

FCC Test Report

Report No.: RF160606E02

FCC ID: W59XWOBAP1

Test Model: XWO-BAP1

Received Date: June 06, 2016

Test Date: June 17 to 29, 2016

Issued Date: July 26, 2016

Applicant: Luxul Wireless

Address: 14203 Minuteman Dr Suite 201 Draper UT 84020 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 (1): E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

Test Location (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin
Chu Hsien 307, Taiwan R.O.C.



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Release Control Record

Issue No.	Description	Date Issued
RF160606E02	Original release.	July 26, 2016

1 Certificate of Conformity

Product: High Power AC1200 Dual-Band Outdoor Bridging AP

Brand: Luxul

Test Model: XWO-BAP1

Sample Status: ENGINEERING SAMPLE

Applicant: Luxul Wireless

Test Date: June 17 to 29, 2016

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

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

Prepared by :



Wendy Wu / Specialist

Date:

July 26, 2016

Approved by :



May Chen / Manager

Date:

July 26, 2016

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 -10.97dB at 0.37656MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2390.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.43 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	High Power AC1200 Dual-Band Outdoor Bridging AP
Brand	Luxul
Test Model	XWO-BAP1
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 56V from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24GHz and 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	2.4GHz: 747.622mW 5GHz: 5.18GHz ~ 5.24GHz: 97.338mW 5.745GHz ~ 5.825GHz: 395.908mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	POE x 1
Cable Supplied	Ethernet cable x1 (unshielded, 1m) Power cable x1 (unshielded, 1.8 m) grounding cable x1 (unshielded, 1.4m)

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 antennas provided to the EUT, please refer to the following table:

2.4GHz				
Transmitter Circuit	Antenna Gain(dBi)	Frequency range (MHz ~ MHz)	Antenna Type	Connector Type
Chain (0)	6	2400~2483.5	Patch	i-pex(MHF)
Chain (1)	6			
5GHz				
Transmitter Circuit	Antenna Gain(dBi)	Frequency range (MHz ~ MHz)	Antenna Type	Connector Type
Chain (0)	10	5150~5875	Patch	i-pex(MHF)
Chain (1)	10			

3. The EUT must be supplied with a POE as following table:

Brand	Model No.	Spec.
PHIHONG	POE29U-560	Input: 100-240V, 0.8A, 50-60Hz Output: 56V, 0.536A

4. The EUT incorporates a MIMO function.

2.4GHz			
Modulation Mode	Data Rate (MCS)	TX & RX Configuration	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20) & 802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz			
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) & 802.11ac (VHT80)	MCS0~9 Nss= 1	2TX	2RX
	MCS0~9 Nss= 2	2TX	2RX

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):

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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE $\geq$ 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 $\geq$ 1G	26deg. C, 68%RH	120Vac, 60Hz	Russell Yeh
RE<1G	26deg. C, 72%RH	120Vac, 60Hz	Russell Yeh
PLC	24deg. C, 61%RH	120Vac, 60Hz	Jyunchun Lin
APCM	24deg. C, 62%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

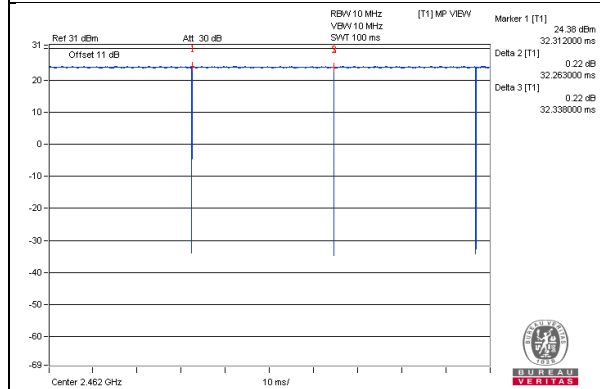
802.11b: Duty cycle = $32.263/32.338 = 0.998$

802.11g: Duty cycle = $5.357/5.417 = 0.989$

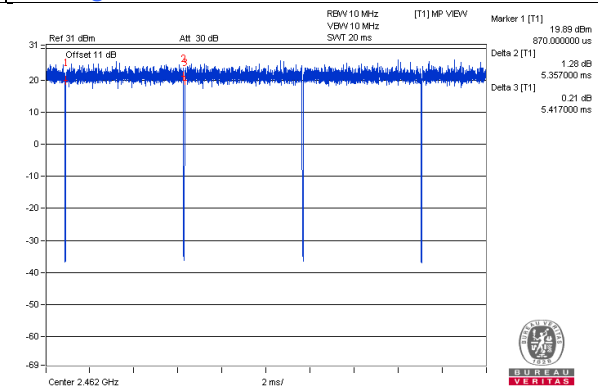
802.11n (HT20): Duty cycle = $4.966/5.036 = 0.986$

802.11n (HT40): Duty cycle = $2.406/2.451 = 0.982$

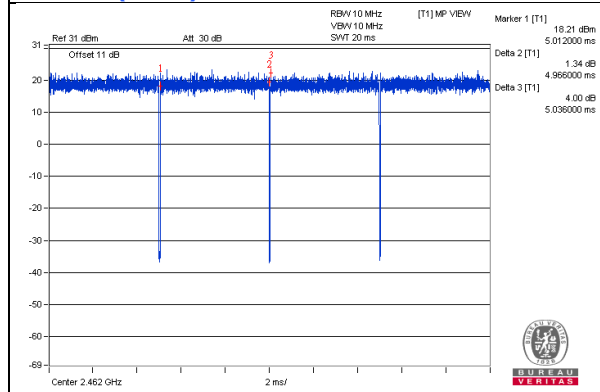
802.11b



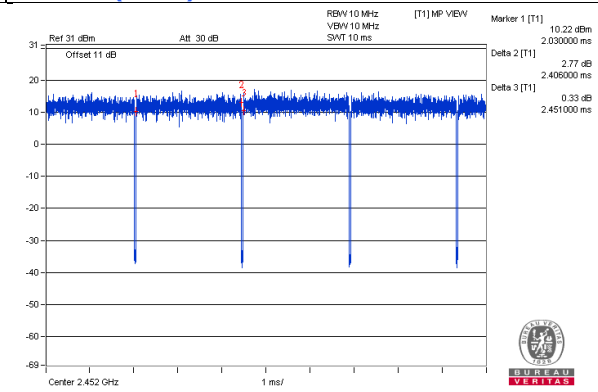
802.11g



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.

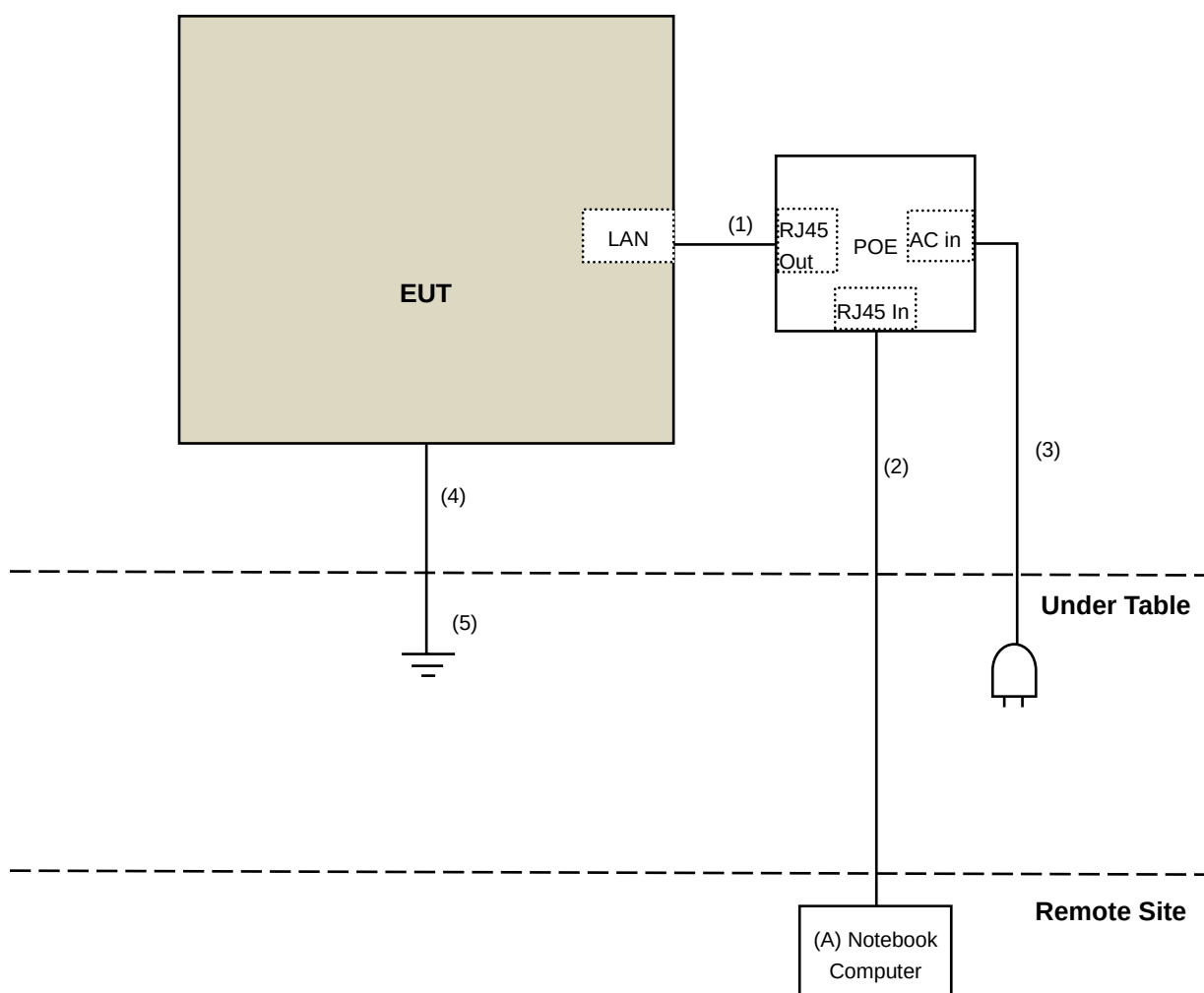
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	1	No	0	Supplied by client
3.	AC Cable	1	1.8	No	0	Supplied by client
4.	Ground Cable	1	1.4	No	0	Supplied by client
5.	Ground Cable	1	2	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 v03r05
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY54450088	July 24, 2015	July 23, 2016
Pre-Amplifier ^(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 02, 2016	Apr. 01, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 19, 2015	Sep. 18, 2016
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150318 150323 150324	Mar. 30, 2016	Mar. 29, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36441/2	Jan. 16, 2016	Jan. 15, 2017
Software	ADT_Radiated_V8.7.07	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	FSP40	100060	May 11, 2016	May 10, 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. Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. 4.
5. The FCC Site Registration No. is 292998
6. The CANADA Site Registration No. is 20331-2
7. Tested Date: June 17 to 29, 2016

4.1.3 Test Procedures

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

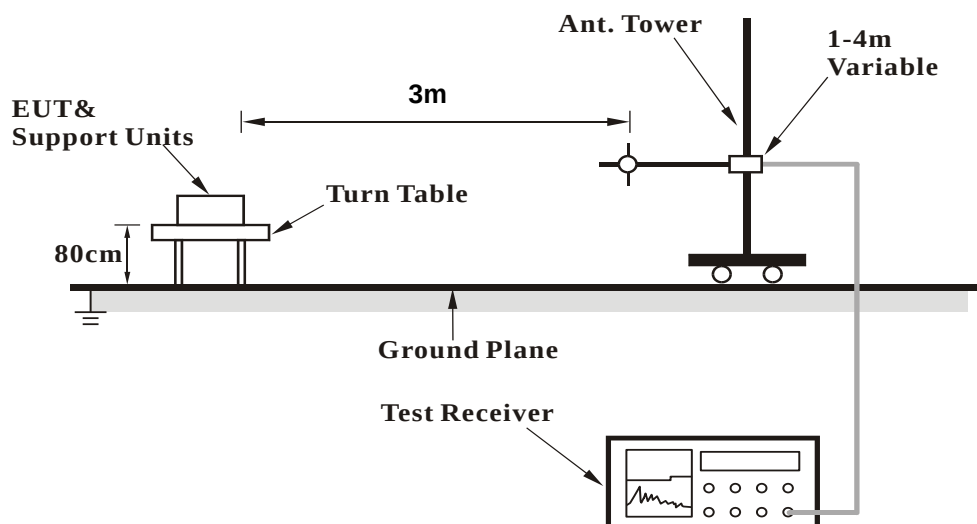
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

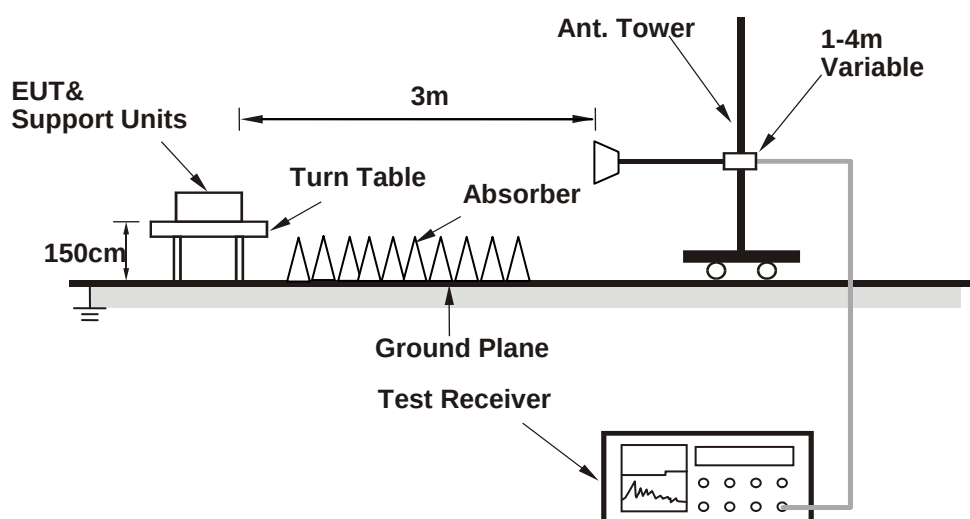
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

1. Connect the EUT with the Notebook Computer which is placed on remote site.
2. Controlling software (artgui.exe[art2_ver_4_9_802_1]) 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)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.4 PK	74.0	-2.6	1.00 H	46	77.00	-5.60
2	2390.00	53.5 AV	54.0	-0.5	1.00 H	46	59.10	-5.60
3	*2412.00	116.2 PK			1.00 H	46	121.70	-5.50
4	*2412.00	113.1 AV			1.00 H	46	118.60	-5.50
5	4824.00	43.3 PK	74.0	-30.7	3.88 H	360	42.40	0.90
6	4824.00	36.7 AV	54.0	-17.3	3.88 H	360	35.80	0.90
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	69.4 PK	74.0	-4.6	1.05 V	23	75.00	-5.60
2	2390.00	50.2 AV	54.0	-3.8	1.05 V	23	55.80	-5.60
3	*2412.00	113.4 PK			1.05 V	23	118.90	-5.50
4	*2412.00	110.1 AV			1.05 V	23	115.60	-5.50
5	4824.00	43.7 PK	74.0	-30.3	1.62 V	67	42.80	0.90
6	4824.00	37.0 AV	54.0	-17.0	1.62 V	67	36.10	0.90

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2312.00	70.7 PK	74.0	-3.3	1.42 H	16	76.60	-5.90
2	2312.00	53.8 AV	54.0	-0.2	1.42 H	16	59.70	-5.90
3	2390.00	69.8 PK	74.0	-4.2	1.42 H	16	75.40	-5.60
4	2390.00	46.8 AV	54.0	-7.2	1.42 H	16	52.40	-5.60
5	*2437.00	113.9 PK			1.42 H	16	119.30	-5.40
6	*2437.00	111.5 AV			1.42 H	16	116.90	-5.40
7	2483.50	68.7 PK	74.0	-5.3	1.42 H	16	74.00	-5.30
8	2483.50	45.6 AV	54.0	-8.4	1.42 H	16	50.90	-5.30
9	4874.00	42.5 PK	74.0	-31.5	3.90 H	360	41.50	1.00
10	4874.00	33.8 AV	54.0	-20.2	3.90 H	360	32.80	1.00
11	7311.00	47.6 PK	74.0	-26.4	1.83 H	219	40.00	7.60
12	7311.00	37.9 AV	54.0	-16.1	1.83 H	219	30.30	7.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2312.00	68.6 PK	74.0	-5.4	1.16 V	22	74.50	-5.90
2	2312.00	49.8 AV	54.0	-4.2	1.16 V	22	55.70	-5.90
3	2390.00	58.1 PK	74.0	-15.9	1.16 V	22	63.70	-5.60
4	2390.00	44.1 AV	54.0	-9.9	1.16 V	22	49.70	-5.60
5	*2437.00	111.1 PK			1.16 V	22	116.50	-5.40
6	*2437.00	108.2 AV			1.16 V	22	113.60	-5.40
7	2483.50	67.6 PK	74.0	-6.4	1.16 V	22	72.90	-5.30
8	2483.50	45.4 AV	54.0	-8.6	1.16 V	22	50.70	-5.30
9	4874.00	42.8 PK	74.0	-31.2	1.72 V	71	41.80	1.00
10	4874.00	32.9 AV	54.0	-21.1	1.72 V	71	31.90	1.00
11	7311.00	47.8 PK	74.0	-26.2	2.50 V	68	40.20	7.60
12	7311.00	35.0 AV	54.0	-19.0	2.50 V	68	27.40	7.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	116.7 PK			1.50 H	12	122.00	-5.30
2	*2462.00	114.4 AV			1.50 H	12	119.70	-5.30
3	2483.50	70.6 PK	74.0	-3.4	1.50 H	12	75.90	-5.30
4	2483.50	53.5 AV	54.0	-0.5	1.50 H	12	58.80	-5.30
5	4924.00	45.7 PK	74.0	-28.3	3.94 H	350	44.40	1.30
6	4924.00	40.0 AV	54.0	-14.0	3.94 H	350	38.70	1.30
7	7386.00	48.8 PK	74.0	-25.2	1.88 H	222	41.10	7.70
8	7386.00	37.2 AV	54.0	-16.8	1.88 H	222	29.50	7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.8 PK			1.12 V	35	119.10	-5.30
2	*2462.00	111.2 AV			1.12 V	35	116.50	-5.30
3	2483.50	69.7 PK	74.0	-4.3	1.23 V	15	75.00	-5.30
4	2483.50	50.5 AV	54.0	-3.5	1.23 V	15	55.80	-5.30
5	4924.00	47.8 PK	74.0	-26.2	1.58 V	83	46.50	1.30
6	4924.00	37.5 AV	54.0	-16.5	1.58 V	83	36.20	1.30
7	7386.00	48.4 PK	74.0	-25.6	2.58 V	77	40.70	7.70
8	7386.00	36.3 AV	54.0	-17.7	2.58 V	77	28.60	7.70

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.8 PK	74.0	-0.2	1.03 H	18	79.40	-5.60
2	2390.00	53.5 AV	54.0	-0.5	1.03 H	18	59.10	-5.60
3	*2412.00	115.4 PK			1.03 H	18	120.90	-5.50
4	*2412.00	103.1 AV			1.03 H	18	108.60	-5.50
5	4824.00	41.1 PK	74.0	-32.9	3.84 H	360	40.20	0.90
6	4824.00	34.2 AV	54.0	-19.8	3.84 H	360	33.30	0.90
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	68.3 PK	74.0	-5.7	1.24 V	44	73.90	-5.60
2	2390.00	49.8 AV	54.0	-4.2	1.24 V	44	55.40	-5.60
3	*2412.00	113.2 PK			1.24 V	44	118.70	-5.50
4	*2412.00	101.3 AV			1.24 V	44	106.80	-5.50
5	4824.00	42.3 PK	74.0	-31.7	1.68 V	59	41.40	0.90
6	4824.00	36.2 AV	54.0	-17.8	1.68 V	59	35.30	0.90

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.4 PK	74.0	-5.6	1.16 H	15	74.00	-5.60
2	2390.00	50.0 AV	54.0	-4.0	1.16 H	15	55.60	-5.60
3	*2437.00	121.4 PK			1.16 H	15	126.80	-5.40
4	*2437.00	109.8 AV			1.16 H	15	115.20	-5.40
5	2483.50	73.6 PK	74.0	-0.4	1.16 H	15	78.90	-5.30
6	2483.50	52.6 AV	54.0	-1.4	1.16 H	15	57.90	-5.30
7	4874.00	40.8 PK	74.0	-33.2	3.82 H	355	39.80	1.00
8	4874.00	31.2 AV	54.0	-22.8	3.82 H	355	30.20	1.00
9	7311.00	46.2 PK	74.0	-27.8	1.87 H	220	38.60	7.60
10	7311.00	35.3 AV	54.0	-18.7	1.87 H	220	27.70	7.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.6 PK	74.0	-5.4	1.31 V	42	74.20	-5.60
2	2390.00	47.5 AV	54.0	-6.5	1.31 V	42	53.10	-5.60
3	*2437.00	118.2 PK			1.31 V	42	123.60	-5.40
4	*2437.00	107.6 AV			1.31 V	42	113.00	-5.40
5	2483.50	70.1 PK	74.0	-3.9	1.31 V	42	75.40	-5.30
6	2483.50	49.4 AV	54.0	-4.6	1.31 V	42	54.70	-5.30
7	4874.00	40.7 PK	74.0	-33.3	1.77 V	65	39.70	1.00
8	4874.00	30.8 AV	54.0	-23.2	1.77 V	65	29.80	1.00
9	7311.00	45.8 PK	74.0	-28.2	2.44 V	60	38.20	7.60
10	7311.00	33.6 AV	54.0	-20.4	2.44 V	60	26.00	7.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	115.5 PK			1.12 H	11	120.80	-5.30
2	*2462.00	104.0 AV			1.12 H	11	109.30	-5.30
3	2483.50	71.5 PK	74.0	-2.5	1.12 H	11	76.80	-5.30
4	2483.50	53.3 AV	54.0	-0.7	1.12 H	11	58.60	-5.30
5	4924.00	43.7 PK	74.0	-30.3	3.88 H	344	42.40	1.30
6	4924.00	38.4 AV	54.0	-15.6	3.88 H	344	37.10	1.30
7	7386.00	47.6 PK	74.0	-26.4	1.74 H	227	39.90	7.70
8	7386.00	34.8 AV	54.0	-19.2	1.74 H	227	27.10	7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.8 PK			1.38 V	46	119.10	-5.30
2	*2462.00	101.7 AV			1.38 V	46	107.00	-5.30
3	2483.50	68.9 PK	74.0	-5.1	1.38 V	46	74.20	-5.30
4	2483.50	47.3 AV	54.0	-6.7	1.38 V	46	52.60	-5.30
5	4924.00	45.8 PK	74.0	-28.2	1.65 V	87	44.50	1.30
6	4924.00	36.1 AV	54.0	-17.9	1.65 V	87	34.80	1.30
7	7386.00	46.5 PK	74.0	-27.5	2.66 V	73	38.80	7.70
8	7386.00	34.2 AV	54.0	-19.8	2.66 V	73	26.50	7.70

REMARKS:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.4 PK	74.0	-3.6	1.65 H	2	76.00	-5.60
2	2390.00	53.3 AV	54.0	-0.7	1.65 H	2	58.90	-5.60
3	*2412.00	116.0 PK			1.65 H	2	121.50	-5.50
4	*2412.00	103.7 AV			1.65 H	2	109.20	-5.50
5	4824.00	41.7 PK	74.0	-32.3	3.89 H	344	40.80	0.90
6	4824.00	33.5 AV	54.0	-20.5	3.89 H	344	32.60	0.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.4 PK	74.0	-5.6	1.18 V	62	74.00	-5.60
2	2390.00	48.5 AV	54.0	-5.5	1.18 V	62	54.10	-5.60
3	*2412.00	112.4 PK			1.18 V	62	117.90	-5.50
4	*2412.00	100.5 AV			1.18 V	62	106.00	-5.50
5	4824.00	41.6 PK	74.0	-32.4	1.63 V	67	40.70	0.90
6	4824.00	35.4 AV	54.0	-18.6	1.63 V	67	34.50	0.90

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.2 PK	74.0	-3.8	1.60 H	2	75.80	-5.60
2	2390.00	50.2 AV	54.0	-3.8	1.60 H	2	55.80	-5.60
3	*2437.00	122.4 PK			1.60 H	2	127.80	-5.40
4	*2437.00	110.5 AV			1.60 H	2	115.90	-5.40
5	2483.50	73.2 PK	74.0	-0.8	1.60 H	2	78.50	-5.30
6	2483.50	53.8 AV	54.0	-0.2	1.60 H	2	59.10	-5.30
7	4874.00	40.1 PK	74.0	-33.9	3.77 H	348	39.10	1.00
8	4874.00	30.3 AV	54.0	-23.7	3.77 H	348	29.30	1.00
9	7311.00	46.6 PK	74.0	-27.4	1.80 H	238	39.00	7.60
10	7311.00	33.7 AV	54.0	-20.3	1.80 H	238	26.10	7.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.6 PK	74.0	-5.4	1.29 V	56	74.20	-5.60
2	2390.00	46.3 AV	54.0	-7.7	1.29 V	56	51.90	-5.60
3	*2437.00	117.3 PK			1.29 V	56	122.70	-5.40
4	*2437.00	106.4 AV			1.29 V	56	111.80	-5.40
5	2483.50	70.5 PK	74.0	-3.5	1.29 V	56	75.80	-5.30
6	2483.50	48.7 AV	54.0	-5.3	1.29 V	56	54.00	-5.30
7	4874.00	40.0 PK	74.0	-34.0	1.80 V	61	39.00	1.00
8	4874.00	30.2 AV	54.0	-23.8	1.80 V	61	29.20	1.00
9	7311.00	44.4 PK	74.0	-29.6	2.53 V	84	36.80	7.60
10	7311.00	32.3 AV	54.0	-21.7	2.53 V	84	24.70	7.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	115.3 PK			1.63 H	0	120.60	-5.30
2	*2462.00	103.1 AV			1.63 H	0	108.40	-5.30
3	2483.50	73.2 PK	74.0	-0.8	1.63 H	0	78.50	-5.30
4	2483.50	53.8 AV	54.0	-0.2	1.63 H	0	59.10	-5.30
5	4924.00	42.8 PK	74.0	-31.2	3.73 H	352	41.50	1.30
6	4924.00	37.5 AV	54.0	-16.5	3.73 H	352	36.20	1.30
7	7386.00	46.9 PK	74.0	-27.1	1.69 H	225	39.20	7.70
8	7386.00	33.4 AV	54.0	-20.6	1.69 H	225	25.70	7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.3 PK			1.43 V	39	115.60	-5.30
2	*2462.00	99.8 AV			1.43 V	39	105.10	-5.30
3	2483.50	67.5 PK	74.0	-6.5	1.43 V	39	72.80	-5.30
4	2483.50	45.7 AV	54.0	-8.3	1.43 V	39	51.00	-5.30
5	4924.00	45.1 PK	74.0	-28.9	1.73 V	92	43.80	1.30
6	4924.00	35.3 AV	54.0	-18.7	1.73 V	92	34.00	1.30
7	7386.00	44.9 PK	74.0	-29.1	2.77 V	65	37.20	7.70
8	7386.00	33.5 AV	54.0	-20.5	2.77 V	65	25.80	7.70

REMARKS:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.5 PK	74.0	-2.5	1.56 H	3	77.10	-5.60
2	2390.00	53.3 AV	54.0	-0.7	1.56 H	3	58.90	-5.60
3	*2422.00	109.8 PK			1.56 H	3	115.20	-5.40
4	*2422.00	97.1 AV			1.56 H	3	102.50	-5.40
5	4844.00	39.2 PK	74.0	-34.8	3.55 H	332	38.30	0.90
6	4844.00	31.4 AV	54.0	-22.6	3.55 H	332	30.50	0.90
7	7266.00	45.0 PK	74.0	-29.0	1.92 H	244	37.30	7.70
8	7266.00	31.9 AV	54.0	-22.1	1.92 H	244	24.20	7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.7 PK	74.0	-6.3	1.43 V	53	73.30	-5.60
2	2390.00	48.8 AV	54.0	-5.2	1.43 V	53	54.40	-5.60
3	*2422.00	107.4 PK			1.43 V	53	112.80	-5.40
4	*2422.00	95.3 AV			1.43 V	53	100.70	-5.40
5	4844.00	38.8 PK	74.0	-35.2	1.78 V	74	37.90	0.90
6	4844.00	29.3 AV	54.0	-24.7	1.78 V	74	28.40	0.90
7	7266.00	42.7 PK	74.0	-31.3	2.53 V	84	35.00	7.70
8	7266.00	31.2 AV	54.0	-22.8	2.53 V	84	23.50	7.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.2 PK	74.0	-2.8	1.67 H	3	76.80	-5.60
2	2390.00	53.9 AV	54.0	-0.1	1.67 H	3	59.50	-5.60
3	*2437.00	112.8 PK			1.67 H	3	118.20	-5.40
4	*2437.00	100.3 AV			1.67 H	3	105.70	-5.40
5	2483.50	68.0 PK	74.0	-6.0	1.67 H	3	73.30	-5.30
6	2483.50	49.4 AV	54.0	-4.6	1.67 H	3	54.70	-5.30
7	4874.00	38.1 PK	74.0	-35.9	3.58 H	341	37.10	1.00
8	4874.00	29.6 AV	54.0	-24.4	3.58 H	341	28.60	1.00
9	7311.00	44.7 PK	74.0	-29.3	1.80 H	238	37.10	7.60
10	7311.00	31.7 AV	54.0	-22.3	1.80 H	238	24.10	7.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.2 PK	74.0	-4.8	1.68 V	41	74.80	-5.60
2	2390.00	50.4 AV	54.0	-3.6	1.68 V	41	56.00	-5.60
3	*2437.00	110.0 PK			1.68 V	41	115.40	-5.40
4	*2437.00	98.2 AV			1.68 V	41	103.60	-5.40
5	2483.50	68.4 PK	74.0	-5.6	1.68 V	41	73.70	-5.30
6	2483.50	48.7 AV	54.0	-5.3	1.68 V	41	54.00	-5.30
7	4874.00	39.3 PK	74.0	-34.7	1.81 V	69	38.30	1.00
8	4874.00	29.4 AV	54.0	-24.6	1.81 V	69	28.40	1.00
9	7311.00	43.3 PK	74.0	-30.7	2.54 V	86	35.70	7.60
10	7311.00	31.5 AV	54.0	-22.5	2.54 V	86	23.90	7.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	110.2 PK			1.72 H	0	115.60	-5.40
2	*2452.00	97.2 AV			1.72 H	0	102.60	-5.40
3	2483.50	71.3 PK	74.0	-2.7	1.72 H	0	76.60	-5.30
4	2483.50	53.7 AV	54.0	-0.3	1.72 H	0	59.00	-5.30
5	4904.00	40.7 PK	74.0	-33.3	3.51 H	339	39.50	1.20
6	4904.00	35.8 AV	54.0	-18.2	3.51 H	339	34.60	1.20
7	7356.00	44.4 PK	74.0	-29.6	1.63 H	218	36.70	7.70
8	7356.00	31.4 AV	54.0	-22.6	1.63 H	218	23.70	7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	106.7 PK			1.51 V	48	112.10	-5.40
2	*2452.00	94.8 AV			1.51 V	48	100.20	-5.40
3	2483.50	67.3 PK	74.0	-6.7	1.51 V	48	72.60	-5.30
4	2483.50	48.2 AV	54.0	-5.8	1.51 V	48	53.50	-5.30
5	4904.00	44.2 PK	74.0	-29.8	1.85 V	94	43.00	1.20
6	4904.00	33.9 AV	54.0	-20.1	1.85 V	94	32.70	1.20
7	7356.00	43.4 PK	74.0	-30.6	2.84 V	55	35.70	7.70
8	7356.00	31.0 AV	54.0	-23.0	2.84 V	55	23.30	7.70

REMARKS:

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

Below 1GHz Data:

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	below 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	108.82	35.7 QP	43.5	-7.8	2.50 H	92	47.20	-11.50
2	128.90	24.2 QP	43.5	-19.3	2.50 H	77	34.20	-10.00
3	256.18	21.3 QP	46.0	-24.7	2.50 H	67	31.00	-9.70
4	325.03	22.5 QP	46.0	-23.5	1.00 H	213	29.70	-7.20
5	403.67	22.0 QP	46.0	-24.0	1.00 H	61	27.30	-5.30
6	609.36	24.8 QP	46.0	-21.2	2.50 H	360	25.00	-0.20
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	73.93	33.8 QP	40.0	-6.2	1.50 V	9	45.50	-11.70
2	111.57	34.0 QP	43.5	-9.5	1.00 V	9	45.20	-11.20
3	162.53	23.0 QP	43.5	-20.5	1.00 V	250	31.70	-8.70
4	270.24	25.6 QP	46.0	-20.4	1.50 V	175	34.50	-8.90
5	350.00	23.6 QP	46.0	-22.4	1.50 V	117	30.50	-6.90
6	610.40	24.6 QP	46.0	-21.4	2.50 V	173	24.80	-0.20

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. 23, 2015	Oct. 22, 2016
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 28, 2015	Oct. 27, 2016
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	Jun. 20, 2016	Jun. 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.3	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: June 22, 2016

4.2.3 Test Procedures

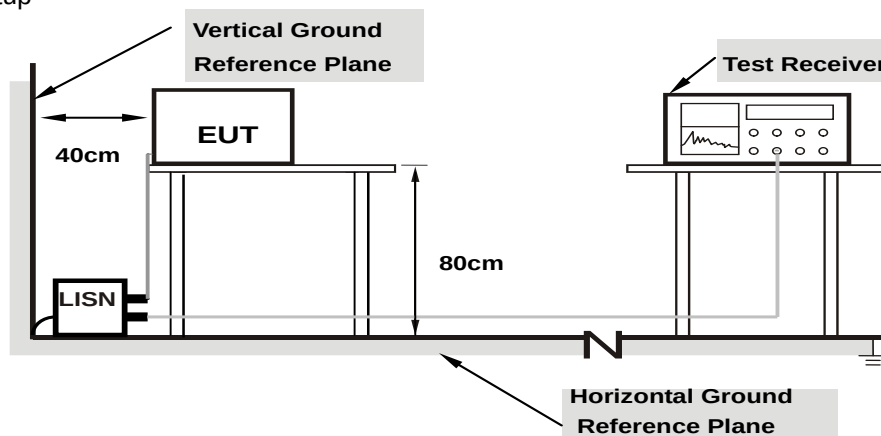
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

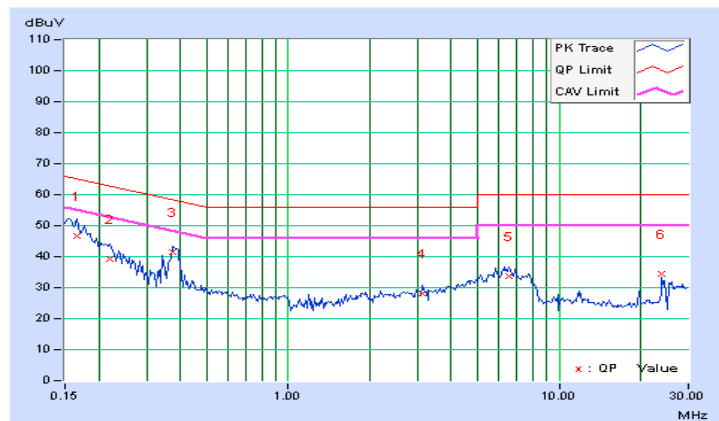
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	10.21	36.50	22.89	46.71	33.10	65.18	55.18	-18.46	-22.07
2	0.22031	10.22	29.11	16.39	39.33	26.61	62.81	52.81	-23.48	-26.20
3	0.37266	10.22	31.29	26.35	41.51	36.57	58.44	48.44	-16.93	-11.87
4	3.11719	10.30	17.99	12.19	28.29	22.49	56.00	46.00	-27.71	-23.51
5	6.55469	10.43	23.37	18.81	33.80	29.24	60.00	50.00	-26.20	-20.76
6	24.00000	11.43	23.17	22.61	34.60	34.04	60.00	50.00	-25.40	-15.96

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.

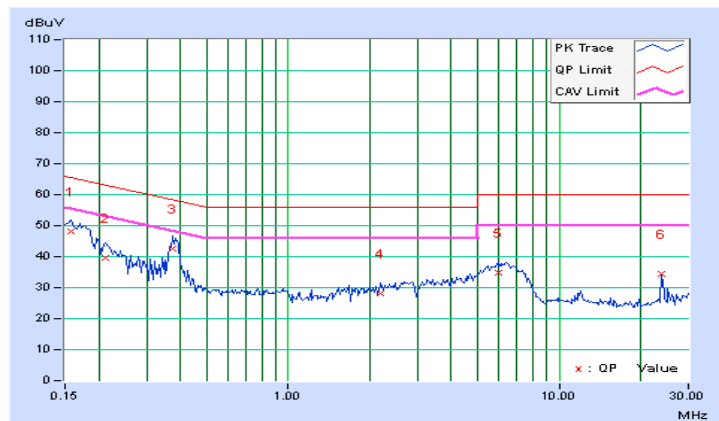


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.19	38.02	23.58	48.21	33.77	65.58	55.58	-17.37	-21.81
2	0.21250	10.21	29.47	16.37	39.68	26.58	63.11	53.11	-23.43	-26.53
3	0.37656	10.20	32.21	27.18	42.41	37.38	58.35	48.35	-15.94	-10.97
4	2.17969	10.29	18.01	13.50	28.30	23.79	56.00	46.00	-27.70	-22.21
5	5.94141	10.33	24.41	19.66	34.74	29.99	60.00	50.00	-25.26	-20.01
6	24.00000	11.13	23.45	22.49	34.58	33.62	60.00	50.00	-25.42	-16.38

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.

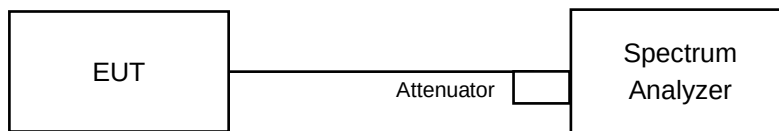


4.3 6dB Bandwidth Measurement

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

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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	10.13	10.12	0.5	Pass
6	2437	10.10	10.12	0.5	Pass
11	2462	10.11	10.13	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.45	16.43	0.5	Pass
6	2437	16.40	16.42	0.5	Pass
11	2462	16.44	16.43	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.61	17.61	0.5	Pass
6	2437	17.63	17.63	0.5	Pass
11	2462	17.60	17.63	0.5	Pass

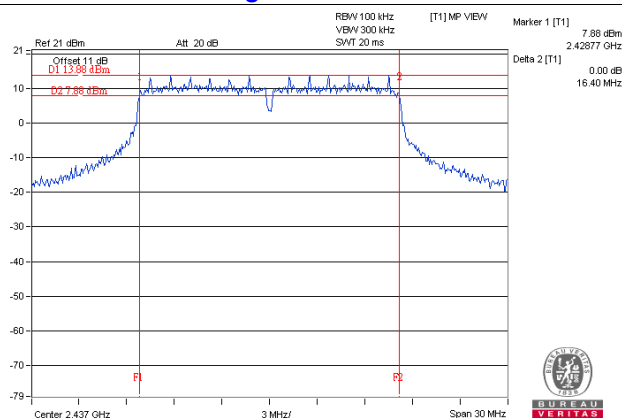
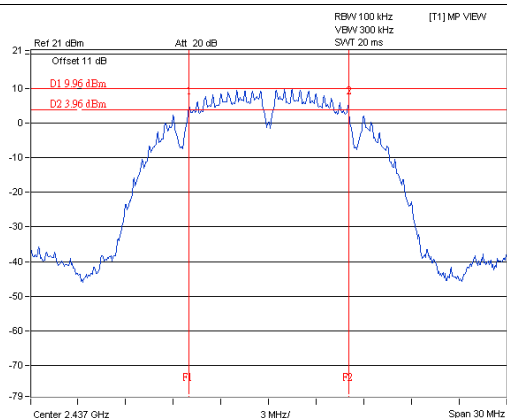
802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.41	36.41	0.5	Pass
6	2437	36.21	36.40	0.5	Pass
9	2452	36.22	36.39	0.5	Pass

Spectrum Plot of Worst Value

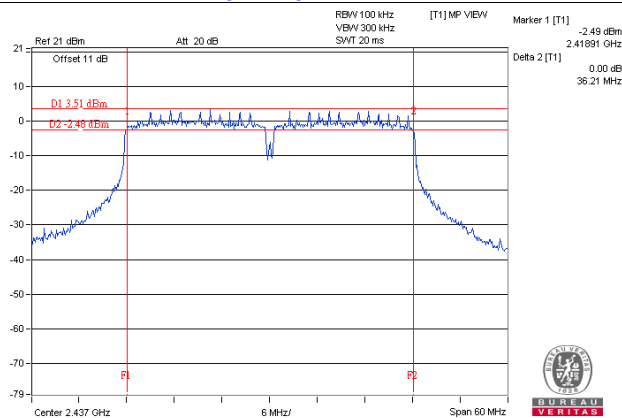
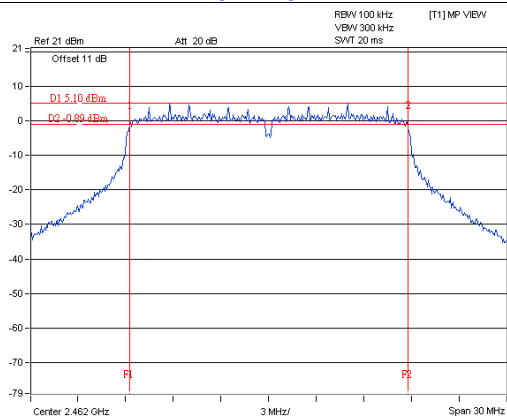
802.11b / Chain 0 : CH6

802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0 : CH11

802.11n (HT40) / Chain 0 : CH6



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

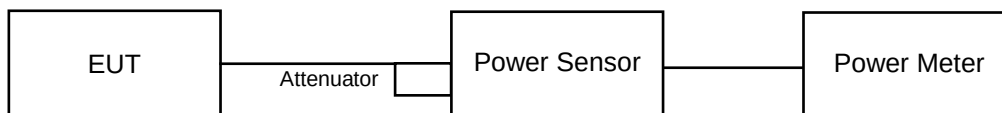
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

802.11b

Chan.	Freq. (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.62	21.92	300.808	24.78	30	Pass
6	2437	19.47	19.88	185.787	22.69	30	Pass
11	2462	22.73	22.87	381.141	25.81	30	Pass

802.11g

Chan.	Freq. (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	17.63	18.25	124.777	20.96	30	Pass
6	2437	25.61	25.84	747.622	28.74	30	Pass
11	2462	19.04	19.43	167.868	22.25	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	17.90	18.29	129.113	21.11	30	Pass
6	2437	25.61	25.84	747.622	28.74	30	Pass
11	2462	16.65	17.20	98.719	19.94	30	Pass

802.11n (HT40)

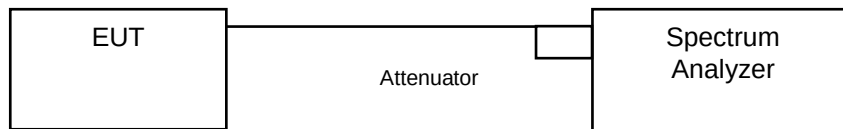
Chan.	Freq. (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	14.51	15.48	63.567	18.03	30	Pass
6	2437	17.75	18.06	123.539	20.92	30	Pass
9	2452	14.25	14.93	57.724	17.61	30	Pass

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

- Set instrument center frequency to DTS channel center frequency.
- Set span to at least 1.5 times the OBW.
- Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set VBW $\geq 3 \times \text{RBW}$.
- Detector = power averaging (RMS) or sample detector (when RMS not available).
- Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span}/\text{RBW}$.
- Sweep time = auto couple.
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- 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/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-7.31	3.01	-4.30	4.99	Pass
	6	2437	-9.77	3.01	-6.76	4.99	Pass
	11	2462	-7.13	3.01	-4.12	4.99	Pass
1	1	2412	-6.39	3.01	-3.38	4.99	Pass
	6	2437	-7.76	3.01	-4.75	4.99	Pass
	11	2462	-5.75	3.01	-2.74	4.99	Pass

NOTE: Directional gain = $6\text{dBi} + 10\log(2) = 9.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(9.01-6) = 4.99\text{dBm}$.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-12.28	3.01	-9.27	4.99	Pass
	6	2437	-5.12	3.01	-2.11	4.99	Pass
	11	2462	-12.04	3.01	-9.03	4.99	Pass
1	1	2412	-12.21	3.01	-9.20	4.99	Pass
	6	2437	-4.50	3.01	-1.49	4.99	Pass
	11	2462	-11.03	3.01	-8.02	4.99	Pass

NOTE: Directional gain = $6\text{dBi} + 10\log(2) = 9.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(9.01-6) = 4.99\text{dBm}$.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-13.36	3.01	-10.35	4.99	Pass
	6	2437	-5.42	3.01	-2.41	4.99	Pass
	11	2462	-14.04	3.01	-11.03	4.99	Pass
1	1	2412	-12.31	3.01	-9.30	4.99	Pass
	6	2437	-4.98	3.01	-1.97	4.99	Pass
	11	2462	-13.14	3.01	-10.13	4.99	Pass

NOTE: Directional gain = $6\text{dBi} + 10\log(2) = 9.01\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(9.01-6) = 4.99\text{dBm}$.

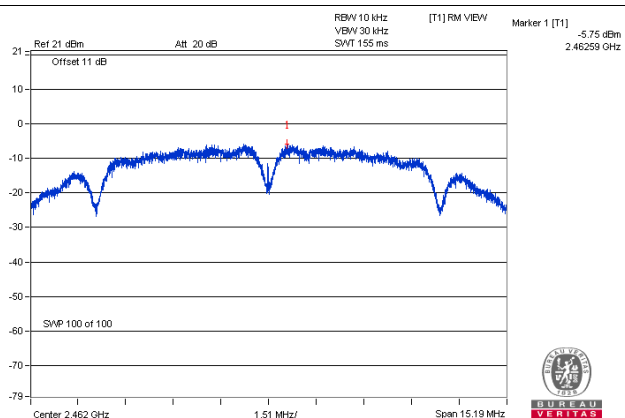
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/10kHz)	10 log (N=2) dB	Total PSD (dBm/10kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-19.00	3.01	-15.99	4.99	Pass
	6	2437	-15.12	3.01	-12.11	4.99	Pass
	9	2452	-12.27	3.01	-9.26	4.99	Pass
1	3	2422	-9.34	3.01	-6.33	4.99	Pass
	6	2437	-13.21	3.01	-10.20	4.99	Pass
	9	2452	-18.28	3.01	-15.27	4.99	Pass

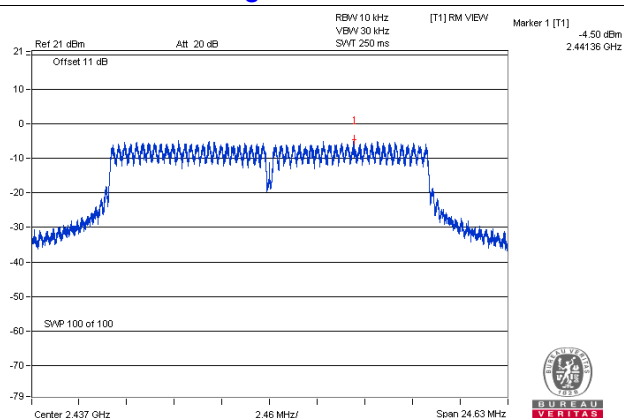
NOTE: Directional gain = 6dBi + 10log(2) = 9.01dBi > 6dBi , so the power density limit shall be reduced to 8-(9.01-6) = 4.99dBm.

Spectrum Plot of Worst Value

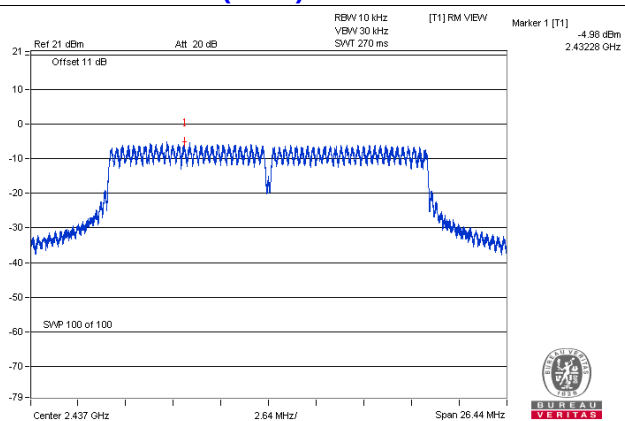
802.11b / Chain 1 : CH11



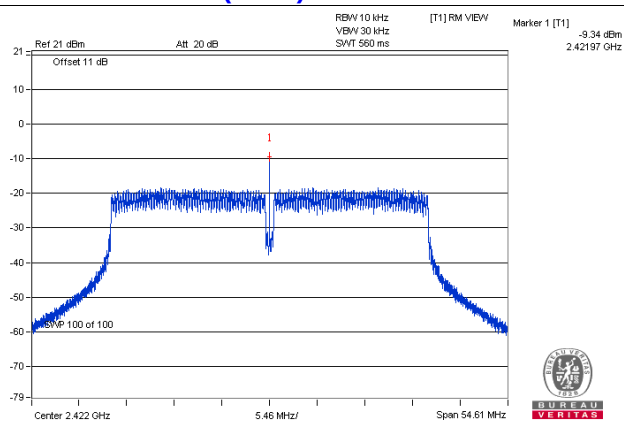
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 1 : CH6



802.11n (HT40) / Chain 1 : CH3

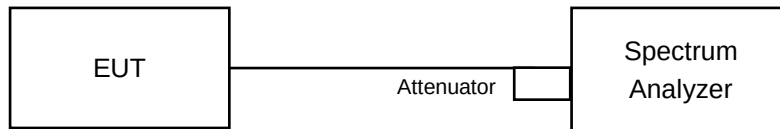


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 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 OOB

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

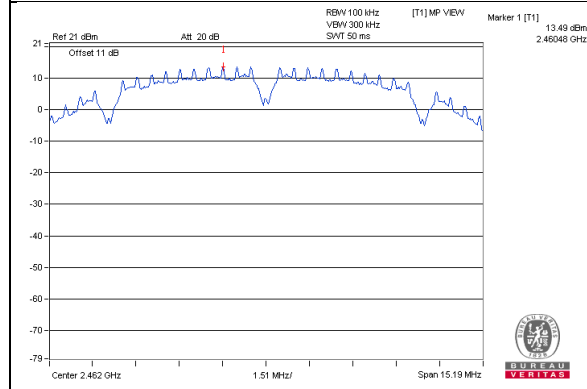
Same as Item 4.3.6

4.6.7 Test Results

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

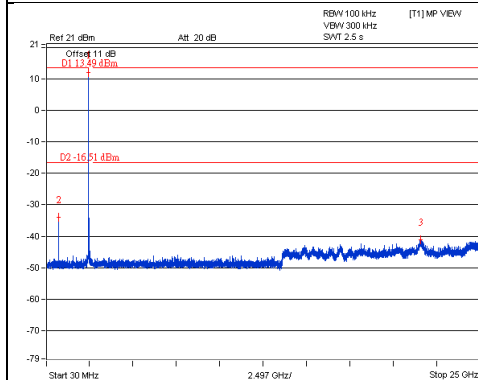
802.11b

Maximum REF

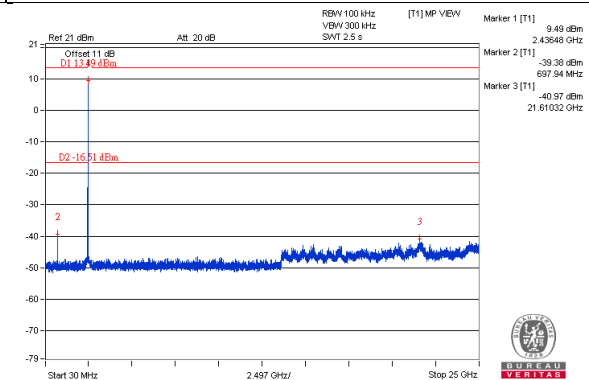


Chain 0

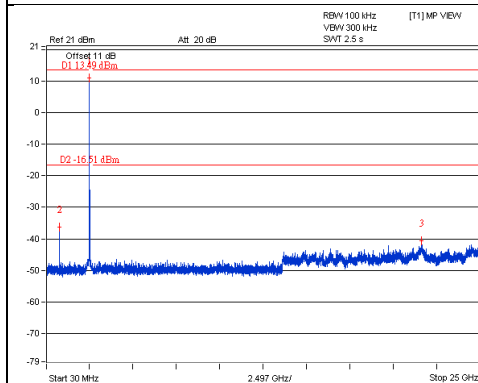
CH 1



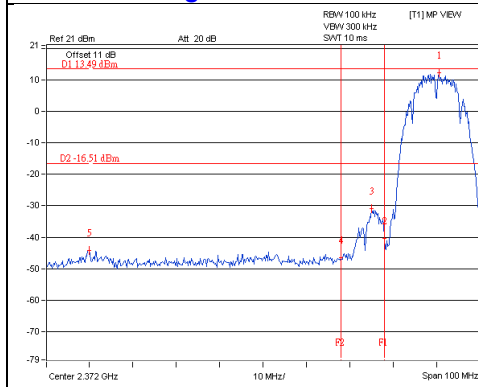
CH 6



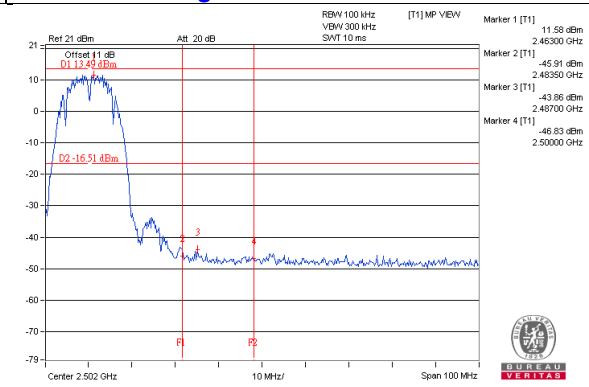
CH 11



CH 1 Band edge

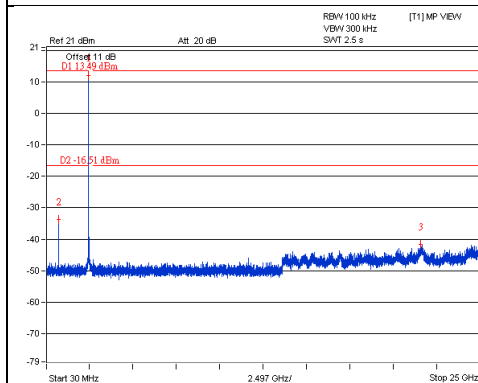


CH 11 Band edge

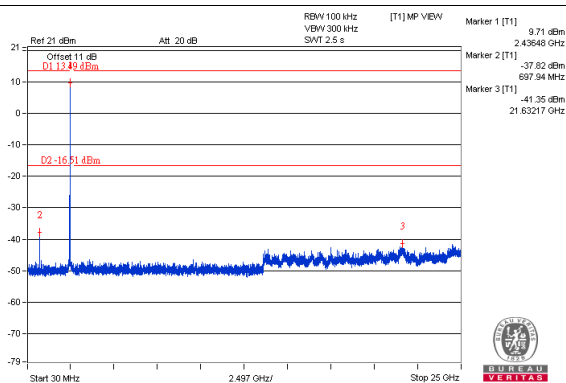


Chain 1

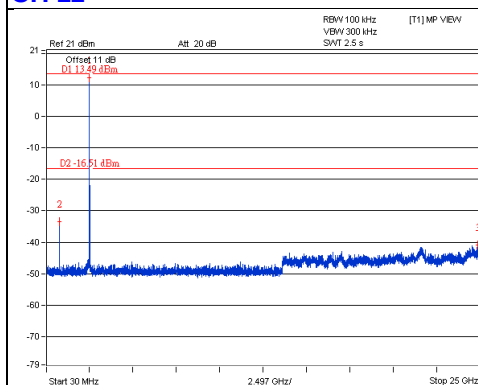
CH 1



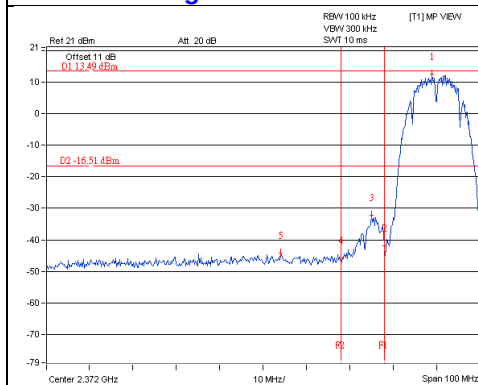
CH 6



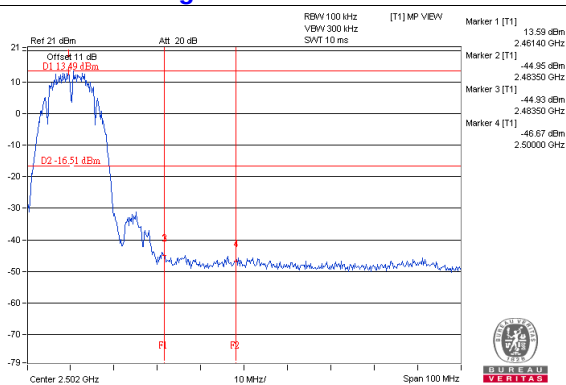
CH 11



CH 1 Band edge

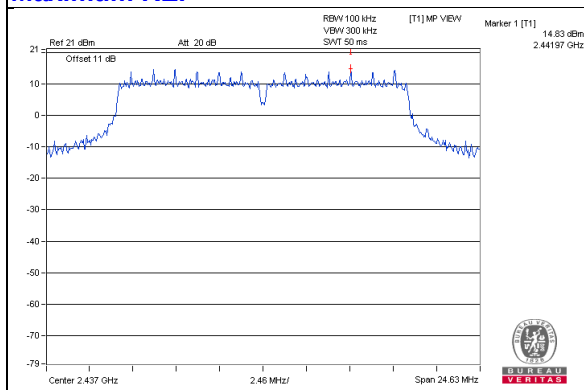


CH 11 Band edge



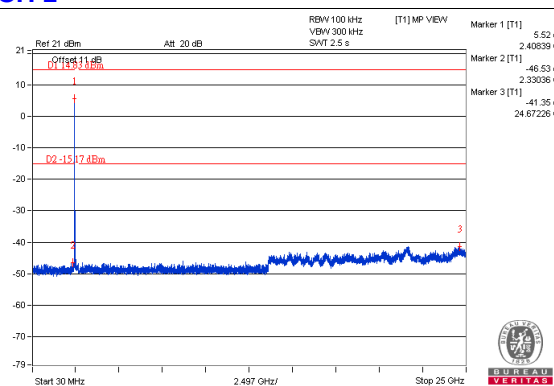
802.11g

Maximum REF

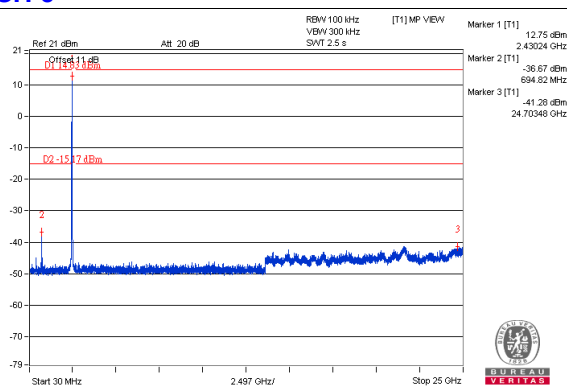


Chain 0

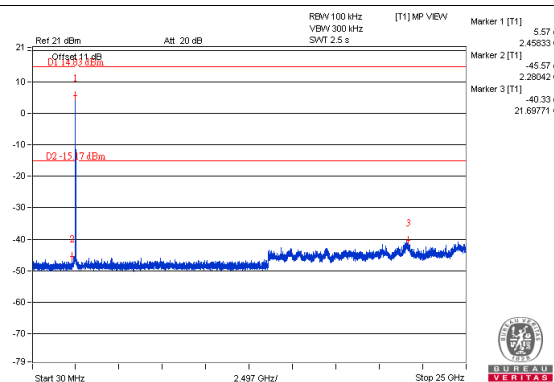
CH 1



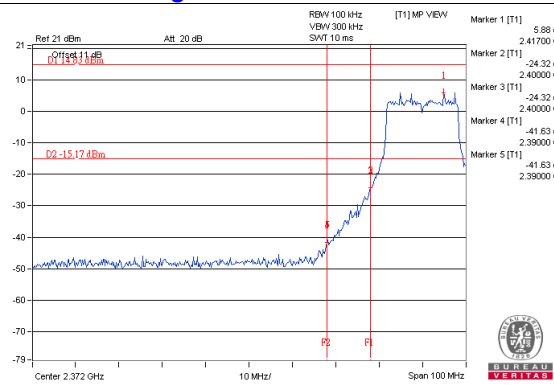
CH 6



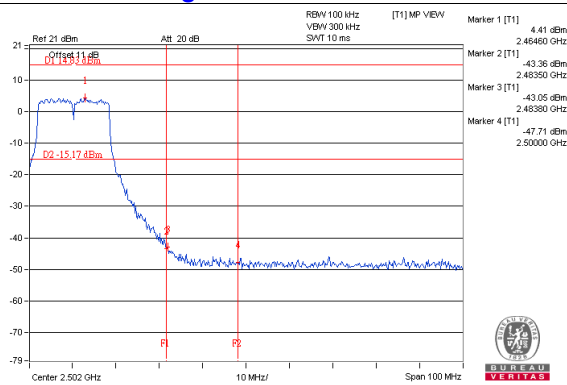
CH 11



CH 1 Band edge

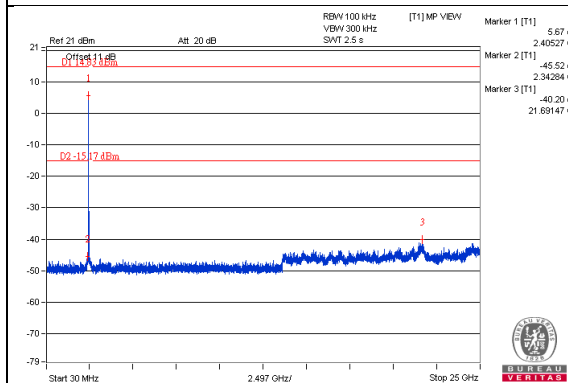


CH 11 Band edge

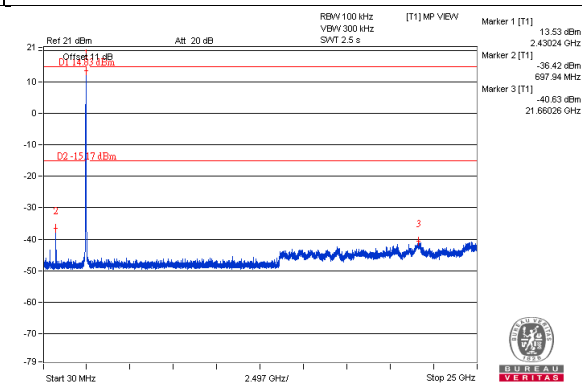


Chain 1

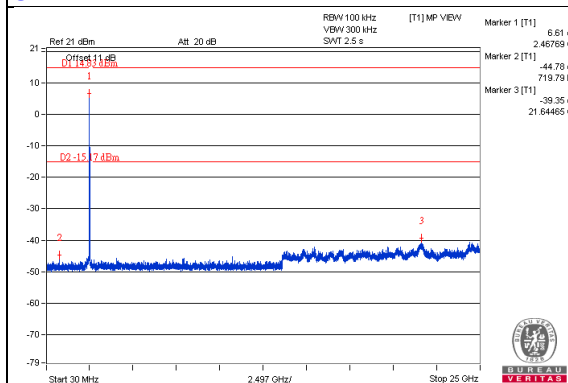
CH 1



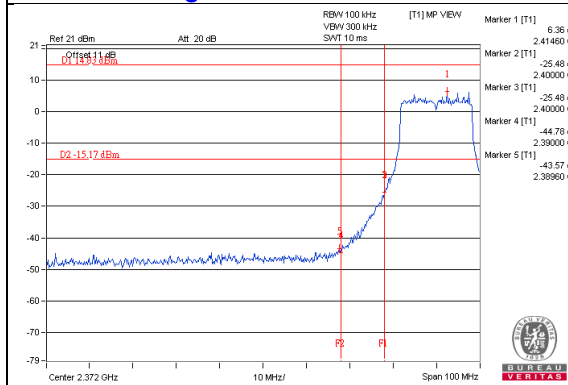
CH 6



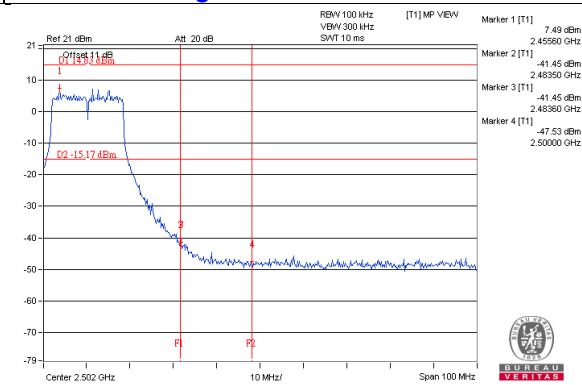
CH 11



CH 1 Band edge

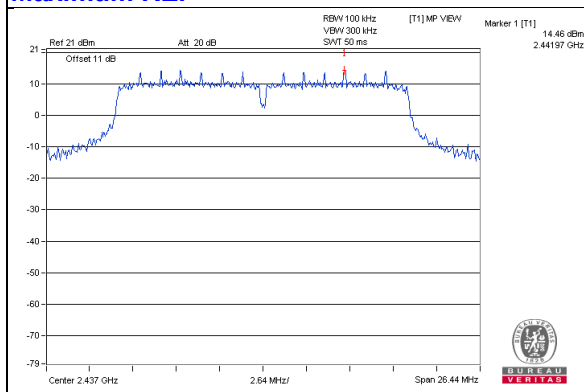


CH 11 Band edge



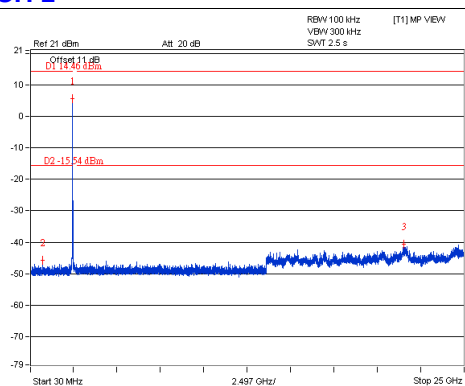
802.11n (HT20)

Maximum REF

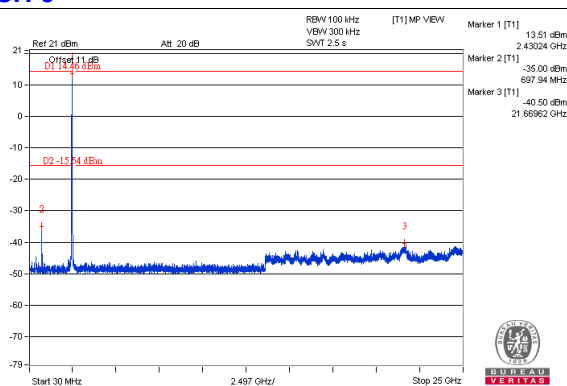


Chain 0

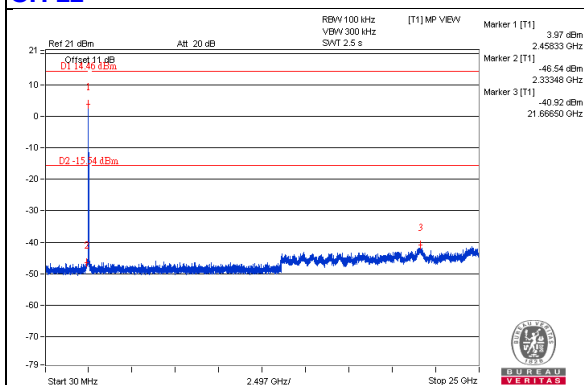
CH 1



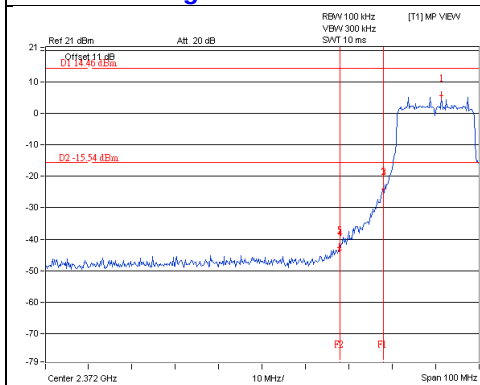
CH 6



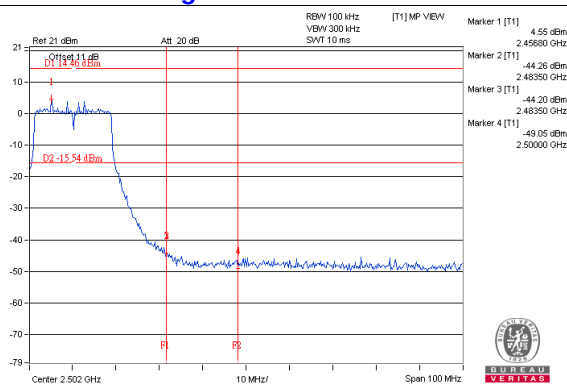
CH 11



CH 1 Band edge

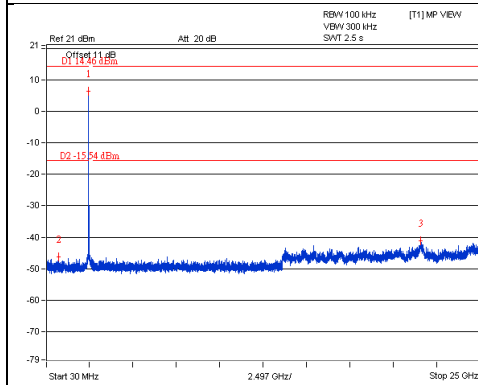


CH 11 Band edge

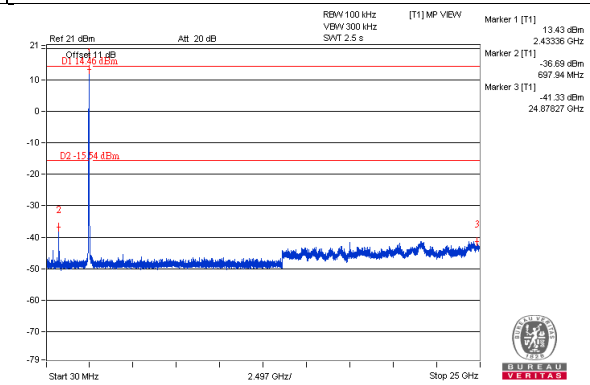


Chain 1

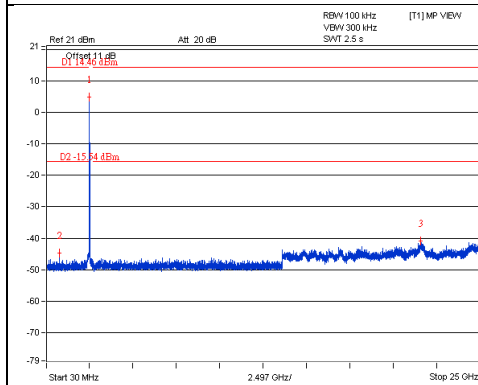
CH 1



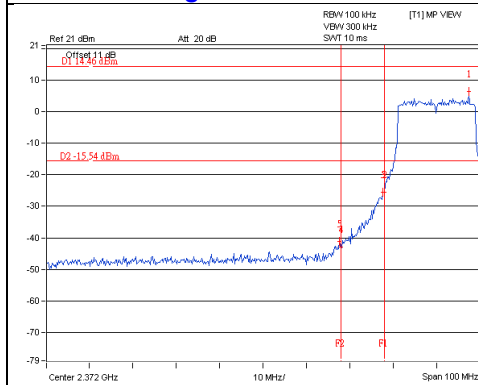
CH 6



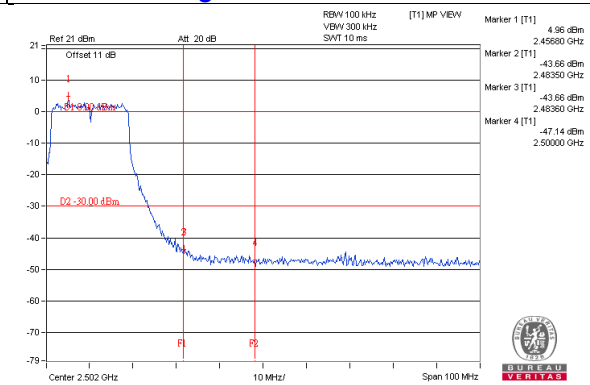
CH 11



CH 1 Band edge

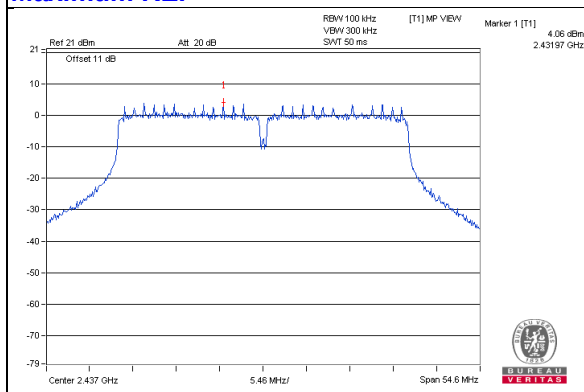


CH 11 Band edge



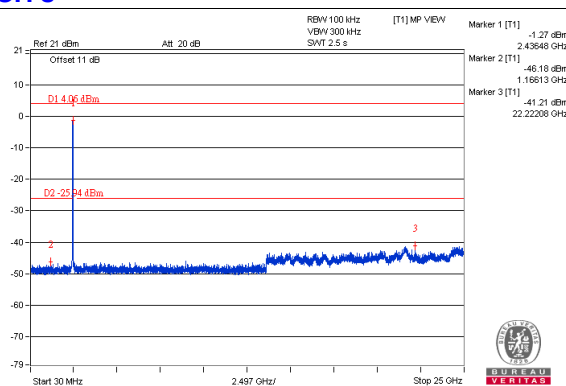
802.11n (HT40)

Maximum REF

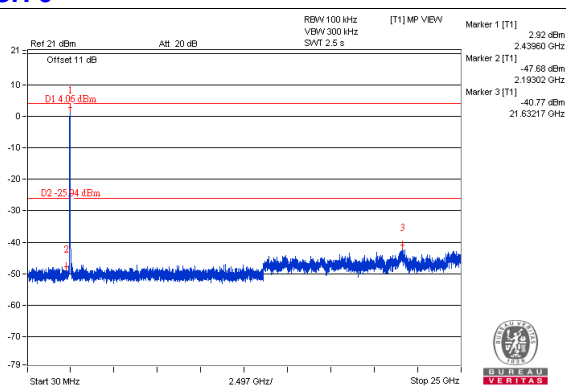


Chain 0

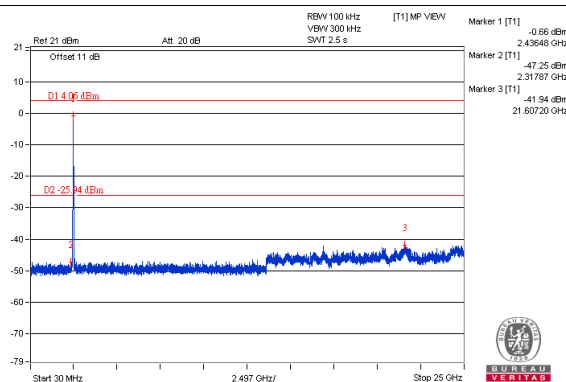
CH 3



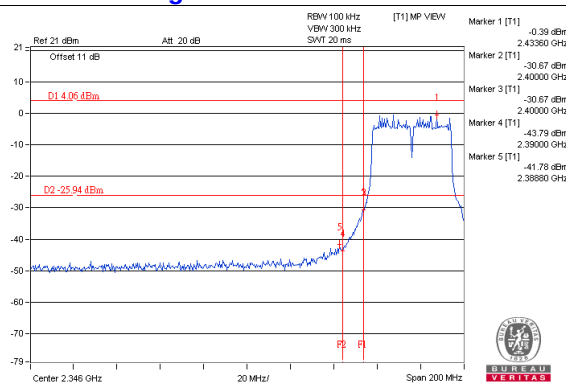
CH 6



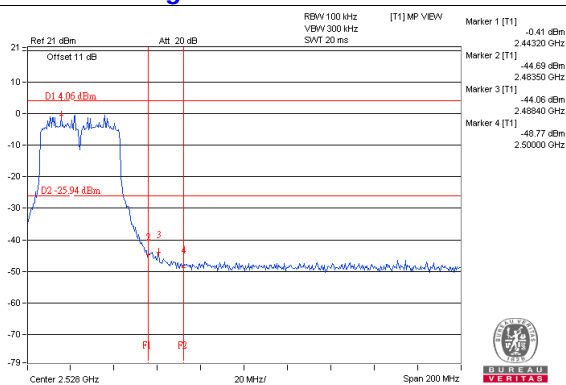
CH 9



CH 3 Band edge

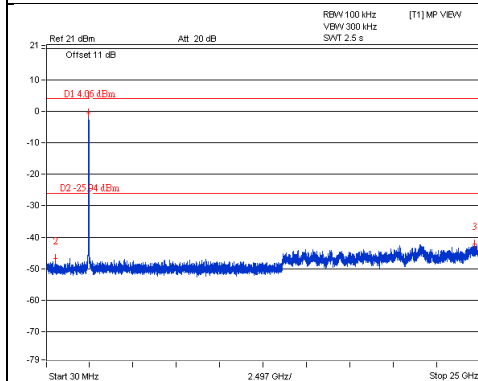


CH 9 Band edge

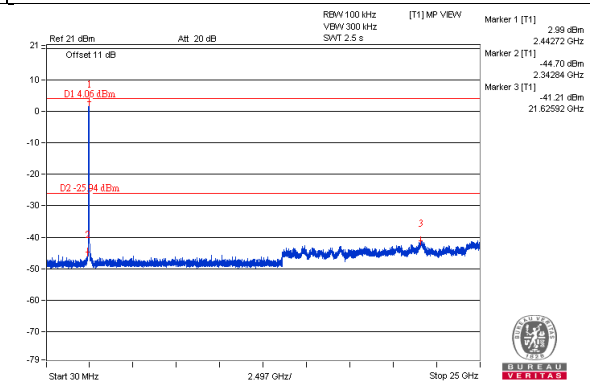


Chain 1

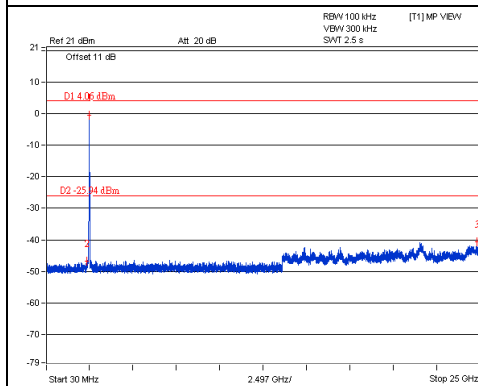
CH 3



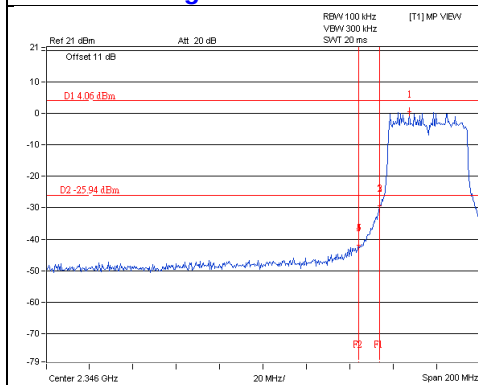
CH 6



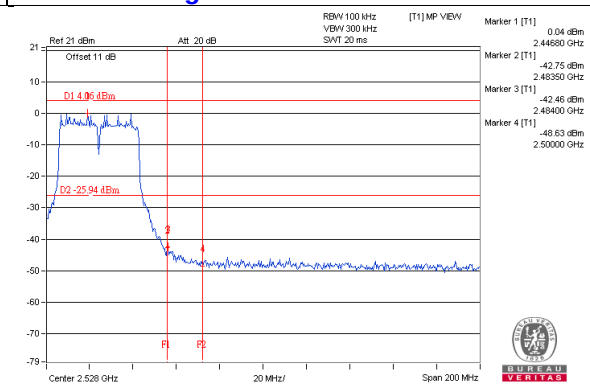
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are 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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