FCC TEST REPORT (15.247)

REPORT NO.:	RF121016C15
MODEL NO.:	DIR-855L
FCC ID:	KA2IR855LA1
RECEIVED:	Oct. 16, 2012
TESTED:	Nov. 23 ~ Dec. 14, 2012
ISSUED:	Dec. 17, 2012

APPLICANT:	D-Link Corporation
ADDRESS:	17595 Mt. Hermann, Fountain Valley, CA 92708, U.S.A.

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121016C15	Original release.	Dec. 17, 2012

1. CERTIFICATION

PRODUCT:	Wireless N900 Dual Band Gigabit Router / Cloud Router 3000
MODEL NO.:	DIR-855L
BRAND:	D-Link
APPLICANT:	D-Link Corporation
TESTED:	Nov. 23 ~ Dec. 14, 2012
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)**
	ANSI C63.10-2009

The above equipment (model: DIR-855L) 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 :** Dec. 17, 2012
Suntee Liu / Specialist

APPROVED BY : _____ , **DATE :** Dec. 17, 2012
Ken Liu / Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -9.79dB at 0.15000MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.00dB at 2483.50MHz, 5080.00MHz and 5400.00MHz.
15.247(d)	Band Edge Measurement	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 UFL 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	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless N900 Dual Band Gigabit Router / Cloud Router 3000
MODEL NO.	DIR-855L
POWER SUPPLY	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 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
OPERATING FREQUENCY	**2.4GHz:** 2412 ~ 2462MHz **5.0GHz:** 5745 ~ 5825MHz
NUMBER OF CHANNEL	**2.4GHz:** 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) **5.0GHz:** 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	364.608mW for 2412 ~ 2462MHz 303.397mW for 5745 ~ 5825MHz
ANTENNA TYPE	2.4GHz: PCB antenna with 0dBi gain 5.0GHz: PCB antenna with 0dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. The EUT incorporates a MIMO function. The EUT provides three completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	3TX
802.11g	3TX
802.11a	3TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX

2. The EUT consumes power from the following adapters. **Adapter 1** was the worst for the final tests.

ADAPTER 1	
BRAND:	D-Link
MODEL:	CG2412-B
INPUT:	100-240Vac, 0.6A, 50-60Hz
OUTPUT:	12Vdc, 2A
POWER LINE:	1.5m non-shielded cable without core

ADAPTER 2	
BRAND:	D-Link
MODEL:	ADS0271-W120200
INPUT:	100-240Vac, 50-60Hz, 0.6A
OUTPUT:	12Vdc, 2A
POWER LINE:	1.1m non-shielded cable without core

3. The antennas can be controlled by software. The EUT had been pre-tested on the following antenna polarities, and only the worst cases are presented in the report.

	2.4GHz	5Hz
Antenna Polarity	V1, V2, V3	V1, V2, V3
	H1, V2, V3	H1, V2, V3
	V1, H2, V3	V1, H2, V3
	V1, V2, H3	V1, V2, H3
	H1, H2, V3	H1, H2, V3
	V1, H2, H3	V1, H2, H3
	H1, V2, H3	H1, V2, H3
	H1, H2, H3	H1, H2, H3
Worst Case	**V1, V2, V3**	**V1, V2, V3**

4. 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

FOR 2.4GHz:

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

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 (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

FOR 5.0GHz (5745 ~ 5825MHz):

5 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.4GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter 1
B	-	-	√	-	Power from adapter 2

Where **RE≥1G:** Radiated Emission above 1GHz **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.

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 (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (40MHz)	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	802.11g	1 to 11	6	OFDM	BPSK	6.0

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	802.11g	1 to 11	6	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

☒ 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, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
A	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
A	802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	15.0

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 (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 67%RH	120Vac, 60Hz	Sun Lin Antony Lee
RE<1G	24deg. C, 69%RH	120Vac, 60Hz	Antony Lee
PLC	25deg. C, 63%RH	120Vac, 60Hz	Antony Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Martin Lee Frank Liu

FOR 5.0GHz (5745 ~ 5825MHz):

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter 1
B	-	-	√	-	Power from adapter 2

Where **RE≥1G:** Radiated Emission above 1GHz **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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A	802.11n (40MHz)	151 to 159	151, 159	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	802.11n (20MHz)	149 to 165	165	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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11n (20MHz)	149 to 165	165	OFDM	BPSK	7.2

BANDEDGE MEASUREMENT:

☒ 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	802.11a	149 to 165	149, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	7.2
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

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	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
RE<1G	24deg. C, 69%RH	120Vac, 60Hz	Antony Lee
PLC	25deg. C, 63%RH	120Vac, 60Hz	Antony Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Martin Lee Frank Liu

3.3 DESCRIPTION OF SUPPORT UNITS

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

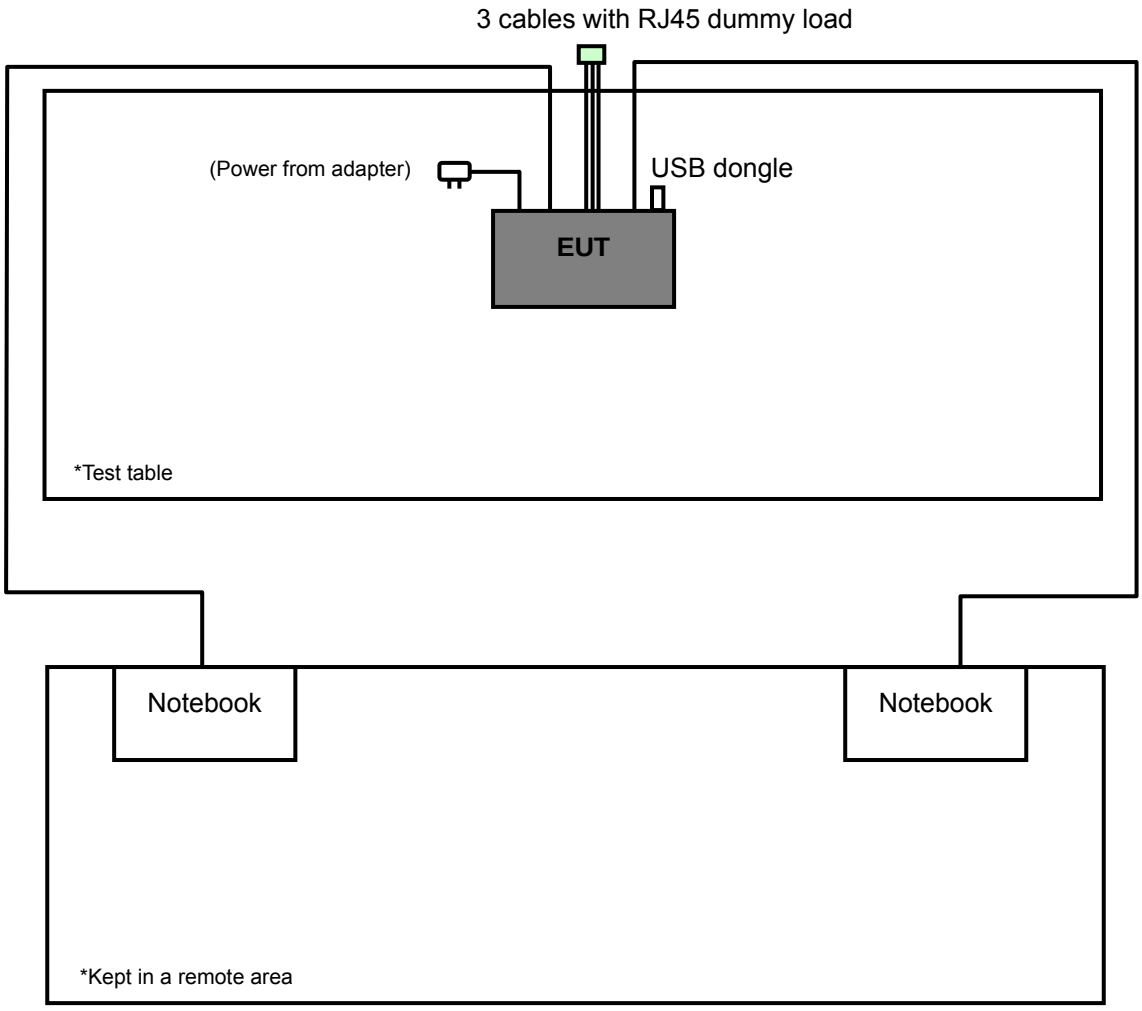
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	USB Dongle	Transcend	V85	538455 4481	NA
2	Dummy Load	NA	NA	NA	NA
3	Notebook	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020
4	Notebook	DELL	D531	CN-0XM006-48643-81U-2973	QDS-BRCM1020

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m RJ45 UTP cable x 3 with load connected to EUT
3	10m RJ45 UTP cable
4	10m RJ45 UTP cable

NOTE:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items 3-4 acted as communication partners to transfer data.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 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 v02
662911 D01 Multiple Transmitter Output v01 r02
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 (FOR 2.4GHz BAND)

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	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 30, 2012	Jan. 29, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 12, 2012	Sep. 11, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 25, 2012	Oct. 24, 2013
High Speed Peak Power Meter	ML2495A	0842014	Apr. 28, 2012	Apr. 27, 2013
Power Sensor	MA2411B	0738404	Apr. 28, 2012	Apr. 27, 2013

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.

3. The test was performed in HwaYa Chamber 9.

4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

5. The FCC Site Registration No. is 460141.

6. The IC Site Registration No. is IC 7450F-4.

4.1.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

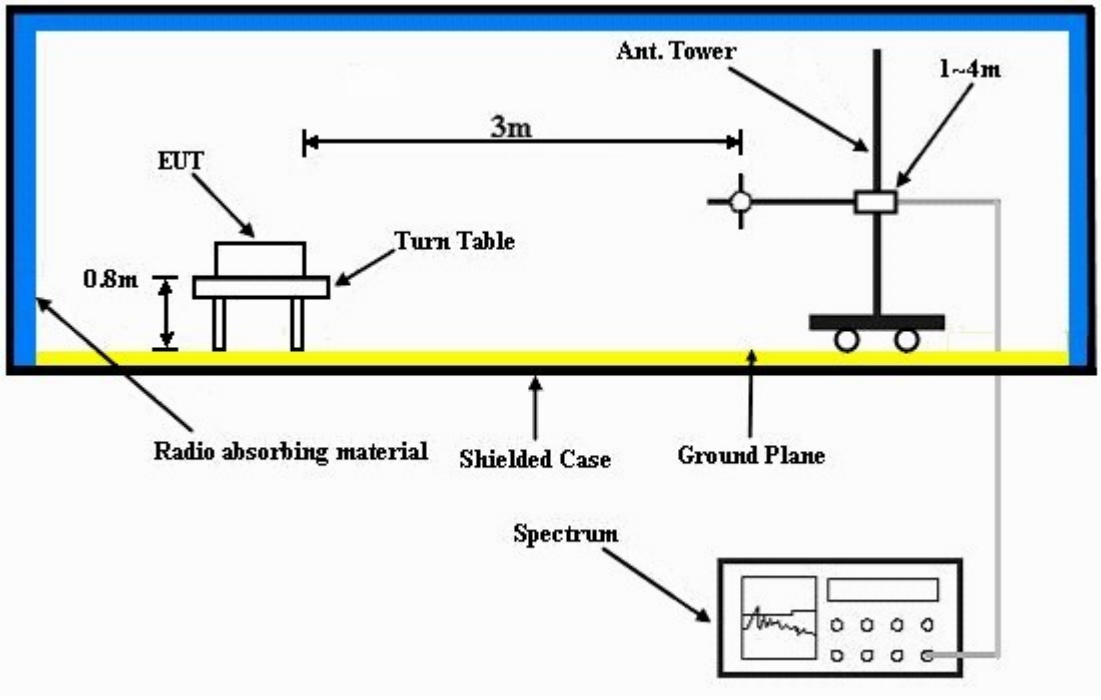
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz and video bandwidth is 300kHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.
b. Prepared two notebooks to act as communication partner and placed them outside of testing area.
c. The communication partners connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partners sent data to EUT by command "PING".
e. The necessary accessories enabled the system in full functions.

4.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA：

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Sun Lin

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	61.2 PK	74.0	-12.8	1.52 H	22	30.30	30.90
2	2390.00	44.2 AV	54.0	-9.8	1.52 H	22	13.30	30.90
3	*2412.00	104.5 PK			1.48 H	32	73.50	31.00
4	*2412.00	99.8 AV			1.48 H	32	68.80	31.00
5	4824.00	50.7 PK	74.0	-23.3	1.28 H	162	13.60	37.10
6	4824.00	46.9 AV	54.0	-7.1	1.28 H	162	9.80	37.10
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	58.5 PK	74.0	-15.5	1.05 V	213	27.60	30.90
2	2390.00	44.8 AV	54.0	-9.2	1.05 V	213	13.90	30.90
3	*2412.00	113.4 PK			1.05 V	213	82.40	31.00
4	*2412.00	108.9 AV			1.05 V	213	77.90	31.00
5	4824.00	55.5 PK	74.0	-18.5	1.00 V	211	18.40	37.10
6	4824.00	52.4 AV	54.0	-1.6	1.00 V	211	15.30	37.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Sun Lin

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	104.8 PK			1.12 H	168	73.70	31.10
2	*2437.00	100.0 AV			1.12 H	168	68.90	31.10
3	4874.00	51.2 PK	74.0	-22.8	1.35 H	158	14.00	37.20
4	4874.00	47.1 AV	54.0	-6.9	1.35 H	158	9.90	37.20
5	7311.00	53.5 PK	74.0	-20.5	1.02 H	232	10.00	43.50
6	7311.00	48.5 AV	54.0	-5.5	1.02 H	232	5.00	43.50
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	115.0 PK			1.00 V	269	83.90	31.10
2	*2437.00	110.8 AV			1.00 V	269	79.70	31.10
3	4874.00	55.4 PK	74.0	-18.6	1.26 V	108	18.20	37.20
4	4874.00	52.2 AV	54.0	-1.8	1.26 V	108	15.00	37.20
5	7311.00	50.2 PK	74.0	-23.8	1.32 V	47	6.70	43.50
6	7311.00	46.6 AV	54.0	-7.4	1.32 V	47	3.10	43.50

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Sun Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.8 PK			1.32 H	28	73.60	31.20
2	*2462.00	100.1 AV			1.32 H	28	68.90	31.20
3	2483.50	62.2 PK	74.0	-11.8	1.37 H	42	30.90	31.30
4	2483.50	45.8 AV	54.0	-8.2	1.37 H	42	14.50	31.30
5	4924.00	54.4 PK	74.0	-19.6	1.05 H	275	17.10	37.30
6	4924.00	49.8 AV	54.0	-4.2	1.05 H	275	12.50	37.30
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	113.0 PK			1.06 V	176	81.80	31.20
2	*2462.00	108.8 AV			1.06 V	176	77.60	31.20
3	**2483.50**	**73.0 PK**	**74.0**	**-1.0**	**1.06 V**	**176**	**41.70**	**31.30**
4	2483.50	46.7 AV	54.0	-7.3	1.06 V	176	15.40	31.30
5	4924.00	56.9 PK	74.0	-17.1	1.05 V	246	19.60	37.30
6	4924.00	52.3 AV	54.0	-1.7	1.05 V	246	15.00	37.30

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.
5. " * ": Fundamental frequency.

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

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	67.1 PK	74.0	-6.9	1.96 H	287	36.20	30.90
2	2390.00	48.9 AV	54.0	-5.1	1.96 H	287	18.00	30.90
3	*2412.00	106.8 PK			1.96 H	287	75.80	31.00
4	*2412.00	96.7 AV			1.96 H	287	65.70	31.00
5	4824.00	55.5 PK	74.0	-18.5	1.25 H	107	18.40	37.10
6	4824.00	43.2 AV	54.0	-10.8	1.25 H	107	6.10	37.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.2 PK	74.0	-3.8	1.06 V	48	39.30	30.90
2	2390.00	52.5 AV	54.0	-1.5	1.06 V	48	21.60	30.90
3	*2412.00	111.4 PK			1.06 V	48	80.40	31.00
4	*2412.00	101.3 AV			1.06 V	48	70.30	31.00
5	4824.00	57.4 PK	74.0	-16.6	1.00 V	128	20.30	37.10
6	4824.00	44.7 AV	54.0	-9.3	1.00 V	128	7.60	37.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Sun Lin

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	2288.00	55.9 PK	74.0	-18.1	1.04 H	152	25.40	30.50
2	2288.00	46.4 AV	54.0	-7.6	1.04 H	152	15.90	30.50
3	*2437.00	109.5 PK			1.35 H	95	78.40	31.10
4	*2437.00	97.5 AV			1.35 H	95	66.40	31.10
5	4874.00	54.8 PK	74.0	-19.2	1.34 H	142	17.60	37.20
6	4874.00	42.0 AV	54.0	-12.0	1.34 H	142	4.80	37.20
7	7311.00	66.6 PK	74.0	-7.4	1.46 H	125	23.10	43.50
8	7311.00	52.5 AV	54.0	-1.5	1.46 H	125	9.00	43.50
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	2288.00	60.9 PK	74.0	-13.1	1.06 V	318	30.40	30.50
2	2288.00	51.6 AV	54.0	-2.4	1.06 V	318	21.10	30.50
3	*2437.00	117.5 PK			1.05 V	302	86.40	31.10
4	*2437.00	106.8 AV			1.05 V	302	75.70	31.10
5	4874.00	62.3 PK	74.0	-11.7	1.00 V	47	25.10	37.20
6	4874.00	46.7 AV	54.0	-7.3	1.00 V	47	9.50	37.20
7	7311.00	51.2 PK	74.0	-22.8	1.04 V	189	7.70	43.50
8	7311.00	42.8 AV	54.0	-11.2	1.04 V	189	-0.70	43.50

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

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	107.0 PK			1.05 H	287	75.80	31.20
2	*2462.00	96.6 AV			1.05 H	287	65.40	31.20
3	2483.50	64.6 PK	74.0	-9.4	1.00 H	287	33.30	31.30
4	2483.50	49.6 AV	54.0	-4.4	1.00 H	287	18.30	31.30
5	4924.00	53.9 PK	74.0	-20.1	1.28 H	174	16.60	37.30
6	4924.00	41.0 AV	54.0	-13.0	1.28 H	174	3.70	37.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.8 PK			1.00 V	41	80.60	31.20
2	*2462.00	101.3 AV			1.00 V	41	70.10	31.20
3	2483.50	66.6 PK	74.0	-7.4	1.05 V	41	35.30	31.30
4	2483.50	52.8 AV	54.0	-1.2	1.05 V	41	21.50	31.30
5	4924.00	55.6 PK	74.0	-18.4	1.00 V	330	18.30	37.30
6	4924.00	42.3 AV	54.0	-11.7	1.00 V	330	5.00	37.30

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.
5. " * ": Fundamental frequency.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.2 PK	74.0	-14.8	1.00 H	128	28.30	30.90
2	2390.00	47.6 AV	54.0	-6.4	1.00 H	128	16.70	30.90
3	*2412.00	106.5 PK			1.00 H	128	75.50	31.00
4	*2412.00	96.5 AV			1.00 H	128	65.50	31.00
5	4824.00	55.1 PK	74.0	-18.9	1.29 H	106	18.00	37.10
6	4824.00	42.2 AV	54.0	-11.8	1.29 H	106	5.10	37.10
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	69.2 PK	74.0	-4.8	1.32 V	45	38.30	30.90
2	2390.00	52.7 AV	54.0	-1.3	1.32 V	45	21.80	30.90
3	*2412.00	111.9 PK			1.32 V	45	80.90	31.00
4	*2412.00	101.0 AV			1.32 V	45	70.00	31.00
5	4824.00	58.6 PK	74.0	-15.4	1.02 V	128	21.50	37.10
6	4824.00	44.2 AV	54.0	-9.8	1.02 V	128	7.10	37.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Sun Lin

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	2288.00	55.4 PK	74.0	-18.6	1.09 H	165	24.90	30.50
2	2288.00	46.2 AV	54.0	-7.8	1.09 H	165	15.70	30.50
3	*2437.00	109.2 PK			1.39 H	102	78.10	31.10
4	*2437.00	97.1 AV			1.39 H	102	66.00	31.10
5	4874.00	54.6 PK	74.0	-19.4	1.22 H	152	17.40	37.20
6	4874.00	41.8 AV	54.0	-12.2	1.22 H	152	4.60	37.20
7	7311.00	67.7 PK	74.0	-6.3	1.42 H	123	24.20	43.50
8	7311.00	52.6 AV	54.0	-1.4	1.42 H	123	9.10	43.50
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	2288.00	60.2 PK	74.0	-13.8	1.04 V	298	29.70	30.50
2	2288.00	50.8 AV	54.0	-3.2	1.04 V	298	20.30	30.50
3	*2437.00	117.2 PK			1.01 V	299	86.10	31.10
4	*2437.00	106.5 AV			1.01 V	299	75.40	31.10
5	4874.00	61.8 PK	74.0	-12.2	1.05 V	52	24.60	37.20
6	4874.00	46.9 AV	54.0	-7.1	1.05 V	52	9.70	37.20
7	7311.00	52.2 PK	74.0	-21.8	1.08 V	205	8.70	43.50
8	7311.00	43.2 AV	54.0	-10.8	1.08 V	205	-0.30	43.50

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.0 PK			1.13 H	287	74.80	31.20
2	*2462.00	95.9 AV			1.13 H	287	64.70	31.20
3	2483.50	64.2 PK	74.0	-9.8	1.00 H	287	32.90	31.30
4	2483.50	48.8 AV	54.0	-5.2	1.00 H	287	17.50	31.30
5	4924.00	52.8 PK	74.0	-21.2	1.05 H	171	15.50	37.30
6	4924.00	39.0 AV	54.0	-15.0	1.05 H	171	1.70	37.30
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	110.1 PK			1.08 V	42	78.90	31.20
2	*2462.00	100.6 AV			1.08 V	42	69.40	31.20
3	2483.50	70.0 PK	74.0	-4.0	1.08 V	42	38.70	31.30
4	2483.50	52.5 AV	54.0	-1.5	1.08 V	42	21.20	31.30
5	4924.00	54.5 PK	74.0	-19.5	1.00 V	327	17.20	37.30
6	4924.00	42.0 AV	54.0	-12.0	1.00 V	327	4.70	37.30

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.
5. " * ": Fundamental frequency.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	1.49 H	318	27.30	30.90
2	2390.00	46.9 AV	54.0	-7.1	1.49 H	318	16.00	30.90
3	*2422.00	97.1 PK			1.49 H	318	66.00	31.10
4	*2422.00	86.9 AV			1.49 H	318	55.80	31.10
5	4844.00	46.8 PK	74.0	-27.2	1.00 H	2	9.70	37.10
6	4844.00	34.2 AV	54.0	-19.8	1.00 H	2	-2.90	37.10
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	63.9 PK	74.0	-10.1	1.08 V	44	33.00	30.90
2	2390.00	52.8 AV	54.0	-1.2	1.08 V	44	21.90	30.90
3	*2422.00	103.4 PK			1.08 V	44	72.30	31.10
4	*2422.00	93.9 AV			1.08 V	44	62.80	31.10
5	4844.00	46.9 PK	74.0	-27.1	1.00 V	297	9.80	37.10
6	4844.00	35.9 AV	54.0	-18.1	1.00 V	297	-1.20	37.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

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	2288.00	55.3 PK	74.0	-18.7	1.08 H	156	24.80	30.50
2	2288.00	45.6 AV	54.0	-8.4	1.08 H	156	15.10	30.50
3	2390.00	57.0 PK	74.0	-17.0	1.31 H	102	26.10	30.90
4	2390.00	46.0 AV	54.0	-8.0	1.31 H	102	15.10	30.90
5	*2437.00	100.4 PK			1.35 H	94	69.30	31.10
6	*2437.00	89.7 AV			1.35 H	94	58.60	31.10
7	4874.00	46.3 PK	74.0	-27.7	1.34 H	151	9.10	37.20
8	4874.00	33.4 AV	54.0	-20.6	1.34 H	151	-3.80	37.20
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	2288.00	60.5 PK	74.0	-13.5	1.06 V	302	30.00	30.50
2	2288.00	51.8 AV	54.0	-2.2	1.06 V	302	21.30	30.50
3	2390.00	67.4 PK	74.0	-6.6	1.01 V	305	36.50	30.90
4	2390.00	52.5 AV	54.0	-1.5	1.01 V	305	21.60	30.90
5	*2437.00	109.8 PK			1.01 V	307	78.70	31.10
6	*2437.00	97.5 AV			1.01 V	307	66.40	31.10
7	4874.00	53.1 PK	74.0	-20.9	1.21 V	274	15.90	37.20
8	4874.00	39.2 AV	54.0	-14.8	1.21 V	274	2.00	37.20

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 67%RH	TESTED BY	Antony Lee

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	98.9 PK			1.72 H	286	67.70	31.20
2	*2452.00	89.0 AV			1.72 H	286	57.80	31.20
3	2483.50	61.4 PK	74.0	-12.6	1.72 H	286	30.10	31.30
4	2483.50	49.2 AV	54.0	-4.8	1.72 H	286	17.90	31.30
5	4904.00	45.5 PK	74.0	-28.5	1.00 H	36	8.30	37.20
6	4904.00	34.1 AV	54.0	-19.9	1.00 H	36	-3.10	37.20
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	*2452.00	102.0 PK			1.31 V	39	70.80	31.20
2	*2452.00	92.4 AV			1.31 V	39	61.20	31.20
3	2483.50	65.2 PK	74.0	-8.8	1.31 V	39	33.90	31.30
4	2483.50	52.8 AV	54.0	-1.2	1.31 V	39	21.50	31.30
5	4904.00	48.3 PK	74.0	-25.7	1.00 V	15	11.10	37.20
6	4904.00	34.9 AV	54.0	-19.1	1.00 V	15	-2.30	37.20

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：802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 69%RH	TESTED BY	Antony Lee

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	101.78	36.7 QP	43.5	-6.8	2.00 H	110	27.20	9.50
2	196.84	35.3 QP	43.5	-8.2	2.00 H	112	23.90	11.40
3	266.68	29.4 QP	46.0	-16.6	1.00 H	272	15.80	13.60
4	499.48	31.9 QP	46.0	-14.1	1.25 H	2	11.80	20.10
5	625.58	35.5 QP	46.0	-10.5	1.25 H	35	13.00	22.50
6	875.84	34.5 QP	46.0	-11.5	1.25 H	35	8.30	26.20
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	45.52	36.9 QP	40.0	-3.1	1.00 V	189	23.60	13.30
2	101.78	40.3 QP	43.5	-3.2	1.25 V	118	30.80	9.50
3	191.02	35.1 QP	43.5	-8.4	1.00 V	216	23.30	11.80
4	375.32	34.7 QP	46.0	-11.3	1.50 V	42	17.80	16.90
5	625.58	39.2 QP	46.0	-6.8	1.50 V	17	16.70	22.50
6	825.40	41.3 QP	46.0	-4.7	1.25 V	8	15.70	25.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
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

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.

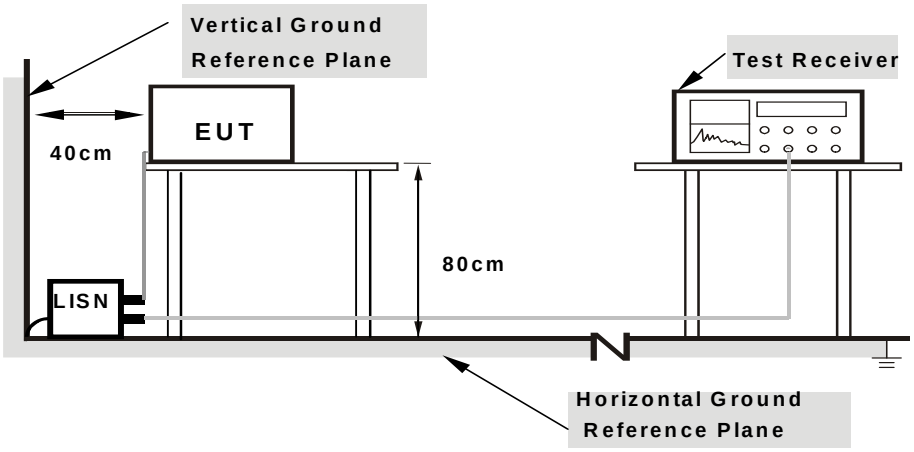
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

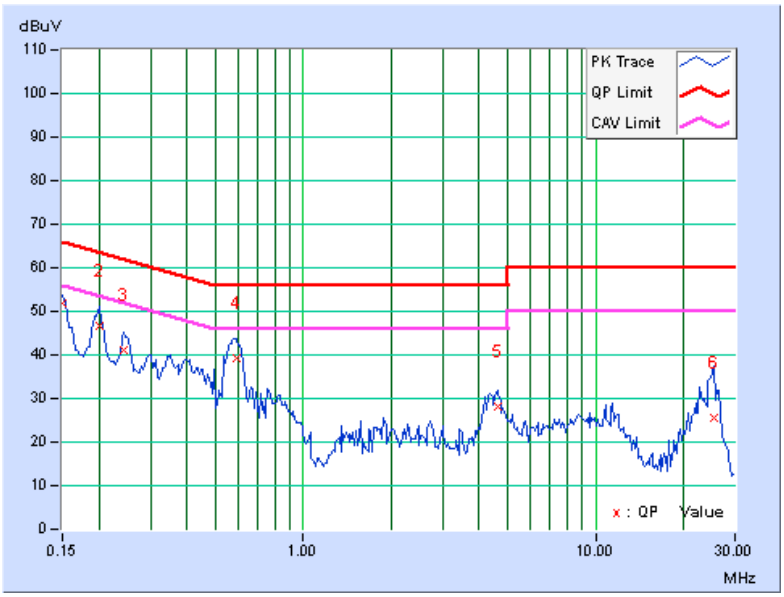
CONDUCTED WORST-CASE DATA：802.11g

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15000**	**0.15**	**51.83**	**46.06**	**51.98**	**46.21**	**66.00**	**56.00**	**-14.02**	**-9.79**
2	0.20078	0.15	46.44	41.82	46.59	41.97	63.58	53.58	-16.99	-11.61
3	0.24375	0.15	40.83	35.85	40.98	36.00	61.97	51.97	-20.98	-15.96
4	0.59141	0.18	39.17	33.80	39.35	33.98	56.00	46.00	-16.65	-12.02
5	4.63281	0.35	27.77	17.07	28.12	17.42	56.00	46.00	-27.88	-28.58
6	25.32031	0.58	25.01	18.89	25.59	19.47	60.00	50.00	-34.41	-30.53

REMARKS:

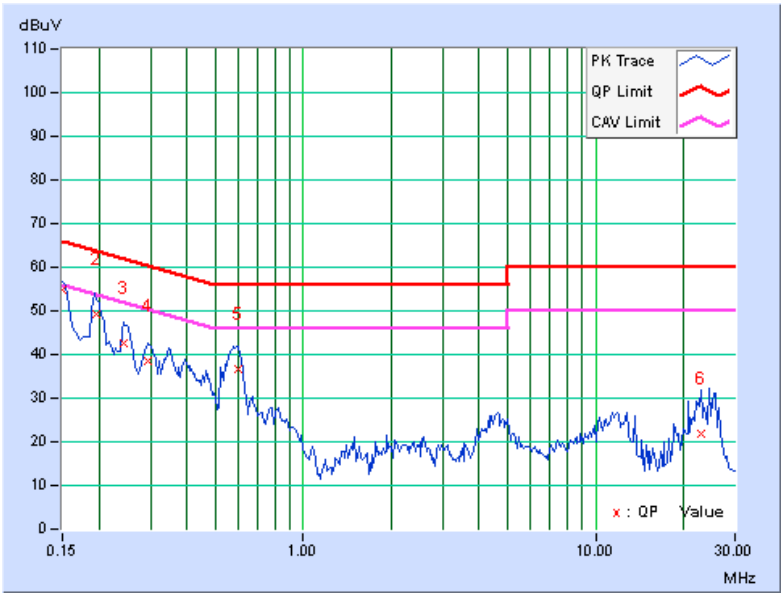
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.13	54.52	46.02	54.65	46.15	66.00	56.00	-11.35	-9.85
2	0.19679	0.14	49.28	41.90	49.42	42.04	63.74	53.74	-14.33	-11.71
3	0.24375	0.14	42.53	34.87	42.67	35.01	61.97	51.97	-19.29	-16.95
4	0.29453	0.15	38.34	31.13	38.49	31.28	60.40	50.40	-21.91	-19.12
5	0.59922	0.17	36.35	31.40	36.52	31.57	56.00	46.00	-19.48	-14.43
6	22.91406	0.67	21.31	15.89	21.98	16.56	60.00	50.00	-38.02	-33.44

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

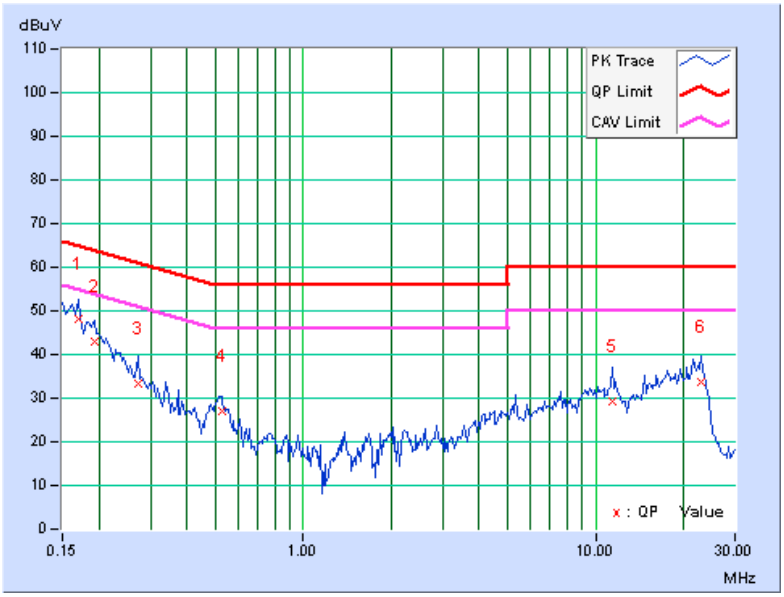


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.15	47.98	32.18	48.13	32.33	64.98	54.98	-16.85	-22.65
2	0.19297	0.15	42.86	28.50	43.01	28.65	63.91	53.91	-20.90	-25.26
3	0.27109	0.16	33.03	17.15	33.19	17.31	61.08	51.08	-27.90	-33.78
4	0.52500	0.17	26.89	19.70	27.06	19.87	56.00	46.00	-28.94	-26.13
5	11.35938	0.46	28.91	22.84	29.37	23.30	60.00	50.00	-30.63	-26.70
6	22.96094	0.60	33.21	28.67	33.81	29.27	60.00	50.00	-26.19	-20.73

REMARKS:

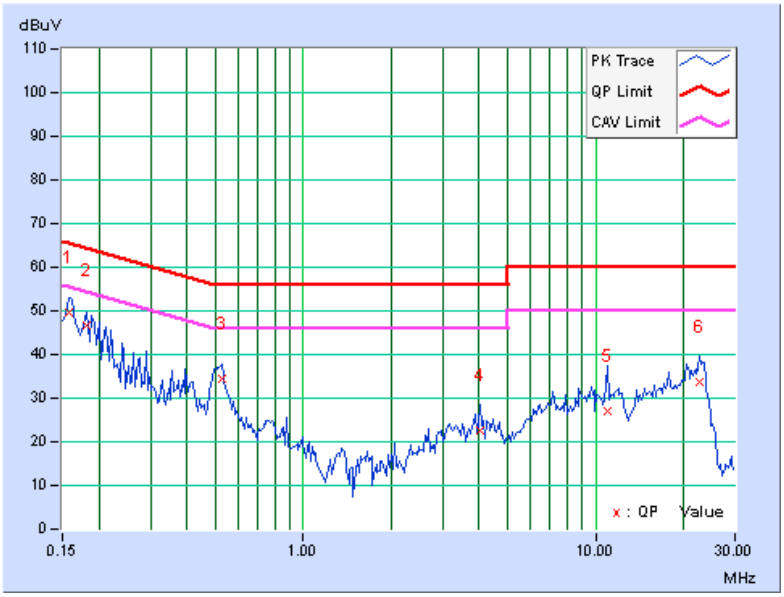
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.13	49.64	36.06	49.77	36.19	65.58	55.58	-15.81	-19.39
2	0.18125	0.14	46.39	33.19	46.53	33.33	64.43	54.43	-17.90	-21.10
3	0.52500	0.17	34.41	27.48	34.58	27.65	56.00	46.00	-21.42	-18.35
4	4.05469	0.35	22.25	14.77	22.60	15.12	56.00	46.00	-33.40	-30.88
5	10.99219	0.50	26.47	20.29	26.97	20.79	60.00	50.00	-33.03	-29.21
6	22.81250	0.67	33.02	28.56	33.69	29.23	60.00	50.00	-26.31	-20.77

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.

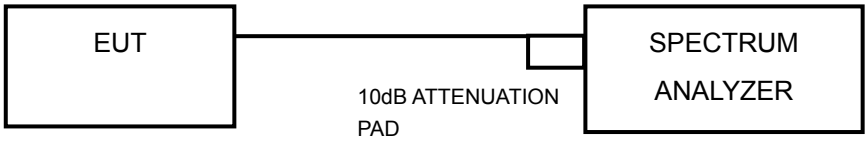


4.3 6dB BANDWIDTH MEASUREMENT

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) = approximately 1% of the emission bandwidth
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 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 RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	6.10	6.13	5.62	0.5	PASS
6	2437	5.64	6.61	6.14	0.5	PASS
11	2462	6.10	5.61	6.04	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	16.42	16.44	16.46	0.5	PASS
6	2437	16.43	16.42	16.43.	0.5	PASS
11	2462	16.44	16.42	16.45	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
1	2412	17.67	17.62	17.64	0.5	PASS
6	2437	17.65	17.34	17.62	0.5	PASS
11	2462	17.66	17.63	17.63	0.5	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
3	2422	36.19	36.41	36.44	0.5	PASS
6	2437	36.43	35.74	36.14	0.5	PASS
9	2452	36.45	36.23	36.13	0.5	PASS

4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

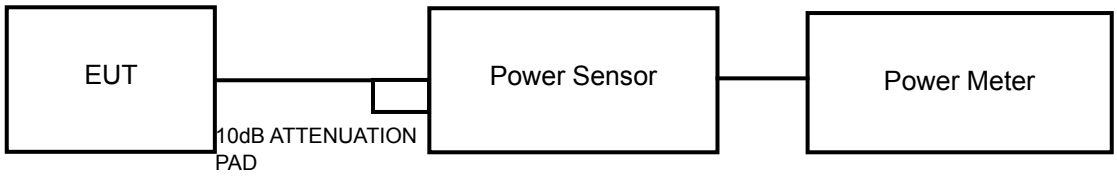
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v01r02 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 power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak 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

802.11b

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	16.99	16.46	17.07	145.195	21.62	30	PASS
6	2437	17.70	18.71	18.76	208.348	23.19	30	PASS
11	2462	18.31	17.86	17.84	189.672	22.78	30	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	16.99	16.40	17.57	150.803	21.78	30	PASS
6	2437	21.02	20.41	21.08	**364.608**	25.62	30	PASS
11	2462	17.11	17.18	17.98	166.450	22.21	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
1	2412	17.52	17.09	18.03	171.195	22.33	30	PASS
6	2437	20.86	20.55	20.91	358.710	25.55	30	PASS
11	2462	17.62	16.95	18.04	171.035	22.33	30	PASS

802.11n (40MHz)

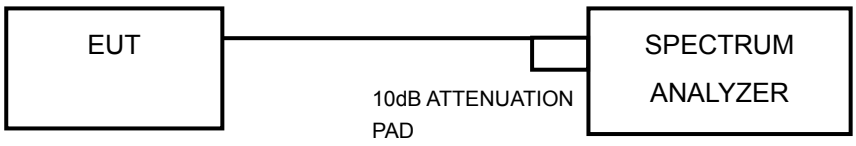
CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
3	2422	12.97	12.57	13.41	59.815	17.77	30	PASS
6	2437	16.05	15.66	15.55	112.977	20.53	30	PASS
9	2452	12.75	12.26	12.47	53.323	17.27	30	PASS

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 the RBW = 3 kHz, VBW =10 kHz, Detector = peak.
b. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
c. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-9.02	4.77	-4.25	8	PASS
	6	2437	-8.82	4.77	-4.05	8	PASS
	11	2462	-8.29	4.77	-3.52	8	PASS
1	1	2412	-10.12	4.77	-5.35	8	PASS
	6	2437	-7.96	4.77	-3.19	8	PASS
	11	2462	-8.63	4.77	-3.86	8	PASS
2	1	2412	-9.27	4.77	-4.50	8	PASS
	6	2437	-6.99	4.77	-2.22	8	PASS
	11	2462	-8.30	4.77	-3.53	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

802.11g

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-13.73	4.77	-8.96	8	PASS
	6	2437	-10.16	4.77	-5.39	8	PASS
	11	2462	-14.48	4.77	-9.71	8	PASS
1	1	2412	-13.71	4.77	-8.94	8	PASS
	6	2437	-10.49	4.77	-5.72	8	PASS
	11	2462	-13.95	4.77	-9.18	8	PASS
2	1	2412	-14.48	4.77	-9.71	8	PASS
	6	2437	-10.65	4.77	-5.88	8	PASS
	11	2462	-13.51	4.77	-8.74	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

802.11n (20MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-14.27	4.77	-9.50	8	PASS
	6	2437	-10.16	4.77	-5.39	8	PASS
	11	2462	-13.03	4.77	-8.26	8	PASS
1	1	2412	-14.72	4.77	-9.95	8	PASS
	6	2437	-11.17	4.77	-6.40	8	PASS
	11	2462	-14.82	4.77	-10.05	8	PASS
2	1	2412	-13.49	4.77	-8.72	8	PASS
	6	2437	-10.75	4.77	-5.98	8	PASS
	11	2462	-12.80	4.77	-8.03	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

802.11n (40MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-22.28	4.77	-17.51	8	PASS
	6	2437	-19.16	4.77	-14.39	8	PASS
	9	2452	-21.83	4.77	-17.06	8	PASS
1	3	2422	-22.60	4.77	-17.83	8	PASS
	6	2437	-19.44	4.77	-14.67	8	PASS
	9	2452	-22.76	4.77	-17.99	8	PASS
2	3	2422	-21.46	4.77	-16.69	8	PASS
	6	2437	-19.54	4.77	-14.77	8	PASS
	9	2452	-21.71	4.77	-16.94	8	PASS

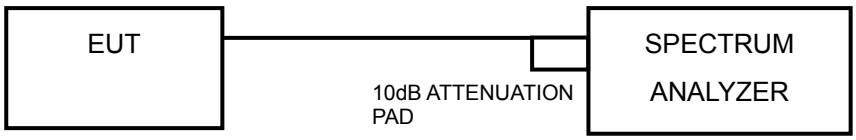
NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below –30dB 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. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

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 conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit. Only worst data of each operating mode is presented.

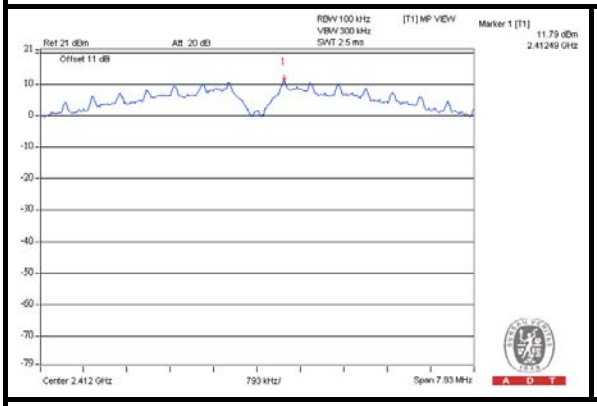
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

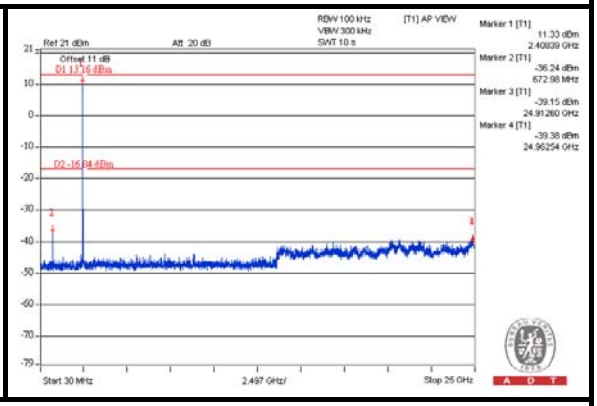
4.6.8 TEST RESULTS

802.11b

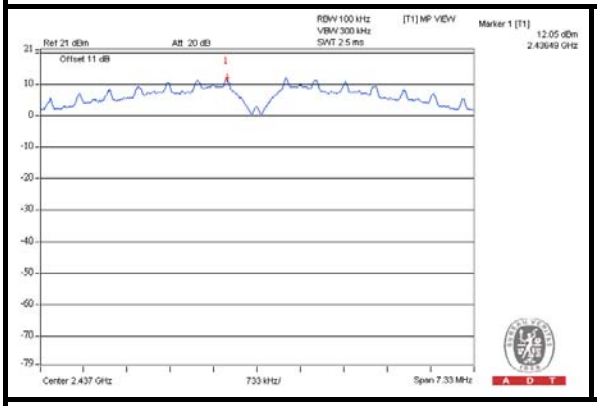
CHAIN 0

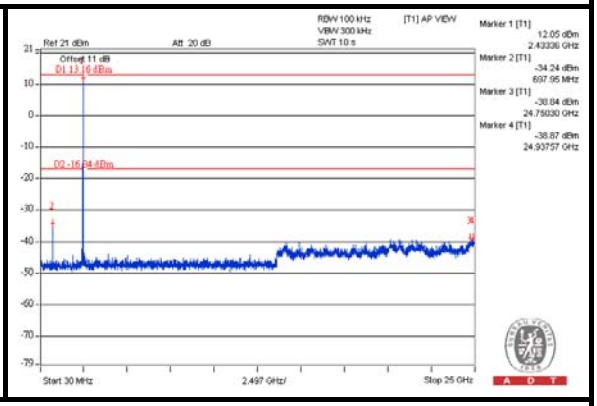
CH 1



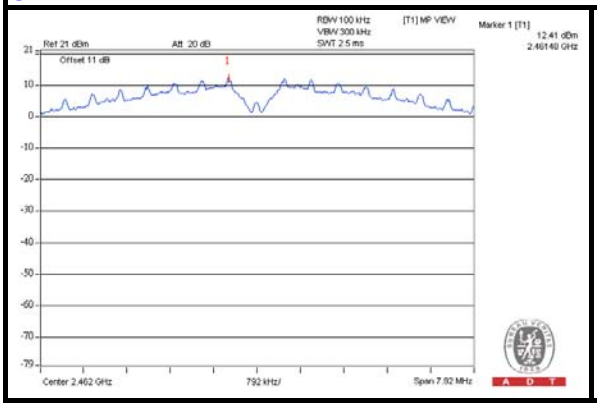


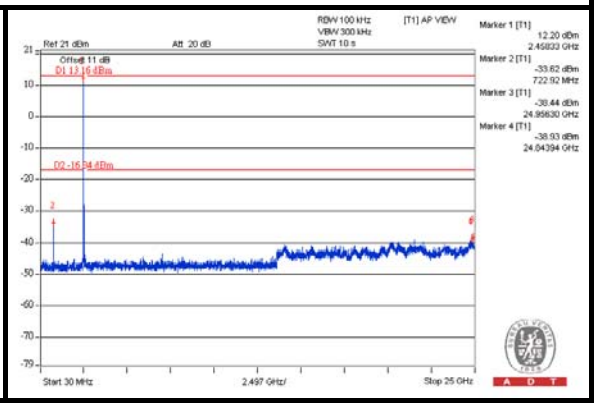
CH 6





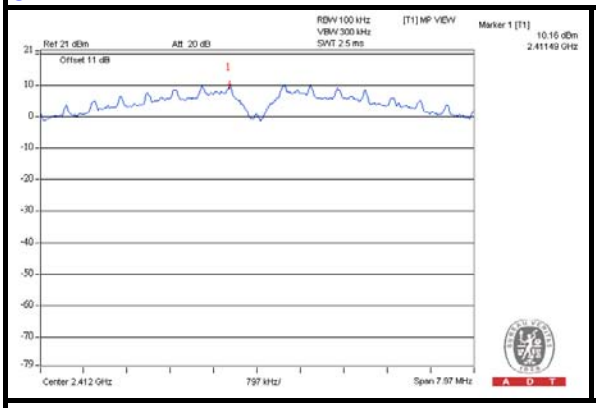
CH 11

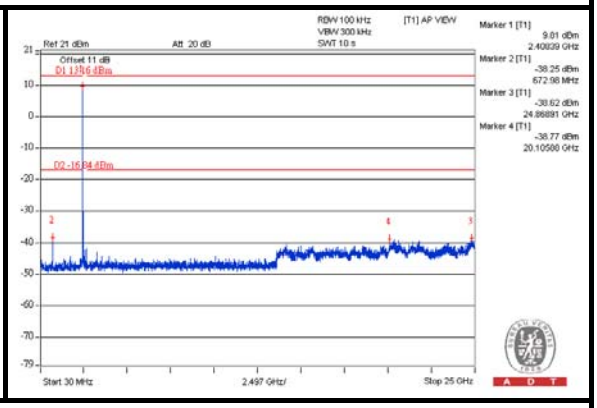




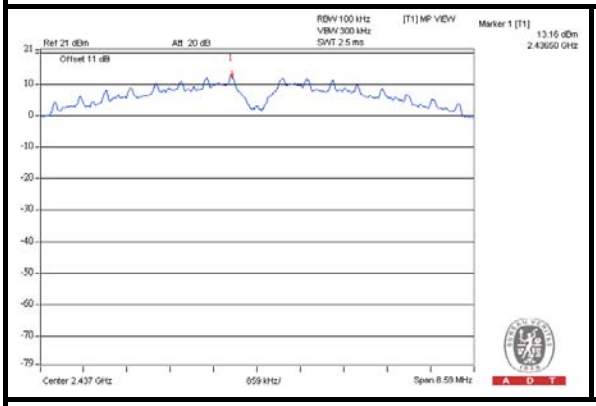
CHAIN 1

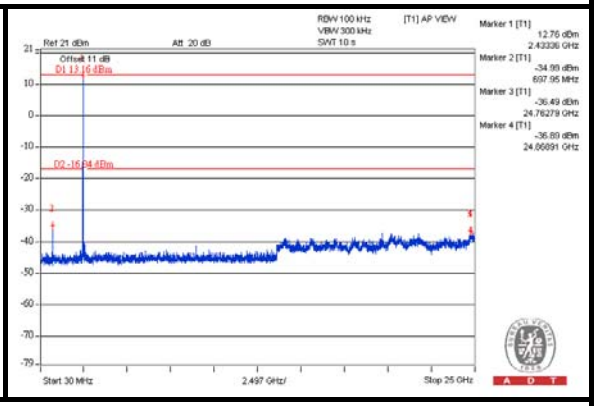
CH 1



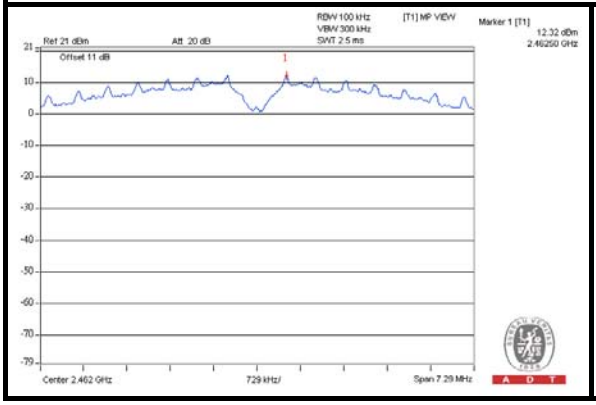


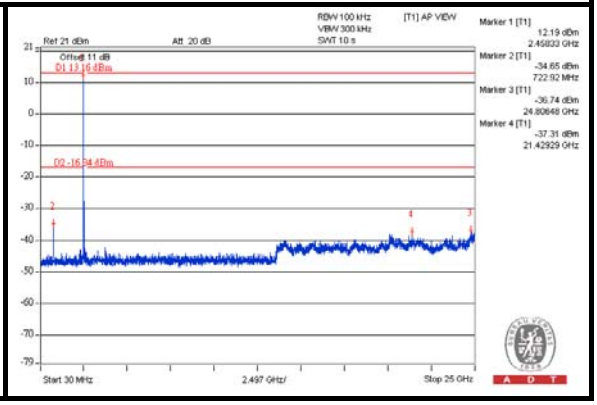
CH 6





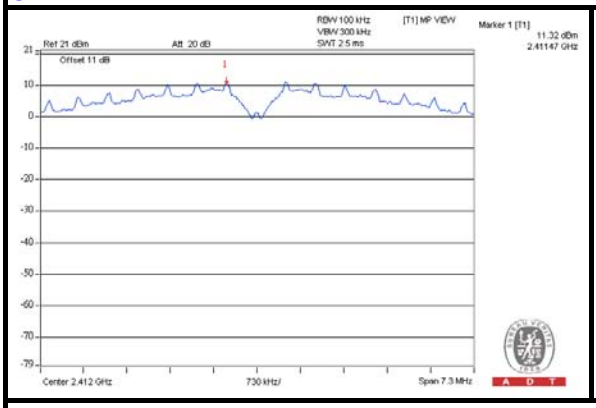
CH 11

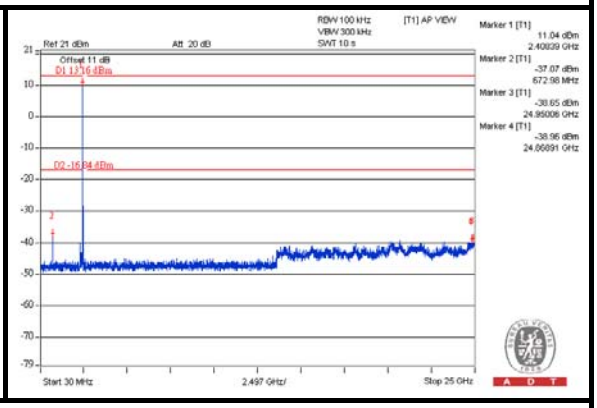




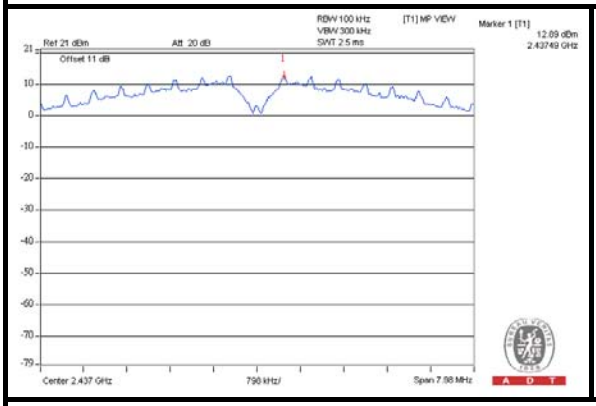
CHAIN 2

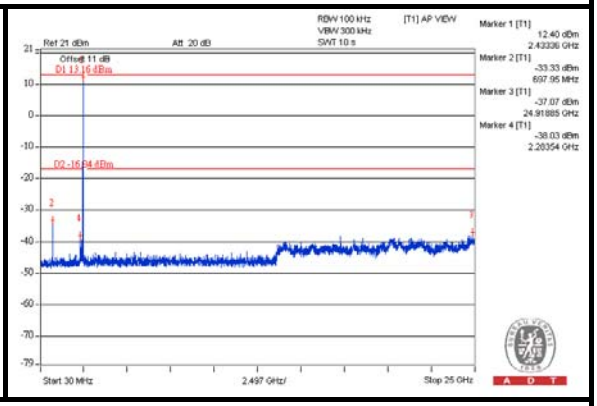
CH 1



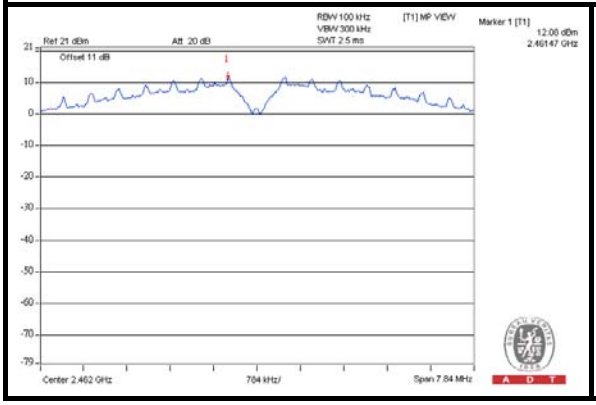


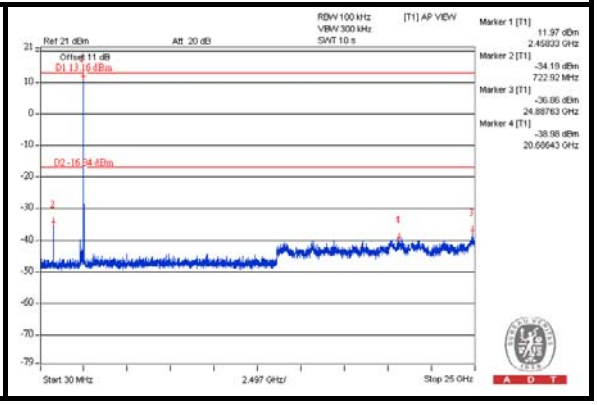
CH 6





CH 11

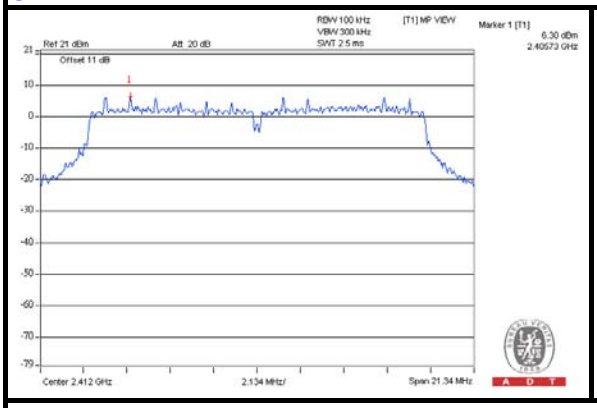


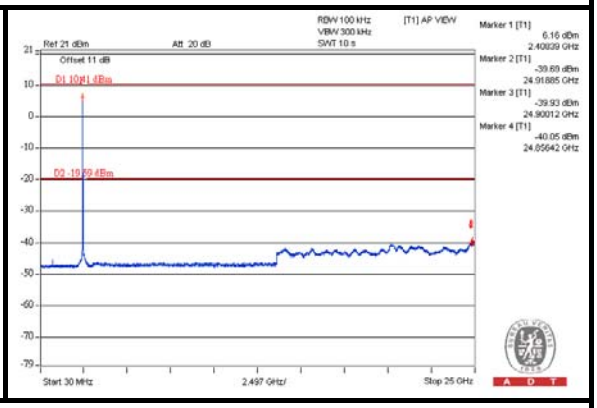


802.11g

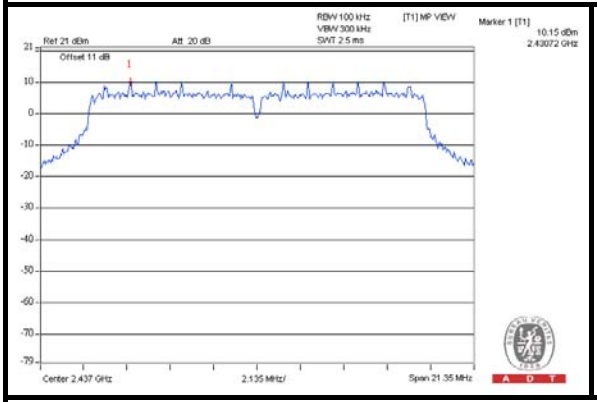
CHAIN 0

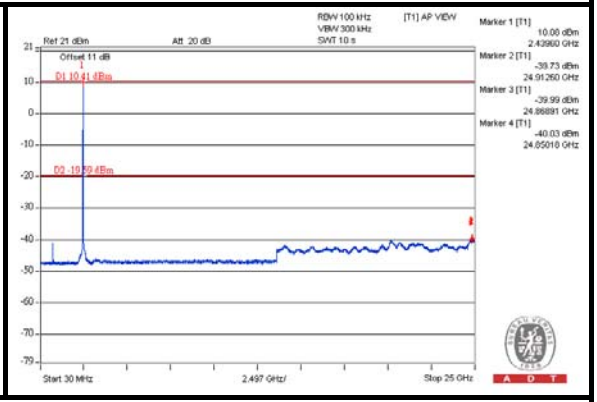
CH 1



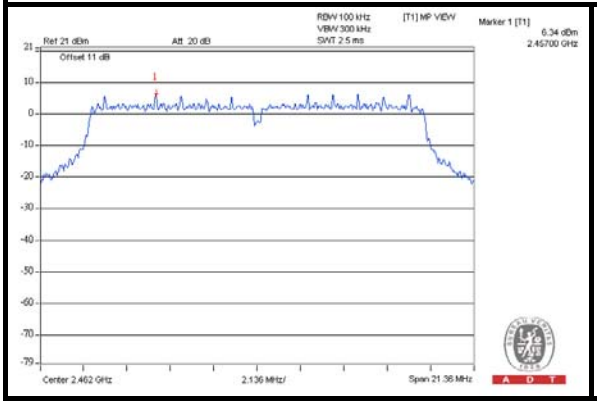


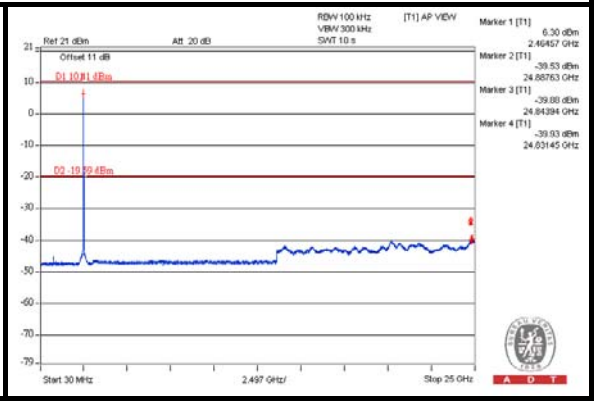
CH 6





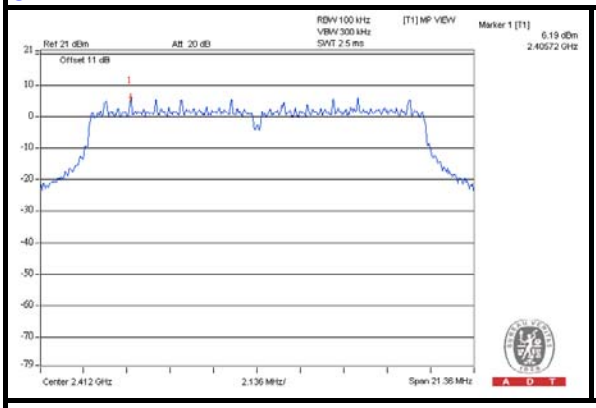
CH 11

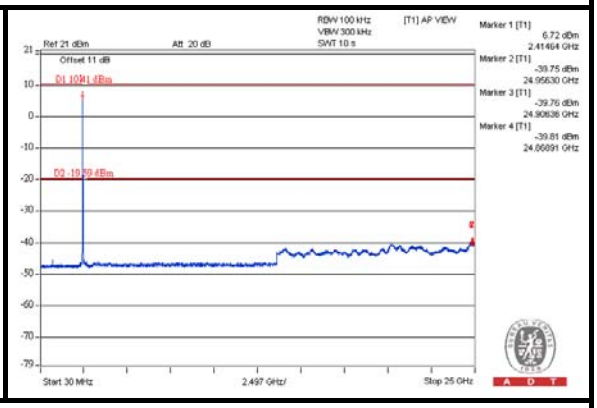




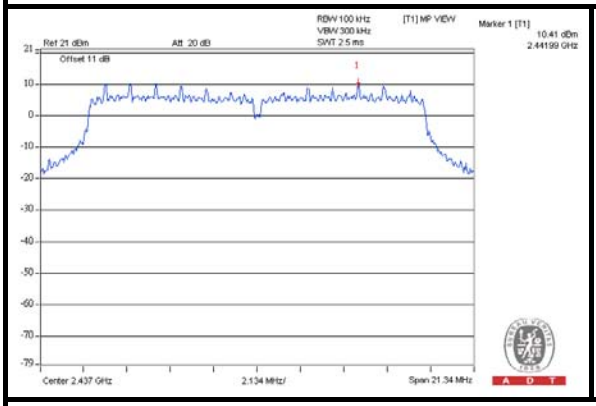
CHAIN 1

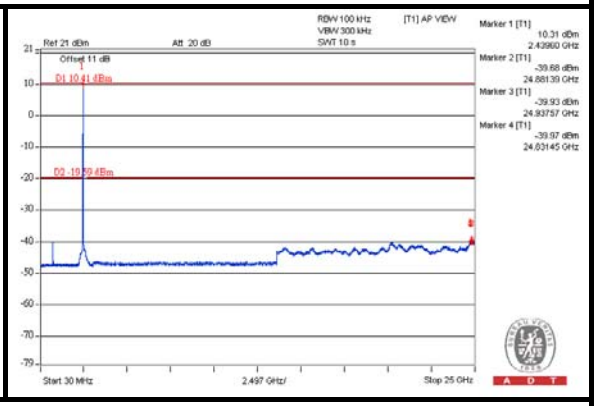
CH 1



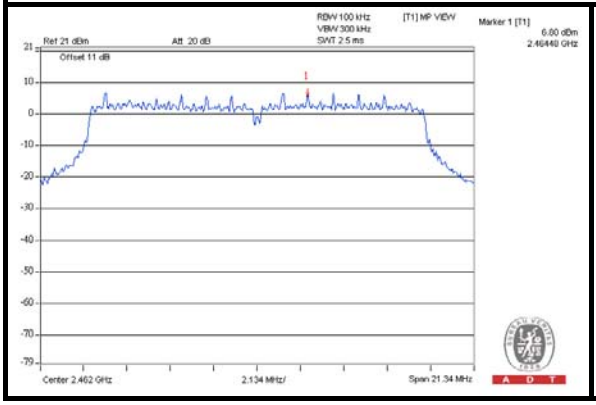


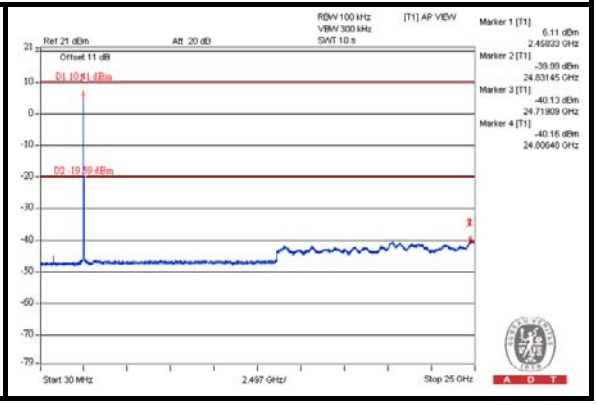
CH 6





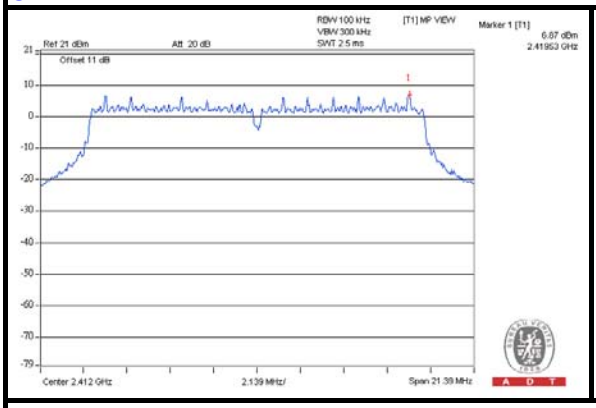
CH 11

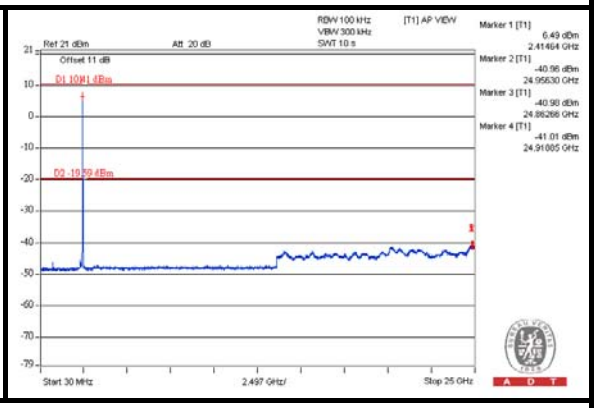




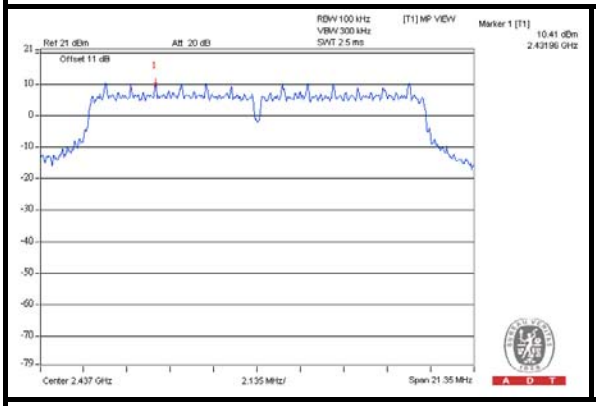
CHAIN 2

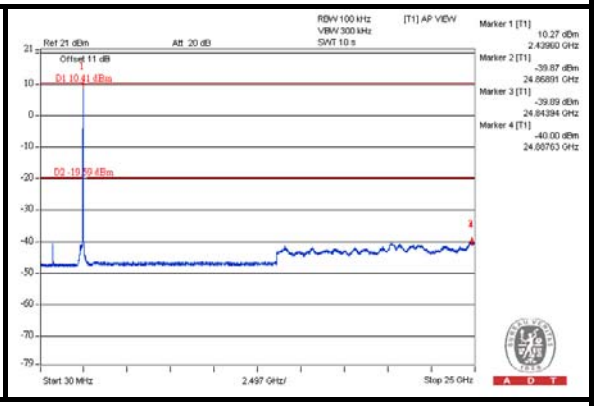
CH 1



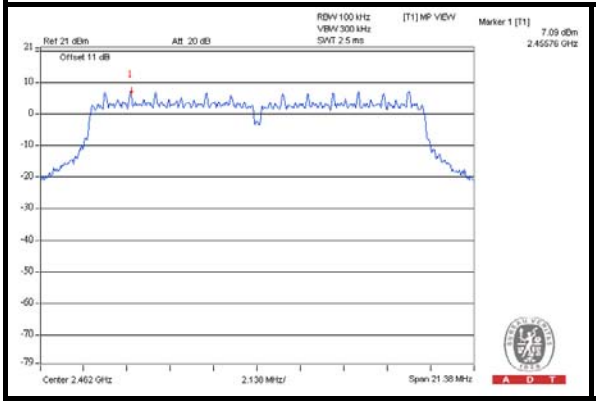


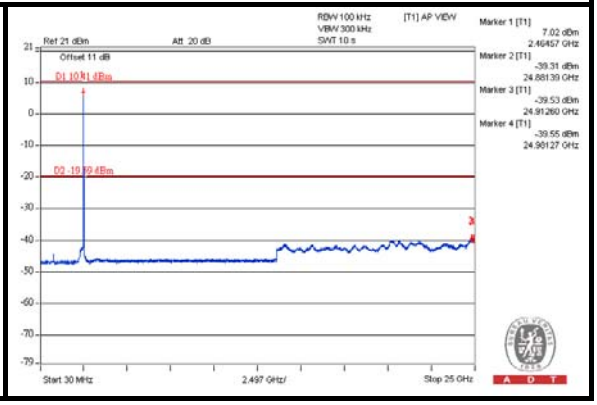
CH 6





CH 11

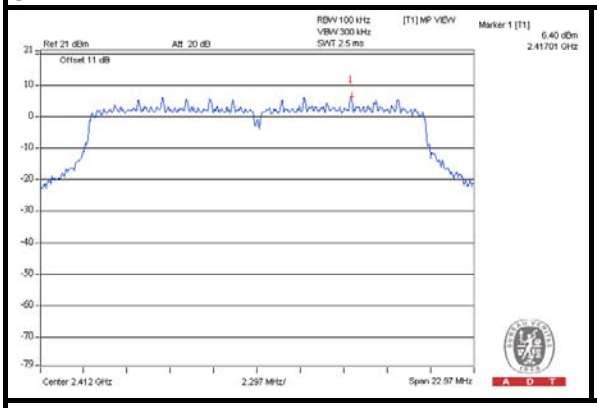


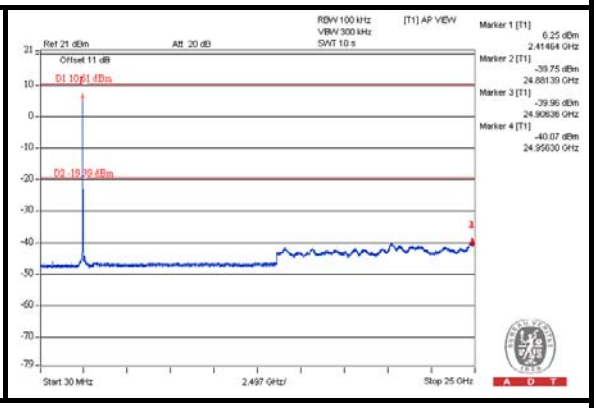


802.11n (20MHz)

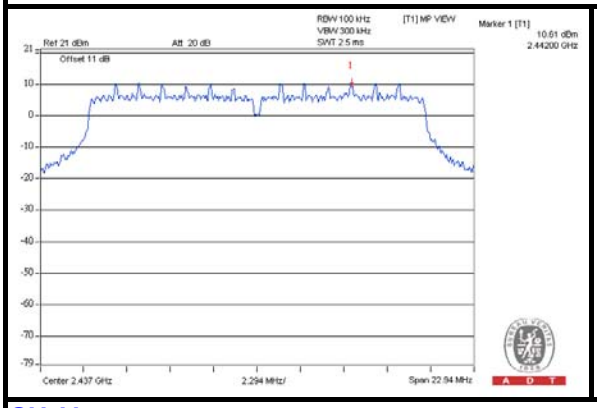
CHAIN 0

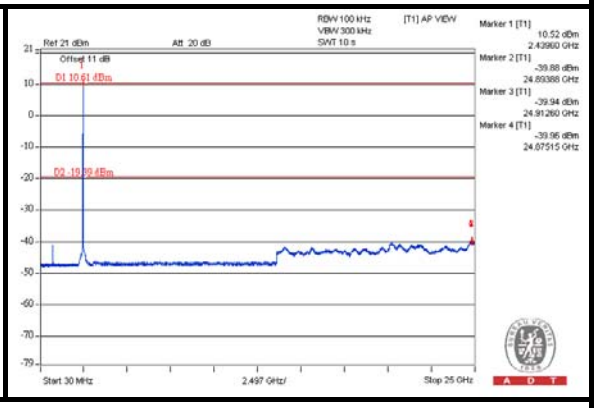
CH 1



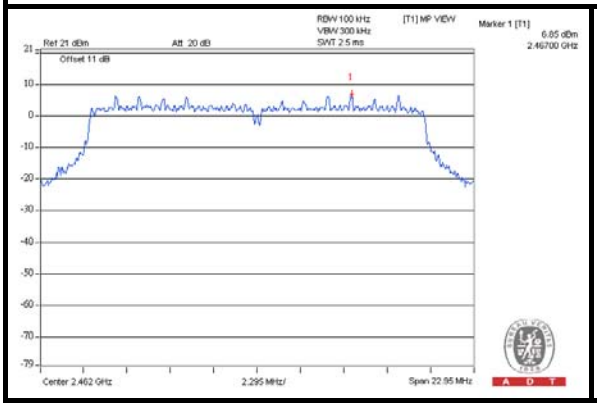


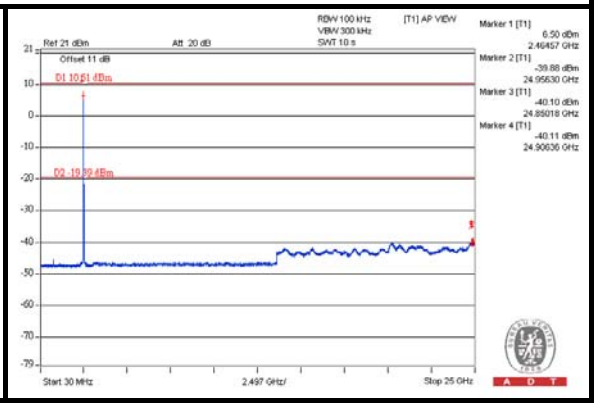
CH 6





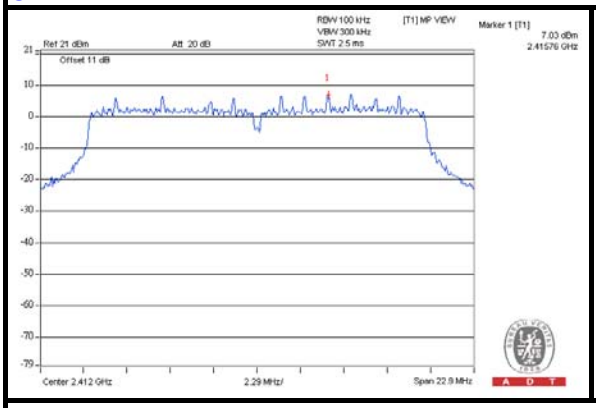
CH 11

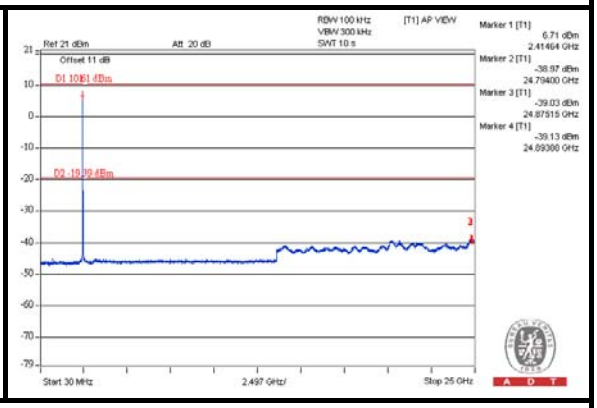




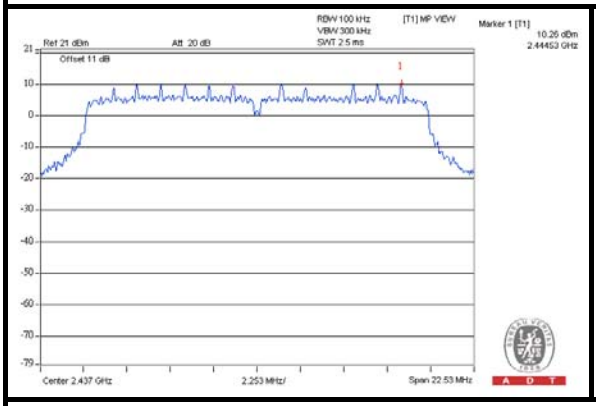
CHAIN 1

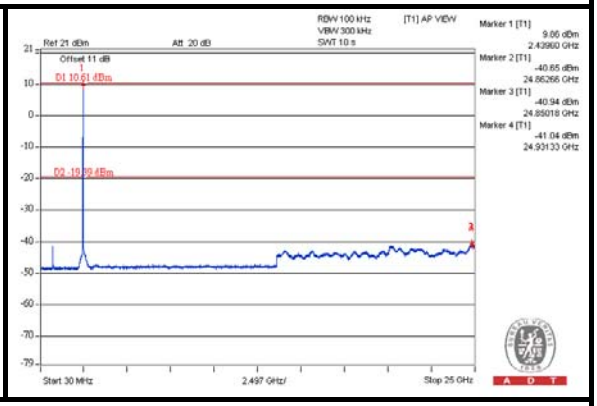
CH 1



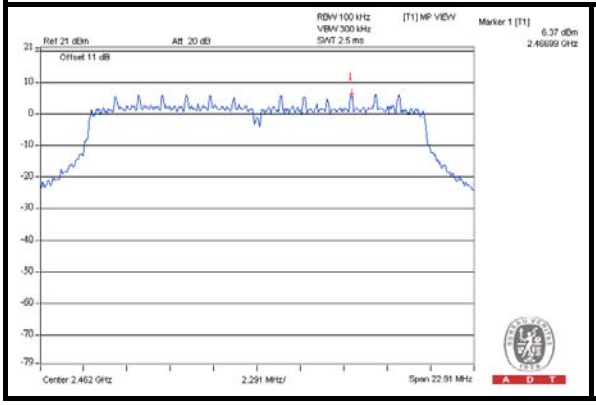


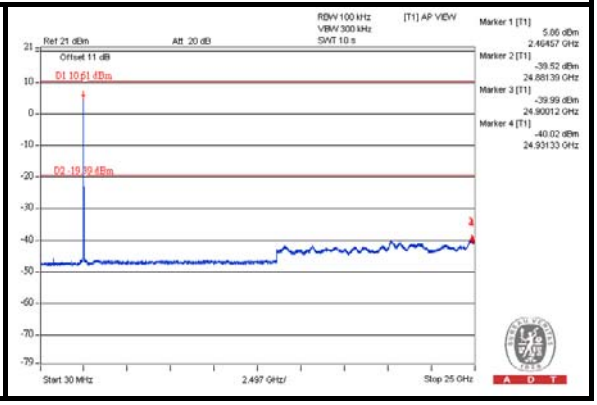
CH 6





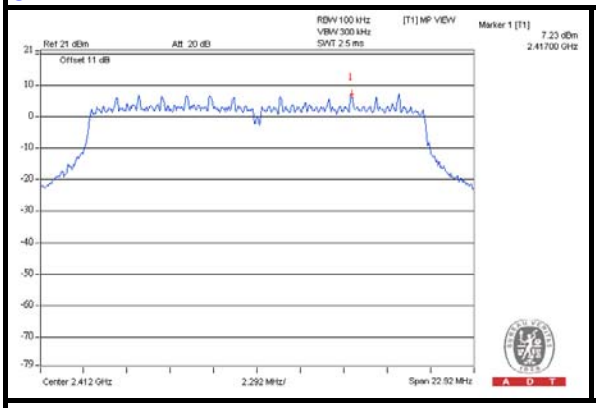
CH 11

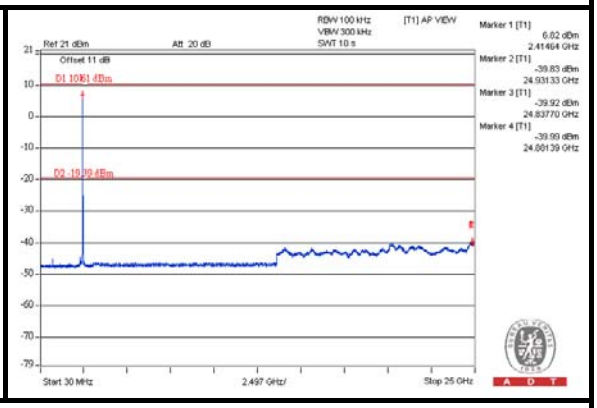




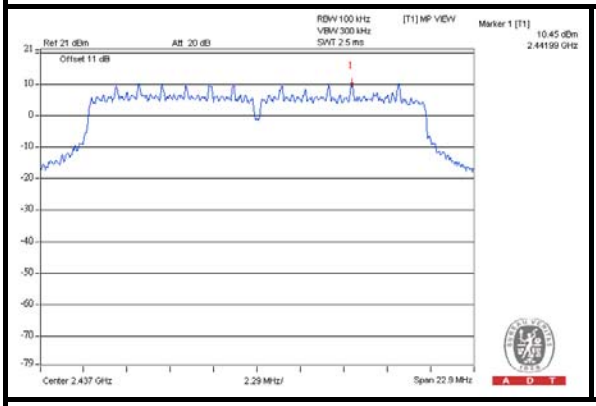
CHAIN 2

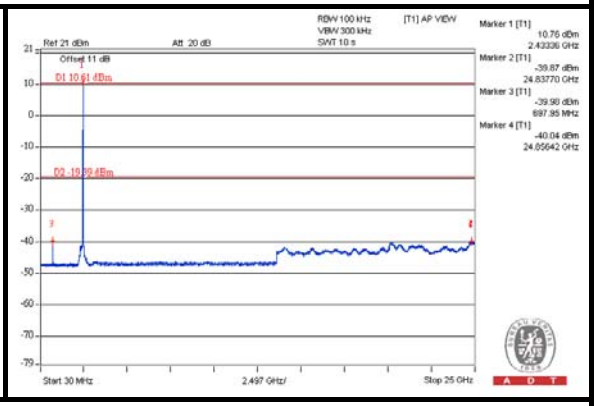
CH 1



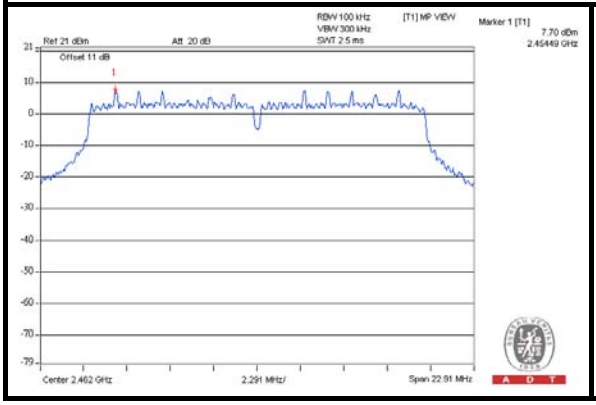


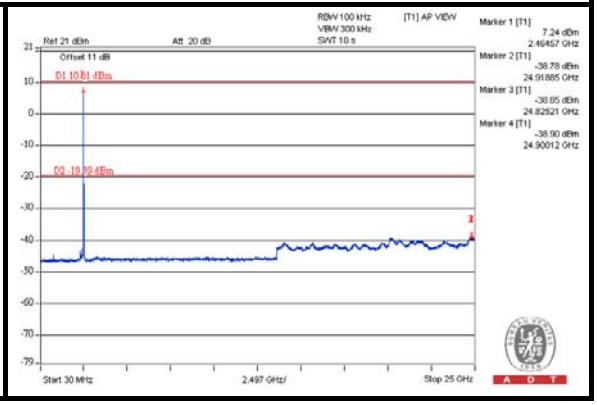
CH 6





CH 11

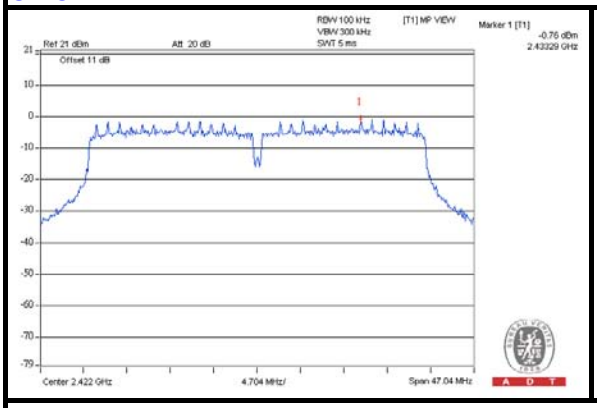


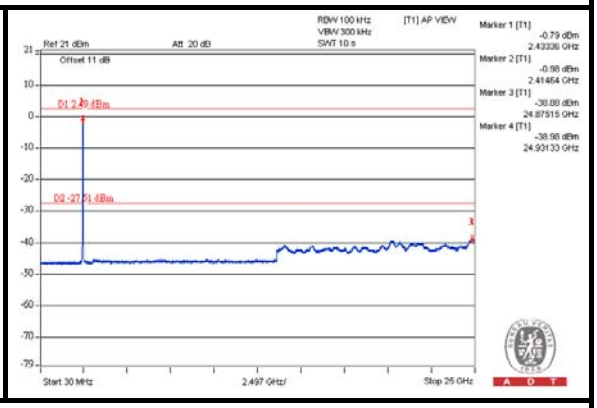


802.11n (40MHz)

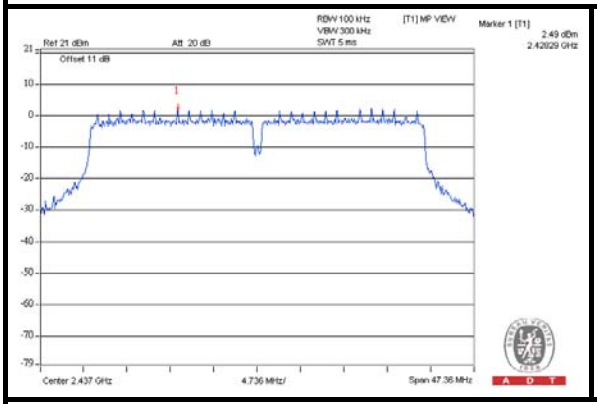
CHAIN 0

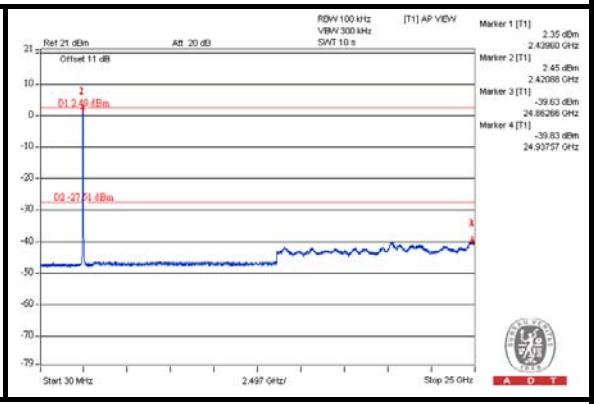
CH 3



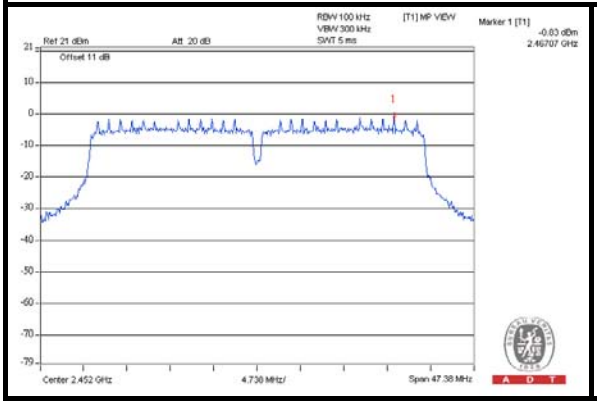


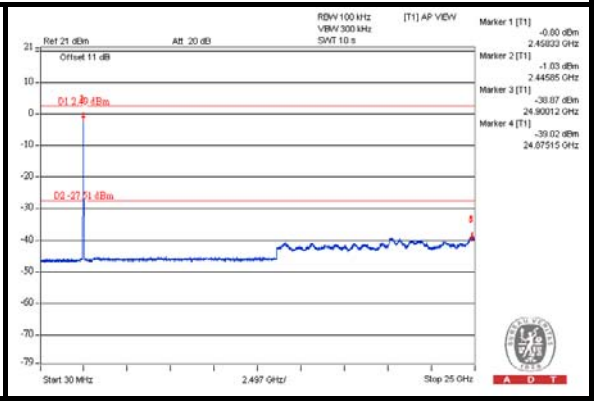
CH 6





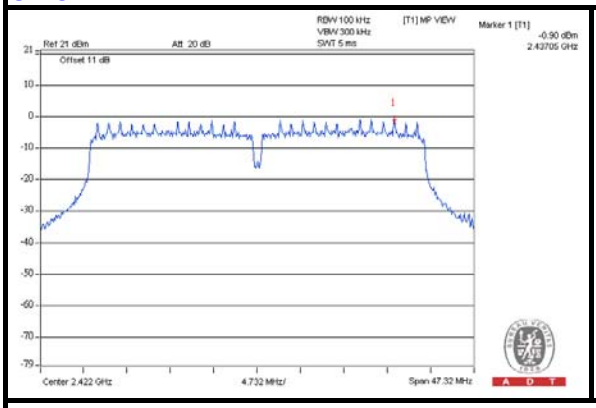
CH 9

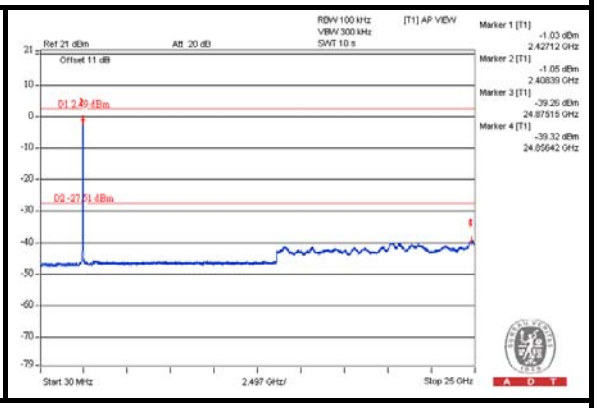




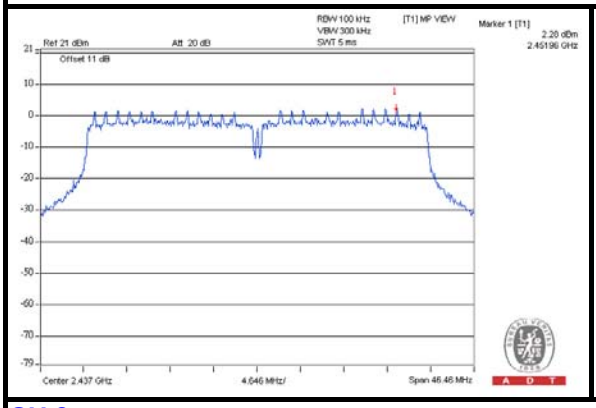
CHAIN 1

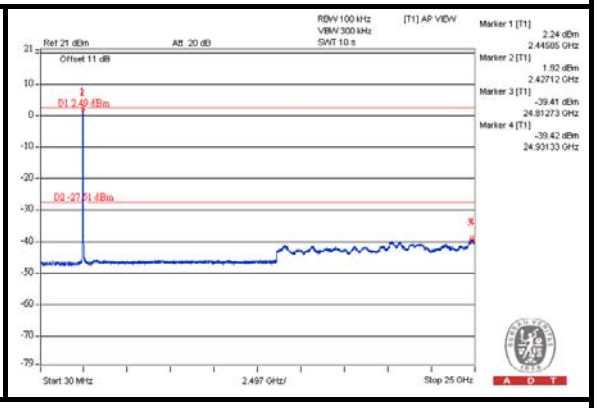
CH 3



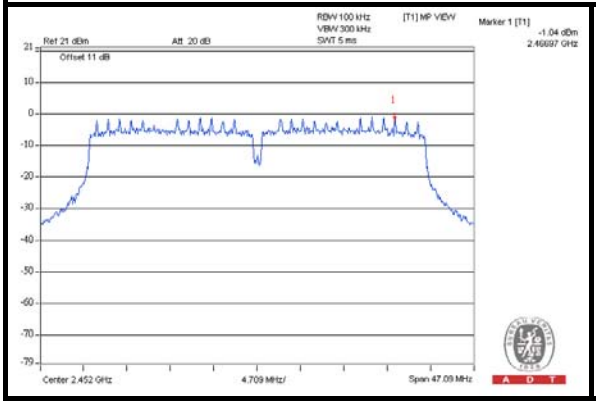


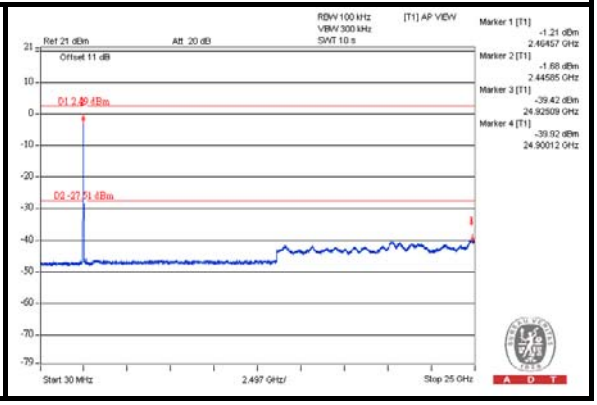
CH 6





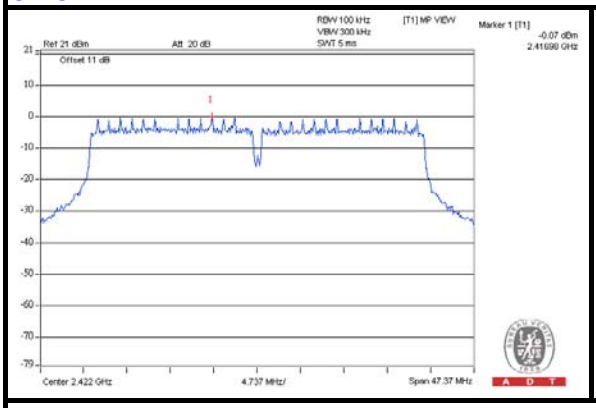
CH 9

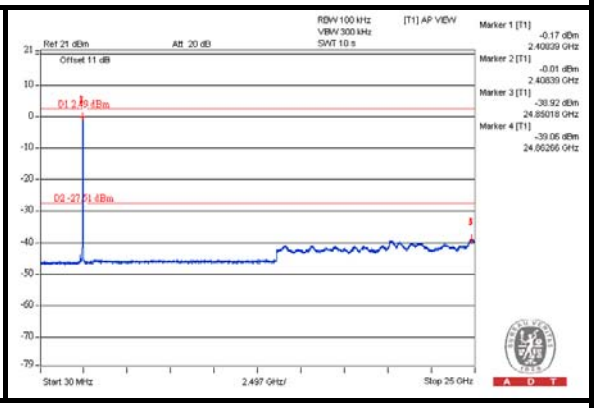




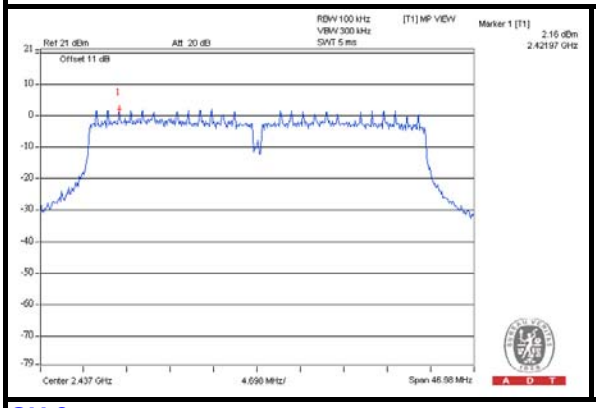
CHAIN 2

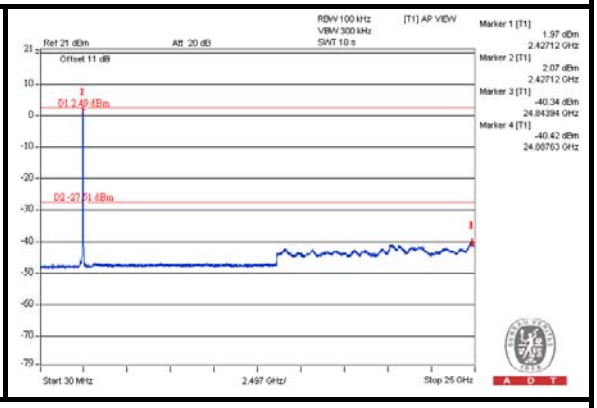
CH 3



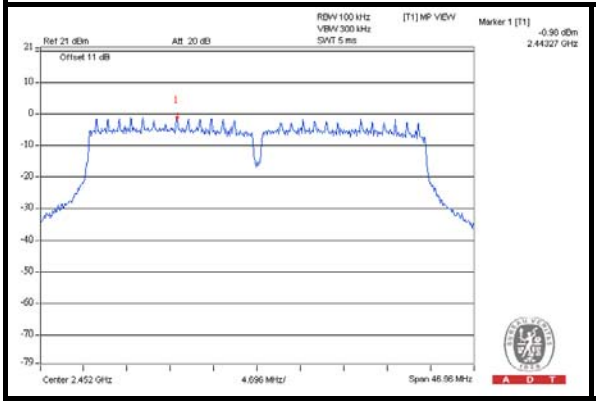


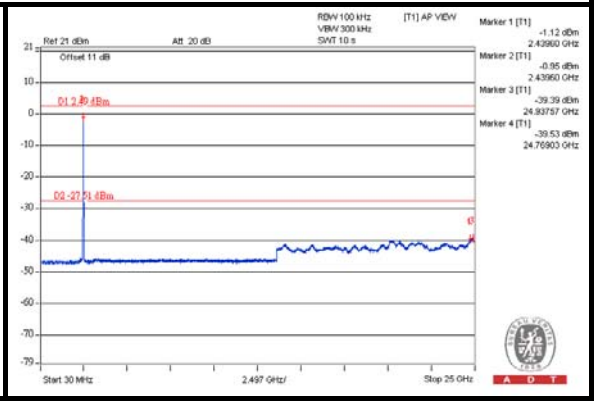
CH 6





CH 9





5. TEST TYPES AND RESULTS (FOR 5.0GHz BAND)

5.1 RADIATED EMISSION MEASUREMENT

5.1.1 LIMITS OF RADIATED EMISSION 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.

5.1.2 TEST INSTRUMENTS

Same as item 4.1.2.

5.1.3 TEST PROCEDURES

Same as item 4.1.3.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation.

5.1.5 TEST SETUP

Same as item 4.1.5.

5.1.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.

5.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA：

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5440.00	56.8 PK	74.0	-17.2	1.08 H	265	18.60	38.20
2	5440.00	43.6 AV	54.0	-10.4	1.08 H	265	5.40	38.20
3	#5725.00	70.2 PK	86.8	-16.6	1.28 H	52	31.50	38.70
4	#5725.00	60.3 AV	76.2	-15.9	1.28 H	52	21.60	38.70
5	*5745.00	106.8 PK			1.22 H	52	68.00	38.80
6	*5745.00	96.2 AV			1.22 H	52	57.40	38.80
7	11490.00	54.8 PK	74.0	-19.2	1.25 H	305	5.40	49.40
8	11490.00	42.2 AV	54.0	-11.8	1.25 H	305	-7.20	49.40
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	5440.00	62.8 PK	74.0	-11.2	1.07 V	192	24.60	38.20
2	5440.00	52.5 AV	54.0	-1.5	1.07 V	192	14.30	38.20
3	#5725.00	78.8 PK	96.7	-17.9	1.02 V	215	40.10	38.70
4	#5725.00	67.4 AV	86.3	-18.9	1.02 V	215	28.70	38.70
5	*5745.00	116.7 PK			1.00 V	208	77.90	38.80
6	*5745.00	106.3 AV			1.00 V	208	67.50	38.80
7	11490.00	65.1 PK	74.0	-8.9	1.65 V	98	15.70	49.40
8	11490.00	51.9 AV	54.0	-2.1	1.65 V	98	2.50	49.40

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5080.00	56.9 PK	74.0	-17.1	1.02 H	254	19.20	37.70
2	5080.00	43.5 AV	54.0	-10.5	1.02 H	254	5.80	37.70
3	*5785.00	107.2 PK			1.22 H	47	68.30	38.90
4	*5785.00	97.0 AV			1.22 H	47	58.10	38.90
5	11570.00	54.4 PK	74.0	-19.6	1.28 H	312	5.20	49.20
6	11570.00	42.0 AV	54.0	-12.0	1.28 H	312	-7.20	49.20
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	5080.00	60.4 PK	74.0	-13.6	1.03 V	197	22.70	37.70
2	5080.00	52.6 AV	54.0	-1.4	1.03 V	197	14.90	37.70
3	*5785.00	116.5 PK			1.05 V	83	77.60	38.90
4	*5785.00	106.2 AV			1.05 V	83	67.30	38.90
5	11570.00	64.0 PK	74.0	-10.0	1.63 V	98	14.80	49.20
6	11570.00	51.2 AV	54.0	-2.8	1.63 V	98	2.00	49.20

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.
6. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5040.00	56.9 PK	74.0	-17.1	1.12 H	289	19.30	37.60
2	5040.00	43.8 AV	54.0	-10.2	1.12 H	289	6.20	37.60
3	5080.00	56.4 PK	74.0	-17.6	1.15 H	294	18.70	37.70
4	5080.00	43.5 AV	54.0	-10.5	1.15 H	294	5.80	37.70
5	*5825.00	106.5 PK			1.18 H	69	67.60	38.90
6	*5825.00	96.0 AV			1.18 H	69	57.10	38.90
7	#5850.00	61.6 PK	86.5	-24.9	1.14 H	78	22.60	39.00
8	#5850.00	51.1 AV	76.0	-24.9	1.14 H	78	12.10	39.00
9	11650.00	59.1 PK	74.0	-14.9	1.06 H	192	10.00	49.10
10	11650.00	46.5 AV	54.0	-7.5	1.06 H	192	-2.60	49.10
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	5040.00	61.0 PK	74.0	-13.0	1.05 V	194	23.40	37.60
2	5040.00	52.8 AV	54.0	-1.2	1.05 V	194	15.20	37.60
3	5080.00	60.3 PK	74.0	-13.7	1.05 V	195	22.60	37.70
4	5080.00	52.2 AV	54.0	-1.8	1.05 V	195	14.50	37.70
5	*5825.00	116.1 PK			1.15 V	82	77.20	38.90
6	*5825.00	106.1 AV			1.15 V	82	67.20	38.90
7	#5850.00	71.2 PK	96.1	-24.9	1.18 V	98	32.20	39.00
8	#5850.00	61.2 AV	86.1	-24.9	1.18 V	98	22.20	39.00
9	11650.00	62.9 PK	74.0	-11.1	1.51 V	95	13.80	49.10
10	11650.00	49.9 AV	54.0	-4.1	1.51 V	95	0.80	49.10

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5080.00	56.5 PK	74.0	-17.5	1.12 H	258	18.80	37.70
2	5080.00	43.2 AV	54.0	-10.8	1.12 H	258	5.50	37.70
3	#5725.00	70.4 PK	86.2	-15.8	1.22 H	57	31.70	38.70
4	#5725.00	60.5 AV	76.5	-16.0	1.22 H	57	21.80	38.70
5	*5745.00	106.2 PK			1.28 H	68	67.40	38.80
6	*5745.00	96.5 AV			1.28 H	68	57.70	38.80
7	11490.00	54.9 PK	74.0	-19.1	1.37 H	296	5.50	49.40
8	11490.00	41.8 AV	54.0	-12.2	1.37 H	296	-7.60	49.40
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	5080.00	60.2 PK	74.0	-13.8	1.04 V	199	22.50	37.70
2	**5080.00**	**53.0 AV**	**54.0**	**-1.0**	**1.04 V**	**199**	**15.30**	**37.70**
3	#5725.00	78.7 PK	96.8	-18.1	1.05 V	198	40.00	38.70
4	#5725.00	67.2 AV	86.3	-19.1	1.05 V	198	28.50	38.70
5	*5745.00	116.8 PK			1.00 V	211	78.00	38.80
6	*5745.00	106.3 AV			1.00 V	211	67.50	38.80
7	11490.00	65.2 PK	74.0	-8.8	1.40 V	80	15.80	49.40
8	11490.00	51.8 AV	54.0	-2.2	1.40 V	80	2.40	49.40

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5400.00	56.8 PK	74.0	-17.2	1.07 H	285	18.70	38.10
2	5400.00	43.5 AV	54.0	-10.5	1.07 H	285	5.40	38.10
3	*5785.00	106.8 PK			1.21 H	52	67.90	38.90
4	*5785.00	96.5 AV			1.21 H	52	57.60	38.90
5	11570.00	54.4 PK	74.0	-19.6	1.29 H	305	5.20	49.20
6	11570.00	41.2 AV	54.0	-12.8	1.29 H	305	-8.00	49.20
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	5400.00	62.2 PK	74.0	-11.8	1.20 V	199	24.10	38.10
2	**5400.00**	**53.0 AV**	**54.0**	**-1.0**	**1.20 V**	**199**	**14.90**	**38.10**
3	*5785.00	116.1 PK			1.03 V	77	77.20	38.90
4	*5785.00	104.6 AV			1.03 V	77	65.70	38.90
5	11570.00	64.6 PK	74.0	-9.4	1.64 V	108	15.40	49.20
6	11570.00	51.1 AV	54.0	-2.9	1.64 V	108	1.90	49.20

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.
6. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5360.00	56.8 PK	74.0	-17.2	1.04 H	268	18.70	38.10
2	5360.00	43.5 AV	54.0	-10.5	1.04 H	268	5.40	38.10
3	*5825.00	105.9 PK			1.24 H	52	67.00	38.90
4	*5825.00	95.6 AV			1.24 H	52	56.70	38.90
5	#5850.00	58.5 PK	85.9	-27.4	1.28 H	62	19.50	39.00
6	#5850.00	48.2 AV	75.6	-27.4	1.28 H	62	9.20	39.00
7	11650.00	54.2 PK	74.0	-19.8	1.38 H	315	5.10	49.10
8	11650.00	41.2 AV	54.0	-12.8	1.38 H	315	-7.90	49.10
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	5360.00	63.2 PK	74.0	-10.8	1.08 V	199	25.10	38.10
2	5360.00	52.4 AV	54.0	-1.6	1.08 V	199	14.30	38.10
3	*5825.00	116.2 PK			1.13 V	77	77.30	38.90
4	*5825.00	105.0 AV			1.13 V	77	66.10	38.90
5	#5850.00	68.8 PK	96.2	-27.4	1.12 V	82	29.80	39.00
6	#5850.00	57.6 AV	85.0	-27.4	1.12 V	82	18.60	39.00
7	11650.00	63.4 PK	74.0	-10.6	1.51 V	109	14.30	49.10
8	11650.00	51.1 AV	54.0	-2.9	1.51 V	109	2.00	49.10

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5400.00	56.2 PK	74.0	-17.8	1.04 H	285	18.10	38.10
2	5400.00	43.7 AV	54.0	-10.3	1.04 H	285	5.60	38.10
3	#5725.00	72.5 PK	83.5	-11.0	1.28 H	28	33.80	38.70
4	#5725.00	61.4 AV	73.2	-11.8	1.28 H	28	22.70	38.70
5	*5755.00	103.5 PK			1.24 H	54	64.70	38.80
6	*5755.00	93.2 AV			1.24 H	54	54.40	38.80
7	11510.00	55.6 PK	74.0	-18.4	1.29 H	314	6.20	49.40
8	11510.00	43.8 AV	54.0	-10.2	1.29 H	314	-5.60	49.40
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	5400.00	60.6 PK	74.0	-13.4	1.00 V	196	22.50	38.10
2	5400.00	50.6 AV	54.0	-3.4	1.00 V	196	12.50	38.10
3	#5725.00	82.5 PK	93.7	-11.2	1.00 V	2	43.80	38.70
4	#5725.00	70.8 AV	82.0	-11.2	1.00 V	2	32.10	38.70
5	*5755.00	113.7 PK			1.00 V	4	74.90	38.80
6	*5755.00	102.0 AV			1.00 V	4	63.20	38.80
7	11510.00	62.5 PK	74.0	-11.5	1.51 V	87	13.10	49.40
8	11510.00	49.2 AV	54.0	-4.8	1.51 V	87	-0.20	49.40

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	5440.00	55.9 PK	74.0	-18.1	1.08 H	295	17.70	38.20
2	5440.00	43.4 AV	54.0	-10.6	1.08 H	295	5.20	38.20
3	*5795.00	104.2 PK			1.21 H	37	65.30	38.90
4	*5795.00	94.2 AV			1.21 H	37	55.30	38.90
5	#5850.00	59.8 PK	84.2	-24.4	1.25 H	51	20.80	39.00
6	#5850.00	45.6 AV	74.2	-28.6	1.25 H	51	6.60	39.00
7	11590.00	56.2 PK	74.0	-17.8	1.24 H	298	7.10	49.10
8	11590.00	44.2 AV	54.0	-9.8	1.24 H	298	-4.90	49.10
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	5440.00	62.8 PK	74.0	-11.2	1.18 V	203	24.60	38.20
2	5440.00	52.5 AV	54.0	-1.5	1.18 V	203	14.30	38.20
3	*5795.00	114.7 PK			1.00 V	44	75.80	38.90
4	*5795.00	103.6 AV			1.00 V	44	64.70	38.90
5	#5850.00	67.6 PK	94.7	-27.1	1.05 V	82	28.60	39.00
6	#5850.00	56.5 AV	83.6	-27.1	1.05 V	82	17.50	39.00
7	11590.00	61.8 PK	74.0	-12.2	1.51 V	109	12.70	49.10
8	11590.00	49.8 AV	54.0	-4.2	1.51 V	109	0.70	49.10

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.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

BELOW 1GHz WORST-CASE DATA：802.11n(20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 69%RH	TESTED BY	Antony Lee

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	109.54	34.4 QP	43.5	-9.1	1.75 H	99	23.90	10.50
2	183.26	34.1 QP	43.5	-9.4	1.50 H	84	21.70	12.40
3	266.68	29.9 QP	46.0	-16.1	1.25 H	252	16.30	13.60
4	375.32	34.5 QP	46.0	-11.5	1.00 H	127	17.60	16.90
5	625.58	40.1 QP	46.0	-5.9	1.00 H	39	17.60	22.50
6	875.84	36.5 QP	46.0	-9.5	1.00 H	34	10.30	26.20
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	47.46	36.6 QP	40.0	-3.4	1.00 V	168	23.20	13.40
2	113.42	37.9 QP	43.5	-5.6	1.00 V	178	27.00	10.90
3	183.26	31.8 QP	43.5	-11.7	1.00 V	246	19.40	12.40
4	499.48	34.4 QP	46.0	-11.6	1.00 V	88	14.30	20.10
5	625.58	41.9 QP	46.0	-4.1	1.00 V	94	19.40	22.50
6	875.84	38.8 QP	46.0	-7.2	1.00 V	77	12.60	26.20

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.17	29.6 QP	43.5	-13.9	1.54 H	20	17.30	12.30
2	249.60	26.6 QP	46.0	-19.4	1.20 H	145	13.60	13.00
3	374.04	29.6 QP	46.0	-16.4	1.78 H	133	12.70	16.90
4	500.42	33.1 QP	46.0	-12.9	1.66 H	208	13.10	20.00
5	624.85	34.3 QP	46.0	-11.7	1.02 H	198	12.00	22.30
6	961.21	44.2 QP	54.0	-9.8	1.24 H	139	16.80	27.40
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	51.29	36.4 QP	40.0	-3.6	1.47 V	7	22.40	14.00
2	64.90	36.5 QP	40.0	-3.5	1.59 V	10	23.60	12.90
3	94.06	33.8 QP	43.5	-9.7	2.21 V	323	25.10	8.70
4	125.17	33.5 QP	43.5	-10.0	1.39 V	188	21.20	12.30
5	500.42	38.2 QP	46.0	-7.8	1.00 V	302	18.20	20.00
6	961.21	35.5 QP	54.0	-18.5	1.05 V	222	8.10	27.40

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.

5.2 CONDUCTED EMISSION MEASUREMENT

5.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.2.2 T EST INSTRUMENTS

Same as item 4.2.2.

5.2.3 TEST PROCEDURES

Same as item 4.2.3.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation.

5.2.5 TEST SETUP

Same as item 4.2.5.

5.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6

5.2.7 TEST RESULTS

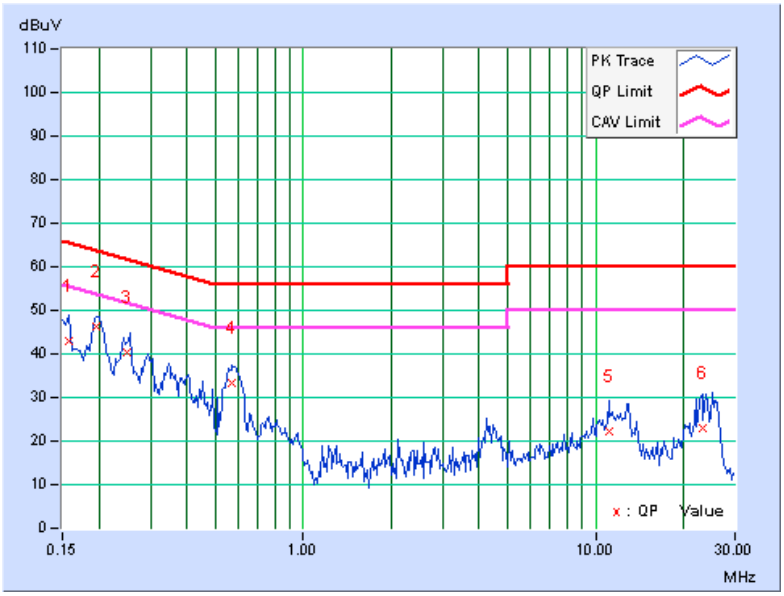
CONDUCTED WORST-CASE DATA：802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.15	42.95	32.85	43.10	33.00	65.58	55.58	-22.48	-22.58
2	0.19687	0.15	46.04	39.27	46.19	39.42	63.74	53.74	-17.55	-14.32
3	0.24911	0.15	40.05	33.32	40.20	33.47	61.79	51.79	-21.58	-18.31
4	0.57188	0.18	32.99	27.21	33.17	27.39	56.00	46.00	-22.83	-18.61
5	11.07813	0.45	21.60	16.61	22.05	17.06	60.00	50.00	-37.95	-32.94
6	23.17578	0.60	22.44	14.63	23.04	15.23	60.00	50.00	-36.96	-34.77

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.

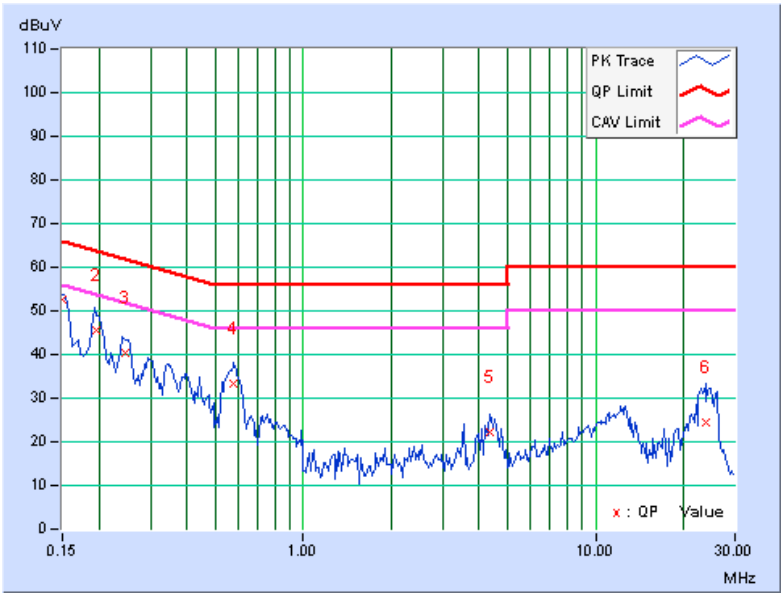


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.13	52.41	43.98	52.54	44.11	66.00	56.00	-13.46	-11.89
2	0.19552	0.14	45.51	38.26	45.65	38.40	63.80	53.80	-18.15	-15.40
3	0.24620	0.14	40.31	33.32	40.45	33.46	61.88	51.88	-21.43	-18.42
4	0.57969	0.17	33.18	27.39	33.35	27.56	56.00	46.00	-22.65	-18.44
5	4.36719	0.36	21.82	10.88	22.18	11.24	56.00	46.00	-33.82	-34.76
6	23.89453	0.65	23.67	14.81	24.32	15.46	60.00	50.00	-35.68	-34.54

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.

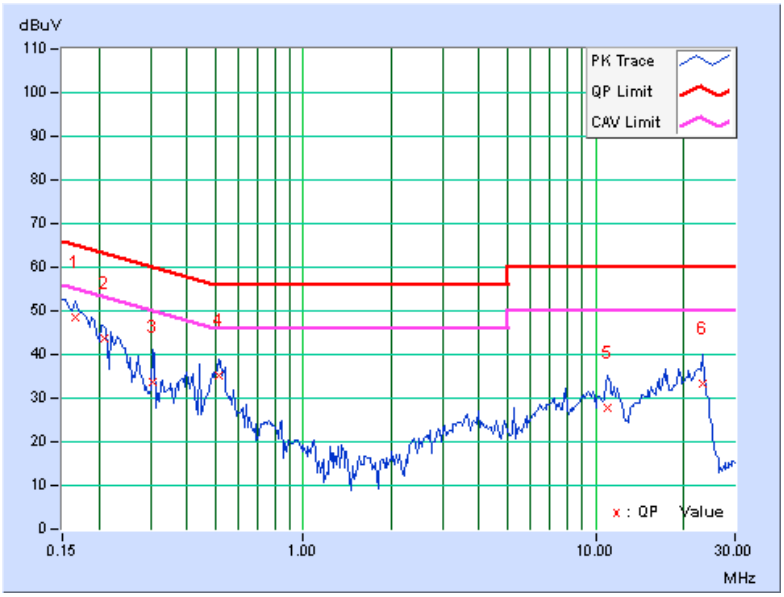


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	0.15	48.42	33.05	48.57	33.20	65.18	55.18	-16.61	-21.98
2	0.20859	0.15	43.37	30.76	43.52	30.91	63.26	53.26	-19.74	-22.35
3	0.30625	0.16	33.58	16.85	33.74	17.01	60.07	50.07	-26.33	-33.06
4	0.51328	0.17	35.05	29.52	35.22	29.69	56.00	46.00	-20.78	-16.31
5	10.97656	0.45	27.44	20.45	27.89	20.90	60.00	50.00	-32.11	-29.10
6	23.20313	0.60	32.55	28.16	33.15	28.76	60.00	50.00	-26.85	-21.24

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.

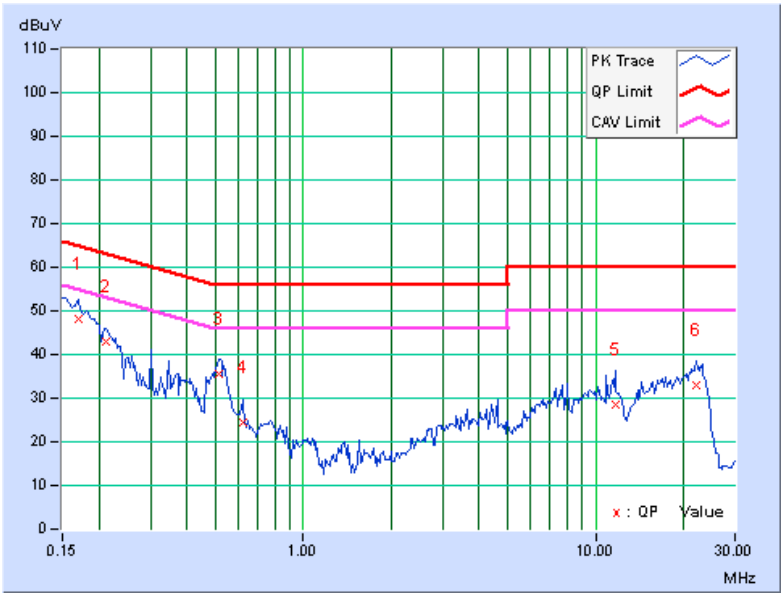


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.13	47.96	32.75	48.09	32.88	64.98	54.98	-16.89	-22.10
2	0.21250	0.14	42.98	31.06	43.12	31.20	63.11	53.11	-19.99	-21.91
3	0.51328	0.17	35.36	29.76	35.53	29.93	56.00	46.00	-20.47	-16.07
4	0.61875	0.17	24.09	17.53	24.26	17.70	56.00	46.00	-31.74	-28.30
5	11.66406	0.52	28.09	21.78	28.61	22.30	60.00	50.00	-31.39	-27.70
6	22.05469	0.69	32.13	27.25	32.82	27.94	60.00	50.00	-27.18	-22.06

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.



5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

5.3.2 TEST SETUP

Same as item 4.3.2.

5.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.3.4 TEST PROCEDURE

Same as item 4.3.4.

5.3.5 DEVIATION FROM TEST STANDARD

No deviation.

5.3.6 EUT OPERATING CONDITIONS

Same as item 4.3.6.

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	16.41	16.37	16.33	0.5	PASS
157	5785	16.41	16.39	16.40	0.5	PASS
165	5825	16.43	16.38	16.36	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	17.63	17.57	17.61	0.5	PASS
157	5785	17.62	17.28	17.37	0.5	PASS
165	5825	17.59	17.55	17.61	0.5	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
151	5755	36.38	36.13	36.10	0.5	PASS
159	5795	35.91	36.34	36.17	0.5	PASS

5.4 CONDUCTED OUTPUT POWER

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 –5850 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v01r02 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.

5.4.2 TEST SETUP

Same as Item 4.4.2.

5.4.3 INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.4.4 TEST PROCEDURES

Same as Item 4.4.4.

5.4.5 DEVIATION FROM TEST STANDARD

No deviation.

5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

5.4.7 TEST RESULTS

802.11a

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	18.02	20.48	17.60	232.617	23.67	30	PASS
157	5785	19.48	20.59	17.82	263.801	24.21	30	PASS
165	5825	20.89	19.68	19.22	299.201	24.76	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	17.98	20.09	17.37	219.476	23.41	30	PASS
157	5785	19.56	20.22	17.67	254.040	24.05	30	PASS
165	5825	20.90	19.78	19.31	**303.397**	24.82	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	19.53	19.99	18.47	259.820	24.15	30	PASS
159	5795	20.02	20.26	19.20	289.808	24.62	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST SETUP

Same as item 4.5.2.

5.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.5.4 TEST PROCEDURE.

Same as item 4.5.4.

5.5.5 DEVIATION FROM TEST STANDARD

No deviation.

5.5.6 EUT OPERATING CONDITION

Same as item 4.3.6.

5.5.7 TEST RESULTS

802.11a

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-13.29	4.77	-8.52	8	PASS
	157	5785	-11.58	4.77	-6.81	8	PASS
	165	5825	-9.49	4.77	-4.72	8	PASS
1	149	5745	-10.96	4.77	-6.19	8	PASS
	157	5785	-10.49	4.77	-5.72	8	PASS
	165	5825	-11.84	4.77	-7.07	8	PASS
2	149	5745	-12.73	4.77	-7.96	8	PASS
	157	5785	-13.32	4.77	-8.55	8	PASS
	165	5825	-11.71	4.77	-6.94	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

802.11n (20MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-12.54	4.77	-7.77	8	PASS
	157	5785	-11.95	4.77	-7.18	8	PASS
	165	5825	-10.89	4.77	-6.12	8	PASS
1	149	5745	-11.06	4.77	-6.29	8	PASS
	157	5785	-11.01	4.77	-6.24	8	PASS
	165	5825	-11.71	4.77	-6.94	8	PASS
2	149	5745	-13.41	4.77	-8.64	8	PASS
	157	5785	-12.69	4.77	-7.92	8	PASS
	165	5825	-12.15	4.77	-7.38	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

802.11n (40MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-16.13	4.77	-11.36	8	PASS
	159	5795	-14.60	4.77	-9.83	8	PASS
1	151	5755	-14.04	4.77	-9.27	8	PASS
	159	5795	-14.87	4.77	-10.10	8	PASS
2	151	5755	-15.81	4.77	-11.04	8	PASS
	159	5795	-15.05	4.77	-10.28	8	PASS

NOTE: Directional gain = 0dBi + 10log(3) = 4.77dBi < 6dBi, so the limit no need to reduced.

5.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below –30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST SETUP

Same as Item 4.6.2

5.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.6.4 TEST PROCEDURE

Same as Item 4.6.4

5.6.5 DEVIATION FROM TEST STANDARD

No deviation.

5.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.7 TEST RESULTS

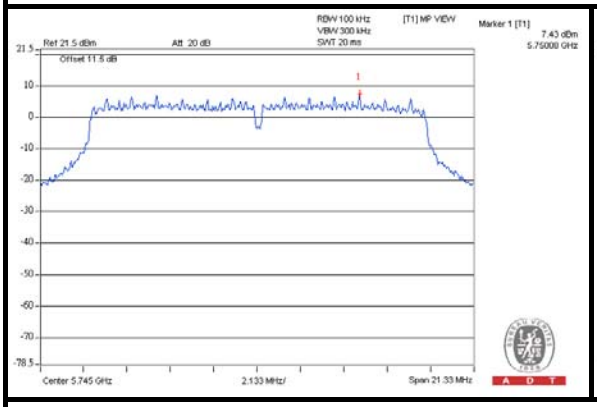
The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit. Only worst data of each operating mode is presented.

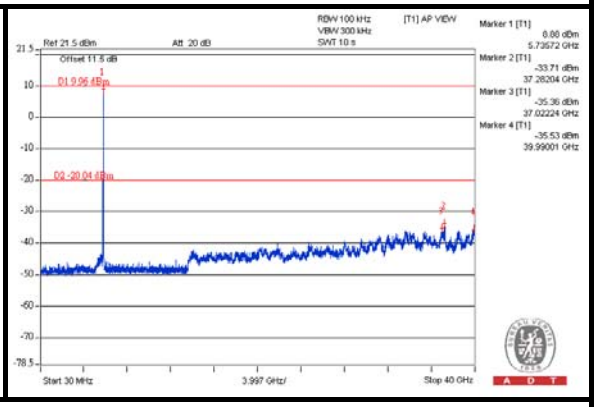
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

802.11a

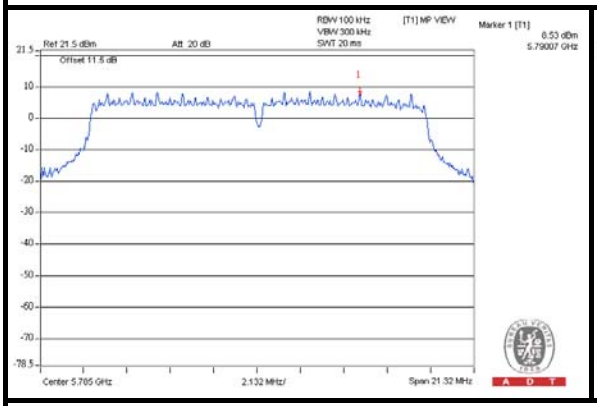
CHAIN 0

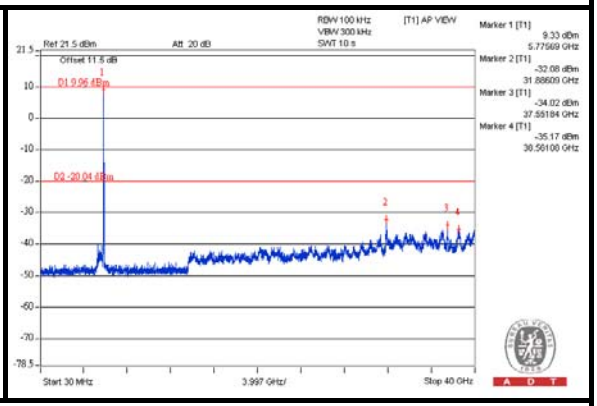
CH 149



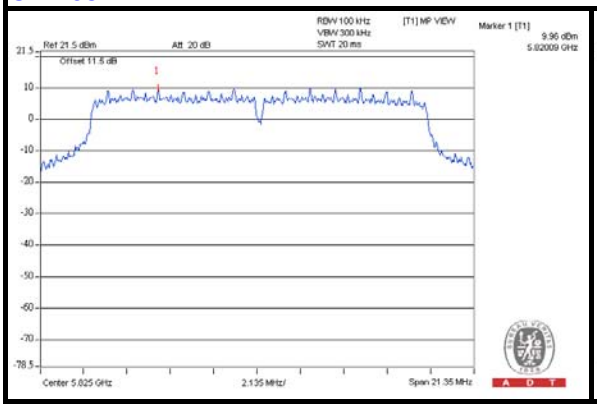


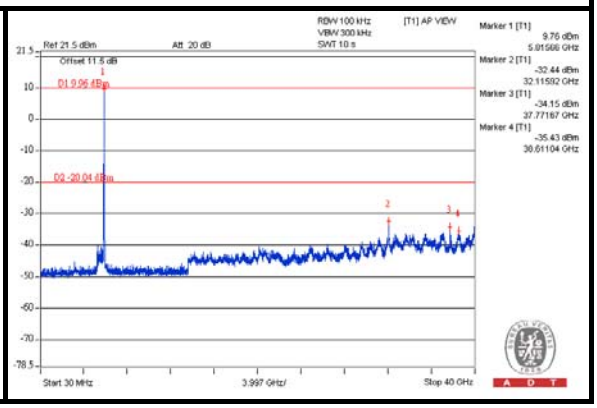
CH 157





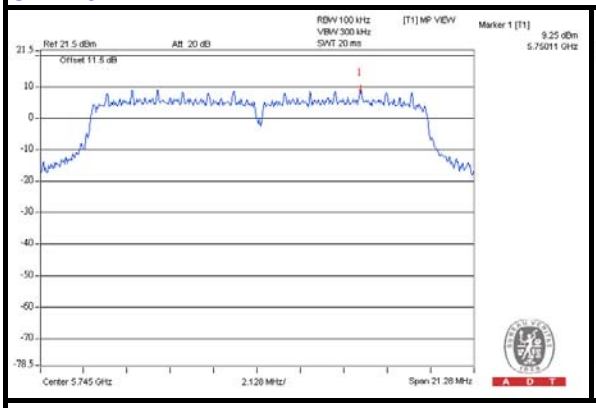
CH 165

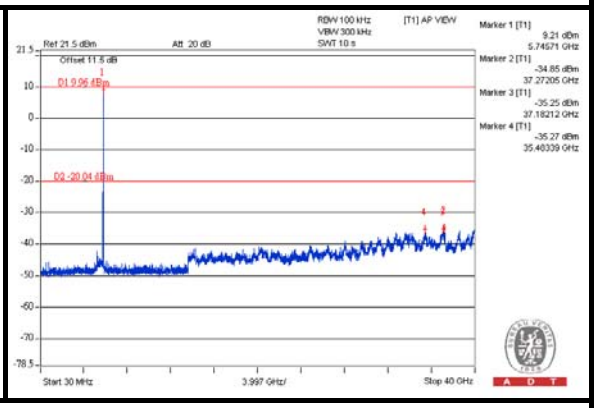




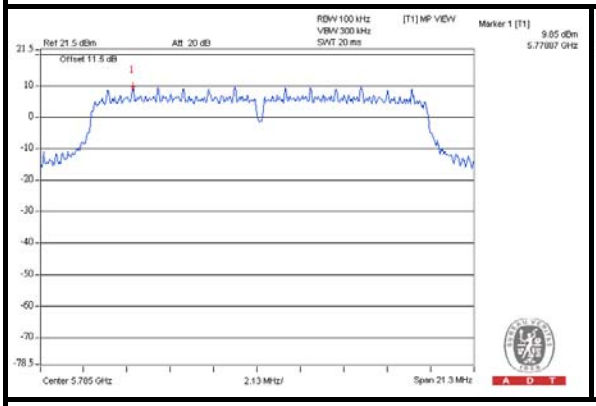
CHAIN 1

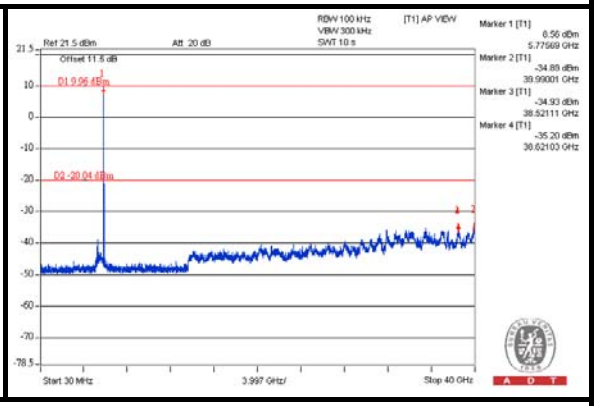
CH 149



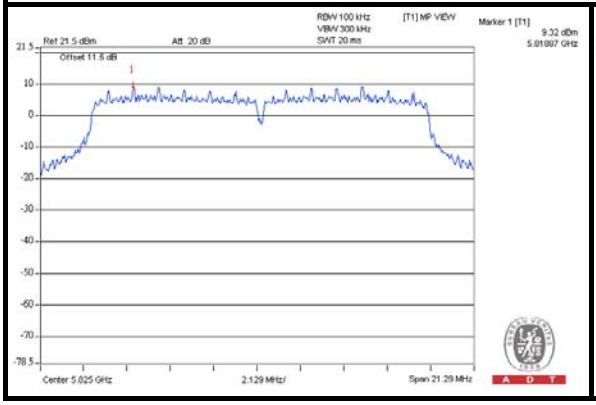


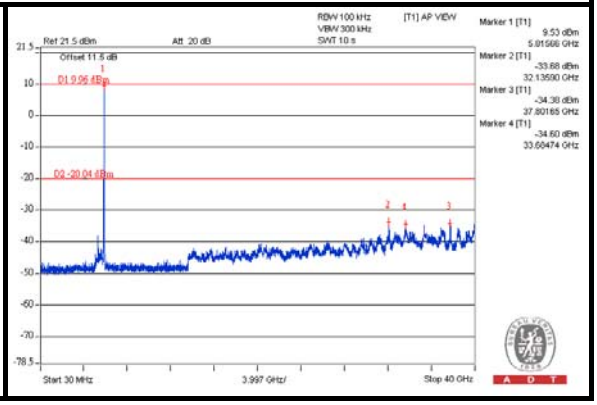
CH 157





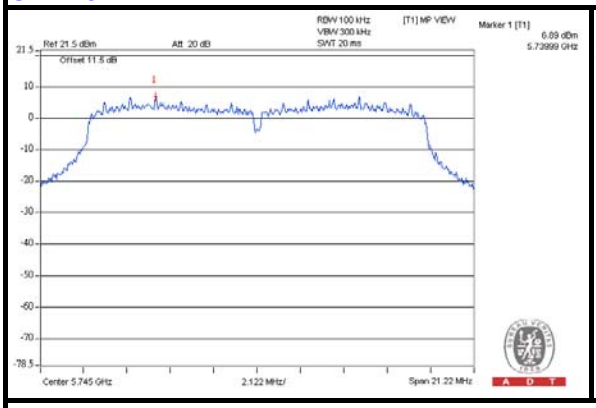
CH 165

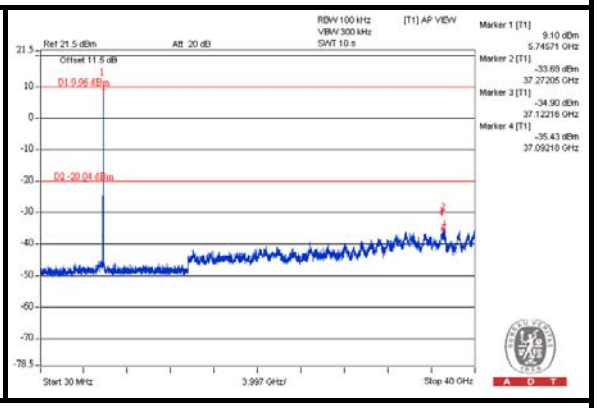




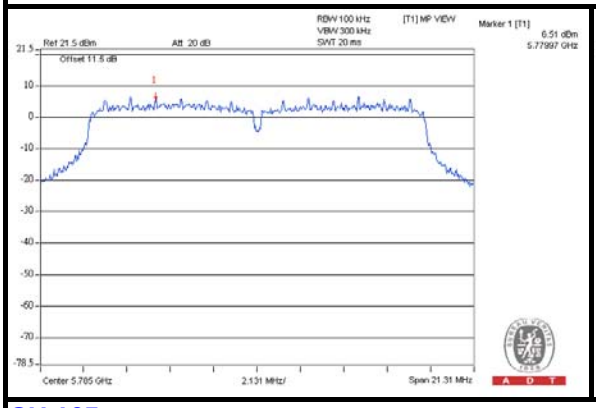
CHAIN 2

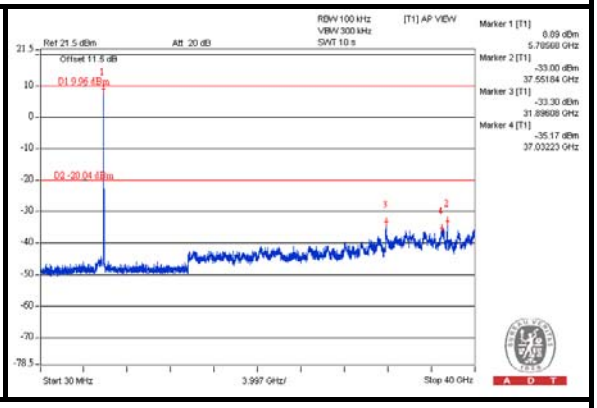
CH 149



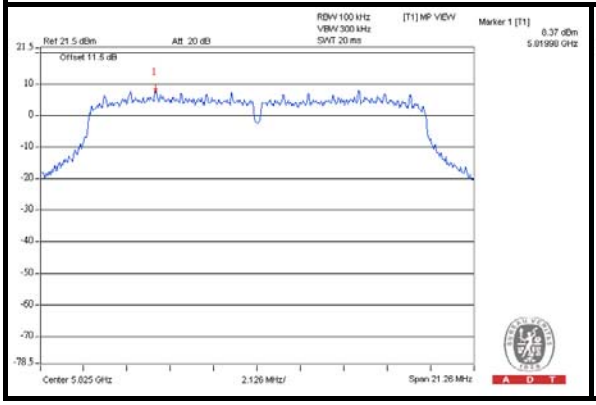


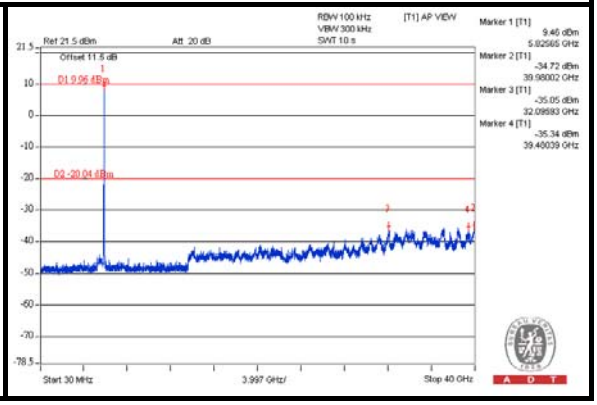
CH 157





CH 165

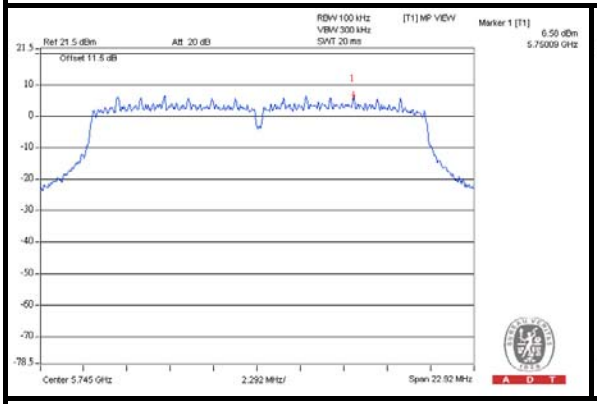


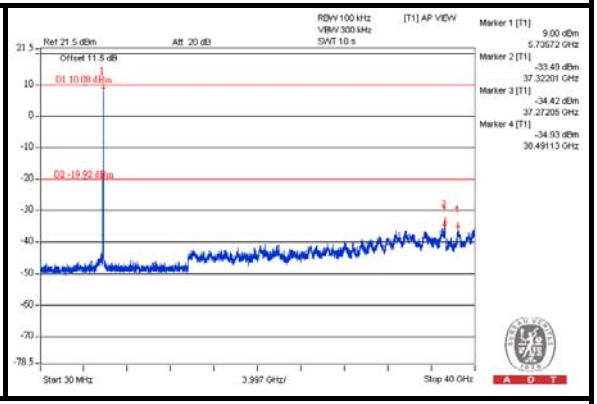


802.11n (20MHz)

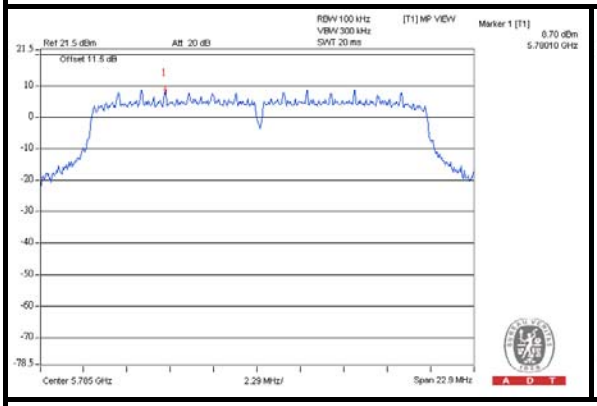
CHAIN 0

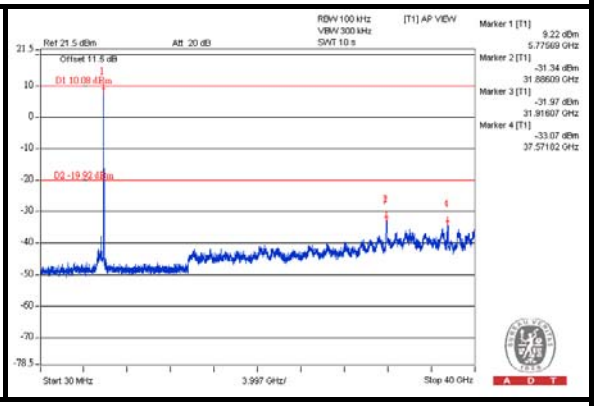
CH 149





CH 157





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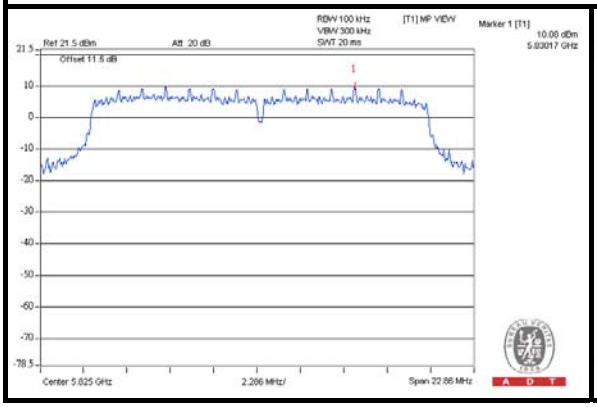
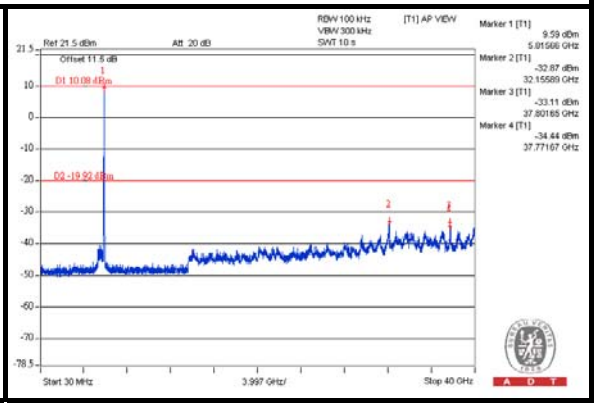
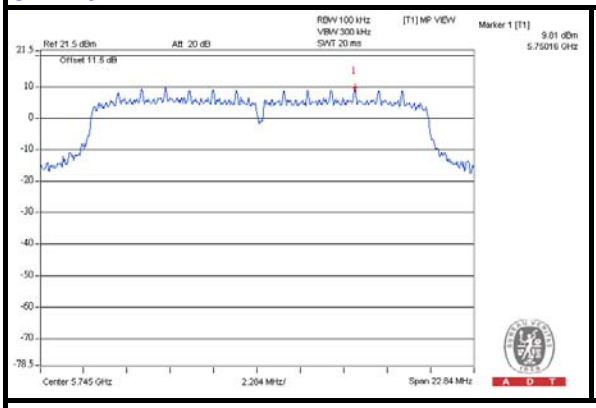
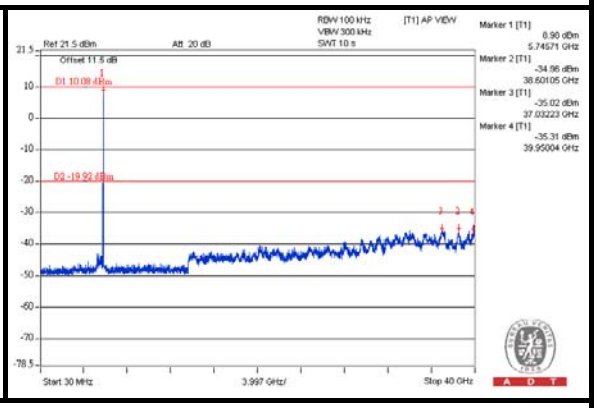




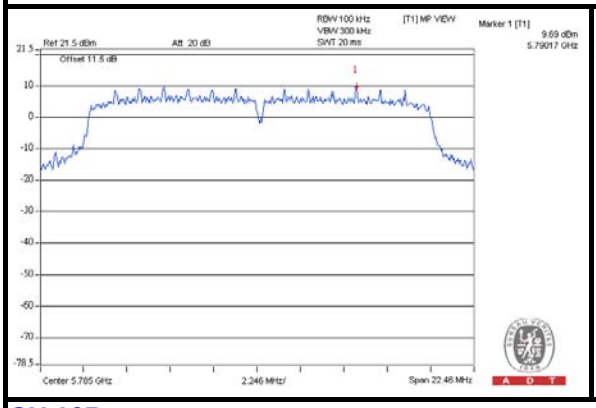
CHAIN 1

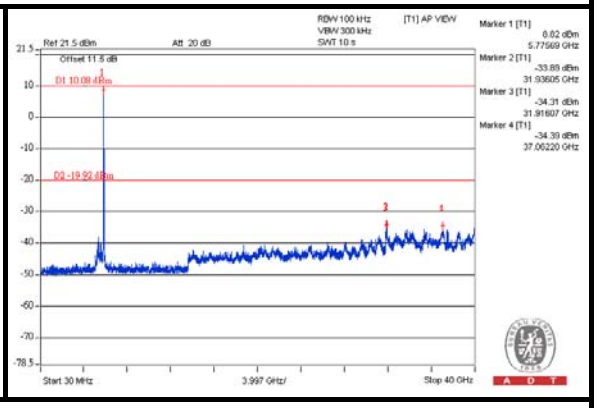
CH 149



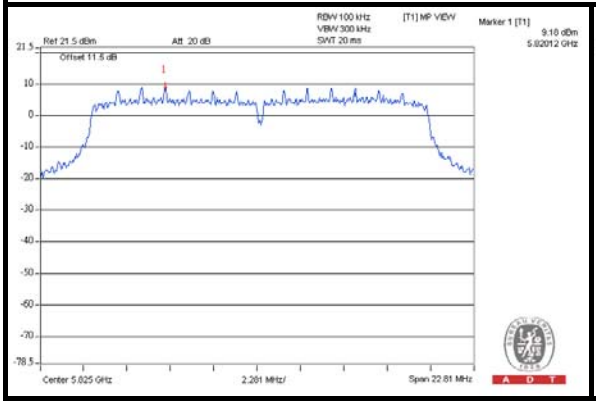


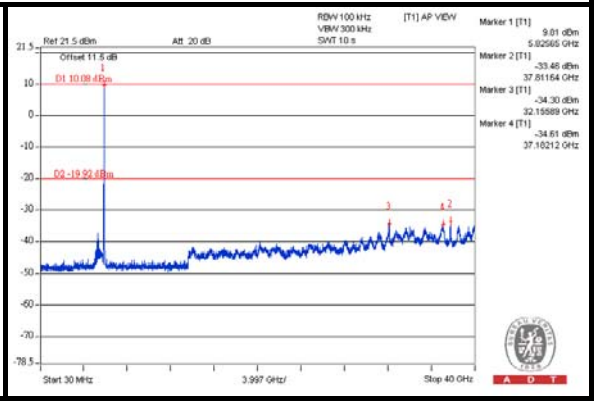
CH 157





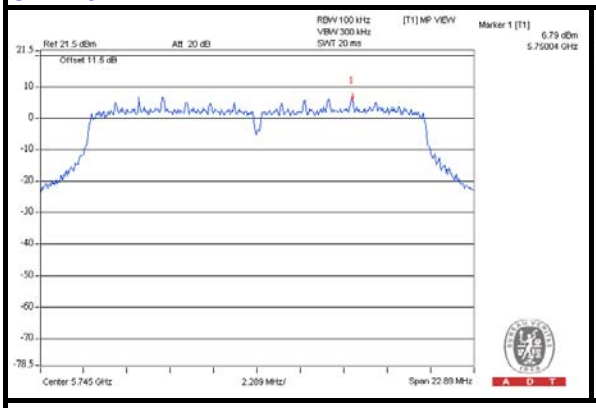
CH 165

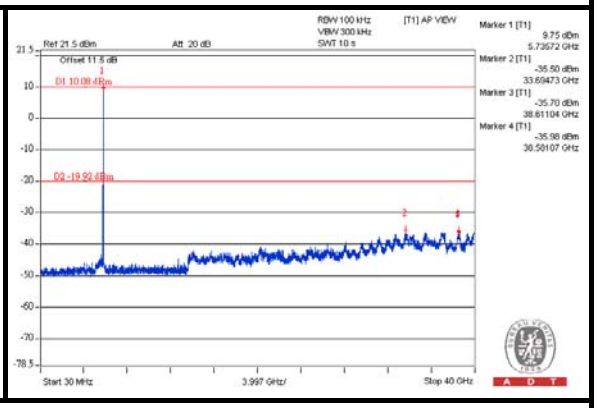




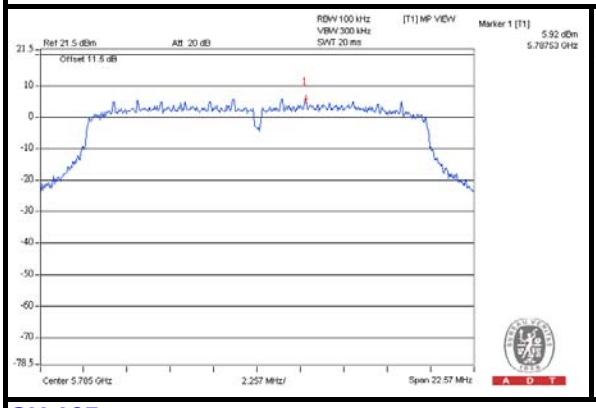
CHAIN 2

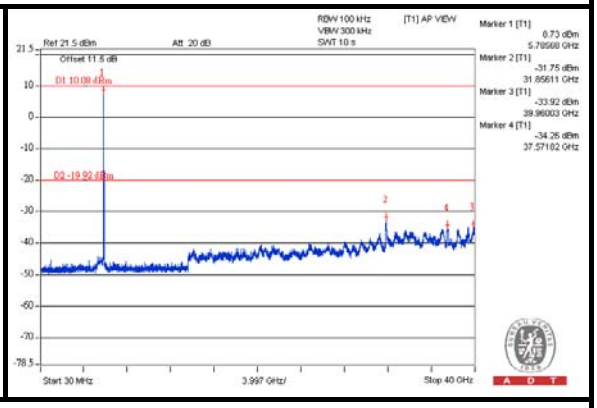
CH 149



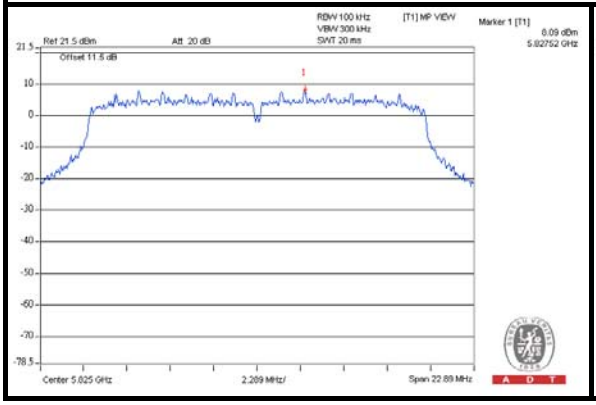


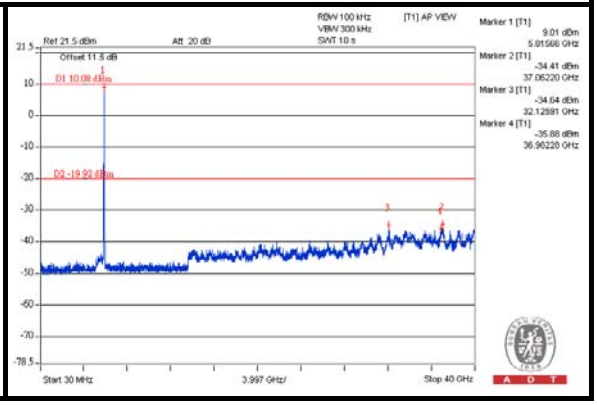
CH 157





CH 165

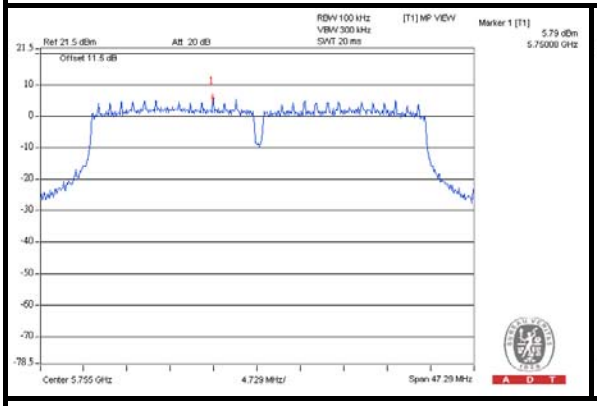


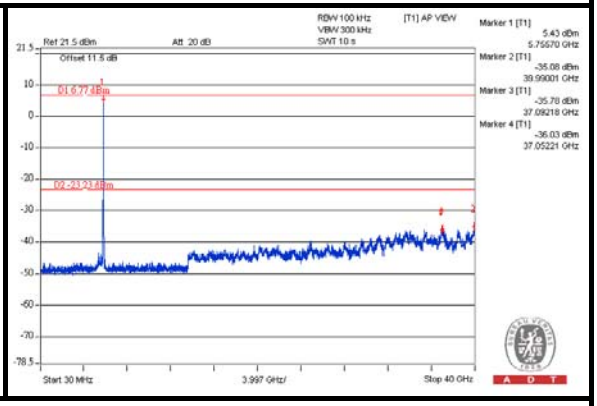


802.11n (40MHz)

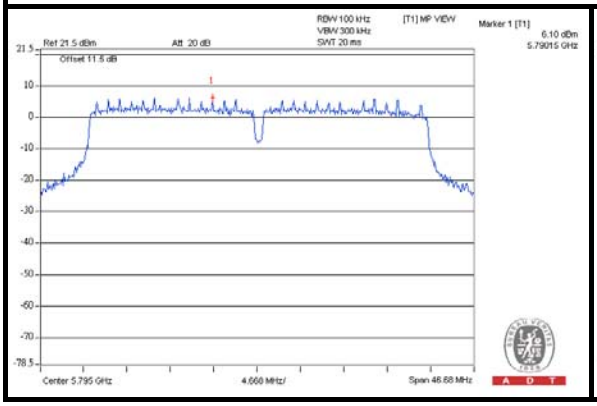
CHAIN 0

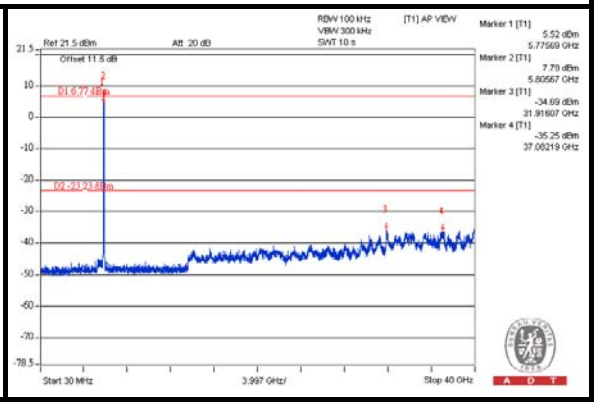
CH 151





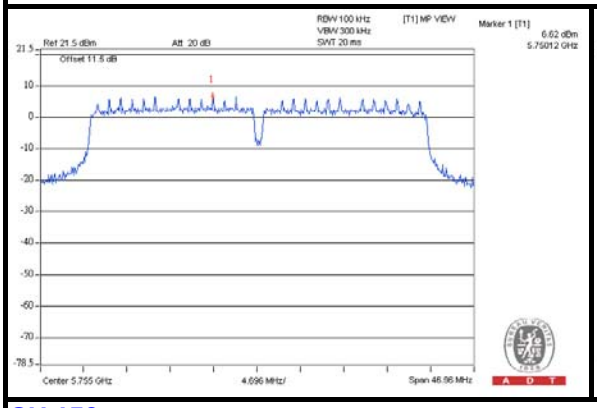
CH 159

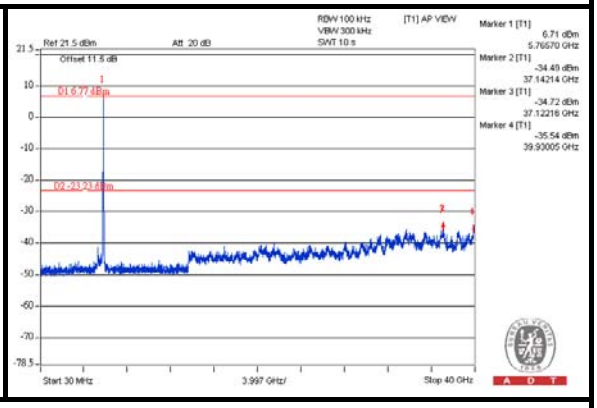




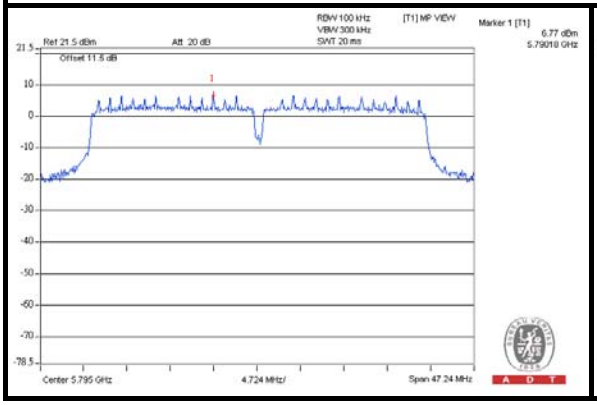
CHAIN 1

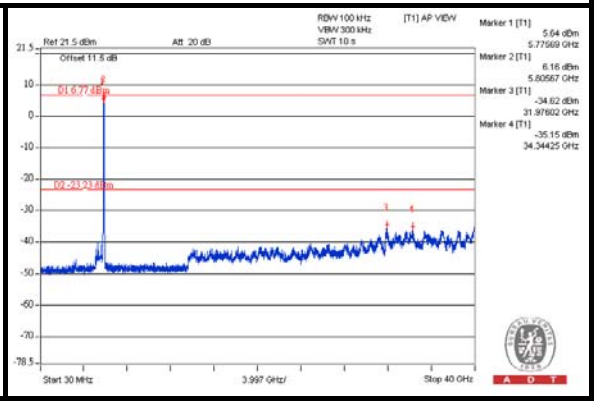
CH 151





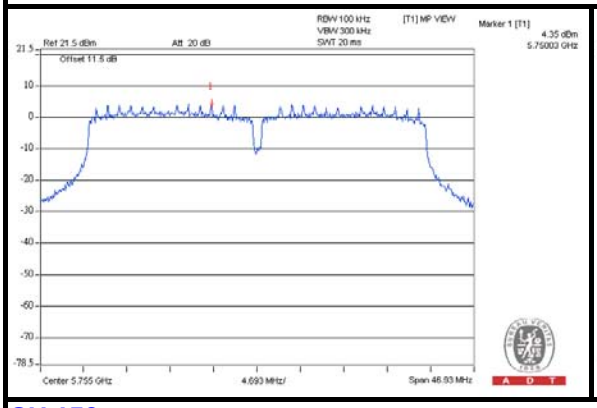
CH 159

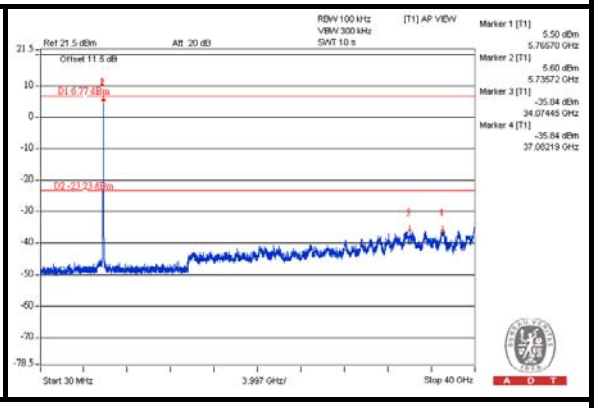




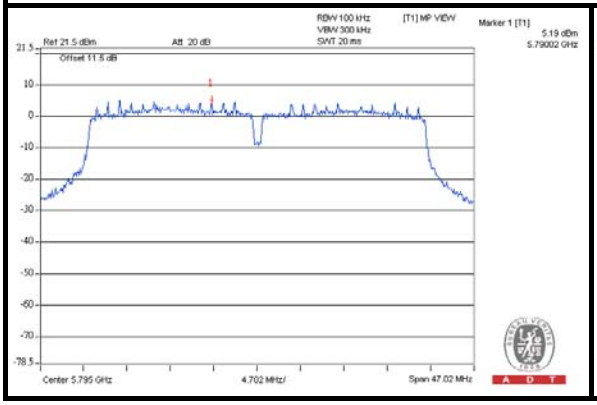
CHAIN 2

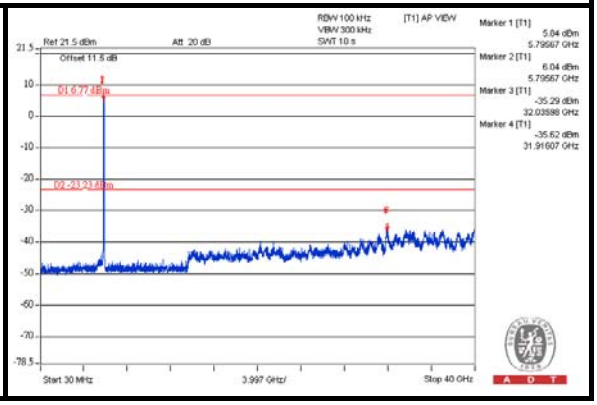
CH 151





CH 159





6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. 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.

8. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---