



FCC TEST REPORT (15.407)

REPORT NO.: RF971117L07A

MODEL NO.: APL21-069

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ISSUED: May 11, 2009

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1. CERTIFICATION

PRODUCT: Access Point 802.11 a/b/g/n
MODEL NO.: APL21-069
BRAND: SonicWALL
APPLICANT: SonicWALL, Inc.
TEST SAMPLE: R&D SAMPLE
TESTED: Apr. 17 ~ May 07, 2009
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.4-2003

The above equipment (Model: APL21-069) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : *Peggy Chen* , **DATE:** May 11, 2009
Peggy Chen / Specialist

TECHNICAL ACCEPTANCE : *Long Chen* , **DATE:** May 11, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : *Gary Chang* , **DATE:** May 11, 2009
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -14.60dB at 0.177MHz.
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 -1.14dB at 875.67MHz.
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	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Access Point 802.11 a/b/g/n
MODEL NO.	APL21-069
FCC ID	QWU-069
POWER SUPPLY	48Vdc from POE
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5260 ~ 5320MHz: 4 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz) 5500 ~ 5700MHz: 11 for 802.11a, draft 802.11n (20MHz) 5 for draft 802.11n (40MHz)
OUTPUT POWER	44.985mW for 5260 ~ 5320MHz 46.263mW for 5500 ~ 5700MHz
ANTENNA TYPE	Dipole antenna with 4.0dBi gain
DATA CABLE	1.6 m shielded RJ45 cable without core
I/O PORTS	RJ45
ACCESSORY DEVICE	POE

NOTE:

1. This report is issued as a supplementary report of RF971117L07. The difference compared with original design is adding 5260~5320MHz & 5500~5700MHz. This report shall be used combined together with its original report. Therefore all tests had been tested.
2. The EUT is an Access Point 802.11 a/b/g/n. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11a	FCC Part 15, Subpart E (Section 15.407)	RF971117L07A
WLAN 802.11a (For DFS report)	FCC Part 15, Subpart E (Section 15.407)	RF971117L07A-1

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

Frequency Band (MHz)	5260~5320	5500~5700
802.11a	√	√
Draft 802.11n (20MHz)	√	√
Draft 802.11n (40MHz)	√	√

4. The EUT was tested with the following POE:

BRAND :	SONICWALL
MODEL :	PD-6083G3NA
INPUT :	100-250Vac, 50/60Hz, 0.5A
OUTPUT :	48Vdc, 0.35A
POWER LINE :	DC: 1.5m non-shielded cable without core

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

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

6. 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 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY
54	5270 MHz
62	5310 MHz

Operated in 5500 ~ 5700MHz

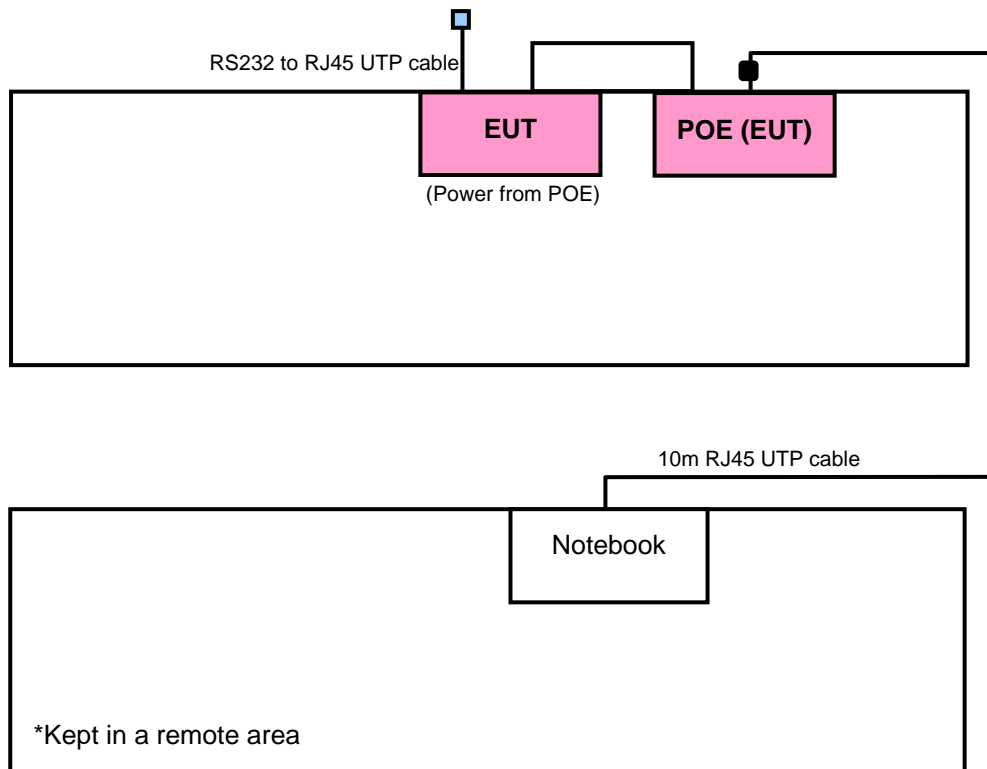
11 channels are provided to this EUT.

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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5260-5320	54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5500-5700	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 (20MHz)	5260-5320	52 to 64	64	OFDM	BPSK	7.2
802.11a	5500-5700	100 to 140	120	OFDM	BPSK	6.0

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 (20MHz)	5260-5320	52 to 64	64	OFDM	BPSK	7.2
802.11a	5500-5700	100 to 140	120	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5260-5320	52 to 64	52, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5260-5320	54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5500-5700	100 to 140	100, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5500-5700	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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5260-5320	54 to 62	54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	5500-5700	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

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable with one core

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m) *NOTE
	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:

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



4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-306	Aug. 14, 2008	Aug. 13, 2009
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2008	Aug. 26, 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 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

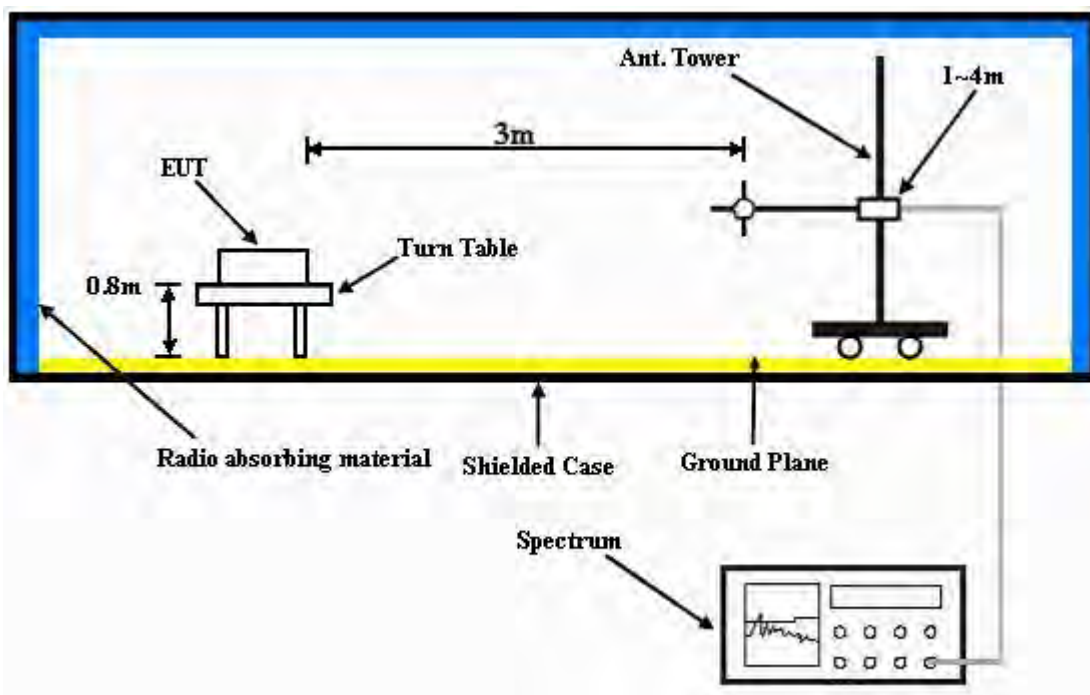
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- a. Placed the EUT on the testing table.
- b. Prepared two notebook systems outside of testing area to act as communication partners.
- c. The communication partners connected with EUT via a RS232 to RJ45 UTP cable & a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".



4.1.8 TEST RESULTS

ABOVE 1GHZ WORST-CASE DATA : 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	24deg. C, 64%RH 1002hPa	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	5150.00	48.53 PK	74.00	-25.47	1.08 H	227	8.78	39.75
2	5150.00	38.00 AV	54.00	-16.00	1.08 H	227	-1.75	39.75
3	*5260.00	103.58 PK			1.08 H	227	63.69	39.89
4	*5260.00	92.89 AV			1.08 H	227	53.00	39.89
5	#10520.00	61.09 PK	68.30	-7.21	1.04 H	229	10.14	50.95
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.58 PK	74.00	-25.42	1.18 V	265	8.83	39.75
2	5150.00	38.08 AV	54.00	-15.92	1.18 V	265	-1.67	39.75
3	*5260.00	112.78 PK			1.18 V	265	72.89	39.89
4	*5260.00	102.79 AV			1.18 V	265	62.90	39.89
5	#10520.00	61.15 PK	68.30	-7.15	1.10 V	108	10.20	50.95

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	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	*5300.00	103.94 PK			1.10 H	167	63.96	39.98
2	*5300.00	93.52 AV			1.10 H	167	53.54	39.98
3	10600.00	59.79 PK	74.00	-14.21	1.11 H	279	8.69	51.10
4	10600.00	47.08 AV	54.00	-6.92	1.11 H	279	-4.02	51.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	113.12 PK			1.06 V	255	73.14	39.98
2	*5300.00	103.77 AV			1.06 V	255	63.79	39.98
3	10600.00	60.10 PK	74.00	-13.90	1.20 V	358	9.00	51.10
4	10600.00	47.18 AV	54.00	-6.82	1.20 V	358	-3.92	51.10

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



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, 64%RH 1002hPa	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	*5320.00	104.12 PK			1.11 H	180	64.11	40.01
2	*5320.00	94.37 AV			1.11 H	180	54.36	40.01
3	5350.00	53.19 PK	74.00	-20.81	1.11 H	180	13.14	40.05
4	5350.00	38.88 AV	54.00	-15.12	1.11 H	180	-1.16	40.05
5	10640.00	58.88 PK	74.00	-15.12	1.00 H	241	7.83	51.05
6	10640.00	46.94 AV	54.00	-7.06	1.00 H	241	-4.11	51.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	113.73 PK			1.10 V	88	73.72	40.01
2	*5320.00	103.20 AV			1.10 V	88	63.19	40.01
3	5350.00	53.21 PK	74.00	-20.79	1.10 V	88	13.16	40.05
4	5350.00	38.96 AV	54.00	-15.04	1.10 V	88	-1.09	40.05
5	10640.00	59.07 PK	74.00	-14.93	1.02 V	118	8.03	51.05
6	10640.00	47.05 AV	54.00	-6.95	1.02 V	118	-3.99	51.05

- 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.



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, 64%RH 1002hPa	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	5460.00	55.64 PK	74.00	-18.36	1.16 H	266	15.42	40.22
2	5460.00	42.79 AV	54.00	-11.21	1.16 H	266	2.57	40.22
3	#5470.00	55.68 PK	68.30	-12.62	1.16 H	266	15.44	40.24
4	*5500.00	105.87 PK			1.16 H	266	65.57	40.30
5	*5500.00	95.59 AV			1.16 H	266	55.29	40.30
6	11000.00	60.88 PK	74.00	-13.12	1.11 H	300	9.63	51.25
7	11000.00	48.89 AV	54.00	-5.11	1.11 H	300	-2.36	51.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.71 PK	74.00	-18.29	1.18 V	166	15.49	40.22
2	5460.00	42.88 AV	54.00	-11.12	1.18 V	166	2.66	40.22
3	#5470.00	55.76 PK	68.30	-12.54	1.18 V	166	15.52	40.24
4	*5500.00	115.33 PK			1.18 V	166	75.03	40.30
5	*5500.00	105.22 AV			1.18 V	166	64.92	40.30
6	11000.00	60.95 PK	74.00	-13.05	1.02 V	63	9.70	51.25
7	11000.00	48.86 AV	54.00	-5.14	1.02 V	63	-2.39	51.25

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	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	*5600.00	105.93 PK			1.47 H	167	65.37	40.56
2	*5600.00	95.62 AV			1.47 H	167	55.06	40.56
3	11200.00	61.59 PK	74.00	-12.41	1.10 H	277	9.97	51.62
4	11200.00	49.00 AV	54.00	-5.00	1.10 H	277	-2.62	51.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	115.74 PK			1.18 V	170	75.18	40.56
2	*5600.00	105.38 AV			1.18 V	170	64.82	40.56
3	11200.00	61.76 PK	74.00	-12.24	1.06 V	283	10.14	51.62
4	11200.00	49.06 AV	54.00	-4.94	1.06 V	283	-2.56	51.62

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



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, 64%RH 1002hPa	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	*5700.00	106.10 PK			1.17 H	218	65.59	40.51
2	*5700.00	95.74 AV			1.17 H	218	55.23	40.51
3	#5725.00	51.29 PK	68.30	-17.01	1.17 H	218	10.69	40.60
5	11400.00	59.66 PK	74.00	-14.34	1.00 H	187	7.77	51.89
6	11400.00	47.09 AV	54.00	-6.91	1.00 H	187	-4.80	51.89
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	*5700.00	115.82 PK			1.19 V	145	75.31	40.51
2	*5700.00	105.81 AV			1.19 V	145	65.30	40.51
3	#5725.00	51.37 PK	68.30	-16.93	1.19 V	145	10.77	40.60
5	11400.00	59.72 PK	74.00	-14.28	1.18 V	19	7.83	51.89
6	11400.00	47.16 AV	54.00	-6.84	1.18 V	19	-4.73	51.89

- 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.



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, 64%RH 1002hPa	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	5150.00	48.56 PK	74.00	-25.44	1.10 H	322	8.81	39.75
2	5150.00	38.12 AV	54.00	-15.88	1.10 H	322	-1.63	39.75
3	*5260.00	103.49 PK			1.10 H	322	63.60	39.89
4	*5260.00	92.81 AV			1.10 H	322	52.92	39.89
5	#10520.00	60.88 PK	68.30	-7.42	1.00 H	169	9.93	50.95
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.56 PK	74.00	-25.44	1.21 V	255	8.81	39.75
2	5150.00	38.00 AV	54.00	-16.00	1.21 V	255	-1.75	39.75
3	*5260.00	112.72 PK			1.21 V	255	72.83	39.89
4	*5260.00	102.63 AV			1.21 V	255	62.74	39.89
5	#10520.00	61.08 PK	68.30	-7.22	1.22 V	157	10.13	50.95

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	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	*5300.00	103.88 PK			1.05 H	255	63.90	39.98
2	*5300.00	93.37 AV			1.05 H	255	53.39	39.98
3	10600.00	59.66 PK	74.00	-14.34	1.01 H	341	8.56	51.10
4	10600.00	47.25 AV	54.00	-6.75	1.01 H	341	-3.85	51.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	113.09 PK			1.33 V	64	73.11	39.98
2	*5300.00	103.68 AV			1.33 V	64	63.70	39.98
3	10600.00	60.21 PK	74.00	-13.79	1.00 V	10	9.11	51.10
4	10600.00	47.30 AV	54.00	-6.70	1.00 V	10	-3.80	51.10

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



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, 64%RH 1002hPa	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	*5320.00	104.08 PK			1.23 H	15	64.07	40.01
2	*5320.00	94.27 AV			1.23 H	15	54.26	40.01
3	5350.00	53.08 PK	74.00	-20.92	1.23 H	15	13.03	40.05
4	5350.00	38.90 AV	54.00	-15.10	1.23 H	15	-1.15	40.05
5	10640.00	58.74 PK	74.00	-15.26	1.26 H	228	7.69	51.05
6	10640.00	46.88 AV	54.00	-7.12	1.26 H	228	-4.17	51.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	113.58 PK			1.06 V	133	73.57	40.01
2	*5320.00	103.19 AV			1.06 V	133	63.18	40.01
3	5350.00	53.24 PK	74.00	-20.76	1.06 V	133	13.20	40.05
4	5350.00	39.90 AV	54.00	-14.10	1.06 V	133	-0.15	40.05
5	10640.00	58.41 PK	74.00	-15.59	1.20 V	316	7.36	51.05
6	10640.00	47.15 AV	54.00	-6.85	1.20 V	316	-3.90	51.05

- 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.



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, 64%RH 1002hPa	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	5460.00	55.32 PK	74.00	-18.68	1.20 H	328	15.10	40.22
2	5460.00	42.28 AV	54.00	-11.72	1.20 H	328	2.06	40.22
3	#5470.00	55.63 PK	68.30	-12.67	1.20 H	328	15.39	40.24
4	*5500.00	105.82 PK			1.20 H	328	65.52	40.30
5	*5500.00	95.53 AV			1.20 H	328	55.23	40.30
6	11000.00	60.79 PK	74.00	-13.21	1.52 H	16	9.54	51.25
7	11000.00	48.77 AV	54.00	-5.23	1.52 H	16	-2.48	51.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.69 PK	74.00	-18.31	1.19 V	300	15.47	40.22
2	5460.00	42.81 AV	54.00	-11.19	1.19 V	300	2.59	40.22
3	#5470.00	55.74 PK	68.30	-12.56	1.19 V	300	15.50	40.24
4	*5500.00	115.29 PK			1.19 V	300	74.99	40.30
5	*5500.00	105.18 AV			1.19 V	300	64.88	40.30
6	11000.00	60.92 PK	74.00	-13.08	1.33 V	254	9.67	51.25
7	11000.00	48.90 AV	54.00	-5.10	1.33 V	254	-2.35	51.25

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	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	*5600.00	105.85 PK			1.23 H	100	65.29	40.56
2	*5600.00	95.44 AV			1.23 H	100	54.88	40.56
3	11200.00	61.45 PK	74.00	-12.55	1.07 H	334	9.83	51.62
4	11200.00	48.69 AV	54.00	-5.31	1.07 H	334	-2.93	51.62
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	115.63 PK			1.18 V	210	75.07	40.56
2	*5600.00	105.25 AV			1.18 V	210	64.69	40.56
3	11200.00	61.72 PK	74.00	-12.28	1.00 V	190	10.10	51.62
4	11200.00	49.00 AV	54.00	-5.00	1.00 V	190	-2.62	51.62

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



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, 64%RH 1002hPa	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	*5700.00	105.88 PK			1.33 H	285	65.37	40.51
2	*5700.00	95.66 AV			1.33 H	285	55.15	40.51
3	#5725.00	51.23 PK	68.30	-17.07	1.33 H	285	10.63	40.60
5	11400.00	59.59 PK	74.00	-14.41	1.00 H	21	7.70	51.89
6	11400.00	47.00 AV	54.00	-7.00	1.00 H	21	-4.89	51.89
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	*5700.00	115.74 PK			1.20 V	133	75.23	40.51
2	*5700.00	105.56 AV			1.20 V	133	65.05	40.51
3	#5725.00	51.29 PK	68.30	-17.01	1.20 V	133	10.69	40.60
5	11400.00	59.66 PK	74.00	-14.34	1.11 V	274	7.77	51.89
6	11400.00	47.09 AV	54.00	-6.91	1.11 V	274	-4.80	51.89

- 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.



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, 64%RH 1002hPa	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	5150.00	48.46 PK	74.00	-25.54	1.09 H	50	8.71	39.75
2	5150.00	38.10 AV	54.00	-15.90	1.09 H	50	-1.65	39.75
3	*5270.00	99.00 PK			1.09 H	50	59.09	39.91
4	*5270.00	87.12 AV			1.09 H	50	47.21	39.91
5	#10540.00	59.88 PK	68.30	-8.42	1.01 H	315	8.89	50.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.62 PK	74.00	-25.38	1.20 V	335	8.87	39.75
2	5150.00	38.11 AV	54.00	-15.89	1.20 V	335	-1.64	39.75
3	*5270.00	109.62 PK			1.20 V	335	69.71	39.91
4	*5270.00	98.24 AV			1.20 V	335	58.33	39.91
5	#10540.00	60.07 PK	68.30	-8.23	1.02 V	259	9.09	50.99

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1002hPa	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	*5310.00	99.52 PK			1.13 H	162	59.53	39.99
2	*5310.00	87.61 AV			1.13 H	162	47.62	39.99
3	5350.00	54.55 PK	74.00	-19.45	1.13 H	162	14.50	40.05
4	5350.00	39.47 AV	54.00	-14.53	1.13 H	162	-0.58	40.05
5	10620.00	60.10 PK	74.00	-13.90	1.12 H	341	9.03	51.07
6	10620.00	46.58 AV	54.00	-7.42	1.12 H	341	-4.49	51.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	110.53 PK			1.18 V	26	70.54	39.99
2	*5310.00	98.76 AV			1.18 V	26	58.77	39.99
3	5350.00	70.62 PK	74.00	-3.37	1.25 V	263	30.58	40.05
4	5350.00	52.08 AV	54.00	-1.92	1.25 V	263	12.03	40.05
5	10620.00	59.95 PK	74.00	-14.05	1.18 V	237	8.88	51.07
6	10620.00	47.08 AV	54.00	-6.92	1.18 V	237	-3.99	51.07

- 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.



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, 64%RH 1002hPa	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	5460.00	50.48 PK	74.00	-23.52	1.09 H	156	10.26	40.22
2	5460.00	37.28 AV	54.00	-16.72	1.09 H	156	-2.94	40.22
3	#5470.00	49.26 PK	68.30	-19.04	1.09 H	156	9.02	40.24
4	*5510.00	101.89 PK			1.09 H	156	61.56	40.33
5	*5510.00	90.17 AV			1.09 H	156	49.84	40.33
6	11020.00	61.93 PK	74.00	-12.07	1.01 H	235	10.60	51.33
7	11020.00	48.46 AV	54.00	-5.54	1.01 H	235	-2.87	51.33

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	5460.00	64.13 PK	74.00	-9.87	1.10 V	138	23.91	40.22
2	5460.00	46.20 AV	54.00	-7.80	1.10 V	138	5.98	40.22
3	#5470.00	67.02 PK	68.30	-1.28	1.10 V	138	26.78	40.24
4	*5510.00	112.67 PK			1.10 V	138	72.34	40.33
5	*5510.00	100.95 AV			1.10 V	138	60.62	40.33
6	11020.00	61.39 PK	74.00	-12.61	1.11 V	31	10.06	51.33
7	11020.00	48.99 AV	54.00	-5.01	1.11 V	31	-2.34	51.33

- 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.
 6. “#”:The radiated frequency is out the restricted band.



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, 64%RH 1002hPa	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	*5590.00	101.92 PK			1.10 H	234	61.39	40.53
2	*5590.00	90.28 AV			1.10 H	234	49.75	40.53
3	11180.00	60.86 PK	74.00	-13.14	1.00 H	15	9.24	51.62
4	11180.00	48.38 AV	54.00	-5.62	1.00 H	15	-3.24	51.62
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	*5590.00	112.71 PK			1.10 V	146	72.18	40.53
2	*5590.00	101.00 AV			1.10 V	146	60.47	40.53
3	11180.00	60.93 PK	74.00	-13.07	1.14 V	209	9.31	51.62
4	11180.00	48.49 AV	54.00	-5.51	1.14 V	209	-3.13	51.62

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



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, 64%RH 1002hPa	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	*5670.00	100.87 PK			1.06 H	337	60.35	40.52
2	*5670.00	90.09 AV			1.06 H	337	49.57	40.52
3	#5725.00	51.52 PK	68.30	-16.78	1.06 H	337	10.92	40.60
4	11340.00	60.88 PK	74.00	-13.12	1.00 H	97	9.09	51.79
5	11340.00	46.79 AV	54.00	-7.21	1.00 H	97	-5.00	51.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	111.34 PK			1.10 V	160	70.82	40.52
2	*5670.00	100.62 AV			1.10 V	160	60.09	40.52
3	#5725.00	51.59 PK	68.30	-16.71	1.10 V	160	10.99	40.60
4	11340.00	61.04 PK	74.00	-12.96	1.16 V	287	9.25	51.79
5	11340.00	46.84 AV	54.00	-7.16	1.16 V	287	-4.95	51.79

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



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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1000hPa	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	62.95	37.13 QP	40.00	-2.87	2.00 H	208	24.15	12.98
2	226.27	40.03 QP	46.00	-5.97	1.50 H	232	27.80	12.23
3	249.60	42.00 QP	46.00	-4.00	1.00 H	226	28.19	13.80
4	374.04	40.41 QP	46.00	-5.59	1.00 H	271	23.45	16.96
5	397.37	40.24 QP	46.00	-5.76	1.00 H	37	22.30	17.94
6	624.85	44.17 QP	46.00	-1.83	1.25 H	73	21.08	23.09
7	875.67	44.80 QP	46.00	-1.20	1.50 H	100	17.37	27.43
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	31.67	38.43 QP	40.00	-1.57	1.00 V	81	25.41	13.02
2	75.85	38.19 QP	40.00	-1.81	1.00 V	178	27.98	10.21
3	519.86	42.07 QP	46.00	-3.93	1.00 V	79	21.23	20.84
4	537.36	40.35 QP	46.00	-5.65	1.00 V	244	19.14	21.21
5	624.85	41.86 QP	46.00	-4.14	1.25 V	178	18.77	23.09
6	875.67	43.08 QP	46.00	-2.92	1.50 V	208	15.65	27.43

- 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.



802.11a 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 1000hPa	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	66.84	37.80 QP	40.00	-2.20	1.70 H	211	24.66	13.14
2	232.11	42.22 QP	46.00	-3.78	1.25 H	223	29.60	12.63
3	374.04	39.97 QP	46.00	-6.03	1.00 H	10	23.01	16.96
4	397.37	39.60 QP	46.00	-6.40	1.00 H	25	21.67	17.94
5	624.85	44.43 QP	46.00	-1.57	1.50 H	73	21.34	23.09
6	795.95	39.84 QP	46.00	-6.16	2.00 H	319	13.86	25.98
7	875.67	44.86 QP	46.00	-1.14	1.50 H	283	17.43	27.43
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	31.84	38.68 QP	40.00	-1.32	1.00 V	199	25.60	13.08
2	72.67	38.17 QP	40.00	-1.83	1.00 V	184	26.30	11.87
3	512.08	42.05 QP	46.00	-3.95	1.00 V	82	21.37	20.68
4	525.69	41.06 QP	46.00	-4.94	1.00 V	10	20.09	20.96
5	624.85	40.52 QP	46.00	-5.48	1.00 V	184	17.43	23.09
6	799.84	39.62 QP	46.00	-6.38	1.25 V	220	13.60	26.02
7	875.67	42.61 QP	46.00	-3.39	1.50 V	211	15.18	27.43

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



4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 19, 2008	Nov. 18, 2009
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 31, 2008	Dec. 30, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jun. 13, 2008	Jun. 12, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Dec. 04, 2008	Dec. 03, 2009
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.



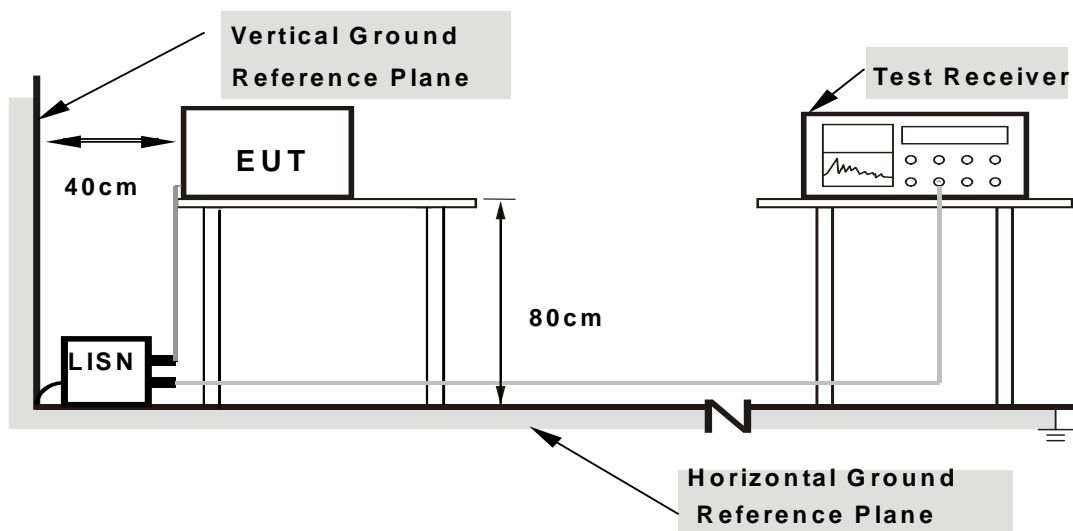
4.2.3 TEST PROCEDURES

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

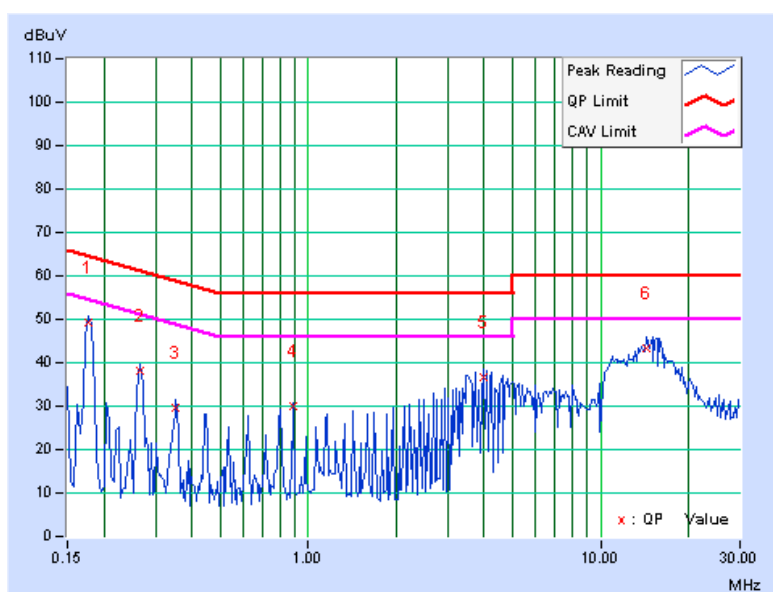
4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	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		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.13	49.27	-	49.40	-	64.61	54.61	-15.21	-
2	0.267	0.13	38.05	-	38.18	-	61.20	51.20	-23.02	-
3	0.353	0.14	29.60	-	29.74	-	58.89	48.89	-29.15	-
4	0.888	0.17	29.76	-	29.93	-	56.00	46.00	-26.07	-
5	4.000	0.37	36.36	-	36.73	-	56.00	46.00	-19.27	-
6	14.391	0.88	42.29	-	43.17	-	60.00	50.00	-16.83	-

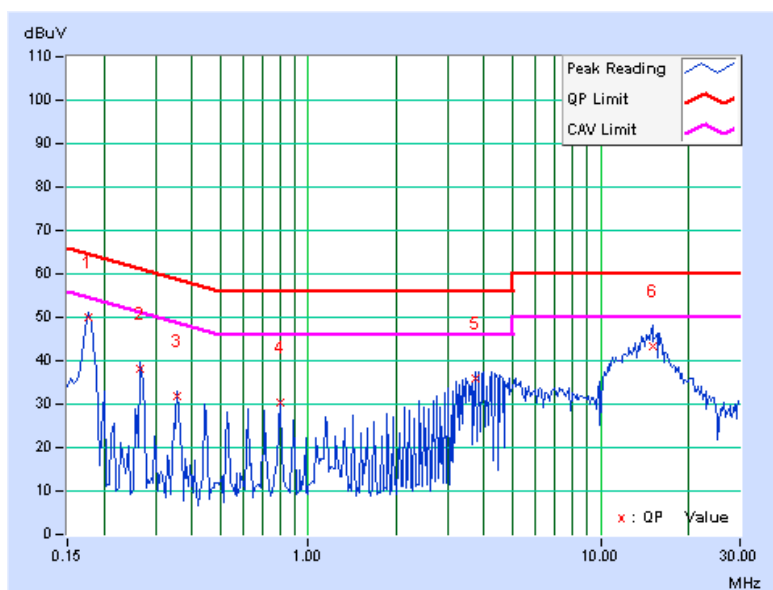
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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 64	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		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.15	49.86	-	50.01	-	64.61	54.61	-14.60	-
2	0.267	0.15	38.14	-	38.29	-	61.20	51.20	-22.91	-
3	0.357	0.16	31.57	-	31.73	-	58.80	48.80	-27.07	-
4	0.798	0.19	30.09	-	30.28	-	56.00	46.00	-25.72	-
5	3.730	0.37	35.49	-	35.86	-	56.00	46.00	-20.14	-
6	15.012	0.82	42.35	-	43.17	-	60.00	50.00	-16.83	-

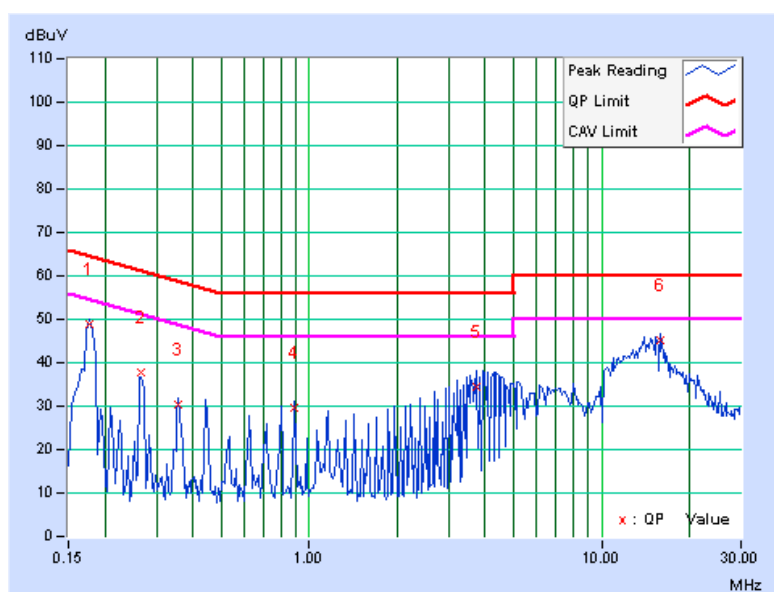
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.13	48.71	-	48.84	-	64.61	54.61	-15.77	-
2	0.267	0.13	37.63	-	37.76	-	61.20	51.20	-23.44	-
3	0.357	0.14	30.24	-	30.38	-	58.80	48.80	-28.42	-
4	0.888	0.17	29.58	-	29.75	-	56.00	46.00	-26.25	-
5	3.734	0.35	34.24	-	34.59	-	56.00	46.00	-21.41	-
6	15.957	0.95	44.25	-	45.20	-	60.00	50.00	-14.80	-

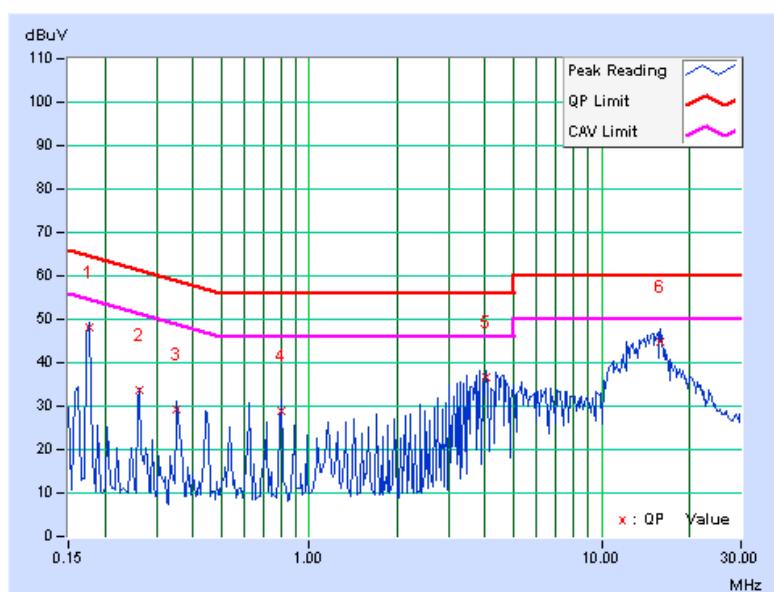
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 982hPa	TESTED BY	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	0.177	0.15	48.10	-	48.25	-	64.61
2	0.263	0.15	33.53	-	33.68	-	61.33	51.33	-27.64	-
3	0.353	0.16	29.28	-	29.44	-	58.89	48.89	-29.45	-
4	0.798	0.19	28.76	-	28.95	-	56.00	46.00	-27.05	-
5	4.008	0.39	36.46	-	36.85	-	56.00	46.00	-19.15	-
6	15.957	0.85	44.11	-	44.96	-	60.00	50.00	-15.04	-

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





4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

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

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

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0824012	Aug. 04, 2008	Aug. 03, 2009
Power Sensor	MA2411B	0738138	Aug. 04, 2008	Aug. 03, 2009

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Measurement Bandwidth of ML2495A is 65MHz greater than 26dB bandwidth of emission.

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009

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

4.3.3 TEST PROCEDURES

FOR POWER OUTPUT MEASUREMENT

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

FOR 26dB OCCUPIED BANDWIDTH

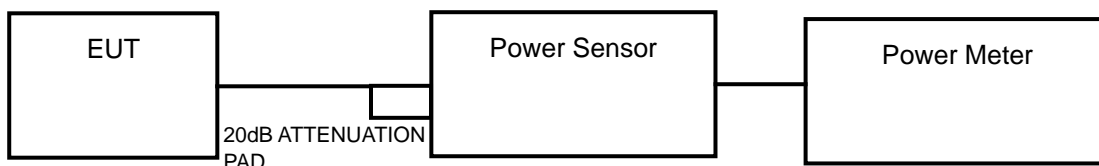
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.3.4 DEVIATION FROM TEST STANDARD

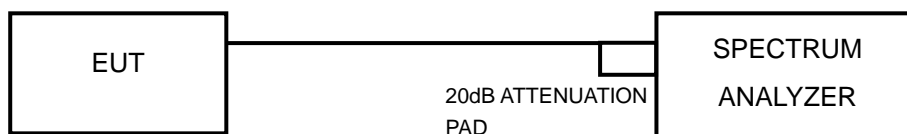
No deviation

4.3.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a OFDM MODULATION

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

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	12.03	11.03	11.53	42.859	16.32	24	PASS
60	5300	11.54	10.06	11.58	38.783	15.89	24	PASS
64	5320	11.56	10.54	12.56	43.676	16.40	24	PASS
100	5500	12.04	10.58	12.55	45.413	16.57	24	PASS
120	5600	12.09	10.51	12.75	46.263	16.65	24	PASS
140	5700	12.05	10.56	12.56	45.439	16.57	24	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

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

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	11.53	10.03	11.04	36.998	15.68	24	PASS
60	5300	11.04	11.04	12.03	41.370	16.17	24	PASS
64	5320	11.52	11.06	12.56	44.985	16.53	24	PASS
100	5500	11.04	10.52	12.54	41.925	16.22	24	PASS
120	5600	11.56	10.56	12.58	43.812	16.42	24	PASS
140	5700	11.53	10.58	12.52	43.517	16.39	24	PASS



DRAFT 802.11n (40MHz) OFDM MODULATION

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

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	10.04	9.04	10.53	29.407	14.68	24	PASS
62	5310	10.03	9.03	10.56	29.444	14.69	24	PASS
102	5510	9.04	9.06	11.04	28.776	14.59	24	PASS
118	5590	9.56	9.58	10.58	29.543	14.70	24	PASS
134	5670	9.03	8.57	10.06	25.332	14.04	24	PASS



26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION

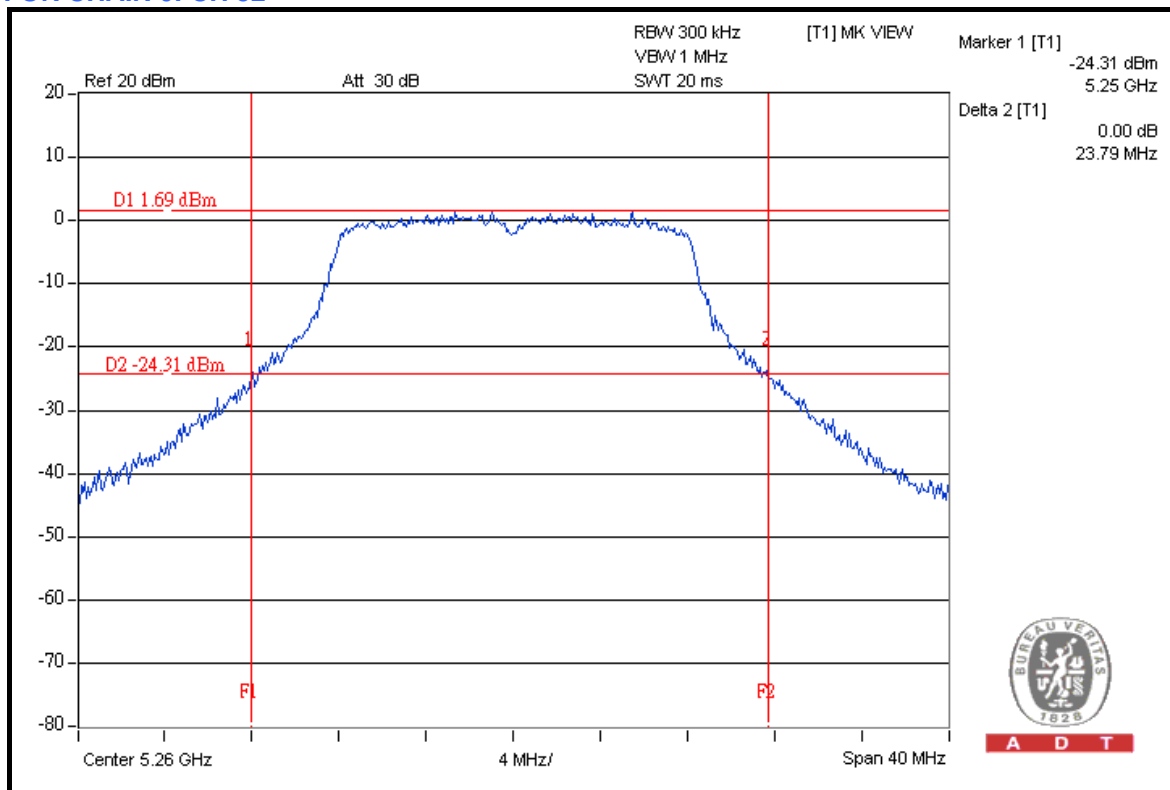
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 67%RH, 991hPa
TESTED BY	Dean Wang		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	23.79	23.32	23.33	PASS
60	5300	23.39	22.59	23.13	PASS
64	5320	23.43	22.09	22.81	PASS
100	5500	23.29	22.49	23.61	PASS
120	5600	23.33	23.32	23.15	PASS
140	5700	23.51	22.98	22.91	PASS



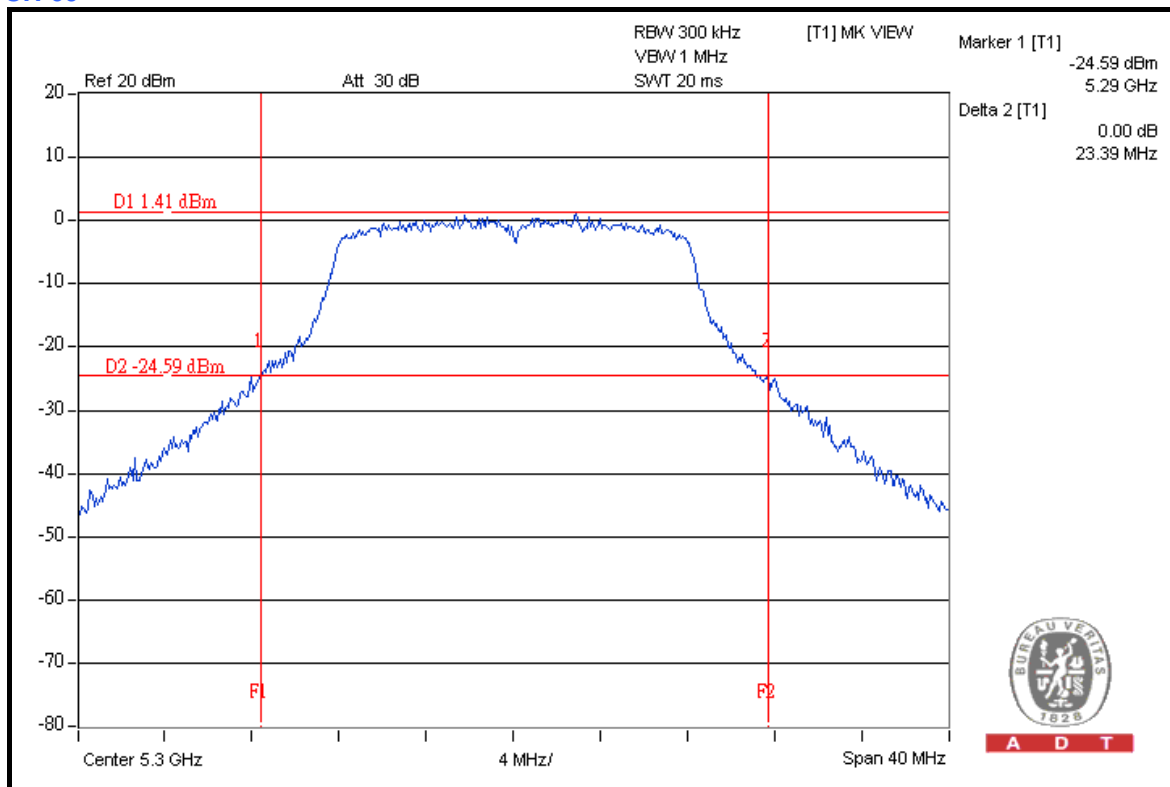
A D T

FOR CHAIN 0: CH 52



A D T

CH 60

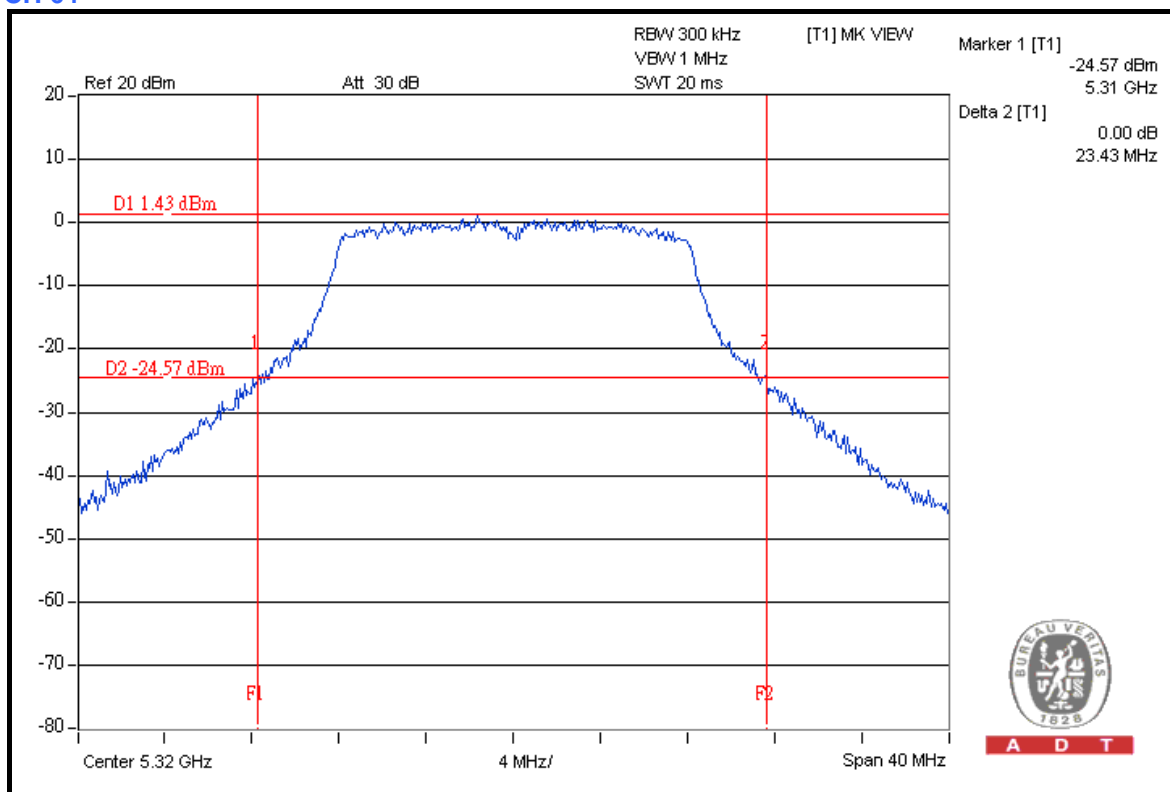


A D T



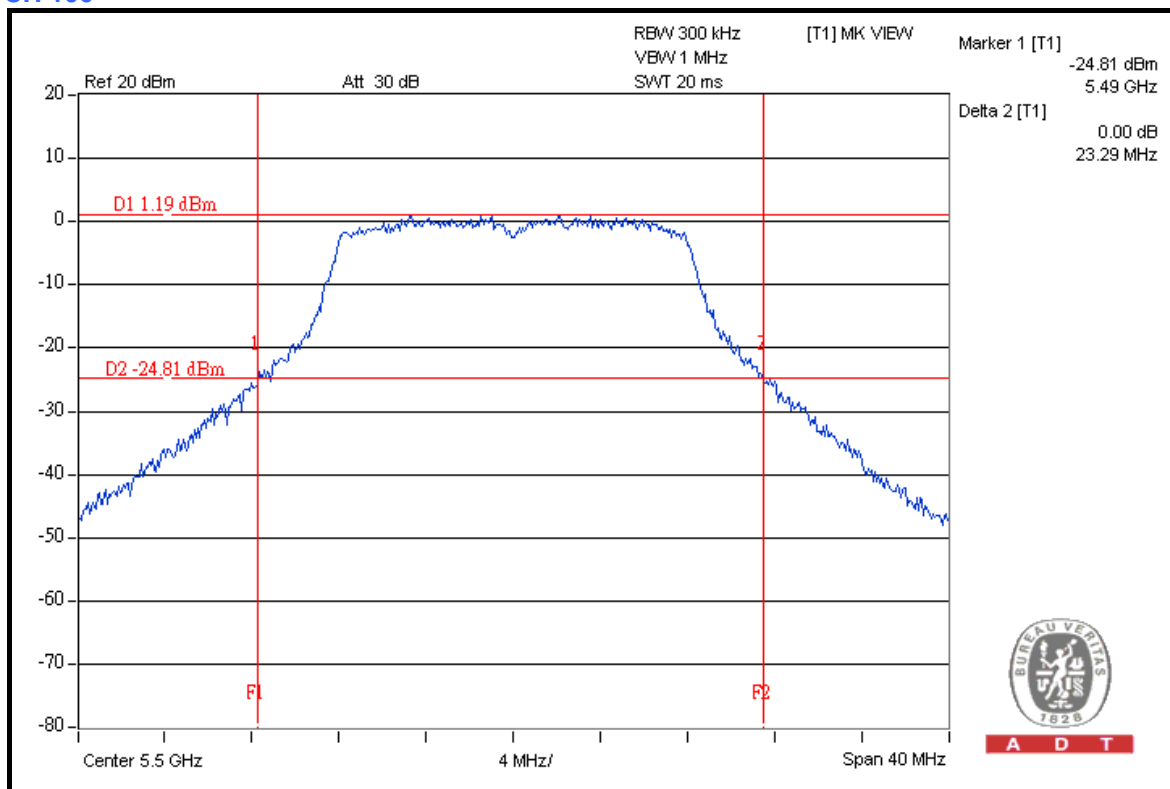
A D T

CH 64



A D T

CH 100

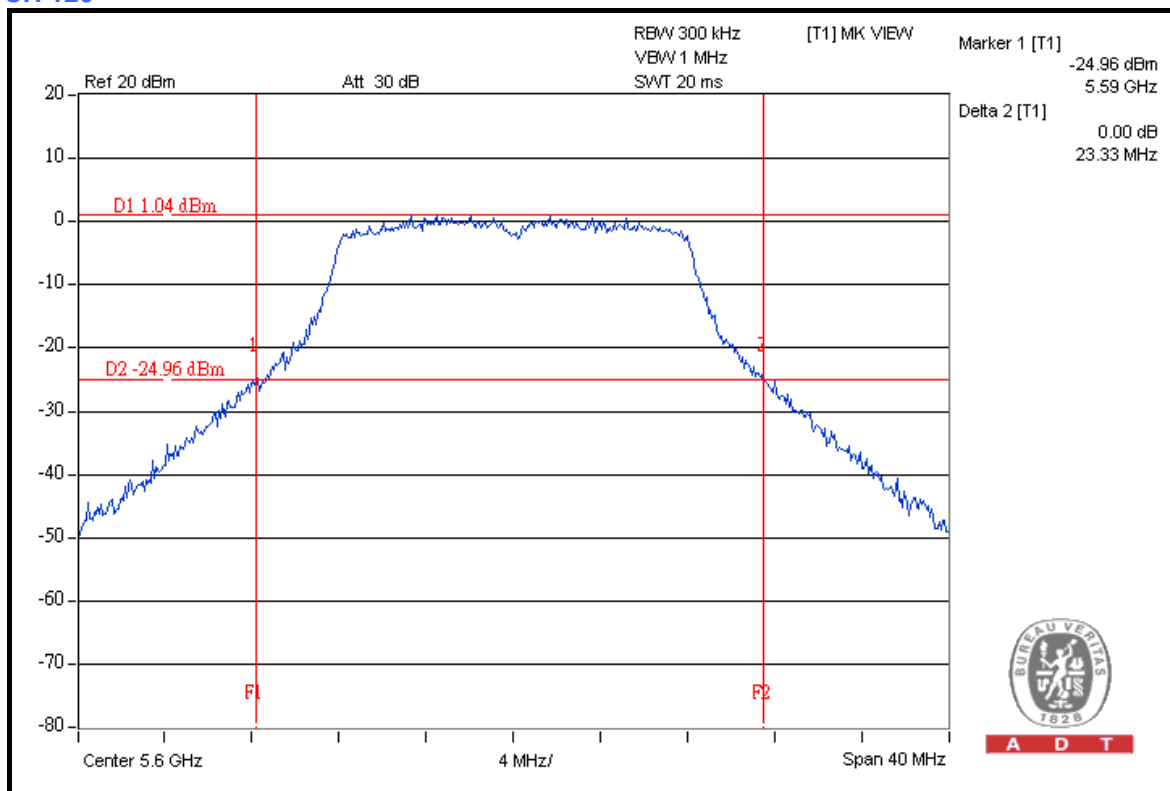


A D T

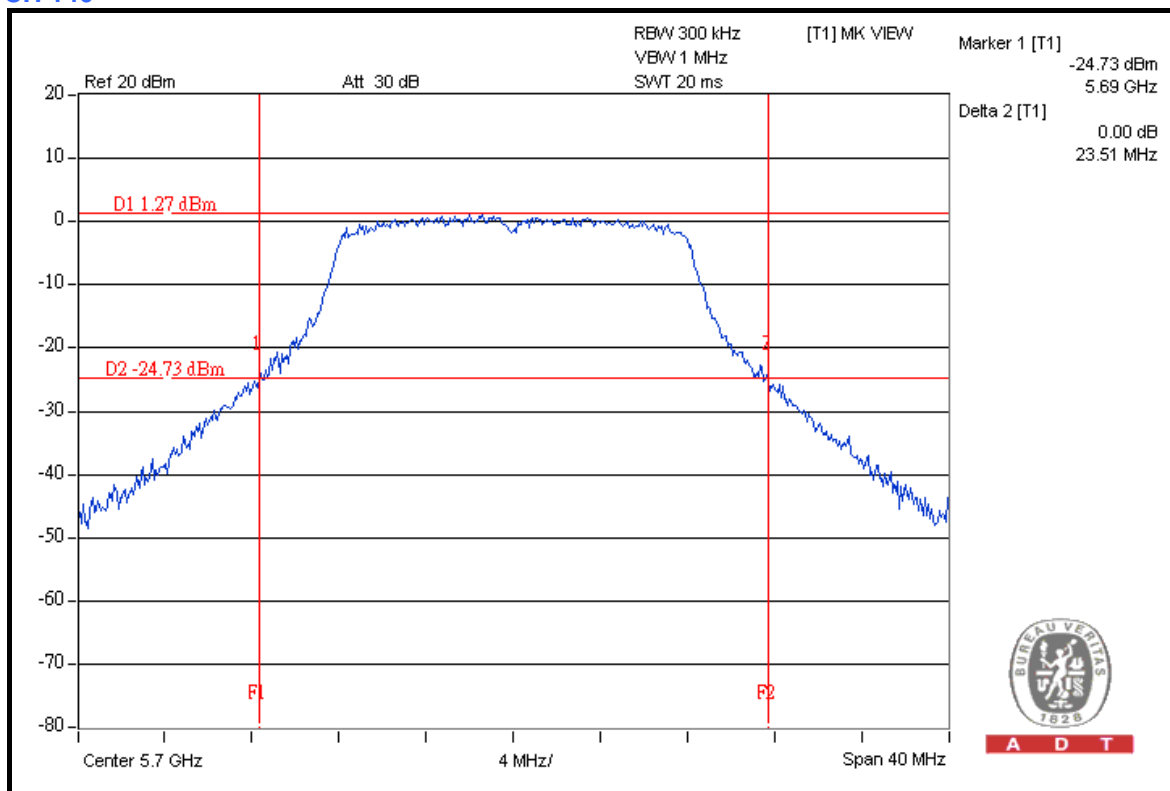


A D T

CH 120



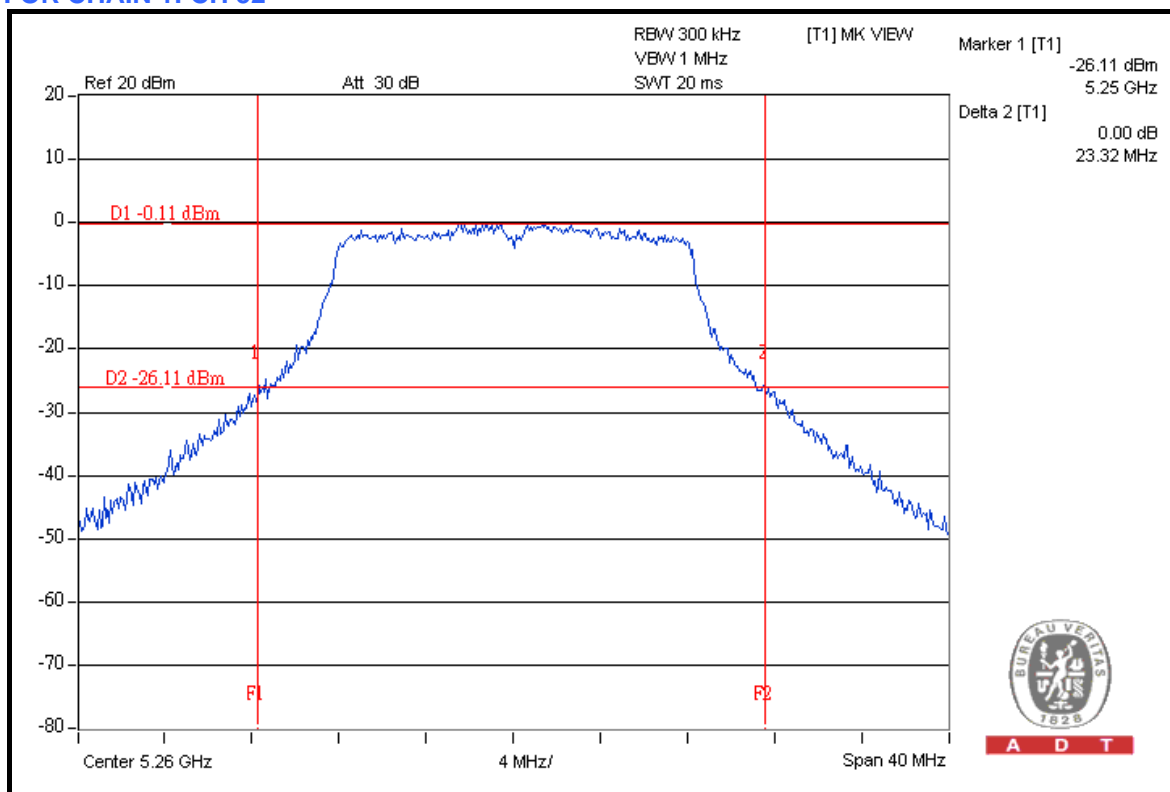
CH 140





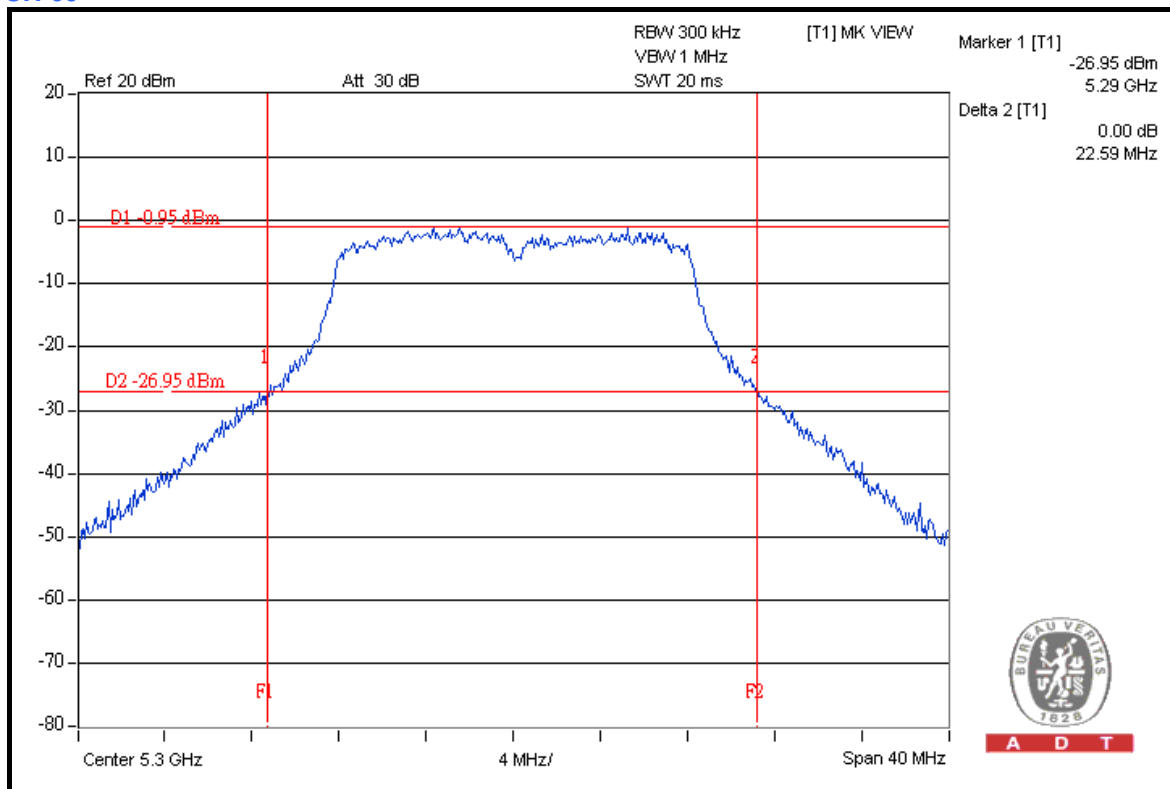
A D T

FOR CHAIN 1: CH 52



A D T

CH 60

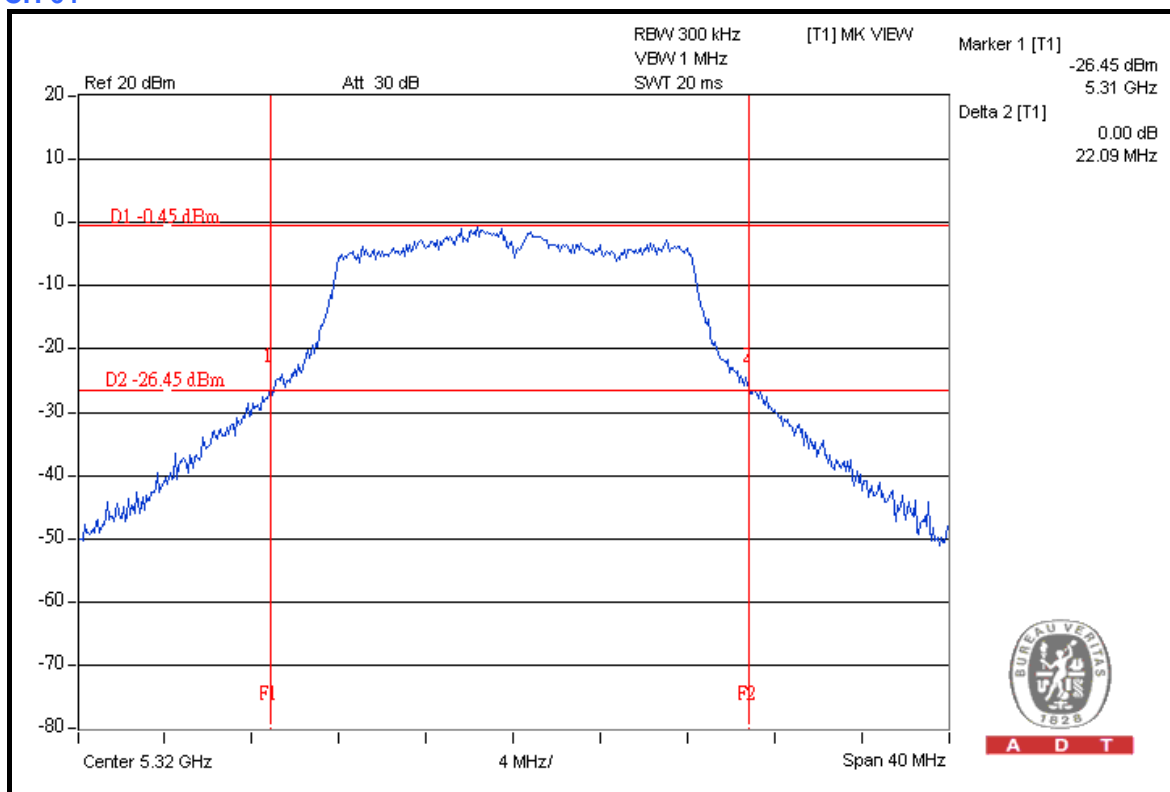


A D T



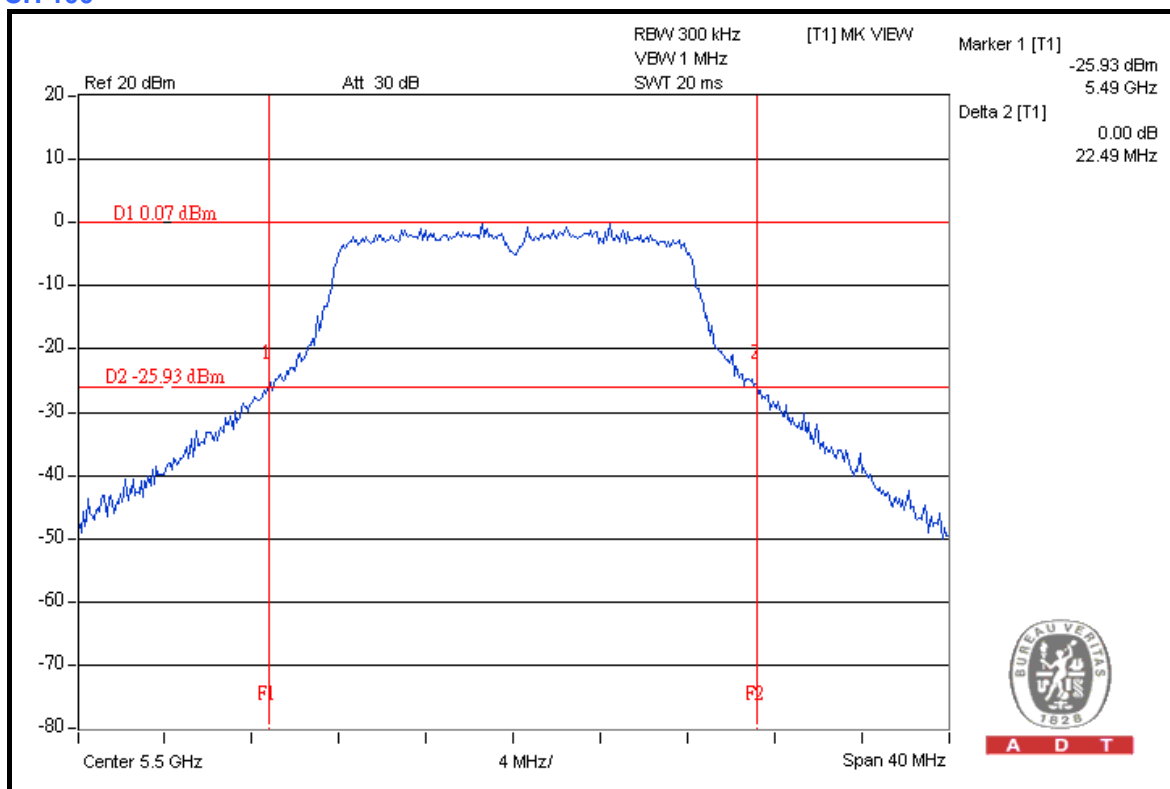
A D T

CH 64



A D T

CH 100

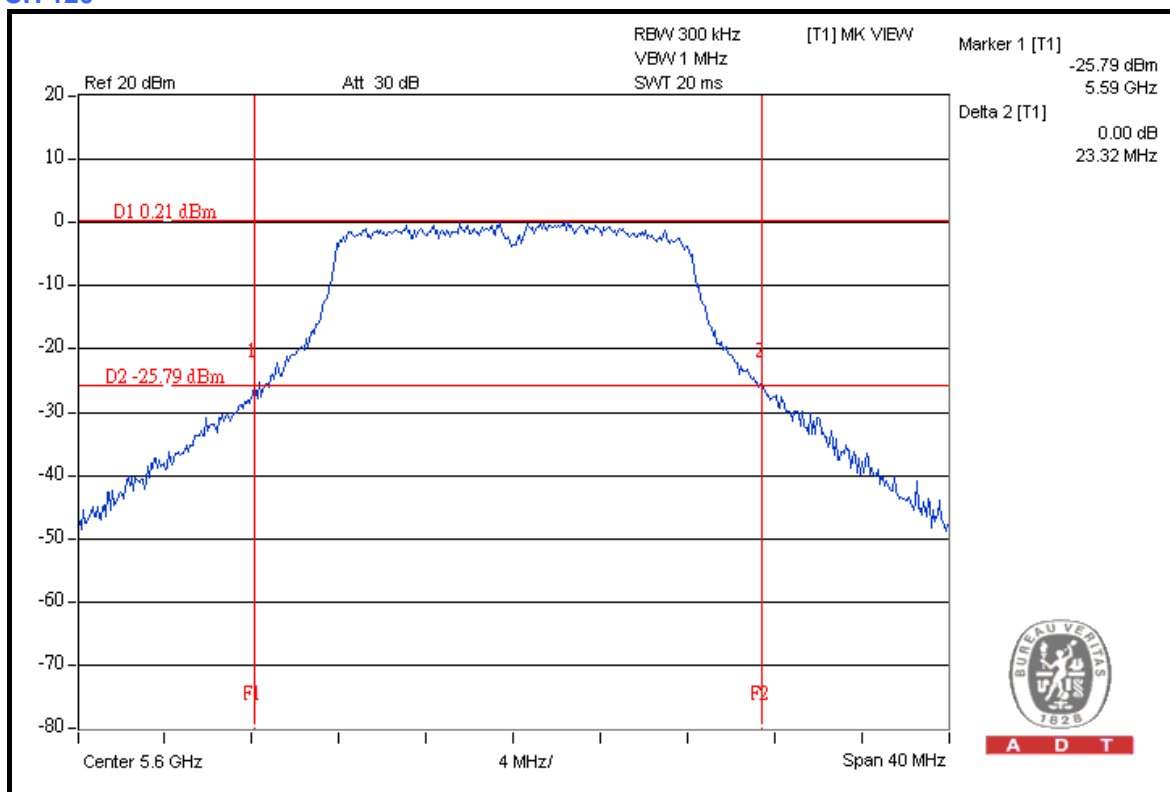


A D T



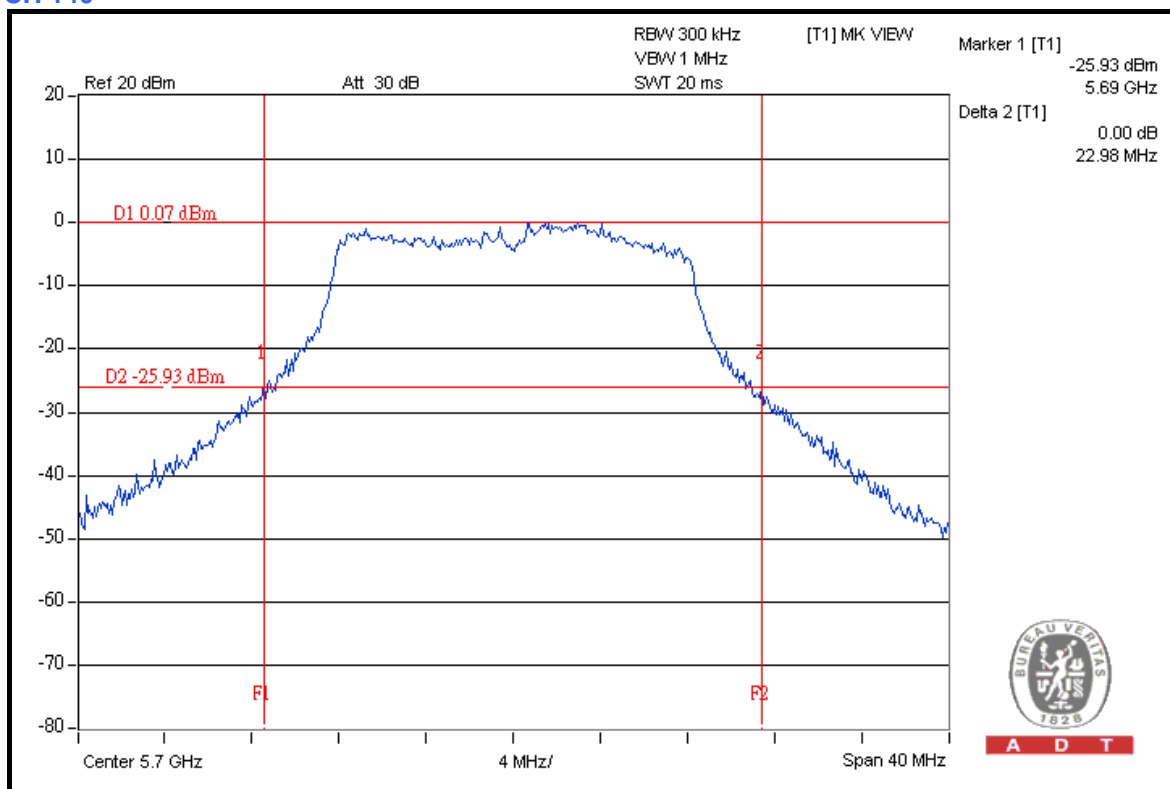
A D T

CH 120



A D T

CH 140

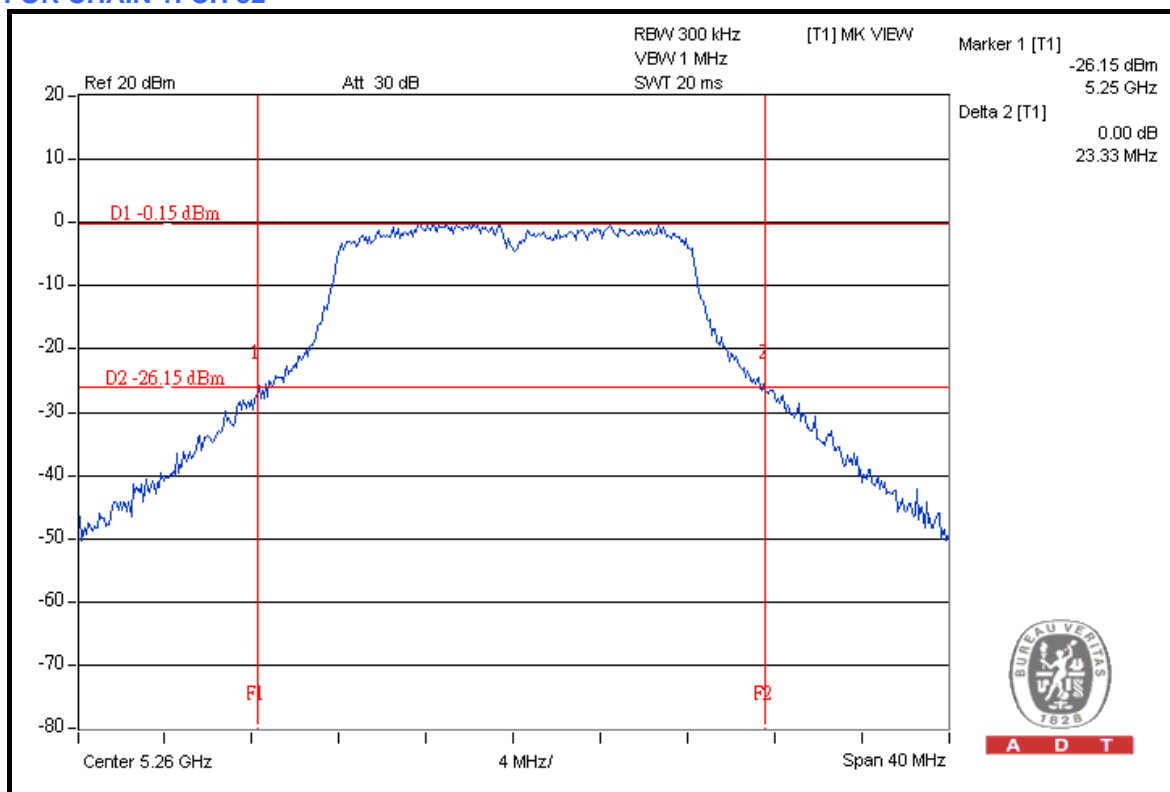


A D T



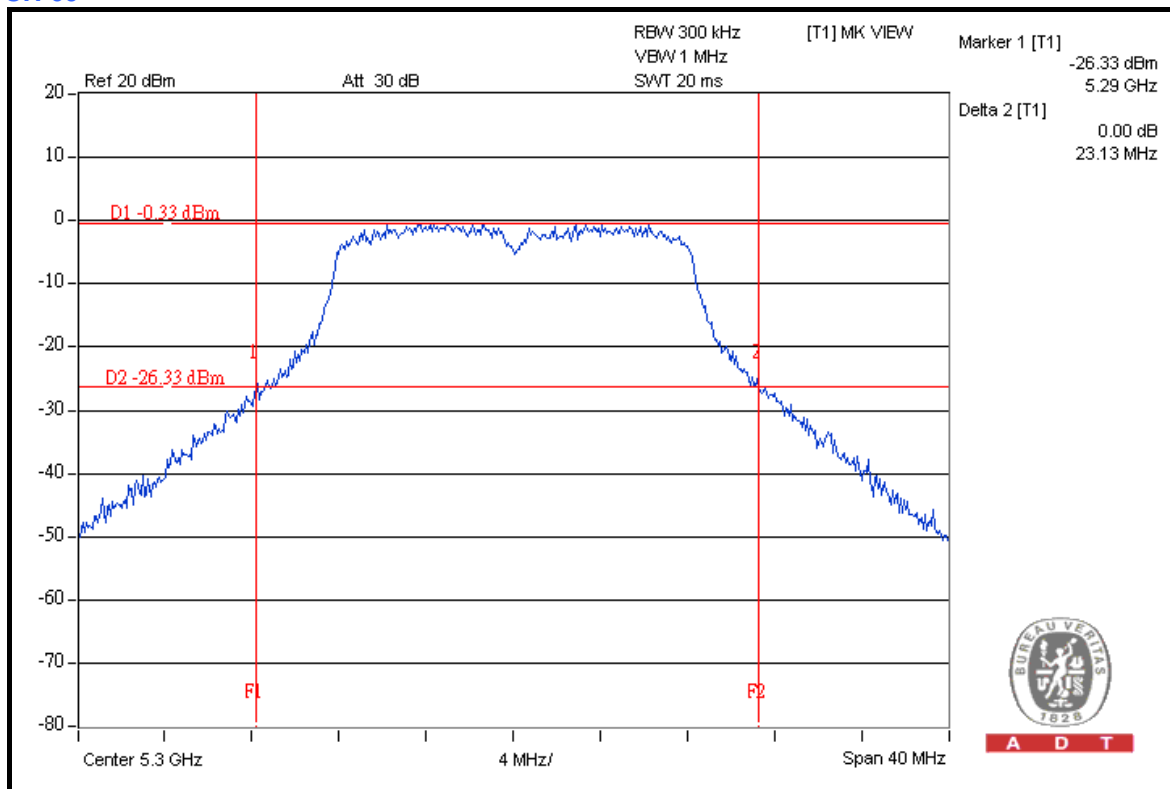
A D T

FOR CHAIN 1: CH 52



A D T

CH 60

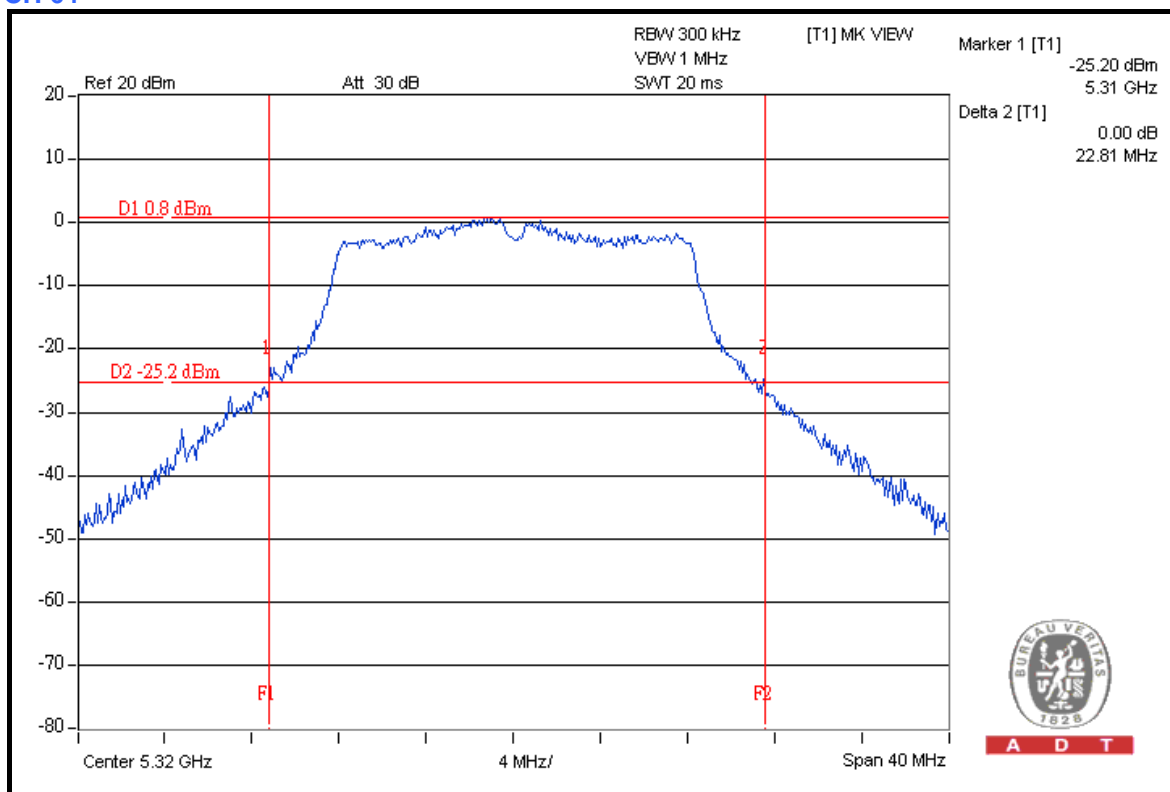


A D T

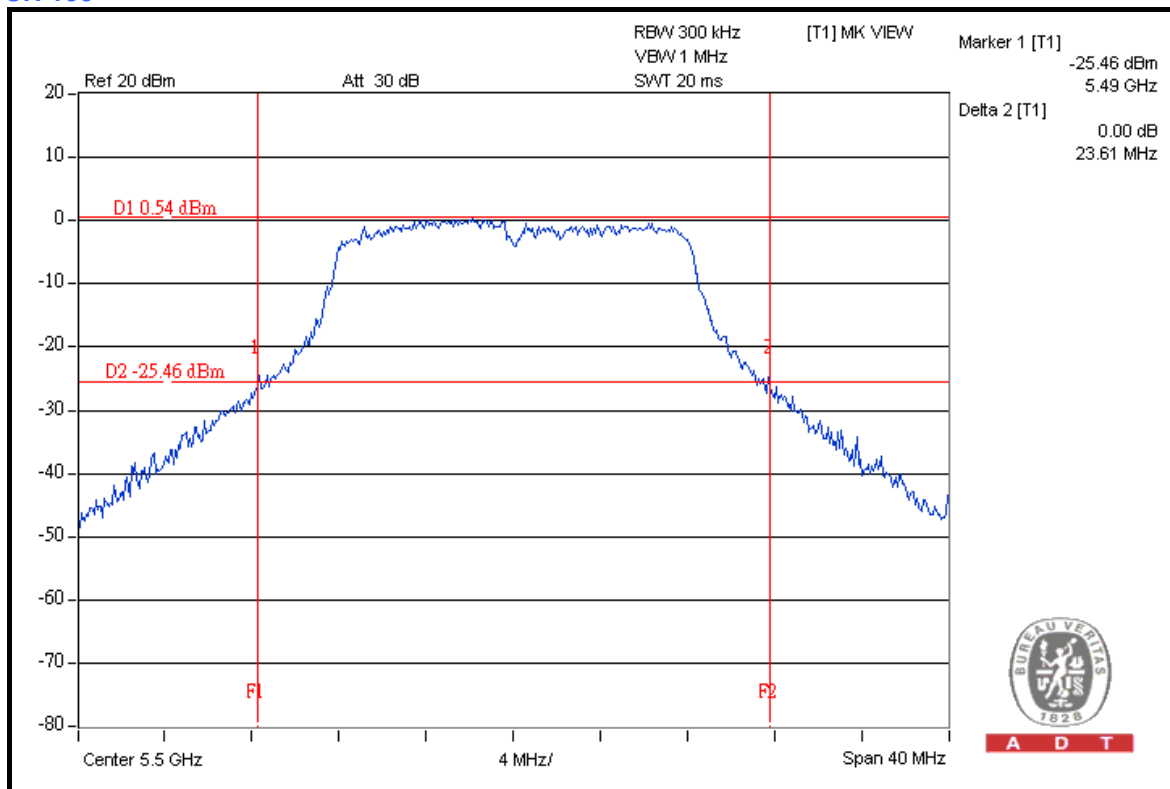


A D T

CH 64



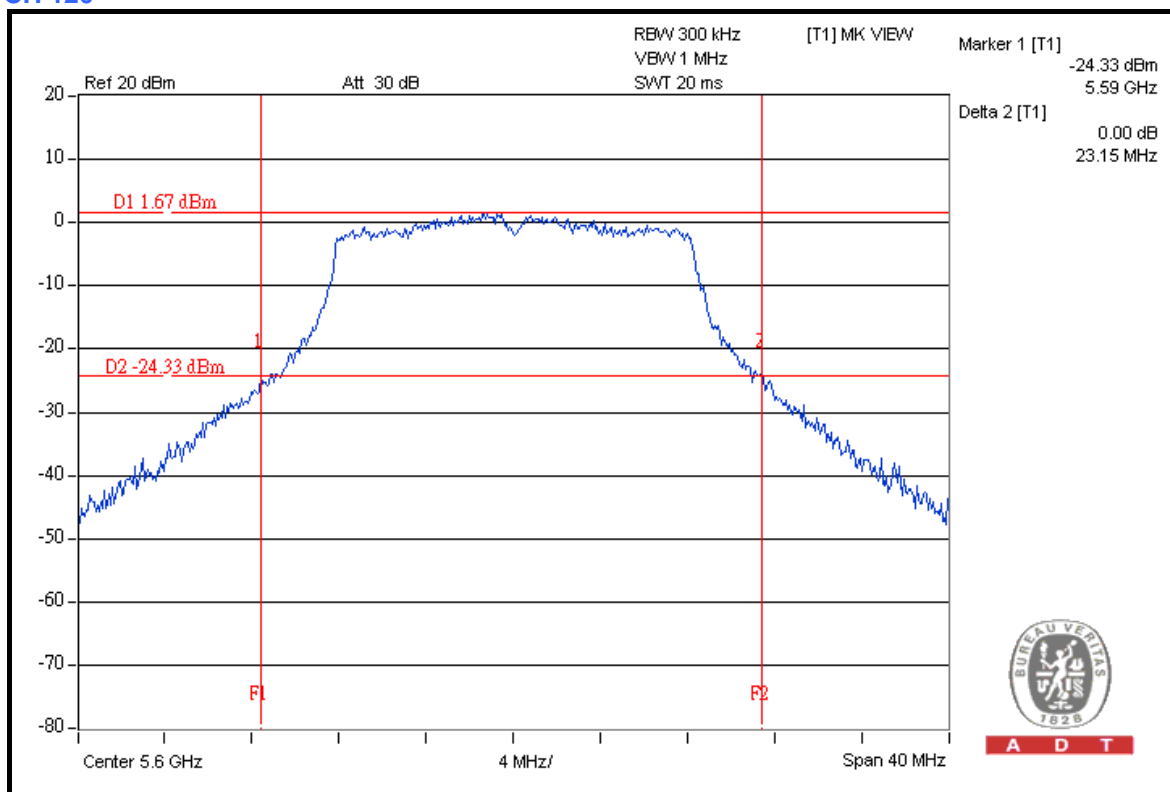
CH 100





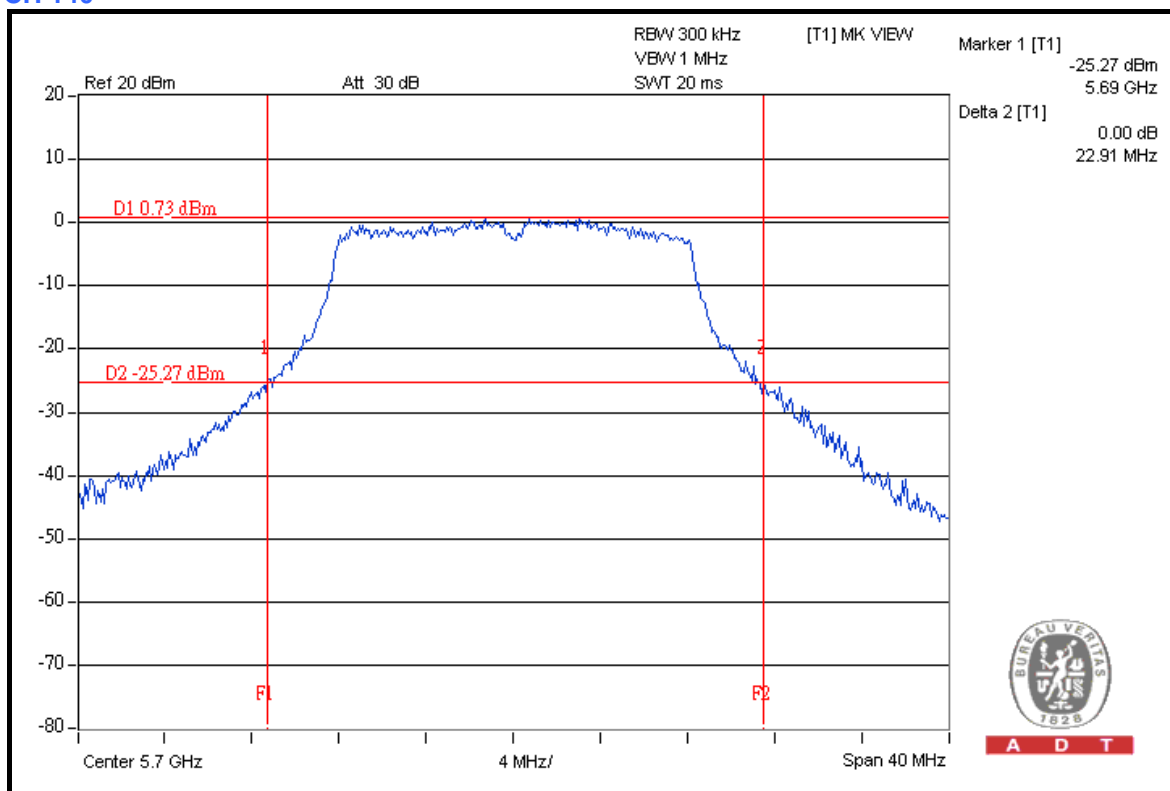
A D T

CH 120



A D T

CH 140



A D T



26dB OCCUPIED BANDWIDTH: DRAFT 802.11n (20MHz) OFDM MODULATION

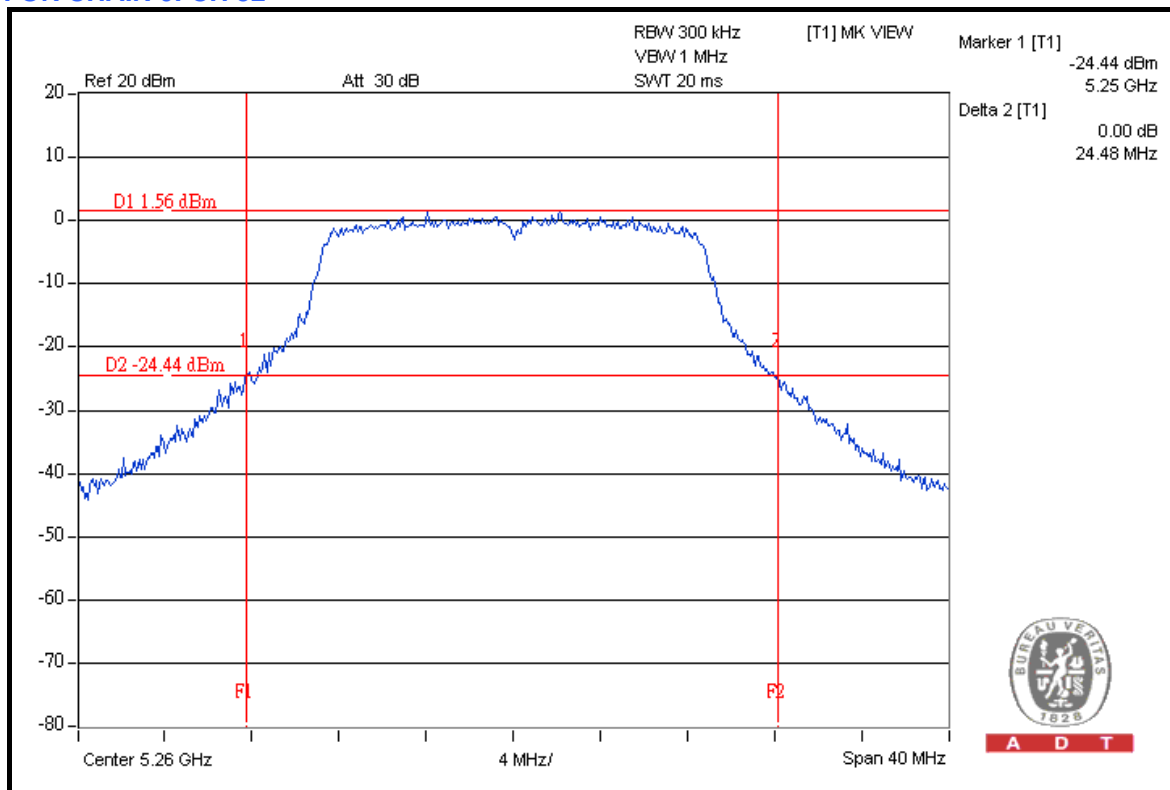
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	24.48	24.33	23.86	PASS
60	5300	24.35	23.51	23.82	PASS
64	5320	24.22	24.42	23.79	PASS
100	5500	24.29	24.13	24.18	PASS
120	5600	24.18	24.41	24.26	PASS
140	5700	24.43	23.56	24.14	PASS



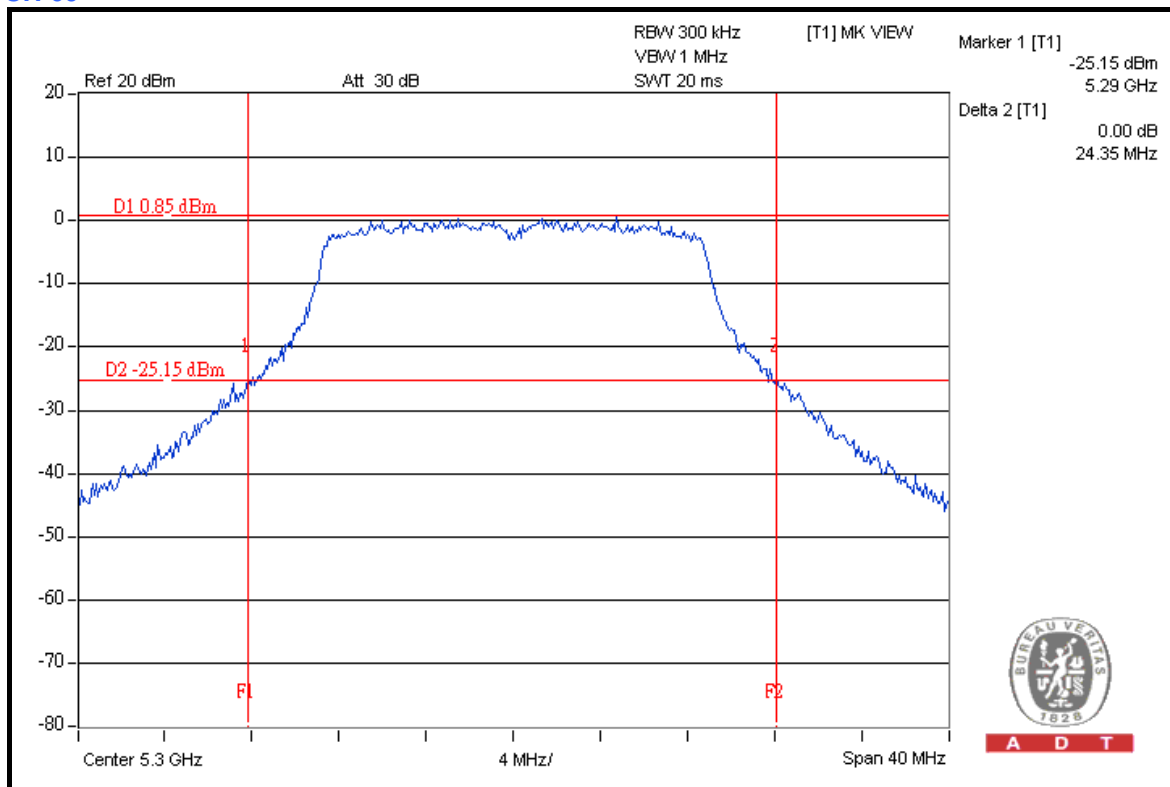
A D T

FOR CHAIN 0: CH 52



A D T

CH 60

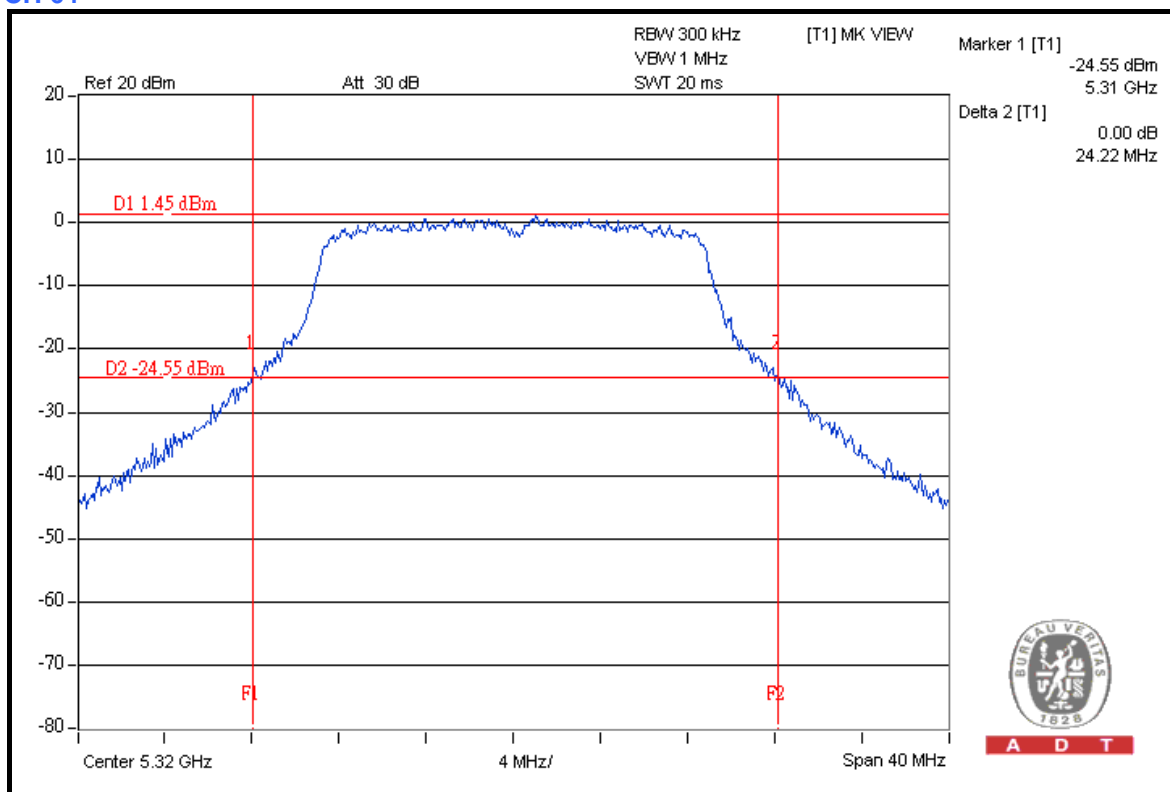


A D T

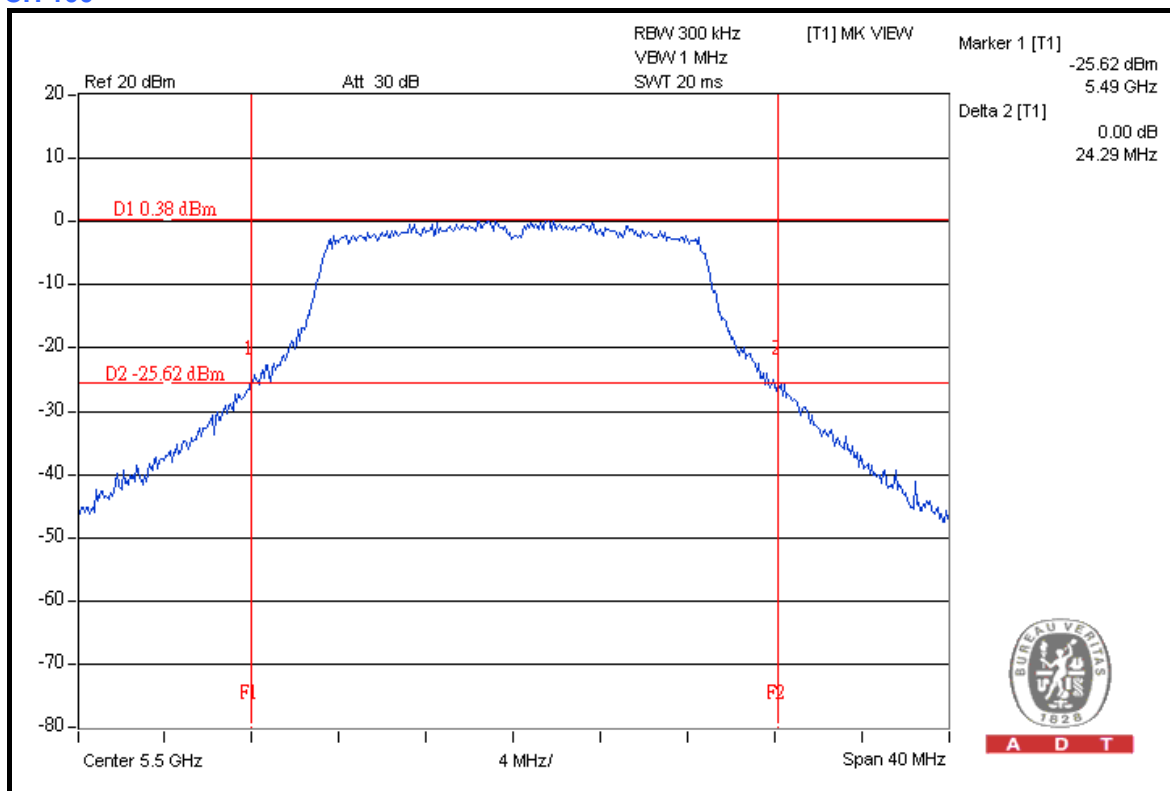


A D T

CH 64



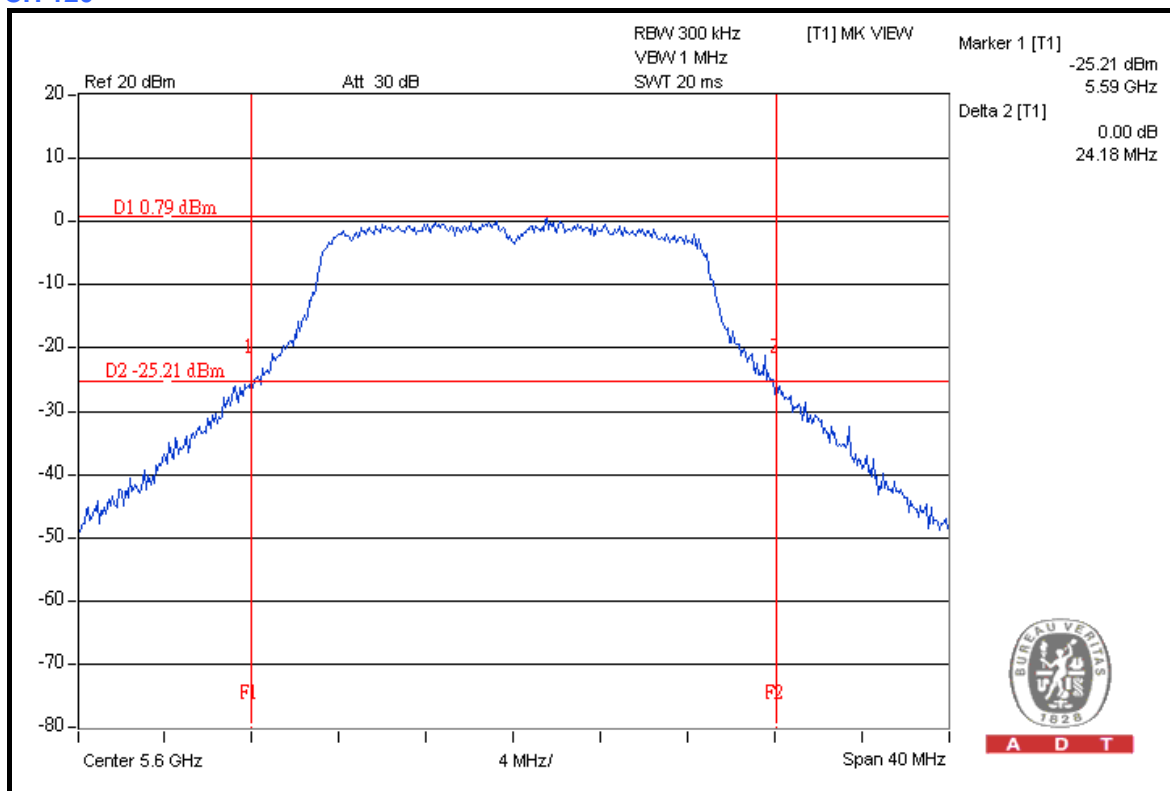
CH 100



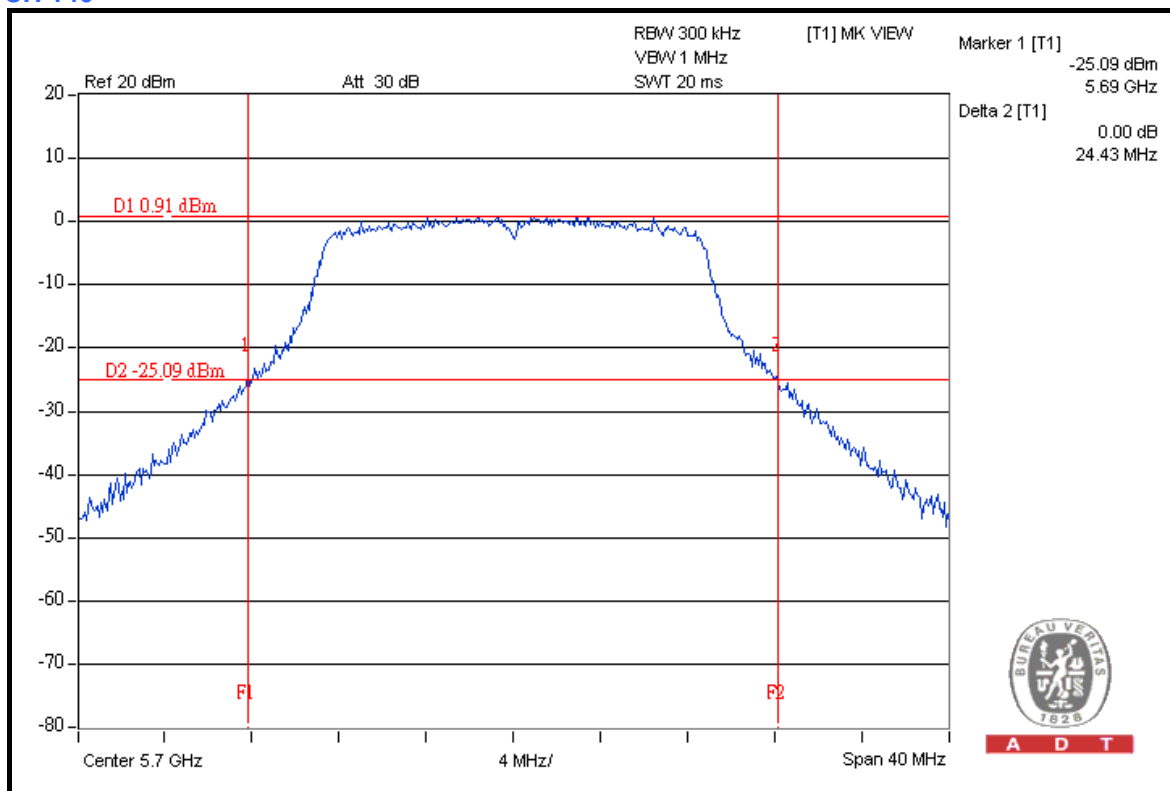


A D T

CH 120



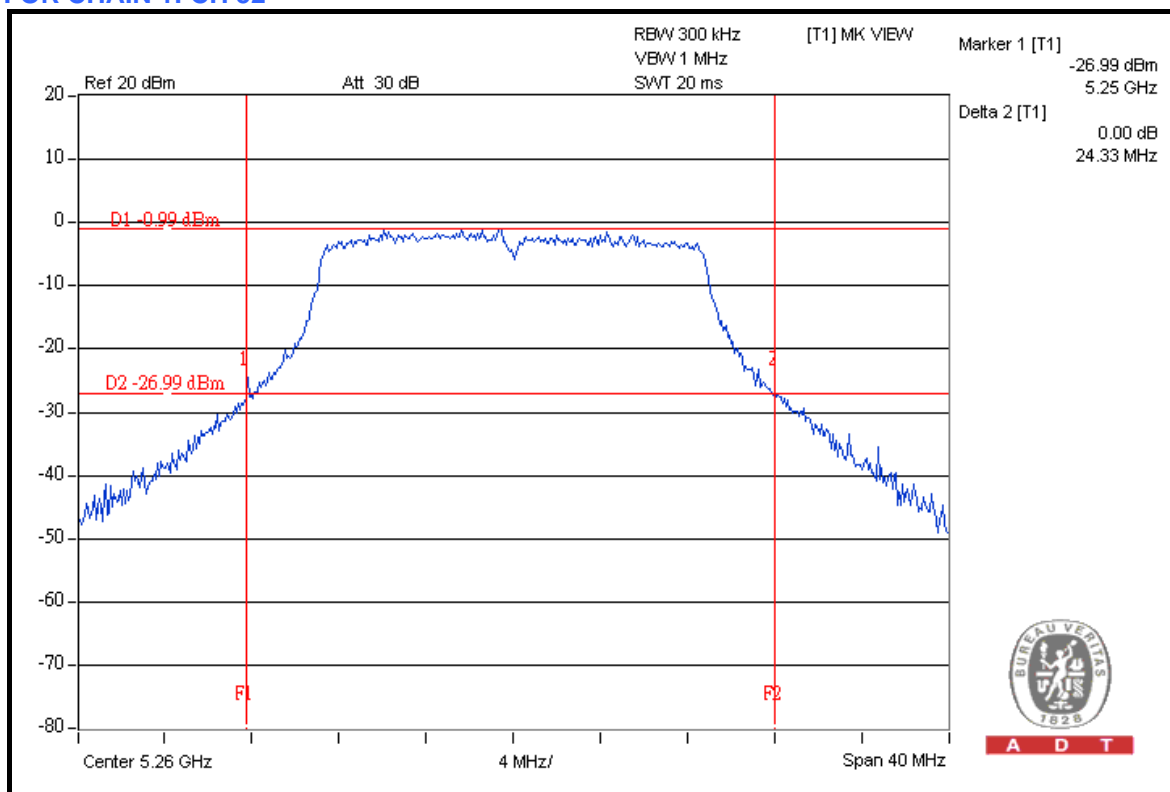
CH 140



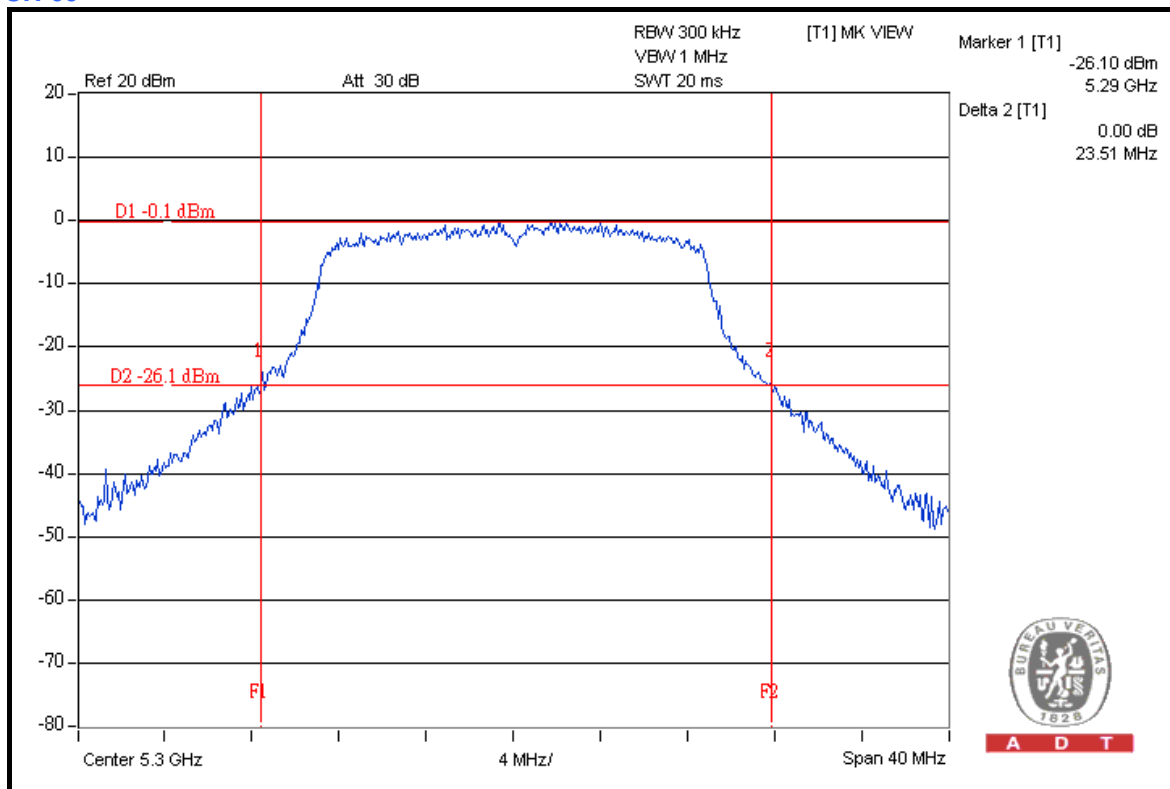


A D T

FOR CHAIN 1: CH 52



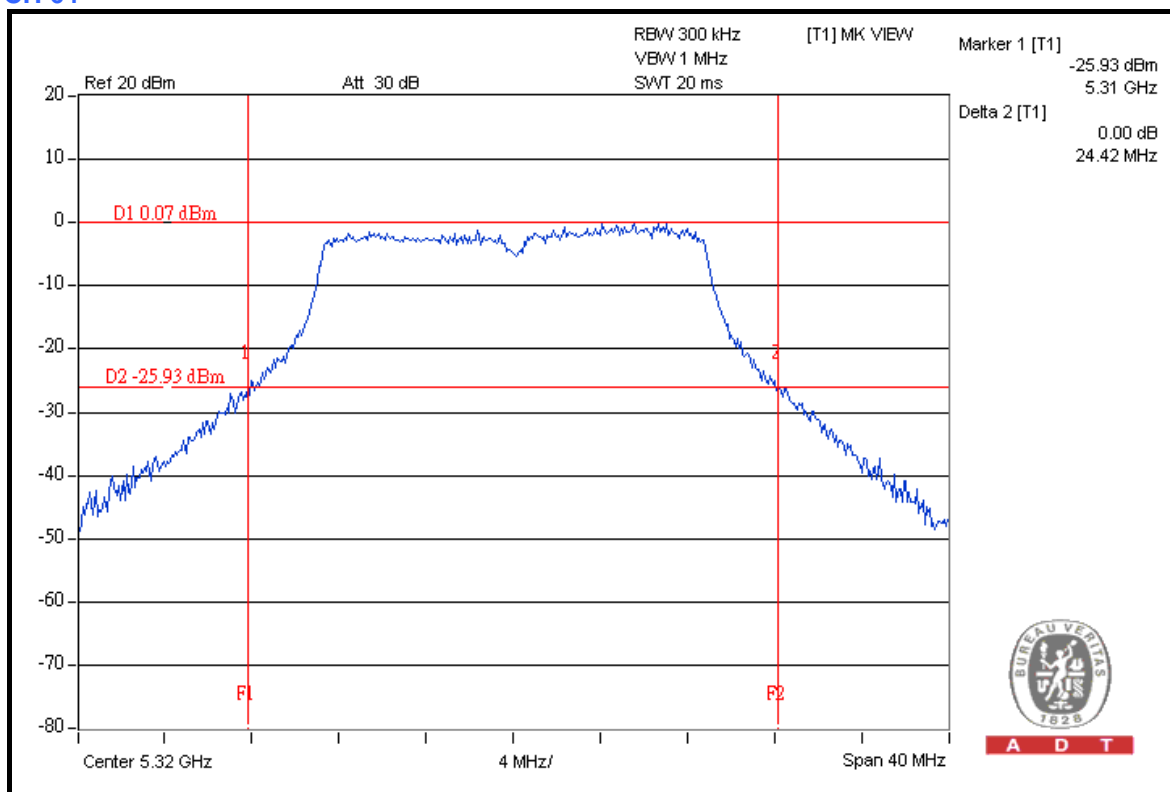
CH 60





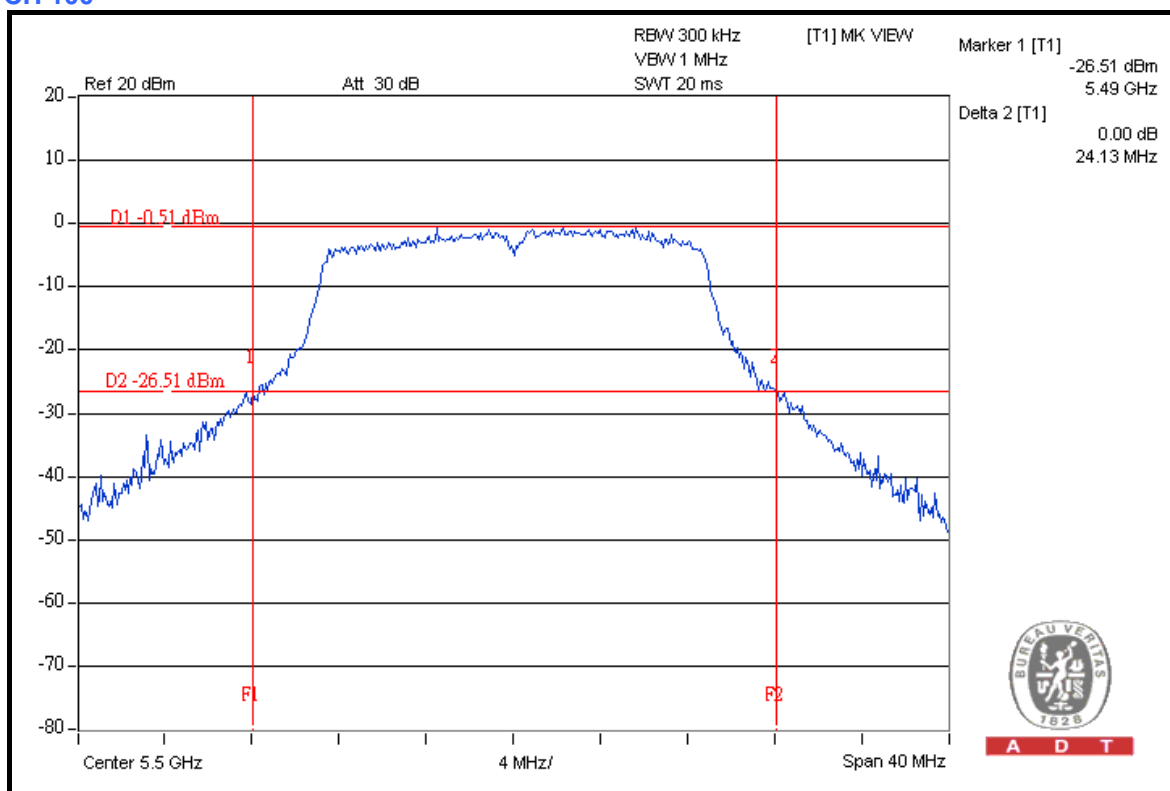
A D T

CH 64



A D T

CH 100

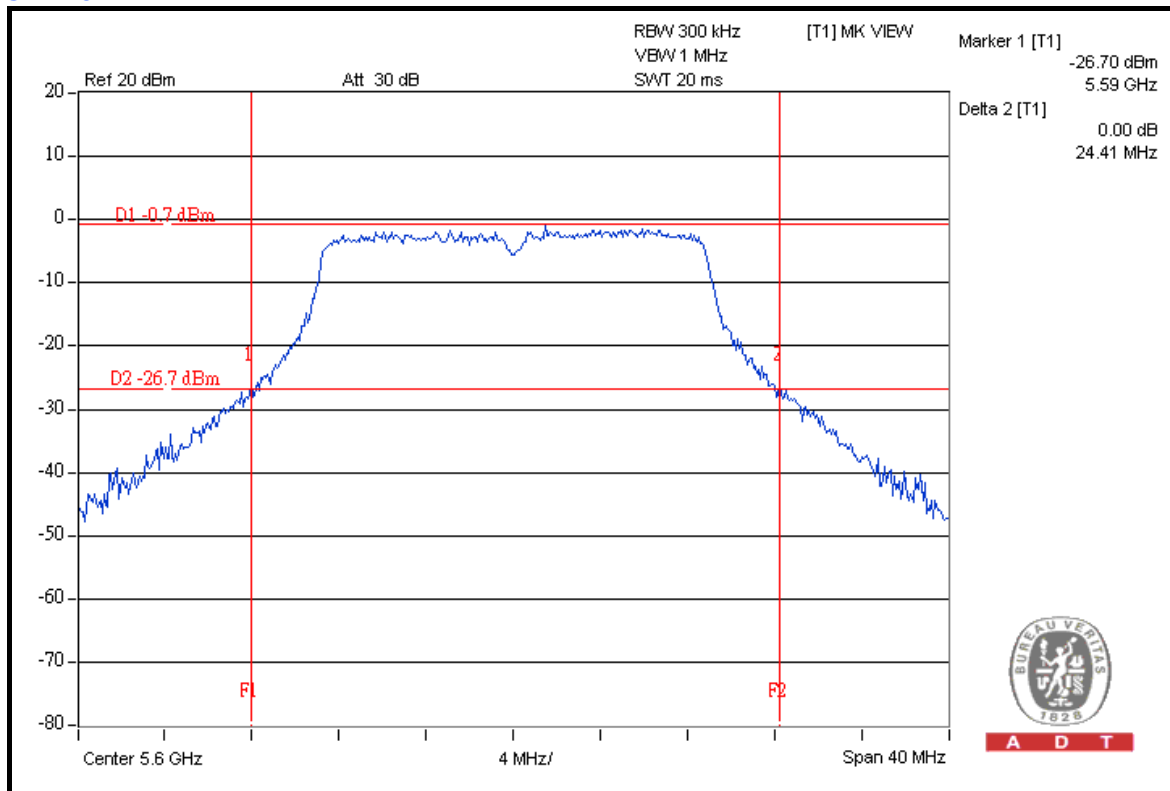


A D T

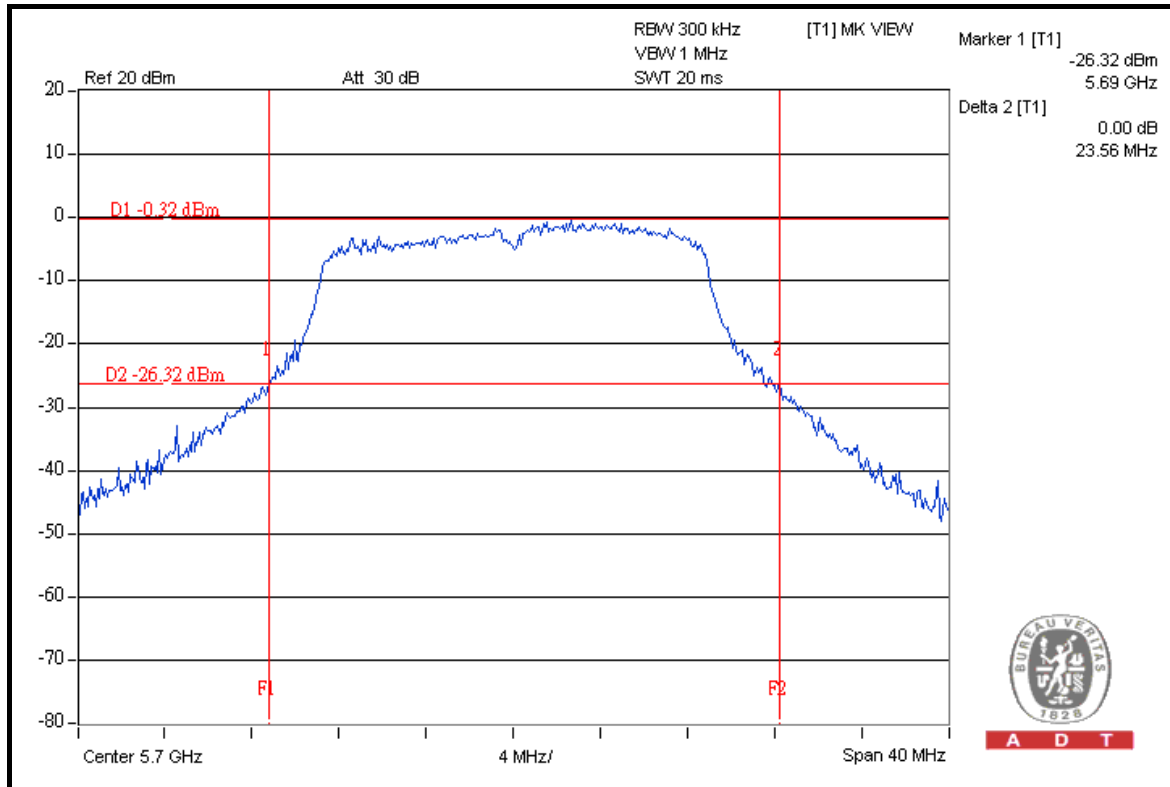


A D T

CH 120



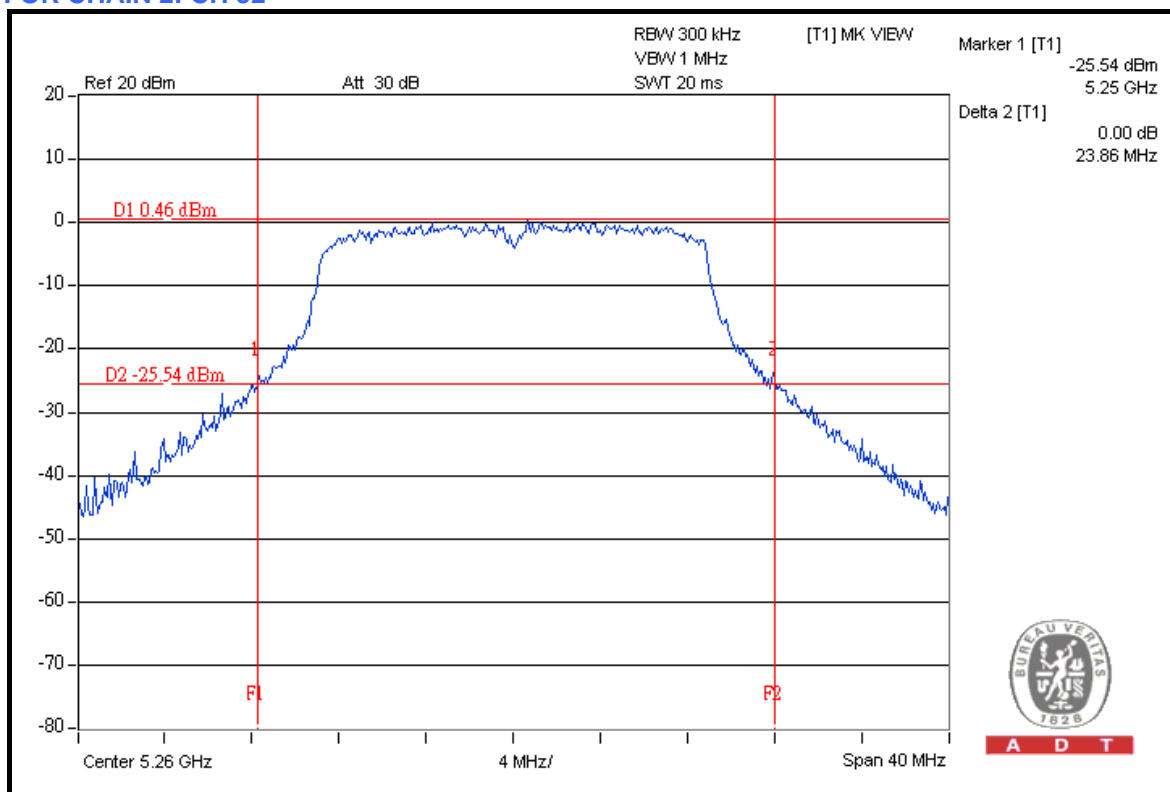
CH 140



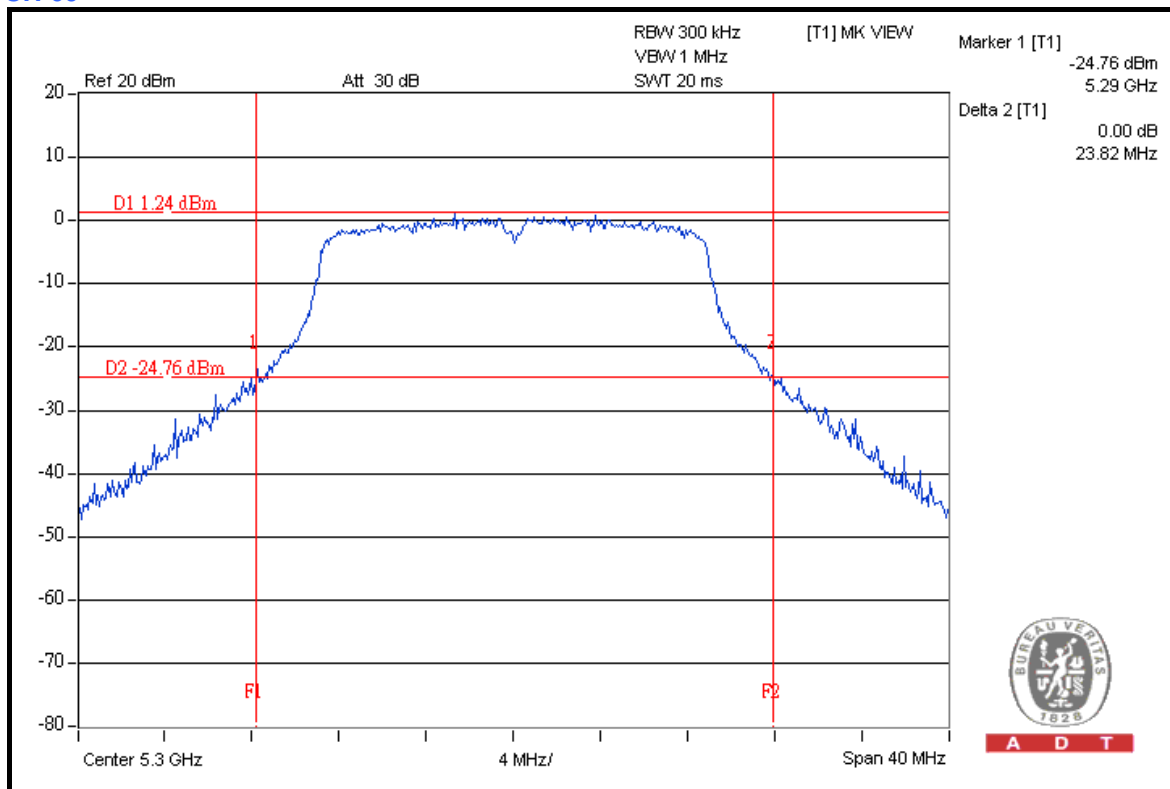


A D T

FOR CHAIN 2: CH 52



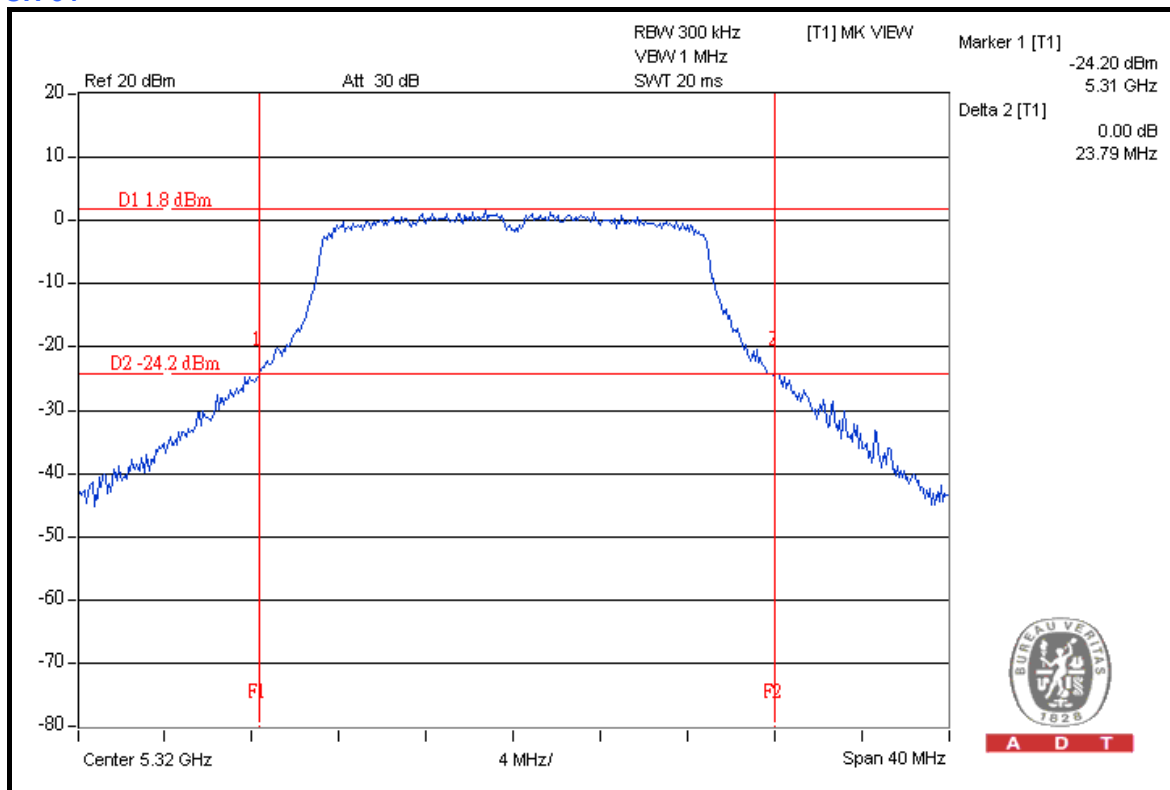
CH 60



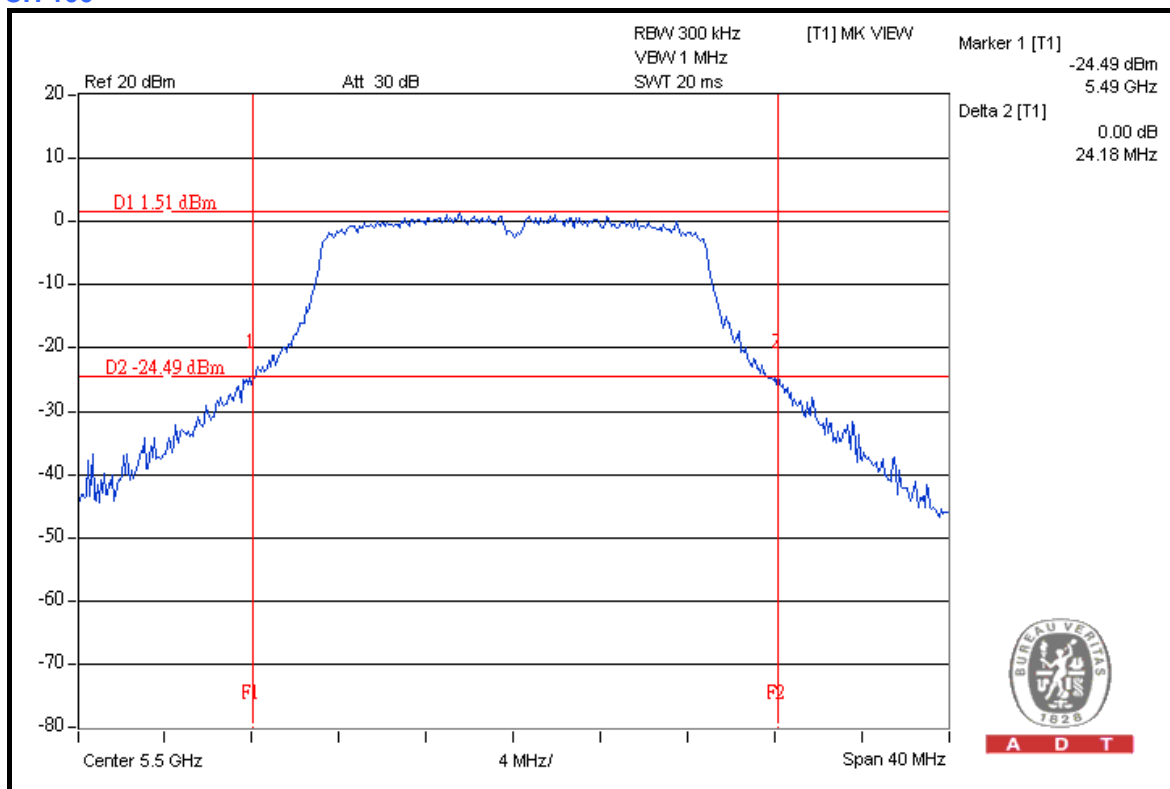


A D T

CH 64



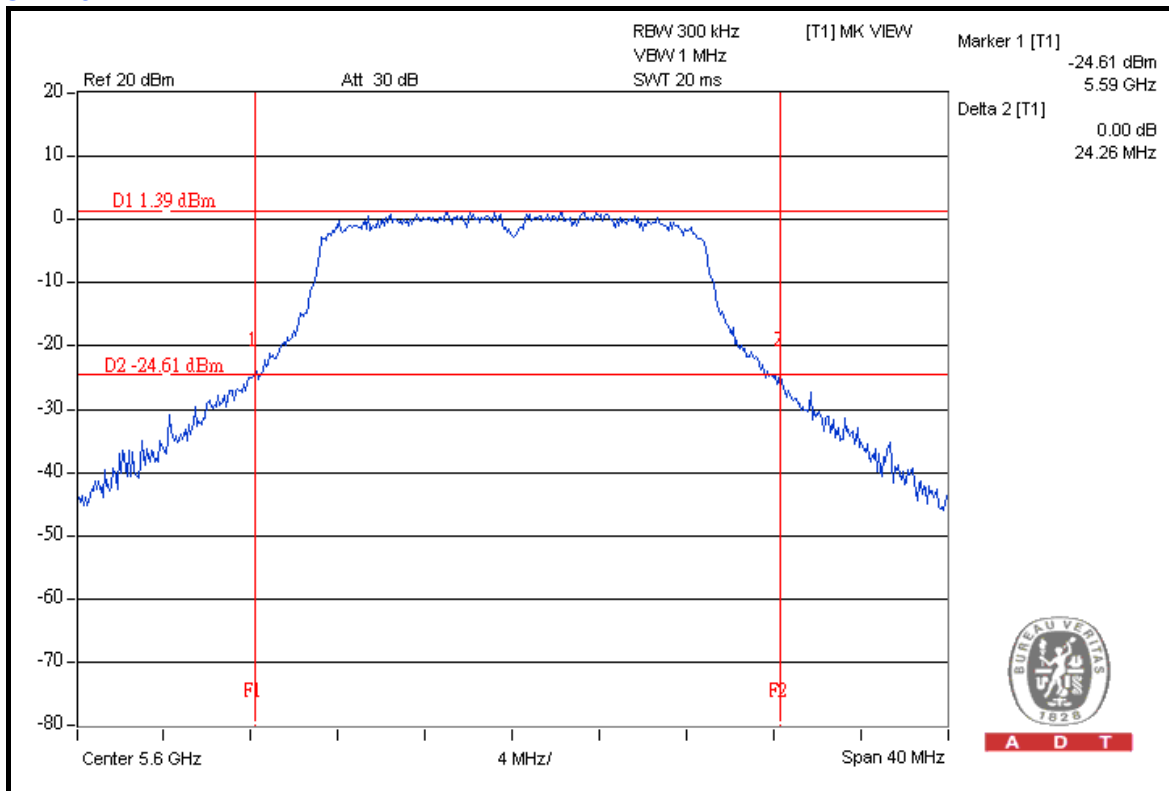
CH 100



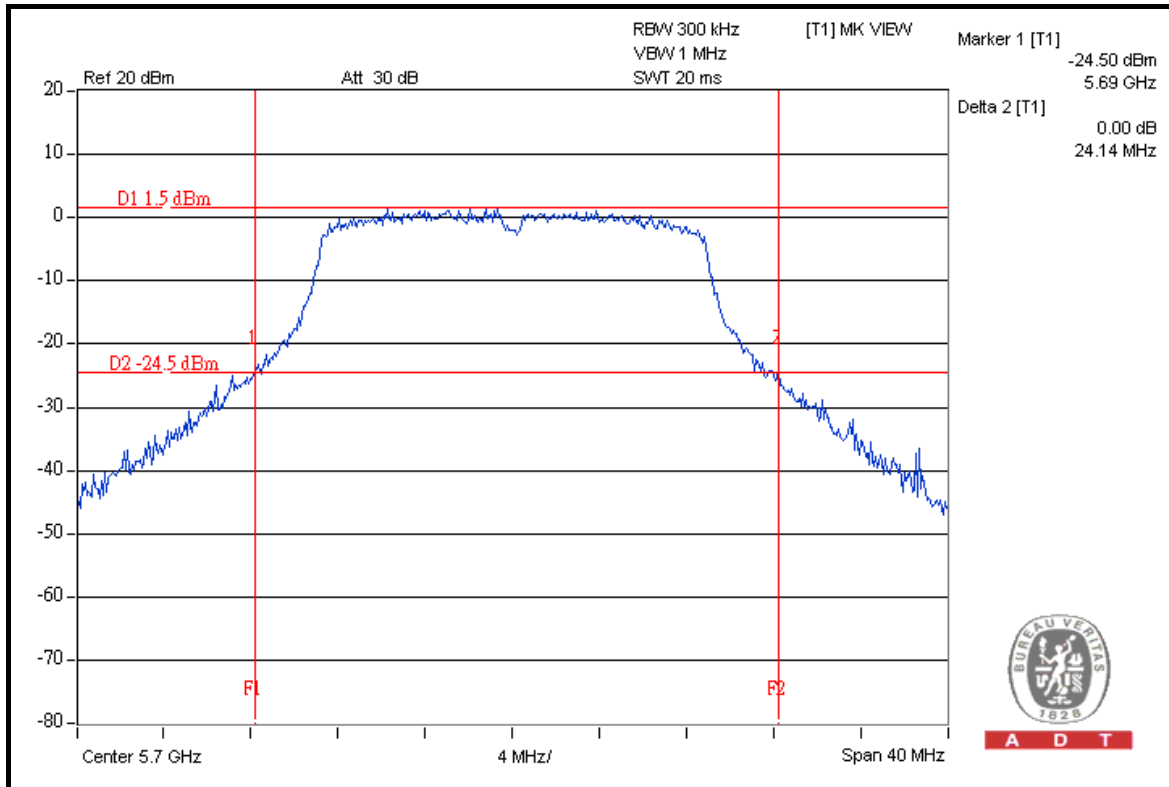


A D T

CH 120



CH 140





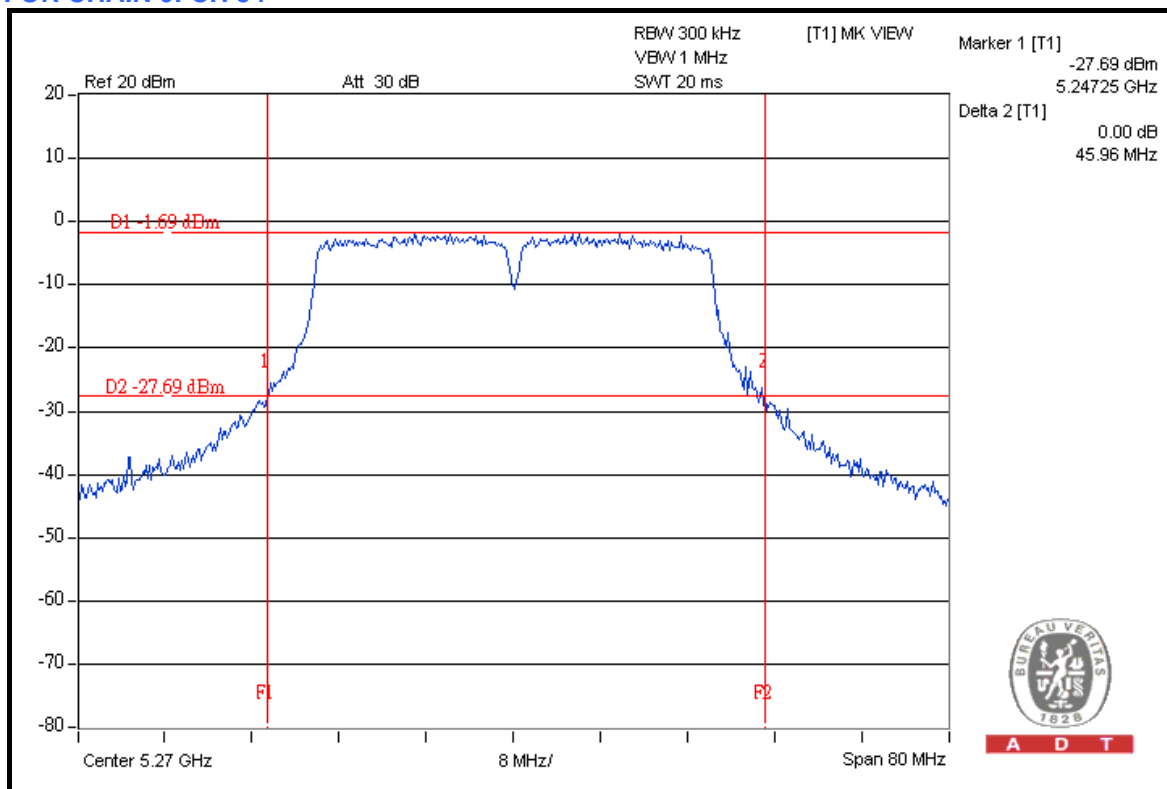
A D T

26dB OCCUPIED BANDWIDTH: DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	45.96	45.04	44.35	PASS
62	5310	45.58	45.44	44.81	PASS
102	5510	45.32	44.44	44.94	PASS
118	5590	45.31	44.97	44.16	PASS
134	5670	44.78	45.26	44.93	PASS

FOR CHAIN 0: CH 54

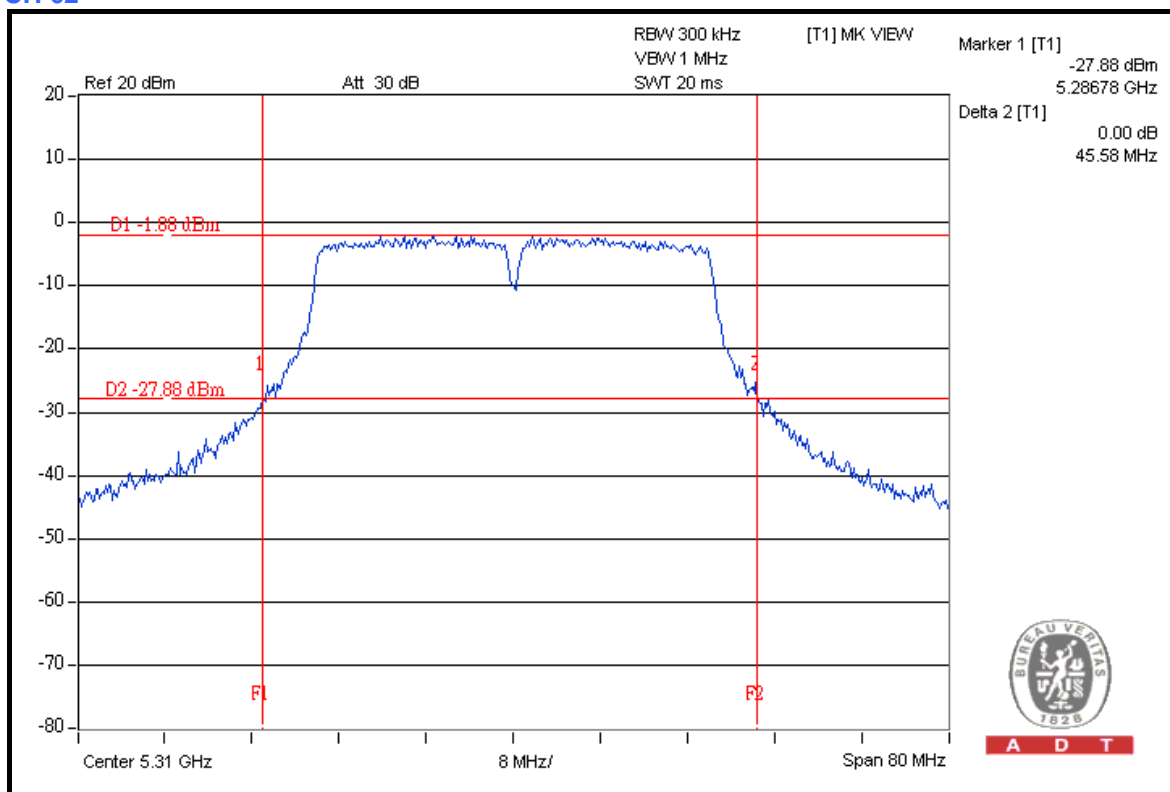


A D T

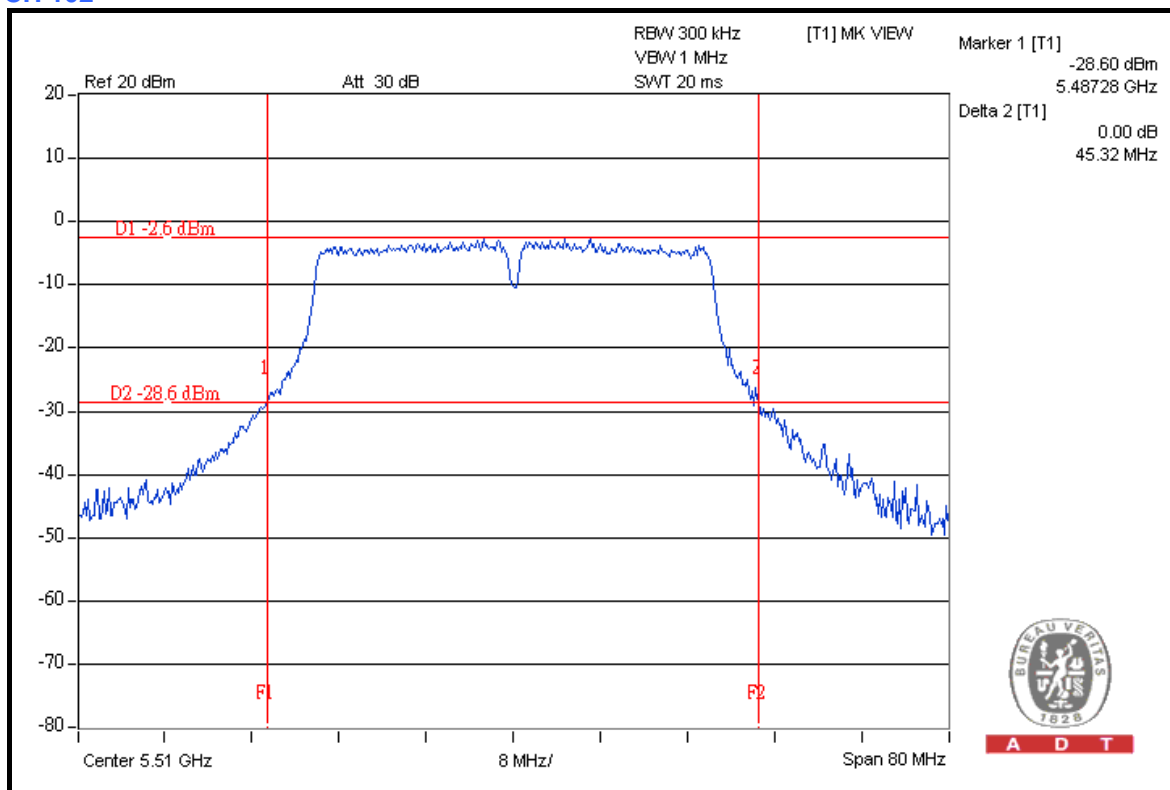


A D T

CH 62



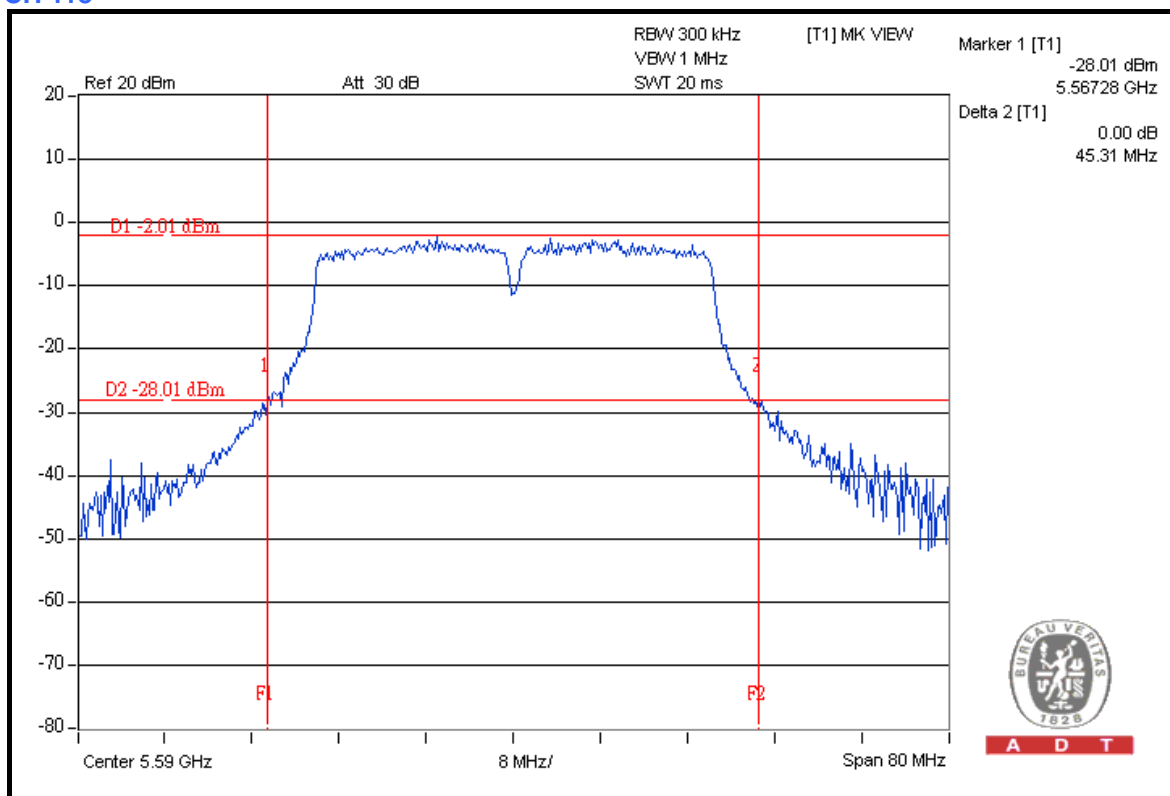
CH 102





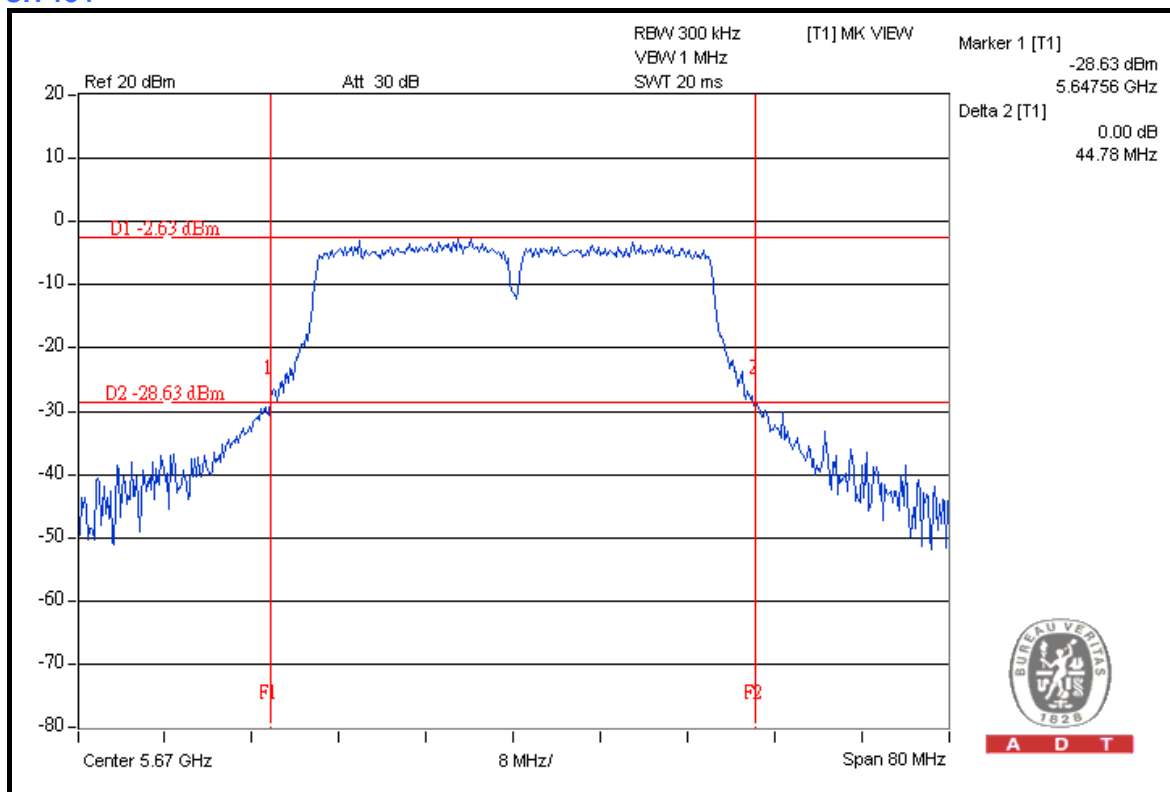
A D T

CH 118



A D T

CH 134

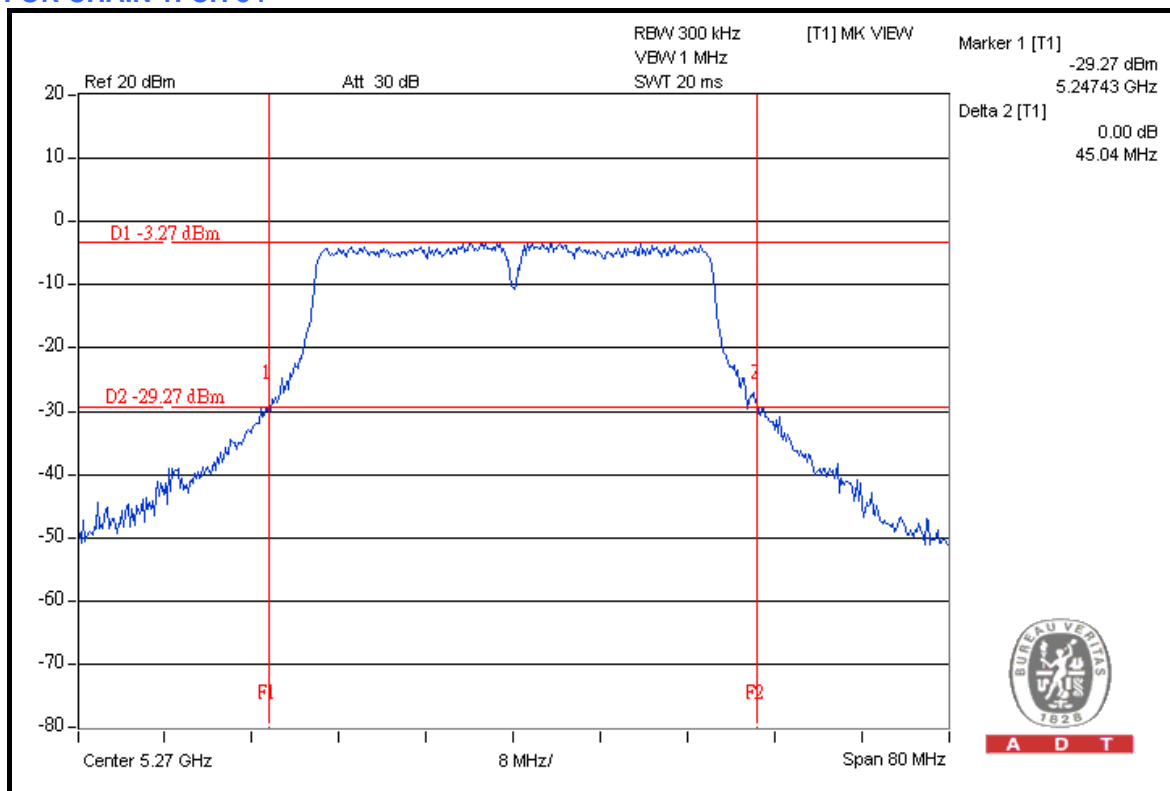


A D T

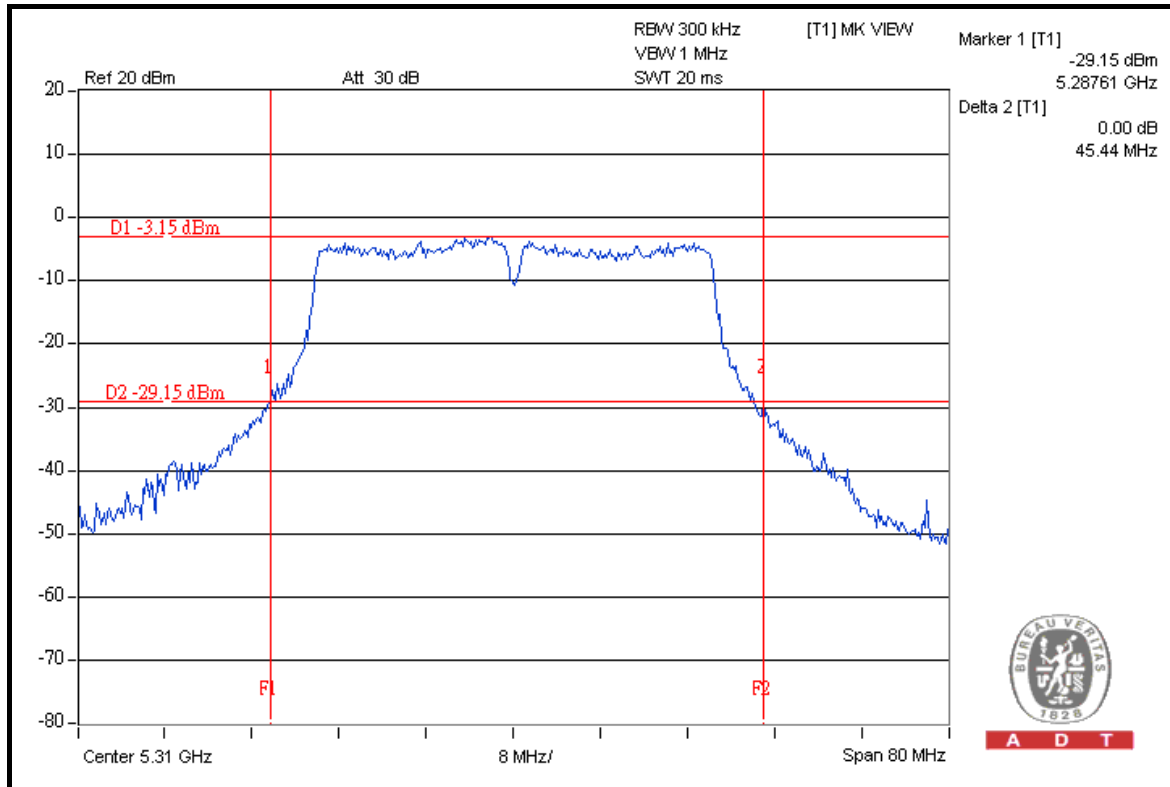


A D T

FOR CHAIN 1: CH 54



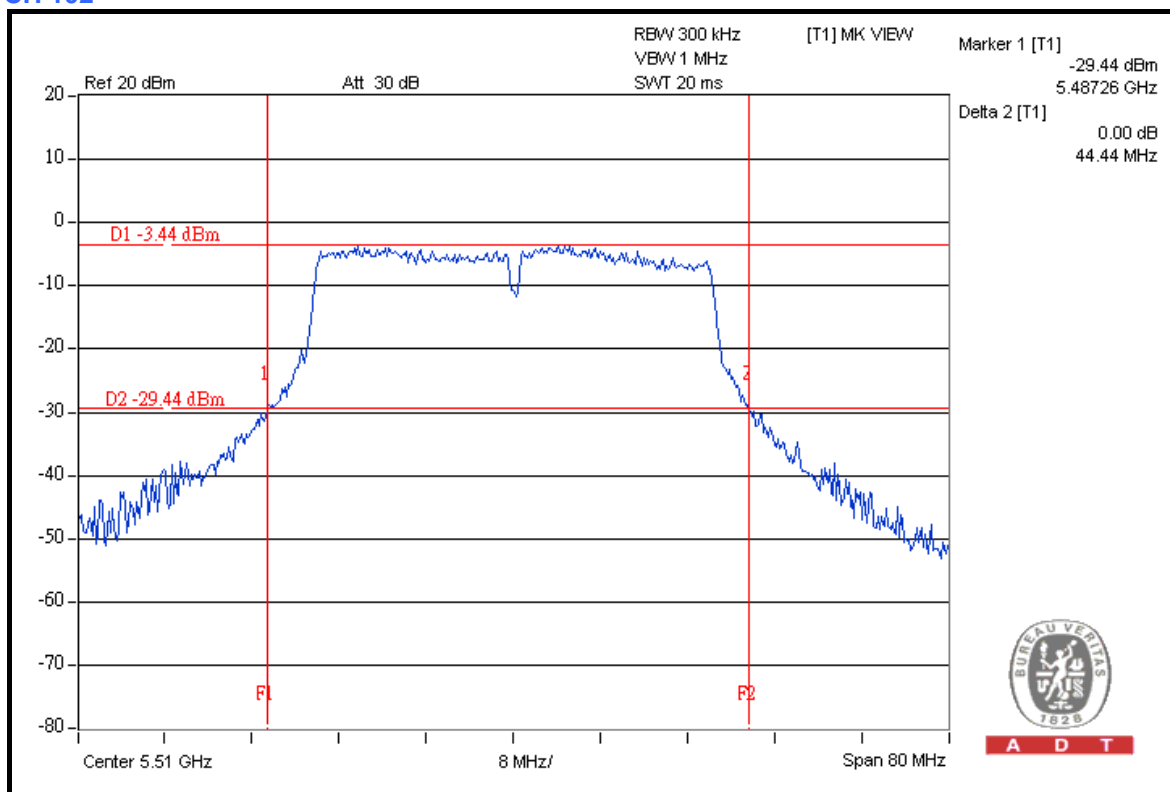
CH 62





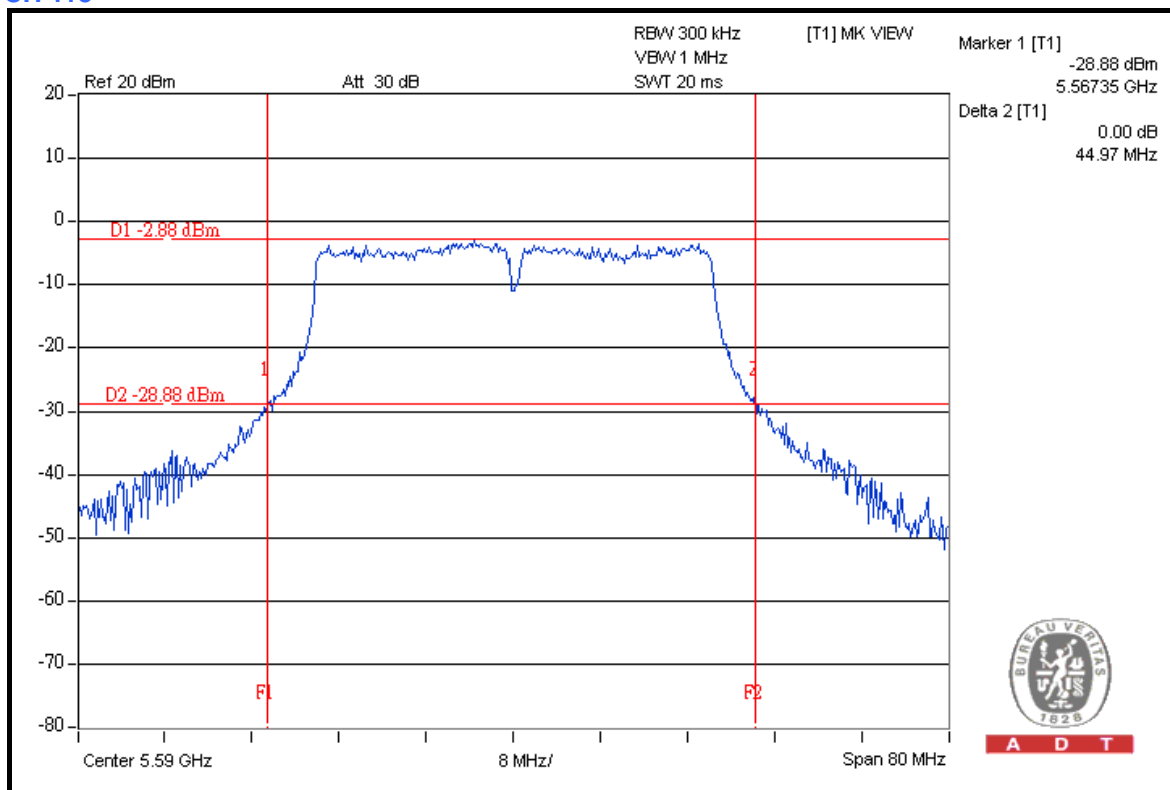
A D T

CH 102



A D T

CH 118

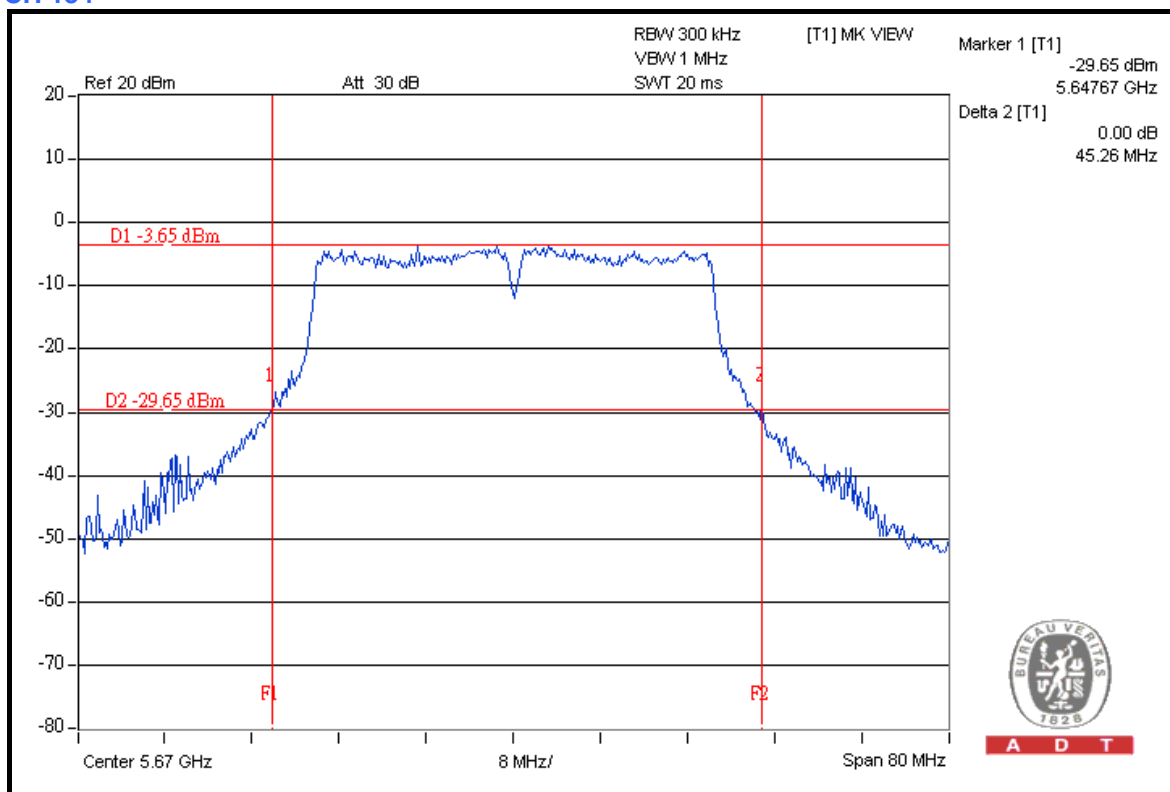


A D T

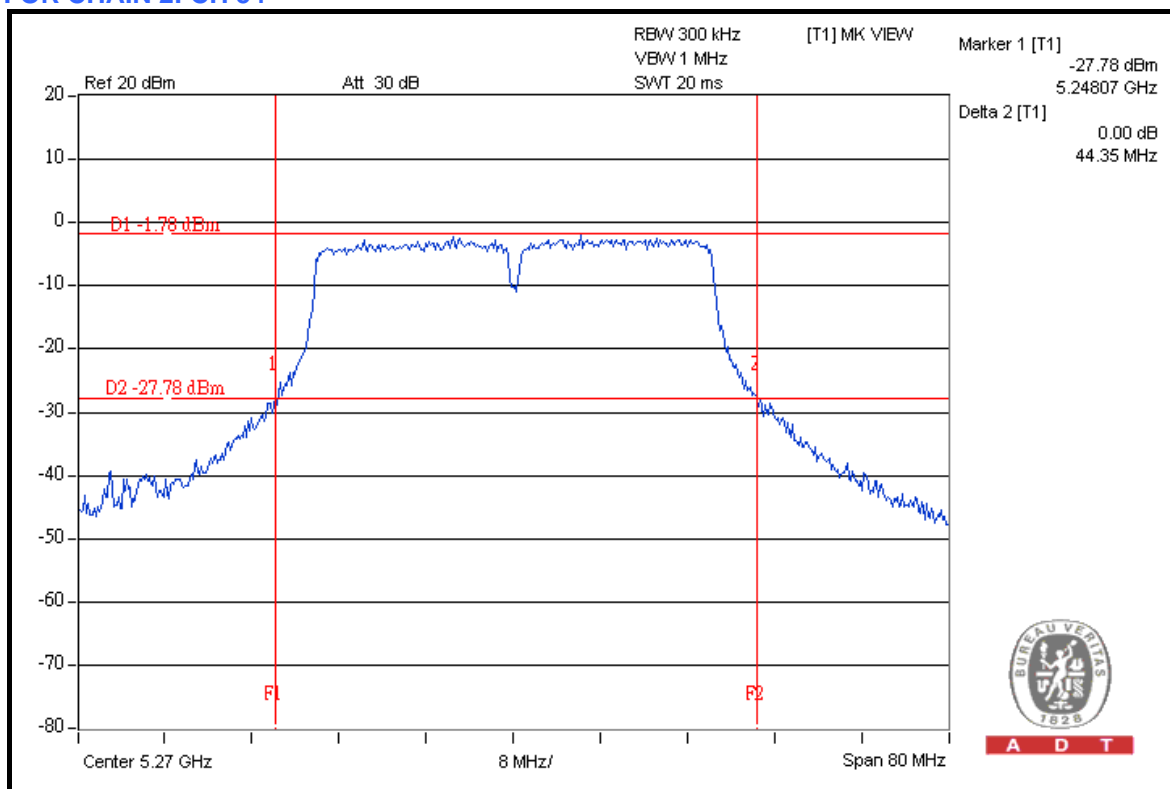


A D T

CH 134



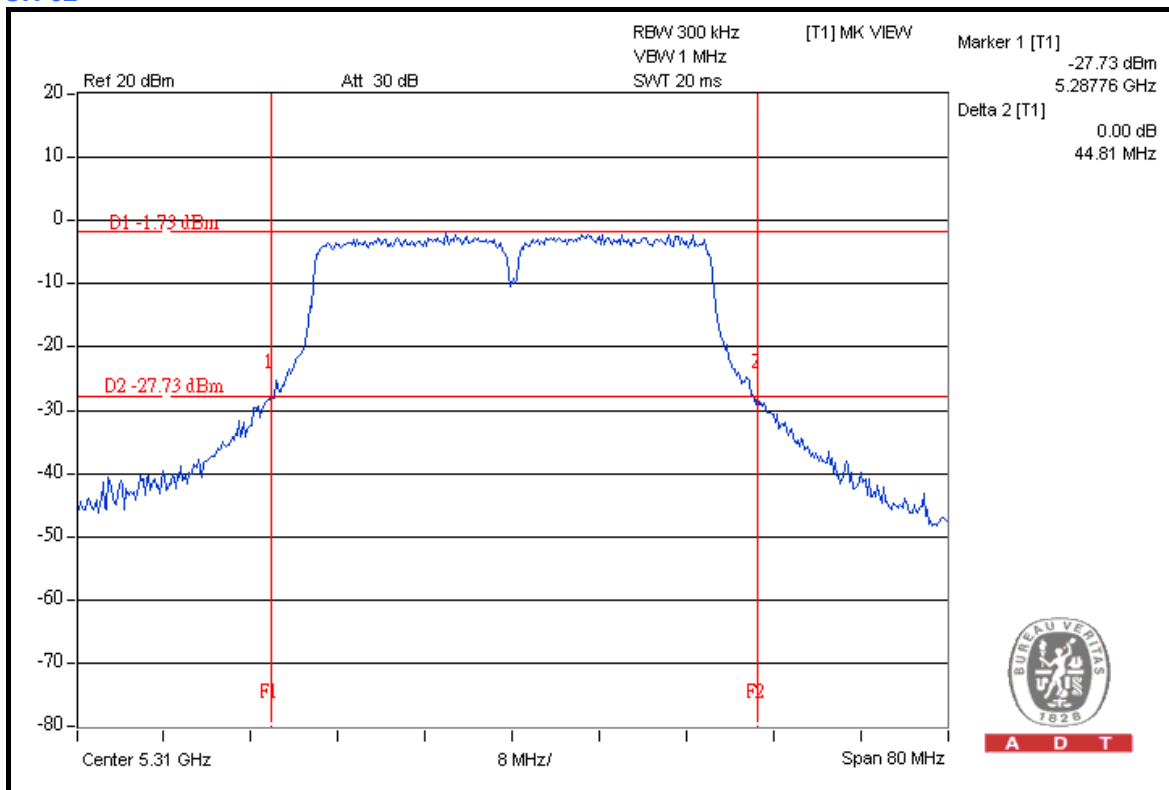
FOR CHAIN 2: CH 54





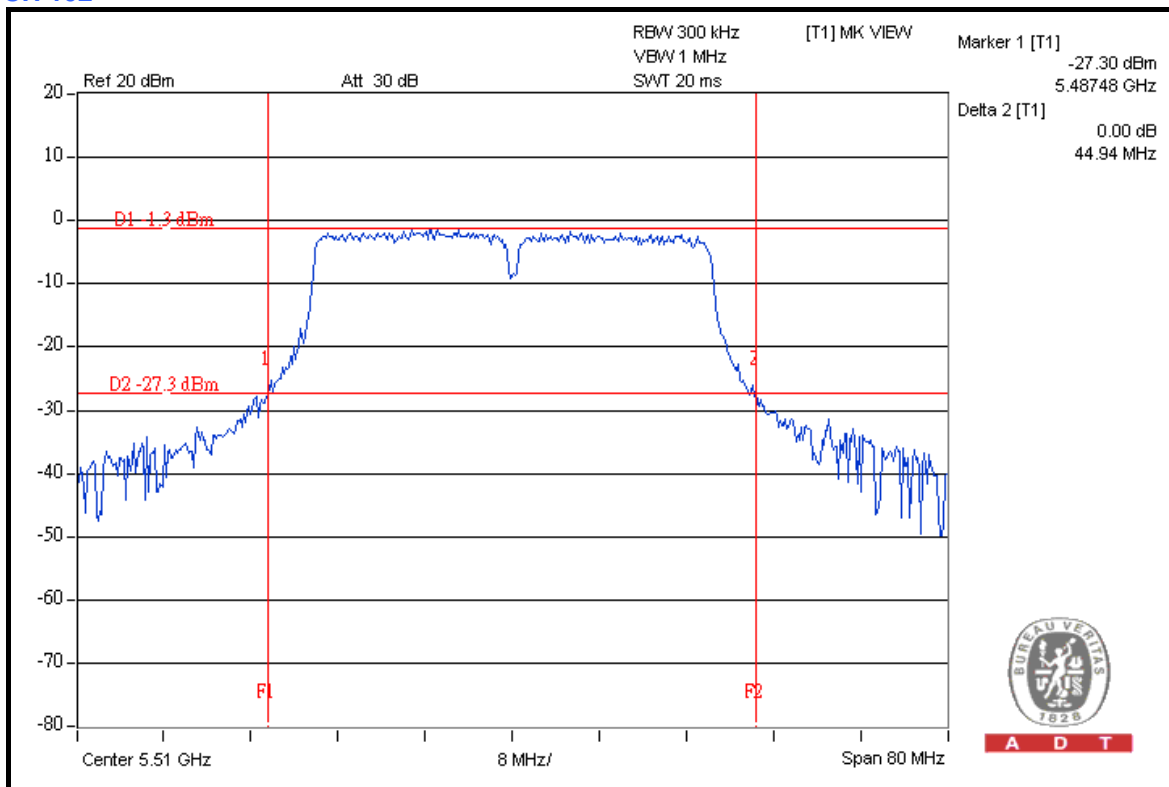
A D T

CH 62



A D T

CH 102

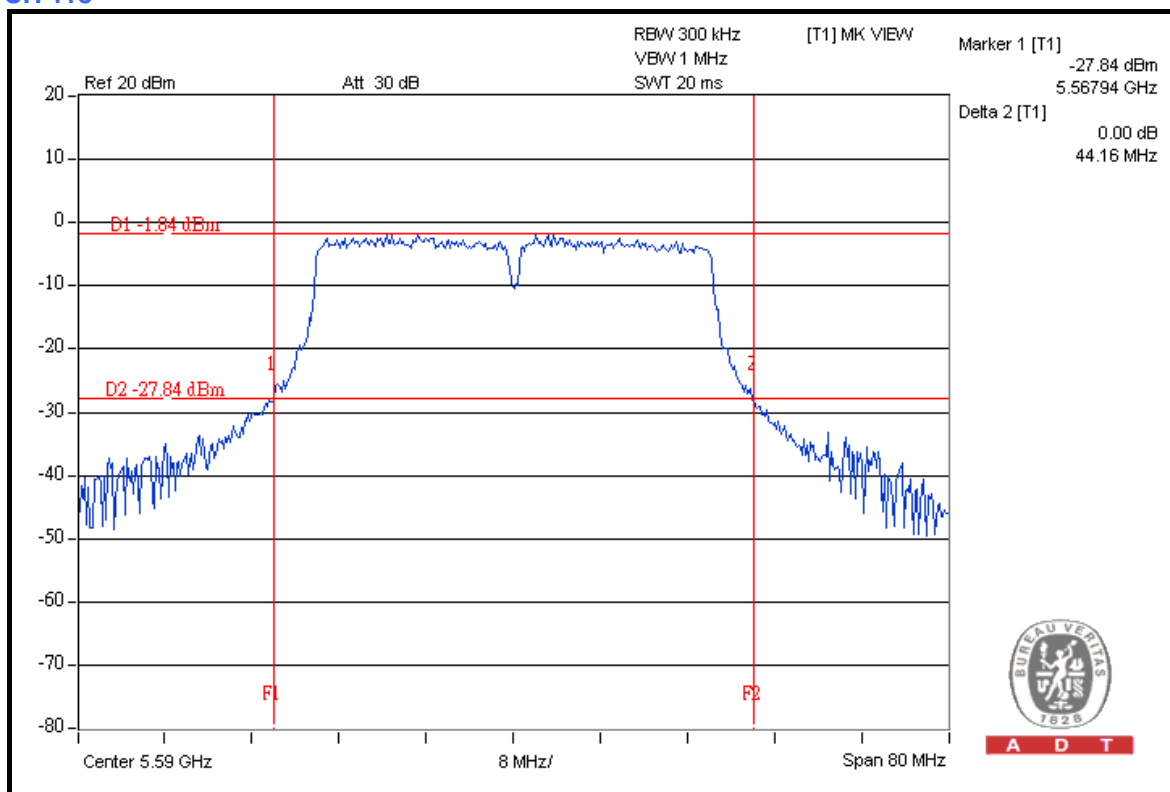


A D T



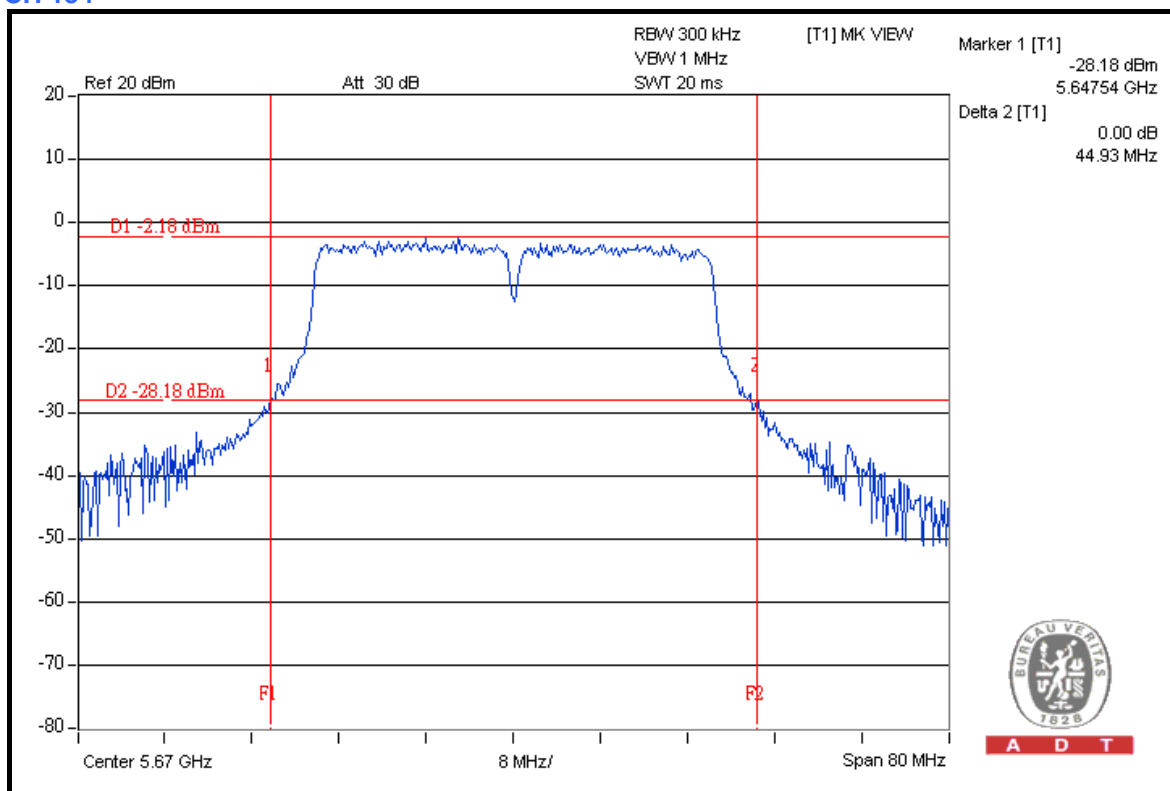
A D T

CH 118



A D T

CH 134



A D T



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	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009

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

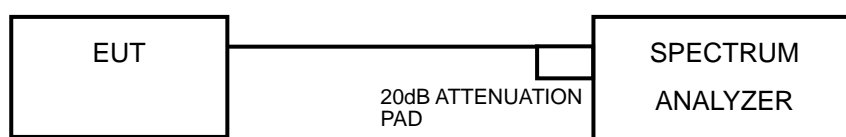
4.4.3 TEST PROCEDURE

- 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 = 300 kHz).
- d. The differences between Trace1 and Trace 2 in any 1MHz band at f1 to f2 range were recorded and showed to another trace.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

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



4.4.7 TEST RESULTS

802.11a OFDM MODULATION

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

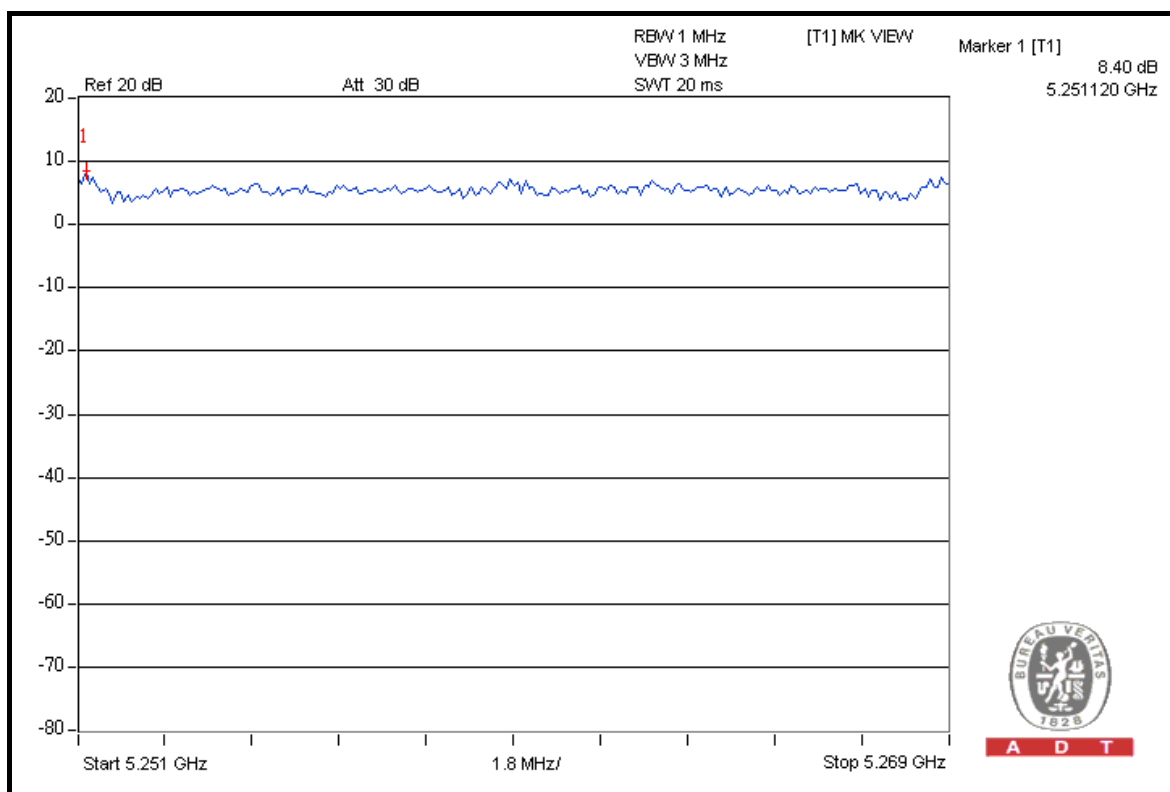
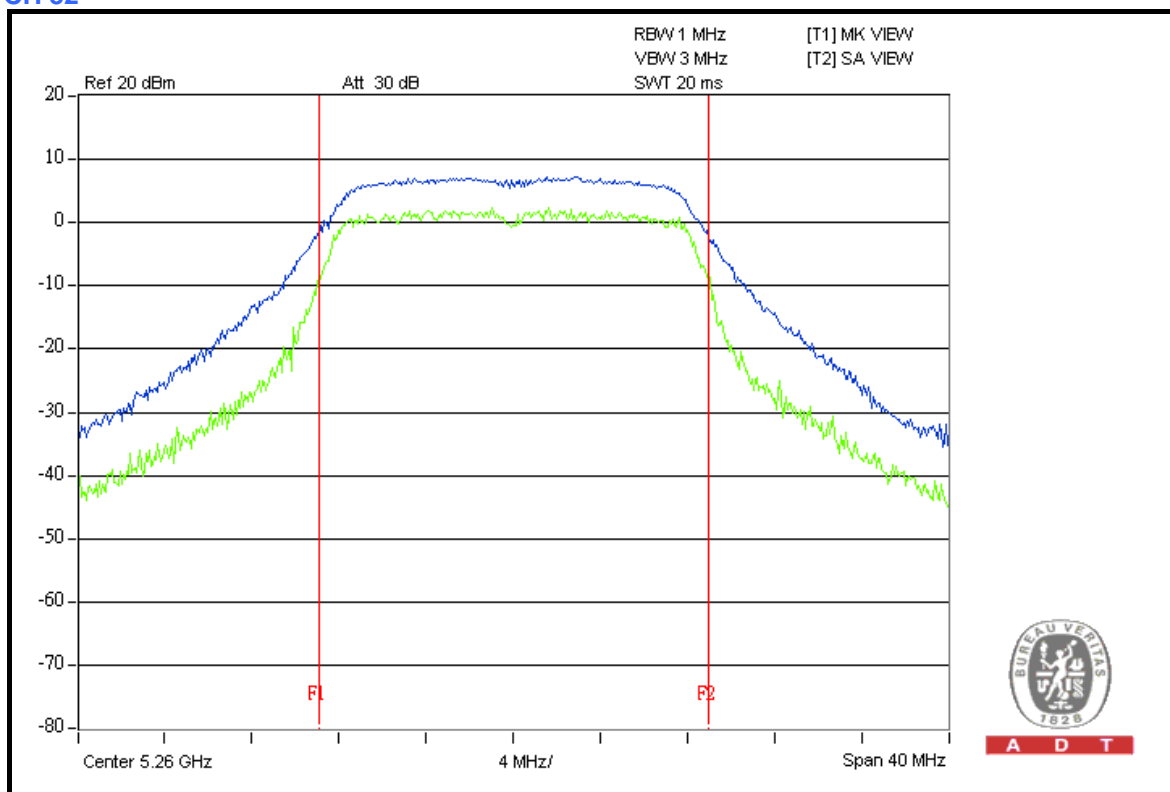
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)			PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
52	5260	8.40	8.07	7.64	13	PASS
60	5300	8.44	9.38	8.68	13	PASS
64	5320	7.66	7.53	8.00	13	PASS
100	5500	8.58	8.27	8.81	13	PASS
120	5600	8.08	8.03	9.47	13	PASS
140	5700	9.31	8.88	7.76	13	PASS



A D T

FOR CHAIN 0:

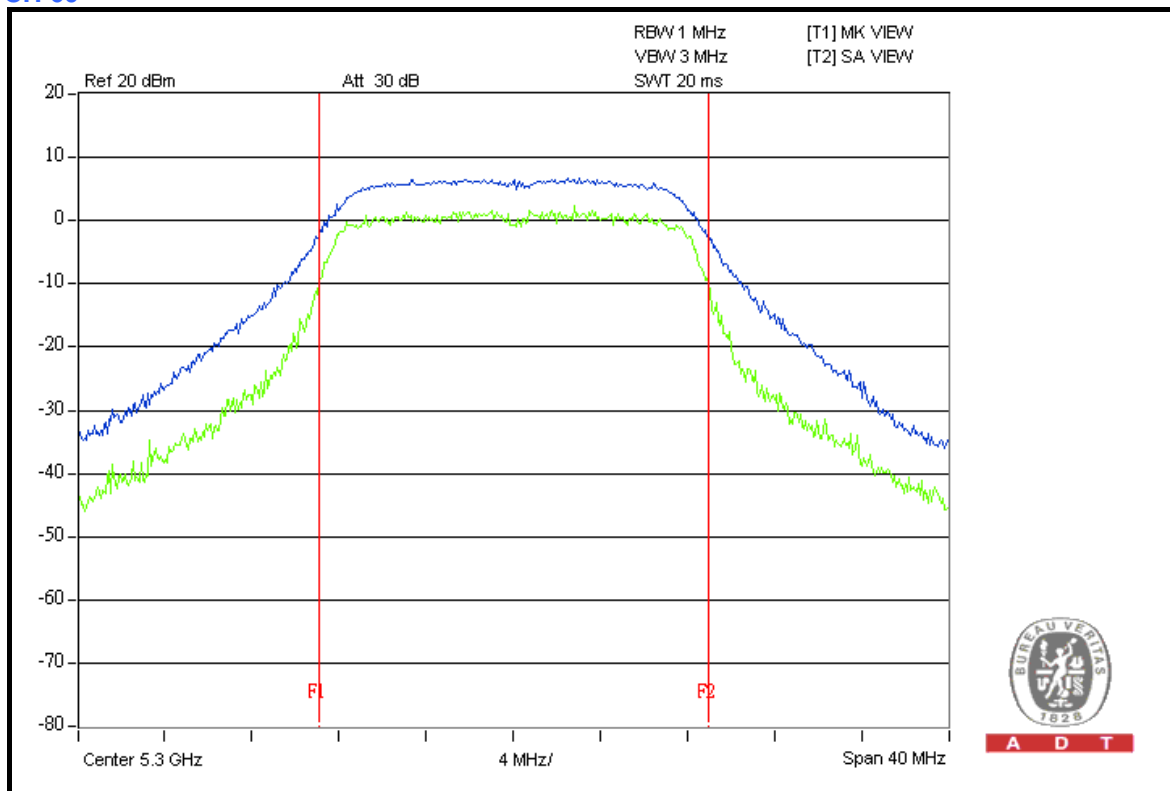
CH 52



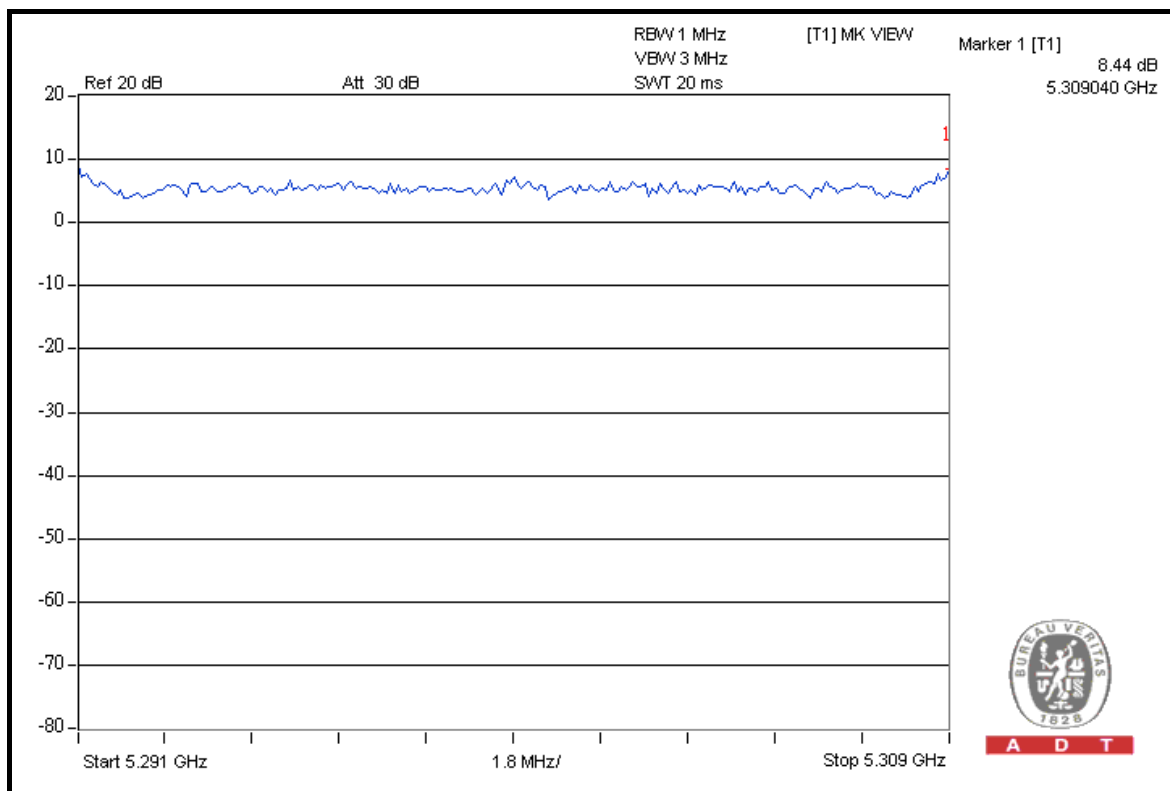


A D T

CH 60



A D T

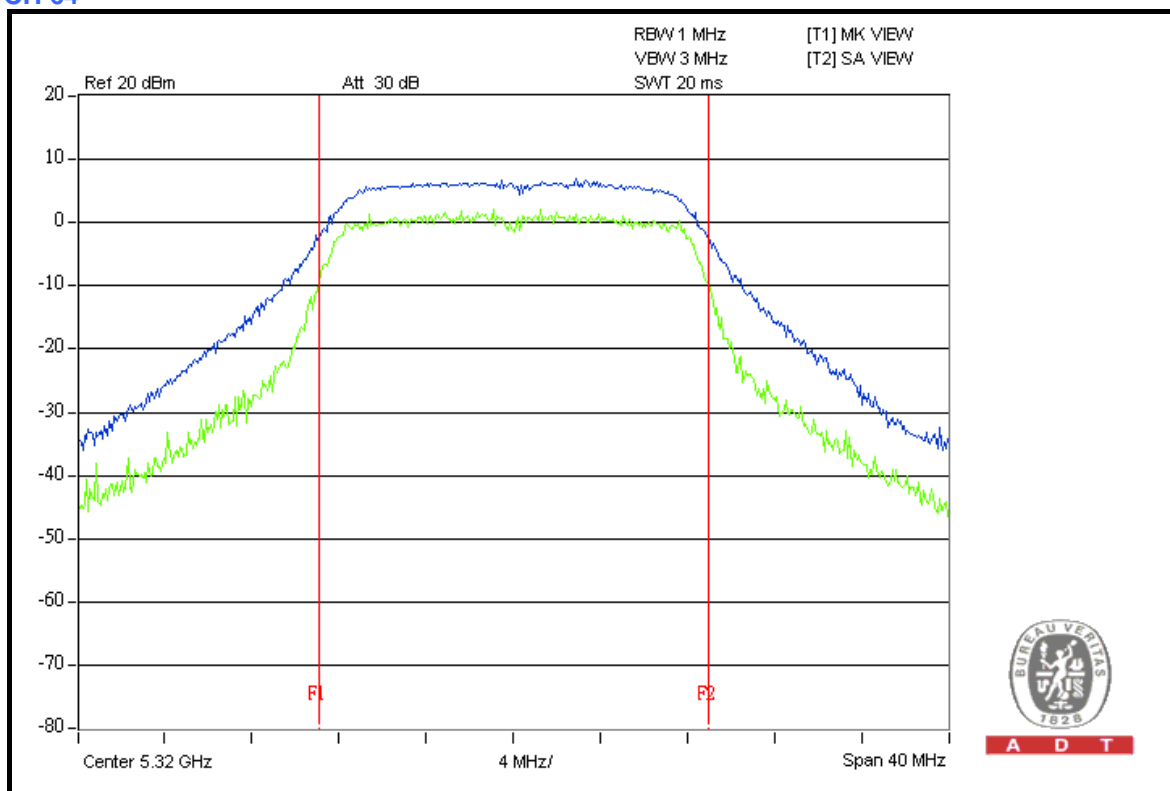


A D T

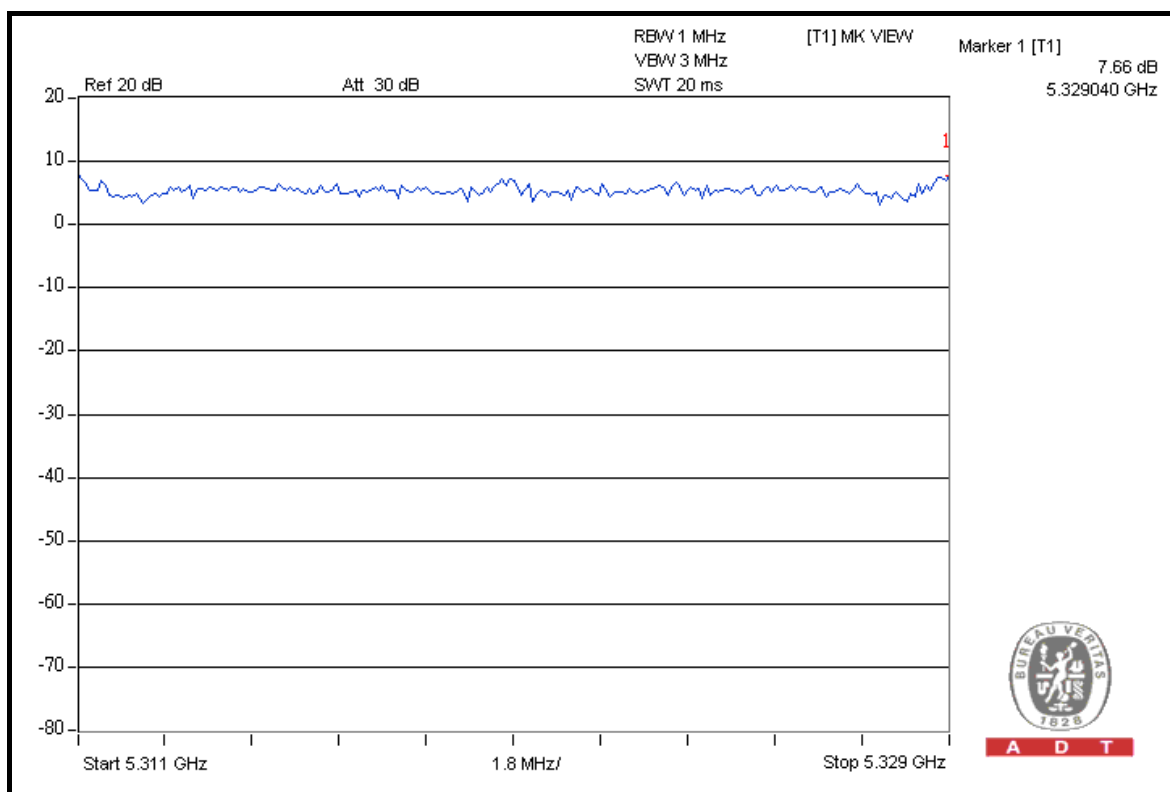


A D T

CH 64



A D T

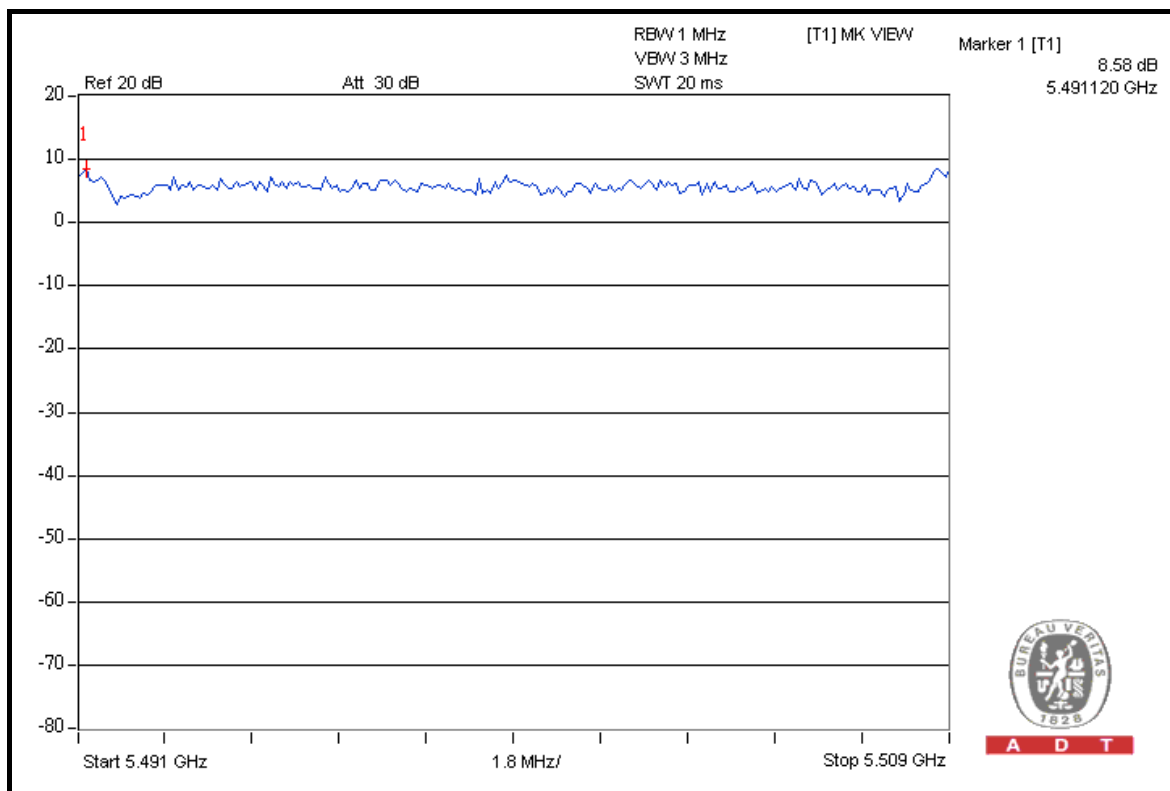
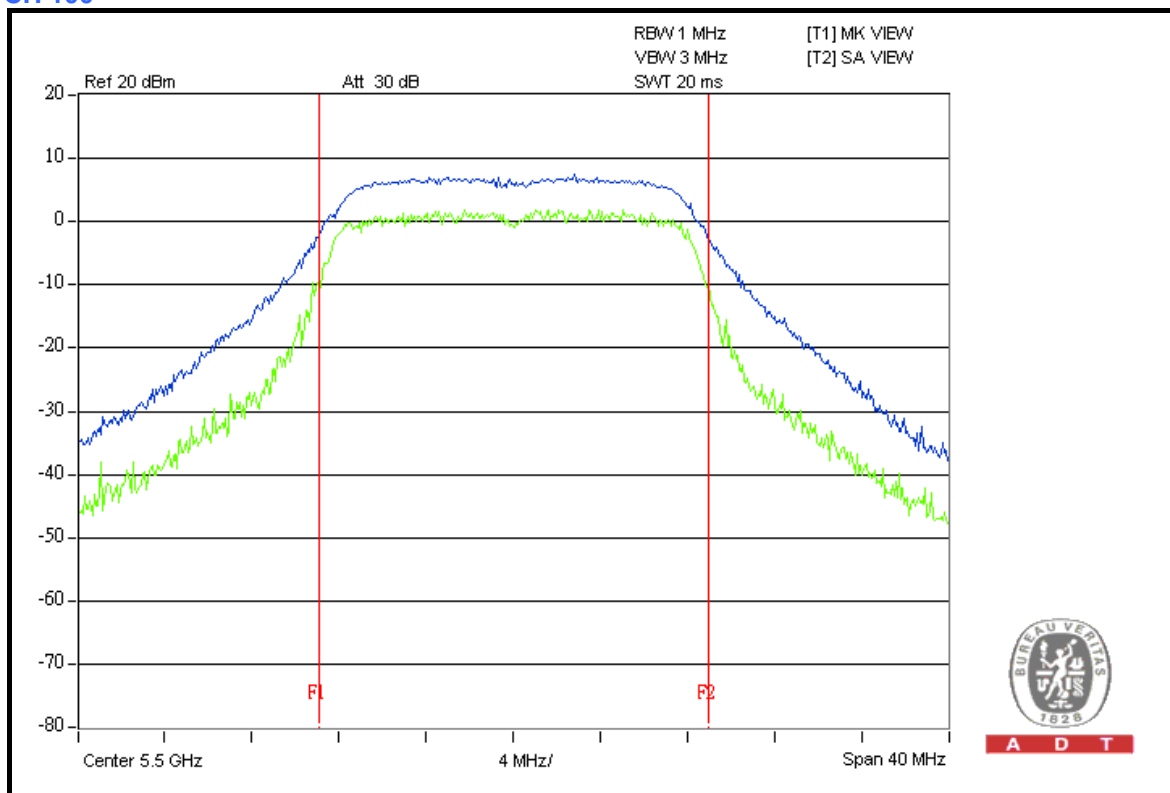


A D T



A D T

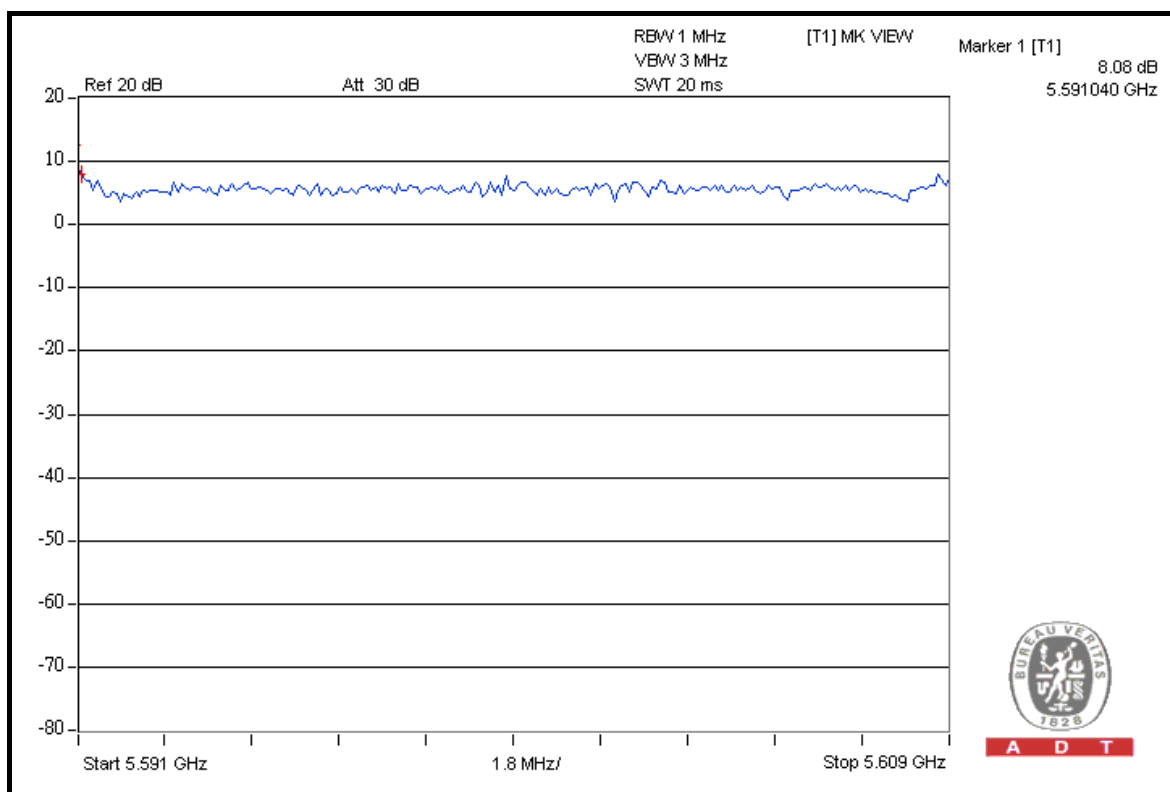
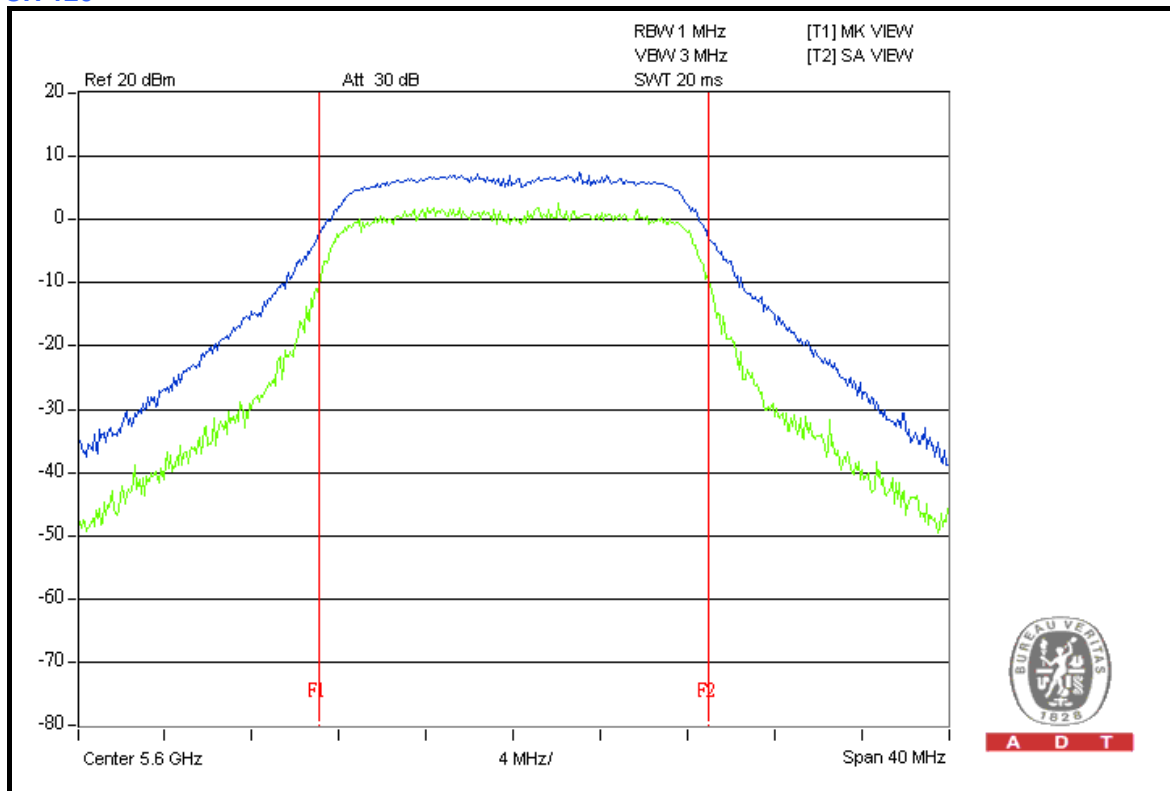
CH 100





A D T

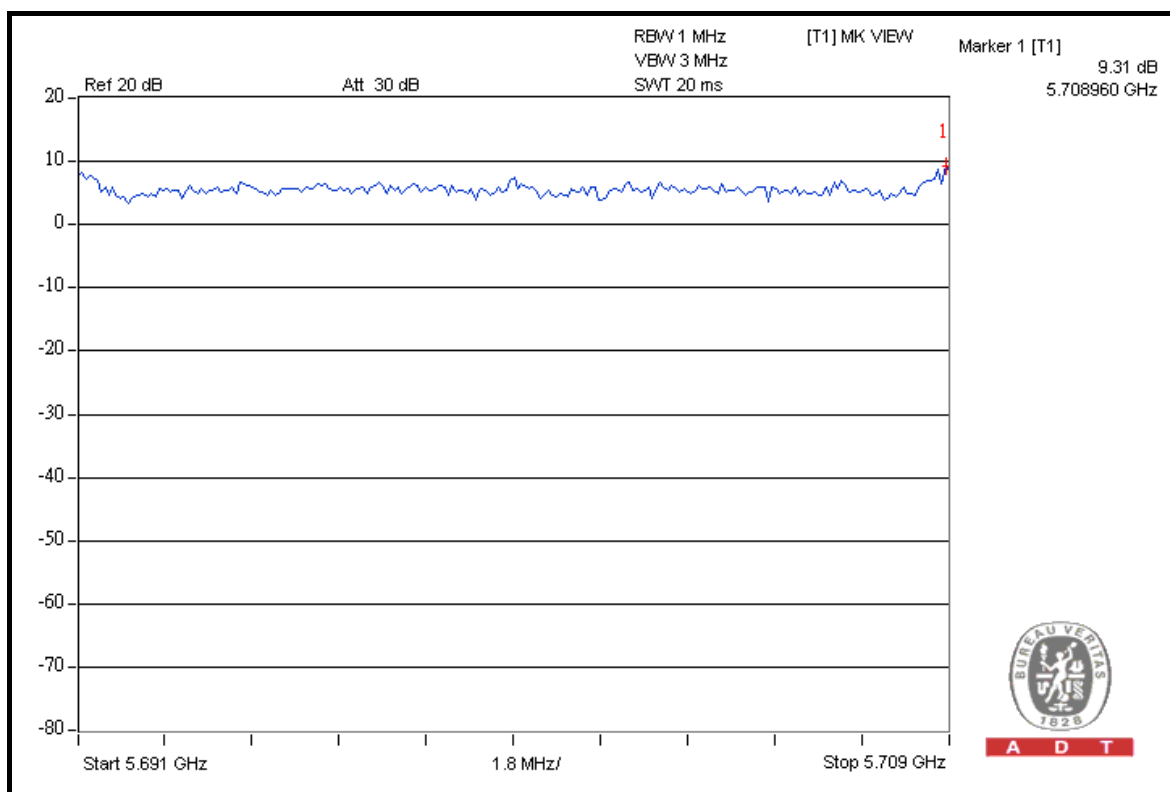
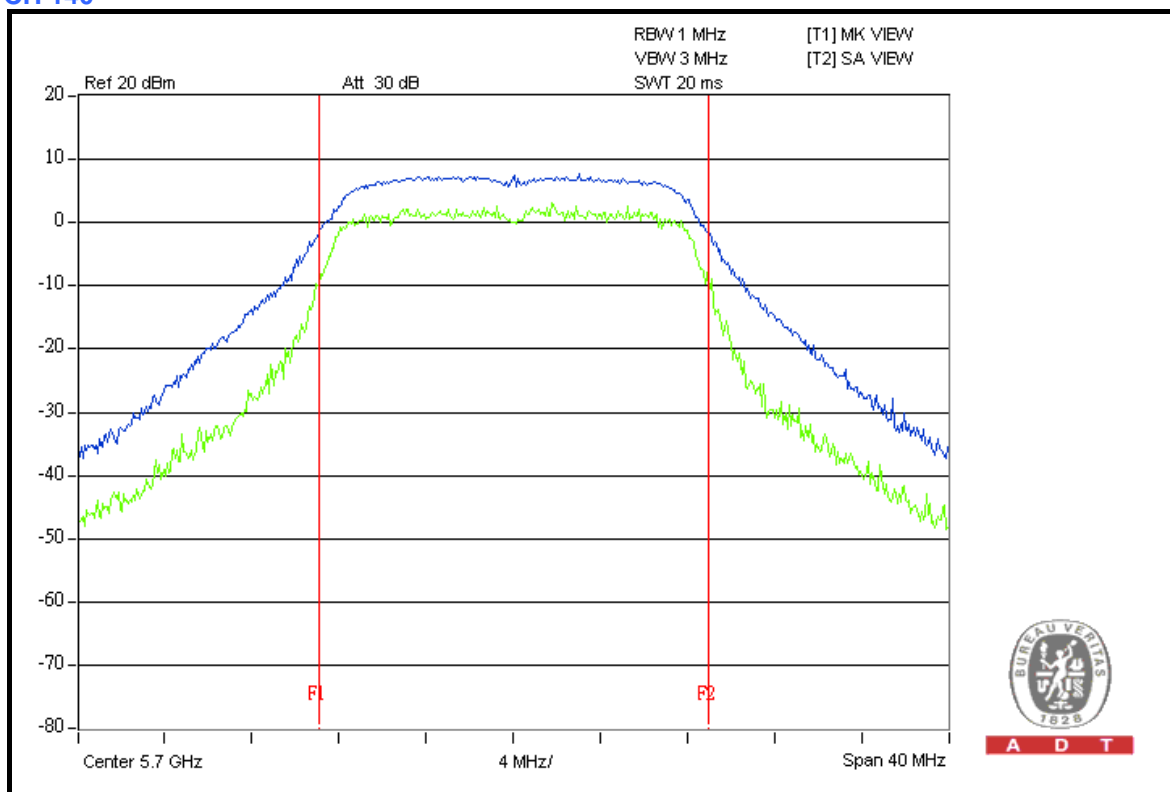
CH 120





A D T

CH 140

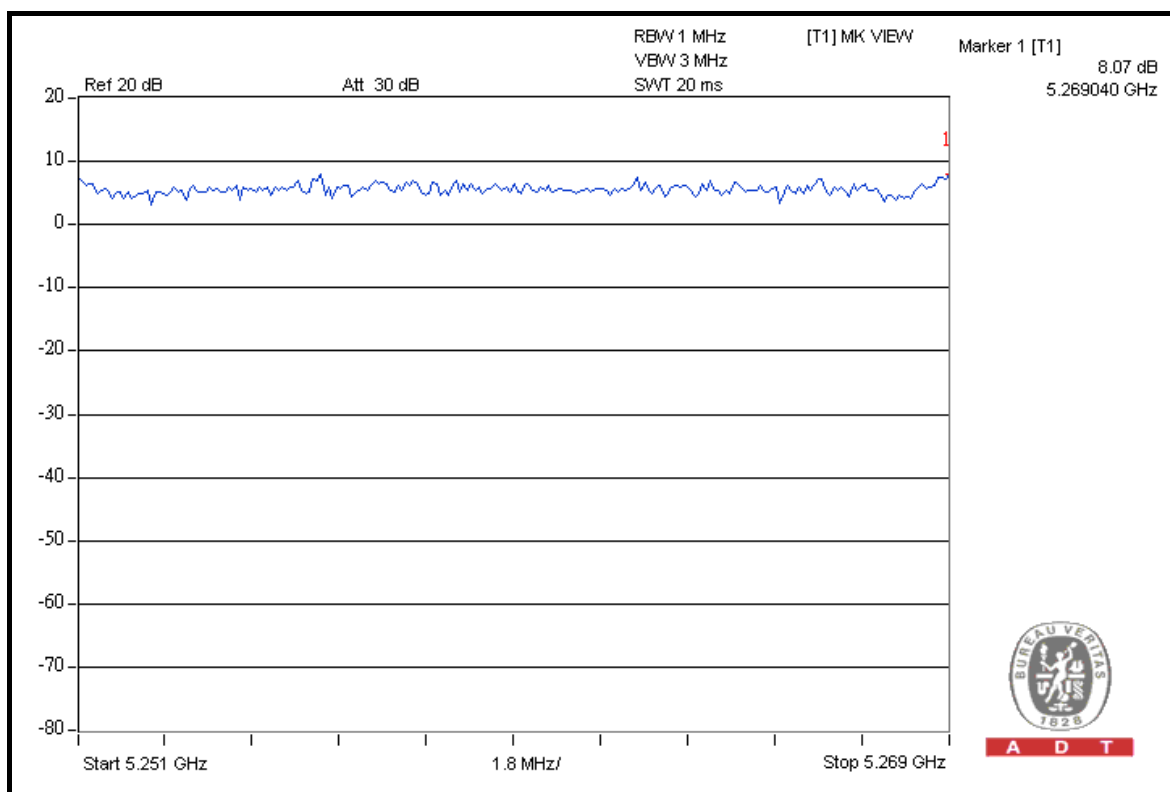
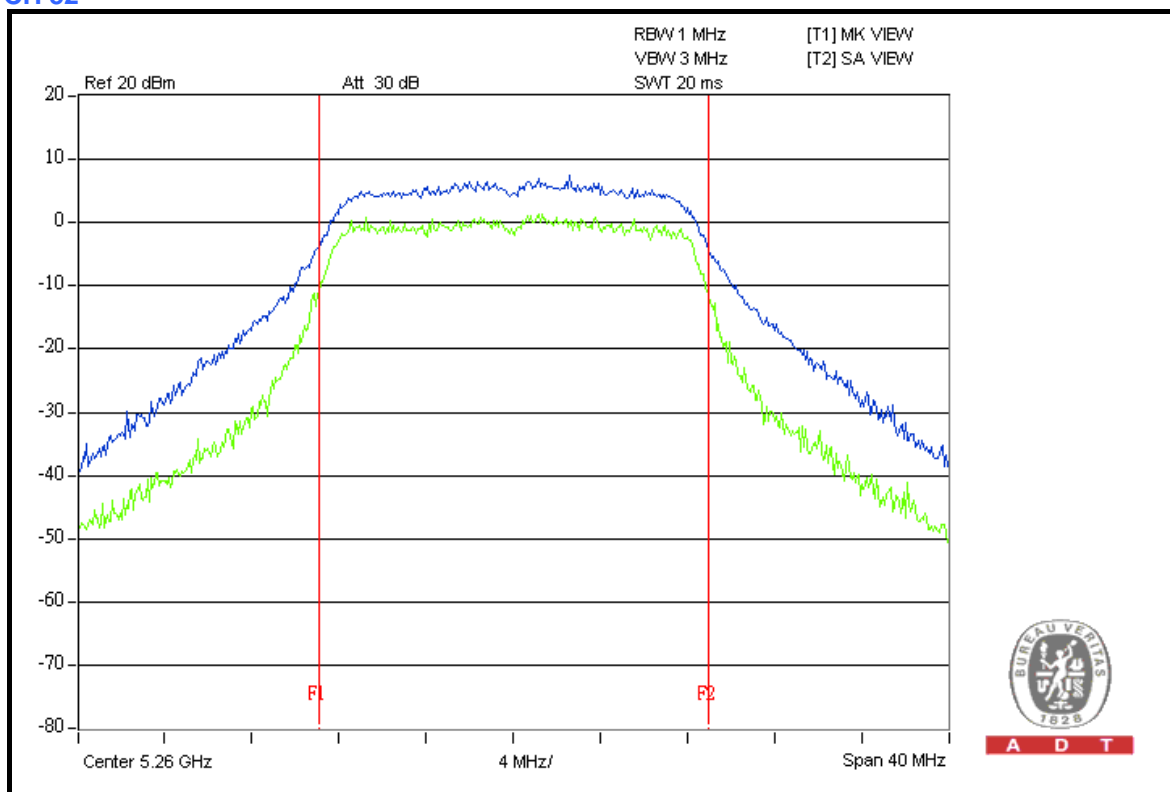




A D T

FOR CHAIN 1:

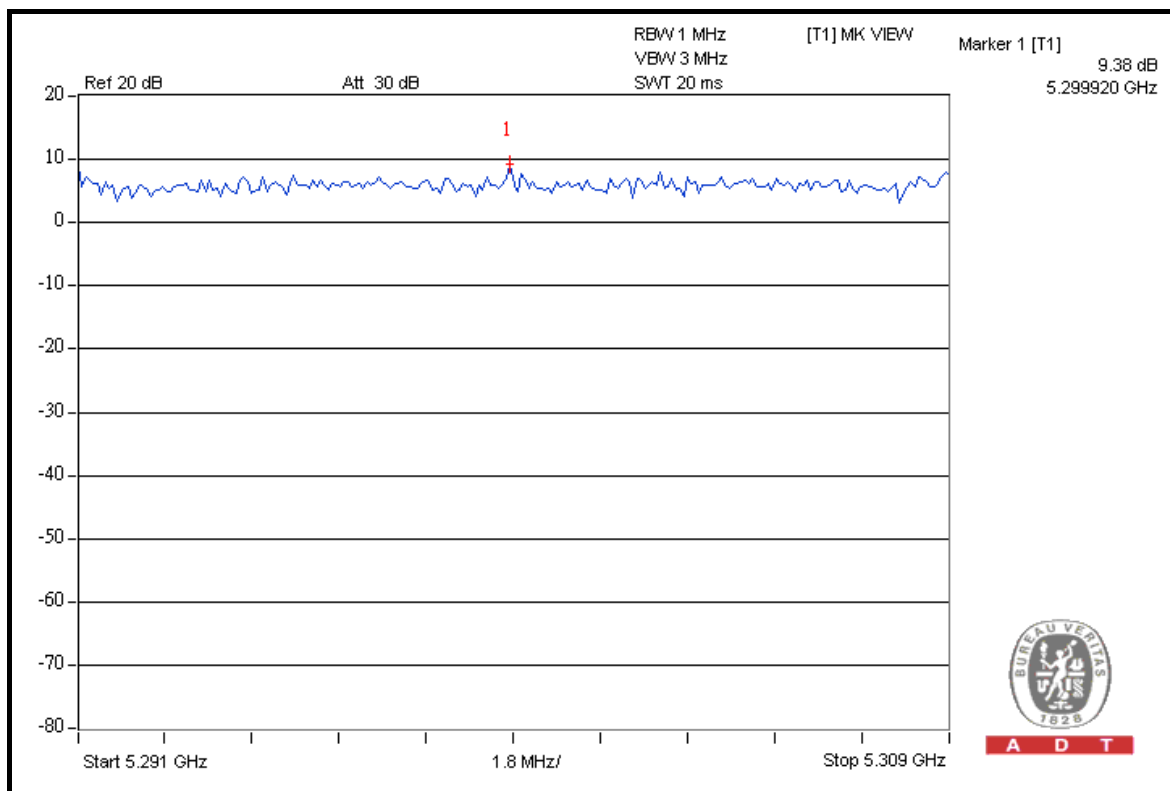
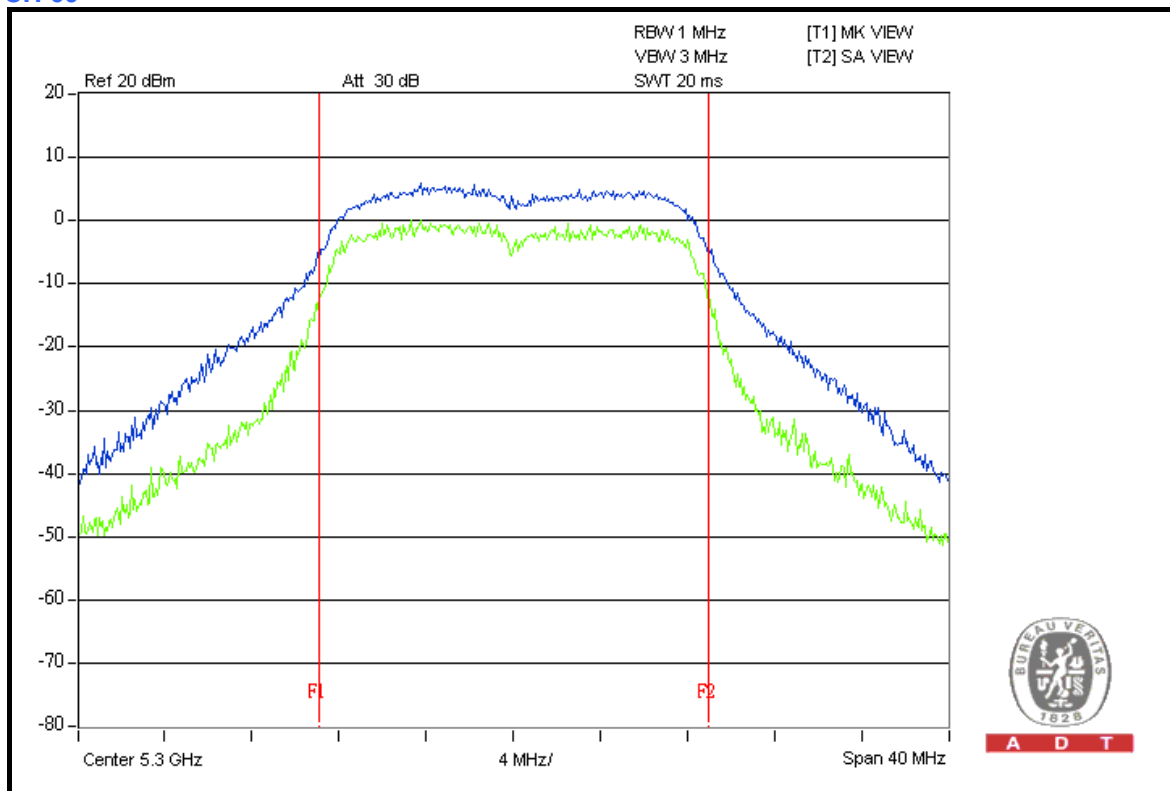
CH 52





A D T

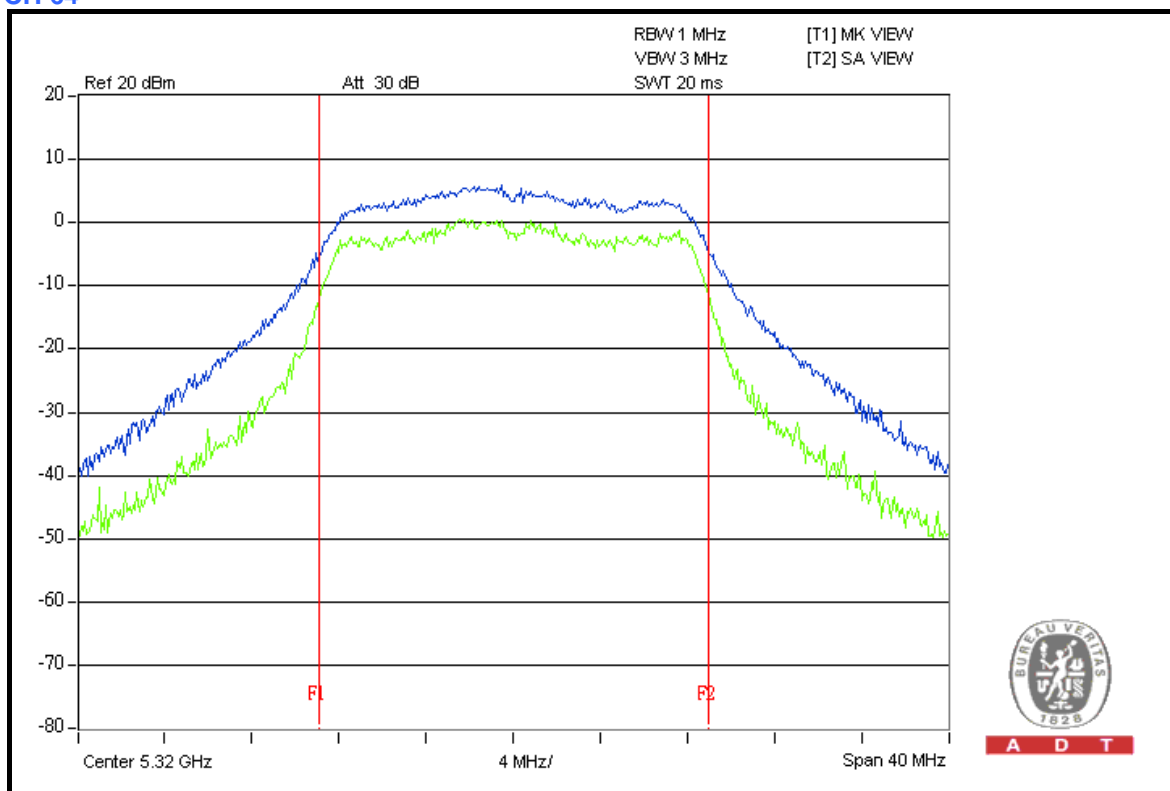
CH 60



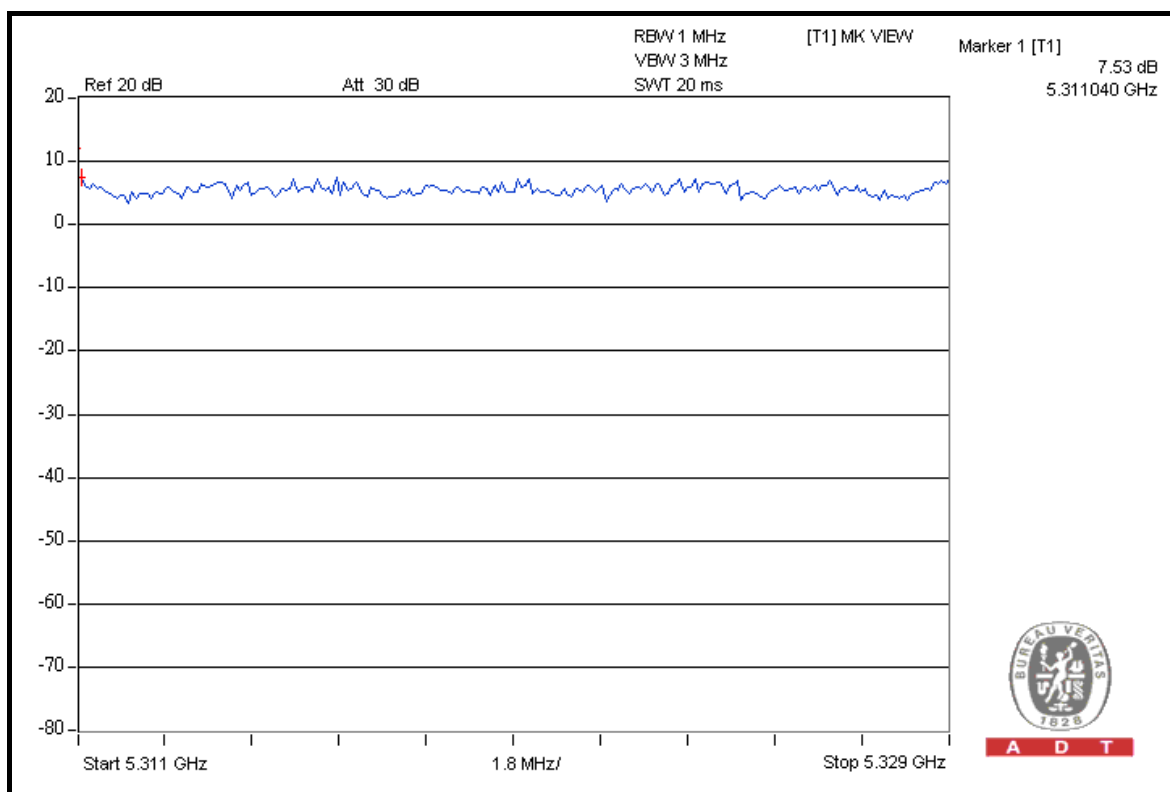


A D T

CH 64



A D T

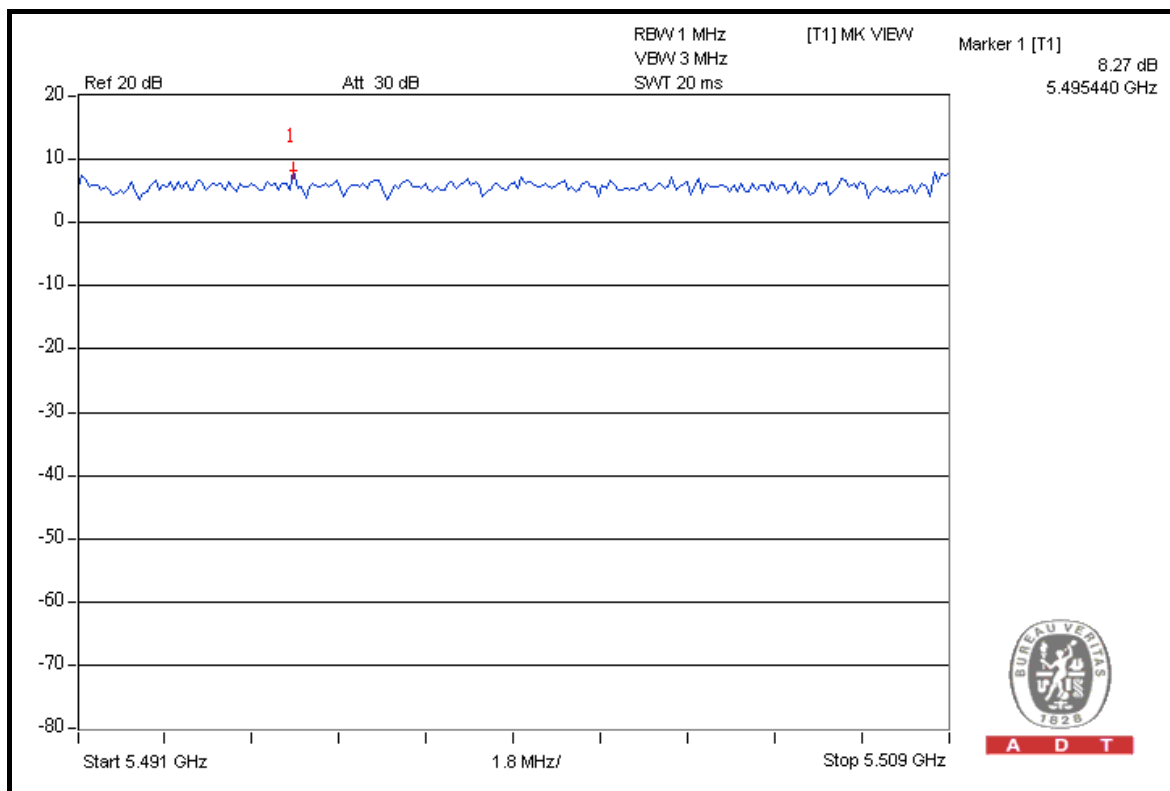
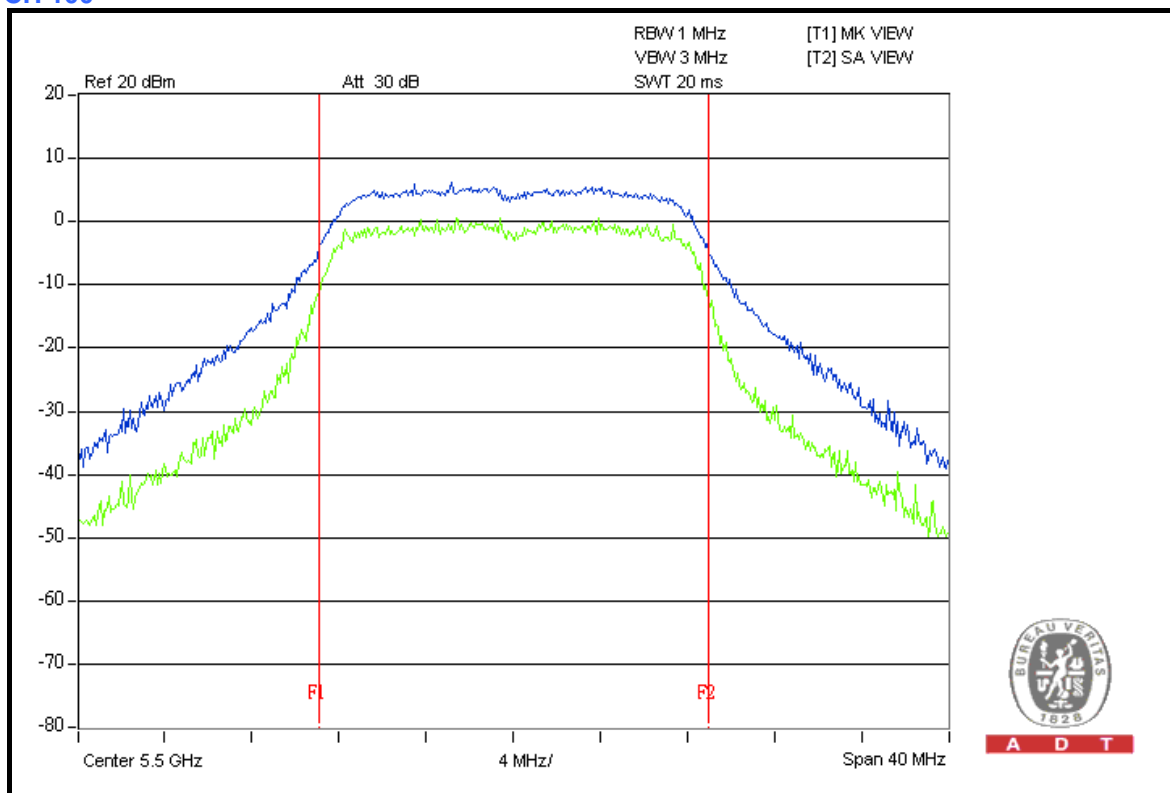


A D T



A D T

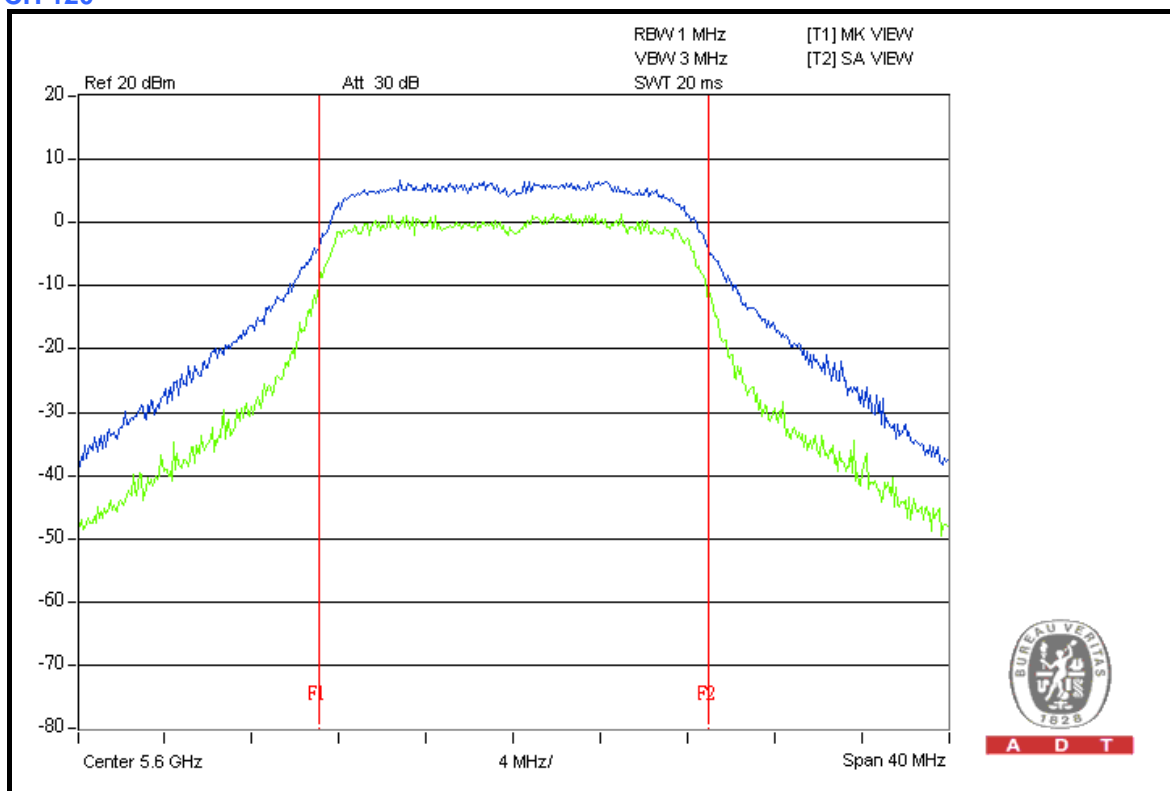
CH 100



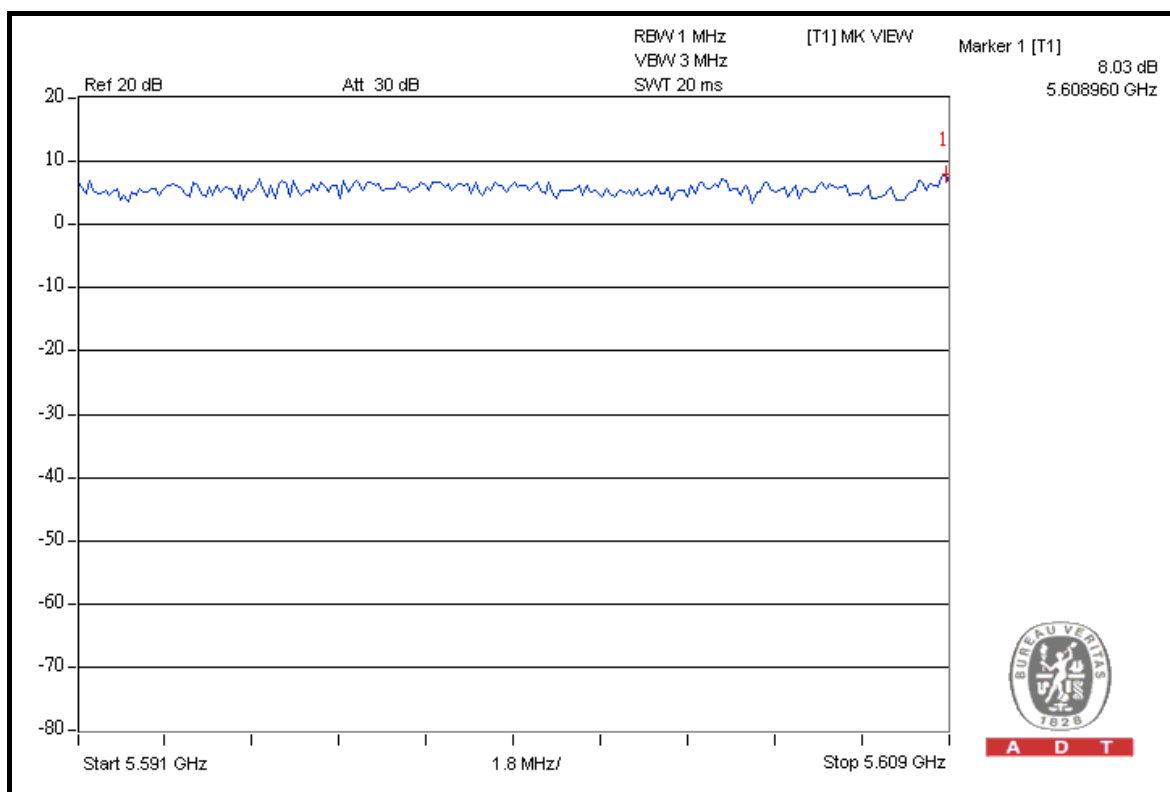


A D T

CH 120



A D T

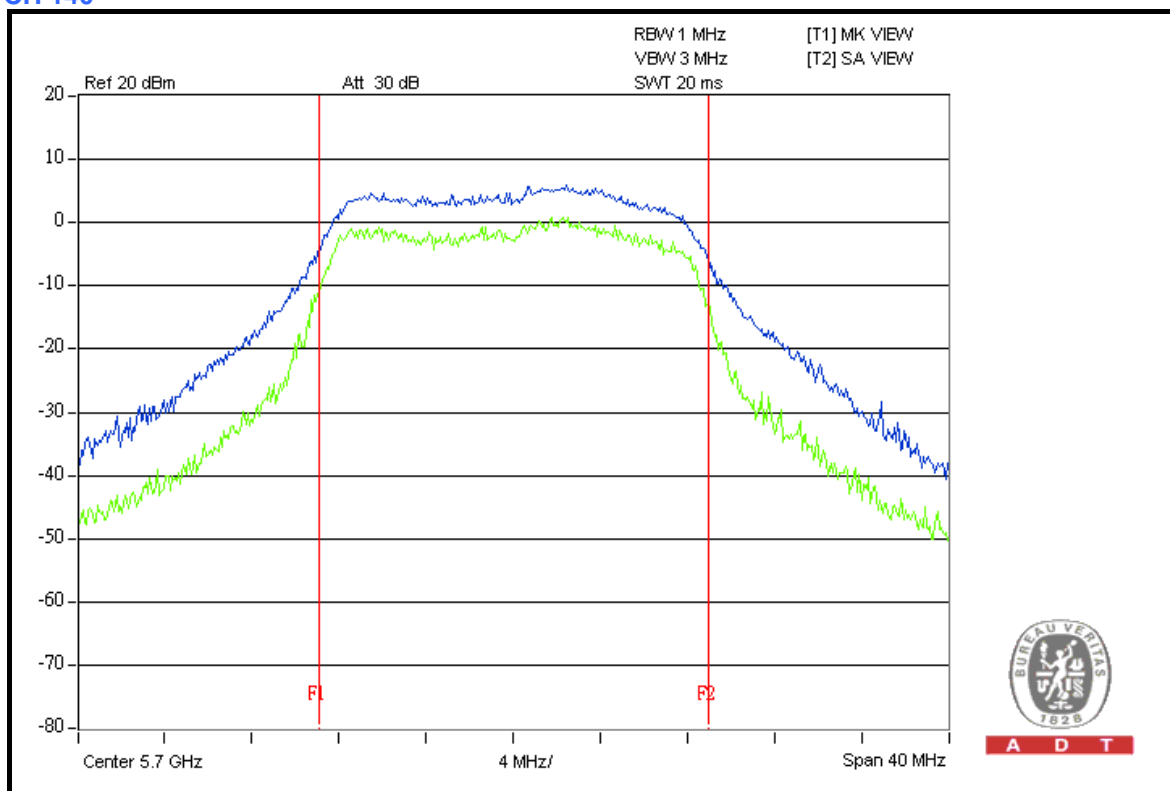


A D T

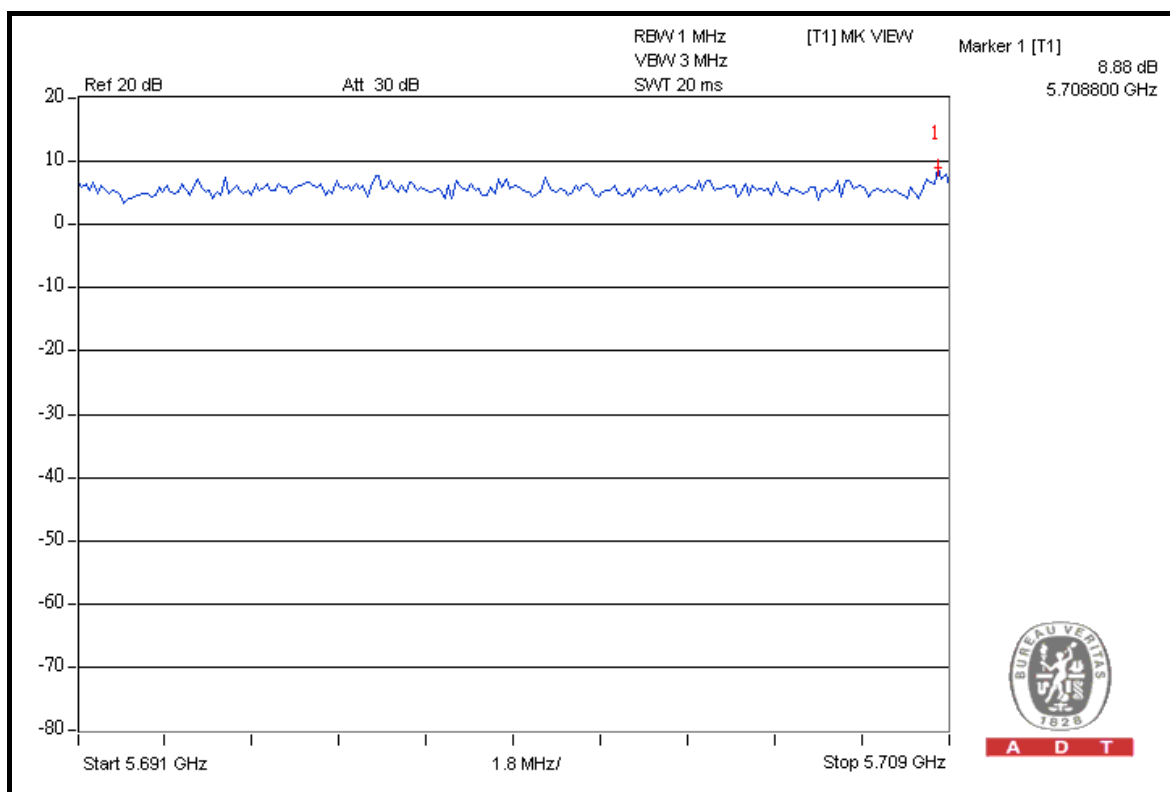


A D T

CH 140



A D T



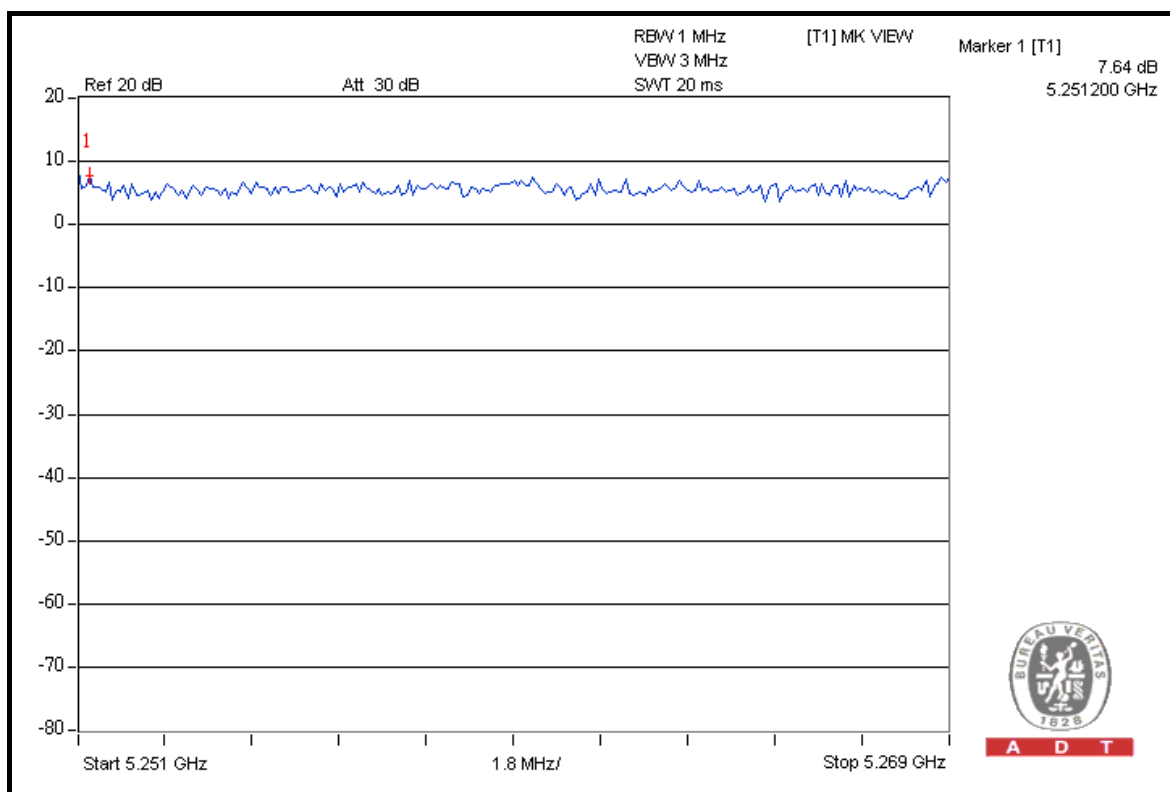
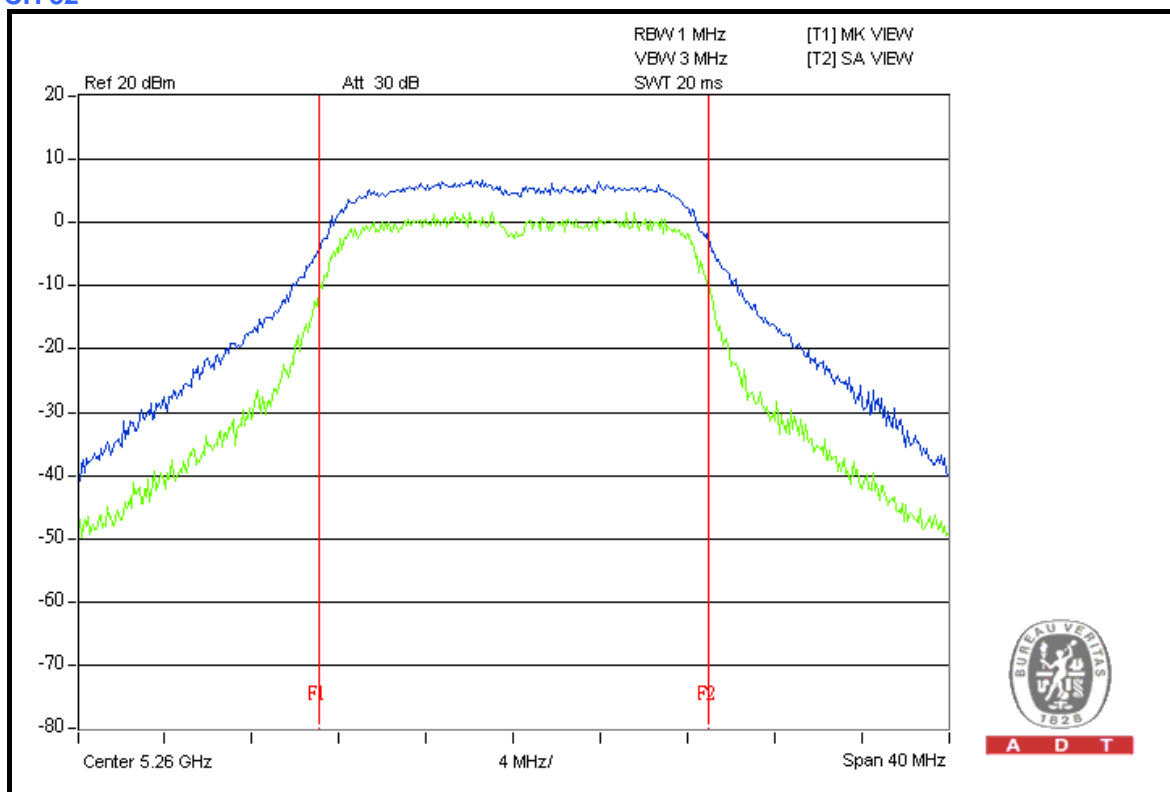
A D T



A D T

FOR CHAIN 2:

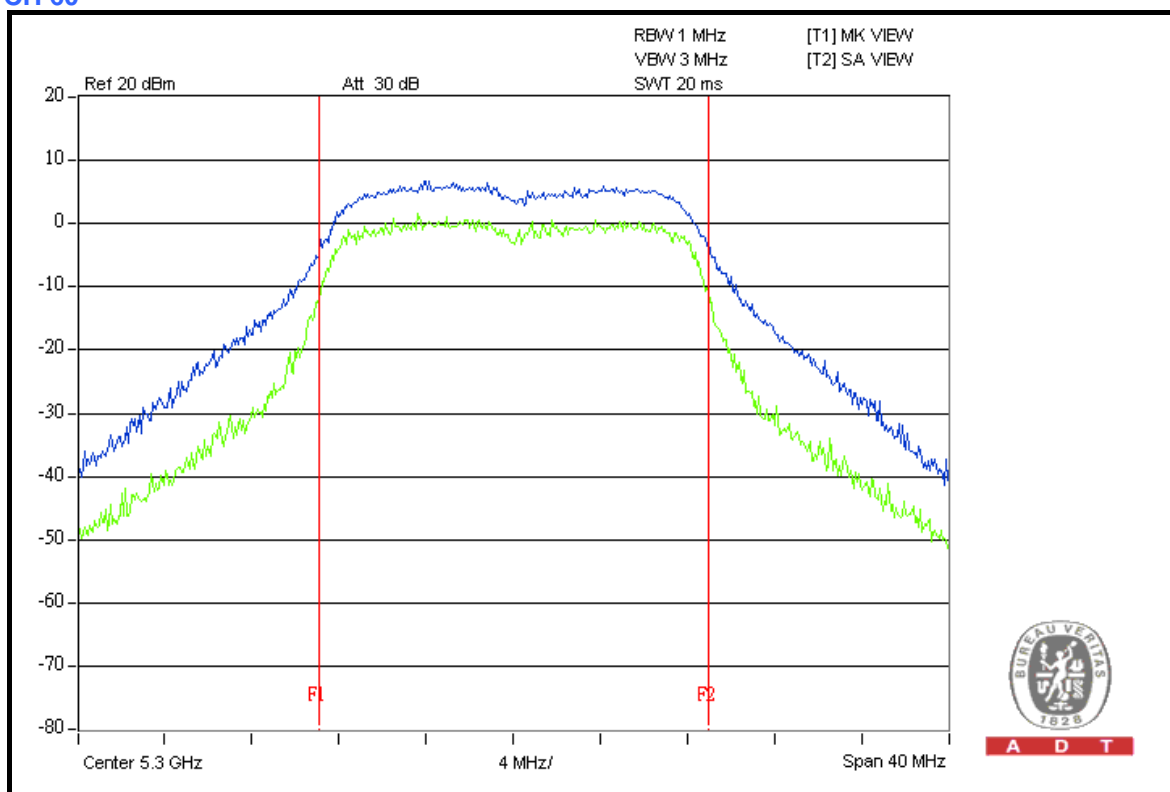
CH 52



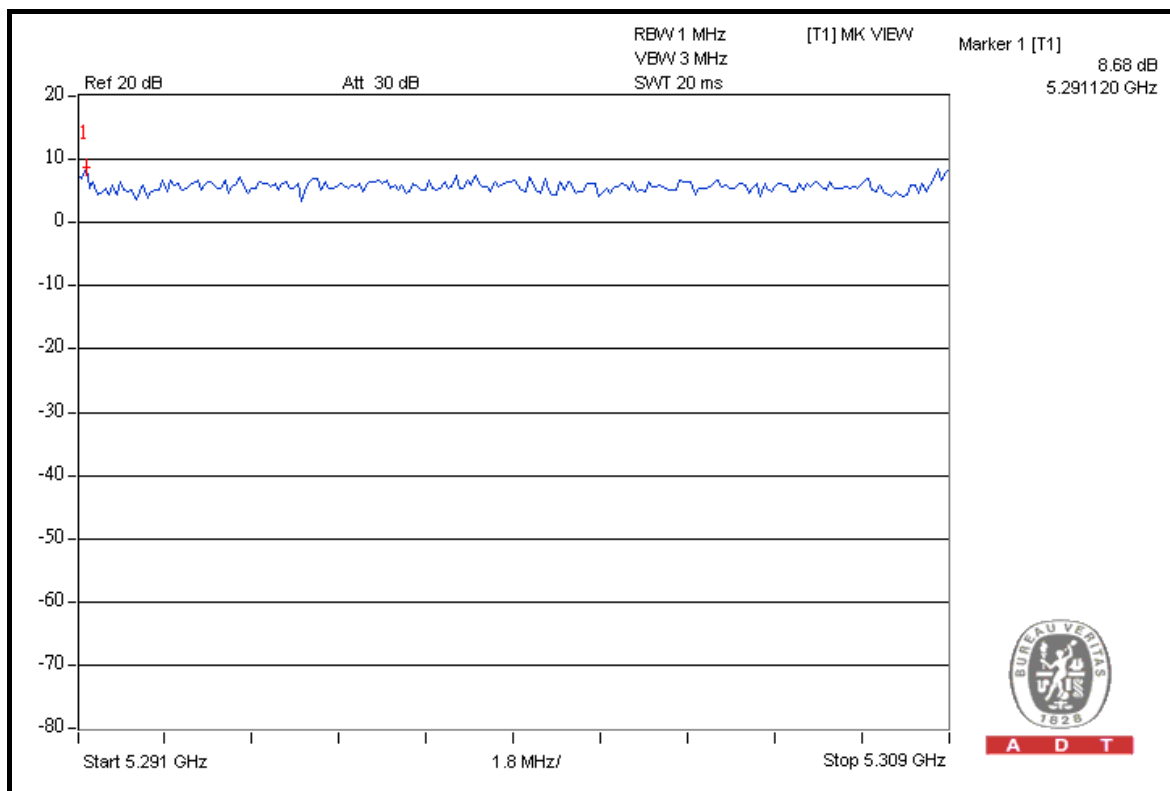


A D T

CH 60



A D T

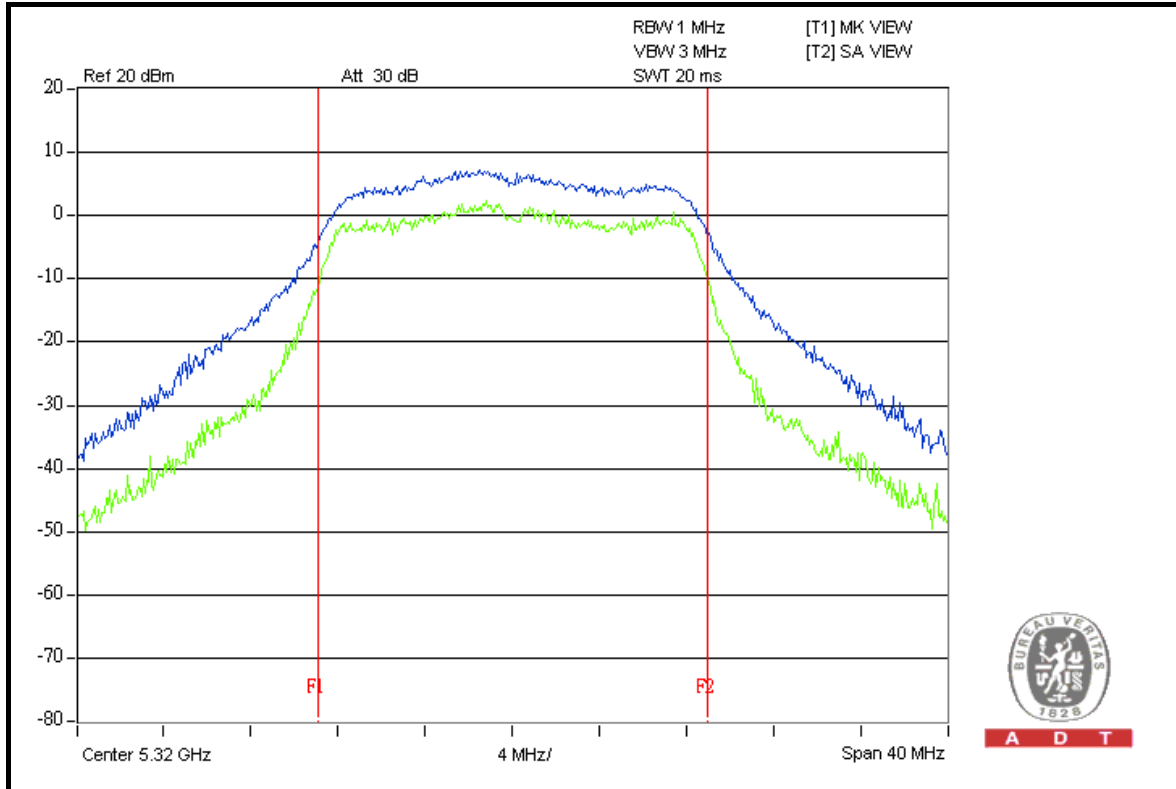


A D T

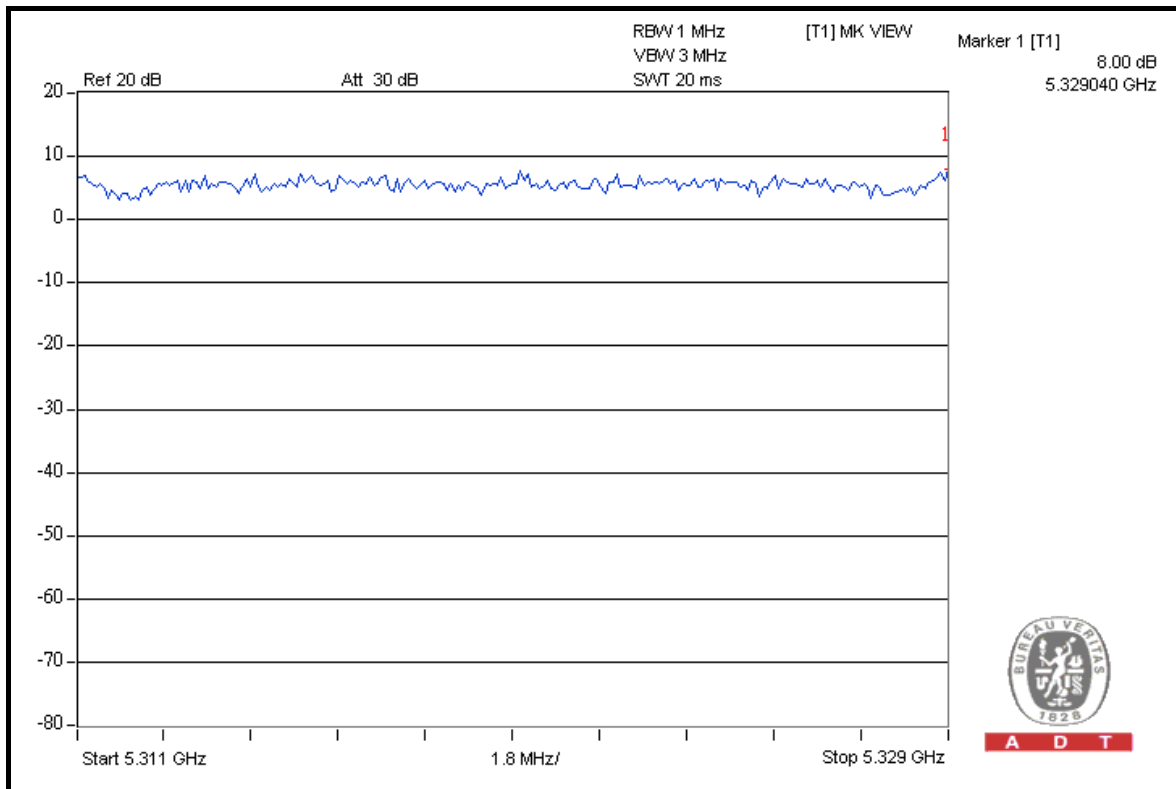


A D T

CH 64



A D T

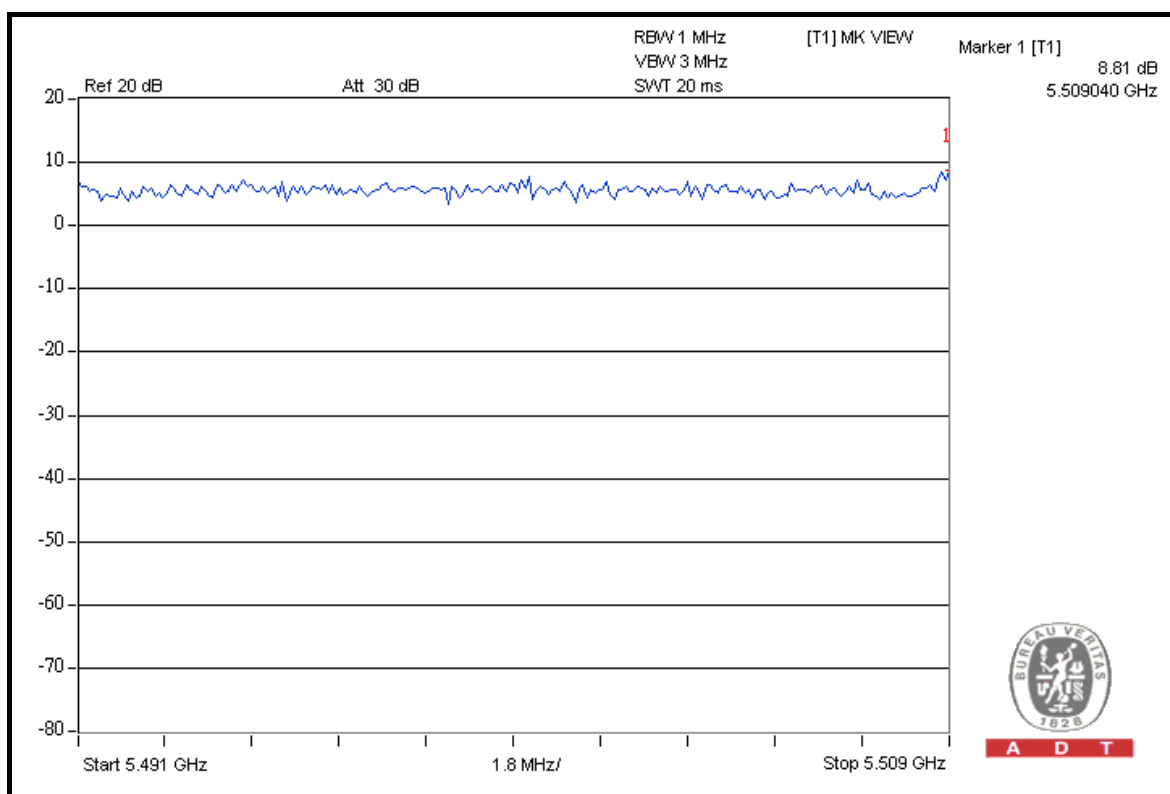
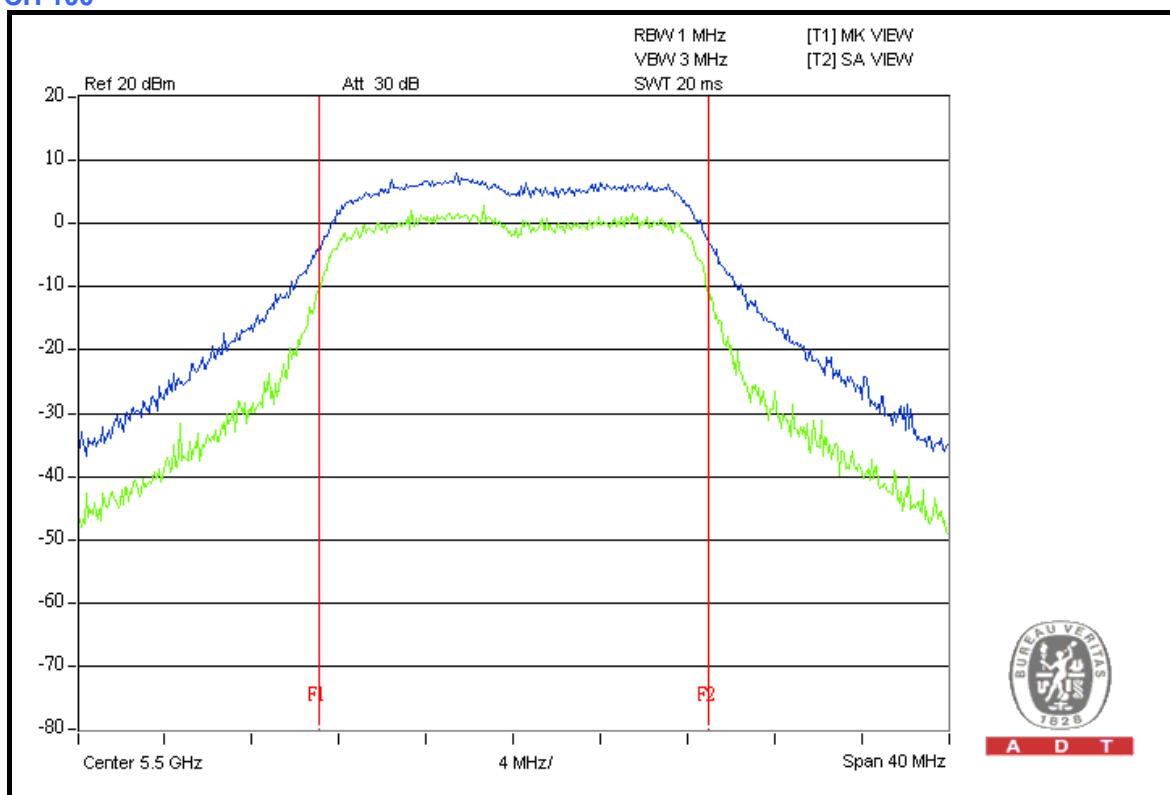


A D T



A D T

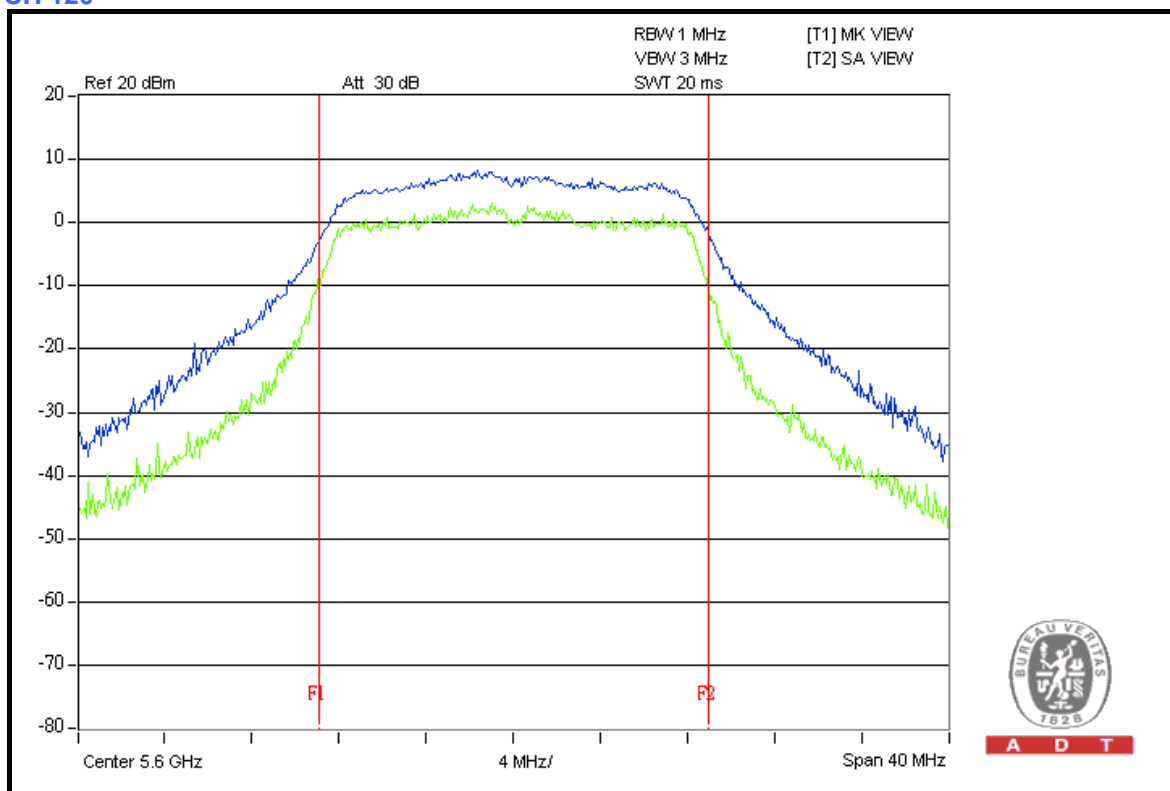
CH 100



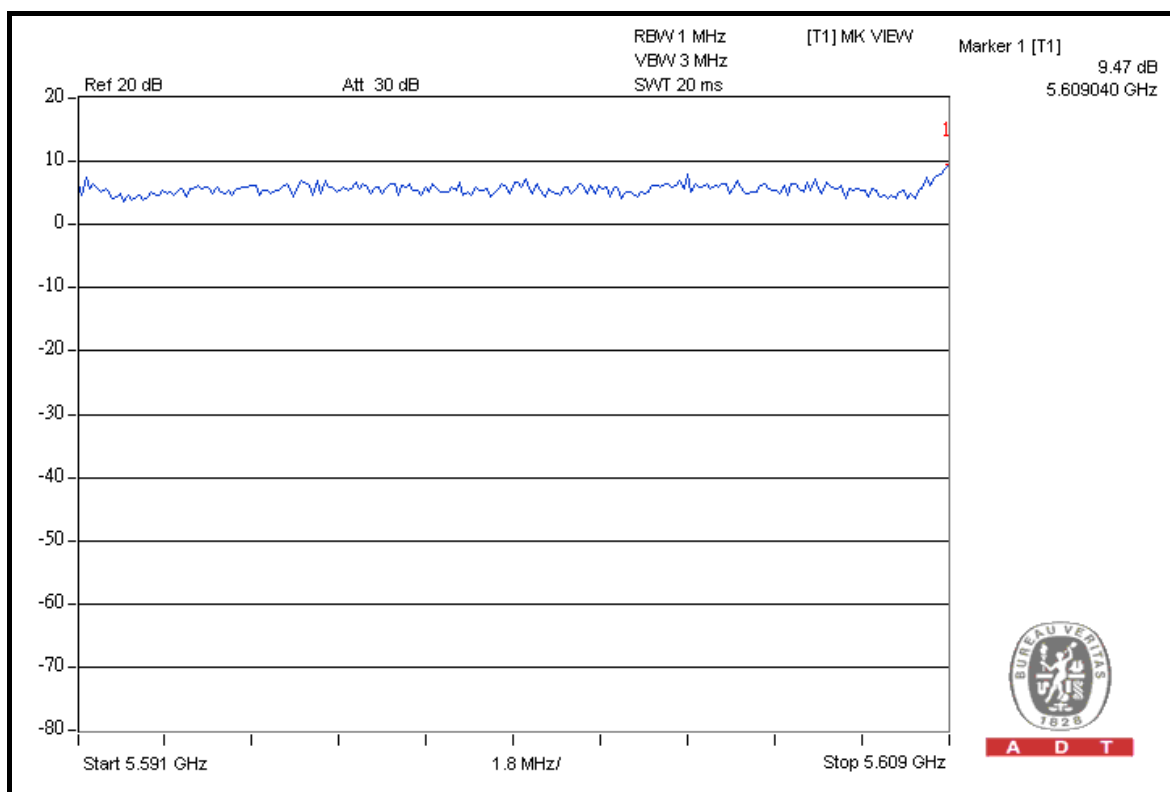


A D T

CH 120



A D T

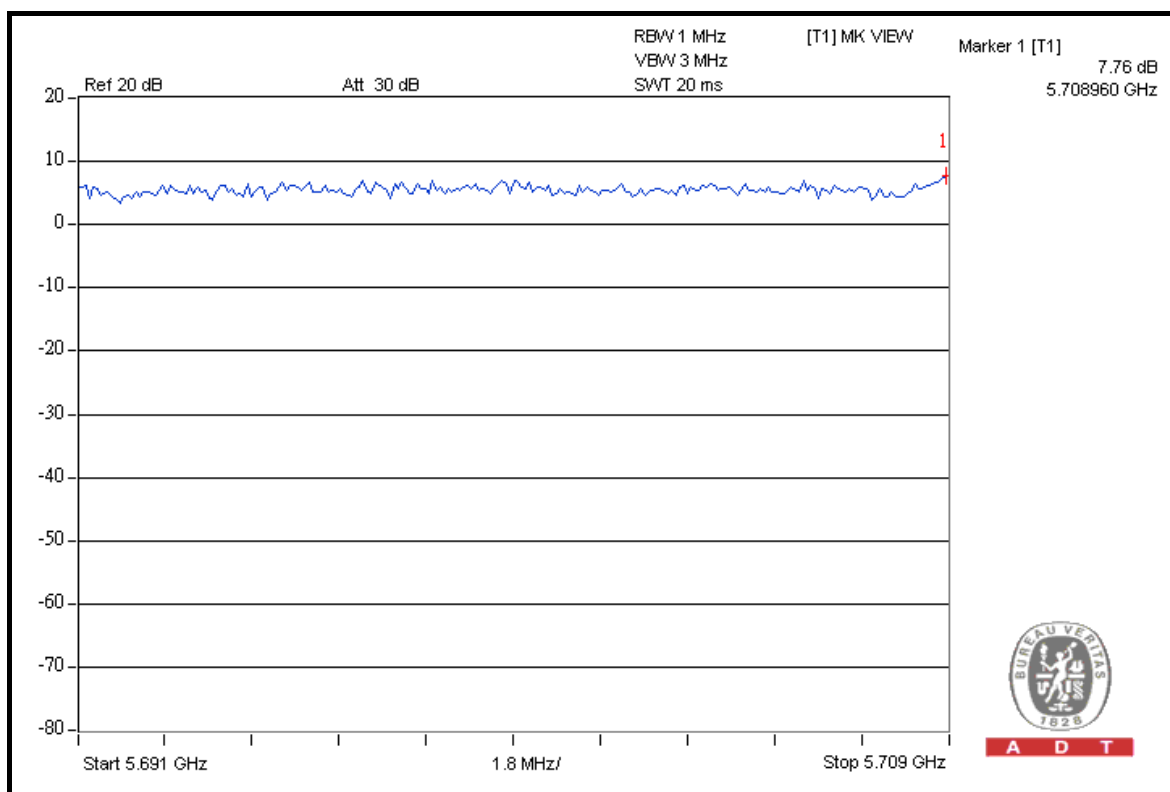
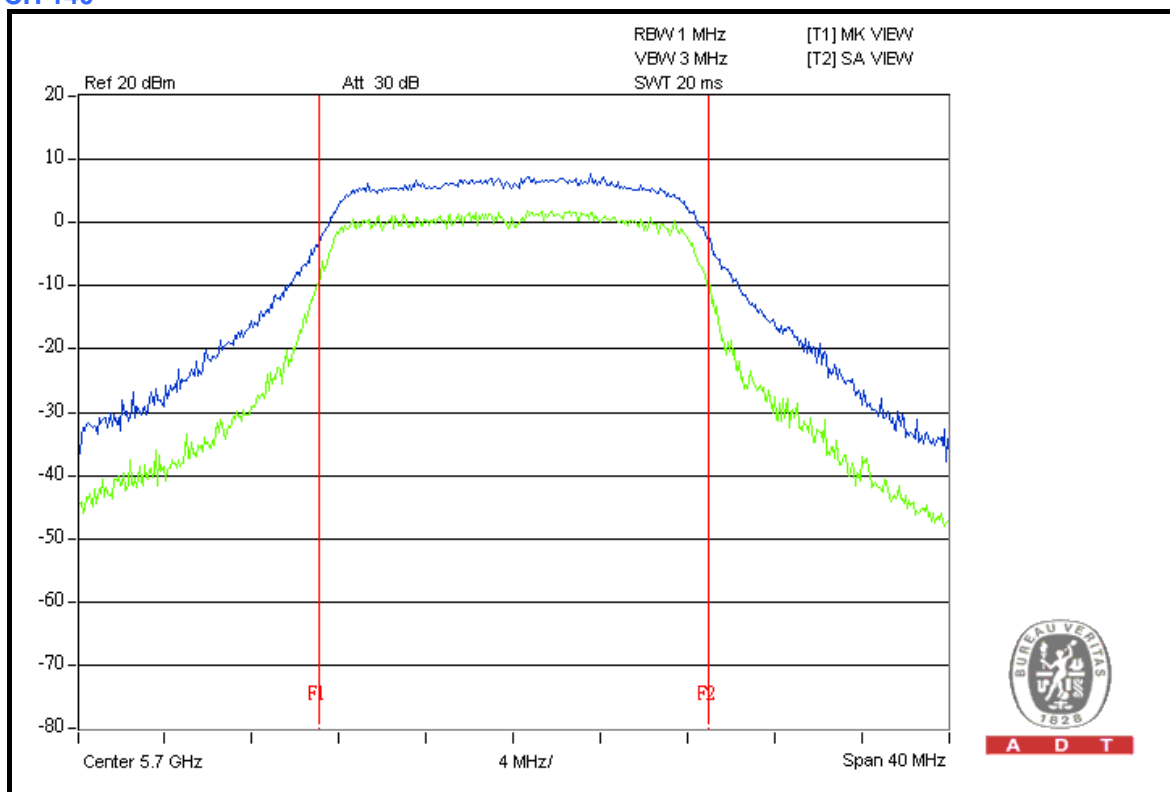


A D T



A D T

CH 140





DRAFT 802.11n (20MHz) OFDM MODULATION

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

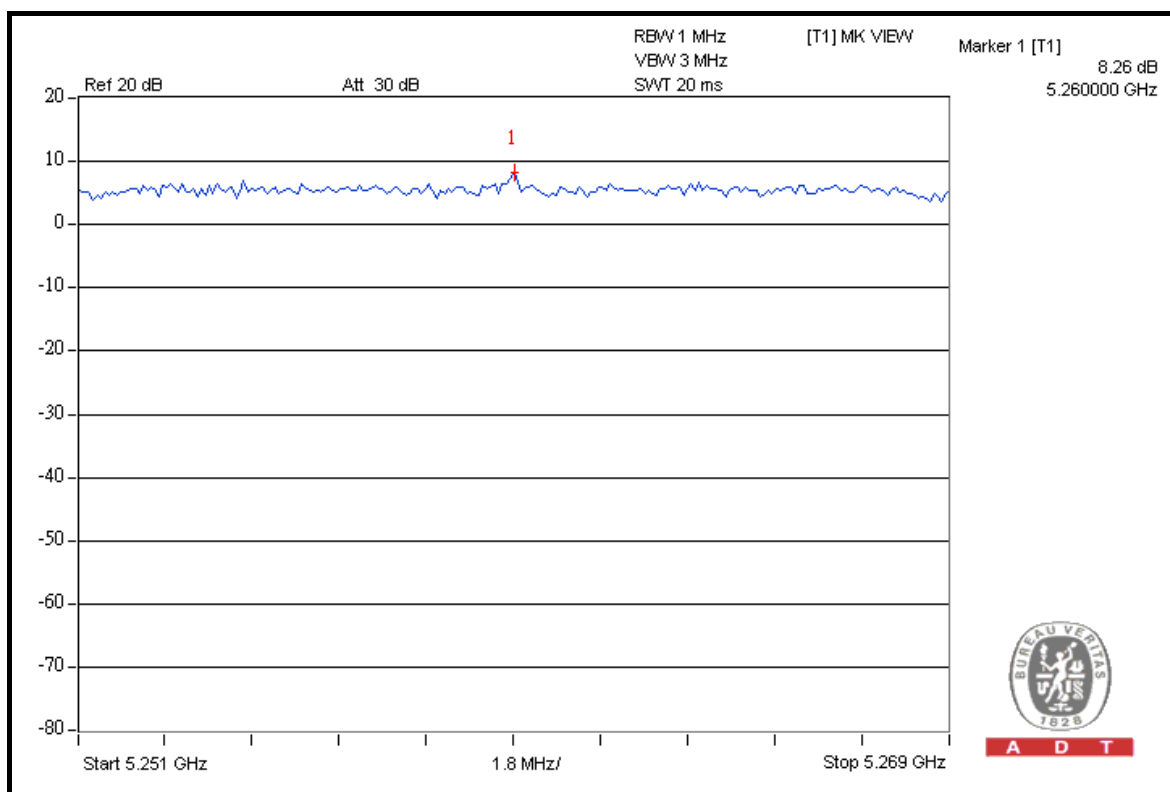
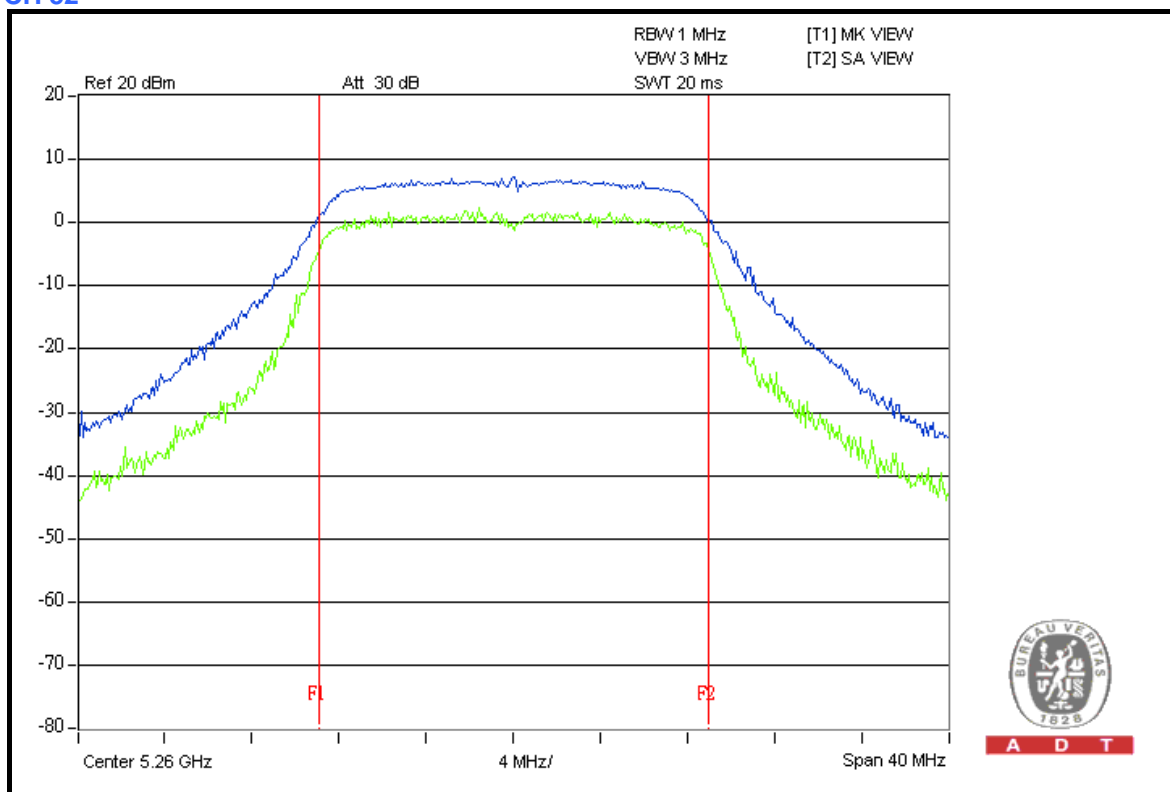
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)			PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
52	5260	8.26	7.10	7.44	13	PASS
60	5300	7.16	7.48	7.35	13	PASS
64	5320	6.89	7.18	8.08	13	PASS
100	5500	7.98	6.89	7.74	13	PASS
120	5600	6.92	7.04	7.61	13	PASS
140	5700	8.45	7.07	7.81	13	PASS



A D T

FOR CHAIN 0:

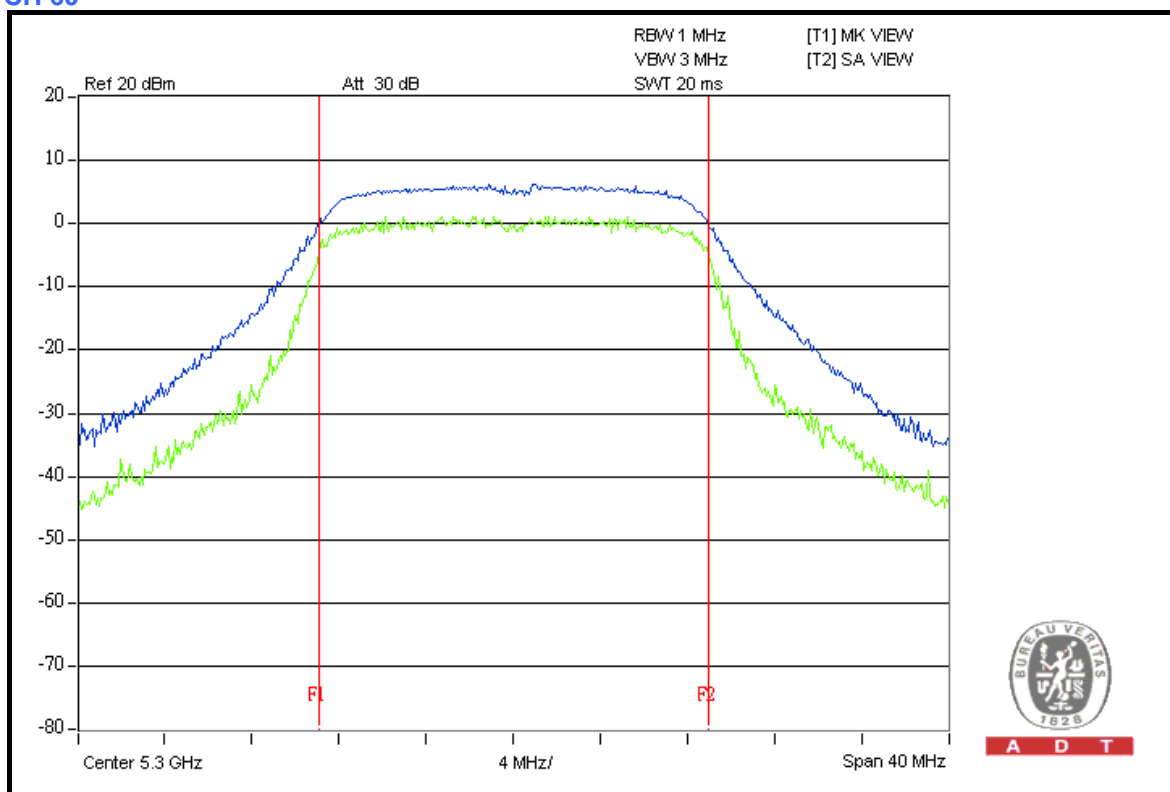
CH 52



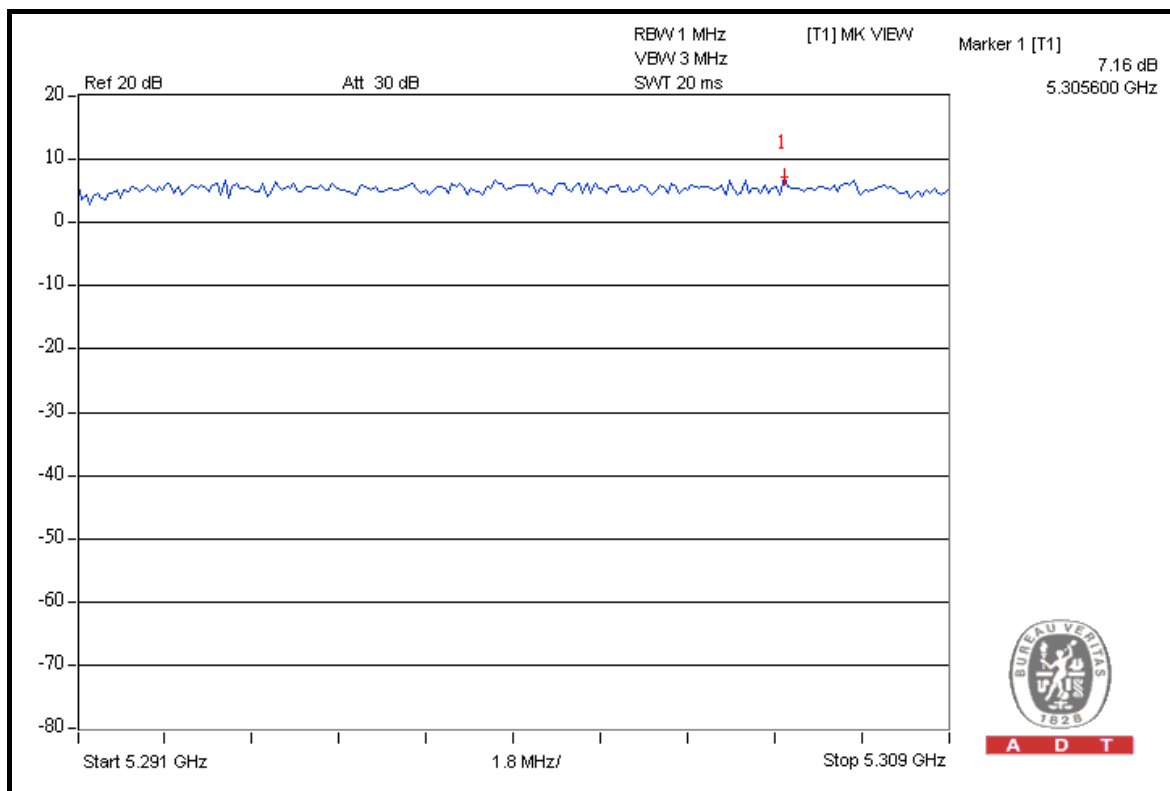


A D T

CH 60



A D T

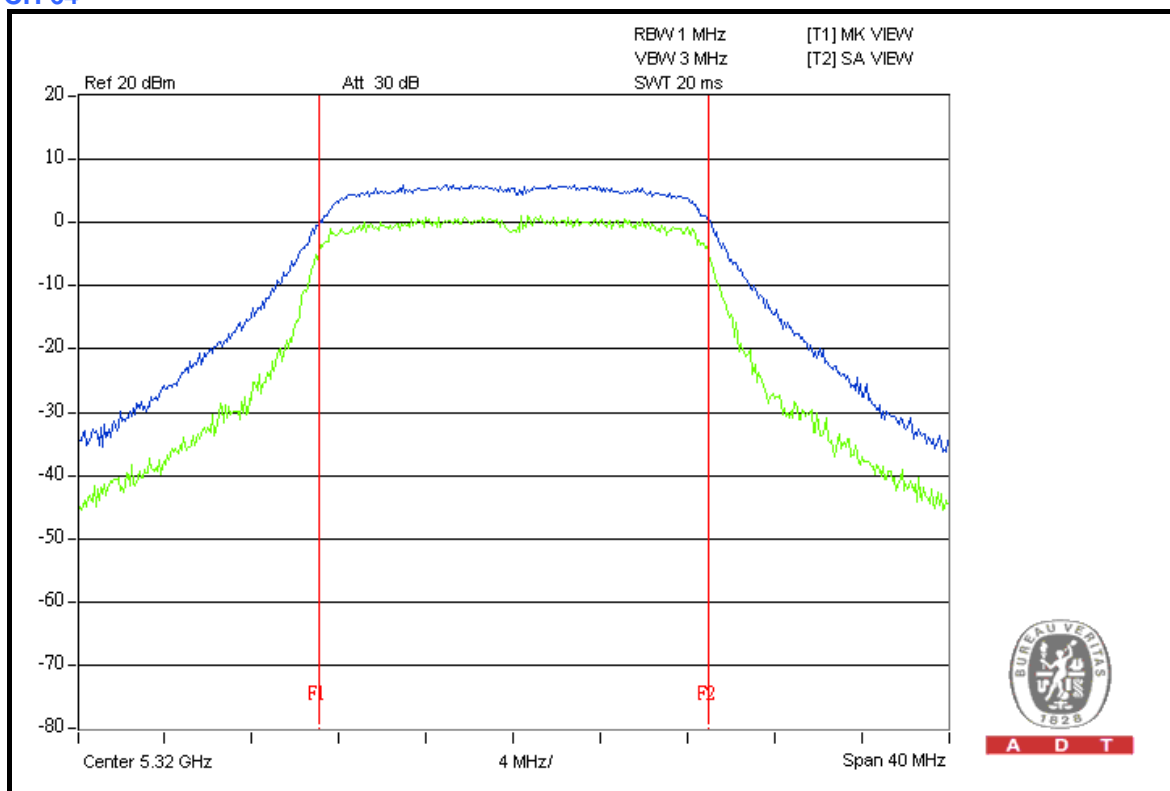


A D T

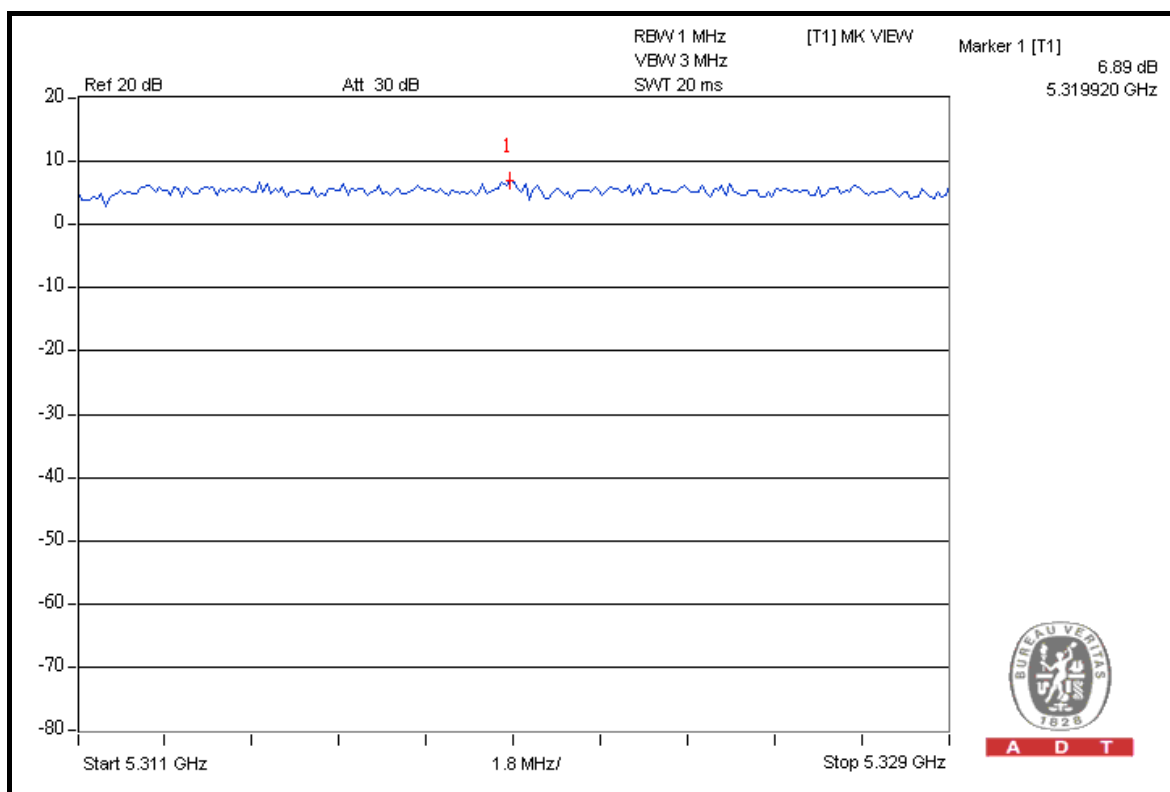


A D T

CH 64



A D T

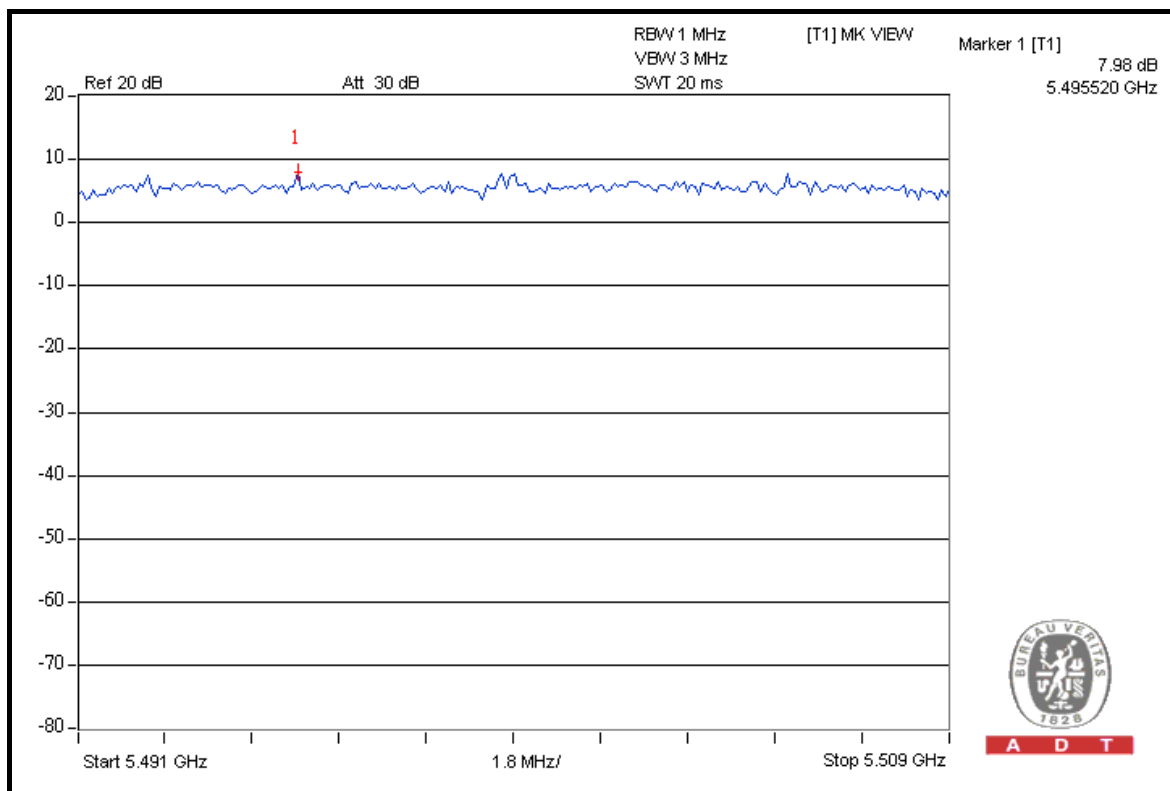
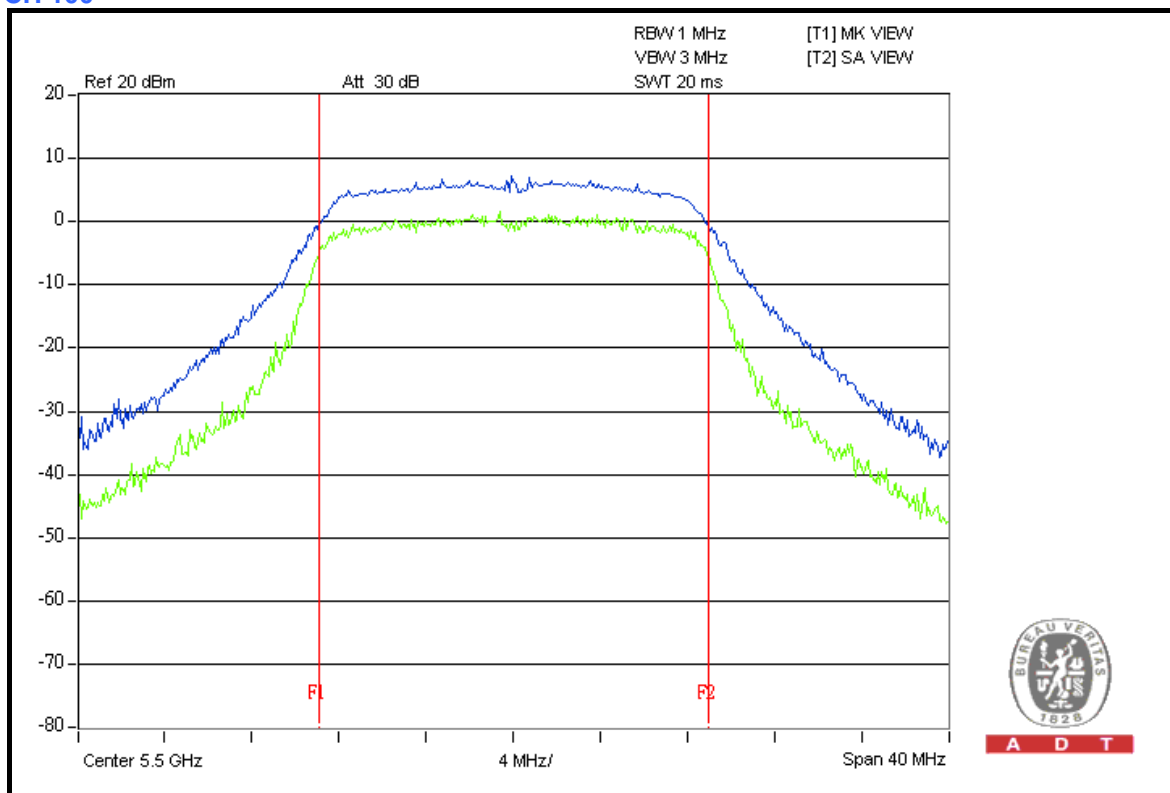


A D T



A D T

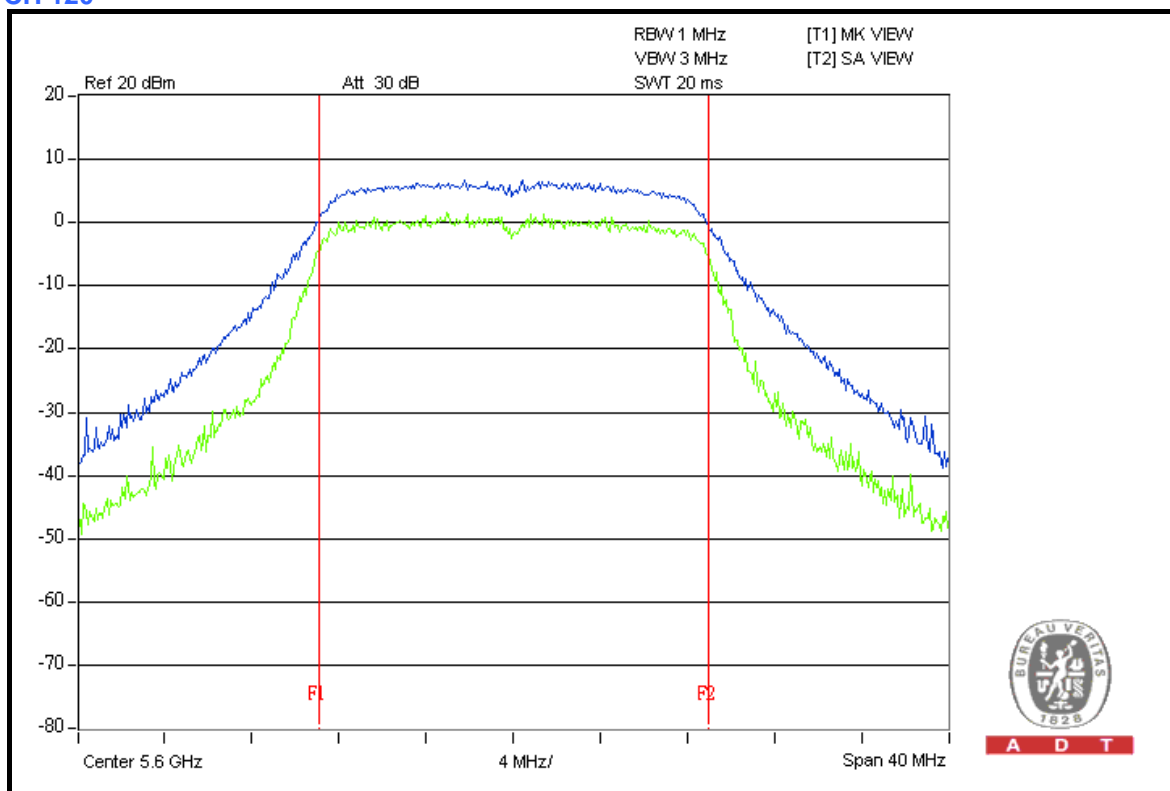
CH 100



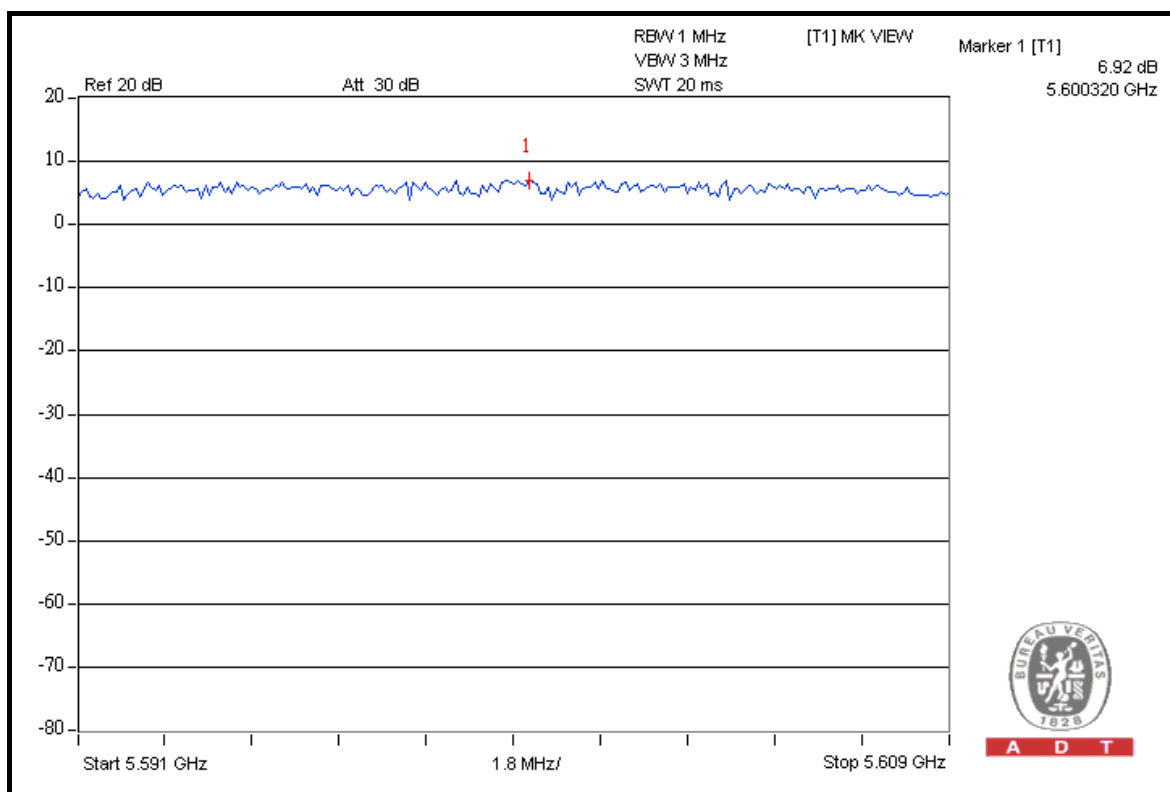


A D T

CH 120



A D T

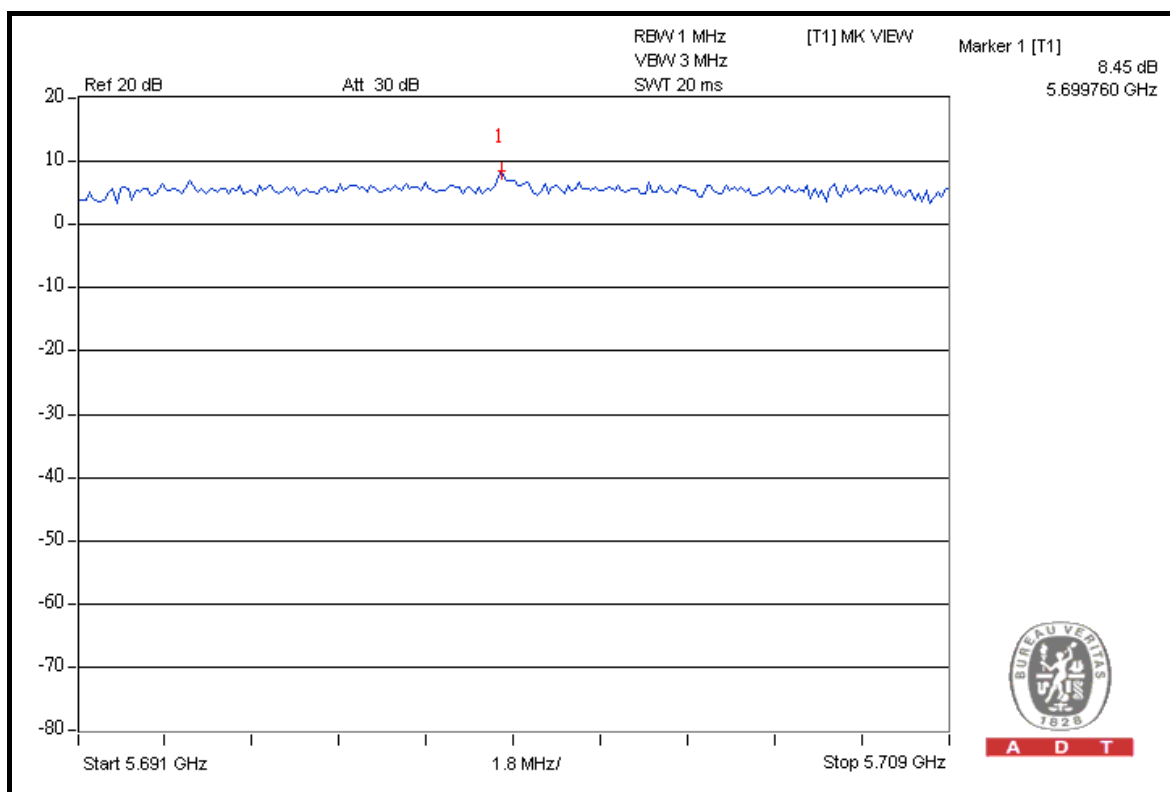
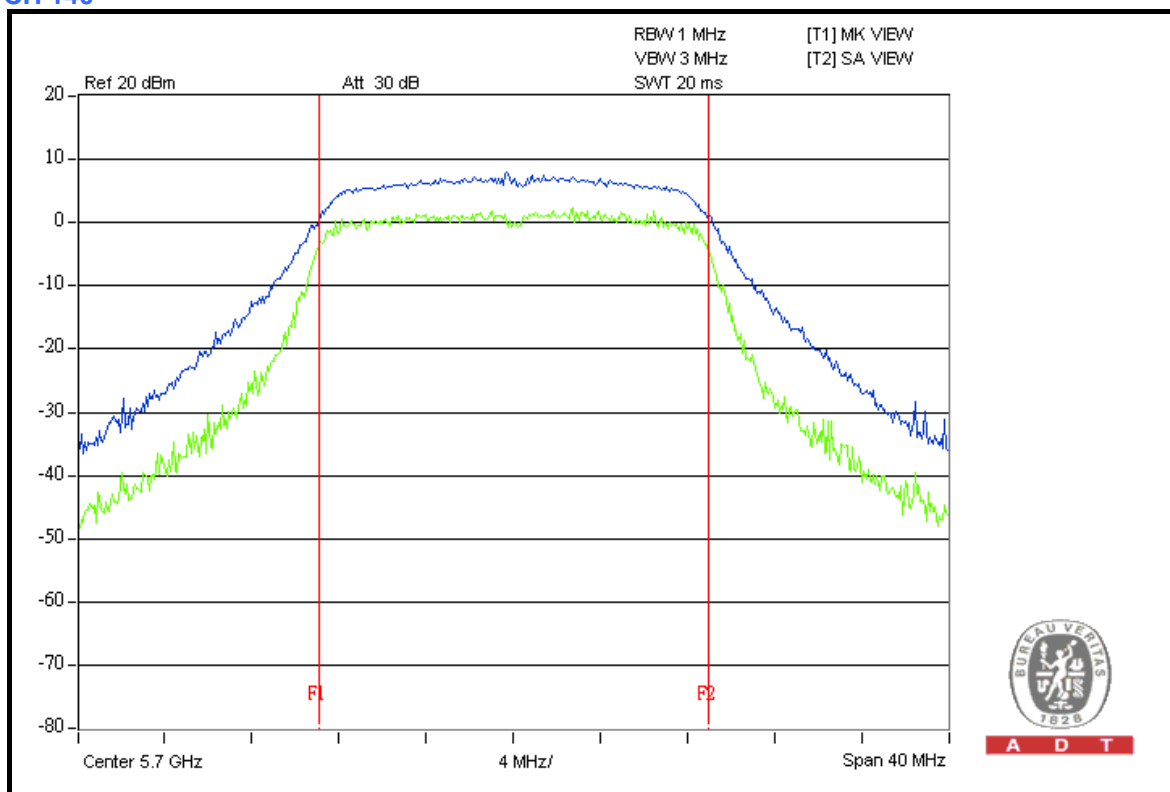


A D T



A D T

CH 140

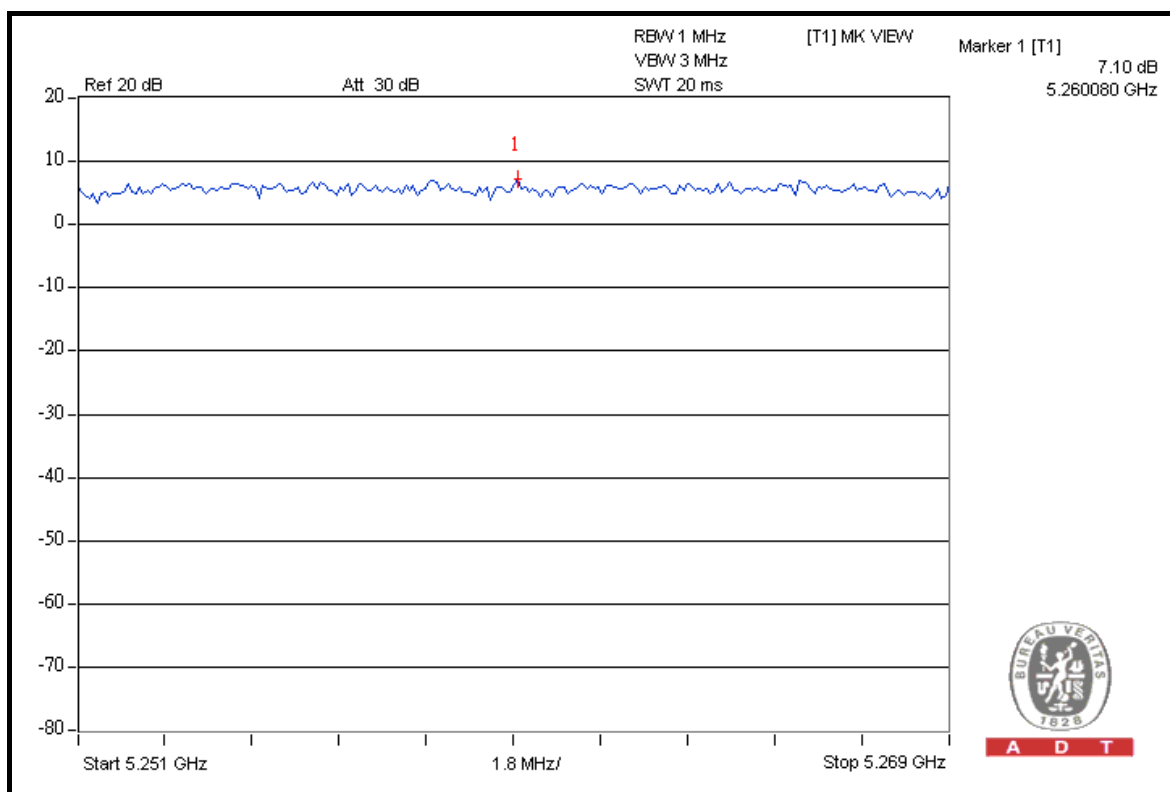
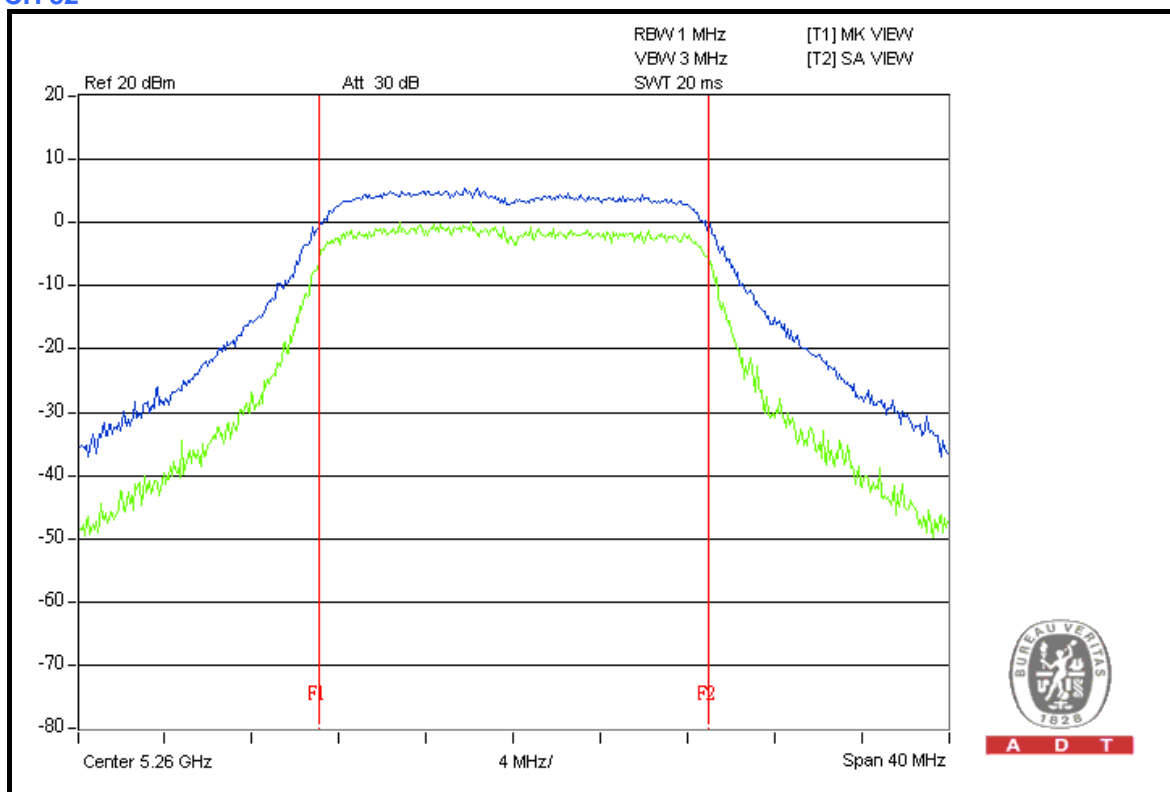




A D T

FOR CHAIN 1:

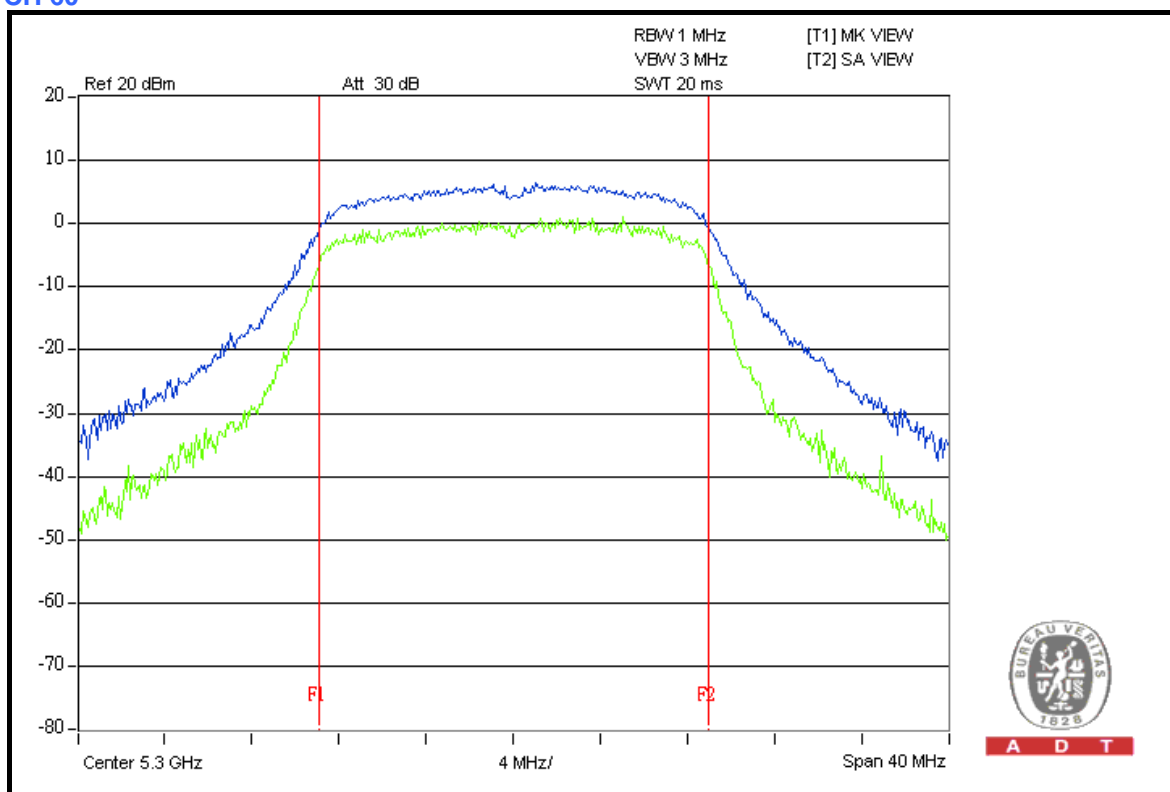
CH 52



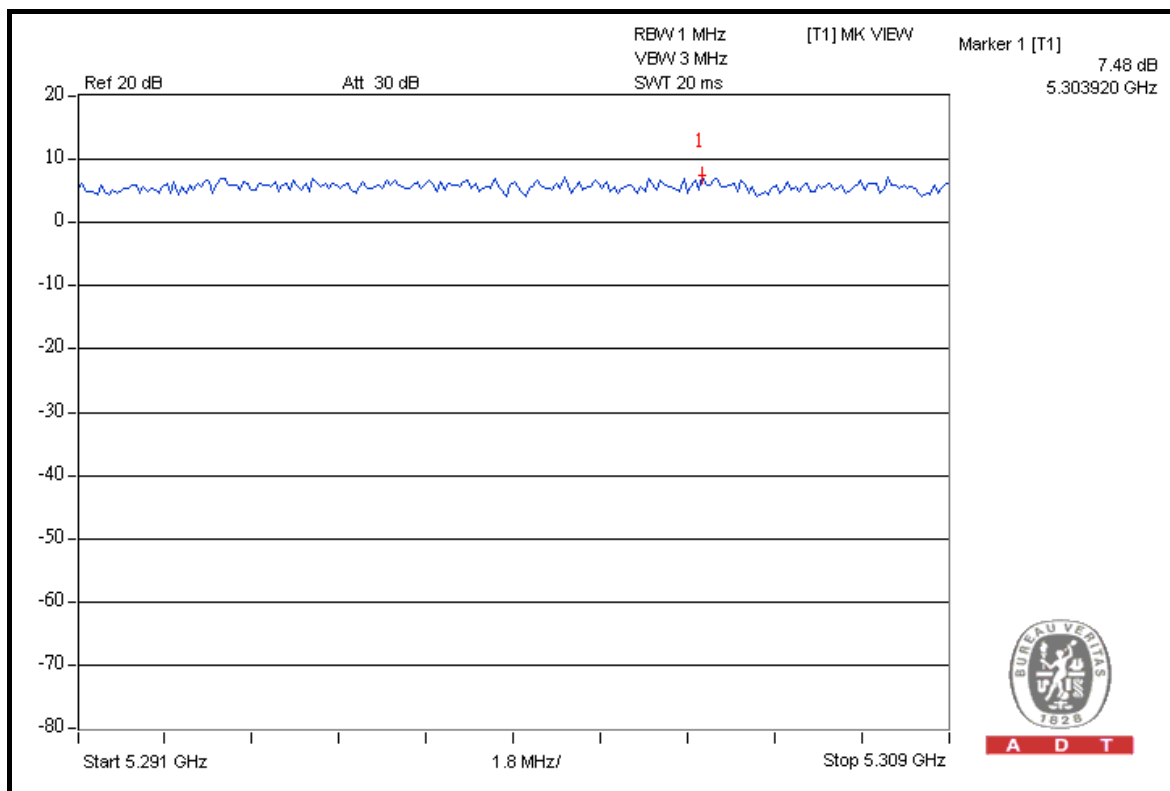


A D T

CH 60



A D T

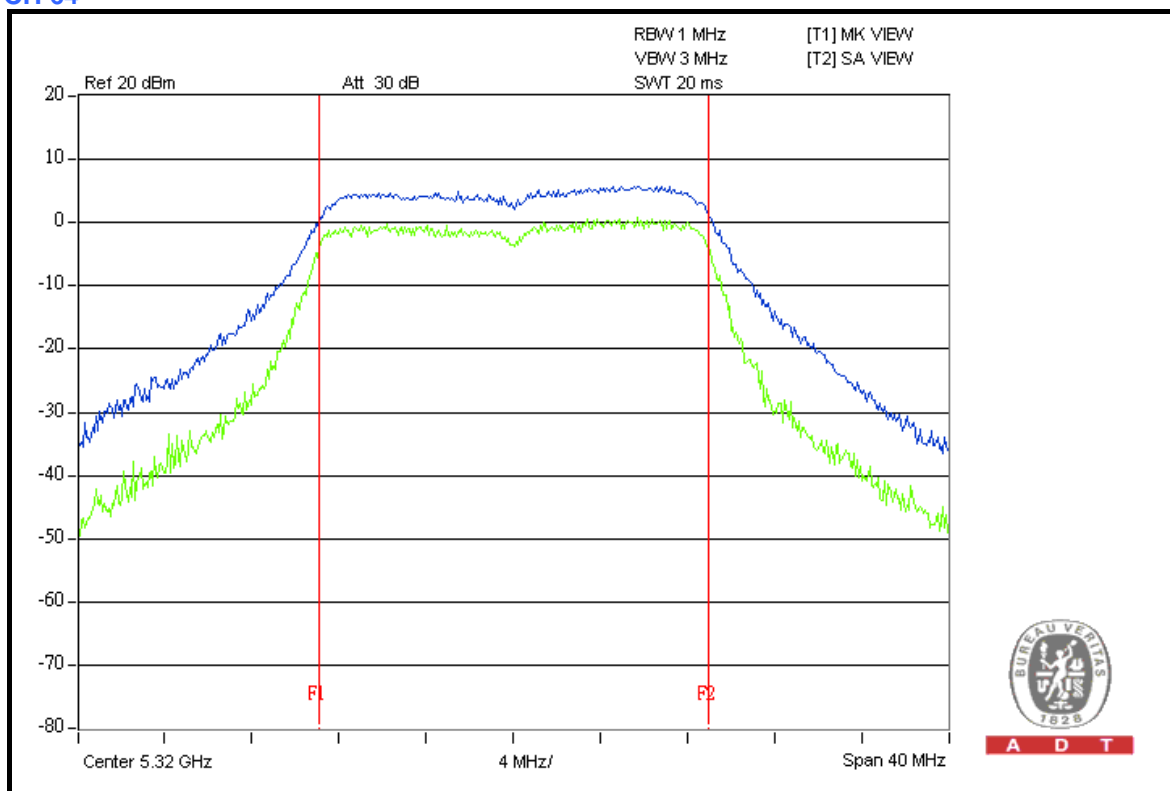


A D T

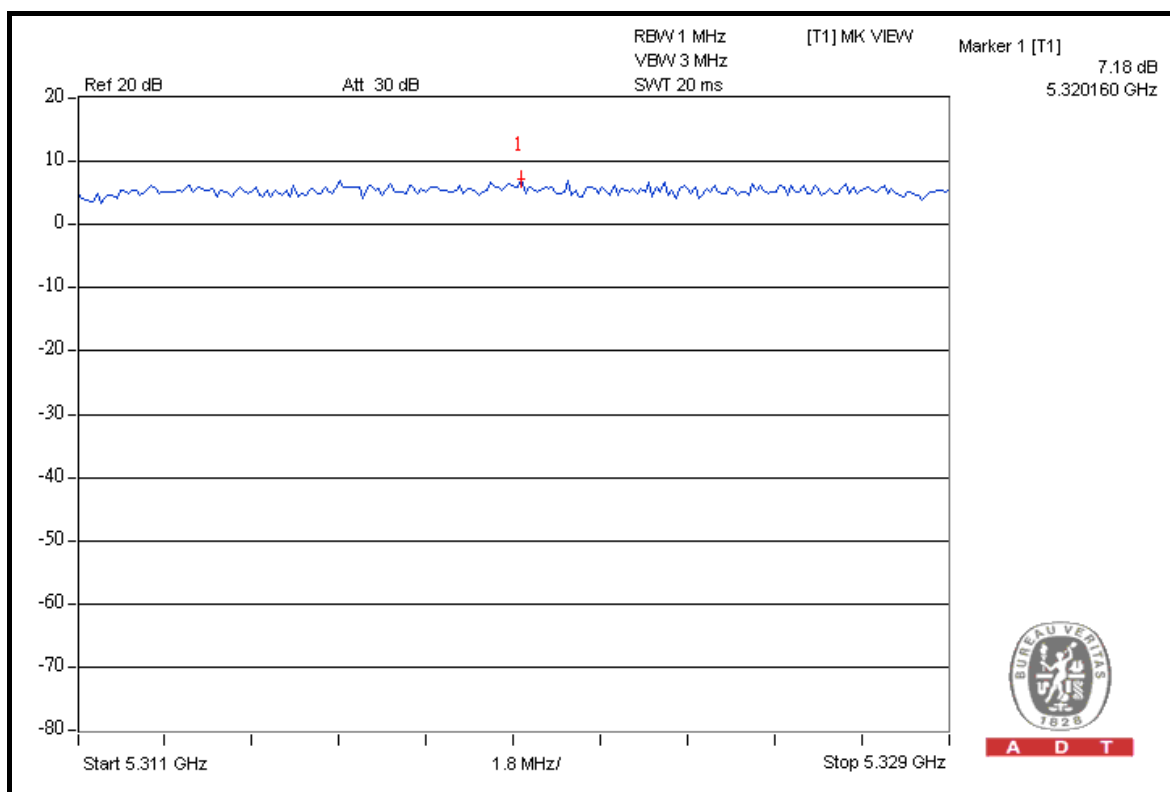


A D T

CH 64



A D T

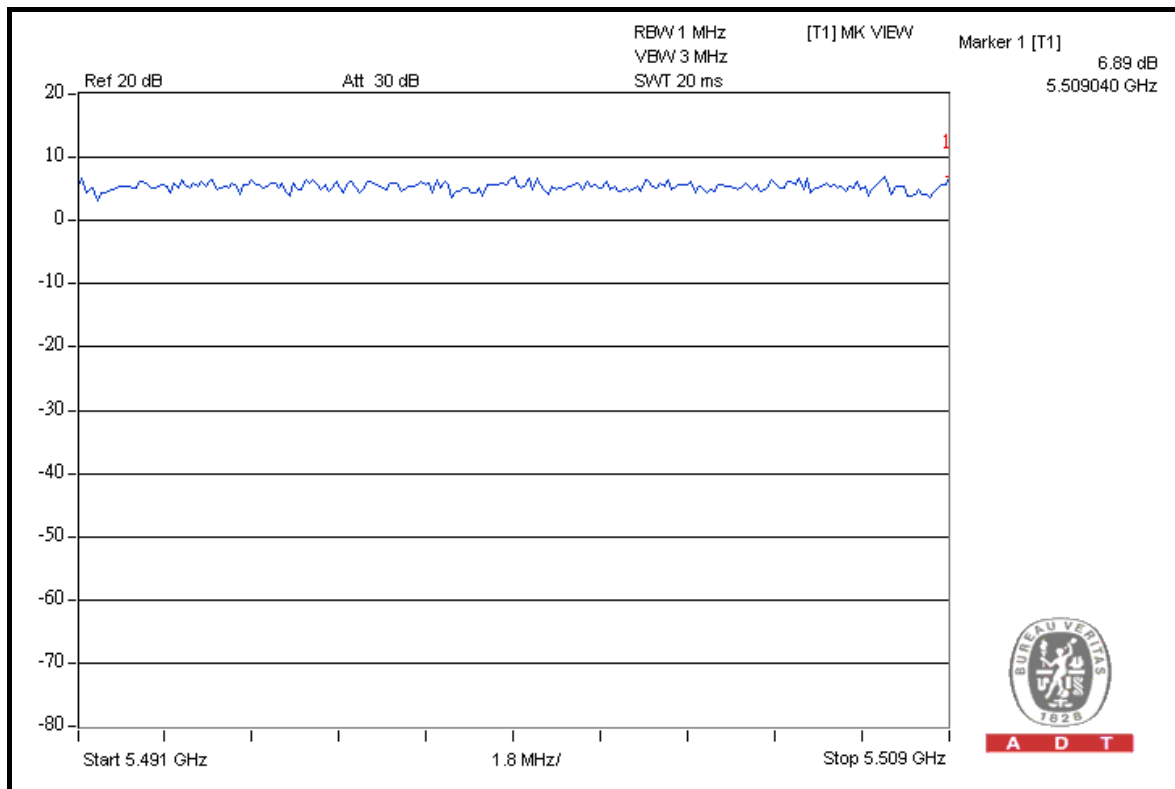
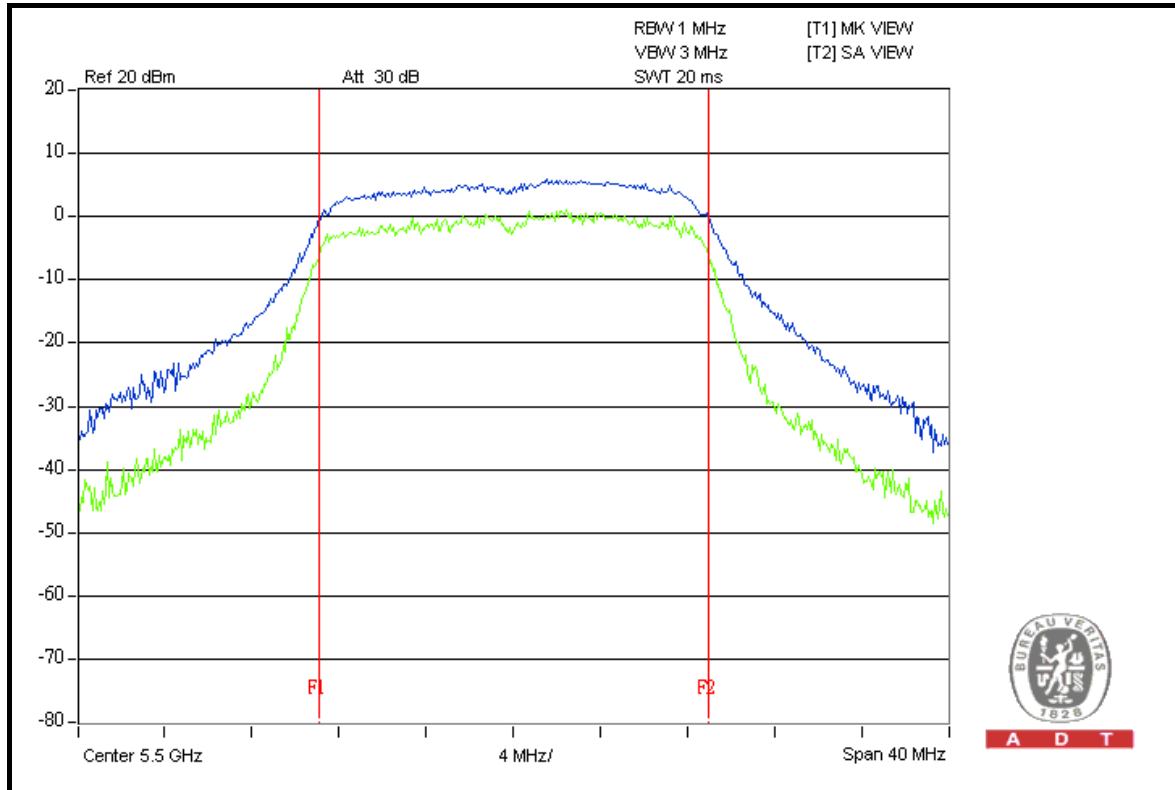


A D T



A D T

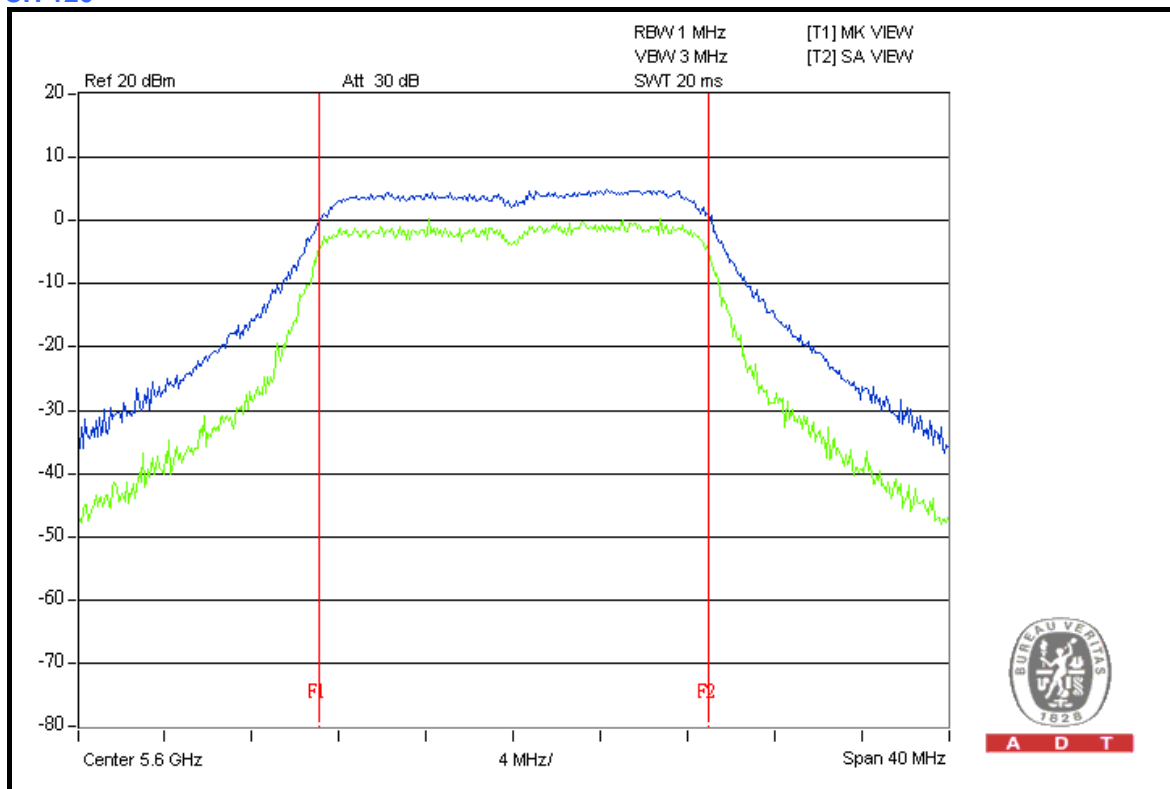
CH 100



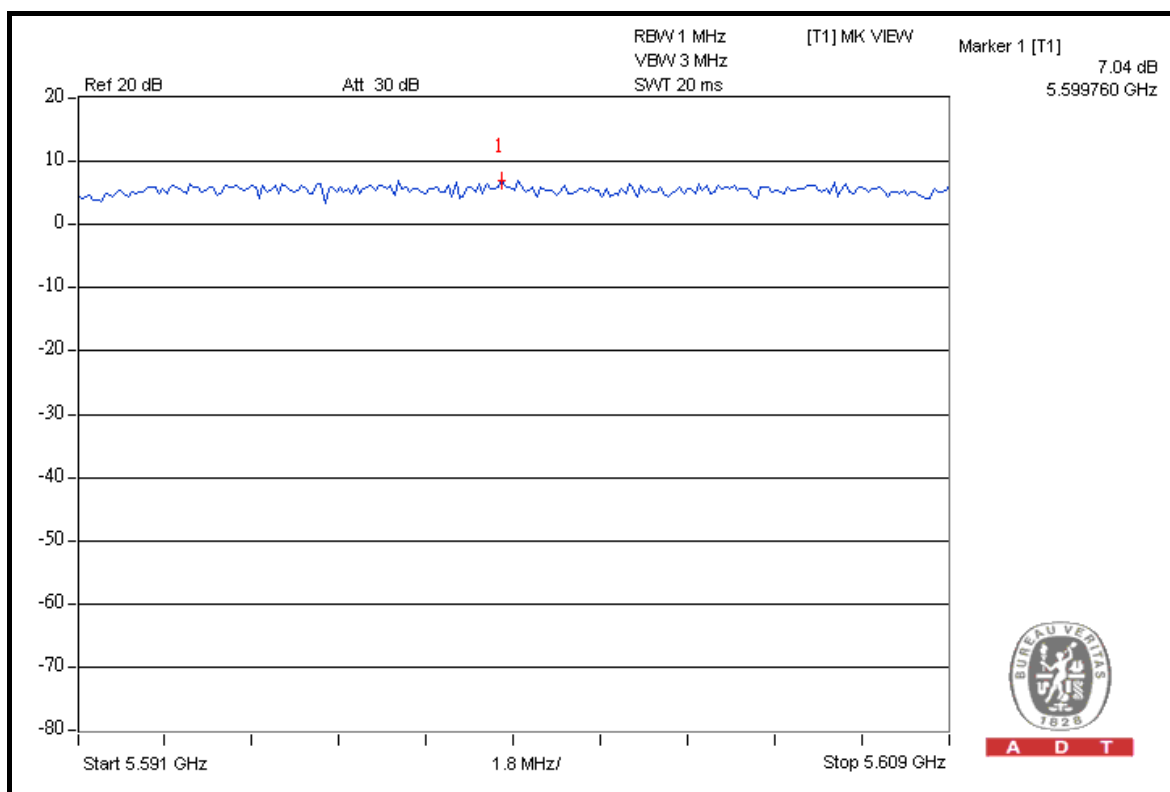


A D T

CH 120



A D T

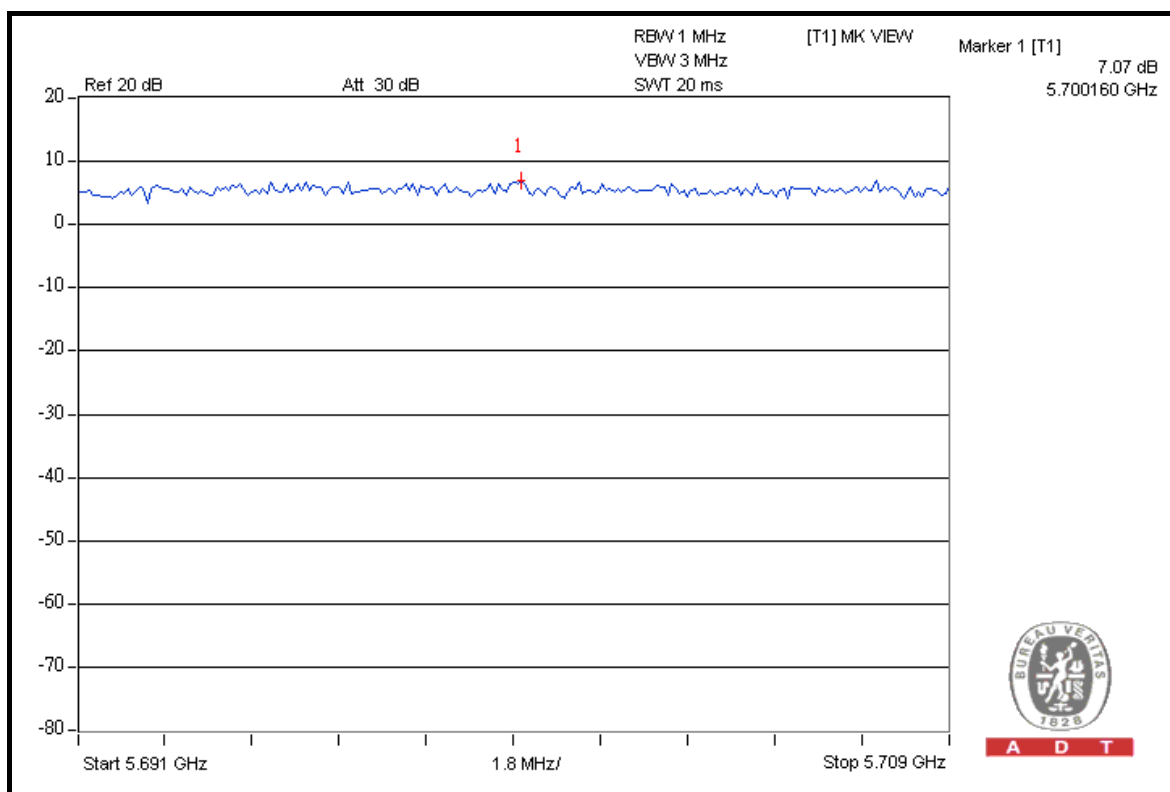
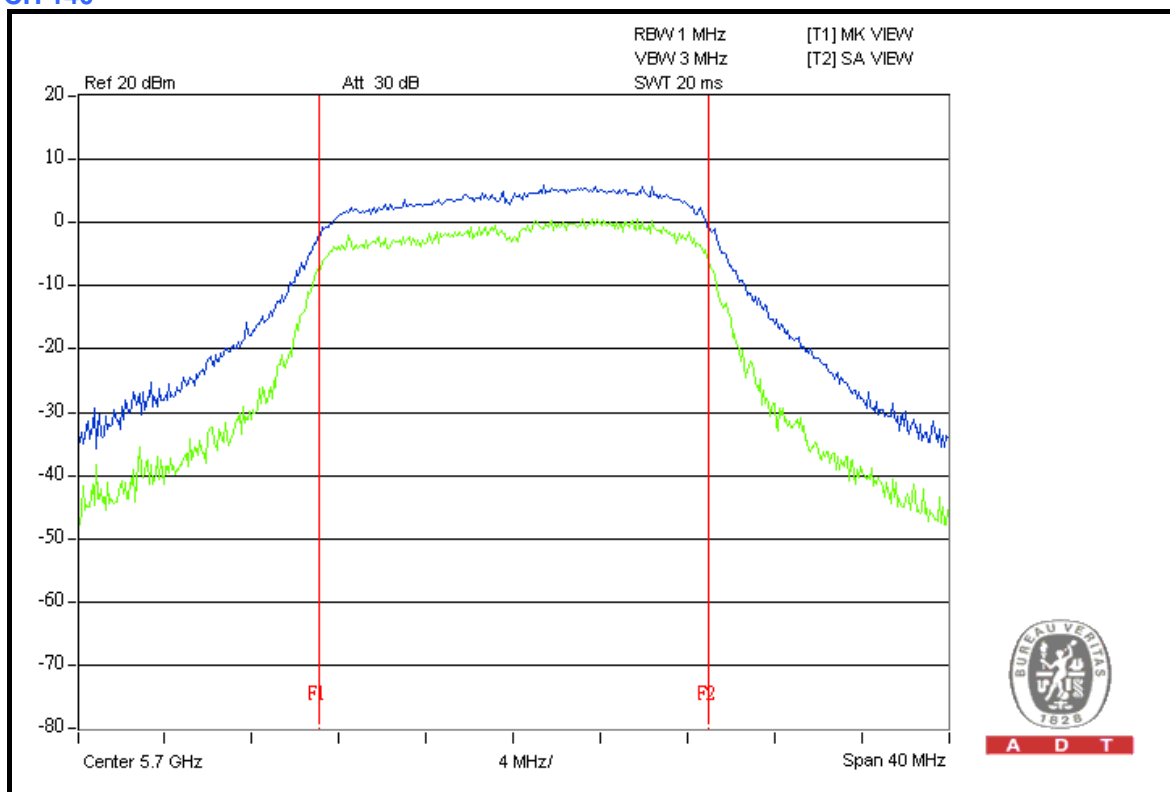


A D T



A D T

CH 140

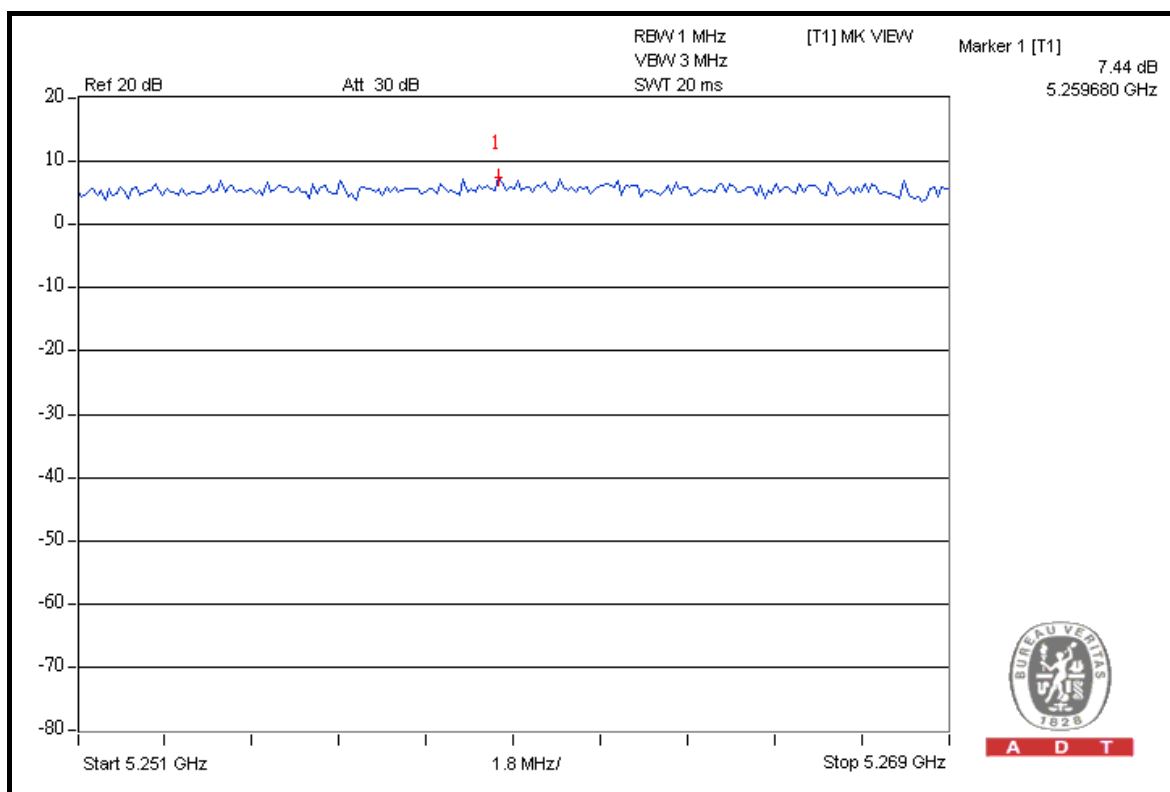
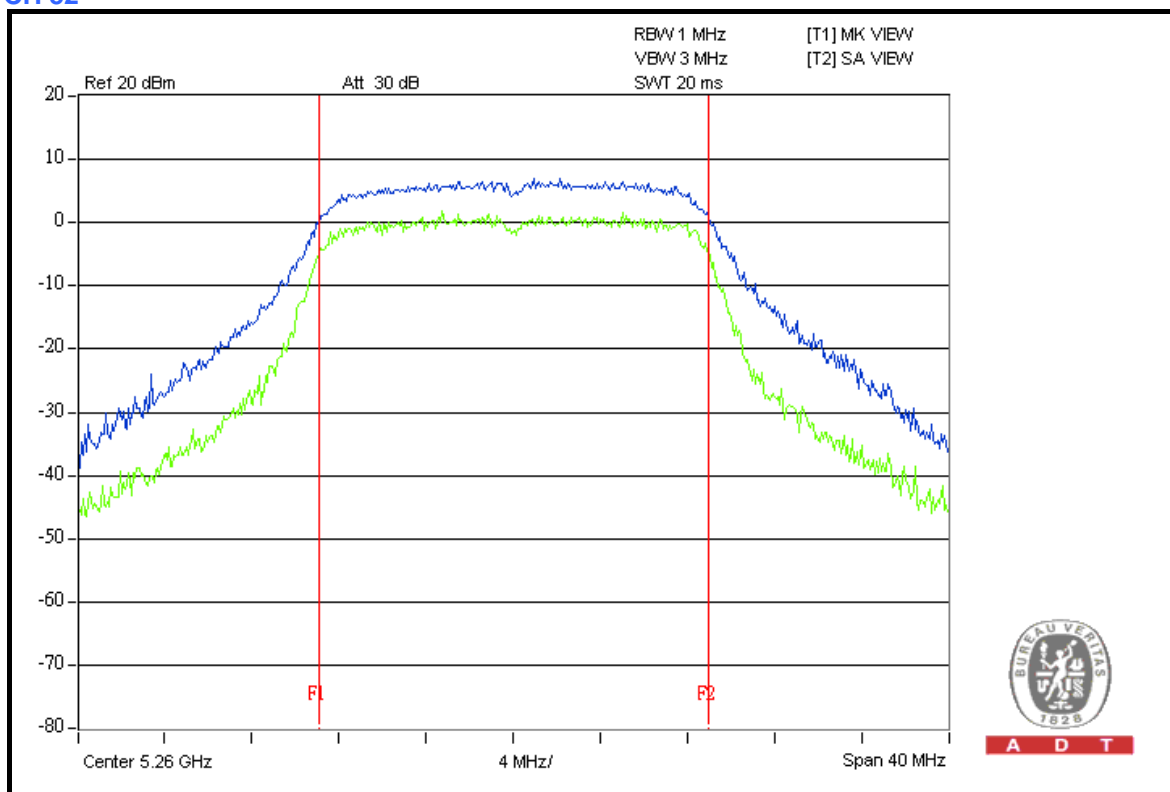




A D T

FOR CHAIN 2:

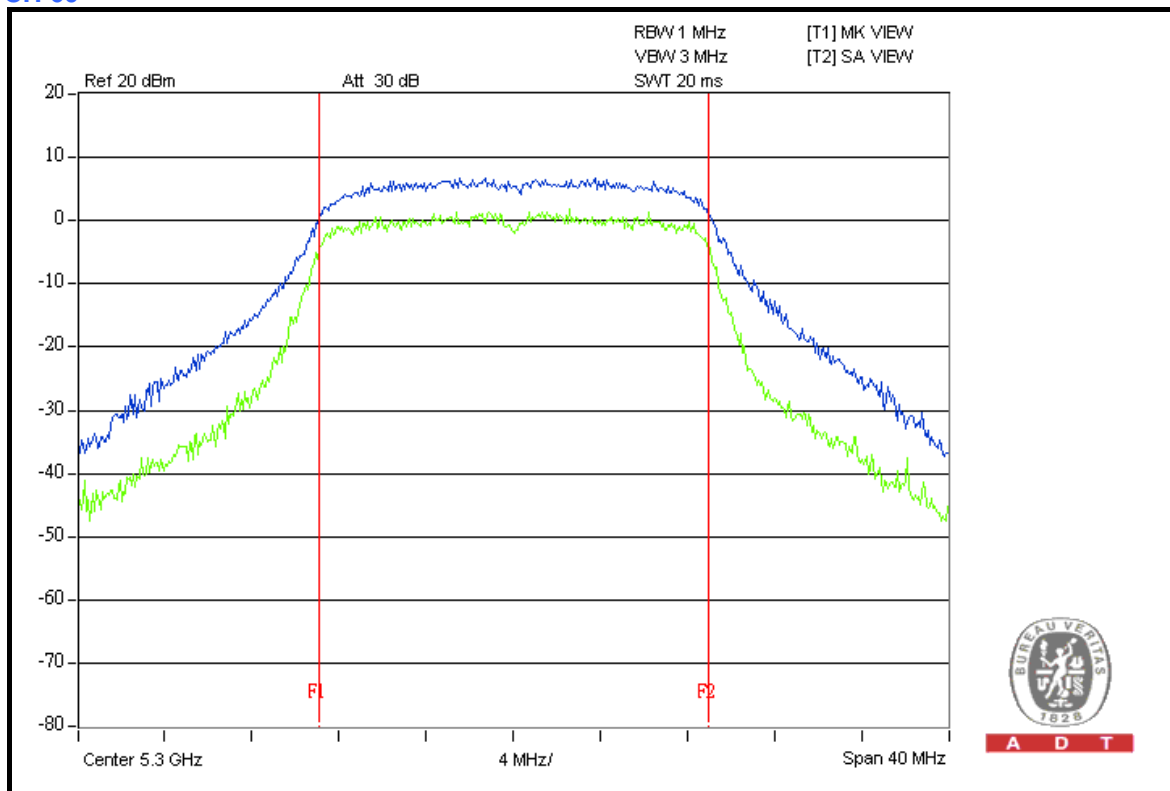
CH 52



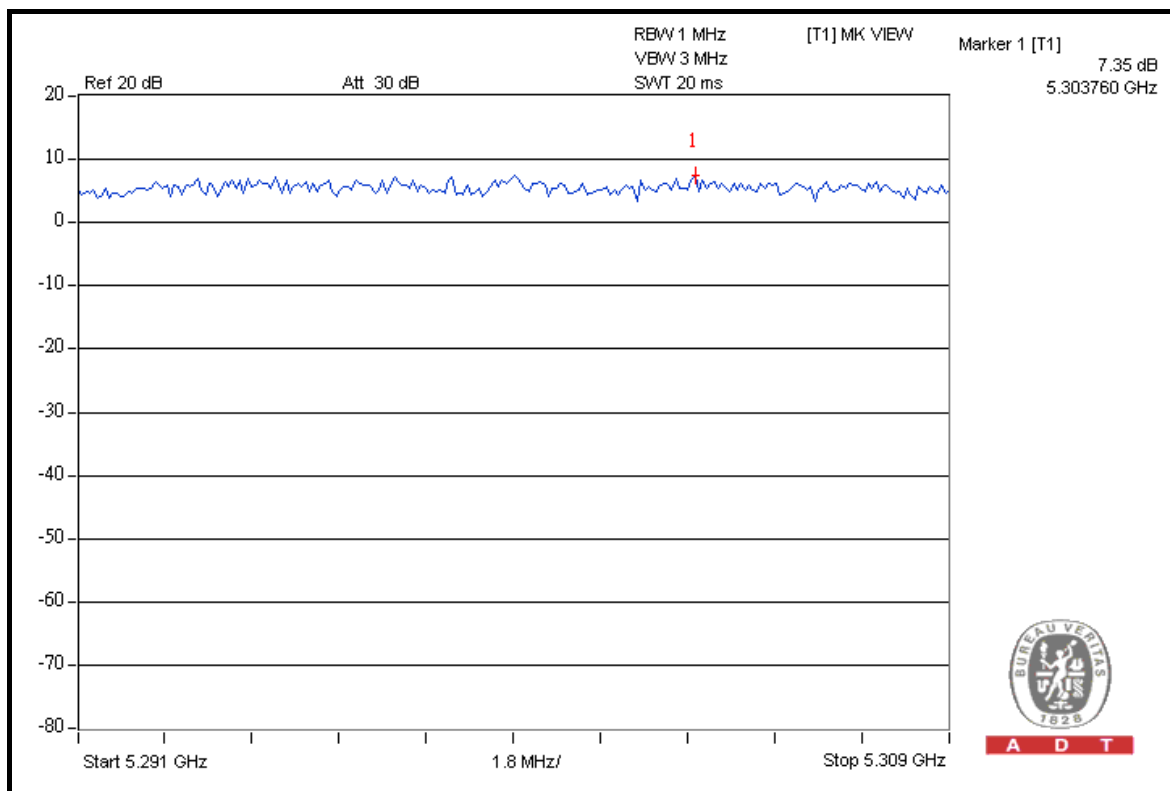


A D T

CH 60



A D T

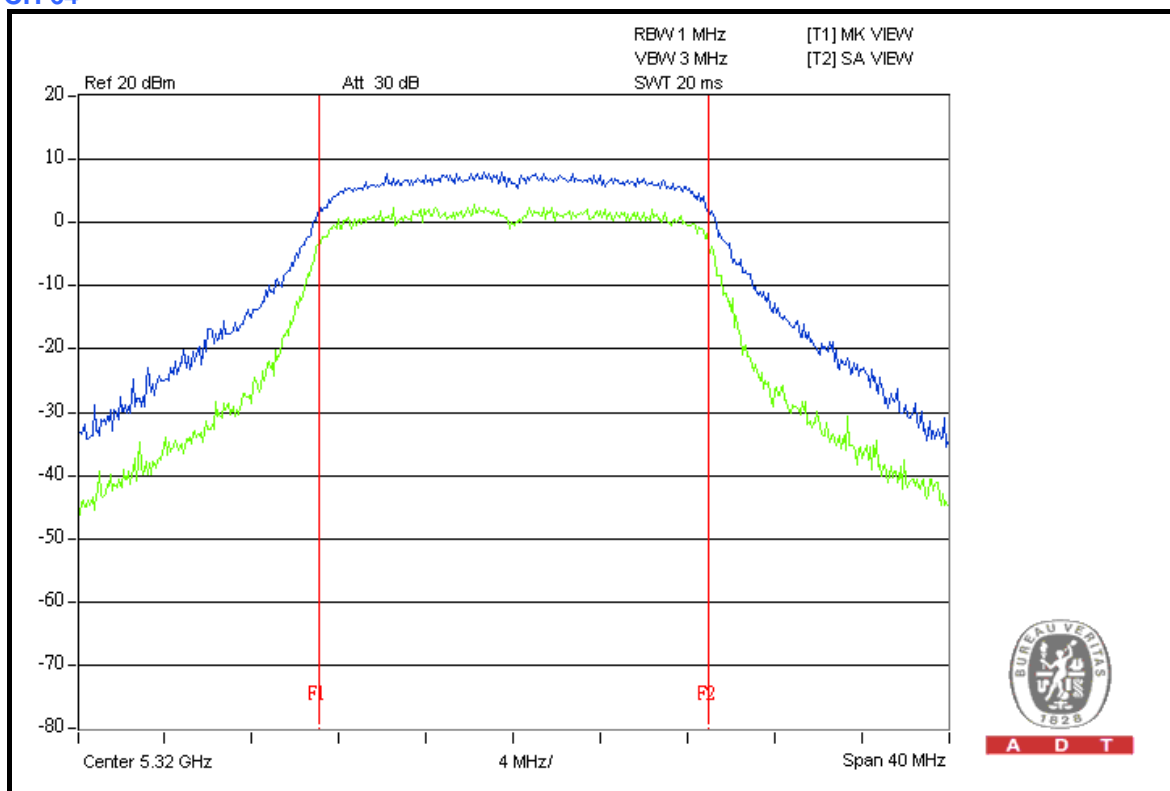


A D T

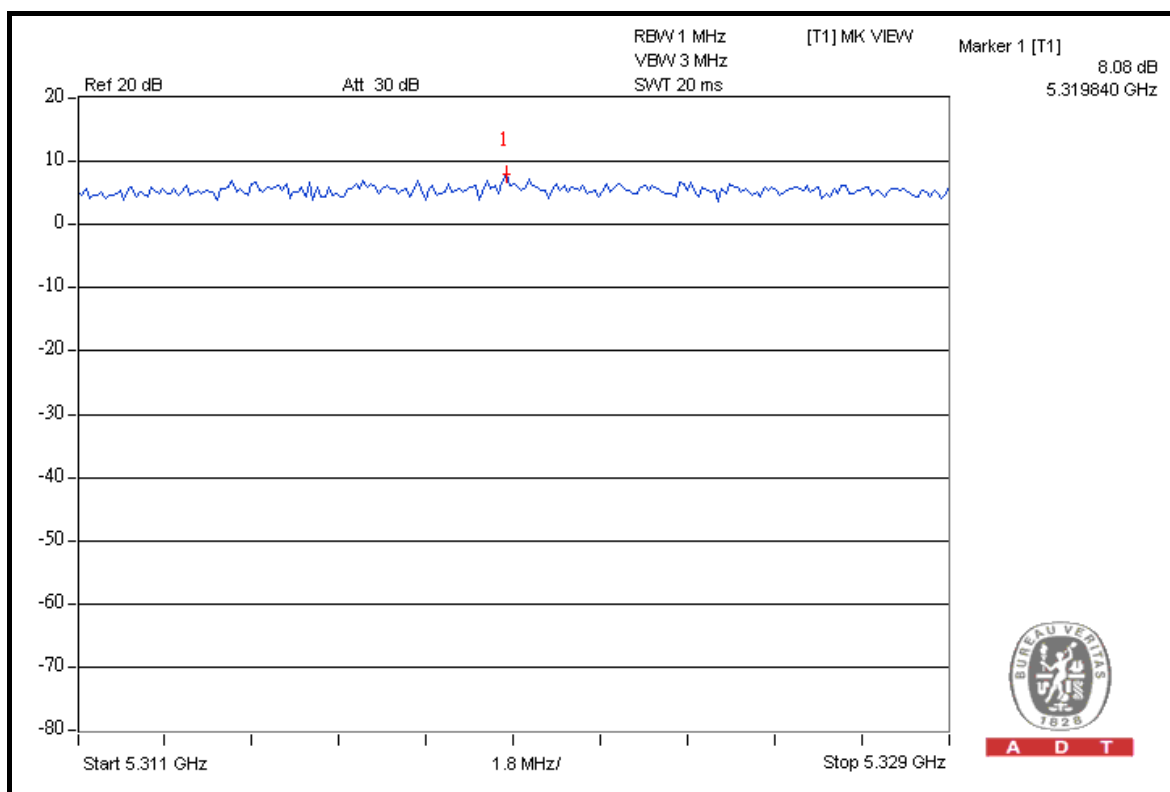


A D T

CH 64



A D T

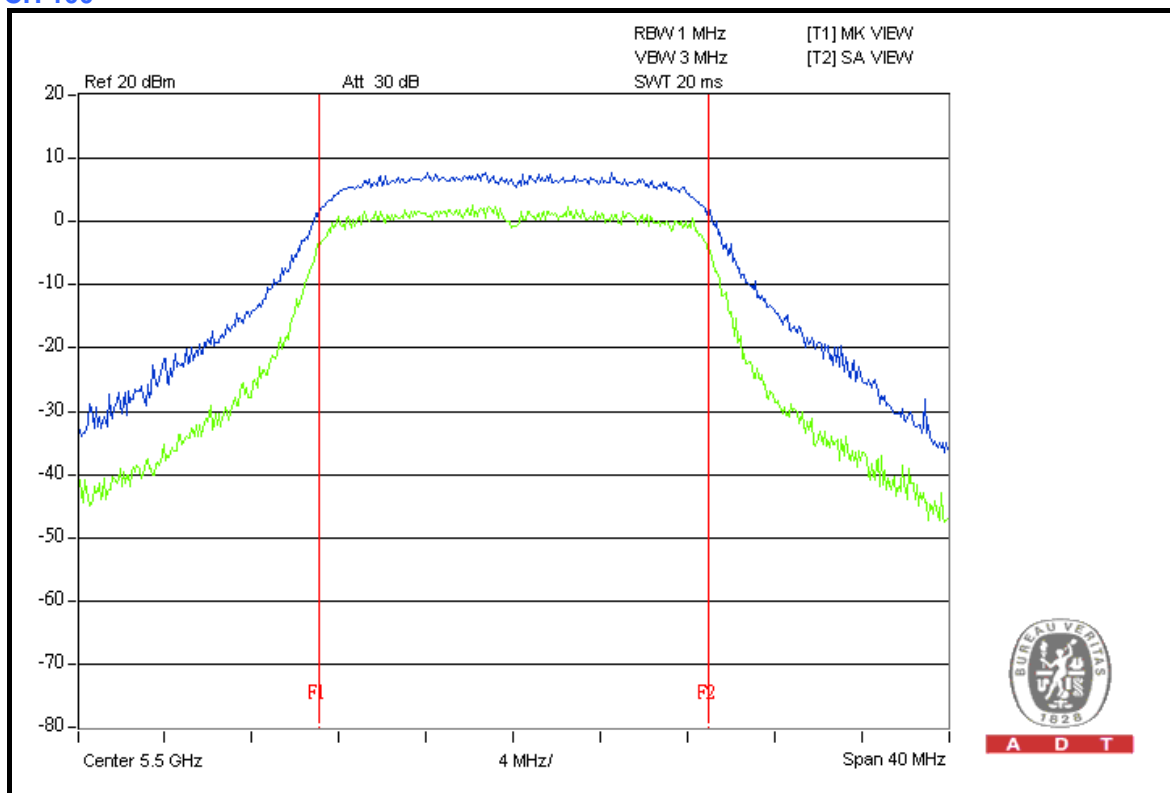


A D T

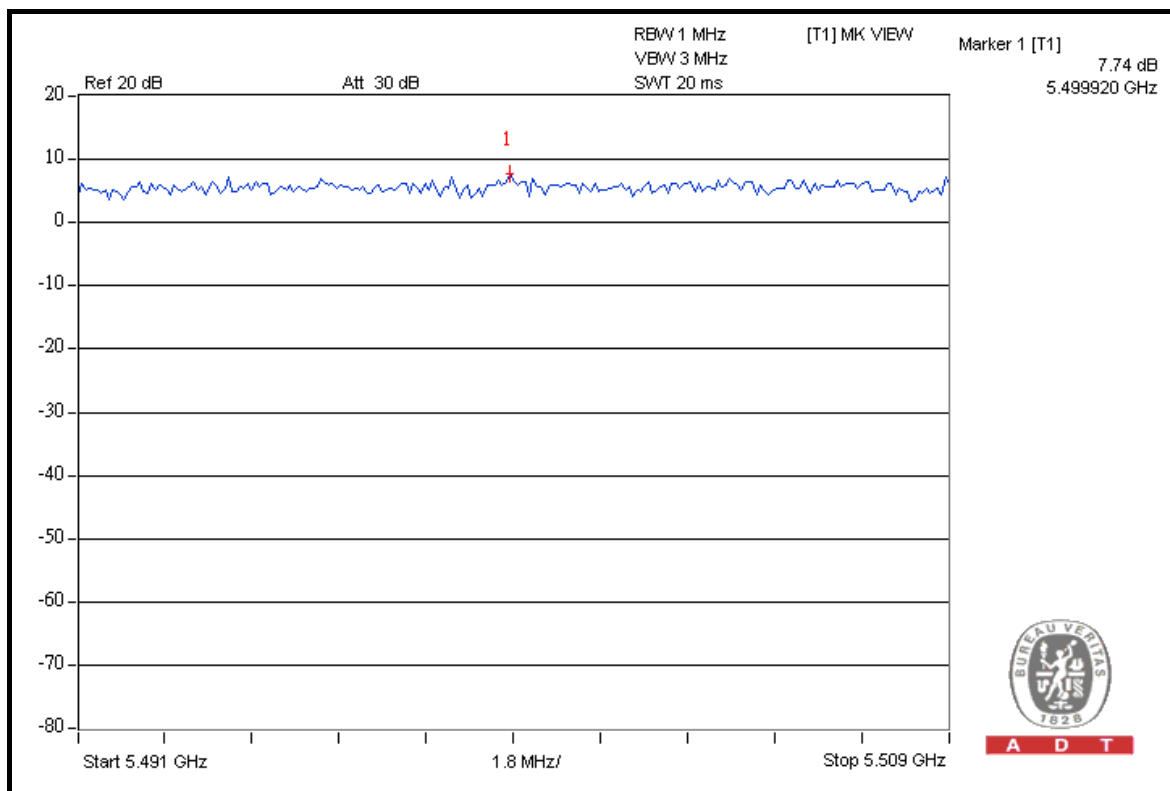


A D T

CH 100



A D T

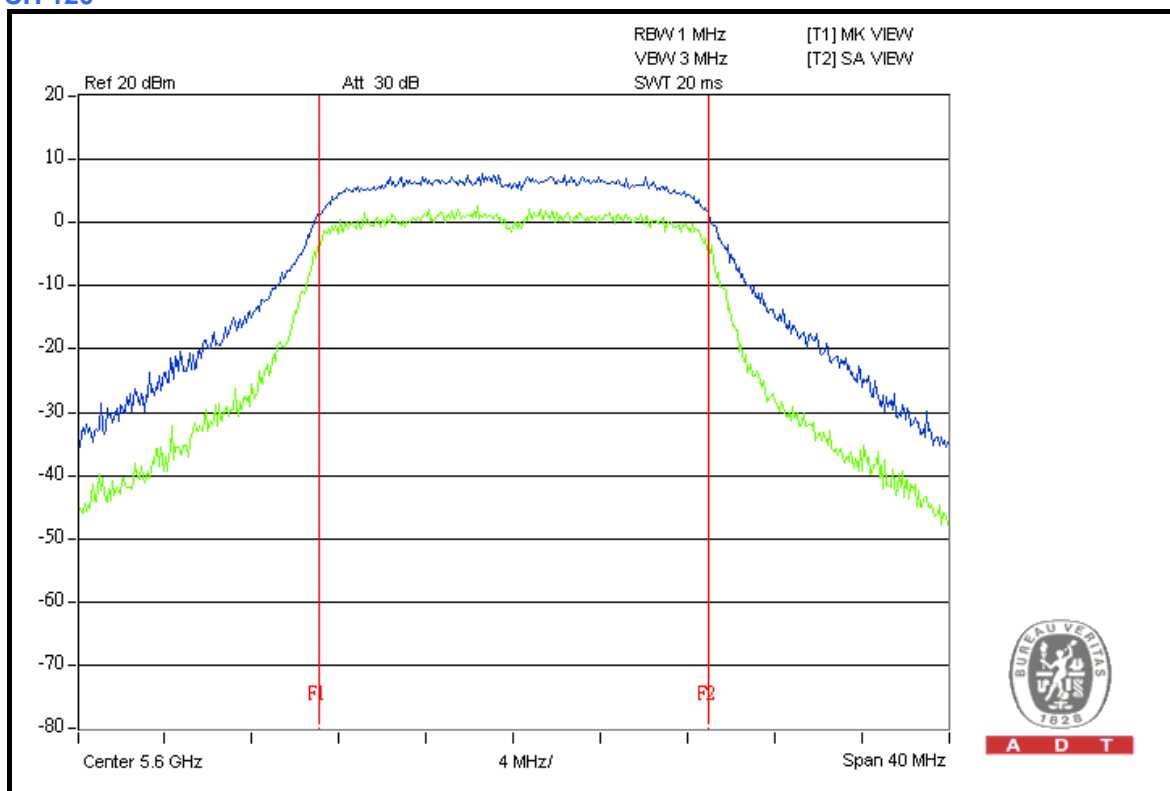


A D T

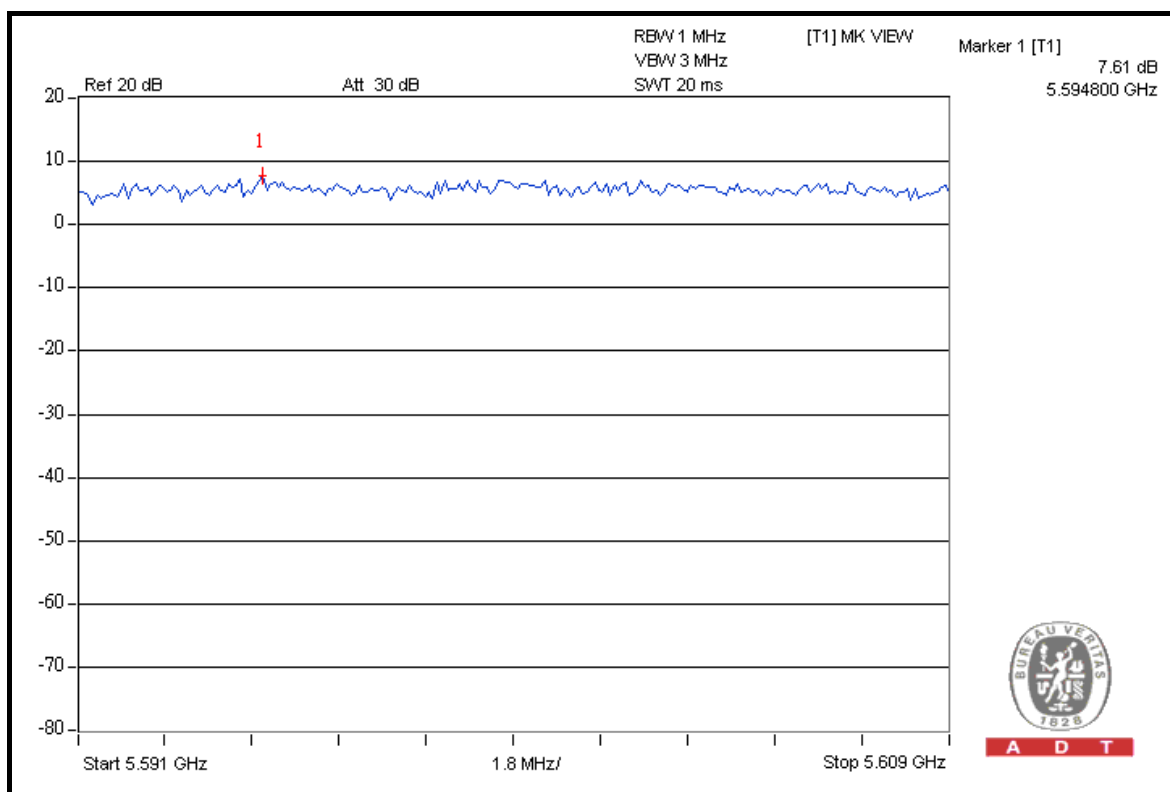


A D T

CH 120



A D T

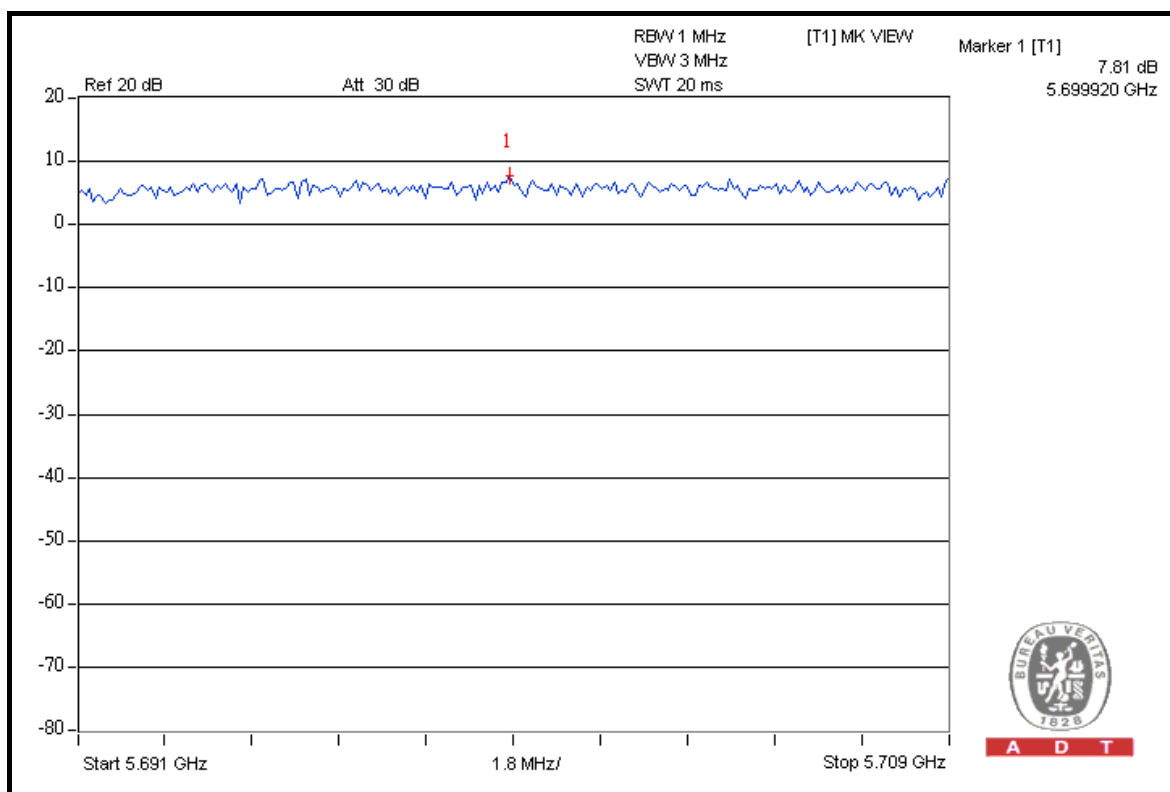
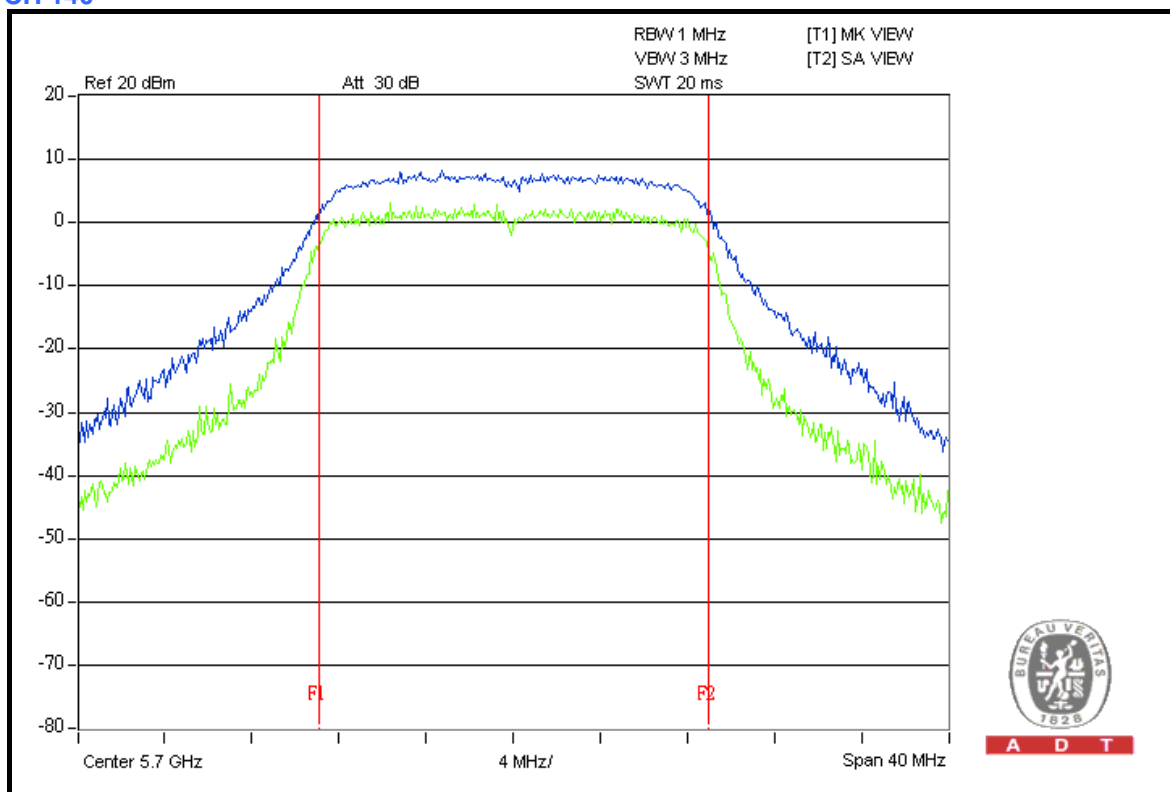


A D T



A D T

CH 140





DRAFT 802.11n (40MHz) OFDM MODULATION

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

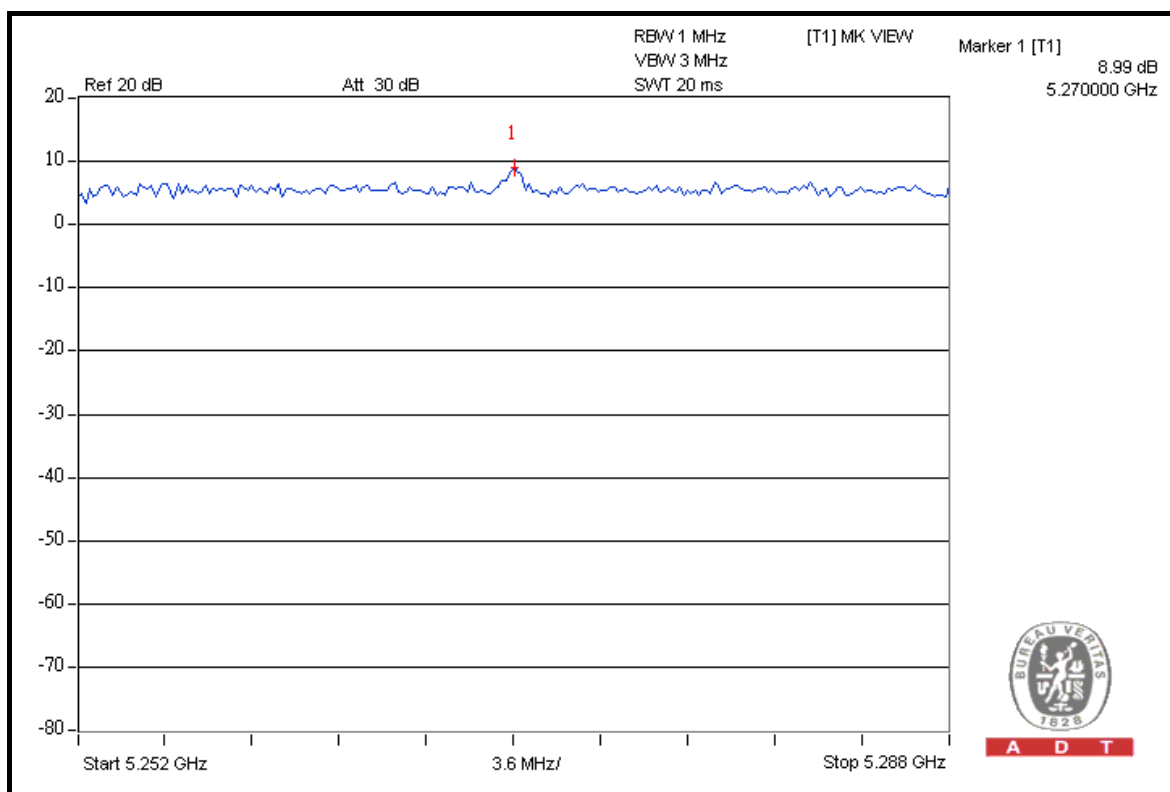
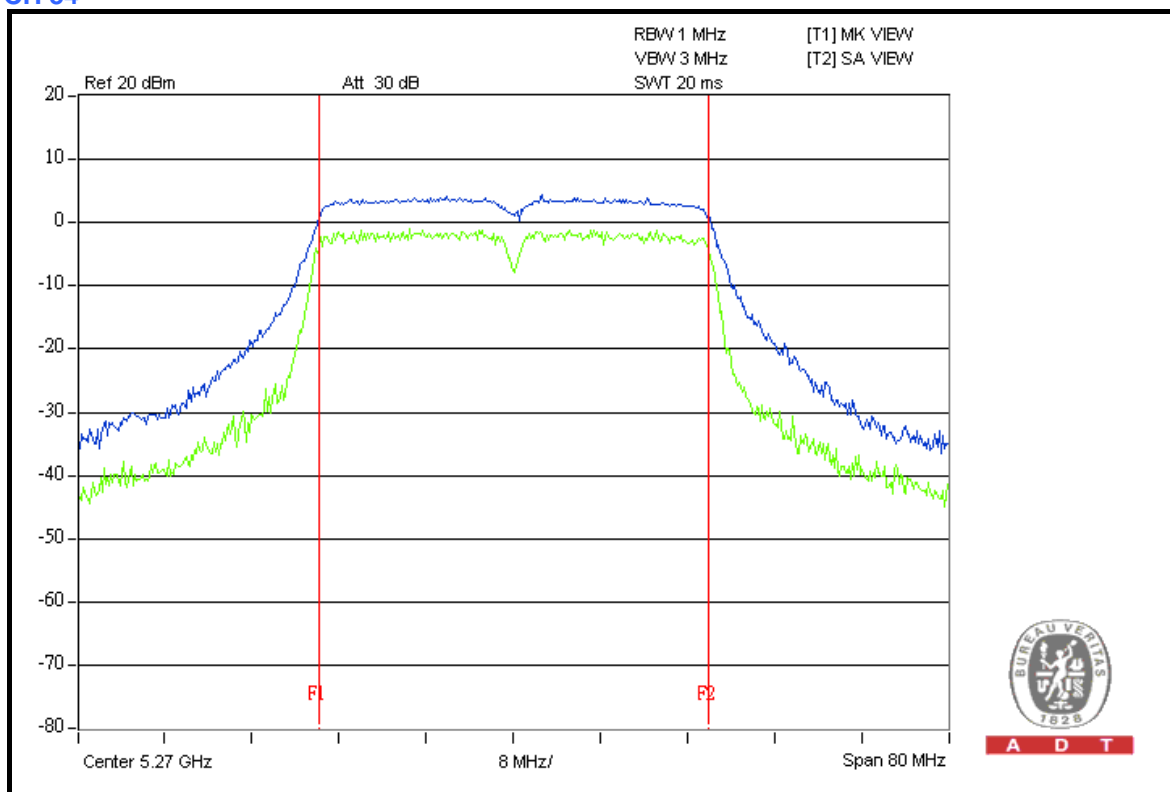
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)			PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
54	5270	8.99	9.25	9.61	13	PASS
62	5310	8.97	9.34	9.20	13	PASS
102	5510	7.71	9.82	8.65	13	PASS
118	5590	8.61	9.17	8.14	13	PASS
134	5670	9.45	8.83	8.54	13	PASS



A D T

FOR CHAIN 0:

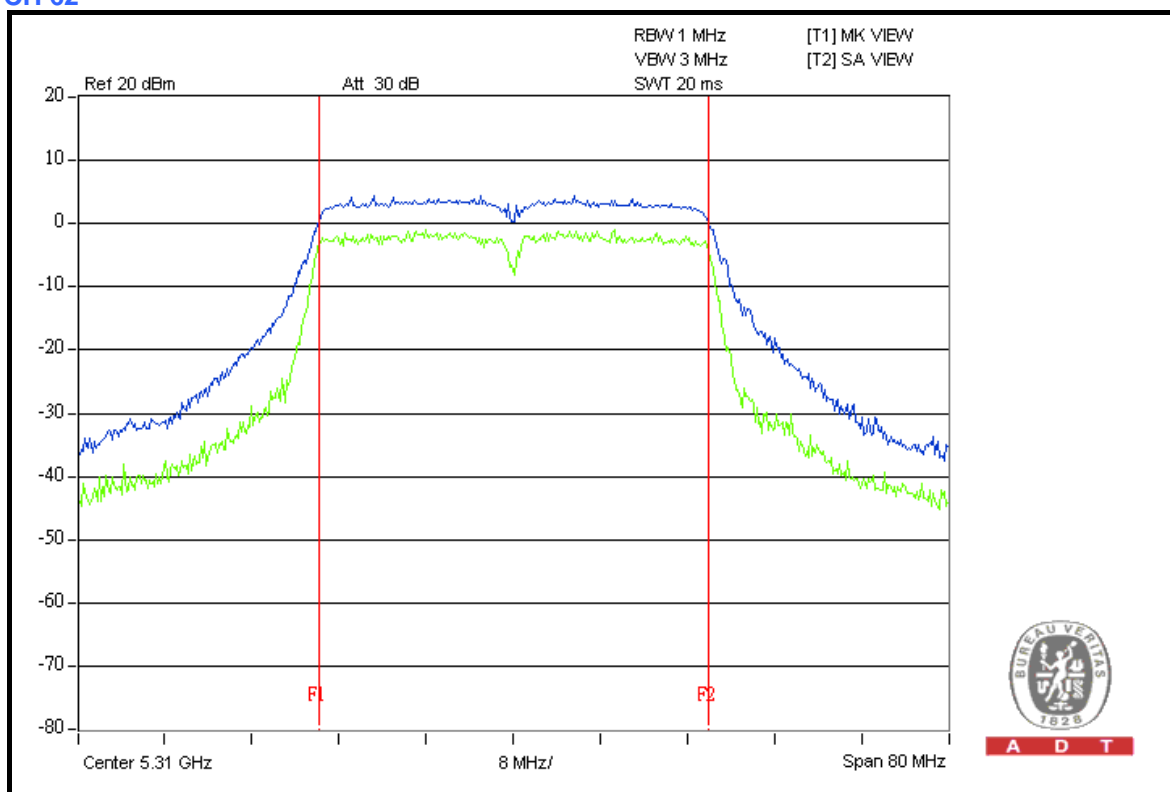
CH 54



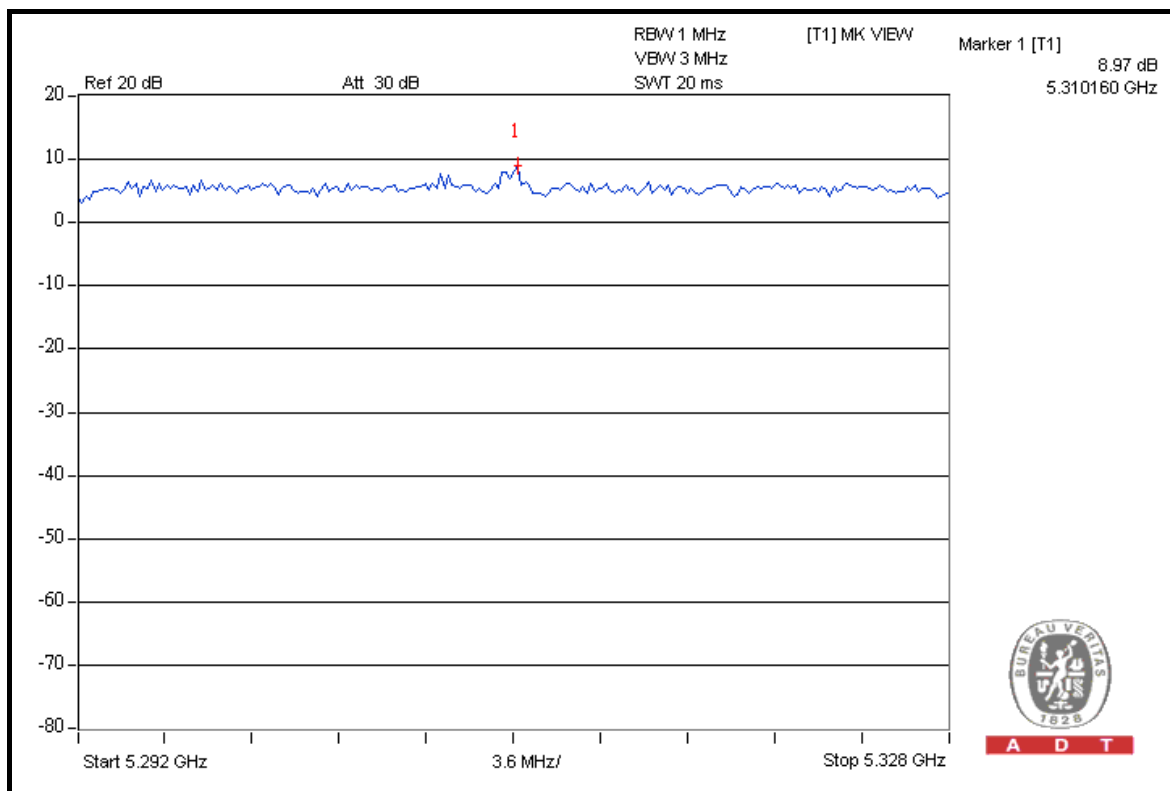


A D T

CH 62



A D T

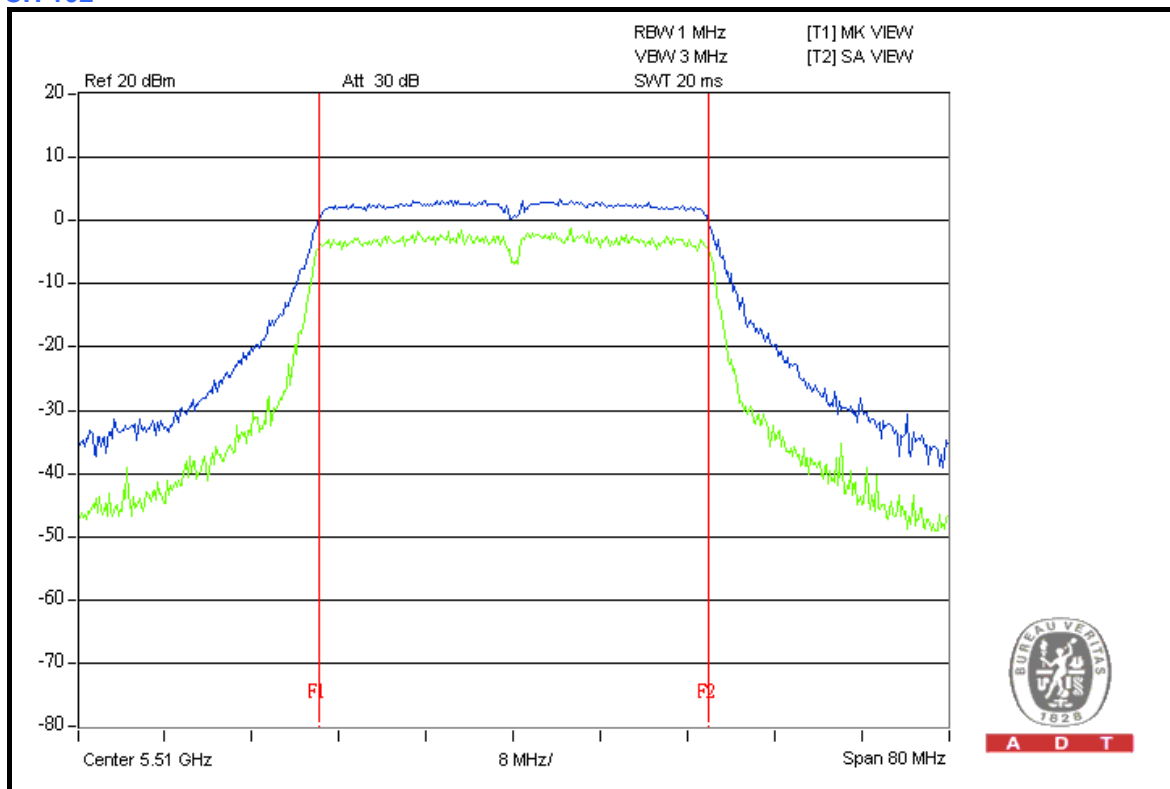


A D T

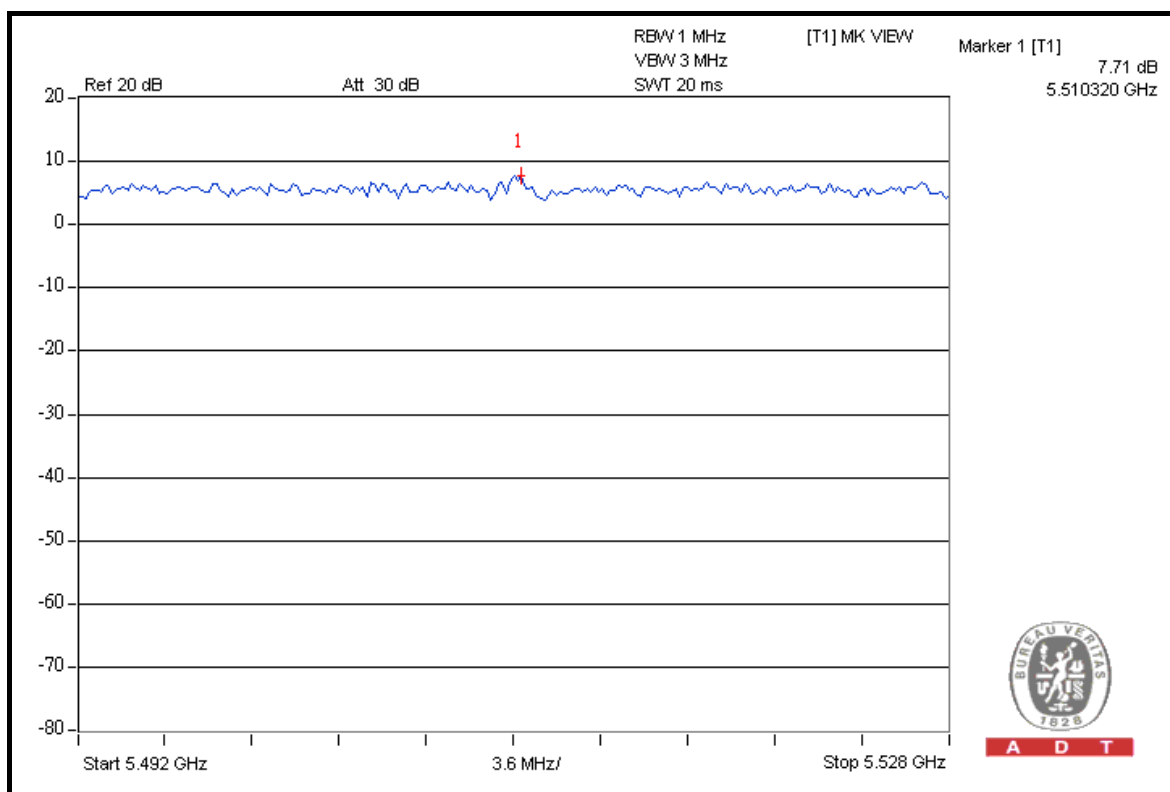


A D T

CH 102



A D T

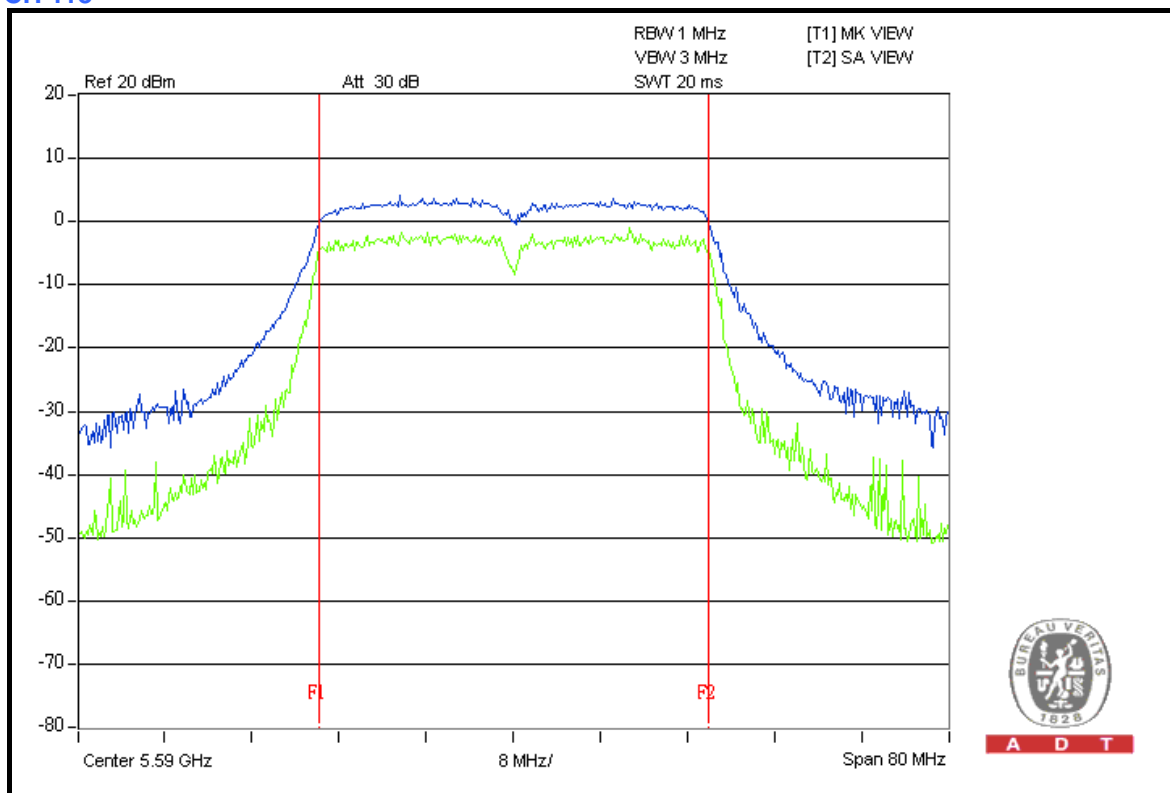


A D T

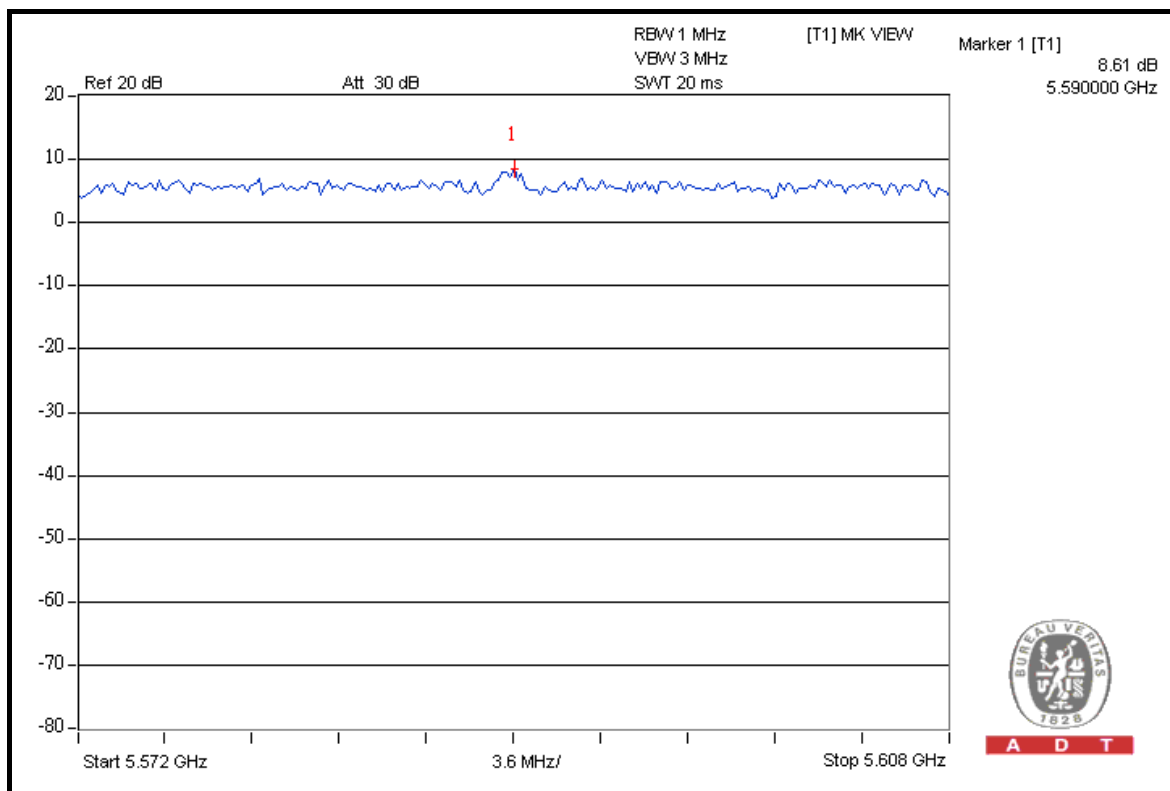


A D T

CH 118



A D T

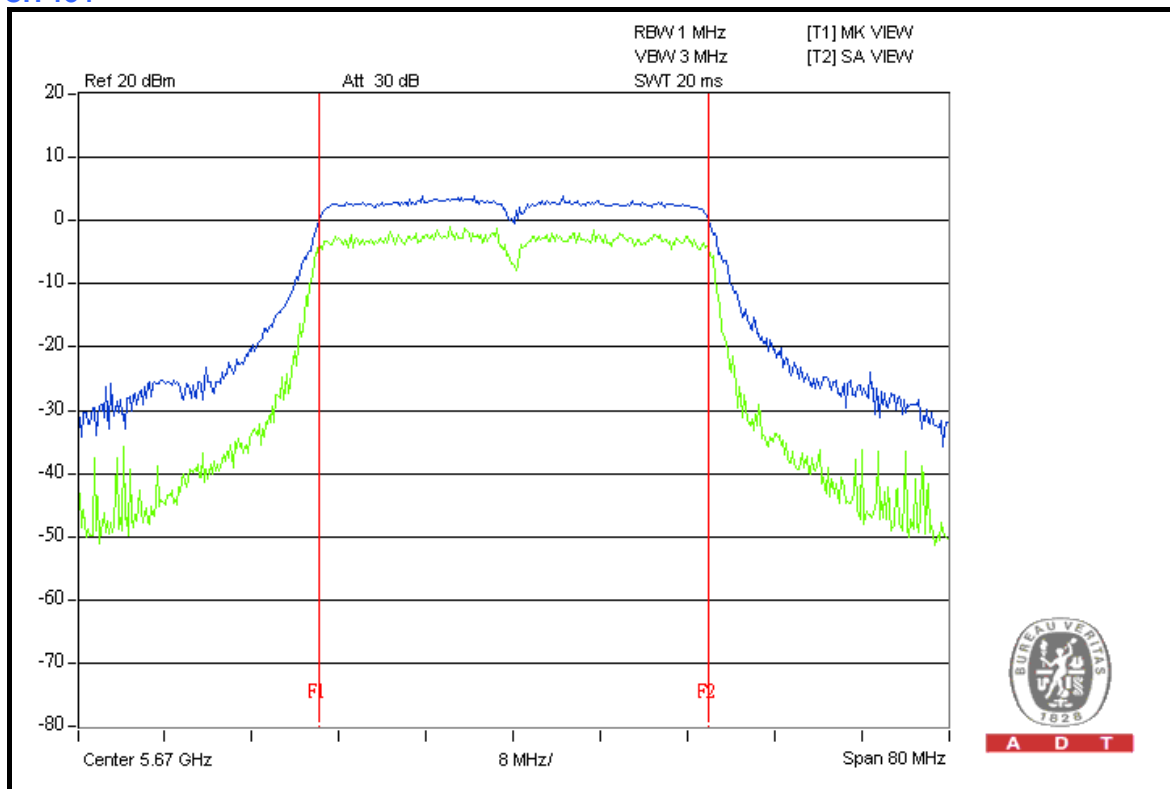


A D T

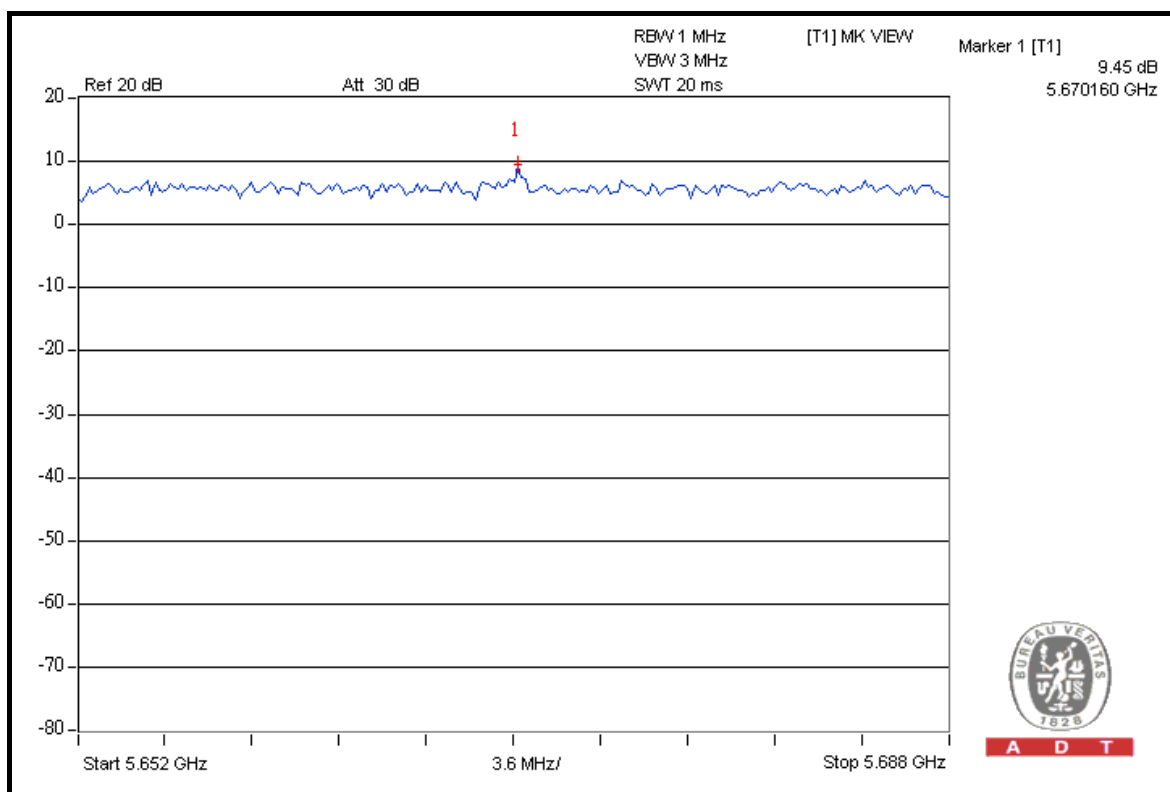


A D T

CH 134



A D T



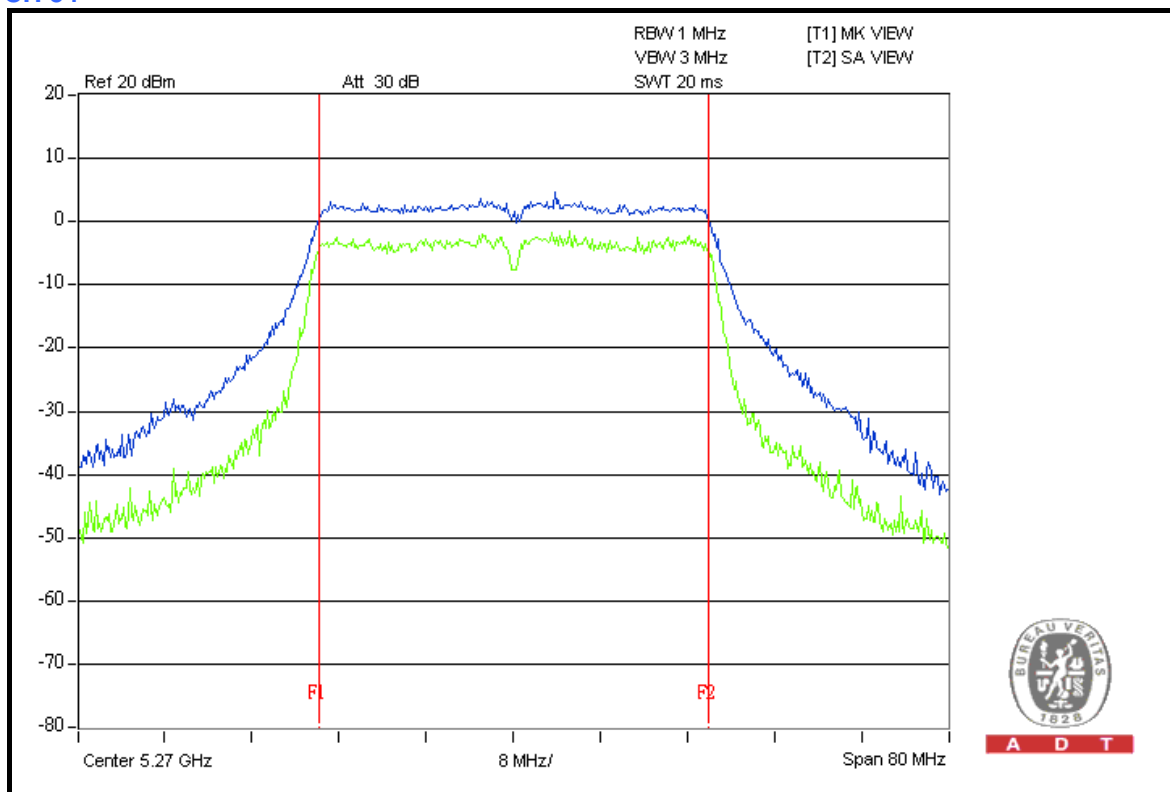
A D T



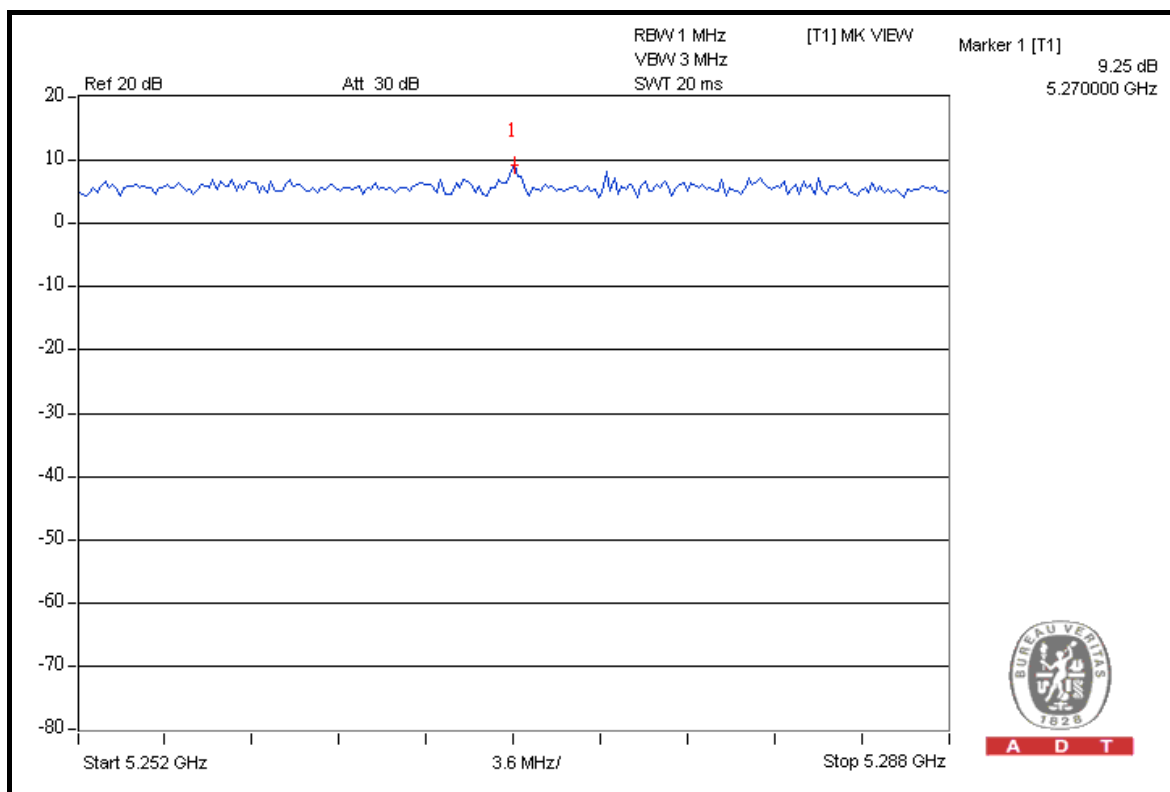
A D T

FOR CHAIN 1:

CH 54



A D T

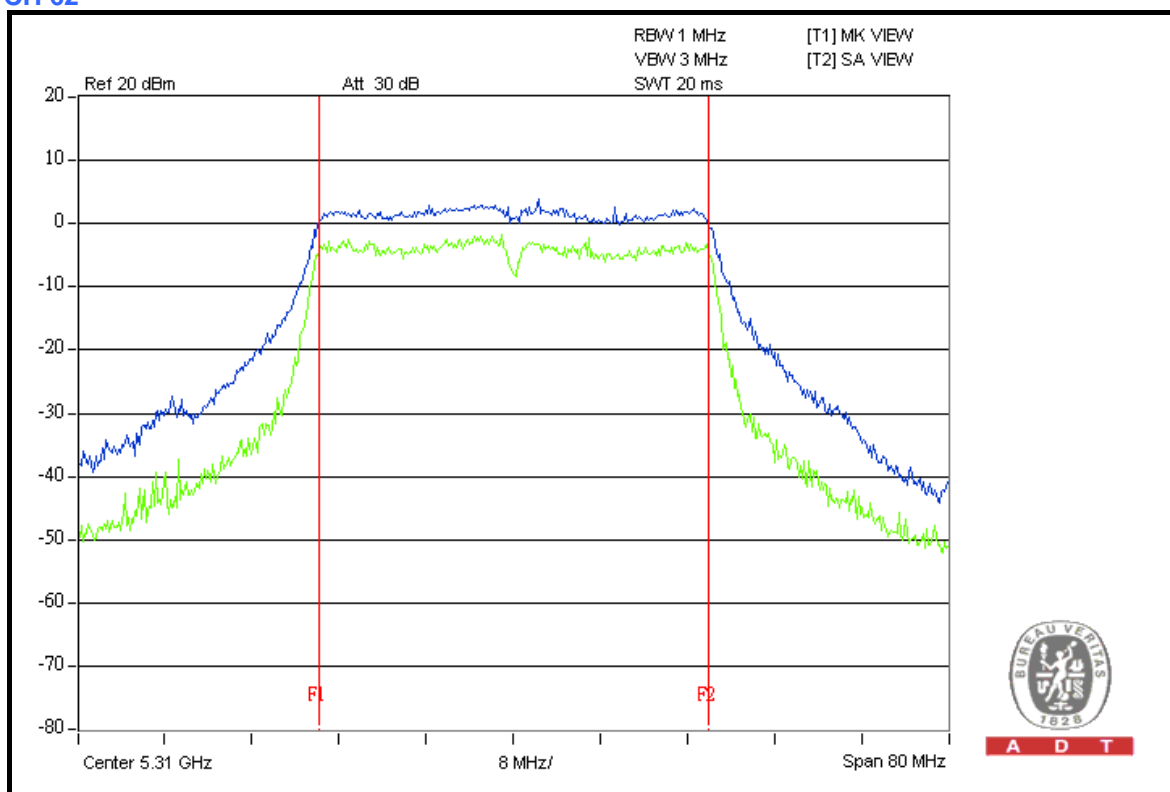


A D T

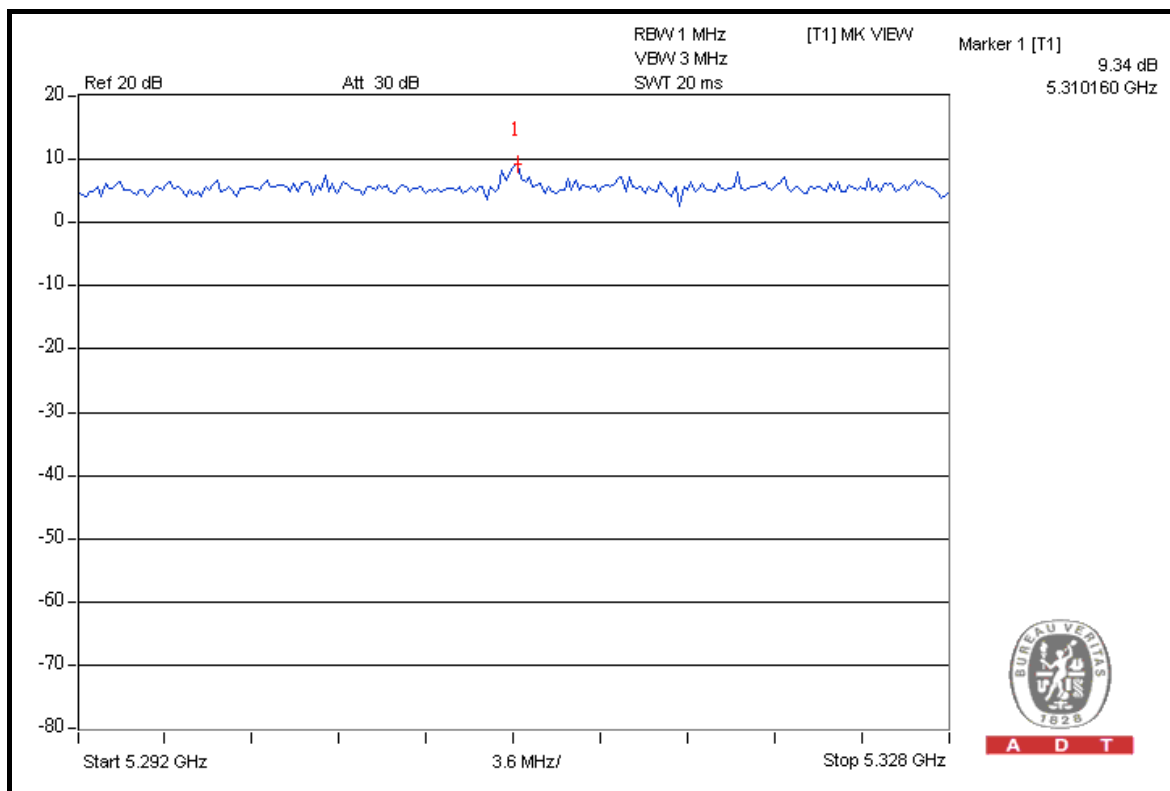


A D T

CH 62



A D T

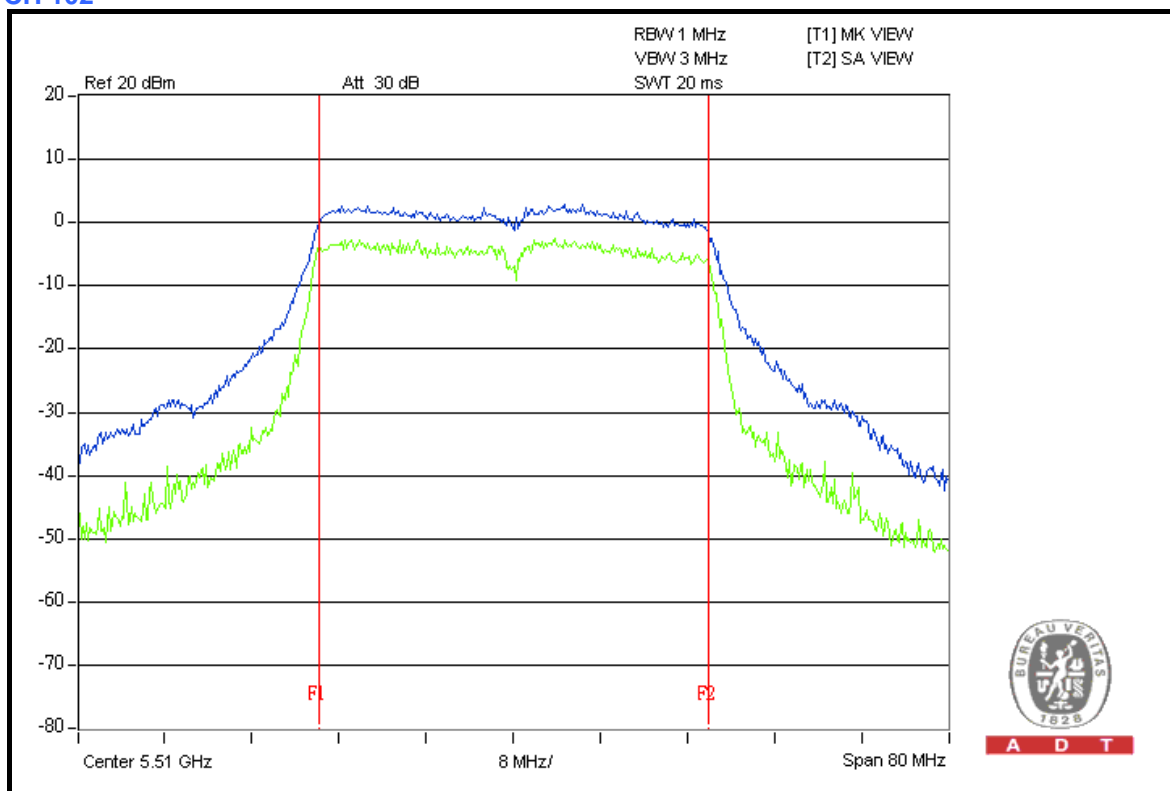


A D T

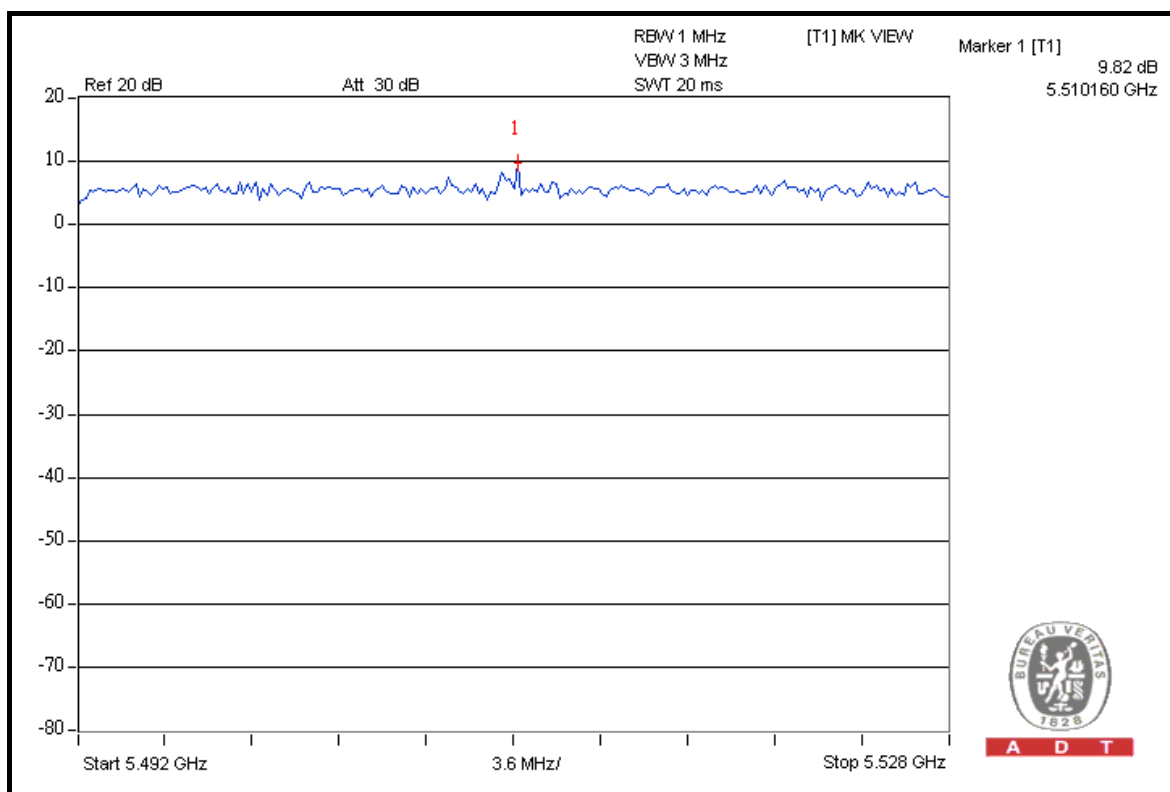


A D T

CH 102



A D T

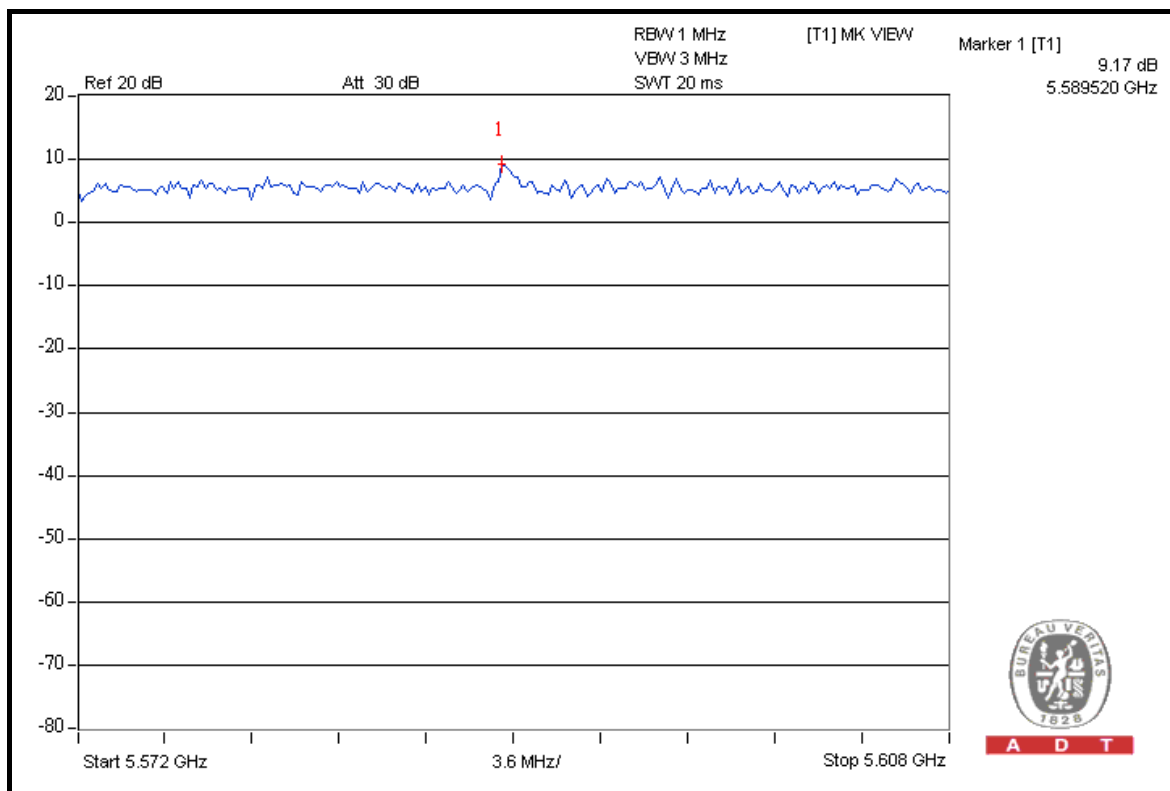
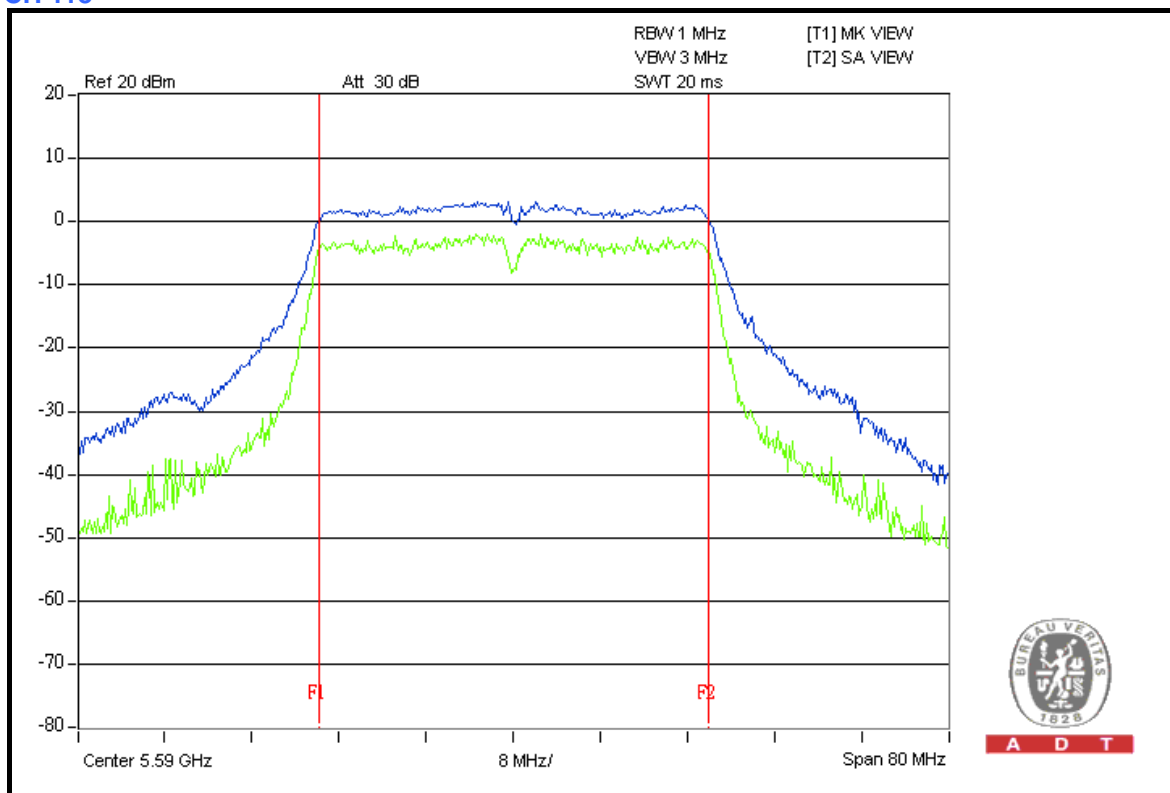


A D T



A D T

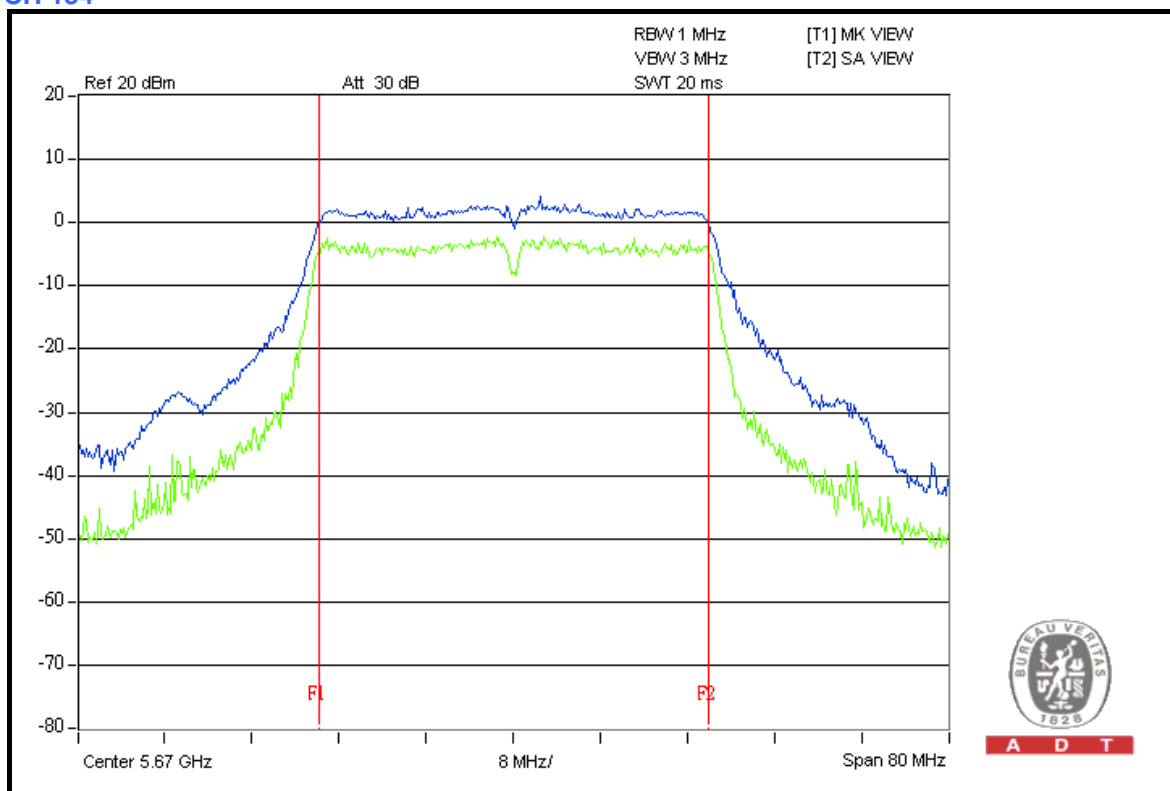
CH 118



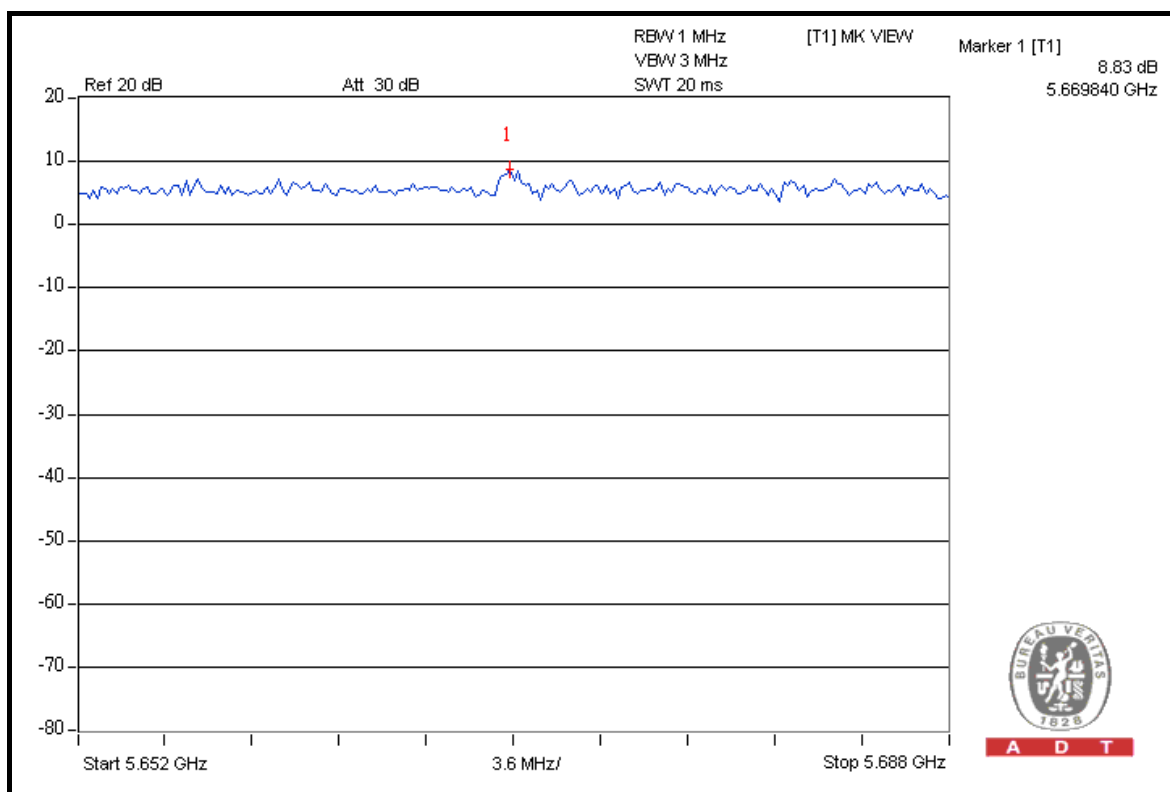


A D T

CH 134



A D T



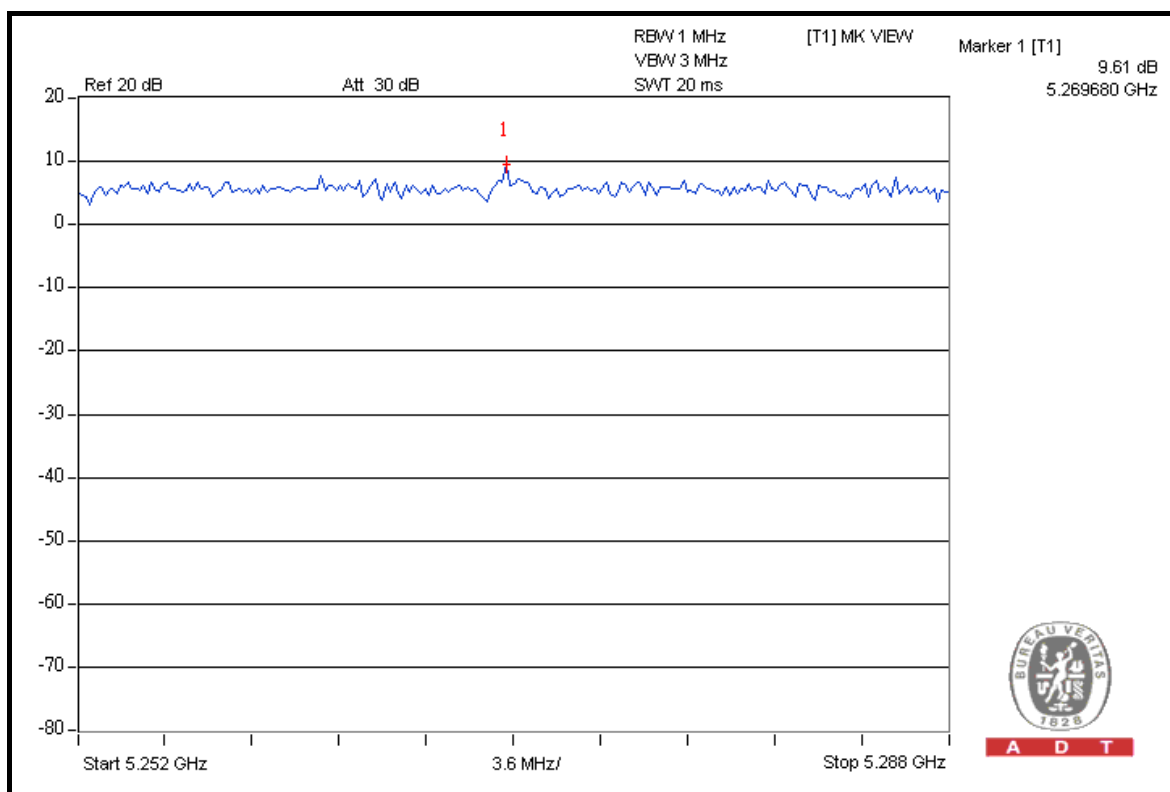
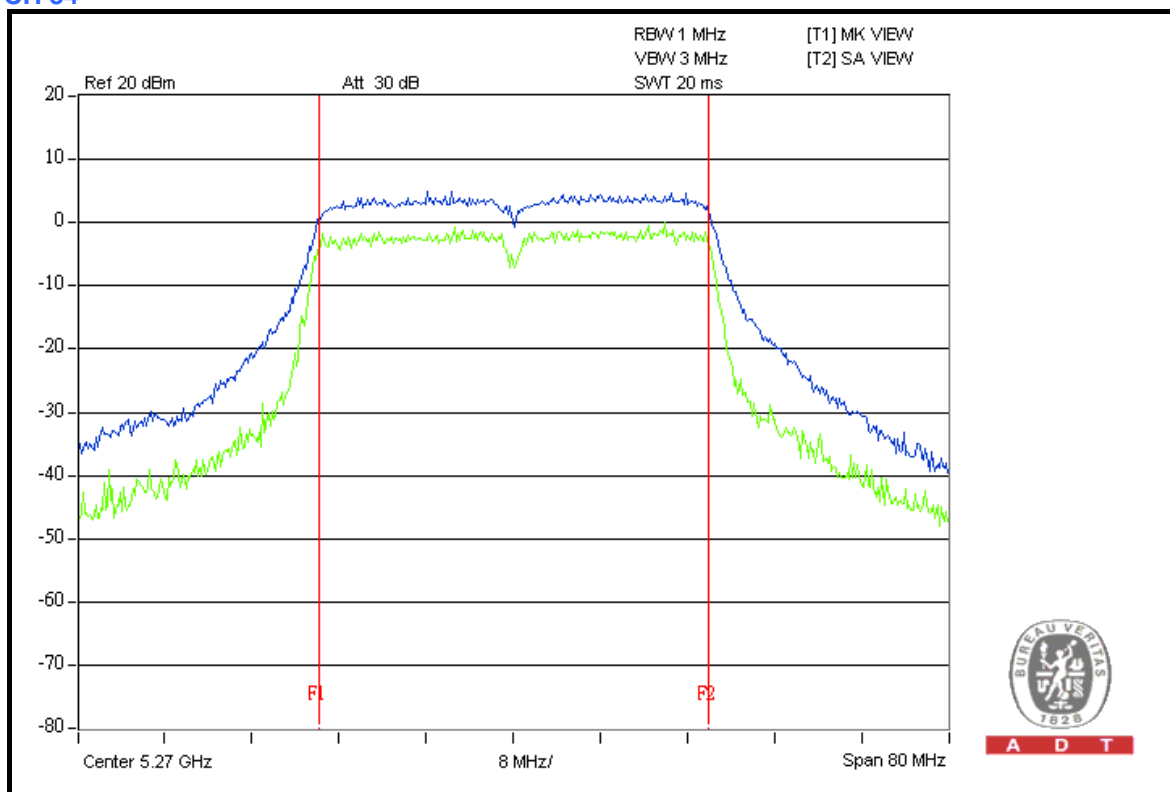
A D T



A D T

FOR CHAIN 2:

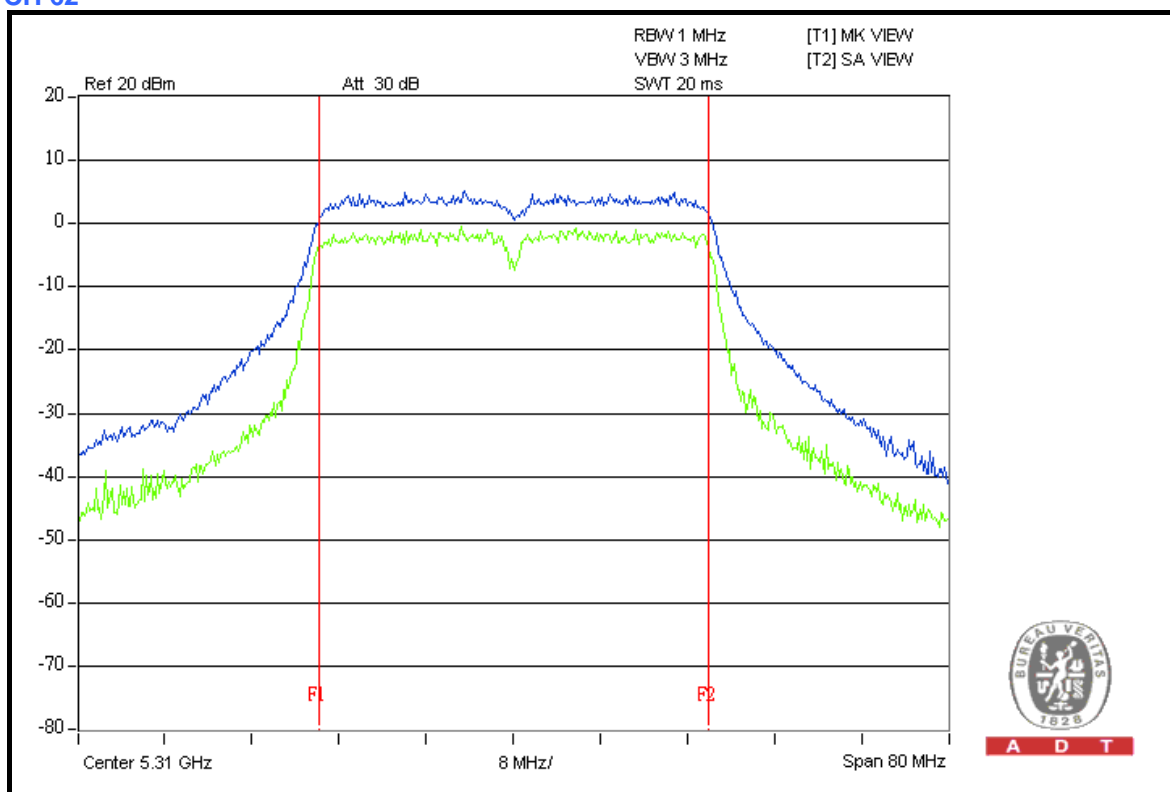
CH 54



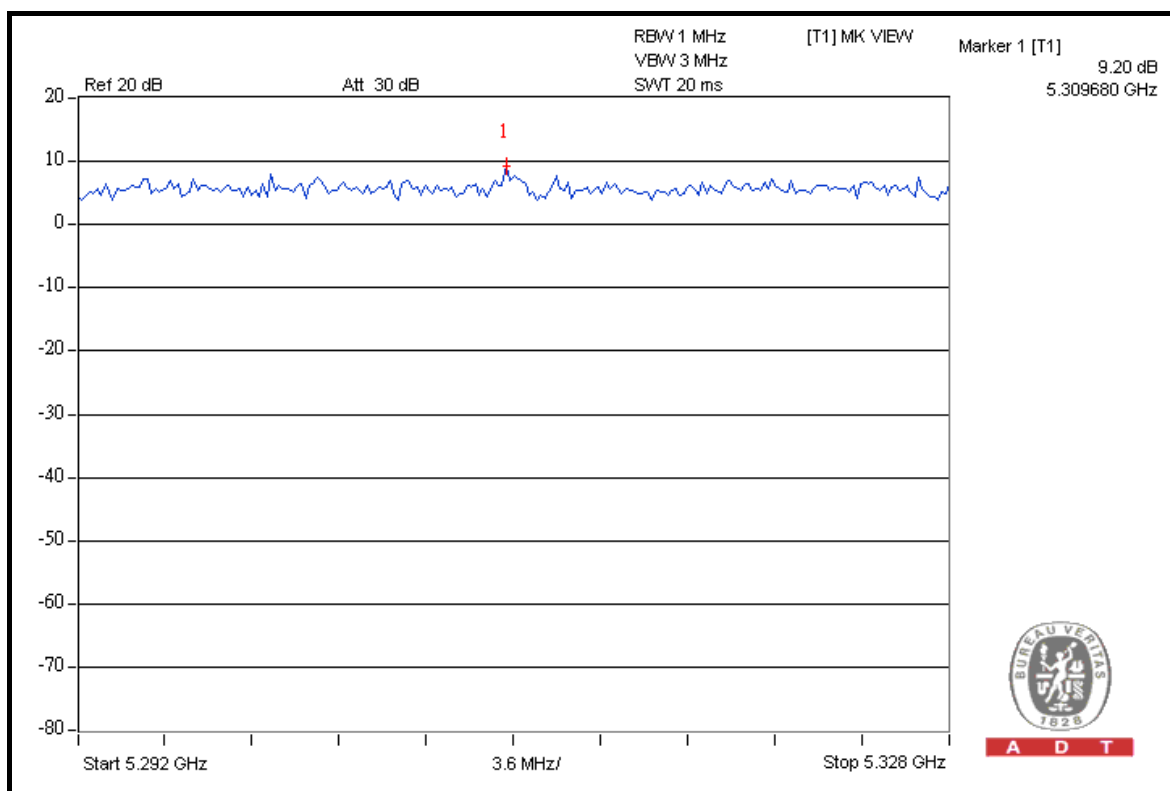


A D T

CH 62



A D T

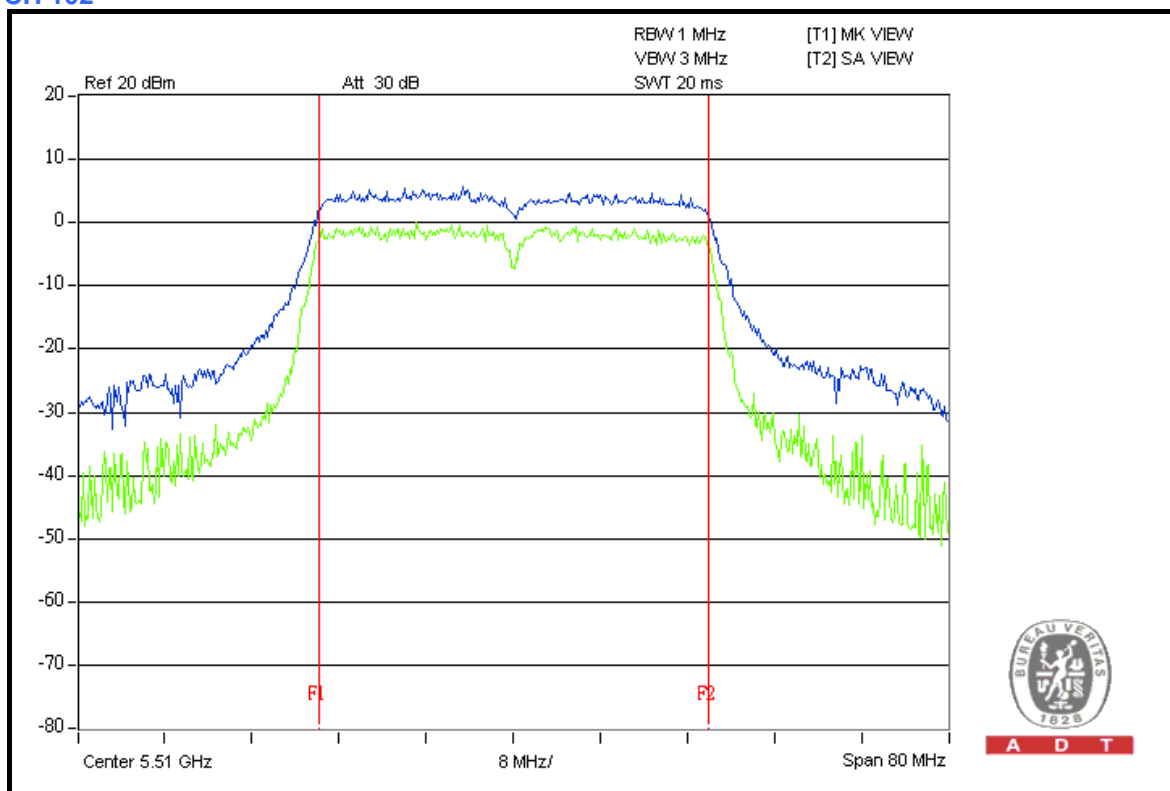


A D T

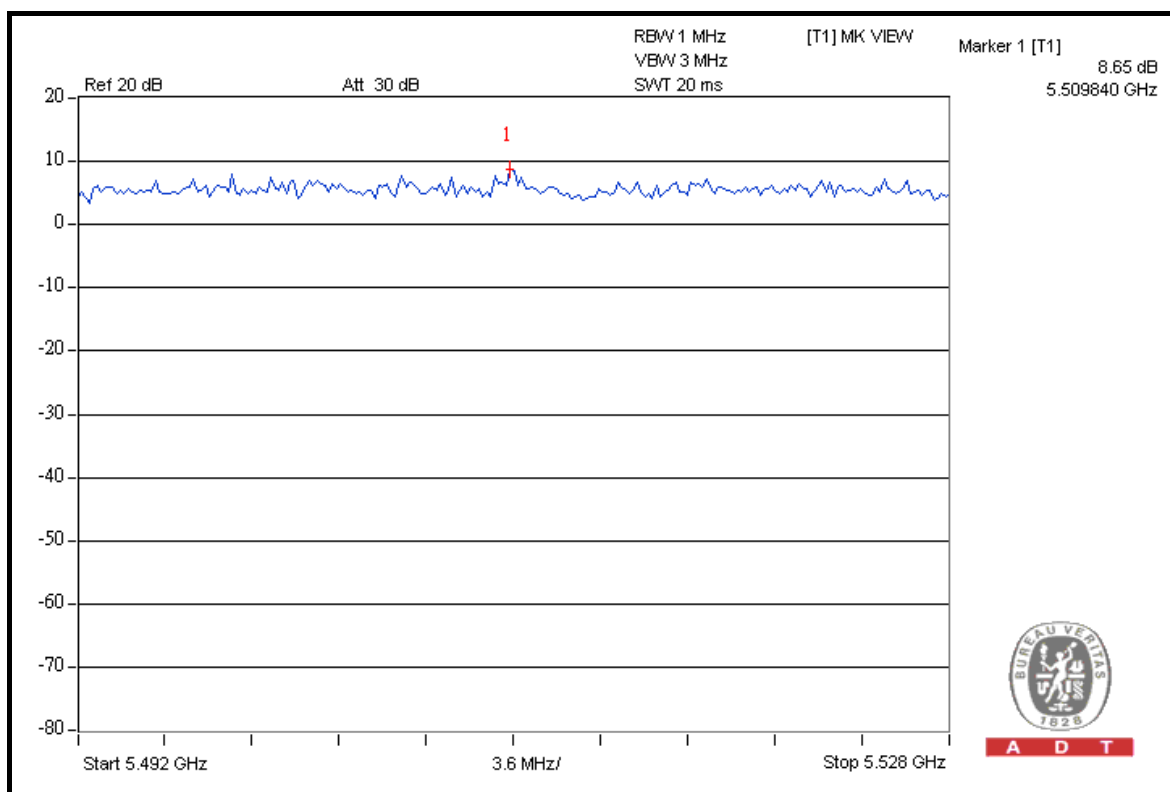


A D T

CH 102



A D T

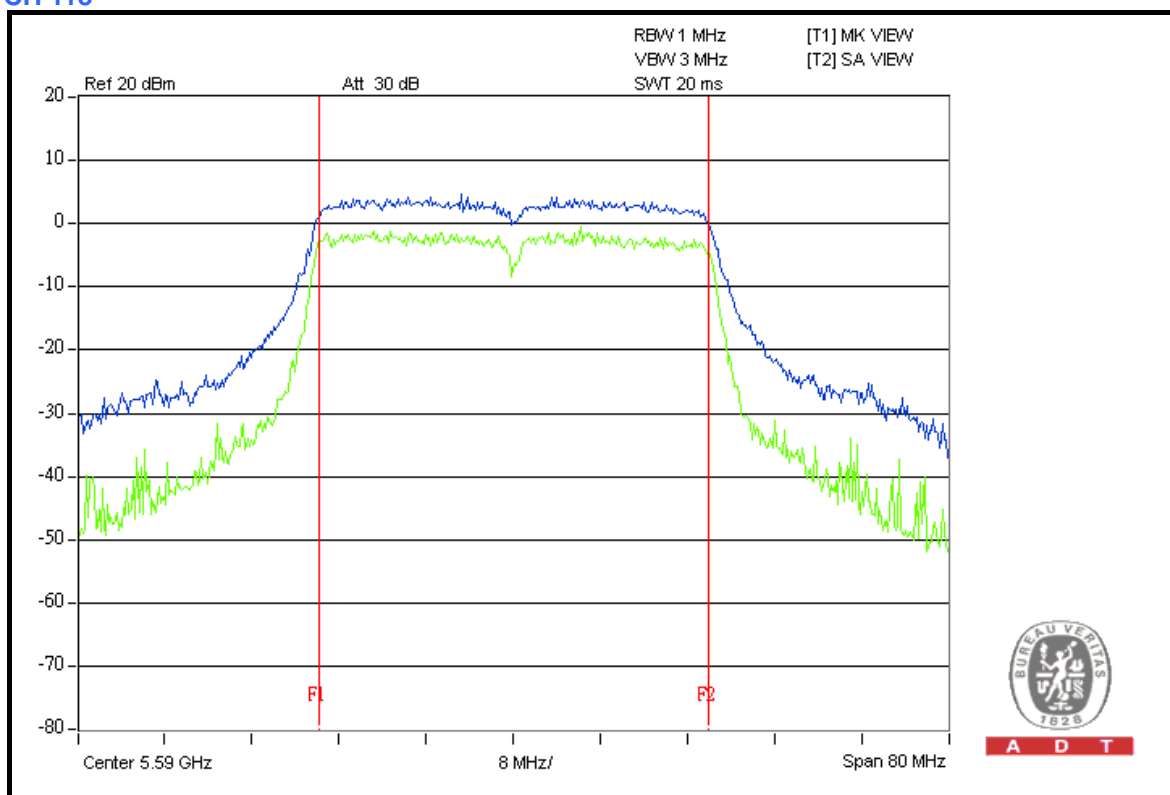


A D T

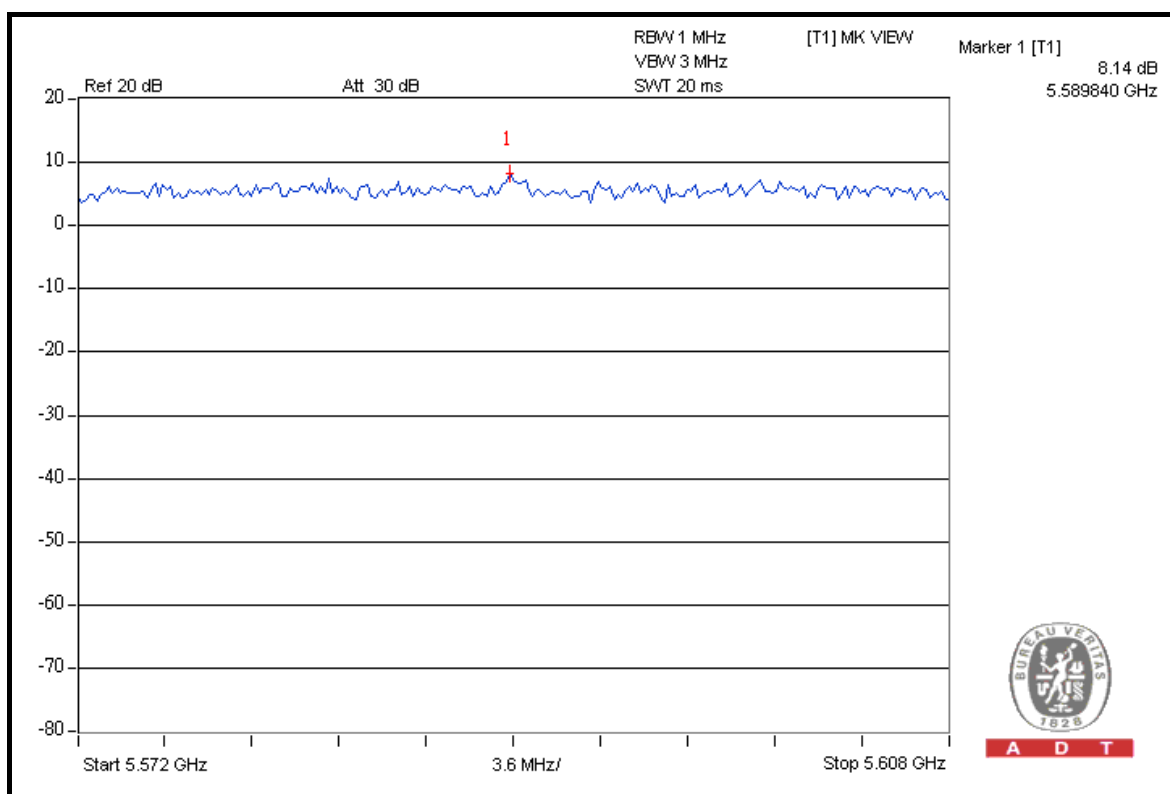


A D T

CH 118



A D T

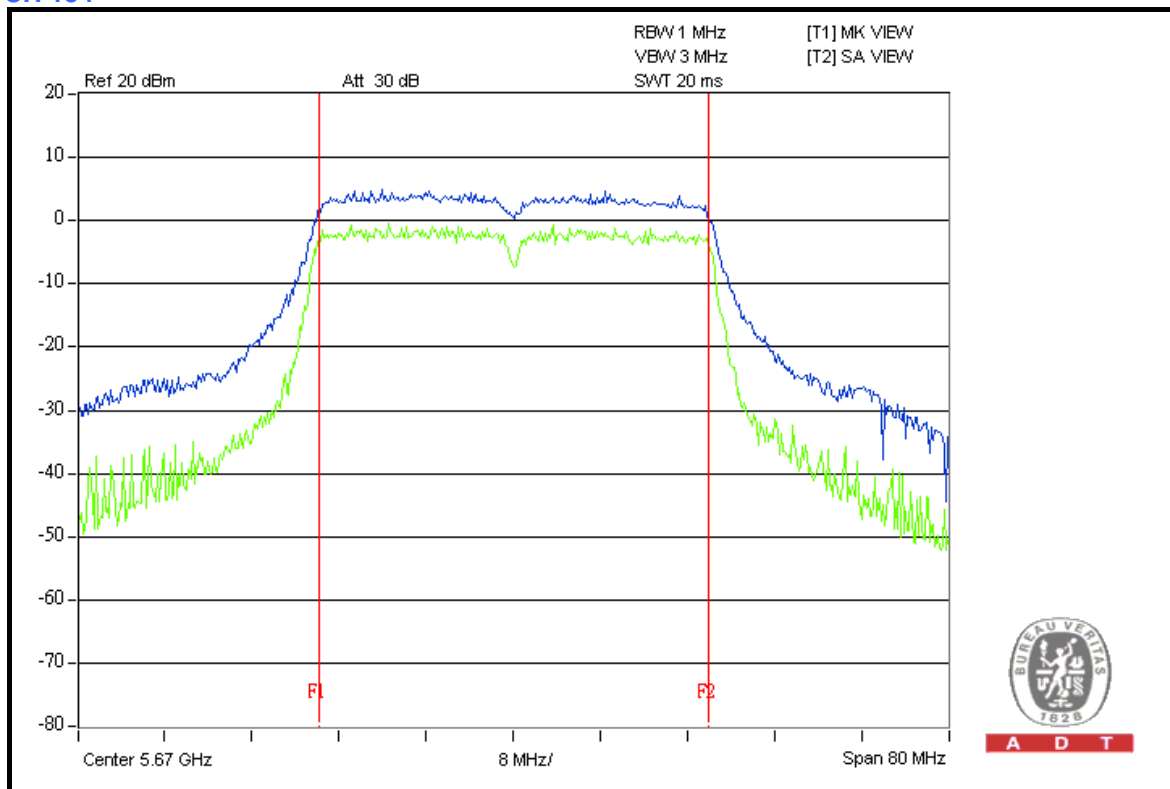


A D T

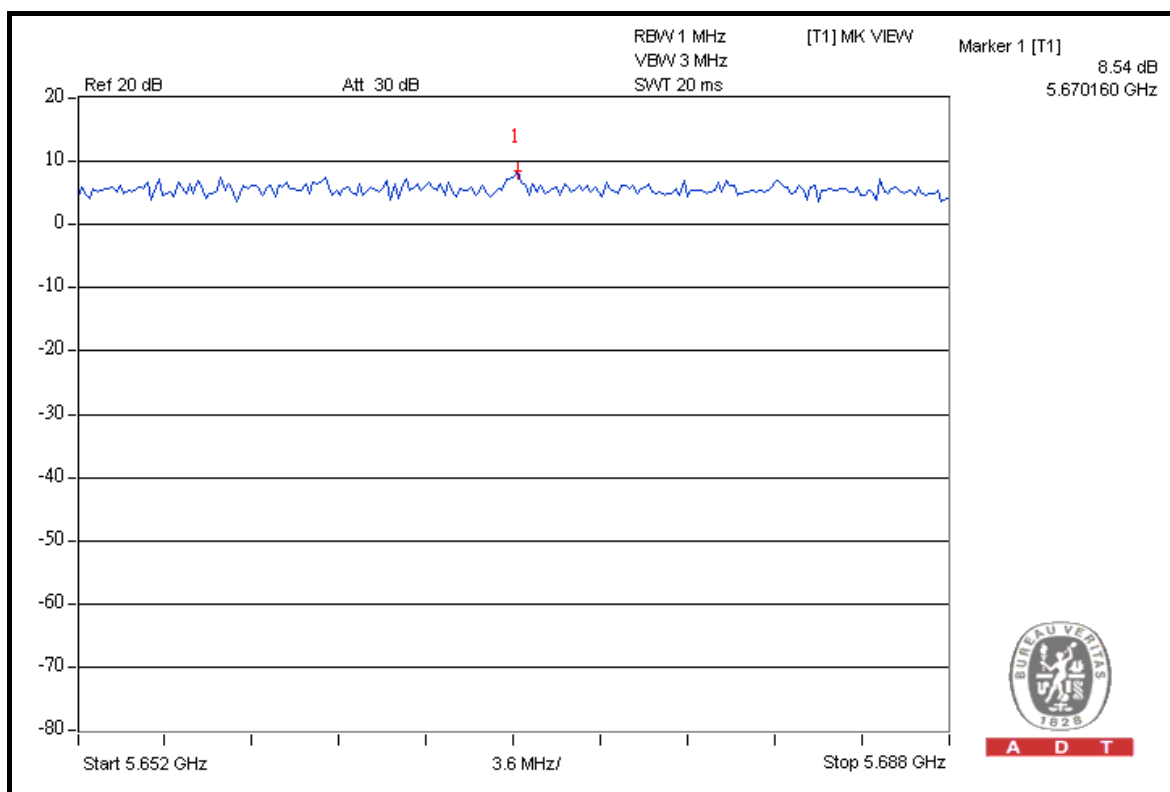


A D T

CH 134



A D T



A D T



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009

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

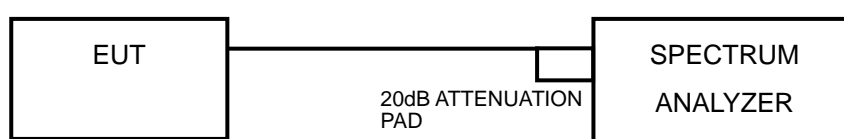
4.5.3 TEST PROCEDURES

- 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 4.4.6



4.5.7 TEST RESULTS

802.11a OFDM MODULATION

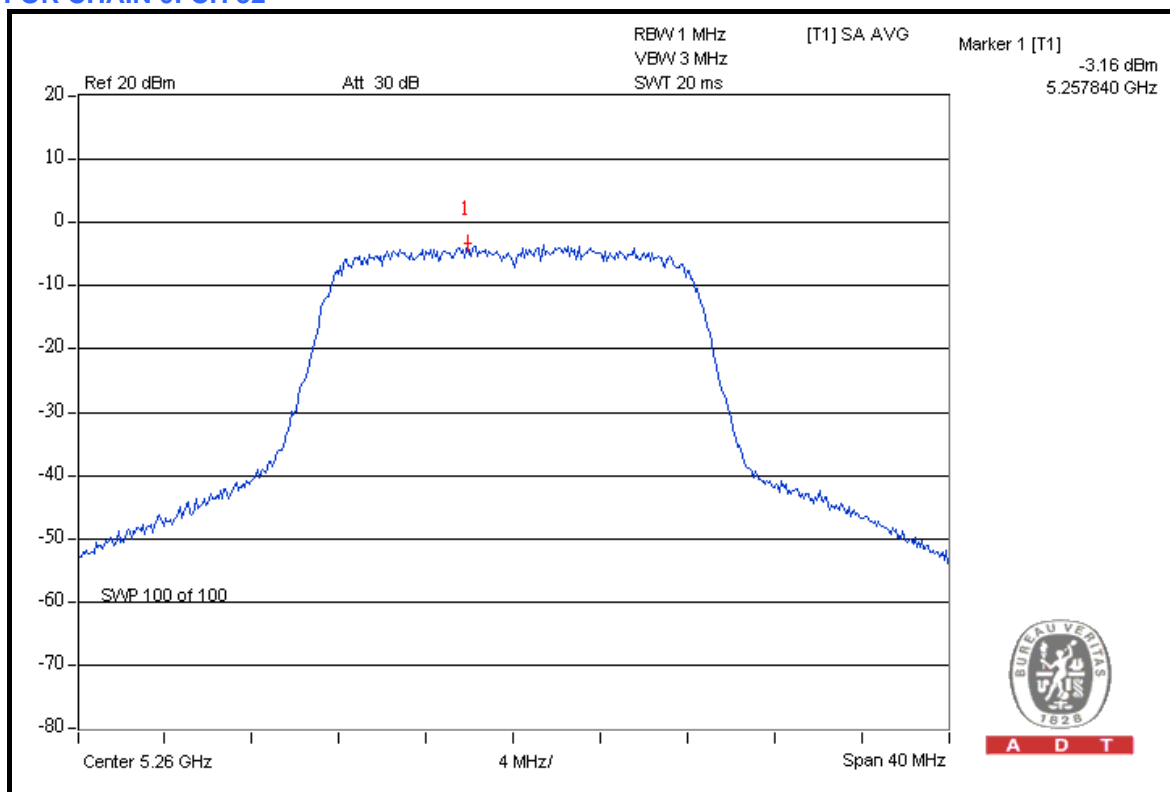
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	-3.16	-4.63	-4.79	1.159	0.64	11	PASS
60	5300	-3.72	-5.79	-4.91	1.011	0.05	11	PASS
64	5320	-3.79	-5.03	-3.95	1.135	0.55	11	PASS
100	5500	-3.94	-5.77	-4.52	1.022	0.09	11	PASS
120	5600	-4.06	-4.81	-3.44	1.176	0.70	11	PASS
140	5700	-3.74	-5.74	-4.43	1.050	0.21	11	PASS

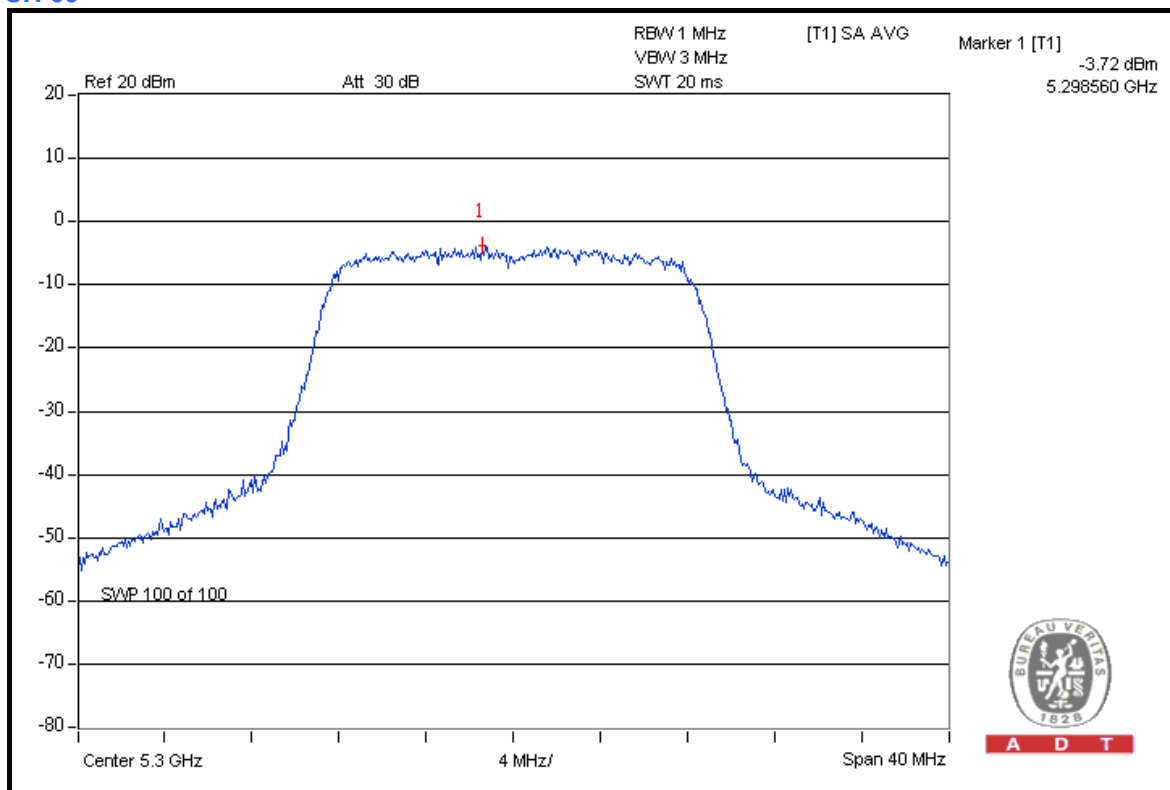


A D T

FOR CHAIN 0: CH 52



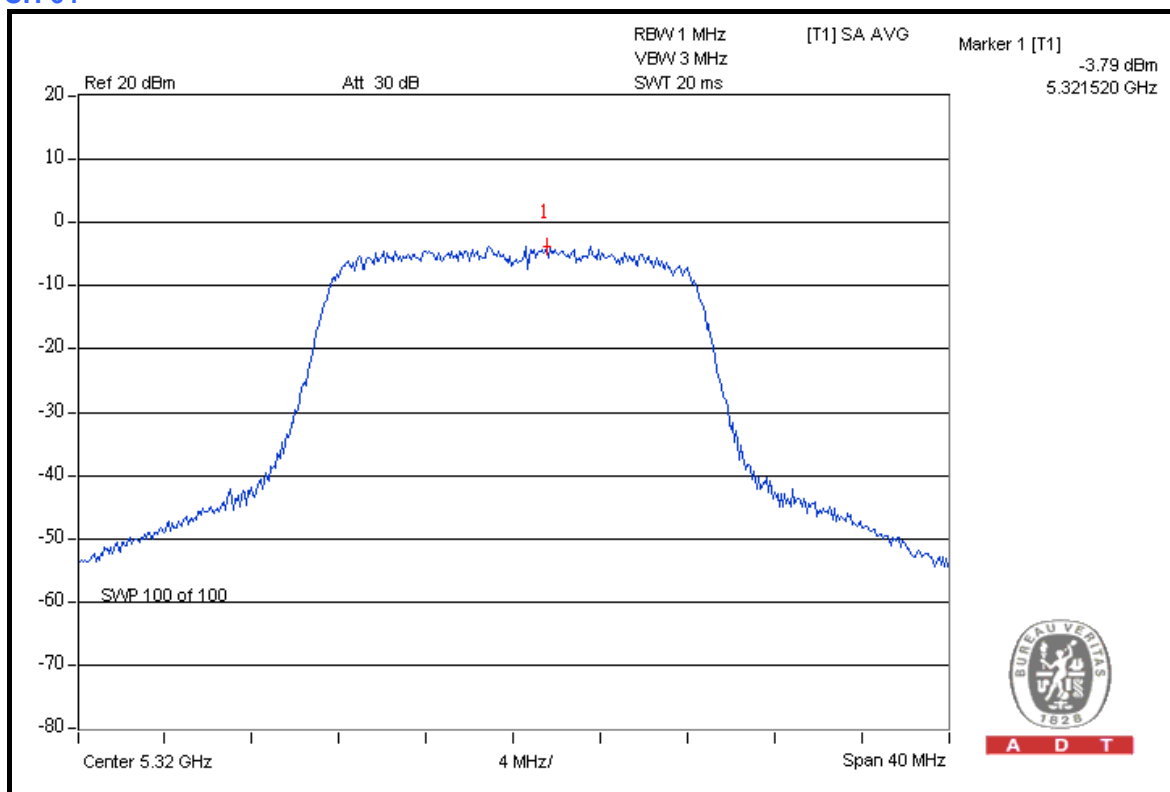
CH 60





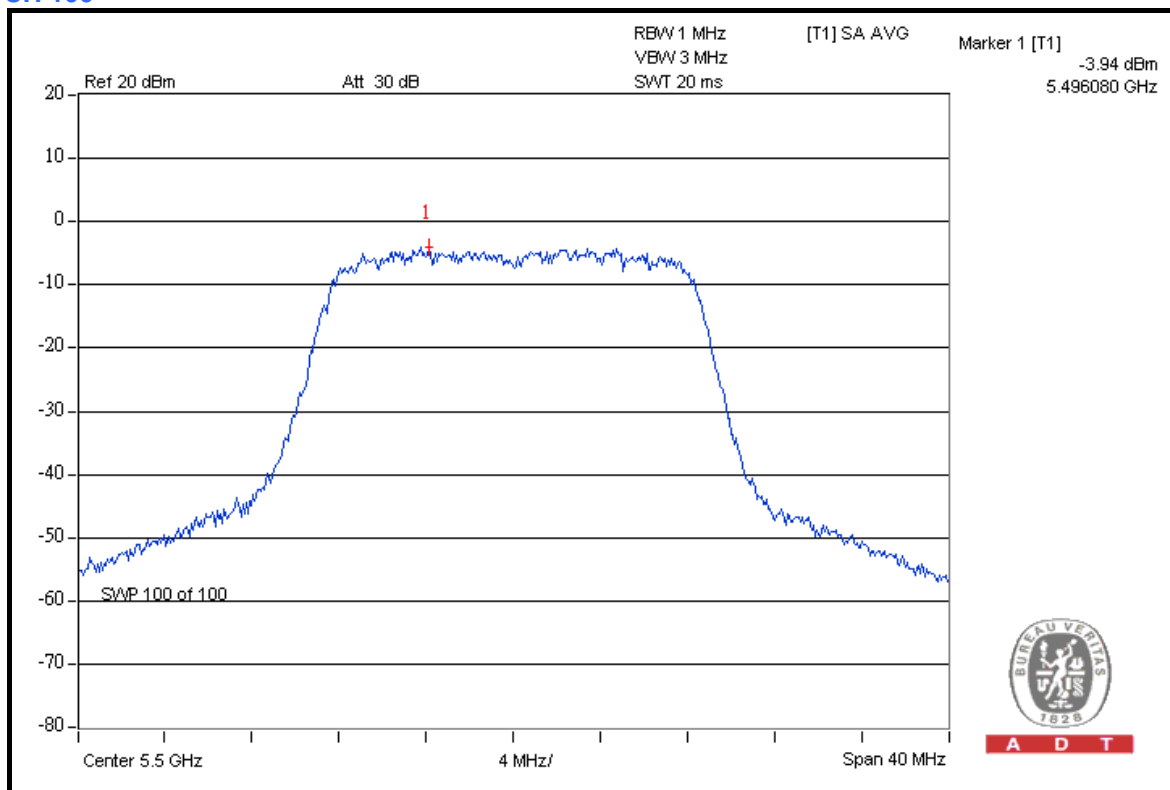
A D T

CH 64



A D T

CH 100

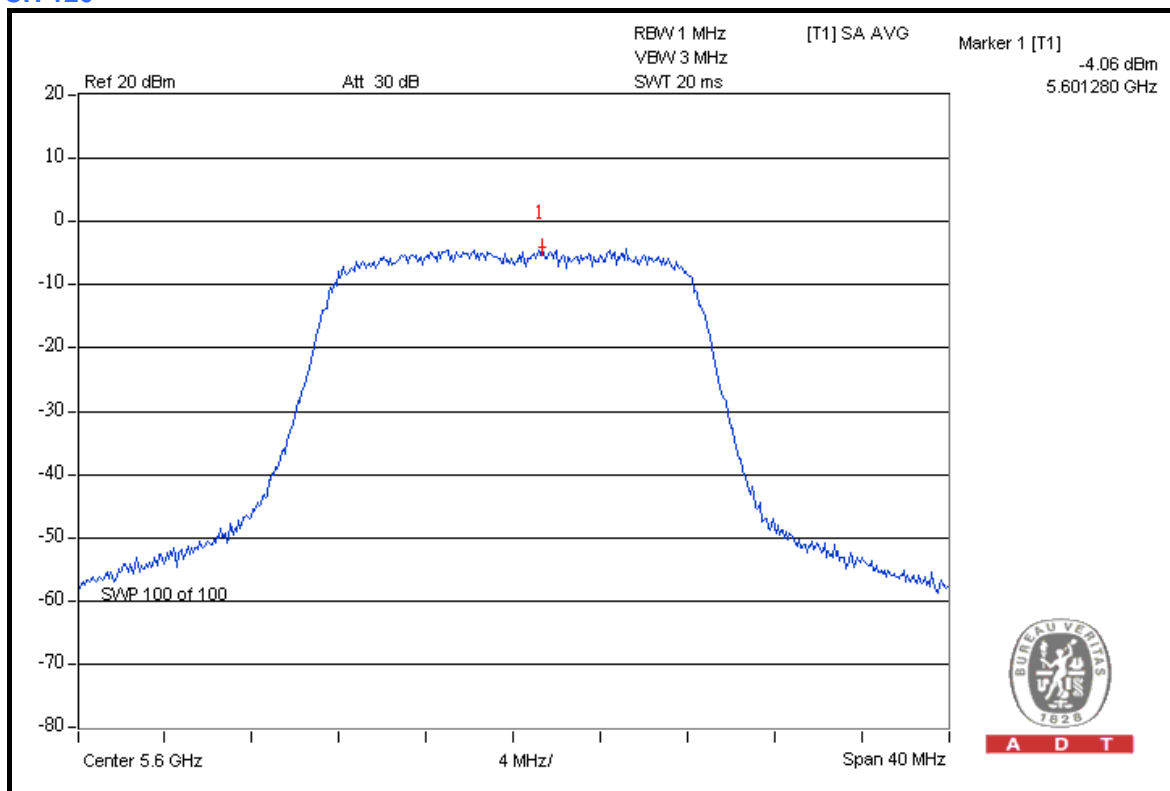


A D T

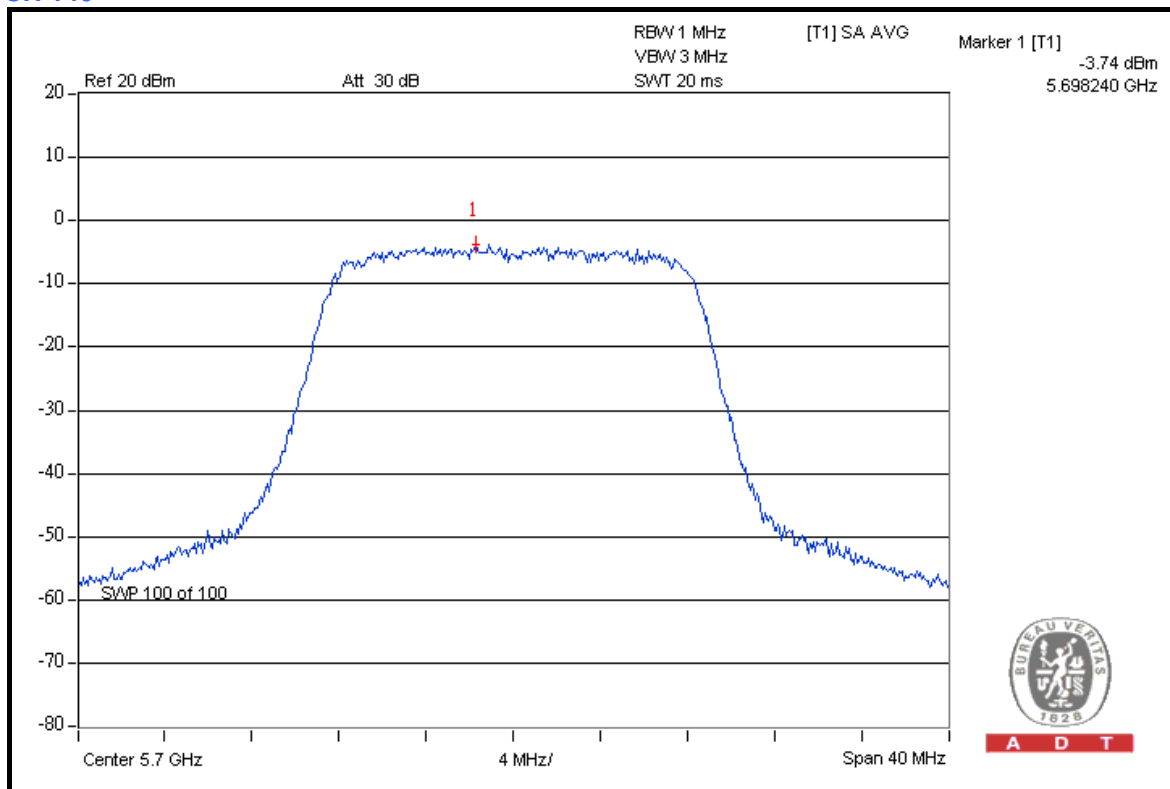


A D T

CH 120



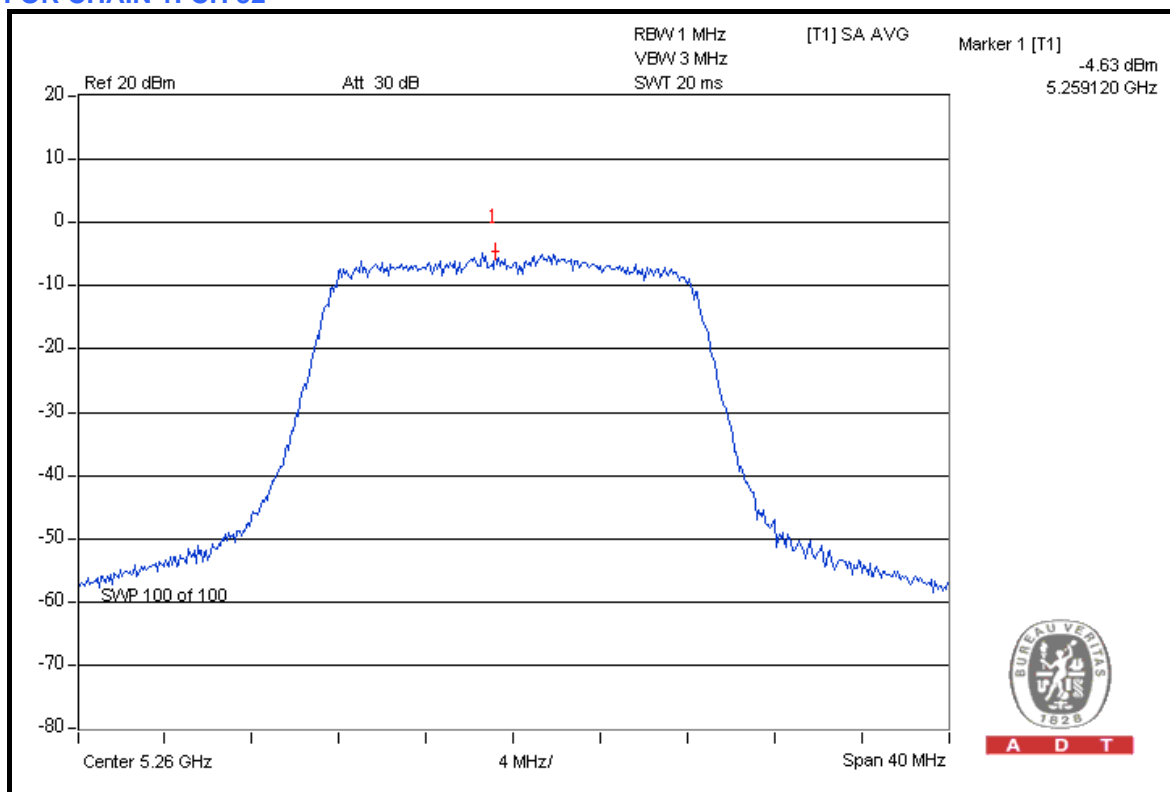
CH 140



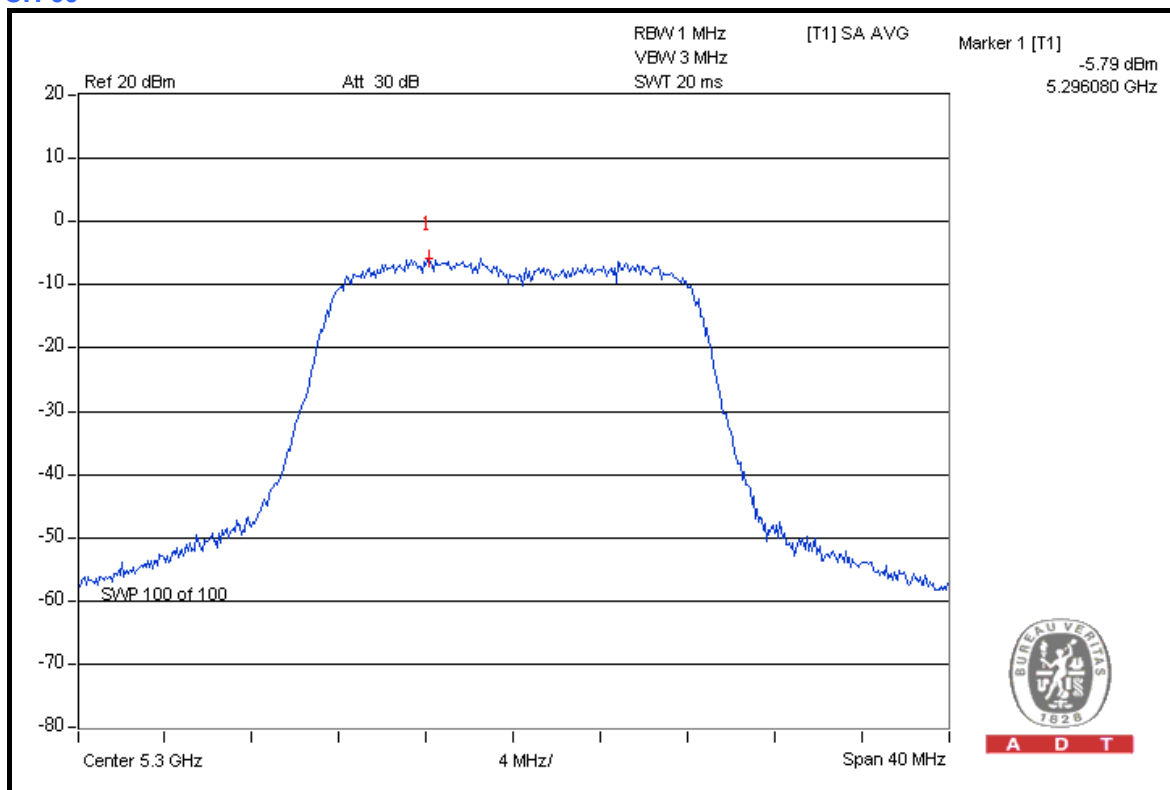


A D T

FOR CHAIN 1: CH 52



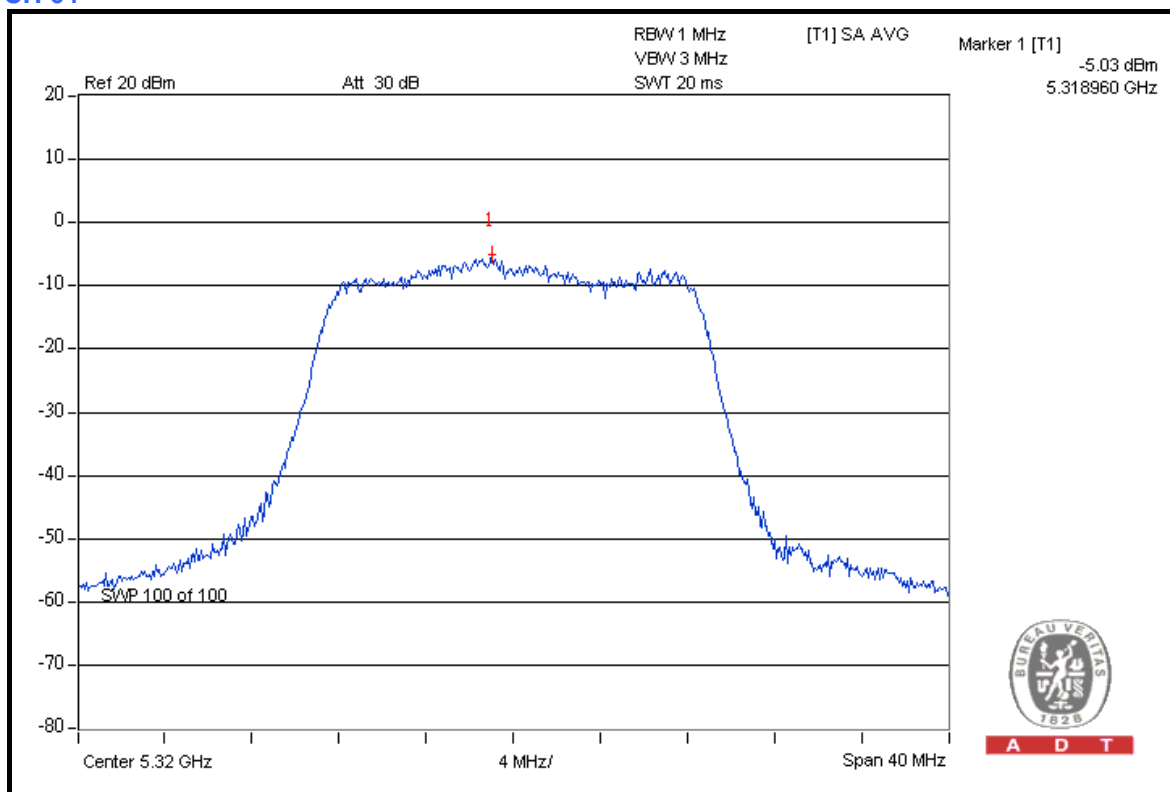
CH 60



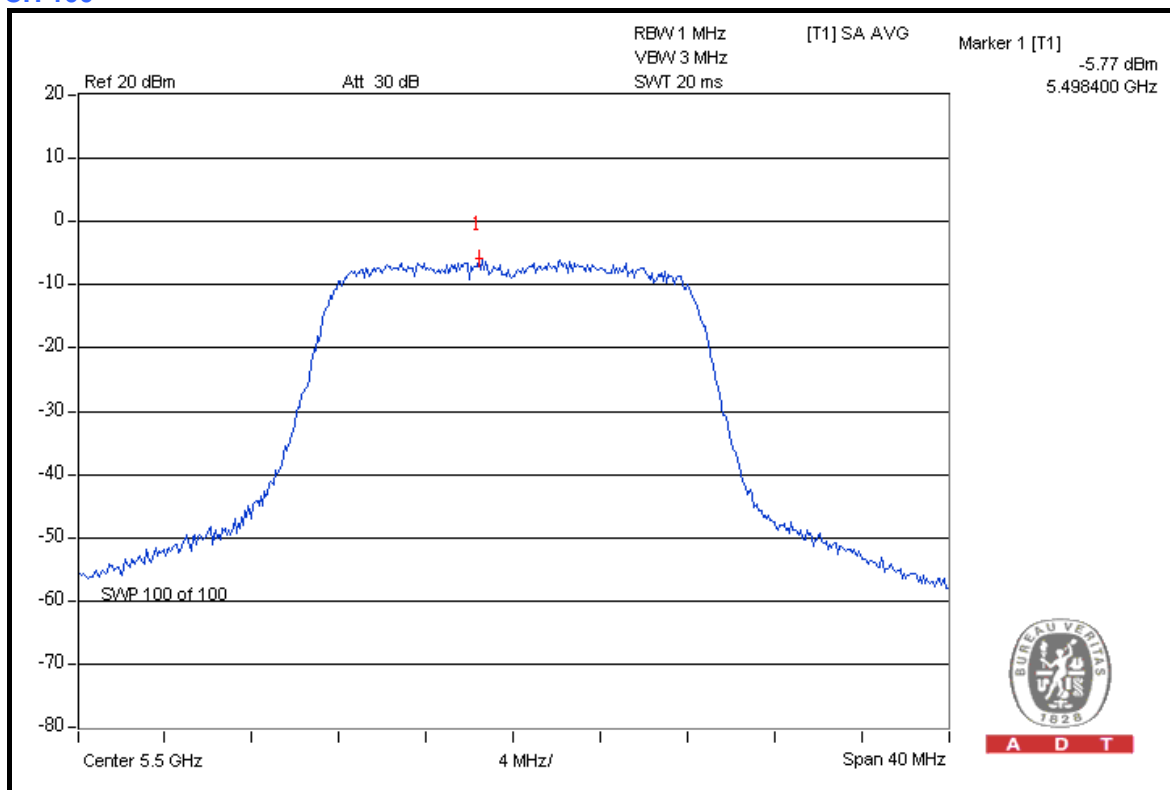


A D T

CH 64



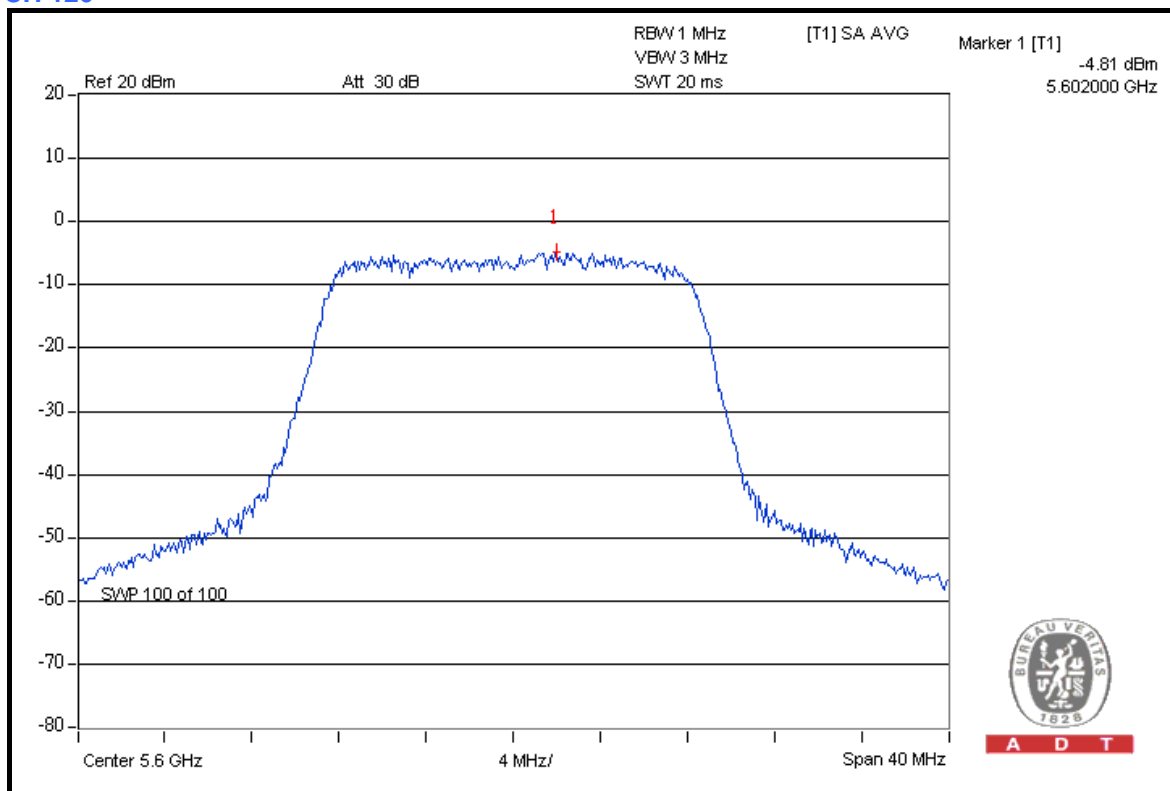
CH 100



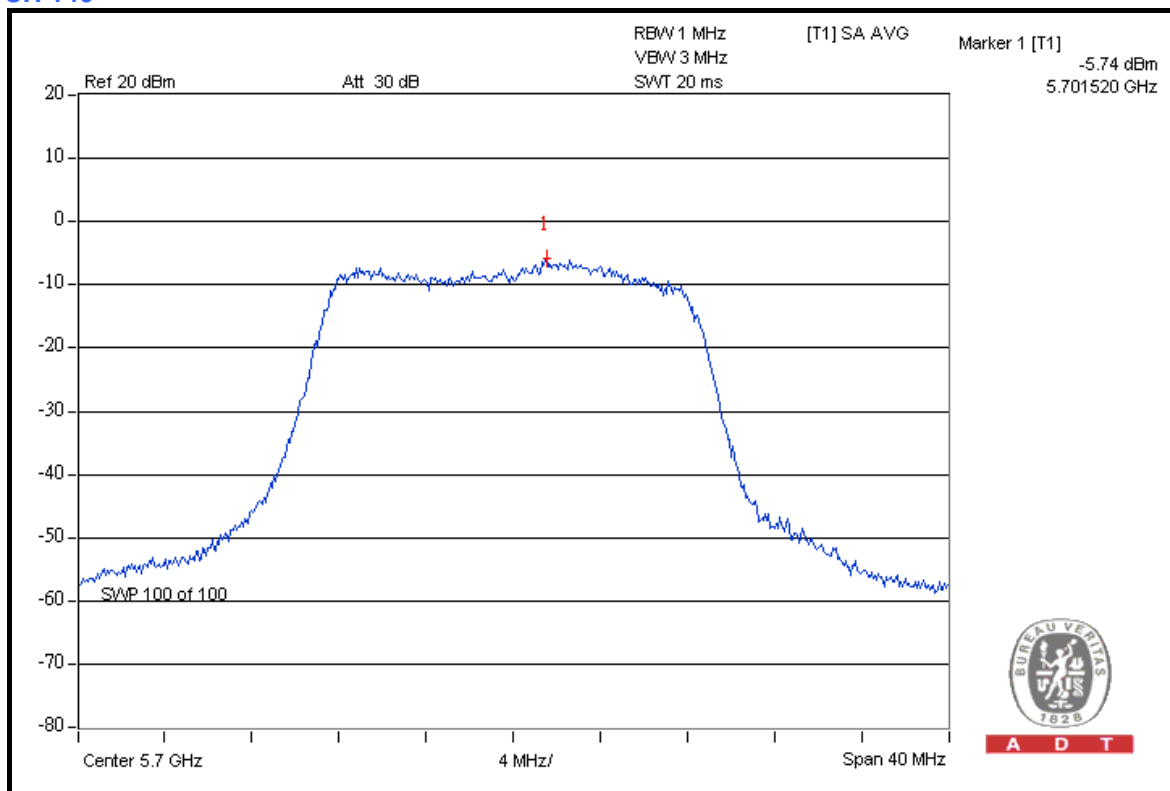


A D T

CH 120



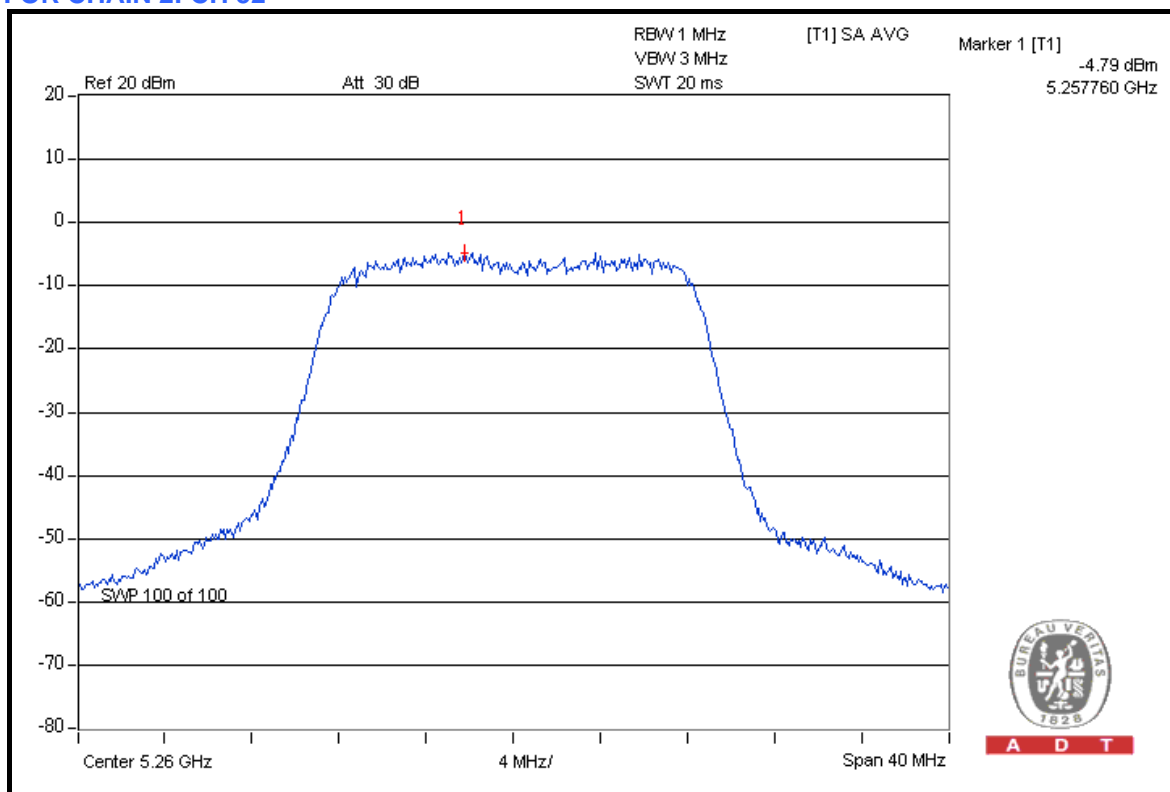
CH 140



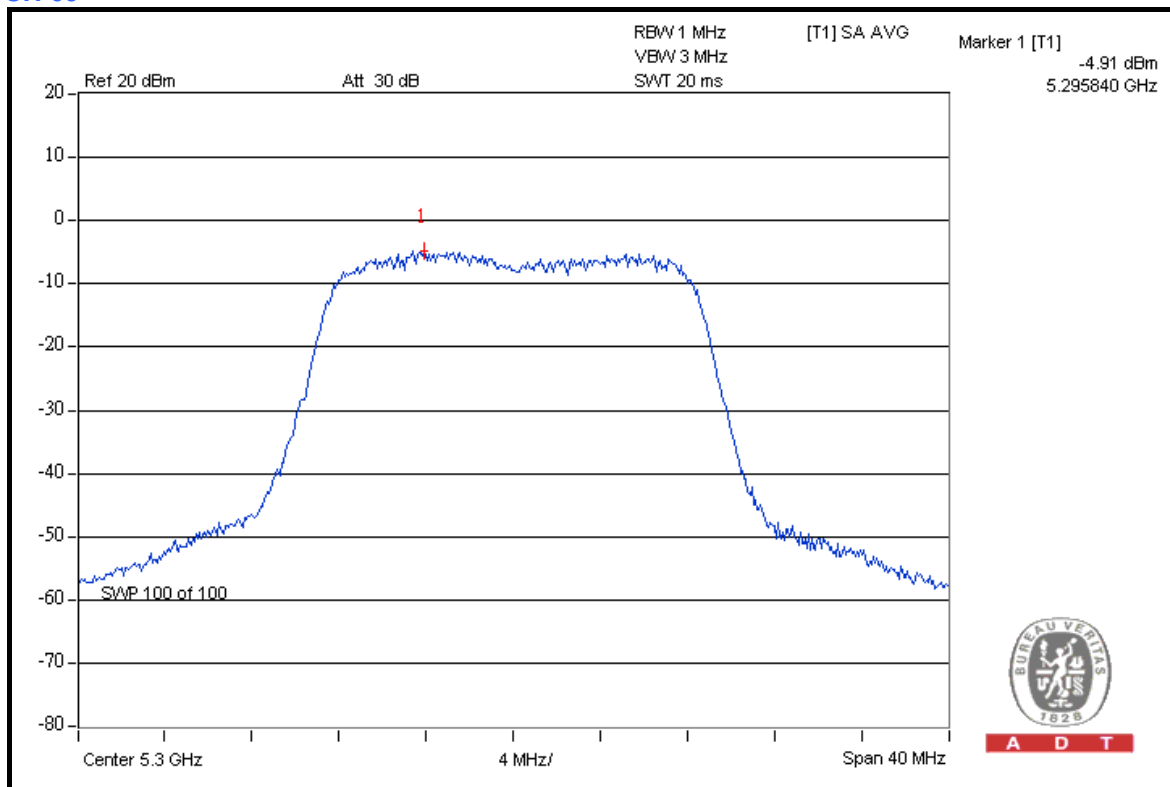


A D T

FOR CHAIN 2: CH 52



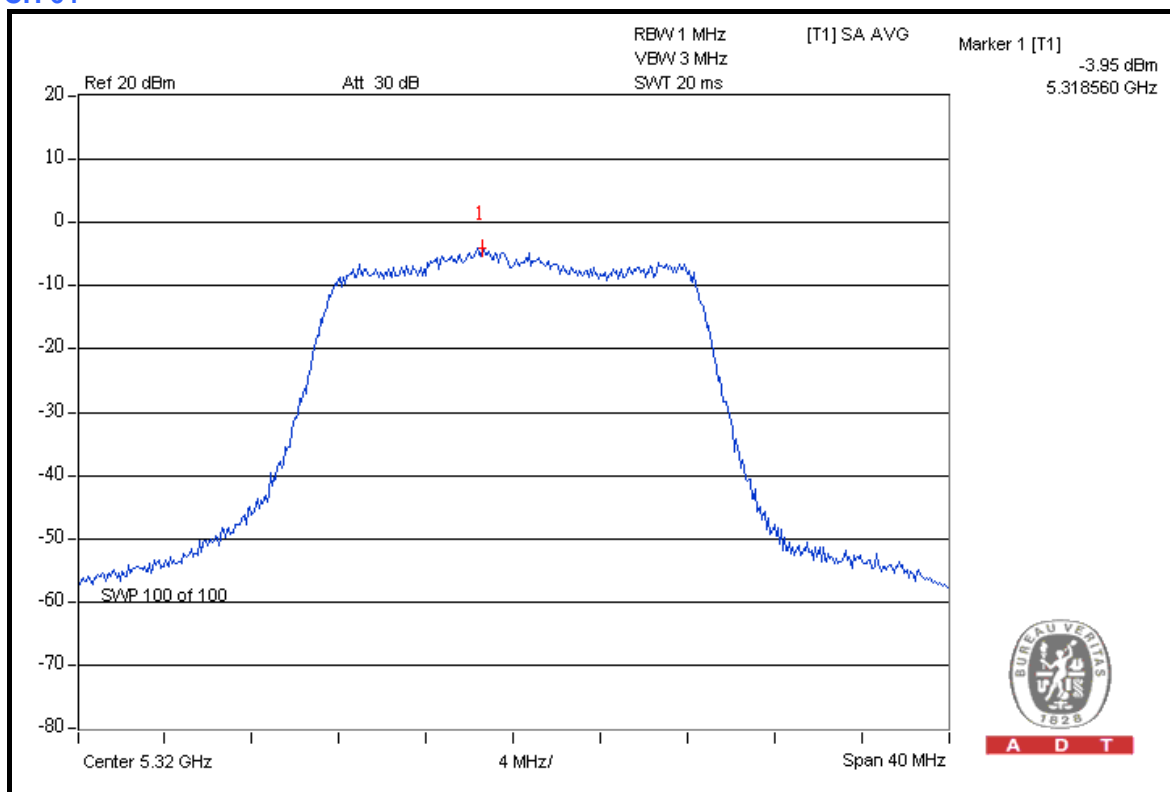
CH 60



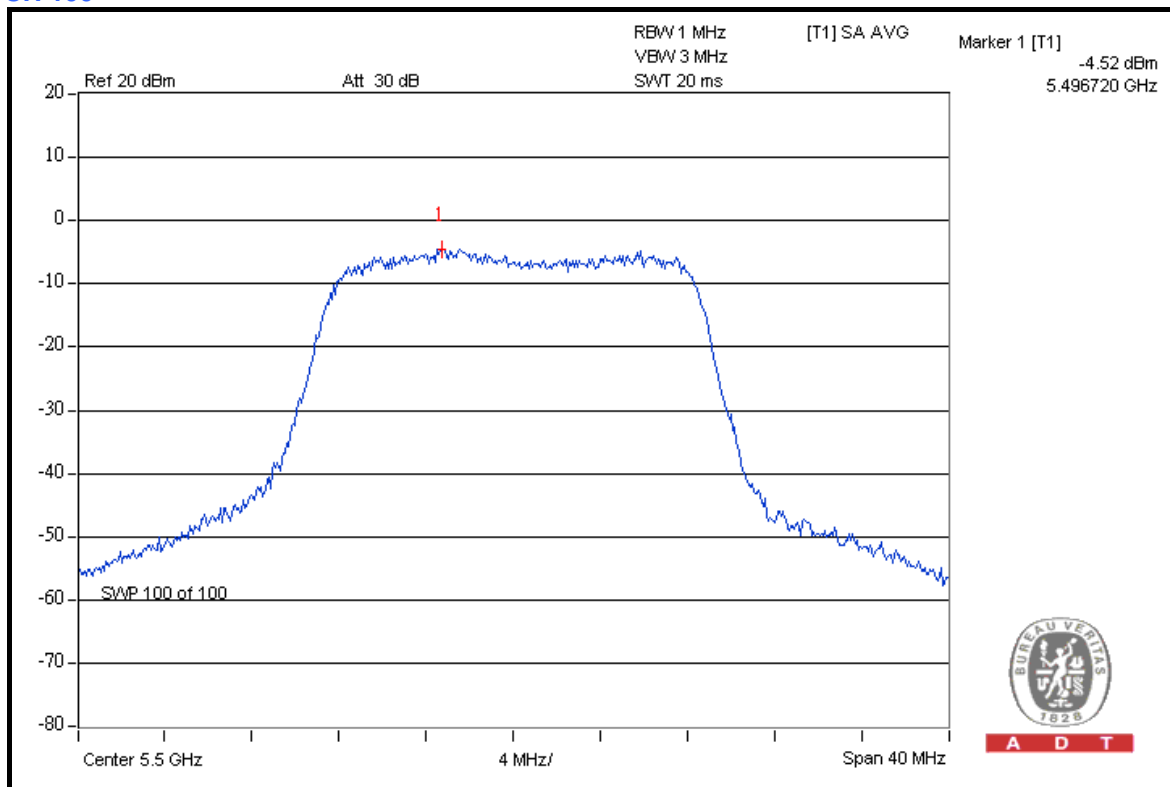


A D T

CH 64



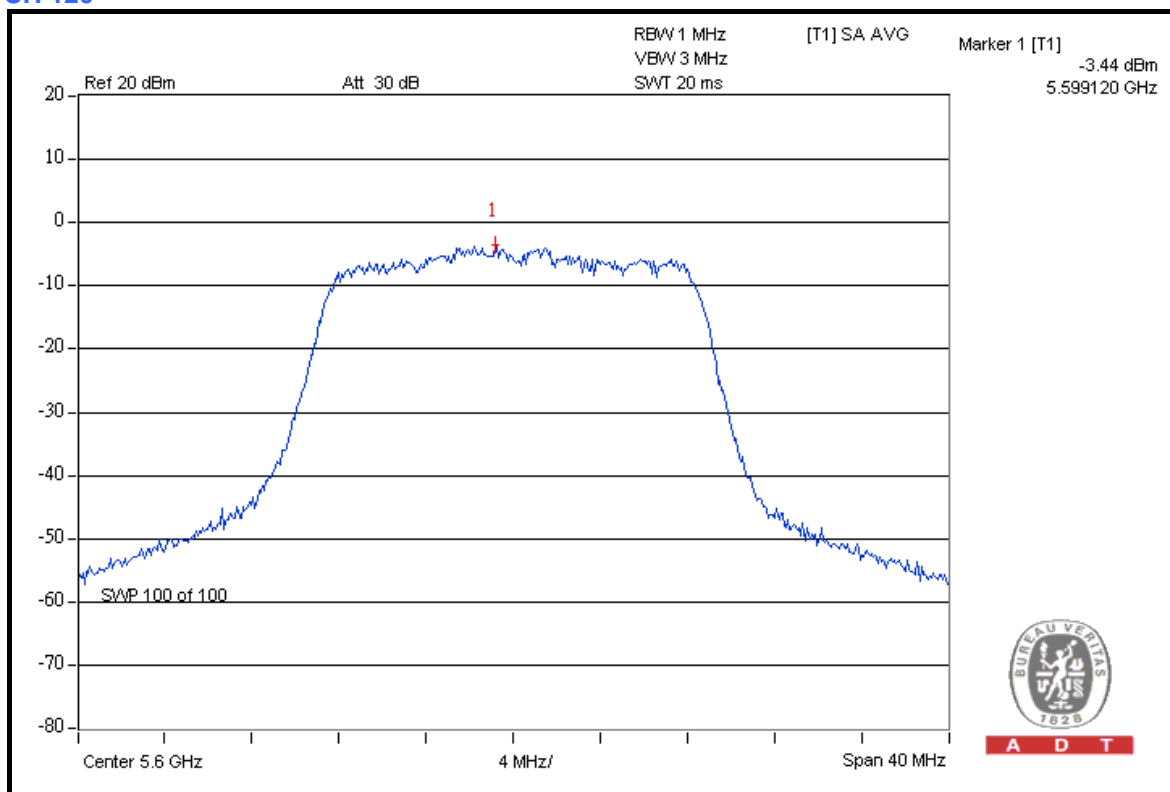
CH 100





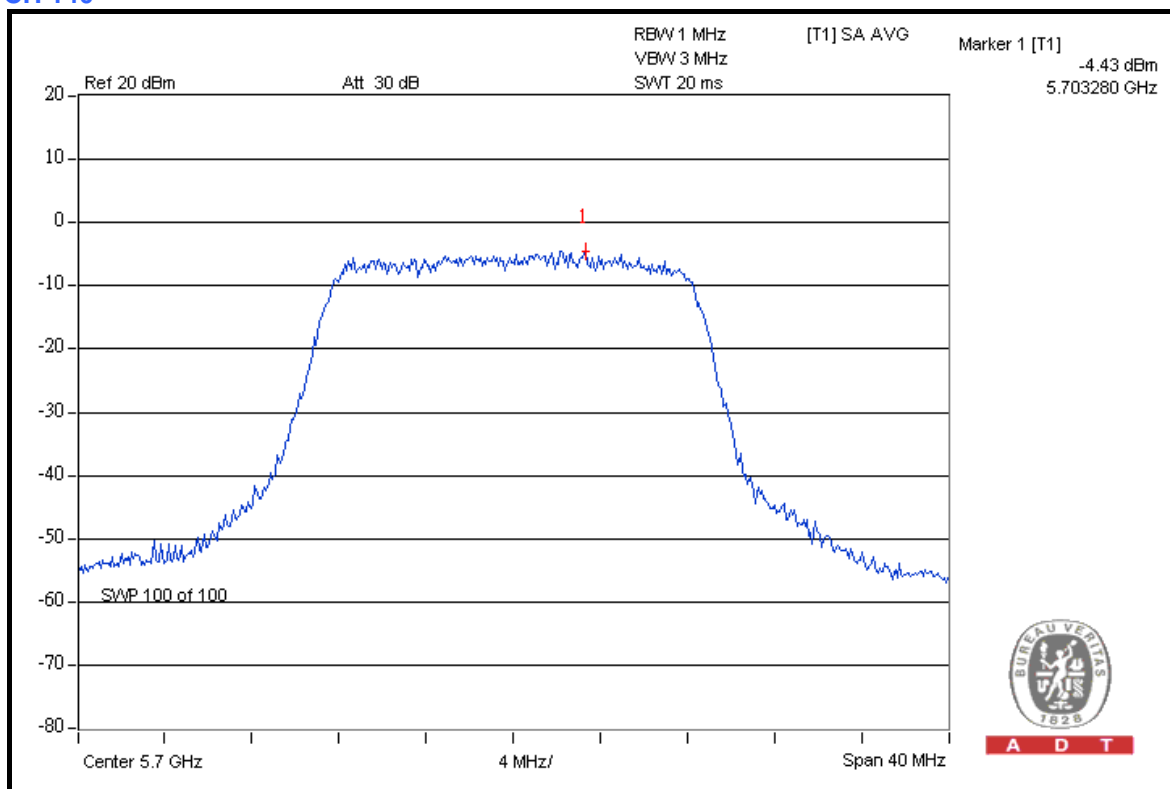
A D T

CH 120



A D T

CH 140



A D T



DRAFT 802.11n (20MHz) OFDM MODULATION

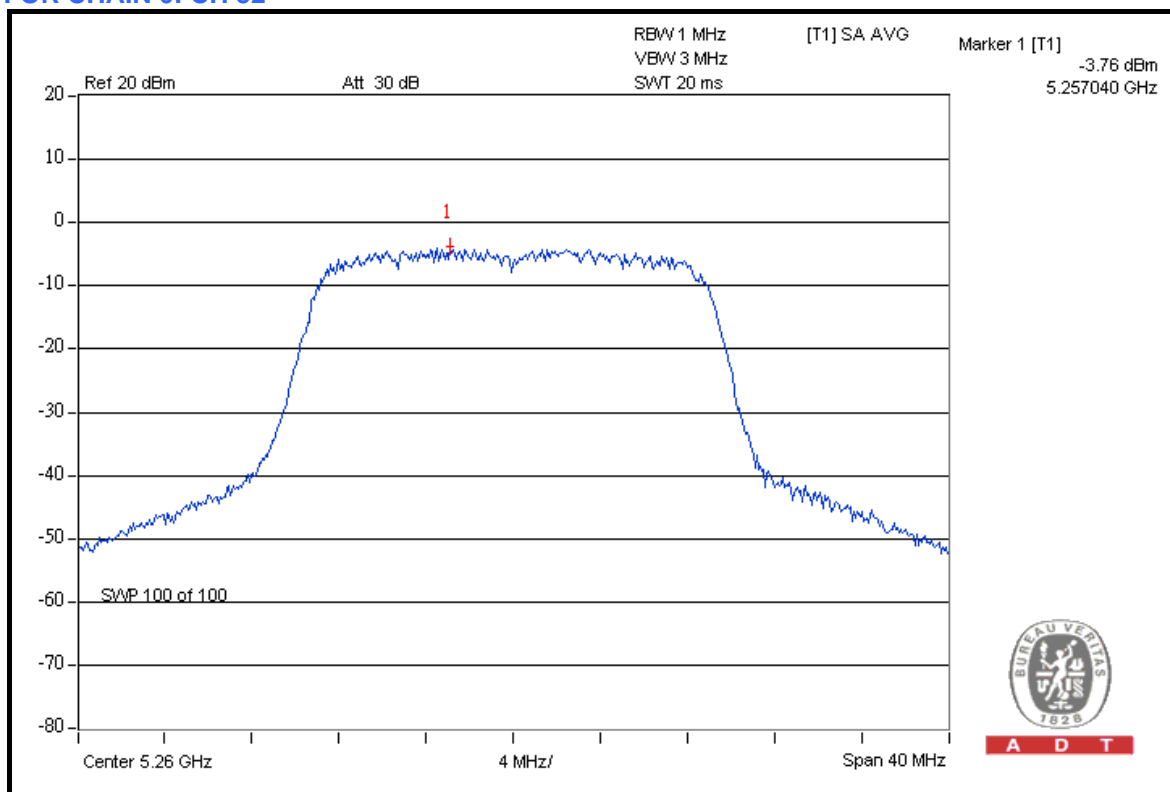
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Brad Wu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	-3.76	-6.23	-5.05	0.972	-0.13	11	PASS
60	5300	-4.32	-5.00	-4.01	1.083	0.35	11	PASS
64	5320	-3.92	-5.10	-3.57	1.154	0.62	11	PASS
100	5500	-4.90	-4.94	-3.49	1.092	0.38	11	PASS
120	5600	-4.51	-5.00	-3.66	1.101	0.42	11	PASS
140	5700	-4.21	-5.03	-3.60	1.130	0.53	11	PASS



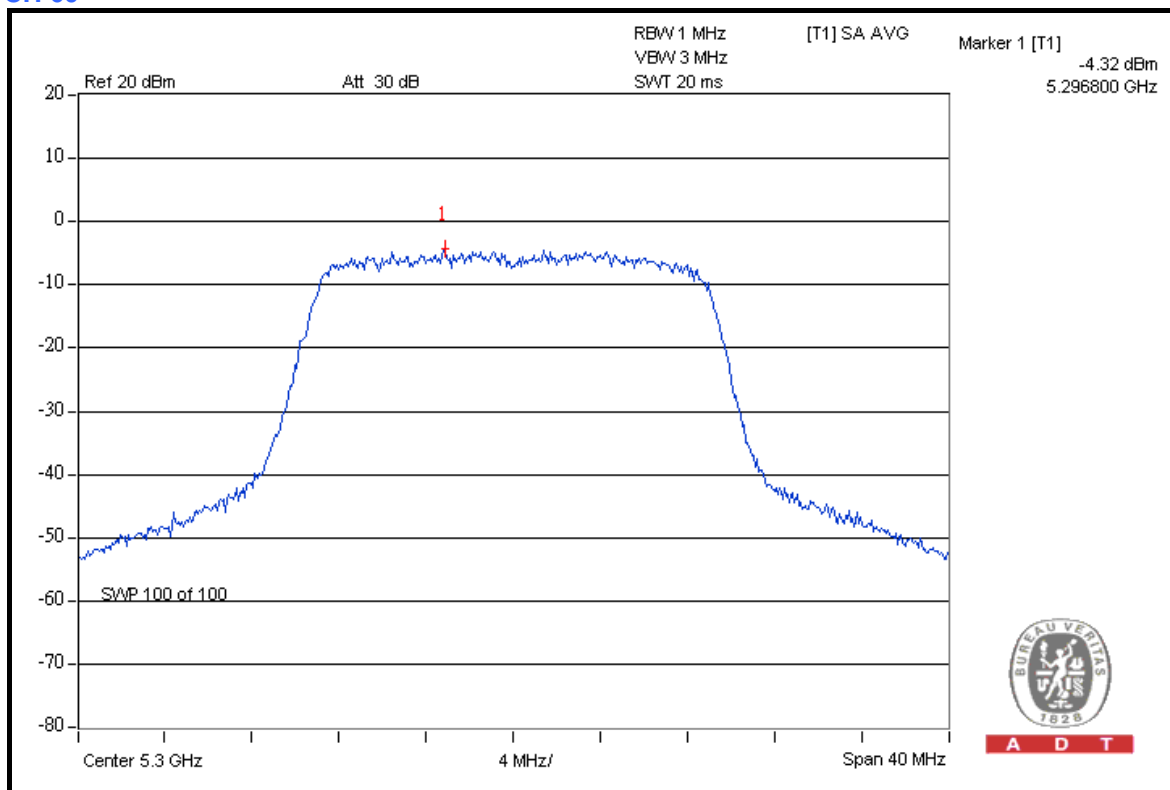
A D T

FOR CHAIN 0: CH 52



A D T

CH 60

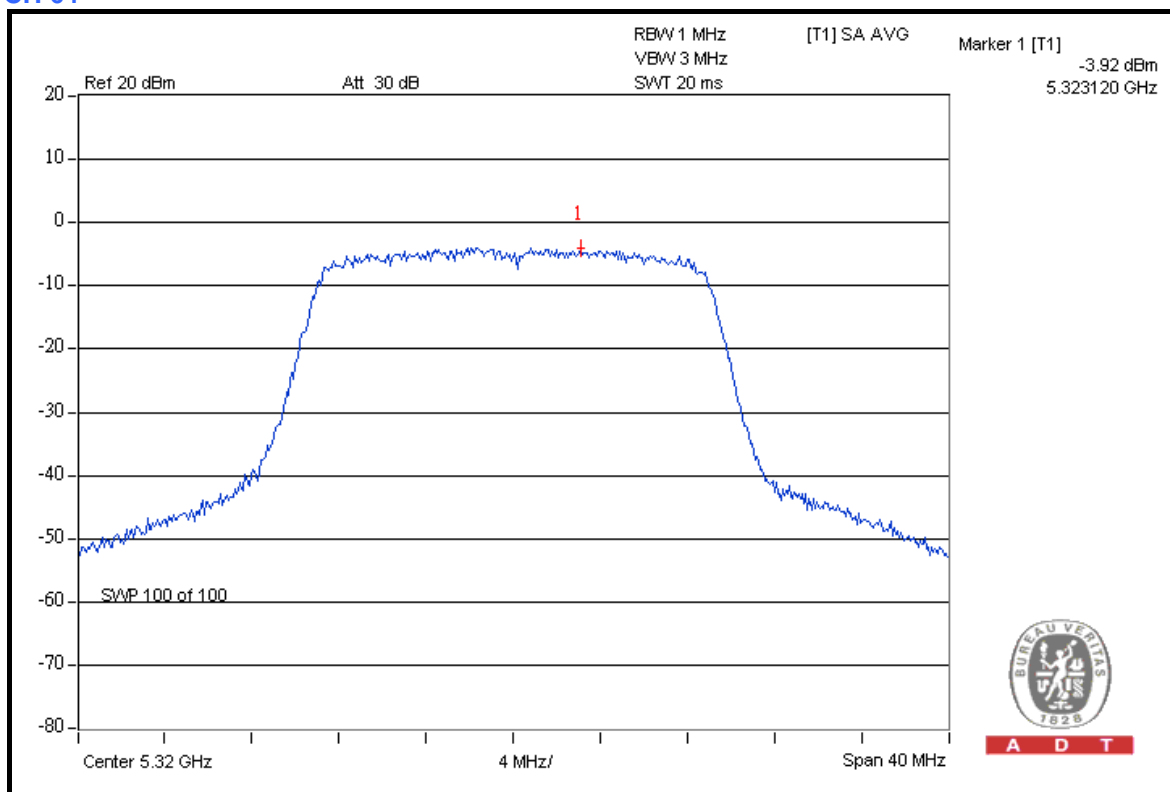


A D T



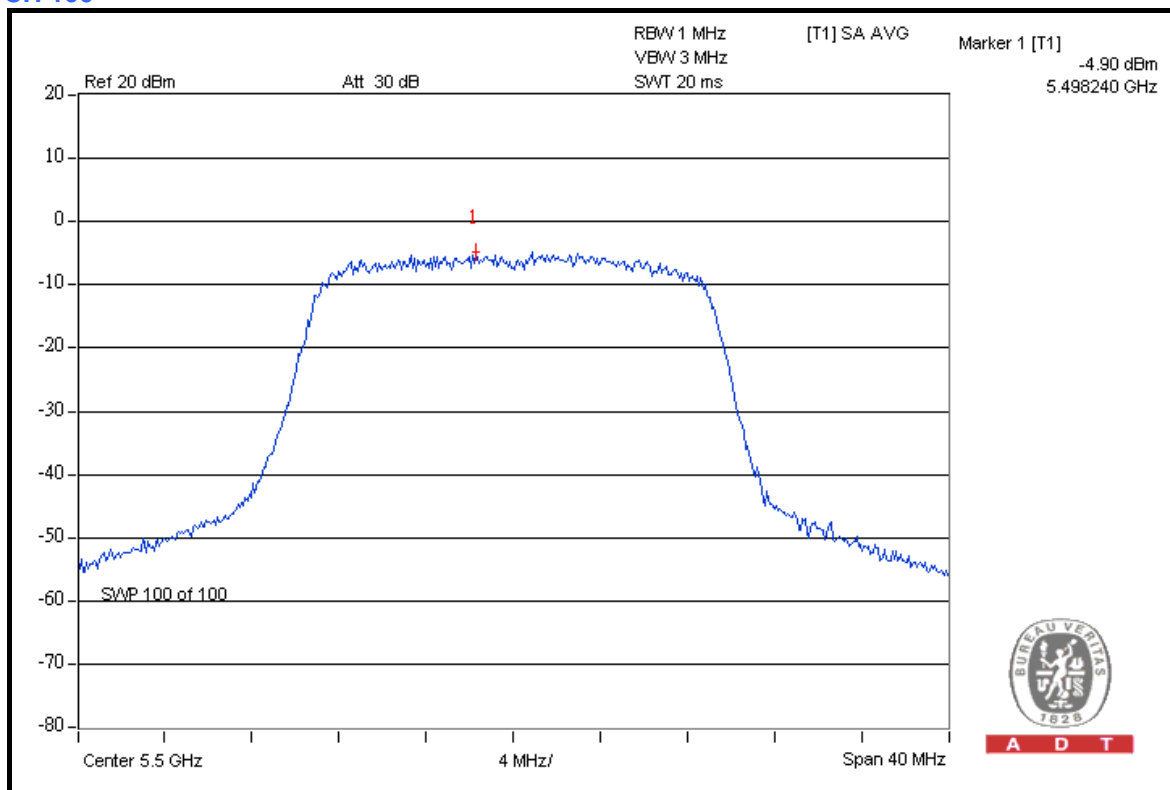
A D T

CH 64



A D T

CH 100

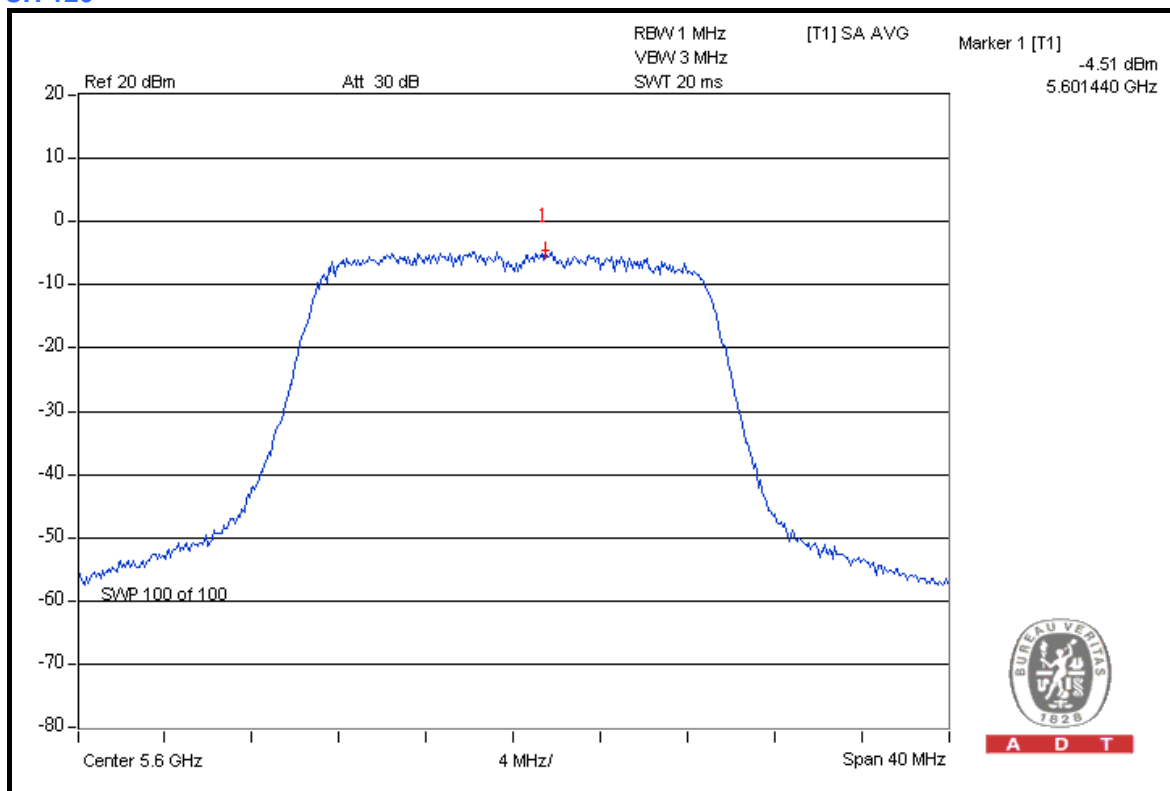


A D T

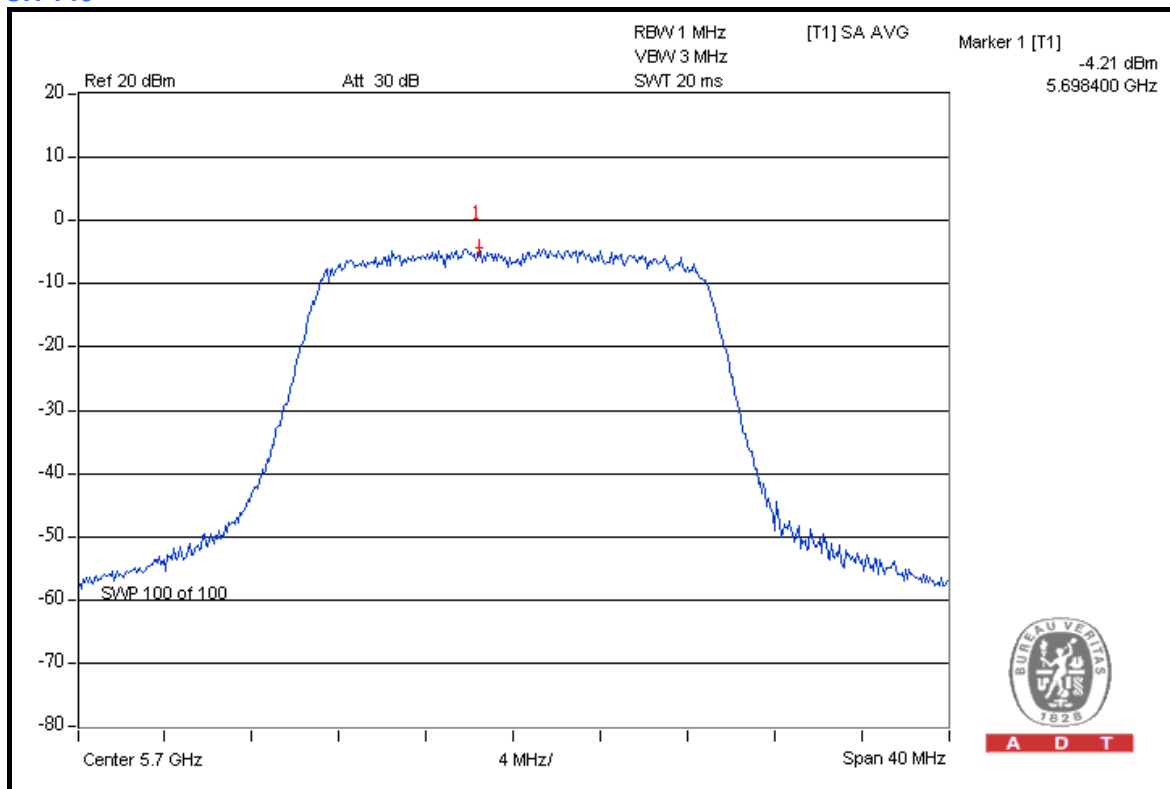


A D T

CH 120



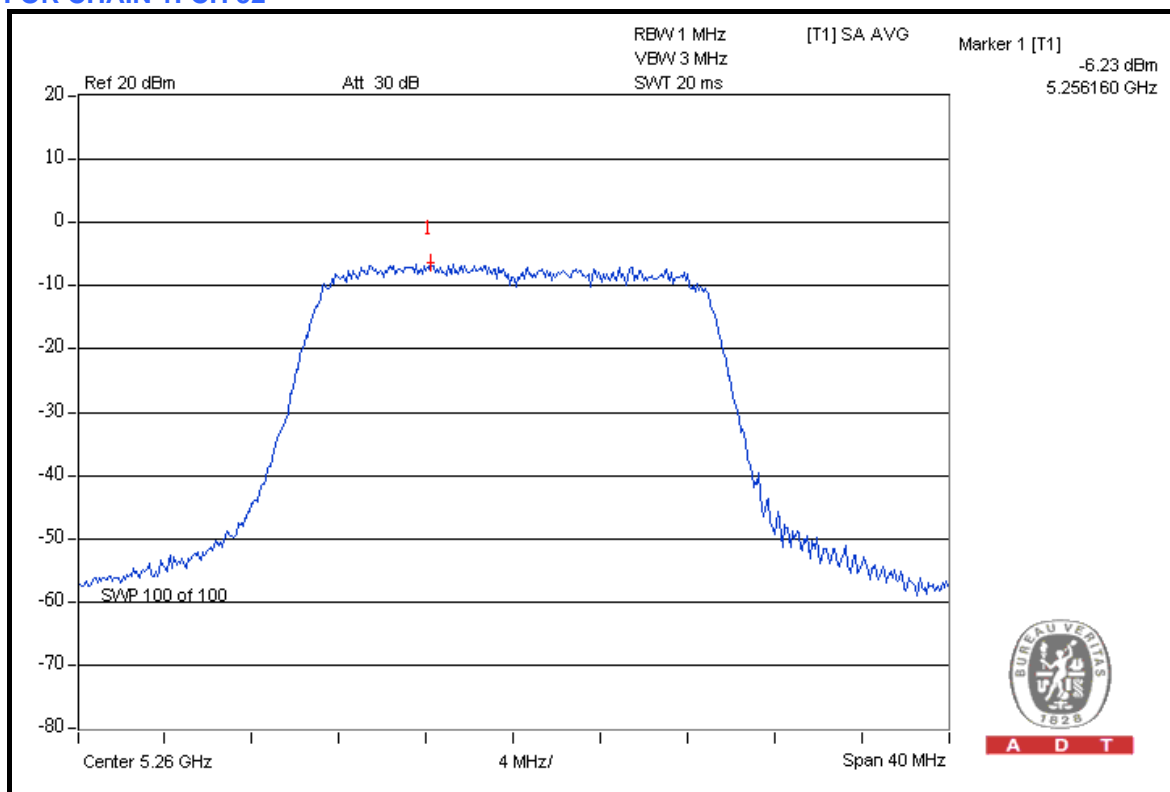
CH 140





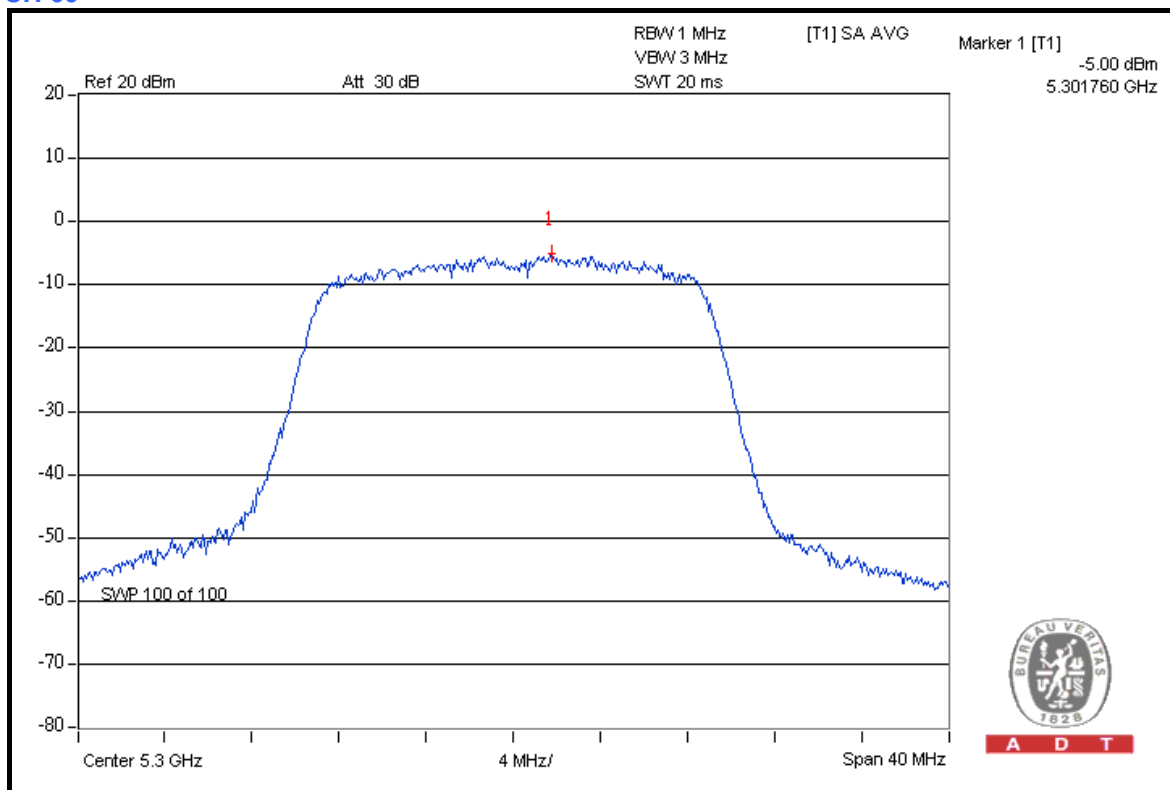
A D T

FOR CHAIN 1: CH 52



A D T

CH 60

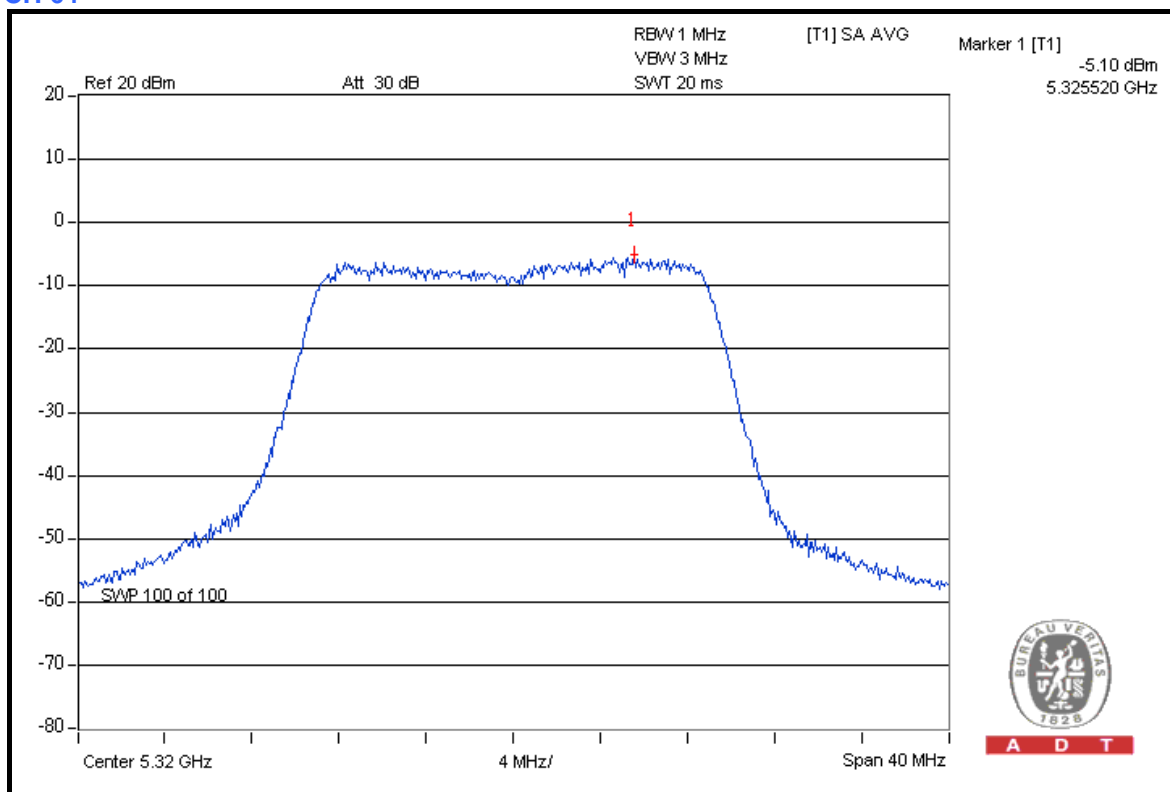


A D T



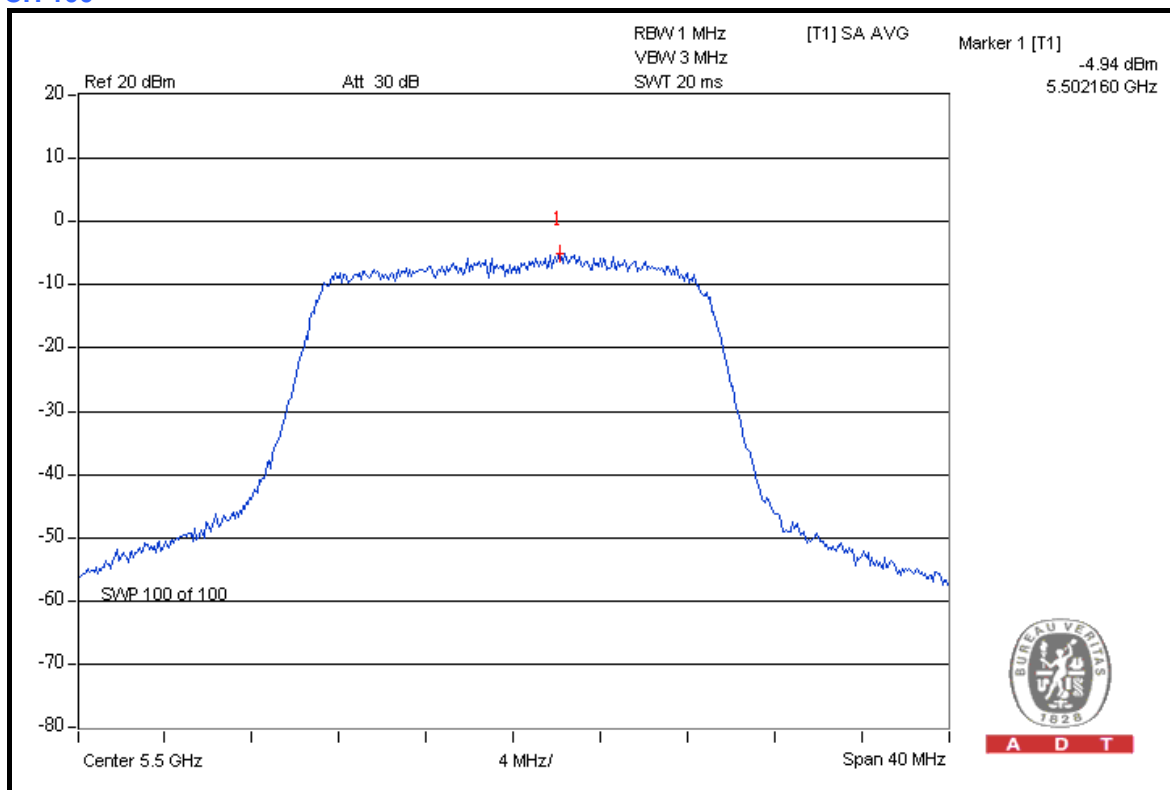
A D T

CH 64



A D T

CH 100

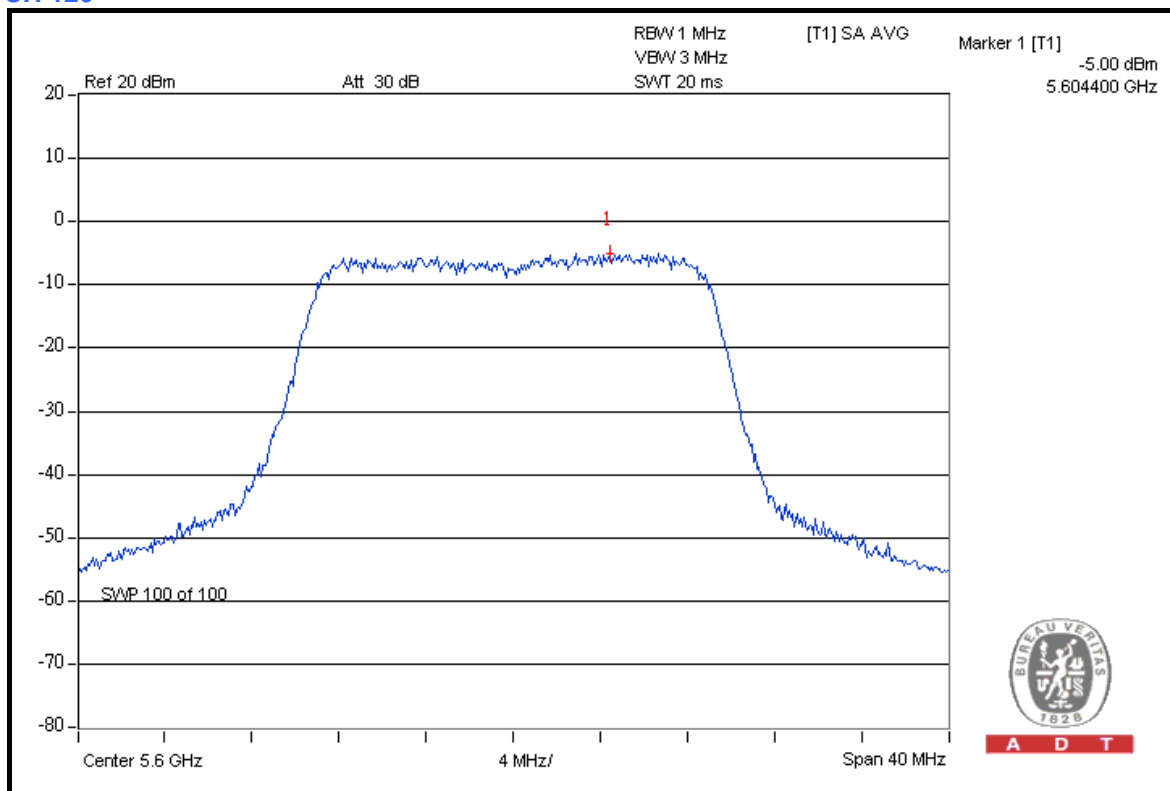


A D T



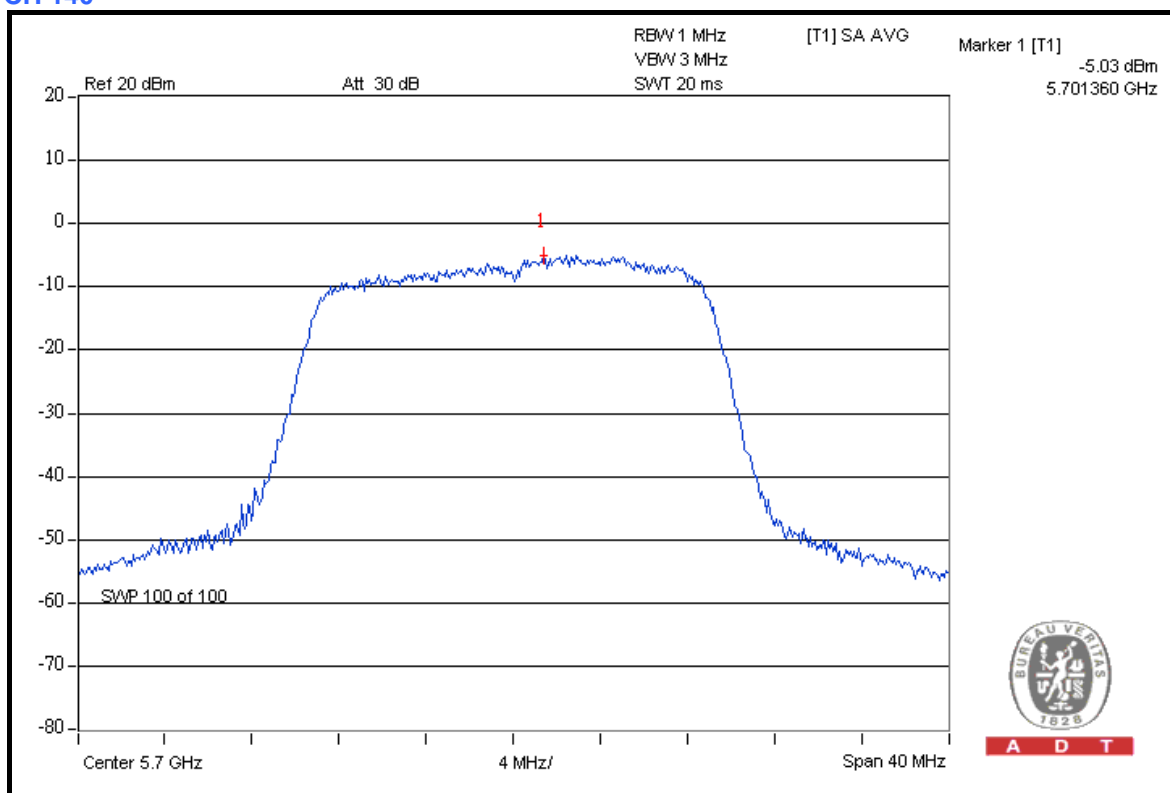
A D T

CH 120



A D T

CH 140

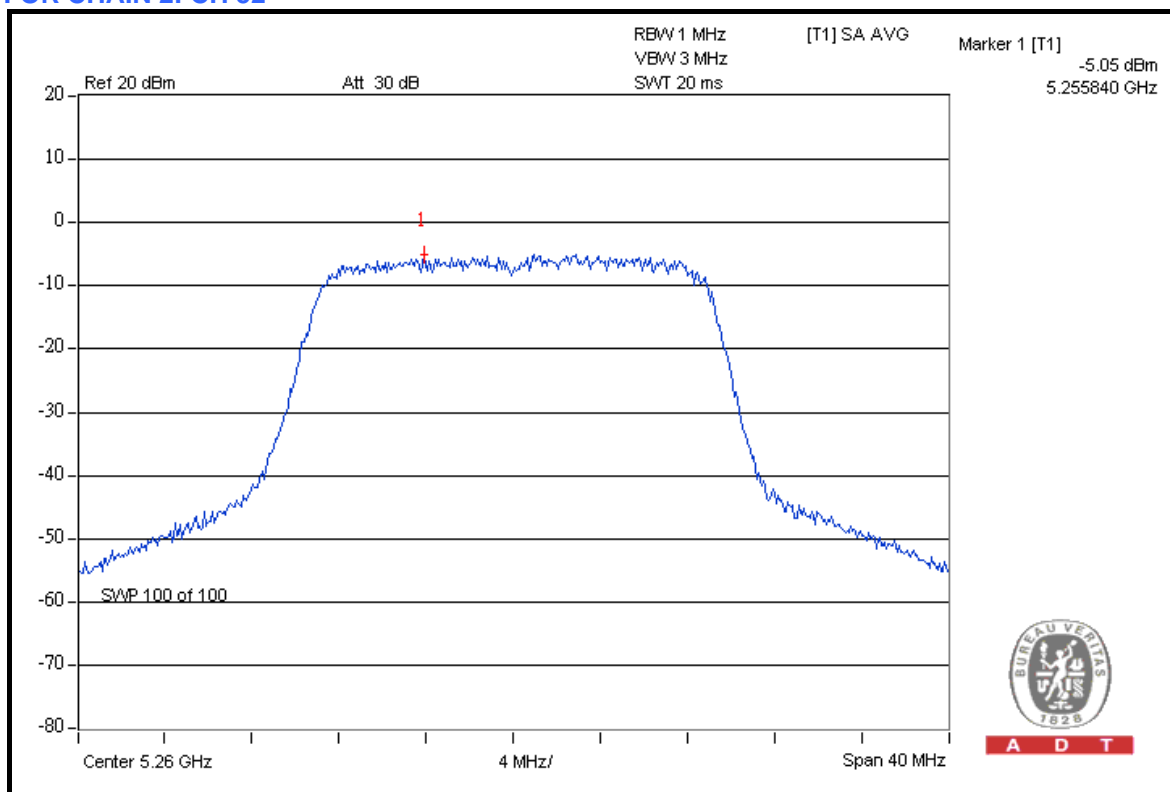


A D T



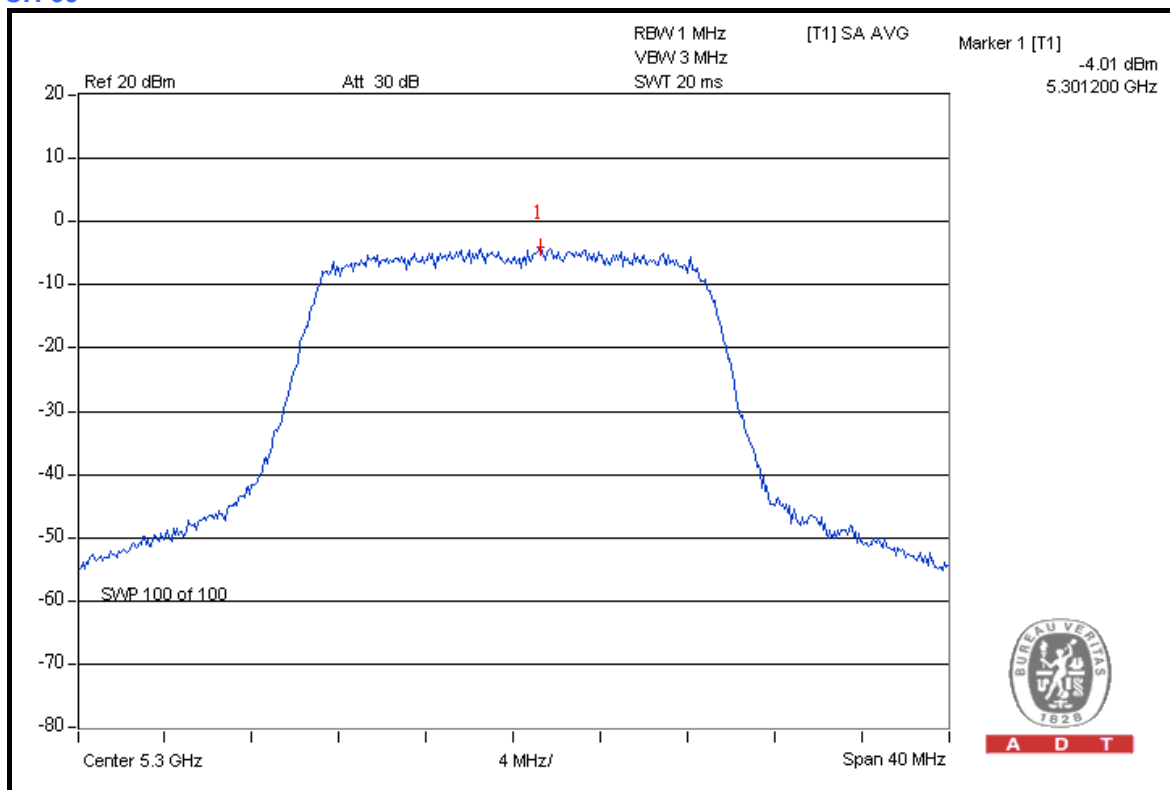
A D T

FOR CHAIN 2: CH 52



A D T

CH 60

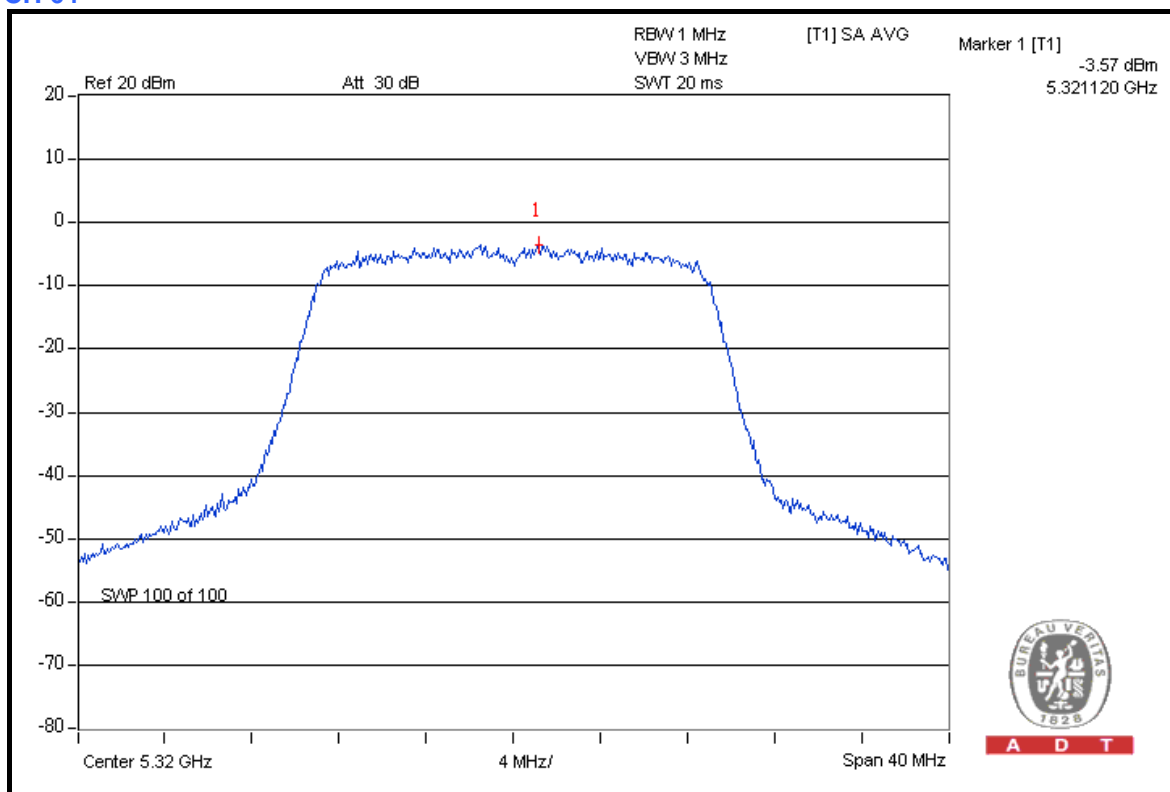


A D T

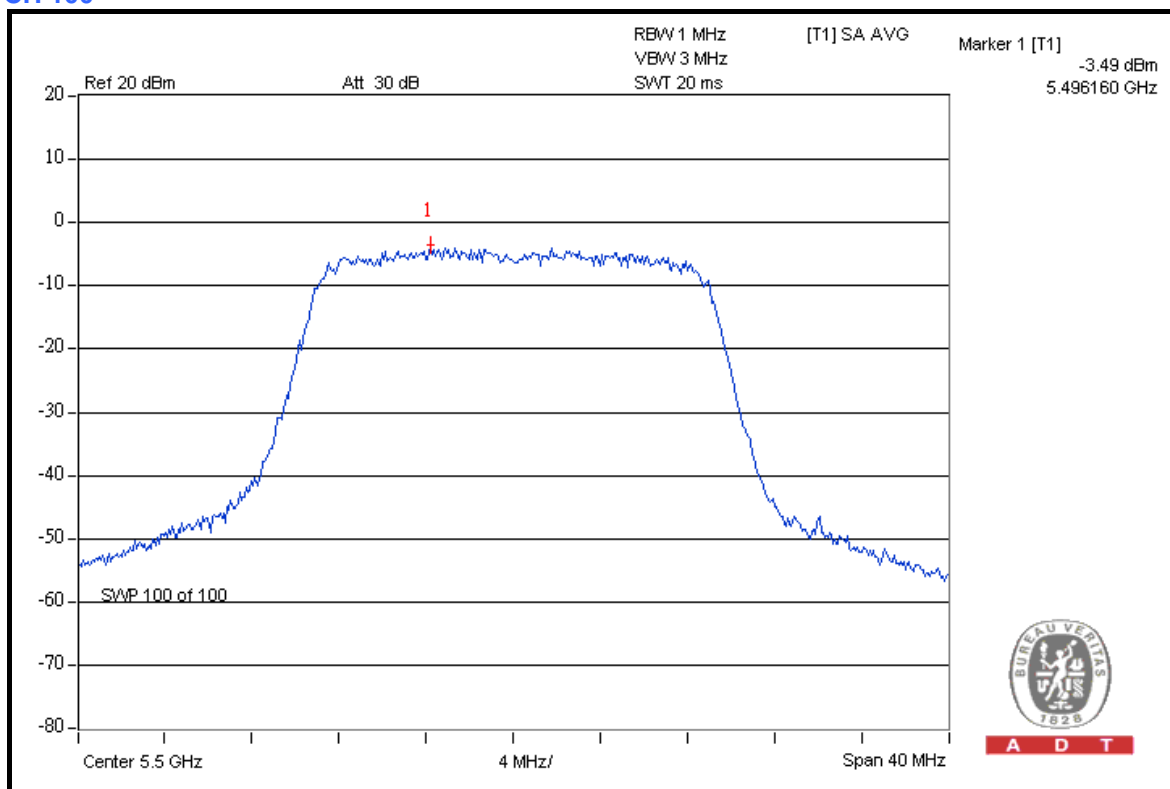


A D T

CH 64



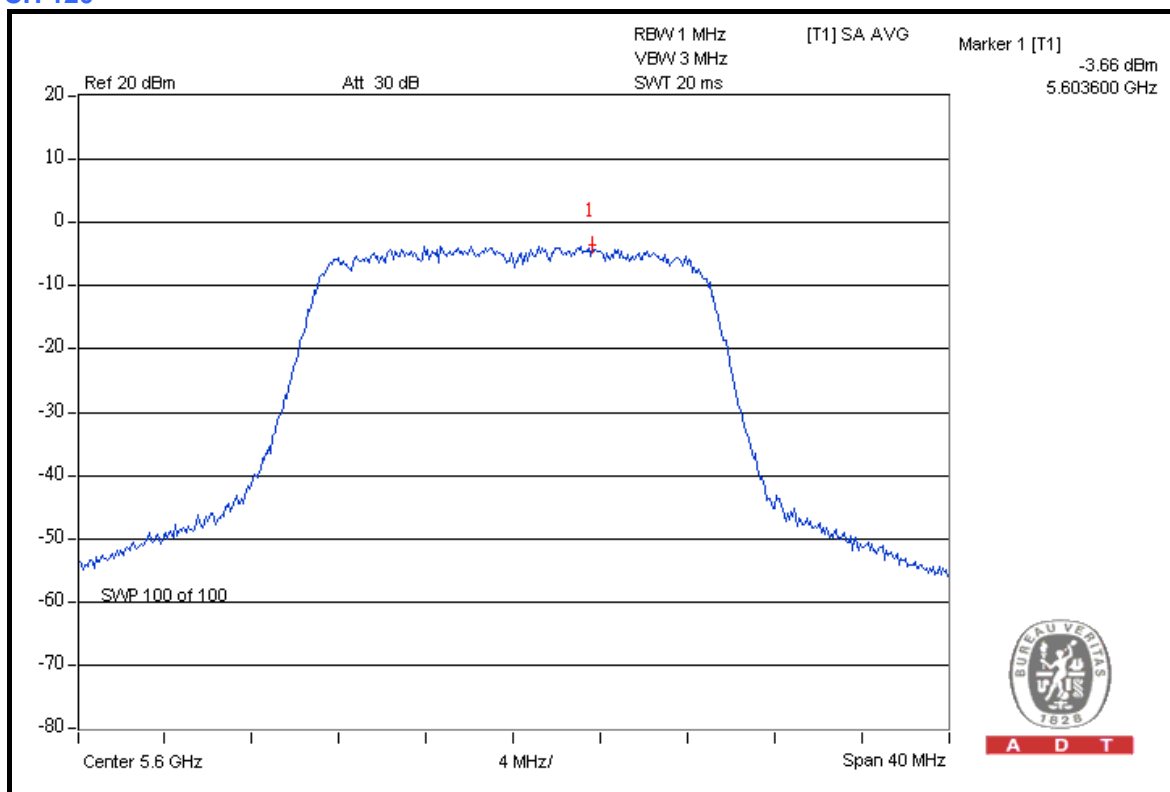
CH 100



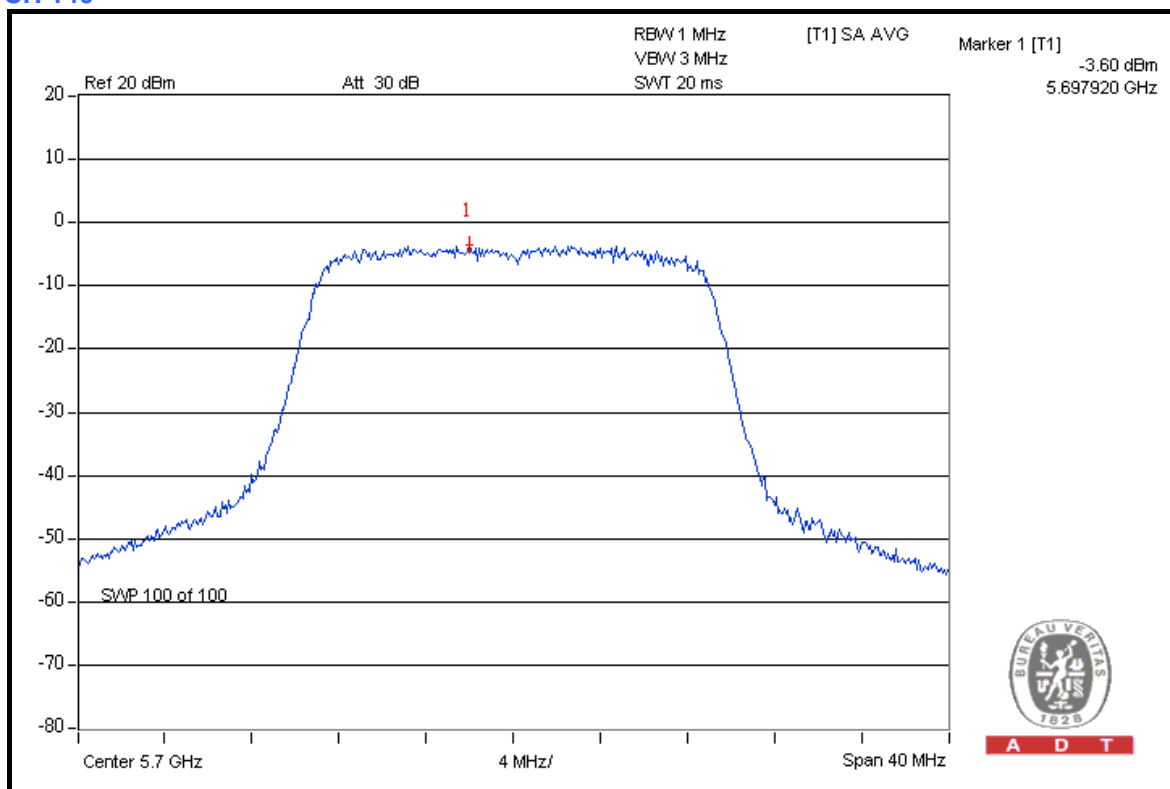


A D T

CH 120



CH 140





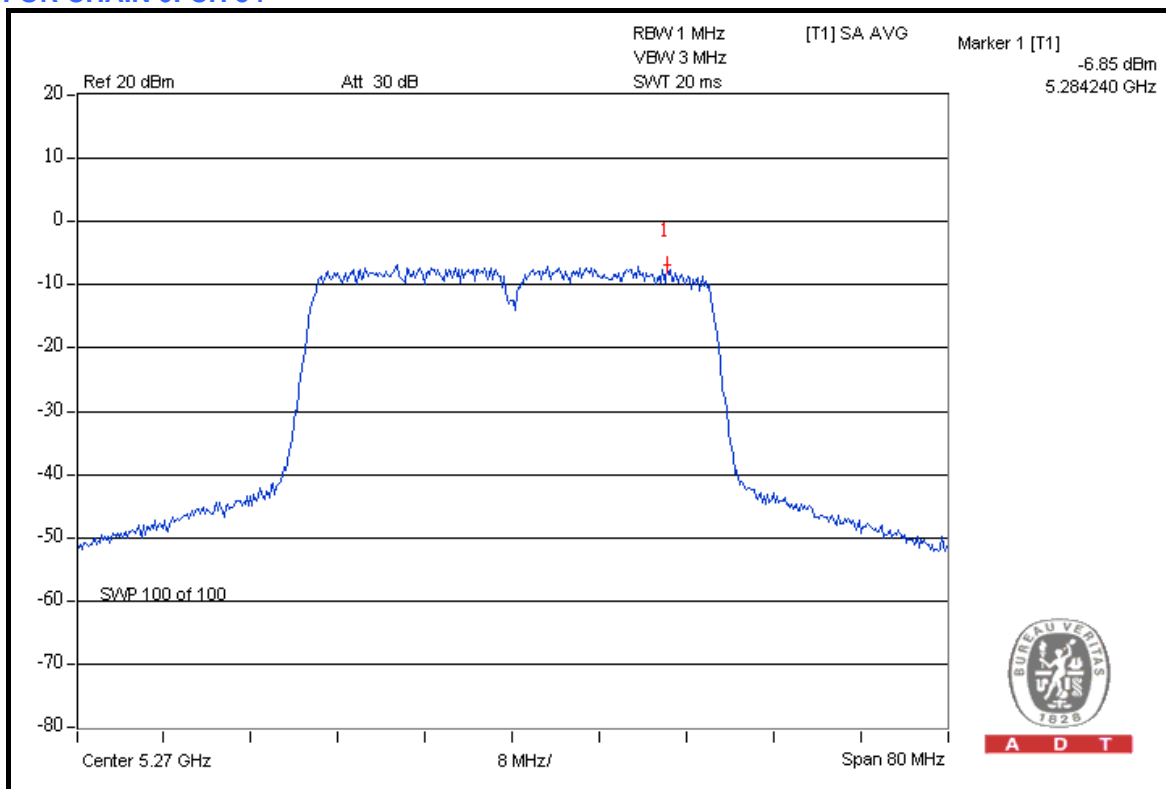
A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

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

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	-6.85	-8.10	-6.66	0.577	-2.39	11	PASS
62	5310	-6.83	-8.07	-6.67	0.579	-2.38	11	PASS
102	5510	-7.80	-8.06	-6.01	0.573	-2.42	11	PASS
118	5590	-7.37	-7.48	-6.68	0.577	-2.39	11	PASS
134	5670	-7.78	-8.43	-6.92	0.514	-2.89	11	PASS

FOR CHAIN 0: CH 54

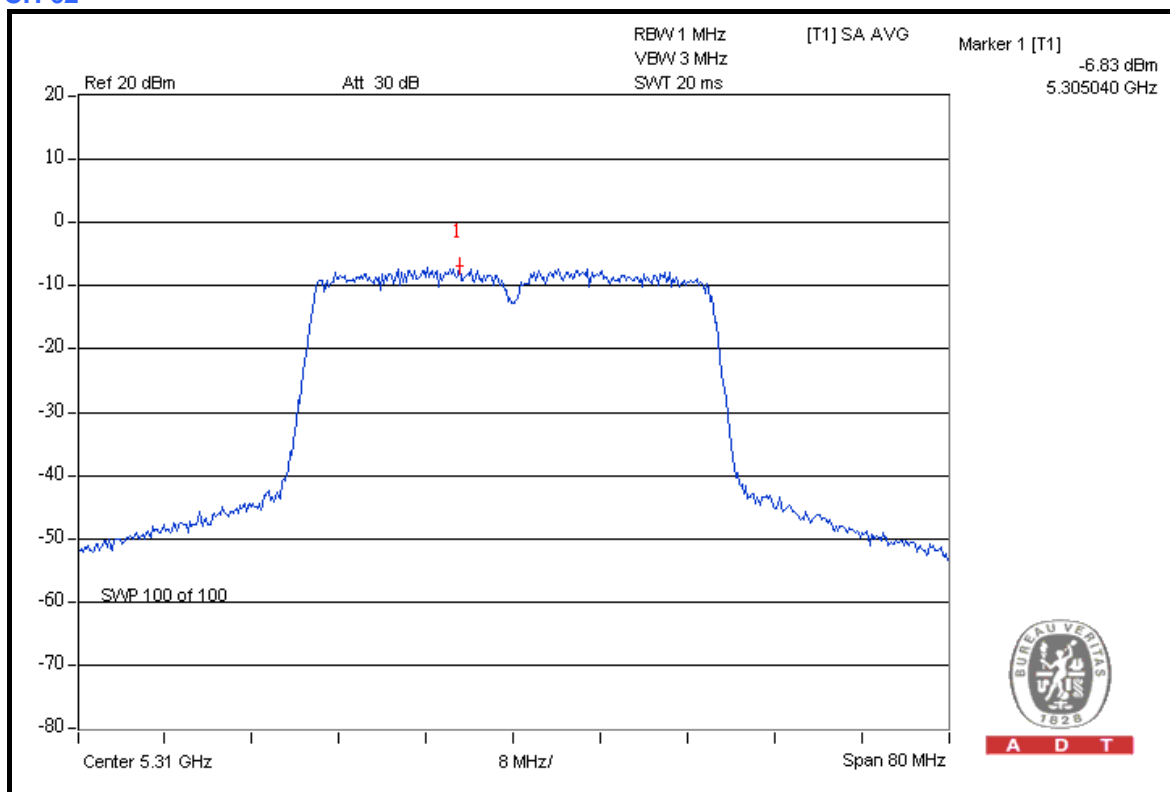


A D T

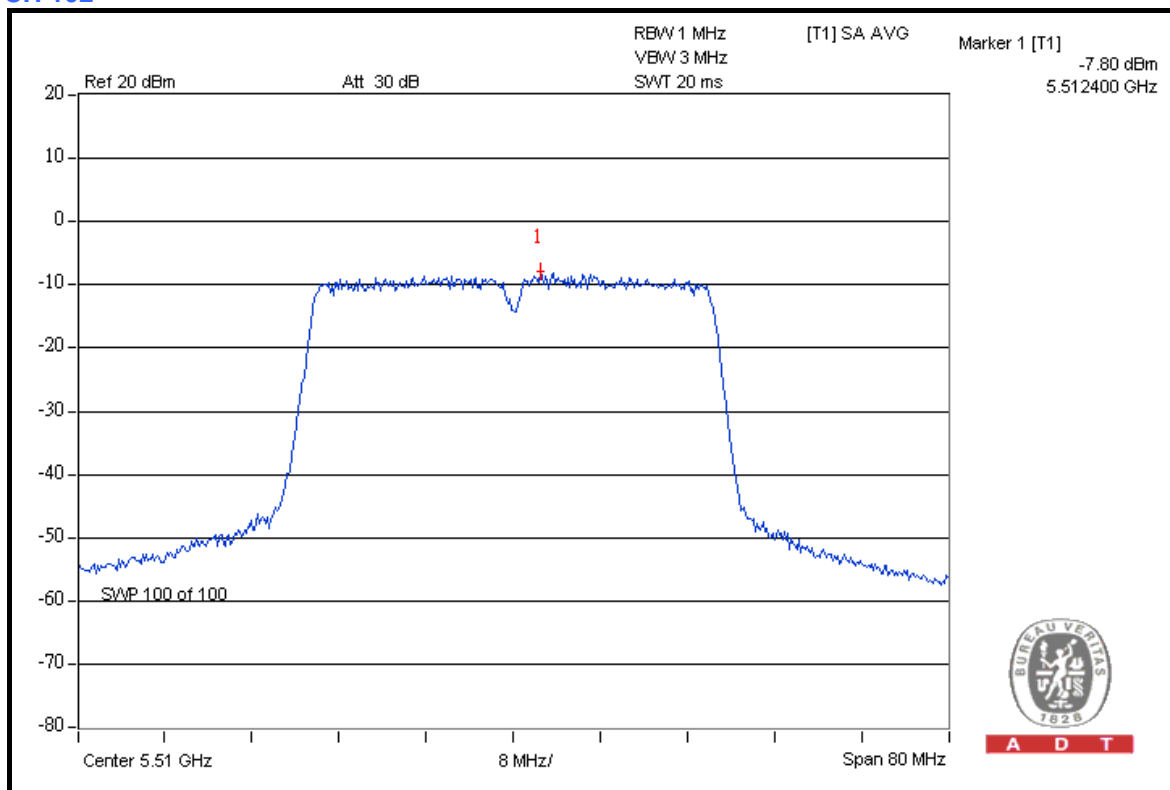


A D T

CH 62



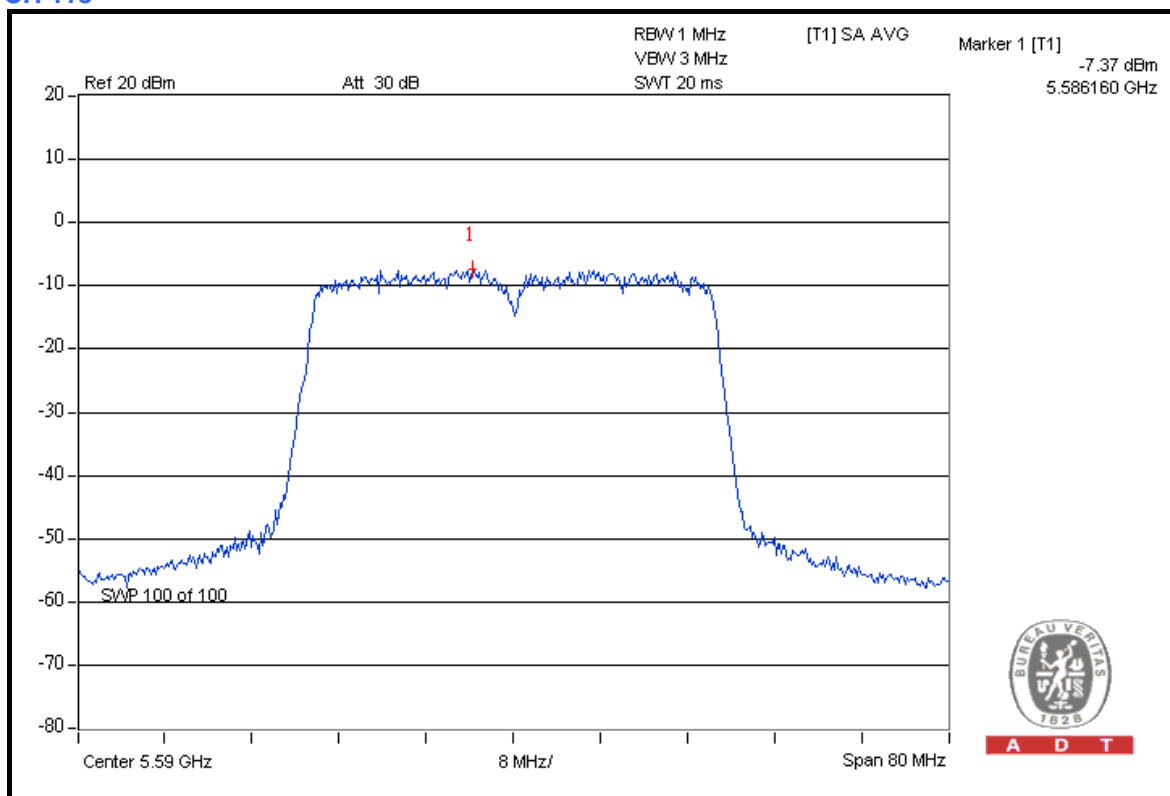
CH 102





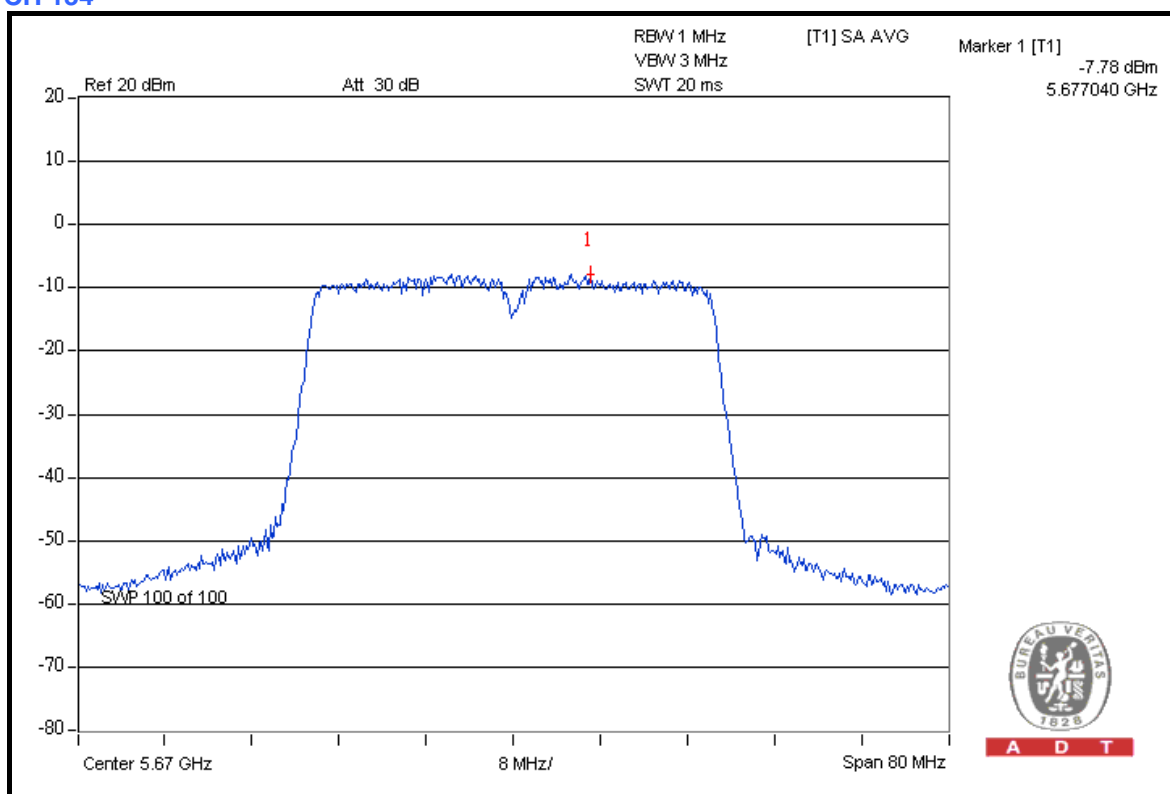
A D T

CH 118



A D T

CH 134

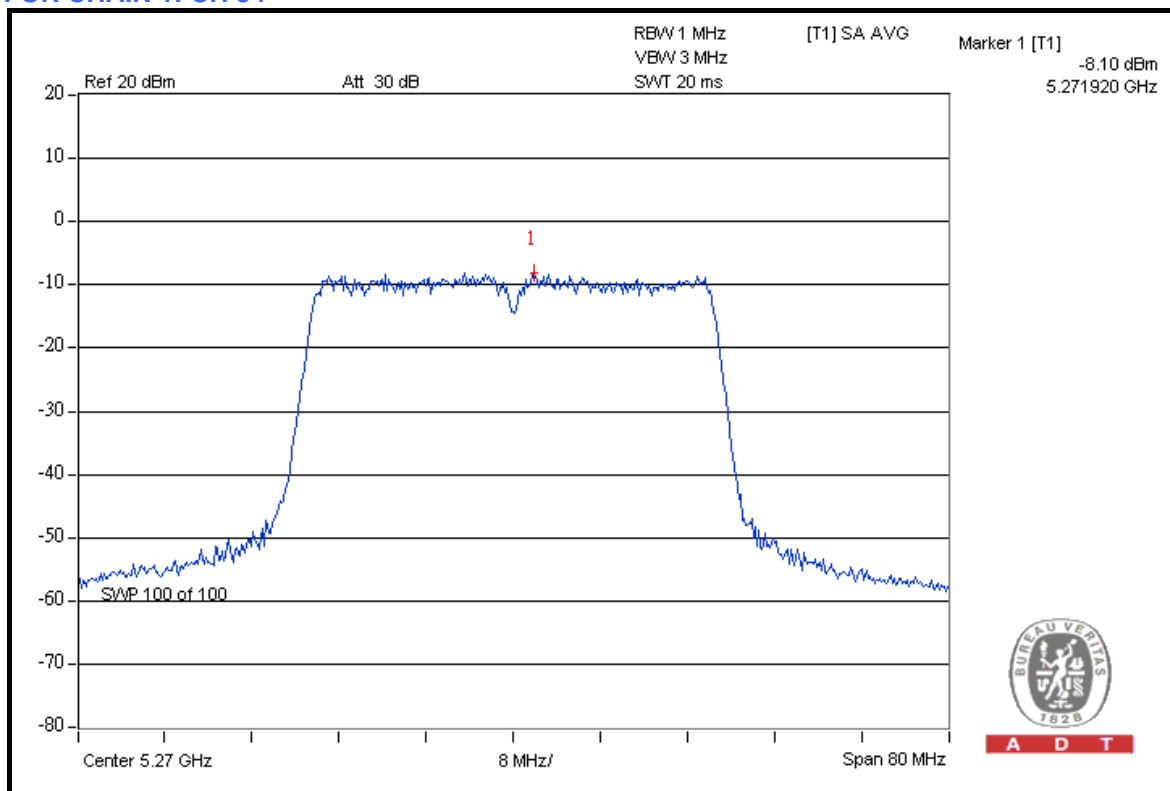


A D T



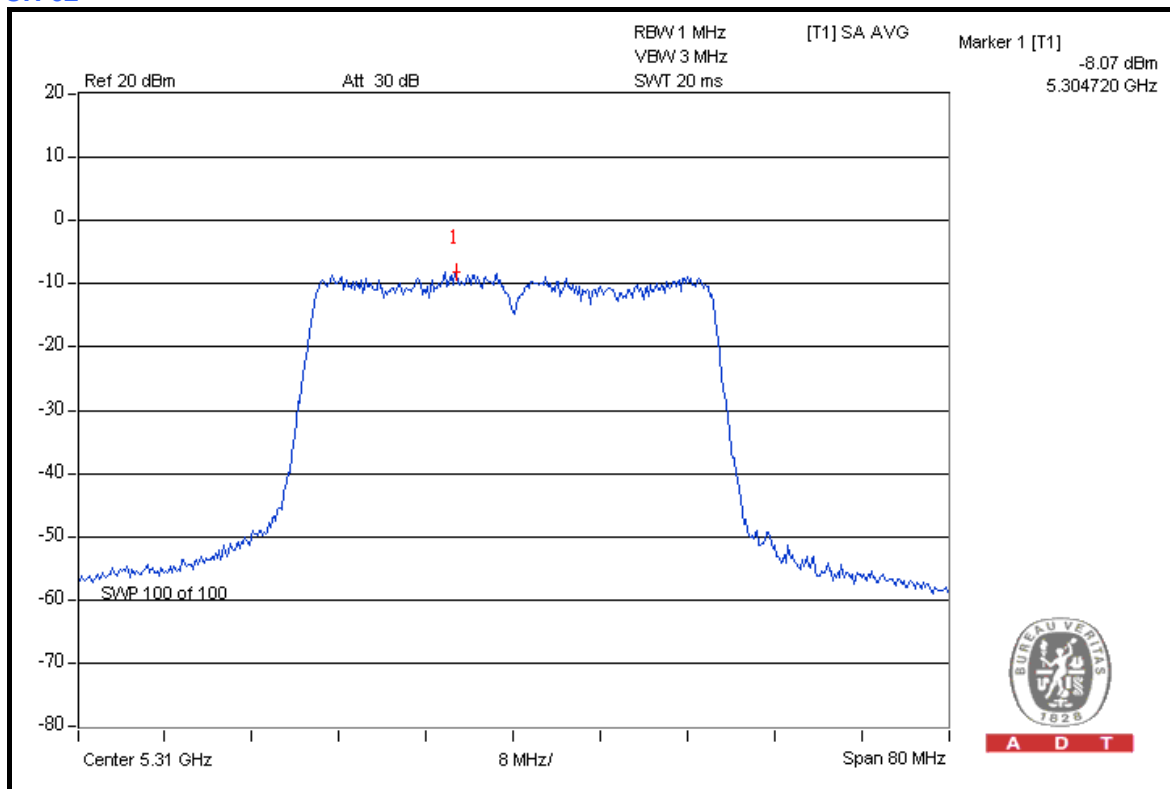
A D T

FOR CHAIN 1: CH 54



A D T

CH 62

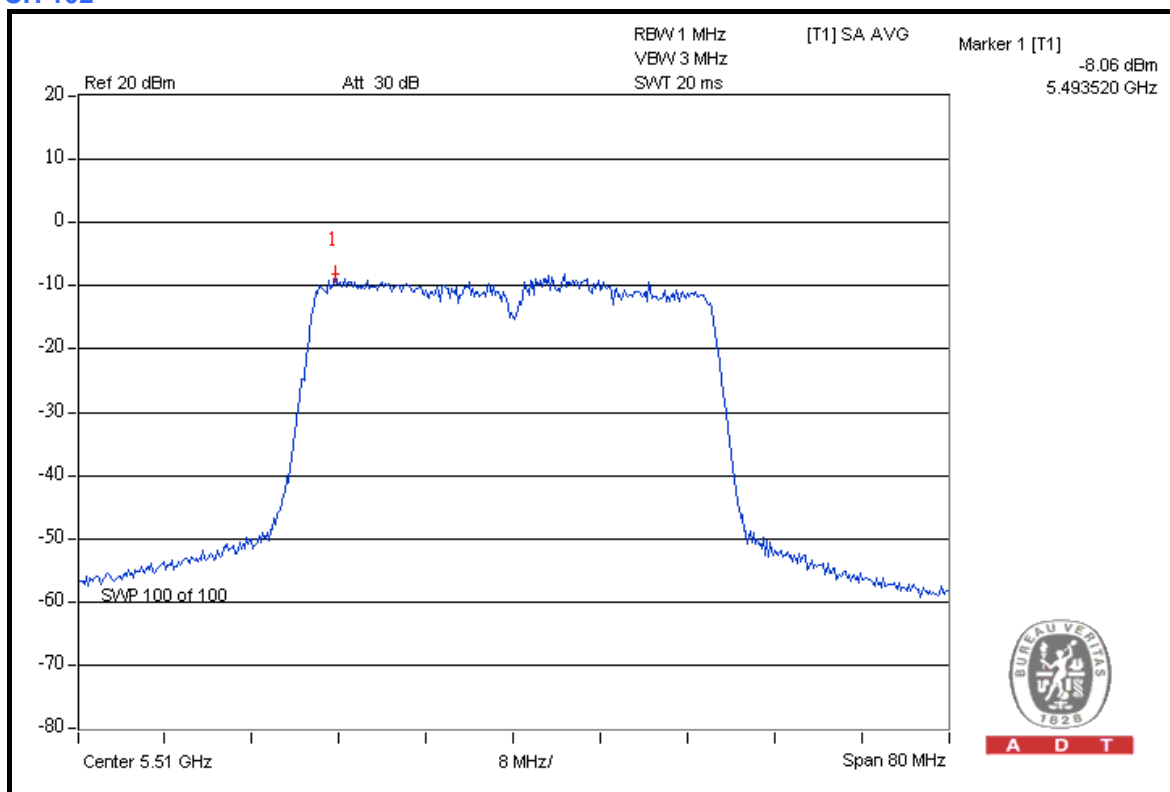


A D T



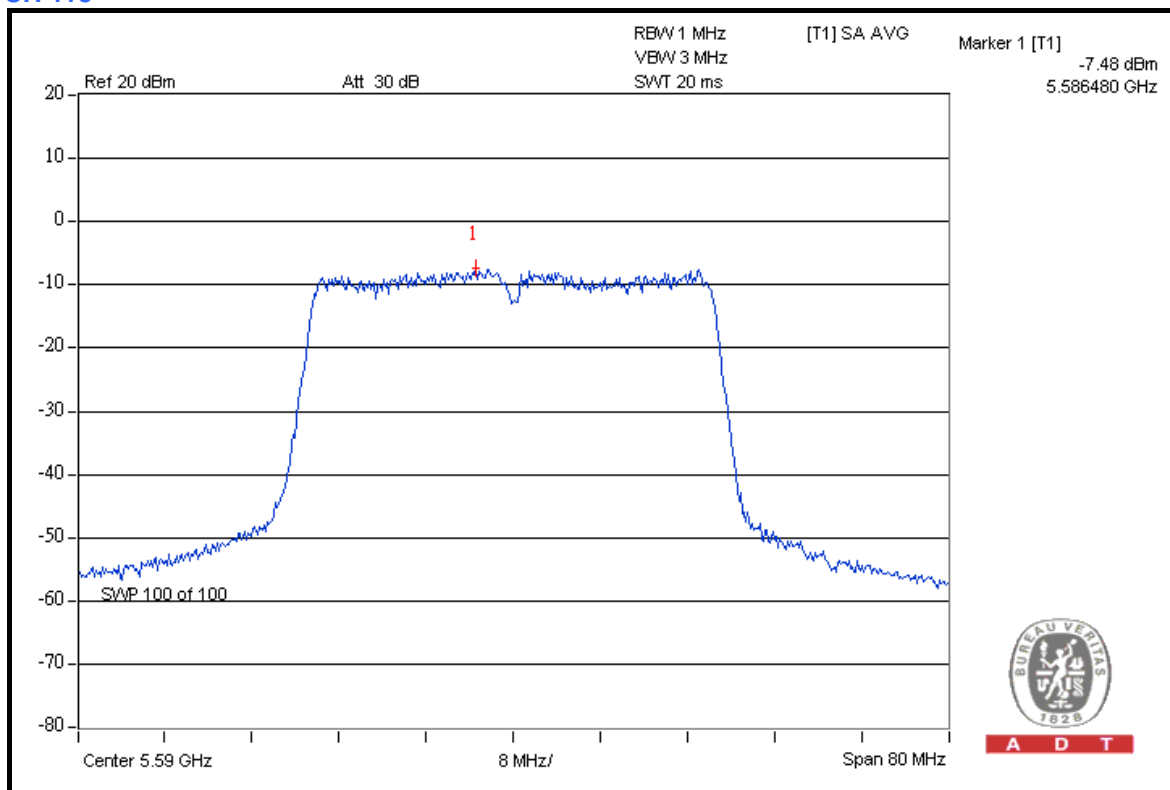
A D T

CH 102



A D T

CH 118

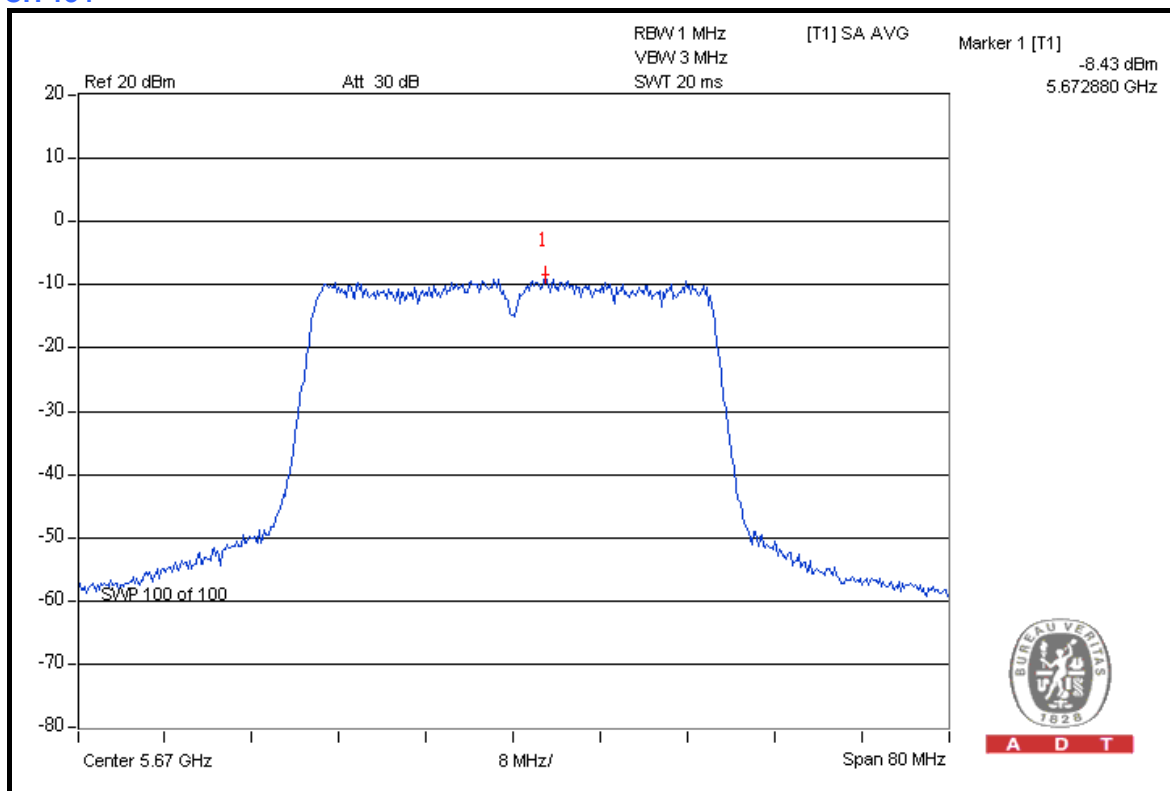


A D T



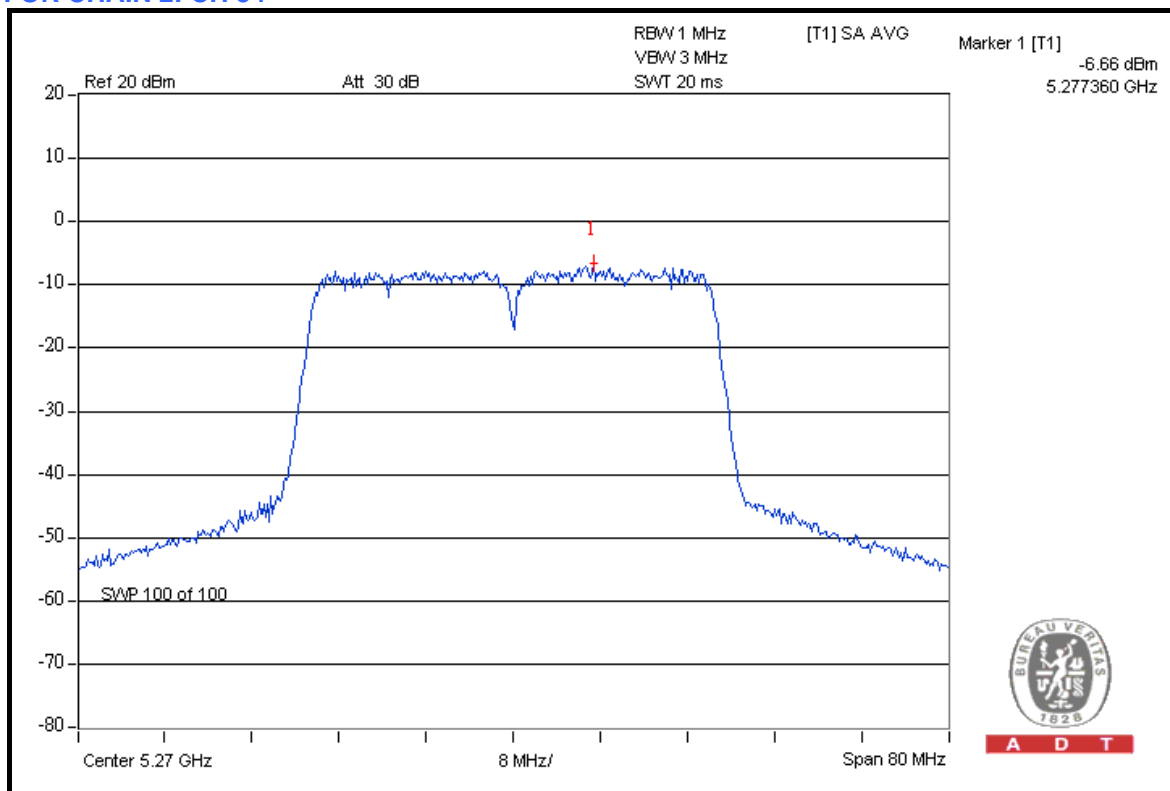
A D T

CH 134



A D T

FOR CHAIN 2: CH 54

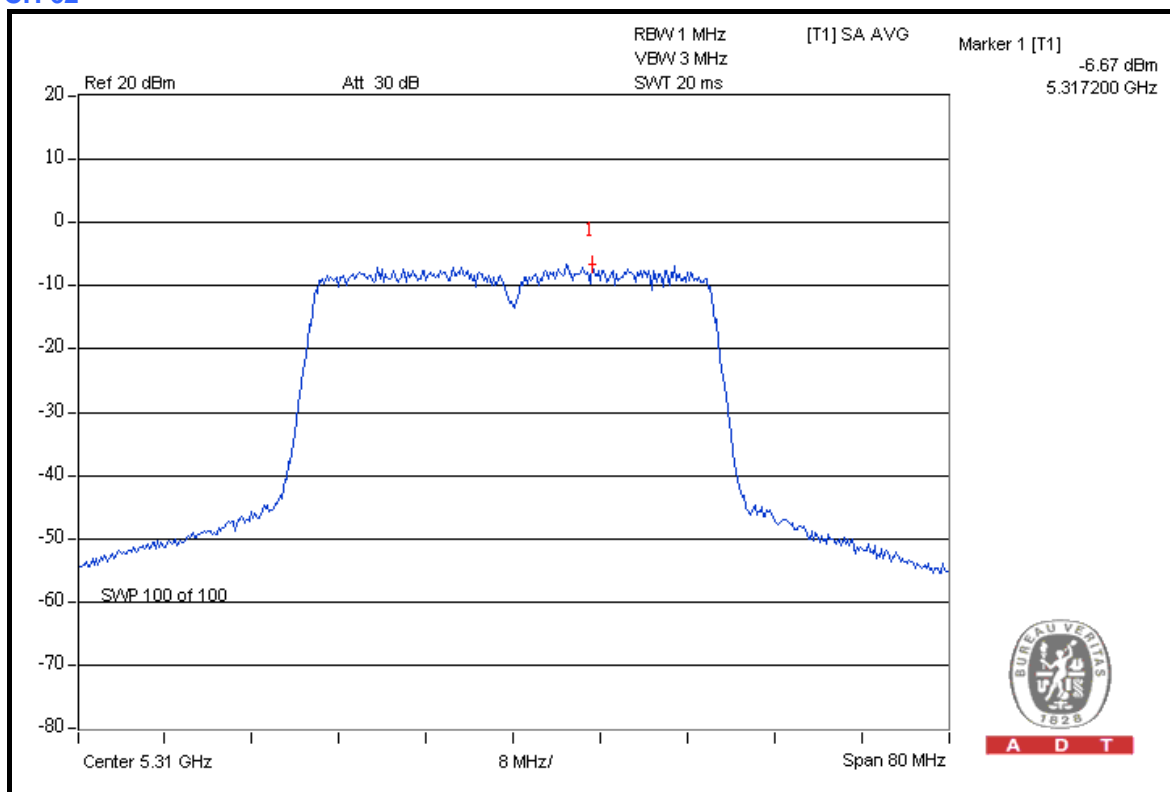


A D T

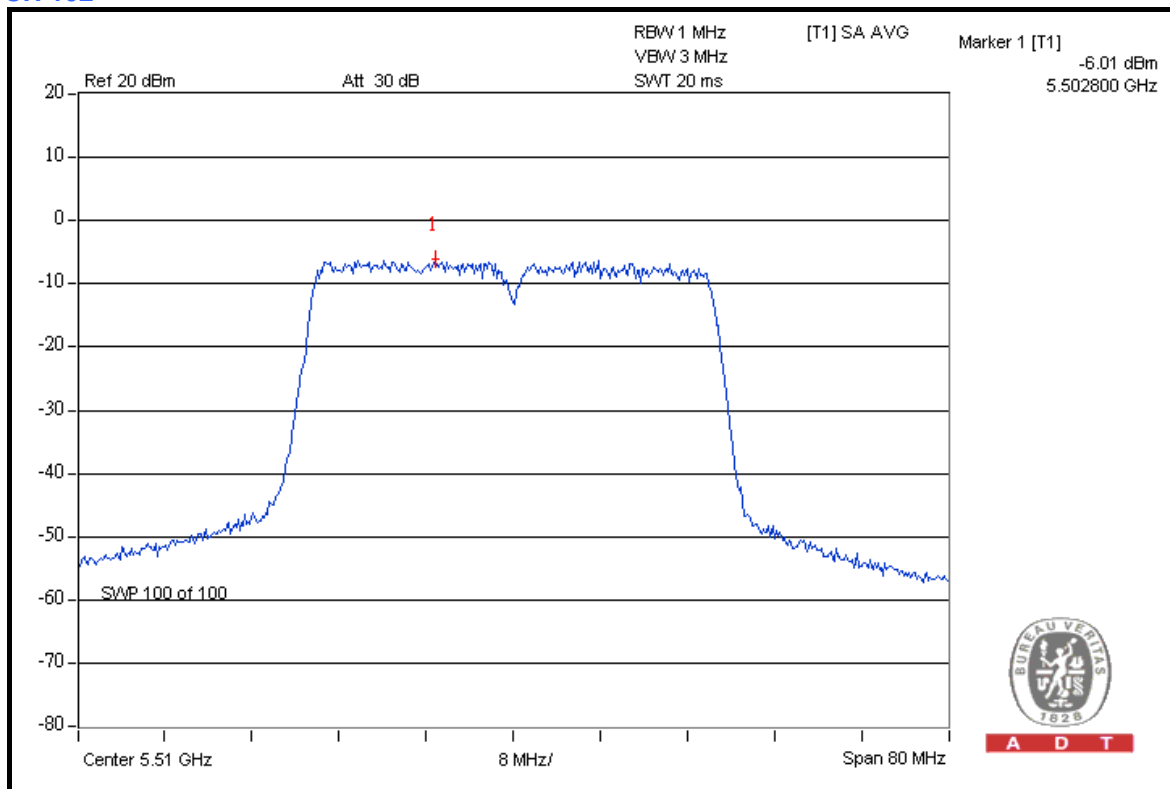


A D T

CH 62



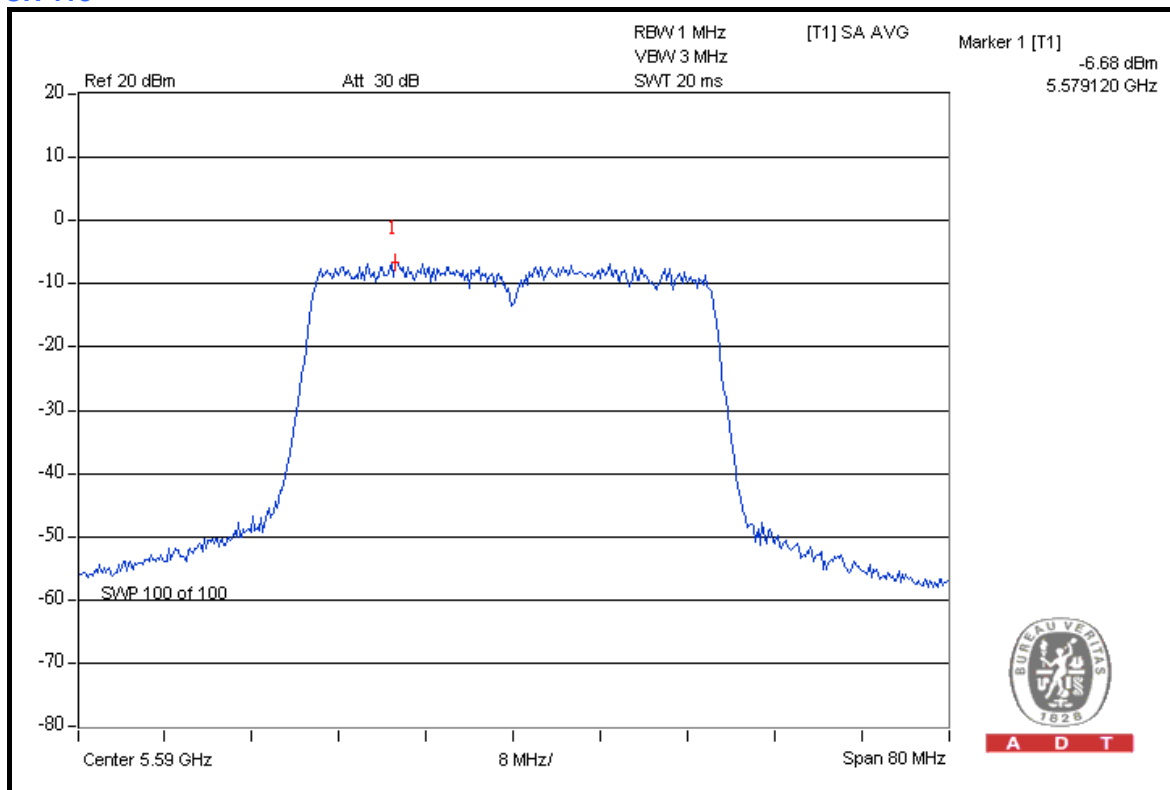
CH 102





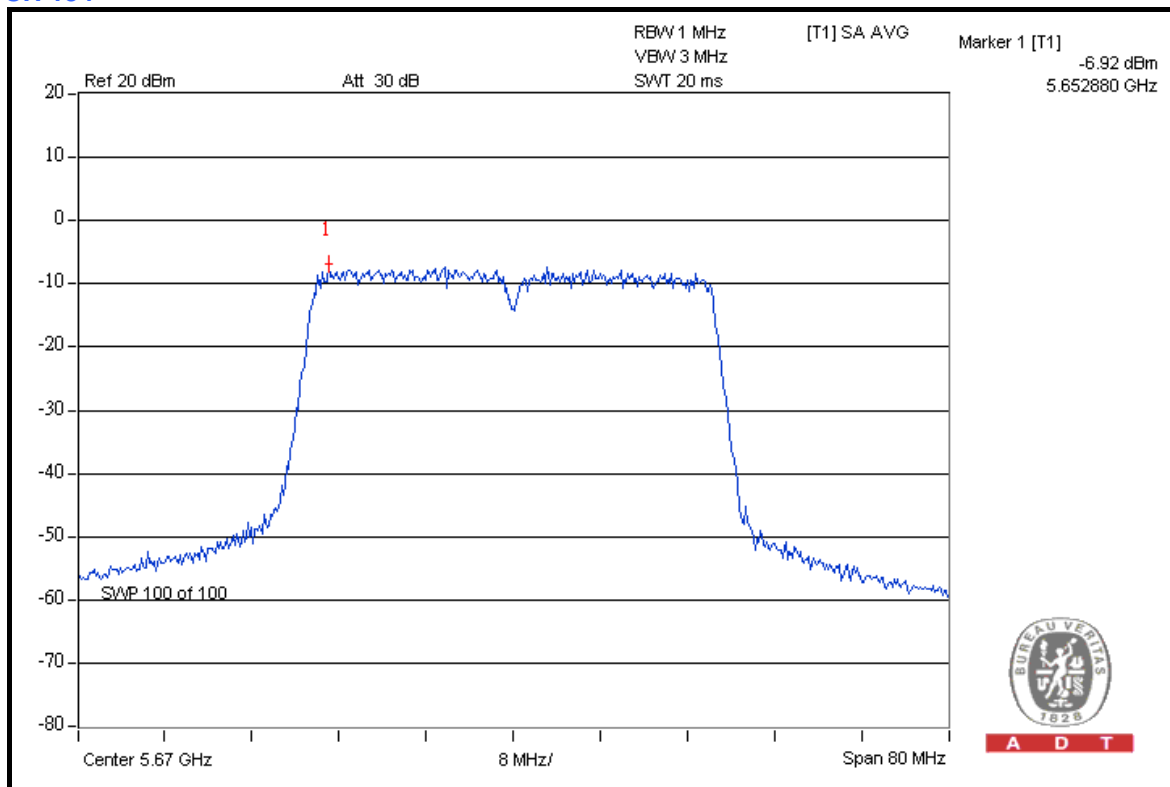
A D T

CH 118



A D T

CH 134



A D T



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 28, 2008	Jun. 27, 2009

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

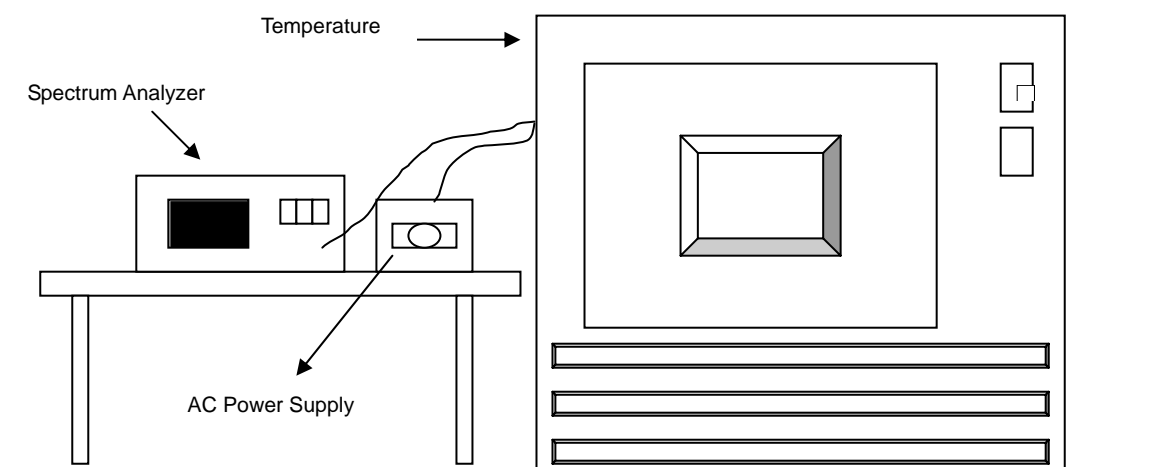
4.6.3 TEST PROCEDURE

- 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 b and c 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 4.1.7



4.6.7 TEST RESULTS

OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5319.998689	-0.0000246	5319.998781	-0.0000229	5319.998842	-0.0000218	5319.998731	-0.0000239
	110.0	5319.983960	-0.0003015	5319.983963	-0.0003014	5319.983961	-0.0003015	5319.983823	-0.0003041
	93.5	5319.986284	-0.0002578	5319.986010	-0.0002630	5319.986159	-0.0002602	5319.986092	-0.0002614
40	126.5	5319.978839	-0.0003978	5319.978621	-0.0004019	5319.978595	-0.0004023	5319.978684	-0.0004007
	110.0	5319.985532	-0.0002720	5319.985357	-0.0002752	5319.985348	-0.0002754	5319.985173	-0.0002787
	93.5	5319.996678	-0.0000624	5319.996730	-0.0000615	5319.996977	-0.0000568	5319.997089	-0.0000547
30	126.5	5319.979746	-0.0003807	5319.980064	-0.0003747	5319.979927	-0.0003773	5319.980098	-0.0003741
	110.0	5319.986499	-0.0002538	5319.986627	-0.0002514	5319.986514	-0.0002535	5319.986600	-0.0002519
	93.5	5320.004640	0.0000872	5320.004682	0.0000880	5320.004892	0.0000920	5320.004894	0.0000920
20	126.5	5319.986720	-0.0002496	5319.986922	-0.0002458	5319.987160	-0.0002414	5319.987271	-0.0002393
	110.0	5319.987140	-0.0002417	5319.987041	-0.0002436	5319.986912	-0.0002460	5319.986893	-0.0002464
	93.5	5320.011588	0.0002178	5320.011402	0.0002143	5320.011273	0.0002119	5320.011174	0.0002100
10	126.5	5319.994890	-0.0000961	5319.994973	-0.0000945	5319.994774	-0.0000982	5319.994705	-0.0000995
	110.0	5320.002714	0.0000510	5320.002438	0.0000458	5320.002671	0.0000502	5320.002521	0.0000474
	93.5	5320.018078	0.0003398	5320.017771	0.0003340	5320.017659	0.0003319	5320.017675	0.0003322
0	126.5	5319.997836	-0.0000407	5319.997920	-0.0000391	5319.998088	-0.0000359	5319.998012	-0.0000374
	110.0	5320.010620	0.0001996	5320.010628	0.0001998	5320.010604	0.0001993	5320.010619	0.0001996
	93.5	5320.023951	0.0004502	5320.023858	0.0004485	5320.023838	0.0004481	5320.023887	0.0004490
-10	126.5	5320.009953	0.0001871	5320.009950	0.0001870	5320.009931	0.0001867	5320.010058	0.0001891
	110.0	5320.015810	0.0002972	5320.015696	0.0002950	5320.015410	0.0002897	5320.015363	0.0002888
	93.5	5320.030609	0.0005754	5320.030587	0.0005749	5320.030357	0.0005706	5320.030259	0.0005688
-20	126.5	5320.014969	0.0002814	5320.014778	0.0002778	5320.014916	0.0002804	5320.014986	0.0002817
	110.0	5320.020539	0.0003861	5320.020697	0.0003890	5320.020666	0.0003885	5320.020862	0.0003921
	93.5	5320.035499	0.0006673	5320.035437	0.0006661	5320.035274	0.0006630	5320.035521	0.0006677
-30	126.5	5320.020275	0.0003811	5320.020359	0.0003827	5320.020229	0.0003802	5320.020156	0.0003789
	110.0	5320.034922	0.0006564	5320.035121	0.0006602	5320.034827	0.0006546	5320.034922	0.0006564
	93.5	5320.037006	0.0006956	5320.036678	0.0006894	5320.036509	0.0006863	5320.036423	0.0006846



4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2009	Apr. 26, 2010
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2008	Aug. 26, 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 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

4.7.2 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. Set both RBW and VBW of spectrum analyzer to 1MHz and 3MHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

4.7.3 EUT OPERATING CONDITION

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

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.26 to 5.32GHz and 5.50 to 5.70GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak 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 5260-5320MHz BAND: 802.11a OFDM MODULATION

Channel 52 (5260MHz)

The band edge emission plot on the next page shows 53.60dBc 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 112.78dBuV/m (Peak), so the maximum field strength in restrict band is $112.78 - 53.60 = 59.18$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 54.91dBc 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 102.79dBuV/m (Average), so the maximum field strength in restrict band is $102.79 - 54.91 = 47.88$ dBuV/m which is under 54dBuV/m limit.

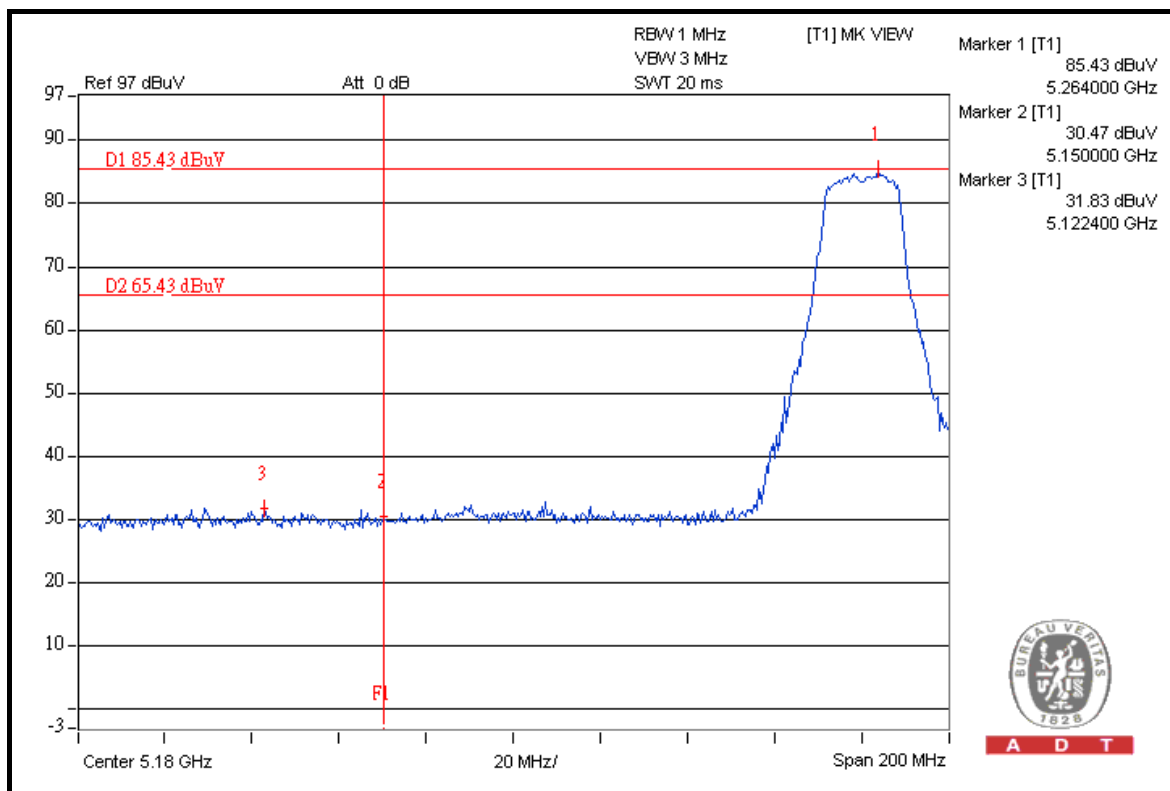
Channel 64 (5320MHz)

The band edge emission plot on the next second page shows 52.18dBc 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 113.73dBuV/m (Peak), so the maximum field strength in restrict band is $113.73 - 52.18 = 61.55$ dBuV/m which is under 74dBuV/m limit.

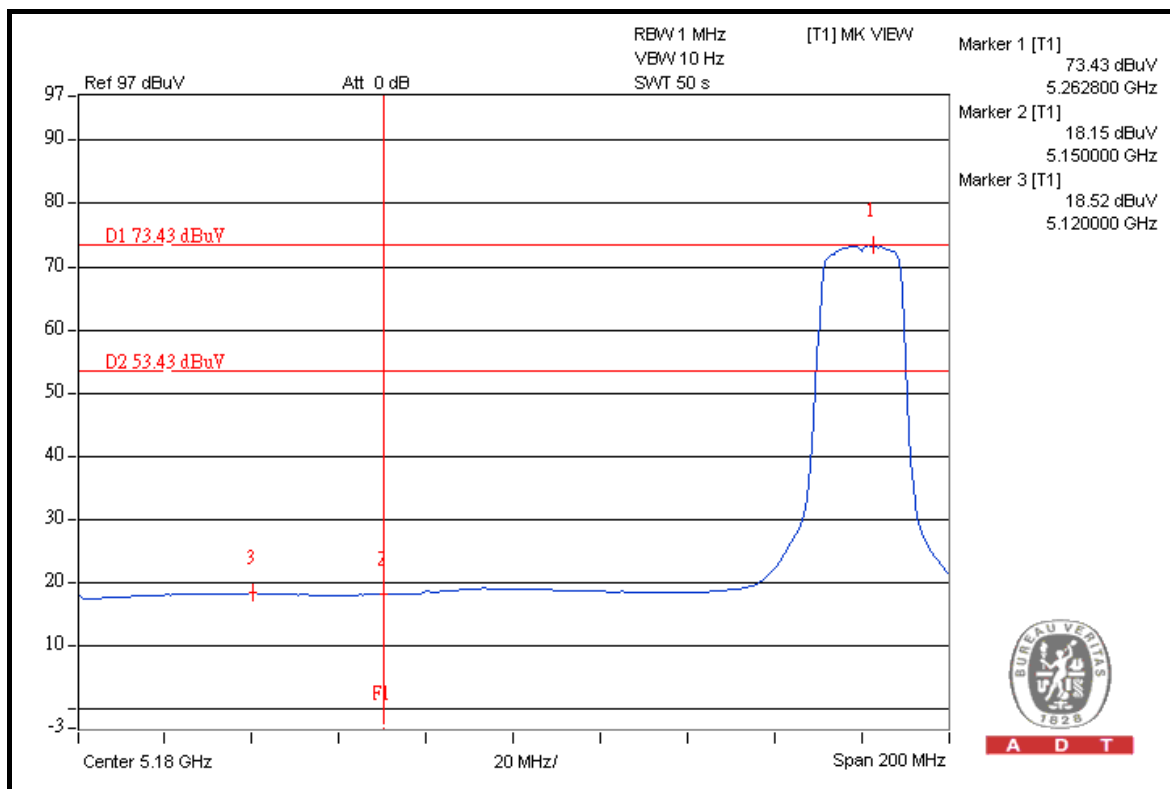
The band edge emission plot on the next third page shows 54.05dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 103.20dBuV/m (Average), so the maximum field strength in restrict band is $103.20 - 54.05 = 49.15$ dBuV/m which is under 54dBuV/m limit.



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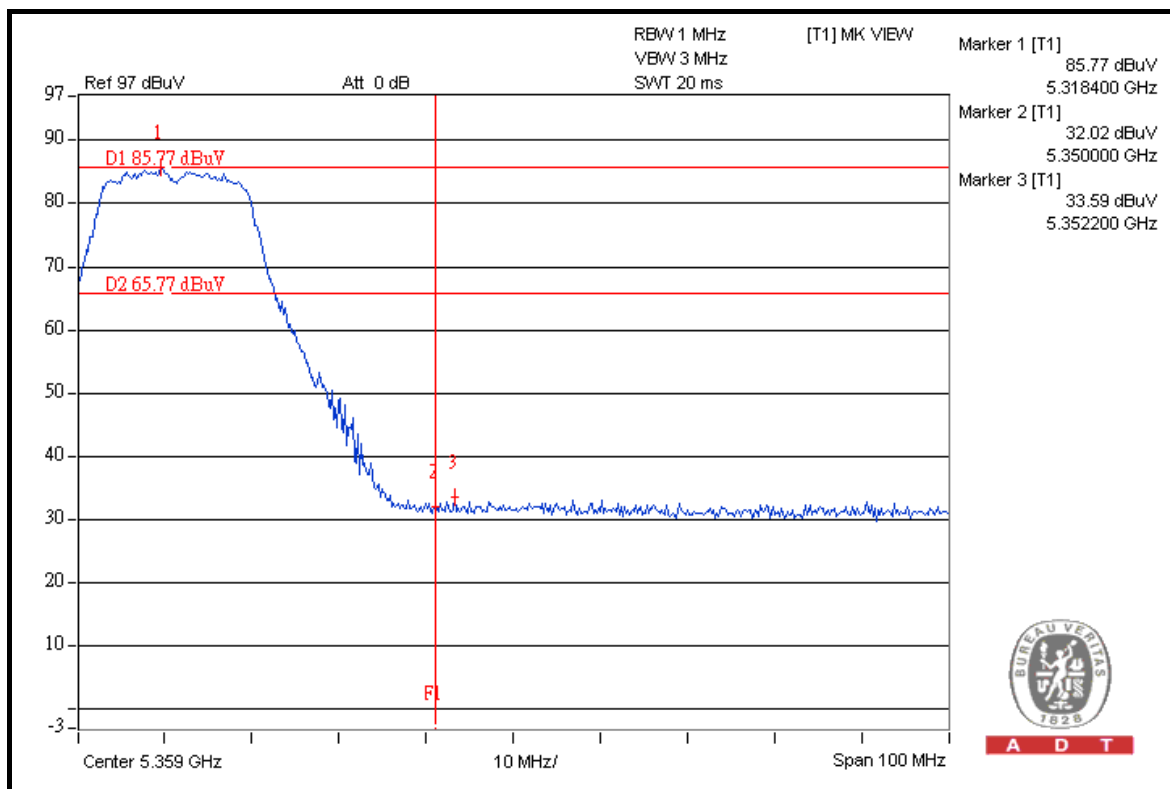
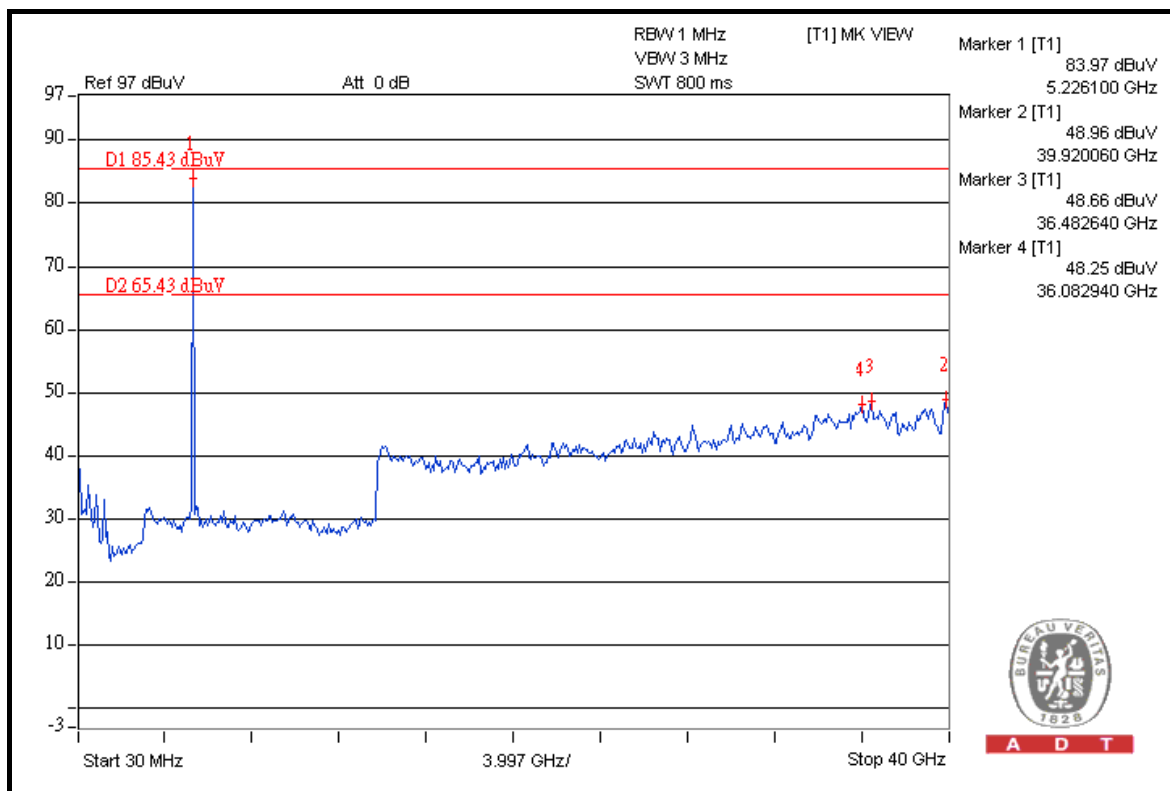
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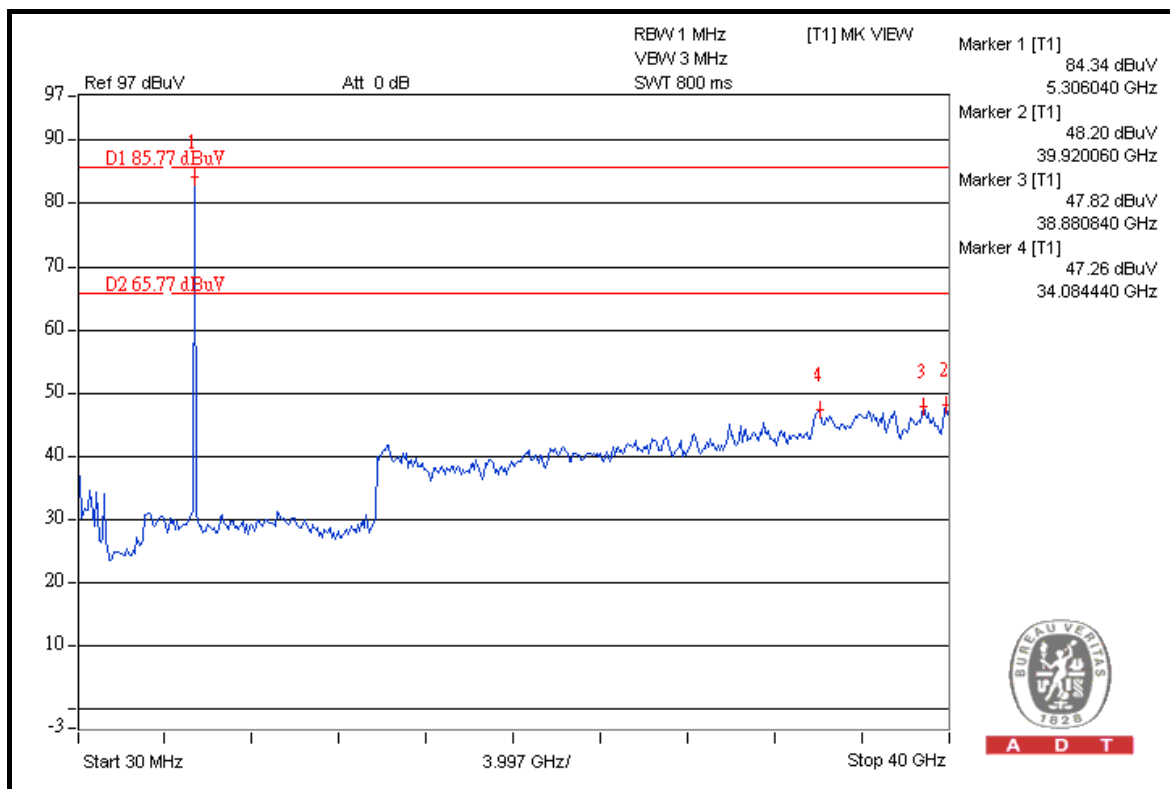
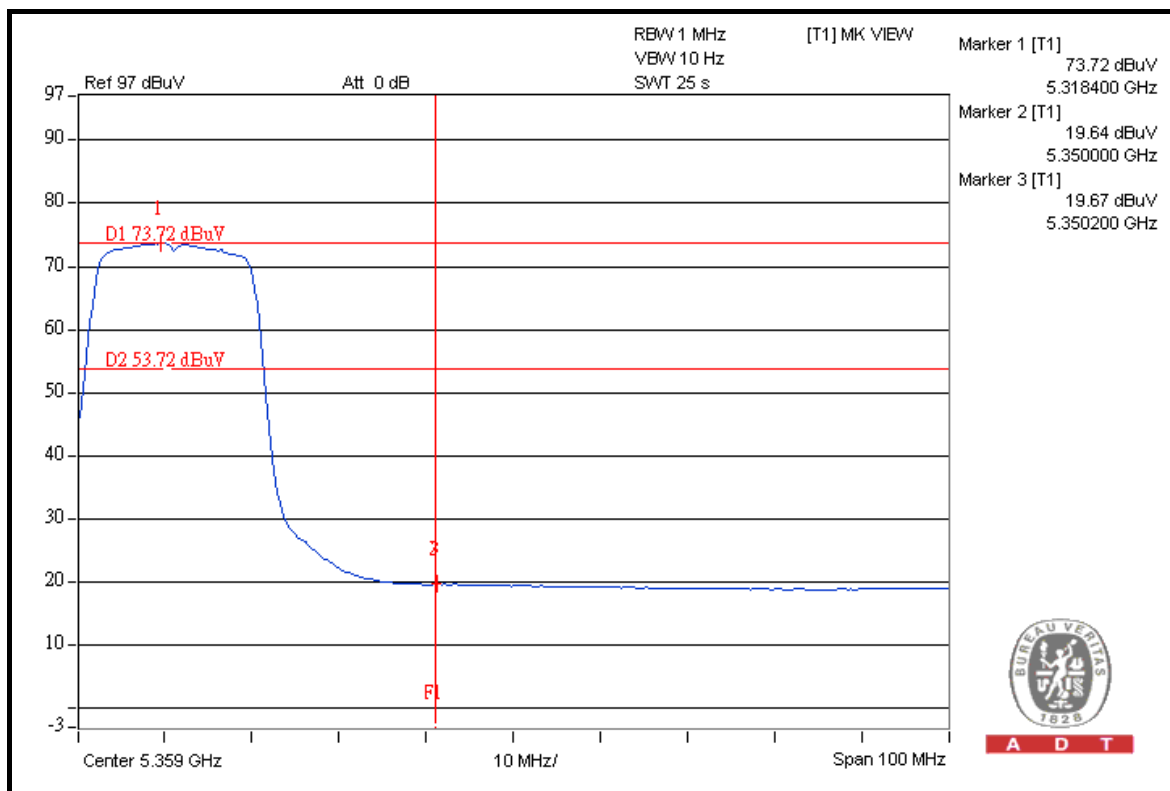


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FOR 5500-5700MHz BAND: 802.11a OFDM MODULATION:

Channel 100 (5500MHz)

The band edge emission plot (5.460GHz) on the next page shows 53.20dBc 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 115.33dBuV/m (Peak), so the maximum field strength out of band emission is $115.33 - 53.20 = 62.13$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 55.85dBc 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 105.22dBuV/m (Average), so the maximum field strength in restrict band is $105.22 - 55.85 = 49.37$ dBuV/m which is under 54dBuV/m limit.

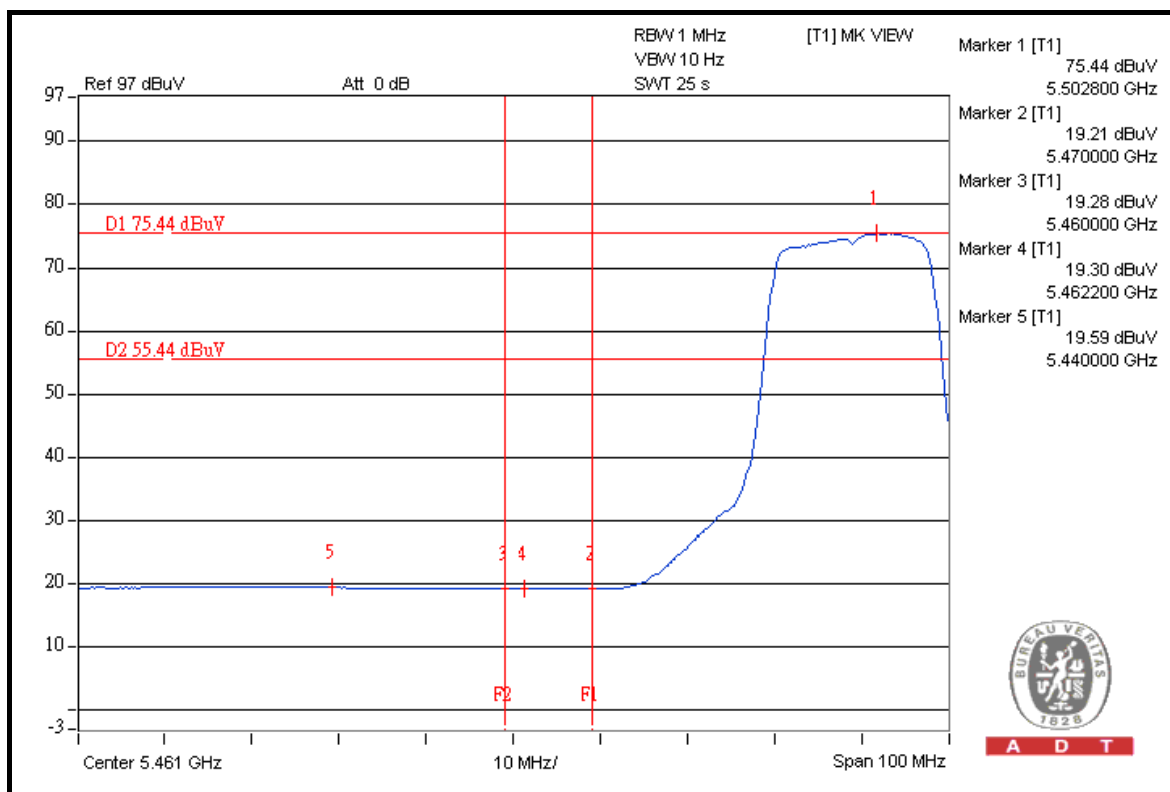
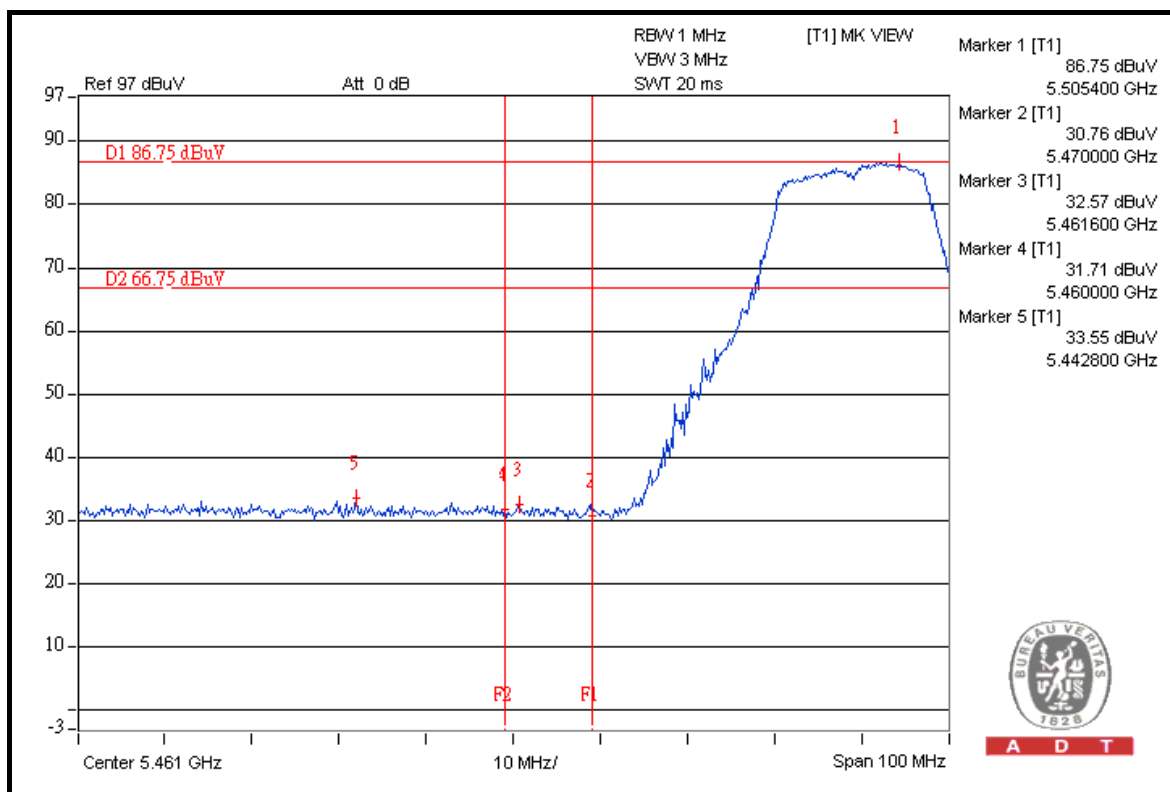
The band edge emission plot (5.470GHz) on the next page shows 54.18dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 100 is 115.33dBuV/m (Peak), so the maximum field strength in restrict band is $115.33 - 54.18 = 61.15$ dBuV/m which is under 68.3dBuV/m limit.

Channel 140 (5700MHz)

The band edge emission plot on the next second page shows 54.31dBc 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 115.82dBuV/m (Peak), so the maximum field strength in restrict band is $115.82 - 54.31 = 61.51$ dBuV/m which is under 68.3dBuV/m limit.

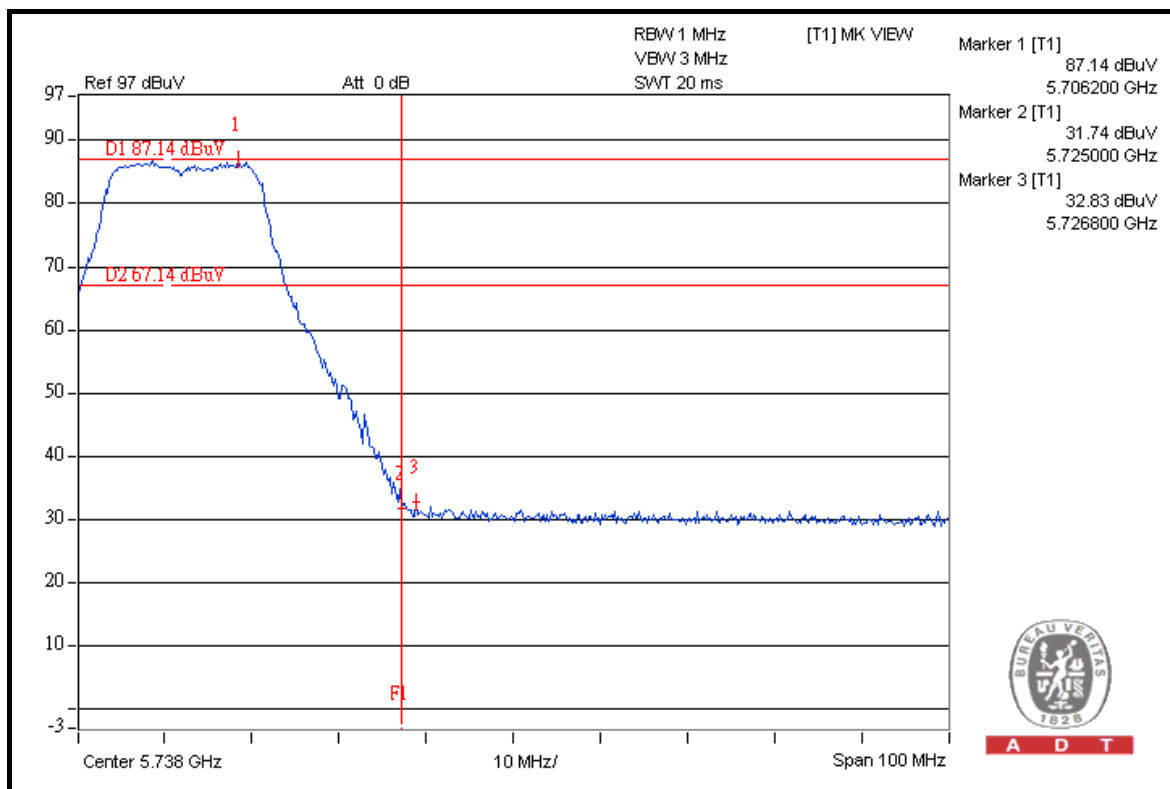
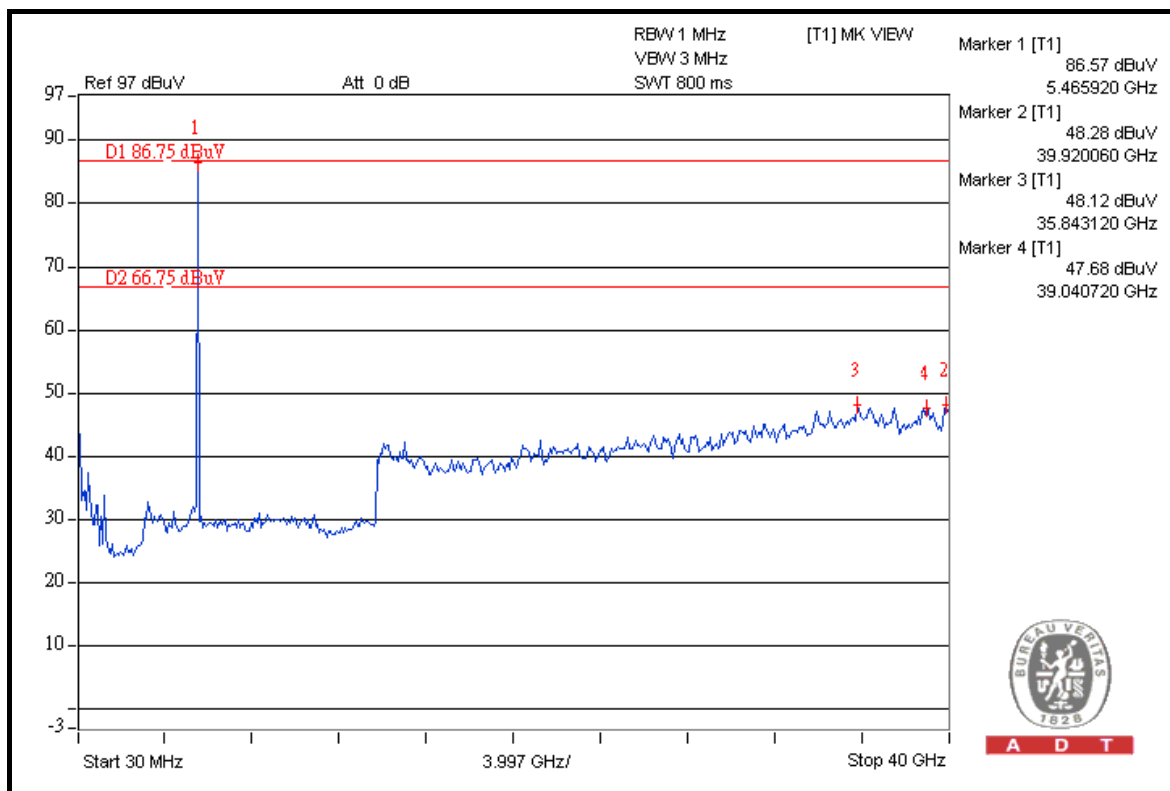


A D T



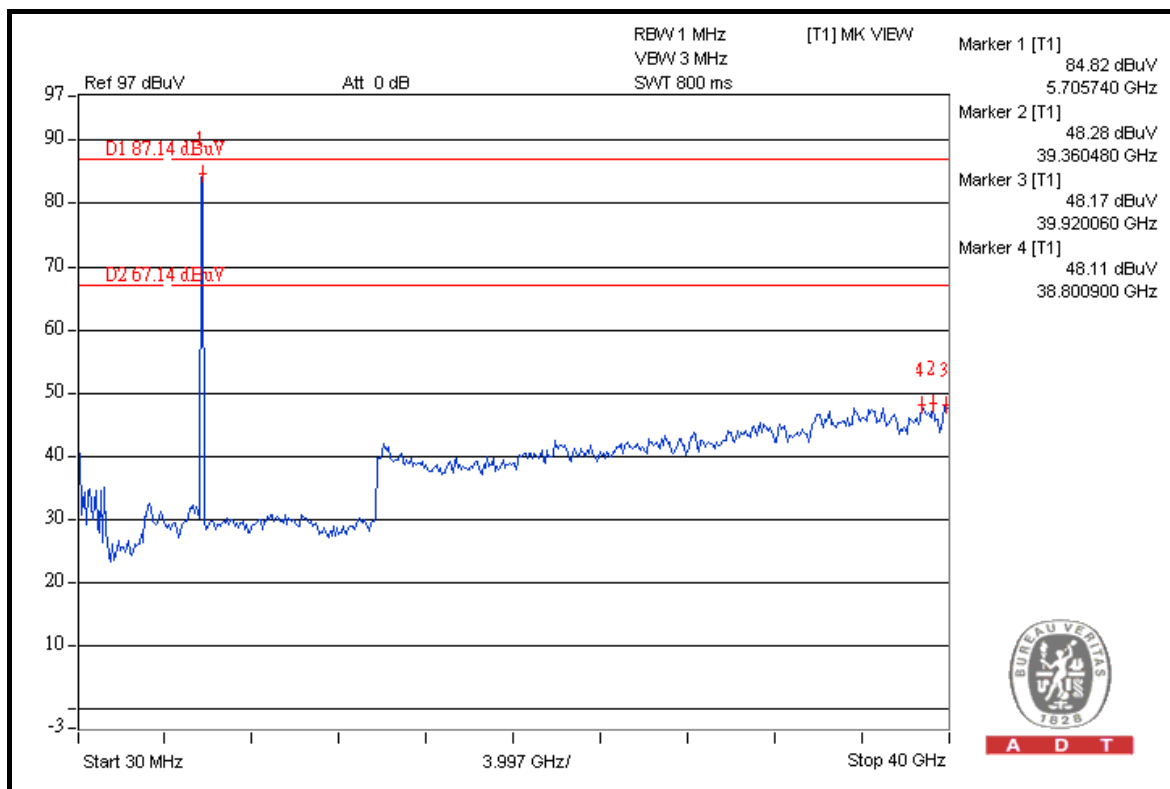
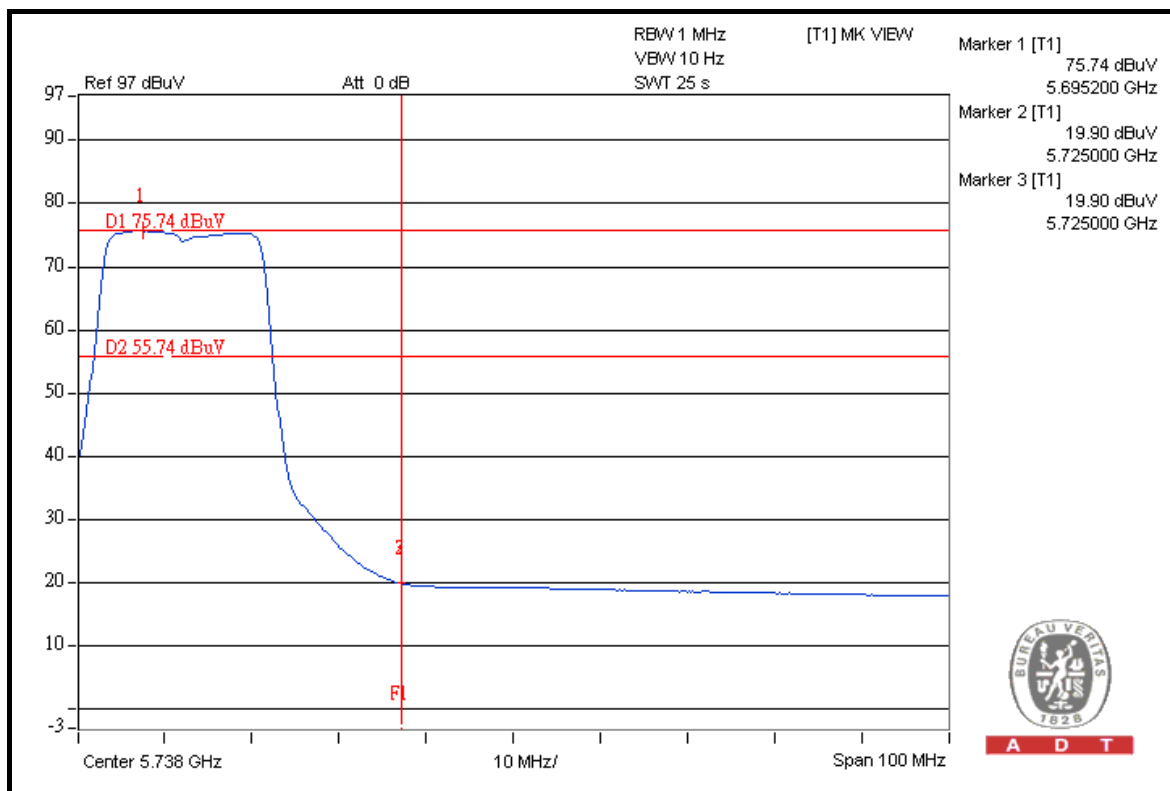


A D T





A D T



FOR 5260-5320MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION

Channel 52 (5260MHz)

The band edge emission plot on the next page shows 53.36dBc 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 112.72dBuV/m (Peak), so the maximum field strength in restrict band is $112.72 - 53.36 = 59.36$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 55.56dBc 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 102.63dBuV/m (Average), so the maximum field strength in restrict band is $102.63 - 55.56 = 47.07$ dBuV/m which is under 54dBuV/m limit.

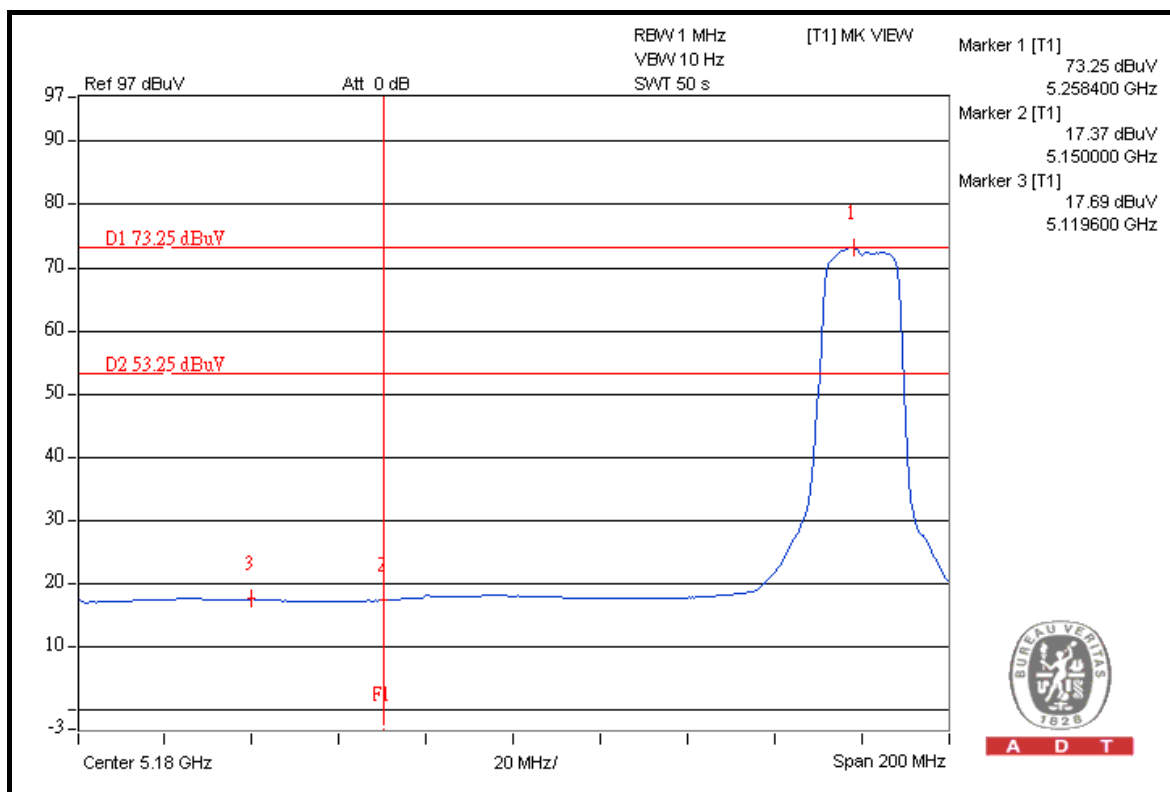
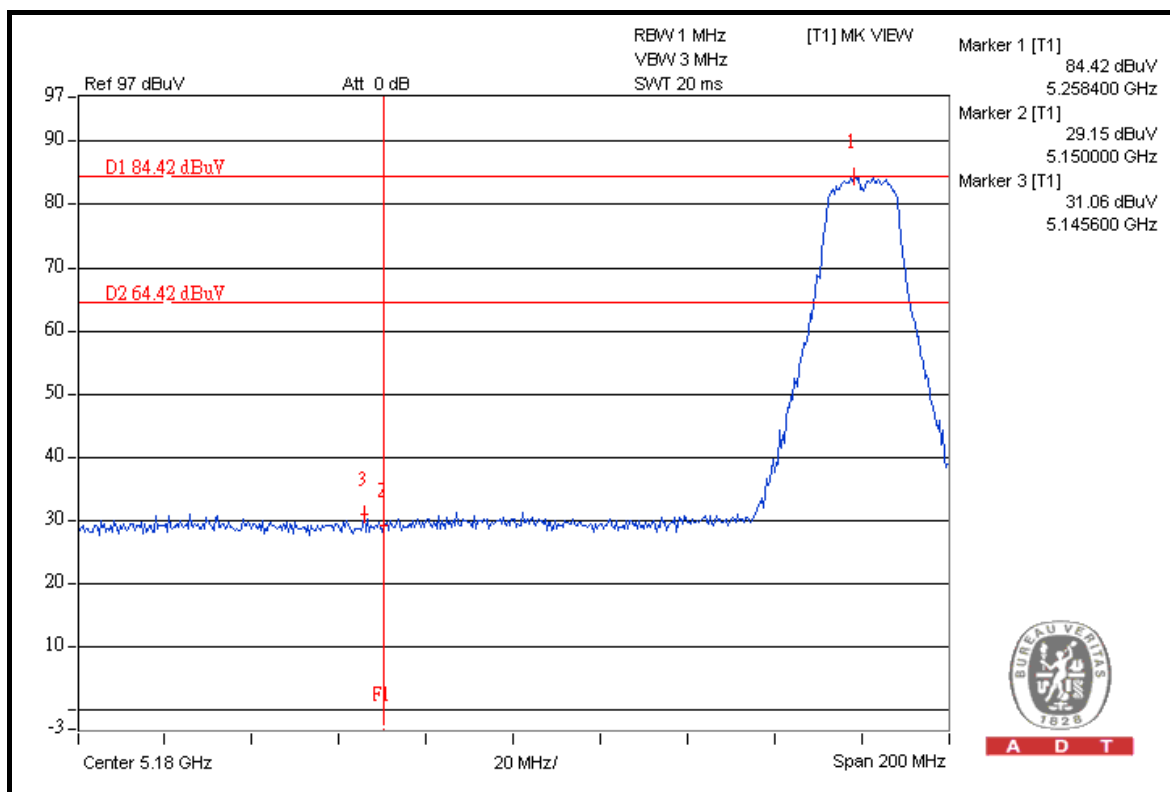
Channel 64 (5320MHz)

The band edge emission plot on the next second page shows 52.84dBc 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 113.58 dBuV/m (Peak), so the maximum field strength in restrict band is $113.58 - 52.84 = 60.74$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 54.40dBc 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 103.19dBuV/m (Average), so the maximum field strength in restrict band is $103.19 - 54.40 = 48.79$ dBuV/m which is under 54dBuV/m limit.

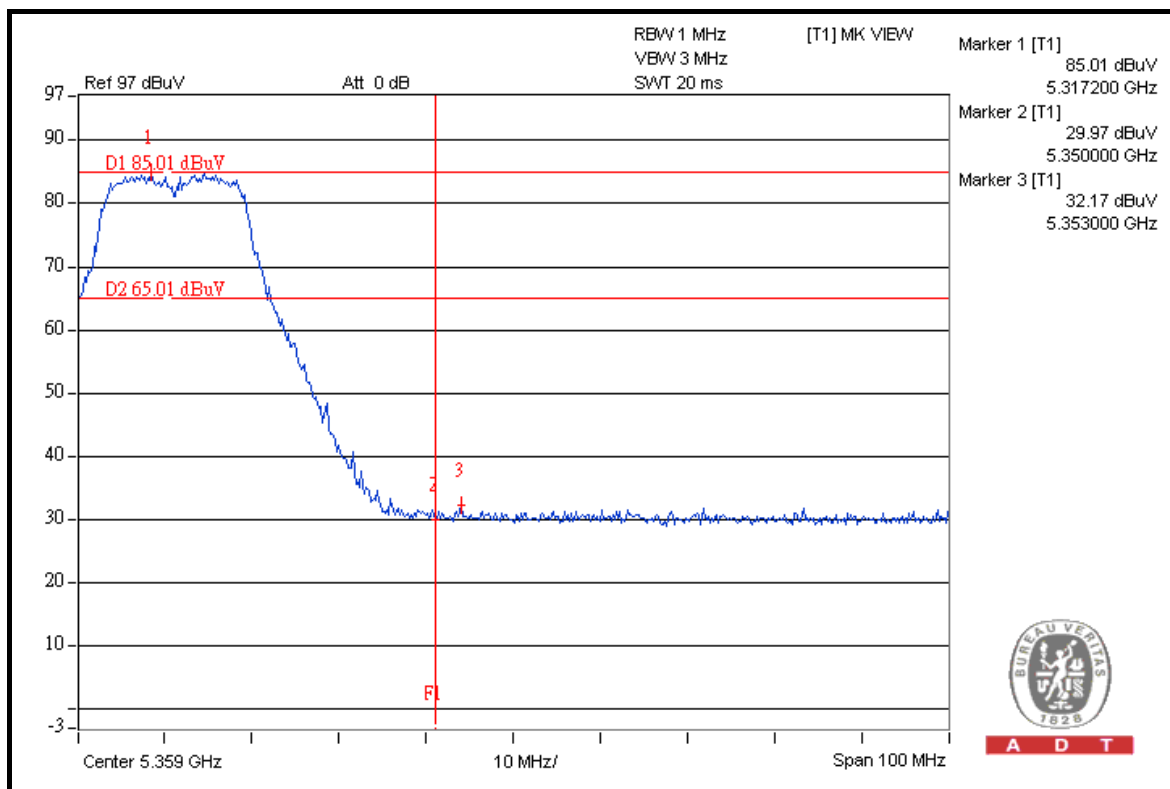
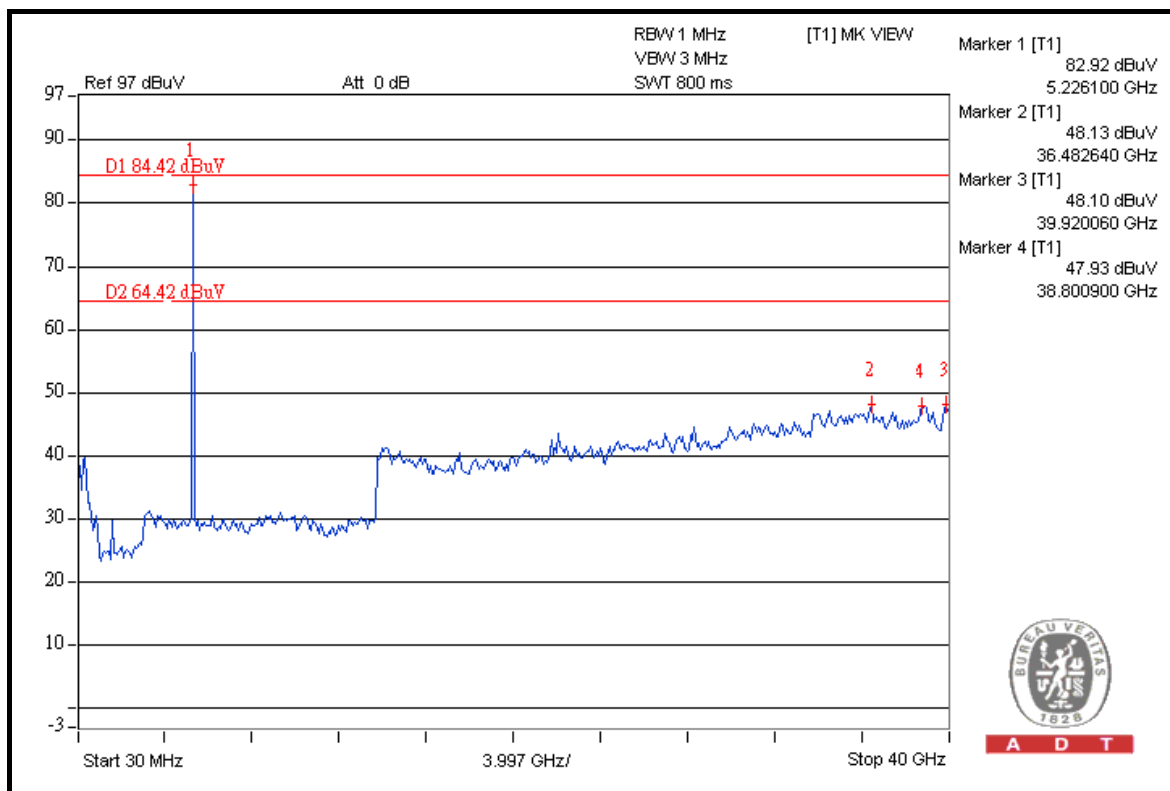


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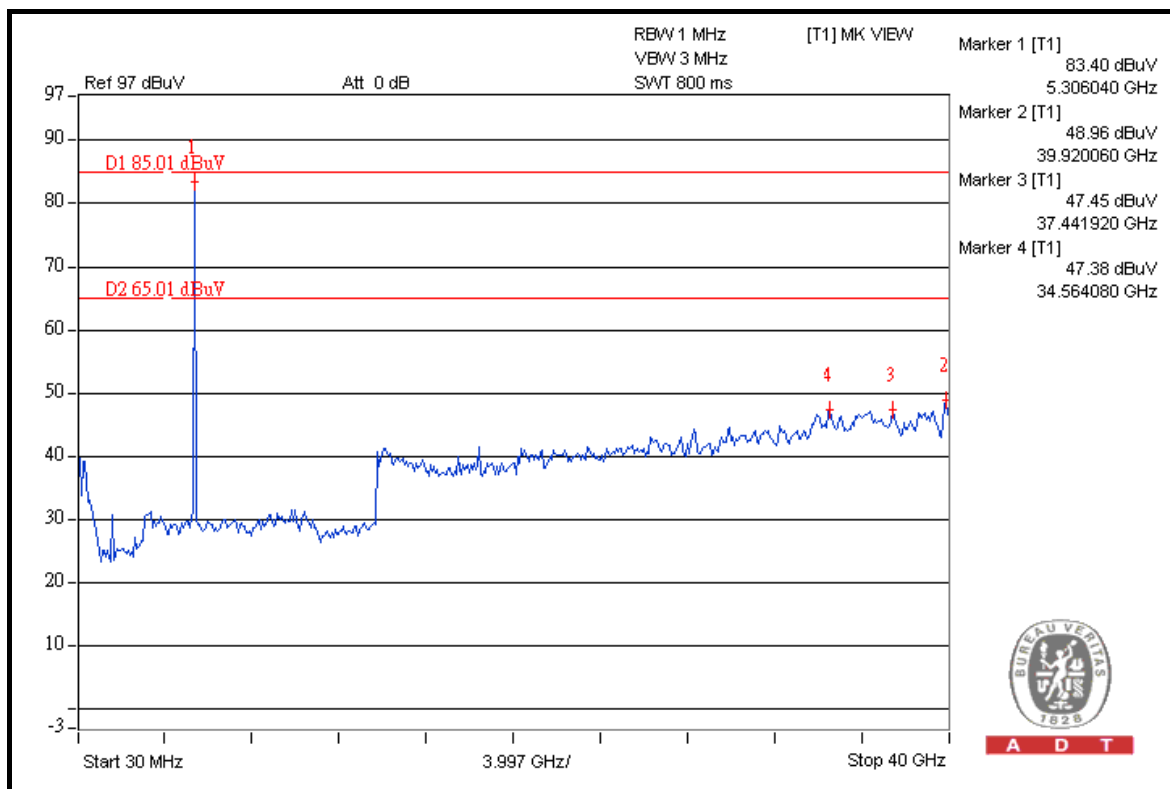
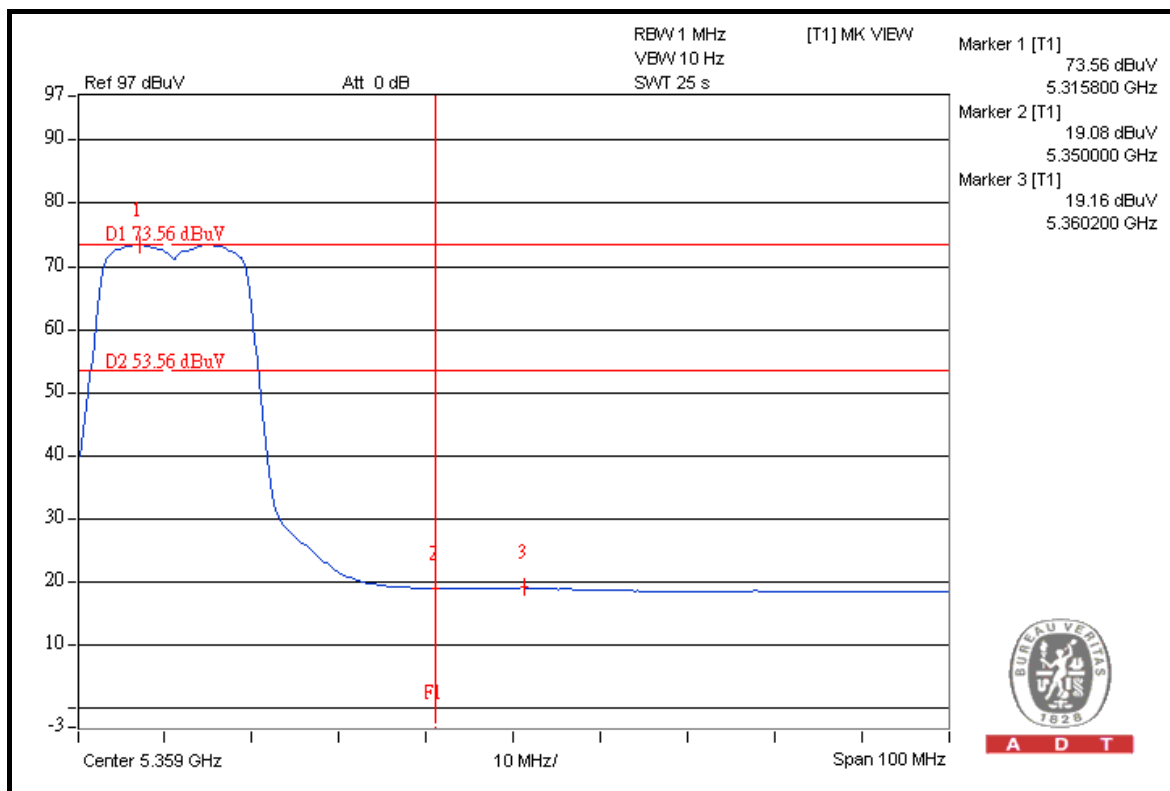


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FOR 5500-5700MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION:

Channel 100 (5500MHz)

The band edge emission plot (5.460GHz) on the next page shows 54.37dBc 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 115.29dBuV/m (Peak), so the maximum field strength out of band emission is $115.29 - 54.37 = 60.92$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 56.40dBc 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 105.18dBuV/m (Average), so the maximum field strength in restrict band is $105.18 - 56.40 = 48.78$ dBuV/m which is under 54dBuV/m limit.

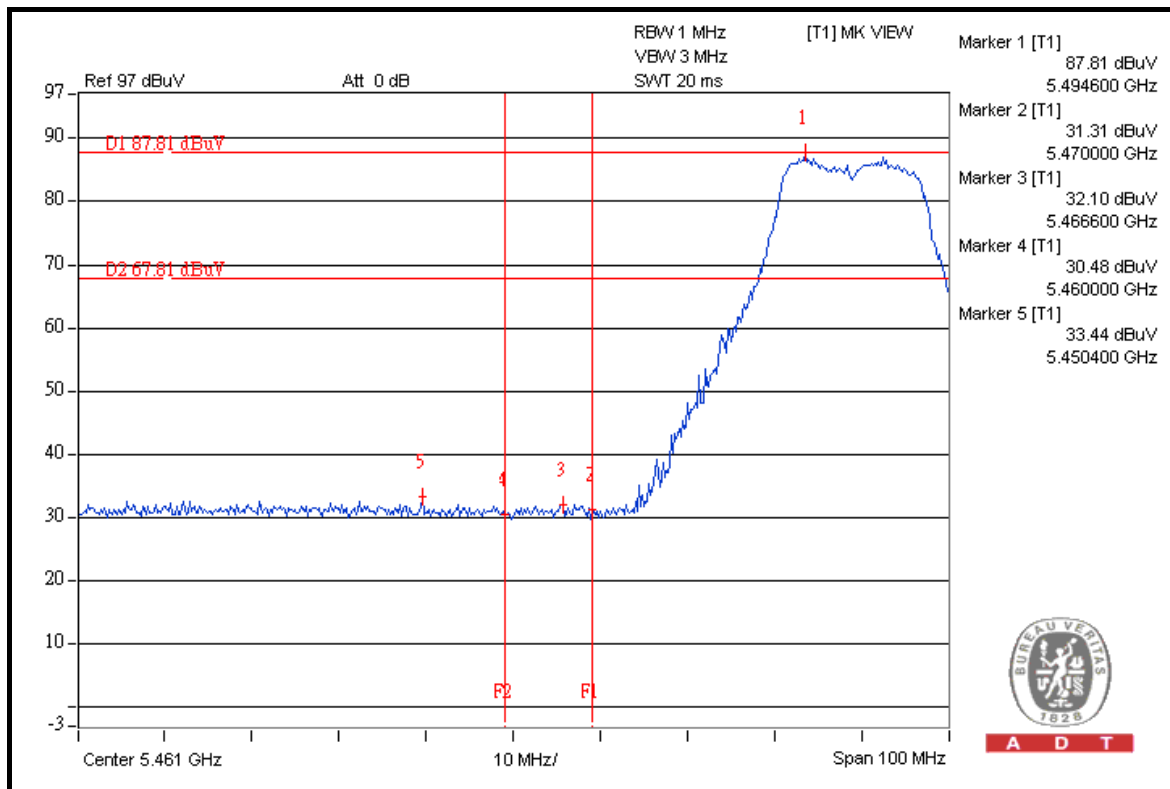
The band edge emission plot (5.470GHz) on the next page shows 55.71dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 100 is 115.29dBuV/m (Peak), so the maximum field strength in restrict band is $115.29 - 55.71 = 59.58$ dBuV/m which is under 68.3dBuV/m limit.

Channel 140 (5700MHz)

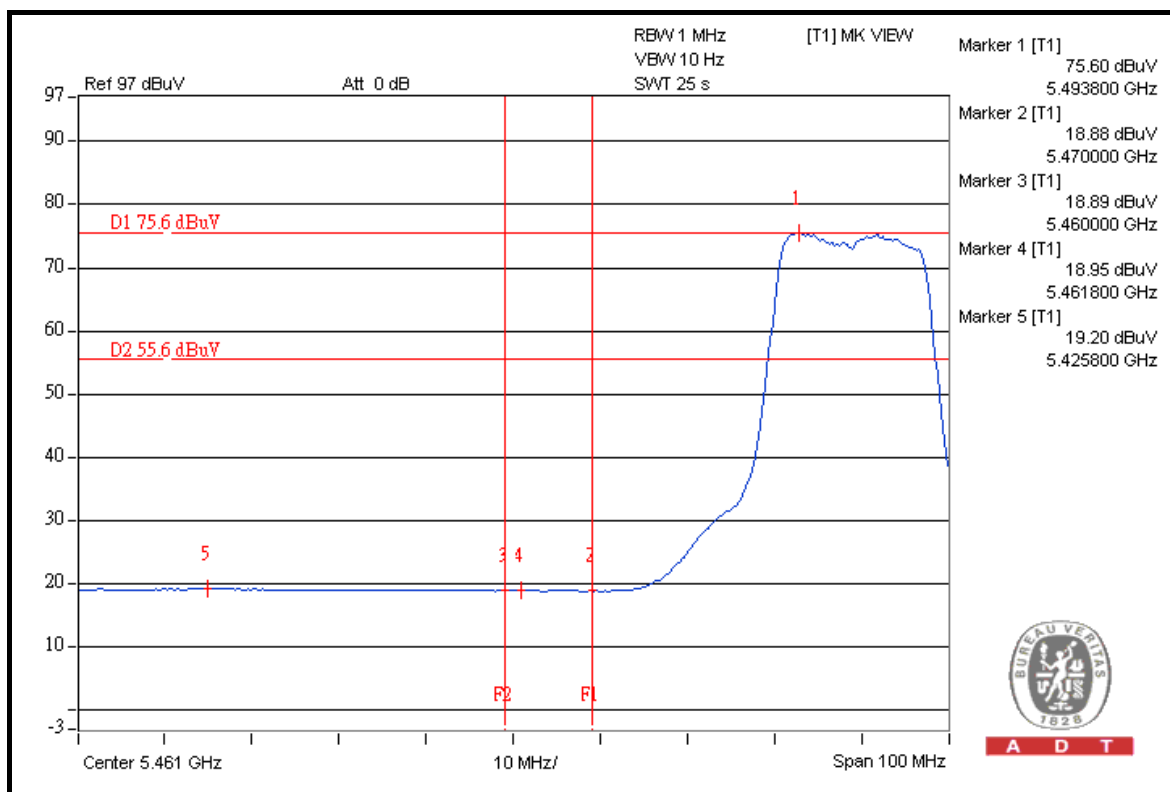
The band edge emission plot on the next second page shows 53.98dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 140 is 115.74dBuV/m (Peak), so the maximum field strength in restrict band is $115.74 - 53.98 = 61.76$ dBuV/m which is under 68.3dBuV/m limit.



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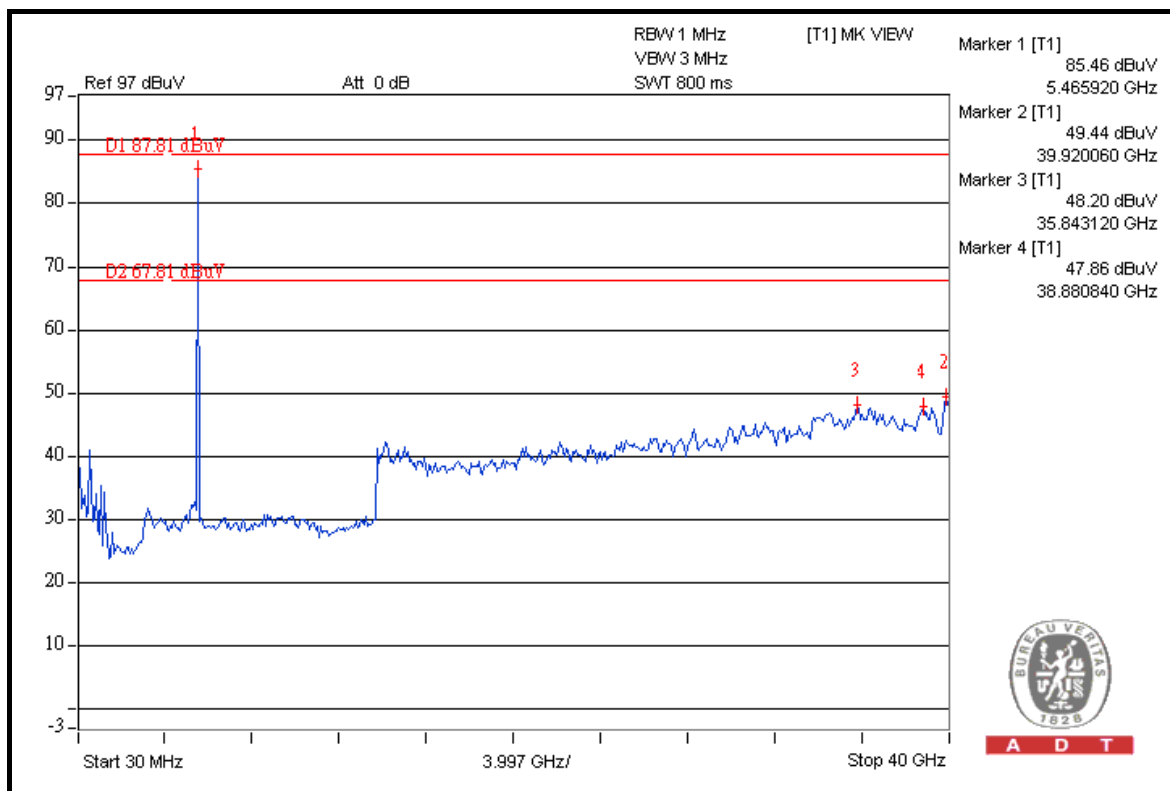
A D T



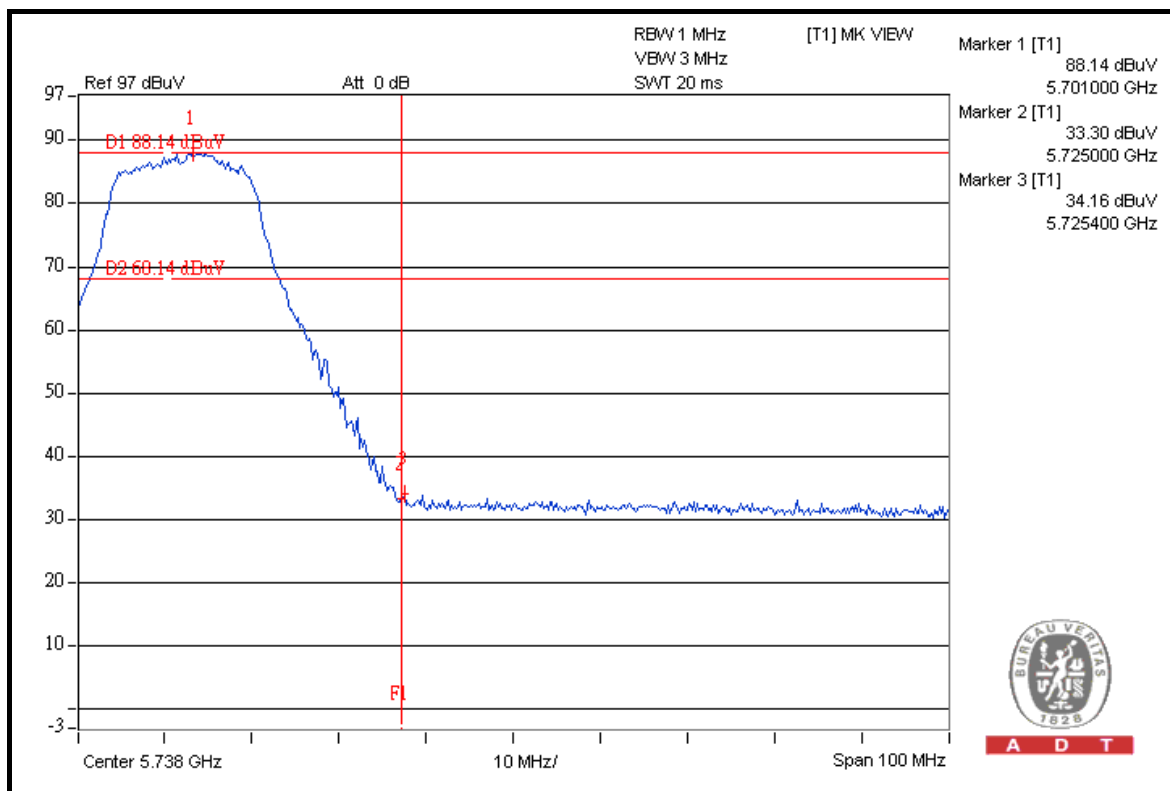
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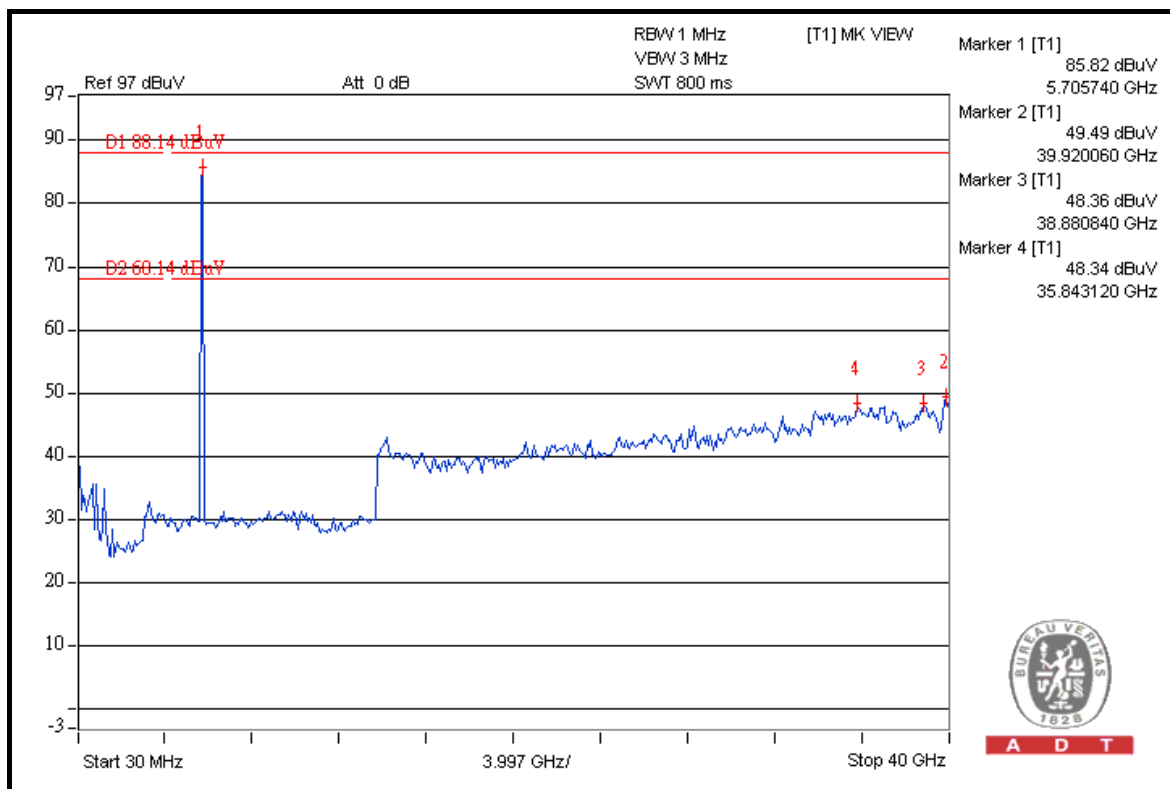
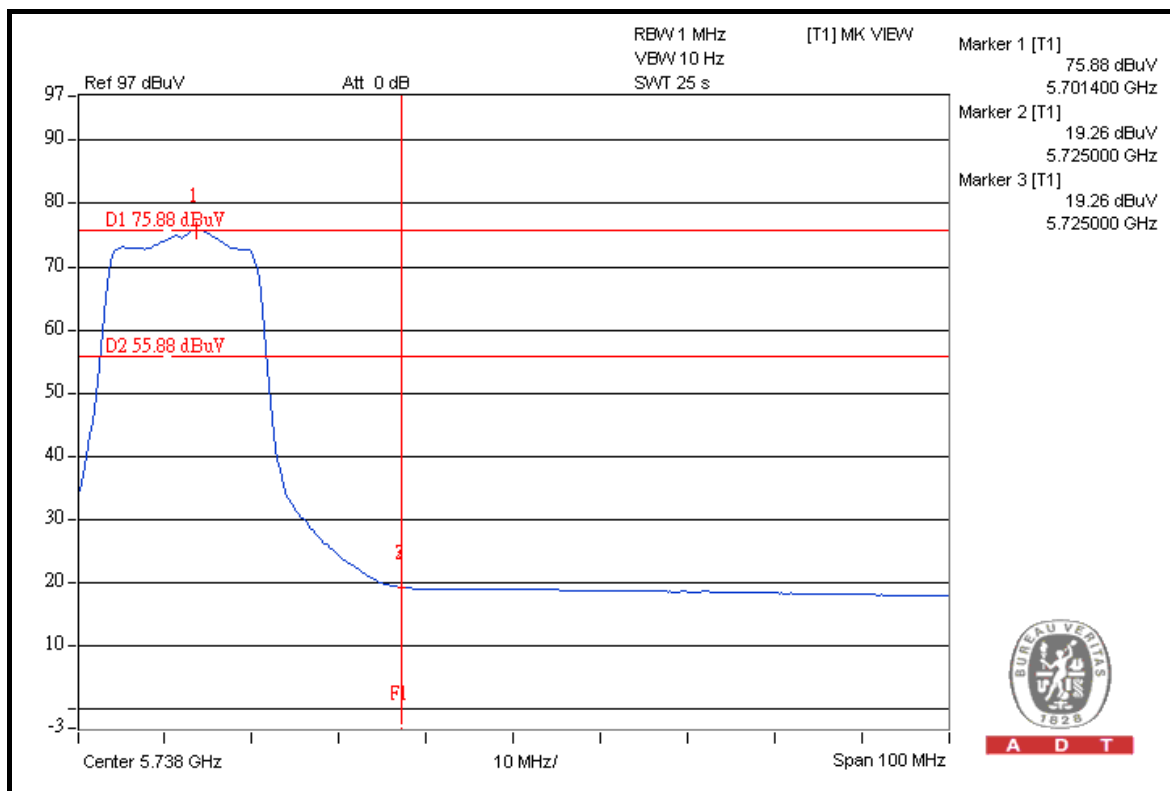
A D T



A D T



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FOR 5260-5320MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

Channel 54 (5270MHz)

The band edge emission plot on the next page shows 49.57dBc 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 109.62dBuV/m (Peak), so the maximum field strength in restrict band is $109.62 - 49.57 = 60.05$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 50.46dBc 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 98.24dBuV/m (Average), so the maximum field strength in restrict band is $98.24 - 50.46 = 47.78$ dBuV/m which is under 54dBuV/m limit.

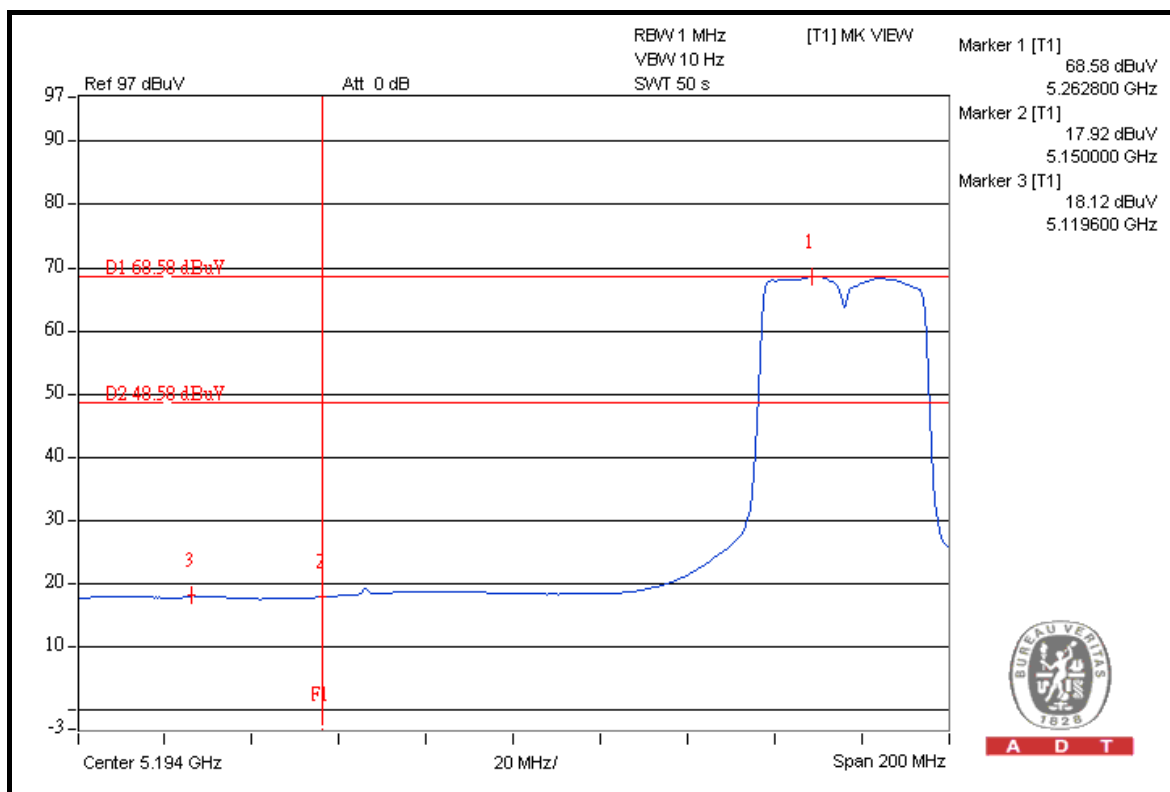
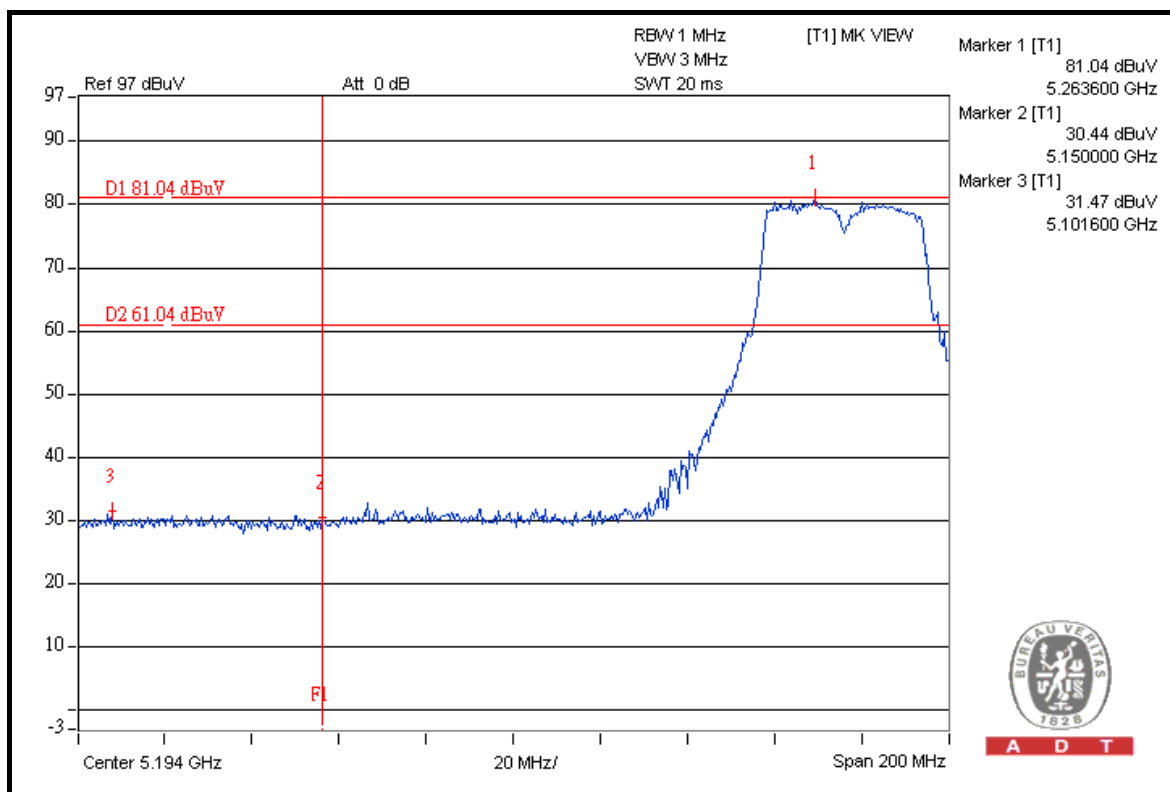
Channel 62 (5310MHz)

The band edge emission plot on the next second page shows 50.19dBc 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 110.53dBuV/m (Peak), so the maximum field strength in restrict band is $110.53 - 50.19 = 60.34$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 52.34dBc 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 98.76dBuV/m (Average), so the maximum field strength in restrict band is $98.76 - 52.34 = 46.42$ dBuV/m which is under 54dBuV/m limit.

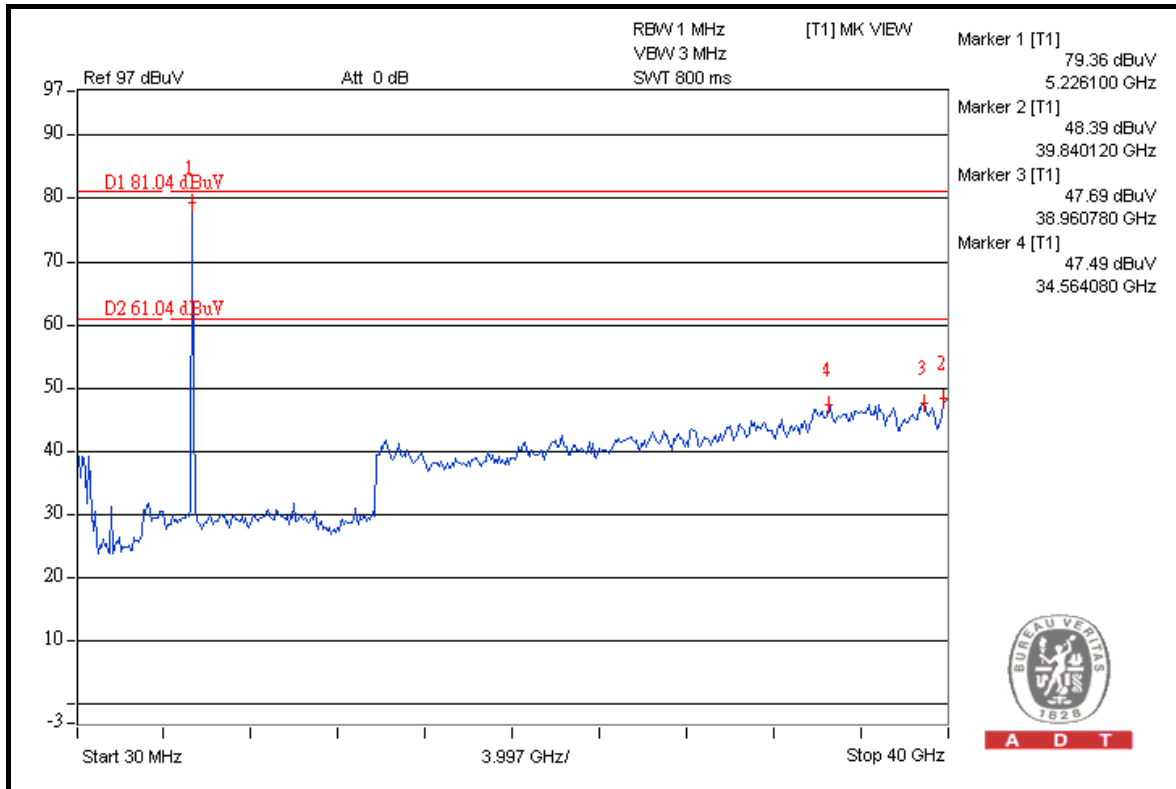


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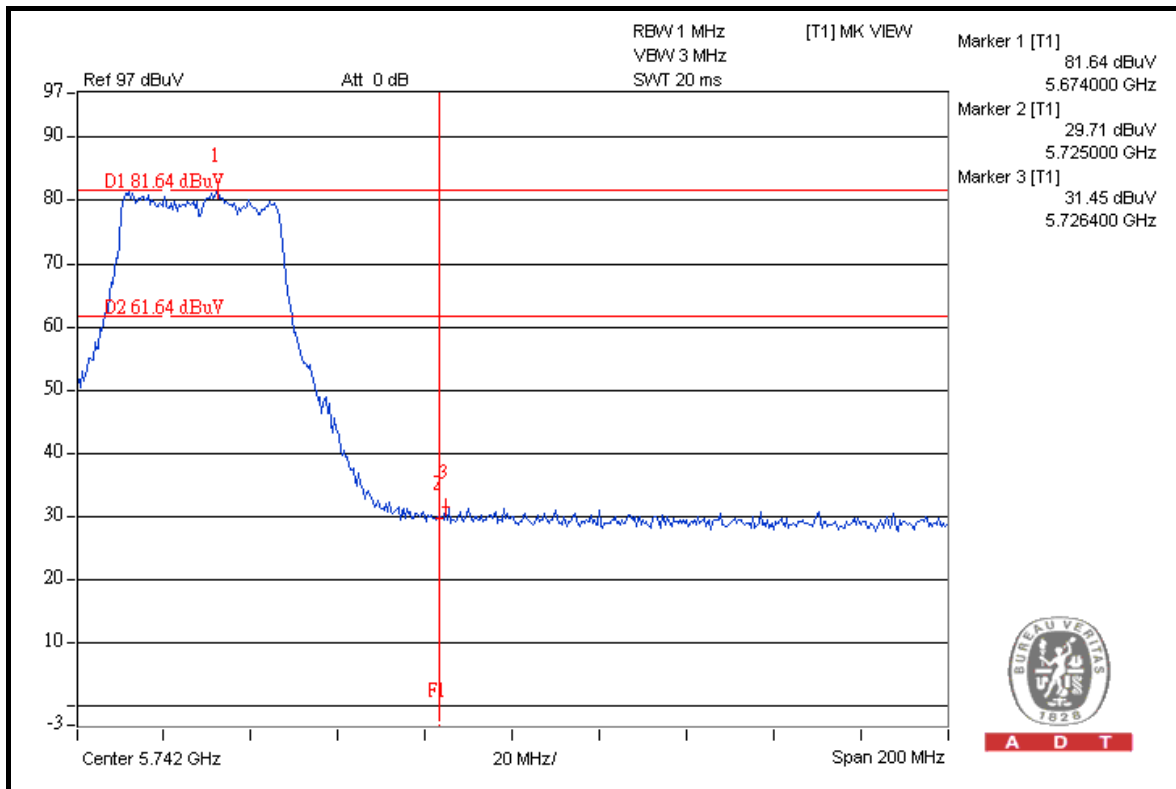




A D T



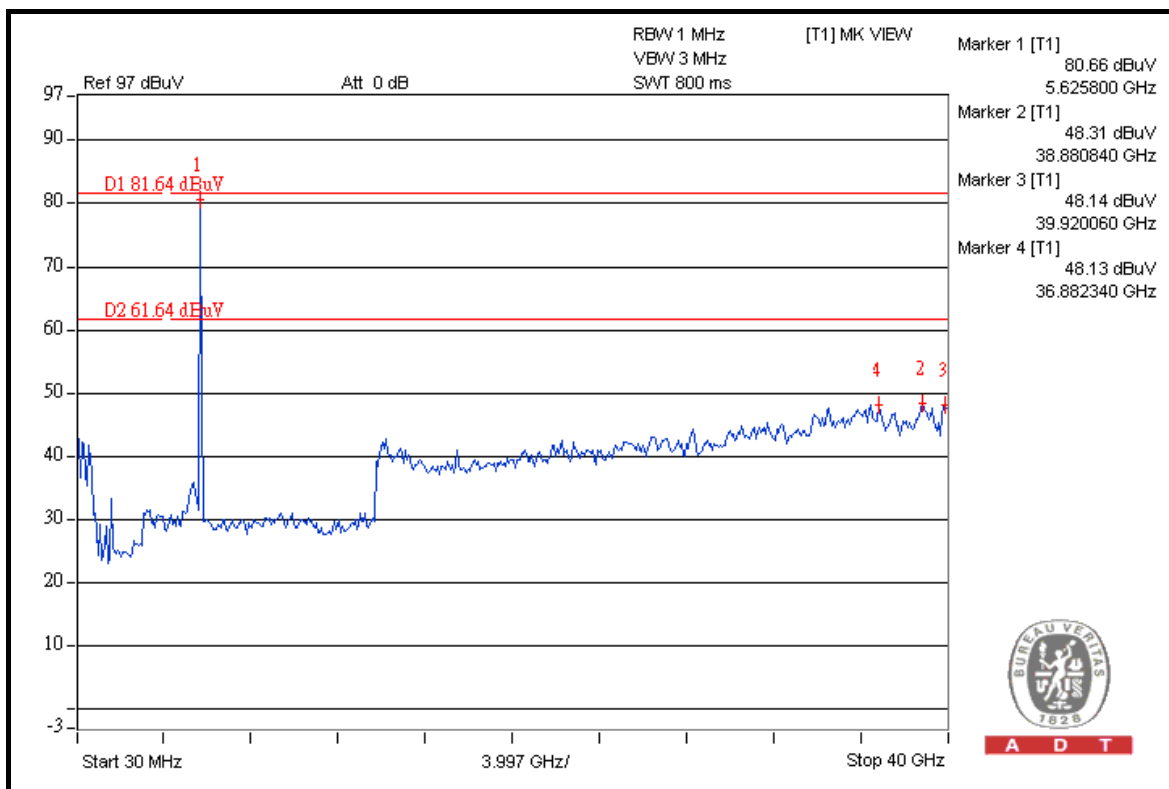
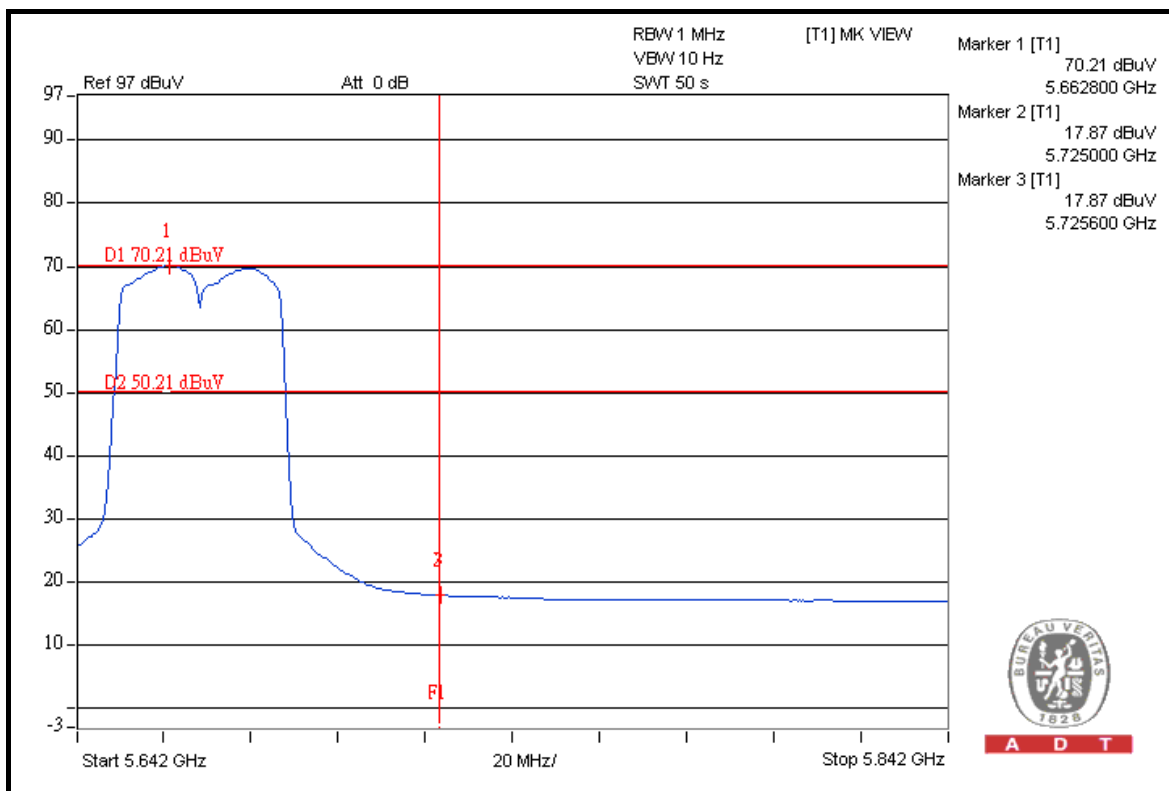
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FOR 5500-5700MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION:

Channel 102 (5510MHz)

The band edge emission plot (5.460GHz) on the next page shows 48.28dBc 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 112.67dBuV/m (Peak), so the maximum field strength in restrict band is $112.67 - 48.28 = 64.39$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 48.84dBc 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 100.95dBuV/m (Average), so the maximum field strength in restrict band is $100.95 - 48.84 = 52.11$ dBuV/m which is under 54dBuV/m limit.

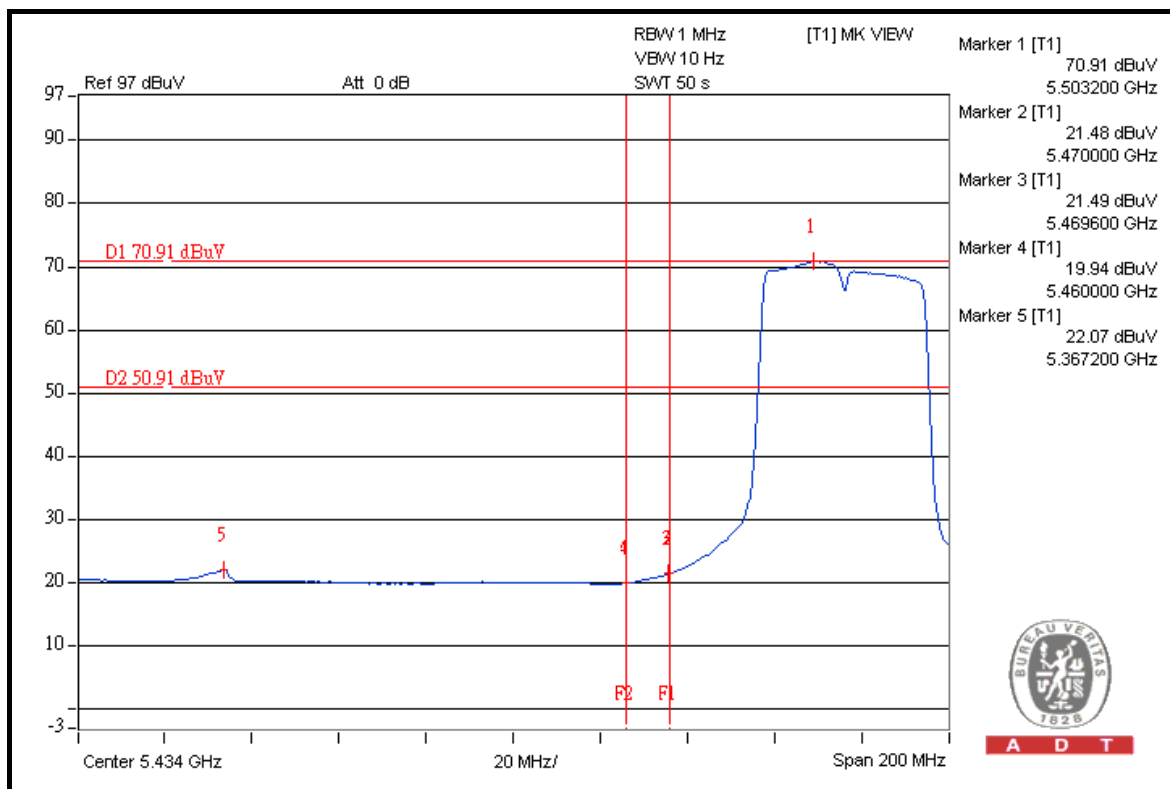
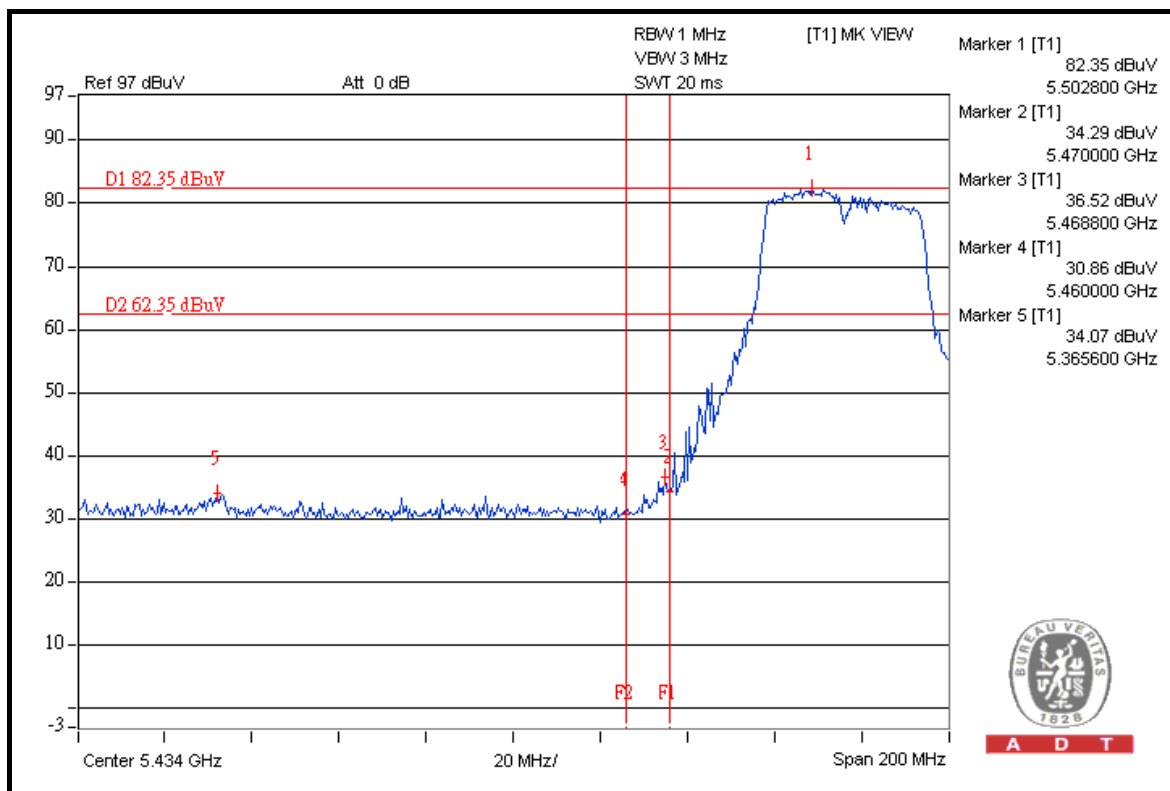
The band edge emission plot (5.470GHz) on the next page shows 45.83dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 102 is 112.67dBuV/m (Peak), so the maximum field strength out of band emission is $112.67 - 45.83 = 66.84$ dBuV/m which is under 68.3dBuV/m limit.

Channel 134 (5670MHz)

The band edge emission plot on the next second page shows 50.19dBc 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 111.34dBuV/m (Peak), so the maximum field strength in restrict band is $111.34 - 50.19 = 61.15$ dBuV/m which is under 68.3dBuV/m limit.

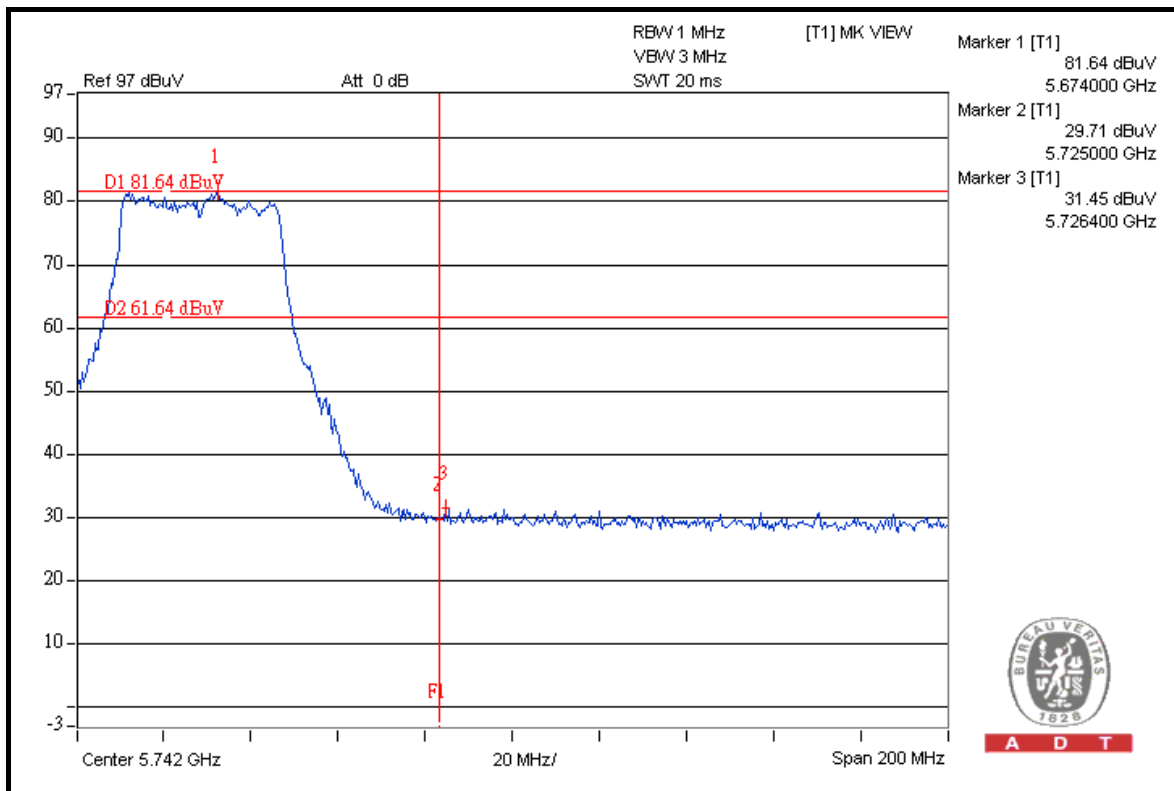
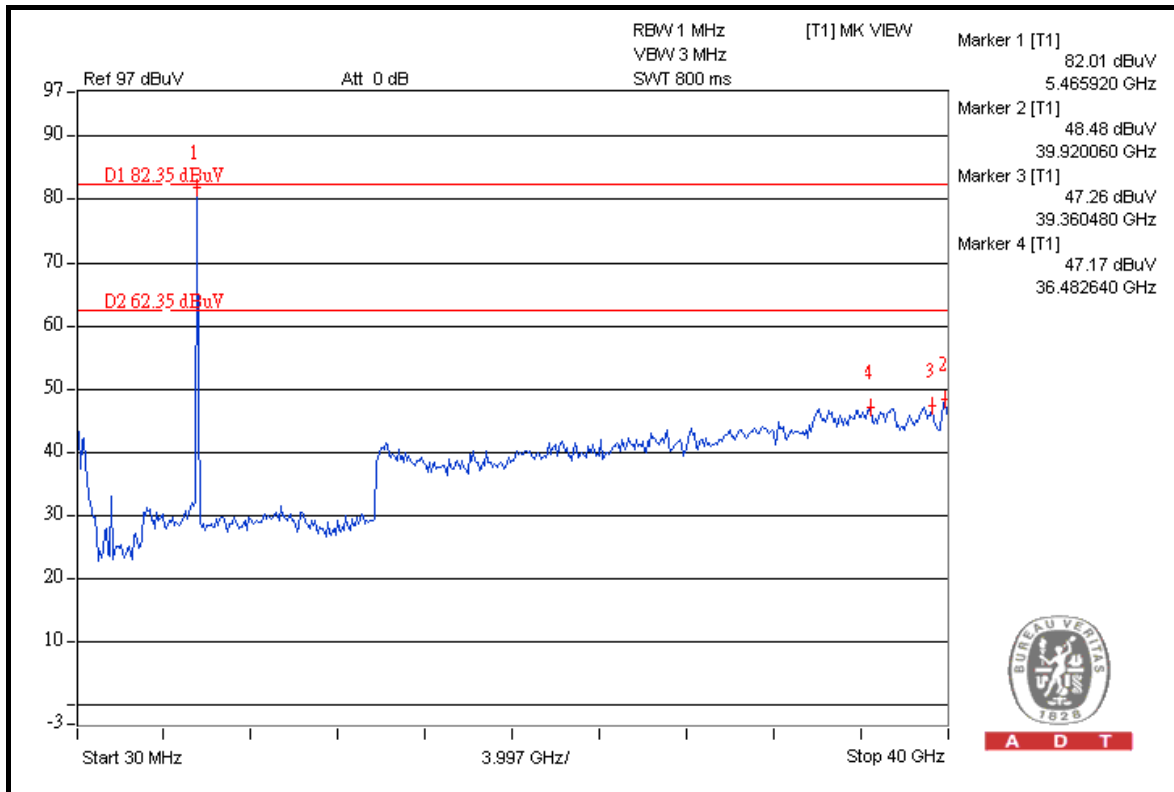


A D T



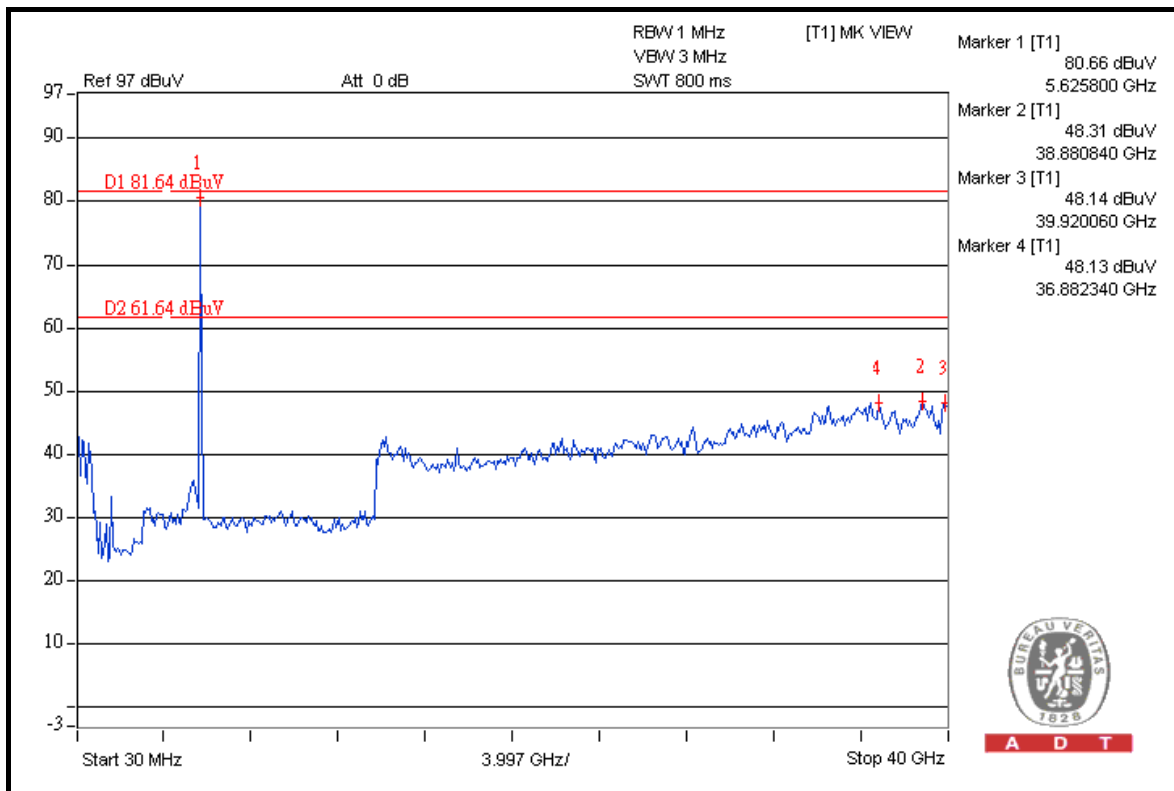
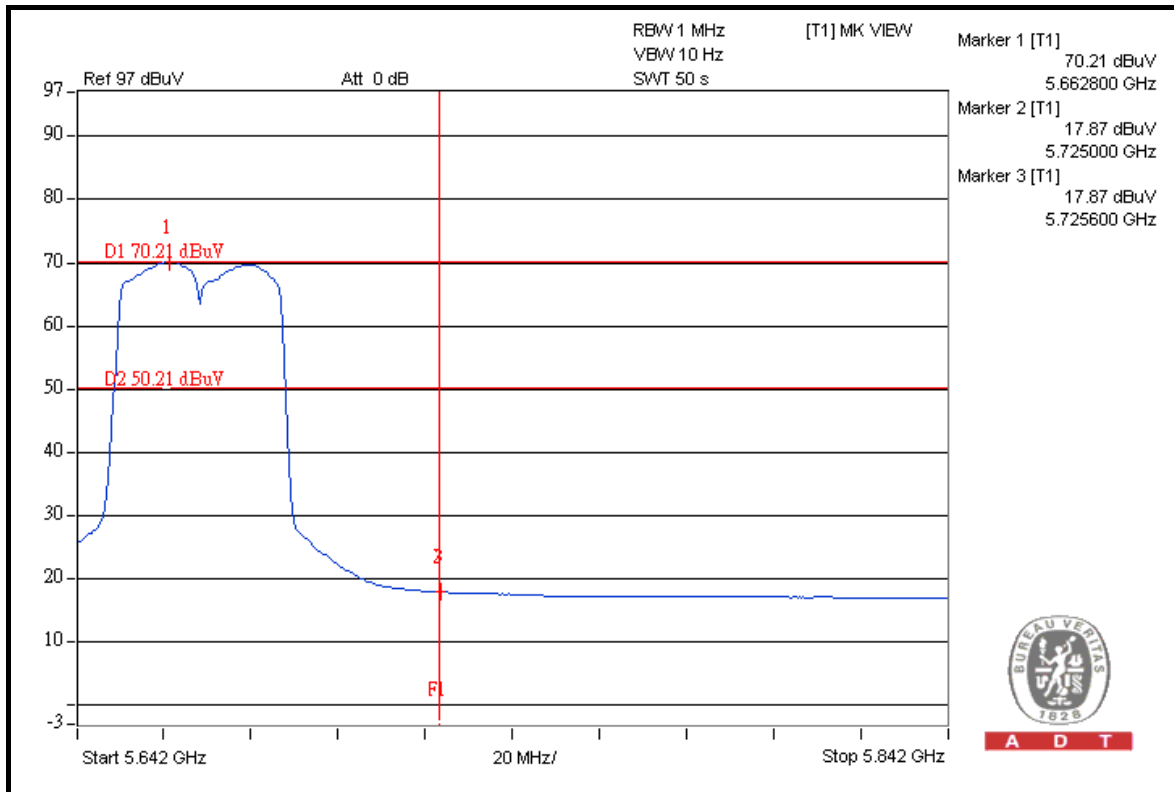


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4.8 ANTENNA REQUIREMENT

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 RTNC connector. The maximum Gain of the antenna is 4dBi.



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:
www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

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

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

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

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

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

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

---END---