FCC Test Report

Report No.: RF150310E06

FCC ID: PY315100303

Test Model: C3700-100NAS

Received Date: Mar. 10, 2015

Test Date: Mar. 25 to Apr. 14, 2015

Issued Date: June 17, 2015

Applicant: NETGEAR, Inc.

Address: 350 East Plumeria Drive San Jose, CA 95134

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

Lab Address: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Test Location (1): No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, 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
RF150310E06	Original release.	June 17, 2015

1 Certificate of Conformity

Product: N600 WIFI Cable Modem Router

Brand: NETGEAR

Test Model: C3700-100NAS

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Mar. 25 to Apr. 14, 2015

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2009

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

Prepared by : _____ , **Date:** June 17, 2015
Lori Chung / Specialist

Approved by : _____ , **Date:** June 17, 2015
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 -7.79dB at 0.27500MHz.
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 7389.00MHz, 2390.00MHz & 2483.50MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

NOTE: The EUT was operating in 2400 ~ 2483.5MHz, 5150~5250MHz and 5725~5.850MHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz. For the 5150~5250MHz and 5725~5850MHz RF parameters was recorded in another test report.

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	2.86 dB
Radiated Emissions up to 1 GHz	30MHz ~1GHz	5.43 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.72 dB
	6GHz ~ 18GHz	4.00 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	N600 WIFI Cable Modem Router
Brand	NETGEAR
Test Model	C3700-100NAS
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a / g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	**For 15.407** 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
	For 15.247 2.412 ~ 2.462GHz
Number of Channel	**For 15.407** 9 for 802.11a, 802.11n (HT20) 4 for 802.11n (HT40)
	For 15.247 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
Output Power	**For 15.407** **1TX Mode:** 802.11a: 162.555mW 802.11n (HT20): 164.816mW 802.11n (HT40): 67.453mW **2TX Mode:** 802.11n (HT20): 332.024mW 802.11n (HT40): 117.634mW
	For 15.247 **1TX Mode:** 802.11b: 194.536mW 802.11g: 297.852mW 802.11n (HT20): 311.172mW 802.11n (HT40): 217.27mW **2TX Mode:** 802.11n (HT20): 563.682mW 802.11n (HT40): 339.721mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The emission of the simultaneous operation (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
2. The antennas provided to the EUT, please refer to the following table:

Antenna No.	PCB Chain No.	Ant. Gain(dBi) <Including cable loss>	Frequency range (GHz to GHz)	Ant. Type	Connecter Type
1	Left	0.3	2.4~2.4835	PIFA	i-pex(MHF)
2		2.6	5.15~5.85		
3	Right	2.3	2.4~2.4835	PIFA	i-pex(MHF)
4		1.8	5.15~5.85		

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

No	P/N	Brand Name	Model No.	Spec.
1	332-10757-01	NETGEAR	ADS-40FPA-12 12030GPCU	Input: 100-240V, 1A, 50-60Hz Output: 12V, 2.5A DC output cable: 1.8m, unshielded
2	332-10758-01	NETGEAR	2ABL030F 1 NA	Input: 100-120V, 1A, 50-60Hz Output: 12V, 2.5A DC output cable: 1.8m, unshielded
For Radiated Emission test, the EUT was pre-tested with adapter 1 & 2, the worst case was found in adapter 2. Therefore only the test data of the adapter 2 was recorded in this report.				

4. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	1TX (fix on chain 0)	2RX
802.11g	6 ~ 54Mbps	1TX (fix on chain 0)	2RX
802.11n (HT20)	MCS 0~7	1TX (fix on chain 0)	2RX
	MCS 8~15	2TX*	2RX
802.11n (HT40)	MCS 0~7	1TX (fix on chain 0)	2RX
	MCS 8~15	2TX*	2RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	1TX (fix on chain 0)	2RX
802.11n (HT20)	MCS 0~7	1TX (fix on chain 0)	2RX
	MCS 8~15	2TX*	2RX
802.11n (HT40)	MCS 0~7	1TX (fix on chain 0)	2RX
	MCS 8~15	2TX*	2RX
Remark: "*" means the device operate with two spatial stream (Nss = 2) with different data, and two signals are not correlated.			

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	
1	√	√	√	√	With adapter 2
2	-	-	√	-	With adapter 1

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: "-"means no effect.

Radiated Emission Test (Above 1GHz):

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

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

1TX MODE					
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
2TX MODE					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

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.

2TX MODE					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	13

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.

2TX MODE					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	13

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.

1TX MODE					
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
2TX MODE					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

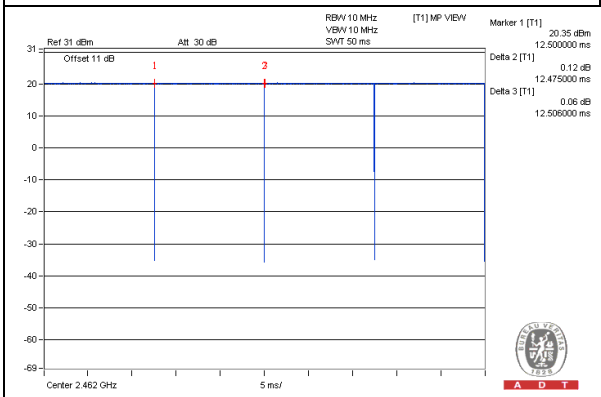
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 68%RH	120Vac, 60Hz	Gary Cheng
RE<1G	21deg. C, 65%RH	120Vac, 60Hz	Tim Ho
PLC	23deg. C, 65%RH	120Vac, 60Hz	Wythe Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Gary Cheng

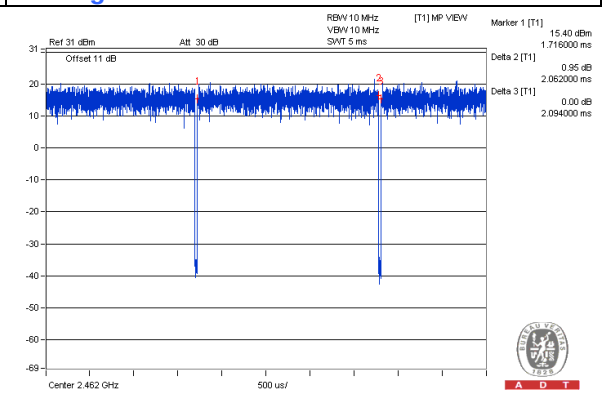
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11b: Duty cycle = 12.475 ms/12.506 ms = 0.998
802.11g: Duty cycle = 2.062 ms/2.094 ms = 0.985
802.11n (HT20): Duty cycle = 1.907 ms/1.937 ms= 0.985
802.11n (HT40): Duty cycle = 0.944 ms/0.963 ms= 0.98

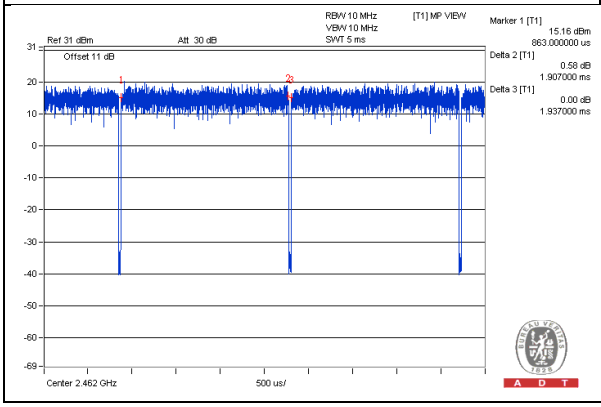
802.11b



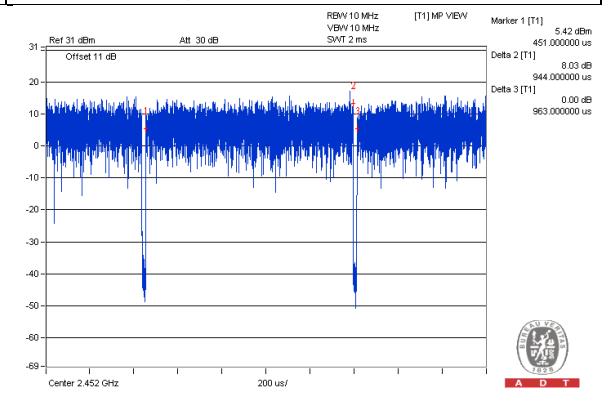
802.11g



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.

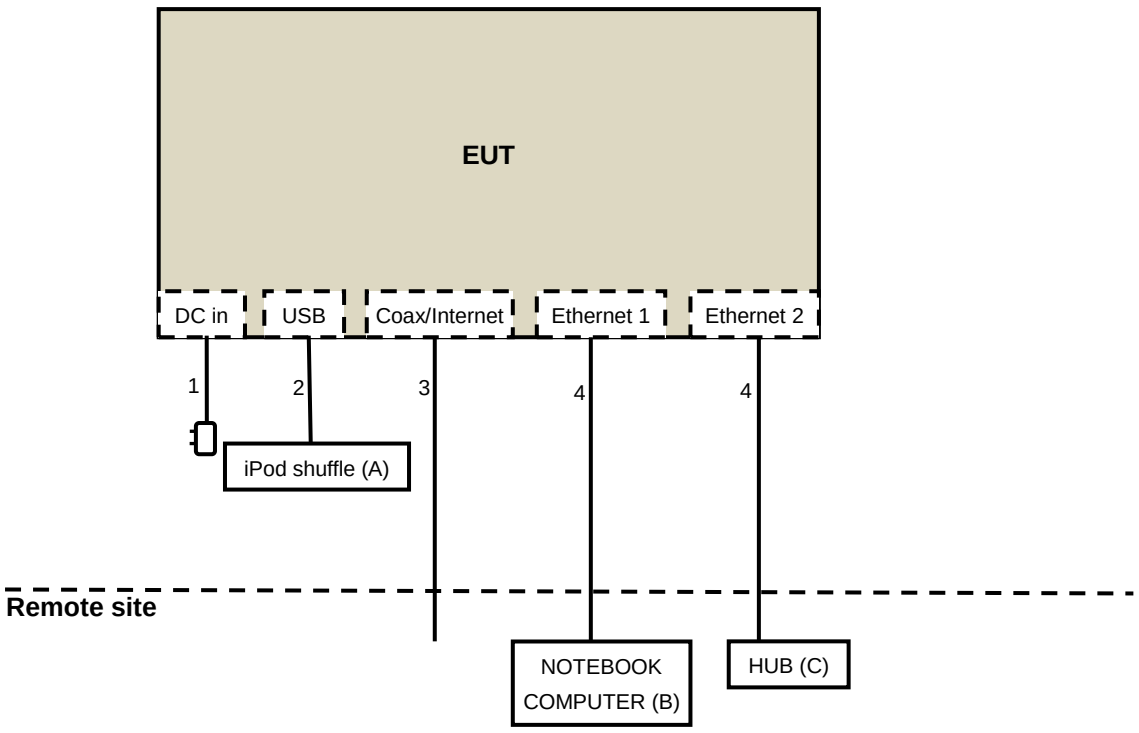
No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	iPod shuffle	Apple	MC749TA/A	CC4DMFJUDFDM	NA	Provided by Lab
B	NOTEBOOK COMPUTER	DELL	E6420	H62T3R1	FCC DoC	Provided by Lab
C	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab

NOTE:

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

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	DC	1	1.8	No	0	Supplied by Client
2	USB	1	0.1	Yes	0	Provided by Lab
3	Coaxial	1	10	Yes	0	Provided by Lab
4	UTP RJ45	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
558074 D01 DTS Meas Guidance v03r02
662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2009

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
MXE EMI Receiver Agilent	N9038A	MY50010156	Aug. 11, 2014	Aug. 10, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Feb. 06, 2015	Feb. 05, 2016
RF Cable	NA	CHHCAB_001	Oct. 05, 2014	Oct. 04, 2015
Horn_Antenna AISI	AIH.8018	0000220091110	Aug. 26, 2014	Aug. 25, 2015
Pre-Amplifier Agilent	8449B	300801923	Oct. 28, 2014	Oct. 27, 2015
RF Cable	NA	131206 131213 131215 SNMY23685/4	Jan. 16, 2015	Jan. 15, 2016
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Dec. 12, 2014	Dec. 11, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	329751/4 RF104-204	Dec. 11, 2014	Dec. 10, 2015
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015
Power Meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power Sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 2015

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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: Apr. 10 to 14, 2015

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters 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:

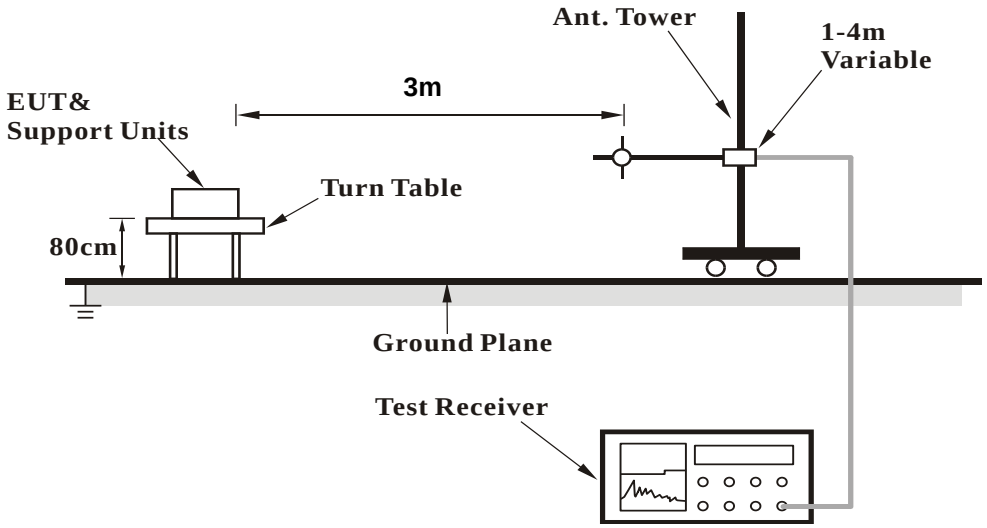
1. For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the ground at 3 meter chamber room for test
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
4. 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/duty cycle)).
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
6. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

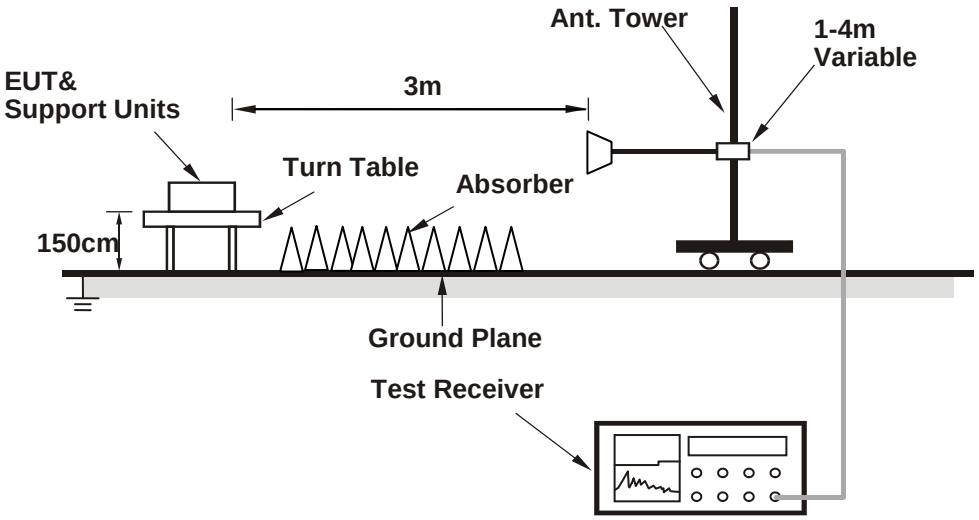
No deviation.

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 support unit B (NOTEBOOK COMPUTER) which is placed on remote site.
2. Controlling software (MTool.exe[2.0.1.0]) has been activated to set the EUT on specific status.

4.1.7 Test Results

1TX MODE

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	59.3 PK	74.0	-14.7	1.35 H	95	65.17	-5.87
2	2390.00	51.7 AV	54.0	-2.3	1.35 H	95	57.57	-5.87
3	*2412.00	106.4 PK			1.35 H	100	112.20	-5.80
4	*2412.00	103.6 AV			1.35 H	100	109.40	-5.80
5	4824.00	53.2 PK	74.0	-20.8	1.72 H	248	49.78	3.42
6	4824.00	48.1 AV	54.0	-5.9	1.72 H	248	44.68	3.42
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	60.5 PK	74.0	-13.5	1.00 V	82	66.37	-5.87
2	2390.00	53.3 AV	54.0	-0.7	1.00 V	82	59.17	-5.87
3	*2412.00	108.8 PK			1.00 V	82	114.60	-5.80
4	*2412.00	106.4 AV			1.00 V	82	112.20	-5.80
5	4824.00	56.3 PK	74.0	-17.7	1.27 V	260	52.88	3.42
6	4824.00	53.5 AV	54.0	-0.5	1.27 V	260	50.08	3.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.4 PK			1.29 H	114	112.10	-5.70
2	*2437.00	103.4 AV			1.29 H	114	109.10	-5.70
3	4874.00	53.4 PK	74.0	-20.6	1.72 H	234	50.00	3.40
4	4874.00	48.2 AV	54.0	-5.8	1.72 H	234	44.80	3.40
5	7311.00	57.6 PK	74.0	-16.4	1.72 H	234	49.84	7.76
6	7311.00	46.6 AV	54.0	-7.4	1.72 H	234	38.84	7.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.9 PK			1.00 V	81	115.60	-5.70
2	*2437.00	107.3 AV			1.00 V	81	113.00	-5.70
3	4874.00	56.2 PK	74.0	-17.8	1.30 V	248	52.80	3.40
4	4874.00	53.7 AV	54.0	-0.3	1.30 V	248	50.30	3.40
5	7311.00	57.7 PK	74.0	-16.3	1.01 V	94	49.94	7.76
6	7311.00	45.4 AV	54.0	-8.6	1.01 V	94	37.64	7.76

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	106.7 PK			1.32 H	106	112.29	-5.59
2	*2462.00	103.9 AV			1.32 H	106	109.49	-5.59
3	4924.00	53.1 PK	74.0	-20.9	1.70 H	229	49.71	3.39
4	4924.00	47.9 AV	54.0	-6.1	1.70 H	229	44.51	3.39
5	7386.00	57.3 PK	74.0	-16.7	1.67 H	237	49.25	8.05
6	7386.00	46.4 AV	54.0	-7.6	1.67 H	237	38.35	8.05
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	108.7 PK			1.00 V	80	114.29	-5.59
2	*2462.00	106.2 AV			1.00 V	80	111.79	-5.59
3	4924.00	54.2 PK	74.0	-19.8	1.28 V	261	50.81	3.39
4	4924.00	51.1 AV	54.0	-2.9	1.28 V	261	47.71	3.39
5	7386.00	61.1 PK	74.0	-12.9	1.00 V	81	53.05	8.05
6	**7386.00**	**53.9 AV**	**54.0**	**-0.1**	**1.00 V**	**81**	**45.85**	**8.05**

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	72.9 PK	74.0	-1.1	1.31 H	88	78.77	-5.87
2	2390.00	52.3 AV	54.0	-1.7	1.31 H	88	58.17	-5.87
3	*2412.00	106.0 PK			1.31 H	88	111.80	-5.80
4	*2412.00	95.1 AV			1.31 H	88	100.90	-5.80
5	4824.00	53.3 PK	74.0	-20.7	1.67 H	229	49.88	3.42
6	4824.00	48.2 AV	54.0	-5.8	1.67 H	229	44.78	3.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.4 PK	74.0	-0.6	1.00 V	86	79.27	-5.87
2	2390.00	52.7 AV	54.0	-1.3	1.00 V	86	58.57	-5.87
3	*2412.00	110.6 PK			1.00 V	84	116.40	-5.80
4	*2412.00	98.8 AV			1.00 V	84	104.60	-5.80
5	4824.00	53.4 PK	74.0	-20.6	1.27 V	274	49.98	3.42
6	4824.00	48.3 AV	54.0	-5.7	1.27 V	274	44.88	3.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.3 PK	74.0	-19.7	1.26 H	87	60.17	-5.87
2	2390.00	48.7 AV	54.0	-5.3	1.26 H	87	54.57	-5.87
3	*2437.00	110.7 PK			1.26 H	87	116.40	-5.70
4	*2437.00	99.8 AV			1.26 H	87	105.50	-5.70
5	2483.50	52.8 PK	74.0	-21.2	1.26 H	87	58.29	-5.49
6	2483.50	46.5 AV	54.0	-7.5	1.26 H	87	51.99	-5.49
7	4874.00	52.9 PK	74.0	-21.1	1.69 H	236	49.50	3.40
8	4874.00	47.7 AV	54.0	-6.3	1.69 H	236	44.30	3.40
9	7311.00	57.7 PK	74.0	-16.3	1.72 H	237	49.94	7.76
10	7311.00	47.0 AV	54.0	-7.0	1.72 H	237	39.24	7.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.2 PK	74.0	-7.8	1.04 V	77	72.07	-5.87
2	2390.00	53.6 AV	54.0	-0.4	1.04 V	77	59.47	-5.87
3	*2437.00	115.7 PK			1.03 V	88	121.40	-5.70
4	*2437.00	103.8 AV			1.03 V	88	109.50	-5.70
5	2483.50	63.2 PK	74.0	-10.8	1.05 V	98	68.69	-5.49
6	2483.50	51.0 AV	54.0	-3.0	1.05 V	98	56.49	-5.49
7	4874.00	53.7 PK	74.0	-20.3	1.33 V	276	50.30	3.40
8	4874.00	48.5 AV	54.0	-5.5	1.33 V	276	45.10	3.40
9	7311.00	58.3 PK	74.0	-15.7	1.03 V	92	50.54	7.76
10	7311.00	47.4 AV	54.0	-6.6	1.03 V	92	39.64	7.76

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	106.3 PK			1.36 H	83	111.89	-5.59
2	*2462.00	95.5 AV			1.36 H	83	101.09	-5.59
3	2483.50	72.2 PK	74.0	-1.8	1.27 H	80	77.69	-5.49
4	2483.50	51.8 AV	54.0	-2.2	1.27 H	80	57.29	-5.49
5	4924.00	53.5 PK	74.0	-20.5	1.71 H	219	50.11	3.39
6	4924.00	48.1 AV	54.0	-5.9	1.71 H	219	44.71	3.39
7	7386.00	57.6 PK	74.0	-16.4	1.76 H	228	49.55	8.05
8	7386.00	46.7 AV	54.0	-7.3	1.76 H	228	38.65	8.05
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	110.9 PK			1.00 V	99	116.49	-5.59
2	*2462.00	99.6 AV			1.00 V	99	105.19	-5.59
3	2483.50	73.3 PK	74.0	-0.7	1.06 V	89	78.79	-5.49
4	2483.50	52.2 AV	54.0	-1.8	1.06 V	89	57.69	-5.49
5	4924.00	53.3 PK	74.0	-20.7	1.39 V	271	49.91	3.39
6	4924.00	48.1 AV	54.0	-5.9	1.39 V	271	44.71	3.39
7	7386.00	58.0 PK	74.0	-16.0	1.08 V	88	49.95	8.05
8	7386.00	47.2 AV	54.0	-6.8	1.08 V	88	39.15	8.05

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	72.3 PK	74.0	-1.7	1.29 H	88	78.17	-5.87
2	2390.00	51.9 AV	54.0	-2.1	1.29 H	88	57.77	-5.87
3	*2412.00	105.9 PK			1.29 H	88	111.70	-5.80
4	*2412.00	95.1 AV			1.29 H	88	100.90	-5.80
5	4824.00	53.2 PK	74.0	-20.8	1.72 H	249	49.78	3.42
6	4824.00	48.0 AV	54.0	-6.0	1.72 H	249	44.58	3.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.7 PK	74.0	-0.3	1.03 V	87	79.57	-5.87
2	2390.00	52.9 AV	54.0	-1.1	1.03 V	87	58.77	-5.87
3	*2412.00	110.5 PK			1.02 V	87	116.30	-5.80
4	*2412.00	99.0 AV			1.02 V	87	104.80	-5.80
5	4824.00	52.8 PK	74.0	-21.2	1.40 V	256	49.38	3.42
6	4824.00	47.7 AV	54.0	-6.3	1.40 V	256	44.28	3.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.6 PK	74.0	-19.4	1.32 H	74	60.47	-5.87
2	2390.00	49.0 AV	54.0	-5.0	1.32 H	74	54.87	-5.87
3	*2437.00	111.0 PK			1.32 H	74	116.70	-5.70
4	*2437.00	100.2 AV			1.32 H	74	105.90	-5.70
5	2500.00	53.1 PK	74.0	-20.9	1.32 H	74	58.53	-5.43
6	2500.00	46.7 AV	54.0	-7.3	1.32 H	74	52.13	-5.43
7	4874.00	53.4 PK	74.0	-20.6	1.77 H	238	50.00	3.40
8	4874.00	48.1 AV	54.0	-5.9	1.77 H	238	44.70	3.40
9	7311.00	57.0 PK	74.0	-17.0	1.76 H	249	49.24	7.76
10	7311.00	46.3 AV	54.0	-7.7	1.76 H	249	38.54	7.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.6 PK	74.0	-7.4	1.02 V	85	72.47	-5.87
2	2390.00	53.5 AV	54.0	-0.5	1.02 V	85	59.37	-5.87
3	*2437.00	115.7 PK			1.02 V	85	121.40	-5.70
4	*2437.00	105.0 AV			1.02 V	85	110.70	-5.70
5	2500.00	62.8 PK	74.0	-11.2	1.02 V	85	68.23	-5.43
6	2500.00	50.7 AV	54.0	-3.3	1.02 V	85	56.13	-5.43
7	4874.00	53.3 PK	74.0	-20.7	1.34 V	262	49.90	3.40
8	4874.00	48.4 AV	54.0	-5.6	1.34 V	262	45.00	3.40
9	7311.00	58.1 PK	74.0	-15.9	1.09 V	74	50.34	7.76
10	7311.00	47.5 AV	54.0	-6.5	1.09 V	74	39.74	7.76

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	106.2 PK			1.28 H	77	111.79	-5.59
2	*2462.00	95.5 AV			1.28 H	77	101.09	-5.59
3	2483.50	72.3 PK	74.0	-1.7	1.28 H	77	77.79	-5.49
4	2483.50	51.9 AV	54.0	-2.1	1.28 H	77	57.39	-5.49
5	4924.00	54.1 PK	74.0	-19.9	1.70 H	238	50.71	3.39
6	4924.00	48.6 AV	54.0	-5.4	1.70 H	238	45.21	3.39
7	7386.00	57.0 PK	74.0	-17.0	1.76 H	220	48.95	8.05
8	7386.00	46.1 AV	54.0	-7.9	1.76 H	220	38.05	8.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.1 PK			1.00 V	86	116.69	-5.59
2	*2462.00	100.5 AV			1.00 V	86	106.09	-5.59
3	2483.50	73.4 PK	74.0	-0.6	1.00 V	86	78.89	-5.49
4	2483.50	52.6 AV	54.0	-1.4	1.00 V	86	58.09	-5.49
5	4924.00	53.5 PK	74.0	-20.5	1.44 V	276	50.11	3.39
6	4924.00	48.0 AV	54.0	-6.0	1.44 V	276	44.61	3.39
7	7386.00	57.6 PK	74.0	-16.4	1.10 V	93	49.55	8.05
8	7386.00	46.7 AV	54.0	-7.3	1.10 V	93	38.65	8.05

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	71.7 PK	74.0	-2.3	1.33 H	94	77.57	-5.87
2	2390.00	51.5 AV	54.0	-2.5	1.33 H	94	57.37	-5.87
3	*2422.00	101.0 PK			1.33 H	94	106.76	-5.76
4	*2422.00	90.0 AV			1.33 H	94	95.76	-5.76
5	4844.00	53.7 PK	74.0	-20.3	1.71 H	223	50.29	3.41
6	4844.00	48.2 AV	54.0	-5.8	1.71 H	223	44.79	3.41
7	7266.00	58.0 PK	74.0	-16.0	1.76 H	240	50.42	7.58
8	7266.00	47.0 AV	54.0	-7.0	1.76 H	240	39.42	7.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.3 PK	74.0	-0.7	1.02 V	88	79.17	-5.87
2	2390.00	52.0 AV	54.0	-2.0	1.02 V	88	57.87	-5.87
3	*2422.00	104.7 PK			1.02 V	88	110.46	-5.76
4	*2422.00	94.0 AV			1.02 V	88	99.76	-5.76
5	4844.00	53.0 PK	74.0	-21.0	1.38 V	286	49.59	3.41
6	4844.00	47.8 AV	54.0	-6.2	1.38 V	286	44.39	3.41
7	7266.00	58.0 PK	74.0	-16.0	1.08 V	76	50.42	7.58
8	7266.00	46.9 AV	54.0	-7.1	1.08 V	76	39.32	7.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.4 PK	74.0	-19.6	1.36 H	79	60.27	-5.87
2	2390.00	49.0 AV	54.0	-5.0	1.36 H	79	54.87	-5.87
3	*2437.00	103.1 PK			1.36 H	79	108.80	-5.70
4	*2437.00	92.1 AV			1.36 H	79	97.80	-5.70
5	2483.50	53.4 PK	74.0	-20.6	1.36 H	79	58.89	-5.49
6	2483.50	46.8 AV	54.0	-7.2	1.36 H	79	52.29	-5.49
7	4874.00	53.0 PK	74.0	-21.0	1.77 H	245	49.60	3.40
8	4874.00	47.9 AV	54.0	-6.1	1.77 H	245	44.50	3.40
9	7311.00	57.8 PK	74.0	-16.2	1.74 H	244	50.04	7.76
10	7311.00	46.9 AV	54.0	-7.1	1.74 H	244	39.14	7.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.4 PK	74.0	-3.6	1.00 V	85	76.27	-5.87
2	2390.00	53.4 AV	54.0	-0.6	1.00 V	85	59.27	-5.87
3	*2437.00	108.1 PK			1.00 V	85	113.80	-5.70
4	*2437.00	96.5 AV			1.00 V	85	102.20	-5.70
5	2483.50	70.8 PK	74.0	-3.2	1.00 V	85	76.29	-5.49
6	2483.50	52.8 AV	54.0	-1.2	1.00 V	85	58.29	-5.49
7	4874.00	53.5 PK	74.0	-20.5	1.38 V	266	50.10	3.40
8	4874.00	48.4 AV	54.0	-5.6	1.38 V	266	45.00	3.40
9	7311.00	57.6 PK	74.0	-16.4	1.05 V	77	49.84	7.76
10	7311.00	46.9 AV	54.0	-7.1	1.05 V	77	39.14	7.76

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	100.8 PK			1.36 H	96	106.44	-5.64
2	*2452.00	90.1 AV			1.36 H	96	95.74	-5.64
3	2483.50	71.2 PK	74.0	-2.8	1.36 H	96	76.69	-5.49
4	2483.50	51.1 AV	54.0	-2.9	1.36 H	96	56.59	-5.49
5	4904.00	53.6 PK	74.0	-20.4	1.68 H	235	50.21	3.39
6	4904.00	48.6 AV	54.0	-5.4	1.68 H	235	45.21	3.39
7	7356.00	57.7 PK	74.0	-16.3	1.74 H	226	49.76	7.94
8	7356.00	46.8 AV	54.0	-7.2	1.74 H	226	38.86	7.94
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	106.3 PK			1.00 V	85	111.94	-5.64
2	*2452.00	95.0 AV			1.00 V	85	100.64	-5.64
3	2483.50	73.5 PK	74.0	-0.5	1.00 V	85	78.99	-5.49
4	2483.50	52.2 AV	54.0	-1.8	1.00 V	85	57.69	-5.49
5	4904.00	53.5 PK	74.0	-20.5	1.37 V	259	50.11	3.39
6	4904.00	48.1 AV	54.0	-5.9	1.37 V	259	44.71	3.39
7	7356.00	58.1 PK	74.0	-15.9	1.06 V	72	50.16	7.94
8	7356.00	47.3 AV	54.0	-6.7	1.06 V	72	39.36	7.94

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.

2TX MODE

Above 1GHz Data:

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	73.3 PK	74.0	-0.7	1.37 H	81	79.17	-5.87
2	2390.00	52.4 AV	54.0	-1.6	1.37 H	81	58.27	-5.87
3	*2412.00	105.1 PK			1.33 H	77	110.90	-5.80
4	*2412.00	95.7 AV			1.33 H	77	101.50	-5.80
5	4824.00	53.2 PK	74.0	-20.8	1.63 H	239	49.78	3.42
6	4824.00	48.5 AV	54.0	-5.5	1.63 H	239	45.08	3.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	**2390.00**	**73.9 PK**	**74.0**	**-0.1**	**1.00 V**	**81**	**79.77**	**-5.87**
2	2390.00	53.5 AV	54.0	-0.5	1.00 V	81	59.37	-5.87
3	*2412.00	111.0 PK			1.84 V	72	116.80	-5.80
4	*2412.00	99.1 AV			1.84 V	72	104.90	-5.80
5	4824.00	54.2 PK	74.0	-19.8	1.30 V	266	50.78	3.42
6	4824.00	48.3 AV	54.0	-5.7	1.30 V	266	44.88	3.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.5 PK	74.0	-8.5	1.38 H	77	71.37	-5.87
2	2390.00	51.8 AV	54.0	-2.2	1.38 H	77	57.67	-5.87
3	*2437.00	114.1 PK			1.38 H	77	119.80	-5.70
4	*2437.00	100.8 AV			1.38 H	77	106.50	-5.70
5	4874.00	53.9 PK	74.0	-20.1	1.60 H	239	50.50	3.40
6	4874.00	48.8 AV	54.0	-5.2	1.60 H	239	45.40	3.40
7	7311.00	57.9 PK	74.0	-16.1	1.71 H	220	50.14	7.76
8	7311.00	46.7 AV	54.0	-7.3	1.71 H	220	38.94	7.76
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	67.1 PK	74.0	-6.9	1.01 V	81	72.97	-5.87
2	2390.00	53.4 AV	54.0	-0.6	1.01 V	81	59.27	-5.87
3	*2437.00	118.9 PK			1.00 V	78	124.60	-5.70
4	*2437.00	105.4 AV			1.00 V	78	111.10	-5.70
5	2483.50	62.1 PK	74.0	-11.9	1.01 V	81	67.59	-5.49
6	2483.50	43.0 AV	54.0	-11.0	1.01 V	81	48.49	-5.49
7	4874.00	54.5 PK	74.0	-19.5	1.37 V	245	51.10	3.40
8	4874.00	48.5 AV	54.0	-5.5	1.37 V	245	45.10	3.40
9	7311.00	57.5 PK	74.0	-16.5	1.06 V	74	49.74	7.76
10	7311.00	47.1 AV	54.0	-6.9	1.06 V	74	39.34	7.76

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.2 PK			1.39 H	80	110.79	-5.59
2	*2462.00	95.8 AV			1.39 H	80	101.39	-5.59
3	2483.50	72.4 PK	74.0	-1.6	1.39 H	87	77.89	-5.49
4	2483.50	52.1 AV	54.0	-1.9	1.39 H	87	57.59	-5.49
5	4924.00	54.0 PK	74.0	-20.0	1.65 H	250	50.61	3.39
6	4924.00	48.8 AV	54.0	-5.2	1.65 H	250	45.41	3.39
7	7386.00	58.0 PK	74.0	-16.0	1.75 H	218	49.95	8.05
8	7386.00	46.7 AV	54.0	-7.3	1.75 H	218	38.65	8.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.6 PK			1.00 V	81	117.19	-5.59
2	*2462.00	99.7 AV			1.00 V	81	105.29	-5.59
3	2483.50	73.6 PK	74.0	-0.4	1.00 V	81	79.09	-5.49
4	2483.50	53.6 AV	54.0	-0.4	1.00 V	81	59.09	-5.49
5	4924.00	53.8 PK	74.0	-20.2	1.30 V	259	50.41	3.39
6	4924.00	48.1 AV	54.0	-5.9	1.30 V	259	44.71	3.39
7	7386.00	58.1 PK	74.0	-15.9	1.15 V	74	50.05	8.05
8	7386.00	47.6 AV	54.0	-6.4	1.15 V	74	39.55	8.05

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	72.9 PK	74.0	-1.1	1.38 H	90	78.77	-5.87
2	2390.00	52.3 AV	54.0	-1.7	1.38 H	90	58.17	-5.87
3	*2422.00	100.4 PK			1.38 H	90	106.16	-5.76
4	*2422.00	91.3 AV			1.38 H	90	97.06	-5.76
5	4844.00	53.6 PK	74.0	-20.4	1.61 H	241	50.19	3.41
6	4844.00	48.6 AV	54.0	-5.4	1.61 H	241	45.19	3.41
7	7266.00	58.5 PK	74.0	-15.5	1.81 H	207	50.92	7.58
8	7266.00	47.1 AV	54.0	-6.9	1.81 H	207	39.52	7.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**2390.00**	**73.9 PK**	**74.0**	**-0.1**	**1.01 V**	**81**	**79.77**	**-5.87**
2	2390.00	53.6 AV	54.0	-0.4	1.01 V	81	59.47	-5.87
3	*2422.00	106.9 PK			1.00 V	81	112.66	-5.76
4	*2422.00	94.1 AV			1.00 V	81	99.86	-5.76
5	4844.00	53.8 PK	74.0	-20.2	1.31 V	254	50.39	3.41
6	4844.00	48.0 AV	54.0	-6.0	1.31 V	254	44.59	3.41
7	7266.00	57.6 PK	74.0	-16.4	1.10 V	88	50.02	7.58
8	7266.00	47.2 AV	54.0	-6.8	1.10 V	88	39.62	7.58

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.44 H	74	71.07	-5.87
2	2390.00	51.5 AV	54.0	-2.5	1.44 H	74	57.37	-5.87
3	*2437.00	105.5 PK			1.38 H	81	111.20	-5.70
4	*2437.00	93.9 AV			1.38 H	81	99.60	-5.70
5	4874.00	52.9 PK	74.0	-21.1	1.63 H	247	49.50	3.40
6	4874.00	48.1 AV	54.0	-5.9	1.63 H	247	44.70	3.40
7	7311.00	57.9 PK	74.0	-16.1	1.78 H	212	50.14	7.76
8	7311.00	46.6 AV	54.0	-7.4	1.78 H	212	38.84	7.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.1 PK	74.0	-1.9	1.00 V	79	77.97	-5.87
2	2390.00	53.5 AV	54.0	-0.5	1.00 V	79	59.37	-5.87
3	*2437.00	108.5 PK			1.03 V	78	114.20	-5.70
4	*2437.00	96.8 AV			1.03 V	78	102.50	-5.70
5	2483.50	68.6 PK	74.0	-5.4	1.00 V	79	74.09	-5.49
6	2483.50	51.5 AV	54.0	-2.5	1.00 V	79	56.99	-5.49
7	4874.00	54.2 PK	74.0	-19.8	1.32 V	245	50.80	3.40
8	4874.00	48.7 AV	54.0	-5.3	1.32 V	245	45.30	3.40
9	7311.00	57.1 PK	74.0	-16.9	1.12 V	65	49.34	7.76
10	7311.00	46.7 AV	54.0	-7.3	1.12 V	65	38.94	7.76

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	100.7 PK			1.35 H	81	106.34	-5.64
2	*2452.00	91.6 AV			1.35 H	81	97.24	-5.64
3	2483.50	72.6 PK	74.0	-1.4	1.35 H	81	78.09	-5.49
4	2483.50	52.2 AV	54.0	-1.8	1.35 H	81	57.69	-5.49
5	4904.00	53.5 PK	74.0	-20.5	1.65 H	226	50.11	3.39
6	4904.00	48.7 AV	54.0	-5.3	1.65 H	226	45.31	3.39
7	7356.00	58.0 PK	74.0	-16.0	1.76 H	217	50.06	7.94
8	7356.00	46.9 AV	54.0	-7.1	1.76 H	217	38.96	7.94
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	108.6 PK			1.00 V	79	114.24	-5.64
2	*2452.00	95.0 AV			1.00 V	79	100.64	-5.64
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**1.00 V**	**79**	**79.39**	**-5.49**
4	2483.50	53.1 AV	54.0	-0.9	1.00 V	79	58.59	-5.49
5	4904.00	53.9 PK	74.0	-20.1	1.36 V	249	50.51	3.39
6	4904.00	48.3 AV	54.0	-5.7	1.36 V	249	44.91	3.39
7	7356.00	57.6 PK	74.0	-16.4	1.09 V	77	49.66	7.94
8	7356.00	47.1 AV	54.0	-6.9	1.09 V	77	39.16	7.94

REMARKS:

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

Below 1GHz Data:

802.11n (HT20)

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	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	125.01	34.2 QP	43.5	-9.3	1.50 H	4	48.80	-14.62
2	249.99	40.8 QP	46.0	-5.2	2.00 H	314	54.65	-13.87
3	374.98	38.1 QP	46.0	-7.9	1.00 H	69	48.30	-10.22
4	500.01	39.9 QP	46.0	-6.1	1.00 H	252	47.08	-7.16
5	624.99	41.5 QP	46.0	-4.5	2.00 H	113	45.81	-4.33
6	874.96	40.2 QP	46.0	-5.8	2.00 H	355	40.58	-0.36
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	62.50	35.5 QP	40.0	-4.5	1.00 V	188	49.87	-14.40
2	71.41	37.8 QP	40.0	-2.2	1.00 V	356	53.41	-15.62
3	125.01	39.6 QP	43.5	-3.9	1.00 V	139	54.21	-14.62
4	250.00	39.4 QP	46.0	-6.6	1.00 V	209	53.30	-13.87
5	533.24	41.3 QP	46.0	-4.7	1.00 V	105	47.89	-6.59
6	625.01	44.4 QP	46.0	-1.6	1.04 V	165	48.68	-4.31

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 ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Sep. 15, 2014	Sep. 14, 2015
Line-Impedance Stabilization Network (for Peripheral) ROHDE & SCHWARZ	ENV216	100071	Nov. 10, 2014	Nov. 09, 2015
RF Cable (JYEBAO)	5D-FB	COCCAB-001	Mar. 09, 2015	Mar. 08, 2016
50 ohms Terminator	N/A	EMC-03	Sep. 22, 2014	Sep. 21, 2015
50 ohms Terminator	N/A	EMC-02	Sep. 30, 2014	Sep. 29, 2015
Software ADT	BV ADT_Cond_V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Mar. 25, 2015

4.2.3 Test Procedures

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

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

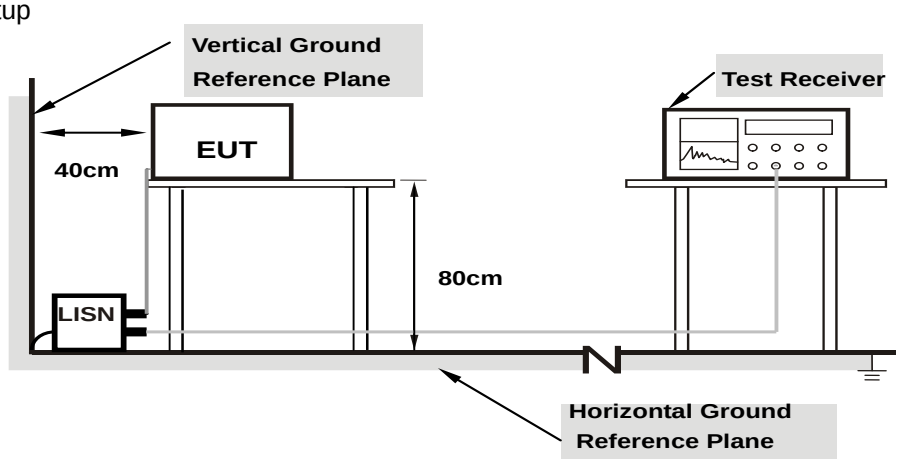
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

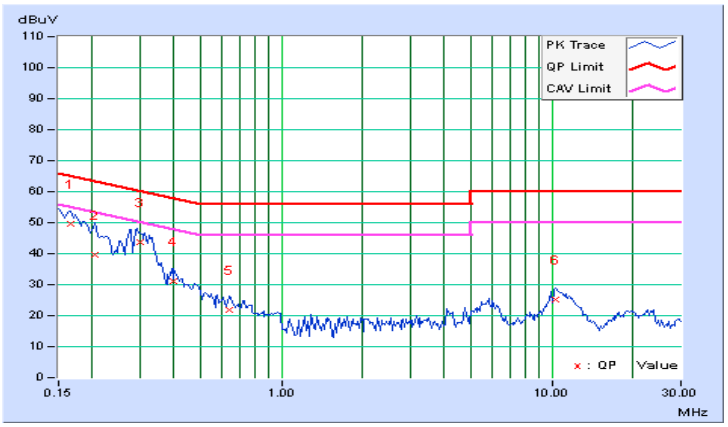
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	0.08	49.65	40.61	49.73	40.69	65.18	55.18	-15.44	-14.48
2	0.20469	0.09	39.36	30.48	39.45	30.57	63.42	53.42	-23.97	-22.85
3	0.30153	0.10	43.60	40.53	43.70	40.63	60.20	50.20	-16.51	-9.58
4	0.40000	0.10	31.09	23.76	31.19	23.86	57.85	47.85	-26.66	-23.99
5	0.64219	0.11	21.79	14.02	21.90	14.13	56.00	46.00	-34.10	-31.87
6	10.26953	0.46	24.63	20.80	25.09	21.26	60.00	50.00	-34.91	-28.74

REMARKS:

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

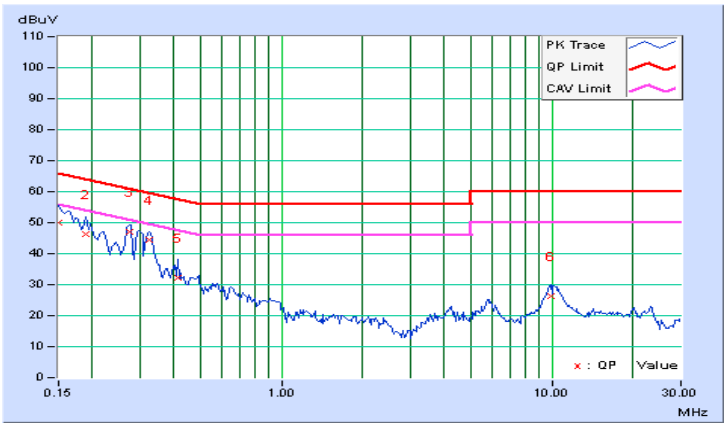


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.08	49.92	38.72	50.00	38.80	66.00	56.00	-16.00	-17.20
2	0.18906	0.08	46.21	38.97	46.29	39.05	64.08	54.08	-17.79	-15.03
3	**0.27500**	**0.09**	**46.86**	**43.09**	**46.95**	**43.18**	**60.97**	**50.97**	**-14.02**	**-7.79**
4	0.32578	0.09	44.33	41.33	44.42	41.42	59.56	49.56	-15.14	-8.14
5	0.41172	0.10	32.15	26.34	32.25	26.44	57.61	47.61	-25.36	-21.17
6	9.98047	0.46	25.78	21.81	26.24	22.27	60.00	50.00	-33.76	-27.73

REMARKS:

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



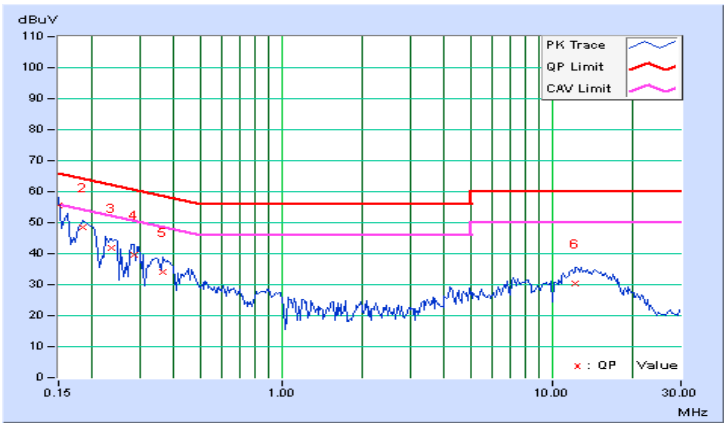
4.2.8 Test Results (Mode 2)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.08	55.40	40.22	55.48	40.30	66.00	56.00	-10.52	-15.70
2	0.18516	0.09	48.40	38.05	48.49	38.14	64.25	54.25	-15.76	-16.11
3	0.23594	0.09	41.83	31.92	41.92	32.01	62.24	52.24	-20.32	-20.23
4	0.28672	0.09	39.40	28.03	39.49	28.12	60.62	50.62	-21.12	-22.49
5	0.36484	0.10	34.02	22.62	34.12	22.72	58.62	48.62	-24.50	-25.90
6	12.24609	0.51	29.89	24.42	30.40	24.93	60.00	50.00	-29.60	-25.07

REMARKS:

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

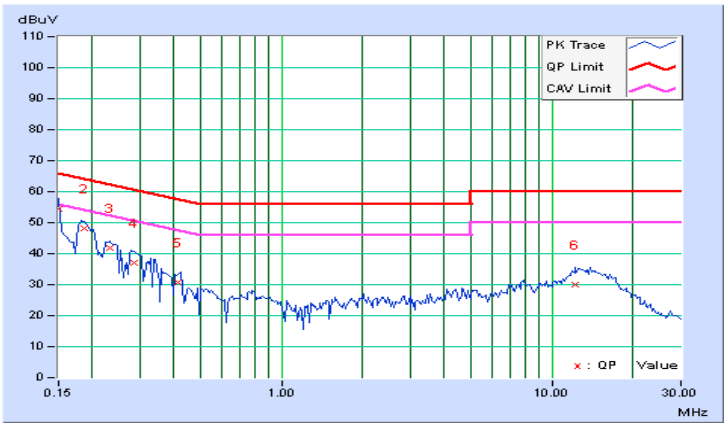


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.08	54.53	35.66	54.61	35.74	66.00	56.00	-11.39	-20.26
2	0.18700	0.08	47.96	38.81	48.04	38.89	64.17	54.17	-16.13	-15.28
3	0.23203	0.08	41.84	32.00	41.92	32.08	62.38	52.38	-20.45	-20.29
4	0.28672	0.09	37.06	23.88	37.15	23.97	60.62	50.62	-23.47	-26.65
5	0.41434	0.10	30.59	19.49	30.69	19.59	57.56	47.56	-26.87	-27.97
6	12.19922	0.52	29.39	24.52	29.91	25.04	60.00	50.00	-30.09	-24.96

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.

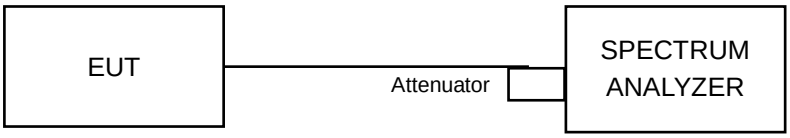


4.3 6dB Bandwidth Measurement

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.

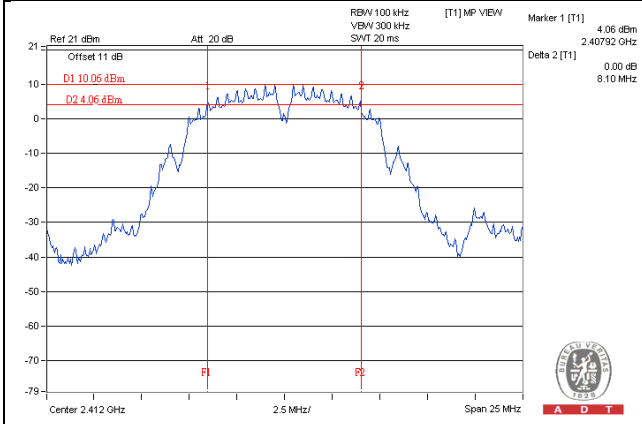
4.3.7 Test Result

1TX MODE

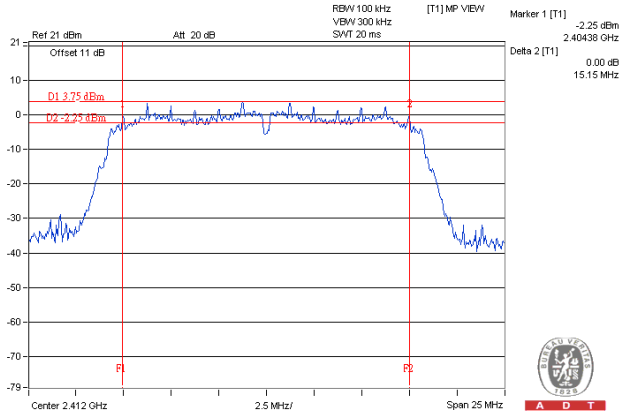
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
802.11b				
1	2412	8.10	0.5	Pass
6	2437	8.12	0.5	Pass
11	2462	8.11	0.5	Pass
802.11g				
1	2412	15.15	0.5	Pass
6	2437	15.16	0.5	Pass
11	2462	15.18	0.5	Pass
802.11n (HT20)				
1	2412	15.15	0.5	Pass
6	2437	15.16	0.5	Pass
11	2462	15.13	0.5	Pass
802.11n (HT40)				
3	2422	36.42	0.5	Pass
6	2437	36.39	0.5	Pass
9	2452	36.20	0.5	Pass

Spectrum Plot of Worst Value

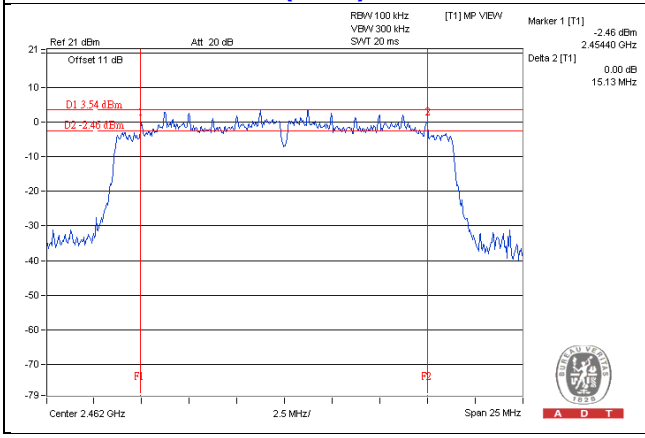
802.11b – CH 1



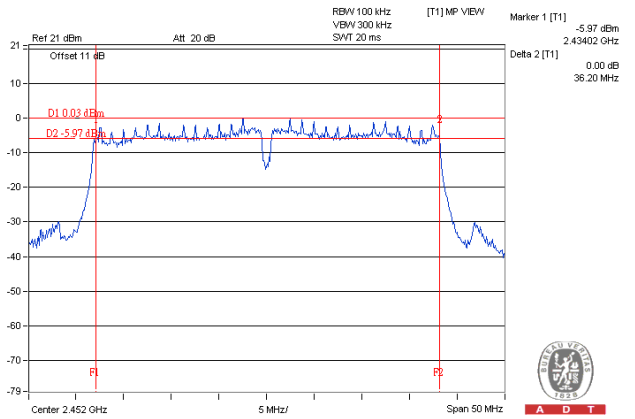
802.11g – CH1



802.11n (HT20) – CH 11



802.11n (HT40) – CH9

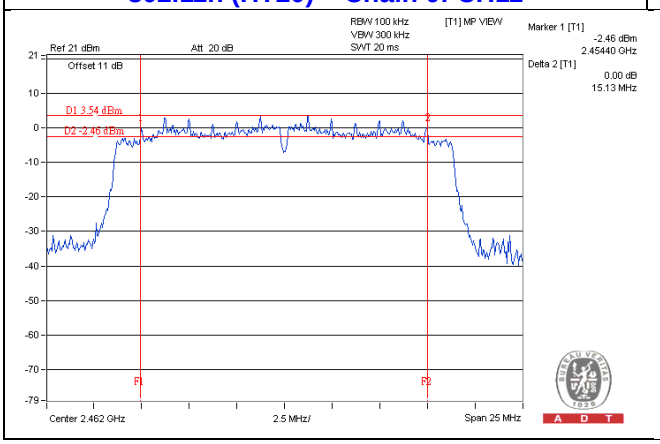


2TX MODE

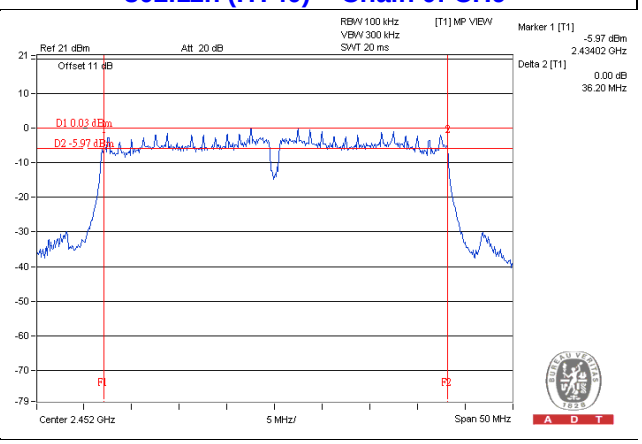
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		CHAIN 0	CHAIN 1		
802.11n (HT20)					
1	2412	15.15	15.75	0.5	Pass
6	2437	15.16	15.16	0.5	Pass
11	2462	15.13	16.93	0.5	Pass
802.11n (HT40)					
3	2422	36.42	36.46	0.5	Pass
6	2437	36.39	36.39	0.5	Pass
9	2452	36.20	36.47	0.5	Pass

Spectrum Plot of Worst Value

802.11n (HT20) – Chain 0: CH11



802.11n (HT40) – Chain 0: CH9



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

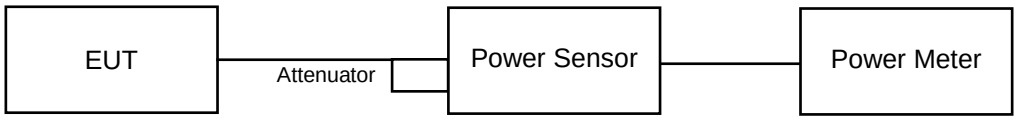
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) 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

1TX MODE

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
802.11b					
1	2412	161.065	22.07	30	Pass
6	2437	194.536	22.89	30	Pass
11	2462	169.044	22.28	30	Pass
802.11g					
1	2412	170.608	22.32	30	Pass
6	2437	297.852	24.74	30	Pass
11	2462	186.638	22.71	30	Pass
802.1n (HT20)					
1	2412	158.855	22.01	30	Pass
6	2437	311.172	24.93	30	Pass
11	2462	183.654	22.64	30	Pass
802.1n (HT40)					
3	2422	148.936	21.73	30	Pass
6	2437	217.27	23.37	30	Pass
9	2452	174.985	22.43	30	Pass

2TX MODE

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
802.11n (HT20)							
1	2412	21.41	21.51	279.936	24.47	30	Pass
6	2437	24.48	24.52	563.682	27.51	30	Pass
11	2462	21.67	21.56	290.112	24.63	30	Pass
802.11n (HT40)							
3	2422	21.17	21.24	263.963	24.22	30	Pass
6	2437	22.21	22.39	339.721	25.31	30	Pass
9	2452	21.38	21.02	263.878	24.21	30	Pass

FOR AVERAGE POWER

1TX MODE

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
802.11b			
1	2412	69.984	18.45
6	2437	87.498	19.42
11	2462	74.302	18.71
802.11g			
1	2412	26.977	14.31
6	2437	93.972	19.73
11	2462	30.620	14.86
802.11n (HT20)			
1	2412	24.717	13.93
6	2437	100.231	20.01
11	2462	28.708	14.58
802.11n (HT40)			
3	2422	19.861	12.98
6	2437	33.963	15.31
9	2452	24.660	13.92

2TX MODE

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
802.11n (HT20)					
1	2412	13.29	13.31	42.759	16.31
6	2437	19.52	19.87	186.587	22.71
11	2462	13.73	13.81	47.649	16.78
802.11n (HT40)					
3	2422	12.53	12.51	35.730	15.53
6	2437	14.21	14.28	53.155	17.26
9	2452	13.19	13.07	41.122	16.14

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

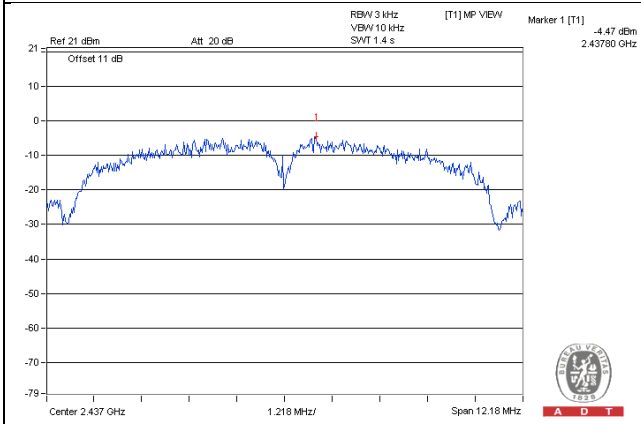
4.5.7 Test Results

1TX MODE

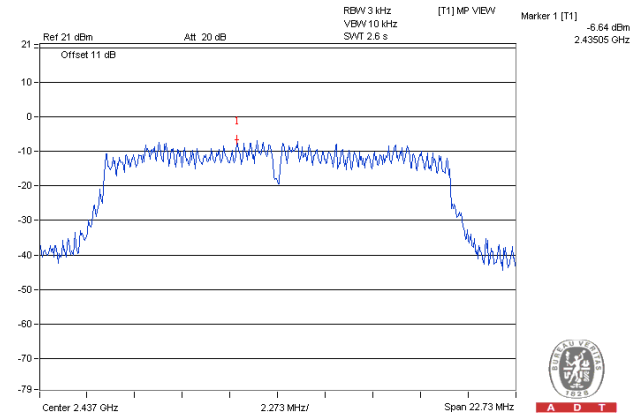
Channel	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Pass /Fail
802.11b				
1	2412	-5.08	8	Pass
6	2437	-4.47	8	Pass
11	2462	-4.63	8	Pass
802.11g				
1	2412	-11.10	8	Pass
6	2437	-6.64	8	Pass
11	2462	-11.37	8	Pass
802.11n (HT20)				
1	2412	-11.95	8	Pass
6	2437	-6.38	8	Pass
11	2462	-10.73	8	Pass
802.11n (HT40)				
3	2422	-15.28	8	Pass
6	2437	-12.17	8	Pass
9	2452	-15.17	8	Pass

Spectrum Plot of Worst Value

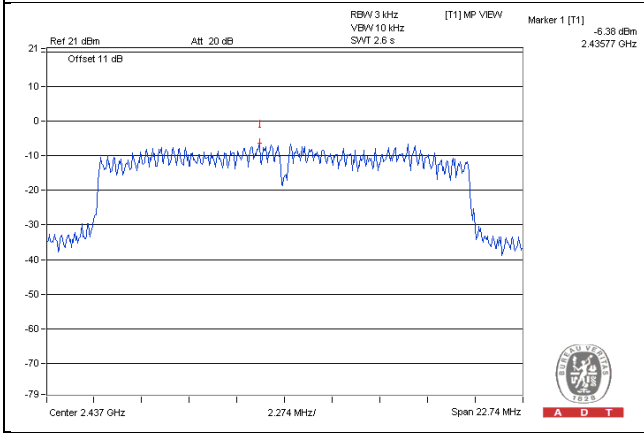
802.11b – CH6



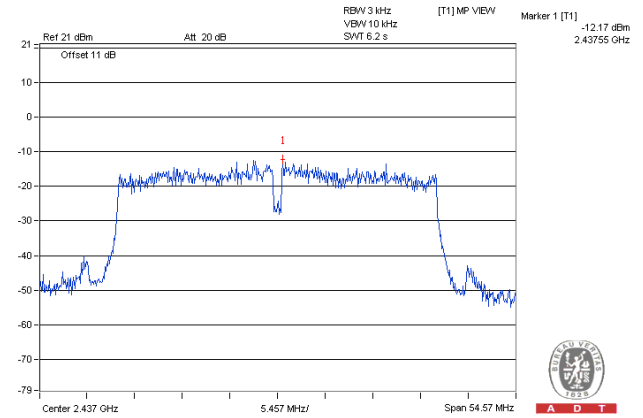
802.11g – CH6



802.11n (HT20) – CH6



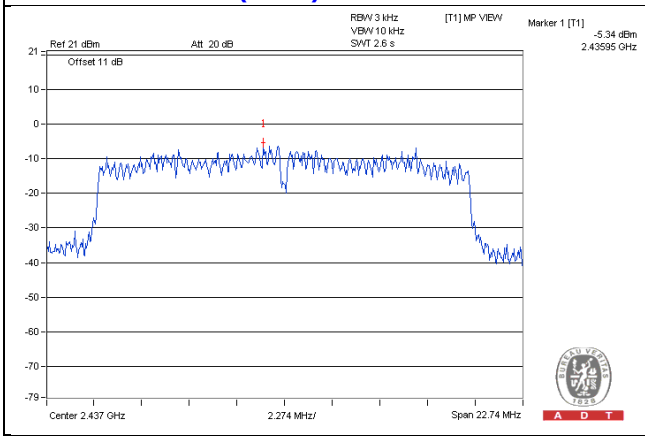
802.11n (HT40) – CH6

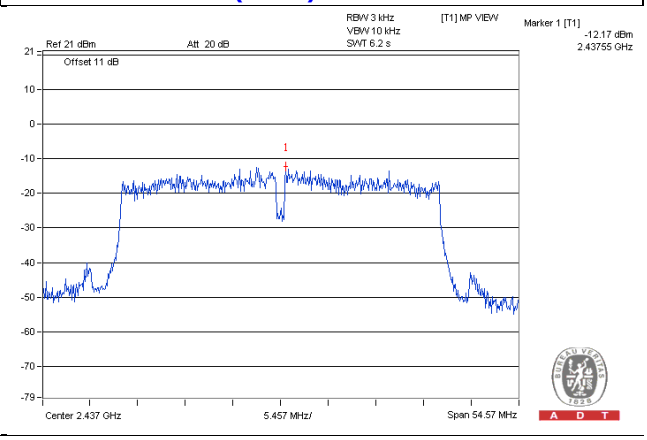


2TX MODE

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass /Fail
802.11n (HT20)							
0	1	2412	-11.95	3.01	-8.94	8	Pass
	6	2437	-6.38	3.01	-3.37	8	Pass
	11	2462	-10.73	3.01	-7.72	8	Pass
1	1	2412	-11.37	3.01	-8.36	8	Pass
	6	2437	-5.34	3.01	-2.33	8	Pass
	11	2462	-12.82	3.01	-9.81	8	Pass
802.11n (HT40)							
0	3	2422	-15.28	3.01	-12.27	8	Pass
	6	2437	-12.17	3.01	-9.16	8	Pass
	9	2452	-15.17	3.01	-12.16	8	Pass
1	3	2422	-16.28	3.01	-13.27	8	Pass
	6	2437	-14.40	3.01	-11.39	8	Pass
	9	2452	-14.46	3.01	-11.45	8	Pass

Spectrum Plot of Worst Value	
802.11n (HT20) – Chain 1: CH6	**802.11n (HT40) – Chain 0: CH6**



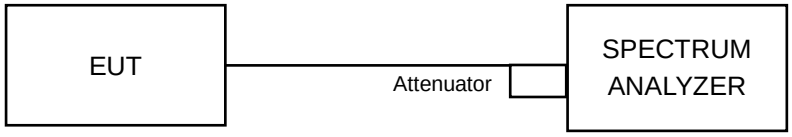


4.6 Conducted Out of Band Emission Measurement

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

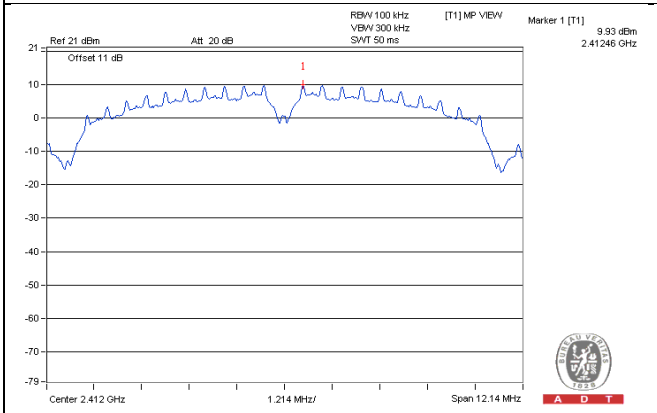
4.6.7 Test Results

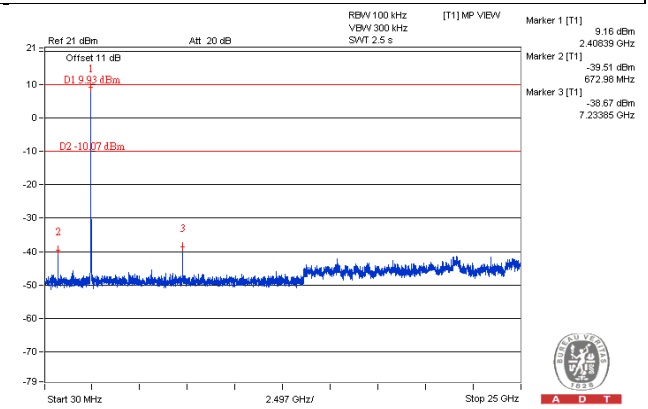
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

1TX MODE

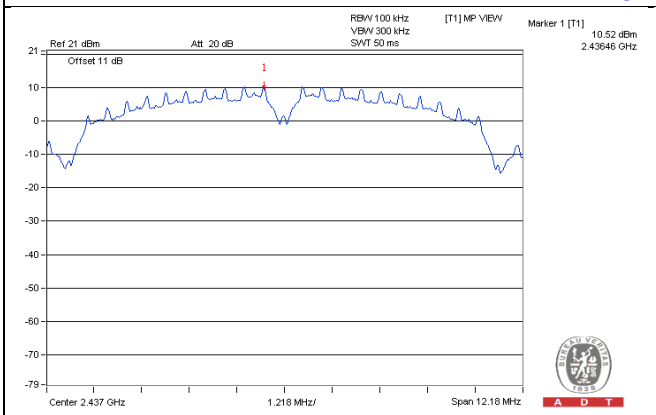
802.11b

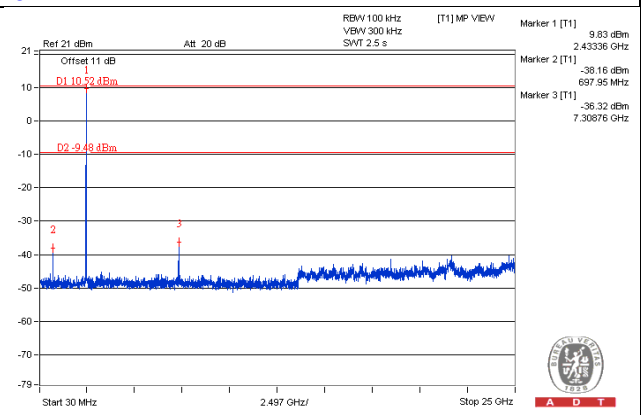
CH 1



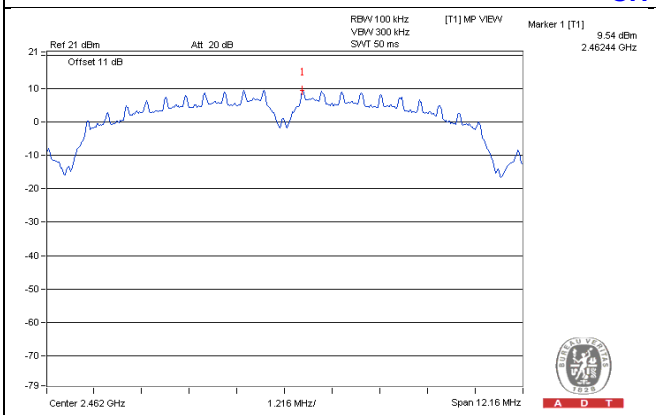


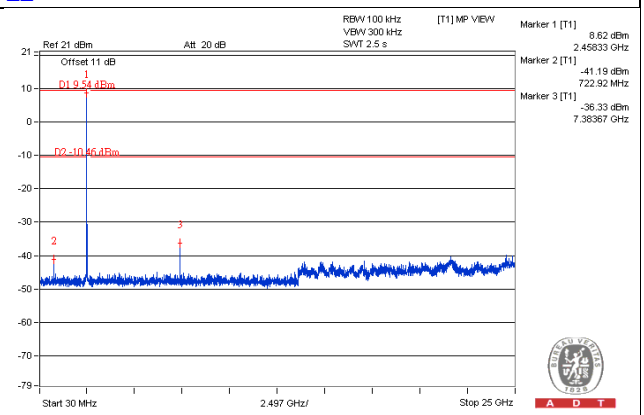
CH 6



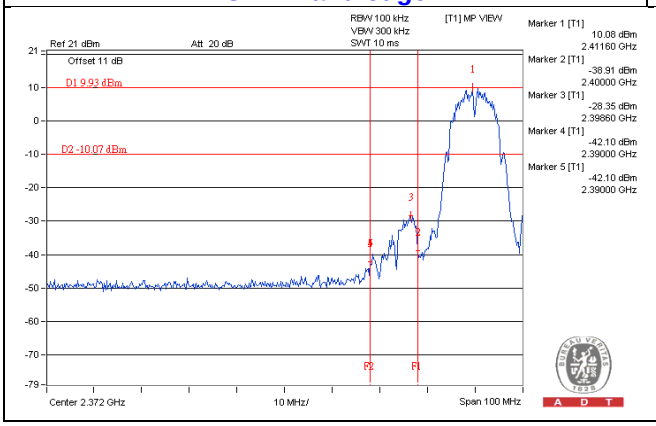


CH 11

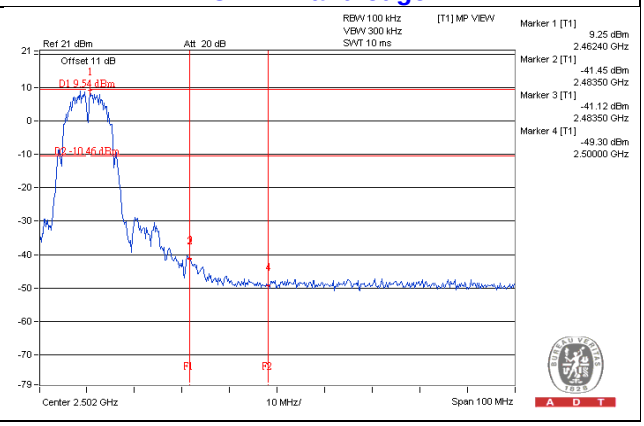




CH 1 Band edge

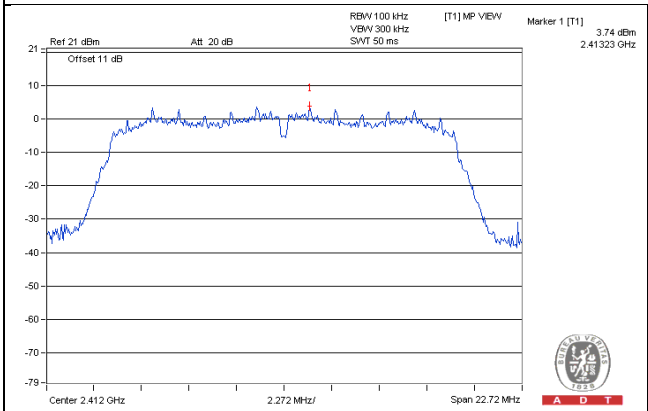


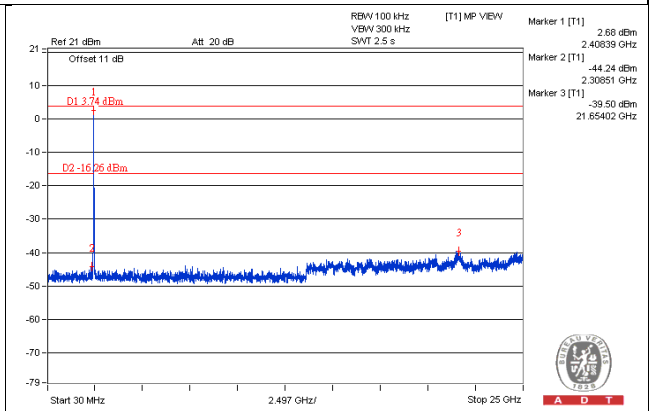
CH 11 Band edge



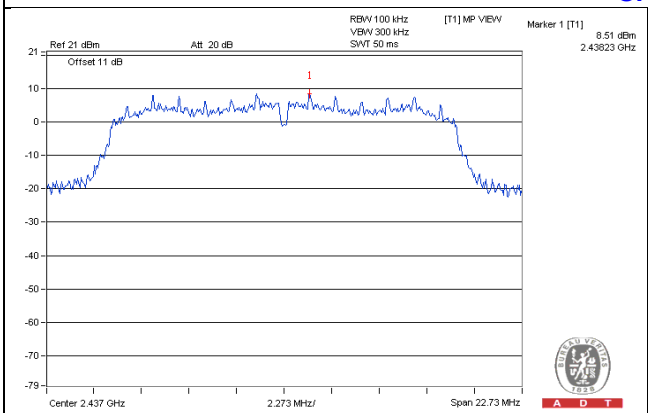
802.11g

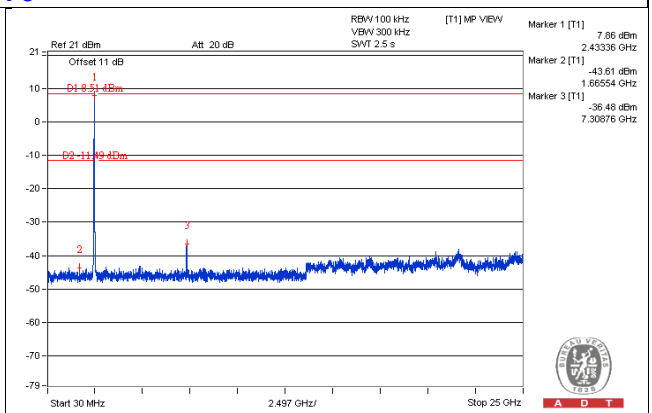
CH 1



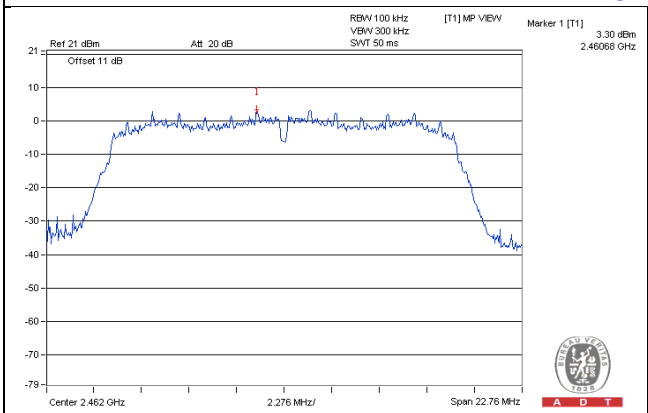


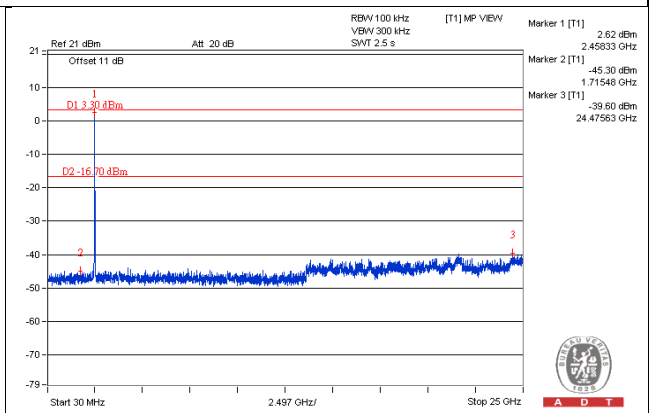
CH 6



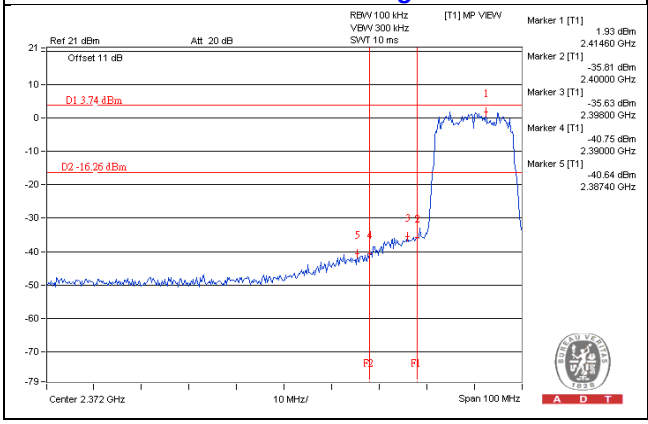


CH 11

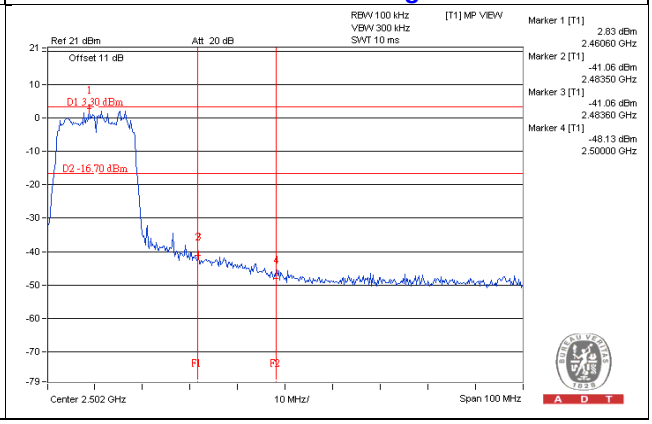




CH 1 Band edge

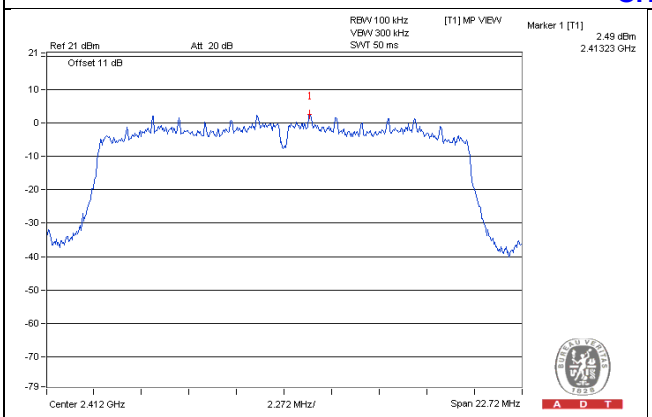


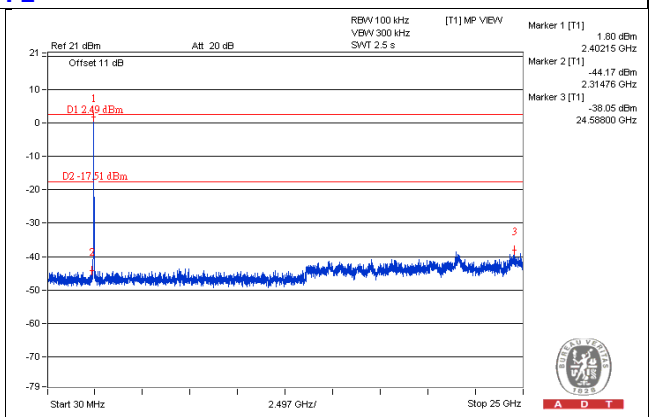
CH 11 Band edge



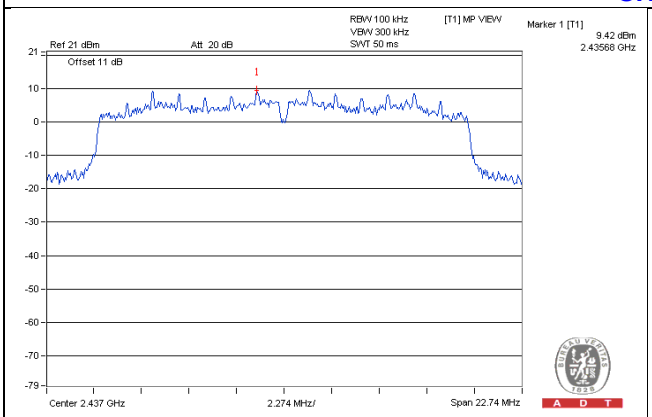
802.11n (HT20)

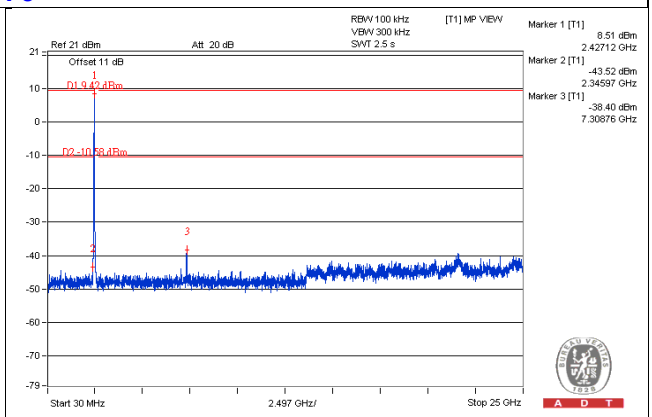
CH 1



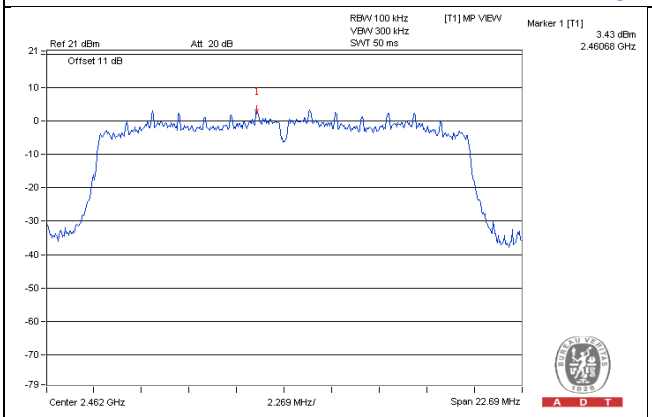


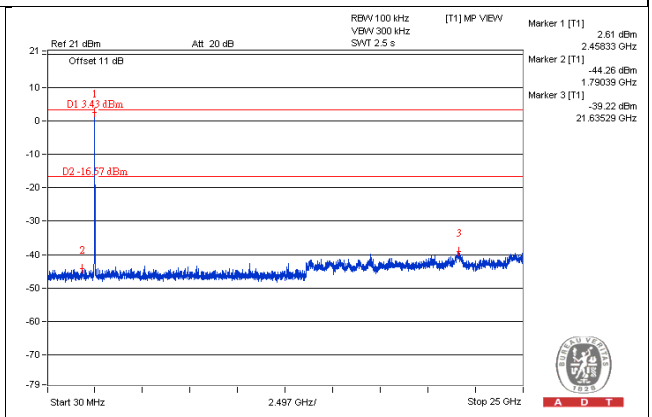
CH 6



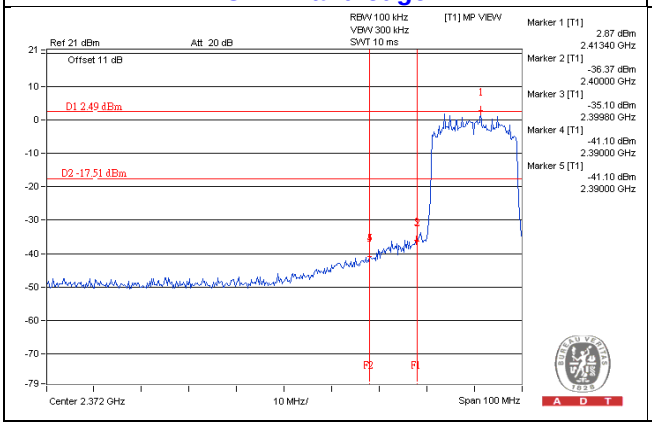


CH 11

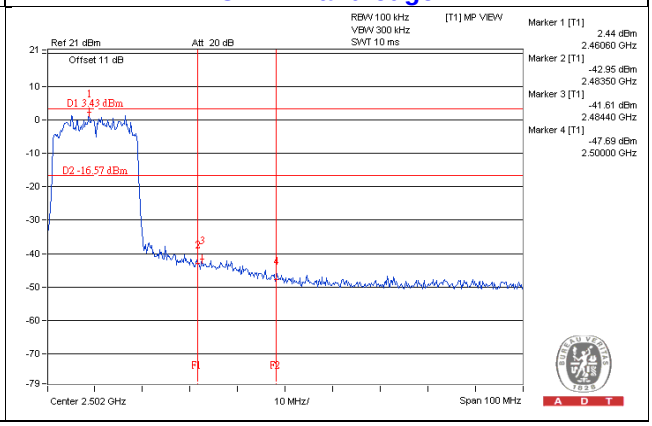




CH 1 Band edge

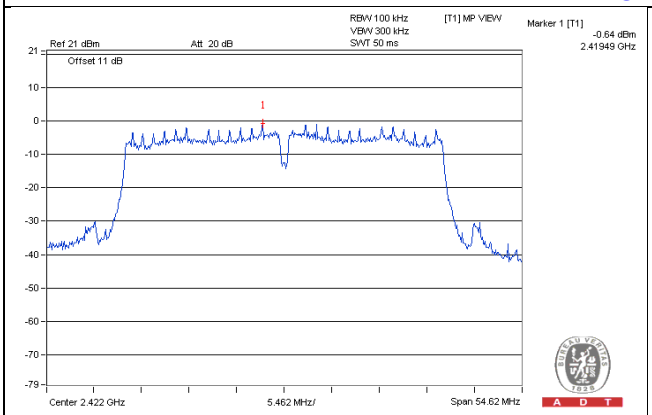


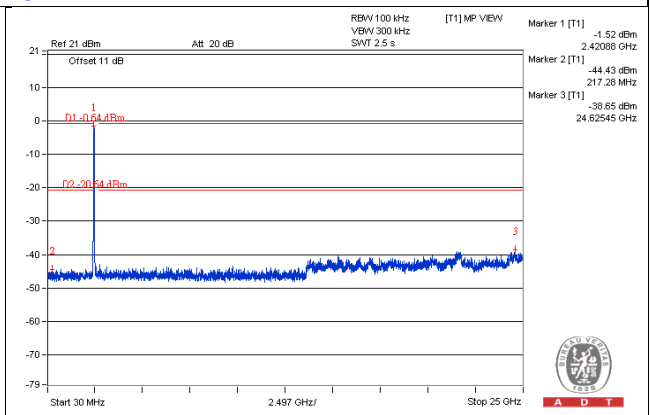
CH 11 Band edge



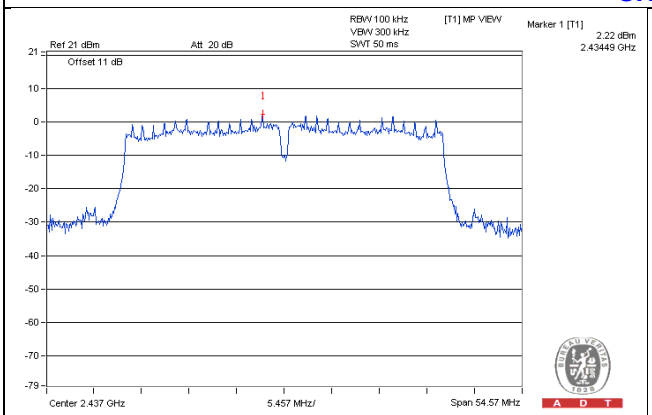
802.11n (HT40)

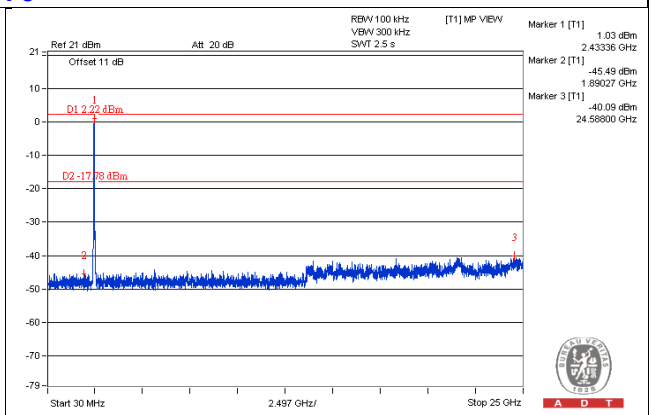
CH 3



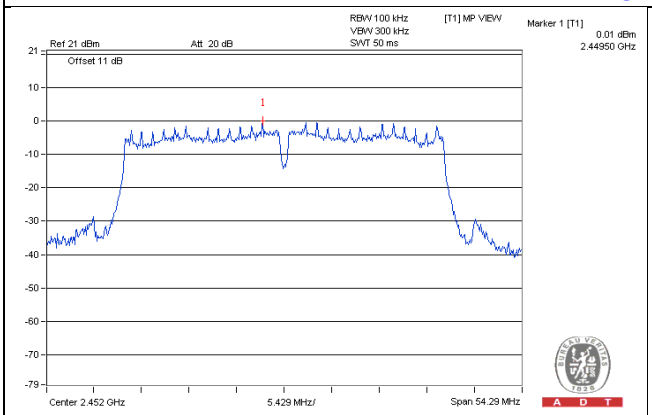


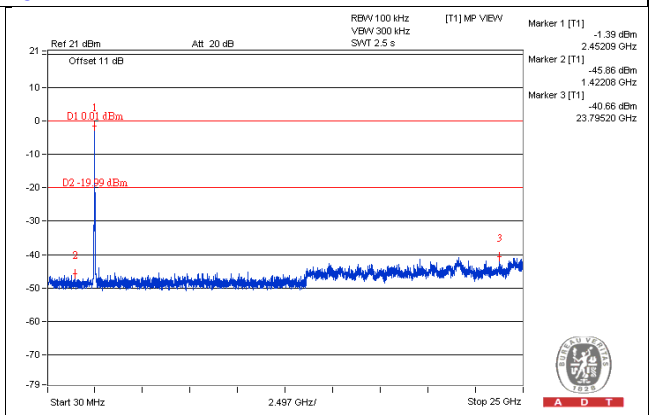
CH 6



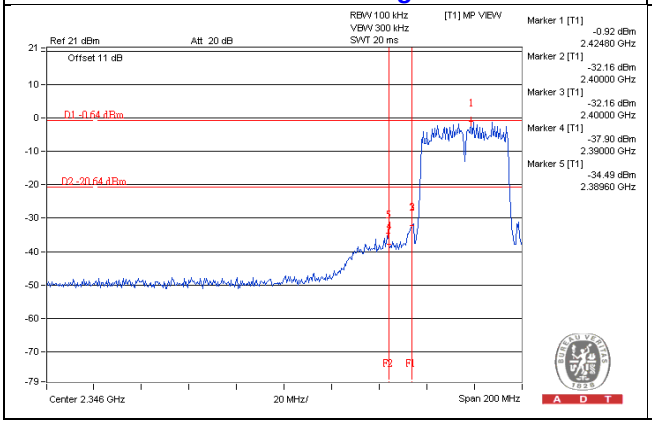


CH 9

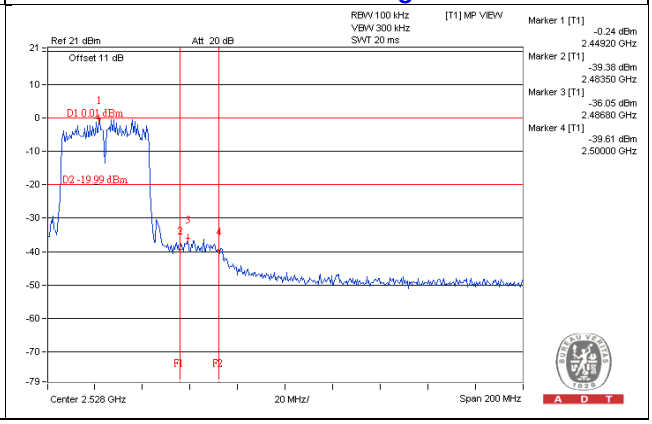




CH 3 Band edge



CH 9 Band edge

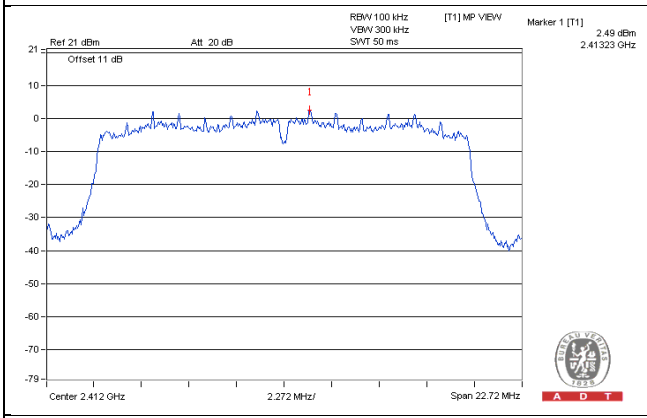


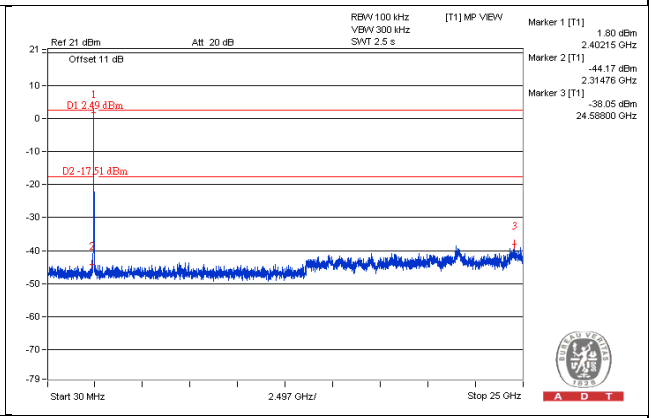
2TX MODE

802.11n (HT20)

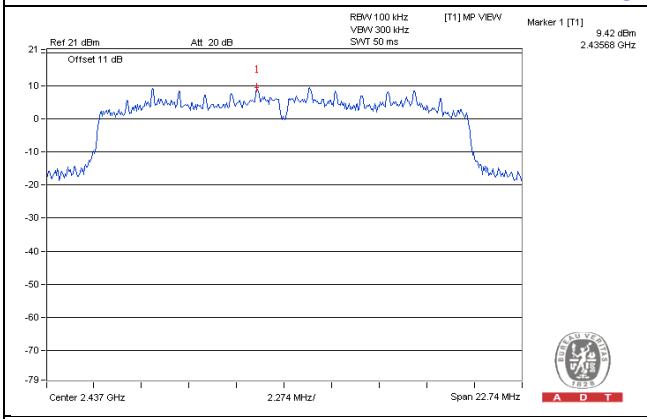
Chain 0

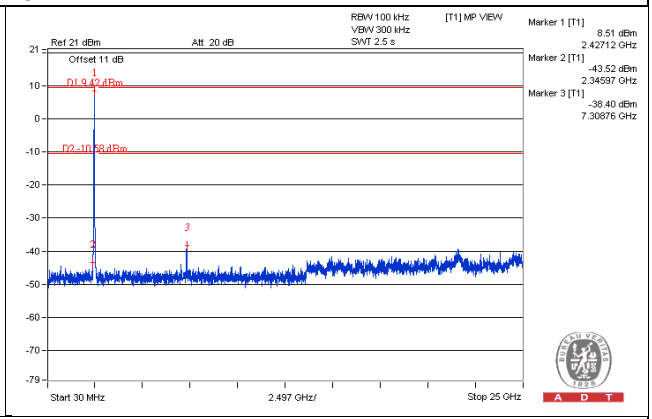
CH 1



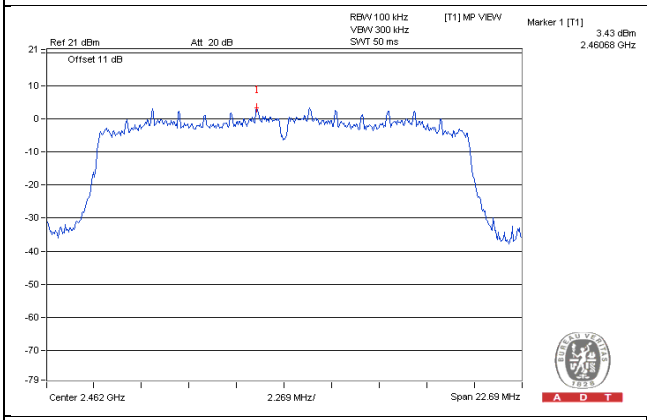


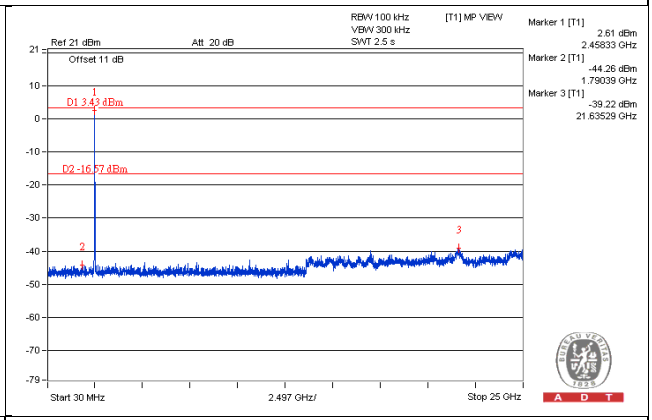
CH 6



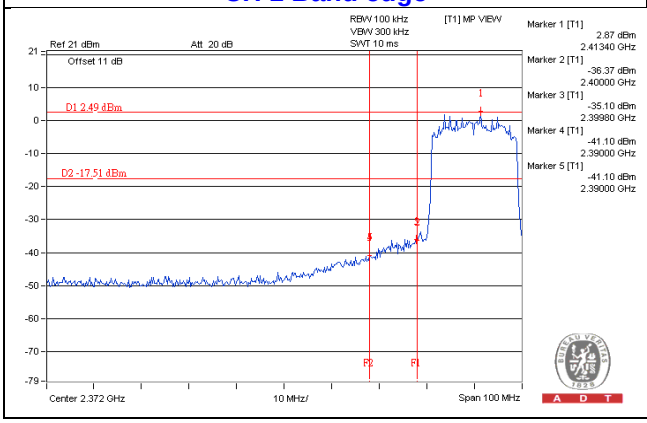


CH 11

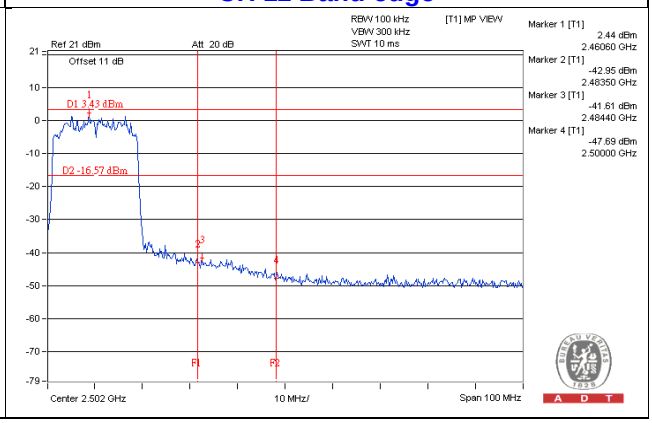




CH 1 Band edge

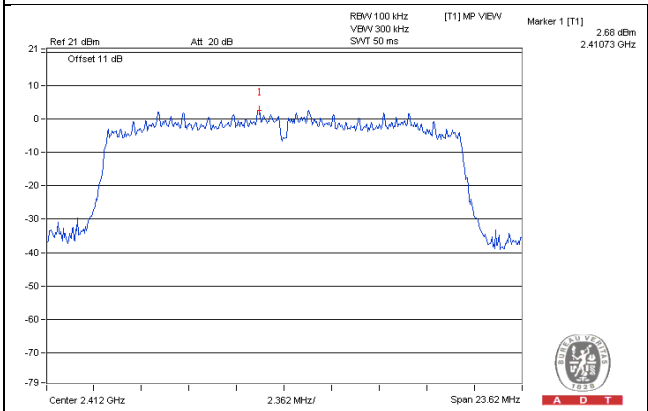


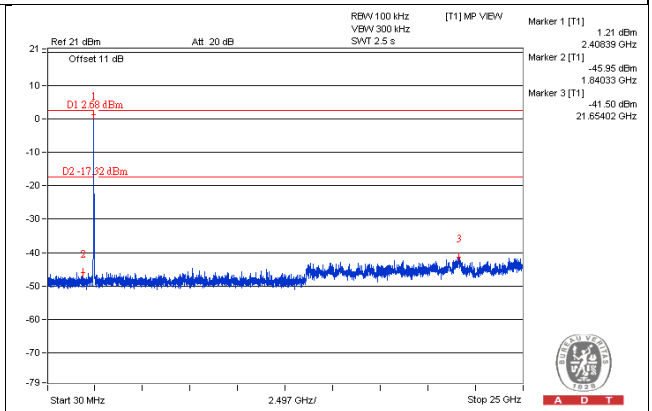
CH 11 Band edge



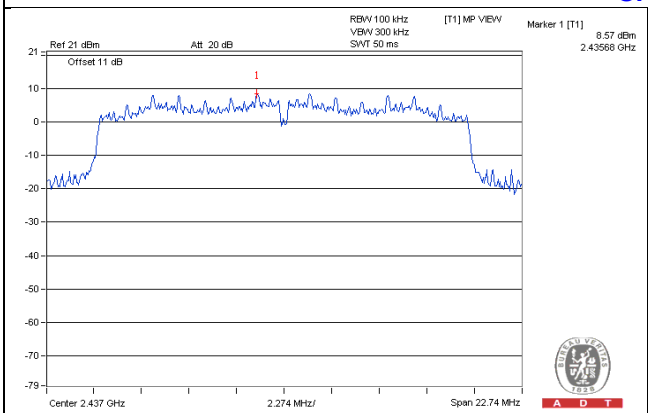
Chain 1

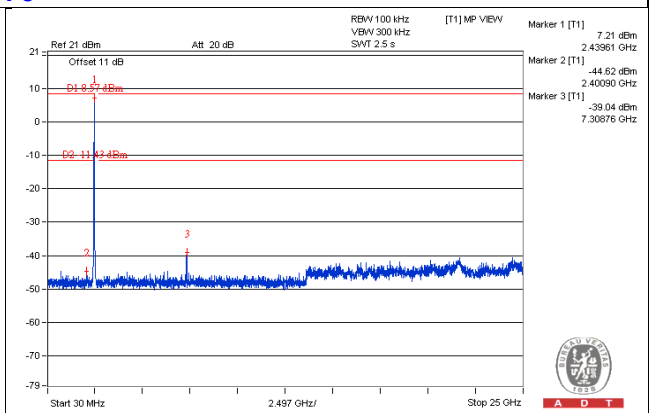
CH 1





CH 6





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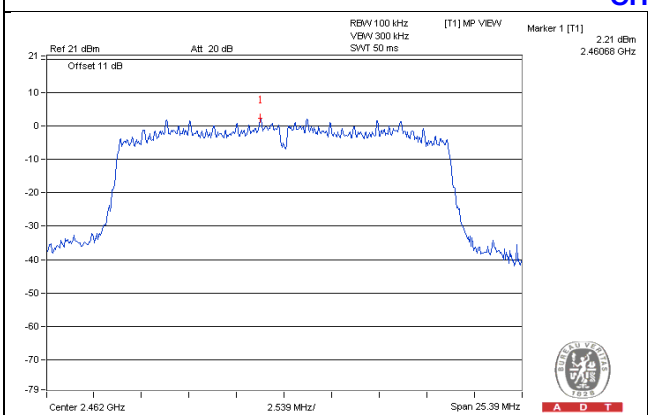
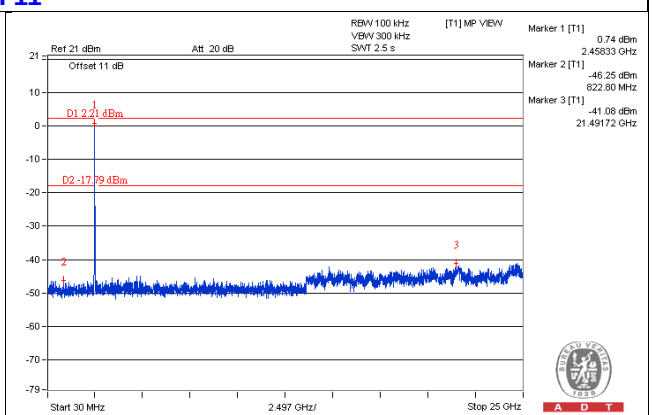
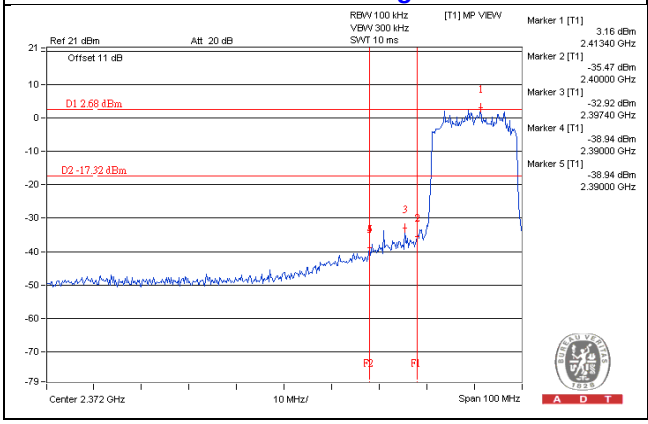
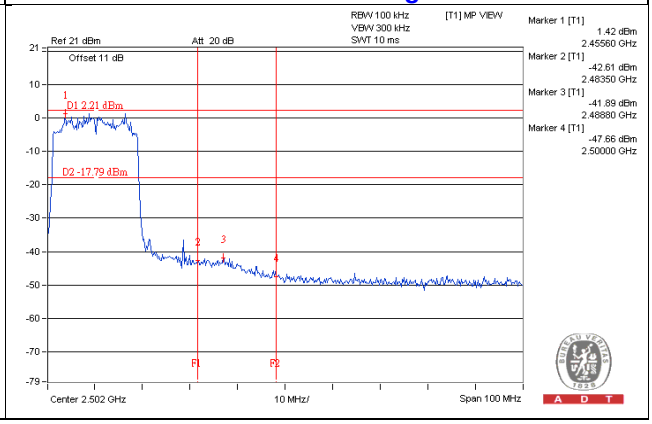




CH 1 Band edge



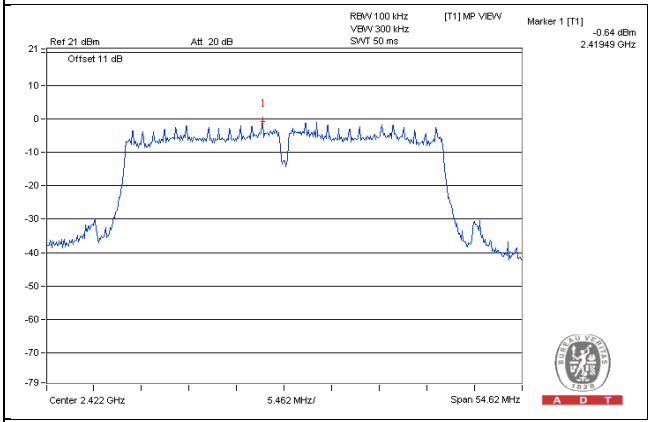
CH 11 Band edge

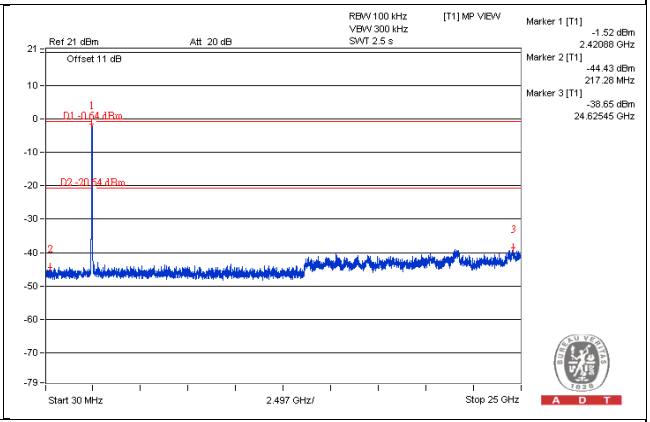


802.11n (HT40)

Chain 0

CH 3





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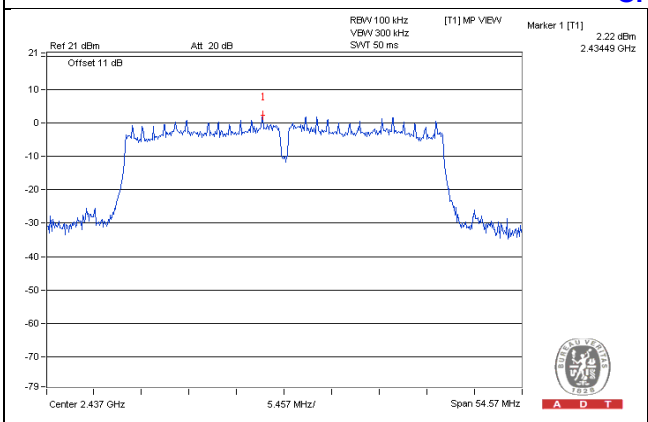

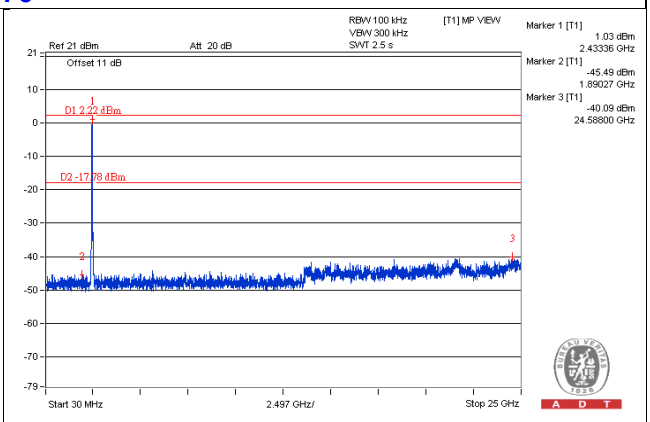

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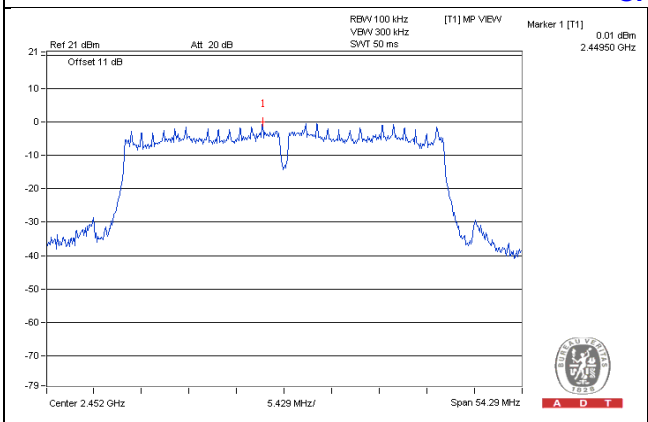
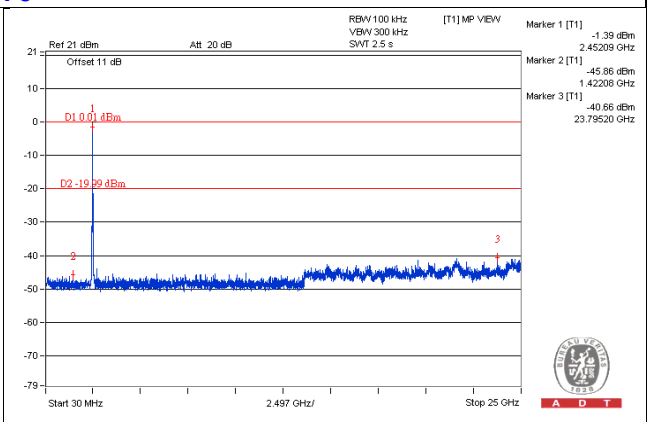
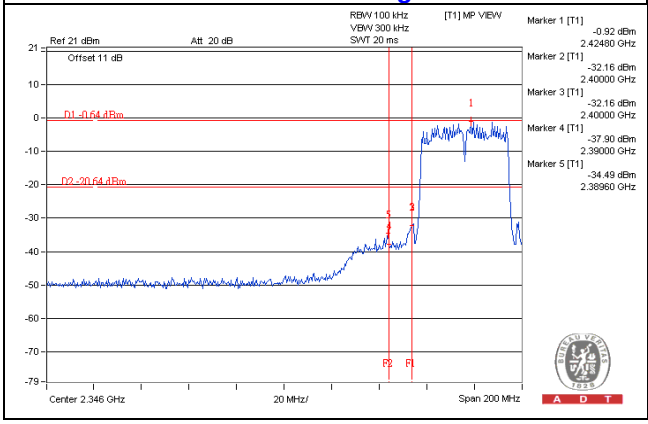




CH 3 Band edge



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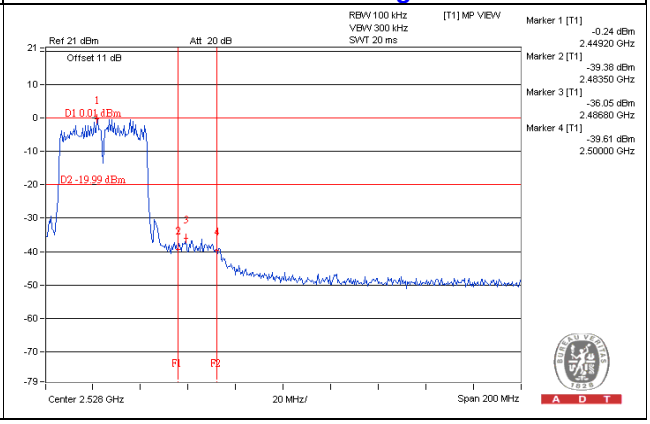
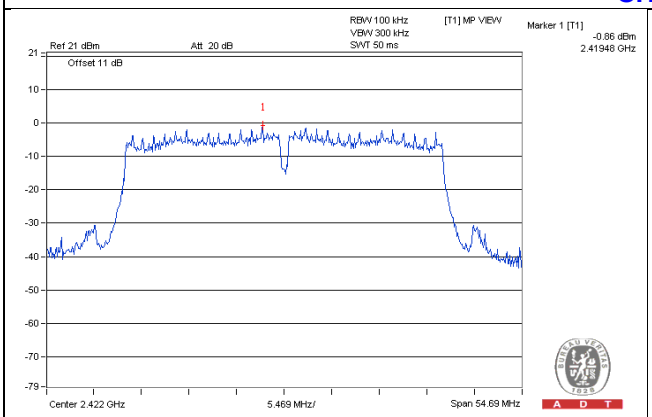
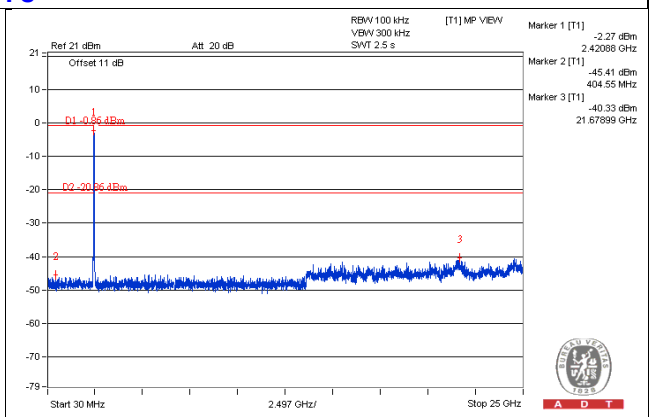


Chain 1

CH 3





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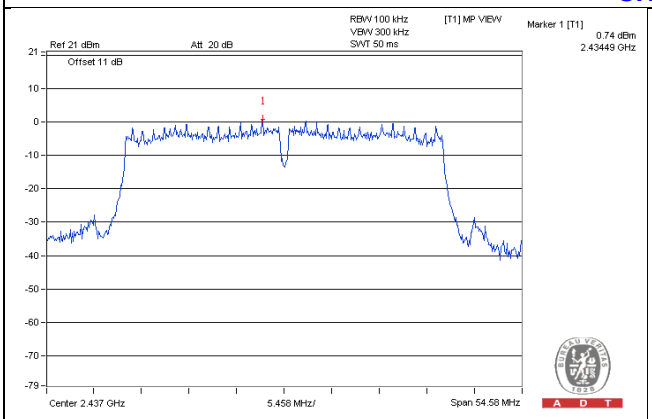
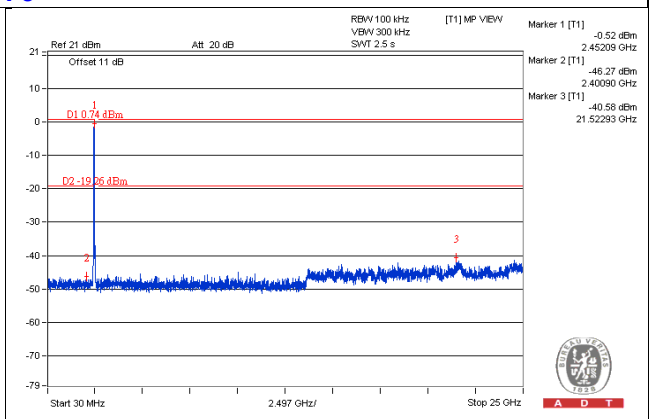
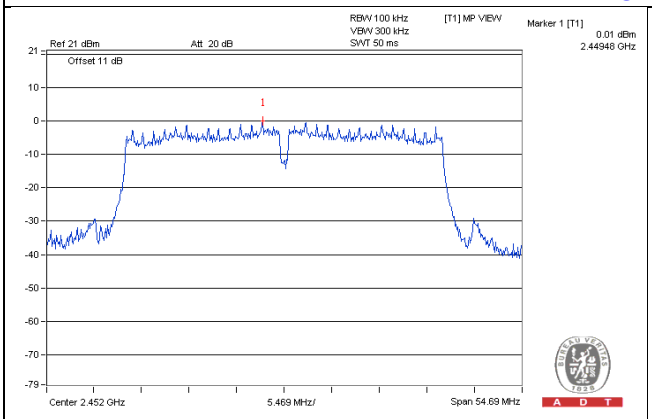
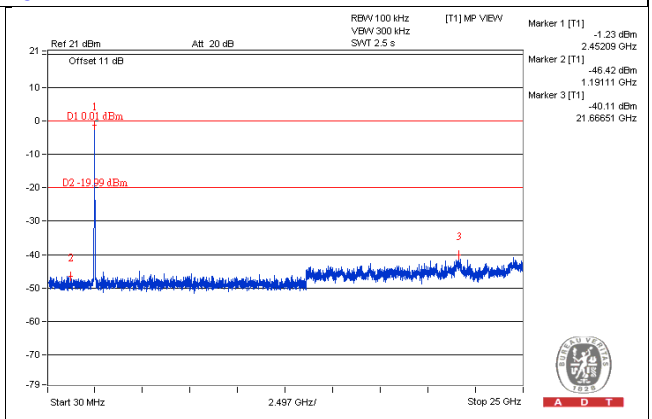


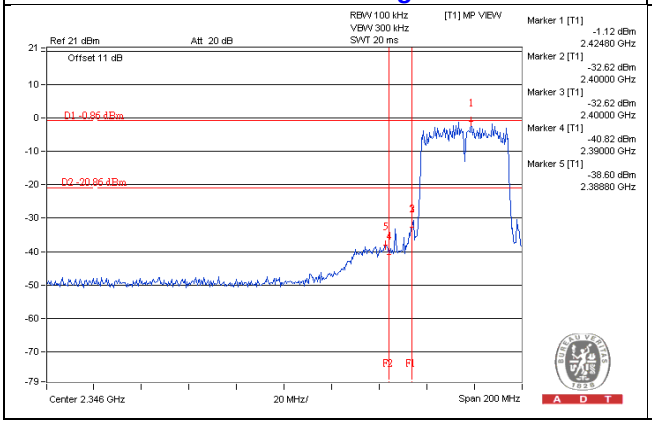


CH 9





CH 3 Band edge



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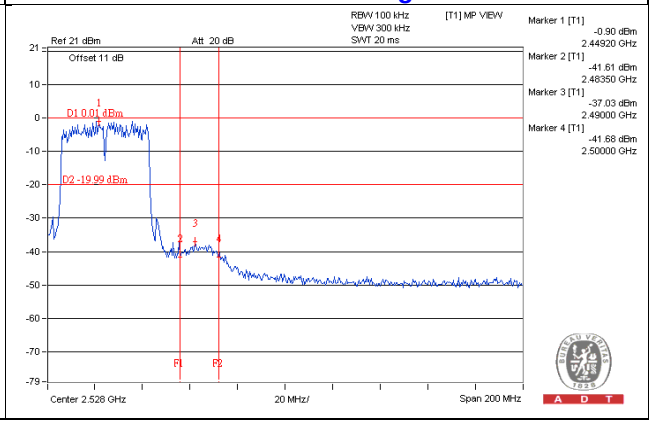

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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

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

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