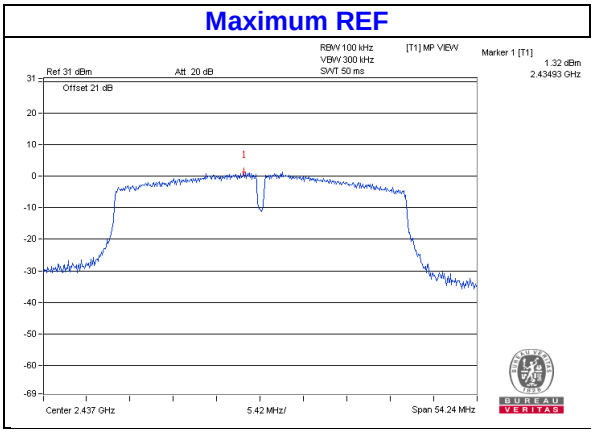


CH 11 Band edge



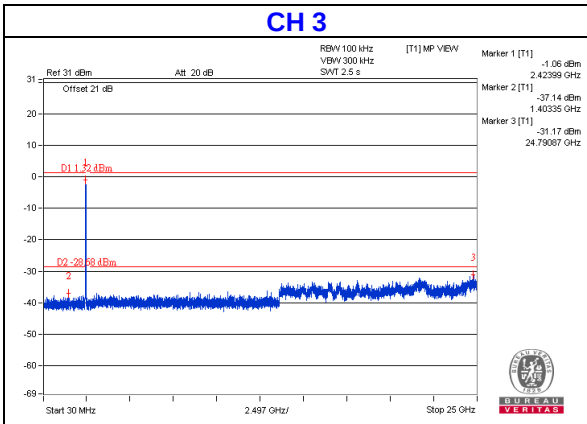
802.11n (HT40)

Maximum REF

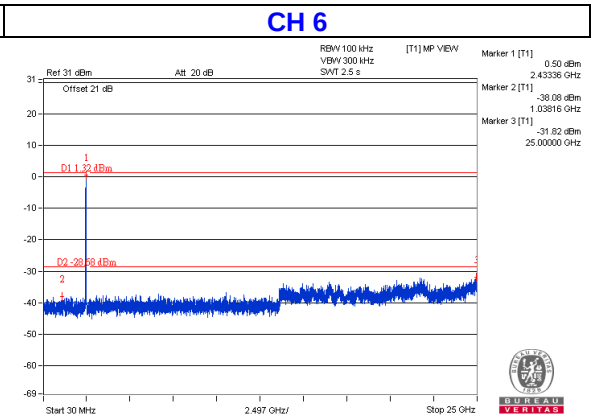


Chain 0

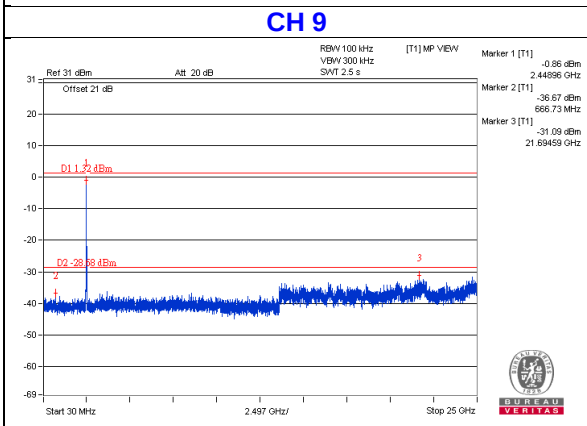
CH 3



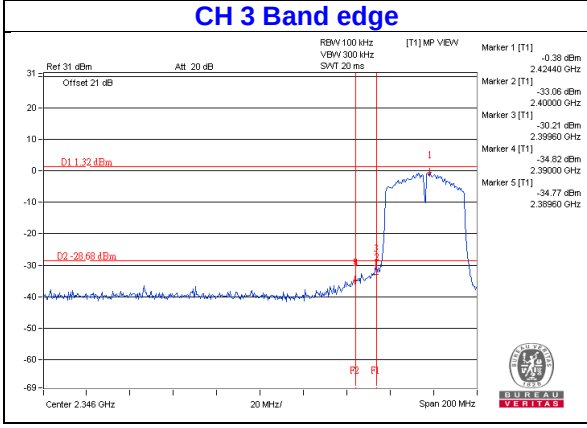
CH 6



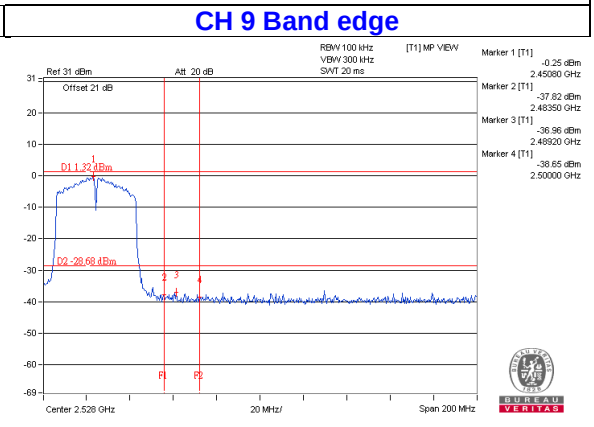
CH 9



CH 3 Band edge

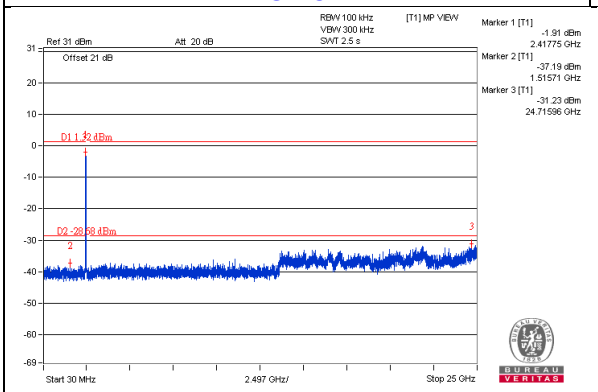


CH 9 Band edge

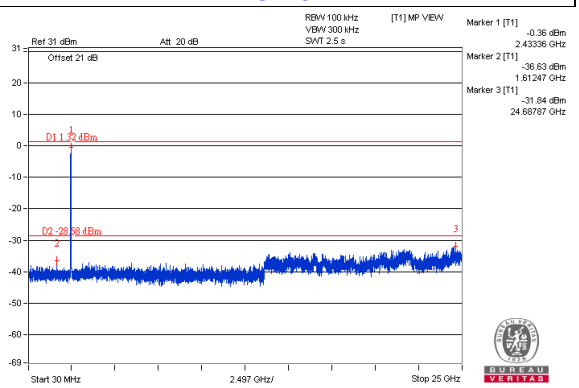


Chain 1

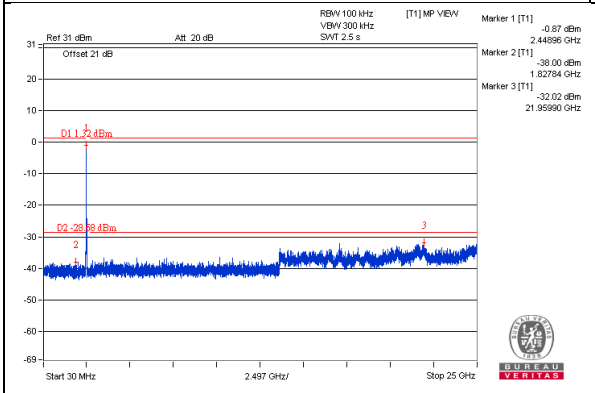
CH 3



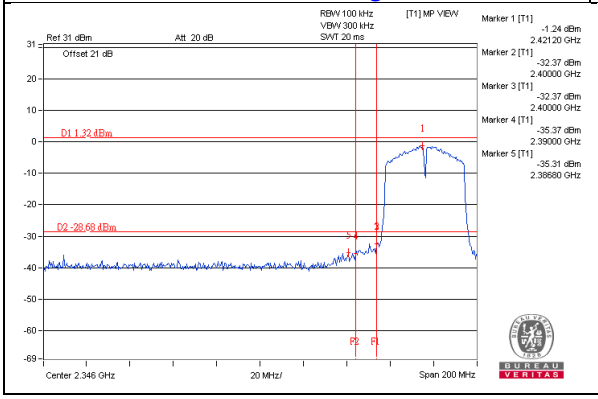
CH 6



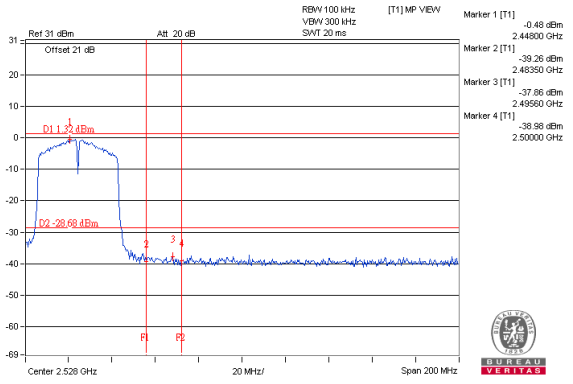
CH 9



CH 3 Band edge

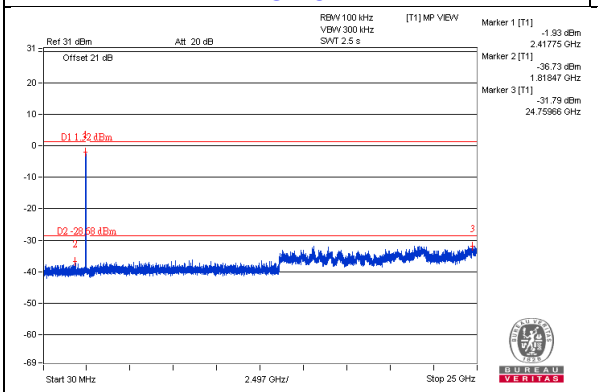


CH 9 Band edge

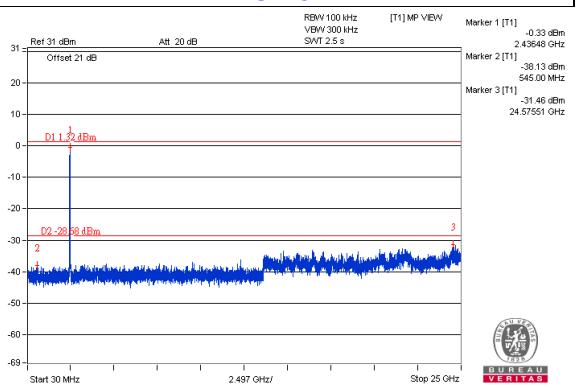


Chain 2

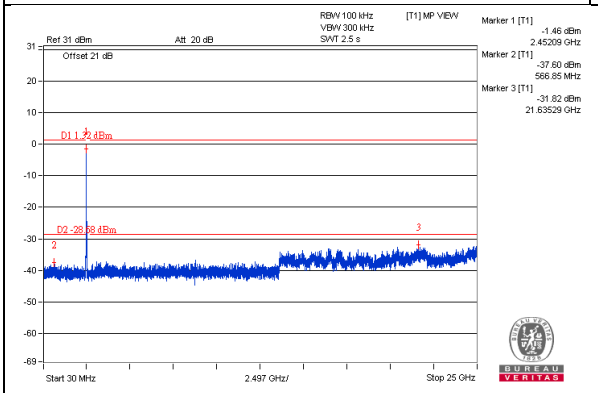
CH 3



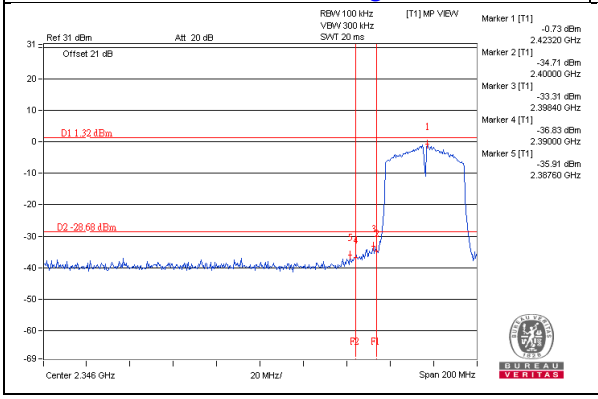
CH 6



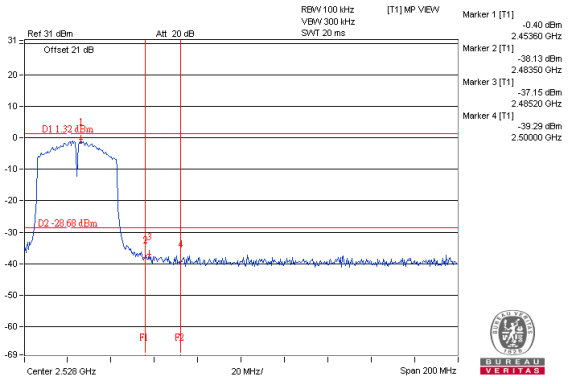
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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Tel: 886-3-3183232
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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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