



FCC TEST REPORT (15.407)

REPORT NO.: RF990519C11-1

MODEL NO.: AW-NU231-D

RECEIVED: Mar. 15, 2010

TESTED: Mar. 15 ~ Jun. 08, 2010

ISSUED: Jun. 11, 2010

APPLICANT: AzureWave Technologies, Inc.

ADDRESS: 8F, No.94, Baozhong Rd., Xindian, Taipei,
Taiwan 231.

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou
Hsiang, Taipei Hsien 244, 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 test report consists of 105 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by TAF or any government agencies. The test results in the report only apply to the tested sample.





A D T

TABLE OF CONTENTS

1.	CERTIFICATION.....	4
2.	SUMMARY OF TEST RESULTS	5
2.1	MEASUREMENT UNCERTAINTY.....	5
3.	GENERAL INFORMATION.....	6
3.1	GENERAL DESCRIPTION OF EUT	6
3.2	DESCRIPTION OF TEST MODES	8
3.2.1	CONFIGURATION OF SYSTEM UNDER TEST	9
3.2.2	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	13
3.4	DESCRIPTION OF SUPPORT UNITS	13
4.	TEST TYPES AND RESULTS	14
4.1	RADIATED EMISSION MEASUREMENT	14
4.1.1	LIMITS OF RADIATED EMISSION MEASUREMENT.....	14
4.1.2	LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	14
4.1.3	TEST INSTRUMENTS.....	15
4.1.4	TEST PROCEDURES	16
4.1.5	DEVIATION FROM TEST STANDARD.....	16
4.1.6	TEST SETUP	17
4.1.7	EUT OPERATING CONDITION.....	17
4.1.8	TEST RESULTS	18
4.2	CONDUCTED EMISSION MEASUREMENT	47
4.2.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT.....	47
4.2.2	TEST INSTRUMENTS.....	47
4.2.3	TEST PROCEDURES	48
4.2.4	DEVIATION FROM TEST STANDARD.....	48
4.2.5	TEST SETUP	49
4.2.6	EUT OPERATING CONDITIONS	49
4.2.7	TEST RESULTS	50
4.3	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	54
4.3.1	LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT.....	54
4.3.2	TEST INSTRUMENTS.....	54
4.3.3	TEST PROCEDURE.....	55
4.3.4	DEVIATION FROM TEST STANDARD.....	55
4.3.5	TEST SETUP	55
4.3.6	EUT OPERATING CONDITIONS	55



A D T

4.3.7	TEST RESULTS	56
4.4	PEAK POWER EXCURSION MEASUREMENT	61
4.4.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT	61
4.4.2	TEST INSTRUMENTS.....	61
4.4.3	TEST PROCEDURE.....	61
4.4.4	DEVIATION FROM TEST STANDARD.....	62
4.4.5	TEST SETUP	62
4.4.6	EUT OPERATING CONDITIONS	62
4.4.7	TEST RESULTS	63
4.5	PEAK POWER SPECTRAL DENSITY MEASUREMENT	69
4.5.1	LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	69
4.5.2	TEST INSTRUMENTS.....	69
4.5.3	TEST PROCEDURES	69
4.5.4	DEVIATION FROM TEST STANDARD.....	70
4.5.5	TEST SETUP	70
4.5.6	EUT OPERATING CONDITIONS	70
4.5.7	TEST RESULTS	71
4.6	FREQUENCY STABILITY.....	74
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	74
4.6.2	TEST INSTRUMENTS.....	74
4.6.3	TEST PROCEDURE.....	74
4.6.4	DEVIATION FROM TEST STANDARD.....	75
4.6.5	TEST SETUP	75
4.6.6	EUT OPERATING CONDITION.....	75
4.6.7	TEST RESULTS	76
4.7	BAND EDGES MEASUREMENT	77
4.7.1	TEST INSTRUMENTS.....	77
4.7.2	TEST PROCEDURE.....	78
4.7.3	EUT OPERATING CONDITION.....	78
4.7.4	TEST RESULTS	79
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	103
6.	INFORMATION ON THE TESTING LABORATORIES	104
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	105



1. CERTIFICATION

PRODUCT: Wireless 802.11 a/b/g/n Dongle

MODEL: AW-NU231-D

BRAND: AzureWave

APPLICANT: AzureWave Technologies, Inc.

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Mar. 15 ~ Jun. 08, 2010

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.4-2003

The above equipment (Model: AW-NU231-D) 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 : Ivy Lin , **DATE:** Jun. 11, 2010
Ivy Lin / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Jun. 11, 2010
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Jun. 11, 2010
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -14.15dB at 0.173MHz.
15.407(b)(1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.8dB at 5725.00MHz.
15.407(a)(1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless 802.11 a/b/g/n Dongle
MODEL NO.	AW-NU231-D
FCC ID	TLZ-AWNU231-D
POWER SUPPLY	5Vdc
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 270.0Mbps
OPERATING FREQUENCY	5180 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5320MHz: 8 for 802.11a, 802.11n (20MHz) 4 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	45.5mW for 5180 ~ 5240MHz 46.0mW for 5260 ~ 5320MHz 43.8mW for 5500 ~ 5700MHz
ANTENNA TYPE	PCB antenna with 1.59dBi gain
ANTENNA CONNECTOR	NA
I/O PORTS	USB
DATA CABLE	NA
ACCESSORY DEVICES	NA

NOTE:

1. The EUT is a Wireless 802.11 a/b/g/n Dongle. The test data are separated into following test reports.

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g, 802.11n	FCC Part 15, Subpart C (Section 15.247)	RF990519C11
WLAN 802.11a, 802.11n (5745~5825 MHz)		
WLAN 802.11a, 802.11n (5180~5320MHz & 5500 ~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF990519C11-1
WLAN 802.11a, 802.11n (For DFS report) (5250~5350MHz & 5470~5725MHz)		RF990519C11-2

2. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2412~2462	5180~5320	5500~5700	5745~5825
802.11b	√	-	-	-
802.11g	√	-	-	-
802.11a	-	√	√	√
802.11n (20MHz) (MCS 0-7) / (MCS 8-15)	√	√	√	√
802.11n (40MHz) (MCS 0-7) / (MCS 8-15)	√	√	√	√

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

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz) (MCS 0-7)	1TX
802.11n (20MHz) (MCS 8-15)	2TX
802.11n (40MHz) (MCS 0-7)	1TX
802.11n (40MHz) (MCS 8-15)	2TX

4. The above EUT information was 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 5180 ~ 5320MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	54	5270 MHz
46	5230 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

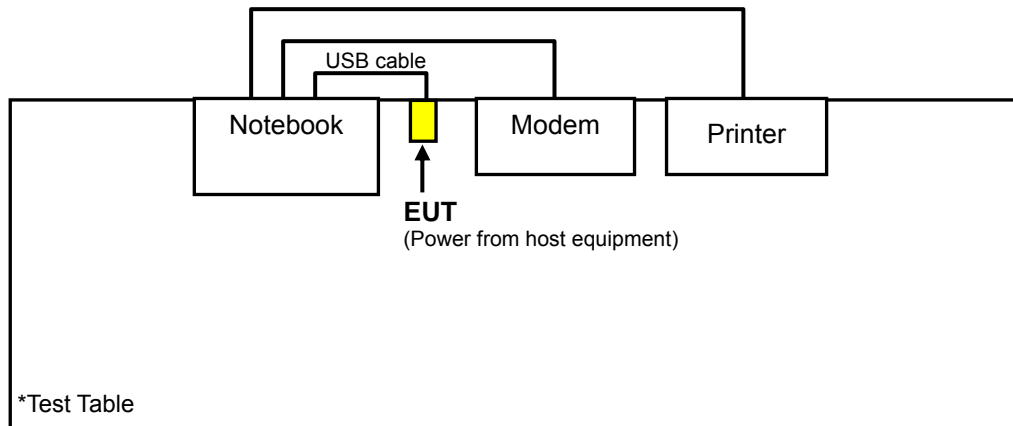
8 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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 : Conducted power of single TX chain has no different when operating at 1 TX or 2 TX mode. Therefore, only 2 TX mode will be tested for 802.11n.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0	Z
802.11n (20MHz) (MCS 8-15)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5	Z
802.11n (40MHz) (MCS 8-15)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5	Z
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0	Z
802.11n (20MHz) (MCS 8-15)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5	Z
802.11n (40MHz) (MCS 8-15)		102 to 134	102, 110, 134	OFDM	BPSK	13.5	Z

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
802.11n (40MHz) (MCS 8-15)	5180-5320	38 to 62	54	OFDM	BPSK	13.5	Z
802.11n (40MHz) (MCS 8-15)	5500-5700	102 to 134	134	OFDM	BPSK	13.5	Z

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (40MHz) (MCS 8-15)	5180-5320	38 to 62	54	OFDM	BPSK	13.5
802.11n (40MHz) (MCS 8-15)	5500-5700	102 to 134	134	OFDM	BPSK	13.5

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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	36, 48, 52, 64	OFDM	BPSK	6.0
802.11n (20MHz) (MCS 8-15)		36 to 64	36, 48, 52, 64	OFDM	BPSK	6.5
802.11n (40MHz) (MCS 8-15)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
802.11n (20MHz) (MCS 8-15)		100 to 140	100, 140	OFDM	BPSK	6.5
802.11n (40MHz) (MCS 8-15)		102 to 134	102, 134	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz) (MCS 8-15)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz) (MCS 8-15)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
802.11n (20MHz) (MCS 8-15)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
802.11n (40MHz) (MCS 8-15)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH, 1013 hPa	120Vac, 60Hz	Brad Wu
RE<1G	25deg. C, 65%RH, 1013 hPa	120Vac, 60Hz	Brad Wu
PLC	20deg. C, 65%RH, 1015 hPa	120Vac, 60Hz	Eason Chen
APCM	25deg. C, 63%RH, 1006 hPa	120Vac, 60Hz	Brad Wu

3.3 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 E (15.407)
ANSI C63.4-2003

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.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP05L	25191592336	E2K24CLNS
2	MODEM	ACEEX	1414V/3	0401008277	IFAXDM1414
3	PRINTER	EPSON	LQ-300+	DCGY054146	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	0.53m non-shielded USB cable without core.
2	1.2m braid shielded wire, DB25 & DB9 connector, w/o core.
3	1.8m braid shielded wire, DB25 connector, w/o core.

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m) *NOTE 3
	PK	PK
5150 ~ 5350	-27	68.3
5470 ~ 5725	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jul. 06, 2009	Jul. 05, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Dec. 31, 2009	Dec. 30, 2010
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2010	Apr. 26, 2011
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jul. 01, 2009	Jun. 30, 2010
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2009	Dec. 24, 2010
Preamplifier Agilent	8447D	2944A10633	Nov. 10, 2009	Nov. 09, 2010
Preamplifier Agilent	8449B	3008A01964	Nov. 09, 2009	Nov. 08, 2010
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 14, 2010	May 13, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 14, 2010	May 13, 2011
Software ADT.	ADT_Radiated_ V7.6.15.9.2	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 ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2009	Aug. 26, 2010

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

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

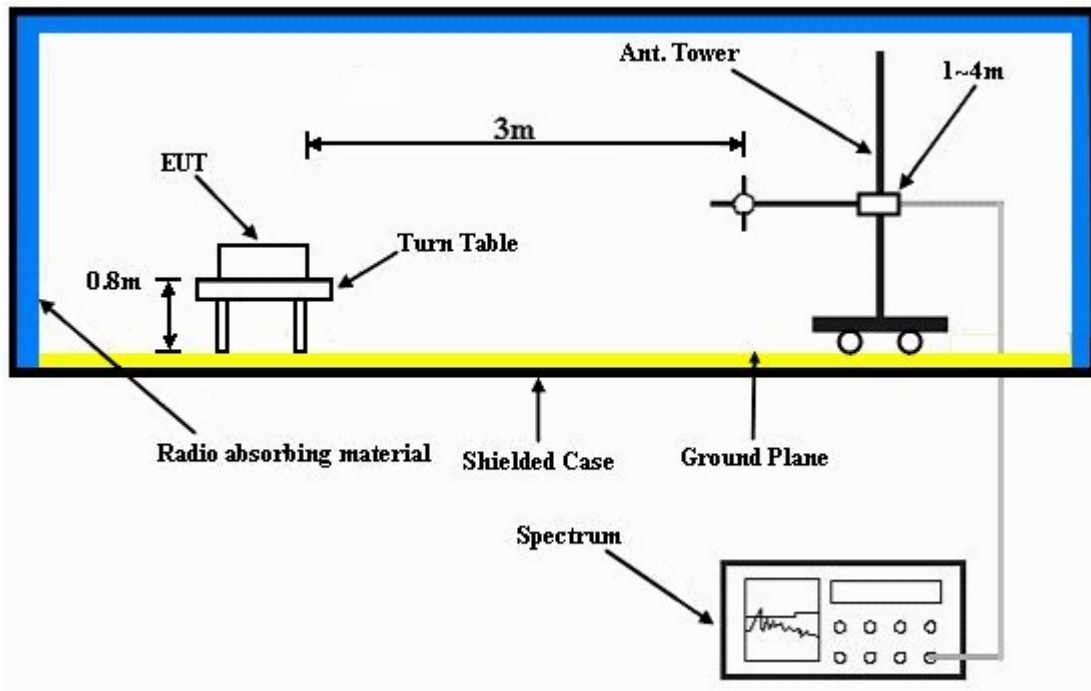
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) 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 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- a. Connected the EUT with notebook system via USB cable on a testing table
- b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.

4.1.8 TEST RESULTS

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	1.05 H	174	20.90	36.70
2	5150.00	41.5 AV	54.0	-12.5	1.05 H	174	4.80	36.70
3	*5180.00	105.4 PK			1.05 H	174	68.60	36.80
4	*5180.00	91.4 AV			1.05 H	174	54.60	36.80
5	#10360.00	58.6 PK	68.3	-9.7	1.08 H	213	10.70	47.90
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	5150.00	61.0 PK	74.0	-13.0	1.30 V	119	24.30	36.70
2	5150.00	42.1 AV	54.0	-11.9	1.30 V	119	5.40	36.70
3	*5180.00	107.8 PK			1.30 V	119	71.00	36.80
4	*5180.00	93.4 AV			1.30 V	119	56.60	36.80
5	#10360.00	58.4 PK	68.3	-9.9	1.05 V	349	10.50	47.90

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	105.7 PK			1.09 H	158	68.90	36.80
2	*5200.00	91.6 AV			1.09 H	158	54.80	36.80
3	#10400.00	59.1 PK	68.3	-9.2	1.05 H	348	11.00	48.10
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	*5200.00	108.2 PK			1.01 V	152	71.40	36.80
2	*5200.00	93.9 AV			1.01 V	152	57.10	36.80
3	#10400.00	58.2 PK	68.3	-10.1	1.03 V	355	10.10	48.10

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	105.0 PK			1.04 H	159	68.10	36.90
2	*5240.00	90.7 AV			1.04 H	159	53.80	36.90
3	#10480.00	58.6 PK	68.3	-9.7	1.06 H	239	10.30	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.2 PK			1.01 V	168	70.30	36.90
2	*5240.00	93.2 AV			1.01 V	168	56.30	36.90
3	#10480.00	59.4 PK	68.3	-8.9	1.01 V	14	11.10	48.30

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	105.2 PK			1.05 H	153	68.20	37.00
2	*5260.00	91.0 AV			1.05 H	153	54.00	37.00
3	#10520.00	58.8 PK	68.3	-9.5	1.03 H	358	10.40	48.40
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	*5260.00	107.7 PK			1.02 V	159	70.70	37.00
2	*5260.00	93.5 AV			1.02 V	159	56.50	37.00
3	#10520.00	58.1 PK	68.3	-10.2	1.02 V	191	9.70	48.40

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	104.9 PK			1.04 H	158	67.80	37.10
2	*5300.00	90.8 AV			1.04 H	158	53.70	37.10
3	10600.00	59.3 PK	74.0	-14.7	1.06 H	176	10.70	48.60
4	10600.00	46.1 AV	54.0	-7.9	1.06 H	176	-2.50	48.60
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	*5300.00	107.6 PK			1.06 V	144	70.50	37.10
2	*5300.00	93.3 AV			1.06 V	144	56.20	37.10
3	10600.00	58.6 PK	74.0	-15.4	1.09 V	175	10.00	48.60
4	10600.00	45.2 AV	54.0	-8.8	1.09 V	175	-3.40	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.5 PK			1.06 H	151	68.30	37.20
2	*5320.00	91.4 AV			1.06 H	151	54.20	37.20
3	5350.00	60.8 PK	74.0	-13.2	1.06 H	151	23.60	37.20
4	5350.00	38.9 AV	54.0	-15.1	1.06 H	151	1.70	37.20
5	10640.00	58.6 PK	74.0	-15.4	1.03 H	11	10.00	48.60
6	10640.00	45.8 AV	54.0	-8.2	1.03 H	11	-2.80	48.60
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	*5320.00	108.4 PK			1.05 V	149	71.20	37.20
2	*5320.00	94.4 AV			1.05 V	149	57.20	37.20
3	5350.00	65.4 PK	74.0	-8.6	1.05 V	149	28.20	37.20
4	5350.00	42.8 AV	54.0	-11.2	1.05 V	149	5.60	37.20
5	10640.00	58.5 PK	74.0	-15.5	1.08 V	176	9.90	48.60
6	10640.00	45.4 AV	54.0	-8.6	1.08 V	176	-3.20	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	47.8 PK	74.0	-26.2	1.01 H	128	10.50	37.30
2	5460.00	36.9 AV	54.0	-17.1	1.01 H	128	-0.40	37.30
3	#5470.00	62.6 PK	68.3	-5.7	1.01 H	128	25.20	37.40
4	*5500.00	103.0 PK			1.01 H	128	65.60	37.40
5	*5500.00	89.2 AV			1.01 H	128	51.80	37.40
6	11000.00	59.0 PK	74.0	-15.0	1.09 H	347	10.30	48.70
7	11000.00	46.1 AV	54.0	-7.9	1.09 H	347	-2.60	48.70
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	5460.00	52.5 PK	74.0	-21.5	1.09 V	186	15.20	37.30
2	5460.00	38.2 AV	54.0	-15.8	1.09 V	186	0.90	37.30
3	#5470.00	64.5 PK	68.3	-3.8	1.09 V	186	27.10	37.40
4	*5500.00	108.2 PK			1.09 V	186	70.80	37.40
5	*5500.00	94.3 AV			1.09 V	186	56.90	37.40
6	11000.00	60.0 PK	74.0	-14.0	1.10 V	198	11.30	48.70
7	11000.00	46.8 AV	54.0	-7.2	1.10 V	198	-1.90	48.70

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.6 PK			1.02 H	129	65.00	37.60
2	*5580.00	88.7 AV			1.02 H	129	51.10	37.60
3	11160.00	58.5 PK	74.0	-15.5	1.05 H	31	10.10	48.40
4	11160.00	45.6 AV	54.0	-8.4	1.05 H	31	-2.80	48.40
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	*5580.00	107.8 PK			1.05 V	3	70.20	37.60
2	*5580.00	94.1 AV			1.05 V	3	56.50	37.60
3	11160.00	59.2 PK	74.0	-14.8	1.03 V	162	10.80	48.40
4	11160.00	46.0 AV	54.0	-8.0	1.03 V	162	-2.40	48.40

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	103.2 PK			1.05 H	131	65.40	37.80
2	*5660.00	89.4 AV			1.05 H	131	51.60	37.80
3	11320.00	59.5 PK	74.0	-14.5	1.08 H	91	11.20	48.30
4	11320.00	46.2 AV	54.0	-7.8	1.08 H	91	-2.10	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	108.0 PK			1.06 V	3	70.20	37.80
2	*5660.00	94.5 AV			1.06 V	3	56.70	37.80
3	11320.00	60.2 PK	74.0	-13.8	1.04 V	163	11.90	48.30
4	11320.00	47.1 AV	54.0	-6.9	1.04 V	163	-1.20	48.30

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.8 PK			1.06 H	135	64.90	37.90
2	*5700.00	89.0 AV			1.06 H	135	51.10	37.90
3	#5725.00	63.1 PK	68.3	-5.2	1.06 H	135	25.10	38.00
4	11400.00	58.9 PK	74.0	-15.1	1.03 H	212	10.90	48.00
5	11400.00	45.8 AV	54.0	-8.2	1.03 H	212	-2.20	48.00
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	*5700.00	107.8 PK			1.03 V	2	69.90	37.90
2	*5700.00	94.2 AV			1.03 V	2	56.30	37.90
3	#5725.00	66.3 PK	68.3	-2.0	1.03 V	2	28.30	38.00
4	11400.00	59.6 PK	74.0	-14.4	1.18 V	151	11.60	48.00
5	11400.00	46.5 AV	54.0	-7.5	1.18 V	151	-1.50	48.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”:The radiated frequency is out the restricted band.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.4 PK	74.0	-18.6	1.06 H	3	18.70	36.70
2	5150.00	37.8 AV	54.0	-16.2	1.06 H	3	1.10	36.70
3	*5180.00	104.7 PK			1.06 H	3	67.90	36.80
4	*5180.00	88.3 AV			1.06 H	3	51.50	36.80
5	#10360.00	58.4 PK	68.3	-9.9	1.02 H	65	10.50	47.90
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	5150.00	59.0 PK	74.0	-15.0	1.01 V	26	22.30	36.70
2	5150.00	41.4 AV	54.0	-12.6	1.01 V	26	4.70	36.70
3	*5180.00	107.0 PK			1.01 V	26	70.20	36.80
4	*5180.00	90.2 AV			1.01 V	26	53.40	36.80
5	#10360.00	58.8 PK	68.3	-9.5	1.02 V	34	10.90	47.90

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	104.3 PK			1.06 H	8	67.50	36.80
2	*5200.00	88.0 AV			1.06 H	8	51.20	36.80
3	#10400.00	58.4 PK	68.3	-9.9	1.03 H	242	10.30	48.10
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	*5200.00	106.8 PK			1.10 V	11	70.00	36.80
2	*5200.00	90.1 AV			1.10 V	11	53.30	36.80
3	#10400.00	58.9 PK	68.3	-9.4	1.05 V	46	10.80	48.10

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.5 PK			1.05 H	13	67.60	36.90
2	*5240.00	88.1 AV			1.05 H	13	51.20	36.90
3	#10480.00	58.6 PK	68.3	-9.7	1.08 H	21	10.30	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.1 PK			1.09 V	6	70.20	36.90
2	*5240.00	90.3 AV			1.09 V	6	53.40	36.90
3	#10480.00	59.2 PK	68.3	-9.1	1.11 V	29	10.90	48.30

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.
 6. “#” : The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	104.7 PK			1.22 H	53	67.70	37.00
2	*5260.00	88.9 AV			1.22 H	53	51.90	37.00
3	#10520.00	57.1 PK	68.3	-11.2	1.08 H	27	8.70	48.40
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	*5260.00	107.2 PK			1.05 V	17	70.20	37.00
2	*5260.00	90.8 AV			1.05 V	17	53.80	37.00
3	#10520.00	57.8 PK	68.3	-10.5	1.32 V	58	9.40	48.40

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.
 6. “#” : The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	104.8 PK			1.21 H	105	67.70	37.10
2	*5300.00	88.9 AV			1.21 H	105	51.80	37.10
3	10600.00	57.0 PK	74.0	-17.0	1.33 H	17	8.40	48.60
4	10600.00	45.1 AV	54.0	-8.9	1.33 H	17	-3.50	48.60
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	*5300.00	107.2 PK			1.27 V	52	70.10	37.10
2	*5300.00	90.8 AV			1.27 V	52	53.70	37.10
3	10600.00	57.5 PK	74.0	-16.5	1.27 V	153	8.90	48.60
4	10600.00	44.8 AV	54.0	-9.2	1.27 V	153	-3.80	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.0 PK			1.07 H	23	67.80	37.20
2	*5320.00	88.8 AV			1.07 H	23	51.60	37.20
3	5350.00	57.1 PK	74.0	-16.9	1.07 H	23	19.90	37.20
4	5350.00	39.3 AV	54.0	-14.7	1.07 H	23	2.10	37.20
5	10640.00	58.2 PK	74.0	-15.8	1.27 H	53	9.60	48.60
6	10640.00	44.8 AV	54.0	-9.2	1.27 H	53	-3.80	48.60
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	*5320.00	107.9 PK			1.05 V	17	70.70	37.20
2	*5320.00	91.2 AV			1.05 V	17	54.00	37.20
3	5350.00	60.2 PK	74.0	-13.8	1.05 V	17	23.00	37.20
4	5350.00	42.3 AV	54.0	-11.7	1.05 V	17	5.10	37.20
5	10640.00	58.3 PK	74.0	-15.7	1.35 V	47	9.70	48.60
6	10640.00	45.7 AV	54.0	-8.3	1.35 V	47	-2.90	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	49.7 PK	74.0	-24.3	1.05 H	58	12.40	37.30
2	5460.00	34.0 AV	54.0	-20.0	1.05 H	58	-3.30	37.30
3	#5470.00	52.8 PK	68.3	-15.5	1.05 H	58	15.40	37.40
4	*5500.00	105.0 PK			1.05 H	58	67.60	37.40
5	*5500.00	88.8 AV			1.05 H	58	51.40	37.40
6	11000.00	58.3 PK	74.0	-15.7	1.28 H	96	9.60	48.70
7	11000.00	45.1 AV	54.0	-8.9	1.28 H	96	-3.60	48.70
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	5460.00	53.0 PK	74.0	-21.0	1.03 V	33	15.70	37.30
2	5460.00	37.5 AV	54.0	-16.5	1.03 V	33	0.20	37.30
3	#5470.00	56.0 PK	68.3	-12.3	1.03 V	33	18.60	37.40
4	*5500.00	107.8 PK			1.03 V	33	70.40	37.40
5	*5500.00	91.3 AV			1.03 V	33	53.90	37.40
6	11000.00	58.8 PK	74.0	-15.2	1.05 V	77	10.10	48.70
7	11000.00	45.3 AV	54.0	-8.7	1.05 V	77	-3.40	48.70

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#“: The radiated frequency is out the restricted band.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	104.7 PK			1.08 H	65	67.10	37.60
2	*5580.00	88.3 AV			1.08 H	65	50.70	37.60
3	11160.00	58.2 PK	74.0	-15.8	1.07 H	89	9.80	48.40
4	11160.00	44.8 AV	54.0	-9.2	1.07 H	89	-3.60	48.40
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	*5580.00	107.2 PK			1.03 V	37	69.60	37.60
2	*5580.00	90.8 AV			1.03 V	37	53.20	37.60
3	11160.00	59.2 PK	74.0	-14.8	1.27 V	353	10.80	48.40
4	11160.00	45.0 AV	54.0	-9.0	1.27 V	353	-3.40	48.40

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	104.9 PK			1.07 H	31	67.10	37.80
2	*5660.00	88.5 AV			1.07 H	31	50.70	37.80
3	11320.00	58.3 PK	74.0	-15.7	1.35 H	59	10.00	48.30
4	11320.00	44.8 AV	54.0	-9.2	1.35 H	59	-3.50	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	107.8 PK			1.09 V	25	70.00	37.80
2	*5660.00	91.0 AV			1.09 V	25	53.20	37.80
3	11320.00	59.0 PK	74.0	-15.0	1.28 V	51	10.70	48.30
4	11320.00	45.7 AV	54.0	-8.3	1.28 V	51	-2.60	48.30

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.8 PK			1.06 H	54	66.90	37.90
2	*5700.00	88.6 AV			1.06 H	54	50.70	37.90
3	#5725.00	63.1 PK	68.3	-5.2	1.06 H	54	25.10	38.00
4	11400.00	58.9 PK	74.0	-15.1	1.28 H	120	10.90	48.00
5	11400.00	45.3 AV	54.0	-8.7	1.28 H	120	-2.70	48.00
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	*5700.00	107.2 PK			1.05 V	15	69.30	37.90
2	*5700.00	91.0 AV			1.05 V	15	53.10	37.90
3	#5725.00	66.5 PK	68.3	-1.8	1.05 V	15	28.50	38.00
4	11400.00	59.8 PK	74.0	-14.2	1.36 V	87	11.80	48.00
5	11400.00	46.0 AV	54.0	-8.0	1.36 V	87	-2.00	48.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.7 PK	74.0	-11.3	1.15 H	52	26.00	36.70
2	5150.00	42.0 AV	54.0	-12.0	1.15 H	52	5.30	36.70
3	*5190.00	100.5 PK			1.15 H	52	63.70	36.80
4	*5190.00	82.3 AV			1.15 H	52	45.50	36.80
5	#10380.00	56.5 PK	68.3	-11.8	1.32 H	47	8.50	48.00
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	5150.00	66.0 PK	74.0	-8.0	1.05 V	35	29.30	36.70
2	5150.00	45.8 AV	54.0	-8.2	1.05 V	35	9.10	36.70
3	*5190.00	103.8 PK			1.05 V	35	67.00	36.80
4	*5190.00	85.5 AV			1.05 V	35	48.70	36.80
5	#10380.00	58.2 PK	68.3	-10.1	1.09 V	257	10.20	48.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	101.0 PK			1.06 H	10	64.10	36.90
2	*5230.00	82.9 AV			1.06 H	10	46.00	36.90
3	#10460.00	57.0 PK	68.3	-11.3	1.16 H	107	8.70	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	104.0 PK			1.07 V	12	67.10	36.90
2	*5230.00	86.0 AV			1.07 V	12	49.10	36.90
3	#10460.00	57.5 PK	68.3	-10.8	1.52 V	277	9.20	48.30

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	101.6 PK			1.07 H	53	64.60	37.00
2	*5270.00	83.5 AV			1.07 H	53	46.50	37.00
3	#10540.00	57.3 PK	68.3	-11.0	1.18 H	72	8.90	48.40
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	*5270.00	104.8 PK			1.02 V	69	67.80	37.00
2	*5270.00	86.5 AV			1.02 V	69	49.50	37.00
3	#10540.00	58.2 PK	68.3	-10.1	1.21 V	268	9.80	48.40

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	100.8 PK			1.08 H	25	63.70	37.10
2	*5310.00	82.6 AV			1.08 H	25	45.50	37.10
3	5350.00	58.3 PK	74.0	-15.7	1.08 H	25	21.10	37.20
4	5350.00	40.0 AV	54.0	-14.0	1.08 H	25	2.80	37.20
5	10620.00	57.0 PK	74.0	-17.0	1.35 H	67	8.40	48.60
6	10620.00	44.3 AV	54.0	-9.7	1.35 H	67	-4.30	48.60
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	*5310.00	103.9 PK			1.25 V	53	66.80	37.10
2	*5310.00	85.5 AV			1.25 V	53	48.40	37.10
3	5350.00	61.8 PK	74.0	-12.2	1.25 V	53	24.60	37.20
4	5350.00	43.5 AV	54.0	-10.5	1.25 V	53	6.30	37.20
5	10620.00	57.5 PK	74.0	-16.5	1.43 V	258	8.90	48.60
6	10620.00	44.8 AV	54.0	-9.2	1.43 V	258	-3.80	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.0 PK	74.0	-18.0	1.35 H	28	18.70	37.30
2	5460.00	38.0 AV	54.0	-16.0	1.35 H	28	0.70	37.30
3	#5470.00	62.0 PK	68.3	-6.3	1.35 H	28	24.60	37.40
4	*5510.00	101.0 PK			1.35 H	28	63.60	37.40
5	*5510.00	83.2 AV			1.35 H	28	45.80	37.40
6	11020.00	57.2 PK	74.0	-16.8	1.53 H	47	8.50	48.70
7	11020.00	44.1 AV	54.0	-9.9	1.53 H	47	-4.60	48.70

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	5460.00	59.7 PK	74.0	-14.3	1.07 V	58	22.40	37.30
2	5460.00	41.2 AV	54.0	-12.8	1.07 V	58	3.90	37.30
3	#5470.00	65.8 PK	68.3	-2.5	1.07 V	58	28.40	37.40
4	*5510.00	104.5 PK			1.07 V	58	67.10	37.40
5	*5510.00	86.2 AV			1.07 V	58	48.80	37.40
6	11020.00	58.0 PK	74.0	-16.0	1.27 V	247	9.30	48.70
7	11020.00	45.0 AV	54.0	-9.0	1.27 V	247	-3.70	48.70

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. “#”: The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	101.3 PK			1.37 H	3	63.80	37.50
2	*5550.00	83.5 AV			1.37 H	3	46.00	37.50
3	11100.00	57.1 PK	74.0	-16.9	1.48 H	237	8.60	48.50
4	11100.00	44.2 AV	54.0	-9.8	1.48 H	237	-4.30	48.50
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	*5550.00	104.8 PK			1.07 V	62	67.30	37.50
2	*5550.00	86.2 AV			1.07 V	62	48.70	37.50
3	11100.00	57.8 PK	74.0	-16.2	1.28 V	347	9.30	48.50
4	11100.00	44.8 AV	54.0	-9.2	1.28 V	347	-3.70	48.50

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	100.9 PK			1.32 H	17	63.10	37.80
2	*5670.00	83.0 AV			1.32 H	17	45.20	37.80
3	#5725.00	55.8 PK	68.3	-12.5	1.32 H	17	17.80	38.00
4	11340.00	57.8 PK	74.0	-16.2	1.22 H	32	9.60	48.20
5	11340.00	45.2 AV	54.0	-8.8	1.22 H	32	-3.00	48.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	104.6 PK			1.07 V	28	66.80	37.80
2	*5670.00	86.0 AV			1.07 V	28	48.20	37.80
3	#5725.00	59.0 PK	68.3	-9.3	1.07 V	28	21.00	38.00
4	11340.00	58.2 PK	74.0	-15.8	1.05 V	278	10.00	48.20
5	11340.00	45.3 AV	54.0	-8.7	1.05 V	278	-2.90	48.20

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 6. "#":The radiated frequency is out the restricted band.
 4. Margin value = Emission level – Limit value.

BELOW 1GHz WORST-CASE DATA : 802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	158.22	27.5 QP	43.5	-16.0	1.50 H	37	13.20	14.30
2	239.88	38.6 QP	46.0	-7.4	1.50 H	37	25.40	13.20
3	335.15	30.1 QP	46.0	-15.9	1.00 H	58	14.80	15.30
4	480.97	35.5 QP	46.0	-10.5	2.00 H	22	15.50	20.00
5	720.12	37.7 QP	46.0	-8.3	1.00 H	223	12.40	25.30
6	795.95	36.3 QP	46.0	-9.7	1.00 H	13	10.30	26.00
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	239.88	30.0 QP	46.0	-16.0	1.50 V	19	16.80	13.20
2	480.97	27.8 QP	46.0	-18.2	1.00 V	91	7.80	20.00
3	724.01	32.9 QP	46.0	-13.1	2.00 V	103	7.60	25.30
4	795.95	31.8 QP	46.0	-14.2	2.00 V	157	5.80	26.00
5	922.33	34.7 QP	46.0	-11.3	1.00 V	10	6.50	28.20
6	960.00	34.9 QP	46.0	-11.1	1.00 V	10	6.20	28.70

- 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).
 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 134	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1013 hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	239.88	40.9 QP	46.0	-5.1	1.00 H	121	27.70	13.20
2	480.97	38.6 QP	46.0	-7.4	2.00 H	211	18.60	20.00
3	675.40	39.2 QP	46.0	-6.8	1.00 H	1	14.70	24.50
4	720.12	40.7 QP	46.0	-5.3	1.00 H	10	15.40	25.30
5	795.95	38.0 QP	46.0	-8.0	2.00 H	106	12.00	26.00
6	961.21	40.0 QP	54.0	-14.0	1.50 H	1	11.30	28.70
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	239.88	37.3 QP	46.0	-8.7	1.50 V	100	24.10	13.20
2	344.87	27.5 QP	46.0	-18.5	1.50 V	142	11.70	15.80
3	480.97	33.5 QP	46.0	-12.5	1.00 V	265	13.50	20.00
4	663.74	38.3 QP	46.0	-7.7	1.00 V	283	14.10	24.20
5	720.12	39.4 QP	46.0	-6.6	1.50 V	109	14.10	25.30
6	795.95	37.7 QP	46.0	-8.3	1.50 V	151	11.70	26.00

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

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	100291	Dec. 16, 2009	Dec. 15, 2010
RF signal cable Woken	5D-FB	Cable-HYC01-01	Nov. 12, 2009	Nov. 11, 2010
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jun. 18, 2009	Jun. 17, 2010
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul., 29, 2009	Jul. 28, 2010
Software ADT	ADT_Cond_ V7.3.7	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.

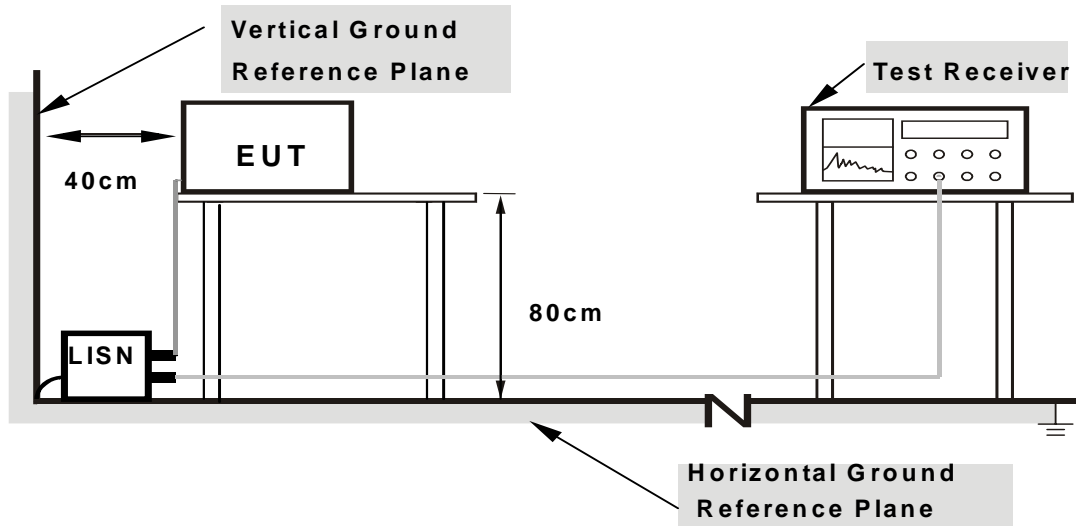
4.2.3 TEST PROCEDURES

- 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



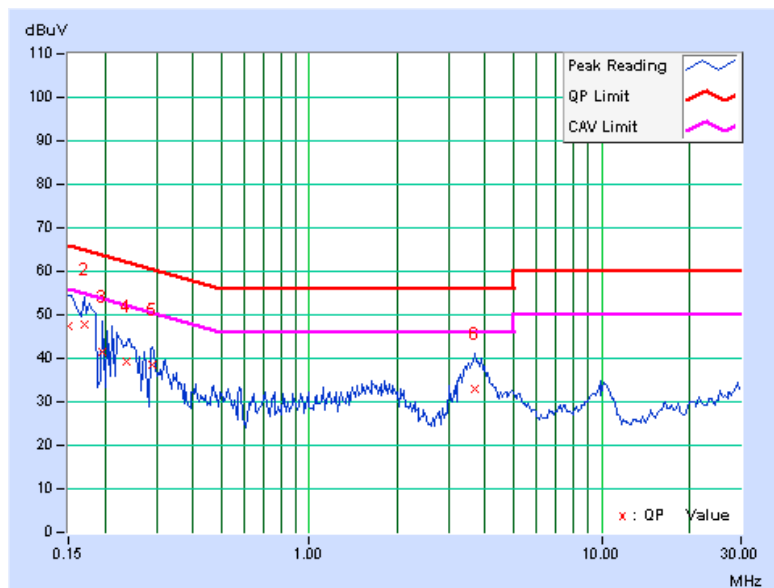
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11n (40MHz)

CHANNEL	Channel 54	PHASE	Line 1
6dB BANDWIDTH	9kHz		

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	0.150	0.12	47.38	-	47.50	-	66.00	56.00	-18.50	-
2	0.170	0.12	47.77	-	47.89	-	64.98	54.98	-17.10	-
3	0.197	0.11	41.48	-	41.59	-	63.74	53.74	-22.15	-
4	0.238	0.11	39.20	-	39.31	-	62.16	52.16	-22.85	-
5	0.291	0.12	38.28	-	38.40	-	60.51	50.51	-22.11	-
6	3.688	0.33	32.65	-	32.98	-	56.00	46.00	-23.02	-

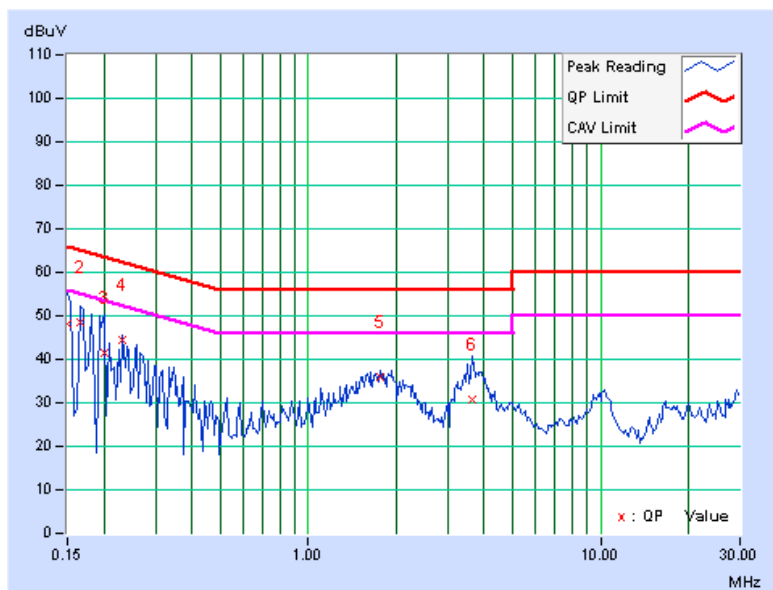
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



CHANNEL	Channel 54	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	47.93	-	48.03	-	66.00	56.00	-17.97	-
2	0.166	0.10	48.40	-	48.50	-	65.18	55.18	-16.68	-
3	0.201	0.10	41.39	-	41.49	-	63.58	53.58	-22.09	-
4	0.232	0.10	44.28	-	44.38	-	62.38	52.38	-17.99	-
5	1.758	0.22	35.54	-	35.76	-	56.00	46.00	-20.24	-
6	3.621	0.30	30.62	-	30.92	-	56.00	46.00	-25.08	-

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



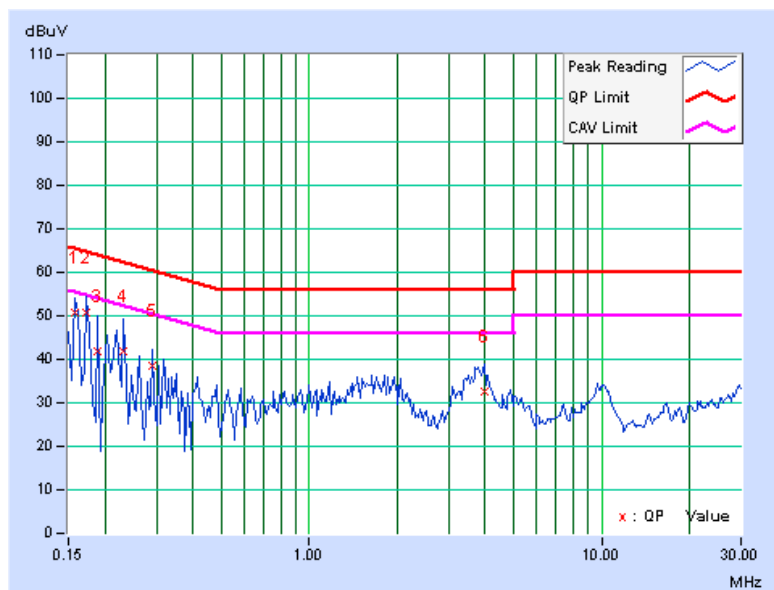


A D T

CHANNEL	Channel 134	PHASE	Line 1
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.12	50.73	-	50.85	-	65.58	55.58	-14.73	-
2	0.173	0.12	50.53	-	50.65	-	64.79	54.79	-14.15	-
3	0.189	0.11	41.72	-	41.83	-	64.08	54.08	-22.25	-
4	0.232	0.11	41.58	-	41.69	-	62.38	52.38	-20.68	-
5	0.291	0.12	38.45	-	38.57	-	60.51	50.51	-21.94	-
6	3.984	0.35	32.41	-	32.76	-	56.00	46.00	-23.24	-

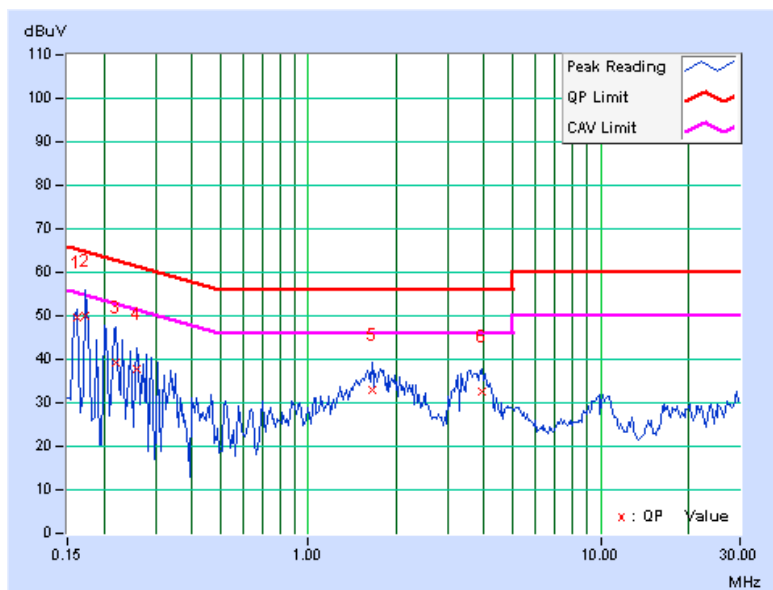
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



CHANNEL	Channel 134	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.10	49.36	-	49.46	-	65.38	55.38	-15.92	-
2	0.173	0.10	49.74	-	49.84	-	64.79	54.79	-14.95	-
3	0.220	0.10	39.11	-	39.21	-	62.81	52.81	-23.60	-
4	0.259	0.11	37.84	-	37.95	-	61.45	51.45	-23.51	-
5	1.648	0.22	32.81	-	33.03	-	56.00	46.00	-22.97	-
6	3.934	0.32	32.32	-	32.64	-	56.00	46.00	-23.36	-

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



4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0824012	Aug. 10, 2009	Aug. 09, 2010
Power Sensor	MA2411B	0738138	Aug. 10, 2009	Aug. 09, 2010

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. Measurement Bandwidth of ML2495A is 65MHz greater than 26dB bandwidth of emission.

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100039	Jan. 11, 2010	Jan. 10, 2011

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

4.3.3 TEST PROCEDURE

FOR POWER OUTPUT MEASUREMENT

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

FOR 26dB OCCUPIED BANDWIDTH

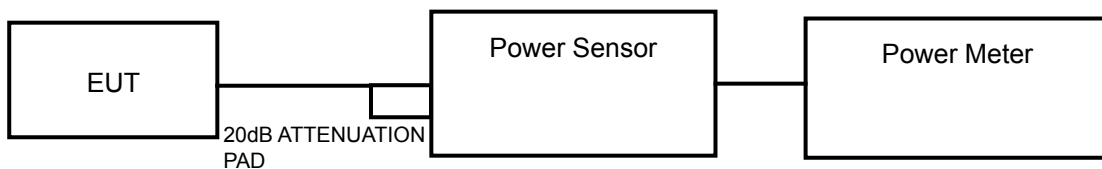
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.3.4 DEVIATION FROM TEST STANDARD

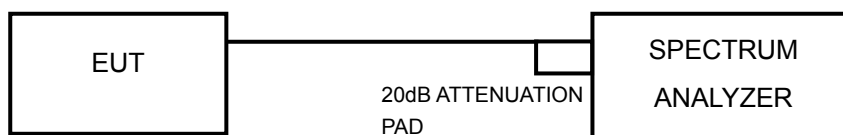
No deviation.

4.3.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (mW)	OUTPUT POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	32.4	15.1	17	PASS
40	5200	33.1	15.2	17	PASS
48	5240	32.4	15.1	17	PASS
52	5260	33.9	15.3	24	PASS
60	5300	32.4	15.1	24	PASS
64	5320	33.1	15.2	24	PASS
100	5500	30.9	14.9	24	PASS
116	5580	30.9	14.9	24	PASS
132	5660	32.4	15.1	24	PASS
140	5700	30.9	14.9	24	PASS

**802.11n (20MHz)**

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	13.1	13.2	41.3	16.2	17	PASS
40	5200	13.1	13.5	42.8	16.3	17	PASS
48	5240	13.1	13.4	42.3	16.3	17	PASS
52	5260	13.1	13.5	42.8	16.3	24	PASS
60	5300	13.2	13.5	43.3	16.4	24	PASS
64	5320	13.1	13.6	43.3	16.4	24	PASS
100	5500	13.2	13.1	41.3	16.2	24	PASS
116	5580	13.3	13.2	42.3	16.3	24	PASS
132	5660	12.9	13.1	39.9	16.0	24	PASS
140	5700	12.9	13.3	40.9	16.1	24	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	13.1	13.8	44.4	16.5	17	PASS
46	5230	13.1	14.0	45.5	16.6	17	PASS
54	5270	13.2	14.0	46.0	16.6	24	PASS
62	5310	13.0	13.9	44.5	16.5	24	PASS
102	5510	13.1	13.5	42.8	16.3	24	PASS
110	5550	13.0	13.5	42.3	16.3	24	PASS
134	5670	13.2	13.6	43.8	16.4	24	PASS

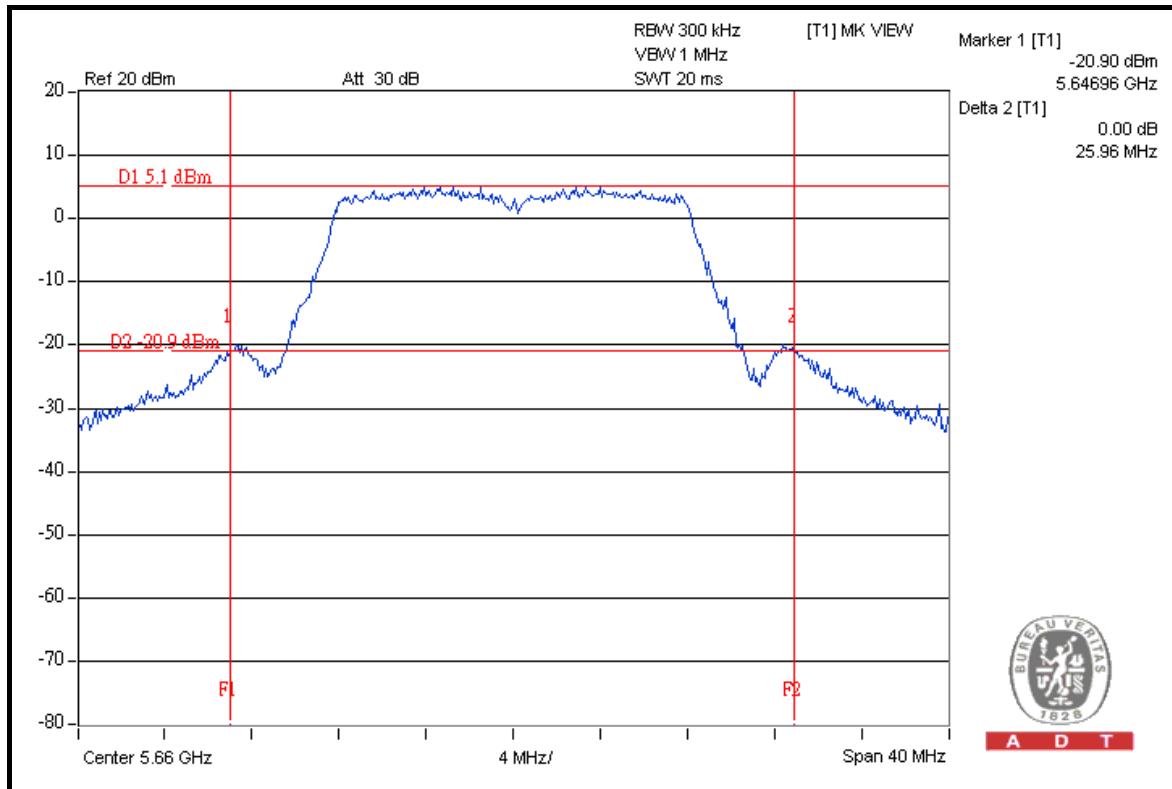


A D T

26dB OCCUPIED BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	25.52	PASS
40	5200	22.99	PASS
48	5240	25.55	PASS
52	5260	25.15	PASS
60	5300	25.38	PASS
64	5320	25.28	PASS
100	5500	23.38	PASS
116	5580	25.83	PASS
132	5660	25.96	PASS
140	5700	25.89	PASS

CH 132



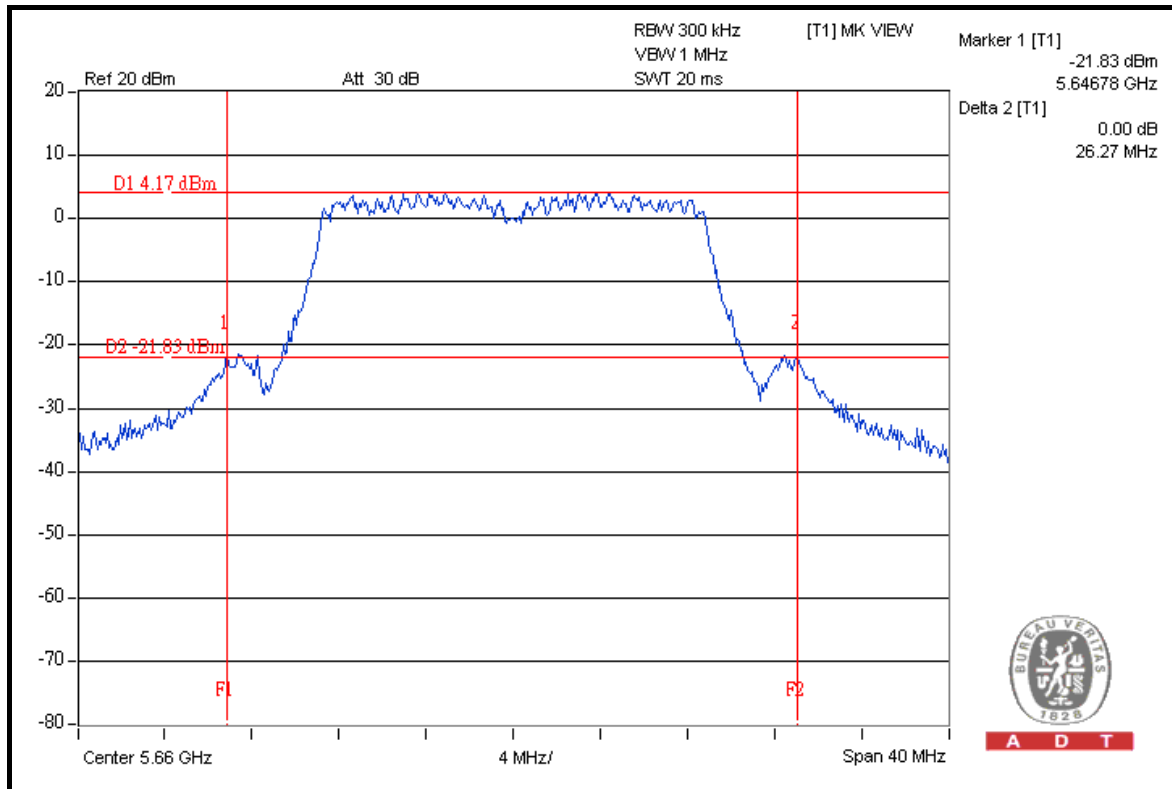


A D T

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	23.05	21.28	PASS
40	5200	24.96	23.07	PASS
48	5240	25.03	21.00	PASS
52	5260	23.28	23.12	PASS
60	5300	25.19	23.22	PASS
64	5320	24.88	25.21	PASS
100	5500	21.73	21.27	PASS
116	5580	26.06	24.82	PASS
132	5660	26.16	26.27	PASS
140	5700	25.52	21.10	PASS

FOR CHAIN 1: CH 132



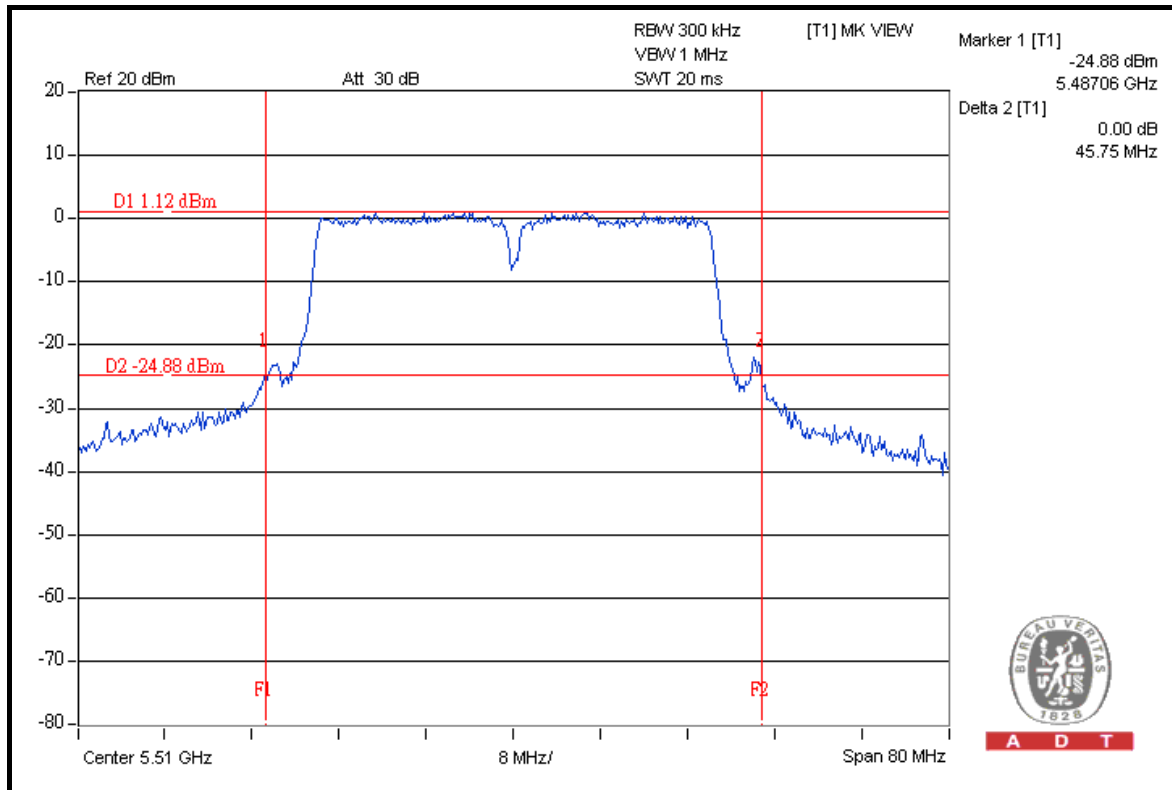


A D T

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
38	5190	44.70	42.03	PASS
46	5230	42.47	43.97	PASS
54	5270	45.24	44.42	PASS
62	5310	44.89	44.13	PASS
102	5510	45.75	44.61	PASS
110	5550	45.33	44.59	PASS
134	5670	45.43	44.24	PASS

CHAIN 0: CH 102



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	13dB
5.250 ~ 5.350GHz	13dB
5.470 ~ 5.725GHz	13dB

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100039	Jan. 11, 2010	Jan. 10, 2011

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

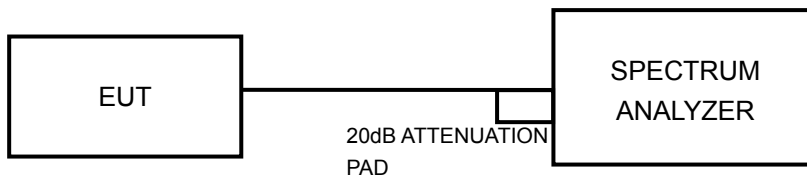
4.4.3 TEST PROCEDURE

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set the spectrum bandwidth span to view the entire spectrum.
- c. Using peak detector and Max-hold function for Trace 1 (RB = 1MHz, VB = 3MHz) and 2 (RB = 1MHz, VB = 300kHz).
- d. The differences between Trace1 and Trace 2 in any 1MHz band at f1 to f2 range were recorded and showed to another trace.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.4.7 TEST RESULTS

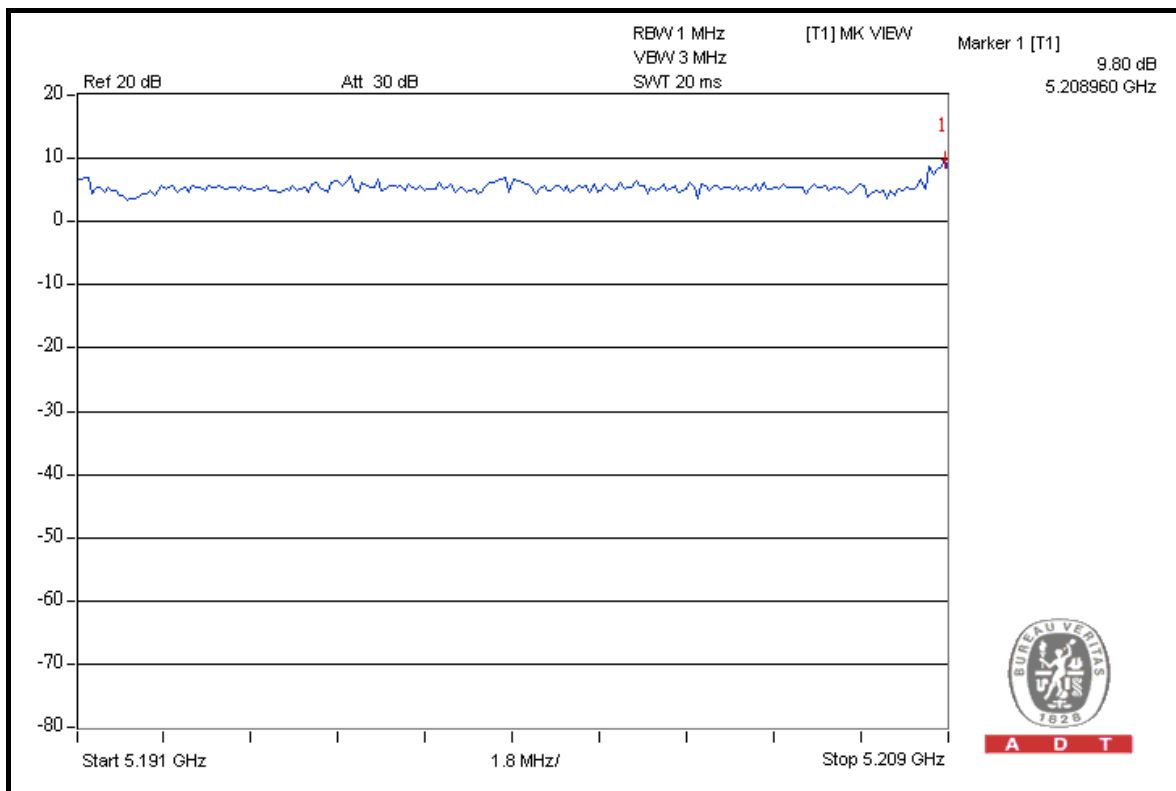
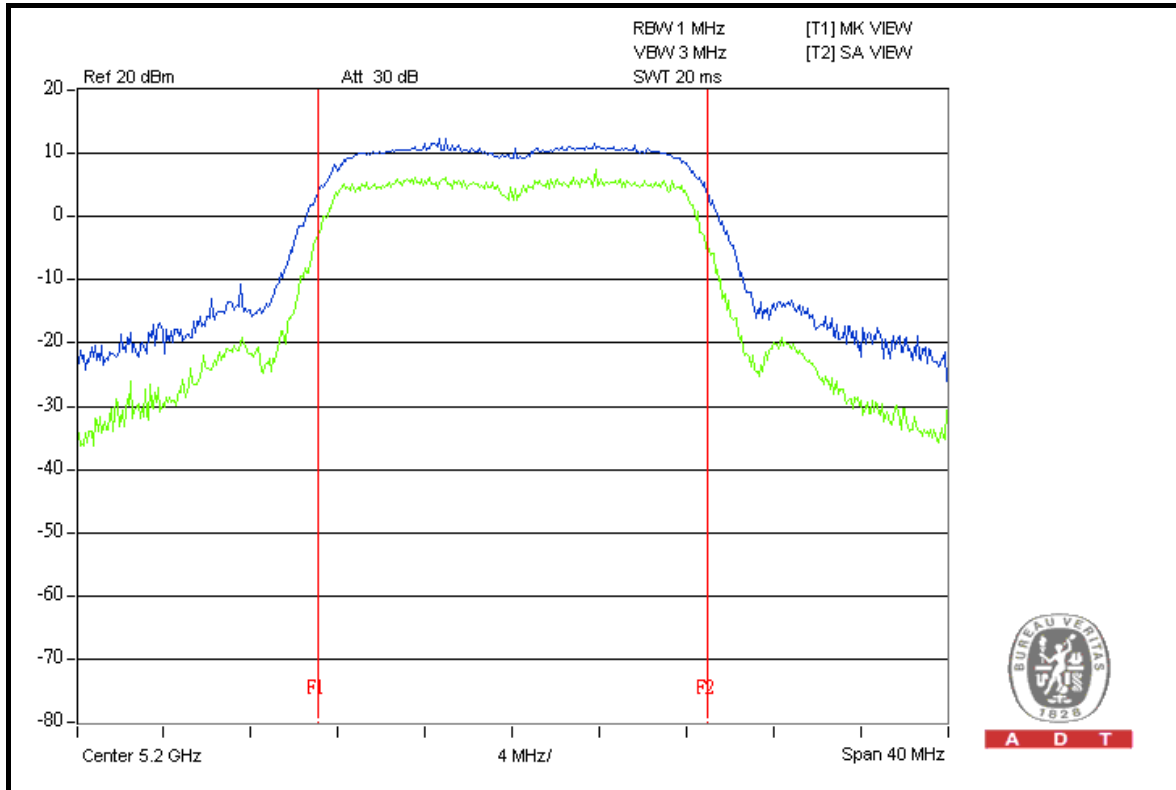
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	7.85	13	PASS
40	5200	9.80	13	PASS
48	5240	8.20	13	PASS
52	5260	8.16	13	PASS
60	5300	9.66	13	PASS
64	5320	8.53	13	PASS
100	5500	9.43	13	PASS
116	5580	8.78	13	PASS
132	5660	8.00	13	PASS
140	5700	8.59	13	PASS



A D T

CH 40





A D T

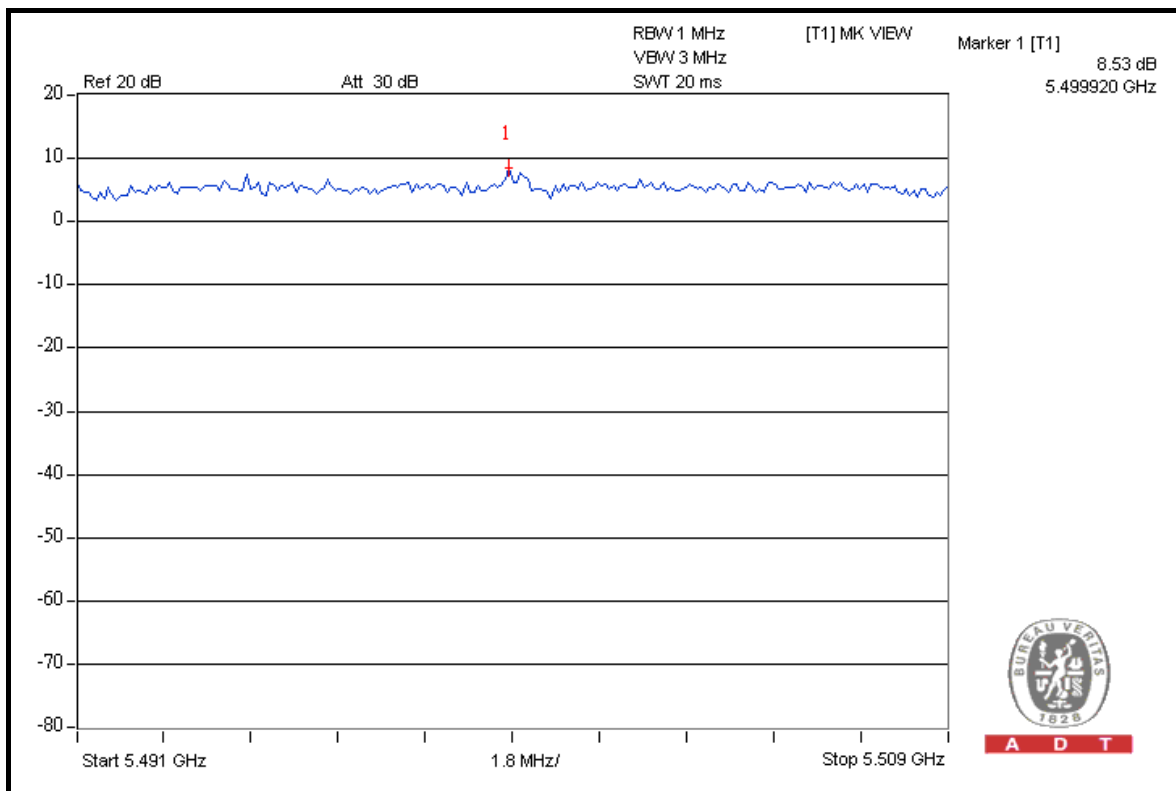
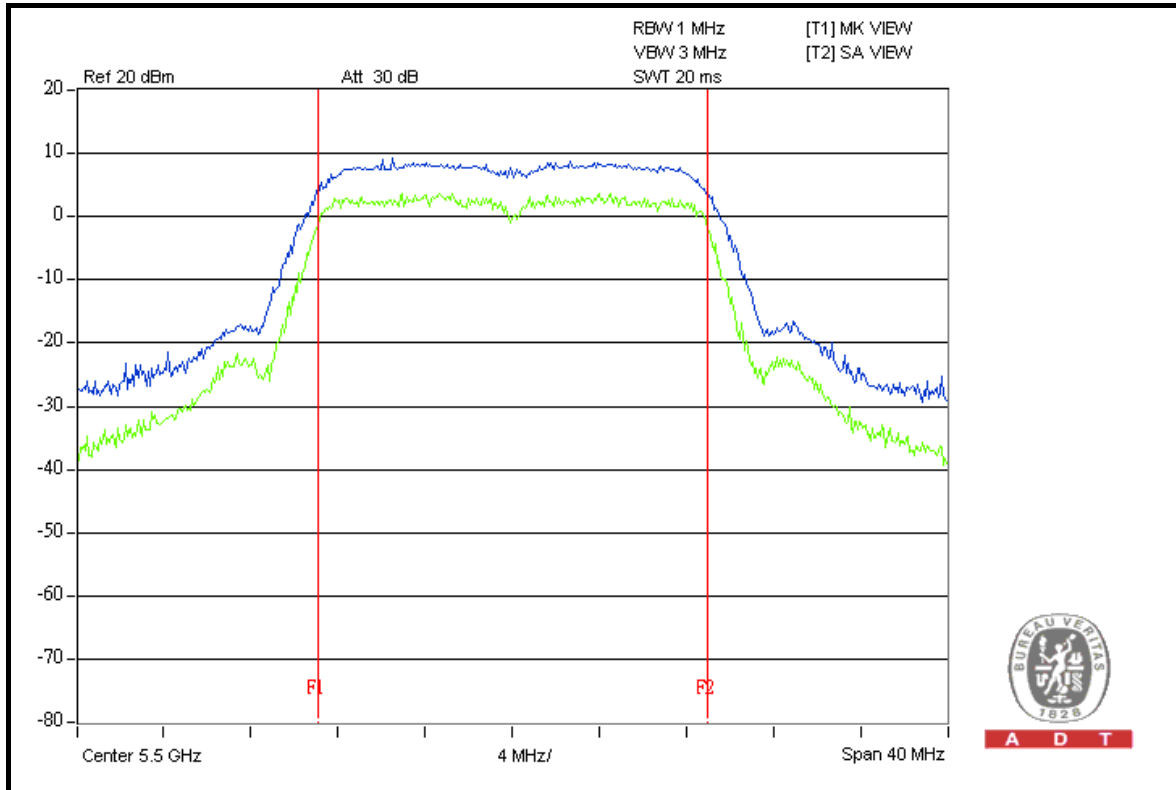
802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	7.40	7.07	13	PASS
40	5200	7.21	7.16	13	PASS
48	5240	8.40	7.70	13	PASS
52	5260	7.76	7.58	13	PASS
60	5300	7.99	7.26	13	PASS
64	5320	7.97	7.19	13	PASS
100	5500	8.53	7.46	13	PASS
116	5580	7.85	7.41	13	PASS
132	5660	7.57	7.73	13	PASS
140	5700	8.13	7.46	13	PASS



A D T

CHAIN 0: CH 100





A D T

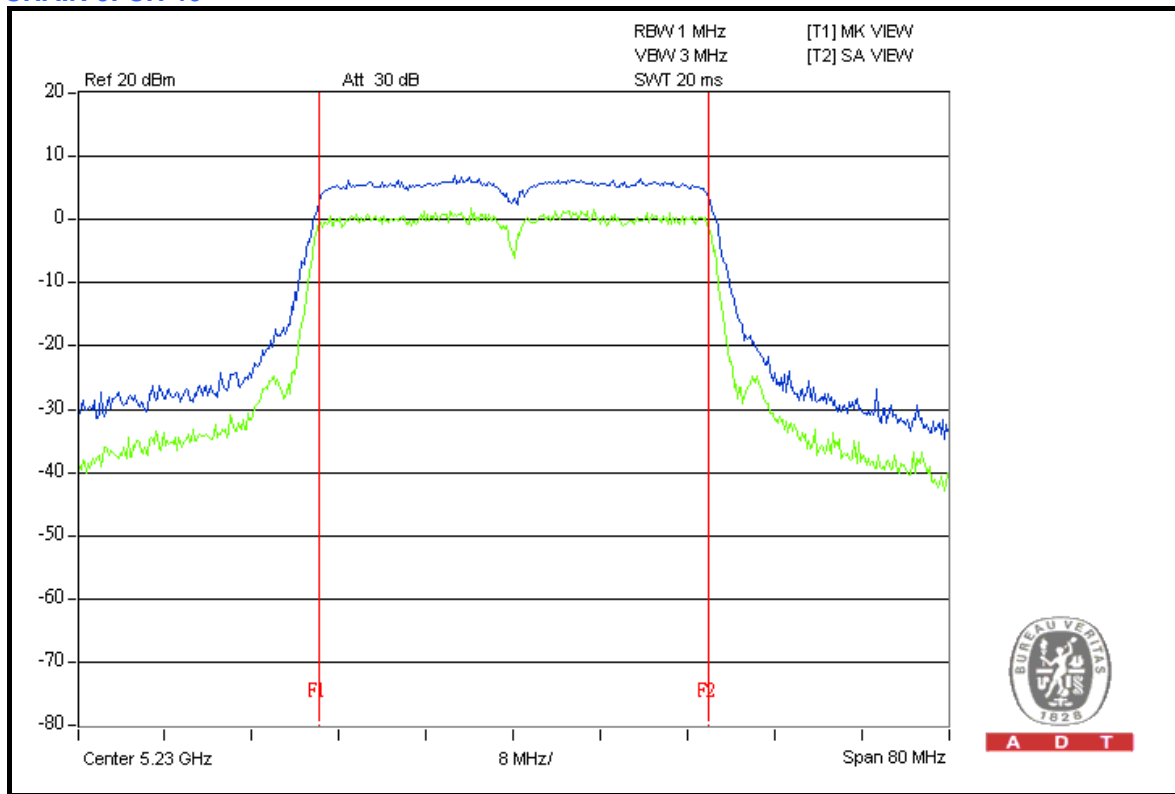
802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
38	5190	8.53	8.38	13	PASS
46	5230	9.55	7.85	13	PASS
54	5270	8.03	8.00	13	PASS
62	5310	8.44	8.42	13	PASS
102	5510	8.23	8.49	13	PASS
110	5550	8.36	8.36	13	PASS
134	5670	8.68	7.60	13	PASS

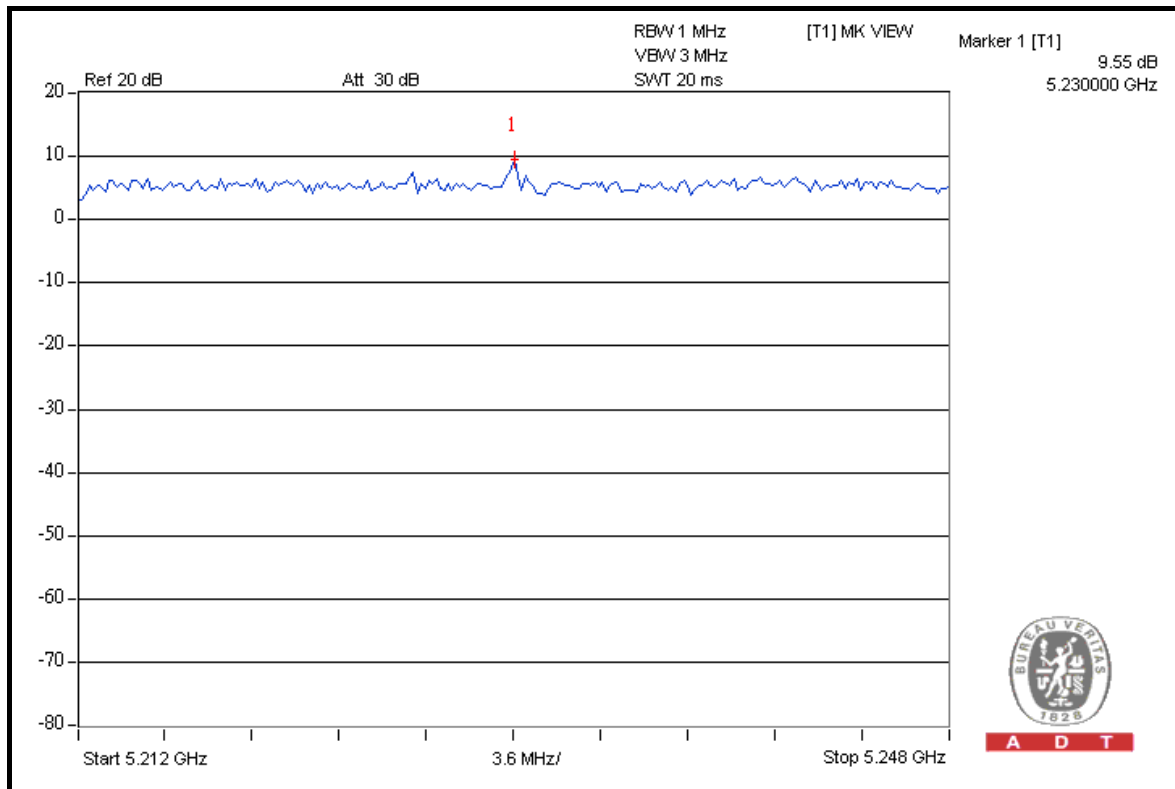


A D T

CHAIN 0: CH 46



A D T



A D T

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100039	Jan. 11, 2010	Jan. 10, 2011

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

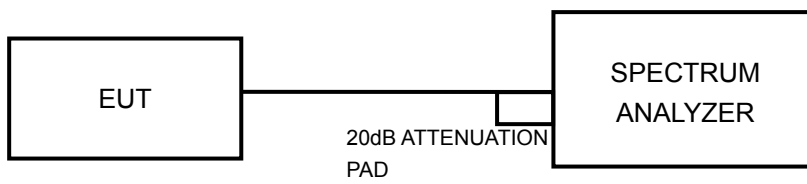
4.5.3 TEST PROCEDURES

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW = 1MHz, VBW = 3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6.



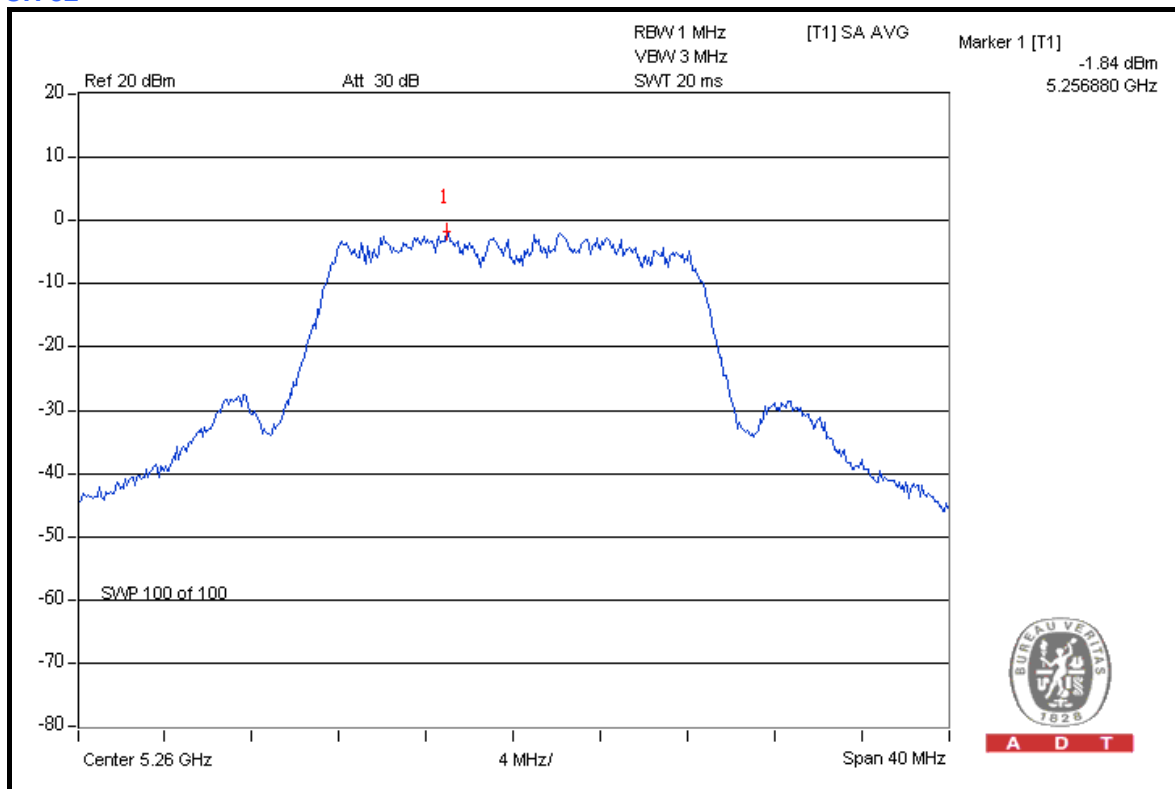
A D T

4.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
36	5180	-2.3	4	PASS
40	5200	-2.0	4	PASS
48	5240	-2.0	4	PASS
52	5260	-1.8	11	PASS
60	5300	-2.1	11	PASS
64	5320	-2.0	11	PASS
100	5500	-2.3	11	PASS
116	5580	-2.3	11	PASS
132	5660	-2.1	11	PASS
140	5700	-2.6	11	PASS

CH 52



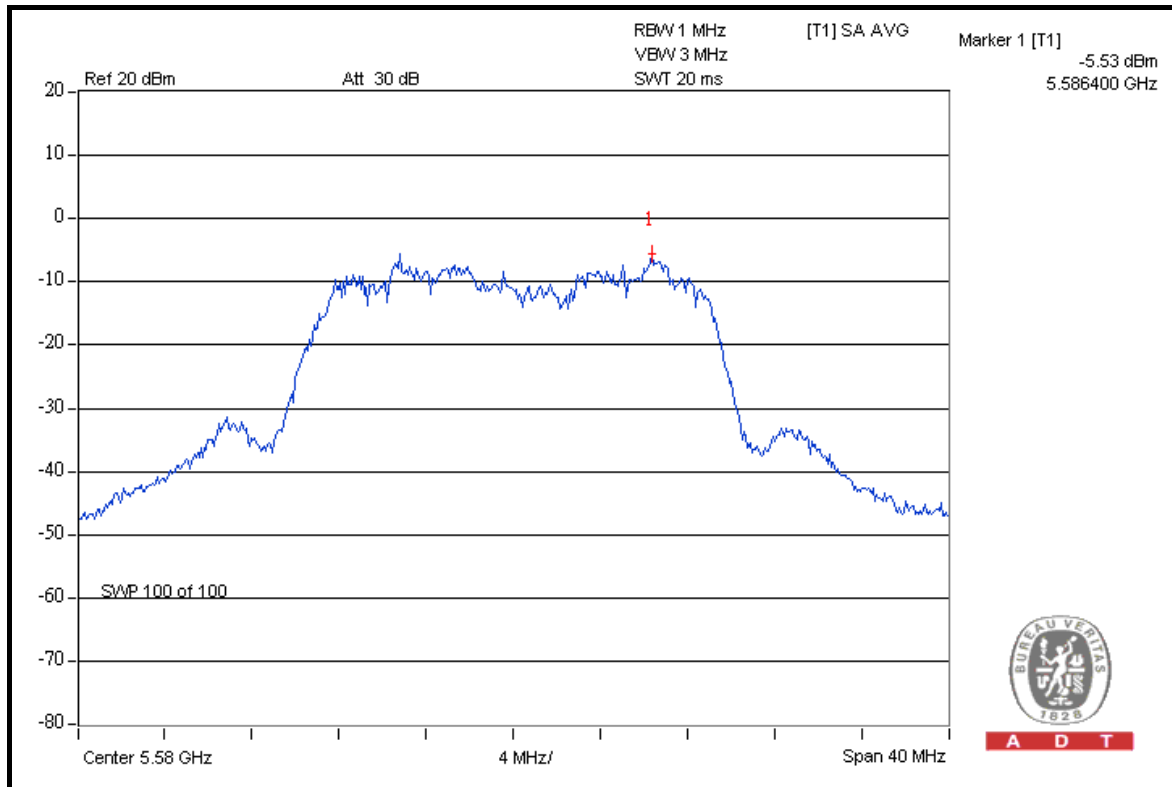


A D T

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-5.9	-7.3	0.4	-3.5	4	PASS
40	5200	-5.7	-6.9	0.5	-3.3	4	PASS
48	5240	-5.7	-6.9	0.5	-3.3	4	PASS
52	5260	-5.7	-6.8	0.5	-3.2	11	PASS
60	5300	-6.0	-6.9	0.5	-3.3	11	PASS
64	5320	-5.8	-6.7	0.5	-3.2	11	PASS
100	5500	-5.8	-7.4	0.4	-3.5	11	PASS
116	5580	-5.5	-7.4	0.5	-3.4	11	PASS
132	5660	-6.0	-7.3	0.4	-3.6	11	PASS
140	5700	-5.9	-7.1	0.5	-3.5	11	PASS

CHAIN 0: CH 116



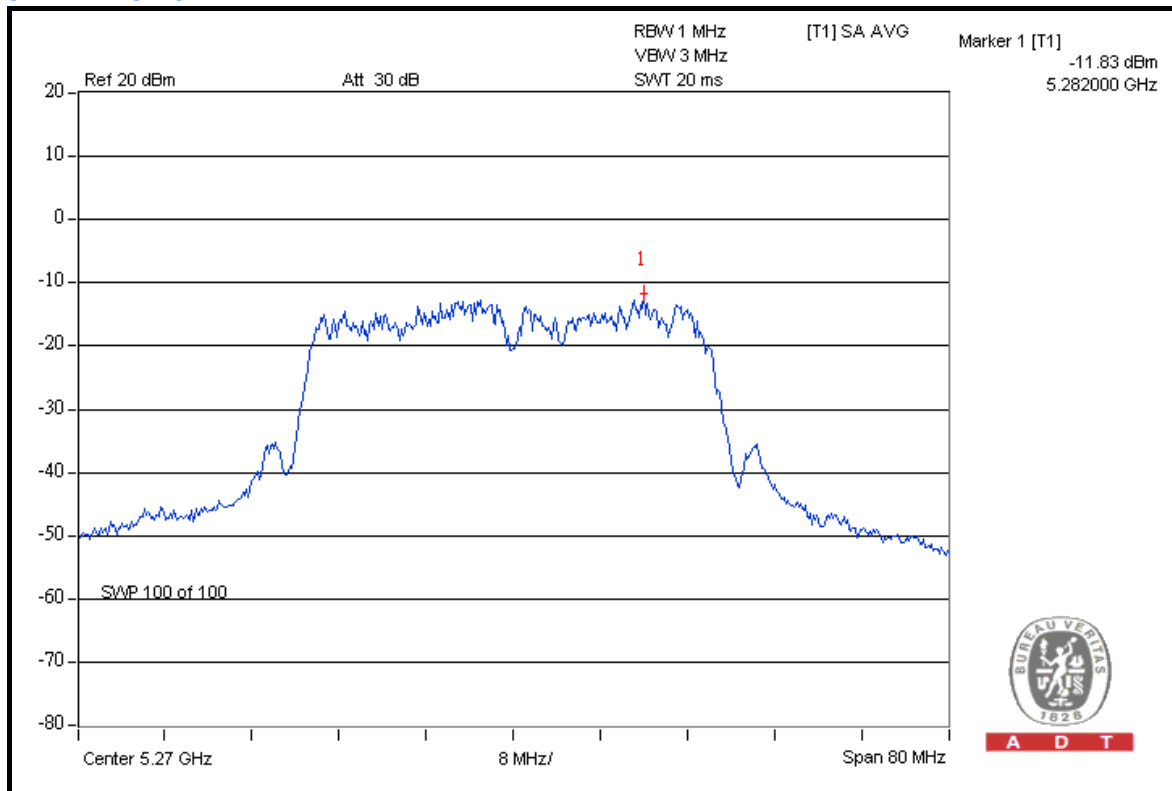


A D T

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-13.0	-12.3	0.1	-9.6	4	PASS
46	5230	-12.9	-11.9	0.1	-9.3	4	PASS
54	5270	-12.8	-11.8	0.1	-9.2	11	PASS
62	5310	-12.9	-12.0	0.1	-9.4	11	PASS
102	5510	-12.9	-12.4	0.1	-9.6	11	PASS
110	5550	-13.2	-12.6	0.1	-9.9	11	PASS
134	5670	-12.8	-12.3	0.1	-9.5	11	PASS

CHAIN 1: CH 54



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within the band of operation frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100039	Jan. 11, 2010	Jan. 10, 2011
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 24, 2008	Jun. 23, 2010

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

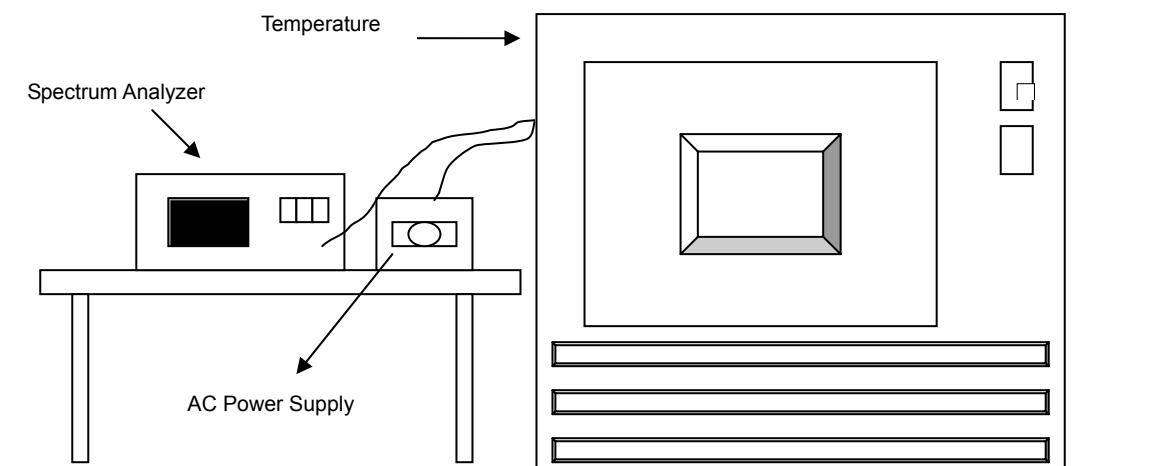
4.6.3 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6.



4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
70	110.0	5319.988467	-2.168	5319.988584	-2.146	5319.988921	-2.083	5319.988809	-2.104
60	110.0	5319.987658	-2.320	5319.988288	-2.202	5319.987650	-2.321	5319.988195	-2.219
50	110.0	5319.987984	-2.259	5319.987683	-2.315	5319.987793	-2.295	5319.988066	-2.243
40	110.0	5319.987861	-2.282	5319.987840	-2.286	5319.987926	-2.270	5319.987982	-2.259
30	110.0	5319.989338	-1.891	5319.990517	-1.783	5319.990114	-1.858	5319.989759	-1.925
20	110.0	5319.991238	-1.647	5319.991027	-1.687	5319.991415	-1.614	5319.991435	-1.610
10	110.0	5319.993024	-1.311	5319.993159	-1.286	5319.993506	-1.221	5319.993191	-1.280
0	110.0	5319.991097	-1.673	5319.991228	-1.649	5319.990993	-1.693	5319.991192	-1.656
-10	110.0	5319.989489	-1.976	5319.989450	-1.983	5319.989477	-1.978	5319.989222	-2.026
-20	110.0	5319.989379	-1.996	5319.989203	-2.030	5319.989563	-1.962	5319.989753	-1.926
-30	110.0	5319.988434	-2.174	5319.988516	-2.159	5319.988854	-2.095	5319.988236	-2.211

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5319.989390	-1.994	5319.989273	-2.016	5319.989781	-1.921	5319.989604	-1.954
	110.0	5319.990981	-1.695	5319.990787	-1.732	5319.991197	-1.655	5319.991385	-1.619
	126.5	5319.992589	-1.393	5319.992253	-1.456	5319.992424	-1.424	5319.992531	-1.404



4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
FOR CONDUCTED MEASUREMENT:				
R&S SPECTRUM ANALYZER	FSP40	100039	Jan. 11, 2010	Jan. 10, 2011
FOR RADIATED MEASUREMENT:				
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jul. 06, 2009	Jul. 05, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Dec. 31, 2009	Dec. 30, 2010
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2010	Apr. 26, 2011
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jul. 01, 2009	Jun. 30, 2010
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2009	Dec. 24, 2010
Preamplifier Agilent	8447D	2944A10633	Nov. 10, 2009	Nov. 09, 2010
Preamplifier Agilent	8449B	3008A01964	Nov. 09, 2009	Nov. 08, 2010
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 14, 2010	May 13, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 14, 2010	May 13, 2011
Software ADT.	ADT_Radiated_ V7.6.15.9.2	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 ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2009	Aug. 26, 2010

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

4.7.2 TEST PROCEDURE

FOR CONDUCTED MEASUREMENT:

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 1MHz and 3MHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

FOR RADIATED MEASUREMENT:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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. Set both RBW and VBW of spectrum analyzer to 1MHz and 3MHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.15 to 5.25GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak field strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW = 1MHz, VBW = 3MHz) are attached on the following pages.

FOR 5180-5320MHz BAND: 802.11a

RESTRICT BAND (4500 ~ 5150 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5180.00 (PK)	107.8	45.58	62.22	74.00
5180.00 (AV)	93.4	52.40	41.00	54.00

RESTRICT BAND (5350 ~ 5460 MHz)

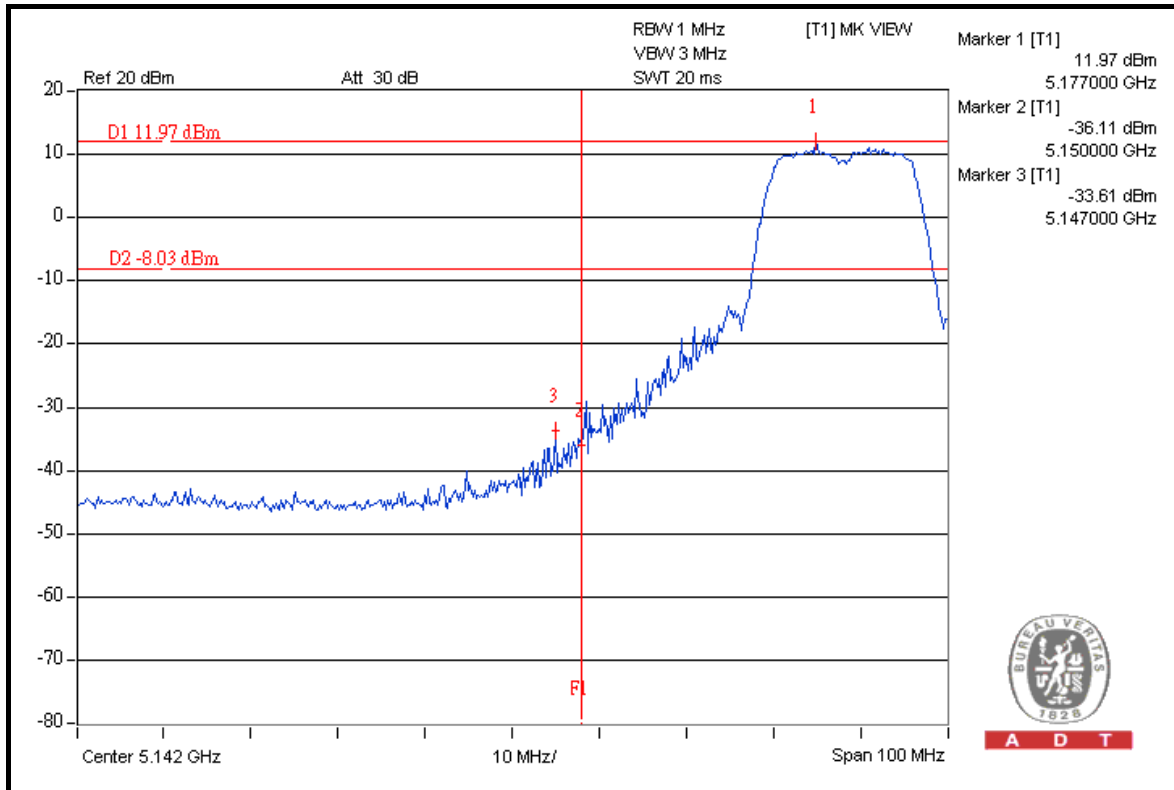
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5320.00 (PK)	108.4	42.28	66.12	74.00
5320.00 (AV)	94.4	51.78	42.62	54.00

NOTE:

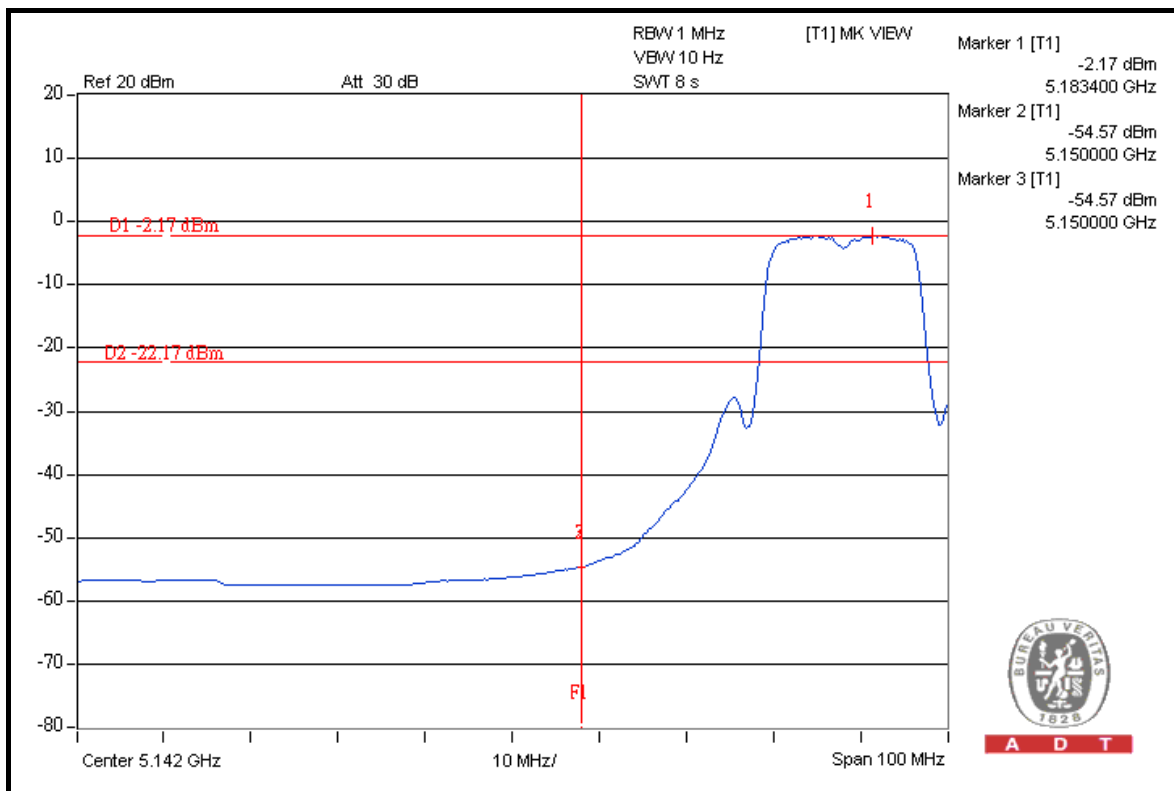
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.



A D T



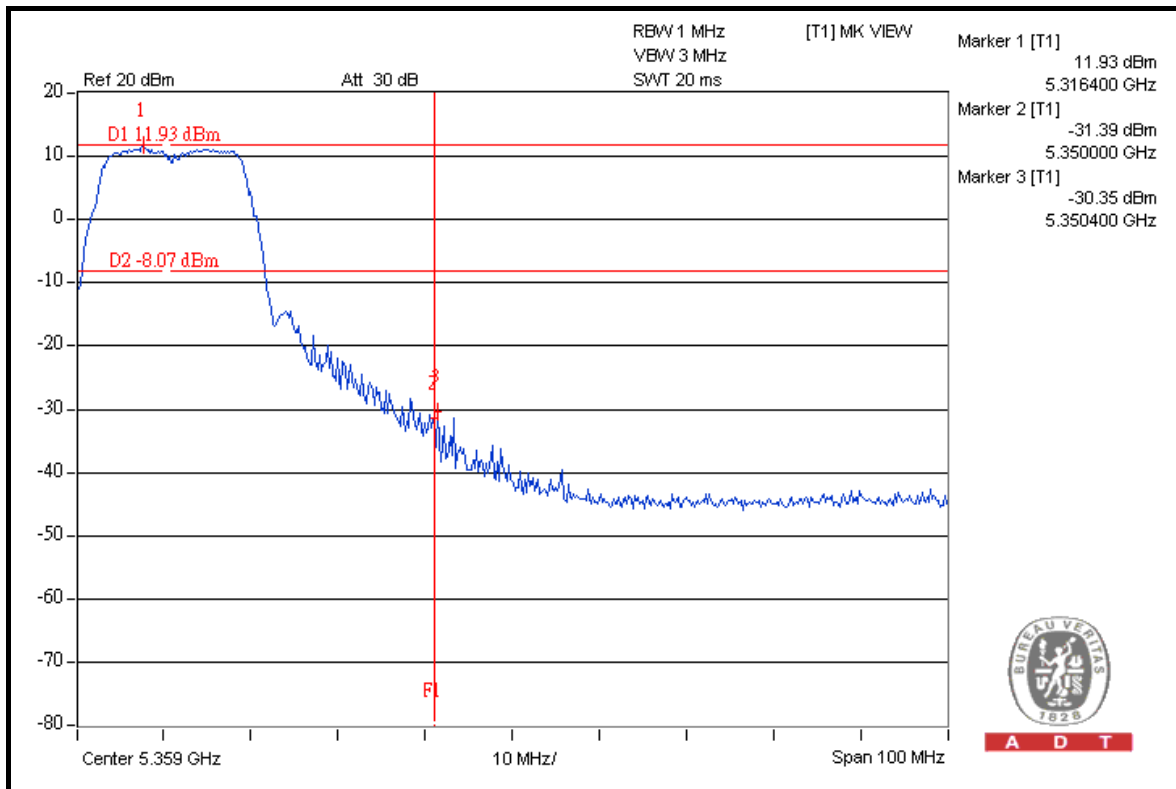
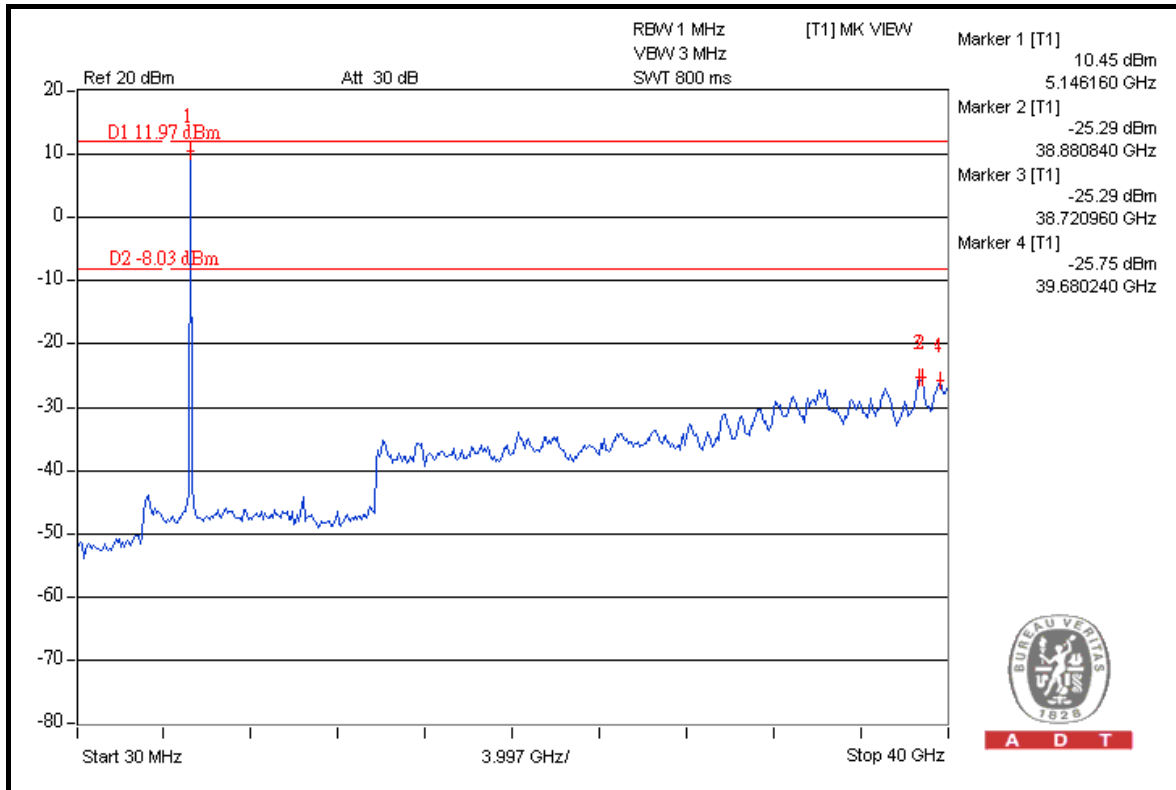
A D T



A D T

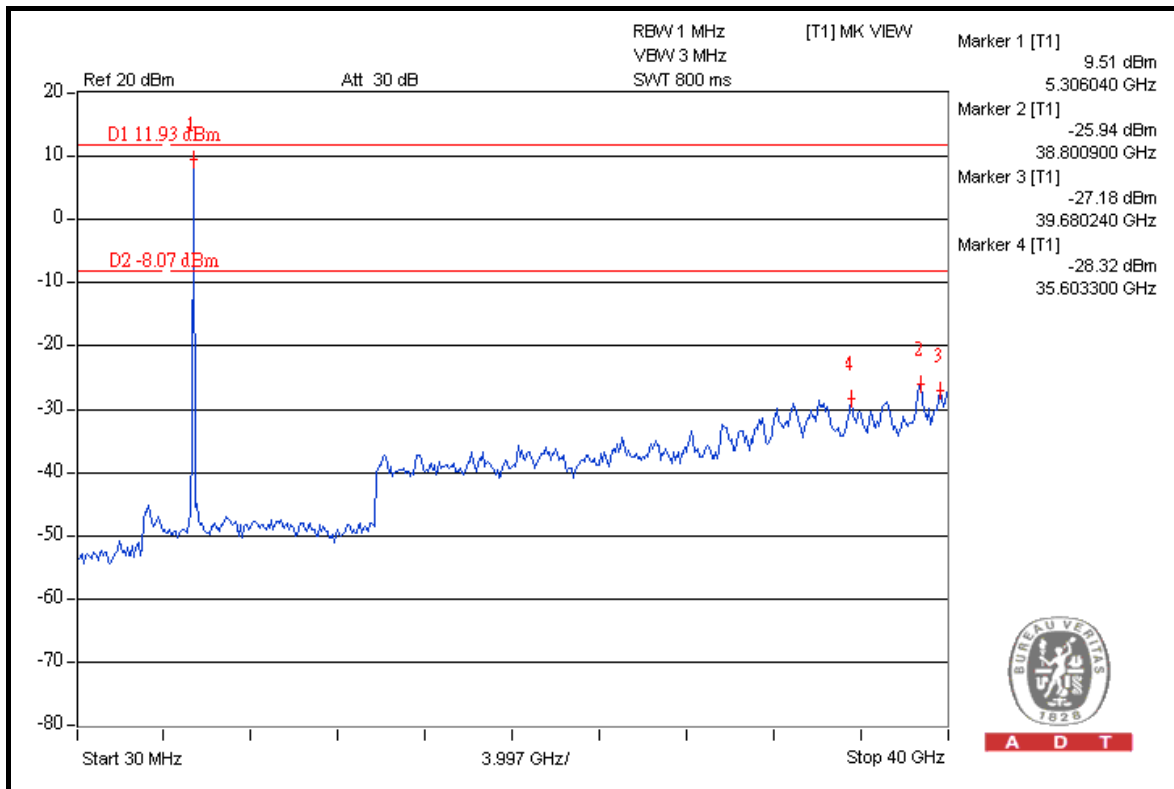
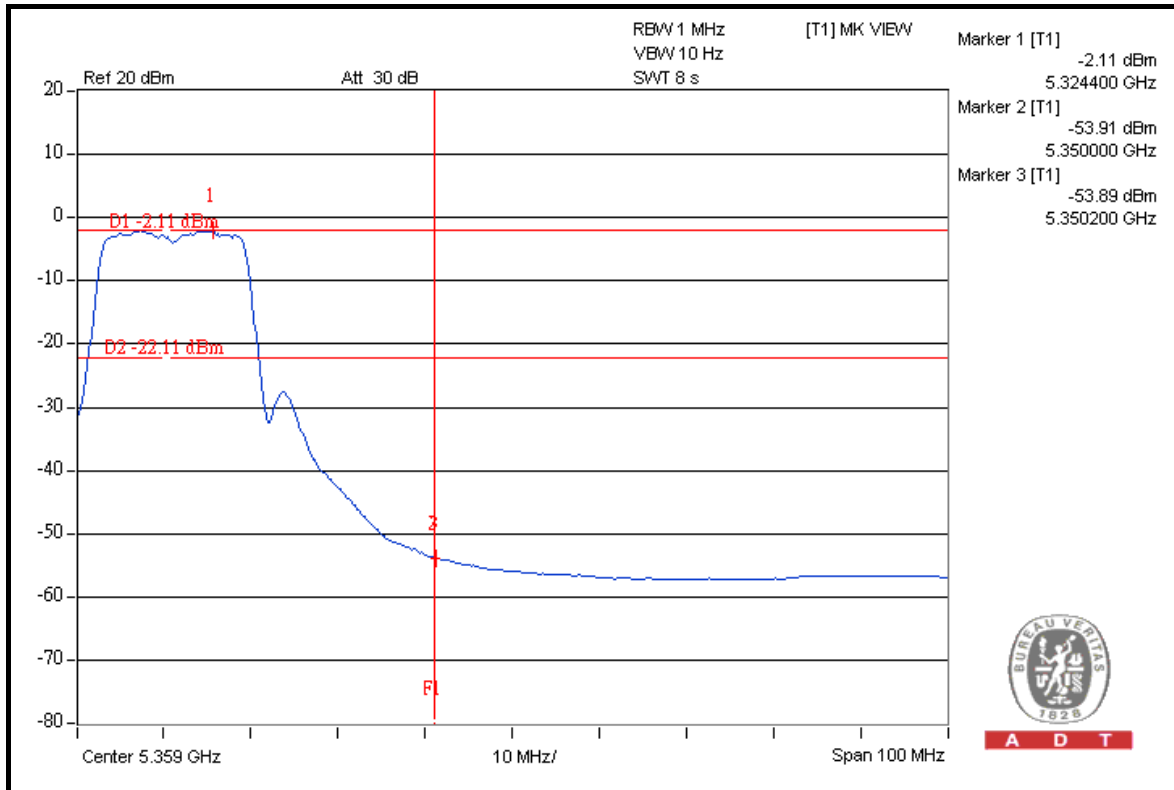


A D T





A D T



FOR 5500-5700MHz BAND:

802.11a

5500MHz

RESTRICT BAND (5350 ~ 5460 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5500.00 (PK)	108.2	51.17	57.03	74.00
5500.00 (AV)	94.3	53.44	40.86	54.00

FREQUENCY BAND (5460 ~ 5470 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5500.00 (PK)	108.2	43.31	64.89	68.30

5700MHz

ABOVE 5725 MHz

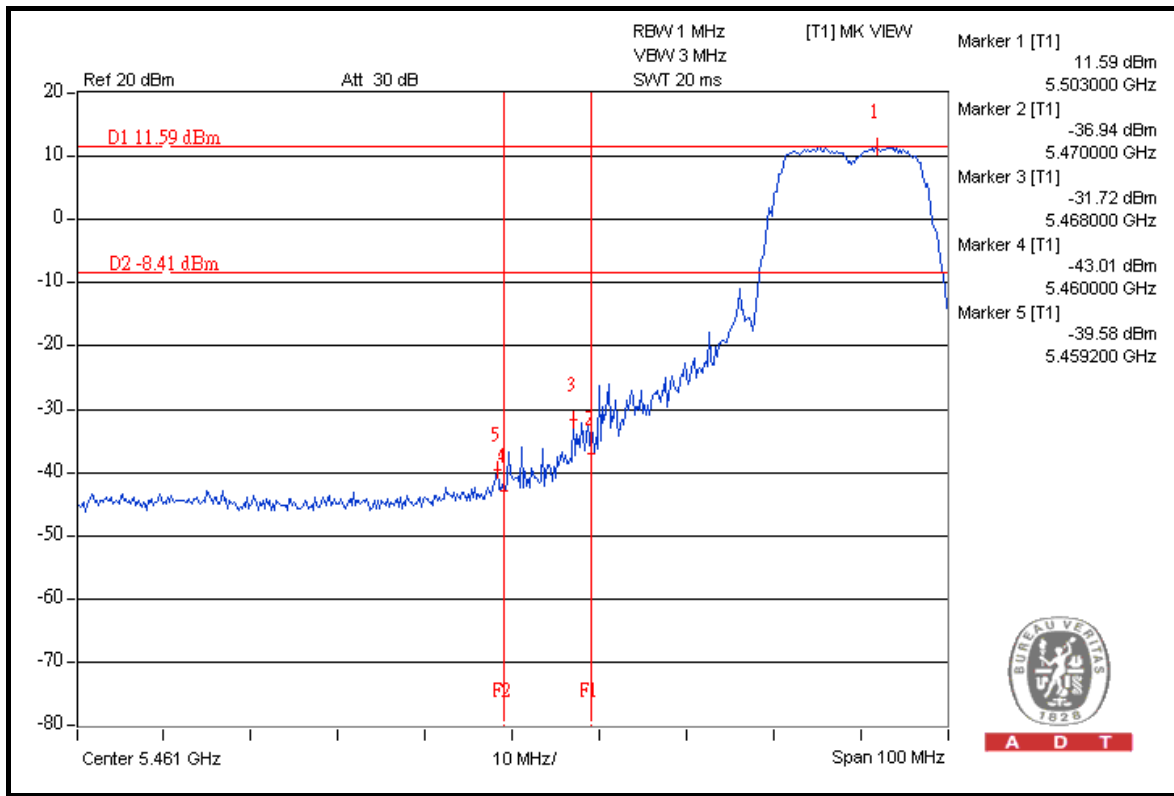
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5700.00 (PK)	107.8	41.93	65.87	68.30

NOTE:

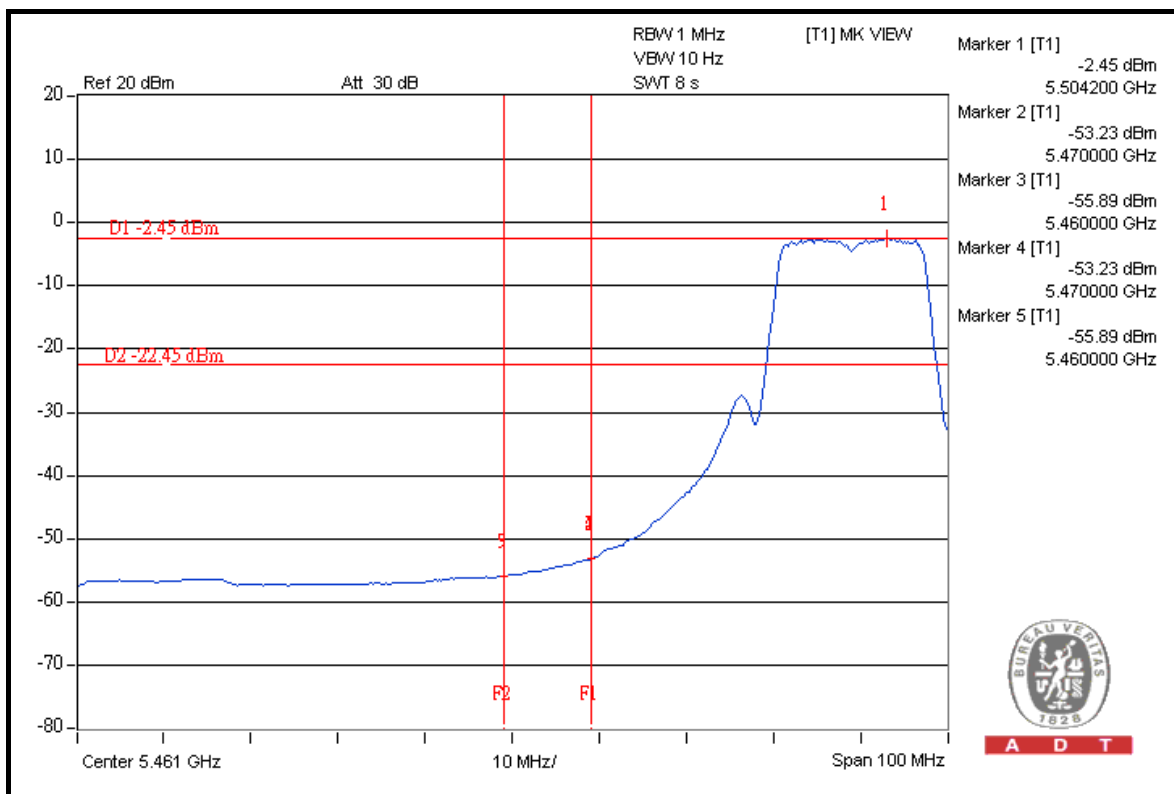
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.



A D T



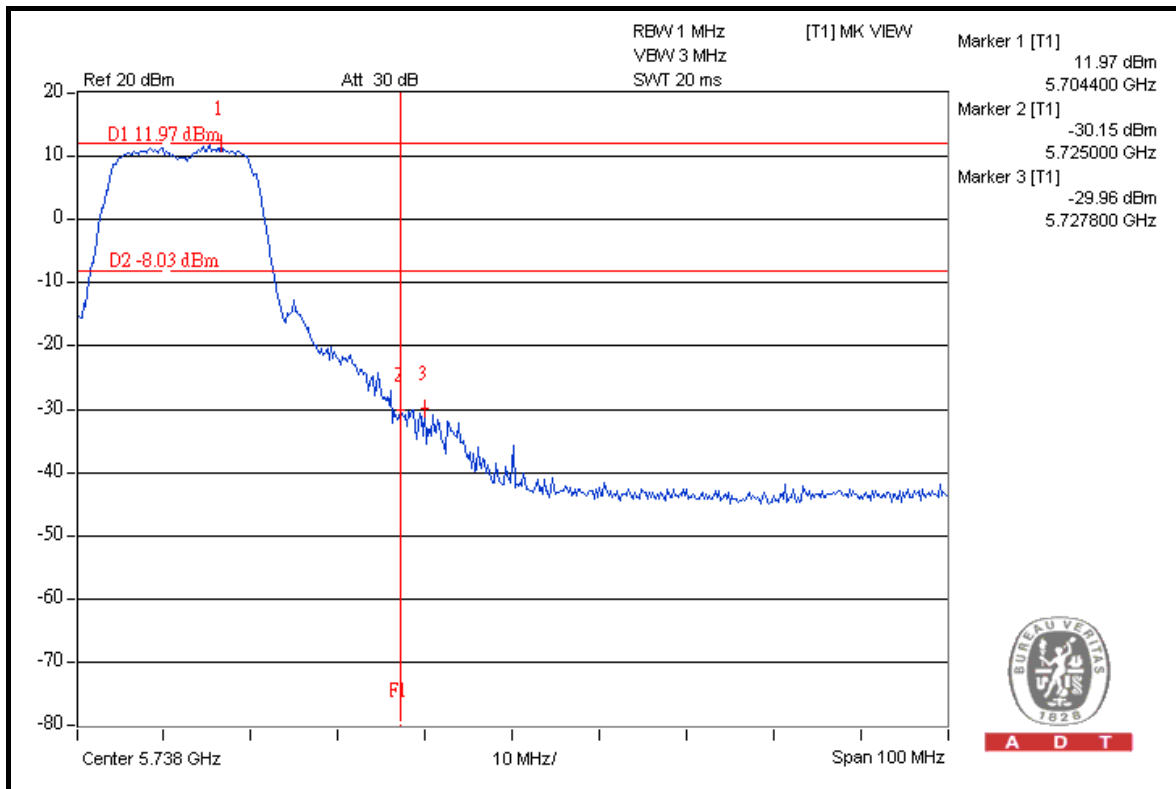
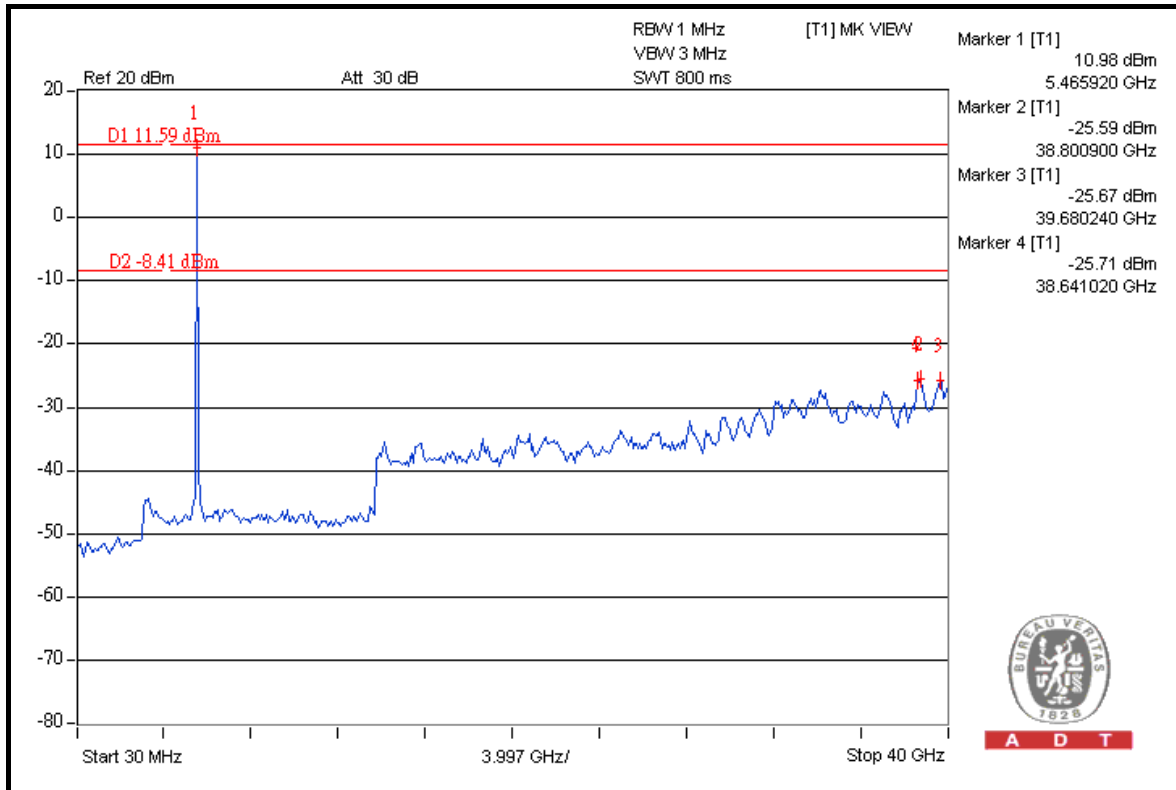
A D T



A D T

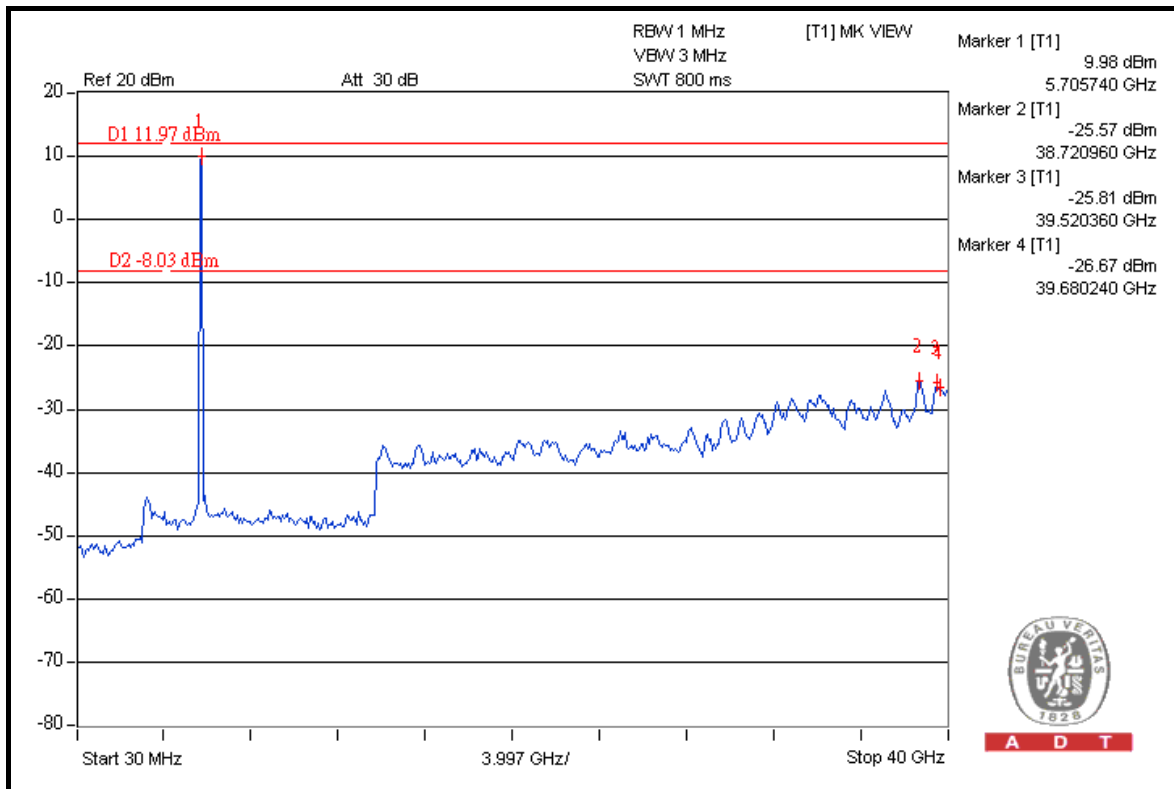
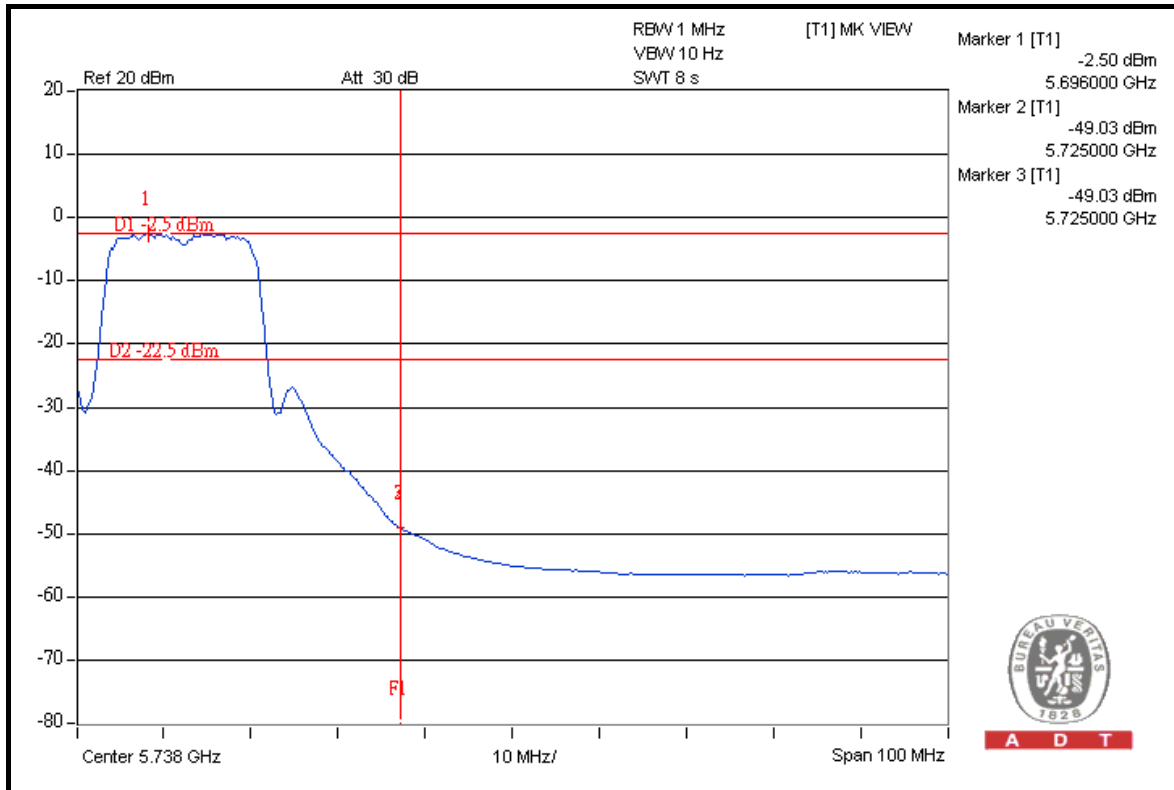


A D T





A D T



FOR 5180-5320MHz BAND:

802.11n (20MHz)

RESTRICT BAND (4500 ~ 5150 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5180.00 (PK)	107.0	48.96	58.04	74.00
5180.00 (AV)	90.2	46.35	43.85	54.00

RESTRICT BAND (5350 ~ 5460 MHz)

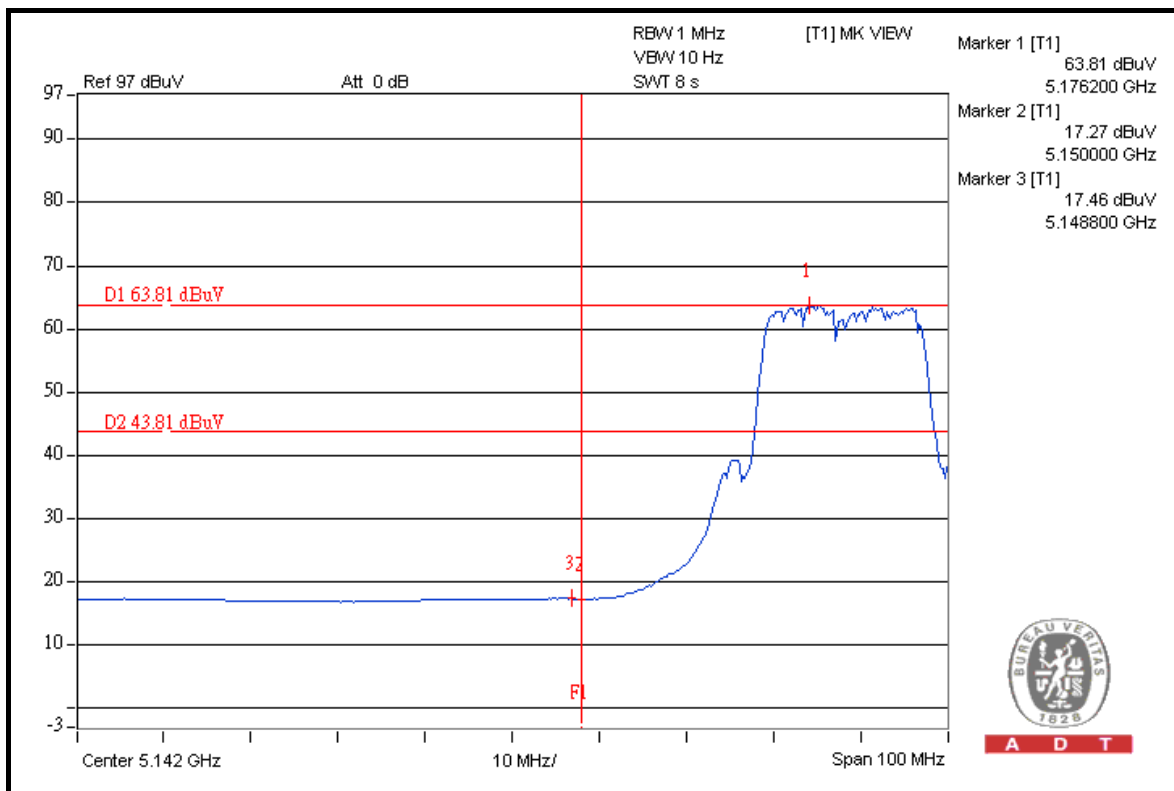
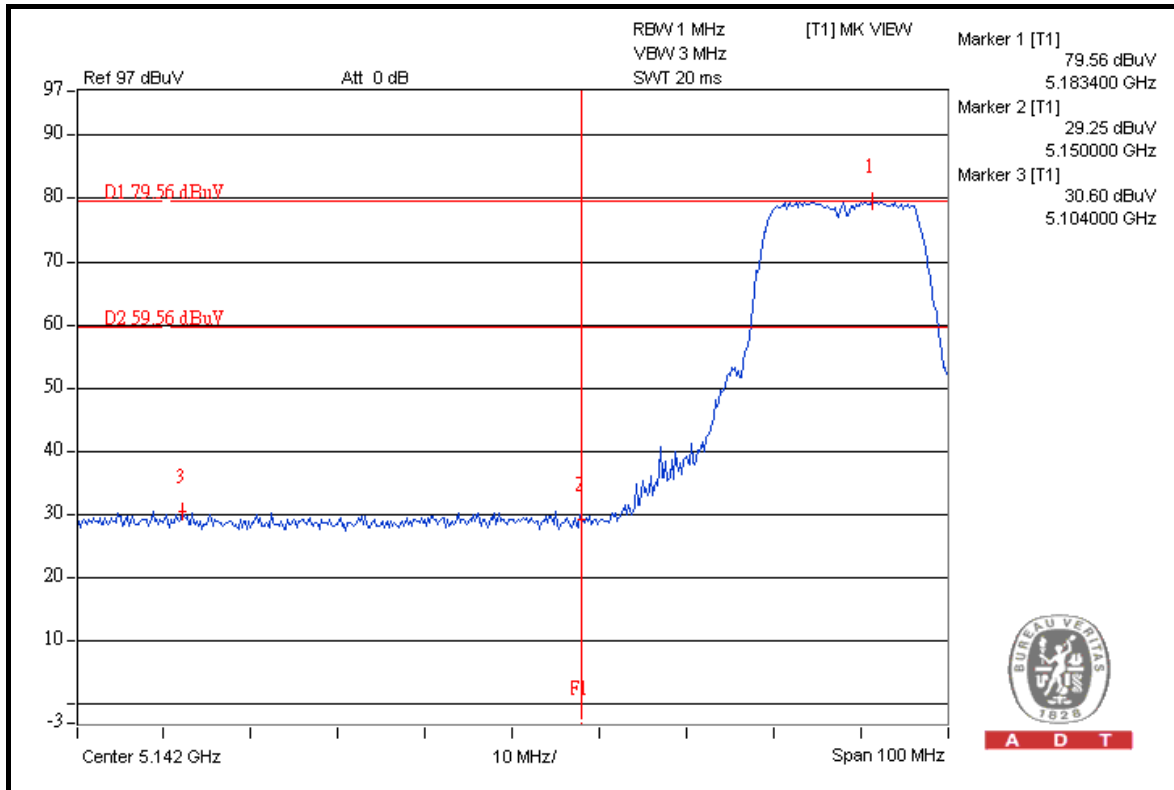
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5320.00 (PK)	107.9	49.59	58.31	74.00
5320.00 (AV)	91.2	46.16	45.04	54.00

NOTE:

- Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
- Maximum field strength in restrict band = Fundamental emission – Delta.

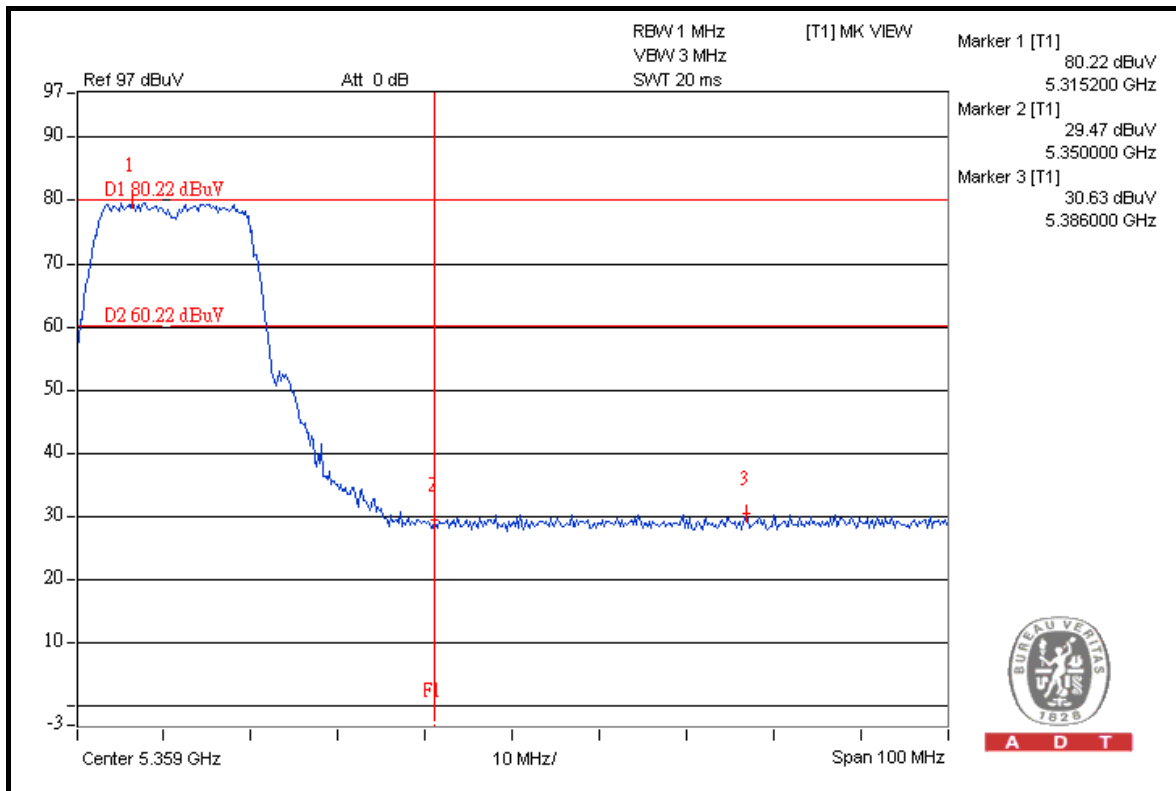
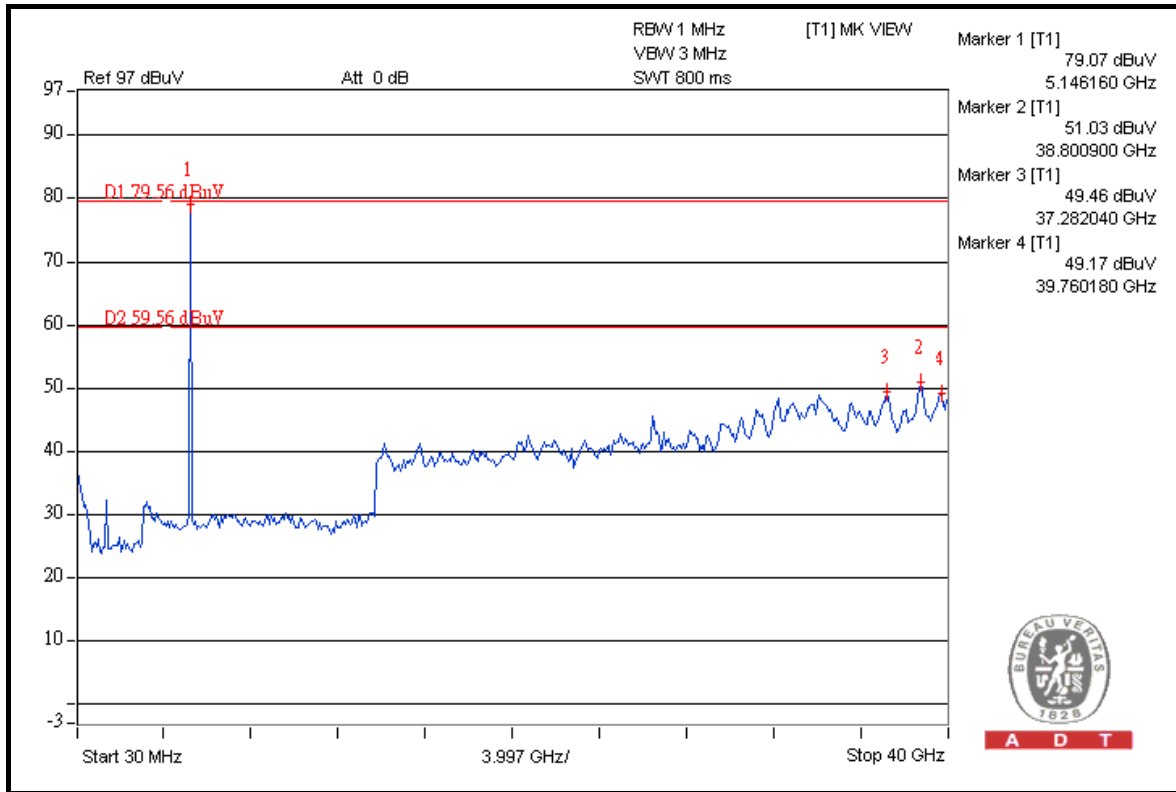


A D T



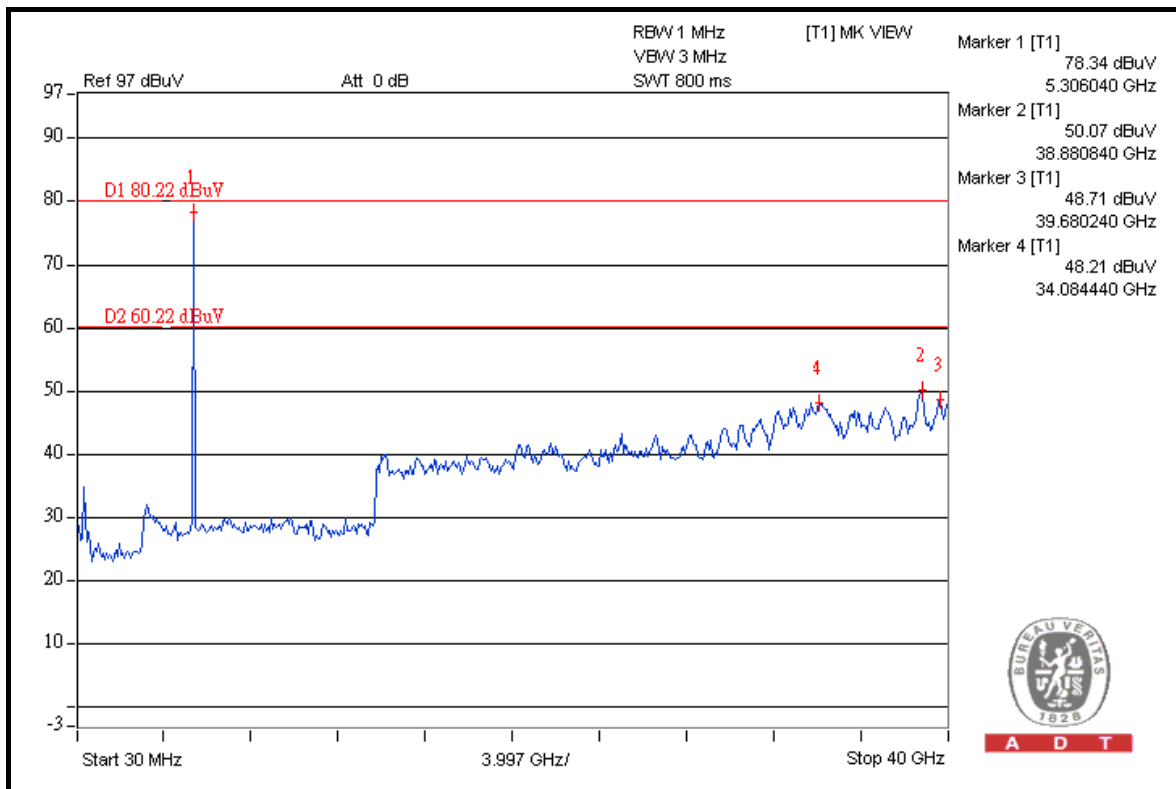
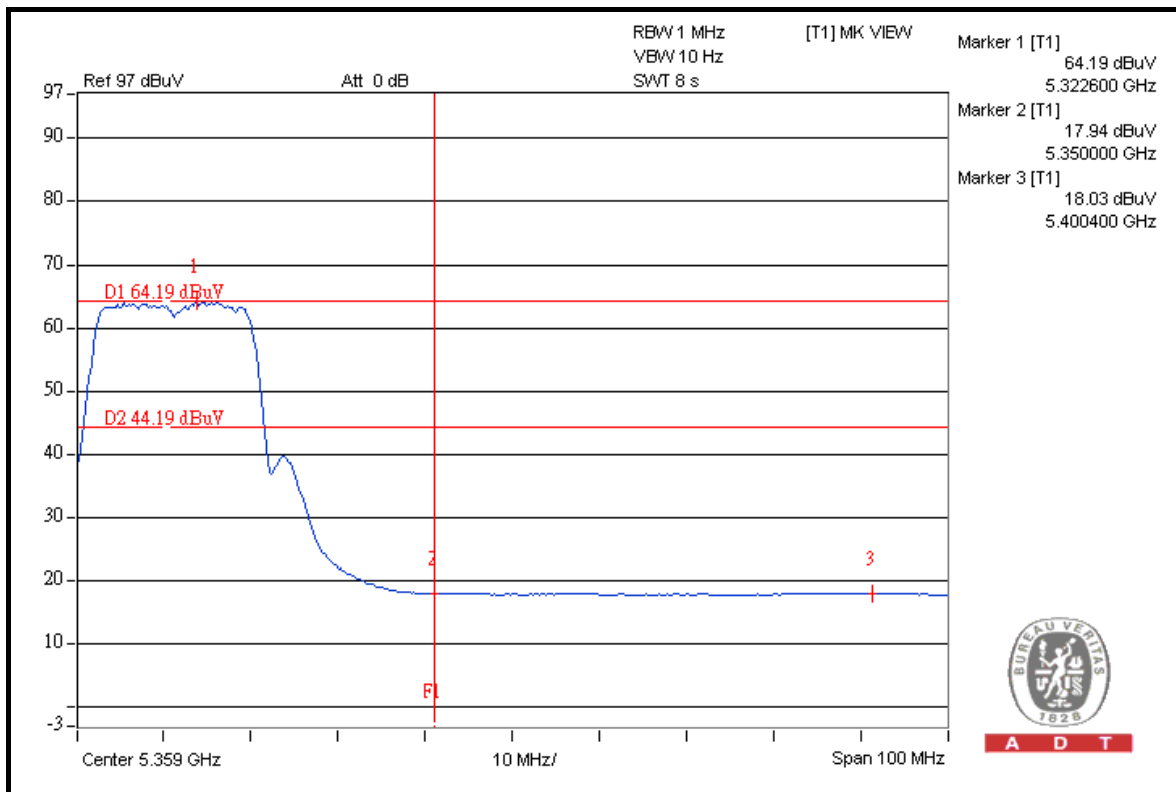


A D T





A D T



FOR 5500-5700MHz BAND:

802.11n (20MHz)

5500MHz

RESTRICT BAND (5350 ~ 5460 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5500.00 (PK)	107.8	49.10	58.70	74.00
5500.00 (AV)	91.3	45.80	45.50	54.00

FREQUENCY BAND (5460 ~ 5470 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5500.00 (PK)	107.8	49.76	58.04	68.30

5700MHz

ABOVE 5725 MHz

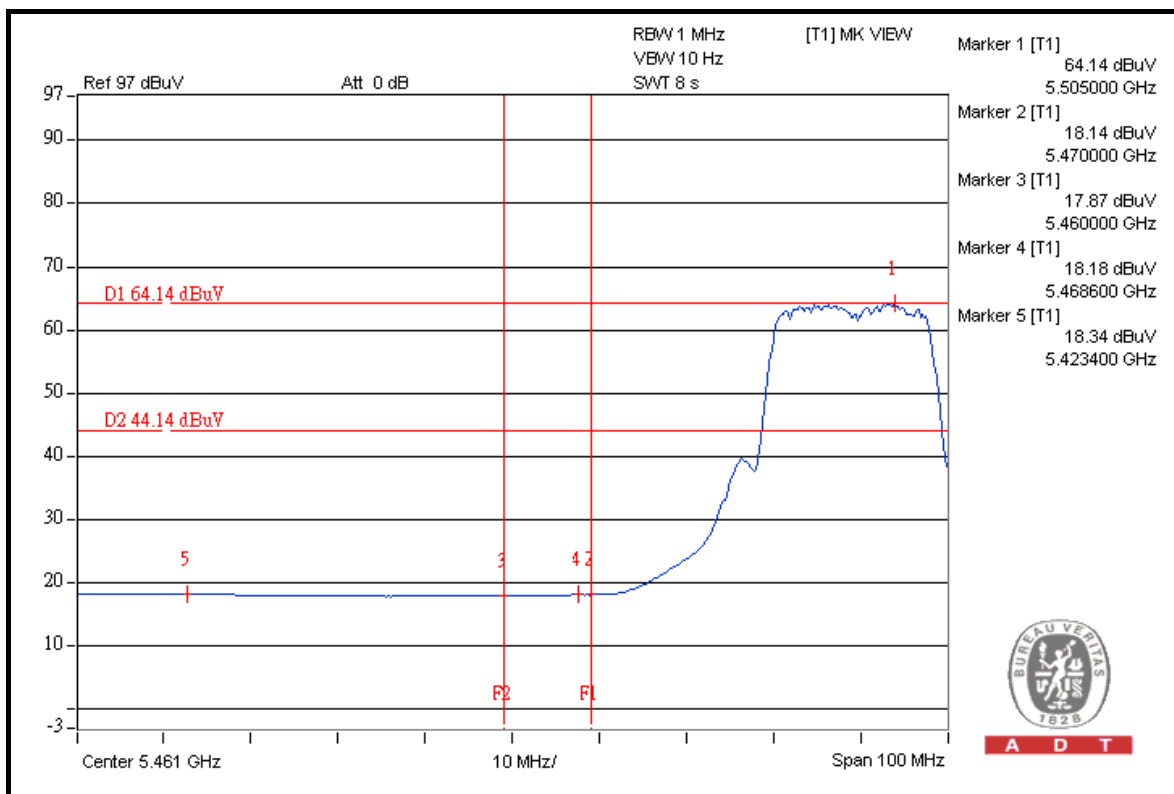
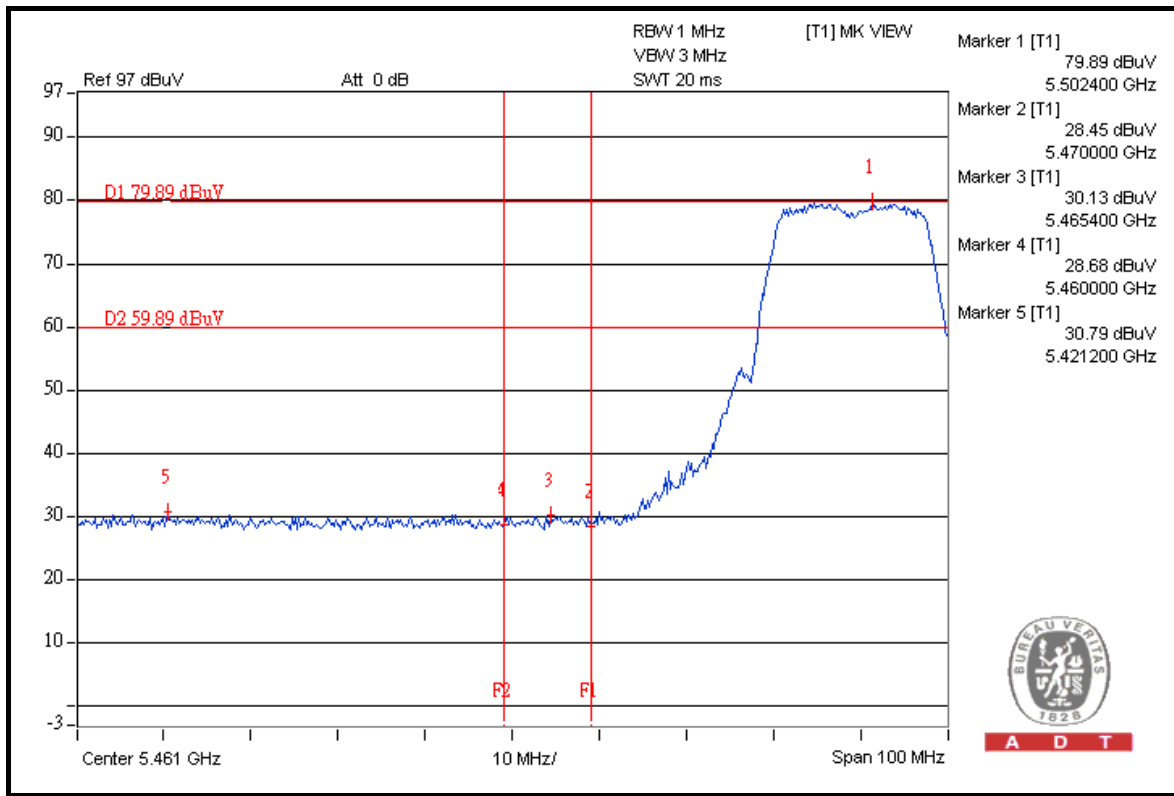
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5700.00 (PK)	107.2	48.80	58.40	68.30

NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

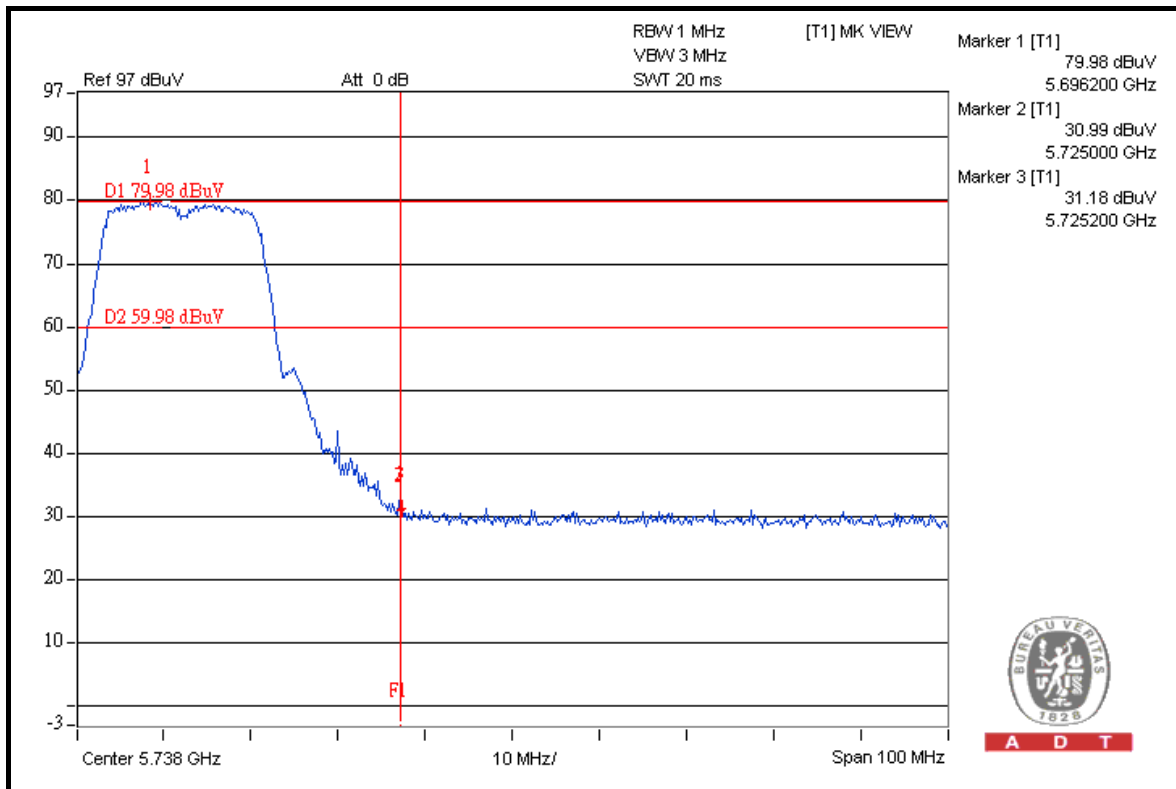
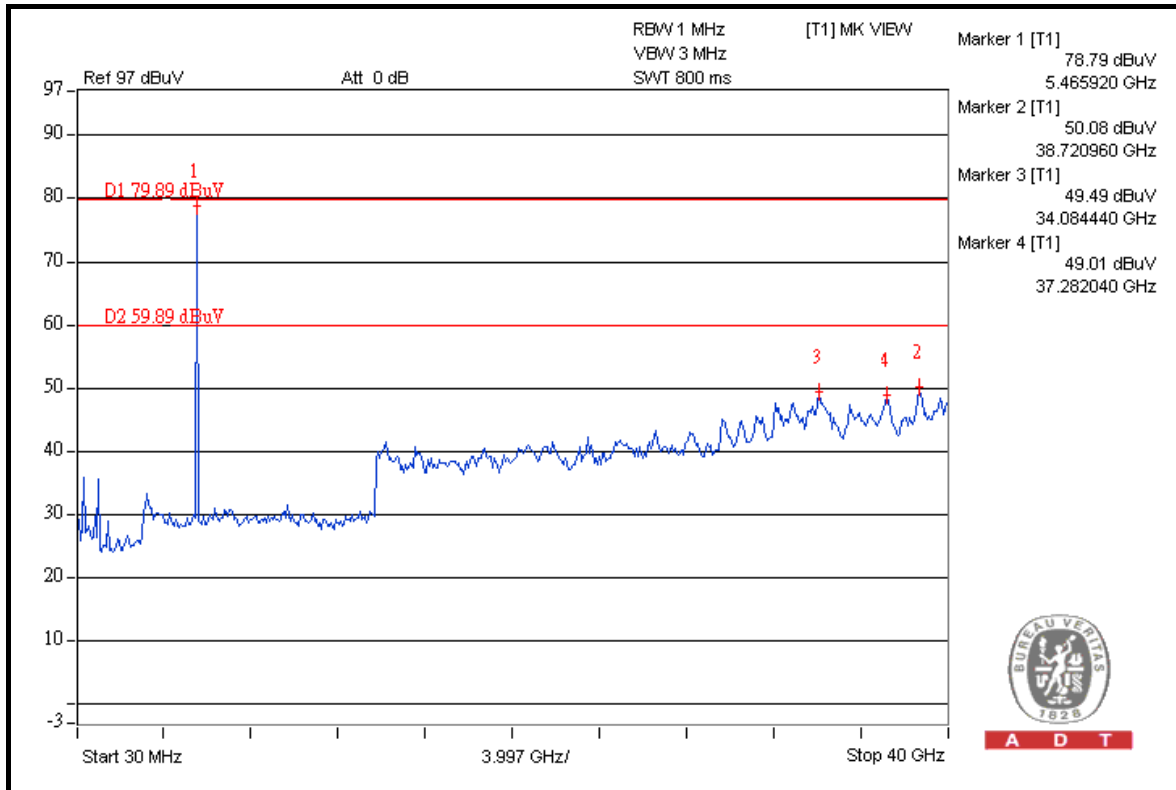


A D T



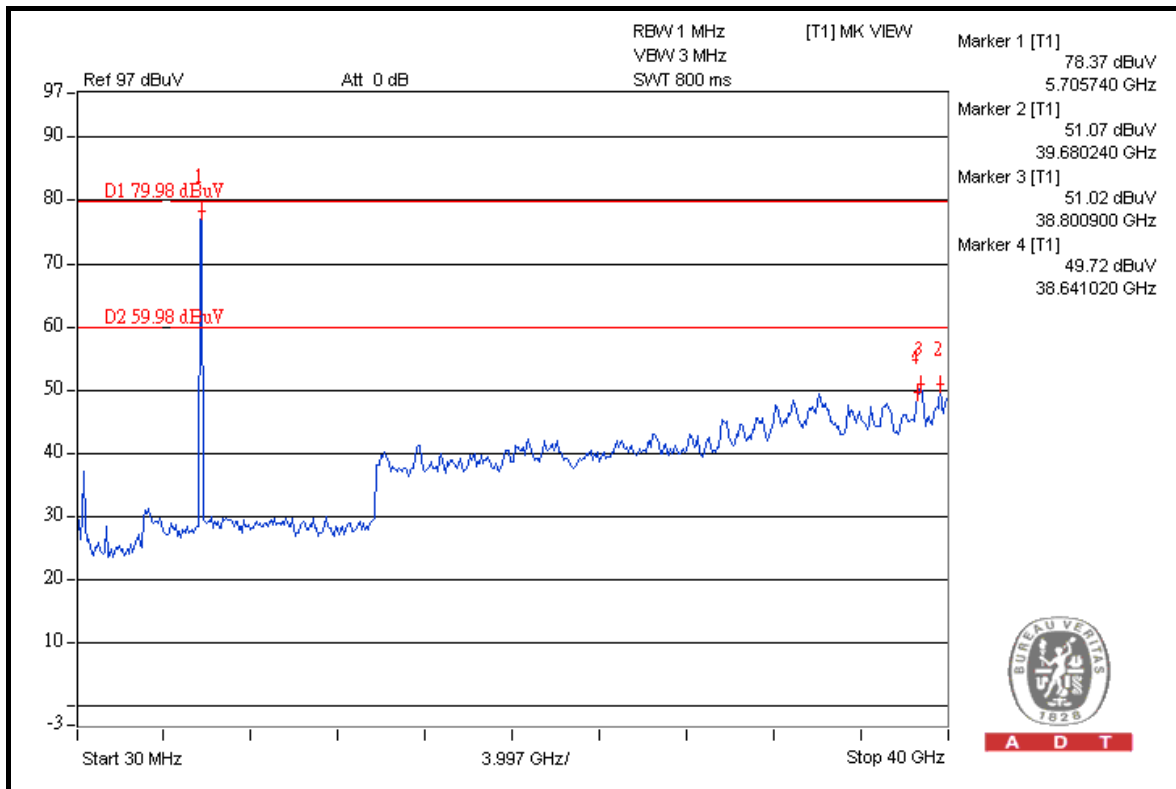
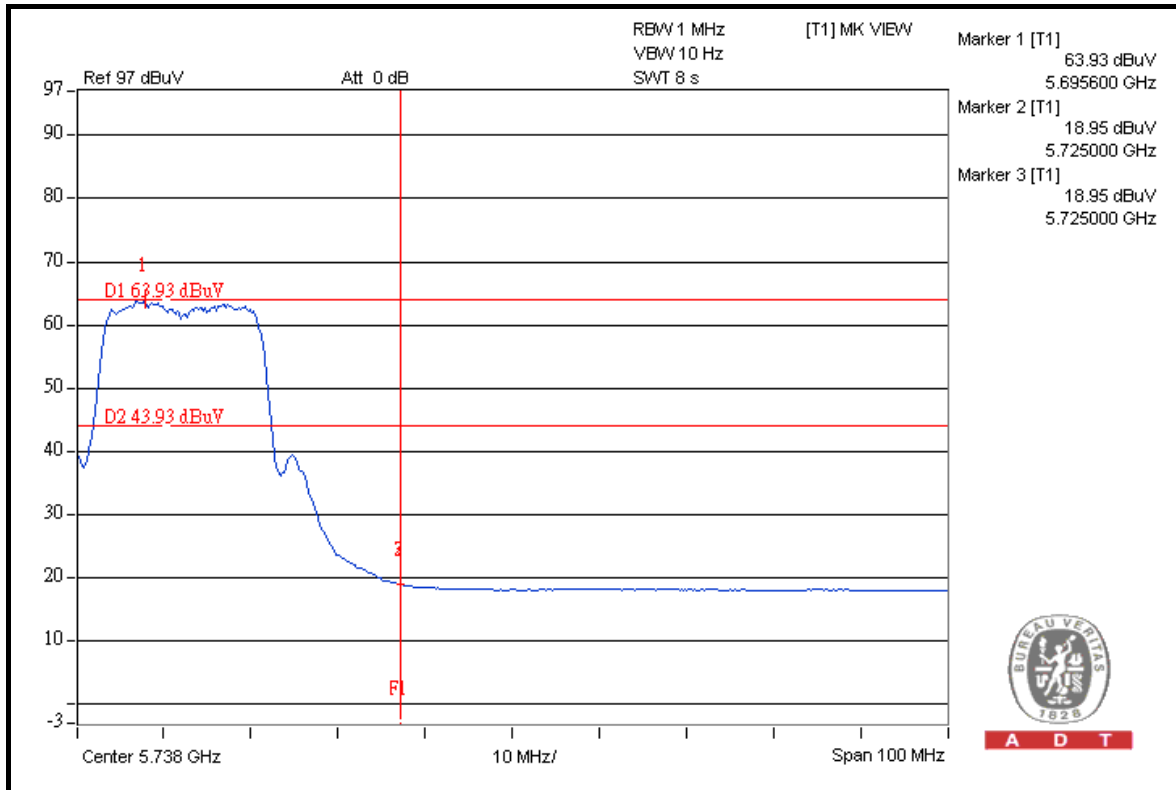


A D T





A D T



FOR 5180-5320MHz BAND:

802.11n (40MHz)

RESTRICT BAND (4500 ~ 5150 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5190.00 (PK)	103.8	41.07	62.73	74.00
5190.00 (AV)	85.5	39.04	46.46	54.00

RESTRICT BAND (5350 ~ 5460 MHz)

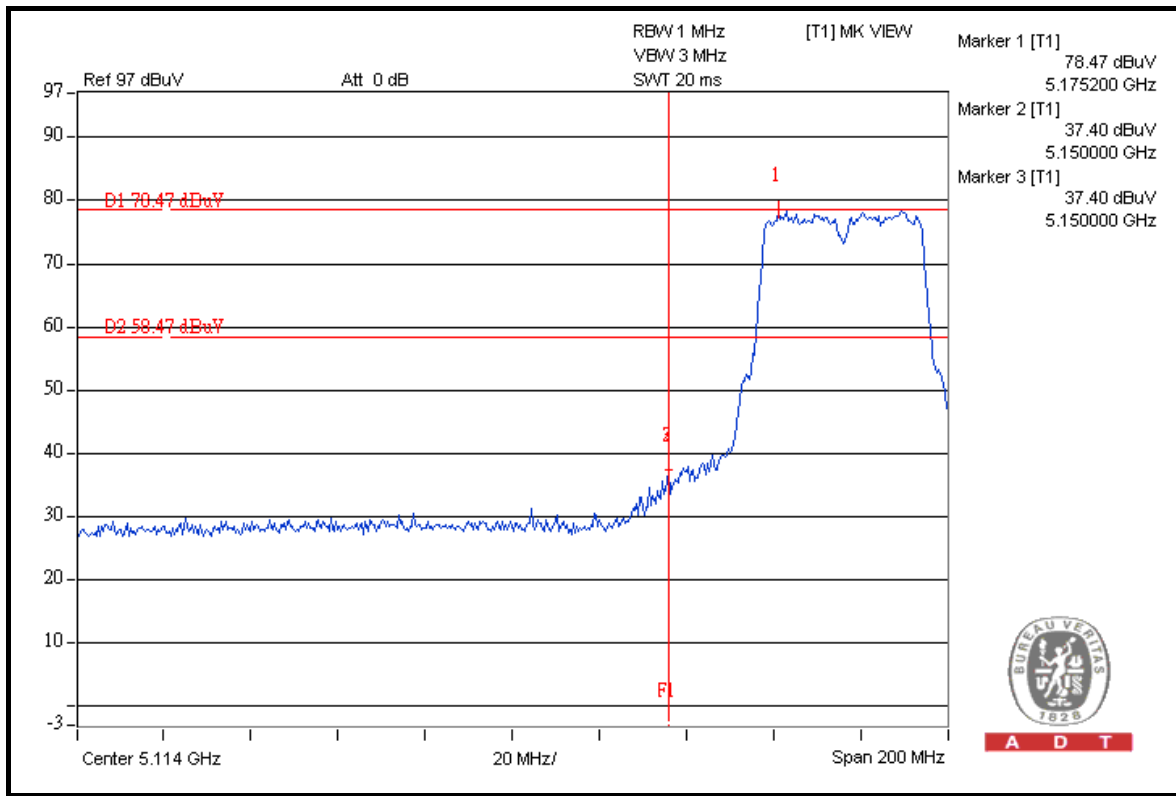
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5310.00 (PK)	103.9	46.33	57.57	74.00
5310.00 (AV)	85.5	39.48	46.02	54.00

NOTE:

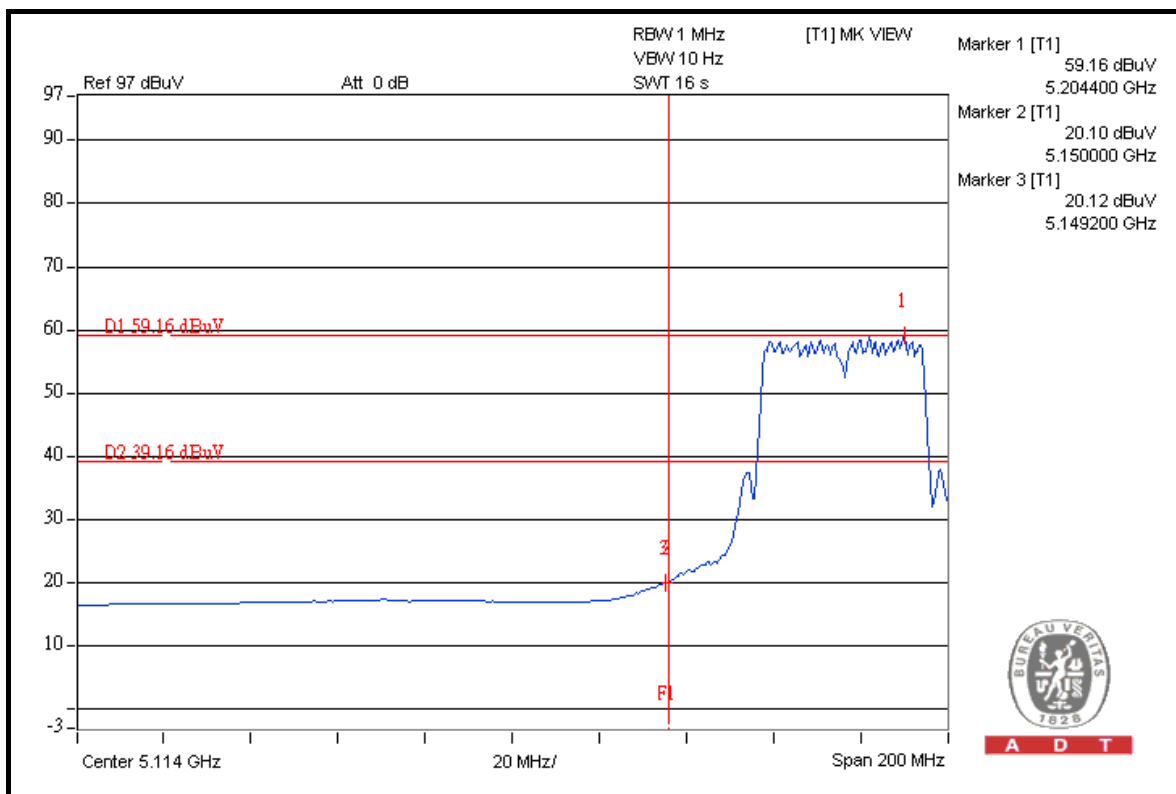
1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.



A D T



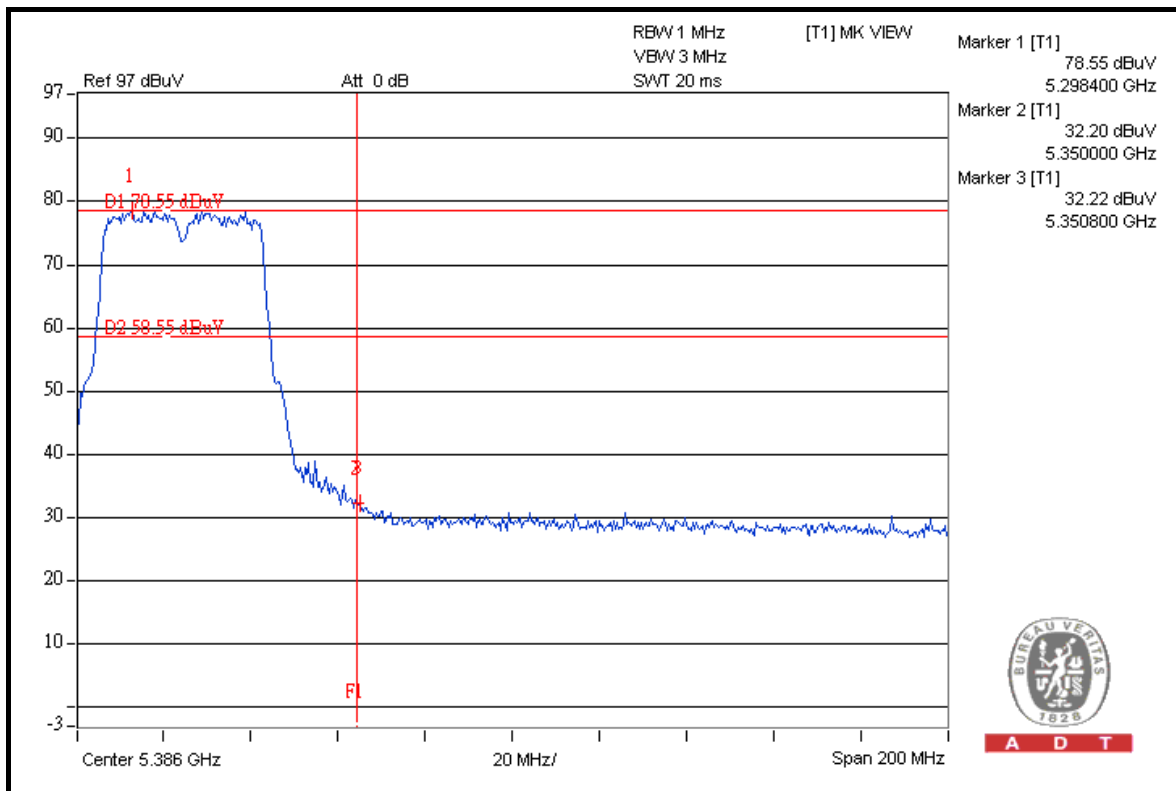
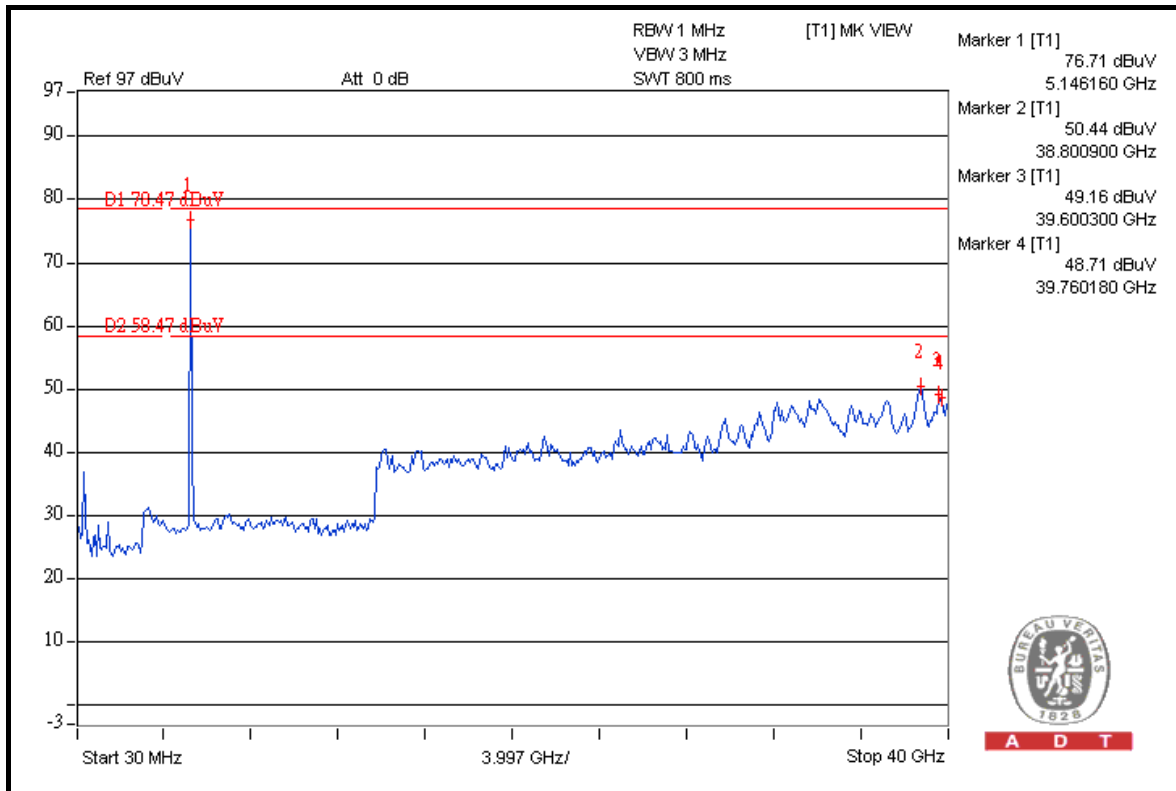
A D T



A D T

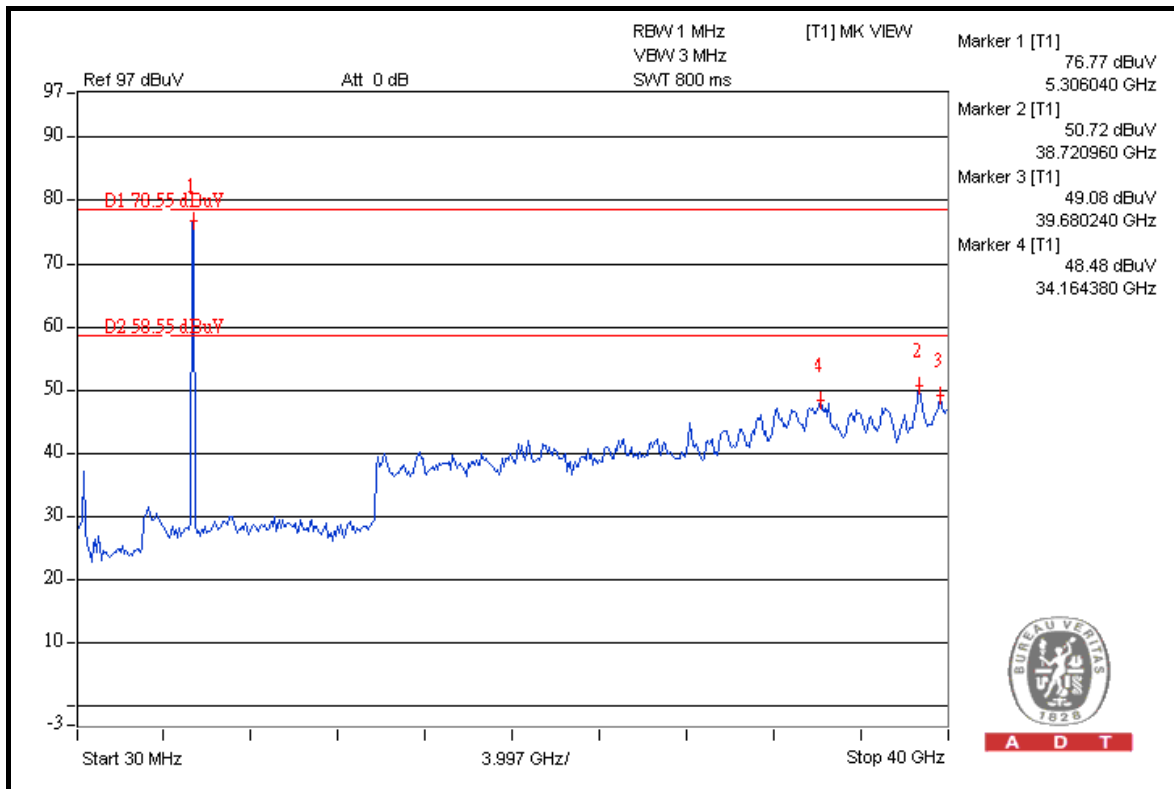
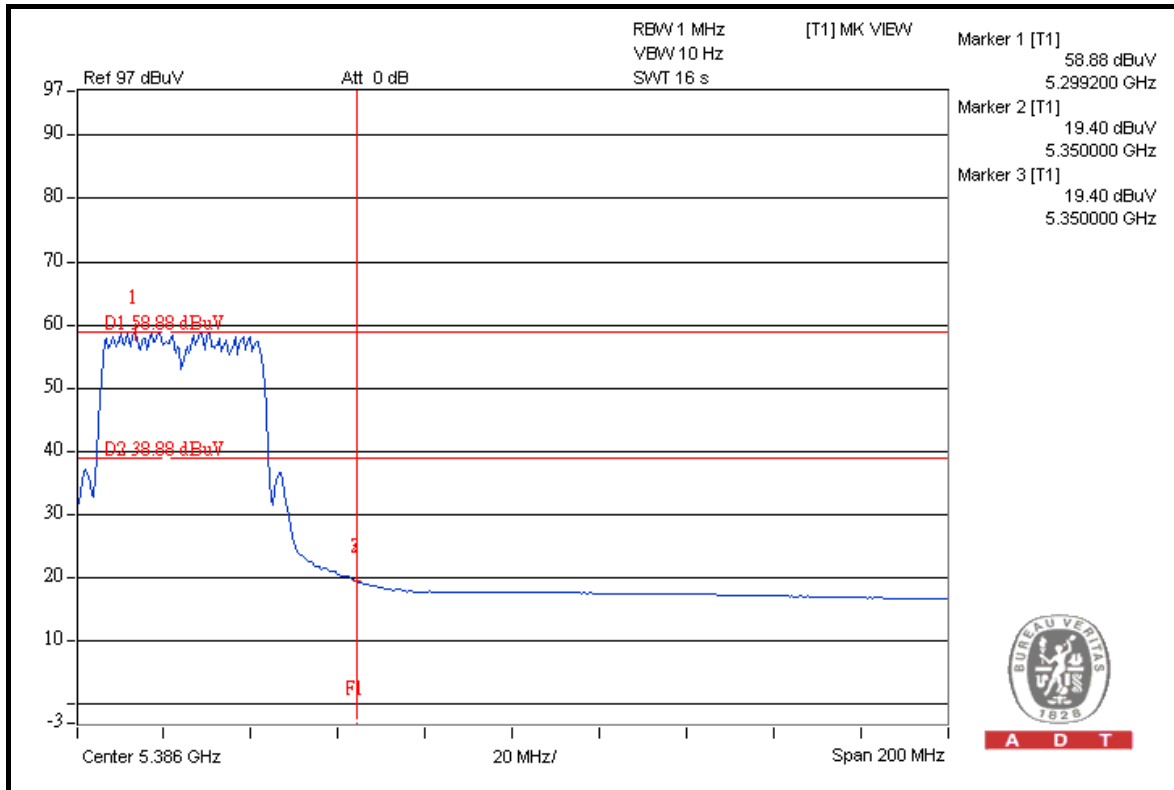


A D T





A D T



FOR 5500-5700MHz BAND:

802.11n (40MHz)

5510MHz

RESTRICT BAND (5350 ~ 5460 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
5510.00 (PK)	104.5	44.89	59.61	74.00
5510.00 (AV)	86.2	39.89	46.31	54.00

FREQUENCY BAND (5460 ~ 5470 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5510.00 (PK)	104.5	37.85	66.65	68.30

5670MHz

ABOVE 5725 MHz

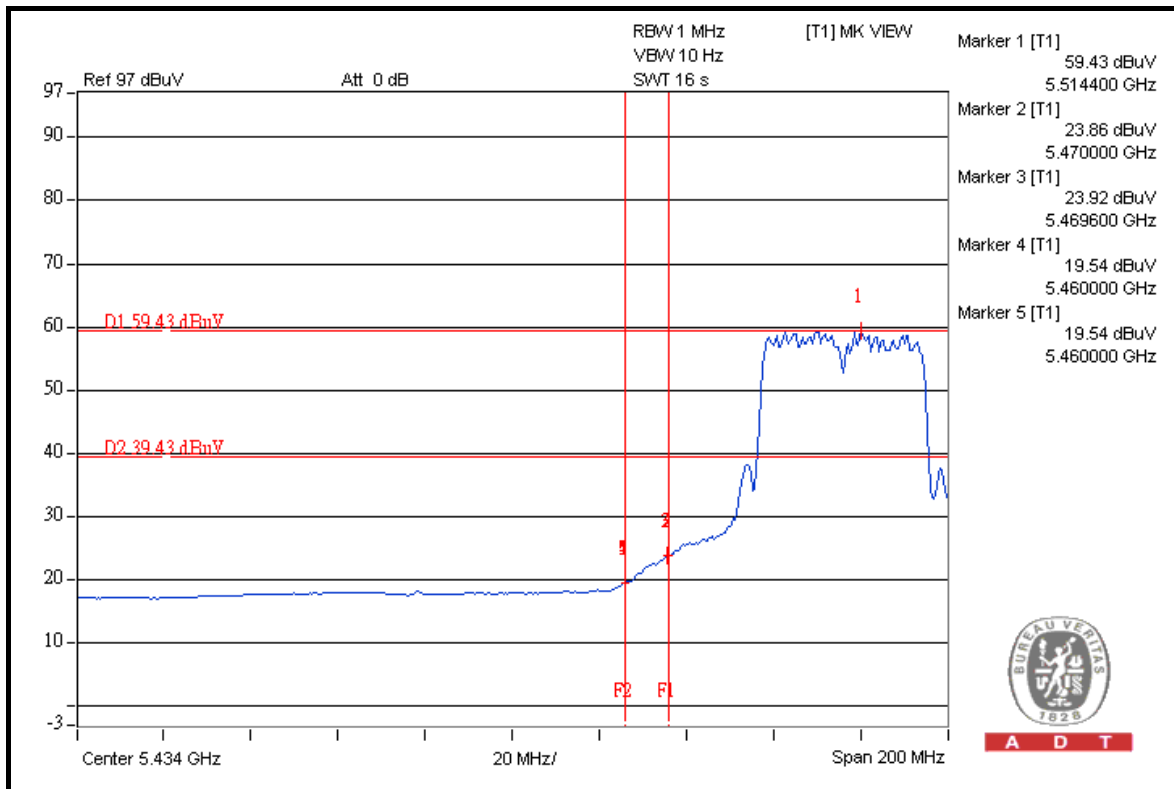
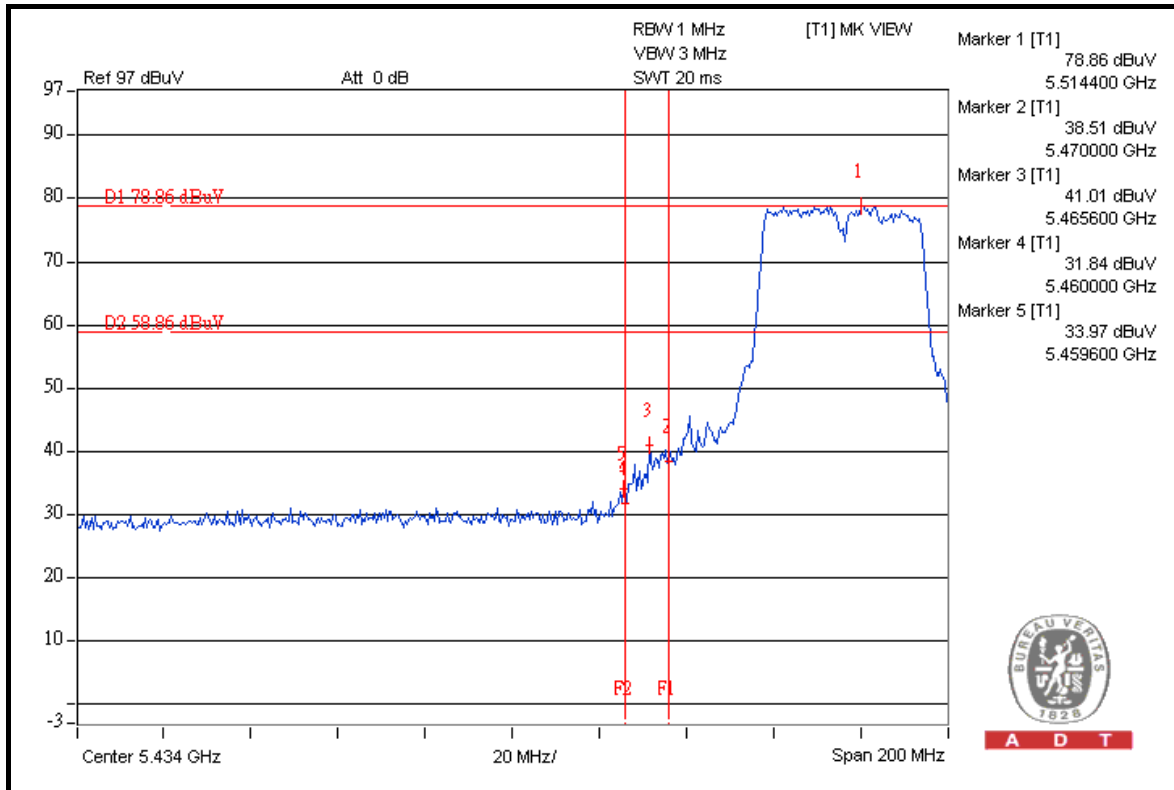
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH (dBuV/m)	LIMIT (dBuV/m)
5670.00 (PK)	104.6	48.05	56.55	68.30

NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 3 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.

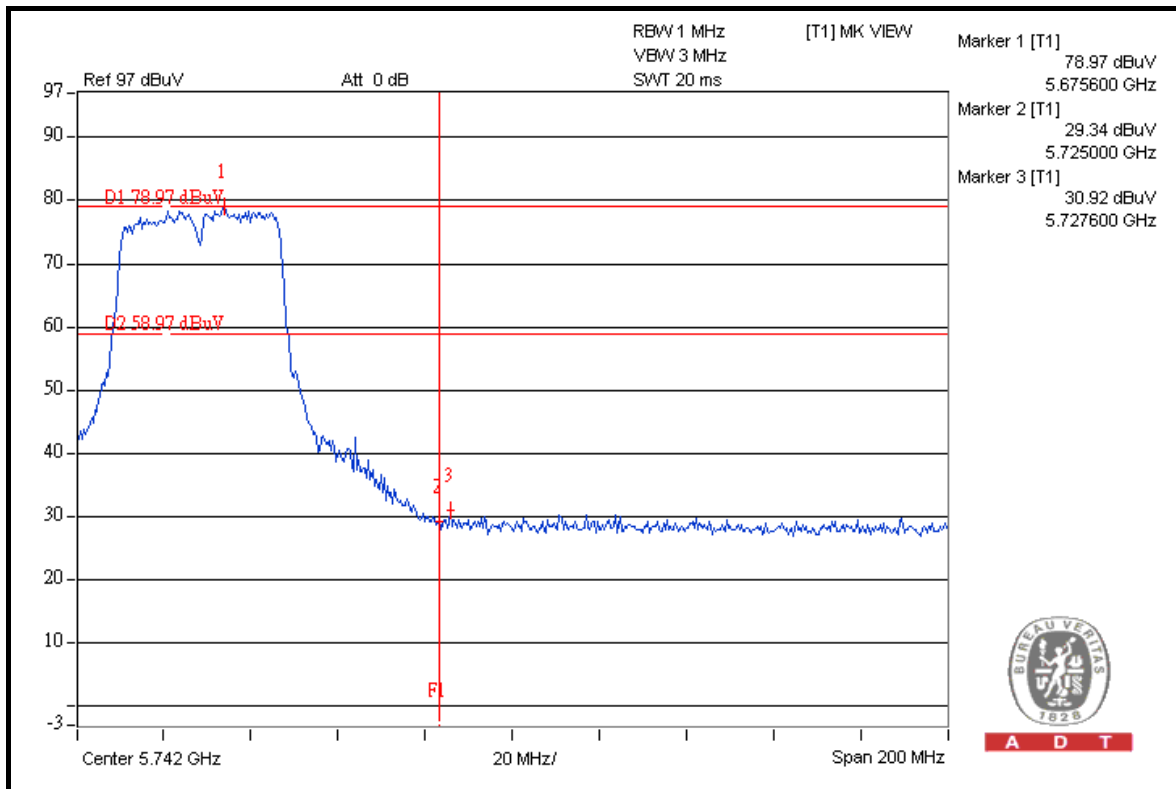
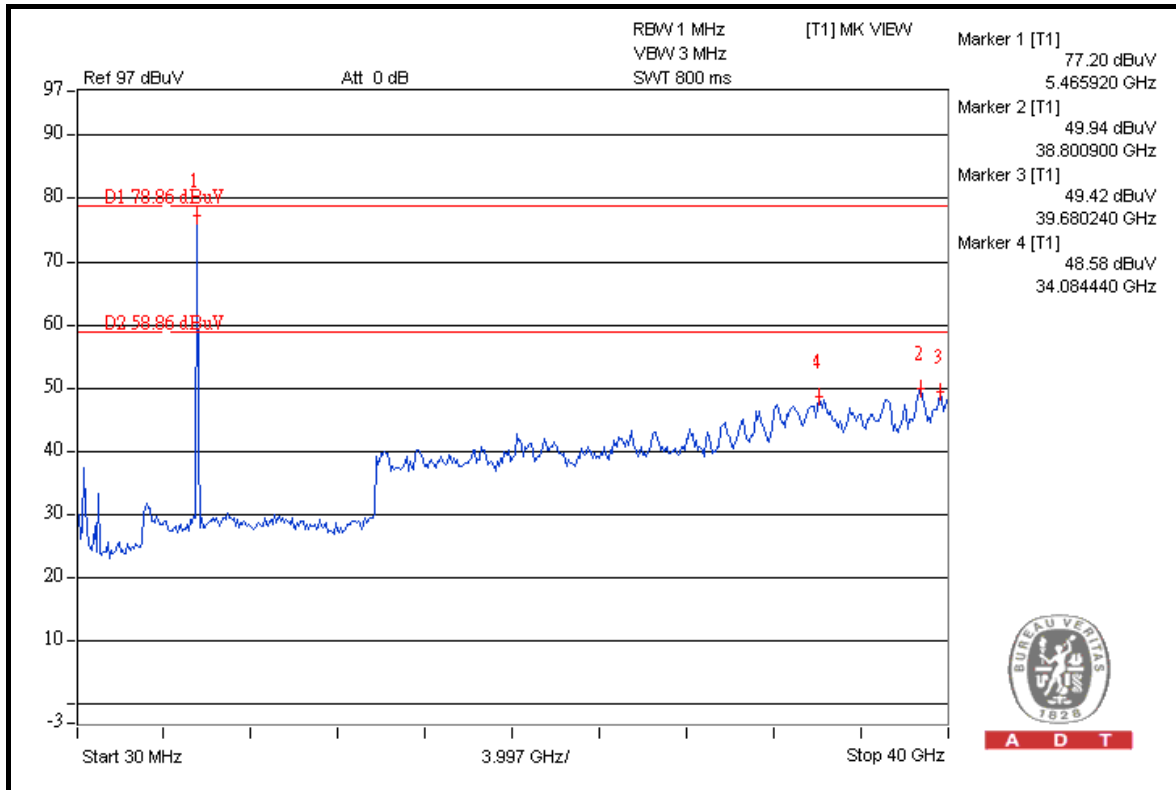


A D T



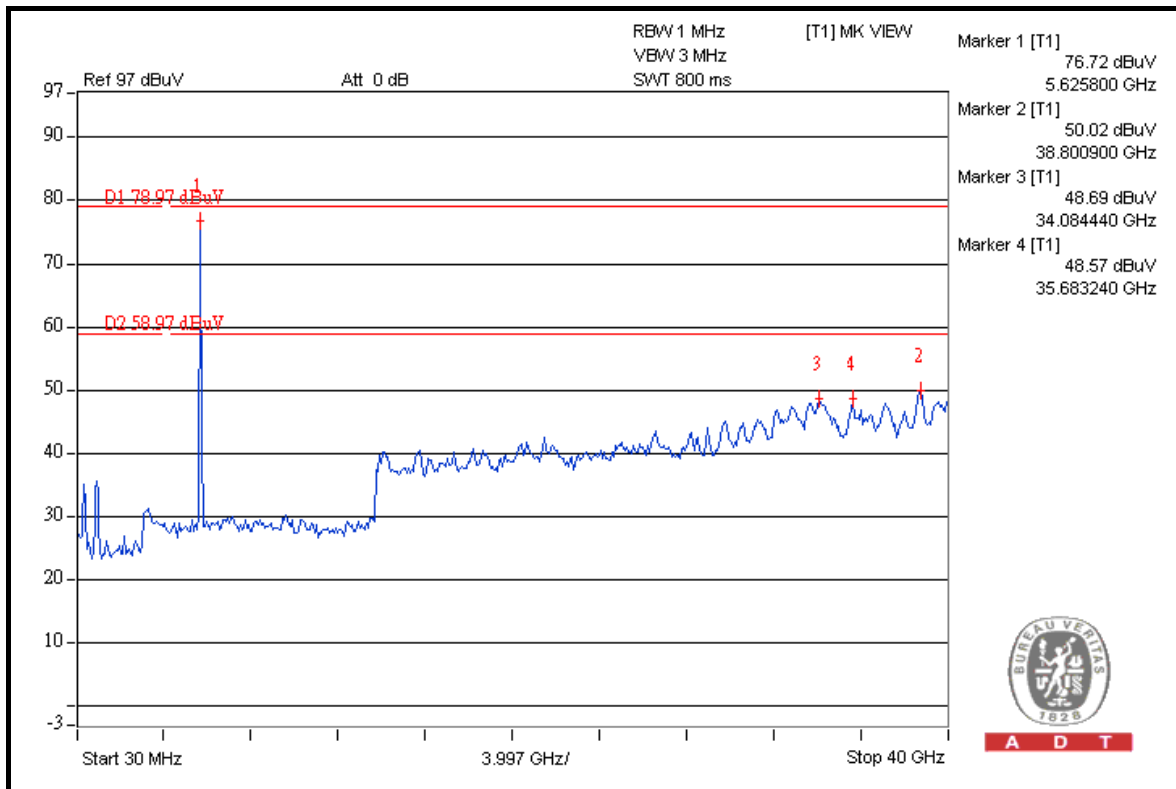
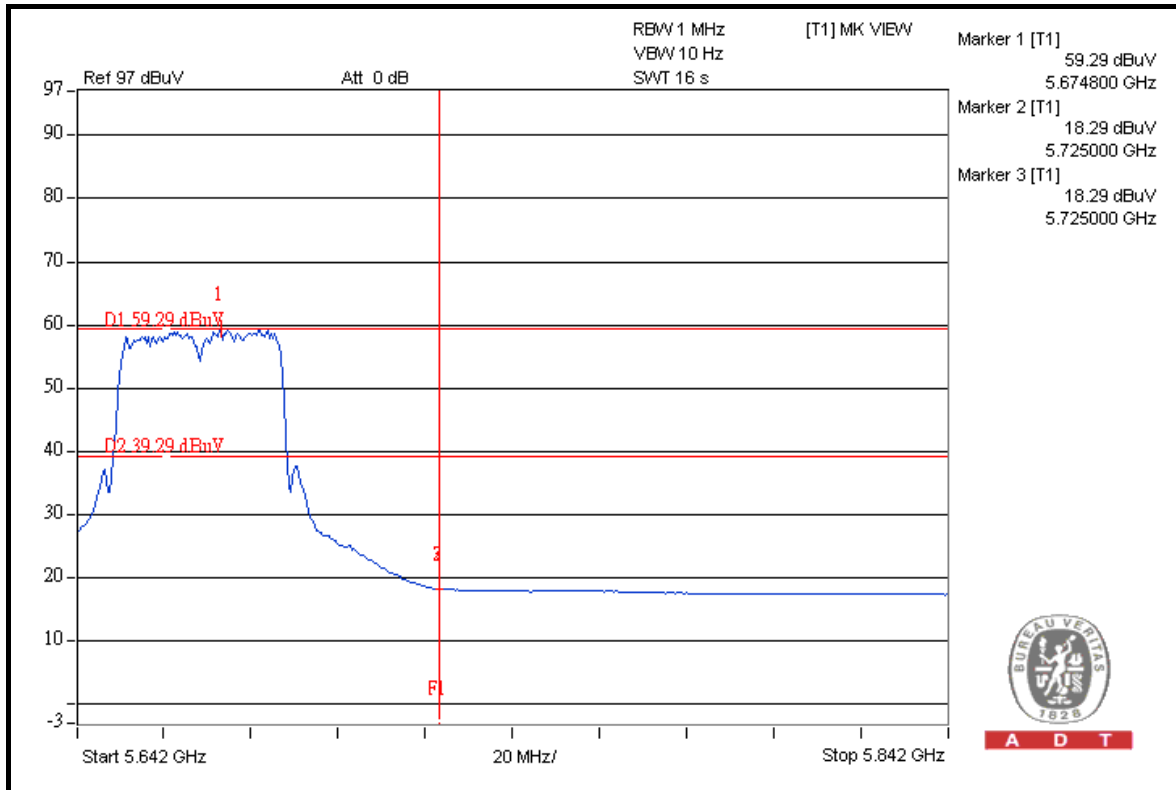


A D T





A D T



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. 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.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. 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: 886-3-3185050

Web Site: www.adt.com.tw

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

7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---