FCC Test Report

Report No.:	RF170221E06
FCC ID:	XCNUBC1307
Test Model:	UBC1307
Received Date:	Feb. 21, 2017
Test Date:	Mar. 02 to 06, 2017
Issued Date:	Mar. 23, 2017
Applicant:	Ubee Interactive Corp.
Address:	10F-1, No. 5, Taiyuan 1st St. Jhubei Ci, Hsinchu County 302, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF170221E06	Original release.	Mar. 23, 2017

1 Certificate of Conformity

Product:	Wireless eMTA, Cable Modem
Brand:	Ubee
Test Model:	UBC1307
Sample Status:	ENGINEERING SAMPLE
Applicant:	Ubee Interactive Corp.
Test Date:	Mar. 02 to 06, 2017
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10: 2013

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

Prepared by : Cindy Hsin , **Date:** Mar. 23, 2017

Cindy Hsin / Specialist

Approved by : , **Date:** Mar. 23, 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 -13.58dB at 0.22812MHz.
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 and 2483.5MHz
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.34 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.47 dB
	6GHz ~ 18GHz	3.75 dB
	18GHz ~ 40GHz	3.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless eMTA, Cable Modem
Brand	Ubee
Test Model	UBC1307
Sample Status	ENGINEERING SAMPLE
Power Supply rating	DC 12V from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	703.137mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The EUT has below Ubee ID, which are identical to each other in all aspects except for the followings:

Product Name	(1) Wireless eMTA (2) Cable Modem			
Model	UBC1307			
Ubee ID	UBC1307-AA00	UBC1307-BA00	UBC1307-CA00	UBC1307-DA00
Ethernet	2 port	1 port	2 port	1 port
VoIP	NA	NA	1 port	1 port

From the above IDs, **Ubee ID: UBC1307-CA00** was selected as representative mode for the test and its data was recorded in this report.

2. The EUT must be supplied with a adapter as following below table:

Brand	Model No.	Spec.
LEI	MU18AY120150-A1	Input: 100-240Vac 50-60Hz, 0.6A Output: 12V/ 1.5A DC output cable (unshielded, 1.5m)

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

Antenna No	Brand	Model	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
1	NA	NA	3.41	2.4~2.4835	PCB(Printing)	none (like solder)
2	NA	NA	3.48	2.4~2.4835	PCB(Printing)	none (like solder)

4. The EUT incorporates a MIMO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1Tx Fixed Chain 0	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX

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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

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

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

Radiated Emission Test (Above 1GHz):

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

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

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

Radiated Emission Test (Below 1GHz):

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

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

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

Power Line Conducted Emission Test:

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

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

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

Antenna Port Conducted Measurement:

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

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

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

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

Test Condition:

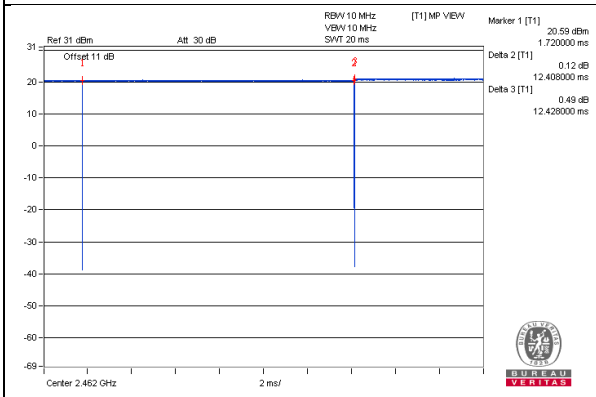
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 64%RH	120Vac, 60Hz	Rey Chen
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Rey Chen
PLC	24deg. C, 60%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

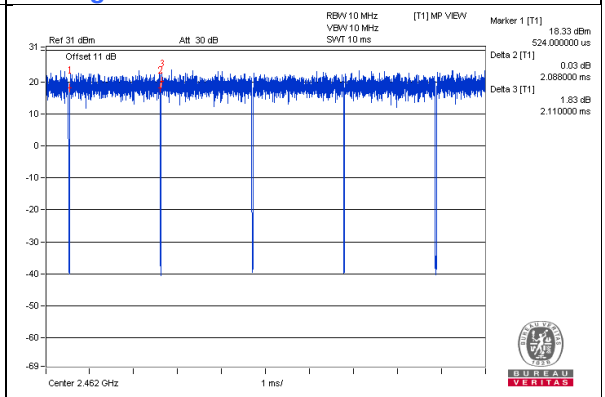
If duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11b: Duty cycle = 12.408/12.428 = 0.998
802.11g: Duty cycle = 2.088/2.11 = 0.99
802.11n (HT20): Duty cycle = 1.919/1.95 = 0.984
802.11n (HT40): Duty cycle = 0.939/0.958 = 0.98

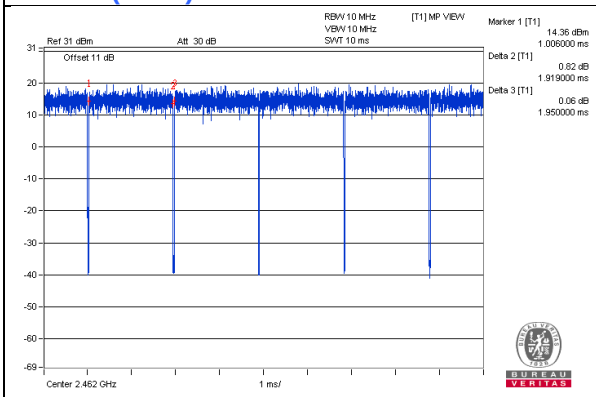
802.11b



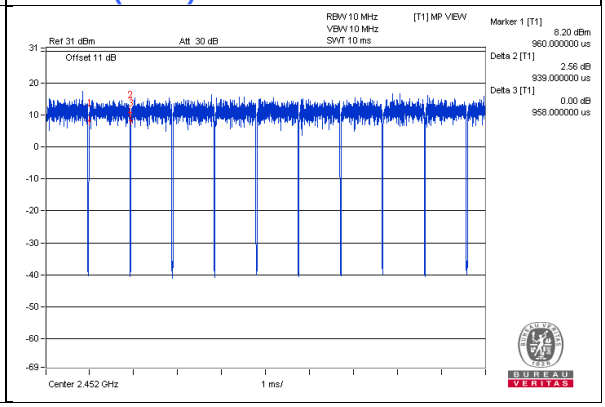
802.11g



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.	Telephone	Remeo	TE-812	97285638	NA	Provided by Lab
B.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

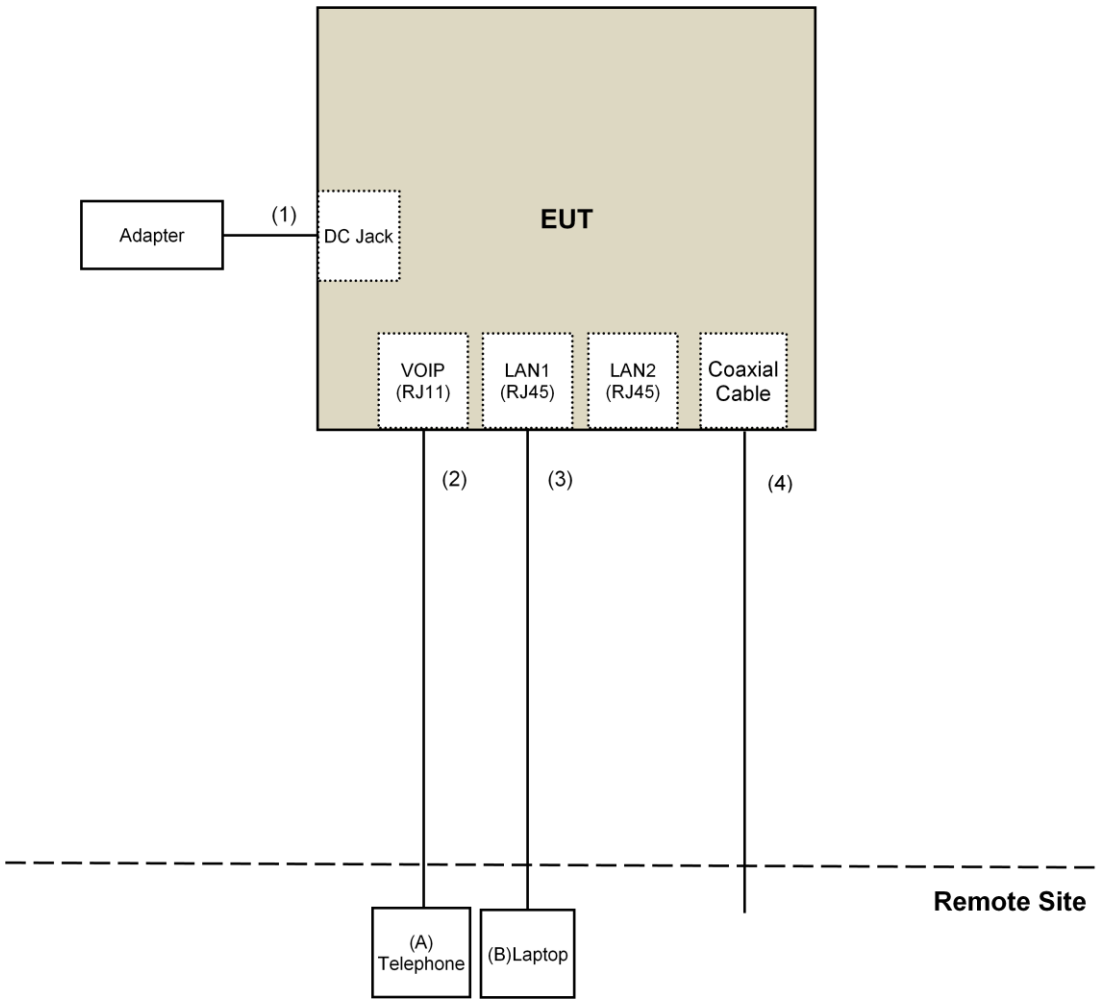
Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-11 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	Coaxial Cable	1	10	Yes	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

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 20dB below the highest level of the desired power:

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

NOTE:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	Aug. 18, 2016	Aug. 17, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 07, 2016	May 06, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Dec. 29, 2016	Dec. 28, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 02, 2016	Apr. 01, 2017
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 28, 2016	Dec. 27, 2017
Pre-Amplifier EMCI	EMC12630SE	980384	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160922 150317 150322	Feb. 02, 2017 Mar. 30, 2016 Mar. 30, 2016	Feb. 01, 2018 Mar. 29, 2017 Mar. 29, 2017
Spectrum Analyzer Keysight	N9030A	MY54490520	July 29, 2016	July 28, 2017
Pre-Amplifier EMCI	EMC184045SE	980386	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSv40	100964	June 28, 2016	June 27, 2017
Power meter Anritsu	ML2495A	0824006	May 26, 2016	May 25, 2017
Power sensor Anritsu	MA2411B	0738172	May 26, 2016	May 25, 2017

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The FCC Site Registration No. is 147459
5. The CANADA Site Registration No. is 20331-1
6. Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Mar. 02, 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:

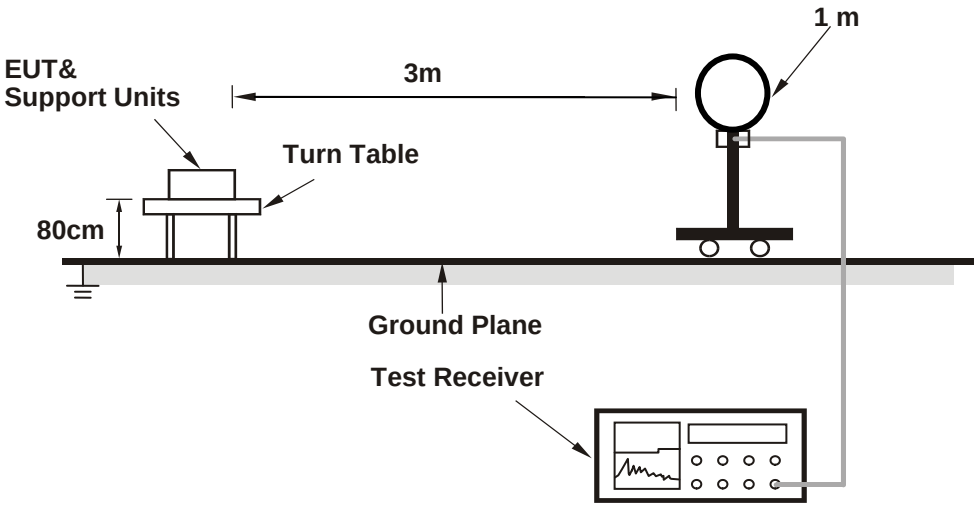
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

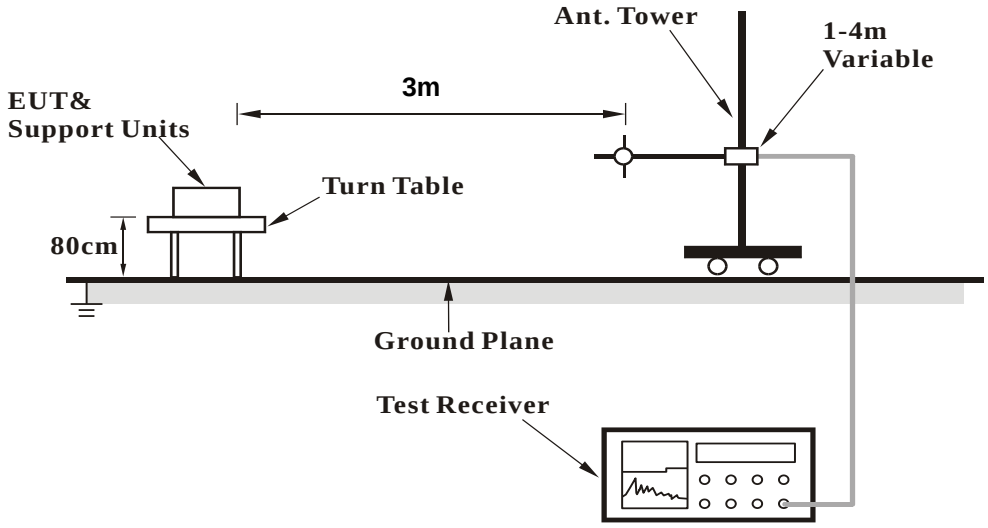
No deviation.

4.1.5 Test Setup

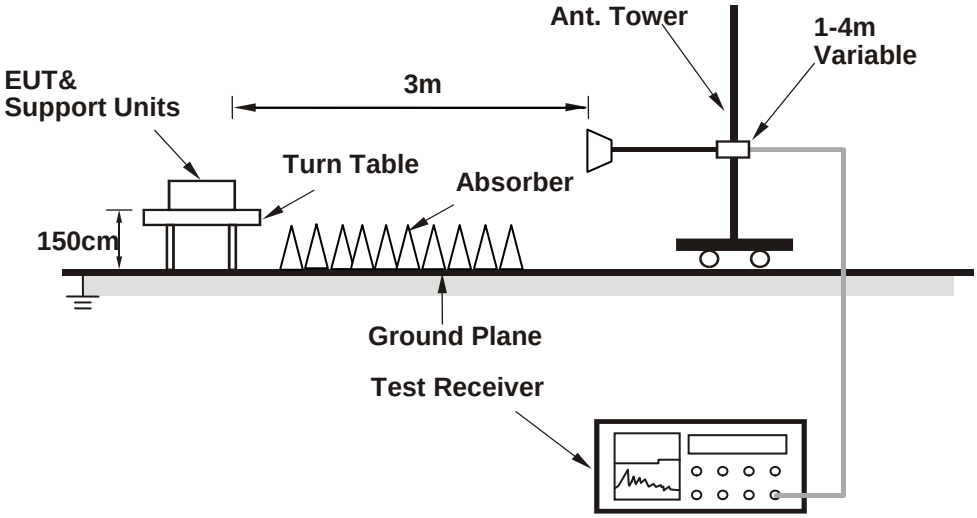
For Radiated emission below 30MHz



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 (MTool 2.0.1.0) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.3 PK	74.0	-15.7	1.31 H	309	60.3	-2.0
2	2390.00	51.9 AV	54.0	-2.1	1.31 H	309	53.9	-2.0
3	*2412.00	107.6 PK			1.31 H	309	109.5	-1.9
4	*2412.00	105.1 AV			1.31 H	309	107.0	-1.9
5	4824.00	38.5 PK	74.0	-35.5	1.01 H	334	36.2	2.3
6	4824.00	28.5 AV	54.0	-25.5	1.01 H	334	26.2	2.3
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	59.4 PK	74.0	-14.6	3.48 V	20	61.4	-2.0
2	2390.00	53.5 AV	54.0	-0.5	3.48 V	20	55.5	-2.0
3	*2412.00	108.9 PK			3.48 V	20	110.8	-1.9
4	*2412.00	106.5 AV			3.48 V	20	108.4	-1.9
5	4824.00	41.5 PK	74.0	-32.5	3.39 V	28	39.2	2.3
6	4824.00	31.2 AV	54.0	-22.8	3.39 V	28	28.9	2.3

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	52.2 PK	74.0	-21.8	1.32 H	307	54.2	-2.0
2	2390.00	41.3 AV	54.0	-12.7	1.32 H	307	43.3	-2.0
3	*2437.00	111.3 PK			1.32 H	307	113.2	-1.9
4	*2437.00	108.8 AV			1.32 H	307	110.7	-1.9
5	2483.50	60.6 PK	74.0	-13.4	1.32 H	307	62.4	-1.8
6	2483.50	50.3 AV	54.0	-3.7	1.32 H	307	52.1	-1.8
7	4874.00	41.6 PK	74.0	-32.4	1.01 H	344	39.2	2.4
8	4874.00	34.4 AV	54.0	-19.6	1.01 H	344	32.0	2.4
9	7311.00	43.7 PK	74.0	-30.3	1.77 H	338	35.5	8.2
10	7311.00	32.3 AV	54.0	-21.7	1.77 H	338	24.1	8.2
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	53.3 PK	74.0	-20.7	3.38 V	22	55.3	-2.0
2	2390.00	42.9 AV	54.0	-11.1	3.38 V	22	44.9	-2.0
3	*2437.00	112.6 PK			3.38 V	22	114.5	-1.9
4	*2437.00	110.2 AV			3.38 V	22	112.1	-1.9
5	2483.50	63.2 PK	74.0	-10.8	3.38 V	22	65.0	-1.8
6	2483.50	53.5 AV	54.0	-0.5	3.38 V	22	55.3	-1.8
7	4874.00	45.8 PK	74.0	-28.2	2.50 V	285	43.4	2.4
8	4874.00	42.2 AV	54.0	-11.8	2.50 V	285	39.8	2.4
9	7311.00	44.1 PK	74.0	-29.9	1.54 V	317	35.9	8.2
10	7311.00	34.6 AV	54.0	-19.4	1.54 V	317	26.4	8.2

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 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	106.5 PK			1.26 H	306	108.3	-1.8
2	*2462.00	104.0 AV			1.26 H	306	105.8	-1.8
3	2483.50	59.9 PK	74.0	-14.1	1.31 H	309	61.7	-1.8
4	2483.50	52.4 AV	54.0	-1.6	1.31 H	309	54.2	-1.8
5	4924.00	41.8 PK	74.0	-32.2	1.03 H	351	39.3	2.5
6	4924.00	34.4 AV	54.0	-19.6	1.03 H	351	31.9	2.5
7	7386.00	43.7 PK	74.0	-30.3	1.73 H	333	35.3	8.4
8	7386.00	32.1 AV	54.0	-21.9	1.73 H	333	23.7	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.8 PK			3.43 V	14	109.6	-1.8
2	*2462.00	105.4 AV			3.43 V	14	107.2	-1.8
3	2483.50	61.0 PK	74.0	-13.0	3.43 V	14	62.8	-1.8
4	2483.50	53.5 AV	54.0	-0.5	3.43 V	14	55.3	-1.8
5	4924.00	42.1 PK	74.0	-31.9	3.34 V	17	39.6	2.5
6	4924.00	35.2 AV	54.0	-18.8	3.34 V	17	32.7	2.5
7	7386.00	44.1 PK	74.0	-29.9	2.51 V	286	35.7	8.4
8	7386.00	33.2 AV	54.0	-20.8	2.51 V	286	24.8	8.4

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.6 PK	74.0	-6.4	1.75 H	296	69.6	-2.0
2	2390.00	53.8 AV	54.0	-0.2	1.75 H	296	55.8	-2.0
3	*2412.00	107.1 PK			1.75 H	296	109.0	-1.9
4	*2412.00	97.0 AV			1.75 H	296	98.9	-1.9
5	4824.00	35.3 PK	74.0	-38.7	1.00 H	0	33.0	2.3
6	4824.00	23.5 AV	54.0	-30.5	1.00 H	0	21.2	2.3
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	3.51 V	18	70.6	-2.0
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**3.51 V**	**18**	**55.9**	**-2.0**
3	*2412.00	108.4 PK			3.51 V	18	110.3	-1.9
4	*2412.00	98.1 AV			3.51 V	18	100.0	-1.9
5	4824.00	36.0 PK	74.0	-38.0	2.20 V	72	33.7	2.3
6	4824.00	24.3 AV	54.0	-29.7	2.20 V	72	22.0	2.3

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	66.9 PK	74.0	-7.1	1.77 H	311	68.9	-2.0
2	2390.00	50.0 AV	54.0	-4.0	1.77 H	311	52.0	-2.0
3	*2437.00	112.6 PK			1.77 H	311	114.5	-1.9
4	*2437.00	102.8 AV			1.77 H	311	104.7	-1.9
5	2483.50	69.6 PK	74.0	-4.4	1.77 H	311	71.4	-1.8
6	2483.50	53.3 AV	54.0	-0.7	1.77 H	311	55.1	-1.8
7	4874.00	37.4 PK	74.0	-36.6	1.02 H	339	35.0	2.4
8	4874.00	24.8 AV	54.0	-29.2	1.02 H	339	22.4	2.4
9	7311.00	41.8 PK	74.0	-32.2	1.75 H	344	33.6	8.2
10	7311.00	28.8 AV	54.0	-25.2	1.75 H	344	20.6	8.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.9 PK	74.0	-6.1	3.44 V	13	69.9	-2.0
2	2390.00	50.1 AV	54.0	-3.9	3.44 V	13	52.1	-2.0
3	*2437.00	113.9 PK			3.44 V	13	115.8	-1.9
4	*2437.00	103.9 AV			3.44 V	13	105.8	-1.9
5	2483.50	69.8 PK	74.0	-4.2	3.44 V	13	71.6	-1.8
6	2483.50	53.5 AV	54.0	-0.5	3.44 V	13	55.3	-1.8
7	4874.00	39.9 PK	74.0	-34.1	2.13 V	51	37.5	2.4
8	4874.00	35.3 AV	54.0	-18.7	2.13 V	51	32.9	2.4
9	7311.00	41.9 PK	74.0	-32.1	2.14 V	148	33.7	8.2
10	7311.00	28.9 AV	54.0	-25.1	2.14 V	148	20.7	8.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.2 PK			1.83 H	314	110.0	-1.8
2	*2462.00	97.6 AV			1.83 H	314	99.4	-1.8
3	2483.50	68.5 PK	74.0	-5.5	1.83 H	314	70.3	-1.8
4	2483.50	53.7 AV	54.0	-0.3	1.83 H	314	55.5	-1.8
5	4924.00	35.3 PK	74.0	-38.7	1.08 H	352	32.8	2.5
6	4924.00	23.5 AV	54.0	-30.5	1.08 H	352	21.0	2.5
7	7386.00	41.2 PK	74.0	-32.8	1.72 H	344	32.8	8.4
8	7386.00	27.7 AV	54.0	-26.3	1.72 H	344	19.3	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.5 PK			2.60 V	165	111.3	-1.8
2	*2462.00	98.7 AV			2.60 V	165	100.5	-1.8
3	2483.50	68.7 PK	74.0	-5.3	2.60 V	165	70.5	-1.8
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**2.60 V**	**165**	**55.7**	**-1.8**
5	4924.00	36.3 PK	74.0	-37.7	2.17 V	66	33.8	2.5
6	4924.00	24.5 AV	54.0	-29.5	2.17 V	66	22.0	2.5
7	7386.00	42.3 PK	74.0	-31.7	2.13 V	162	33.9	8.4
8	7386.00	28.8 AV	54.0	-25.2	2.13 V	162	20.4	8.4

REMARKS:

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

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	66.4 PK	74.0	-7.6	1.91 H	305	68.4	-2.0
2	2390.00	52.8 AV	54.0	-1.2	1.91 H	305	54.8	-2.0
3	*2412.00	108.1 PK			1.91 H	315	110.0	-1.9
4	*2412.00	96.7 AV			1.91 H	315	98.6	-1.9
5	4824.00	37.0 PK	74.0	-37.0	1.04 H	316	34.7	2.3
6	4824.00	24.1 AV	54.0	-29.9	1.04 H	316	21.8	2.3
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	67.5 PK	74.0	-6.5	3.14 V	354	69.5	-2.0
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**3.14 V**	**354**	**55.9**	**-2.0**
3	*2412.00	108.2 PK			3.14 V	354	110.1	-1.9
4	*2412.00	96.9 AV			3.14 V	354	98.8	-1.9
5	4824.00	37.3 PK	74.0	-36.7	2.12 V	326	35.0	2.3
6	4824.00	24.3 AV	54.0	-29.7	2.12 V	326	22.0	2.3

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	64.7 PK	74.0	-9.3	1.86 H	311	66.7	-2.0
2	2390.00	48.8 AV	54.0	-5.2	1.86 H	311	50.8	-2.0
3	*2437.00	113.6 PK			1.86 H	311	115.5	-1.9
4	*2437.00	103.2 AV			1.86 H	311	105.1	-1.9
5	2483.50	69.1 PK	74.0	-4.9	1.86 H	311	70.9	-1.8
6	2483.50	52.9 AV	54.0	-1.1	1.86 H	311	54.7	-1.8
7	4874.00	37.0 PK	74.0	-37.0	1.01 H	325	34.6	2.4
8	4874.00	25.1 AV	54.0	-28.9	1.01 H	325	22.7	2.4
9	7311.00	41.6 PK	74.0	-32.4	1.82 H	360	33.4	8.2
10	7311.00	29.0 AV	54.0	-25.0	1.82 H	360	20.8	8.2
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	65.5 PK	74.0	-8.5	3.42 V	360	67.5	-2.0
2	2390.00	49.0 AV	54.0	-5.0	3.42 V	360	51.0	-2.0
3	*2437.00	113.7 PK			3.42 V	360	115.6	-1.9
4	*2437.00	103.8 AV			3.42 V	360	105.7	-1.9
5	2483.50	69.9 PK	74.0	-4.1	3.42 V	360	71.7	-1.8
6	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**3.42 V**	**360**	**55.7**	**-1.8**
7	4874.00	37.8 PK	74.0	-36.2	2.12 V	341	35.4	2.4
8	4874.00	25.2 AV	54.0	-28.8	2.12 V	341	22.8	2.4
9	7311.00	41.9 PK	74.0	-32.1	2.19 V	207	33.7	8.2
10	7311.00	29.1 AV	54.0	-24.9	2.19 V	207	20.9	8.2

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 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	106.0 PK			1.92 H	312	107.8	-1.8
2	*2462.00	96.3 AV			1.92 H	312	98.1	-1.8
3	2483.50	69.2 PK	74.0	-4.8	1.85 H	314	71.0	-1.8
4	2483.50	53.5 AV	54.0	-0.5	1.85 H	314	55.3	-1.8
5	4924.00	37.0 PK	74.0	-37.0	1.06 H	340	34.5	2.5
6	4924.00	24.0 AV	54.0	-30.0	1.06 H	340	21.5	2.5
7	7386.00	42.1 PK	74.0	-31.9	1.87 H	355	33.7	8.4
8	7386.00	28.8 AV	54.0	-25.2	1.87 H	355	20.4	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.2 PK			3.41 V	17	108.0	-1.8
2	*2462.00	96.5 AV			3.41 V	17	98.3	-1.8
3	2483.50	69.4 PK	74.0	-4.6	3.41 V	17	71.2	-1.8
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**3.41 V**	**17**	**55.7**	**-1.8**
5	4924.00	37.3 PK	74.0	-36.7	2.14 V	341	34.8	2.5
6	4924.00	24.3 AV	54.0	-29.7	2.14 V	341	21.8	2.5
7	7386.00	42.3 PK	74.0	-31.7	2.24 V	214	33.9	8.4
8	7386.00	29.4 AV	54.0	-24.6	2.24 V	214	21.0	8.4

REMARKS:

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

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	63.4 PK	74.0	-10.6	3.84 H	46	65.4	-2.0
2	2390.00	50.6 AV	54.0	-3.4	3.84 H	46	52.6	-2.0
3	*2422.00	102.3 PK			3.84 H	46	104.3	-2.0
4	*2422.00	91.5 AV			3.84 H	46	93.5	-2.0
5	4844.00	41.3 PK	74.0	-32.7	2.14 H	43	38.9	2.4
6	4844.00	36.6 AV	54.0	-17.4	2.14 H	43	34.2	2.4
7	7266.00	41.6 PK	74.0	-32.4	2.14 H	186	33.4	8.2
8	7266.00	29.0 AV	54.0	-25.0	2.14 H	186	20.8	8.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.41 V	360	69.5	-2.0
2	2390.00	53.6 AV	54.0	-0.4	1.41 V	360	55.6	-2.0
3	*2422.00	104.3 PK			1.41 V	360	106.3	-2.0
4	*2422.00	92.8 AV			1.41 V	360	94.8	-2.0
5	4844.00	41.5 PK	74.0	-32.5	2.09 V	51	39.1	2.4
6	4844.00	36.9 AV	54.0	-17.1	2.09 V	51	34.5	2.4
7	7266.00	41.8 PK	74.0	-32.2	1.74 V	348	33.6	8.2
8	7266.00	29.2 AV	54.0	-24.8	1.74 V	348	21.0	8.2

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)
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	63.4 PK	74.0	-10.6	3.83 H	60	65.4	-2.0
2	2390.00	47.6 AV	54.0	-6.4	3.83 H	60	49.6	-2.0
3	*2437.00	102.9 PK			3.87 H	53	104.8	-1.9
4	*2437.00	92.4 AV			3.87 H	53	94.3	-1.9
5	2483.50	65.4 PK	74.0	-8.6	3.75 H	43	67.2	-1.8
6	2483.50	50.7 AV	54.0	-3.3	3.75 H	43	52.5	-1.8
7	4874.00	40.4 PK	74.0	-33.6	2.18 H	37	38.0	2.4
8	4874.00	34.2 AV	54.0	-19.8	2.18 H	37	31.8	2.4
9	7311.00	42.0 PK	74.0	-32.0	2.08 H	188	33.8	8.2
10	7311.00	29.2 AV	54.0	-24.8	2.08 H	188	21.0	8.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.37 V	360	69.5	-2.0
2	2390.00	50.6 AV	54.0	-3.4	1.37 V	360	52.6	-2.0
3	*2437.00	104.9 PK			1.37 V	360	106.8	-1.9
4	*2437.00	94.1 AV			1.37 V	360	96.0	-1.9
5	2483.50	69.5 PK	74.0	-4.5	1.37 V	360	71.3	-1.8
6	2483.50	53.7 AV	54.0	-0.3	1.37 V	360	55.5	-1.8
7	4874.00	40.6 PK	74.0	-33.4	2.10 V	52	38.2	2.4
8	4874.00	34.4 AV	54.0	-19.6	2.10 V	52	32.0	2.4
9	7311.00	42.1 PK	74.0	-31.9	1.75 V	349	33.9	8.2
10	7311.00	29.4 AV	54.0	-24.6	1.75 V	349	21.2	8.2

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 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	99.5 PK			3.89 H	32	101.4	-1.9
2	*2452.00	89.4 AV			3.89 H	32	91.3	-1.9
3	2483.50	62.8 PK	74.0	-11.2	3.89 H	41	64.6	-1.8
4	2483.50	50.7 AV	54.0	-3.3	3.89 H	41	52.5	-1.8
5	4904.00	40.5 PK	74.0	-33.5	2.12 H	51	38.1	2.4
6	4904.00	34.0 AV	54.0	-20.0	2.12 H	51	31.6	2.4
7	7356.00	42.1 PK	74.0	-31.9	2.08 H	197	33.7	8.4
8	7356.00	29.3 AV	54.0	-24.7	2.08 H	197	20.9	8.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.5 PK			1.40 V	360	103.4	-1.9
2	*2452.00	90.7 AV			1.40 V	360	92.6	-1.9
3	2483.50	66.9 PK	74.0	-7.1	1.40 V	360	68.7	-1.8
4	2483.50	53.7 AV	54.0	-0.3	1.40 V	360	55.5	-1.8
5	4904.00	40.7 PK	74.0	-33.3	2.11 V	50	38.3	2.4
6	4904.00	34.2 AV	54.0	-19.8	2.11 V	50	31.8	2.4
7	7356.00	42.3 PK	74.0	-31.7	1.74 V	347	33.9	8.4
8	7356.00	29.5 AV	54.0	-24.5	1.74 V	347	21.1	8.4

REMARKS:

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

Below 1GHz Data:

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.01	25.0 QP	43.5	-18.5	2.00 H	71	34.8	-9.8
2	375.03	31.4 QP	46.0	-14.6	1.00 H	341	37.0	-5.6
3	513.35	36.5 QP	46.0	-9.5	2.00 H	45	38.8	-2.3
4	625.00	36.9 QP	46.0	-9.1	1.00 H	360	37.0	-0.1
5	875.02	36.4 QP	46.0	-9.6	1.00 H	238	33.0	3.4
6	1000.00	39.9 QP	54.0	-14.1	1.00 H	210	34.9	5.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	44.38	28.8 QP	40.0	-11.2	1.00 V	206	37.2	-8.4
2	375.00	31.4 QP	46.0	-14.6	2.00 V	360	37.0	-5.6
3	625.00	36.0 QP	46.0	-10.0	2.00 V	360	36.1	-0.1
4	749.98	35.9 QP	46.0	-10.1	2.00 V	360	33.7	2.2
5	875.02	35.3 QP	46.0	-10.7	2.00 V	360	31.9	3.4
6	1000.00	40.8 QP	54.0	-13.2	1.00 V	39	35.8	5.0

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
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. 06, 2017

4.2.3 Test Procedures

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

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

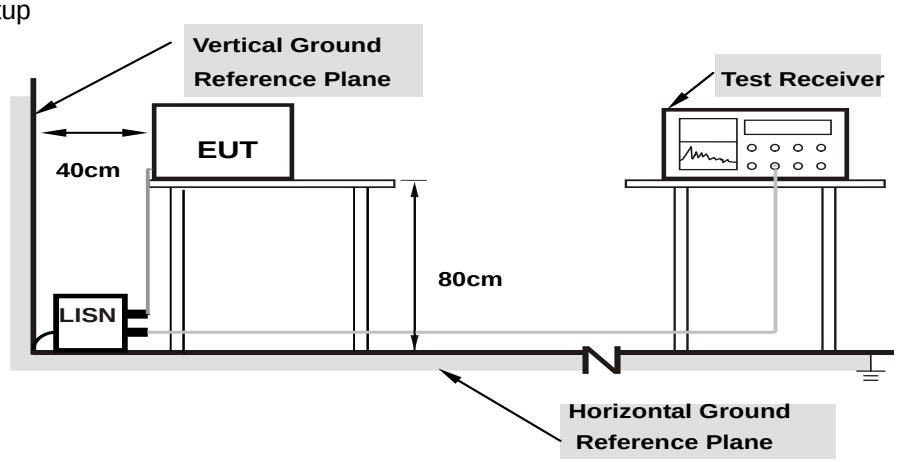
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

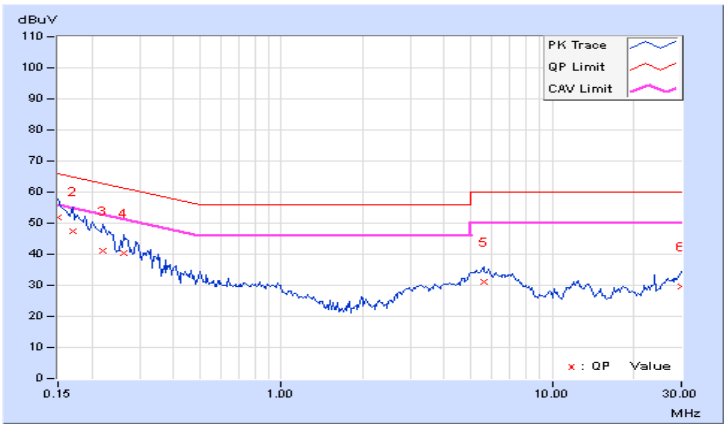
4.2.7 Test Results

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

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	0.15000	10.20	41.72	31.25	51.92	41.45	66.00	56.00	-14.08	-14.55
2	0.16953	10.20	37.19	27.06	47.39	37.26	64.98	54.98	-17.59	-17.72
3	0.22031	10.20	30.99	18.89	41.19	29.09	62.81	52.81	-21.62	-23.72
4	0.26328	10.21	30.24	21.21	40.45	31.42	61.33	51.33	-20.88	-19.91
5	5.57813	10.42	20.65	15.61	31.07	26.03	60.00	50.00	-28.93	-23.97
6	29.93750	11.85	17.73	12.35	29.58	24.20	60.00	50.00	-30.42	-25.80

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

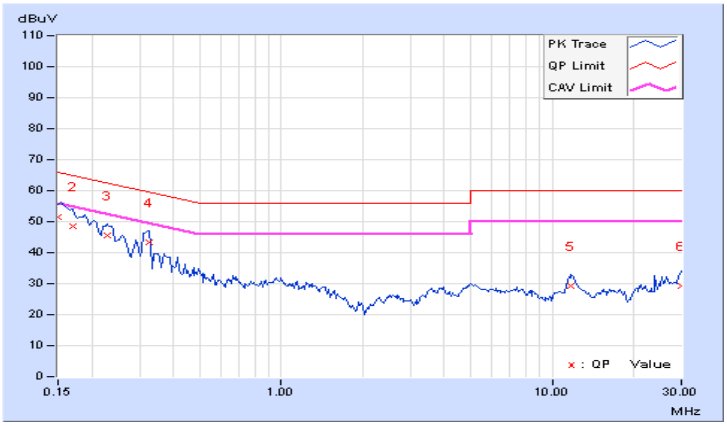


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15000	10.19	41.46	31.61	51.65	41.80	66.00	56.00	-14.35	-14.20
2	0.16953	10.18	38.19	29.14	48.37	39.32	64.98	54.98	-16.61	-15.66
3	**0.22812**	**10.18**	**35.24**	**28.76**	**45.42**	**38.94**	**62.52**	**52.52**	**-17.10**	**-13.58**
4	0.32578	10.21	33.26	23.61	43.47	33.82	59.56	49.56	-16.09	-15.74
5	11.69922	10.79	18.42	14.29	29.21	25.08	60.00	50.00	-30.79	-24.92
6	29.98047	11.40	17.82	12.52	29.22	23.92	60.00	50.00	-30.78	-26.08

Remarks:

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

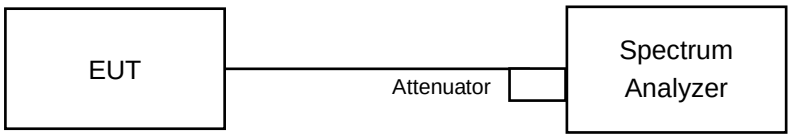


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.14	0.5	PASS
6	2437	9.10	0.5	PASS
11	2462	8.13	0.5	PASS

802.11g

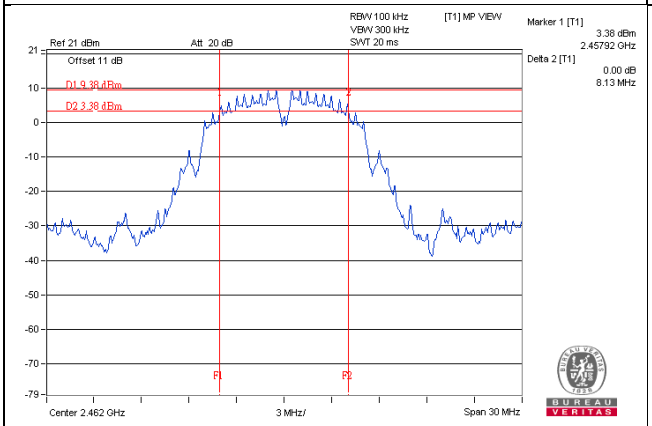
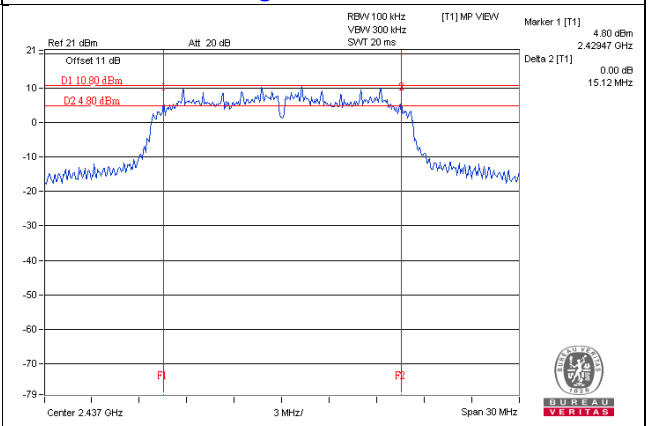
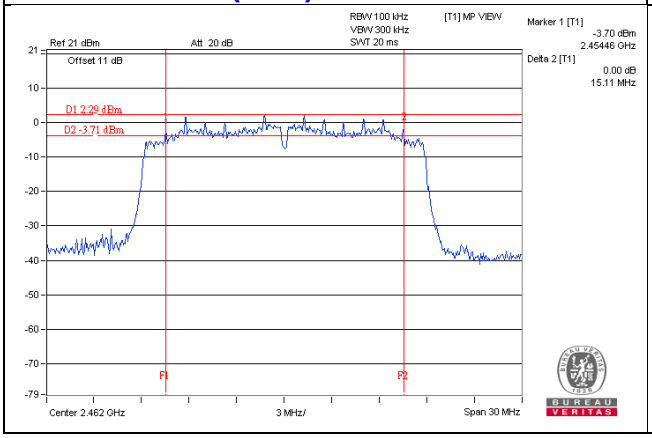
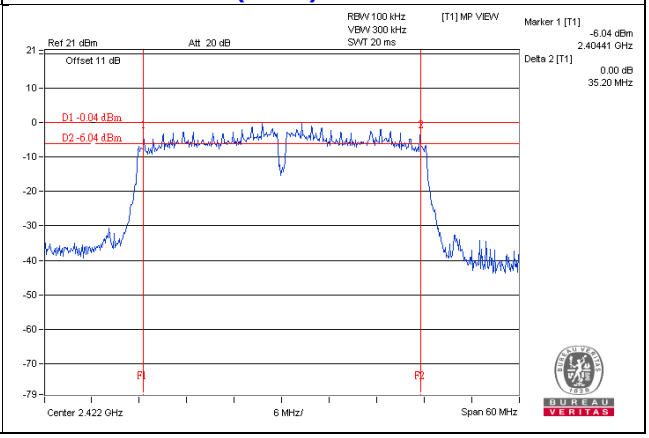
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.17	15.17	0.5	Pass
6	2437	15.17	15.12	0.5	Pass
11	2462	15.18	15.15	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.74	15.16	0.5	Pass
6	2437	15.15	15.16	0.5	Pass
11	2462	15.77	15.11	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.20	35.23	0.5	Pass
6	2437	35.91	35.39	0.5	Pass
9	2452	36.01	35.46	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / CH11	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 1 : CH11	**802.11n (HT40) / Chain 0 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

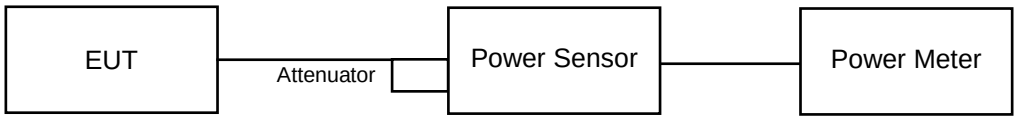
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

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

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

FOR PEAK POWER

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	221.309	23.45	30	Pass
6	2437	379.315	25.79	30	Pass
11	2462	138.995	21.43	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.61	23.59	410.95	26.14	30	Pass
6	2437	25.43	25.49	703.137	28.47	30	Pass
11	2462	22.38	22.16	337.419	25.28	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.14	21.39	301.403	24.79	30	Pass
6	2437	25.43	25.39	695.079	28.42	30	Pass
11	2462	22.15	20.64	279.937	24.47	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	20.05	20.53	214.138	23.31	30	Pass
6	2437	22.29	22.30	339.258	25.31	30	Pass
9	2452	20.38	19.90	206.868	23.16	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	96.828	19.86
6	2437	225.944	23.54
11	2462	58.614	17.68

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.36	15.17	67.241	18.28
6	2437	20.95	21.61	269.328	24.30
11	2462	14.97	15.05	63.394	18.02

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.67	14.07	54.836	17.39
6	2437	20.55	20.93	237.381	23.75
11	2462	12.86	12.33	36.42	15.61

802.11n (HT40)

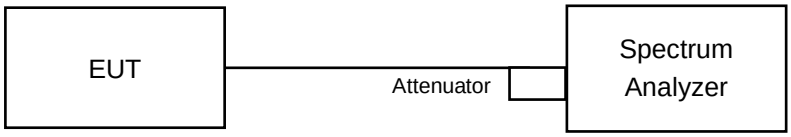
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.48	12.78	36.668	15.64
6	2437	14.87	14.74	60.475	17.82
9	2452	11.39	11.79	28.873	14.60

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-2.49	8	Pass
6	2437	0.03	8	Pass
11	2462	-5.96	8	Pass

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.96	3.01	-6.95	7.54	Pass
	6	2437	-4.52	3.01	-1.51	7.54	Pass
	11	2462	-9.45	3.01	-6.44	7.54	Pass
1	1	2412	-10.14	3.01	-7.13	7.54	Pass
	6	2437	-3.79	3.01	-0.78	7.54	Pass
	11	2462	-10.22	3.01	-7.21	7.54	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.46dBi > 6dBi , so the power density limit shall be reduced to 8-(6.46-6) = 7.54dBm.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-10.92	3.01	-7.91	7.54	Pass
	6	2437	-4.32	3.01	-1.31	7.54	Pass
	11	2462	-12.09	3.01	-9.08	7.54	Pass
1	1	2412	-9.98	3.01	-6.97	7.54	Pass
	6	2437	-4.27	3.01	-1.26	7.54	Pass
	11	2462	-11.16	3.01	-8.15	7.54	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.46dBi > 6dBi , so the power density limit shall be reduced to 8-(6.46-6) = 7.54dBm.

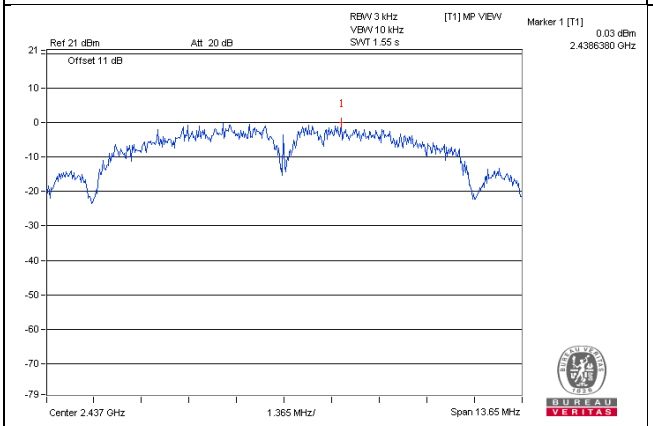
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-14.67	3.01	-11.66	7.54	Pass
	6	2437	-12.56	3.01	-9.55	7.54	Pass
	9	2452	-15.68	3.01	-12.67	7.54	Pass
1	3	2422	-14.39	3.01	-11.38	7.54	Pass
	6	2437	-13.55	3.01	-10.54	7.54	Pass
	9	2452	-16.19	3.01	-13.18	7.54	Pass

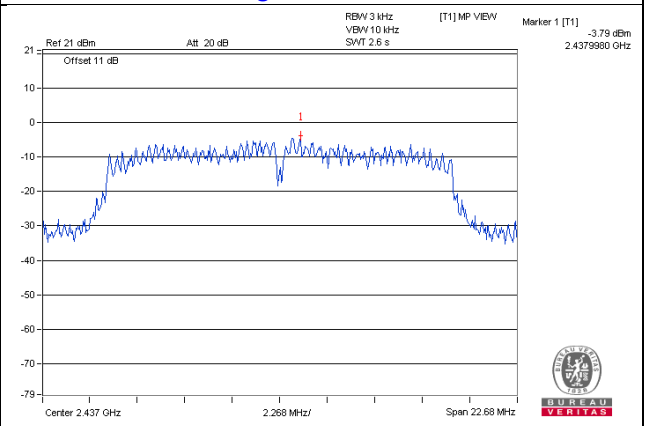
Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.46dBi > 6dBi , so the power density limit shall be reduced to 8-(6.46-6) = 7.54dBm.

Spectrum Plot of Worst Value

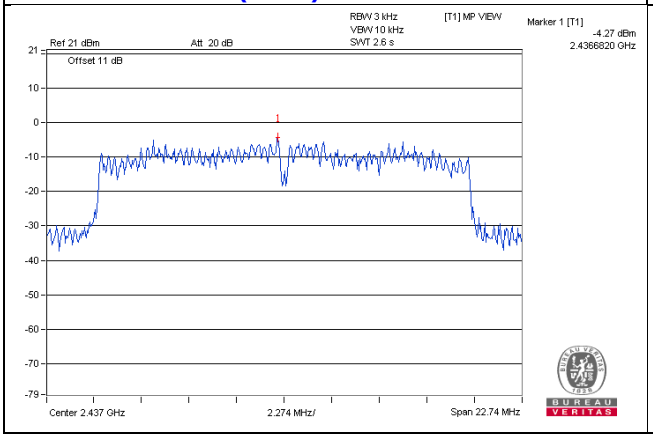
802.11b / CH6



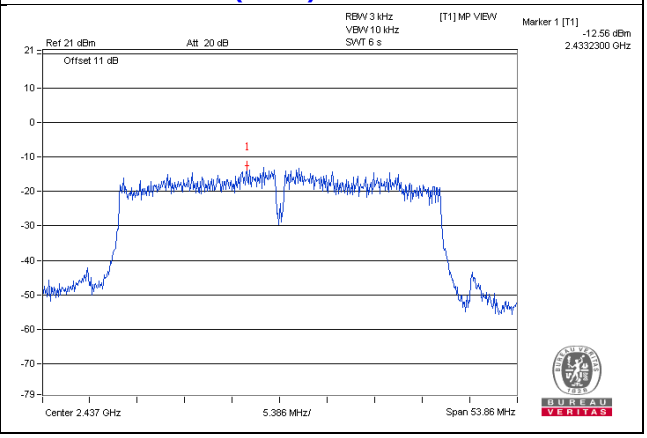
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 1 : CH6



802.11n (HT40) / Chain 0 : CH6

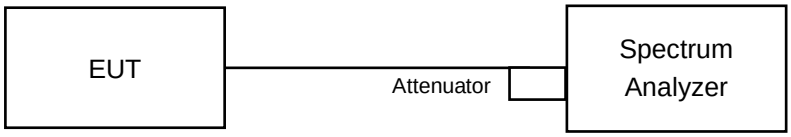


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

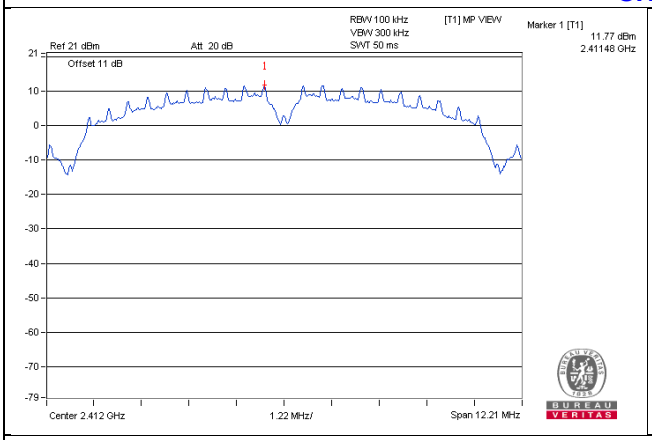
Same as Item 4.3.6

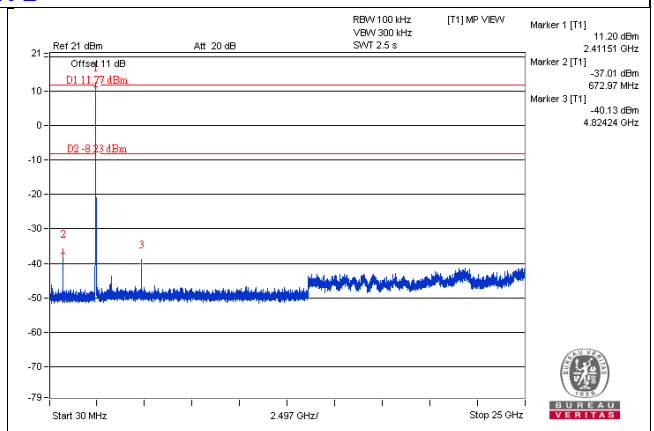
4.6.7 Test Results

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

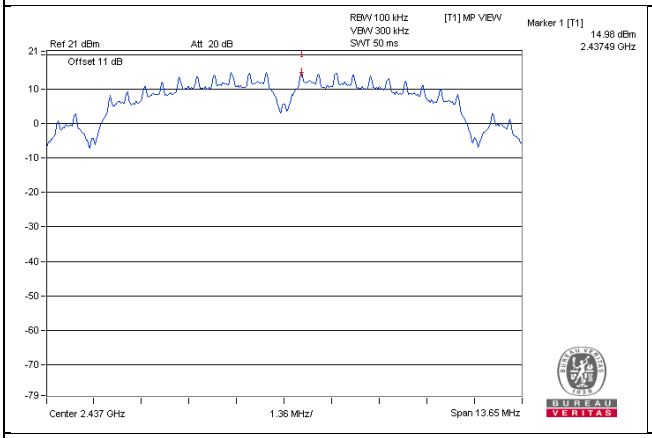
802.11b

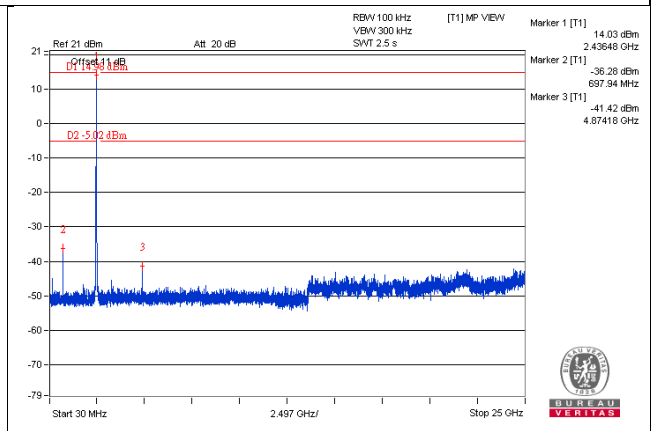
CH 1



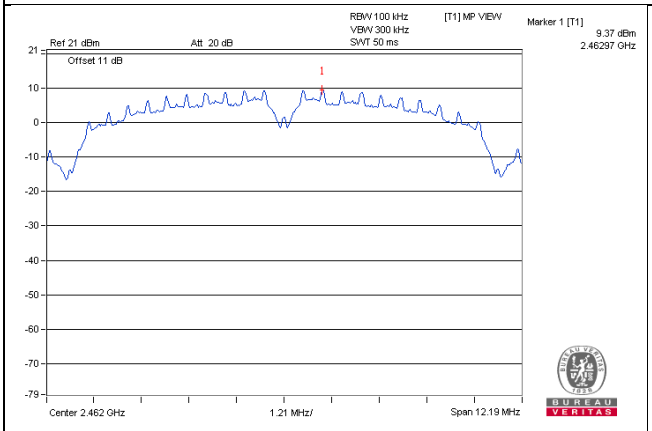


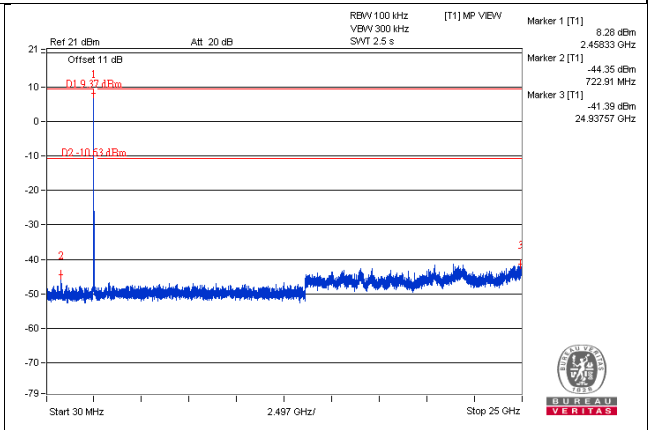
CH 6



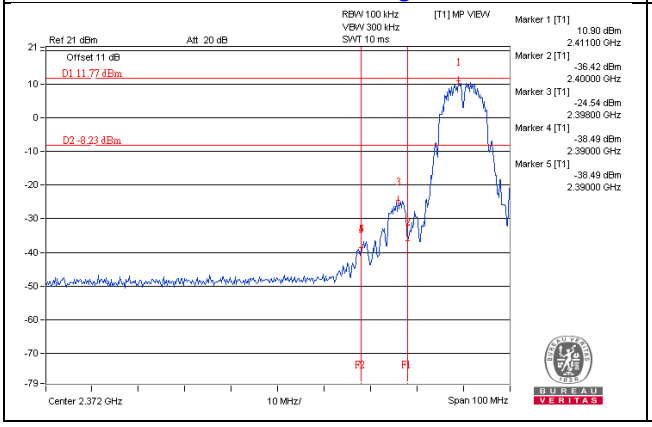


CH 11

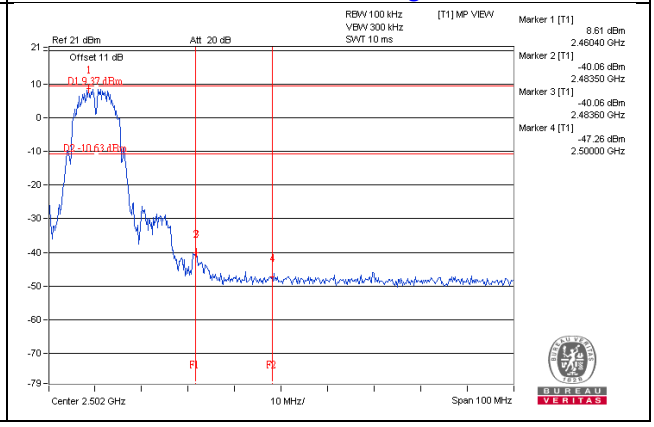




CH 1 Band edge

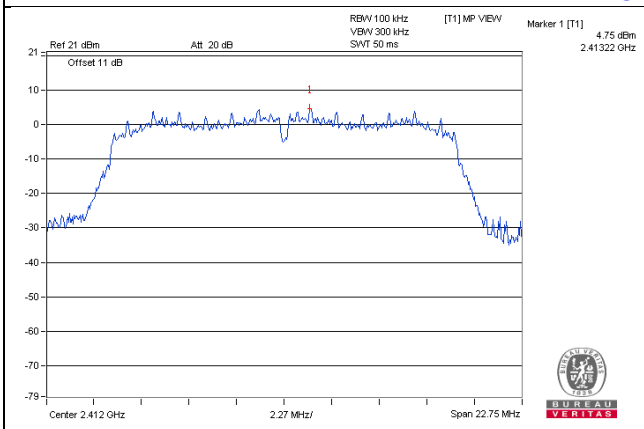


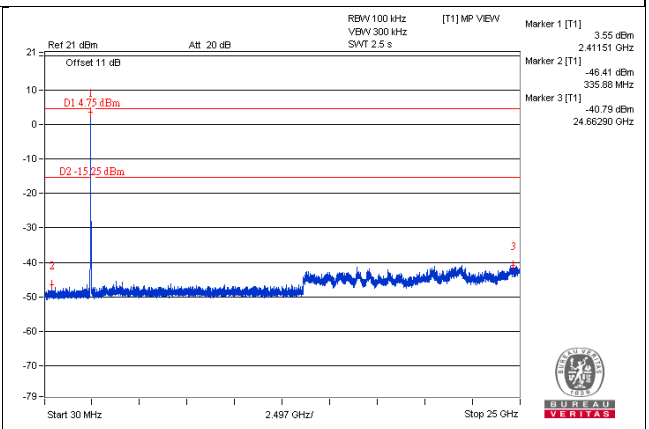
CH 11 Band edge



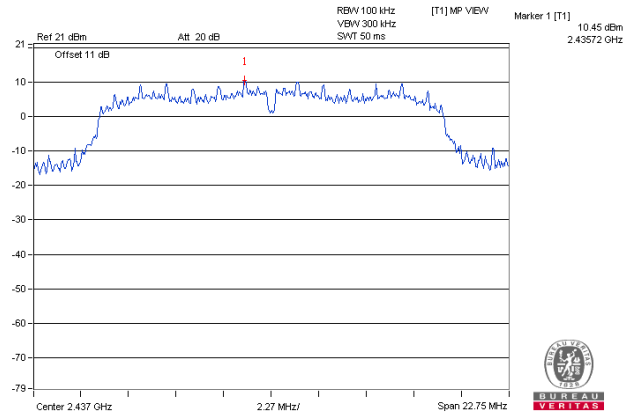
802.11g : Chain 0

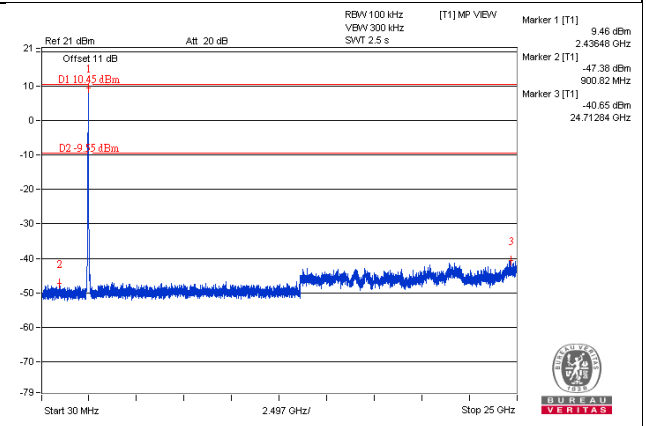
CH 1



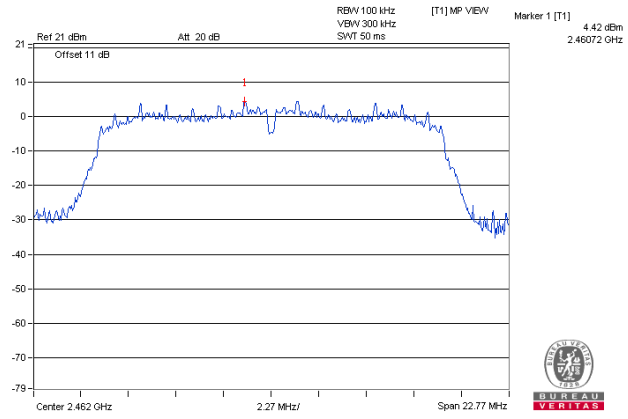


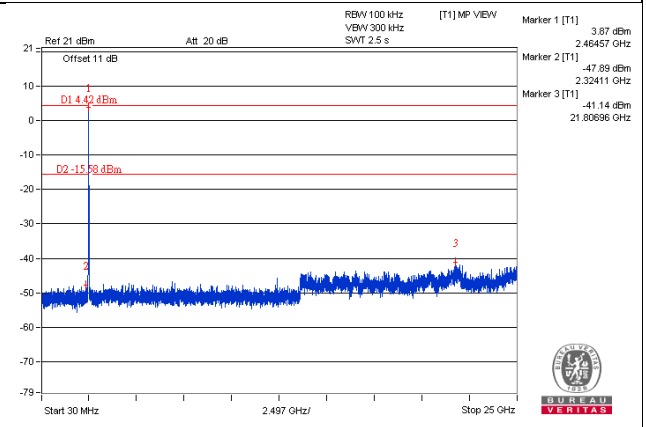
CH 6



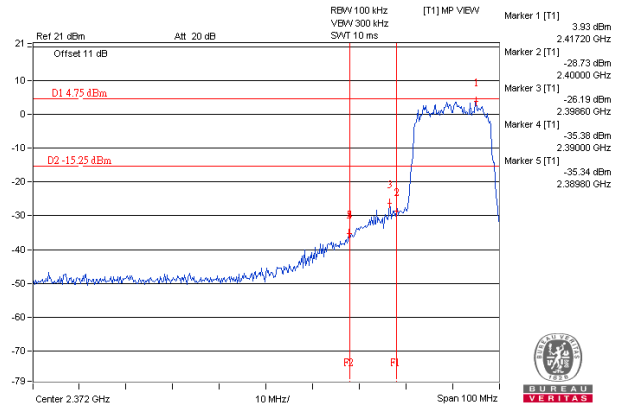


CH 11

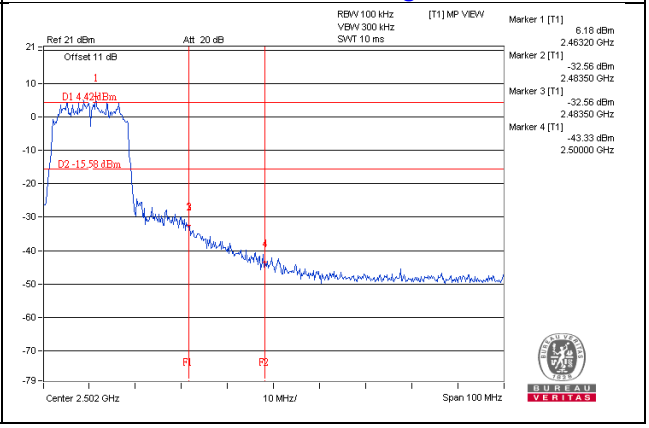




CH 1 Band edge

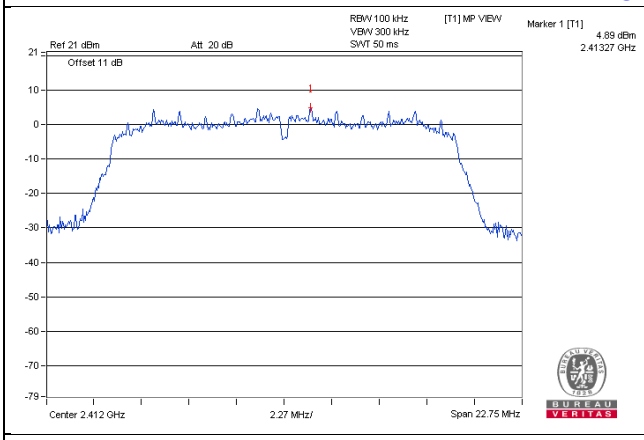


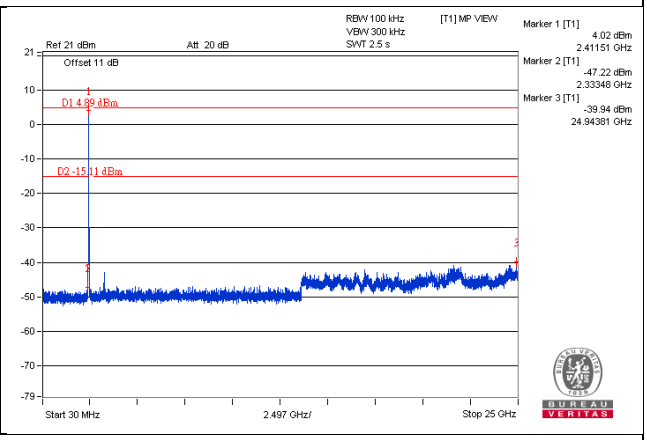
CH 11 Band edge



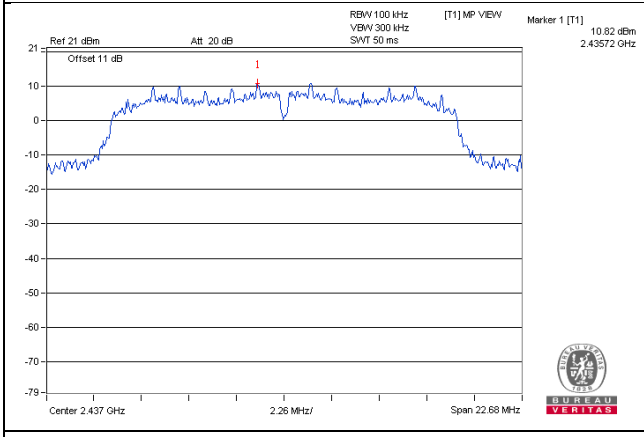
Chain 1

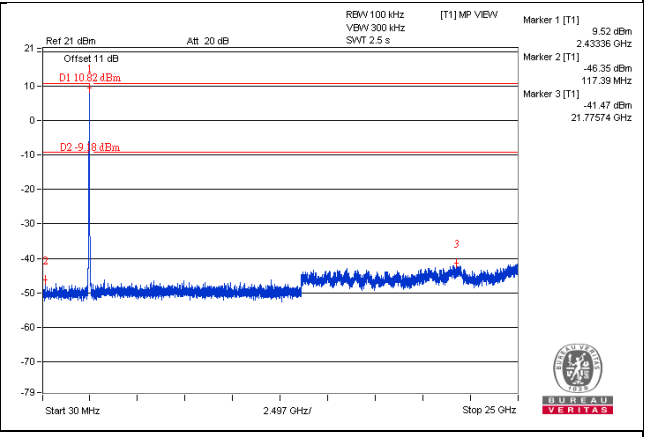
CH 1



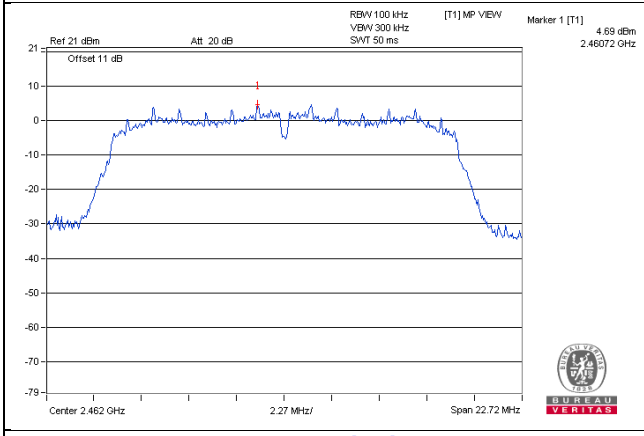


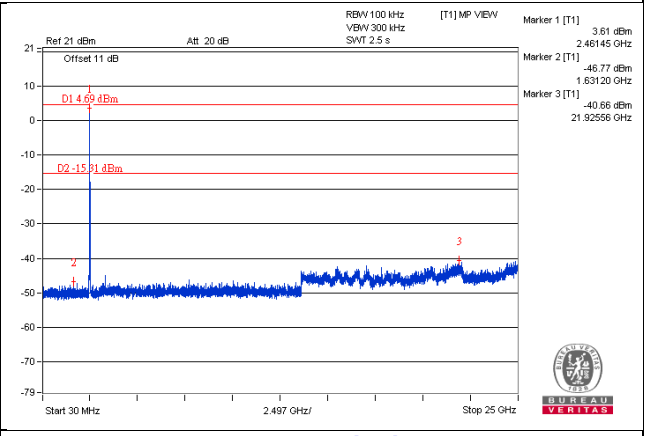
CH 6



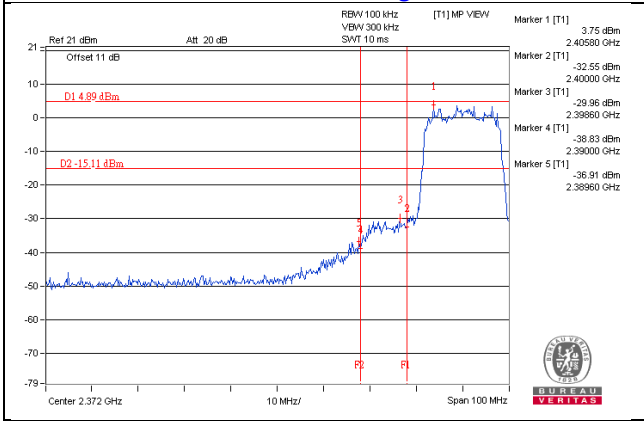


CH 11

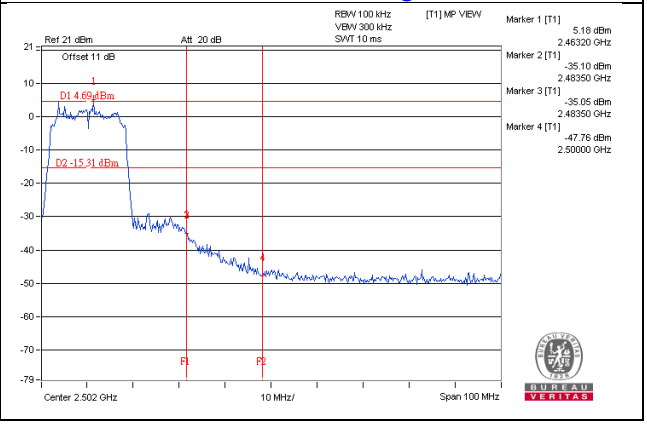




CH 1 Band edge

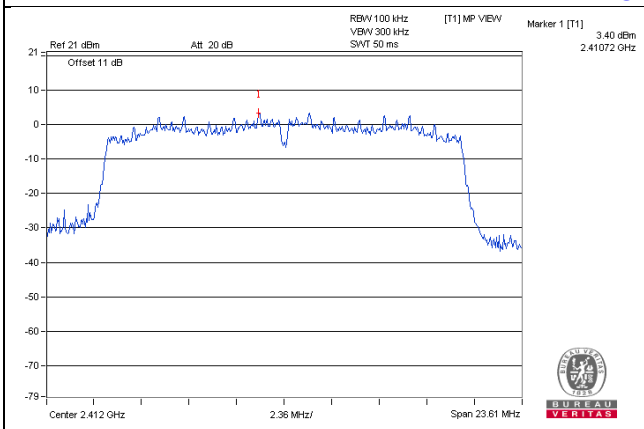


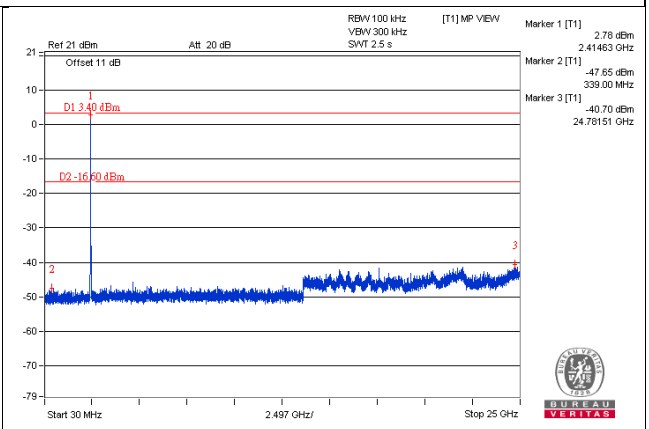
CH 11 Band edge



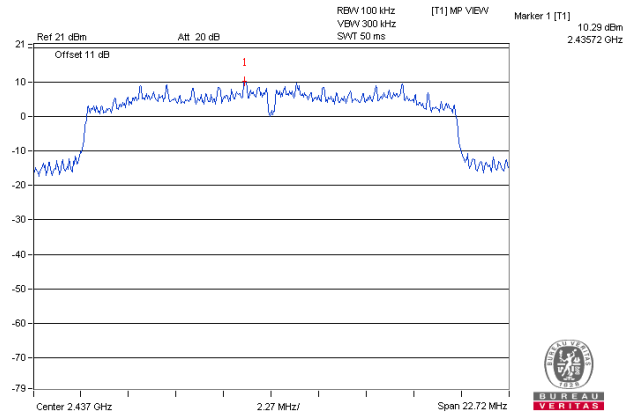
802.11n (HT20) : Chain 0

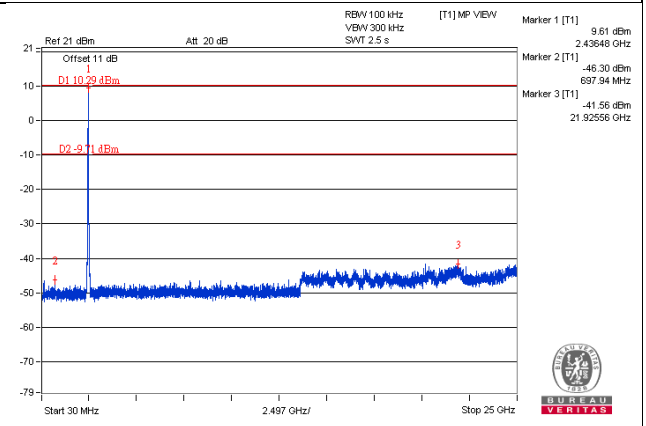
CH 1



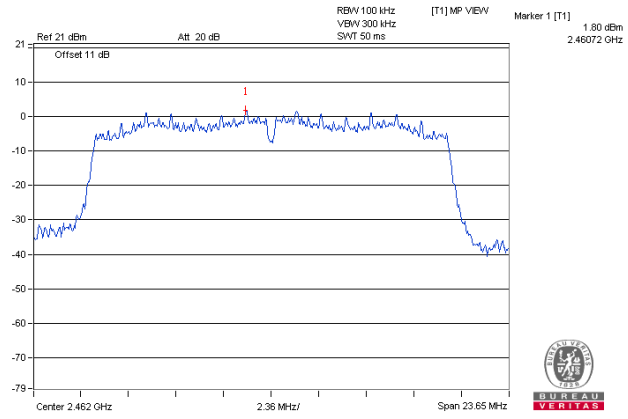


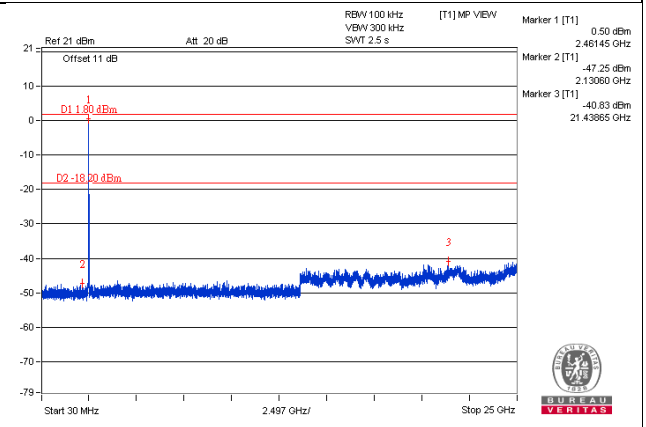
CH 6



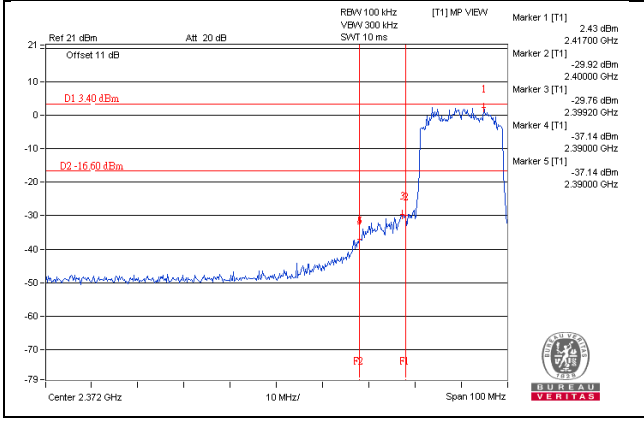


CH 11

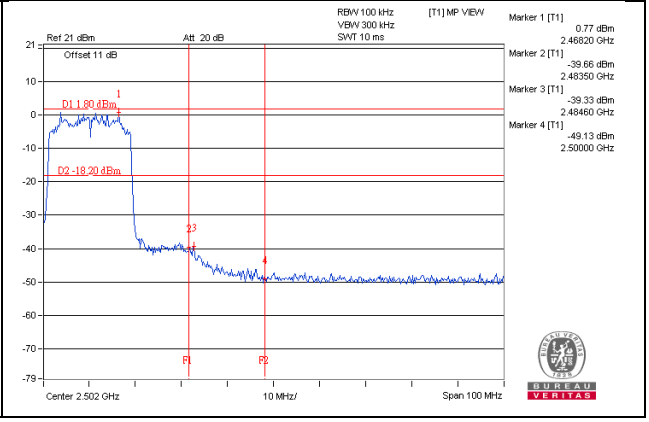




CH 1 Band edge

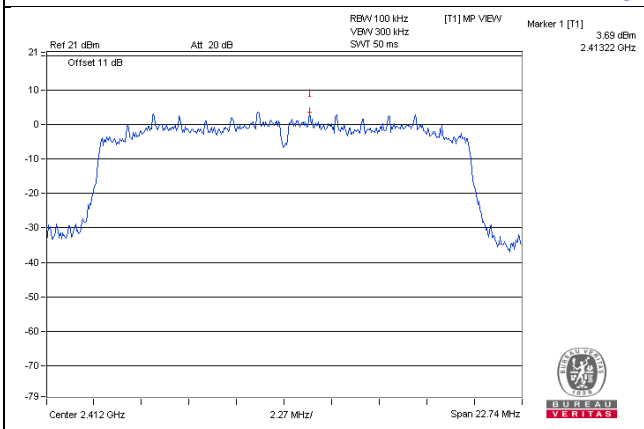


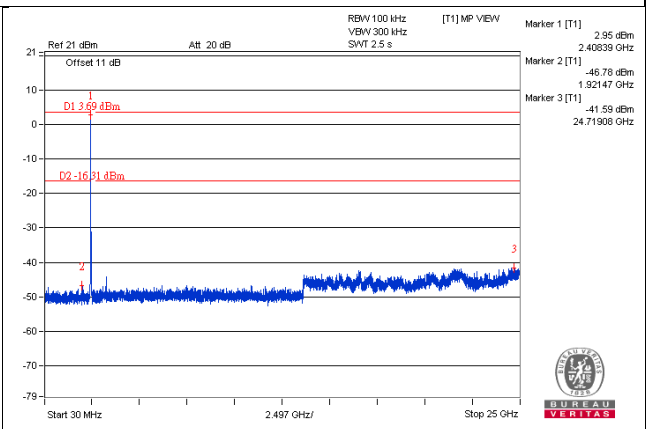
CH 11 Band edge



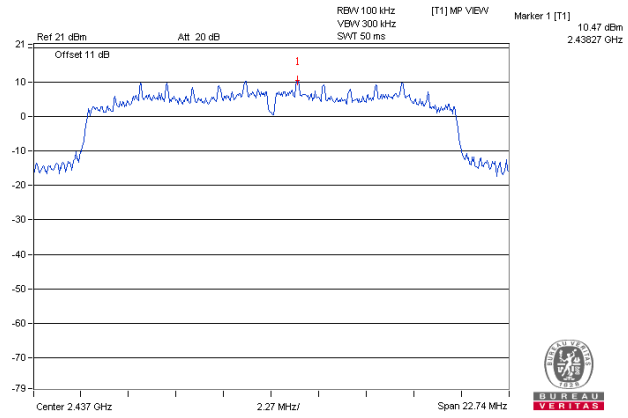
Chain 1

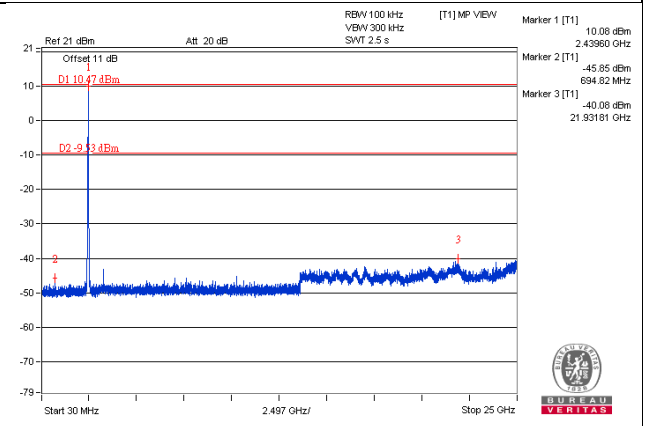
CH 1



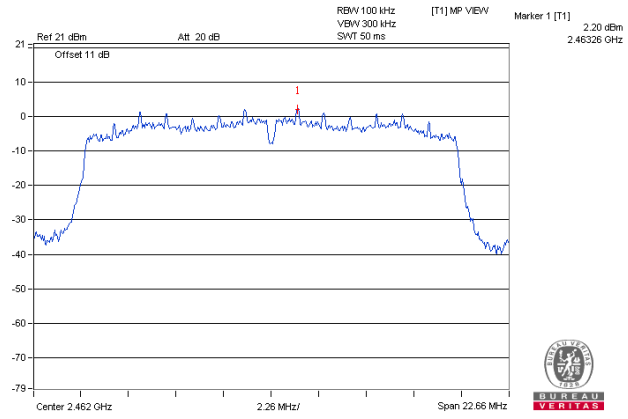


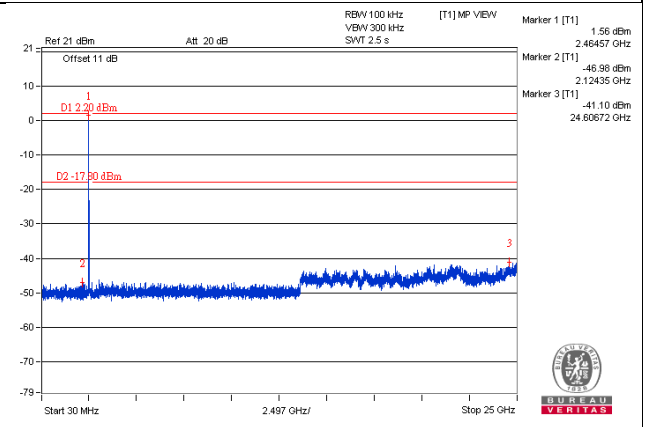
CH 6



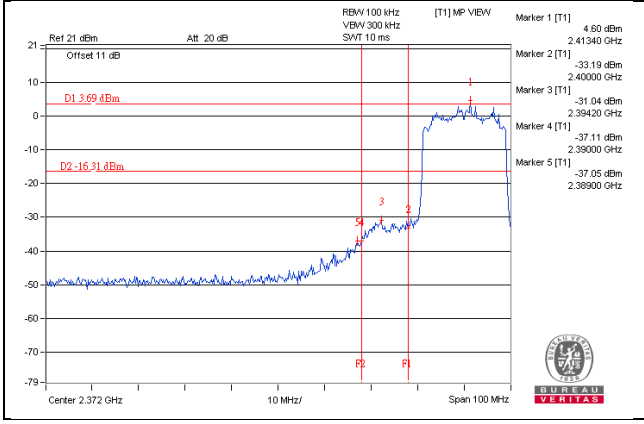


CH 11

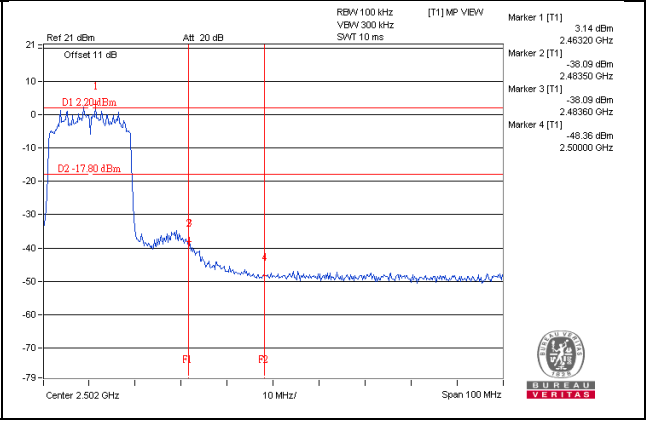




CH 1 Band edge

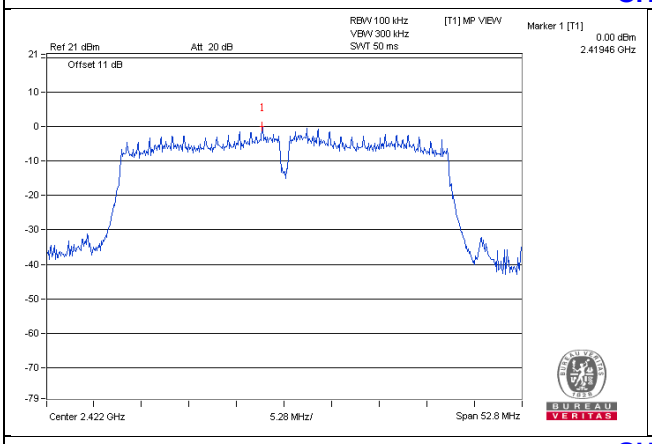


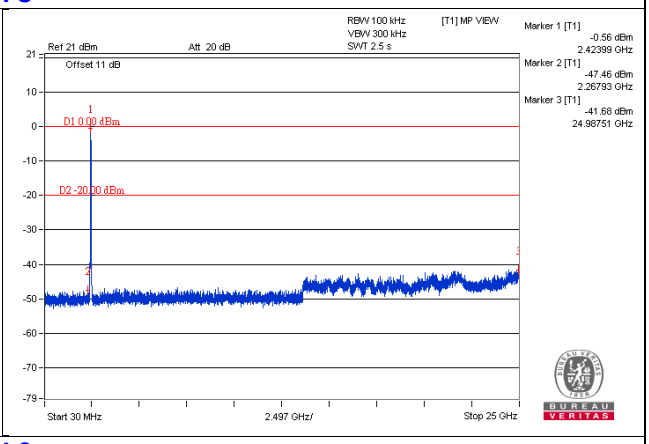
CH 11 Band edge



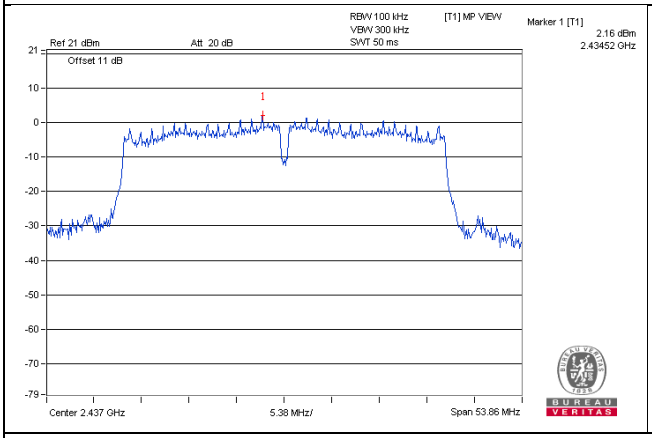
802.11n (HT40) : Chain 0

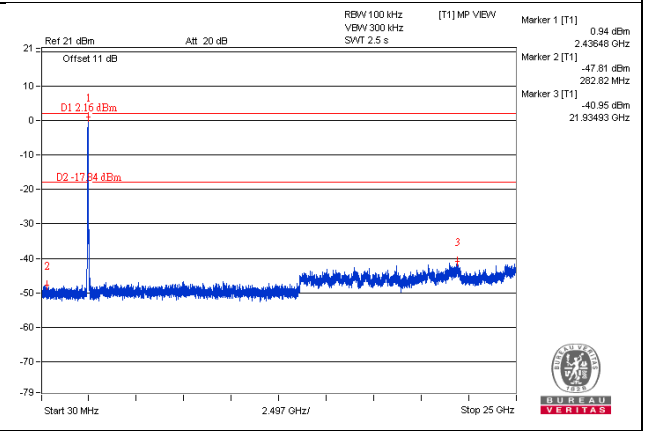
CH 3



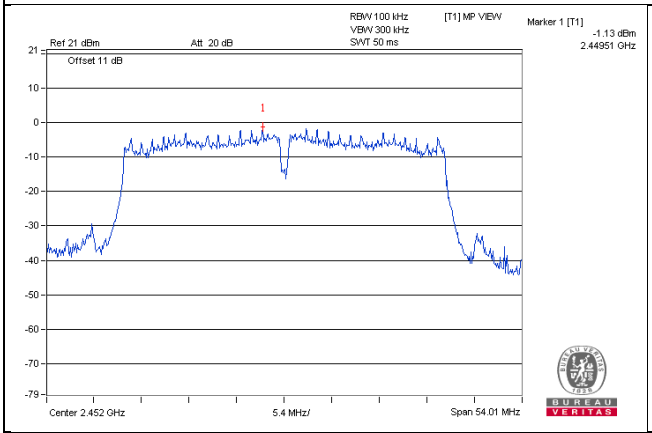


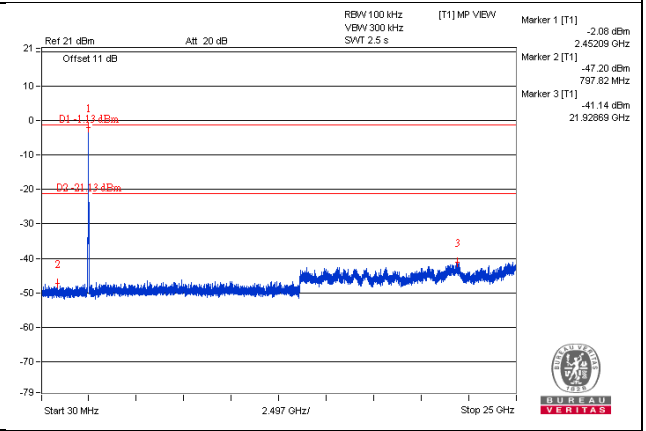
CH 6



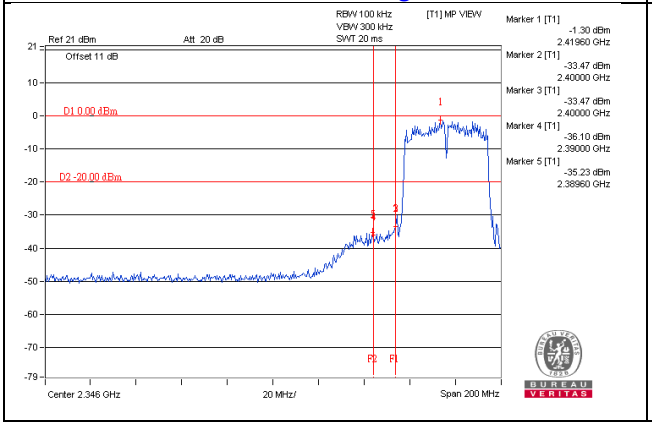


CH 9

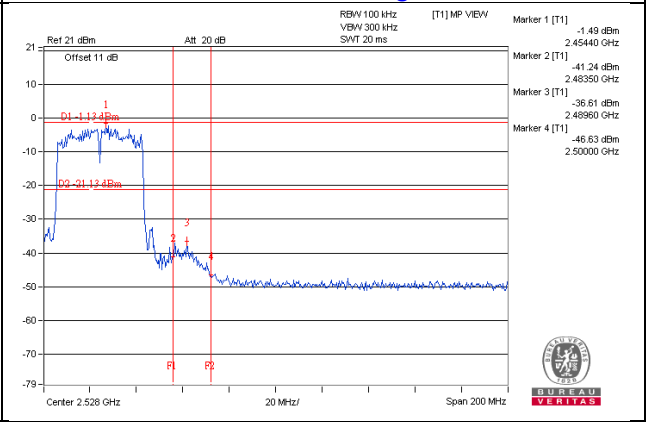




CH 3 Band edge

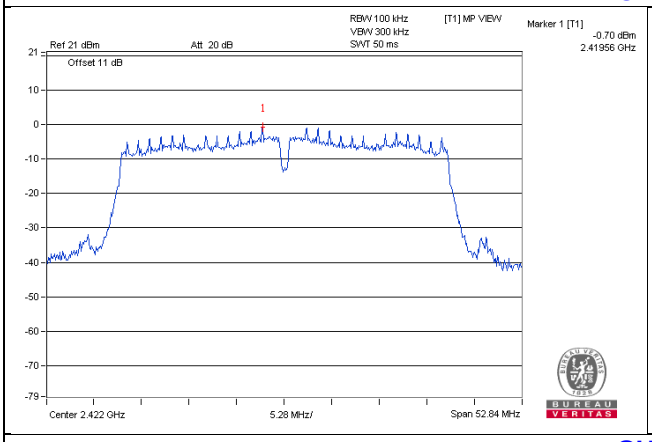


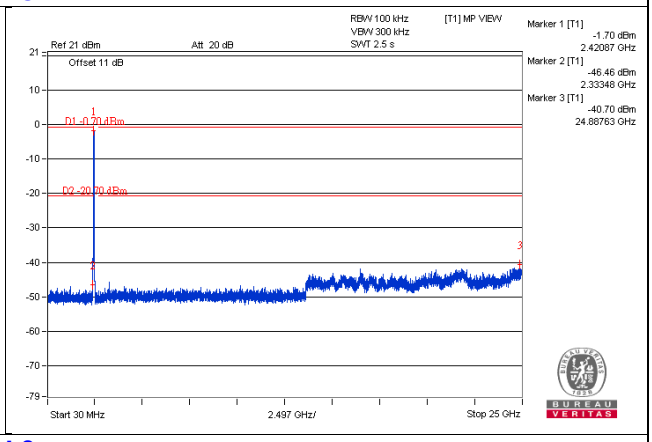
CH 9 Band edge



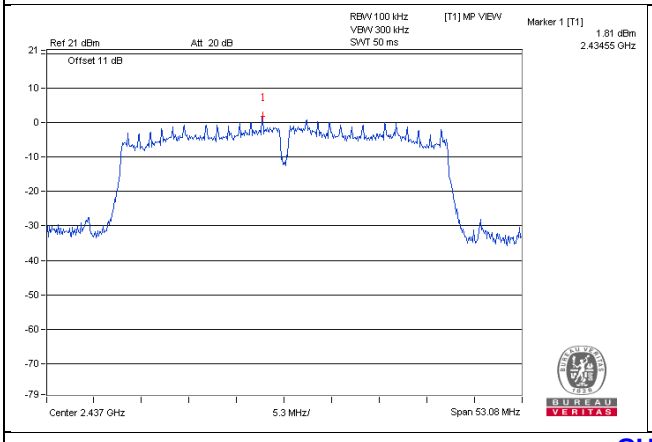
Chain 1

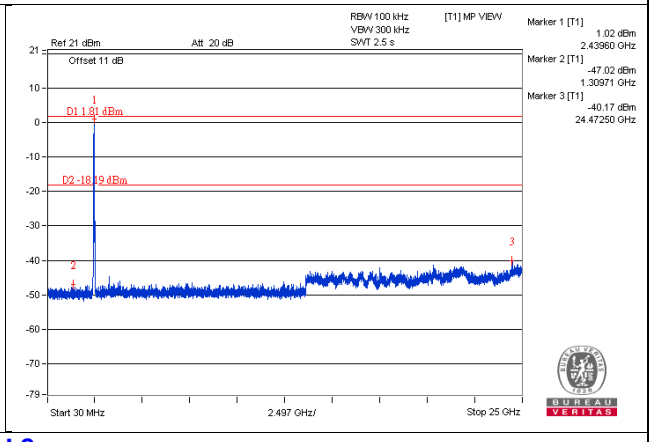
CH 3



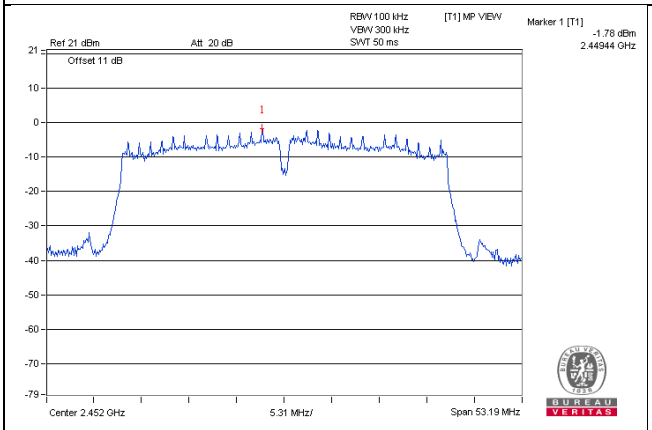


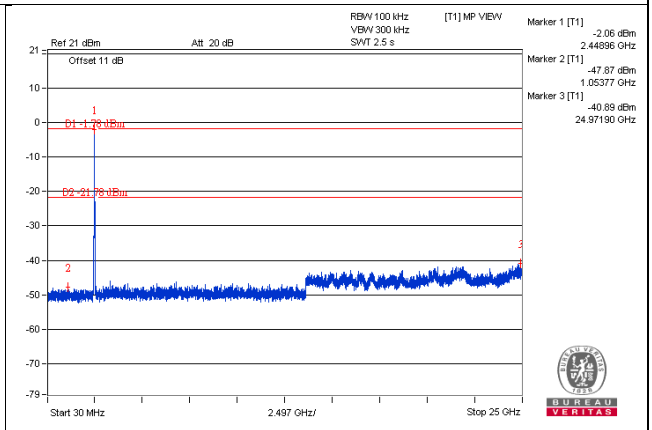
CH 6



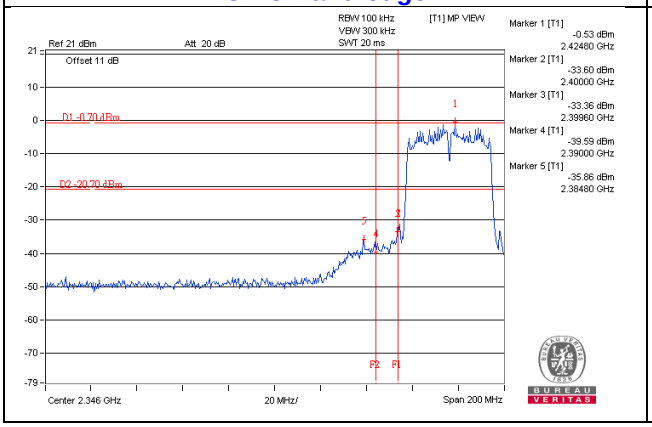


CH 9

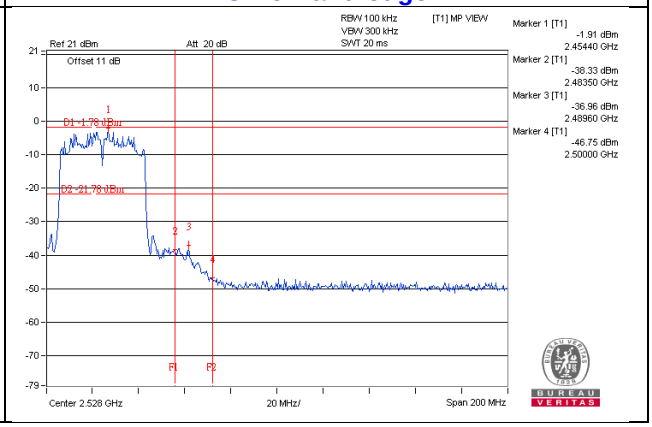




CH 3 Band edge



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.

--- END ---