



A D T

FCC TEST REPORT (15.247)

REPORT NO.: RF130813C26

MODEL NO.: NVG599

FCC ID: GZ5NVG599

RECEIVED: Aug. 13, 2013

TESTED: Aug. 19 ~ Nov. 14, 2013

ISSUED: Nov. 19, 2013

APPLICANT: ARRIS Group, Inc.

ADDRESS: 46653 Fremont Blvd., Fremont, CA, 94538, USA

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.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.



TABLE OF CONTENTS

RELEASE CONTROL RECORD.....	5
1. CERTIFICATION.....	6
2. SUMMARY OF TEST RESULTS	7
2.1 MEASUREMENT UNCERTAINTY.....	7
3. GENERAL INFORMATION.....	8
3.1 GENERAL DESCRIPTION OF EUT	8
3.2 DESCRIPTION OF TEST MODES	10
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	11
3.3 DUTY CYCLE OF TEST SIGNAL.....	16
3.4 DESCRIPTION OF SUPPORT UNITS	18
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	19
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	20
4. TEST TYPES AND RESULTS (FOR 2.4GHZ BAND).....	21
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	21
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	21
4.1.2 TEST INSTRUMENTS.....	22
4.1.3 TEST PROCEDURES	23
4.1.4 DEVIATION FROM TEST STANDARD.....	23
4.1.5 TEST SETUP.....	24
4.1.6 EUT OPERATING CONDITIONS	25
4.1.7 TEST RESULTS	26
4.2 CONDUCTED EMISSION MEASUREMENT	40
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	40
4.2.2 TEST INSTRUMENTS.....	40
4.2.3 TEST PROCEDURES	41
4.2.4 DEVIATION FROM TEST STANDARD.....	41
4.2.5 TEST SETUP.....	41
4.2.6 EUT OPERATING CONDITIONS	41
4.2.7 TEST RESULTS	42
4.3 6dB BANDWIDTH MEASUREMENT	46
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	46
4.3.2 TEST SETUP.....	46
4.3.3 TEST INSTRUMENTS.....	46
4.3.4 TEST PROCEDURE.....	46
4.3.5 DEVIATION FROM TEST STANDARD.....	46
4.3.6 EUT OPERATING CONDITIONS	46
4.3.7 TEST RESULTS	47



4.4	CONDUCTED OUTPUT POWER.....	49
4.4.1	LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	49
4.4.2	TEST SETUP	49
4.4.3	TEST INSTRUMENTS.....	49
4.4.4	TEST PROCEDURES	49
4.4.5	DEVIATION FROM TEST STANDARD.....	50
4.4.6	EUT OPERATING CONDITIONS	50
4.4.7	TEST RESULTS	51
4.5	POWER SPECTRAL DENSITY MEASUREMENT	52
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	52
4.5.2	TEST SETUP.....	52
4.5.3	TEST INSTRUMENTS.....	52
4.5.4	TEST PROCEDURE.....	52
4.5.5	DEVIATION FROM TEST STANDARD.....	52
4.5.6	EUT OPERATING CONDITION.....	52
4.5.7	TEST RESULTS	53
4.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT.....	55
4.6.1	LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT	55
4.6.2	TEST SETUP.....	55
4.6.3	TEST INSTRUMENTS.....	55
4.6.4	TEST PROCEDURE.....	56
4.6.5	DEVIATION FROM TEST STANDARD.....	56
4.6.6	EUT OPERATING CONDITION.....	56
4.6.7	TEST RESULTS	56
5.	TEST TYPES AND RESULTS (FOR 5.0GHz BAND).....	63
5.1	RADIATED EMISSION MEASUREMENT	63
5.1.1	LIMITS OF RADIATED EMISSION MEASUREMENT	63
5.1.2	TEST INSTRUMENTS.....	64
5.1.3	TEST PROCEDURES	64
5.1.4	DEVIATION FROM TEST STANDARD.....	64
5.1.5	TEST SETUP.....	64
5.1.6	EUT OPERATING CONDITIONS	64
5.1.7	TEST RESULTS	65
5.2	CONDUCTED EMISSION MEASUREMENT	82
5.2.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	82
5.2.2	TEST INSTRUMENTS.....	82
5.2.3	TEST PROCEDURES	82
5.2.4	DEVIATION FROM TEST STANDARD.....	82
5.2.5	TEST SETUP.....	82



5.2.6	EUT OPERATING CONDITIONS	82
5.2.7	TEST RESULTS	83
5.3	6dB BANDWIDTH MEASUREMENT	87
5.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	87
5.3.2	TEST SETUP	87
5.3.3	TEST INSTRUMENTS.....	87
5.3.4	TEST PROCEDURE.....	87
5.3.5	DEVIATION FROM TEST STANDARD.....	87
5.3.6	EUT OPERATING CONDITIONS	87
5.3.7	TEST RESULTS	88
5.4	CONDUCTED OUTPUT POWER.....	91
5.4.1	LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	91
5.4.2	TEST SETUP	91
5.4.3	INSTRUMENTS.....	91
5.4.4	TEST PROCEDURES	92
5.4.5	DEVIATION FROM TEST STANDARD.....	92
5.4.6	EUT OPERATING CONDITIONS	92
5.4.7	TEST RESULTS	93
5.5	POWER SPECTRAL DENSITY MEASUREMENT	95
5.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	95
5.5.2	TEST SETUP.....	95
5.5.3	TEST INSTRUMENTS.....	95
5.5.4	TEST PROCEDURE.....	95
5.5.5	DEVIATION FROM TEST STANDARD.....	95
5.5.6	EUT OPERATING CONDITION.....	95
5.5.7	TEST RESULTS	96
5.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT	99
5.6.1	LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT	99
5.6.2	TEST SETUP.....	99
5.6.3	TEST INSTRUMENTS.....	99
5.6.4	TEST PROCEDURE.....	99
5.6.5	DEVIATION FROM TEST STANDARD.....	99
5.6.6	EUT OPERATING CONDITION.....	99
5.6.7	TEST RESULTS	99
6.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	113
7.	INFORMATION ON THE TESTING LABORATORIES	114
8.	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	115



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130813C26	Original release	Nov. 19, 2013



A D T

1. CERTIFICATION

PRODUCT: DSL

MODEL NO.: NVG599

BRAND: ARRIS

APPLICANT: ARRIS Group, Inc.

TESTED: Aug. 19 ~ Nov. 14, 2013

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**

ANSI C63.10-2009

The above equipment (model: NVG599) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE :** Nov. 19, 2013
Pettie Chen / Senior Specialist

APPROVED BY :  , **DATE :** Nov. 19, 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 -12.11dB at 1.05248MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 2483.50MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is UFL not a standard connector.

2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	DSL
MODEL NO.	NVG599
POWER SUPPLY	7.4Vdc (Battery) 12Vdc (Adapter)
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 (2.4GHz Band): up to 300.0Mbps 802.11n (5GHz Band): up to 450.0Mbps 802.11ac: up to 1300Mbps
OPERATING FREQUENCY	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5745 ~ 5825MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 5.0GHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	497.633mW for 2412 ~ 2462MHz 911.800mW for 5745 ~ 5825MHz
ANTENNA TYPE	2.4GHz: PIFA antenna with 2.5dBi gain 5.0GHz: PIFA antenna with 3.0dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter, Battery



NOTE:

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

2.4GHz Band	
MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

5GHz Band	
MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX/3TX
802.11n (40MHz)	1TX/3TX
802.11ac (80MHz)	1TX/3TX

*For 5G Band: Chain 1 was chosen for the final tests.

2. The EUT consumes power from the following battery and adapters.

ADAPTER 1	
BRAND:	ARRIS
MODEL:	NBS42A120350M2
INPUT:	100-120Vac~50/60Hz, 1.0A
OUTPUT:	12Vdc / 3.5A
POWER LINE:	DC 2.2m non-shielded cable without core AC 0.8m non-shielded cable without core

ADAPTER 2	
BRAND:	LITEON
MODEL:	PB-1420-1M01
INPUT:	100-120Vac~60Hz, 1.0A
OUTPUT:	12Vdc / 3.5A
POWER LINE:	DC 1.85m non-shielded cable without core AC 0.8m non-shielded cable without core

Battery	
BRAND:	ARRIS
RATING:	7.4Vdc, 41.4Wh / 5600mAh

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



3.2 DESCRIPTION OF TEST MODES

FOR 2.4GHz:

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

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

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

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

FOR 5.0GHz (5745 ~ 5825MHz):

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
155	5775MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.4GHz:

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

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

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	2TX
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0	2TX

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)	TX FUNCTION
A, B	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2	2TX



A D T

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)	TX FUNCTION
A, B	802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2	2TX

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)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	2TX
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0	2TX

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)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	1TX
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	2TX
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	15.0	2TX



A D T

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
PLC	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
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	√	√	√	√	Power from adapter 1
B	-	√	√	-	Power from adapter 2

Where **RE≥1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE:
The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2	1TX/3TX
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	1TX/3TX
A	802.11ac (80MHz)	155	155	OFDM	BPSK	32.5	1TX/3TX

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)	TX FUNCTION
A, B	802.11n (20MHz)	149 to 165	165	OFDM	BPSK	7.2	3TX

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)	TX FUNCTION
A, B	802.11n (20MHz)	149 to 165	165	OFDM	BPSK	7.2	3TX



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)	TX FUNCTION
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2	1TX/3TX
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	1TX/3TX
A	802.11ac (80MHz)	155	155	OFDM	BPSK	32.5	1TX/3TX

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)	TX FUNCTION
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0	1TX
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	7.2	1TX/3TX
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0	1TX/3TX
A	802.11ac (80MHz)	155	155	OFDM	BPSK	32.5	1TX/3TX

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
PLC	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 DUTY CYCLE OF TEST SIGNAL

2.4GHz Band:

802.11b: Duty cycle of test signal is > 98 %, duty factor is not required.

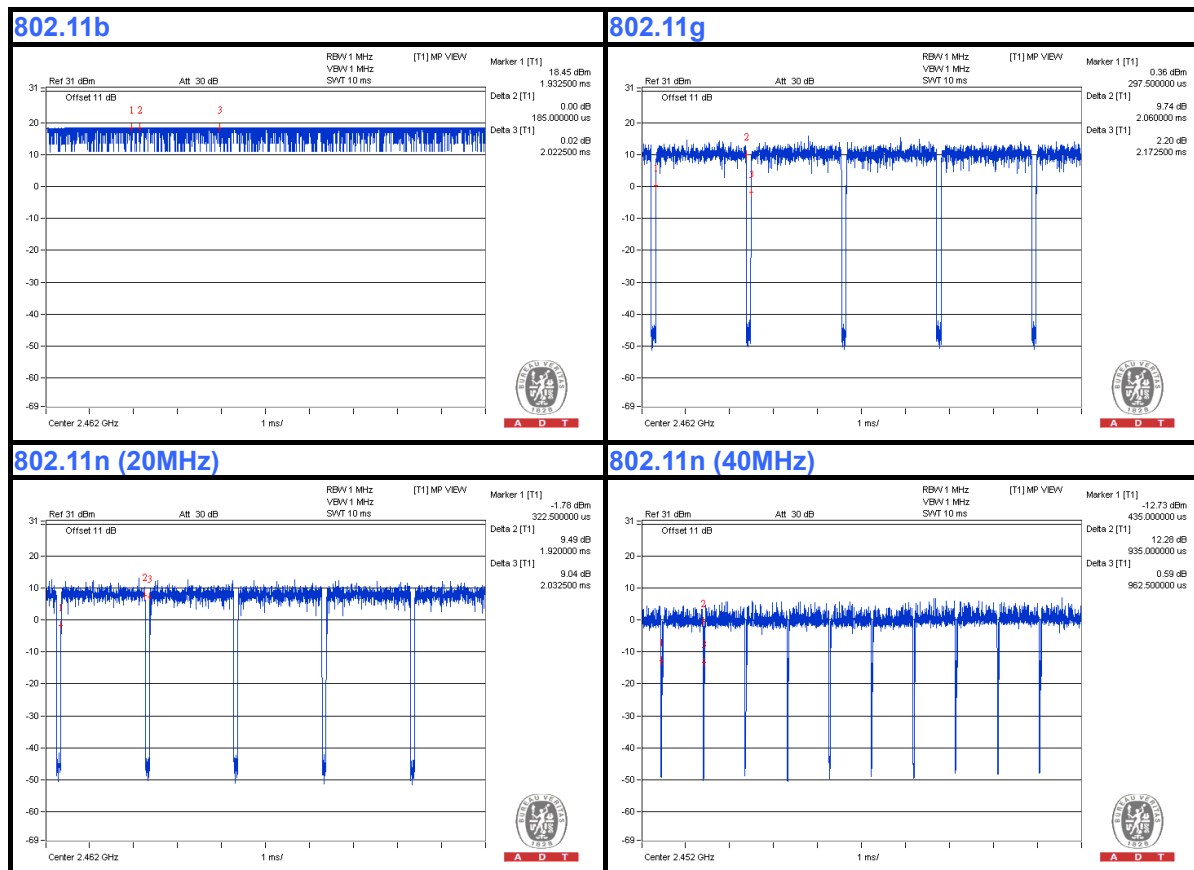
802.11g, 802.11n (20MHz), 802.11n (40MHz):

Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11g: Duty cycle = $2.06/2.17 = 0.949$, Duty factor = $10 * \log(1/0.949) = 0.23$

802.11n (20MHz): Duty cycle = $1.92/2.03 = 0.946$, Duty factor = $10 * \log(1/0.946) = 0.24$

802.11n (40MHz): Duty cycle = $0.935/0.962 = 0.972$, Duty factor = $10 * \log(1/0.972) = 0.12$





A D T

5GHz Band:

802.11a, 802.11n (20MHz):

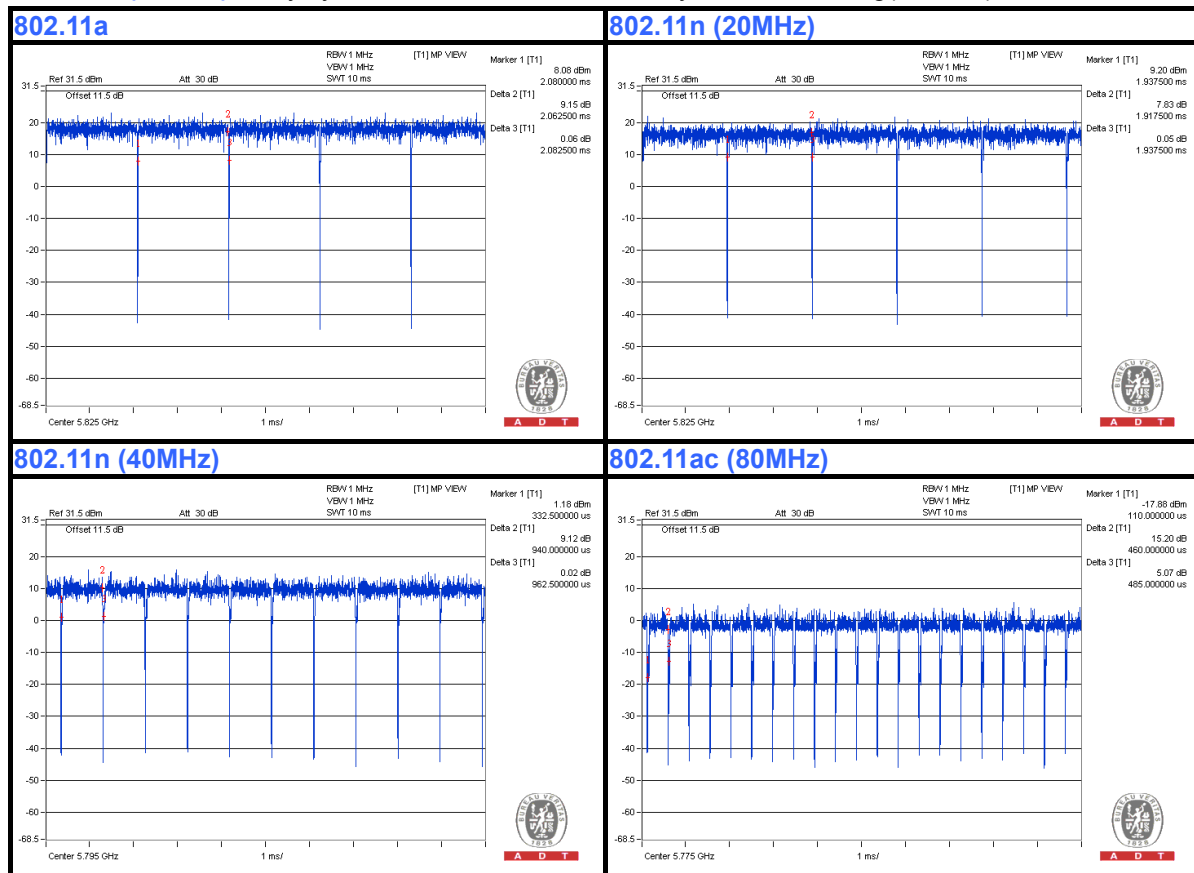
Duty cycle of test signal is > 98 %, duty factor is not required.

802.11n (40MHz), 802.11ac (80MHz):

Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11n (40MHz): Duty cycle = $0.94/0.96 = 0.979$, Duty factor = $10 * \log(1/0.979) = 0.09$

802.11ac (80MHz): Duty cycle = $0.46/0.485 = 0.948$, Duty factor = $10 * \log(1/0.948) = 0.23$





A D T

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.

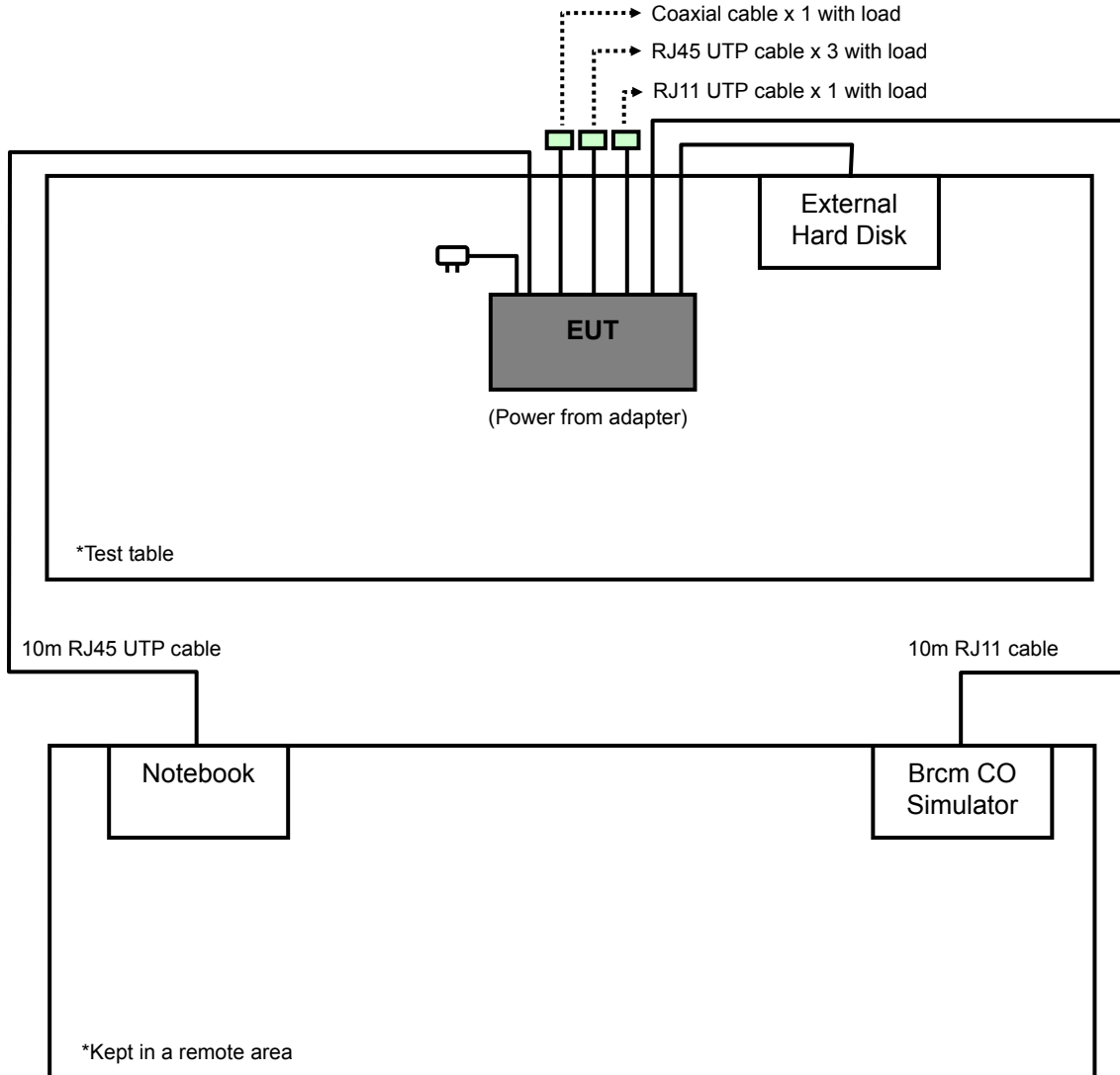
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	External Hard Disk	WD	WDBACY5000ABL-01	WX41C12T2738	NA
2	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved
3	Brcm CO Simulator	Broadcom	BCM56026	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	0.5m USB cable
2	10m RJ45 (cat 5e) cable
3	10m RJ11 cable

NOTE:

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST





A D T

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 30dB 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 30dB under any condition of modulation.



A D T

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Dec. 25, 2012	Dec. 24, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jan. 31, 2013	Jan. 30, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Mar. 20, 2013	Mar. 19, 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	8447D	2944A10633	Oct. 07, 2013	Oct. 06, 2014
Preamplifier Agilent	8449B	3008A01964	Aug. 26, 2013	Oct. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 23, 2013	Aug. 22, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 23, 2013	Aug. 22, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	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:

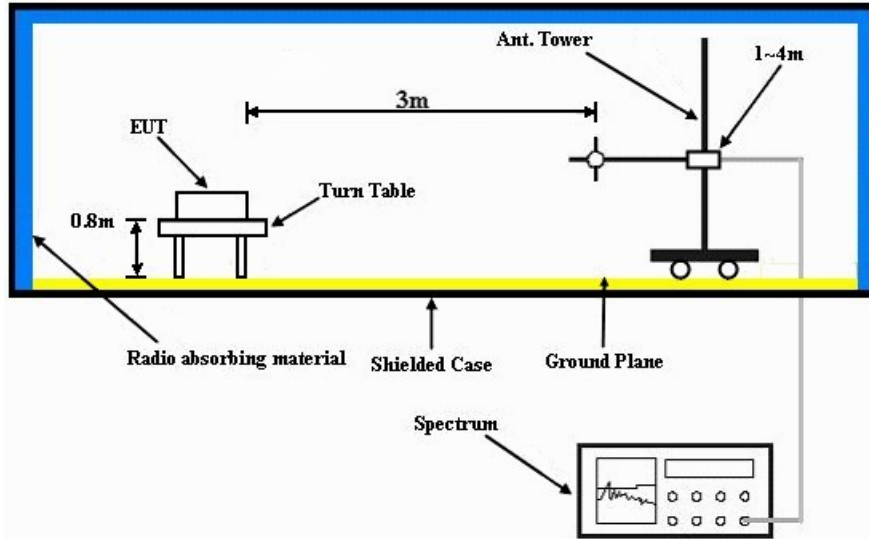
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz(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

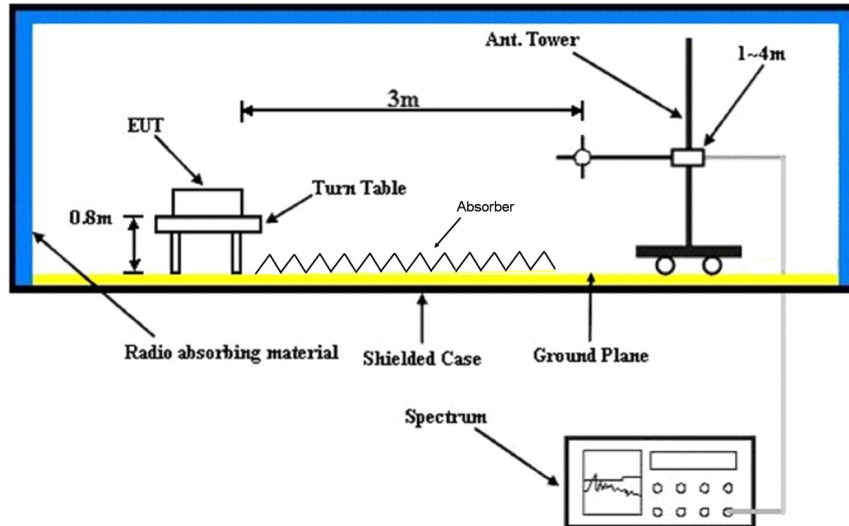
No deviation.

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 notebook and Brcm CO Simulator to act as communication partner and placed them outside of testing area.
- c. The communication partners connected with EUT via a RJ45 or RJ11 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The notebook (communication partner) sent data to EUT by command "PING".
- e. The EUT link with Brcm CO Simulator via DSL function.
- f. The necessary accessories enabled the system in full functions.



A D T

4.1.7 TEST RESULTS

ABOVE 1GHz DATA :

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.5 PK	74.0	-9.5	1.07 H	346	33.70	30.80
2	2390.00	53.1 AV	54.0	-0.9	1.07 H	346	22.30	30.80
3	*2412.00	119.8 PK			1.05 H	332	88.90	30.90
4	*2412.00	115.7 AV			1.05 H	332	84.80	30.90
5	4824.00	47.3 PK	74.0	-26.7	1.00 H	177	44.20	3.10
6	4824.00	38.8 AV	54.0	-15.2	1.00 H	177	35.70	3.10
7	5000.00	45.6 PK	74.0	-28.4	1.00 H	315	42.10	3.50
8	5000.00	34.6 AV	54.0	-19.4	1.00 H	315	31.10	3.50

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	2390.00	56.9 PK	74.0	-17.1	1.10 V	120	26.10	30.80
2	2390.00	45.6 AV	54.0	-8.4	1.10 V	120	14.80	30.80
3	*2412.00	110.5 PK			1.01 V	104	79.60	30.90
4	*2412.00	106.4 AV			1.01 V	104	75.50	30.90
5	4824.00	47.8 PK	74.0	-26.2	1.66 V	93	44.70	3.10
6	4824.00	40.0 AV	54.0	-14.0	1.66 V	93	36.90	3.10
7	5000.00	53.2 PK	74.0	-20.8	1.12 V	16	49.70	3.50
8	5000.00	49.1 AV	54.0	-4.9	1.12 V	16	45.60	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.2 PK	74.0	-7.8	1.07 H	333	35.40	30.80
2	2390.00	53.6 AV	54.0	-0.4	1.07 H	333	22.80	30.80
3	*2437.00	120.9 PK			1.05 H	339	89.90	31.00
4	*2437.00	116.9 AV			1.05 H	339	85.90	31.00
5	4874.00	48.5 PK	74.0	-25.5	1.01 H	2	45.20	3.30
6	4874.00	39.4 AV	54.0	-14.6	1.01 H	2	36.10	3.30
7	5000.00	45.5 PK	74.0	-28.5	1.00 H	314	42.00	3.50
8	5000.00	34.5 AV	54.0	-19.5	1.00 H	314	31.00	3.50
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	2390.00	57.6 PK	74.0	-16.4	1.10 V	90	26.80	30.80
2	2390.00	46.7 AV	54.0	-7.3	1.10 V	90	15.90	30.80
3	*2437.00	113.4 PK			1.05 V	85	82.40	31.00
4	*2437.00	109.4 AV			1.05 V	85	78.40	31.00
5	4874.00	47.2 PK	74.0	-26.8	1.59 V	173	43.90	3.30
6	4874.00	37.8 AV	54.0	-16.2	1.59 V	173	34.50	3.30
7	5000.00	52.2 PK	74.0	-21.8	1.00 V	17	48.70	3.50
8	5000.00	48.1 AV	54.0	-5.9	1.00 V	17	44.60	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	119.2 PK			1.03 H	339	88.10	31.10
2	*2462.00	115.1 AV			1.03 H	339	84.00	31.10
3	2483.50	64.0 PK	74.0	-10.0	1.00 H	340	32.80	31.20
4	2483.50	52.4 AV	54.0	-1.6	1.00 H	340	21.20	31.20
5	4924.00	46.5 PK	74.0	-27.5	1.00 H	14	43.00	3.50
6	4924.00	36.2 AV	54.0	-17.8	1.00 H	14	32.70	3.50
7	5000.00	45.9 PK	74.0	-28.1	1.00 H	314	42.40	3.50
8	5000.00	34.7 AV	54.0	-19.3	1.00 H	314	31.20	3.50
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	*2462.00	111.0 PK			1.00 V	103	79.90	31.10
2	*2462.00	107.0 AV			1.00 V	103	75.90	31.10
3	2483.50	58.4 PK	74.0	-15.6	1.10 V	123	27.20	31.20
4	2483.50	46.6 AV	54.0	-7.4	1.10 V	123	15.40	31.20
5	4924.00	45.7 PK	74.0	-28.3	1.02 V	306	42.20	3.50
6	4924.00	33.9 AV	54.0	-20.1	1.02 V	306	30.40	3.50
7	5000.00	52.2 PK	74.0	-21.8	1.12 V	16	48.70	3.50
8	5000.00	48.3 AV	54.0	-5.7	1.12 V	16	44.80	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.2 PK	74.0	-2.8	1.07 H	339	39.70	31.50
2	2390.00	53.1 AV	54.0	-0.9	1.07 H	339	21.60	31.50
3	*2412.00	118.6 PK			1.05 H	338	87.00	31.60
4	*2412.00	106.9 AV			1.05 H	338	75.30	31.60
5	4824.00	48.2 PK	74.0	-25.8	1.32 H	347	44.90	3.30
6	4824.00	36.0 AV	54.0	-18.0	1.32 H	347	32.70	3.30
7	5000.00	46.3 PK	74.0	-27.7	1.00 H	313	42.60	3.70
8	5000.00	34.9 AV	54.0	-19.1	1.00 H	313	31.20	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	2390.00	60.7 PK	74.0	-13.3	1.75 V	90	29.20	31.50
2	2390.00	46.1 AV	54.0	-7.9	1.75 V	90	14.60	31.50
3	*2412.00	108.6 PK			1.70 V	84	77.00	31.60
4	*2412.00	96.7 AV			1.70 V	84	65.10	31.60
5	4824.00	44.4 PK	74.0	-29.6	1.18 V	331	41.10	3.30
6	4824.00	33.7 AV	54.0	-20.3	1.18 V	331	30.40	3.30
7	5000.00	52.6 PK	74.0	-21.4	1.13 V	17	48.90	3.70
8	5000.00	48.6 AV	54.0	-5.4	1.13 V	17	44.90	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. “ * “: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.3 PK	74.0	-8.7	1.06 H	343	33.80	31.50
2	2390.00	53.4 AV	54.0	-0.6	1.06 H	343	21.90	31.50
3	*2437.00	121.7 PK			1.02 H	336	90.10	31.60
4	*2437.00	112.3 AV			1.02 H	336	80.70	31.60
5	4874.00	47.7 PK	74.0	-26.3	1.23 H	180	44.20	3.50
6	4874.00	35.9 AV	54.0	-18.1	1.23 H	180	32.40	3.50
7	5000.00	47.3 PK	74.0	-26.7	1.02 H	317	43.60	3.70
8	5000.00	36.1 AV	54.0	-17.9	1.02 H	317	32.40	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	2390.00	57.3 PK	74.0	-16.7	1.10 V	110	25.80	31.50
2	2390.00	46.0 AV	54.0	-8.0	1.10 V	110	14.50	31.50
3	*2437.00	113.1 PK			1.02 V	108	81.50	31.60
4	*2437.00	103.3 AV			1.02 V	108	71.70	31.60
5	4874.00	46.2 PK	74.0	-27.8	1.31 V	190	42.70	3.50
6	4874.00	33.9 AV	54.0	-20.1	1.31 V	190	30.40	3.50
7	5000.00	53.3 PK	74.0	-20.7	1.10 V	15	49.60	3.70
8	5000.00	48.4 AV	54.0	-5.6	1.10 V	15	44.70	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. “ * “: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	118.2 PK			1.02 H	338	86.50	31.70
2	*2462.00	106.3 AV			1.02 H	338	74.60	31.70
3	2483.50	73.4 PK	74.0	-0.6	1.02 H	341	41.50	31.90
4	2483.50	53.6 AV	54.0	-0.4	1.02 H	341	21.70	31.90
5	4924.00	48.4 PK	74.0	-25.6	1.32 H	147	44.70	3.70
6	4924.00	36.7 AV	54.0	-17.3	1.32 H	147	33.00	3.70
7	5000.00	46.6 PK	74.0	-27.4	1.01 H	316	42.90	3.70
8	5000.00	34.9 AV	54.0	-19.1	1.01 H	316	31.20	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	*2462.00	110.5 PK			1.03 V	85	78.80	31.70
2	*2462.00	98.8 AV			1.03 V	85	67.10	31.70
3	2483.50	63.3 PK	74.0	-10.7	1.10 V	90	31.40	31.90
4	2483.50	47.6 AV	54.0	-6.4	1.10 V	90	15.70	31.90
5	4924.00	46.3 PK	74.0	-27.7	1.12 V	159	42.60	3.70
6	4924.00	33.8 AV	54.0	-20.2	1.12 V	159	30.10	3.70
7	5000.00	52.6 PK	74.0	-21.4	1.13 V	18	48.90	3.70
8	5000.00	48.5 AV	54.0	-5.5	1.13 V	18	44.80	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. “ * “: Fundamental frequency.



A D T

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.6 PK	74.0	-1.4	1.07 H	337	41.10	31.50
2	2390.00	53.6 AV	54.0	-0.4	1.07 H	337	22.10	31.50
3	*2412.00	117.9 PK			1.04 H	336	86.30	31.60
4	*2412.00	107.0 AV			1.04 H	336	75.40	31.60
5	4824.00	48.0 PK	74.0	-26.0	1.32 H	85	44.70	3.30
6	4824.00	36.0 AV	54.0	-18.0	1.32 H	85	32.70	3.30
7	5000.00	47.2 PK	74.0	-26.8	1.02 H	311	43.50	3.70
8	5000.00	36.0 AV	54.0	-18.0	1.02 H	311	32.30	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	2390.00	60.9 PK	74.0	-13.1	1.70 V	110	29.40	31.50
2	2390.00	47.1 AV	54.0	-6.9	1.70 V	110	15.60	31.50
3	*2412.00	107.2 PK			1.66 V	105	75.60	31.60
4	*2412.00	97.3 AV			1.66 V	105	65.70	31.60
5	4824.00	46.2 PK	74.0	-27.8	1.13 V	74	42.90	3.30
6	4824.00	33.7 AV	54.0	-20.3	1.13 V	74	30.40	3.30
7	5000.00	52.3 PK	74.0	-21.7	1.13 V	18	48.60	3.70
8	5000.00	48.4 AV	54.0	-5.6	1.13 V	18	44.70	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. “ * “: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.1 PK	74.0	-8.9	1.06 H	338	33.60	31.50
2	2390.00	53.5 AV	54.0	-0.5	1.06 H	338	22.00	31.50
3	*2437.00	121.9 PK			1.01 H	334	90.30	31.60
4	*2437.00	111.2 AV			1.01 H	334	79.60	31.60
5	4874.00	48.2 PK	74.0	-25.8	1.23 H	74	44.70	3.50
6	4874.00	36.4 AV	54.0	-17.6	1.23 H	74	32.90	3.50
7	5000.00	46.4 PK	74.0	-27.6	1.02 H	315	42.70	3.70
8	5000.00	36.1 AV	54.0	-17.9	1.02 H	315	32.40	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	2390.00	57.5 PK	74.0	-16.5	1.10 V	110	26.00	31.50
2	2390.00	46.0 AV	54.0	-8.0	1.10 V	110	14.50	31.50
3	*2437.00	113.0 PK			1.03 V	107	81.40	31.60
4	*2437.00	102.4 AV			1.03 V	107	70.80	31.60
5	4874.00	46.2 PK	74.0	-27.8	1.17 V	56	42.70	3.50
6	4874.00	34.3 AV	54.0	-19.7	1.17 V	56	30.80	3.50
7	5000.00	52.3 PK	74.0	-21.7	1.13 V	18	48.60	3.70
8	5000.00	48.2 AV	54.0	-5.8	1.13 V	18	44.50	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. “ * “: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	116.2 PK			1.00 H	334	84.50	31.70
2	*2462.00	105.5 AV			1.00 H	334	73.80	31.70
3	2483.50	73.5 PK	74.0	-0.5	1.00 H	332	41.60	31.90
4	2483.50	53.8 AV	54.0	-0.2	1.00 H	332	21.90	31.90
5	4924.00	48.6 PK	74.0	-25.4	1.03 H	74	44.90	3.70
6	4924.00	36.7 AV	54.0	-17.3	1.03 H	74	33.00	3.70
7	5000.00	47.3 PK	74.0	-26.7	1.02 H	317	43.60	3.70
8	5000.00	36.2 AV	54.0	-17.8	1.02 H	317	32.50	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	*2462.00	108.6 PK			1.05 V	85	76.90	31.70
2	*2462.00	97.9 AV			1.05 V	85	66.20	31.70
3	2483.50	64.5 PK	74.0	-9.5	1.10 V	90	32.60	31.90
4	2483.50	47.3 AV	54.0	-6.7	1.10 V	90	15.40	31.90
5	4924.00	46.6 PK	74.0	-27.4	1.35 V	225	42.90	3.70
6	4924.00	34.2 AV	54.0	-19.8	1.35 V	225	30.50	3.70
7	5000.00	52.6 PK	74.0	-21.4	1.13 V	17	48.90	3.70
8	5000.00	48.5 AV	54.0	-5.5	1.13 V	17	44.80	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. “ * “: Fundamental frequency.



A D T

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.30 H	258	36.70	30.80
2	2390.00	53.6 AV	54.0	-0.4	1.30 H	258	22.80	30.80
3	*2422.00	112.5 PK			1.27 H	288	81.50	31.00
4	*2422.00	100.3 AV			1.27 H	288	69.30	31.00
5	4844.00	48.3 PK	74.0	-25.7	1.32 H	85	45.10	3.20
6	4844.00	35.8 AV	54.0	-18.2	1.32 H	85	32.60	3.20
7	5000.00	46.1 PK	74.0	-27.9	1.02 H	316	42.60	3.50
8	5000.00	34.9 AV	54.0	-19.1	1.02 H	316	31.40	3.50

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	2390.00	58.2 PK	74.0	-15.8	1.10 V	110	27.40	30.80
2	2390.00	46.1 AV	54.0	-7.9	1.10 V	110	15.30	30.80
3	*2422.00	102.8 PK			1.02 V	105	71.80	31.00
4	*2422.00	90.8 AV			1.02 V	105	59.80	31.00
5	4844.00	45.7 PK	74.0	-28.3	1.02 V	301	42.50	3.20
6	4844.00	33.5 AV	54.0	-20.5	1.02 V	301	30.30	3.20
7	5000.00	52.3 PK	74.0	-21.7	1.13 V	16	48.80	3.50
8	5000.00	48.2 AV	54.0	-5.8	1.13 V	16	44.70	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.4 PK	74.0	-5.6	1.28 H	288	37.60	30.80
2	2390.00	53.5 AV	54.0	-0.5	1.28 H	288	22.70	30.80
3	*2437.00	116.1 PK			1.26 H	285	85.10	31.00
4	*2437.00	106.3 AV			1.26 H	285	75.30	31.00
5	4874.00	49.0 PK	74.0	-25.0	1.32 H	85	45.70	3.30
6	4874.00	36.2 AV	54.0	-17.8	1.32 H	85	32.90	3.30
7	5000.00	46.1 PK	74.0	-27.9	1.02 H	316	42.60	3.50
8	5000.00	34.8 AV	54.0	-19.2	1.02 H	316	31.30	3.50
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	2390.00	56.4 PK	74.0	-17.6	1.02 V	105	25.60	30.80
2	2390.00	45.4 AV	54.0	-8.6	1.02 V	105	14.60	30.80
3	*2437.00	105.1 PK			1.01 V	101	74.10	31.00
4	*2437.00	93.9 AV			1.01 V	101	62.90	31.00
5	4874.00	46.0 PK	74.0	-28.0	1.14 V	85	42.70	3.30
6	4874.00	33.4 AV	54.0	-20.6	1.14 V	85	30.10	3.30
7	5000.00	52.4 PK	74.0	-21.6	1.13 V	20	48.90	3.50
8	5000.00	48.2 AV	54.0	-5.8	1.13 V	20	44.70	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	112.0 PK			1.02 H	310	81.00	31.00
2	*2452.00	100.0 AV			1.02 H	310	69.00	31.00
3	2483.50	68.1 PK	74.0	-5.9	1.00 H	303	36.90	31.20
4	2483.50	53.6 AV	54.0	-0.4	1.00 H	303	22.40	31.20
5	4904.00	48.5 PK	74.0	-25.5	1.32 H	55	45.10	3.40
6	4904.00	36.1 AV	54.0	-17.9	1.32 H	55	32.70	3.40
7	5000.00	46.4 PK	74.0	-27.6	1.01 H	320	42.90	3.50
8	5000.00	35.0 AV	54.0	-19.0	1.01 H	320	31.50	3.50
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	*2452.00	102.9 PK			1.00 V	104	71.90	31.00
2	*2452.00	91.6 AV			1.00 V	104	60.60	31.00
3	2483.50	60.0 PK	74.0	-14.0	1.10 V	115	28.80	31.20
4	2483.50	46.4 AV	54.0	-7.6	1.10 V	115	15.20	31.20
5	4904.00	45.9 PK	74.0	-28.1	1.02 V	85	42.50	3.40
6	4904.00	33.5 AV	54.0	-20.5	1.02 V	85	30.10	3.40
7	5000.00	52.4 PK	74.0	-21.6	1.15 V	20	48.90	3.50
8	5000.00	48.2 AV	54.0	-5.8	1.15 V	20	44.70	3.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	47.36	35.3 QP	40.0	-4.7	1.00 H	184	49.60	-14.30
2	249.17	43.1 QP	46.0	-2.9	1.00 H	267	57.30	-14.20
3	375.29	36.9 QP	46.0	-9.1	1.00 H	124	47.70	-10.80
4	499.48	40.8 QP	46.0	-5.2	1.51 H	147	49.10	-8.30
5	625.60	37.0 QP	46.0	-9.0	1.25 H	136	42.40	-5.40
6	875.91	38.1 QP	46.0	-7.9	1.51 H	157	39.20	-1.10
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	72.59	33.4 QP	40.0	-6.6	1.00 V	336	49.60	-16.20
2	249.17	40.4 QP	46.0	-5.6	1.00 V	195	54.60	-14.20
3	375.29	32.8 QP	46.0	-13.2	1.49 V	145	43.60	-10.80
4	499.48	38.7 QP	46.0	-7.3	1.00 V	182	47.00	-8.30
5	625.60	34.3 QP	46.0	-11.7	1.00 V	12	39.70	-5.40
6	749.79	31.5 QP	46.0	-14.5	1.24 V	194	34.60	-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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	181.25	34.8 QP	43.5	-8.7	1.25 H	163	50.20	-15.40
2	258.87	38.9 QP	46.0	-7.1	1.00 H	227	52.90	-14.00
3	375.29	37.5 QP	46.0	-8.5	1.50 H	126	48.50	-11.00
4	625.60	35.9 QP	46.0	-10.1	1.00 H	224	41.60	-5.70
5	705.16	36.5 QP	46.0	-9.5	1.25 H	215	41.20	-4.70
6	751.73	34.6 QP	46.0	-11.4	1.50 H	306	38.00	-3.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	258.87	37.5 QP	46.0	-8.5	1.50 V	132	51.50	-14.00
2	375.29	38.0 QP	46.0	-8.0	1.00 V	180	49.00	-11.00
3	499.48	35.3 QP	46.0	-10.7	1.00 V	318	43.80	-8.50
4	559.63	33.7 QP	46.0	-12.3	1.00 V	339	41.30	-7.60
5	802.18	35.5 QP	46.0	-10.5	1.24 V	169	38.10	-2.60
6	961.29	38.3 QP	54.0	-15.7	1.00 V	8	38.10	0.20

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



A D T

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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. 16, 2012	Nov. 15, 2013
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 04, 2013	Feb. 03, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 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

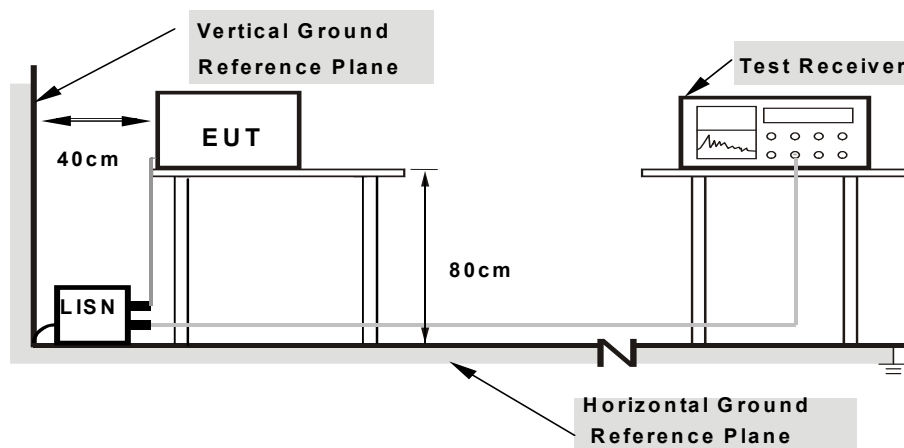
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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



A D T

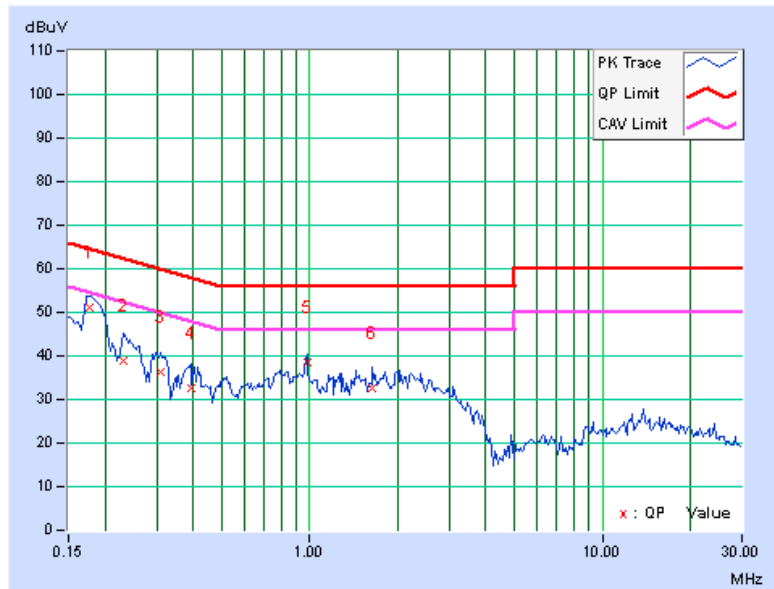
4.2.7 TEST RESULTS

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	0.16	51.02	31.87	51.18	32.03	64.61	54.61	-13.43	-22.58
2	0.23203	0.17	38.58	25.43	38.75	25.60	62.38	52.38	-23.63	-26.78
3	0.31016	0.20	36.01	22.79	36.21	22.99	59.97	49.97	-23.76	-26.98
4	0.39219	0.23	32.20	17.00	32.43	17.23	58.02	48.02	-25.59	-30.79
5	0.98203	0.25	38.27	25.47	38.52	25.72	56.00	46.00	-17.48	-20.28
6	1.62891	0.28	32.21	24.50	32.49	24.78	56.00	46.00	-23.51	-21.22

- 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.



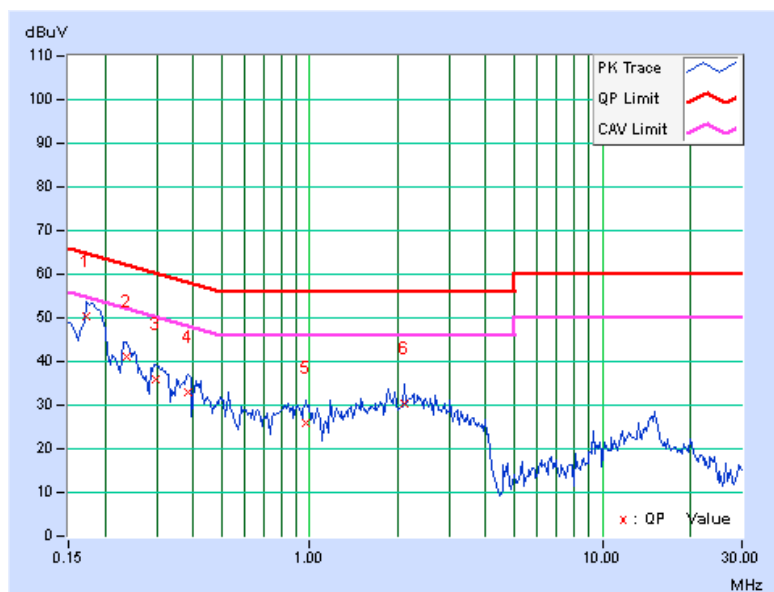


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.17	50.38	34.32	50.55	34.49	64.79	54.79	-14.25	-20.31
2	0.23594	0.18	40.78	23.55	40.96	23.73	62.24	52.24	-21.28	-28.51
3	0.29844	0.20	35.90	23.30	36.10	23.50	60.29	50.29	-24.18	-26.78
4	0.38438	0.23	32.68	14.96	32.91	15.19	58.18	48.18	-25.27	-32.99
5	0.97422	0.25	25.52	16.90	25.77	17.15	56.00	46.00	-30.23	-28.85
6	2.10156	0.29	30.20	24.44	30.49	24.73	56.00	46.00	-25.51	-21.27

- 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.



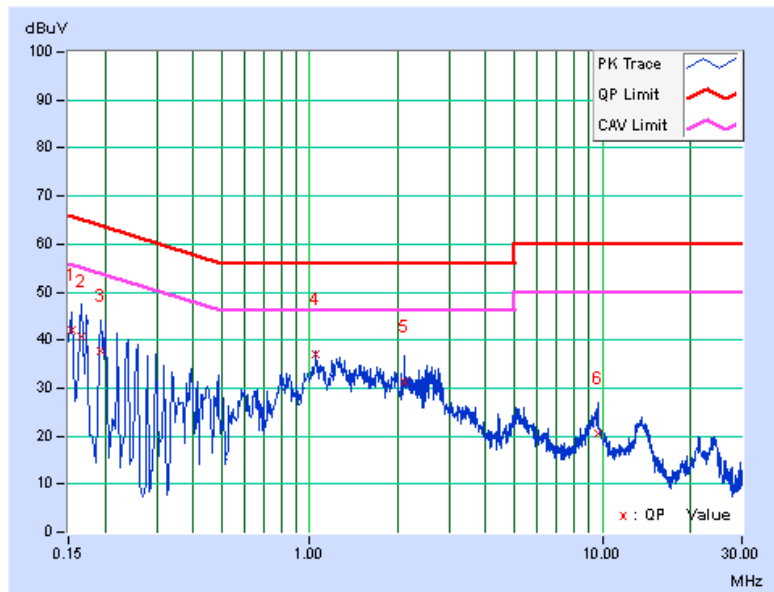


A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.16	41.93	25.99	42.09	26.15	65.79	55.79	-23.70	-29.64
2	0.16564	0.16	40.51	19.20	40.67	19.36	65.18	55.18	-24.51	-35.82
3	0.19305	0.16	37.41	18.43	37.57	18.59	63.90	53.90	-26.34	-35.32
4	1.05069	0.25	36.73	33.49	36.98	33.74	56.00	46.00	-19.02	-12.26
5	2.10500	0.30	30.90	26.17	31.20	26.47	56.00	46.00	-24.80	-19.53
6	9.62393	0.70	19.92	14.02	20.62	14.72	60.00	50.00	-39.38	-35.28

- 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.



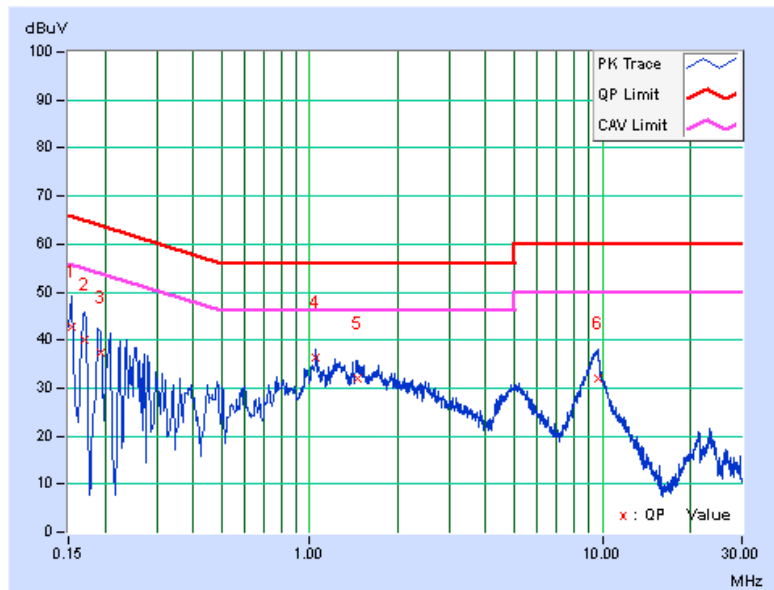


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.17	42.48	29.45	42.65	29.62	65.79	55.79	-23.14	-26.17
2	0.16967	0.17	39.98	14.23	40.15	14.40	64.98	54.98	-24.83	-40.58
3	0.19393	0.17	37.15	22.46	37.32	22.63	63.87	53.87	-26.55	-31.24
4	1.05321	0.25	36.21	32.06	36.46	32.31	56.00	46.00	-19.54	-13.69
5	1.45985	0.26	31.65	26.13	31.91	26.39	56.00	46.00	-24.09	-19.61
6	9.66694	0.59	31.50	26.23	32.09	26.82	60.00	50.00	-27.91	-23.18

- 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.

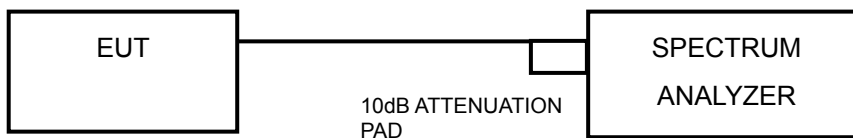


4.3 6dB BANDWIDTH MEASUREMENT

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.07	0.5	PASS
6	2437	8.11	0.5	PASS
11	2462	8.52	0.5	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.41	0.5	PASS
6	2437	16.42	0.5	PASS
11	2462	16.44	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	17.66	0.5	PASS
6	2437	17.65	17.67	0.5	PASS
11	2462	17.63	17.67	0.5	PASS

802.11n (40MHz)

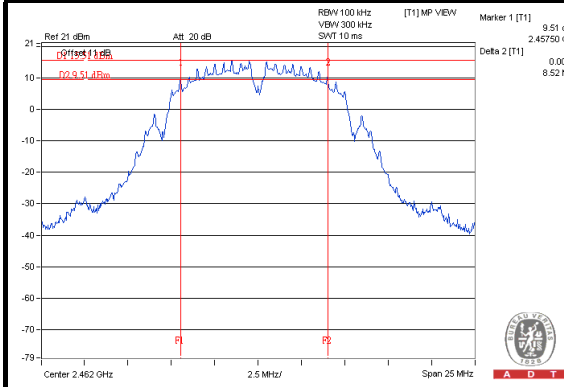
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	35.22	35.19	0.5	PASS
6	2437	35.28	35.40	0.5	PASS
9	2452	35.54	35.80	0.5	PASS



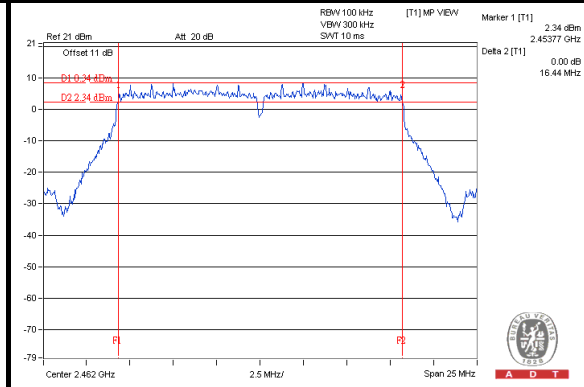
A D T

SPECTRUM PLOT OF WORST VALUE

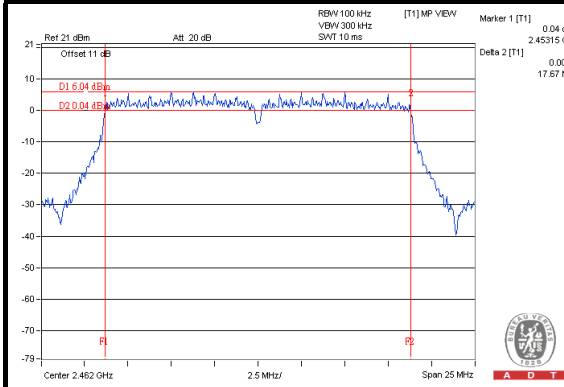
802.11b



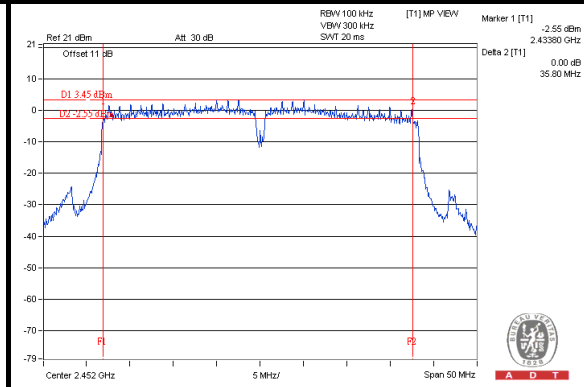
802.11g



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,

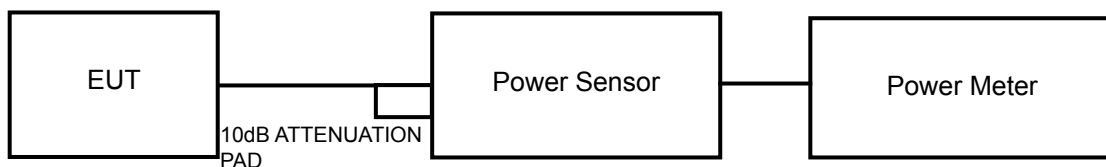
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

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

Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

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



A D T

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



A D T

4.4.7 TEST RESULTS

FOR AVERAGE POWER

802.11b

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	399.025	26.01	30	PASS
6	2437	494.311	26.94	30	PASS
11	2462	298.538	24.75	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	109.396	20.39	30	PASS
6	2437	338.844	25.30	30	PASS
11	2462	116.413	20.66	30	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	19.42	19.23	171.251	22.34	30	PASS
6	2437	24.39	23.48	497.633	26.97	30	PASS
11	2462	18.93	18.13	143.176	21.56	30	PASS

802.11n (40MHz)

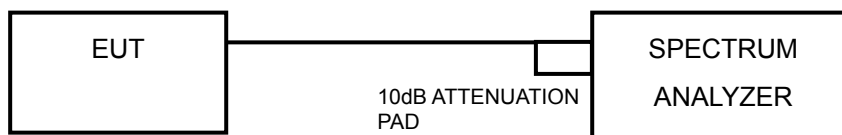
CHAN.	FREQ. (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	16.16	16.14	82.420	19.16	30	PASS
6	2437	20.33	20.85	229.514	23.61	30	PASS
9	2452	17.65	17.42	113.418	20.55	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



4.5.7 TEST RESULTS

802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-4.71	8	PASS
6	2437	-2.83	8	PASS
11	2462	-4.09	8	PASS

802.11g

Channel	Freq. (MHz)	PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-12.93	0.23	-12.70	8	PASS
6	2437	-7.91	0.23	-7.68	8	PASS
11	2462	-12.34	0.23	-12.11	8	PASS

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-14.00	3.01	-10.99	0.24	-10.75	8	PASS
	6	2437	-9.33	3.01	-6.32	0.24	-6.08	8	PASS
	11	2462	-14.66	3.01	-11.65	0.24	-11.41	8	PASS
1	1	2412	-15.05	3.01	-12.04	0.24	-11.80	8	PASS
	6	2437	-10.16	3.01	-7.15	0.24	-6.91	8	PASS
	11	2462	-14.13	3.01	-11.12	0.24	-10.88	8	PASS

NOTE: Directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the limit no need to reduced.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-19.41	3.01	-16.40	0.12	-16.28	8	PASS
	6	2437	-14.68	3.01	-11.67	0.12	-11.55	8	PASS
	9	2452	-18.37	3.01	-15.36	0.12	-15.24	8	PASS
1	3	2422	-18.66	3.01	-15.65	0.12	-15.53	8	PASS
	6	2437	-15.07	3.01	-12.06	0.12	-11.94	8	PASS
	9	2452	-17.54	3.01	-14.53	0.12	-14.41	8	PASS

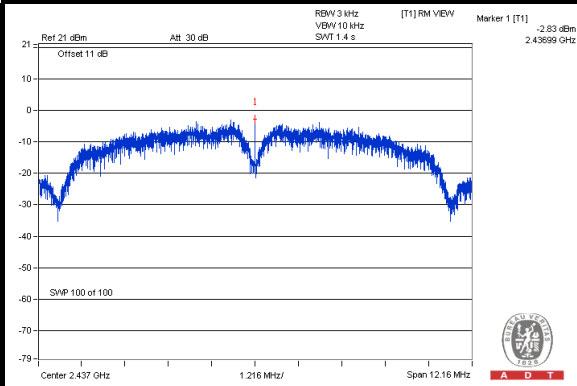
NOTE: Directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the limit no need to reduced.



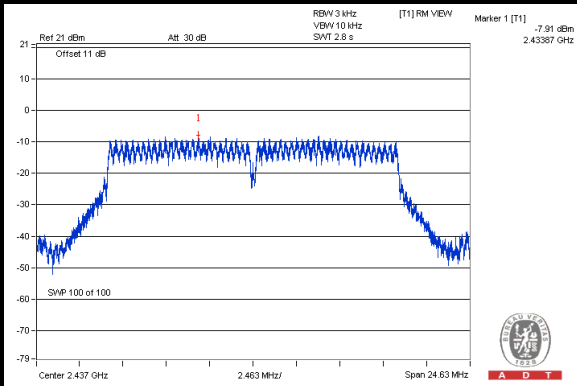
A D T

SPECTRUM PLOT OF WORST VALUE

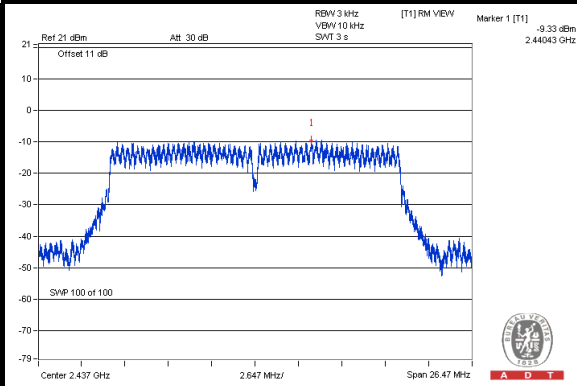
802.11b



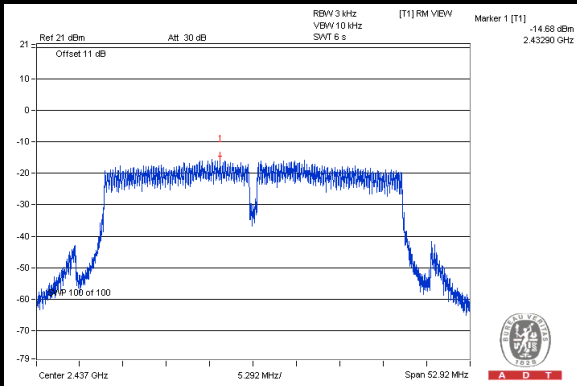
802.11g



802.11n (20MHz)



802.11n (40MHz)

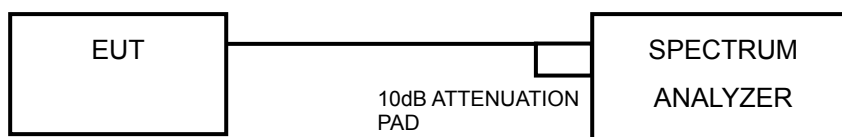


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.



4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Ensure that the number of measurement points \geq 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 $10\log(N)$ since the limit is relative emission limit.

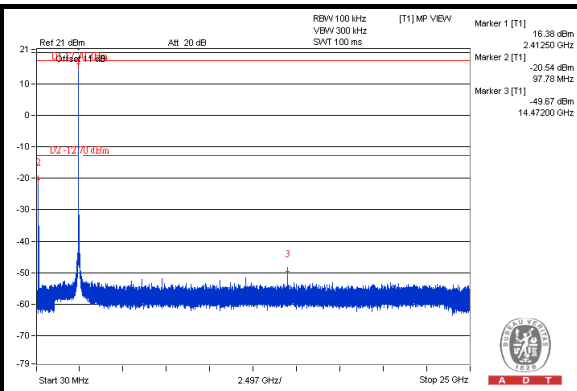
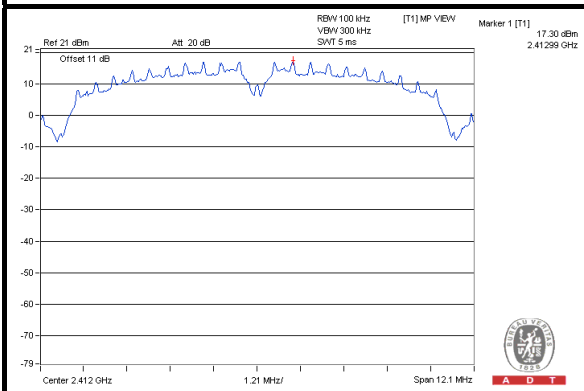
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.



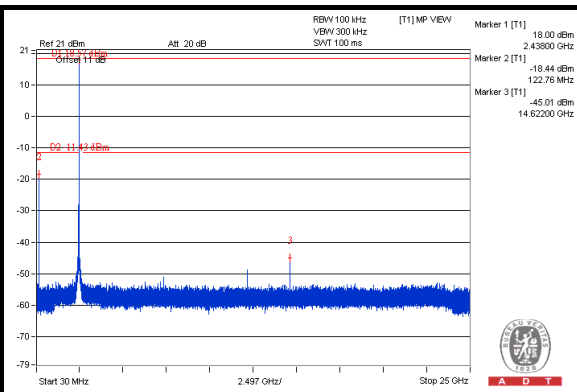
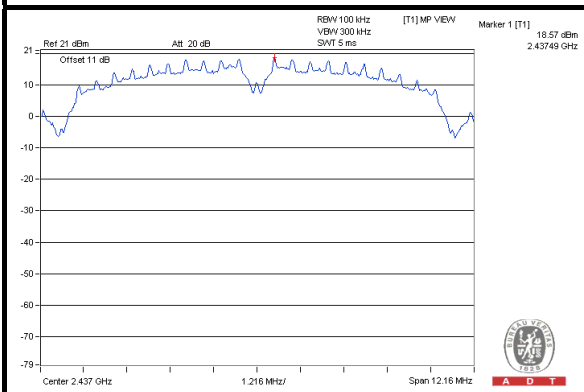
A D T

802.11b

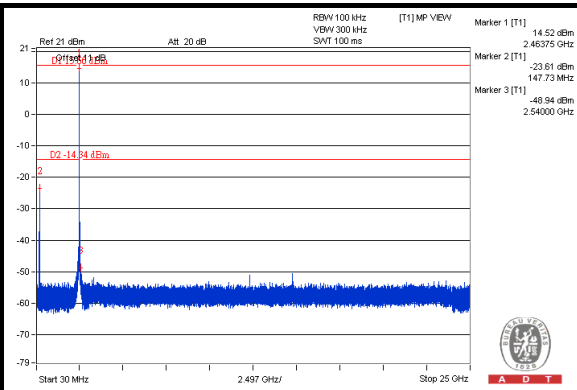
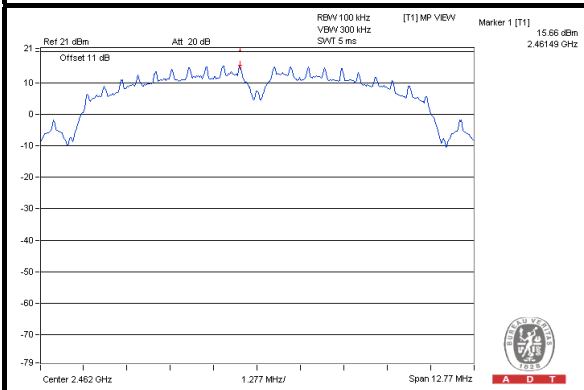
CH 1



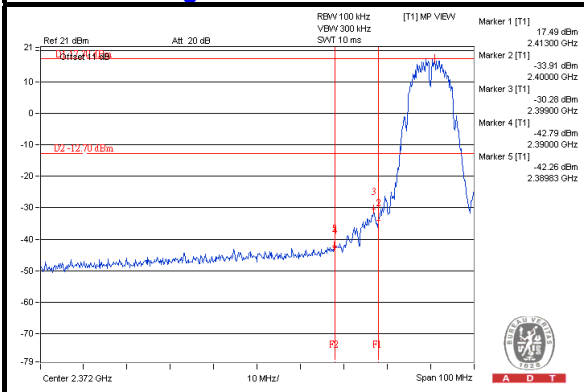
CH 6



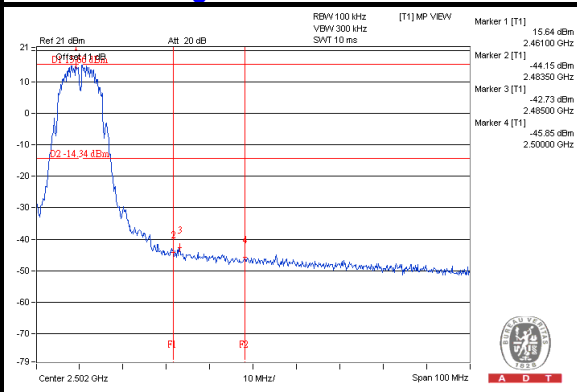
CH 11



CH 1 Band edge



CH 11 Band edge

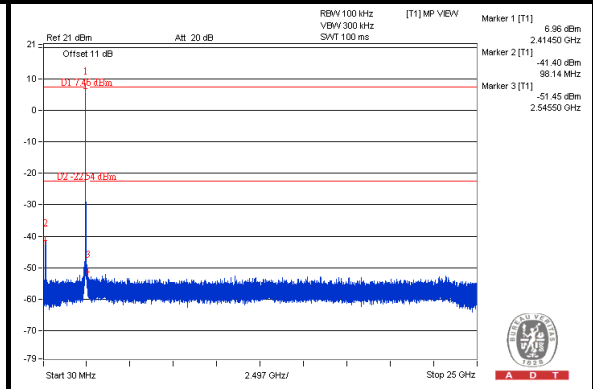
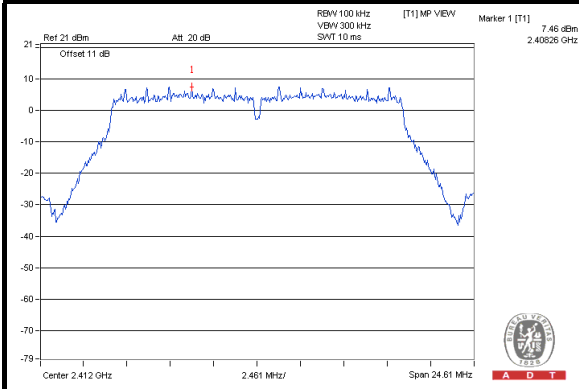




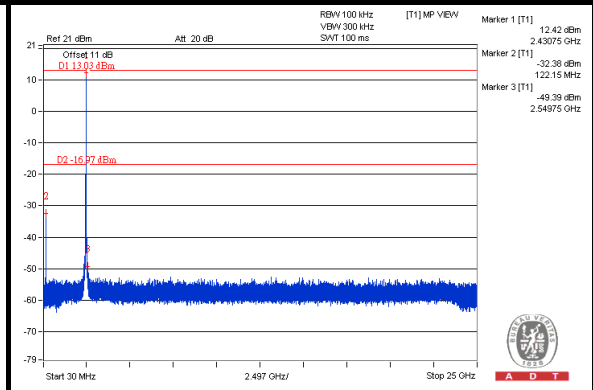
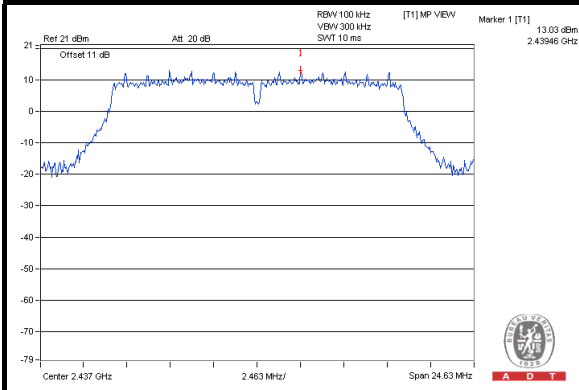
A D T

802.11g

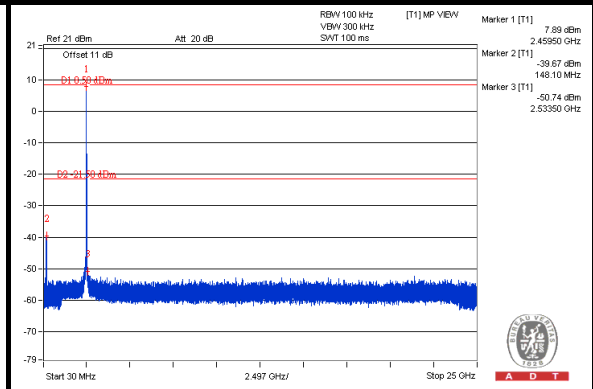
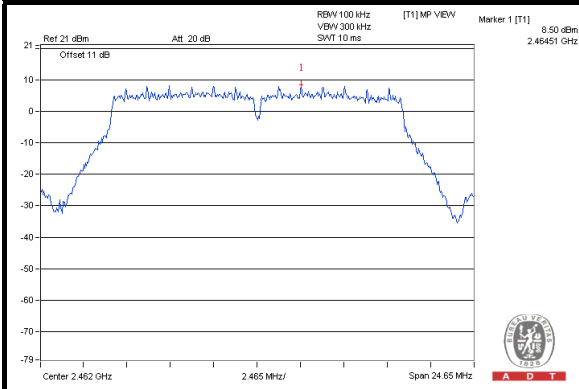
CH 1



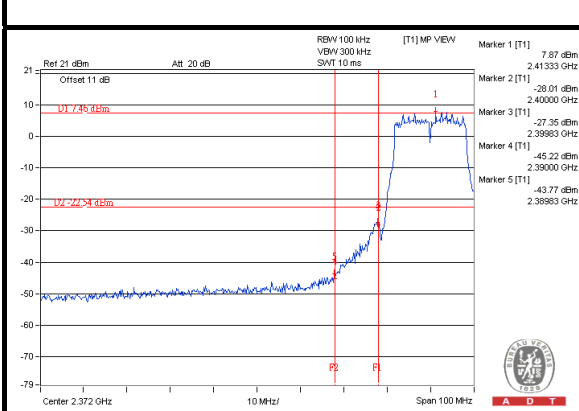
CH 6



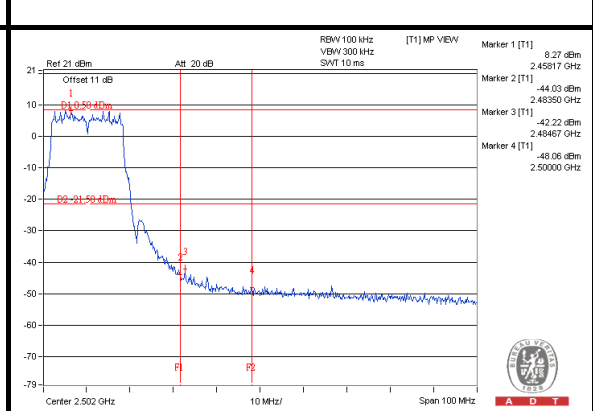
CH 11



CH 1 Band edge



CH 11 Band edge

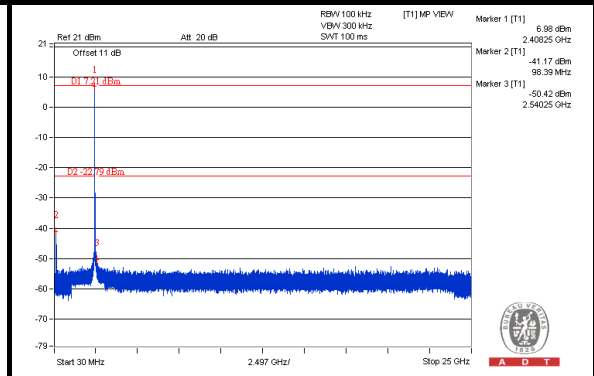
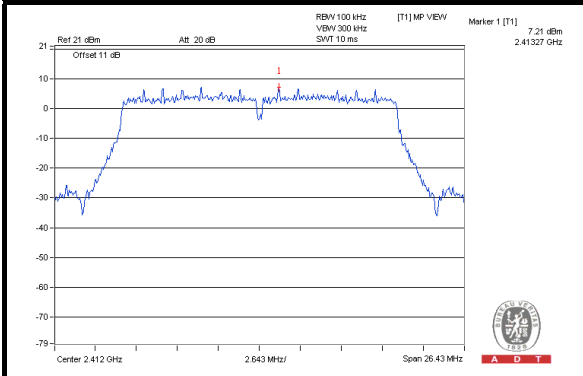




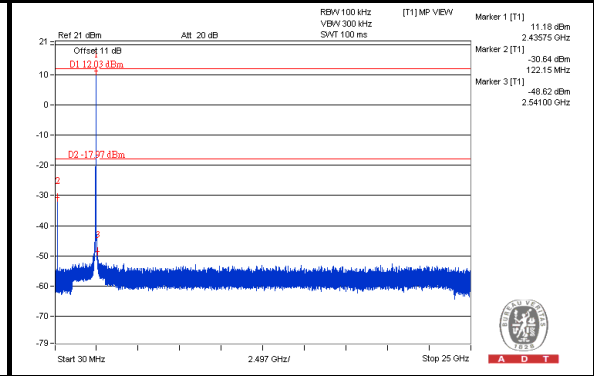
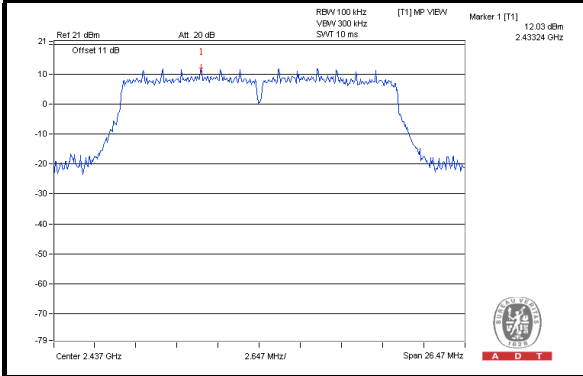
A D T

802.11n (20MHz) CHAIN 0

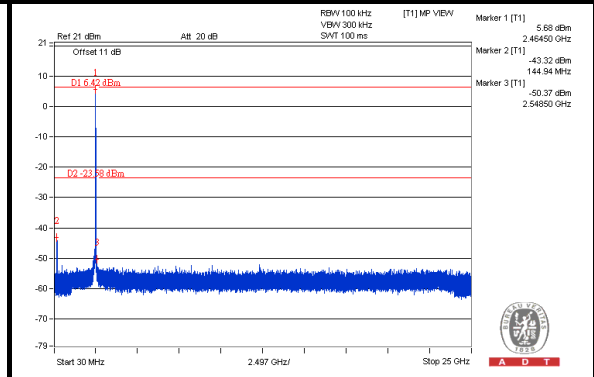
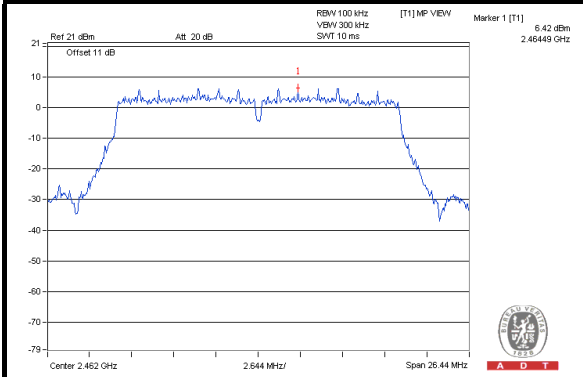
CH 1



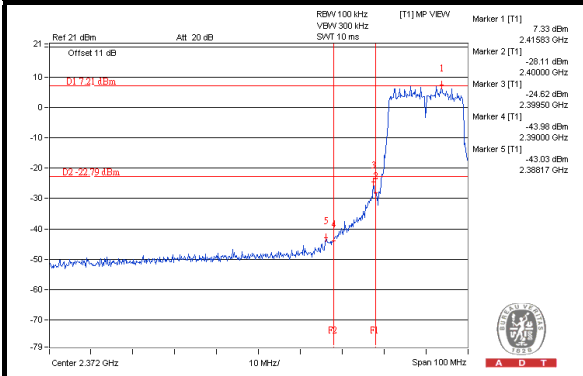
CH 6



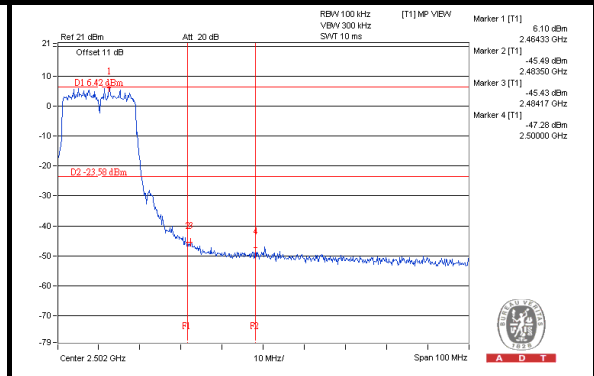
CH 11



CH 1 Band edge



CH 11 Band edge

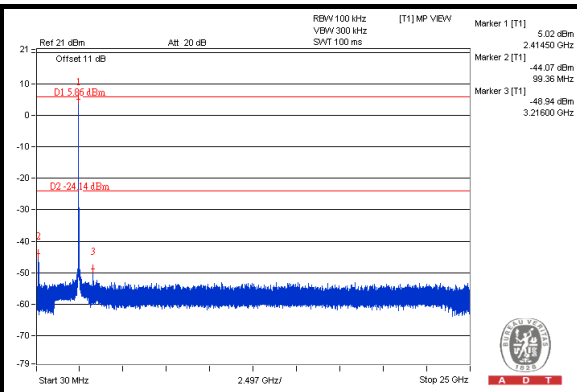
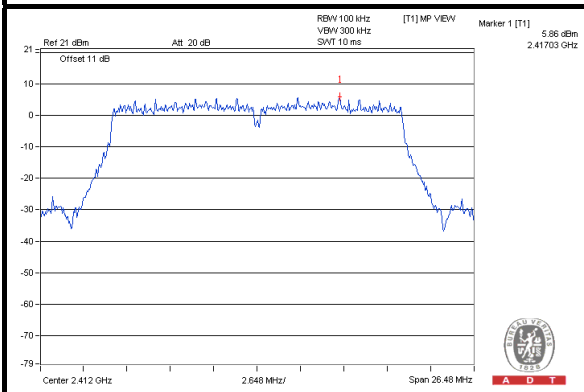




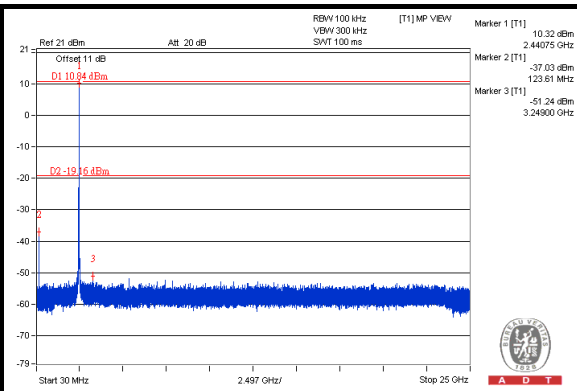
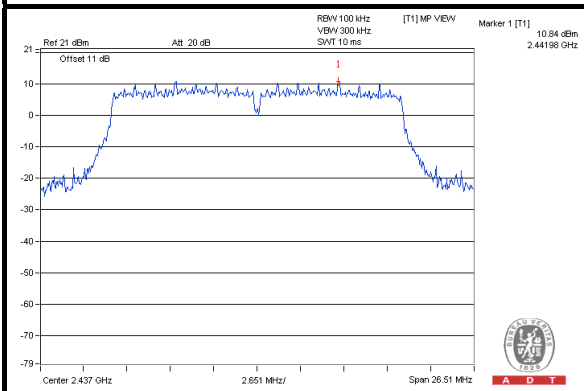
A D T

CHAIN 1

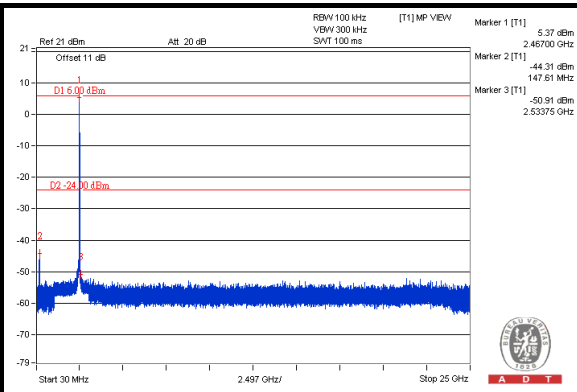
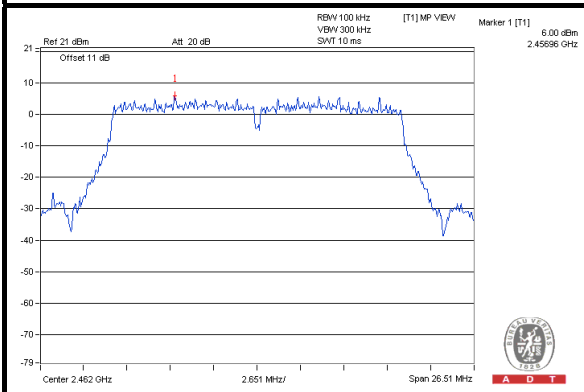
CH 1



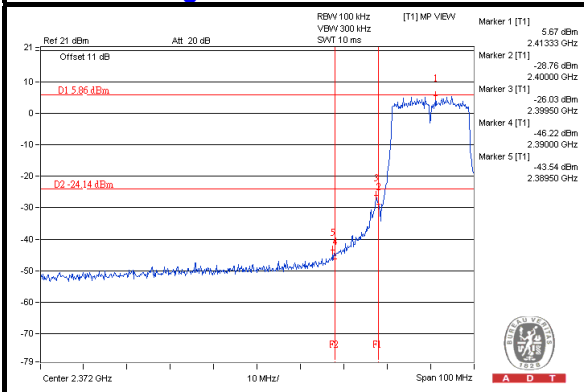
CH 6



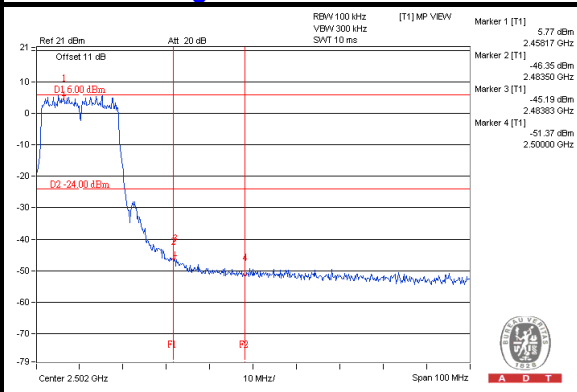
CH 11



CH 1 Band edge



CH 11 Band edge

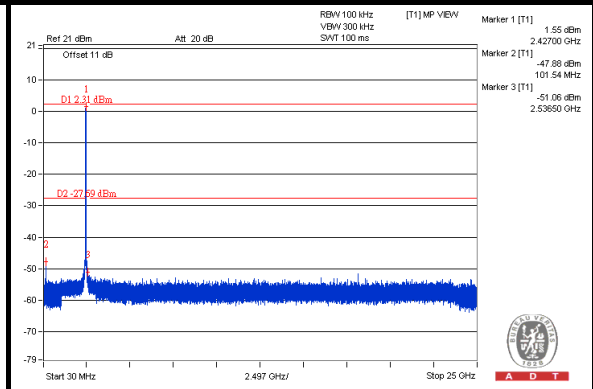
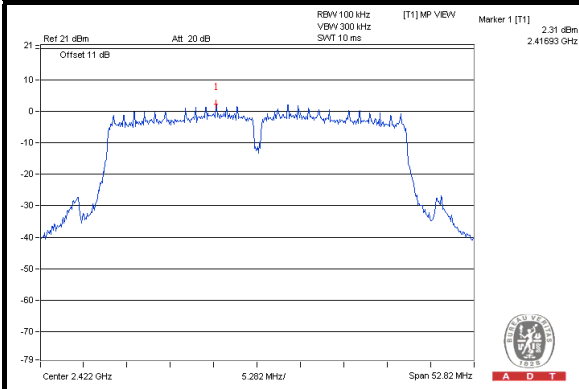




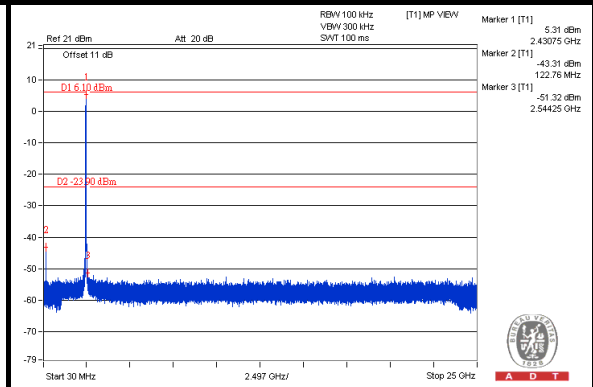
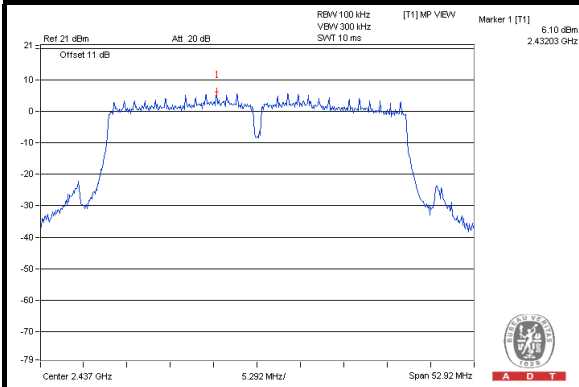
A D T

802.11n (40MHz) CHAIN 0

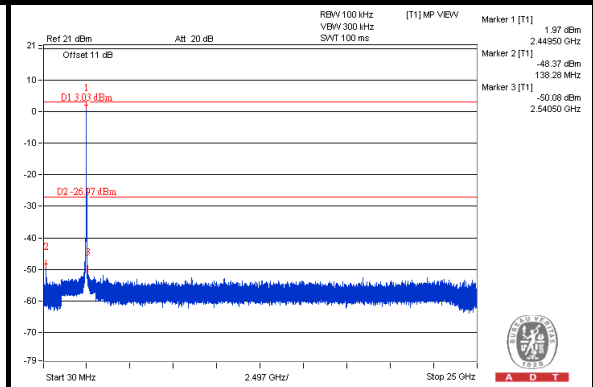
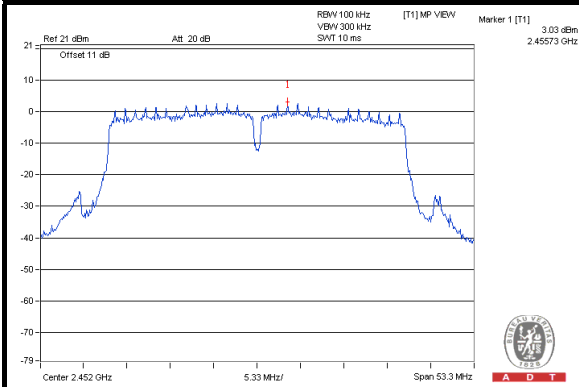
CH 3



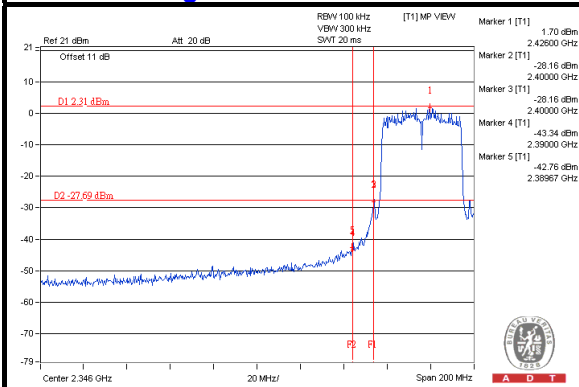
CH 6



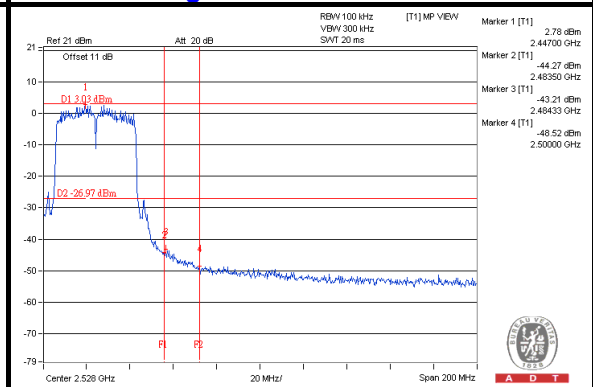
CH 9



CH 3 Band edge



CH 9 Band edge

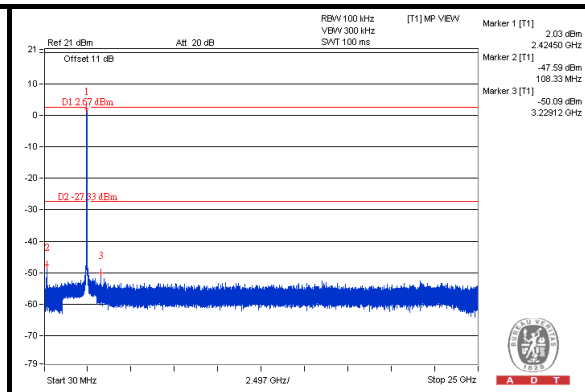
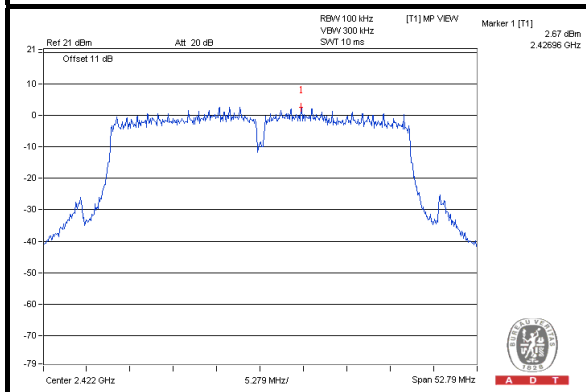




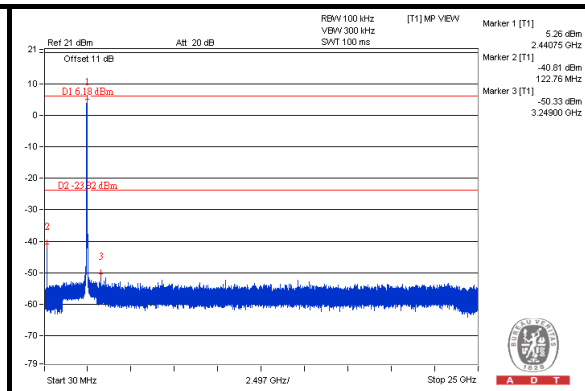
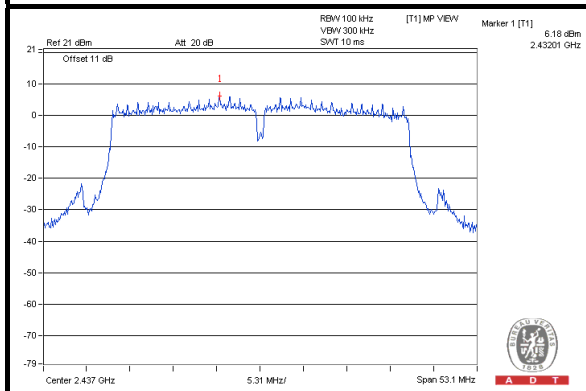
A D T

CHAIN 1

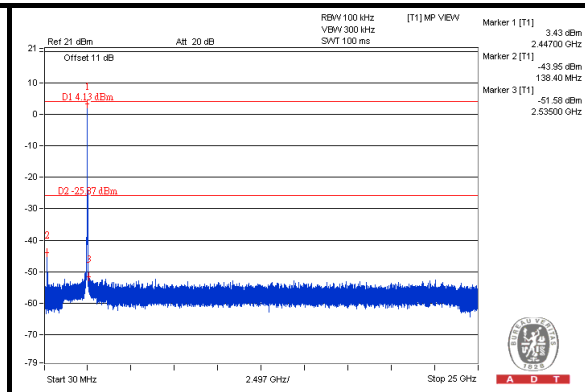
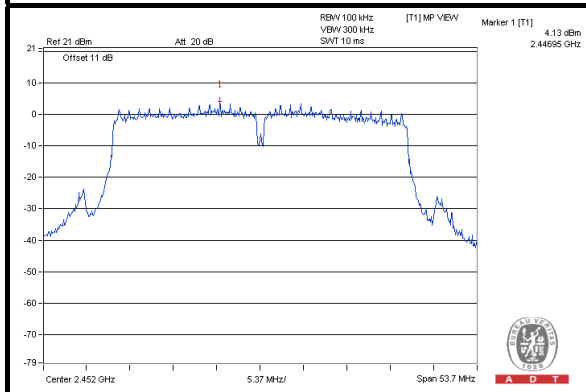
CH 3



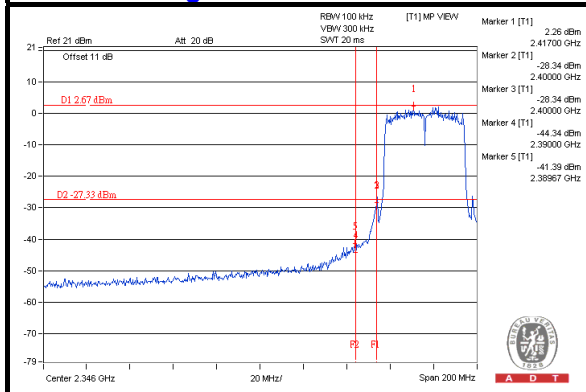
CH 6



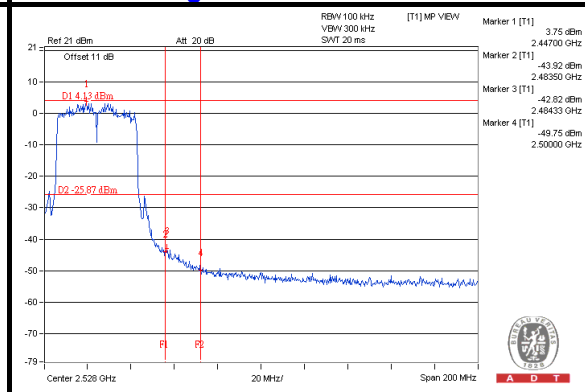
CH 9



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 30dB 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 30dB under any condition of modulation.



A D T

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.



A D T

5.1.7 TEST RESULTS

ABOVE 1GHz DATA :

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.7 PK	74.0	-15.3	1.20 H	350	53.40	5.30
2	5000.00	49.4 AV	54.0	-4.6	1.20 H	350	44.10	5.30
3	#5725.00	75.3 PK	76.2	-0.9	1.00 H	341	69.30	6.00
4	#5725.00	64.2 AV	65.1	-0.9	1.00 H	341	58.20	6.00
5	*5745.00	106.2 PK			1.00 H	18	67.70	38.50
6	*5745.00	95.1 AV			1.00 H	18	56.60	38.50
7	11490.00	60.3 PK	74.0	-13.7	1.12 H	305	41.30	19.00
8	11490.00	47.6 AV	54.0	-6.4	1.12 H	305	28.60	19.00
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	5000.00	60.9 PK	74.0	-13.1	1.12 V	360	55.60	5.30
2	5000.00	51.9 AV	54.0	-2.1	1.12 V	360	46.60	5.30
3	#5725.00	88.6 PK	89.5	-0.9	1.00 V	341	82.60	6.00
4	#5725.00	77.3 AV	78.2	-0.9	1.00 V	341	71.30	6.00
5	*5745.00	119.5 PK			1.00 V	337	81.00	38.50
6	*5745.00	108.2 AV			1.00 V	337	69.70	38.50
7	11160.00	61.9 PK	74.0	-12.1	1.25 V	95	43.60	18.30
8	11160.00	48.7 AV	54.0	-5.3	1.25 V	95	30.40	18.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.3 PK	74.0	-14.7	1.20 H	20	54.00	5.30
2	5000.00	49.8 AV	54.0	-4.2	1.20 H	20	44.50	5.30
3	*5785.00	110.8 PK			1.00 H	21	72.20	38.60
4	*5785.00	100.9 AV			1.00 H	21	62.30	38.60
5	11570.00	60.2 PK	74.0	-13.8	1.23 H	65	41.20	19.00
6	11570.00	47.6 AV	54.0	-6.4	1.23 H	65	28.60	19.00

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	5000.00	60.7 PK	74.0	-13.3	1.13 V	12	55.40	5.30
2	5000.00	51.8 AV	54.0	-2.2	1.13 V	12	46.50	5.30
3	*5785.00	122.8 PK			1.08 V	333	84.20	38.60
4	*5785.00	112.0 AV			1.08 V	333	73.40	38.60
5	11570.00	62.6 PK	74.0	-11.4	1.32 V	85	43.60	19.00
6	11570.00	49.1 AV	54.0	-4.9	1.32 V	85	30.10	19.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.0 PK	74.0	-16.0	1.60 H	30	52.70	5.30
2	5000.00	48.9 AV	54.0	-5.1	1.60 H	30	43.60	5.30
3	*5825.00	111.4 PK			1.00 H	19	72.70	38.70
4	*5825.00	99.4 AV			1.00 H	19	60.70	38.70
5	#5850.00	80.7 PK	81.4	-0.7	1.00 H	74	74.50	6.20
6	#5850.00	68.7 AV	69.4	-0.7	1.00 H	74	62.50	6.20
7	11650.00	60.1 PK	74.0	-13.9	1.25 H	98	41.20	18.90
8	11650.00	47.5 AV	54.0	-6.5	1.25 H	98	28.60	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.2 PK	74.0	-13.8	1.54 V	19	54.90	5.30
2	5000.00	51.2 AV	54.0	-2.8	1.54 V	19	45.90	5.30
3	*5825.00	122.2 PK			1.00 V	56	83.50	38.70
4	*5825.00	110.2 AV			1.00 V	56	71.50	38.70
5	#5850.00	91.5 PK	92.2	-0.7	1.00 V	74	85.30	6.20
6	#5850.00	79.5 AV	80.2	-0.7	1.00 V	74	73.30	6.20
7	11650.00	62.0 PK	74.0	-12.0	1.14 V	208	43.10	18.90
8	11650.00	49.4 AV	54.0	-4.6	1.14 V	208	30.50	18.90

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



A D T

802.11n (20MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.2 PK	74.0	-12.8	1.00 H	5	55.90	5.30
2	5000.00	53.1 AV	54.0	-0.9	1.00 H	5	47.80	5.30
3	#5725.00	86.4 PK	86.9	-0.5	1.12 H	344	47.90	38.50
4	#5725.00	75.5 AV	76.0	-0.5	1.12 H	344	37.00	38.50
5	*5745.00	116.9 PK			1.03 H	341	78.40	38.50
6	*5745.00	106.0 AV			1.03 H	341	67.50	38.50
7	11490.00	62.6 PK	74.0	-11.4	1.06 H	324	43.60	19.00
8	11490.00	49.6 AV	54.0	-4.4	1.06 H	324	30.60	19.00
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	5000.00	57.5 PK	74.0	-16.5	1.41 V	320	52.20	5.30
2	5000.00	47.4 AV	54.0	-6.6	1.41 V	320	42.10	5.30
3	#5725.00	79.4 PK	79.9	-0.5	1.12 V	344	40.90	38.50
4	#5725.00	68.6 AV	69.1	-0.5	1.12 V	344	30.10	38.50
5	*5745.00	109.9 PK			1.00 V	85	71.40	38.50
6	*5745.00	99.1 AV			1.00 V	85	60.60	38.50
7	11490.00	61.7 PK	74.0	-12.3	1.02 V	325	42.70	19.00
8	11490.00	47.8 AV	54.0	-6.2	1.02 V	325	28.80	19.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.5 PK	74.0	-13.5	1.00 H	4	55.20	5.30
2	5000.00	53.1 AV	54.0	-0.9	1.00 H	4	47.80	5.30
3	*5785.00	119.2 PK			1.02 H	340	80.60	38.60
4	*5785.00	108.3 AV			1.02 H	340	69.70	38.60
5	11570.00	63.5 PK	74.0	-10.5	1.59 H	263	44.50	19.00
6	11570.00	49.6 AV	54.0	-4.4	1.59 H	263	30.60	19.00
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	5000.00	57.4 PK	74.0	-16.6	1.00 V	226	52.10	5.30
2	5000.00	46.5 AV	54.0	-7.5	1.00 V	226	41.20	5.30
3	*5785.00	114.8 PK			1.23 V	82	76.20	38.60
4	*5785.00	103.6 AV			1.23 V	82	65.00	38.60
5	11570.00	61.3 PK	74.0	-12.7	1.02 V	111	42.30	19.00
6	11570.00	48.9 AV	54.0	-5.1	1.02 V	111	29.90	19.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.0 PK	74.0	-14.0	1.00 H	6	54.70	5.30
2	5000.00	53.5 AV	54.0	-0.5	1.00 H	6	48.20	5.30
3	*5825.00	120.0 PK			1.00 H	338	81.30	38.70
4	*5825.00	109.1 AV			1.00 H	338	70.40	38.70
5	#5850.00	89.1 PK	90.0	-0.9	1.10 H	336	50.40	38.70
6	#5850.00	78.2 AV	79.1	-0.9	1.10 H	336	39.50	38.70
7	11650.00	61.6 PK	74.0	-12.4	1.02 H	185	42.70	18.90
8	11650.00	50.1 AV	54.0	-3.9	1.02 H	185	31.20	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.8 PK	74.0	-15.2	1.00 V	226	53.50	5.30
2	5000.00	47.4 AV	54.0	-6.6	1.00 V	226	42.10	5.30
3	*5825.00	112.7 PK			1.00 V	83	74.00	38.70
4	*5825.00	102.0 AV			1.00 V	83	63.30	38.70
5	#5850.00	81.8 PK	82.7	-0.9	1.10 V	336	43.10	38.70
6	#5850.00	71.1 AV	72.0	-0.9	1.10 V	336	32.40	38.70
7	11650.00	62.2 PK	74.0	-11.8	1.02 V	147	43.30	18.90
8	11650.00	48.7 AV	54.0	-5.3	1.02 V	147	29.80	18.90

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- The limit value is defined as per 15.247.
- "#":The radiated frequency is out the restricted band.



A D T

802.11n (20MHz): 3TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.9 PK	74.0	-15.1	1.10 H	80	53.60	5.30
2	5000.00	47.6 AV	54.0	-6.4	1.10 H	80	42.30	5.30
3	#5725.00	84.0 PK	84.8	-0.8	1.00 H	344	78.00	6.00
4	#5725.00	73.0 AV	73.8	-0.8	1.00 H	344	67.00	6.00
5	*5745.00	114.8 PK			1.56 H	46	76.30	38.50
6	*5745.00	103.8 AV			1.56 H	46	65.30	38.50
7	11490.00	59.1 PK	74.0	-14.9	1.18 H	230	40.10	19.00
8	11490.00	47.6 AV	54.0	-6.4	1.18 H	230	28.60	19.00

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	5000.00	59.5 PK	74.0	-14.5	1.00 V	72	54.20	5.30
2	5000.00	50.5 AV	54.0	-3.5	1.00 V	72	45.20	5.30
3	#5725.00	90.6 PK	91.4	-0.8	1.00 V	344	84.60	6.00
4	#5725.00	78.2 AV	79.0	-0.8	1.00 V	344	72.20	6.00
5	*5745.00	121.4 PK			1.00 V	350	82.90	38.50
6	*5745.00	109.0 AV			1.00 V	350	70.50	38.50
7	11490.00	62.6 PK	74.0	-11.4	1.12 V	63	43.60	19.00
8	11490.00	49.3 AV	54.0	-4.7	1.12 V	63	30.30	19.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	57.6 PK	74.0	-16.4	1.10 H	80	52.30	5.30
2	5000.00	48.5 AV	54.0	-5.5	1.10 H	80	43.20	5.30
3	*5785.00	116.6 PK			1.43 H	25	78.00	38.60
4	*5785.00	104.9 AV			1.43 H	25	66.30	38.60
5	11570.00	60.0 PK	74.0	-14.0	1.20 H	45	41.00	19.00
6	11570.00	47.3 AV	54.0	-6.7	1.20 H	45	28.30	19.00
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	5000.00	57.8 PK	74.0	-16.2	1.81 V	70	52.50	5.30
2	5000.00	51.2 AV	54.0	-2.8	1.81 V	70	45.90	5.30
3	*5785.00	123.9 PK			1.00 V	351	85.30	38.60
4	*5785.00	113.6 AV			1.00 V	351	75.00	38.60
5	11570.00	62.5 PK	74.0	-11.5	1.32 V	58	43.50	19.00
6	11570.00	49.6 AV	54.0	-4.4	1.32 V	58	30.60	19.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.0 PK	74.0	-15.0	1.15 H	68	53.70	5.30
2	5000.00	48.7 AV	54.0	-5.3	1.15 H	68	43.40	5.30
3	*5825.00	117.5 PK			1.77 H	47	78.80	38.70
4	*5825.00	105.3 AV			1.77 H	47	66.60	38.70
5	#5850.00	86.2 PK	87.5	-1.3	1.00 H	72	80.00	6.20
6	#5850.00	74.0 AV	75.3	-1.3	1.00 H	72	67.80	6.20
7	11650.00	59.8 PK	74.0	-14.2	1.02 H	58	40.90	18.90
8	11650.00	47.6 AV	54.0	-6.4	1.02 H	58	28.70	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.1 PK	74.0	-15.9	1.02 V	327	52.80	5.30
2	5000.00	51.9 AV	54.0	-2.1	1.02 V	327	46.60	5.30
3	*5825.00	124.3 PK			1.08 V	335	85.60	38.70
4	*5825.00	111.6 AV			1.08 V	335	72.90	38.70
5	#5850.00	93.0 PK	94.3	-1.3	1.00 V	72	86.80	6.20
6	#5850.00	80.3 AV	81.6	-1.3	1.00 V	72	74.10	6.20
7	11650.00	62.5 PK	74.0	-11.5	1.14 V	230	43.60	18.90
8	11650.00	51.4 AV	54.0	-2.6	1.14 V	230	32.50	18.90

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



A D T

802.11n (40MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.6 PK	74.0	-13.4	1.00 H	6	55.30	5.30
2	5000.00	53.1 AV	54.0	-0.9	1.00 H	6	47.80	5.30
3	#5725.00	81.9 PK	82.7	-0.8	1.13 H	344	43.40	38.50
4	#5725.00	70.8 AV	71.6	-0.8	1.13 H	344	32.30	38.50
5	*5755.00	112.7 PK			1.03 H	341	74.10	38.60
6	*5755.00	101.6 AV			1.03 H	341	63.00	38.60
7	11510.00	61.2 PK	74.0	-12.8	1.06 H	158	42.20	19.00
8	11510.00	50.3 AV	54.0	-3.7	1.06 H	158	31.30	19.00

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	5000.00	58.9 PK	74.0	-15.1	1.03 V	266	53.60	5.30
2	5000.00	47.9 AV	54.0	-6.1	1.03 V	266	42.60	5.30
3	#5725.00	76.6 PK	77.4	-0.8	1.13 V	344	38.10	38.50
4	#5725.00	65.4 AV	66.2	-0.8	1.13 V	344	26.90	38.50
5	*5755.00	107.4 PK			1.57 V	253	68.80	38.60
6	*5755.00	96.2 AV			1.57 V	253	57.60	38.60
7	11650.00	60.9 PK	74.0	-13.1	1.62 V	84	42.00	18.90
8	11650.00	47.7 AV	54.0	-6.3	1.62 V	84	28.80	18.90

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
5. “ * “: Fundamental frequency.
6. The limit value is defined as per 15.247.
7. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.0 PK	74.0	-13.0	1.00 H	4	55.70	5.30
2	5000.00	53.3 AV	54.0	-0.7	1.00 H	4	48.00	5.30
3	*5795.00	117.3 PK			1.10 H	339	78.70	38.60
4	*5795.00	105.9 AV			1.10 H	339	67.30	38.60
5	#5850.00	86.7 PK	87.3	-0.6	1.00 H	339	48.00	38.70
6	#5850.00	75.3 AV	75.9	-0.6	1.00 H	339	36.60	38.70
7	11590.00	61.9 PK	74.0	-12.1	1.00 H	154	42.90	19.00
8	11590.00	50.7 AV	54.0	-3.3	1.00 H	154	31.70	19.00
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	5000.00	59.0 PK	74.0	-15.0	1.02 V	225	53.70	5.30
2	5000.00	47.5 AV	54.0	-6.5	1.02 V	225	42.20	5.30
3	*5795.00	111.1 PK			1.22 V	81	72.50	38.60
4	*5795.00	100.5 AV			1.22 V	81	61.90	38.60
5	#5850.00	80.5 PK	81.1	-0.6	1.00 V	339	41.80	38.70
6	#5850.00	69.9 AV	70.5	-0.6	1.00 V	339	31.20	38.70
7	11590.00	61.4 PK	74.0	-12.6	1.02 V	31	42.40	19.00
8	11590.00	46.6 AV	54.0	-7.4	1.02 V	31	27.60	19.00

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



A D T

802.11n (40MHz): 3TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.3 PK	74.0	-14.7	1.58 H	96	54.00	5.30
2	5000.00	48.9 AV	54.0	-5.1	1.58 H	96	43.60	5.30
3	#5725.00	82.2 PK	83.1	-0.9	1.22 H	343	76.20	6.00
4	#5725.00	70.7 AV	71.7	-1.0	1.22 H	343	64.70	6.00
5	*5755.00	113.1 PK			1.47 H	45	74.50	38.60
6	*5755.00	101.7 AV			1.47 H	45	63.10	38.60
7	11510.00	60.5 PK	74.0	-13.5	1.25 H	74	41.50	19.00
8	11510.00	47.1 AV	54.0	-6.9	1.25 H	74	28.10	19.00
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	5000.00	59.9 PK	74.0	-14.1	1.09 V	71	54.60	5.30
2	5000.00	50.4 AV	54.0	-3.6	1.09 V	71	45.10	5.30
3	#5725.00	86.9 PK	87.9	-1.0	1.22 V	343	80.90	6.00
4	#5725.00	74.0 AV	75.0	-1.0	1.22 V	343	68.00	6.00
5	*5755.00	117.9 PK			1.00 V	344	79.30	38.60
6	*5755.00	105.0 AV			1.00 V	344	66.40	38.60
7	11510.00	62.5 PK	74.0	-11.5	1.32 V	69	43.50	19.00
8	11510.00	49.5 AV	54.0	-4.5	1.32 V	69	30.50	19.00

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- The limit value is defined as per 15.247.
- "#":The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	113.9 PK			1.54 H	44	75.30	38.60
2	*5795.00	104.2 AV			1.54 H	44	65.60	38.60
3	#5850.00	77.4 PK	83.9	-6.5	1.00 H	74	71.20	6.20
4	#5850.00	67.7 AV	74.2	-6.5	1.00 H	74	61.50	6.20
5	11590.00	60.3 PK	74.0	-13.7	1.32 H	58	41.30	19.00
6	11590.00	47.1 AV	54.0	-6.9	1.32 H	58	28.10	19.00

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	*5795.00	120.8 PK			1.00 V	343	82.20	38.60
2	*5795.00	107.5 AV			1.00 V	343	68.90	38.60
3	#5850.00	84.3 PK	90.8	-6.5	1.00 V	74	78.10	6.20
4	#5850.00	71.0 AV	77.5	-6.5	1.00 V	74	64.80	6.20
5	11590.00	56.2 PK	74.0	-17.8	1.05 V	98	37.20	19.00
6	11590.00	49.4 AV	54.0	-4.6	1.05 V	98	30.40	19.00

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



A D T

802.11ac (80MHz): 1TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.4 PK	74.0	-13.6	1.00 H	6	55.10	5.30
2	5000.00	53.0 AV	54.0	-1.0	1.00 H	6	47.70	5.30
3	#5725.00	78.9 PK	79.4	-0.5	1.11 H	344	40.40	38.50
4	#5725.00	67.2 AV	67.7	-0.5	1.11 H	344	28.70	38.50
5	*5775.00	109.4 PK			1.01 H	341	70.80	38.60
6	*5775.00	97.7 AV			1.01 H	341	59.10	38.60
7	#5850.00	73.5 PK	79.4	-5.9	1.09 H	339	34.80	38.70
8	#5850.00	61.9 AV	67.7	-5.8	1.09 H	339	23.20	38.70
9	11550.00	64.6 PK	74.0	-9.4	1.05 H	335	45.60	19.00
10	11550.00	50.2 AV	54.0	-3.8	1.05 H	335	31.20	19.00

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	5000.00	58.9 PK	74.0	-15.1	1.02 V	174	53.60	5.30
2	5000.00	47.8 AV	54.0	-6.2	1.02 V	174	42.50	5.30
3	#5725.00	72.1 PK	72.6	-0.5	1.11 V	360	33.60	38.50
4	#5725.00	60.6 AV	61.1	-0.5	1.11 V	360	22.10	38.50
5	*5775.00	102.6 PK			1.24 V	84	64.00	38.60
6	*5775.00	91.1 AV			1.24 V	84	52.50	38.60
7	#5850.00	66.8 PK	72.6	-5.8	1.09 V	339	28.10	38.70
8	#5850.00	55.2 AV	61.1	-5.9	1.09 V	339	16.50	38.70
9	11550.00	60.8 PK	74.0	-13.2	1.09 V	222	41.80	19.00
10	11550.00	47.5 AV	54.0	-6.5	1.09 V	222	28.50	19.00

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- The limit value is defined as per 15.247.
- "#":The radiated frequency is out the restricted band.



A D T

802.11ac (80MHz): 3TX

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5133.00	52.3 PK	74.0	-21.7	1.41 H	43	47.20	5.10
2	5133.00	47.7 AV	54.0	-6.3	1.41 H	43	42.60	5.10
3	#5725.00	69.2 PK	75.2	-6.0	1.54 H	50	63.20	6.00
4	#5725.00	59.5 AV	65.5	-6.0	1.54 H	50	53.50	6.00
5	*5775.00	105.2 PK			1.55 H	50	66.60	38.60
6	*5775.00	95.5 AV			1.55 H	50	56.90	38.60
7	#5850.00	59.2 PK	75.2	-16.0	1.54 H	50	53.00	6.20
8	#5850.00	49.5 AV	65.5	-16.0	1.54 H	50	43.30	6.20
9	11550.00	60.3 PK	74.0	-13.7	1.00 H	44	41.30	19.00
10	11550.00	49.6 AV	54.0	-4.4	1.00 H	44	30.60	19.00

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	5133.00	56.1 PK	74.0	-17.9	1.00 V	345	51.00	5.10
2	5133.00	53.1 AV	54.0	-0.9	1.00 V	345	48.00	5.10
3	#5725.00	72.5 PK	81.5	-9.0	1.00 V	345	66.50	6.00
4	#5725.00	64.8 AV	70.8	-6.0	1.00 V	345	58.80	6.00
5	*5775.00	111.5 PK			1.00 V	345	72.90	38.60
6	*5775.00	100.8 AV			1.00 V	345	62.20	38.60
7	#5850.00	65.5 PK	81.5	-16.0	1.00 V	345	59.30	6.20
8	#5850.00	54.8 AV	70.8	-16.0	1.00 V	345	48.60	6.20
9	11550.00	59.8 PK	74.0	-14.2	1.00 V	107	40.80	19.00
10	11550.00	48.2 AV	54.0	-5.8	1.00 V	107	29.20	19.00

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- The limit value is defined as per 15.247.
- "#":The radiated frequency is out the restricted band.



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	258.87	38.8 QP	46.0	-7.2	1.35 H	233	52.80	-14.00
2	319.02	36.6 QP	46.0	-9.4	1.00 H	298	48.60	-12.00
3	375.29	37.7 QP	46.0	-8.3	1.25 H	129	48.70	-11.00
4	625.60	35.7 QP	46.0	-10.3	1.00 H	233	41.40	-5.70
5	705.16	37.2 QP	46.0	-8.8	1.50 H	220	41.90	-4.70
6	802.18	34.7 QP	46.0	-11.3	1.50 H	190	37.30	-2.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	270.51	32.7 QP	46.0	-13.3	1.25 V	24	45.90	-13.20
2	375.29	37.5 QP	46.0	-8.5	1.00 V	179	48.50	-11.00
3	480.07	34.7 QP	46.0	-11.3	1.50 V	321	43.60	-8.90
4	559.63	33.6 QP	46.0	-12.4	1.50 V	345	41.20	-7.60
5	720.68	32.1 QP	46.0	-13.9	1.00 V	182	36.50	-4.40
6	961.29	38.0 QP	54.0	-16.0	1.50 V	7	37.80	0.20

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	258.87	38.2 QP	46.0	-7.8	1.25 H	259	52.20	-14.00
2	319.02	35.5 QP	46.0	-10.5	1.00 H	308	47.50	-12.00
3	375.29	37.8 QP	46.0	-8.2	1.50 H	126	48.80	-11.00
4	625.60	35.8 QP	46.0	-10.2	1.50 H	220	41.50	-5.70
5	705.16	37.1 QP	46.0	-8.9	1.00 H	216	41.80	-4.70
6	833.23	34.5 QP	46.0	-11.5	1.50 H	209	36.60	-2.10

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	258.87	34.2 QP	46.0	-11.8	1.25 V	21	48.20	-14.00
2	375.29	37.6 QP	46.0	-8.4	1.00 V	176	48.60	-11.00
3	499.48	34.4 QP	46.0	-11.6	1.50 V	335	42.90	-8.50
4	559.63	34.3 QP	46.0	-11.7	1.25 V	353	41.90	-7.60
5	705.16	31.6 QP	46.0	-14.4	1.00 V	180	36.30	-4.70
6	875.91	33.4 QP	46.0	-12.6	1.55 V	163	34.90	-1.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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 (dB μ V)	
	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

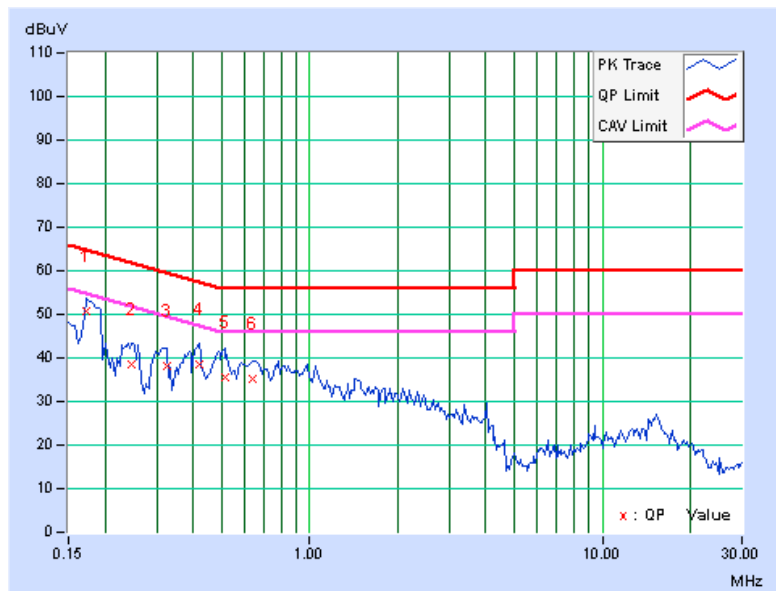
CONDUCTED WORST-CASE DATA : 802.11n(20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.16	50.75	37.91	50.91	38.07	64.79	54.79	-13.89	-16.73
2	0.24766	0.18	38.26	23.77	38.44	23.95	61.84	51.84	-23.40	-27.89
3	0.32578	0.20	37.94	19.04	38.14	19.24	59.56	49.56	-21.41	-30.31
4	0.41953	0.23	38.44	28.14	38.67	28.37	57.46	47.46	-18.79	-19.09
5	0.51328	0.23	35.31	17.66	35.54	17.89	56.00	46.00	-20.46	-28.11
6	0.63828	0.24	34.77	27.35	35.01	27.59	56.00	46.00	-20.99	-18.41

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.





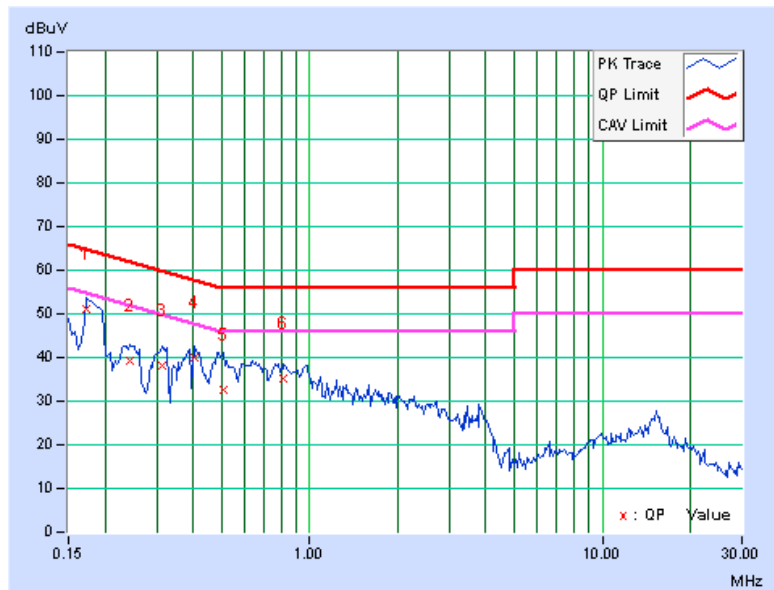
A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.17	50.83	37.65	51.00	37.82	64.79	54.79	-13.80	-16.98
2	0.24375	0.19	39.01	29.79	39.20	29.98	61.97	51.97	-22.77	-21.99
3	0.31406	0.21	38.05	24.11	38.26	24.32	59.86	49.86	-21.60	-25.54
4	0.40391	0.24	39.77	27.81	40.01	28.05	57.77	47.77	-17.76	-19.72
5	0.50938	0.24	32.52	23.15	32.76	23.39	56.00	46.00	-23.24	-22.61
6	0.81797	0.25	34.99	26.49	35.24	26.74	56.00	46.00	-20.76	-19.26

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.





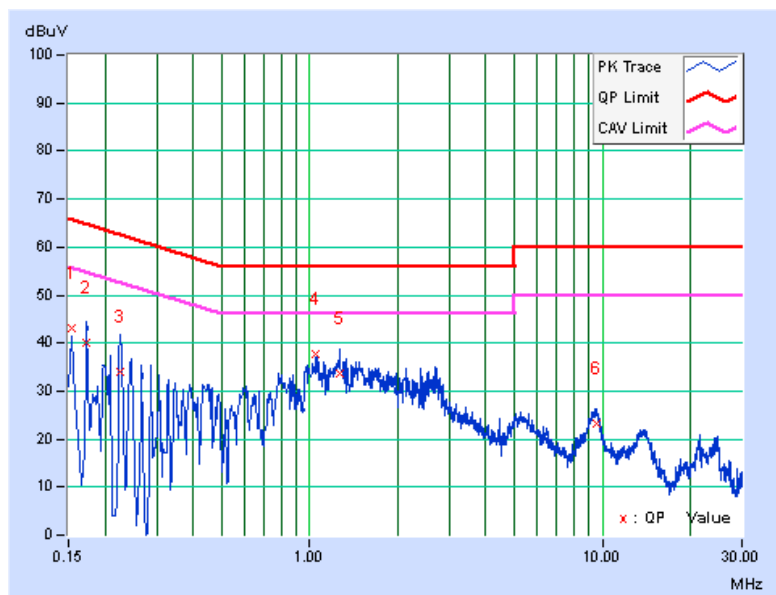
A D T

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.16	42.94	28.17	43.10	28.33	65.79	55.79	-22.69	-27.46
2	0.17346	0.16	40.00	11.36	40.16	11.52	64.79	54.79	-24.64	-43.28
3	0.22434	0.17	33.91	11.44	34.08	11.61	62.66	52.66	-28.58	-41.05
4	1.05248	0.25	37.37	33.64	37.62	33.89	56.00	46.00	-18.38	-12.11
5	1.26826	0.26	33.32	27.43	33.58	27.69	56.00	46.00	-22.42	-18.31
6	9.53400	0.70	22.42	16.48	23.12	17.18	60.00	50.00	-36.88	-32.82

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.





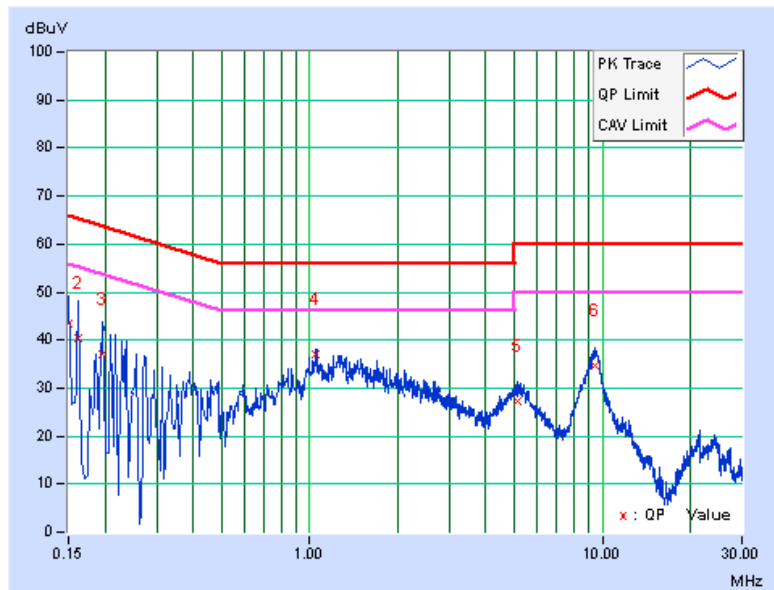
A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.16	43.31	32.07	43.47	32.23	66.00	56.00	-22.53	-23.77
2	0.16181	0.17	40.21	13.25	40.38	13.42	65.37	55.37	-24.99	-41.95
3	0.19692	0.17	36.94	24.22	37.11	24.39	63.74	53.74	-26.63	-29.35
4	1.05346	0.25	36.89	32.97	37.14	33.22	56.00	46.00	-18.86	-12.78
5	5.15871	0.42	26.89	21.81	27.31	22.23	60.00	50.00	-32.69	-27.77
6	9.40497	0.58	34.12	28.92	34.70	29.50	60.00	50.00	-25.30	-20.50

REMARKS:

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





5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

5.3.2 TEST SETUP

Same as item 4.3.2.

5.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.3.4 TEST PROCEDURE

Same as item 4.3.4.

5.3.5 DEVIATION FROM TEST STANDARD

No deviation.

5.3.6 EUT OPERATING CONDITIONS

Same as item 4.3.6.



5.3.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.41	0.5	PASS
157	5785	16.40	0.5	PASS
165	5825	16.41	0.5	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.41	0.5	PASS
157	5785	16.42	0.5	PASS
165	5825	16.42	0.5	PASS

802.11n (20MHz): 3TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	17.64	17.68	17.66	0.5	PASS
157	5785	17.65	17.68	17.68	0.5	PASS
165	5825	17.66	17.67	17.65	0.5	PASS

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	36.12	0.5	PASS
159	5795	36.47	0.5	PASS



A D T

802.11n (40MHz): 3TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
151	5755	36.36	36.47	36.43	0.5	PASS
159	5795	36.50	36.51	36.52	0.5	PASS

802.11ac (80MHz): 1TX

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	76.36	0.5	PASS

802.11ac (80MHz): 3TX

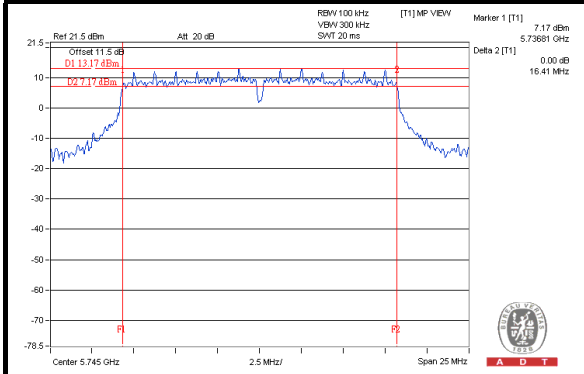
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
155	5775	76.20	76.24	75.88	0.5	PASS



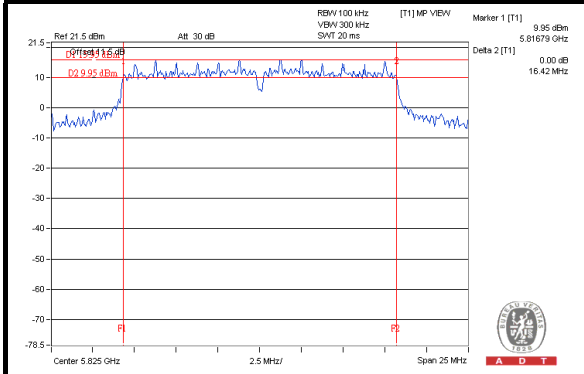
A D T

SPECTRUM PLOT OF WORST VALUE

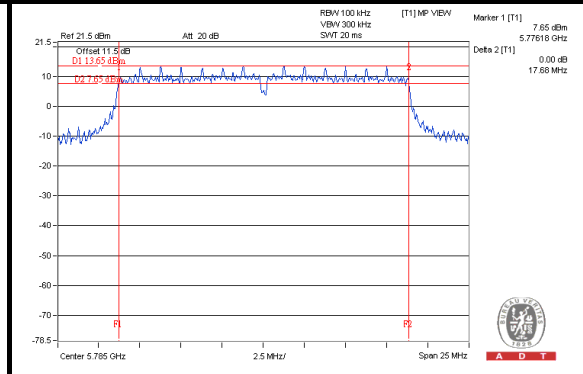
802.11a



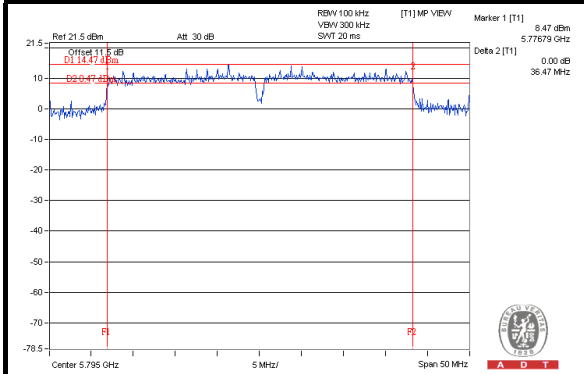
802.11n (20MHz): 1TX



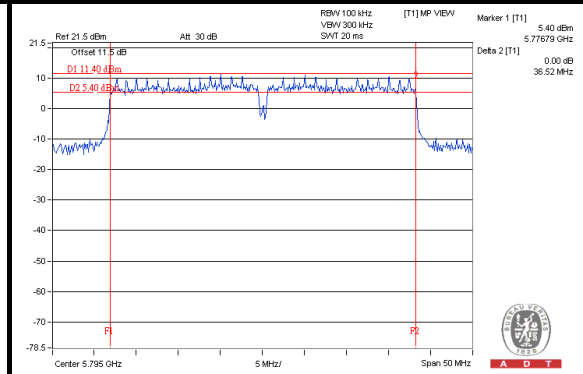
802.11n (20MHz): 3TX



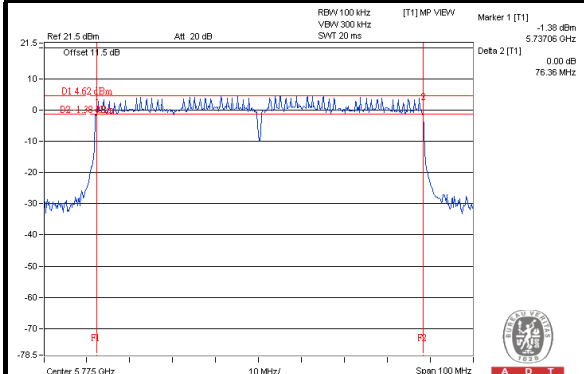
802.11n (40MHz): 1TX



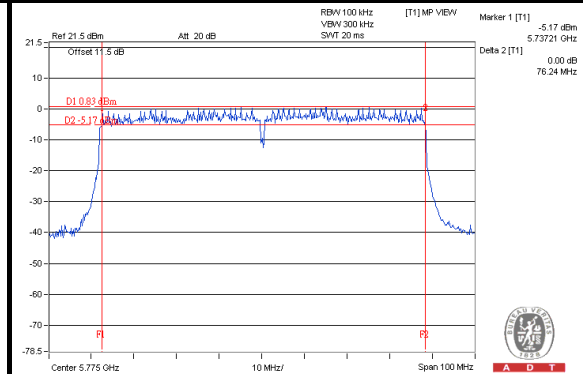
802.11n (40MHz): 3TX



802.11ac (80MHz): 1TX



802.11ac (80MHz): 3TX



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 $NANT \leq 4$;

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

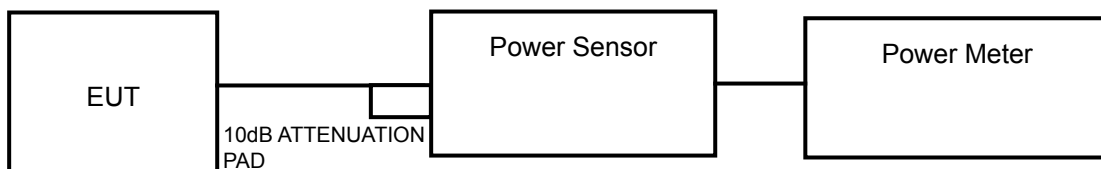
Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

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

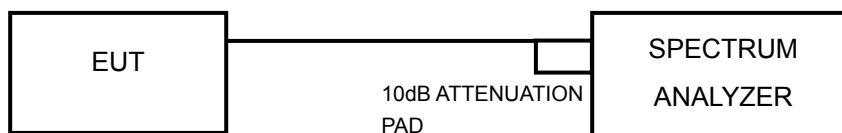
5.4.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)



For 802.11ac (80MHz)



5.4.3 INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.



5.4.4 TEST PROCEDURES

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

For 802.11ac (80MHz)

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

- 1) Set the RBW = 1 MHz.
- 2) Set the VBW \geq 3 RBW.
- 3) Set the span \geq 1.5 x DTS bandwidth.
- 4) Detector = peak.
- 5) Sweep time = auto couple.
- 6) Trace mode = max hold.
- 7) Allow trace to fully stabilize.
- 8) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

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

FOR AVERAGE POWER

802.11a

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	248.313	23.95	30	PASS
157	5785	497.737	26.97	30	PASS
165	5825	469.894	26.72	30	PASS

802.11n (20MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	197.697	22.96	30	PASS
157	5785	540.754	27.33	30	PASS
165	5825	335.738	25.26	30	PASS

802.11n (20MHz): 3TX

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	21.66	21.65	21.55	435.662	26.39	30	PASS
157	5785	25.25	24.85	24.22	904.698	29.57	30	PASS
165	5825	25.47	24.78	24.13	911.800	29.60	30	PASS

802.11n (40MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
151	5755	132.130	21.21	30	PASS
159	5795	526.017	27.21	30	PASS



A D T

802.11n (40MHz): 3TX

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	21.10	20.78	20.82	369.280	25.67	30	PASS
159	5795	25.33	24.41	24.62	906.985	29.58	30	PASS

802.11ac (80MHz): 1TX

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
155	5775	110.408	20.43	30	PASS

802.11ac (80MHz): 3TX

CHAN.	FREQ. (MHz)	AVG. POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
155	5775	18.17	17.77	18.14	190.619	22.80	30	PASS



A D T

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST SETUP

Same as item 4.5.2.

5.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.5.4 TEST PROCEDURE.

Same as item 4.5.4.

5.5.5 DEVIATION FROM TEST STANDARD

No deviation.

5.5.6 EUT OPERATING CONDITION

Same as item 4.3.6.



5.5.7 TEST RESULTS

802.11a

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-7.33	8	PASS
157	5785	-4.90	8	PASS
165	5825	-5.66	8	PASS

802.11n (20MHz): 1TX

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-8.69	8	PASS
157	5785	-3.97	8	PASS
165	5825	-5.45	8	PASS

802.11n (20MHz): 3TX

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	-9.12	4.77	-4.35	6.23	PASS
	157	5785	-4.73	4.77	0.04	6.23	PASS
	165	5825	-4.12	4.77	0.65	6.23	PASS
1	149	5745	-11.40	4.77	-6.63	6.23	PASS
	157	5785	-7.95	4.77	-3.18	6.23	PASS
	165	5825	-7.96	4.77	-3.19	6.23	PASS
2	149	5745	-11.28	4.77	-6.51	6.23	PASS
	157	5785	-8.09	4.77	-3.32	6.23	PASS
	165	5825	-8.22	4.77	-3.45	6.23	PASS

NOTE: Directional gain = $3\text{dBi} + 10\log(3) = 7.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (7.77 - 6) = 6.23\text{dBm}$.

802.11n (40MHz): 1TX

Channel	Freq. (MHz)	PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-14.82	0.09	-14.73	8	PASS
159	5795	-7.89	0.09	-7.80	8	PASS



802.11n (40MHz): 3TX

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-11.69	4.77	-6.92	0.09	-6.83	6.23	PASS
	159	5795	-8.38	4.77	-3.61	0.09	-3.52	6.23	PASS
1	151	5755	-14.65	4.77	-9.88	0.09	-9.79	6.23	PASS
	159	5795	-10.62	4.77	-5.85	0.09	-5.76	6.23	PASS
2	151	5755	-14.20	4.77	-9.43	0.09	-9.34	6.23	PASS
	159	5795	-10.74	4.77	-5.97	0.09	-5.88	6.23	PASS

NOTE: Directional gain = 3dBi + 10log(3) = 7.77dBi > 6dBi , so the power density limit shall be reduced to 8-(7.77-6) = 6.23dBm.

802.11ac (80MHz): 1TX

Channel	Freq. (MHz)	PSD W/O DUTY FACTOR (dBm/3kHz)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
155	5775	-15.82	0.23	-15.59	8	PASS

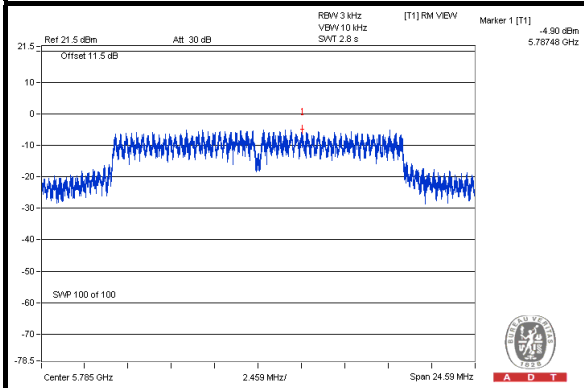
802.11ac (80MHz): 3TX

TX chain	Chan.	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	Limit (dBm/3kHz)	PASS /FAIL
0	155	5775	-14.70	4.77	-9.93	0.23	-9.70	6.23	PASS
1	155	5775	-20.93	4.77	-16.16	0.23	-15.93	6.23	PASS
2	155	5775	-20.68	4.77	-15.91	0.23	-15.68	6.23	PASS

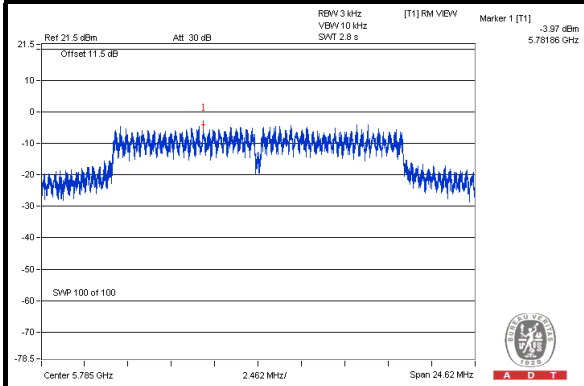
NOTE: Directional gain = 3dBi + 10log(3) = 7.77dBi > 6dBi , so the power density limit shall be reduced to 8-(7.77-6) = 6.23dBm.

SPECTRUM PLOT OF WORST VALUE

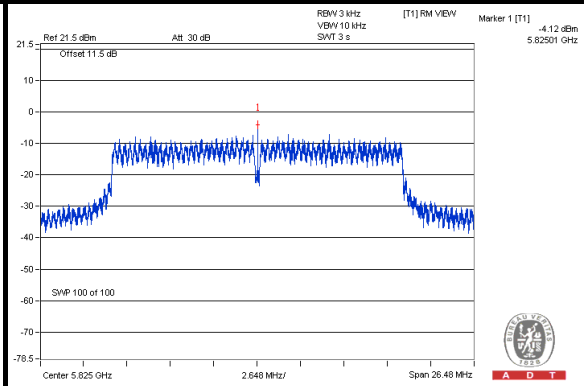
802.11a



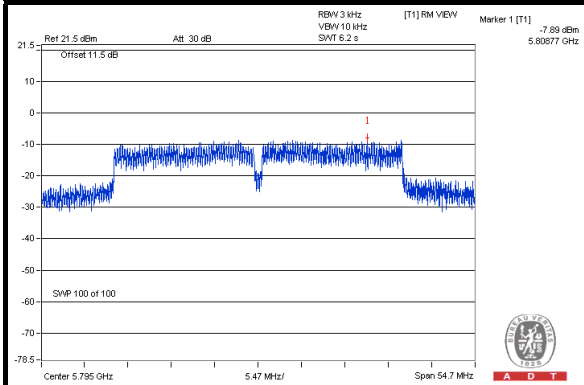
802.11n (20MHz): 1TX



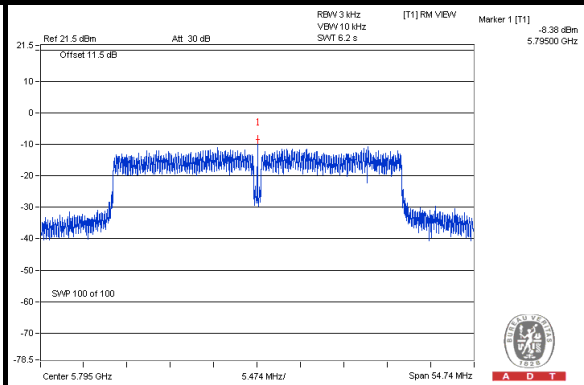
802.11n (20MHz): 3TX



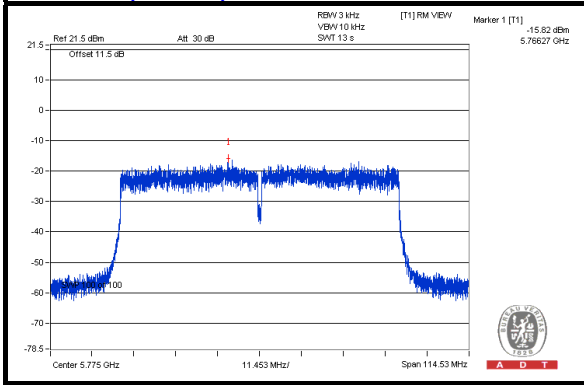
802.11n (40MHz): 1TX



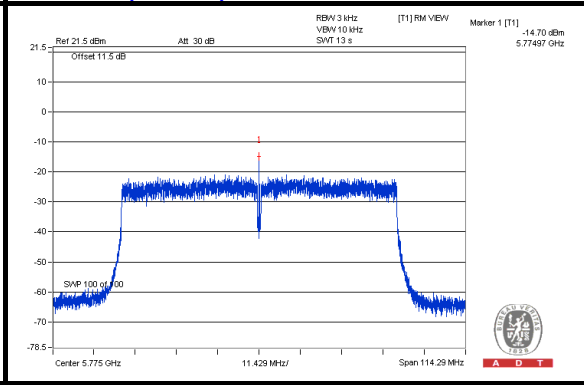
802.11n (40MHz): 3TX



802.11ac (80MHz): 1TX



802.11ac (80MHz): 3TX





5.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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

5.6.2 TEST SETUP

Same as Item 4.6.2

5.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

5.6.4 TEST PROCEDURE

Same as Item 4.6.4

5.6.5 DEVIATION FROM TEST STANDARD

No deviation.

5.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.7 TEST RESULTS

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

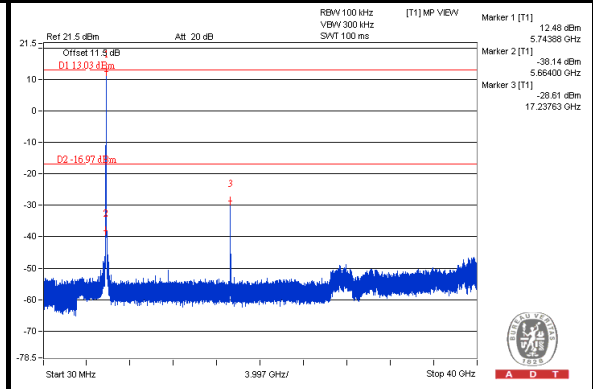
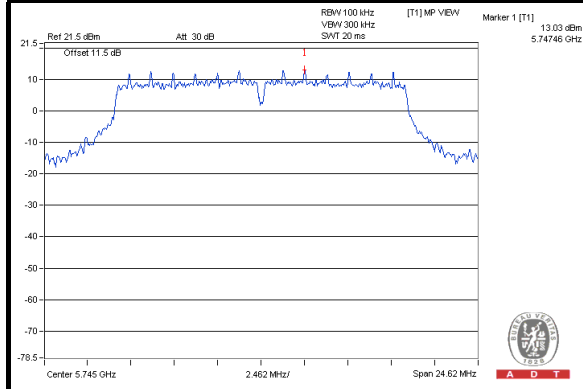
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.



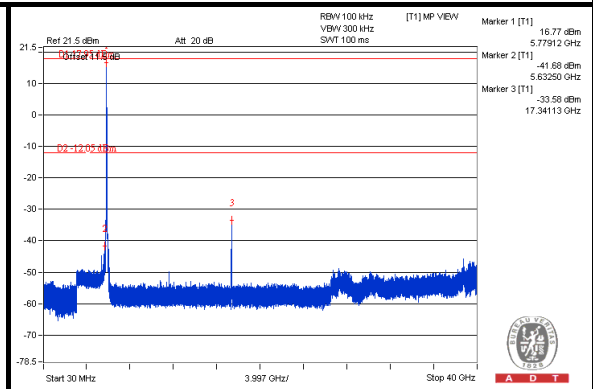
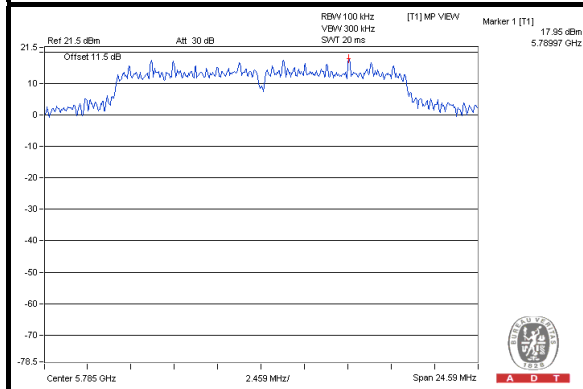
A D T

802.11a

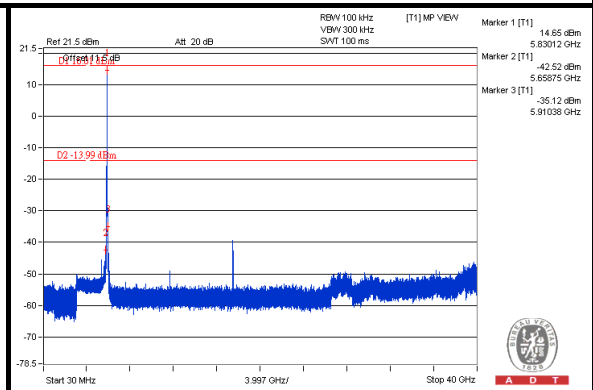
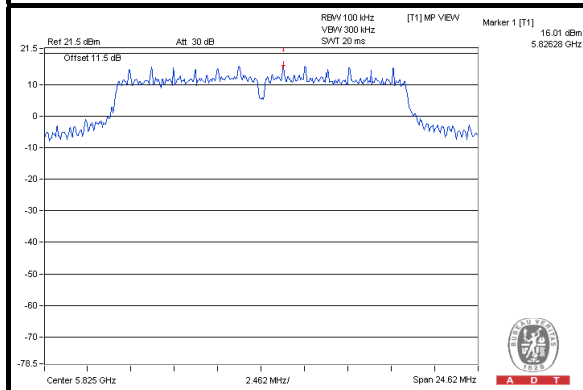
CH 149



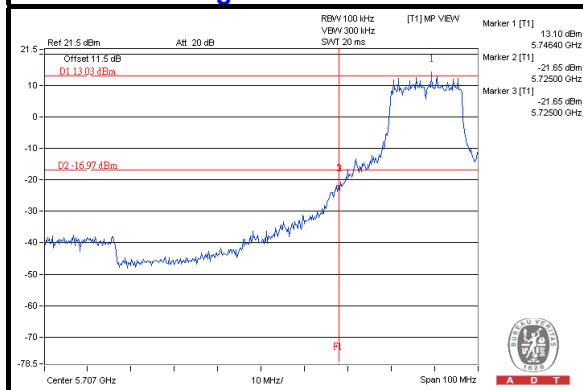
CH 157



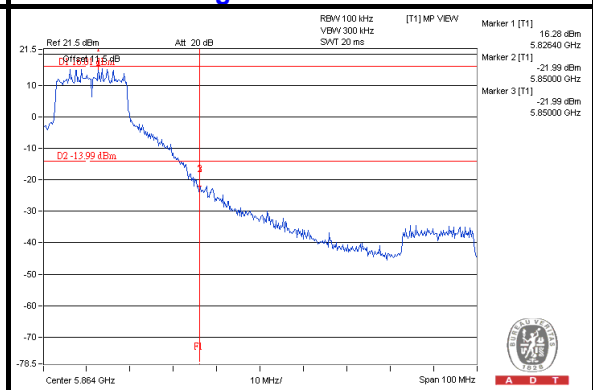
CH 165



CH 149 Band edge



CH 165 Band edge

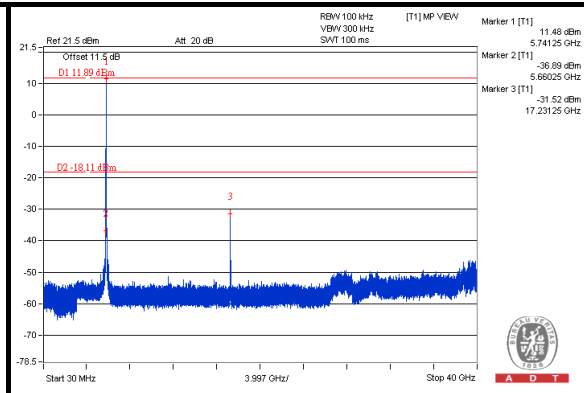
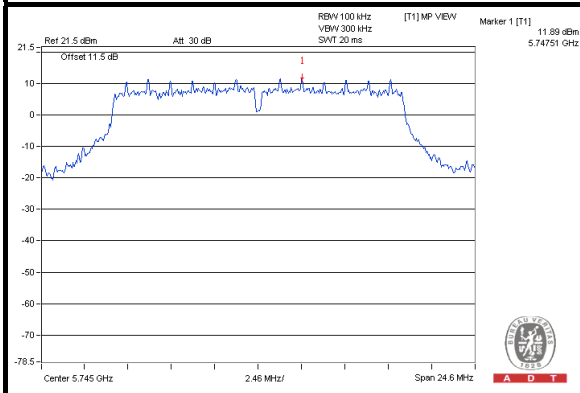




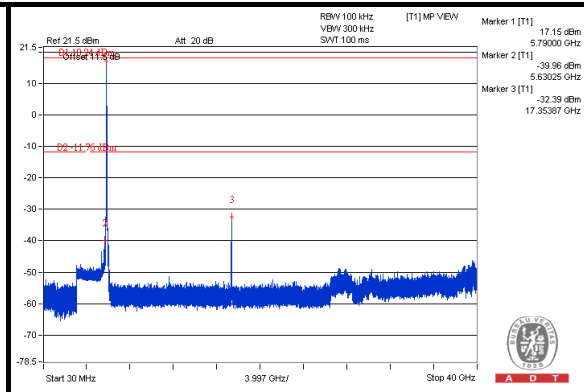
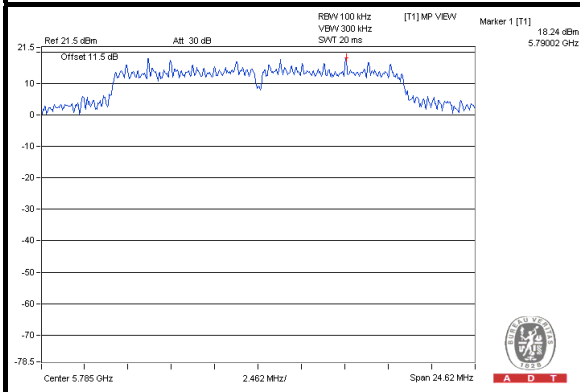
A D T

802.11n (20MHz): 1TX

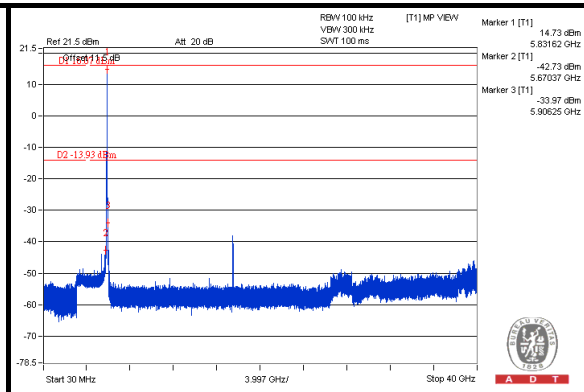
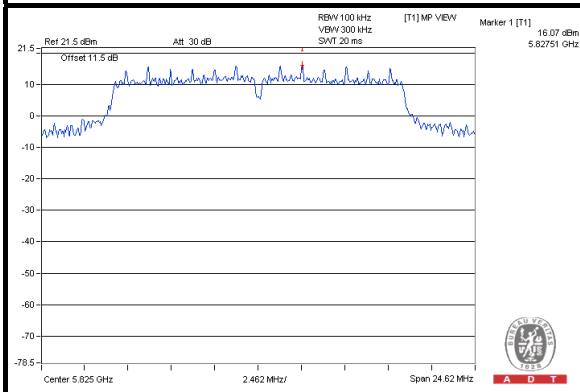
CH 149



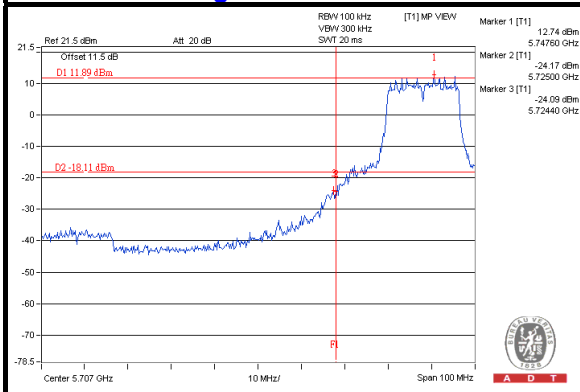
CH 157



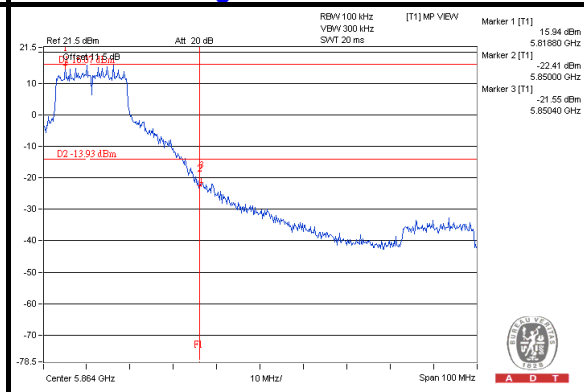
CH 165



CH 149 Band edge



CH 165 Band edge

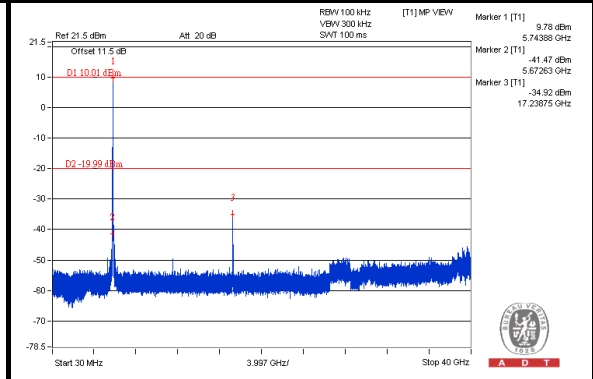
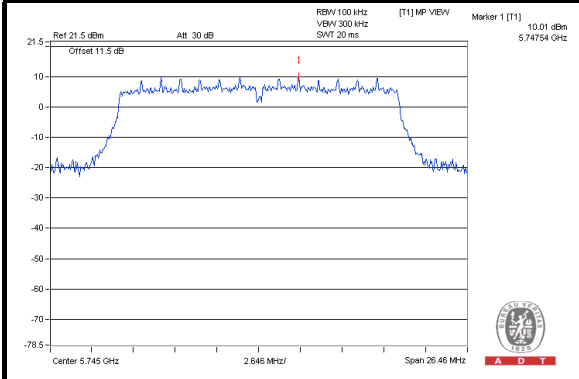




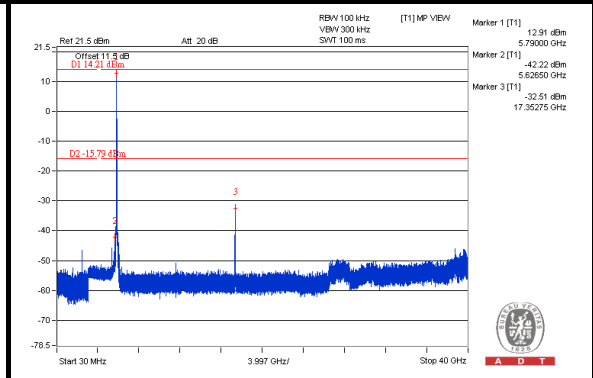
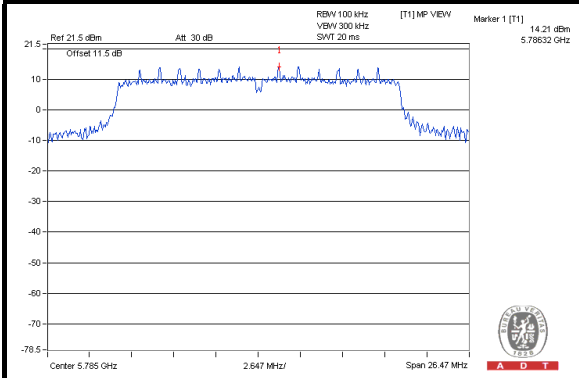
A D T

802.11n (20MHz): 3TX CHAIN 0

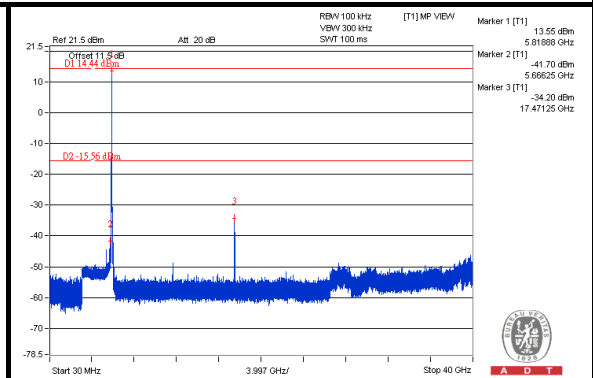
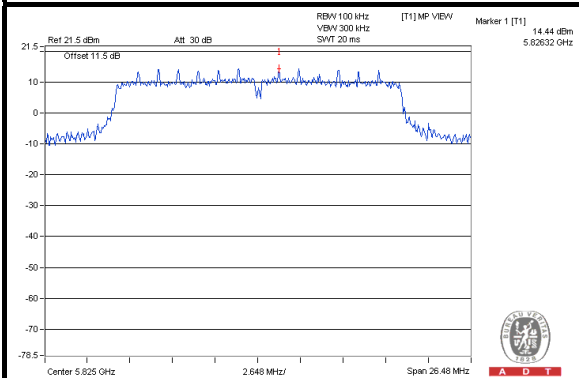
CH 149



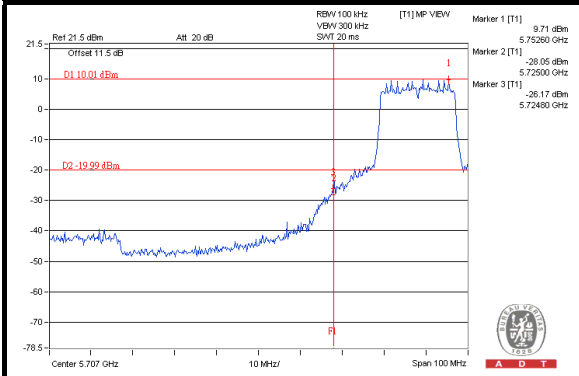
CH 157



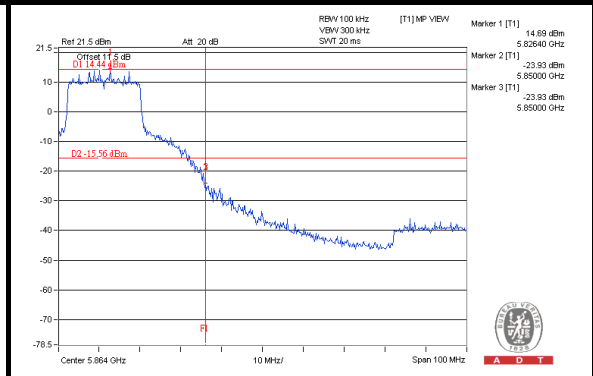
CH 165



CH 149 Band edge



CH 165 Band edge

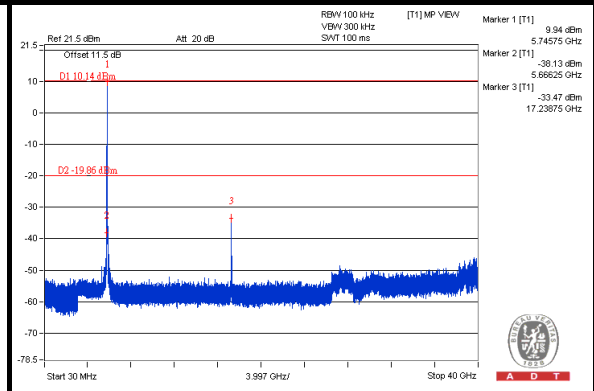
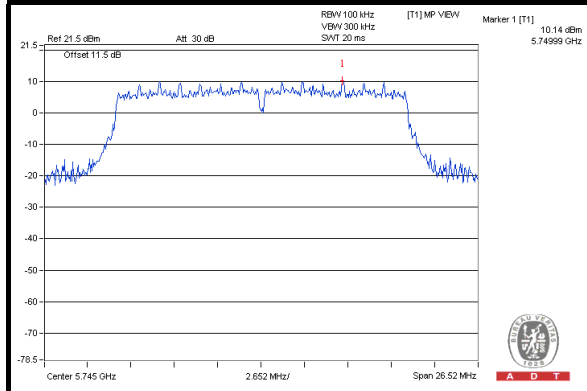




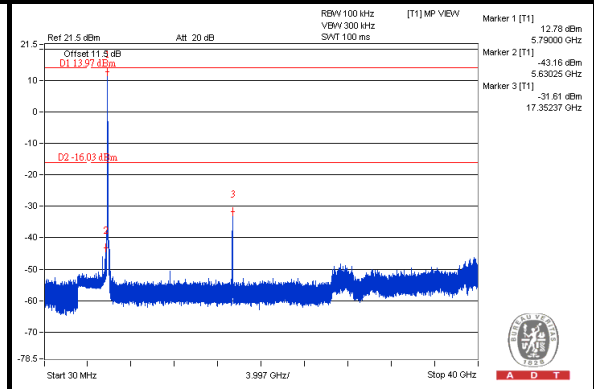
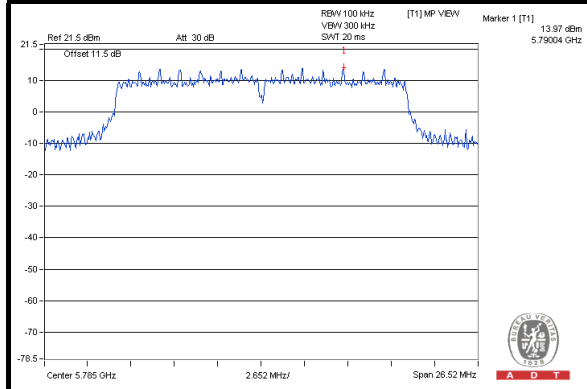
A D T

CHAIN 1

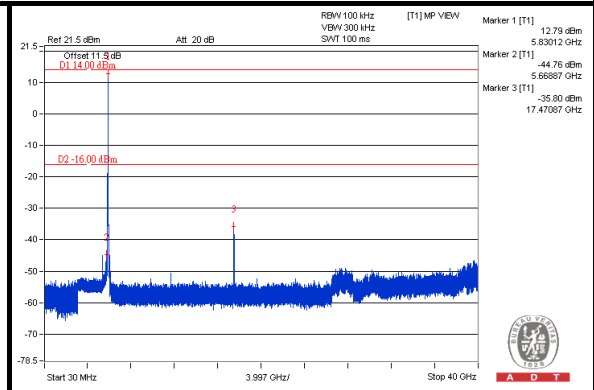
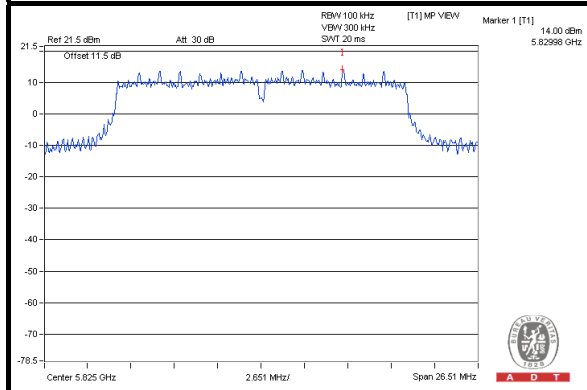
CH 149



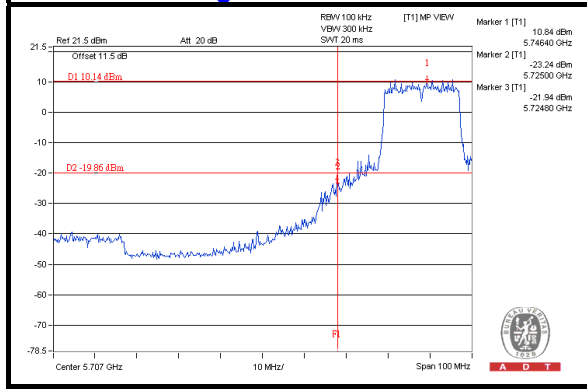
CH 157



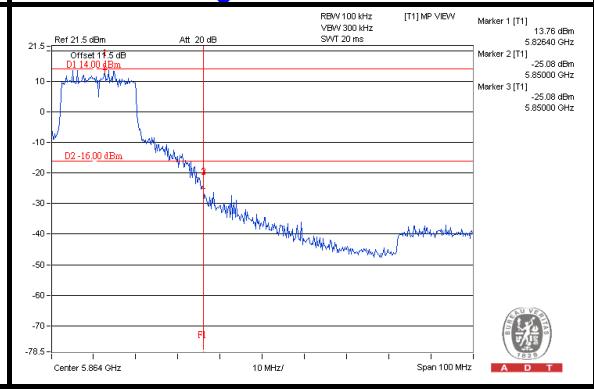
CH 165



CH 149 Band edge



CH 165 Band edge

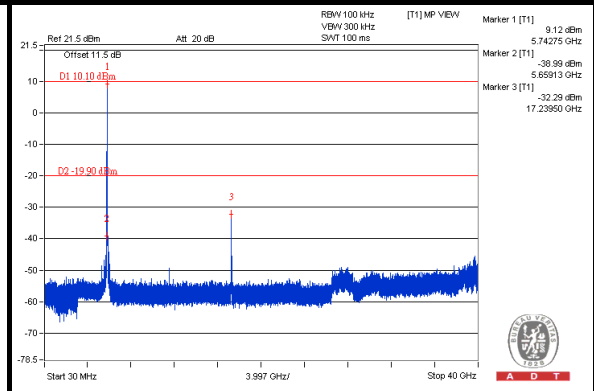
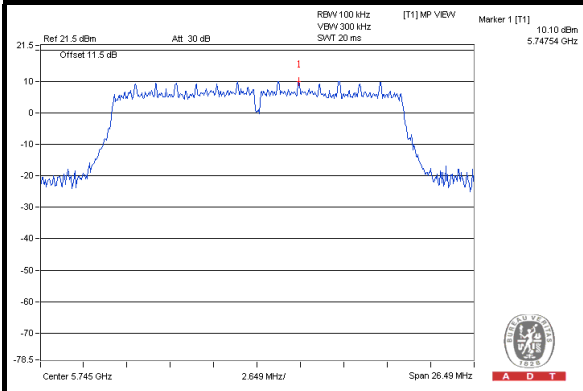




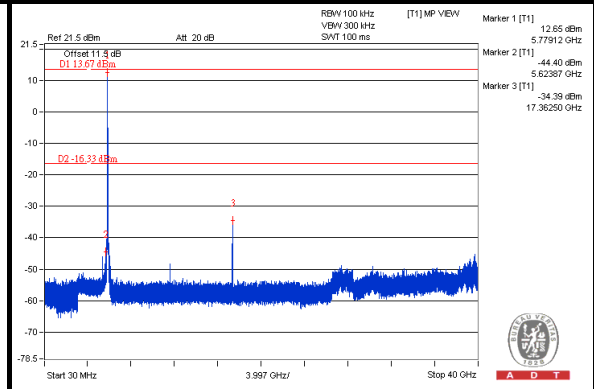
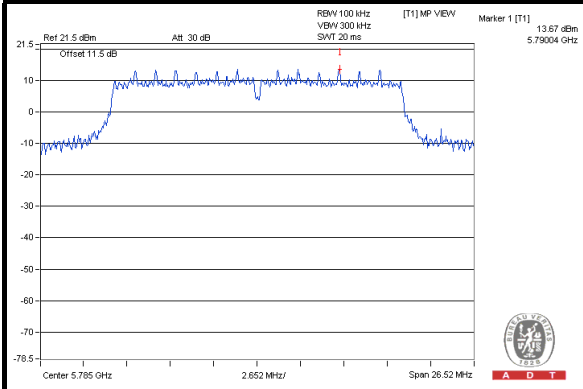
A D T

CHAIN 2

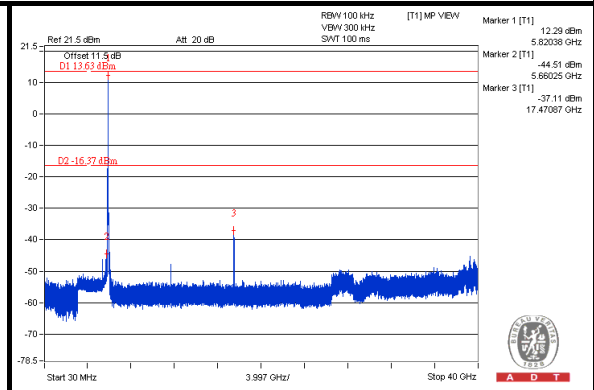
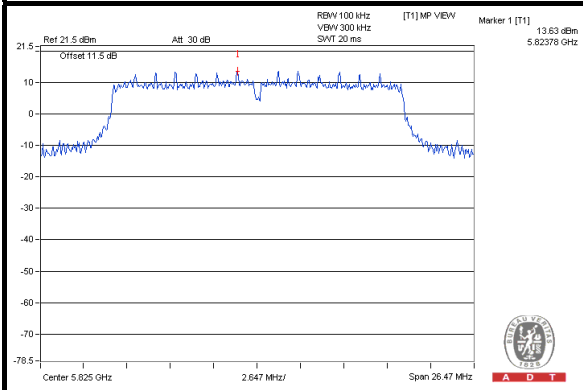
CH 149



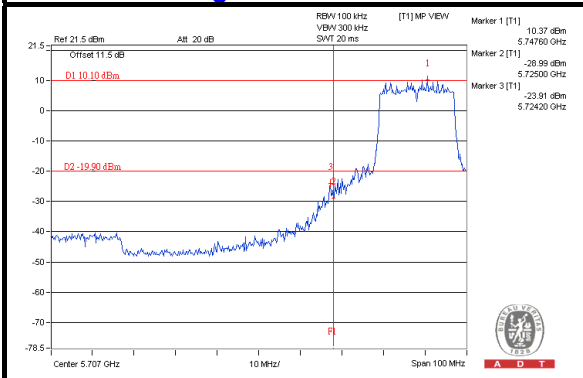
CH 157



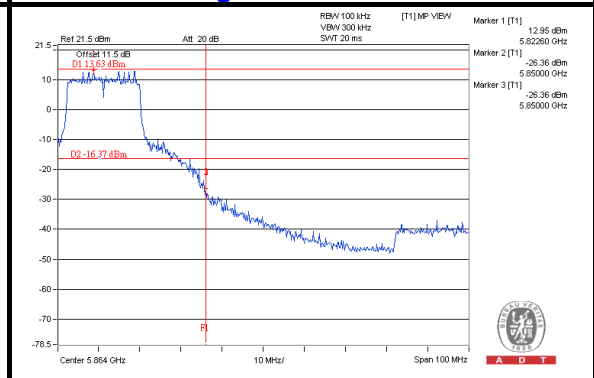
CH 165



CH 149 Band edge



CH 165 Band edge

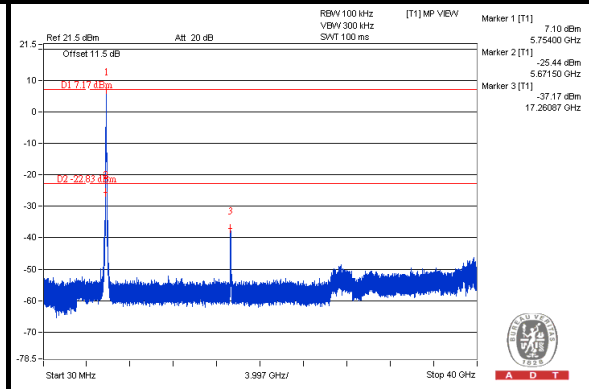
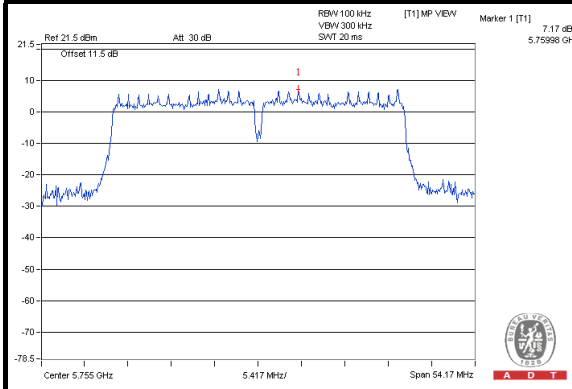




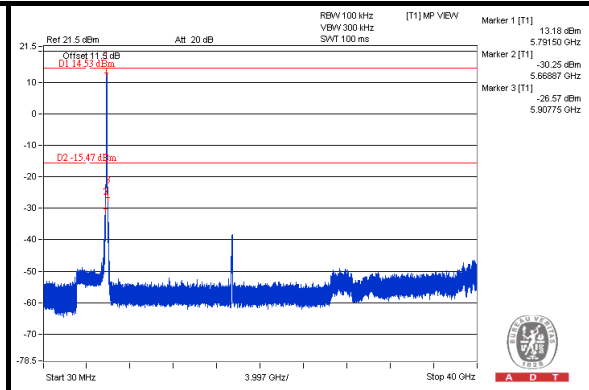
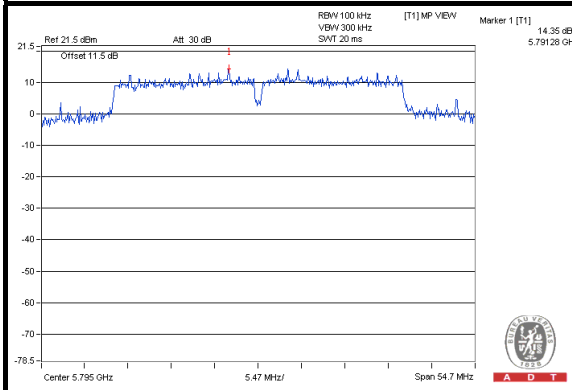
A D T

802.11n (40MHz): 1TX

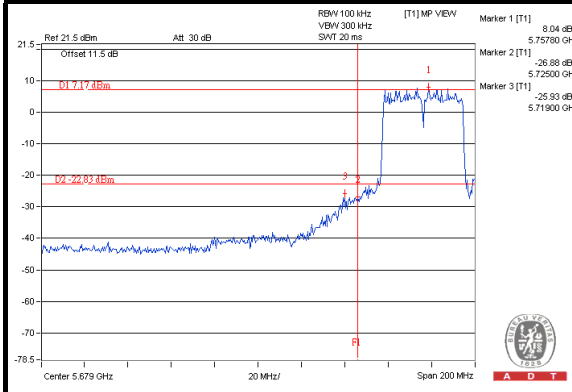
CH 151



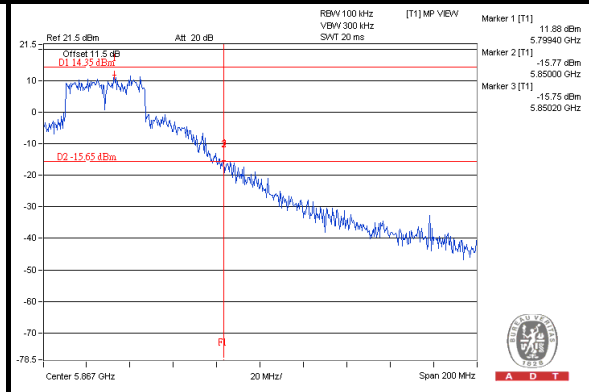
CH 159



CH 151 Band edge



CH 159 Band edge



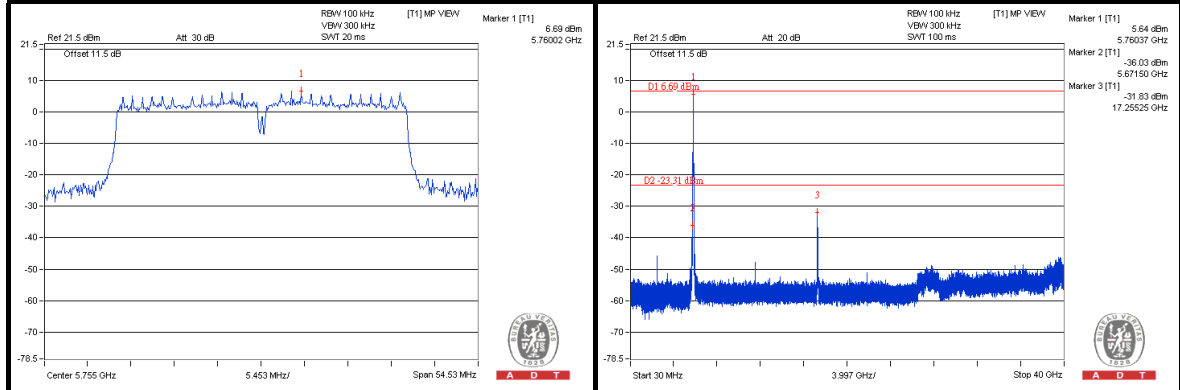


A D T

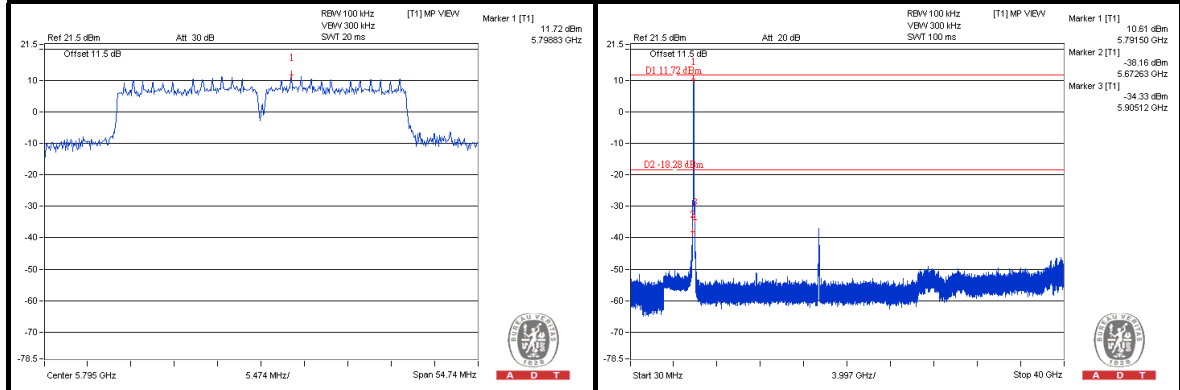
802.11n (40MHz): 3TX

CHAIN 0

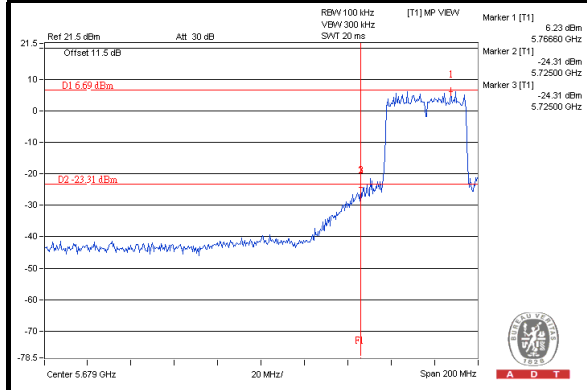
CH 151



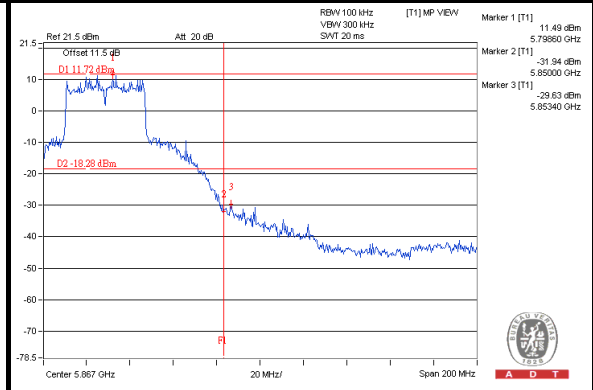
CH 159



CH 151 Band edge



CH 159 Band edge

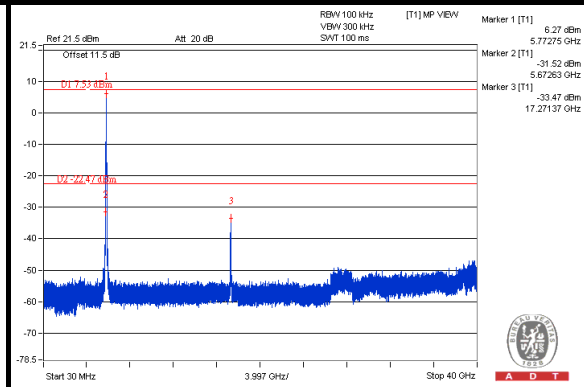
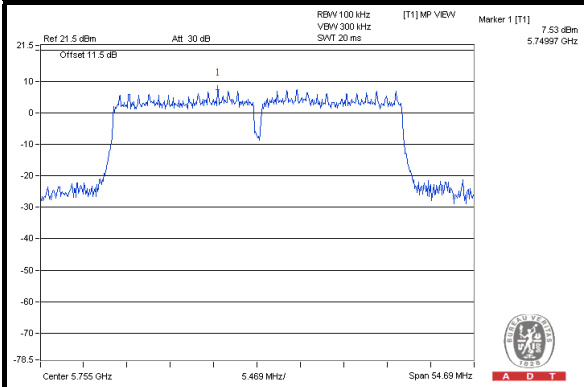




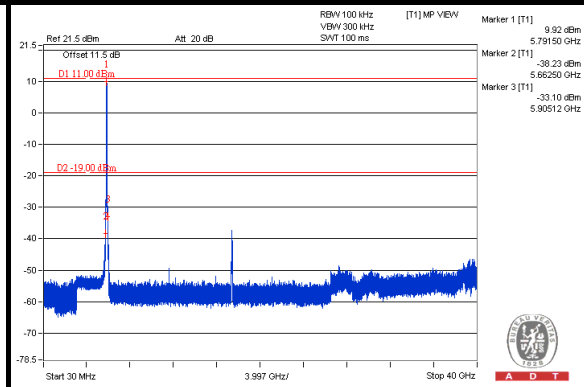
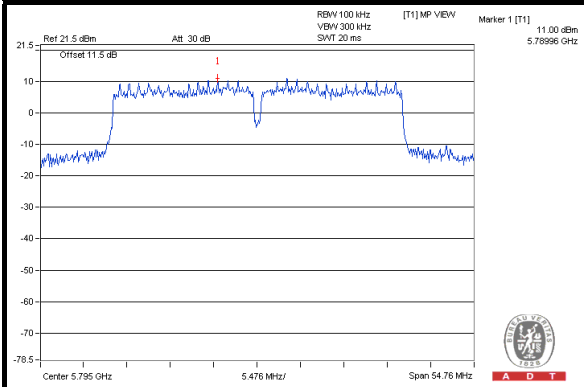
A D T

CHAIN 1

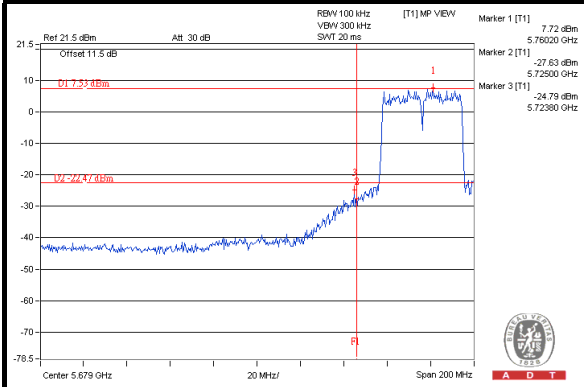
CH 151



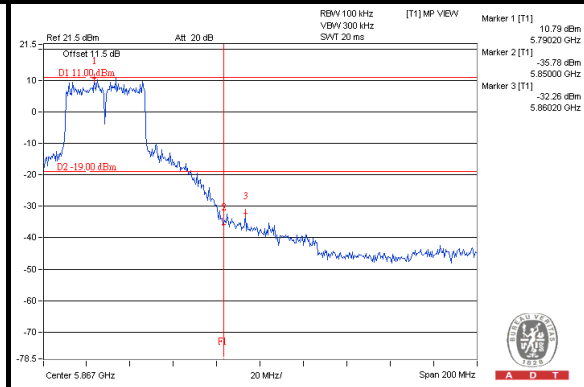
CH 159



CH 151 Band edge



CH 159 Band edge

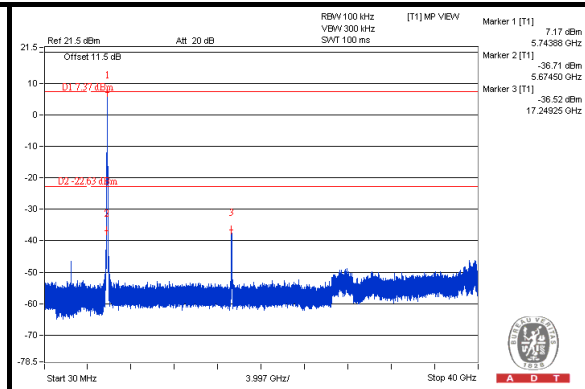
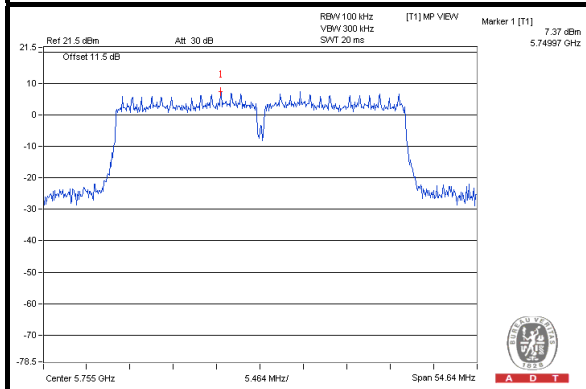




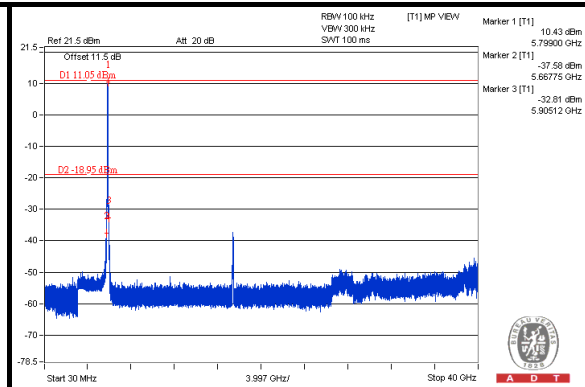
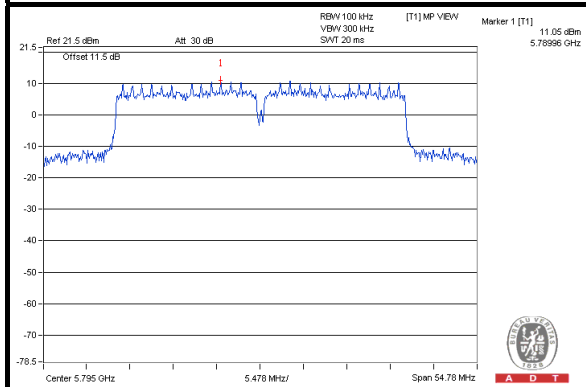
A D T

CHAIN 2

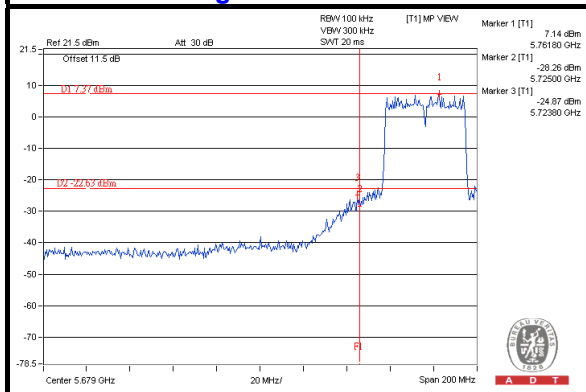
CH 151



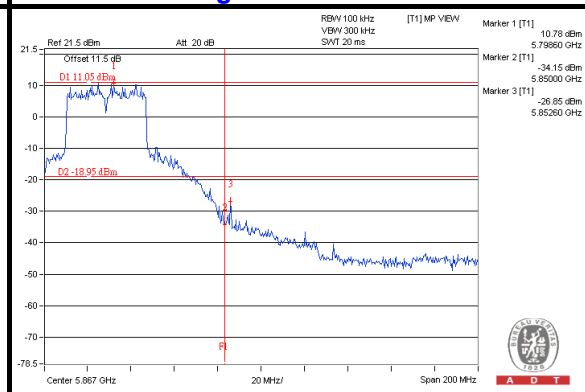
CH 159



CH 151 Band edge

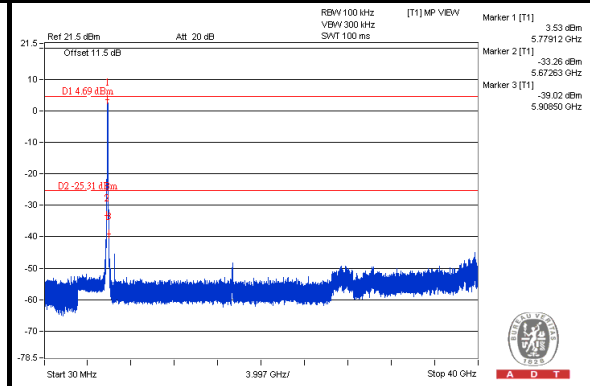
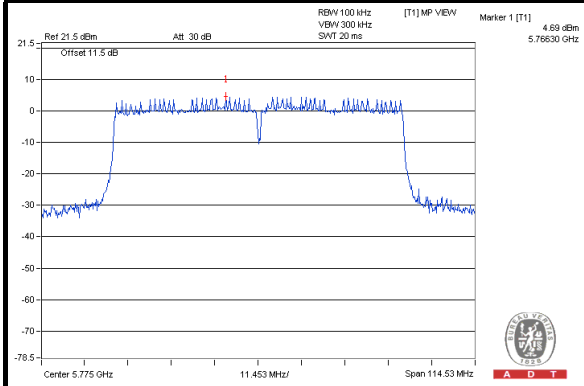


CH 159 Band edge

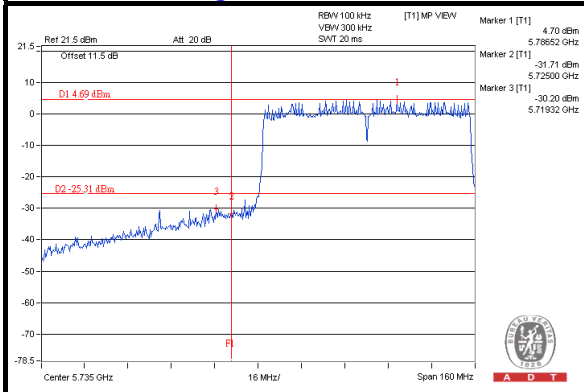


802.11ac (80MHz): 1TX

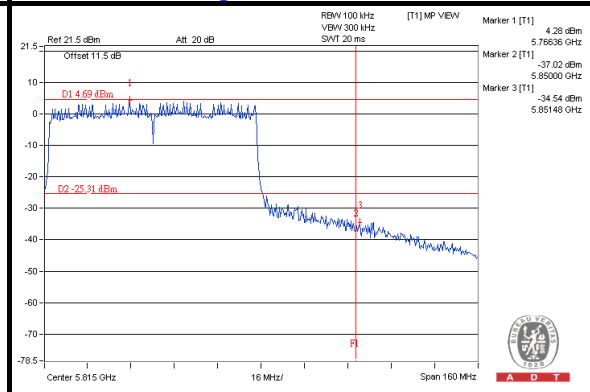
CH 155



CH 155 Band edge



CH 155 Band edge

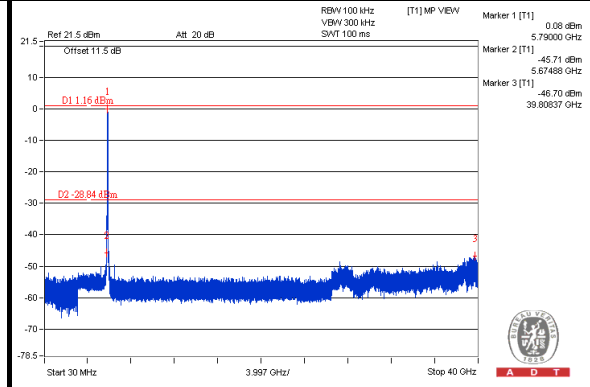
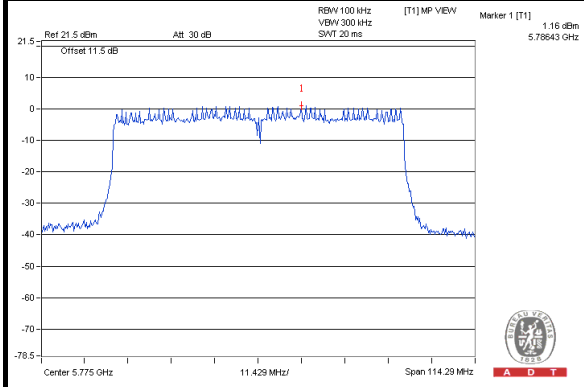




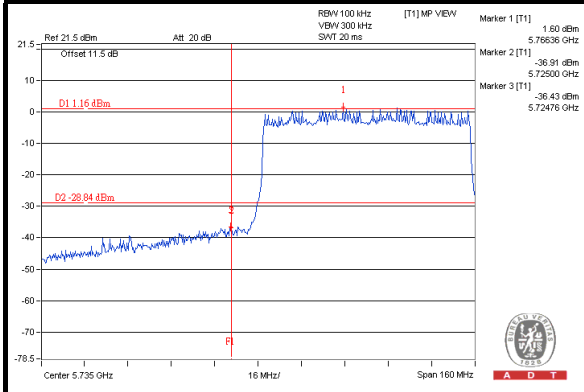
A D T

802.11ac (80MHz): 3TX CHAIN 0

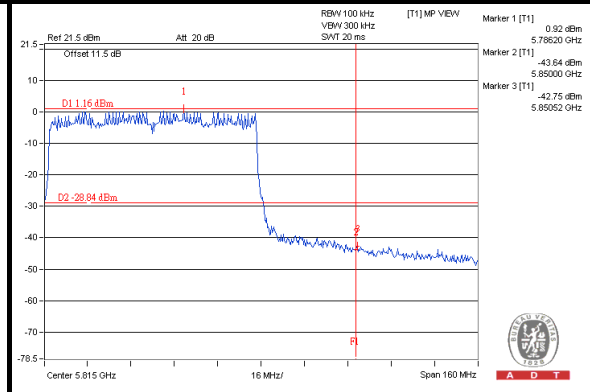
CH 155



CH 155 Band edge

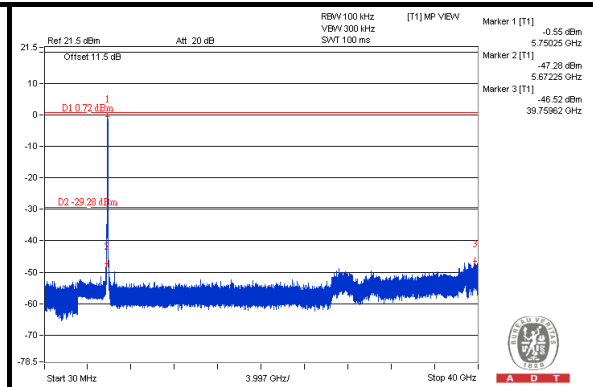
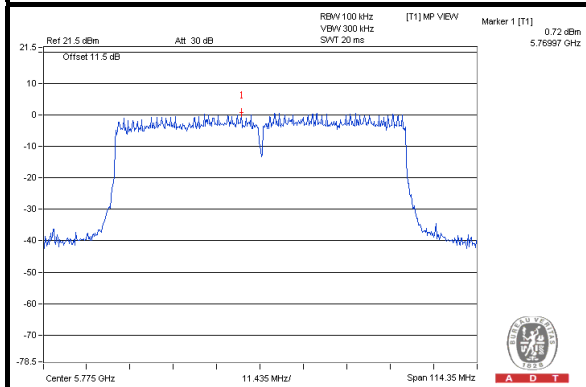


CH 155 Band edge

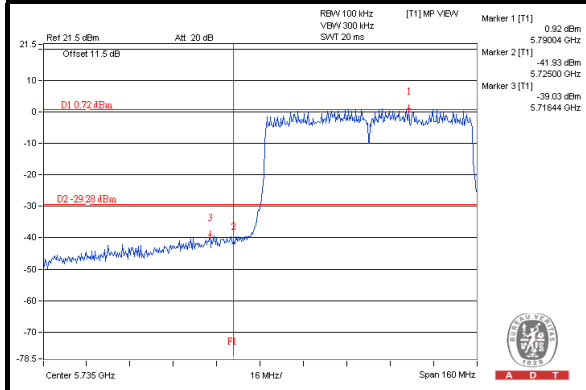


CHAIN 1

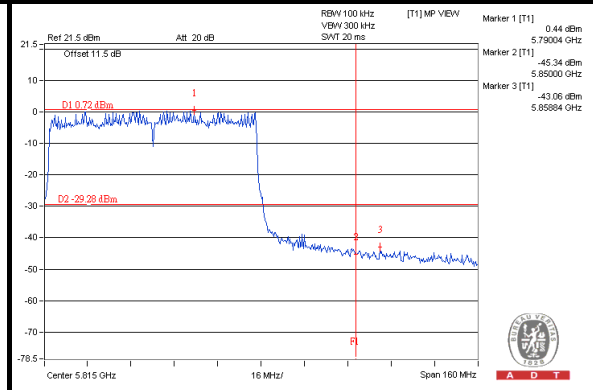
CH 155



CH 155 Band edge



CH 155 Band edge

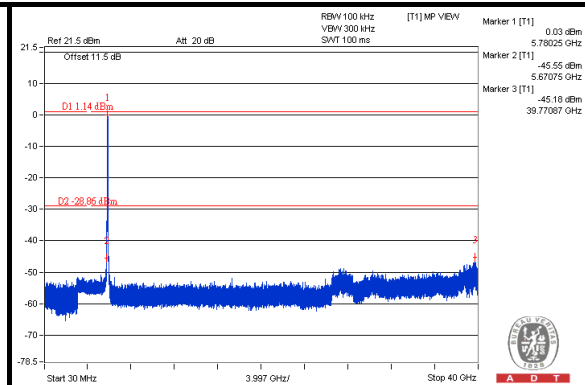
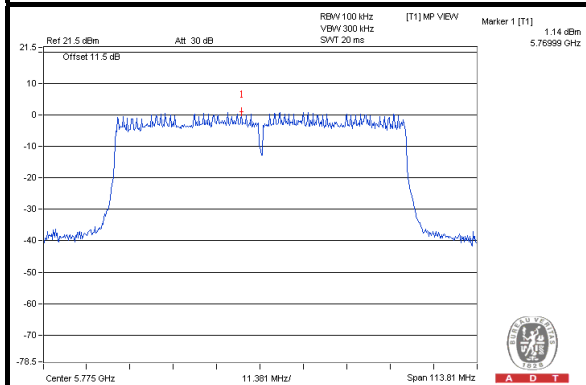




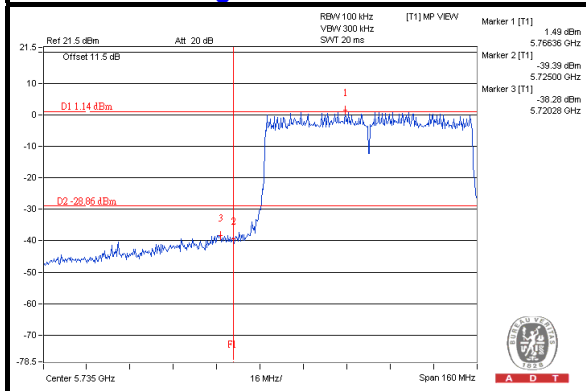
A D T

CHAIN 2

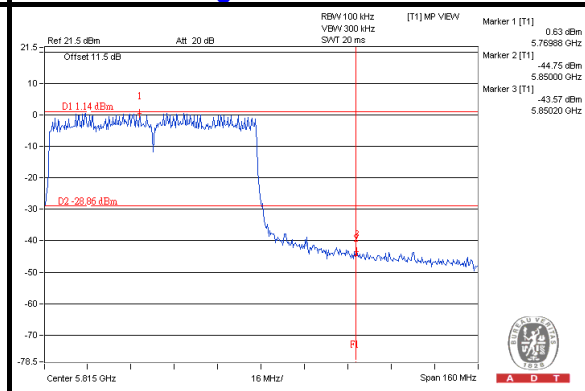
CH 155



CH 155 Band edge



CH 155 Band edge





A D T

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



A D T

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.



A D T

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---