

FCC Test Report

Report No.: RF150513C25

FCC ID: E2K-APL280B5

Test Model: APL28-0B5

Received Date: May 13, 2015

Test Date: Jun. 01 ~ Jun. 09, 2015

Issued Date: Jun. 11, 2015

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Release Control Record

Issue No.	Description	Date Issued
RF150513C25	Original release	Jun. 11, 2015

1 Certificate of Conformity

Product: Wireless Network Security Appliance

Brand: DELL, DELL SONICWALL, SONICWALL

Test Model: APL28-0B5

Sample Status: Engineering sample

Applicant: Dell Inc.

Test Date: Jun. 01 ~ Jun. 09, 2015

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

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

Prepared by : Celine Chou , **Date:** Jun. 11, 2015
Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Jun. 11, 2015
Ken Liu / Senior 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 -11.13dB at 0.15000MHz
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2390.00MHz, 2483.50MHz and 4824.00MHz.
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 connectors are R-TNC and R-SMA 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) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Network Security Appliance
Brand	DELL, DELL SONICWALL, SONICWALL
Test Model	APL28-0B5
Status of EUT	Engineering sample
Power Supply Rating	12Vdc (adapter)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
Output Power	950.973mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter
Data Cable Supplied	1.8m non-shielded RJ45 cable without core

Note:

- The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

Modulation Mode	TX Function
802.11b	3TX
802.11g	3TX
802.11n (HT20)	3TX
802.11n (HT40)	3TX

- The EUT uses following adapters.

Adapter 1	
Brand	AMIGO
Model	AMS117-1202000F2
Input	100-240Vac, 50/60Hz, 0.8A Max
Output	12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded without core DC: 1.5m cable with one core

Adapter 2	
Brand	Sunny COMPUTER TECHNOLOGY CO., LTD.
Model	SYS1544-2412-T3
Input	100-240Vac, 1.0A MAX, 50-60Hz
Output	+12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded without core DC: 1.85m cable with one core

3. The following antennas were provided to the EUT.

No.	Type	Gain(dBi)		Connector
		2.4GHz Band	5GHz Band	
1	Dipole	2.5	2.5	R-TNC
2	Dipole	2.5	2.5	R-TNC
3	Dipole	3	3	R-SMA

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	
A	√	√	√	√	Power by adapter 1
B	-	√	√	-	Power by 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: 1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.
2. "-" 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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11b	1 to 11	1	DSSS	DBPSK	1.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11b	1 to 11	1	DSSS	DBPSK	1.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	18deg. C, 70%RH	120Vac, 60Hz	Jones Chang
RE $<$ 1G	22deg. C, 67%RH 20deg. C, 70%RH	120Vac, 60Hz	Jones Chang Nick Hsu
PLC	18deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Nick Hsu

3.3 Duty Cycle of Test Signal

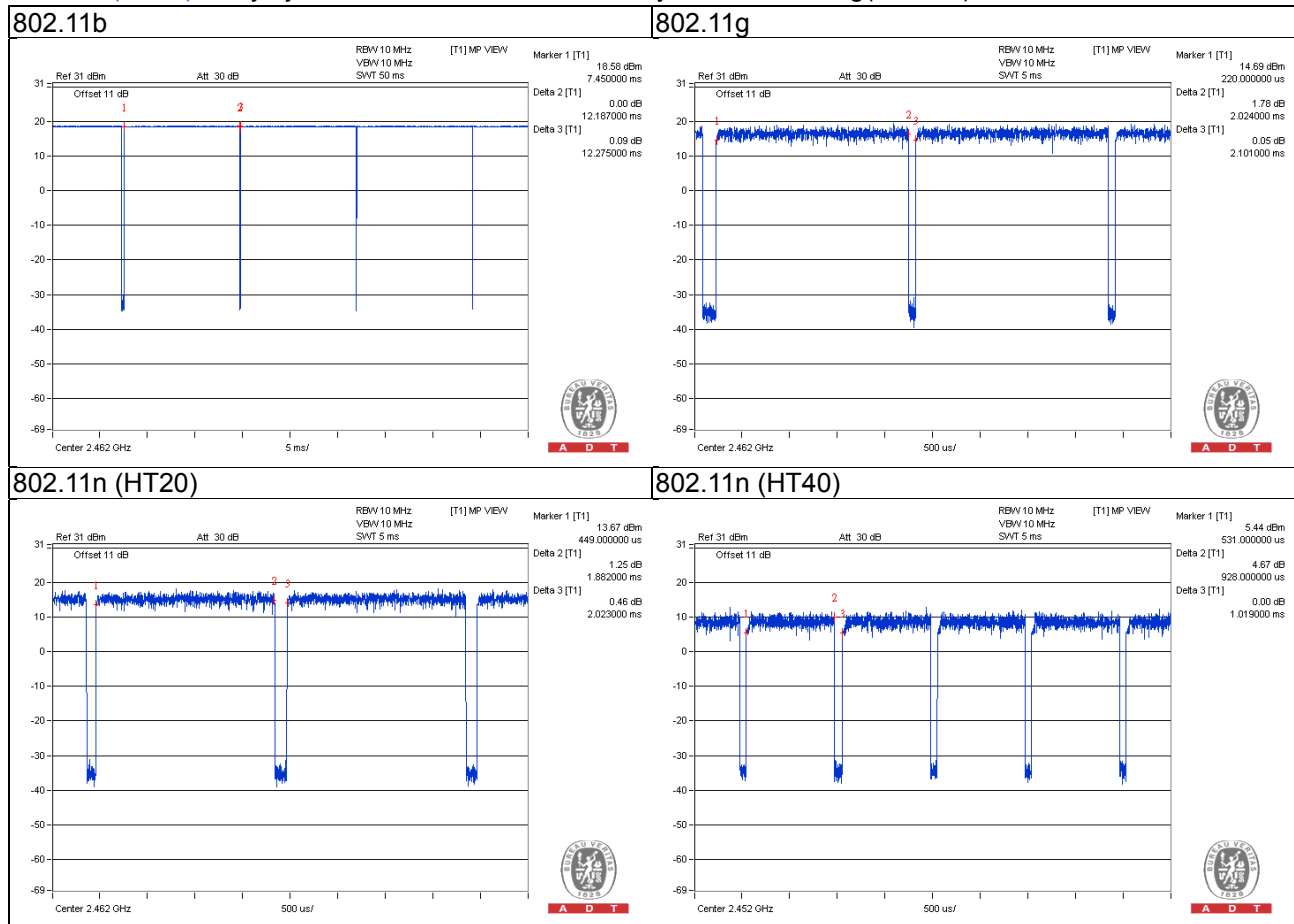
802.11b: Duty cycle of test signal is > 98%

802.11g, 802.11n (HT20), 802.11n (HT40): Duty cycle of test signal is < 98%.

802.11g: Duty cycle = $2.024/2.101 = 0.963$, Duty factor = $10 * \log(1/0.963) = 0.16$

802.11n (HT20): Duty cycle = $1.882/2.023 = 0.930$, Duty factor = $10 * \log(1/0.930) = 0.31$

802.11n (HT40): Duty cycle = $0.928/1.019 = 0.911$, Duty factor = $10 * \log(1/0.911) = 0.41$



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.

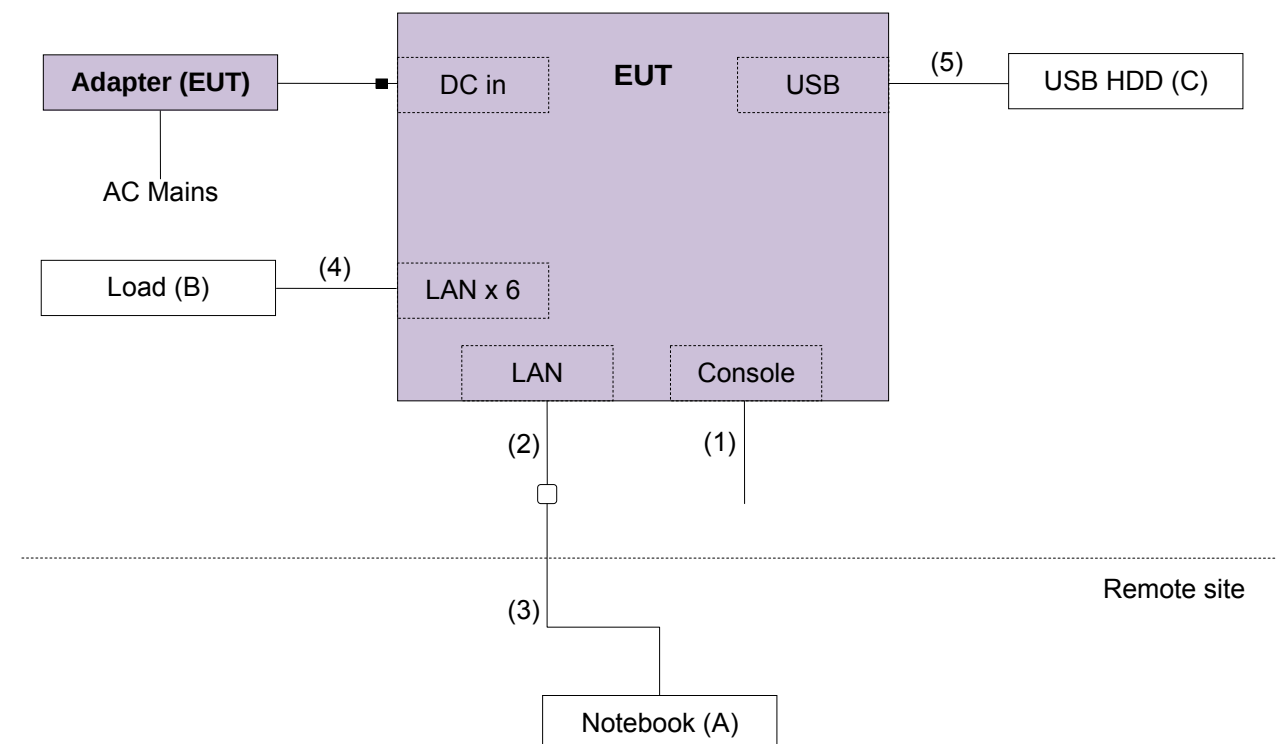
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-
C.	USB HDD	WD	WDBACY5000ABL-01	WXS1CC1D3606	FCC DoC Approved	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Console	1	1.8	N	0	Provided by the client
2.	RJ45, Cat5e	1	1.8	N	0	Accessory of EUT
3.	RJ45, Cat5e	1	3	N	0	-
4.	RJ45, Cat5e	6	1.8	N	0	-
5.	USB	1	1.8	Y	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance v03r02

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

Note: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It 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.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 10, 2015	Apr. 09, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Aug. 29, 2014	Aug. 28, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Feb. 05, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	9120D	209	Feb. 09, 2015	Feb. 08, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
Preamplifier Agilent	8447D	2944A10738	Oct.18, 2014	Oct. 17, 2015
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	214378/4	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6 +309224/4	Aug. 22, 2014	Aug. 21, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
High Speed Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015

- Note:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedures

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

Note:

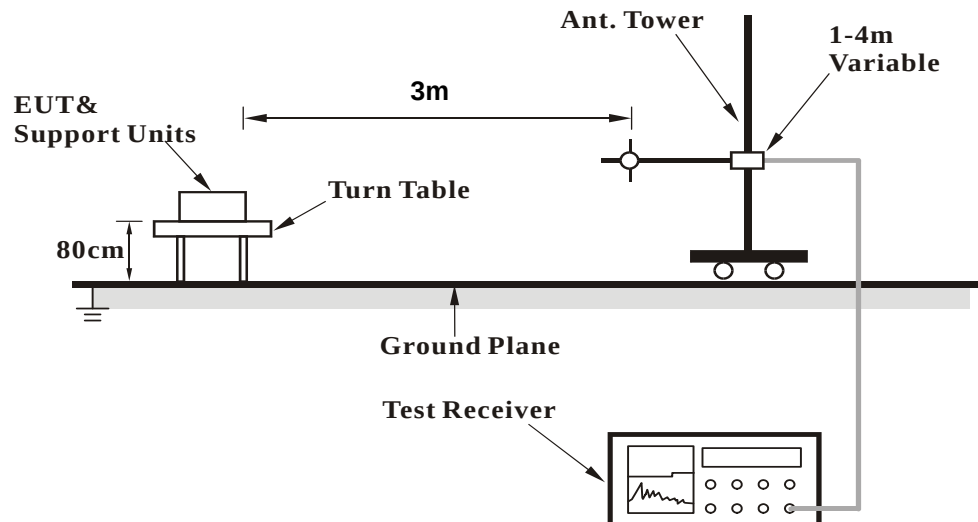
1. For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the ground at 3 meter chamber room for test.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
3. The resolution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

4.1.4 Deviation from Test Standard

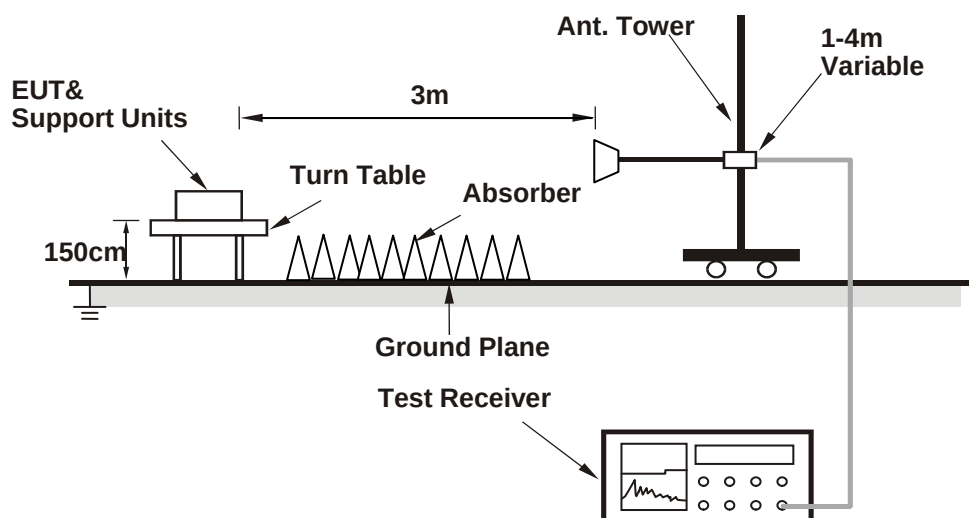
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

- Connected the EUT with HDD and placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".
- The necessary accessories enable the system in full functions.

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	61.5 PK	74.0	-12.5	1.90 H	348	29.00	32.50
2	2390.00	48.5 AV	54.0	-5.5	1.90 H	348	16.00	32.50
3	*2412.00	117.5 PK			1.70 H	316	84.90	32.60
4	*2412.00	114.5 AV			1.70 H	316	81.90	32.60
5	4824.00	56.3 PK	74.0	-17.7	2.20 H	320	50.40	5.90
6	4824.00	53.0 AV	54.0	-1.0	2.20 H	320	47.10	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.4 PK	74.0	-12.6	1.00 V	86	28.90	32.50
2	2390.00	52.0 AV	54.0	-2.0	1.00 V	86	19.50	32.50
3	*2412.00	115.3 PK			1.18 V	87	82.70	32.60
4	*2412.00	111.6 AV			1.18 V	87	79.00	32.60
5	4824.00	50.4 PK	74.0	-23.6	1.00 V	237	44.50	5.90
6	4824.00	42.7 AV	54.0	-11.3	1.00 V	237	36.80	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	*2437.00	119.7 PK			1.36 H	337	87.00	32.70
2	*2437.00	116.5 AV			1.36 H	337	83.80	32.70
3	4874.00	56.0 PK	74.0	-18.0	2.20 H	324	50.10	5.90
4	4874.00	52.8 AV	54.0	-1.2	2.20 H	324	46.90	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.4 PK			1.29 V	81	78.70	32.70
2	*2437.00	108.1 AV			1.29 V	81	75.40	32.70
3	4874.00	50.4 PK	74.0	-23.6	1.80 V	271	44.50	5.90
4	4874.00	42.4 AV	54.0	-11.6	1.80 V	271	36.50	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	115.5 PK			1.37 H	344	82.90	32.60
2	*2462.00	112.1 AV			1.37 H	344	79.50	32.60
3	2483.50	56.7 PK	74.0	-17.3	1.23 H	133	24.00	32.70
4	2483.50	45.9 AV	54.0	-8.1	1.23 H	133	13.20	32.70
5	4924.00	56.0 PK	74.0	-18.0	1.45 H	328	50.00	6.00
6	4924.00	52.8 AV	54.0	-1.2	1.45 H	328	46.80	6.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.5 PK			1.00 V	74	77.90	32.60
2	*2462.00	107.1 AV			1.00 V	74	74.50	32.60
3	2483.50	56.7 PK	74.0	-17.3	1.00 V	80	24.00	32.70
4	2483.50	46.0 AV	54.0	-8.0	1.00 V	80	13.30	32.70
5	4924.00	52.5 PK	74.0	-21.5	2.57 V	249	46.50	6.00
6	4924.00	46.8 AV	54.0	-7.2	2.57 V	249	40.80	6.00

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)
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	71.2 PK	74.0	-2.8	1.01 H	178	38.70	32.50
2	2390.00	52.4 AV	54.0	-1.6	1.01 H	178	19.90	32.50
3	*2412.00	116.8 PK			1.38 H	345	84.20	32.60
4	*2412.00	106.9 AV			1.38 H	345	74.30	32.60
5	4824.00	51.0 PK	74.0	-23.0	1.42 H	199	45.10	5.90
6	4824.00	38.3 AV	54.0	-15.7	1.42 H	199	32.40	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.5 PK	74.0	-10.5	1.00 V	11	31.00	32.50
2	2390.00	48.6 AV	54.0	-5.4	1.00 V	11	16.10	32.50
3	*2412.00	110.7 PK			1.90 V	101	78.10	32.60
4	*2412.00	100.4 AV			1.90 V	101	67.80	32.60
5	4824.00	49.3 PK	74.0	-24.7	2.19 V	260	43.40	5.90
6	4824.00	35.3 AV	54.0	-18.7	2.19 V	260	29.40	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	65.2 PK	74.0	-8.8	1.56 H	179	32.70	32.50
2	2390.00	52.2 AV	54.0	-1.8	1.56 H	179	19.70	32.50
3	*2437.00	120.8 PK			1.37 H	341	88.10	32.70
4	*2437.00	110.9 AV			1.37 H	341	78.20	32.70
5	2483.50	68.6 PK	74.0	-5.4	1.32 H	322	35.90	32.70
6	2483.50	51.8 AV	54.0	-2.2	1.32 H	322	19.10	32.70
7	4874.00	56.1 PK	74.0	-17.9	1.64 H	330	50.20	5.90
8	4874.00	43.1 AV	54.0	-10.9	1.64 H	330	37.20	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.0 PK	74.0	-14.0	1.32 V	94	27.50	32.50
2	2390.00	48.4 AV	54.0	-5.6	1.32 V	94	15.90	32.50
3	*2437.00	116.1 PK			2.26 V	83	83.40	32.70
4	*2437.00	107.0 AV			2.26 V	83	74.30	32.70
5	2483.50	59.1 PK	74.0	-14.9	1.99 V	132	26.40	32.70
6	2483.50	47.2 AV	54.0	-6.8	1.99 V	132	14.50	32.70
7	4874.00	51.3 PK	74.0	-22.7	2.58 V	262	45.40	5.90
8	4874.00	37.2 AV	54.0	-16.8	2.58 V	262	31.30	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	115.7 PK			1.35 H	338	83.10	32.60
2	*2462.00	105.6 AV			1.35 H	338	73.00	32.60
3	2483.50	69.7 PK	74.0	-4.3	1.81 H	347	37.00	32.70
4	2483.50	52.8 AV	54.0	-1.2	1.81 H	347	20.10	32.70
5	4924.00	53.3 PK	74.0	-20.7	1.47 H	325	47.30	6.00
6	4924.00	40.5 AV	54.0	-13.5	1.47 H	325	34.50	6.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.8 PK			2.04 V	80	77.20	32.60
2	*2462.00	99.8 AV			2.04 V	80	67.20	32.60
3	2483.50	58.2 PK	74.0	-15.8	2.34 V	100	25.50	32.70
4	2483.50	46.9 AV	54.0	-7.1	2.34 V	100	14.20	32.70
5	4924.00	48.9 PK	74.0	-25.1	2.20 V	260	42.90	6.00
6	4924.00	35.6 AV	54.0	-18.4	2.20 V	260	29.60	6.00

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)
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	70.2 PK	74.0	-3.8	1.56 H	333	37.70	32.50
2	2390.00	53.0 AV	54.0	-1.0	1.56 H	333	20.50	32.50
3	*2412.00	114.5 PK			1.58 H	333	81.90	32.60
4	*2412.00	105.0 AV			1.58 H	333	72.40	32.60
5	4824.00	50.0 PK	74.0	-24.0	1.60 H	289	44.10	5.90
6	4824.00	36.9 AV	54.0	-17.1	1.60 H	289	31.00	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.8 PK	74.0	-9.2	1.48 V	96	32.30	32.50
2	2390.00	49.4 AV	54.0	-4.6	1.48 V	96	16.90	32.50
3	*2412.00	108.1 PK			1.50 V	97	75.50	32.60
4	*2412.00	98.0 AV			1.50 V	97	65.40	32.60
5	4824.00	47.9 PK	74.0	-26.1	2.00 V	225	42.00	5.90
6	4824.00	34.7 AV	54.0	-19.3	2.00 V	225	28.80	5.90

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.2 PK	74.0	-3.8	1.78 H	336	37.70	32.50
2	2390.00	52.1 AV	54.0	-1.9	1.78 H	336	19.60	32.50
3	*2437.00	119.6 PK			1.36 H	323	86.90	32.70
4	*2437.00	111.0 AV			1.36 H	323	78.30	32.70
5	2483.50	61.8 PK	74.0	-12.2	1.36 H	332	29.10	32.70
6	2483.50	50.0 AV	54.0	-4.0	1.36 H	332	17.30	32.70
7	4874.00	57.2 PK	74.0	-16.8	1.56 H	266	51.30	5.90
8	4874.00	41.4 AV	54.0	-12.6	1.56 H	266	35.50	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.1 PK	74.0	-14.9	1.48 V	86	26.60	32.50
2	2390.00	49.4 AV	54.0	-4.6	1.48 V	86	16.90	32.50
3	*2437.00	114.0 PK			1.50 V	103	81.30	32.70
4	*2437.00	104.5 AV			1.50 V	103	71.80	32.70
5	2483.50	57.0 PK	74.0	-17.0	1.55 V	94	24.30	32.70
6	2483.50	46.7 AV	54.0	-7.3	1.55 V	94	14.00	32.70
7	4874.00	48.3 PK	74.0	-25.7	2.00 V	255	42.40	5.90
8	4874.00	35.1 AV	54.0	-18.9	2.00 V	255	29.20	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	114.1 PK			1.51 H	335	81.50	32.60
2	*2462.00	104.3 AV			1.51 H	335	71.70	32.60
3	2483.50	67.0 PK	74.0	-7.0	1.33 H	337	34.30	32.70
4	2483.50	53.0 AV	54.0	-1.0	1.33 H	337	20.30	32.70
5	4924.00	49.5 PK	74.0	-24.5	1.56 H	344	43.50	6.00
6	4924.00	36.6 AV	54.0	-17.4	1.56 H	344	30.60	6.00
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	104.1 PK			1.23 V	124	71.50	32.60
2	*2462.00	94.8 AV			1.23 V	124	62.20	32.60
3	2483.50	57.1 PK	74.0	-16.9	1.53 V	104	24.40	32.70
4	2483.50	46.0 AV	54.0	-8.0	1.53 V	104	13.30	32.70
5	4924.00	47.7 PK	74.0	-26.3	2.05 V	265	41.70	6.00
6	4924.00	34.5 AV	54.0	-19.5	2.05 V	265	28.50	6.00

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)
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 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	62.7 PK	74.0	-11.3	1.25 H	324	30.20	32.50
2	2390.00	52.2 AV	54.0	-1.8	1.25 H	324	19.70	32.50
3	*2422.00	107.5 PK			1.70 H	338	74.90	32.60
4	*2422.00	98.8 AV			1.70 H	338	66.20	32.60
5	4844.00	47.9 PK	74.0	-26.1	1.52 H	330	42.00	5.90
6	4844.00	35.3 AV	54.0	-18.7	1.52 H	330	29.40	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.9 PK	74.0	-12.1	1.03 V	94	29.40	32.50
2	2390.00	48.2 AV	54.0	-5.8	1.03 V	94	15.70	32.50
3	*2422.00	102.3 PK			2.09 V	77	69.70	32.60
4	*2422.00	92.4 AV			2.09 V	77	59.80	32.60
5	4844.00	47.4 PK	74.0	-26.6	2.20 V	265	41.50	5.90
6	4844.00	34.3 AV	54.0	-19.7	2.20 V	265	28.40	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	65.7 PK	74.0	-8.3	1.23 H	108	33.20	32.50
2	2390.00	52.5 AV	54.0	-1.5	1.23 H	108	20.00	32.50
3	*2437.00	113.5 PK			1.37 H	339	80.80	32.70
4	*2437.00	104.1 AV			1.37 H	339	71.40	32.70
5	4874.00	52.1 PK	74.0	-21.9	1.30 H	294	46.20	5.90
6	4874.00	38.6 AV	54.0	-15.4	1.30 H	294	32.70	5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.2 PK	74.0	-9.8	1.92 V	51	31.70	32.50
2	2390.00	49.0 AV	54.0	-5.0	1.92 V	51	16.50	32.50
3	*2437.00	107.0 PK			1.03 V	74	74.30	32.70
4	*2437.00	97.3 AV			1.03 V	74	64.60	32.70
5	4874.00	48.5 PK	74.0	-25.5	2.06 V	222	42.60	5.90
6	4874.00	35.2 AV	54.0	-18.8	2.06 V	222	29.30	5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	106.9 PK			1.53 H	338	74.20	32.70
2	*2452.00	97.6 AV			1.53 H	338	64.90	32.70
3	2483.50	68.1 PK	74.0	-5.9	1.68 H	337	35.40	32.70
4	2483.50	53.0 AV	54.0	-1.0	1.68 H	337	20.30	32.70
5	4904.00	48.3 PK	74.0	-25.7	1.24 H	306	42.50	5.80
6	4904.00	35.8 AV	54.0	-18.2	1.24 H	306	30.00	5.80
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	102.3 PK			2.05 V	83	69.70	32.60
2	*2452.00	92.3 AV			2.05 V	83	59.70	32.60
3	2483.50	61.6 PK	74.0	-12.4	2.01 V	88	28.90	32.70
4	2483.50	49.9 AV	54.0	-4.1	2.01 V	88	17.20	32.70
5	4904.00	47.8 PK	74.0	-26.2	2.26 V	266	42.00	5.80
6	4904.00	34.6 AV	54.0	-19.4	2.26 V	266	28.80	5.80

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

Below 1GHz worst-case data:

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	A		

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	39.62	31.9 QP	40.0	-8.1	1.49 H	83	46.90	-15.00
2	352.65	34.8 QP	46.0	-11.2	1.00 H	93	46.40	-11.60
3	500.42	31.1 QP	46.0	-14.9	1.49 H	206	39.50	-8.40
4	624.85	37.3 QP	46.0	-8.7	1.49 H	3	42.90	-5.60
5	667.63	36.0 QP	46.0	-10.0	1.49 H	3	41.00	-5.00
6	751.23	34.3 QP	46.0	-11.7	1.00 H	126	37.50	-3.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.43	36.5 QP	40.0	-3.5	1.00 V	15	51.60	-15.10
2	49.14	35.9 QP	40.0	-4.1	1.00 V	297	50.30	-14.40
3	61.01	36.6 QP	40.0	-3.4	1.50 V	340	51.40	-14.80
4	171.83	29.5 QP	43.5	-14.0	1.01 V	135	43.90	-14.40
5	624.85	32.9 QP	46.0	-13.1	1.50 V	160	38.50	-5.60
6	667.63	32.6 QP	46.0	-13.4	1.50 V	153	37.60	-5.00

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	B		

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	37.68	30.2 QP	40.0	-9.8	1.50 H	84	45.50	-15.30
2	57.12	29.0 QP	40.0	-11.0	1.50 H	99	43.60	-14.60
3	109.62	25.8 QP	43.5	-17.7	1.50 H	283	43.20	-17.40
4	218.50	25.8 QP	46.0	-20.2	1.00 H	322	42.20	-16.40
5	751.23	37.0 QP	46.0	-9.0	1.00 H	218	40.20	-3.20
6	895.11	37.7 QP	46.0	-8.3	1.50 H	251	38.40	-0.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.62	37.5 QP	40.0	-2.5	1.00 V	323	52.50	-15.00
2	59.06	36.5 QP	40.0	-3.5	1.50 V	341	51.00	-14.50
3	107.67	28.1 QP	43.5	-15.4	1.50 V	120	45.90	-17.80
4	500.42	33.8 QP	46.0	-12.2	1.00 V	228	42.20	-8.40
5	667.63	35.2 QP	46.0	-10.8	1.50 V	182	40.20	-5.00
6	747.34	36.8 QP	46.0	-9.2	1.50 V	254	40.10	-3.30

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)
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.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Apr. 27, 2015	Apr. 26, 2016
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2014	Dec. 29, 2015
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 10, 2014	Jul. 09, 2015
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 Test Procedures

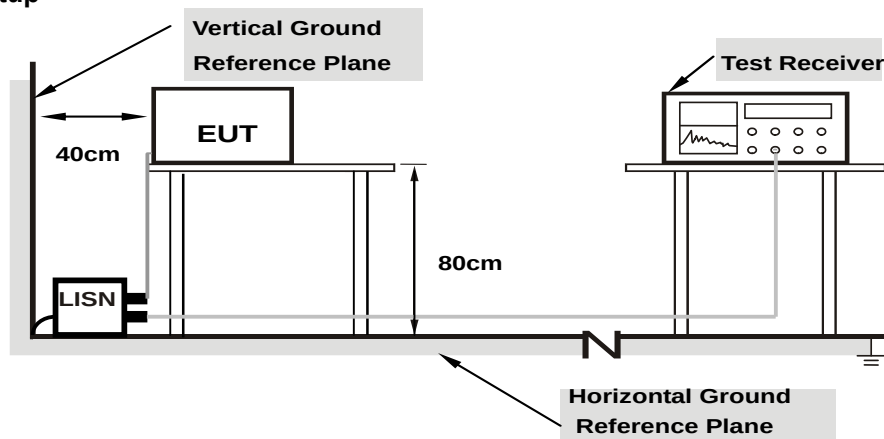
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

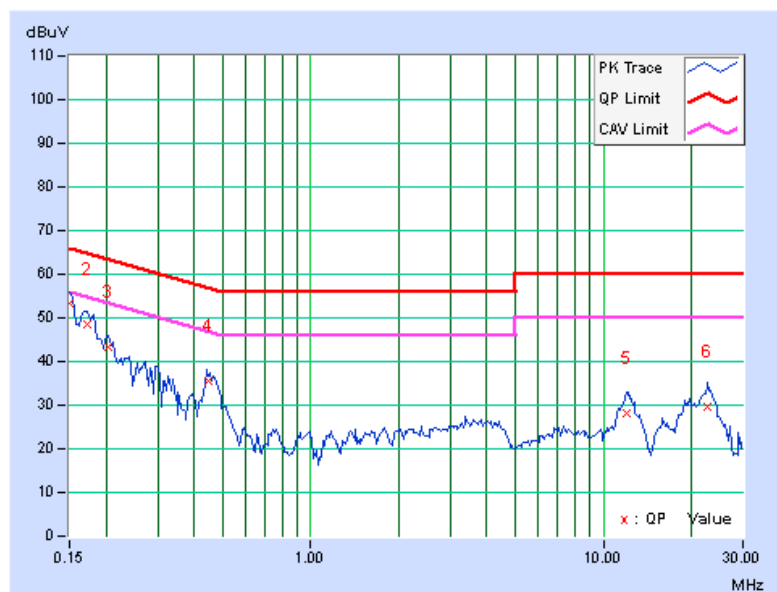
4.2.7 Test Results

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.16	53.34	44.25	53.50	44.41	66.00	56.00	-12.50	-11.59
2	0.17344	0.17	48.42	38.14	48.59	38.31	64.79	54.79	-16.21	-16.49
3	0.20469	0.17	43.05	34.06	43.22	34.23	63.42	53.42	-20.20	-19.19
4	0.44806	0.18	35.41	31.15	35.59	31.33	56.91	46.91	-21.32	-15.58
5	12.02734	0.48	27.85	22.95	28.33	23.43	60.00	50.00	-31.67	-26.57
6	22.79688	0.57	29.06	24.06	29.63	24.63	60.00	50.00	-30.37	-25.37

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.

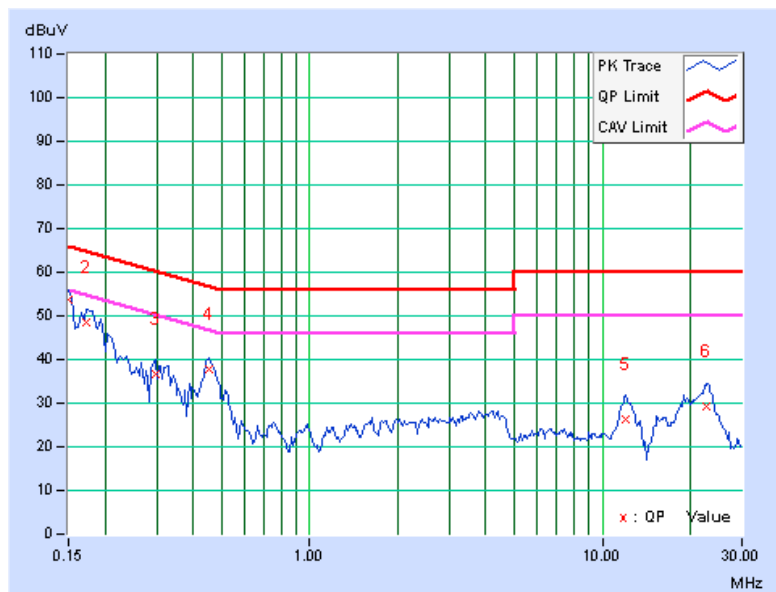


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.17	53.51	44.70	53.68	44.87	66.00	56.00	-12.32	-11.13
2	0.17344	0.18	48.38	38.55	48.56	38.73	64.79	54.79	-16.24	-16.07
3	0.29844	0.19	36.57	28.63	36.76	28.82	60.29	50.29	-23.53	-21.47
4	0.45078	0.20	37.59	33.61	37.79	33.81	56.86	46.86	-19.07	-13.05
5	12.07813	0.58	25.84	21.08	26.42	21.66	60.00	50.00	-33.58	-28.34
6	22.79688	0.72	28.60	23.32	29.32	24.04	60.00	50.00	-30.68	-25.96

Remarks:

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

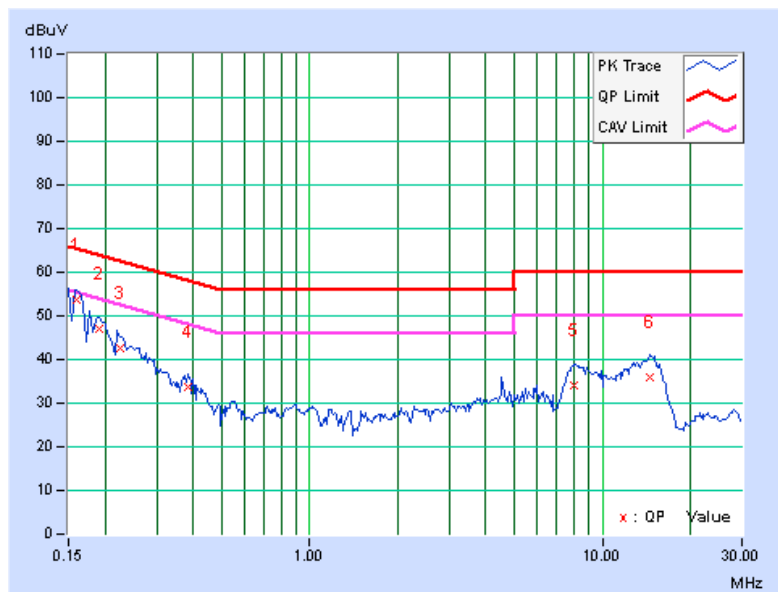


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15909	0.17	53.42	40.72	53.59	40.89	65.51	55.51	-11.93	-14.63
2	0.19034	0.17	46.95	33.75	47.12	33.92	64.02	54.02	-16.90	-20.10
3	0.22413	0.17	42.34	29.74	42.51	29.91	62.66	52.66	-20.15	-22.75
4	0.38438	0.18	33.43	26.92	33.61	27.10	58.18	48.18	-24.58	-21.09
5	8.01953	0.42	33.66	28.39	34.08	28.81	60.00	50.00	-25.92	-21.19
6	14.58203	0.52	35.57	30.67	36.09	31.19	60.00	50.00	-23.91	-18.81

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.

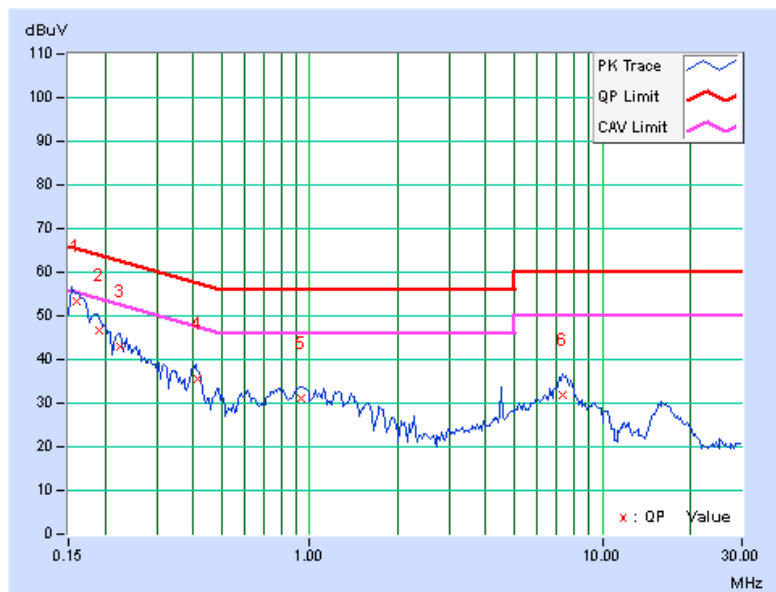


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15900	0.18	53.28	40.88	53.46	41.06	65.52	55.52	-12.06	-14.46
2	0.19034	0.18	46.65	33.61	46.83	33.79	64.02	54.02	-17.19	-20.23
3	0.22550	0.18	42.80	30.66	42.98	30.84	62.61	52.61	-19.63	-21.77
4	0.41544	0.20	35.36	28.82	35.56	29.02	57.54	47.54	-21.98	-18.52
5	0.93125	0.24	30.98	24.95	31.22	25.19	56.00	46.00	-24.78	-20.81
6	7.34766	0.46	31.37	25.55	31.83	26.01	60.00	50.00	-28.17	-23.99

Remarks:

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

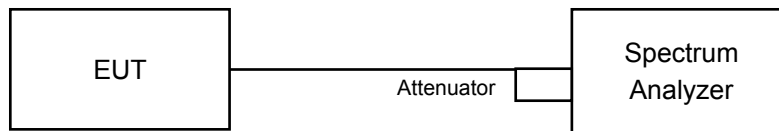


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	7.10	7.08	7.07	0.5	Pass
6	2437	7.11	7.08	7.10	0.5	Pass
11	2462	7.09	7.10	7.10	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	16.39	16.01	16.35	0.5	Pass
6	2437	16.37	16.10	16.35	0.5	Pass
11	2462	16.37	16.36	16.36	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	17.36	16.96	16.96	0.5	Pass
6	2437	17.57	16.93	16.97	0.5	Pass
11	2462	17.56	17.18	17.33	0.5	Pass

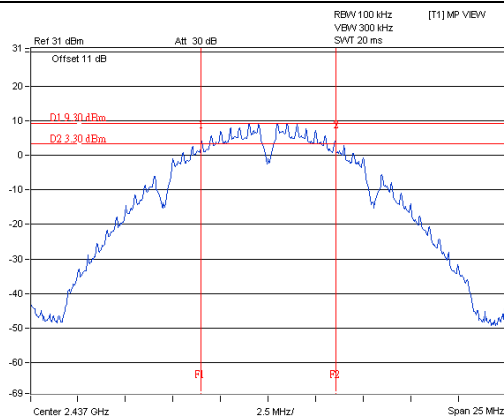
802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
3	2422	35.89	35.85	35.73	0.5	Pass
6	2437	36.11	35.80	35.80	0.5	Pass
9	2452	36.10	35.82	35.80	0.5	Pass

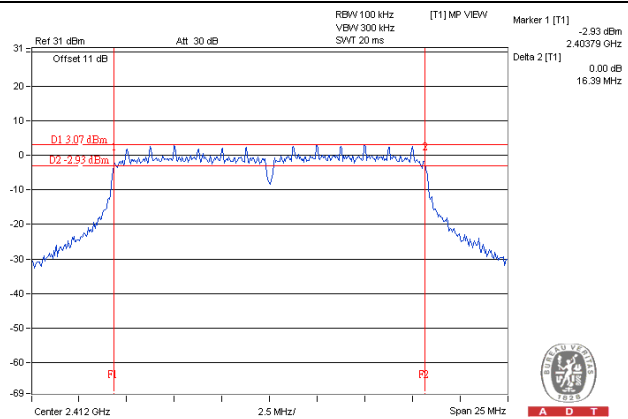
Spectrum Plot of Worst Value

802.11b

802.11g



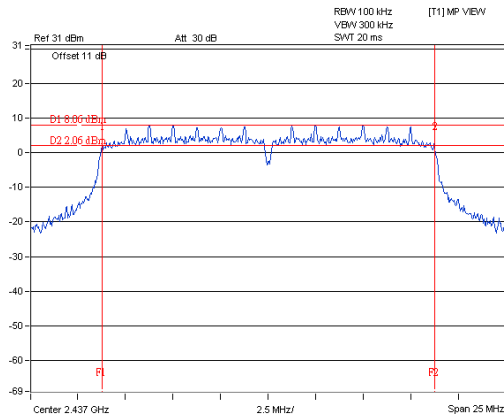
A D T



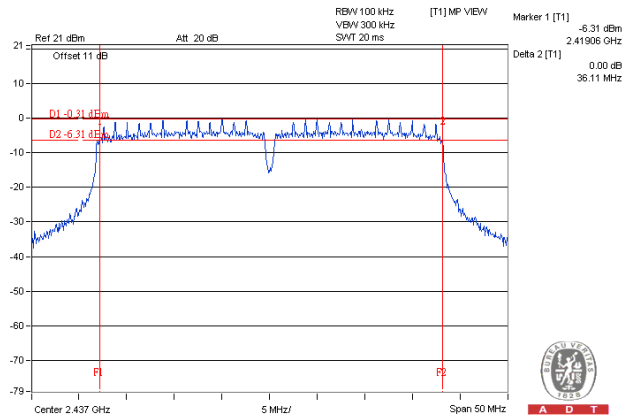
A D T

802.11n (HT20)

802.11n (HT40)



A D T



A D T

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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

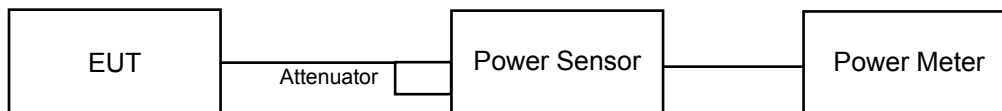
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

For Peak Power

802.11b

Chan.	Freq. (MHz)	Peak Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	20.66	21.31	21.47	391.901	25.93	30	Pass
6	2437	20.86	21.26	21.75	405.183	26.08	30	Pass
11	2462	19.54	20.06	20.15	294.855	24.70	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	20.80	21.54	21.88	416.957	26.20	30	Pass
6	2437	24.75	25.11	25.16	950.973	29.78	30	Pass
11	2462	20.21	21.06	21.10	361.423	25.58	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	Chain 2				
1	2412	18.79	19.30	19.69	253.908	24.05	30	Pass
6	2437	24.35	25.01	25.10	912.821	29.60	30	Pass
11	2462	19.64	20.04	20.17	296.962	24.73	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	Chain 2				
3	2422	14.80	16.01	16.47	114.463	20.59	30	Pass
6	2437	20.17	21.23	21.80	388.087	25.89	30	Pass
9	2452	15.73	16.22	16.47	123.651	20.92	30	Pass

For Average Power

802.11b

Chan.	Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1	Chain 2		
1	2412	17.72	18.34	18.55	199.004	22.99
6	2437	18.01	18.32	18.83	207.545	23.17
11	2462	16.57	17.01	17.33	149.703	21.75

802.11g

Chan.	Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1	Chain 2		
1	2412	15.17	15.77	15.99	110.361	20.43
6	2437	20.26	21.84	21.05	386.277	25.87
11	2462	14.74	15.07	15.54	97.732	19.90

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1	Chain 2		
1	2412	13.03	13.73	14.02	68.931	18.38
6	2437	19.93	20.42	20.61	323.635	25.10
11	2462	13.94	14.10	14.59	79.252	18.99

802.11n (HT40)

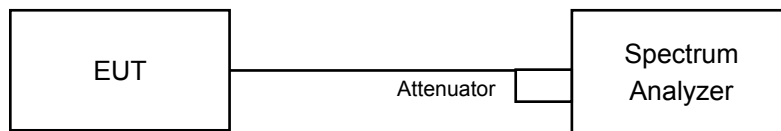
Chan.	Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1	Chain 2		
3	2422	9.18	10.06	10.25	29.011	14.63
6	2437	14.60	15.22	15.66	98.919	19.95
9	2452	9.87	10.51	10.87	33.169	15.21

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

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=3) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	1	2412	-4.06	4.77	0.71	6.56	Pass
	6	2437	-4.08	4.77	0.69	6.56	Pass
	11	2462	-5.87	4.77	-1.10	6.56	Pass
1	1	2412	-2.60	4.77	2.17	6.56	Pass
	6	2437	-2.49	4.77	2.28	6.56	Pass
	11	2462	-5.25	4.77	-0.48	6.56	Pass
2	1	2412	-1.74	4.77	3.03	6.56	Pass
	6	2437	-3.11	4.77	1.66	6.56	Pass
	11	2462	-4.06	4.77	0.71	6.56	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10G^{1/20} + 10G^{2/20} + \dots + 10G^{N/20})^2/3] = 7.44 \text{ dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.44-6) = 6.56\text{dBm}$.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=3) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	1	2412	-11.42	4.77	-6.65	6.56	Pass
	6	2437	-4.96	4.77	-0.19	6.56	Pass
	11	2462	-11.09	4.77	-6.32	6.56	Pass
1	1	2412	-10.44	4.77	-5.67	6.56	Pass
	6	2437	-4.44	4.77	0.33	6.56	Pass
	11	2462	-10.41	4.77	-5.64	6.56	Pass
2	1	2412	-9.56	4.77	-4.79	6.56	Pass
	6	2437	-4.52	4.77	0.25	6.56	Pass
	11	2462	-8.67	4.77	-3.90	6.56	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10G^{1/20} + 10G^{2/20} + \dots + 10G^{N/20})^2/3] = 7.44 \text{ dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.44-6) = 6.56\text{dBm}$.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=3) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	1	2412	-13.64	4.77	-8.87	6.56	Pass
	6	2437	-5.94	4.77	-1.17	6.56	Pass
	11	2462	-12.25	4.77	-7.48	6.56	Pass
1	1	2412	-11.29	4.77	-6.52	6.56	Pass
	6	2437	-5.23	4.77	-0.46	6.56	Pass
	11	2462	-12.82	4.77	-8.05	6.56	Pass
2	1	2412	-5.48	4.77	-0.71	6.56	Pass
	6	2437	-5.64	4.77	-0.87	6.56	Pass
	11	2462	-11.68	4.77	-6.91	6.56	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10G^{1/20} + 10G^{2/20} + \dots + 10G^{N/20})^2/3] = 7.44 \text{ dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.44-6) = 6.56\text{dBm}$.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm)	10 log (N=3) dB	Total PSD (dBm)	Limit (dBm)	Pass / Fail
0	3	2422	-20.15	4.77	-15.38	6.56	Pass
	6	2437	-14.21	4.77	-9.44	6.56	Pass
	9	2452	-19.41	4.77	-14.64	6.56	Pass
1	3	2422	-18.63	4.77	-13.86	6.56	Pass
	6	2437	-13.74	4.77	-8.97	6.56	Pass
	9	2452	-18.59	4.77	-13.82	6.56	Pass
2	3	2422	-17.00	4.77	-12.23	6.56	Pass
	6	2437	-11.97	4.77	-7.20	6.56	Pass
	9	2452	-18.90	4.77	-14.13	6.56	Pass

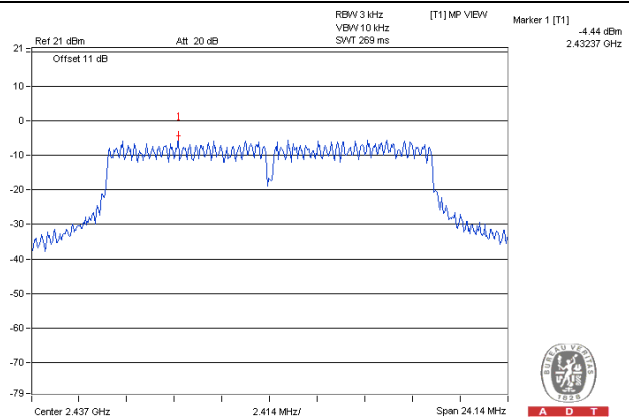
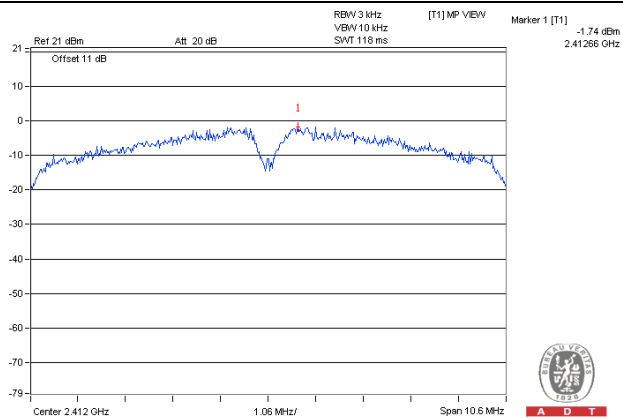
Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10G^{1/20} + 10G^{2/20} + \dots + 10G^{N/20})^2/3] = 7.44 \text{ dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.44-6) = 6.56\text{dBm}$.

Spectrum Plot of Worst Value

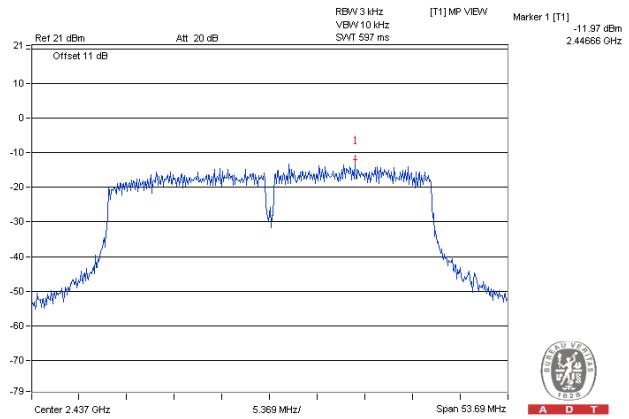
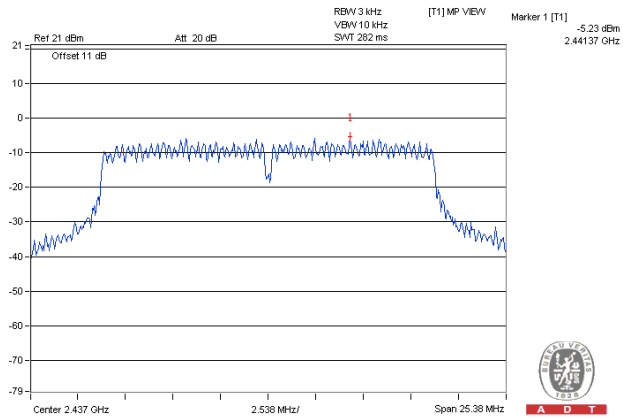
802.11b

802.11g



802.11n (HT20)

802.11n (HT40)

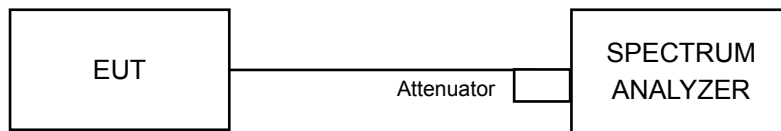


4.6 Conducted Out of Band Emission Measurement

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

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

MEASUREMENT PROCEDURE OOB

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

4.6.5 Deviation from Test Standard

No deviation.

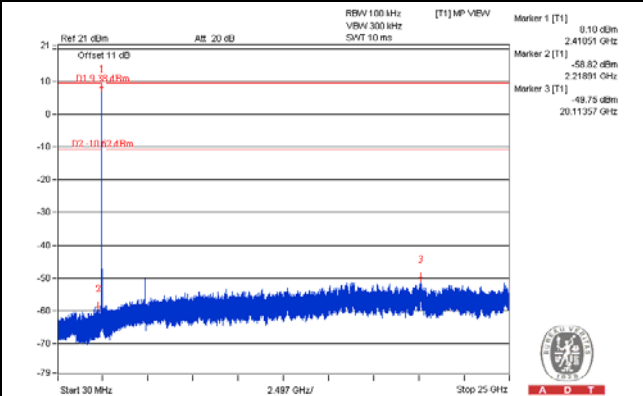
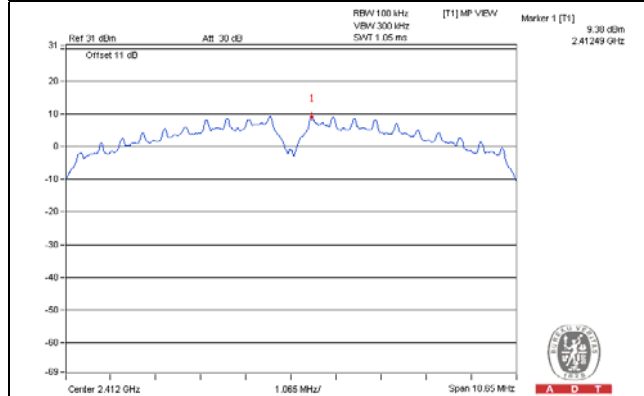
4.6.6 EUT Operating Condition

Same as Item 4.3.6

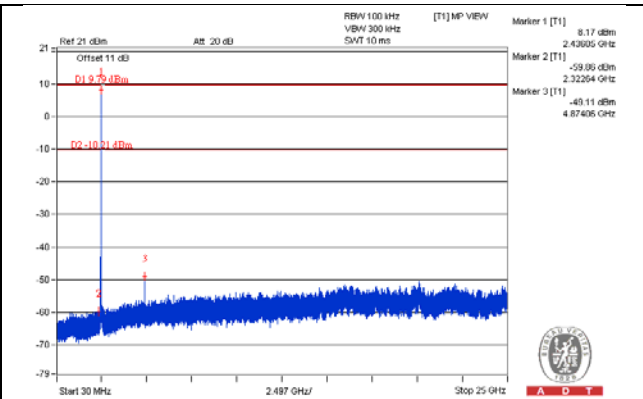
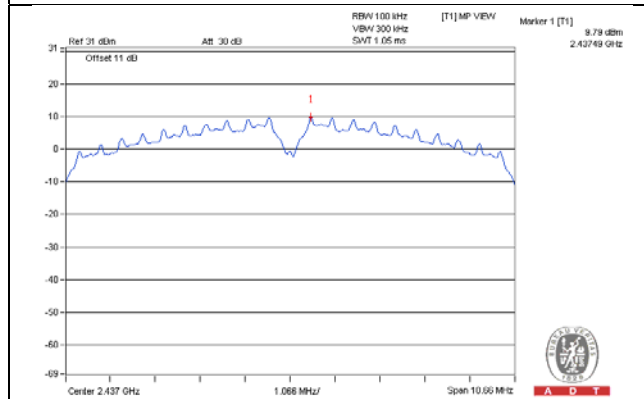
4.6.7 Test Results

802.11b_CHAIN 0

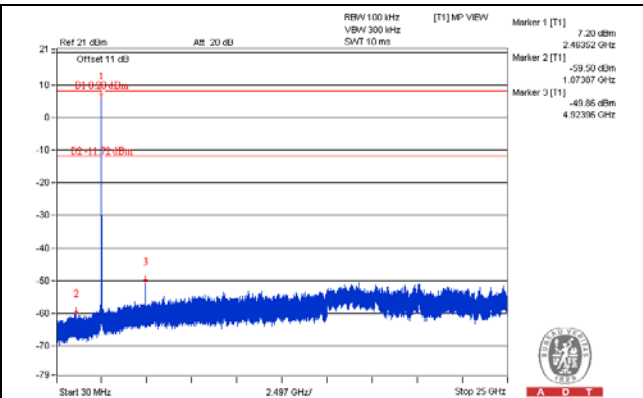
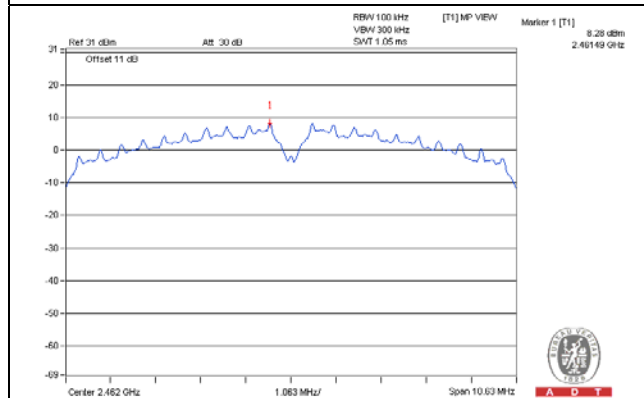
CH 1



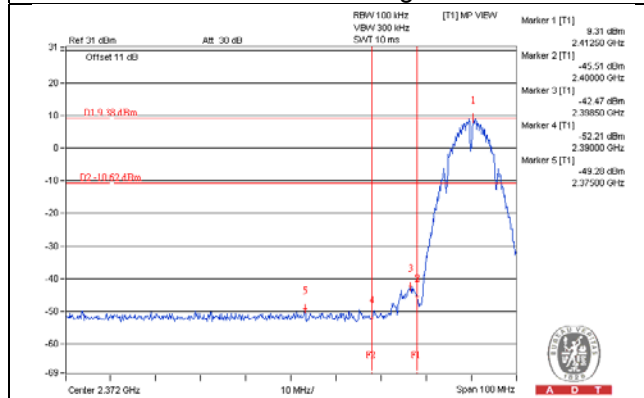
CH 6



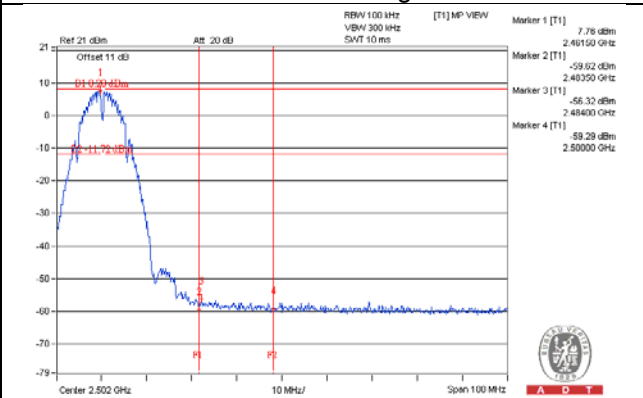
CH 11



CH 1 Band edge

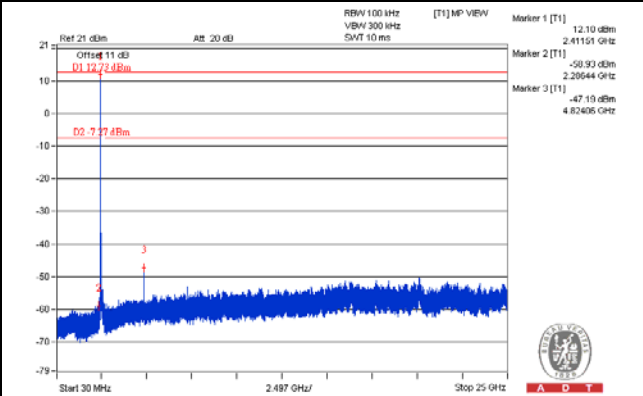
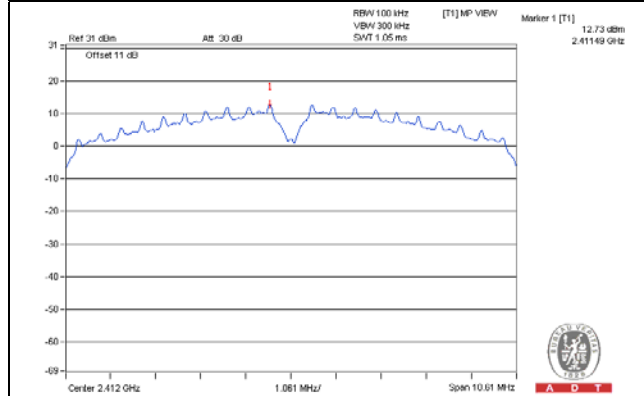


CH 11 Band edge

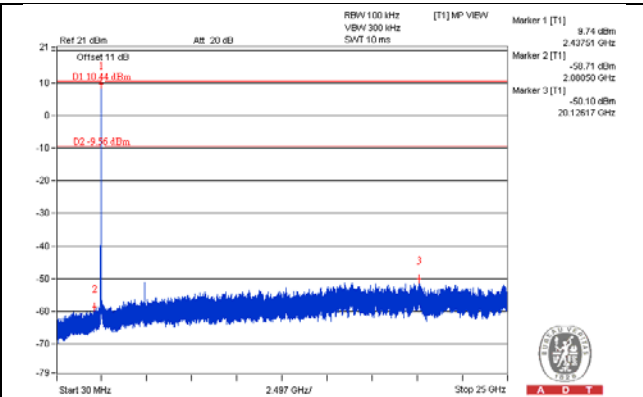
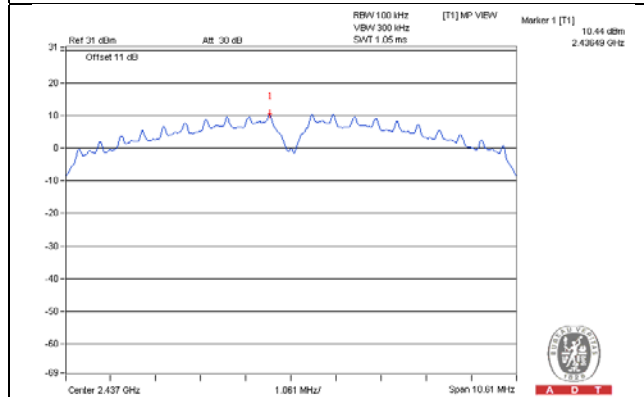


802.11b_CHAIN 1

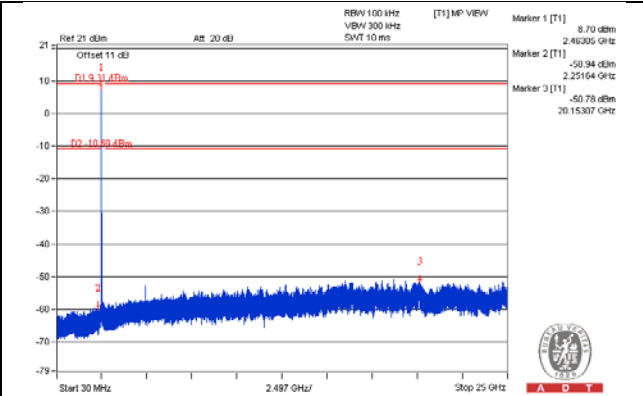
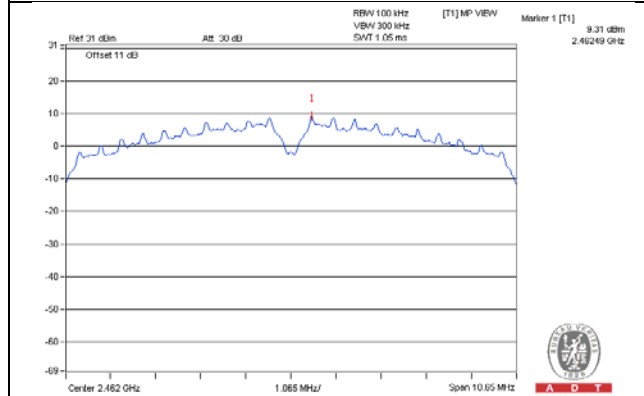
CH 1



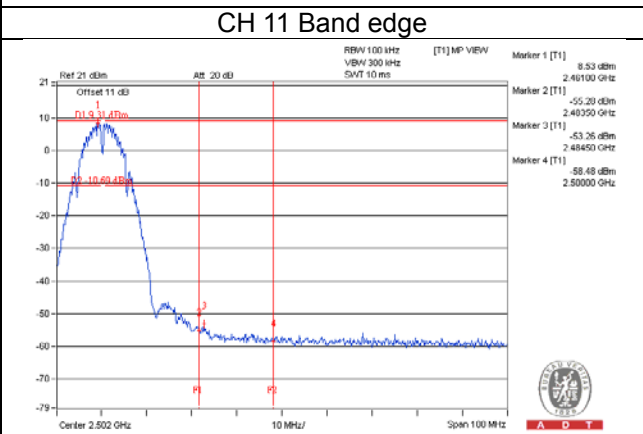
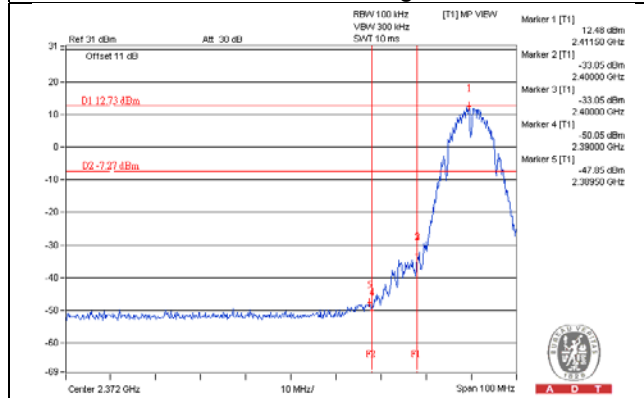
CH 6



CH 11

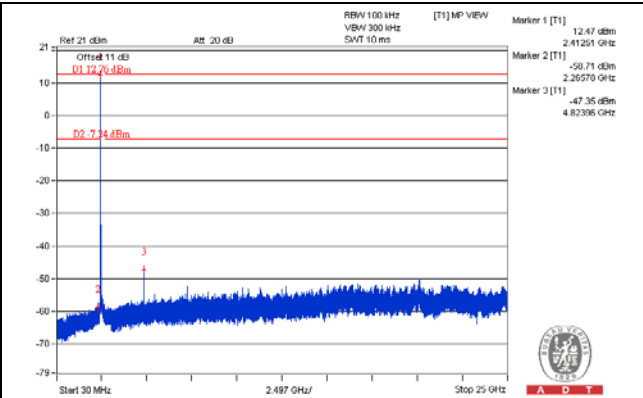
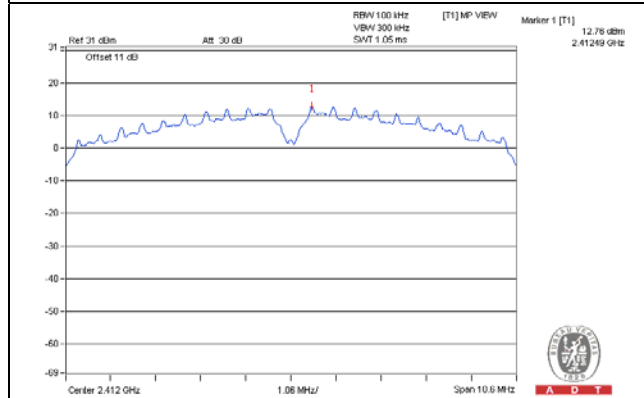


CH 1 Band edge

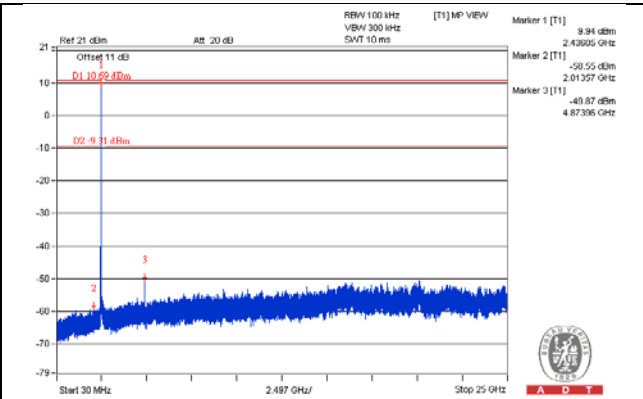
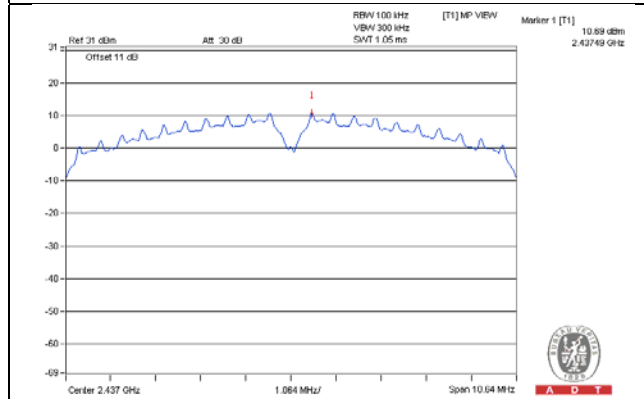


802.11b_CHAIN 2

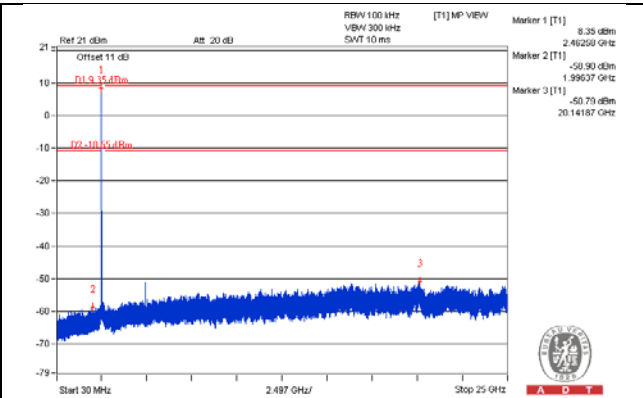
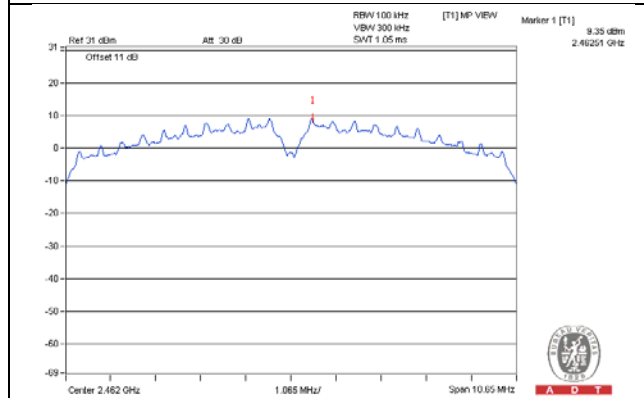
CH 1



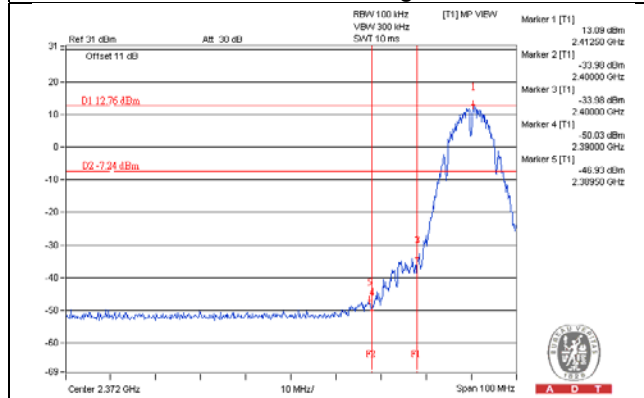
CH 6



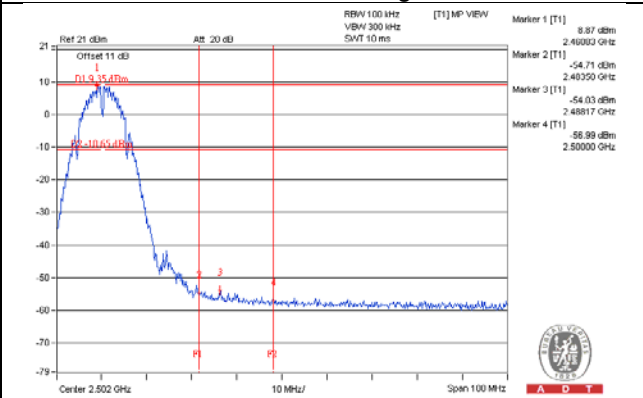
CH 11



CH 1 Band edge

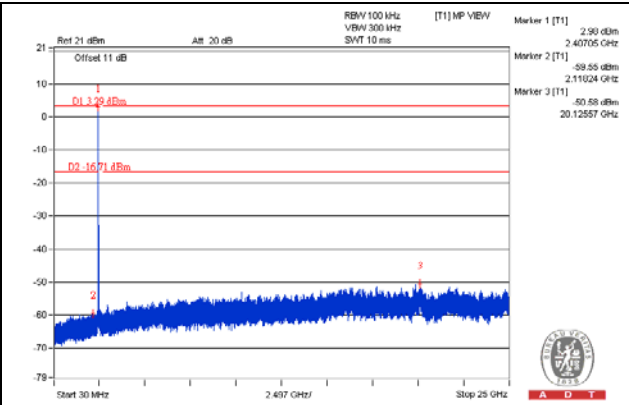
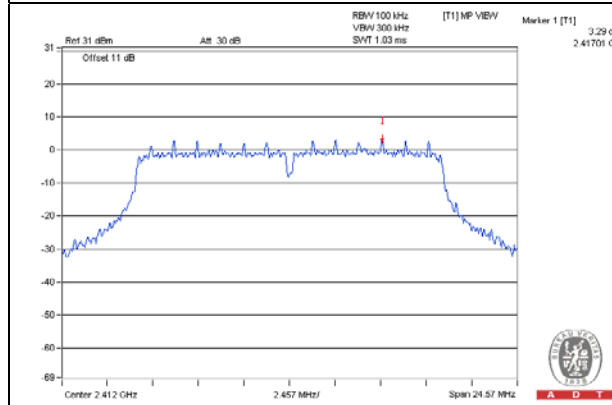


CH 11 Band edge

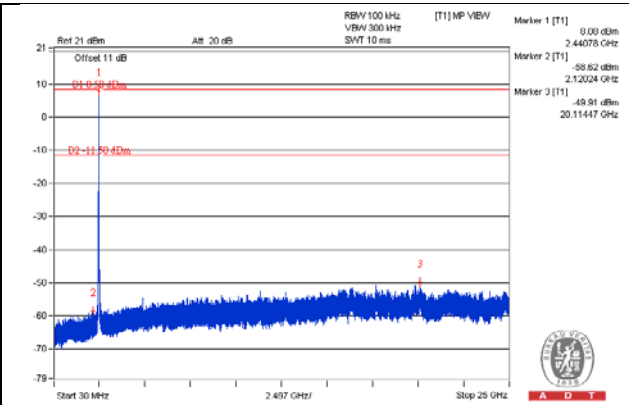
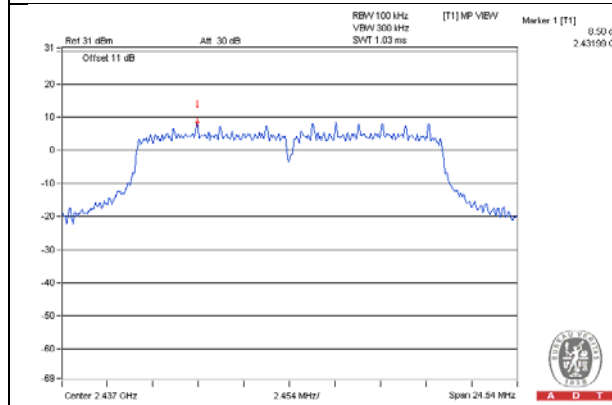


802.11g_CHAIN 0

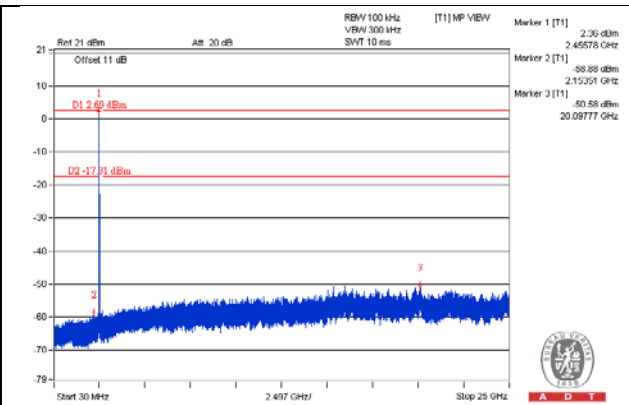
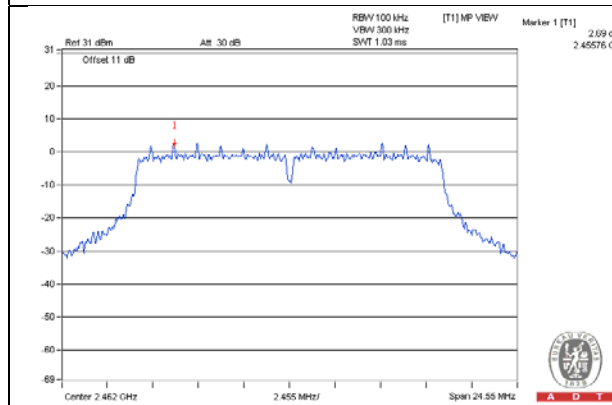
CH 1



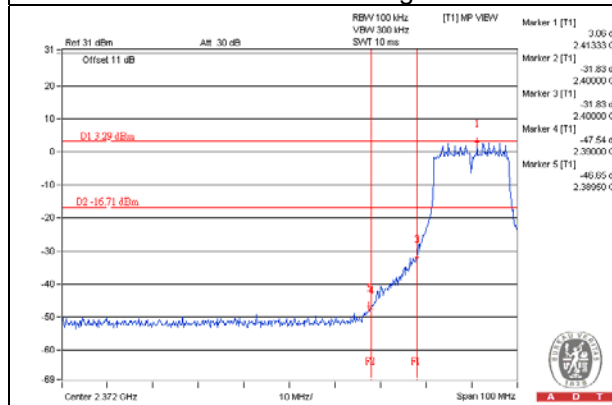
CH 6



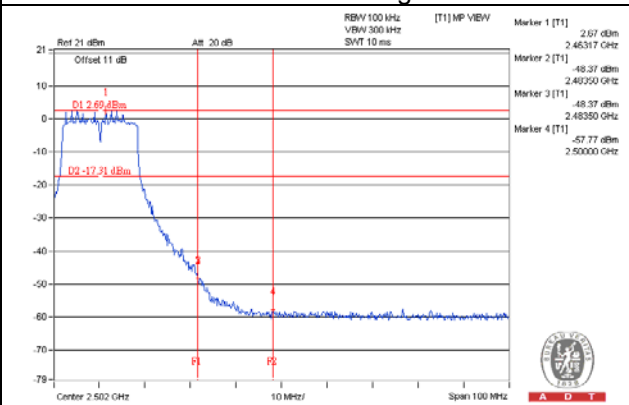
CH 11



CH 1 Band edge

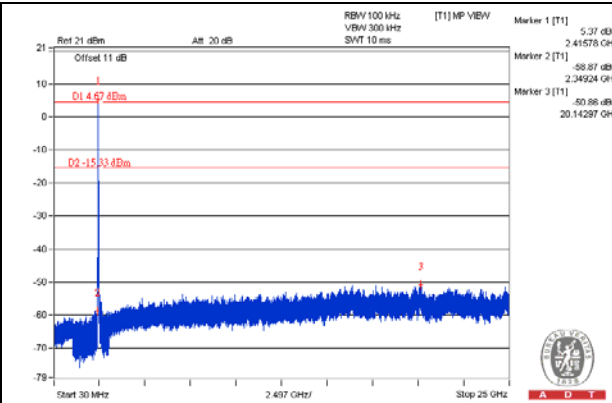
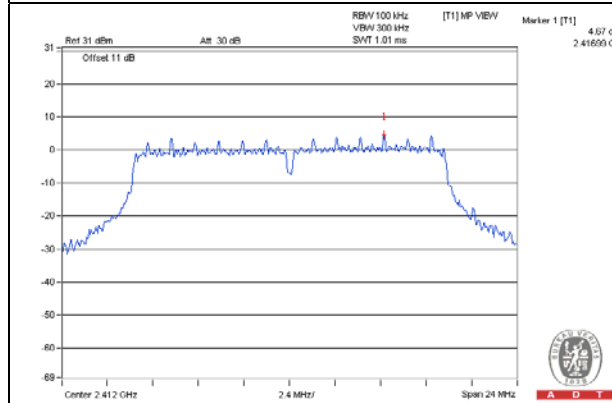


CH 11 Band edge

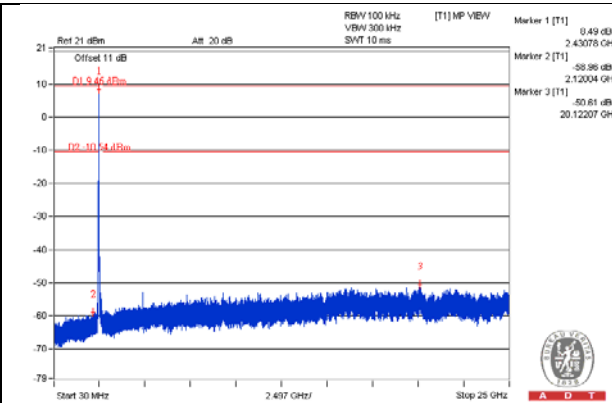
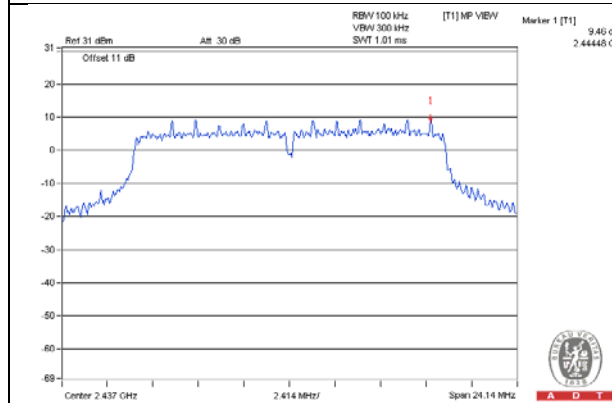


802.11g_CHAIN 1

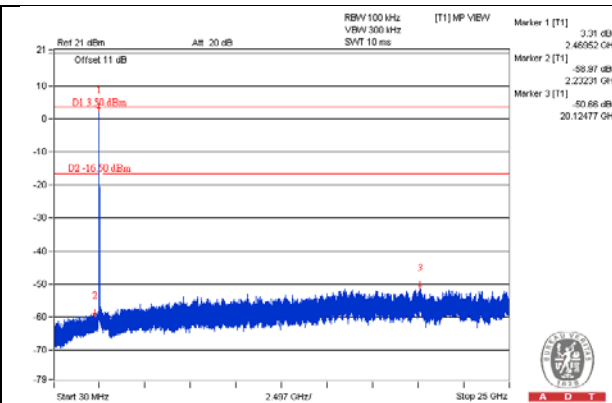
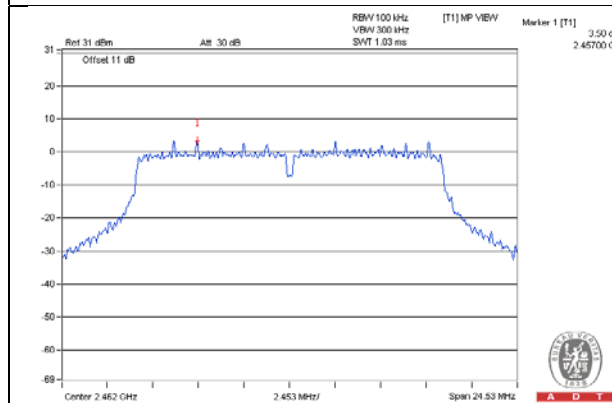
CH 1



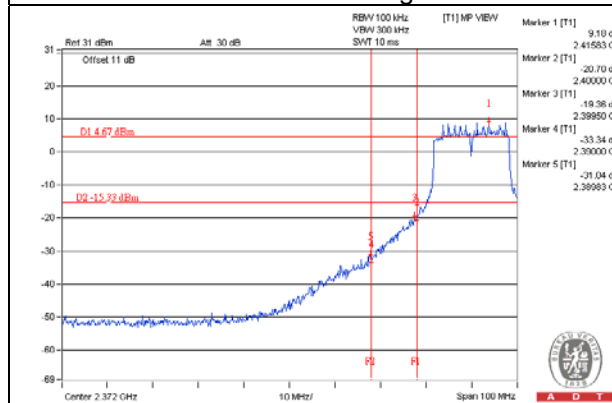
CH 6



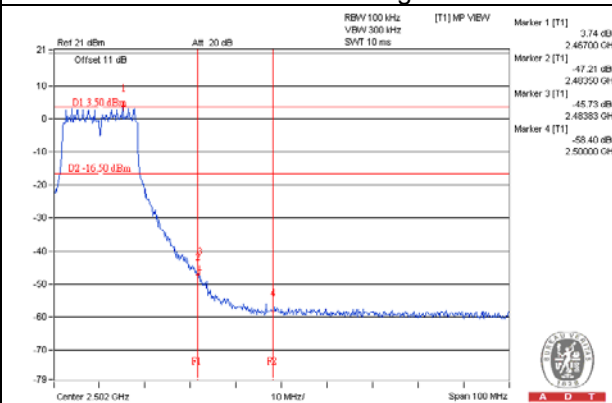
CH 11



CH 1 Band edge

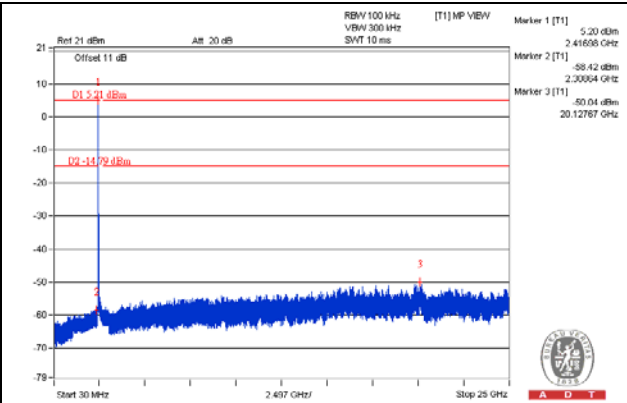
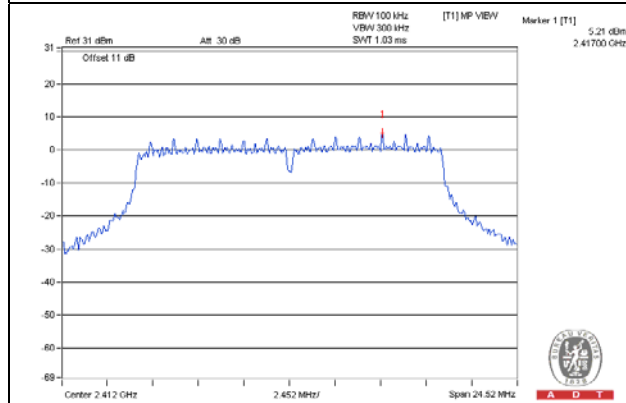


CH 11 Band edge

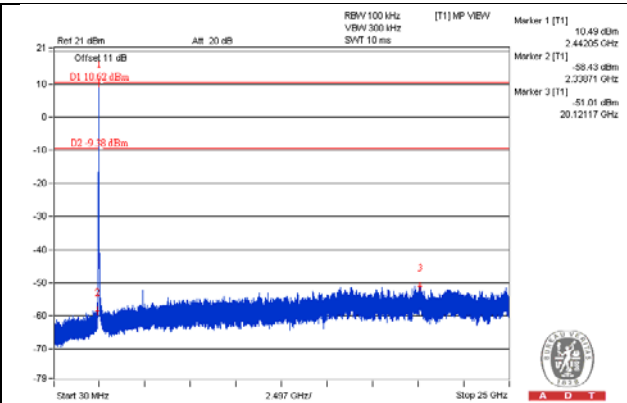
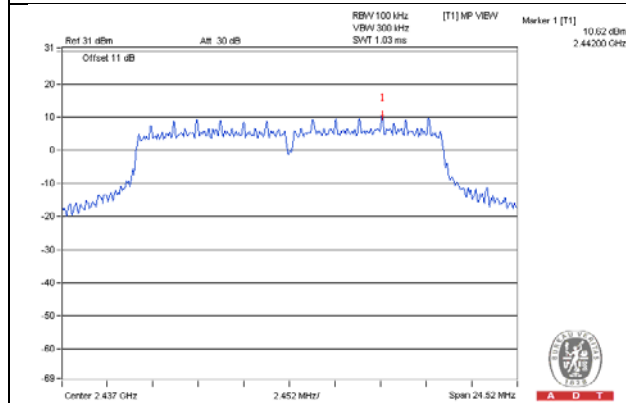


802.11g_CHAIN 2

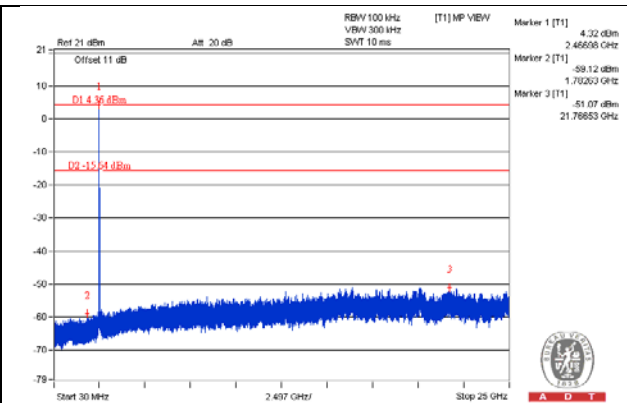
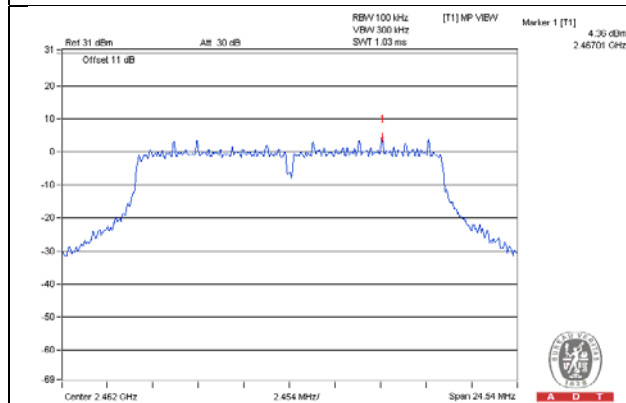
CH 1



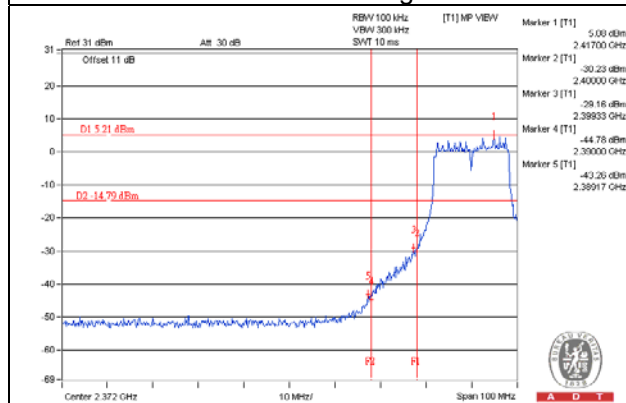
CH 6



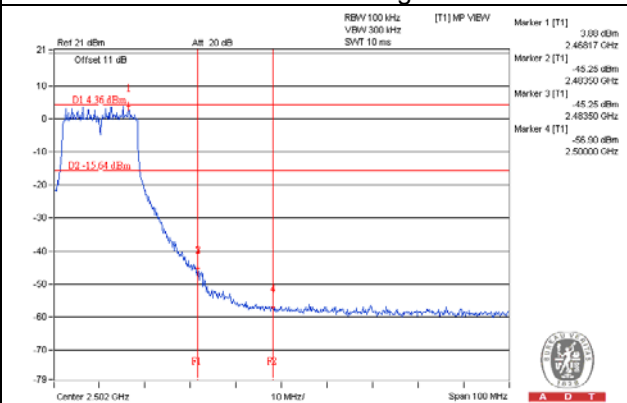
CH 11



CH 1 Band edge

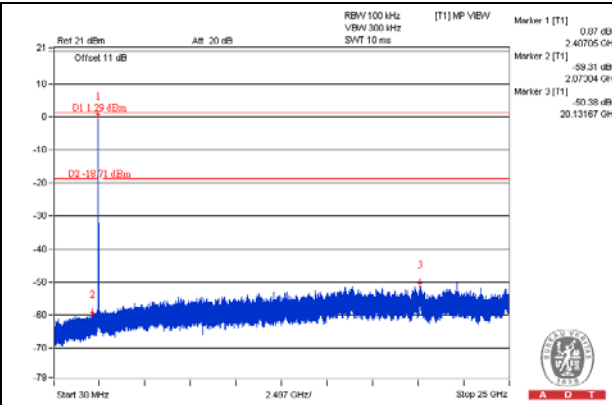
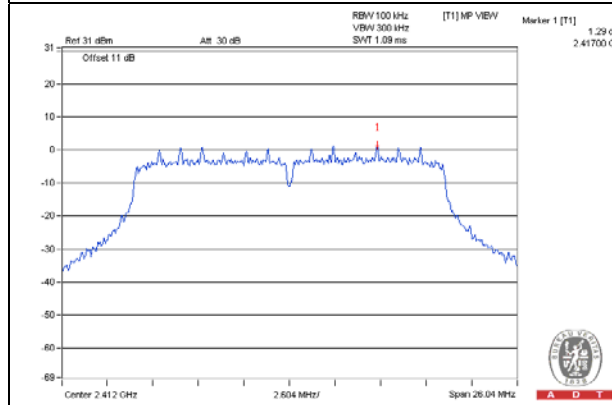


CH 11 Band edge

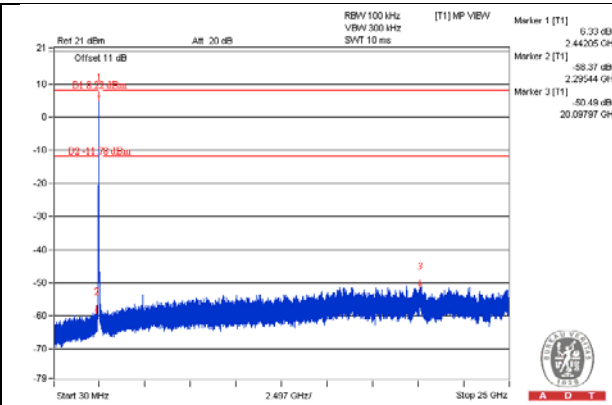
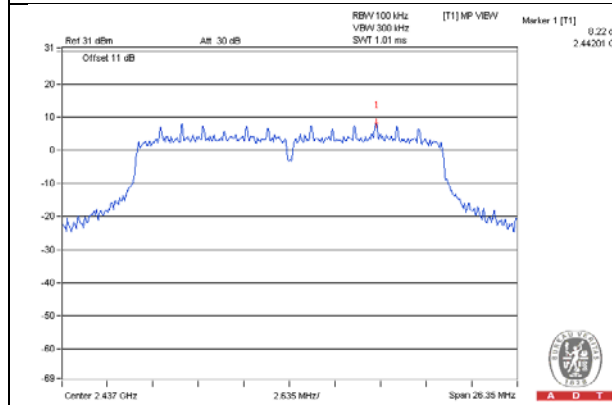


802.11n (HT20)_CHAIN 0

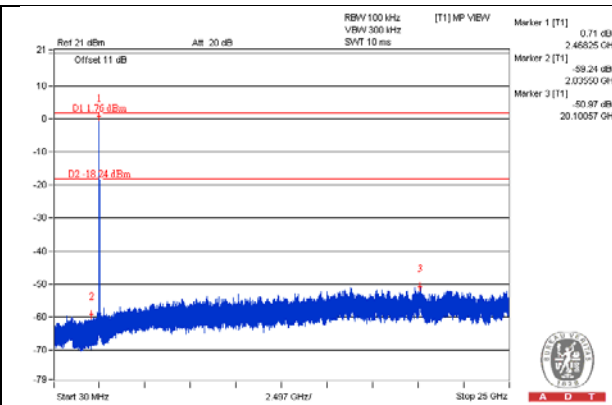
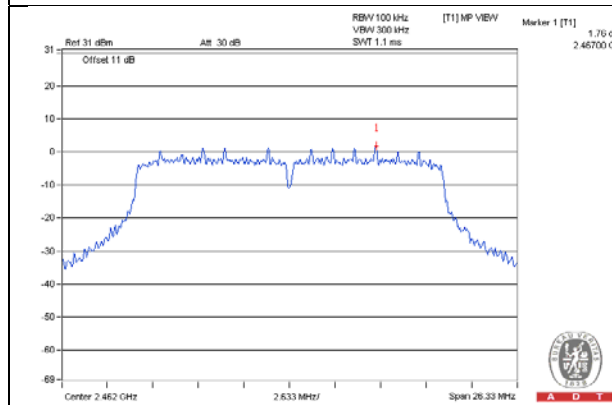
CH 1



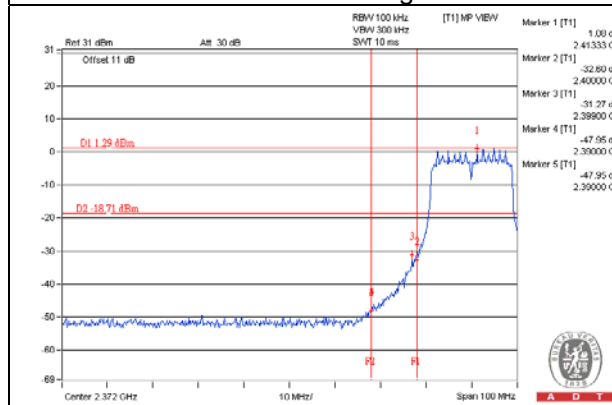
CH 6



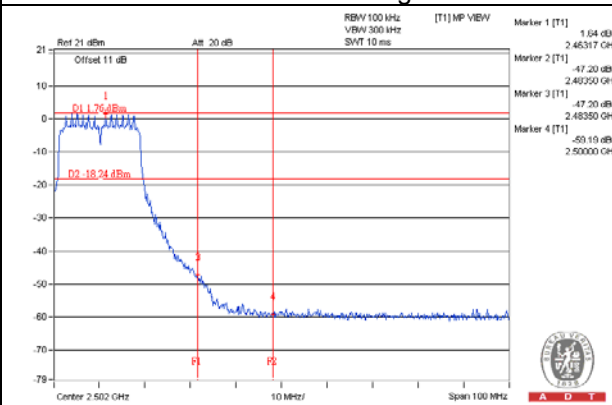
CH 11



CH 1 Band edge

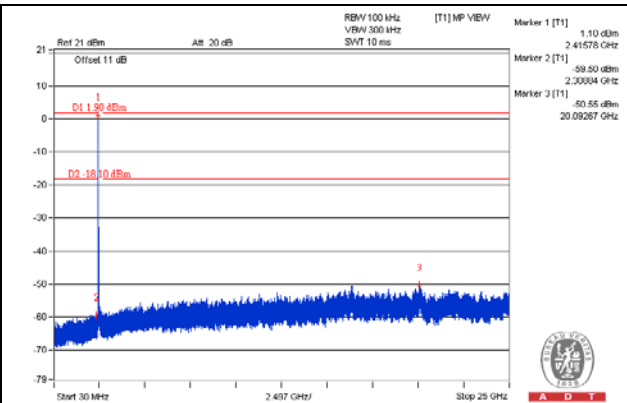
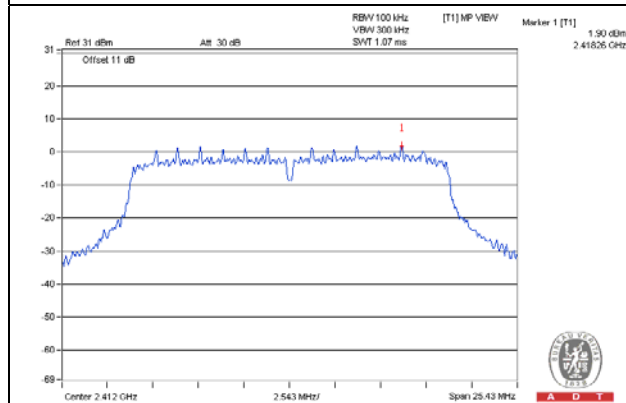


CH 11 Band edge

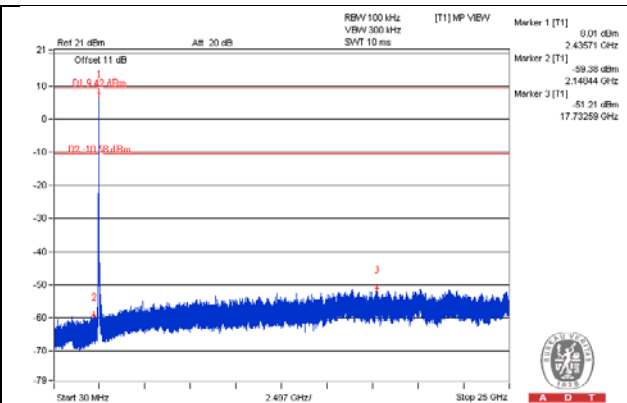
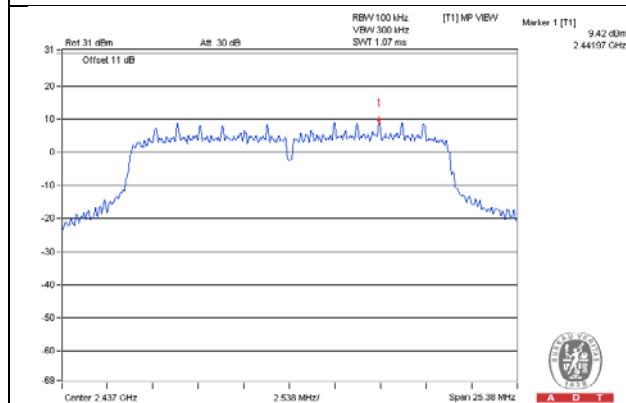


802.11n (HT20)_CHAIN 1

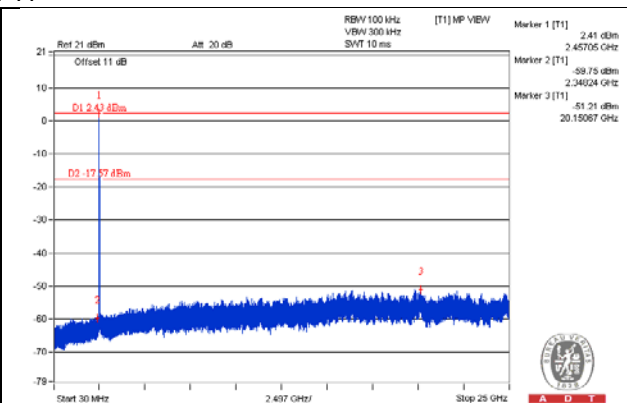
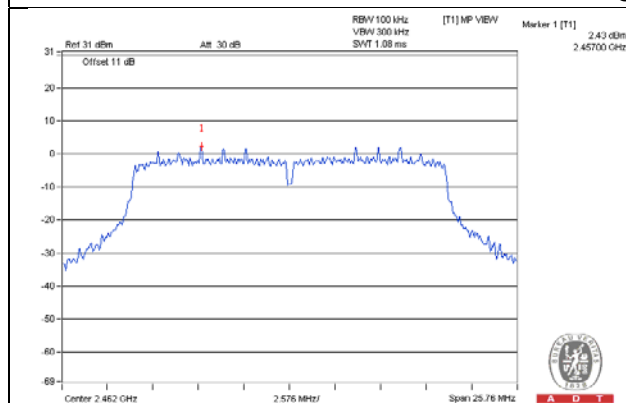
CH 1



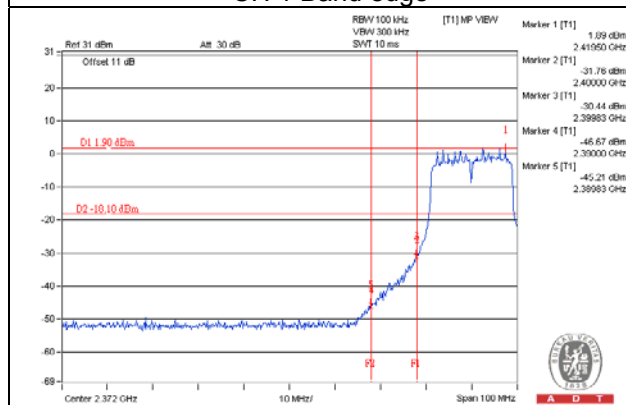
CH 6



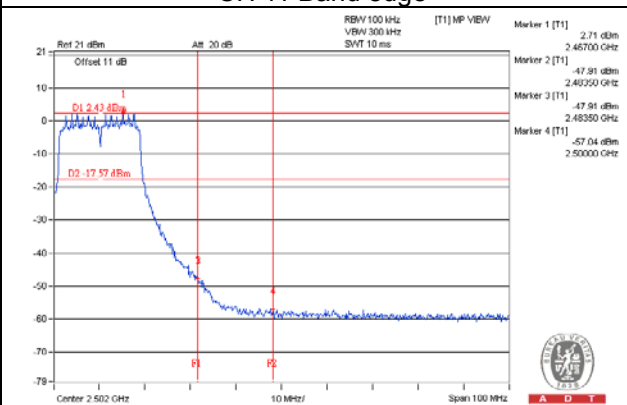
CH 11



CH 1 Band edge

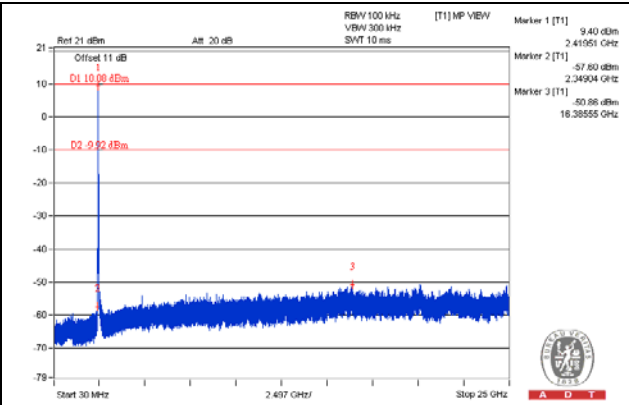
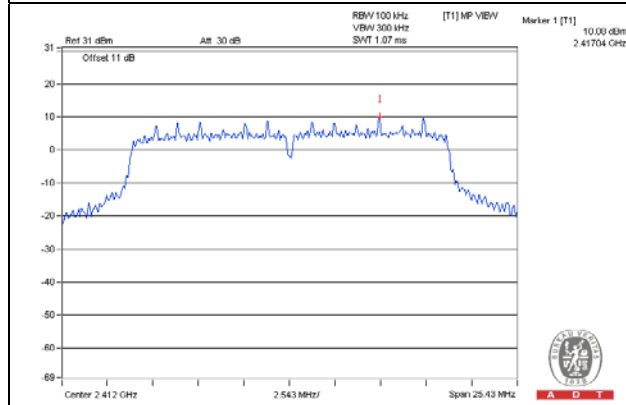


CH 11 Band edge

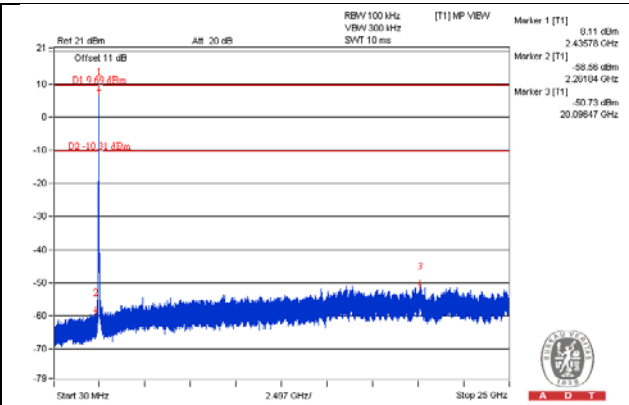
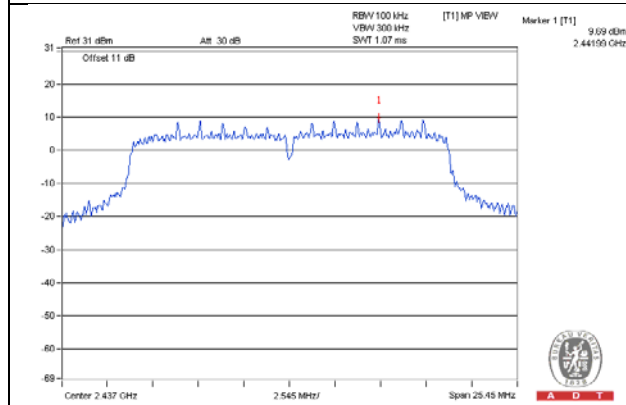


802.11n (HT20)_ CHAIN 2

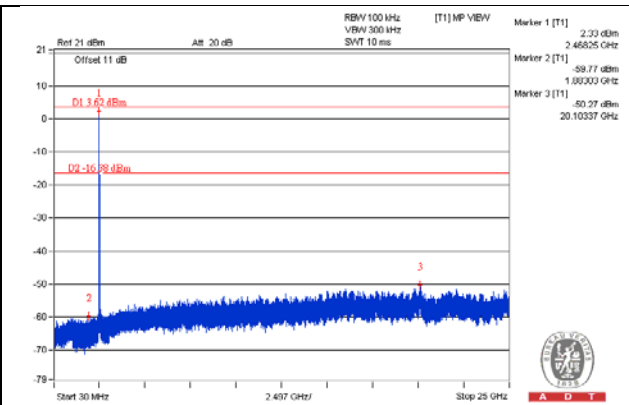
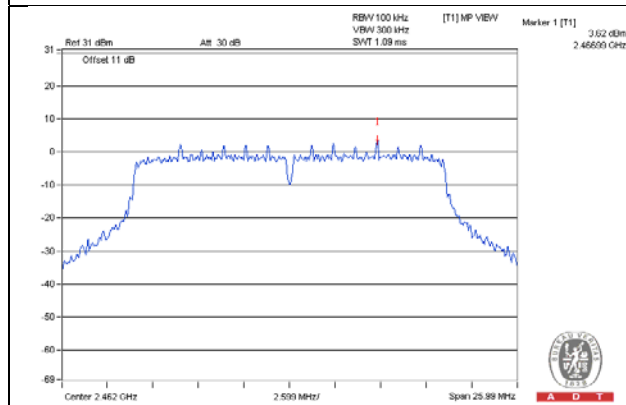
CH 1



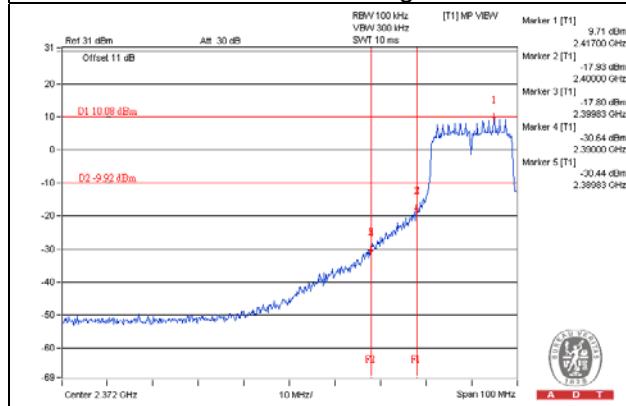
CH 6



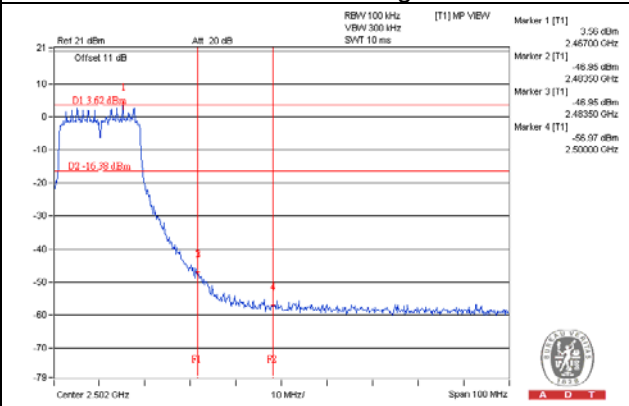
CH 11



CH 1 Band edge

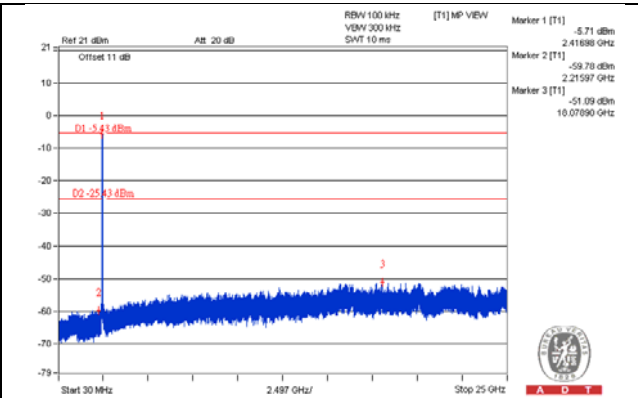
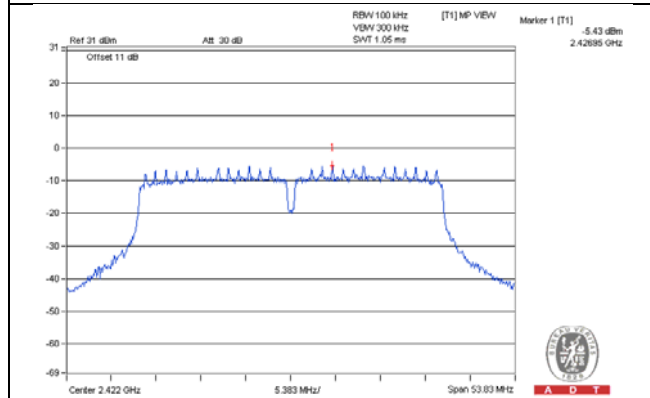


CH 11 Band edge

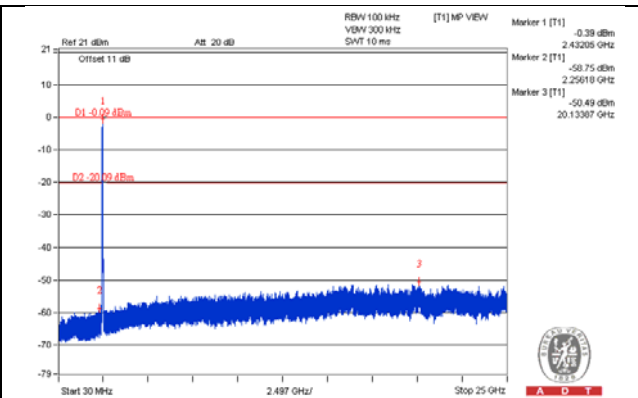
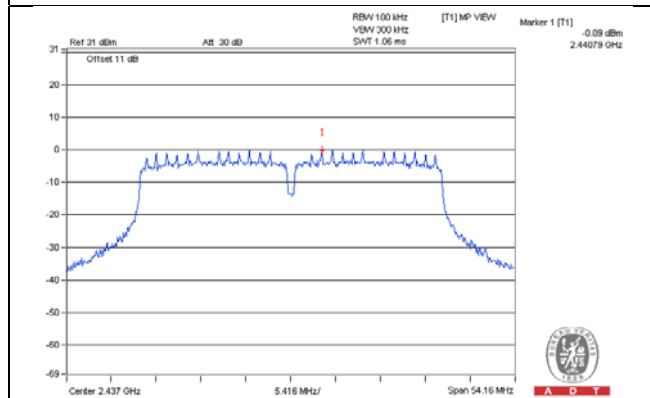


802.11n (HT40)_ CHAIN 0

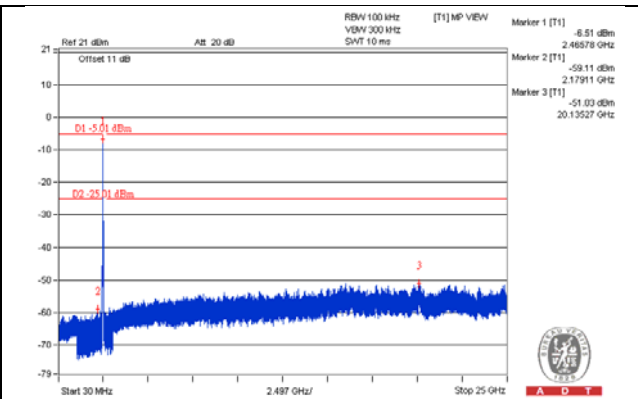
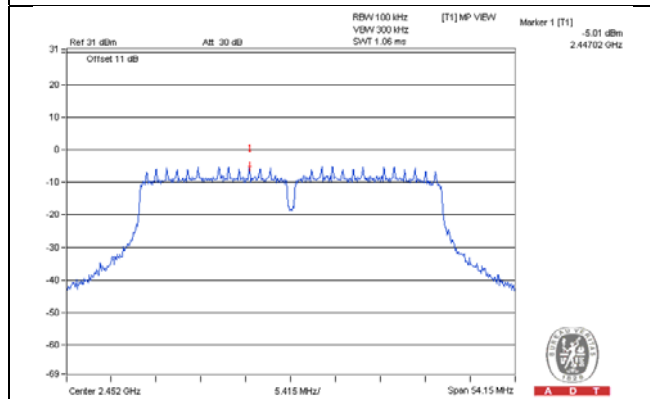
CH 3



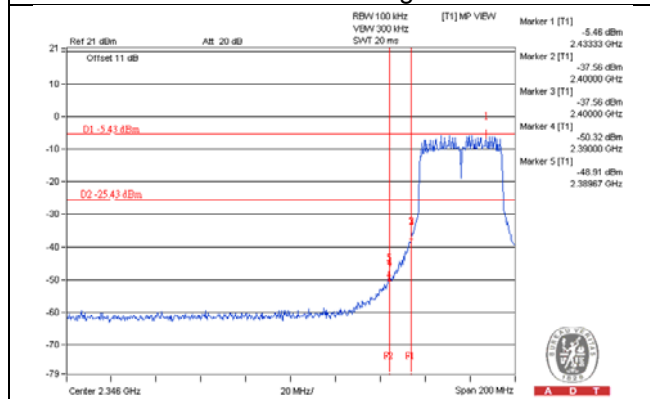
CH 6



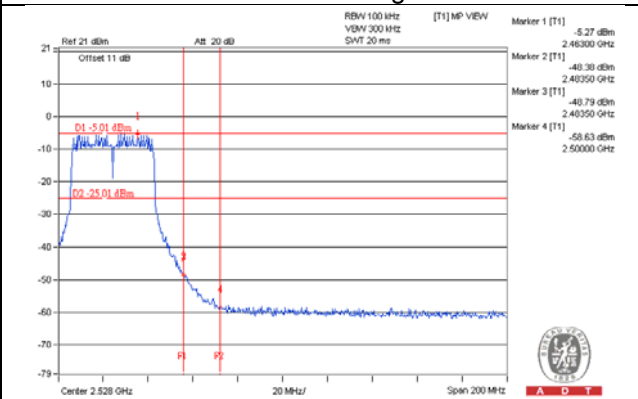
CH 9



CH 3 Band edge

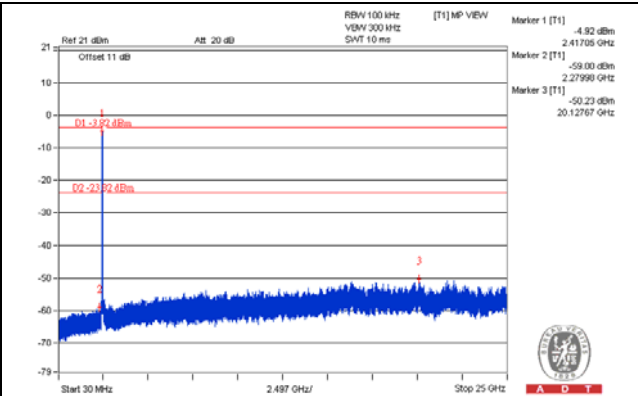
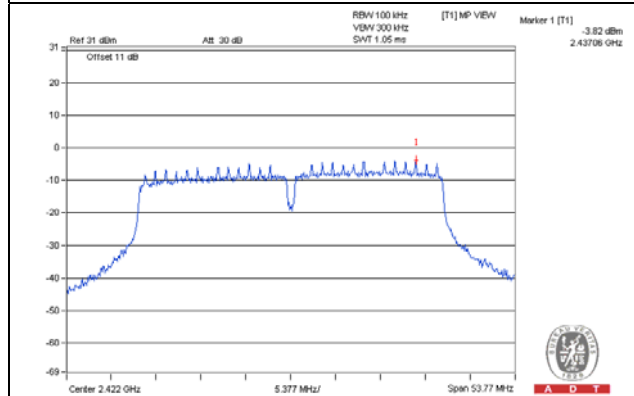


CH 9 Band edge

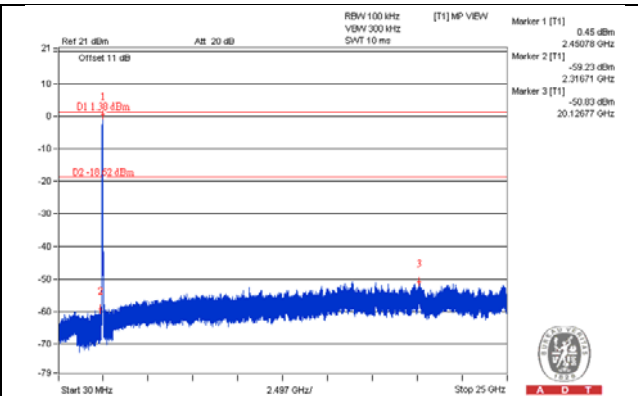
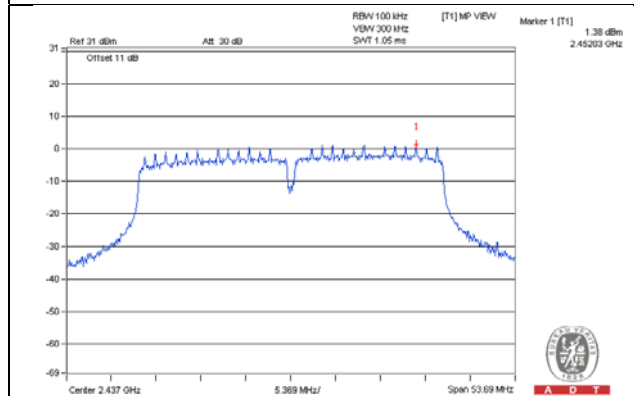


802.11n (HT40)_ CHAIN 1

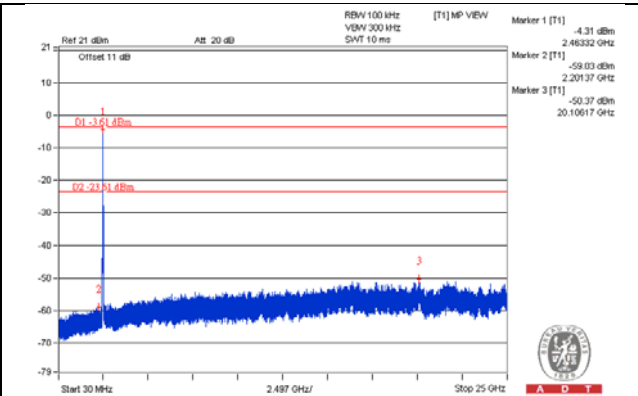
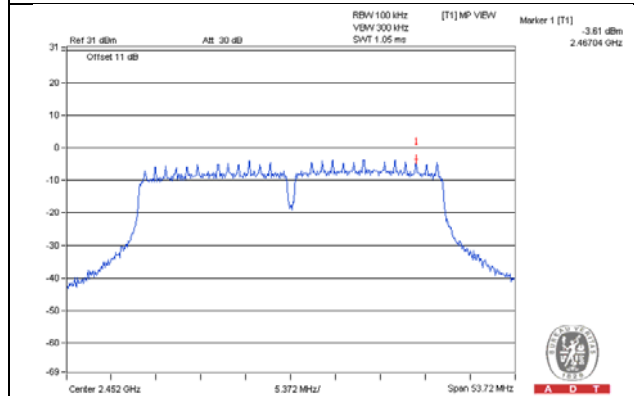
CH 3



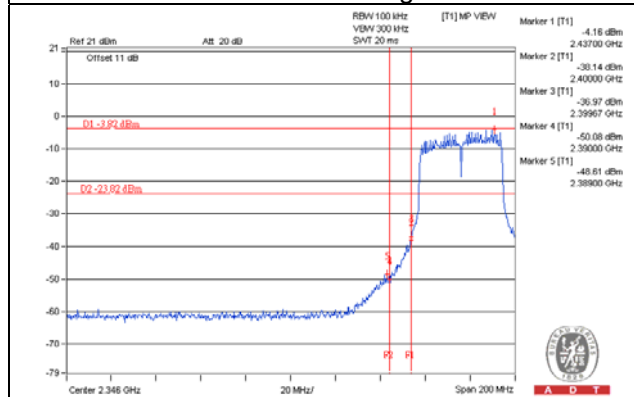
CH 6



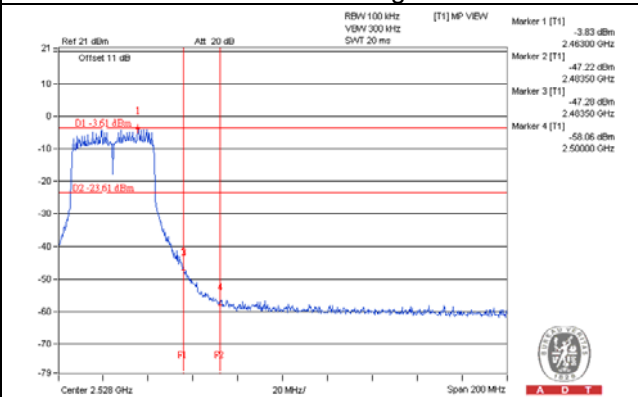
CH 9



CH 3 Band edge

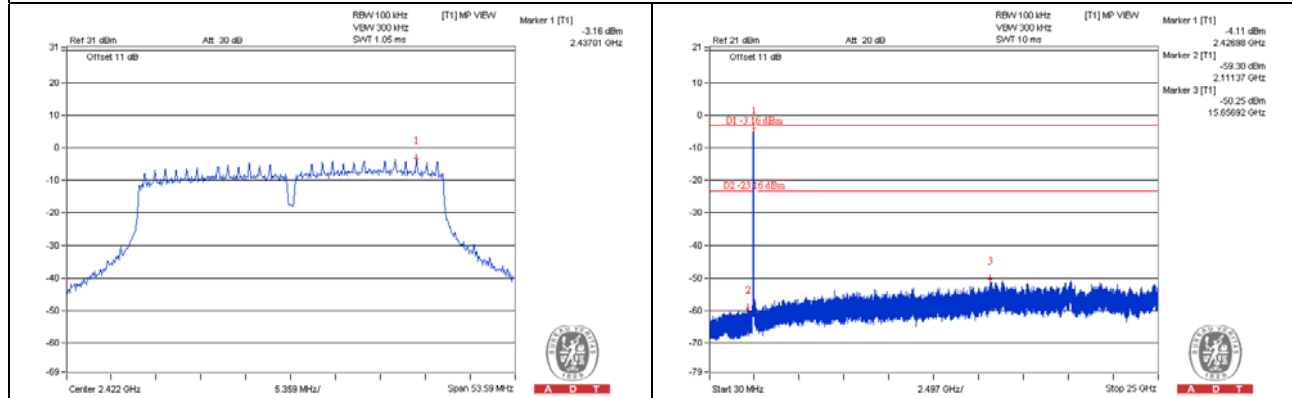


CH 9 Band edge

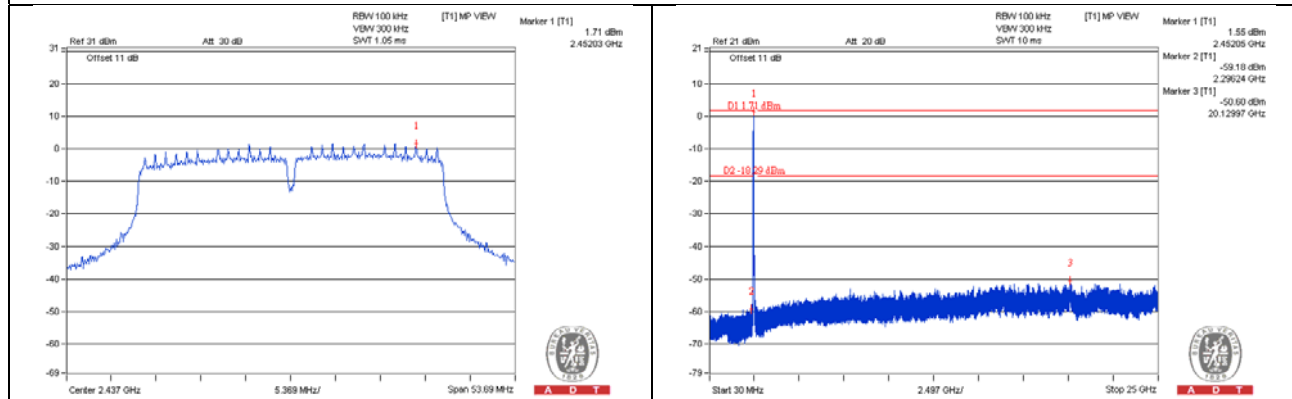


802.11n (HT40)_ CHAIN 2

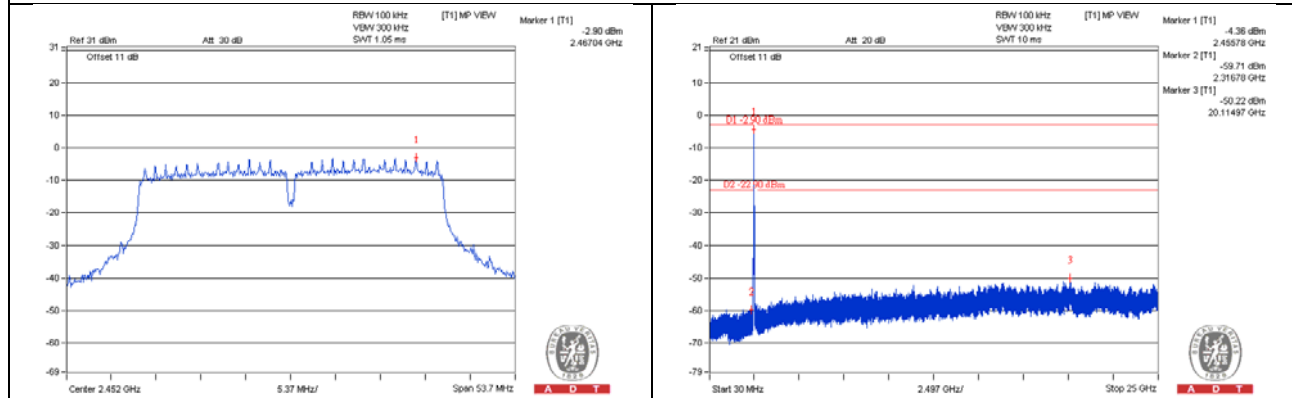
CH 3



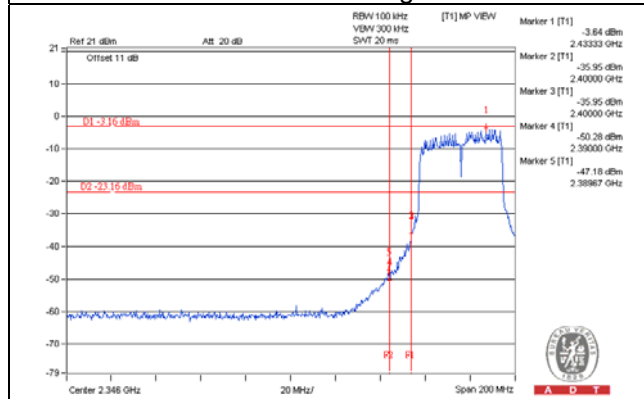
CH 6



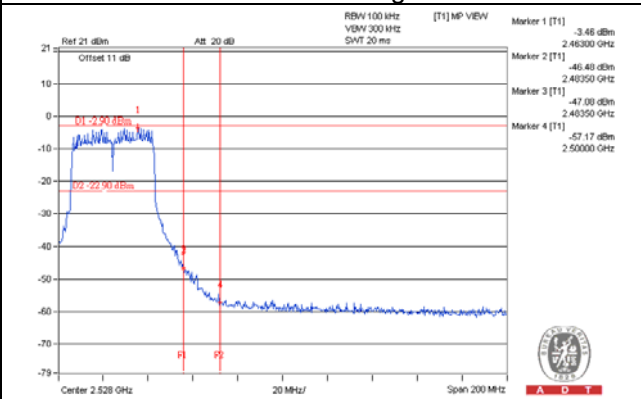
CH 9



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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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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