FCC TEST REPORT (15.247)

REPORT NO.:	RF131223C35
MODEL NO.:	XR600
FCC ID:	SK6-XR620
RECEIVED:	Dec. 12, 2013
TESTED:	Dec. 17 ~ Dec. 27, 2013
ISSUED:	Jan. 09, 2013

APPLICANT:	Xirrus, INC.
ADDRESS:	2101 Corporate Center Driver Thousand Oaks, California 91320

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
RF131223C35	Original release	Jan. 09, 2013

1. CERTIFICATION

PRODUCT:	802.11ac 2x2 AP
MODEL NO.:	XR600
BRAND:	Xirrus
APPLICANT:	Xirrus, INC.
TESTED:	Dec. 17 ~ Dec. 27, 2013
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)**
	ANSI C63.10-2009

The above equipment (model: XR600) 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 :** Jan. 09, 2013

Ivy Lin / Specialist

APPROVED BY : _____ **, DATE :** Jan. 09, 2013

Ken Liu / Senior 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 -16.03dB at 3.07053MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5725.00MHz.
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 I-PEX 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	3.19 dB
	200MHz ~1000MHz	3.21 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	802.11ac 2x2 AP
MODEL NO.	XR600
POWER SUPPLY	55Vdc (POE)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 256QAM, 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 300.0Mbps 802.11ac: up to 867.0Mbpss
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:** 802.11a, 802.11n (20MHz): 5 802.11n (40MHz): 2 802.11ac (VHT80): 1
OUTPUT POWER	251.852 mW for 2412 ~ 2462MHz 213.177mW for 5745 ~ 5825MHz
ANTENNA TYPE	2.4GHz: Monopole antenna with 3.48dBi gain 5.0GHz: Monopole antenna with 5.16dBi gain
ANTENNA CONNECTOR	I-PEX
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	N/A

NOTE:

1. The EUT is collocated two dual band RF modules (Radio 1, Radio 2), can not transmit simultaneously.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
802.11a	2TX
802.11n (20MHz) (MCS 8 ~ 15)	2TX
802.11n (40MHz) (MCS 8 ~ 15)	2TX
802.11ac (VHT80)	2TX

3. The EUT was powered by the following POE (provided as a support unit only).

BRAND	PowerDsine
MODEL	PD9001G
INPUT POWER	100-250Vac, 50/60Hz, 0.8A
OUTPUT POWER	55Vdc, 0.60A

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 and 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

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
155	5775MHz

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

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, B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A, B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A, B	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	802.11b	1 to 11	6	DSSS	DBPSK	1.0
B	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2

POWER LINE CONDUCTED EMISSION TEST:

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

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	6	DSSS	DBPSK	1.0
B	802.11n (20MHz)	1 to 11	6	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, B	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
A, B	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
A, B	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, B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A, B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A, B	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	22deg. C, 69%RH	120Vac, 60Hz	Brad Tung, Jones Chang
RE<1G	22deg. C, 69%RH	120Vac, 60Hz	Jones Chang
PLC	25deg. C, 71%RH	120Vac, 60Hz	Jones Chang
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

FOR 5.0GHz (5745 ~ 5825MHz):

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Radio 1
B	√	√	√	√	Radio 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:
1. Radio 1: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. Radio 2: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.

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, B	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A, B	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0
A, B	802.11ac (VHT80)	155	155	OFDM	BPSK	58.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	149 to 165	149	OFDM	BPSK	7.2
B	802.11n (20MHz)	149 to 165	157	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	802.11a	149 to 165	149	OFDM	BPSK	6.0
B	802.11n (20MHz)	149 to 165	157	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, B	802.11a	149 to 165	149, 165	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	7.2
A, B	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0
A, B	802.11ac (VHT80)	155	155	OFDM	BPSK	58.5

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, B	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A, B	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0
A, B	802.11ac (VHT80)	155	155	OFDM	BPSK	58.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	22deg. C, 69%RH	120Vac, 60Hz	Brad Tung, Jones Chang
RE<1G	22deg. C, 69%RH	120Vac, 60Hz	Jones Chang
PLC	25deg. C, 71%RH	120Vac, 60Hz	Jones Chang
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 DUTY CYCLE OF TEST SIGNAL

2.4GHz Band:

Test mode A

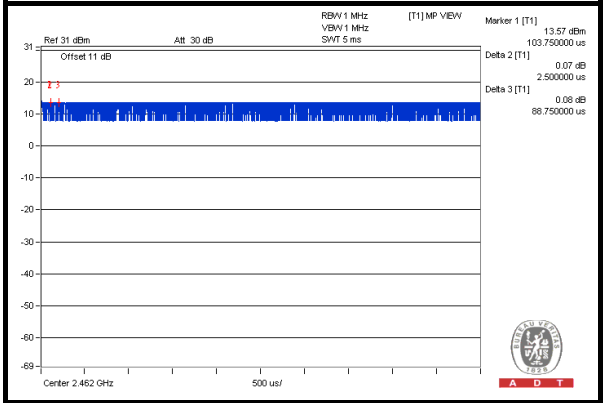
802.11b: Duty cycle of test signal is 100 %

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

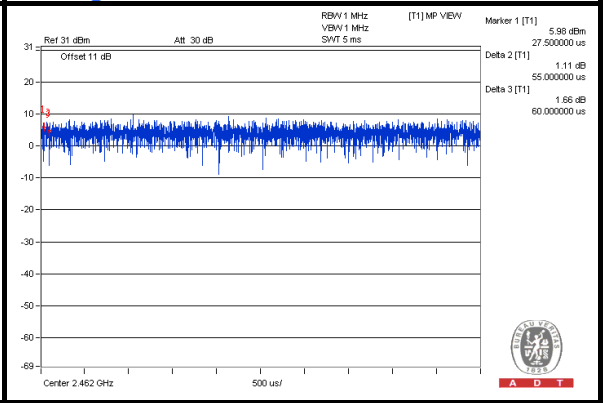
802.11n (20MHz): Duty cycle of test signal is > 98 %

802.11n (40MHz): Duty cycle of test signal is > 98 %

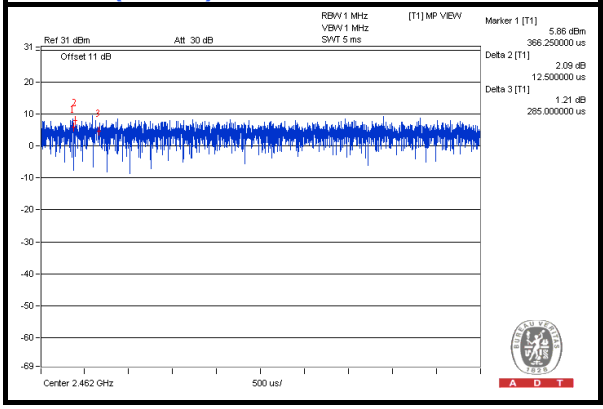
802.11b



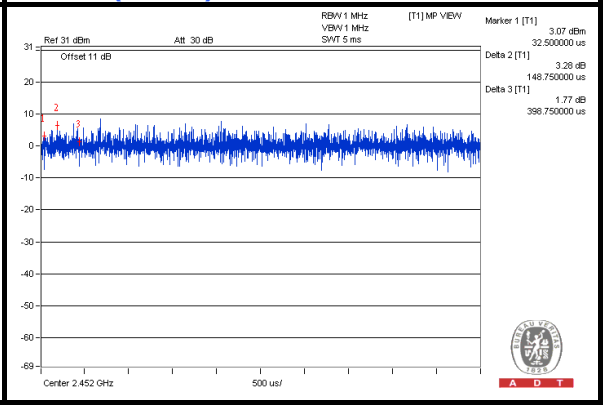
802.11g



802.11n (20MHz)



802.11n (40MHz)



Test mode B

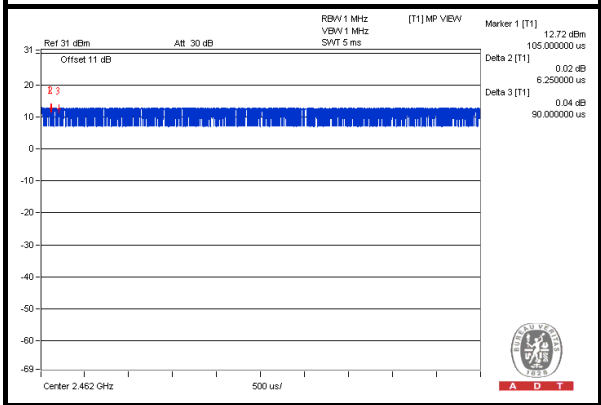
802.11b: Duty cycle of test signal is 100 %

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

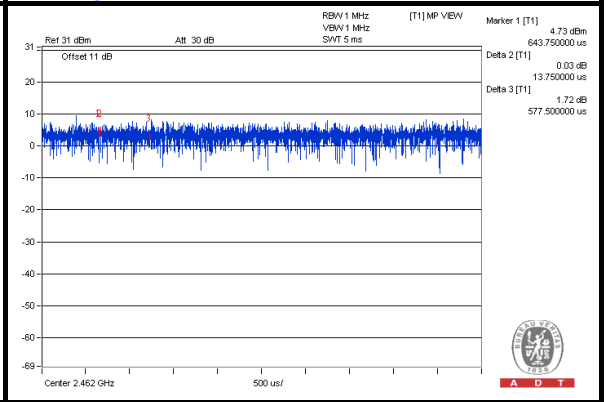
802.11n (20MHz): Duty cycle of test signal is > 98 %

802.11n (40MHz): Duty cycle of test signal is > 98 %

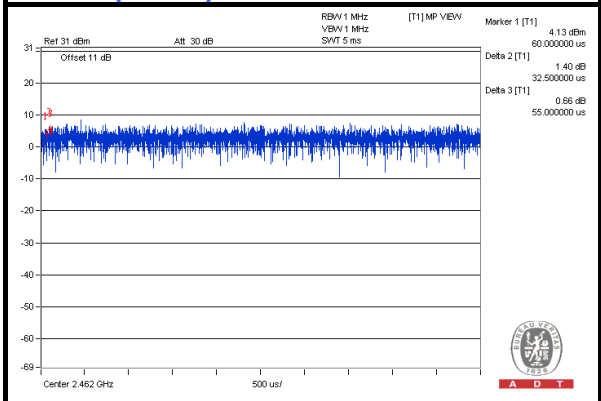
802.11b



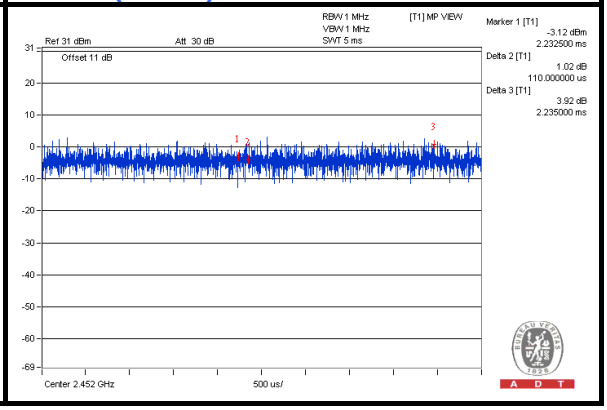
802.11g



802.11n (20MHz)



802.11n (40MHz)



5.0GHz Band:

Test mode A

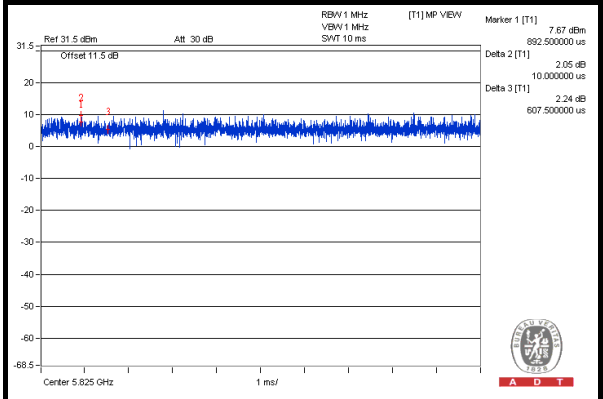
802.11a: Duty cycle of test signal is > 98 %

802.11n (20MHz): Duty cycle of test signal is > 98 %

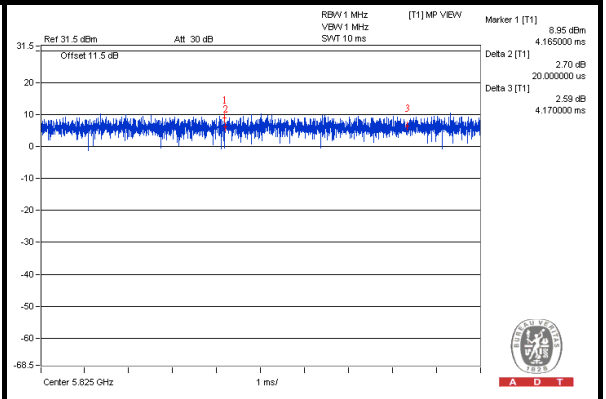
802.11n (40MHz): Duty cycle of test signal is > 98 %

802.11ac (VHT80): Duty cycle of test signal is > 98 %

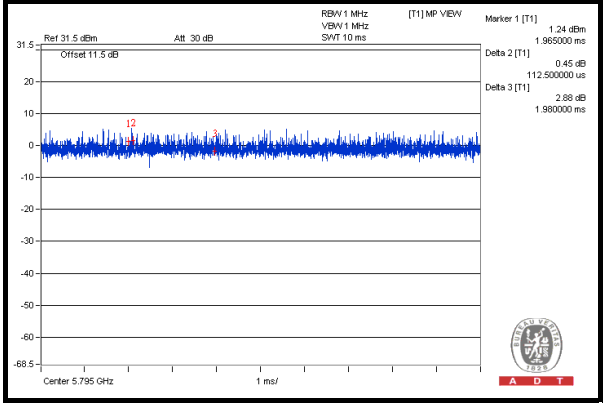
802.11a



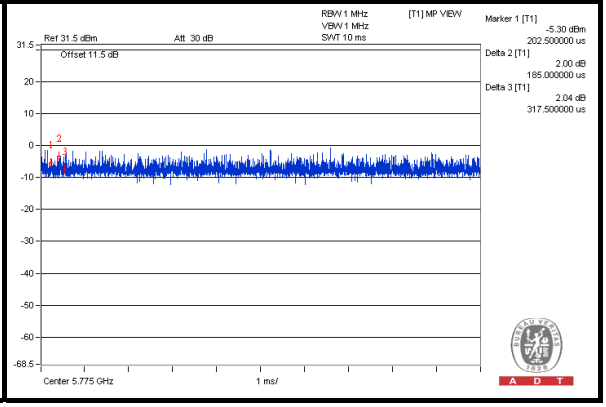
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



Test mode B

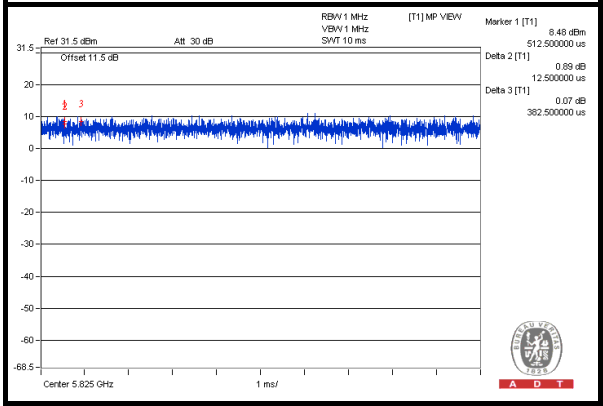
802.11a: Duty cycle of test signal is > 98 %

802.11n (20MHz): Duty cycle of test signal is > 98 %

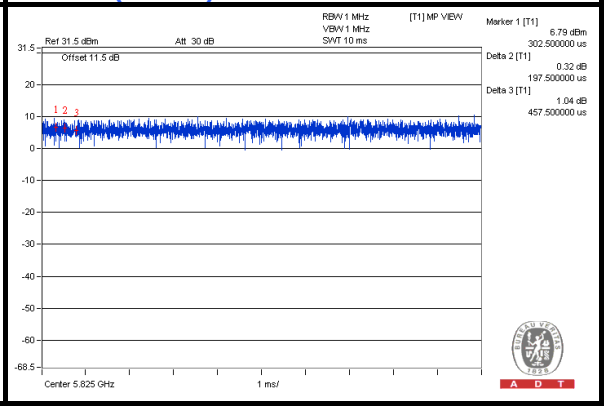
802.11n (40MHz): Duty cycle of test signal is > 98 %

802.11ac (VHT80): Duty cycle of test signal is > 98 %

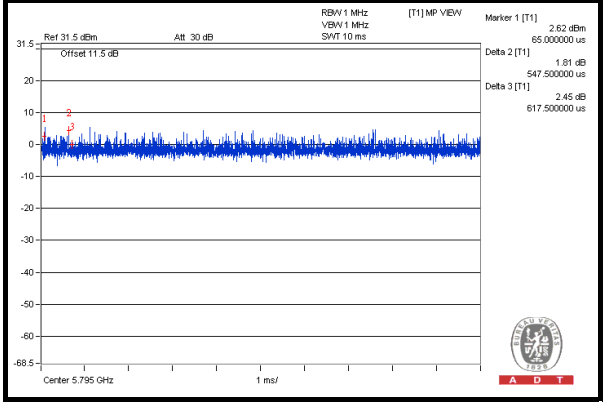
802.11a



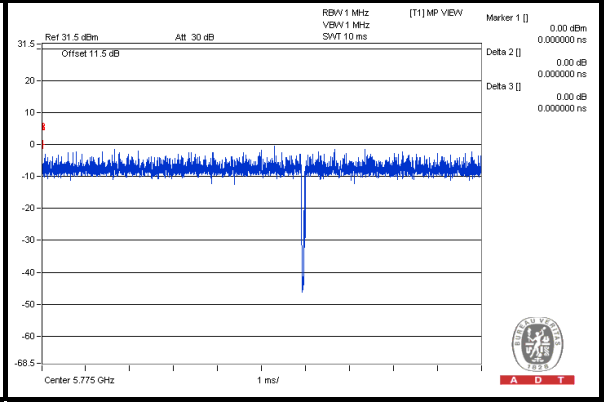
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



3.4 DESCRIPTION OF SUPPORT UNITS

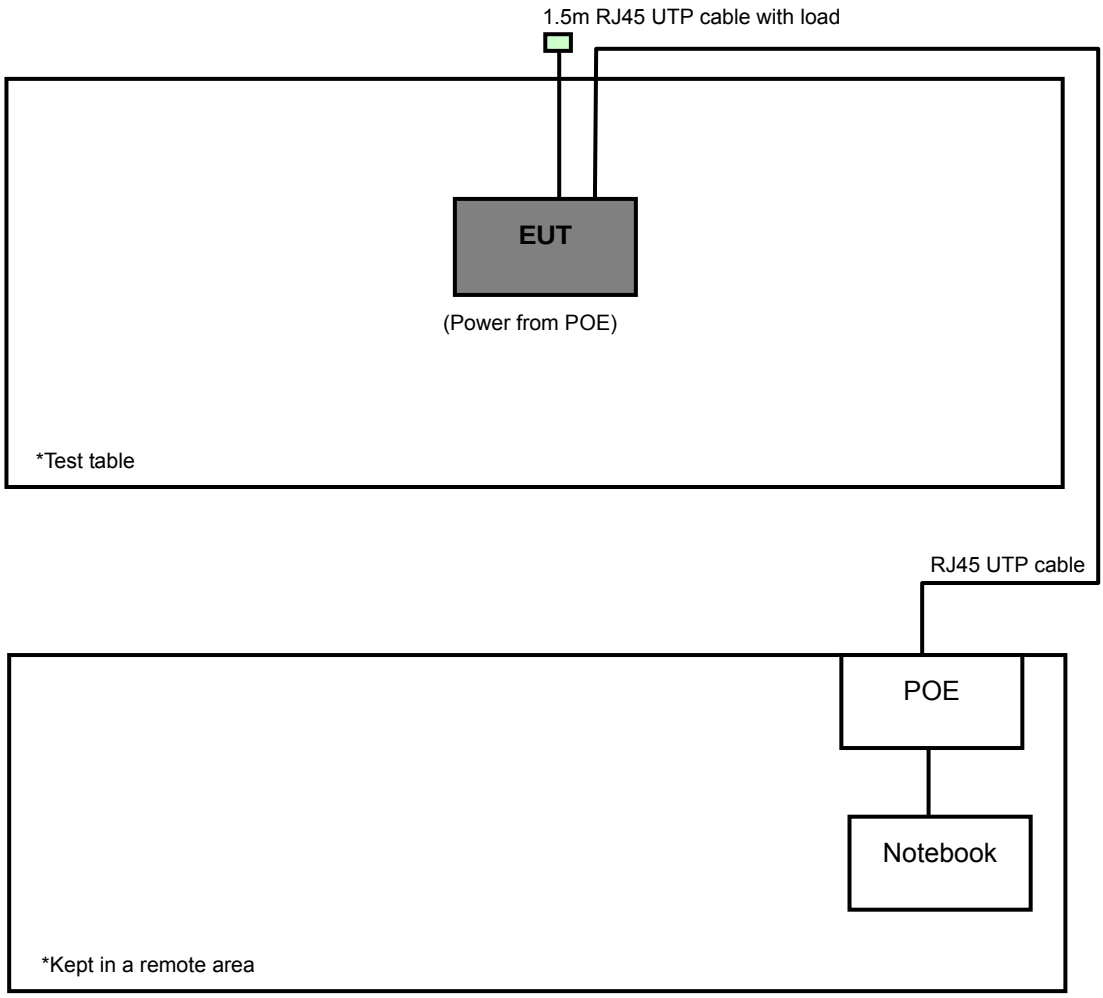
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	D531	CN-0XM006-48643-81U-2973	QDS-BRCM1020
2	POE	PowerDsine	PD9001G	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	3m RJ45 UTP cable
2	1.5m RJ45 UTP cable

NOTE:
1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1 ~ 2 acted as a communication partner to transfer data.
3. Item 2 was provided by the client.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)
558074 D01 DTS Meas Guidance v03r01
662911 D01 Multiple Transmitter Output v02
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	100424	Sep. 09, 2013	Sep. 08, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2013	Dec. 17, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	9120D	209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 28, 2013	Oct. 27, 2014
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 2014

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

2. The test was performed in HwaYa Chamber 4.

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

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC7450F-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:

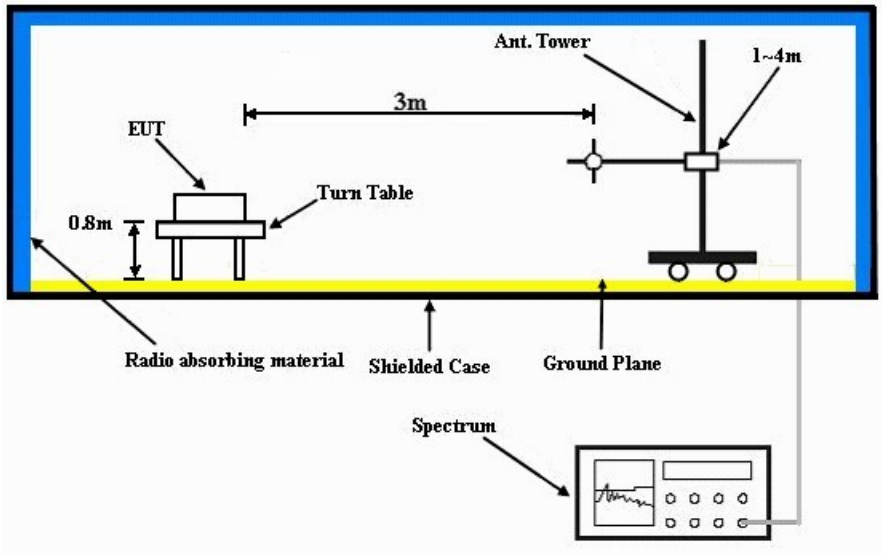
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T(Duty cycle < 98%) or 10Hz(Duty cycle > 98%) 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

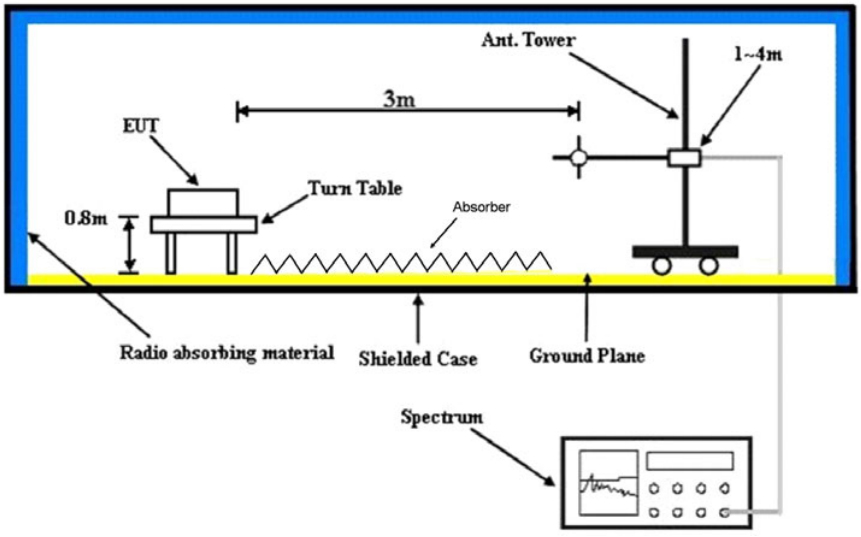
No deviation.

4.1.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.6 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.
b. Prepared notebooks and POE to act as communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".

4.1.7 TEST RESULTS

TEST MODE A

ABOVE 1GHz DATA：

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	2388.00	65.5 PK	74.0	-8.5	1.05 H	57	33.60	31.90
2	2388.00	52.6 AV	54.0	-1.4	1.05 H	57	20.70	31.90
3	*2412.00	110.1 PK			1.05 H	58	78.10	32.00
4	*2412.00	107.2 AV			1.05 H	58	75.20	32.00
5	4824.00	49.5 PK	74.0	-24.5	1.13 H	138	44.70	4.80
6	4824.00	42.9 AV	54.0	-11.1	1.13 H	138	38.10	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.7 PK	74.0	-16.3	1.20 V	177	25.80	31.90
2	2390.00	46.5 AV	54.0	-7.5	1.20 V	177	14.60	31.90
3	*2412.00	103.3 PK			1.19 V	184	71.30	32.00
4	*2412.00	99.9 AV			1.19 V	184	67.90	32.00
5	4824.00	46.5 PK	74.0	-27.5	1.00 V	180	41.70	4.80
6	4824.00	37.3 AV	54.0	-16.7	1.00 V	180	32.50	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	112.1 PK			1.05 H	55	80.10	32.00
2	*2437.00	109.7 AV			1.05 H	55	77.70	32.00
3	4874.00	51.0 PK	74.0	-23.0	1.36 H	151	46.00	5.00
4	4874.00	46.8 AV	54.0	-7.2	1.36 H	151	41.80	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.7 PK			1.00 V	124	72.70	32.00
2	*2437.00	103.0 AV			1.00 V	124	71.00	32.00
3	4874.00	48.0 PK	74.0	-26.0	1.06 V	181	43.00	5.00
4	4874.00	39.8 AV	54.0	-14.2	1.36 V	151	34.80	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.0 PK			1.04 H	56	78.80	32.20
2	*2462.00	108.2 AV			1.04 H	56	76.00	32.20
3	2483.50	63.0 PK	74.0	-11.0	1.02 H	59	30.70	32.30
4	2483.50	52.5 AV	54.0	-1.5	1.02 H	59	20.20	32.30
5	4924.00	48.4 PK	74.0	-25.6	1.13 H	148	43.40	5.00
6	4924.00	39.7 AV	54.0	-14.3	1.13 H	148	34.70	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.7 PK			1.18 V	184	69.50	32.20
2	*2462.00	98.1 AV			1.18 V	184	65.90	32.20
3	2483.50	56.4 PK	74.0	-17.6	1.18 V	191	24.10	32.30
4	2483.50	46.6 AV	54.0	-7.4	1.18 V	191	14.30	32.30
5	4924.00	46.4 PK	74.0	-27.6	1.03 V	188	41.40	5.00
6	4924.00	37.7 AV	54.0	-16.3	1.03 V	188	32.70	5.00

REMARKS:

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

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	61.9 PK	74.0	-12.1	1.06 H	51	30.00	31.90
2	2390.00	52.4 AV	54.0	-1.6	1.06 H	51	20.50	31.90
3	*2412.00	109.4 PK			1.05 H	57	77.40	32.00
4	*2412.00	98.1 AV			1.05 H	57	66.10	32.00
5	4824.00	46.9 PK	74.0	-27.1	1.05 H	119	42.10	4.80
6	4824.00	35.9 AV	54.0	-18.1	1.05 H	119	31.10	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.3 PK	74.0	-16.7	1.00 V	104	25.40	31.90
2	2390.00	46.6 AV	54.0	-7.4	1.00 V	104	14.70	31.90
3	*2412.00	103.1 PK			1.00 V	104	71.10	32.00
4	*2412.00	94.5 AV			1.00 V	104	62.50	32.00
5	4824.00	44.9 PK	74.0	-29.1	1.00 V	19	40.10	4.80
6	4824.00	34.6 AV	54.0	-19.4	1.00 V	19	29.80	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	112.8 PK			1.04 H	52	80.80	32.00
2	*2437.00	101.5 AV			1.04 H	52	69.50	32.00
3	2483.50	66.5 PK	74.0	-7.5	1.04 H	52	34.20	32.30
4	2483.50	52.6 AV	54.0	-1.4	1.04 H	52	20.30	32.30
5	4874.00	49.2 PK	74.0	-24.8	1.01 H	21	44.20	5.00
6	4874.00	38.5 AV	54.0	-15.5	1.01 H	21	33.50	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.6 PK			1.15 V	183	74.60	32.00
2	*2437.00	96.4 AV			1.15 V	183	64.40	32.00
3	2483.50	63.5 PK	74.0	-10.5	1.15 V	186	31.20	32.30
4	2483.50	48.1 AV	54.0	-5.9	1.15 V	186	15.80	32.30
5	4874.00	47.0 PK	74.0	-27.0	1.01 V	144	42.00	5.00
6	4874.00	35.2 AV	54.0	-18.8	1.01 V	144	30.20	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	107.5 PK			1.06 H	55	75.30	32.20
2	*2462.00	98.2 AV			1.06 H	55	66.00	32.20
3	2483.50	62.3 PK	74.0	-11.7	1.04 H	30	30.00	32.30
4	2483.50	52.6 AV	54.0	-1.4	1.04 H	30	20.30	32.30
5	4924.00	46.3 PK	74.0	-27.7	1.05 H	55	41.30	5.00
6	4924.00	35.4 AV	54.0	-18.6	1.05 H	55	30.40	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.6 PK			1.19 V	186	69.40	32.20
2	*2462.00	92.1 AV			1.19 V	186	59.90	32.20
3	2483.50	57.8 PK	74.0	-16.2	1.19 V	186	25.50	32.30
4	2483.50	45.9 AV	54.0	-8.1	1.19 V	186	13.60	32.30
5	4924.00	45.9 PK	74.0	-28.1	1.00 V	223	40.90	5.00
6	4924.00	34.7 AV	54.0	-19.3	1.00 V	129	29.70	5.00

REMARKS:

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

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.1 PK	74.0	-5.9	1.07 H	50	36.20	31.90
2	2390.00	52.8 AV	54.0	-1.2	1.07 H	50	20.90	31.90
3	*2412.00	105.2 PK			1.06 H	57	73.20	32.00
4	*2412.00	96.4 AV			1.06 H	57	64.40	32.00
5	4824.00	46.3 PK	74.0	-27.7	1.08 H	359	41.50	4.80
6	4824.00	34.6 AV	54.0	-19.4	1.08 H	359	29.80	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.9 PK	74.0	-10.1	1.00 V	119	32.00	31.90
2	2390.00	51.1 AV	54.0	-2.9	1.00 V	119	19.20	31.90
3	*2412.00	103.1 PK			1.00 V	123	71.10	32.00
4	*2412.00	91.6 AV			1.00 V	123	59.60	32.00
5	4824.00	45.6 PK	74.0	-28.4	1.00 V	119	40.80	4.80
6	4824.00	34.0 AV	54.0	-20.0	1.00 V	119	29.20	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	110.8 PK			1.07 H	57	78.80	32.00
2	*2437.00	98.9 AV			1.07 H	57	66.90	32.00
3	2483.50	66.9 PK	74.0	-7.1	1.05 H	34	34.60	32.30
4	2483.50	52.2 AV	54.0	-1.8	1.05 H	34	19.90	32.30
5	4874.00	48.1 PK	74.0	-25.9	1.09 H	352	43.10	5.00
6	4874.00	37.9 AV	54.0	-16.1	1.09 H	352	32.90	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.5 PK			1.00 V	100	74.50	32.00
2	*2437.00	95.4 AV			1.00 V	100	63.40	32.00
3	2483.50	60.3 PK	74.0	-13.7	1.00 V	125	28.00	32.30
4	2483.50	47.9 AV	54.0	-6.1	1.00 V	125	15.60	32.30
5	4874.00	46.5 PK	74.0	-27.5	1.00 V	292	41.50	5.00
6	4874.00	36.5 AV	54.0	-17.5	1.00 V	292	31.50	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.7 PK			1.05 H	56	73.50	32.20
2	*2462.00	94.9 AV			1.05 H	56	62.70	32.20
3	2483.50	67.9 PK	74.0	-6.1	1.04 H	57	35.60	32.30
4	2483.50	52.6 AV	54.0	-1.4	1.04 H	57	20.30	32.30
5	4924.00	46.4 PK	74.0	-27.6	1.00 H	211	41.40	5.00
6	4924.00	34.3 AV	54.0	-19.7	1.00 H	211	29.30	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.0 PK			1.00 V	101	70.80	32.20
2	*2462.00	91.2 AV			1.00 V	101	59.00	32.20
3	2483.50	61.8 PK	74.0	-12.2	1.00 V	112	29.50	32.30
4	2483.50	49.6 AV	54.0	-4.4	1.00 V	112	17.30	32.30
5	4924.00	46.1 PK	74.0	-27.9	1.00 V	91	41.10	5.00
6	4924.00	33.8 AV	54.0	-20.2	1.00 V	91	28.80	5.00

REMARKS:

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

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	61.9 PK	74.0	-12.1	1.05 H	52	30.00	31.90
2	2390.00	52.3 AV	54.0	-1.7	1.05 H	52	20.40	31.90
3	*2422.00	102.3 PK			1.05 H	59	70.30	32.00
4	*2422.00	91.1 AV			1.05 H	59	59.10	32.00
5	4844.00	46.1 PK	74.0	-27.9	1.01 H	118	41.30	4.80
6	4844.00	34.5 AV	54.0	-19.5	1.01 H	118	29.70	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.2 PK	74.0	-8.8	1.00 V	104	33.30	31.90
2	2390.00	52.2 AV	54.0	-1.8	1.00 V	104	20.30	31.90
3	*2422.00	96.4 PK			1.00 V	104	64.40	32.00
4	*2422.00	88.3 AV			1.00 V	104	56.30	32.00
5	4844.00	45.6 PK	74.0	-28.4	1.01 V	18	40.80	4.80
6	4844.00	34.0 AV	54.0	-20.0	1.01 V	18	29.20	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	104.9 PK			1.09 H	58	72.90	32.00
2	*2437.00	93.3 AV			1.09 H	58	61.30	32.00
3	2483.50	64.7 PK	74.0	-9.3	1.05 H	58	32.40	32.30
4	2483.50	52.9 AV	54.0	-1.1	1.05 H	58	20.60	32.30
5	4874.00	45.7 PK	74.0	-28.3	1.00 H	311	40.70	5.00
6	4874.00	34.4 AV	54.0	-19.6	1.00 H	311	29.40	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.9 PK			1.00 V	122	69.90	32.00
2	*2437.00	90.8 AV			1.00 V	122	58.80	32.00
3	2483.50	60.7 PK	74.0	-13.3	1.00 V	126	28.40	32.30
4	2483.50	49.6 AV	54.0	-4.4	1.00 V	126	17.30	32.30
5	4874.00	45.2 PK	74.0	-28.8	1.00 V	351	40.20	5.00
6	4874.00	33.8 AV	54.0	-20.2	1.00 V	351	28.80	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	101.5 PK			1.05 H	57	69.30	32.20
2	*2452.00	90.7 AV			1.05 H	57	58.50	32.20
3	2483.50	66.0 PK	74.0	-8.0	1.05 H	57	33.70	32.30
4	2483.50	52.8 AV	54.0	-1.2	1.05 H	57	20.50	32.30
5	4904.00	46.3 PK	74.0	-27.7	1.00 H	222	41.30	5.00
6	4904.00	35.0 AV	54.0	-19.0	1.00 H	222	30.00	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	98.7 PK			1.00 V	127	66.50	32.20
2	*2452.00	87.7 AV			1.00 V	127	55.50	32.20
3	2483.50	60.8 PK	74.0	-13.2	1.00 V	133	28.50	32.30
4	2483.50	49.9 AV	54.0	-4.1	1.00 V	133	17.60	32.30
5	4904.00	45.7 PK	74.0	-28.3	1.00 V	288	40.70	5.00
6	4904.00	34.0 AV	54.0	-20.0	1.00 V	288	29.00	5.00

REMARKS:

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

TEST MODE B

ABOVE 1GHz DATA：

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.4 PK	74.0	-4.6	1.42 H	60	37.50	31.90
2	2390.00	52.9 AV	54.0	-1.1	1.42 H	60	21.00	31.90
3	*2412.00	116.0 PK			1.42 H	60	84.00	32.00
4	*2412.00	112.4 AV			1.42 H	60	80.40	32.00
5	4824.00	48.7 PK	74.0	-25.3	1.00 H	344	43.90	4.80
6	4824.00	41.1 AV	54.0	-12.9	1.00 H	344	36.30	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.9 PK	74.0	-11.1	1.00 V	99	31.00	31.90
2	2390.00	46.9 AV	54.0	-7.1	1.00 V	99	15.00	31.90
3	*2412.00	110.0 PK			1.00 V	99	78.00	32.00
4	*2412.00	106.3 AV			1.00 V	99	74.30	32.00
5	4824.00	51.7 PK	74.0	-22.3	1.53 V	222	46.90	4.80
6	4824.00	46.1 AV	54.0	-7.9	1.53 V	222	41.30	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	115.4 PK			1.38 H	67	83.40	32.00
2	*2437.00	112.0 AV			1.38 H	67	80.00	32.00
3	2483.50	58.8 PK	74.0	-15.2	1.38 H	67	26.50	32.30
4	2483.50	48.9 AV	54.0	-5.1	1.38 H	67	16.60	32.30
5	4874.00	49.3 PK	74.0	-24.7	1.00 H	354	44.30	5.00
6	4874.00	41.7 AV	54.0	-12.3	1.00 H	354	36.70	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.6 PK			1.00 V	105	77.60	32.00
2	*2437.00	106.4 AV			1.00 V	105	74.40	32.00
3	2483.50	55.5 PK	74.0	-18.5	1.00 V	105	23.20	32.30
4	2483.50	46.5 AV	54.0	-7.5	1.00 V	105	14.20	32.30
5	4874.00	51.5 PK	74.0	-22.5	1.50 V	218	46.50	5.00
6	4874.00	46.3 AV	54.0	-7.7	1.50 V	218	41.30	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	113.4 PK			1.37 H	64	81.20	32.20
2	*2462.00	109.9 AV			1.37 H	64	77.70	32.20
3	2483.50	64.8 PK	74.0	-9.2	1.37 H	64	32.50	32.30
4	2483.50	52.9 AV	54.0	-1.1	1.37 H	64	20.60	32.30
5	4924.00	48.1 PK	74.0	-25.9	1.00 H	350	43.10	5.00
6	4924.00	40.6 AV	54.0	-13.4	1.00 H	350	35.60	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.5 PK			1.00 V	107	75.30	32.20
2	*2462.00	104.1 AV			1.00 V	107	71.90	32.20
3	2483.50	59.3 PK	74.0	-14.7	1.00 V	107	27.00	32.30
4	2483.50	47.7 AV	54.0	-6.3	1.00 V	107	15.40	32.30
5	4924.00	51.1 PK	74.0	-22.9	1.55 V	209	46.10	5.00
6	4924.00	45.6 AV	54.0	-8.4	1.55 V	209	40.60	5.00

REMARKS:

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

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.9 PK	74.0	-8.1	1.39 H	65	34.00	31.90
2	2390.00	52.2 AV	54.0	-1.8	1.39 H	65	20.30	31.90
3	*2412.00	111.9 PK			1.39 H	65	79.90	32.00
4	*2412.00	101.7 AV			1.39 H	65	69.70	32.00
5	4824.00	46.0 PK	74.0	-28.0	1.17 H	248	41.20	4.80
6	4824.00	34.1 AV	54.0	-19.9	1.17 H	248	29.30	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.0 PK	74.0	-12.0	1.00 V	90	30.10	31.90
2	2390.00	48.0 AV	54.0	-6.0	1.00 V	90	16.10	31.90
3	*2412.00	107.9 PK			1.00 V	90	75.90	32.00
4	*2412.00	97.8 AV			1.00 V	90	65.80	32.00
5	4824.00	45.9 PK	74.0	-28.1	1.13 V	310	41.10	4.80
6	4824.00	34.0 AV	54.0	-20.0	1.13 V	310	29.20	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	116.2 PK			1.37 H	61	84.20	32.00
2	*2437.00	105.8 AV			1.37 H	61	73.80	32.00
3	2483.50	66.5 PK	74.0	-7.5	1.37 H	61	34.20	32.30
4	2483.50	52.5 AV	54.0	-1.5	1.37 H	61	20.20	32.30
5	4874.00	46.2 PK	74.0	-27.8	1.24 H	225	41.20	5.00
6	4874.00	34.5 AV	54.0	-19.5	1.24 H	225	29.50	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.0 PK			1.00 V	94	81.00	32.00
2	*2437.00	103.0 AV			1.00 V	94	71.00	32.00
3	2483.50	64.4 PK	74.0	-9.6	1.00 V	94	32.10	32.30
4	2483.50	49.3 AV	54.0	-4.7	1.00 V	94	17.00	32.30
5	4874.00	46.1 PK	74.0	-27.9	1.08 V	243	41.10	5.00
6	4874.00	34.3 AV	54.0	-19.7	1.08 V	243	29.30	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.1 PK			1.34 H	69	77.90	32.20
2	*2462.00	99.6 AV			1.34 H	69	67.40	32.20
3	2483.50	69.2 PK	74.0	-4.8	1.34 H	69	36.90	32.30
4	2483.50	52.2 AV	54.0	-1.8	1.34 H	69	19.90	32.30
5	4924.00	46.5 PK	74.0	-27.5	1.12 H	245	41.50	5.00
6	4924.00	34.4 AV	54.0	-19.6	1.12 H	245	29.40	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.1 PK			1.00 V	92	73.90	32.20
2	*2462.00	95.7 AV			1.00 V	92	63.50	32.20
3	2483.50	65.5 PK	74.0	-8.5	1.00 V	92	33.20	32.30
4	2483.50	47.5 AV	54.0	-6.5	1.00 V	92	15.20	32.30
5	4924.00	46.3 PK	74.0	-27.7	1.08 V	302	41.30	5.00
6	4924.00	34.2 AV	54.0	-19.8	1.08 V	302	29.20	5.00

REMARKS:

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

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.0 PK	74.0	-8.0	1.39 H	63	34.10	31.90
2	2390.00	52.1 AV	54.0	-1.9	1.39 H	63	20.20	31.90
3	*2412.00	113.0 PK			1.39 H	63	81.00	32.00
4	*2412.00	103.2 AV			1.39 H	63	71.20	32.00
5	4824.00	45.1 PK	74.0	-28.9	1.15 H	163	40.30	4.80
6	4824.00	34.2 AV	54.0	-19.8	1.15 H	163	29.40	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.9 PK	74.0	-13.1	1.00 V	102	29.00	31.90
2	2390.00	46.9 AV	54.0	-7.1	1.00 V	102	15.00	31.90
3	*2412.00	108.0 PK			1.00 V	102	76.00	32.00
4	*2412.00	98.3 AV			1.00 V	102	66.30	32.00
5	4824.00	44.9 PK	74.0	-29.1	1.28 V	129	40.10	4.80
6	4824.00	33.9 AV	54.0	-20.1	1.28 V	129	29.10	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	115.2 PK			1.40 H	60	83.20	32.00
2	*2437.00	105.3 AV			1.40 H	60	73.30	32.00
3	2483.50	69.4 PK	74.0	-4.6	1.40 H	60	37.10	32.30
4	2483.50	52.9 AV	54.0	-1.1	1.40 H	60	20.60	32.30
5	4874.00	46.0 PK	74.0	-28.0	1.18 H	154	41.00	5.00
6	4874.00	34.3 AV	54.0	-19.7	1.18 H	154	29.30	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.5 PK			1.00 V	109	78.50	32.00
2	*2437.00	100.7 AV			1.00 V	109	68.70	32.00
3	2483.50	63.3 PK	74.0	-10.7	1.00 V	109	31.00	32.30
4	2483.50	46.9 AV	54.0	-7.1	1.00 V	109	14.60	32.30
5	4874.00	45.8 PK	74.0	-28.2	1.23 V	80	40.80	5.00
6	4874.00	34.0 AV	54.0	-20.0	1.23 V	80	29.00	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.9 PK			1.38 H	66	77.70	32.20
2	*2462.00	100.8 AV			1.38 H	66	68.60	32.20
3	2483.50	66.4 PK	74.0	-7.6	1.38 H	66	34.10	32.30
4	2483.50	52.5 AV	54.0	-1.5	1.38 H	66	20.20	32.30
5	4924.00	45.4 PK	74.0	-28.6	1.19 H	218	40.40	5.00
6	4924.00	34.4 AV	54.0	-19.6	1.19 H	218	29.40	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.0 PK			1.00 V	96	72.80	32.20
2	*2462.00	96.0 AV			1.00 V	96	63.80	32.20
3	2483.50	61.5 PK	74.0	-12.5	1.00 V	96	29.20	32.30
4	2483.50	46.8 AV	54.0	-7.2	1.00 V	96	14.50	32.30
5	4924.00	45.2 PK	74.0	-28.8	1.30 V	138	40.20	5.00
6	4924.00	34.2 AV	54.0	-19.8	1.30 V	138	29.20	5.00

REMARKS:

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

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	63.8 PK	74.0	-10.2	1.00 H	60	31.90	31.90
2	2390.00	52.7 AV	54.0	-1.3	1.00 H	60	20.80	31.90
3	*2422.00	99.3 PK			2.01 H	65	67.30	32.00
4	*2422.00	90.3 AV			2.01 H	65	58.30	32.00
5	4844.00	46.0 PK	74.0	-28.0	1.19 H	239	41.20	4.80
6	4844.00	34.9 AV	54.0	-19.1	1.19 H	239	30.10	4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.0 PK	74.0	-13.0	1.24 V	220	29.10	31.90
2	2390.00	49.2 AV	54.0	-4.8	1.24 V	220	17.30	31.90
3	*2422.00	96.3 PK			1.25 V	211	64.30	32.00
4	*2422.00	86.9 AV			1.25 V	211	54.90	32.00
5	4844.00	45.8 PK	74.0	-28.2	1.09 V	330	41.00	4.80
6	4844.00	34.3 AV	54.0	-19.7	1.09 V	309	29.50	4.80

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.8 PK	74.0	-8.2	1.70 H	70	33.90	31.90
2	2390.00	52.3 AV	54.0	-1.7	1.70 H	70	20.40	31.90
3	*2437.00	103.0 PK			1.70 H	70	71.00	32.00
4	*2437.00	93.1 AV			1.70 H	70	61.10	32.00
5	2483.50	63.8 PK	74.0	-10.2	1.40 H	70	31.50	32.30
6	2483.50	52.6 AV	54.0	-1.4	1.16 H	72	20.30	32.30
7	4874.00	47.1 PK	74.0	-26.9	1.10 H	34	42.10	5.00
8	4874.00	35.7 AV	54.0	-18.3	1.10 H	34	30.70	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.5 PK	74.0	-12.5	1.25 V	211	29.60	31.90
2	2390.00	51.1 AV	54.0	-2.9	1.25 V	211	19.20	31.90
3	*2437.00	99.7 PK			1.25 V	210	67.70	32.00
4	*2437.00	89.9 AV			1.25 V	210	57.90	32.00
5	2483.50	59.6 PK	74.0	-14.4	1.10 V	72	27.30	32.30
6	2483.50	48.5 AV	54.0	-5.5	1.10 V	72	16.20	32.30
7	4874.00	46.5 PK	74.0	-27.5	1.00 V	129	41.50	5.00
8	4874.00	35.2 AV	54.0	-18.8	1.00 V	129	30.20	5.00

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	99.2 PK			1.40 H	62	67.00	32.20
2	*2452.00	90.5 AV			1.40 H	62	58.30	32.20
3	2483.50	65.9 PK	74.0	-8.1	1.14 H	73	33.60	32.30
4	2483.50	52.8 AV	54.0	-1.2	1.14 H	73	20.50	32.30
5	4904.00	46.9 PK	74.0	-27.1	1.10 H	229	41.90	5.00
6	4904.00	35.5 AV	54.0	-18.5	1.10 H	229	30.50	5.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.2 PK			1.26 V	125	64.00	32.20
2	*2452.00	86.7 AV			1.26 V	125	54.50	32.20
3	2483.50	60.9 PK	74.0	-13.1	1.26 V	217	28.60	32.30
4	2483.50	51.3 AV	54.0	-2.7	1.26 V	217	19.00	32.30
5	4904.00	46.3 PK	74.0	-27.7	1.00 V	309	41.30	5.00
6	4904.00	34.8 AV	54.0	-19.2	1.00 V	309	29.80	5.00

REMARKS:

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

TEST MODE A

BELOW 1GHz WORST-CASE DATA：802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	45.42	31.4 QP	40.0	-8.6	1.49 H	55	45.60	-14.20
2	375.29	37.6 QP	46.0	-8.4	1.00 H	227	48.90	-11.30
3	499.48	39.6 QP	46.0	-6.4	1.49 H	159	48.60	-9.00
4	802.18	39.7 QP	46.0	-6.3	1.00 H	298	42.80	-3.10
5	901.14	34.8 QP	46.0	-11.2	1.49 H	143	36.30	-1.50
6	1000.10	36.9 QP	54.0	-17.1	2.00 H	37	37.20	-0.30
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	36.15	38.4 QP	40.0	-1.6	1.48 V	6	53.00	-14.60
2	64.83	37.2 QP	40.0	-2.8	1.00 V	323	52.40	-15.20
3	249.17	34.9 QP	46.0	-11.1	1.00 V	160	49.40	-14.50
4	499.48	39.6 QP	46.0	-6.4	1.00 V	72	48.60	-9.00
5	549.93	37.8 QP	46.0	-8.2	1.00 V	218	46.10	-8.30
6	802.18	42.1 QP	46.0	-3.9	1.50 V	7	45.20	-3.10

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

TEST MODE B

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	124.98	32.7 QP	43.5	-10.8	1.99 H	247	48.40	-15.70
2	249.17	42.1 QP	46.0	-3.9	1.00 H	226	56.60	-14.50
3	549.93	44.0 QP	46.0	-2.0	1.49 H	7	52.30	-8.30
4	600.38	42.6 QP	46.0	-3.4	1.49 H	174	49.60	-7.00
5	650.83	40.6 QP	46.0	-5.4	1.49 H	7	46.70	-6.10
6	751.73	35.4 QP	46.0	-10.6	1.00 H	179	39.10	-3.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.60	38.0 QP	40.0	-2.0	1.00 V	222	53.10	-15.10
2	47.36	38.0 QP	40.0	-2.0	1.00 V	8	52.50	-14.50
3	375.29	44.5 QP	46.0	-1.5	1.00 V	246	55.80	-11.30
4	549.93	41.1 QP	46.0	-4.9	1.00 V	8	49.40	-8.30
5	650.83	43.0 QP	46.0	-3.0	1.00 V	8	49.10	-6.10
6	749.79	34.9 QP	46.0	-11.1	1.49 V	341	38.80	-3.90

REMARKS:

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY 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	100289	Nov. 29, 2013	Nov. 28, 2014
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 04, 2013	Feb. 03, 2014
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 1.

3. The VCCI Site Registration No. is C-2040.

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.

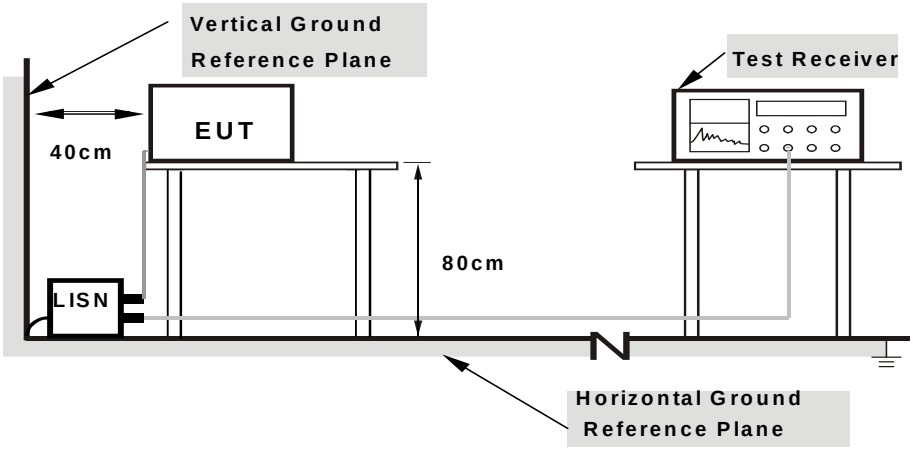
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

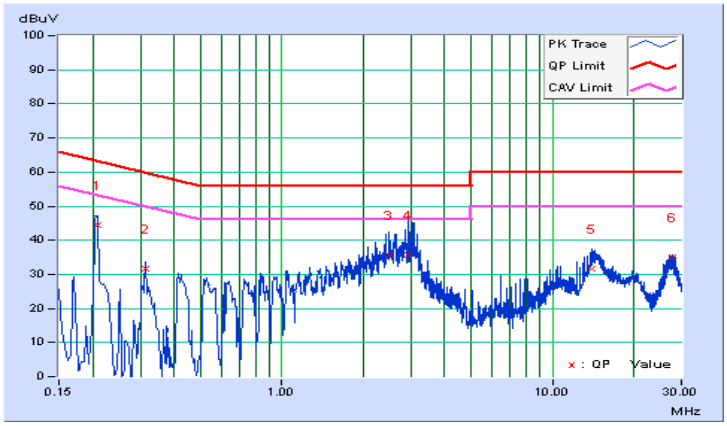
TEST MODE A

CONDUCTED WORST-CASE DATA：802.11b

PHASE	Line 1	6dB BANDWIDTH	9kHz

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	0.20783	0.16	44.21	28.16	44.37	28.32	63.29	53.29	-18.92	-24.97
2	0.31422	0.20	31.56	20.92	31.76	21.12	59.86	49.86	-28.10	-28.74
3	2.49991	0.32	35.33	22.83	35.65	23.15	56.00	46.00	-20.35	-22.85
4	2.93392	0.34	35.21	22.93	35.55	23.27	56.00	46.00	-20.45	-22.73
5	14.05396	0.92	30.82	25.40	31.74	26.32	60.00	50.00	-28.26	-23.68
6	27.81210	1.59	33.59	31.10	35.18	32.69	60.00	50.00	-24.82	-17.31

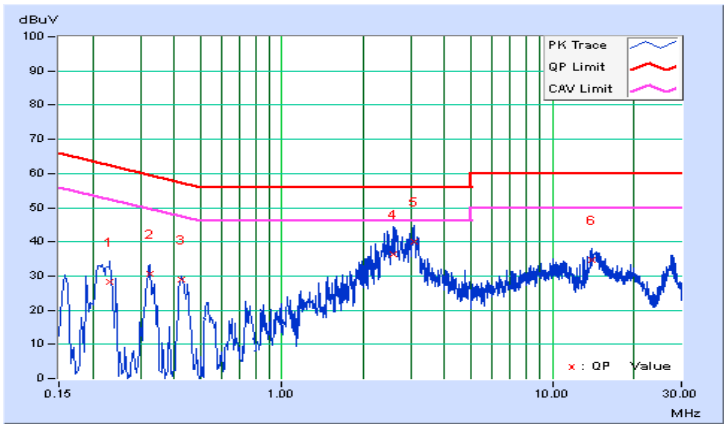
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.23216	0.18	28.04	9.55	28.22	9.73	62.37	52.37	-34.15	-42.64
2	0.32442	0.21	30.55	20.62	30.76	20.83	59.59	49.59	-28.83	-28.76
3	0.42782	0.24	28.57	22.88	28.81	23.12	57.29	47.29	-28.48	-24.17
4	2.59375	0.31	35.97	23.26	36.28	23.57	56.00	46.00	-19.72	-22.43
5	**3.07053**	**0.33**	**39.64**	**26.86**	**39.97**	**27.19**	**56.00**	**46.00**	**-16.03**	**-18.81**
6	14.05787	0.73	33.98	30.11	34.71	30.84	60.00	50.00	-25.29	-19.16

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.



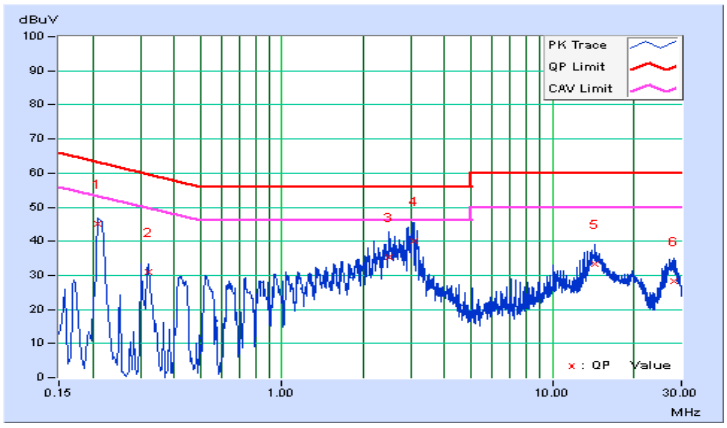
TEST MODE B

CONDUCTED WORST-CASE 802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz

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	0.20893	0.16	45.08	30.40	45.24	30.56	63.25	53.25	-18.00	-22.68
2	0.32187	0.20	30.92	21.19	31.12	21.39	59.66	49.66	-28.54	-28.27
3	2.49600	0.32	35.18	23.37	35.50	23.69	56.00	46.00	-20.50	-22.31
4	3.07077	0.35	39.62	25.63	39.97	25.98	56.00	46.00	-16.03	-20.02
5	14.32766	0.94	32.34	27.00	33.28	27.94	60.00	50.00	-26.72	-22.06
6	28.09086	1.60	26.54	20.97	28.14	22.57	60.00	50.00	-31.86	-27.43

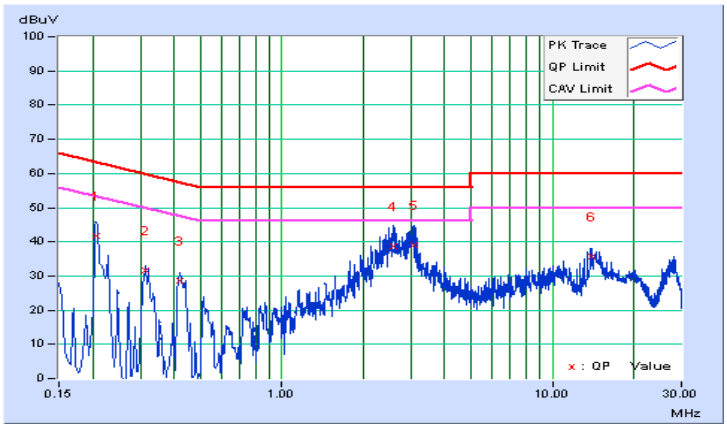
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.20511	0.17	41.73	26.84	41.90	27.01	63.40	53.40	-21.50	-26.39
2	0.31422	0.21	31.36	22.42	31.57	22.63	59.86	49.86	-28.29	-27.23
3	0.42000	0.24	28.48	22.99	28.72	23.23	57.45	47.45	-28.73	-24.22
4	2.58984	0.31	38.28	25.42	38.59	25.73	56.00	46.00	-17.41	-20.27
5	3.07863	0.33	38.67	26.35	39.00	26.68	56.00	46.00	-17.00	-19.32
6	14.03832	0.73	35.02	31.65	35.75	32.38	60.00	50.00	-24.25	-17.62

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

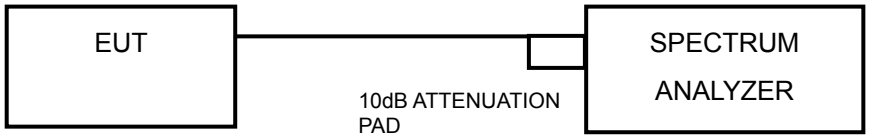


4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.3.4 TEST PROCEDURE

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

4.3.5 DEVIATION 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

TEST MODE A

802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	8.05	7.57	0.5	PASS
6	2437	9.08	10.03	0.5	PASS
11	2462	7.10	6.60	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.40	16.37	0.5	PASS
6	2437	16.44	16.39	0.5	PASS
11	2462	16.47	16.42	0.5	PASS

802.11n (20MHz)

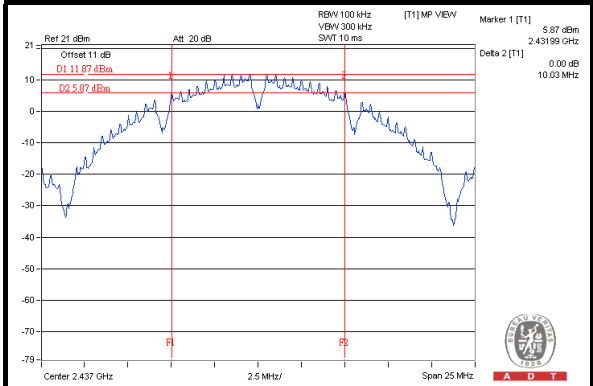
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.61	17.66	0.5	PASS
6	2437	17.60	17.65	0.5	PASS
11	2462	17.35	17.61	0.5	PASS

802.11n (40MHz)

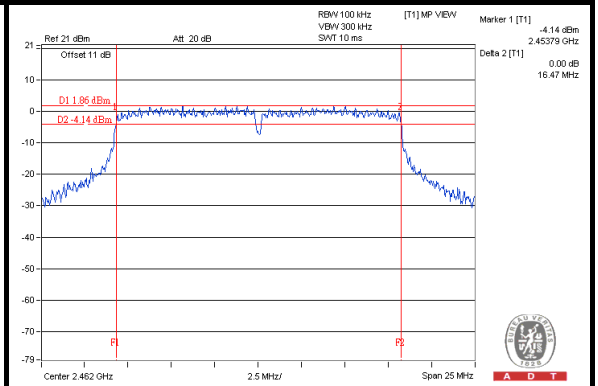
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	36.41	36.42	0.5	PASS
6	2437	36.46	36.50	0.5	PASS
9	2452	36.41	35.71	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

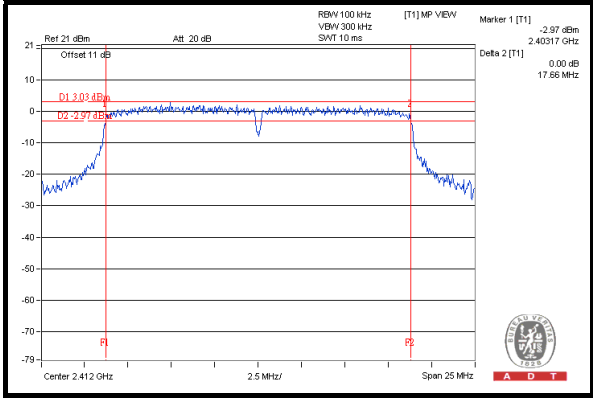
802.11b



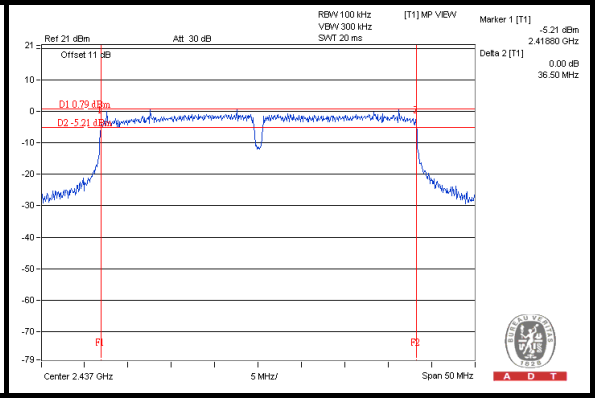
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE B

802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	7.59	8.04	0.5	PASS
6	2437	8.55	8.55	0.5	PASS
11	2462	7.12	7.07	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.41	16.40	0.5	PASS
6	2437	16.39	16.41	0.5	PASS
11	2462	16.37	16.40	0.5	PASS

802.11n (20MHz)

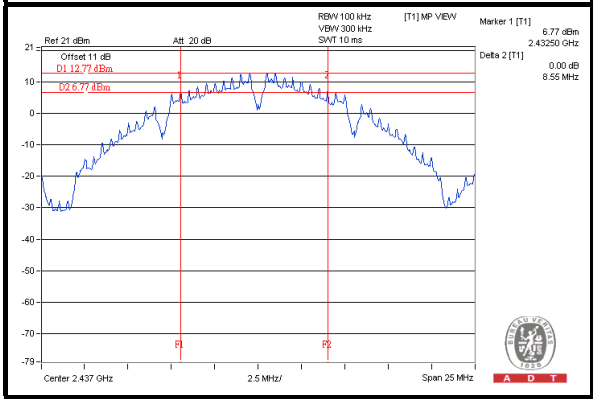
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.63	17.63	0.5	PASS
6	2437	17.61	17.68	0.5	PASS
11	2462	16.83	17.66	0.5	PASS

802.11n (40MHz)

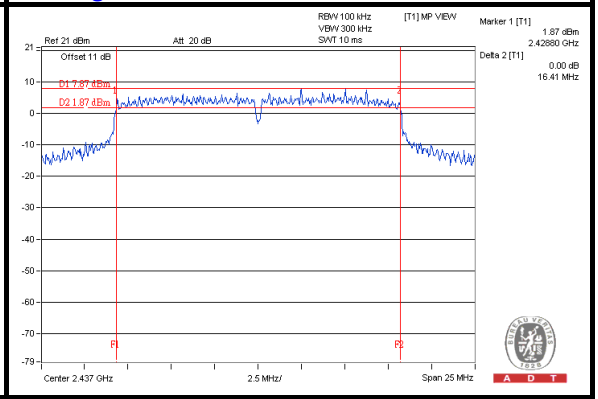
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	36.18	36.47	0.5	PASS
6	2437	36.35	36.39	0.5	PASS
9	2452	35.43	35.43	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

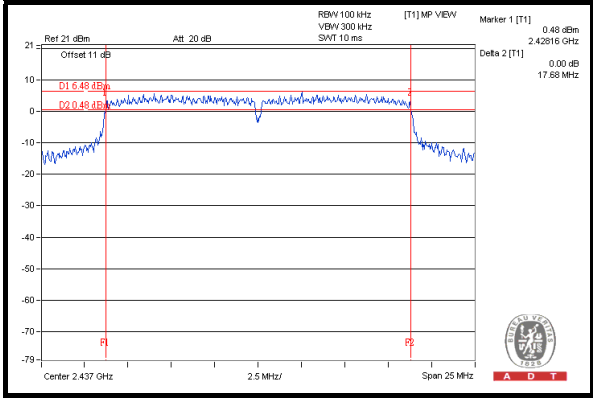
802.11b



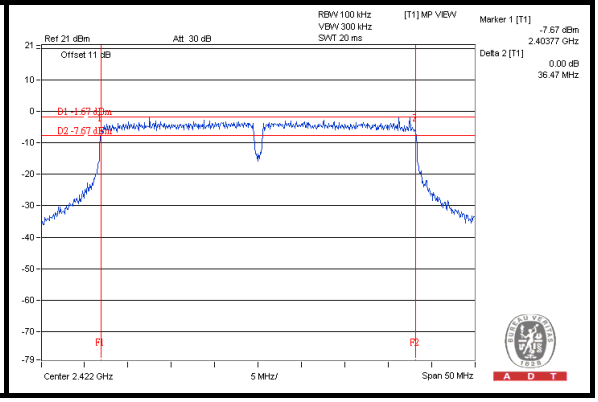
802.11g



802.11n (20MHz)



802.11n (40MHz)



4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

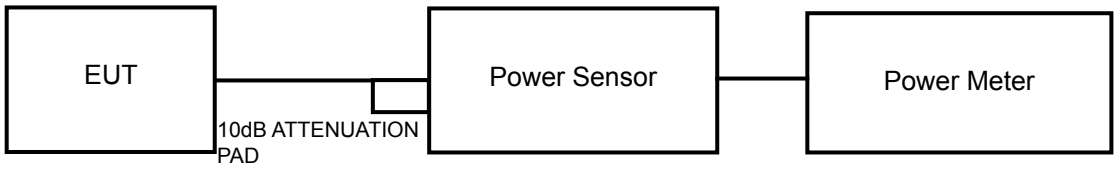
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output v02 Method of conducted output power measurement on IEEE 802.11 devices,

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

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

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

FOR PEAK POWER

TEST MODE A

802.11b

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.95	20.65	240.596	23.81	30	PASS
6	2437	21.10	20.90	**251.852**	24.01	30	PASS
11	2462	20.39	20.15	212.910	23.28	30	PASS

802.11g

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.29	19.84	203.288	23.08	30	PASS
6	2437	20.96	20.88	247.200	23.93	30	PASS
11	2462	19.87	19.65	189.308	22.77	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.19	19.91	202.421	23.06	30	PASS
6	2437	20.94	20.81	244.669	23.89	30	PASS
11	2462	19.46	19.32	173.815	22.40	30	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	19.51	18.92	167.314	22.24	30	PASS
6	2437	20.24	19.96	204.765	23.11	30	PASS
9	2452	18.90	18.57	149.570	21.75	30	PASS

TEST MODE B

802.11b

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.70	20.69	234.710	23.71	30	PASS
6	2437	20.92	20.84	244.934	23.89	30	PASS
11	2462	20.26	20.15	209.684	23.22	30	PASS

802.11g

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	19.66	19.97	191.782	22.83	30	PASS
6	2437	20.95	20.84	245.790	23.91	30	PASS
11	2462	18.90	18.88	154.893	21.90	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.33	20.44	218.557	23.40	30	PASS
6	2437	20.98	20.84	246.653	23.92	30	PASS
11	2462	19.09	19.18	163.890	22.15	30	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	19.51	19.40	176.427	22.47	30	PASS
6	2437	20.40	20.22	214.844	23.32	30	PASS
9	2452	18.77	18.77	150.672	21.78	30	PASS

FOR AVERAGE POWER

TEST MODE A

802.11b

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	19.50	18.62	161.903	22.09
6	2437	19.67	19.38	179.379	22.54
11	2462	17.98	17.84	123.620	20.92

802.11g

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	15.77	14.92	68.803	18.38
6	2437	18.74	18.33	142.894	21.55
11	2462	14.92	14.78	61.107	17.86

802.11n (20MHz)

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	15.63	14.88	67.320	18.28
6	2437	18.65	18.30	140.890	21.49
11	2462	14.31	14.26	53.646	17.30

802.11n (40MHz)

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
3	2422	14.50	13.72	51.734	17.14
6	2437	16.00	15.61	76.203	18.82
9	2452	13.80	13.40	45.866	16.61

TEST MODE B

802.11b

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	18.66	18.72	147.924	21.70
6	2437	19.52	19.36	175.834	22.45
11	2462	17.99	17.88	124.327	20.95

802.11g

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	14.77	15.17	62.877	17.98
6	2437	18.68	18.45	143.774	21.58
11	2462	13.59	13.62	45.870	16.62

802.11n (20MHz)

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
1	2412	15.98	16.34	82.681	19.17
6	2437	18.59	18.35	140.668	21.48
11	2462	14.00	13.91	49.723	16.97

802.11n (40MHz)

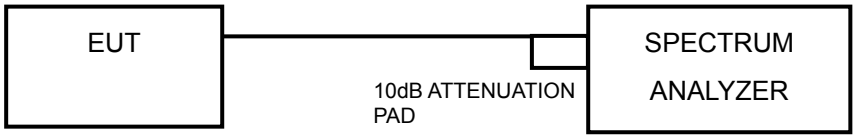
CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
3	2422	14.35	14.34	54.391	17.36
6	2437	16.42	16.20	85.540	19.32
9	2452	13.31	13.56	44.128	16.45

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

TEST MODE A

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-1.94	3.01	1.07	7.5	PASS
	6	2437	-2.11	3.01	0.90	7.5	PASS
	11	2462	-2.49	3.01	0.52	7.5	PASS
1	1	2412	-1.56	3.01	1.45	7.5	PASS
	6	2437	-2.51	3.01	0.50	7.5	PASS
	11	2462	-2.98	3.01	0.03	7.5	PASS

NOTE: Directional gain = 3.48dBi + 10log(2) = 6.5dBi > 6dBi , so the power density limit shall be reduced to 8-(6.5-6) = 7.5dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-9.99	3.01	-6.98	7.5	PASS
	6	2437	-6.64	3.01	-3.63	7.5	PASS
	11	2462	-9.74	3.01	-6.73	7.5	PASS
1	1	2412	-9.29	3.01	-6.28	7.5	PASS
	6	2437	-6.02	3.01	-3.01	7.5	PASS
	11	2462	-8.89	3.01	-5.88	7.5	PASS

NOTE: Directional gain = 3.48dBi + 10log(2) = 6.5dBi > 6dBi , so the power density limit shall be reduced to 8-(6.5-6) = 7.5dBm.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-9.58	3.01	-6.57	8	PASS
	6	2437	-6.83	3.01	-3.82	8	PASS
	11	2462	-11.14	3.01	-8.13	8	PASS
1	1	2412	-8.52	3.01	-5.51	8	PASS
	6	2437	-5.72	3.01	-2.71	8	PASS
	11	2462	-11.08	3.01	-8.07	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi < 6dBi, so the limit no need to reduced.

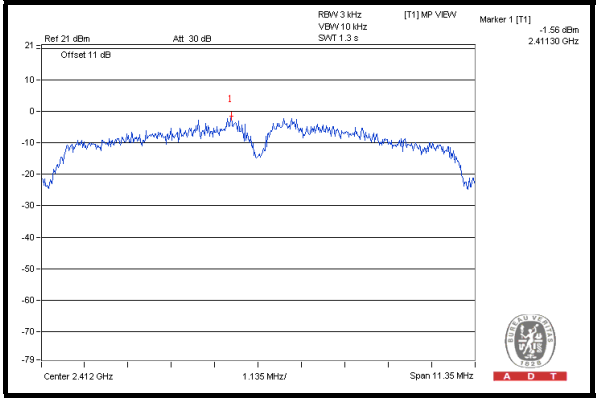
802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-14.80	3.01	-11.79	8	PASS
	6	2437	-11.22	3.01	-8.21	8	PASS
	9	2452	-14.83	3.01	-11.82	8	PASS
1	3	2422	-10.79	3.01	-7.78	8	PASS
	6	2437	-12.43	3.01	-9.42	8	PASS
	9	2452	-11.98	3.01	-8.97	8	PASS

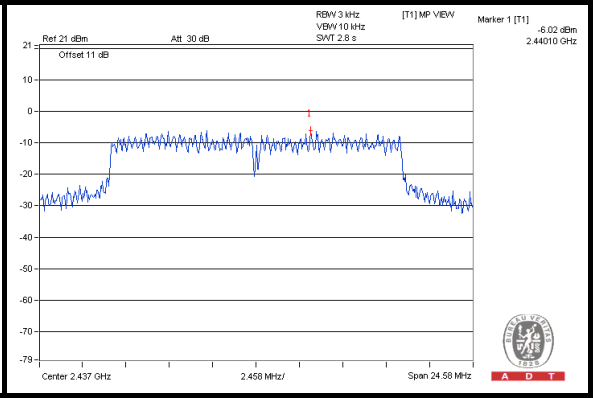
NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi < 6dBi, so the limit no need to reduced.

SPECTRUM PLOT OF WORST VALUE

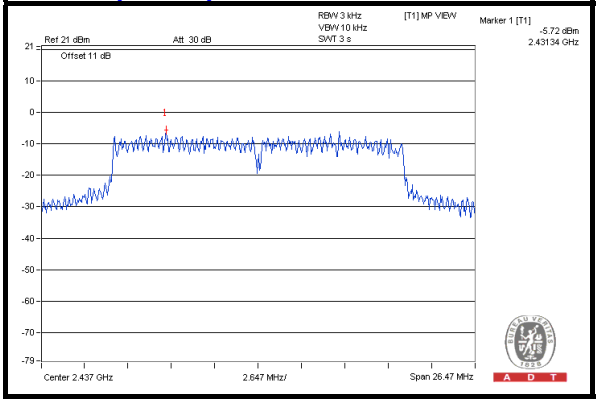
802.11b



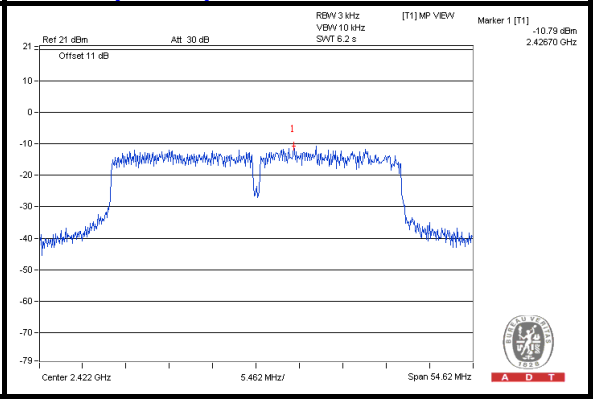
802.11g



802.11n (20MHz)



802.11n (40MHz)



TEST MODE B

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-2.60	3.01	0.41	7.5	PASS
	6	2437	-1.33	3.01	1.68	7.5	PASS
	11	2462	-4.22	3.01	-1.21	7.5	PASS
1	1	2412	-1.85	3.01	1.16	7.5	PASS
	6	2437	-0.80	3.01	2.21	7.5	PASS
	11	2462	-4.17	3.01	-1.16	7.5	PASS

NOTE: Directional gain = 3.48dBi + 10log(2) = 6.5dBi > 6dBi , so the power density limit shall be reduced to 8-(6.5-6) = 7.5dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-9.97	3.01	-6.96	7.5	PASS
	6	2437	-6.48	3.01	-3.47	7.5	PASS
	11	2462	-10.72	3.01	-7.71	7.5	PASS
1	1	2412	-9.49	3.01	-6.48	7.5	PASS
	6	2437	-5.82	3.01	-2.81	7.5	PASS
	11	2462	-11.64	3.01	-8.63	7.5	PASS

NOTE: Directional gain = 3.48dBi + 10log(2) = 6.5dBi > 6dBi , so the power density limit shall be reduced to 8-(6.5-6) = 7.5dBm.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-8.96	3.01	-5.95	8	PASS
	6	2437	-6.45	3.01	-3.44	8	PASS
	11	2462	-10.99	3.01	-7.98	8	PASS
1	1	2412	-9.07	3.01	-6.06	8	PASS
	6	2437	-5.61	3.01	-2.60	8	PASS
	11	2462	-11.68	3.01	-8.67	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi < 6dBi, so the limit no need to reduced.

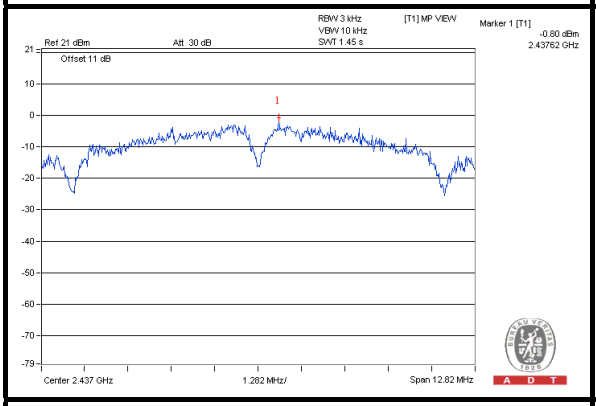
802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-12.07	3.01	-9.06	8	PASS
	6	2437	-10.89	3.01	-7.88	8	PASS
	9	2452	-14.66	3.01	-11.65	8	PASS
1	3	2422	-14.51	3.01	-11.50	8	PASS
	6	2437	-12.07	3.01	-9.06	8	PASS
	9	2452	-14.91	3.01	-11.90	8	PASS

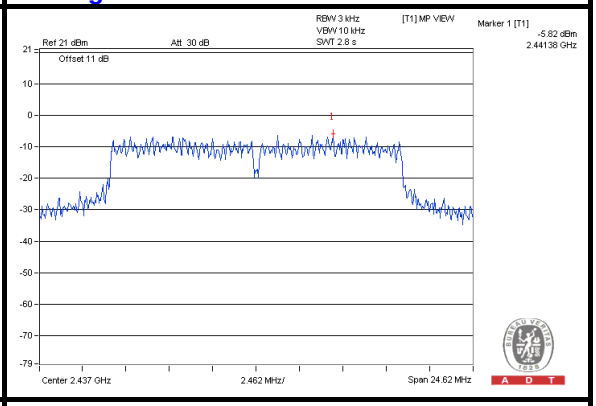
NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi < 6dBi, so the limit no need to reduced.

SPECTRUM PLOT OF WORST VALUE

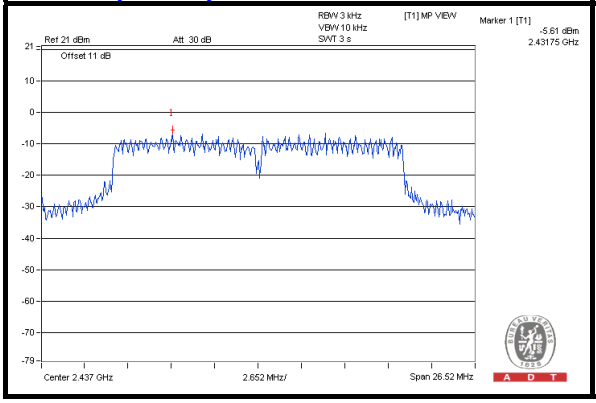
802.11b



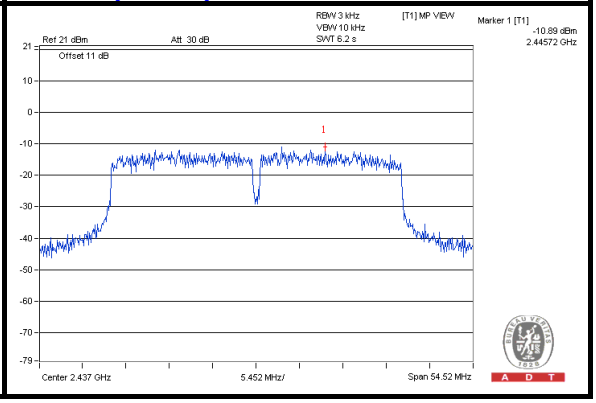
802.11g



802.11n (20MHz)



802.11n (40MHz)

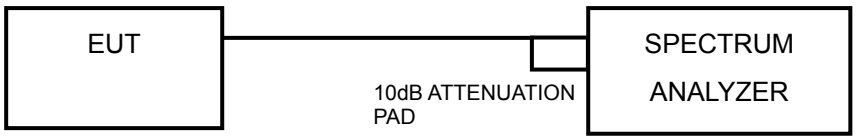


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Ensure that the number of measurement points ≥ span/RBW
4. According to measurement points to set differ measurement span.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

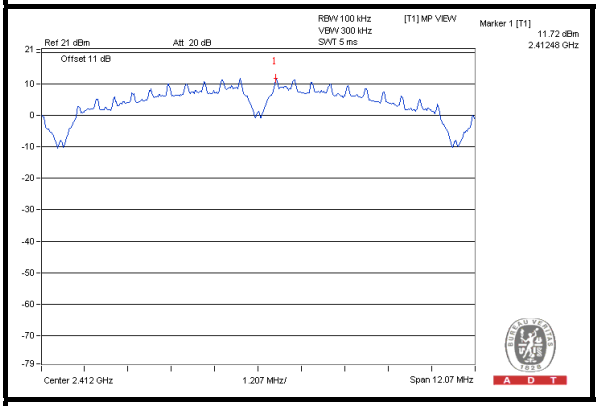
4.6.7 TEST RESULTS

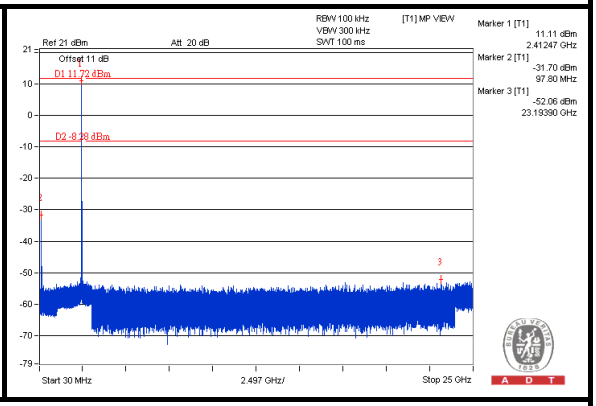
The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

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

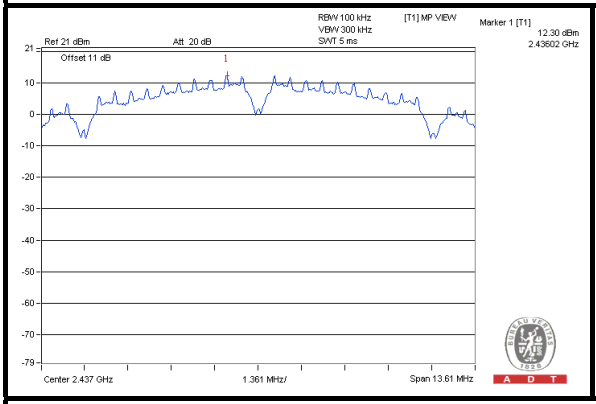
TEST MODE A
802.11b
CHAIN 0

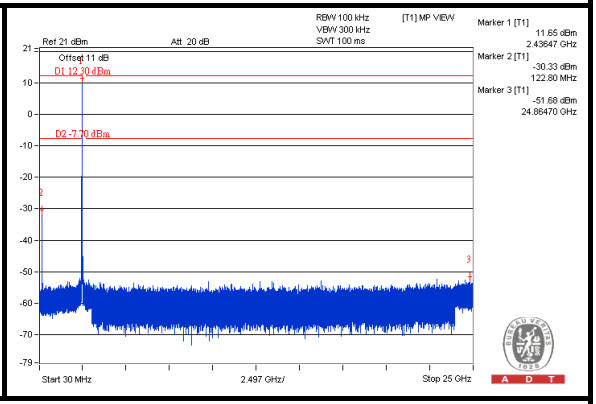
CH 1



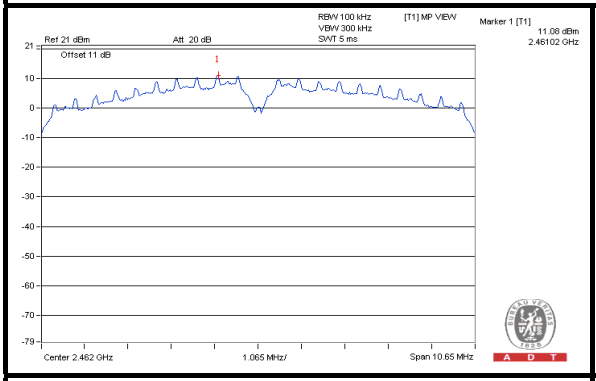


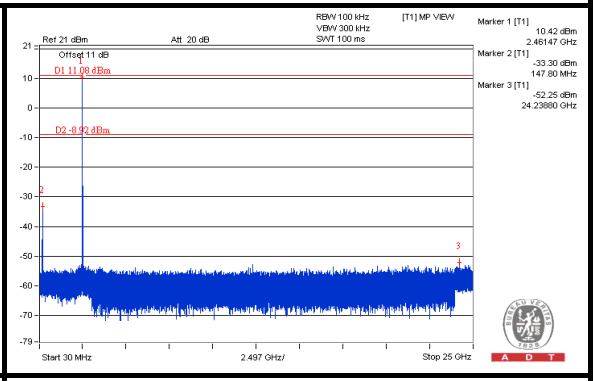
CH 6



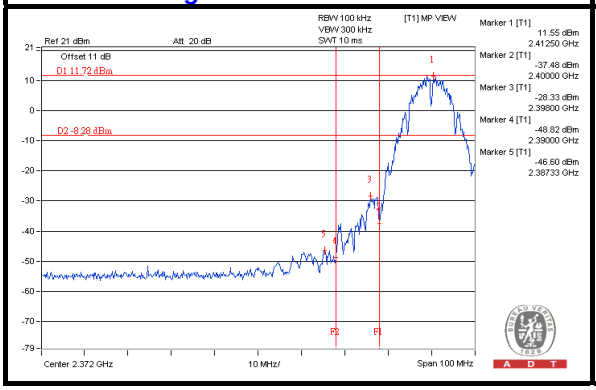


CH 11

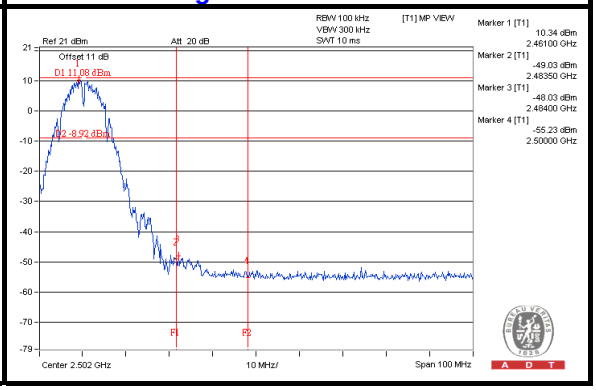




CH 1 Band edge

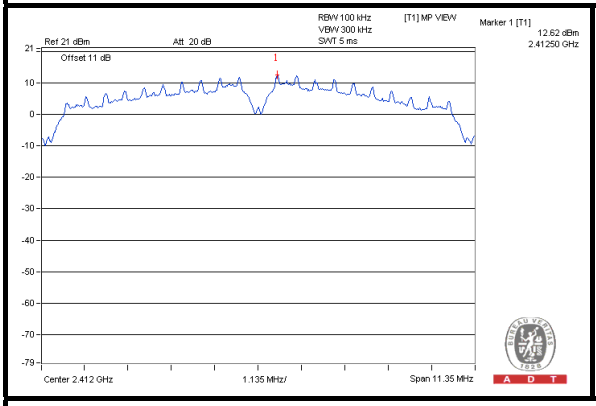


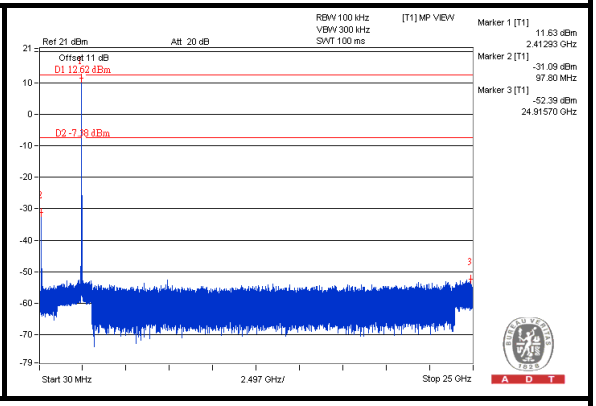
CH 11 Band edge



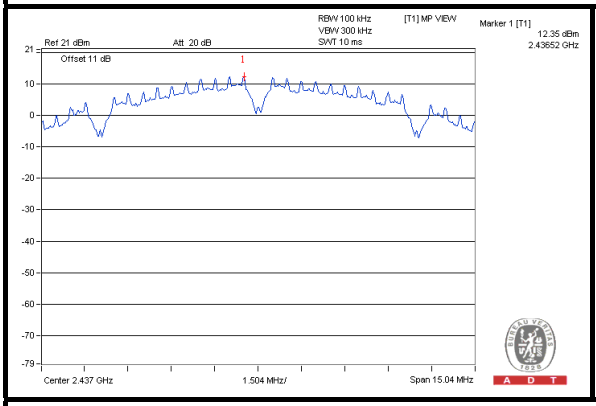
CHAIN 1

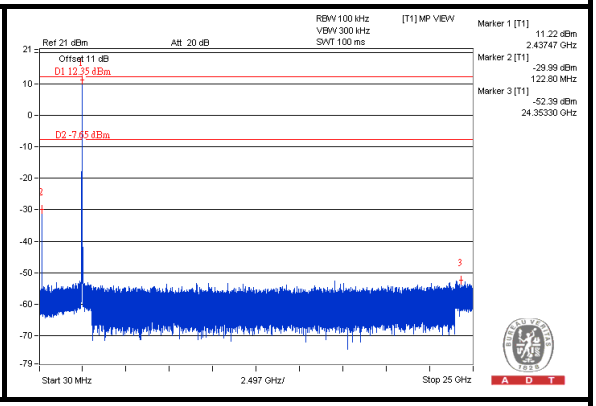
CH 1



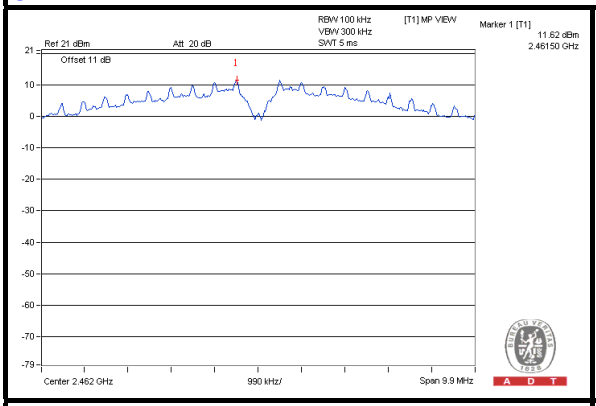


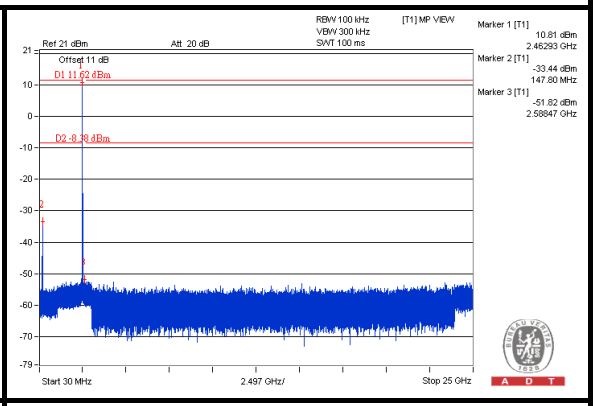
CH 6



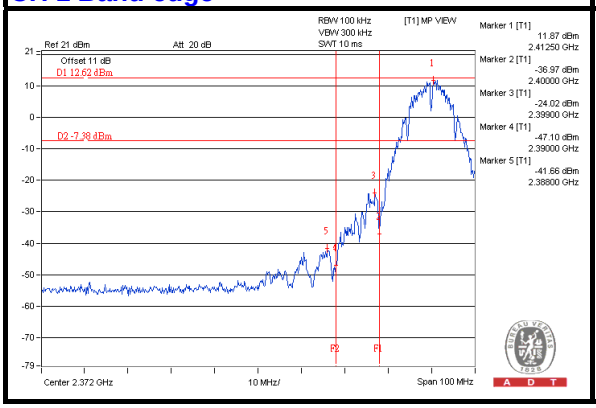


CH 11

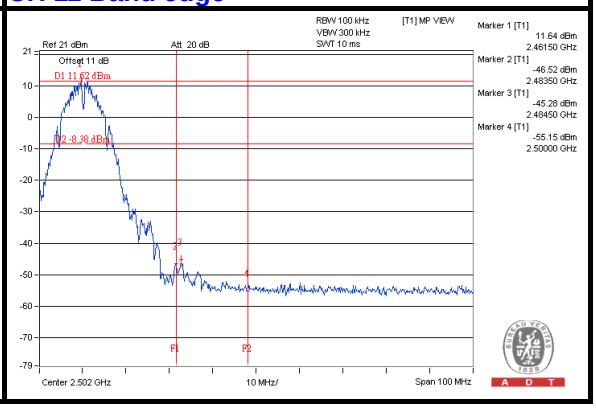




CH 1 Band edge



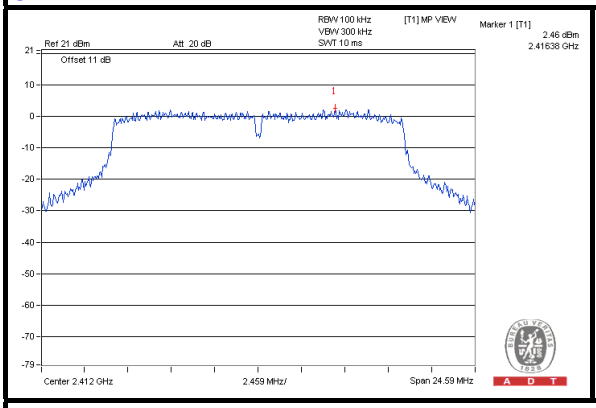
CH 11 Band edge

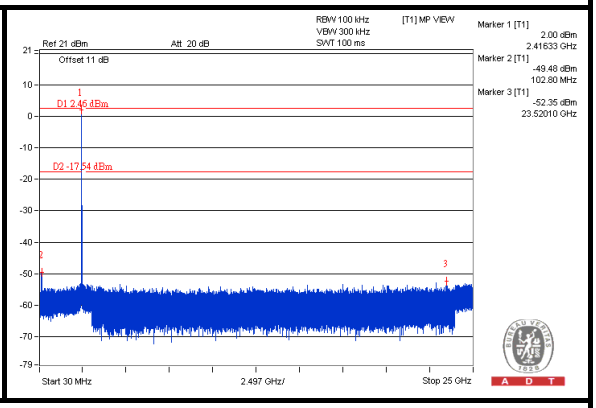


802.11g

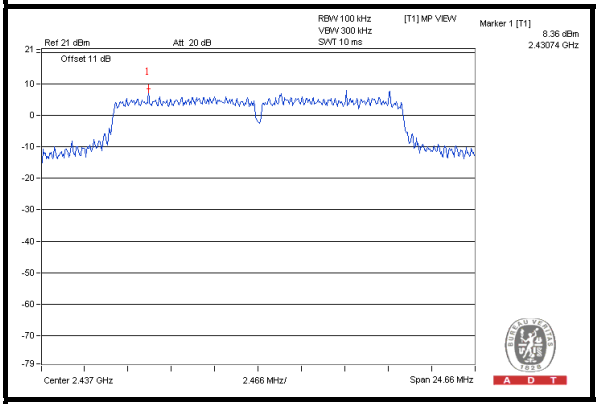
CHAIN 0

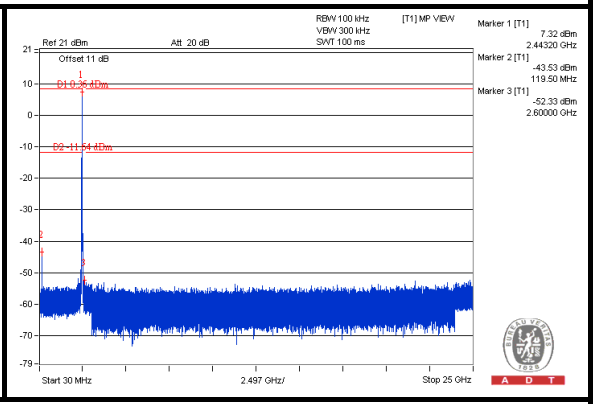
CH 1



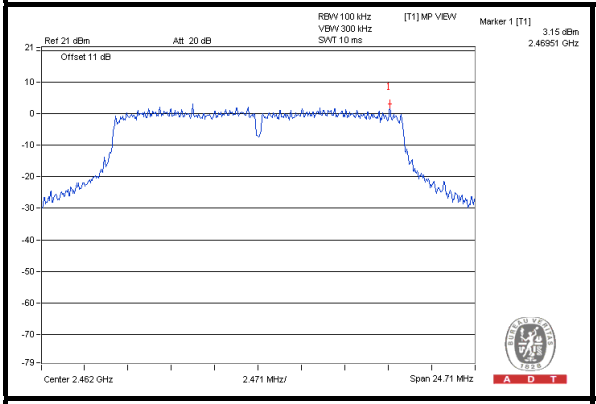


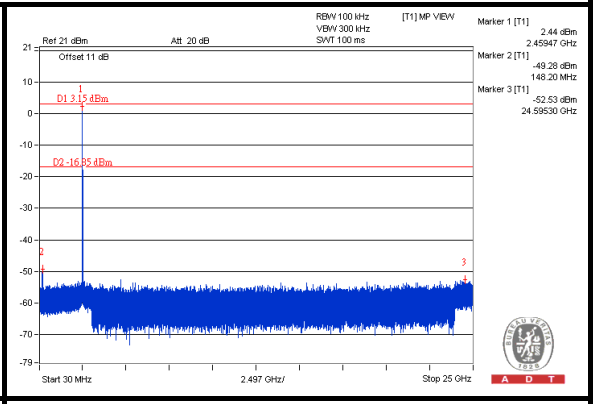
CH 6



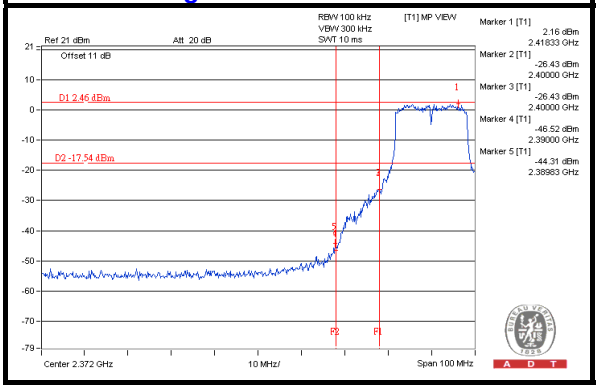


CH 11

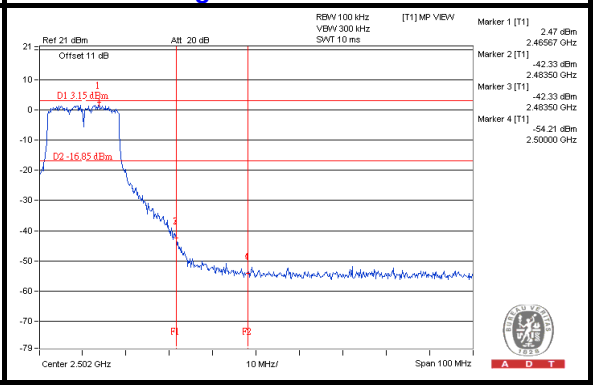




CH 1 Band edge

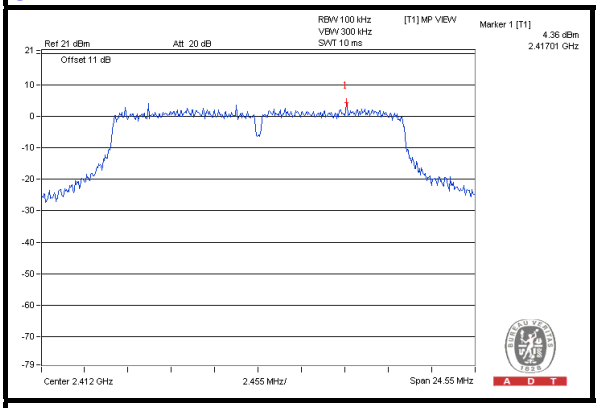


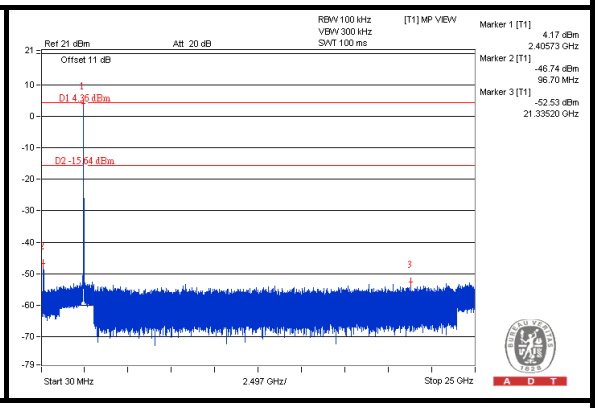
CH 11 Band edge



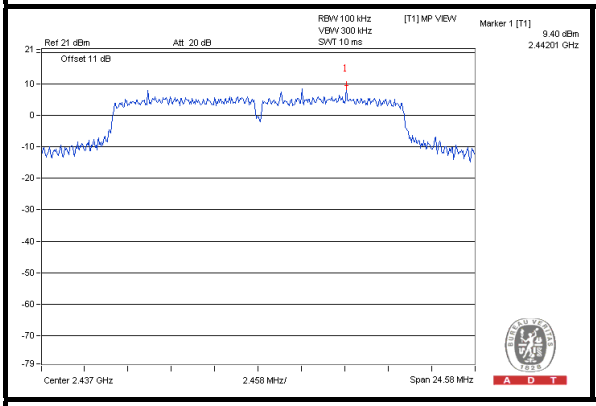
CHAIN 1

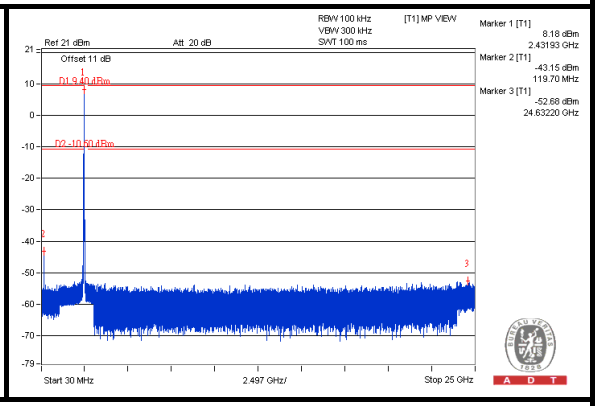
CH 1



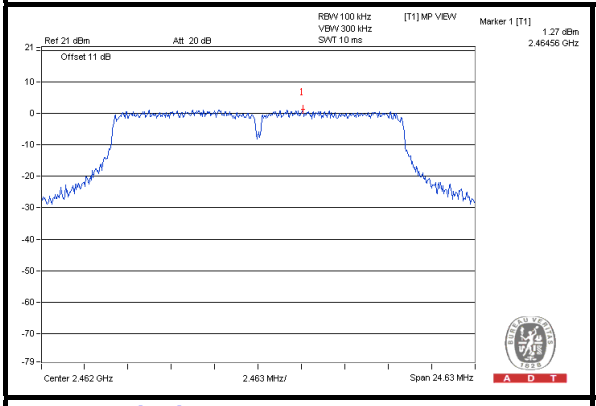


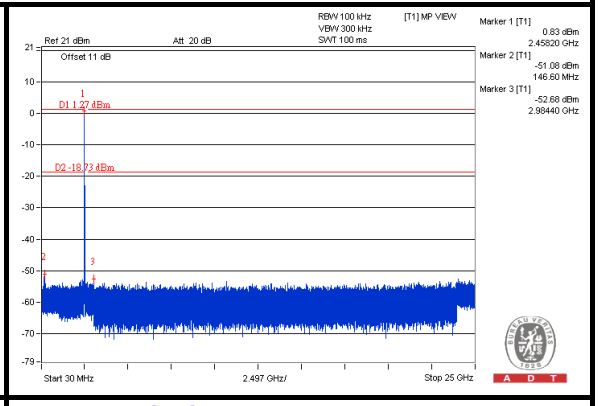
CH 6



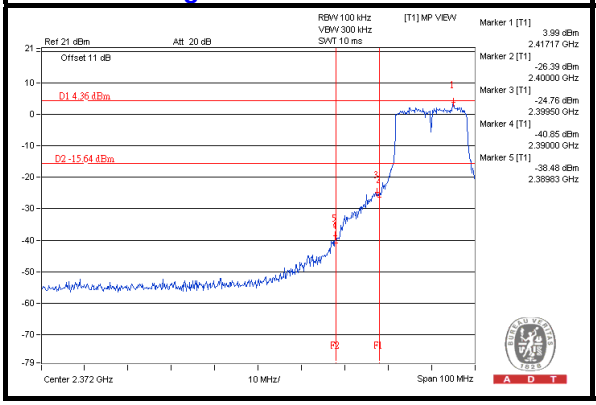


CH 11

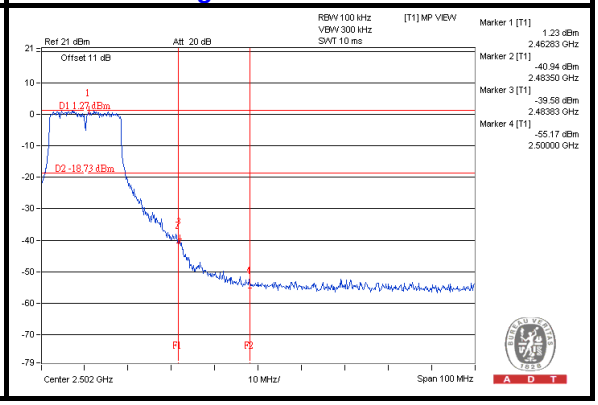




CH 1 Band edge



CH 11 Band edge



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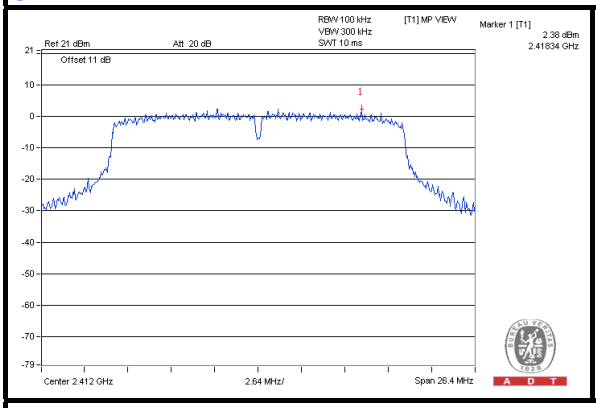

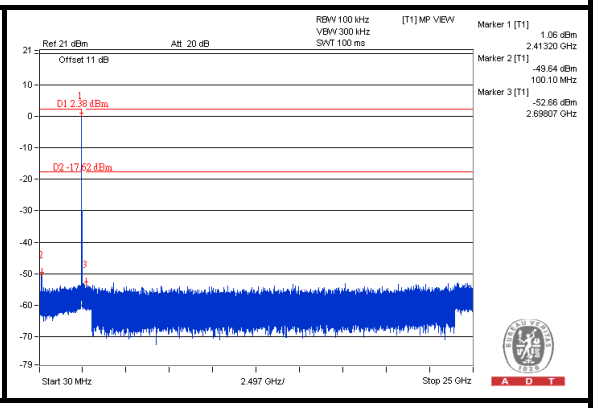

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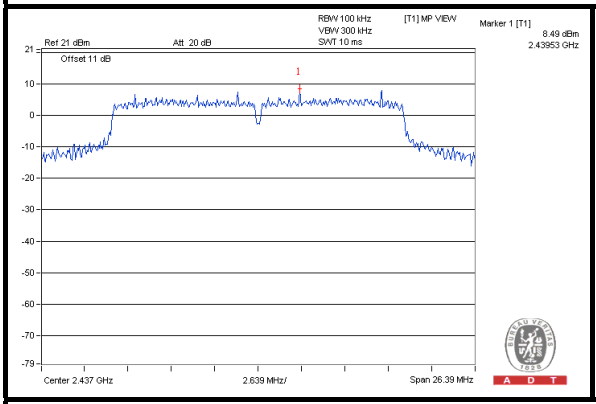

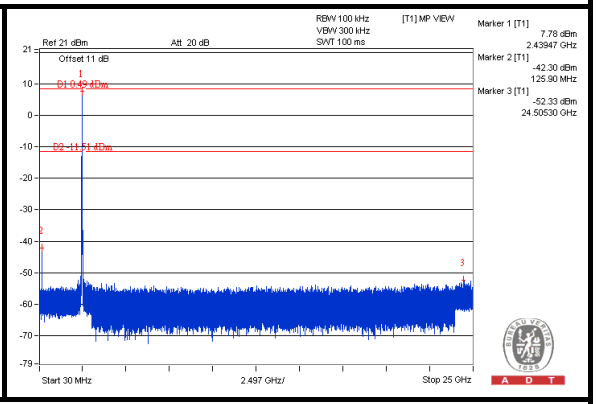

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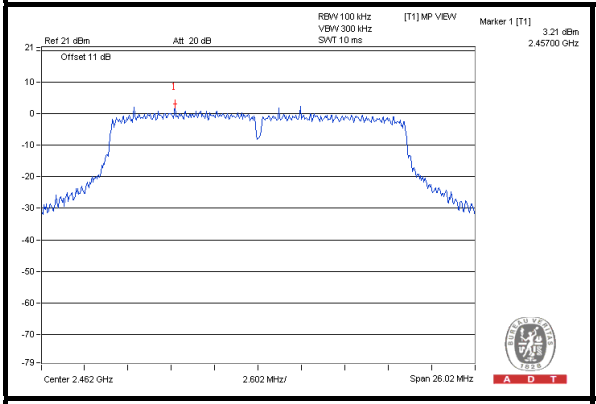

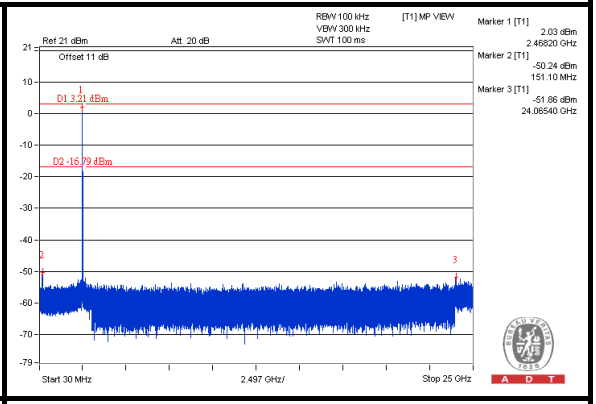

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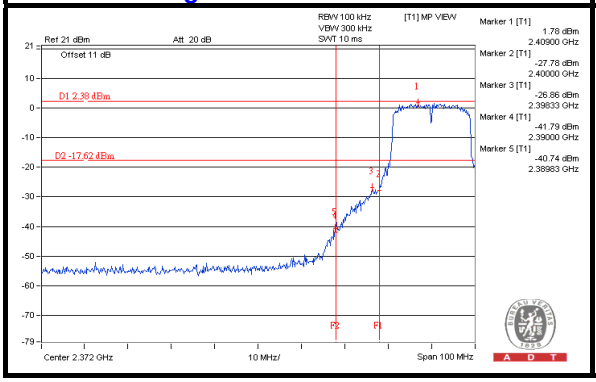

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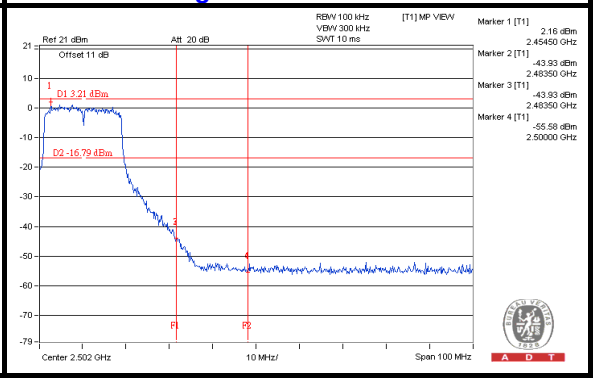

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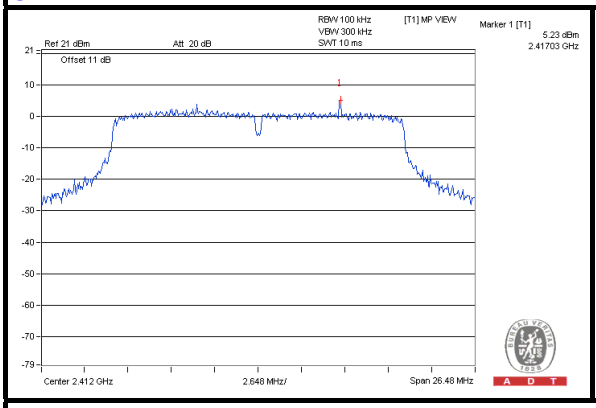
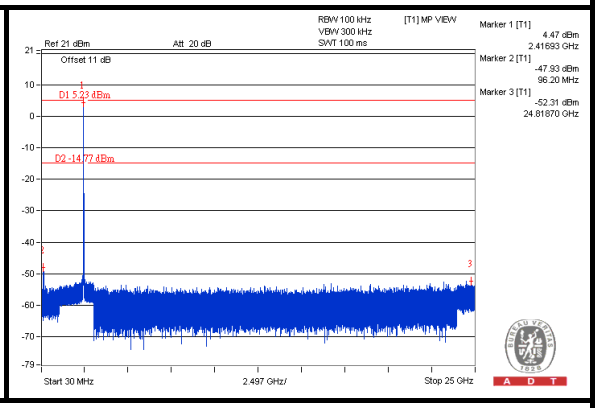
CH 1





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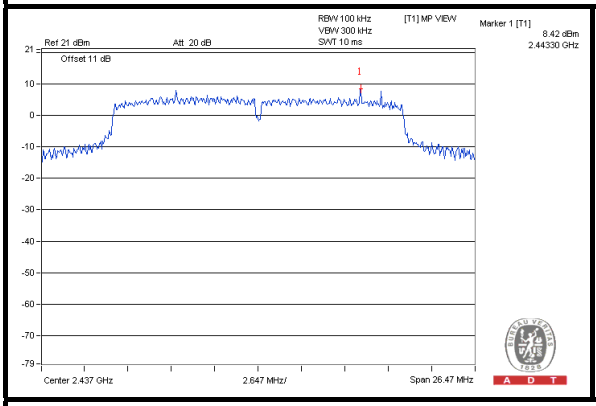

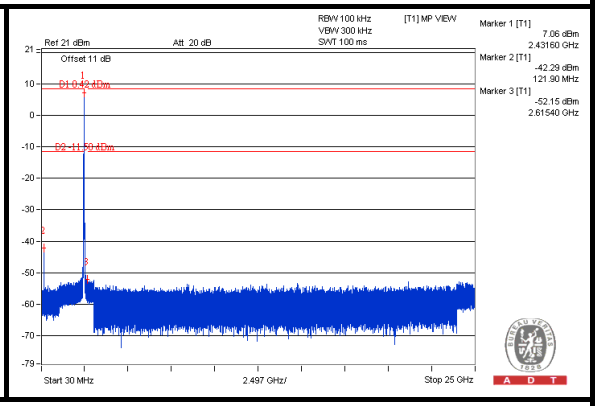

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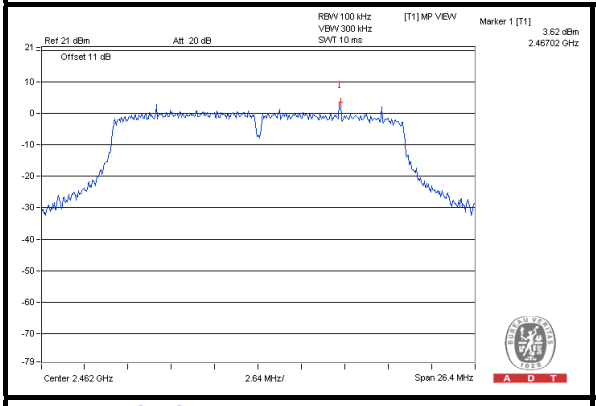

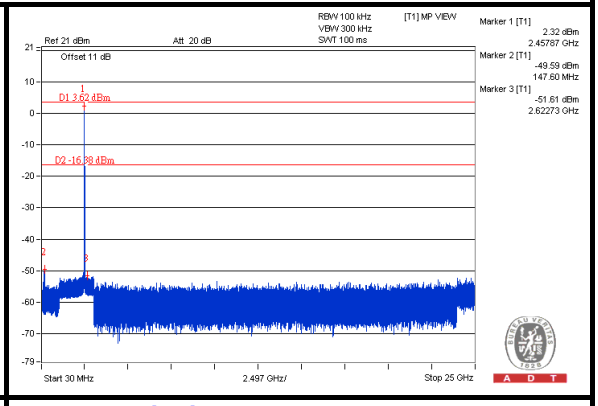

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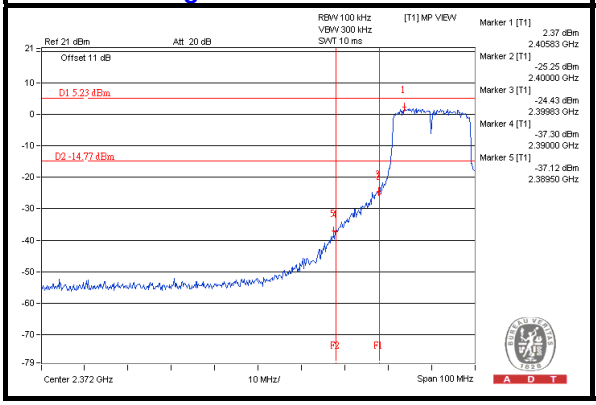

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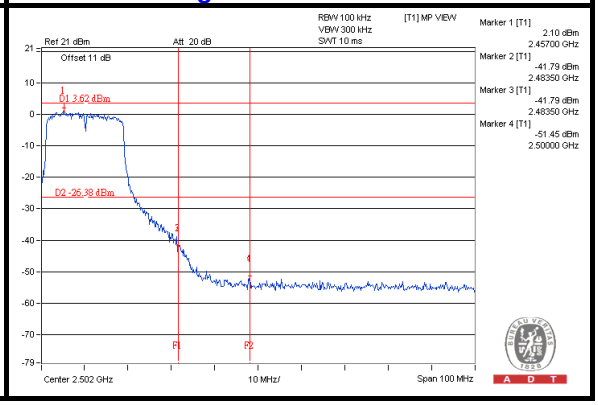

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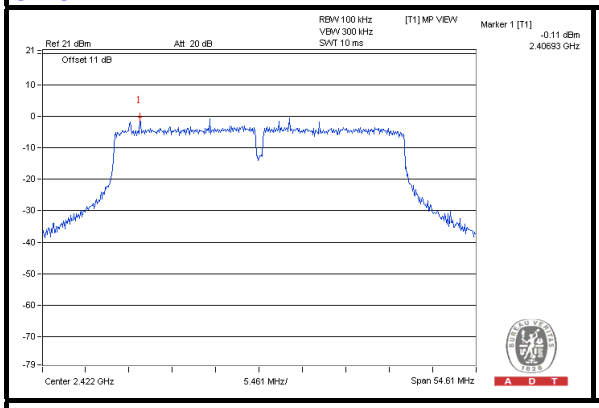

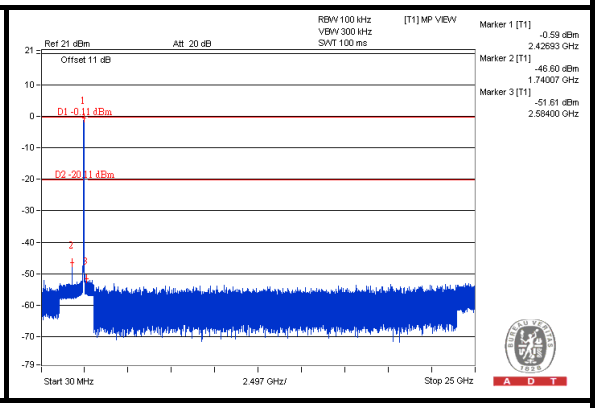

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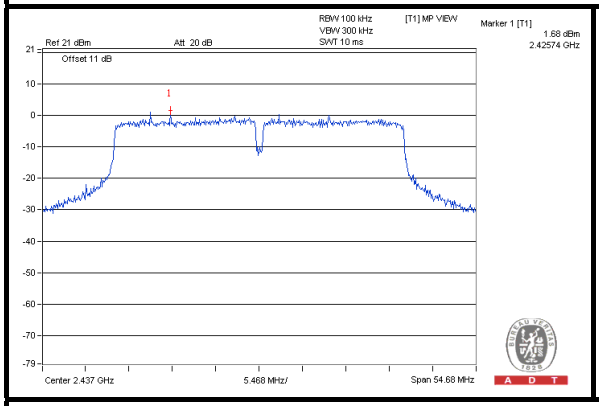

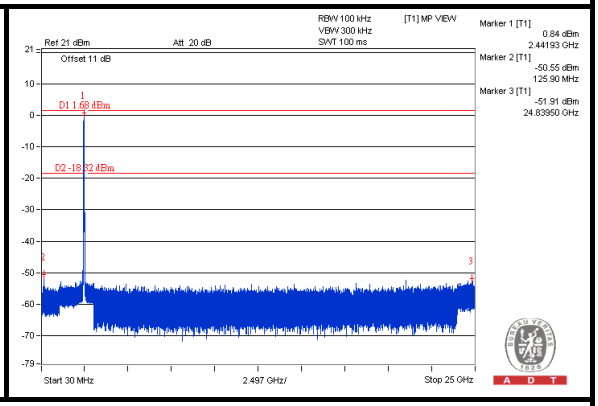

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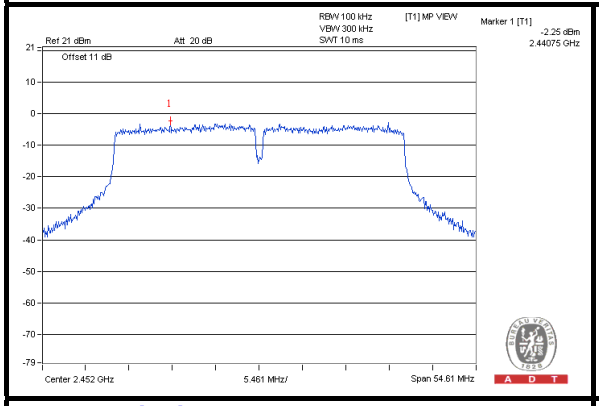
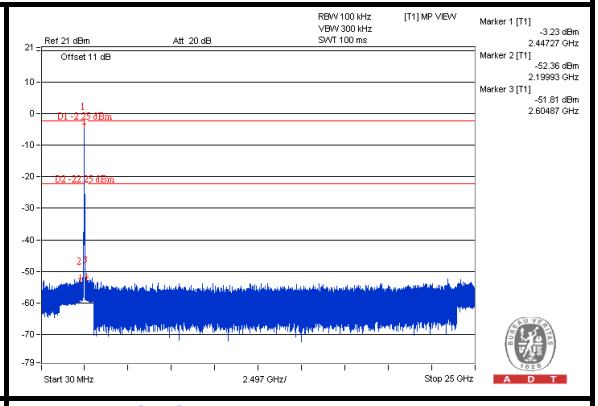
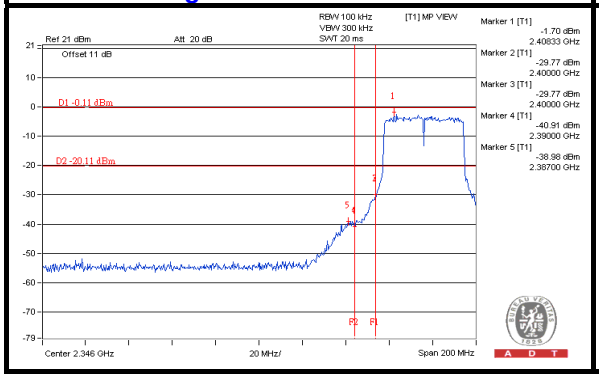




CH 3 Band edge



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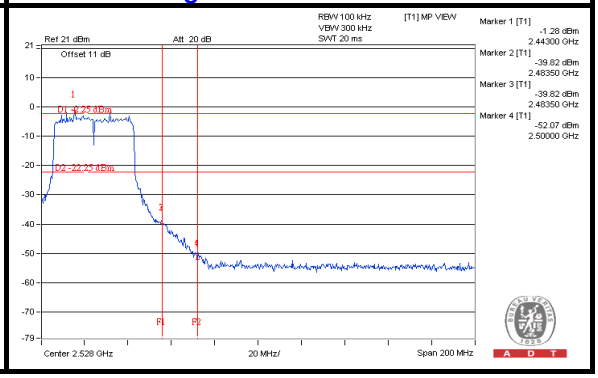

CHAIN 1

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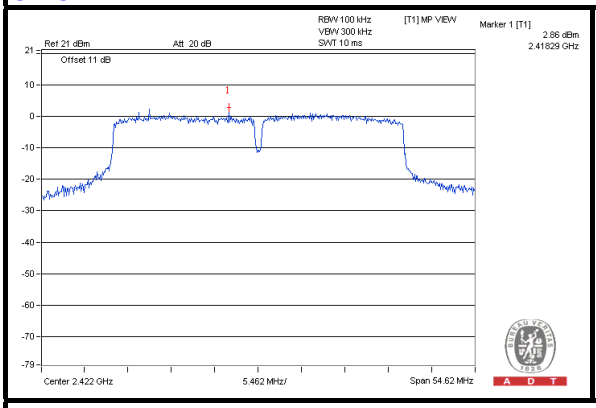

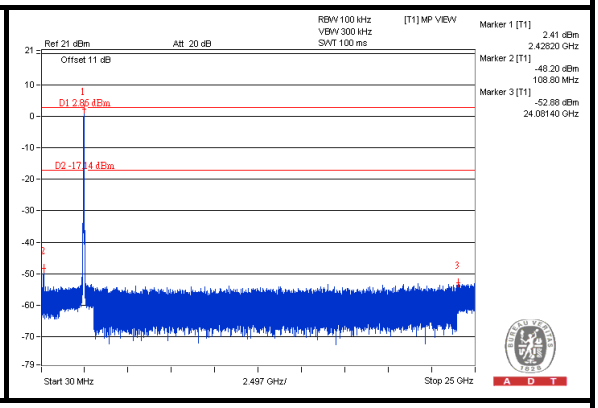

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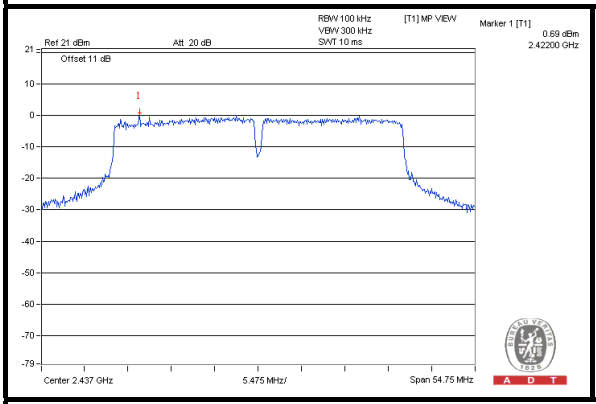

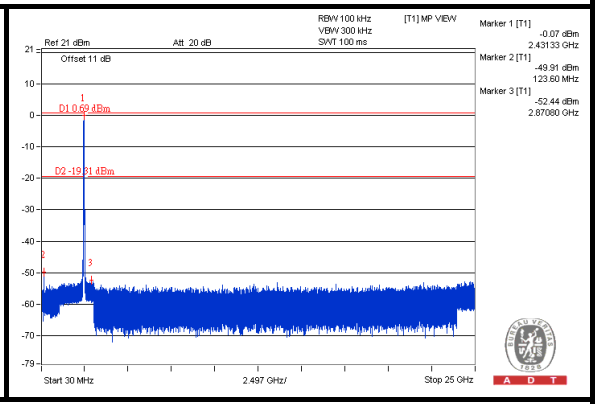

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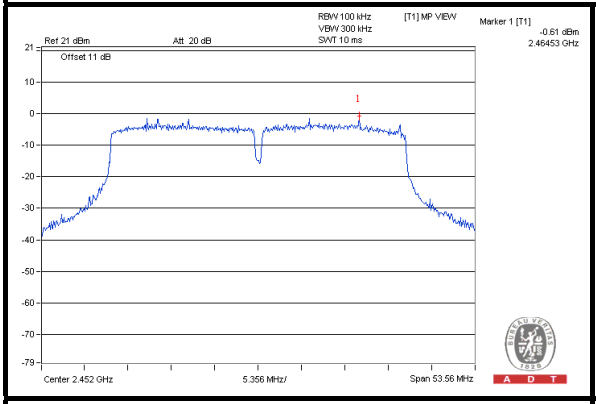

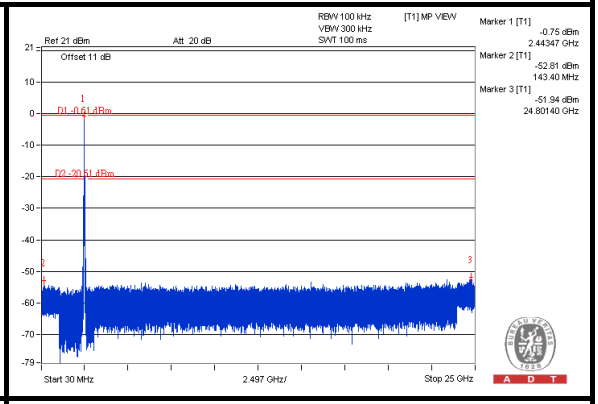

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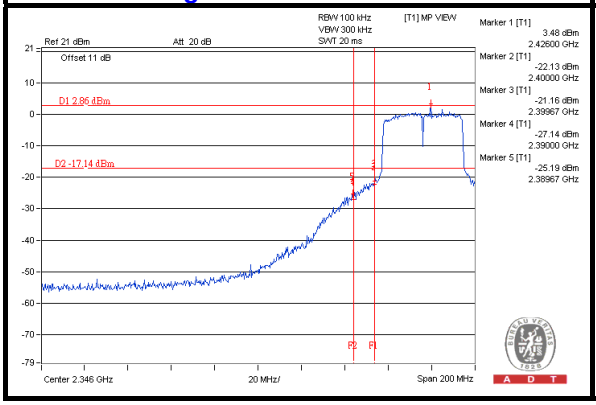

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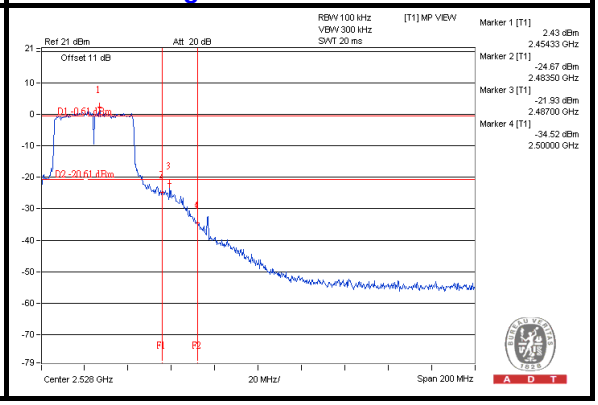

TEST MODE B
802.11b
CHAIN 0

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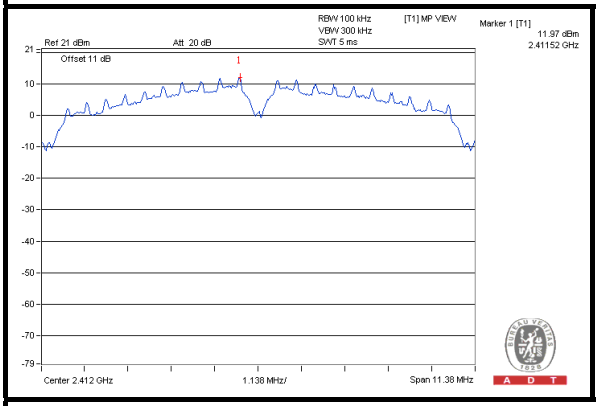

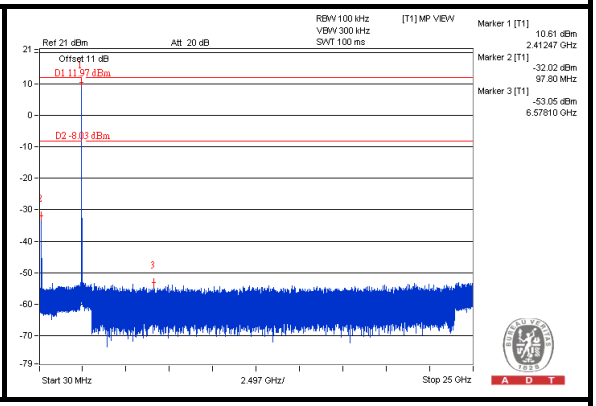

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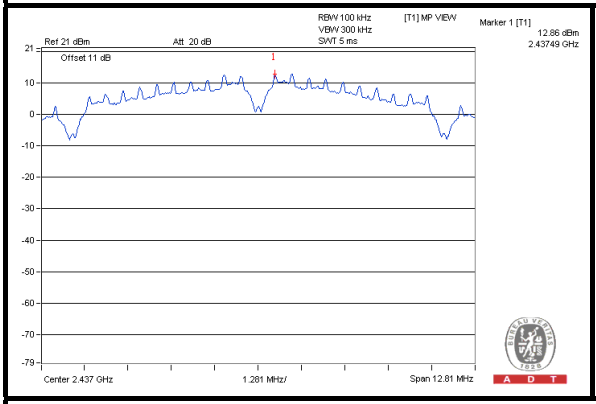

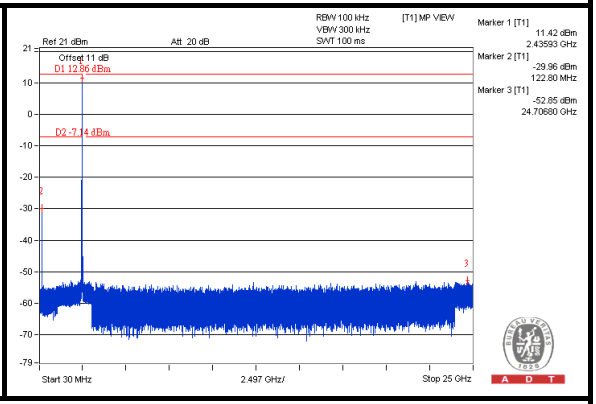

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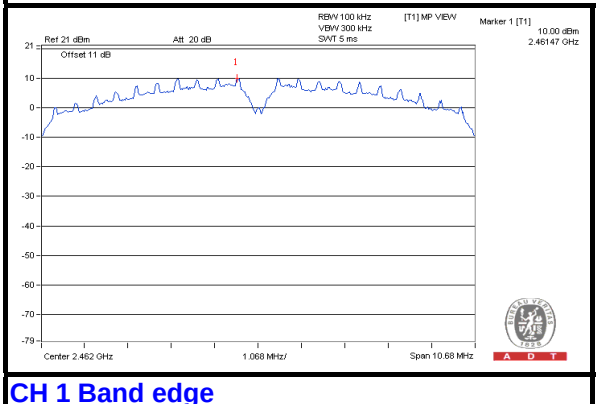

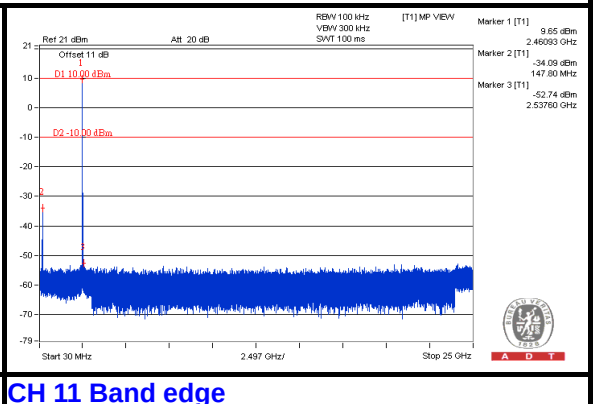

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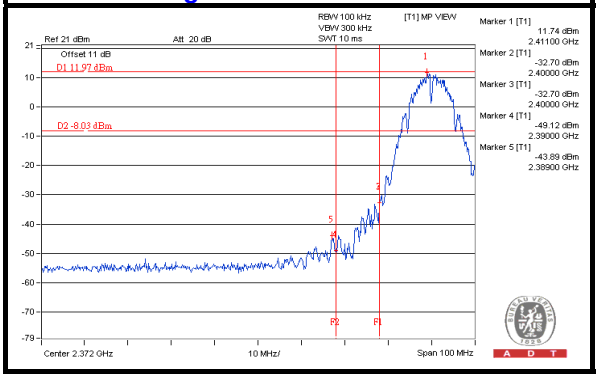

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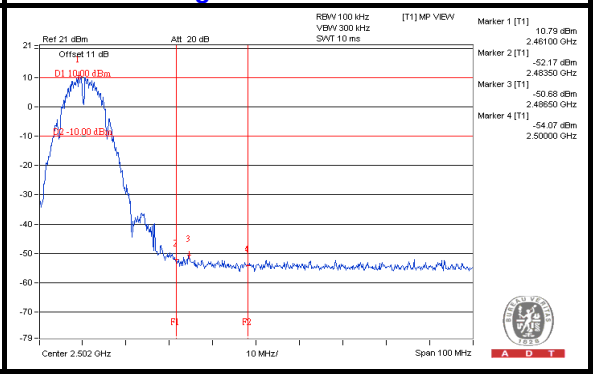
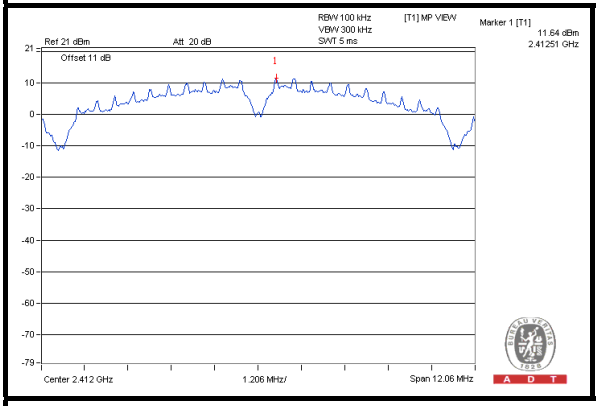
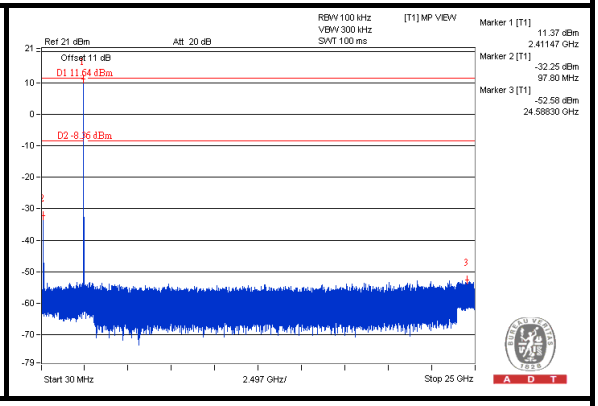


CHAIN 1

CH 1





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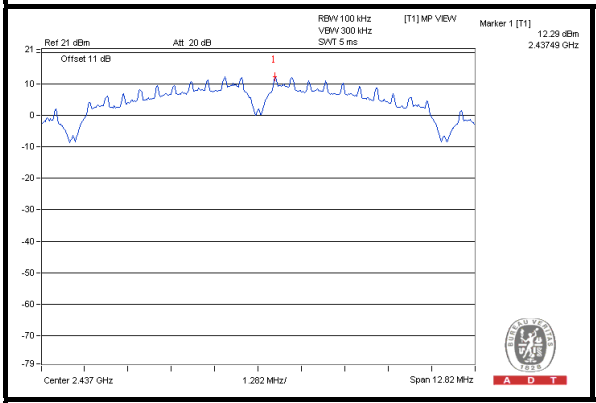

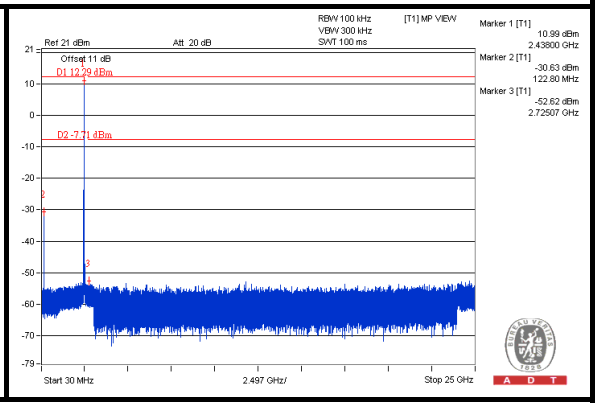

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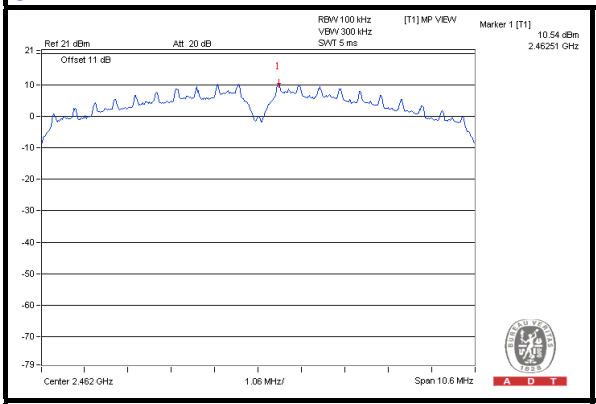
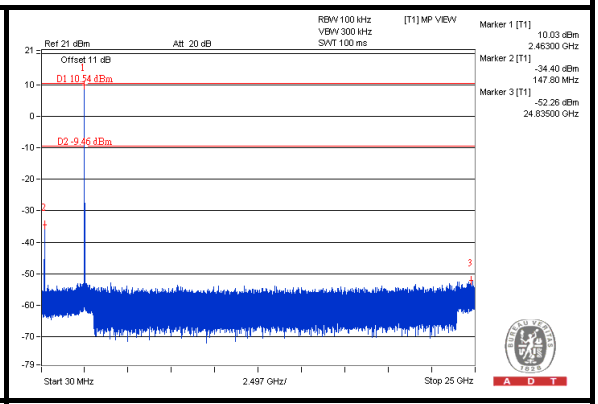
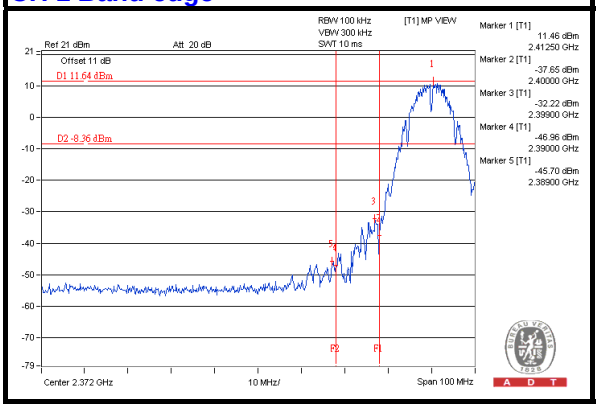




CH 1 Band edge



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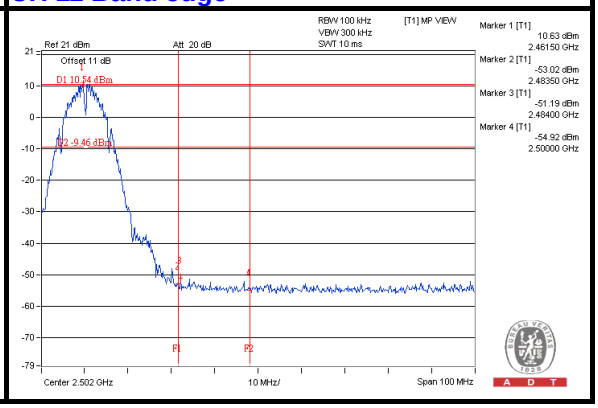

802.11g

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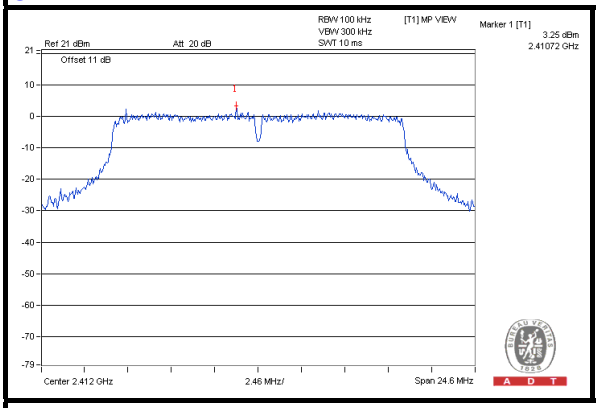
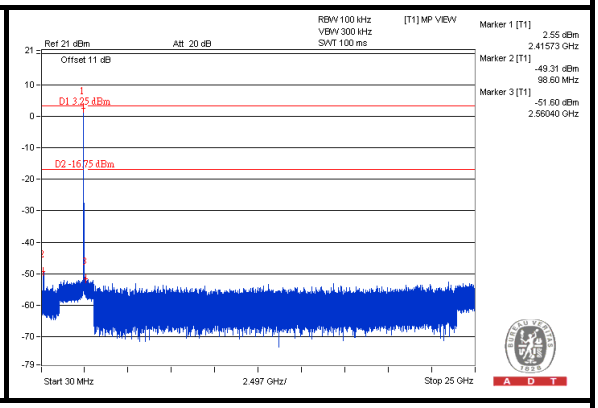
CH 1





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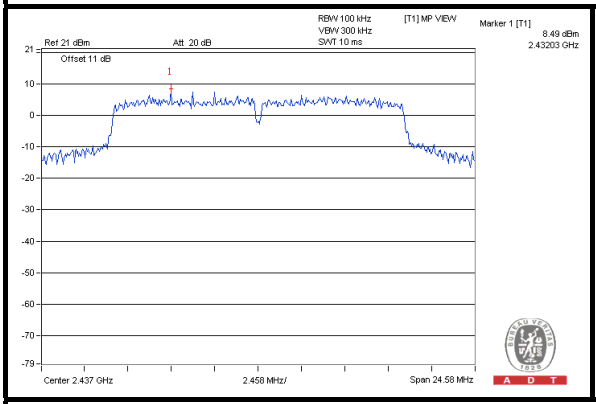

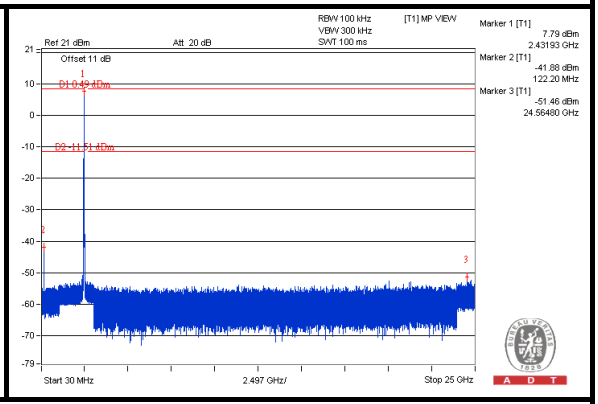

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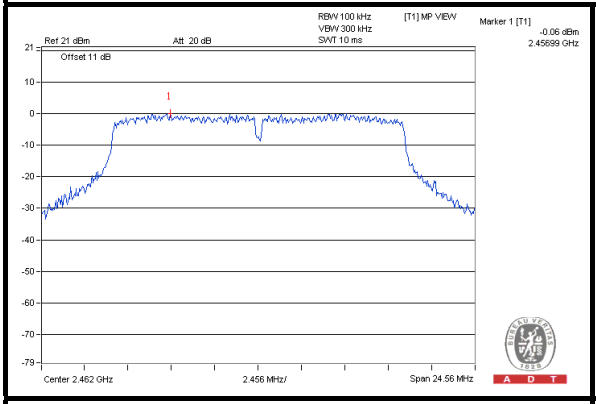
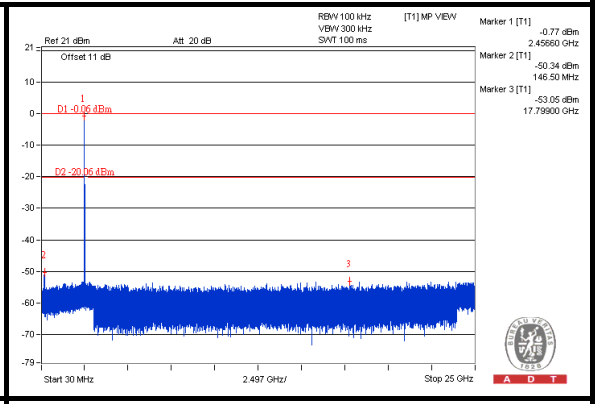
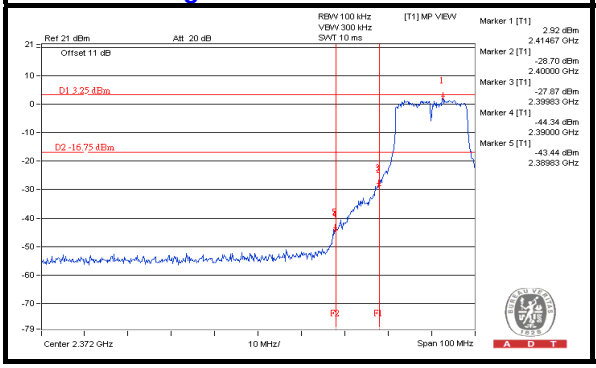




CH 1 Band edge



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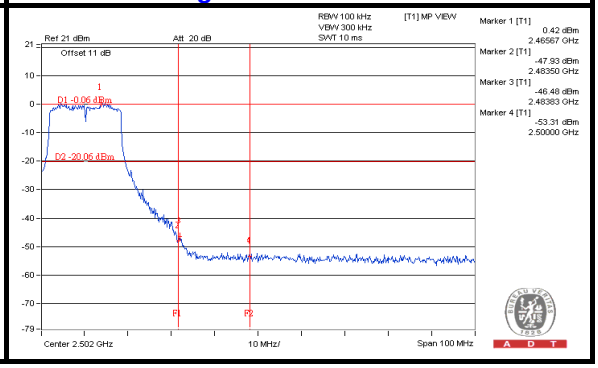
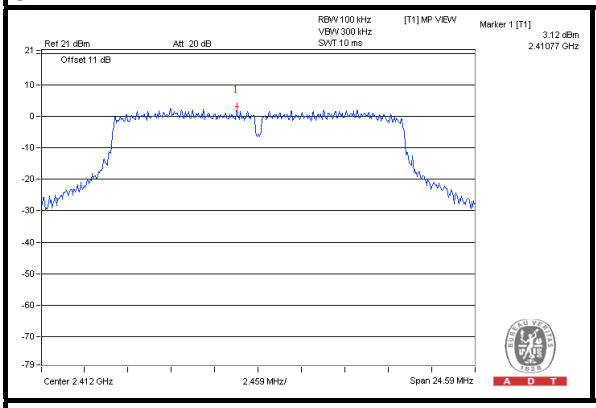
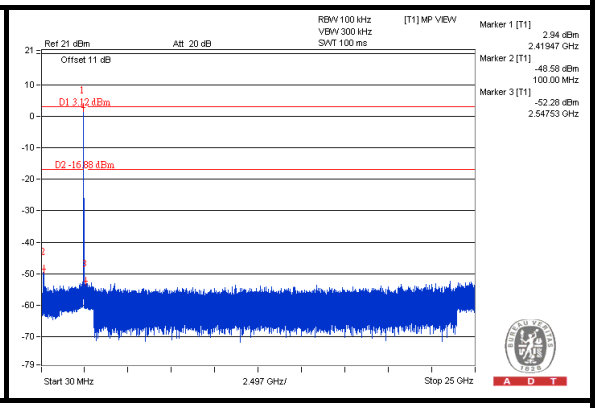


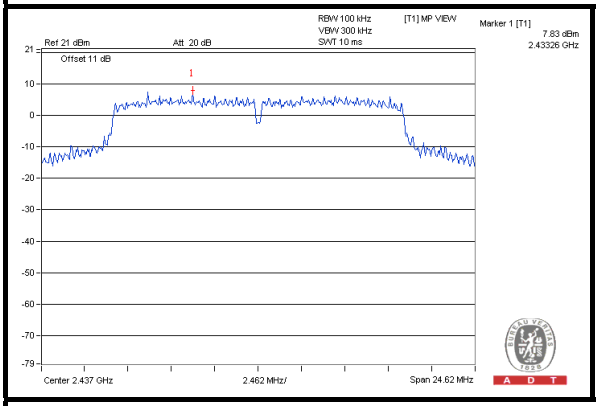
CHAIN 1

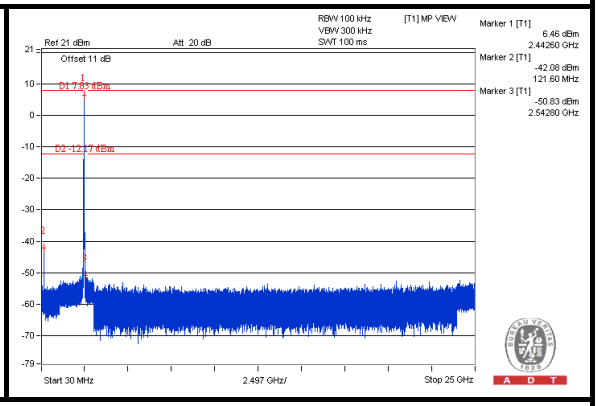
CH 1



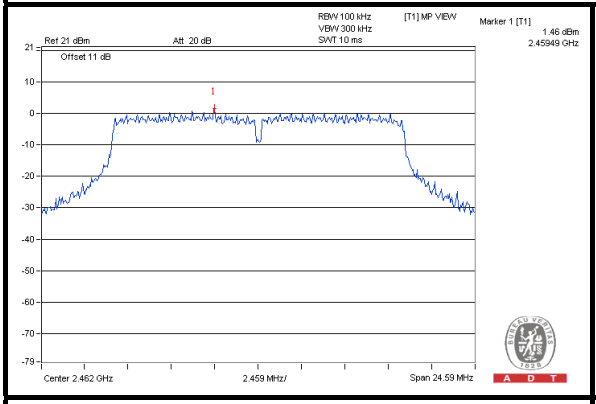


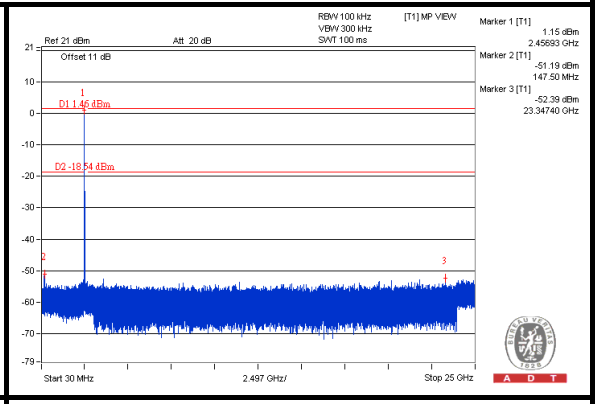
CH 6



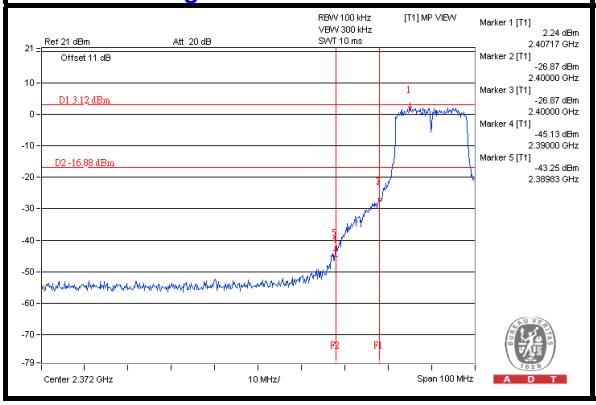


CH 11

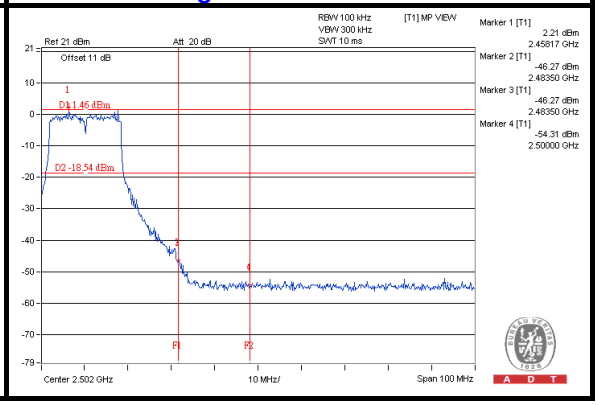




CH 1 Band edge



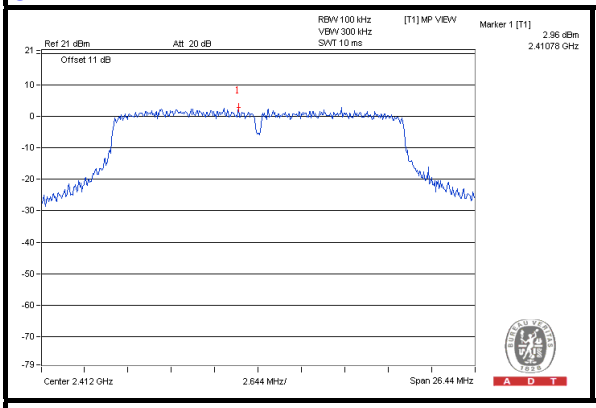
CH 11 Band edge

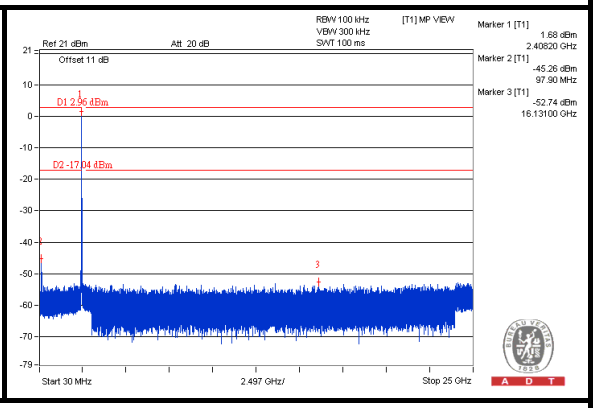


802.11n (20MHz)

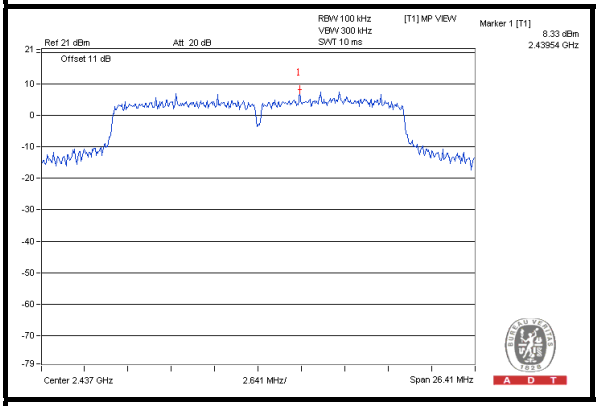
CHAIN 0

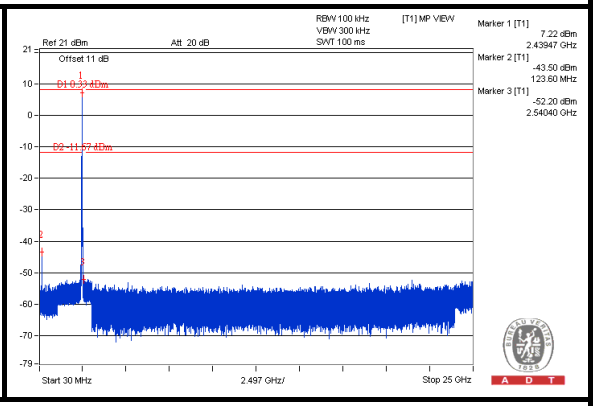
CH 1



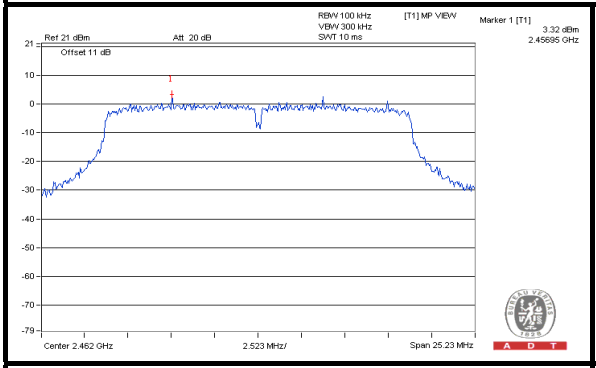


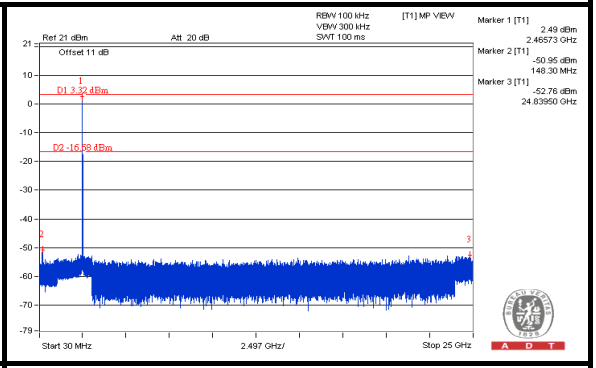
CH 6



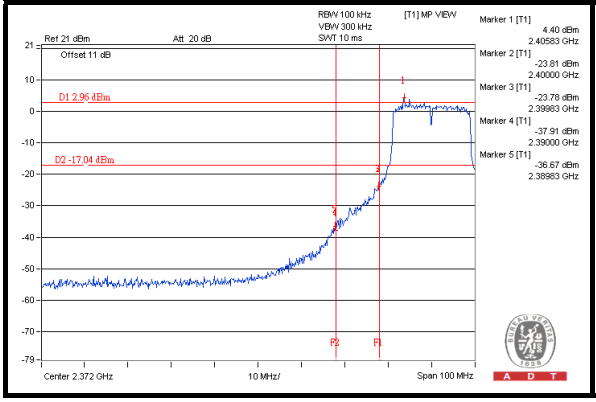


CH 11

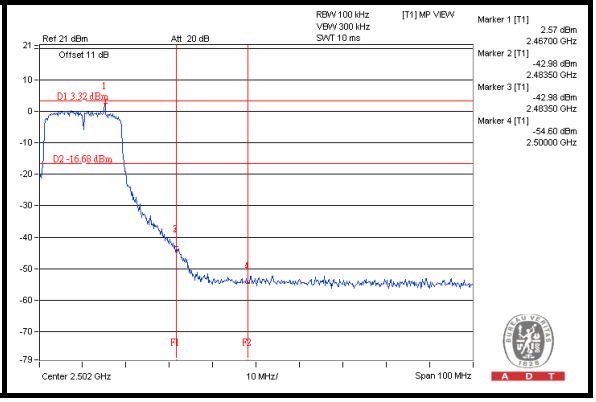




CH 1 Band edge

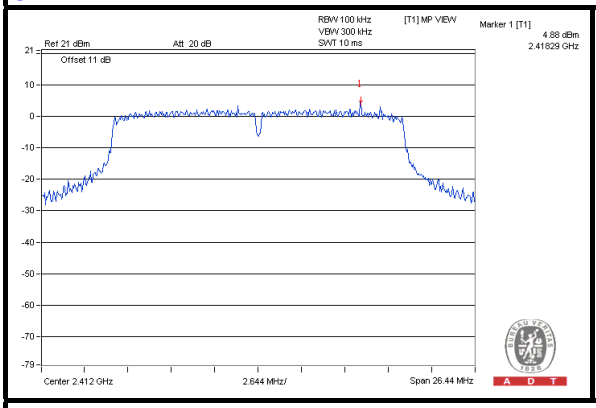


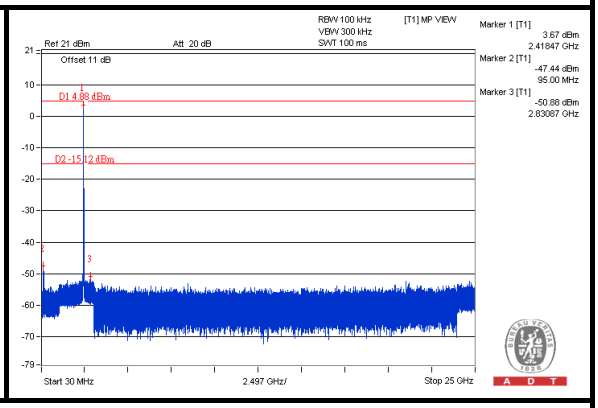
CH 11 Band edge



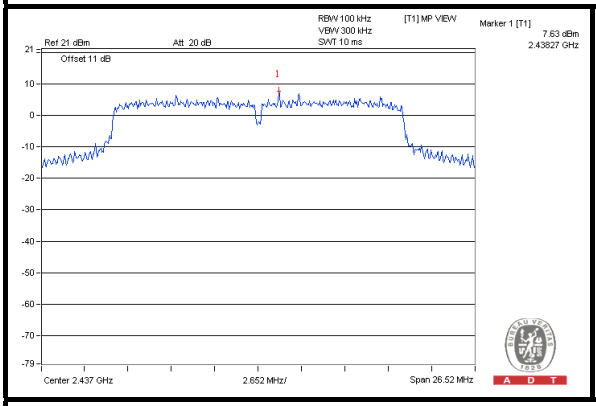
CHAIN 1

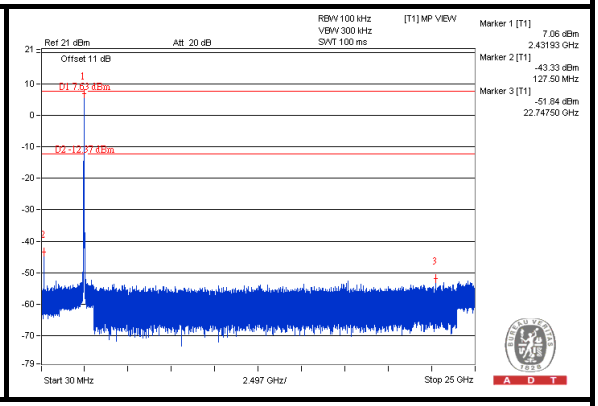
CH 1



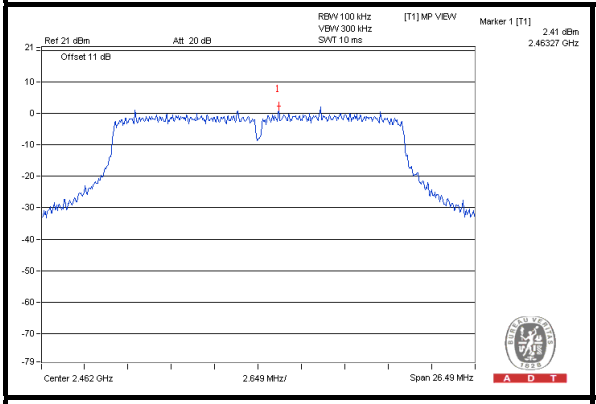


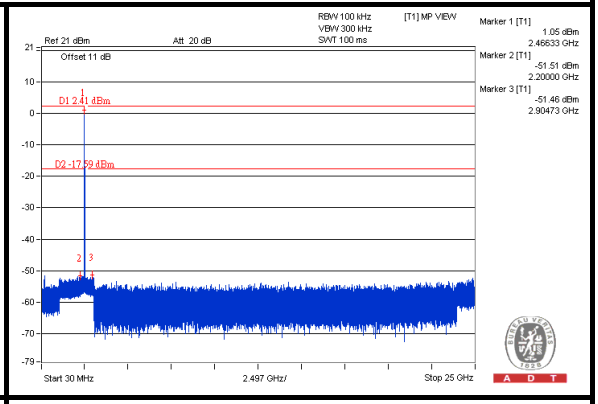
CH 6



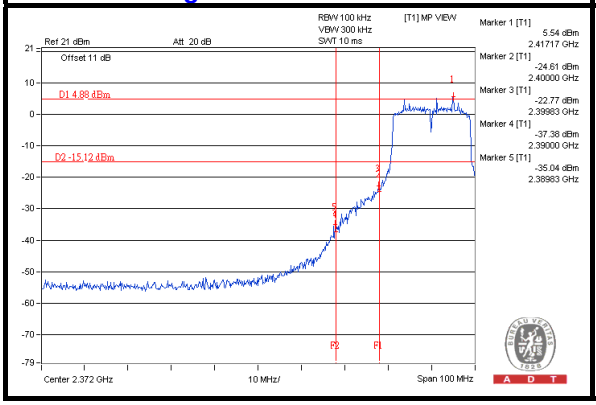


CH 11

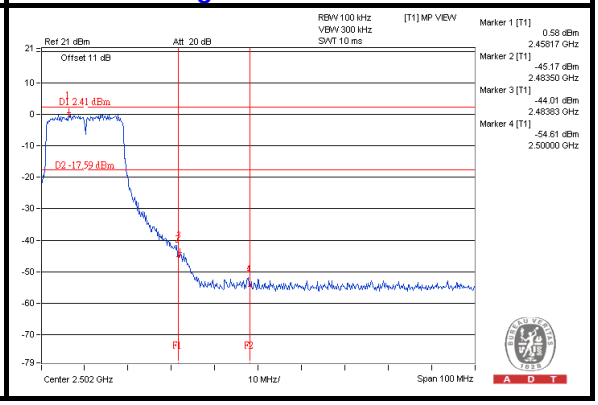




CH 1 Band edge



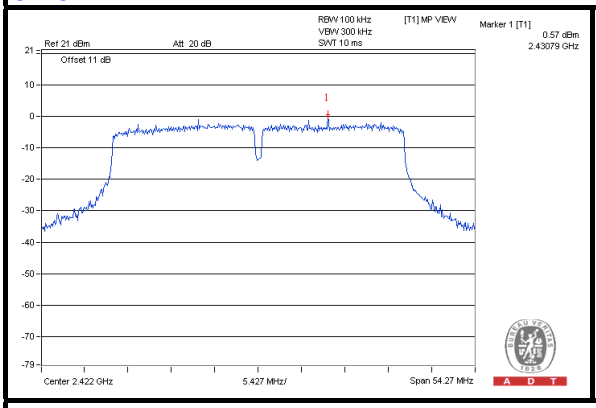
CH 11 Band edge

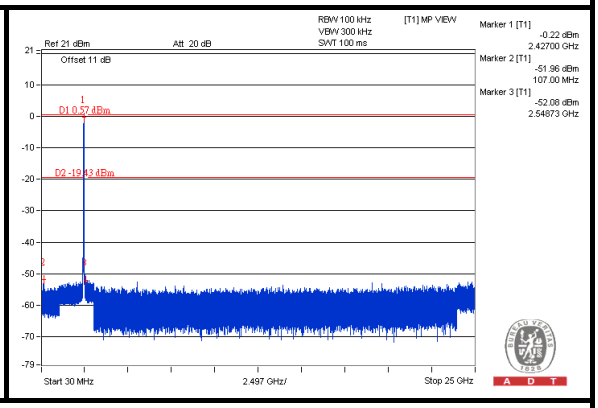


802.11n (40MHz)

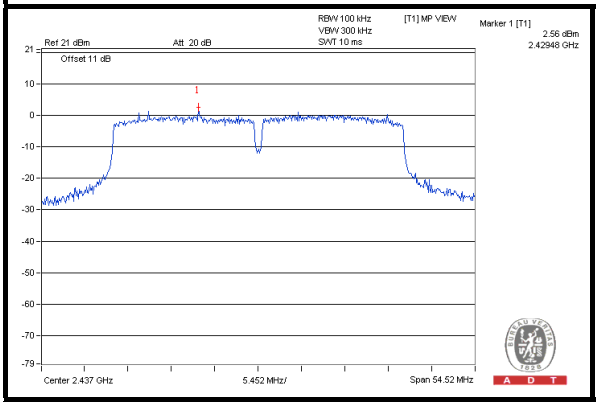
CHAIN 0

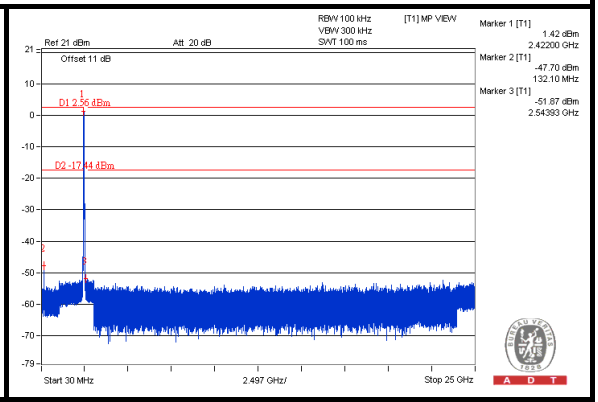
CH 3



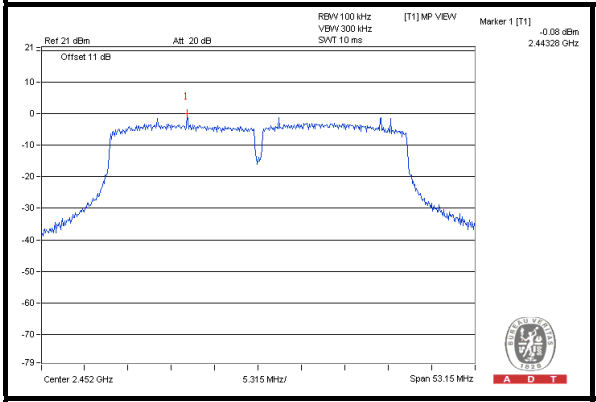


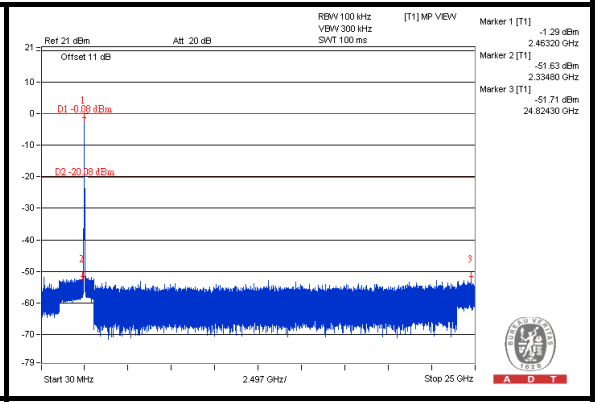
CH 6



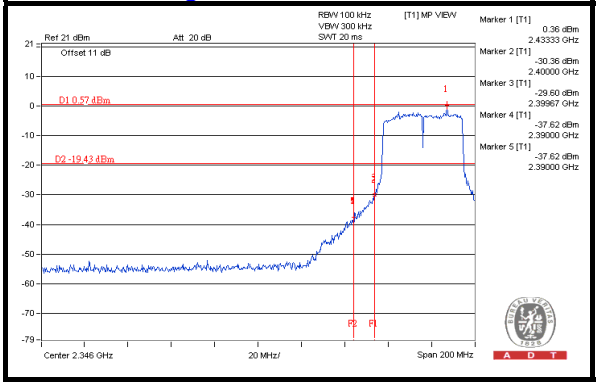


CH 9

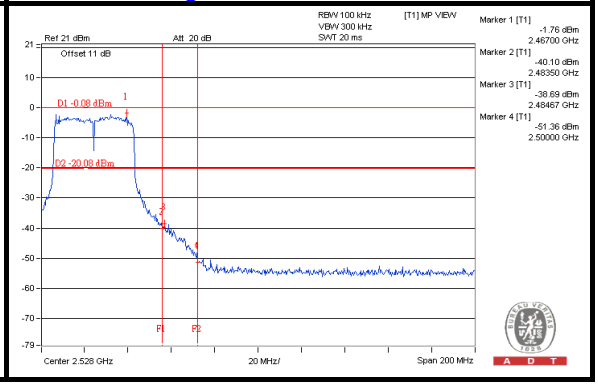




CH 3 Band edge

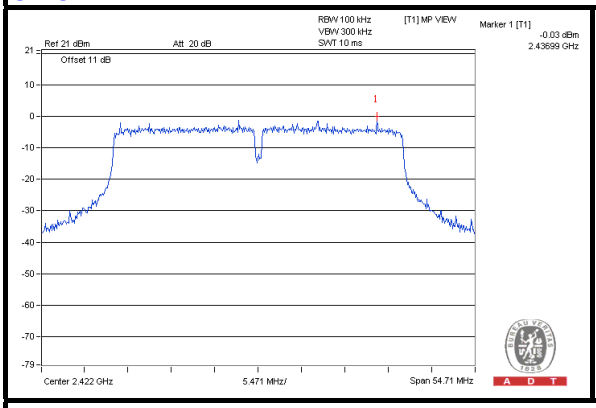


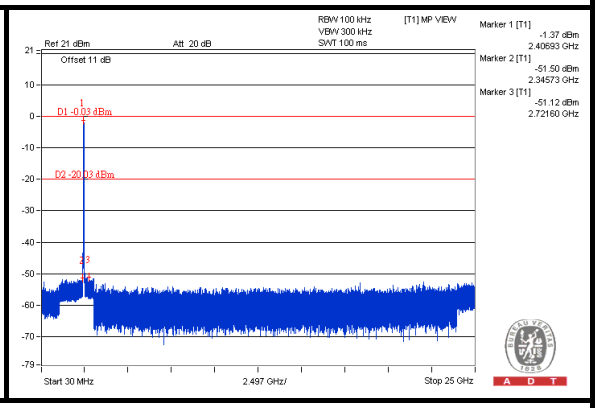
CH 9 Band edge



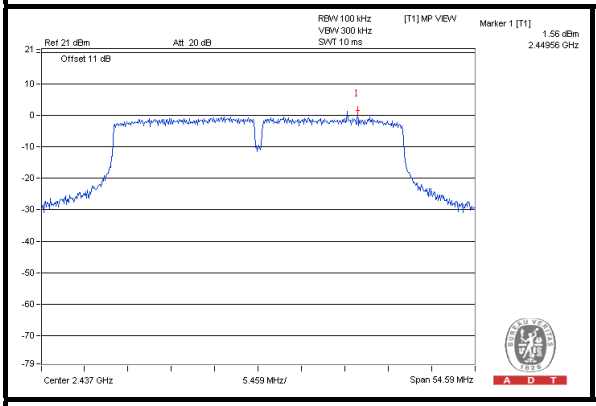
CHAIN 1

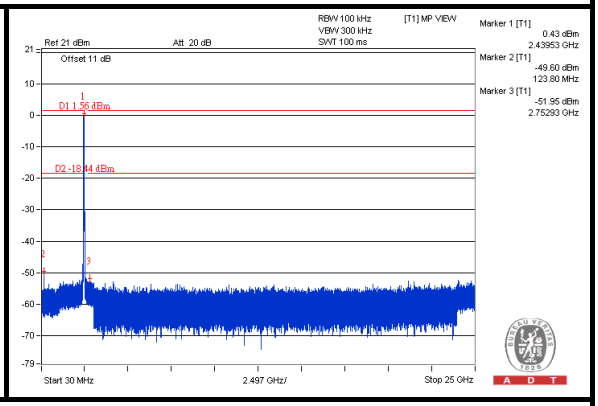
CH 3



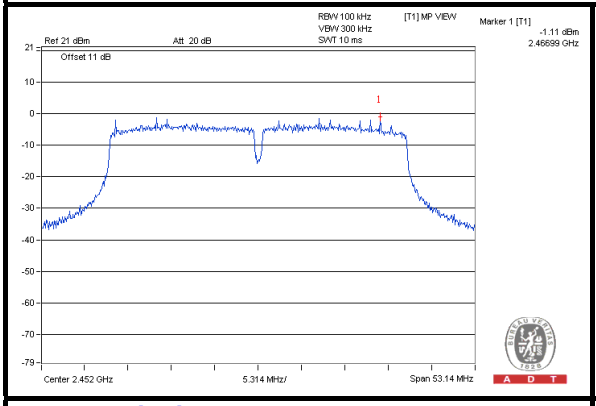


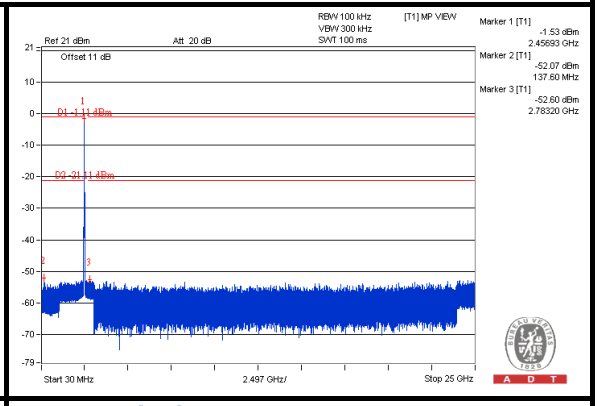
CH 6



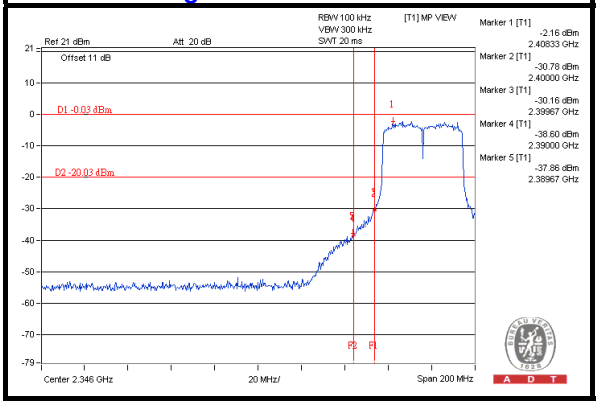


CH 9

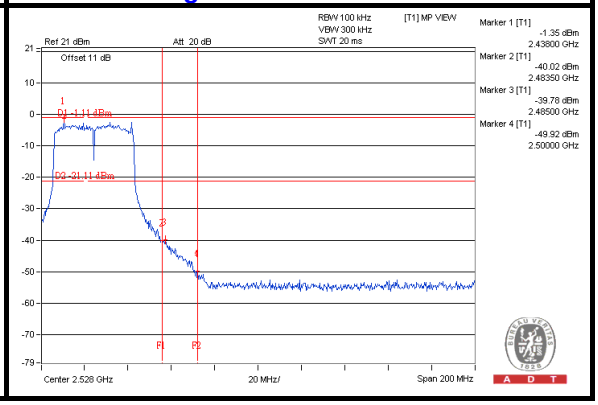




CH 3 Band edge



CH 9 Band edge



5. 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

TEST MODE A

ABOVE 1GHz DATA：

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	73.9 PK	88.9	-15.0	1.03 H	98	67.60	6.30
2	#5725.00	63.9 AV	78.9	-15.0	1.03 H	98	57.60	6.30
3	*5745.00	108.9 PK			1.03 H	98	68.70	40.20
4	*5745.00	98.9 AV			1.03 H	98	58.70	40.20
5	11490.00	60.4 PK	74.0	-13.6	1.16 H	257	42.30	18.10
6	11490.00	48.4 AV	54.0	-5.6	1.16 H	257	30.30	18.10
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	#5725.00	69.9 PK	84.9	-15.0	1.00 V	8	63.60	6.30
2	#5725.00	59.9 AV	74.9	-15.0	1.00 V	8	53.60	6.30
3	*5745.00	104.9 PK			1.00 V	8	64.70	40.20
4	*5745.00	94.9 AV			1.00 V	8	54.70	40.20
5	11490.00	60.2 PK	74.0	-13.8	1.06 V	130	42.10	18.10
6	11490.00	48.2 AV	54.0	-5.8	1.06 V	130	30.10	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5785.00	108.7 PK			1.10 H	85	68.40	40.30
2	*5785.00	98.6 AV			1.10 H	85	58.30	40.30
3	11570.00	60.5 PK	74.0	-13.5	1.23 H	35	42.30	18.20
4	11570.00	48.4 AV	54.0	-5.6	1.23 H	35	30.20	18.20
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	*5785.00	104.8 PK			1.00 V	10	64.50	40.30
2	*5785.00	94.9 AV			1.00 V	10	54.60	40.30
3	11570.00	60.4 PK	74.0	-13.6	1.14 V	74	42.20	18.20
4	11570.00	48.4 AV	54.0	-5.6	1.14 V	74	30.20	18.20

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5825.00	109.2 PK			1.40 H	108	68.90	40.30
2	*5825.00	98.5 AV			1.40 H	108	58.20	40.30
3	#5850.00	68.2 PK	89.2	-21.0	1.40 H	108	61.60	6.60
4	#5850.00	57.5 AV	78.5	-21.0	1.40 H	108	50.90	6.60
5	11650.00	60.2 PK	74.0	-13.8	1.25 H	233	42.10	18.10
6	11650.00	48.2 AV	54.0	-5.8	1.25 H	233	30.10	18.10
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	*5825.00	105.2 PK			1.00 V	17	64.90	40.30
2	*5825.00	94.5 AV			1.00 V	17	54.20	40.30
3	#5850.00	64.2 PK	85.2	-21.0	1.00 V	17	57.60	6.60
4	#5850.00	53.5 AV	74.5	-21.0	1.00 V	17	46.90	6.60
5	11650.00	60.1 PK	74.0	-13.9	1.13 V	25	42.00	18.10
6	11650.00	48.0 AV	54.0	-6.0	1.13 V	25	29.90	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	73.7 PK	88.7	-15.0	1.08 H	88	67.40	6.30
2	#5725.00	63.7 AV	78.7	-15.0	1.08 H	88	57.40	6.30
3	*5745.00	108.7 PK			1.08 H	88	68.50	40.20
4	*5745.00	98.7 AV			1.08 H	88	58.50	40.20
5	11490.00	60.3 PK	74.0	-13.7	1.20 H	243	42.20	18.10
6	11490.00	48.2 AV	54.0	-5.8	1.20 H	243	30.10	18.10
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	#5725.00	69.7 PK	84.7	-15.0	1.00 V	13	63.40	6.30
2	#5725.00	59.7 AV	74.7	-15.0	1.00 V	13	53.40	6.30
3	*5745.00	104.7 PK			1.00 V	13	64.50	40.20
4	*5745.00	94.7 AV			1.00 V	13	54.50	40.20
5	11490.00	60.1 PK	74.0	-13.9	1.12 V	136	42.00	18.10
6	11490.00	47.9 AV	54.0	-6.1	1.12 V	136	29.80	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5785.00	108.6 PK			1.07 H	88	68.30	40.30
2	*5785.00	98.5 AV			1.07 H	88	58.20	40.30
3	11570.00	60.3 PK	74.0	-13.7	1.12 H	253	42.10	18.20
4	11570.00	48.2 AV	54.0	-5.8	1.12 H	253	30.00	18.20
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	*5785.00	104.8 PK			1.00 V	15	64.50	40.30
2	*5785.00	94.8 AV			1.00 V	15	54.50	40.30
3	11570.00	60.2 PK	74.0	-13.8	1.06 V	340	42.00	18.20
4	11570.00	48.0 AV	54.0	-6.0	1.06 V	340	29.80	18.20

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5825.00	108.8 PK			1.33 H	96	68.50	40.30
2	*5825.00	98.7 AV			1.33 H	96	58.40	40.30
3	#5850.00	68.8 PK	88.8	-20.0	1.33 H	96	62.20	6.60
4	#5850.00	58.7 AV	78.7	-20.0	1.33 H	96	52.10	6.60
5	11650.00	60.2 PK	74.0	-13.8	1.08 H	252	42.10	18.10
6	11650.00	48.1 AV	54.0	-5.9	1.08 H	252	30.00	18.10
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	*5825.00	104.8 PK			1.00 V	22	64.50	40.30
2	*5825.00	94.7 AV			1.00 V	22	54.40	40.30
3	#5850.00	64.8 PK	84.8	-20.0	1.00 V	22	58.20	6.60
4	#5850.00	54.7 AV	74.7	-20.0	1.00 V	22	48.10	6.60
5	11650.00	60.1 PK	74.0	-13.9	1.27 V	75	42.00	18.10
6	11650.00	47.8 AV	54.0	-6.2	1.27 V	75	29.70	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	85.0 PK	87.0	-2.0	1.41 H	108	78.70	6.30
2	#5725.00	74.0 AV	76.0	-2.0	1.41 H	108	67.70	6.30
3	*5755.00	107.0 PK			1.41 H	108	66.80	40.20
4	*5755.00	96.0 AV			1.41 H	108	55.80	40.20
5	11510.00	59.3 PK	74.0	-14.7	1.12 H	125	41.20	18.10
6	11510.00	48.0 AV	54.0	-6.0	1.12 H	125	29.90	18.10
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	#5725.00	81.8 PK	83.8	-2.0	1.00 V	16	75.50	6.30
2	#5725.00	70.8 AV	72.8	-2.0	1.00 V	16	64.50	6.30
3	*5755.00	103.8 PK			1.00 V	16	63.60	40.20
4	*5755.00	92.8 AV			1.00 V	16	52.60	40.20
5	11510.00	59.1 PK	74.0	-14.9	1.34 V	342	41.00	18.10
6	11510.00	47.7 AV	54.0	-6.3	1.34 V	342	29.60	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5795.00	106.2 PK			1.40 H	101	65.90	40.30
2	*5795.00	96.3 AV			1.40 H	101	56.00	40.30
3	#5850.00	64.2 PK	86.2	-22.0	1.40 H	101	57.60	6.60
4	#5850.00	54.3 AV	76.3	-22.0	1.40 H	101	47.70	6.60
5	11590.00	59.3 PK	74.0	-14.7	1.11 H	47	41.20	18.10
6	11590.00	48.0 AV	54.0	-6.0	1.11 H	47	29.90	18.10
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	*5795.00	103.2 PK			1.02 V	5	62.90	40.30
2	*5795.00	93.3 AV			1.02 V	5	53.00	40.30
3	#5850.00	61.2 PK	83.2	-22.0	1.02 V	5	54.60	6.60
4	#5850.00	51.3 AV	73.3	-22.0	1.02 V	5	44.70	6.60
5	11590.00	59.1 PK	74.0	-14.9	1.27 V	321	41.00	18.10
6	11590.00	47.8 AV	54.0	-6.2	1.27 V	321	29.70	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11ac (VHT80)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	77.8 PK	83.8	-6.0	1.00 H	112	71.50	6.30
2	#5725.00	66.2 AV	72.2	-6.0	1.00 H	112	59.90	6.30
3	*5775.00	103.8 PK			1.00 H	112	63.60	40.20
4	*5775.00	92.2 AV			1.00 H	112	52.00	40.20
5	#5850.00	73.8 PK	83.8	-10.0	1.00 H	112	67.20	6.60
6	#5850.00	62.2 AV	72.2	-10.0	1.00 H	112	55.60	6.60
7	11550.00	49.6 PK	74.0	-24.4	1.07 H	124	31.50	18.10
8	11550.00	47.7 AV	54.0	-6.3	1.07 H	124	29.60	18.10
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	#5725.00	74.8 PK	80.8	-6.0	1.00 V	20	68.50	6.30
2	#5725.00	63.2 AV	69.2	-6.0	1.00 V	20	56.90	6.30
3	*5775.00	100.8 PK			1.00 V	20	60.60	40.20
4	*5775.00	89.2 AV			1.00 V	20	49.00	40.20
5	#5850.00	70.8 PK	80.8	-10.0	1.00 V	20	64.20	6.60
6	#5850.00	59.2 AV	69.2	-10.0	1.00 V	20	52.60	6.60
7	11550.00	49.3 PK	74.0	-24.7	1.15 V	120	31.20	18.10
8	11550.00	47.5 AV	54.0	-6.5	1.15 V	120	29.40	18.10

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).
   – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

TEST MODE B

ABOVE 1GHz DATA：

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	77.4 PK	87.4	-10.0	1.02 H	262	71.10	6.30
2	#5725.00	67.8 AV	77.8	-10.0	1.02 H	262	61.50	6.30
3	*5745.00	107.4 PK			1.02 H	262	67.20	40.20
4	*5745.00	97.8 AV			1.02 H	262	57.60	40.20
5	11490.00	59.2 PK	74.0	-14.8	1.04 H	27	41.10	18.10
6	11490.00	48.3 AV	54.0	-5.7	1.04 H	27	30.20	18.10
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	#5725.00	73.4 PK	83.4	-10.0	1.45 V	25	67.10	6.30
2	#5725.00	63.8 AV	73.8	-10.0	1.45 V	25	57.50	6.30
3	*5745.00	103.4 PK			1.45 V	25	63.20	40.20
4	*5745.00	93.8 AV			1.45 V	25	53.60	40.20
5	11490.00	61.2 PK	74.0	-12.8	1.30 V	55	43.10	18.10
6	11490.00	50.3 AV	54.0	-3.7	1.30 V	55	32.20	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5785.00	107.4 PK			1.08 H	288	67.10	40.30
2	*5785.00	97.8 AV			1.08 H	288	57.50	40.30
3	11570.00	60.4 PK	74.0	-13.6	1.24 H	33	42.20	18.20
4	11570.00	48.4 AV	54.0	-5.6	1.24 H	33	30.20	18.20
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	*5785.00	103.4 PK			1.43 V	15	63.10	40.30
2	*5785.00	93.8 AV			1.43 V	15	53.50	40.30
3	11570.00	61.4 PK	74.0	-12.6	1.26 V	9	43.20	18.20
4	11570.00	50.3 AV	54.0	-3.7	1.26 V	9	32.10	18.20

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5825.00	107.3 PK			1.67 H	290	67.00	40.30
2	*5825.00	97.5 AV			1.67 H	290	57.20	40.30
3	#5850.00	62.3 PK	87.3	-25.0	1.67 H	290	55.70	6.60
4	#5850.00	52.5 AV	77.5	-25.0	1.67 H	290	45.90	6.60
5	11650.00	60.2 PK	74.0	-13.8	1.25 H	256	42.10	18.10
6	11650.00	48.2 AV	54.0	-5.8	1.25 H	256	30.10	18.10
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	*5825.00	103.3 PK			1.52 V	31	63.00	40.30
2	*5825.00	93.5 AV			1.52 V	31	53.20	40.30
3	#5850.00	58.3 PK	83.3	-25.0	1.52 V	31	51.70	6.60
4	#5850.00	48.5 AV	73.5	-25.0	1.52 V	31	41.90	6.60
5	11650.00	61.5 PK	74.0	-12.5	1.23 V	160	43.40	18.10
6	11650.00	50.2 AV	54.0	-3.8	1.23 V	160	32.10	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	77.2 PK	87.2	-10.0	1.06 H	277	70.90	6.30
2	#5725.00	67.6 AV	77.6	-10.0	1.06 H	277	61.30	6.30
3	*5745.00	107.2 PK			1.06 H	277	67.00	40.20
4	*5745.00	97.6 AV			1.06 H	277	57.40	40.20
5	11490.00	59.1 PK	74.0	-14.9	1.21 H	13	41.00	18.10
6	11490.00	48.2 AV	54.0	-5.8	1.21 H	13	30.10	18.10
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	#5725.00	73.1 PK	83.1	-10.0	1.37 V	310	66.80	6.30
2	#5725.00	63.5 AV	73.5	-10.0	1.37 V	310	57.20	6.30
3	*5745.00	103.1 PK			1.37 V	310	62.90	40.20
4	*5745.00	93.5 AV			1.37 V	310	53.30	40.20
5	11490.00	61.1 PK	74.0	-12.9	1.28 V	195	43.00	18.10
6	11490.00	50.2 AV	54.0	-3.8	1.28 V	195	32.10	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5785.00	107.5 PK			1.15 H	291	67.20	40.30
2	*5785.00	97.5 AV			1.15 H	291	57.20	40.30
3	11570.00	59.3 PK	74.0	-14.7	1.18 H	40	41.10	18.20
4	11570.00	48.2 AV	54.0	-5.8	1.18 H	40	30.00	18.20
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	*5785.00	103.5 PK			1.45 V	16	63.20	40.30
2	*5785.00	93.3 AV			1.45 V	16	53.00	40.30
3	11570.00	61.5 PK	74.0	-12.5	1.12 V	174	43.30	18.20
4	11570.00	50.6 AV	54.0	-3.4	1.12 V	174	32.40	18.20

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5825.00	107.4 PK			1.62 H	285	67.10	40.30
2	*5825.00	97.6 AV			1.62 H	285	57.30	40.30
3	#5850.00	62.4 PK	87.4	-25.0	1.62 H	285	55.80	6.60
4	#5850.00	52.6 AV	77.6	-25.0	1.62 H	285	46.00	6.60
5	11650.00	59.3 PK	74.0	-14.7	1.20 H	250	41.20	18.10
6	11650.00	48.3 AV	54.0	-5.7	1.20 H	250	30.20	18.10
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	*5825.00	103.4 PK			1.48 V	20	63.10	40.30
2	*5825.00	93.6 AV			1.48 V	20	53.30	40.30
3	#5850.00	58.4 PK	83.4	-25.0	1.48 V	20	51.80	6.60
4	#5850.00	48.6 AV	73.6	-25.0	1.48 V	20	42.00	6.60
5	11650.00	61.3 PK	74.0	-12.7	1.16 V	153	43.20	18.10
6	11650.00	50.1 AV	54.0	-3.9	1.16 V	153	32.00	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	#5725.00	81.5 PK	85.5	-4.0	1.68 H	278	75.20	6.30
2	#5725.00	71.5 AV	75.5	-4.0	1.68 H	278	65.20	6.30
3	*5755.00	105.5 PK			1.68 H	278	65.30	40.20
4	*5755.00	95.5 AV			1.68 H	278	55.30	40.20
5	11510.00	60.2 PK	74.0	-13.8	1.24 H	177	42.10	18.10
6	11510.00	48.0 AV	54.0	-6.0	1.24 H	177	29.90	18.10
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	#5725.00	78.5 PK	82.5	-4.0	1.42 V	13	72.20	6.30
2	#5725.00	68.5 AV	72.5	-4.0	1.42 V	13	62.20	6.30
3	*5755.00	102.5 PK			1.42 V	13	62.30	40.20
4	*5755.00	92.5 AV			1.42 V	13	52.30	40.20
5	11510.00	61.2 PK	74.0	-12.8	1.30 V	166	43.10	18.10
6	11510.00	50.0 AV	54.0	-4.0	1.30 V	166	31.90	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	*5795.00	105.3 PK			1.00 H	260	65.00	40.30
2	*5795.00	95.3 AV			1.00 H	260	55.00	40.30
3	#5850.00	67.3 PK	85.3	-18.0	1.00 H	260	60.70	6.60
4	#5850.00	57.3 AV	75.3	-18.0	1.00 H	260	50.70	6.60
5	11590.00	59.6 PK	74.0	-14.4	1.28 H	257	41.50	18.10
6	11590.00	48.1 AV	54.0	-5.9	1.28 H	257	30.00	18.10
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	*5795.00	102.3 PK			1.35 V	23	62.00	40.30
2	*5795.00	92.3 AV			1.35 V	23	52.00	40.30
3	#5850.00	64.3 PK	82.3	-18.0	1.35 V	23	57.70	6.60
4	#5850.00	54.3 AV	72.3	-18.0	1.35 V	23	47.70	6.60
5	11590.00	61.0 PK	74.0	-13.0	1.28 V	166	42.90	18.10
6	11590.00	49.5 AV	54.0	-4.5	1.28 V	166	31.40	18.10

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11ac (VHT80)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Brad Wu

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	**#5725.00**	**82.0 PK**	**83.0**	**-1.0**	**1.04 H**	**266**	**75.70**	**6.30**
2	**#5725.00**	**70.5 AV**	**71.5**	**-1.0**	**1.04 H**	**266**	**64.20**	**6.30**
3	*5775.00	103.0 PK			1.04 H	266	62.80	40.20
4	*5775.00	91.5 AV			1.04 H	266	51.30	40.20
5	#5850.00	73.0 PK	83.0	-10.0	1.04 H	266	66.40	6.60
6	#5850.00	61.5 AV	71.5	-10.0	1.04 H	266	54.90	6.60
7	11550.00	59.9 PK	74.0	-14.1	1.16 H	132	41.80	18.10
8	11550.00	48.3 AV	54.0	-5.7	1.16 H	132	30.20	18.10
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	**#5725.00**	**79.0 PK**	**80.0**	**-1.0**	**1.38 V**	**12**	**72.70**	**6.30**
2	**#5725.00**	**67.5 AV**	**68.5**	**-1.0**	**1.38 V**	**12**	**61.20**	**6.30**
3	*5775.00	100.0 PK			1.38 V	12	59.80	40.20
4	*5775.00	88.5 AV			1.38 V	12	48.30	40.20
5	#5850.00	70.0 PK	80.0	-10.0	1.38 V	12	63.40	6.60
6	#5850.00	58.5 AV	68.5	-10.0	1.38 V	12	51.90	6.60
7	11550.00	60.9 PK	74.0	-13.1	1.22 V	160	42.80	18.10
8	11550.00	49.3 AV	54.0	-4.7	1.22 V	160	31.20	18.10

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).
   – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.
7. The limit value is defined as per 15.247.

TEST MODE A

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	249.17	30.4 QP	46.0	-15.6	1.50 H	225	44.90	-14.50
2	375.29	33.8 QP	46.0	-12.2	1.00 H	128	45.10	-11.30
3	600.38	39.3 QP	46.0	-6.7	1.00 H	141	46.30	-7.00
4	650.83	40.5 QP	46.0	-5.5	1.00 H	135	46.60	-6.10
5	751.73	37.0 QP	46.0	-9.0	1.25 H	202	40.70	-3.70
6	850.69	35.7 QP	46.0	-10.3	2.00 H	205	38.20	-2.50
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	55.13	35.5 QP	40.0	-4.5	1.00 V	329	49.60	-14.10
2	375.29	35.5 QP	46.0	-10.5	1.00 V	244	46.80	-11.30
3	450.97	37.1 QP	46.0	-8.9	1.00 V	17	46.80	-9.70
4	549.93	40.4 QP	46.0	-5.6	1.00 V	19	48.70	-8.30
5	600.38	37.7 QP	46.0	-8.3	1.50 V	22	44.70	-7.00
6	650.83	43.2 QP	46.0	-2.8	2.00 V	2	49.30	-6.10

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

TEST MODE B

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 69%RH	TESTED BY	Jones Chang

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	124.98	31.9 QP	43.5	-11.6	2.00 H	272	47.60	-15.70
2	249.17	35.9 QP	46.0	-10.1	1.01 H	212	50.40	-14.50
3	549.93	44.2 QP	46.0	-1.8	1.01 H	7	52.50	-8.30
4	600.38	42.7 QP	46.0	-3.3	1.51 H	12	49.70	-7.00
5	650.83	41.2 QP	46.0	-4.8	1.01 H	7	47.30	-6.10
6	751.73	36.7 QP	46.0	-9.3	1.01 H	203	40.40	-3.70
7	850.69	36.3 QP	46.0	-9.7	1.01 H	167	38.80	-2.50
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	39.60	36.5 QP	40.0	-3.5	1.50 V	8	51.60	-15.10
2	49.30	35.3 QP	40.0	-4.7	1.00 V	33	49.90	-14.60
3	375.29	33.2 QP	46.0	-12.8	1.50 V	238	44.50	-11.30
4	549.93	40.1 QP	46.0	-5.9	1.50 V	8	48.40	-8.30
5	650.83	42.8 QP	46.0	-3.2	1.00 V	13	48.90	-6.10
6	751.73	34.8 QP	46.0	-11.2	1.50 V	5	38.50	-3.70

REMARKS:

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

5.2 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 TEST 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

TEST MODE A

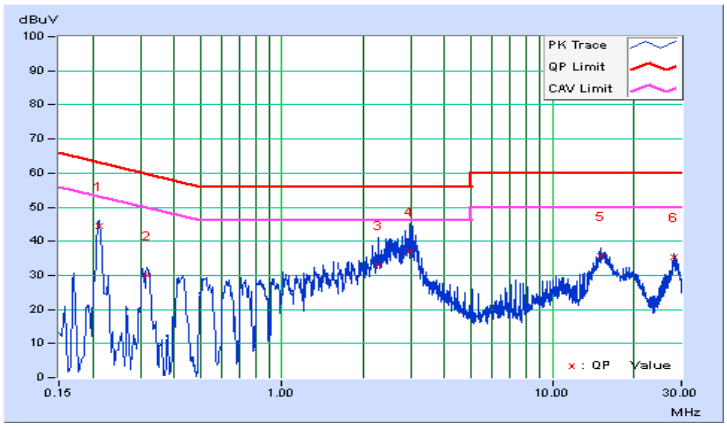
CONDUCTED WORST-CASE DATA：802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz

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	0.21115	0.16	44.30	30.99	44.46	31.15	63.16	53.16	-18.70	-22.01
2	0.31849	0.20	29.88	20.25	30.08	20.45	59.75	49.75	-29.66	-29.29
3	2.26531	0.30	32.59	24.04	32.89	24.34	56.00	46.00	-23.11	-21.66
4	2.98475	0.34	36.85	25.05	37.19	25.39	56.00	46.00	-18.81	-20.61
5	15.13312	0.98	34.63	30.50	35.61	31.48	60.00	50.00	-24.39	-18.52
6	28.29809	1.61	33.65	31.14	35.26	32.75	60.00	50.00	-24.74	-17.25

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.

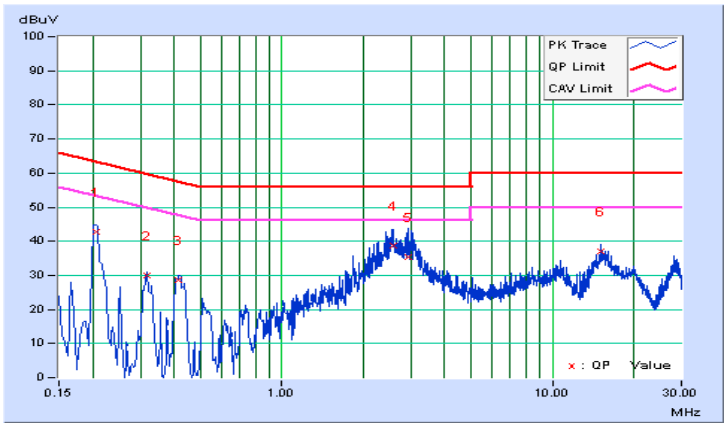


PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.20511	0.17	42.64	29.78	42.81	29.95	63.40	53.40	-20.59	-23.45
2	0.31813	0.21	29.60	20.31	29.81	20.52	59.76	49.76	-29.94	-29.23
3	0.41560	0.24	28.44	22.88	28.68	23.12	57.54	47.54	-28.86	-24.42
4	2.58984	0.31	38.47	28.79	38.78	29.10	56.00	46.00	-17.22	-16.90
5	2.92219	0.33	34.94	26.48	35.27	26.81	56.00	46.00	-20.73	-19.19
6	15.12921	0.76	36.13	32.65	36.89	33.41	60.00	50.00	-23.11	-16.59

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.



TEST MODE B

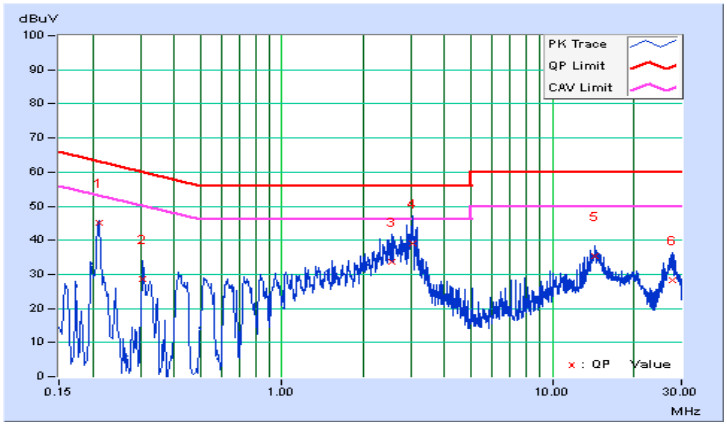
CONDUCTED WORST-CASE DATA：802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz

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	0.21170	0.16	44.90	31.63	45.06	31.79	63.14	53.14	-18.07	-21.34
2	0.30640	0.20	28.27	14.01	28.47	14.21	60.07	50.07	-31.60	-35.86
3	2.55465	0.32	33.48	23.76	33.80	24.08	56.00	46.00	-22.20	-21.92
4	3.03167	0.35	38.70	25.48	39.05	25.83	56.00	46.00	-16.95	-20.17
5	14.31202	0.94	34.55	30.28	35.49	31.22	60.00	50.00	-24.51	-18.78
6	27.78197	1.59	26.61	22.02	28.20	23.61	60.00	50.00	-31.80	-26.39

REMARKS:

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

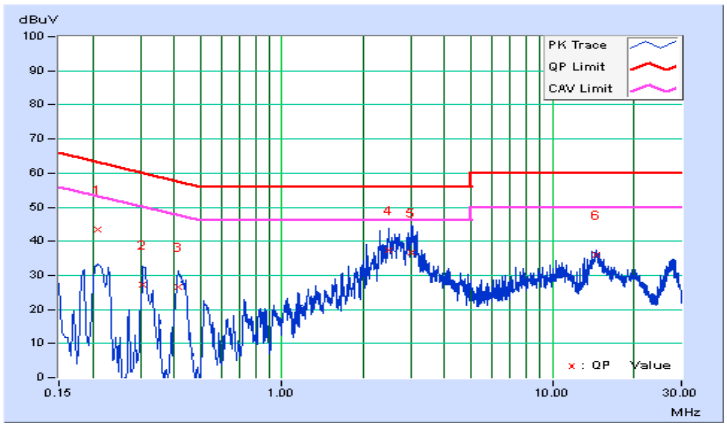


PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.20838	0.17	43.43	31.30	43.60	31.47	63.27	53.27	-19.67	-21.80
2	0.30696	0.21	27.10	13.52	27.31	13.73	60.05	50.05	-32.74	-36.32
3	0.41197	0.24	26.50	16.26	26.74	16.50	57.61	47.61	-30.87	-31.11
4	2.48427	0.30	37.07	25.45	37.37	25.75	56.00	46.00	-18.63	-20.25
5	3.00430	0.33	36.34	25.32	36.67	25.65	56.00	46.00	-19.33	-20.35
6	14.59354	0.75	35.25	31.37	36.00	32.12	60.00	50.00	-24.00	-17.88

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

TEST MODE A

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.47	16.47	0.5	PASS
157	5785	16.40	16.40	0.5	PASS
165	5825	16.42	16.43	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	17.63	17.63	0.5	PASS
157	5785	17.64	17.65	0.5	PASS
165	5825	17.65	17.65	0.5	PASS

802.11n (40MHz)

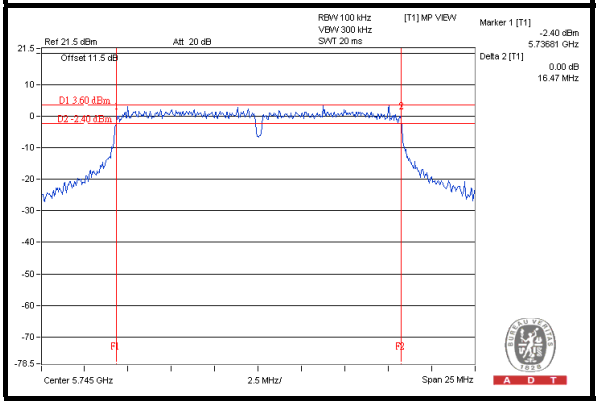
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	36.16	36.45	0.5	PASS
159	5795	36.45	36.49	0.5	PASS

802.11ac (VHT80)

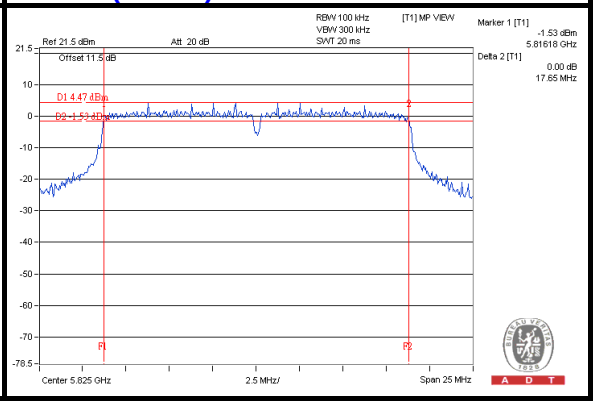
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
155	5775	76.65	76.64	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

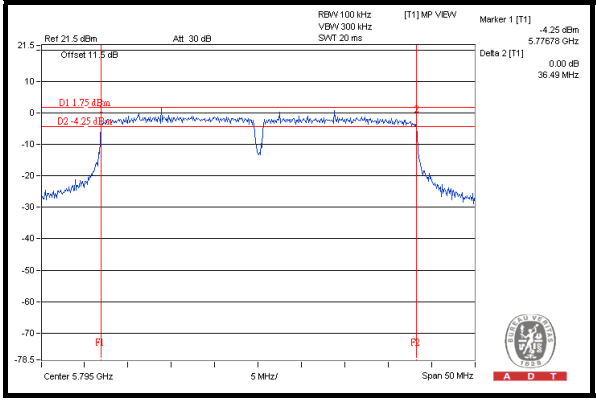
802.11a



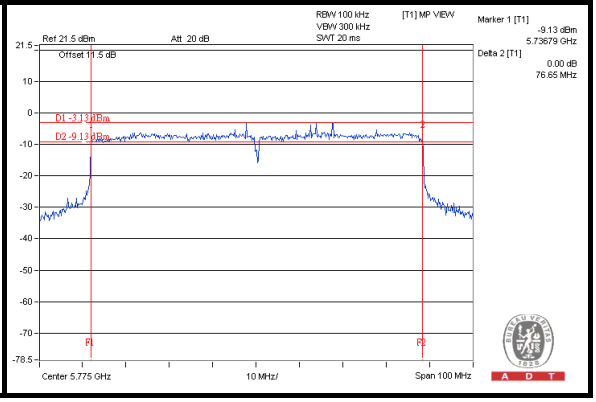
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



TEST MODE B

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.44	16.44	0.5	PASS
157	5785	16.45	16.44	0.5	PASS
165	5825	16.44	16.46	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	17.64	17.63	0.5	PASS
157	5785	17.62	17.67	0.5	PASS
165	5825	17.62	17.59	0.5	PASS

802.11n (40MHz)

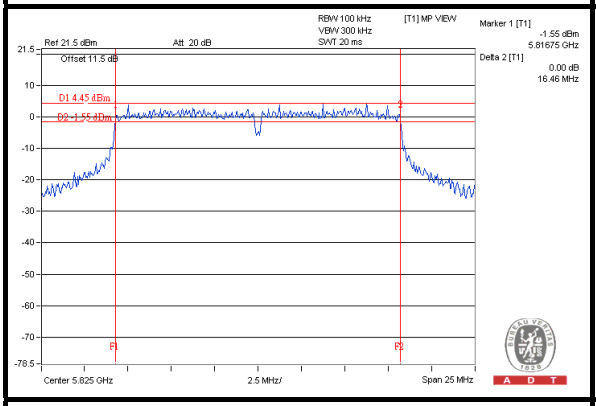
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	36.46	36.48	0.5	PASS
159	5795	36.46	36.44	0.5	PASS

802.11ac (VHT80)

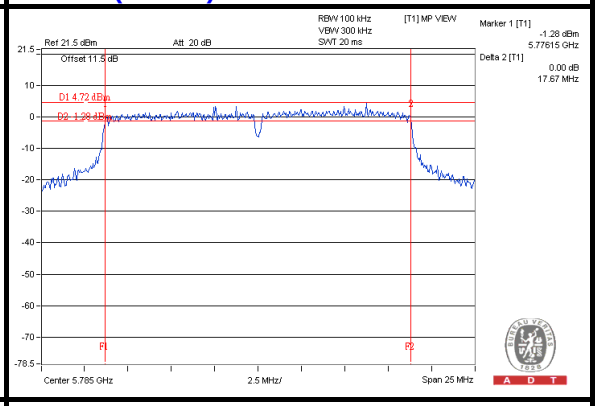
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
155	5775	76.72	76.09	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

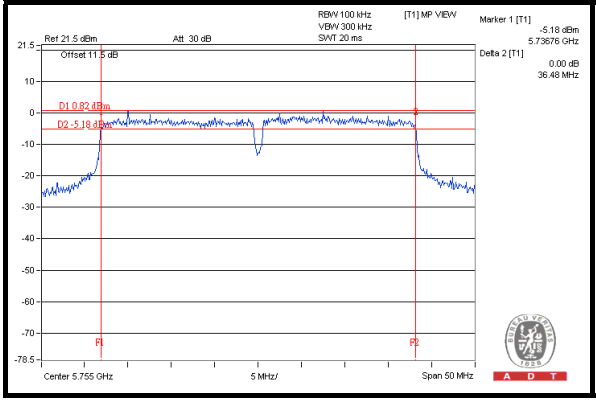
802.11a



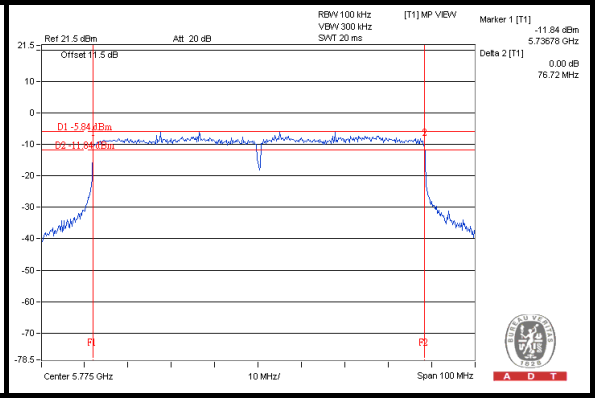
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



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 v02 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

TEST MODE A

802.11a

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	19.54	20.52	202.670	23.07	30	PASS
157	5785	19.63	20.45	202.750	23.07	30	PASS
165	5825	19.77	20.46	206.015	23.14	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	19.74	20.64	210.067	23.22	30	PASS
157	5785	19.72	20.41	203.657	23.09	30	PASS
165	5825	19.81	20.42	205.873	23.14	30	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	19.71	20.77	212.940	23.28	30	PASS
159	5795	19.00	20.63	195.044	22.90	30	PASS

802.11ac (VHT80)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
155	5775	18.88	17.90	138.928	21.43	30	PASS

TEST MODE B

802.11a

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	19.81	19.99	195.489	22.91	30	PASS
157	5785	19.91	19.96	197.032	22.95	30	PASS
165	5825	19.92	19.97	197.487	22.96	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	19.86	20.20	201.541	23.04	30	PASS
157	5785	20.01	20.39	209.627	23.21	30	PASS
165	5825	20.14	20.41	**213.177**	23.29	30	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	19.79	20.13	198.319	22.97	30	PASS
159	5795	19.99	20.22	204.966	23.12	30	PASS

802.11ac (VHT80)

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
155	5775	18.02	17.81	123.782	20.93	30	PASS

FOR AVERAGE POWER

TEST MODE A

802.11a

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	14.96	15.72	68.658	18.37
157	5785	14.98	15.65	68.205	18.34
165	5825	15.12	15.69	69.577	18.42

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	15.22	15.92	72.350	18.59
157	5785	14.96	15.54	67.143	18.27
165	5825	15.06	15.72	69.388	18.41

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
151	5755	15.00	16.02	71.617	18.55
159	5795	15.04	15.92	70.999	18.51

802.11ac (VHT80)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
155	5775	14.01	13.66	48.404	16.85

TEST MODE B

802.11a

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	13.36	15.42	56.511	17.52
157	5785	15.23	15.45	68.418	18.35
165	5825	15.52	15.52	71.290	18.53

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
149	5745	15.16	15.42	67.644	18.30
157	5785	15.34	15.96	73.644	18.67
165	5825	15.52	15.77	73.402	18.66

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
151	5755	14.82	15.87	68.976	18.39
159	5795	15.17	16.02	72.879	18.63

802.11ac (VHT80)

CHANNEL	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)
		CHAIN 0	CHAIN 1		
155	5775	13.30	13.00	41.333	16.16

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

TEST MODE A

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-11.00	3.01	-7.99	5.8	PASS
	157	5785	-9.69	3.01	-6.68	5.8	PASS
	165	5825	-10.11	3.01	-7.10	5.8	PASS
1	149	5745	-10.92	3.01	-7.91	5.8	PASS
	157	5785	-9.18	3.01	-6.17	5.8	PASS
	165	5825	-9.23	3.01	-6.22	5.8	PASS

NOTE: Directional gain = 5.16dBi + 10log(2) = 8.2dBi > 6dBi , so the power density limit shall be reduced to 8-(8.2-6) = 5.8dBm.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-10.86	3.01	-7.85	8	PASS
	157	5785	-10.44	3.01	-7.43	8	PASS
	165	5825	-10.14	3.01	-7.13	8	PASS
1	149	5745	-10.13	3.01	-7.12	8	PASS
	157	5785	-7.76	3.01	-4.75	8	PASS
	165	5825	-10.60	3.01	-7.59	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi < 6dBi, so the limit no need to reduced.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-12.98	3.01	-9.97	8	PASS
	159	5795	-13.47	3.01	-10.46	8	PASS
1	151	5755	-12.15	3.01	-9.14	8	PASS
	159	5795	-11.26	3.01	-8.25	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi < 6dBi, so the limit no need to reduced.

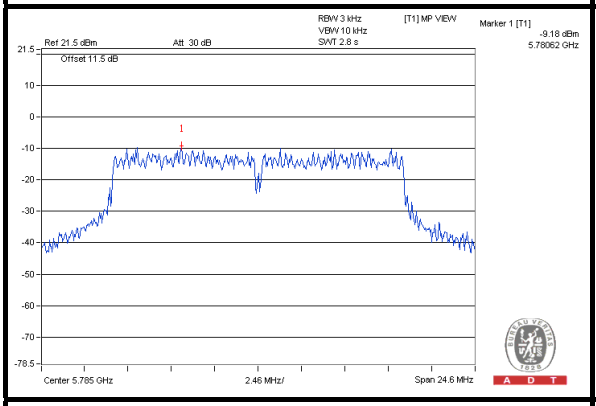
802.11ac (VHT80)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5775	-16.48	3.01	-13.47	5.8	PASS
1	151	5775	-18.08	3.01	-15.07	5.8	PASS

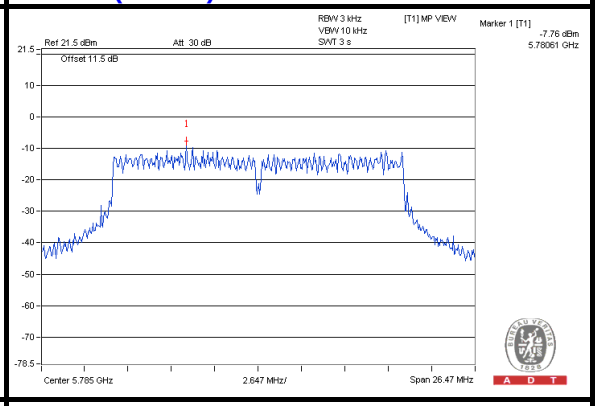
NOTE: Directional gain = 5.16dBi + 10log(2) = 8.2dBi > 6dBi , so the power density limit shall be reduced to 8-(8.2-6) = 5.8dBm.

SPECTRUM PLOT OF WORST VALUE

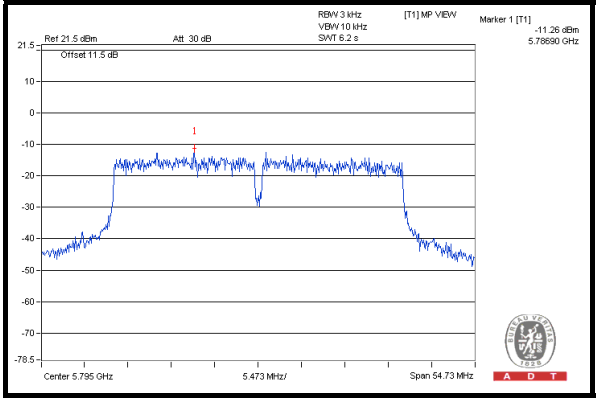
802.11a



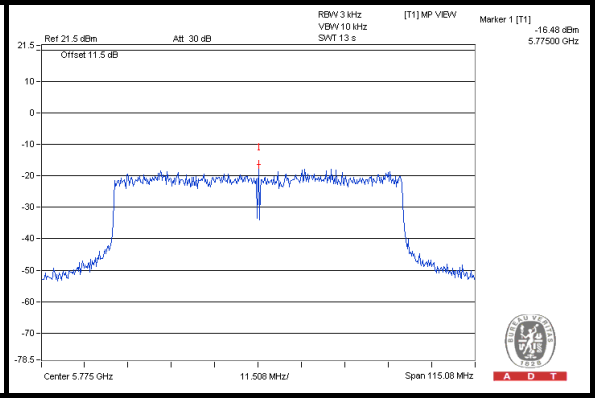
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



TEST MODE B

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-11.54	3.01	-8.53	5.8	PASS
	157	5785	-8.99	3.01	-5.98	5.8	PASS
	165	5825	-9.97	3.01	-6.96	5.8	PASS
1	149	5745	-9.36	3.01	-6.35	5.8	PASS
	157	5785	-10.63	3.01	-7.62	5.8	PASS
	165	5825	-10.06	3.01	-7.05	5.8	PASS

NOTE: Directional gain = 5.16dBi + 10log(2) = 8.2dBi > 6dBi , so the power density limit shall be reduced to 8-(8.2-6) = 5.8dBm.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-10.74	3.01	-7.73	8	PASS
	157	5785	-9.64	3.01	-6.63	8	PASS
	165	5825	-10.51	3.01	-7.50	8	PASS
1	149	5745	-10.38	3.01	-7.37	8	PASS
	157	5785	-10.63	3.01	-7.62	8	PASS
	165	5825	-9.30	3.01	-6.29	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi < 6dBi, so the limit no need to reduced.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-14.37	3.01	-11.36	8	PASS
	159	5795	-13.46	3.01	-10.45	8	PASS
1	151	5755	-12.85	3.01	-9.84	8	PASS
	159	5795	-11.20	3.01	-8.19	8	PASS

NOTE: IEEE 802.11n, MCS = 8-15, NSS = 2,
Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi < 6dBi, so the limit no need to reduced.

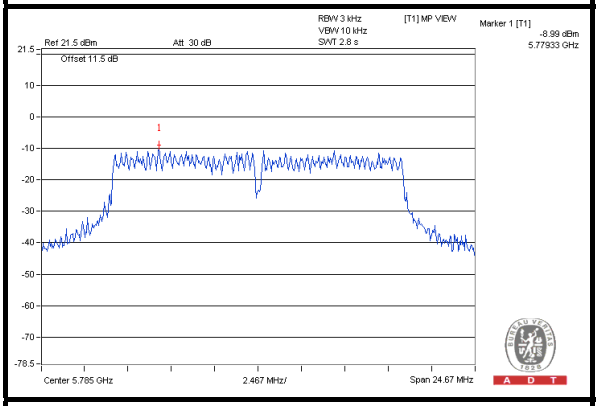
802.11ac (VHT80)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5775	-19.40	3.01	-16.39	5.8	PASS
1	151	5775	-19.21	3.01	-16.20	5.8	PASS

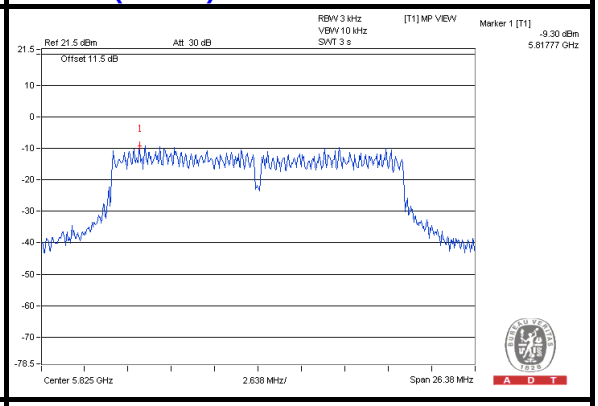
NOTE: Directional gain = 5.16dBi + 10log(2) = 8.2dBi > 6dBi , so the power density limit shall be reduced to 8-(8.2-6) = 5.8dBm.

SPECTRUM PLOT OF WORST VALUE

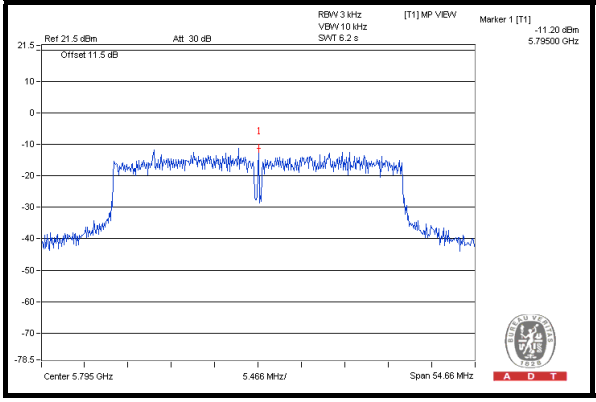
802.11a



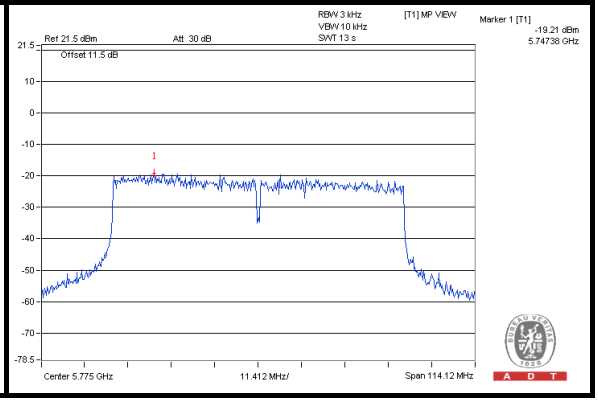
802.11n (20MHz)



802.11n (40MHz)



802.11ac (VHT80)



5.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below –20dB 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.

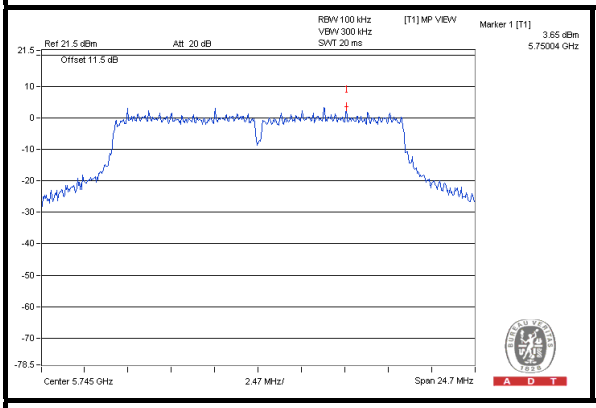
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

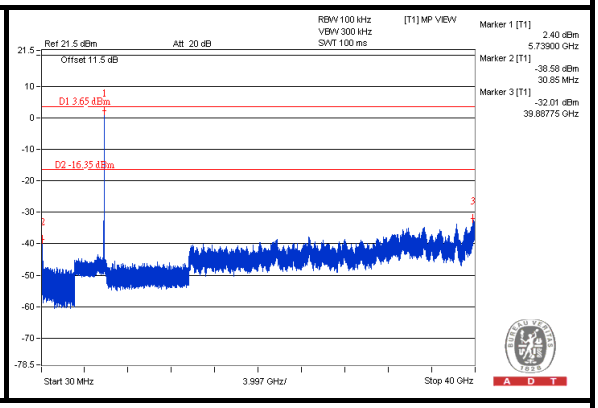
TEST MODE A

802.11a

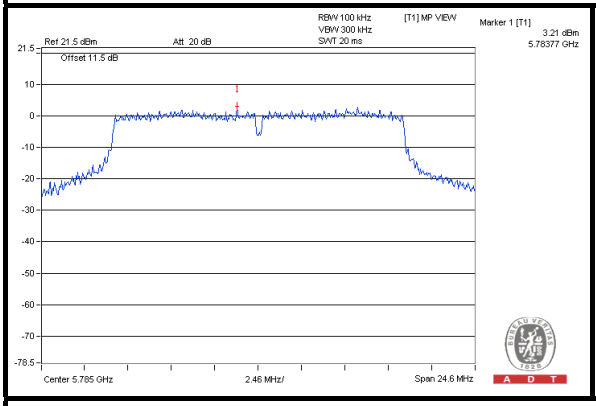
CHAIN 0

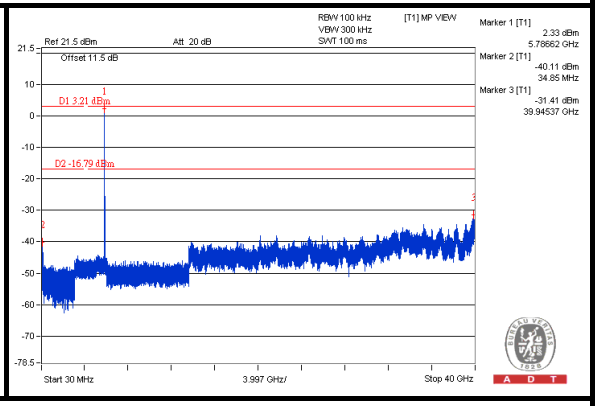
CH 149



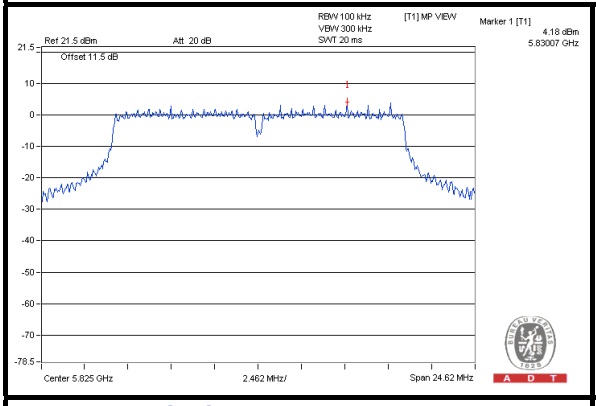


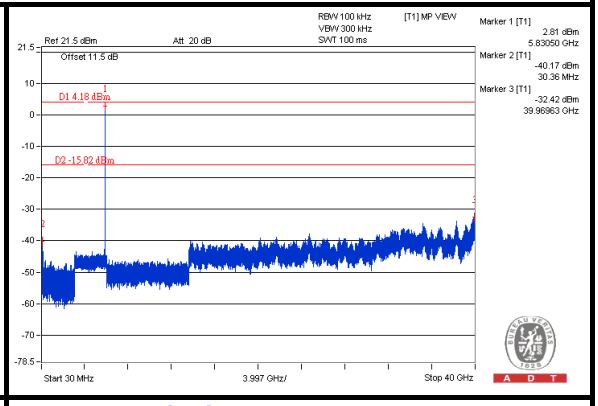
CH 157



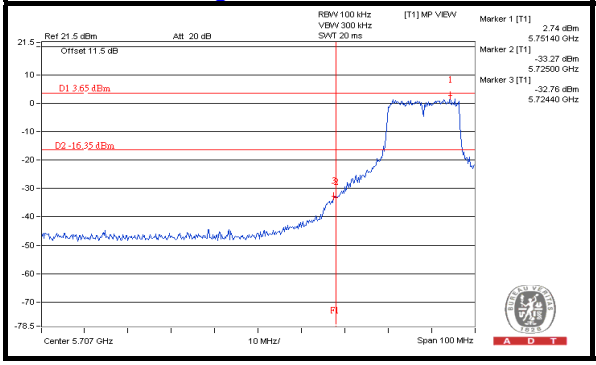


CH 165

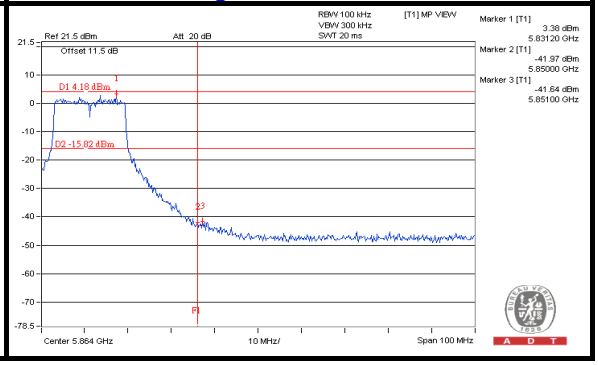




CH 149 Band edge

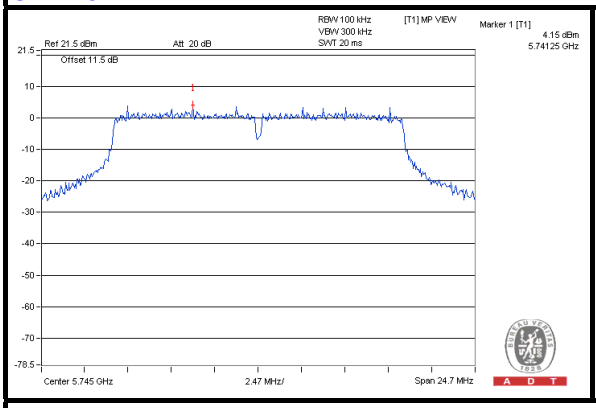


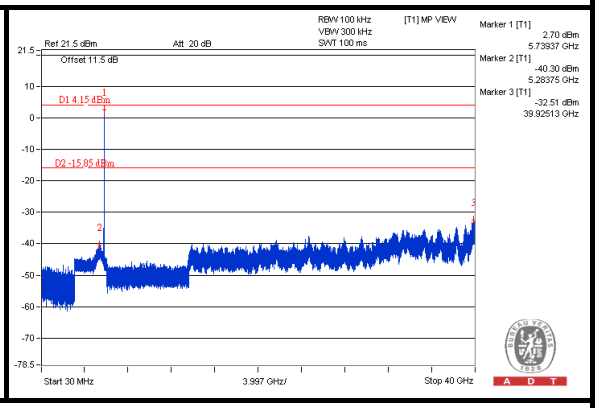
CH 165 Band edge



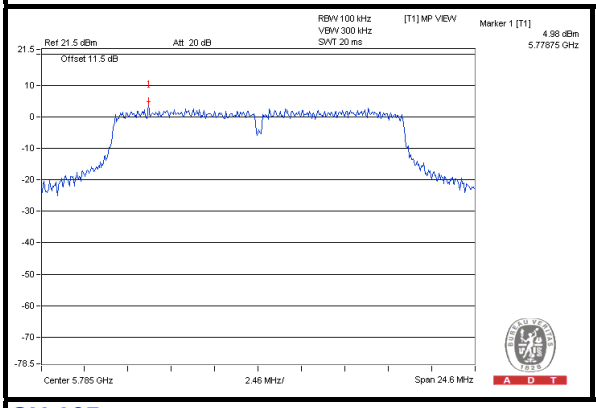
CHAIN 1

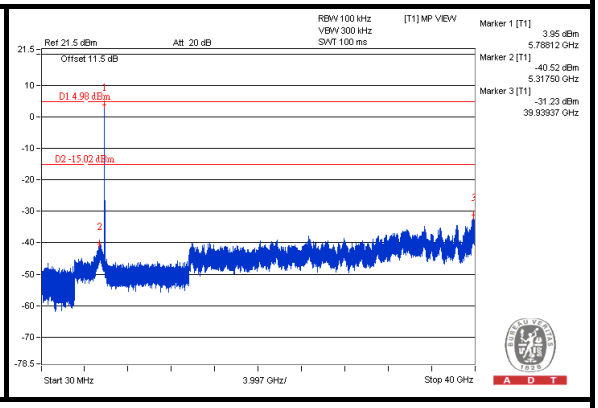
CH 149



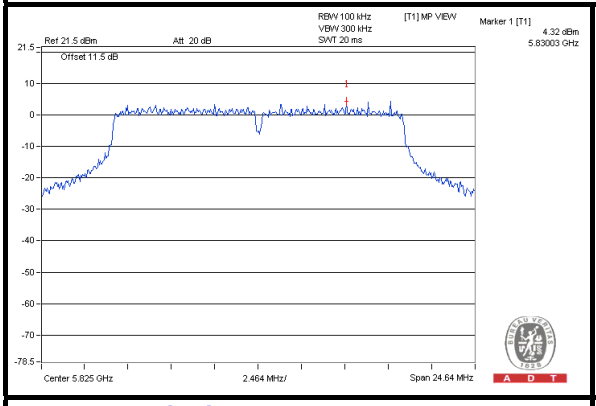


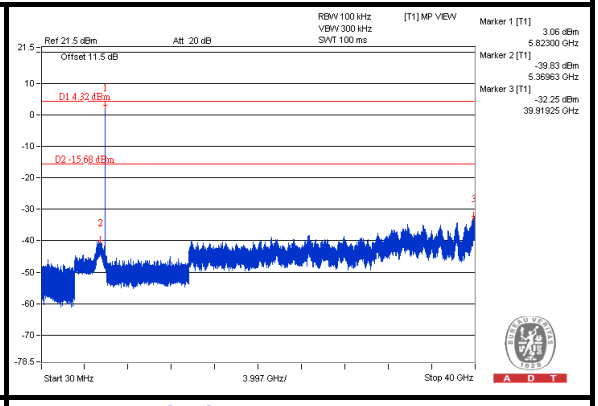
CH 157



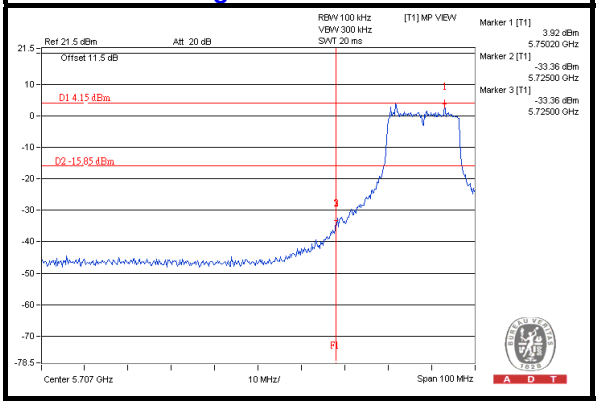


CH 165

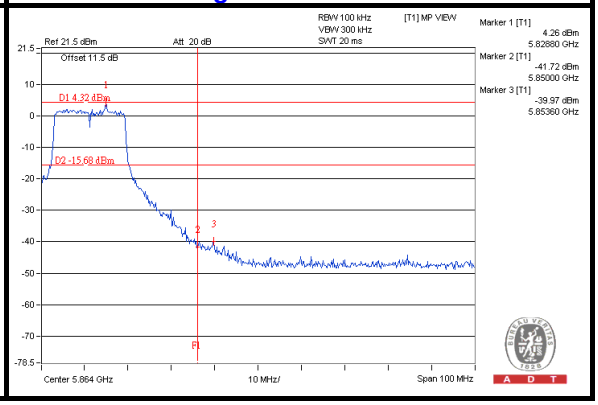




CH 149 Band edge



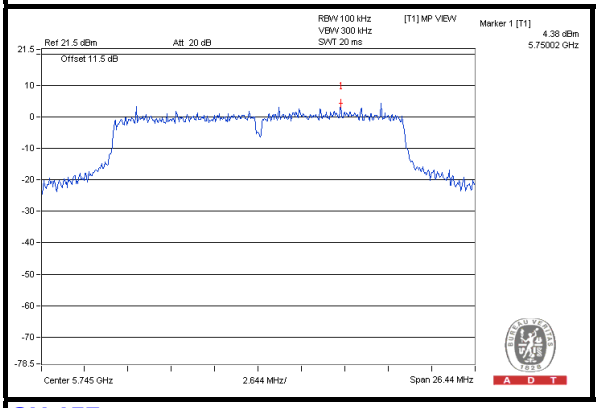
CH 165 Band edge

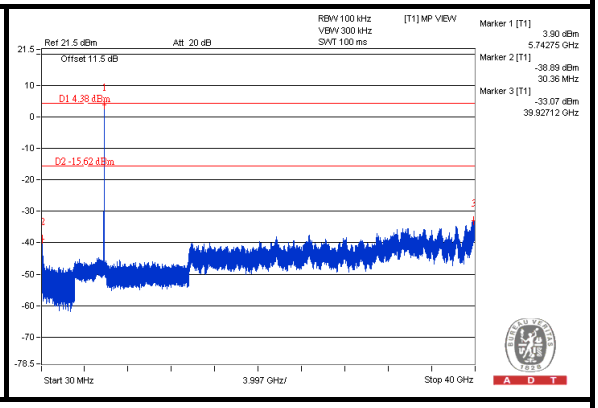


802.11n (20MHz)

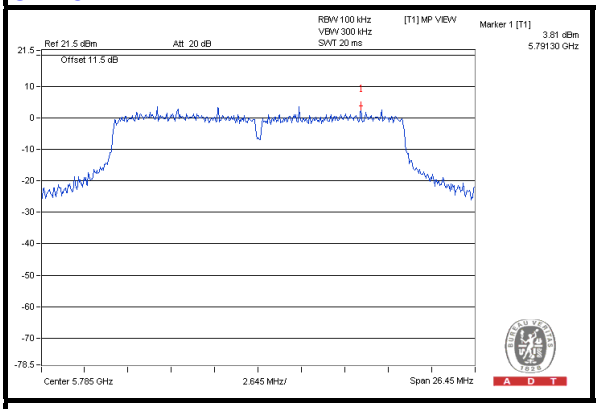
CHAIN 0

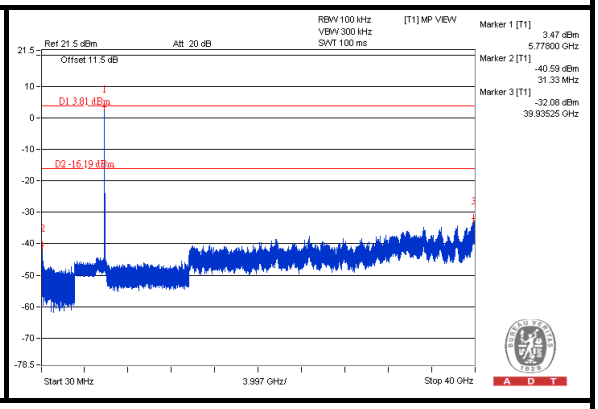
CH 149



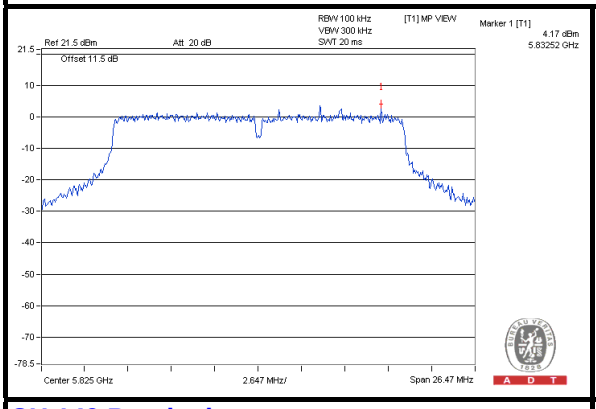


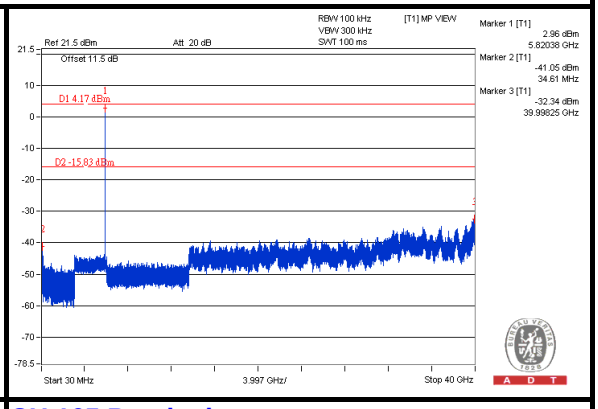
CH 157



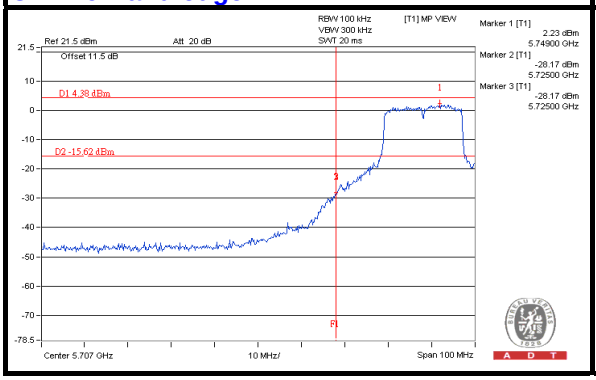


CH 165

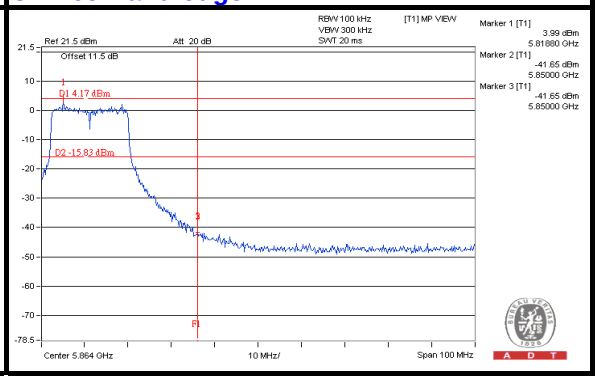




CH 149 Band edge

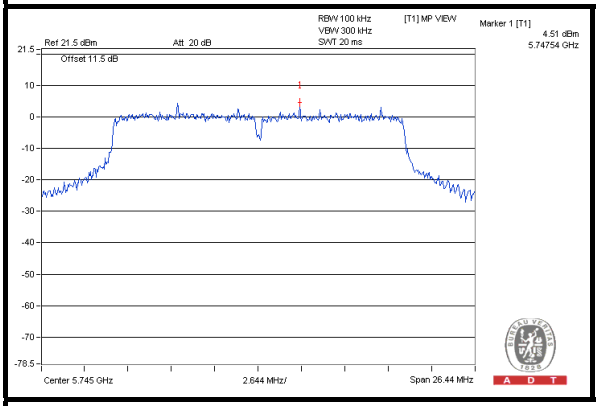


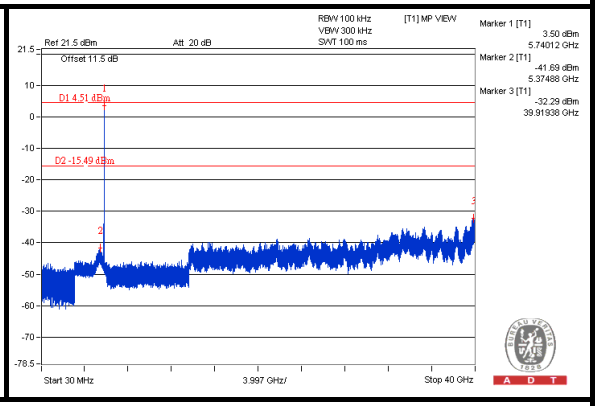
CH 165 Band edge



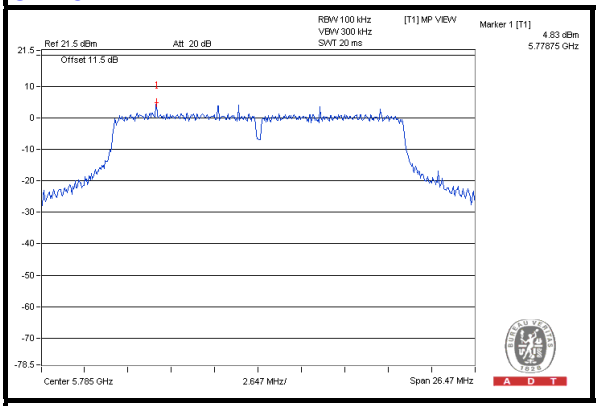
CHAIN 1

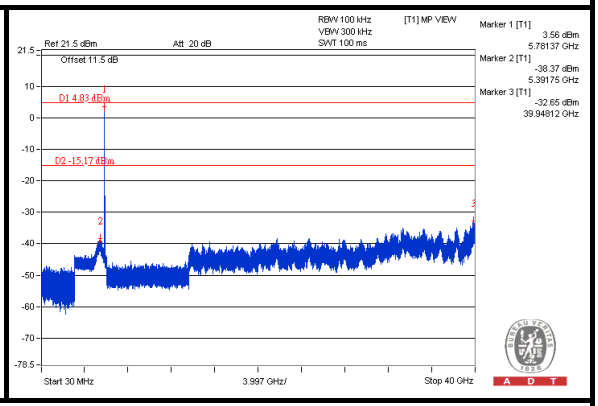
CH 149



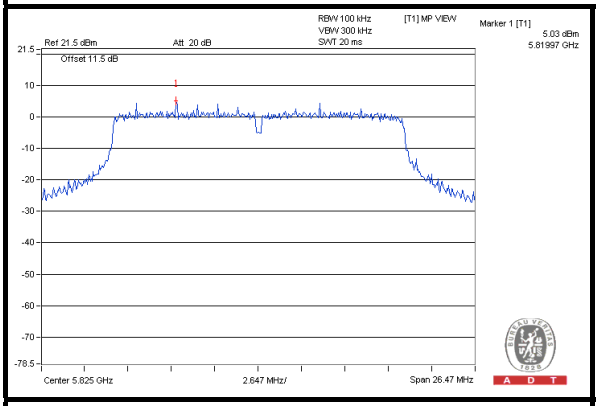


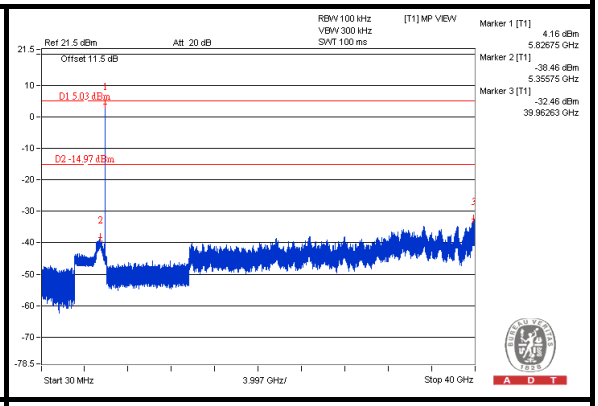
CH 157



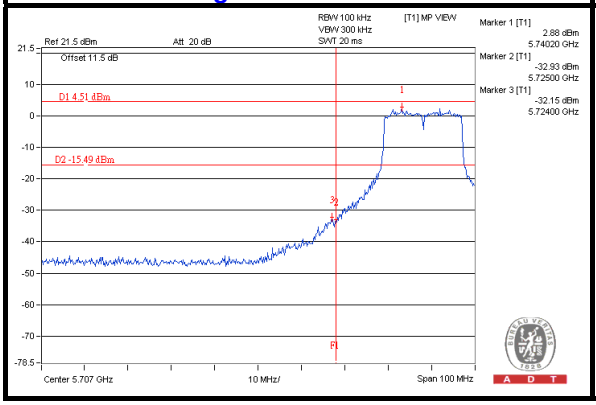


CH 165

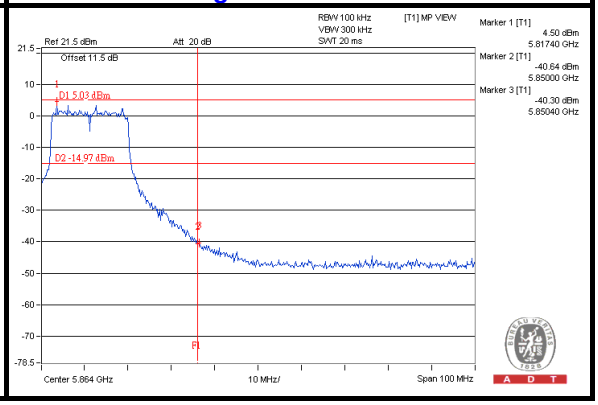




CH 149 Band edge



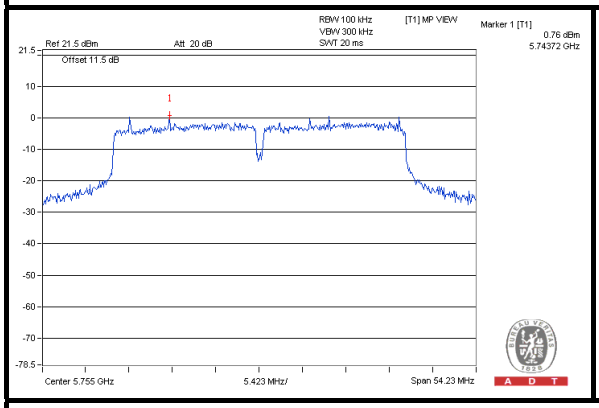
CH 165 Band edge

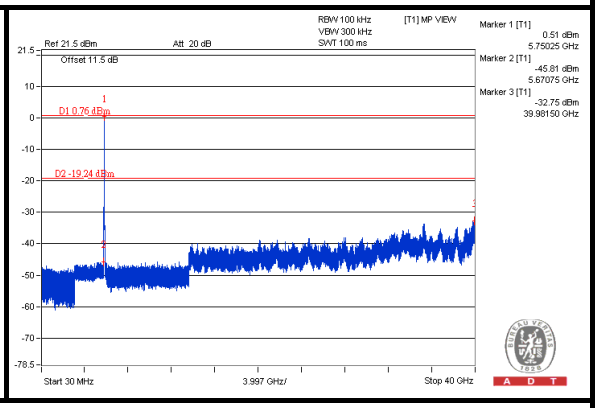


802.11n (40MHz)

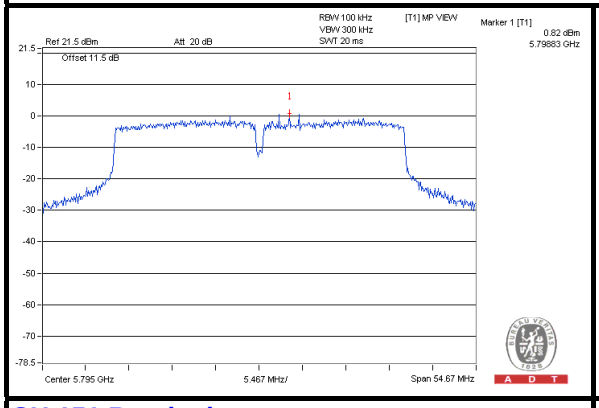
CHAIN 0

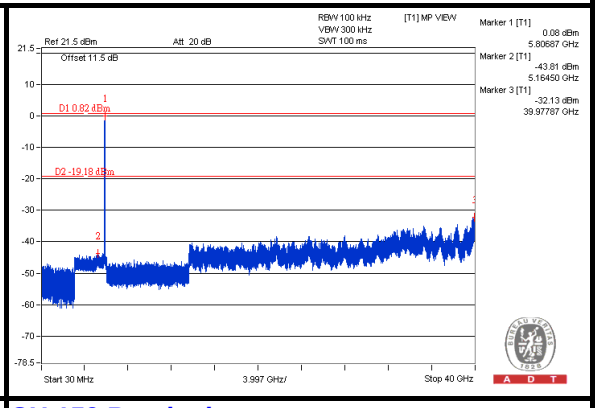
CH 151



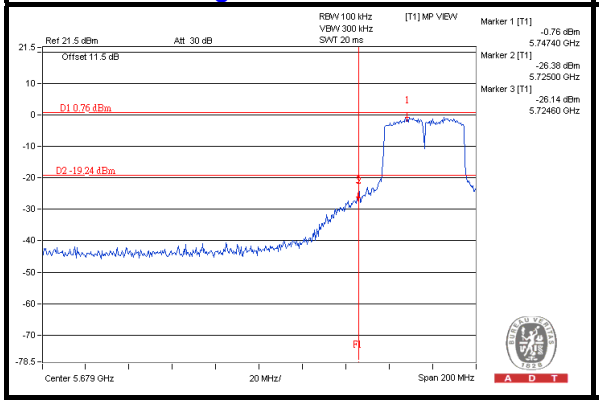


CH 159

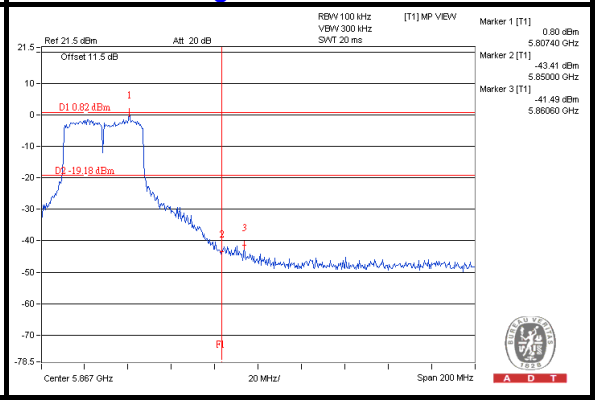




CH 151 Band edge

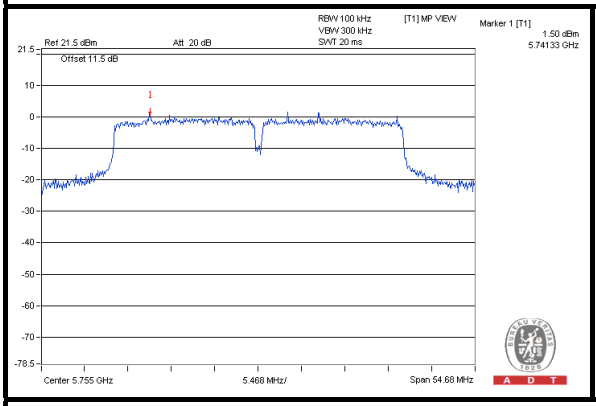


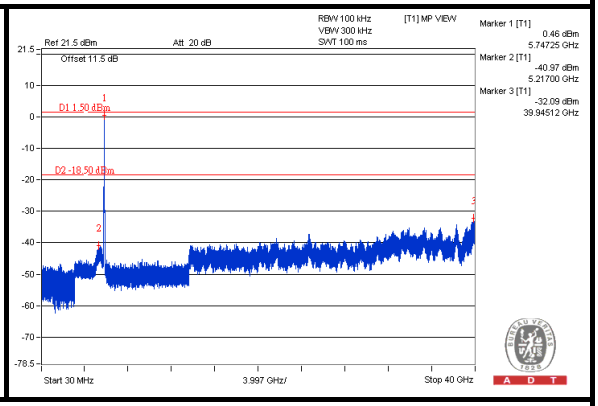
CH 159 Band edge



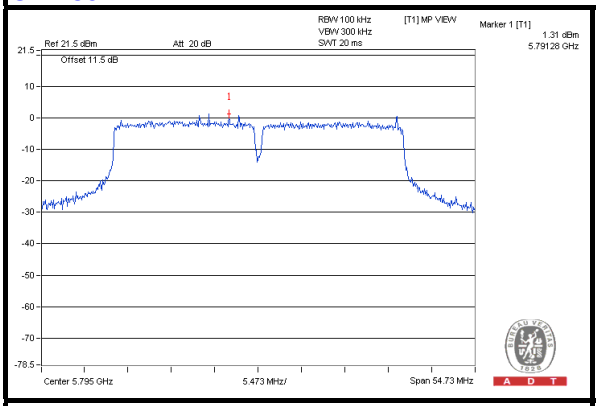
CHAIN 1

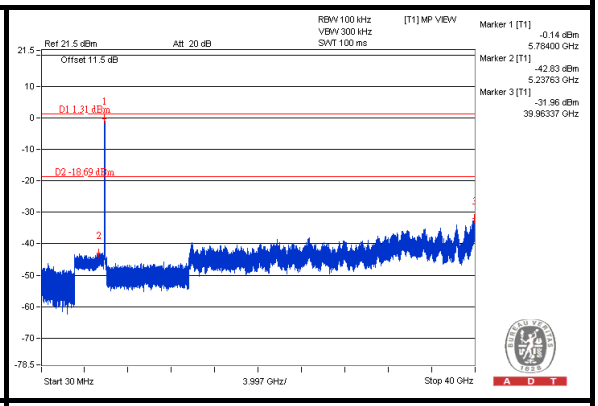
CH 151



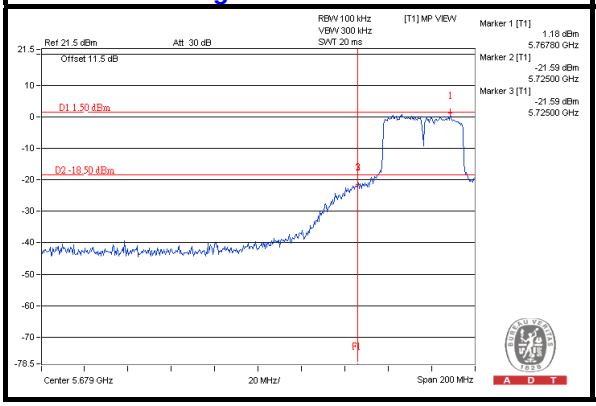


CH 159

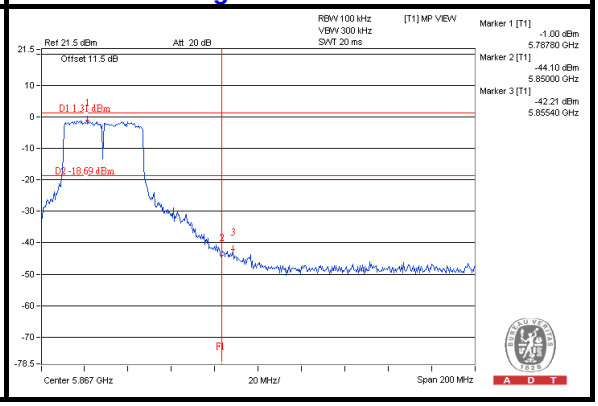




CH 151 Band edge

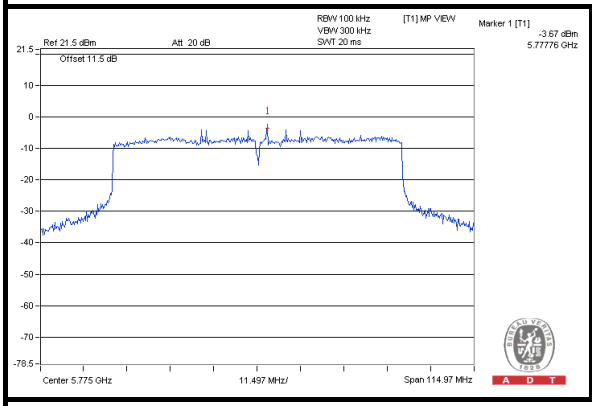


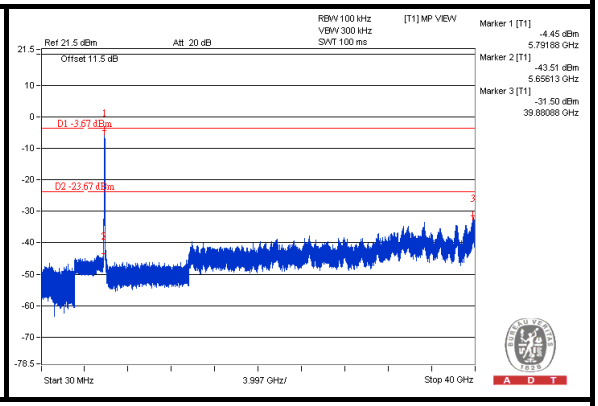
CH 159 Band edge



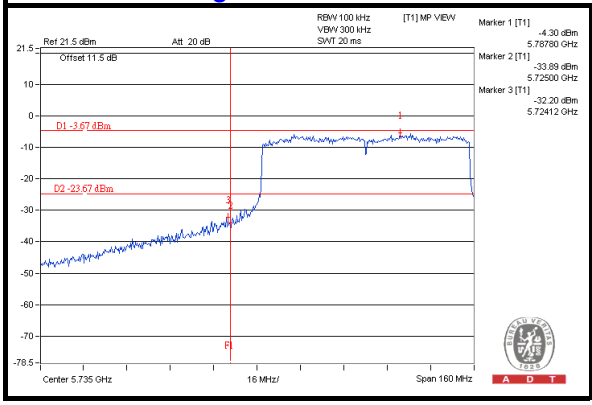
802.11ac (VHT80)
CHAIN 0

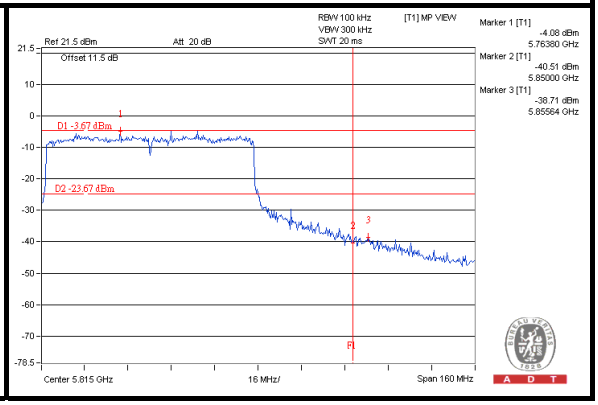
CH 155





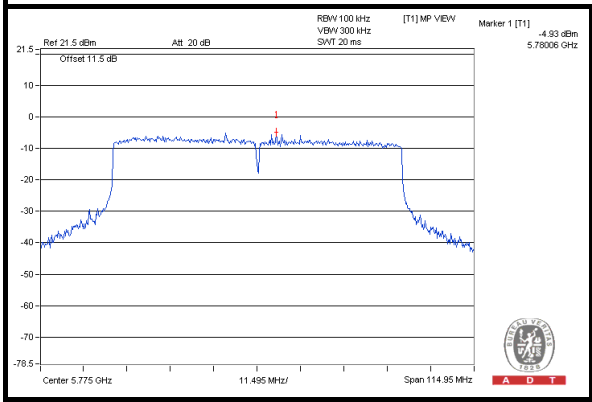
CH 155 Band edge

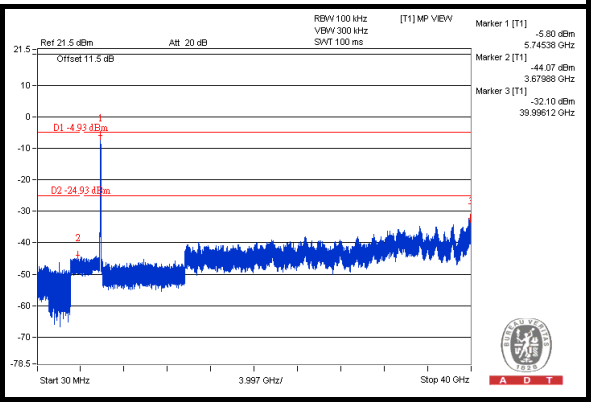




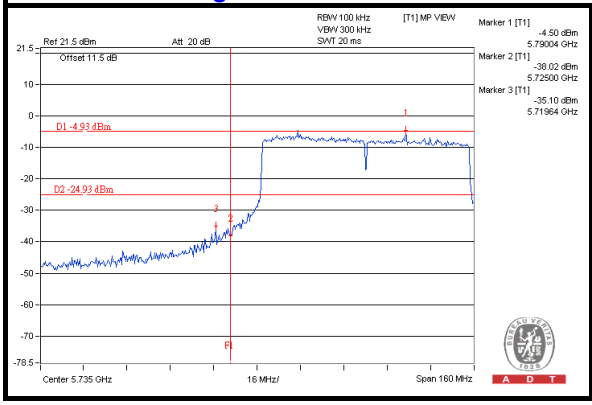
CHAIN 1

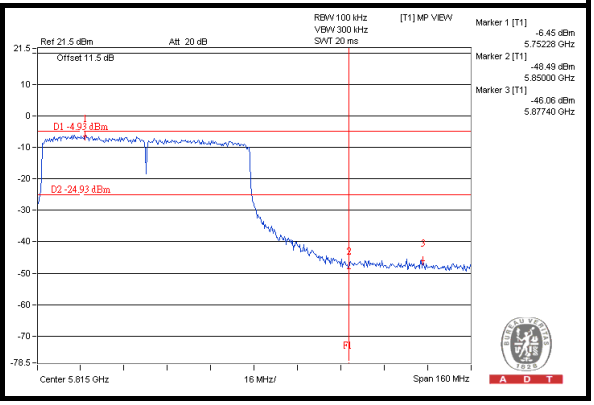
CH 155





CH 155 Band edge



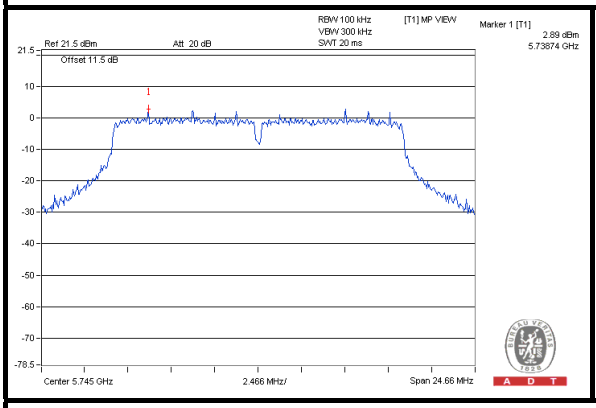


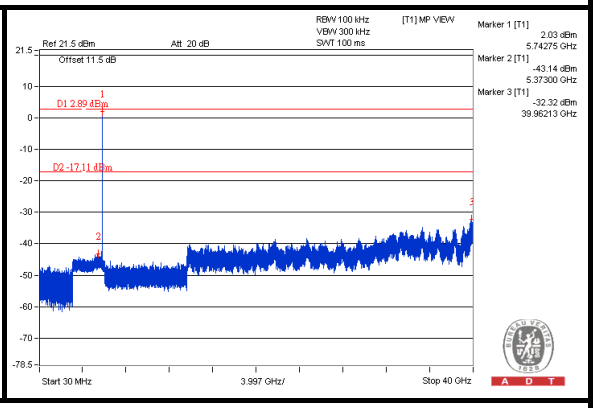
TEST MODE B

802.11a

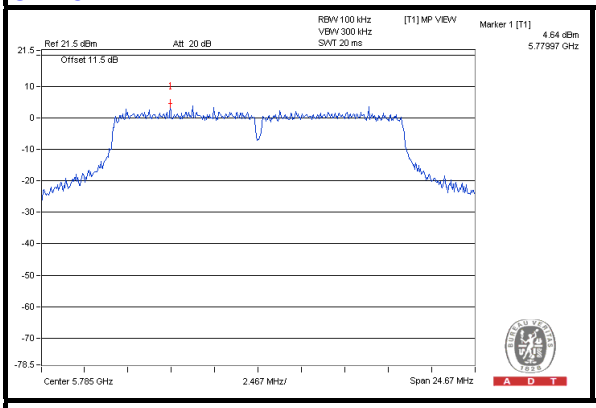
CHAIN 0

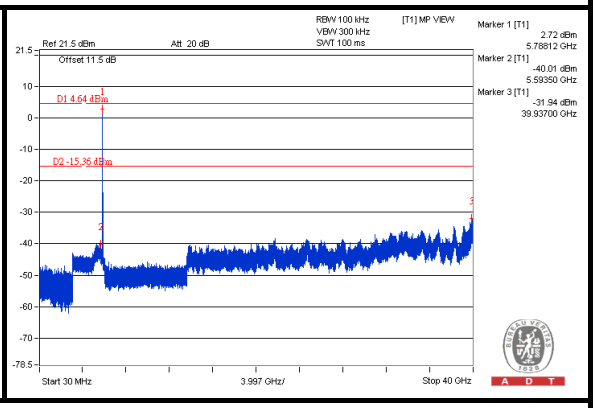
CH 149



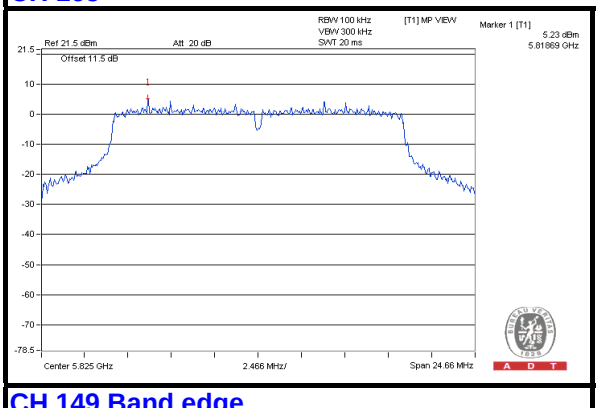


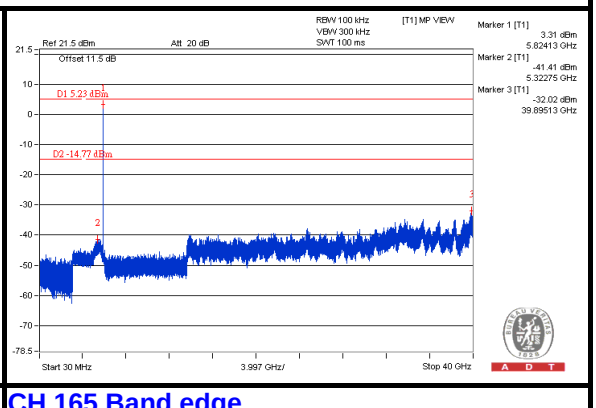
CH 157



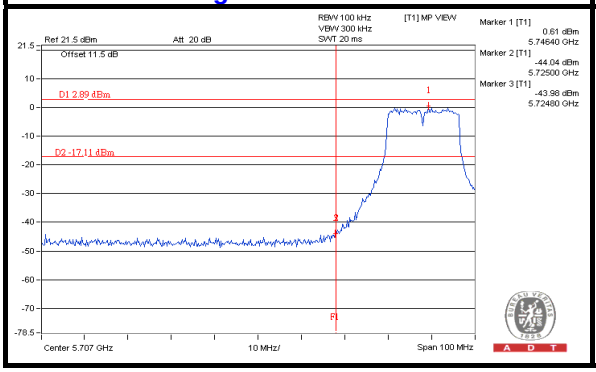


CH 165

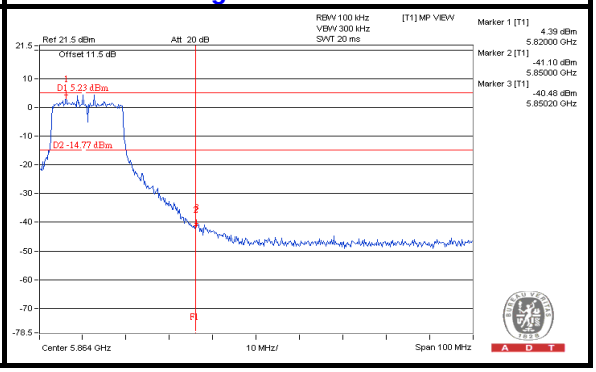




CH 149 Band edge

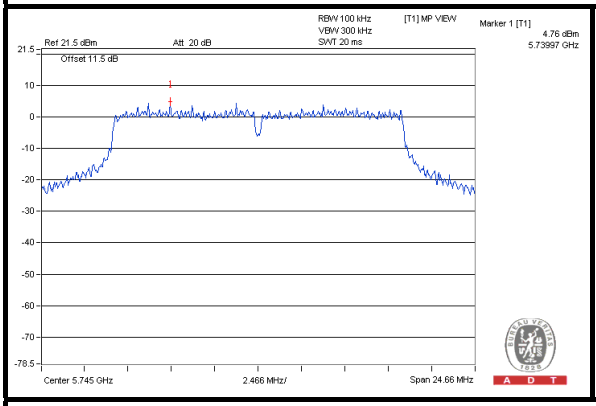


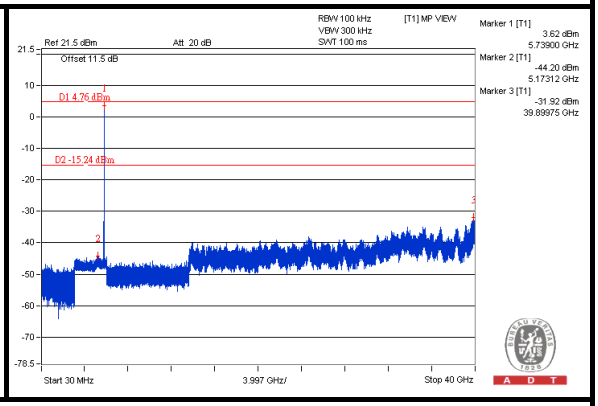
CH 165 Band edge



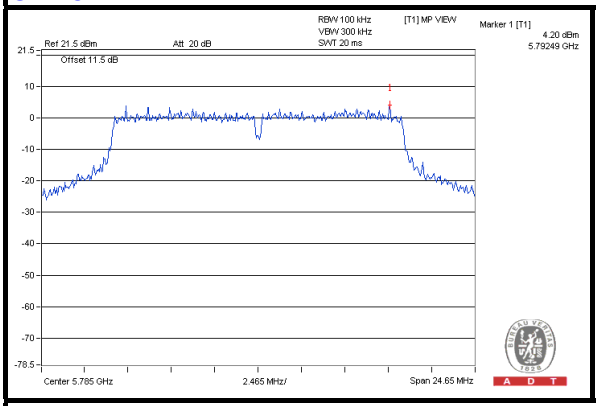
CHAIN 1

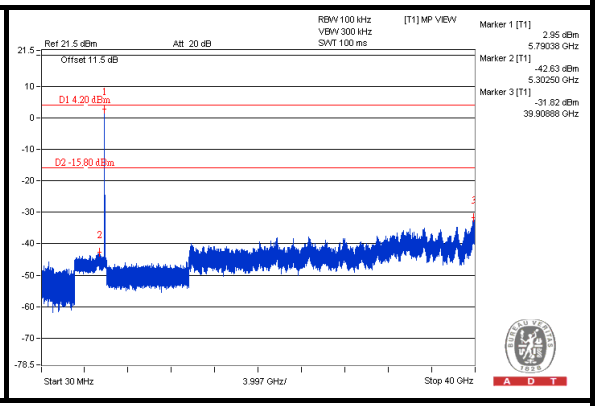
CH 149



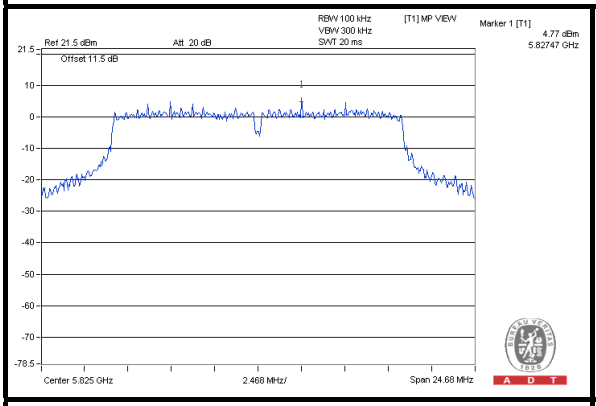


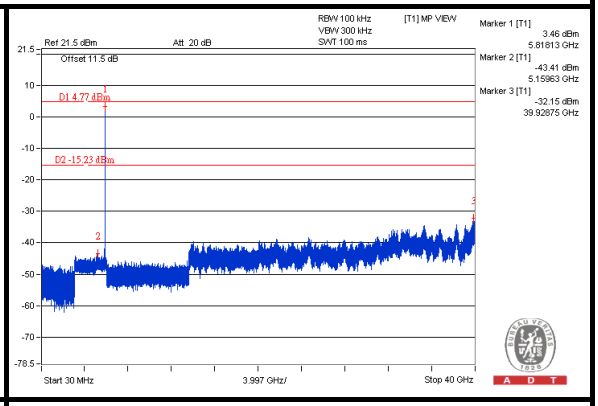
CH 157



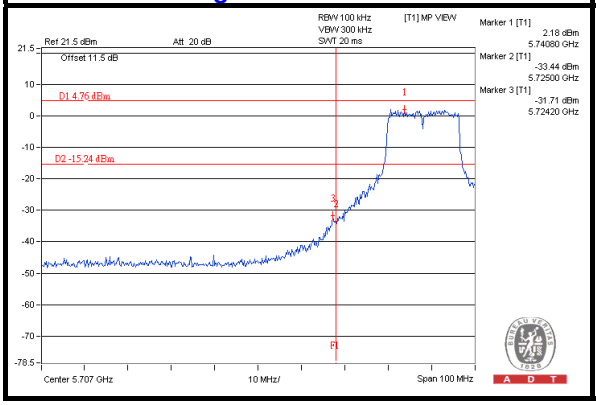


CH 165

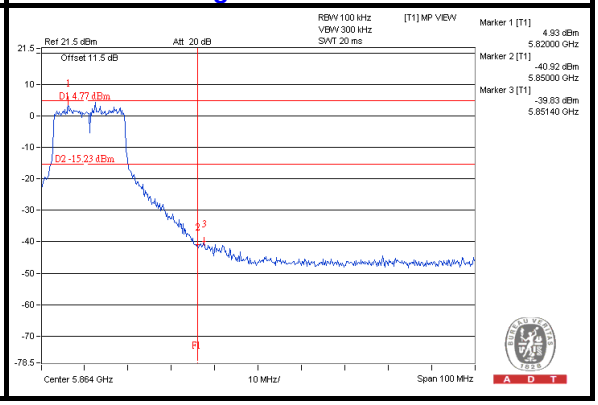




CH 149 Band edge



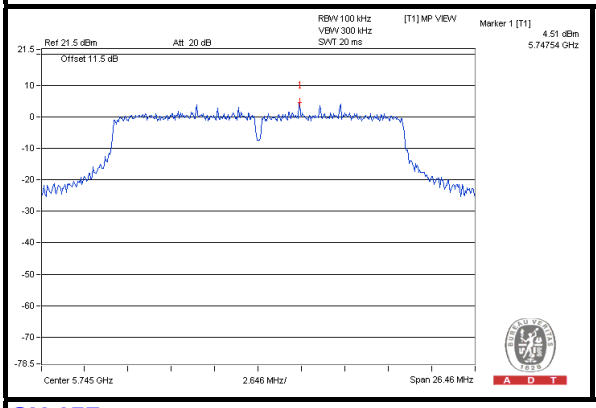
CH 165 Band edge

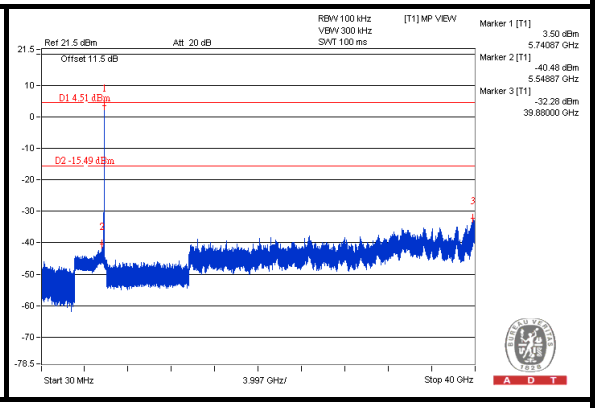


802.11n (20MHz)

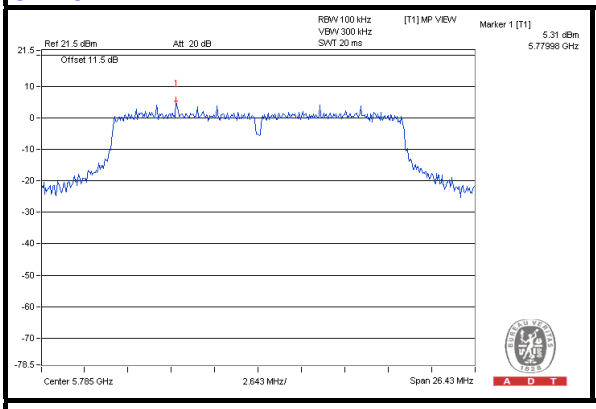
CHAIN 0

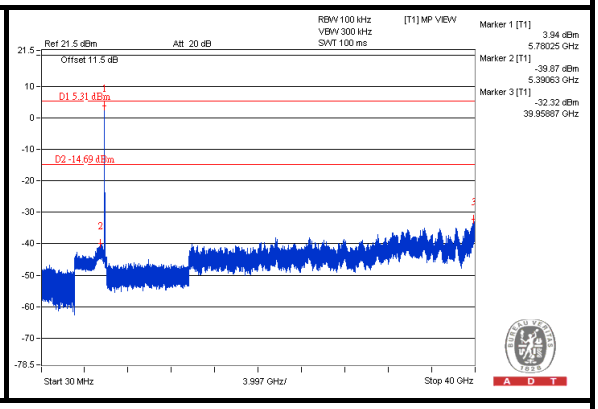
CH 149



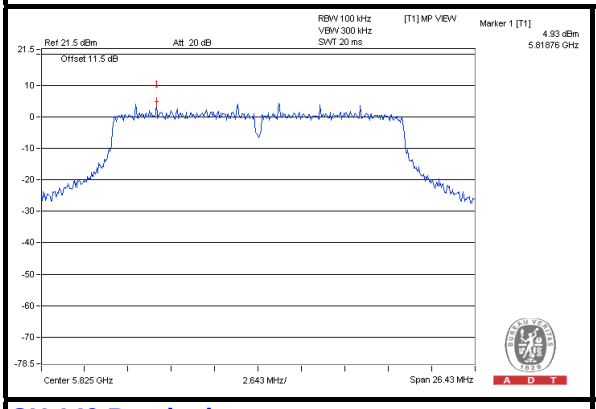


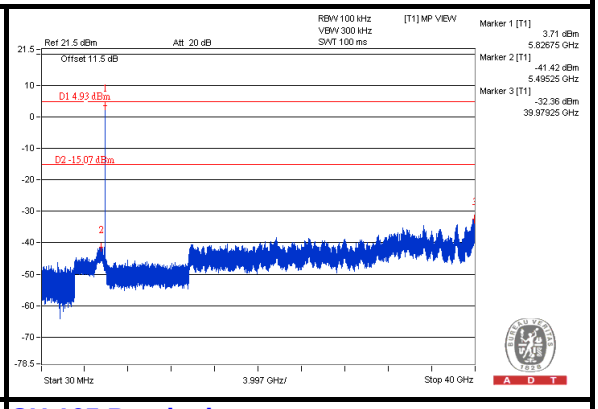
CH 157



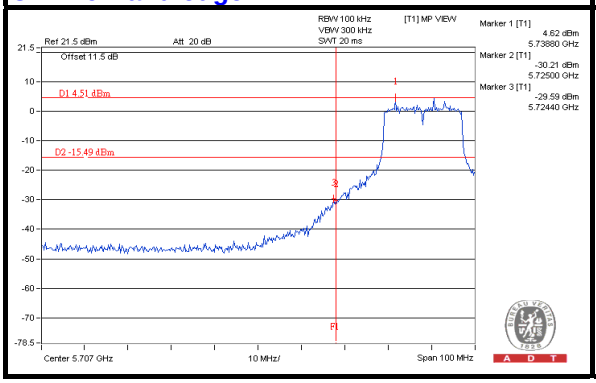


CH 165

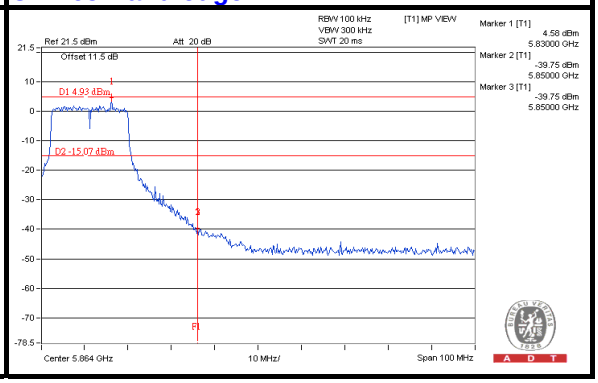




CH 149 Band edge

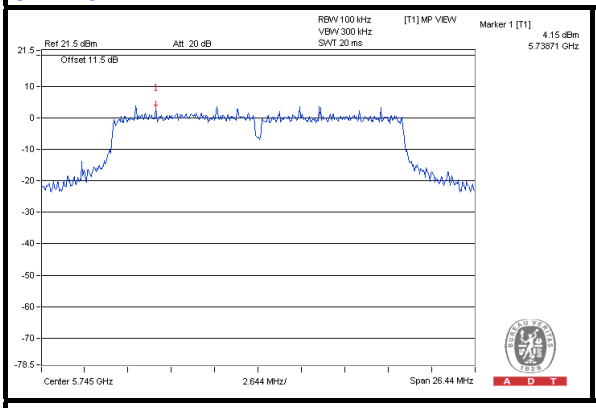


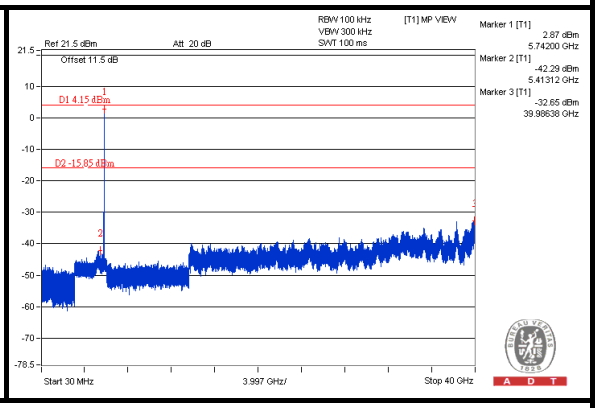
CH 165 Band edge



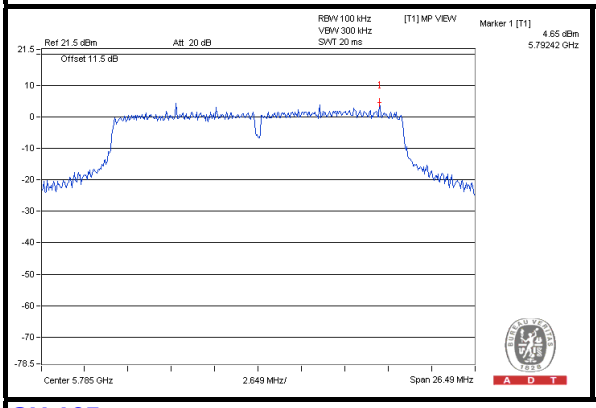
CHAIN 1

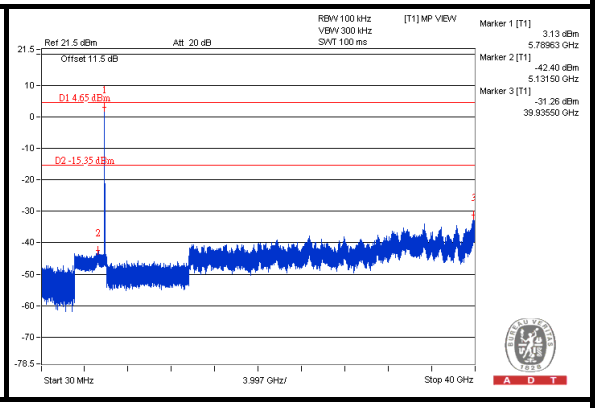
CH 149



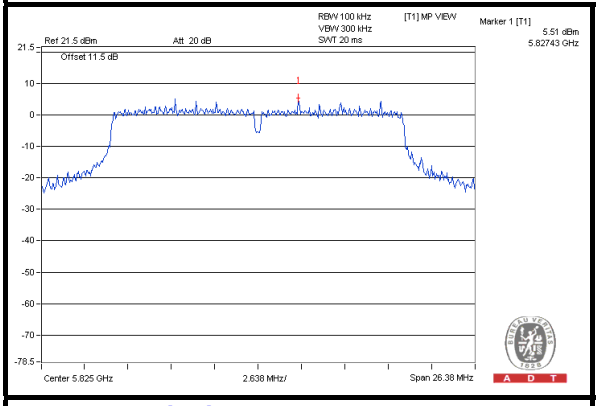


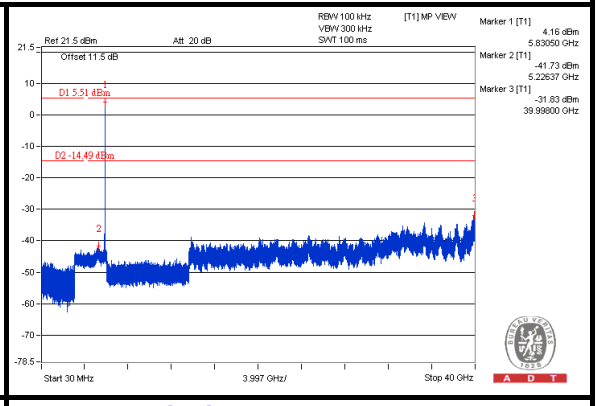
CH 157



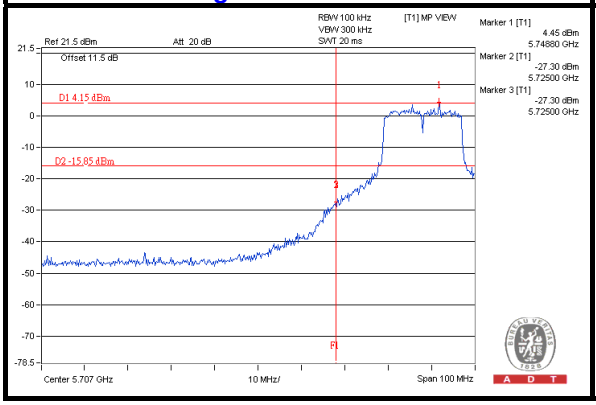


CH 165

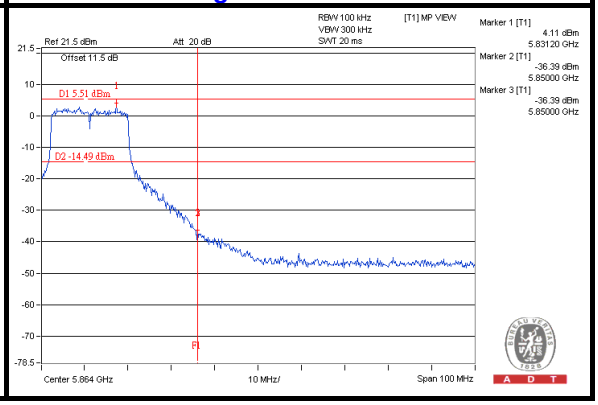




CH 149 Band edge



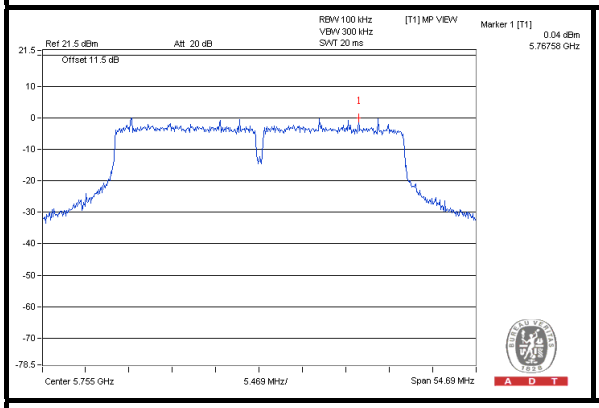
CH 165 Band edge

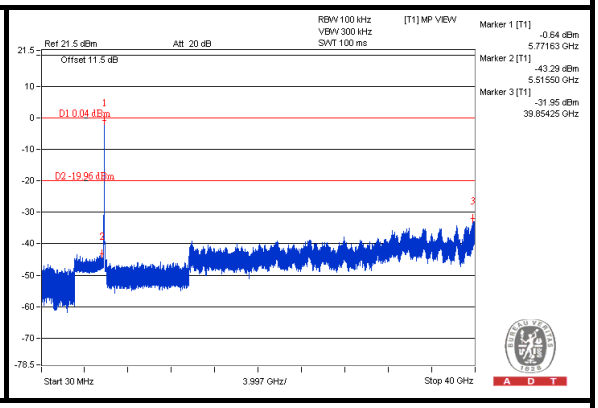


802.11n (40MHz)

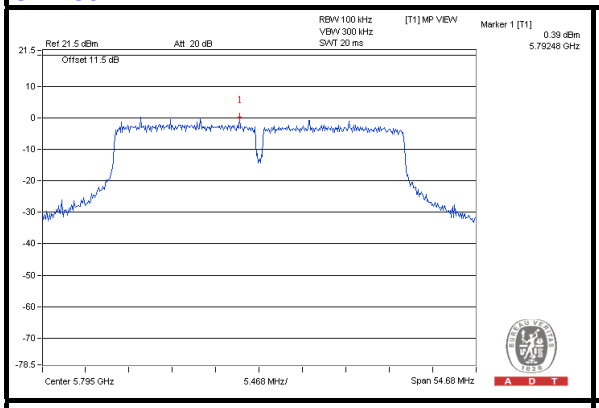
CHAIN 0

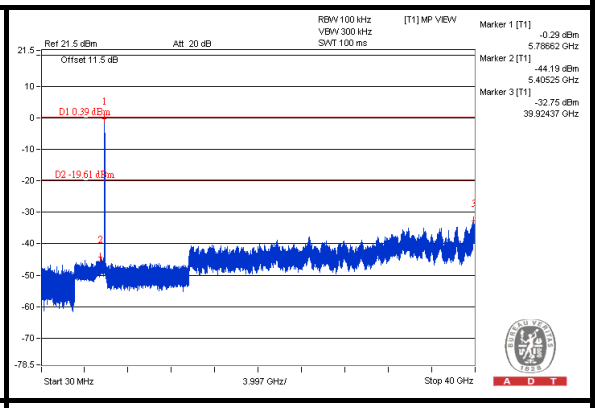
CH 151



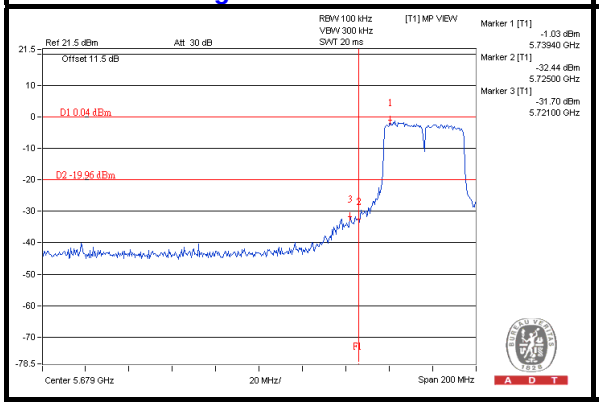


CH 159

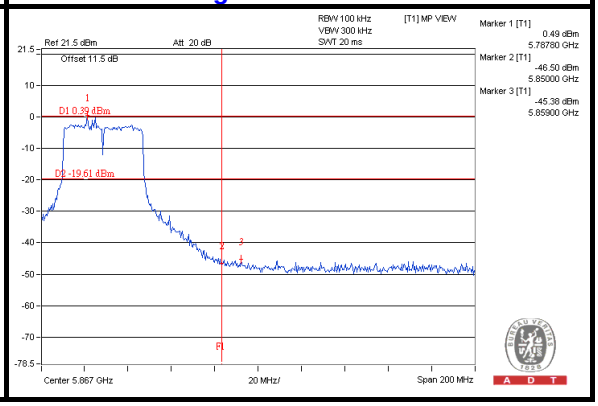




CH 151 Band edge

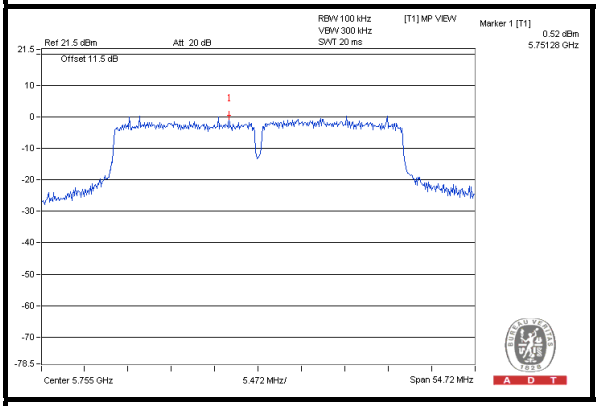


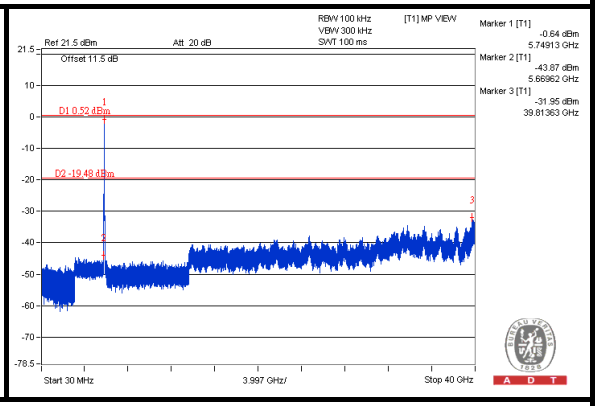
CH 159 Band edge



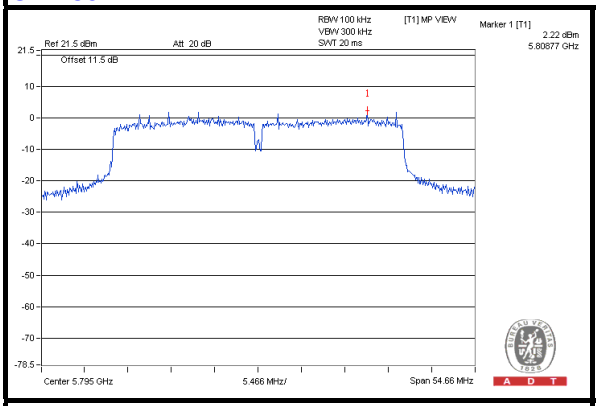
CHAIN 1

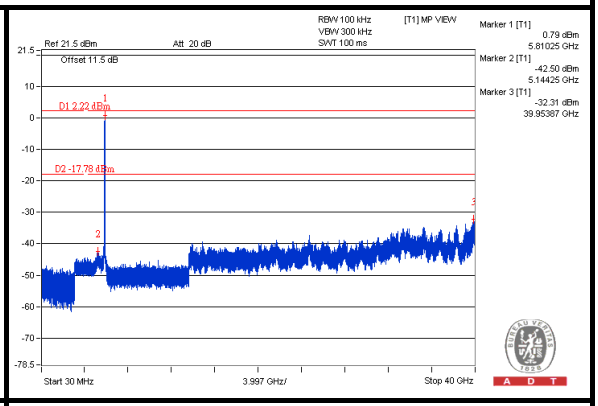
CH 151



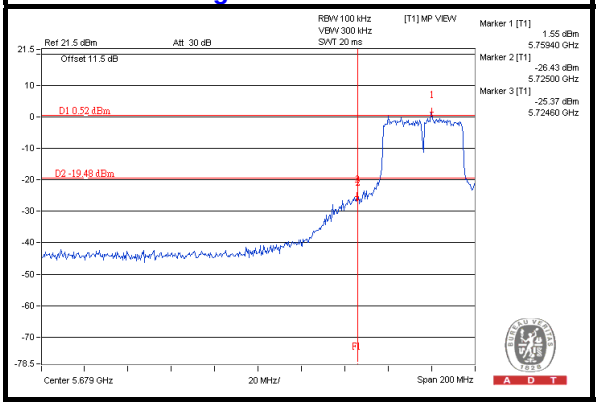


CH 159

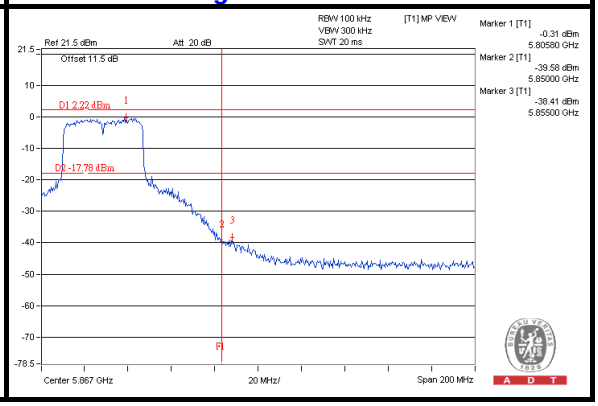




CH 151 Band edge

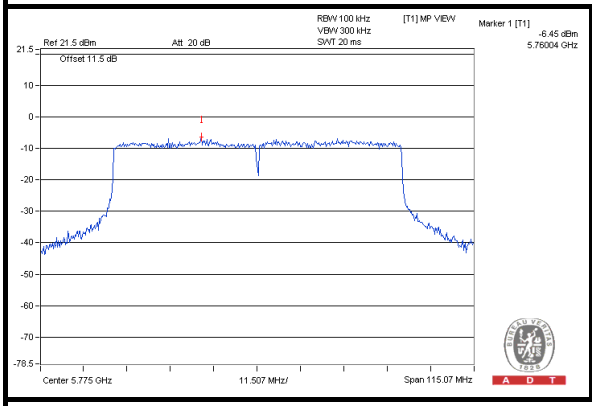


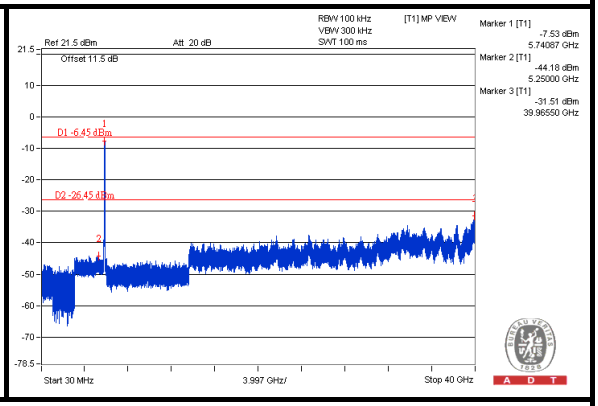
CH 159 Band edge



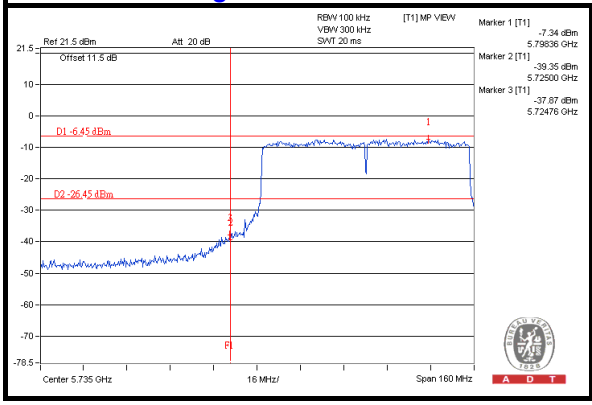
802.11ac (VHT80)
CHAIN 0

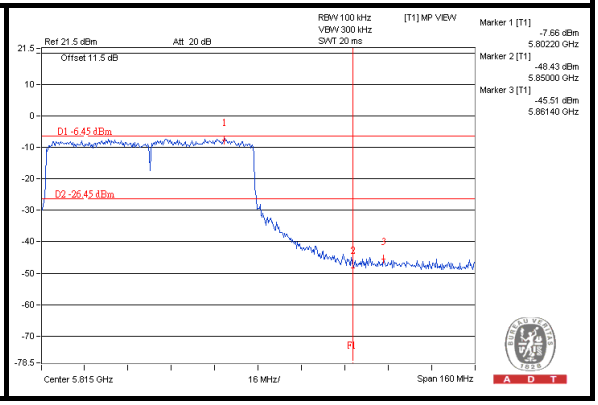
CH 155





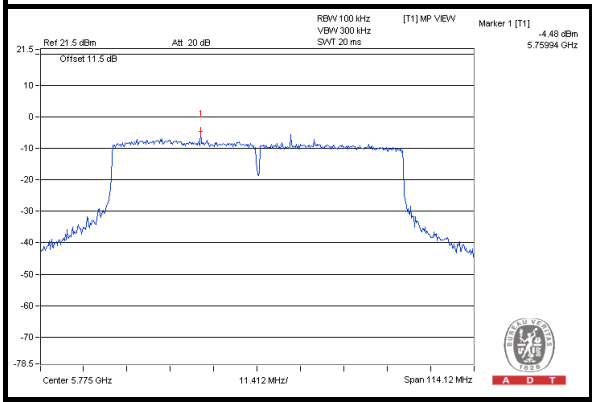
CH 155 Band edge

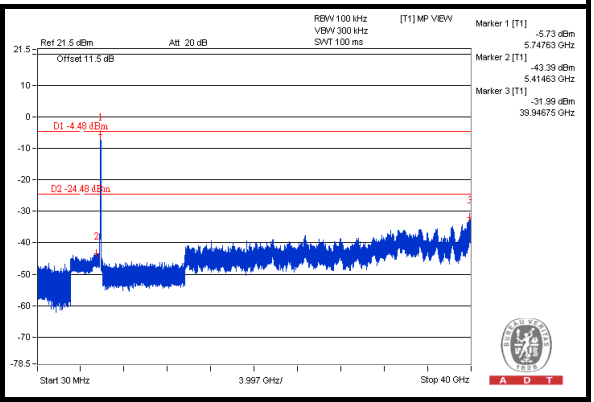




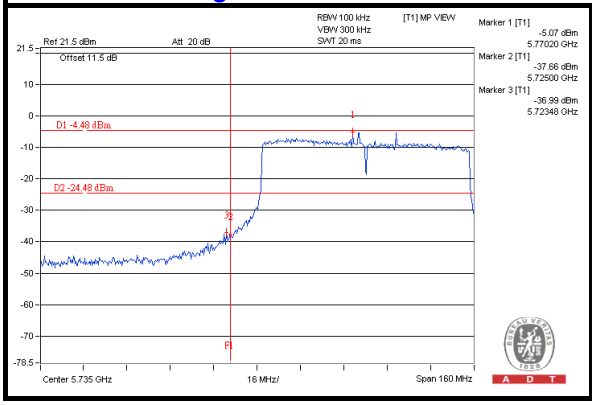
CHAIN 1

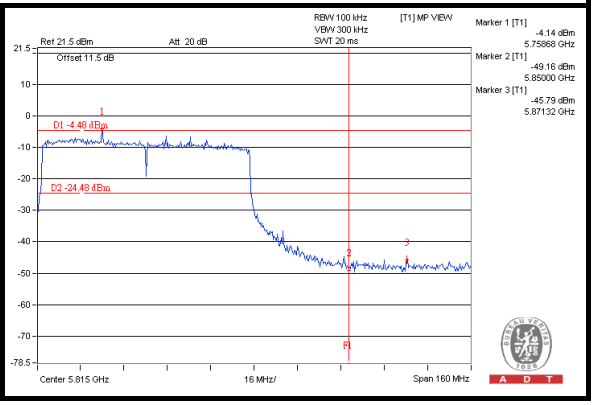
CH 155





CH 155 Band edge





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:

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

Hsin Chu EMC/RF Lab
Tel: 886-3-5935343
Fax: 886-3-5935342

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

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

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

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---