FCC Test Report

Report No.:	RF160408E01
FCC ID:	H8N-TC7300B0M
Test Model:	TC7300.Bxxxxxx
Series Model:	TC7300.Bxxxxxx (x=0-9, A-Z, a-z, "- ", "." or blank for marketing)
Received Date:	Apr. 08, 2016
Test Date:	Apr. 13 to 28, 2016
Issued Date:	May 17, 2016
Applicant:	ASKEY COMPUTER CORP
Address:	10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, TAIWAN, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF160408E01	Original release.	May 17, 2016

1 Certificate of Conformity

Product:	Cable Modem
Brand:	Technicolor
Test Model:	TC7300.Bxxxxxx
Series Model:	TC7300.Bxxxxxx (x=0-9, A-Z, a-z, "-", "." or blank for marketing)
Sample Status:	ENGINEERING SAMPLE
Applicant:	ASKEY COMPUTER CORP
Test Date:	Apr. 13 to 28, 2016
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) ANSI C63.10: 2013

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

Prepared by : _____ , **Date:** May 17, 2016

Wendy Wu / Specialist

Approved by : _____ , **Date:** May 17, 2016

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 -5.59dB at 0.40391MHz.
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 2500.00MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.37 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	Technicolor
Test Model	TC7300.Bxxxxxx
Series Model	TC7300.Bxxxxxx (x=0-9, A-Z, a-z, "- ", "." or blank for marketing)
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 12V from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
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	951.566mW
Antenna Type	Refert to Note
Antenna Connector	Refert to Note
Accessory Device	Adapter x1
Data Cable Supplied	NA

Note:

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

Brand	Model No.	Difference
ASKEY	TC7300.Bxxxxxx	for marketing
	TC7300.Bxxxxxx	(x=0-9, A-Z, a-z, "-", "." or blank for marketing)
From the above models, model: TC7300.Bxxxxxx was selected as representative model for the test and its data was recorded in this report.		

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

Transmitter Circuit	Brand	Model	Antenna Gain (dBi)	Frequency range (GHz to GHz)	Antenna Type	Connecter Type	Cable Length (mm)
Chain (0)	HONGLIN	NA	3.61	2.4-2.4835	PCB	i-pex(MHF)	30
Chain (1)	HONGLIN	AN	3.24	2.4-2.4835	PCB	i-pex(MHF)	200

3. The EUT power needs to be supplied from one power adapter, the information is as below table:

No.	Brand Name	Model No.	Spec.
1	LEI	MU18A2120150-A1	Input: 100-240V, 50-60Hz, 0.5A Output: 12V, 1.5A DC output cable (Unshielded, 1.5m)
2	APD	WB-18D12FU	Input: 100-240V~, 50-60Hz, 0.5A Output: 12V, 1.5A DC output cable (Unshielded, 1.5m)
From the above modes, the worst radiated emissions test was found in **Adapter 1,** Therefore only the test data of the modes were recorded in this report.			

4. The EUT incorporates a MIMO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX (diversity)	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
Note: For 1TX configuration mode, this report selects the max. Antenna gain to do final test.			

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 1
2	-	-	√	-	With Adapter 2

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

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

NOTE: "-"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	7.2
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	7.2

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	7.2

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	7.2
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15

Test Condition:

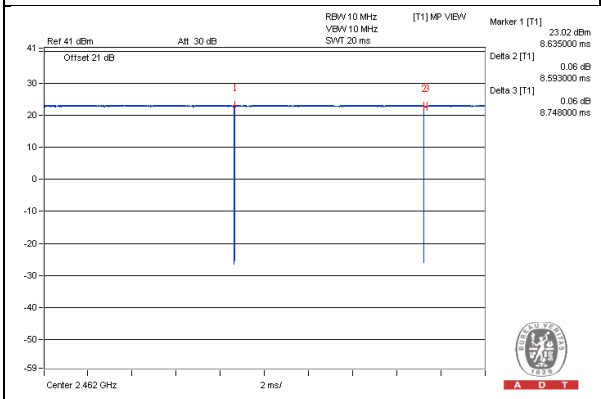
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY	TEST LOCATION
RE≥1G	22deg. C, 64%RH	120Vac, 60Hz	Jyunchung Lin	1
RE<1G	22deg. C, 64%RH	120Vac, 60Hz	Jyunchung Lin	1
PLC	24deg. C, 75%RH	120Vac, 60Hz	Arthur Yang	2
APCM	24deg. C, 64%RH	120Vac, 60Hz	Anderson Chen	1

3.3 Duty Cycle of Test Signal

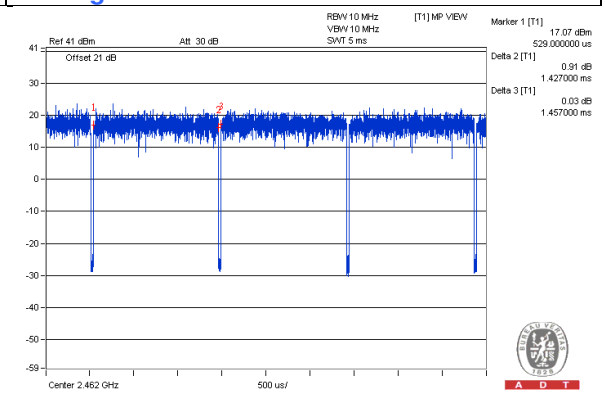
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 8.593/8.748 = 0.982
802.11g: Duty cycle = 1.427/1.457 = 0.979, Duty factor = 10 * log(1/0.979) = 0.1
802.11n (HT20): Duty cycle = 1.32/1.355 = 0.974, Duty factor = 10 * log(1/0.974) = 0.1
802.11n (HT40): Duty cycle = 0.652/0.68 = 0.959, Duty factor = 10 * log(1/0.959) = 0.2

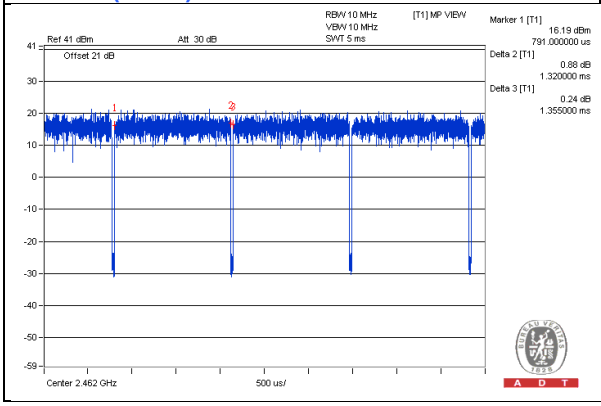
802.11b



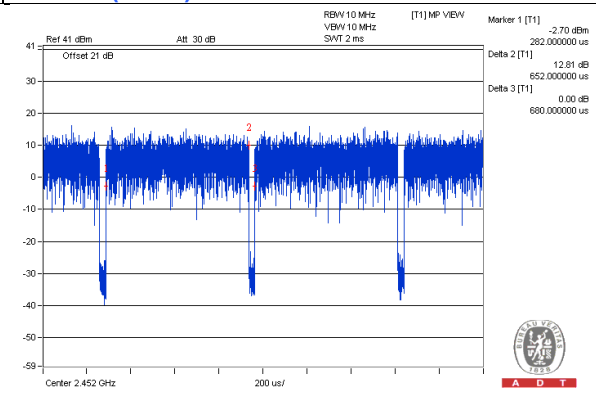
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

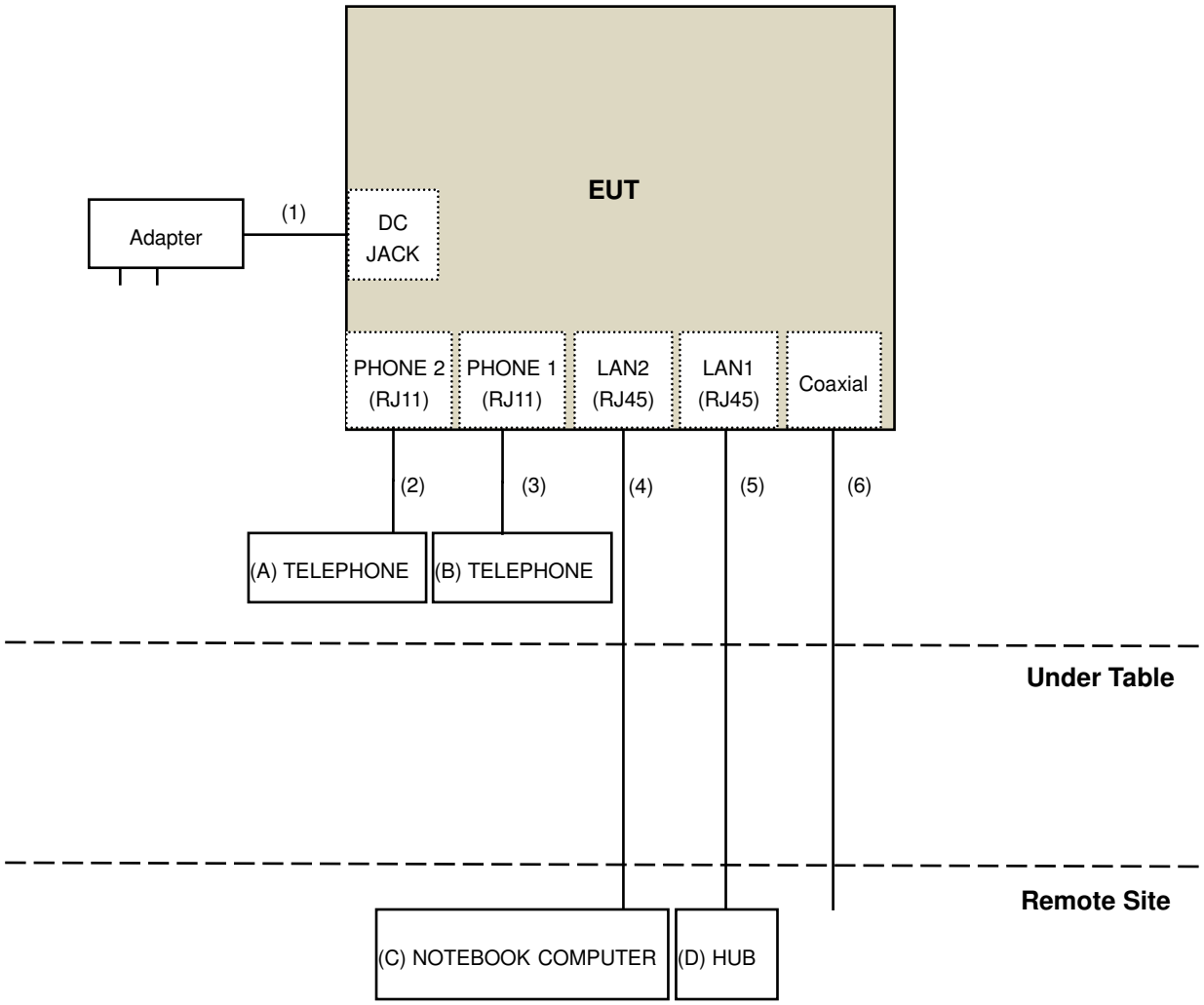
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	TELEPHONE	WONDER	WD-303	7C17KA 04011	NA	Provided by Lab
B.	TELEPHONE	WONDER	WD-303	7C17KA 05211	NA	Provided by Lab
C.	NOTEBOOK COMPUTER	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
D.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab

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

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)
KDB 558074 D01 DTS Meas Guidance v03r05
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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

NOTE:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210105	July 24, 2015	July 23, 2016
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-03	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D-FB	CHGCAB-001-1 CHGCAB-001-2	Oct. 03, 2015	Oct. 02, 2016
	RF-141	CHGCAB-004	Oct. 03, 2015	Oct. 02, 2016
Horn_Antenna AISI	AIH.8018	0000320091110	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A02578	June. 23, 2015	June 22, 2016
RF Cable	NA	131205 131216 131217 SNMY23684/4	Jan. 15, 2016	Jan. 14, 2017
Spectrum Analyzer Agilent	E4446A	MY48250254	Nov. 25, 2015	Nov. 24, 2016
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Dec. 11, 2015	Dec. 10, 2016
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Jan. 18, 2016	Jan. 17, 2017
RF Cable	SUCOFLEX 102	36442/2 36434/2	Dec. 10, 2015	Dec.09, 2016
Software	ADT_Radiated_V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA
Boresight Antenna Fixture	NA	NA	NA	NA
Spectrum analyzer R&s	FSP 40	100036	Jan. 27, 2016	Jan. 26, 2017
Power meter Anritsu	ML2495A	0824006	May 25, 2015	May 24, 2016
Power sensor Anritsu	MA2411B	0738172	May 25, 2015	May 24, 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: Apr. 27 to 28, 2016

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

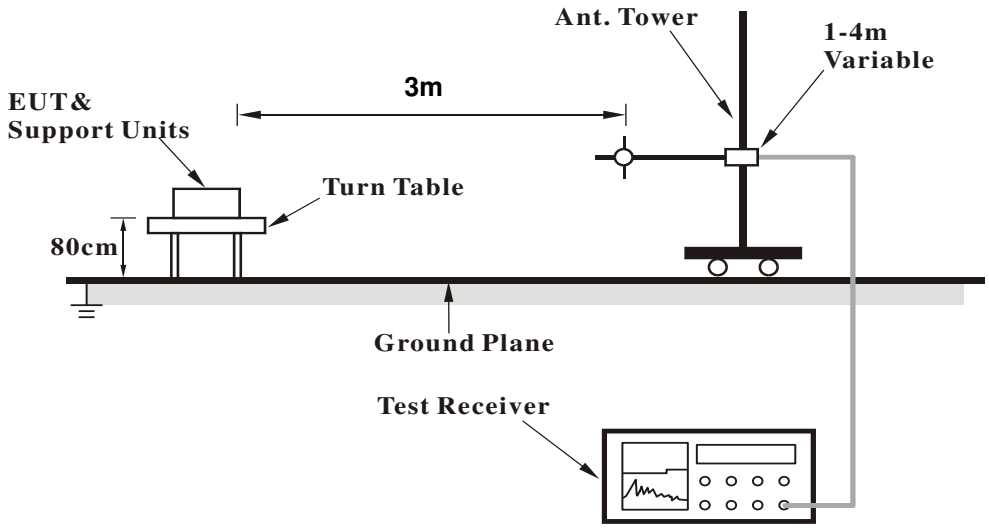
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

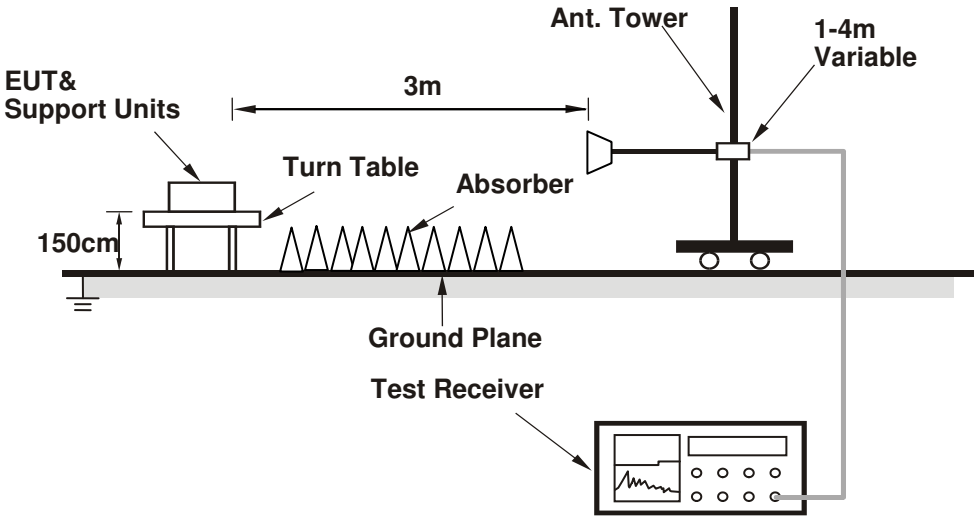
No deviation.

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 C (Notebook Computer) which is placed on remote site.
2. The communication partner run test program “Telnet paster Broadcom wl command[wl_command_2G4.txt] ” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.9 PK	74.0	-7.1	1.44 H	289	66.28	0.62
2	2390.00	53.8 AV	54.0	-0.2	1.44 H	289	53.18	0.62
3	*2412.00	112.4 PK			1.44 H	289	111.68	0.72
4	*2412.00	109.6 AV			1.44 H	289	108.88	0.72
5	2500.00	63.5 PK	74.0	-10.5	1.44 H	289	62.50	1.00
6	2500.00	53.7 AV	54.0	-0.3	1.44 H	289	52.70	1.00
7	4824.00	52.7 PK	74.0	-21.3	1.00 H	309	43.42	9.28
8	4824.00	45.6 AV	54.0	-8.4	1.00 H	309	36.32	9.28
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	60.8 PK	74.0	-13.2	2.09 V	170	60.18	0.62
2	2390.00	47.7 AV	54.0	-6.3	2.09 V	170	47.08	0.62
3	*2412.00	106.6 PK			2.09 V	170	105.88	0.72
4	*2412.00	103.8 AV			2.09 V	170	103.08	0.72
5	2500.00	59.5 PK	74.0	-14.5	2.09 V	170	58.50	1.00
6	2500.00	47.3 AV	54.0	-6.7	2.09 V	170	46.30	1.00
7	4824.00	53.6 PK	74.0	-20.4	1.52 V	153	44.32	9.28
8	4824.00	47.8 AV	54.0	-6.2	1.52 V	153	38.52	9.28

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	67.8 PK	74.0	-6.2	1.45 H	290	67.18	0.62
2	2390.00	53.6 AV	54.0	-0.4	1.45 H	290	52.98	0.62
3	*2437.00	117.3 PK			1.45 H	290	116.50	0.80
4	*2437.00	114.7 AV			1.45 H	290	113.90	0.80
5	2500.00	65.2 PK	74.0	-8.8	1.45 H	290	64.20	1.00
6	2500.00	52.5 AV	54.0	-1.5	1.45 H	290	51.50	1.00
7	4874.00	53.2 PK	74.0	-20.8	1.04 H	297	43.80	9.40
8	4874.00	45.8 AV	54.0	-8.2	1.04 H	297	36.40	9.40
9	7311.00	54.5 PK	74.0	-19.5	1.74 H	177	38.12	16.38
10	7311.00	46.8 AV	54.0	-7.2	1.74 H	177	30.42	16.38
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	60.7 PK	74.0	-13.3	2.04 V	172	60.08	0.62
2	2390.00	47.5 AV	54.0	-6.5	2.04 V	172	46.88	0.62
3	*2437.00	111.8 PK			2.04 V	172	111.00	0.80
4	*2437.00	109.3 AV			2.04 V	172	108.50	0.80
5	2500.00	59.2 PK	74.0	-14.8	2.04 V	172	58.20	1.00
6	2500.00	47.1 AV	54.0	-6.9	2.04 V	172	46.10	1.00
7	4874.00	53.6 PK	74.0	-20.4	1.50 V	158	44.20	9.40
8	4874.00	47.9 AV	54.0	-6.1	1.50 V	158	38.50	9.40
9	7311.00	55.2 PK	74.0	-18.8	1.43 V	155	38.82	16.38
10	7311.00	47.3 AV	54.0	-6.7	1.43 V	155	30.92	16.38

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	112.9 PK			1.40 H	290	112.02	0.88
2	*2462.00	110.3 AV			1.40 H	290	109.42	0.88
3	2483.50	66.6 PK	74.0	-7.4	1.40 H	290	65.65	0.95
4	2483.50	53.6 AV	54.0	-0.4	1.40 H	290	52.65	0.95
5	4924.00	52.9 PK	74.0	-21.1	1.00 H	309	43.44	9.46
6	4924.00	45.4 AV	54.0	-8.6	1.00 H	309	35.94	9.46
7	7386.00	54.2 PK	74.0	-19.8	1.68 H	186	38.22	15.98
8	7386.00	46.6 AV	54.0	-7.4	1.68 H	186	30.62	15.98
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.4 PK			2.03 V	176	106.52	0.88
2	*2462.00	104.9 AV			2.03 V	176	104.02	0.88
3	2483.50	60.4 PK	74.0	-13.6	2.03 V	176	59.45	0.95
4	2483.50	48.3 AV	54.0	-5.7	2.03 V	176	47.35	0.95
5	4924.00	54.1 PK	74.0	-19.9	1.52 V	173	44.64	9.46
6	4924.00	48.2 AV	54.0	-5.8	1.52 V	173	38.74	9.46
7	7386.00	55.1 PK	74.0	-18.9	1.39 V	148	39.12	15.98
8	7386.00	46.9 AV	54.0	-7.1	1.39 V	148	30.92	15.98

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	70.0 PK	74.0	-4.0	1.40 H	249	69.38	0.62
2	2390.00	49.0 AV	54.0	-5.0	1.40 H	249	48.38	0.62
3	*2412.00	111.6 PK			1.40 H	249	110.88	0.72
4	*2412.00	100.7 AV			1.40 H	249	99.98	0.72
5	2500.00	63.7 PK	74.0	-10.3	1.40 H	249	62.70	1.00
6	2500.00	53.8 AV	54.0	-0.2	1.40 H	249	52.80	1.00
7	4824.00	50.3 PK	74.0	-23.7	1.07 H	297	41.02	9.28
8	4824.00	37.7 AV	54.0	-16.3	1.07 H	297	28.42	9.28
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	56.1 PK	74.0	-17.9	2.09 V	185	55.48	0.62
2	2390.00	42.8 AV	54.0	-11.2	2.09 V	185	42.18	0.62
3	*2412.00	106.1 PK			2.09 V	185	105.38	0.72
4	*2412.00	95.3 AV			2.09 V	185	94.58	0.72
5	2500.00	60.2 PK	74.0	-13.8	2.61 V	201	59.20	1.00
6	2500.00	52.3 AV	54.0	-1.7	2.61 V	201	51.30	1.00
7	4824.00	50.4 PK	74.0	-23.6	1.48 V	160	41.12	9.28
8	4824.00	37.7 AV	54.0	-16.3	1.48 V	160	28.42	9.28

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	64.5 PK	74.0	-9.5	1.40 H	248	63.88	0.62
2	2390.00	50.9 AV	54.0	-3.1	1.40 H	248	50.28	0.62
3	*2437.00	116.6 PK			1.40 H	248	115.80	0.80
4	*2437.00	105.7 AV			1.40 H	248	104.90	0.80
5	2483.50	66.9 PK	74.0	-7.1	1.40 H	248	65.95	0.95
6	2483.50	51.0 AV	54.0	-3.0	1.40 H	248	50.05	0.95
7	2500.00	65.7 PK	74.0	-8.3	1.40 H	248	64.70	1.00
8	**2500.00**	**53.9 AV**	**54.0**	**-0.1**	**1.40 H**	**248**	**52.90**	**1.00**
9	4874.00	50.2 PK	74.0	-23.8	1.08 H	281	40.80	9.40
10	4874.00	37.6 AV	54.0	-16.4	1.08 H	281	28.20	9.40
11	7311.00	54.5 PK	74.0	-19.5	1.71 H	190	38.12	16.38
12	7311.00	46.7 AV	54.0	-7.3	1.71 H	190	30.32	16.38
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	58.8 PK	74.0	-15.2	1.98 V	185	58.18	0.62
2	2390.00	44.7 AV	54.0	-9.3	1.98 V	185	44.08	0.62
3	*2437.00	111.1 PK			1.98 V	185	110.30	0.80
4	*2437.00	100.3 AV			1.98 V	185	99.50	0.80
5	2483.50	67.6 PK	74.0	-6.4	1.98 V	185	66.65	0.95
6	2483.50	45.1 AV	54.0	-8.9	1.98 V	185	44.15	0.95
7	2500.00	63.9 PK	74.0	-10.1	1.98 V	185	62.90	1.00
8	2500.00	52.4 AV	54.0	-1.6	1.98 V	185	51.40	1.00
9	4874.00	50.6 PK	74.0	-23.4	1.50 V	162	41.20	9.40
10	4874.00	37.8 AV	54.0	-16.2	1.50 V	162	28.40	9.40
11	7311.00	55.2 PK	74.0	-18.8	1.41 V	153	38.82	16.38
12	7311.00	47.5 AV	54.0	-6.5	1.41 V	153	31.12	16.38

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.9 PK			1.40 H	246	111.02	0.88
2	*2462.00	100.9 AV			1.40 H	246	100.02	0.88
3	2483.50	73.4 PK	74.0	-0.6	1.40 H	246	72.45	0.95
4	2483.50	50.8 AV	54.0	-3.2	1.40 H	246	49.85	0.95
5	4924.00	50.4 PK	74.0	-23.6	1.07 H	296	40.94	9.46
6	4924.00	38.0 AV	54.0	-16.0	1.07 H	296	28.54	9.46
7	7386.00	55.1 PK	74.0	-18.9	1.69 H	196	39.12	15.98
8	7386.00	47.0 AV	54.0	-7.0	1.69 H	196	31.02	15.98
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.4 PK			2.00 V	177	105.52	0.88
2	*2462.00	95.5 AV			2.00 V	177	94.62	0.88
3	2483.50	67.3 PK	74.0	-6.7	2.00 V	177	66.35	0.95
4	2483.50	44.9 AV	54.0	-9.1	2.00 V	177	43.95	0.95
5	4924.00	51.2 PK	74.0	-22.8	1.50 V	149	41.74	9.46
6	4924.00	38.2 AV	54.0	-15.8	1.50 V	149	28.74	9.46
7	7386.00	55.2 PK	74.0	-18.8	1.39 V	164	39.22	15.98
8	7386.00	47.3 AV	54.0	-6.7	1.39 V	164	31.32	15.98

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	73.4 PK	74.0	-0.6	1.66 H	288	72.78	0.62
2	2390.00	52.4 AV	54.0	-1.6	1.66 H	288	51.78	0.62
3	*2412.00	109.7 PK			1.66 H	288	108.98	0.72
4	*2412.00	97.9 AV			1.66 H	288	97.18	0.72
5	4824.00	50.7 PK	74.0	-23.3	1.05 H	297	41.42	9.28
6	4824.00	38.1 AV	54.0	-15.9	1.05 H	297	28.82	9.28
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.98 V	162	66.88	0.62
2	2390.00	46.3 AV	54.0	-7.7	1.98 V	162	45.68	0.62
3	*2412.00	104.2 PK			1.98 V	162	103.48	0.72
4	*2412.00	92.5 AV			1.98 V	162	91.78	0.72
5	4824.00	51.2 PK	74.0	-22.8	1.53 V	143	41.92	9.28
6	4824.00	38.1 AV	54.0	-15.9	1.53 V	143	28.82	9.28

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	69.9 PK	74.0	-4.1	1.40 H	289	69.28	0.62
2	2390.00	53.1 AV	54.0	-0.9	1.40 H	289	52.48	0.62
3	*2437.00	117.1 PK			1.40 H	289	116.30	0.80
4	*2437.00	104.4 AV			1.40 H	289	103.60	0.80
5	2483.50	70.3 PK	74.0	-3.7	1.40 H	289	69.35	0.95
6	2483.50	53.7 AV	54.0	-0.3	1.40 H	289	52.75	0.95
7	4874.00	49.9 PK	74.0	-24.1	1.13 H	266	40.50	9.40
8	4874.00	37.4 AV	54.0	-16.6	1.13 H	266	28.00	9.40
9	7311.00	54.9 PK	74.0	-19.1	1.71 H	202	38.52	16.38
10	7311.00	46.9 AV	54.0	-7.1	1.71 H	202	30.52	16.38
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	64.3 PK	74.0	-9.7	1.94 V	190	63.68	0.62
2	2390.00	47.5 AV	54.0	-6.5	1.94 V	190	46.88	0.62
3	*2437.00	111.6 PK			1.94 V	190	110.80	0.80
4	*2437.00	99.0 AV			1.94 V	190	98.20	0.80
5	2483.50	64.7 PK	74.0	-9.3	1.94 V	190	63.75	0.95
6	2483.50	48.1 AV	54.0	-5.9	1.94 V	190	47.15	0.95
7	4874.00	51.6 PK	74.0	-22.4	1.49 V	141	42.20	9.40
8	4874.00	38.7 AV	54.0	-15.3	1.49 V	141	29.30	9.40
9	7311.00	55.4 PK	74.0	-18.6	1.37 V	159	39.02	16.38
10	7311.00	47.3 AV	54.0	-6.7	1.37 V	159	30.92	16.38

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	110.5 PK			1.40 H	289	109.62	0.88
2	*2462.00	98.7 AV			1.40 H	289	97.82	0.88
3	2483.50	73.7 PK	74.0	-0.3	1.40 H	289	72.75	0.95
4	2483.50	51.1 AV	54.0	-2.9	1.40 H	289	50.15	0.95
5	4924.00	50.3 PK	74.0	-23.7	1.06 H	288	40.84	9.46
6	4924.00	37.5 AV	54.0	-16.5	1.06 H	288	28.04	9.46
7	7386.00	54.5 PK	74.0	-19.5	1.68 H	205	38.52	15.98
8	7386.00	46.8 AV	54.0	-7.2	1.68 H	205	30.82	15.98
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	105.0 PK			2.05 V	184	104.12	0.88
2	*2462.00	93.3 AV			2.05 V	184	92.42	0.88
3	2483.50	68.1 PK	74.0	-5.9	2.05 V	184	67.15	0.95
4	2483.50	45.5 AV	54.0	-8.5	2.05 V	184	44.55	0.95
5	4924.00	51.1 PK	74.0	-22.9	1.47 V	161	41.64	9.46
6	4924.00	37.9 AV	54.0	-16.1	1.47 V	161	28.44	9.46
7	7386.00	54.8 PK	74.0	-19.2	1.43 V	152	38.82	15.98
8	7386.00	47.0 AV	54.0	-7.0	1.43 V	152	31.02	15.98

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	68.6 PK	74.0	-5.4	1.70 H	191	67.98	0.62
2	2390.00	53.4 AV	54.0	-0.6	1.70 H	191	52.78	0.62
3	*2422.00	106.4 PK			1.70 H	191	105.65	0.75
4	*2422.00	94.0 AV			1.70 H	191	93.25	0.75
5	4844.00	50.4 PK	74.0	-23.6	1.08 H	272	41.08	9.32
6	4844.00	37.8 AV	54.0	-16.2	1.08 H	272	28.48	9.32
7	7266.00	54.1 PK	74.0	-19.9	1.75 H	191	37.54	16.56
8	7266.00	46.4 AV	54.0	-7.6	1.75 H	191	29.84	16.56
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	63.5 PK	74.0	-10.5	2.02 V	182	62.88	0.62
2	2390.00	47.4 AV	54.0	-6.6	2.02 V	182	46.78	0.62
3	*2422.00	100.9 PK			2.02 V	182	100.15	0.75
4	*2422.00	88.6 AV			2.02 V	182	87.85	0.75
5	4844.00	51.3 PK	74.0	-22.7	1.47 V	162	41.98	9.32
6	4844.00	38.5 AV	54.0	-15.5	1.47 V	162	29.18	9.32
7	7266.00	55.5 PK	74.0	-18.5	1.45 V	168	38.94	16.56
8	7266.00	47.4 AV	54.0	-6.6	1.45 V	168	30.84	16.56

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	71.6 PK	74.0	-2.4	1.70 H	289	70.98	0.62
2	2390.00	53.7 AV	54.0	-0.3	1.70 H	289	53.08	0.62
3	*2437.00	110.4 PK			1.70 H	289	109.60	0.80
4	*2437.00	97.9 AV			1.70 H	289	97.10	0.80
5	2483.50	71.4 PK	74.0	-2.6	1.70 H	289	70.45	0.95
6	2483.50	52.7 AV	54.0	-1.3	1.70 H	289	51.75	0.95
7	4874.00	50.3 PK	74.0	-23.7	1.03 H	278	40.90	9.40
8	4874.00	37.5 AV	54.0	-16.5	1.03 H	278	28.10	9.40
9	7311.00	54.5 PK	74.0	-19.5	1.76 H	190	38.12	16.38
10	7311.00	46.8 AV	54.0	-7.2	1.76 H	190	30.42	16.38
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.6 PK	74.0	-8.4	2.04 V	187	64.98	0.62
2	2390.00	47.8 AV	54.0	-6.2	2.04 V	187	47.18	0.62
3	*2437.00	104.9 PK			2.04 V	187	104.10	0.80
4	*2437.00	92.5 AV			2.04 V	187	91.70	0.80
5	2483.50	66.0 PK	74.0	-8.0	2.04 V	187	65.05	0.95
6	2483.50	47.1 AV	54.0	-6.9	2.04 V	187	46.15	0.95
7	4874.00	51.4 PK	74.0	-22.6	1.53 V	162	42.00	9.40
8	4874.00	38.5 AV	54.0	-15.5	1.53 V	162	29.10	9.40
9	7311.00	55.6 PK	74.0	-18.4	1.39 V	157	39.22	16.38
10	7311.00	47.6 AV	54.0	-6.4	1.39 V	157	31.22	16.38

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	105.8 PK			1.70 H	289	104.96	0.84
2	*2452.00	93.6 AV			1.70 H	289	92.76	0.84
3	2483.50	70.4 PK	74.0	-3.6	1.70 H	289	69.45	0.95
4	2483.50	53.6 AV	54.0	-0.4	1.70 H	289	52.65	0.95
5	4904.00	50.7 PK	74.0	-23.3	1.06 H	282	41.25	9.45
6	4904.00	38.0 AV	54.0	-16.0	1.06 H	282	28.55	9.45
7	7356.00	54.3 PK	74.0	-19.7	1.66 H	202	38.16	16.14
8	7356.00	46.2 AV	54.0	-7.8	1.66 H	202	30.06	16.14
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			1.98 V	187	99.46	0.84
2	*2452.00	88.2 AV			1.98 V	187	87.36	0.84
3	2483.50	65.9 PK	74.0	-8.1	1.98 V	187	64.95	0.95
4	2483.50	47.7 AV	54.0	-6.3	1.98 V	187	46.75	0.95
5	4904.00	50.9 PK	74.0	-23.1	1.51 V	146	41.45	9.45
6	4904.00	37.9 AV	54.0	-16.1	1.51 V	146	28.45	9.45
7	7356.00	55.3 PK	74.0	-18.7	1.35 V	175	39.16	16.14
8	7356.00	47.7 AV	54.0	-6.3	1.35 V	175	31.56	16.14

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:

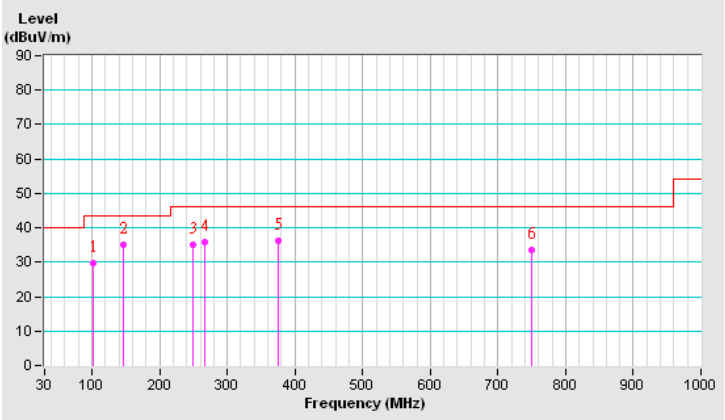
802.11n (HT20)

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	101.00	29.8 QP	43.5	-13.7	2.50 H	360	42.08	-12.25
2	146.33	35.2 QP	43.5	-8.3	2.00 H	277	42.94	-7.76
3	250.00	35.1 QP	46.0	-10.9	1.00 H	267	43.86	-8.73
4	266.34	35.9 QP	46.0	-10.1	1.50 H	96	43.89	-7.98
5	375.01	36.1 QP	46.0	-9.9	1.00 H	25	40.69	-4.59
6	750.01	33.7 QP	46.0	-12.3	1.00 H	201	29.81	3.87

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

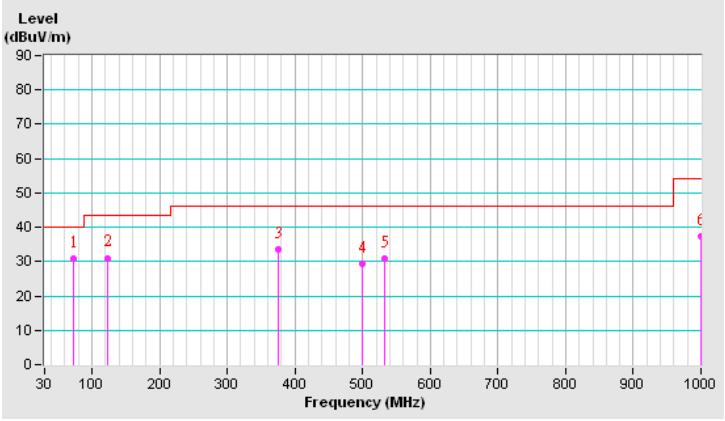


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	73.55	31.0 QP	40.0	-9.0	1.00 V	293	41.81	-10.82
2	122.49	31.1 QP	43.5	-12.5	1.00 V	26	40.73	-9.68
3	374.98	33.5 QP	46.0	-12.5	1.00 V	360	38.15	-4.61
4	500.01	29.2 QP	46.0	-16.8	2.00 V	328	30.73	-1.49
5	533.28	30.8 QP	46.0	-15.2	1.00 V	287	31.71	-0.94
6	999.98	37.2 QP	54.0	-16.8	1.50 V	19	29.88	7.32

REMARKS:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct 23, 2015	Oct. 22, 2016
Line-Impedance Stabilization Network (for EUT) 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. 08, 2016	Mar. 07, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-002	Sep. 14, 2015	Sep. 13, 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
50 ohms Terminator	E1-011315	13	Dec. 11 2015	Dec. 10 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: Apr. 13, 2016

4.2.3 Test Procedures

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

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

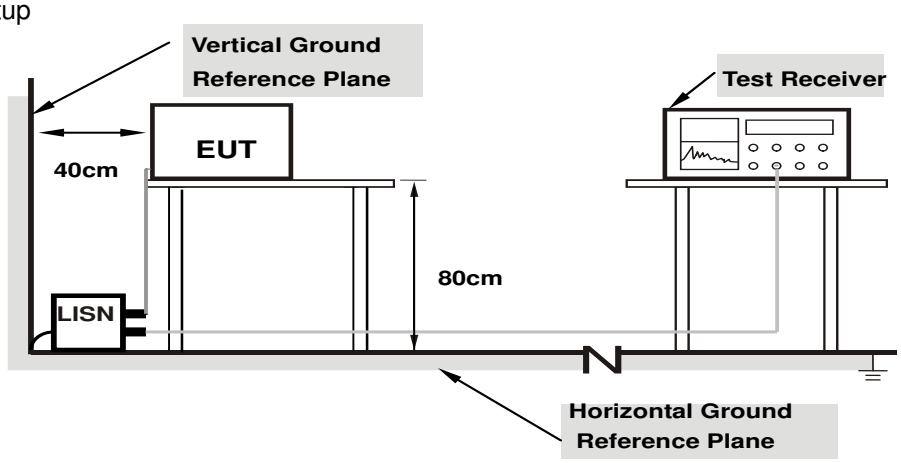
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

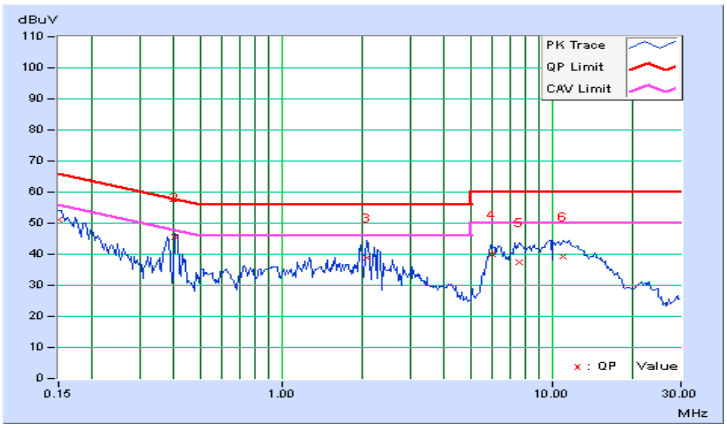
4.2.7 Test Results (Mode 1)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.44	40.84	27.72	51.28	38.16	66.00	56.00	-14.72	-17.84
2	**0.40391**	**10.43**	**35.18**	**31.75**	**45.61**	**42.18**	**57.77**	**47.77**	**-12.16**	**-5.59**
3	2.07422	10.45	28.49	16.46	38.94	26.91	56.00	46.00	-17.06	-19.09
4	6.00781	10.73	29.35	23.88	40.08	34.61	60.00	50.00	-19.92	-15.39
5	7.62109	10.81	26.75	21.57	37.56	32.38	60.00	50.00	-22.44	-17.62
6	10.97266	10.98	28.15	23.09	39.13	34.07	60.00	50.00	-20.87	-15.93

Remarks:

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

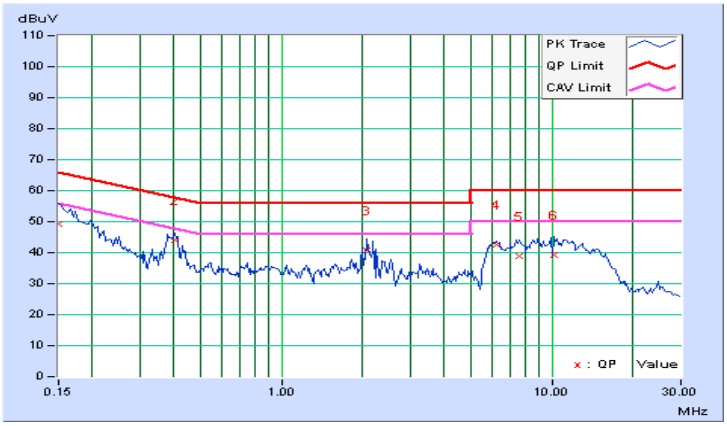


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.44	38.76	27.94	49.20	38.38	66.00	56.00	-16.80	-17.62
2	0.40391	10.48	33.58	30.88	44.06	41.36	57.77	47.77	-13.71	-6.41
3	2.07813	10.51	30.13	19.66	40.64	30.17	56.00	46.00	-15.36	-15.83
4	6.21484	10.81	31.65	24.74	42.46	35.55	60.00	50.00	-17.54	-14.45
5	7.61328	10.86	28.10	22.92	38.96	33.78	60.00	50.00	-21.04	-16.22
6	10.16797	10.95	28.33	22.08	39.28	33.03	60.00	50.00	-20.72	-16.97

Remarks:

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



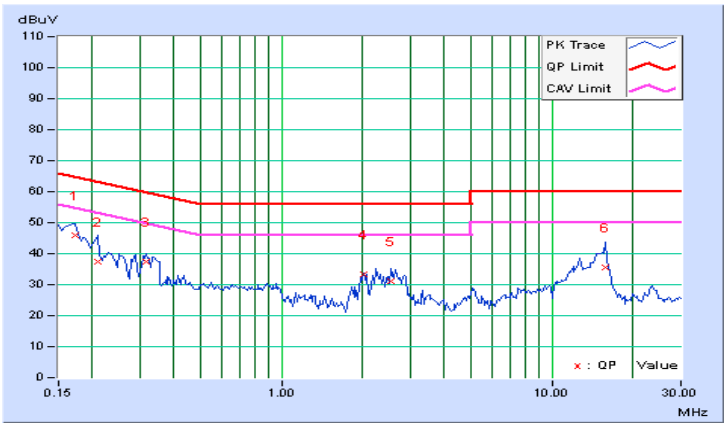
4.2.8 Test Results (Mode 2)

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	10.42	35.69	25.85	46.11	36.27	64.79	54.79	-18.68	-18.52
2	0.20859	10.40	27.15	18.93	37.55	29.33	63.26	53.26	-25.71	-23.93
3	0.31797	10.42	26.98	15.31	37.40	25.73	59.76	49.76	-22.36	-24.03
4	2.02344	10.44	22.91	10.97	33.35	21.41	56.00	46.00	-22.65	-24.59
5	2.53906	10.49	20.48	11.82	30.97	22.31	56.00	46.00	-25.03	-23.69
6	15.76172	11.29	24.38	17.71	35.67	29.00	60.00	50.00	-24.33	-21.00

Remarks:

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

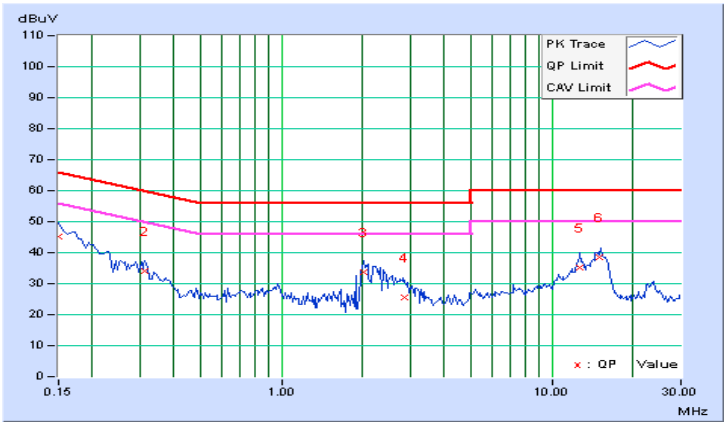


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.44	34.75	23.48	45.19	33.92	66.00	56.00	-20.81	-22.08
2	0.31406	10.47	23.69	14.06	34.16	24.53	59.86	49.86	-25.71	-25.34
3	2.02344	10.50	23.05	10.39	33.55	20.89	56.00	46.00	-22.45	-25.11
4	2.84375	10.60	14.90	11.47	25.50	22.07	56.00	46.00	-30.50	-23.93
5	12.75000	11.12	24.22	17.41	35.34	28.53	60.00	50.00	-24.66	-21.47
6	14.92969	11.26	27.13	22.97	38.39	34.23	60.00	50.00	-21.61	-15.77

Remarks:

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

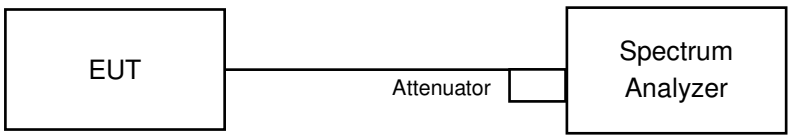


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.13	0.5	PASS
6	2437	8.61	0.5	PASS
11	2462	8.11	0.5	PASS

802.11g

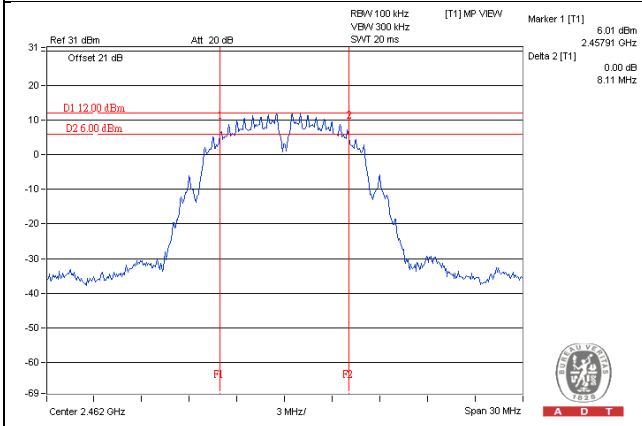
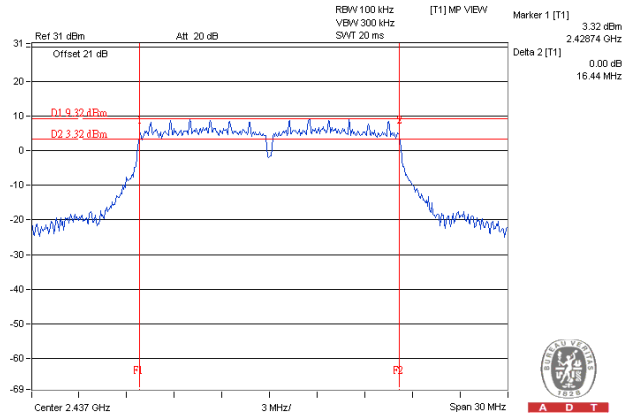
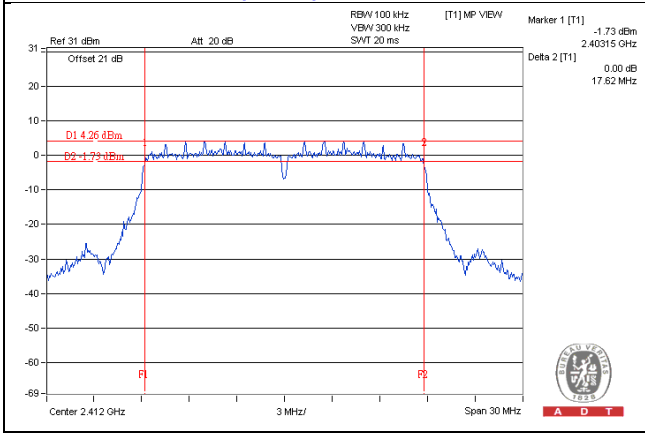
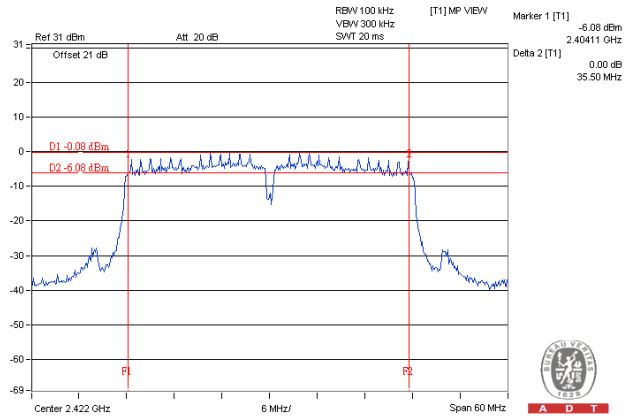
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.46	16.46	0.5	PASS
6	2437	16.44	16.44	0.5	PASS
11	2462	16.45	16.46	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.62	17.64	0.5	PASS
6	2437	17.64	17.63	0.5	PASS
11	2462	17.64	17.65	0.5	PASS

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.50	35.55	0.5	Pass
6	2437	35.79	35.82	0.5	Pass
9	2452	35.56	35.54	0.5	Pass

Spectrum Plot of Worst Value	
802.11b : CH11	**802.11g / Chain 0 : CH6**
	
802.11n (HT20) / Chain 0 : CH1	**802.11n (HT40) / Chain 0 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

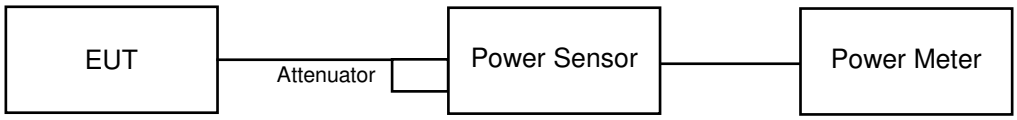
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

Array Gain = 0 dB (i.e., no array gain) for 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

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	286.418	24.57	30	Pass
6	2437	537.032	27.30	30	Pass
11	2462	265.461	24.24	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	25.99	25.32	737.6	28.68	30	Pass
6	2437	27.26	26.19	948.019	29.77	30	Pass
11	2462	25.40	24.31	616.511	27.90	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	25.17	23.86	572.072	27.57	30	Pass
6	2437	27.11	26.41	951.566	29.78	30	Pass
11	2462	25.19	23.94	578.112	27.62	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	23.44	22.93	417.136	26.20	30	Pass
6	2437	25.92	25.01	707.798	28.50	30	Pass
9	2452	23.12	22.68	390.469	25.92	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	120.781	20.82
6	2437	311.889	24.94
11	2462	113.501	20.55

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	16.77	15.70	84.688	19.28
6	2437	21.09	20.04	229.454	23.61
11	2462	16.86	15.34	82.727	19.18

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	16.09	14.98	72.121	18.58
6	2437	21.05	20.15	230.864	23.63
11	2462	16.18	15.08	73.706	18.68

802.11n (HT40)

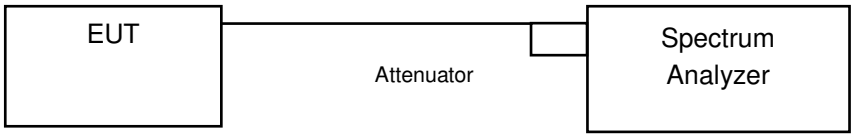
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	13.81	13.49	46.38	16.66
6	2437	17.39	16.86	103.357	20.14
9	2452	13.50	13.15	43.041	16.34

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-2.00	8.00	Pass
6	2437	0.81	8.00	Pass
11	2462	-2.76	8.00	Pass

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.95	3.01	-6.94	7.56	Pass
	6	2437	-5.54	3.01	-2.53	7.56	Pass
	11	2462	-9.62	3.01	-6.61	7.56	Pass
1	1	2412	-9.24	3.01	-6.23	7.56	Pass
	6	2437	-4.52	3.01	-1.51	7.56	Pass
	11	2462	-9.68	3.01	-6.67	7.56	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.44dBi > 6dBi , so the power limit shall be reduced to 8-(6.44-6) = 7.56dBm.

802.11n (HT20)

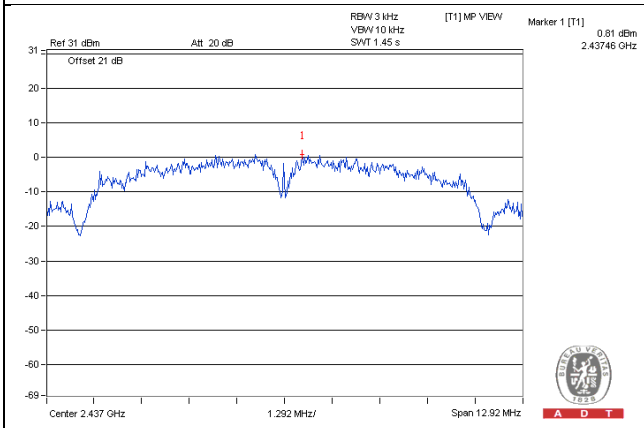
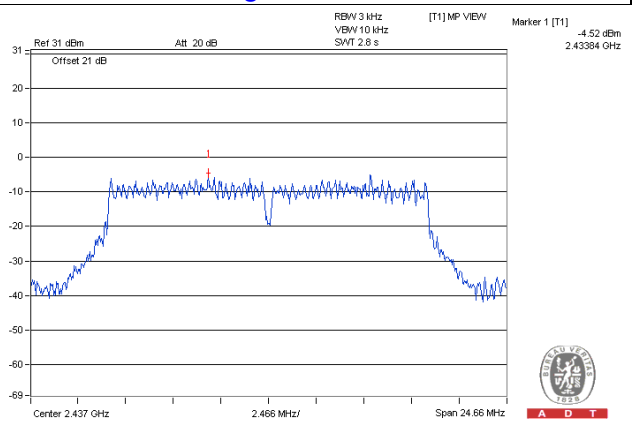
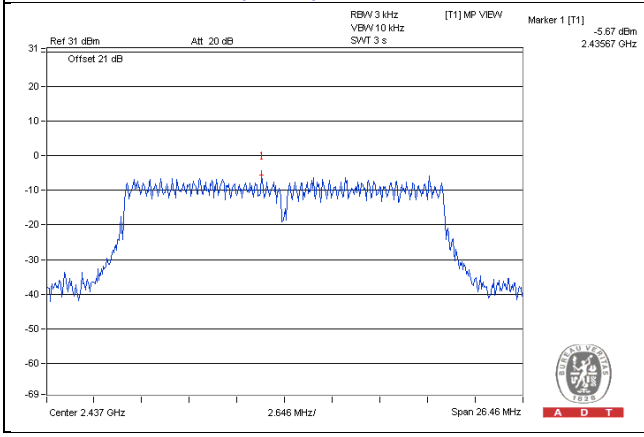
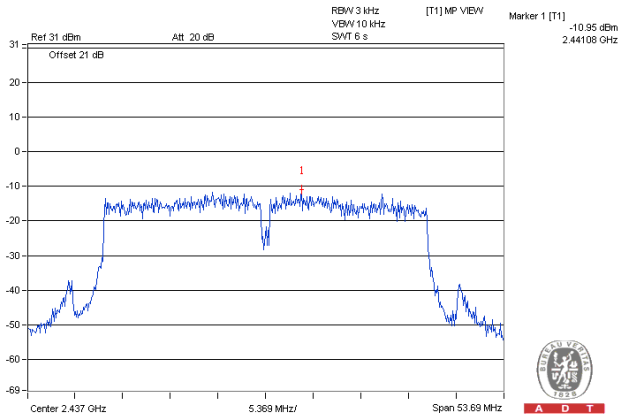
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.95	3.01	-6.94	7.56	Pass
	6	2437	-5.67	3.01	-2.66	7.56	Pass
	11	2462	-10.01	3.01	-7.00	7.56	Pass
1	1	2412	-10.45	3.01	-7.44	7.56	Pass
	6	2437	-5.96	3.01	-2.95	7.56	Pass
	11	2462	-10.05	3.01	-7.04	7.56	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.44dBi > 6dBi , so the power limit shall be reduced to 8-(6.44-6) = 7.56dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-14.10	3.01	-11.09	7.56	Pass
	6	2437	-10.95	3.01	-7.94	7.56	Pass
	9	2452	-15.20	3.01	-12.19	7.56	Pass
1	3	2422	-15.57	3.01	-12.56	7.56	Pass
	6	2437	-11.22	3.01	-8.21	7.56	Pass
	9	2452	-14.96	3.01	-11.95	7.56	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.44dBi > 6dBi , so the power limit shall be reduced to 8-(6.44-6) = 7.56dBm.

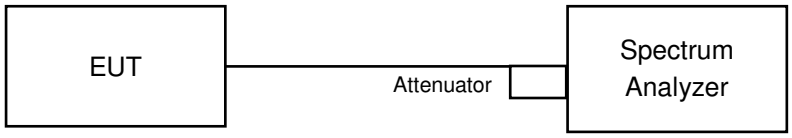
Spectrum Plot of Worst Value	
802.11b : CH6	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 0 : CH6	**802.11n (HT40) / Chain 0 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

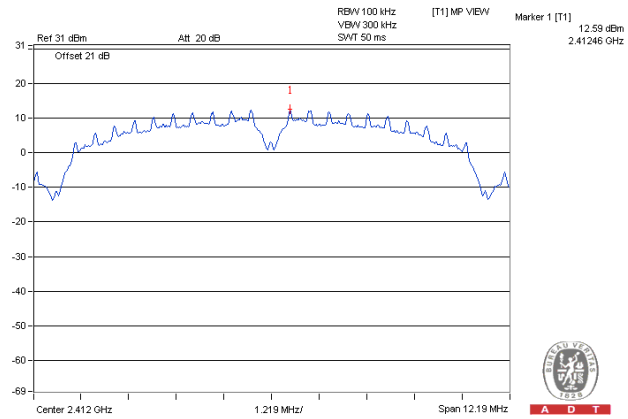
Same as Item 4.3.6

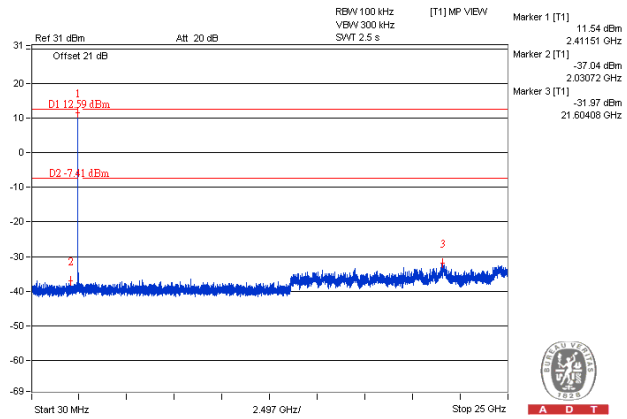
4.6.7 Test Results

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

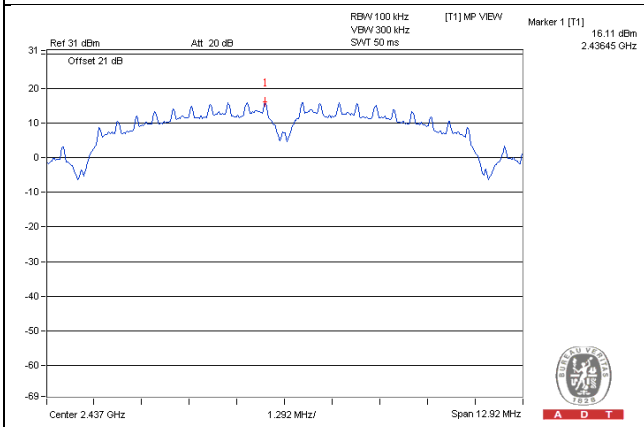
802.11b

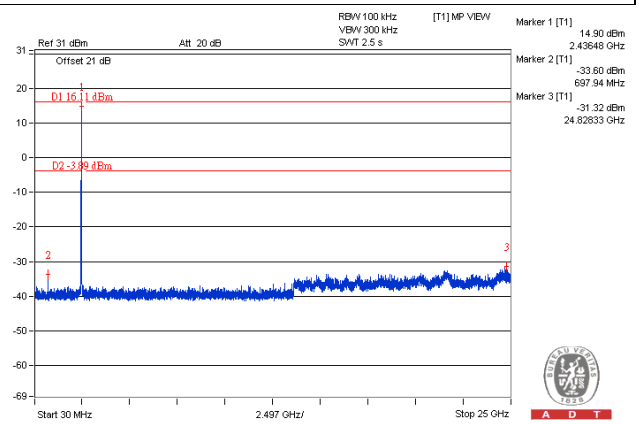
CH 1



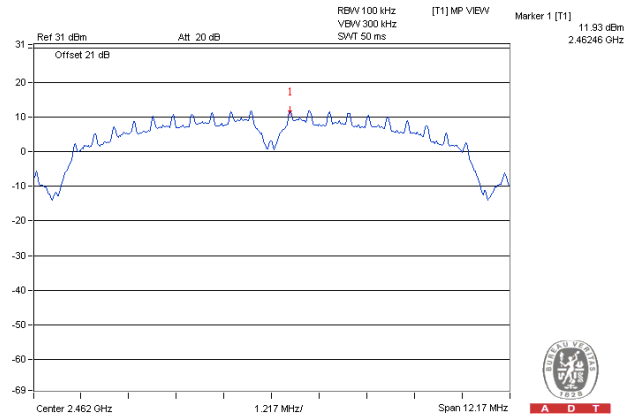


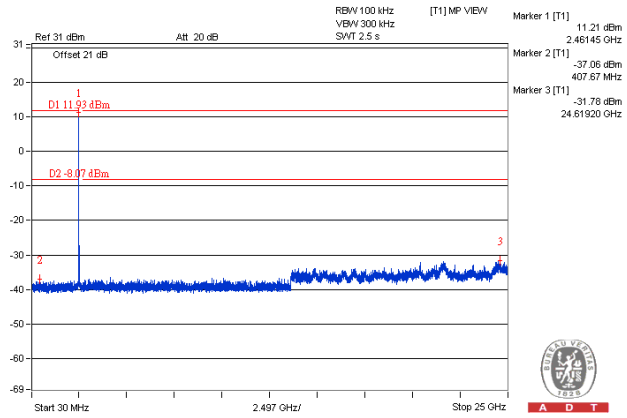
CH 6



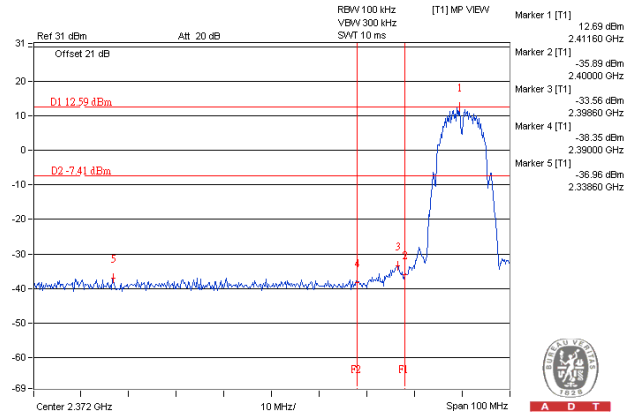


CH 11

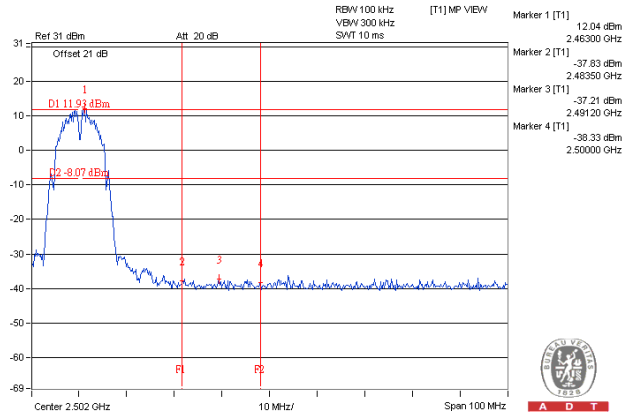




CH 1 Band edge

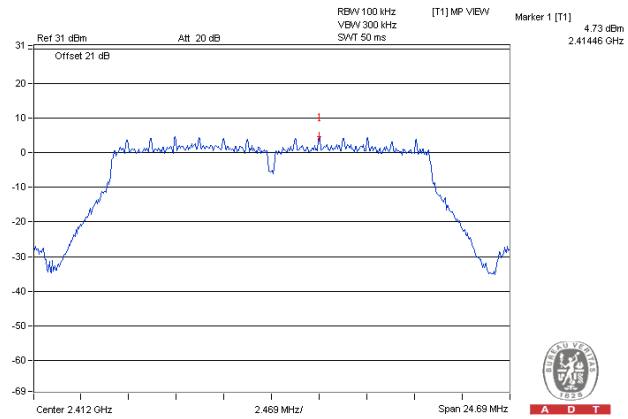


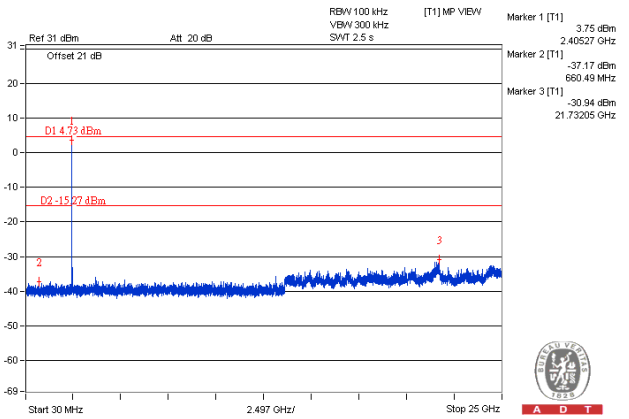
CH 11 Band edge



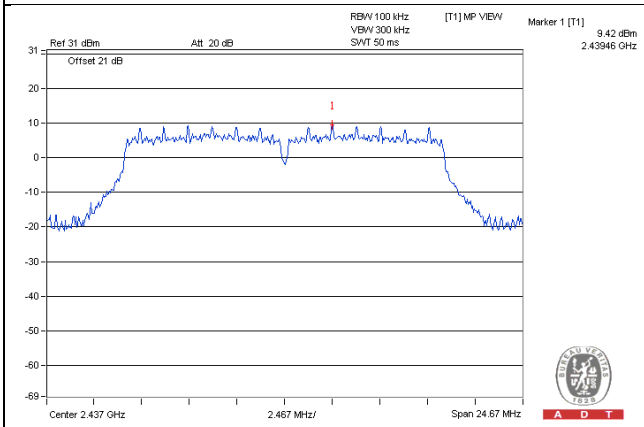
802.11g Chain 0

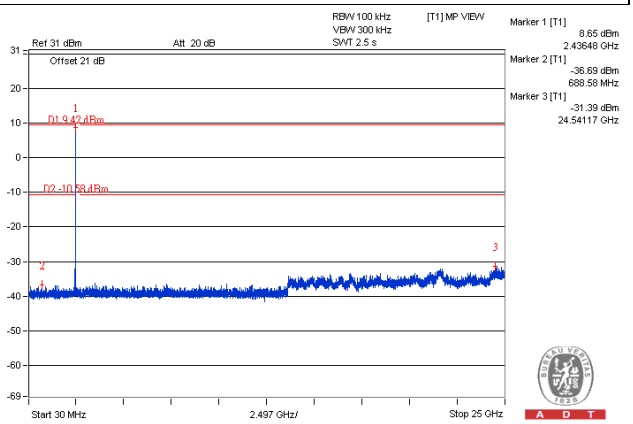
CH 1



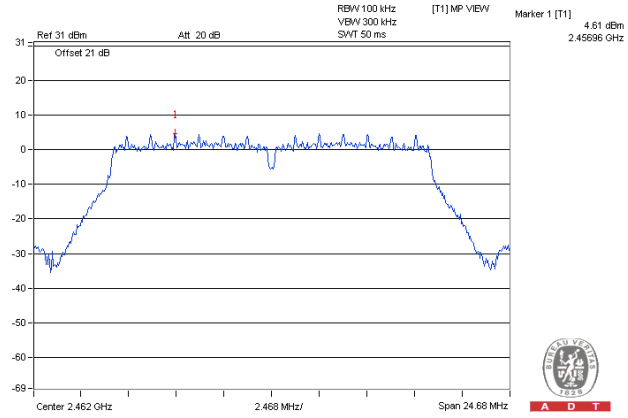


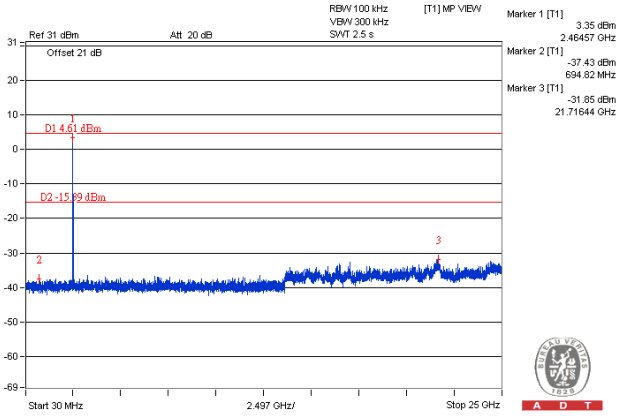
CH 6



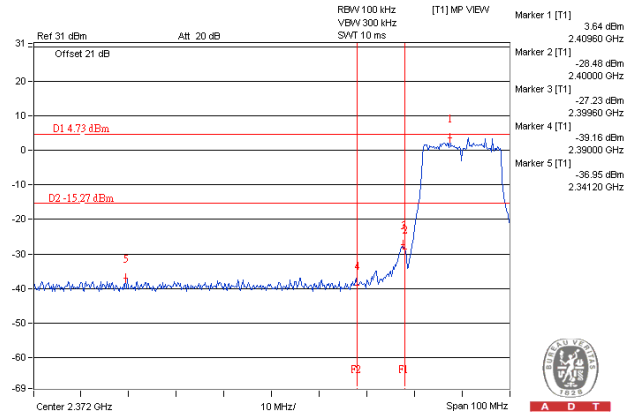


CH 11

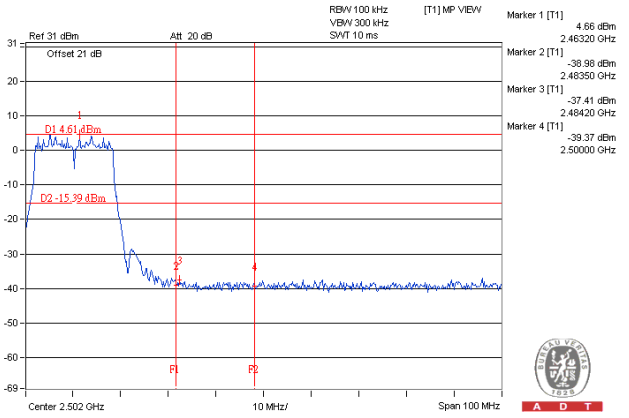




CH 1 Band edge

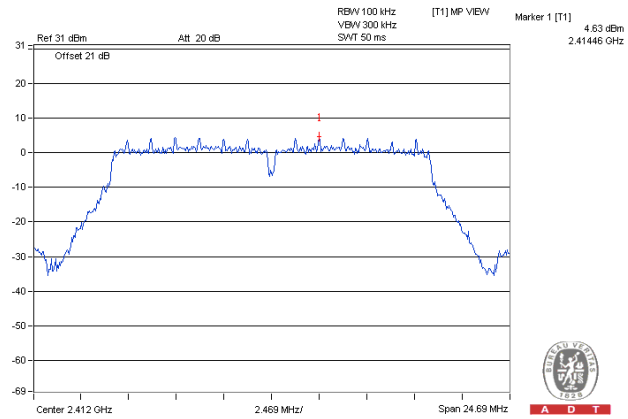


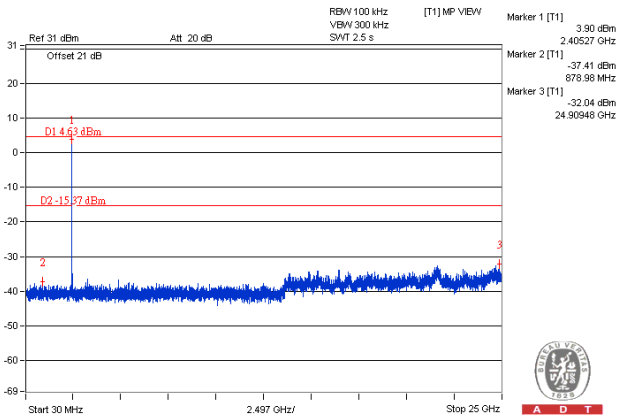
CH 11 Band edge



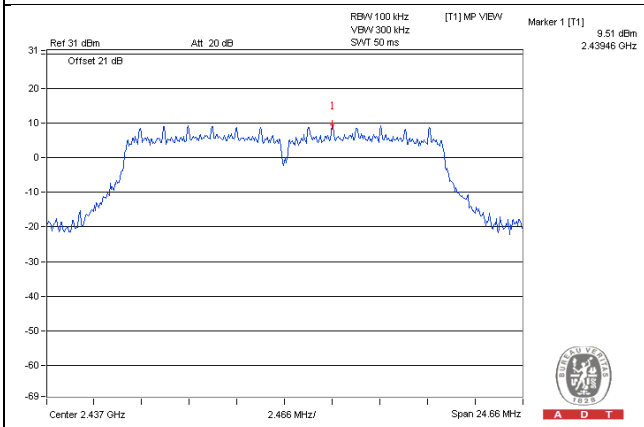
Chain 1

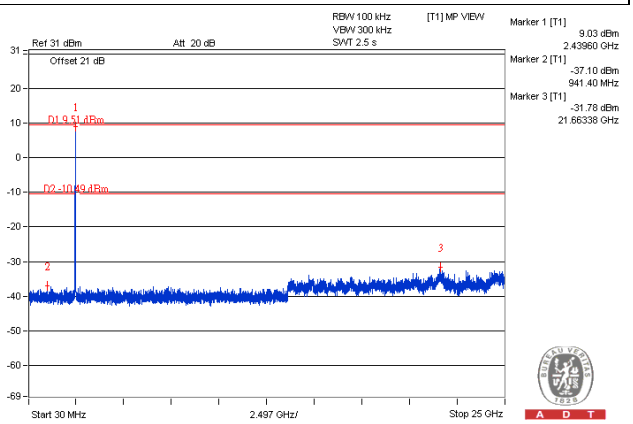
CH 1



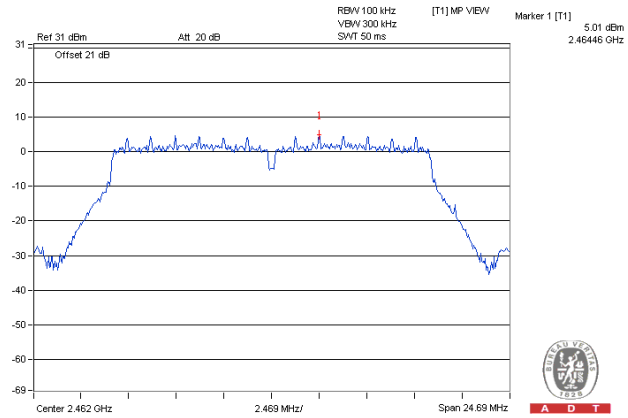


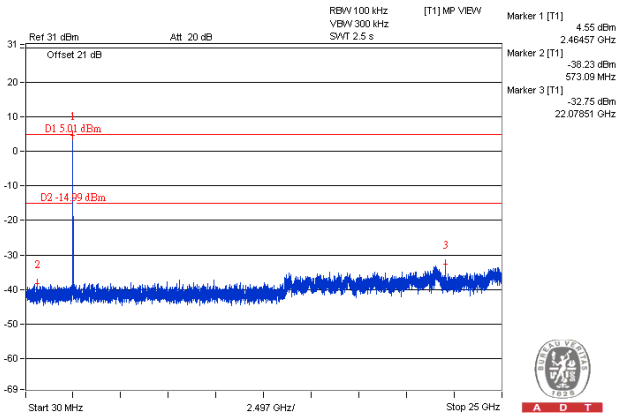
CH 6



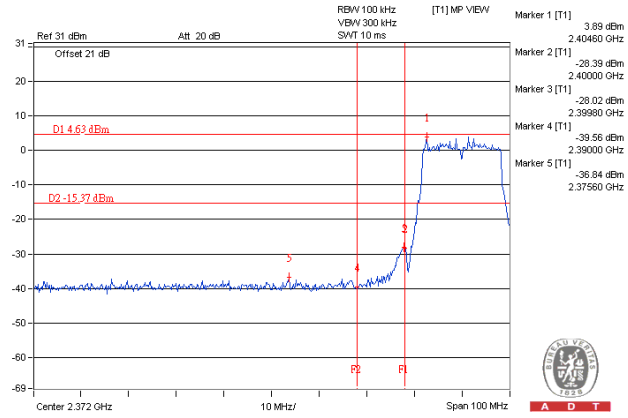


CH 11

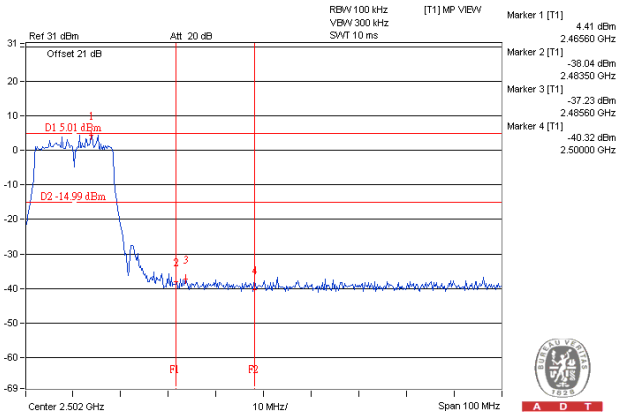




CH 1 Band edge

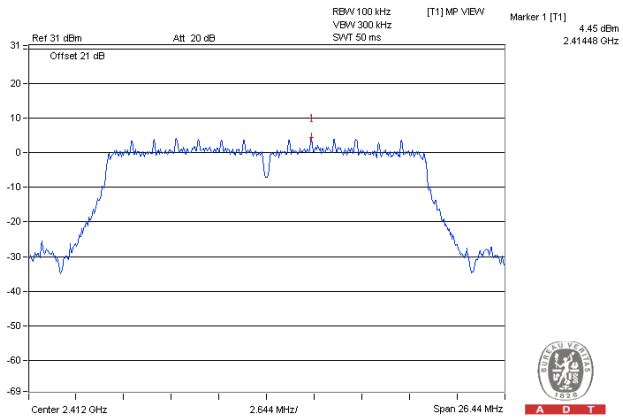


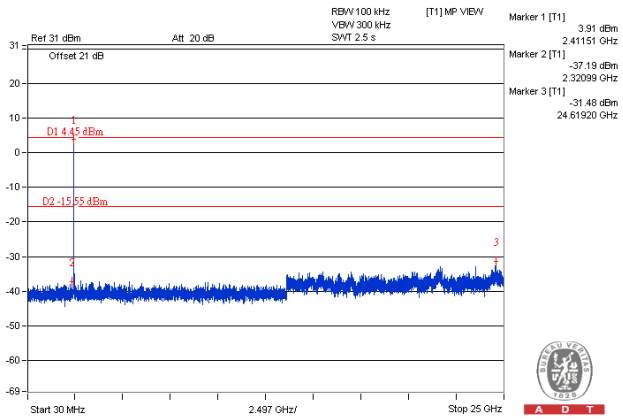
CH 11 Band edge



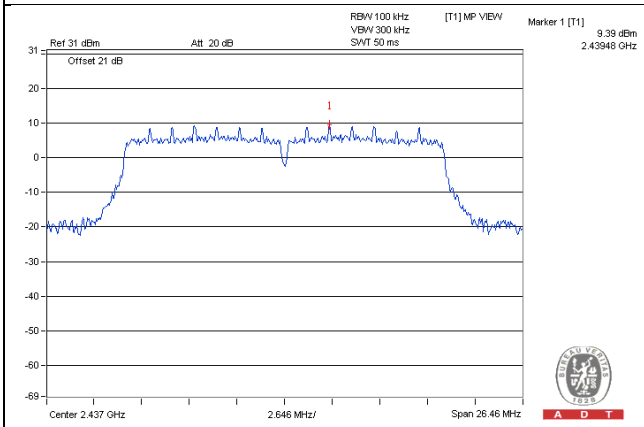
802.11n (HT20) Chain 0

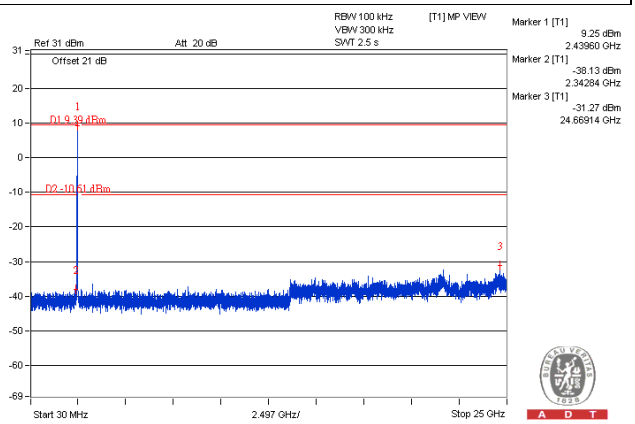
CH 1



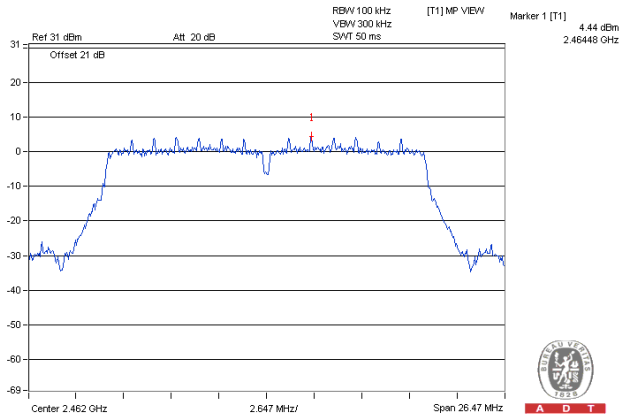


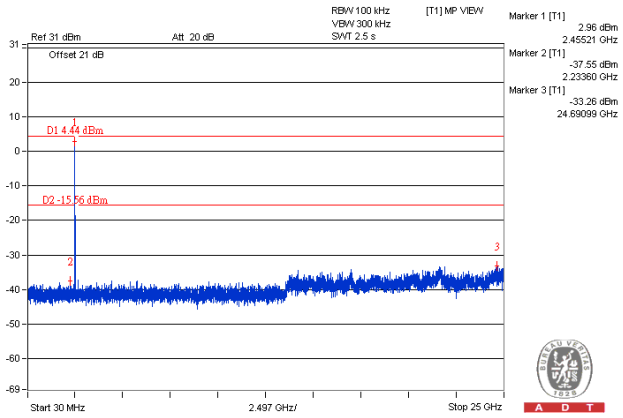
CH 6



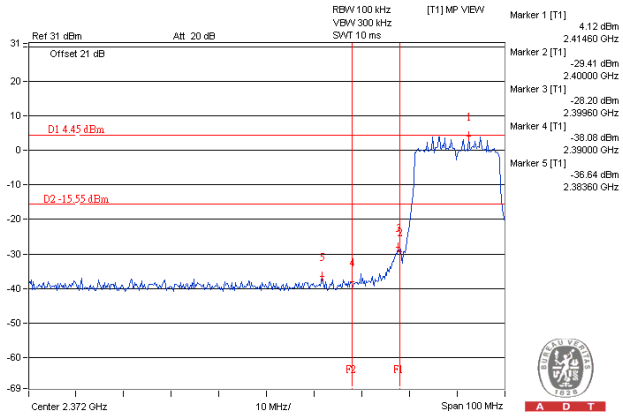


CH 11

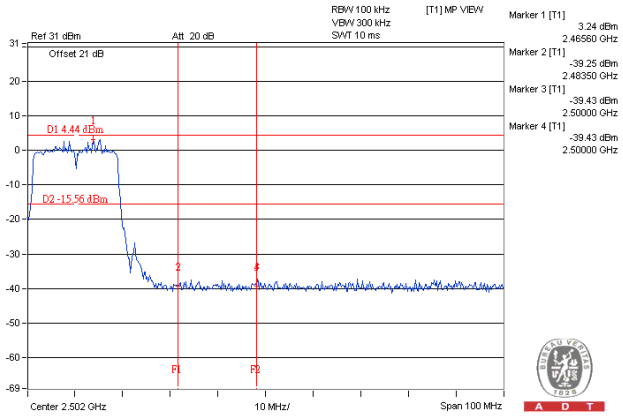




CH 1 Band edge

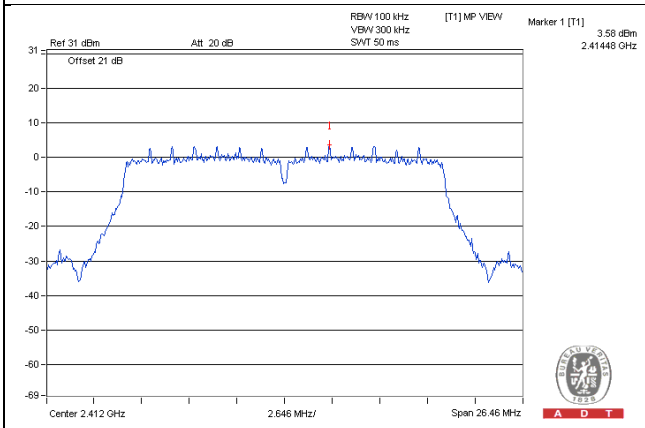


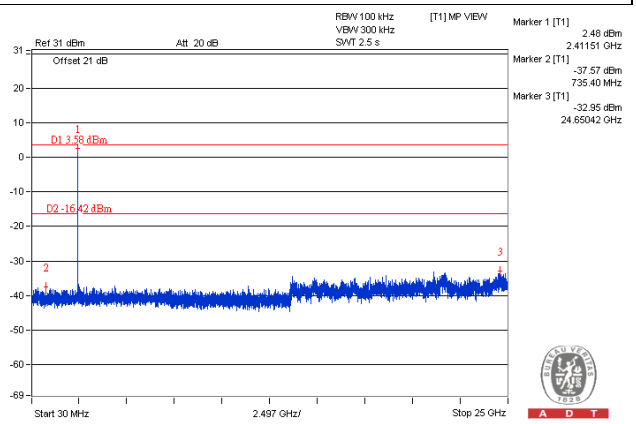
CH 11 Band edge



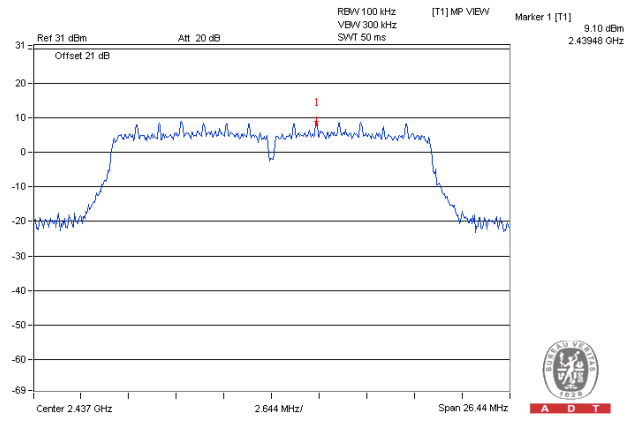
Chain 1

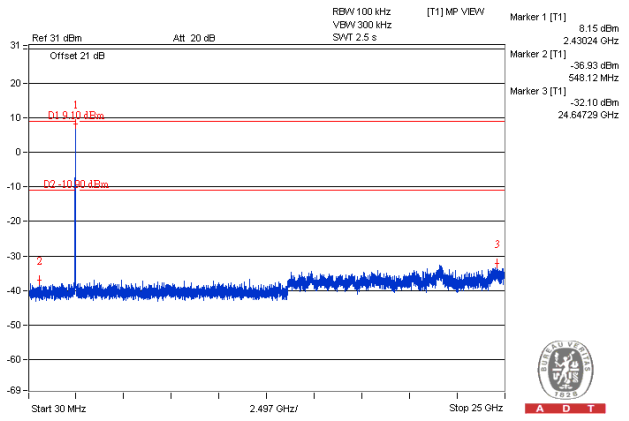
CH 1



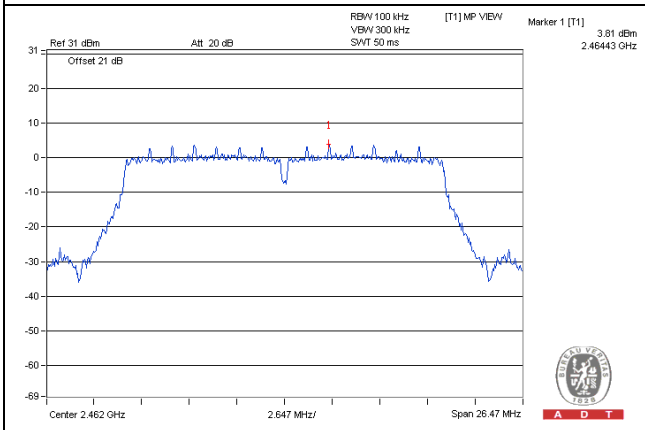


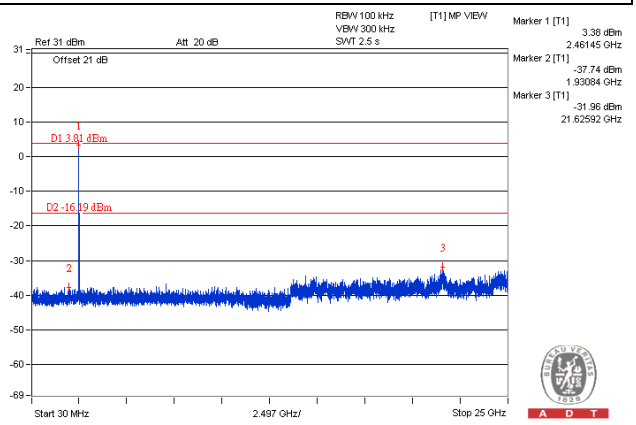
CH 6



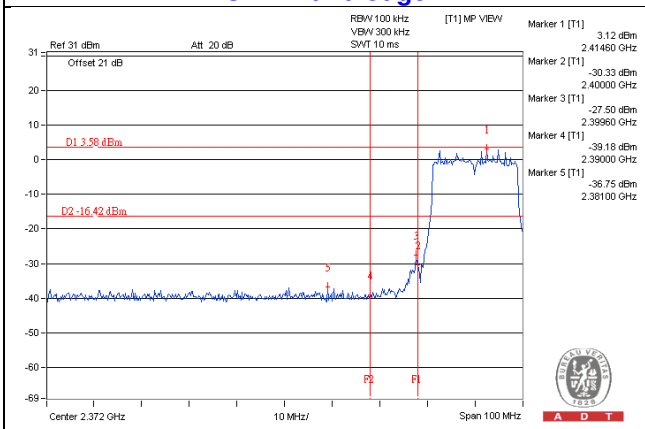


CH 11

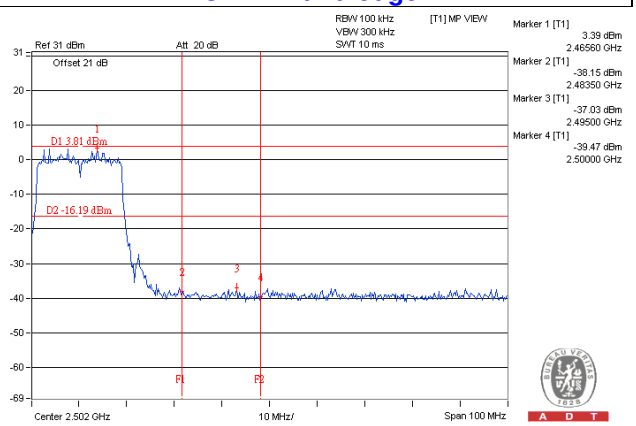




CH 1 Band edge

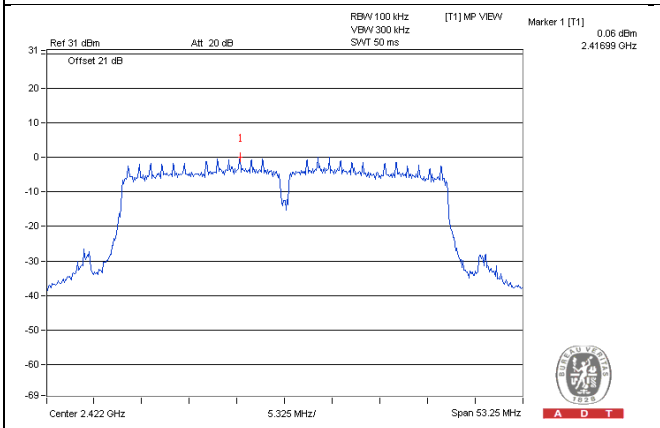


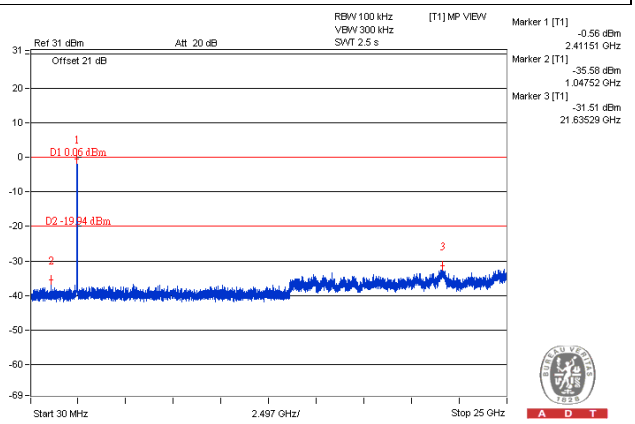
CH 11 Band edge



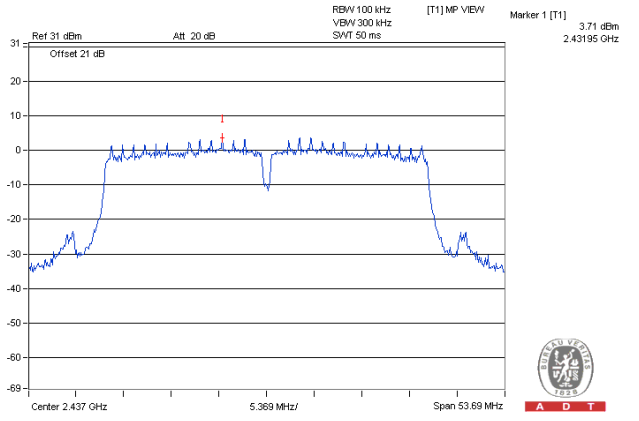
802.11n (HT40) Chain 0

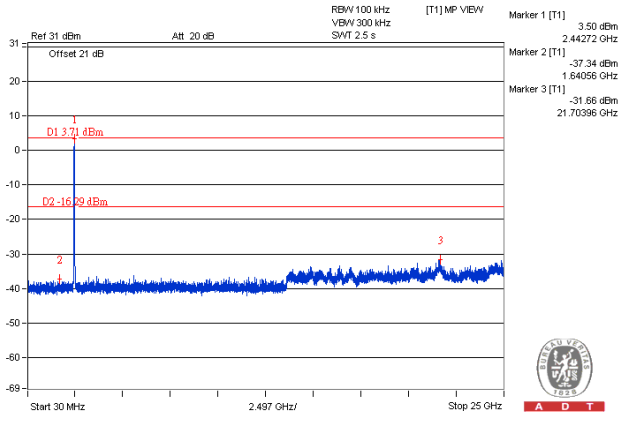
CH 3



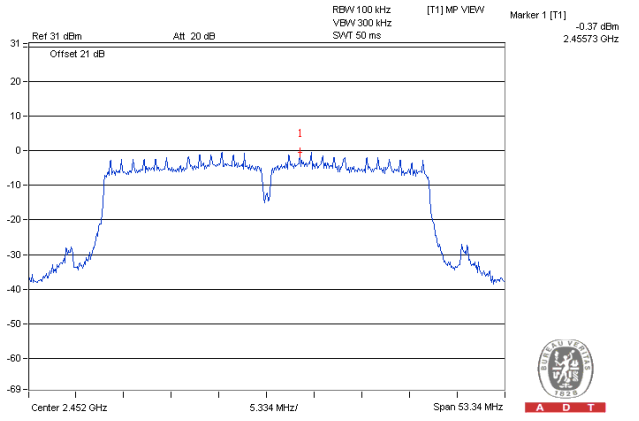


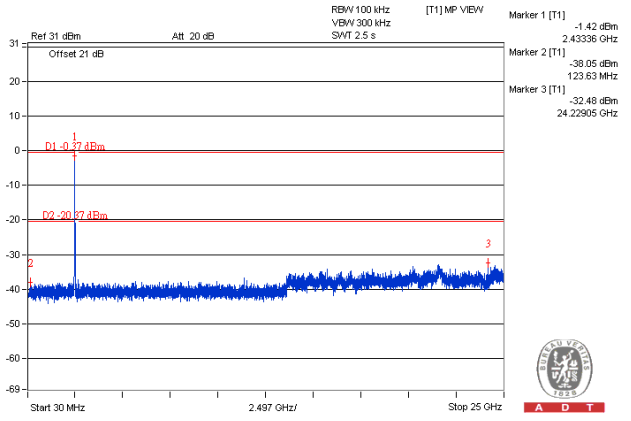
CH 6



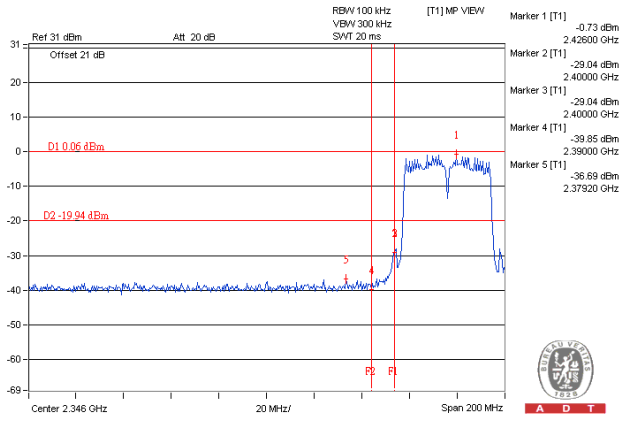


CH 9

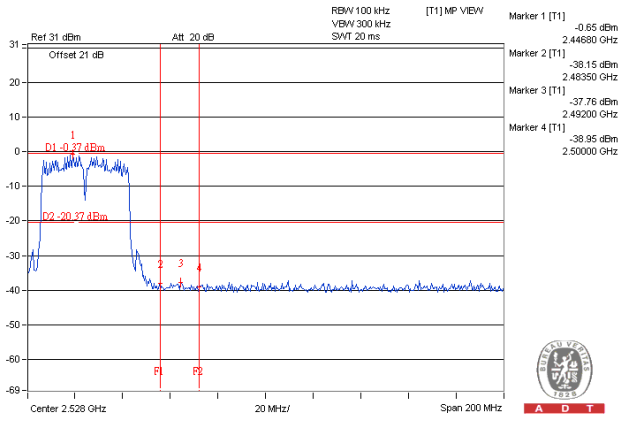




CH 3 Band edge

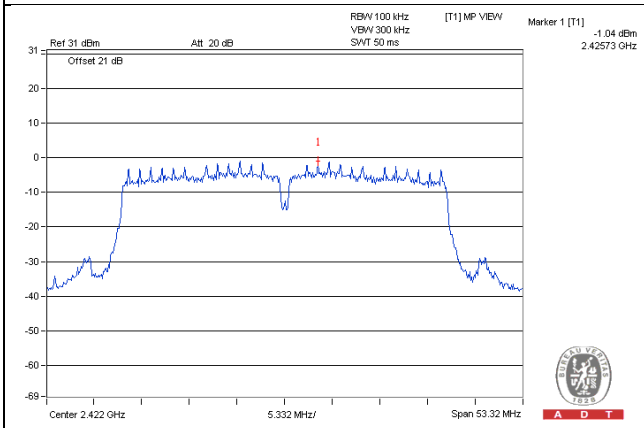


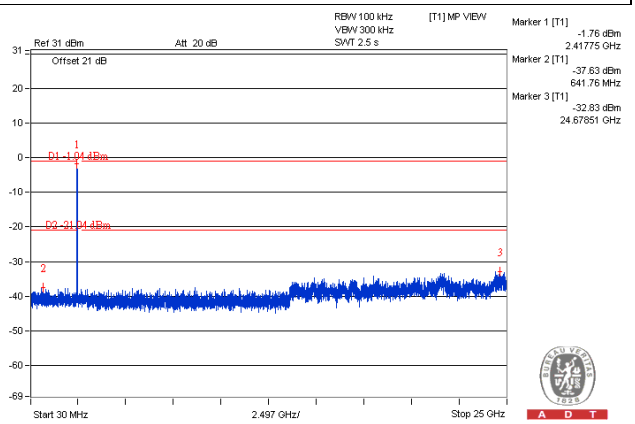
CH 9 Band edge



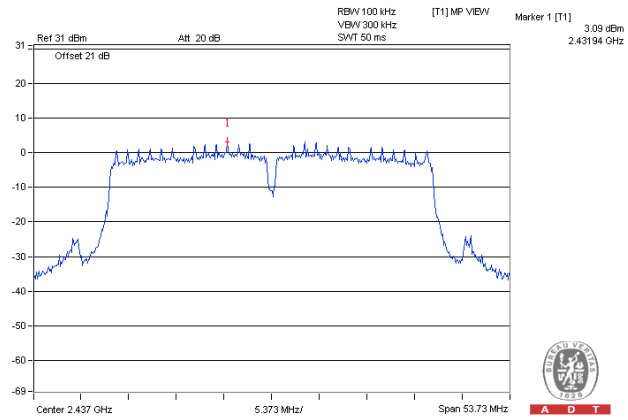
Chain 1

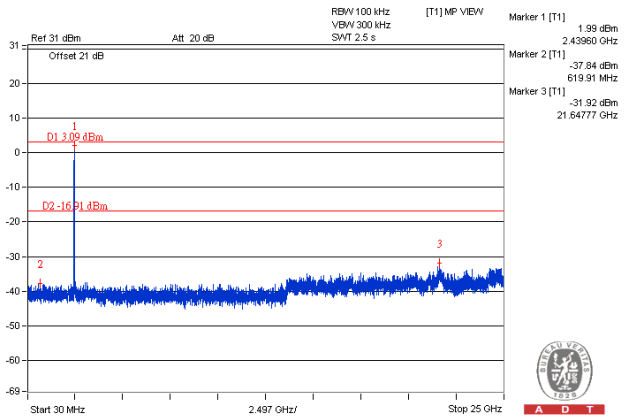
CH 3



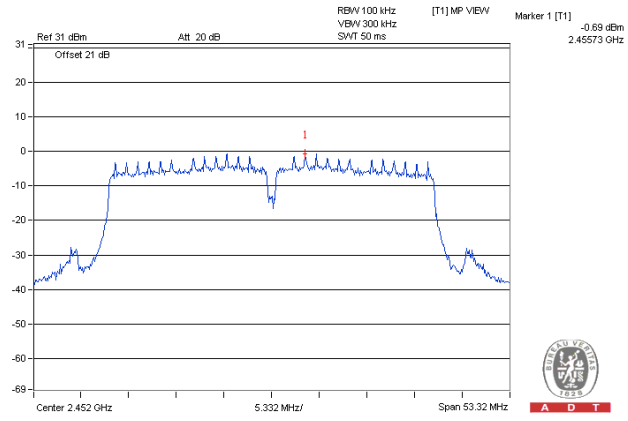


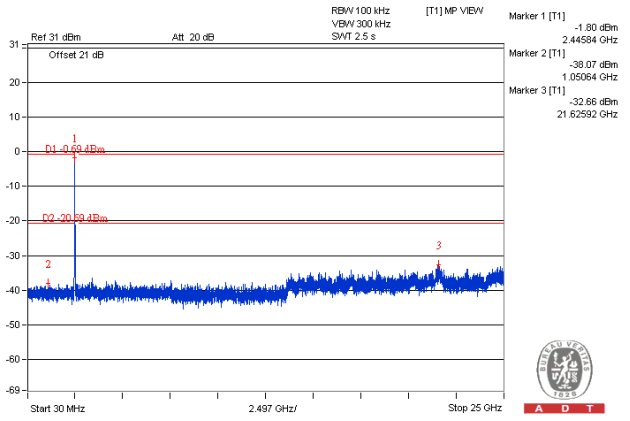
CH 6



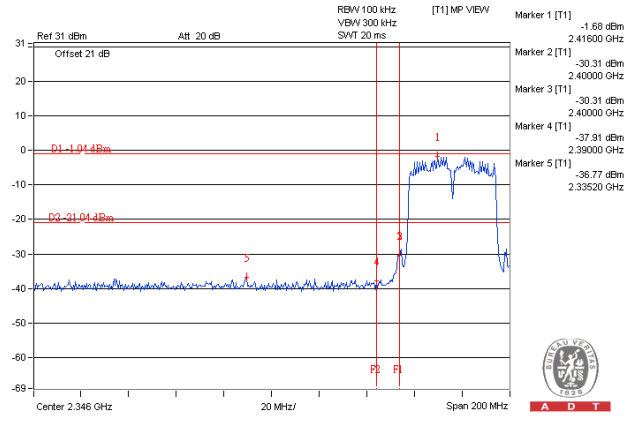


CH 9

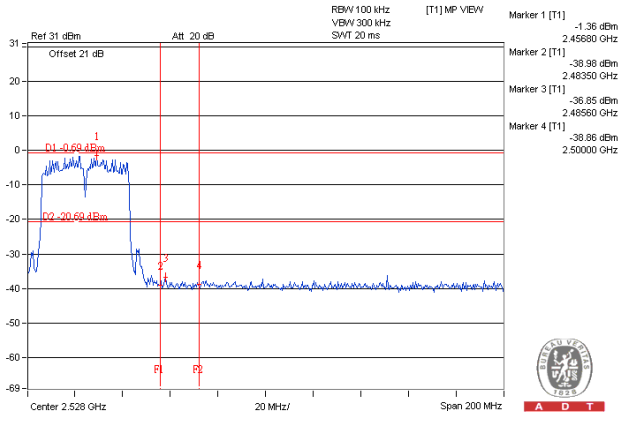




CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

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

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

--- END ---