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FCC TEST REPORT (15.407)

REPORT NO.: RF980313L03-1

MODEL NO.: MC9598

RECEIVED: Mar. 13, 2009

TESTED: Mar. 23 ~ Mar. 30, 2009

ISSUED: Mar. 31, 2009

APPLICANT: Motorola, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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R.O.C.

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1. CERTIFICATION

PRODUCT: Mobile Computer
MODEL NO.: MC9598
BRAND: Motorola
APPLICANT: Motorola, Inc.
TEST SAMPLE: ENGINEERING SAMPLE
TESTED: Mar. 23 ~ Mar. 30, 2009
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.4-2003

The above equipment (Model: MC9598) 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 : Peggy Chen , **DATE:** Mar. 31, 2009
Peggy Chen / Specialist

TECHNICAL
ACCEPTANCE : Long Chen , **DATE:** Mar. 31, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Mar. 31, 2009
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 -18.48dB at 0.205MHz.
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 -1.04dB at 5470.00MHz.
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.

2.1 MEASUREMENT UNCERTAINTY

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

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

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



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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile Computer
MODEL NO.	MC9598
FCC ID	UZ7MC9598
POWER SUPPLY	3.7Vdc from rechargeable lithium battery 12Vdc from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps
FREQUENCY RANGE	5.0GHz: 5180 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5.0GHz: 5180 ~ 5320MHz: 8 for 802.11a 5500 ~ 5700MHz: 11 for 802.11a
OUTPUT POWER	11.455mW for 5180 ~ 5320MHz 23.174mW for 5500 ~ 5700MHz
ANTENNA TYPE	Main antenna: 5.0GHz: PIFA antenna with 3.52dBi gain Aux. antenna: 5.0GHz: PIFA antenna with 4.0dBi gain
DATA CABLE	Refer to NOTE as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Battery

NOTE:

- The models identified as below are identical to each other except of the following options:

- Barcode reader: 1D laser scanner / 2D Imager

BRAND	MODEL	DESCRIPTION
Motorola	MC9598	EVDO 1D Calculator Numeric
Motorola	MC9598	EVDO 2D Calculator Numeric
Motorola	MC9598	EVDO 1D Alpha Primary
Motorola	MC9598	EVDO 2D Alpha Primary
Motorola	MC9598	EVDO 1D Telephony Numeric
Motorola	MC9598	EVDO 2D Telephony Numeric
Motorola	MC9598	EVDO 1D Alpha Numeric Wide
Motorola	MC9598	EVDO 2D Alpha Numeric Wide

***the worst case had been marked by boldface.

- The EUT is a Mobile Computer. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g	FCC Part 15, Subpart C (Section 15.247)	RF980313L03
WLAN 802.11a (5745~5825 MHz)		
WLAN 802.11a (5180~5320MHz, 5500~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF980313L03-1
WLAN 802.11a (For DFS report) (5260~5320MHz, 5500~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF980313L03-5
BLUETOOTH	FCC Part 15, Subpart C (Section 15.247)	RF980313L03-2
CDMA 850	FCC Part 22	RF980313L03-3
CDMA 1900	FCC Part 24	RF980313L03-4

- The EUT has one lithium battery listed as below:

LI-ION BATTERY	
BRAND:	MOTOROLA
MODEL:	82-111636-01
RATING:	3.7Vdc, 4800mAh, 17.7Wh

- The following accessories are for support units only.

PRODUCT	BRAND	MODEL	P/N	DESCRIPTION
USB charging Y cable	Motorola	-	25-116365-01R	1.8m shielded cable with one core
Headset	Motorola	-	50-11300-050R	0.8m non-shielded cable with one core
Adapter	HIPRO	HP-O2040D43	-	Input: 100-240Vac, 50-60Hz, 1.5A Output: 12Vdc, 3.33A, MAX 40W Power line: AC 1.7m non-shielded cable without core DC1.8m non-shielded cable with one core

- The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
- The EUT operates in the 2.4GHz/5GHz frequency spectrum with throughput of up to 54Mbps.
- 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

Operated in 5180 ~ 5320MHz

8 channels are provided for 802.11a

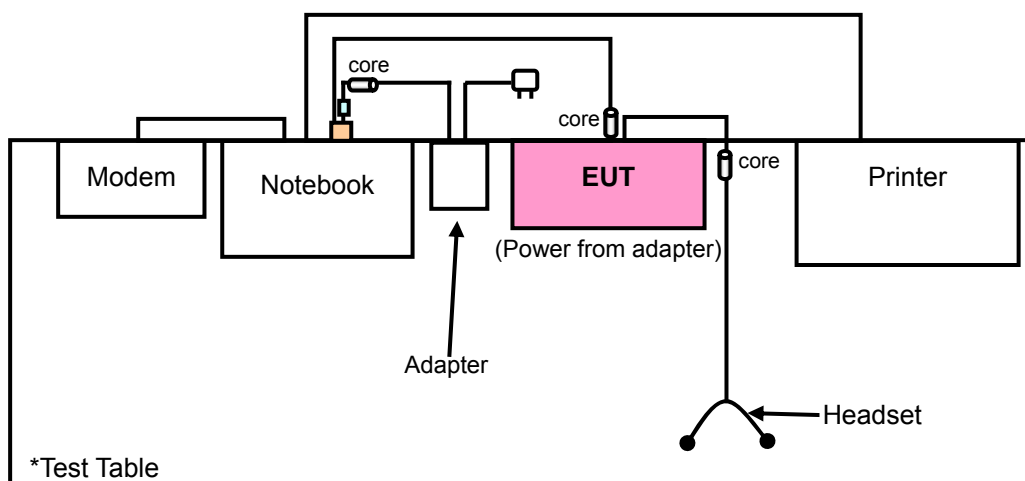
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

Operated in 5500 ~ 5700MHz

11 channels are provided for 802.11a

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 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

RADIATED EMISSION TEST (ABOVE 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, 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
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0	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, 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	60	OFDM	BPSK	6.0	Z
802.11a	5500-5700	100 to 140	120	OFDM	BPSK	6.0	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)
802.11a	5180-5320	36 to 64	60	OFDM	BPSK	6.0
802.11a	5500-5700	100 to 140	120	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	36, 64	OFDM	BPSK	6.0
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED 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, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0

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	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY054011	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008253	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.8m shielded USB cable with one core
2	1.8m braid shielded wire, DB25 connector, w/o core.
3	1.2m braid shielded wire, DB25 & DB9 connector, w/o core.

NOTE 1: All power cords of the above support units are non shielded (1.8m).

NOTE 2: The 1.8m USB cable was supplied from client and only for test.

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
	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	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 02, 2008	May 01, 2009
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
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

- 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.

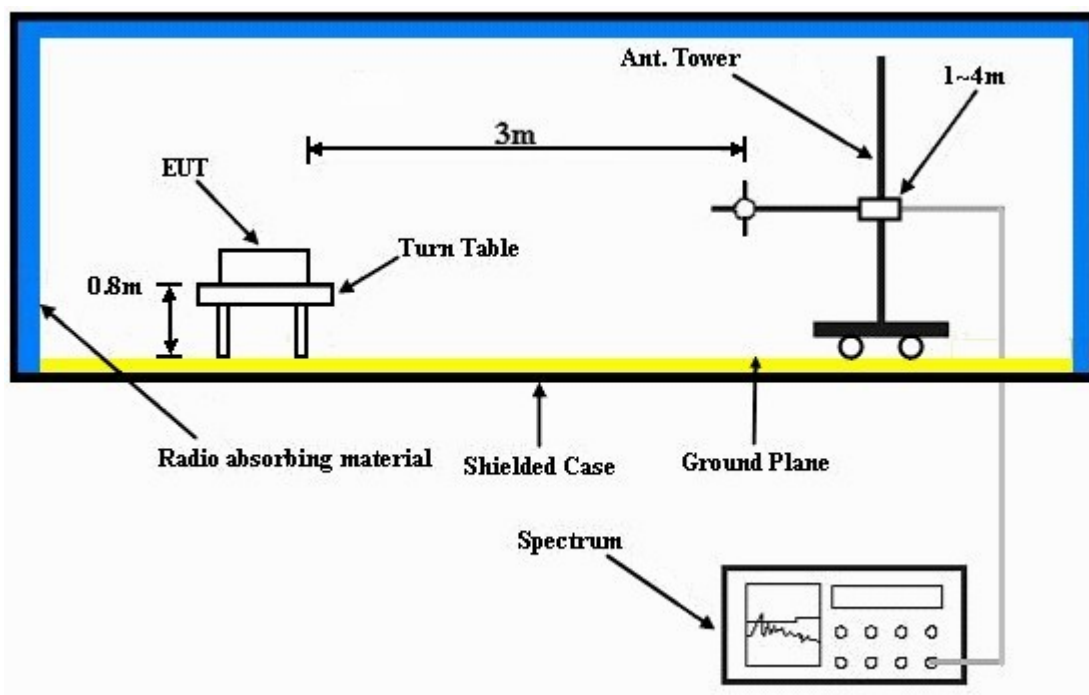
NOTE:

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

- Connected the EUT to a notebook via a USB cable and placed on a testing table.
- The EUT runs a test program (provided by manufacture) to transmit at specific channel.
- The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	65.78 PK	74.00	-8.22	1.04 H	270	26.69	39.09
2	5150.00	45.84 AV	54.00	-8.16	1.04 H	270	6.75	39.09
3	*5180.00	110.93 PK			1.03 H	269	71.75	39.18
4	*5180.00	100.49 AV			1.03 H	269	61.31	39.18
5	#10360.00	60.78 PK	68.30	-7.52	1.10 H	317	11.31	49.47
6	#10360.00	47.82 AV	54.00	-6.18	1.10 H	317	-1.65	49.47
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	68.29 PK	74.00	-5.71	1.00 V	318	29.20	39.09
2	5150.00	48.49 AV	54.00	-5.51	1.00 V	318	9.40	39.09
3	*5180.00	111.97 PK			1.12 V	319	72.79	39.18
4	*5180.00	101.33 AV			1.12 V	319	62.15	39.18
5	#10360.00	59.93 PK	68.30	-8.37	1.20 V	104	10.46	49.47

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	110.65 PK			1.01 H	283	71.41	39.24
2	*5200.00	99.93 AV			1.01 H	283	60.69	39.24
3	#10400.00	60.66 PK	68.30	-7.64	1.18 H	73	11.06	49.60
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	*5200.00	111.62 PK			1.00 V	312	72.38	39.24
2	*5200.00	101.11 AV			1.00 V	312	61.87	39.24
3	#10400.00	60.32 PK	68.30	-7.98	1.07 V	343	10.72	49.60

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.
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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	110.53 PK			1.01 H	295	71.22	39.31
2	*5240.00	100.23 AV			1.01 H	295	60.92	39.31
3	#10480.00	60.83 PK	68.30	-7.47	1.14 H	34	11.10	49.73
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	111.08 PK			1.10 V	326	71.77	39.31
2	*5240.00	101.18 AV			1.10 V	326	61.87	39.31
3	#10480.00	60.72 PK	68.30	-7.58	1.08 V	9	10.99	49.73

- 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	111.11 PK			1.12 H	297	71.76	39.35
2	*5260.00	100.78 AV			1.12 H	297	61.43	39.35
3	#10520.00	60.90 PK	68.30	-7.40	1.39 H	346	11.14	49.76
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	112.69 PK			1.00 V	311	73.34	39.35
2	*5260.00	102.28 AV			1.00 V	311	62.93	39.35
3	#10520.00	59.96 PK	68.30	-8.34	1.00 V	0	10.20	49.76

- 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	111.49 PK			1.12 H	298	72.07	39.42
2	*5300.00	100.86 AV			1.12 H	298	61.44	39.42
3	10600.00	60.17 PK	74.00	-13.83	1.06 H	360	10.41	49.76
4	10600.00	47.94 AV	54.00	-6.06	1.06 H	360	-1.82	49.76
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	111.94 PK			1.08 V	307	72.52	39.42
2	*5300.00	101.52 AV			1.08 V	307	62.10	39.42
3	10600.00	60.85 PK	74.00	-13.15	1.03 V	44	11.09	49.76
4	10600.00	48.01 AV	54.00	-5.99	1.03 V	44	-1.75	49.76

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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	110.23 PK			1.03 H	306	70.81	39.42
2	*5320.00	100.14 AV			1.03 H	306	60.72	39.42
3	5350.00	66.83 PK	74.00	-7.17	1.13 H	305	27.41	39.42
4	5350.00	48.60 AV	54.00	-5.40	1.13 H	305	9.18	39.42
5	10640.00	61.49 PK	74.00	-12.51	1.11 H	8	11.65	49.84
6	10640.00	49.04 AV	54.00	-4.96	1.11 H	8	-0.80	49.84
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	111.27 PK			1.09 V	324	71.85	39.42
2	*5320.00	101.01 AV			1.09 V	324	61.59	39.42
3	5350.00	68.56 PK	74.00	-5.44	1.07 V	325	29.14	39.42
4	5350.00	51.58 AV	54.00	-2.42	1.07 V	325	12.16	39.42
5	10640.00	61.29 PK	74.00	-12.71	1.15 V	2	11.45	49.84
6	10640.00	48.51 AV	54.00	-5.49	1.15 V	2	-1.33	49.84

- 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	59.49 PK	74.00	-14.51	1.00 H	338	19.97	39.52
2	5460.00	44.02 AV	54.00	-9.98	1.00 H	338	4.50	39.52
3	#5470.00	62.70 PK	68.30	-5.60	1.00 H	338	23.16	39.54
4	*5500.00	109.23 PK			1.00 H	343	69.64	39.59
5	*5500.00	98.56 AV			1.00 H	343	58.97	39.59
6	11000.00	60.89 PK	74.00	-13.11	1.64 H	347	10.66	50.23
7	11000.00	48.04 AV	54.00	-5.96	1.64 H	347	-2.19	50.23
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	62.22 PK	74.00	-11.78	1.04 V	327	22.70	39.52
2	5460.00	47.27 AV	54.00	-6.73	1.04 V	327	7.75	39.52
3	#5470.00	67.26 PK	68.30	-1.04	1.25 V	328	27.72	39.54
4	*5500.00	111.07 PK			1.15 V	337	71.48	39.59
5	*5500.00	100.31 AV			1.15 V	337	60.72	39.59
6	11000.00	61.02 PK	74.00	-12.98	1.15 V	16	10.79	50.23
7	11000.00	47.74 AV	54.00	-6.26	1.15 V	16	-2.49	50.23

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 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	*5600.00	111.38 PK			1.00 H	352	71.66	39.72
2	*5600.00	100.79 AV			1.00 H	352	61.07	39.72
3	11200.00	63.52 PK	74.00	-10.48	1.09 H	322	13.38	50.14
4	11200.00	50.49 AV	54.00	-3.51	1.09 H	322	0.35	50.14
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	*5600.00	113.18 PK			1.11 V	325	73.46	39.72
2	*5600.00	102.93 AV			1.11 V	325	63.21	39.72
3	11200.00	61.03 PK	74.00	-12.97	1.11 V	0	10.89	50.14
4	11200.00	48.49 AV	54.00	-5.51	1.11 V	0	-1.65	50.14

- 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002hPa	TESTED BY	Match Tsui

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	104.85 PK			1.00 H	352	65.05	39.80
2	*5700.00	94.53 AV			1.00 H	352	54.73	39.80
3	#5725.00	62.66 PK	68.30	-5.64	1.15 H	349	22.82	39.84
4	11400.00	61.01 PK	74.00	-12.99	1.00 H	360	10.99	50.02
5	11400.00	47.72 AV	54.00	-6.28	1.00 H	360	-2.30	50.02
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	106.23 PK			1.18 V	337	66.43	39.80
2	*5700.00	96.07 AV			1.18 V	337	56.27	39.80
3	#5725.00	67.24 PK	68.30	-1.06	1.07 V	325	27.40	39.84
4	11400.00	60.44 PK	74.00	-13.56	1.00 V	0	10.42	50.02
5	11400.00	47.56 AV	54.00	-6.44	1.00 V	0	-2.46	50.02

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.

BELOW 1GHz WORST-CASE DATA : 802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 67%RH 1000hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	152.39	29.49 QP	43.50	-14.01	1.25 H	184	15.39	14.10
2	321.54	26.94 QP	46.00	-19.06	1.00 H	247	12.26	14.68
3	471.25	29.11 QP	46.00	-16.89	2.00 H	229	9.33	19.78
4	665.68	39.79 QP	46.00	-6.21	1.25 H	214	15.61	24.18
5	768.73	30.29 QP	46.00	-15.71	1.75 H	97	4.60	25.69
6	953.44	33.12 QP	46.00	-12.88	1.00 H	115	4.55	28.57
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	70.73	33.17 QP	40.00	-6.83	1.00 V	205	20.29	12.88
2	181.55	28.27 QP	43.50	-15.23	1.00 V	217	16.78	11.49
3	364.32	27.08 QP	46.00	-18.92	1.25 V	193	10.53	16.55
4	471.25	31.64 QP	46.00	-14.36	1.00 V	160	11.86	19.78
5	663.74	39.33 QP	46.00	-6.67	1.25 V	202	15.19	24.14
6	832.89	39.07 QP	46.00	-6.93	1.75 V	61	12.45	26.62

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 120	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 67%RH 1000hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	68.79	20.66 QP	40.00	-19.34	1.25 H	10	7.44	13.22
2	152.39	29.70 QP	43.50	-13.80	1.25 H	217	15.61	14.10
3	317.65	26.41 QP	46.00	-19.59	1.00 H	265	11.90	14.51
4	665.68	39.94 QP	46.00	-6.06	1.25 H	217	15.76	24.18
5	762.90	30.91 QP	46.00	-15.09	1.00 H	136	5.28	25.63
6	955.38	29.17 QP	46.00	-16.83	1.00 H	85	0.59	28.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	45.45	30.23 QP	40.00	-9.77	1.00 V	316	16.09	14.14
2	70.73	33.32 QP	40.00	-6.68	1.00 V	166	20.44	12.88
3	181.55	27.65 QP	43.50	-15.85	1.00 V	217	16.16	11.49
4	663.74	39.18 QP	46.00	-6.82	1.00 V	49	15.04	24.14
5	762.90	30.90 QP	46.00	-15.10	2.25 V	151	5.27	25.63
6	906.77	38.38 QP	46.00	-7.62	1.50 V	247	10.38	28.00

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	Nov. 19, 2008	Nov. 18, 2009
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 31, 2008	Dec. 30, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jun. 13, 2008	Jun. 12, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Dec. 04, 2008	Dec. 03, 2009
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.

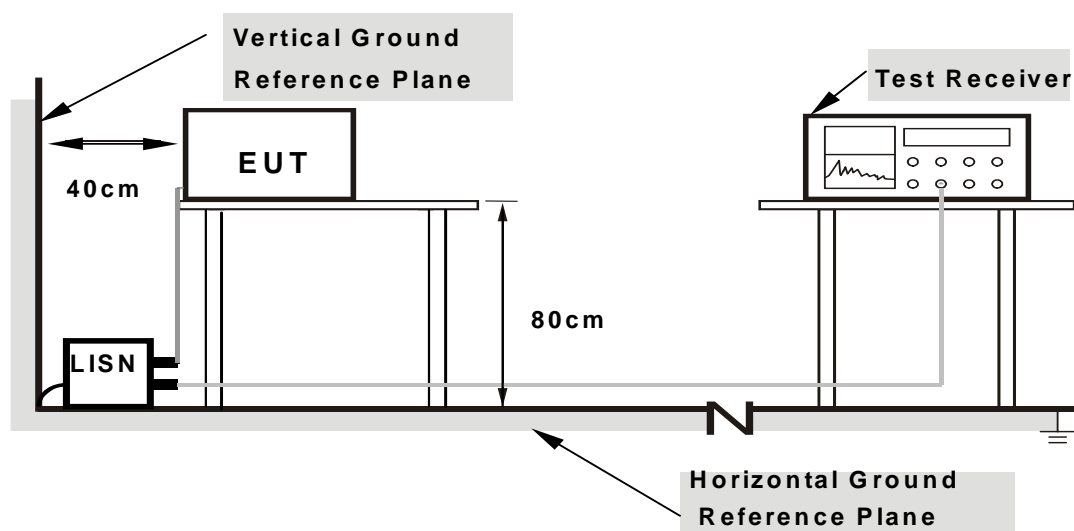
4.2.3 TEST PROCEDURES

- 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.

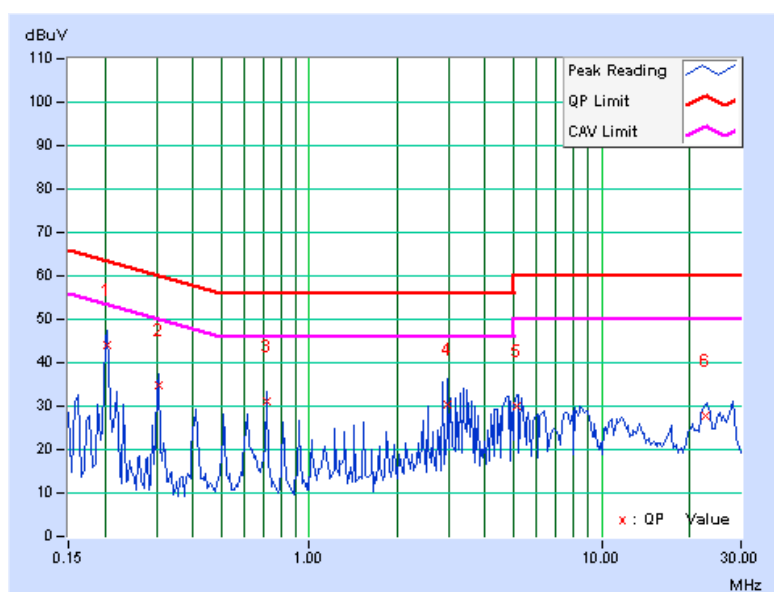
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Mark Liao

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	0.205	0.13	43.93	-	44.06	-	63.42	53.42	-19.36	-
2	0.306	0.14	34.72	-	34.86	-	60.07	50.07	-25.22	-
3	0.716	0.16	30.81	-	30.97	-	56.00	46.00	-25.03	-
4	2.957	0.30	30.22	-	30.52	-	56.00	46.00	-25.48	-
5	5.105	0.42	29.66	-	30.08	-	60.00	50.00	-29.92	-
6	22.672	1.19	26.57	-	27.76	-	60.00	50.00	-32.24	-

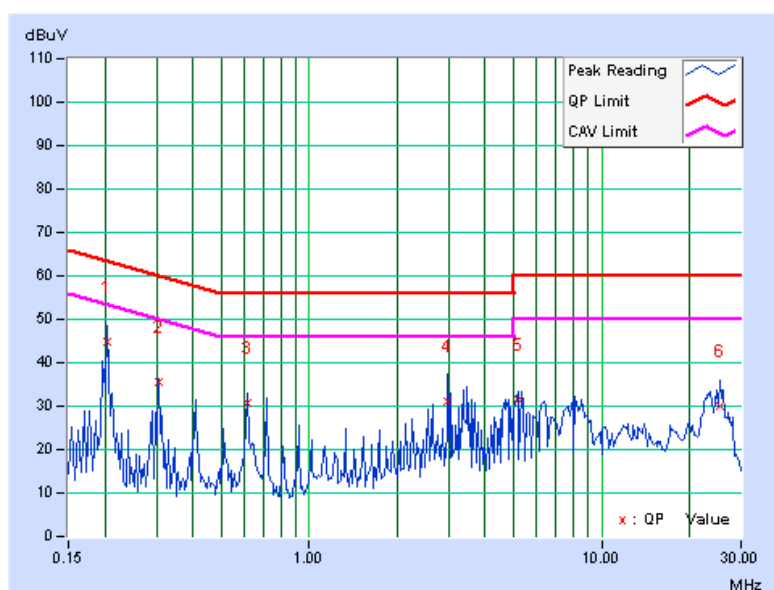
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Mark Liao

No	Freq.	Corr. Factor	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	0.205	0.15	44.71	-	44.86	-	63.42	53.42	-18.56	-
2	0.306	0.16	35.28	-	35.44	-	60.07	50.07	-24.64	-
3	0.615	0.17	30.63	-	30.80	-	56.00	46.00	-25.20	-
4	2.961	0.32	30.96	-	31.28	-	56.00	46.00	-24.72	-
5	5.207	0.44	30.96	-	31.40	-	60.00	50.00	-28.60	-
6	25.320	0.86	29.12	-	29.98	-	60.00	50.00	-30.02	-

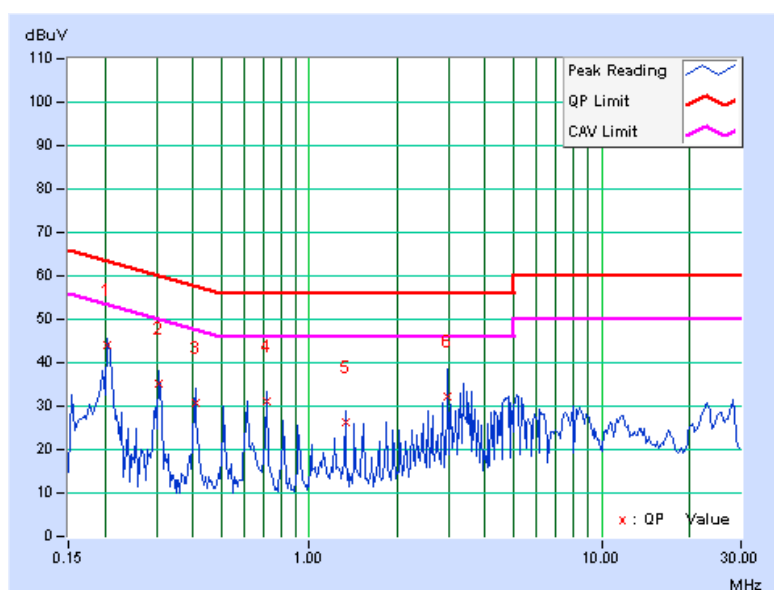
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Mark Liao

No	Freq.	Corr. Factor	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	0.205	0.13	43.80	-	43.93	-	63.42	53.42	-19.49	-
2	0.306	0.14	35.12	-	35.26	-	60.07	50.07	-24.82	-
3	0.408	0.14	30.51	-	30.65	-	57.69	47.69	-27.04	-
4	0.716	0.16	31.03	-	31.19	-	56.00	46.00	-24.81	-
5	1.328	0.20	26.23	-	26.43	-	56.00	46.00	-29.57	-
6	2.961	0.30	31.88	-	32.18	-	56.00	46.00	-23.82	-

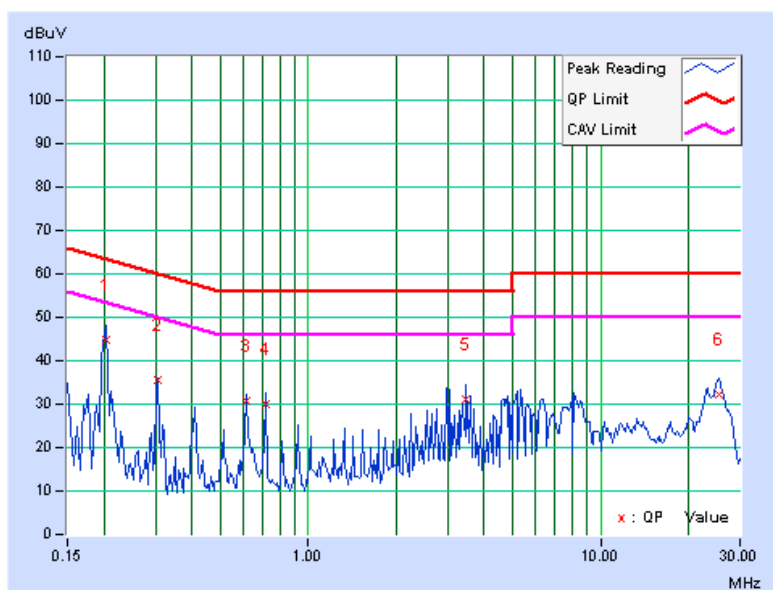
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Mark Liao

No	Freq.	Corr. Factor	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	0.205	0.15	44.79	-	44.94	-	63.42	53.42	-18.48	-
2	0.306	0.16	35.26	-	35.42	-	60.07	50.07	-24.66	-
3	0.615	0.17	30.59	-	30.76	-	56.00	46.00	-25.24	-
4	0.716	0.18	29.85	-	30.03	-	56.00	46.00	-25.97	-
5	3.473	0.35	30.92	-	31.27	-	56.00	46.00	-24.73	-
6	25.328	0.86	31.40	-	32.26	-	60.00	50.00	-27.74	-

- 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. 04, 2008	Aug. 03, 2009
Power Sensor	MA2411B	0738138	Aug. 04, 2008	Aug. 03, 2009

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	100041	Apr. 22, 2008	Apr. 21, 2009

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 PROCEDURES

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

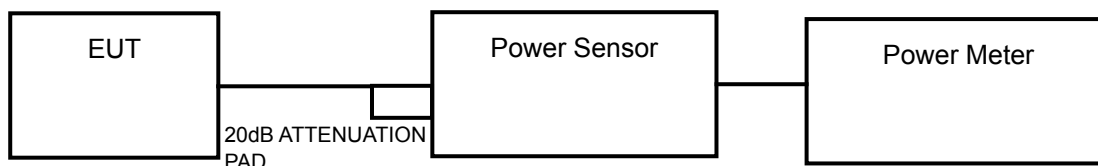
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.3.4 DEVIATION FROM TEST STANDARD

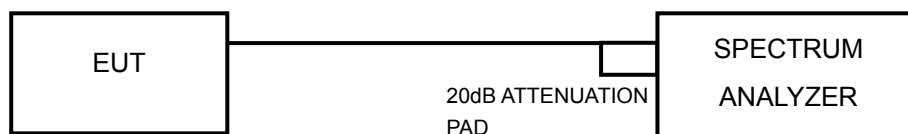
No deviation

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 OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (mW)	OUTPUT POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	10.593	10.25	17	PASS
40	5200	8.974	9.53	17	PASS
48	5240	10.495	10.21	17	PASS
52	5260	10.069	10.03	24	PASS
60	5300	11.455	10.59	24	PASS
64	5320	10.765	10.32	24	PASS
100	5500	10.280	10.12	24	PASS
120	5600	23.174	13.65	24	PASS
140	5700	7.178	8.56	24	PASS

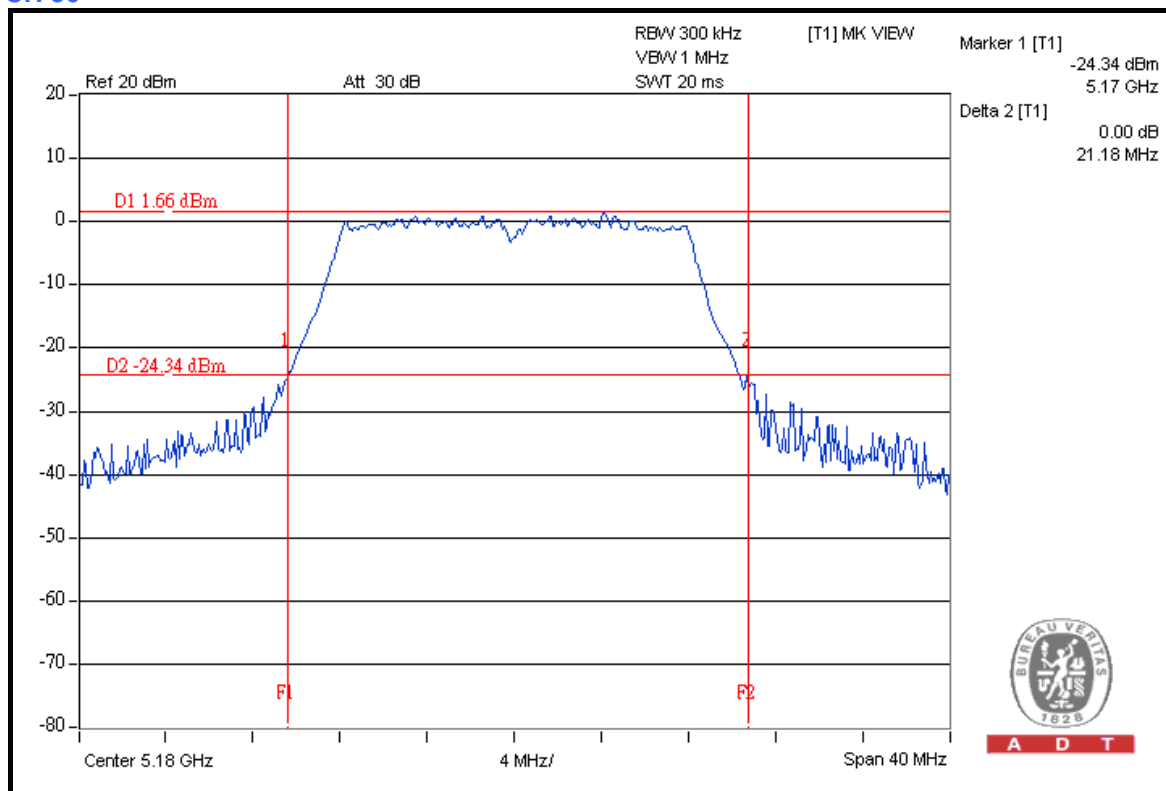


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26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	21.18	PASS
40	5200	20.82	PASS
48	5240	20.83	PASS
52	5260	20.79	PASS
60	5300	20.98	PASS
64	5320	20.96	PASS
100	5500	20.83	PASS
120	5600	24.84	PASS
140	5700	20.75	PASS

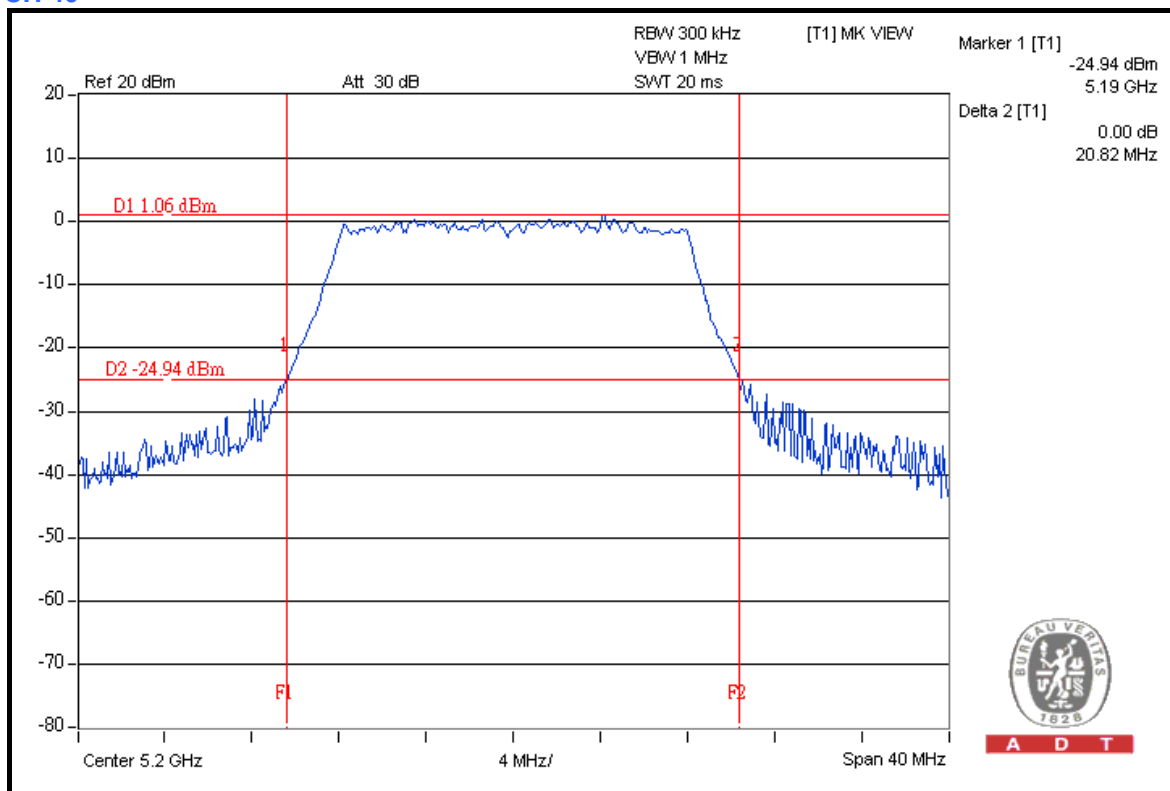
CH 36

A D T

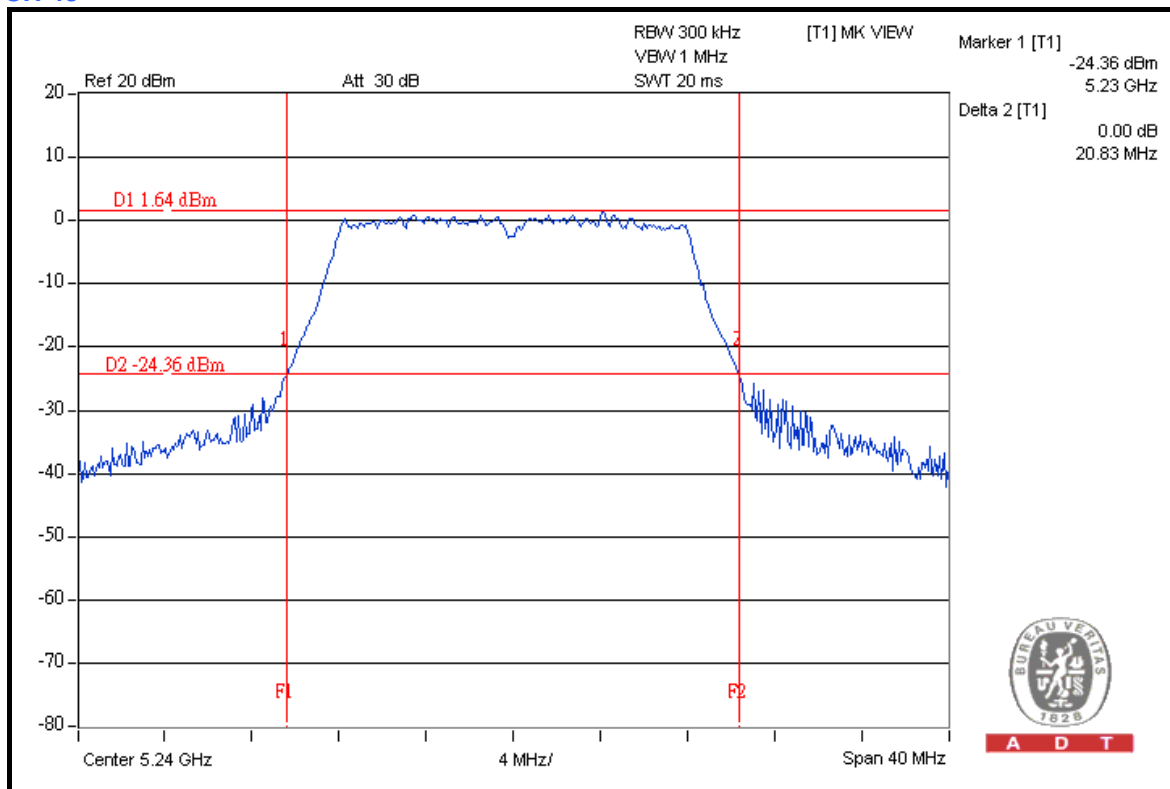


A D T

CH 40



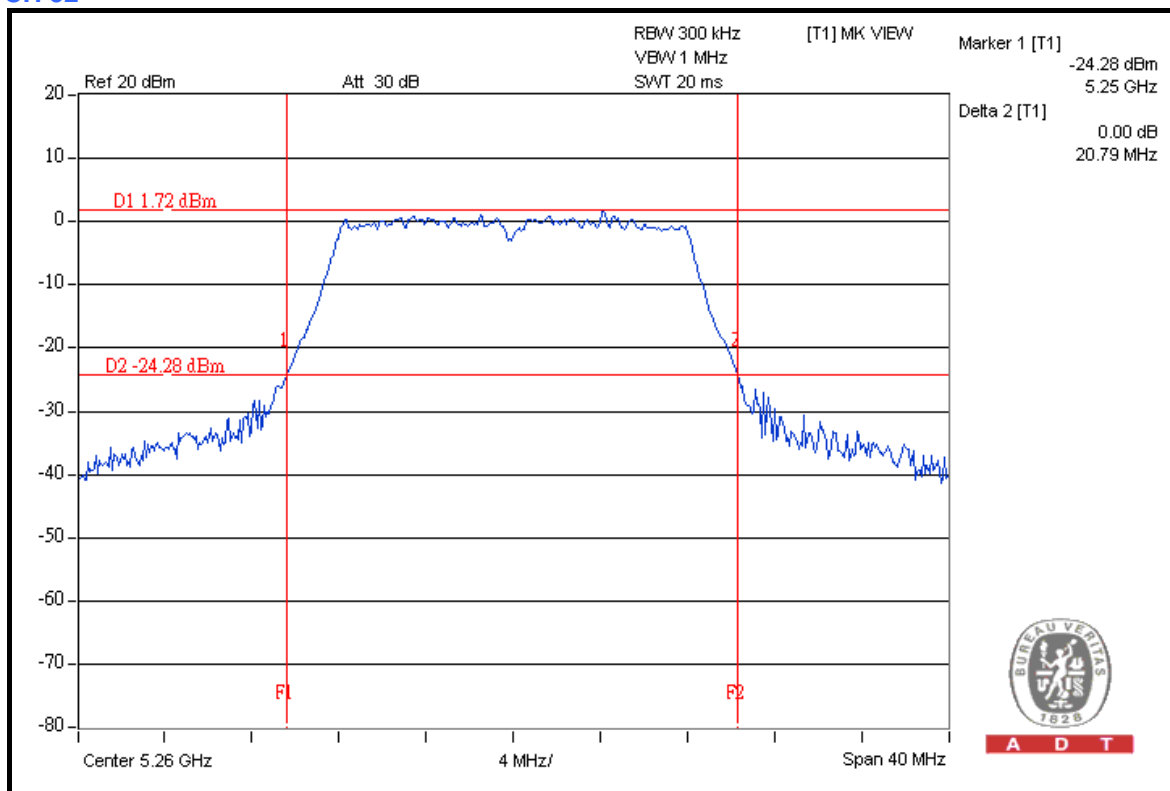
CH 48



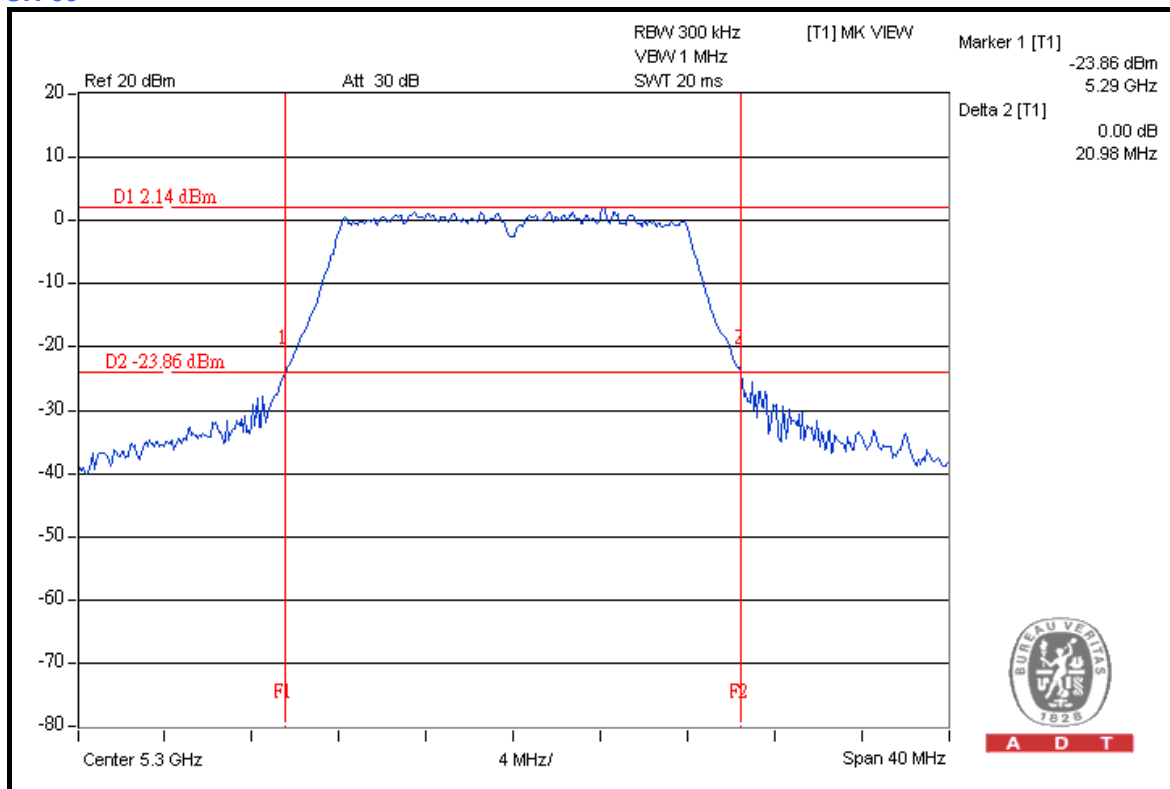


A D T

CH 52



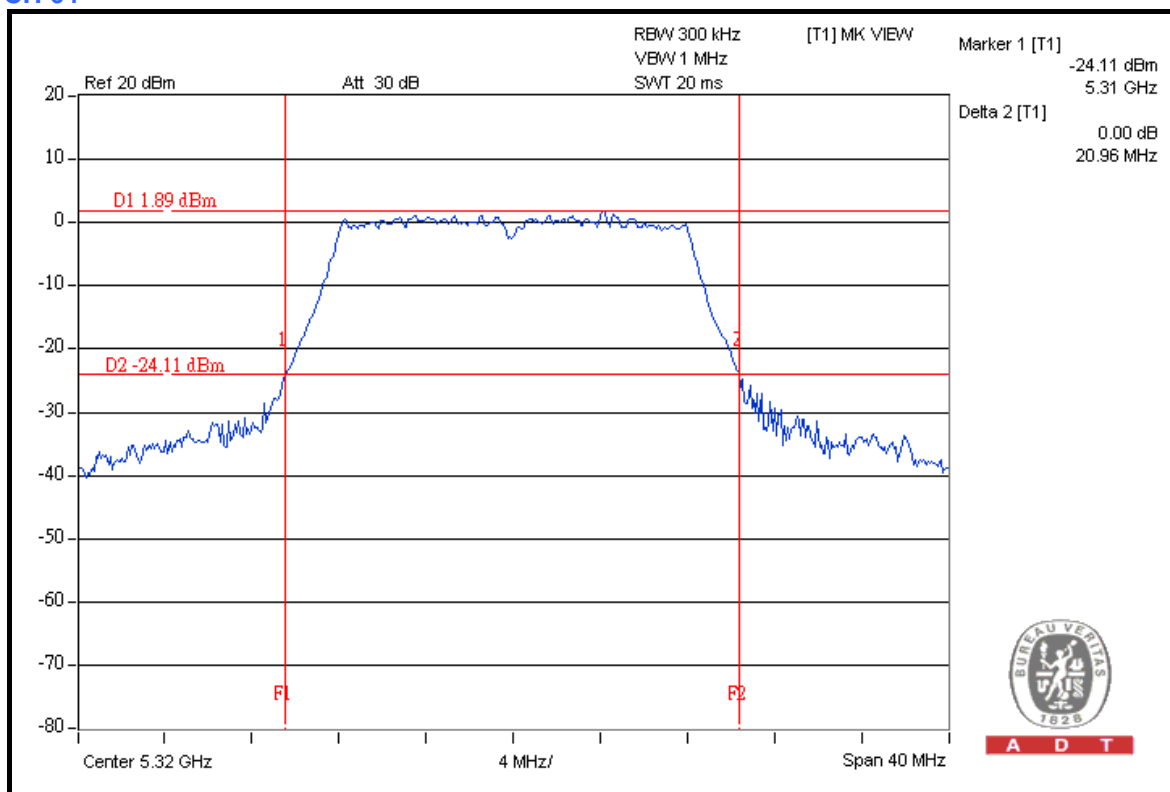
CH 60





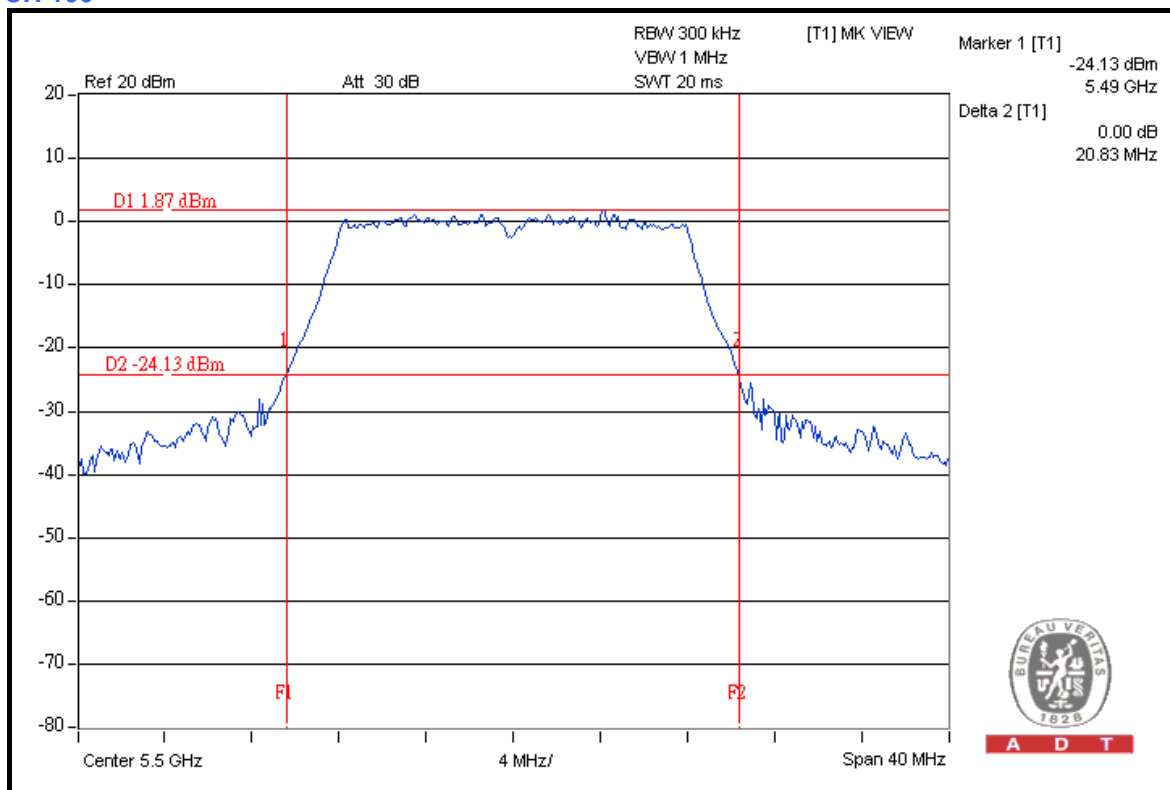
A D T

CH 64



A D T

CH 100

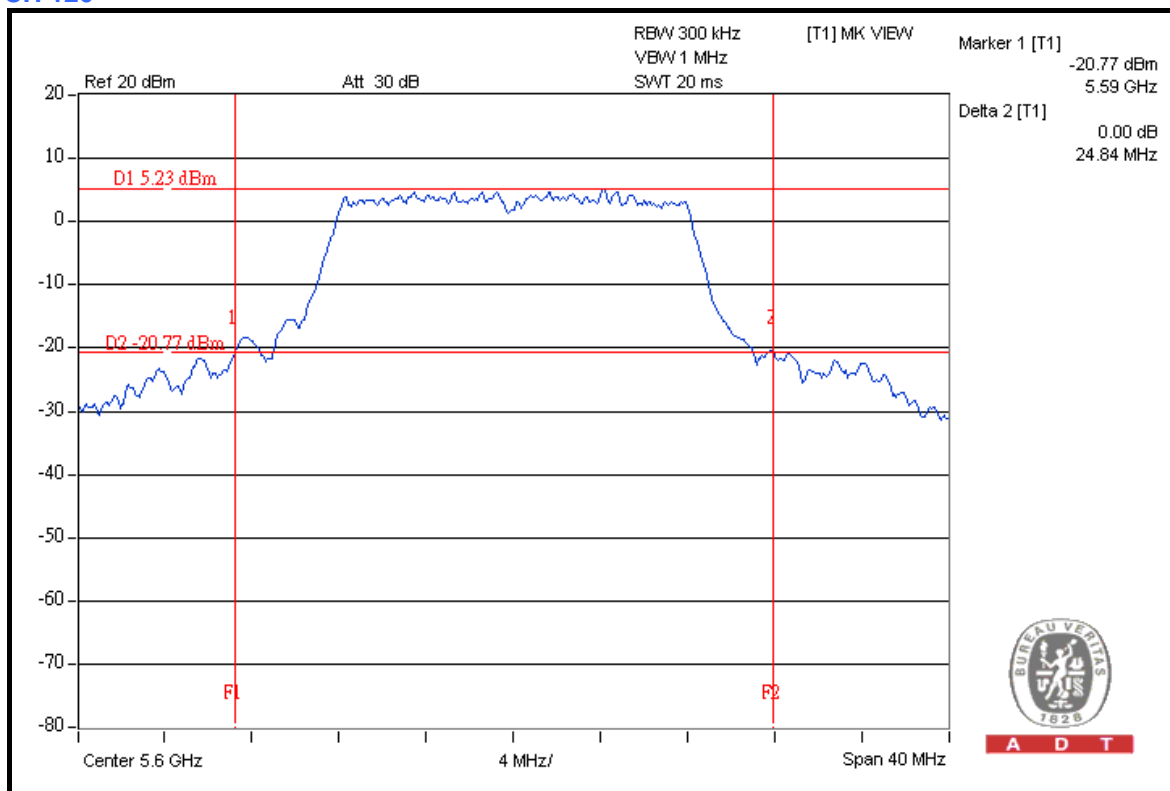


A D T

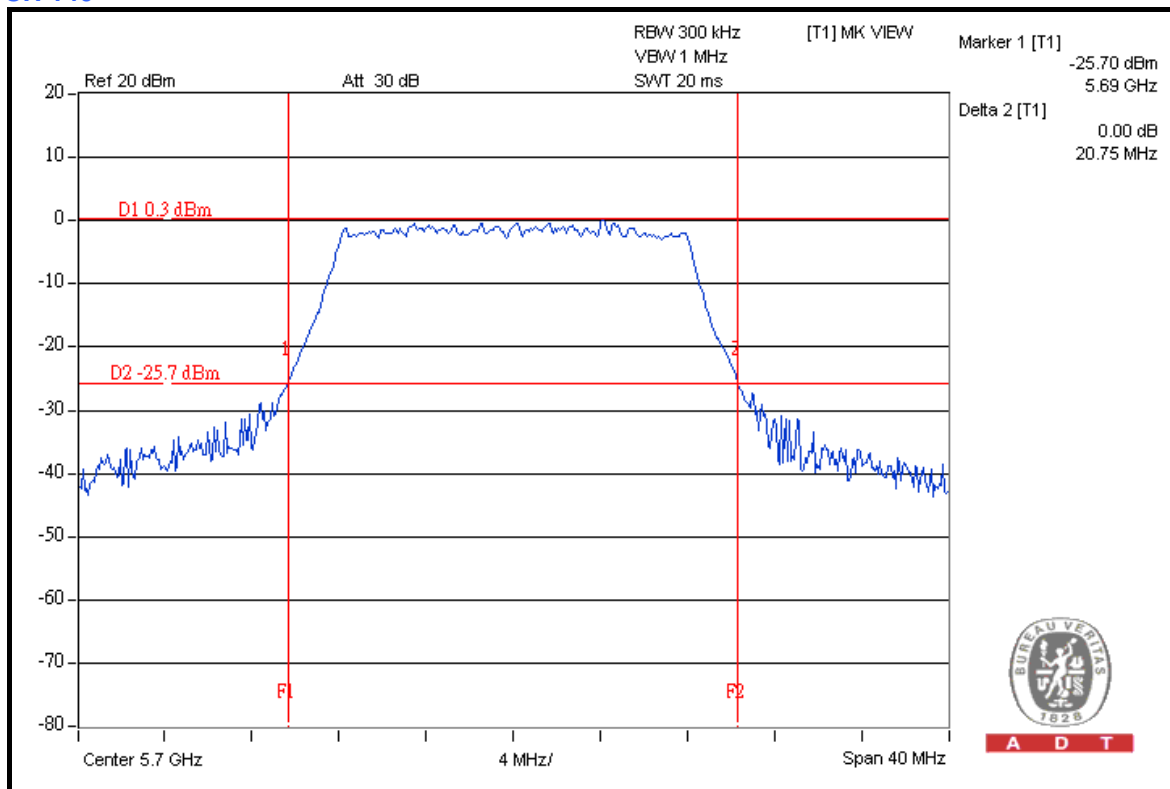


A D T

CH 120



CH 140



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	100041	Apr. 22, 2008	Apr. 21, 2009

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

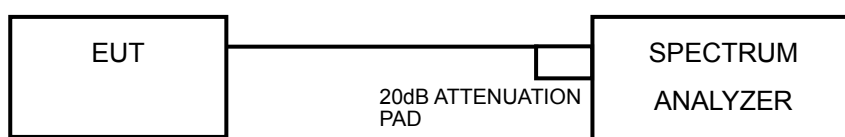
4.4.3 TEST PROCEDURE

- The transmitter output was connected to the spectrum analyzer.
- Set the spectrum bandwidth span to view the entire spectrum.
- Using peak detector and Max-hold function for Trace 1 (RB = 1MHz, VB = 3MHz) and 2 (RB = 1MHz, VB = 300 kHz).
- 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.



A D T

4.4.7 TEST RESULTS

802.11a OFDM MODULATION

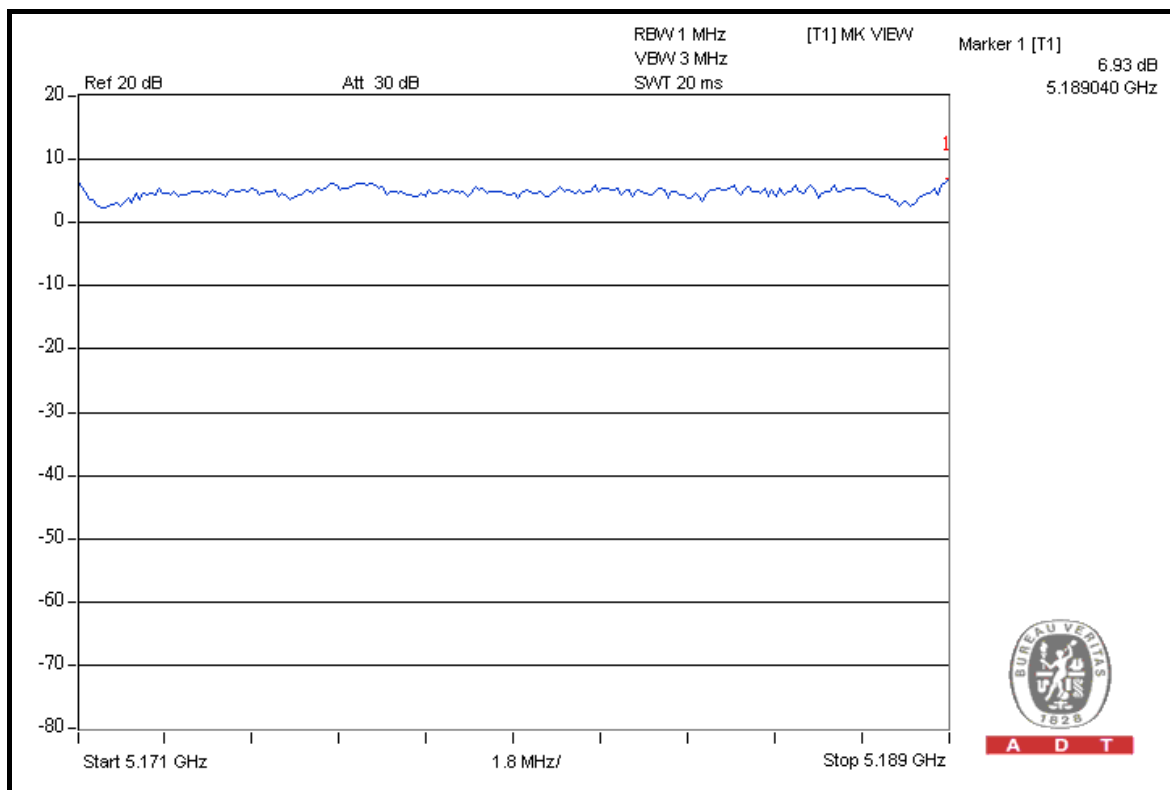
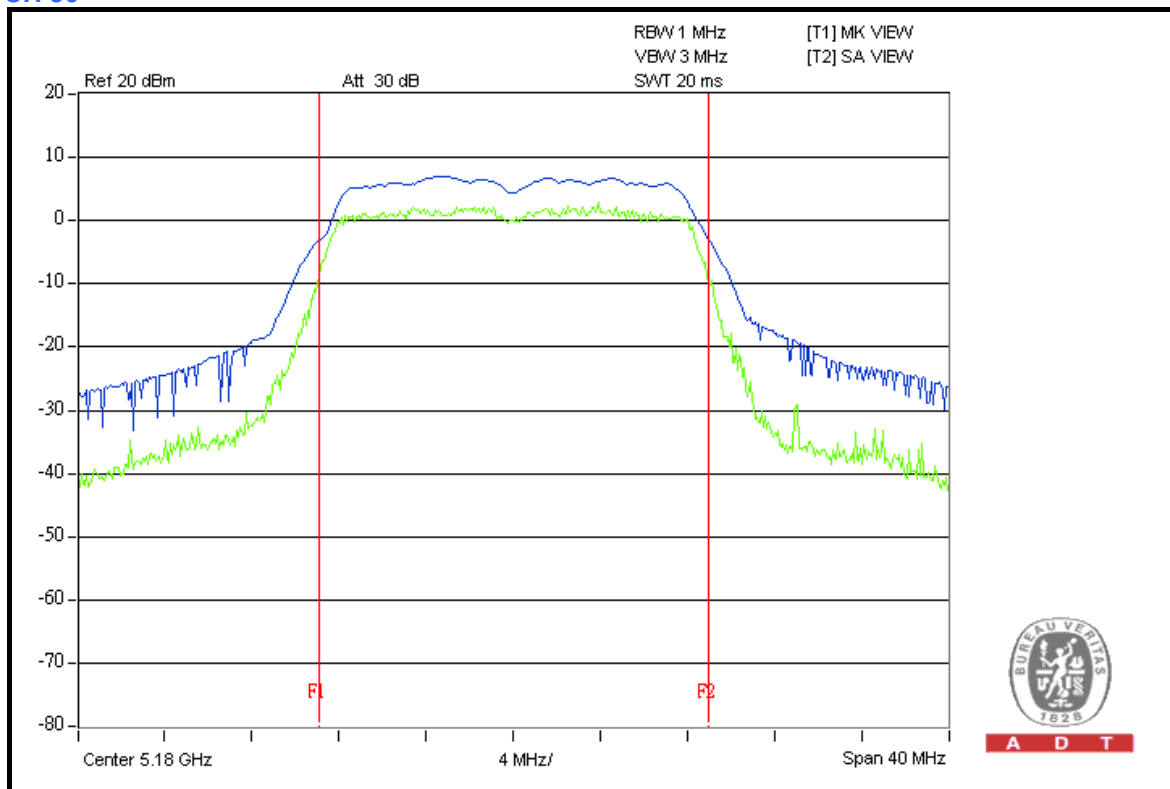
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	6.93	13	PASS
40	5200	7.21	13	PASS
48	5240	7.47	13	PASS
52	5260	7.13	13	PASS
60	5300	7.29	13	PASS
64	5320	7.35	13	PASS
100	5500	6.80	13	PASS
120	5600	6.59	13	PASS
140	5700	6.44	13	PASS



A D T

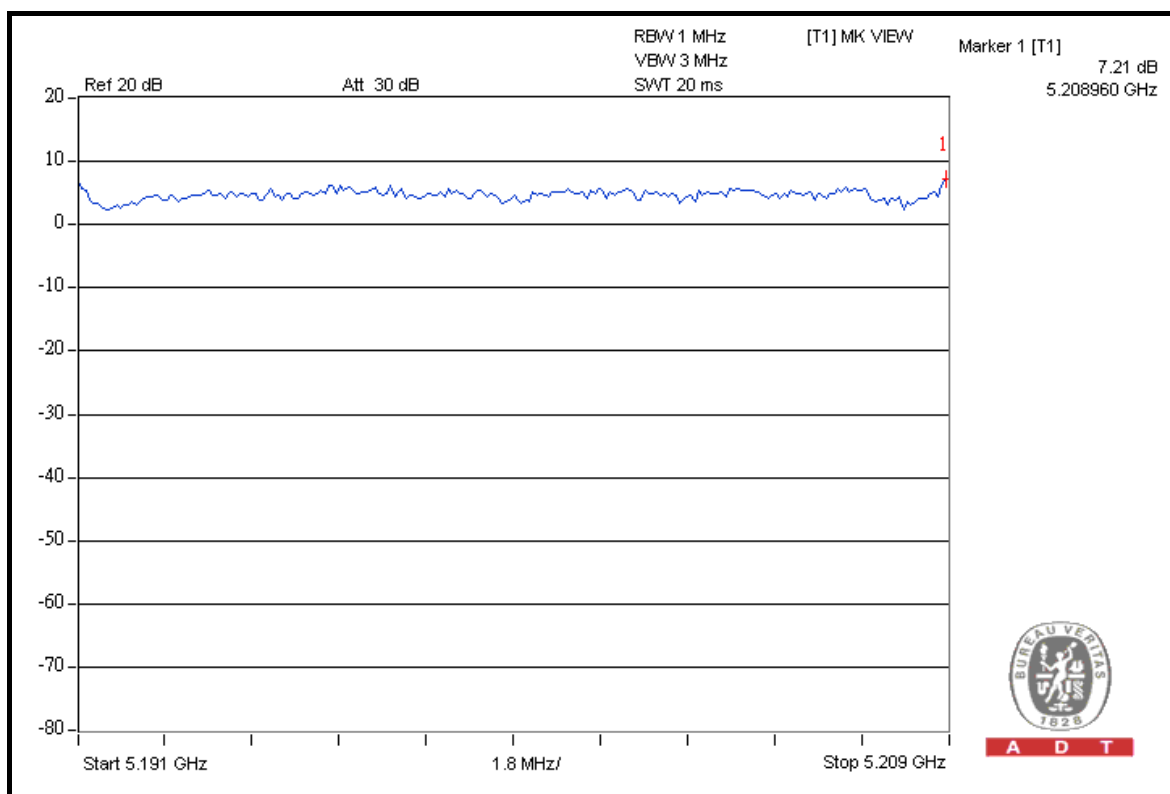
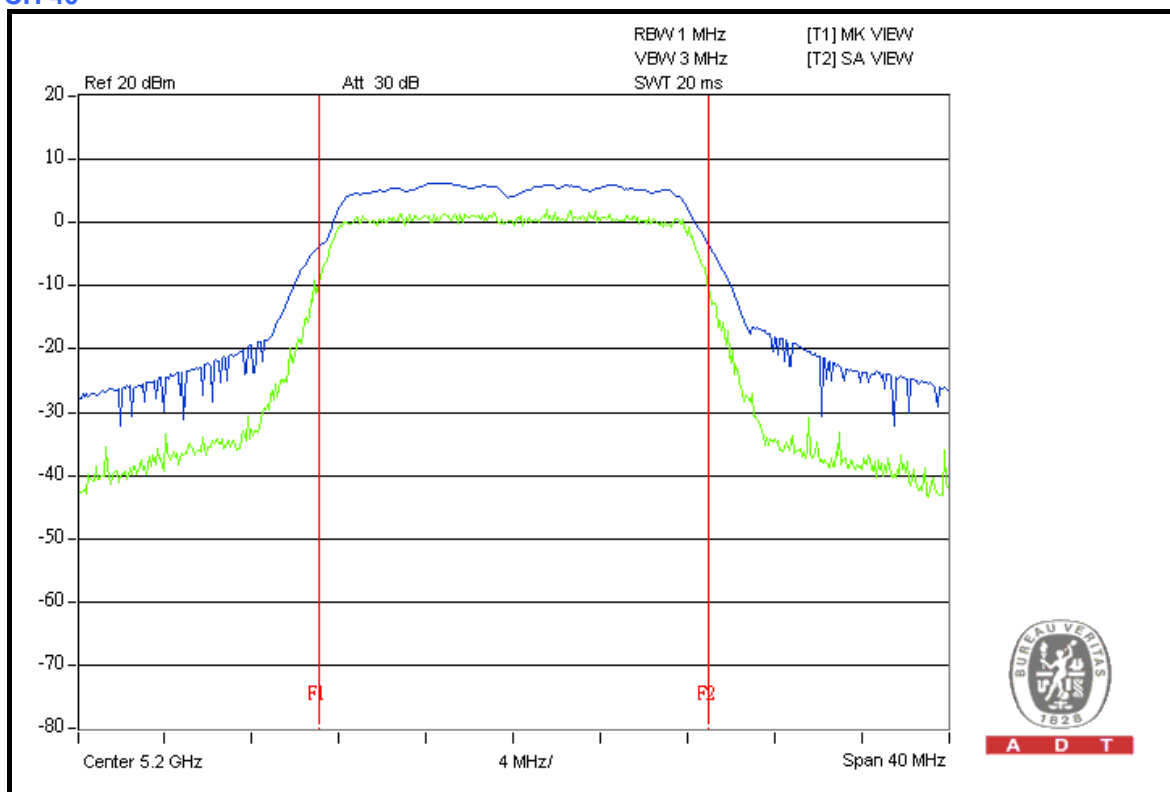
CH 36





A D T

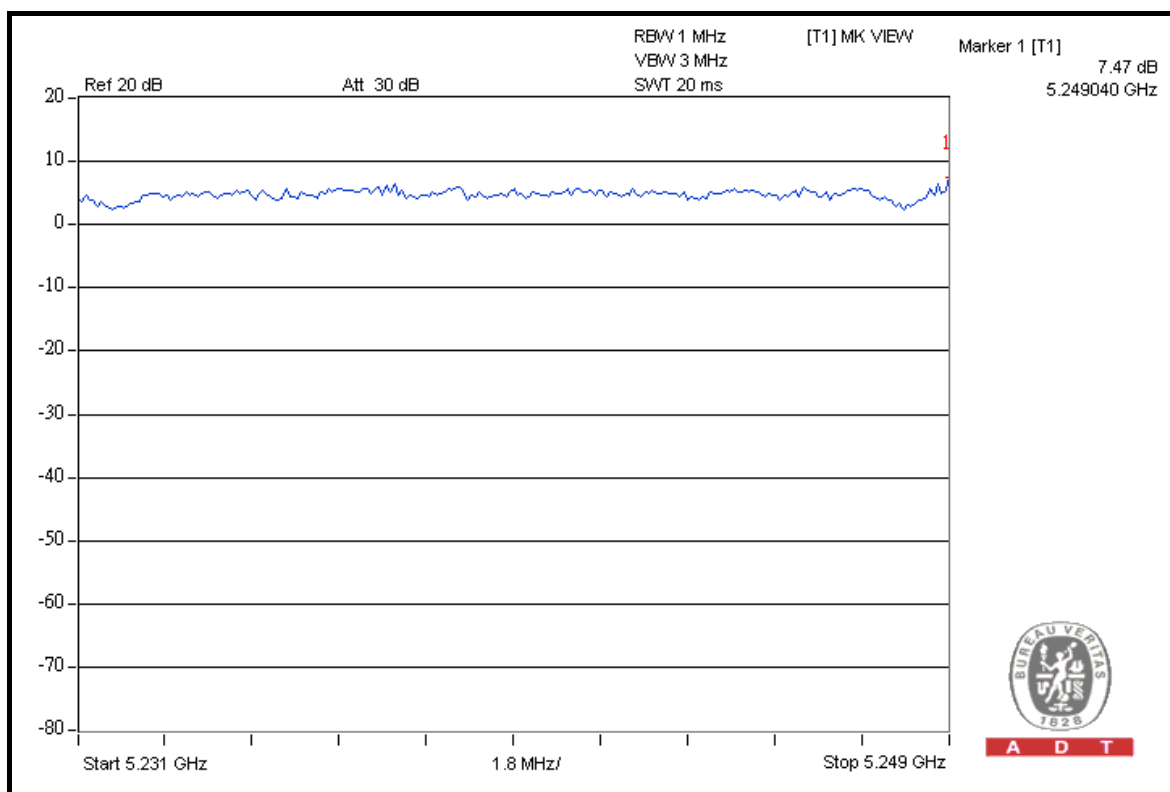
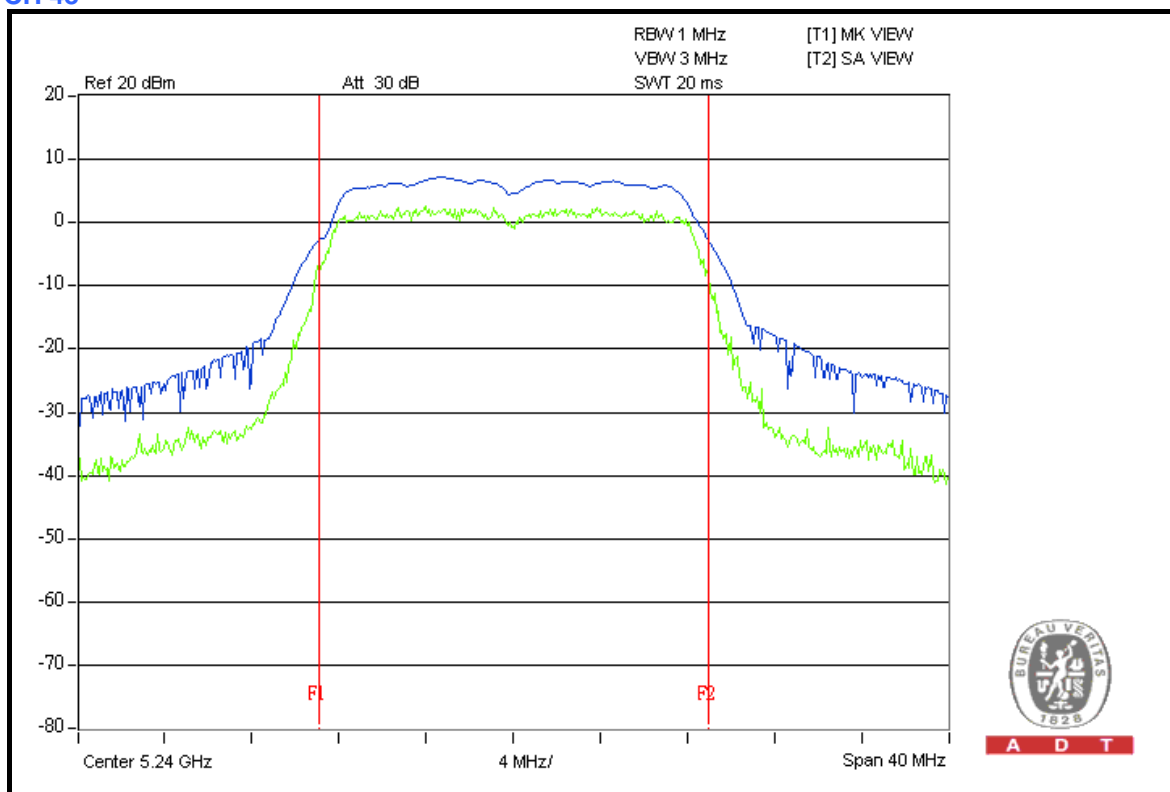
CH 40





A D T

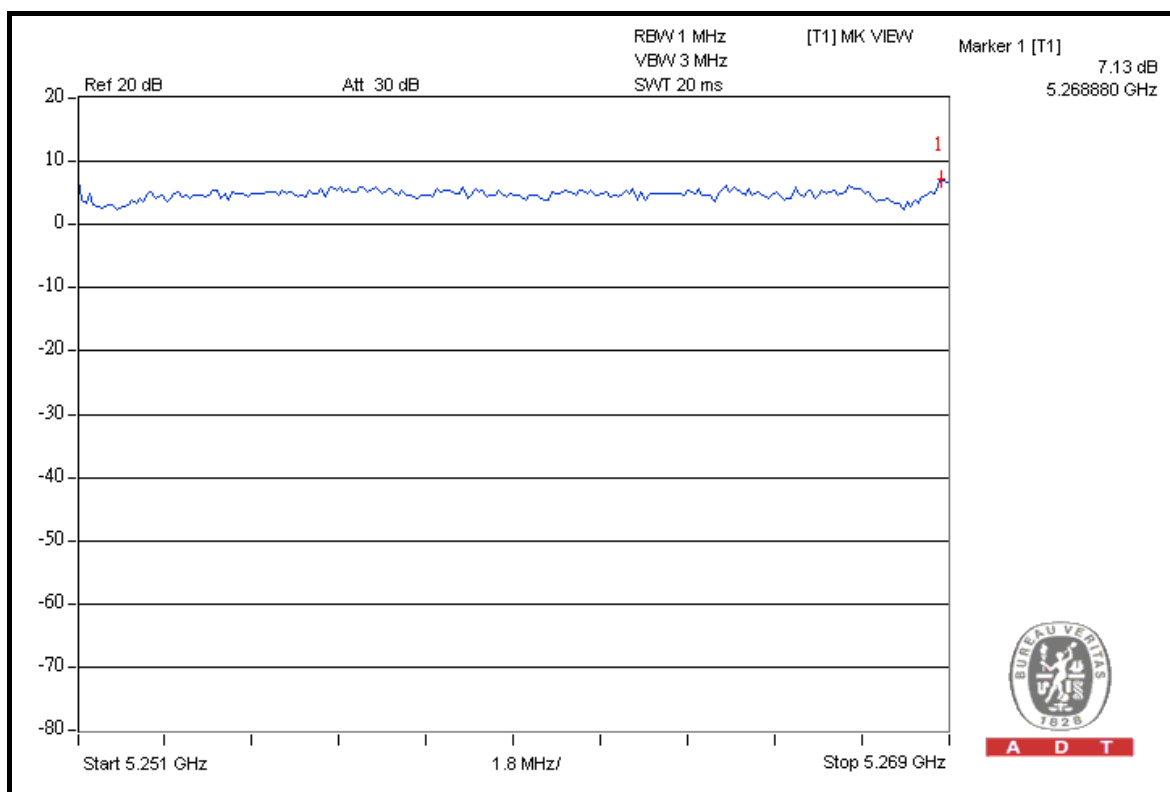
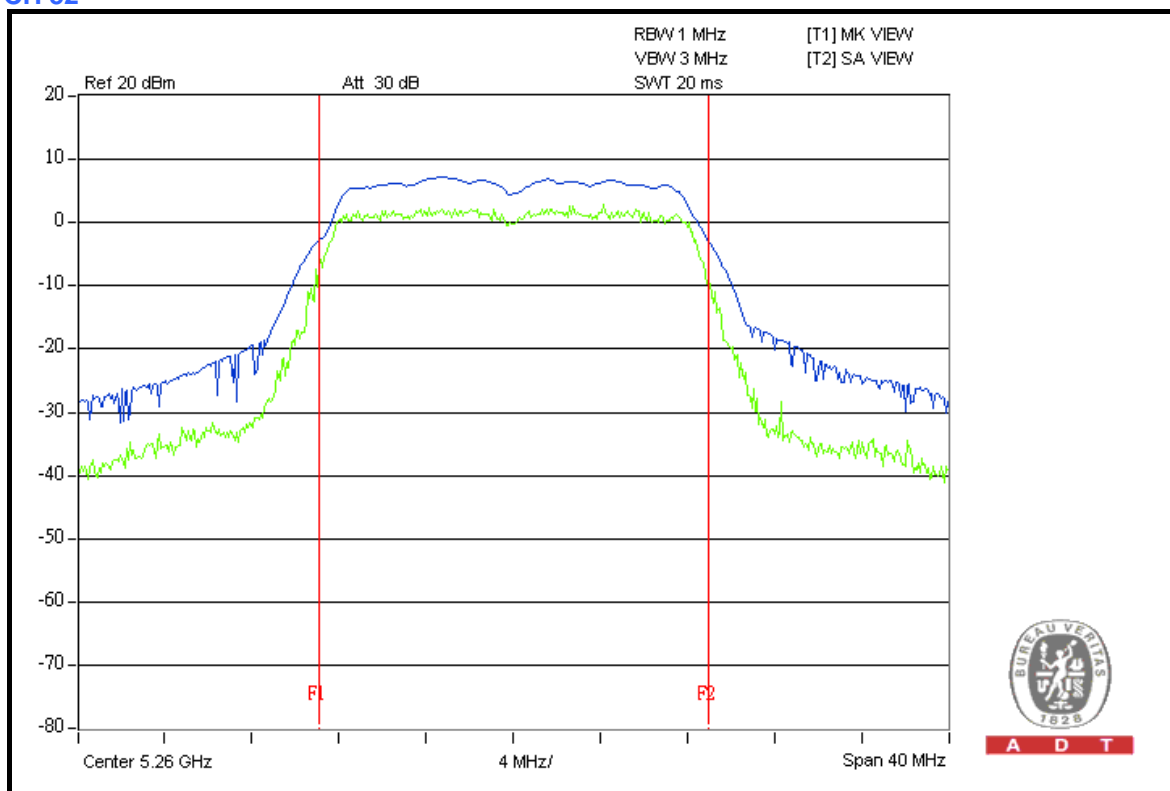
CH 48





A D T

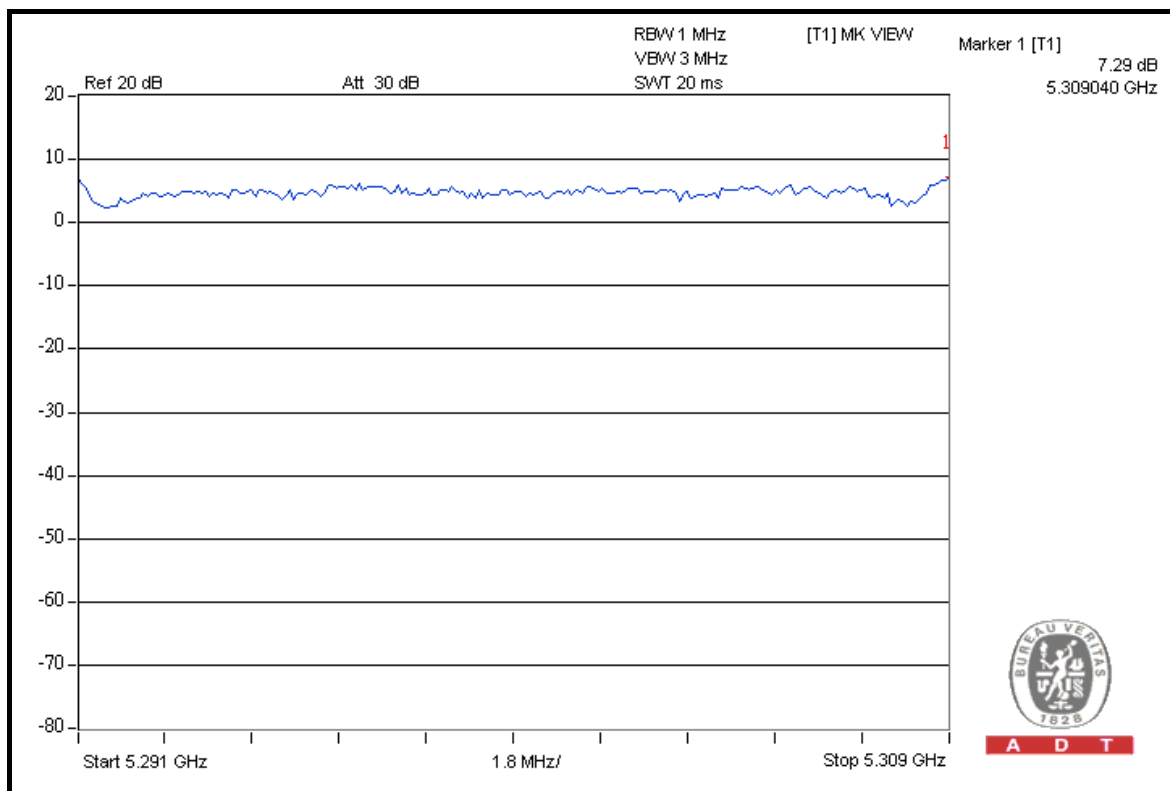
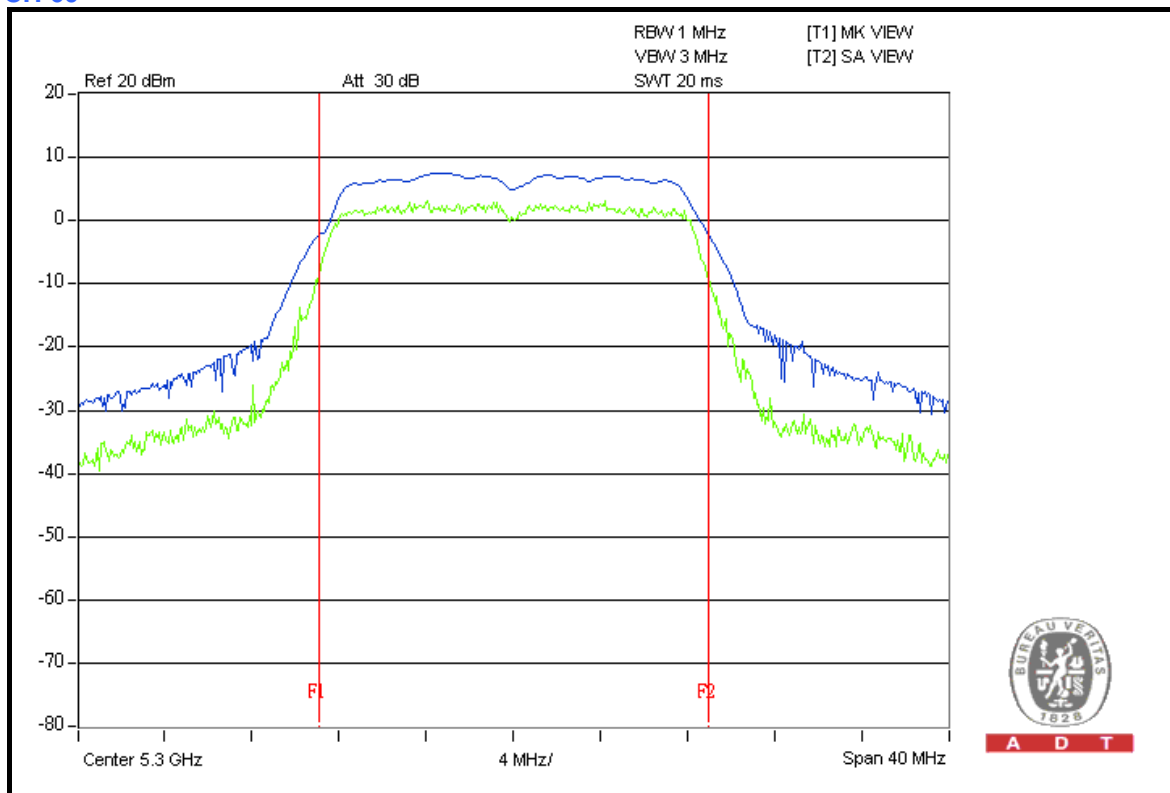
CH 52





A D T

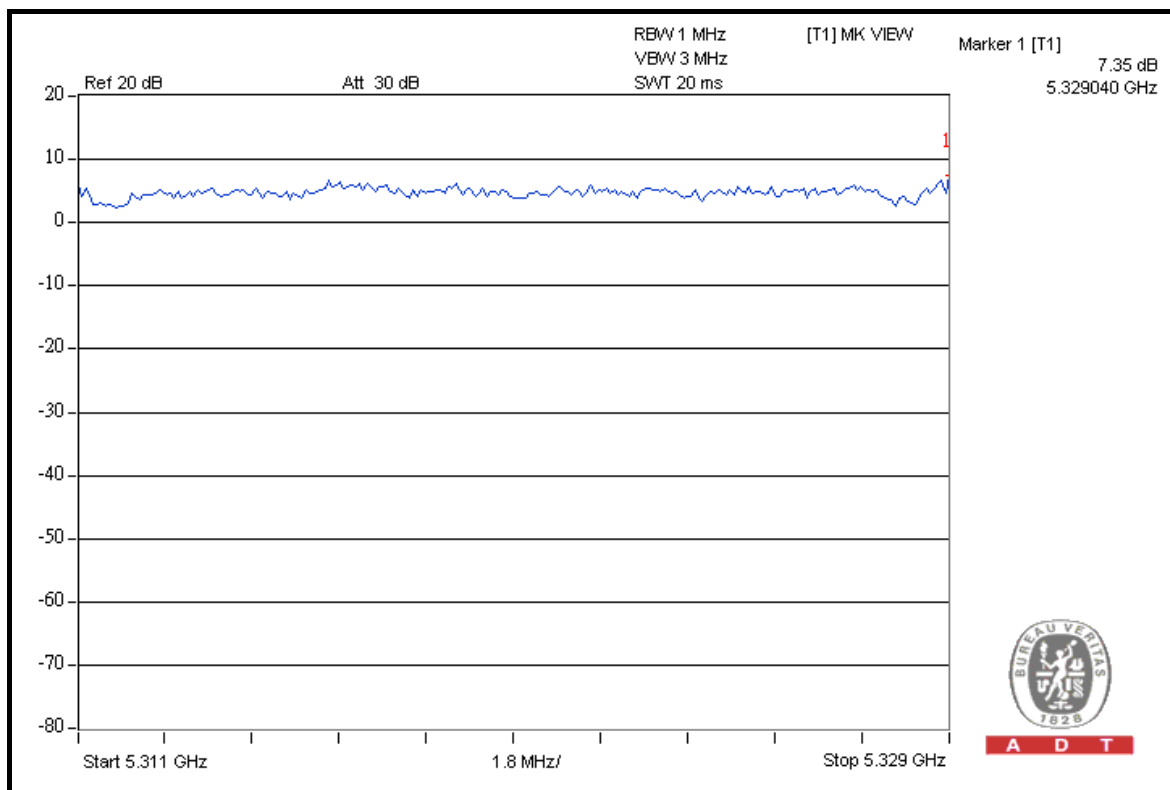
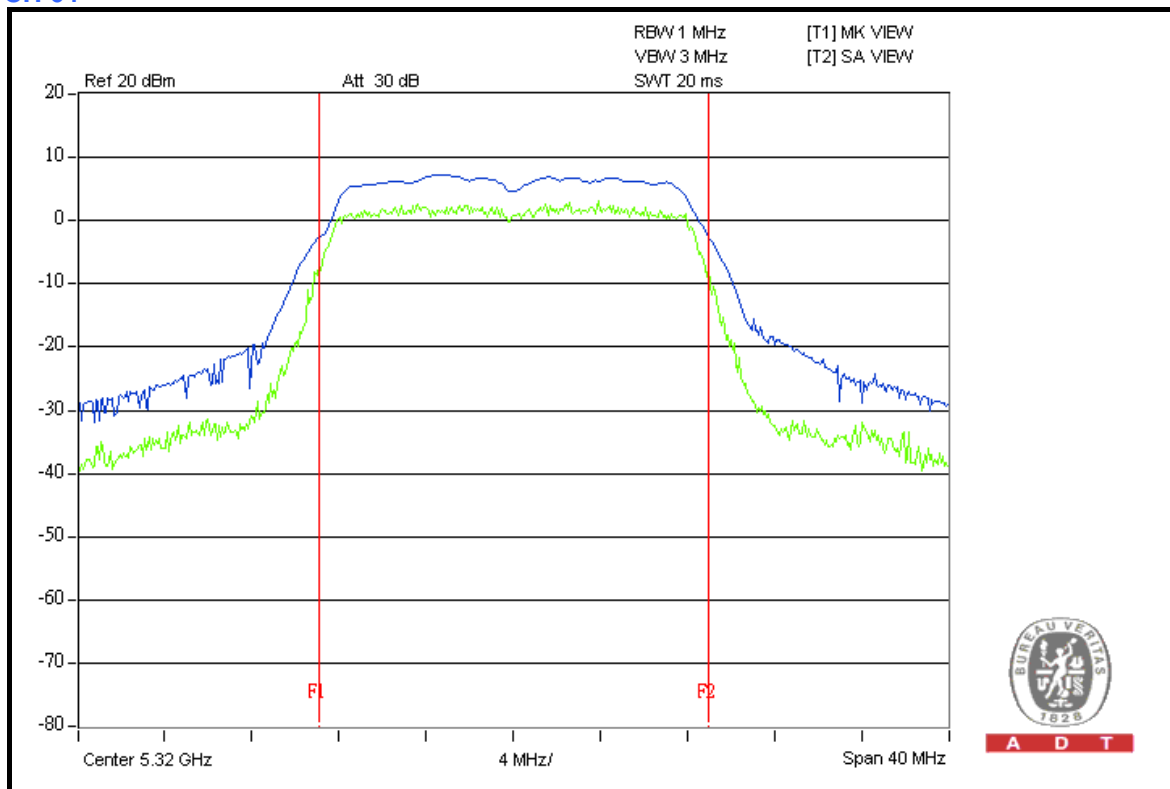
CH 60





A D T

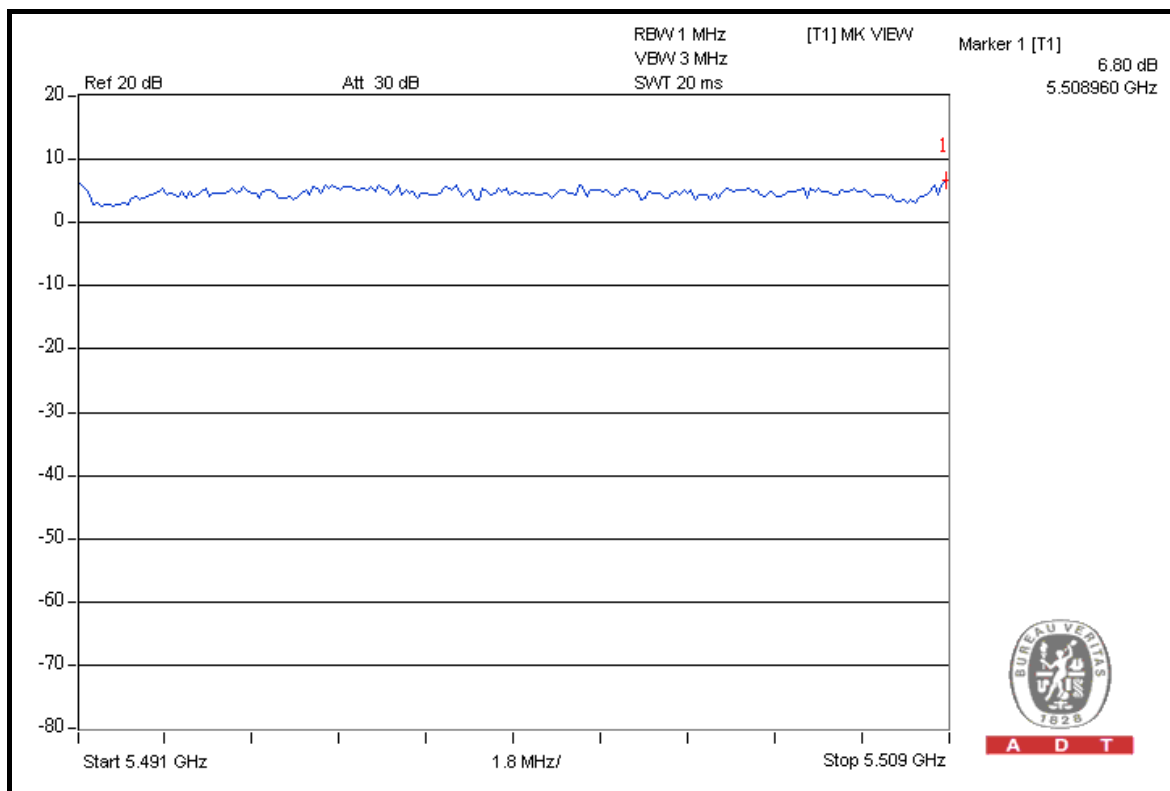
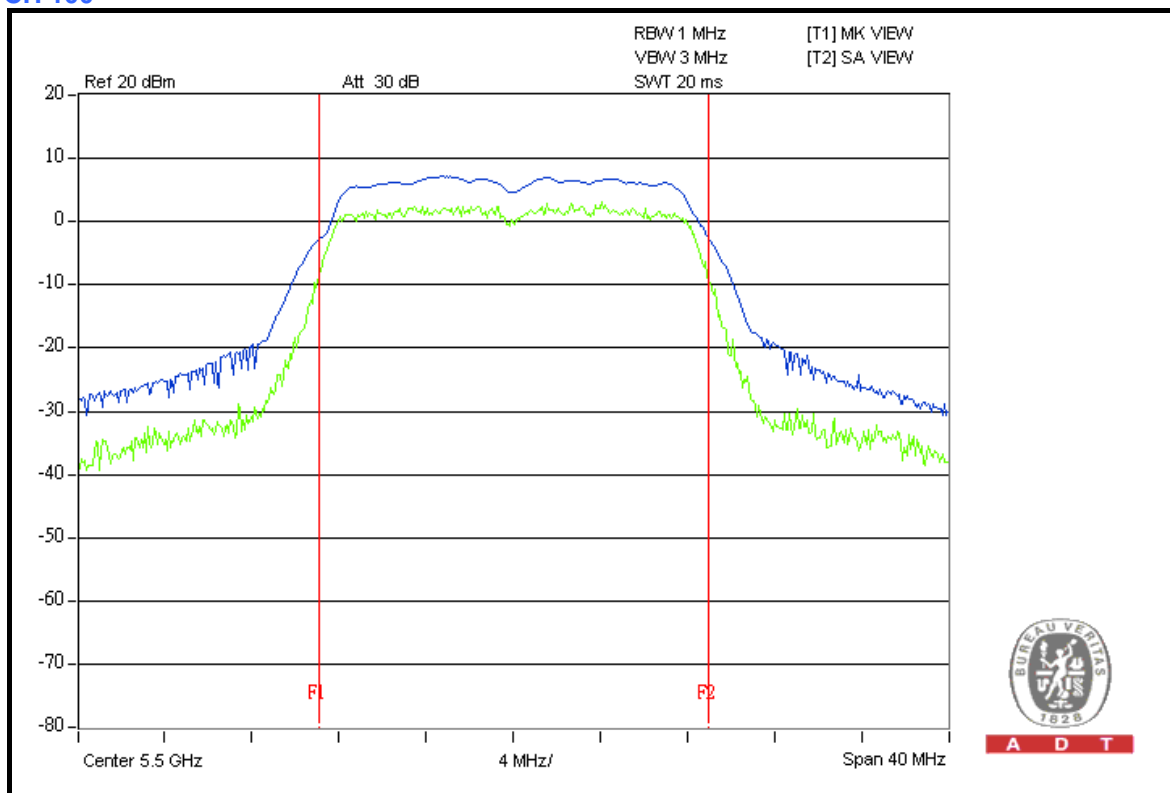
CH 64





A D T

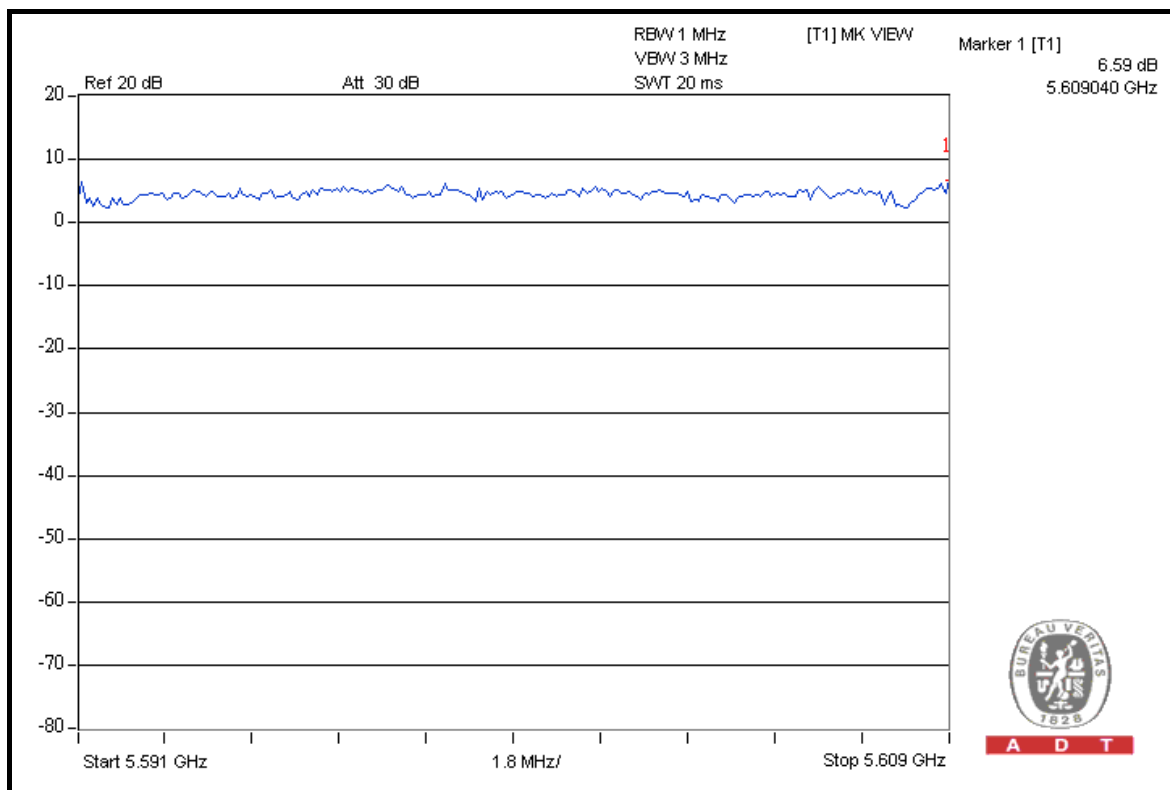
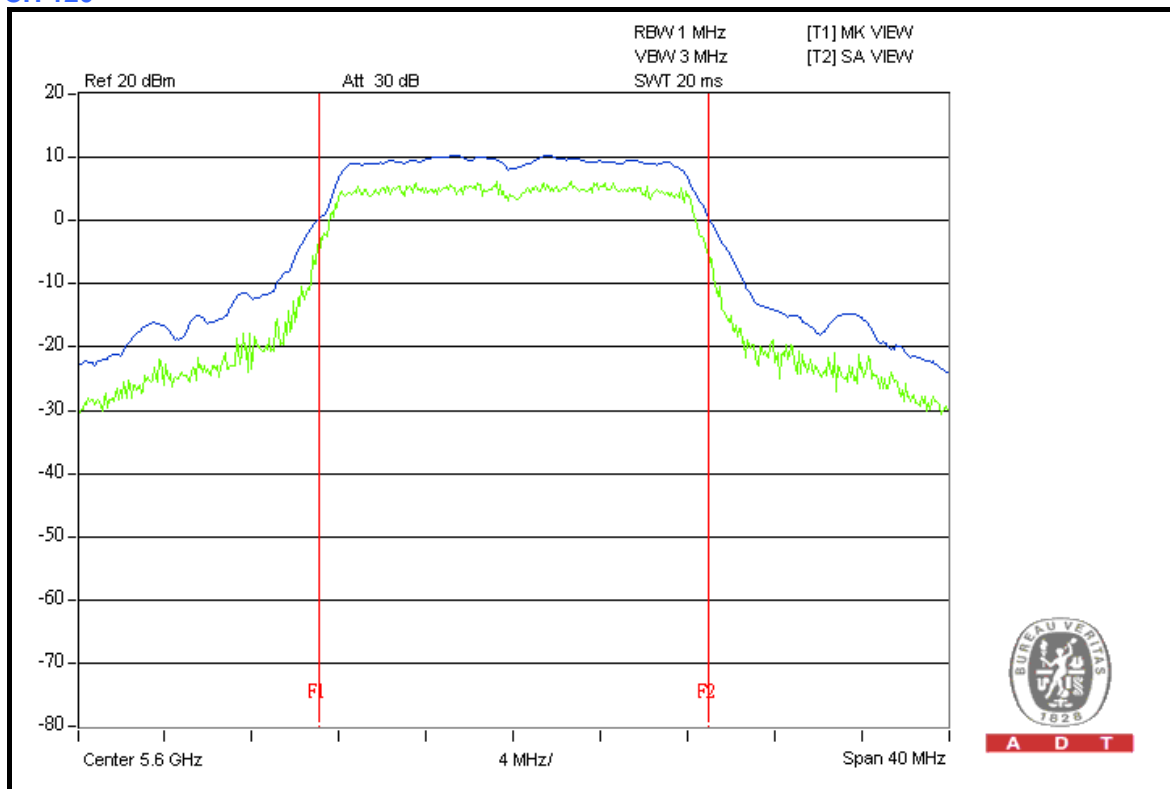
CH 100





A D T

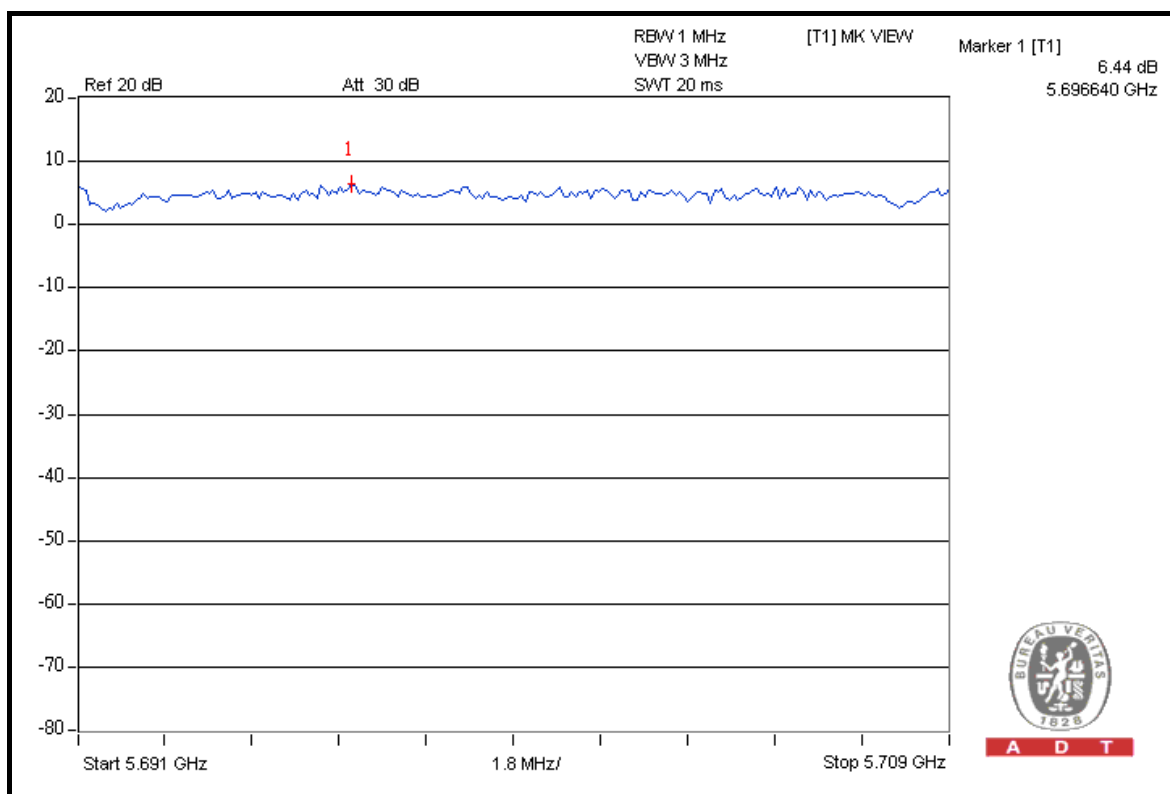
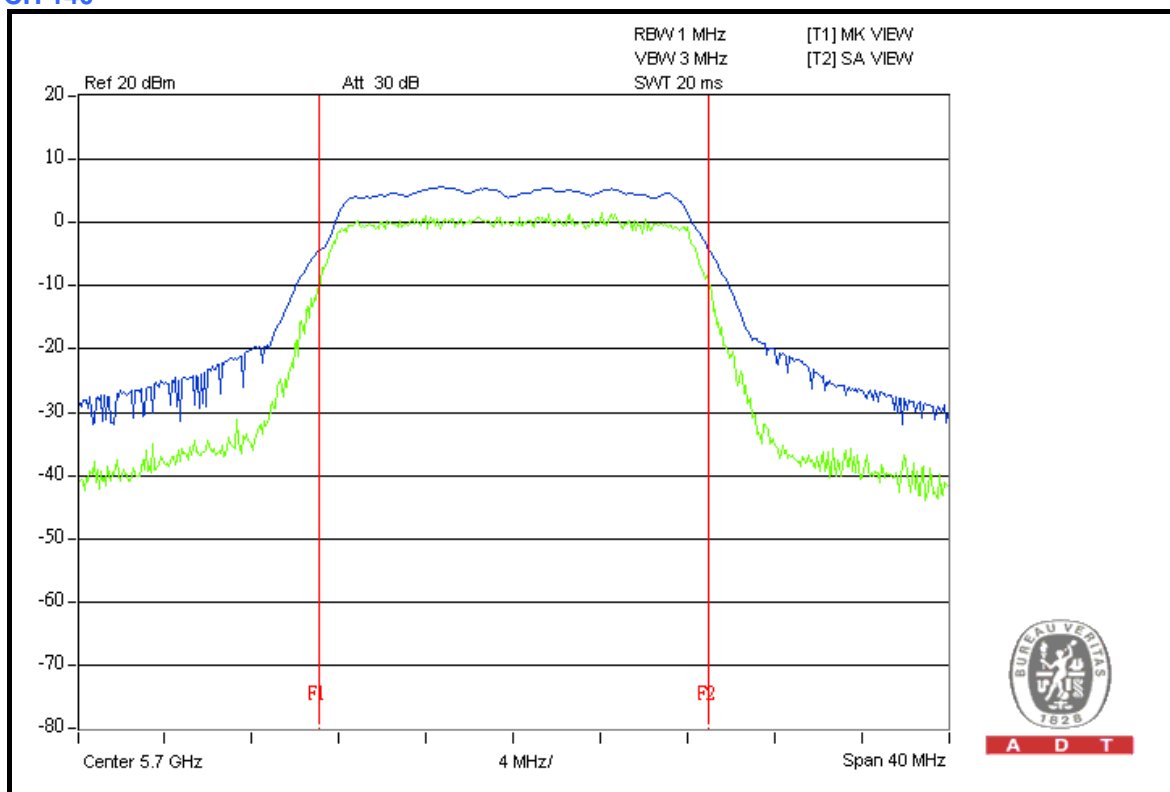
CH 120





A D T

CH 140



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	100041	Apr. 22, 2008	Apr. 21, 2009

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

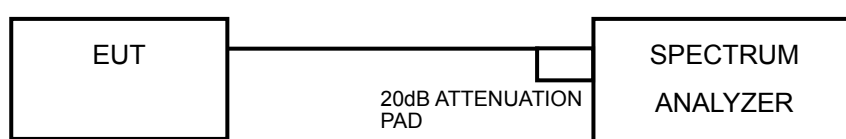
4.5.3 TEST PROCEDURES

- The transmitter output was connected to the spectrum analyzer.
- 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 4.4.6



A D T

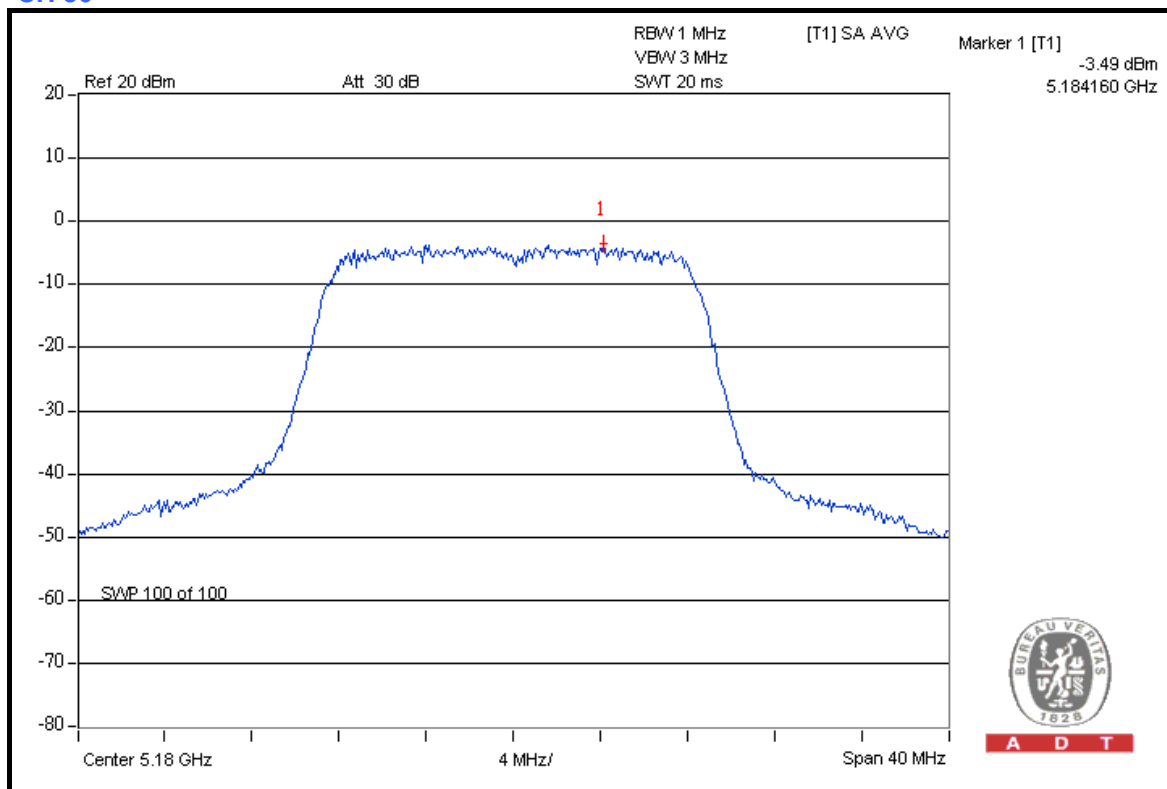
4.5.7 TEST RESULTS

802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
36	5180	-3.49	4	PASS
40	5200	-4.17	4	PASS
48	5240	-3.38	4	PASS
52	5260	-3.64	11	PASS
60	5300	-2.76	11	PASS
64	5320	-3.14	11	PASS
100	5500	-2.96	11	PASS
120	5600	0.41	11	PASS
140	5700	-4.73	11	PASS

CH 36

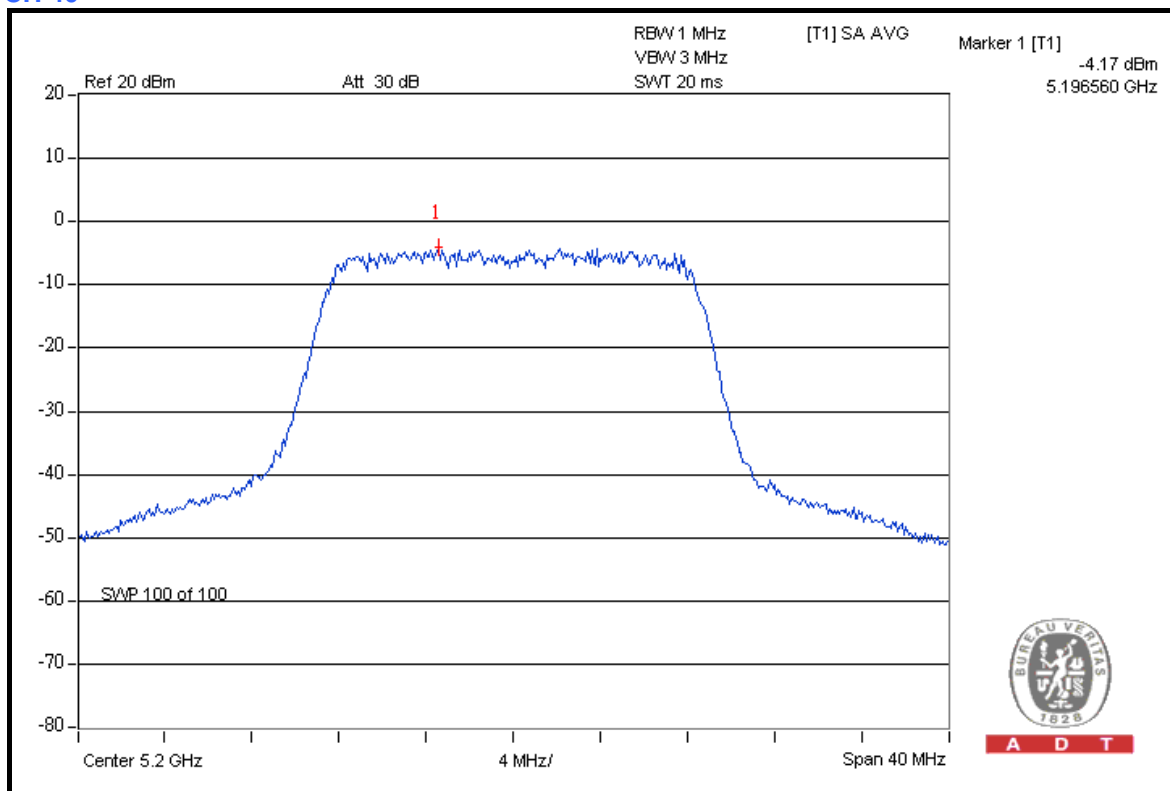


A D T



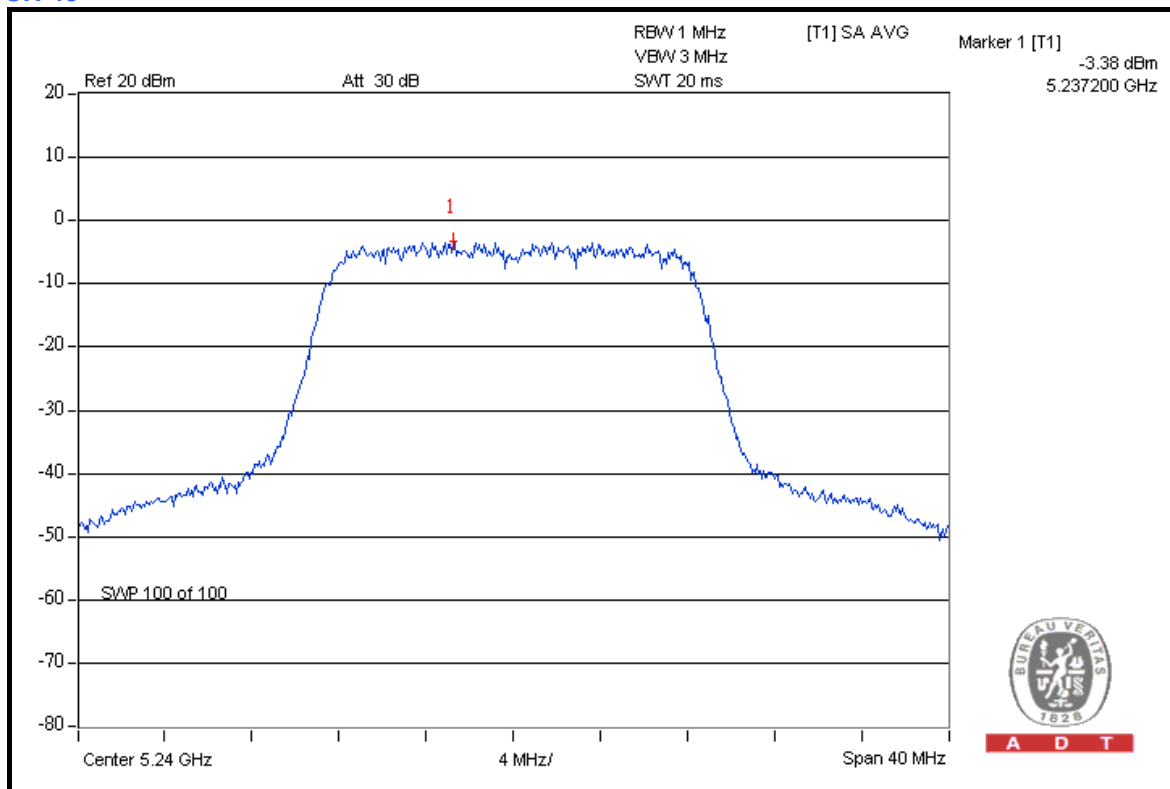
A D T

CH 40



A D T

CH 48

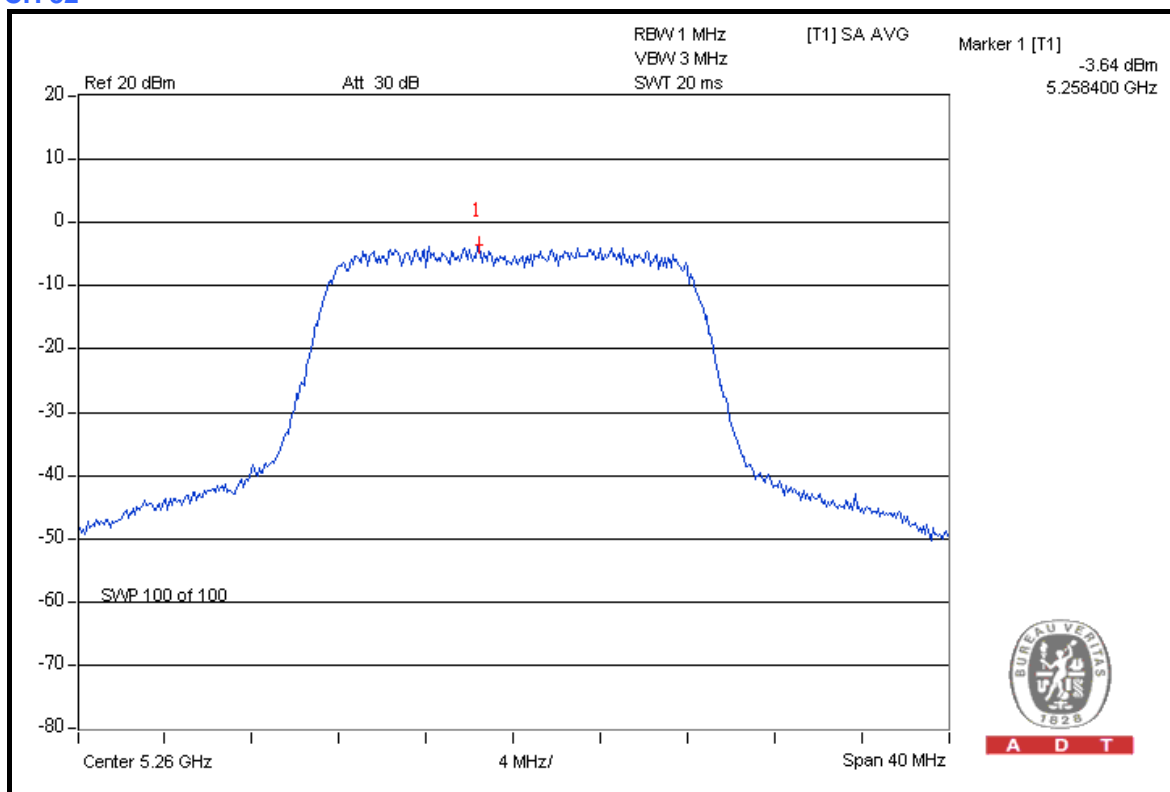


A D T



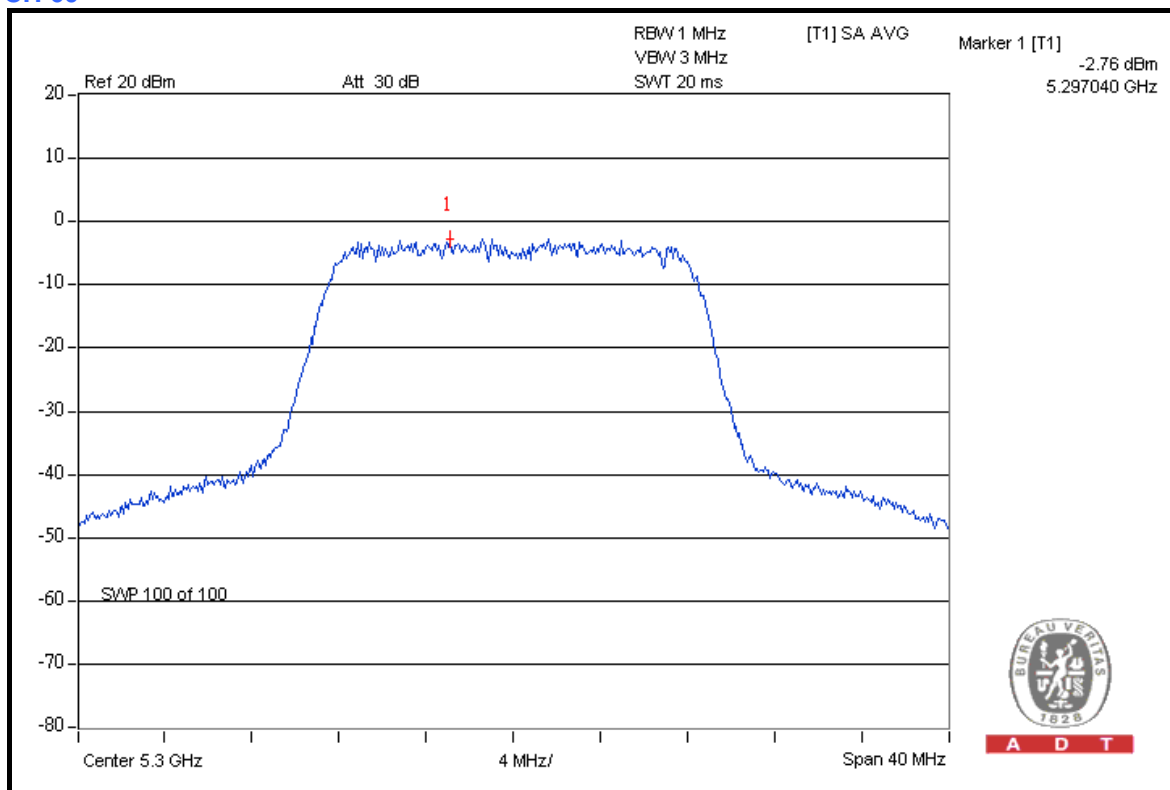
A D T

CH 52



A D T

CH 60

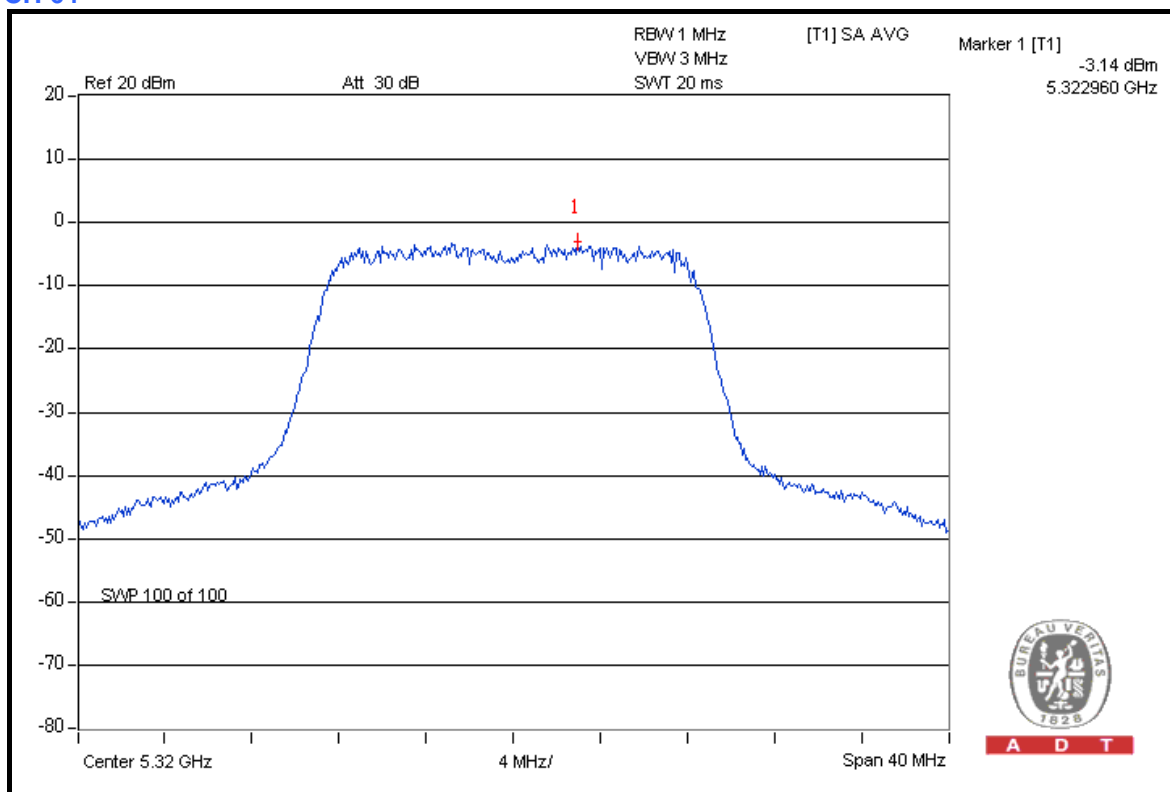


A D T



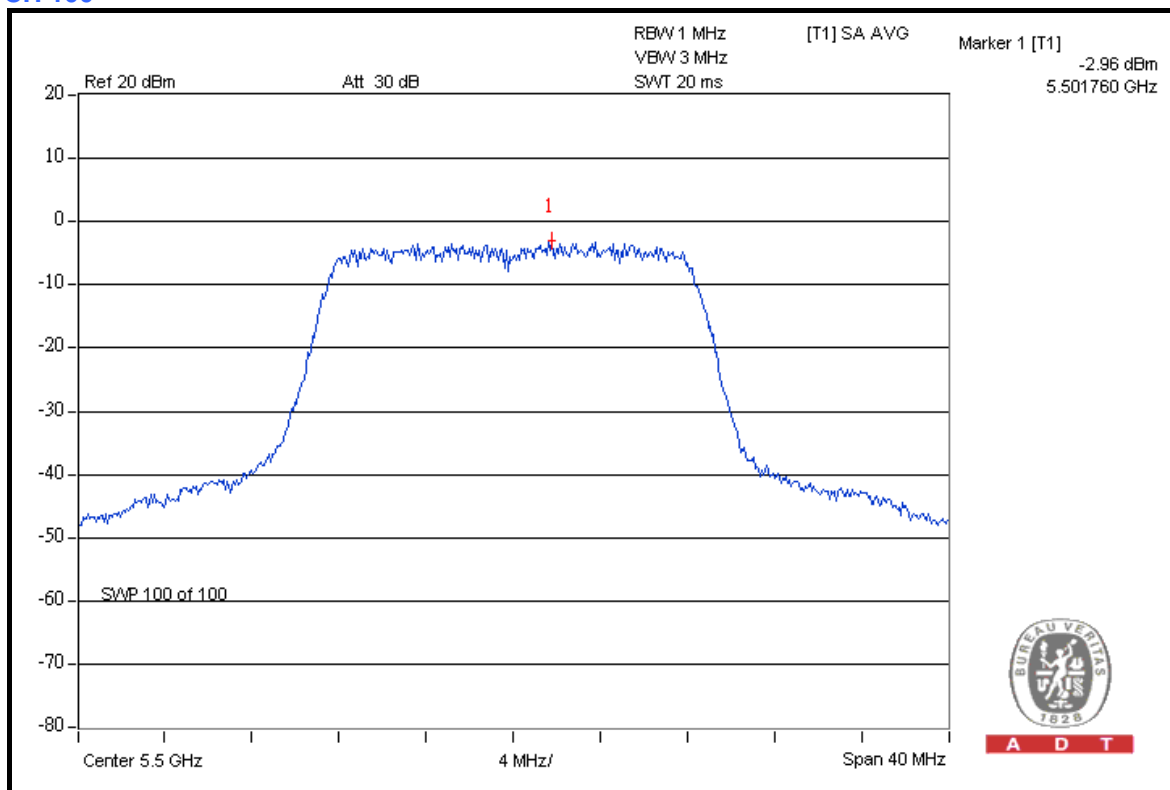
A D T

CH 64



A D T

CH 100

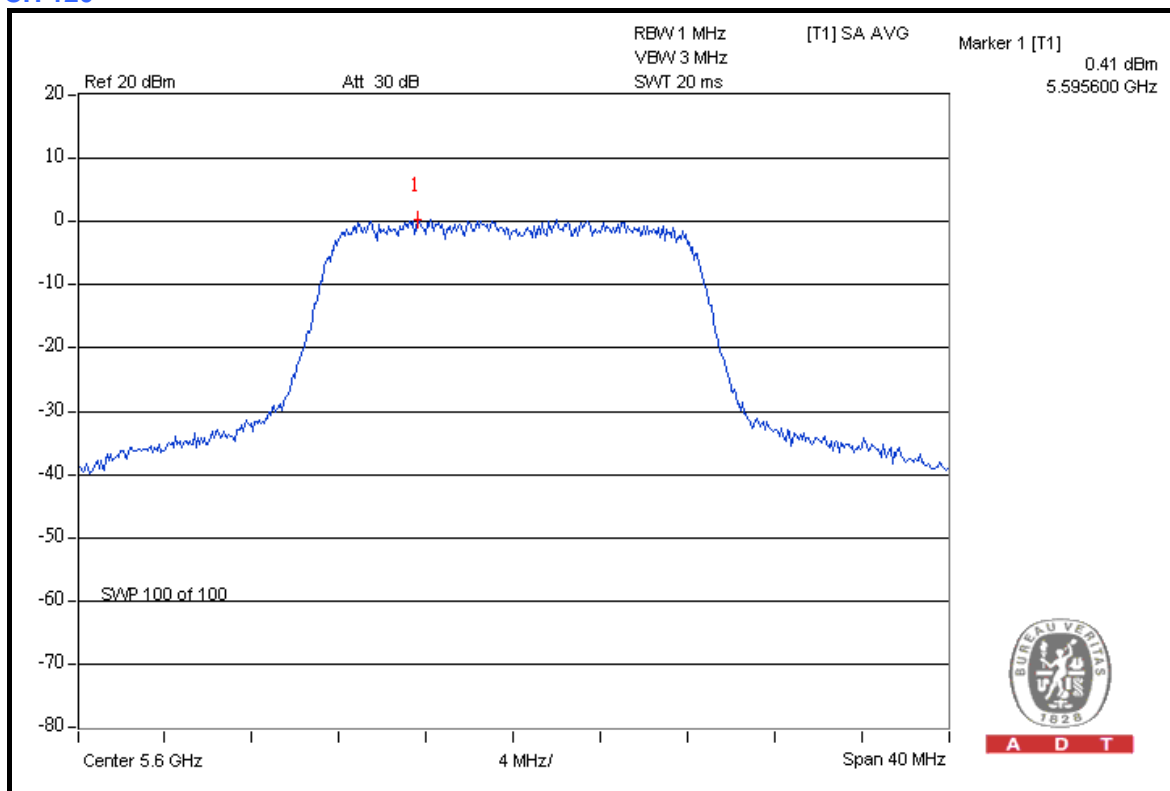


A D T



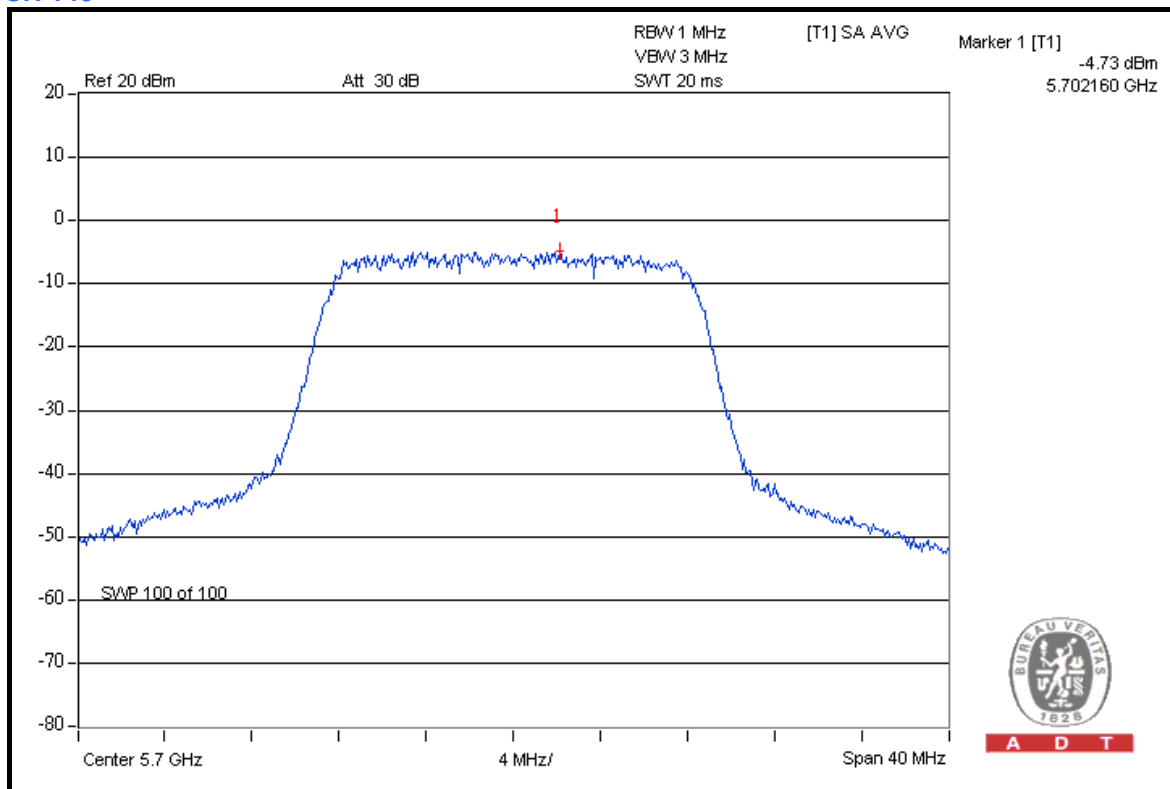
A D T

CH 120



A D T

CH 140



A D T

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 the operating 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	100041	Apr. 22, 2008	Apr. 21, 2009
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 28, 2008	Jun. 27, 2009

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

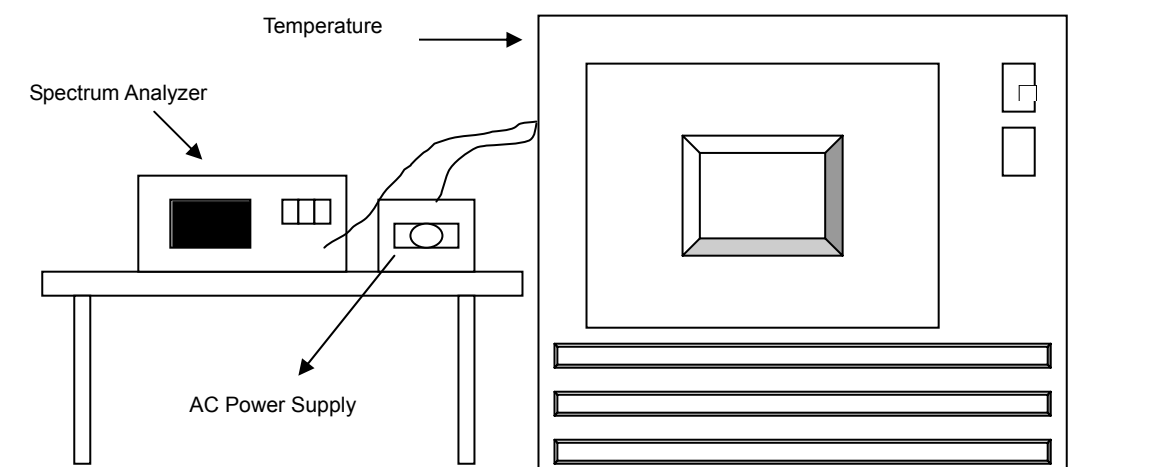
4.6.3 TEST PROCEDURE

- The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step b and c with the temperature chamber set to the lowest temperature.
- 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 4.1.7

4.6.7 TEST RESULTS

OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5319.998807	-0.0000224	5319.999071	-0.0000175	5319.999049	-0.0000179	5319.998896	-0.0000208
	110.0	5319.983847	-0.0003036	5319.983704	-0.0003063	5319.984012	-0.0003005	5319.983987	-0.0003010
	93.5	5319.986992	-0.0002445	5319.986723	-0.0002496	5319.986872	-0.0002468	5319.986625	-0.0002514
40	126.5	5319.979282	-0.0003894	5319.979014	-0.0003945	5319.979123	-0.0003924	5319.979271	-0.0003896
	110.0	5319.985324	-0.0002759	5319.985634	-0.0002700	5319.985402	-0.0002744	5319.985435	-0.0002738
	93.5	5319.997227	-0.0000521	5319.996847	-0.0000593	5319.996754	-0.0000610	5319.996801	-0.0000601
30	126.5	5319.979866	-0.0003785	5319.980229	-0.0003716	5319.979889	-0.0003780	5319.979811	-0.0003795
	110.0	5319.986109	-0.0002611	5319.985984	-0.0002635	5319.985934	-0.0002644	5319.986002	-0.0002631
	93.5	5320.004071	0.0000765	5320.004140	0.0000778	5320.003993	0.0000751	5320.003878	0.0000729
20	126.5	5319.986956	-0.0002452	5319.987156	-0.0002414	5319.986974	-0.0002448	5319.986949	-0.0002453
	110.0	5319.987065	-0.0002431	5319.987132	-0.0002419	5319.986925	-0.0002458	5319.986890	-0.0002464
	93.5	5320.011001	0.0002068	5320.011143	0.0002095	5320.010929	0.0002054	5320.010954	0.0002059
10	126.5	5319.994743	-0.0000988	5319.994786	-0.0000980	5319.994597	-0.0001016	5319.994486	-0.0001036
	110.0	5320.002565	0.0000482	5320.002841	0.0000534	5320.002698	0.0000507	5320.002529	0.0000475
	93.5	5320.017522	0.0003294	5320.017942	0.0003373	5320.017907	0.0003366	5320.017664	0.0003320
0	126.5	5319.997706	-0.0000431	5319.997445	-0.0000480	5319.997182	-0.0000530	5319.997134	-0.0000539
	110.0	5320.009625	0.0001809	5320.009962	0.0001873	5320.009465	0.0001779	5320.009440	0.0001774
	93.5	5320.024241	0.0004557	5320.024004	0.0004512	5320.024367	0.0004580	5320.024371	0.0004581
-10	126.5	5320.009668	0.0001817	5320.009520	0.0001789	5320.009315	0.0001751	5320.009232	0.0001735
	110.0	5320.016152	0.0003036	5320.016175	0.0003040	5320.015931	0.0002995	5320.016117	0.0003030
	93.5	5320.030146	0.0005667	5320.030343	0.0005704	5320.030268	0.0005689	5320.030037	0.0005646
-20	126.5	5320.015212	0.0002859	5320.015509	0.0002915	5320.015047	0.0002828	5320.015202	0.0002858
	110.0	5320.020284	0.0003813	5320.020275	0.0003811	5320.020081	0.0003775	5320.020067	0.0003772
	93.5	5320.035380	0.0006650	5320.035157	0.0006608	5320.035537	0.0006680	5320.035788	0.0006727
-30	126.5	5320.020624	0.0003877	5320.020836	0.0003917	5320.020679	0.0003887	5320.020728	0.0003896
	110.0	5320.035413	0.0006657	5320.034976	0.0006574	5320.035225	0.0006621	5320.035290	0.0006633
	93.5	5320.037339	0.0007019	5320.037301	0.0007011	5320.037254	0.0007003	5320.037238	0.0007000

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009

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

The transmitter output was connected to the spectrum analyzer via a low lose 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.

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 5.18 to 5.32GHz and 5.50 to 5.70GHz 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 filed 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 OFDM MODULATION

Channel 36 (5180MHz)

The band edge emission plot on the next page shows 41.66dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 111.97dBuV/m (Peak), so the maximum field strength in restrict band is $111.97 - 41.66 = 70.31\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 50.49dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 101.33dBuV/m (Average), so the maximum field strength in restrict band is $101.33 - 50.49 = 50.84\text{dBuV/m}$ which is under 54dBuV/m limit.

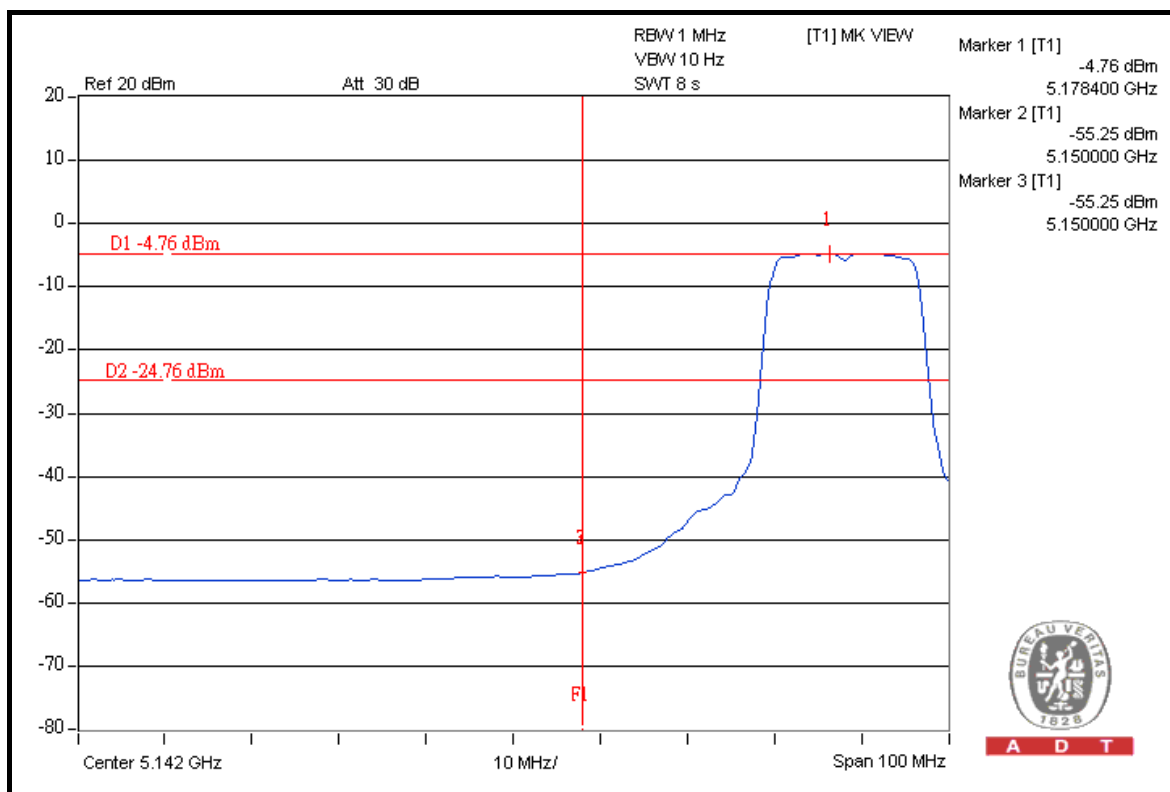
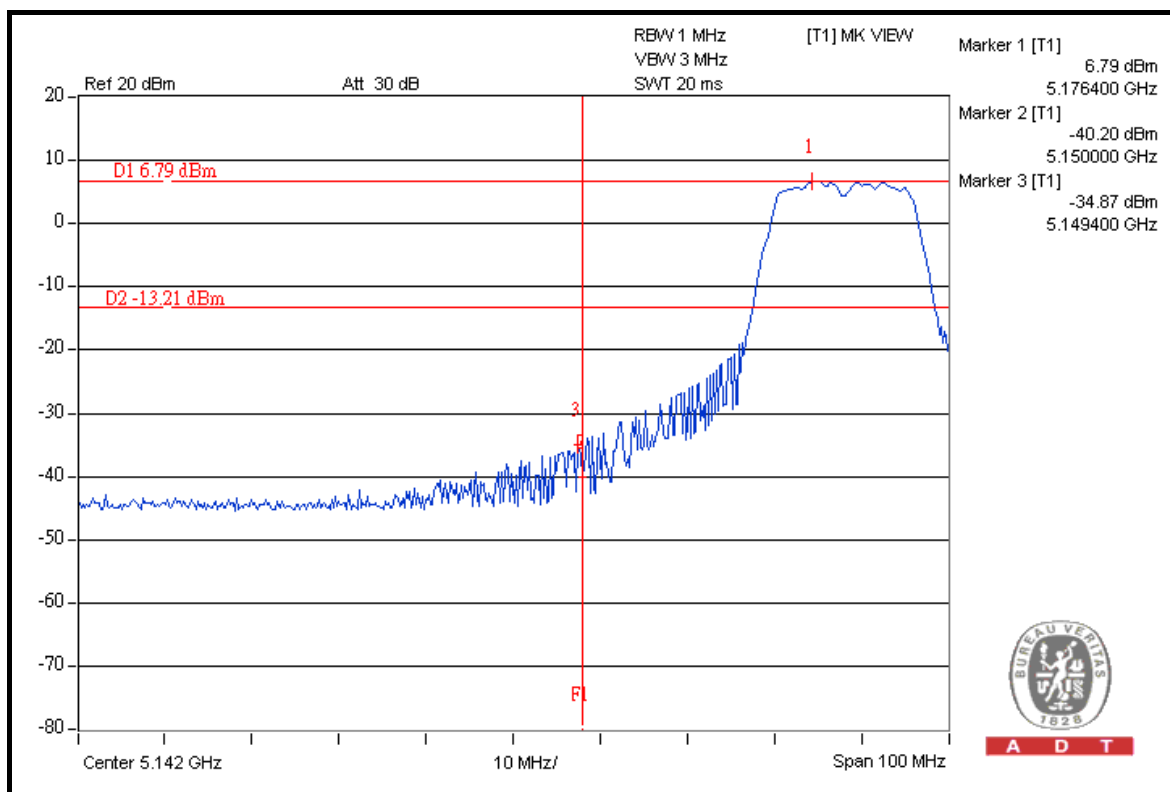
Channel 64 (5320MHz)

The band edge emission plot on the next second page shows 42.72dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 111.27dBuV/m (Peak), so the maximum field strength in restrict band is $111.27 - 42.72 = 68.55\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 50.17dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 101.01dBuV/m (Average), so the maximum field strength in restrict band is $101.01 - 50.17 = 50.84\text{dBuV/m}$ which is under 54dBuV/m limit.

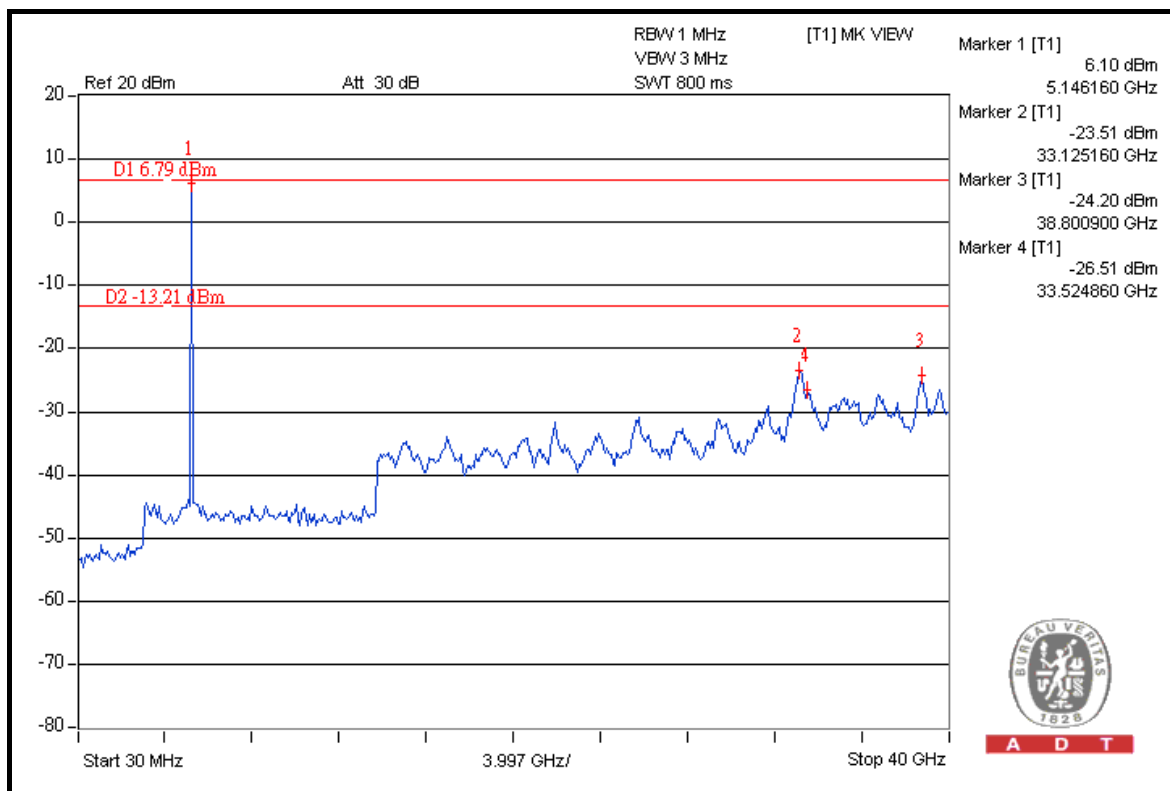


A D T

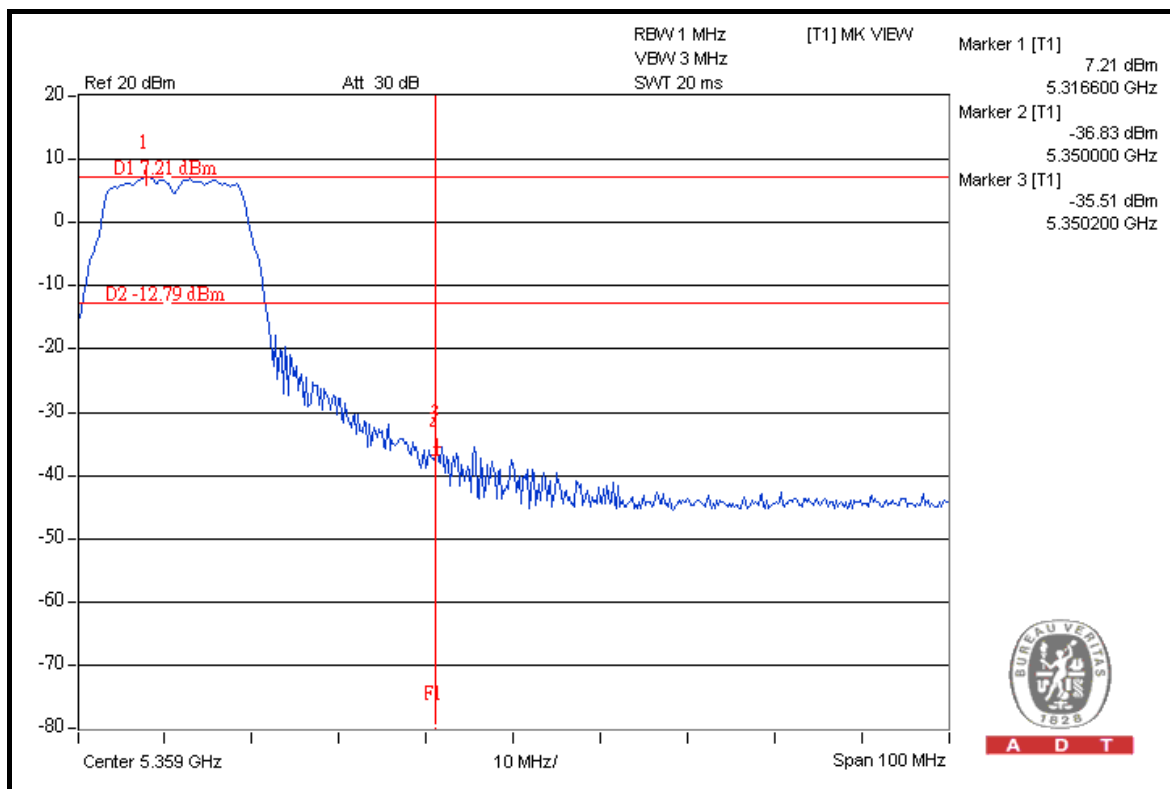




A D T



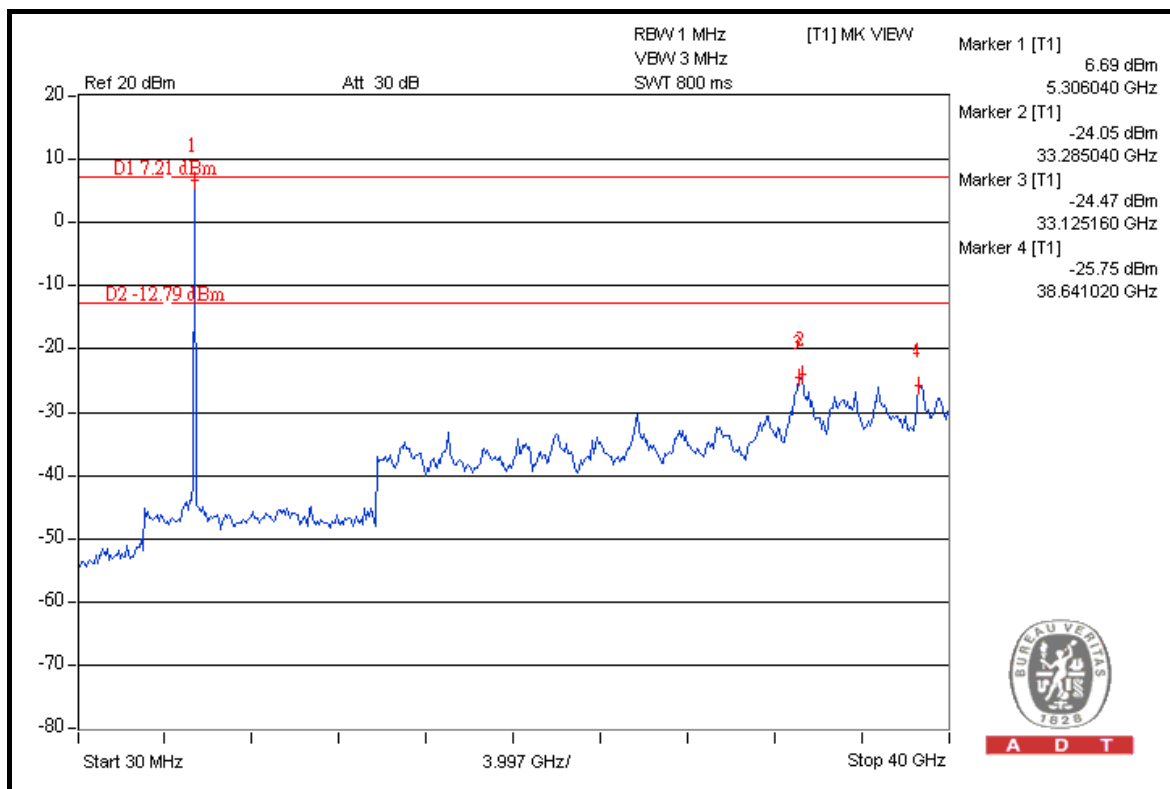
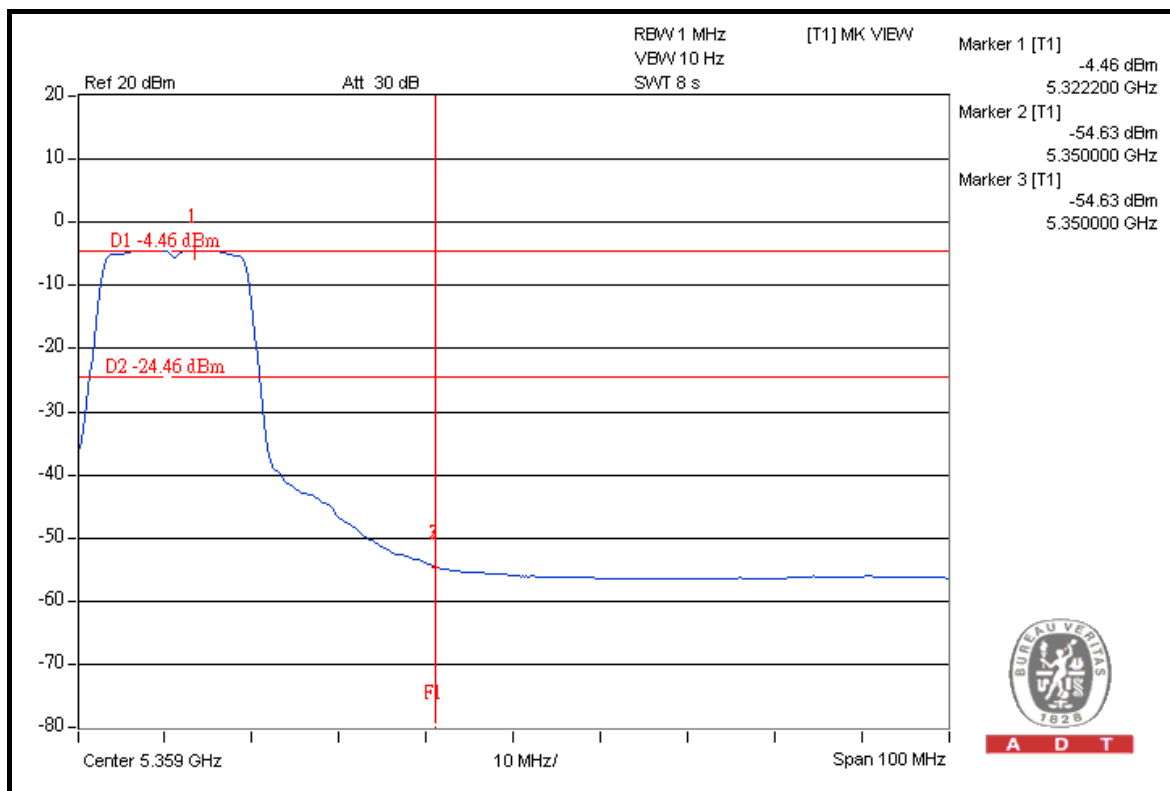
A D T



A D T



A D T



FOR 5500-5700MHz BAND: 802.11a OFDM MODULATION

Channel 100 (5500MHz)

The band edge emission plot (5.460GHz) on the next page shows 50.21dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 100 is 111.07dBuV/m (Peak), so the maximum field strength out of band emission is $111.07 - 50.21 = 60.86\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 51.22dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 100 is 100.31dBuV/m (Average), so the maximum field strength in restrict band is $100.31 - 51.22 = 49.09\text{dBuV/m}$ which is under 54dBuV/m limit.

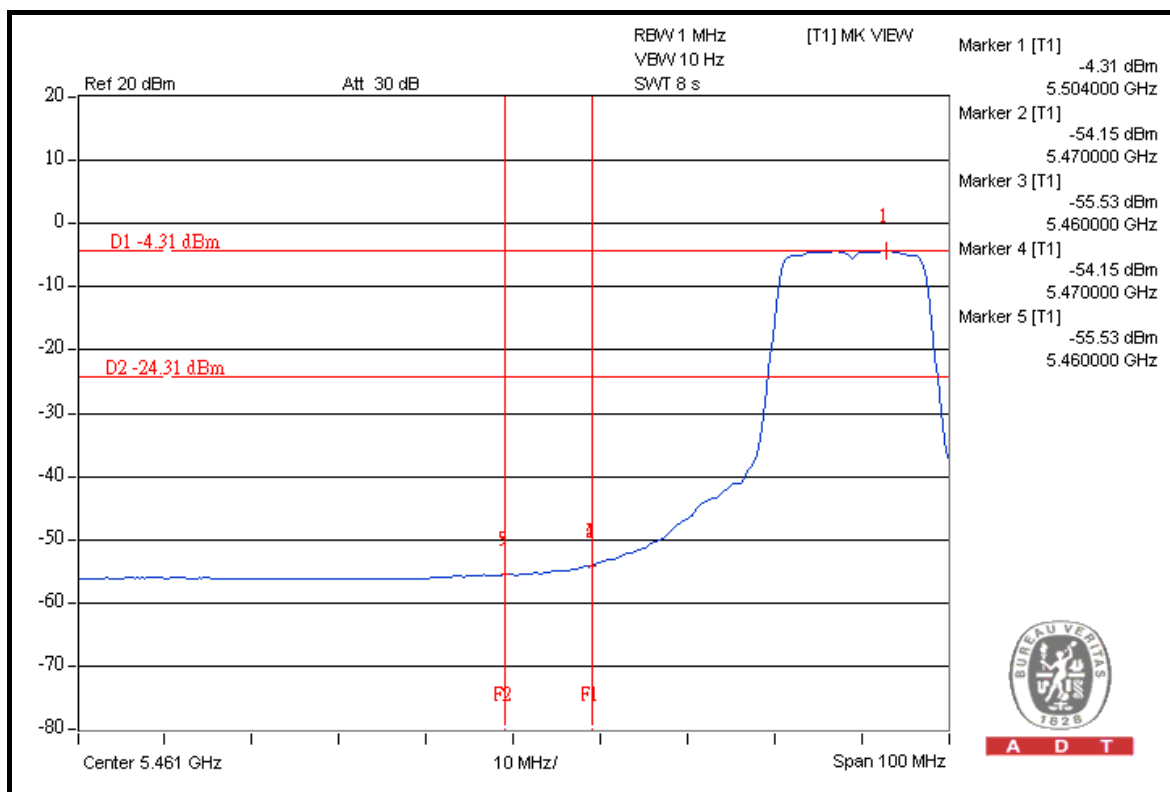
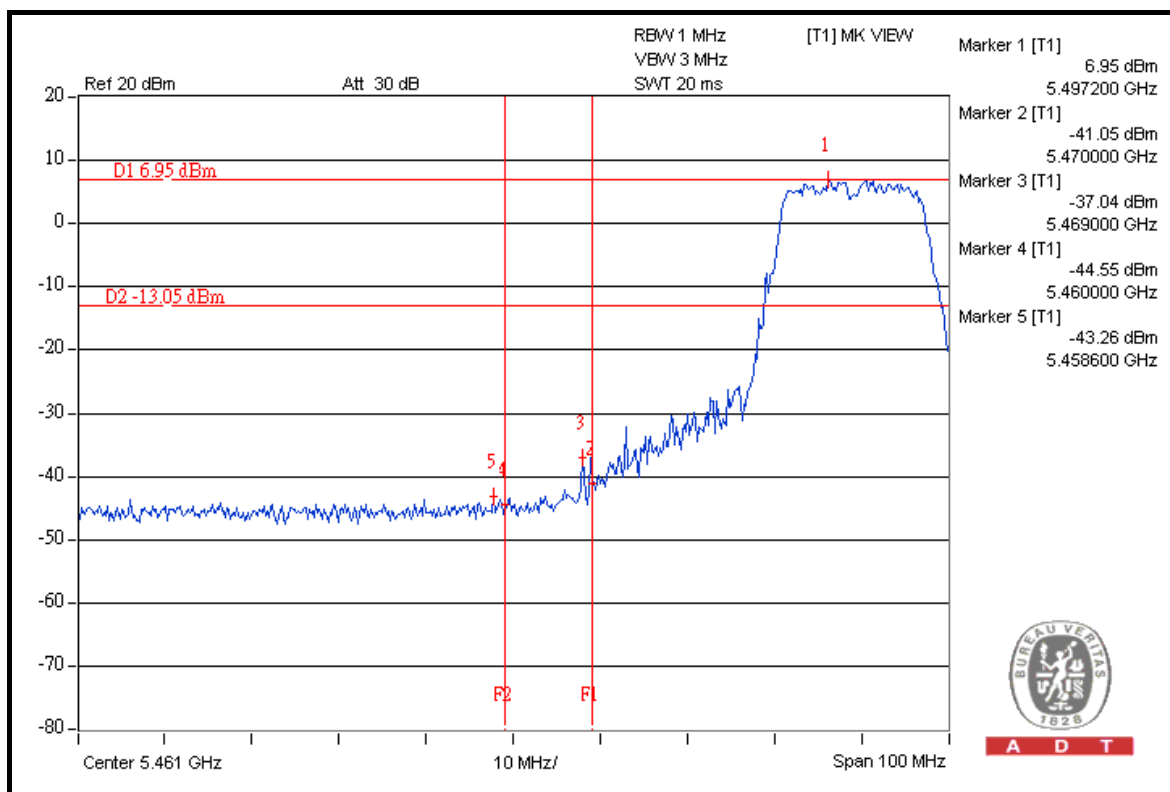
The band edge emission plot (5.470GHz) on the next page shows 43.99dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 100 is 111.07dBuV/m (Peak), so the maximum field strength in restrict band is $111.07 - 43.99 = 67.08\text{dBuV/m}$ which is under 68.3dBuV/m limit.

Channel 140 (5700MHz)

The band edge emission plot on the next second page shows 39.76dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 140 is 106.23dBuV/m (Peak), so the maximum field strength in restrict band is $106.23 - 39.76 = 66.47\text{dBuV/m}$ which is under 68.3dBuV/m limit.

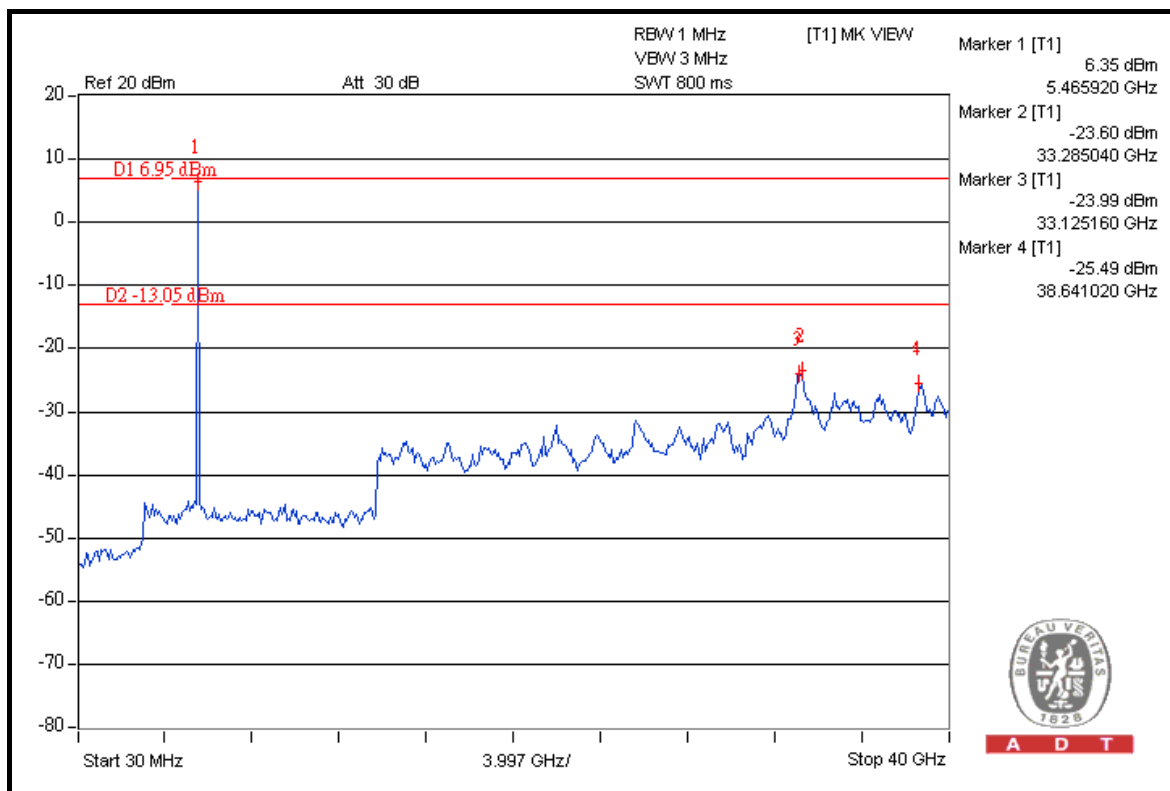


A D T

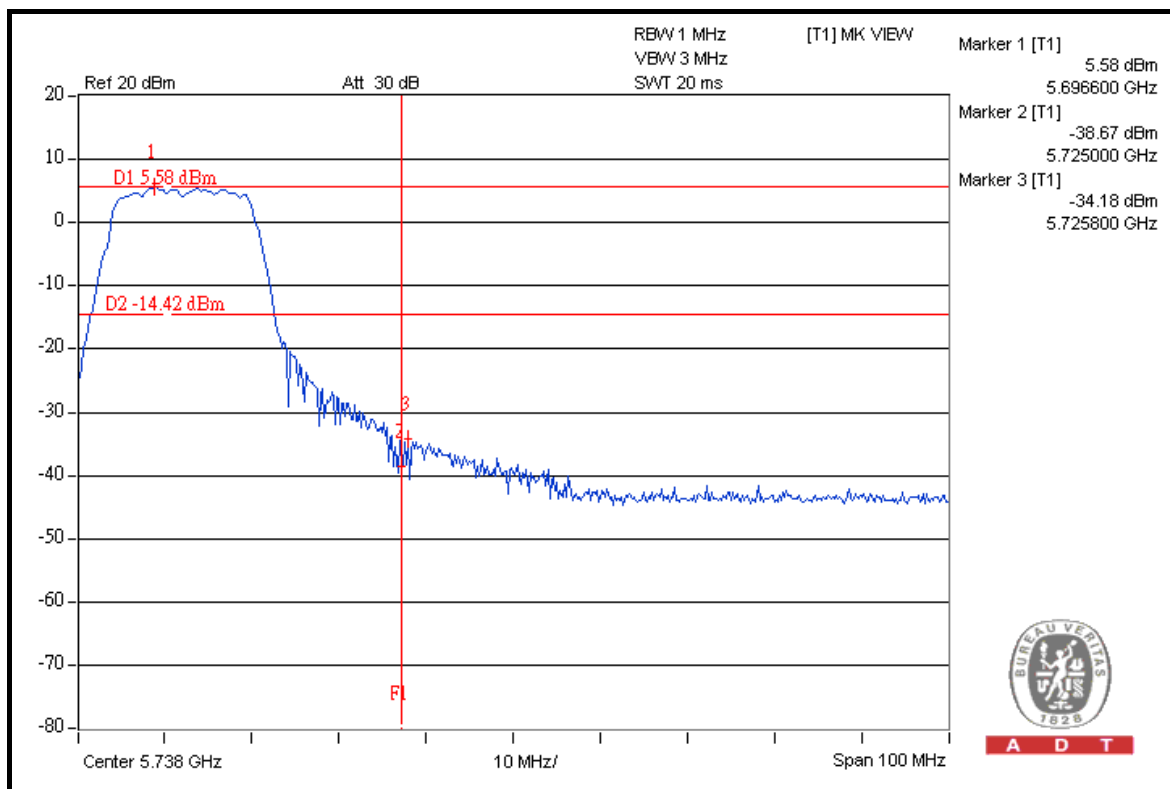




A D T



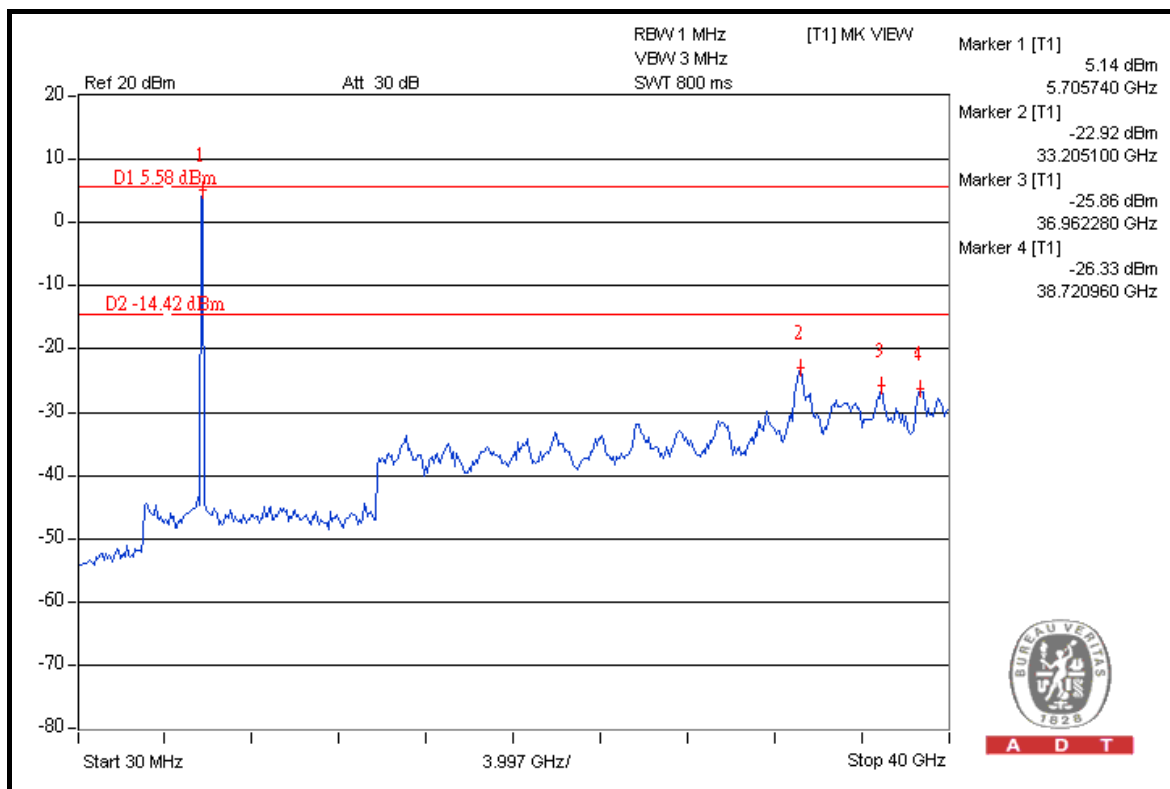
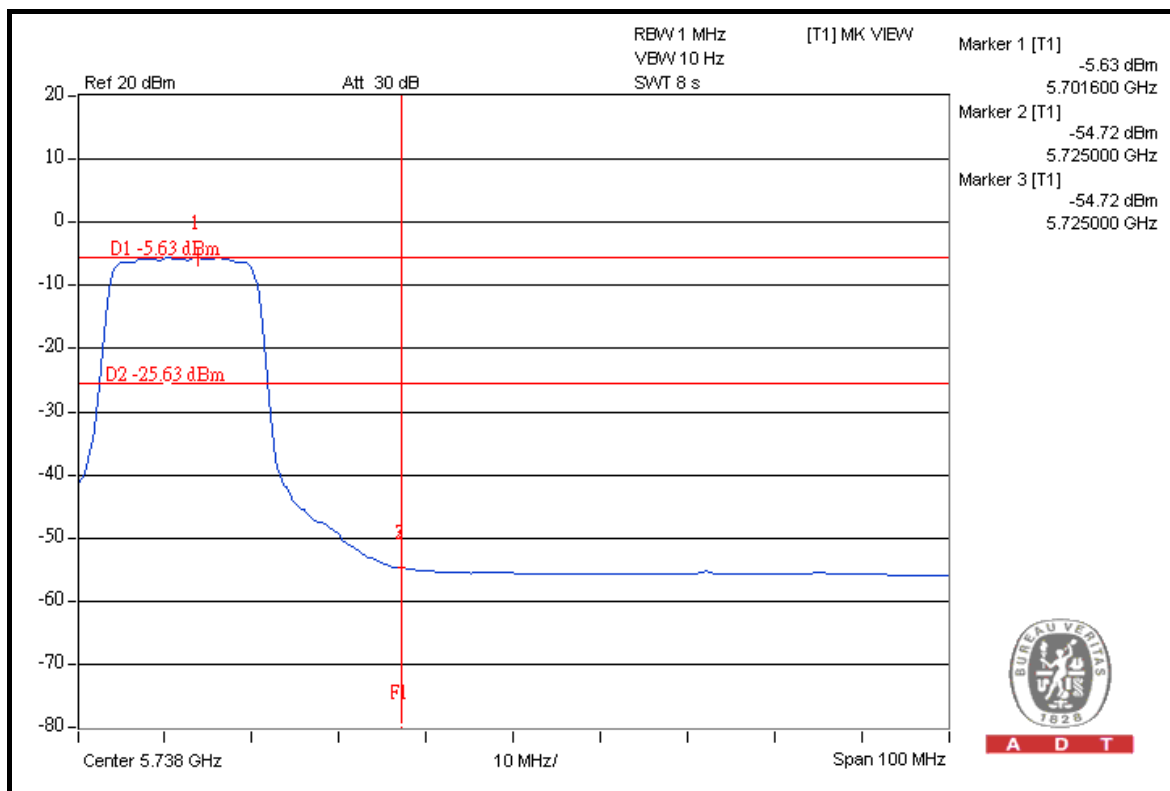
A D T



A D T



A D T



4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is PIFA antenna without connector. The maximum Gain of the antenna is 4.00dBi.

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 by the following approval agencies according to ISO/IEC 17025.

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

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---