

FCC Test Report

Report No.: RF151021E09

FCC ID: H8NTCG220

Test Model: TCG220-TdP

Series Model: TCG220XXXX (X can be 0-9, A-Z, a-z, “-”, “.” or blank for marketing)

Received Date: Oct. 21, 2015

Test Date: Oct. 22 to Nov. 03, 2015

Issued Date: Nov. 12, 2015

Applicant: ASKEY COMPUTER CORP.

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A D T

Release Control Record

Issue No.	Description	Date Issued
RF151021E09	Original release.	Nov. 12, 2015



A D T

1 Certificate of Conformity

Product: Cable Modem

Brand: ASKEY

Test Model: TCG220-TdP

Series Model: TCG220XXXX (X can be 0-9, A-Z, a-z, "-", ".", or blank for marketing)

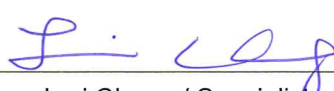
Sample Status: ENGINEERING SAMPLE

Applicant: ASKEY COMPUTER CORP.

Test Date: Oct. 22 to Nov. 03, 2015

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

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

Prepared by : , **Date:** Nov. 12, 2015
Lori Chung / Specialist

Approved by : , **Date:** Nov. 12, 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 -6.71dB at 0.39219MHz.
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, 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.

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	3.65 dB
	6GHz ~ 18GHz	3.88 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	Cable Modem
Brand	ASKEY
Test Model	TCG220-TdP
Series Model	TCG220XXXX (X can be 0-9, A-Z, a-z, “-”, “.” or blank for marketing)
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 802.11g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
Output Power	802.11b: 308.319mW 802.11g: 714.681mW 802.11n (HT20): 704.583mW 802.11n (HT40): 521.381mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

- The EUT has two model names, which are identical to each other in all aspects except for the following table:

Brand	Model No.	Difference
ASKEY	TCG220-TdP	for marketing
	TCG220XXXX	X can be 0-9, A-Z, a-z, "-", "." or blank for marketing

From the above models, model: TCG220-TdP was selected as representative model for the test and its data was recorded in this report.

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

Antenna No	PCB Chain No.	Brand	Model	Antenna Type	Antenna Connector	Gain (dBi)	Cable Length (mm)	Frequency (GHz to GHz)
1	Chain 0	MASTER WAVE	98P4QMIPF000	PCB	i-pex(MHF)	3.68	60	2.4~2.4835
2	Chain 1	MASTER WAVE	98P4RMIPF000	PCB	i-pex(MHF)	3.36	54	2.4~2.4835

- The EUT must be supplied with a power adapter and the following different models could be chosen:

Adapter	Brand	Model No.	Spec.
1	Sunny	SYS1428-1812-W2	Input: 100-240V, 1.0A, 50-60Hz Output: 12V, 1.5A DC output cable (Unshielded, 1.4m)
2	LEI	MU18A2120150-A1	Input: 100-240V, 0.5A, 50/60Hz Output: 12V, 1.5A DC output cable (Unshielded, 1.5m)

Note: For radiated emission test, the EUT was pre-tested with above adapters, the worse case was found in **adapter 1**. Therefore only the test data of the adapter was recorded in this report.

- The EUT incorporates a MIMO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX (diversity)	1RX
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

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

3.2 Description of Test Modes

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

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
1	√	√	√	√	With adapter 1
2	-	-	√	-	With adapter 2

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement
 RE<1G: Radiated Emission below 1GHz
 PLC: Power Line Conducted Emission
 APCM: Antenna Port Conducted Measurement

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.

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

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	24deg. C, 70%RH	120Vac, 60Hz	Weiwei Lo
RE<1G	24deg. C, 67%RH	120Vac, 60Hz	Robert Cheng
PLC	25deg. C, 65%RH	120Vac, 60Hz	Scott Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Gary Cheng

3.3 Duty Cycle of Test Signal

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

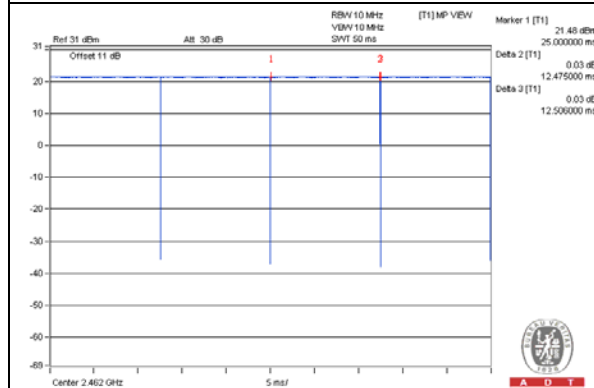
802.11b: Duty cycle = 12.475 ms/12.506 ms = 0.998

802.11g: Duty cycle = 2.063 ms/2.083 ms = 0.99

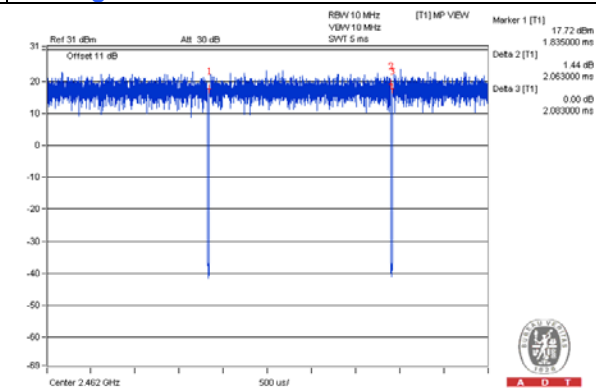
802.11n (HT20): Duty cycle = 1.907 ms/1.928 ms = 0.989

802.11n (HT40): Duty cycle = 0.934 ms/0.951 ms = 0.982

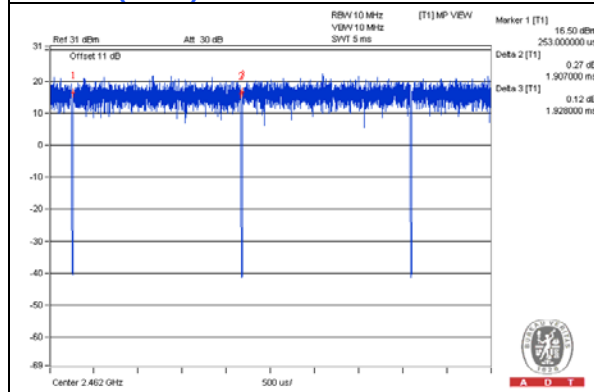
802.11b



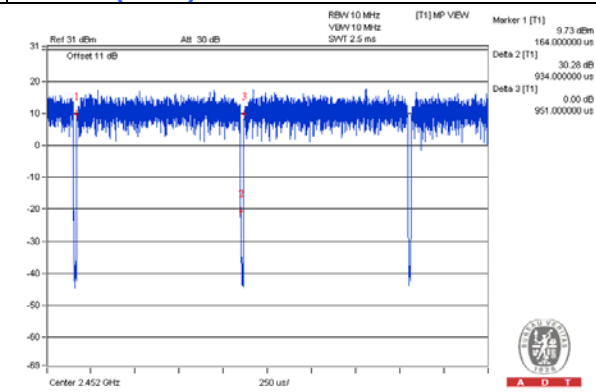
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

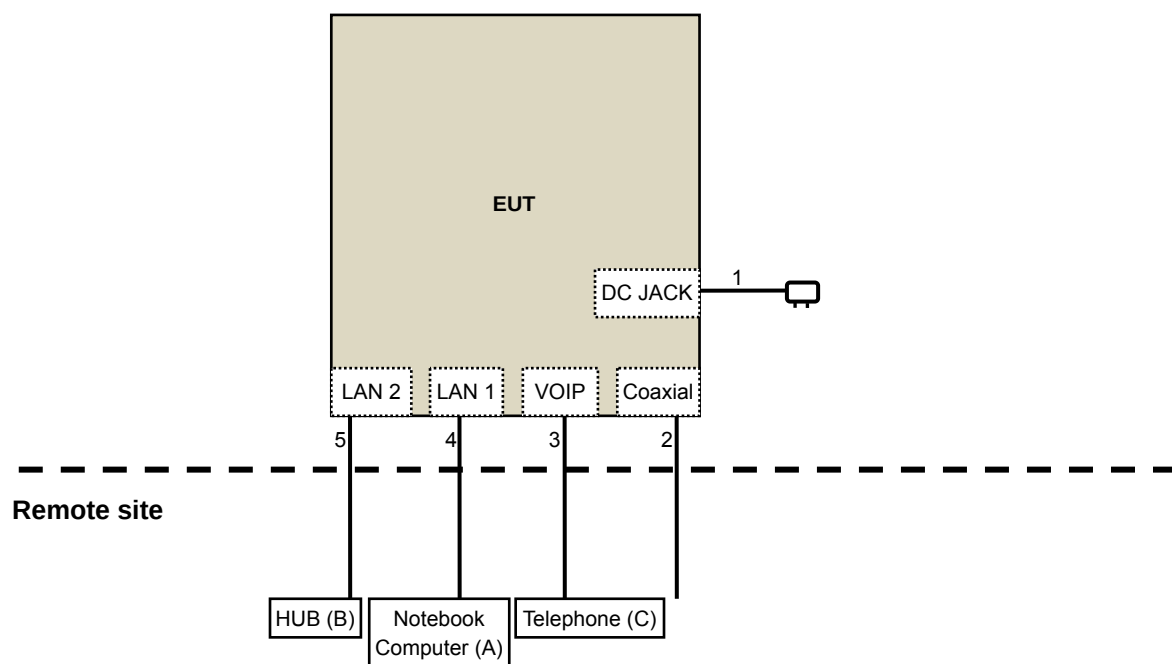
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	DELL	E5430	4YV4VY1	FCC DoC	Provided by Lab
B.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab
C.	Telephone	WONDER	WD-303	7C17KA 05211	NA	Provided by Lab

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	1	1.4 / 1.5	No	0	Supplied by Client
2.	Coaxial	1	10	No	0	Provided by Lab
3.	RJ11	1	10	No	0	Provided by Lab
4.	RJ45	1	10	No	0	Provided by Lab
5.	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 v03r03

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

For Below 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	Dec. 12, 2014	Dec. 11, 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. 09, 2015	Feb. 08, 2016
RF Cable	8D-FB	CHHCAB-001-1 CHHCAB-001-2	Oct. 04, 2015	Oct. 03, 2016
	RF-141	CHHCAB-004	Oct. 04, 2015	Oct. 03, 2016
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	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 966 Chamber No. H.
3. The FCC Site Registration No. is 797305.
4. The CANADA Site Registration No. is IC 7450H-3.
5. Tested Date: Oct. 22, 2015

For Above 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210105	July 24, 2015	July 23, 2016
Horn_Antenna AISI	AIH.8018	000032009111 0	Feb. 09, 2015	Feb. 08, 2016
Pre-Amplifier Agilent	8449B	3008A02578	June 23, 2015	June 22, 2016
RF Cable	NA	131205 131216 131217 SNMY23684/ 4	Jan. 16, 2015	Jan. 15, 2016
Spectrum Analyzer R&S	FSV40	100964	June 26, 2015	June 25, 2016
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Dec. 12, 2014	Dec. 11, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Feb. 05, 2015	Feb. 04, 2016
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
Power Meter Anritsu	ML2495A	1014008	Apr. 28, 2015	Apr. 27, 2016
Power Sensor Anritsu	MA2411B	0917122	Apr. 28, 2015	Apr. 27, 2016
Spectrum Analyzer R&S	FSP40	100060	May 08, 2015	May 07, 2016

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 966 Chamber No. G.
3. The FCC Site Registration No. is 966073.
4. The VCCI Site Registration No. is G-137.
5. The CANADA Site Registration No. is IC 7450H-2.
6. Tested Date: Oct. 23 to Nov. 03, 2015

4.1.3 Test Procedures

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

Note:

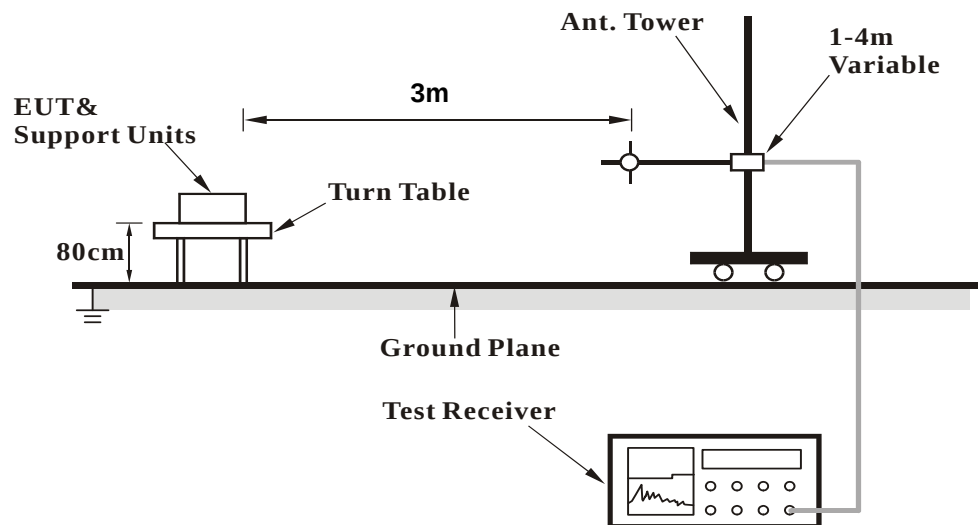
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

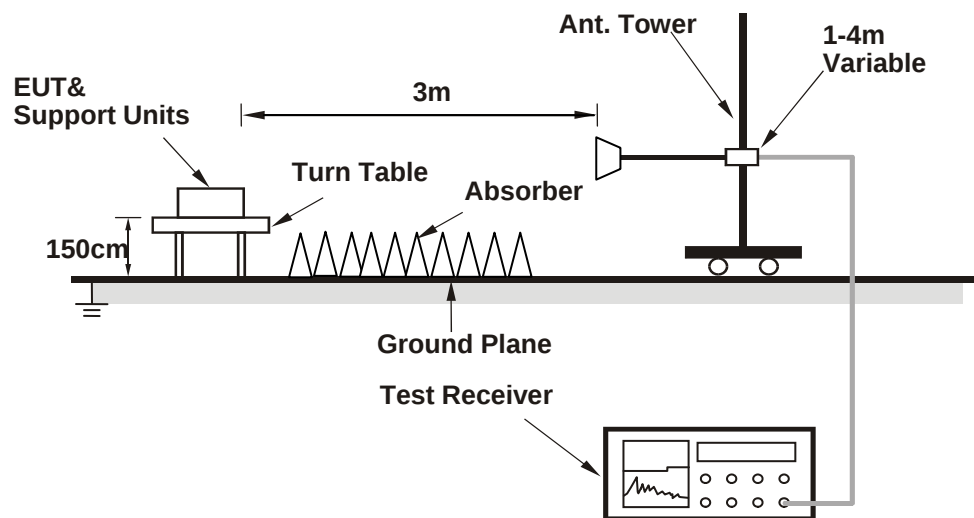
No deviation.

4.1.5 Test Setup

<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 A (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

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.3 PK	74.0	-13.7	1.88 H	130	60.46	-0.16
2	2390.00	53.6 AV	54.0	-0.4	1.88 H	130	53.76	-0.16
3	*2412.00	104.5 PK			1.88 H	130	104.60	-0.10
4	*2412.00	101.6 AV			1.88 H	130	101.70	-0.10
5	4824.00	49.8 PK	74.0	-24.2	1.86 H	329	41.04	8.76
6	4824.00	42.4 AV	54.0	-11.6	1.86 H	329	33.64	8.76
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	52.5 PK	74.0	-21.5	2.12 V	305	52.66	-0.16
2	2390.00	44.2 AV	54.0	-9.8	2.12 V	305	44.36	-0.16
3	*2412.00	98.4 PK			2.11 V	306	98.50	-0.10
4	*2412.00	92.9 AV			2.11 V	306	93.00	-0.10
5	4824.00	50.4 PK	74.0	-23.6	1.77 V	324	41.64	8.76
6	4824.00	42.5 AV	54.0	-11.5	1.77 V	324	33.74	8.76

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 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	51.7 PK	74.0	-22.3	2.01 H	135	51.86	-0.16
2	2390.00	40.7 AV	54.0	-13.3	2.01 H	135	40.86	-0.16
3	*2437.00	108.1 PK			2.01 H	135	108.13	-0.03
4	*2437.00	105.4 AV			2.01 H	135	105.43	-0.03
5	2483.50	50.2 PK	74.0	-23.8	2.01 H	135	50.09	0.11
6	2483.50	39.4 AV	54.0	-14.6	2.01 H	135	39.29	0.11
7	4874.00	49.6 PK	74.0	-24.4	1.80 H	340	40.69	8.91
8	4874.00	41.9 AV	54.0	-12.1	1.80 H	340	32.99	8.91
9	7311.00	54.4 PK	74.0	-19.6	1.80 H	340	37.95	16.45
10	7311.00	42.1 AV	54.0	-11.9	1.80 H	340	25.65	16.45

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	52.3 PK	74.0	-21.7	2.08 V	319	52.46	-0.16
2	2390.00	44.2 AV	54.0	-9.8	2.08 V	319	44.36	-0.16
3	*2437.00	101.2 PK			2.07 V	211	101.23	-0.03
4	*2437.00	97.0 AV			2.07 V	211	97.03	-0.03
5	2483.50	52.5 PK	74.0	-21.5	2.11 V	309	52.39	0.11
6	2483.50	44.1 AV	54.0	-9.9	2.11 V	309	43.99	0.11
7	4874.00	49.6 PK	74.0	-24.4	1.81 V	297	40.69	8.91
8	4874.00	44.3 AV	54.0	-9.7	1.81 V	297	35.39	8.91
9	7311.00	54.6 PK	74.0	-19.4	1.81 V	297	38.15	16.45
10	7311.00	42.5 AV	54.0	-11.5	1.81 V	297	26.05	16.45

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.9 PK			2.02 H	33	104.85	0.05
2	*2462.00	101.7 AV			2.02 H	33	101.65	0.05
3	2483.50	60.1 PK	74.0	-13.9	2.02 H	33	59.99	0.11
4	2483.50	53.7 AV	54.0	-0.3	2.02 H	33	53.59	0.11
5	4924.00	49.5 PK	74.0	-24.5	1.75 H	341	40.41	9.09
6	4924.00	41.8 AV	54.0	-12.2	1.75 H	341	32.71	9.09
7	7386.00	54.2 PK	74.0	-19.8	1.81 H	326	37.60	16.60
8	7386.00	41.8 AV	54.0	-12.2	1.81 H	326	25.20	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	98.0 PK			2.07 V	336	97.95	0.05
2	*2462.00	93.0 AV			2.07 V	336	92.95	0.05
3	2483.50	52.0 PK	74.0	-22.0	2.07 V	336	51.89	0.11
4	2483.50	44.1 AV	54.0	-9.9	2.07 V	336	43.99	0.11
5	4924.00	50.2 PK	74.0	-23.8	1.82 V	312	41.11	9.09
6	4924.00	42.4 AV	54.0	-11.6	1.82 V	312	33.31	9.09
7	7386.00	54.4 PK	74.0	-19.6	1.77 V	294	37.80	16.60
8	7386.00	42.4 AV	54.0	-11.6	1.77 V	294	25.80	16.60

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.6 PK	74.0	-2.4	2.01 H	155	71.76	-0.16
2	2390.00	53.9 AV	54.0	-0.1	2.01 H	155	54.06	-0.16
3	*2412.00	109.5 PK			2.02 H	145	109.60	-0.10
4	*2412.00	99.5 AV			2.02 H	145	99.60	-0.10
5	4824.00	54.8 PK	74.0	-19.2	1.00 H	261	46.04	8.76
6	4824.00	41.3 AV	54.0	-12.7	1.00 H	261	32.54	8.76
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	52.1 PK	74.0	-21.9	2.04 V	336	52.26	-0.16
2	2390.00	44.0 AV	54.0	-10.0	2.04 V	336	44.16	-0.16
3	*2412.00	104.5 PK			2.00 V	322	104.60	-0.10
4	*2412.00	94.9 AV			2.00 V	322	95.00	-0.10
5	4824.00	50.8 PK	74.0	-23.2	1.78 V	198	42.04	8.76
6	4824.00	37.7 AV	54.0	-16.3	1.78 V	198	28.94	8.76

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 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	72.6 PK	74.0	-1.4	2.11 H	163	72.76	-0.16
2	2390.00	53.9 AV	54.0	-0.1	2.11 H	163	54.06	-0.16
3	*2437.00	114.9 PK			2.10 H	151	114.93	-0.03
4	*2437.00	105.3 AV			2.10 H	151	105.33	-0.03
5	2483.50	68.2 PK	74.0	-5.8	2.11 H	165	68.09	0.11
6	2483.50	50.7 AV	54.0	-3.3	2.11 H	165	50.59	0.11
7	4874.00	54.5 PK	74.0	-19.5	1.00 H	260	45.59	8.91
8	4874.00	40.8 AV	54.0	-13.2	1.00 H	260	31.89	8.91
9	7311.00	54.7 PK	74.0	-19.3	1.00 H	265	38.25	16.45
10	7311.00	43.0 AV	54.0	-11.0	1.00 H	265	26.55	16.45

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.5 PK	74.0	-7.5	1.80 V	337	66.66	-0.16
2	2390.00	49.9 AV	54.0	-4.1	1.80 V	337	50.06	-0.16
3	*2437.00	110.3 PK			1.80 V	339	110.33	-0.03
4	*2437.00	100.3 AV			1.80 V	339	100.33	-0.03
5	2483.50	66.1 PK	74.0	-7.9	1.80 V	331	65.99	0.11
6	2483.50	49.1 AV	54.0	-4.9	1.80 V	331	48.99	0.11
7	4874.00	50.9 PK	74.0	-23.1	1.76 V	202	41.99	8.91
8	4874.00	37.9 AV	54.0	-16.1	1.76 V	202	28.99	8.91
9	7311.00	54.4 PK	74.0	-19.6	1.85 V	189	37.95	16.45
10	7311.00	42.4 AV	54.0	-11.6	1.85 V	189	25.95	16.45

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.8 PK			1.98 H	155	109.75	0.05
2	*2462.00	99.3 AV			1.98 H	155	99.25	0.05
3	2483.50	70.5 PK	74.0	-3.5	1.98 H	165	70.39	0.11
4	2483.50	53.9 AV	54.0	-0.1	1.98 H	165	53.79	0.11
5	4924.00	55.2 PK	74.0	-18.8	1.00 H	254	46.11	9.09
6	4924.00	41.2 AV	54.0	-12.8	1.00 H	254	32.11	9.09
7	7386.00	54.5 PK	74.0	-19.5	1.00 H	272	37.90	16.60
8	7386.00	42.6 AV	54.0	-11.4	1.00 H	272	26.00	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.5 PK			2.00 V	330	105.45	0.05
2	*2462.00	94.3 AV			2.00 V	330	94.25	0.05
3	2483.50	52.2 PK	74.0	-21.8	2.02 V	330	52.09	0.11
4	2483.50	44.4 AV	54.0	-9.6	2.02 V	330	44.29	0.11
5	4924.00	50.4 PK	74.0	-23.6	1.77 V	190	41.31	9.09
6	4924.00	37.5 AV	54.0	-16.5	1.77 V	190	28.41	9.09
7	7386.00	55.0 PK	74.0	-19.0	1.86 V	191	38.40	16.60
8	7386.00	42.7 AV	54.0	-11.3	1.86 V	191	26.10	16.60

REMARKS:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.9 PK	74.0	-3.1	2.04 H	141	71.06	-0.16
2	2390.00	53.8 AV	54.0	-0.2	2.04 H	141	53.96	-0.16
3	*2412.00	107.2 PK			1.96 H	26	107.30	-0.10
4	*2412.00	96.5 AV			1.96 H	26	96.60	-0.10
5	4824.00	55.0 PK	74.0	-19.0	1.00 H	269	46.24	8.76
6	4824.00	40.7 AV	54.0	-13.3	1.00 H	269	31.94	8.76
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	52.1 PK	74.0	-21.9	2.10 V	322	52.26	-0.16
2	2390.00	44.0 AV	54.0	-10.0	2.10 V	322	44.16	-0.16
3	*2412.00	104.7 PK			2.10 V	321	104.80	-0.10
4	*2412.00	92.9 AV			2.10 V	321	93.00	-0.10
5	4824.00	51.2 PK	74.0	-22.8	1.76 V	203	42.44	8.76
6	4824.00	38.7 AV	54.0	-15.3	1.76 V	203	29.94	8.76

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.1 PK	74.0	-3.9	2.04 H	140	70.26	-0.16
2	2390.00	53.9 AV	54.0	-0.1	2.04 H	140	54.06	-0.16
3	*2437.00	113.8 PK			2.02 H	139	113.83	-0.03
4	*2437.00	104.1 AV			2.02 H	139	104.13	-0.03
5	2483.50	70.6 PK	74.0	-3.4	2.02 H	129	70.49	0.11
6	2483.50	53.0 AV	54.0	-1.0	2.02 H	129	52.89	0.11
7	4874.00	54.5 PK	74.0	-19.5	1.00 H	246	45.59	8.91
8	4874.00	41.0 AV	54.0	-13.0	1.00 H	246	32.09	8.91
9	7311.00	55.2 PK	74.0	-18.8	1.06 H	282	38.75	16.45
10	7311.00	42.4 AV	54.0	-11.6	1.06 H	282	25.95	16.45

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	51.7 PK	74.0	-22.3	2.11 V	319	51.86	-0.16
2	2390.00	43.7 AV	54.0	-10.3	2.11 V	319	43.86	-0.16
3	*2437.00	111.4 PK			2.10 V	300	111.43	-0.03
4	*2437.00	100.7 AV			2.10 V	300	100.73	-0.03
5	2483.50	51.7 PK	74.0	-22.3	2.11 V	306	51.59	0.11
6	2483.50	43.8 AV	54.0	-10.2	2.11 V	306	43.69	0.11
7	4874.00	50.7 PK	74.0	-23.3	1.76 V	185	41.79	8.91
8	4874.00	38.1 AV	54.0	-15.9	1.76 V	185	29.19	8.91
9	7311.00	54.5 PK	74.0	-19.5	1.88 V	162	38.05	16.45
10	7311.00	42.1 AV	54.0	-11.9	1.88 V	162	25.65	16.45

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.8 PK			2.01 H	32	106.75	0.05
2	*2462.00	96.3 AV			2.01 H	32	96.25	0.05
3	2483.50	71.6 PK	74.0	-2.4	2.02 H	33	71.49	0.11
4	2483.50	53.9 AV	54.0	-0.1	2.02 H	33	53.79	0.11
5	4924.00	54.5 PK	74.0	-19.5	1.00 H	274	45.41	9.09
6	4924.00	40.5 AV	54.0	-13.5	1.00 H	274	31.41	9.09
7	7386.00	55.4 PK	74.0	-18.6	1.00 H	267	38.80	16.60
8	7386.00	43.5 AV	54.0	-10.5	1.00 H	267	26.90	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.2 PK			1.88 V	130	104.15	0.05
2	*2462.00	92.6 AV			1.88 V	130	92.55	0.05
3	2483.50	67.5 PK	74.0	-6.5	1.88 V	135	67.39	0.11
4	2483.50	50.0 AV	54.0	-4.0	1.88 V	135	49.89	0.11
5	4924.00	50.9 PK	74.0	-23.1	1.76 V	188	41.81	9.09
6	4924.00	38.5 AV	54.0	-15.5	1.76 V	188	29.41	9.09
7	7386.00	54.6 PK	74.0	-19.4	1.89 V	175	38.00	16.60
8	7386.00	42.4 AV	54.0	-11.6	1.89 V	175	25.80	16.60

REMARKS:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.7 PK	74.0	-3.3	2.04 H	155	70.86	-0.16
2	2390.00	53.9 AV	54.0	-0.1	2.04 H	155	54.06	-0.16
3	*2422.00	103.7 PK			2.04 H	155	103.78	-0.08
4	*2422.00	93.1 AV			2.04 H	155	93.18	-0.08
5	4844.00	54.0 PK	74.0	-20.0	1.01 H	266	45.18	8.82
6	4844.00	40.4 AV	54.0	-13.6	1.01 H	266	31.58	8.82
7	7266.00	54.5 PK	74.0	-19.5	1.02 H	252	37.89	16.61
8	7266.00	42.7 AV	54.0	-11.3	1.02 H	252	26.09	16.61
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	72.6 PK	74.0	-1.4	1.58 V	148	72.76	-0.16
2	2390.00	53.4 AV	54.0	-0.6	1.58 V	148	53.56	-0.16
3	*2422.00	102.9 PK			1.58 V	149	102.98	-0.08
4	*2422.00	90.6 AV			1.58 V	149	90.68	-0.08
5	4844.00	51.6 PK	74.0	-22.4	1.78 V	197	42.78	8.82
6	4844.00	38.9 AV	54.0	-15.1	1.78 V	197	30.08	8.82
7	7266.00	55.2 PK	74.0	-18.8	1.89 V	180	38.59	16.61
8	7266.00	43.1 AV	54.0	-10.9	1.89 V	180	26.49	16.61

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.7 PK	74.0	-5.3	2.02 H	154	68.86	-0.16
2	2390.00	53.9 AV	54.0	-0.1	2.02 H	154	54.06	-0.16
3	*2437.00	105.9 PK			2.03 H	154	105.93	-0.03
4	*2437.00	96.1 AV			2.03 H	154	96.13	-0.03
5	2483.50	71.8 PK	74.0	-2.2	2.03 H	155	71.69	0.11
6	2483.50	53.0 AV	54.0	-1.0	2.03 H	155	52.89	0.11
7	4874.00	55.2 PK	74.0	-18.8	1.06 H	257	46.29	8.91
8	4874.00	41.4 AV	54.0	-12.6	1.06 H	257	32.49	8.91
9	7311.00	54.5 PK	74.0	-19.5	1.10 H	286	38.05	16.45
10	7311.00	42.0 AV	54.0	-12.0	1.10 H	286	25.55	16.45

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	52.0 PK	74.0	-22.0	2.11 V	315	52.16	-0.16
2	2390.00	43.7 AV	54.0	-10.3	2.11 V	315	43.86	-0.16
3	*2437.00	104.6 PK			2.00 V	307	104.63	-0.03
4	*2437.00	93.6 AV			2.00 V	307	93.63	-0.03
5	2483.50	51.8 PK	74.0	-22.2	2.10 V	307	51.69	0.11
6	2483.50	43.8 AV	54.0	-10.2	2.10 V	307	43.69	0.11
7	4874.00	51.5 PK	74.0	-22.5	1.83 V	192	42.59	8.91
8	4874.00	38.5 AV	54.0	-15.5	1.83 V	192	29.59	8.91
9	7311.00	55.0 PK	74.0	-19.0	1.86 V	175	38.55	16.45
10	7311.00	42.8 AV	54.0	-11.2	1.86 V	175	26.35	16.45

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.1 PK			2.05 H	152	102.08	0.02
2	*2452.00	92.1 AV			2.05 H	152	92.08	0.02
3	2483.50	70.8 PK	74.0	-3.2	2.04 H	155	70.69	0.11
4	2483.50	53.9 AV	54.0	-0.1	2.04 H	155	53.79	0.11
5	4904.00	54.3 PK	74.0	-19.7	1.00 H	249	45.29	9.01
6	4904.00	40.4 AV	54.0	-13.6	1.00 H	249	31.39	9.01
7	7356.00	55.4 PK	74.0	-18.6	1.02 H	270	38.85	16.55
8	7356.00	43.4 AV	54.0	-10.6	1.02 H	270	26.85	16.55
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	100.3 PK			2.10 V	322	100.28	0.02
2	*2452.00	89.7 AV			2.10 V	322	89.68	0.02
3	2483.50	52.2 PK	74.0	-21.8	2.11 V	322	52.09	0.11
4	2483.50	44.0 AV	54.0	-10.0	2.11 V	322	43.89	0.11
5	4904.00	51.9 PK	74.0	-22.1	1.82 V	200	42.89	9.01
6	4904.00	38.8 AV	54.0	-15.2	1.82 V	200	29.79	9.01
7	7356.00	54.8 PK	74.0	-19.2	1.82 V	189	38.25	16.55
8	7356.00	42.5 AV	54.0	-11.5	1.82 V	189	25.95	16.55

REMARKS:

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

Below 1GHz Data:

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	152.85	34.9 QP	43.5	-8.6	2.00 H	298	42.56	-7.65
2	162.43	33.9 QP	43.5	-9.6	2.00 H	275	41.71	-7.84
3	375.00	34.1 QP	46.0	-11.9	2.00 H	360	38.91	-4.85
4	625.02	40.6 QP	46.0	-5.4	1.50 H	336	39.33	1.25
5	790.99	38.3 QP	46.0	-7.8	1.00 H	360	34.01	4.24
6	874.99	40.3 QP	46.0	-5.7	1.50 H	311	34.93	5.33
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	50.35	35.5 QP	40.0	-4.5	1.00 V	200	43.78	-8.29
2	63.49	36.6 QP	40.0	-3.4	1.00 V	360	45.87	-9.29
3	73.17	35.0 QP	40.0	-5.0	1.00 V	36	45.98	-10.98
4	175.79	33.5 QP	43.5	-10.0	1.00 V	360	42.39	-8.89
5	610.98	40.4 QP	46.0	-5.6	1.00 V	78	39.32	1.12
6	875.02	39.3 QP	46.0	-6.7	1.00 V	292	33.95	5.36

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	100375	May 06, 2015	May 05, 2016
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Sep. 01, 2015	Aug. 31, 2016
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 11, 2015	June 10, 2016
RF Cable	5D-FB	COCCAB-001	Mar. 09, 2015	Mar. 08, 2016
50 ohms Terminator	N/A	EMC-03	Sep. 23, 2015	Sep. 22, 2016
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2015	Sep. 30, 2016
Software BVADT	BVADT_Cond_ V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: Oct. 28, 2015

4.2.3 Test Procedures

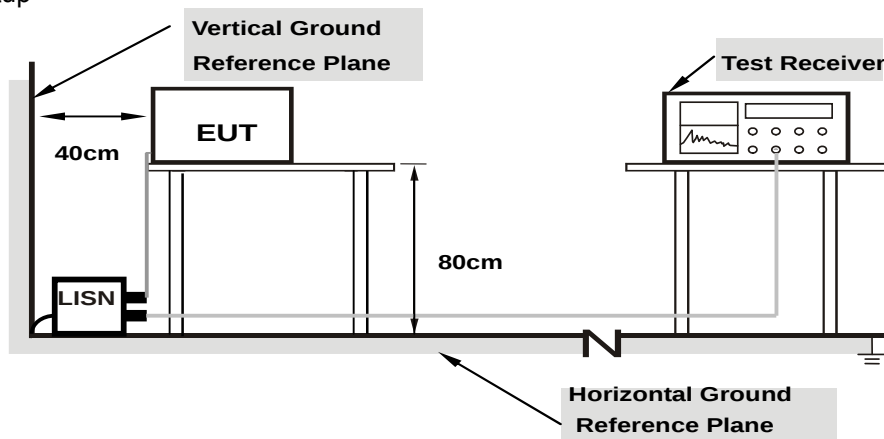
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

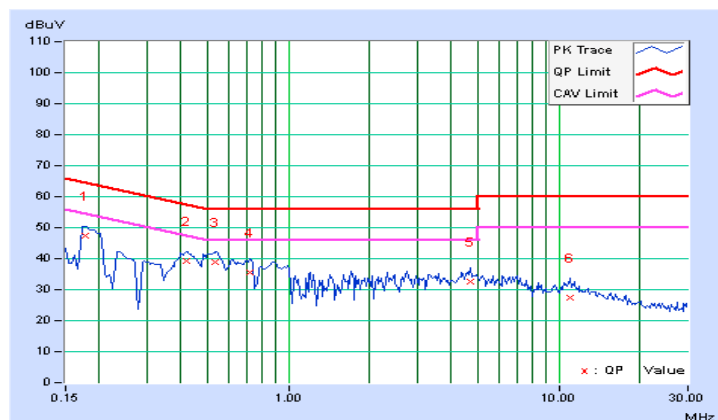
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	10.36	37.03	20.91	47.39	31.27	64.61	54.61	-17.22	-23.34
2	0.41953	10.37	28.76	17.08	39.13	27.45	57.46	47.46	-18.33	-20.01
3	0.53672	10.36	28.70	17.58	39.06	27.94	56.00	46.00	-16.94	-18.06
4	0.72031	10.34	25.22	14.12	35.56	24.46	56.00	46.00	-20.44	-21.54
5	4.72266	10.62	21.84	16.03	32.46	26.65	56.00	46.00	-23.54	-19.35
6	11.07031	10.97	16.27	10.65	27.24	21.62	60.00	50.00	-32.76	-28.38

REMARKS:

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

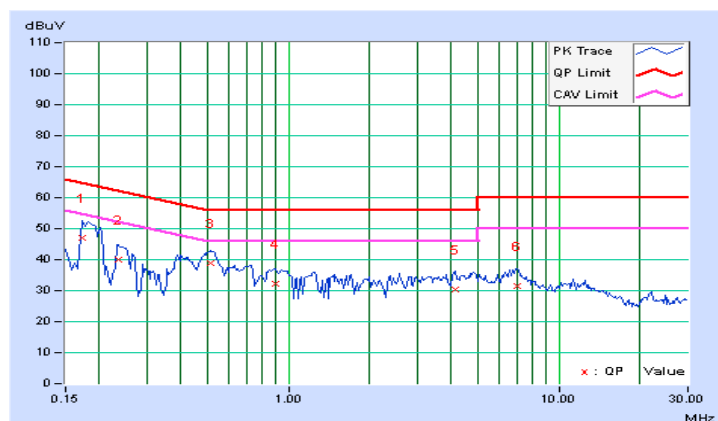


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	10.38	36.52	16.85	46.90	27.23	64.79	54.79	-17.89	-27.56
2	0.23594	10.40	29.68	12.46	40.08	22.86	62.24	52.24	-22.16	-29.38
3	0.51328	10.41	28.62	16.91	39.03	27.32	56.00	46.00	-16.97	-18.68
4	0.89219	10.38	21.80	12.01	32.18	22.39	56.00	46.00	-23.82	-23.61
5	4.16406	10.69	19.59	13.49	30.28	24.18	56.00	46.00	-25.72	-21.82
6	7.05469	10.80	20.62	15.47	31.42	26.27	60.00	50.00	-28.58	-23.73

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



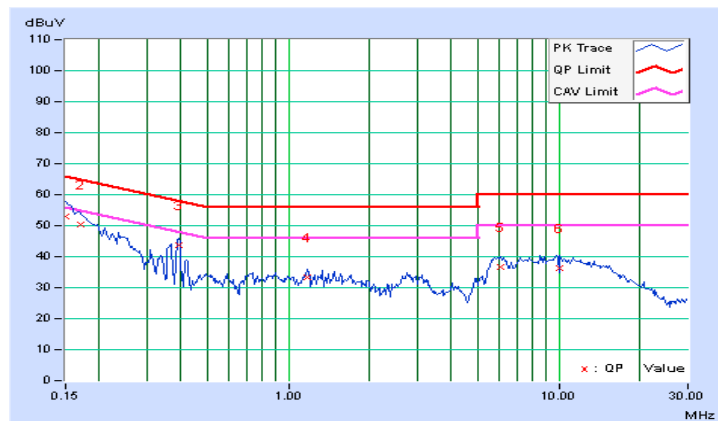
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.38	42.70	31.22	53.08	41.60	66.00	56.00	-12.92	-14.40
2	0.16953	10.36	39.94	27.74	50.30	38.10	64.98	54.98	-14.68	-16.88
3	0.39219	10.37	33.25	30.94	43.62	41.31	58.02	48.02	-14.40	-6.71
4	1.17578	10.33	22.87	16.03	33.20	26.36	56.00	46.00	-22.80	-19.64
5	6.10547	10.69	26.06	20.66	36.75	31.35	60.00	50.00	-23.25	-18.65
6	10.00391	10.90	25.28	20.40	36.18	31.30	60.00	50.00	-23.82	-18.70

REMARKS:

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

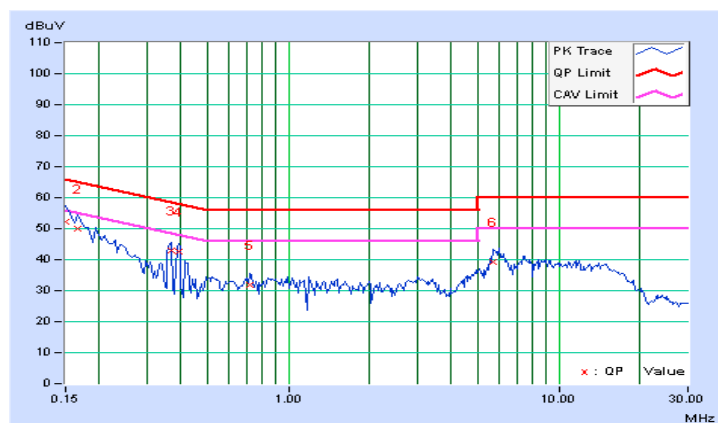


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.38	41.99	30.41	52.37	40.79	66.00	56.00	-13.63	-15.21
2	0.16562	10.38	39.54	28.46	49.92	38.84	65.18	55.18	-15.25	-16.33
3	0.36688	10.42	32.66	29.09	43.08	39.51	58.57	48.57	-15.50	-9.07
4	0.39219	10.42	32.14	29.76	42.56	40.18	58.02	48.02	-15.46	-7.84
5	0.72422	10.39	21.41	18.21	31.80	28.60	56.00	46.00	-24.20	-17.40
6	5.74609	10.75	28.46	22.86	39.21	33.61	60.00	50.00	-20.79	-16.39

REMARKS:

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

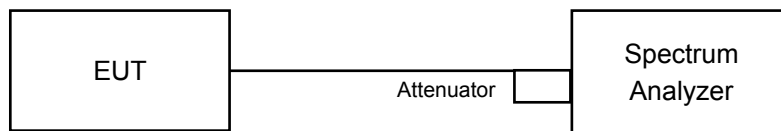


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.12	0.5	PASS
6	2437	8.11	0.5	PASS
11	2462	8.12	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.17	15.18	0.5	Pass
6	2437	15.10	15.15	0.5	Pass
11	2462	15.14	15.16	0.5	Pass

802.11n (HT20)

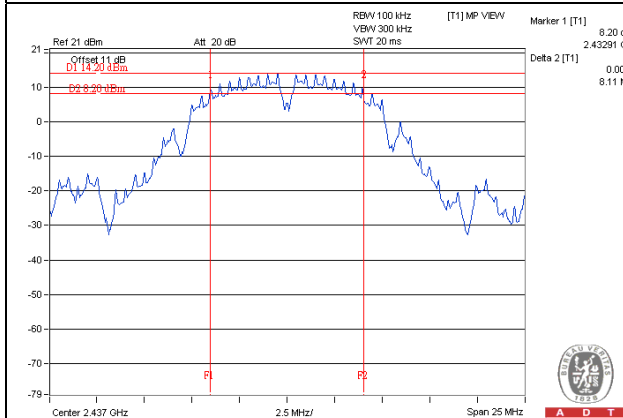
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.18	15.17	0.5	Pass
6	2437	15.12	15.16	0.5	Pass
11	2462	15.15	15.14	0.5	Pass

802.11n (HT40)

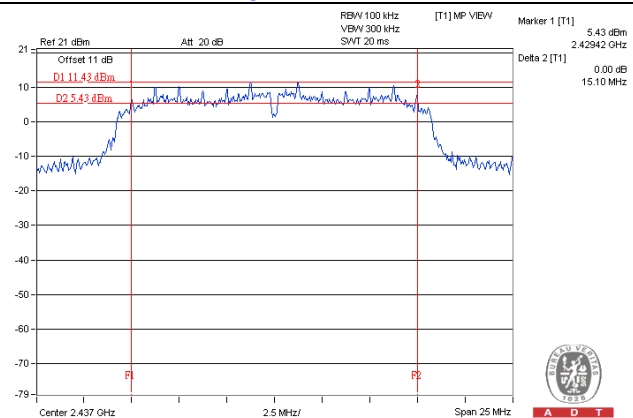
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.27	35.19	0.5	Pass
6	2437	35.30	35.78	0.5	Pass
9	2452	35.24	35.86	0.5	Pass

Spectrum Plot of Worst Value

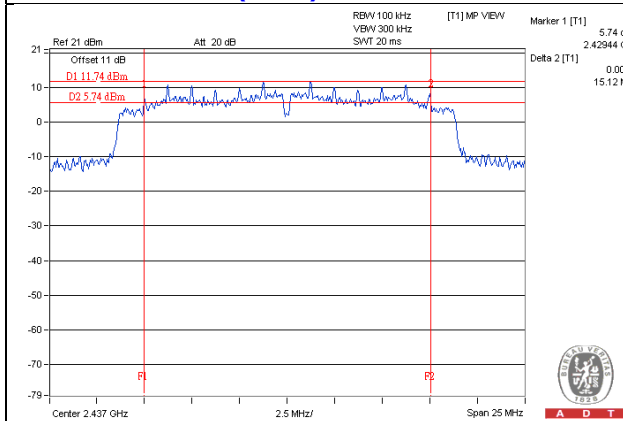
802.11b – CH 6



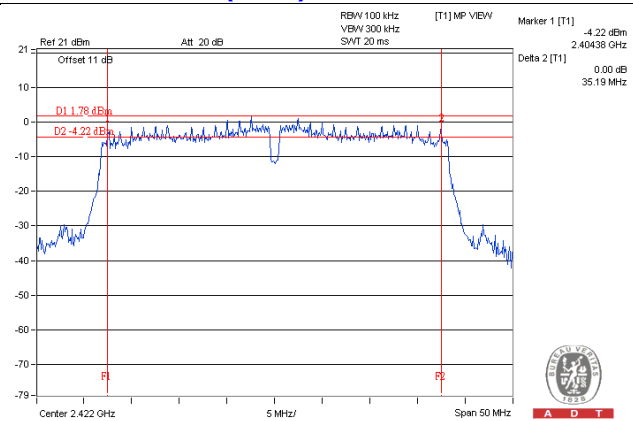
802.11g – Chain 0: CH 6



802.11n (HT20) – Chain 0: CH 6



802.11n (HT40) – Chain 1: CH 3



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,

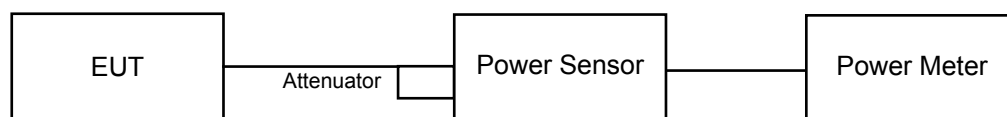
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

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 $NANT \geq 5$.

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

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	165.577	22.19	30	Pass
6	2437	308.319	24.89	30	Pass
11	2462	137.404	21.38	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	24.25	24.63	556.475	27.45	30	Pass
6	2437	25.30	25.75	714.681	28.54	30	Pass
11	2462	24.59	24.92	598.196	27.77	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.18	24.91	517.712	27.14	30	Pass
6	2437	25.18	25.74	704.583	28.48	30	Pass
11	2462	23.64	24.12	489.432	26.90	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	21.69	22.15	311.63	24.94	30	Pass
6	2437	23.71	24.57	521.381	27.17	30	Pass
9	2452	21.76	22.38	322.95	25.09	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	68.707	18.37
6	2437	157.036	21.96
11	2462	56.624	17.53

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	14.95	15.37	65.696	18.18
6	2437	21.30	22.11	297.451	24.73
11	2462	15.64	16.56	81.934	19.13

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	13.86	14.17	50.444	17.03
6	2437	21.12	22.06	290.114	24.63
11	2462	13.88	14.27	51.164	17.09

802.11n (HT40)

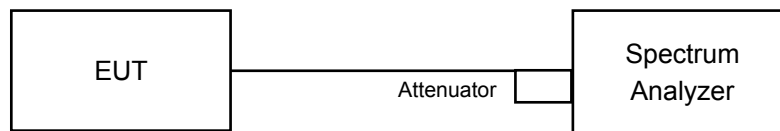
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	12.47	13.54	40.254	16.05
6	2437	15.46	16.13	76.176	18.82
9	2452	12.30	13.34	38.559	15.86

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- 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)	Limit (dBm)	Pass /Fail
1	2412	-4.63	8	Pass
6	2437	-0.49	8	Pass
11	2462	-4.45	8	Pass

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass /Fail
0	1	2412	-11.11	3.01	-8.10	7.47	Pass
	6	2437	-3.75	3.01	-0.74	7.47	Pass
	11	2462	-8.23	3.01	-5.22	7.47	Pass
1	1	2412	-9.53	3.01	-6.52	7.47	Pass
	6	2437	-2.88	3.01	0.13	7.47	Pass
	11	2462	-7.91	3.01	-4.90	7.47	Pass

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.53\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $8-(6.53-6) = 7.47\text{dBm}$.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass /Fail
0	1	2412	-10.85	3.01	-7.84	7.47	Pass
	6	2437	-4.01	3.01	-1.00	7.47	Pass
	11	2462	-10.47	3.01	-7.46	7.47	Pass
1	1	2412	-9.42	3.01	-6.41	7.47	Pass
	6	2437	-2.61	3.01	0.40	7.47	Pass
	11	2462	-8.68	3.01	-5.67	7.47	Pass

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.53\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $8-(6.53-6) = 7.47\text{dBm}$.

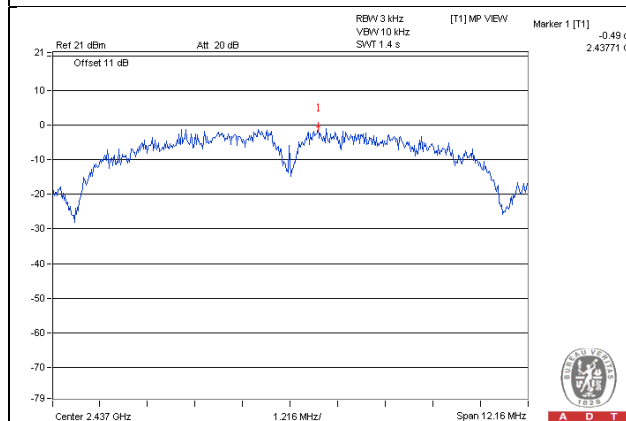
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	Pass /Fail
0	3	2422	-14.45	3.01	-11.44	7.47	Pass
	6	2437	-12.64	3.01	-9.63	7.47	Pass
	9	2452	-14.51	3.01	-11.50	7.47	Pass
1	3	2422	-12.86	3.01	-9.85	7.47	Pass
	6	2437	-11.61	3.01	-8.60	7.47	Pass
	9	2452	-13.84	3.01	-10.83	7.47	Pass

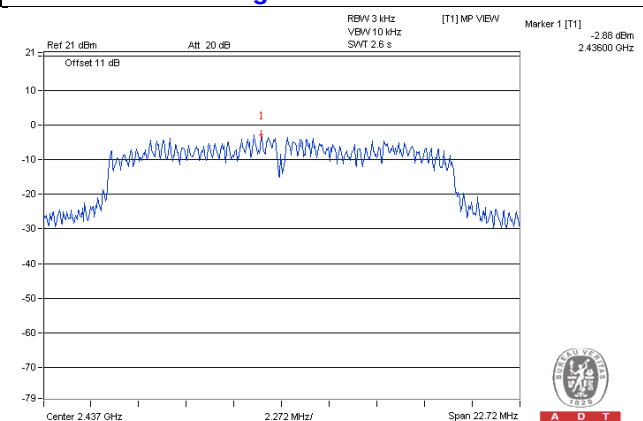
NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.53\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $8-(6.53-6) = 7.47\text{dBm}$.

Spectrum Plot of Worst Value

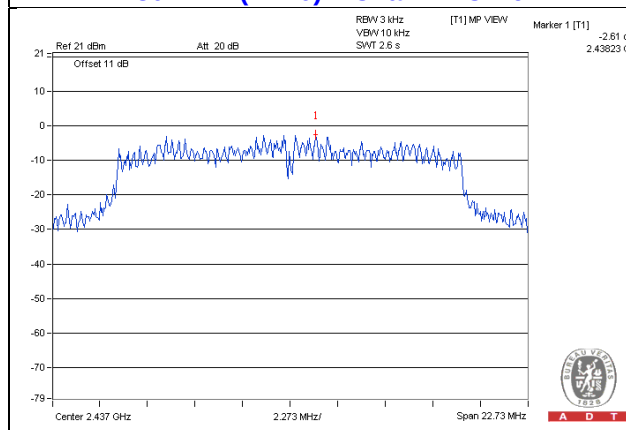
802.11b – CH 6



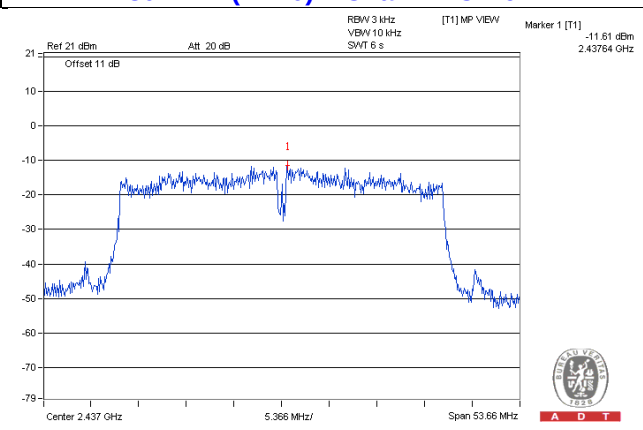
802.11g – Chain 1: CH 6



802.11n (HT20) – Chain 1: CH 6



802.11n (HT40) – Chain 1: CH 6

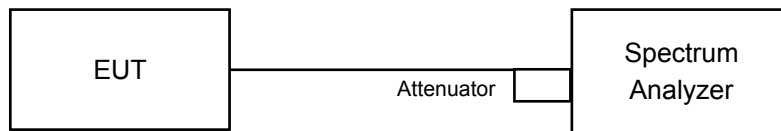


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

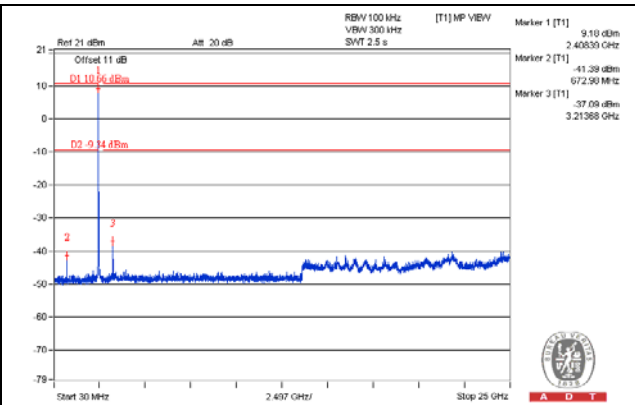
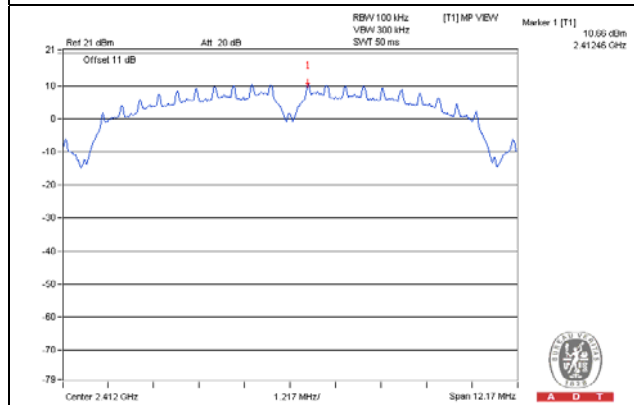
Same as Item 4.3.6

4.6.7 Test Results

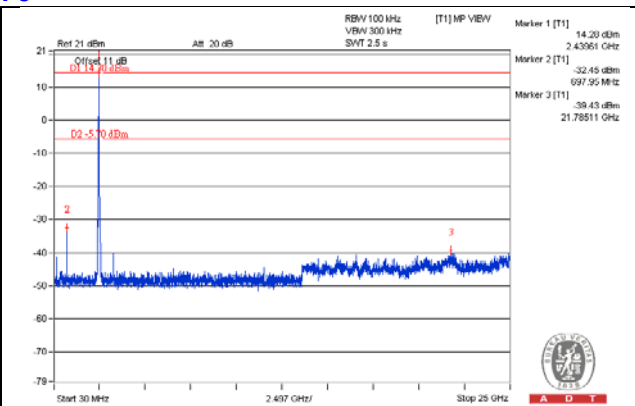
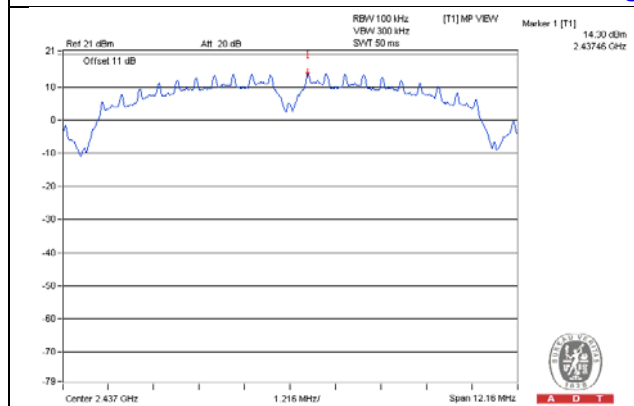
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b

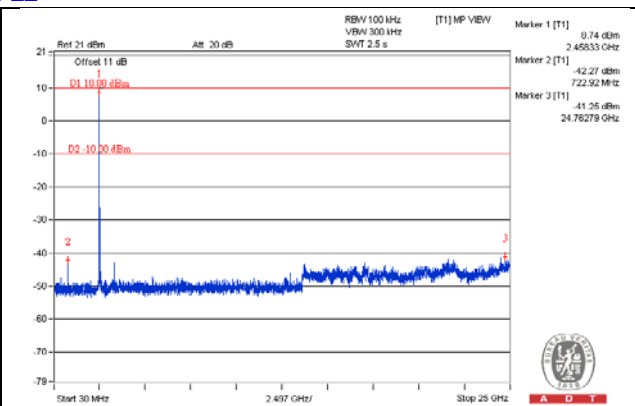
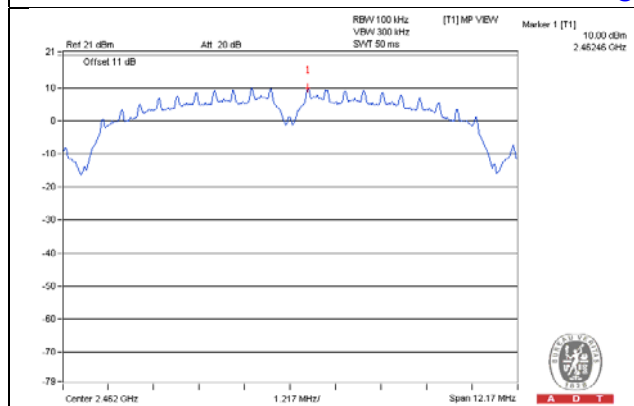
CH 1



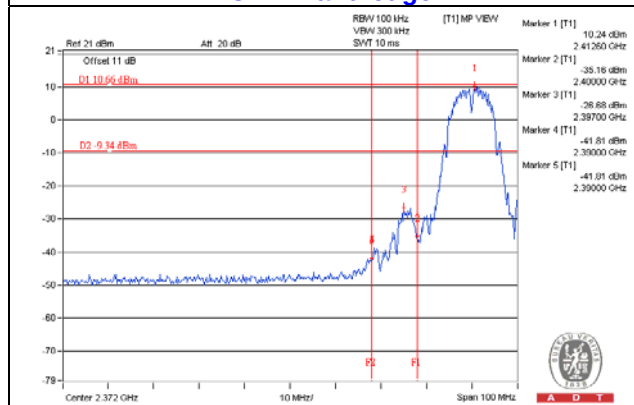
CH 6



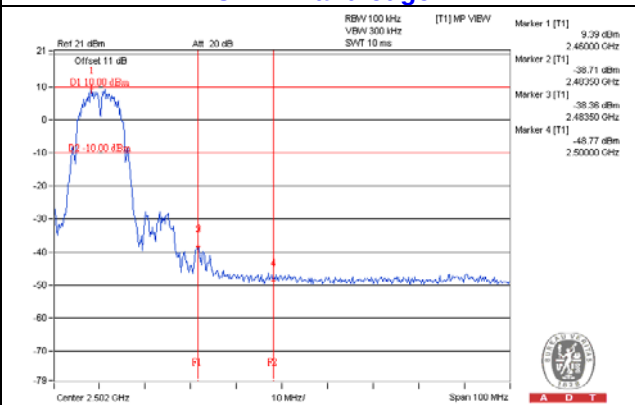
CH 11



CH 1 Band edge



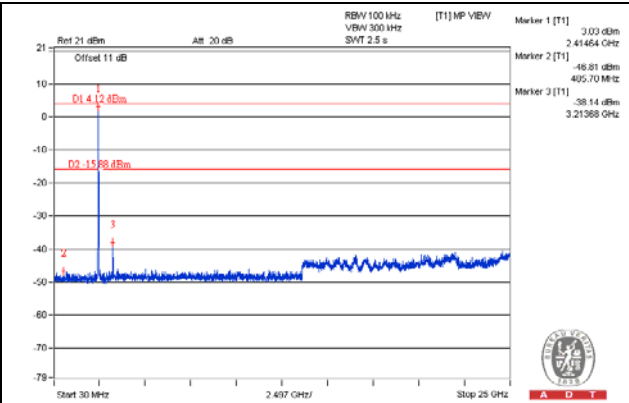
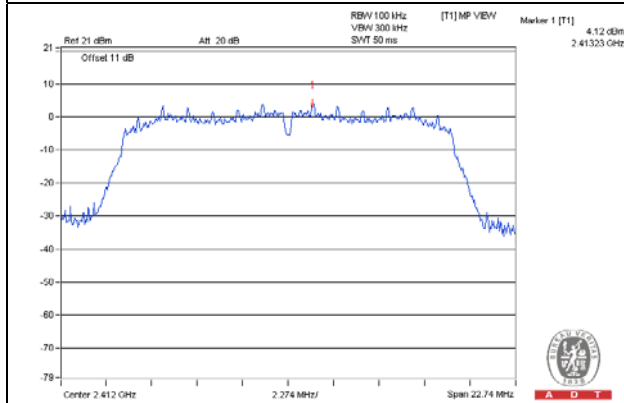
CH 11 Band edge



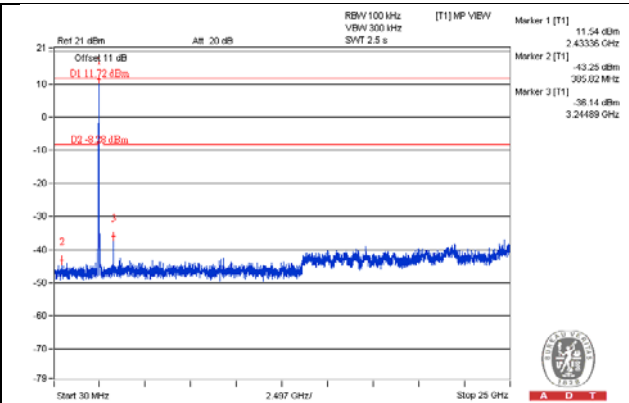
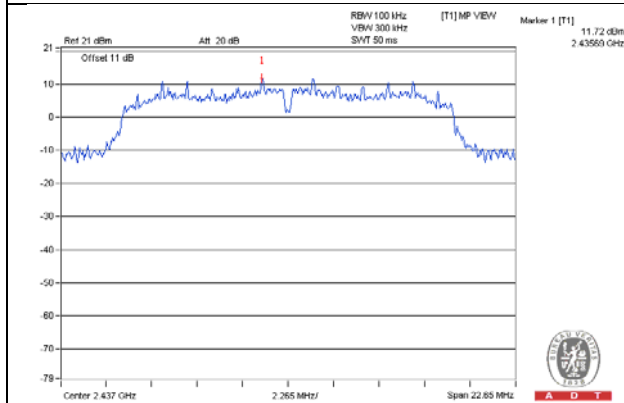
802.11g

Chain 0

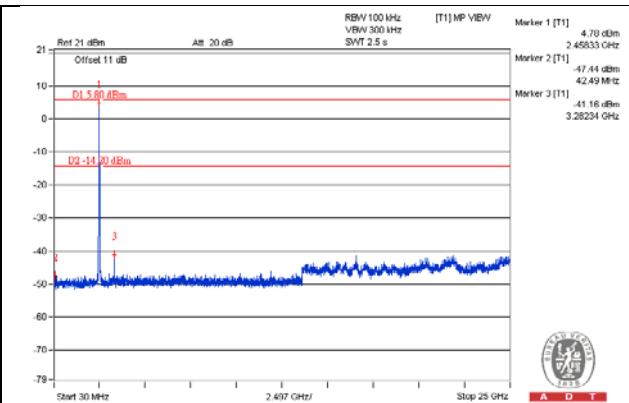
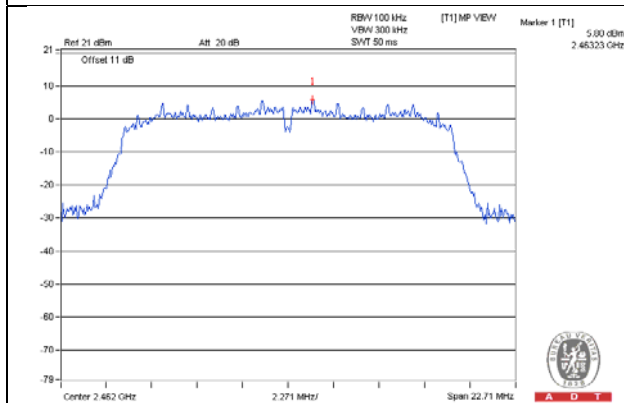
CH 1



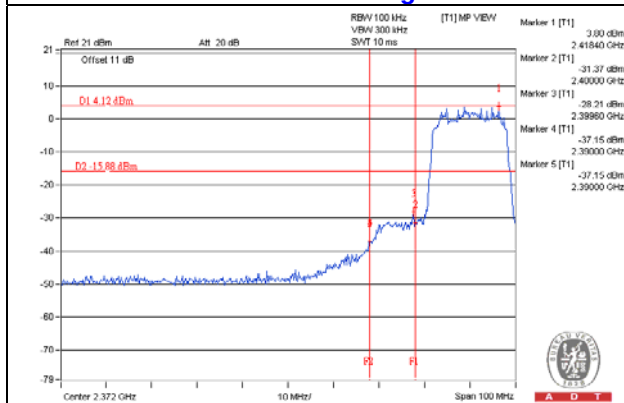
CH 6



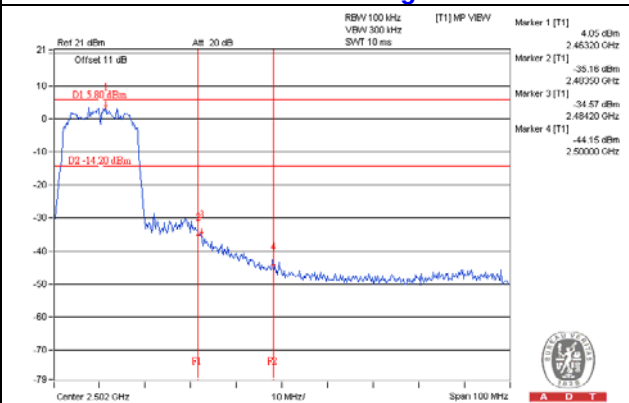
CH 11



CH 1 Band edge

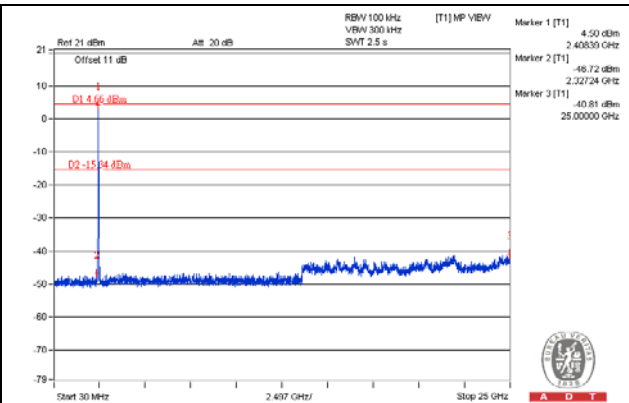
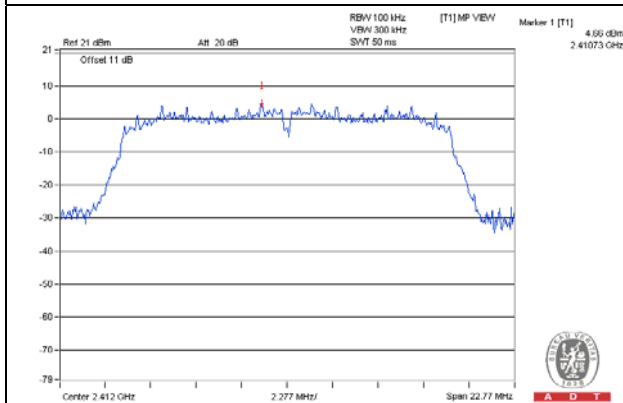


CH 11 Band edge

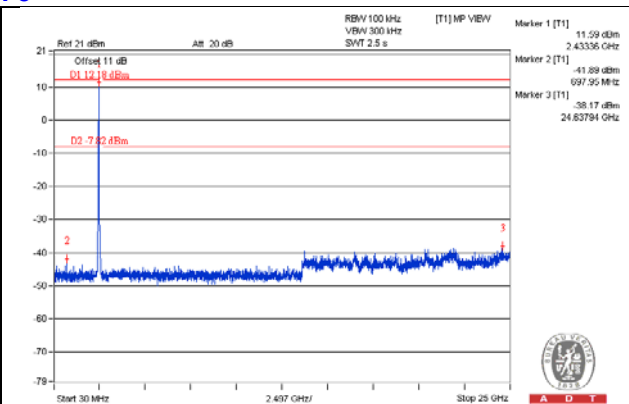
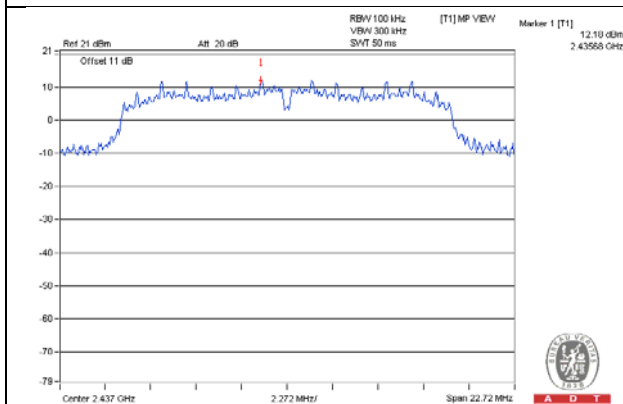


Chain 1

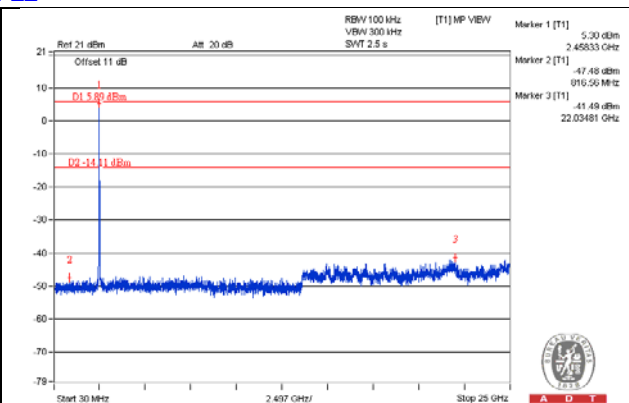
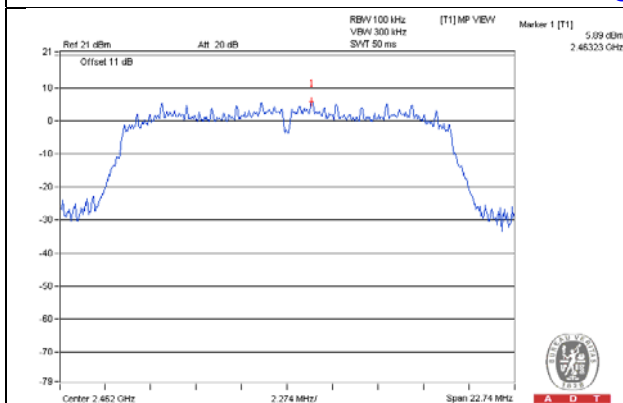
CH 1



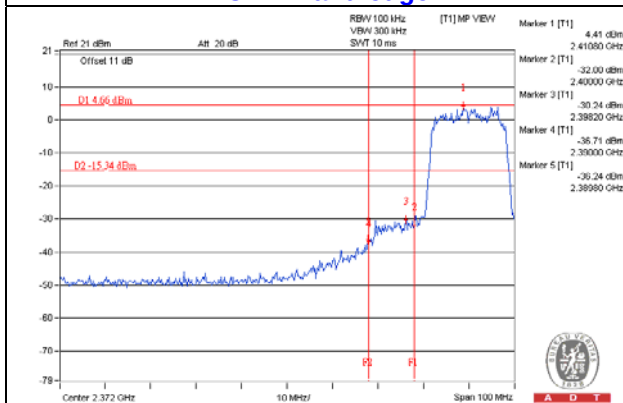
CH 6



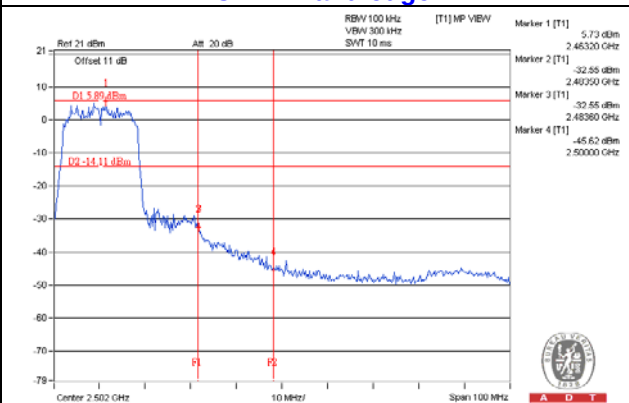
CH 11



CH 1 Band edge



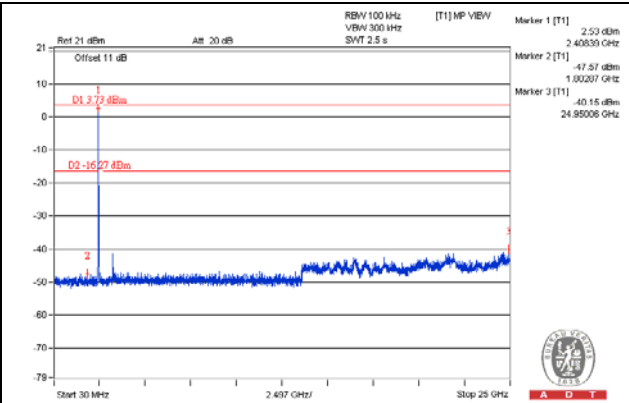
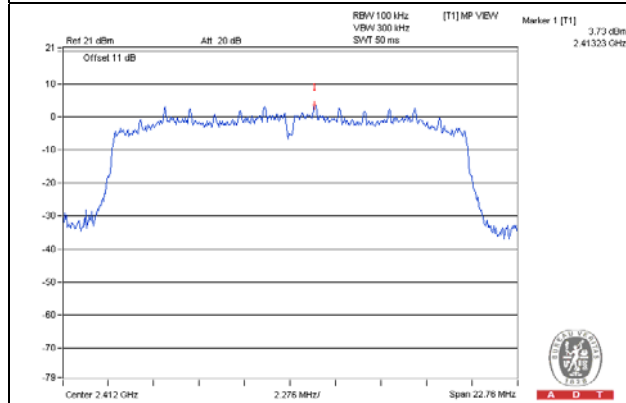
CH 11 Band edge



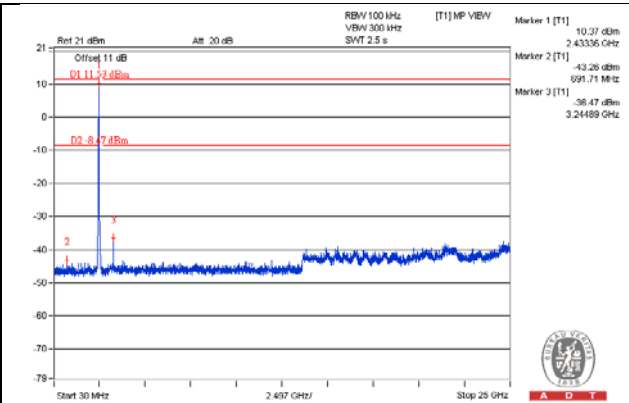
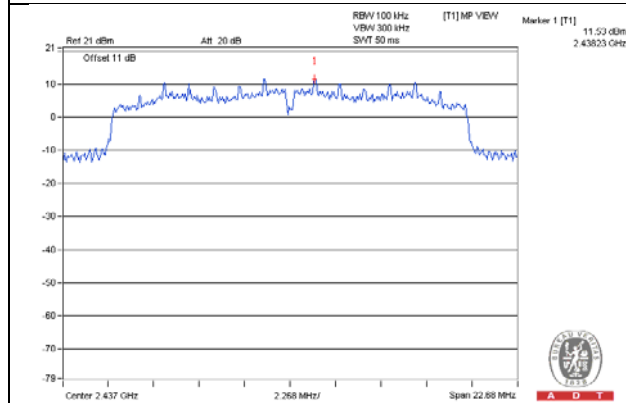
802.11n (HT20)

Chain 0

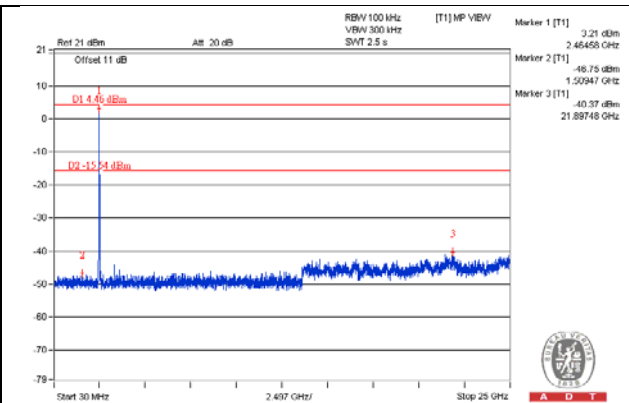
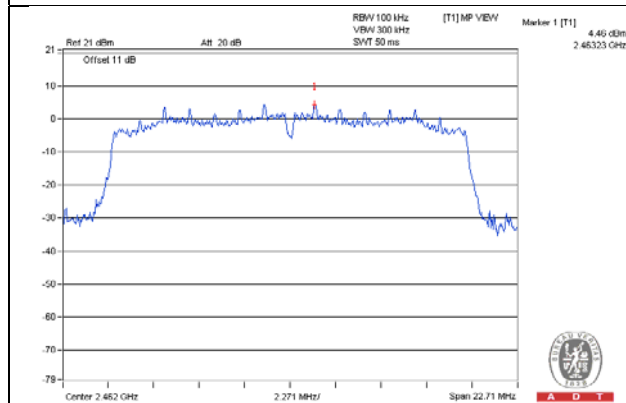
CH 1



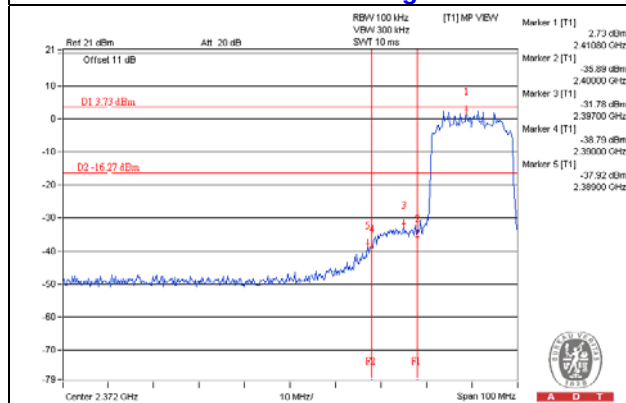
CH 6



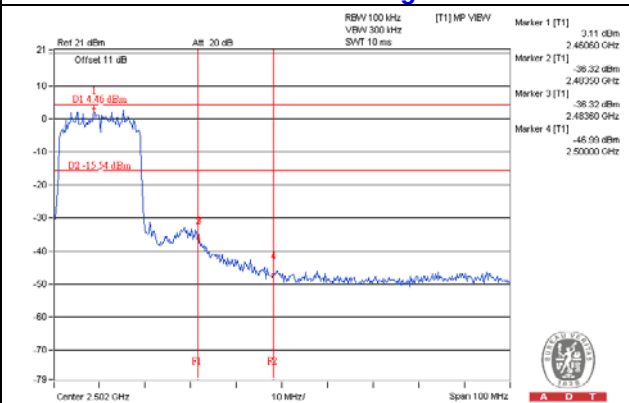
CH 11



CH 1 Band edge

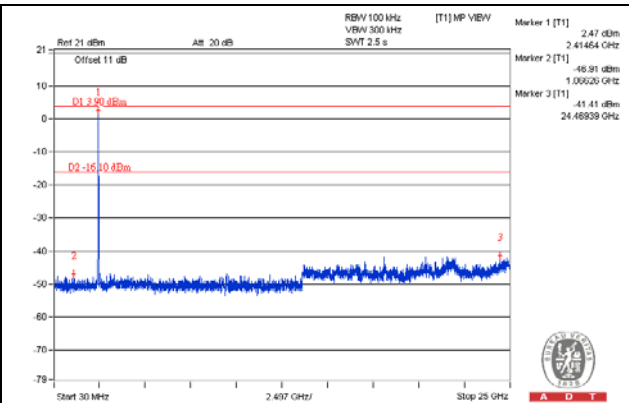
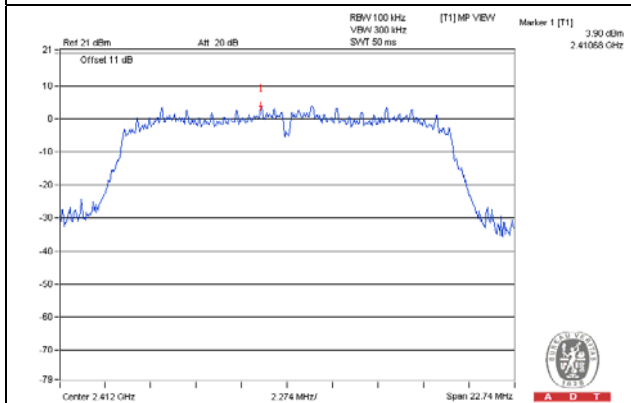


CH 11 Band edge

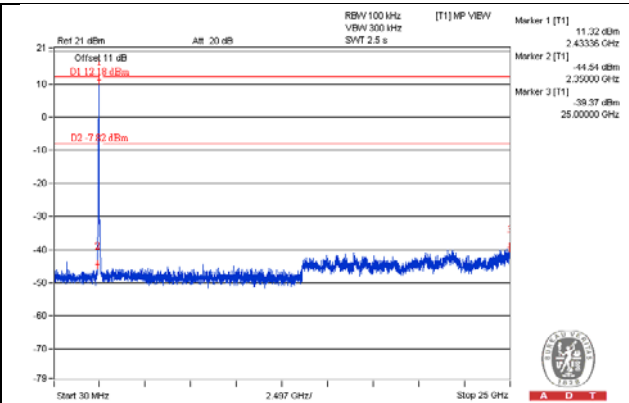
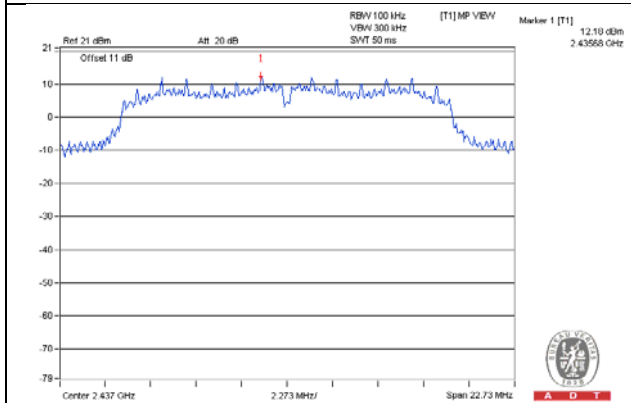


Chain 1

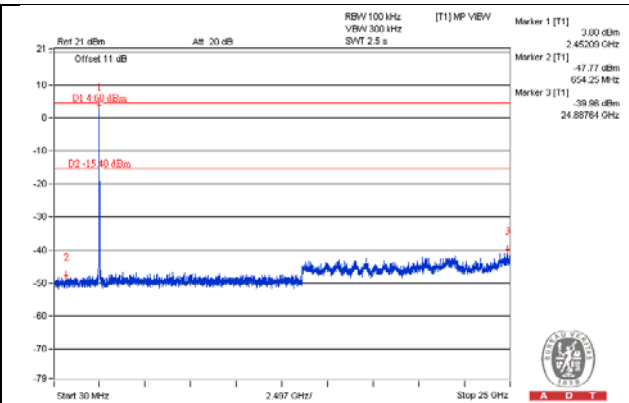
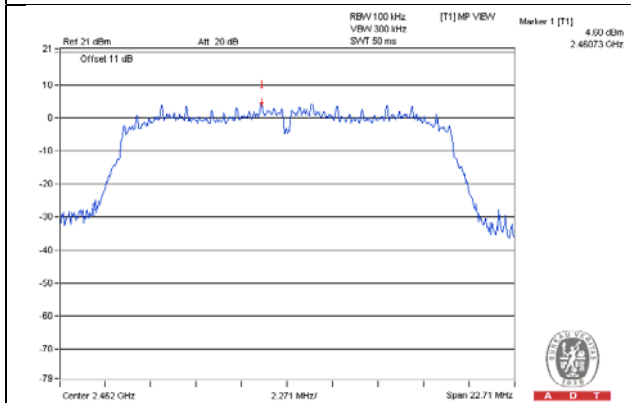
CH 1



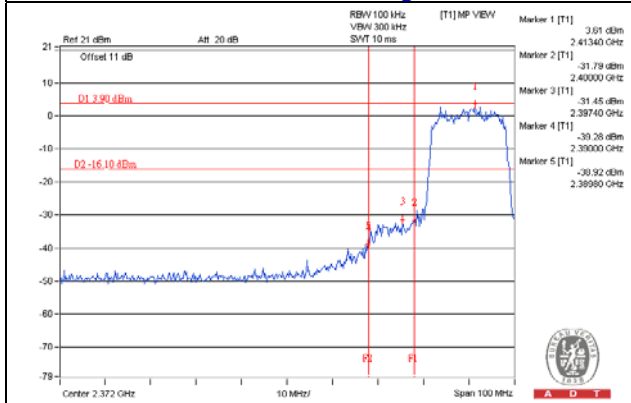
CH 6



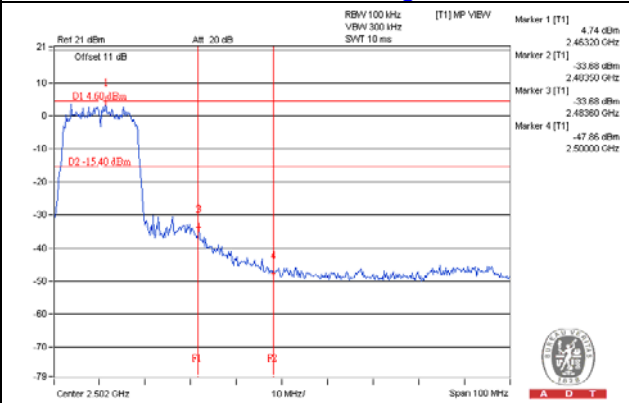
CH 11



CH 1 Band edge



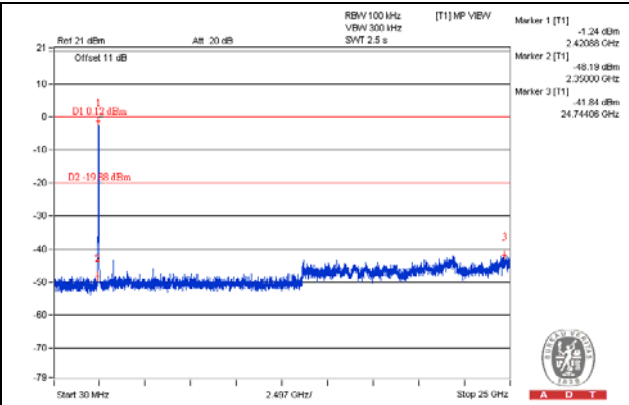
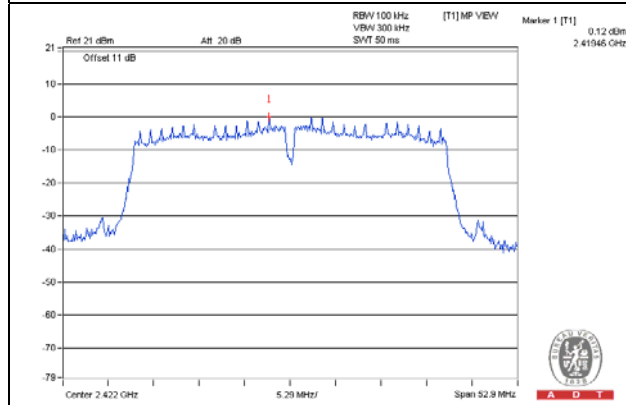
CH 11 Band edge



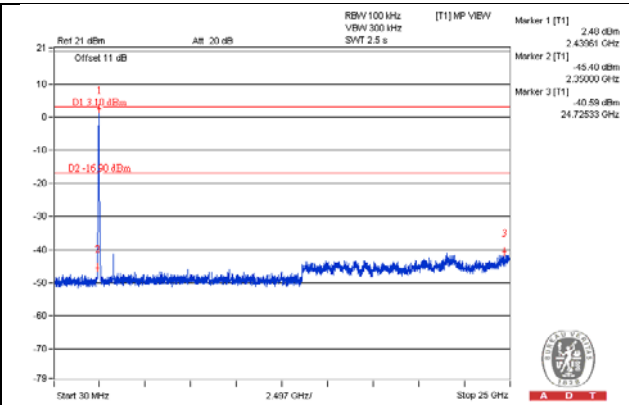
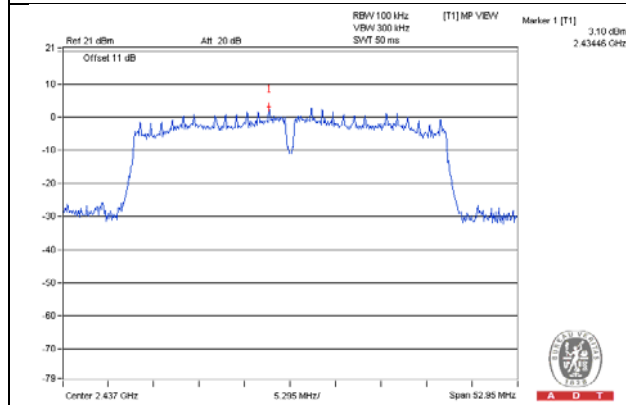
802.11n (HT40)

Chain 0

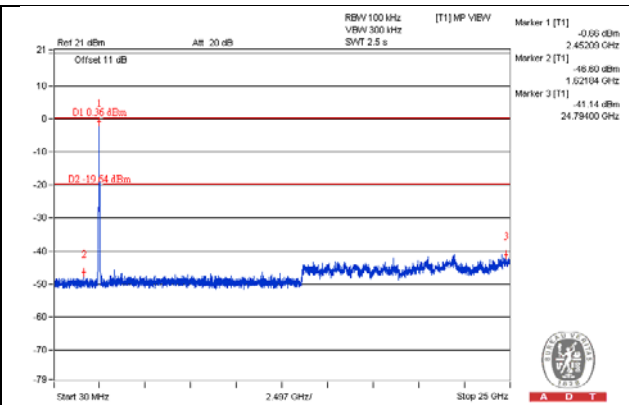
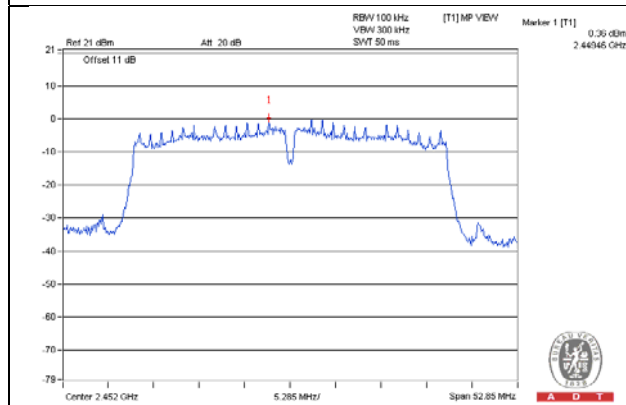
CH 3



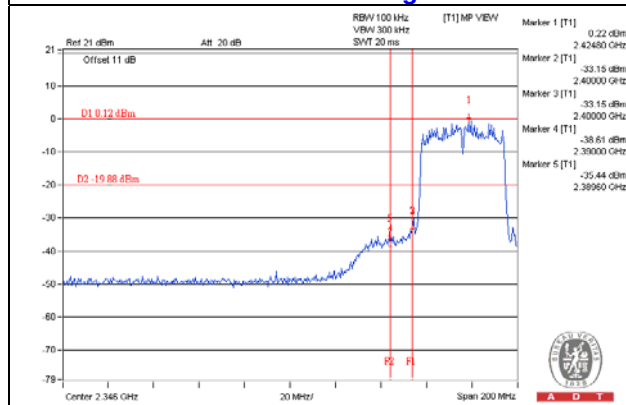
CH 6



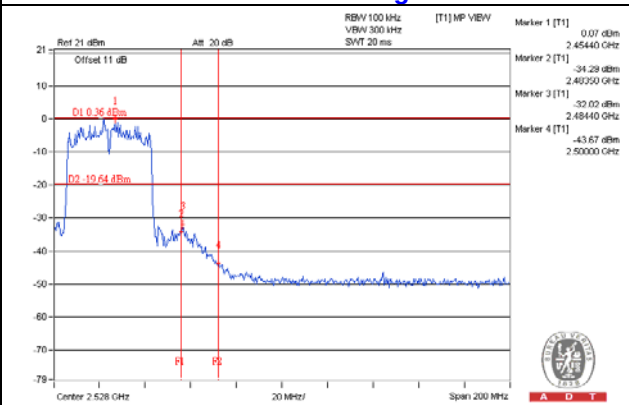
CH 9



CH 3 Band edge

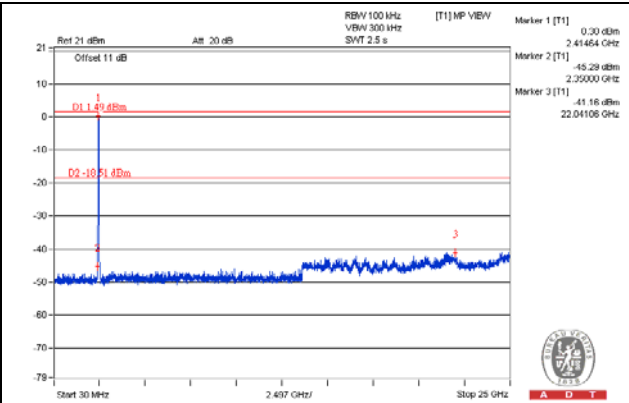
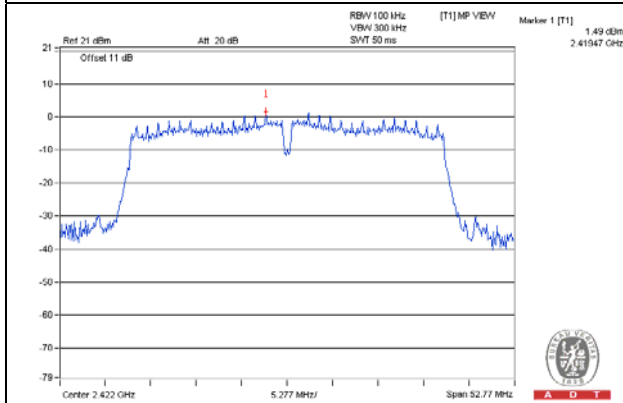


CH 9 Band edge

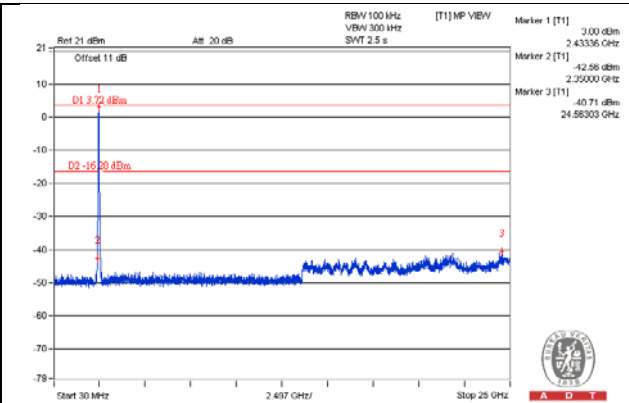
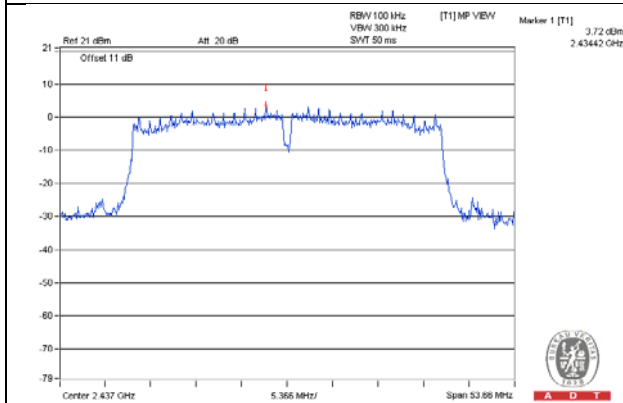


Chain 1

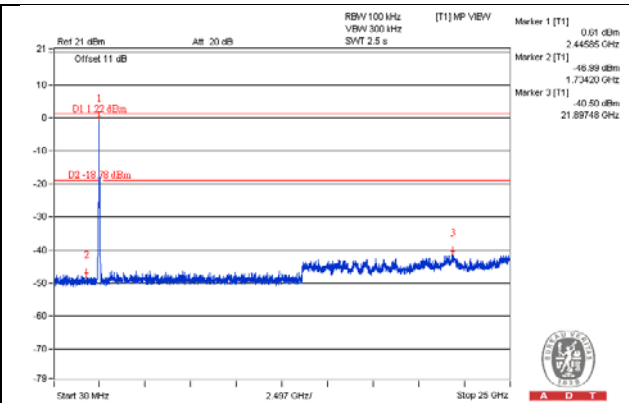
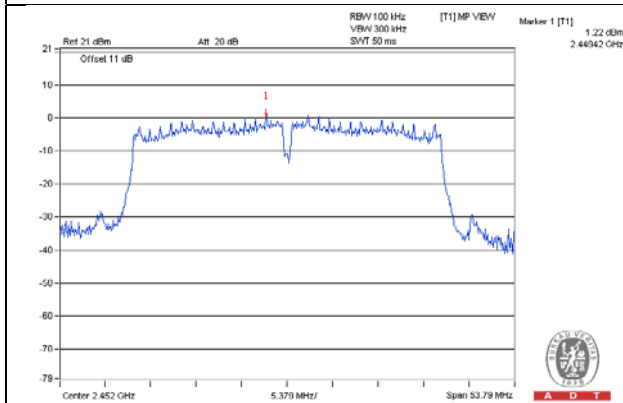
CH 3



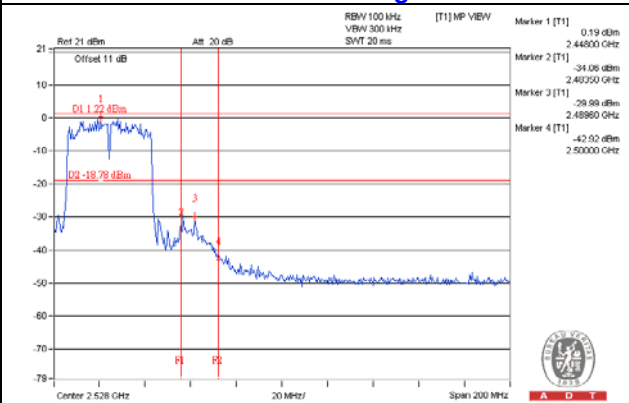
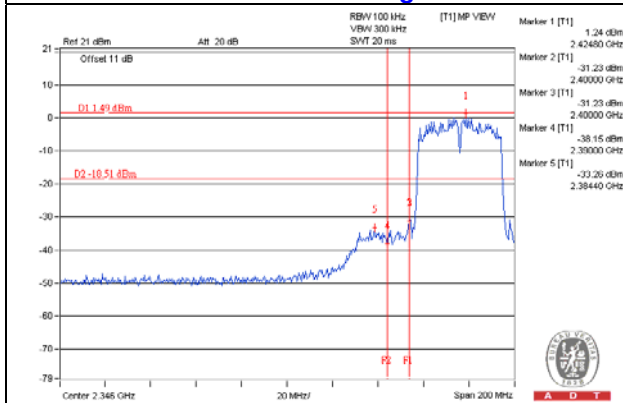
CH 6



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:

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

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