



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF970520L25A

**MODEL NO.:** DGL-4500

**RECEIVED:** May 22, 2008

**TESTED:** May 26 ~ Jun. 26, 2008

**ISSUED:** Dec. 29, 2008

**APPLICANT:** D-Link Corporation

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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:** Xtreme N GAMING ROUTER

**MODEL:** DGL-4500

**BRAND:** D-Link

**APPLICANT:** D-Link Corporation

**TEST SAMPLE:** ENGINEERING SAMPLE

**TESTED:** May 26 ~ Jun. 26, 2008

**STANDARDS: FCC Part 15, Subpart E (Section 15.407)**  
ANSI C63.4-2003

The above equipment (Model: DGL-4500) 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** : Andrea Hsia , **DATE:** Dec. 29, 2008  
Andrea Hsia / Specialist

**TECHNICAL ACCEPTANCE** : Long Chen , **DATE:** Dec. 29, 2008  
Responsible for RF Long Chen / Senior Engineer

**APPROVED BY** : Gary Chang , **DATE:** Dec. 29, 2008  
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 -12.09dB at 0.190MHz
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 -1.13dB at 500.63 & 877.69MHz
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	2.93 dB
	200MHz ~1000MHz	2.95 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

<b>EUT</b>	Xtreme N GAMING ROUTER
<b>MODEL NO.</b>	DGL-4500
<b>FCC ID</b>	KA2DGL4500A2
<b>POWER SUPPLY</b>	12Vdc from AC adapter
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 300Mbps
<b>FREQUENCY RANGE</b>	5250 ~ 5350MHz, 5470 ~ 5725MHz
<b>NUMBER OF CHANNEL</b>	5250 ~ 5350MHz: 4 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz) 5470 ~ 5725MHz: 11 for 802.11a, draft 802.11n (20MHz) 5 for draft 802.11n (40MHz)
<b>OUTPUT POWER</b>	35.625mW for 5250.0 ~ 5350.0MHz 34.444mW for 5470.0 ~ 5725.0MHz
<b>ANTENNA TYPE</b>	Dipole antenna with 2.0dBi gain
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	RJ45
<b>ASSOCIATED DEVICES</b>	Adapter

#### NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report is adding frequency band from 5.25 to 5.35GHz and 5.47 to 5.725GHz by software.
2. The EUT was powered by the following adapter:

<b>BRAND:</b>	D-Link
<b>MODEL:</b>	AG2412-B
<b>INPUT:</b>	100-240Vac, 50-60Hz, 0.5A
<b>OUTPUT:</b>	12Vdc, 2A
<b>POWER LINE:</b>	1.8m non-shielded cable without core

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

MODULATION MODE	TX FUNCTION
802.11a	1TX
Draft 802.11n (20MHz)	3TX
Draft 802.11n (40MHz)	3TX

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

Operated in 5250 ~ 5350MHz:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260MHz	60	5300MHz
56	5280MHz	64	5320MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270MHz	62	5310MHz

Operated in 5470 ~ 5725MHz:

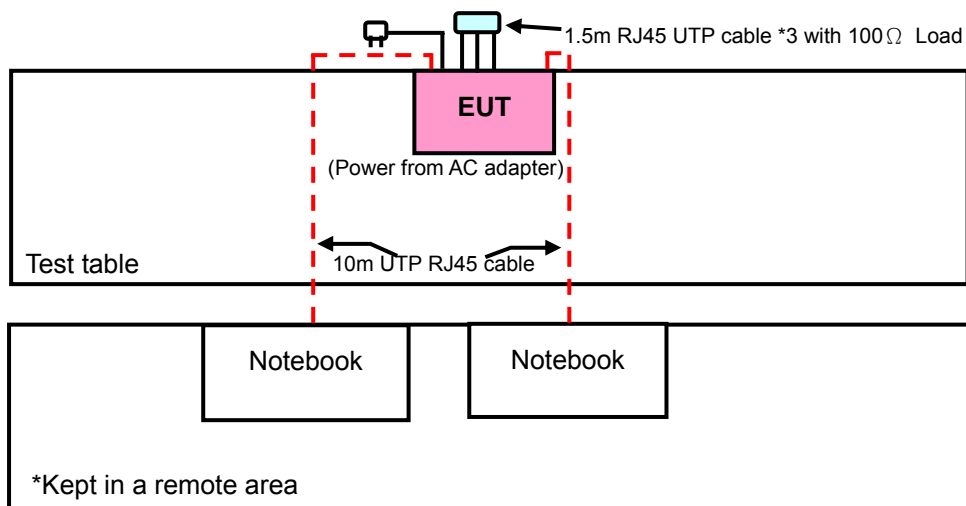
11 channels are provided to this EUT.

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

5 channels are provided for draft 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	126	5630MHz
110	5550MHz	134	5670MHz
118	5590MHz		

#### 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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥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 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	5250-5350	52 to 64	52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5470-5725	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0

#### **RADIATED EMISSION TEST (BELOW 1GHz):**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (40MHz)	5250-5350	54 to 62	54	OFDM	BPSK	15.0
Draft 802.11n (20MHz)	5470-5725	100 to 140	120	OFDM	BPSK	7.2

#### **POWER LINE CONDUCTED EMISSION TEST:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (40MHz)	5250-5350	54 to 62	54	OFDM	BPSK	15.0
Draft 802.11n (20MHz)	5470-5725	100 to 140	120	OFDM	BPSK	7.2



**BANDEDGE MEASUREMENT:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5250-5350	52 to 64	52, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5470-5725	100 to 140	100, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	15.0

**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	5250-5350	52 to 64	52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5470-5725	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0

### 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 COMPUTER	DELL	PP05L	16484462992	E2K24CLNS
2	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m UTP RJ 45 cable
2	10m UTP RJ 45 cable

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

**NOTE 2:** Item 1 ~ 2 acted as communication partners to transfer data.

## 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
5250 ~ 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	ESCI	100424	Jul. 28, 2007	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 06, 2007	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 31, 2007	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 07, 2008	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 20, 2007	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 08, 2007	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 10, 2007	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Apr. 23, 2008	Apr. 22, 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. The test was performed in HwaYa Chamber 9.
  3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The FCC Site Registration No. is 460141.
  5. The IC Site Registration No. is IC 7450F-4.

#### 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.

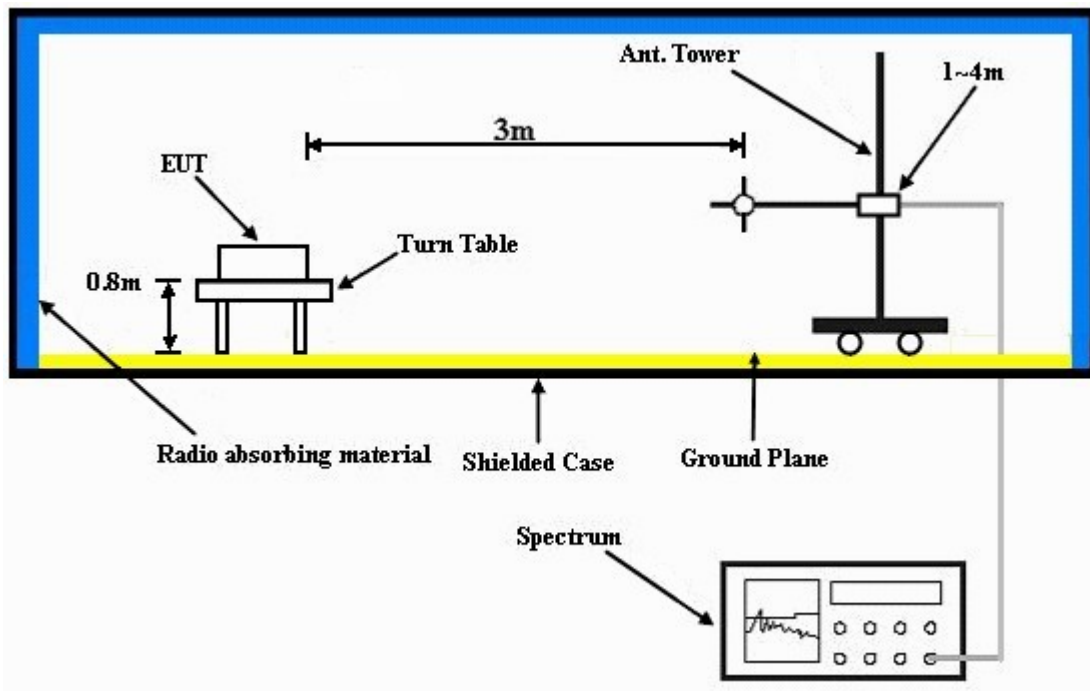
**NOTE:**

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

- Placed the EUT on a testing table.
- Prepared notebook computer and placed it outside of testing area to act as communication partner for EUT.
- The EUT ran a test program (provided by manufacturer) to enable all functions under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

#### 4.1.8 TEST RESULTS

##### 802.11a OFDM MODULATION

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, 68%RH 1000hPa	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	1125.00	53.57 PK	74.00	-20.43	1.17 H	341	25.49	28.08
2	1125.00	45.31 AV	54.00	-8.69	1.17 H	341	17.23	28.08
3	5150.00	55.32 PK	74.00	-18.68	1.04 H	311	16.73	38.59
4	5150.00	41.08 AV	54.00	-12.92	1.04 H	311	2.49	38.59
5	*5260.00	98.85 PK			1.04 H	311	60.13	38.72
6	*5260.00	88.10 AV			1.04 H	311	49.38	38.72
7	#10520.00	57.69 PK	68.30	-10.61	1.07 H	0	8.57	49.12
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	1125.00	56.65 PK	74.00	-17.35	1.27 V	344	28.57	28.08
2	1125.00	51.17 AV	54.00	-2.83	1.27 V	344	23.09	28.08
3	5150.00	56.23 PK	74.00	-17.77	1.07 V	317	17.64	38.59
4	5150.00	42.62 AV	54.00	-11.38	1.07 V	317	4.03	38.59
5	*5260.00	110.82 PK			1.07 V	317	72.10	38.72
6	*5260.00	99.78 AV			1.07 V	317	61.06	38.72
7	#10520.00	57.74 PK	68.30	-10.56	1.04 V	360	8.62	49.12

- 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 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH 1000hPa	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	1125.00	53.44 PK	74.00	-20.56	1.10 H	347	25.36	28.08
2	1125.00	45.69 AV	54.00	-8.31	1.10 H	347	17.61	28.08
3	*5300.00	98.71 PK			1.09 H	300	59.95	38.76
4	*5300.00	87.96 AV			1.09 H	300	49.20	38.76
5	10600.00	57.74 PK	74.00	-16.26	1.10 H	360	8.44	49.30
6	10600.00	44.56 AV	54.00	-9.44	1.10 H	360	-4.74	49.30
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	1125.00	56.69 PK	74.00	-17.31	1.31 V	356	28.61	28.08
2	1125.00	52.04 AV	54.00	-1.96	1.31 V	356	23.96	28.08
3	*5300.00	110.42 PK			1.01 V	307	71.66	38.76
4	*5300.00	99.46 AV			1.01 V	307	60.70	38.76
5	10600.00	57.66 PK	74.00	-16.34	1.17 V	0	8.36	49.30
6	10600.00	44.81 AV	54.00	-9.19	1.17 V	0	-4.49	49.30

- 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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH 1000hPa	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	1125.00	51.69 PK	74.00	-22.31	1.10 H	136	23.61	28.08
2	1125.00	47.05 AV	54.00	-6.95	1.10 H	136	18.97	28.08
3	*5320.00	98.41 PK			1.13 H	247	59.63	38.78
4	*5320.00	87.86 AV			1.13 H	247	49.08	38.78
5	5350.00	49.65 PK	74.00	-24.35	1.13 H	247	10.84	38.81
6	5350.00	36.79 AV	54.00	-17.21	1.13 H	247	-2.02	38.81
7	10640.00	58.41 PK	74.00	-15.59	1.11 H	37	9.08	49.33
8	10640.00	44.10 AV	54.00	-9.90	1.11 H	37	-5.23	49.33
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	1125.00	58.08 PK	74.00	-15.92	1.00 V	215	30.00	28.08
2	1125.00	49.59 AV	54.00	-4.41	1.00 V	215	21.51	28.08
3	*5320.00	109.21 PK			1.24 V	146	70.43	38.78
4	*5320.00	98.20 AV			1.24 V	146	59.42	38.78
5	5350.00	56.97 PK	74.00	-17.03	1.24 V	146	18.16	38.81
6	5350.00	42.42 AV	54.00	-11.58	1.24 V	146	3.61	38.81
7	10640.00	58.48 PK	74.00	-15.52	1.00 V	0	9.15	49.33
8	10640.00	45.15 AV	54.00	-8.85	1.00 V	0	-4.18	49.33

- 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.



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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, 68%RH 1000hPa	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	1125.00	55.14 PK	74.00	-18.86	1.10 H	344	27.06	28.08
2	1125.00	45.93 AV	54.00	-8.07	1.10 H	344	17.85	28.08
3	5460.00	51.59 PK	74.00	-22.41	1.27 H	294	12.60	38.99
4	5460.00	40.19 AV	54.00	-13.81	1.27 H	294	1.20	38.99
5	#5470.00	50.33 PK	68.30	-17.97	1.27 H	294	11.32	39.01
6	*5500.00	97.32 PK			1.27 H	294	58.24	39.07
7	*5500.00	87.16 AV			1.27 H	294	48.09	39.07
8	7333.00	53.81 PK	74.00	-20.19	1.08 H	23	8.83	44.99
9	7333.00	43.44 AV	54.00	-10.56	1.08 H	23	-1.54	44.99
10	11000.00	58.44 PK	74.00	-15.56	1.28 H	0	8.55	49.89
11	11000.00	44.29 AV	54.00	-9.71	1.28 H	0	-5.60	49.89
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	1125.00	58.11 PK	74.00	-15.89	1.16 V	350	30.03	28.08
2	1125.00	51.42 AV	54.00	-2.58	1.16 V	350	23.34	28.08
3	5460.00	52.40 PK	74.00	-21.60	1.00 V	340	13.41	38.99
4	5460.00	41.03 AV	54.00	-12.97	1.00 V	340	2.04	38.99
5	#5470.00	53.58 PK	68.30	-14.72	1.00 V	340	14.57	39.01
6	*5500.00	108.75 PK			1.00 V	340	69.68	39.07
7	*5500.00	97.70 AV			1.00 V	340	58.63	39.07
8	7333.00	55.93 PK	74.00	-18.07	1.16 V	341	10.94	44.99
9	7333.00	49.40 AV	54.00	-4.60	1.16 V	341	4.41	44.99
10	11000.00	55.64 PK	74.00	-18.36	1.10 V	360	5.75	49.89
11	11000.00	44.51 AV	54.00	-9.49	1.10 V	360	-5.38	49.89

- 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, 68%RH 1000hPa	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	1125.00	55.34 PK	74.00	-18.66	1.17 H	354	27.26	28.08
2	1125.00	46.07 AV	54.00	-7.93	1.17 H	354	17.99	28.08
3	*5600.00	97.12 PK			1.31 H	310	57.83	39.29
4	*5600.00	86.95 AV			1.31 H	310	47.66	39.29
5	7466.00	59.26 PK	74.00	-14.74	1.24 H	24	14.25	45.00
6	7466.00	48.26 AV	54.00	-5.74	1.24 H	24	3.25	45.00
7	11200.00	59.41 PK	74.00	-14.59	1.10 H	360	9.63	49.78
8	11200.00	44.62 AV	54.00	-9.38	1.10 H	360	-5.16	49.78
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	1125.00	57.85 PK	74.00	-16.15	1.10 V	345	29.77	28.08
2	1125.00	51.08 AV	54.00	-2.92	1.10 V	345	23.00	28.08
3	*5600.00	108.04 PK			1.01 V	333	68.75	39.29
4	*5600.00	97.24 AV			1.01 V	333	57.95	39.29
5	7466.00	60.88 PK	74.00	-13.12	1.28 V	36	15.87	45.00
6	7466.00	51.39 AV	54.00	-2.61	1.28 V	36	6.38	45.00
7	11200.00	55.78 PK	74.00	-18.22	1.00 V	360	6.00	49.78
8	11200.00	44.62 AV	54.00	-9.38	1.00 V	360	-5.16	49.78

- 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.



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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, 68%RH 1000hPa	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	1125.00	55.17 PK	74.00	-18.83	1.07 H	341	27.09	28.08
2	1125.00	46.07 AV	54.00	-7.93	1.07 H	341	17.99	28.08
3	*5700.00	96.14 PK			1.21 H	300	56.58	39.56
4	*5700.00	86.07 AV			1.21 H	300	46.51	39.56
5	#5725.00	54.23 PK	68.30	-14.07	1.21 H	300	14.62	39.61
6	7466.00	54.36 PK	74.00	-19.64	1.00 H	45	9.36	45.00
7	7466.00	44.63 AV	54.00	-9.37	1.00 H	45	-0.37	45.00
8	11400.00	56.67 PK	74.00	-17.33	1.07 H	360	6.81	49.86
9	11400.00	44.52 AV	54.00	-9.48	1.07 H	360	-5.34	49.86
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	1125.00	58.63 PK	74.00	-15.37	1.10 V	341	30.55	28.08
2	1125.00	51.67 AV	54.00	-2.33	1.10 V	341	23.59	28.08
3	*5700.00	107.65 PK			1.06 V	66	68.09	39.56
4	*5700.00	97.16 AV			1.06 V	66	57.60	39.56
5	#5725.00	62.55 PK	68.30	-5.75	1.06 V	66	22.94	39.61
6	7466.00	60.28 PK	74.00	-13.72	1.02 V	36	15.27	45.00
7	7466.00	51.25 AV	54.00	-2.75	1.02 V	36	6.24	45.00
8	11400.00	56.04 PK	74.00	-17.96	1.00 V	360	6.18	49.86
9	11400.00	44.96 AV	54.00	-9.04	1.00 V	360	-4.90	49.86

- 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

**DRAFT 802.11n (20MHz) OFDM MODULATION**

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	24deg. C, 68%RH 1000hPa	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	58.34 PK	74.00	-15.66	1.10 H	213	19.75	38.59
2	5150.00	45.52 AV	54.00	-8.48	1.10 H	213	6.93	38.59
3	*5260.00	97.86 PK			1.10 H	213	59.14	38.72
4	*5260.00	87.51 AV			1.10 H	213	48.79	38.72
5	#10480.00	57.26 PK	68.30	-11.04	1.01 H	66	8.25	49.01

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	1125.00	53.86 PK	74.00	-20.14	1.03 V	28	25.78	28.08
2	1125.00	48.72 AV	54.00	-5.28	1.03 V	28	20.64	28.08
3	5150.00	59.62 PK	74.00	-14.38	1.05 V	158	21.03	38.59
4	5150.00	46.21 AV	54.00	-7.79	1.05 V	158	7.62	38.59
5	*5260.00	110.28 PK			1.05 V	158	71.56	38.72
6	*5260.00	99.54 AV			1.05 V	158	60.82	38.72

- 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 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	97.13 PK			1.10 H	218	58.37	38.76
2	*5300.00	86.82 AV			1.10 H	218	48.06	38.76
3	10600.00	57.03 PK	74.00	-16.97	1.01 H	229	7.73	49.30
4	10600.00	43.89 AV	54.00	-10.11	1.01 H	229	-5.41	49.30
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	1125.00	53.95 PK	74.00	-20.05	1.02 V	24	25.87	28.08
2	1125.00	49.06 AV	54.00	-4.94	1.02 V	24	20.98	28.08
3	*5300.00	109.87 PK			1.12 V	152	71.11	38.76
4	*5300.00	98.89 AV			1.12 V	152	60.13	38.76

- 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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	97.56 PK			1.09 H	213	58.78	38.78
2	*5320.00	87.25 AV			1.09 H	213	48.47	38.78
3	5350.00	46.13 PK	74.00	-27.87	1.09 H	213	7.32	38.81
4	5350.00	34.32 AV	54.00	-19.68	1.09 H	213	-4.49	38.81
5	10640.00	57.86 PK	74.00	-16.14	1.16 H	305	8.53	49.33
6	10640.00	44.24 AV	54.00	-9.76	1.16 H	305	-5.09	49.33
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	1125.00	53.83 PK	74.00	-20.17	1.02 V	101	25.75	28.08
2	1125.00	48.62 AV	54.00	-5.38	1.02 V	101	20.54	28.08
3	*5320.00	110.13 PK			1.00 V	168	71.35	38.78
4	*5320.00	99.47 AV			1.00 V	168	60.69	38.78
5	5350.00	52.40 PK	74.00	-21.60	1.00 V	168	13.59	38.81
6	5350.00	40.23 AV	54.00	-13.77	1.00 V	168	1.42	38.81

- 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 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	47.36 PK	74.00	-26.64	1.06 H	344	19.28	28.08
2	1125.00	42.47 AV	54.00	-11.53	1.06 H	344	14.39	28.08
3	5460.00	47.15 PK	74.00	-26.85	1.00 H	311	8.16	38.99
4	5460.00	34.65 AV	54.00	-19.35	1.00 H	311	-4.34	38.99
5	#5470.00	47.62 PK	68.30	-20.68	1.00 H	311	8.61	39.01
6	*5500.00	97.14 PK			1.01 H	311	58.07	39.07
7	*5500.00	86.87 AV			1.01 H	311	47.80	39.07
8	7334.00	52.63 PK	74.00	-21.37	1.00 H	0	7.65	44.99
9	7334.00	40.34 AV	54.00	-13.66	1.00 H	0	-4.64	44.99
10	11000.00	58.69 PK	74.00	-15.31	1.00 H	360	8.80	49.89
11	11000.00	45.47 AV	54.00	-8.53	1.00 H	360	-4.42	49.89

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	1125.00	54.11 PK	74.00	-19.89	1.08 V	344	26.03	28.08
2	1125.00	48.61 AV	54.00	-5.39	1.08 V	344	20.53	28.08
3	5460.00	52.94 PK	74.00	-21.06	1.20 V	143	13.95	38.99
4	5460.00	40.84 AV	54.00	-13.16	1.20 V	143	1.85	38.99
5	#5470.00	52.54 PK	68.30	-15.76	1.20 V	143	13.53	39.01
6	*5500.00	110.20 PK			1.20 V	143	71.13	39.07
7	*5500.00	100.56 AV			1.20 V	143	61.49	39.07
8	7334.00	53.93 PK	74.00	-20.07	1.09 V	221	8.95	44.99
9	7334.00	43.96 AV	54.00	-10.04	1.09 V	221	-1.02	44.99
10	11000.00	56.78 PK	74.00	-17.22	1.00 V	360	6.89	49.89
11	11000.00	44.85 AV	54.00	-9.15	1.00 V	360	-5.04	49.89

- 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	24deg. C, 68%RH 1000hPa	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	*5600.00	97.68 PK			1.00 H	350	58.39	39.29
2	*5600.00	86.41 AV			1.00 H	350	47.12	39.29
3	11200.00	58.69 PK	74.00	-15.31	1.10 H	0	8.91	49.78
4	11200.00	45.63 AV	54.00	-8.37	1.10 H	0	-4.15	49.78

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	1125.00	55.23 PK	74.00	-18.77	1.19 V	311	27.15	28.08
2	1125.00	49.62 AV	54.00	-4.38	1.19 V	311	21.54	28.08
3	*5600.00	110.24 PK			1.19 V	151	70.95	39.29
4	*5600.00	100.39 AV			1.19 V	151	61.10	39.29

- 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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	98.04 PK			1.07 H	355	58.48	39.56
2	*5700.00	88.26 AV			1.07 H	355	48.70	39.56
3	#5725.00	57.13 PK	68.30	-11.17	1.07 H	355	17.52	39.61
4	7600.00	54.72 PK	74.00	-19.28	1.31 H	0	9.80	44.92
5	7600.00	42.46 AV	54.00	-11.54	1.31 H	0	-2.46	44.92
6	11400.00	57.69 PK	74.00	-16.31	1.00 H	355	7.83	49.86
7	11400.00	46.02 AV	54.00	-7.98	1.00 H	355	-3.84	49.86
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	1125.00	54.62 PK	74.00	-19.38	1.20 V	345	26.54	28.08
2	1125.00	49.53 AV	54.00	-4.47	1.20 V	345	21.45	28.08
3	*5700.00	110.64 PK			1.22 V	177	71.08	39.56
4	*5700.00	100.53 AV			1.22 V	177	60.97	39.56
5	#5725.00	59.45 PK	68.30	-8.85	1.22 V	177	19.84	39.61
6	7600.00	56.07 PK	74.00	-17.93	1.41 V	211	11.15	44.92
7	7600.00	46.06 AV	54.00	-7.94	1.41 V	211	1.14	44.92

- 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

**DRAFT 802.11n (40MHz) OFDM MODULATION**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	54.24 PK	74.00	-19.76	1.47 H	355	26.16	28.08
2	1125.00	45.06 AV	54.00	-8.94	1.47 H	355	16.98	28.08
3	5150.00	59.35 PK	74.00	-14.65	1.05 H	355	20.76	38.59
4	5150.00	46.73 AV	54.00	-7.27	1.05 H	355	8.14	38.59
5	*5270.00	97.64 PK			1.05 H	355	58.91	38.73
6	*5270.00	86.91 AV			1.05 H	355	48.18	38.73
7	#7026.00	48.34 PK	68.30	-19.96	1.01 H	355	4.52	43.82
8	#10540.00	60.44 PK	68.30	-7.86	1.11 H	0	11.28	49.16
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	1125.00	58.47 PK	74.00	-15.53	1.37 V	340	30.39	28.08
2	1125.00	50.56 AV	54.00	-3.44	1.37 V	340	22.48	28.08
3	5150.00	60.01 PK	74.00	-13.99	1.01 V	39	21.42	38.59
4	5150.00	47.53 AV	54.00	-6.47	1.01 V	39	8.94	38.59
5	*5270.00	109.47 PK			1.01 V	39	70.74	38.73
6	*5270.00	98.56 AV			1.01 V	39	59.83	38.73
7	#7026.00	55.69 PK	68.30	-12.61	1.52 V	311	11.87	43.82
8	#10540.00	61.47 PK	68.30	-6.83	1.10 V	360	12.31	49.16

- 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 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	54.63 PK	74.00	-19.37	1.10 H	347	26.55	28.08
2	1125.00	45.47 AV	54.00	-8.53	1.10 H	347	17.39	28.08
3	*5310.00	97.41 PK			1.03 H	36	58.64	38.77
4	*5310.00	86.59 AV			1.03 H	36	47.82	38.77
5	5350.00	54.72 PK	74.00	-19.28	1.03 H	36	15.91	38.81
6	5350.00	40.67 AV	54.00	-13.33	1.03 H	36	1.86	38.81
7	#7080.00	49.67 PK	68.30	-18.63	1.00 H	360	5.55	44.12
8	10620.00	59.47 PK	74.00	-14.53	1.07 H	360	10.15	49.32
9	10620.00	44.61 AV	54.00	-9.39	1.07 H	360	-4.71	49.32

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	1125.00	58.21 PK	74.00	-15.79	1.07 V	355	30.13	28.08
2	1125.00	50.04 AV	54.00	-3.96	1.07 V	355	21.96	28.08
3	*5310.00	109.17 PK			1.03 V	45	70.40	38.77
4	*5310.00	98.24 AV			1.03 V	45	59.47	38.77
5	5350.00	53.83 PK	74.00	-20.17	1.03 V	45	15.02	38.81
6	5350.00	42.65 AV	54.00	-11.35	1.03 V	45	3.84	38.81
7	#7080.00	55.14 PK	68.30	-13.16	1.68 V	239	11.02	44.12
8	10620.00	60.47 PK	74.00	-13.53	1.07 V	360	11.15	49.32
9	10620.00	44.65 AV	54.00	-9.35	1.07 V	360	-4.67	49.32

- 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 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	54.63 PK	74.00	-19.37	1.42 H	10	26.55	28.08
2	1125.00	45.69 AV	54.00	-8.31	1.42 H	10	17.61	28.08
3	5460.00	51.57 PK	74.00	-22.43	1.09 H	18	12.58	38.99
4	5460.00	40.32 AV	54.00	-13.68	1.09 H	18	1.33	38.99
5	#5470.00	53.24 PK	68.30	-15.06	1.09 H	18	14.23	39.01
6	*5510.00	97.07 PK			1.09 H	18	57.97	39.10
7	*5510.00	86.15 AV			1.09 H	18	47.05	39.10
8	7346.00	50.60 PK	74.00	-23.40	1.18 H	345	5.60	45.00
9	7346.00	40.26 AV	54.00	-13.74	1.18 H	345	-4.74	45.00
10	11020.00	60.10 PK	74.00	-13.90	1.10 H	360	10.24	49.86
11	11020.00	44.96 AV	54.00	-9.04	1.10 H	360	-4.90	49.86

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	1125.00	58.96 PK	74.00	-15.04	1.10 V	310	30.88	28.08
2	1125.00	50.14 AV	54.00	-3.86	1.10 V	310	22.06	28.08
3	5460.00	53.14 PK	74.00	-20.86	1.03 V	81	14.15	38.99
4	5460.00	41.08 AV	54.00	-12.92	1.03 V	81	2.09	38.99
5	#5470.00	53.47 PK	68.30	-14.83	1.03 V	81	14.46	39.01
6	*5510.00	108.95 PK			1.03 V	81	69.85	39.10
7	*5510.00	97.56 AV			1.03 V	81	58.46	39.10
8	7346.00	56.02 PK	74.00	-17.98	1.53 V	333	11.02	45.00
9	7346.00	44.67 AV	54.00	-9.33	1.53 V	333	-0.33	45.00
10	11020.00	60.74 PK	74.00	-13.26	1.45 V	354	10.88	49.86
11	11020.00	44.78 AV	54.00	-9.22	1.45 V	354	-5.08	49.86

- 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 118	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	54.53 PK	74.00	-19.47	1.00 H	15	26.45	28.08
2	1125.00	46.49 AV	54.00	-7.51	1.00 H	15	18.41	28.08
3	*5590.00	97.06 PK			1.03 H	357	57.79	39.27
4	*5590.00	86.21 AV			1.03 H	357	46.94	39.27
5	7452.00	51.11 PK	74.00	-22.89	1.01 H	277	6.10	45.01
6	7452.00	40.57 AV	54.00	-13.43	1.01 H	277	-4.44	45.01
7	11180.00	60.04 PK	74.00	-13.96	1.24 H	166	10.27	49.77
8	11180.00	44.66 AV	54.00	-9.34	1.24 H	166	-5.11	49.77
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	1125.00	59.11 PK	74.00	-14.89	1.00 V	5	31.03	28.08
2	1125.00	50.32 AV	54.00	-3.68	1.00 V	5	22.24	28.08
3	*5590.00	109.00 PK			1.04 V	100	69.73	39.27
4	*5590.00	97.74 AV			1.04 V	100	58.47	39.27
5	7452.00	56.72 PK	74.00	-17.28	1.44 V	206	11.71	45.01
6	7452.00	44.83 AV	54.00	-9.17	1.44 V	206	-0.18	45.01
7	11180.00	61.09 PK	74.00	-12.91	1.35 V	177	11.32	49.77
8	11180.00	45.01 AV	54.00	-8.99	1.35 V	177	-4.76	49.77

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 68%RH 1000hPa	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	1125.00	53.42 PK	74.00	-20.58	1.39 H	360	25.34	28.08
2	1125.00	44.56 AV	54.00	-9.44	1.39 H	360	16.48	28.08
3	*5670.00	97.17 PK			1.10 H	17	57.69	39.48
4	*5670.00	86.39 AV			1.10 H	17	46.91	39.48
5	#5725.00	57.14 PK	68.30	-11.16	1.10 H	17	17.53	39.61
6	7560.00	51.24 PK	74.00	-22.76	1.31 H	355	6.29	44.95
7	7560.00	40.63 AV	54.00	-13.37	1.31 H	355	-4.32	44.95
8	11340.00	59.62 PK	74.00	-14.38	1.30 H	360	9.81	49.81
9	11340.00	44.27 AV	54.00	-9.73	1.30 H	360	-5.54	49.81
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	1125.00	59.17 PK	74.00	-14.83	1.18 V	300	31.09	28.08
2	1125.00	50.04 AV	54.00	-3.96	1.18 V	300	21.96	28.08
3	*5670.00	109.07 PK			1.16 V	355	69.59	39.48
4	*5670.00	97.85 AV			1.16 V	355	58.37	39.48
5	#5725.00	60.47 PK	68.30	-7.83	1.16 V	355	20.86	39.61
6	7560.00	56.80 PK	74.00	-17.20	1.41 V	310	11.85	44.95
7	7560.00	45.06 AV	54.00	-8.94	1.41 V	310	0.11	44.95
8	11340.00	61.17 PK	74.00	-12.83	1.30 V	360	11.36	49.81
9	11340.00	44.96 AV	54.00	-9.04	1.30 V	360	-4.85	49.81

- 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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**BELOW 1GHz WORST-CASE DATA : DRAFT 802.11n (40MHz) OFDM MODULATION**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 999hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	249.68	44.35 QP	46.00	-1.65	1.00 H	14	31.58	12.77
2	300.08	42.00 QP	46.00	-4.00	1.75 H	235	28.40	13.60
3	375.62	38.08 QP	46.00	-7.92	1.00 H	168	22.67	15.41
4	500.25	43.16 QP	46.00	-2.84	1.00 H	235	24.05	19.11
5	568.74	43.10 QP	46.00	-2.90	1.00 H	288	22.33	20.77
6	877.64	43.84 QP	46.00	-2.16	1.00 H	271	18.20	25.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.16	35.55 QP	40.00	-4.45	1.00 V	135	22.00	13.55
2	64.82	34.62 QP	40.00	-5.38	1.00 V	10	22.16	12.46
3	249.66	44.56 QP	46.00	-1.44	2.00 V	167	31.80	12.76
4	<b>500.63</b>	<b>44.87 QP</b>	<b>46.00</b>	<b>-1.13</b>	<b>1.25 V</b>	<b>97</b>	<b>25.75</b>	<b>19.12</b>
5	568.49	42.20 QP	46.00	-3.80	1.00 V	166	21.44	20.76
6	<b>877.69</b>	<b>44.87 QP</b>	<b>46.00</b>	<b>-1.13</b>	<b>1.00 V</b>	<b>278</b>	<b>19.23</b>	<b>25.64</b>

- 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.





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**BELOW 1GHz WORST-CASE DATA : DRAFT 802.11n (20MHz) OFDM MODULATION**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 999hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	249.60	44.66 QP	46.00	-1.34	1.25 H	148	31.90	12.76
2	300.16	42.08 QP	46.00	-3.92	1.00 H	124	28.48	13.60
3	375.98	37.94 QP	46.00	-8.06	1.00 H	241	22.52	15.42
4	500.42	42.42 QP	46.00	-3.58	1.25 H	187	23.30	19.12
5	568.47	42.30 QP	46.00	-3.70	1.25 H	229	21.54	20.76
6	877.61	43.67 QP	46.00	-2.33	1.50 H	256	18.03	25.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.18	35.77 QP	40.00	-4.23	1.00 V	310	22.21	13.55
2	64.90	36.53 QP	40.00	-3.47	1.25 V	130	24.08	12.45
3	164.06	37.59 QP	43.50	-5.91	1.00 V	220	24.21	13.38
4	249.60	44.82 QP	46.00	-1.18	1.00 V	190	32.06	12.76
5	500.42	44.04 QP	46.00	-1.96	1.00 V	157	24.92	19.12
6	568.47	41.52 QP	46.00	-4.48	1.00 V	151	20.76	20.76
7	877.61	44.20 QP	46.00	-1.80	1.00 V	274	18.56	25.64

- 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 $\mu$ 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	100288	Sep. 22, 2007	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 07, 2008	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 10, 2008	Jan. 09, 2009
LISN SCHWARZBECK	NNBL 8226-2	8226-142	May 07, 2008	May 06, 2009
Software ADT	ADT_Cond_V3	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
 2. The test was performed in HwaYa Shielded Room 2.  
 3. The VCCI Site Registration No. is C-2047.

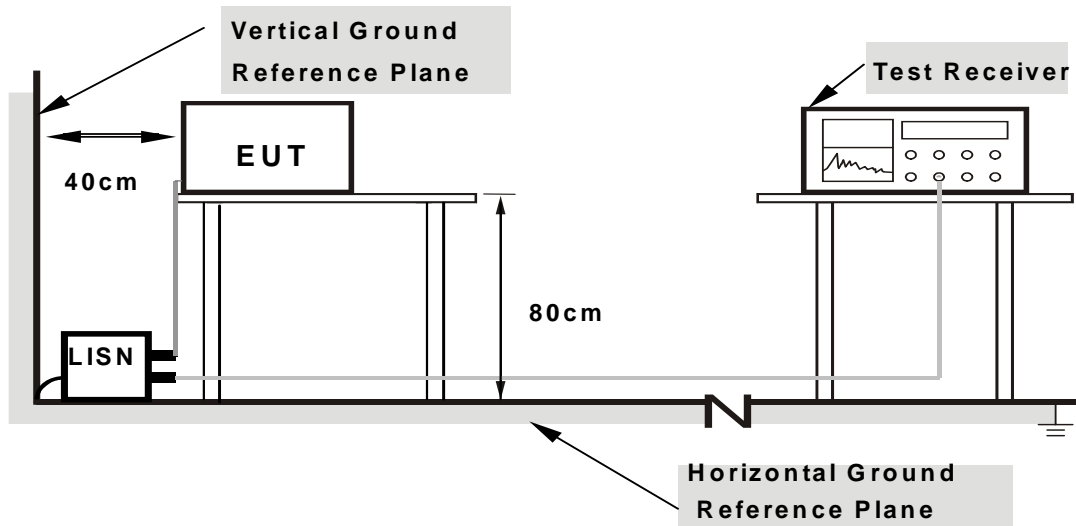
#### 4.2.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

#### 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

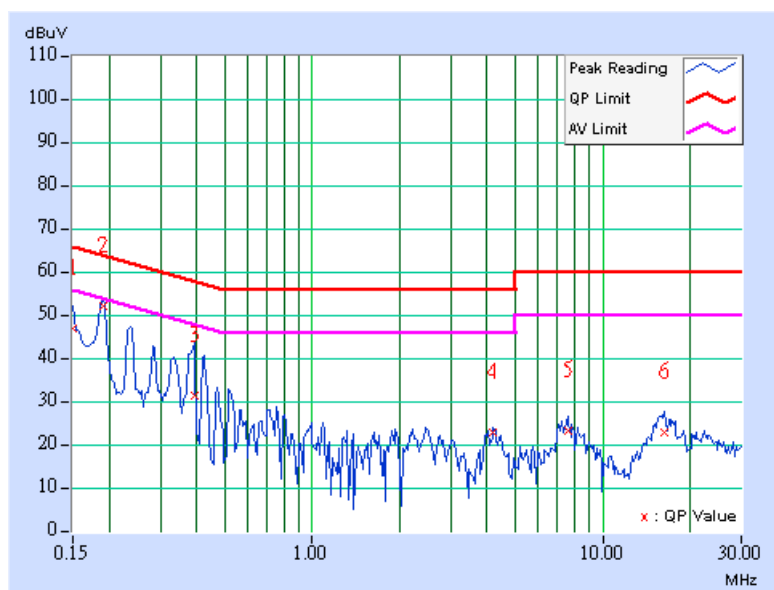
#### CONDUCTED WORST-CASE DATA :

#### FOR 5250-5350MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Lori Chiu

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	46.38	-	46.48	-	66.00	56.00	-19.52	-
2	<b>0.190</b>	<b>0.10</b>	<b>51.84</b>	-	<b>51.94</b>	-	<b>64.03</b>	<b>54.03</b>	<b>-12.09</b>	-
3	0.393	0.10	30.91	-	31.01	-	58.01	48.01	-27.00	-
4	4.211	0.28	22.50	-	22.78	-	56.00	46.00	-33.22	-
5	7.559	0.31	22.81	-	23.12	-	60.00	50.00	-36.88	-
6	16.369	0.50	22.62	-	23.12	-	60.00	50.00	-36.88	-

- 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.

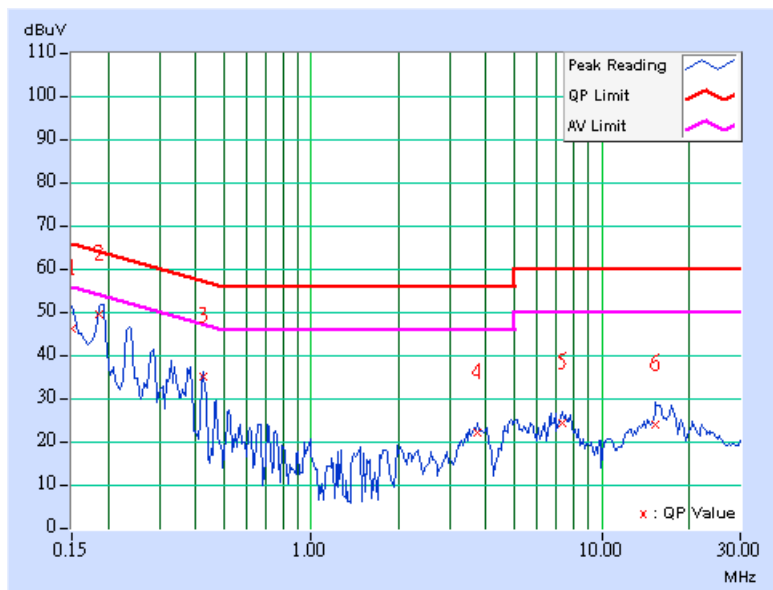




EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	15.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Lori Chiu

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	45.96	-	46.06	-	66.00	56.00	-19.94	-
2	0.186	0.10	49.21	-	49.31	-	64.22	54.22	-14.91	-
3	0.424	0.10	34.72	-	34.82	-	57.37	47.37	-22.55	-
4	3.711	0.27	21.82	-	22.09	-	56.00	46.00	-33.91	-
5	7.282	0.36	23.84	-	24.20	-	60.00	50.00	-35.80	-
6	15.297	0.49	23.56	-	24.05	-	60.00	50.00	-35.95	-

- 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.



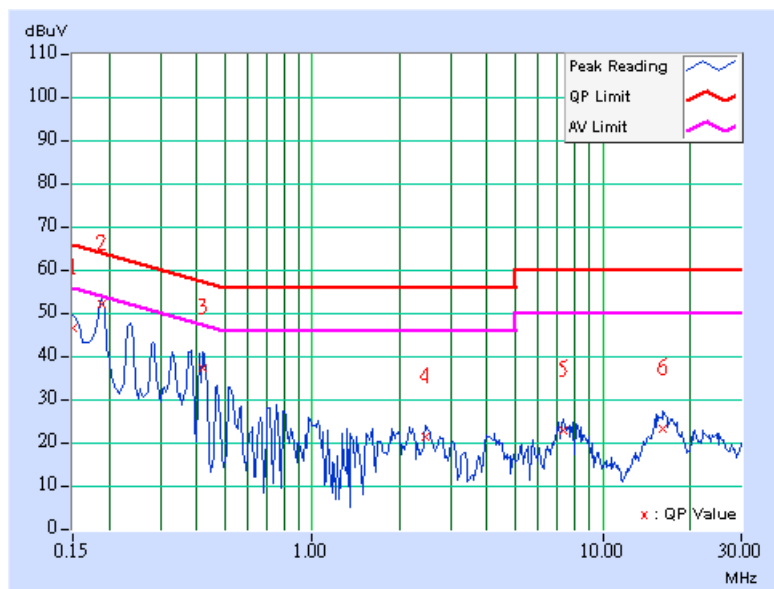


**FOR 5470-5725MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Lori Chiu

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	46.25	-	46.35	-	66.00	56.00	-19.65	-
2	0.189	0.10	51.59	-	51.69	-	64.08	54.08	-12.39	-
3	0.420	0.10	37.09	-	37.19	-	57.46	47.46	-20.27	-
4	2.461	0.23	21.04	-	21.27	-	56.00	46.00	-34.73	-
5	7.305	0.31	22.31	-	22.62	-	60.00	50.00	-37.38	-
6	16.168	0.50	22.71	-	23.21	-	60.00	50.00	-36.79	-

- 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.

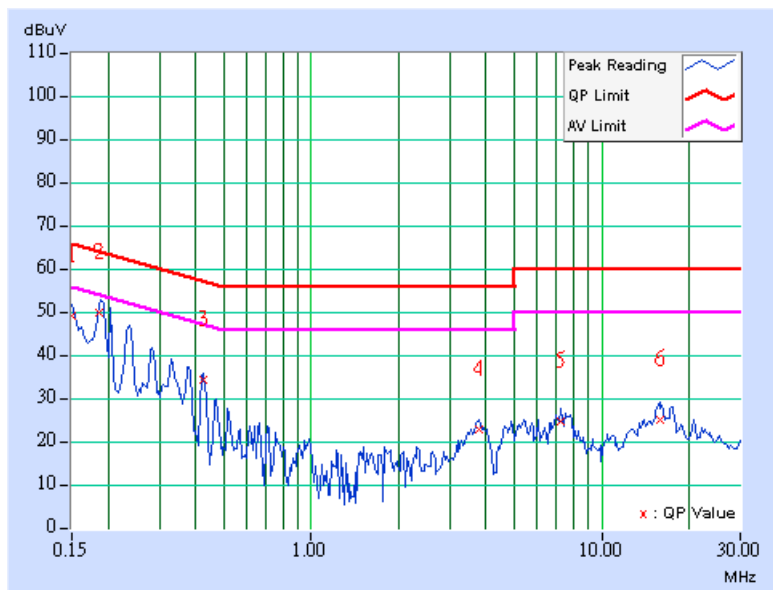




EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	Lori Chiu

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	48.89	-	48.99	-	66.00	56.00	-17.01	-
2	0.185	0.10	49.33	-	49.43	-	64.25	54.25	-14.82	-
3	0.423	0.10	34.09	-	34.19	-	57.38	47.38	-23.19	-
4	3.777	0.27	22.32	-	22.59	-	56.00	46.00	-33.41	-
5	7.246	0.36	24.22	-	24.58	-	60.00	50.00	-35.42	-
6	15.793	0.49	24.74	-	25.23	-	60.00	50.00	-34.77	-

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





### 4.3 PEAK TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 29, 2007	Jun. 28, 2008

**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

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set span to encompass the entire emission bandwidth of the signal.
- c. Set RBW to 1MHz, VBW to 3MHz.
- d. Using the spectrum analyzer's channel power measurement function to measure the output power.

**NOTE:** The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.3.5 TEST SETUP



#### 4.3.6 EUT OPERATING CONDITIONS

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



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#### 4.3.7 TEST RESULTS

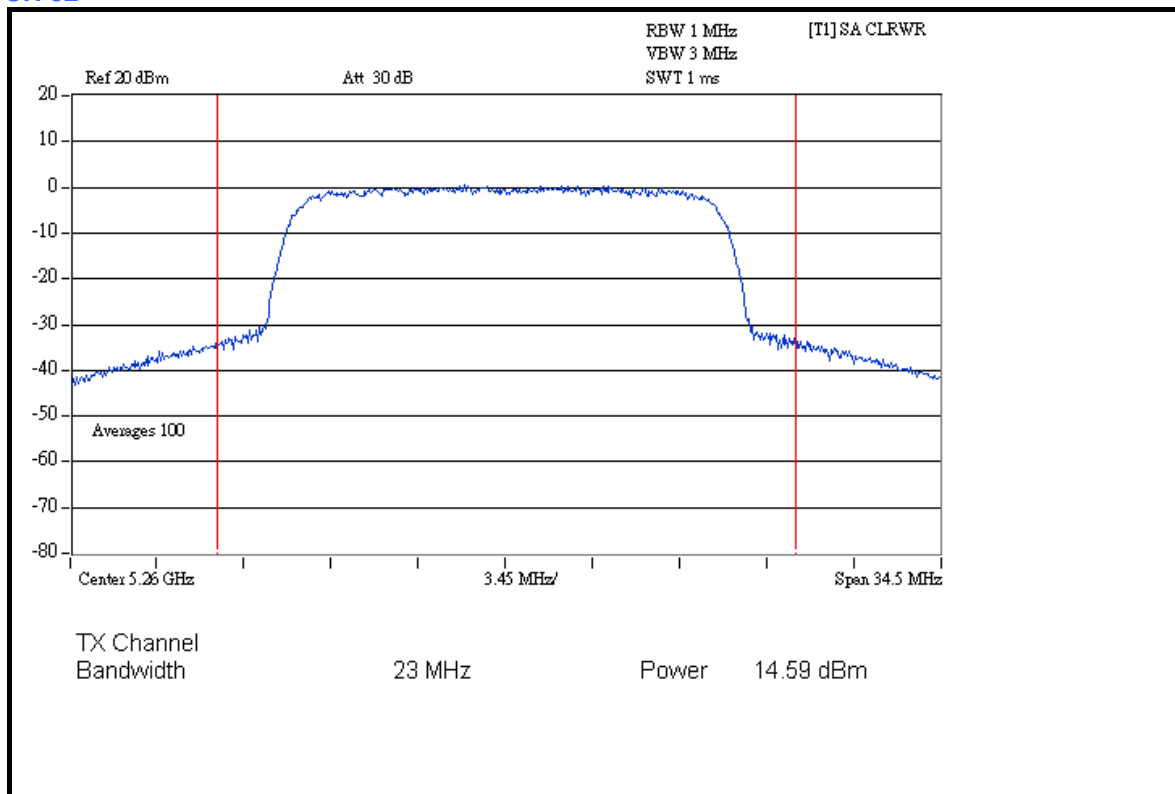
##### PEAK POWER OUTPUT: 802.11a OFDM MODULATION

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

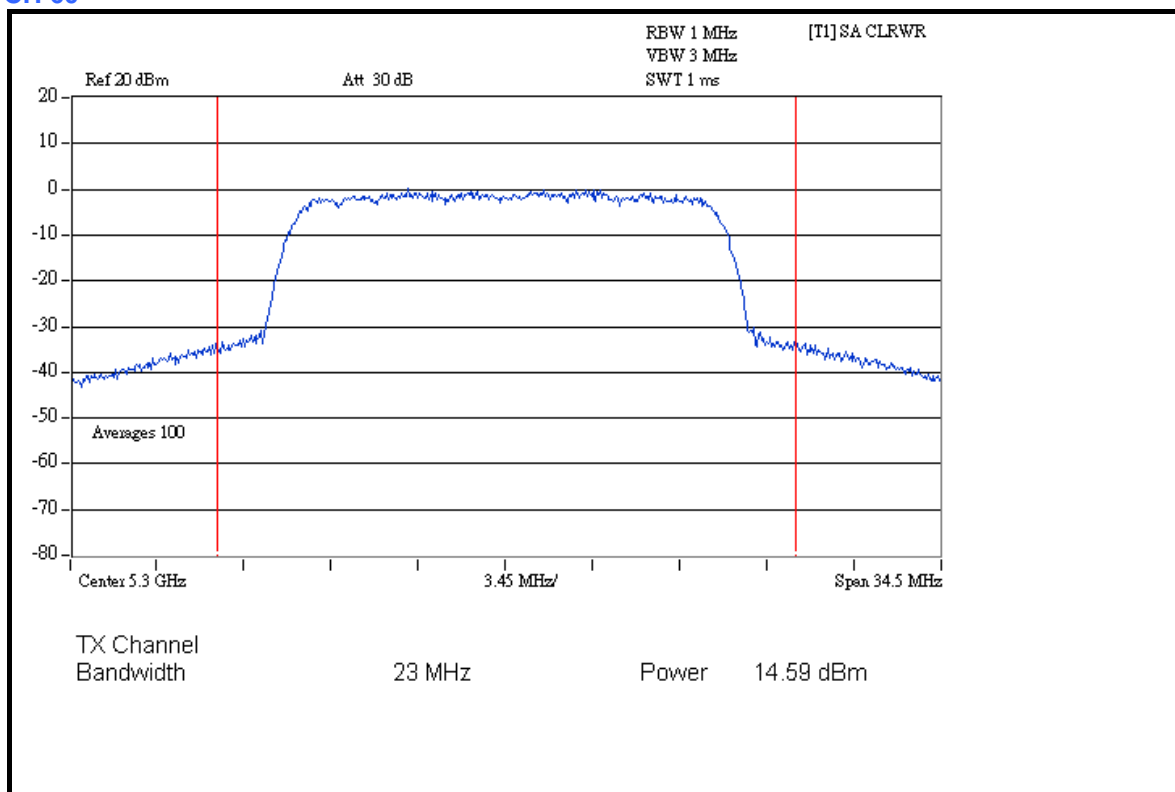
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
52	5260	28.774	14.59	24.00	PASS
60	5300	28.774	14.59	24.00	PASS
64	5320	28.907	14.61	24.00	PASS
100	5500	31.696	15.01	24.00	PASS
120	5600	28.510	14.55	24.00	PASS
140	5700	29.040	14.63	24.00	PASS



### CH 52



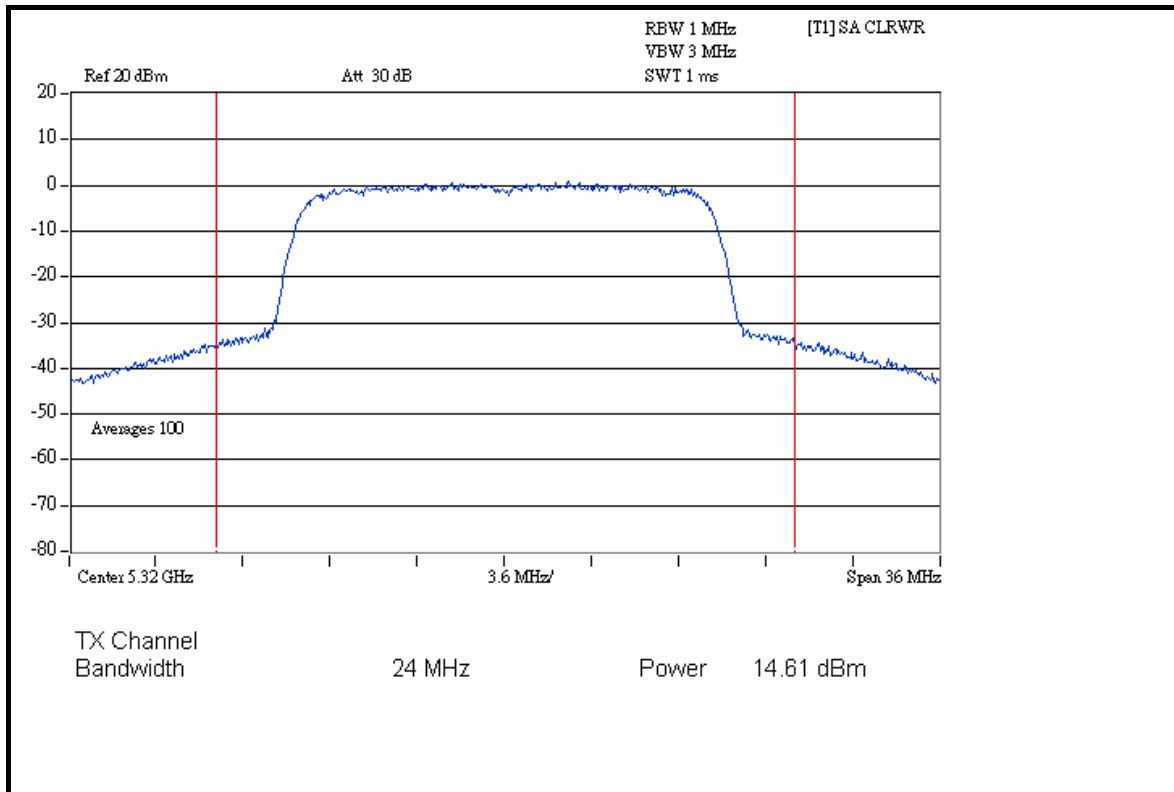
### CH 60



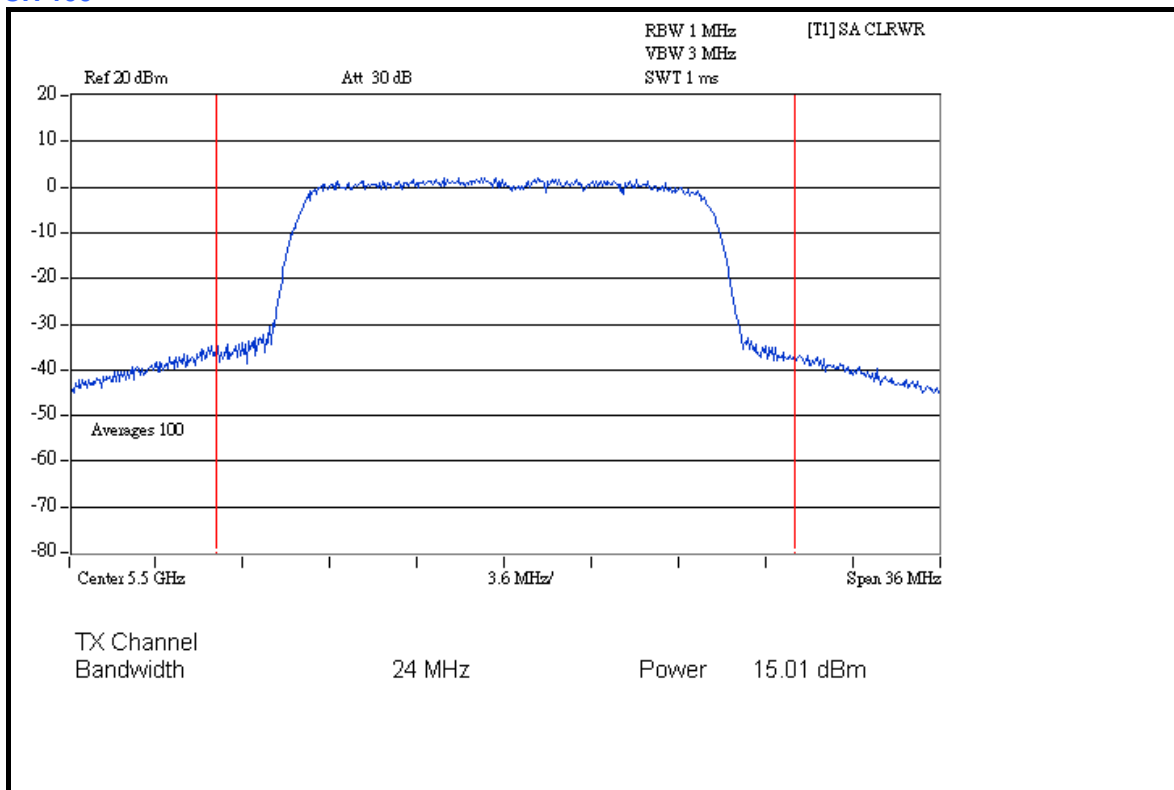


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### CH 64



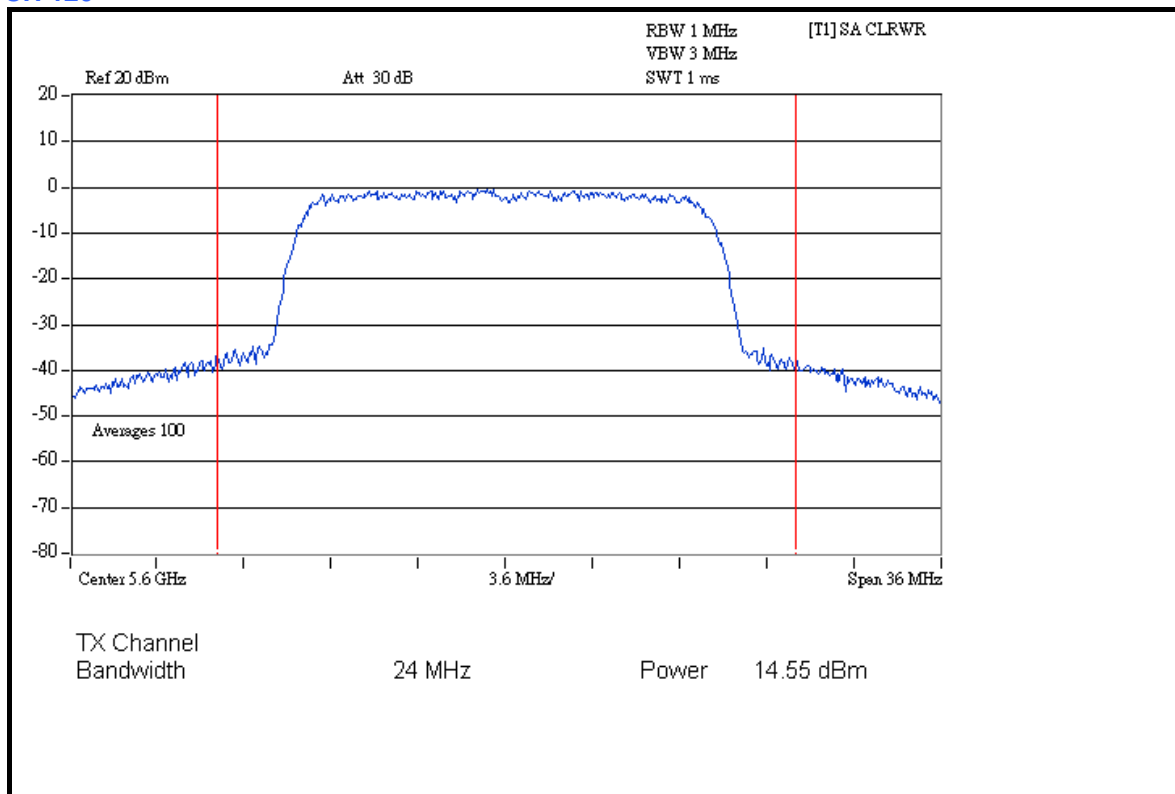
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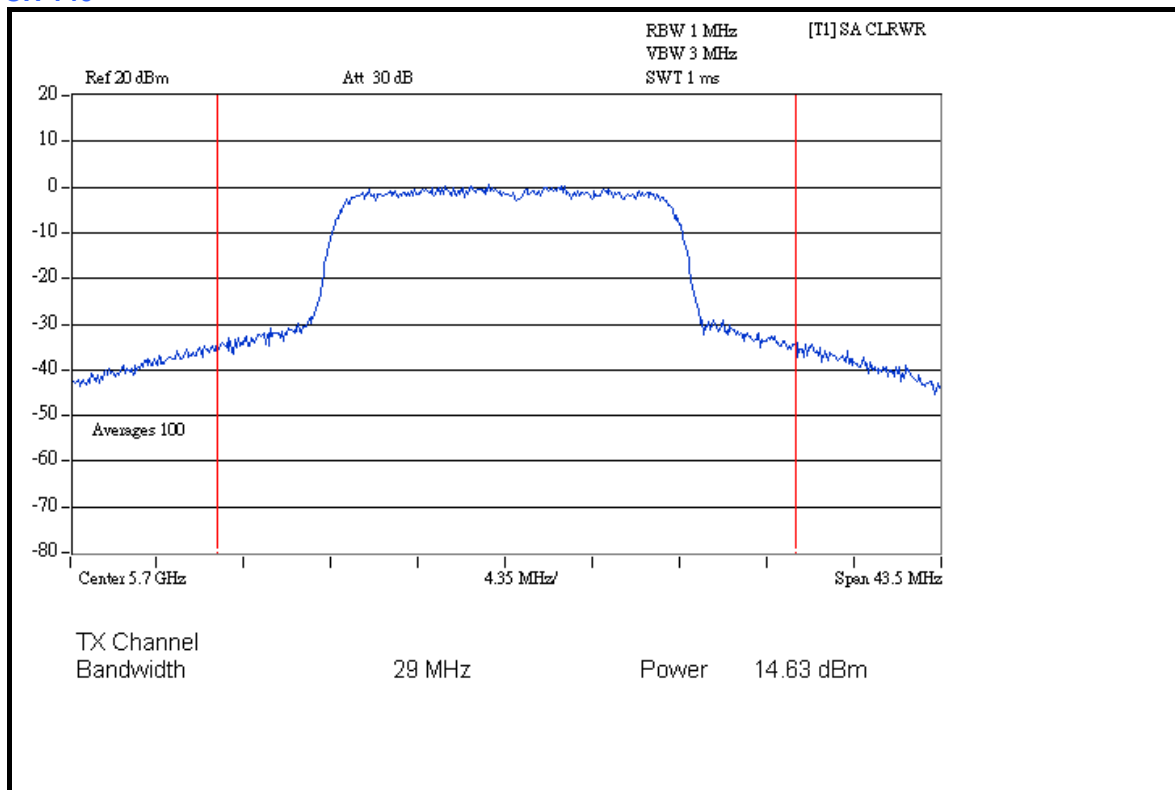


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### CH 120



### CH 140





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### DRAFT 802.11n (20MHz) OFDM MODULATION

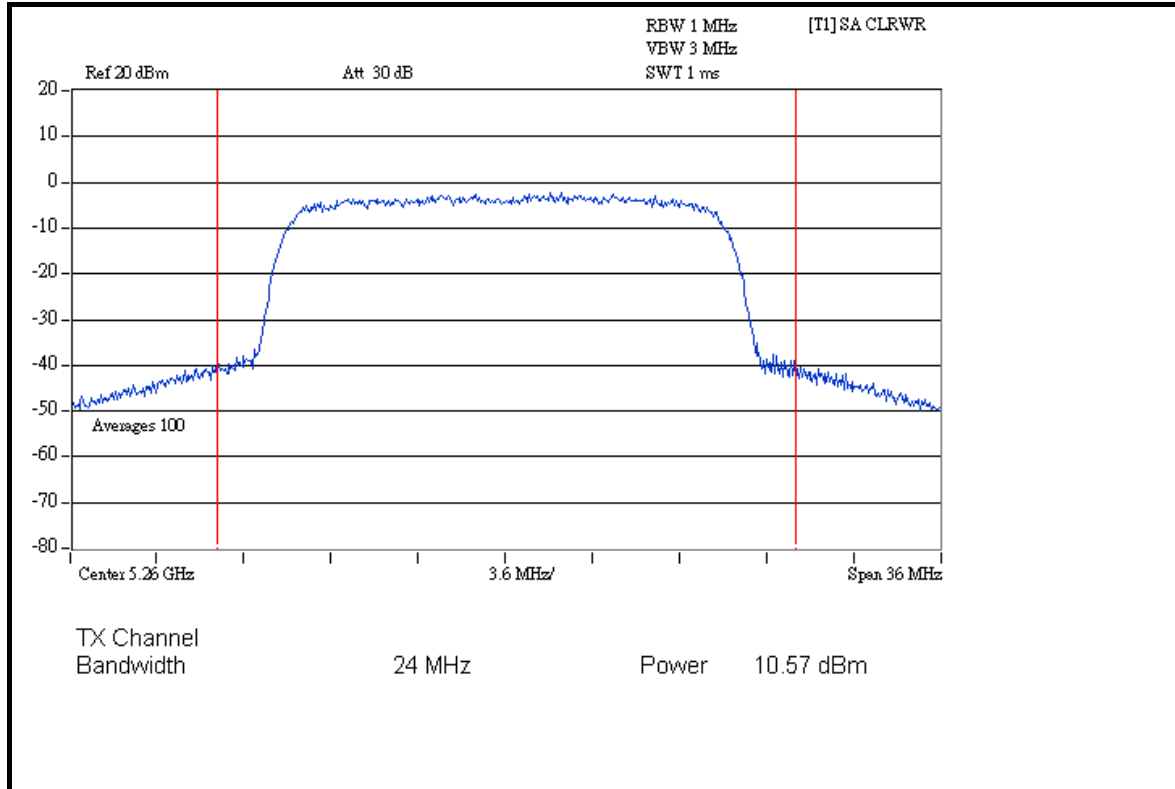
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	7.2Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	10.57	10.55	11.01	35.371	15.49	24	PASS
60	5300	10.55	10.15	10.05	31.817	15.03	24	PASS
64	5320	10.63	9.08	10.65	31.267	14.95	24	PASS
100	5500	10.05	10.59	10.57	32.973	15.18	24	PASS
120	5600	10.06	11.08	10.60	34.444	15.37	24	PASS
140	5700	10.05	10.55	10.54	32.790	15.16	24	PASS

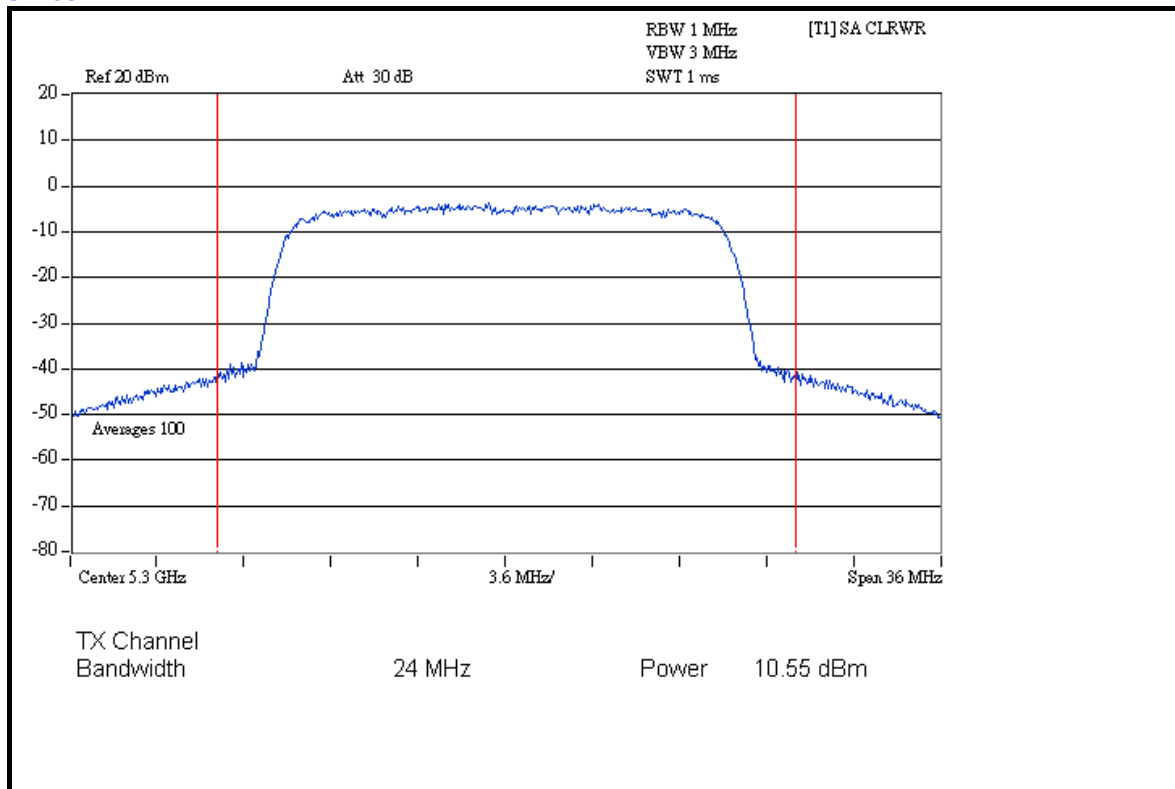


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### CHAIN 0: CH 52



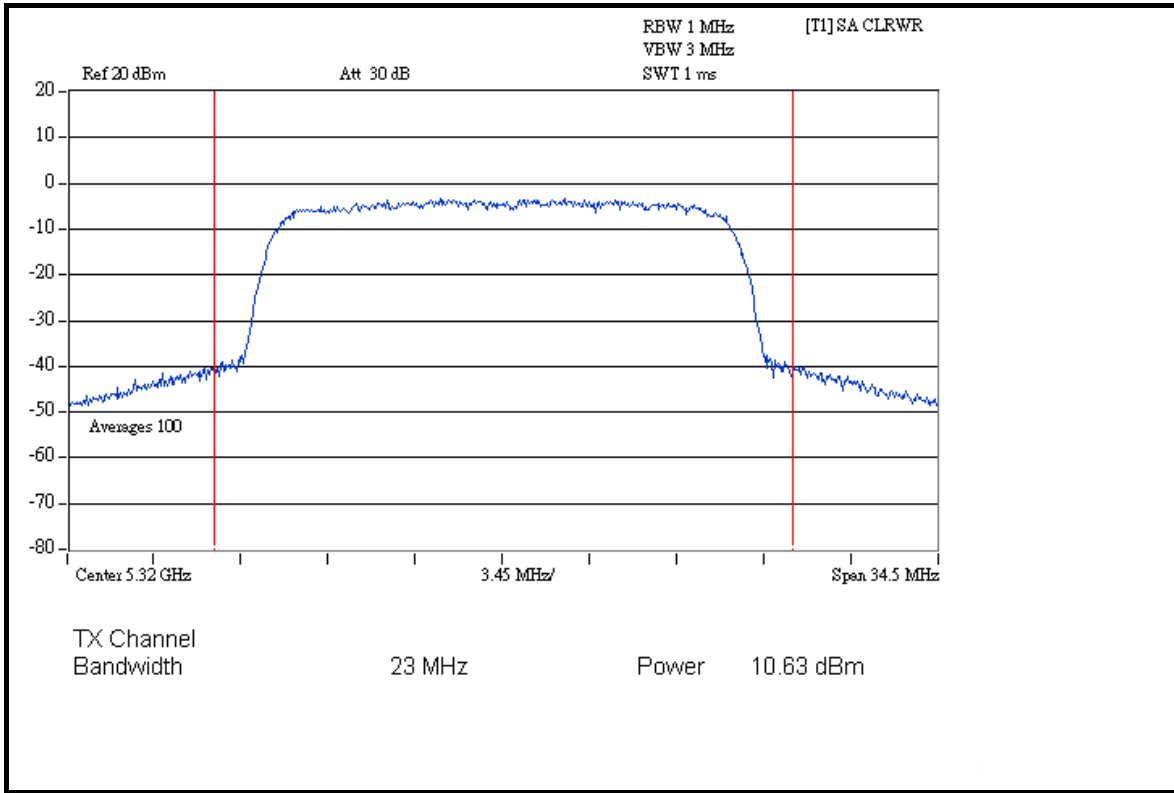
### CH 60



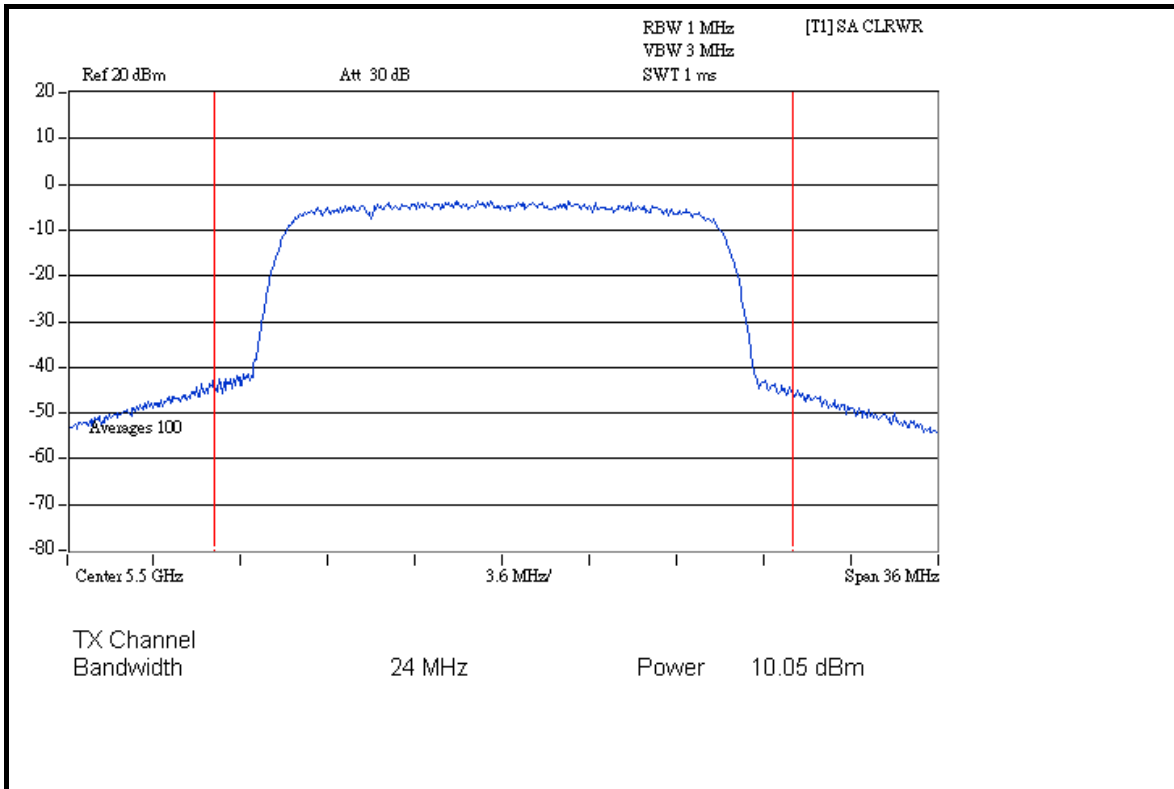




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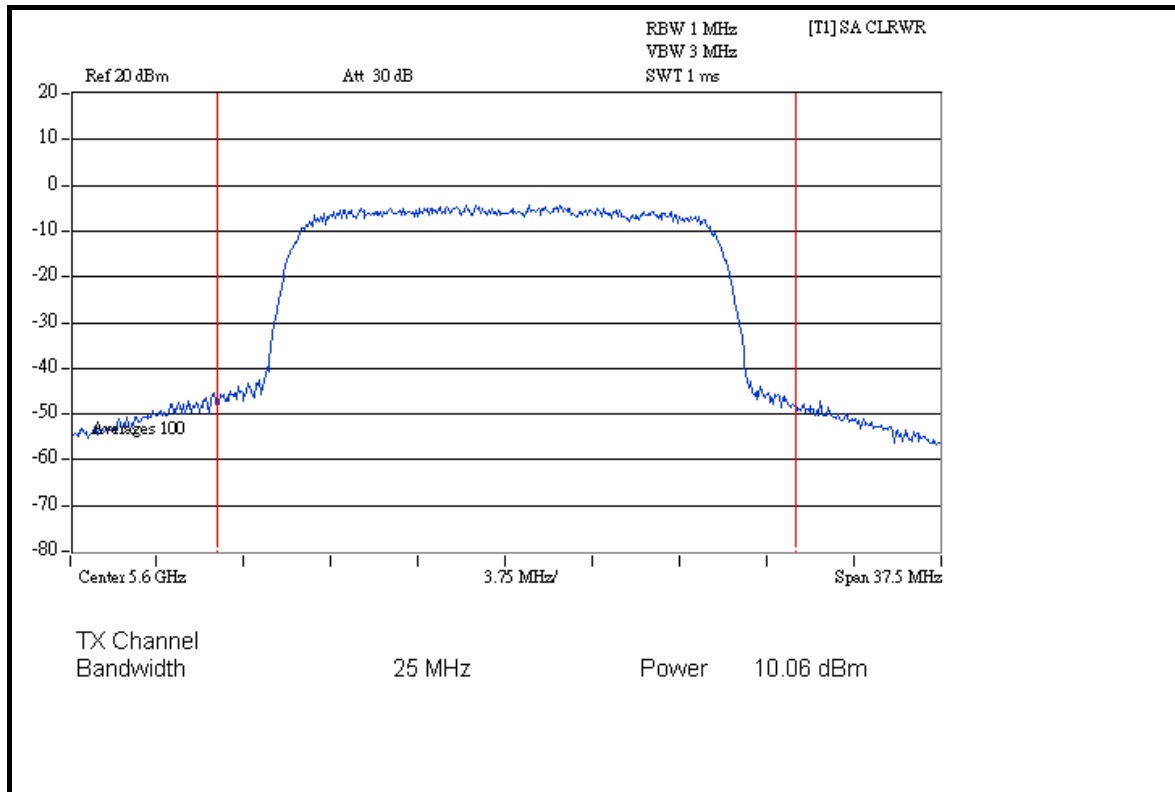


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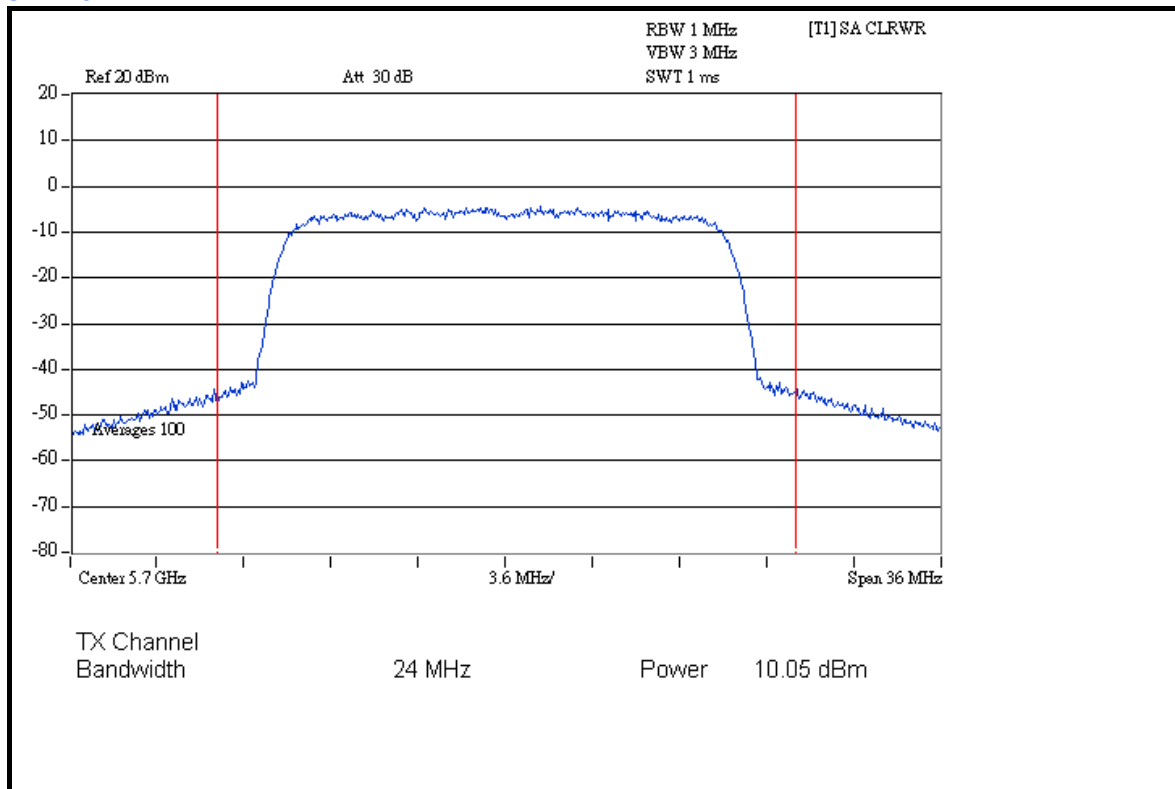




### CH 120



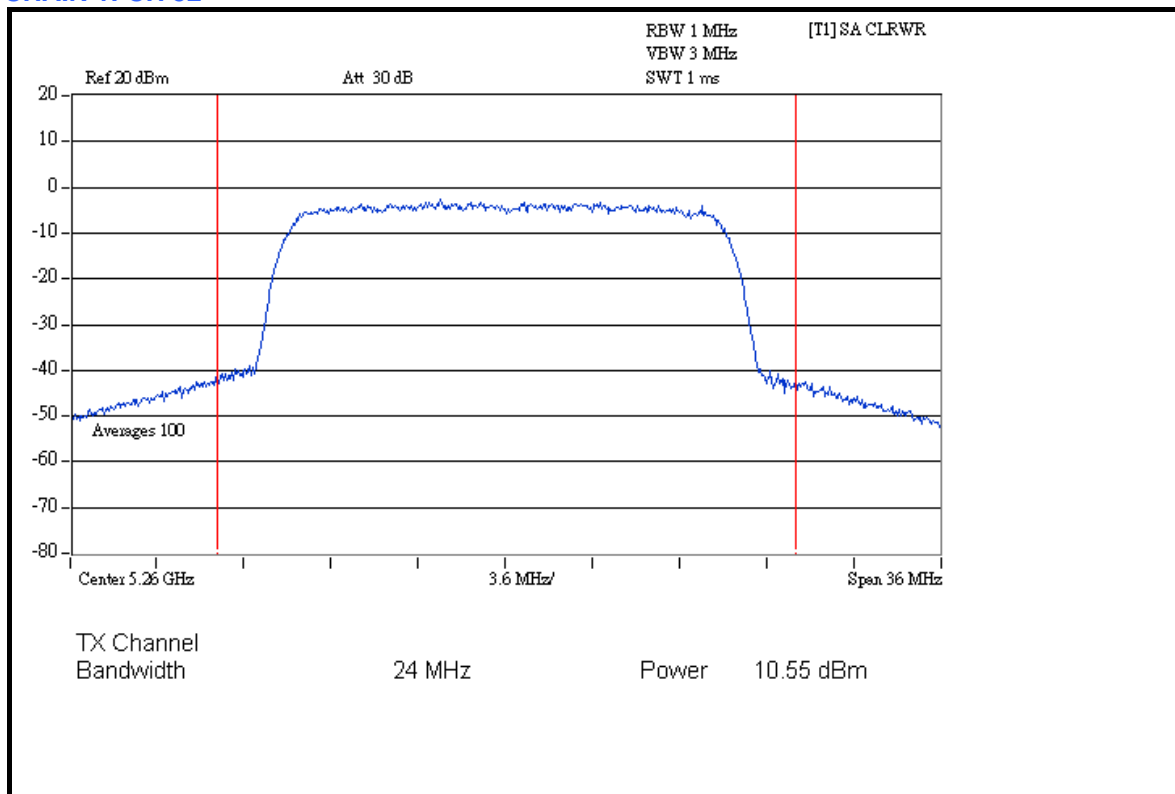
### CH 140



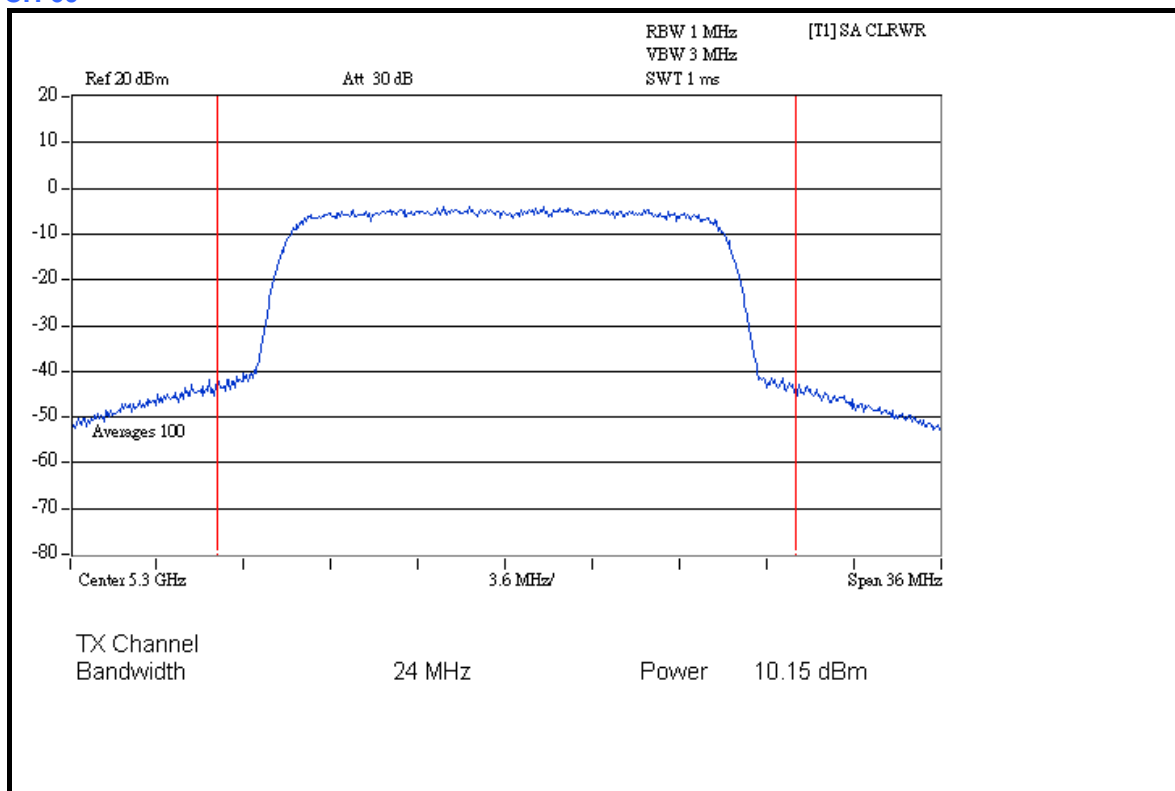


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### CHAIN 1: CH 52



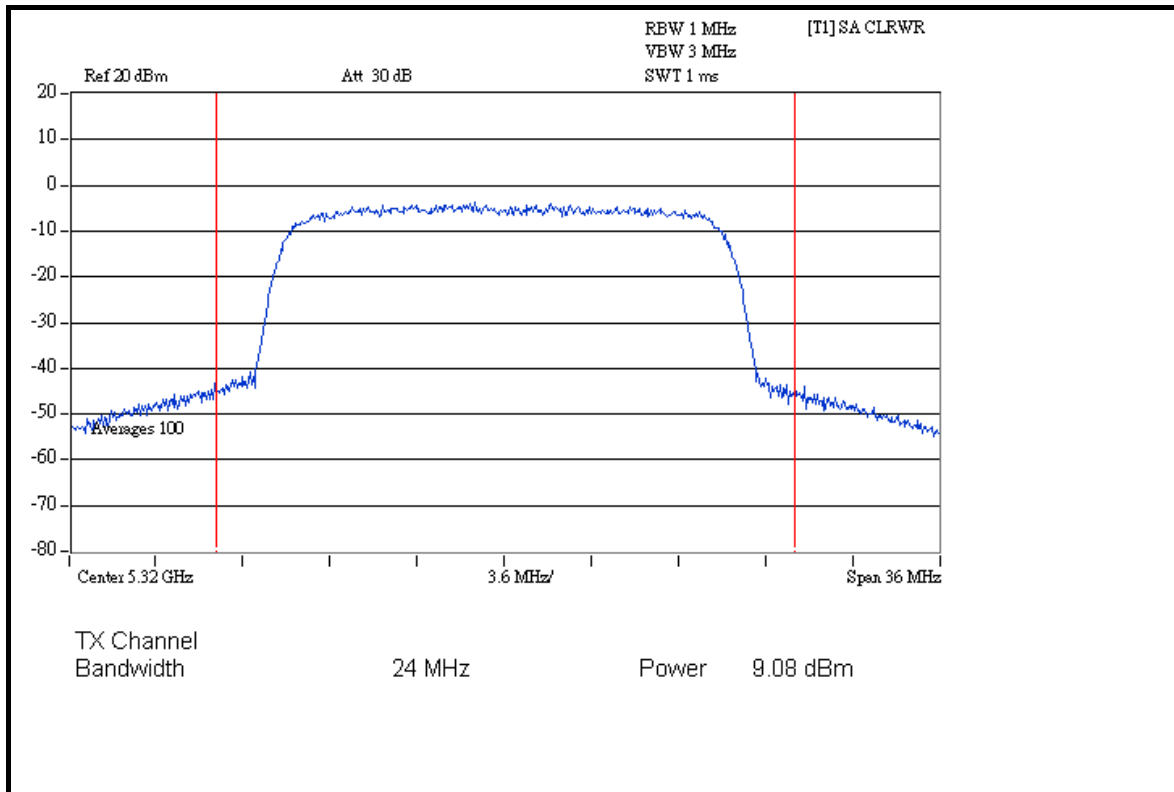
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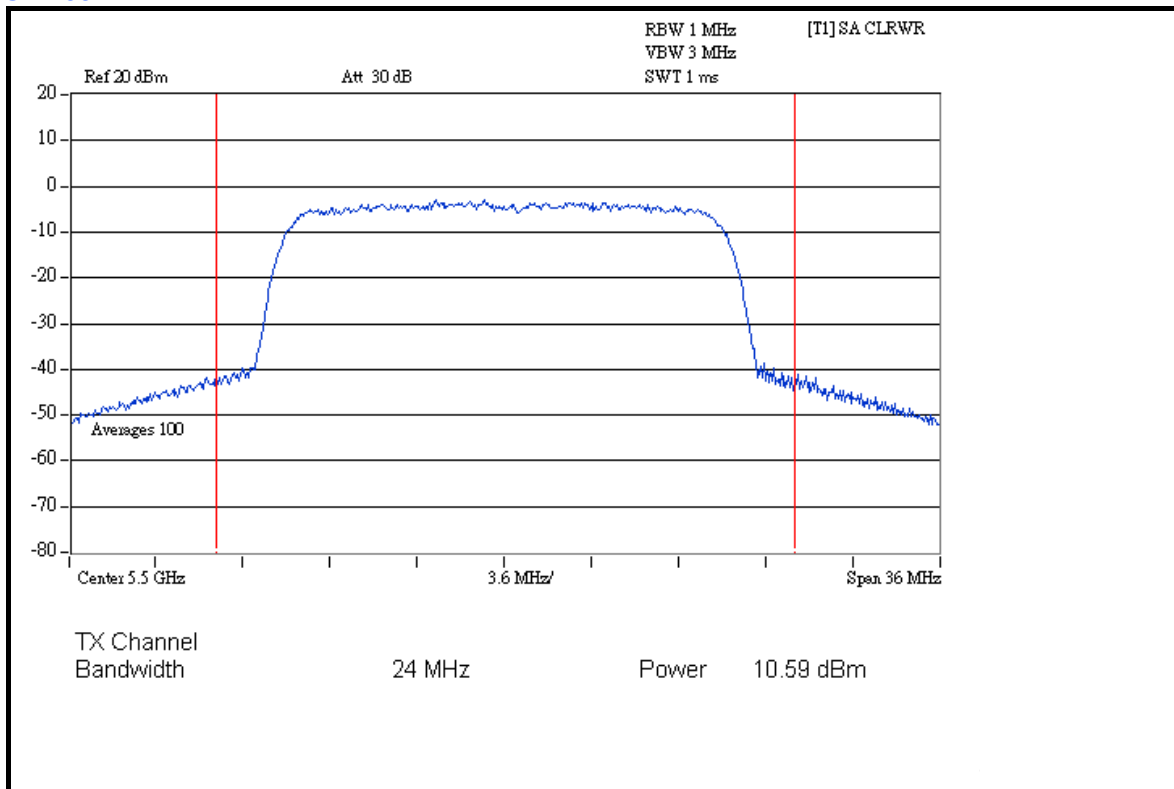


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### CH 64



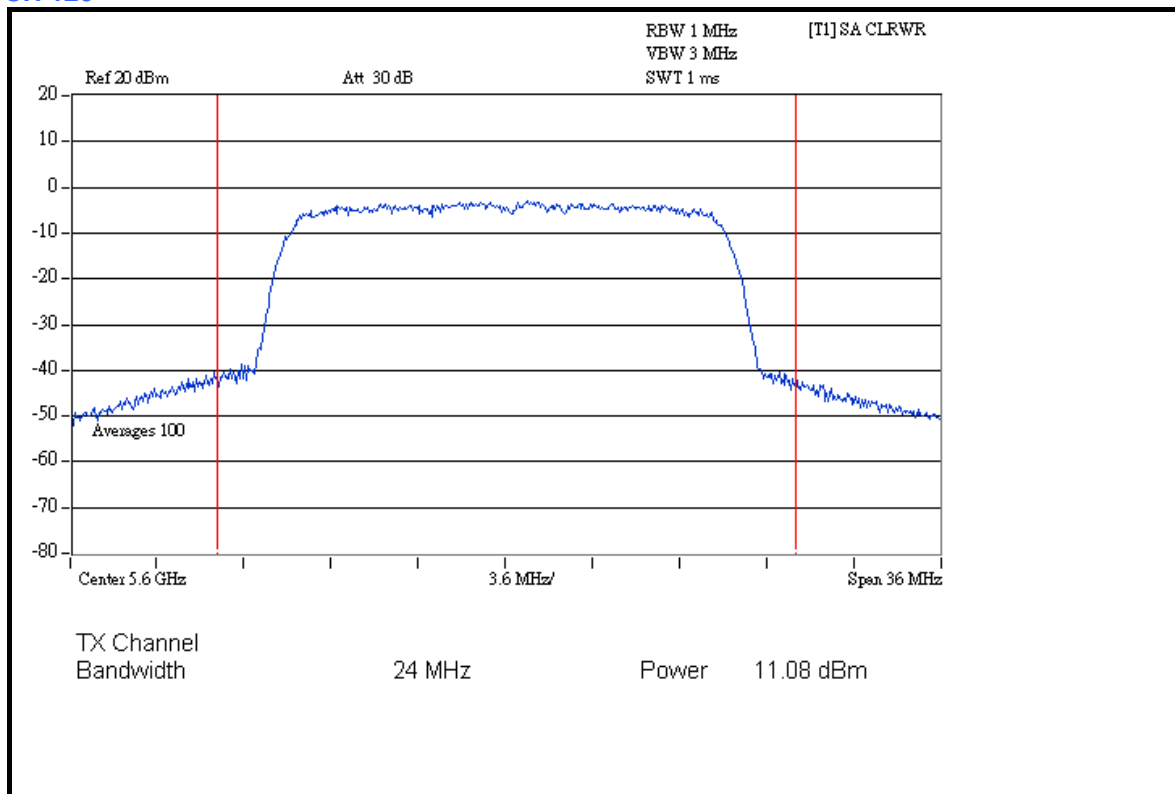
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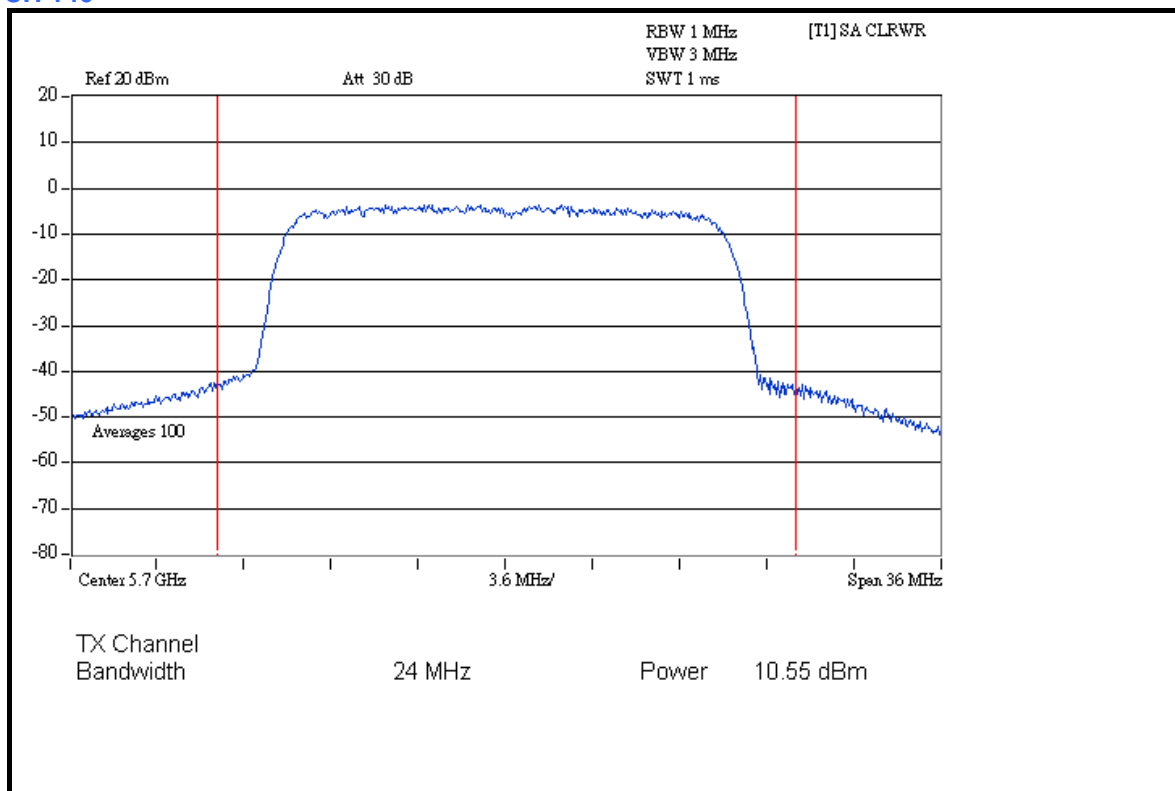


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### CH 120



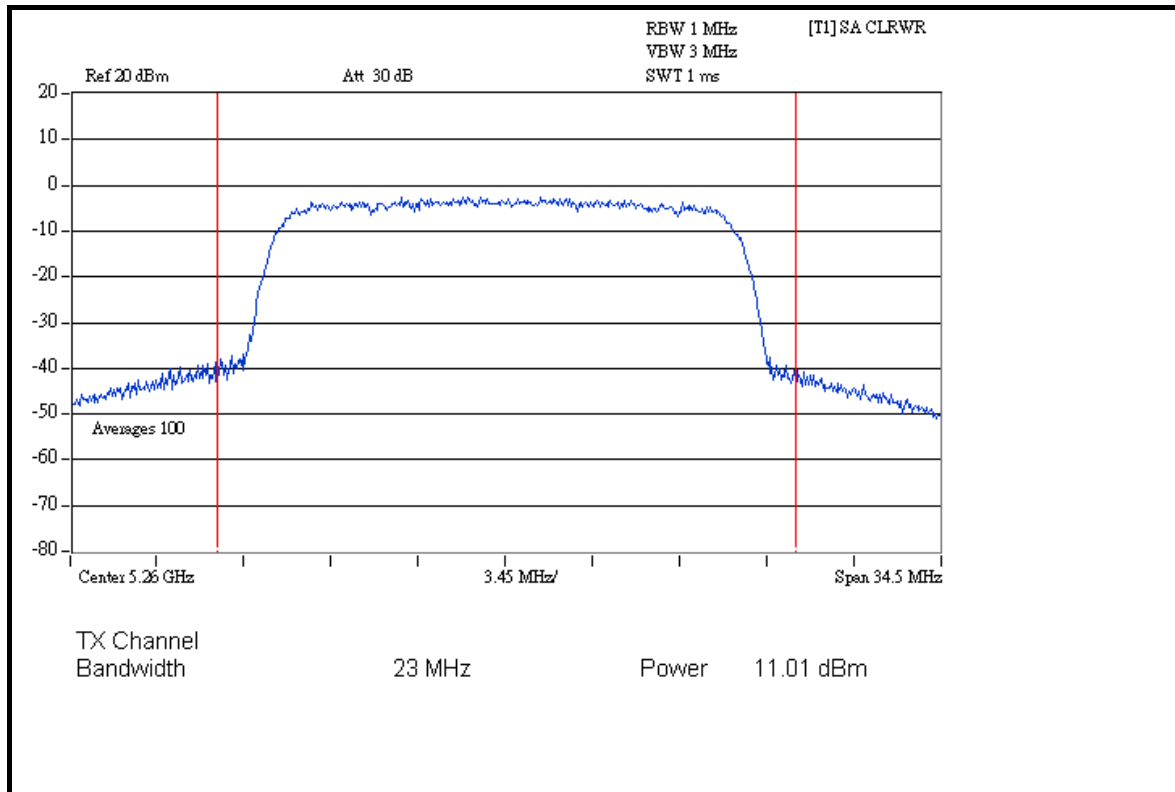
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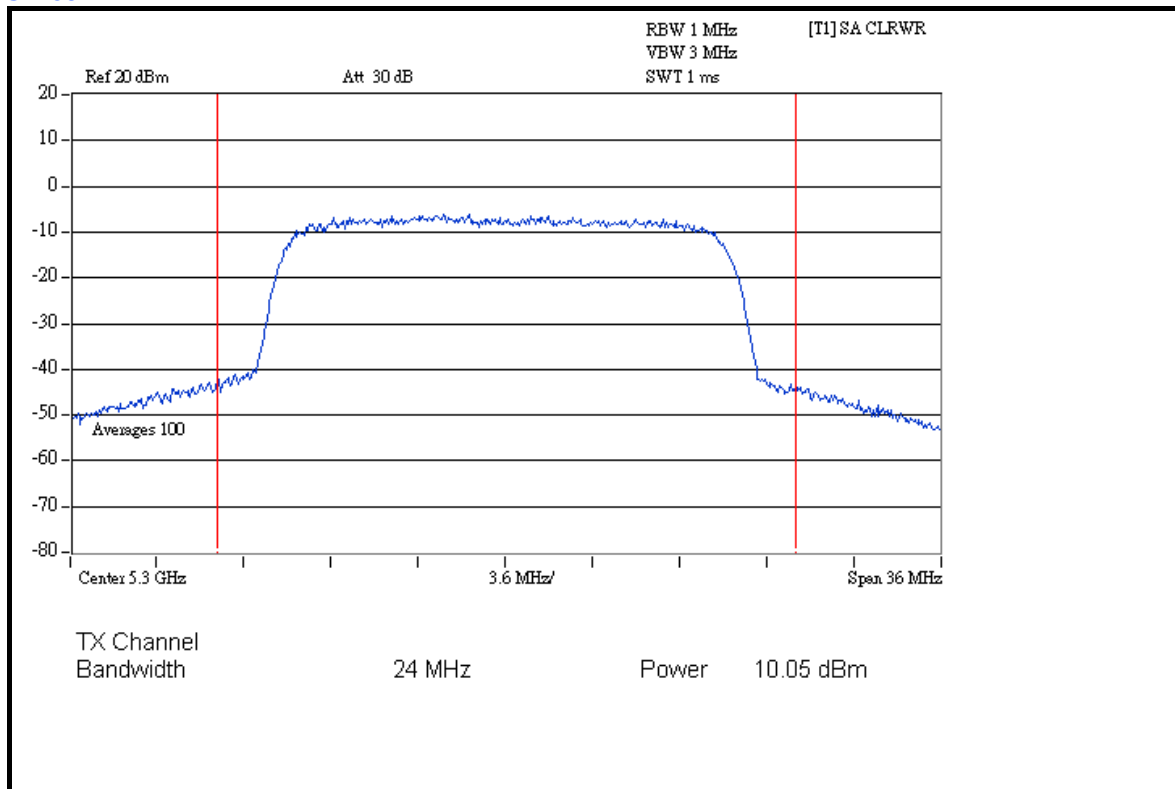


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### CHAIN 2: CH 52



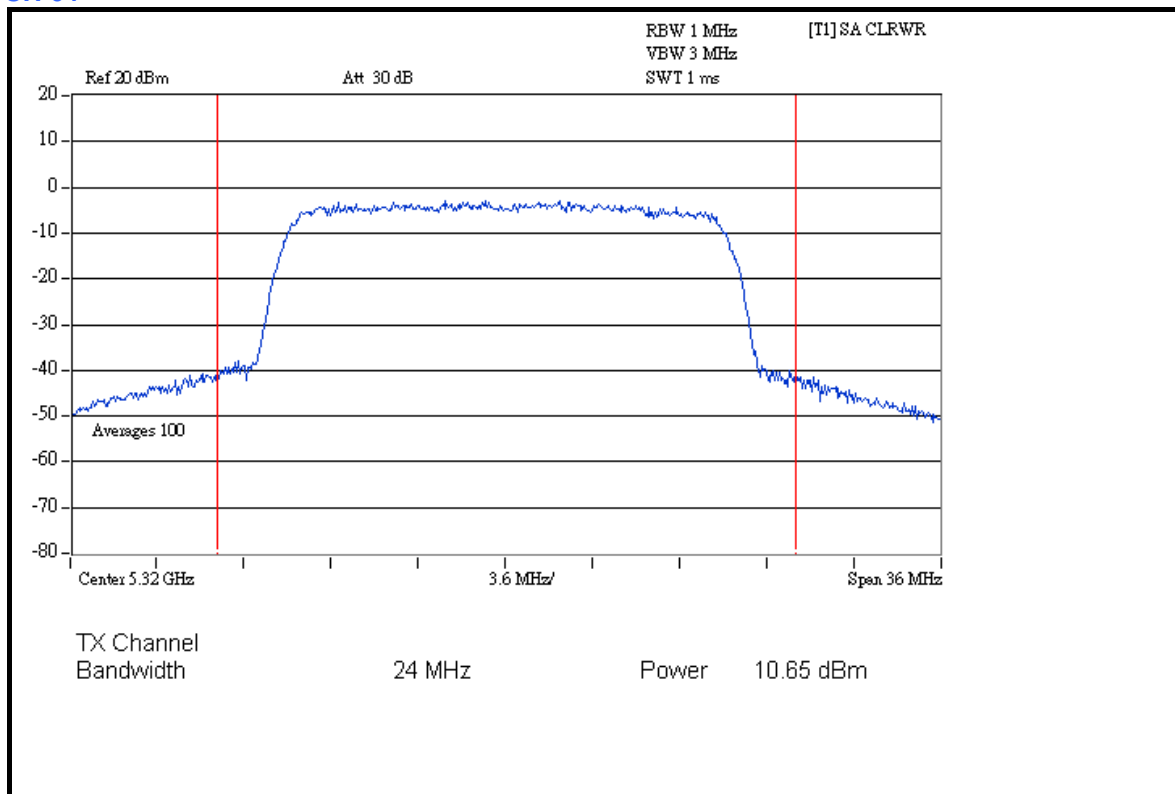
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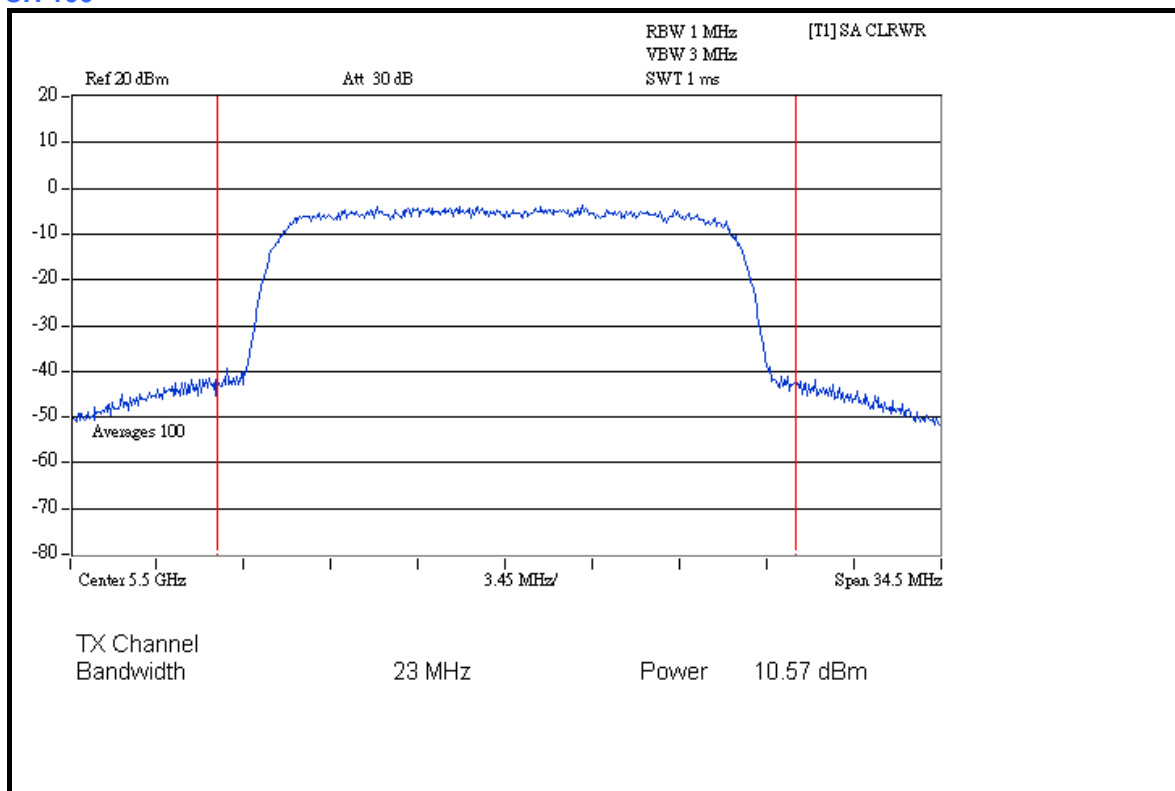


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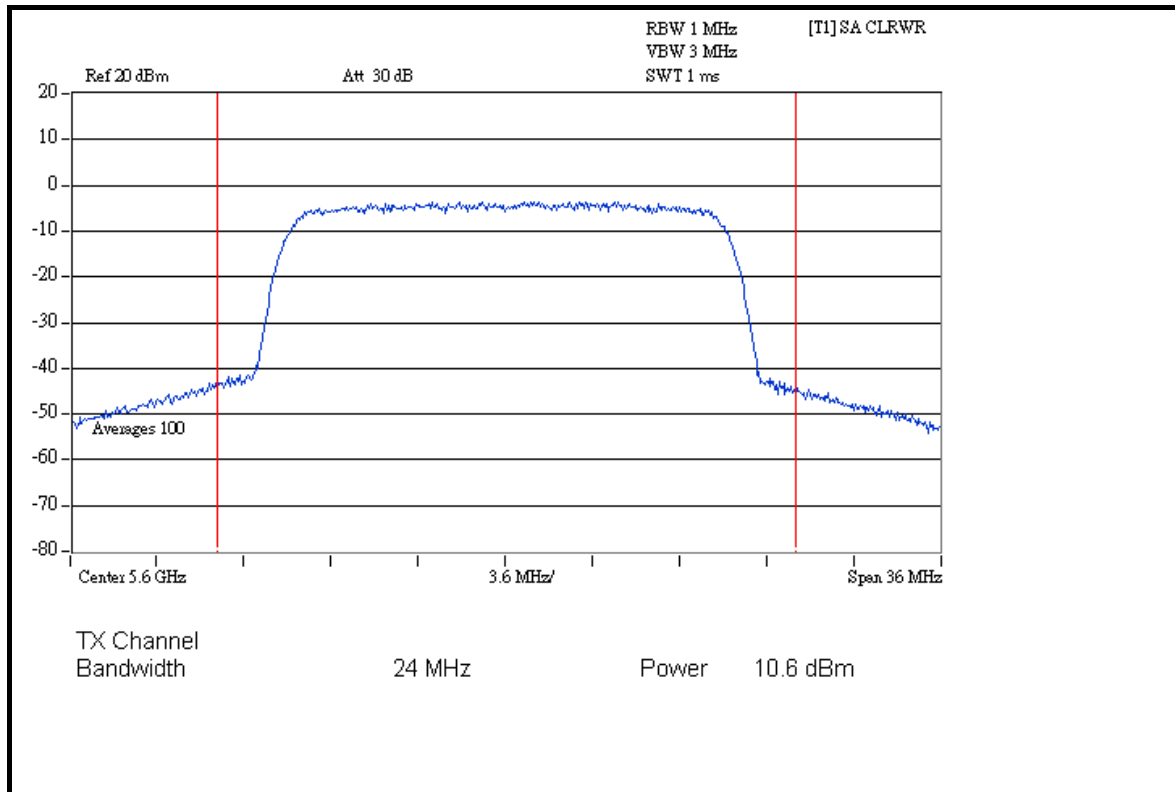
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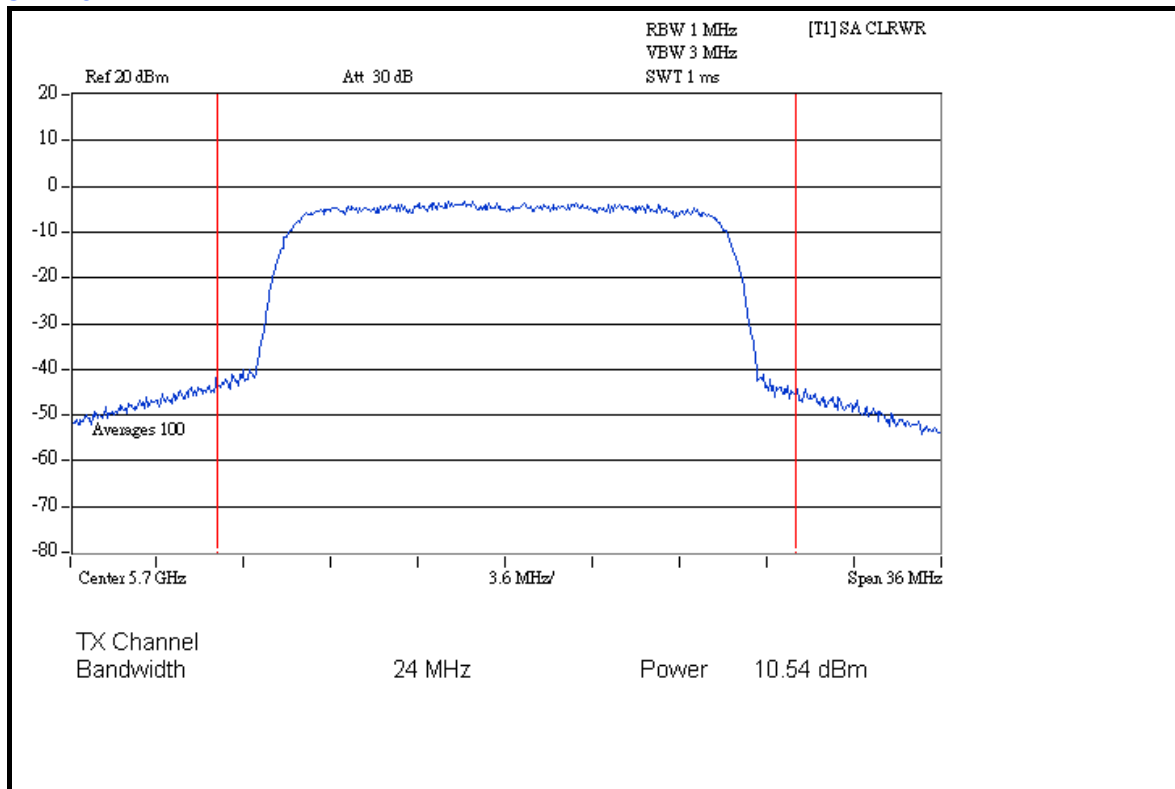
### CH 100



CH 120



CH 140







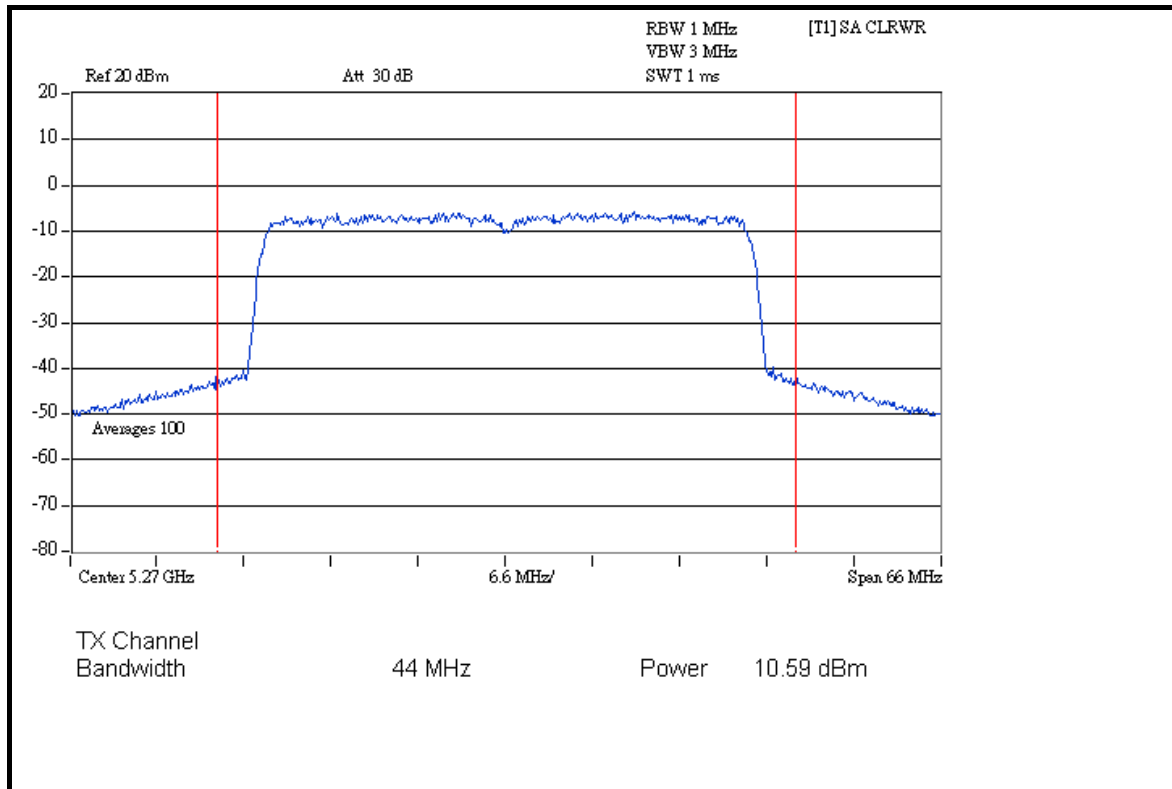
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**DRAFT 802.11n (40MHz) OFDM MODULATION**

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	15.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)			TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	10.59	10.56	11.07	35.625	15.52	24	PASS
62	5310	10.07	10.08	10.03	30.418	14.83	24	PASS
102	5510	10.09	11.02	10.60	34.338	15.36	24	PASS
118	5590	10.10	10.58	10.52	32.934	15.18	24	PASS
134	5670	10.06	10.54	10.51	32.709	15.15	24	PASS

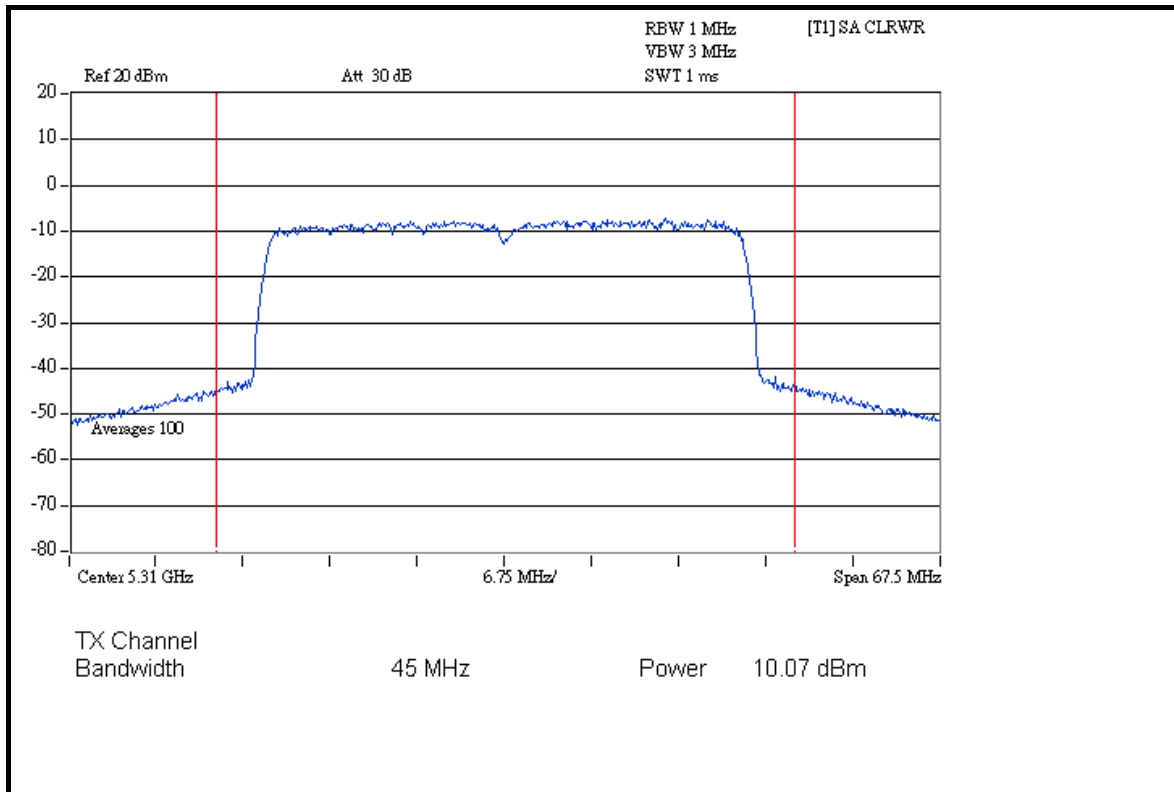
**CHAIN 0: CH 54**



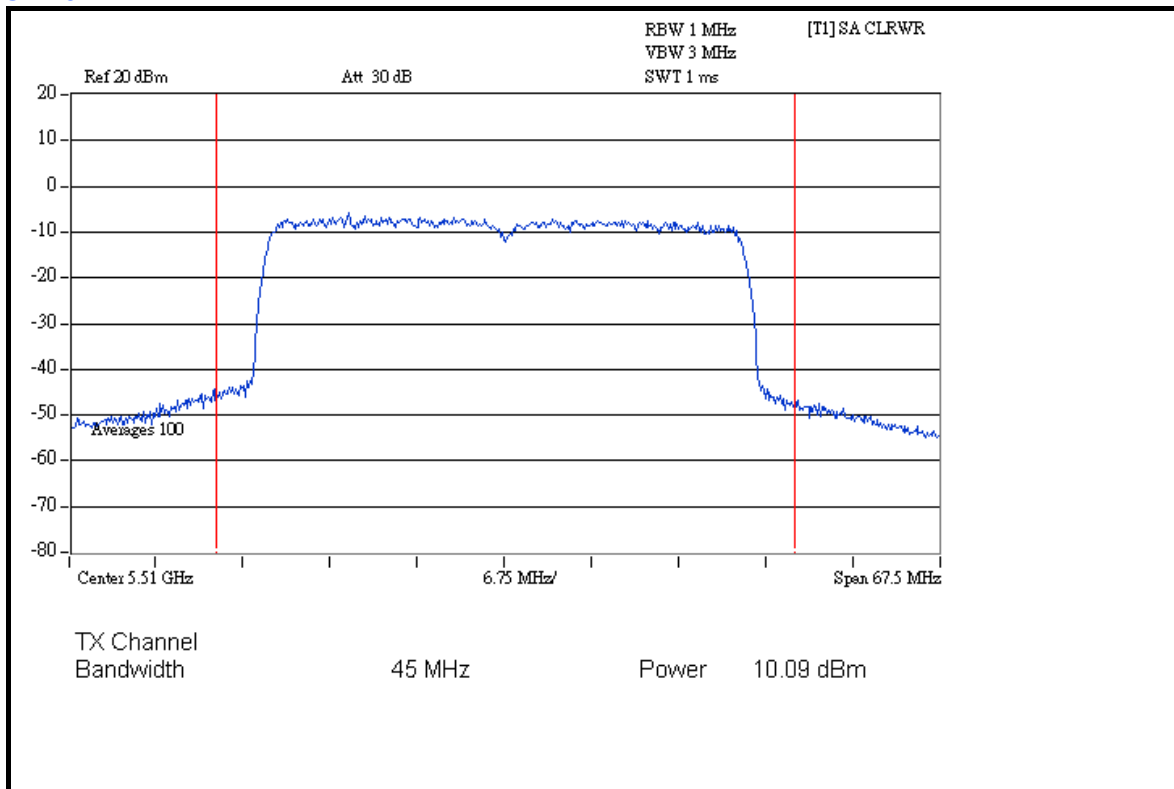


A D T

### CH 62



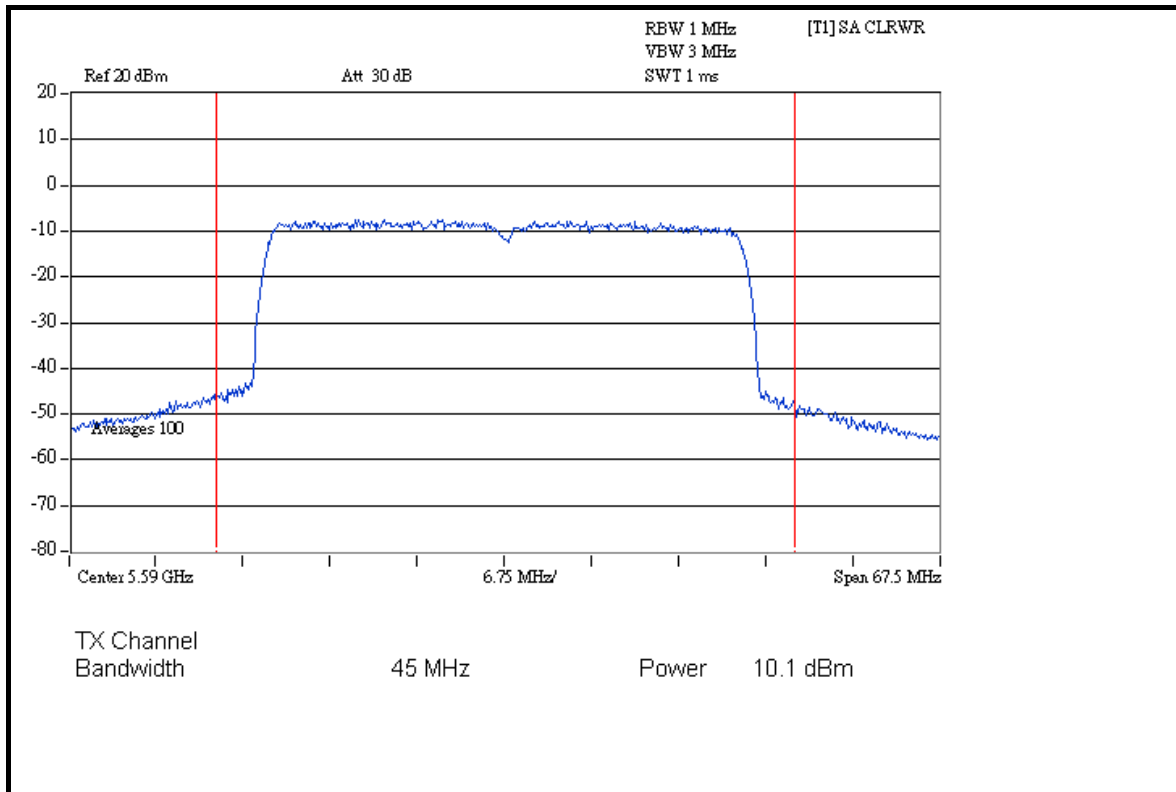
### CH 102



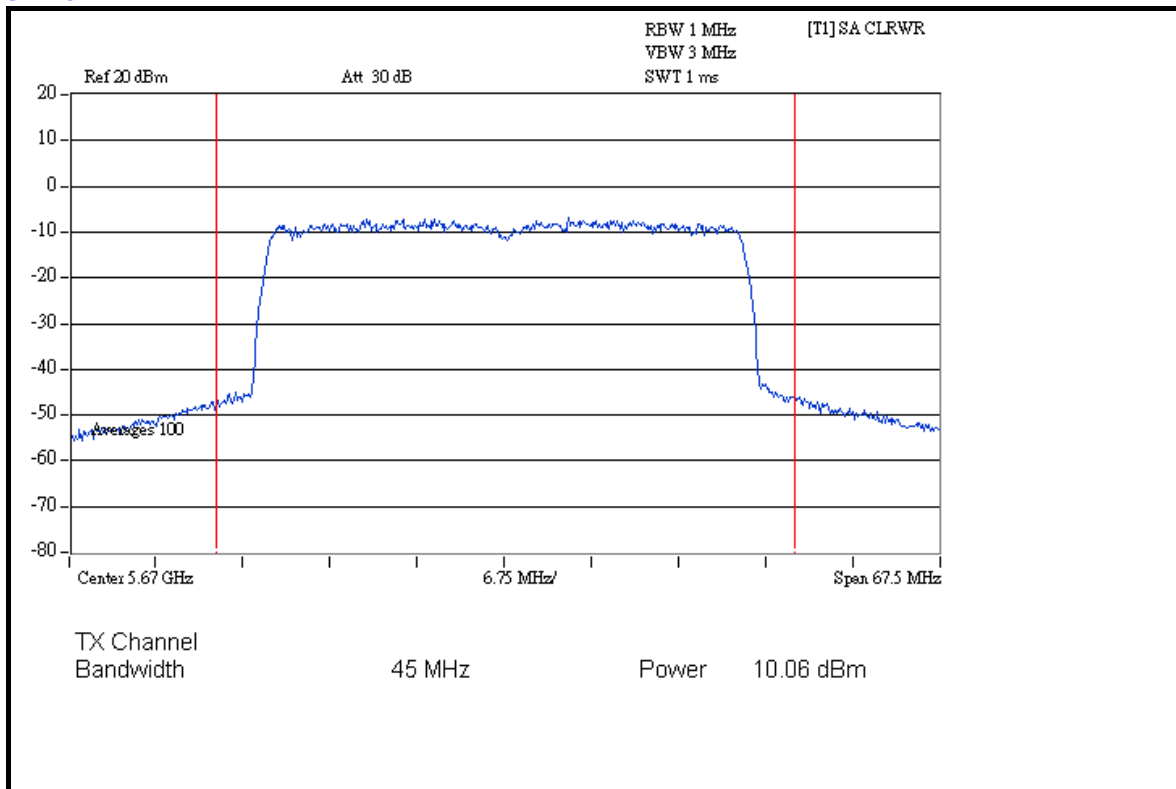


A D T

### CH 118



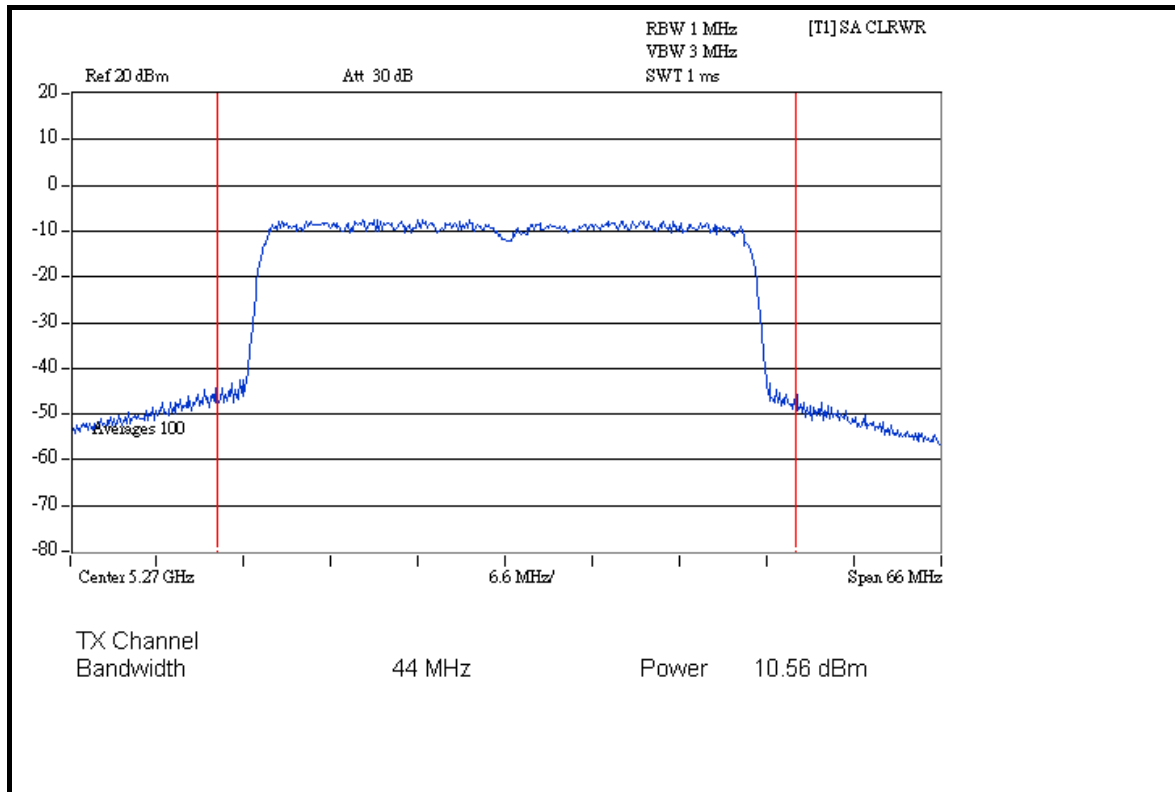
### CH 134



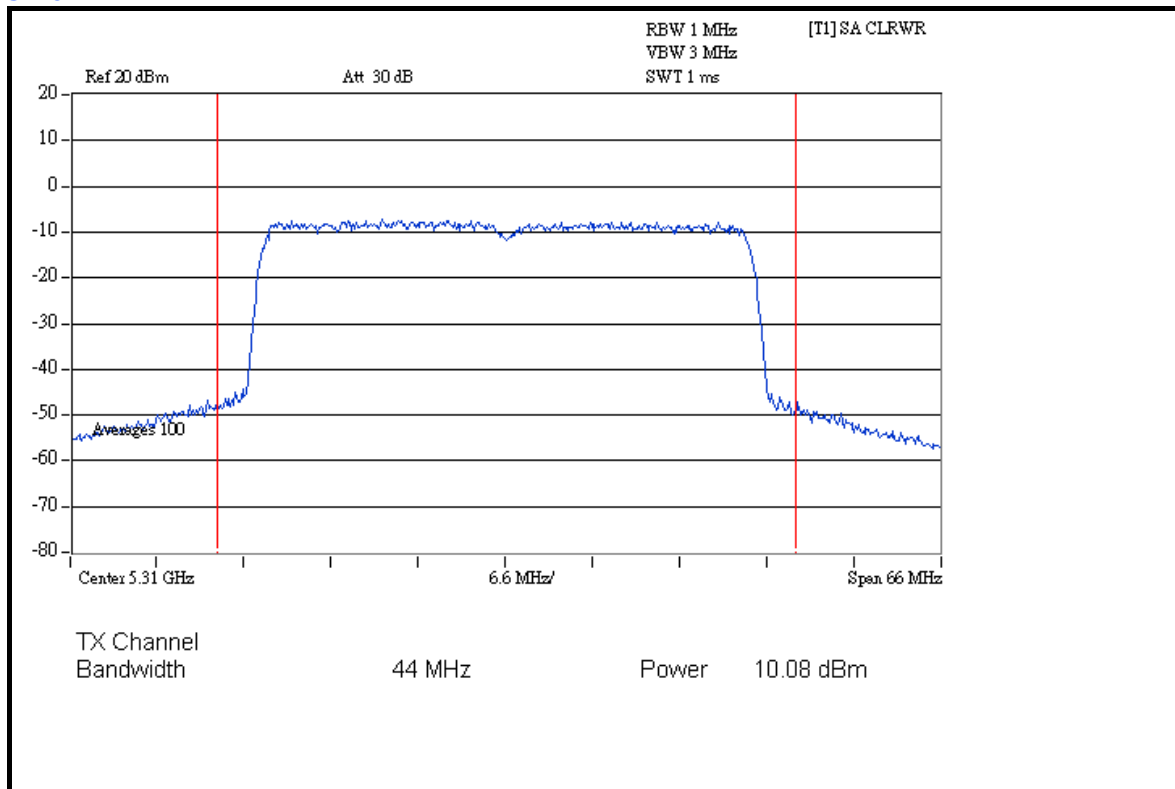


A D T

### CHAIN 1: CH 54



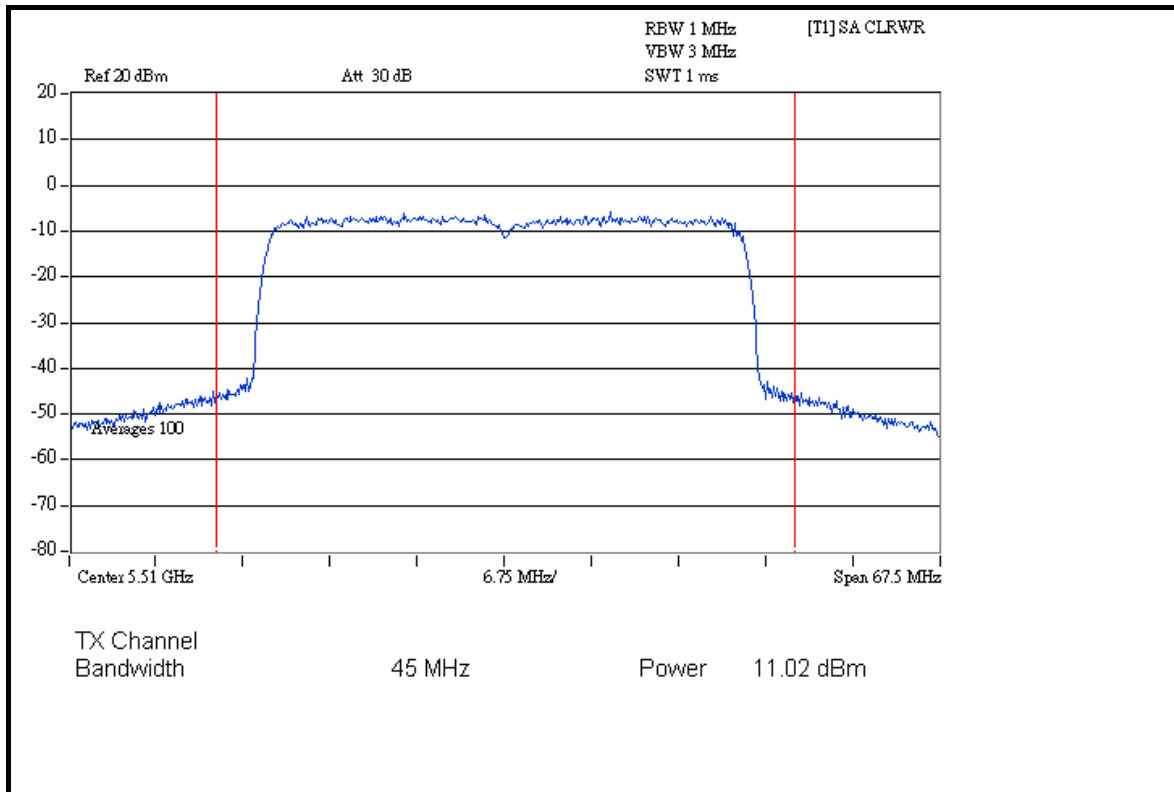
### CH 62



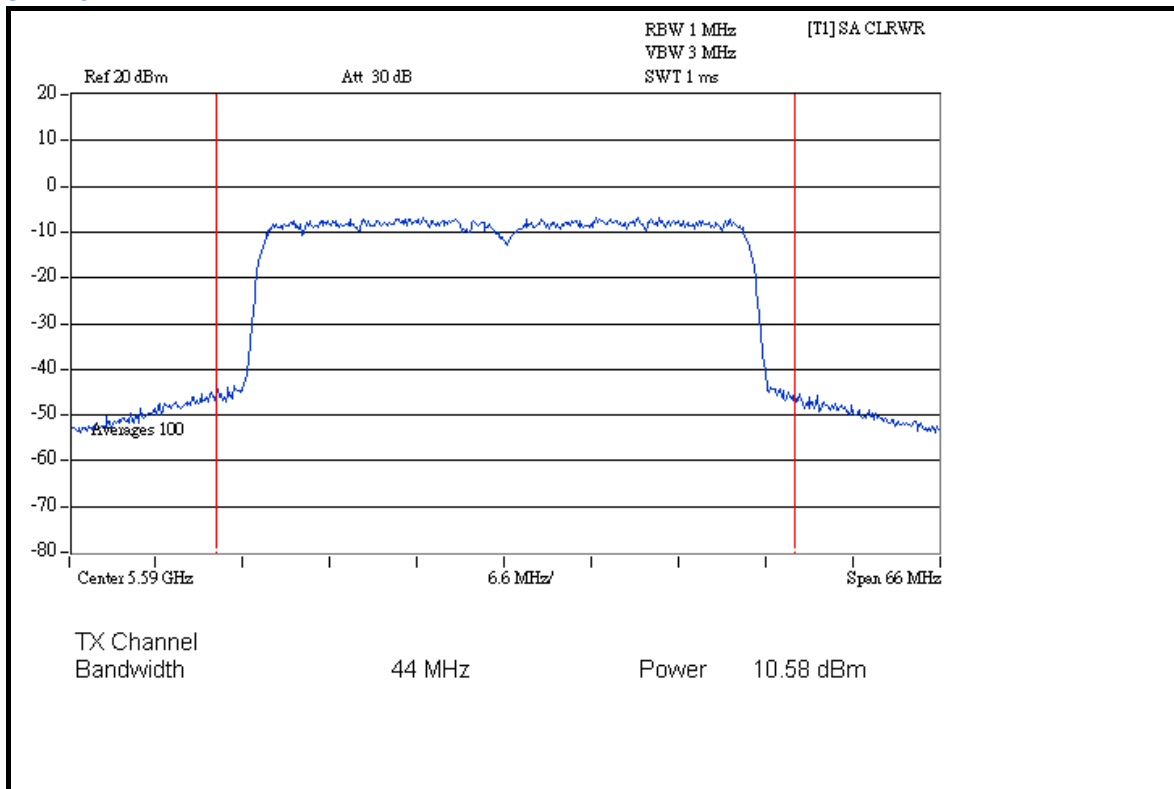


A D T

### CH 102



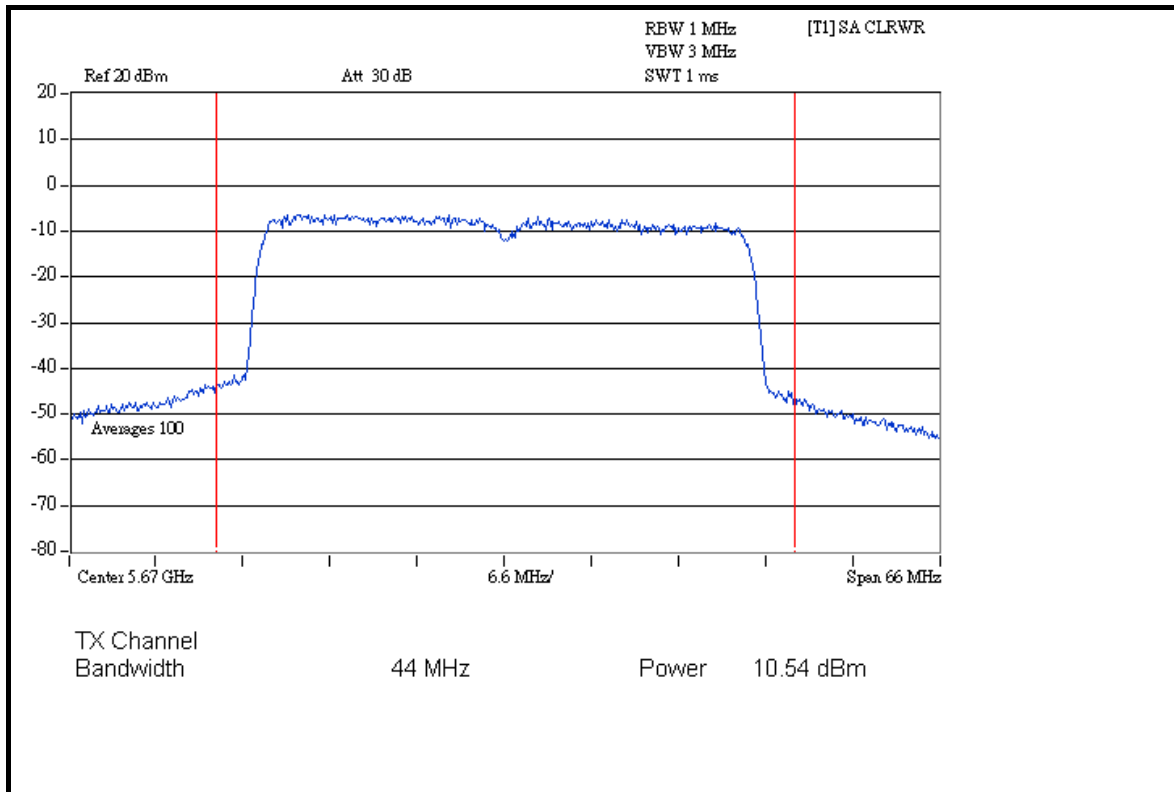
### CH 118



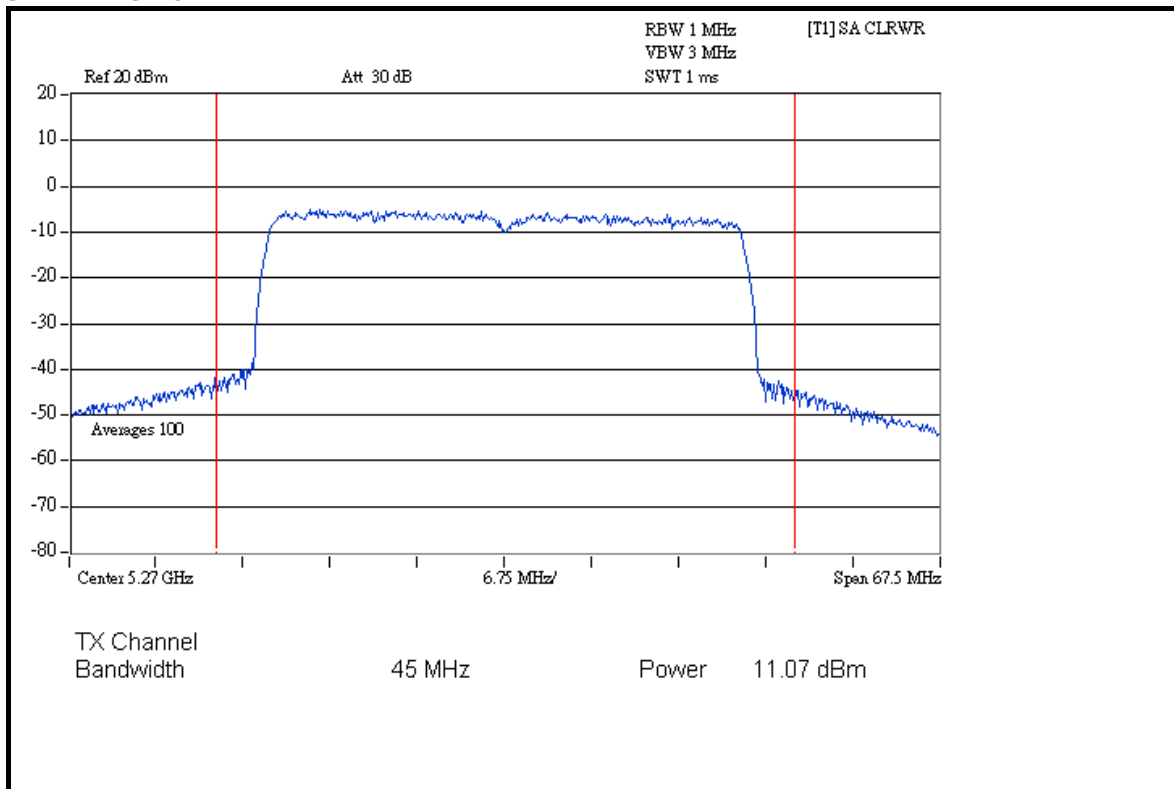


A D T

### CH 134



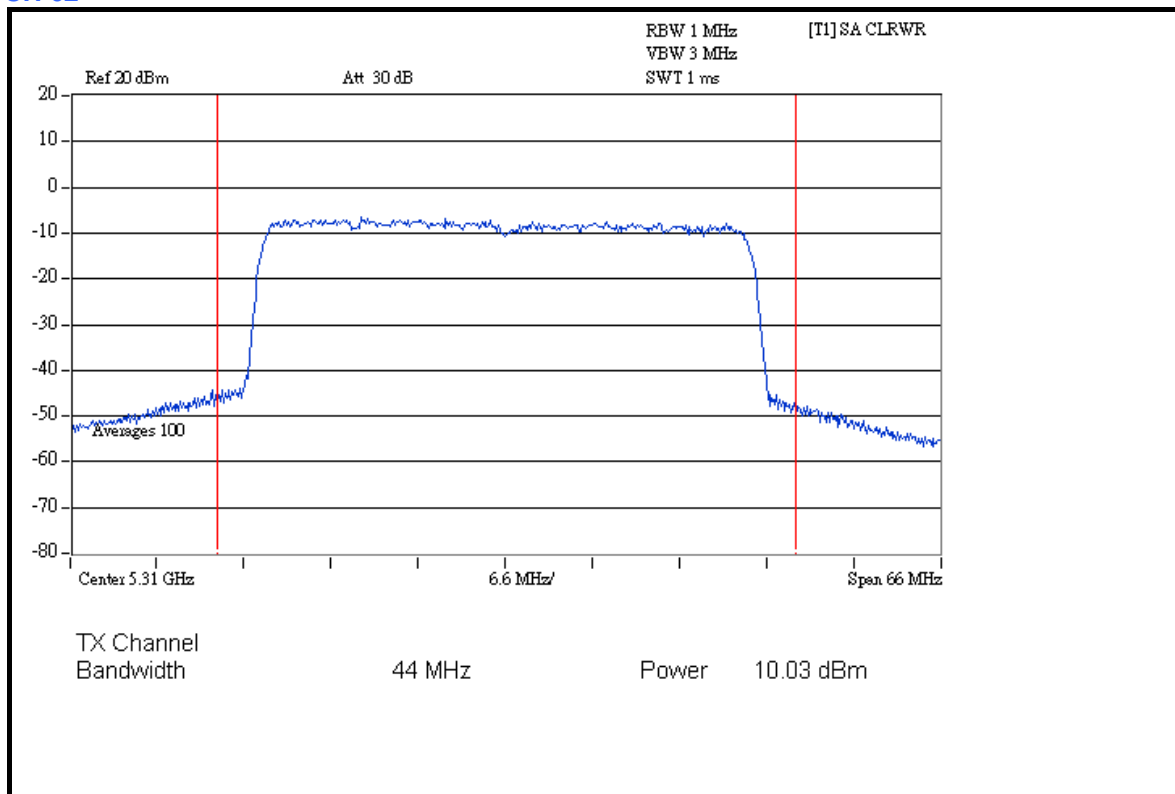
### CHAIN 2: CH 54



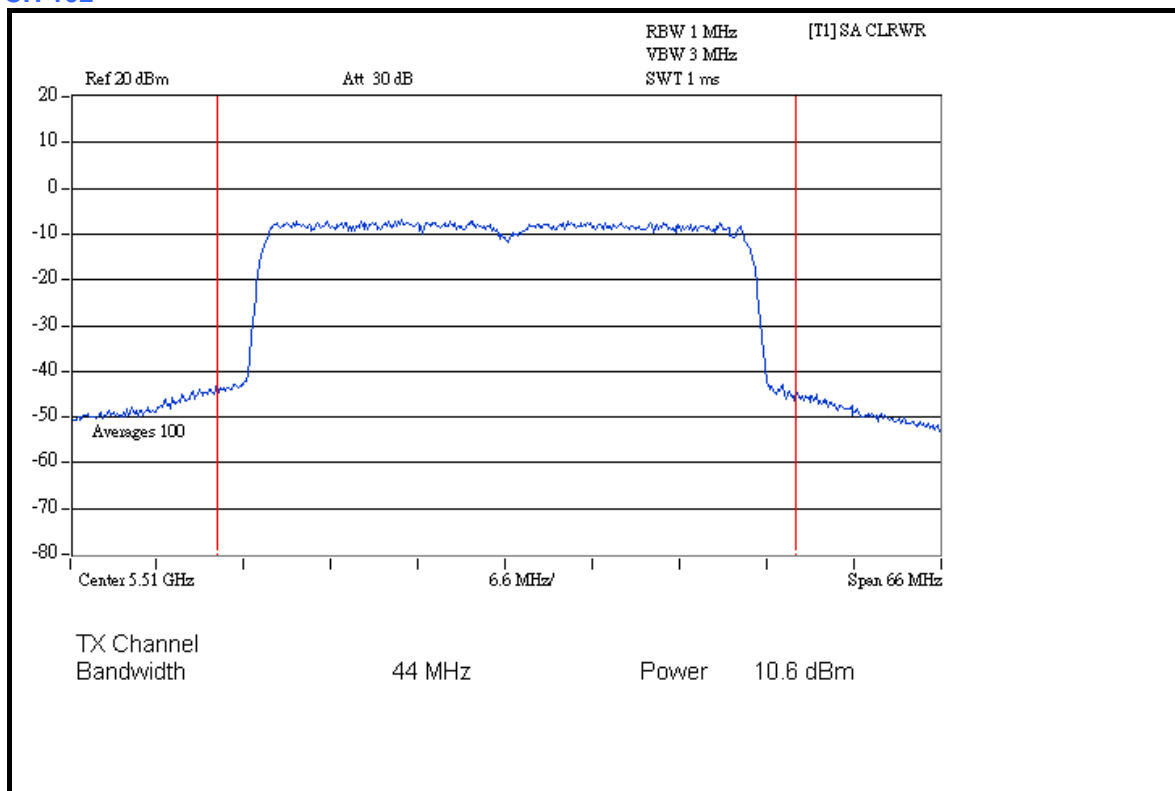


A D T

### CH 62

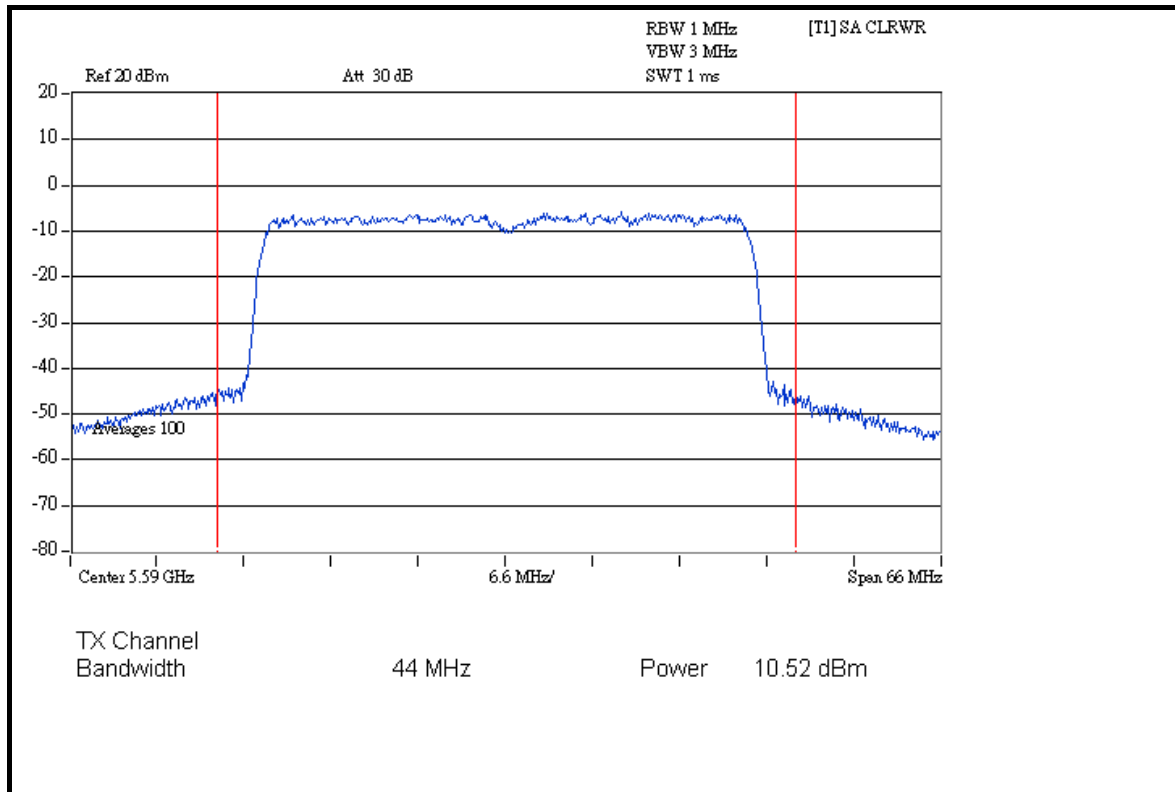


### CH 102

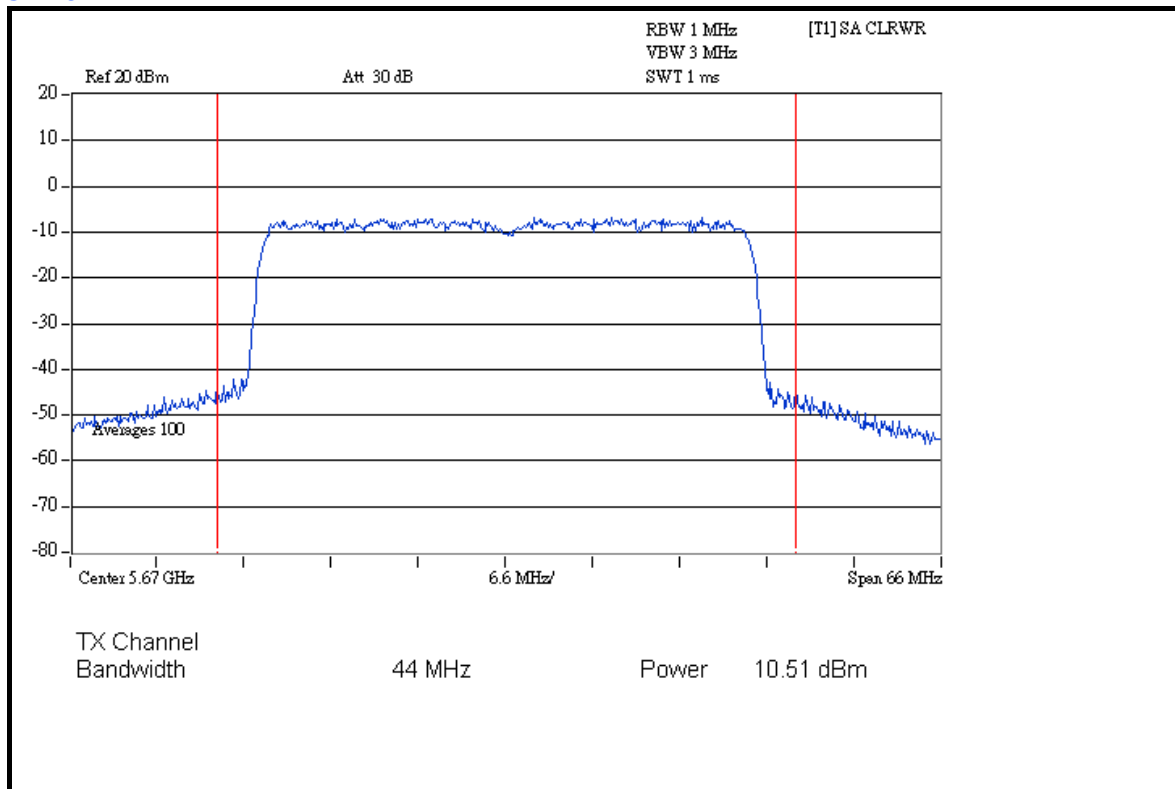




### CH 118



### CH 134







A D T

**26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION**

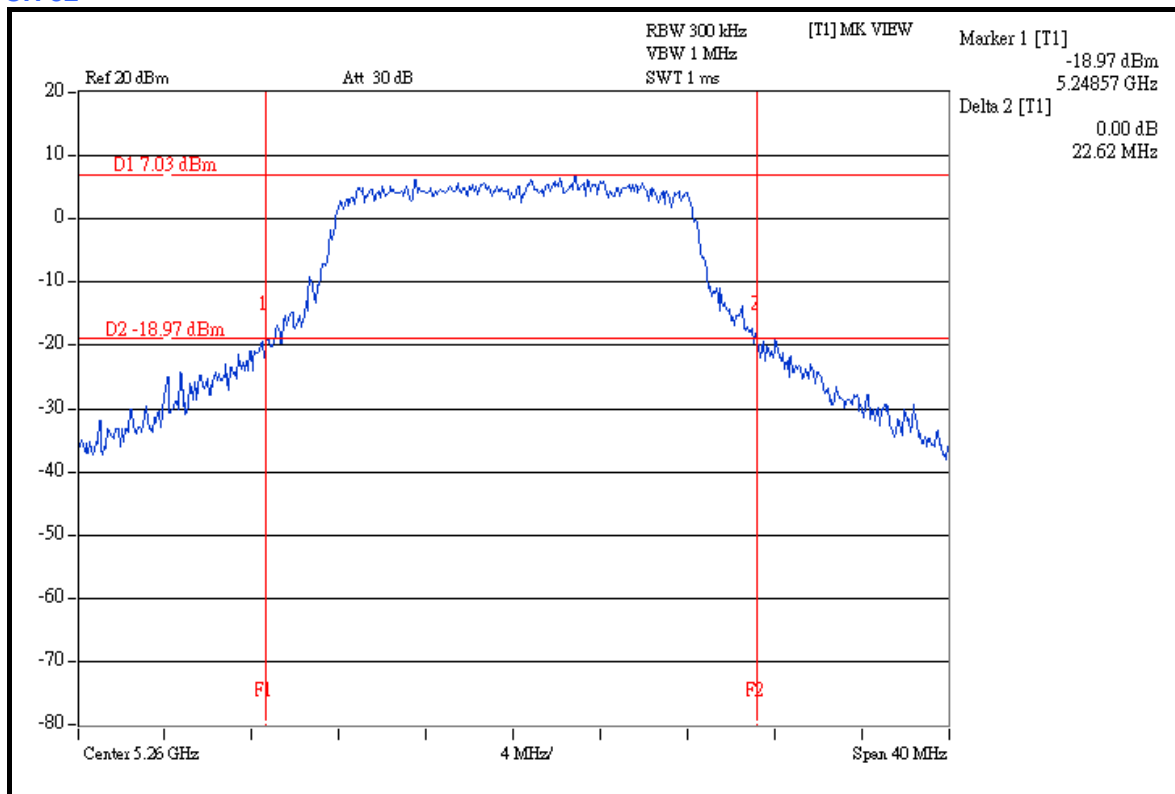
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>26dBc OCCUPIED BANDWIDTH (MHz)</b>	<b>PASS / FAIL</b>
52	5260	22.62	PASS
60	5300	22.62	PASS
64	5320	23.77	PASS
100	5500	23.44	PASS
120	5600	23.28	PASS
140	5700	28.92	PASS

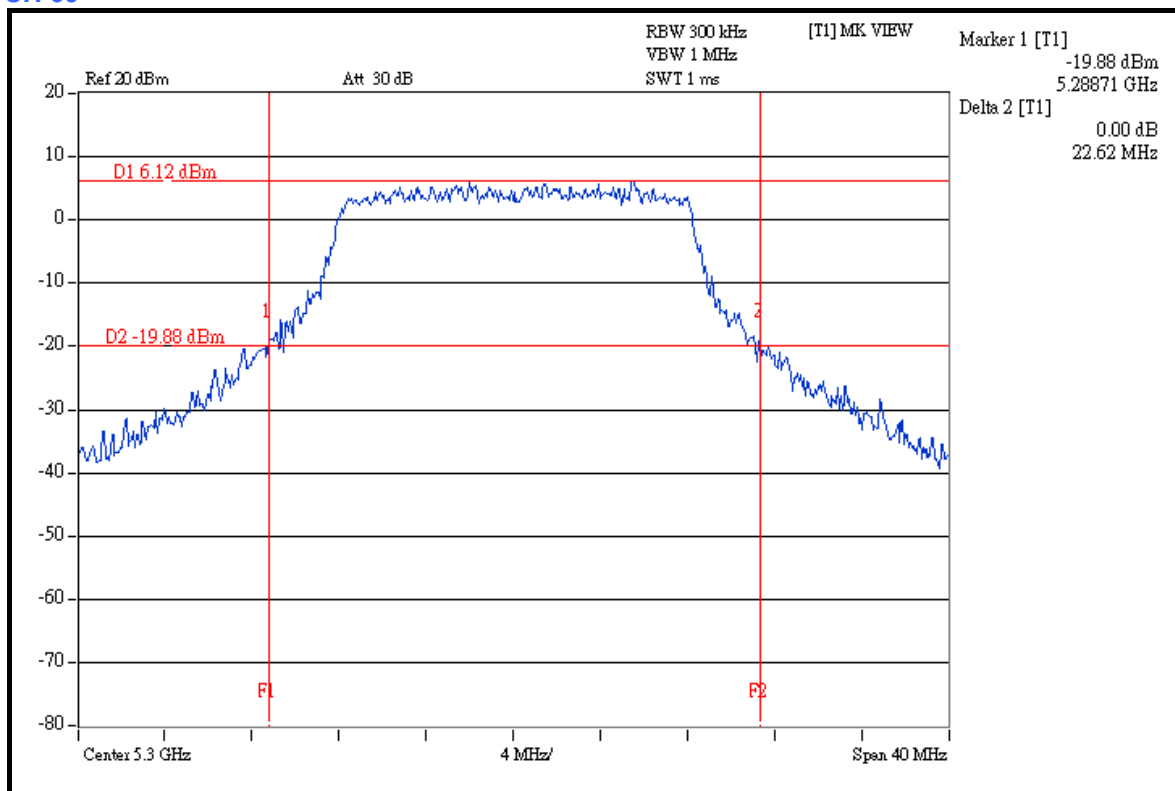


A D T

### CH 52



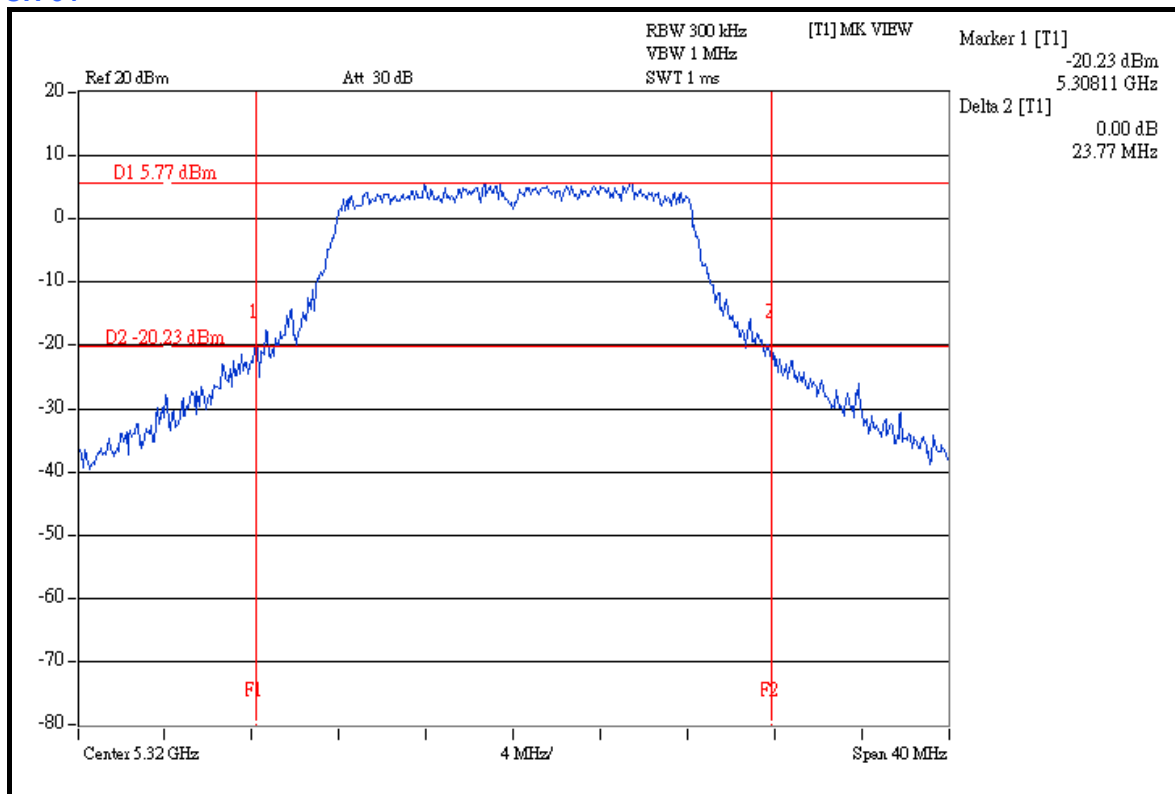
### CH 60



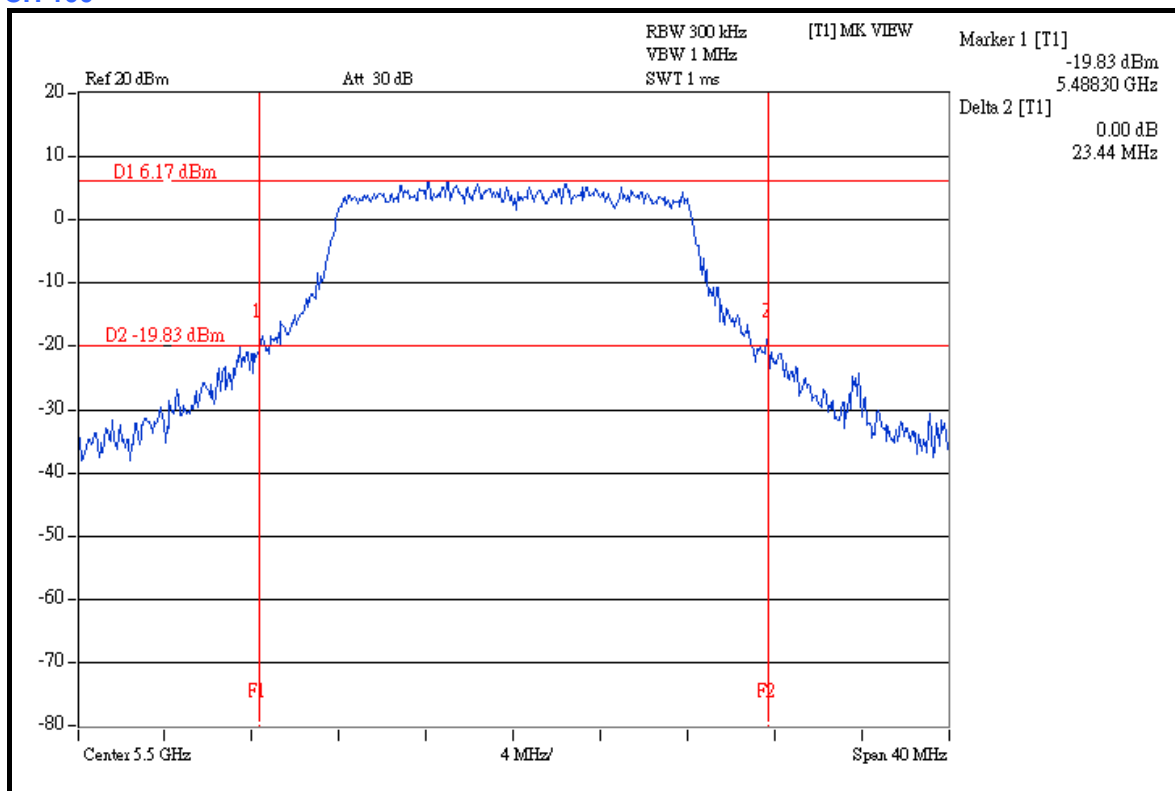


A D T

### CH 64



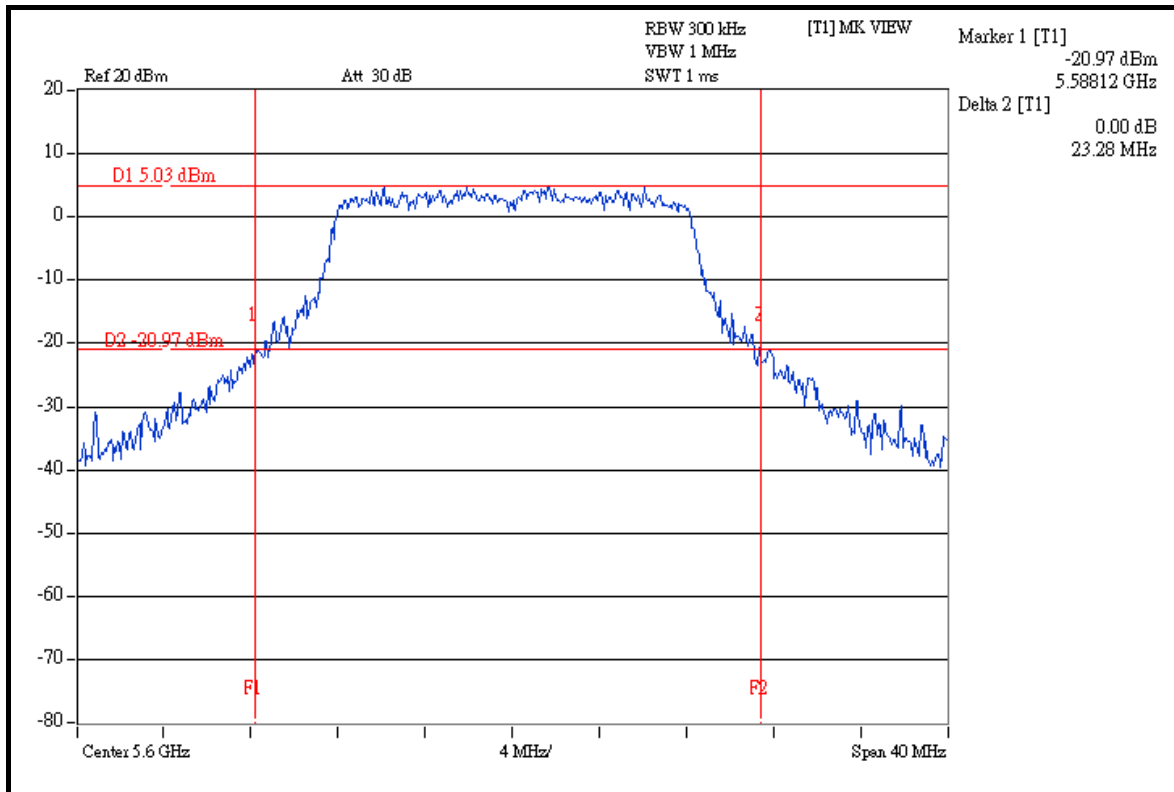
### CH 100



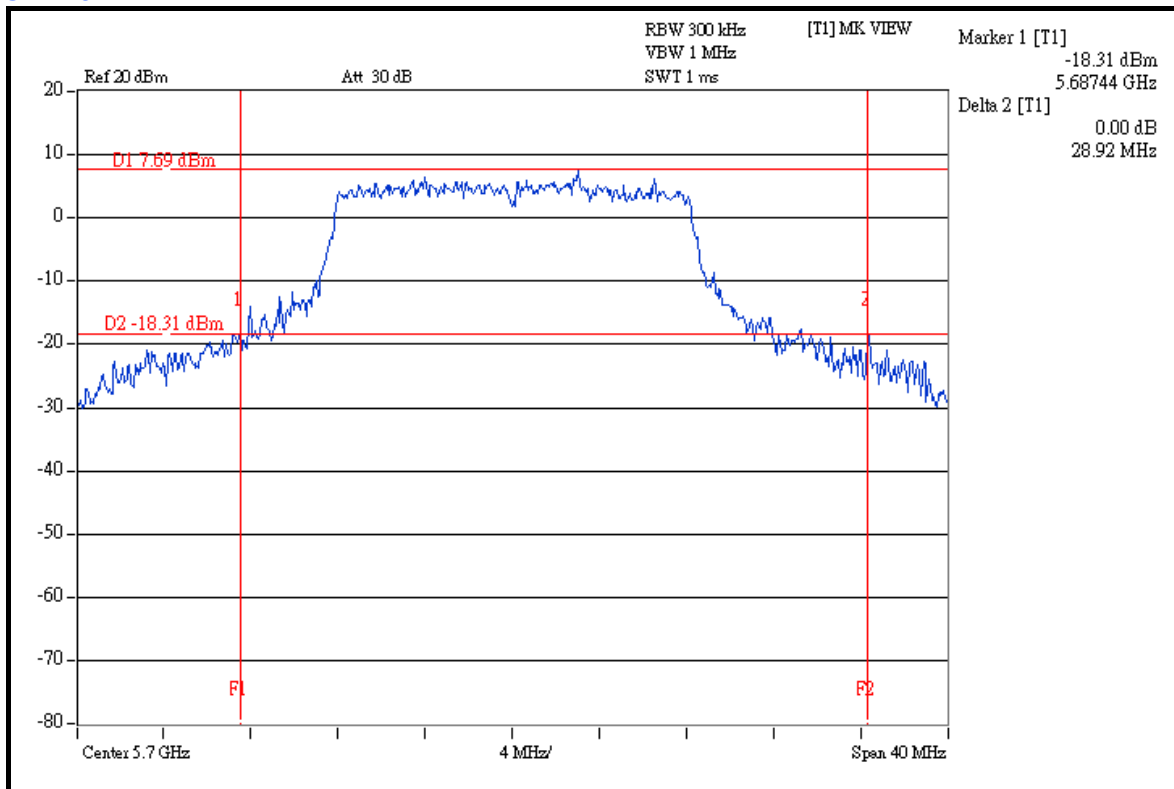


A D T

### CH 120



### CH 140





A D T

### DRAFT 802.11n (20MHz) OFDM MODULATION

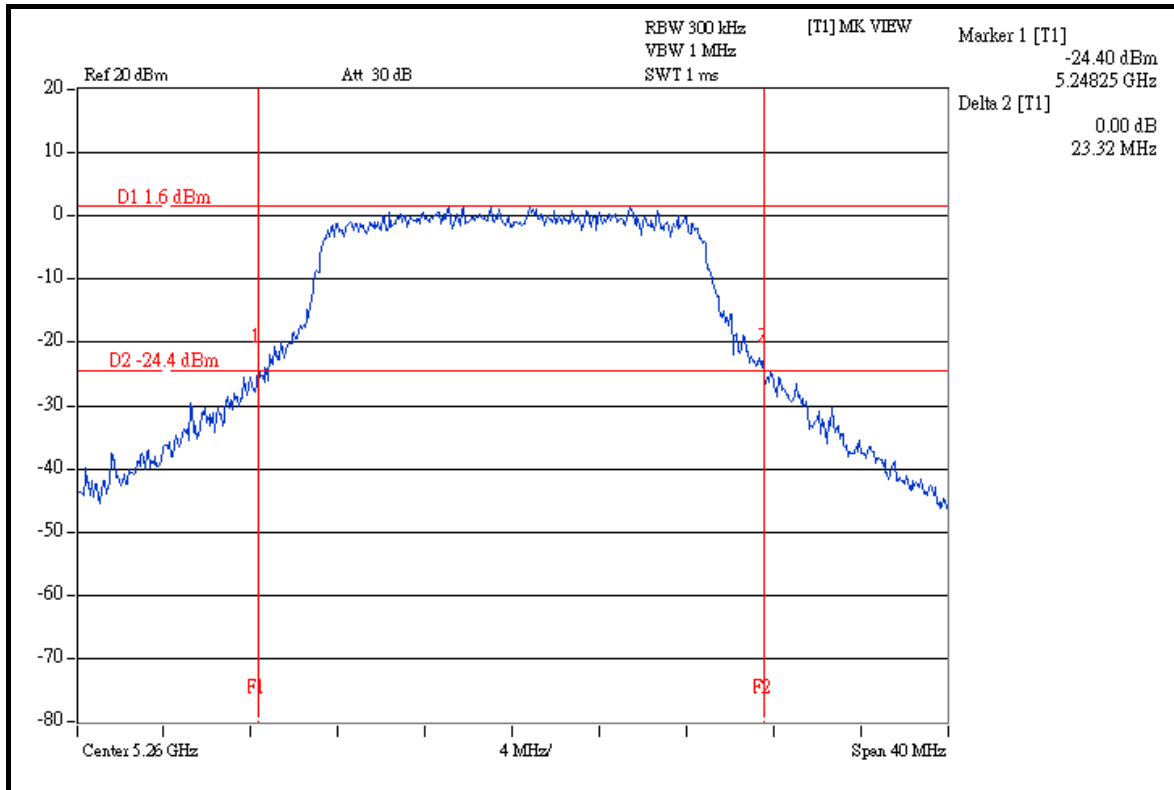
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	7.2Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	23.32	23.48	22.85	PASS
60	5300	23.59	23.05	23.30	PASS
64	5320	22.88	23.66	23.46	PASS
100	5500	23.44	23.45	22.94	PASS
120	5600	24.02	23.40	23.76	PASS
140	5700	23.45	23.48	23.40	PASS

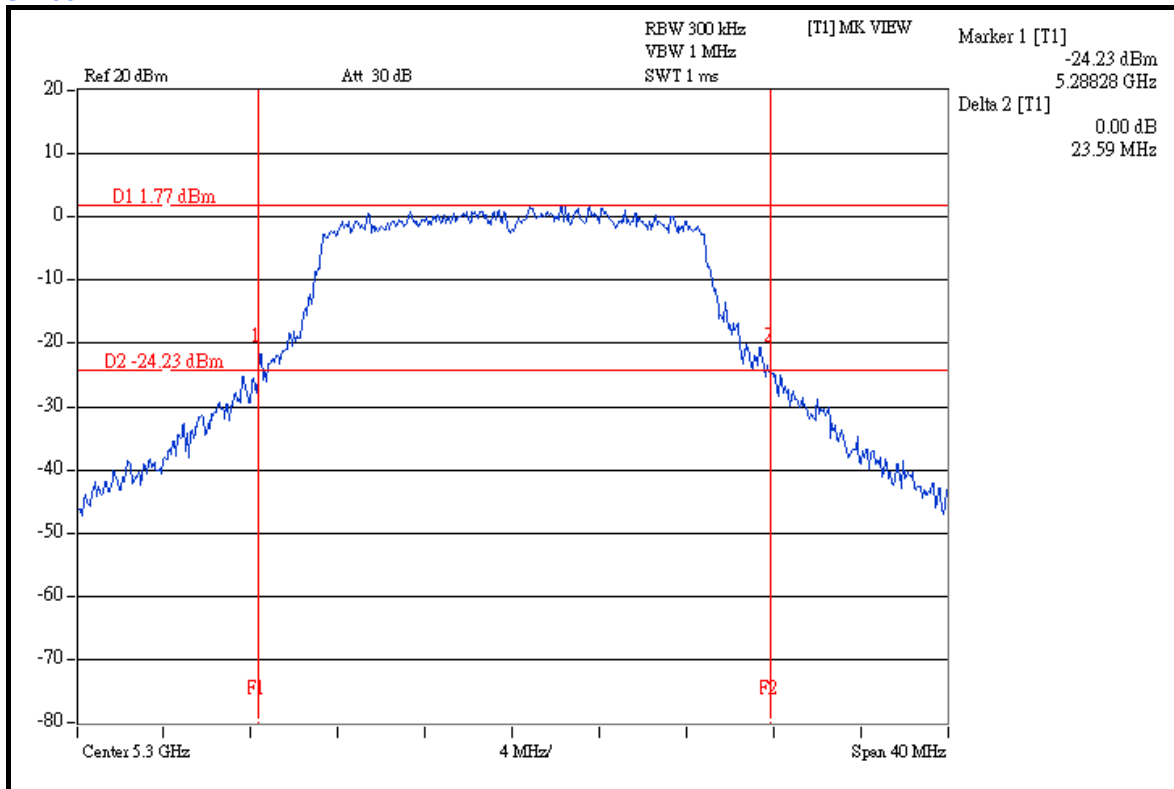


A D T

### CHAIN 0: CH 52



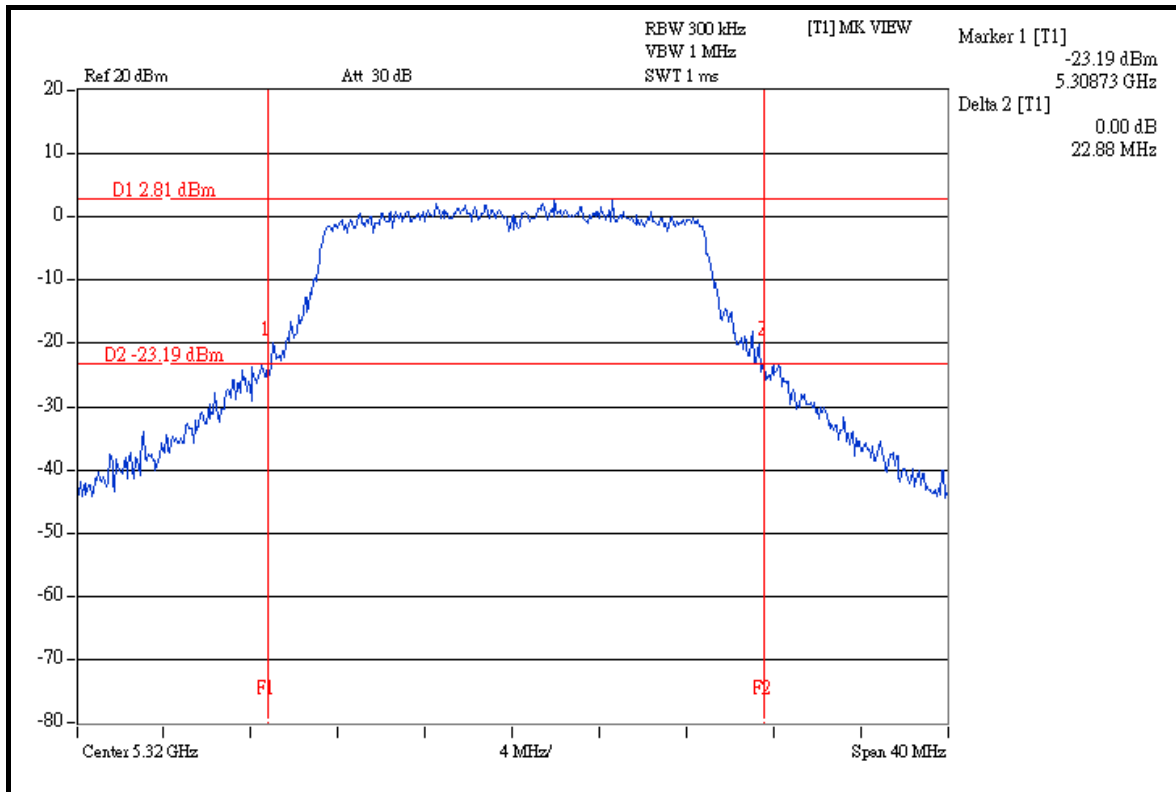
### CH 60



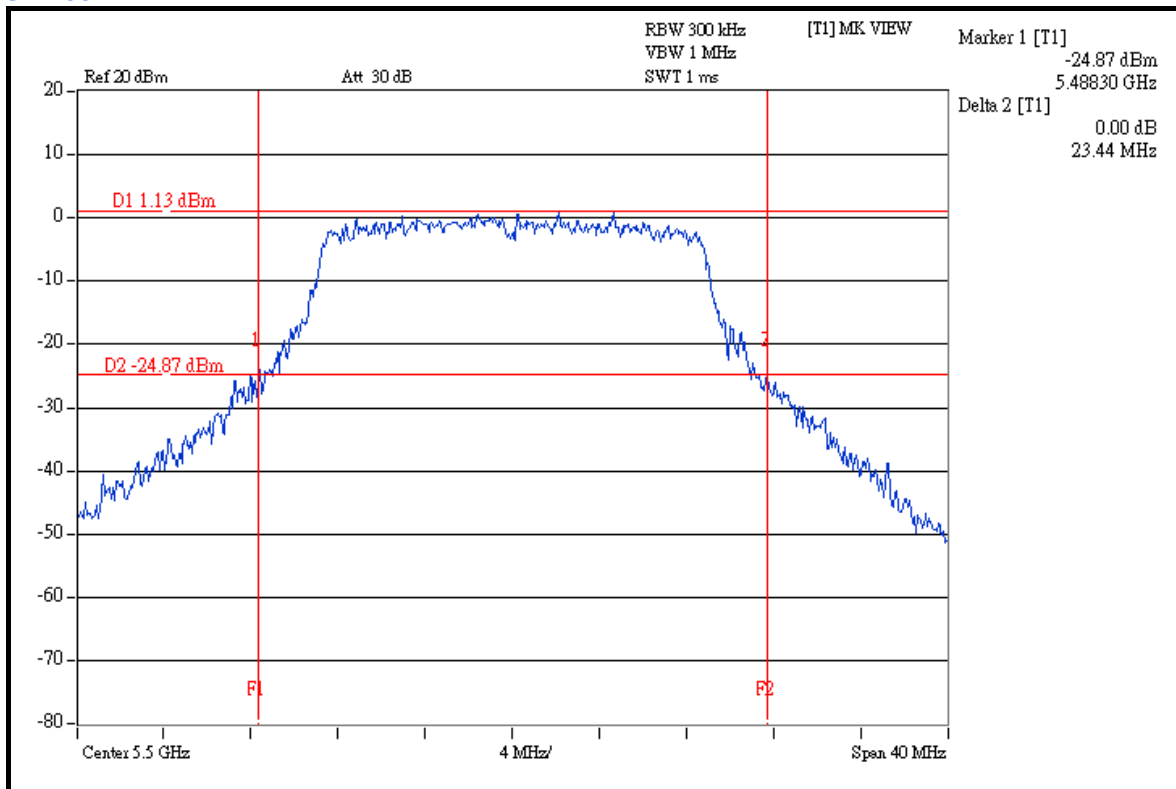


A D T

### CH 64



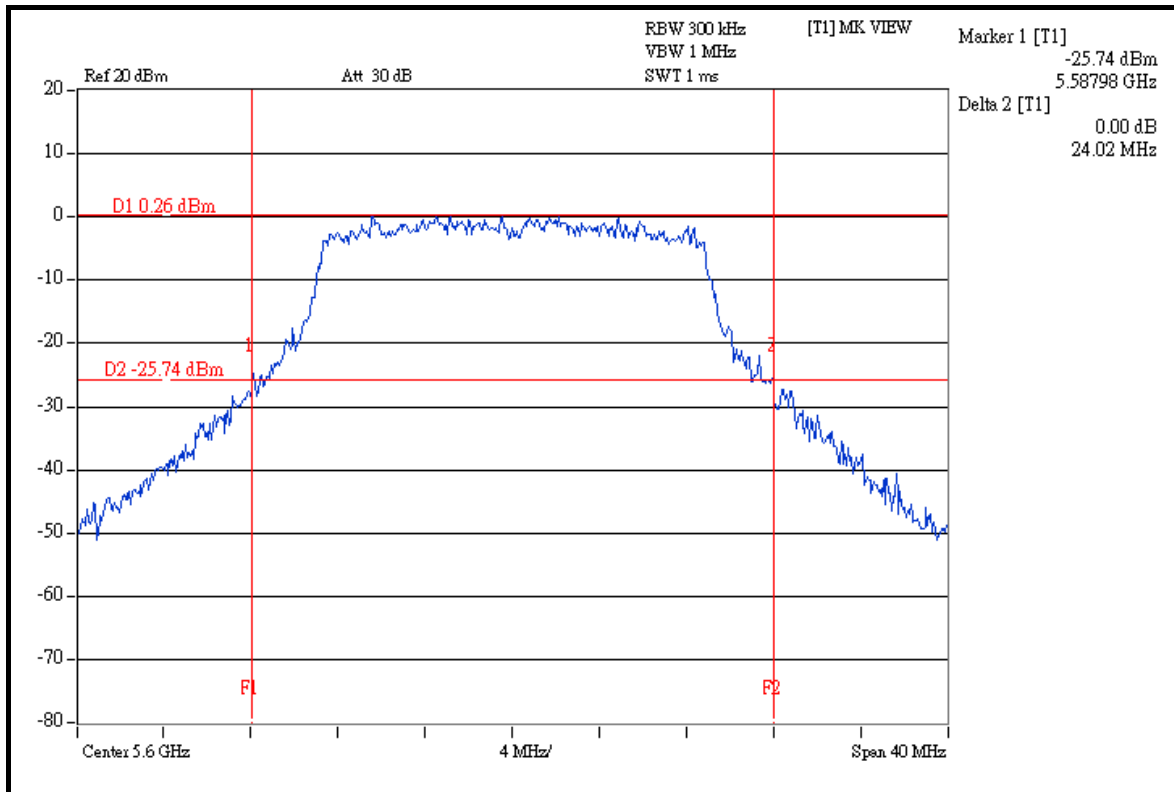
### CH 100



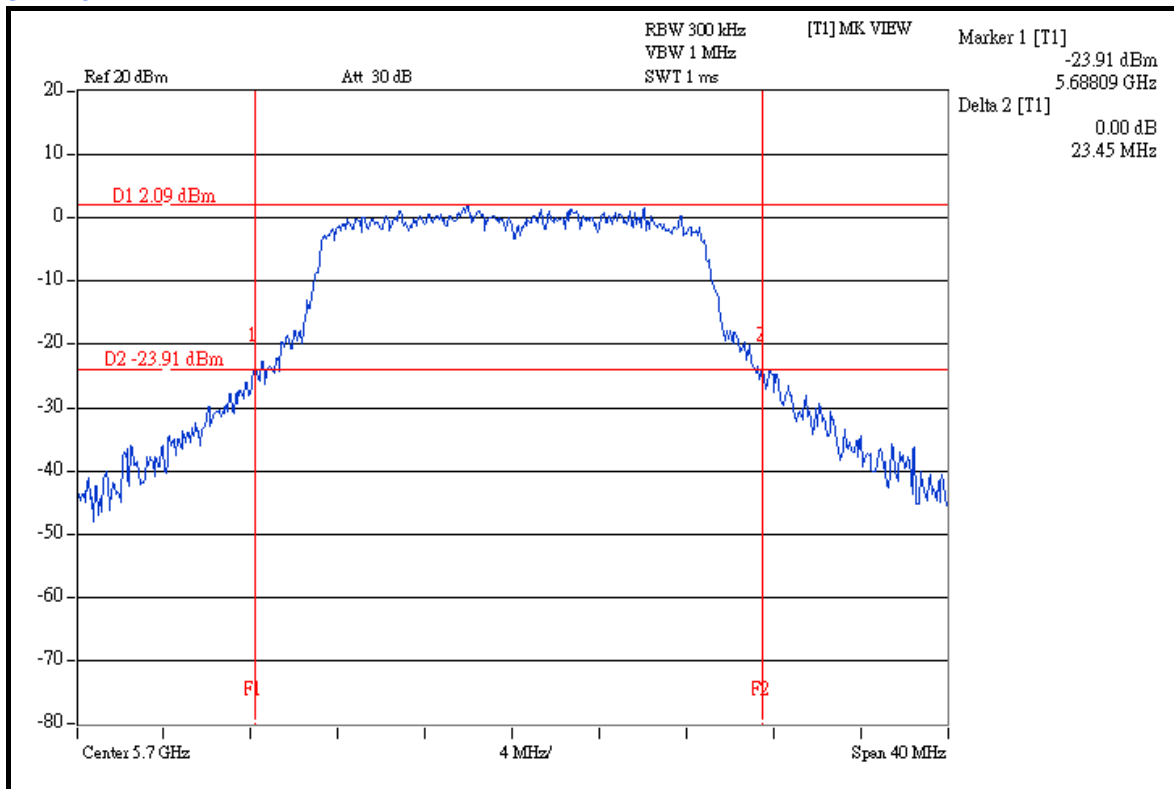


A D T

### CH 120



### CH 140

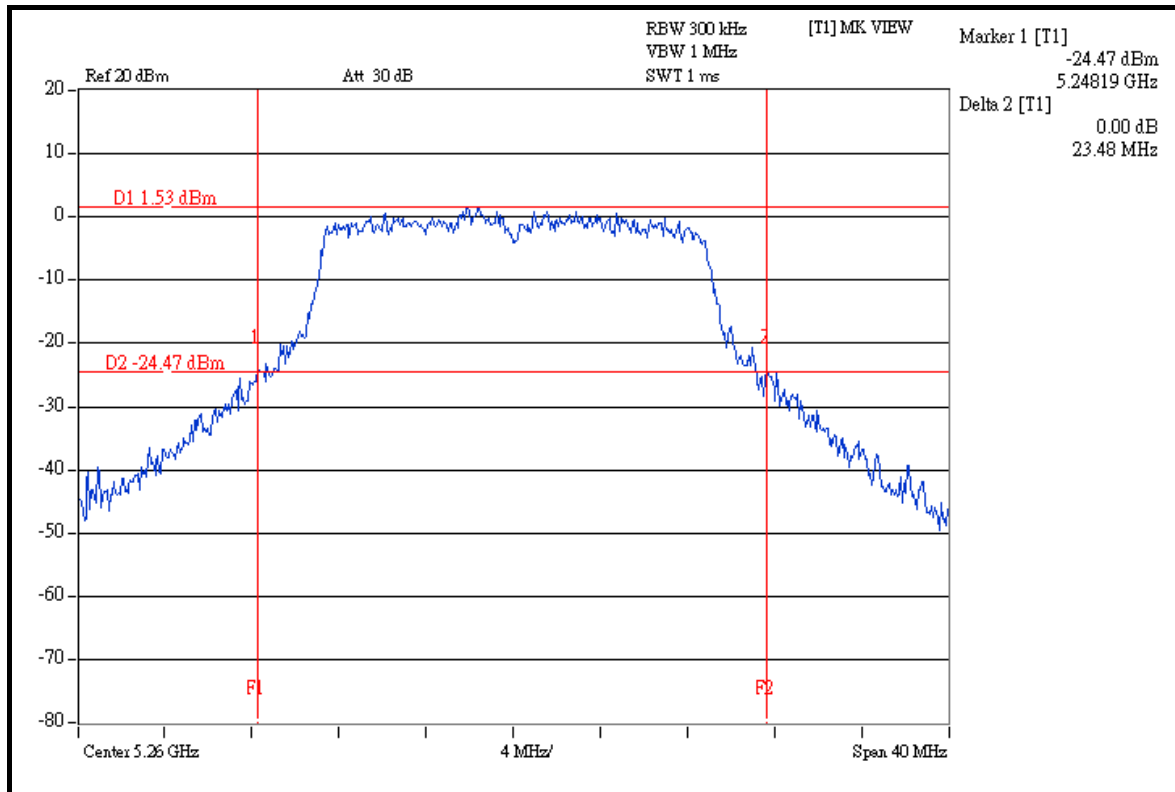




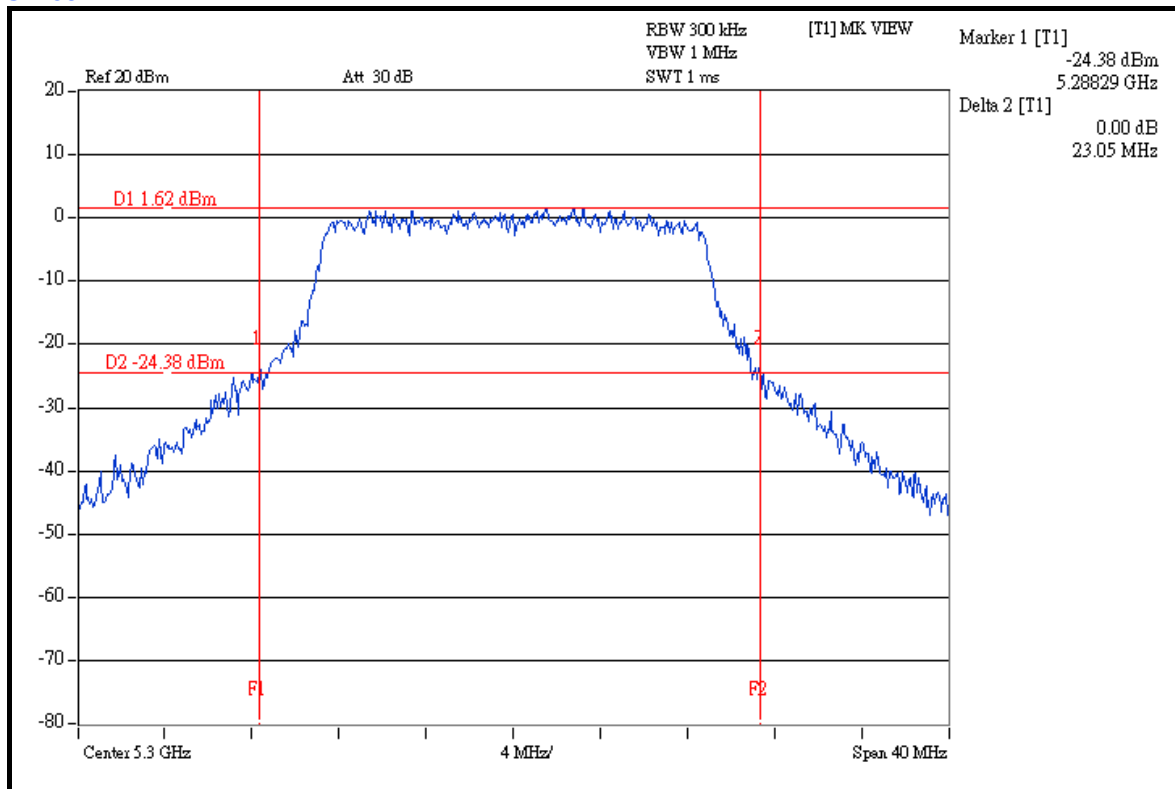


A D T

### CHAIN 1: CH 52



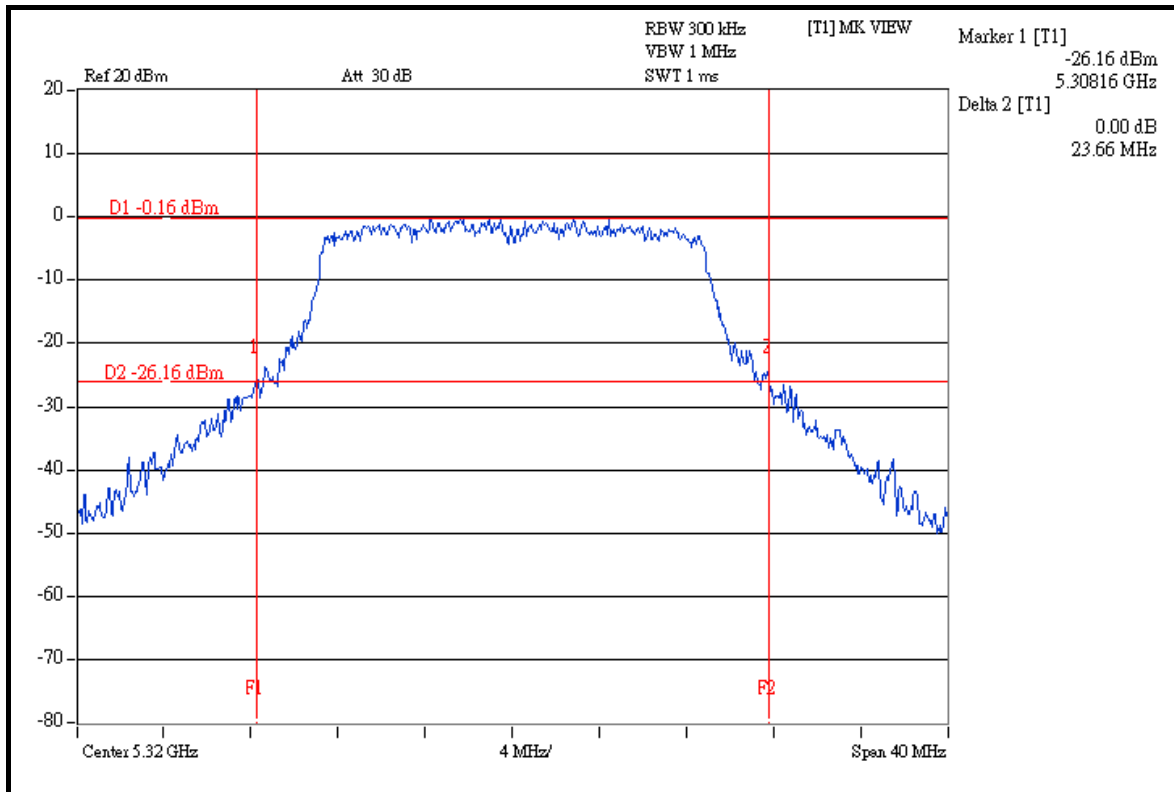
### CH 60



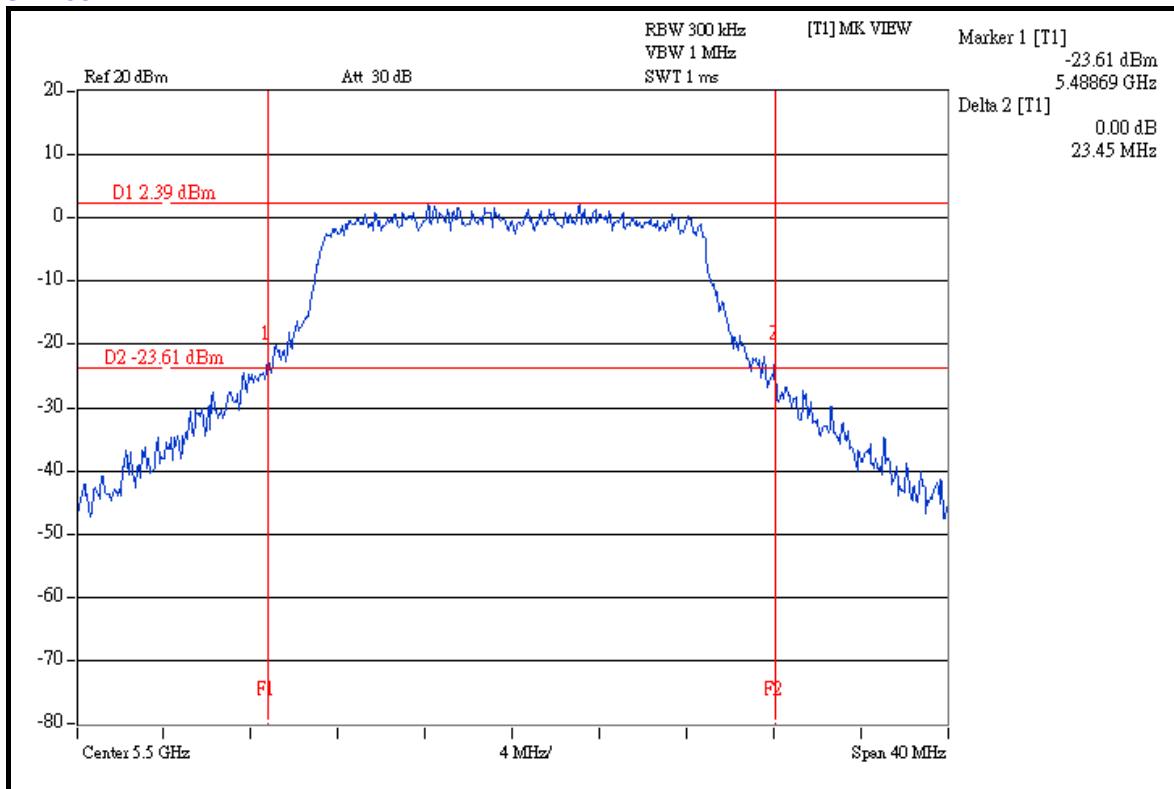


A D T

### CH 64



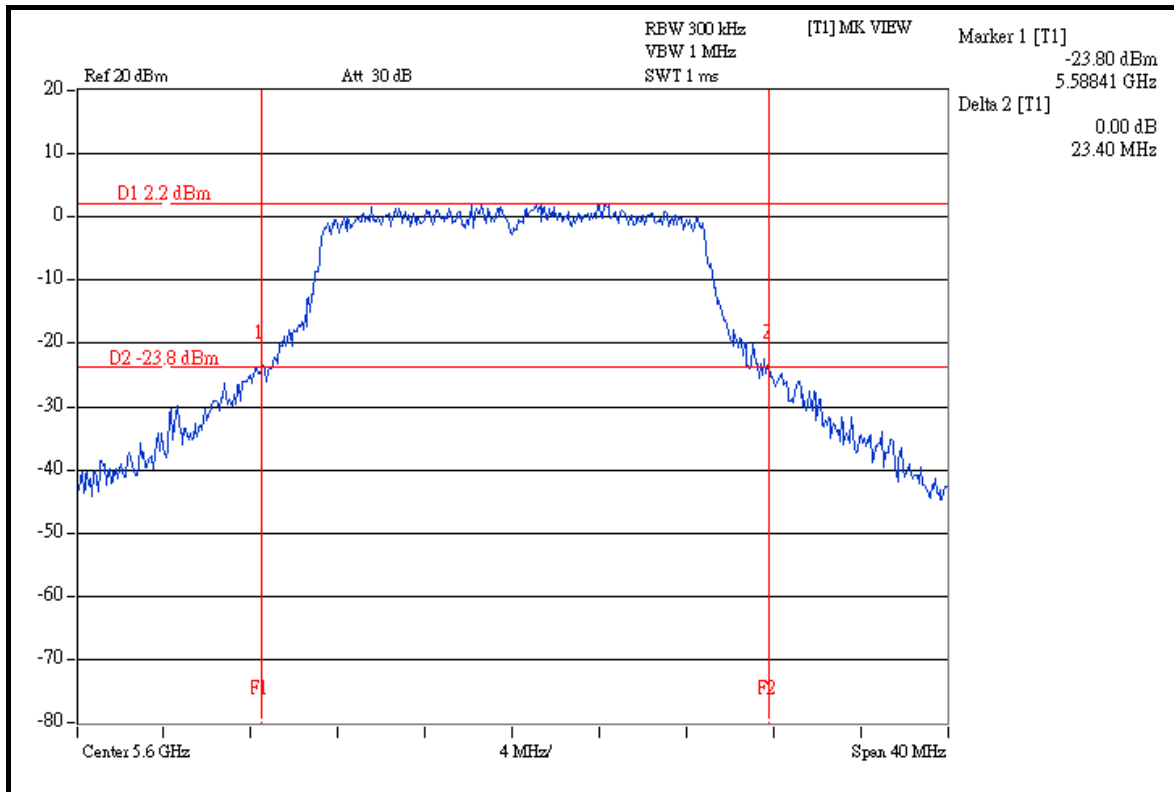
### CH 100



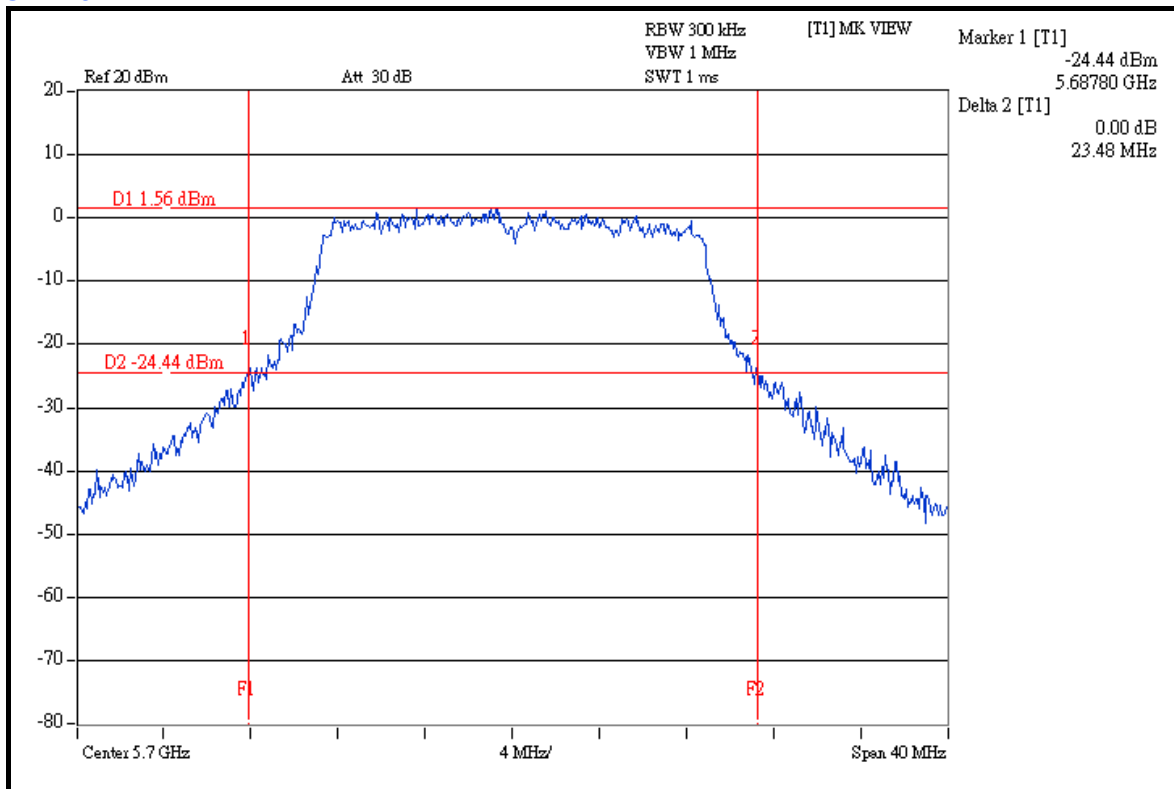


A D T

### CH 120



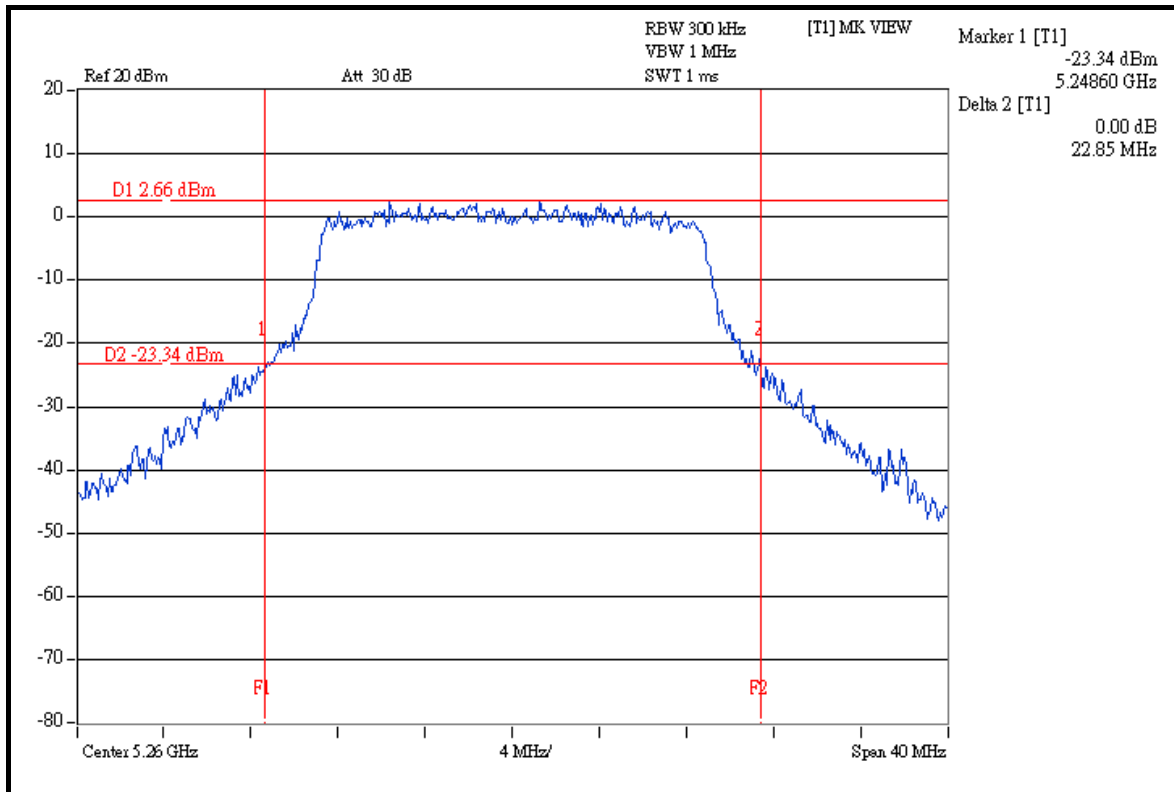
### CH 140



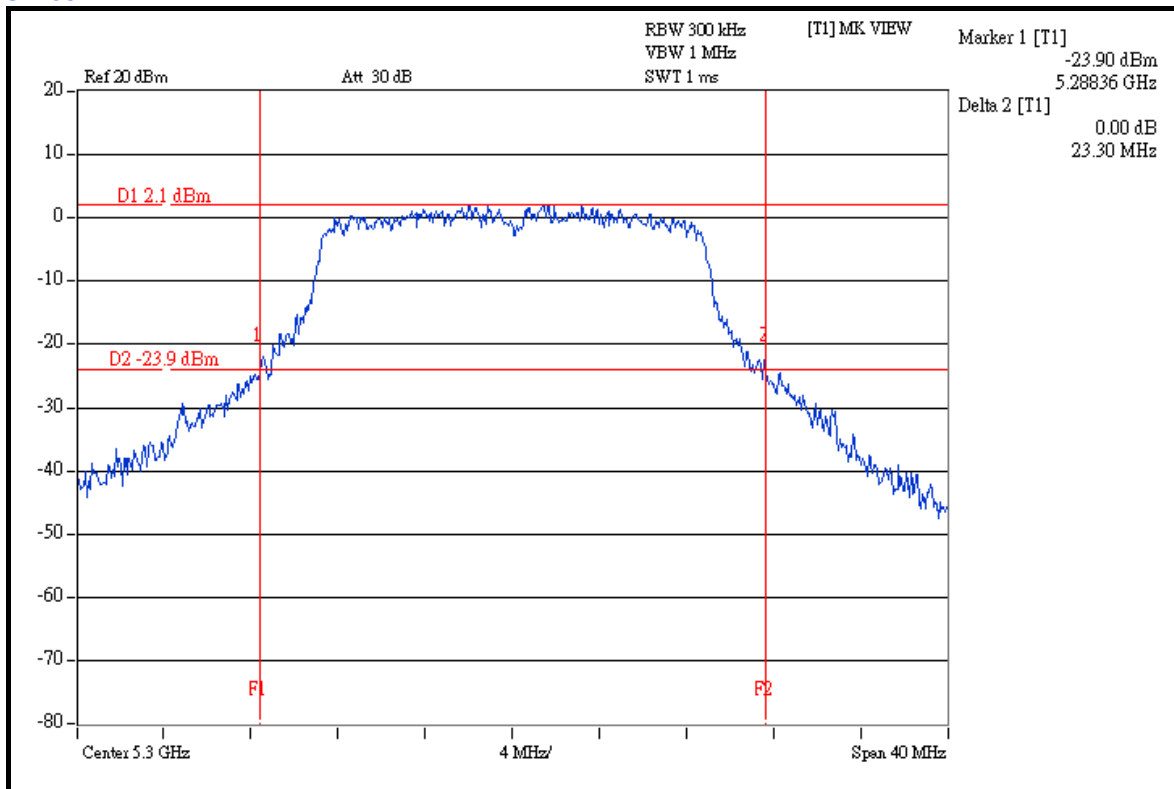


A D T

### CHAIN 2: CH 52



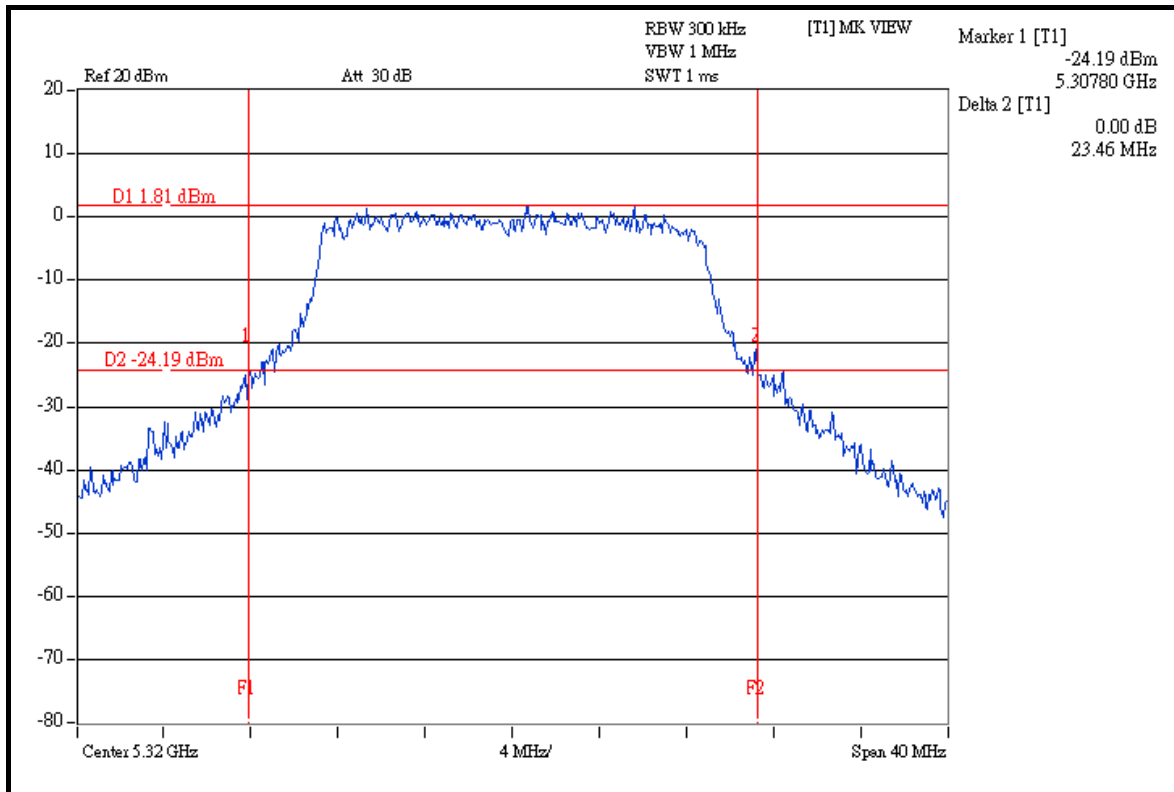
### CH 60



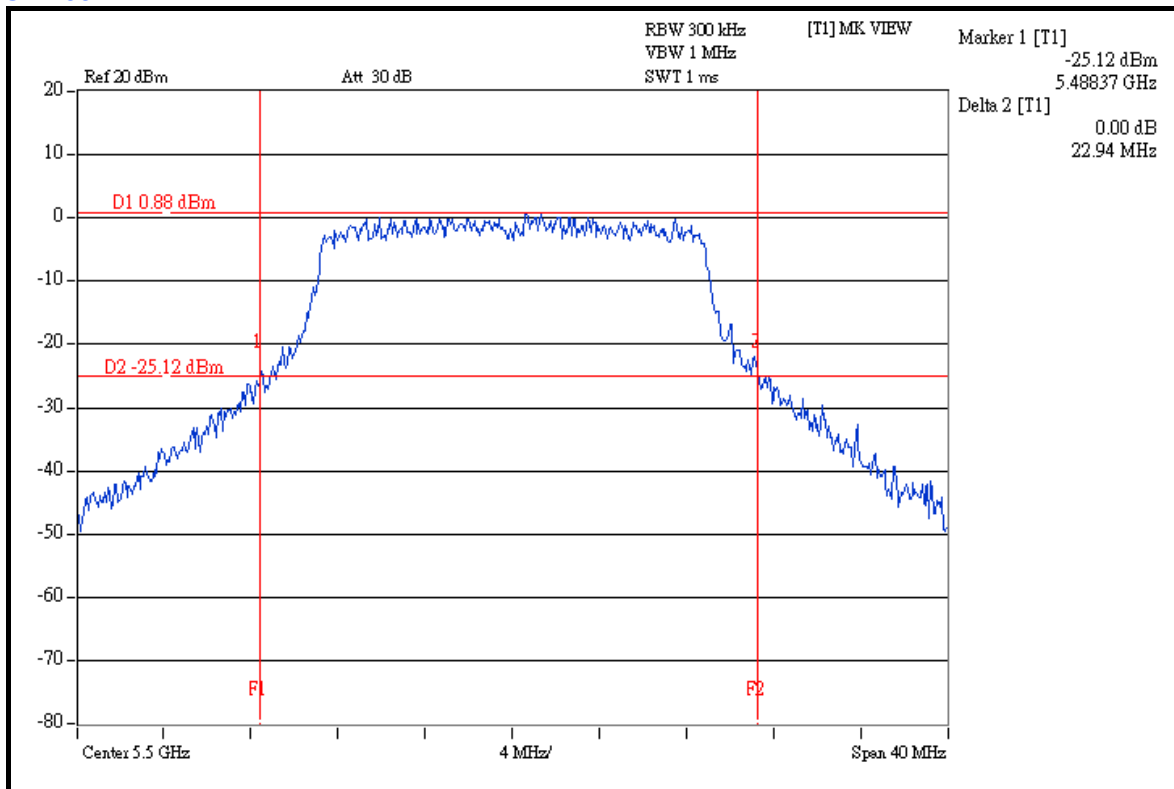


A D T

### CH 64



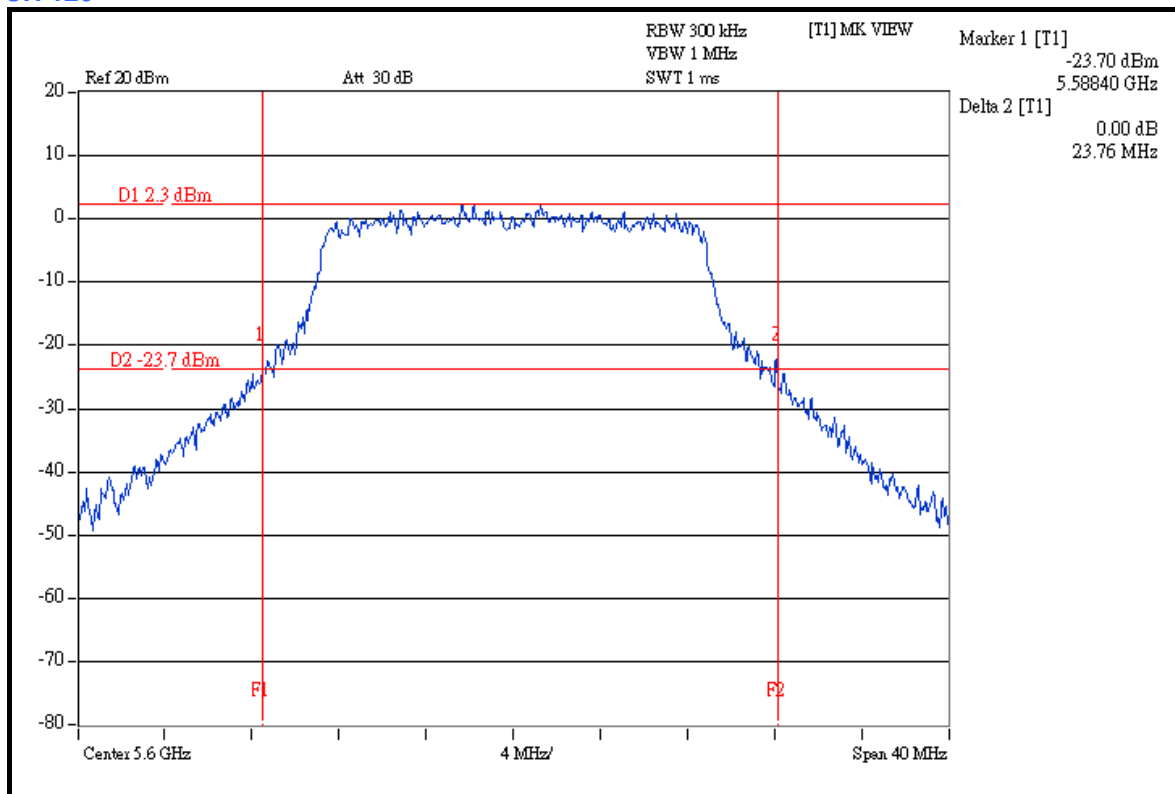
### CH 100



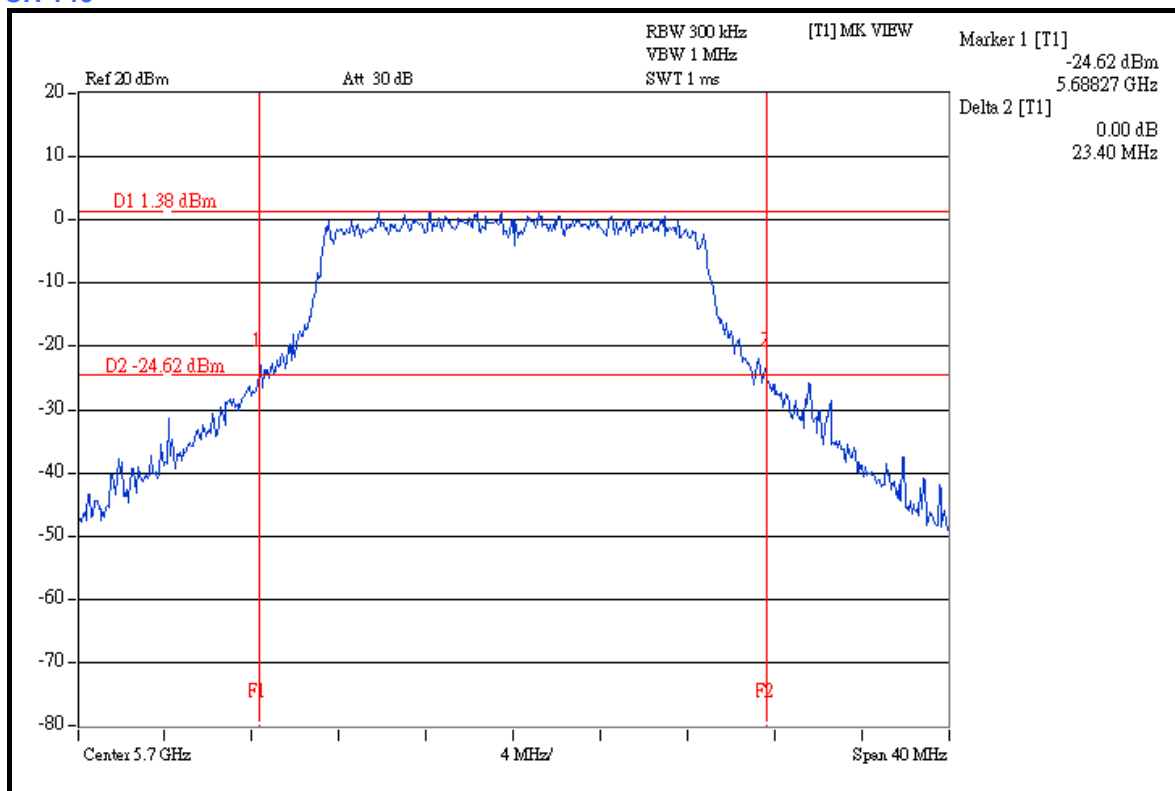


A D T

### CH 120



### CH 140





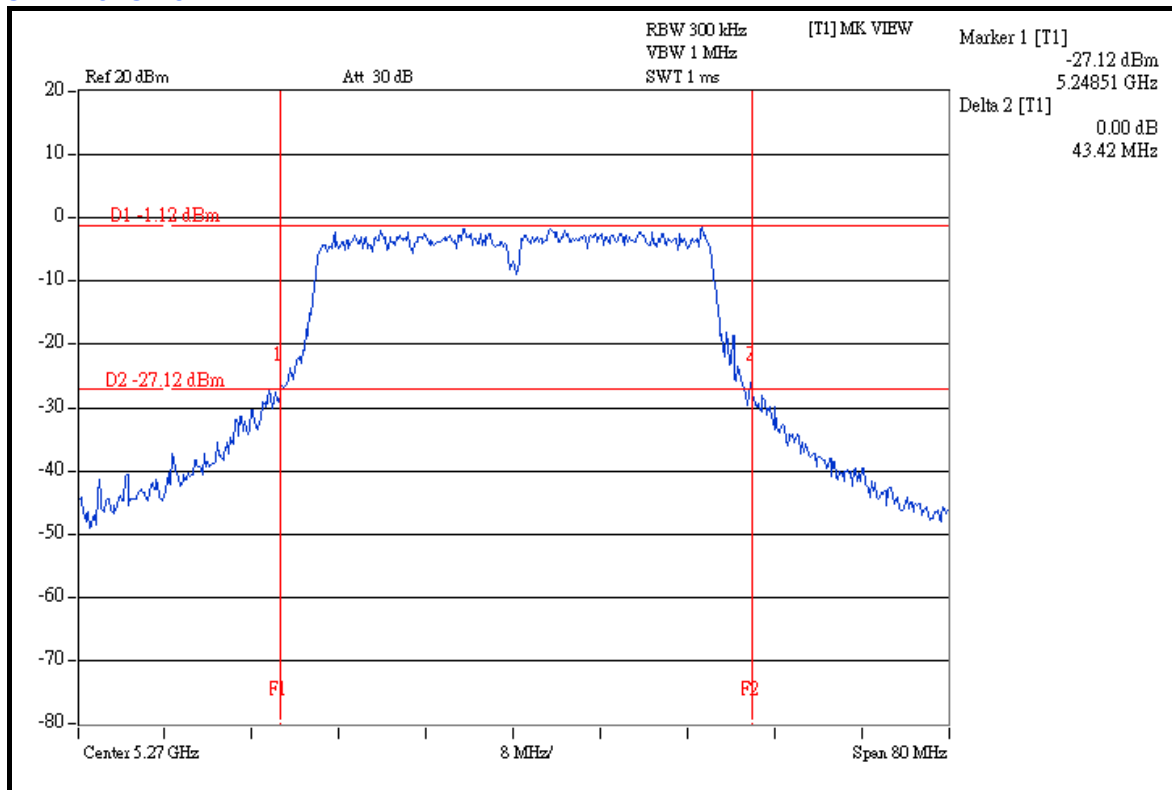
A D T

**DRAFT 802.11n (40MHz) OFDM MODULATION**

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	15.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	43.42	43.45	44.37	PASS
62	5310	44.76	43.11	43.93	PASS
102	5510	44.03	44.80	43.41	PASS
118	5590	44.20	43.90	43.61	PASS
134	5670	44.02	43.16	43.82	PASS

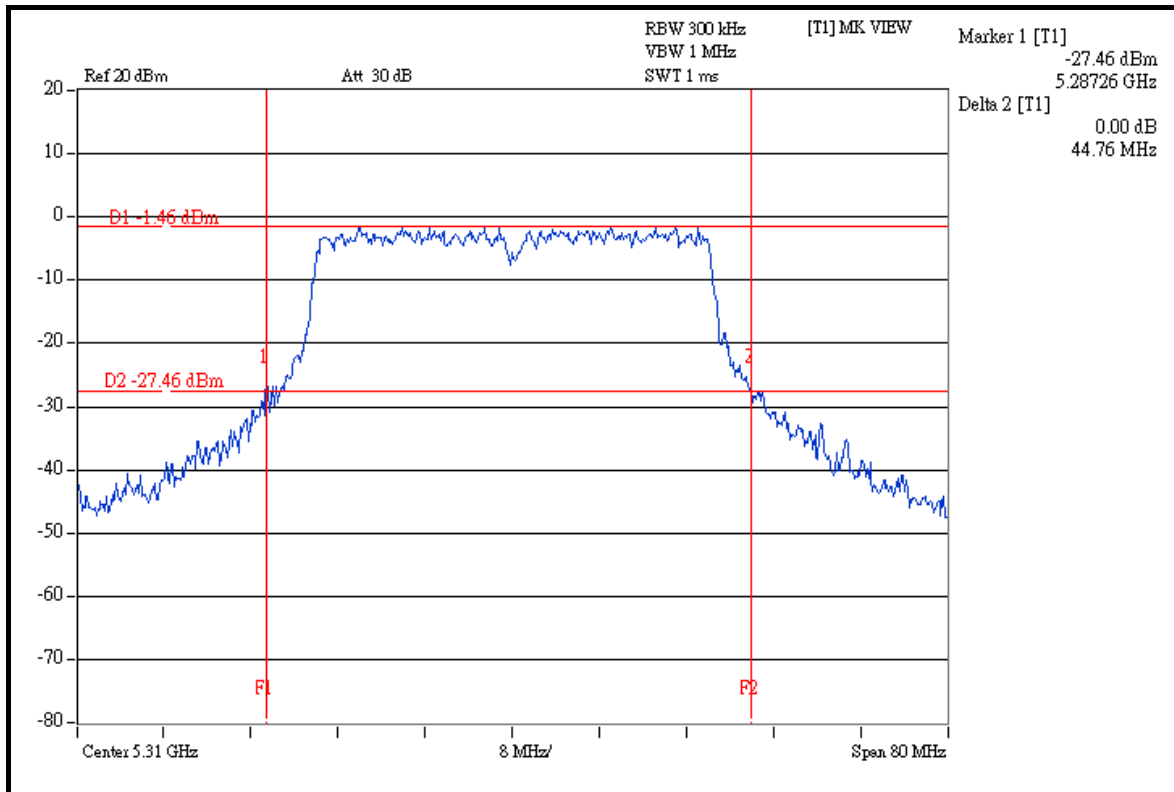
**CHAIN 0: CH 54**



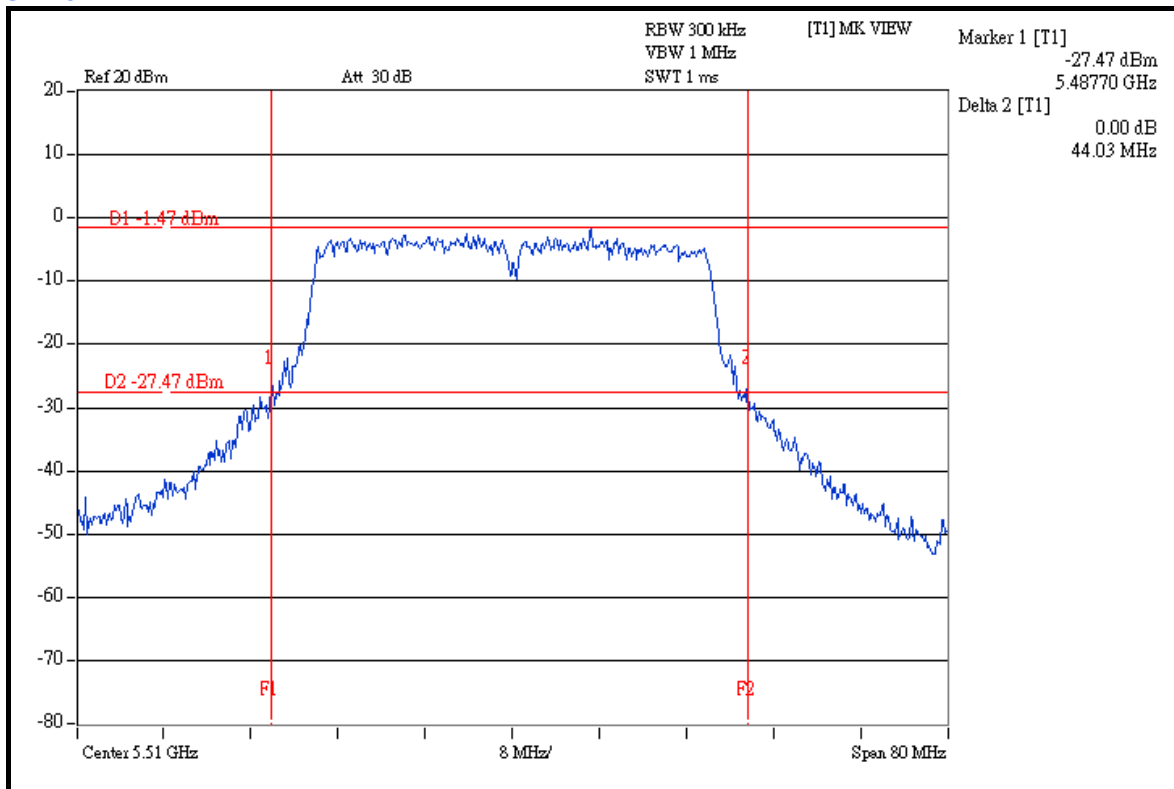


A D T

### CH 62



### CH 102

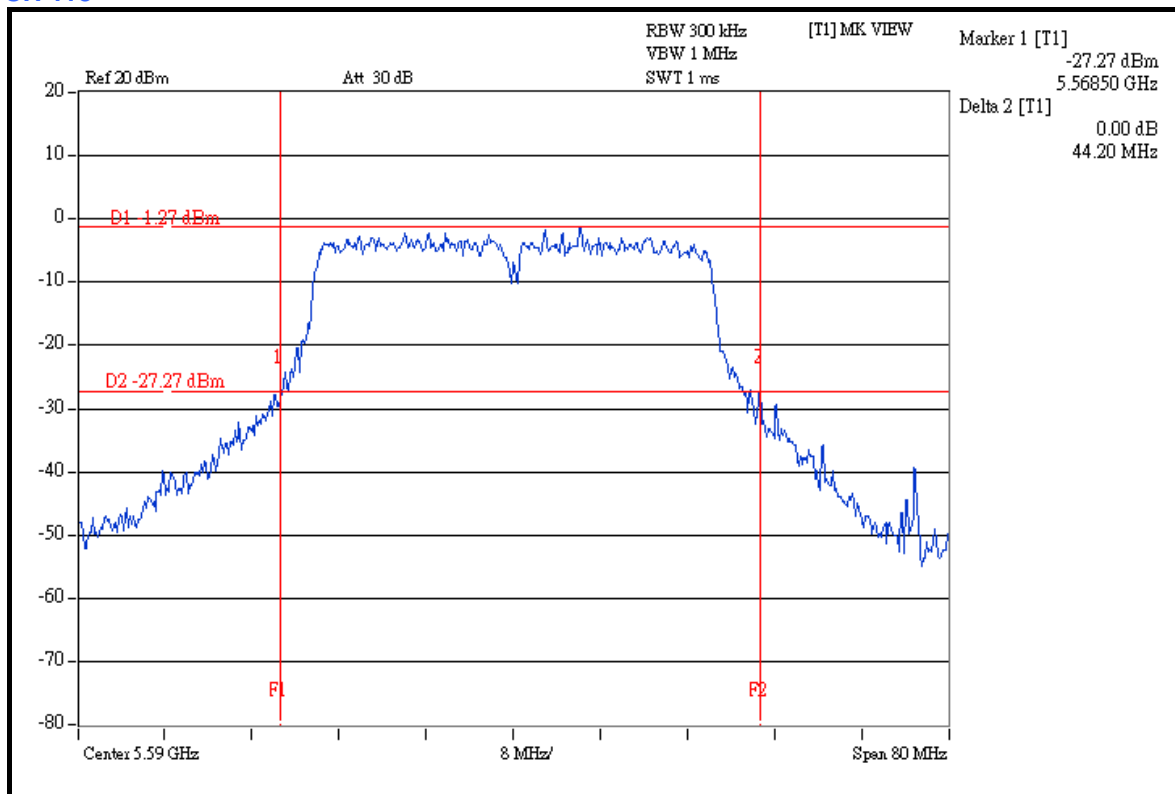




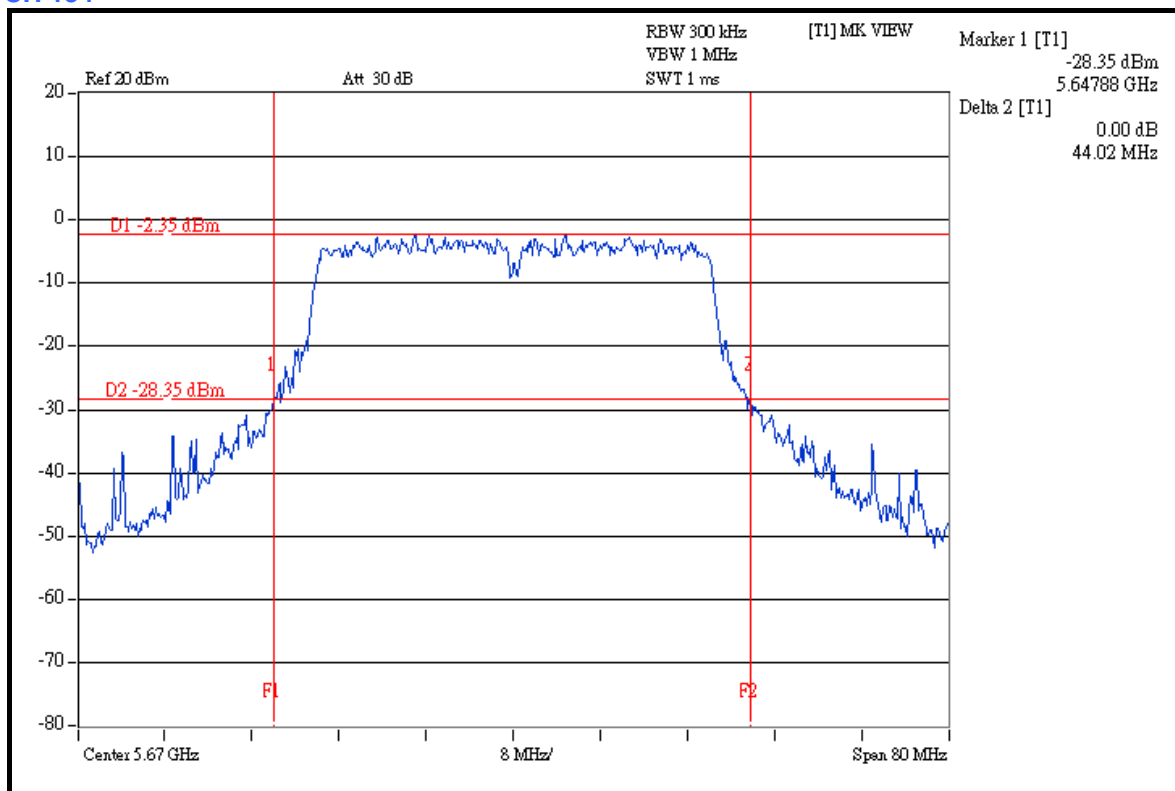


A D T

### CH 118



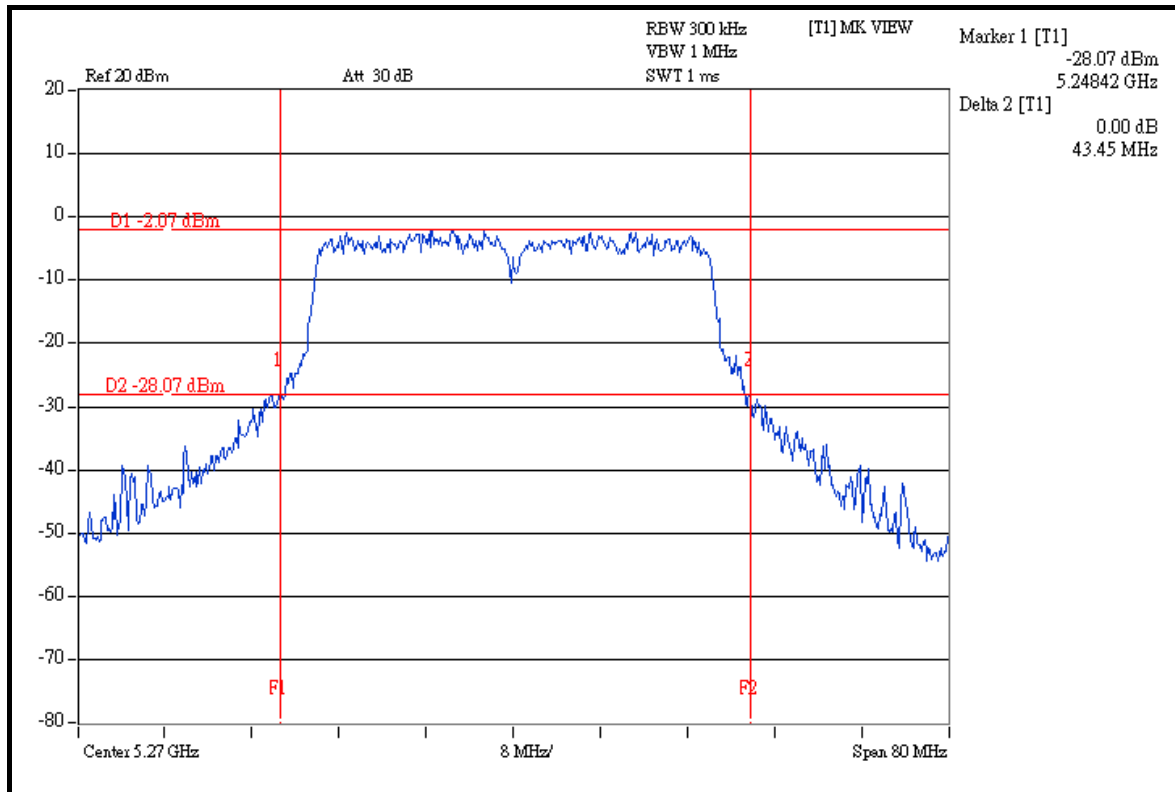
### CH 134



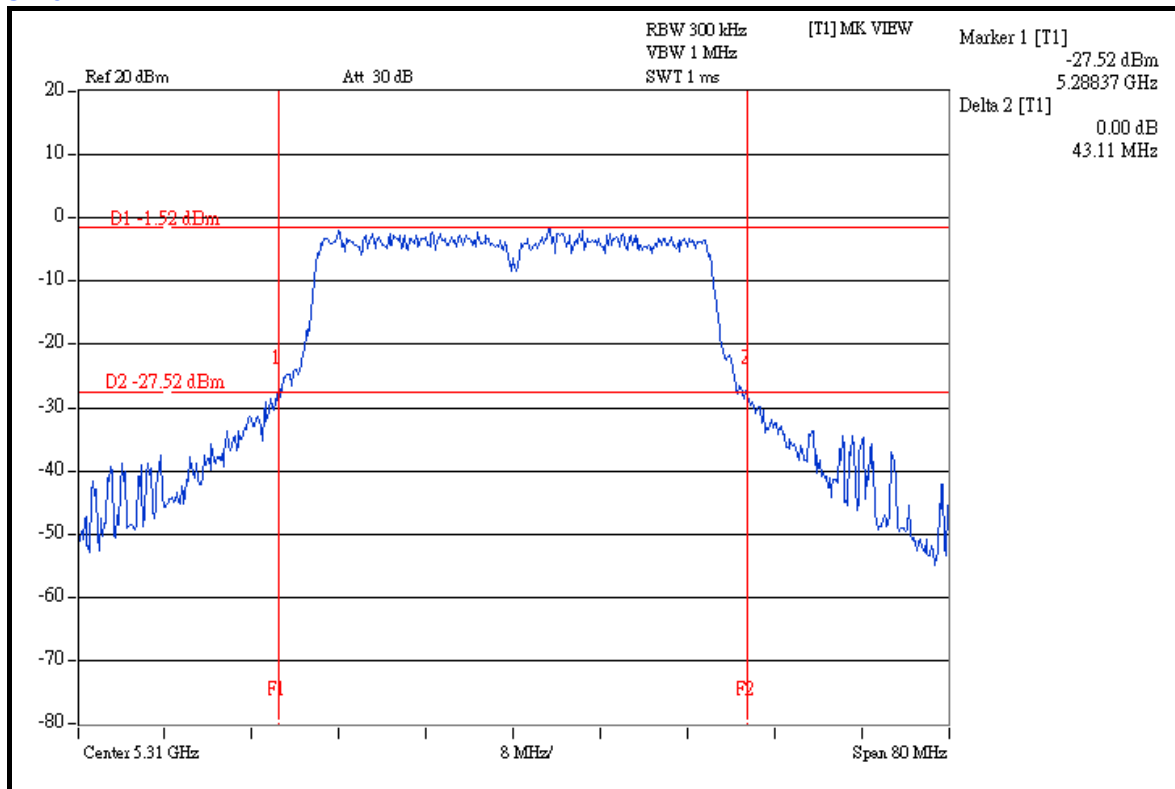


A D T

### CHAIN 1: CH 54



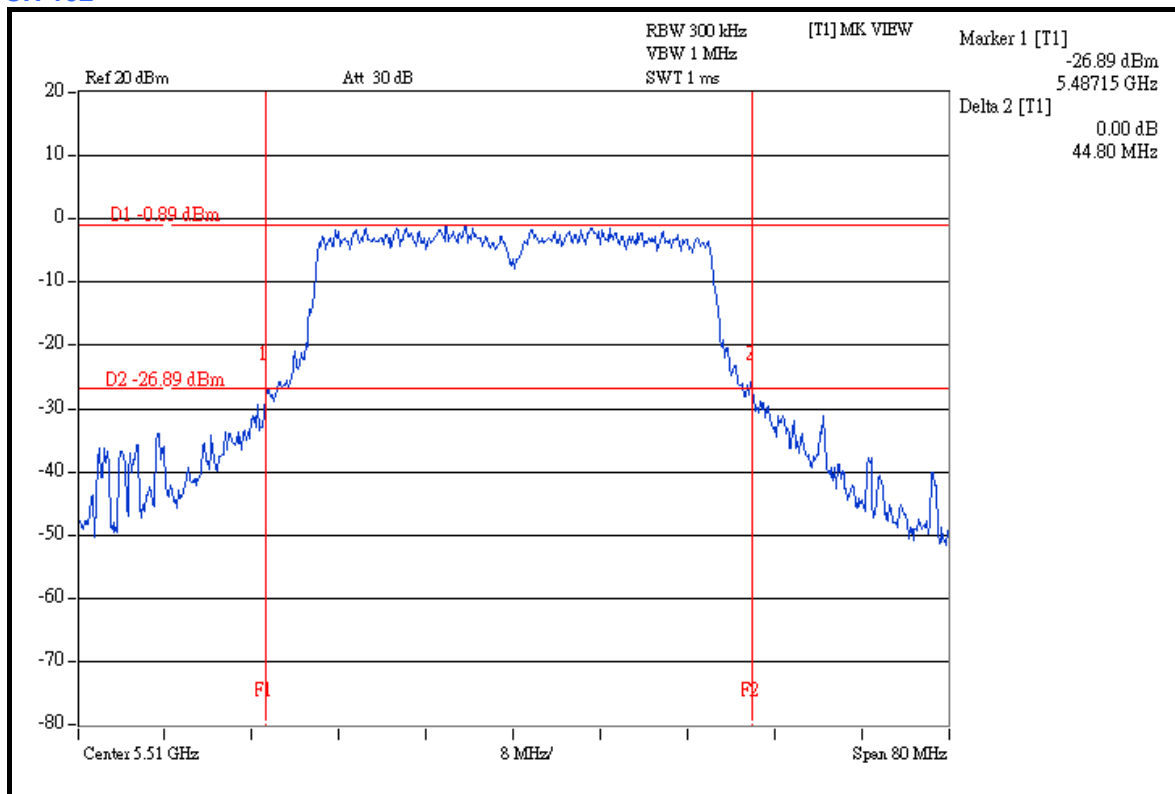
### CH 62



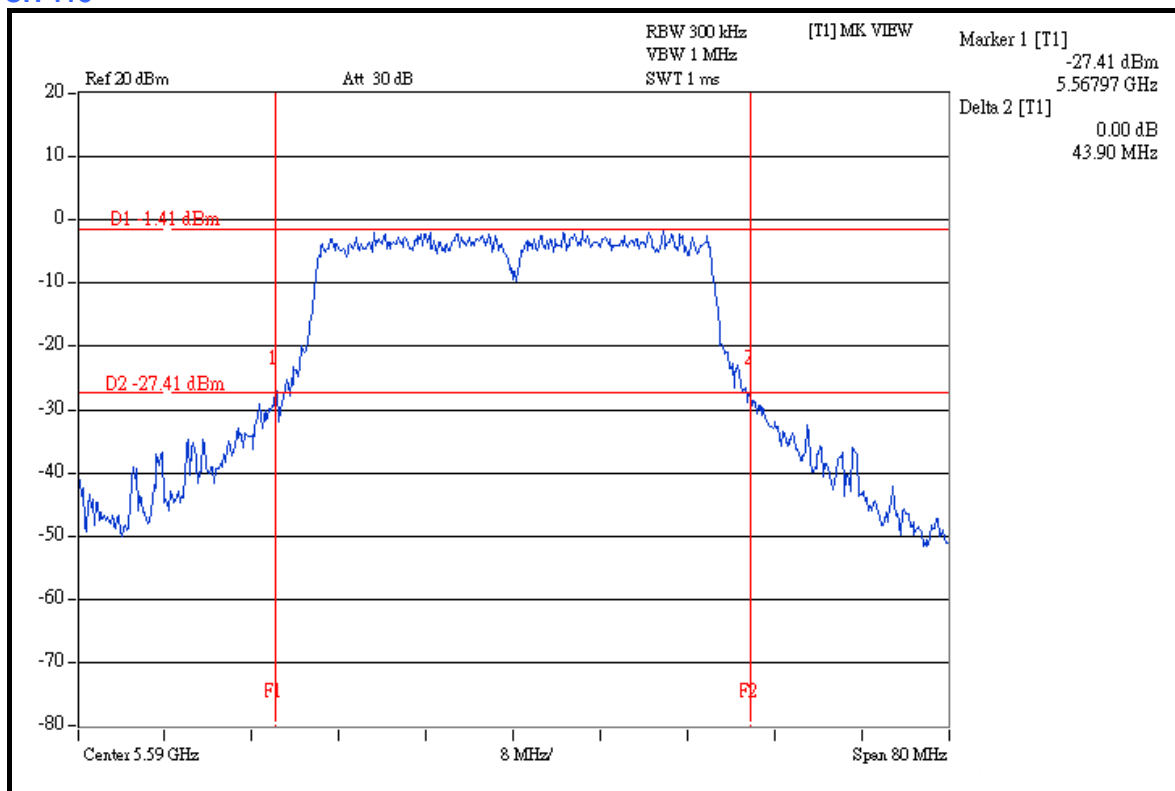


A D T

### CH 102



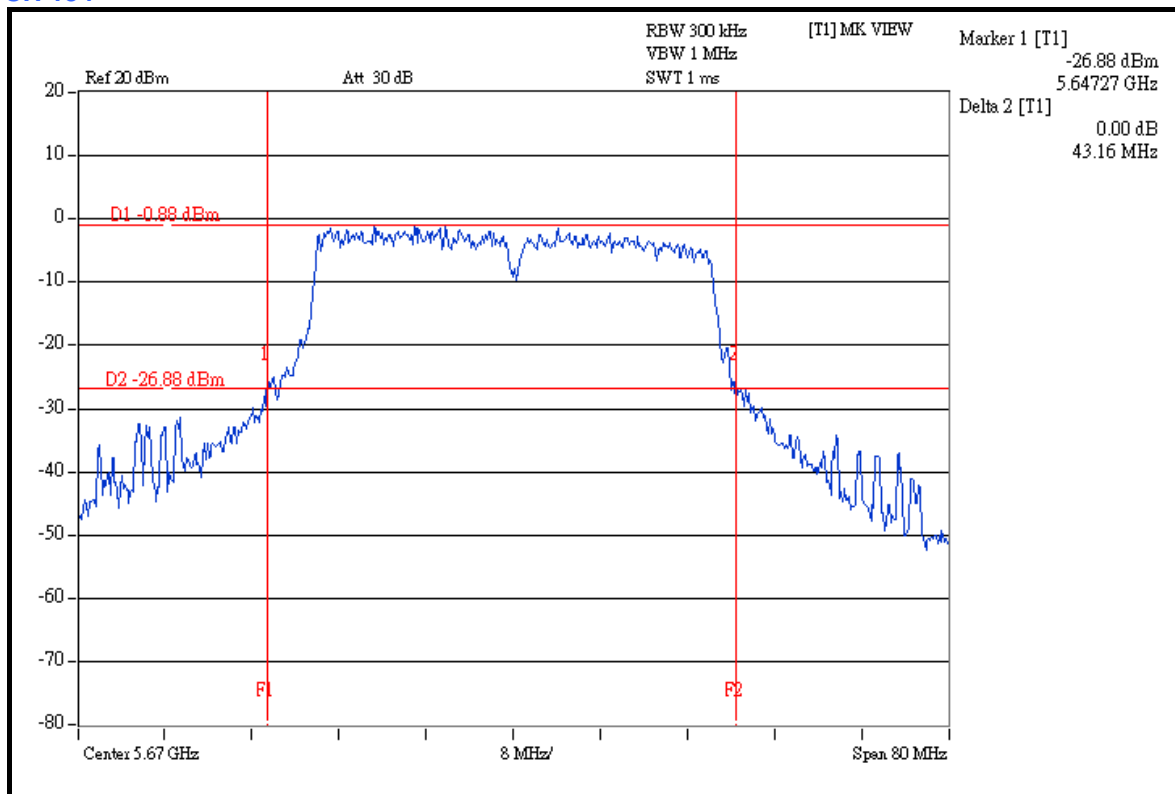
### CH 118



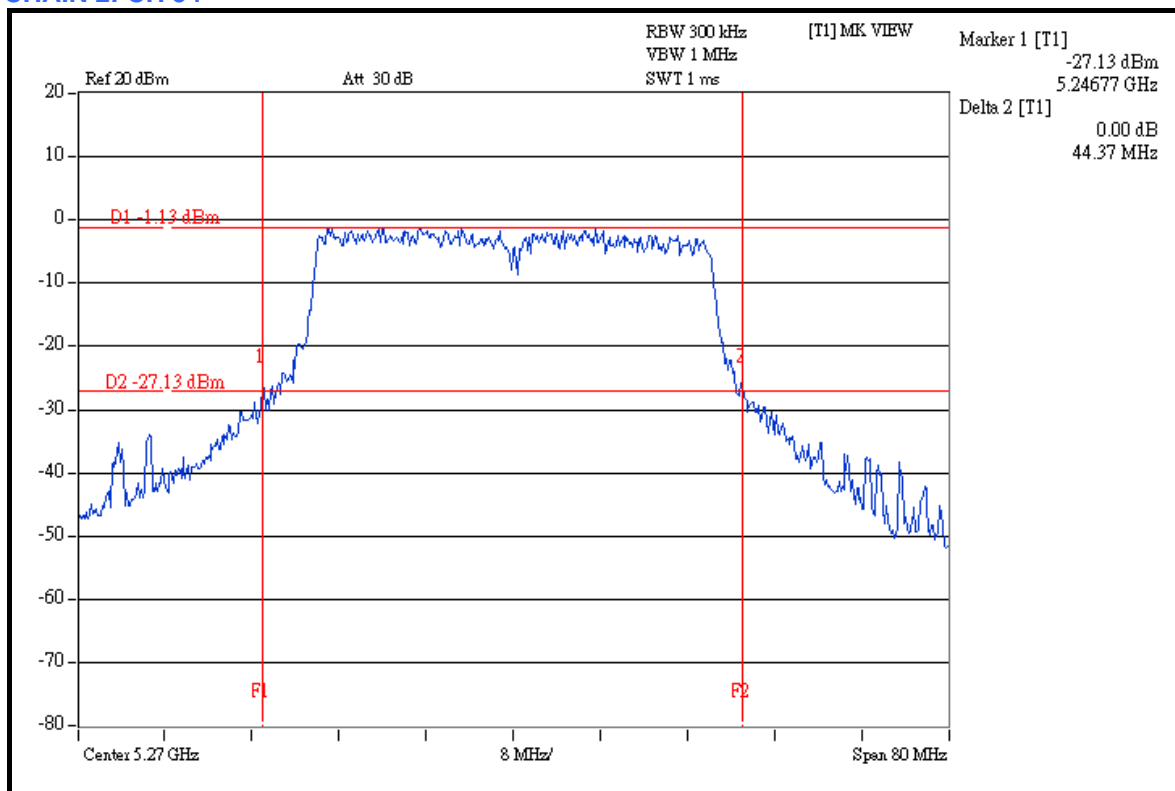


A D T

### CH 134



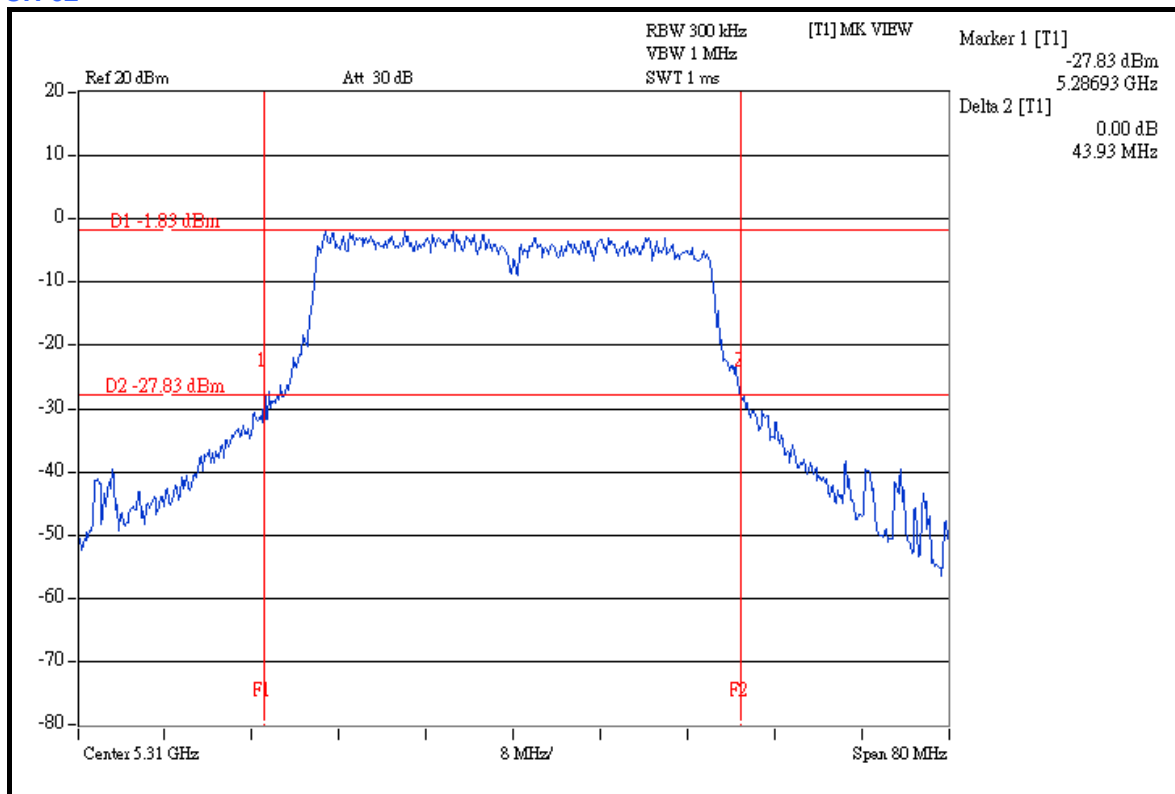
### CHAIN 2: CH 54



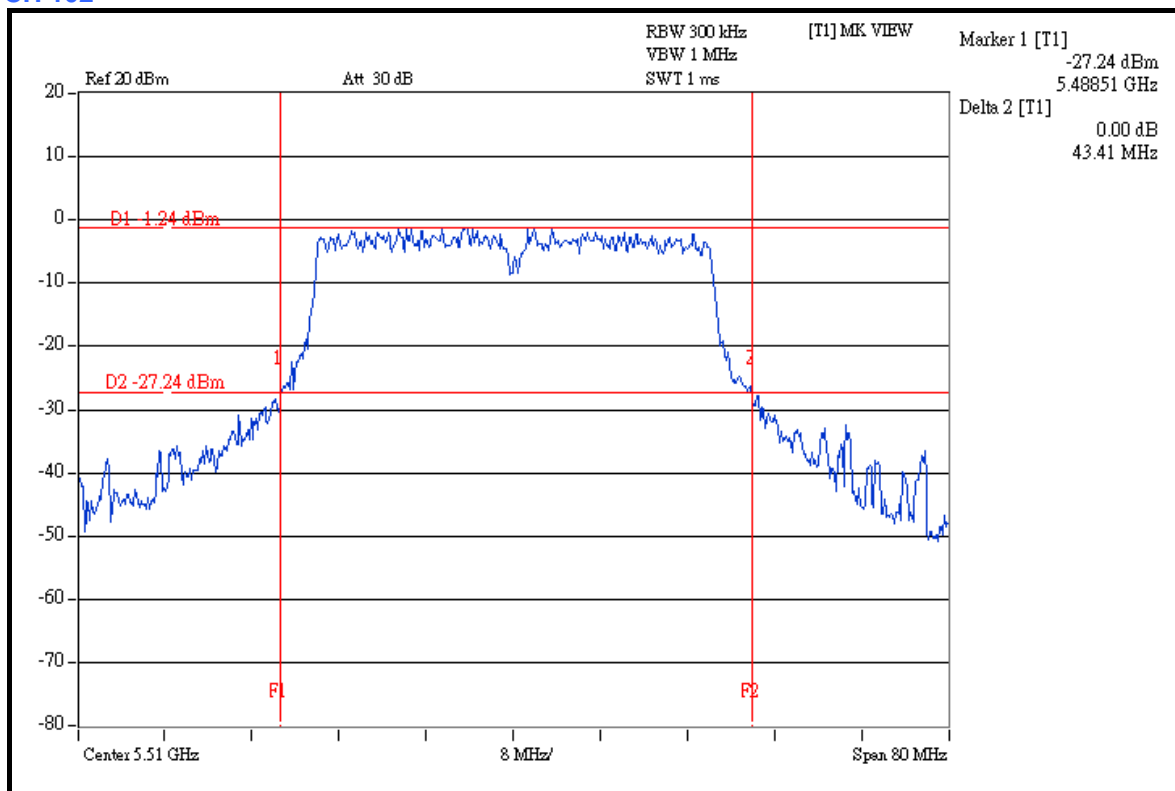


A D T

### CH 62



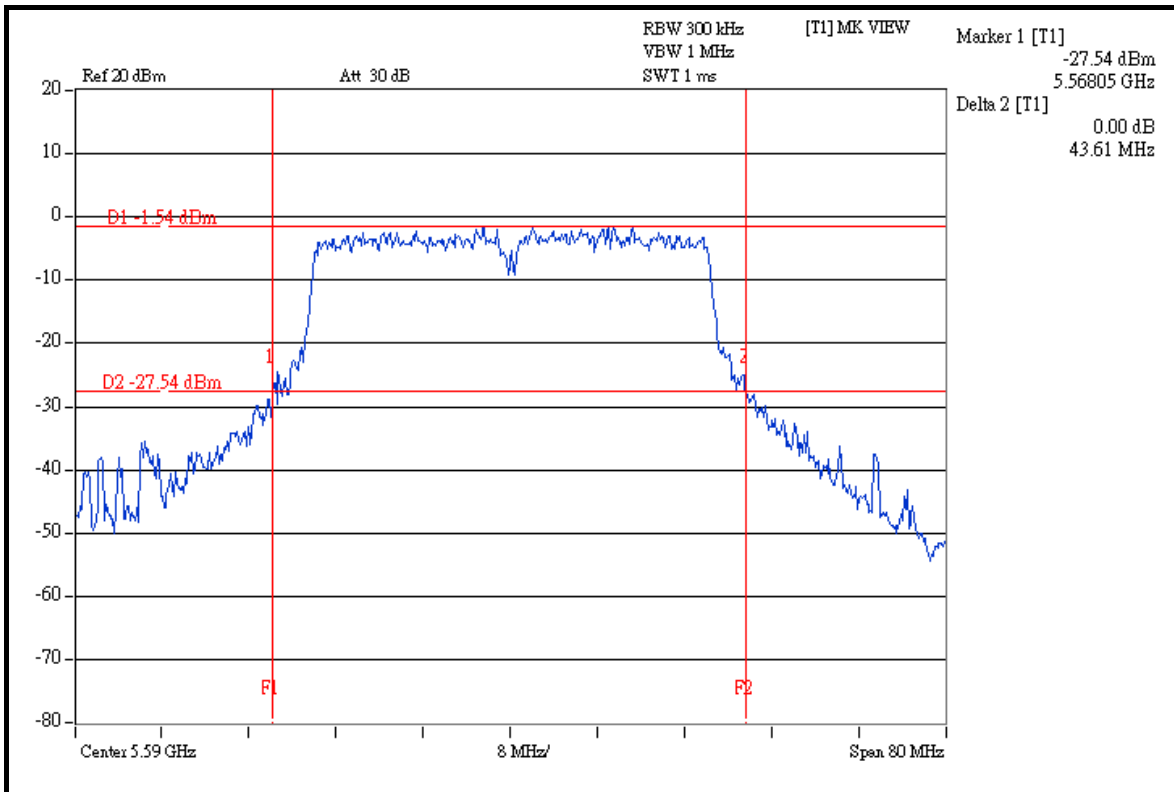
### CH 102



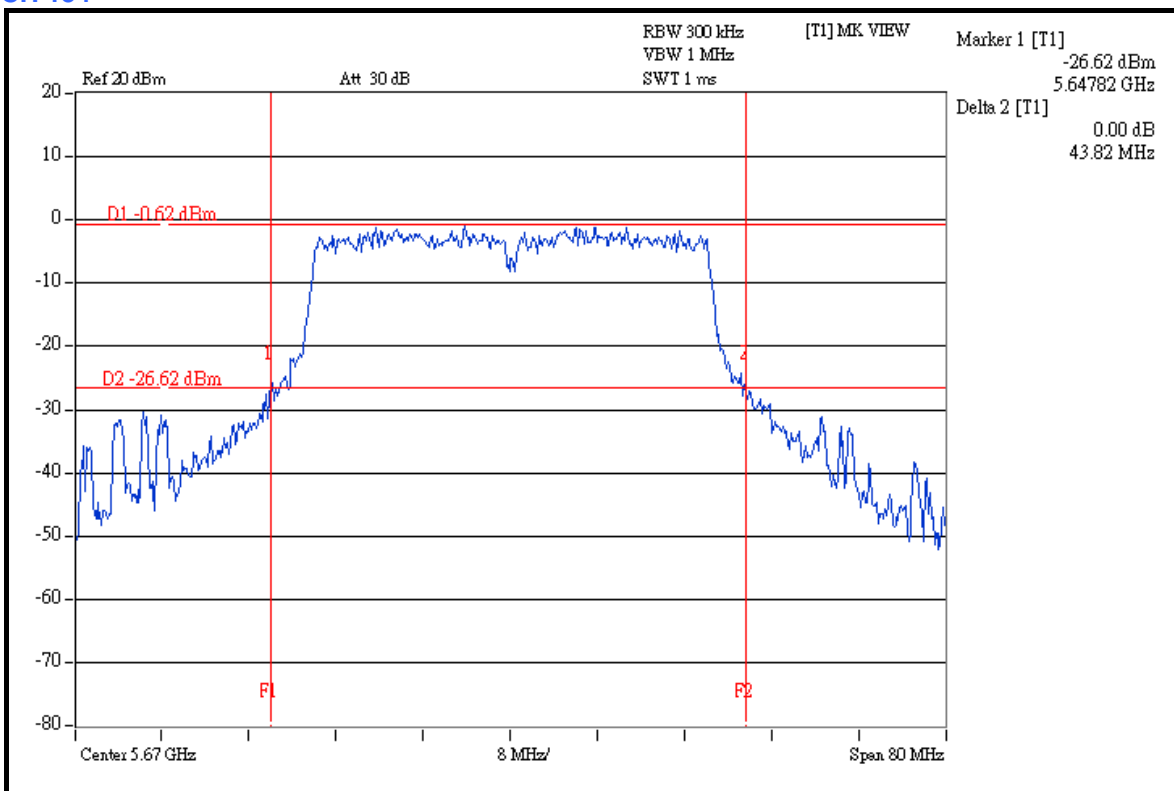


A D T

### CH 118



### CH 134



#### 4.4 PEAK POWER EXCURSION MEASUREMENT

##### 4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

##### 4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
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

- 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 largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

#### 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.





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#### 4.4.7 TEST RESULTS

##### 802.11a OFDM MODULATION

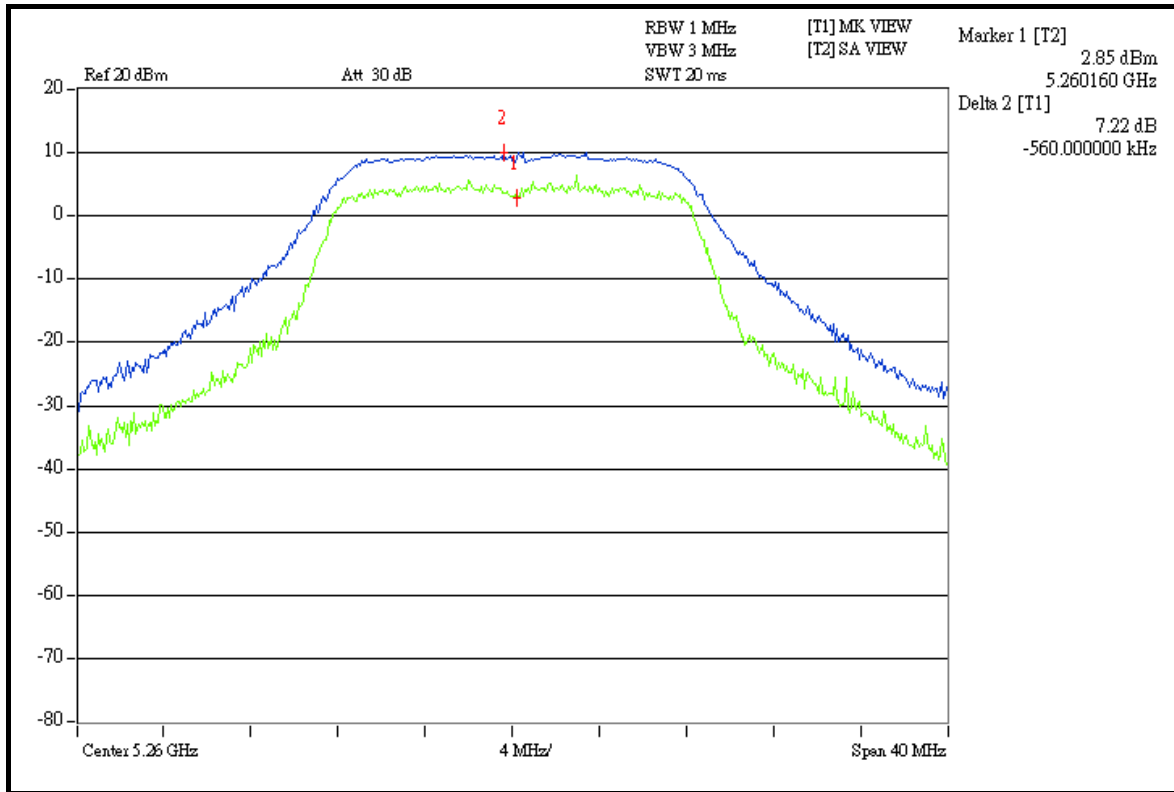
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER EXCURSION (dB)</b>	<b>PEAK TO AVERAGE EXCURSION LIMIT (dB)</b>	<b>PASS / FAIL</b>
52	5260	7.22	13	PASS
60	5300	7.90	13	PASS
64	5320	7.68	13	PASS
100	5500	6.96	13	PASS
120	5600	7.43	13	PASS
140	5700	7.95	13	PASS

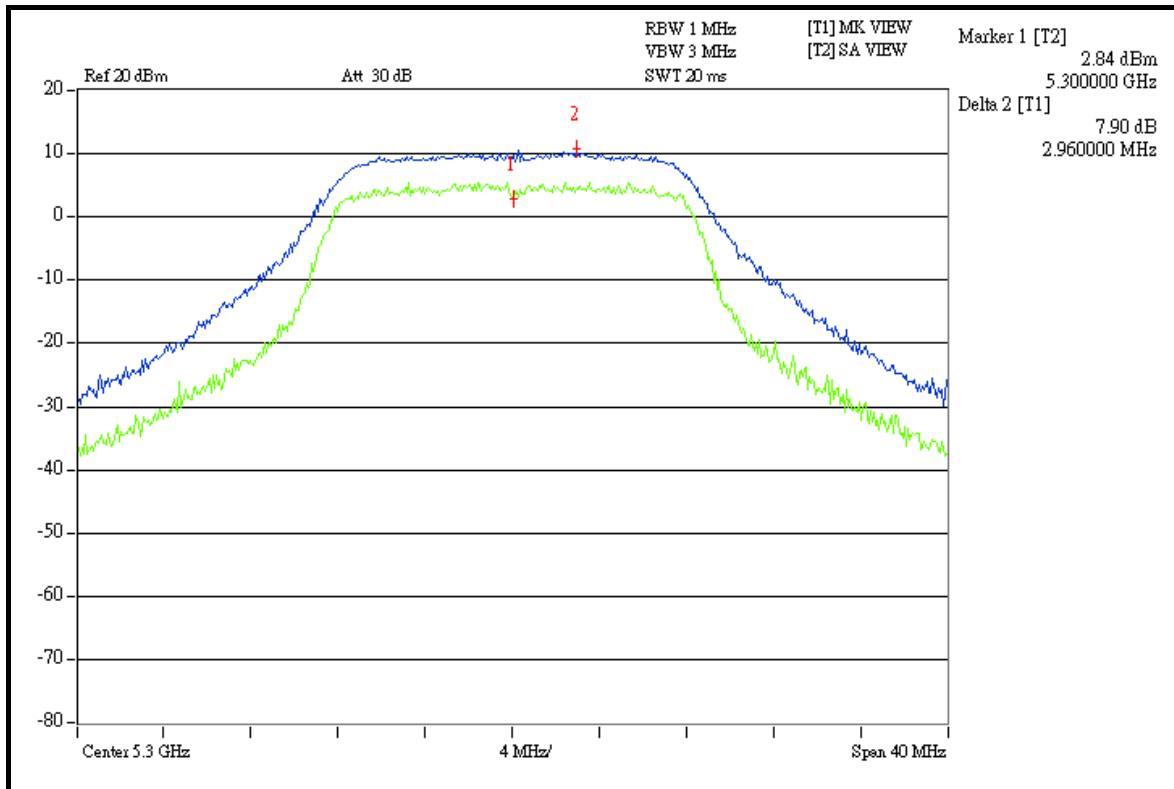


A D T

### CH 52



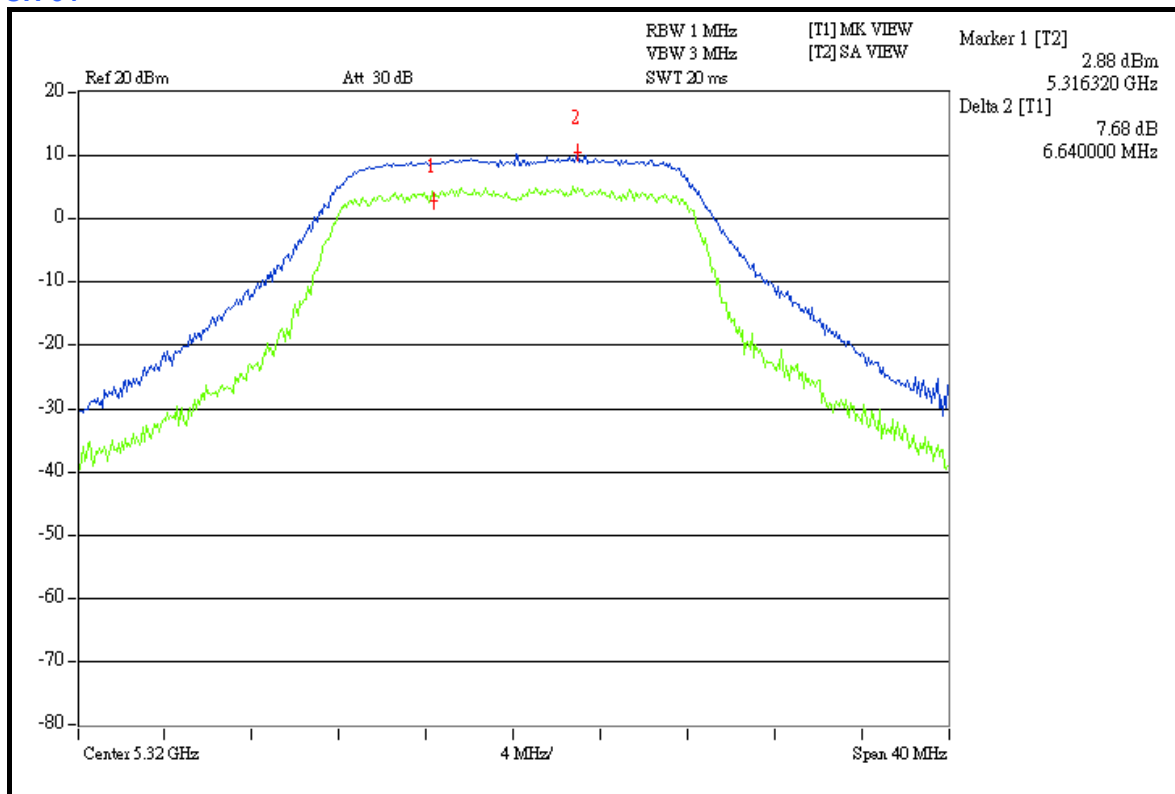
### CH 60



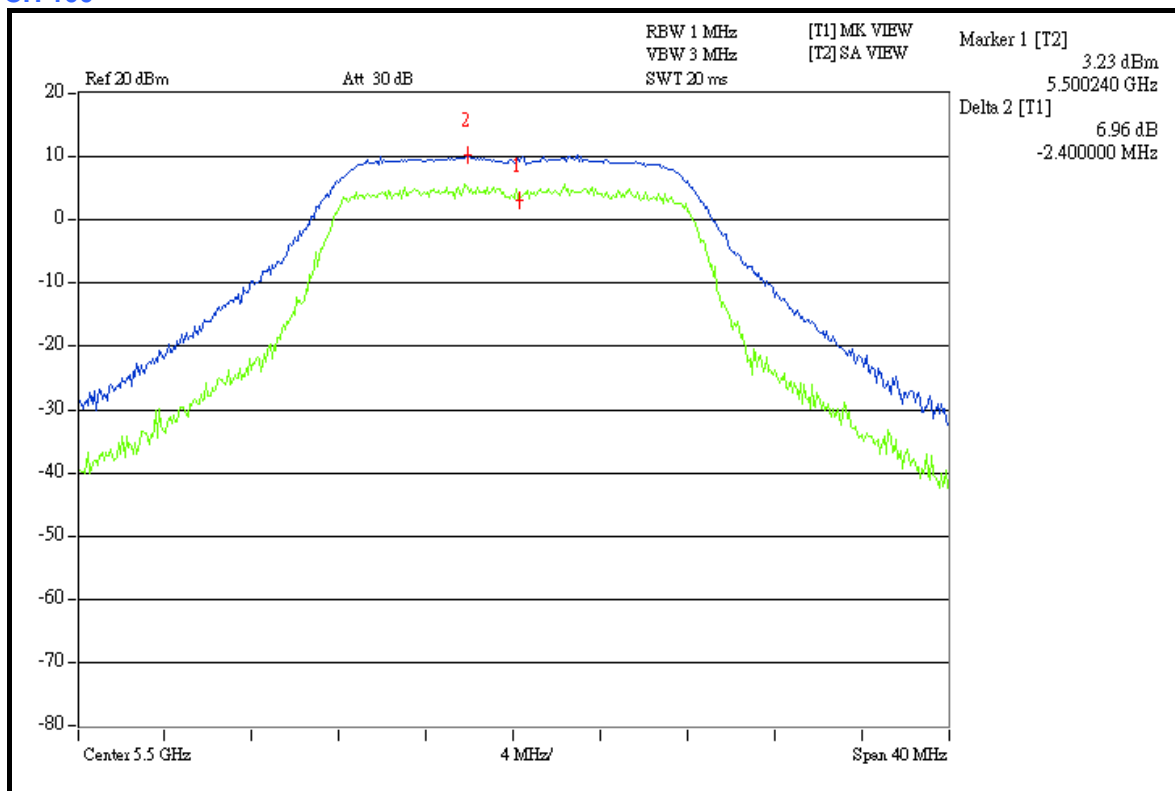


A D T

### CH 64



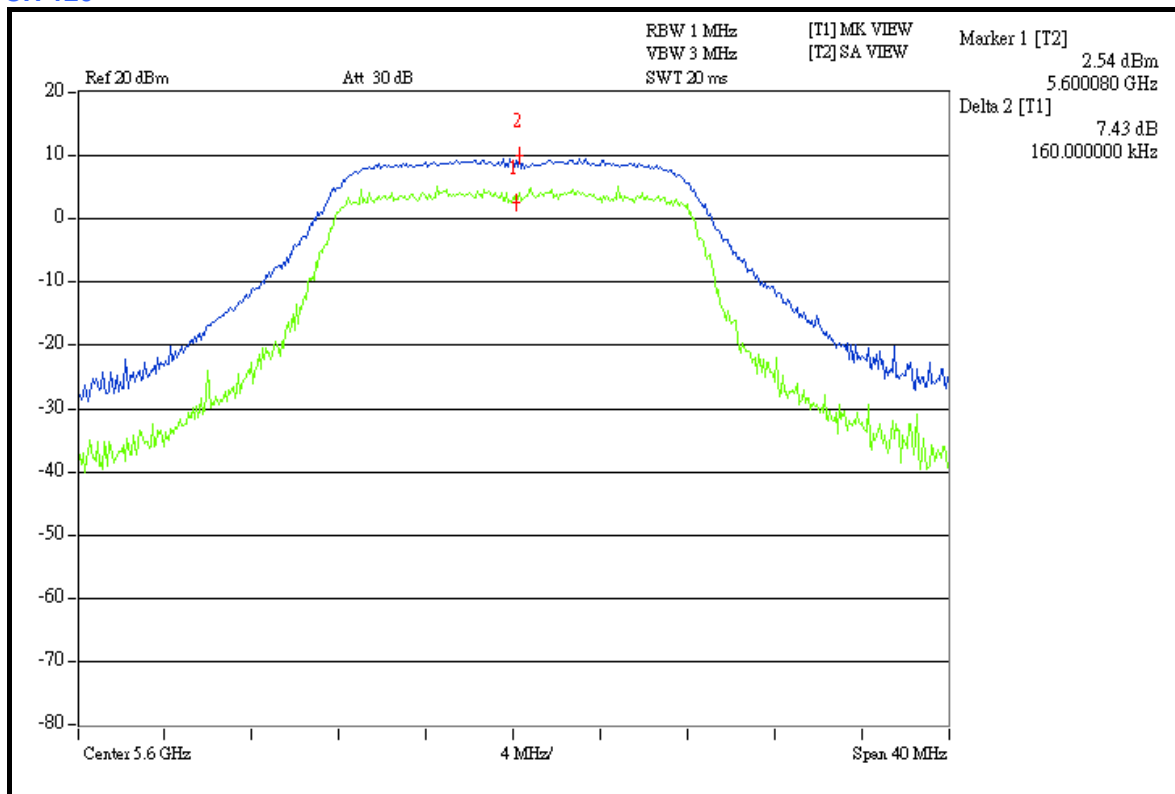
### CH 100



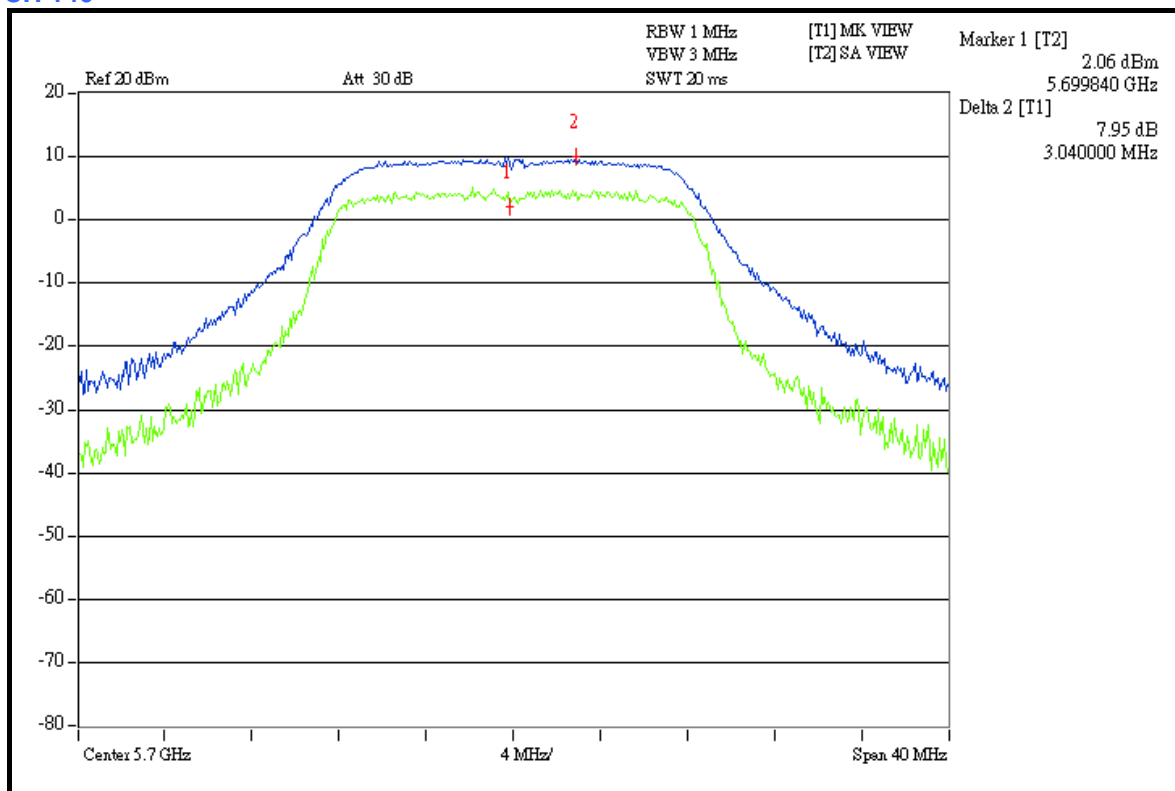


A D T

### CH 120



### CH 140





A D T

### DRAFT 802.11n (20MHz) OFDM MODULATION

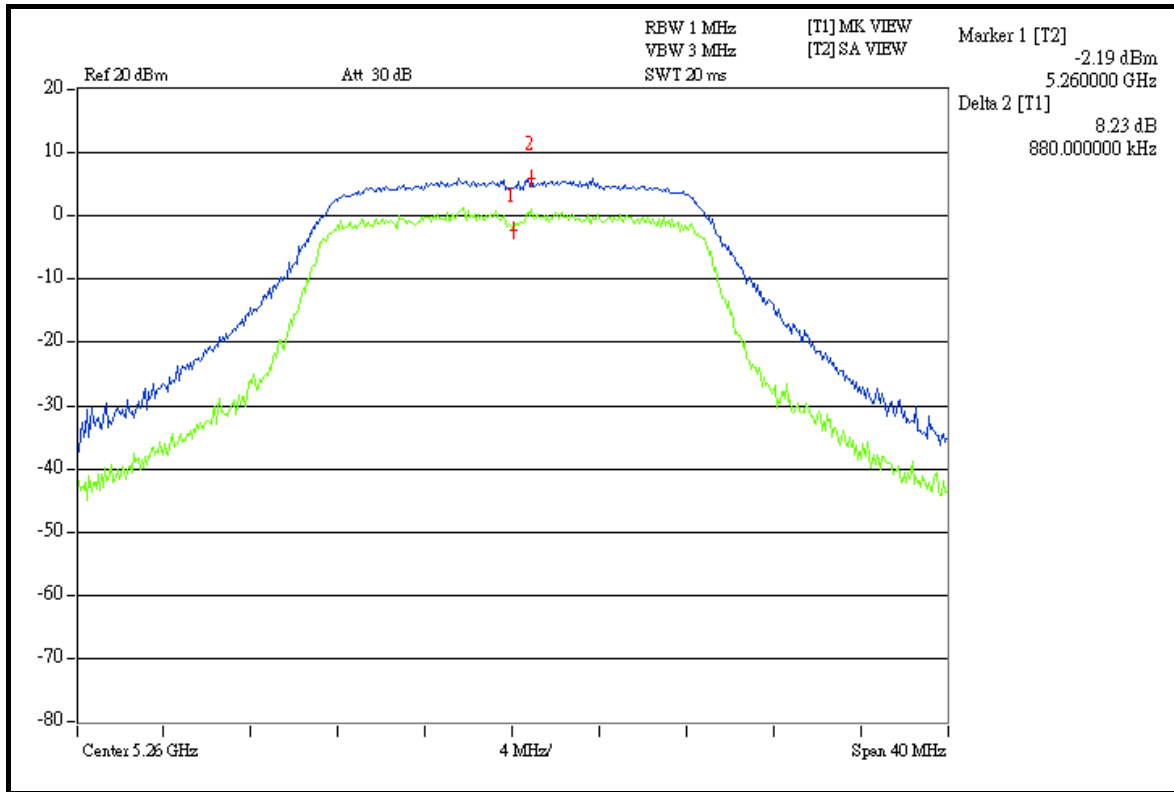
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	7.2Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)			PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
52	5260	8.23	8.06	8.64	13	PASS
60	5300	7.77	7.83	7.73	13	PASS
64	5320	8.35	8.15	8.52	13	PASS
100	5500	7.87	7.75	8.53	13	PASS
120	5600	9.22	8.15	8.36	13	PASS
140	5700	8.28	7.99	8.01	13	PASS

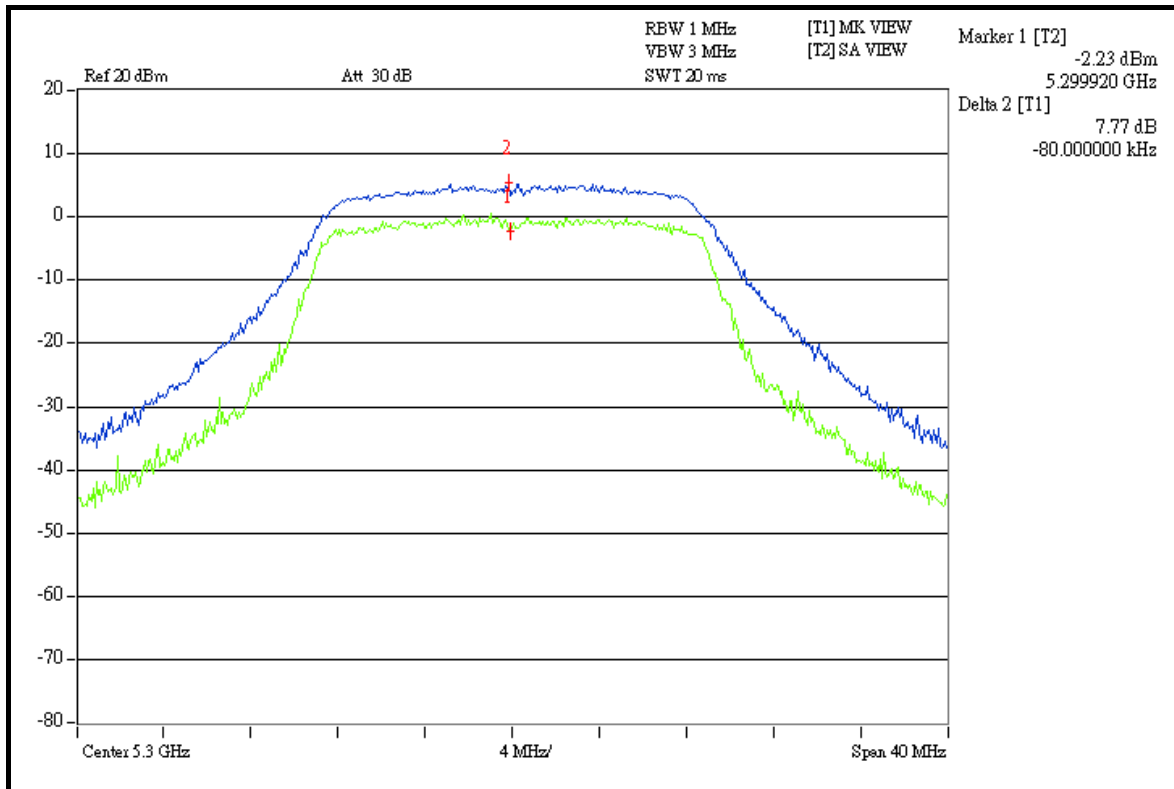


A D T

### CHAIN 0: CH 52



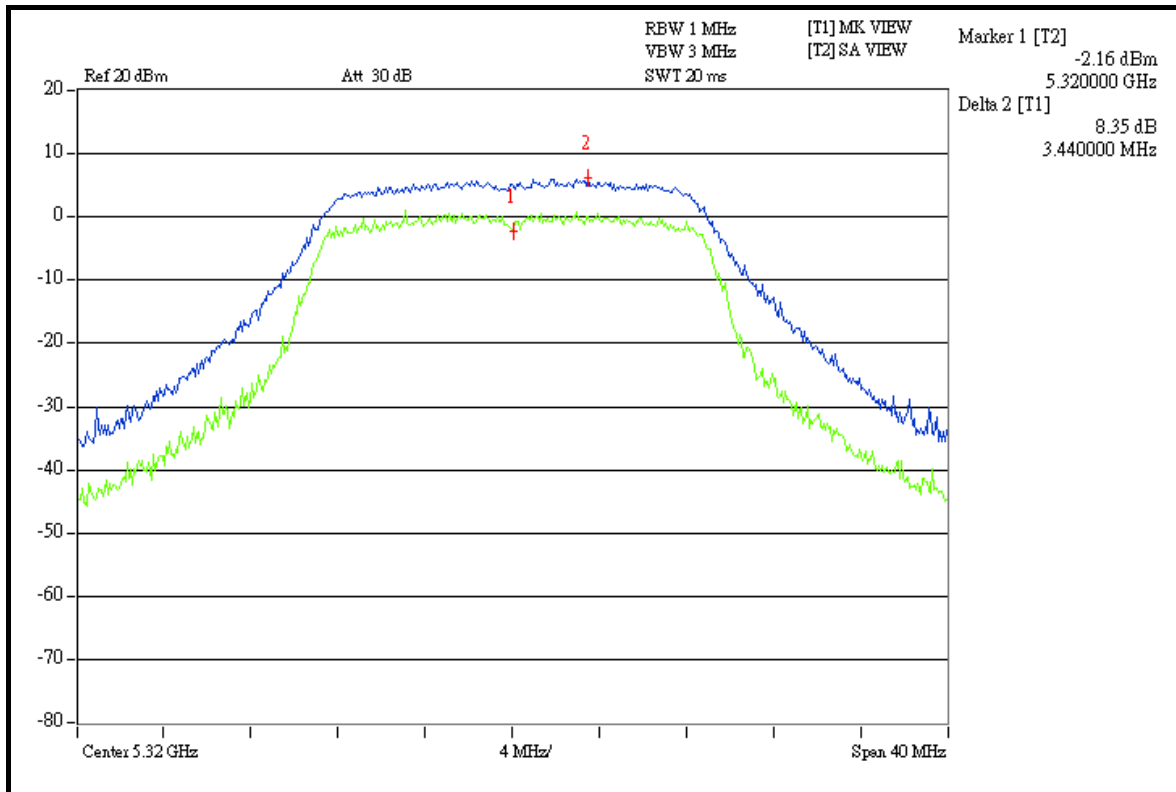
### CH 60



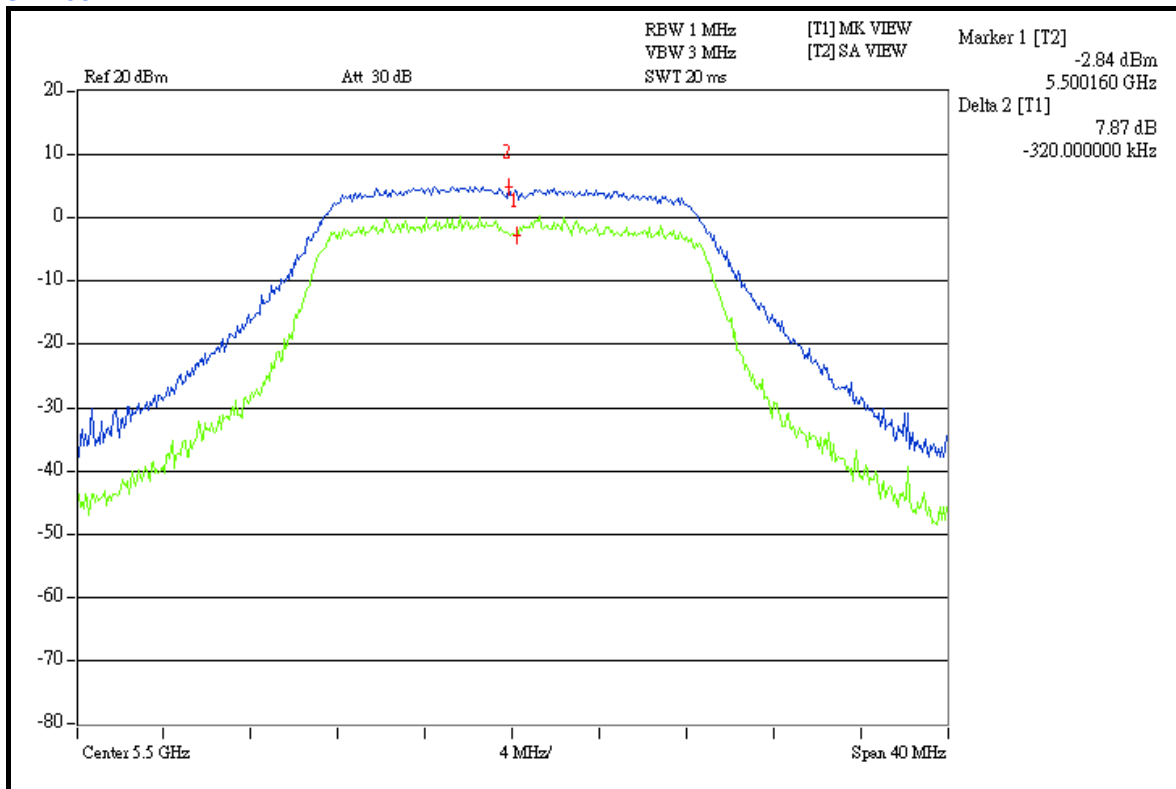


A D T

### CH 64



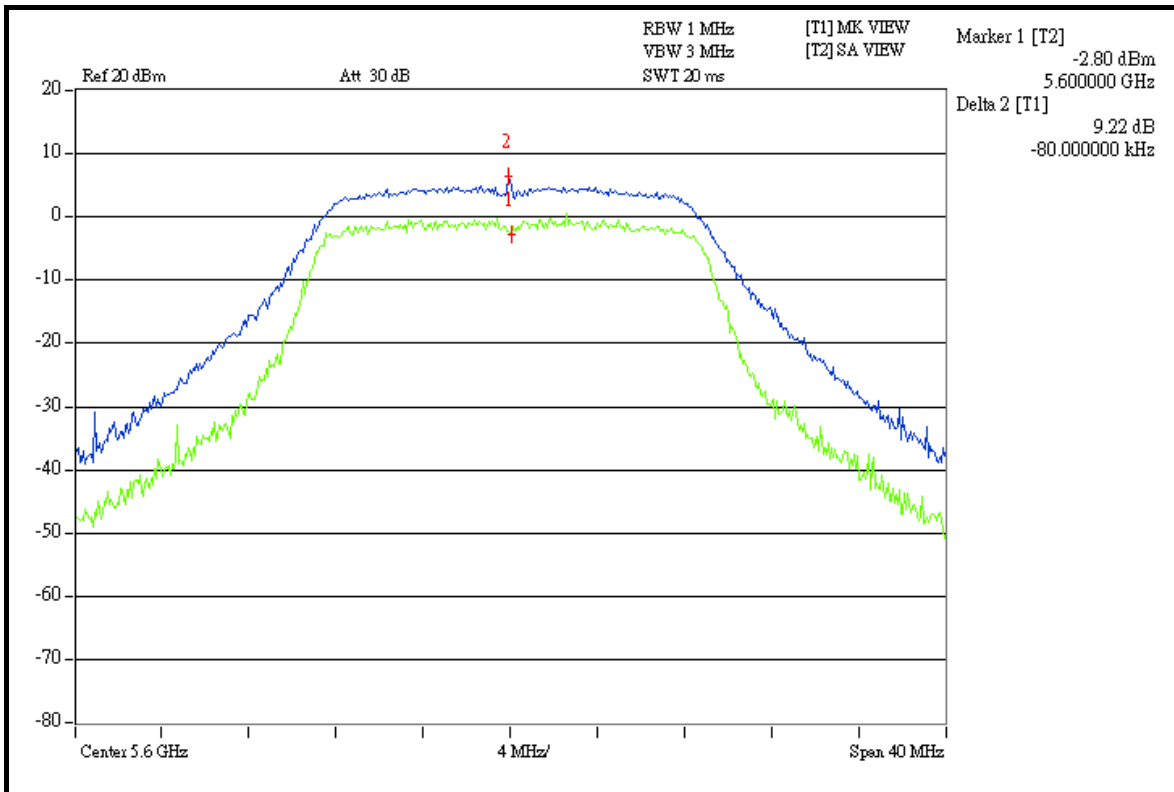
### CH 100



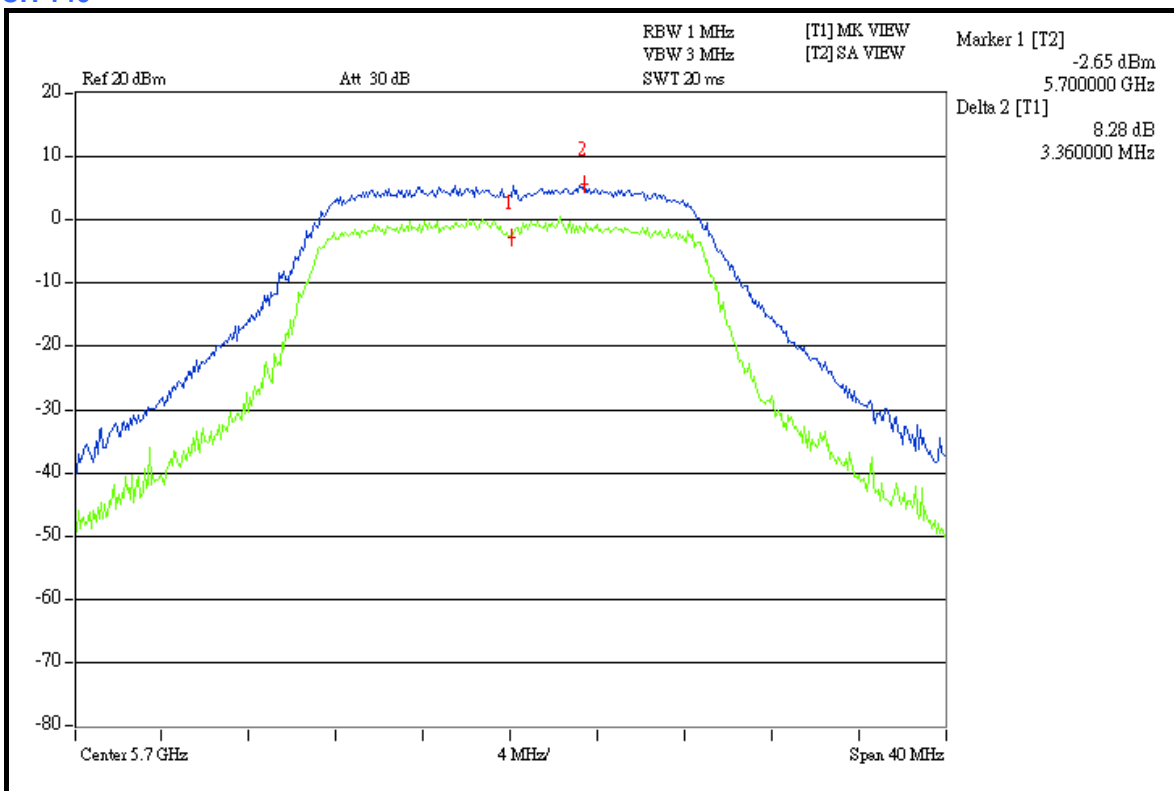


A D T

### CH 120



### CH 140

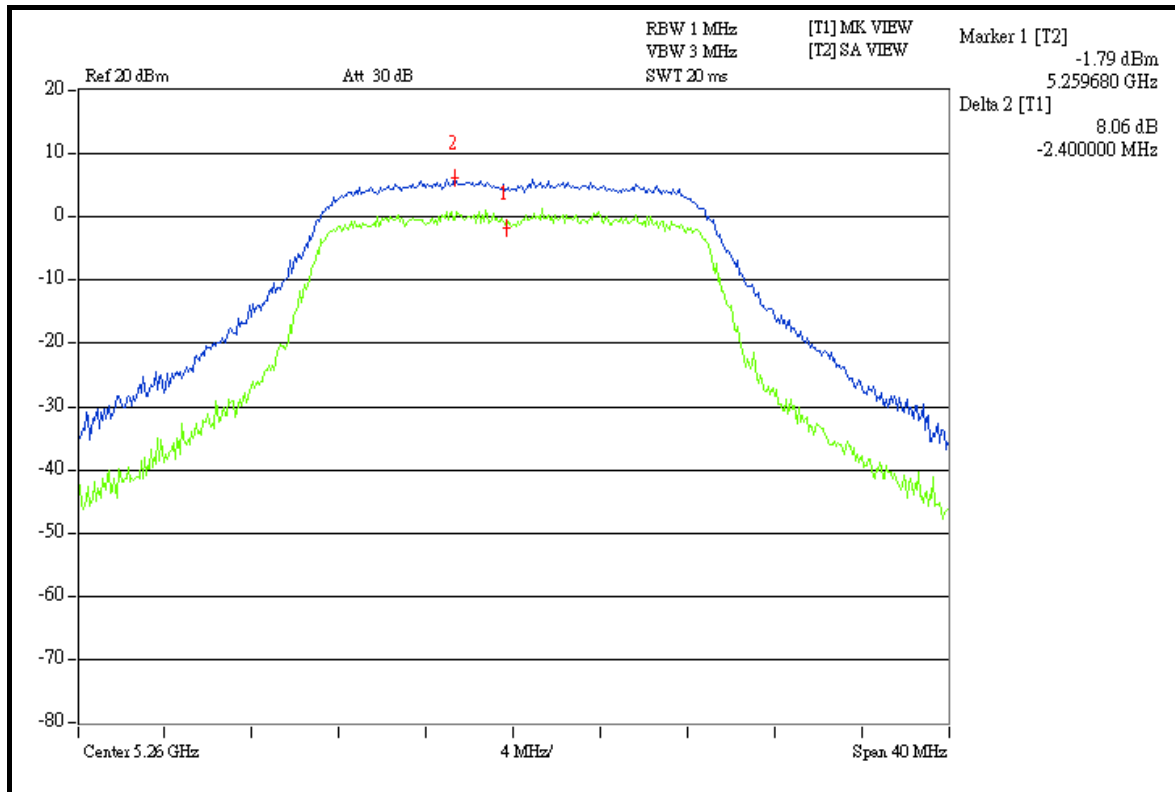




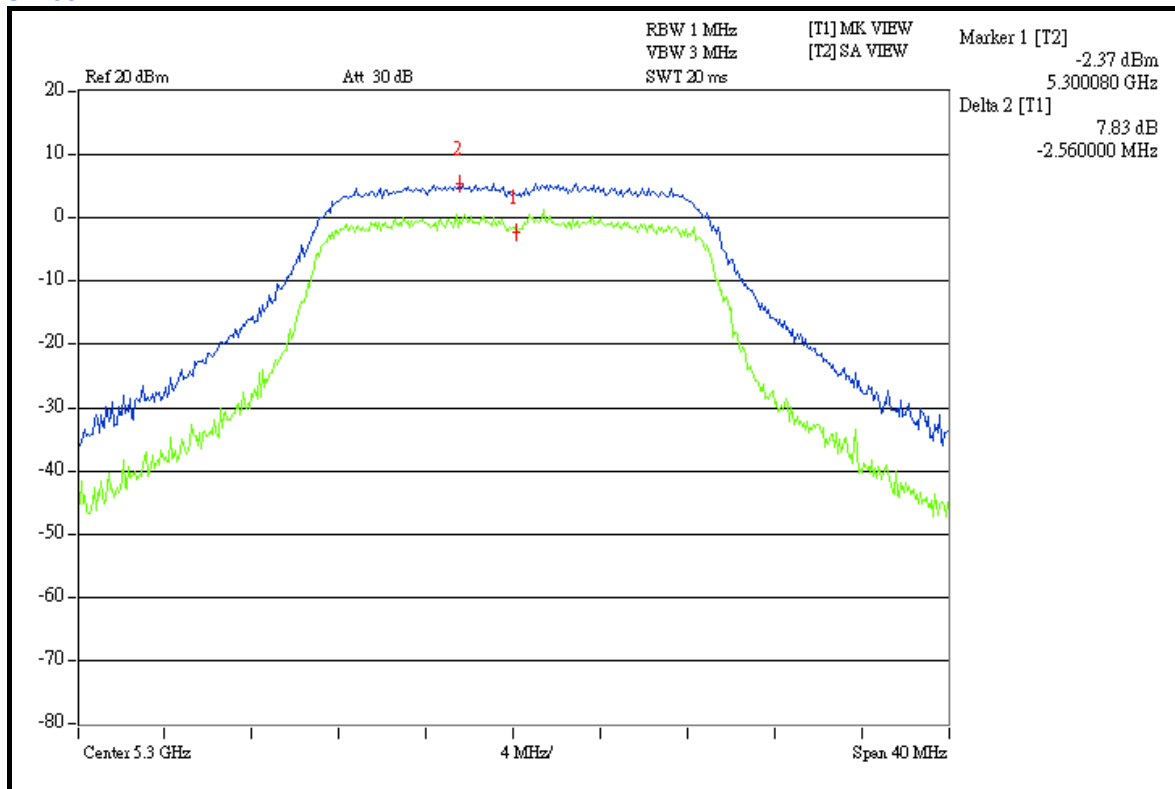


A D T

### CHAIN 1: CH 52



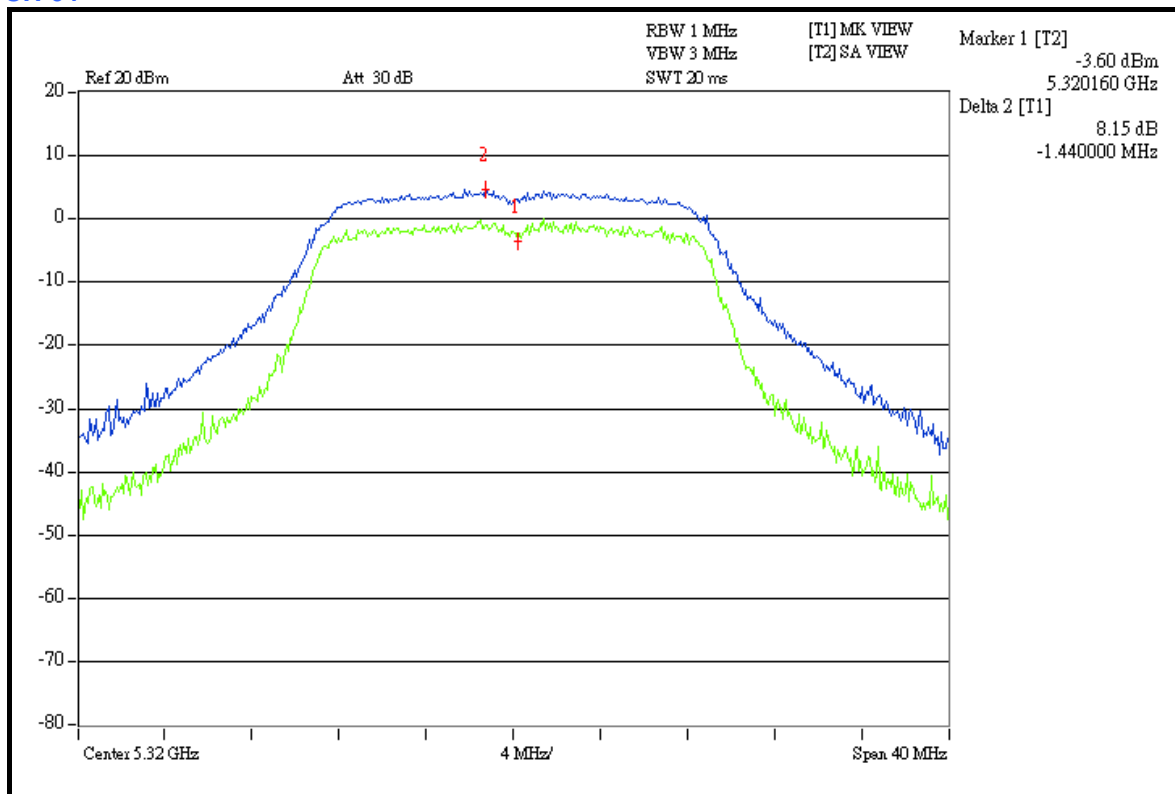
### CH 60



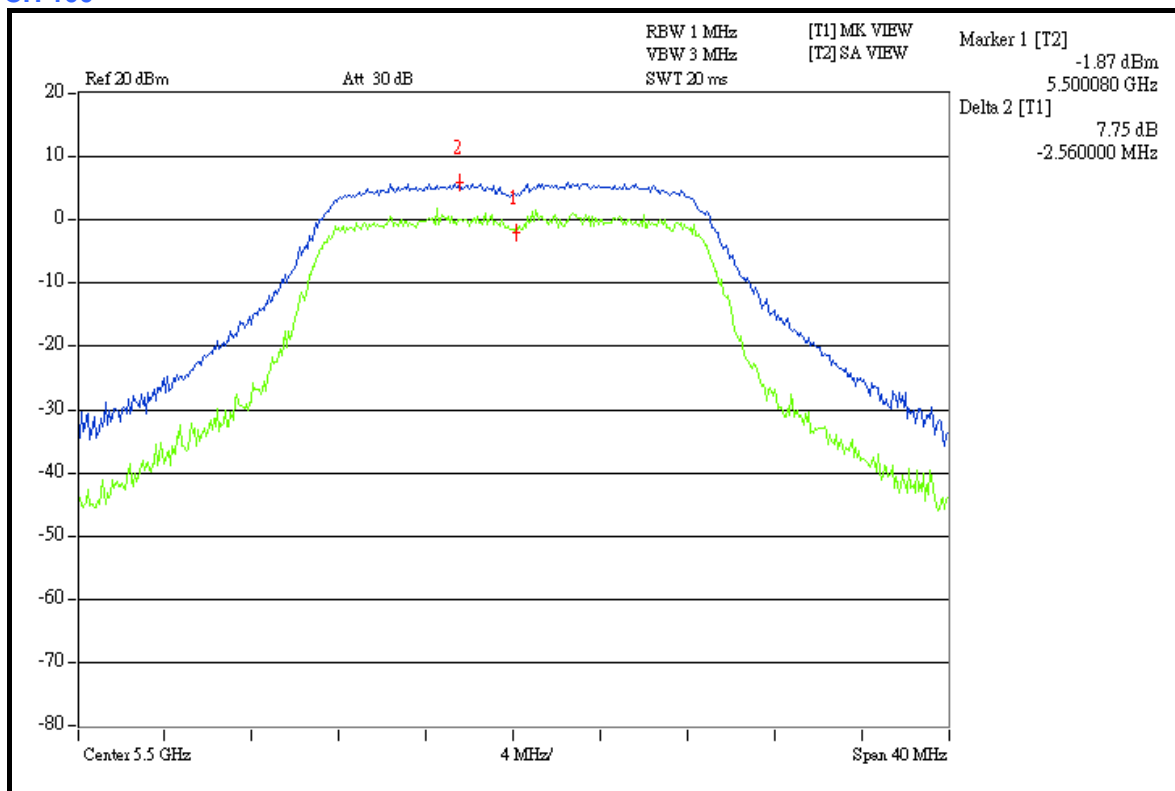


A D T

### CH 64



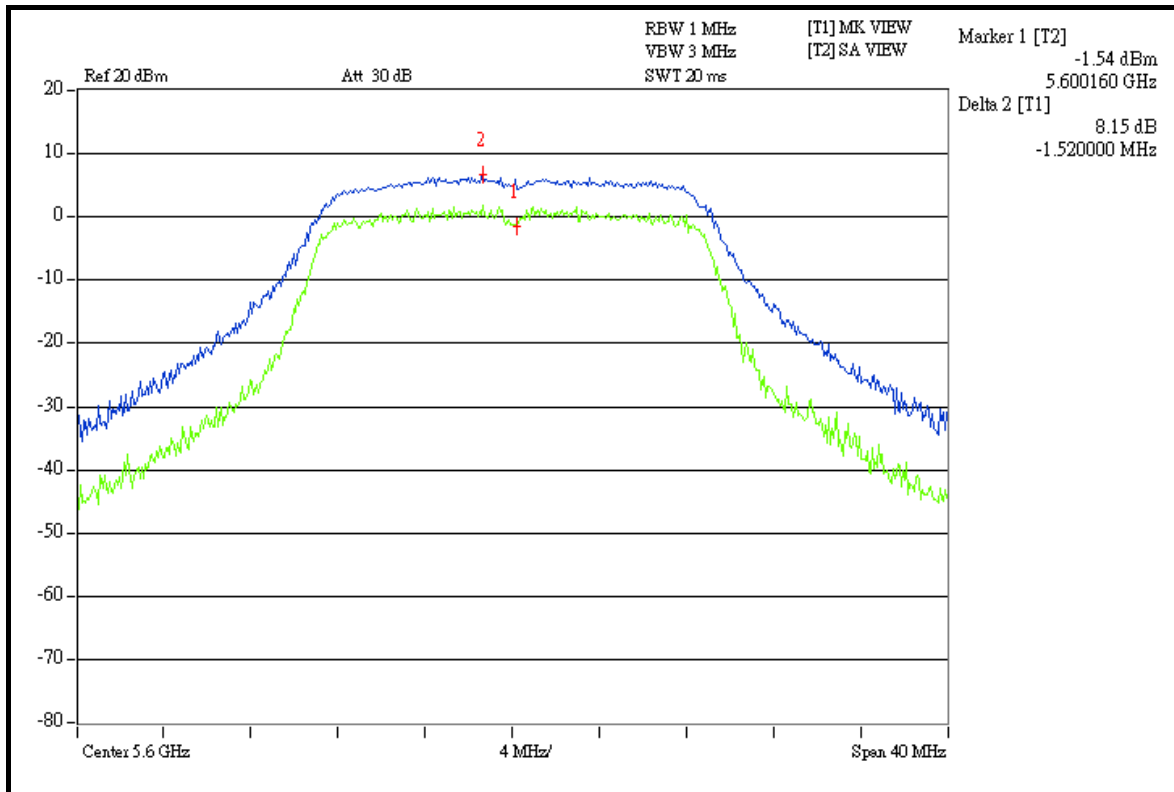
### CH 100



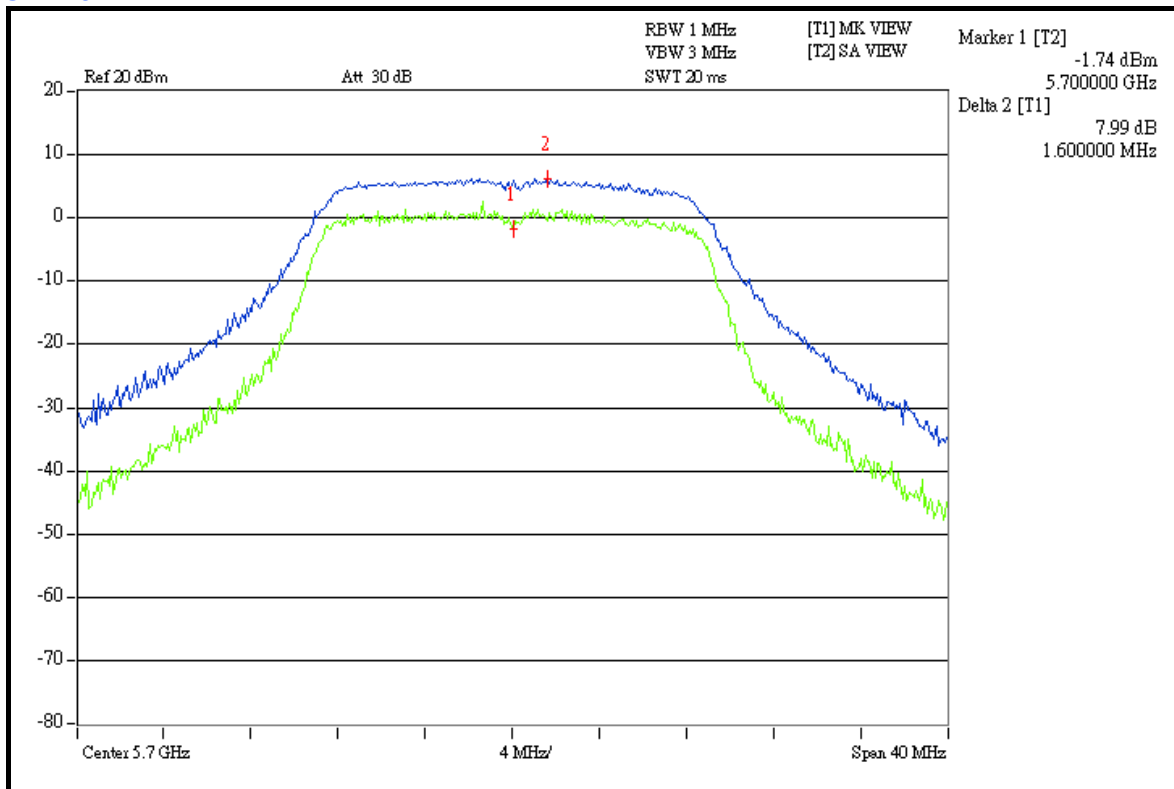


A D T

### CH 120



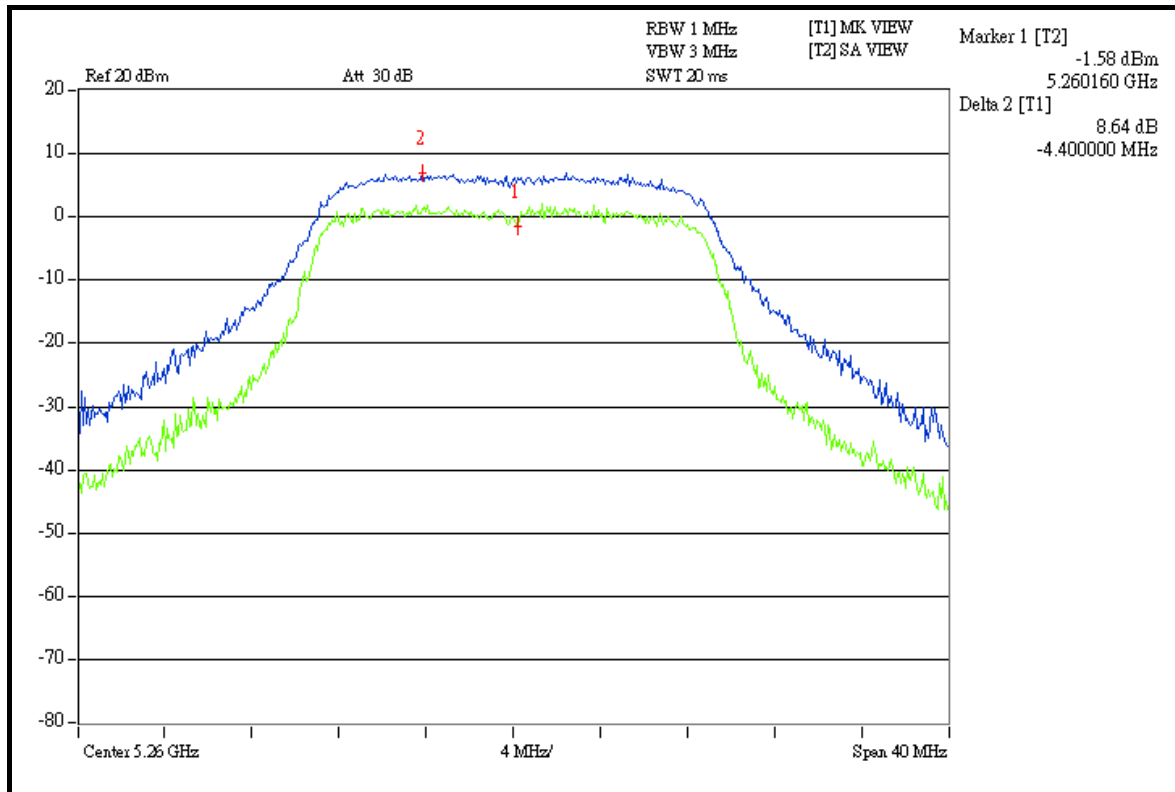
### CH 140



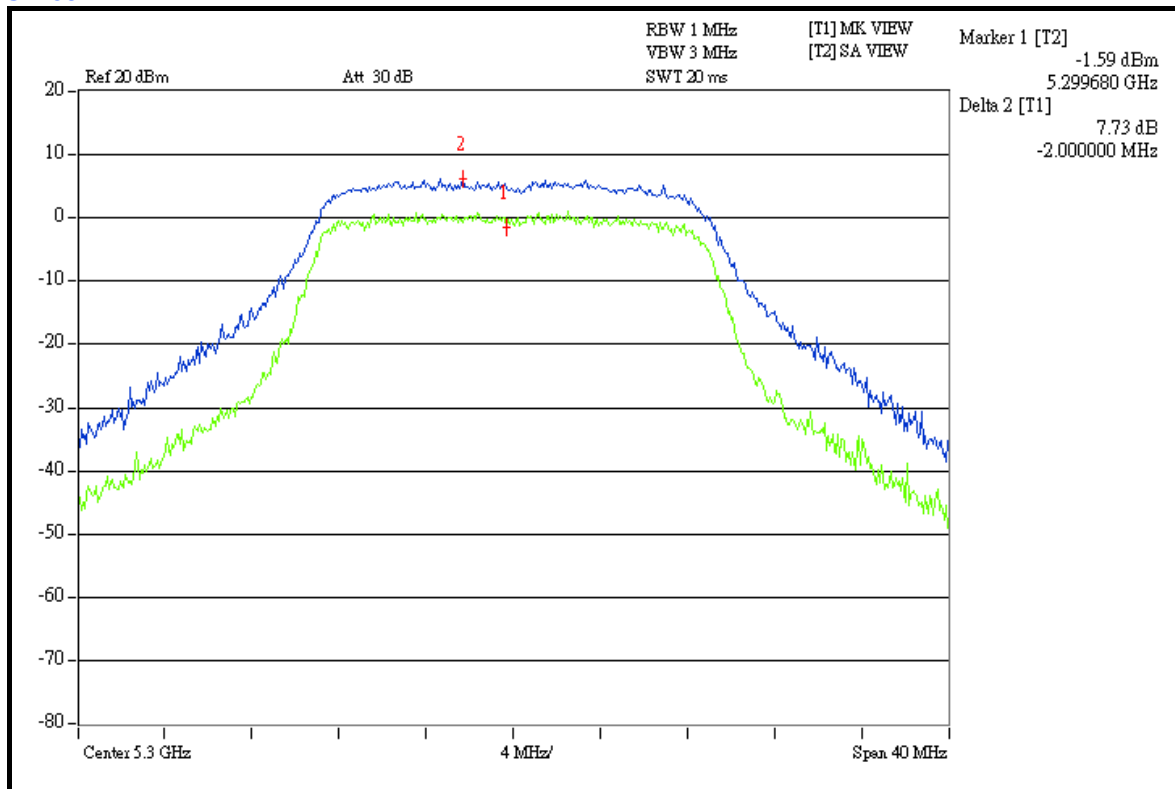


A D T

### CHAIN 2: CH 52



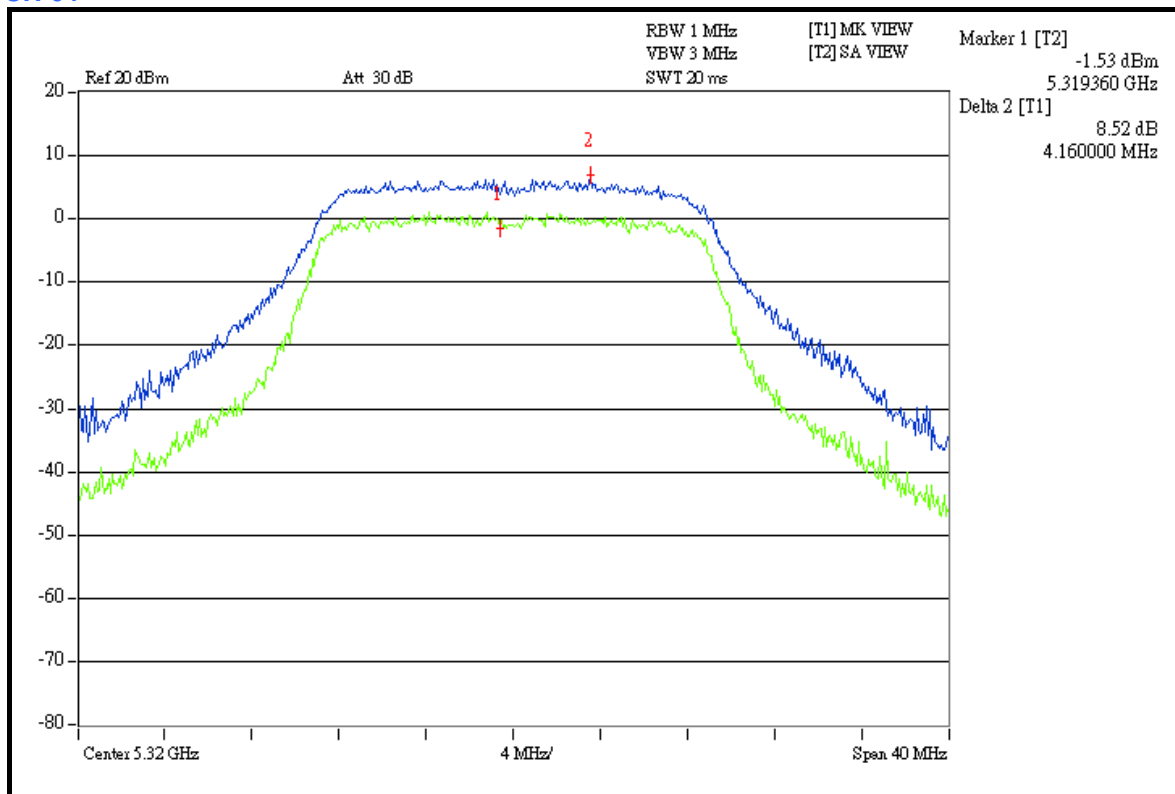
### CH 60



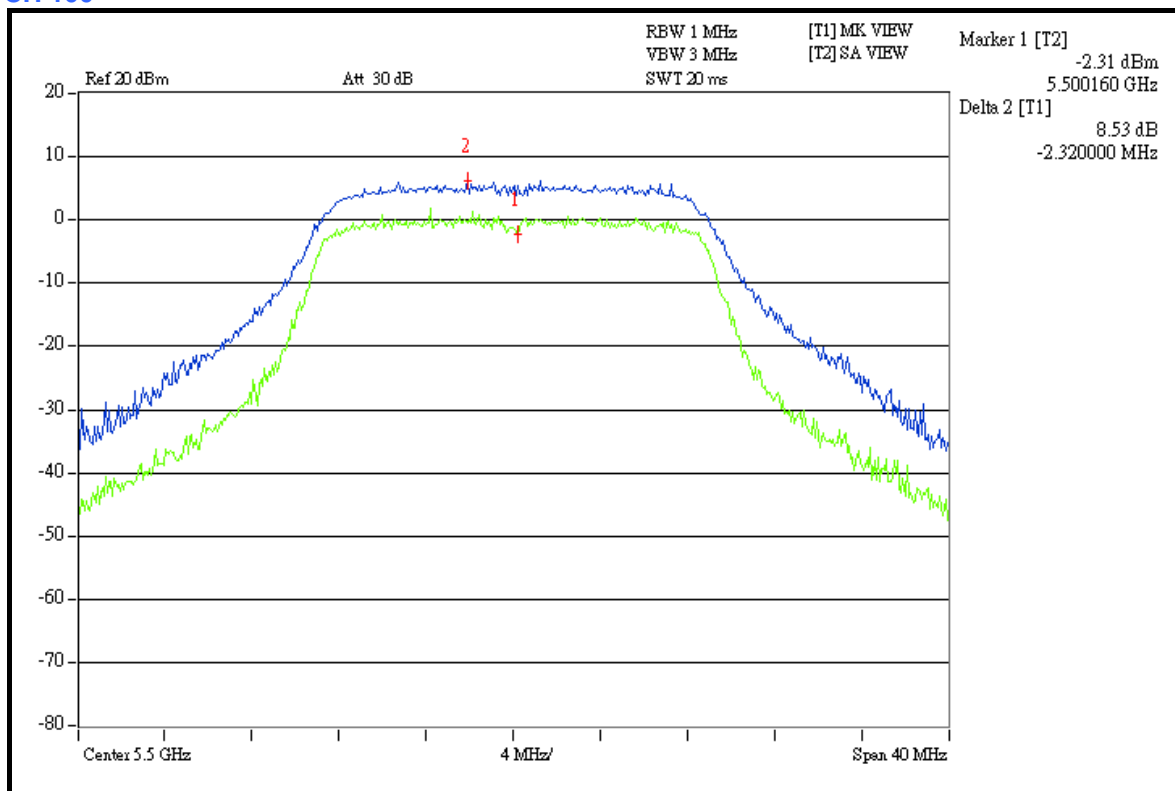


A D T

### CH 64



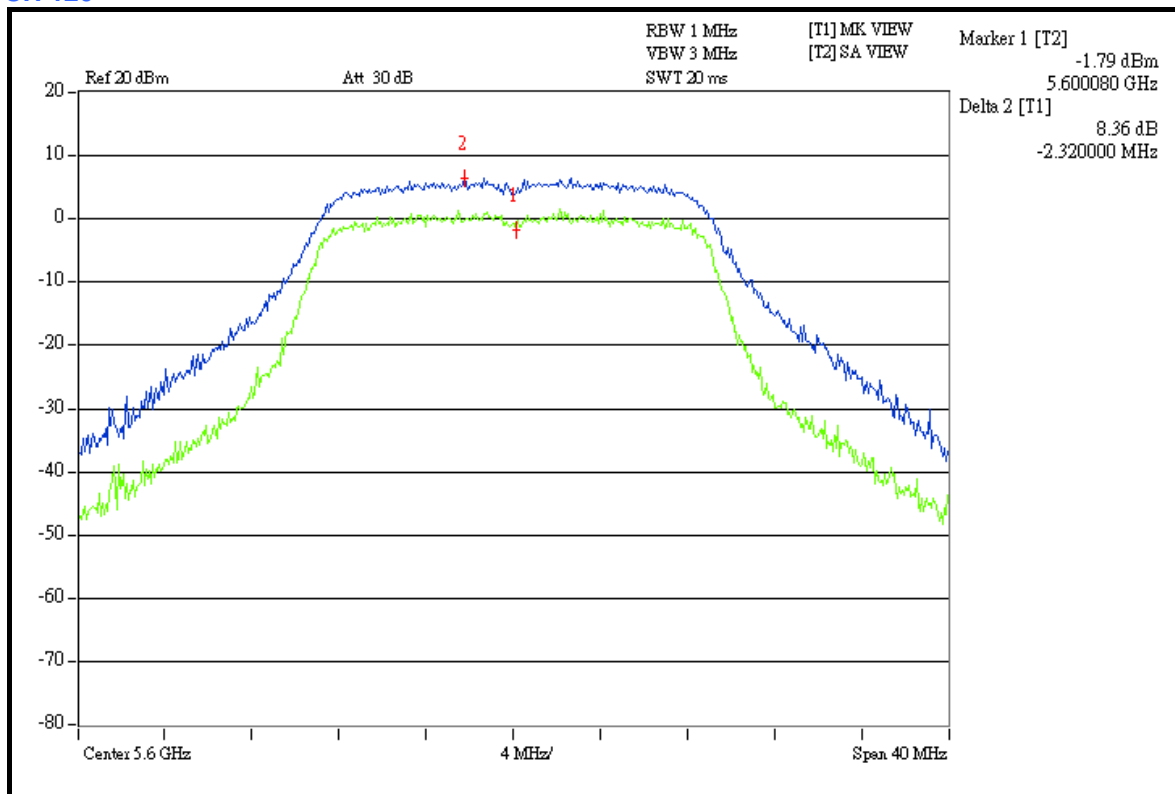
### CH 100



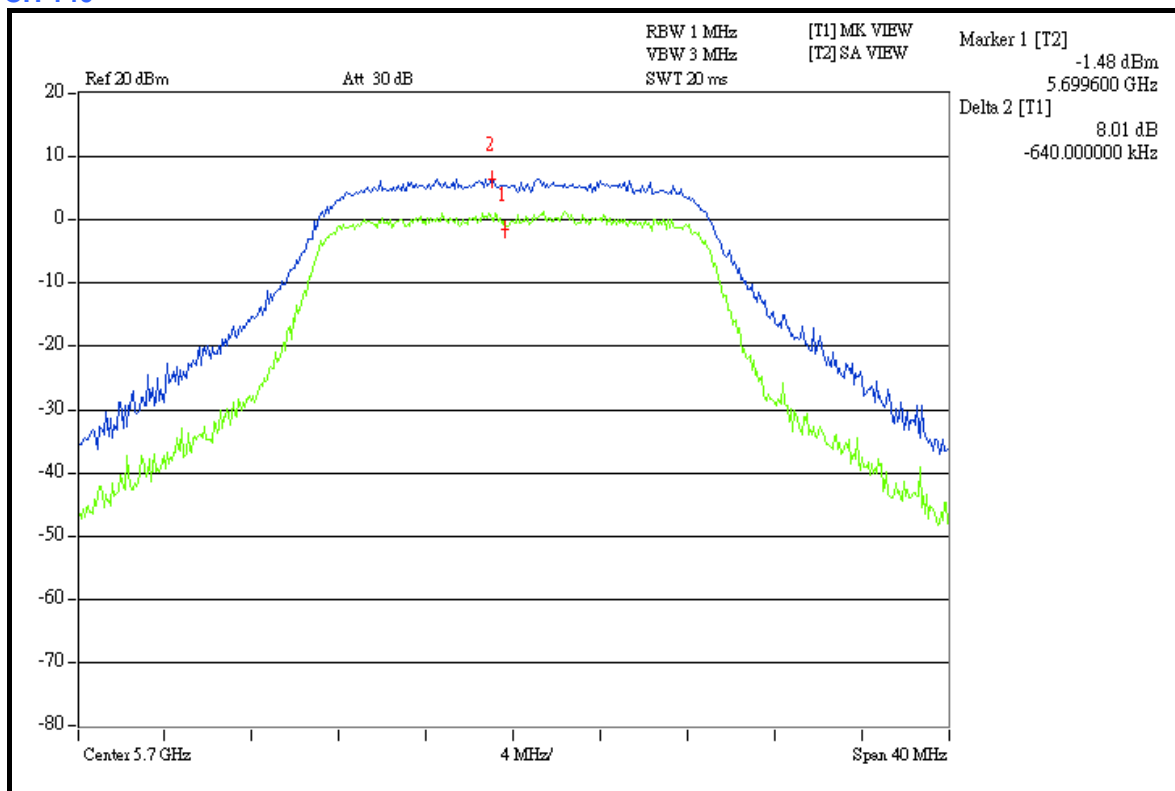


A D T

### CH 120



### CH 140





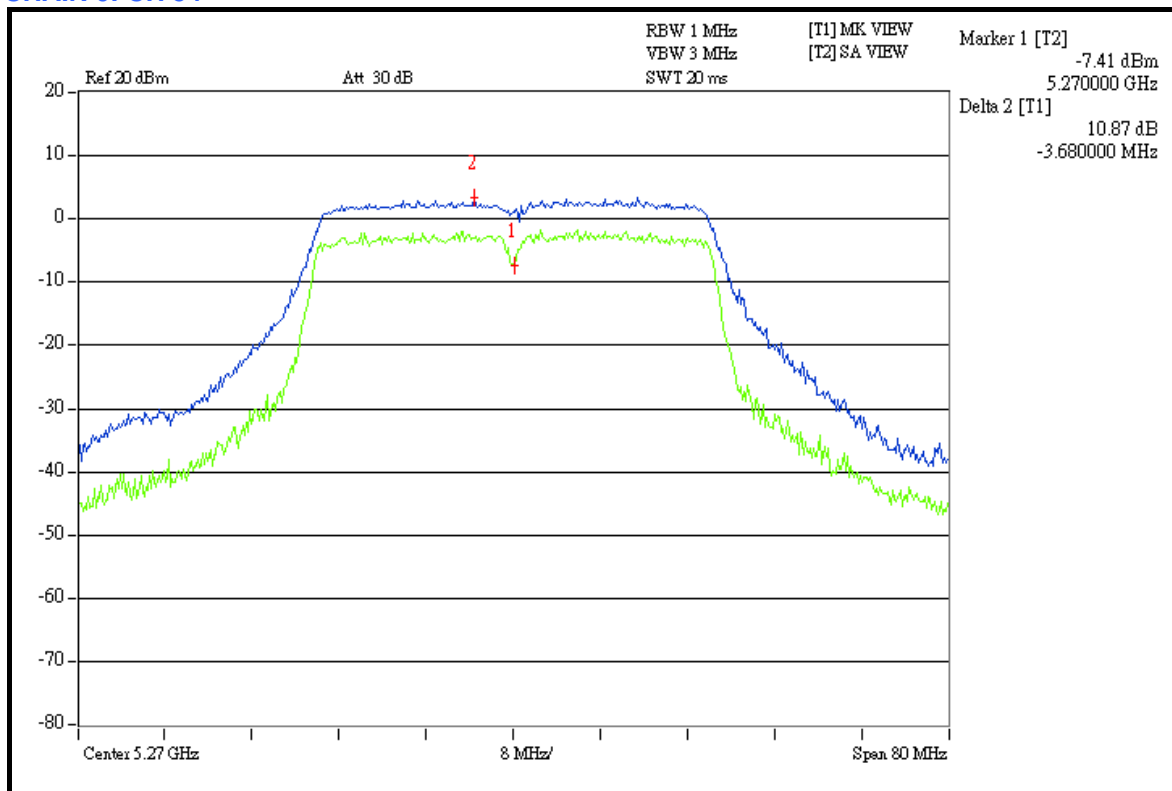
A D T

**DRAFT 802.11n (40MHz) OFDM MODULATION**

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	15.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)			PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
54	5270	10.87	9.74	11.33	13	PASS
62	5310	9.80	11.07	10.47	13	PASS
102	5510	10.61	11.59	11.84	13	PASS
118	5590	9.78	10.94	10.73	13	PASS
134	5670	10.61	11.08	11.52	13	PASS

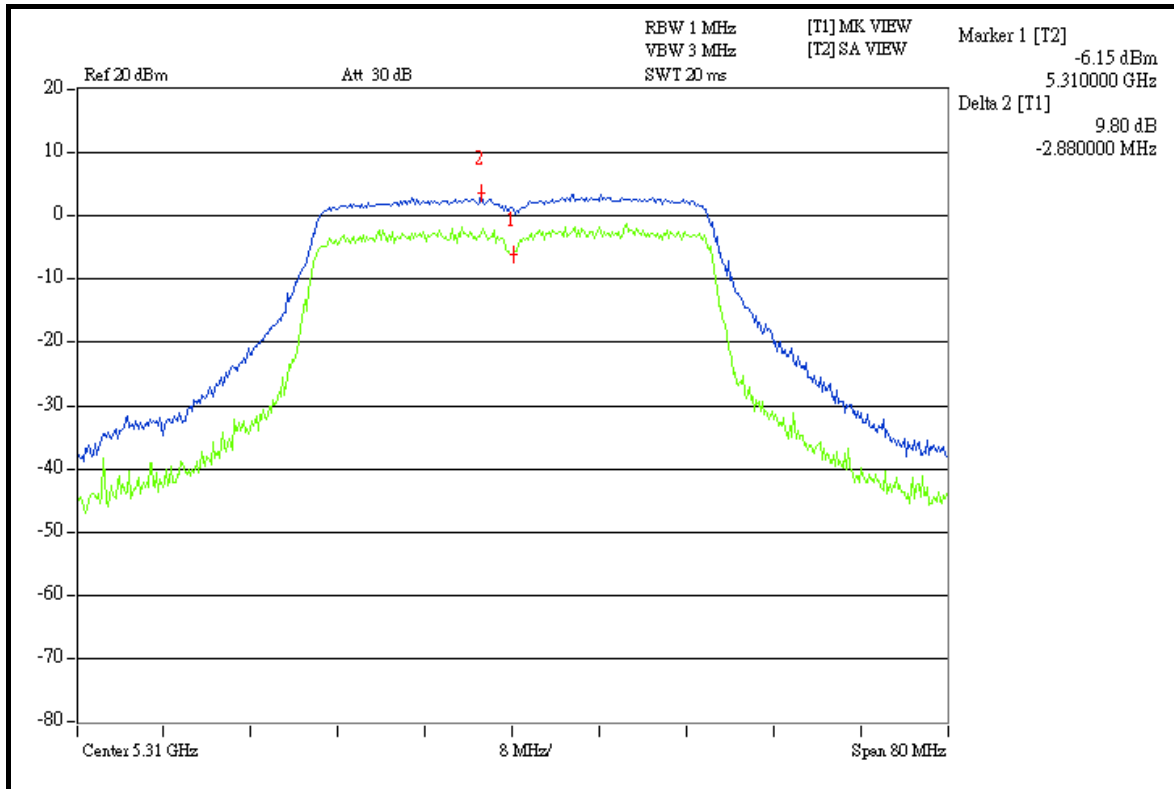
**CHAIN 0: CH 54**



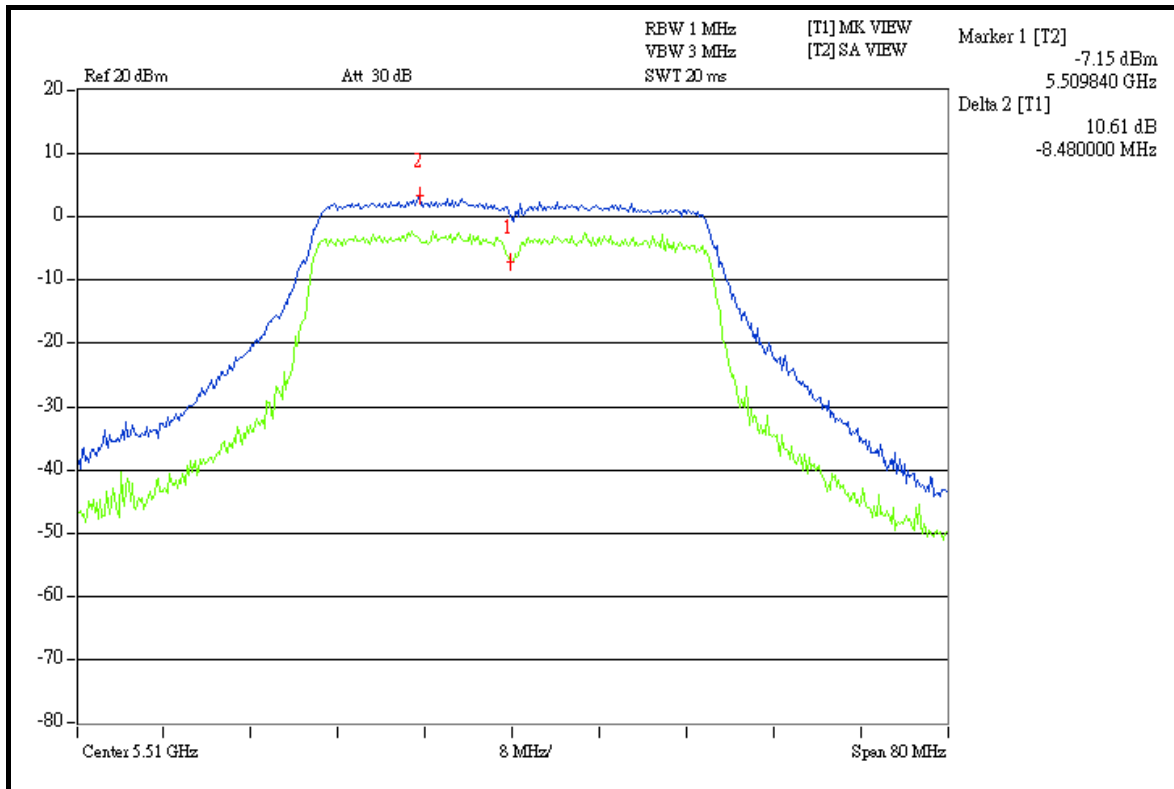


A D T

### CH 62



### CH 102

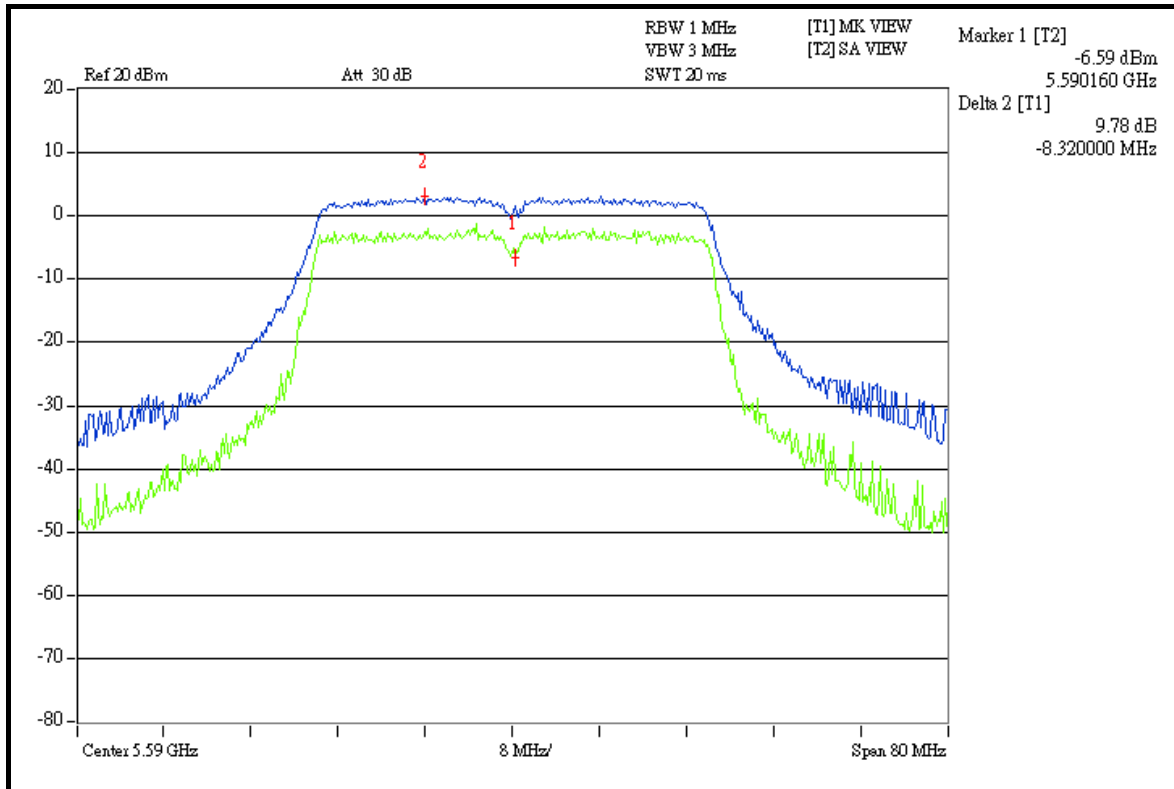




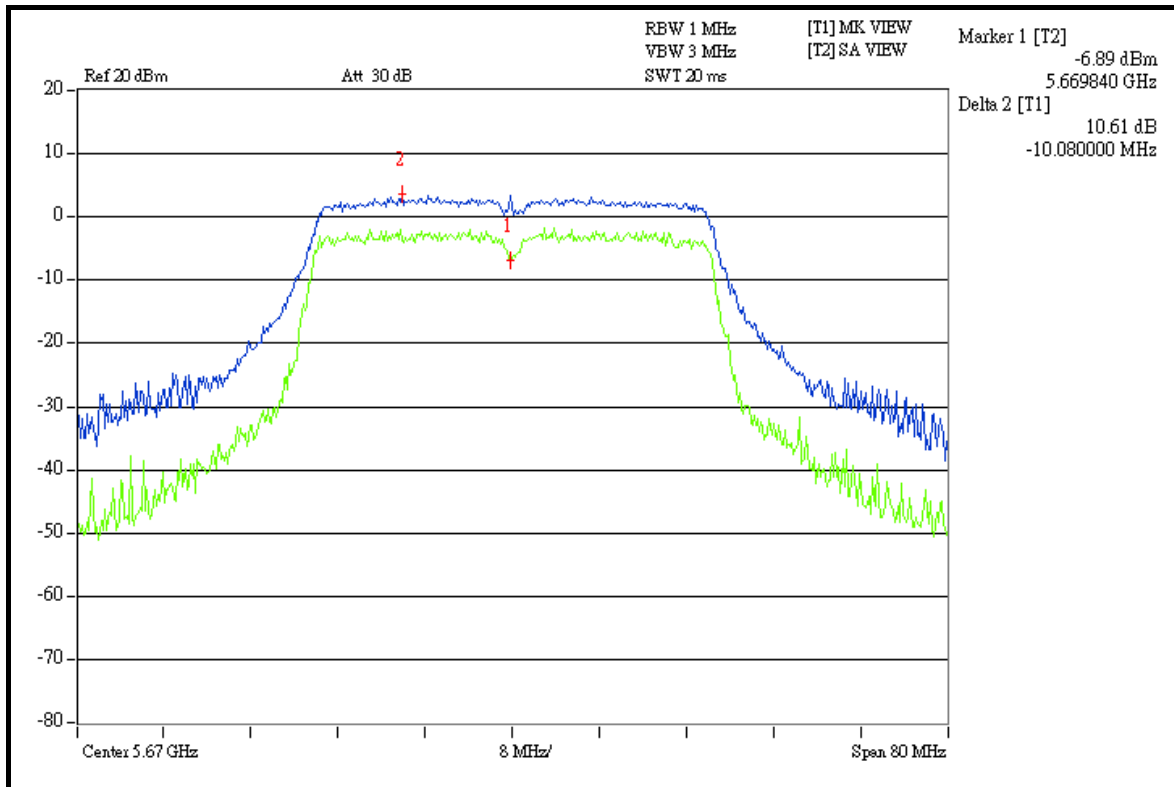


A D T

### CH 118



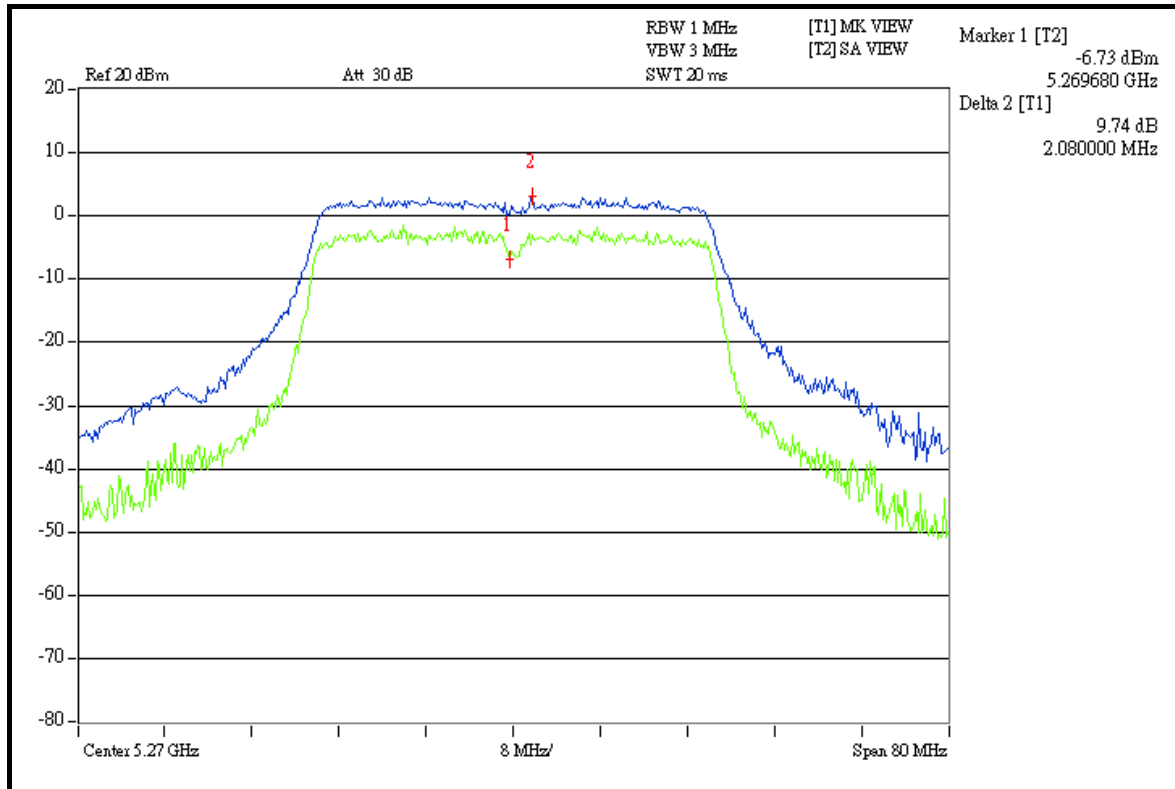
### CH 134



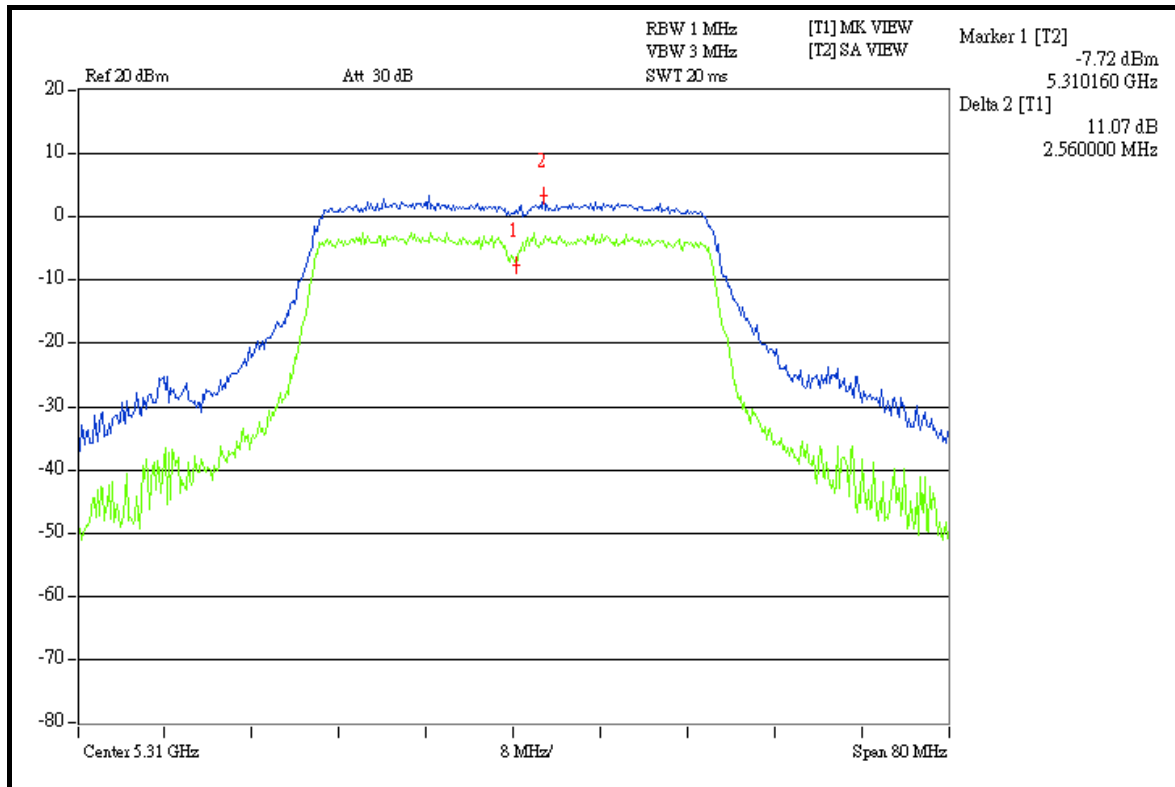


A D T

### CHAIN 1: CH 54



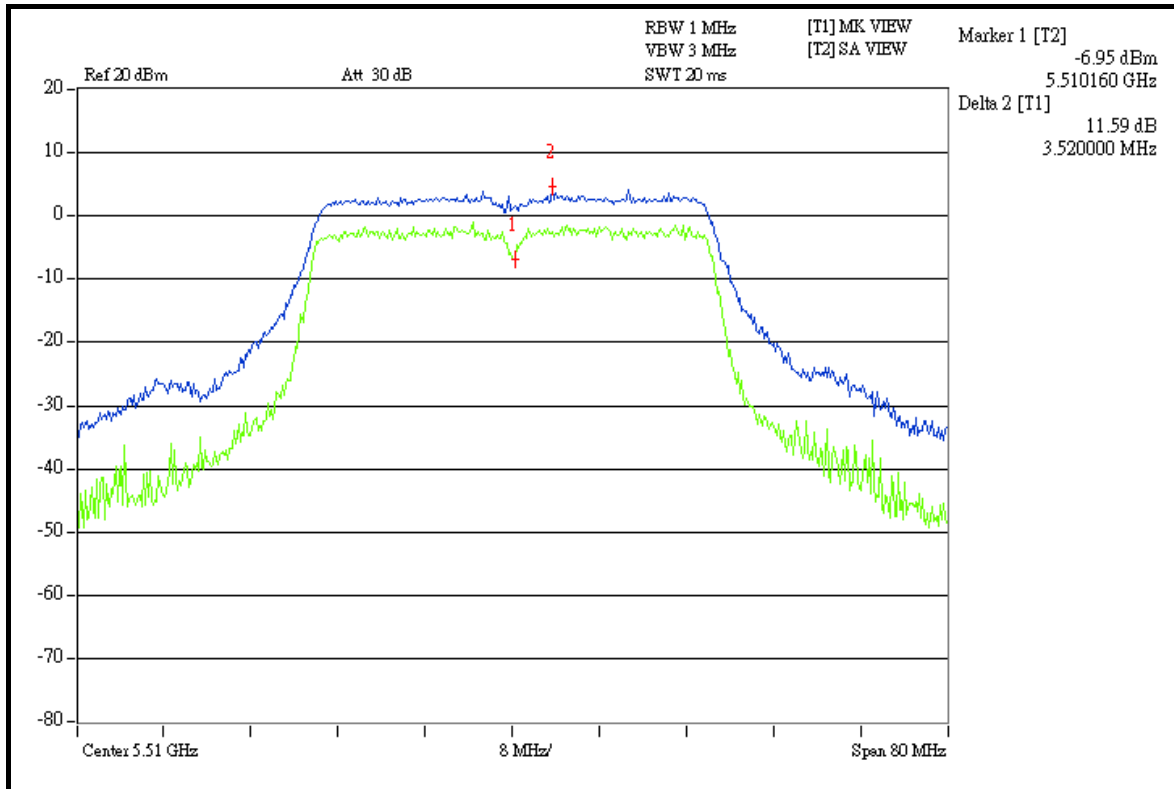
### CH 62



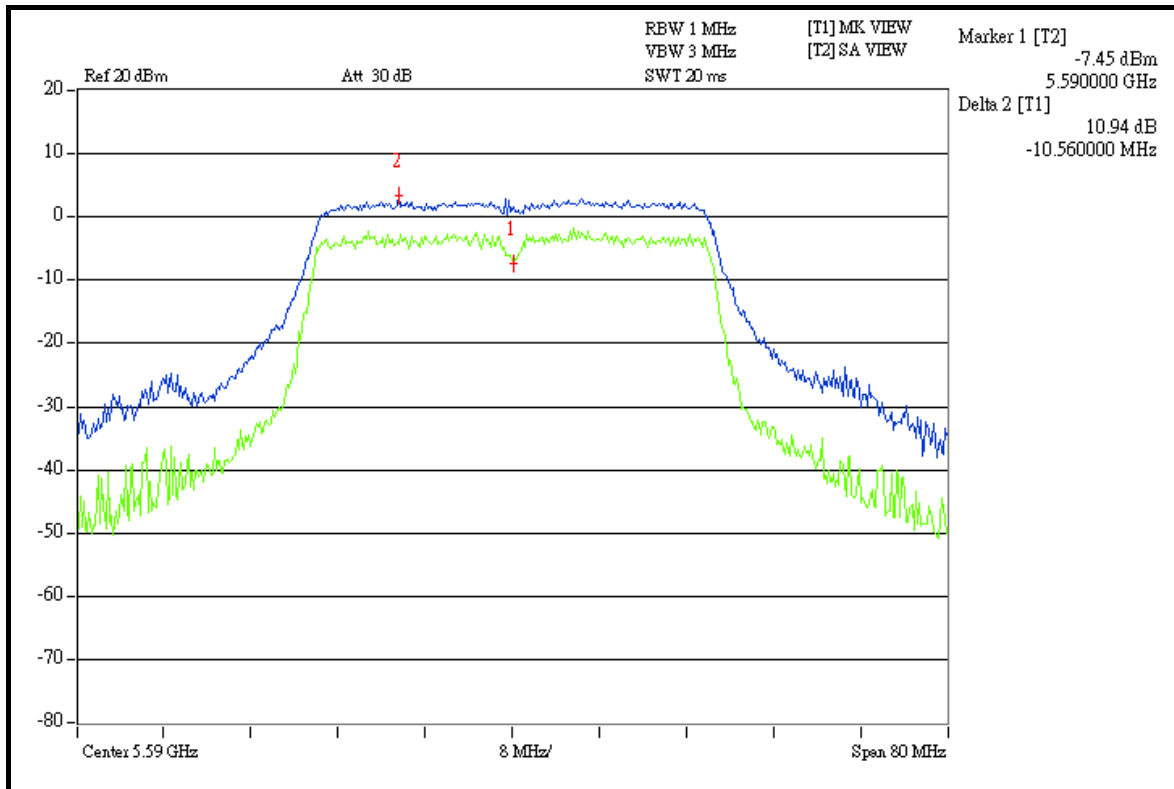


A D T

### CH 102



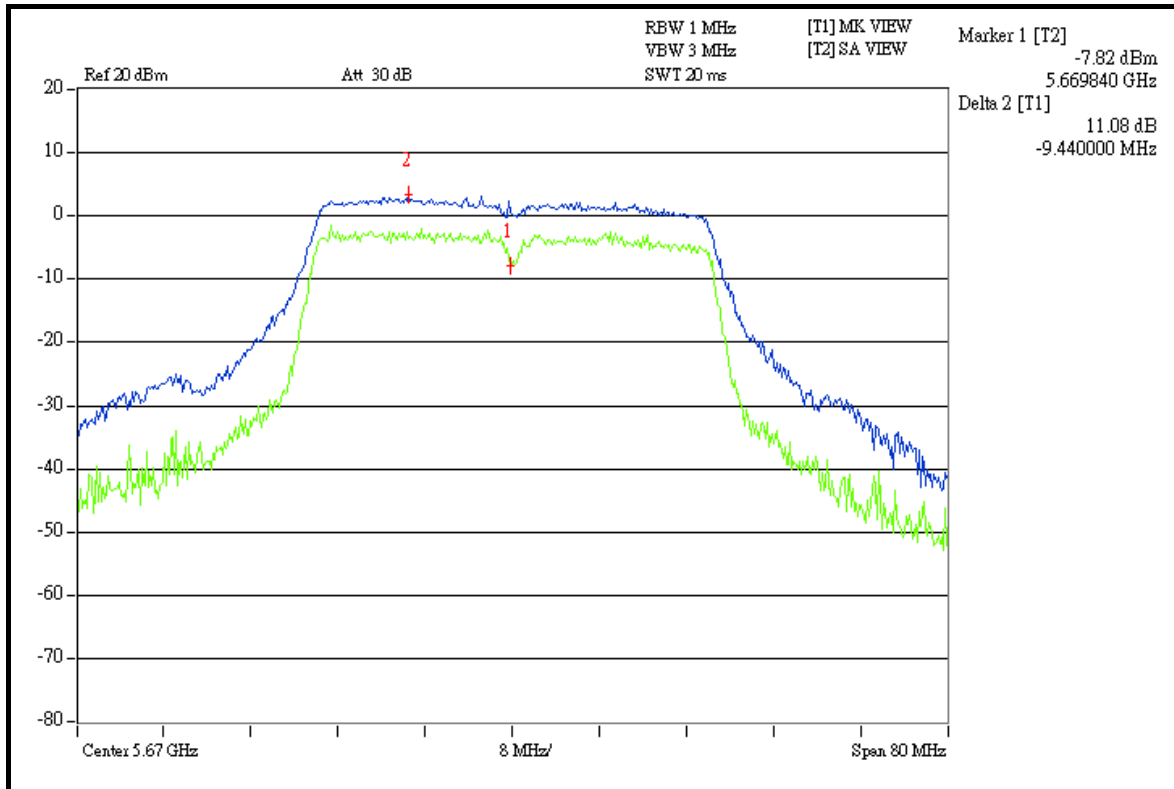
### CH 118



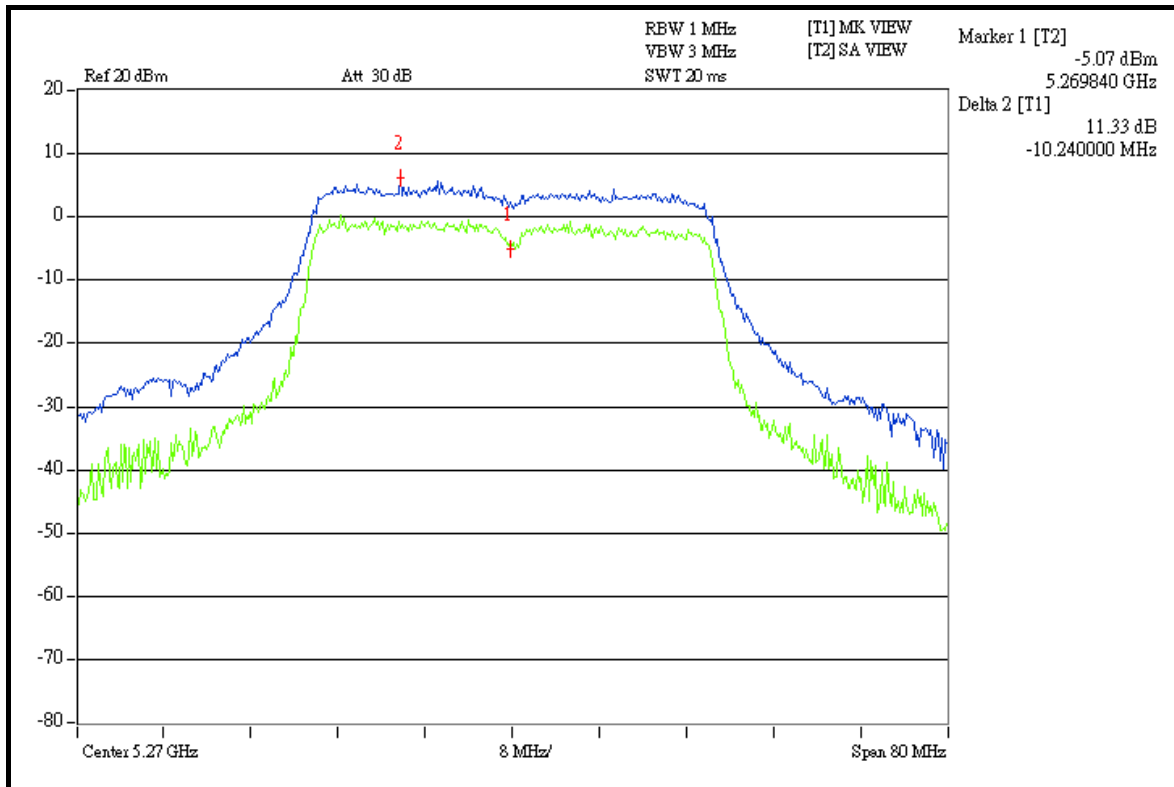


A D T

### CH 134



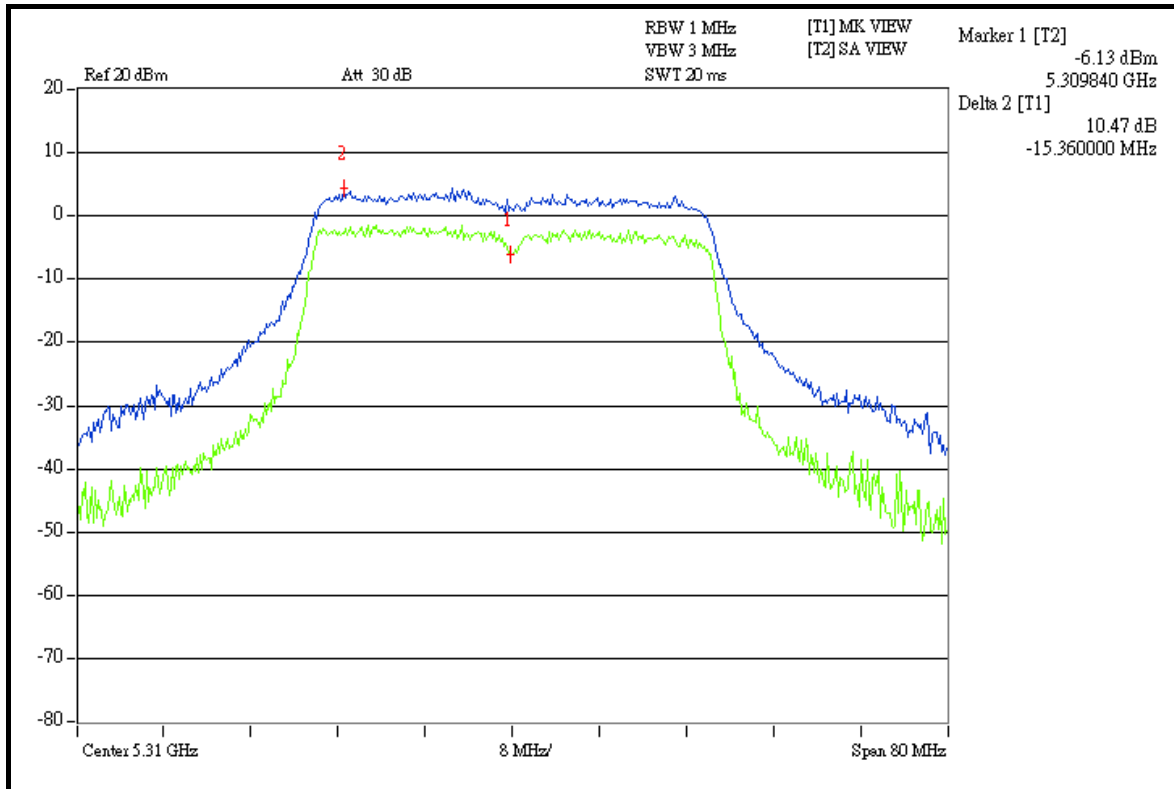
### CHAIN 2: CH 54



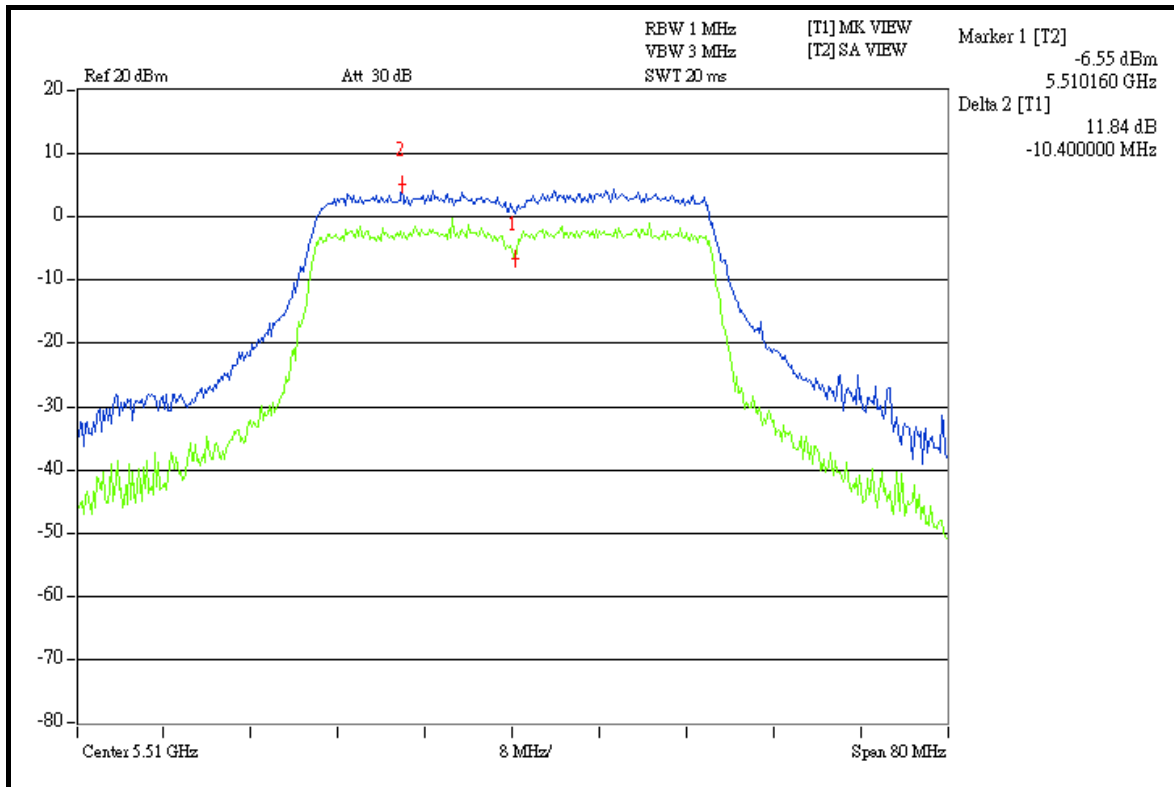


A D T

### CH 62



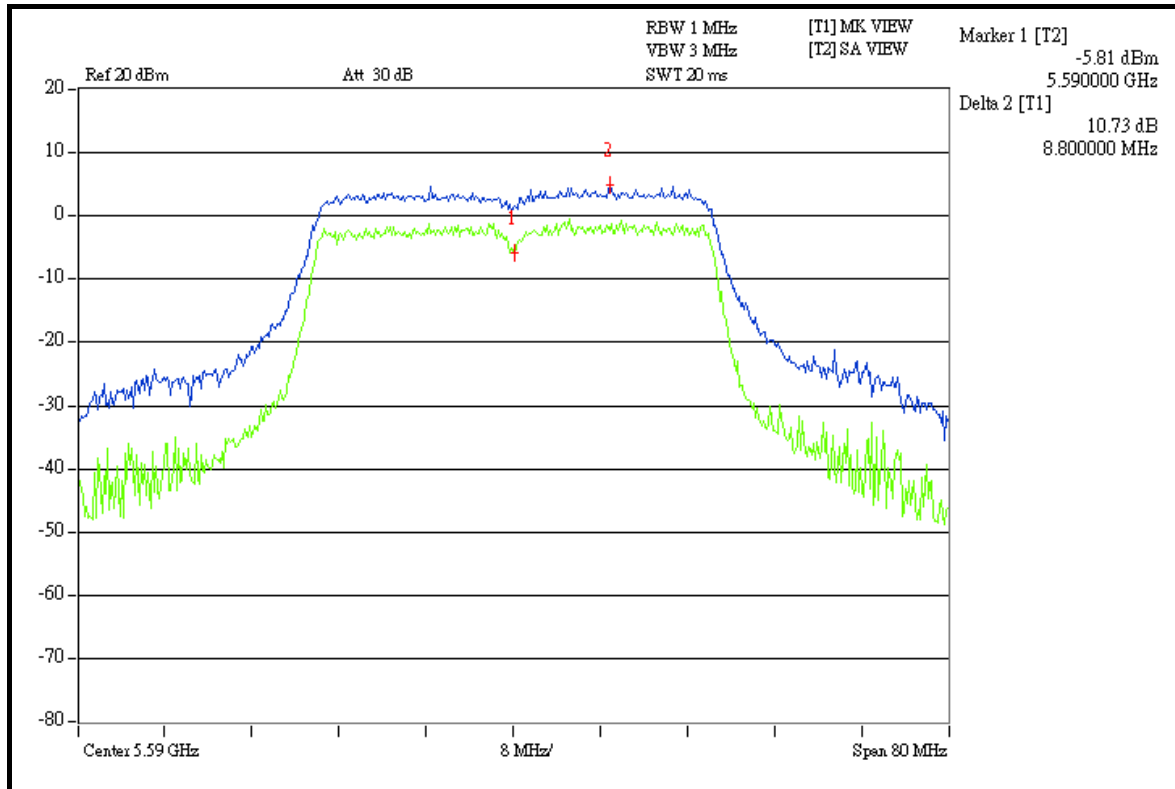
### CH 102



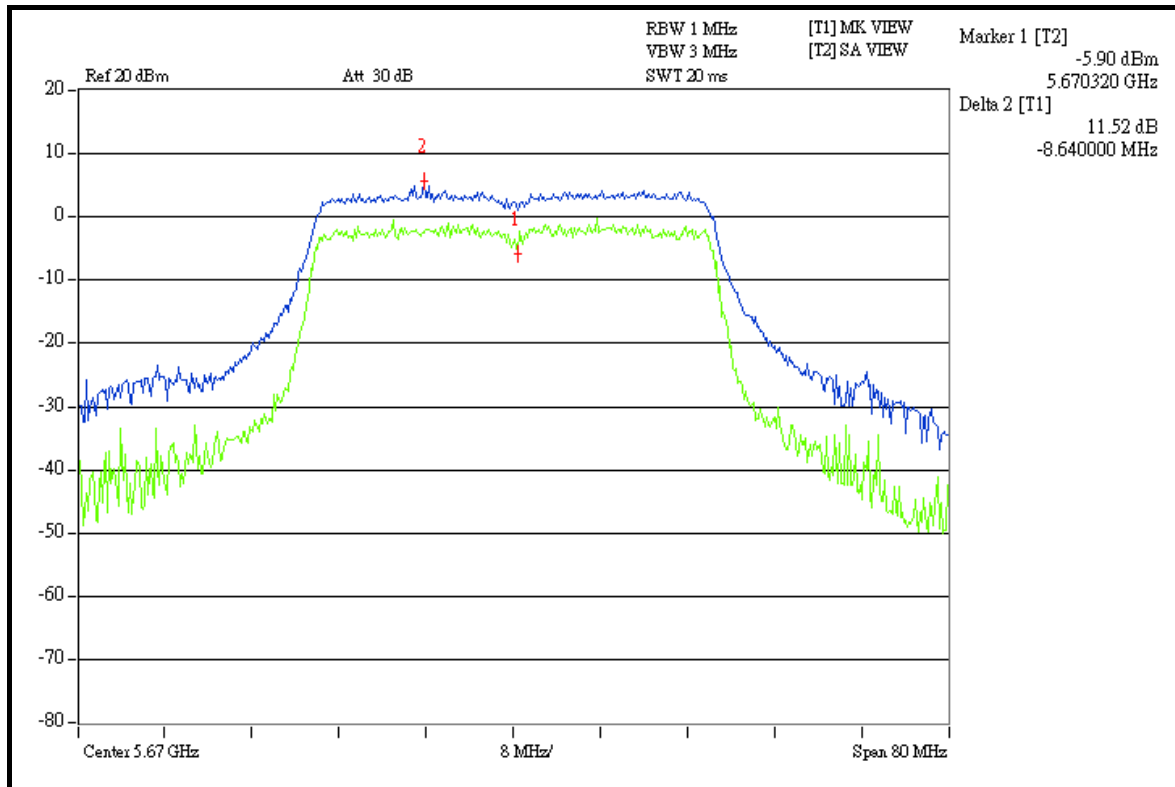


A D T

### CH 118



### CH 134



## 4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

### 4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

### 4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
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

- 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



#### 4.5.7 TEST RESULTS

##### 802.11a OFDM MODULATION

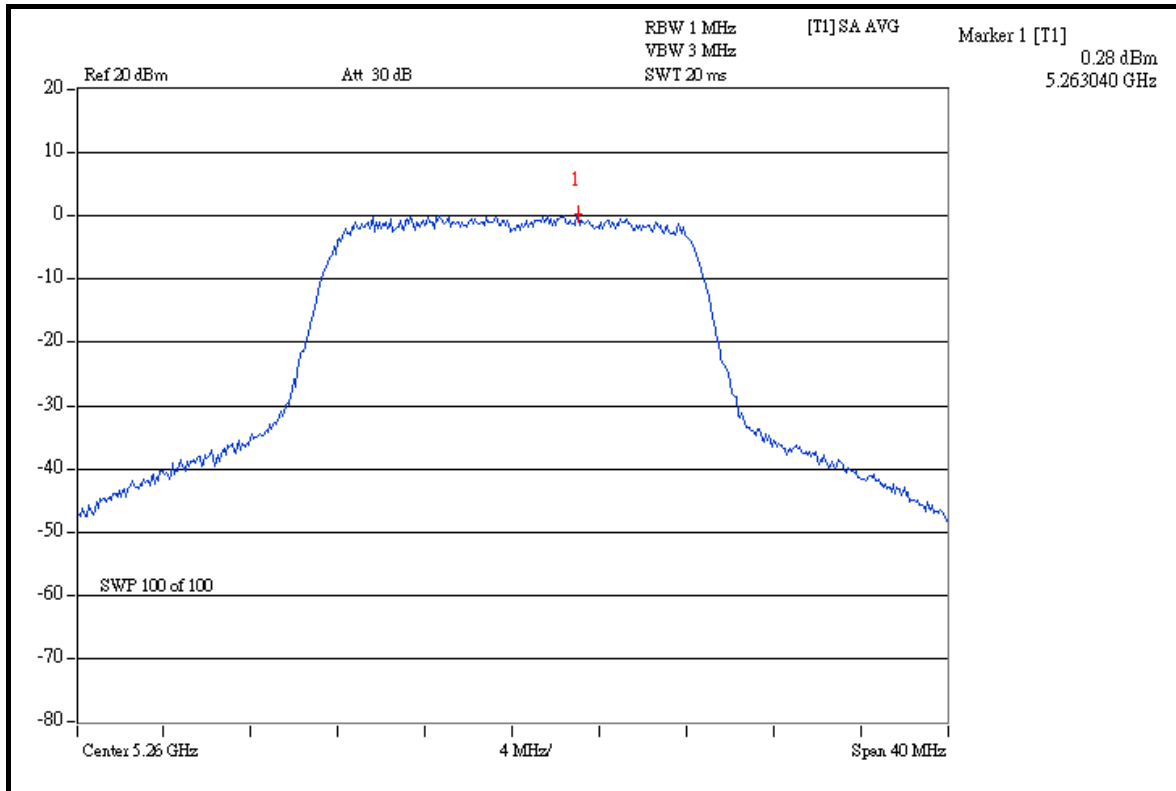
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz )	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
52	5260	0.28	11	PASS
60	5300	0.11	11	PASS
64	5320	0.08	11	PASS
100	5500	-0.33	11	PASS
120	5600	-0.76	11	PASS
140	5700	-0.71	11	PASS

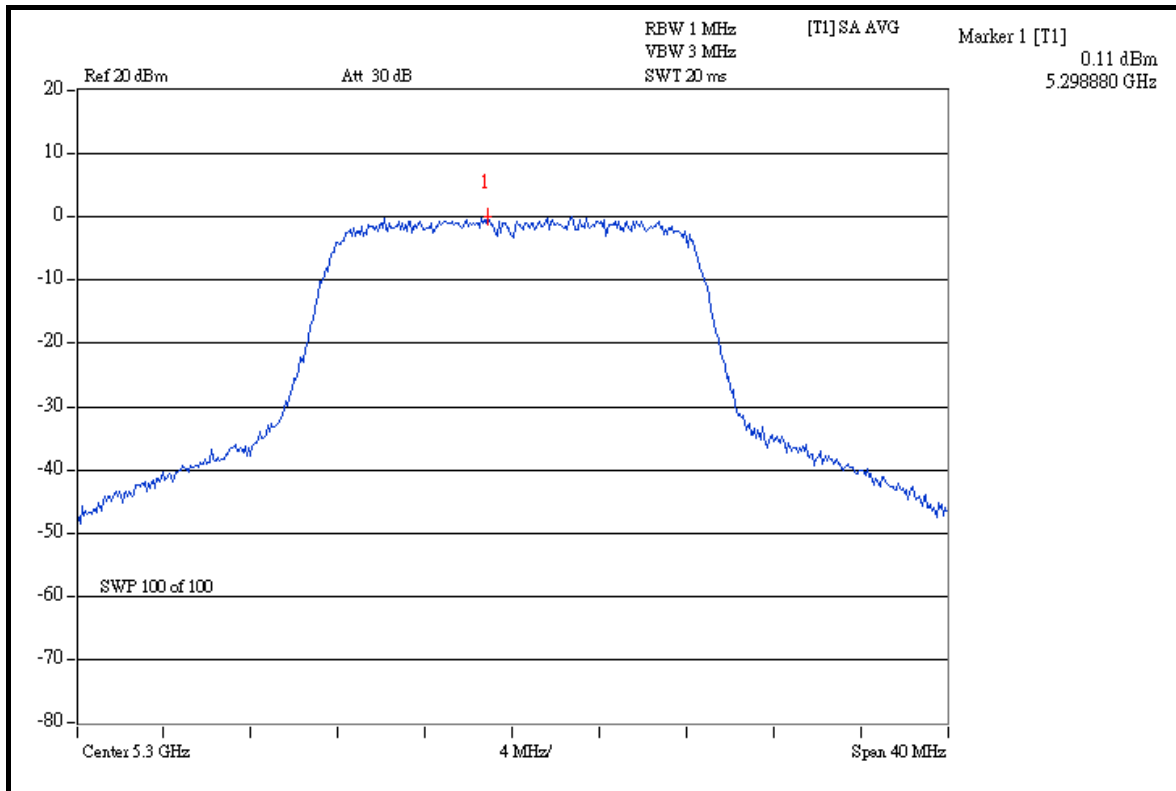


A D T

### CH 52



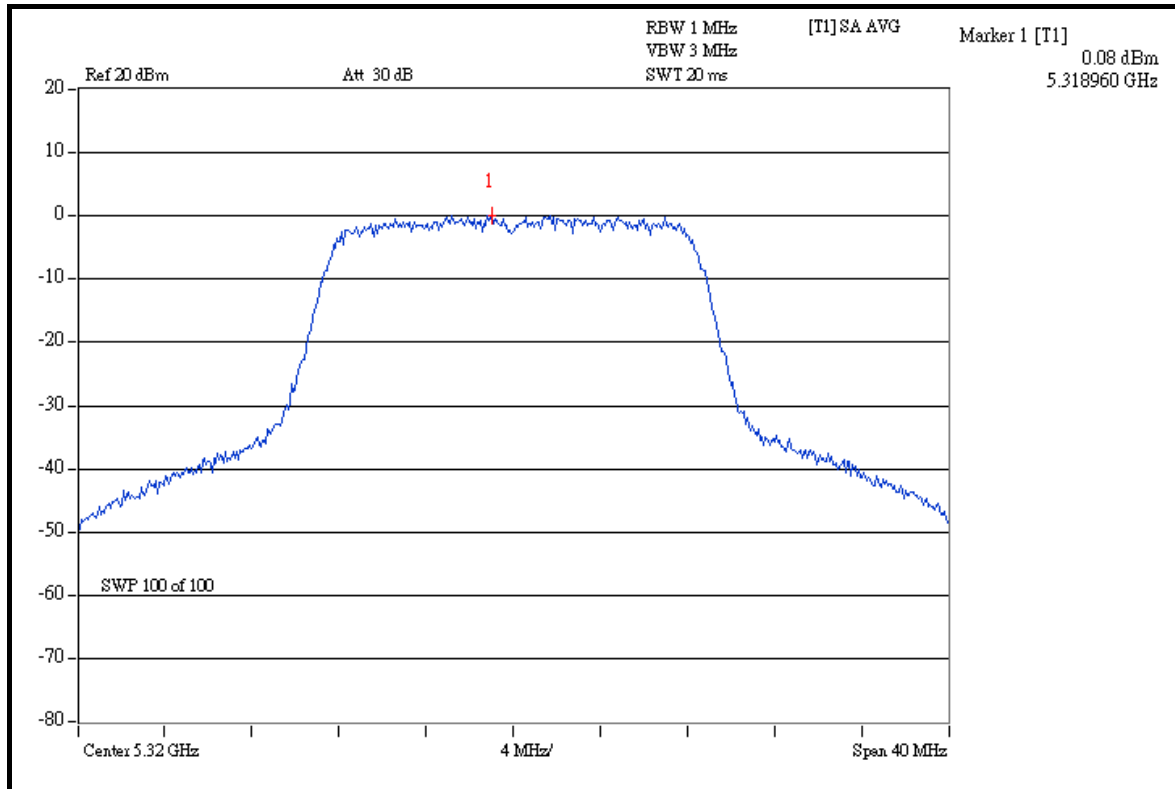
### CH 60



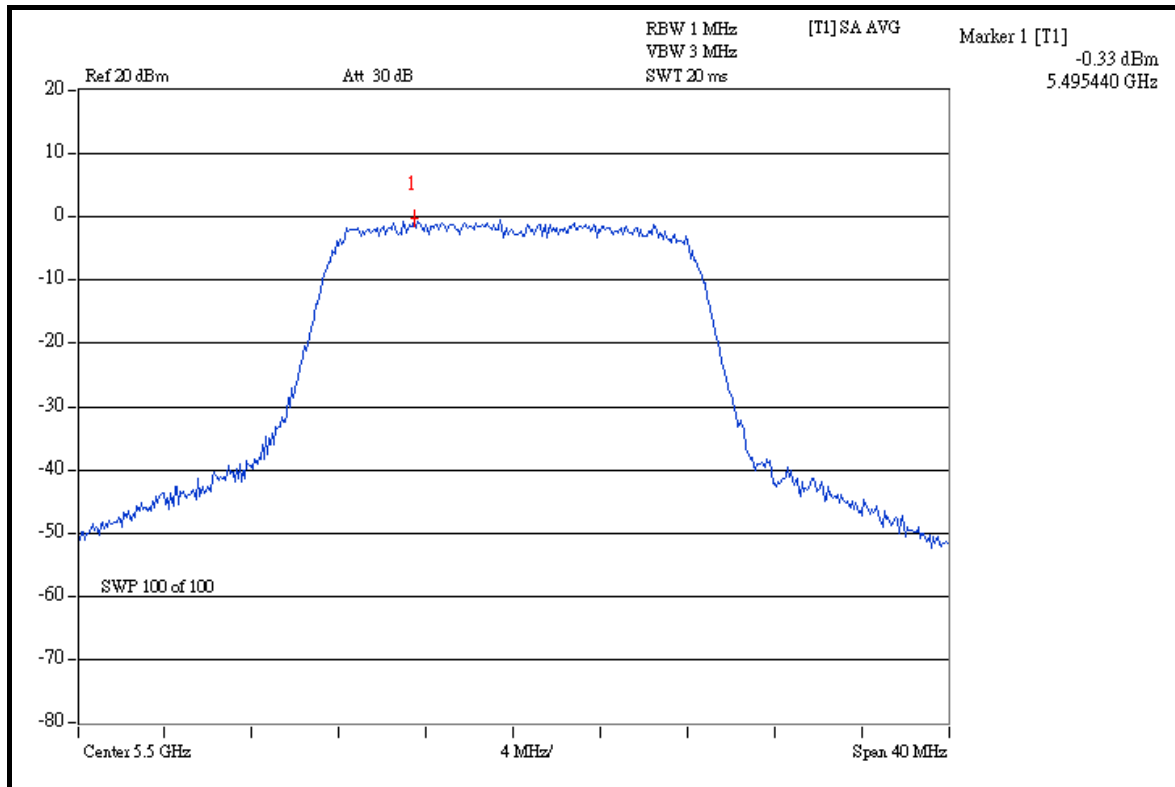


A D T

### CH 64



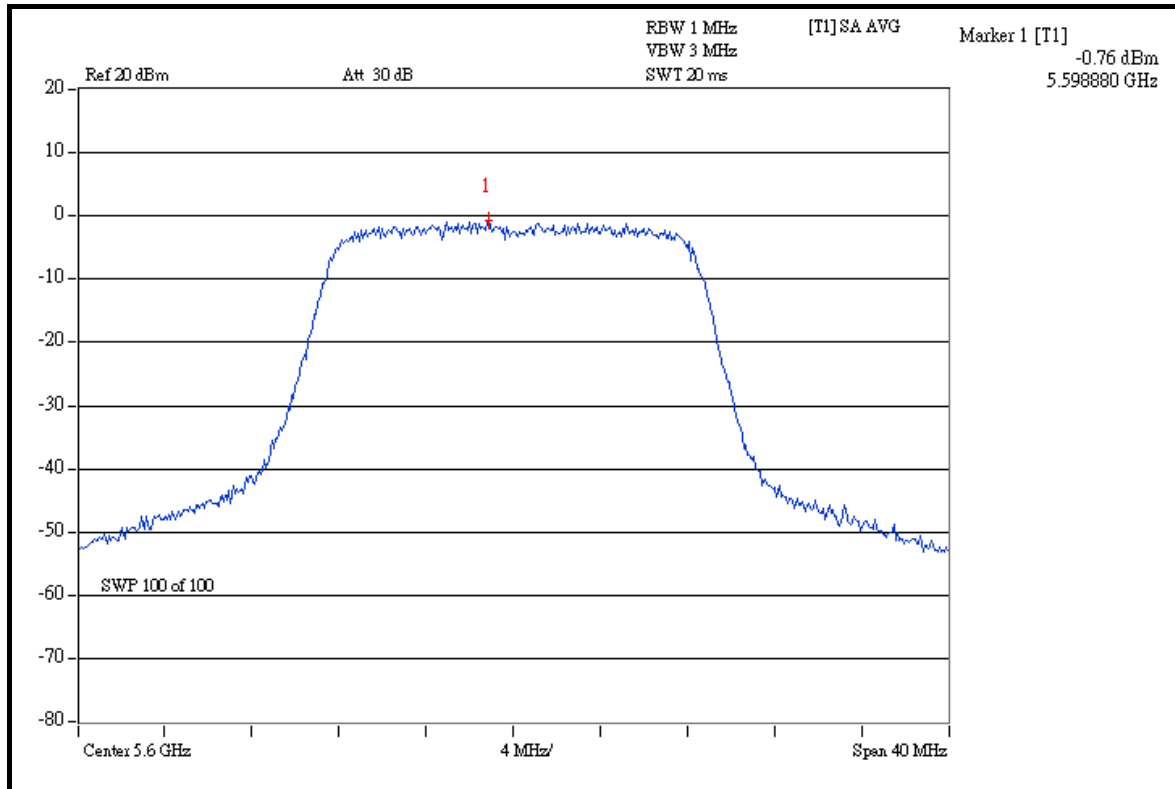
### CH 100



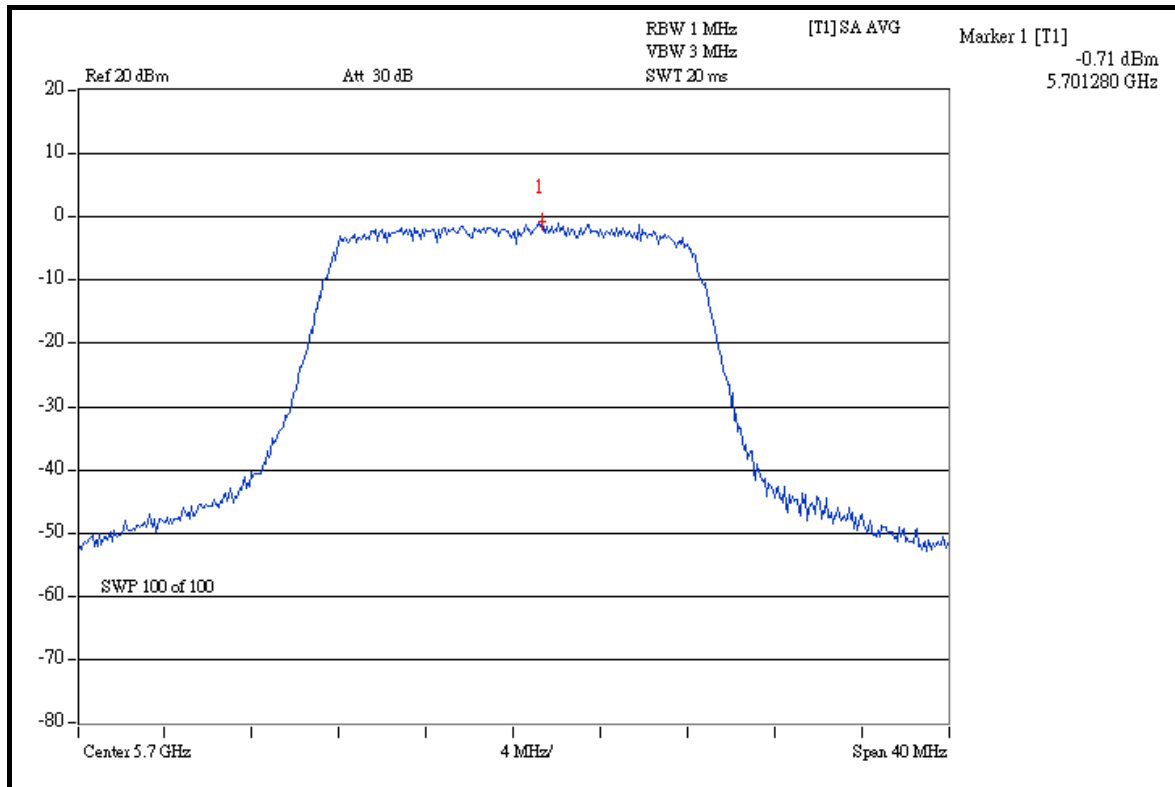


A D T

### CH 120



### CH 140





A D T

### DRAFT 802.11n (20MHz) OFDM MODULATION

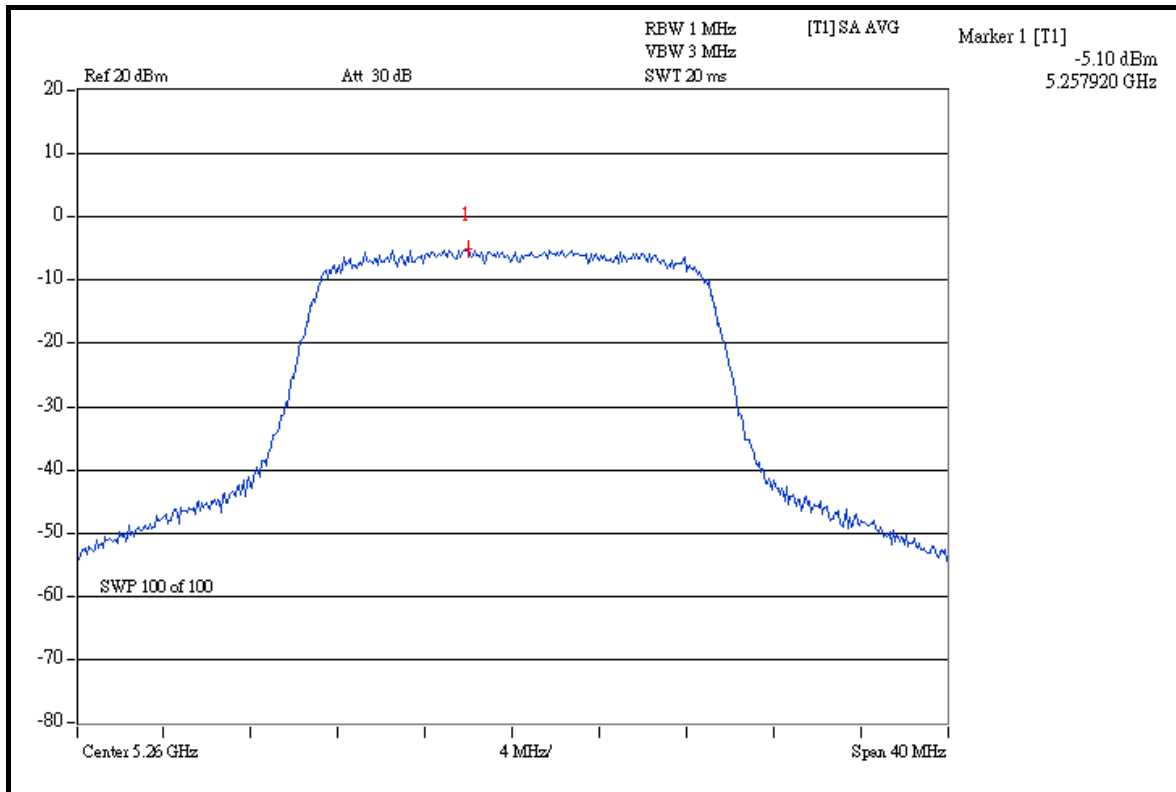
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	7.2Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	-5.10	-5.41	-4.82	0.926	-0.33	11	PASS
60	5300	-5.86	-5.42	-5.57	0.824	-0.84	11	PASS
64	5320	-5.11	-6.44	-5.59	0.811	-0.91	11	PASS
100	5500	-5.71	-4.87	-5.13	0.901	-0.45	11	PASS
120	5600	-5.71	-4.42	-5.24	0.929	-0.32	11	PASS
140	5700	-5.50	-4.80	-5.21	0.914	-0.39	11	PASS

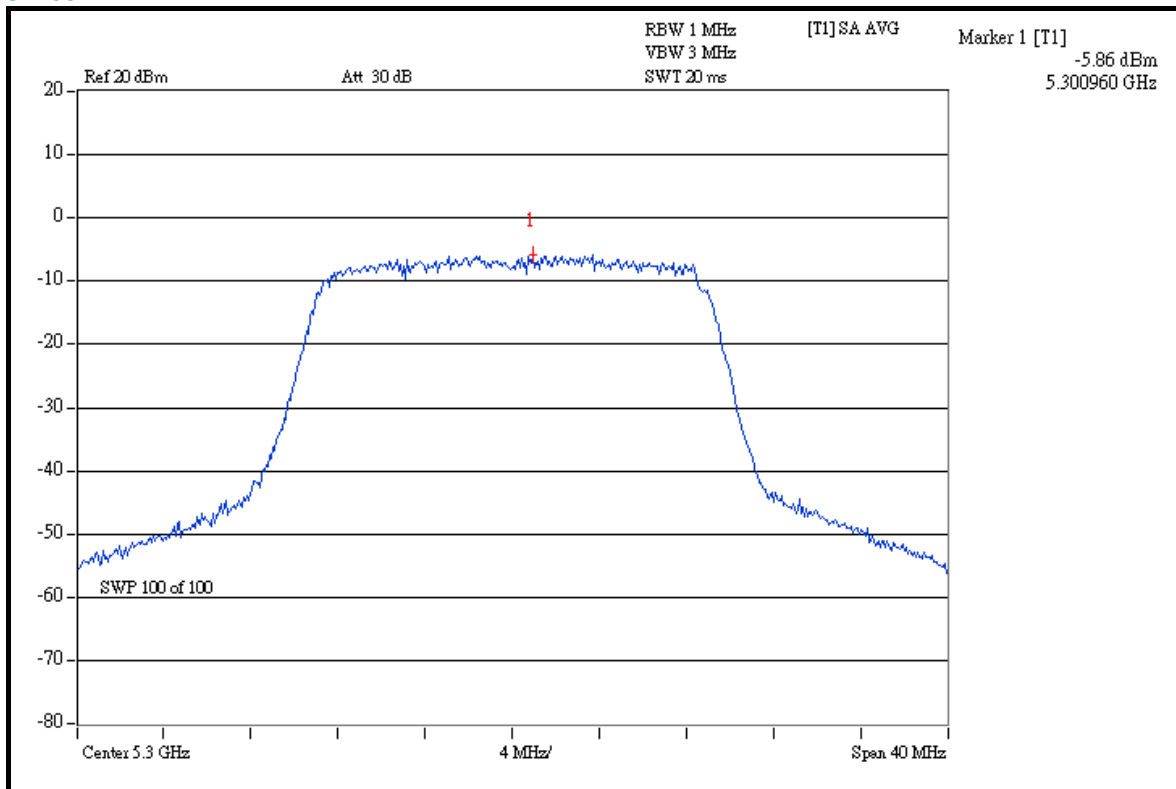


A D T

### CHAIN 0: CH 52



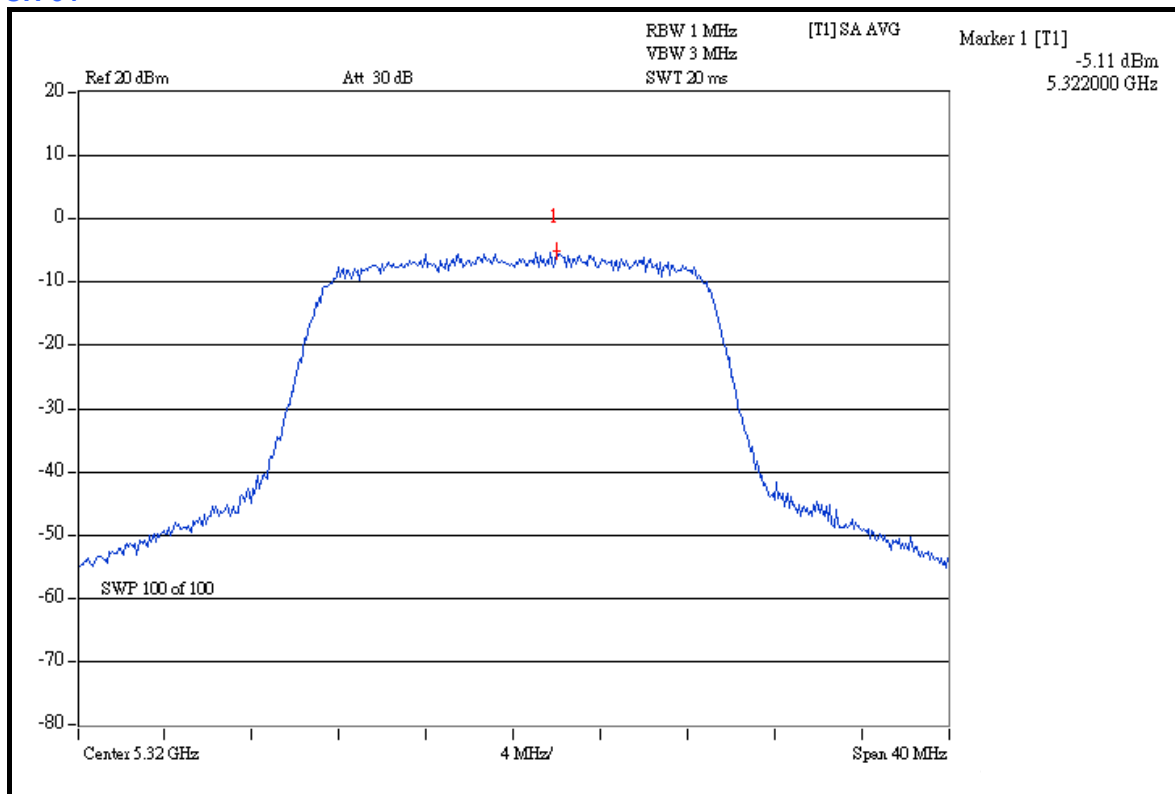
### CH 60



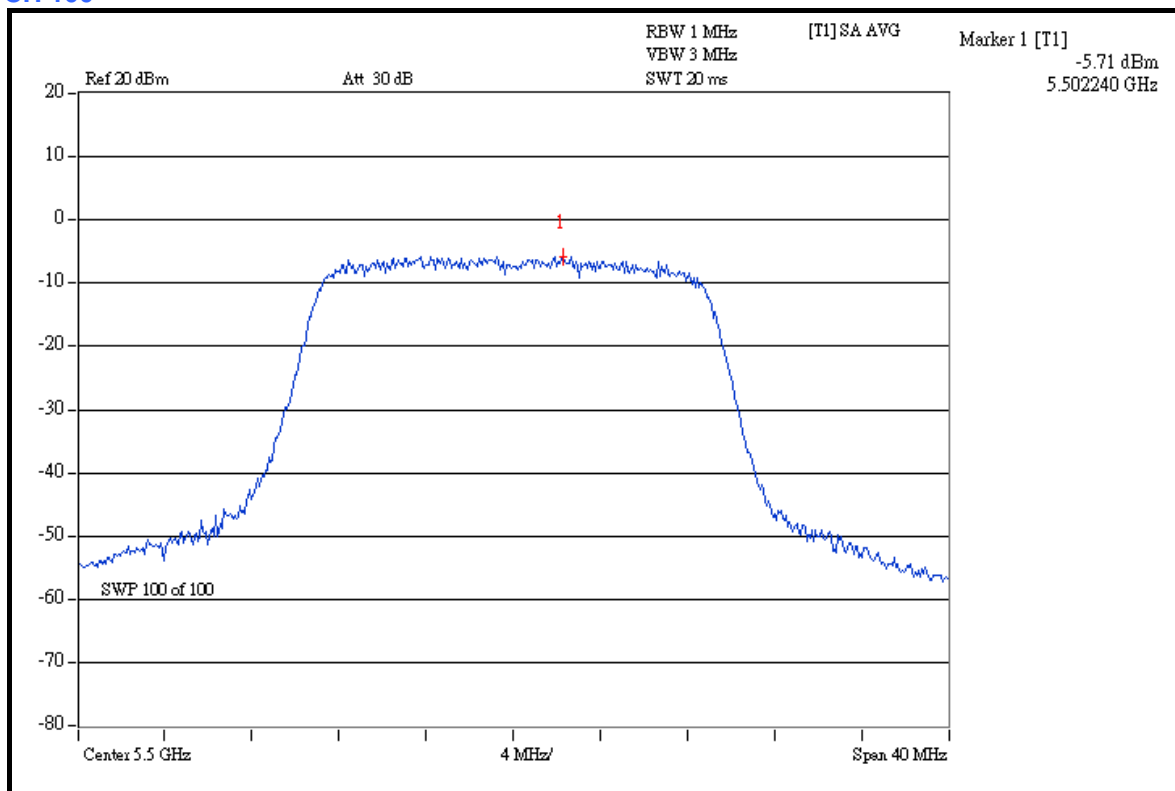


A D T

### CH 64



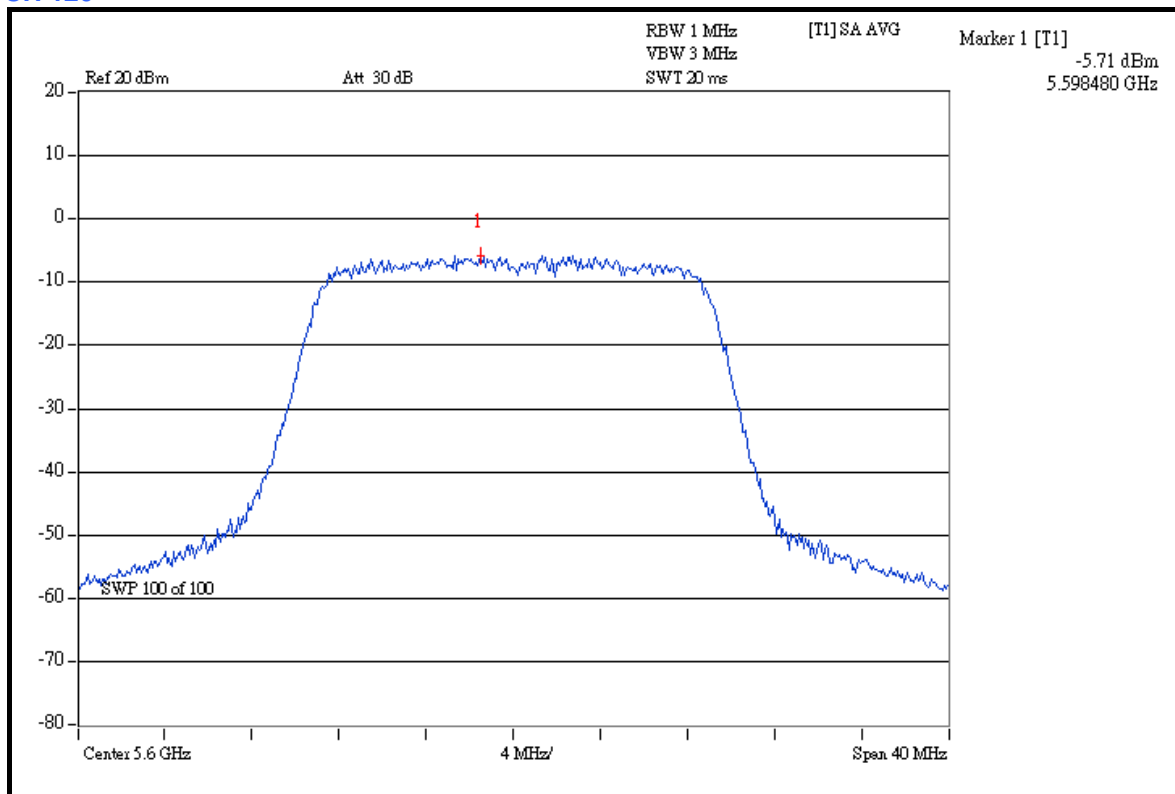
### CH 100



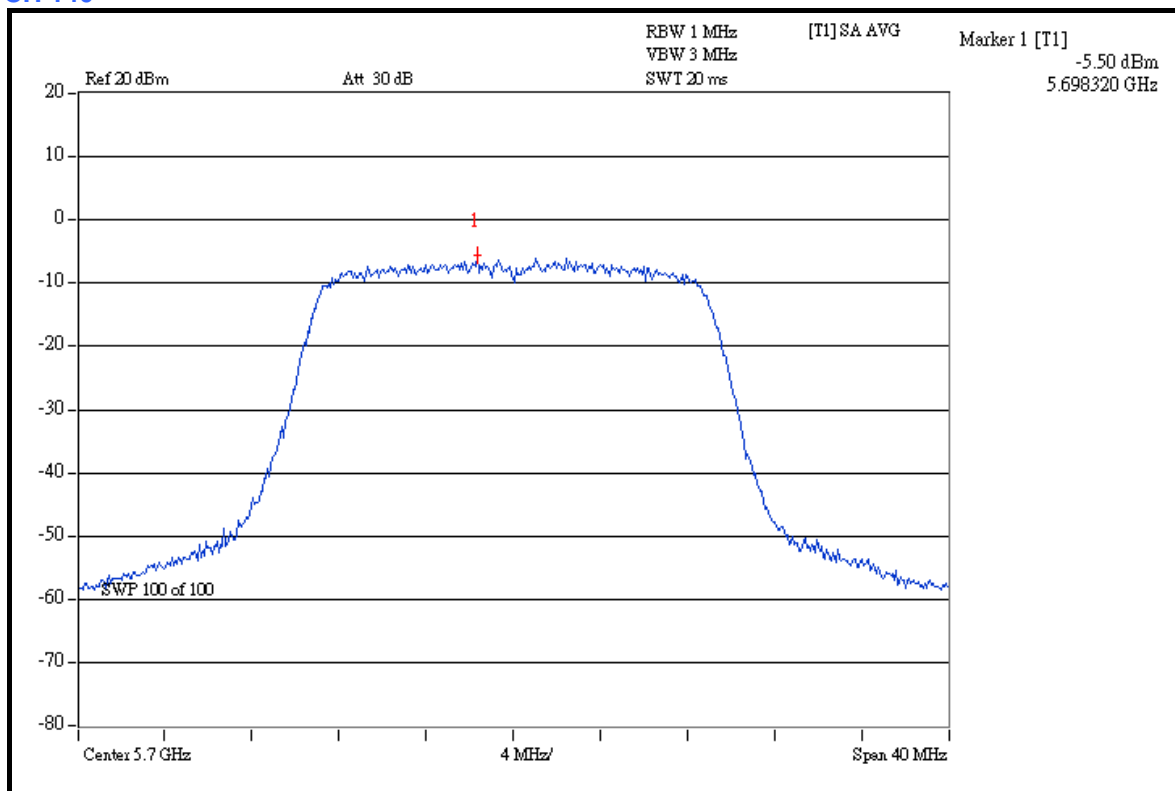


A D T

### CH 120



### CH 140

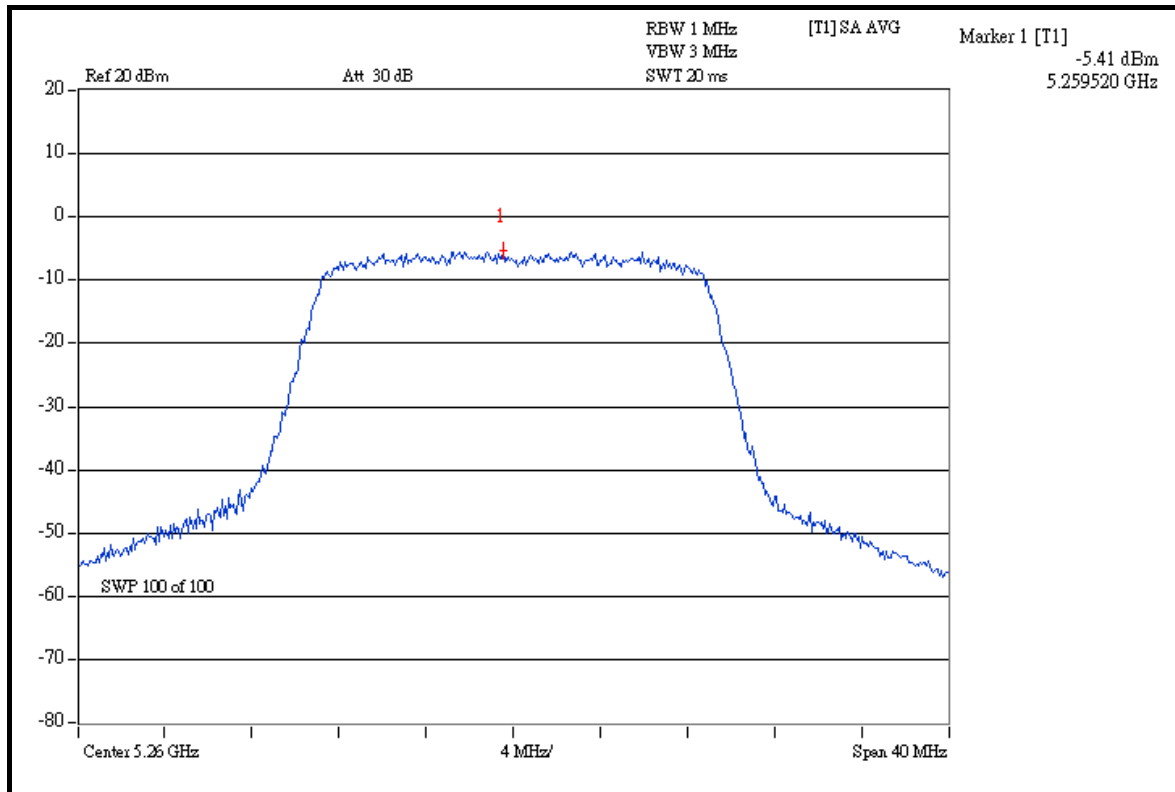




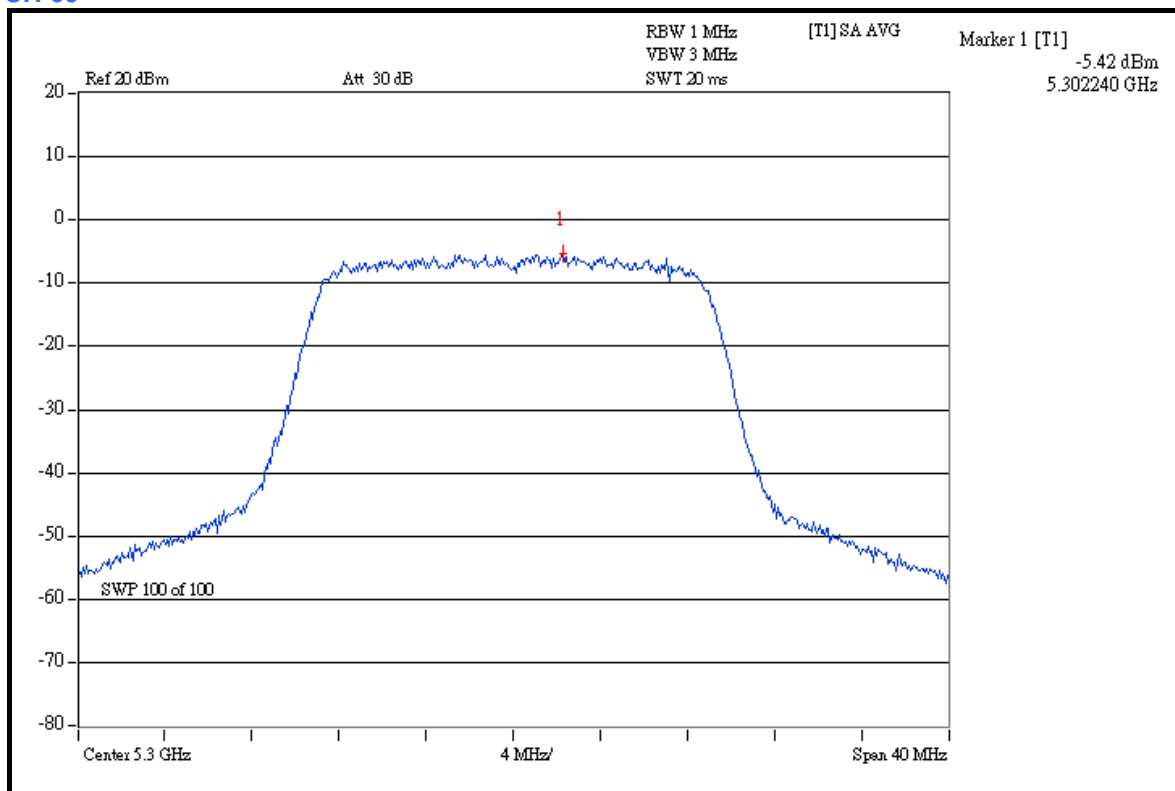


A D T

### CHAIN 1: CH 52



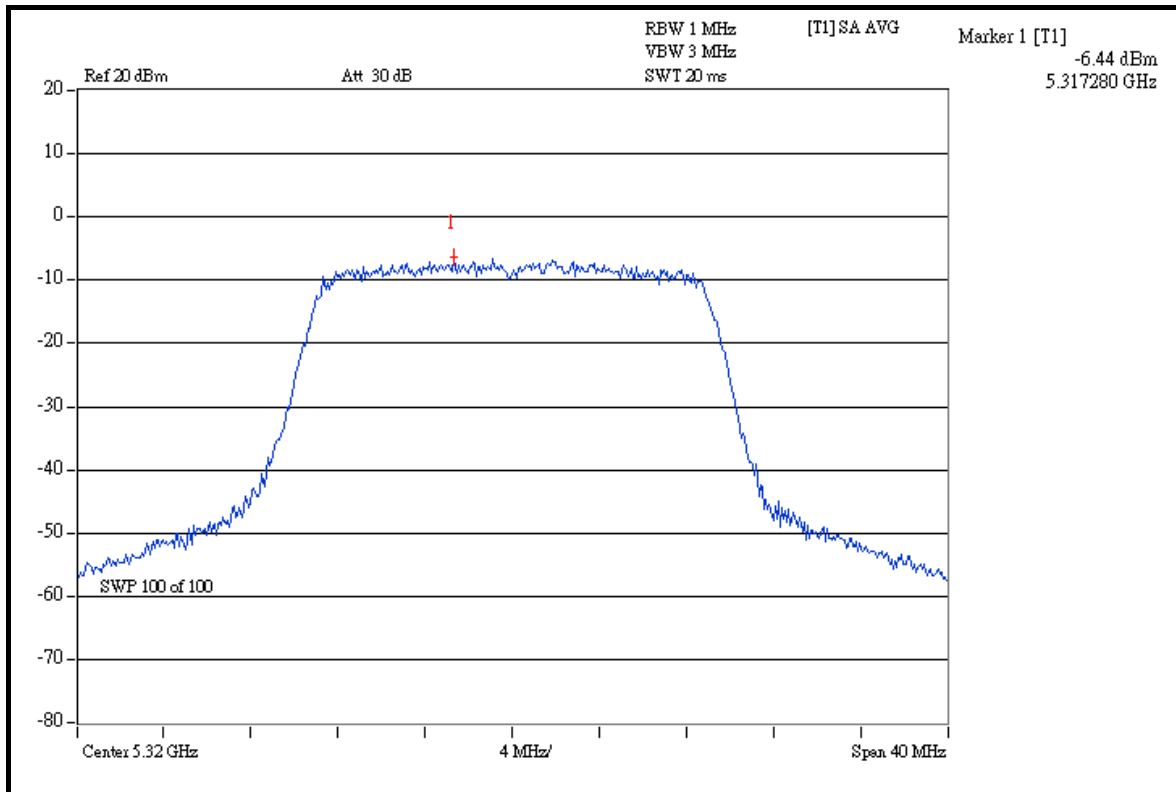
### CH 60



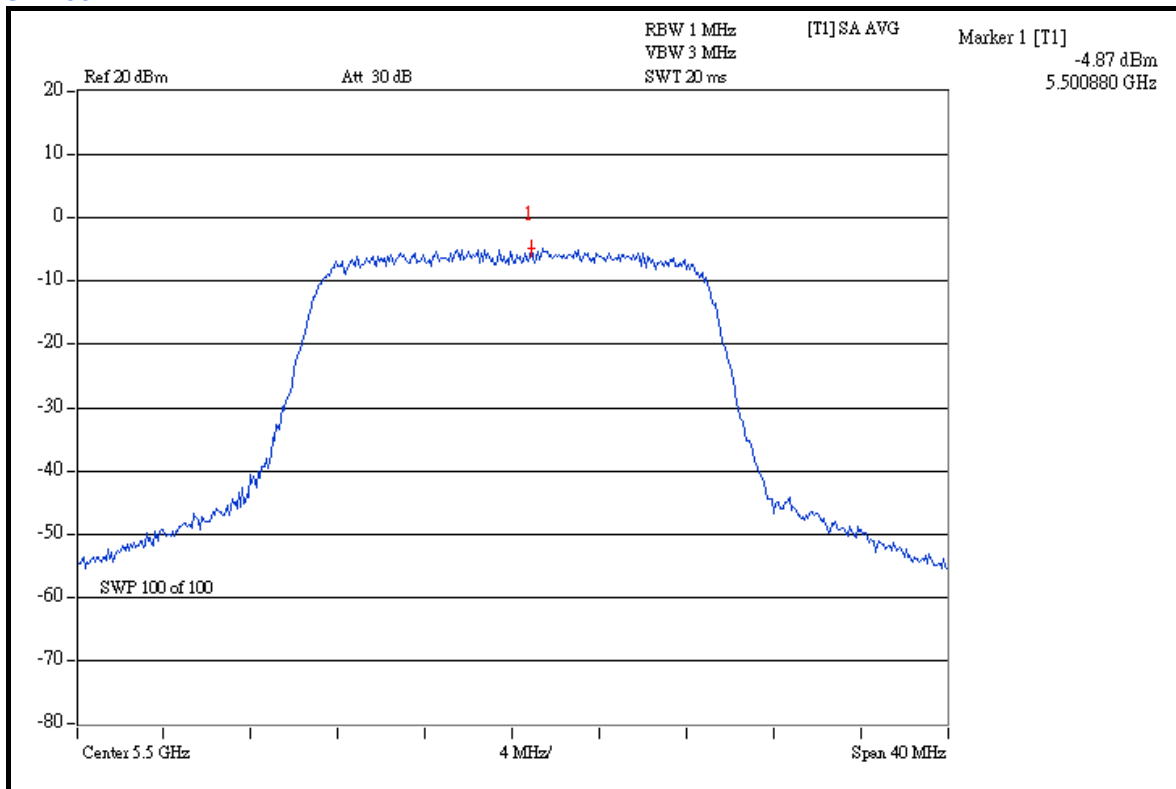


A D T

### CH 64



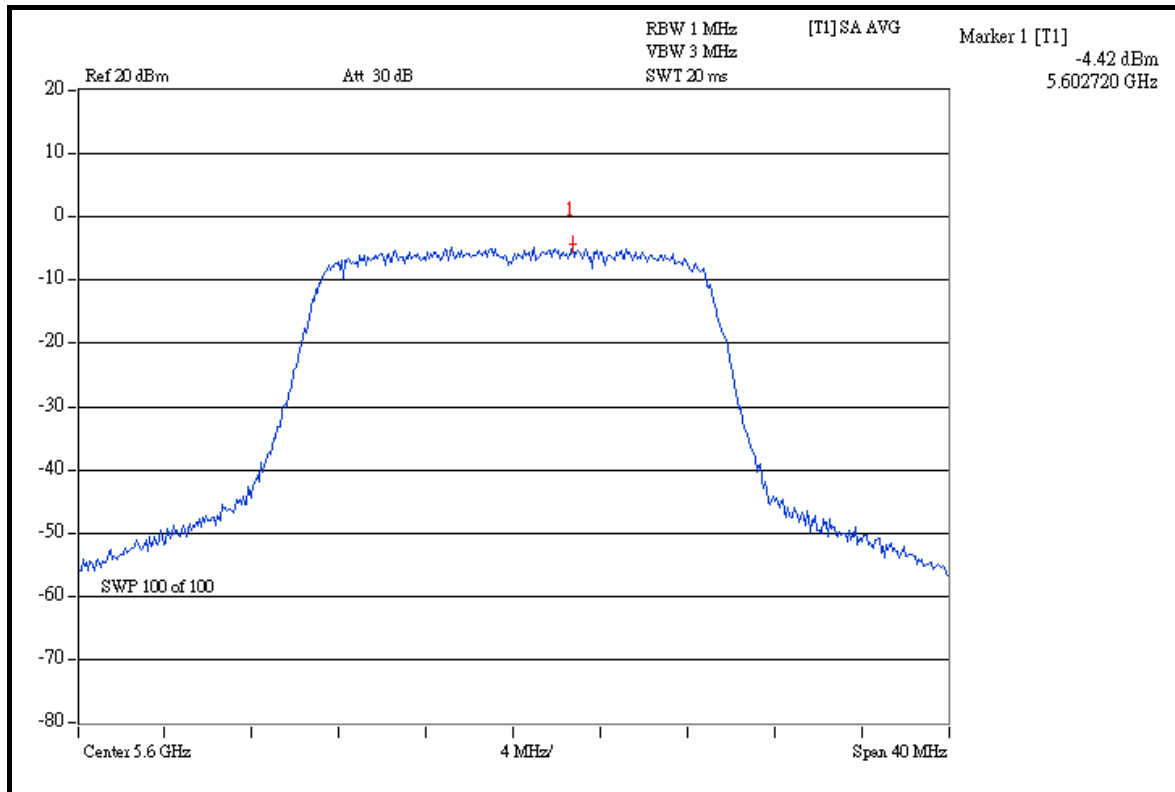
### CH 100



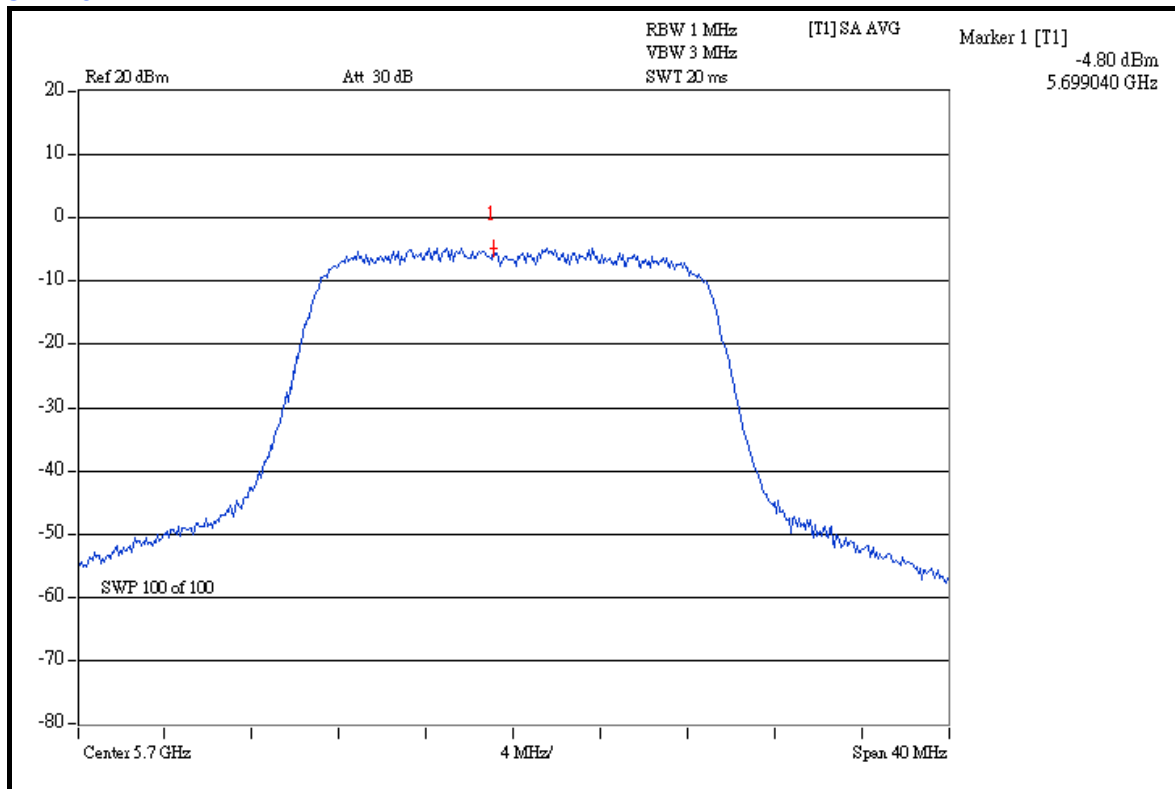


A D T

### CH 120



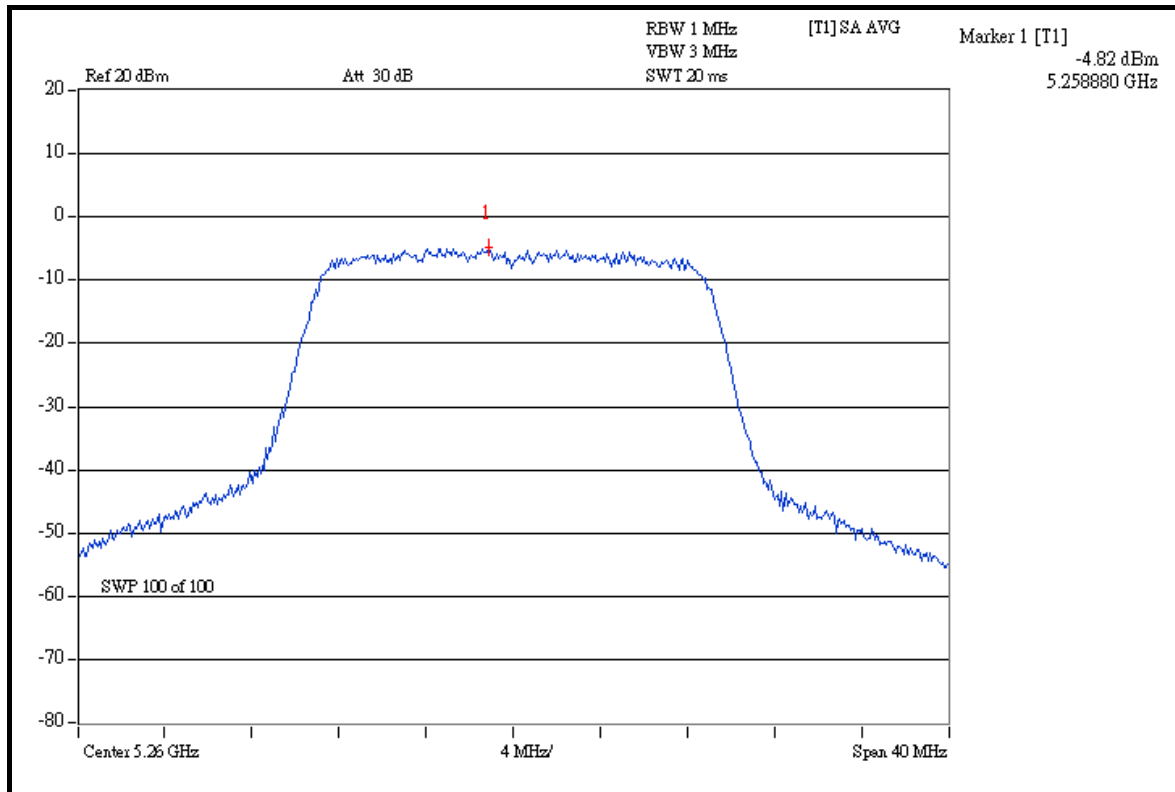
### CH 140



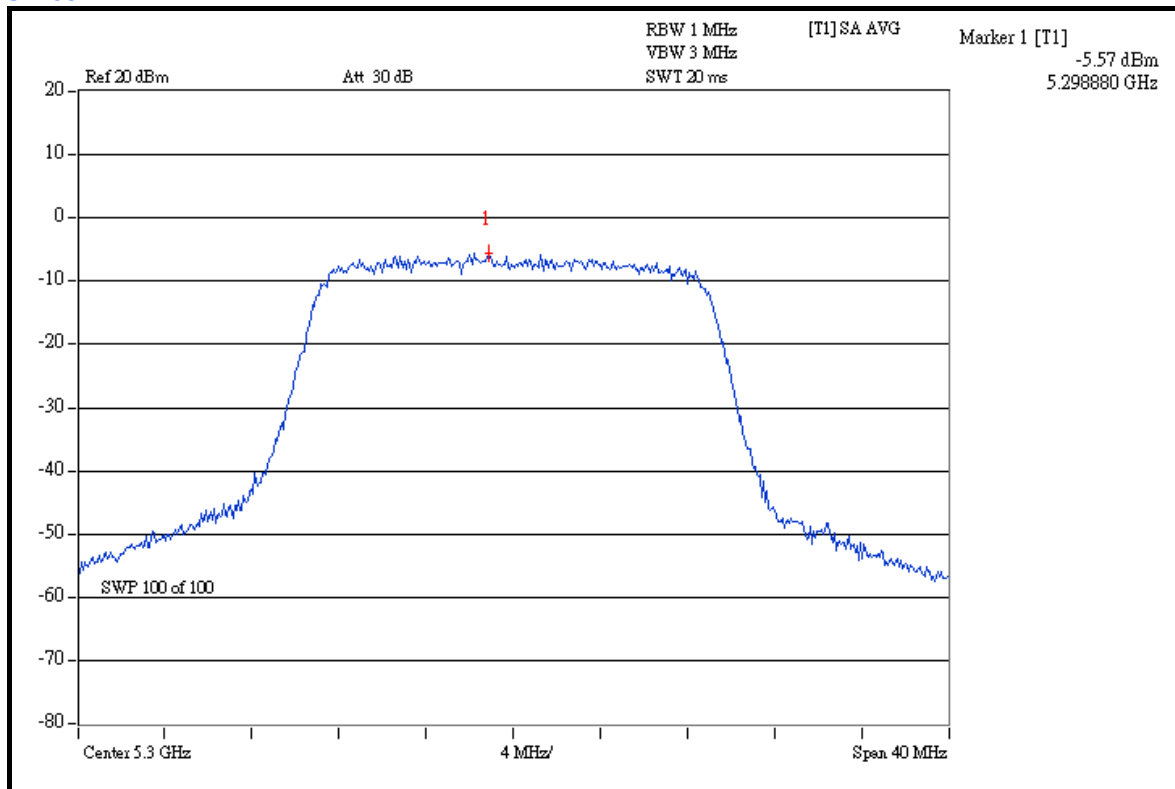


A D T

### CHAIN 2: CH 52



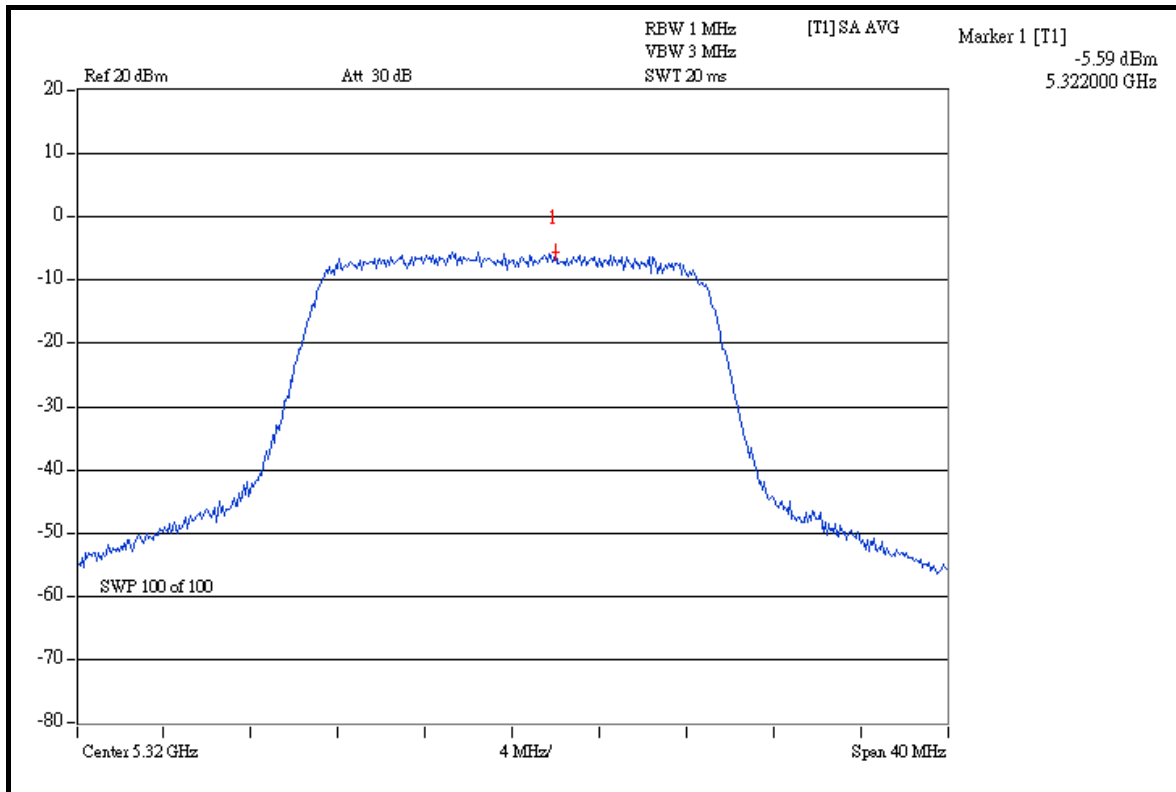
### CH 60



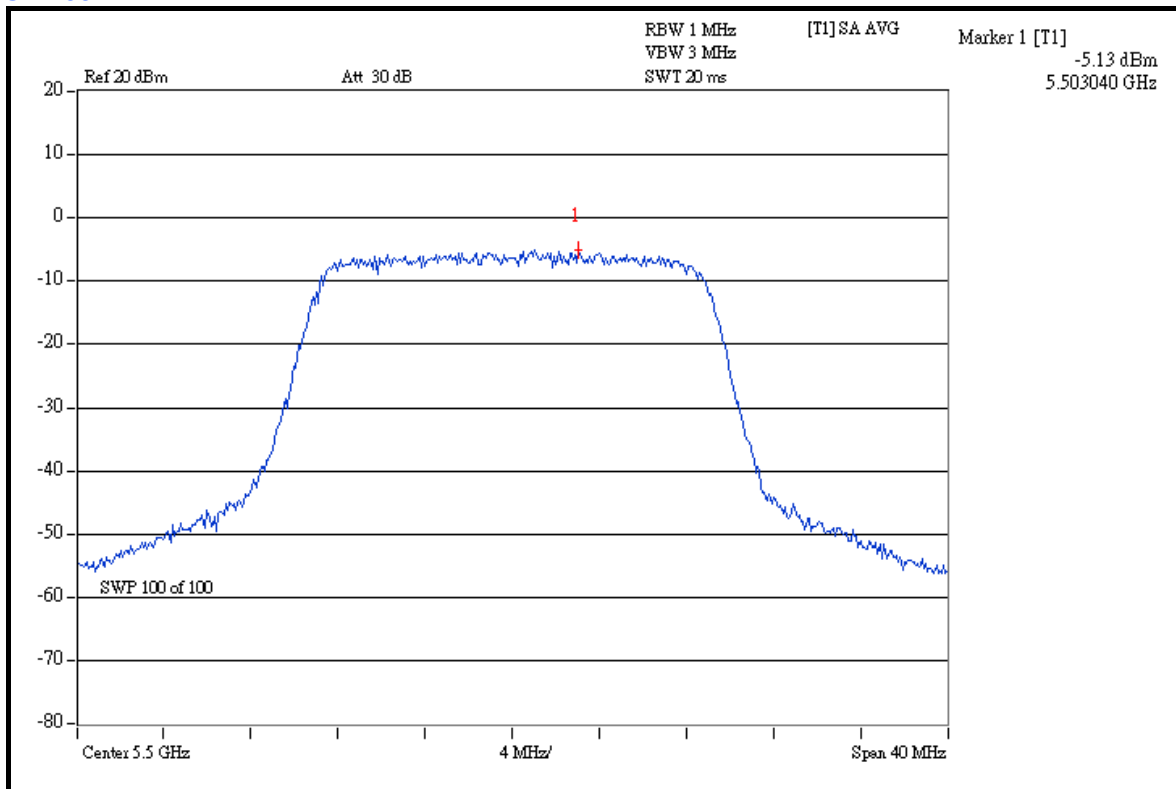


A D T

### CH 64



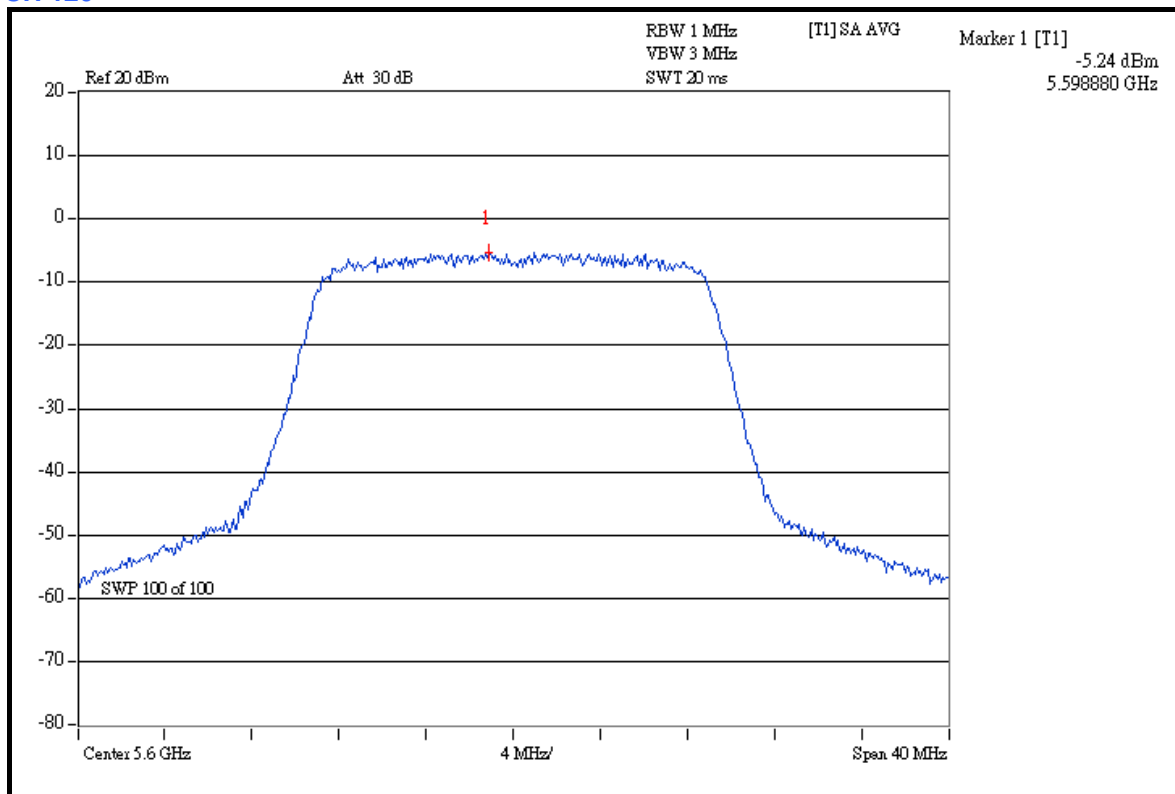
### CH 100



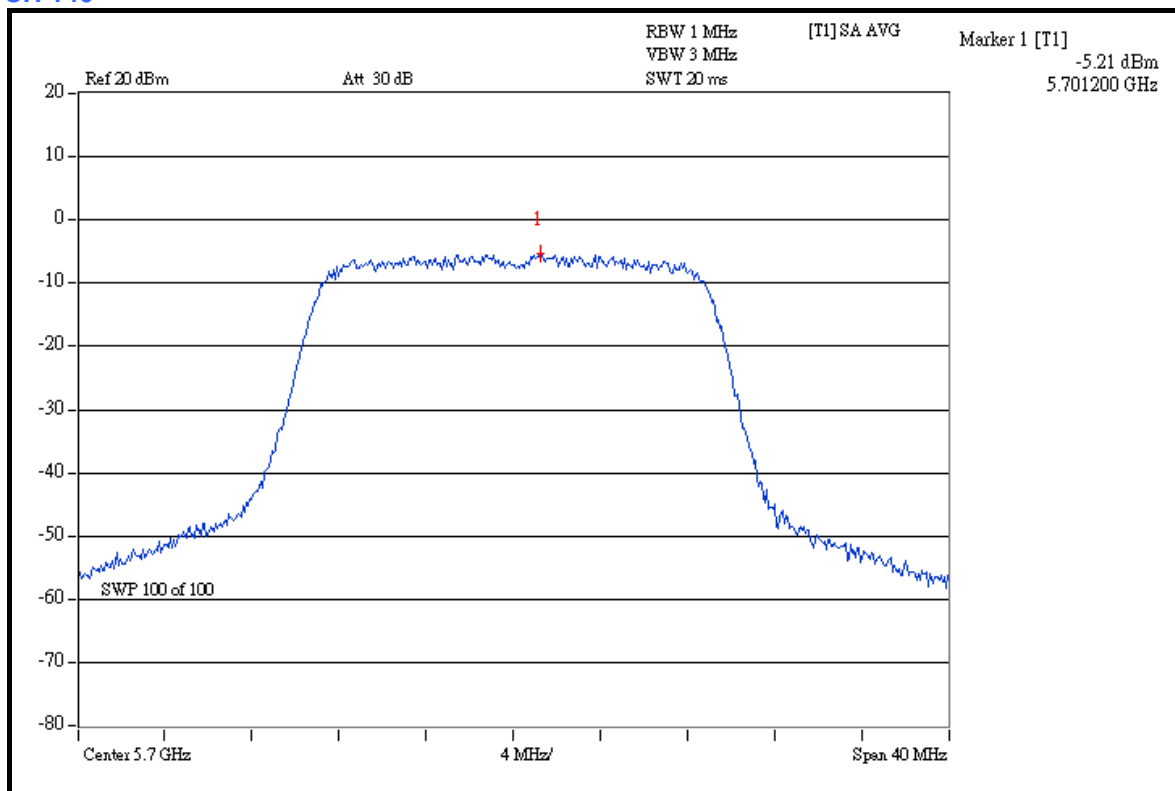


A D T

### CH 120



### CH 140





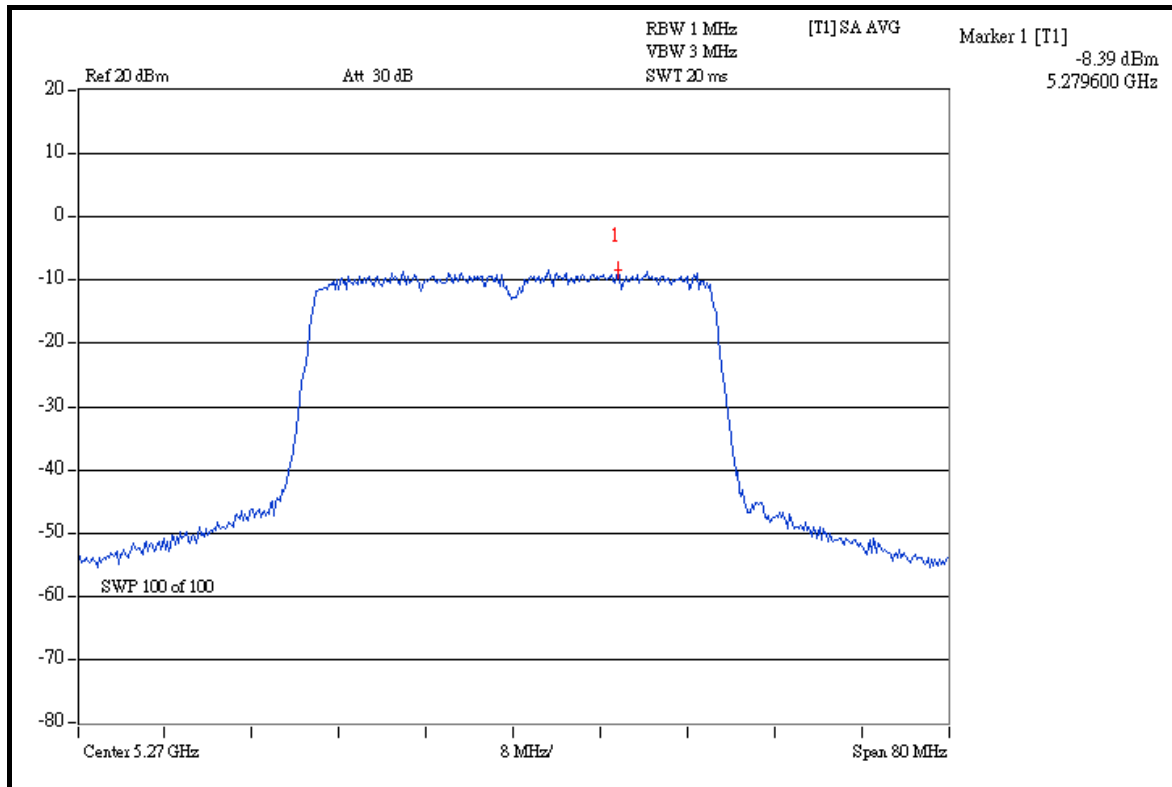
A D T

**DRAFT 802.11n (40MHz) OFDM MODULATION**

<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	15.0Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25 deg.C, 65 %RH, 991hPa
<b>TESTED BY</b>	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	-8.39	-8.73	-7.05	0.476	-3.22	11	PASS
62	5310	-8.41	-8.38	-8.12	0.444	-3.53	11	PASS
102	5510	-8.63	-7.31	-7.68	0.493	-3.07	11	PASS
118	5590	-8.44	-7.86	-7.65	0.479	-3.20	11	PASS
134	5670	-8.43	-7.79	-7.64	0.482	-3.17	11	PASS

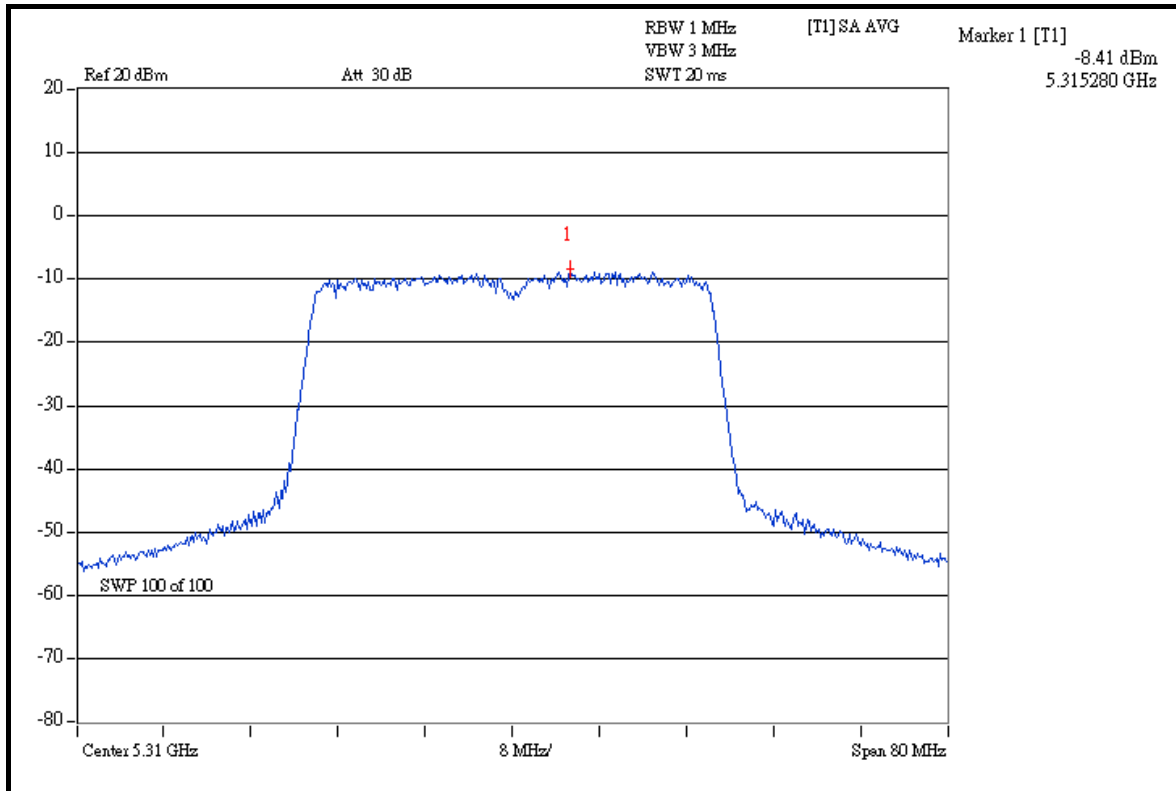
**CHAIN 0: CH 54**



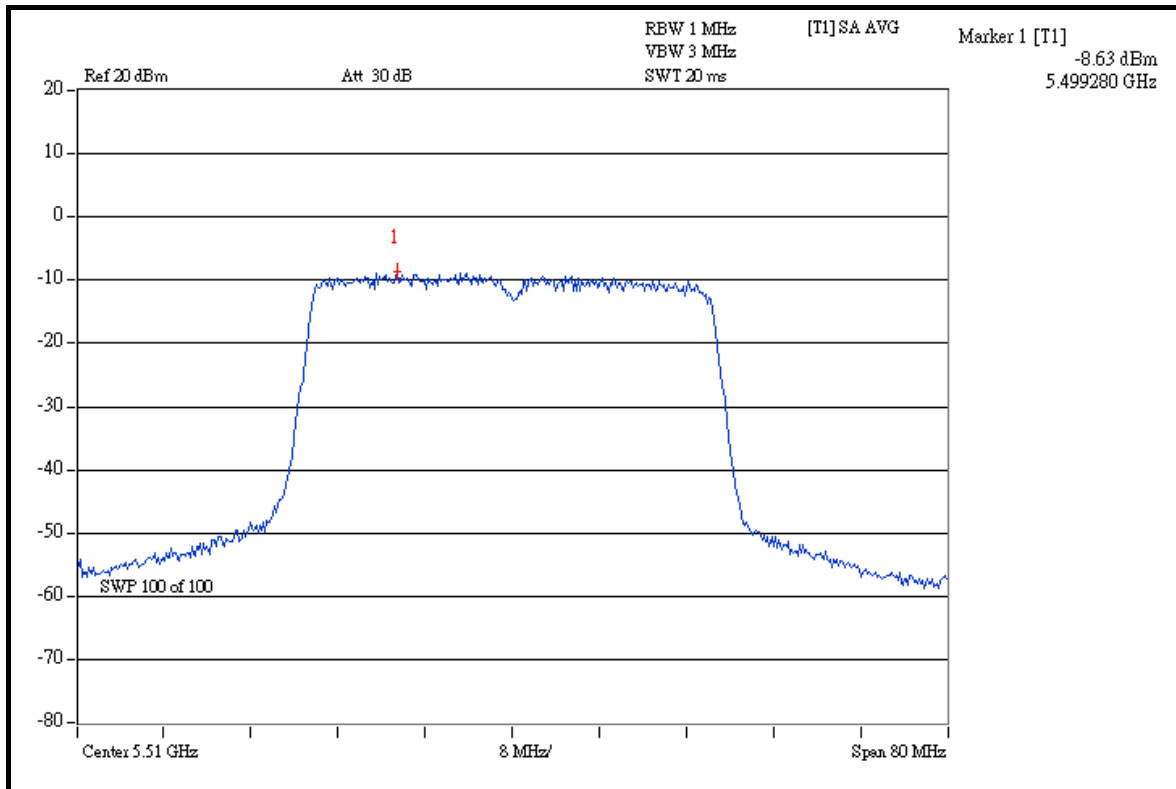


A D T

### CH 62



### CH 102

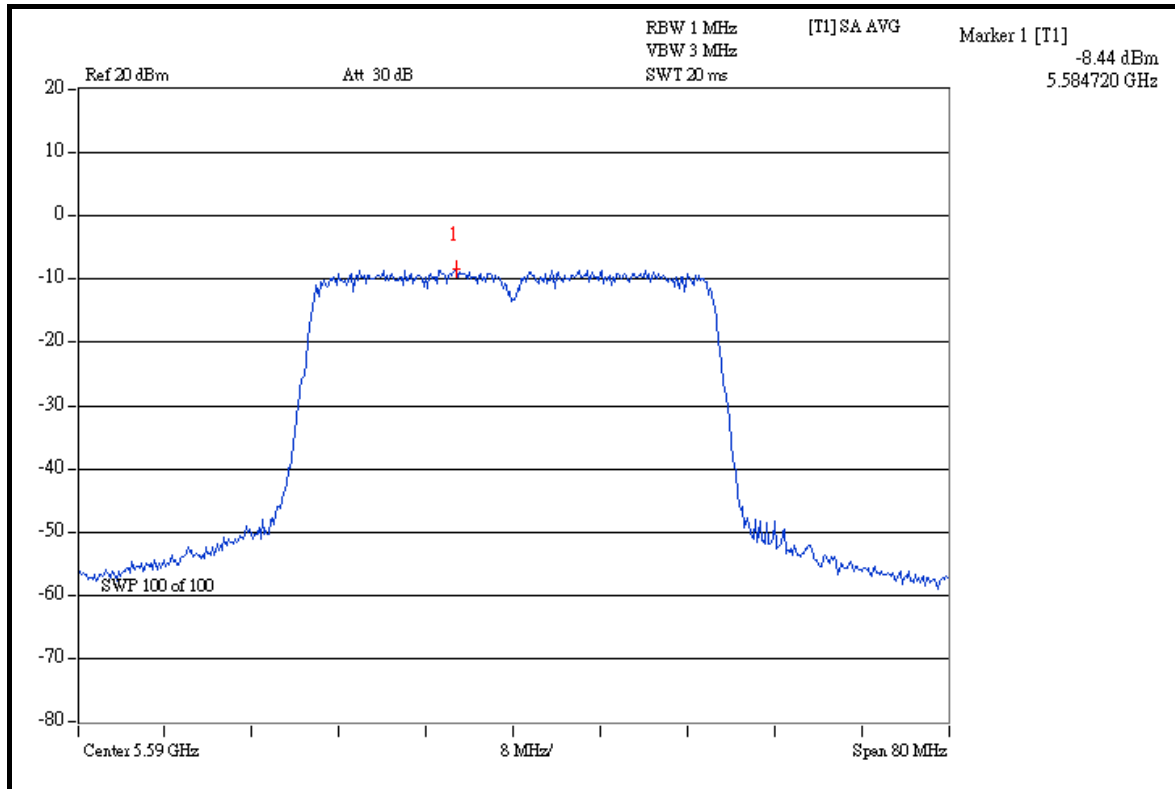




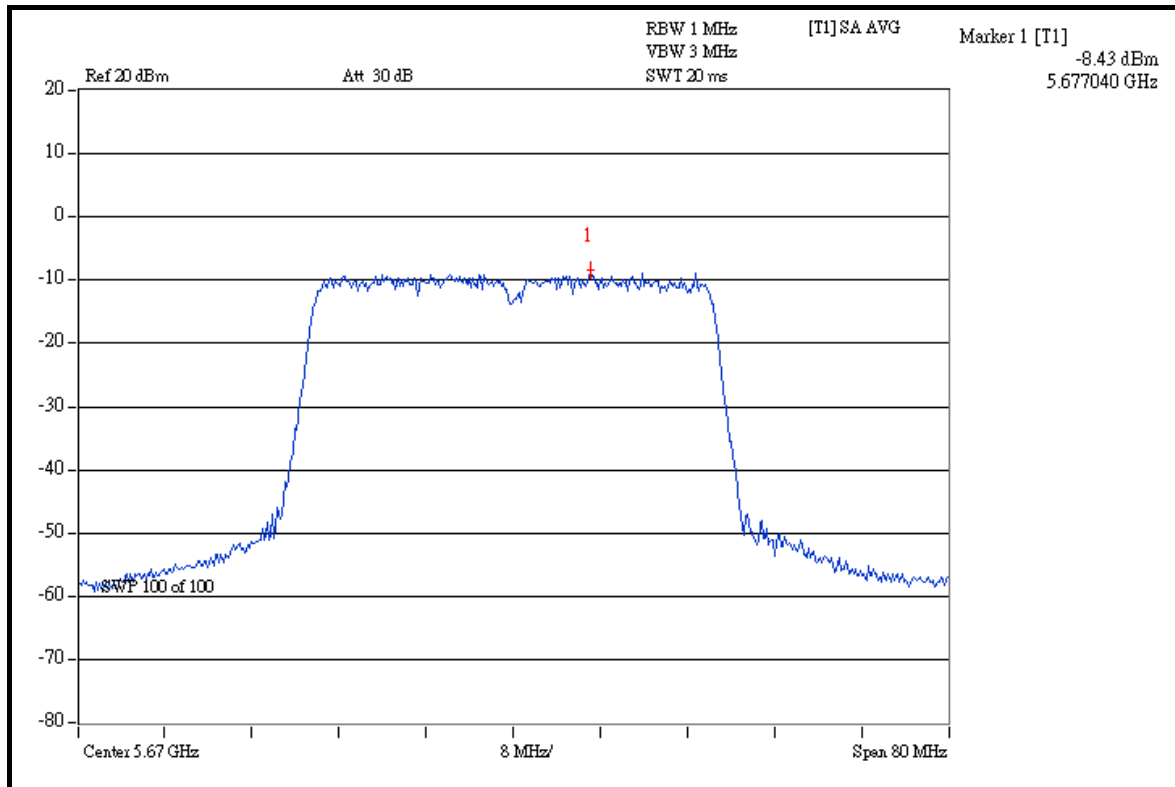


A D T

### CH 118



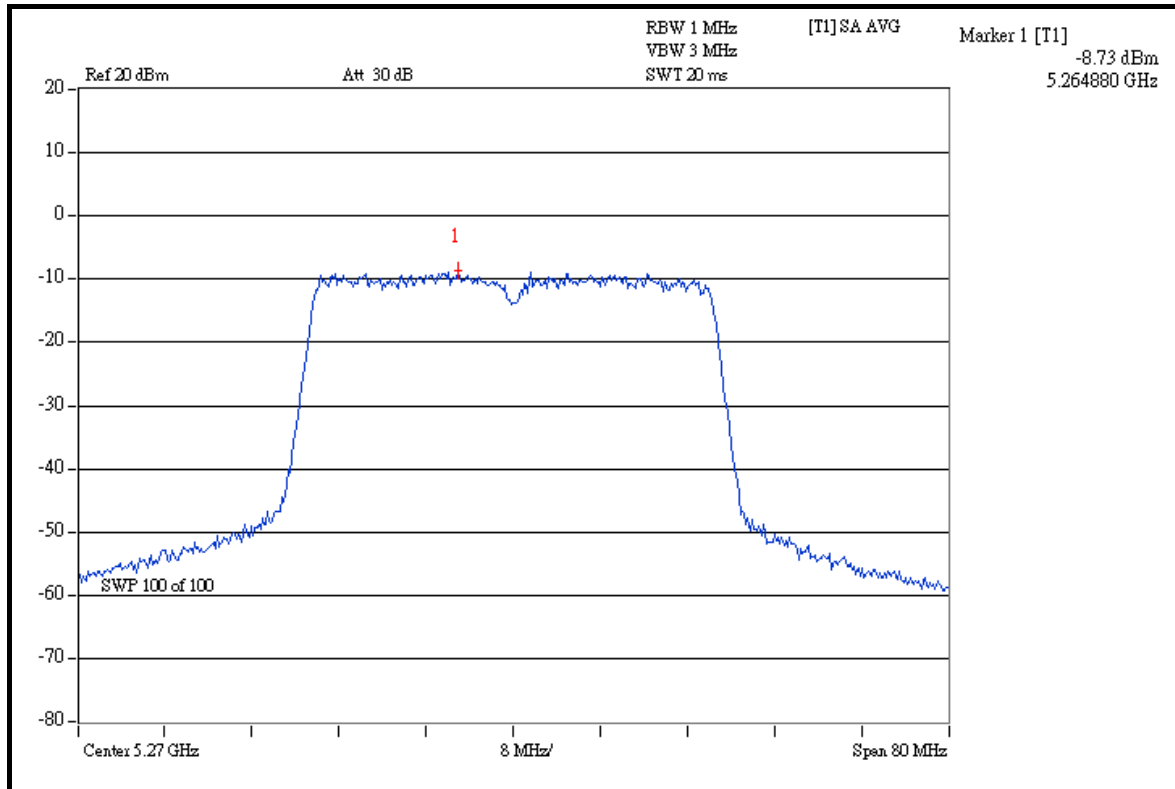
### CH 134



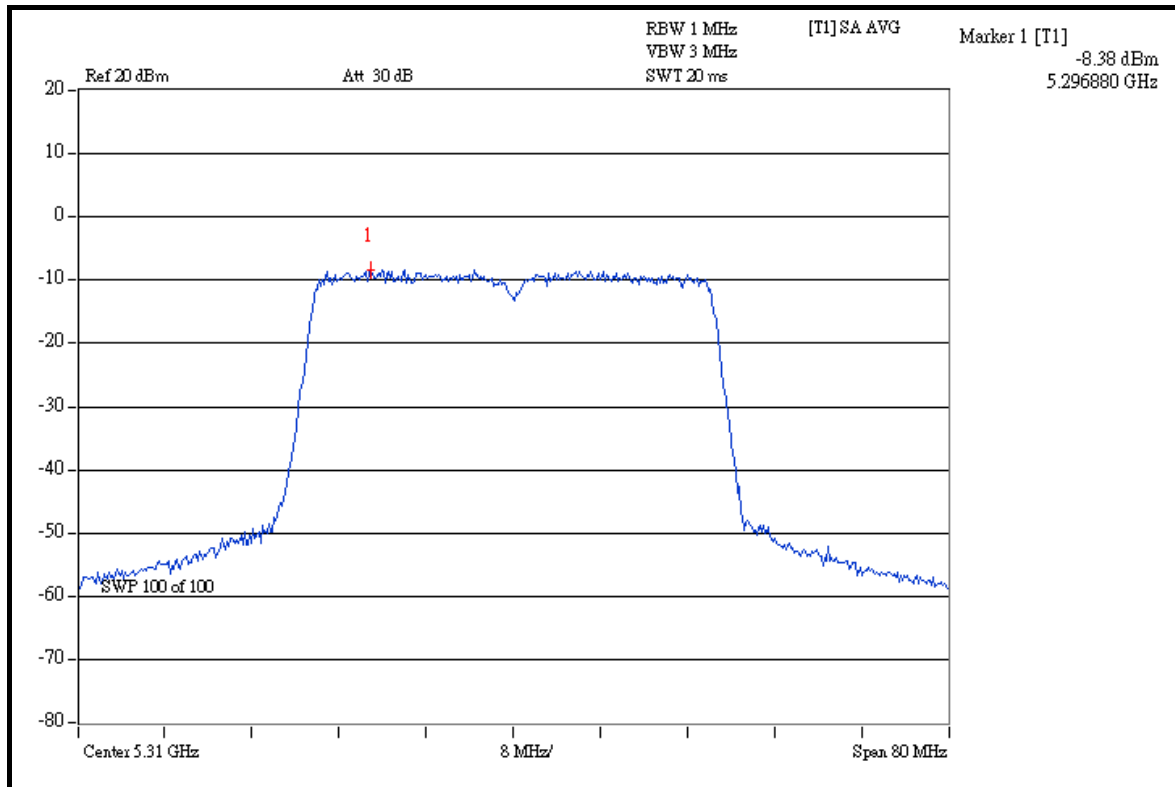


A D T

### CHAIN 1: CH 54



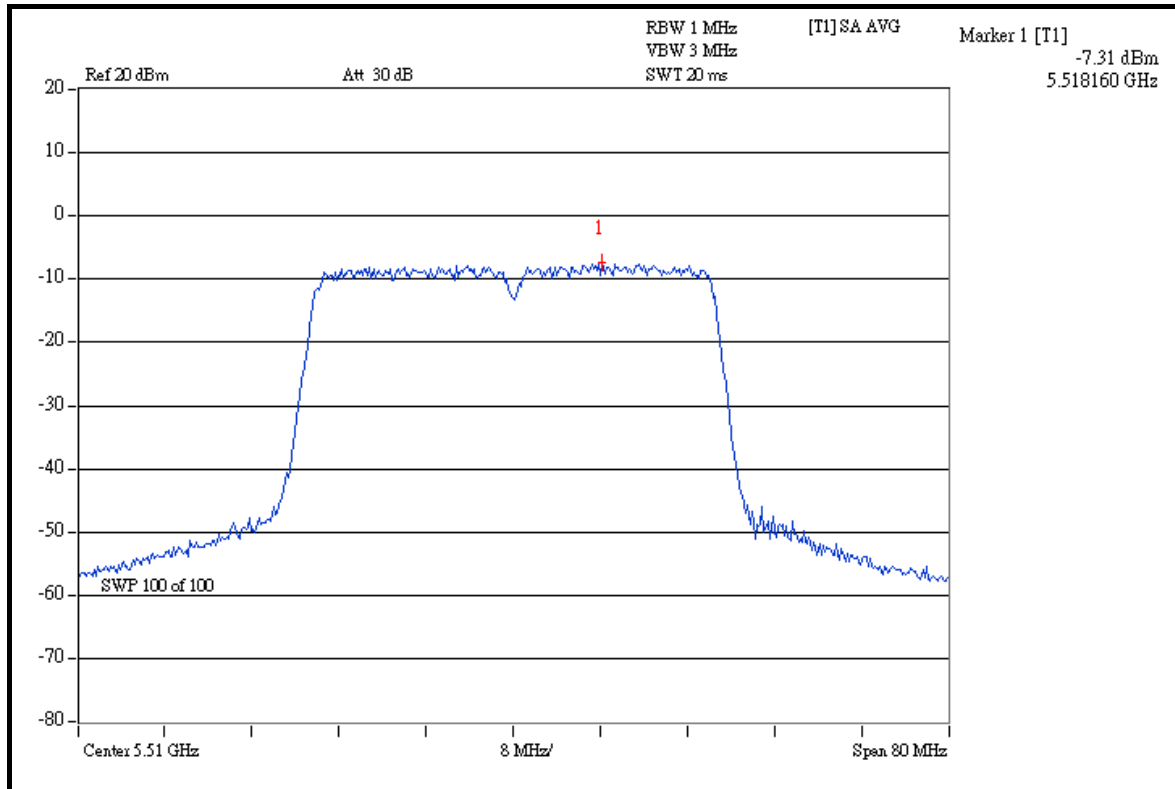
### CH 62



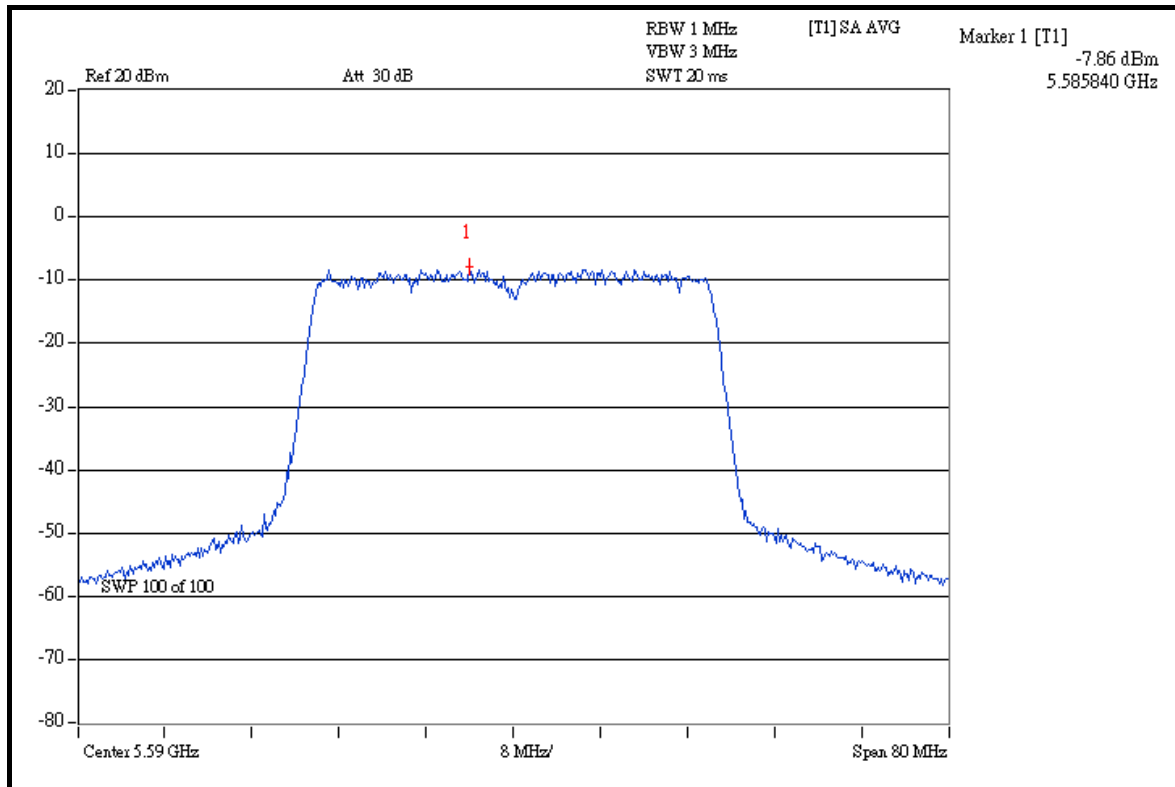


A D T

### CH 102



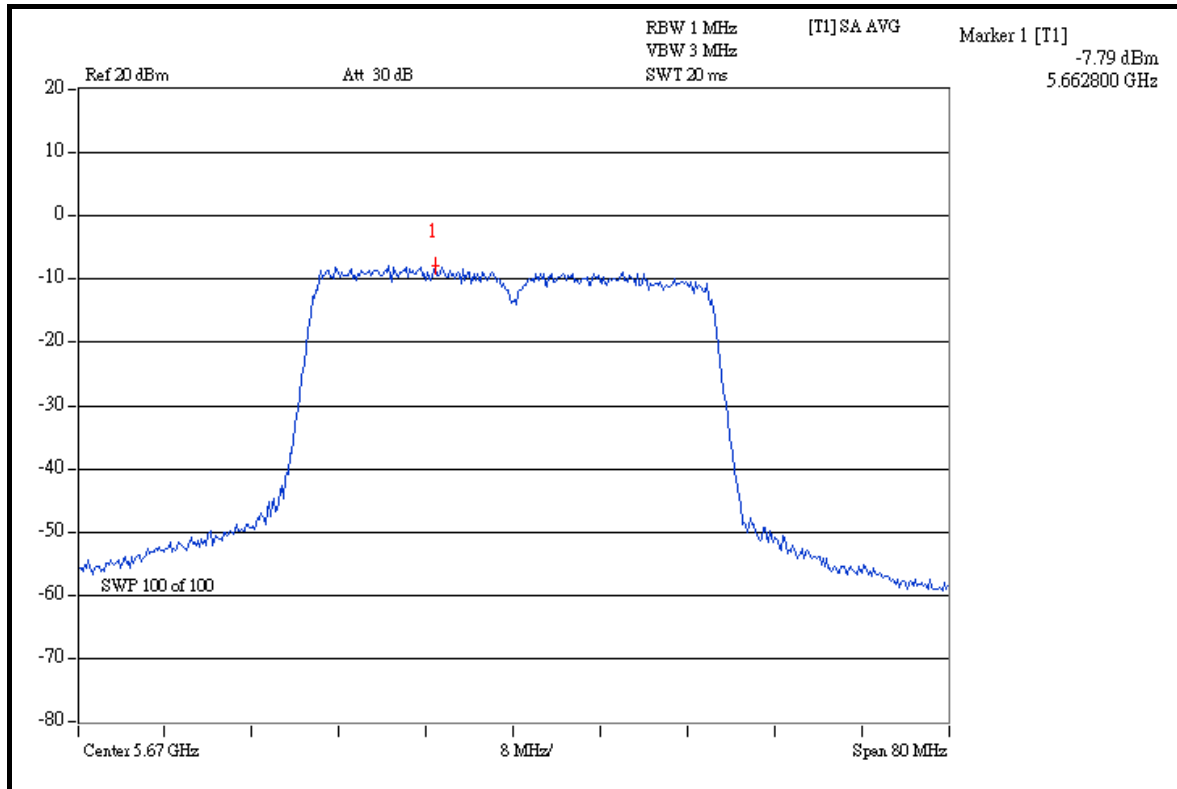
### CH 118



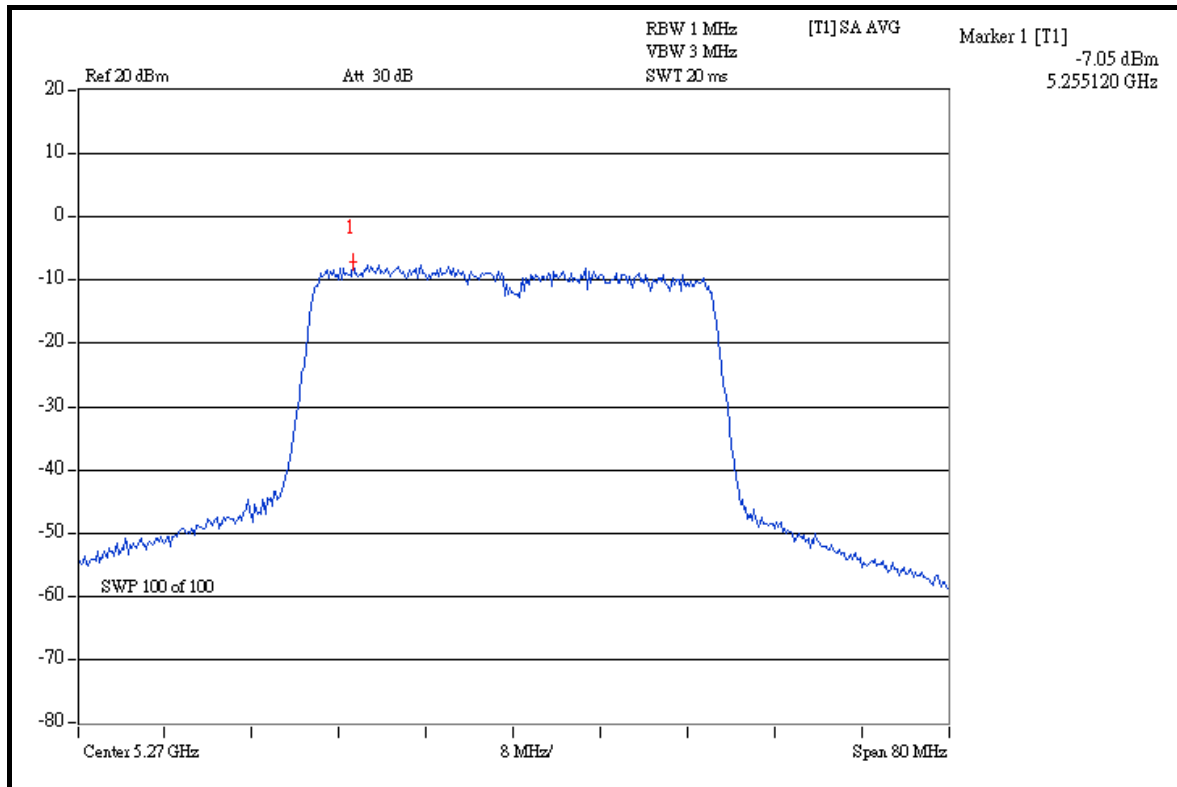


A D T

### CH 134



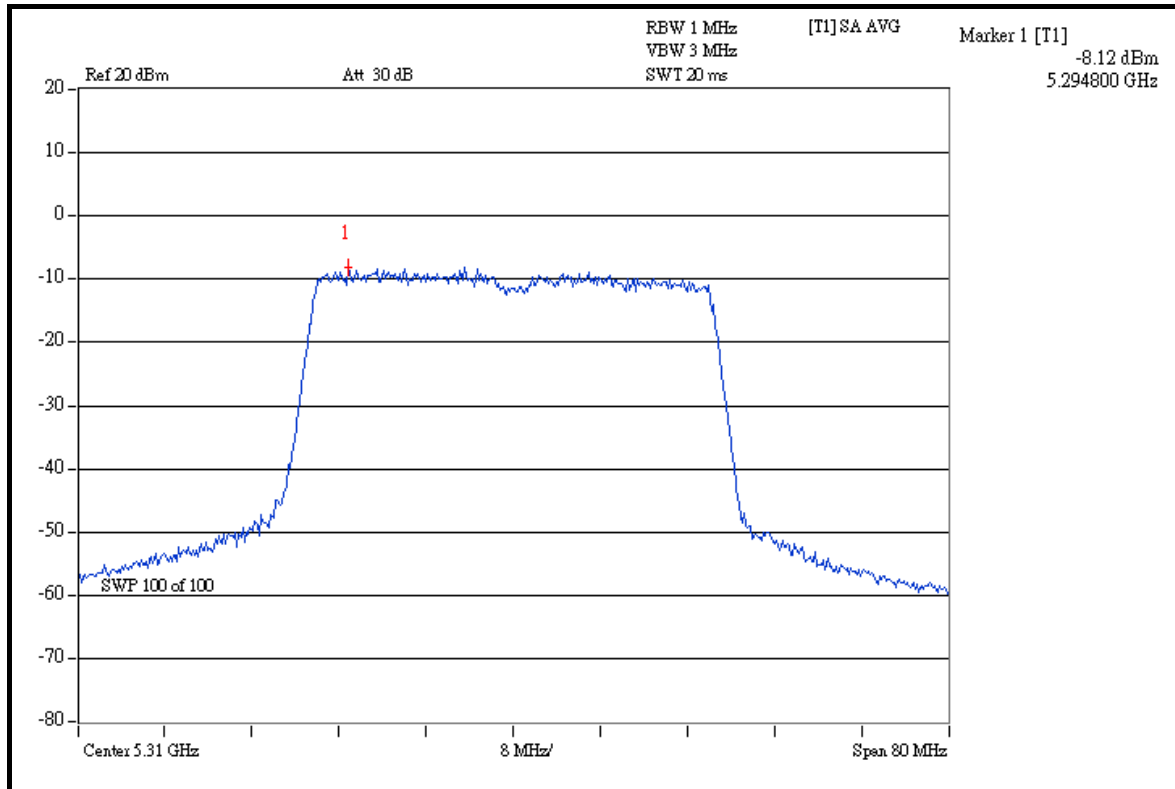
### CHAIN 2: CH 54



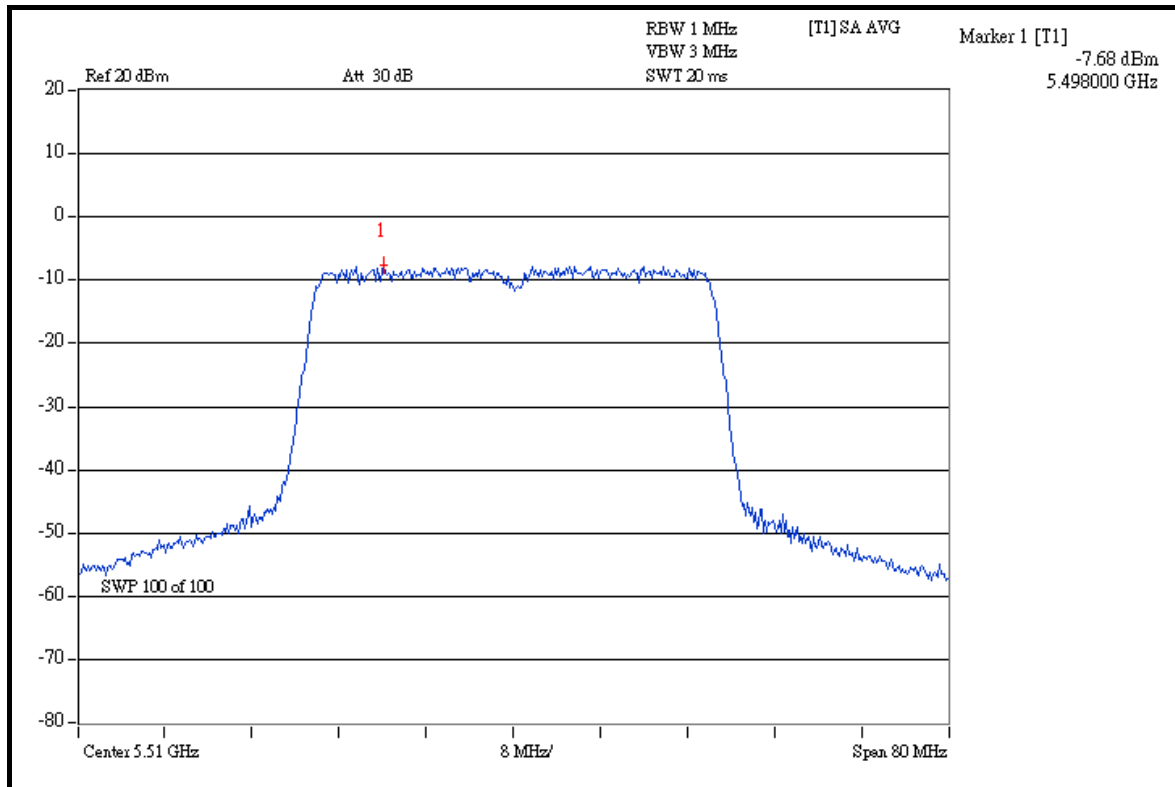


A D T

### CH 62



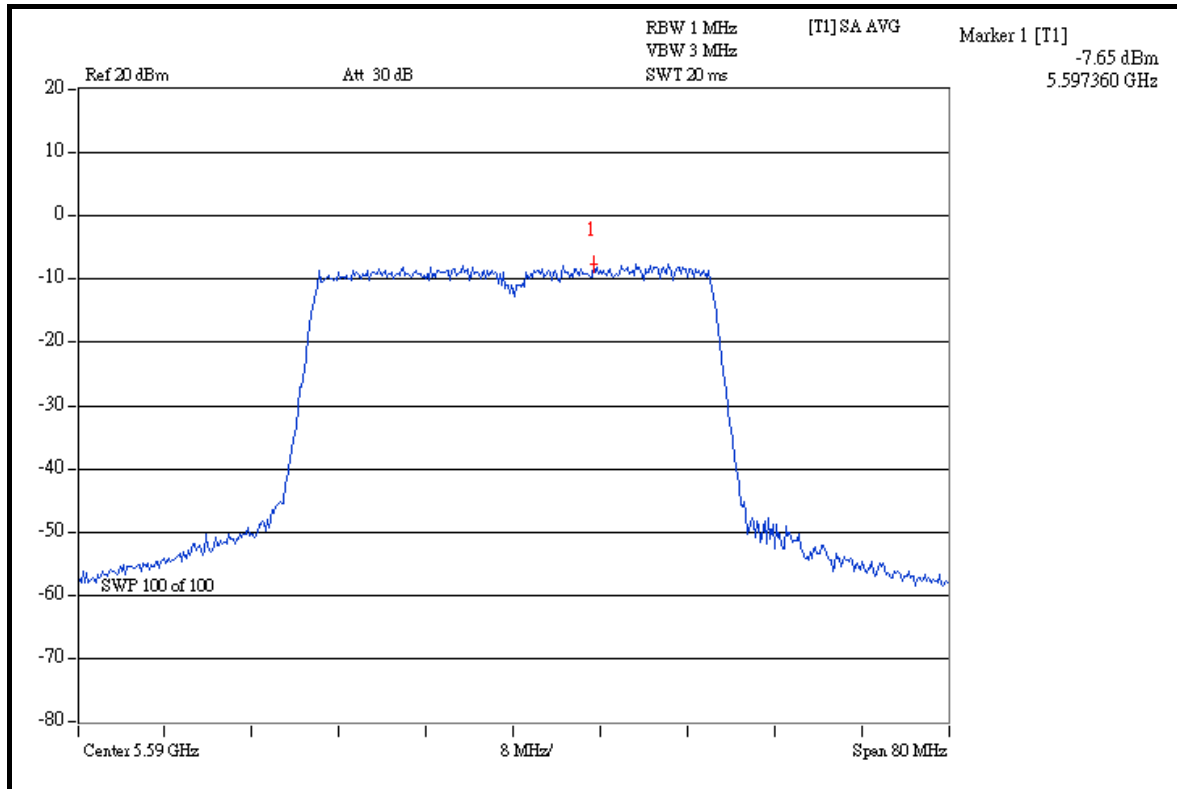
### CH 102



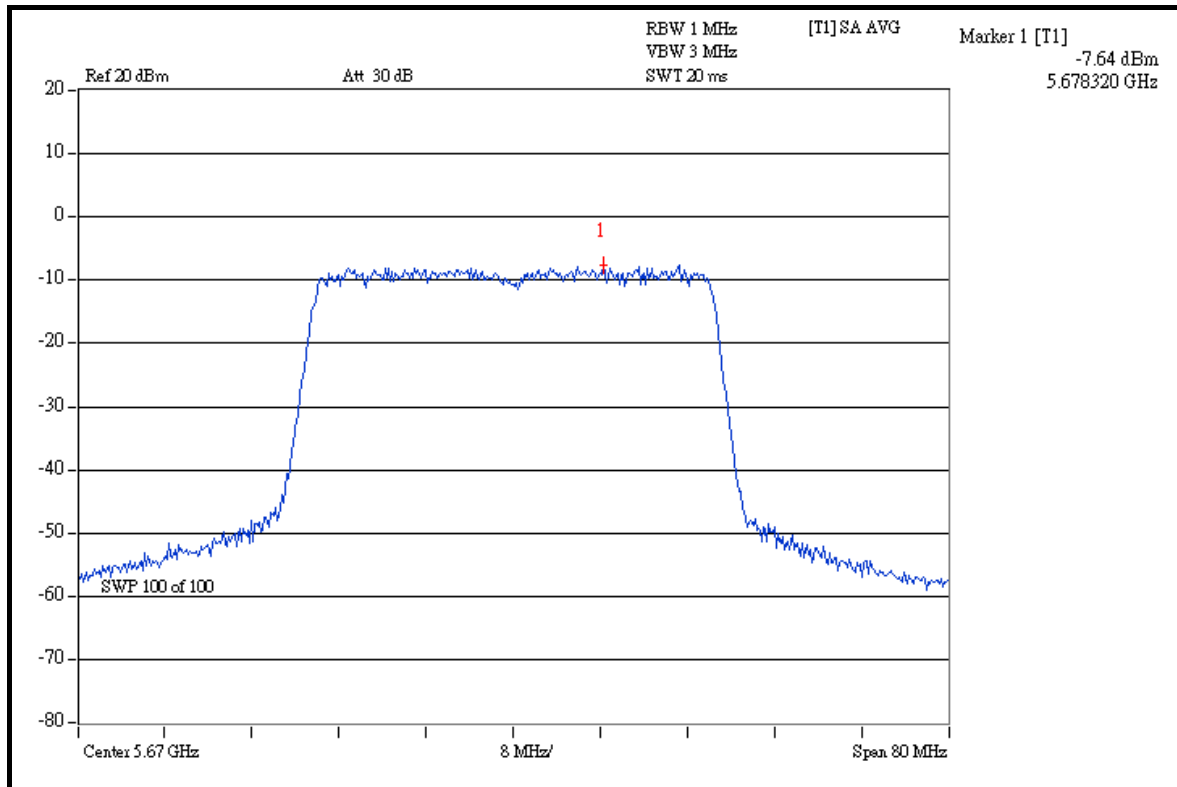


A D T

### CH 118



### CH 134



## 4.6 FREQUENCY STABILITY

### 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% 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
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Nov. 22, 2007	Nov. 21, 2008
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 29, 2007	Jun. 28, 2008

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

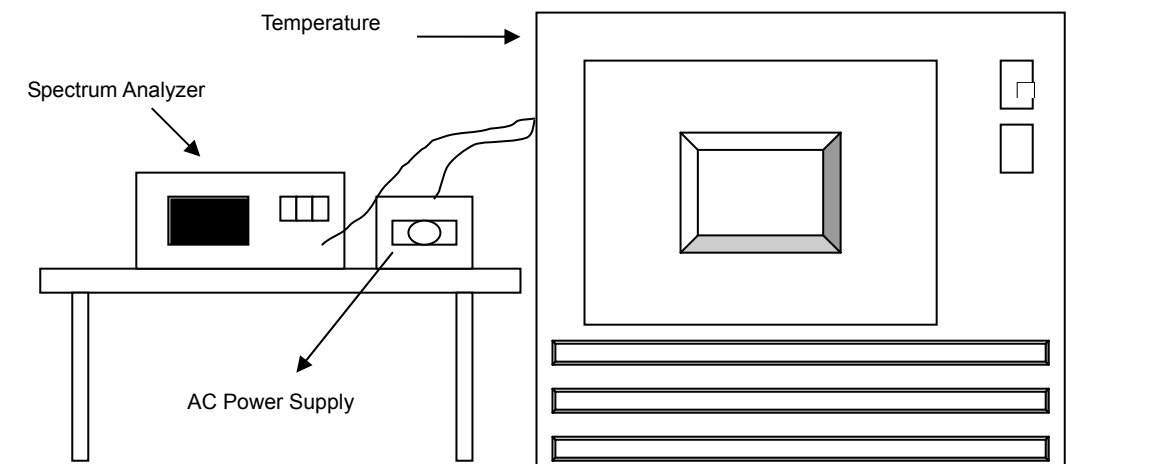
### 4.6.3 TEST PROCEDURE

- 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

OPERATING FREQUENCY: 5320MHz						LIMIT: ± 0.01%			
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5320.027514	0.0005172	5320.018536	0.0003484	5320.032397	0.0006090	5320.041957	0.0007887
	110.0	5320.025922	0.0004873	5320.022920	0.0004308	5320.013389	0.0002517	5320.025392	0.0004773
	93.5	5320.027718	0.0005210	5320.025674	0.0004826	5320.017557	0.0003300	5320.027577	0.0005184
40	126.5	5320.019172	0.0003604	5320.021135	0.0003973	5320.008695	0.0001634	5320.020717	0.0003894
	110.0	5320.023952	0.0004502	5320.025803	0.0004850	5320.015983	0.0003004	5320.025625	0.0004817
	93.5	5320.035702	0.0006711	5320.039684	0.0007459	5320.026396	0.0004962	5320.039251	0.0007378
30	126.5	5320.019290	0.0003626	5320.019957	0.0003751	5320.009821	0.0001846	5320.020358	0.0003827
	110.0	5320.026500	0.0004981	5320.024581	0.0004620	5320.016969	0.0003190	5320.027932	0.0005250
	93.5	5320.045596	0.0008571	5320.043503	0.0008177	5320.035680	0.0006707	5320.047099	0.0008853
20	126.5	5320.026960	0.0005068	5320.027251	0.0005122	5320.018649	0.0003505	5320.028155	0.0005292
	110.0	5320.029517	0.0005548	5320.028512	0.0005359	5320.019093	0.0003589	5320.028200	0.0005301
	93.5	5320.052786	0.0009922	5320.053591	0.0010073	5320.041876	0.0007871	5320.052267	0.0009825
10	126.5	5320.035552	0.0006683	5320.034099	0.0006410	5320.026556	0.0004992	5320.035434	0.0006661
	110.0	5320.043156	0.0008112	5320.044404	0.0008347	5320.033100	0.0006222	5320.043354	0.0008149
	93.5	5320.059504	0.0011185	5320.060145	0.0011305	5320.048727	0.0009159	5320.058955	0.0011082
0	126.5	5320.037932	0.0007130	5320.040045	0.0007527	5320.027606	0.0005189	5320.039255	0.0007379
	110.0	5320.049036	0.0009217	5320.050637	0.0009518	5320.042653	0.0008017	5320.051322	0.0009647
	93.5	5320.064182	0.0012064	5320.064808	0.0012182	5320.052893	0.0009942	5320.065419	0.0012297
-10	126.5	5320.051330	0.0009648	5320.051099	0.0009605	5320.040789	0.0007667	5320.051499	0.0009680
	110.0	5320.057750	0.0010855	5320.056936	0.0010702	5320.048641	0.0009143	5320.057280	0.0010767
	93.5	5320.071751	0.0013487	5320.071941	0.0013523	5320.064125	0.0012054	5320.073285	0.0013775
-20	126.5	5320.055792	0.0010487	5320.056057	0.0010537	5320.048412	0.0009100	5320.054869	0.0010314
	110.0	5320.062035	0.0011661	5320.060001	0.0011278	5320.053246	0.0010009	5320.059857	0.0011251
	93.5	5320.078443	0.0014745	5320.077410	0.0014551	5320.066022	0.0012410	5320.074489	0.0014002
-30	126.5	5320.059315	0.0011149	5320.061947	0.0011644	5320.052446	0.0009858	5320.064319	0.0012090
	110.0	5320.074670	0.0014036	5320.075378	0.0014169	5320.066502	0.0012500	5320.074626	0.0014027
	93.5	5320.077695	0.0014604	5320.077774	0.0014619	5320.071199	0.0013383	5320.078949	0.0014840

## 4.7 BAND EDGES MEASUREMENT

### 4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
<b>FOR CONDUCTED MEASUREMENT:</b>				
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 29, 2007	Jun. 28, 2008
<b>FOR RADIATED MEASUREMENT:</b>				
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May 28, 2008	May 27, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 06, 2007	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 31, 2007	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 07, 2008	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 20, 2007	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 08, 2007	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 10, 2007	Aug. 09, 2008
Software	ADT Radiated V7.6	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	May 06, 2008	May 05, 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

##### FOR CONDUCTED MEASUREMENT:

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.

##### 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 1kHz 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 5.25 to 5.35GHz and 5.47 to 5.725GHz 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 5250-5350MHz BAND: 802.11a OFDM MODULATION**

##### **Channel 52 (5260MHz)**

The band edge emission plot on the next page shows 55.53dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 52 is 110.82dBuV/m (Peak), so the maximum field strength in restrict band is  $110.82 - 55.53 = 55.29$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 58.20dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 52 is 99.78dBuV/m (Average), so the maximum field strength in restrict band is  $99.78 - 58.20 = 41.58$ dBuV/m which is under 54dBuV/m limit.

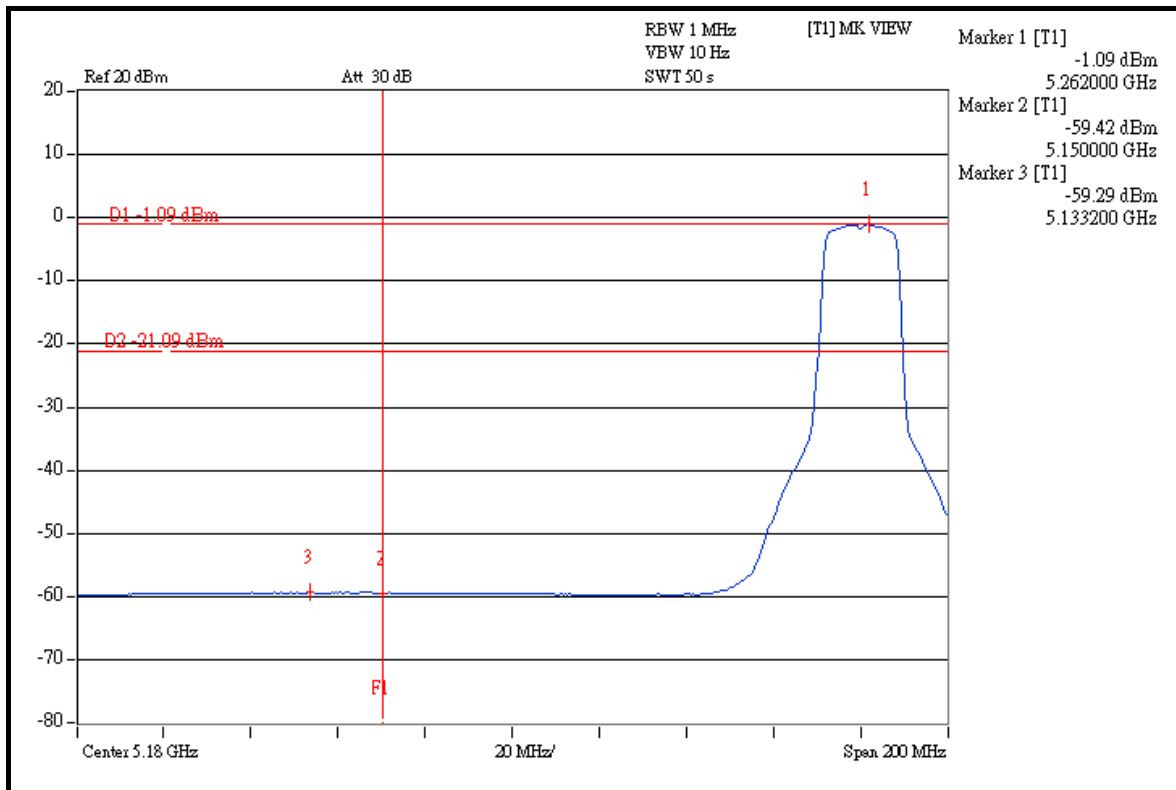
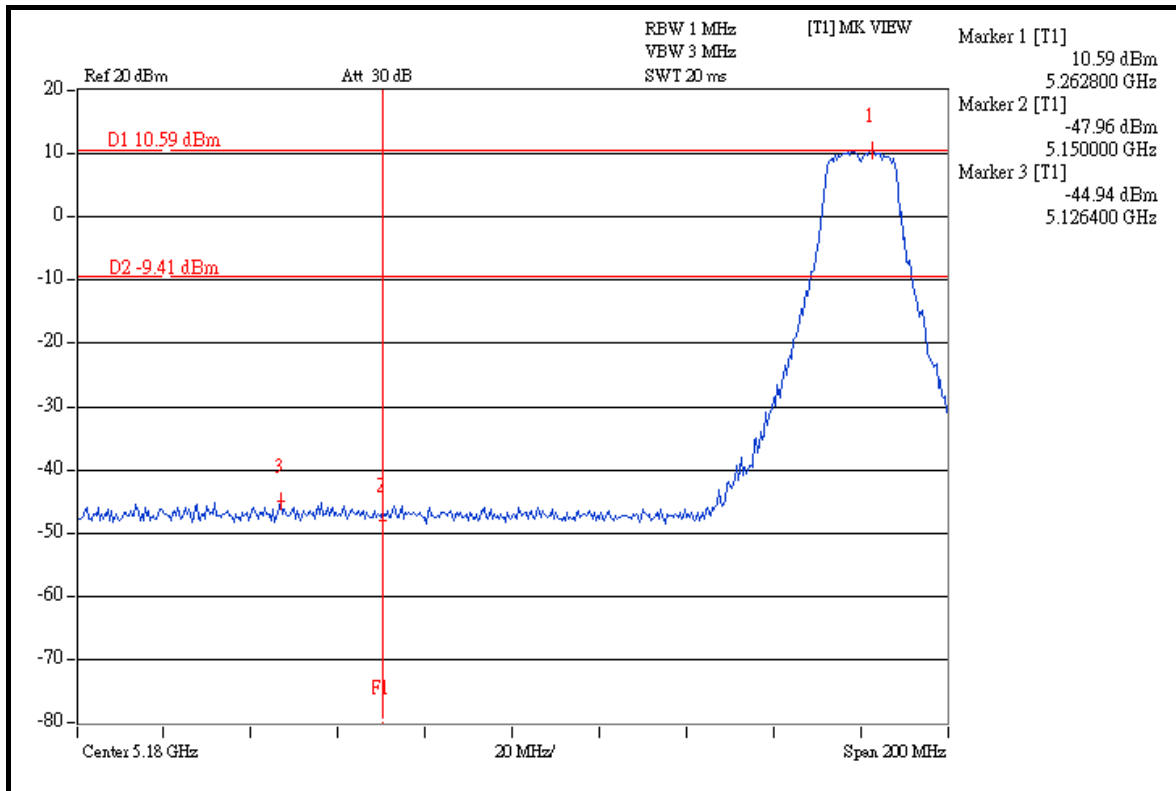
##### **Channel 64 (5320MHz)**

The band edge emission plot on the next second page shows 47.56dBc 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 109.21dBuV/m (Peak), so the maximum field strength in restrict band is  $109.21 - 47.56 = 61.65$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 56.44dBc 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 98.20dBuV/m (Average), so the maximum field strength in restrict band is  $98.20 - 56.44 = 41.76$ dBuV/m which is under 54dBuV/m limit.

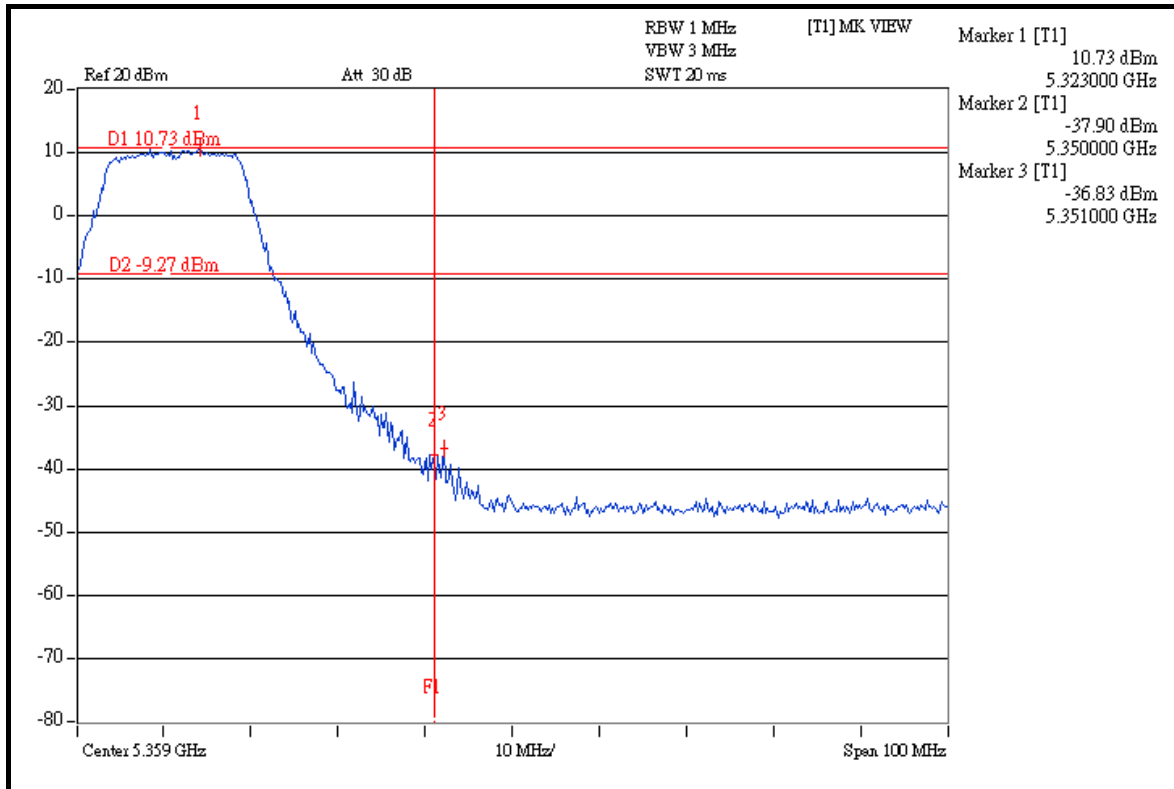
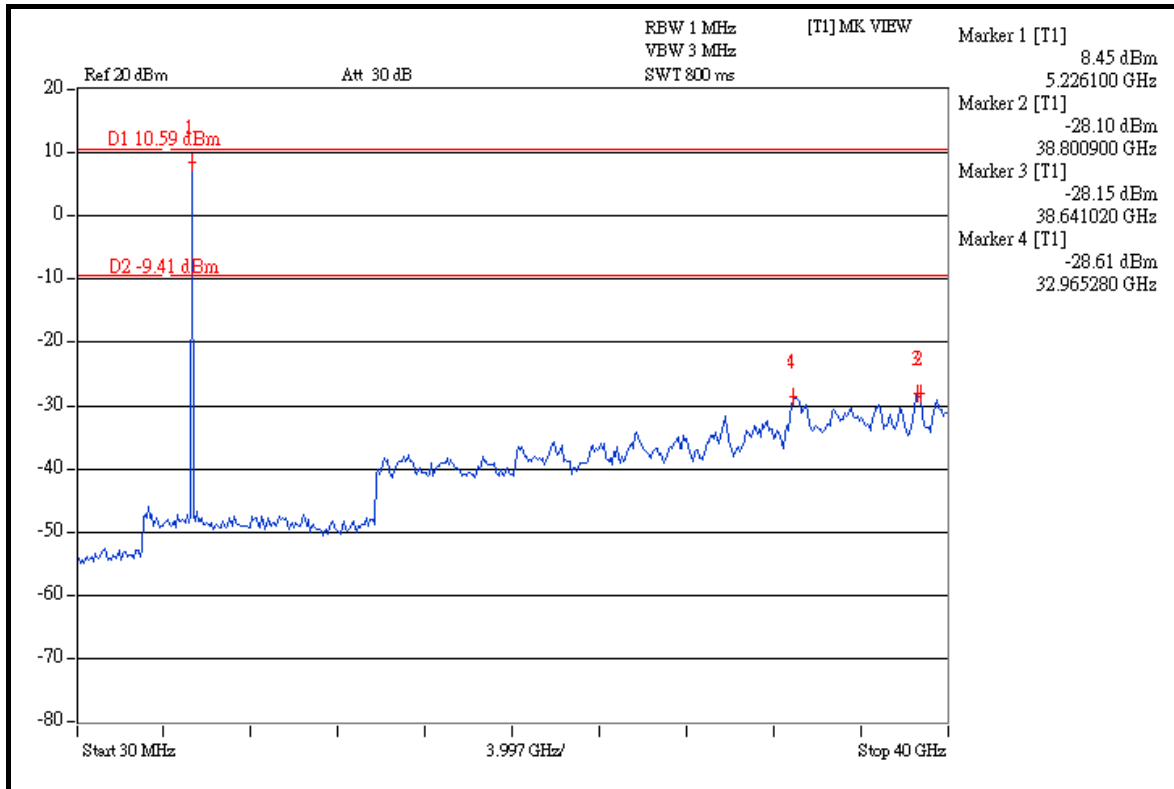


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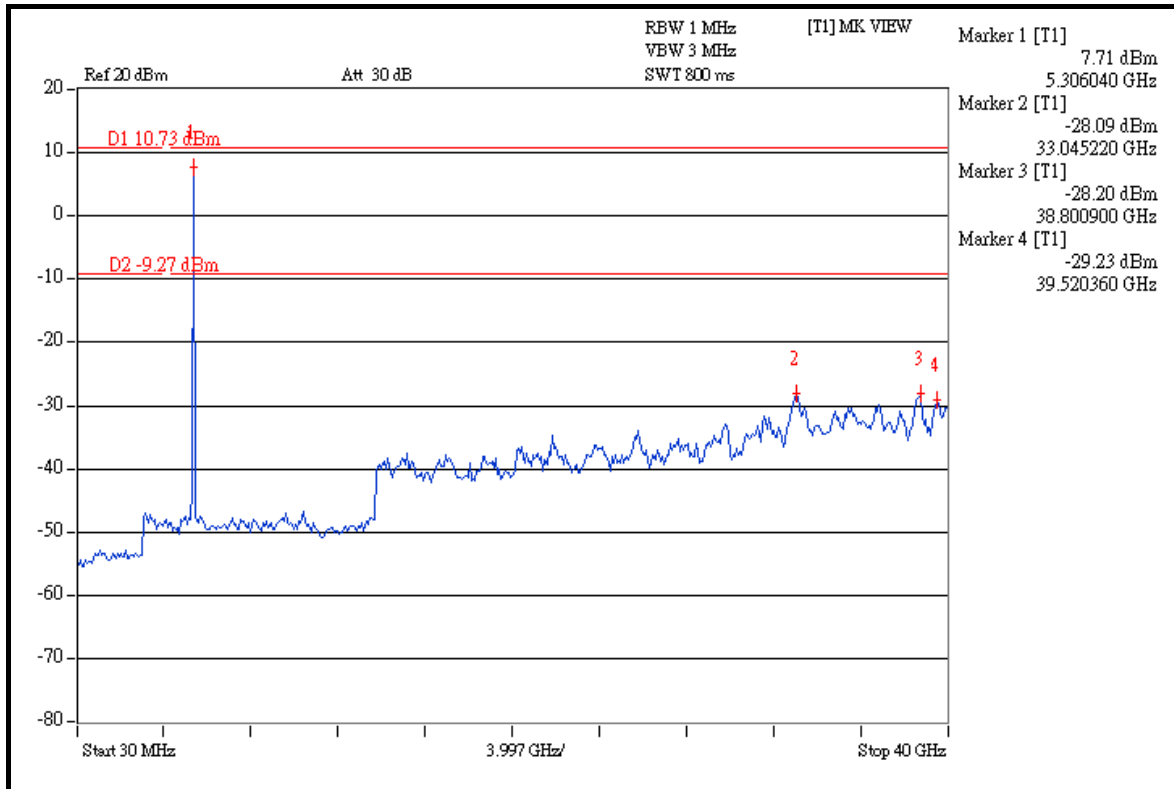
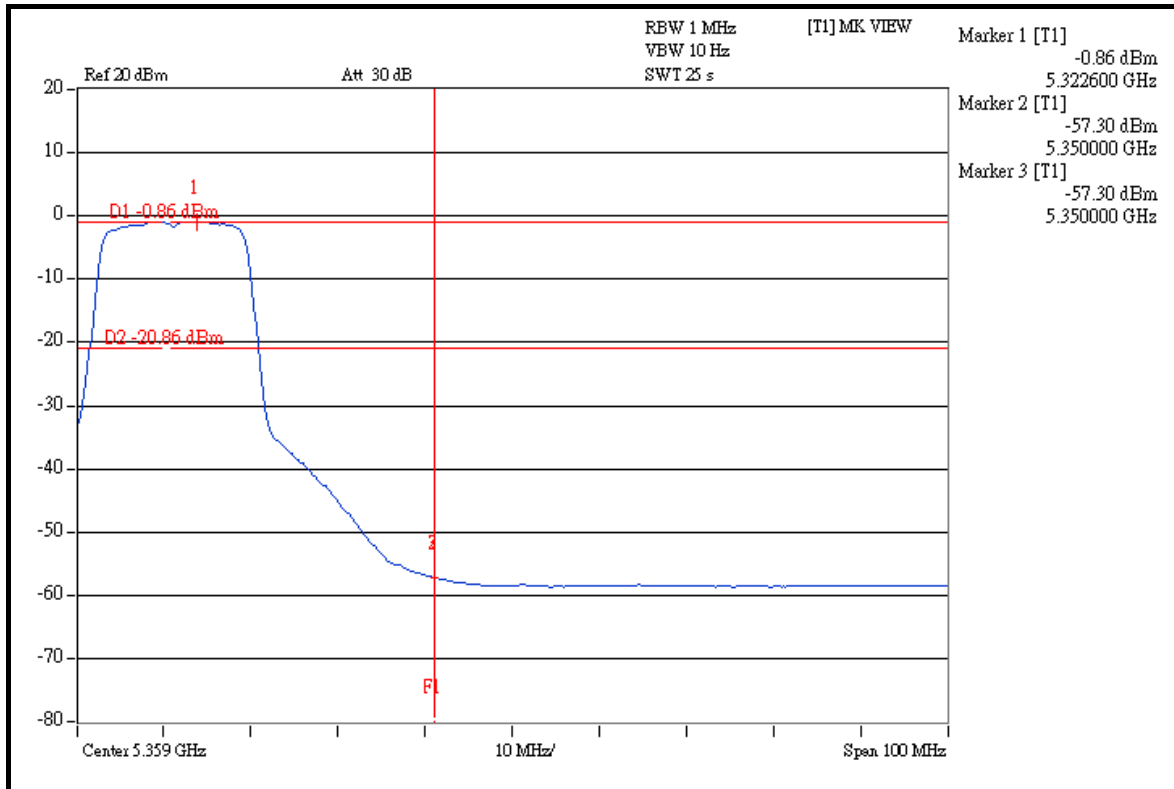


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## FOR 5470-5725MHz BAND: 802.11a OFDM MODULATION

### Channel 100 (5500MHz)

The band edge emission plot (5.460GHz) on the next page shows 55.09dBc 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 108.75dBuV/m (Peak), so the maximum field strength in restrict band is  $108.75 - 55.09 = 53.66$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 57.71dBc 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 97.70dBuV/m (Average), so the maximum field strength in restrict band is  $97.70 - 57.71 = 39.99$ dBuV/m which is under 54dBuV/m limit.

The band edge emission plot (5.470GHz) on the next page shows 51.91dBc 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 108.75dBuV/m (Peak), so the maximum field strength out of band emission is  $108.75 - 51.91 = 56.84$ dBuV/m which is under 68.3dBuV/m limit.

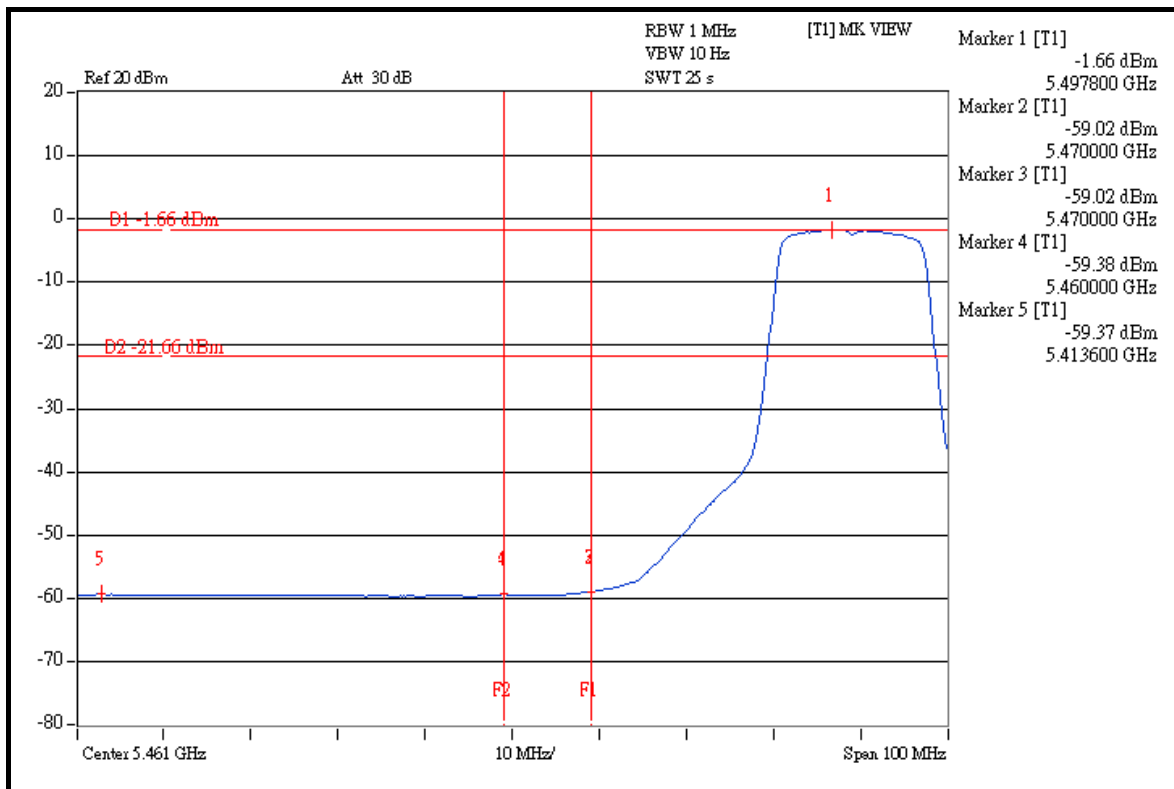
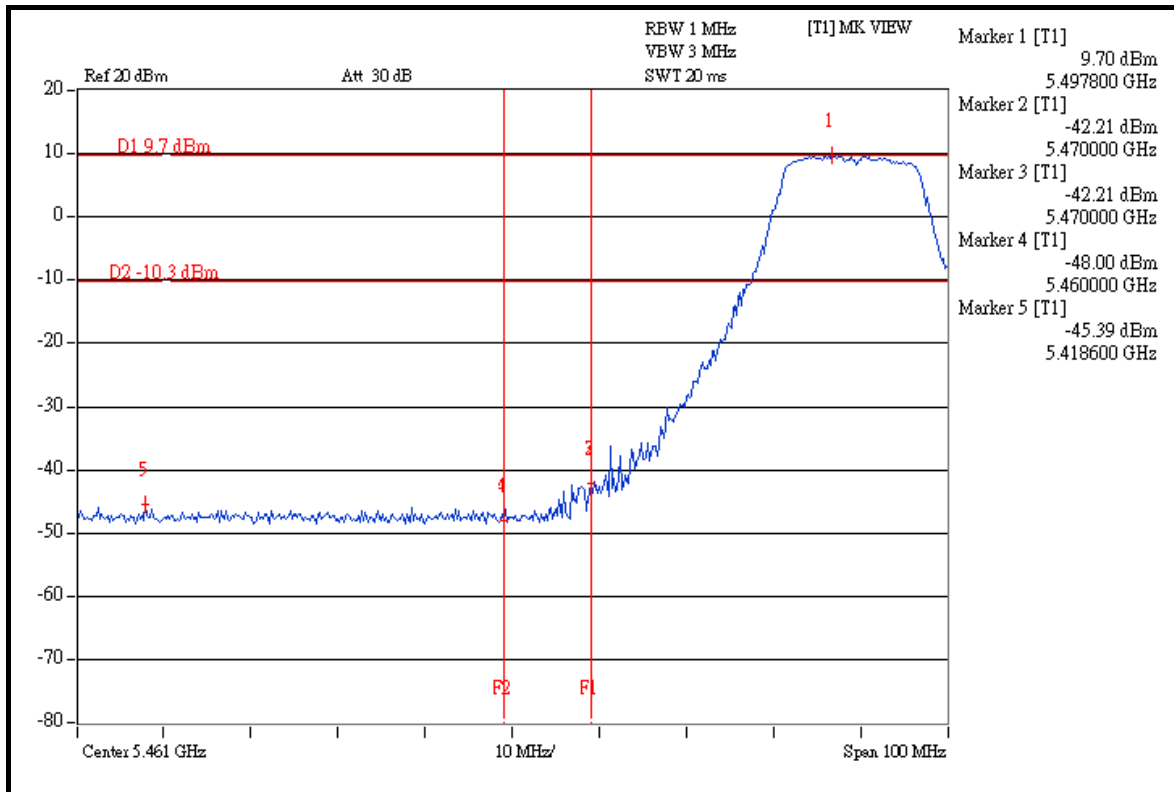
### Channel 140 (5700MHz)

The band edge emission plot on the next second page shows 41.26dBc 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 107.65dBuV/m (Peak), so the maximum field strength in restrict band is  $107.65 - 41.26 = 66.39$ dBuV/m which is under 68.3dBuV/m limit.



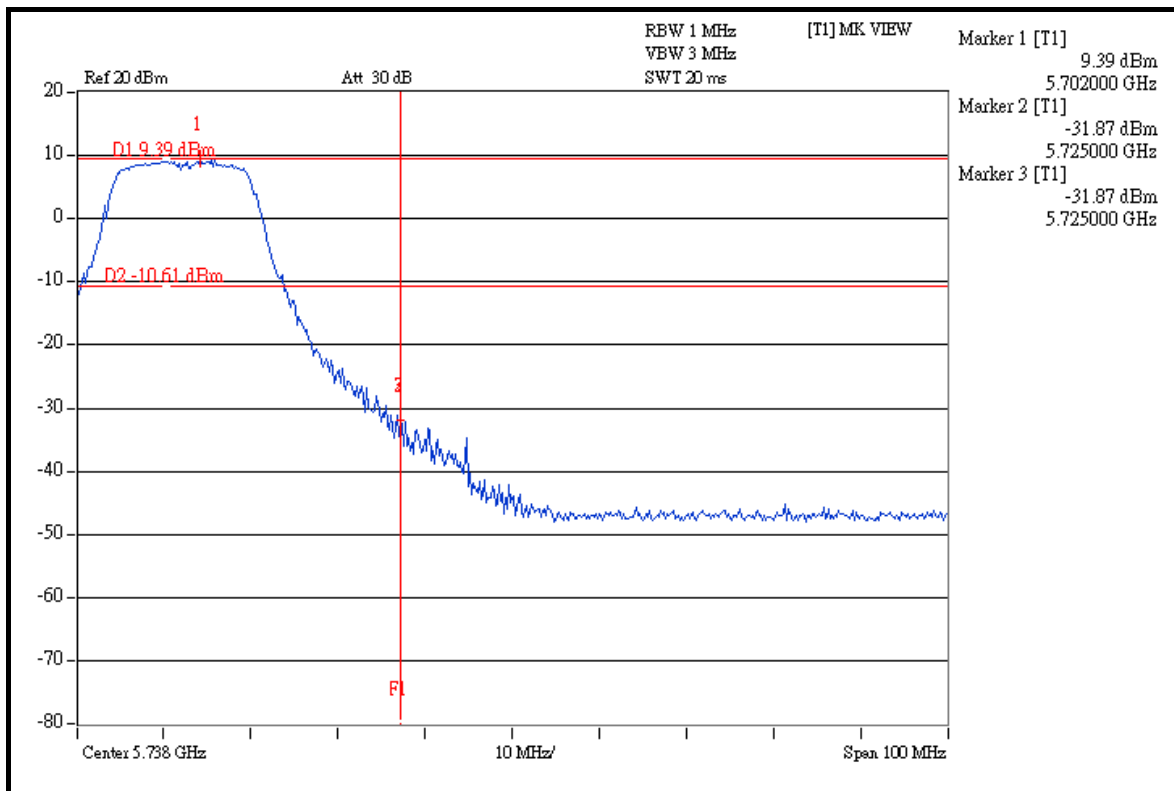
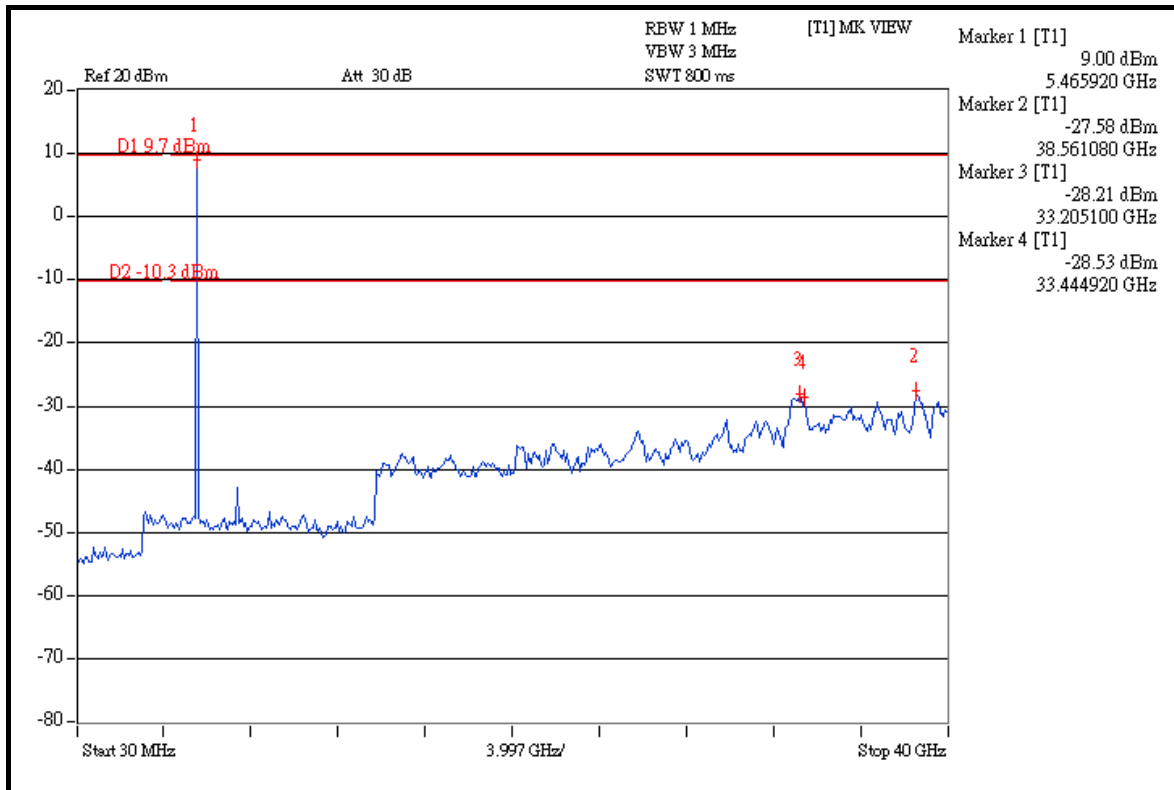


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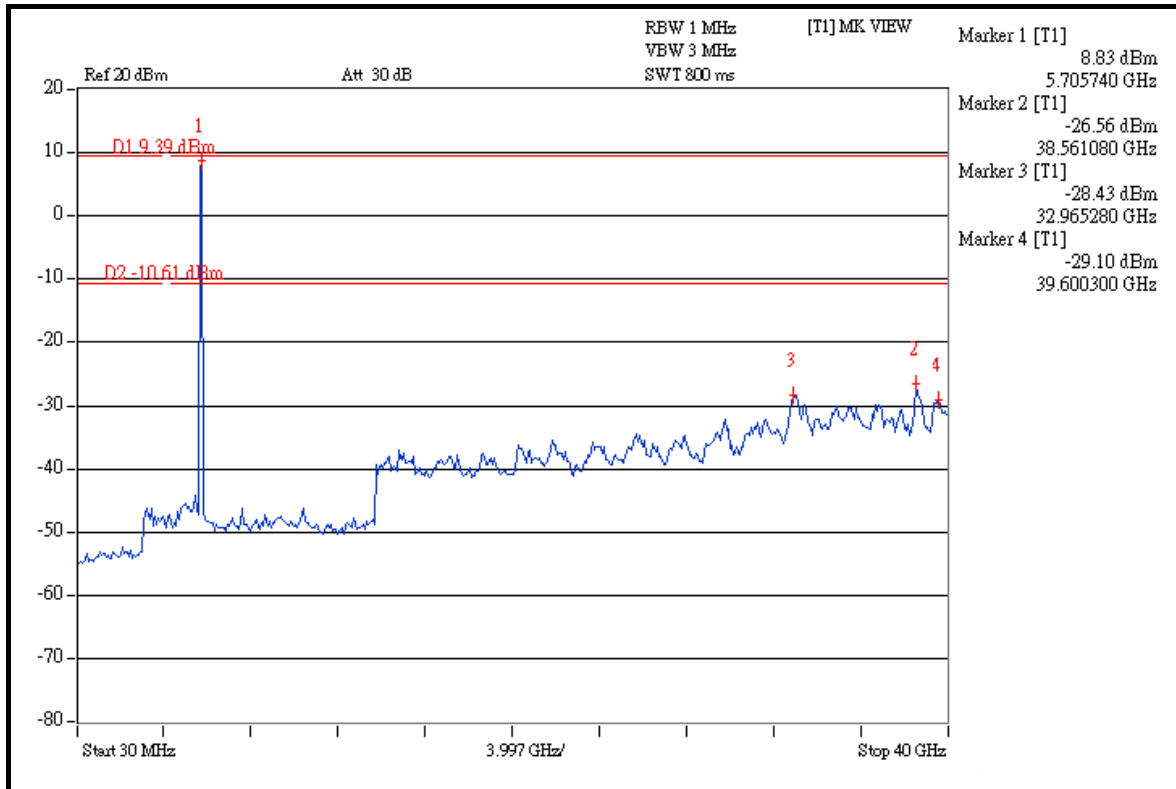
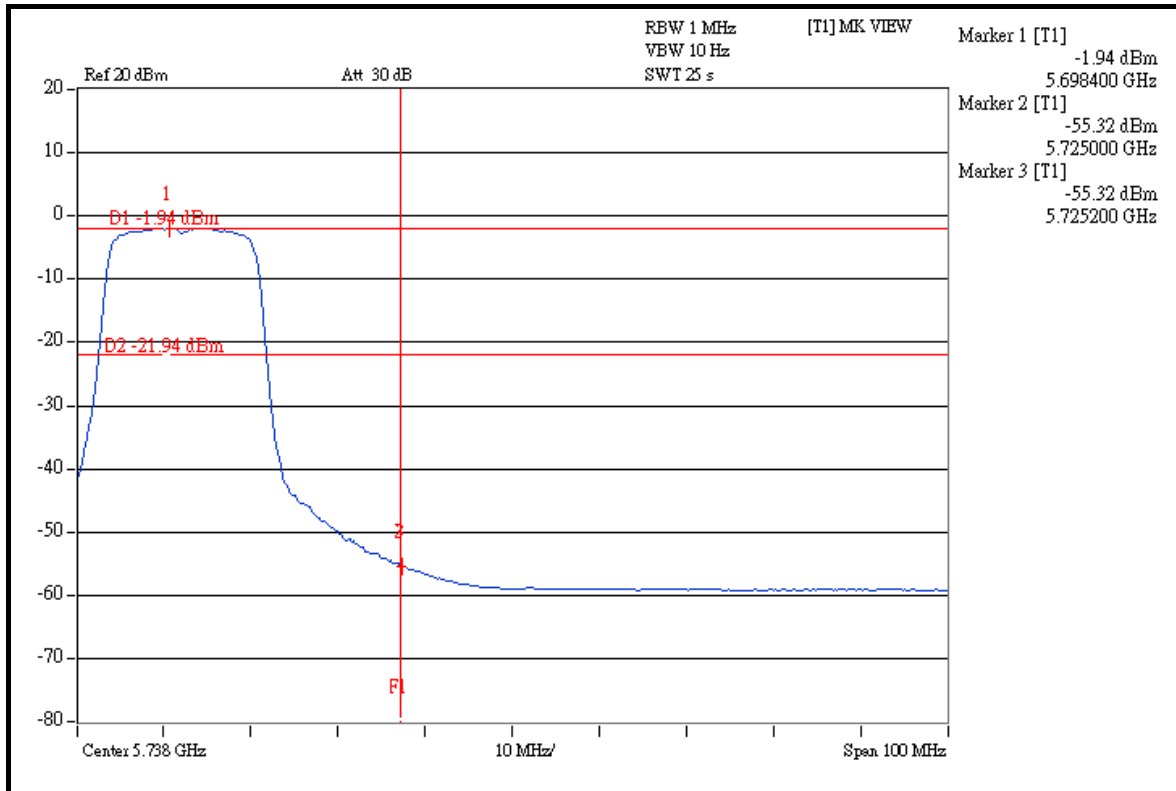


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## FOR 5250-5350MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION

### Channel 52 (5260MHz)

The band edge emission plot on the next page shows 51.55dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 52 is 110.28dBuV/m (Peak), so the maximum field strength in restrict band is  $110.28 - 51.55 = 58.73$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 54.10dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 52 is 99.54dBuV/m (Average), so the maximum field strength in restrict band is  $99.54 - 54.10 = 45.44$ dBuV/m which is under 54dBuV/m limit.

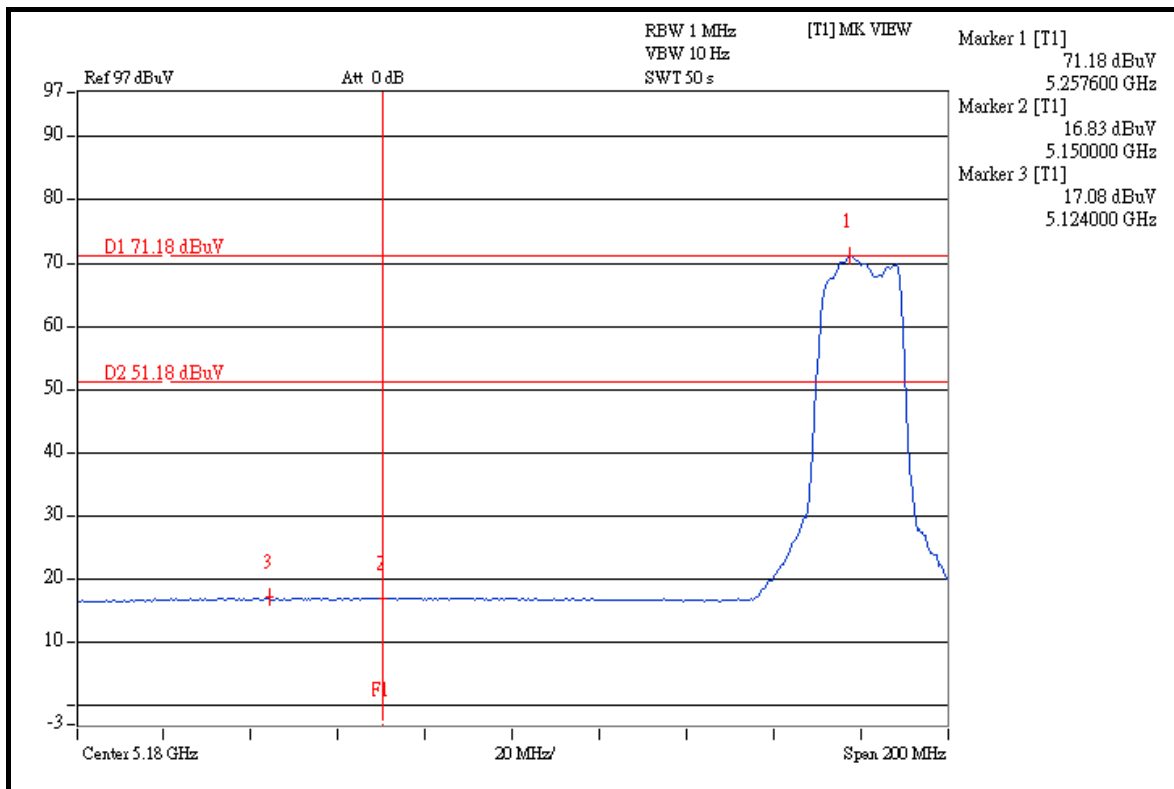
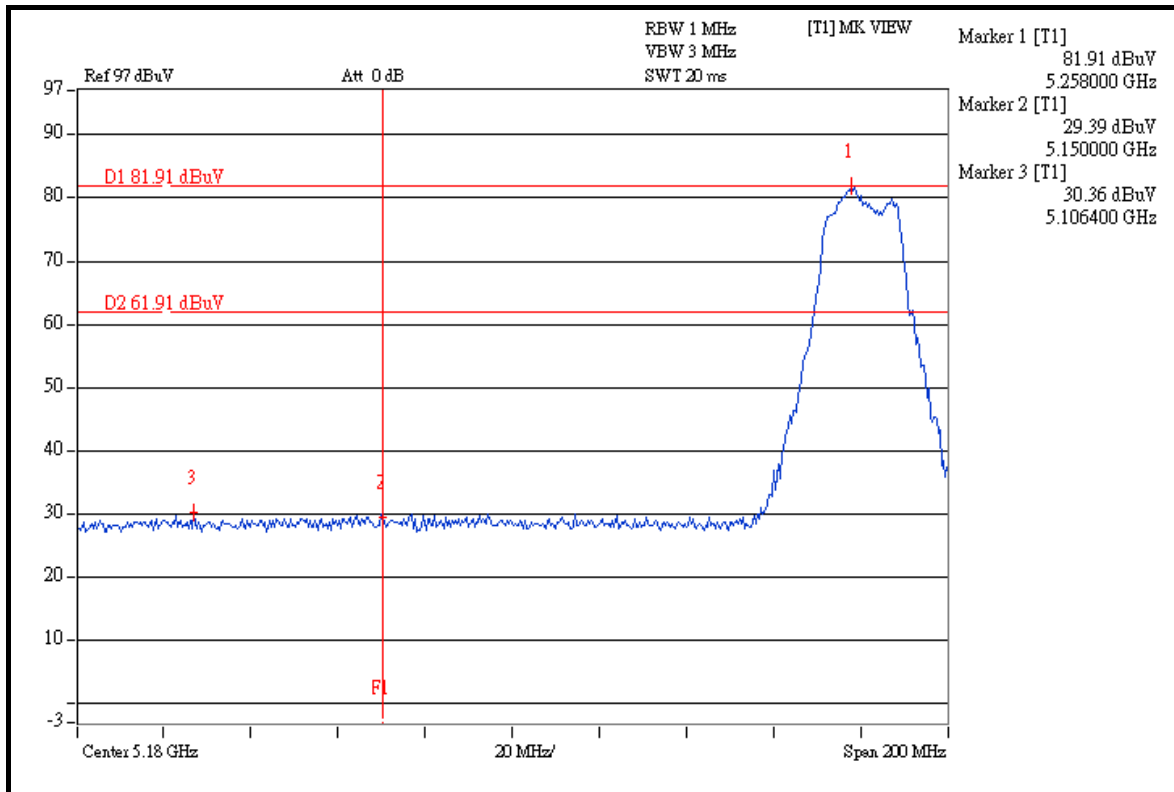
### Channel 64 (5320MHz)

The band edge emission plot on the next second page shows 52.01dBc 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 110.13dBuV/m (Peak), so the maximum field strength in restrict band is  $110.13 - 52.01 = 58.12$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 52.62dBc 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 99.47dBuV/m (Average), so the maximum field strength in restrict band is  $99.47 - 52.62 = 46.85$ dBuV/m which is under 54dBuV/m limit.

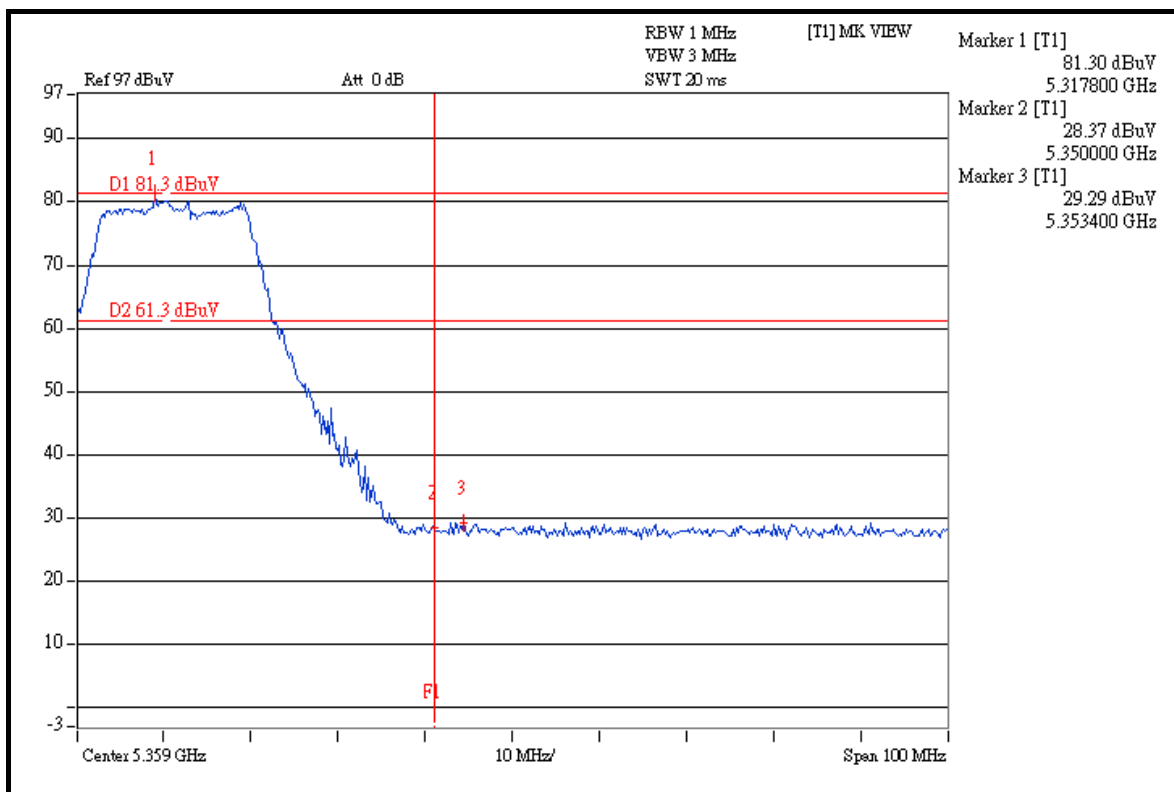
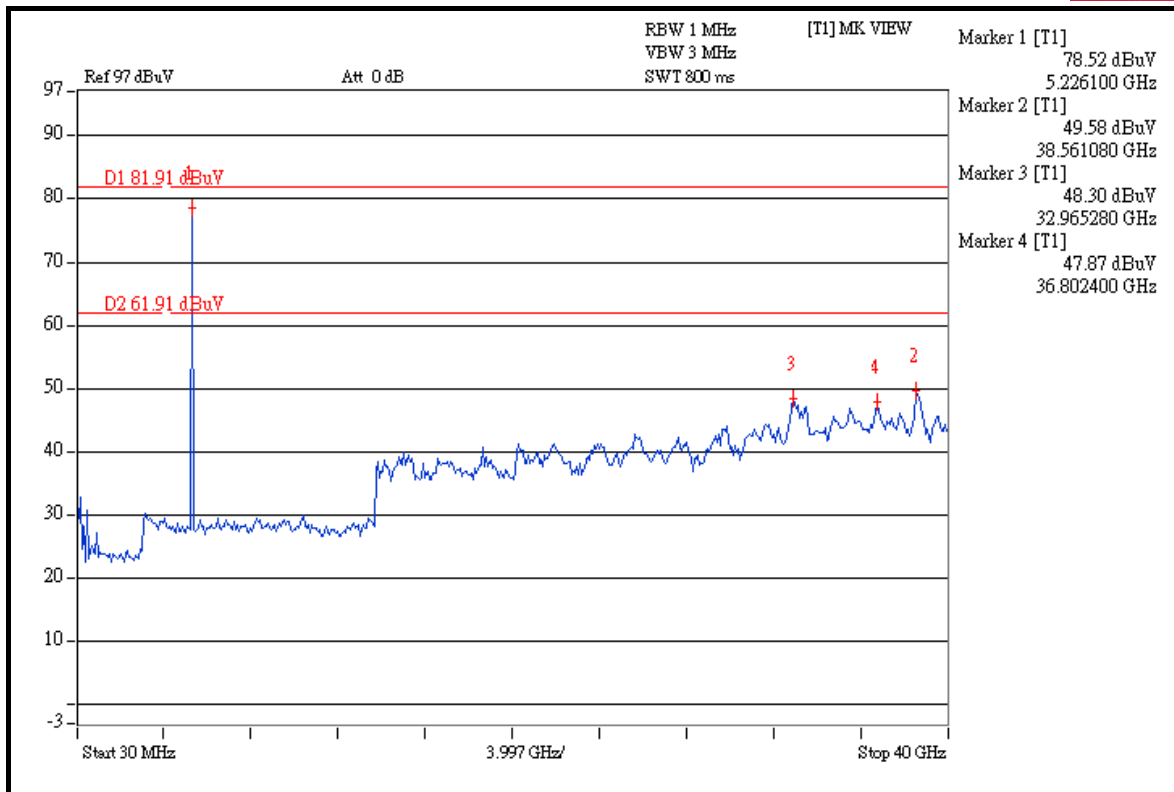


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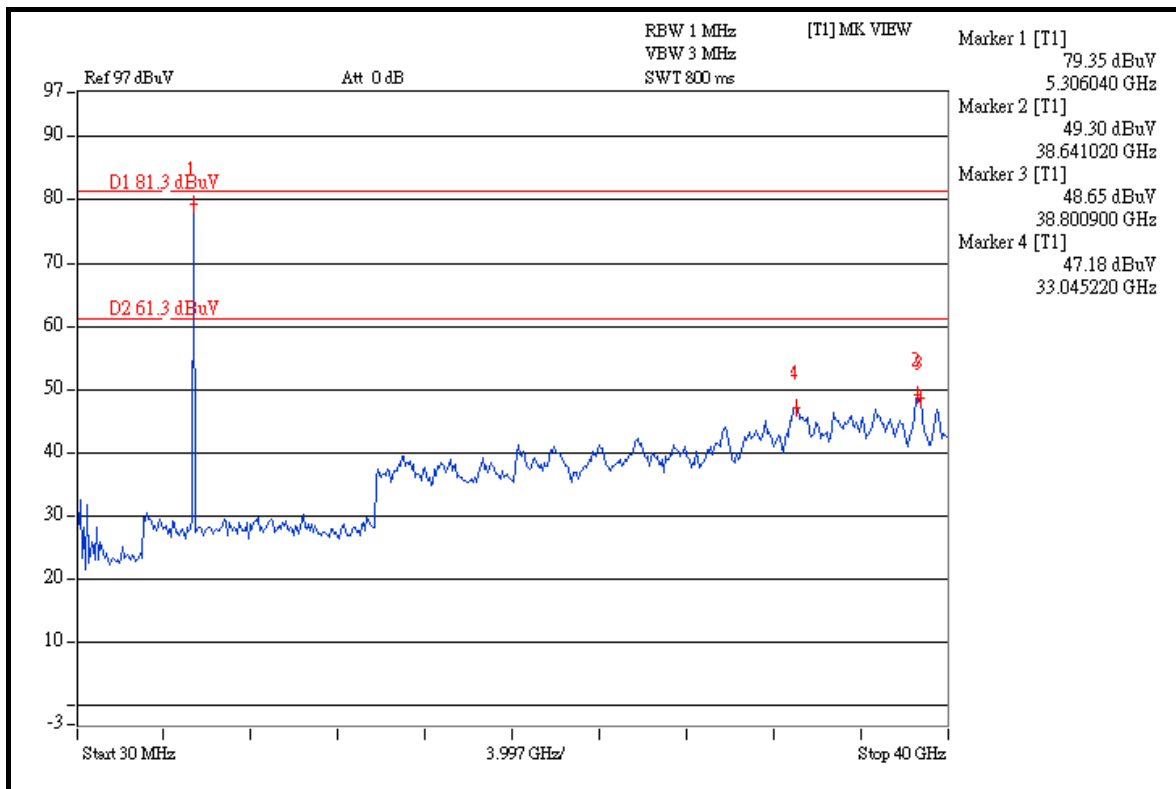
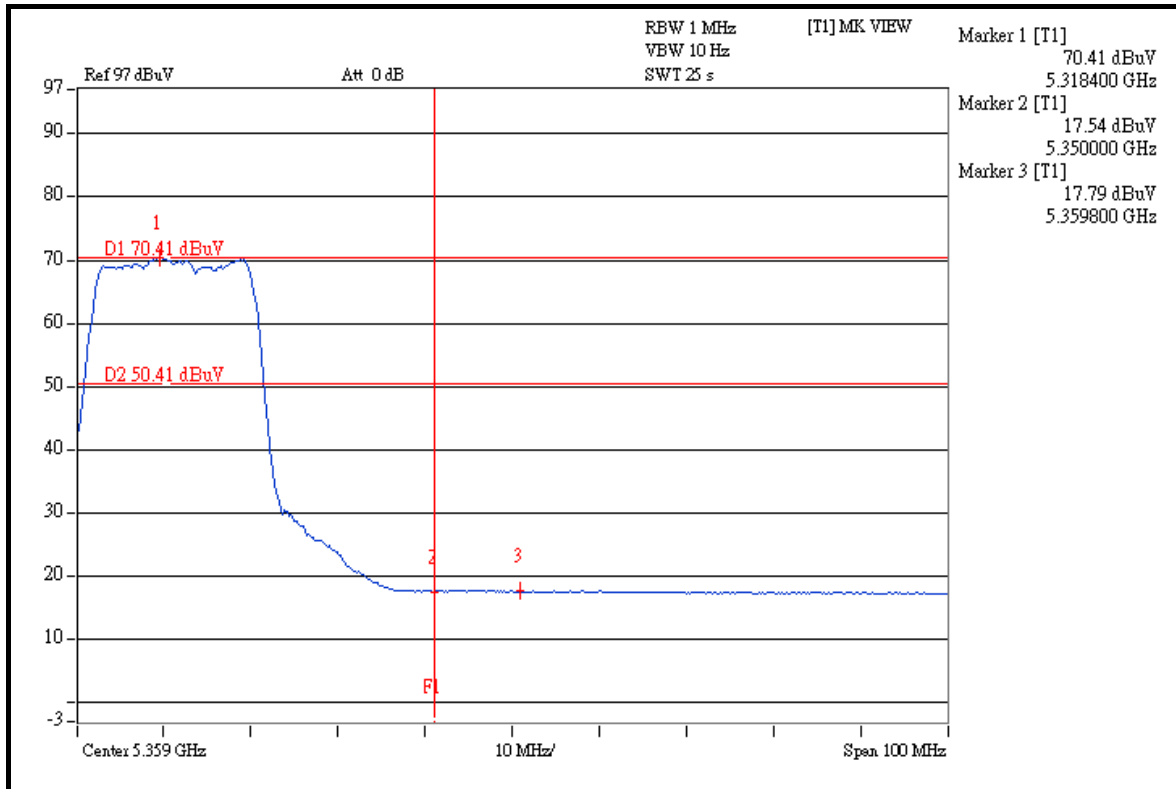


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## FOR 5470-5725MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION

### Channel 100 (5500MHz)

The band edge emission plot (5.460GHz) on the next page shows 52.06dBc 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 110.20dBuV/m (Peak), so the maximum field strength in restrict band is  $110.20 - 52.06 = 58.14$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 54.53dBc 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 100.56dBuV/m (Average), so the maximum field strength in restrict band is  $100.56 - 54.53 = 46.03$ dBuV/m which is under 54dBuV/m limit.

The band edge emission plot (5.470GHz) on the next page shows 52.06dBc 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 110.20dBuV/m (Peak), so the maximum field strength out of band emission is  $110.20 - 52.06 = 58.14$ dBuV/m which is under 68.3dBuV/m limit.

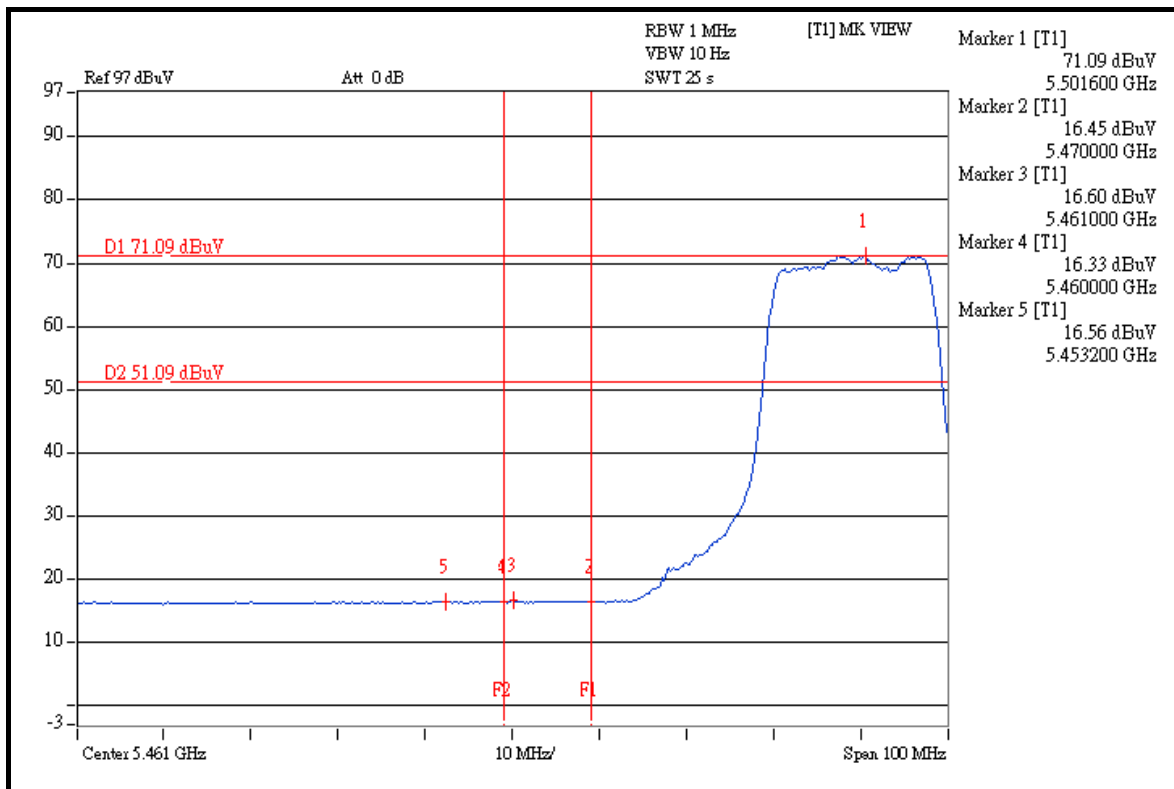
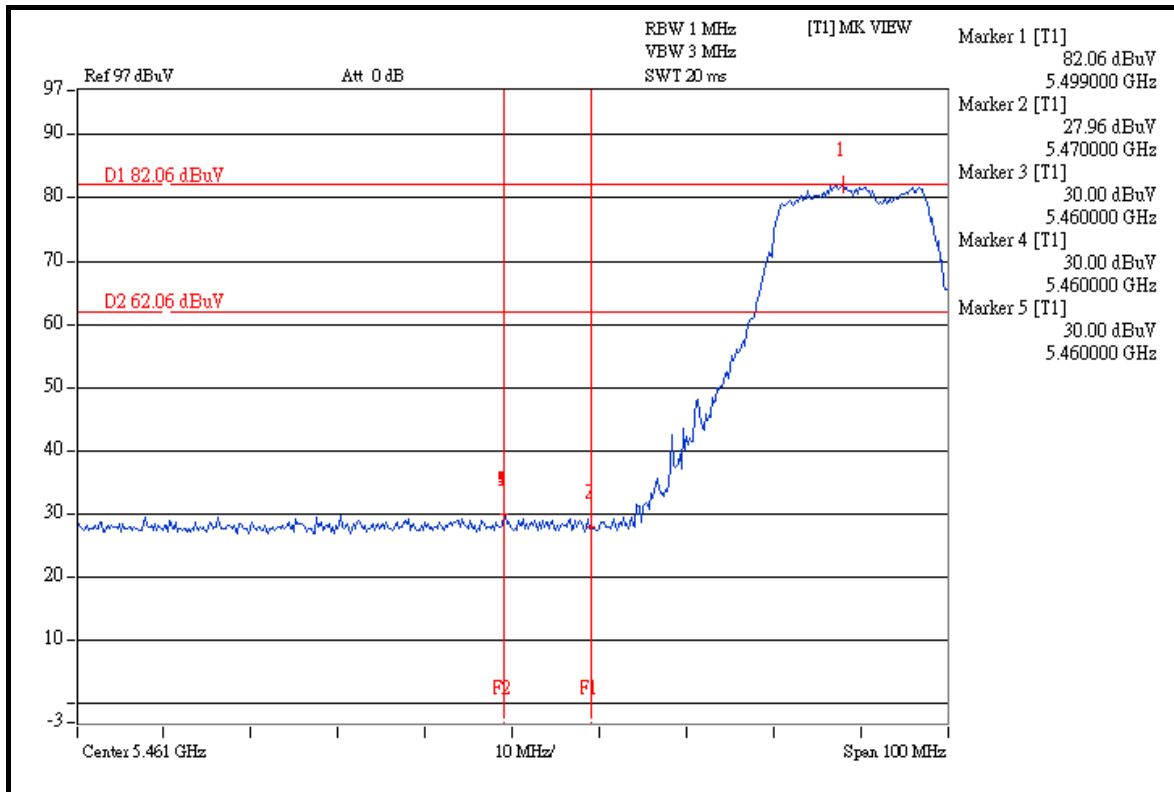
### Channel 140 (5700MHz)

The band edge emission plot on the next second page shows 51.18dBc 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 110.64dBuV/m (Peak), so the maximum field strength in restrict band is  $110.64 - 51.18 = 59.46$ dBuV/m which is under 68.3dBuV/m limit.



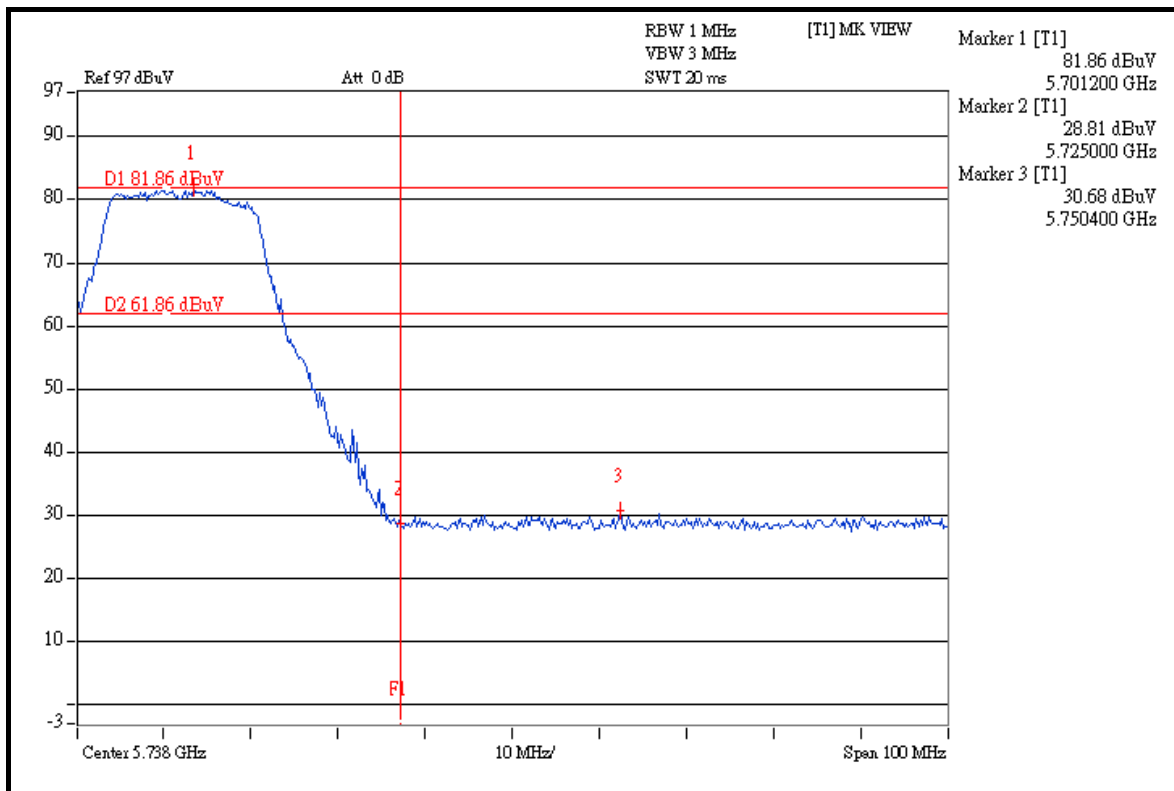
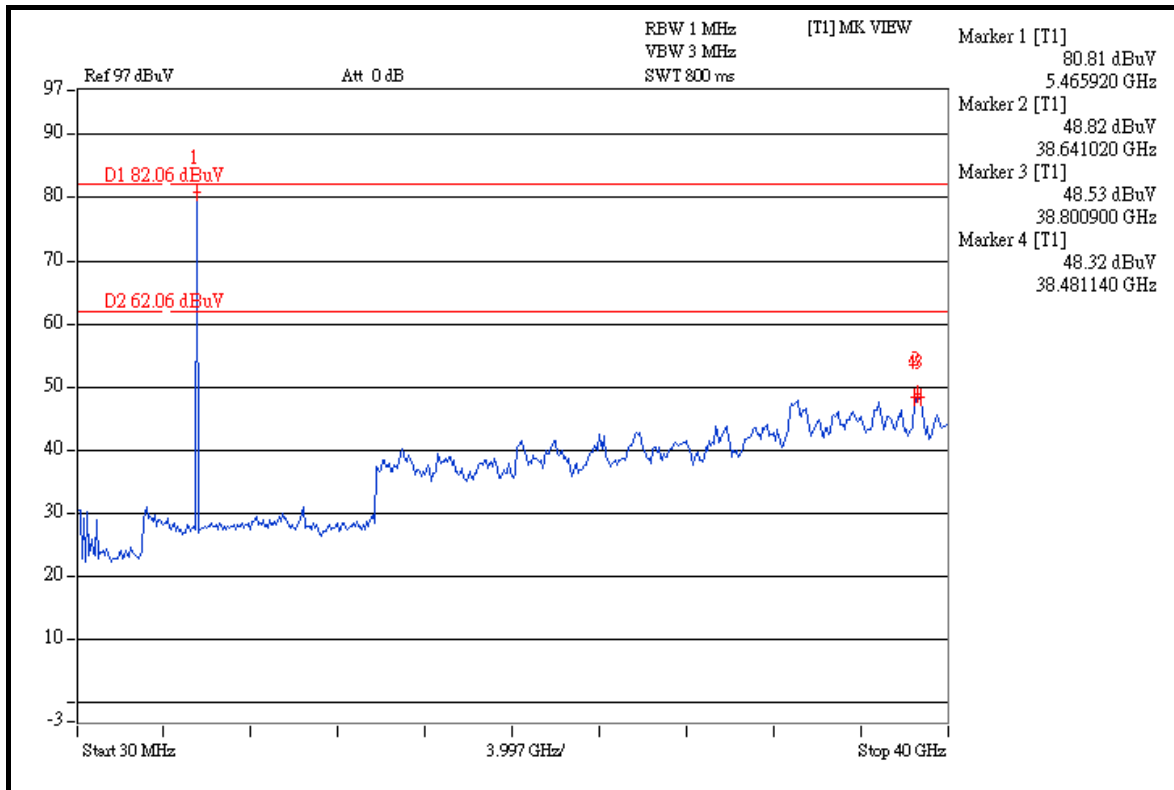


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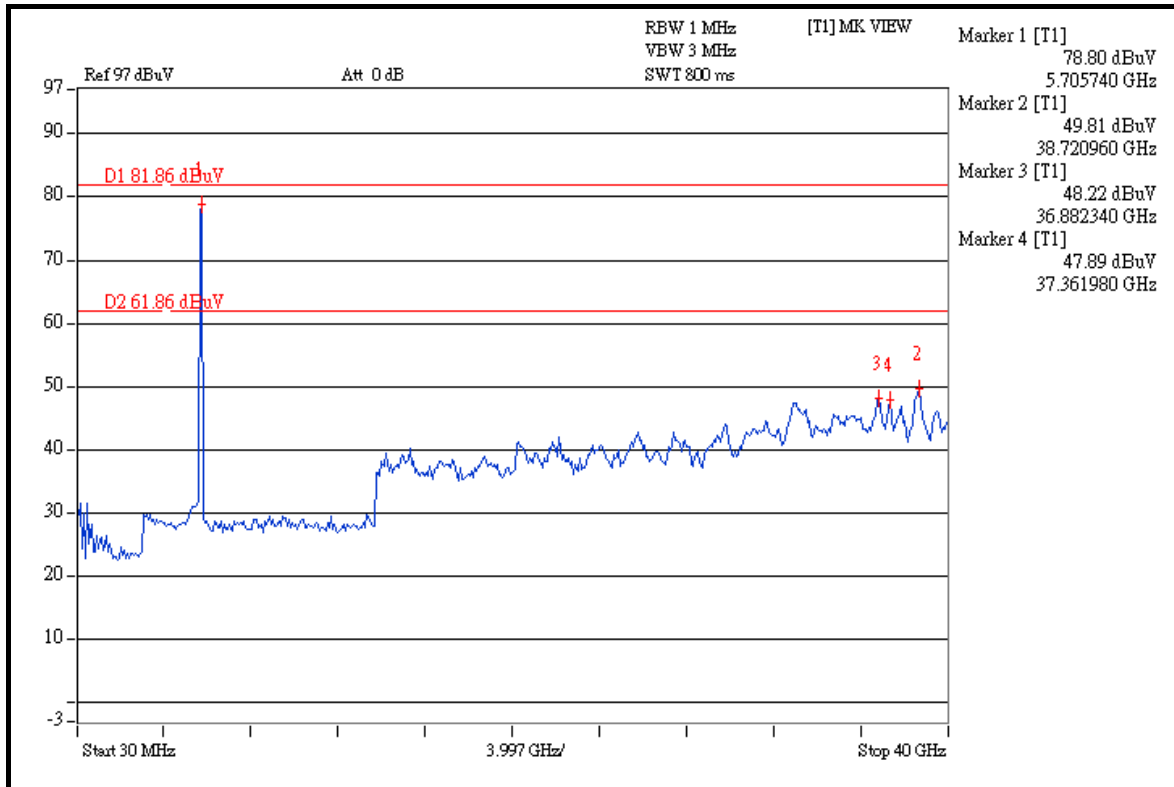
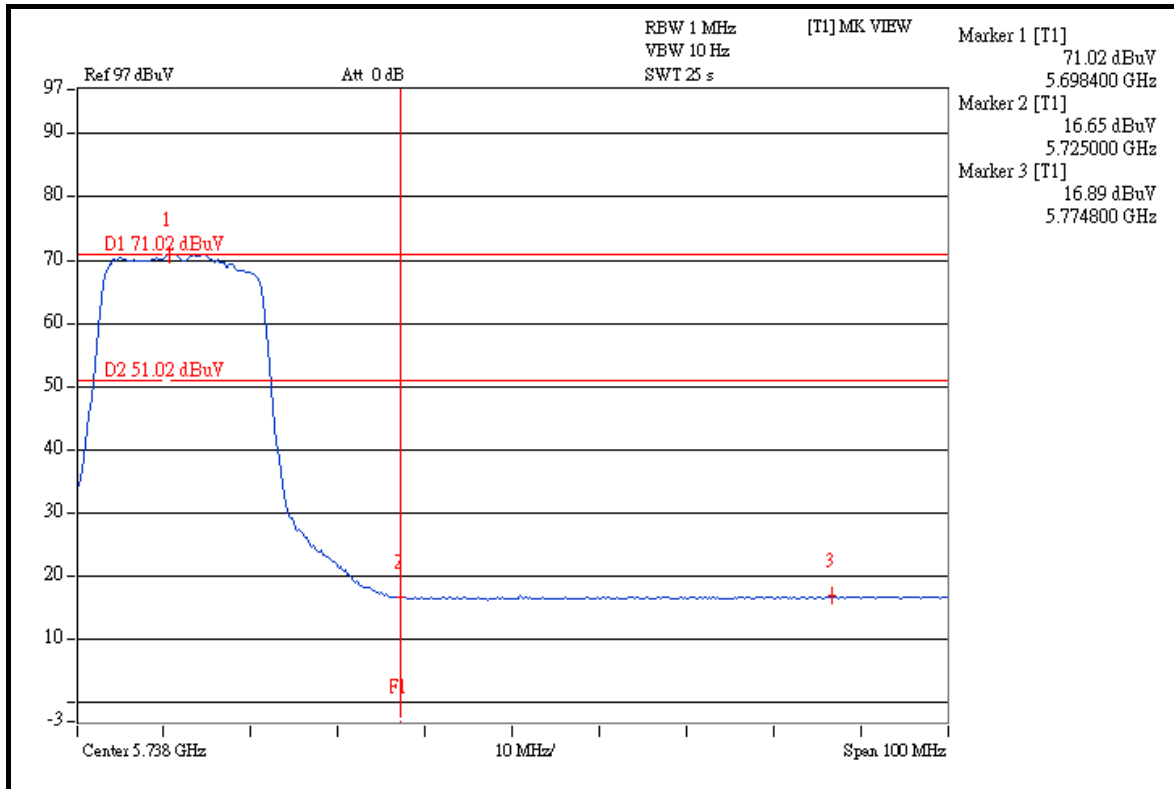


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## FOR 5250-5350MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

### Channel 54 (5270MHz)

The band edge emission plot on the next page shows 50.31dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 54 is 109.47dBuV/m (Peak), so the maximum field strength in restrict band is  $109.47 - 50.31 = 59.16$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 52.25dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 54 is 98.56dBuV/m (Average), so the maximum field strength in restrict band is  $98.56 - 52.25 = 46.31$ dBuV/m which is under 54dBuV/m limit.

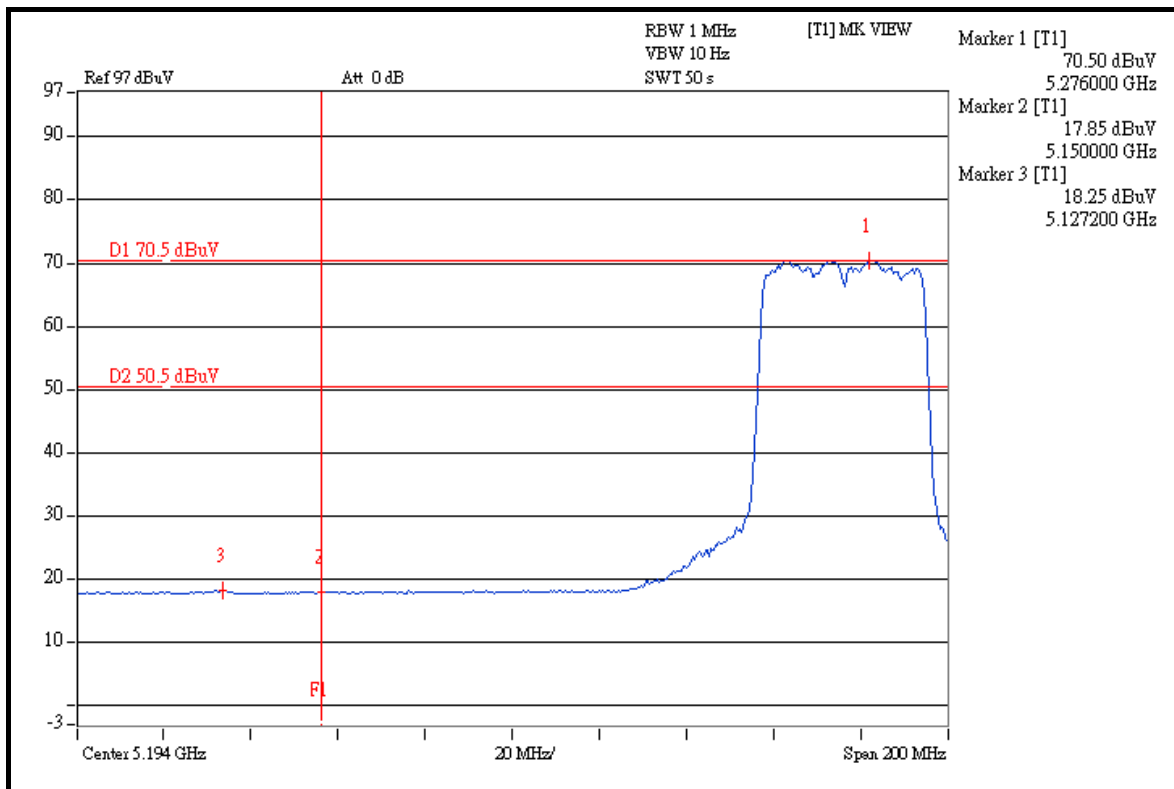
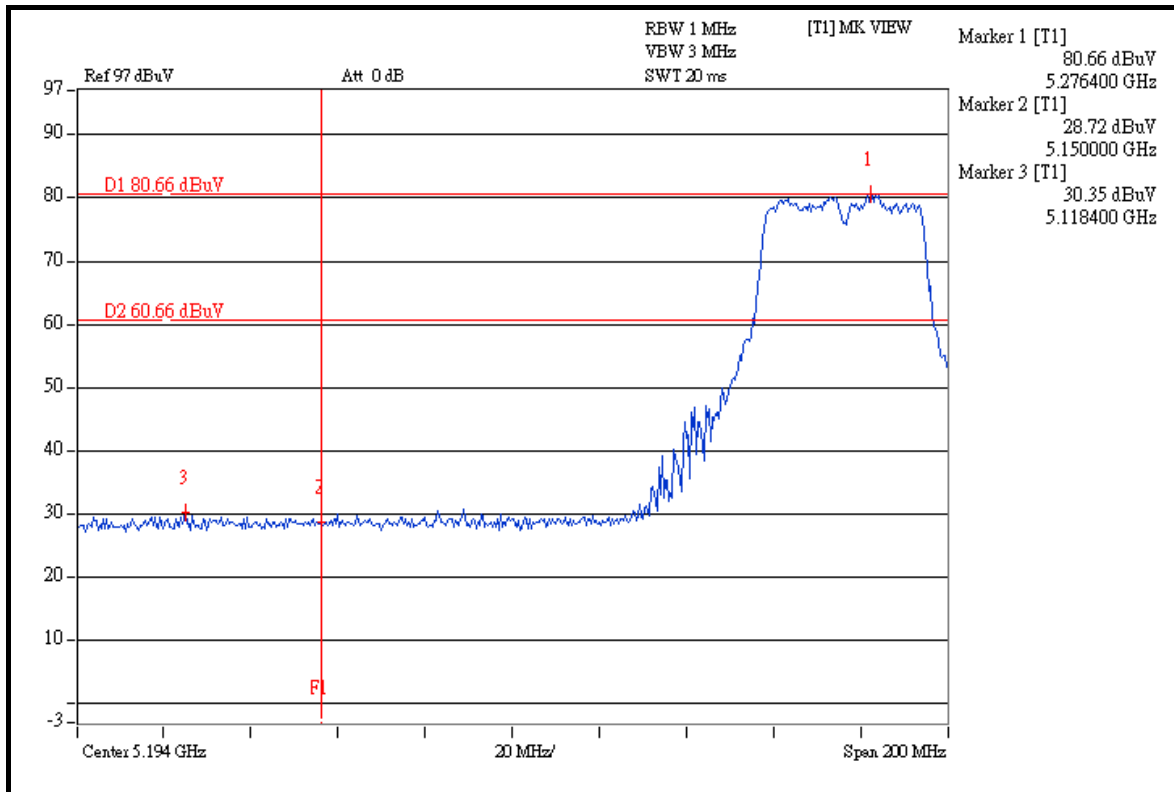
### Channel 62 (5310MHz)

The band edge emission plot on the next second page shows 41.06dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 62 is 109.17dBuV/m (Peak), so the maximum field strength in restrict band is  $109.17 - 41.06 = 68.11$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 47.81dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 62 is 98.24dBuV/m (Average), so the maximum field strength in restrict band is  $98.24 - 47.81 = 50.43$ dBuV/m which is under 54dBuV/m limit.

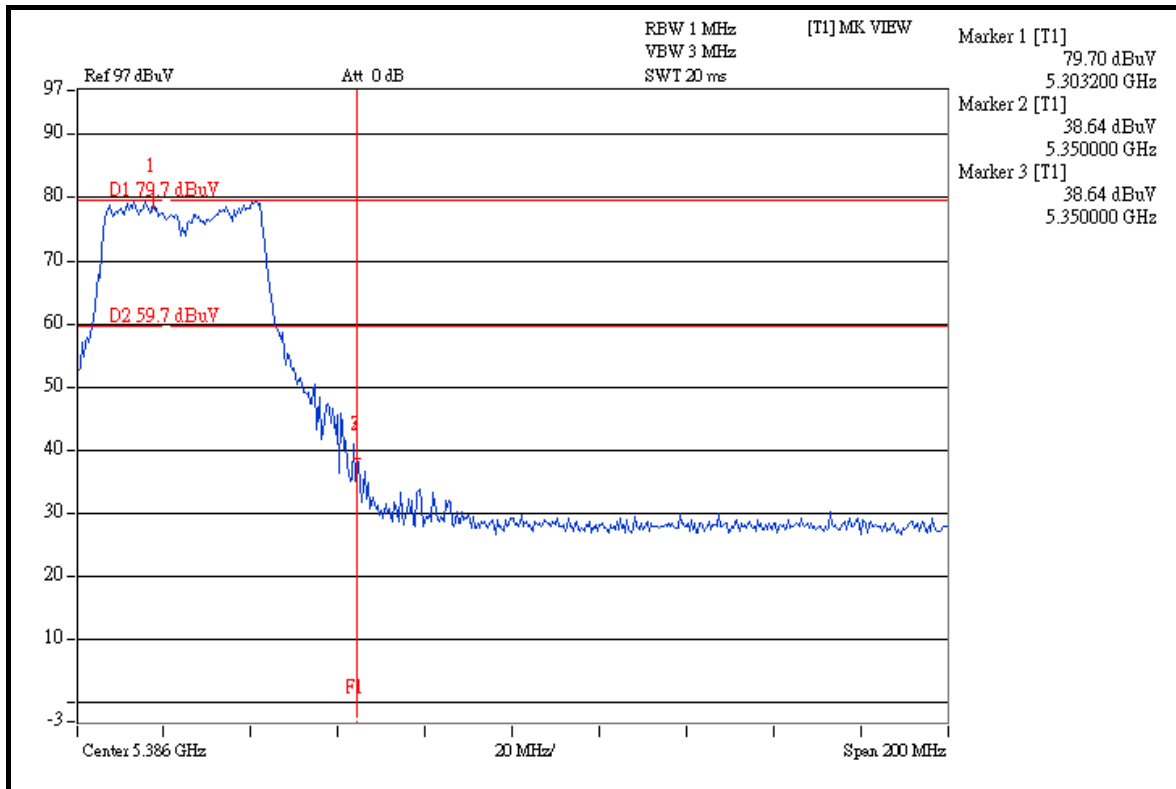
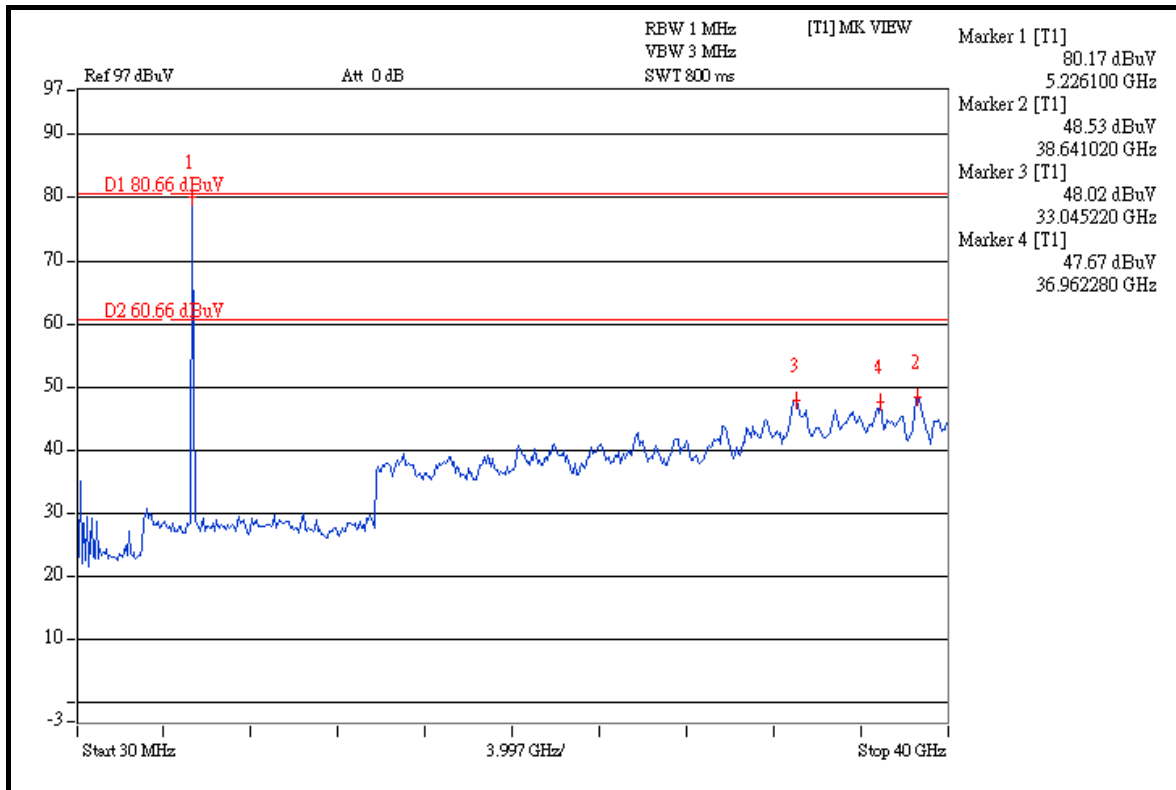


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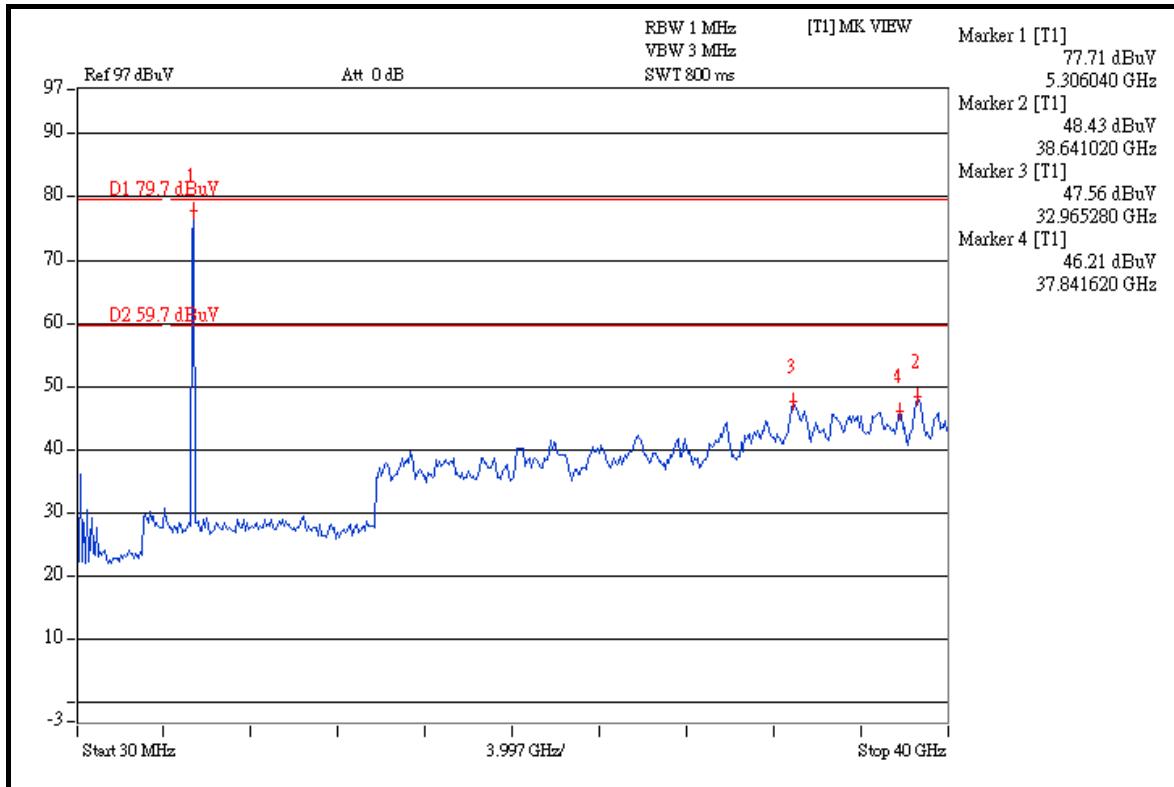
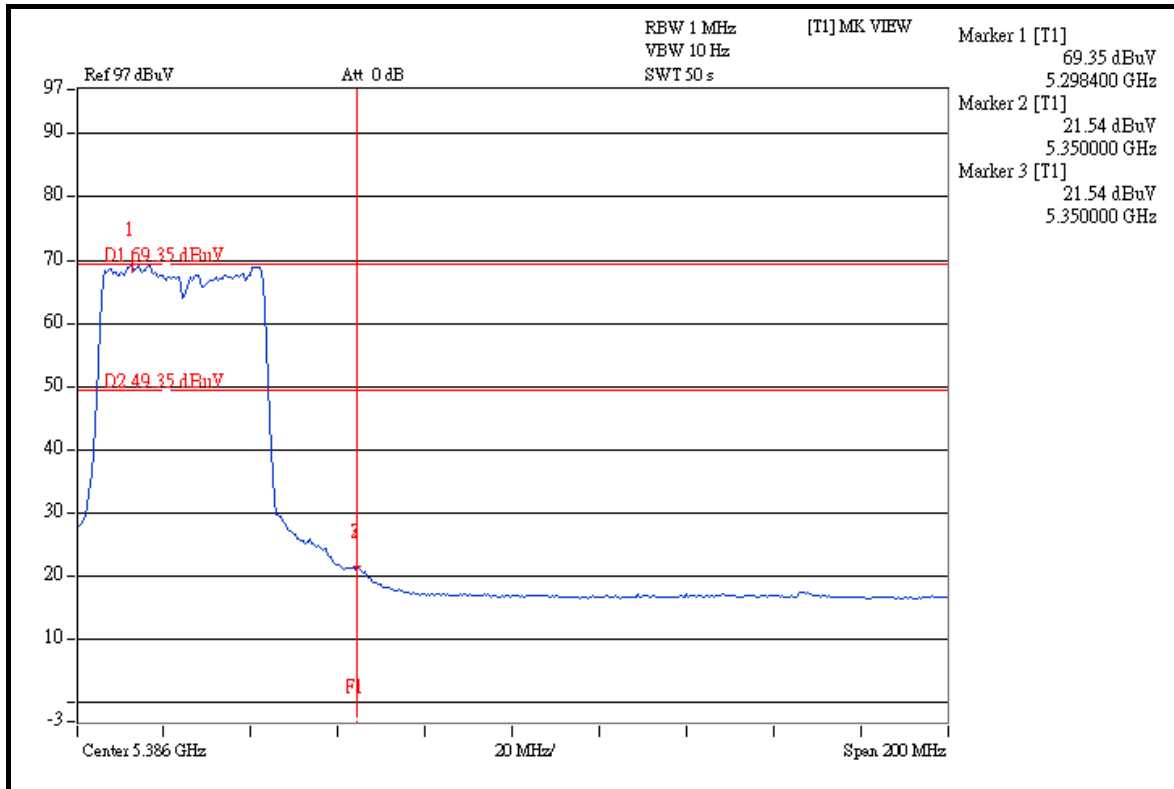


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## FOR 5470-5725MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

### Channel 102 (5510MHz)

The band edge emission plot (5.460GHz) on the next page shows 48.53dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 102 is 108.95dBuV/m (Peak), so the maximum field strength in restrict band is  $108.95 - 48.53 = 60.42$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 51.48dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 102 is 97.56dBuV/m (Average), so the maximum field strength in restrict band is  $97.56 - 51.48 = 46.08$ dBuV/m which is under 54dBuV/m limit.

The band edge emission plot (5.470GHz) on the next page shows 43.25dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 102 is 108.95dBuV/m (Peak), so the maximum field strength out of band emission is  $108.95 - 43.25 = 65.70$ dBuV/m which is under 68.3dBuV/m limit.

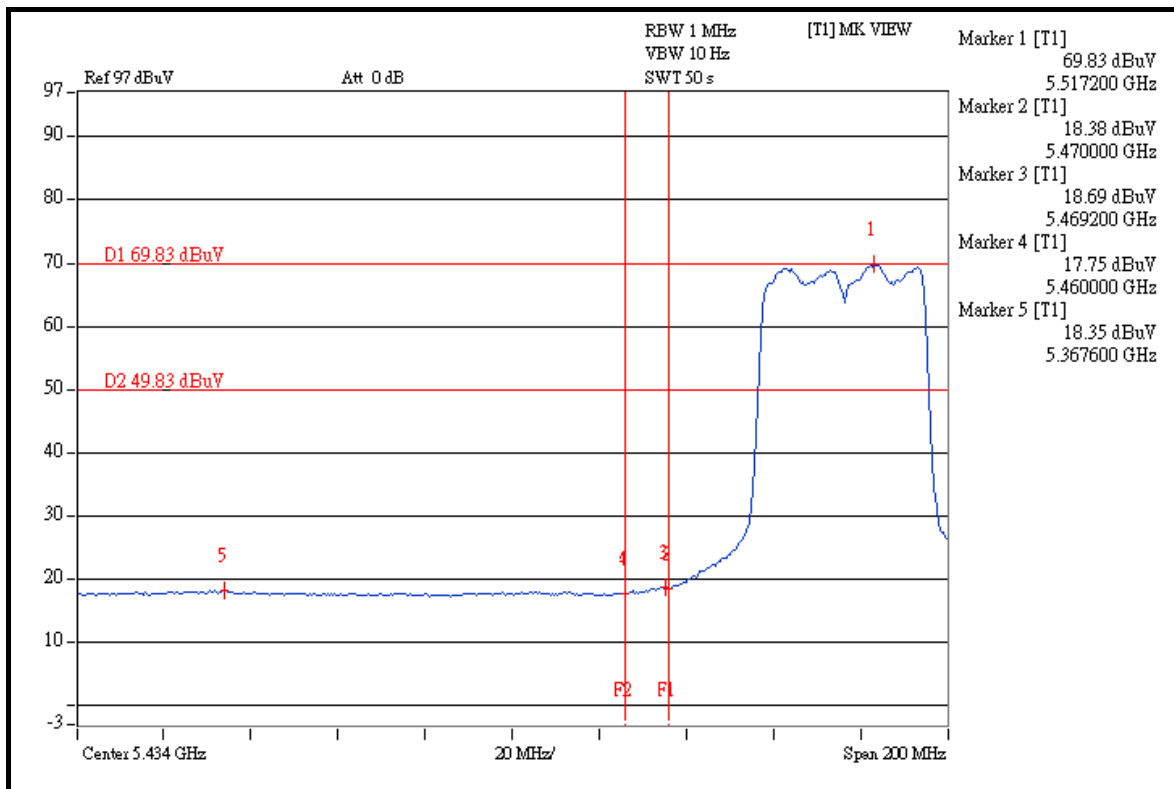
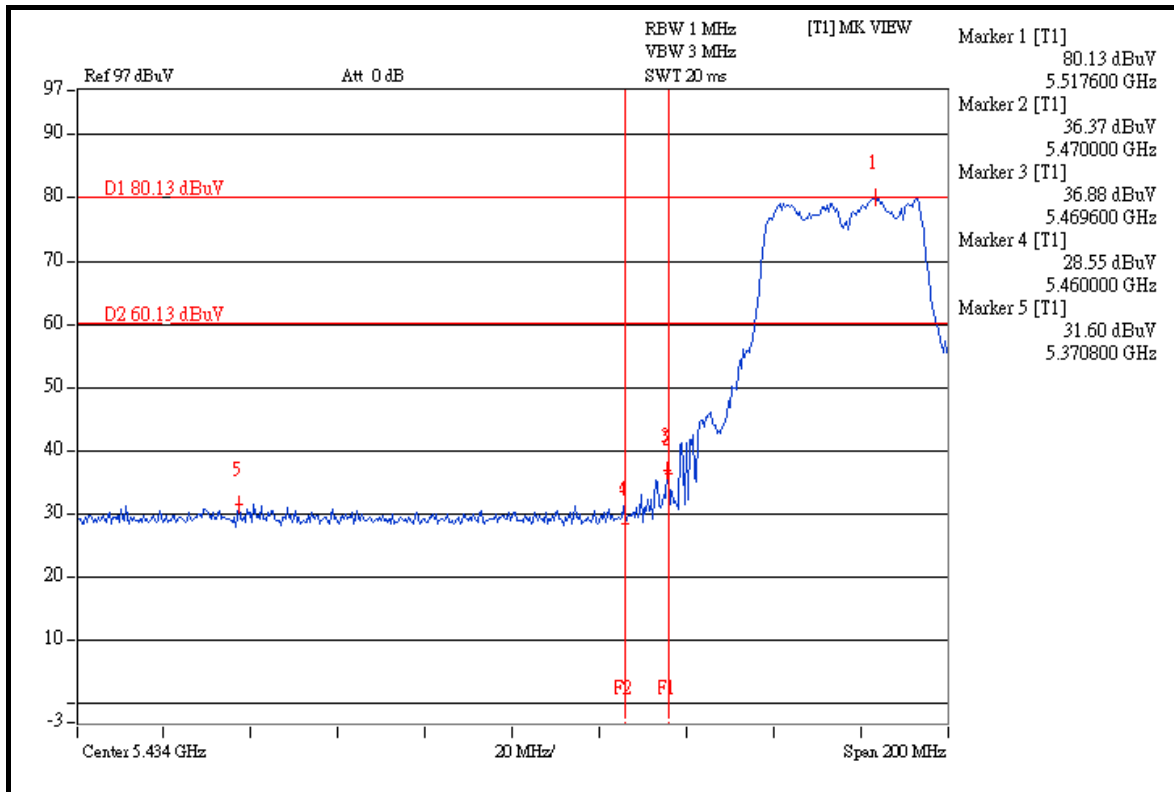
### Channel 134 (5670MHz)

The band edge emission plot on the next second page shows 49.17dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 134 is 109.07dBuV/m (Peak), so the maximum field strength in restrict band is  $109.07 - 49.17 = 59.90$ dBuV/m which is under 68.3dBuV/m limit.



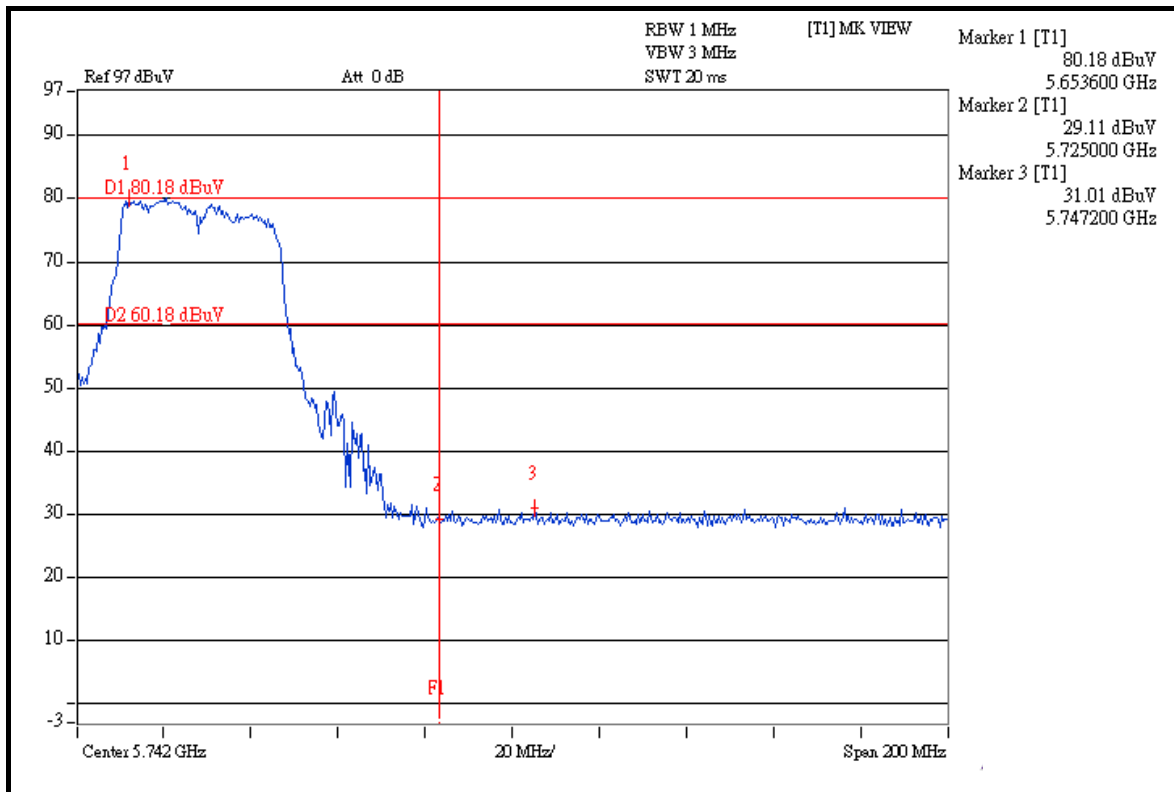
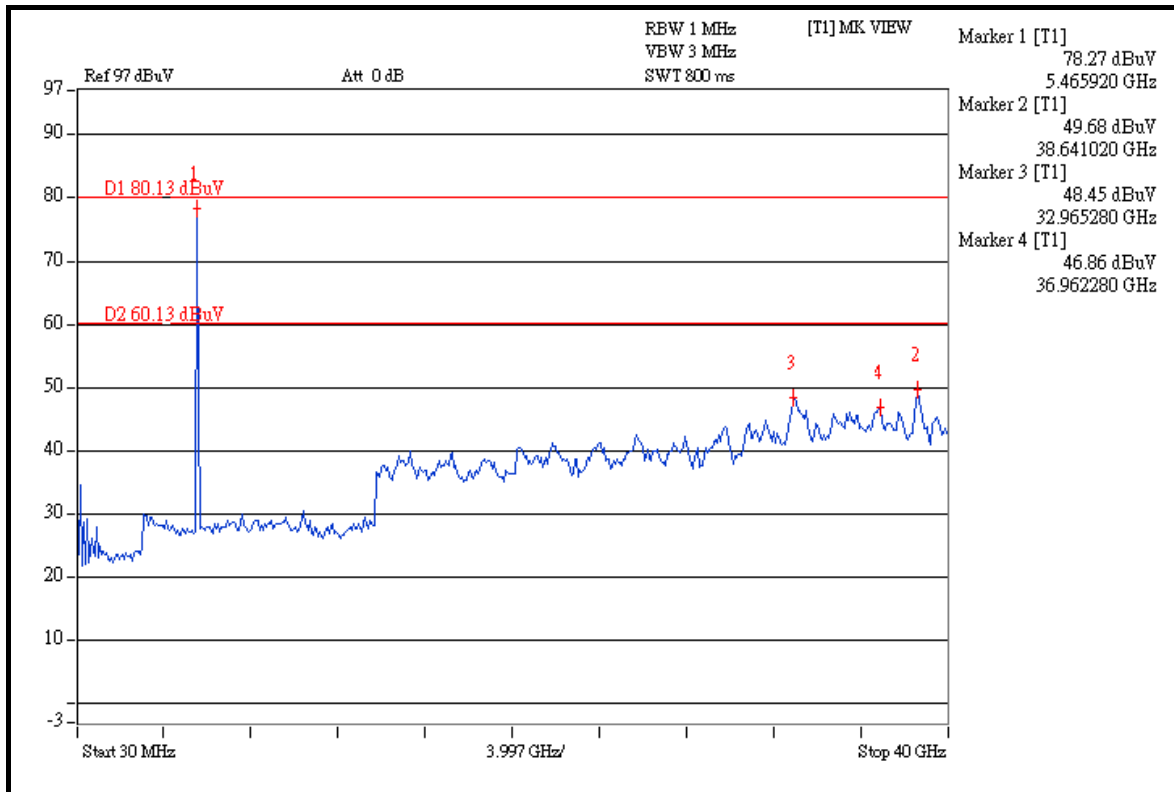


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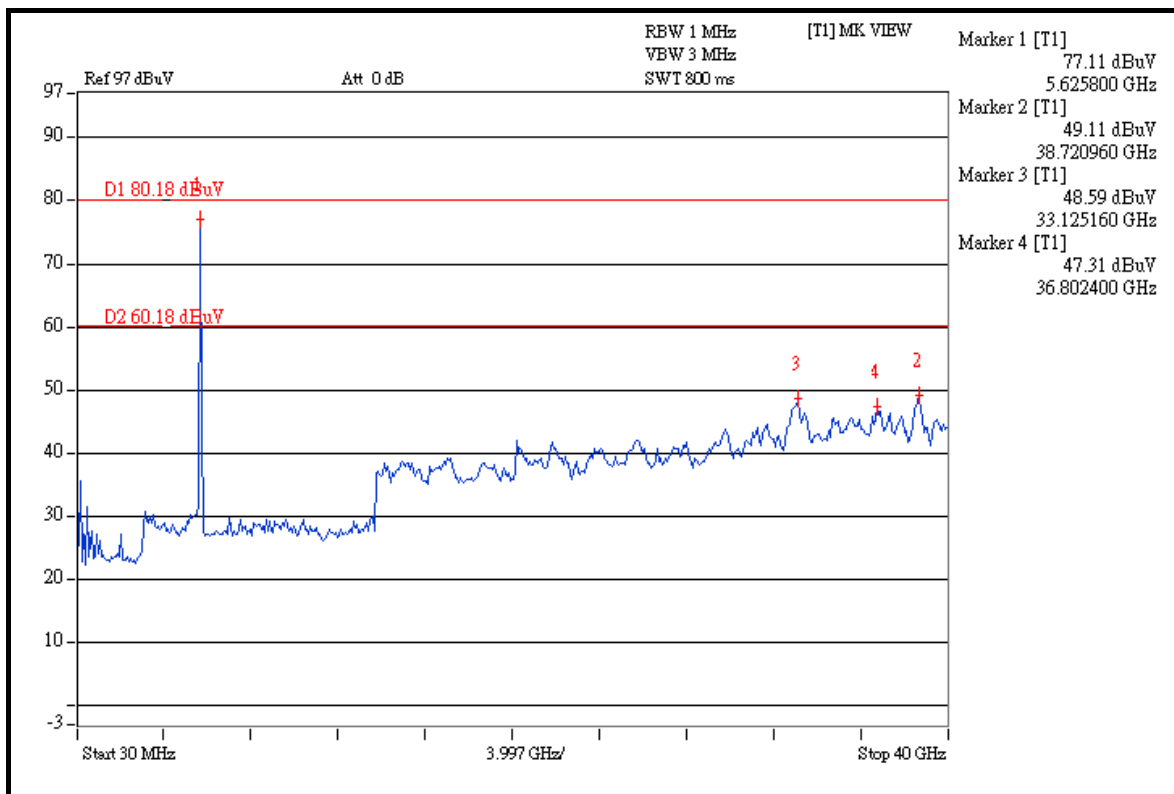
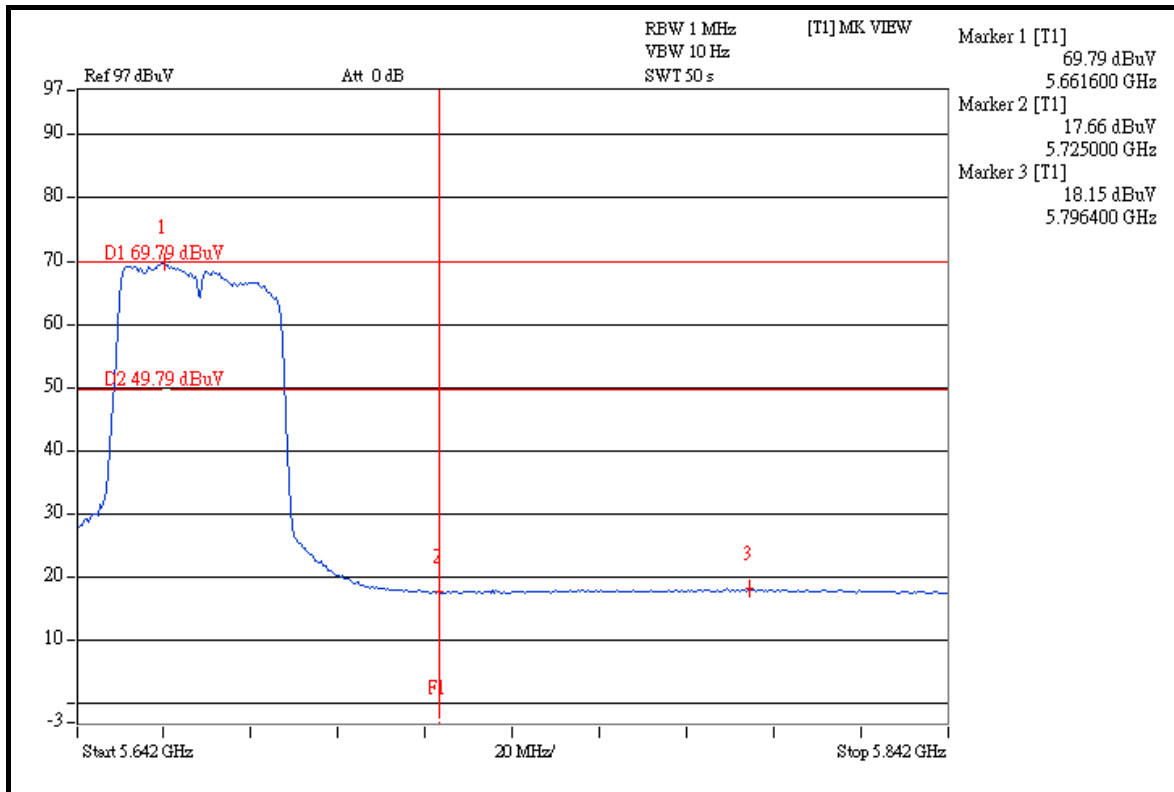


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## **4.8 ANTENNA REQUIREMENT**

### **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 Dipole antenna with R-SMA connector. The maximum Gain of the antenna is 2dBi.



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## 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.

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