

FCC TEST REPORT (15.407)

REPORT NO.: RF970131L13A-1

MODEL NO.: WL-606

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TESTED: Jun. 03 ~ Jun. 12, 2009

ISSUED: Jun. 17, 2009

APPLICANT: 3Com Corporation

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1. CERTIFICATION

PRODUCT: 3Com Wireless Dual Band 11n USB Adapter

MODEL NO.: WL-606

BRAND: 3Com

APPLICANT: 3Com Corporation

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Jun. 03 ~ Jun. 12, 2009

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

ANSI C63.4-2003

The above equipment (Model: WL-606) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Andrea Hsia , **DATE** : Jun. 17, 2009
Andrea Hsia / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE** : Jun. 17, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE** : Jun. 17, 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 -12.51dB at 3.961MHz.
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 -1.16dB at 5725.00MHz.
15.407(a)(1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

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	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	3Com Wireless Dual Band 11n USB Adapter
MODEL NO.	WL-606
FCC ID	O9C-WL606
POWER SUPPLY	5Vdc from host equipment
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	5180 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5320MHz: 8 for 802.11a, draft 802.11n (20MHz) 4 for draft 802.11n (40MHz) 5500 ~ 5700MHz: 11 for 802.11a, draft 802.11n (20MHz) 5 for draft 802.11n (40MHz)
OUTPUT POWER	45.554mW for 5180 ~ 5240MHz 56.759mW for 5260 ~ 5320MHz 50.974mW for 5500 ~ 5700MHz
ANTENNA TYPE	Refer to note as below
DATA CABLE	NA
I/O PORTS	USB
ASSOCIATED DEVICES	NA

NOTE:

- The EUT is a 3Com Wireless Dual Band 11n USB Adapter. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g, draft 802.11n	FCC Part 15, Subpart C (Section 15.247)	RF970131L13A
WLAN 802.11a, draft 802.11n (5745~5825 MHz)		
WLAN 802.11a, draft 802.11n (5180~5320MHz & 5500 ~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF970131L13A-1
WLAN 802.11a, draft 802.11n (For DFS report) (5260~5320MHz & 5500~5700MHz)	FCC Part 15, Subpart E (Section 15.407)	RF970131L13A-2

- The following antennas are used in this EUT.

TYPE	GAIN (dBi)	
	2.4GHz	5.0GHz
Printed (Antenna 1)	2.83	4.25
Printed (Antenna 2)	3.73	4.99

**Higher gain antenna was chosen for final test.

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

Frequency Band (MHz)	2412~2462	5180~5320	5500~5700	5745~5825
802.11b	√			
802.11g	√			
802.11a		√	√	√
Draft 802.11n (20MHz)	√	√	√	√
Draft 802.11n (40MHz)	√	√	√	√

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

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
Draft 802.11n (20MHz)	2TX
Draft 802.11n (40MHz)	2TX

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

3.2 DESCRIPTION OF TEST MODES

Operated in 5180 ~ 5320MHz

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

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

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

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

Operated in 5500 ~ 5700MHz

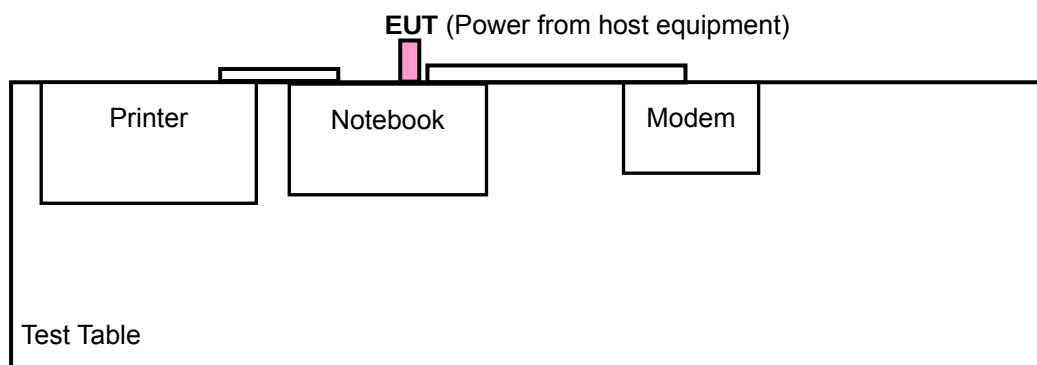
11 channels are provided for 802.11a, draft 802.11n (20MHz):

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5690 MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥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	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		38 to 62	38, 46, 54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (20MHz)	5180-5320	36 to 64	64	OFDM	BPSK	7.2
Draft 802.11n (20MHz)	5500-5700	100 to 140	120	OFDM	BPSK	7.2

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (20MHz)	5180-5320	36 to 64	64	OFDM	BPSK	7.2
Draft 802.11n (20MHz)	5500-5700	100 to 140	120	OFDM	BPSK	7.2

BANDEDGE MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	36, 48, 52, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		36 to 64	36, 48, 52, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		38 to 62	38, 46, 54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		38 to 62	38, 46, 54, 62	OFDM	BPSK	15.0
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6.0
Draft 802.11n (20MHz)		100 to 140	100, 120, 140	OFDM	BPSK	7.2
Draft 802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY054011	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008253	IFAXDM1414

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May 25, 2009	May 24, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 08, 2008	Aug. 07, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2009	Apr. 29, 2010
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Aug. 06, 2008	Aug. 05, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009	Jan. 05, 2010
Preamplifier Agilent	8449B	3008A01911	Sep. 10, 2008	Sep. 09, 2009
Preamplifier Agilent	8447D	2944A10638	Dec. 26, 2008	Dec. 25, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 13, 2009	May 12, 2010
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008	Aug. 08, 2009
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	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 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 460141.
 5. The IC Site Registration No. is IC 7450F-4.

4.1.4 TEST PROCEDURES

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

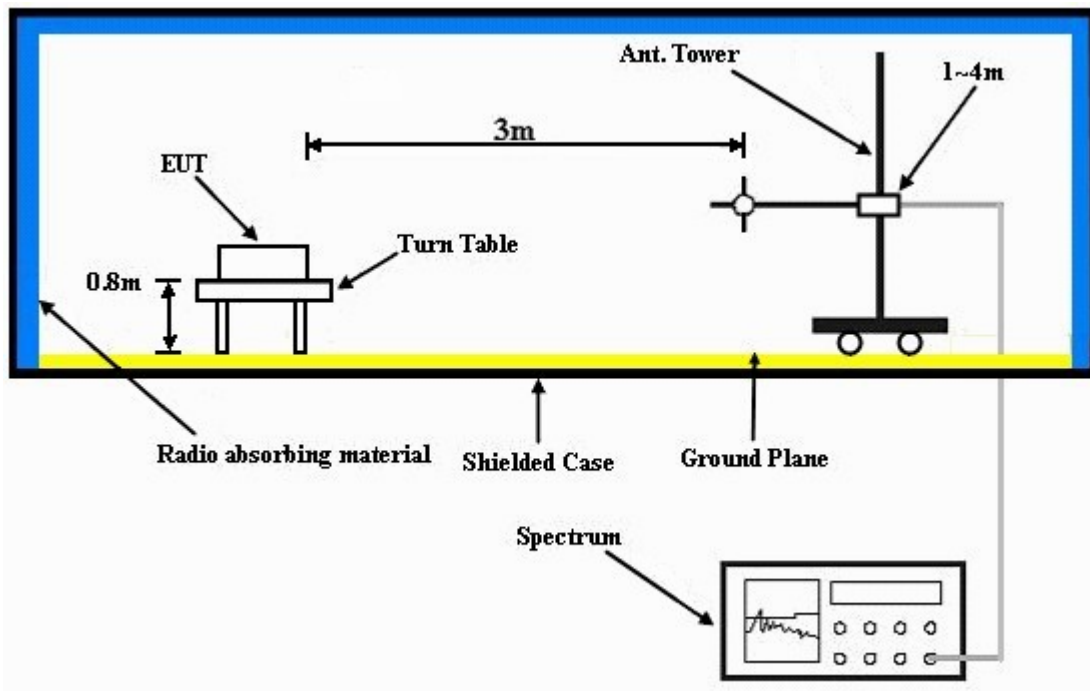
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- Plugged the EUT into a notebook system and placed on a testing table.
- The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.80 PK	74.00	-9.20	1.00 H	159	24.38	40.41
2	5150.00	44.63 AV	54.00	-9.37	1.00 H	159	4.22	40.41
3	*5180.00	110.87 PK			1.00 H	163	70.41	40.46
4	*5180.00	100.34 AV			1.00 H	163	59.88	40.46
5	#10360.00	60.22 PK	68.30	-8.08	1.02 H	54	8.98	51.24
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	57.41 PK	74.00	-16.59	1.00 V	68	17.00	40.41
2	5150.00	39.47 AV	54.00	-14.53	1.00 V	68	-0.95	40.41
3	*5180.00	104.37 PK			1.00 V	53	63.91	40.46
4	*5180.00	93.66 AV			1.00 V	53	53.20	40.46
5	#10360.00	60.97 PK	68.30	-7.33	1.00 V	261	9.73	51.24

- 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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.14 PK			1.00 H	166	69.65	40.49
2	*5200.00	98.95 AV			1.00 H	166	58.46	40.49
3	#10400.00	59.90 PK	68.30	-8.40	1.01 H	62	8.58	51.32
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.39 PK			1.00 V	54	62.90	40.49
2	*5200.00	93.25 AV			1.00 V	54	52.76	40.49
3	#10400.00	60.52 PK	68.30	-7.78	1.01 V	68	9.20	51.32

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.62 PK			1.00 H	166	69.09	40.53
2	*5240.00	98.34 AV			1.00 H	166	57.81	40.53
3	#10480.00	59.83 PK	68.30	-8.47	1.00 H	63	8.33	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	102.84 PK			1.00 V	54	62.31	40.53
2	*5240.00	93.15 AV			1.00 V	54	52.62	40.53
3	#10480.00	61.25 PK	68.30	-7.05	1.00 V	273	9.75	51.50

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	109.19 PK			1.00 H	164	68.64	40.55
2	*5260.00	98.10 AV			1.00 H	164	57.55	40.55
3	#10520.00	60.67 PK	68.30	-7.63	1.01 H	53	9.10	51.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	103.35 PK			1.00 V	58	62.80	40.55
2	*5260.00	93.16 AV			1.00 V	58	52.61	40.55
3	#10520.00	60.85 PK	68.30	-7.45	1.00 V	274	9.27	51.58

- 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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.31 PK			1.02 H	194	68.72	40.59
2	*5300.00	97.86 AV			1.02 H	194	57.27	40.59
3	10600.00	60.53 PK	74.00	-13.47	1.00 H	66	8.85	51.68
4	10600.00	47.34 AV	54.00	-6.66	1.00 H	66	-4.34	51.68
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	102.98 PK			1.00 V	50	62.39	40.59
2	*5300.00	92.85 AV			1.00 V	50	52.26	40.59
3	10600.00	60.85 PK	74.00	-13.15	1.00 V	258	9.17	51.68
4	10600.00	47.37 AV	54.00	-6.63	1.00 V	258	-4.31	51.68

- 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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.92 PK			1.00 H	177	69.30	40.62
2	*5320.00	99.27 AV			1.00 H	177	58.65	40.62
3	5350.00	53.12 PK	74.00	-20.87	1.02 H	48	12.46	40.66
4	5350.00	41.33 AV	54.00	-12.67	1.02 H	48	0.66	40.66
5	10640.00	60.59 PK	74.00	-13.41	1.00 H	79	8.89	51.71
6	10640.00	47.14 AV	54.00	-6.86	1.00 H	79	-4.56	51.71
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	106.65 PK			1.00 V	183	66.03	40.62
2	*5320.00	95.39 AV			1.00 V	183	54.77	40.62
3	5350.00	52.41 PK	74.00	-21.59	1.00 V	163	11.74	40.66
4	5350.00	40.59 AV	54.00	-13.41	1.00 V	163	-0.07	40.66
5	10640.00	60.23 PK	74.00	-13.77	1.00 V	104	8.52	51.71
6	10640.00	48.59 AV	54.00	-5.41	1.00 V	104	-3.12	51.71

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	53.90 PK	74.00	-20.10	1.00 H	156	13.03	40.87
2	5460.00	38.13 AV	54.00	-15.87	1.00 H	156	-2.74	40.87
3	#5470.00	63.37 PK	68.30	-4.93	1.00 H	156	22.48	40.89
4	*5500.00	109.24 PK			1.00 H	151	68.29	40.95
5	*5500.00	98.02 AV			1.00 H	151	57.07	40.95
6	11000.00	60.93 PK	74.00	-13.07	1.02 H	360	8.78	52.15
7	11000.00	47.09 AV	54.00	-6.91	1.02 H	360	-5.06	52.15
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	48.43 PK	74.00	-25.57	1.55 V	0	7.56	40.87
2	5460.00	36.60 AV	54.00	-17.40	1.55 V	0	-4.27	40.87
3	#5470.00	59.41 PK	68.30	-8.89	1.55 V	0	18.52	40.89
4	*5500.00	106.12 PK			1.51 V	40	65.17	40.95
5	*5500.00	94.61 AV			1.51 V	40	53.66	40.95
6	11000.00	61.58 PK	74.00	-12.42	1.12 V	49	9.43	52.15
7	11000.00	47.54 AV	54.00	-6.46	1.12 V	49	-4.61	52.15

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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	109.08 PK			1.00 H	162	67.94	41.14
2	*5600.00	97.96 AV			1.00 H	162	56.82	41.14
3	11200.00	60.90 PK	74.00	-13.10	1.01 H	359	8.50	52.40
4	11200.00	48.31 AV	54.00	-5.69	1.01 H	359	-4.09	52.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	105.84 PK			1.43 V	38	64.70	41.14
2	*5600.00	95.45 AV			1.43 V	38	54.31	41.14
3	11200.00	61.95 PK	74.00	-12.05	1.10 V	51	9.55	52.40
4	11200.00	47.83 AV	54.00	-6.17	1.10 V	51	-4.57	52.40

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.42 PK			1.00 H	156	68.05	41.37
2	*5700.00	98.13 AV			1.00 H	156	56.76	41.37
3	#5725.00	64.73 PK	68.30	-3.57	1.00 H	157	23.31	41.41
4	11400.00	61.09 PK	74.00	-12.91	1.00 H	341	8.46	52.63
5	11400.00	48.08 AV	54.00	-5.92	1.00 H	341	-4.55	52.63
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.76 PK			1.43 V	36	65.39	41.37
2	*5700.00	96.33 AV			1.43 V	36	54.96	41.37
3	#5725.00	61.62 PK	68.30	-6.68	1.43 V	36	20.21	41.41
4	11400.00	60.83 PK	74.00	-13.17	1.10 V	58	8.20	52.63
5	11400.00	48.19 AV	54.00	-5.81	1.10 V	58	-4.44	52.63

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 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.13 PK	74.00	-9.87	1.00 H	192	23.72	40.41
2	5150.00	42.37 AV	54.00	-11.63	1.00 H	192	1.95	40.41
3	*5180.00	113.46 PK			1.00 H	190	73.00	40.46
4	*5180.00	100.59 AV			1.00 H	190	60.13	40.46
5	#10360.00	60.53 PK	68.30	-7.77	1.02 H	48	9.29	51.24
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.48 PK	74.00	-12.52	1.73 V	289	21.06	40.41
2	5150.00	40.61 AV	54.00	-13.39	1.73 V	289	0.19	40.41
3	*5180.00	109.65 PK			1.72 V	299	69.19	40.46
4	*5180.00	97.07 AV			1.72 V	299	56.61	40.46
5	#10360.00	60.24 PK	68.30	-8.06	1.00 V	258	9.00	51.24

- 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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	113.96 PK			1.00 H	193	73.47	40.49
2	*5200.00	101.13 AV			1.00 H	193	60.64	40.49
3	#10400.00	59.82 PK	68.30	-8.48	1.00 H	58	8.50	51.32
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	109.18 PK			1.68 V	294	68.69	40.49
2	*5200.00	96.45 AV			1.68 V	294	55.96	40.49
3	#10400.00	59.94 PK	68.30	-8.36	1.00 V	263	8.62	51.32

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	113.05 PK			1.00 H	185	72.52	40.53
2	*5240.00	100.15 AV			1.00 H	185	59.62	40.53
3	#10480.00	60.06 PK	68.30	-8.24	1.00 H	38	8.56	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.12 PK			1.66 V	287	68.59	40.53
2	*5240.00	96.88 AV			1.66 V	287	56.35	40.53
3	#10480.00	61.04 PK	68.30	-7.26	1.00 V	263	9.54	51.50

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	112.99 PK			1.33 H	188	72.44	40.55
2	*5260.00	99.50 AV			1.33 H	188	58.95	40.55
3	#10520.00	60.69 PK	68.30	-7.61	1.00 H	37	9.12	51.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	109.27 PK			1.71 V	288	68.72	40.55
2	*5260.00	96.31 AV			1.71 V	288	55.76	40.55
3	#10520.00	61.46 PK	68.30	-6.84	1.01 V	263	9.89	51.58

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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.15 PK			1.00 H	185	71.56	40.59
2	*5300.00	99.03 AV			1.00 H	185	58.44	40.59
3	10600.00	60.84 PK	74.00	-13.16	1.01 H	55	9.16	51.68
4	10600.00	48.96 AV	54.00	-5.04	1.01 H	55	-2.72	51.68
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	109.11 PK			1.69 V	292	68.52	40.59
2	*5300.00	95.95 AV			1.69 V	292	55.36	40.59
3	10600.00	60.29 PK	74.00	-13.71	1.00 V	266	8.61	51.68
4	10600.00	47.85 AV	54.00	-6.15	1.00 V	266	-3.83	51.68

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	111.74 PK			1.00 H	193	71.12	40.62
2	*5320.00	99.31 AV			1.00 H	193	58.69	40.62
3	5350.00	69.77 PK	74.00	-4.23	1.00 H	194	29.10	40.66
4	5350.00	46.27 AV	54.00	-7.73	1.00 H	194	5.61	40.66
5	10640.00	60.36 PK	74.00	-13.64	1.00 H	39	8.66	51.71
6	10640.00	47.13 AV	54.00	-6.87	1.00 H	39	-4.57	51.71
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	108.99 PK			1.64 V	296	68.37	40.62
2	*5320.00	95.57 AV			1.64 V	296	54.95	40.62
3	5350.00	68.56 PK	74.00	-5.44	1.64 V	298	27.90	40.66
4	5350.00	45.65 AV	54.00	-8.35	1.64 V	298	4.98	40.66
5	10640.00	59.98 PK	74.00	-14.02	1.01 V	250	8.28	51.71
6	10640.00	46.91 AV	54.00	-7.09	1.01 V	250	-4.79	51.71

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.29 PK	74.00	-11.71	1.00 H	196	21.42	40.87
2	5460.00	40.27 AV	54.00	-13.73	1.00 H	196	-0.60	40.87
3	#5470.00	66.26 PK	68.30	-2.04	1.00 H	196	25.37	40.89
4	*5500.00	111.18 PK			1.00 H	195	70.23	40.95
5	*5500.00	98.07 AV			1.00 H	195	57.12	40.95
6	11000.00	60.68 PK	74.00	-13.32	1.01 H	345	8.53	52.15
7	11000.00	47.32 AV	54.00	-6.68	1.01 H	345	-4.83	52.15
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	57.22 PK	74.00	-16.78	1.56 V	298	16.35	40.87
2	5460.00	38.44 AV	54.00	-15.56	1.56 V	298	-2.43	40.87
3	#5470.00	61.58 PK	68.30	-6.72	1.56 V	298	20.69	40.89
4	*5500.00	107.64 PK			1.56 V	298	66.69	40.95
5	*5500.00	94.45 AV			1.56 V	298	53.50	40.95
6	11000.00	61.13 PK	74.00	-12.87	1.01 V	261	8.98	52.15
7	11000.00	47.43 AV	54.00	-6.57	1.01 V	261	-4.72	52.15

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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	111.03 PK			1.00 H	187	69.89	41.14
2	*5600.00	97.86 AV			1.00 H	187	56.72	41.14
3	11200.00	61.23 PK	74.00	-12.77	1.00 H	39	8.83	52.40
4	11200.00	48.33 AV	54.00	-5.67	1.00 H	39	-4.07	52.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	107.76 PK			1.75 V	286	66.62	41.14
2	*5600.00	94.68 AV			1.75 V	286	53.54	41.14
3	11200.00	60.96 PK	74.00	-13.04	1.04 V	263	8.56	52.40
4	11200.00	47.58 AV	54.00	-6.42	1.04 V	263	-4.82	52.40

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.58 PK			1.00 H	154	70.21	41.37
2	*5700.00	98.63 AV			1.00 H	154	57.26	41.37
3	#5725.00	67.14 PK	68.30	-1.16	1.00 H	156	25.73	41.41
4	11400.00	60.77 PK	74.00	-13.23	1.00 H	14	8.14	52.63
5	11400.00	47.81 AV	54.00	-6.19	1.00 H	14	-4.82	52.63
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	108.66 PK			1.00 V	180	67.29	41.37
2	*5700.00	95.64 AV			1.00 V	180	54.27	41.37
3	#5725.00	66.76 PK	68.30	-1.54	1.00 V	180	25.34	41.41
4	11400.00	61.04 PK	74.00	-12.96	1.01 V	38	8.41	52.63
5	11400.00	47.83 AV	54.00	-6.17	1.01 V	38	-4.80	52.63

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 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.73 PK	74.00	-2.27	1.00 H	189	31.32	40.41
2	5150.00	52.26 AV	54.00	-1.74	1.00 H	189	11.84	40.41
3	*5190.00	110.04 PK			1.00 H	189	69.56	40.48
4	*5190.00	95.98 AV			1.00 H	189	55.51	40.48
5	#10380.00	60.18 PK	68.30	-8.12	1.02 H	53	8.90	51.28
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.20 PK	74.00	-7.80	1.00 V	295	25.79	40.41
2	5150.00	49.52 AV	54.00	-4.48	1.00 V	295	9.10	40.41
3	*5190.00	105.78 PK			1.00 V	295	65.31	40.48
4	*5190.00	92.65 AV			1.00 V	295	52.18	40.48
5	#10380.00	60.84 PK	68.30	-7.46	1.00 V	266	9.56	51.28

- 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 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	109.69 PK			1.00 H	191	69.17	40.52
2	*5230.00	95.46 AV			1.00 H	191	54.94	40.52
3	#10460.00	60.74 PK	68.30	-7.56	1.01 H	66	9.28	51.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	105.71 PK			1.00 V	269	65.19	40.52
2	*5230.00	93.28 AV			1.00 V	269	52.76	40.52
3	#10460.00	60.44 PK	68.30	-7.86	1.00 V	265	8.98	51.46

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 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	109.34 PK			1.00 H	191	68.78	40.56
2	*5270.00	95.25 AV			1.00 H	191	54.69	40.56
3	#10540.00	60.14 PK	68.30	-8.16	1.00 H	65	8.54	51.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	105.79 PK			1.00 V	65	65.23	40.56
2	*5270.00	91.65 AV			1.00 V	65	51.09	40.56
3	#10540.00	61.38 PK	68.30	-6.92	1.00 V	253	9.78	51.60

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	109.32 PK			1.00 H	194	68.72	40.60
2	*5310.00	95.11 AV			1.00 H	194	54.51	40.60
3	5350.00	72.69 PK	74.00	-1.31	1.00 H	194	32.02	40.66
4	5350.00	50.09 AV	54.00	-3.91	1.00 H	194	9.43	40.66
5	10620.00	59.84 PK	74.00	-14.16	1.00 H	48	8.15	51.69
6	10620.00	47.11 AV	54.00	-6.89	1.00 H	48	-4.58	51.69
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	105.72 PK			1.00 V	192	65.12	40.60
2	*5310.00	91.91 AV			1.00 V	192	51.30	40.60
3	5350.00	65.19 PK	74.00	-8.81	1.00 V	192	24.53	40.66
4	5350.00	50.27 AV	54.00	-3.73	1.00 V	192	9.60	40.66
5	10620.00	60.15 PK	74.00	-13.85	1.00 V	241	8.46	51.69
6	10620.00	46.82 AV	54.00	-7.18	1.00 V	241	-4.87	51.69

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.10 PK	74.00	-9.90	1.00 H	196	23.23	40.87
2	5460.00	45.69 AV	54.00	-8.31	1.00 H	196	4.82	40.87
3	#5470.00	66.28 PK	68.30	-2.02	1.00 H	196	25.39	40.89
4	*5510.00	109.45 PK			1.00 H	175	68.48	40.97
5	*5510.00	95.31 AV			1.00 H	175	54.34	40.97
6	11020.00	60.24 PK	74.00	-13.76	1.00 H	73	8.05	52.19
7	11020.00	48.66 AV	54.00	-5.34	1.00 H	73	-3.53	52.19
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	63.59 PK	74.00	-10.41	1.00 V	198	22.72	40.87
2	5460.00	43.41 AV	54.00	-10.59	1.00 V	198	2.54	40.87
3	#5470.00	64.14 PK	68.30	-4.16	1.00 V	197	23.25	40.89
4	*5510.00	105.61 PK			1.00 V	264	64.64	40.97
5	*5510.00	92.03 AV			1.00 V	264	51.06	40.97
6	11020.00	60.38 PK	74.00	-13.62	1.00 V	210	8.19	52.19
7	11020.00	47.31 AV	54.00	-6.69	1.00 V	210	-4.88	52.19

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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5590.00	109.06 PK			1.00 H	154	67.94	41.12
2	*5590.00	95.13 AV			1.00 H	154	54.01	41.12
3	11180.00	60.36 PK	74.00	-13.64	1.00 H	104	7.97	52.39
4	11180.00	48.85 AV	54.00	-5.15	1.00 H	104	-3.54	52.39
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	105.56 PK			1.00 V	279	64.44	41.12
2	*5590.00	91.46 AV			1.00 V	279	50.34	41.12
3	11180.00	60.06 PK	74.00	-13.94	1.00 V	237	7.67	52.39
4	11180.00	47.16 AV	54.00	-6.84	1.00 V	237	-5.23	52.39

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	23deg. C, 70%RH 1000 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	109.64 PK			1.00 H	157	68.34	41.30
2	*5670.00	95.58 AV			1.00 H	157	54.28	41.30
3	#5725.00	66.38 PK	68.30	-1.92	1.00 H	159	24.97	41.41
4	11340.00	60.74 PK	74.00	-13.26	1.00 H	66	8.12	52.62
5	11340.00	47.13 AV	54.00	-6.87	1.00 H	66	-5.49	52.62
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	*5670.00	105.89 PK			1.00 V	288	64.59	41.30
2	*5670.00	92.05 AV			1.00 V	288	50.75	41.30
3	#5725.00	64.23 PK	68.30	-4.07	1.00 V	288	22.82	41.41
4	11340.00	60.38 PK	74.00	-13.62	1.00 V	271	7.76	52.62
5	11340.00	47.66 AV	54.00	-6.34	1.00 V	271	-4.96	52.62

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.
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 60	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 999 hPa	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	479.03	39.39 QP	46.00	-6.61	1.75 H	31	20.78	18.60
2	685.13	38.29 QP	46.00	-7.71	2.00 H	118	15.68	22.61
3	751.23	35.53 QP	46.00	-10.47	1.75 H	82	11.55	23.98
4	795.95	41.46 QP	46.00	-4.54	1.00 H	97	16.25	25.21
5	840.67	36.94 QP	46.00	-9.06	1.00 H	169	11.37	25.57
6	854.28	35.39 QP	46.00	-10.61	1.50 H	109	9.72	25.67
7	914.55	36.95 QP	46.00	-9.05	2.00 H	94	10.72	26.22
8	961.21	45.20 QP	54.00	-8.80	1.50 H	259	18.66	26.54
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	32.11 QP	40.00	-7.89	1.00 V	43	19.88	12.22
2	681.24	36.63 QP	46.00	-9.37	1.25 V	349	14.05	22.57
3	749.29	35.01 QP	46.00	-10.99	1.75 V	202	11.08	23.93
4	801.78	42.72 QP	46.00	-3.28	1.50 V	175	17.39	25.33
5	912.61	38.30 QP	46.00	-7.70	1.00 V	316	12.09	26.21
6	957.33	42.50 QP	46.00	-3.50	1.00 V	316	15.98	26.52

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 999 hPa	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	479.03	38.36 QP	46.00	-7.64	1.75 H	46	19.75	18.60
2	683.18	40.96 QP	46.00	-5.04	1.25 H	130	18.37	22.59
3	751.23	35.32 QP	46.00	-10.68	2.00 H	97	11.34	23.98
4	797.89	43.06 QP	46.00	-2.94	1.00 H	148	17.80	25.26
5	840.67	36.15 QP	46.00	-9.85	1.00 H	163	10.58	25.57
6	862.06	36.14 QP	46.00	-9.86	1.50 H	154	10.40	25.75
7	935.94	36.30 QP	46.00	-9.70	2.00 H	88	9.92	26.38
8	961.21	44.08 QP	54.00	-9.92	1.50 H	277	17.54	26.54
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	31.84 QP	40.00	-8.16	1.00 V	46	19.62	12.22
2	681.24	34.68 QP	46.00	-11.32	1.25 V	22	12.10	22.57
3	747.34	34.72 QP	46.00	-11.28	1.75 V	148	10.83	23.88
4	790.12	42.23 QP	46.00	-3.77	1.50 V	205	17.18	25.05
5	852.33	35.10 QP	46.00	-10.90	1.50 V	145	9.45	25.65
6	906.77	34.98 QP	46.00	-11.02	1.00 V	289	8.81	26.16
7	916.50	38.30 QP	46.00	-7.70	1.25 V	4	12.07	26.24
8	957.33	42.99 QP	46.00	-3.01	1.00 V	286	16.47	26.52

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 SCHWARZBECK	NNBL 8226-2	8226-142	Jun. 03, 2009	Jun. 02, 2010
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Dec. 04, 2008	Dec. 03, 2009
Software ADT	ADT_Conc_ 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.

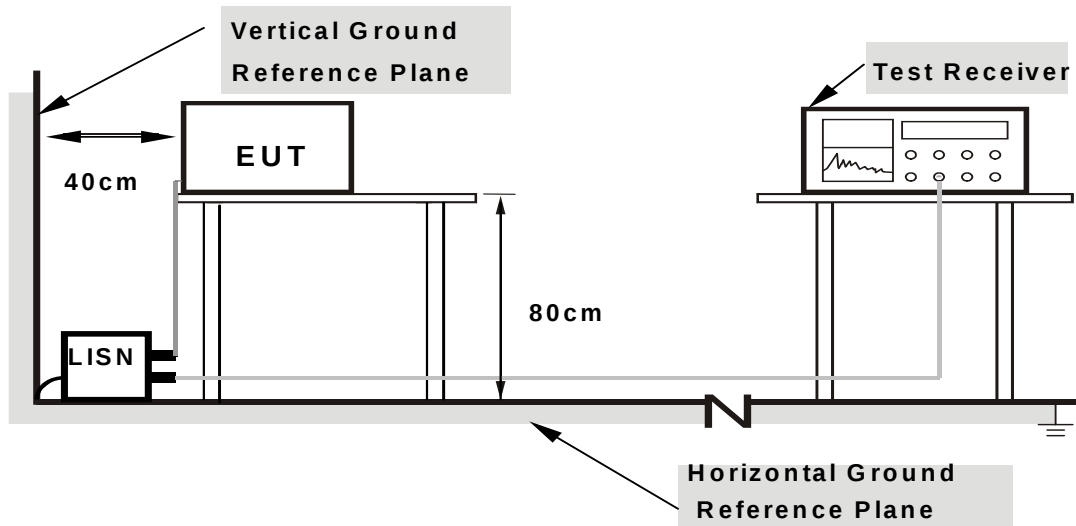
4.2.3 TEST PROCEDURES

- 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.

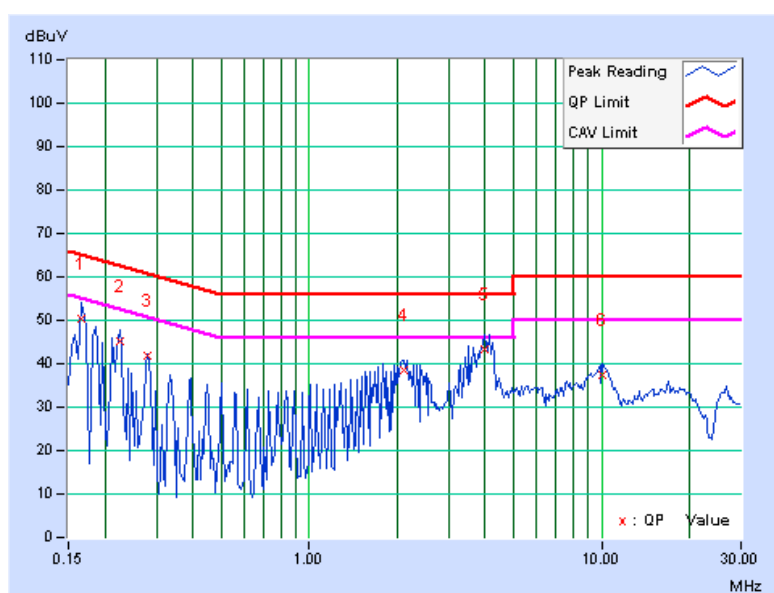
4.2.7 TEST RESULTS

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	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1021hPa	TESTED BY	Sun Lin

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.13	50.17	-	50.30	-	65.18	55.18	-14.88	-
2	0.224	0.13	45.16	-	45.29	-	62.66	52.66	-17.37	-
3	0.279	0.13	41.65	-	41.78	-	60.85	50.85	-19.06	-
4	2.121	0.24	38.31	-	38.55	-	56.00	46.00	-17.45	-
5	3.961	0.37	43.12	-	43.49	-	56.00	46.00	-12.51	-
6	10.047	0.66	36.73	-	37.39	-	60.00	50.00	-22.61	-

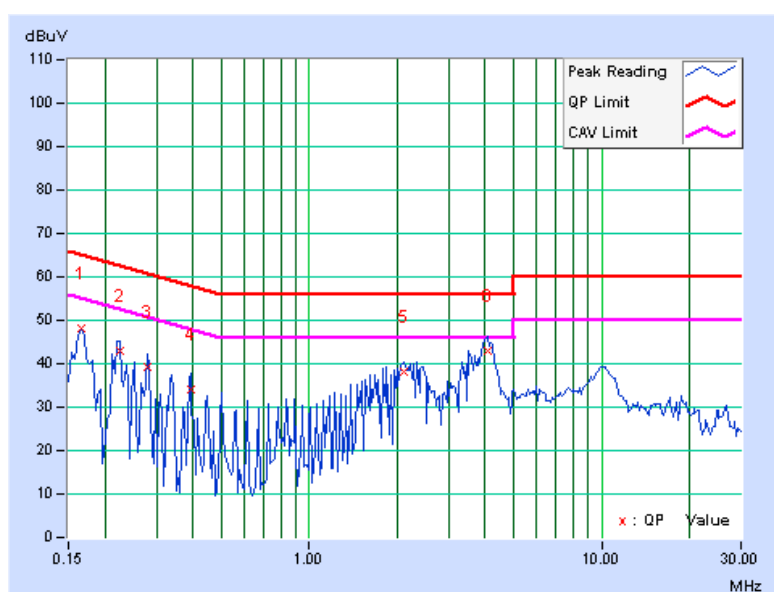
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1021hPa	TESTED BY	Sun Lin

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.14	47.88	-	48.02	-	65.18	55.18	-17.15	-
2	0.224	0.15	42.89	-	43.04	-	62.66	52.66	-19.62	-
3	0.279	0.15	39.28	-	39.43	-	60.85	50.85	-21.41	-
4	0.392	0.16	33.91	-	34.07	-	58.02	48.02	-23.95	-
5	2.121	0.26	37.93	-	38.19	-	56.00	46.00	-17.81	-
6	4.074	0.39	42.51	-	42.90	-	56.00	46.00	-13.10	-

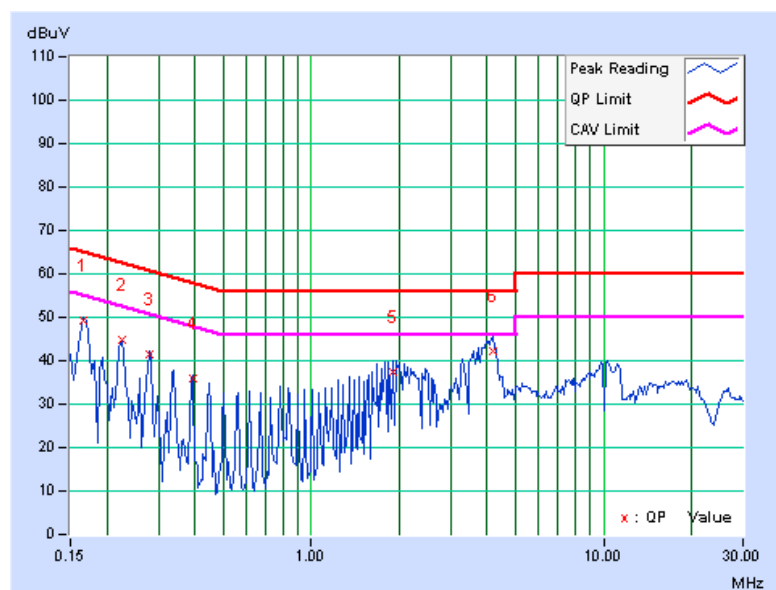
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = 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	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1021hPa	TESTED BY	Sun Lin

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	0.166	0.13	49.06	-	49.19	-	65.18	55.18	-15.99	-
2	0.224	0.13	44.54	-	44.67	-	62.66	52.66	-17.99	-
3	0.279	0.13	41.25	-	41.38	-	60.85	50.85	-19.46	-
4	0.392	0.14	35.74	-	35.88	-	58.02	48.02	-22.14	-
5	1.902	0.23	37.33	-	37.56	-	56.00	46.00	-18.44	-
6	4.195	0.38	41.74	-	42.12	-	56.00	46.00	-13.88	-

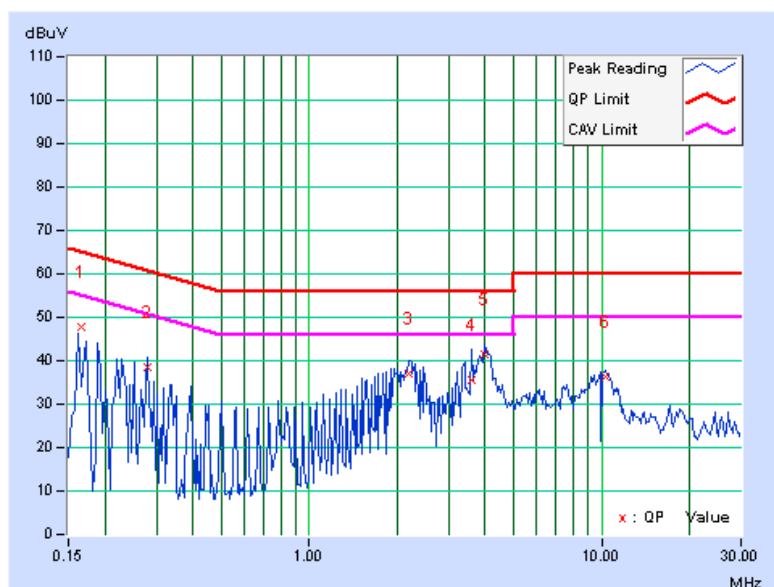
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 120	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH, 1021hPa	TESTED BY	Sun Lin

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.14	47.47	-	47.61	-	65.18	55.18	-17.56	-
2	0.279	0.15	38.35	-	38.50	-	60.85	50.85	-22.34	-
3	2.184	0.26	36.79	-	37.05	-	56.00	46.00	-18.95	-
4	3.578	0.36	35.26	-	35.62	-	56.00	46.00	-20.38	-
5	3.969	0.39	41.27	-	41.66	-	56.00	46.00	-14.34	-
6	10.293	0.67	35.59	-	36.26	-	60.00	50.00	-23.74	-

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



4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

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

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

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

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

FOR POWER OUTPUT MEASUREMENT

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

FOR 26dB OCCUPIED BANDWIDTH

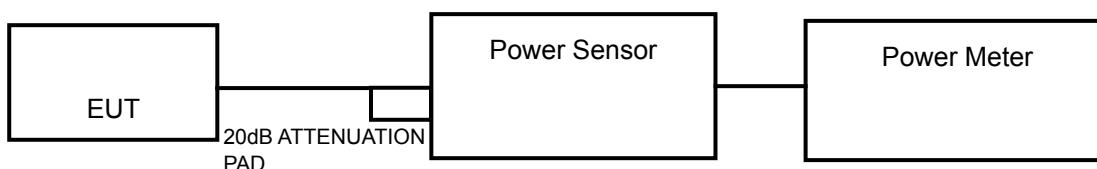
The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.3.4 DEVIATION FROM TEST STANDARD

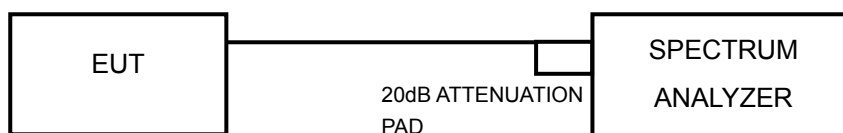
No deviation.

4.3.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

PEAK POWER OUTPUT: 802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	OUTPUT POWER (mW)	OUTPUT POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
36	5180	35.810	15.54	17	PASS
40	5200	31.989	15.05	17	PASS
48	5240	32.211	15.08	17	PASS
52	5260	31.842	15.03	24	PASS
60	5300	32.434	15.11	24	PASS
64	5320	32.063	15.06	24	PASS
100	5500	28.379	14.53	24	PASS
120	5600	28.774	14.59	24	PASS
140	5700	28.576	14.56	24	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	13.52	13.54	45.085	16.54	17	PASS
40	5200	13.58	13.57	45.554	16.59	17	PASS
48	5240	13.54	13.52	45.085	16.54	17	PASS
52	5260	15.51	14.55	56.759	17.54	24	PASS
60	5300	15.57	14.03	48.044	16.82	24	PASS
64	5320	15.55	14.06	48.115	16.82	24	PASS
100	5500	13.56	13.52	45.189	16.55	24	PASS
120	5600	13.58	13.55	45.450	16.58	24	PASS
140	5700	13.54	14.07	48.121	16.82	24	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	13.05	13.06	40.414	16.07	17	PASS
46	5230	13.11	13.09	40.835	16.11	17	PASS
54	5270	13.54	13.51	45.033	16.54	24	PASS
62	5310	13.07	13.08	40.600	16.09	24	PASS
102	5510	13.55	13.08	42.970	16.33	24	PASS
118	5590	13.57	13.56	45.450	16.58	24	PASS
134	5670	13.54	14.53	50.974	17.07	24	PASS



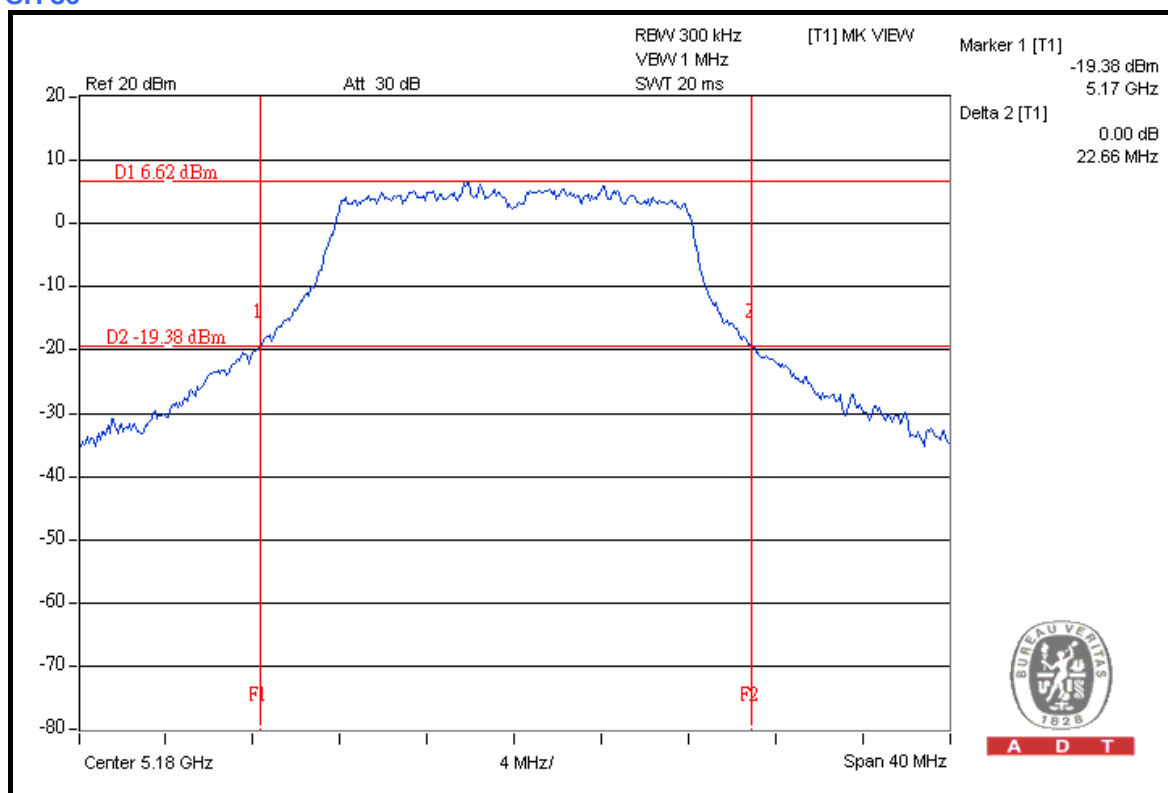
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26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.66	PASS
40	5200	22.93	PASS
48	5240	23.15	PASS
52	5260	22.80	PASS
60	5300	22.78	PASS
64	5320	22.73	PASS
100	5500	22.78	PASS
120	5600	23.17	PASS
140	5700	24.41	PASS

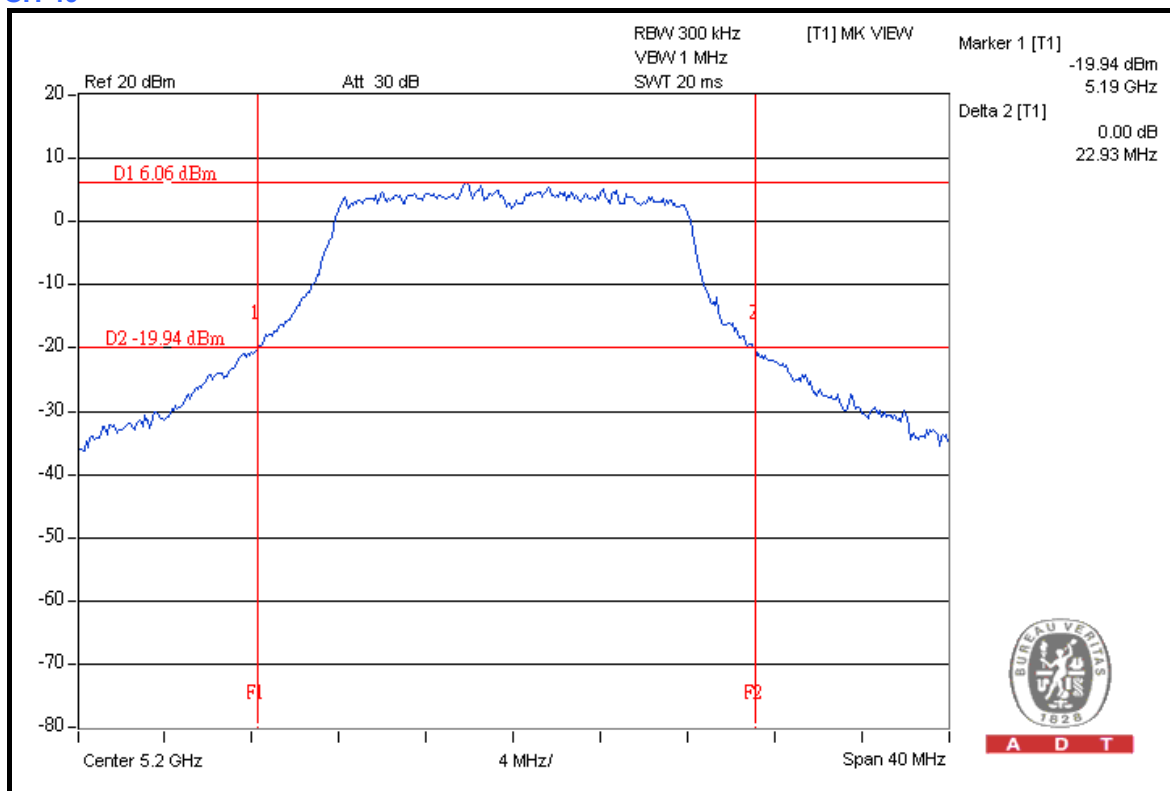
CH 36



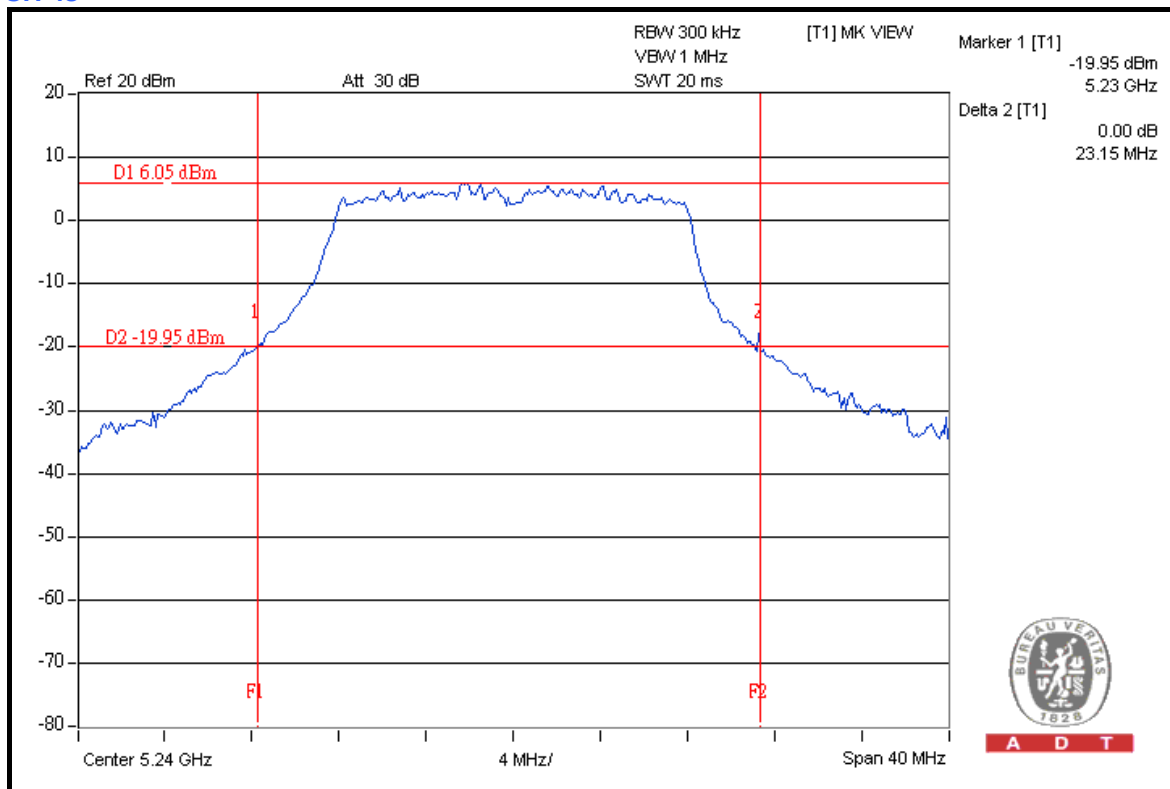


A D T

CH 40



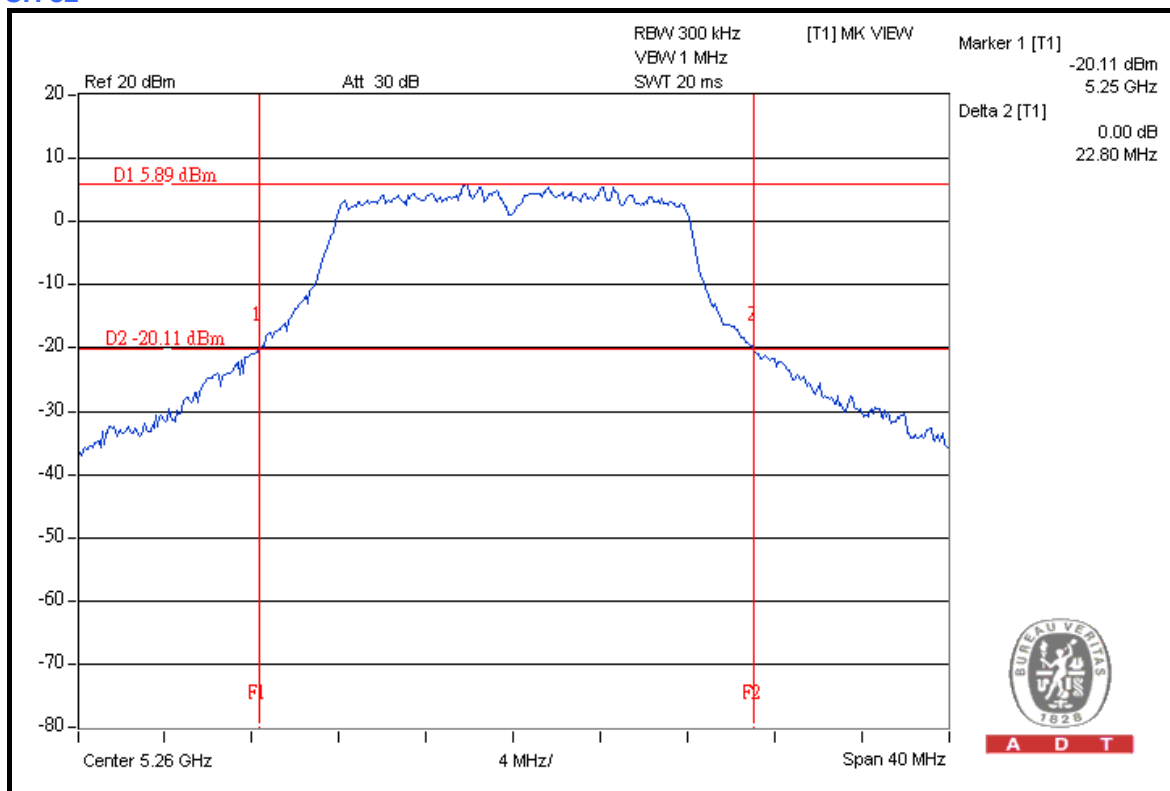
CH 48



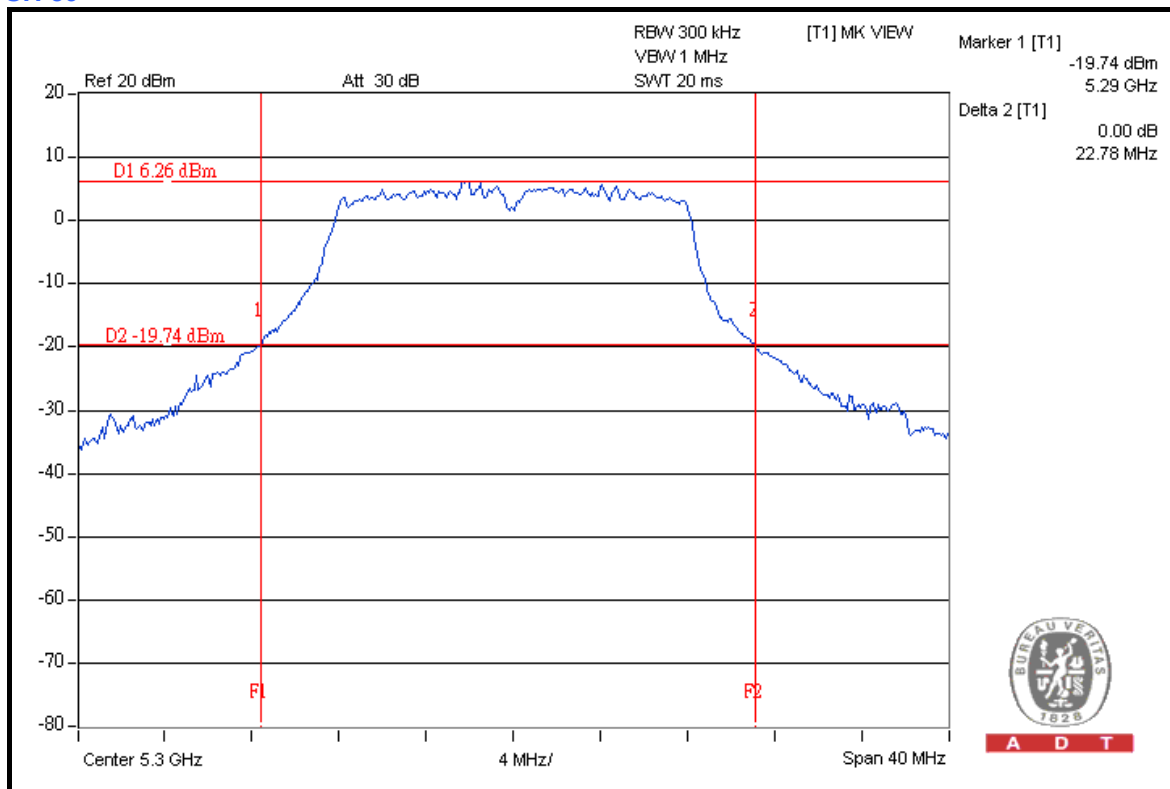


A D T

CH 52



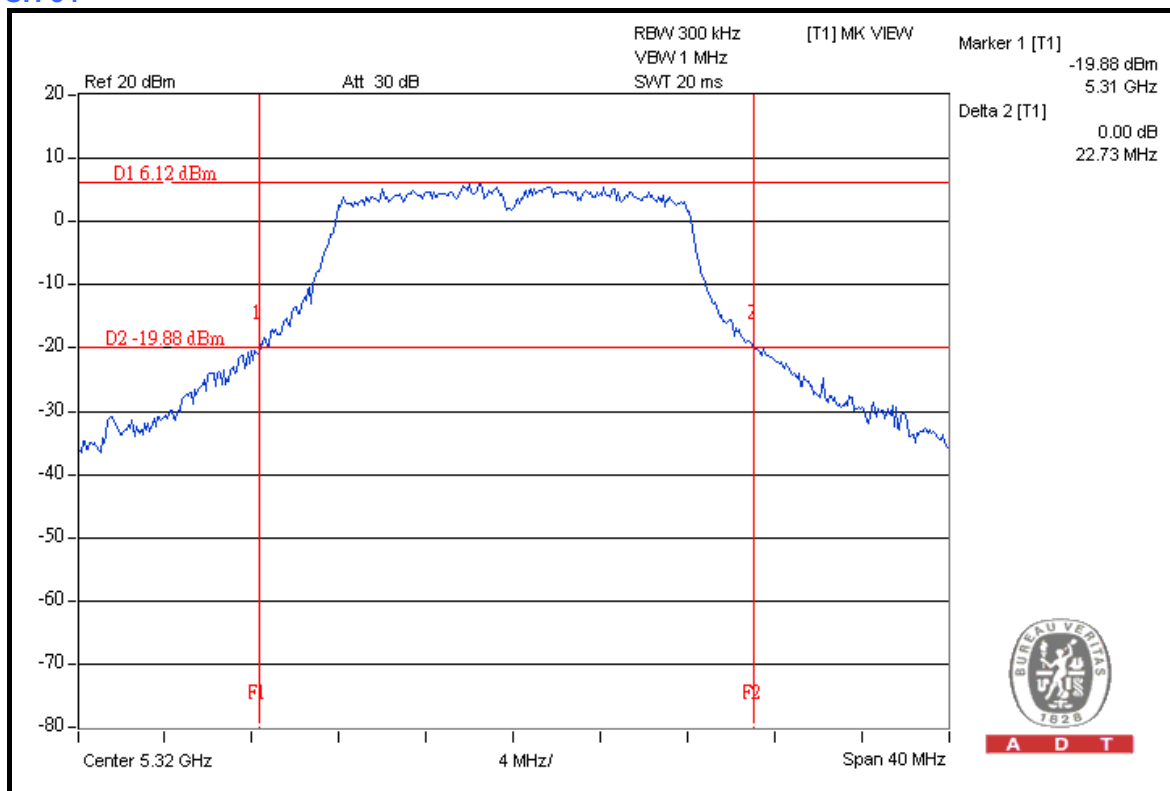
CH 60



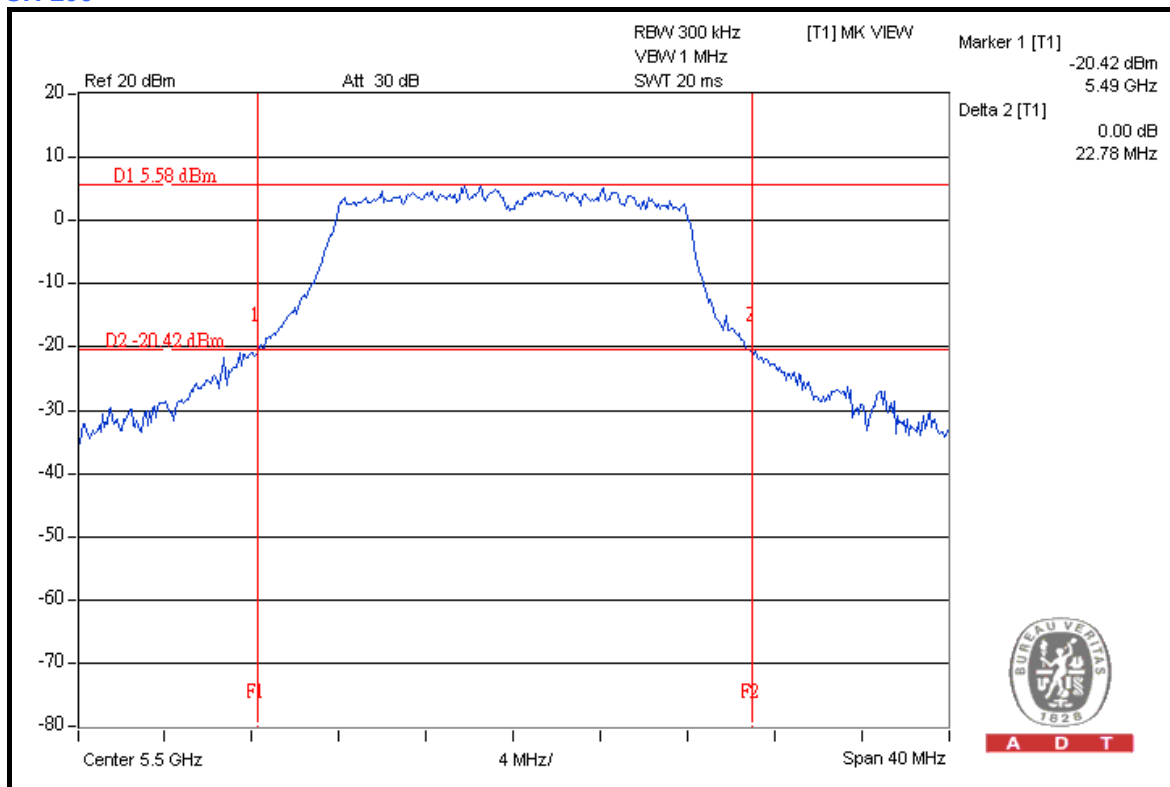


A D T

CH 64



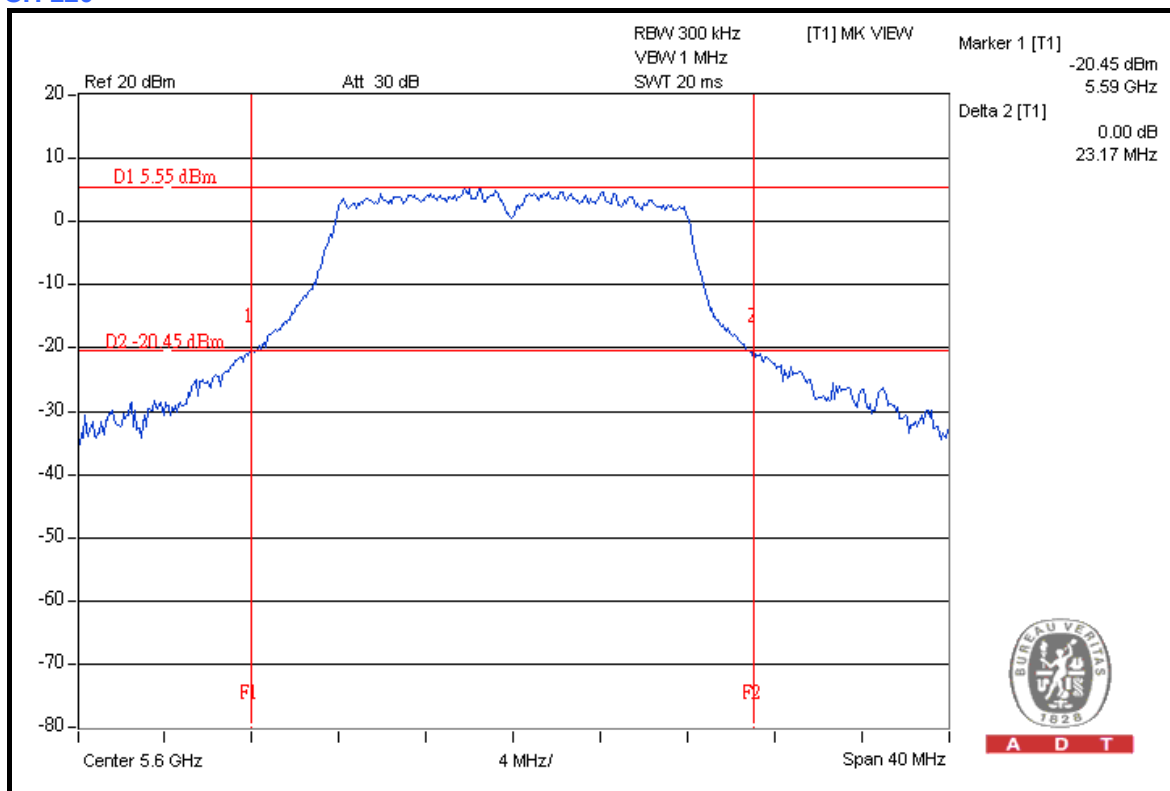
CH 100



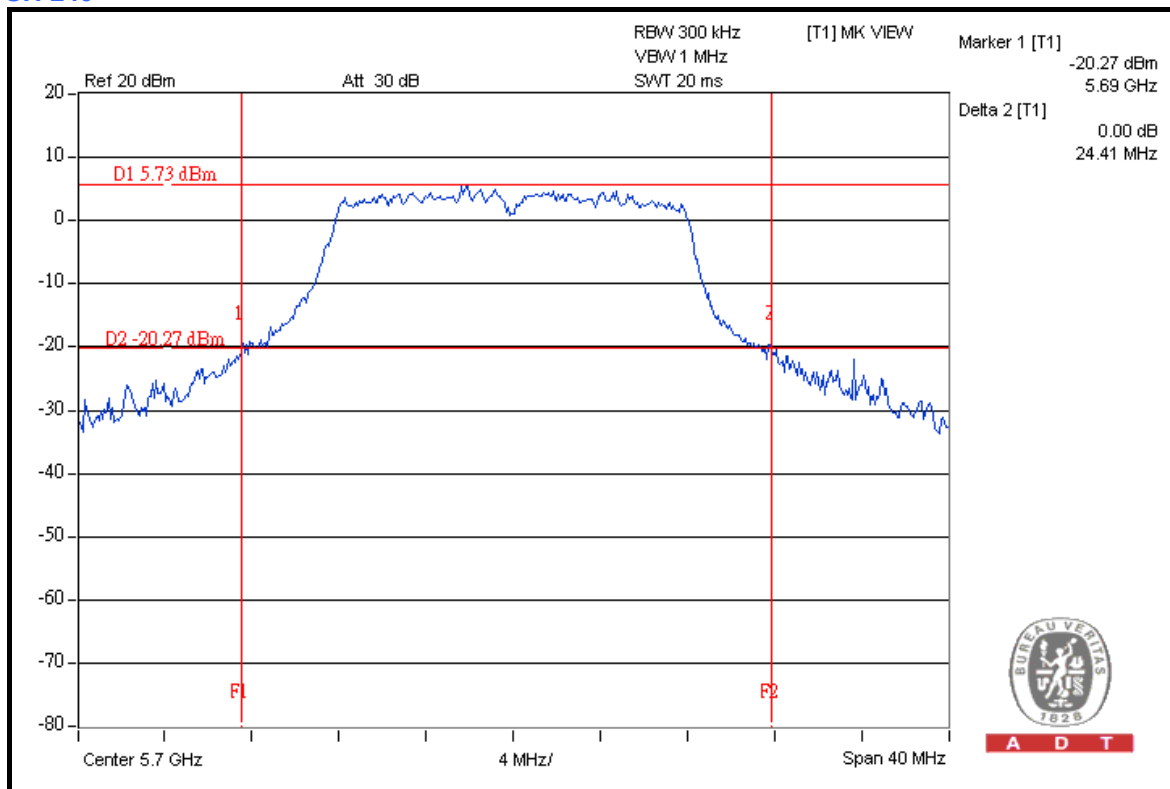


A D T

CH 120



CH 140



DRAFT 802.11n (20MHz) OFDM MODULATION

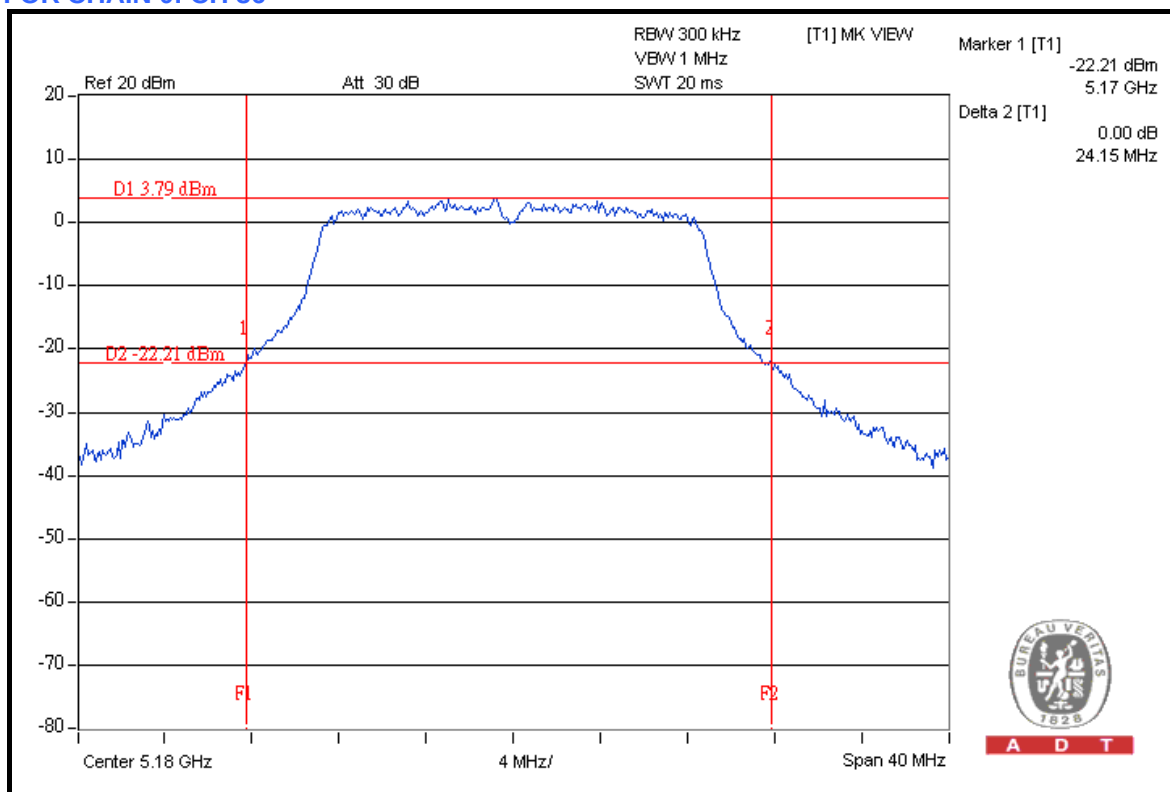
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	24.15	24.81	PASS
40	5200	24.32	24.84	PASS
48	5240	24.23	24.80	PASS
52	5260	24.92	25.01	PASS
60	5300	24.24	24.67	PASS
64	5320	24.51	24.75	PASS
100	5500	23.72	24.33	PASS
120	5600	23.80	24.37	PASS
140	5700	24.01	24.37	PASS

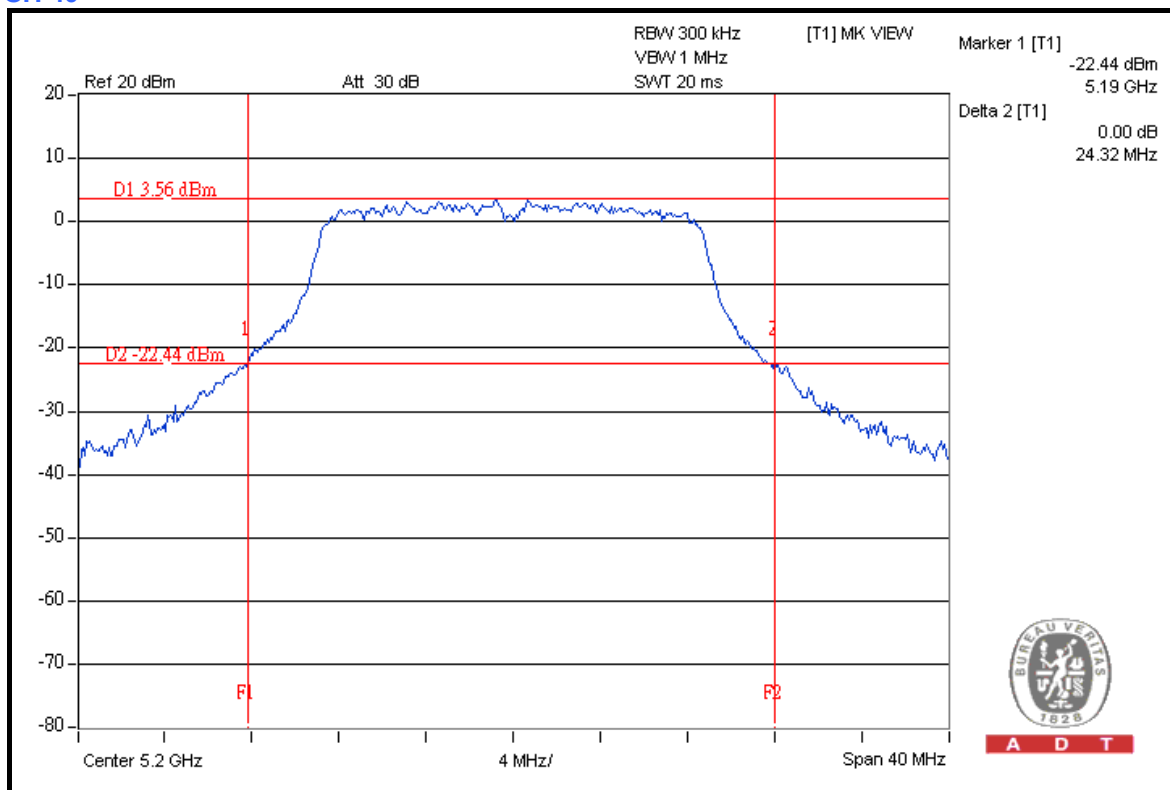


A D T

FOR CHAIN 0: CH 36



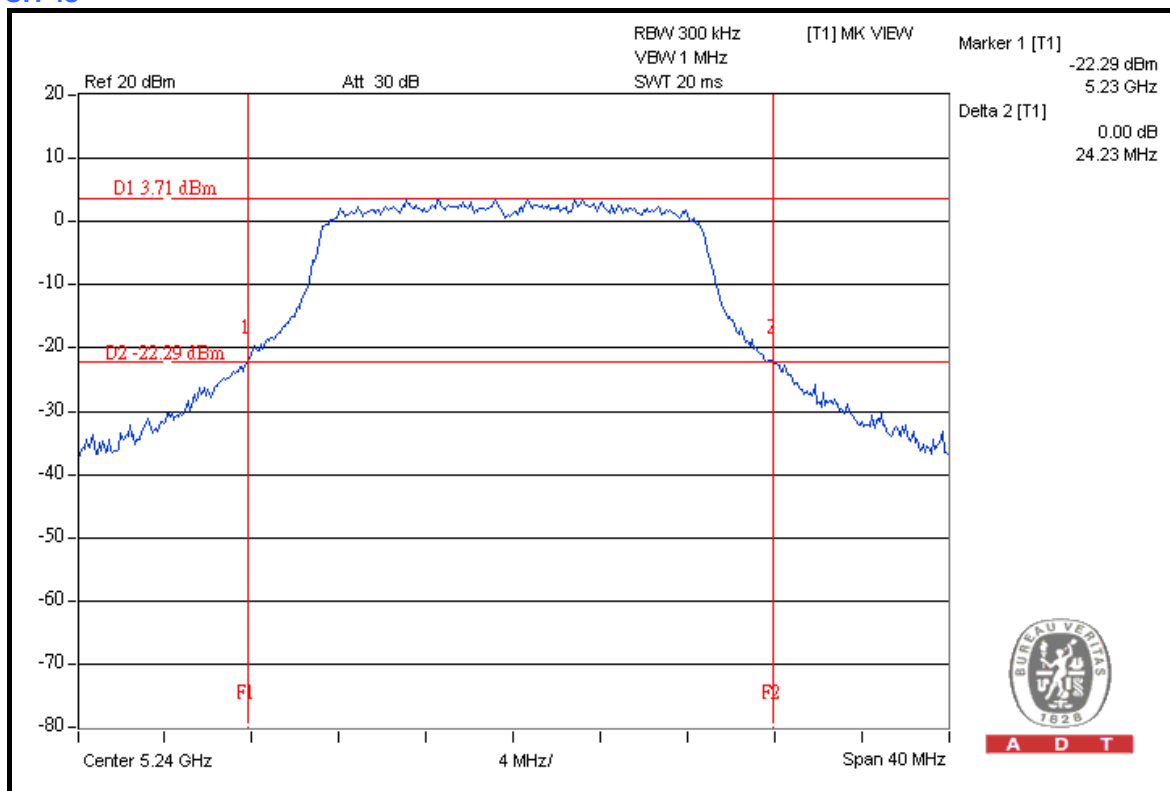
CH 40



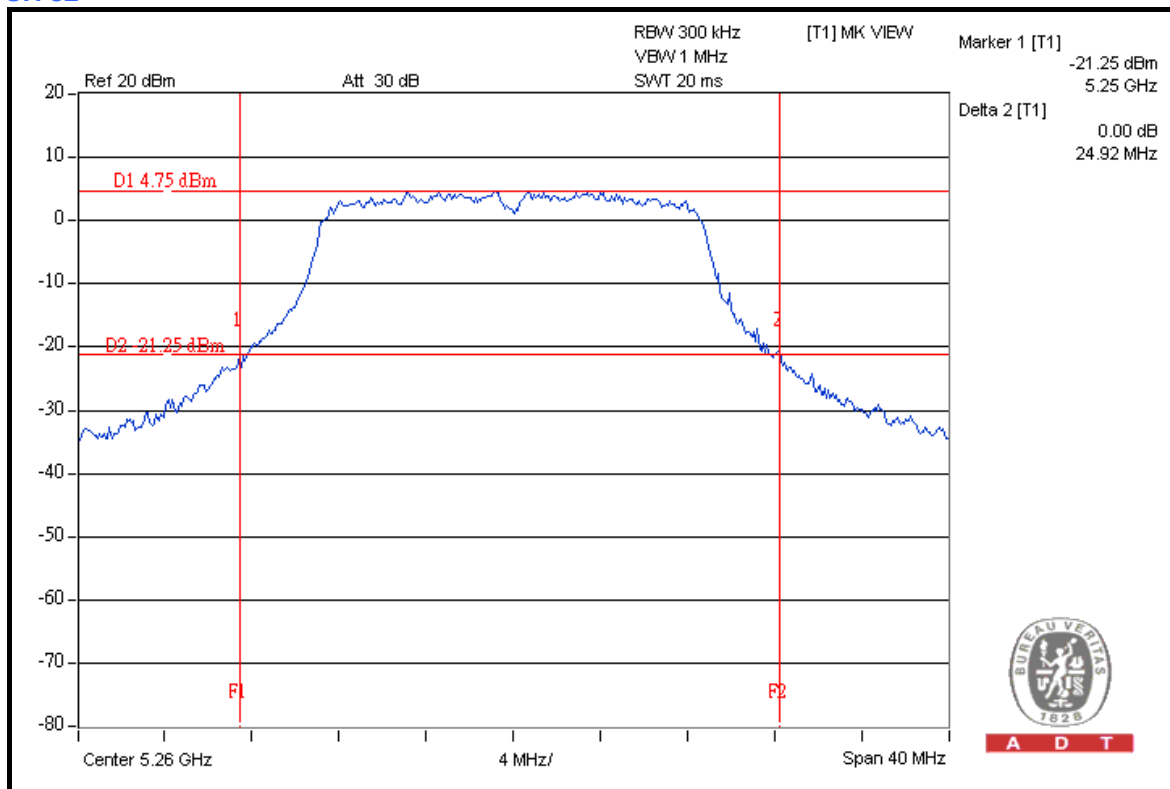


A D T

CH 48



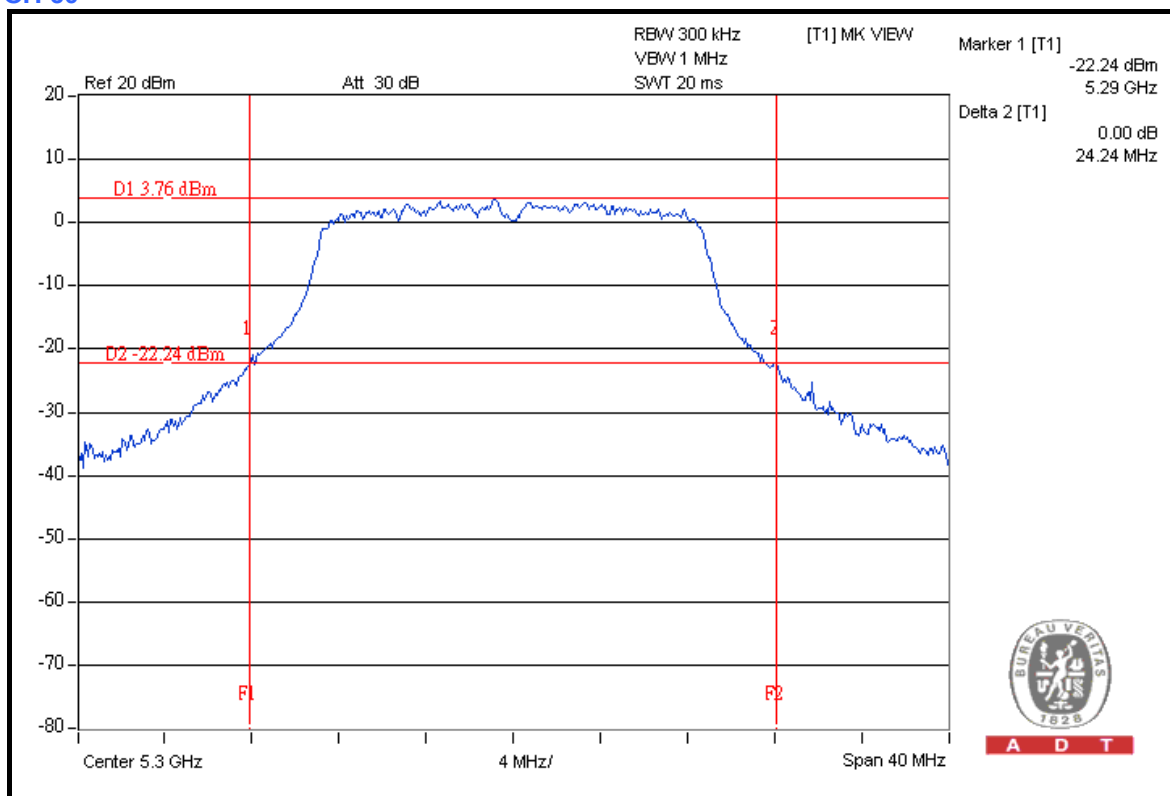
CH 52



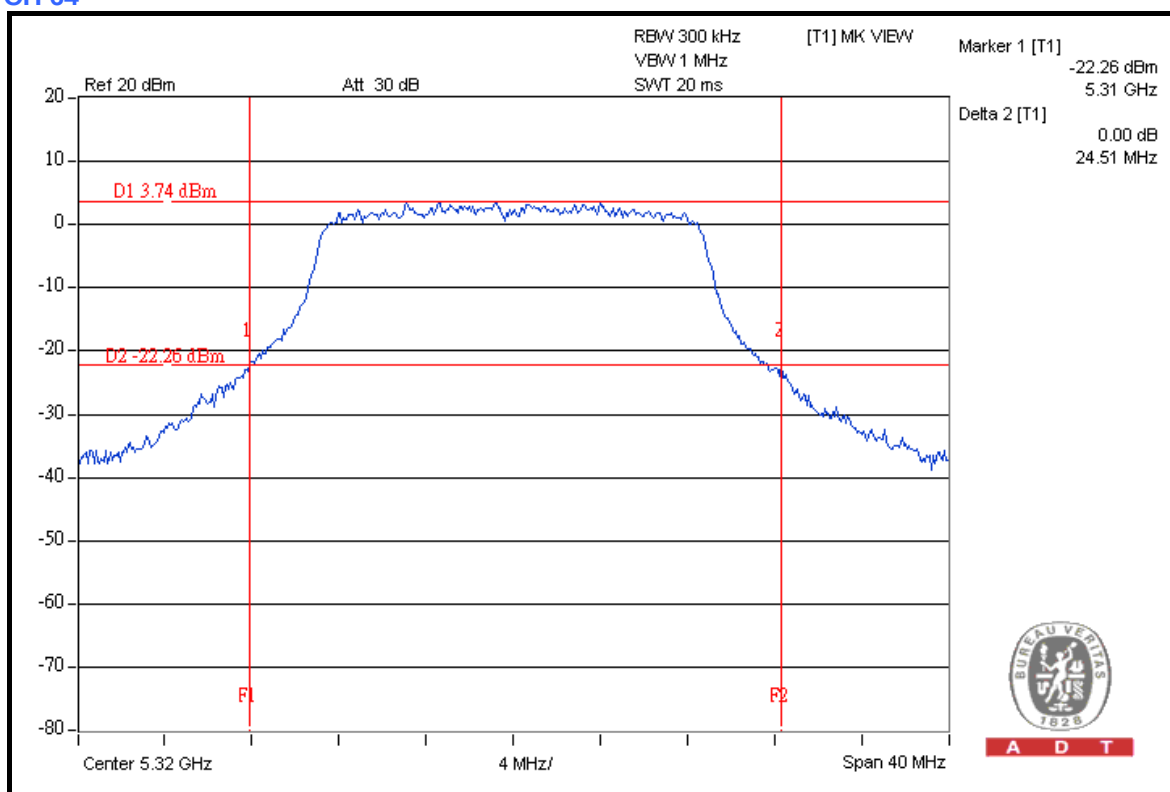


A D T

CH 60



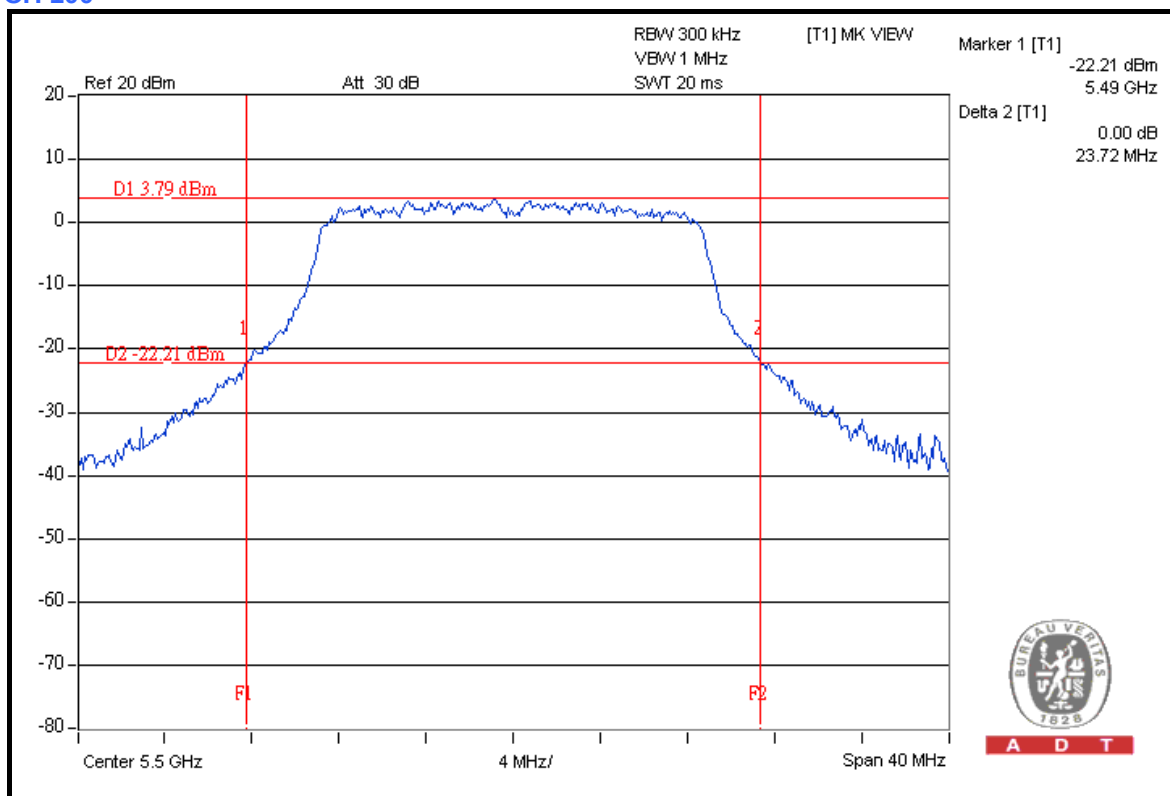
CH 64





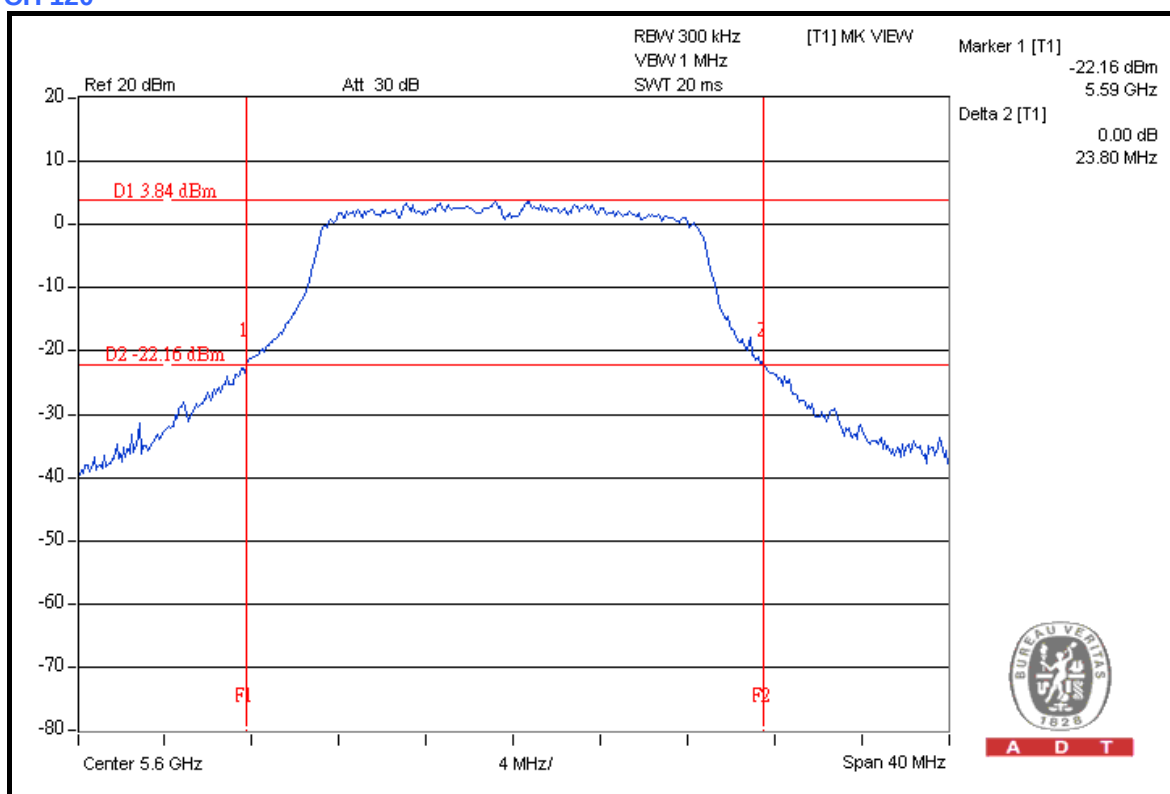
A D T

CH 100



A D T

CH 120

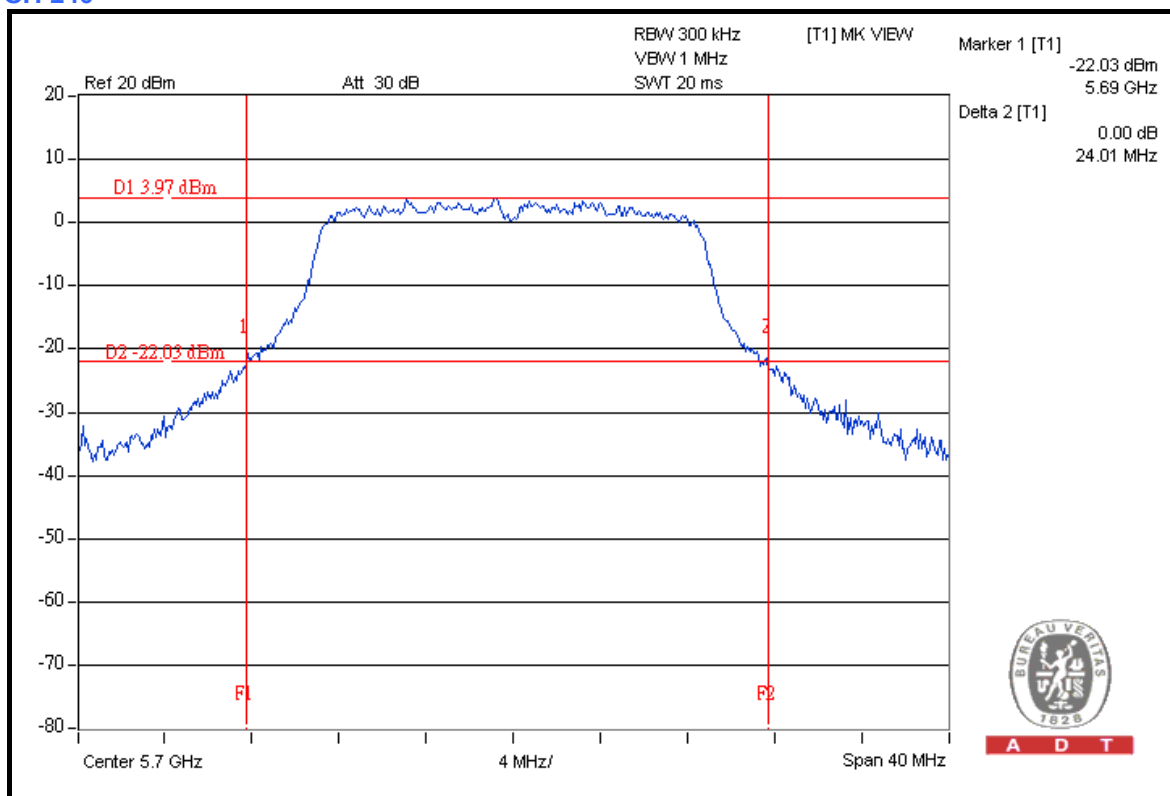


A D T

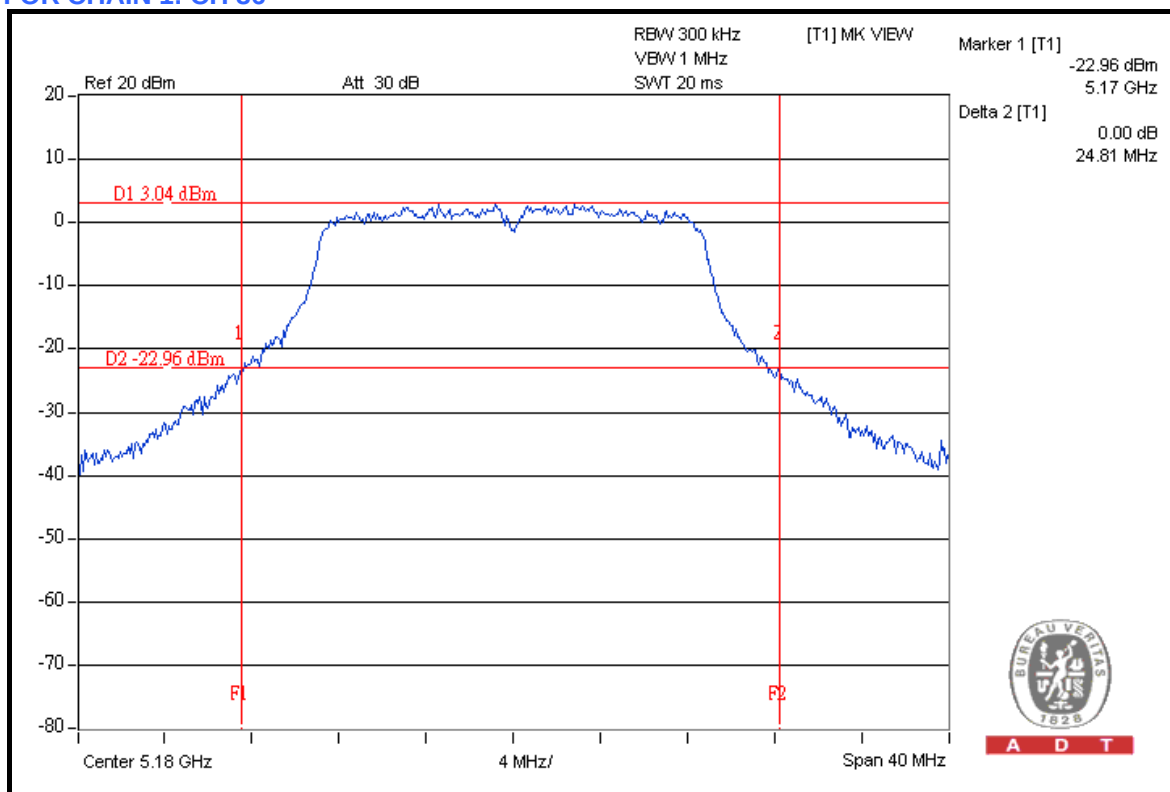


A D T

CH 140



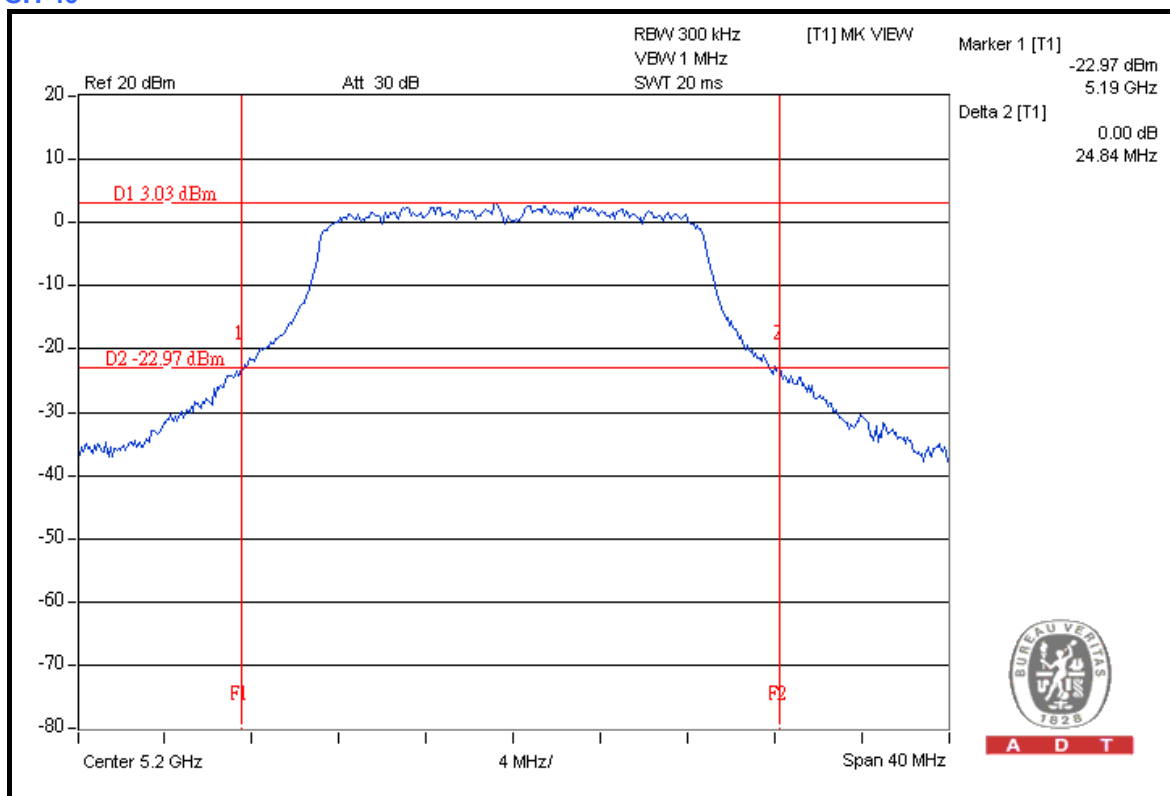
FOR CHAIN 1: CH 36



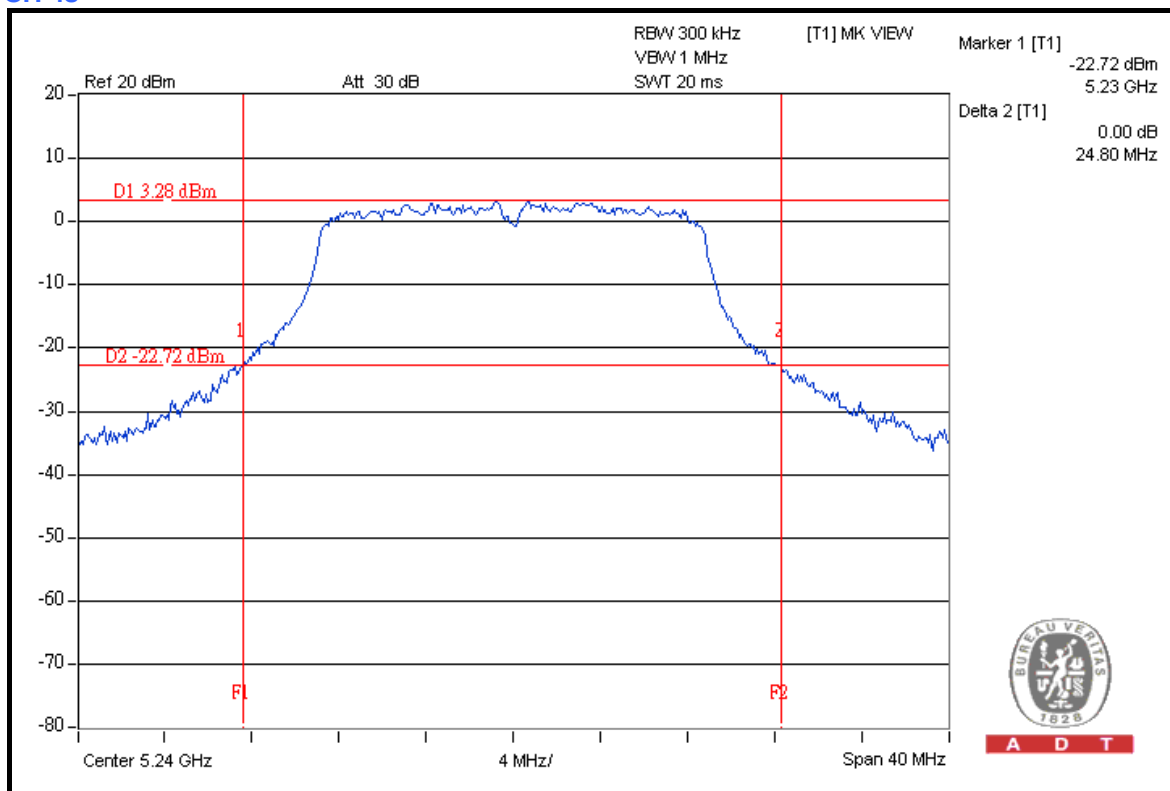


A D T

CH 40



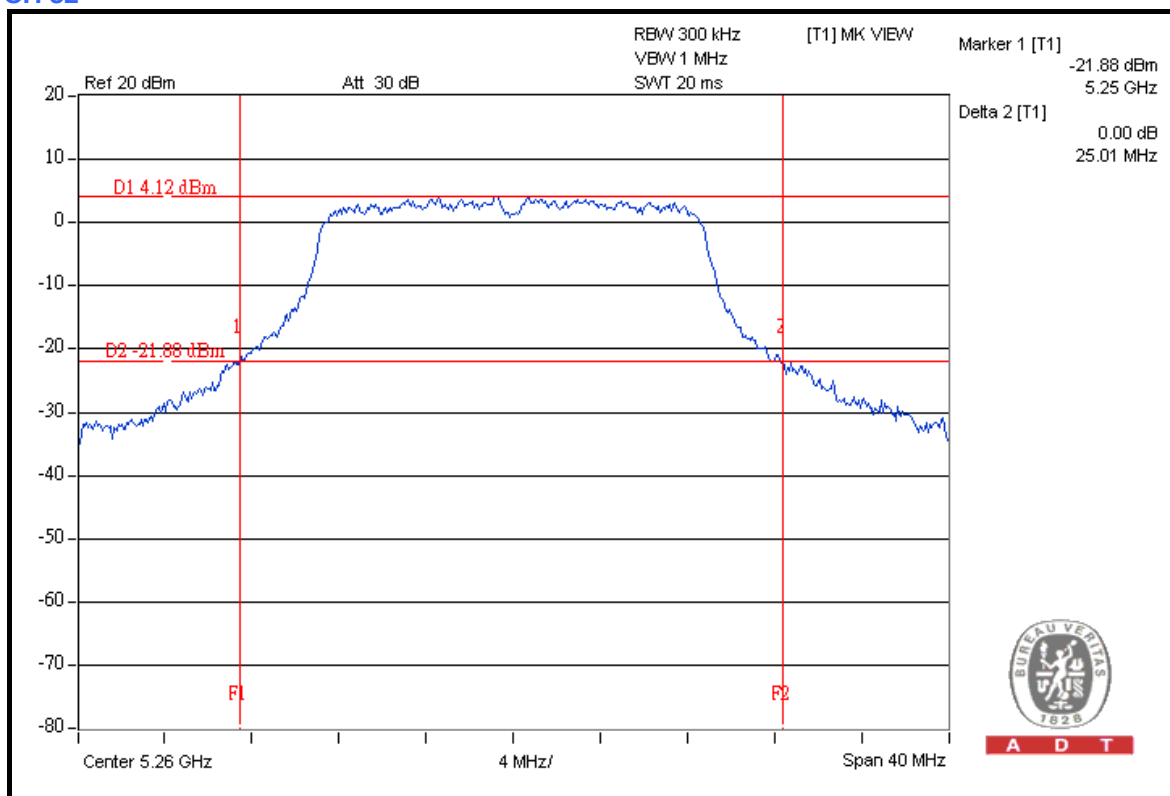
CH 48



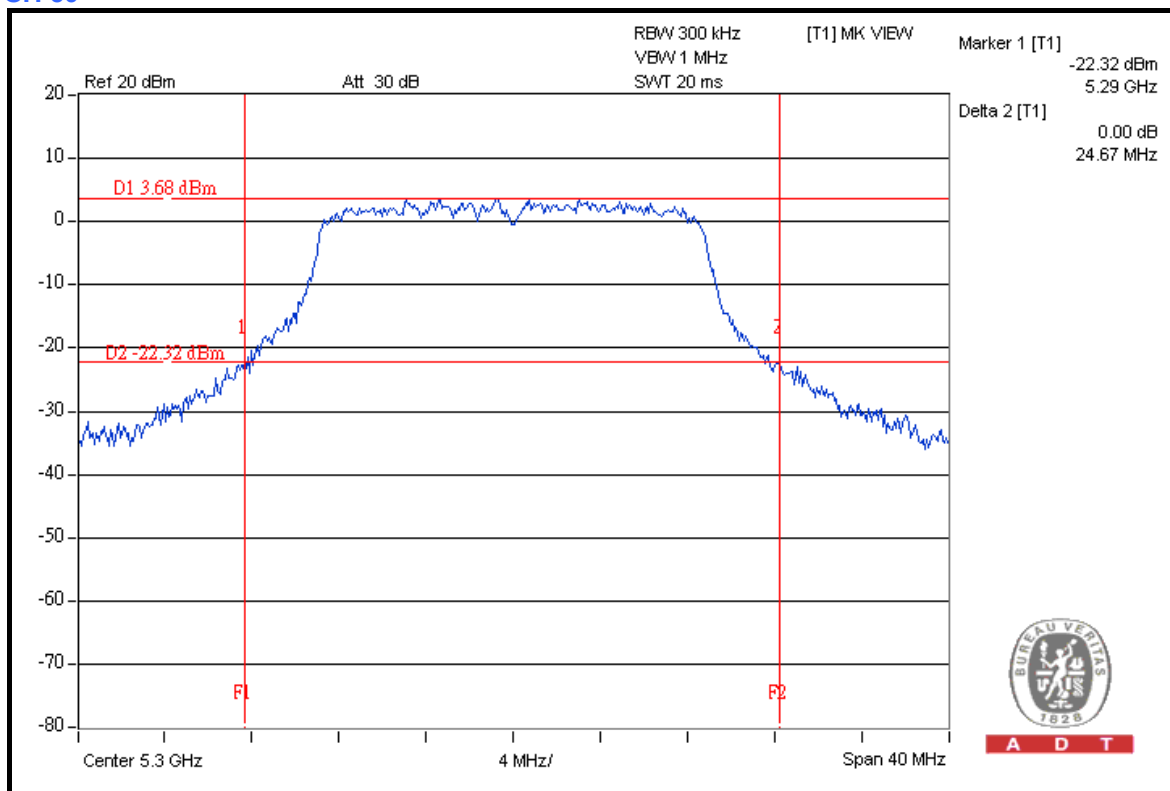


A D T

CH 52



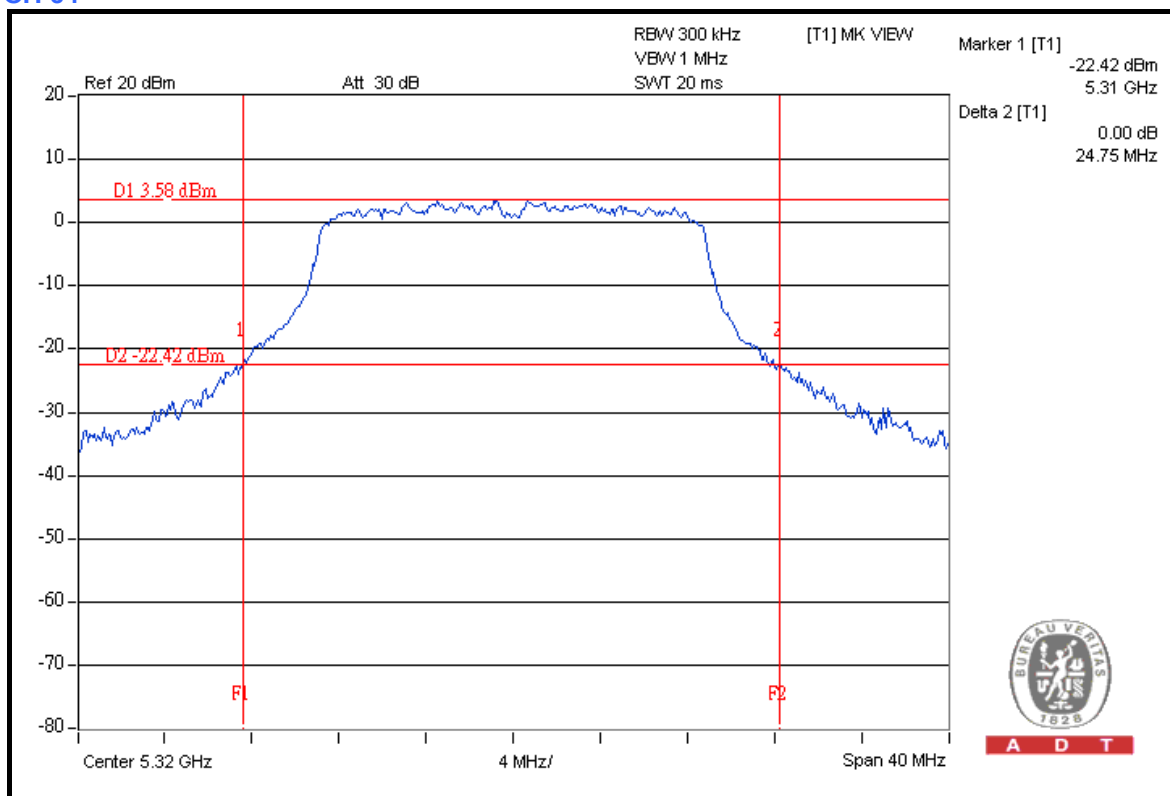
CH 60



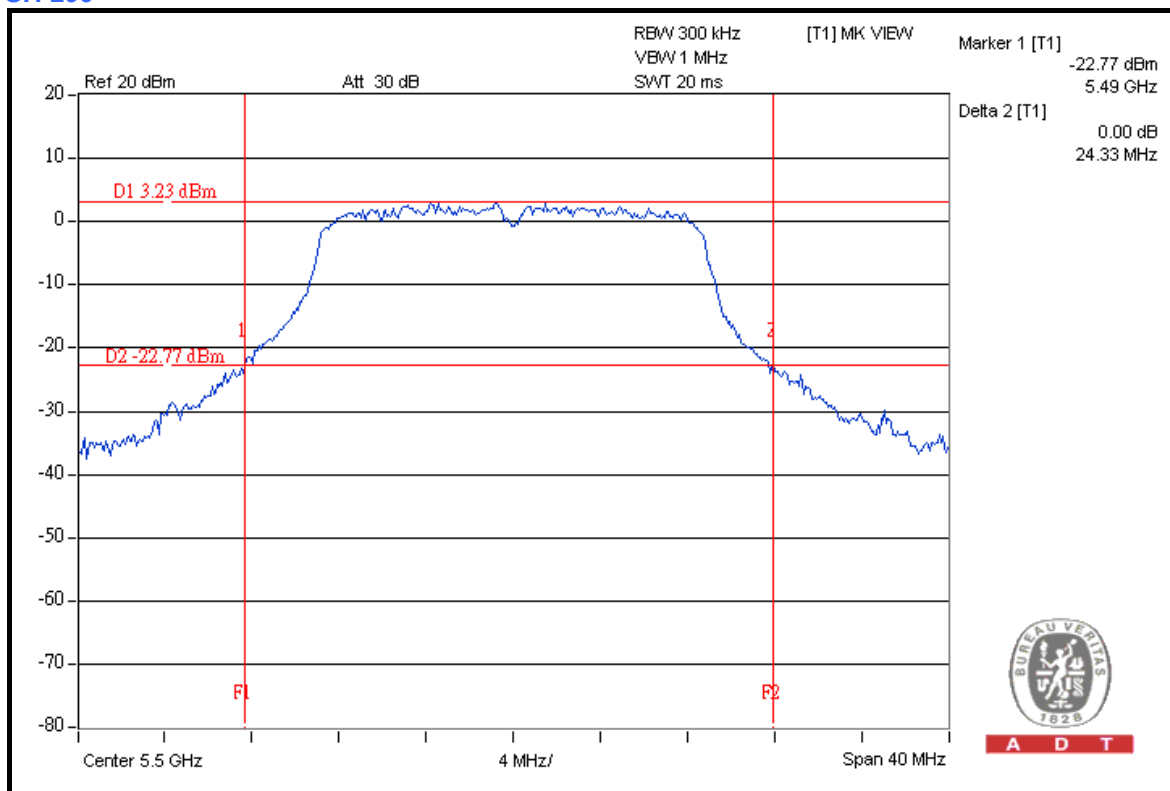


A D T

CH 64



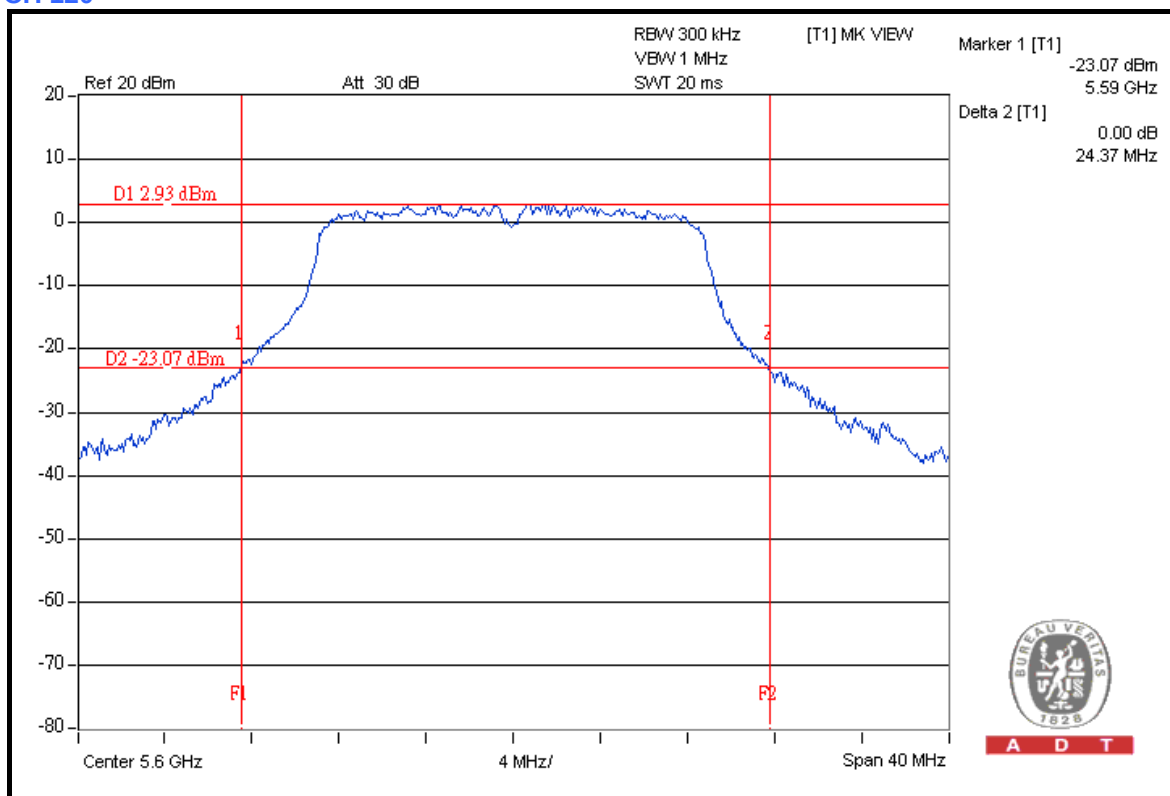
CH 100





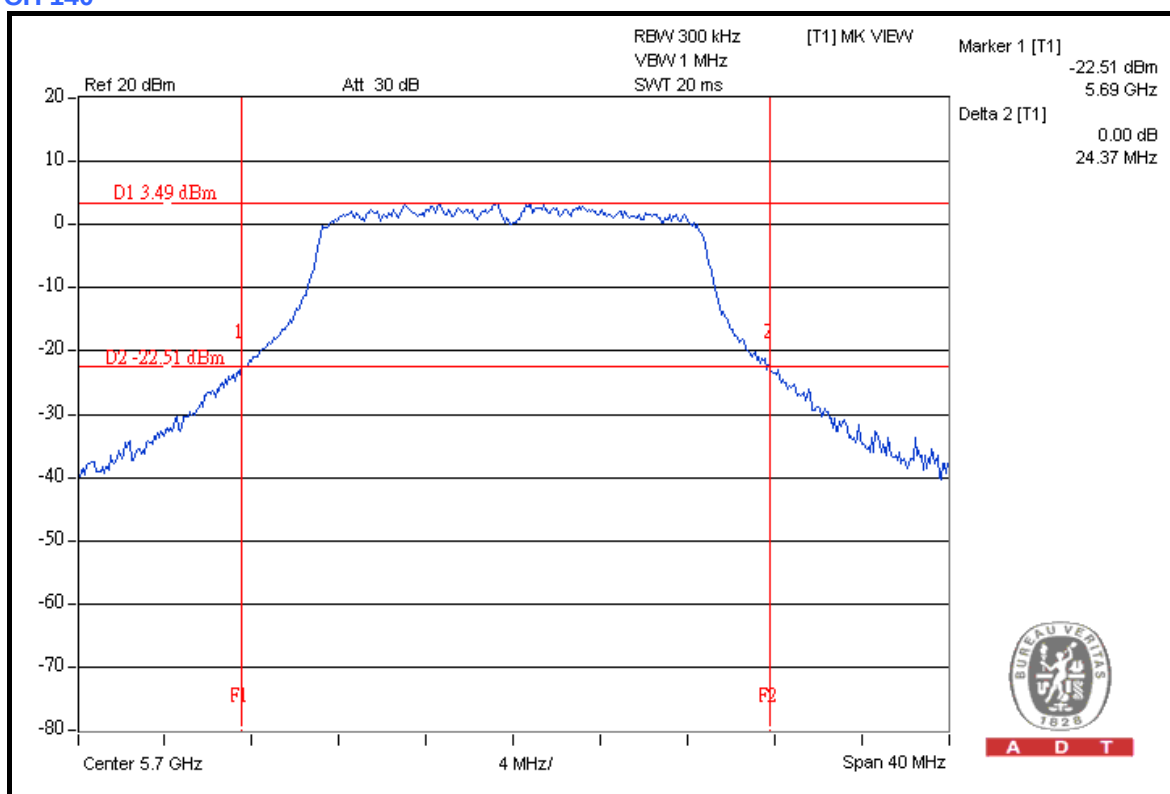
A D T

CH 120



A D T

CH 140



A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

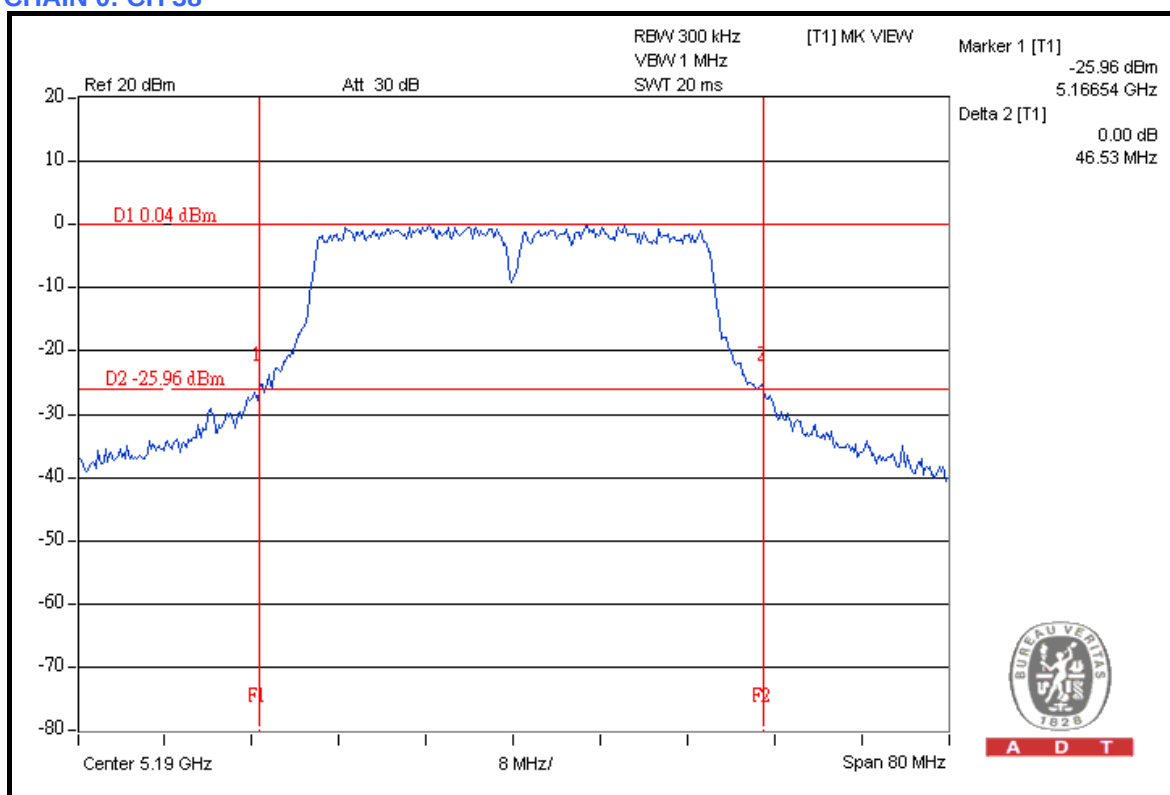
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
38	5190	46.53	45.35	PASS
46	5230	45.46	45.21	PASS
54	5270	45.98	45.87	PASS
62	5310	45.75	45.84	PASS
102	5510	45.34	45.60	PASS
118	5590	44.78	44.48	PASS
134	5670	44.12	44.43	PASS

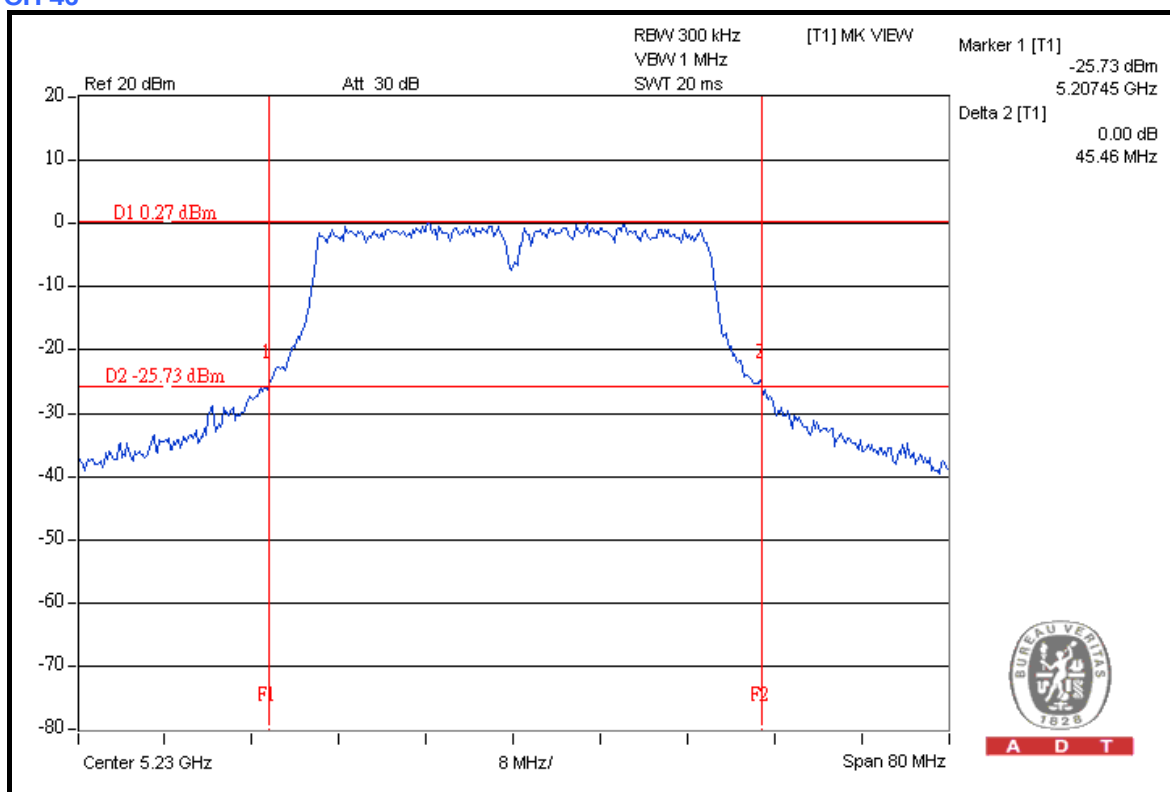


A D T

CHAIN 0: CH 38



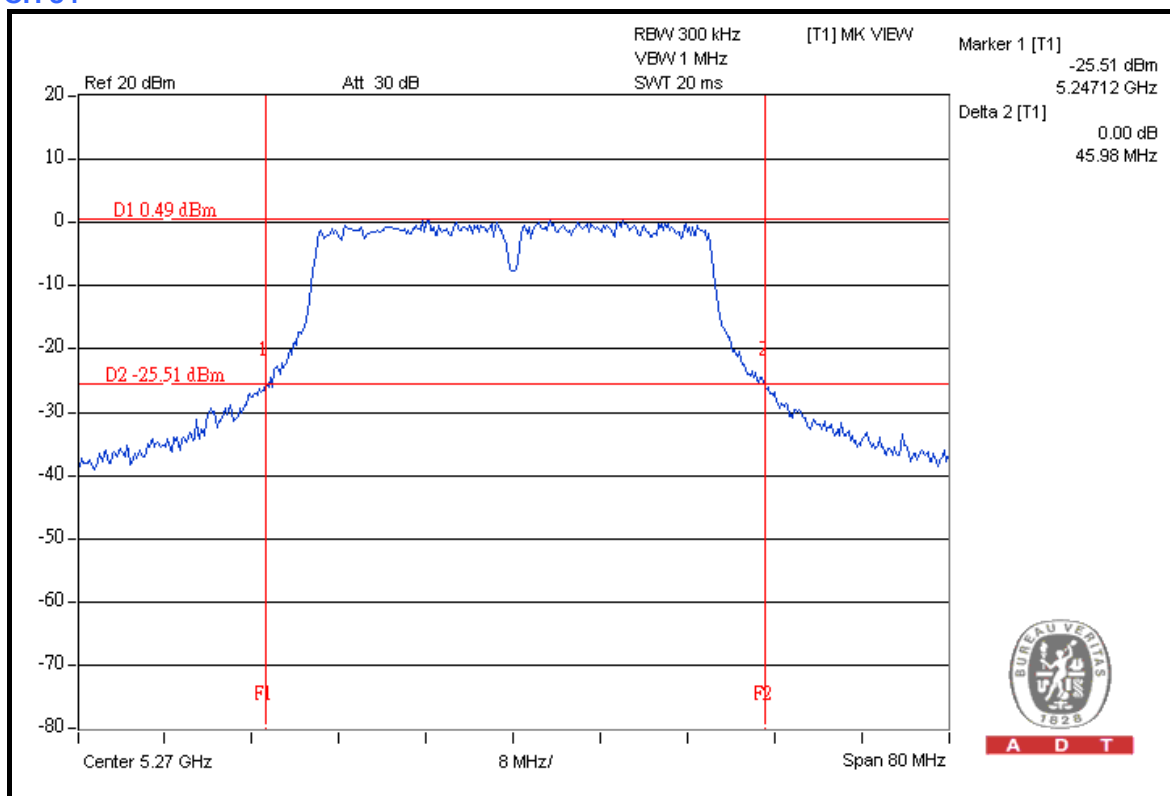
CH 46





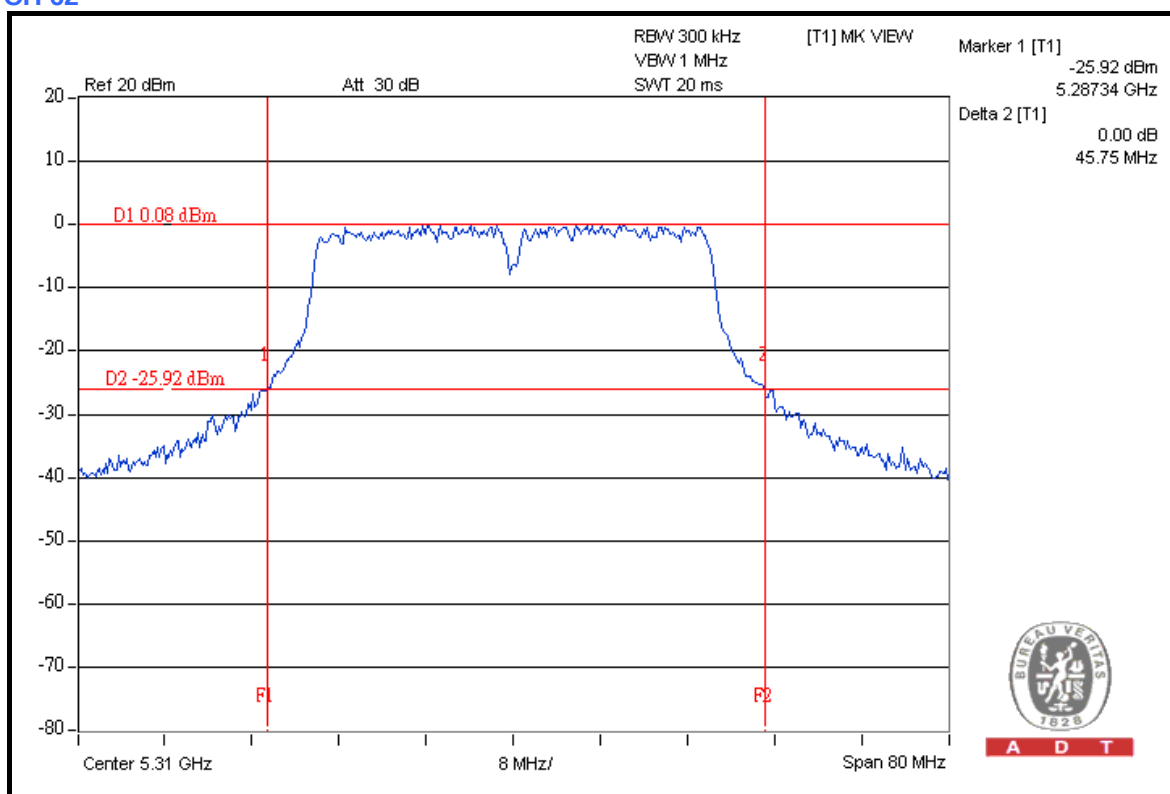
A D T

CH 54



A D T

CH 62



A D T

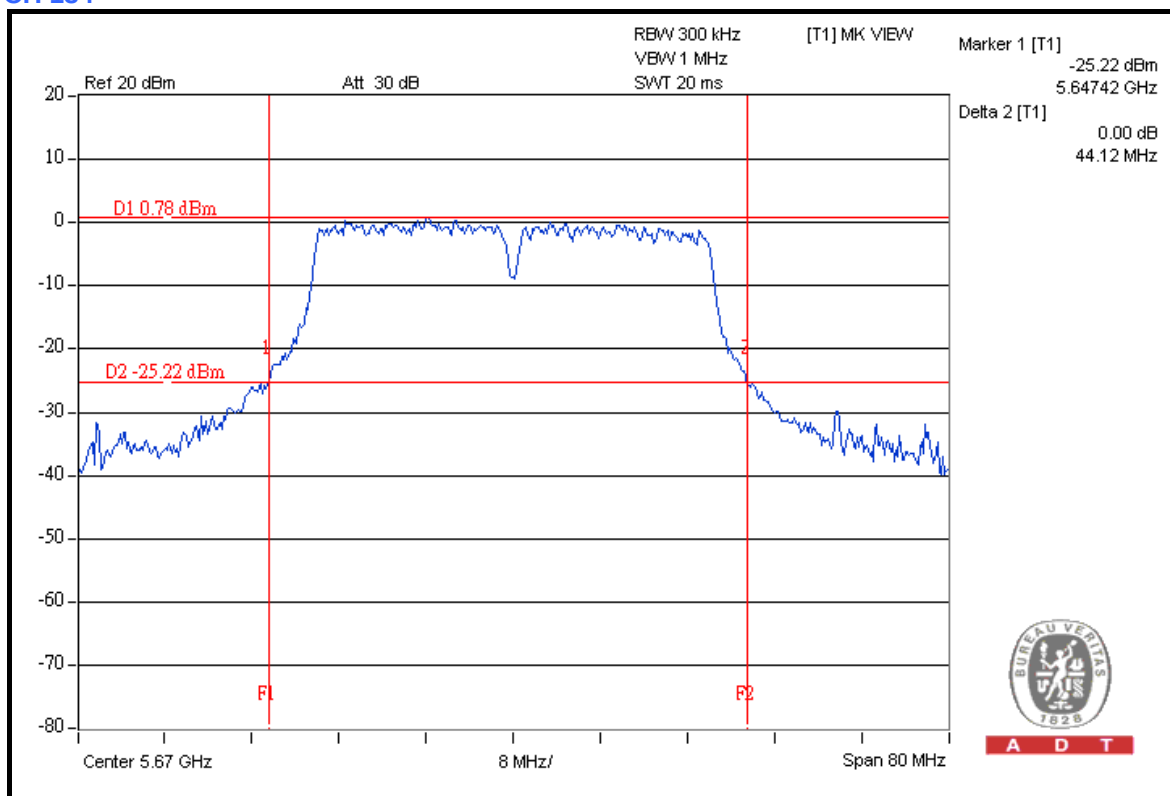
A D T

A D T

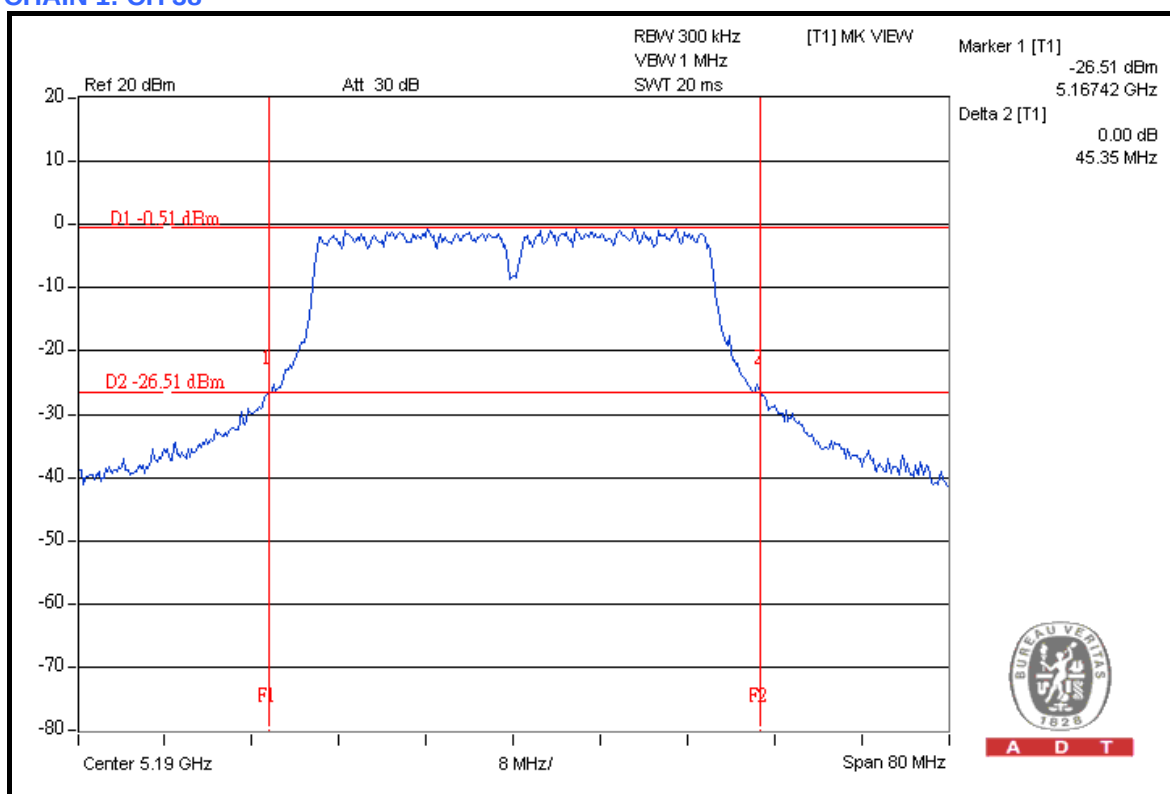


A D T

CH 134



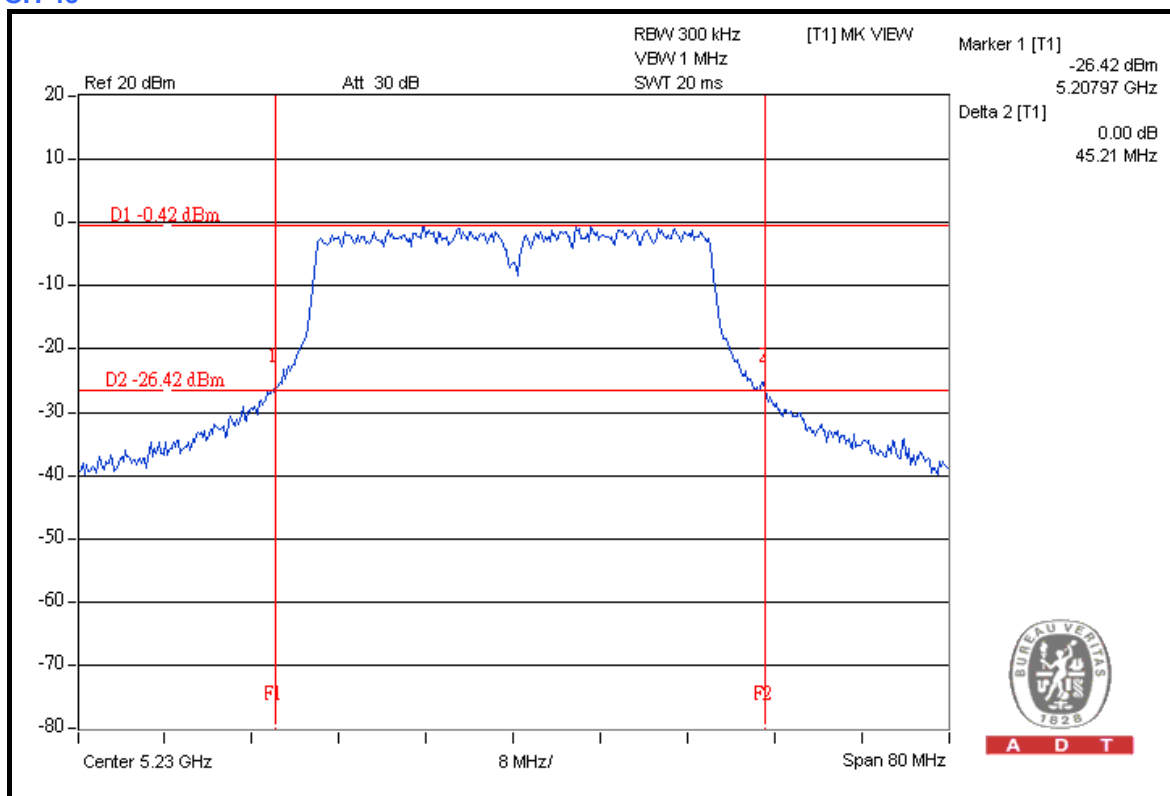
CHAIN 1: CH 38



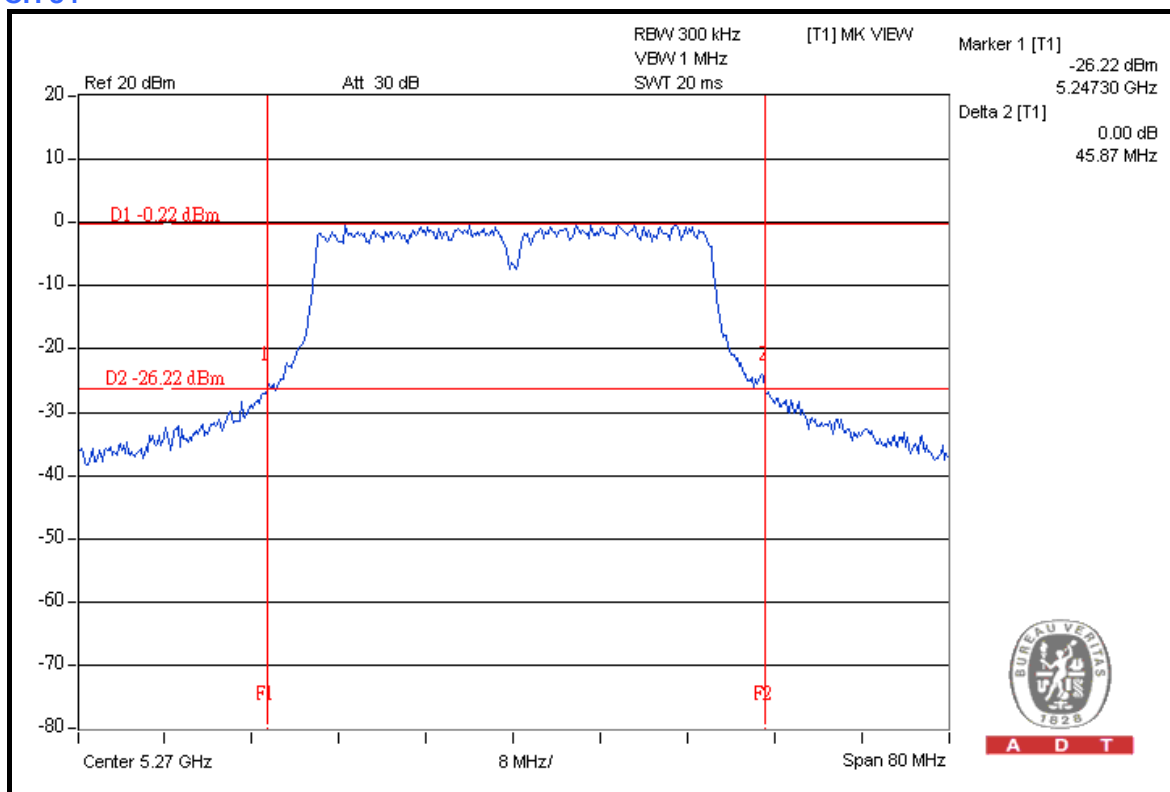


A D T

CH 46



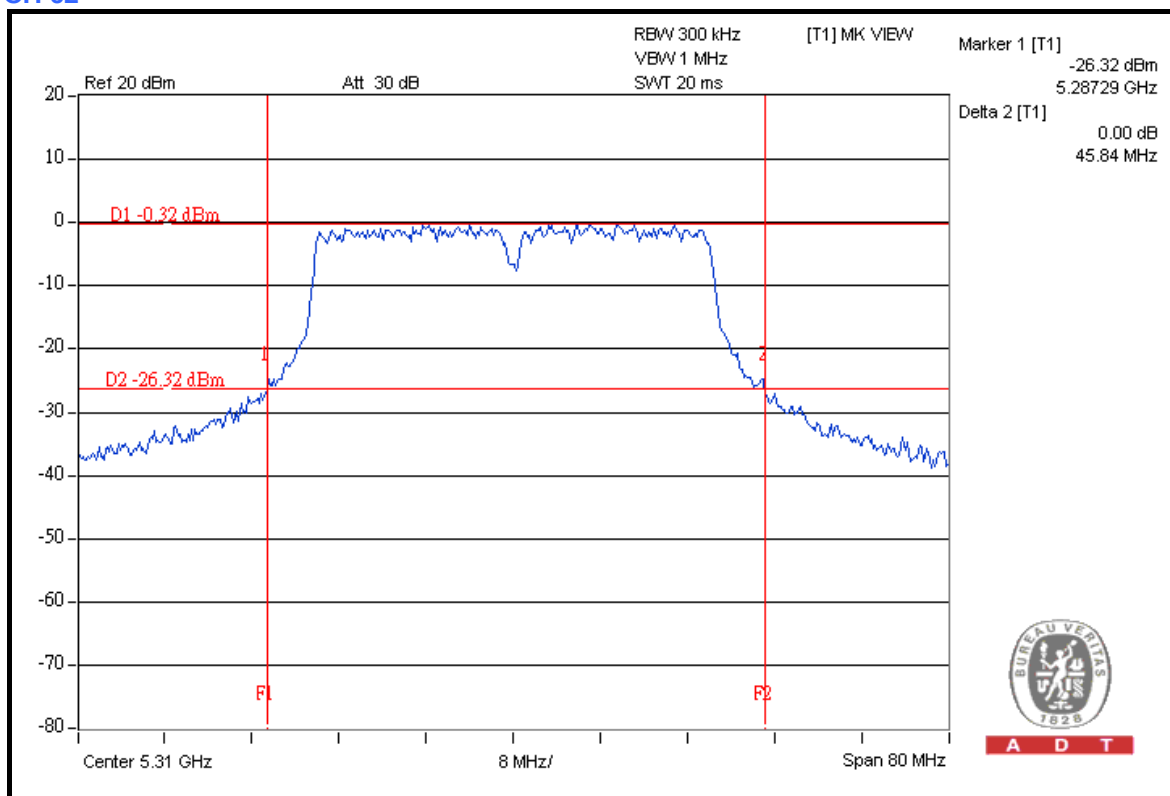
CH 54



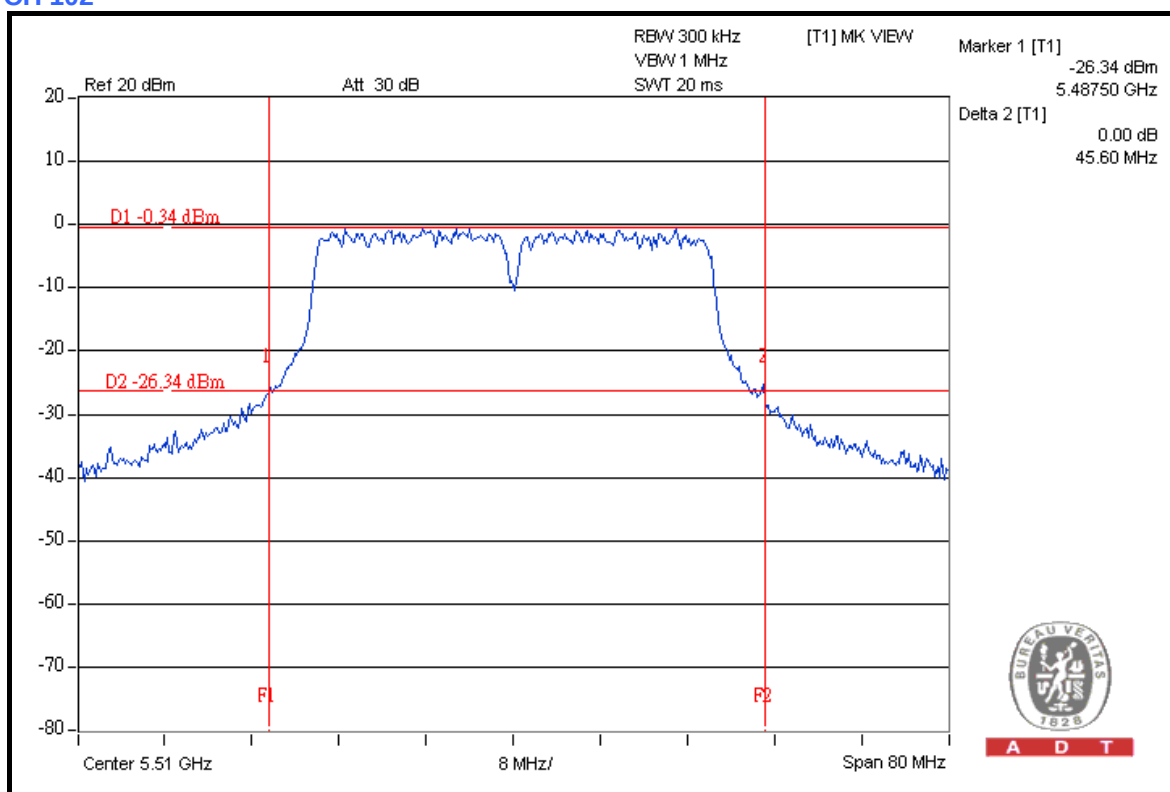


A D T

CH 62



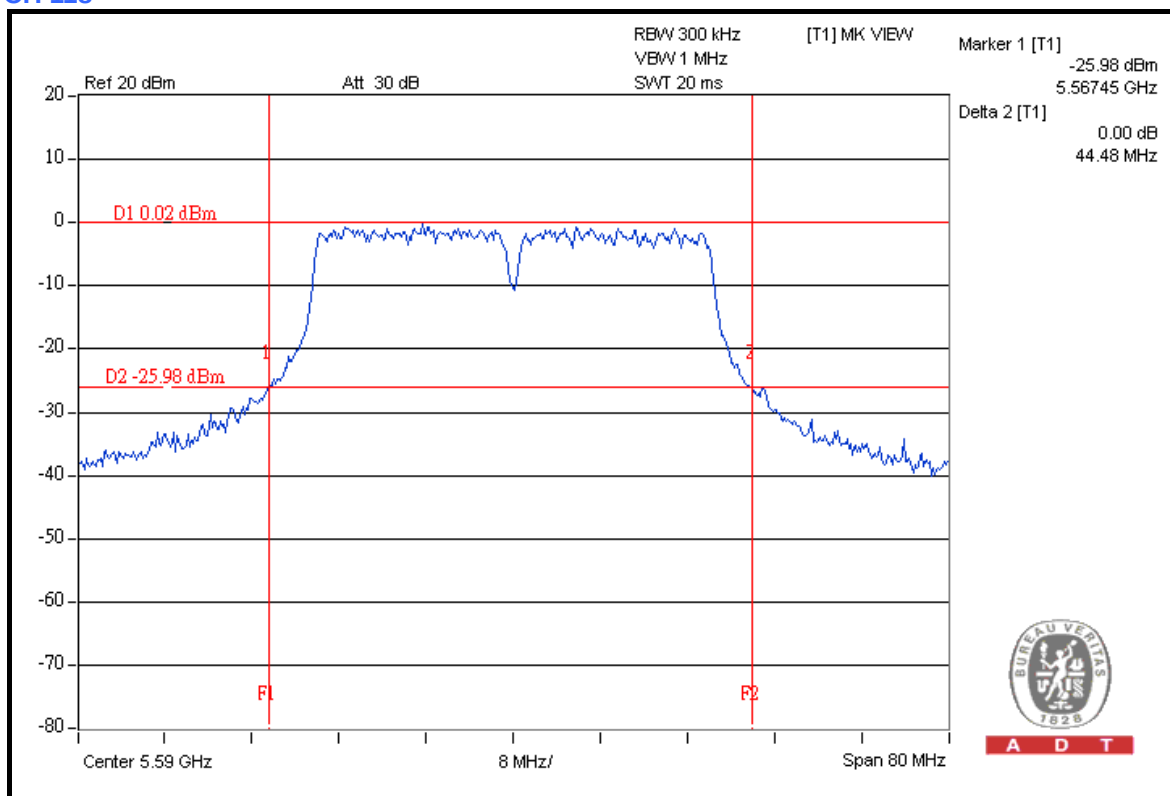
CH 102



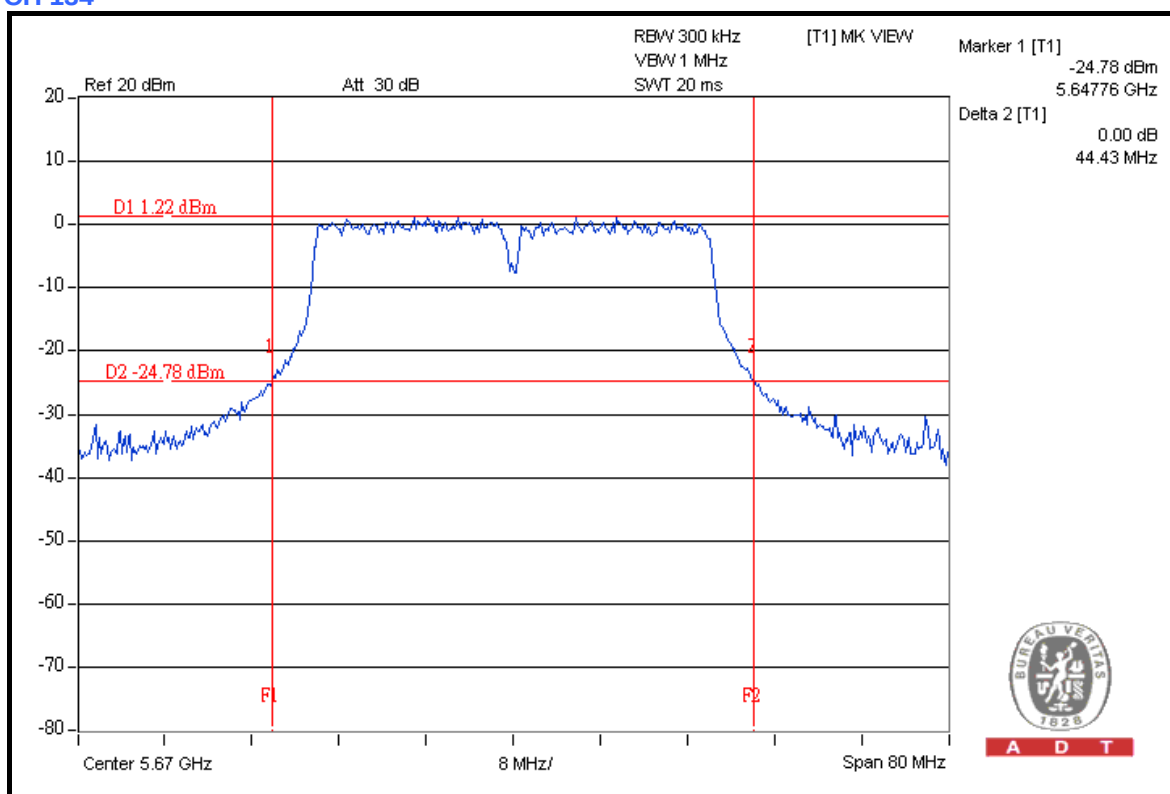


A D T

CH 118



CH 134



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

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

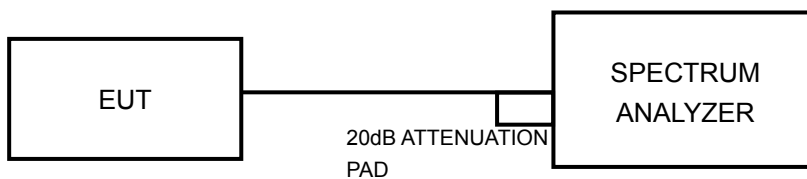
4.4.3 TEST PROCEDURE

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

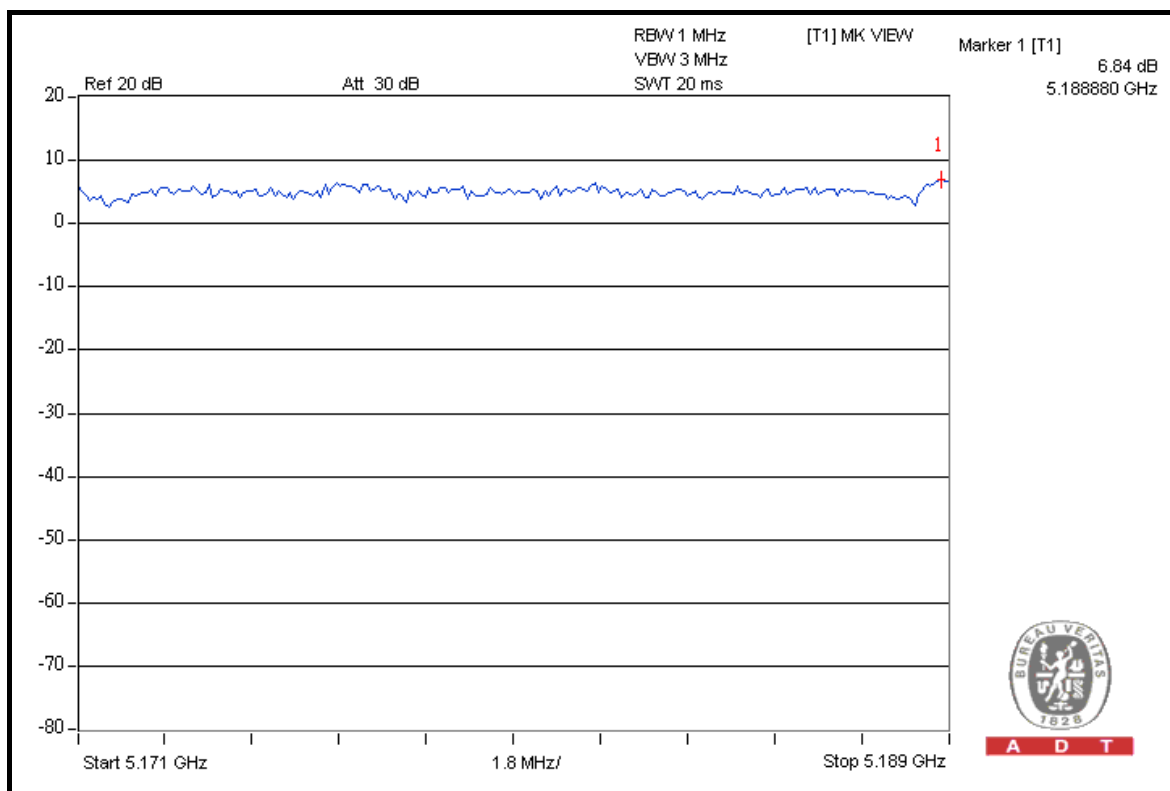
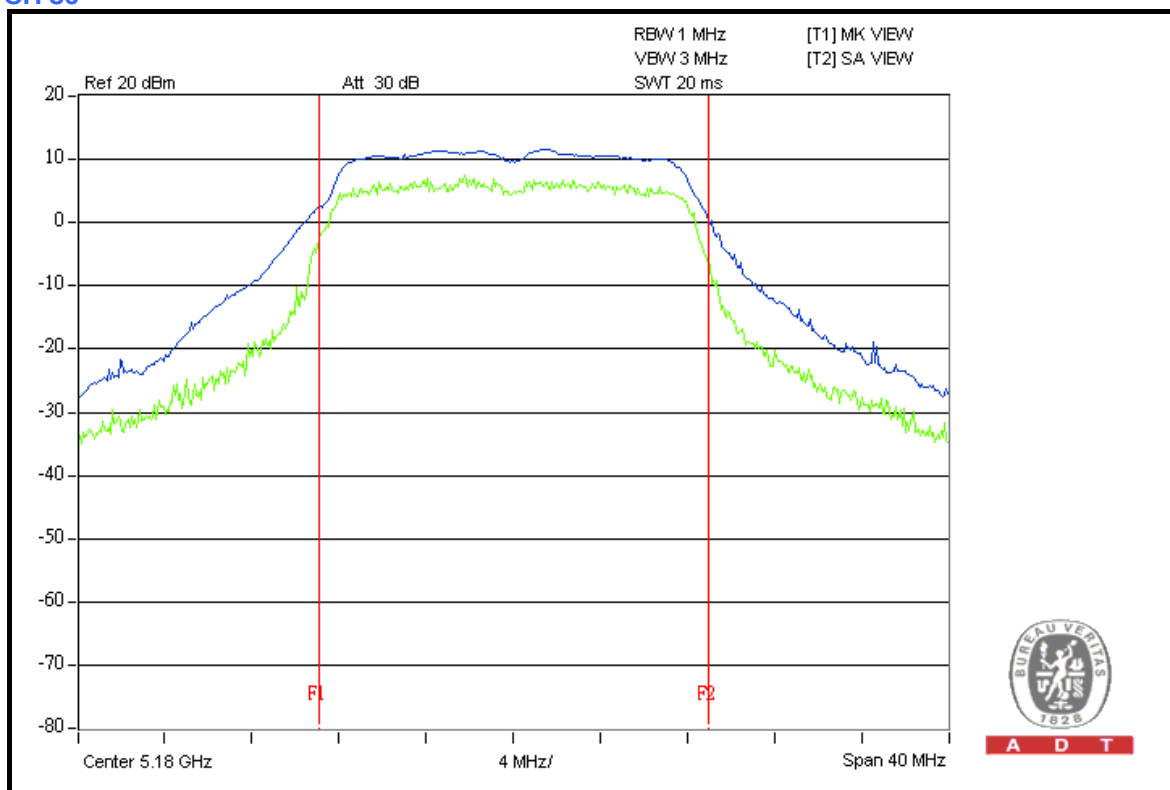
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
36	5180	6.84	13	PASS
40	5200	7.26	13	PASS
48	5240	7.90	13	PASS
52	5260	6.68	13	PASS
60	5300	6.92	13	PASS
64	5320	7.22	13	PASS
100	5500	7.52	13	PASS
120	5600	7.68	13	PASS
140	5700	7.31	13	PASS



A D T

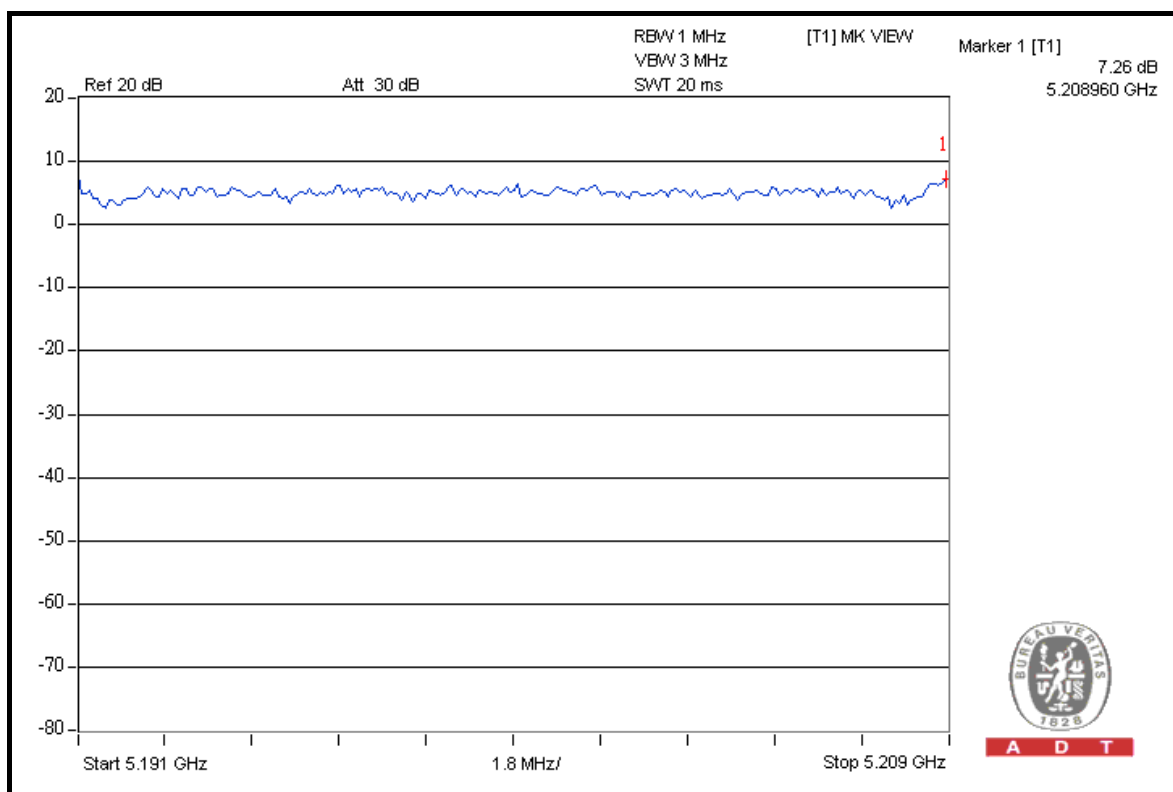
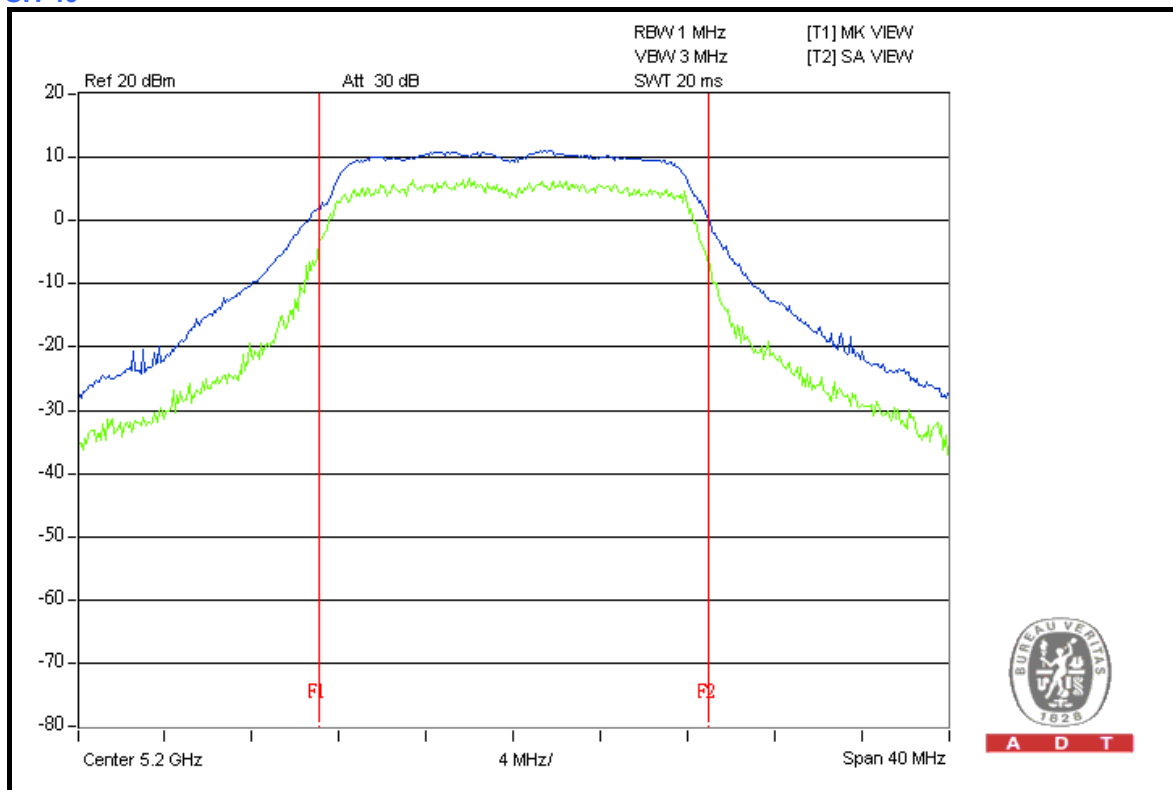
CH 36





A D T

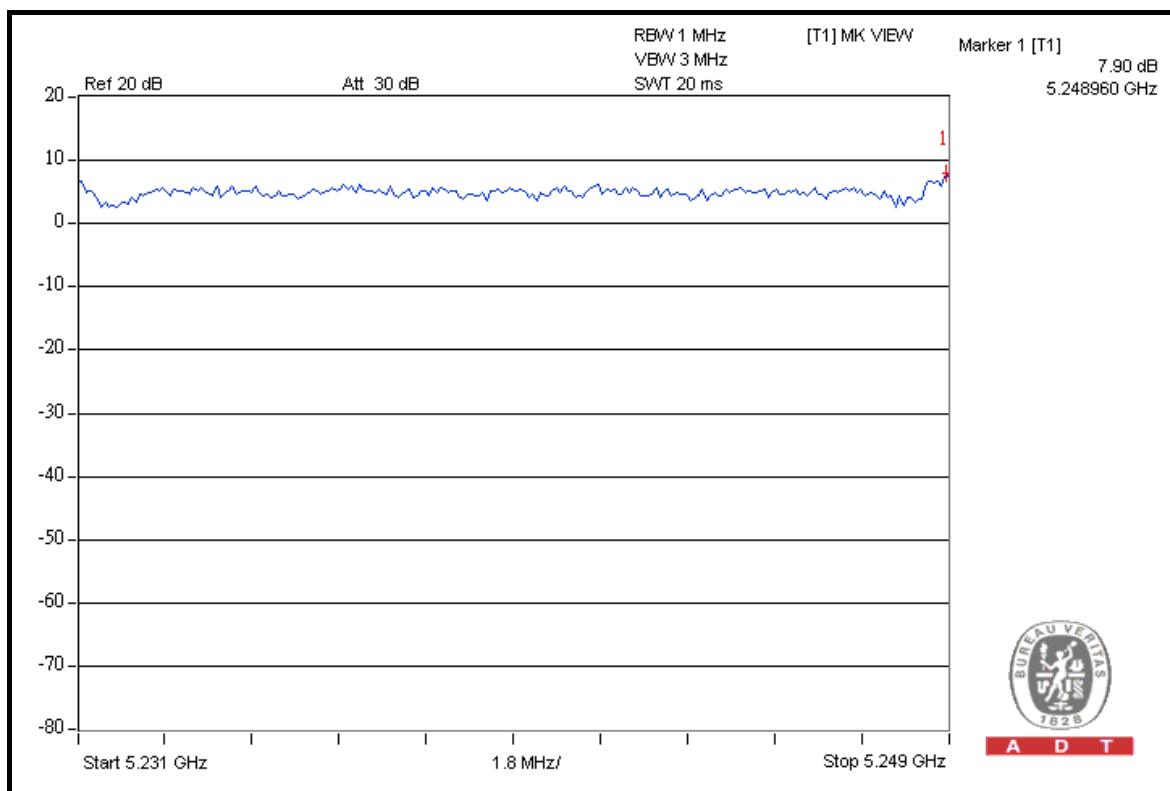
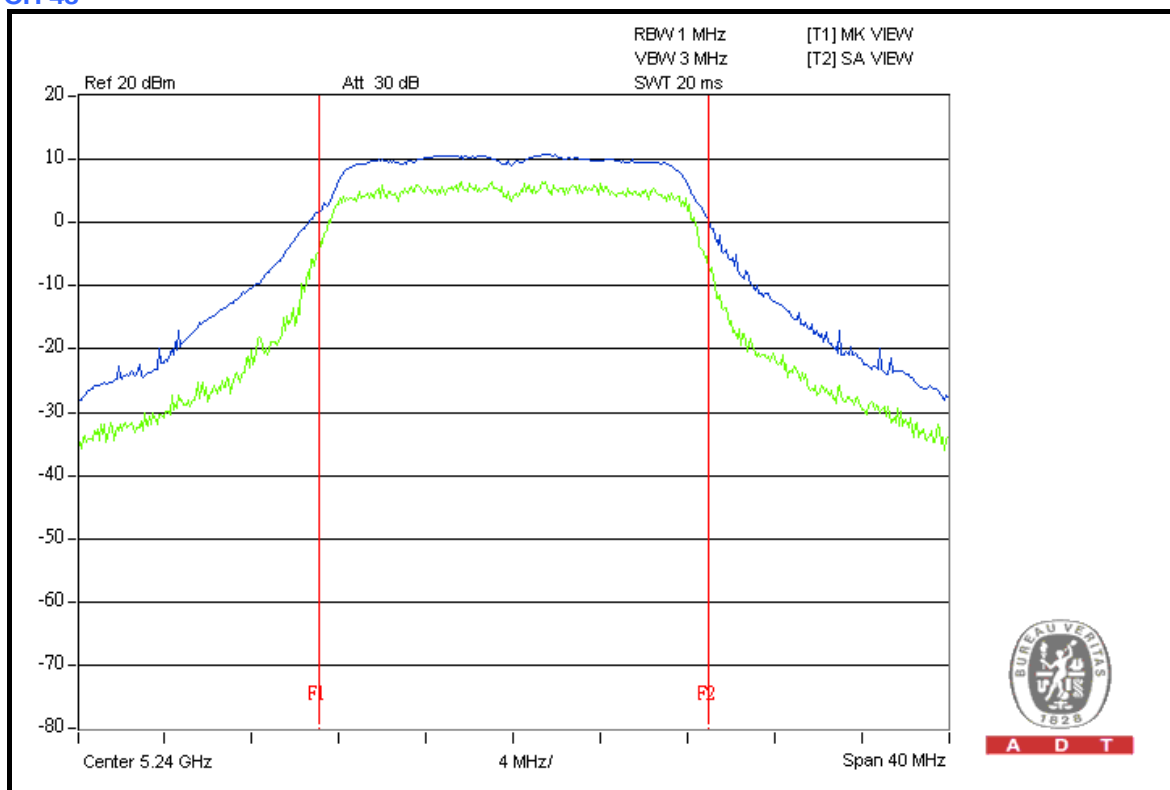
CH 40





A D T

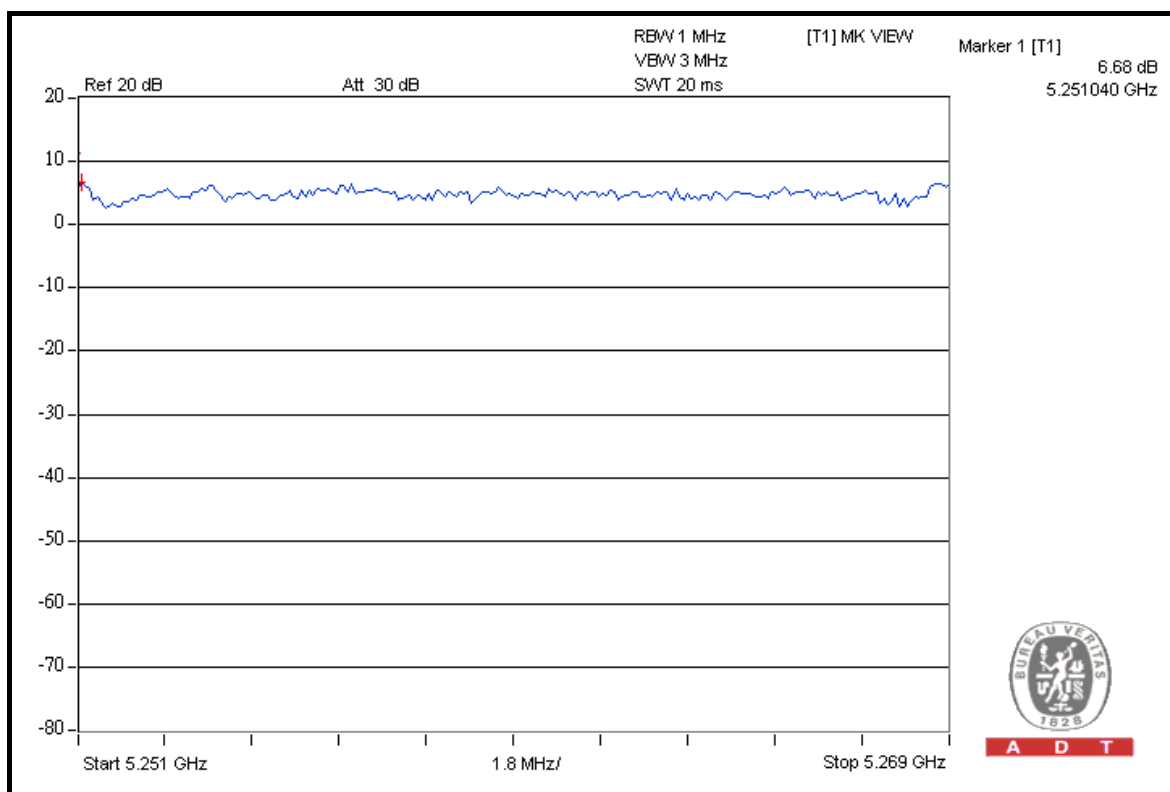
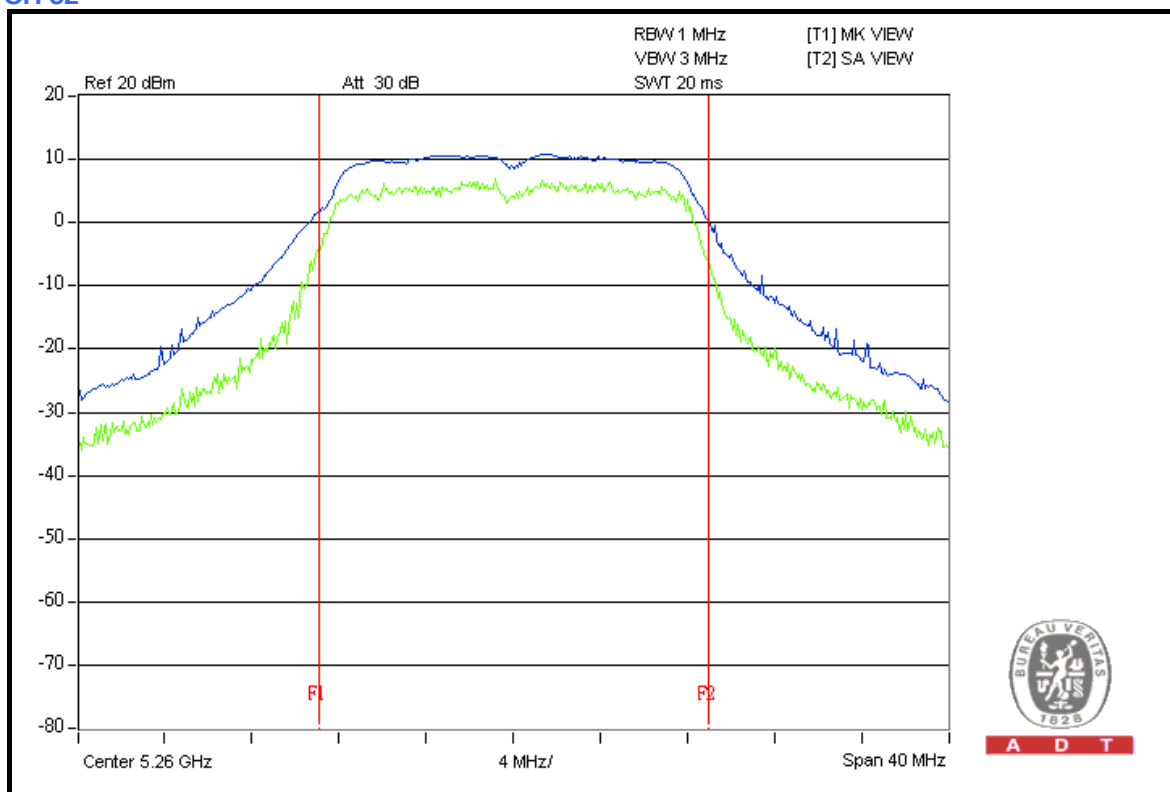
CH 48





A D T

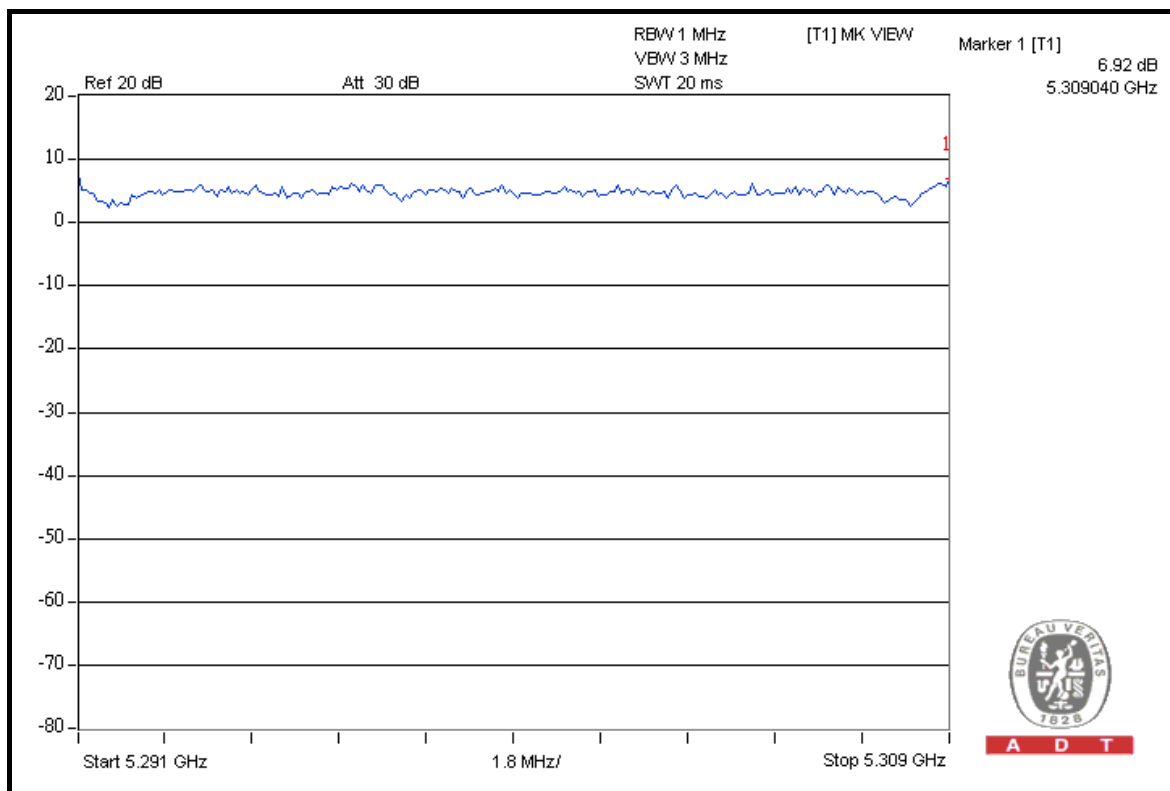
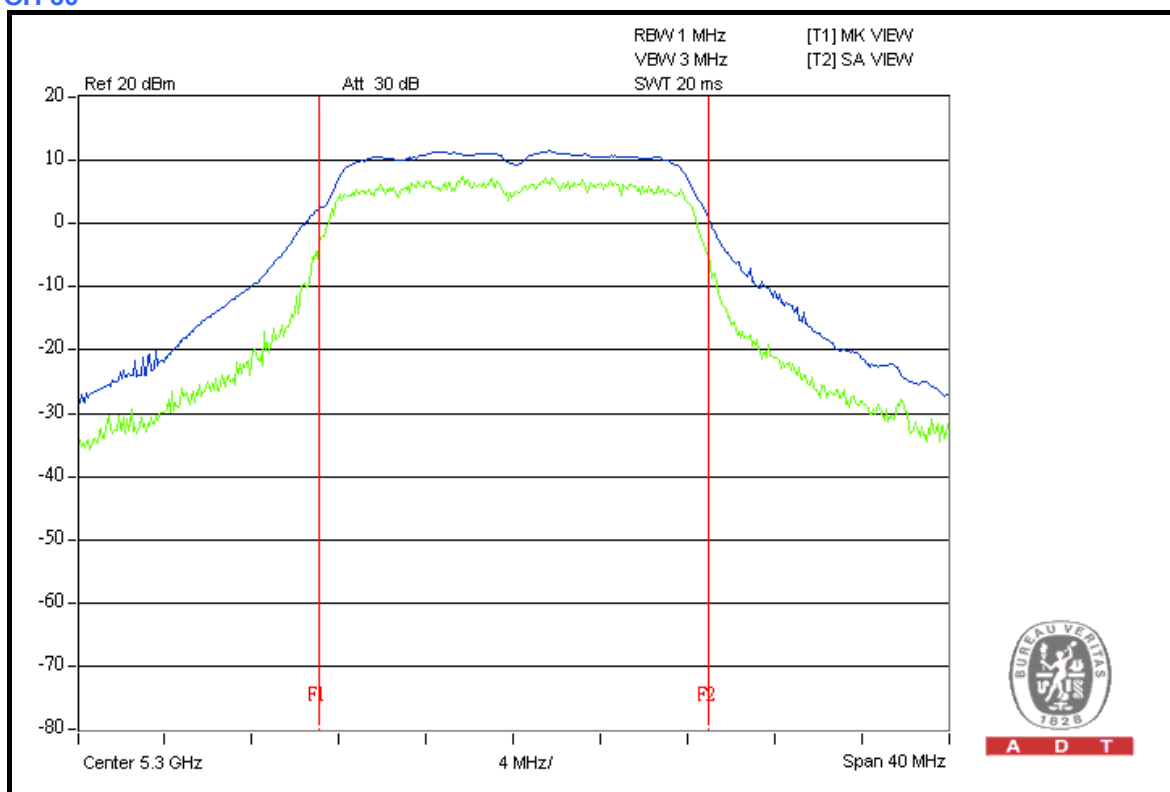
CH 52





A D T

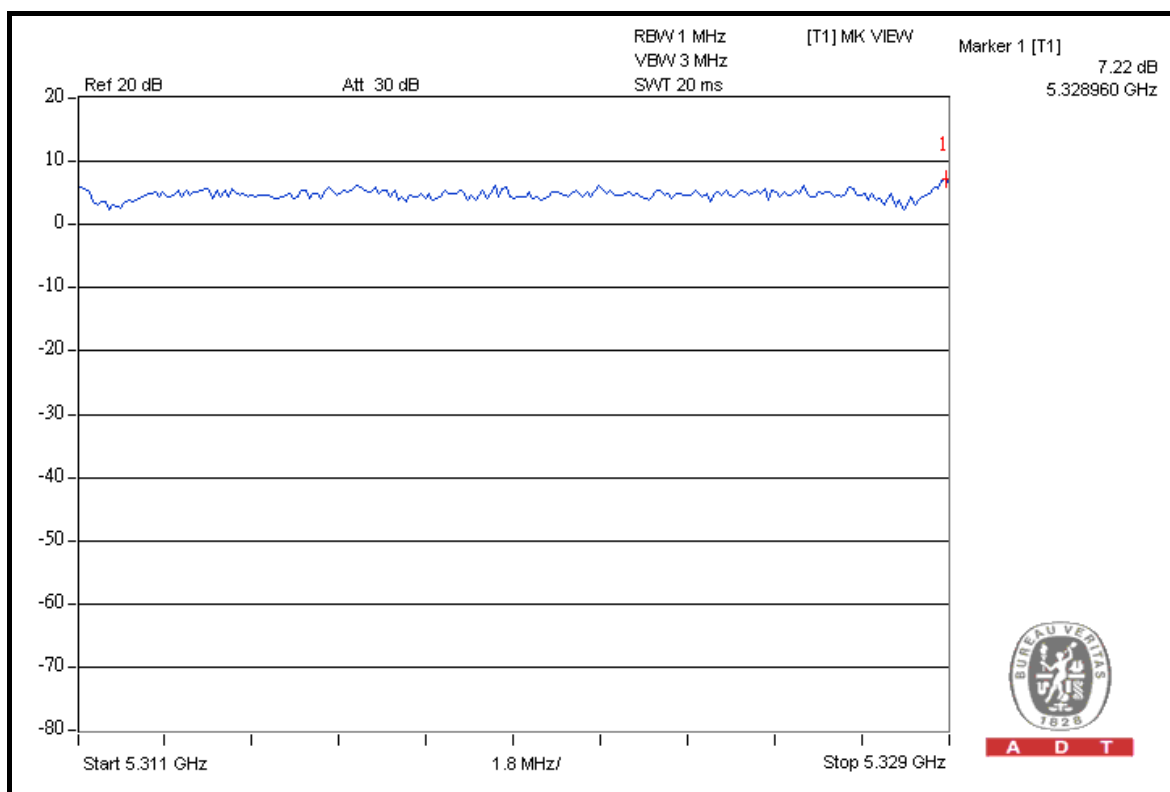
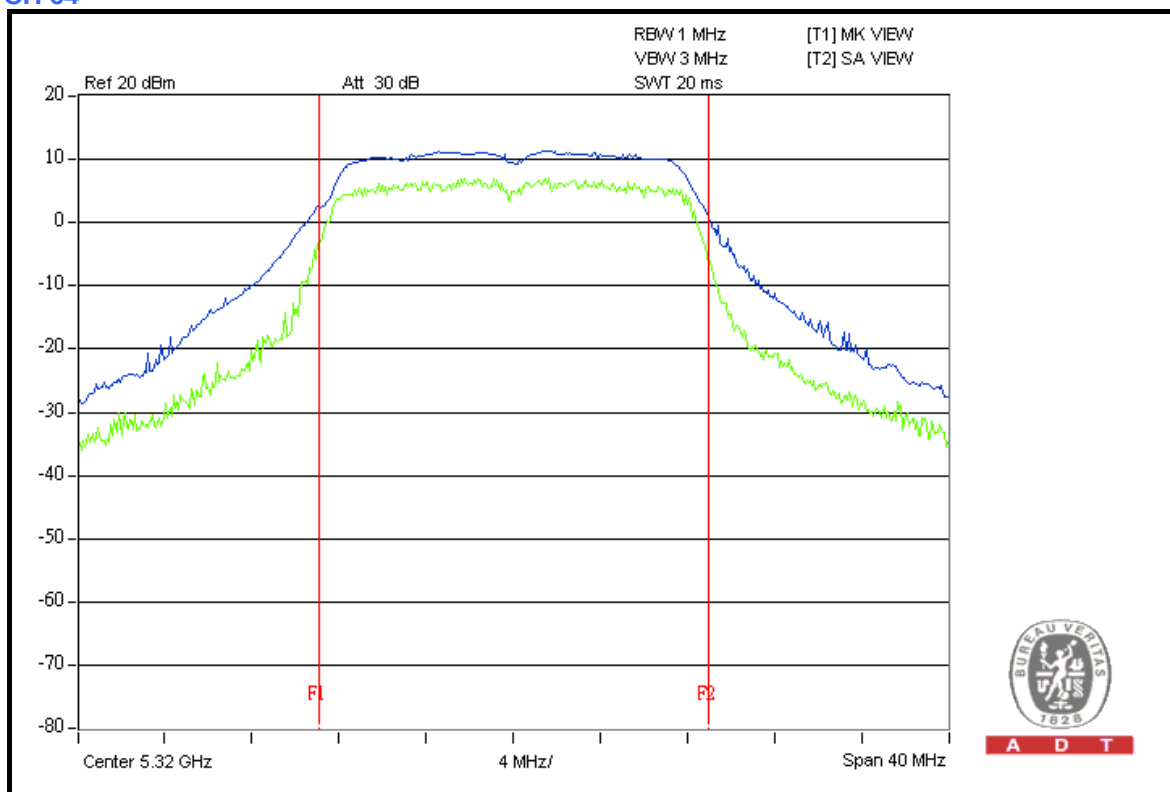
CH 60





A D T

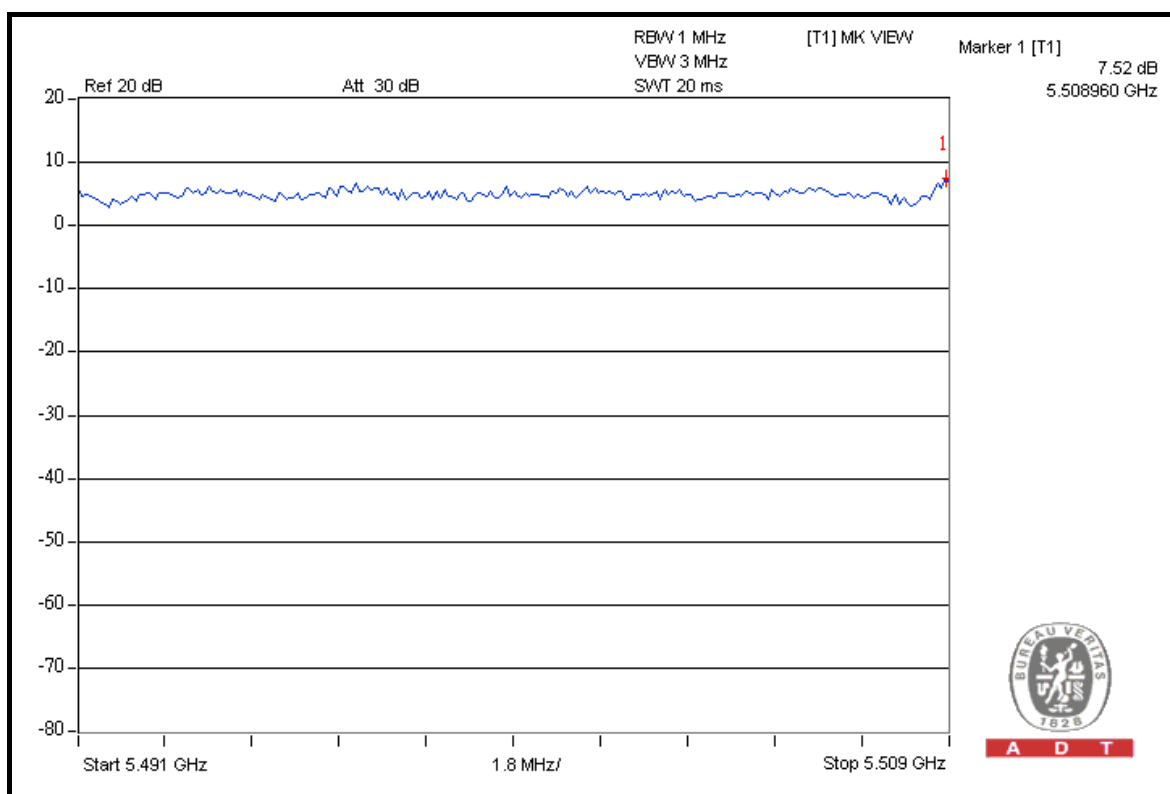
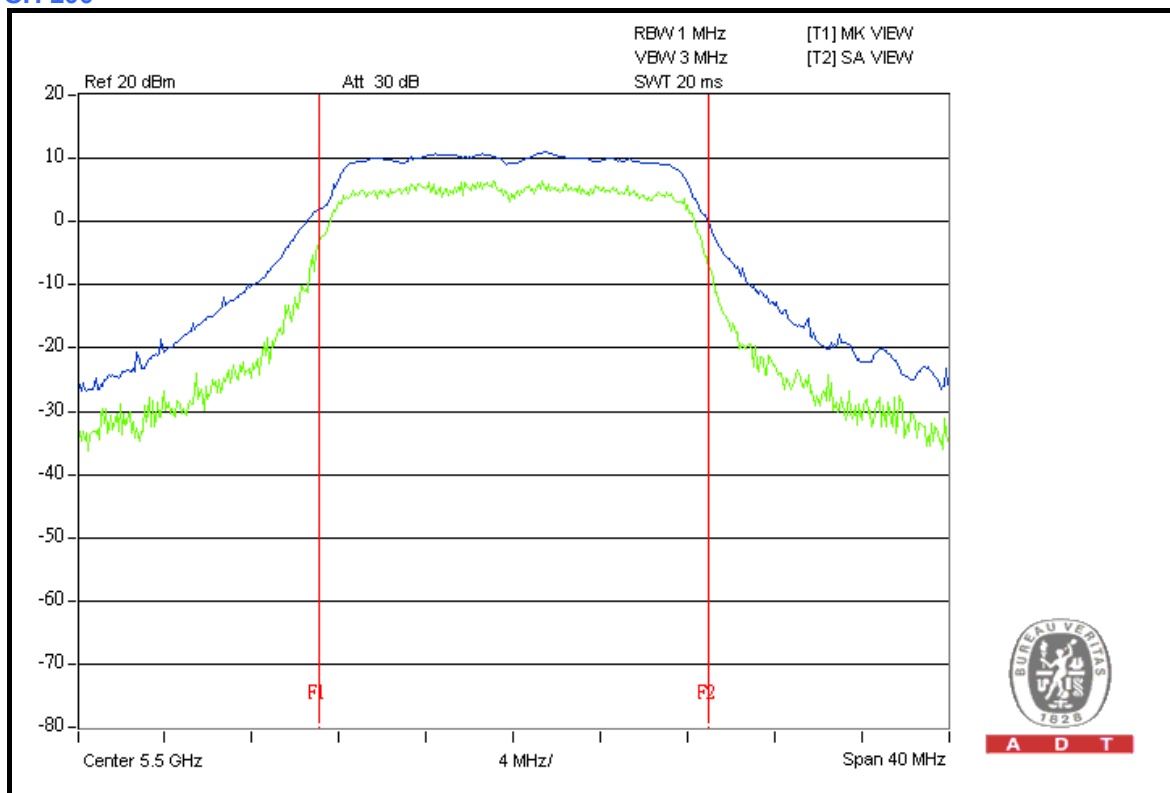
CH 64





A D T

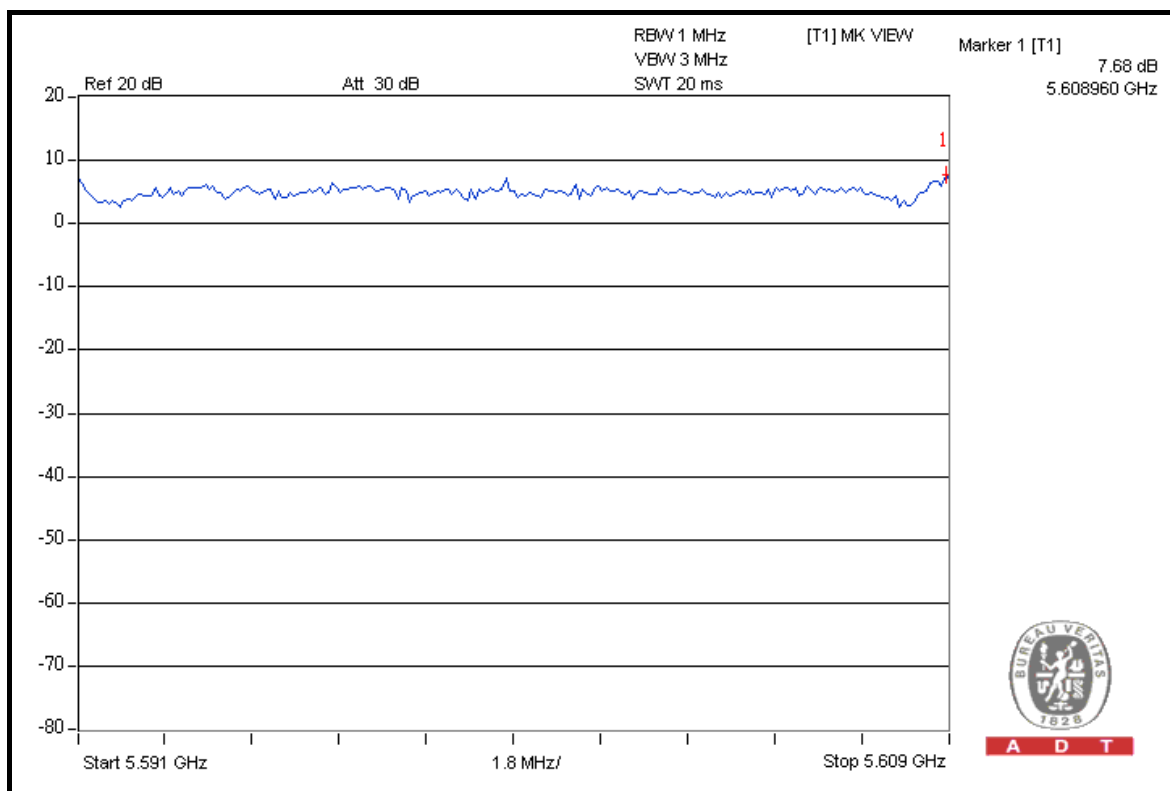
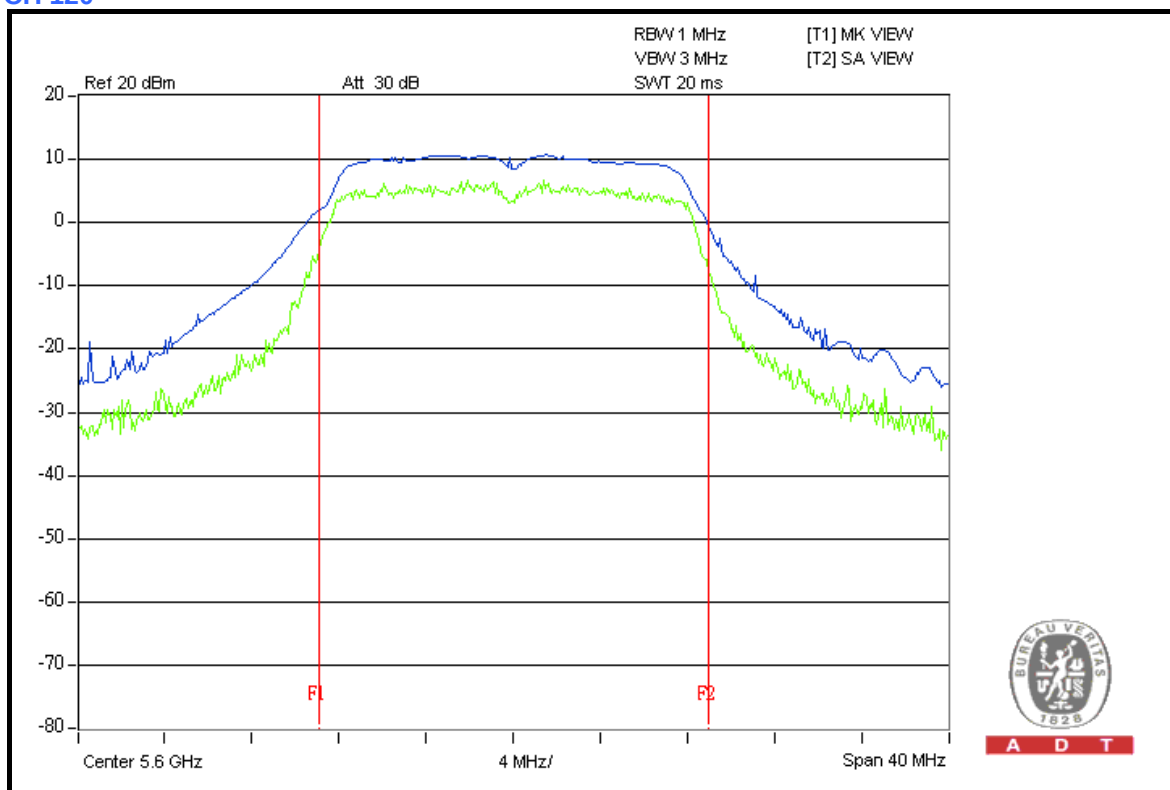
CH 100





A D T

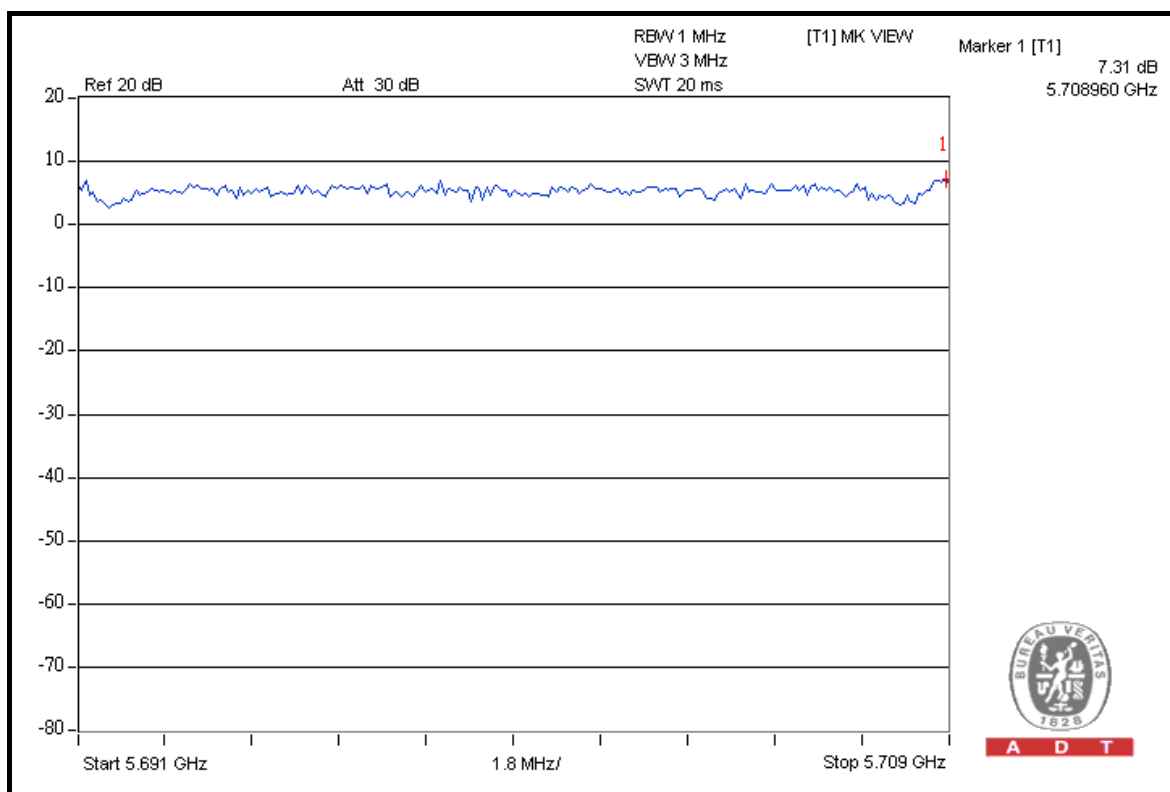
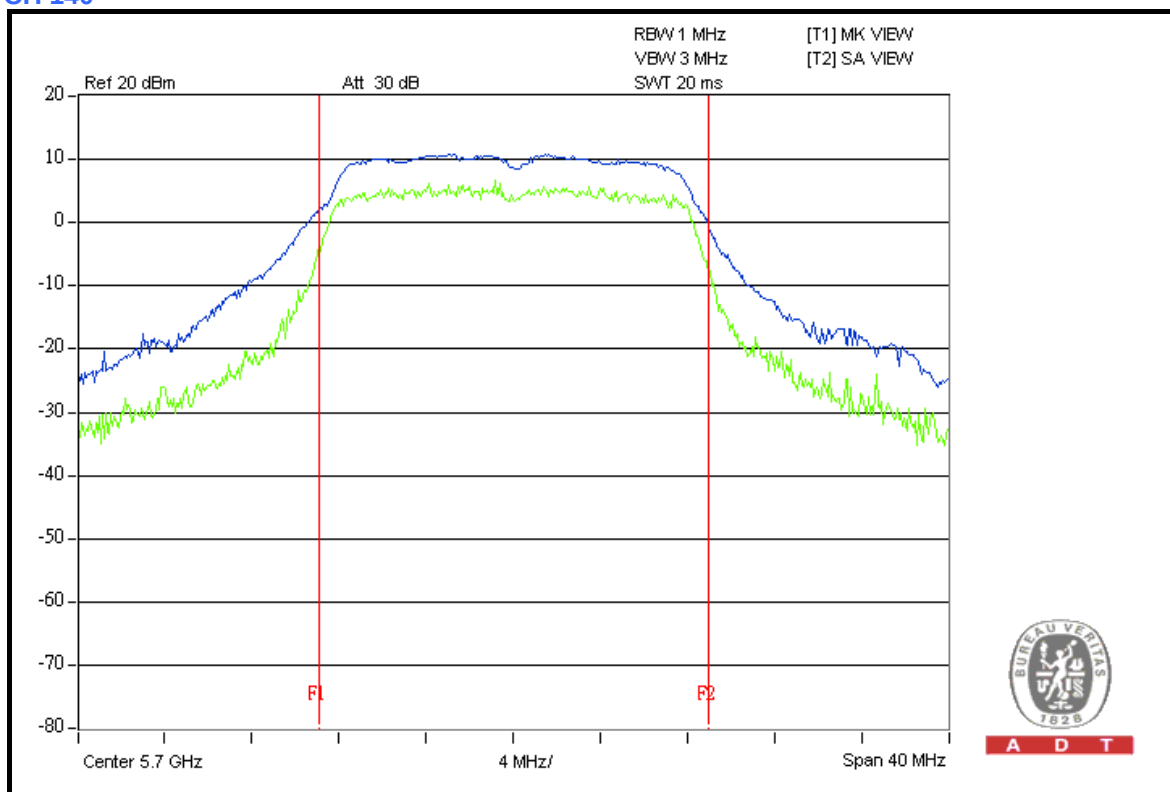
CH 120





A D T

CH 140



DRAFT 802.11n (20MHz) OFDM MODULATION

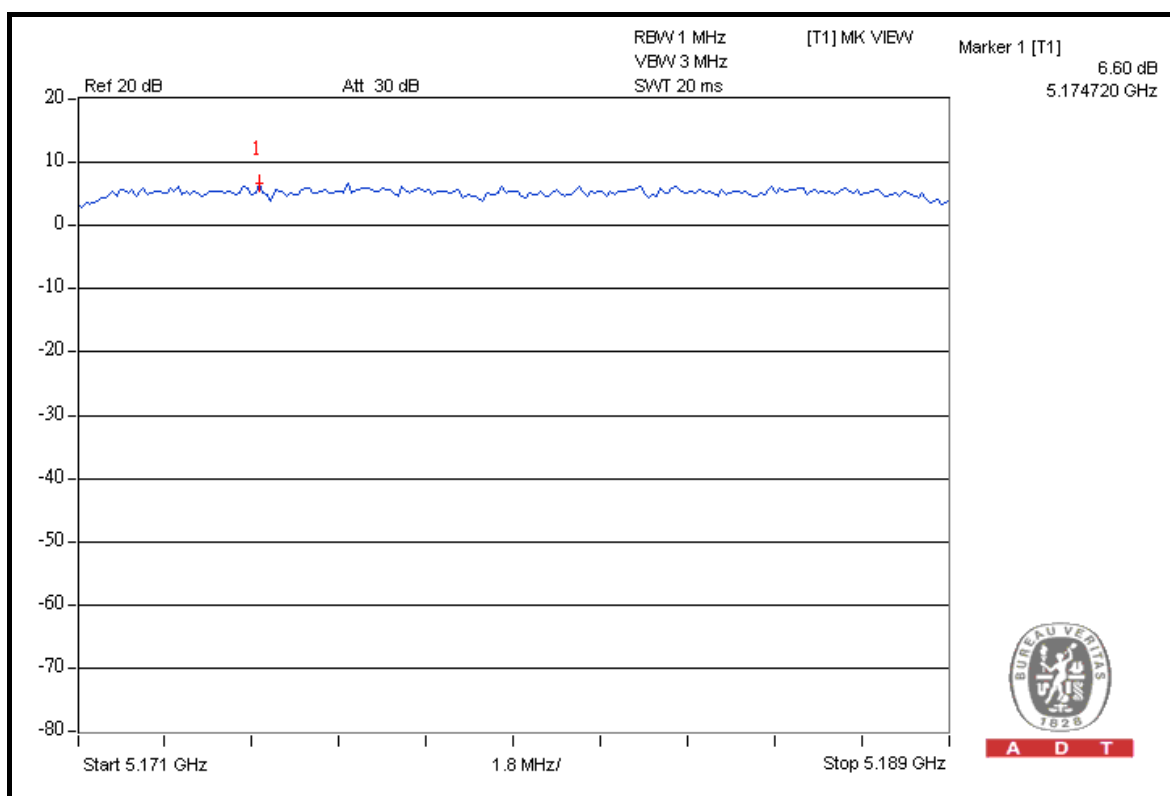
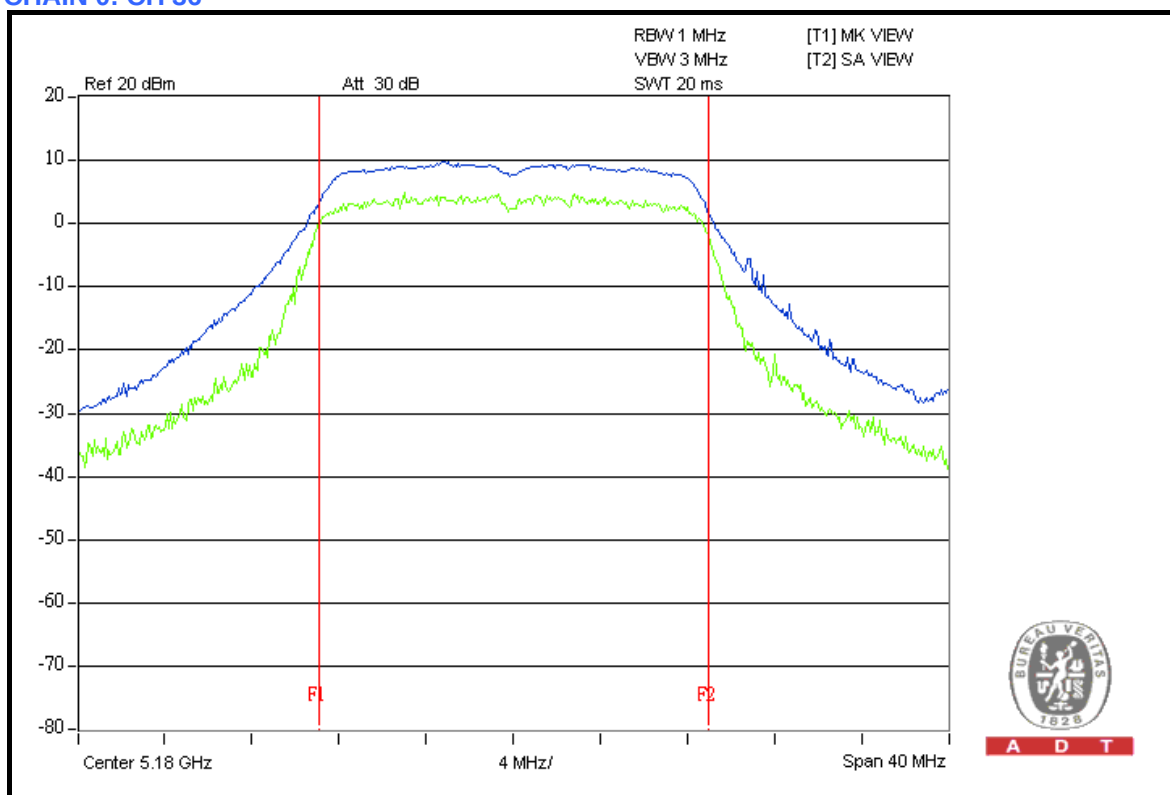
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	6.60	6.07	13	PASS
40	5200	6.36	6.42	13	PASS
48	5240	6.68	6.32	13	PASS
52	5260	6.61	6.50	13	PASS
60	5300	6.88	6.58	13	PASS
64	5320	6.88	6.77	13	PASS
100	5500	6.82	6.36	13	PASS
120	5600	6.81	6.46	13	PASS
140	5700	6.56	6.81	13	PASS



A D T

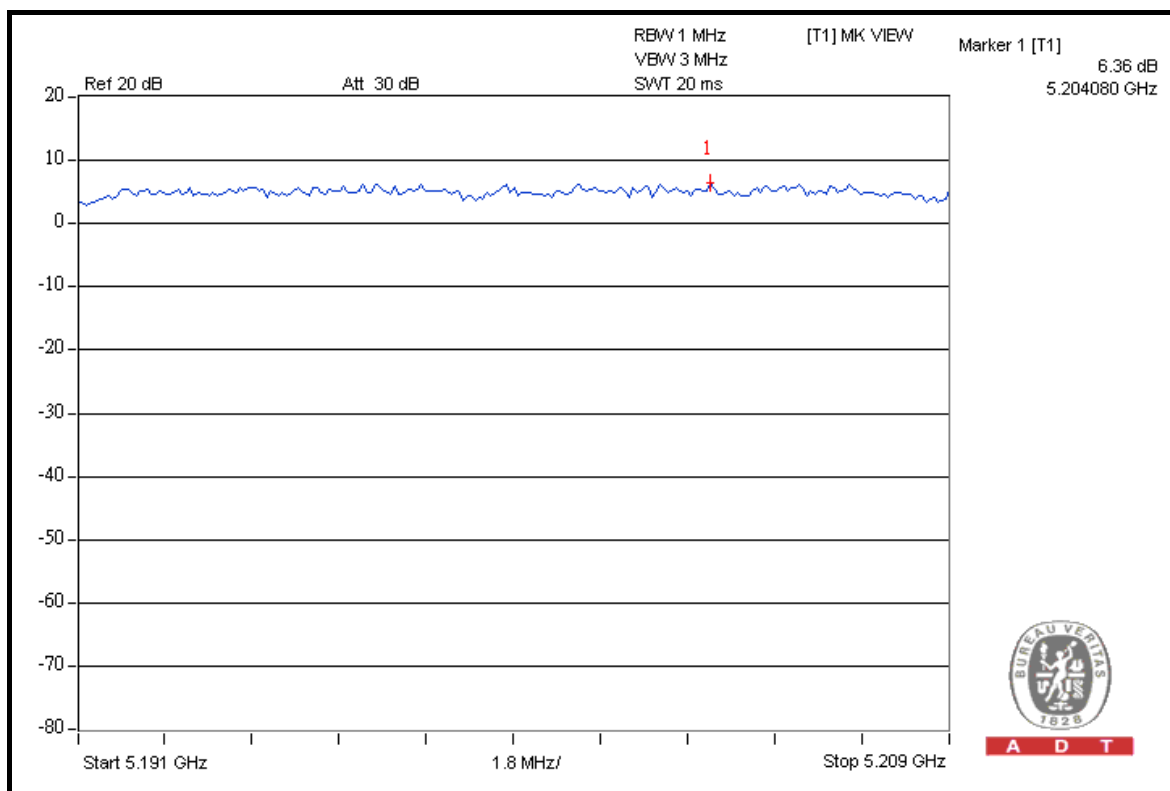
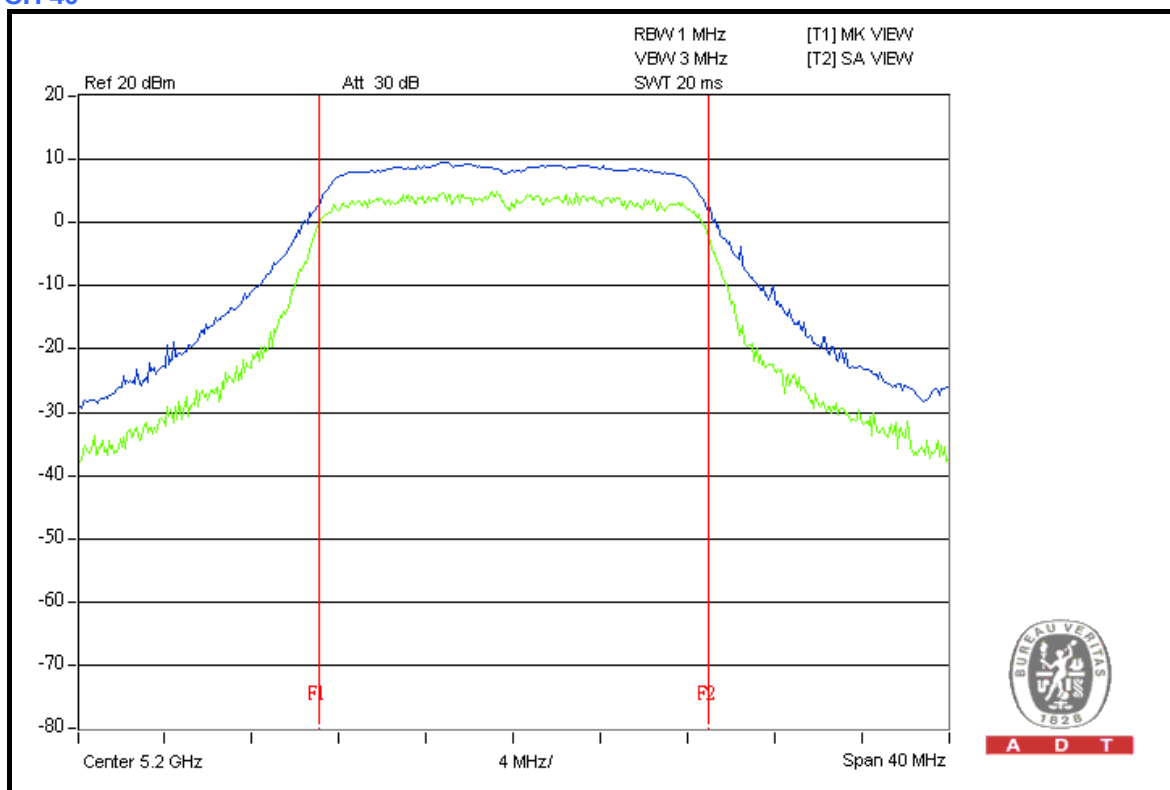
CHAIN 0: CH 36





A D T

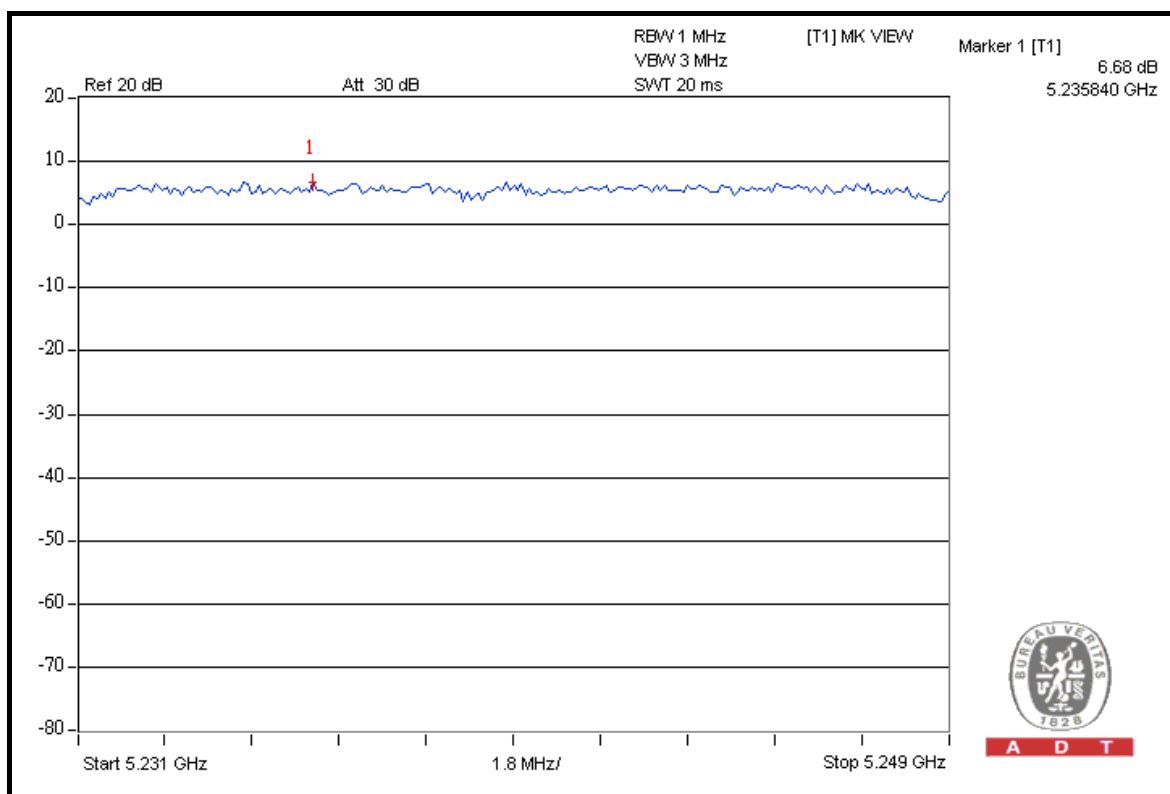
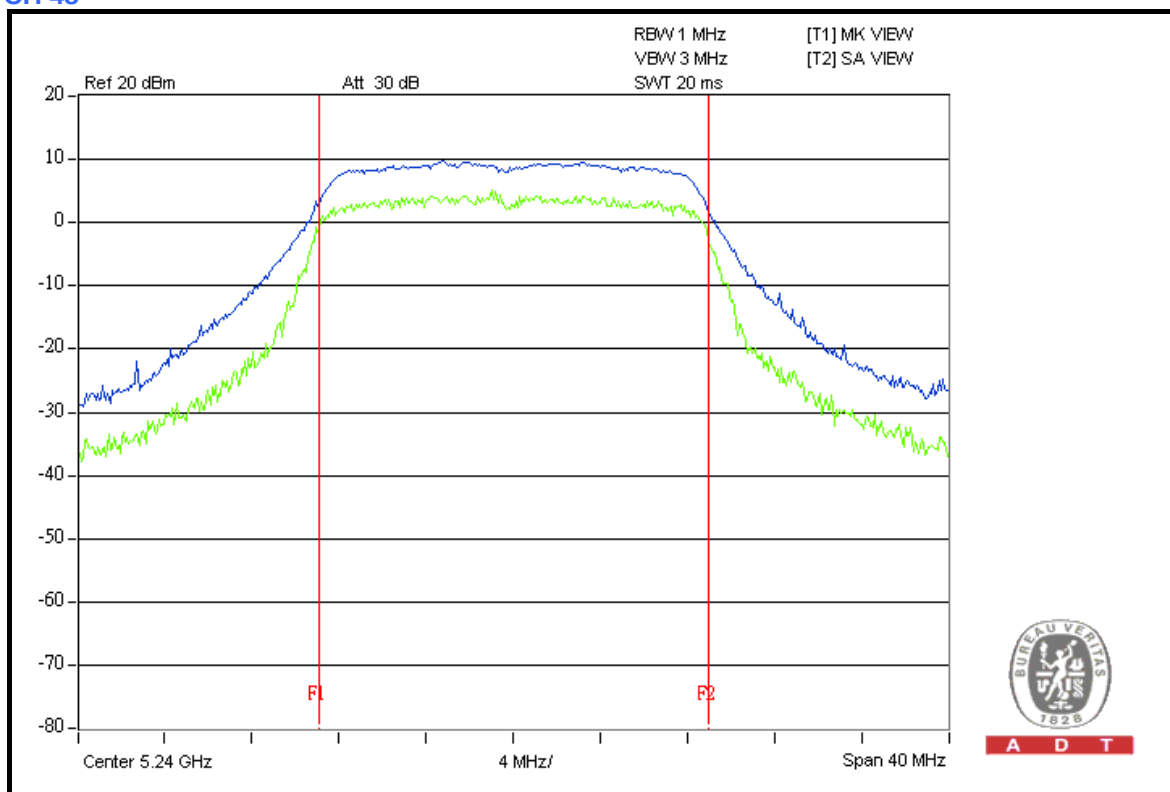
CH 40



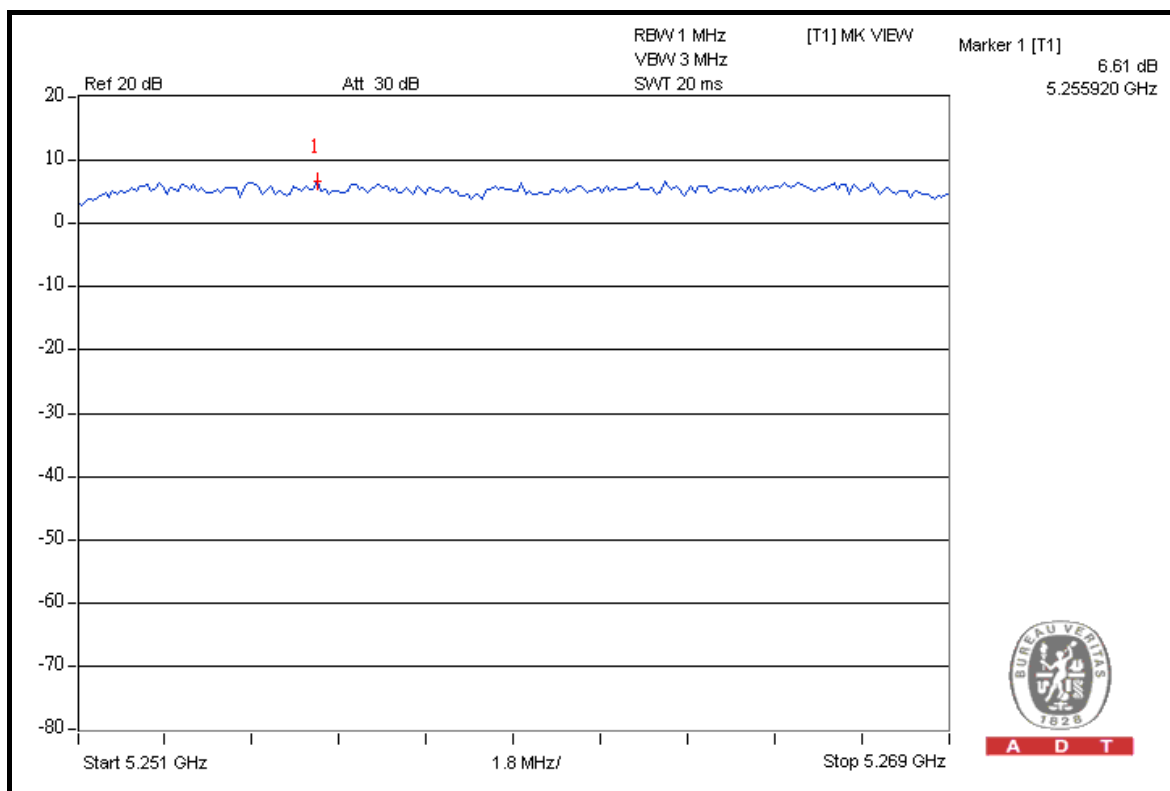
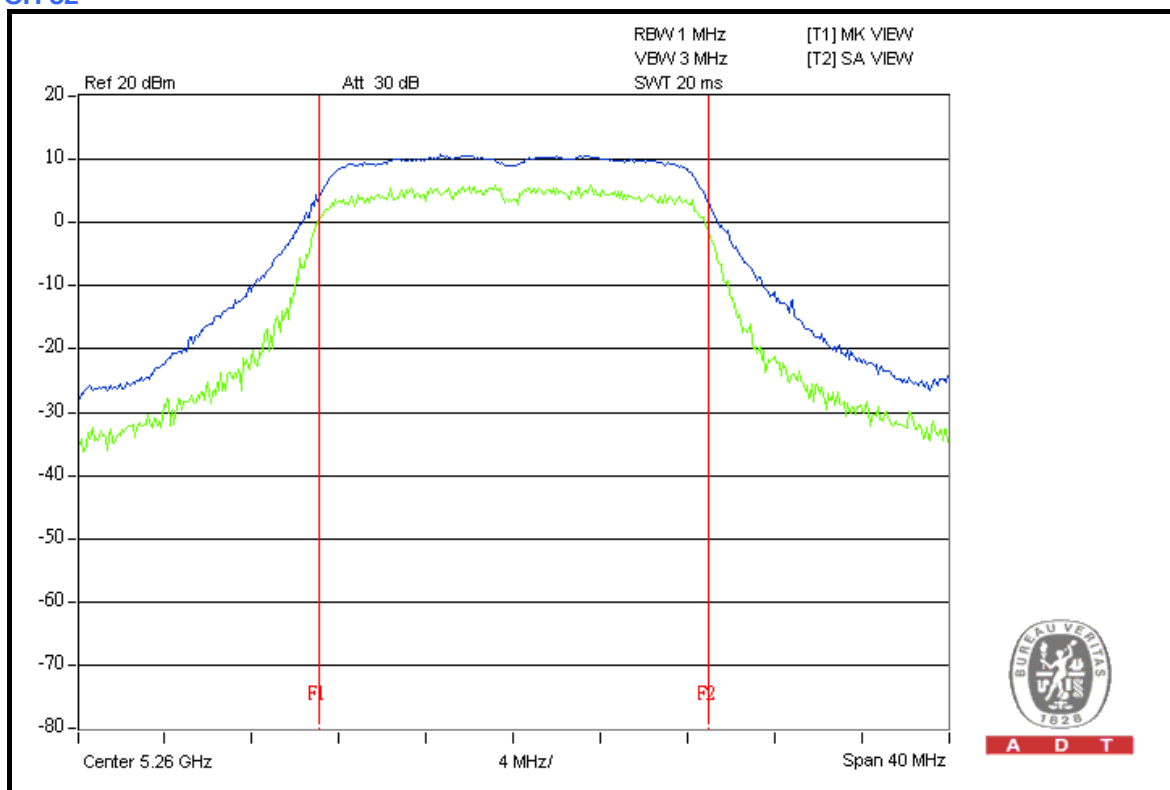


A D T

CH 48



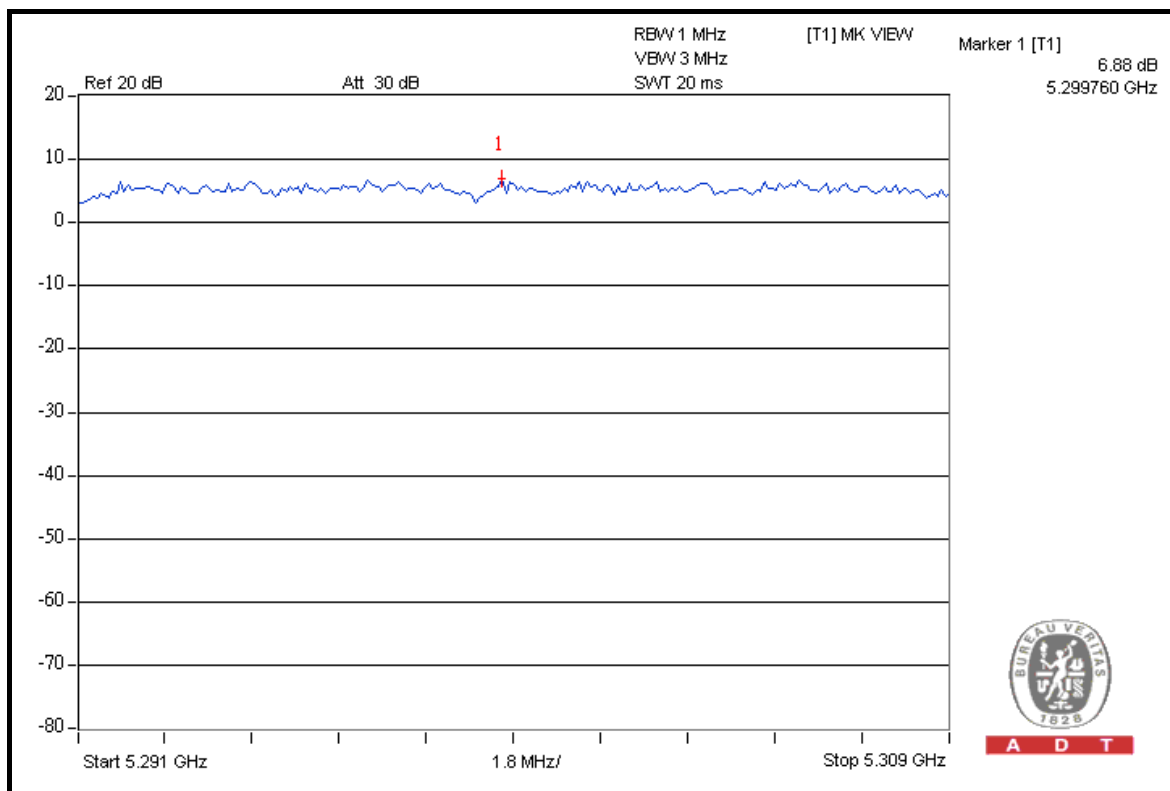
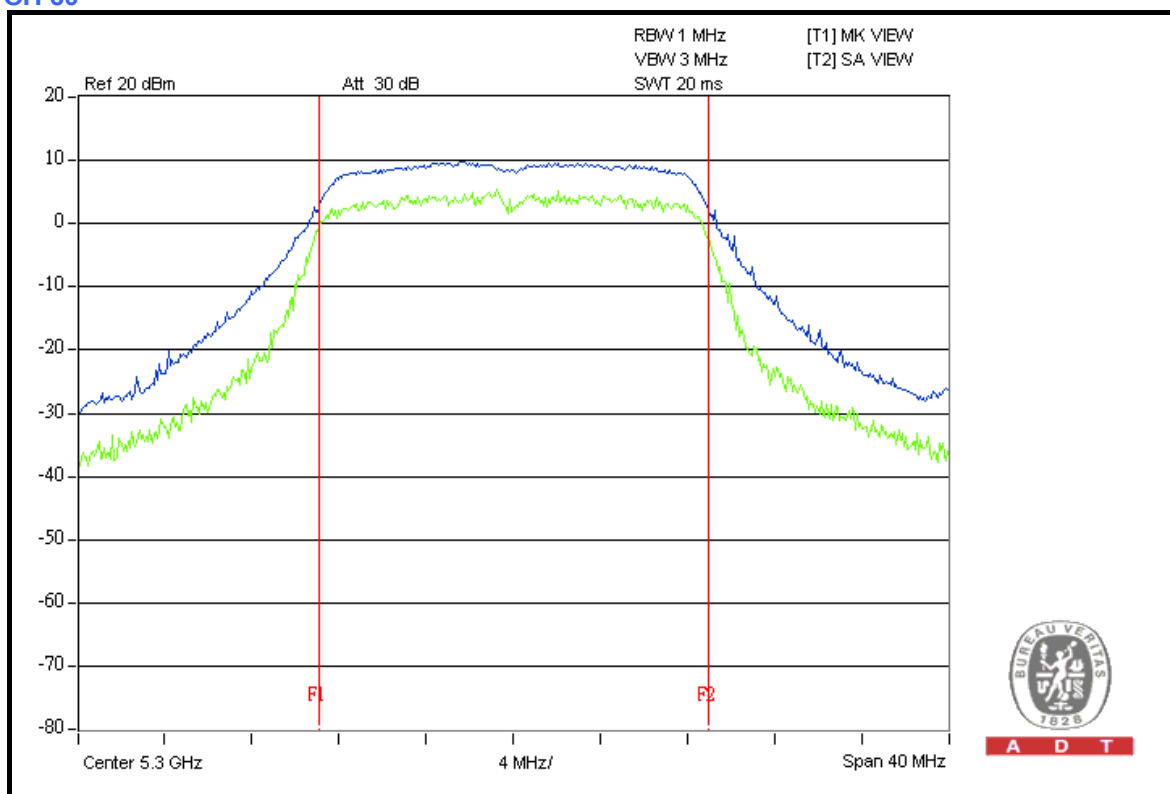
CH 52





A D T

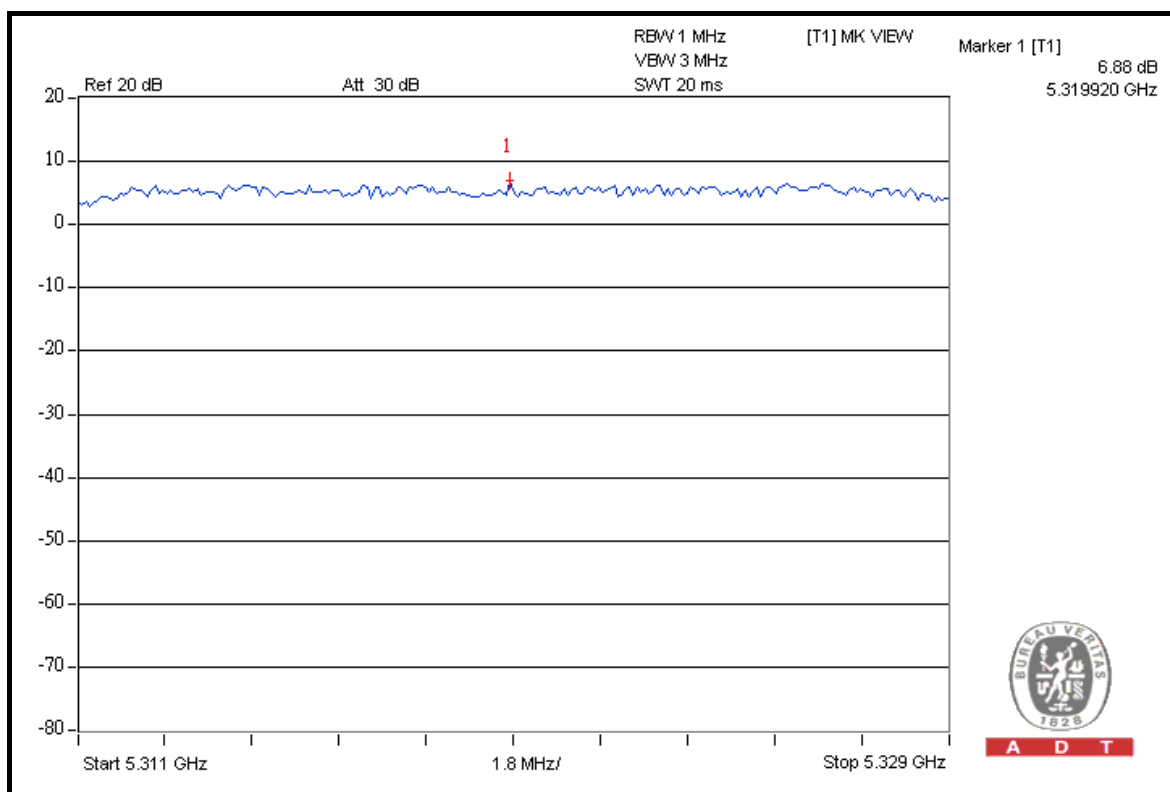
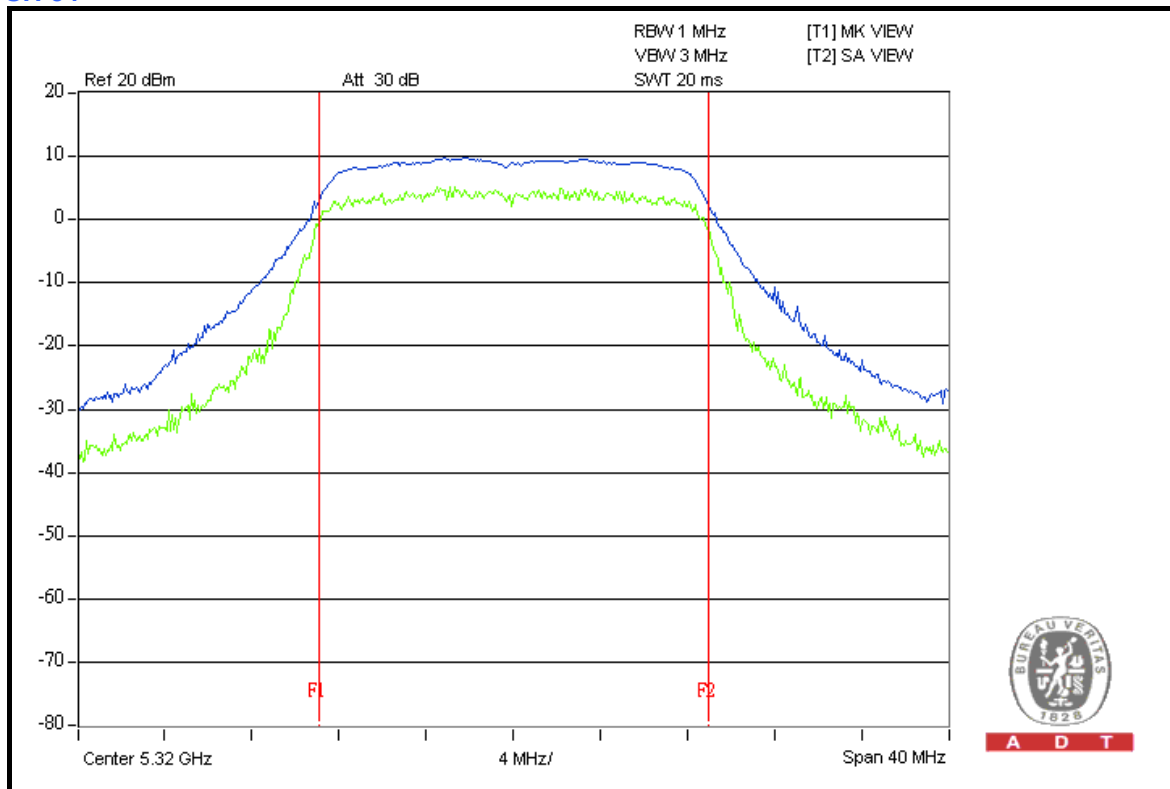
CH 60





A D T

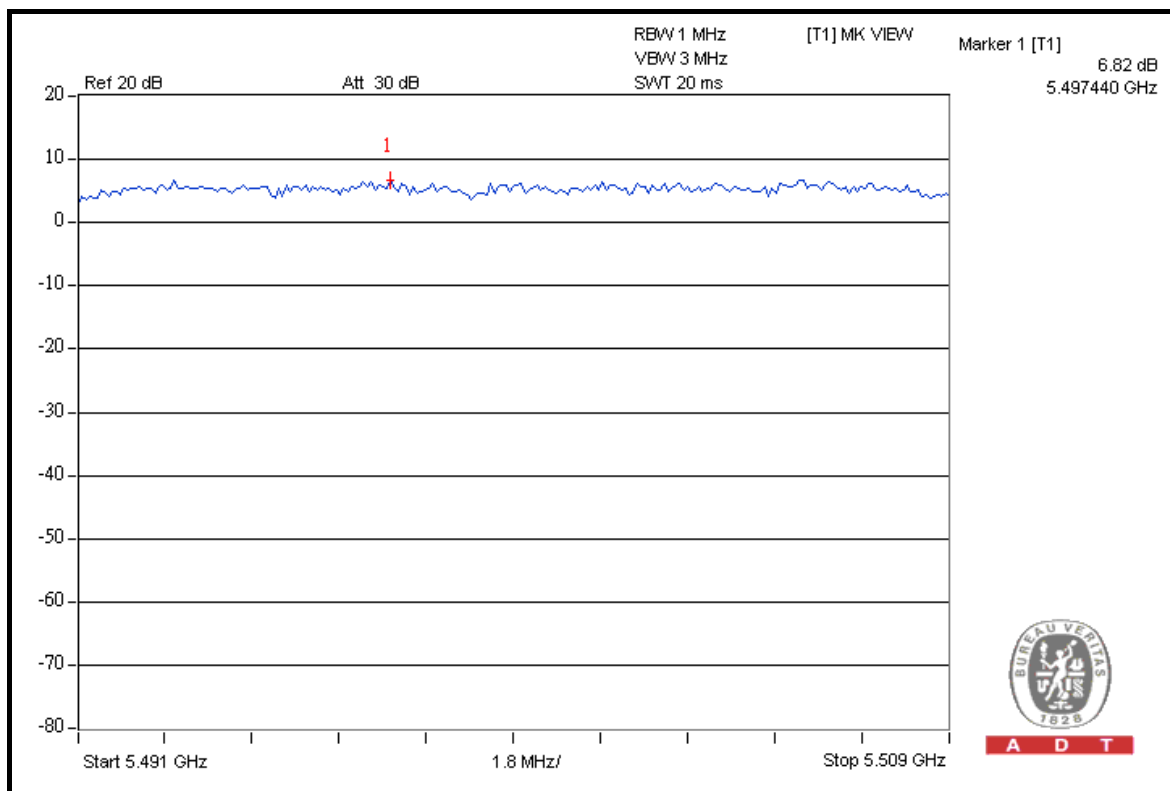
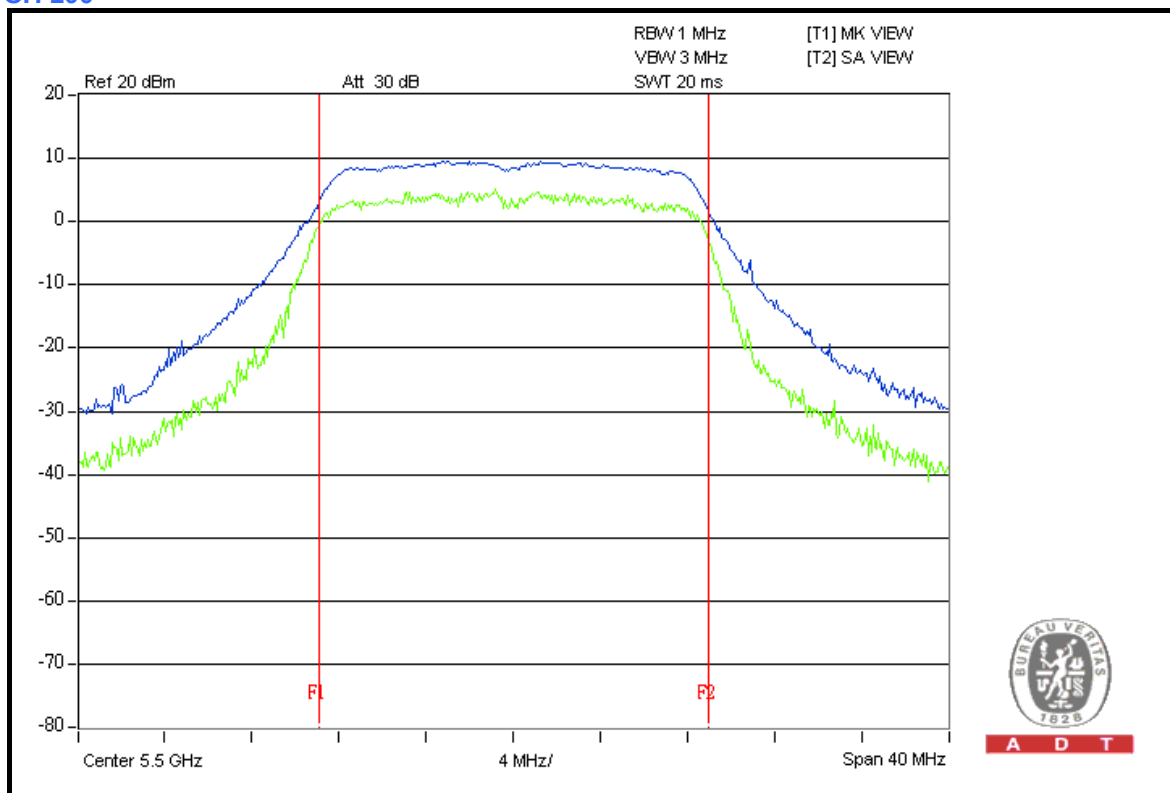
CH 64





A D T

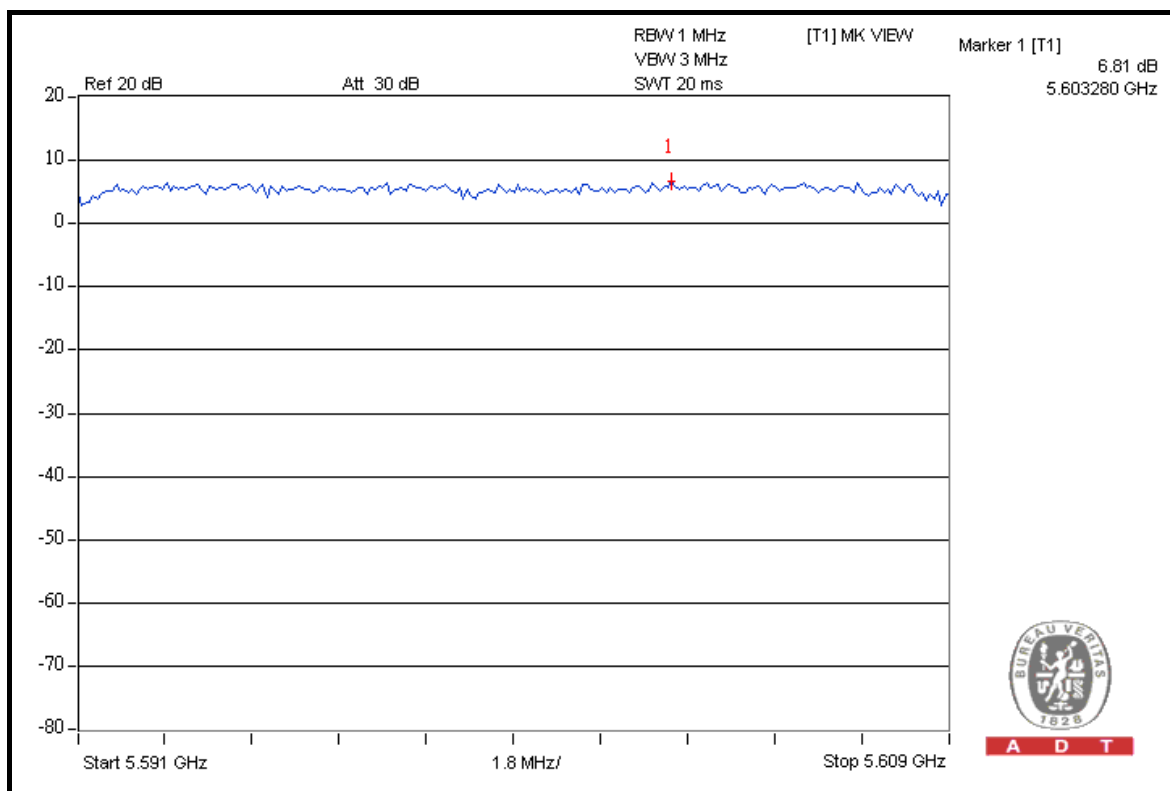
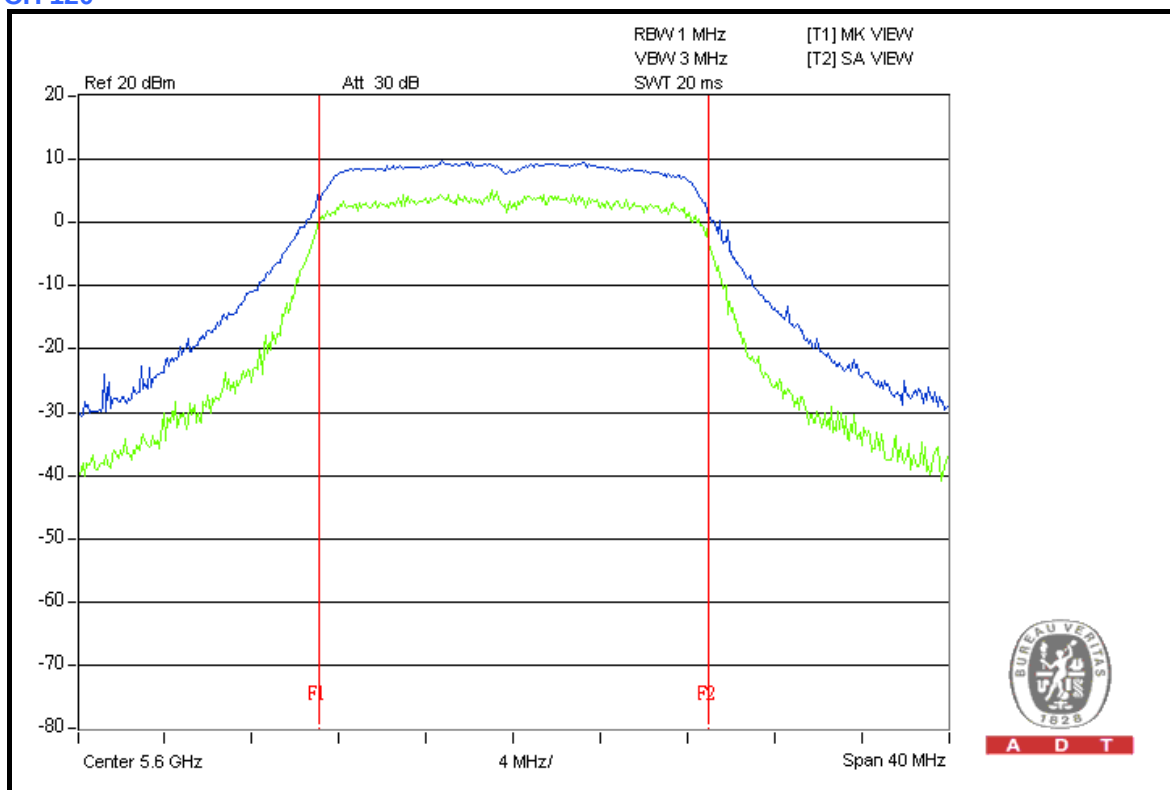
CH 100





A D T

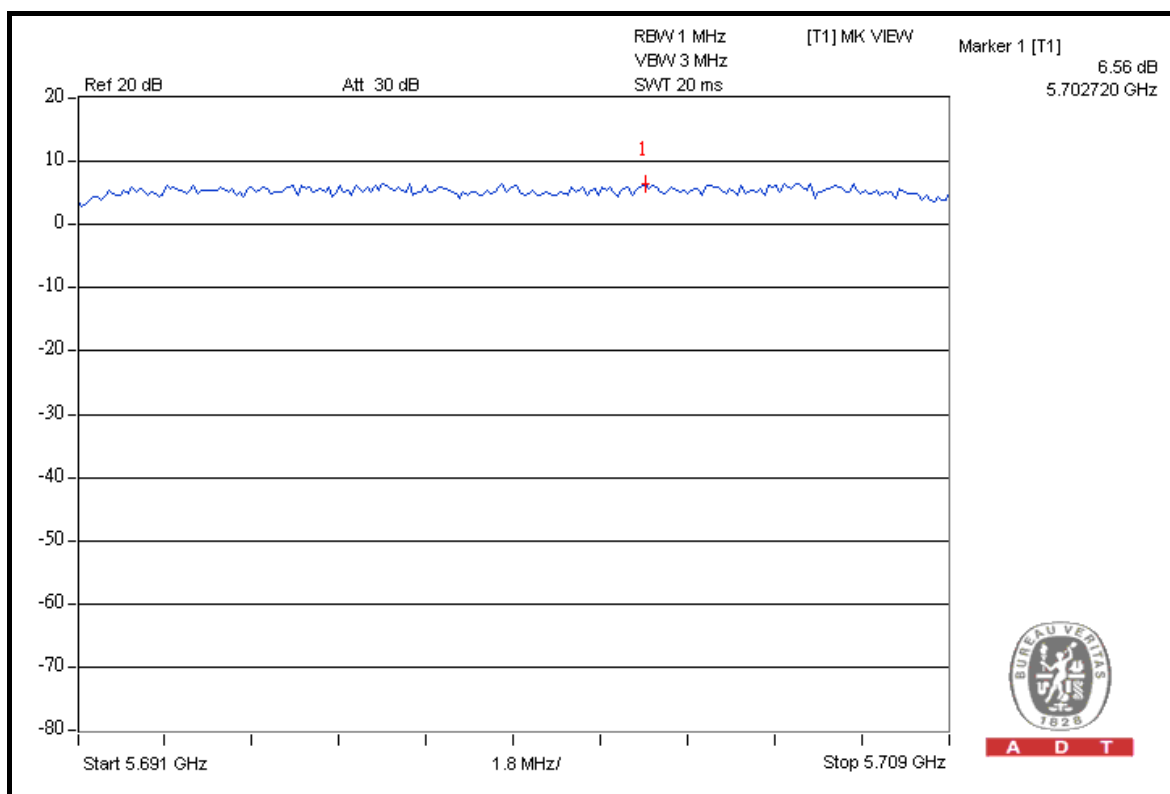
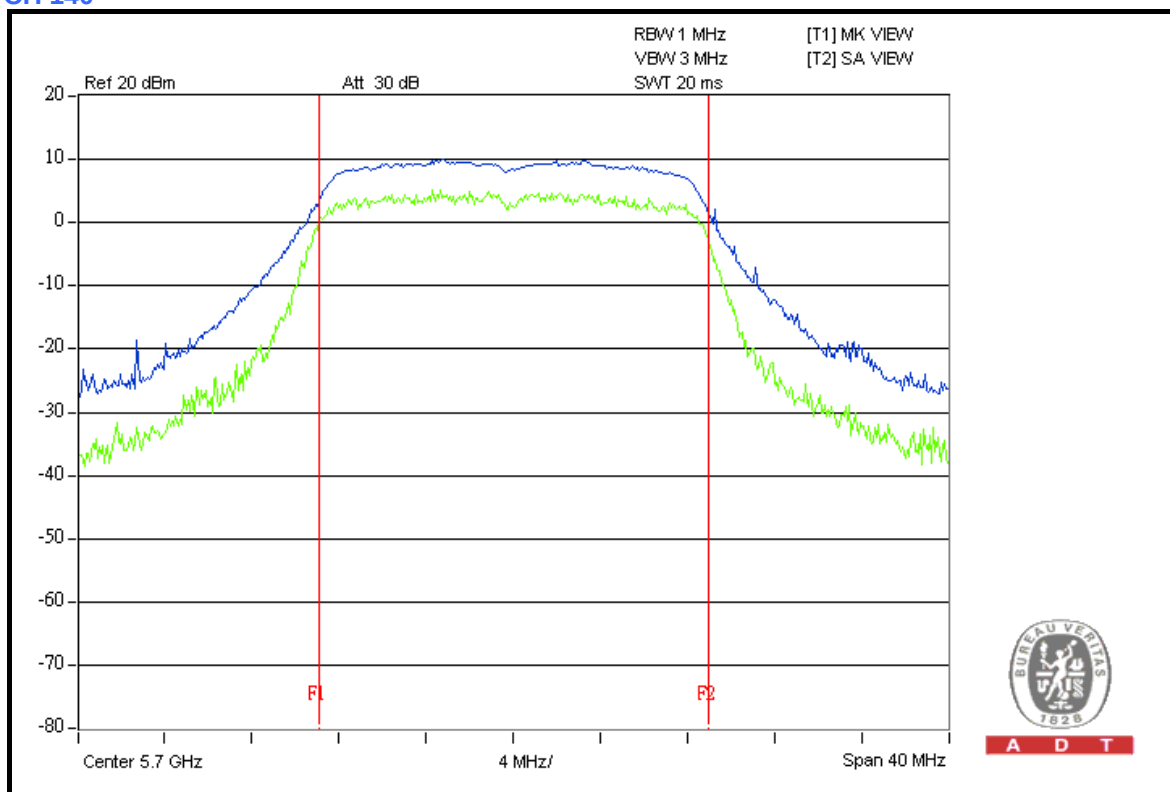
CH 120





A D T

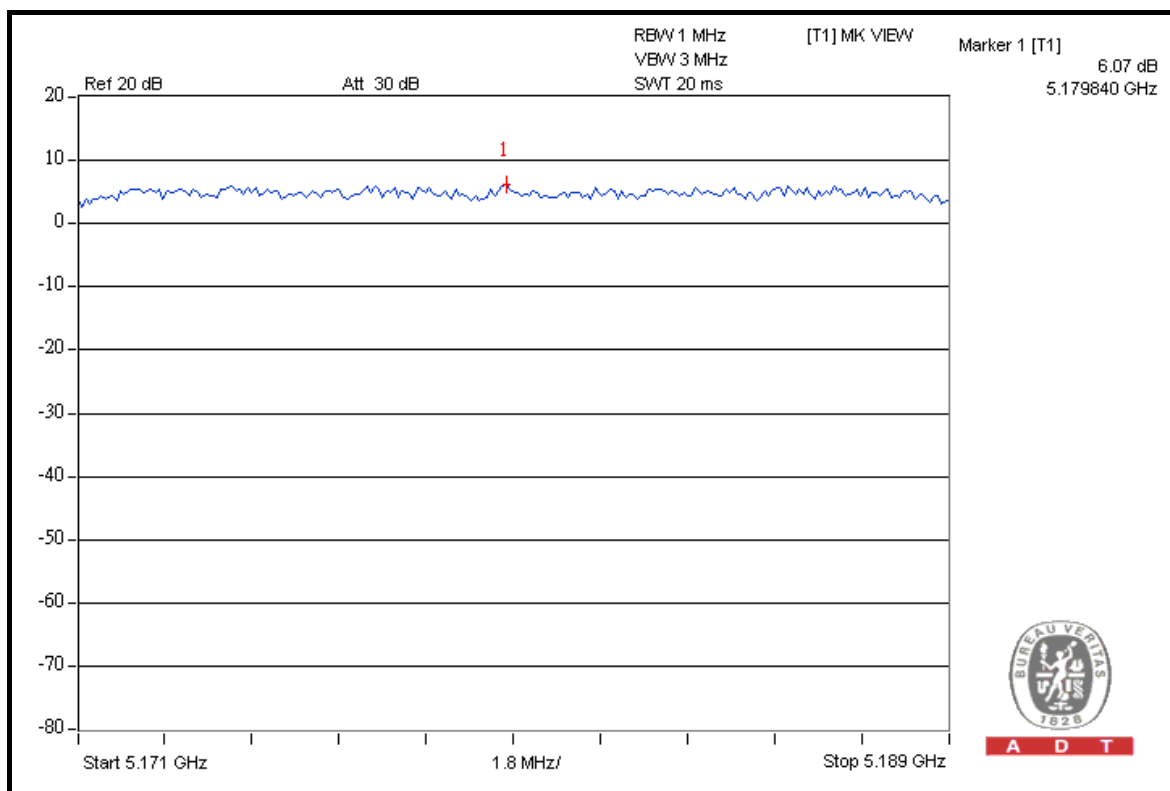
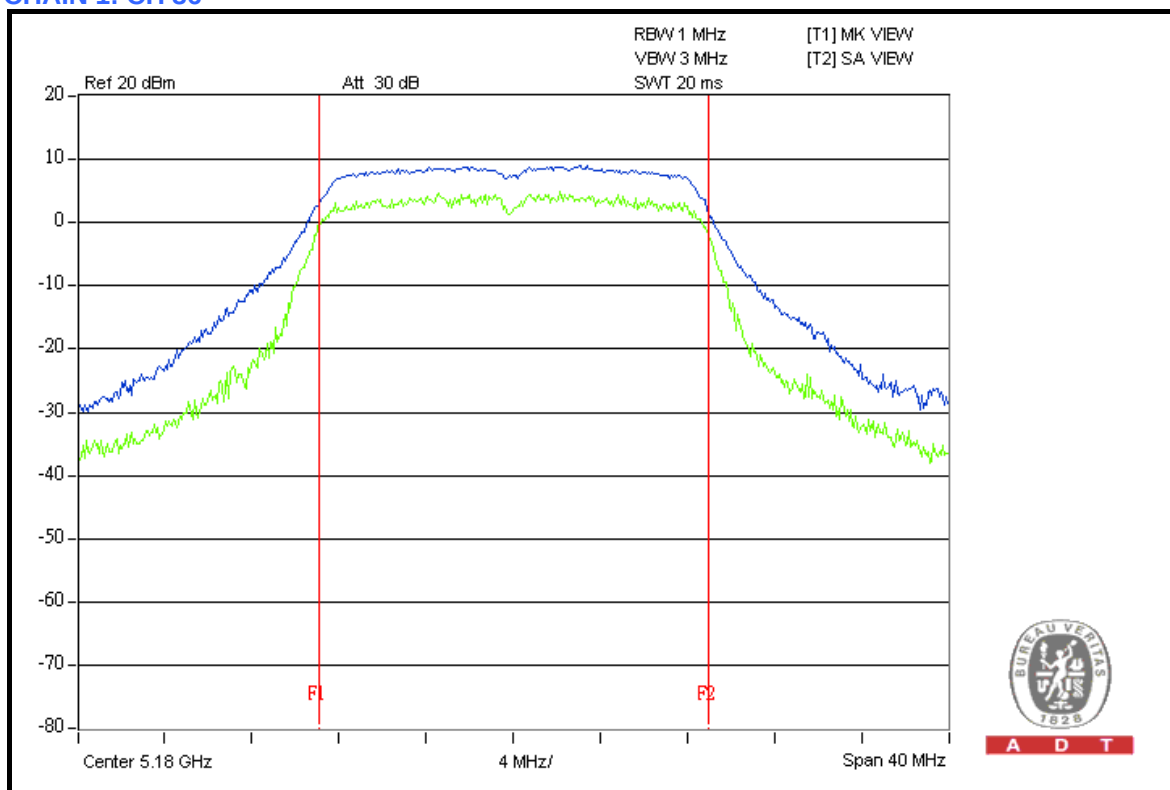
CH 140





A D T

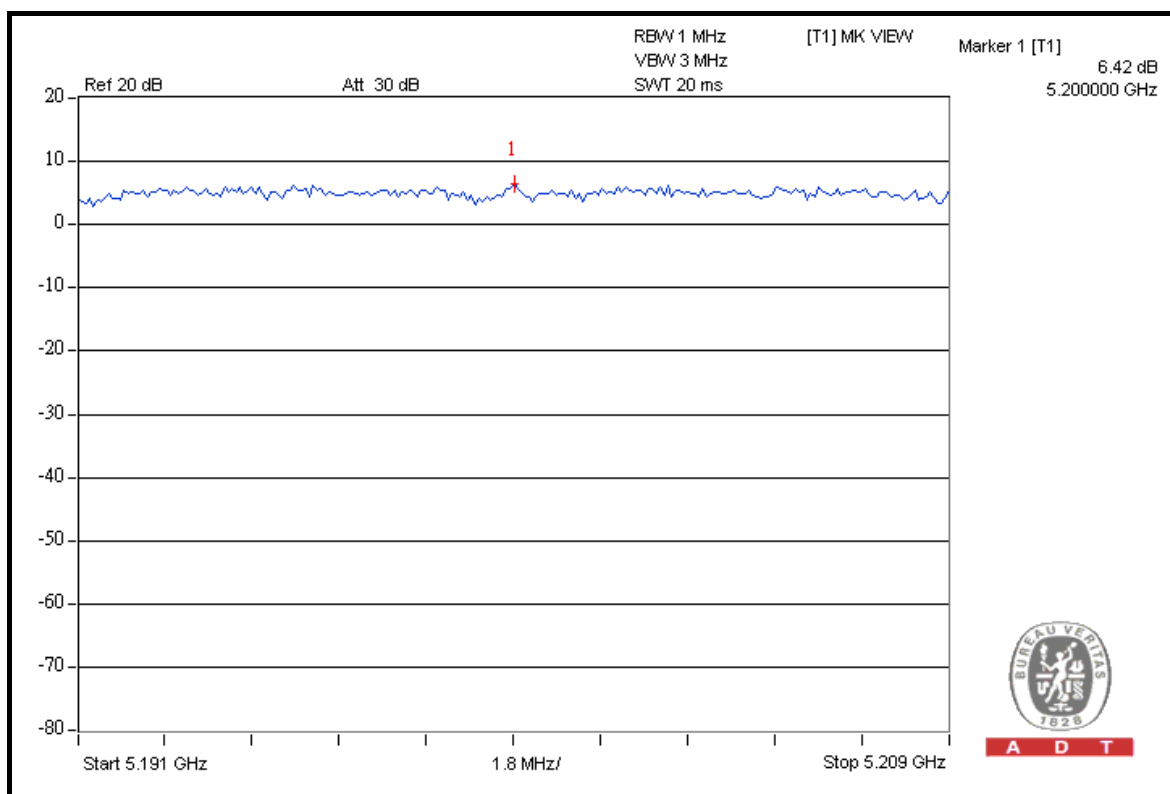
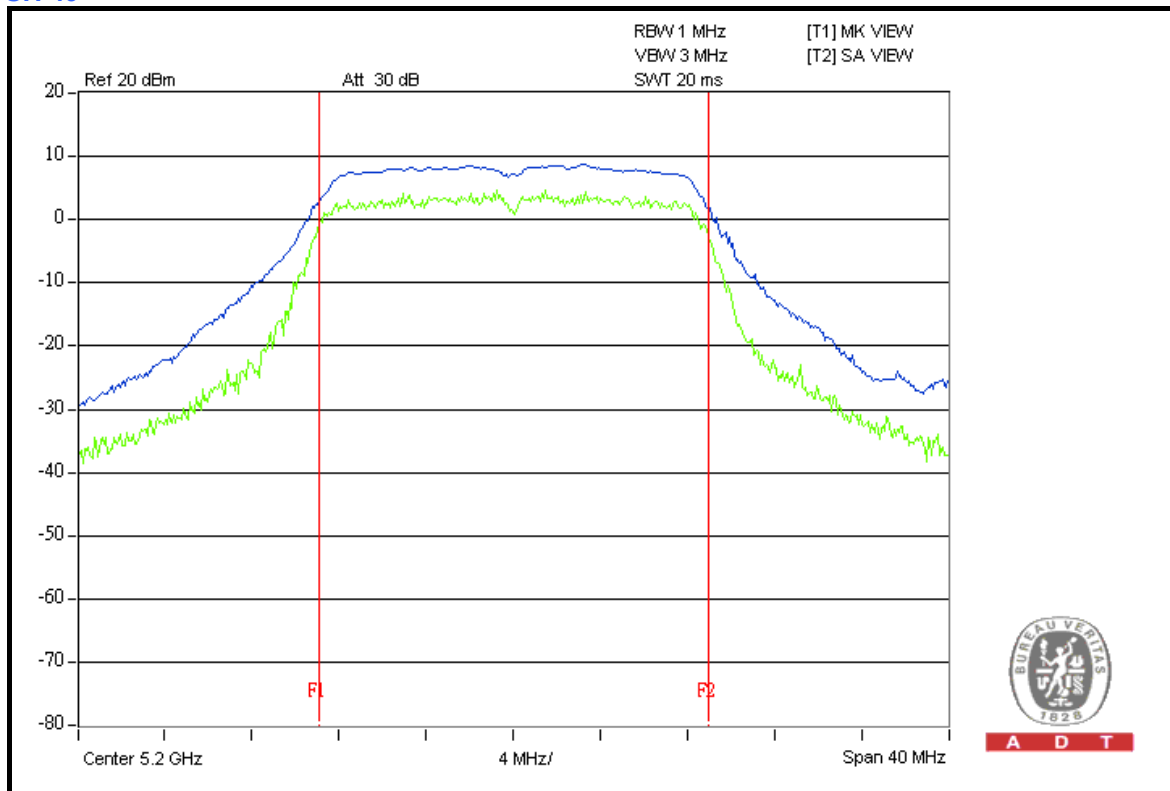
CHAIN 1: CH 36





A D T

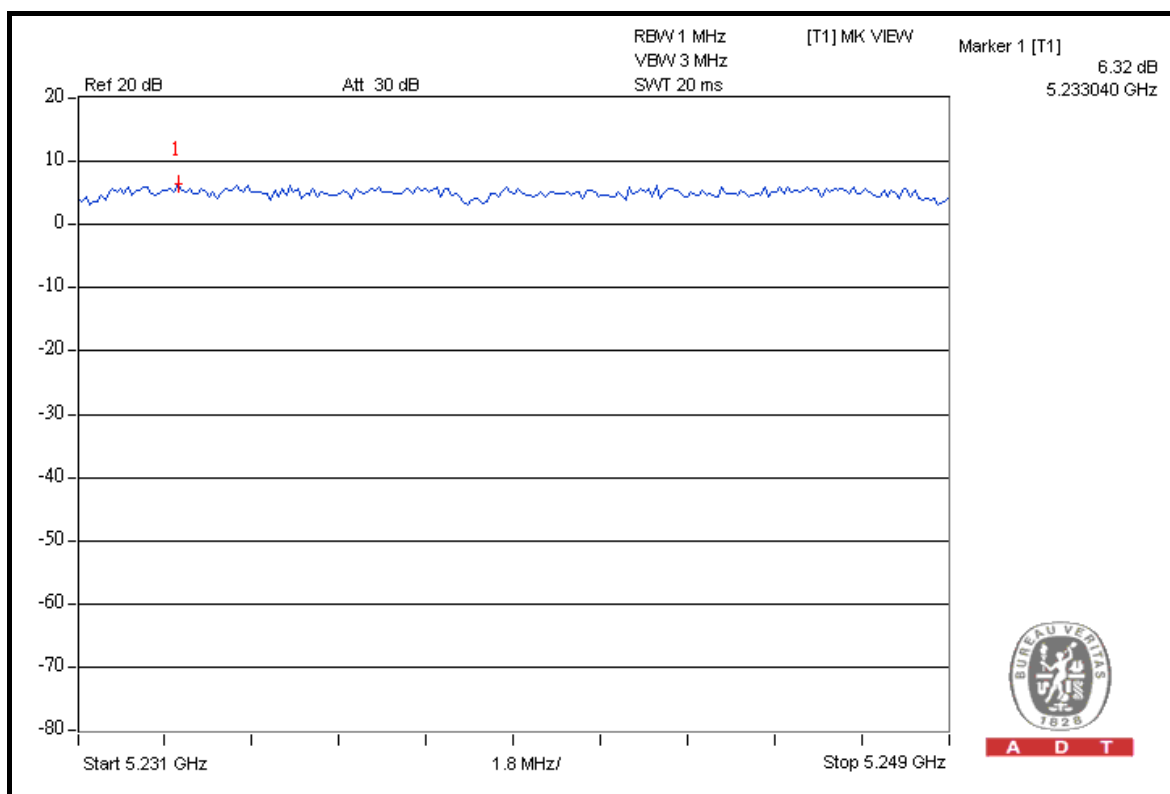
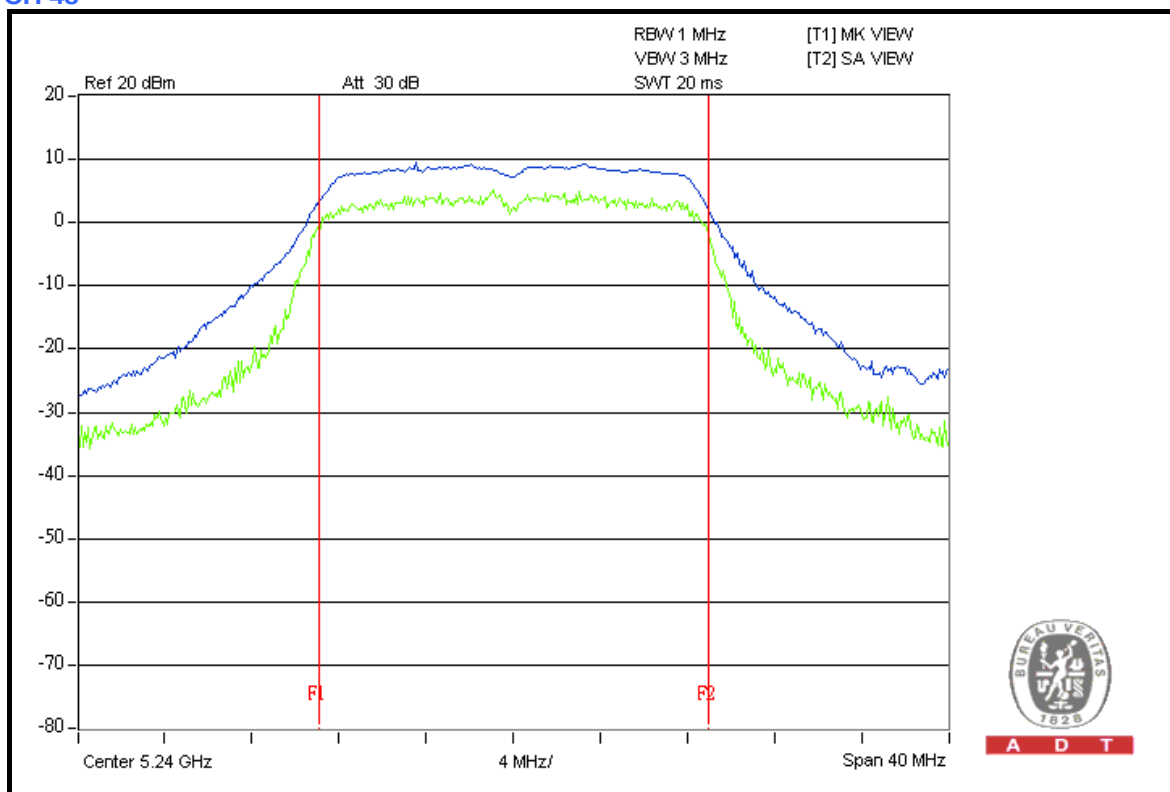
CH 40





A D T

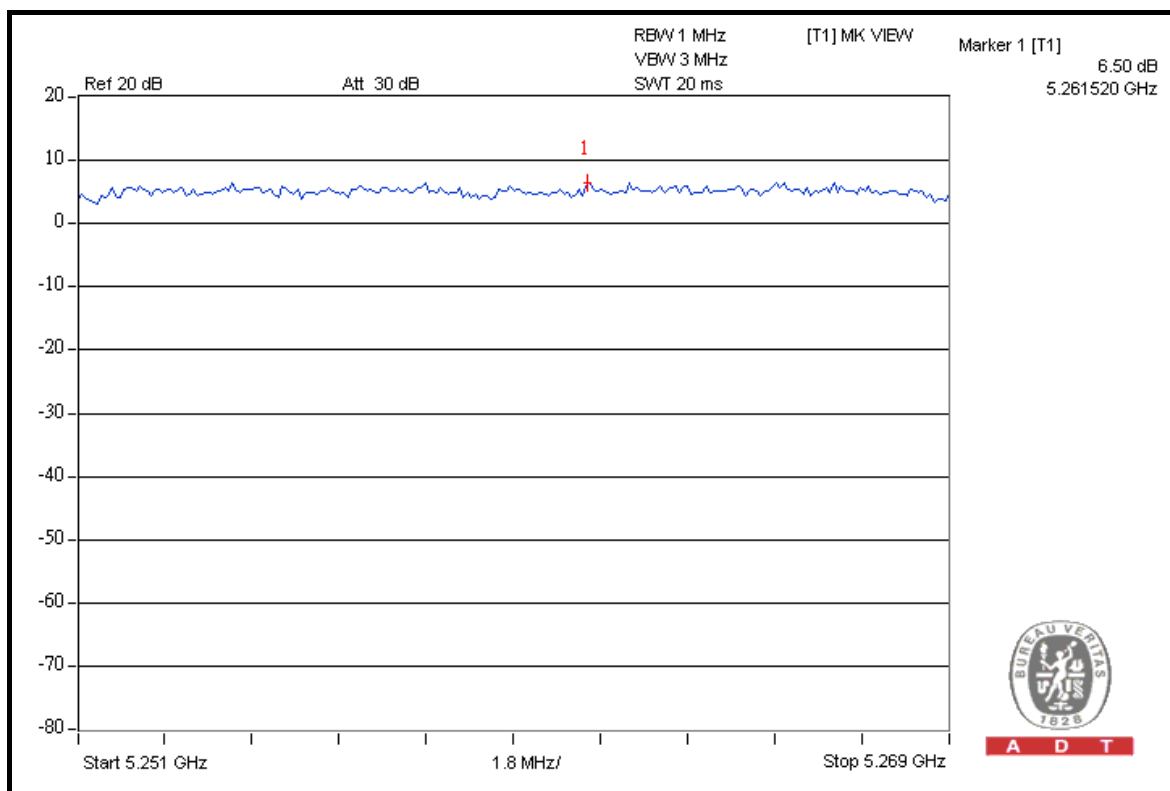
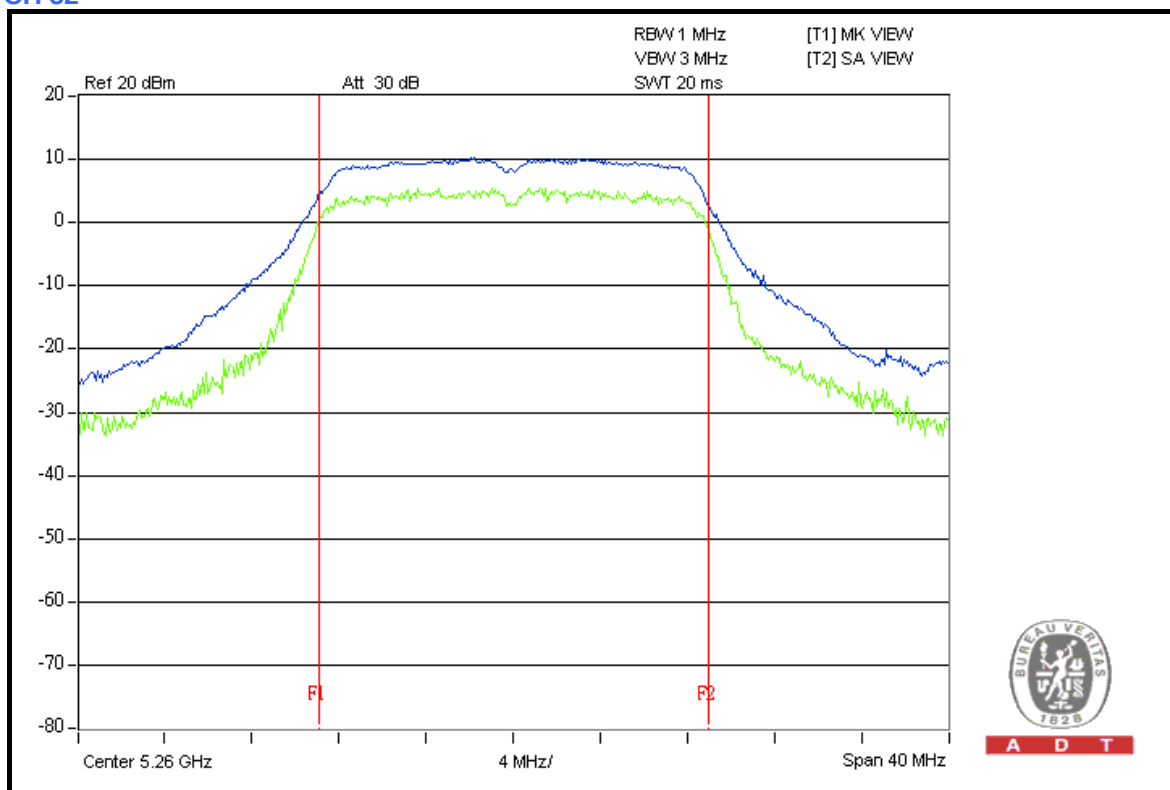
CH 48





A D T

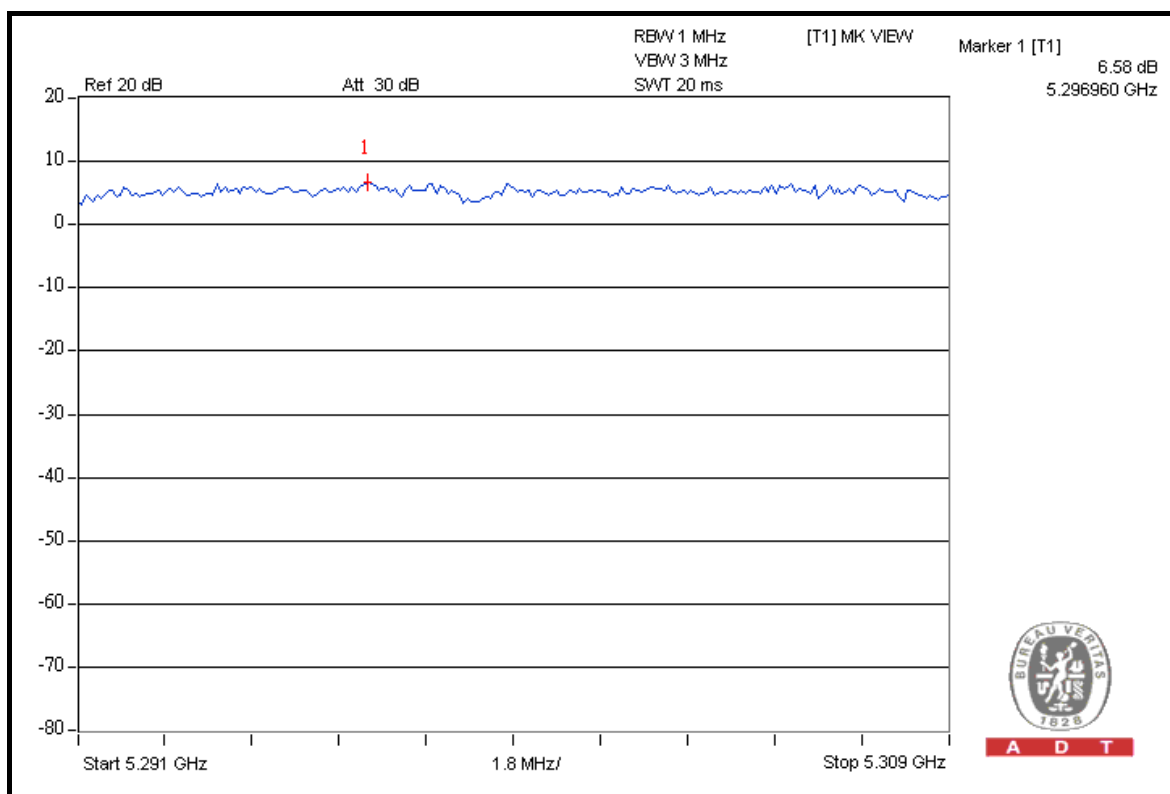
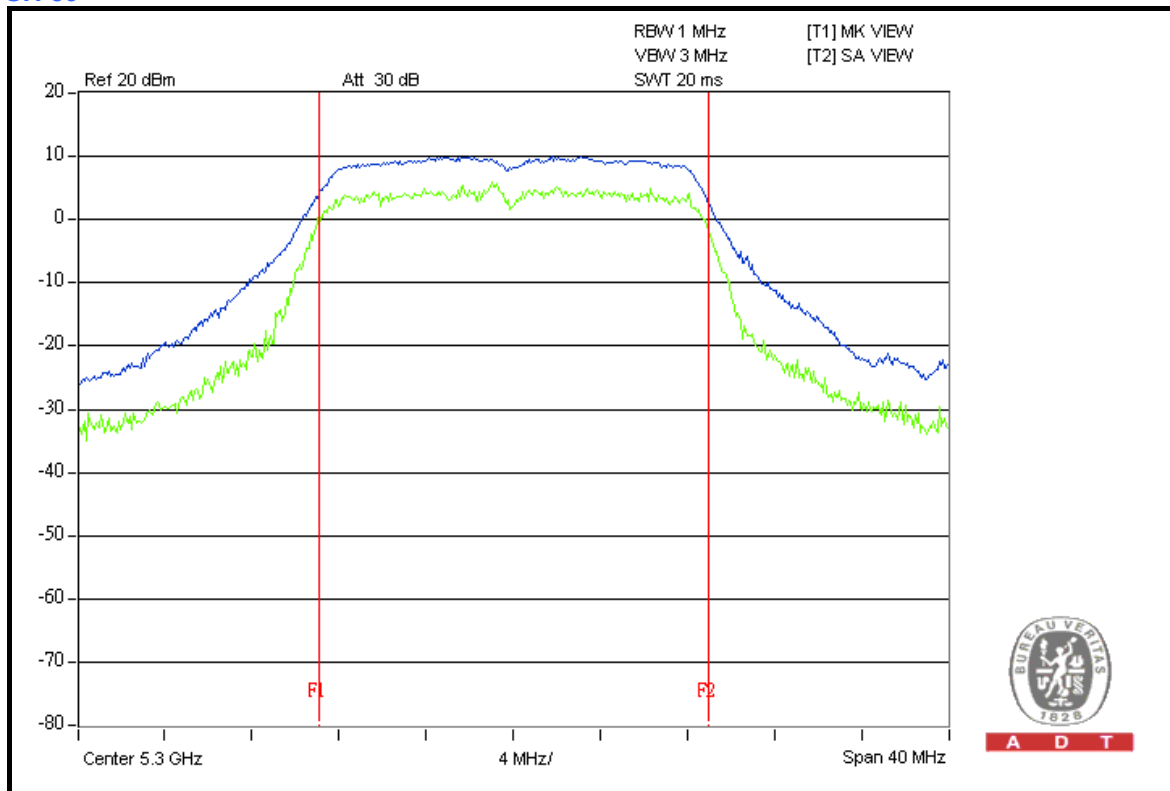
CH 52





A D T

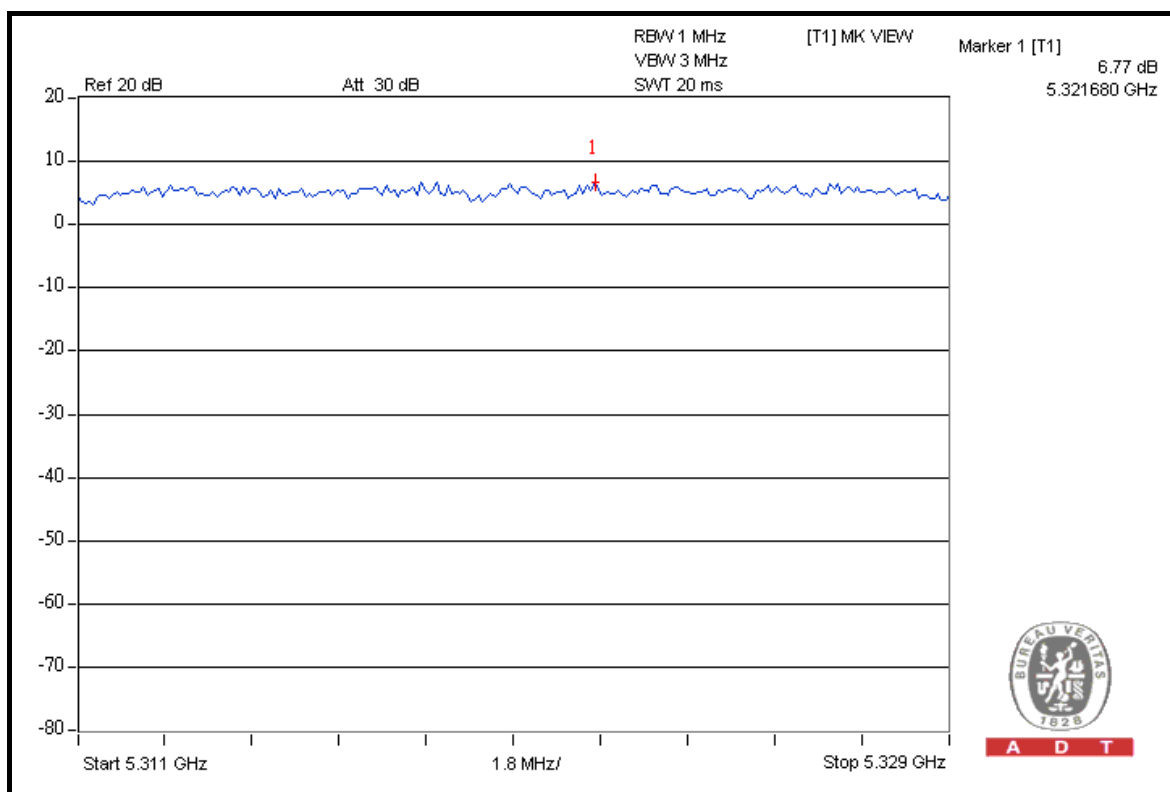
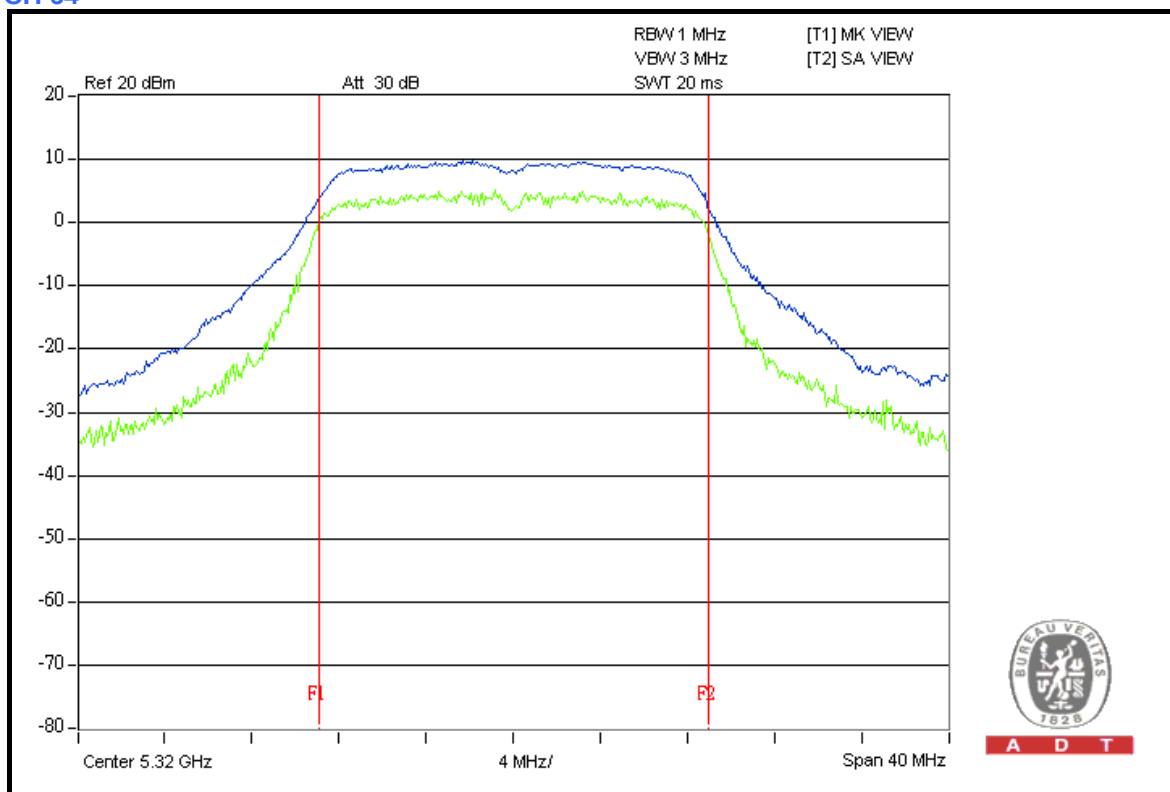
CH 60





A D T

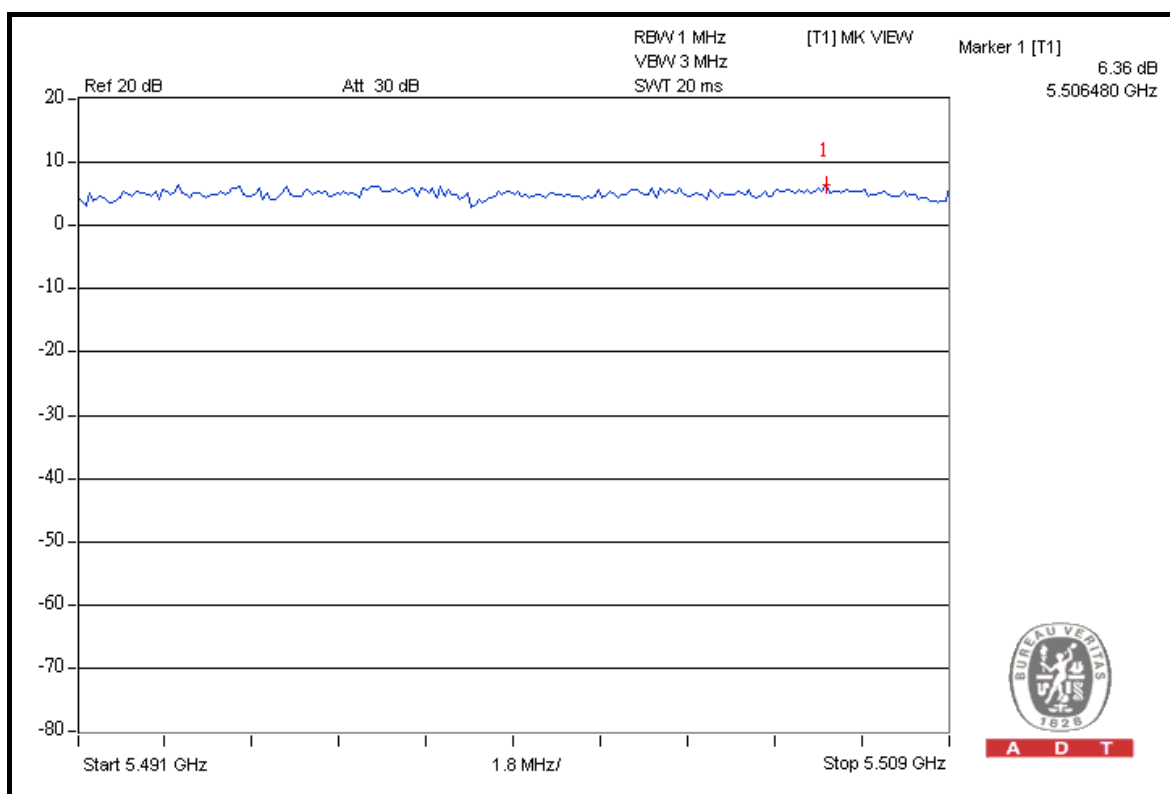
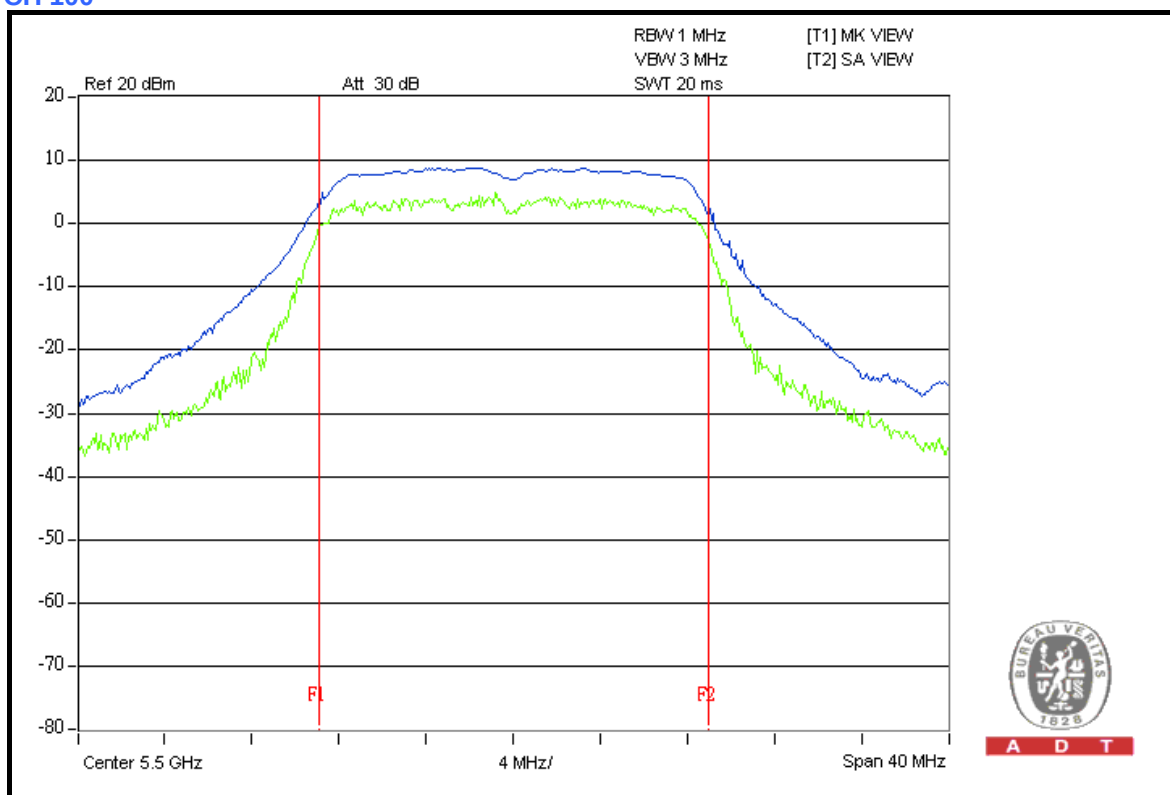
CH 64





A D T

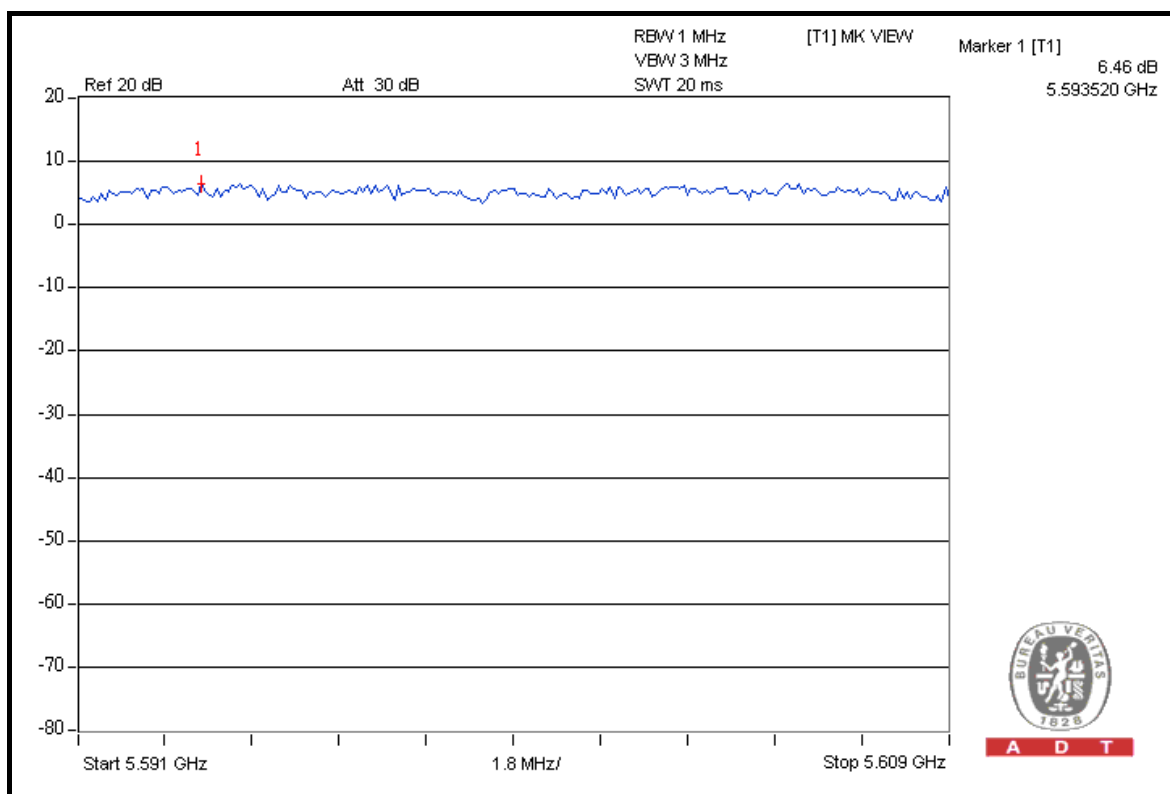
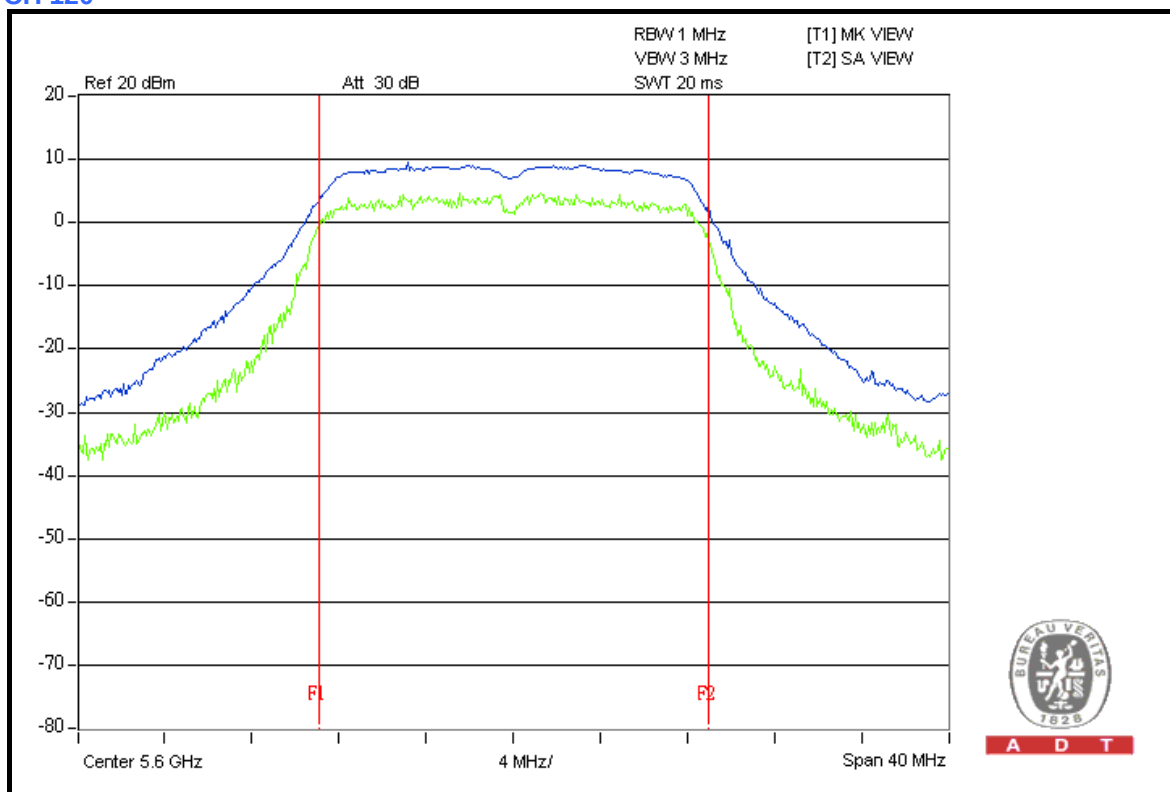
CH 100





A D T

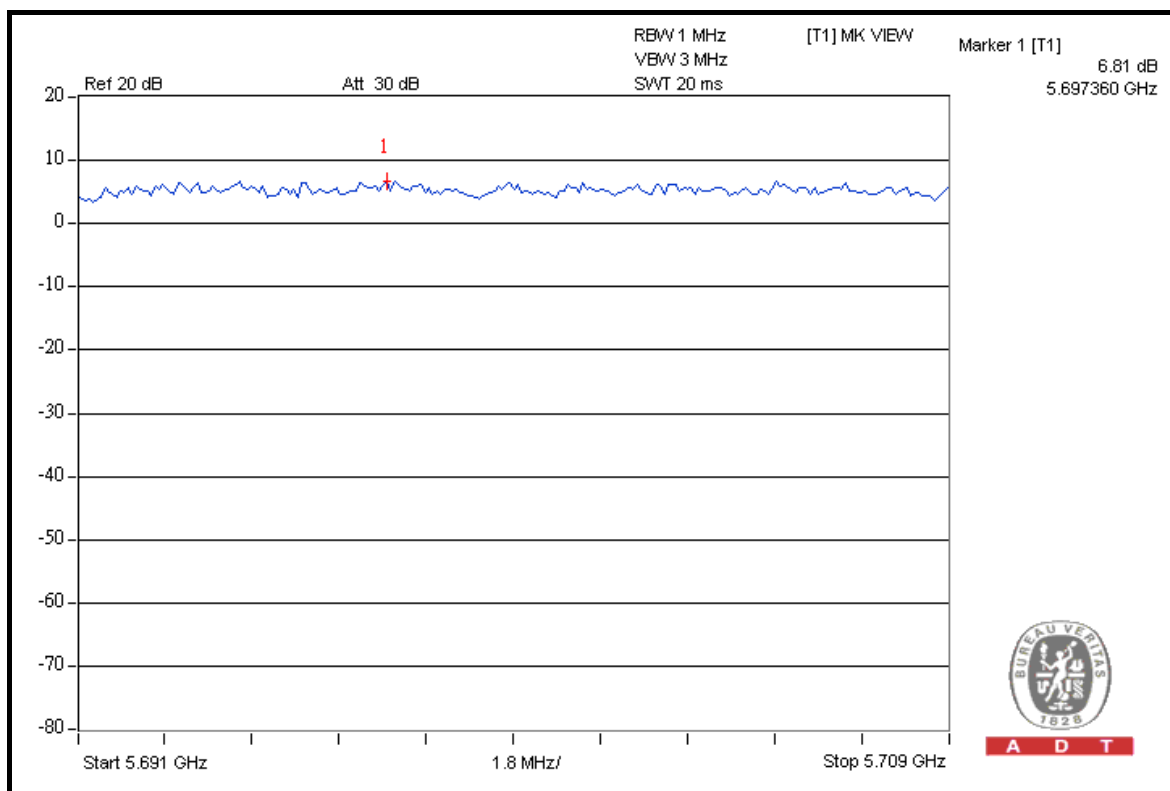
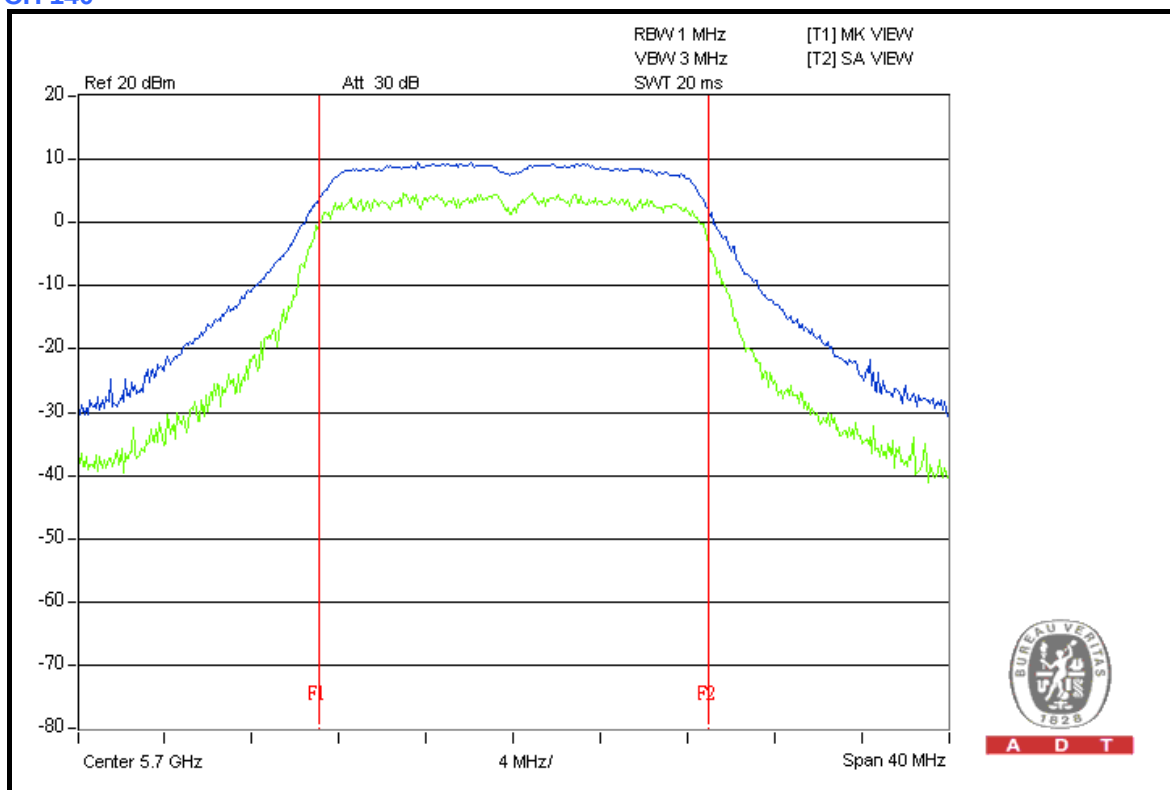
CH 120





A D T

CH 140





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

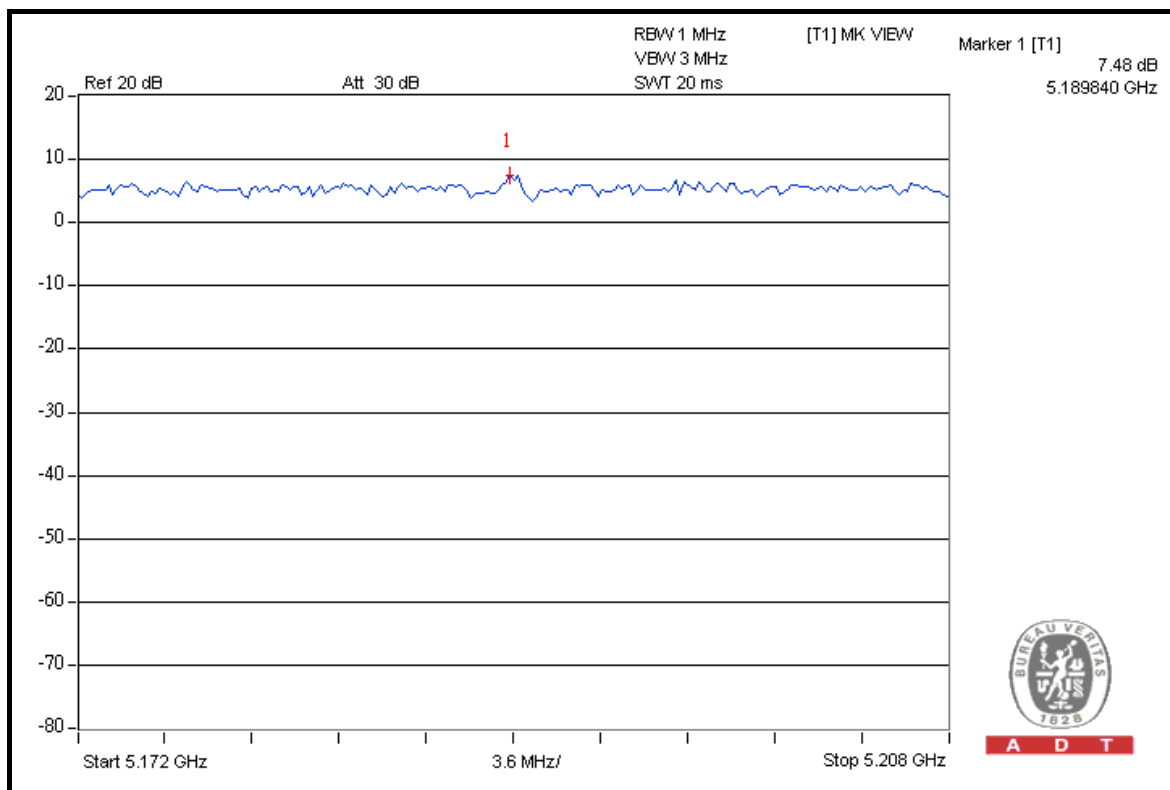
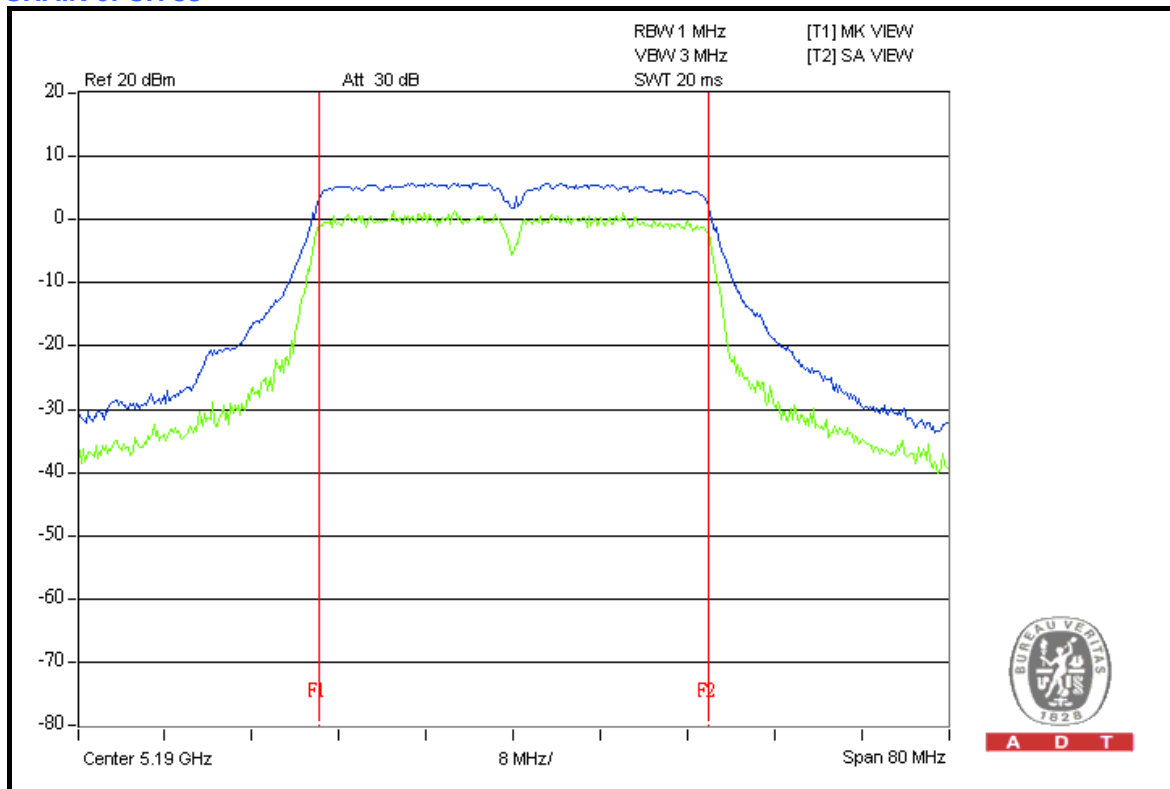
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
38	5190	7.48	6.69	13	PASS
46	5230	7.75	7.23	13	PASS
54	5270	6.61	6.65	13	PASS
62	5310	7.22	7.48	13	PASS
102	5510	6.67	6.87	13	PASS
118	5590	7.45	7.40	13	PASS
134	5670	7.66	8.14	13	PASS



A D T

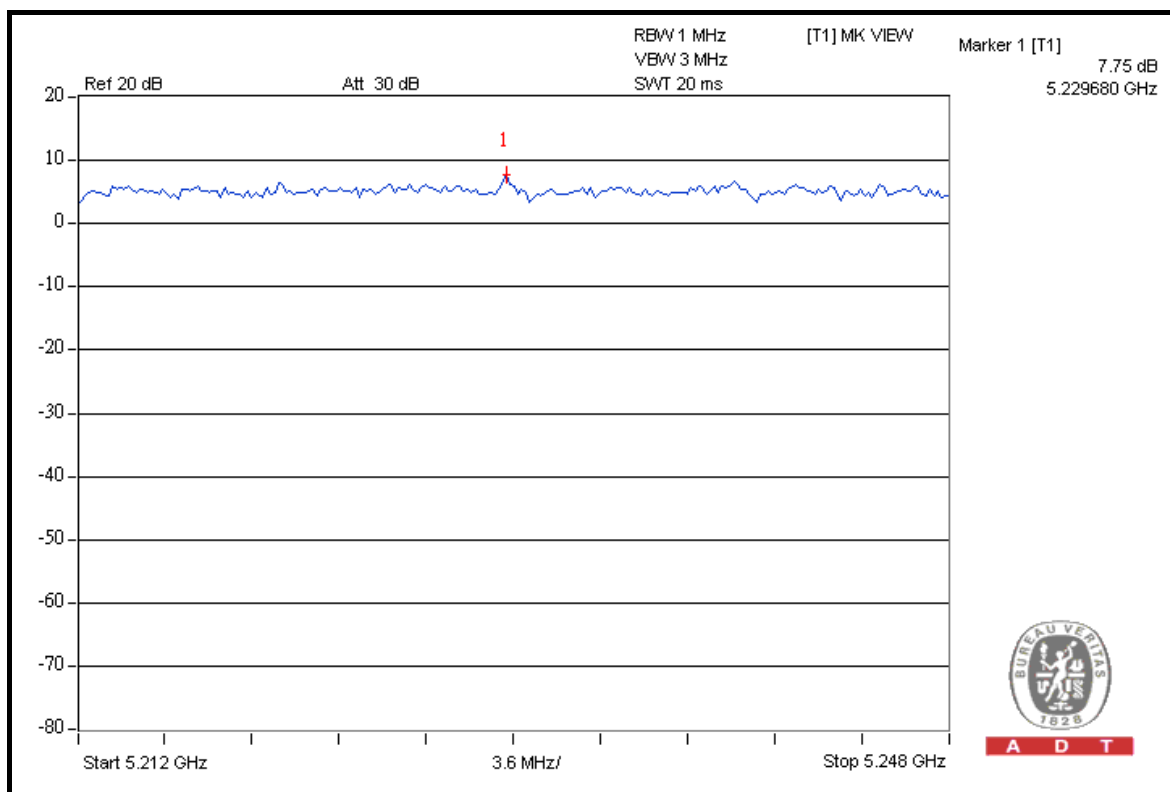
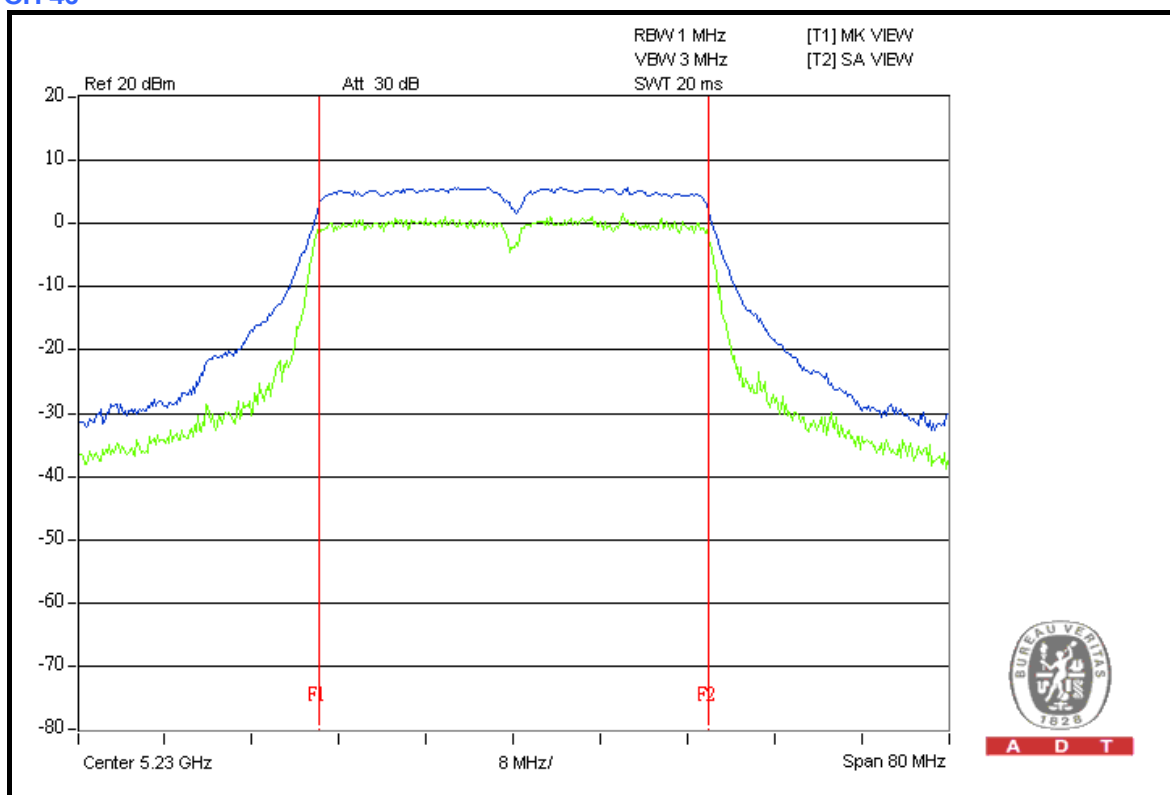
CHAIN 0: CH 38





A D T

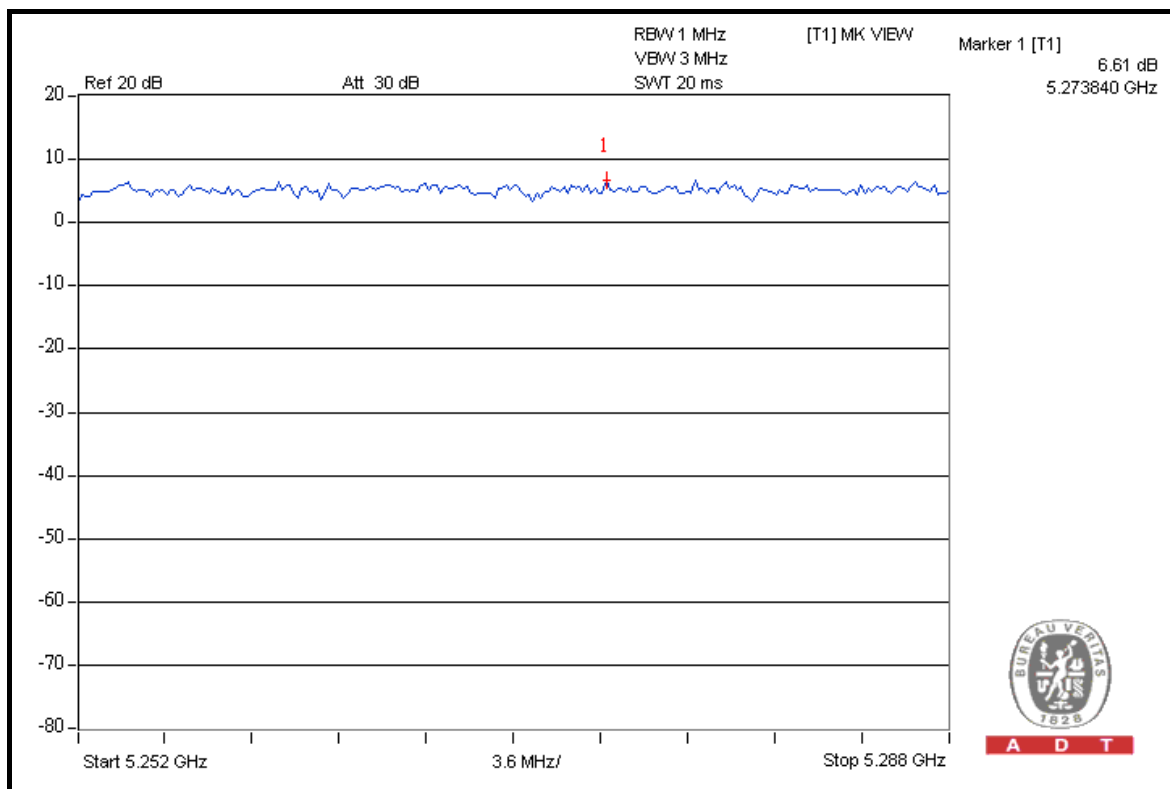
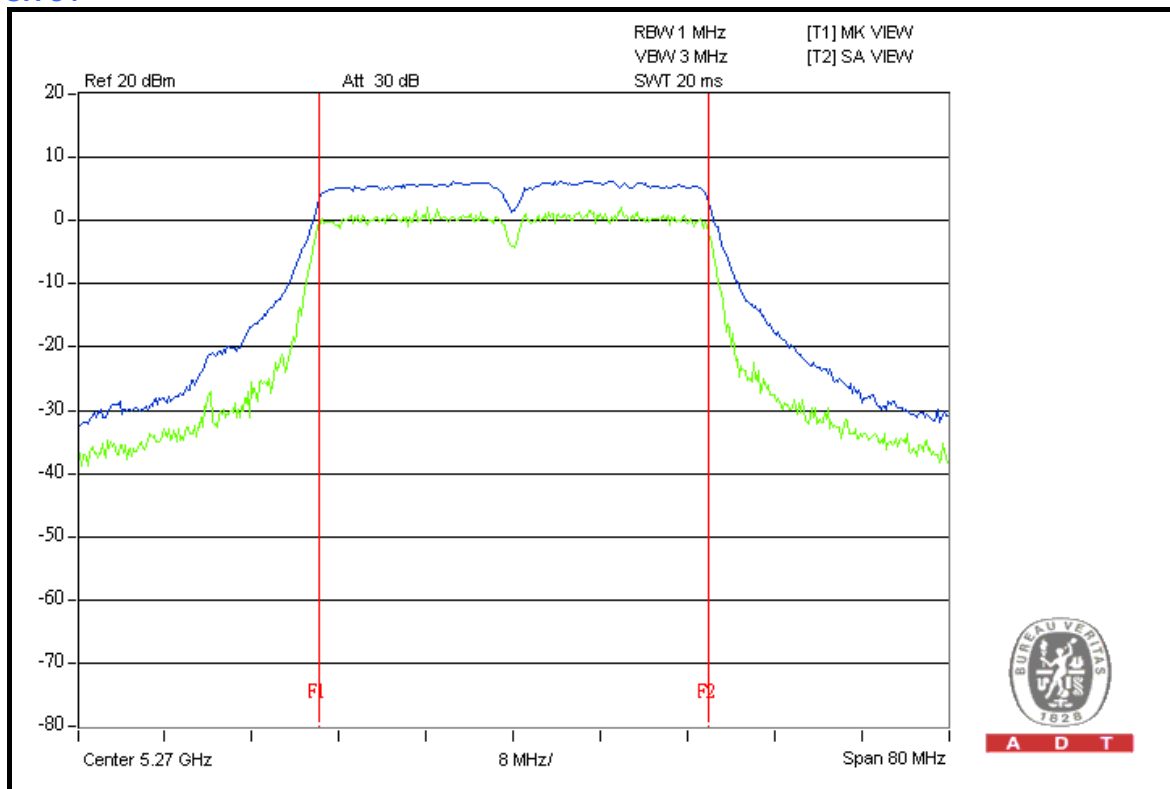
CH 46





A D T

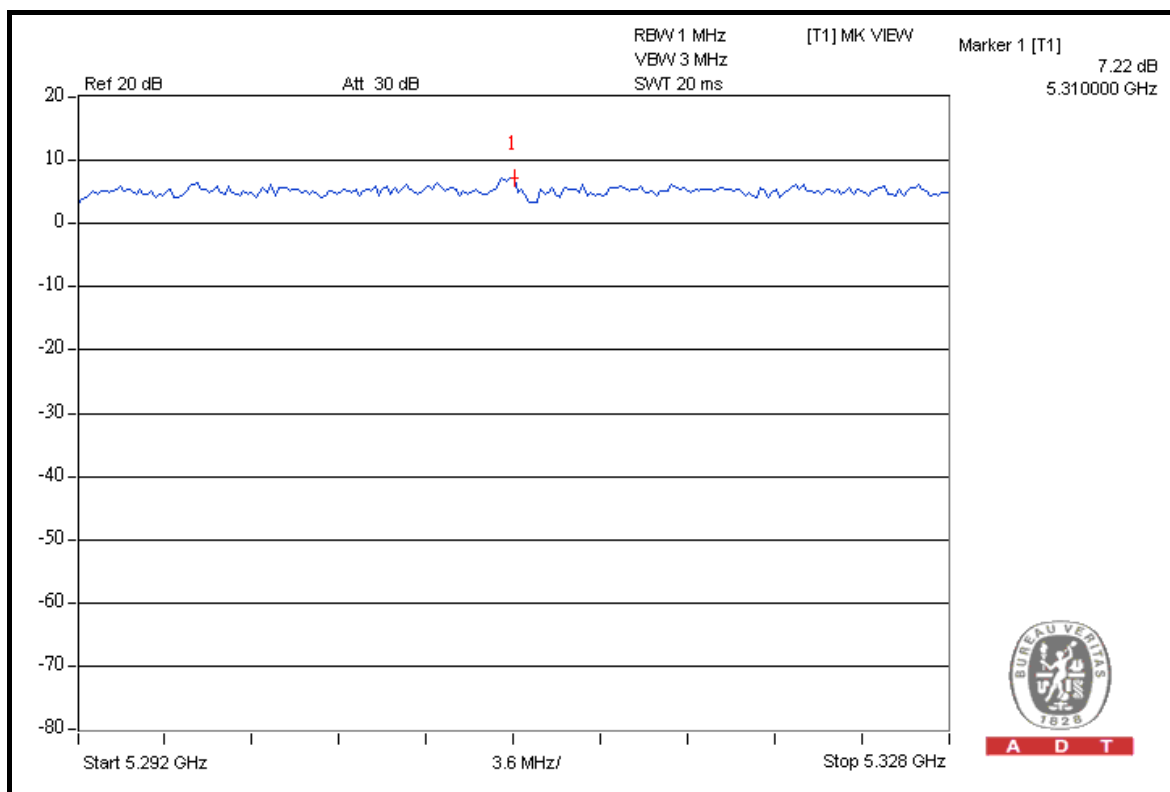
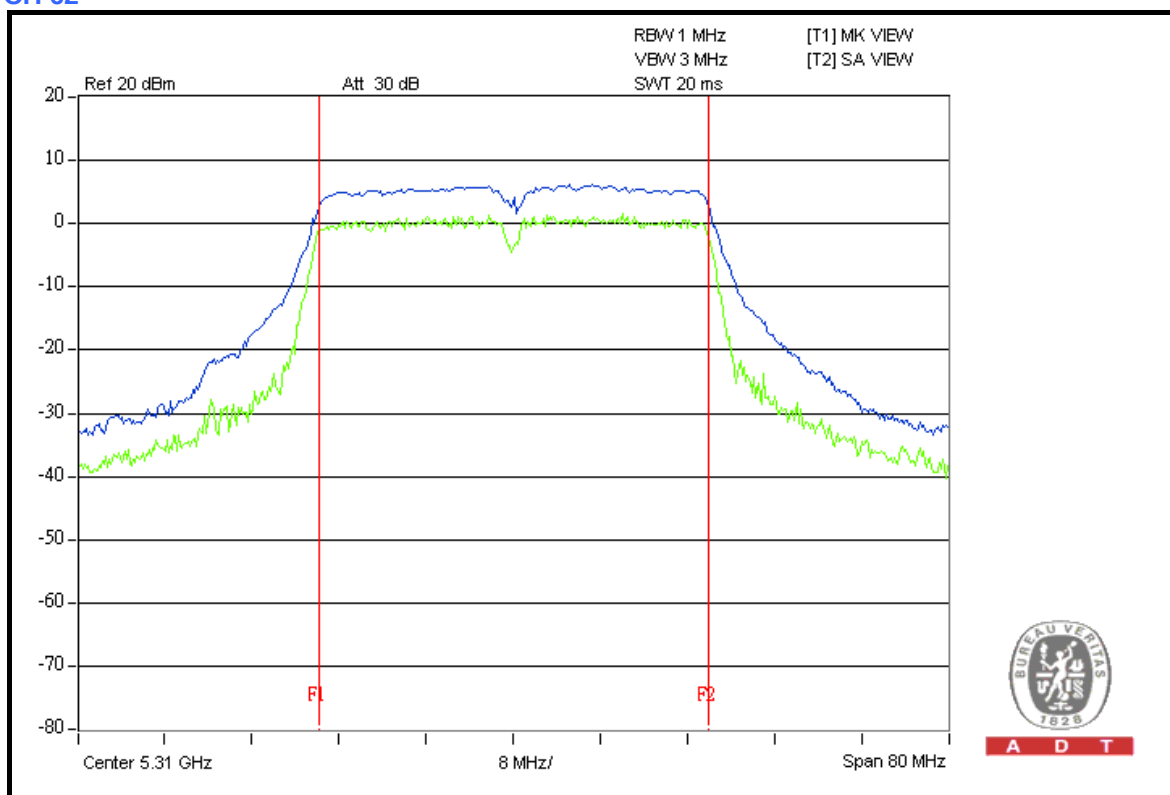
CH 54





A D T

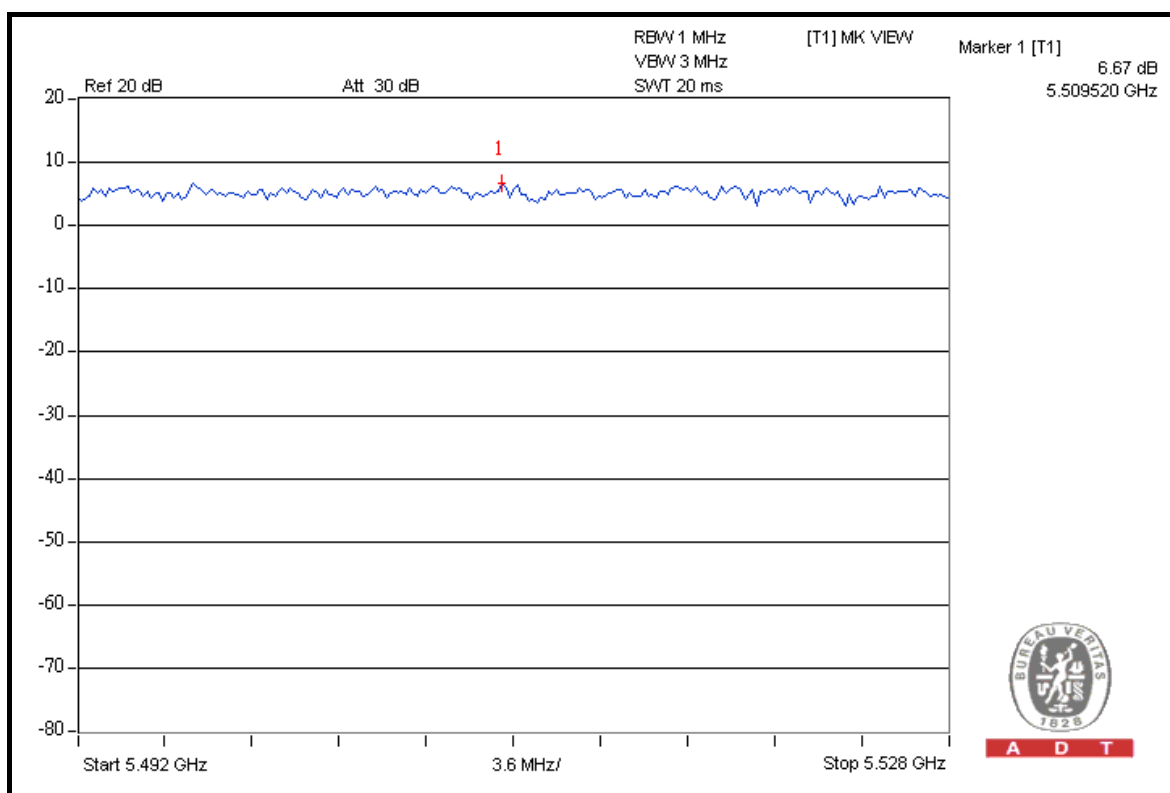
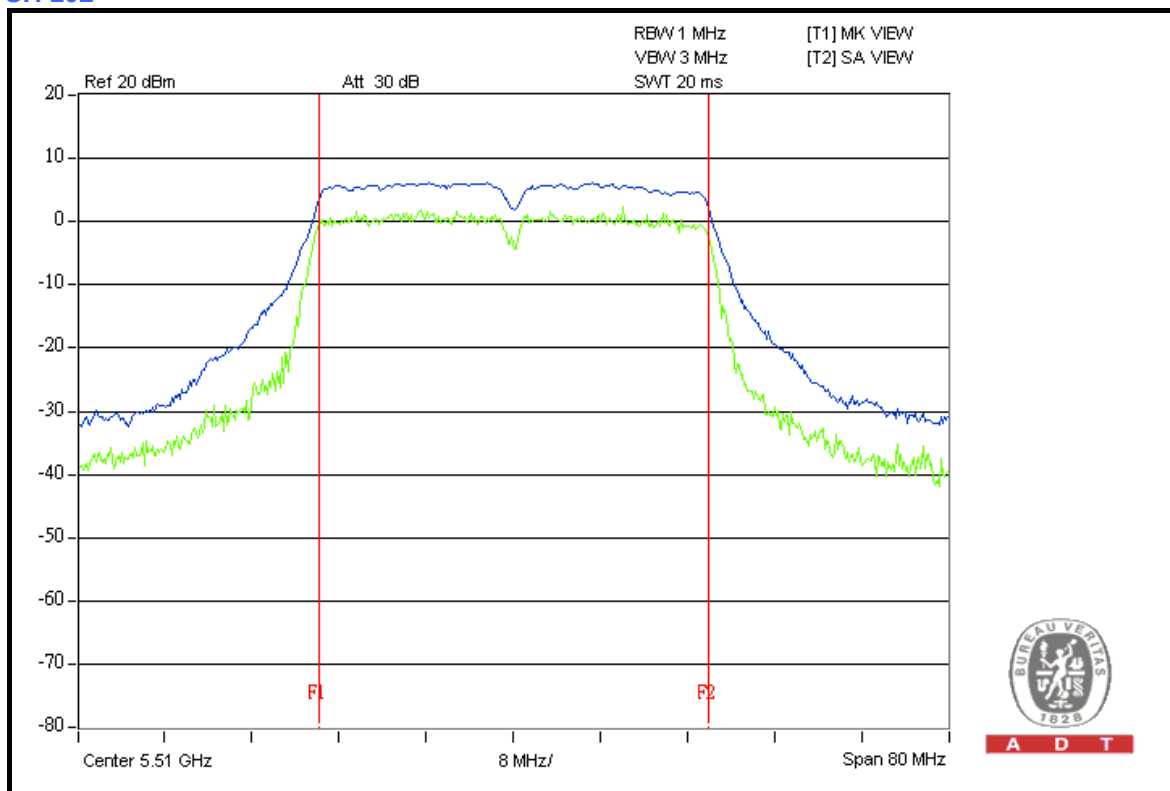
CH 62





A D T

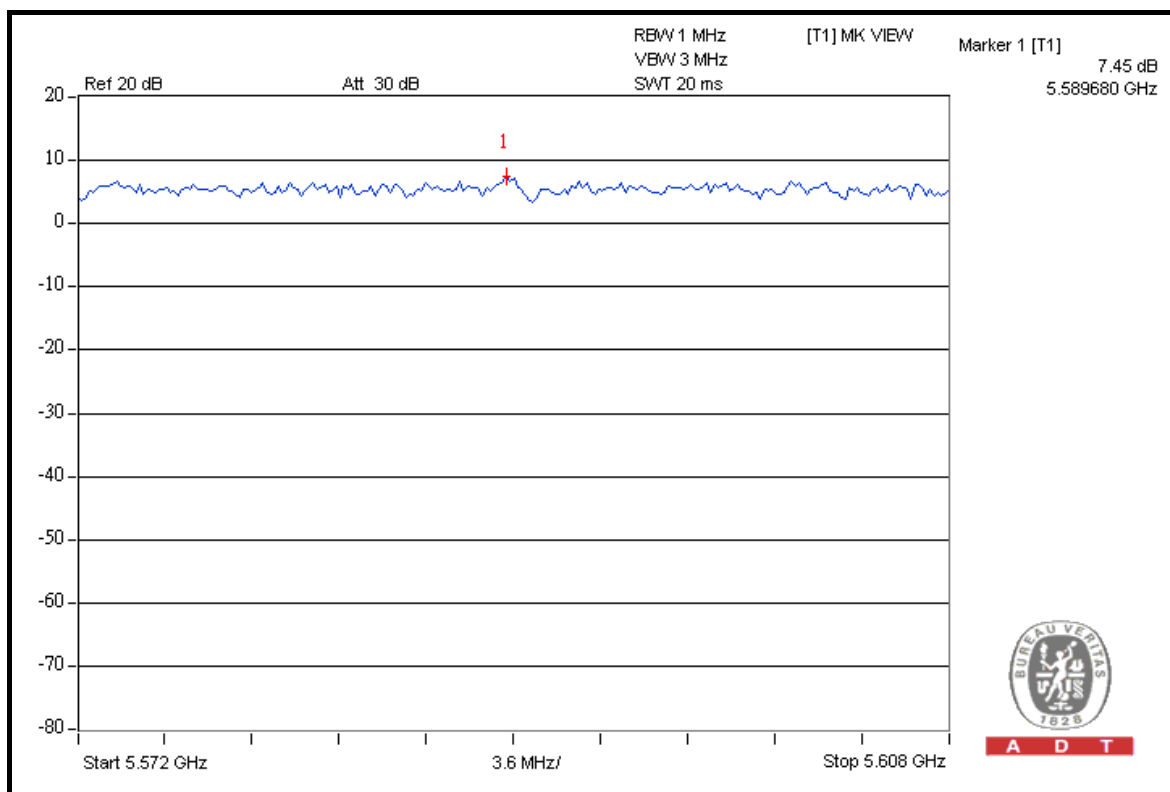
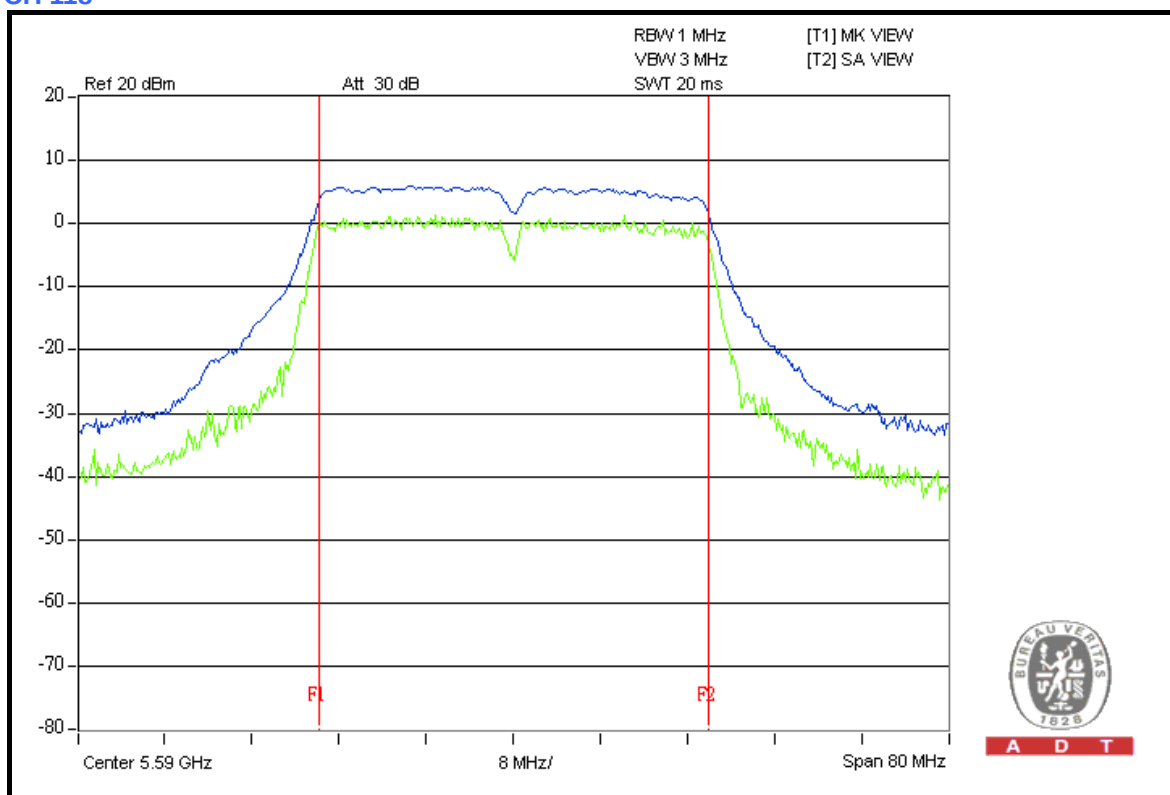
CH 102





A D T

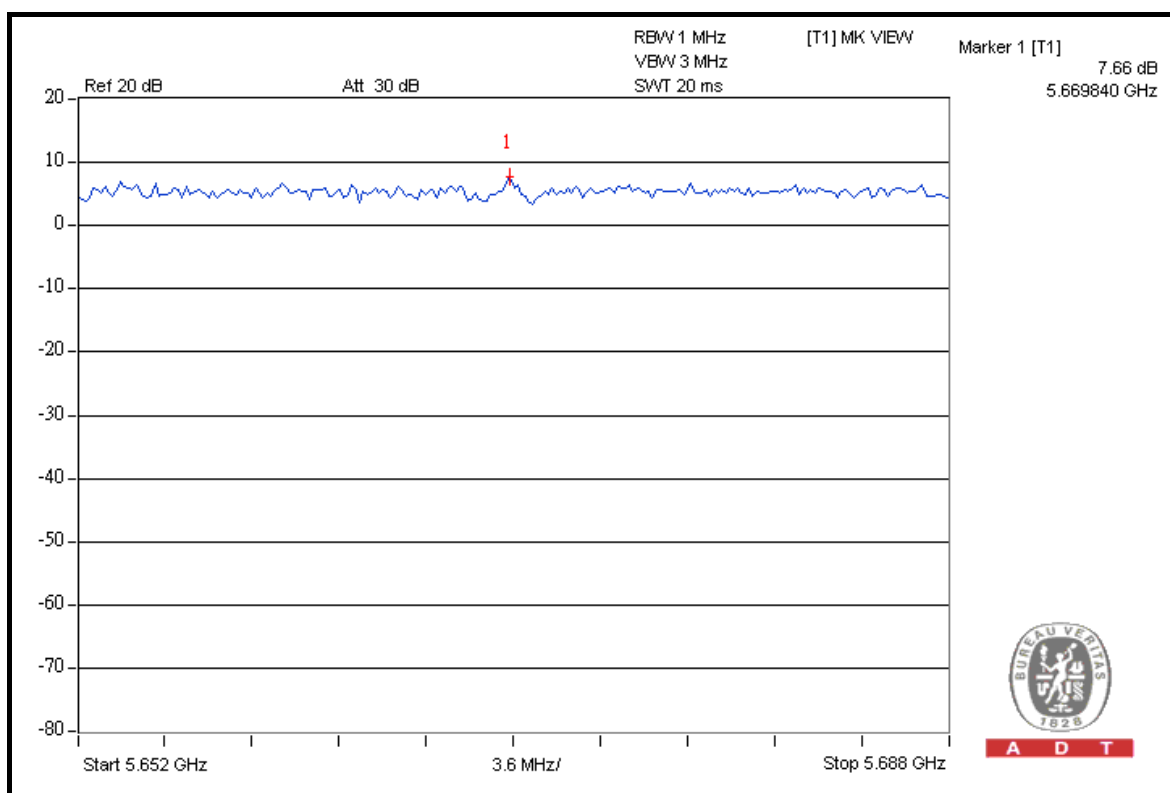
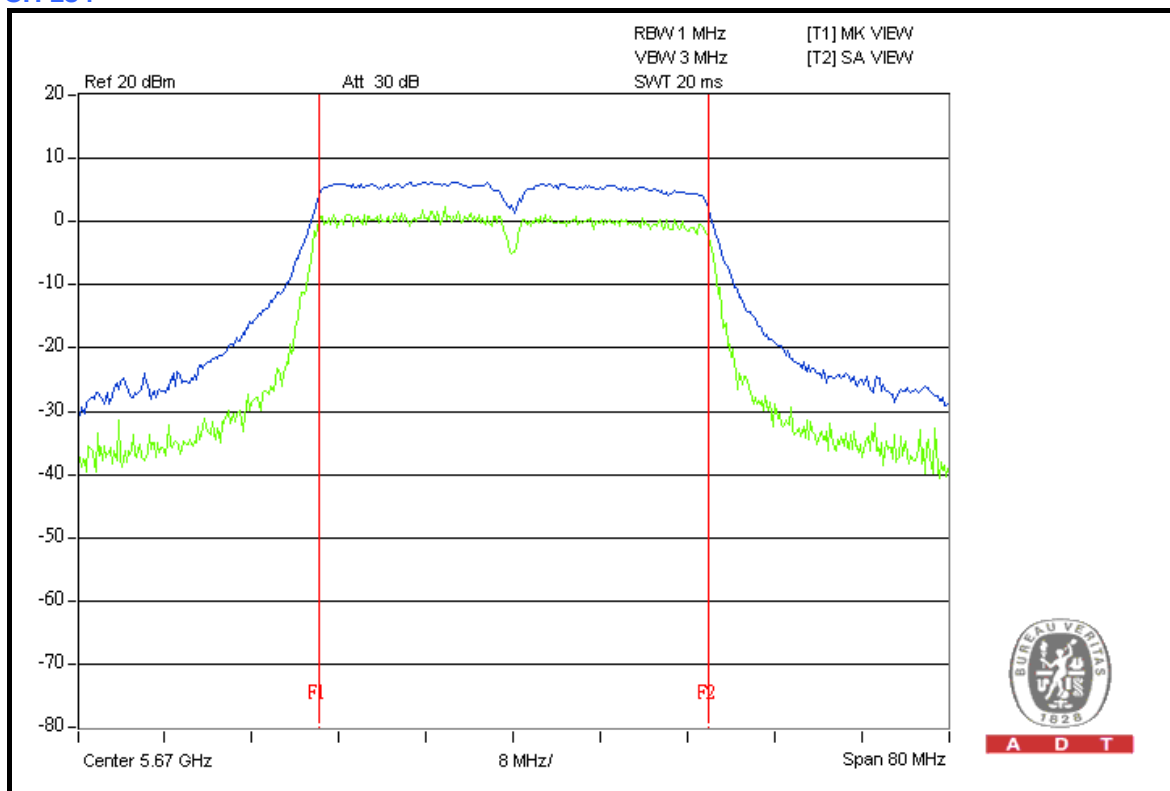
CH 118





A D T

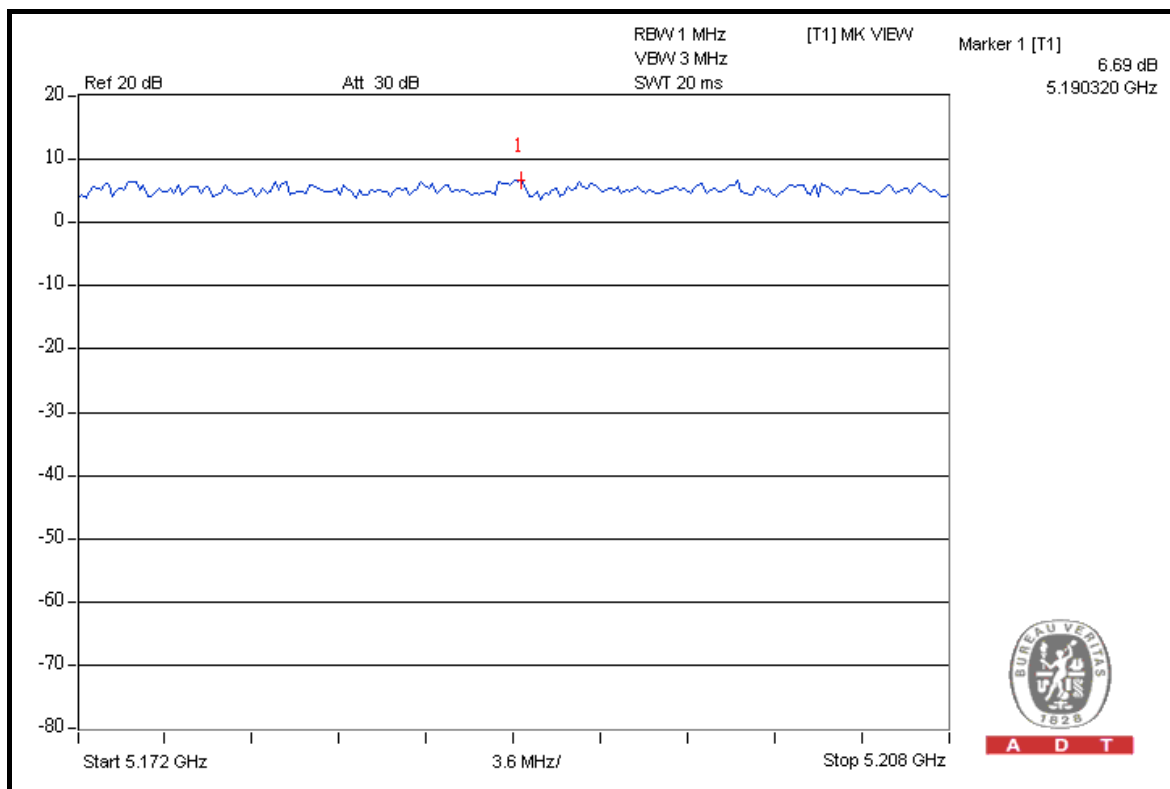
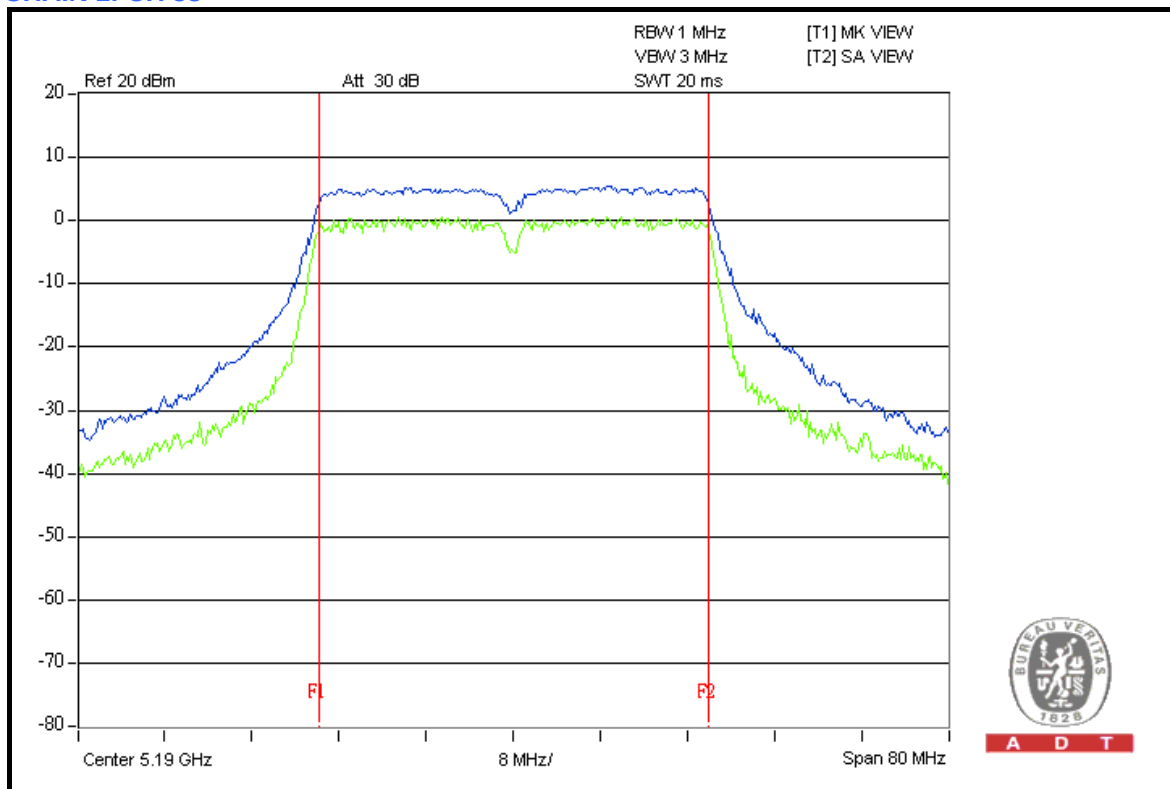
CH 134





A D T

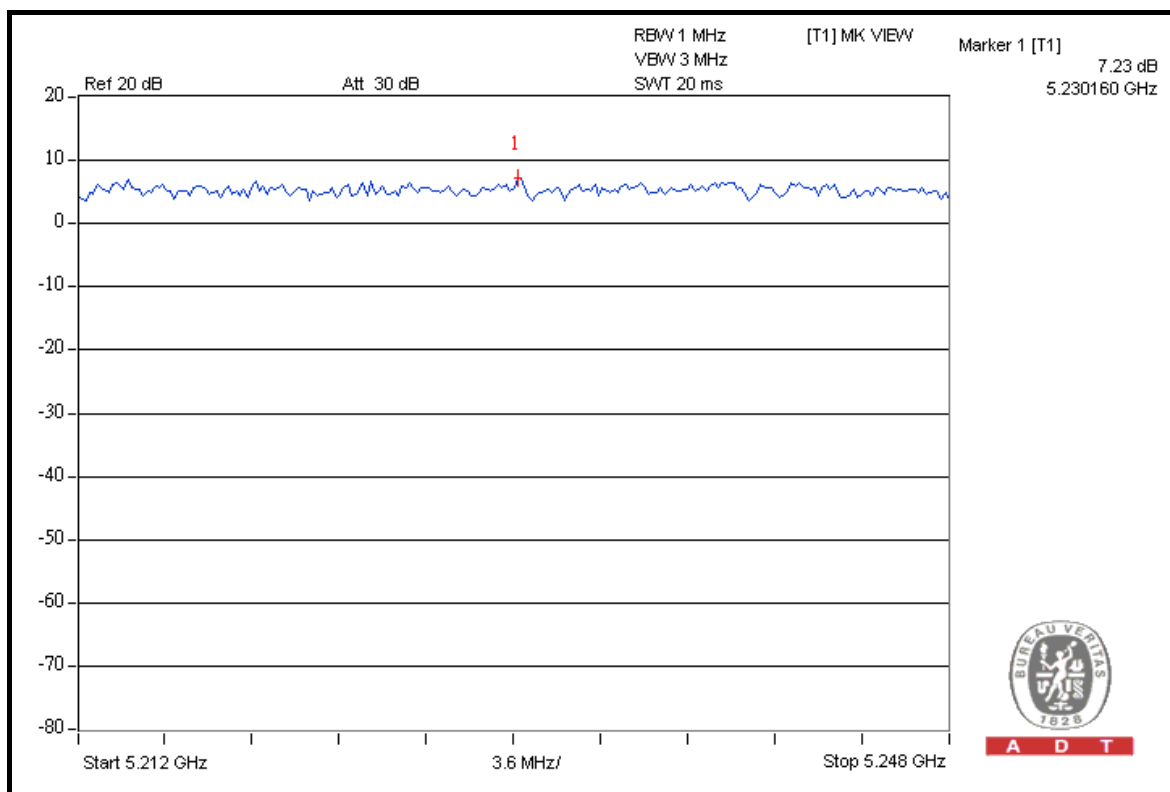
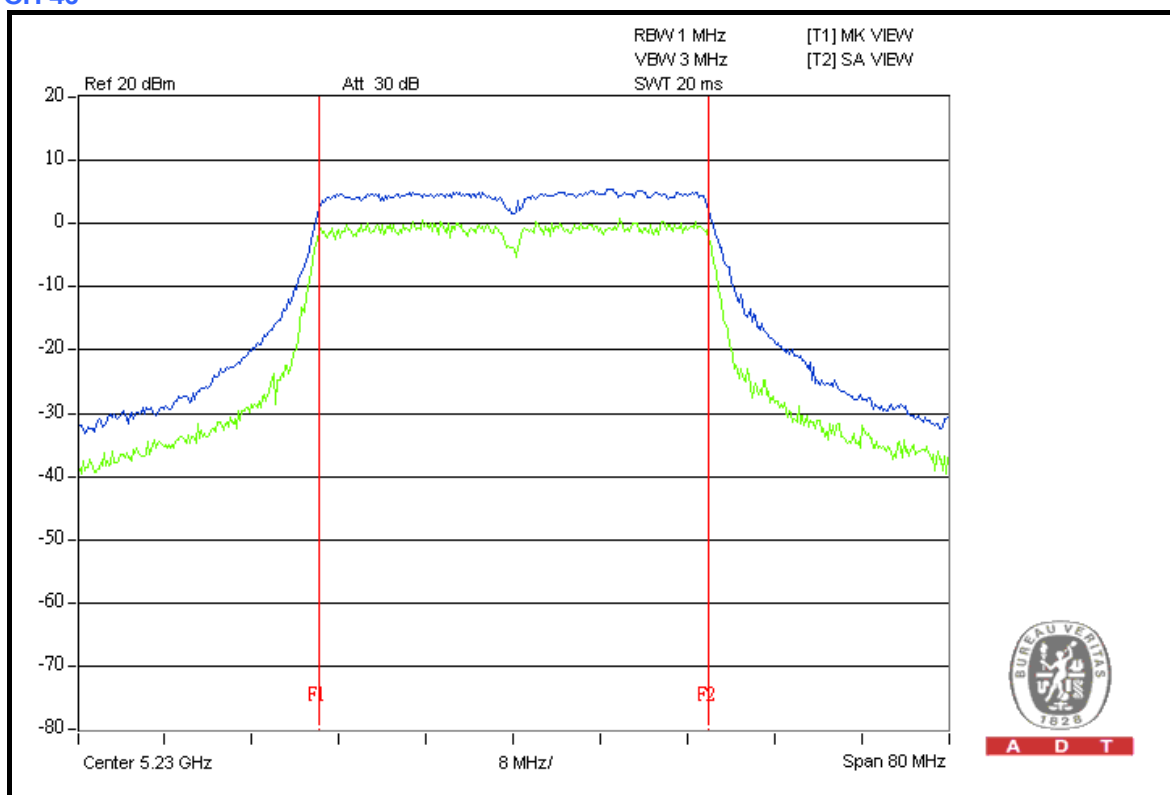
CHAIN 1: CH 38





A D T

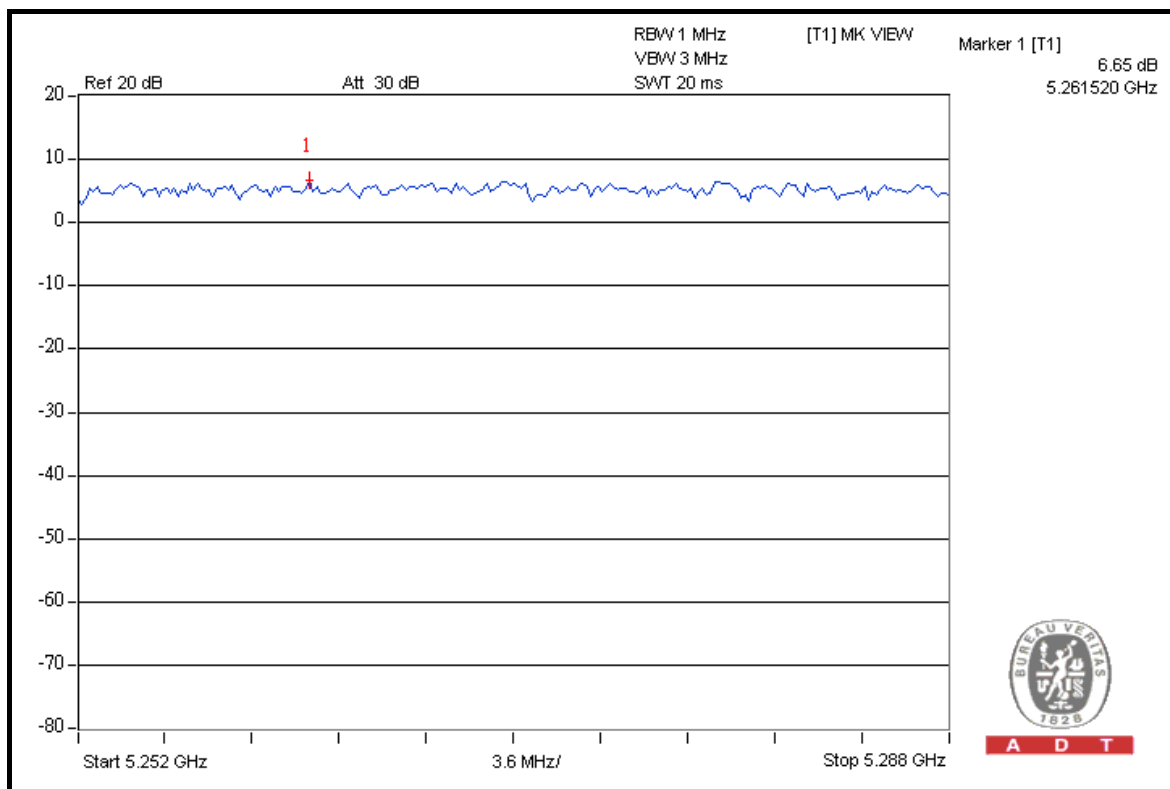
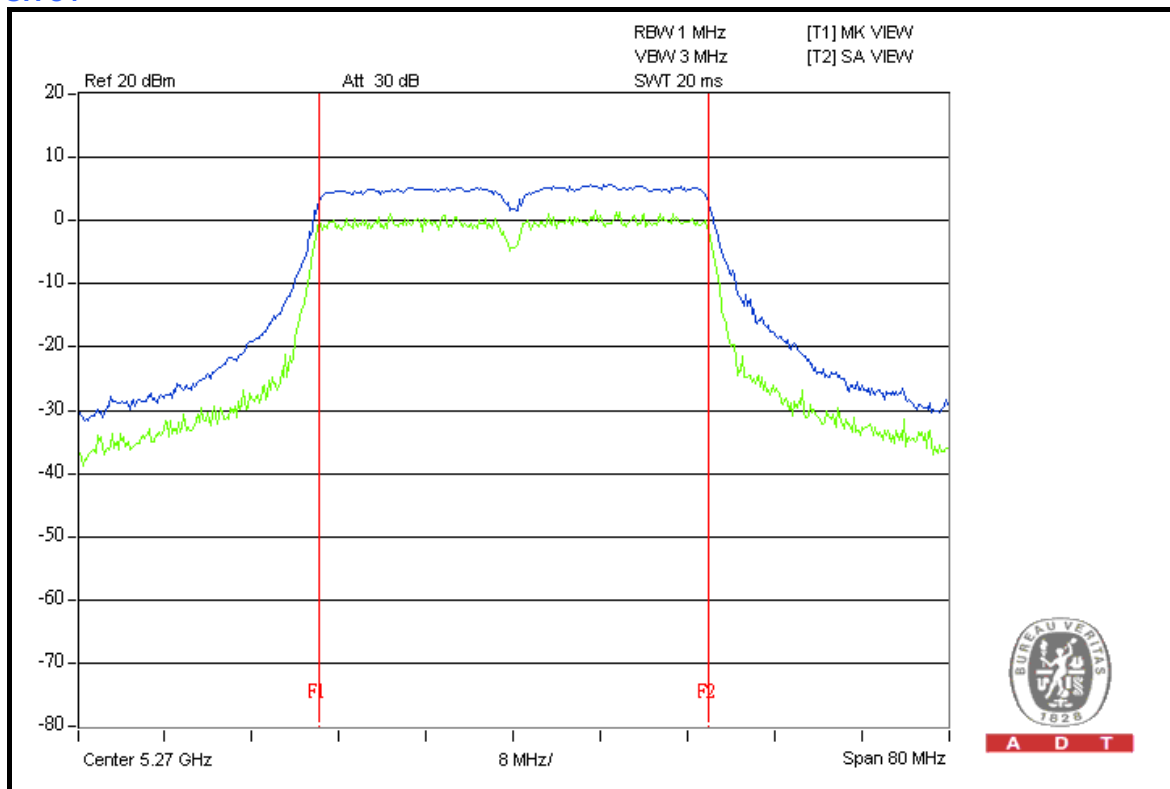
CH 46





A D T

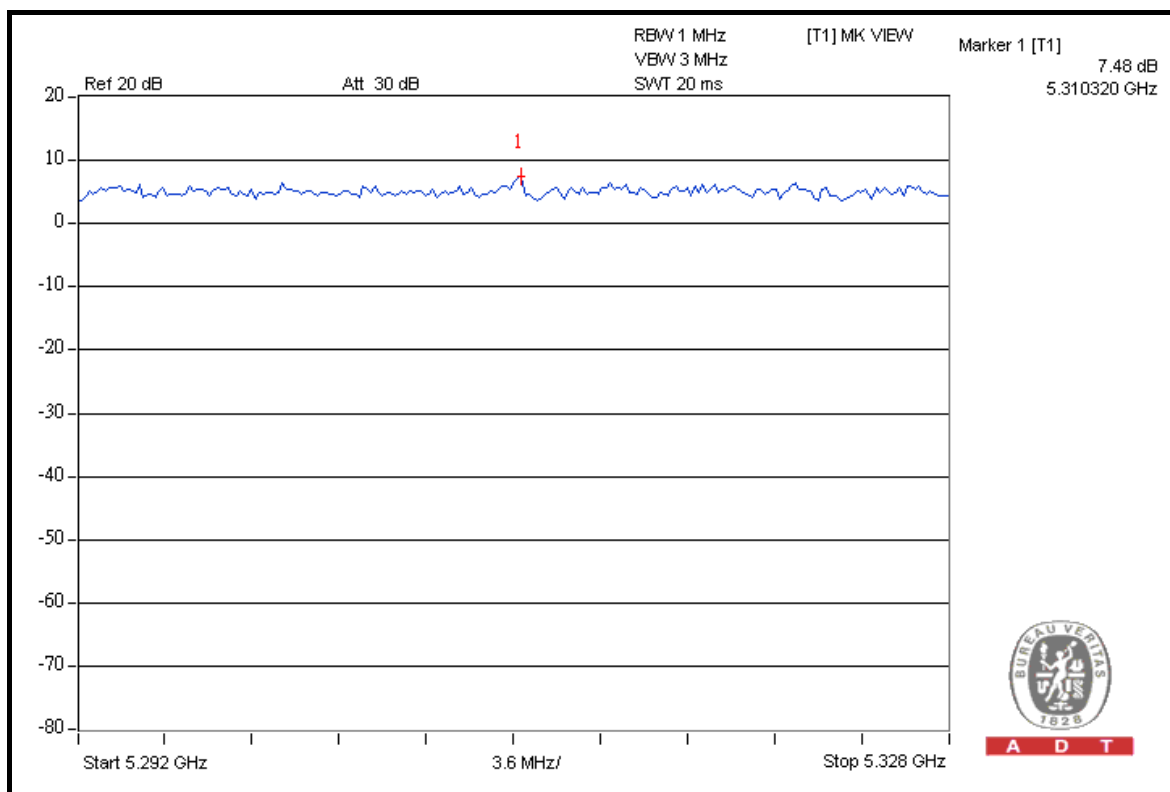
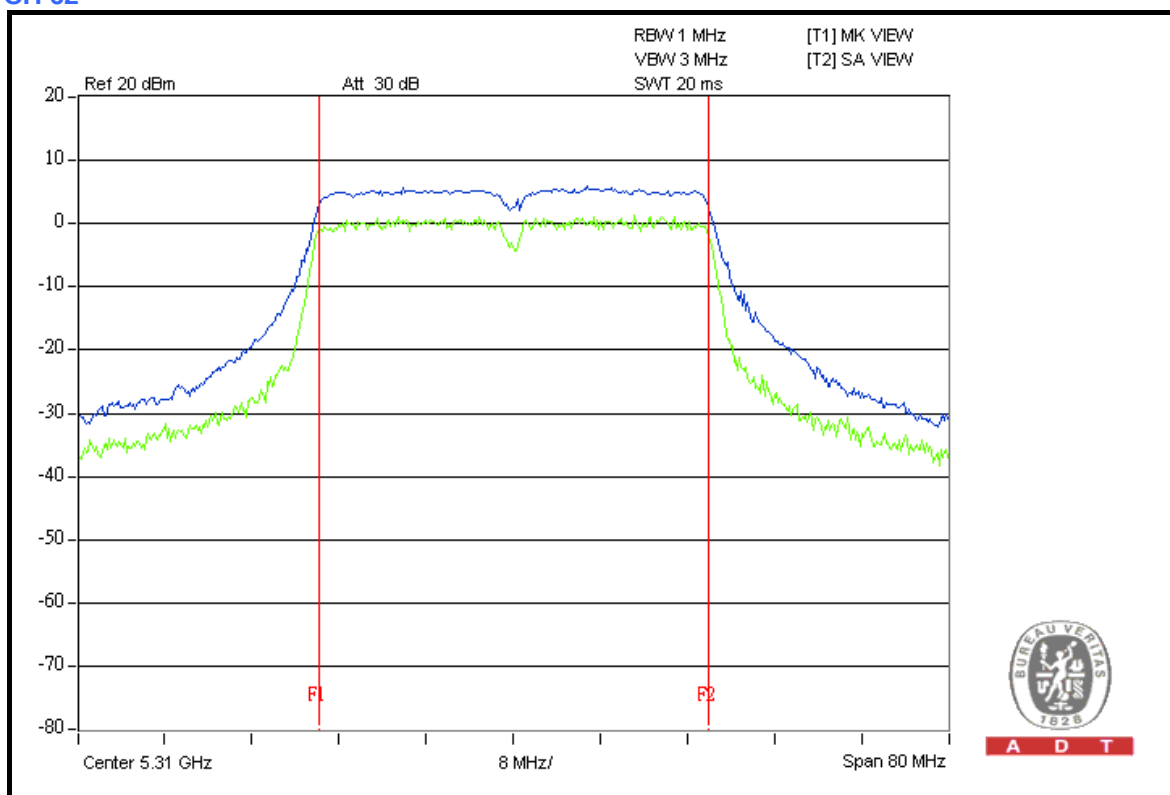
CH 54





A D T

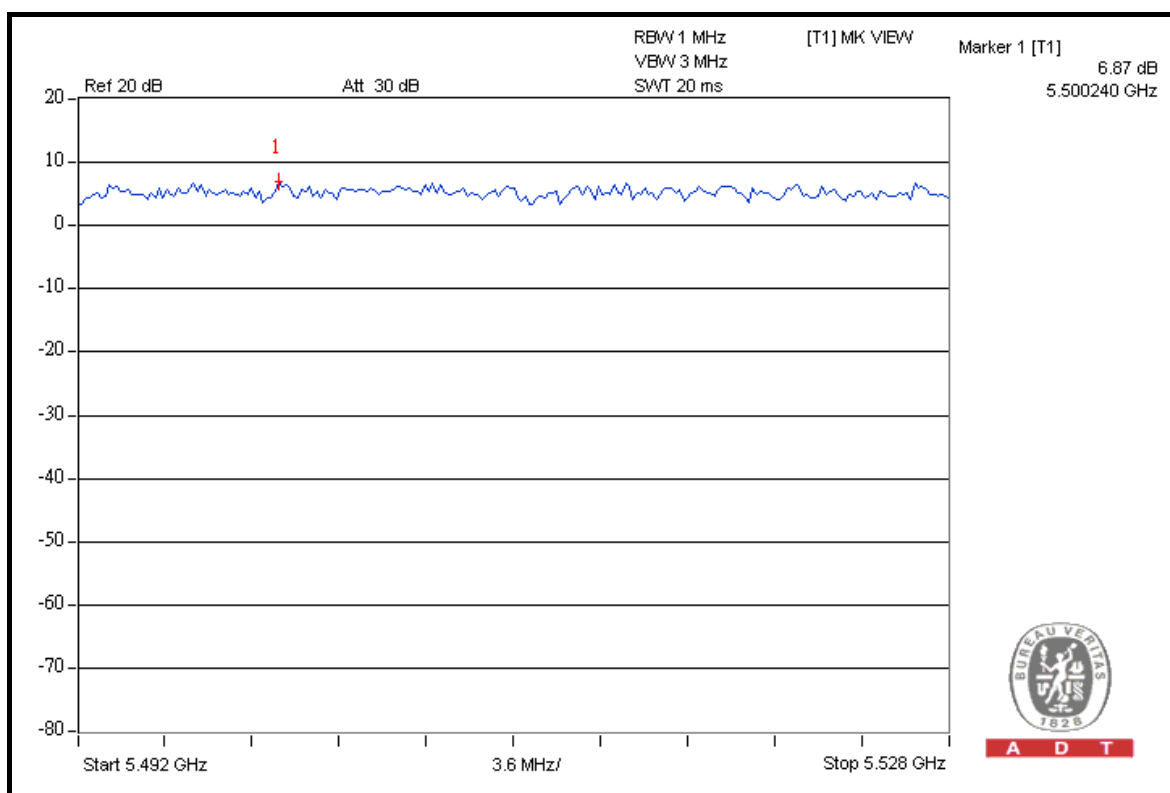
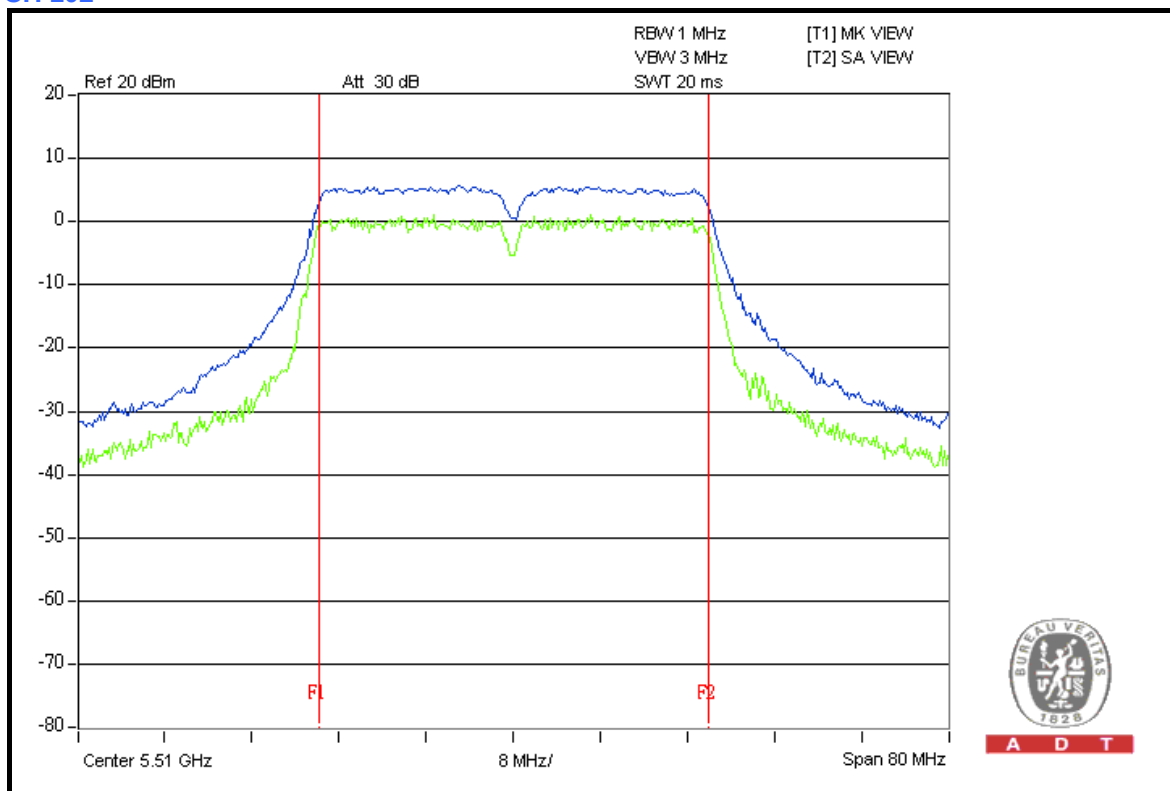
CH 62





A D T

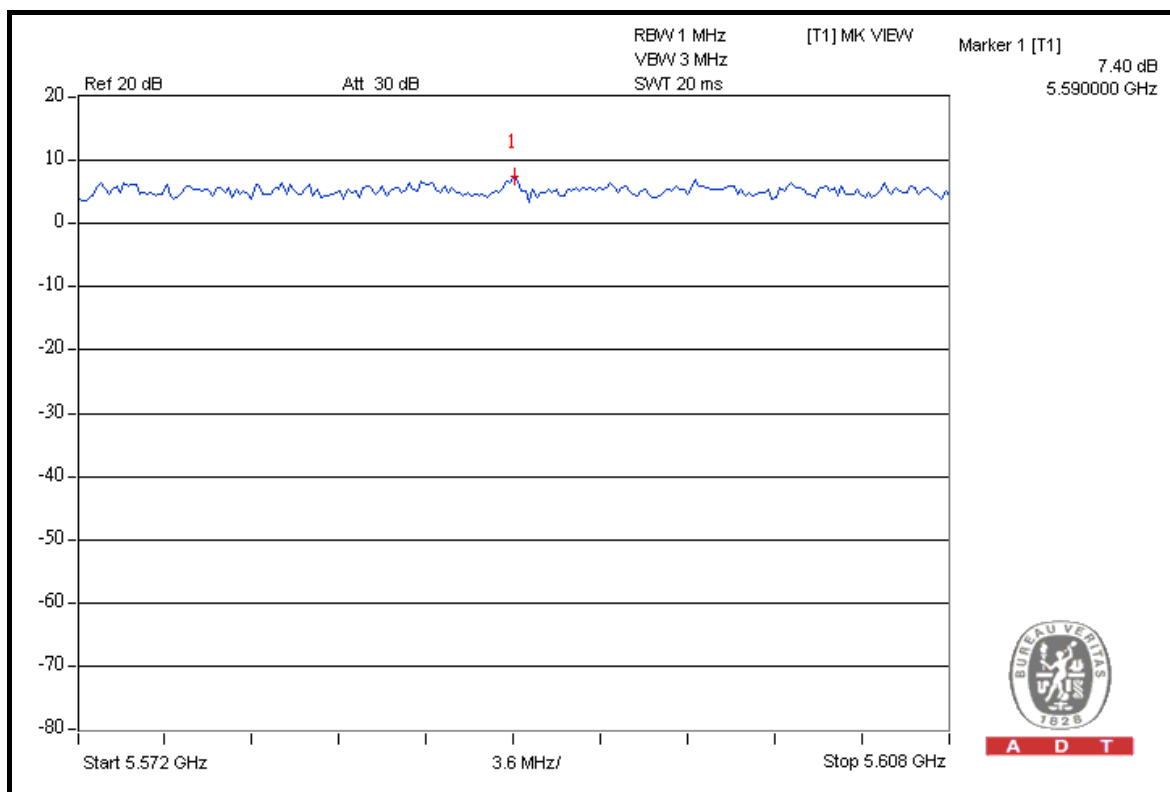
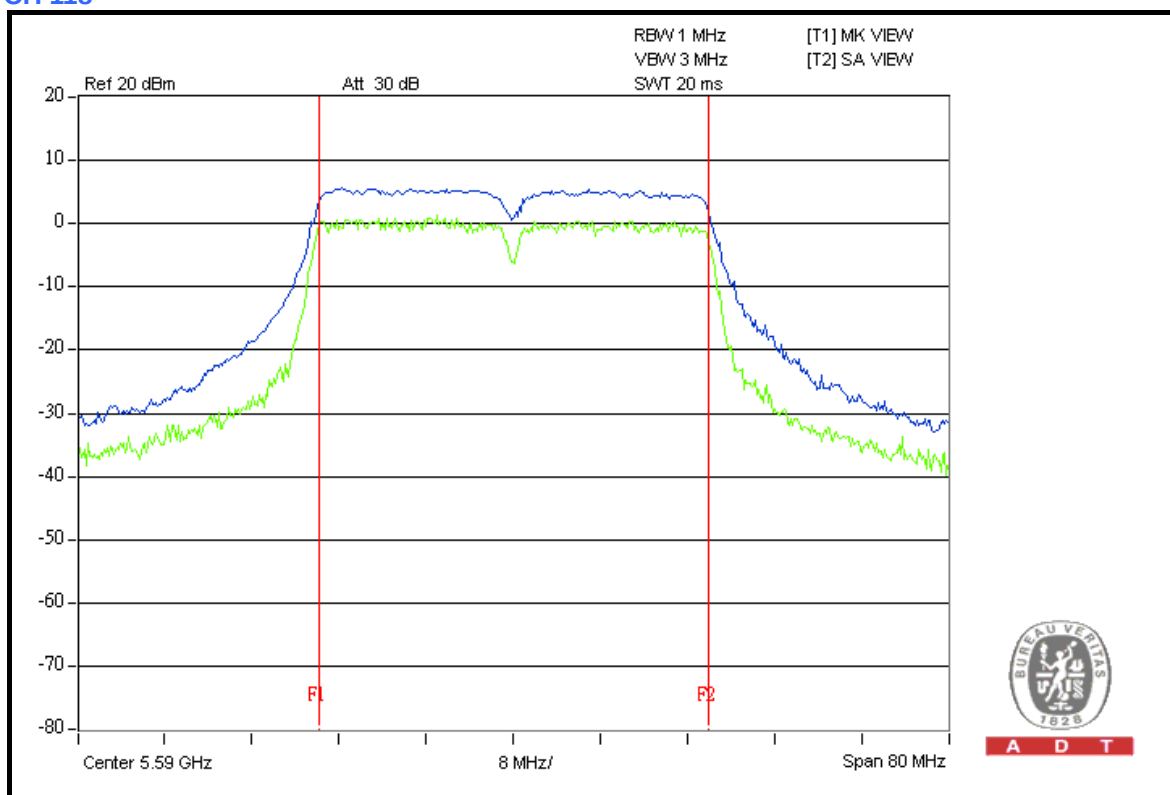
CH 102





A D T

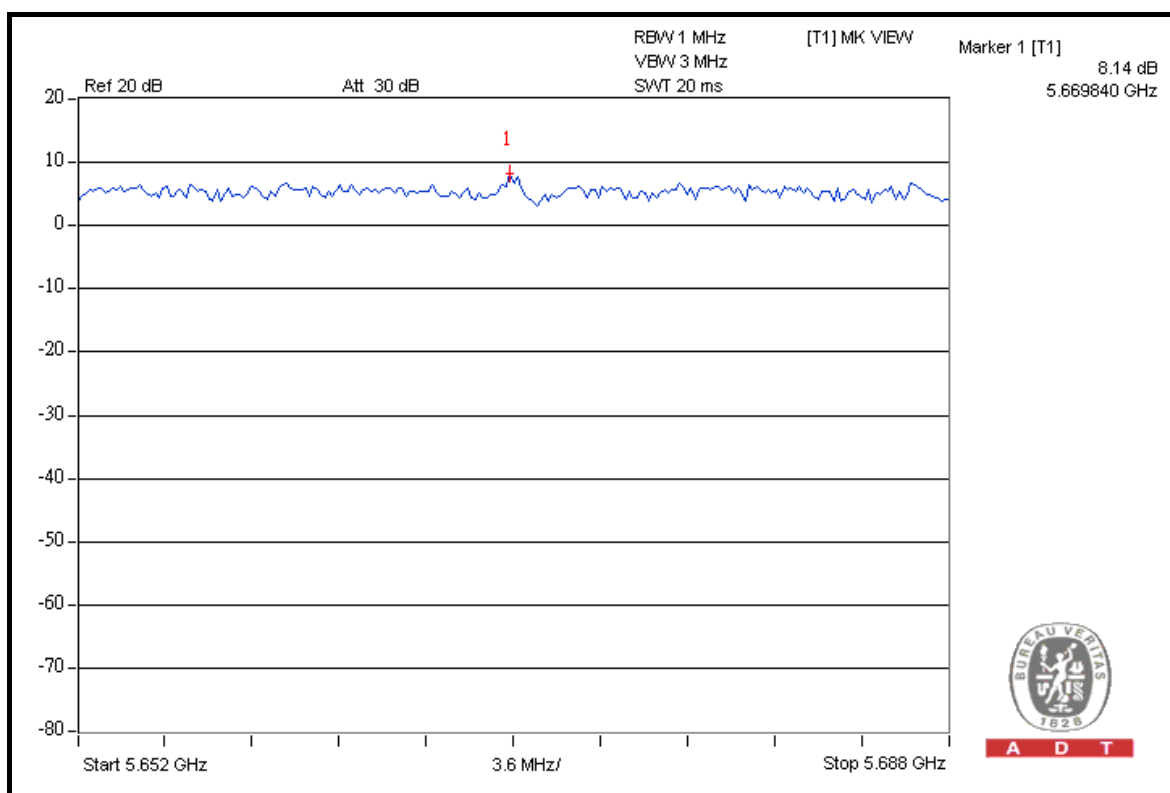
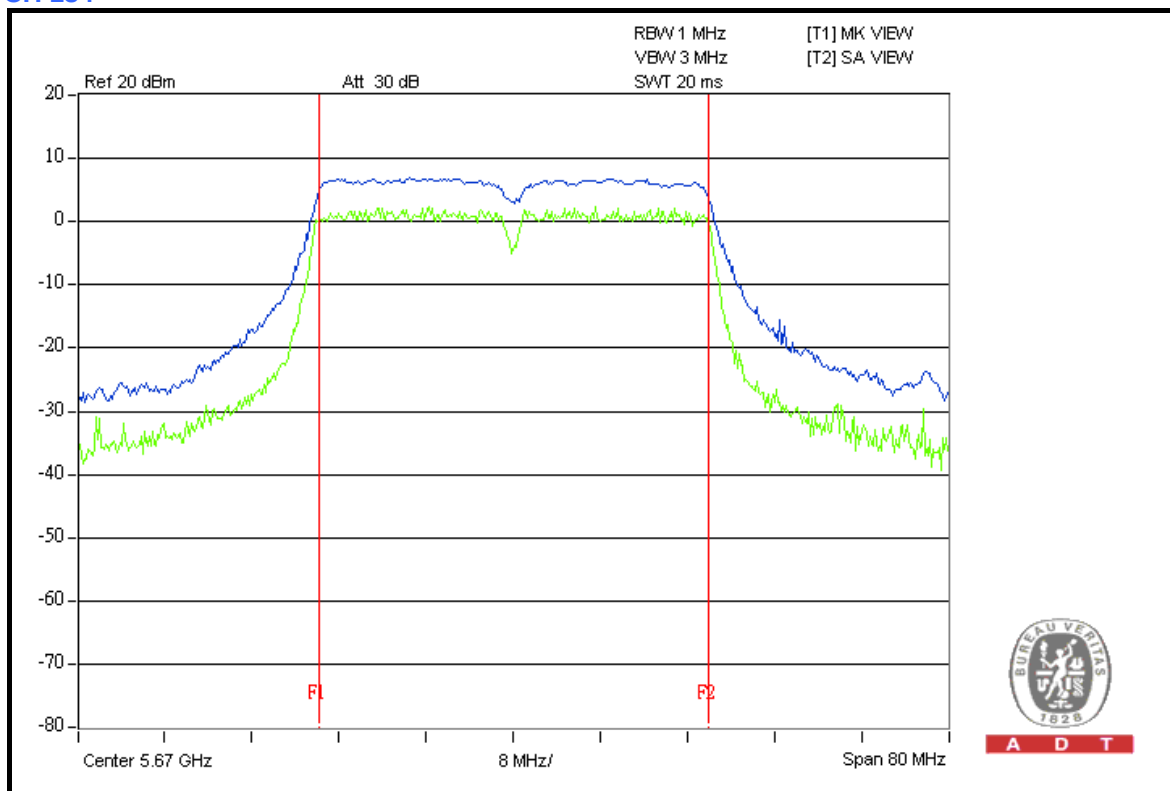
CH 118





A D T

CH 134



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

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

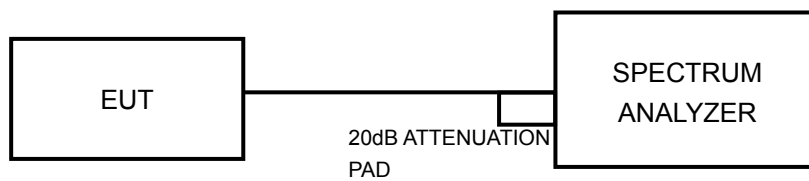
4.5.3 TEST PROCEDURES

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6.

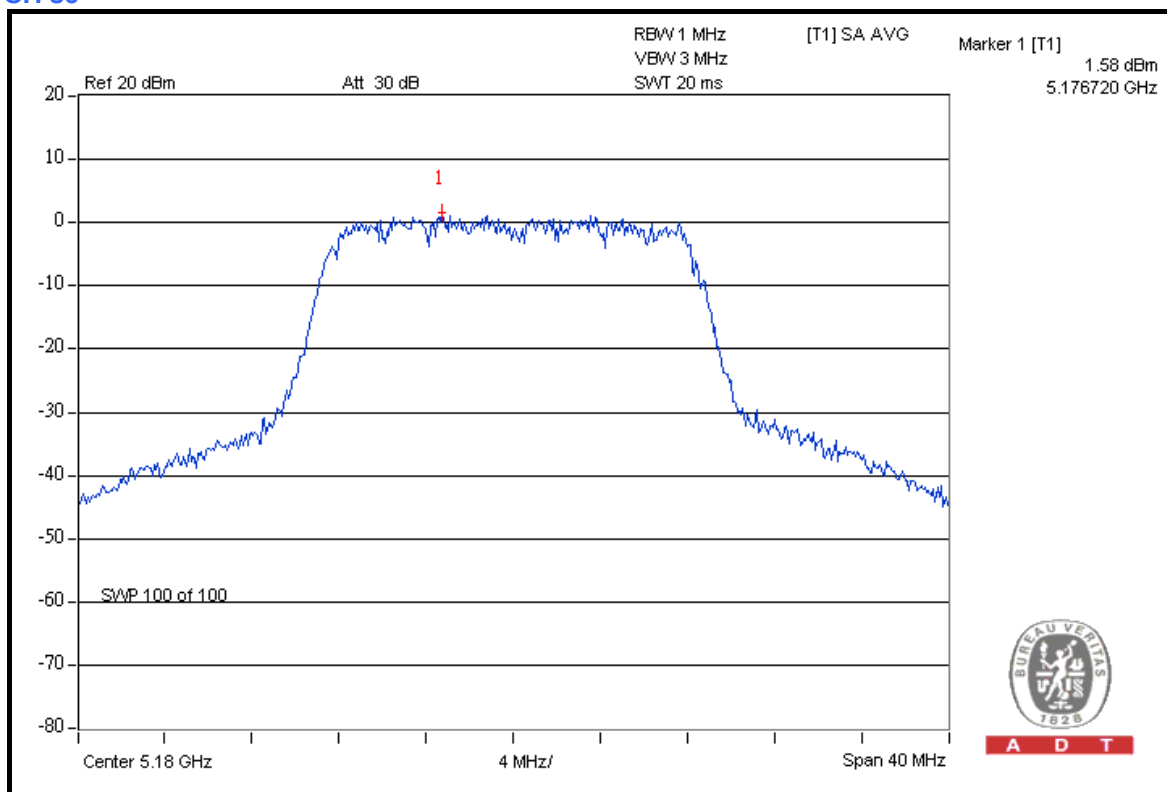
4.5.7 TEST RESULTS

802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
36	5180	1.58	4	PASS
40	5200	1.16	4	PASS
48	5240	1.07	4	PASS
52	5260	0.93	11	PASS
60	5300	1.15	11	PASS
64	5320	1.19	11	PASS
100	5500	0.52	11	PASS
120	5600	0.43	11	PASS
140	5700	0.70	11	PASS

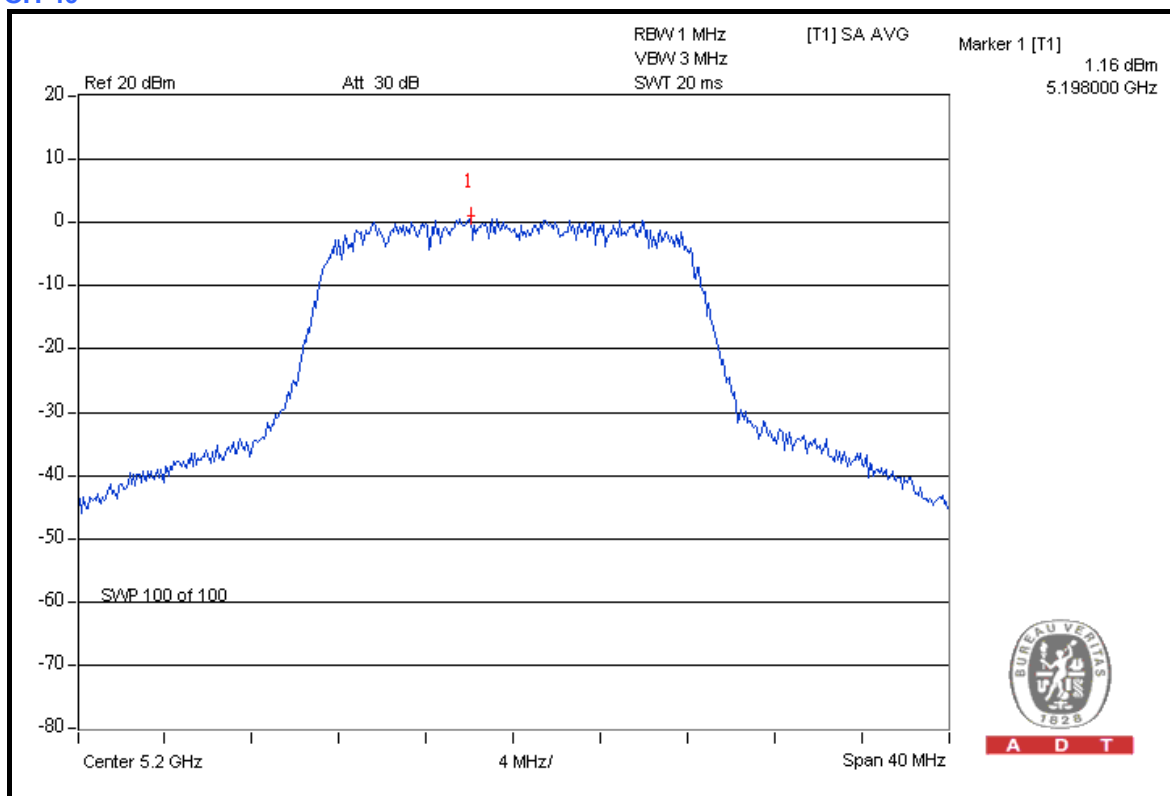
CH 36





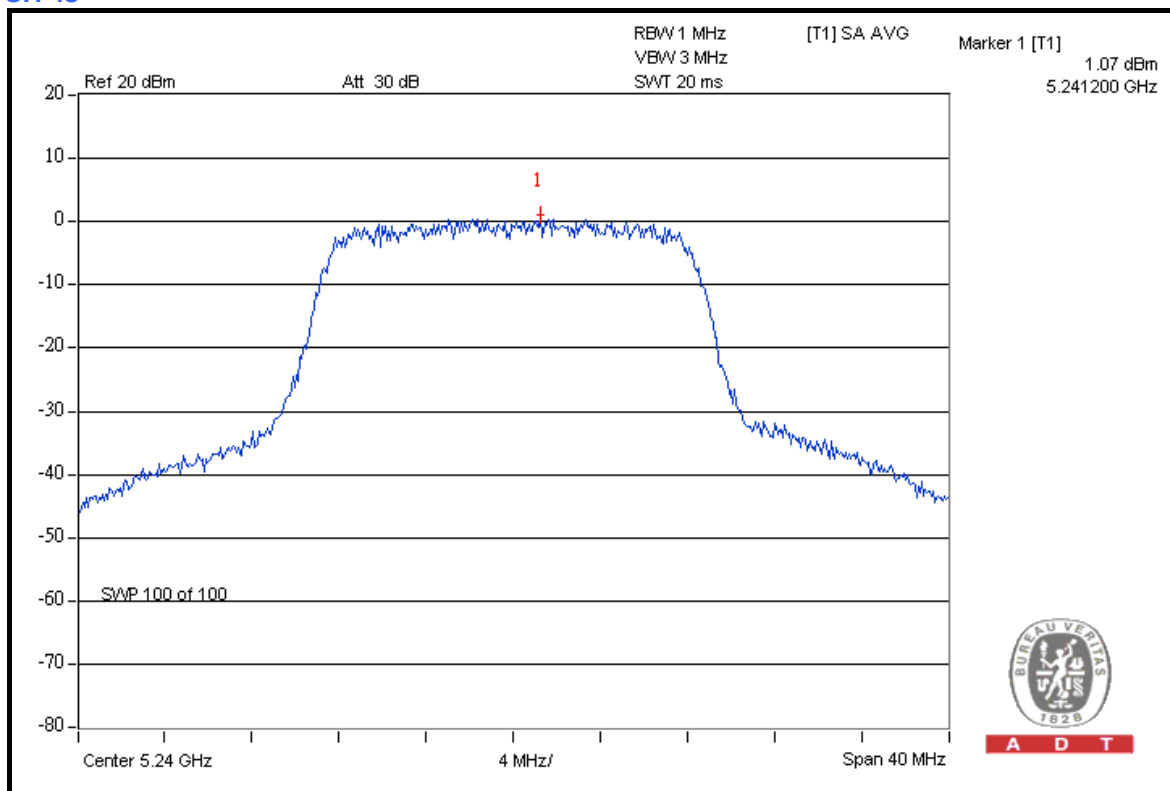
A D T

CH 40



A D T

CH 48

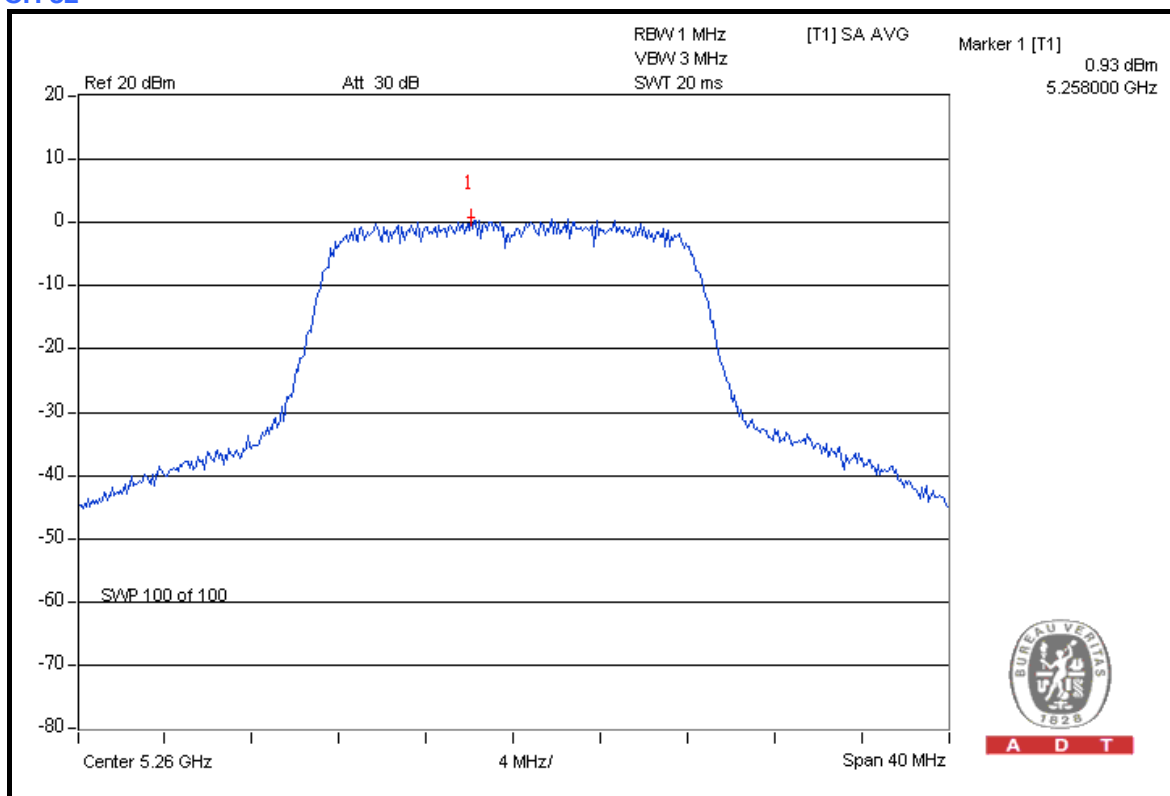


A D T

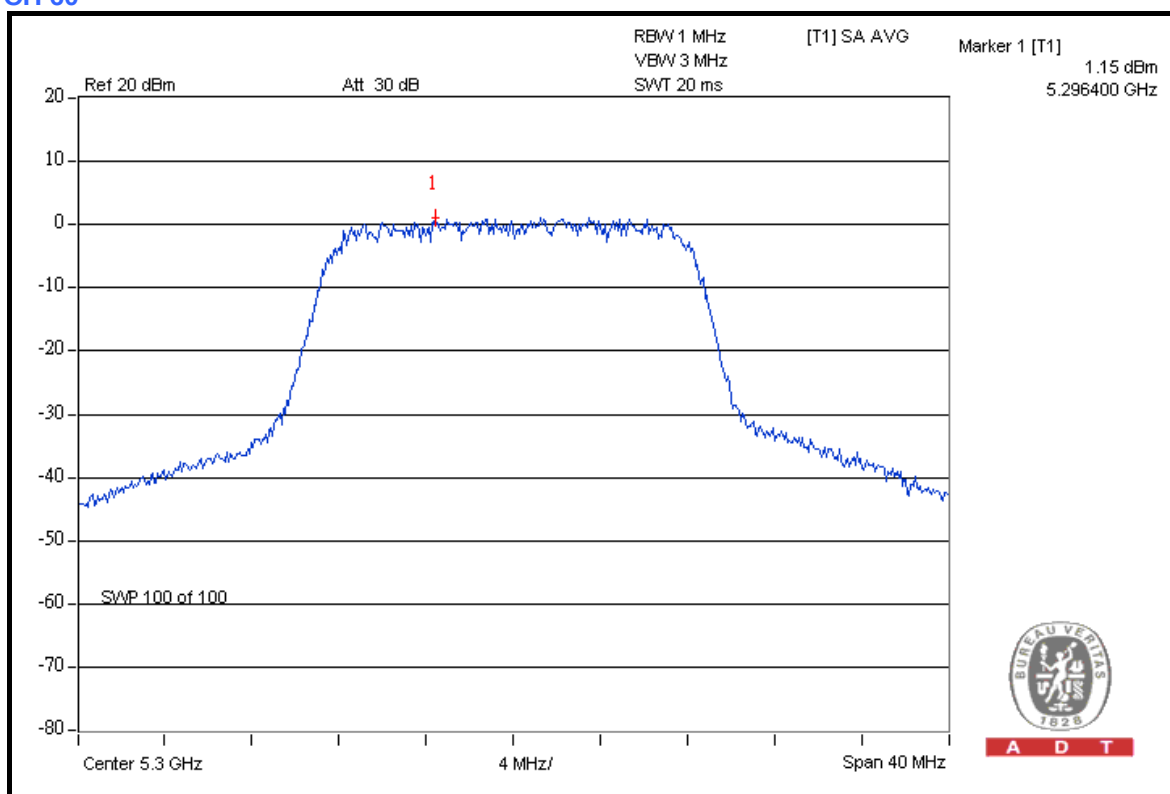


A D T

CH 52



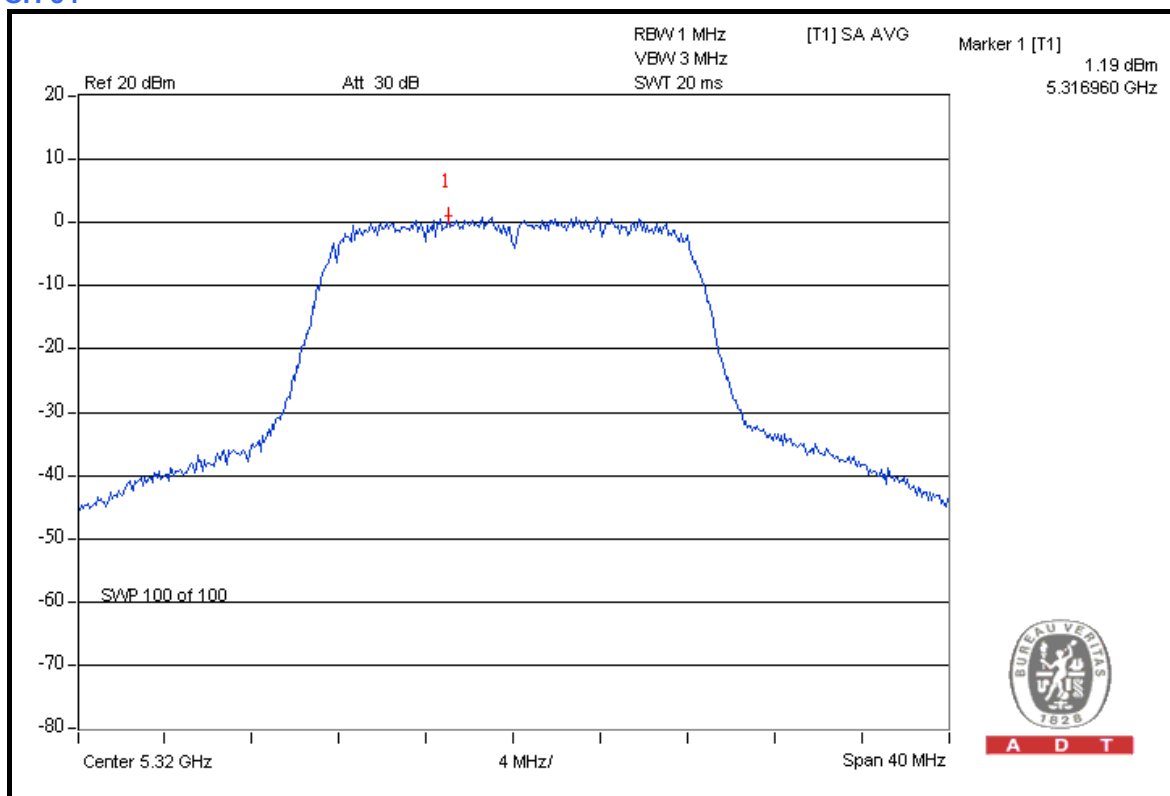
CH 60





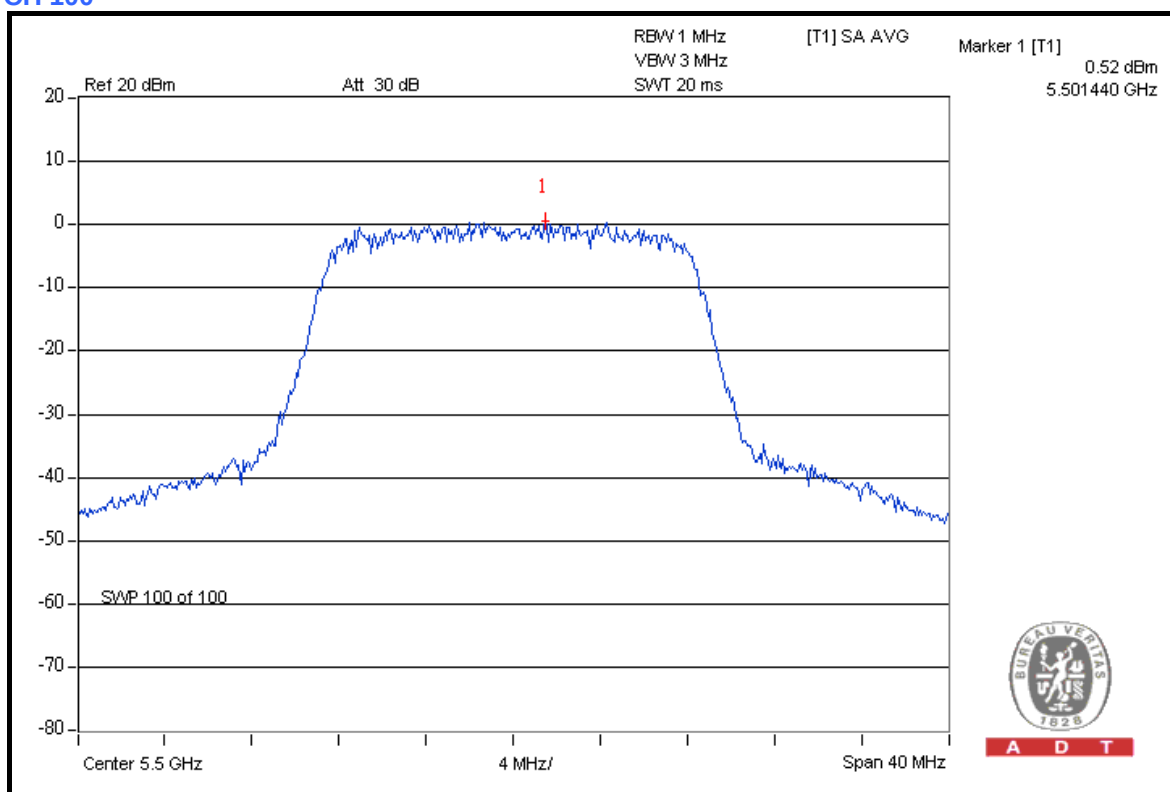
A D T

CH 64



A D T

CH 100

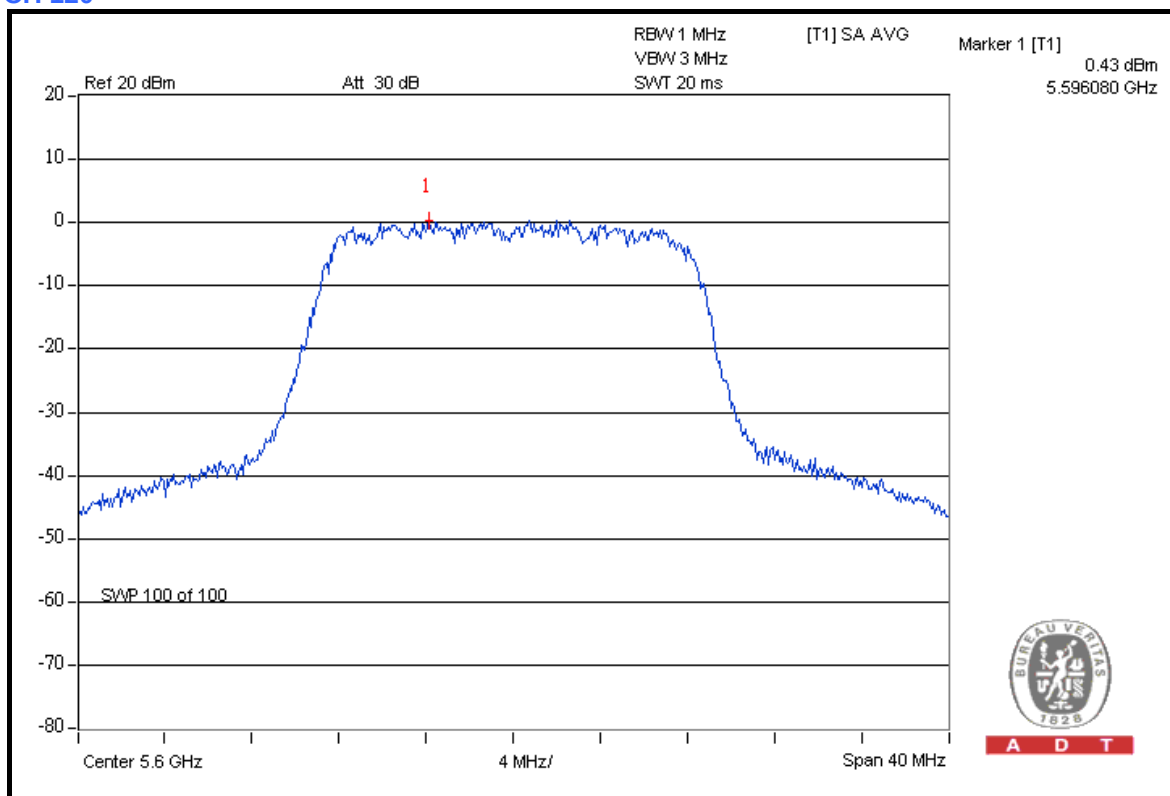


A D T



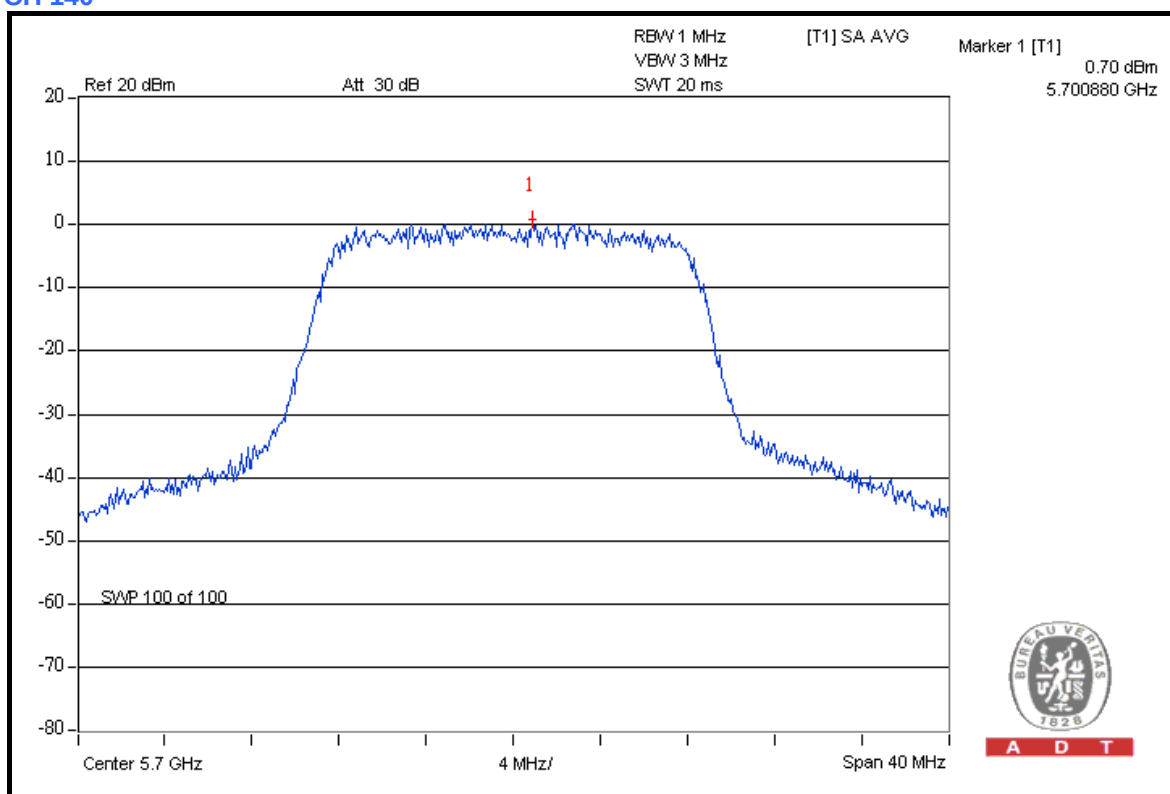
A D T

CH 120



A D T

CH 140



A D T

DRAFT 802.11n (20MHz) OFDM MODULATION

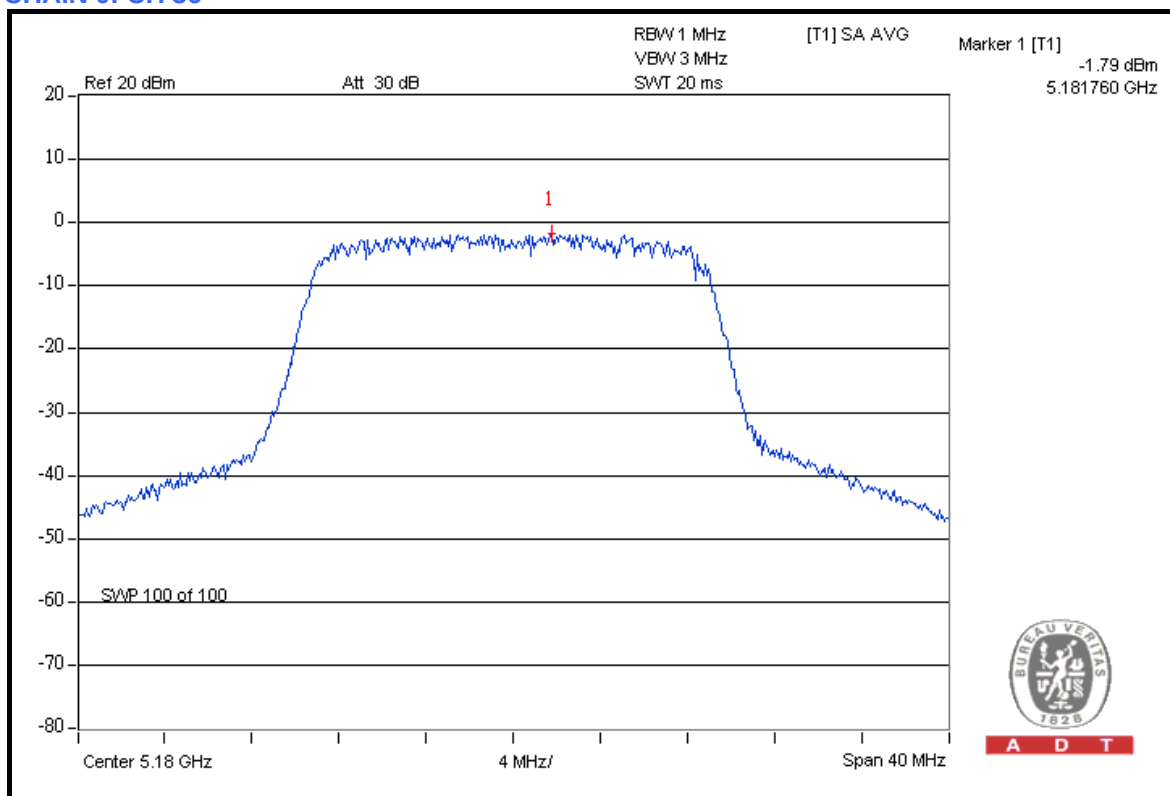
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-1.79	-1.89	1.309	1.17	4	PASS
40	5200	-1.64	-1.88	1.334	1.25	4	PASS
48	5240	-1.63	-1.82	1.345	1.29	4	PASS
52	5260	-0.85	-0.73	1.668	2.22	11	PASS
60	5300	-1.58	-1.17	1.459	1.64	11	PASS
64	5320	-1.55	-1.22	1.455	1.63	11	PASS
100	5500	-1.57	-1.70	1.373	1.38	11	PASS
120	5600	-1.60	-1.74	1.362	1.34	11	PASS
140	5700	-1.60	-1.15	1.459	1.64	11	PASS



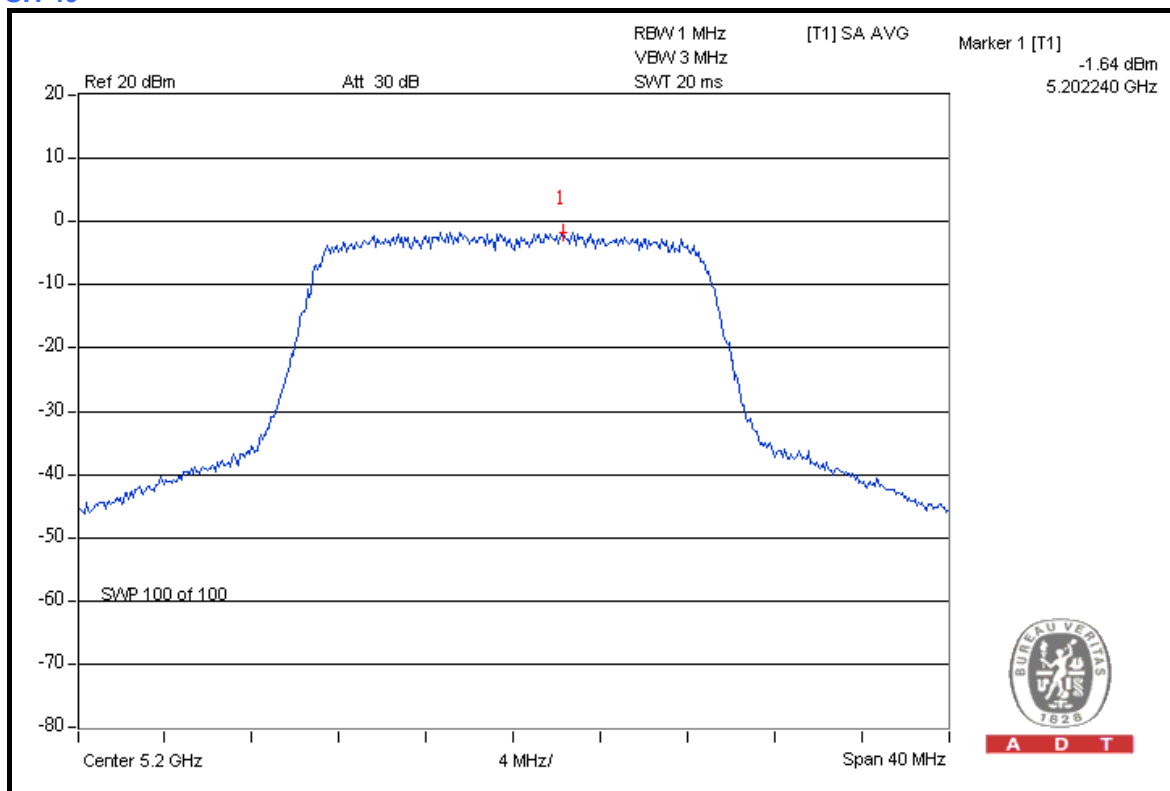
A D T

CHAIN 0: CH 36



A D T

CH 40

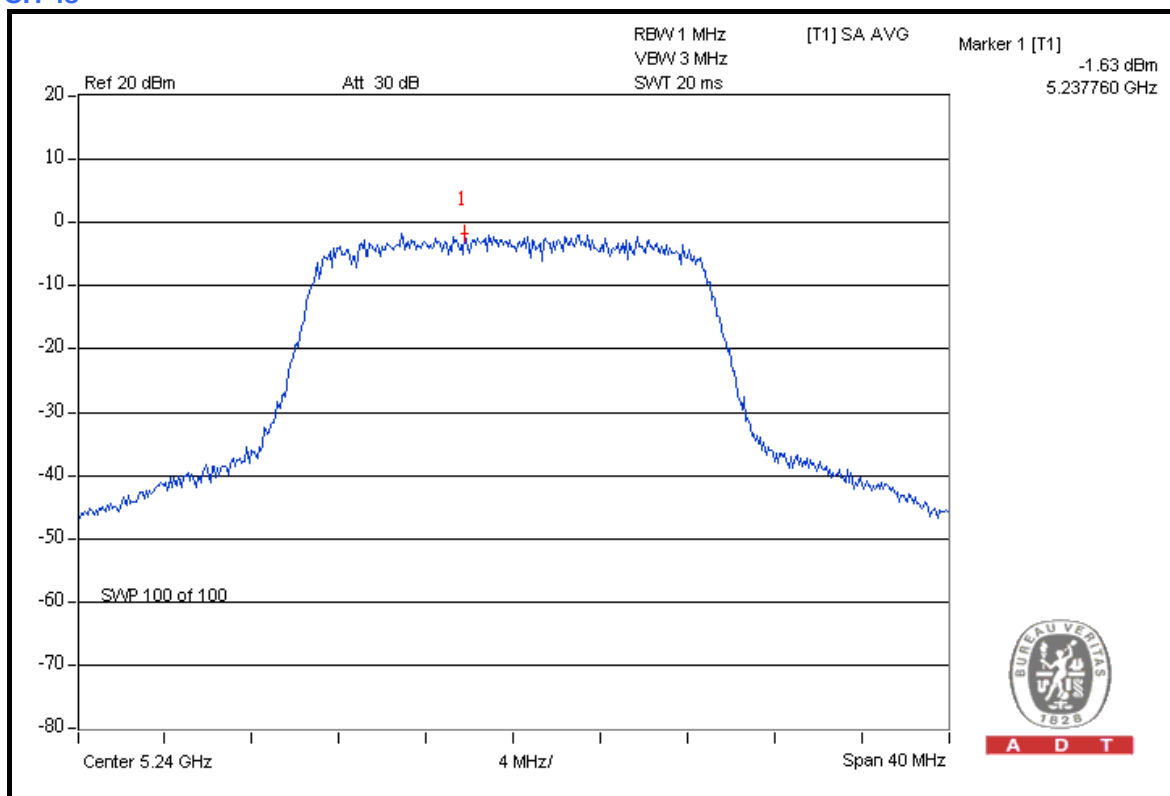


A D T

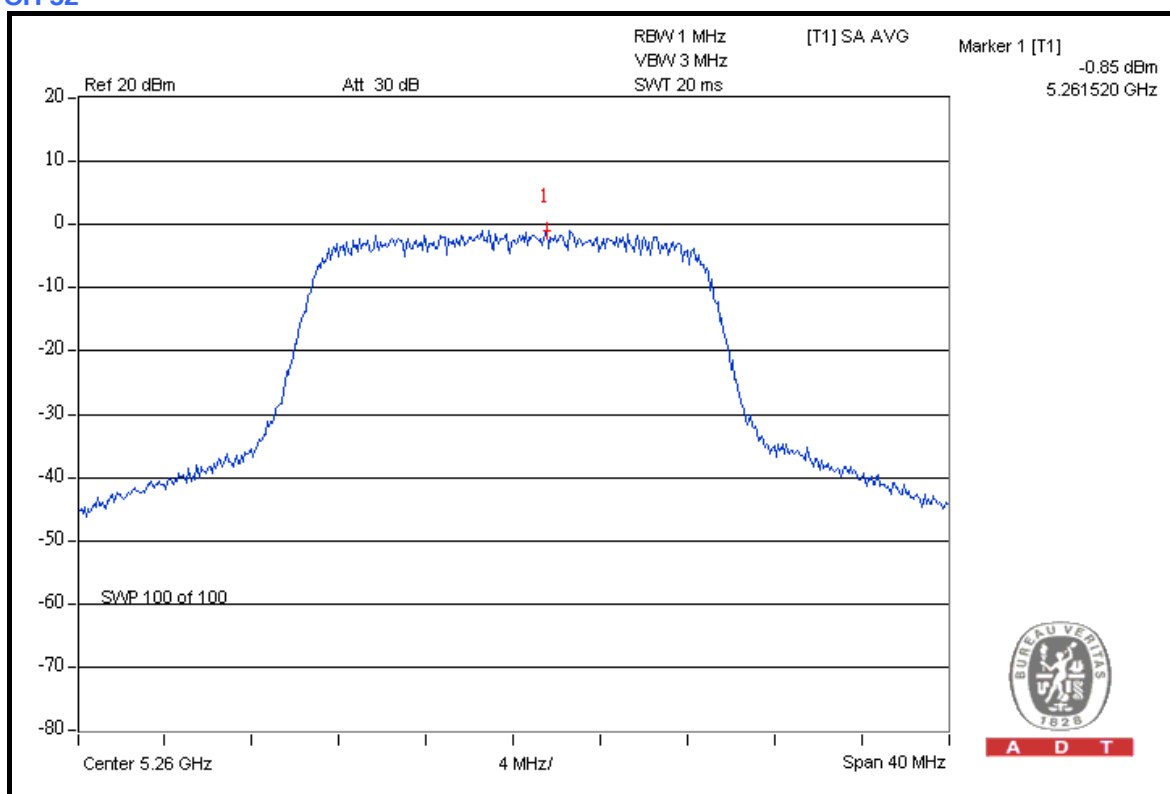


A D T

CH 48



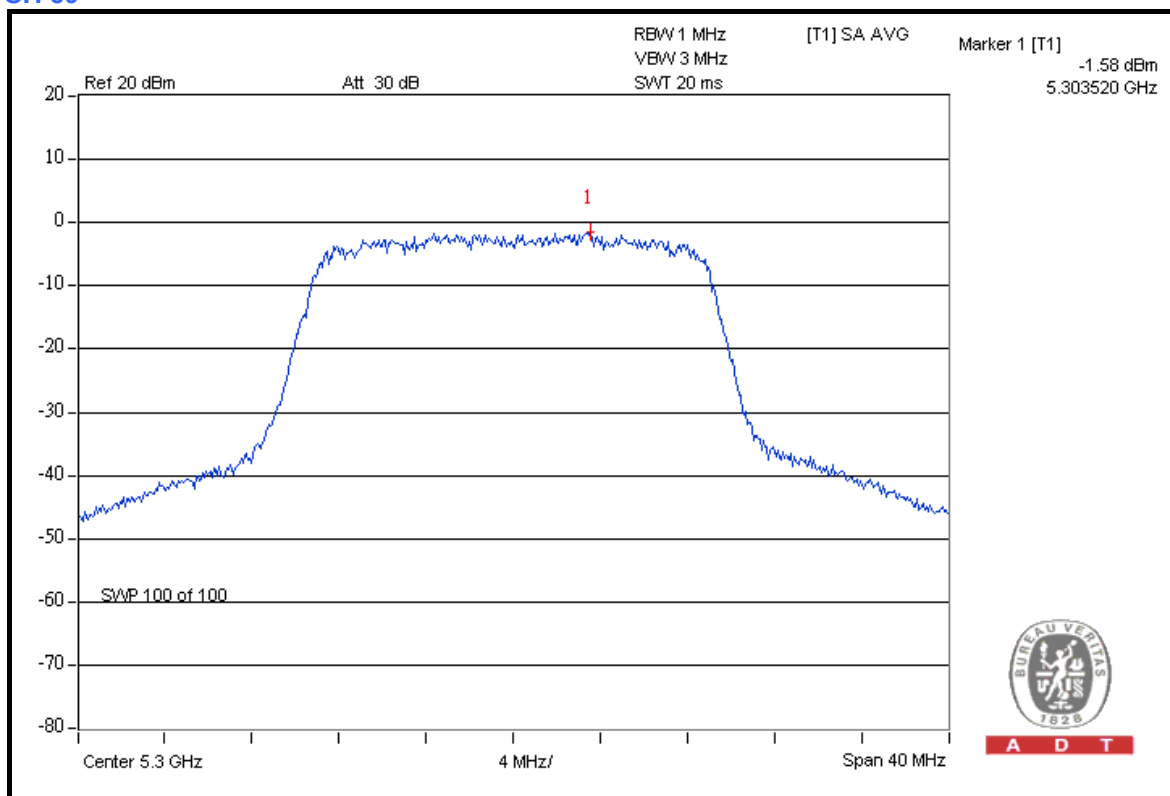
CH 52





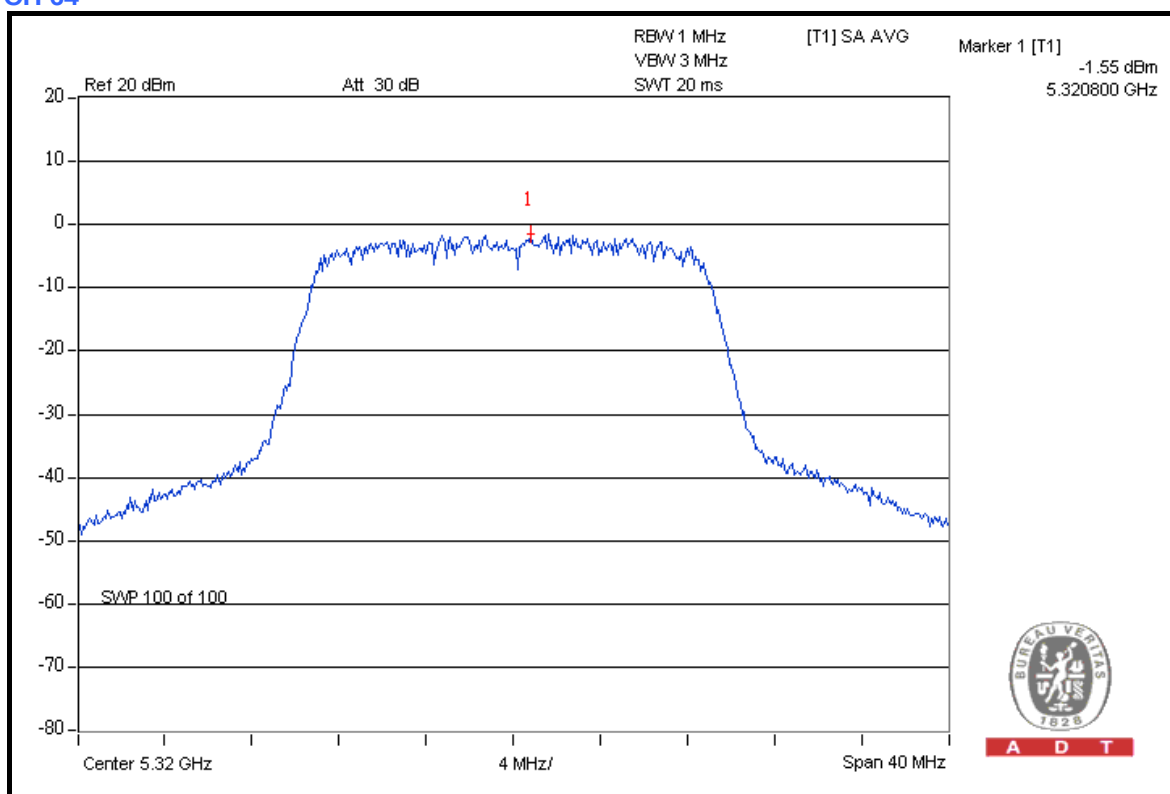
A D T

CH 60



A D T

CH 64

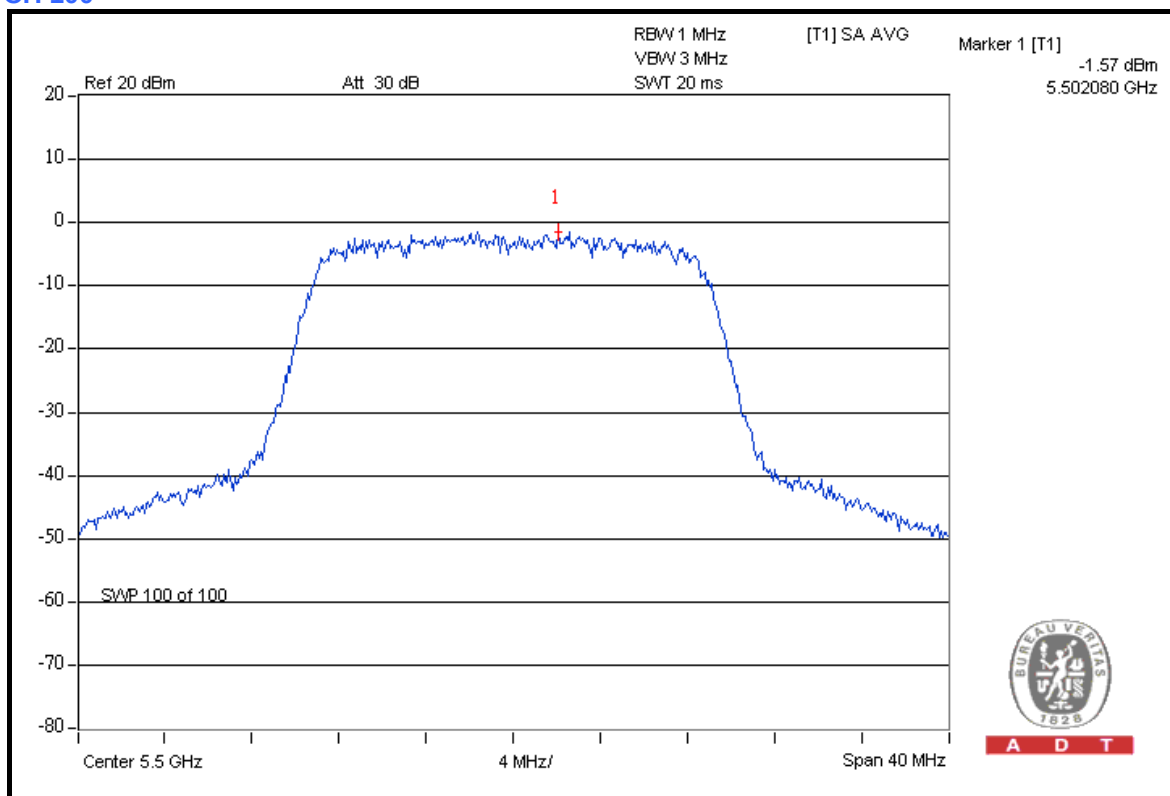


A D T

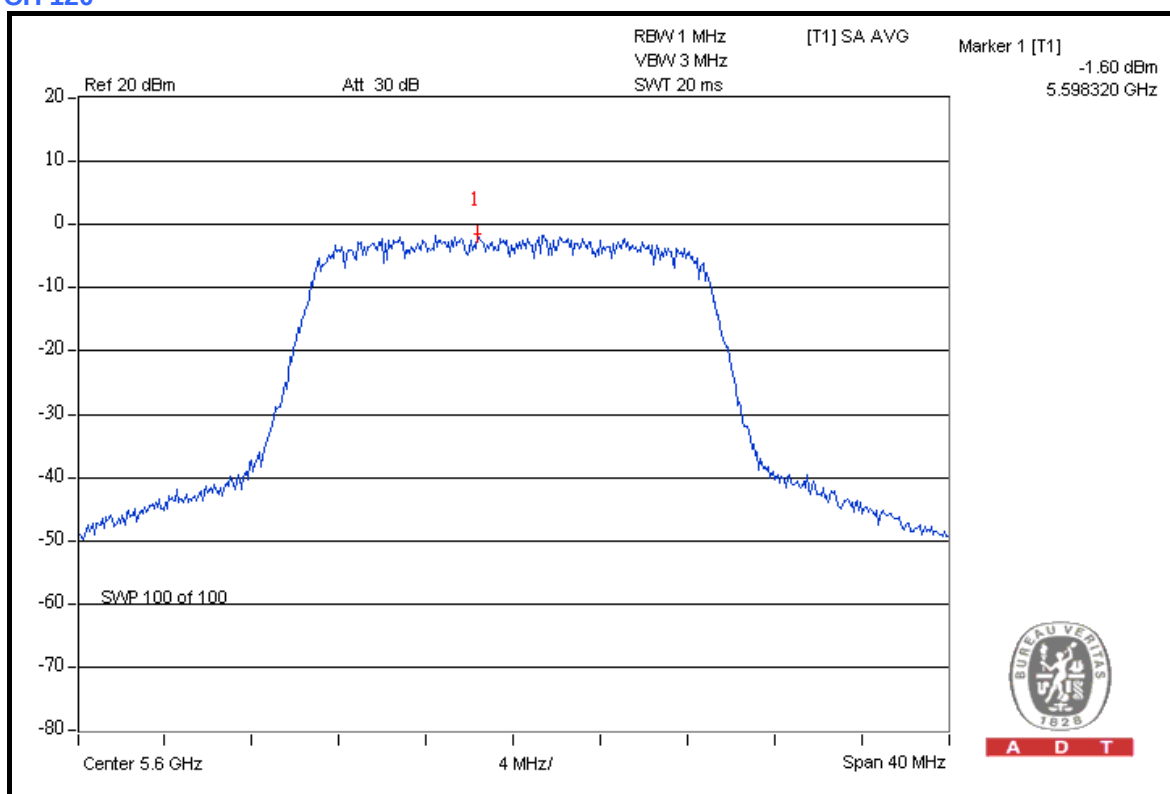


A D T

CH 100



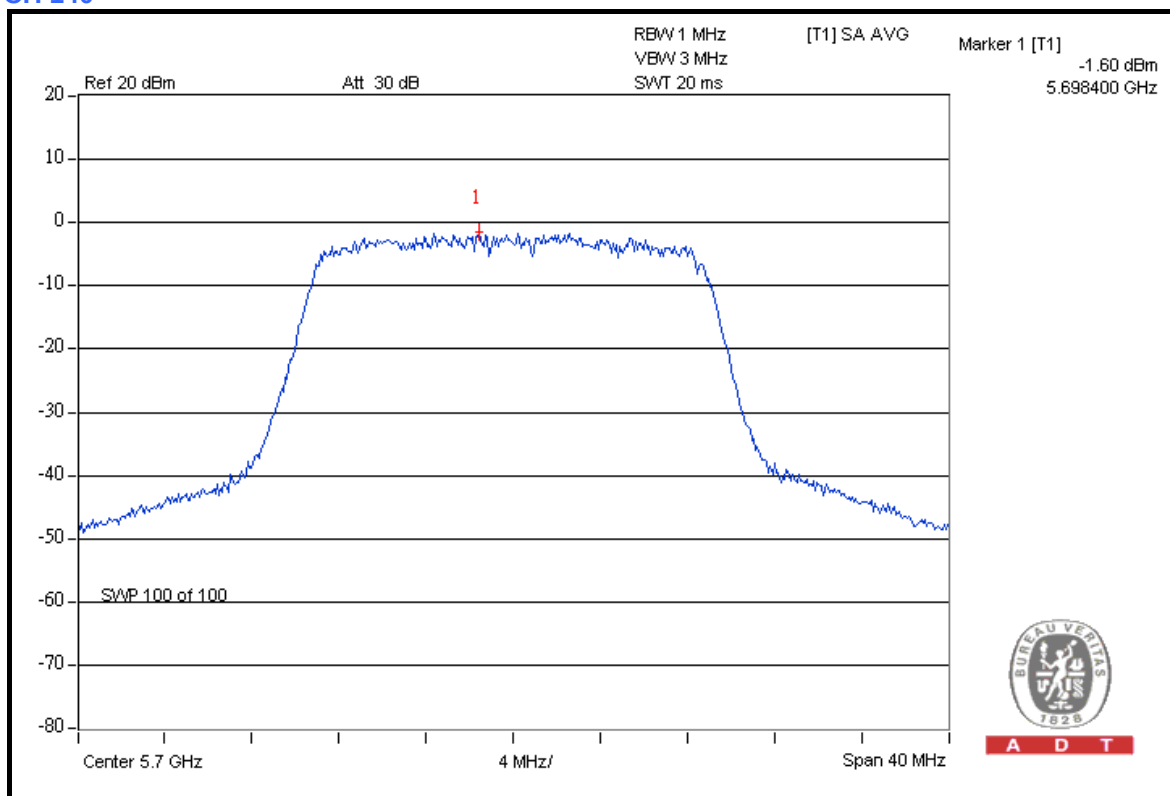
CH 120





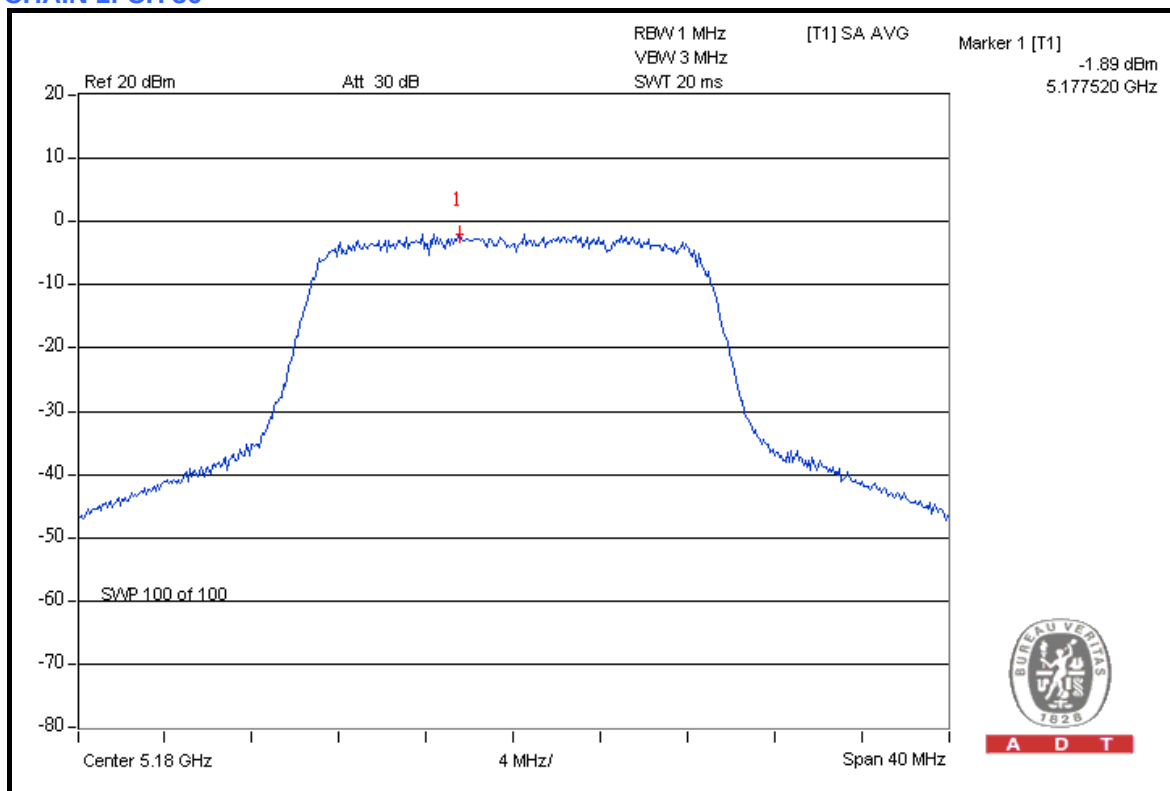
A D T

CH 140



A D T

CHAIN 1: CH 36

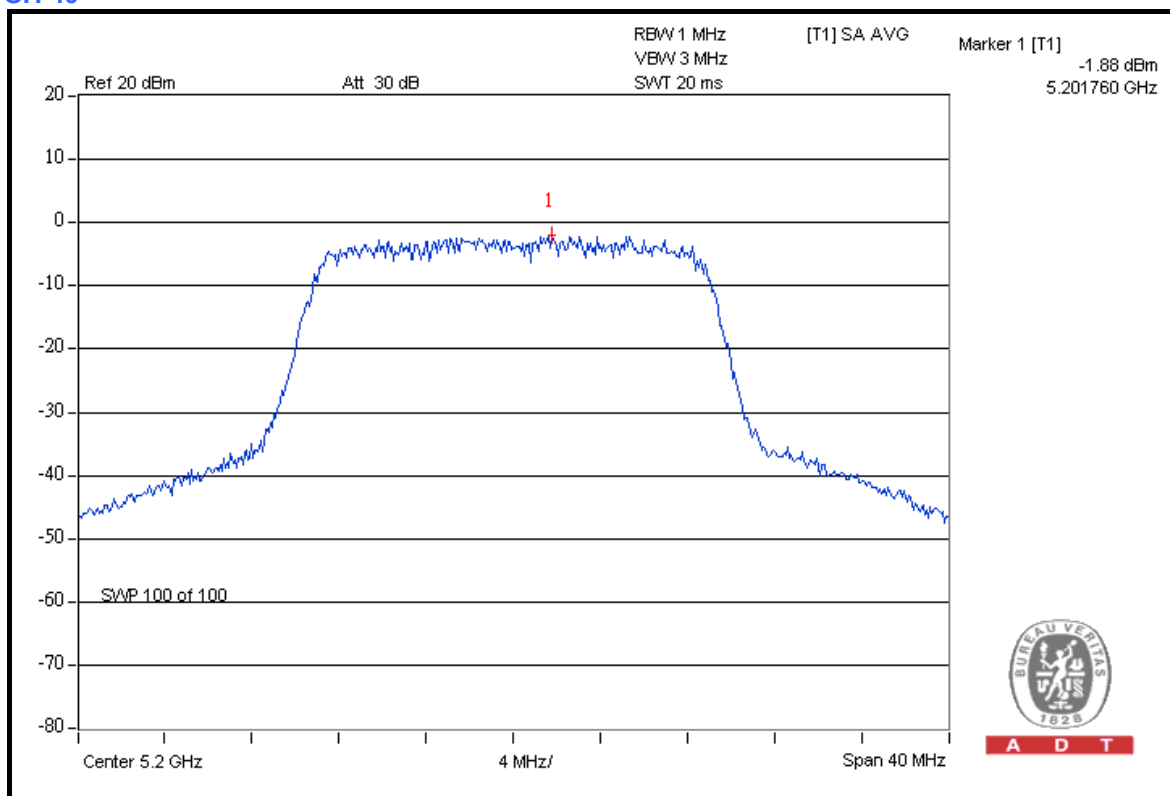


A D T



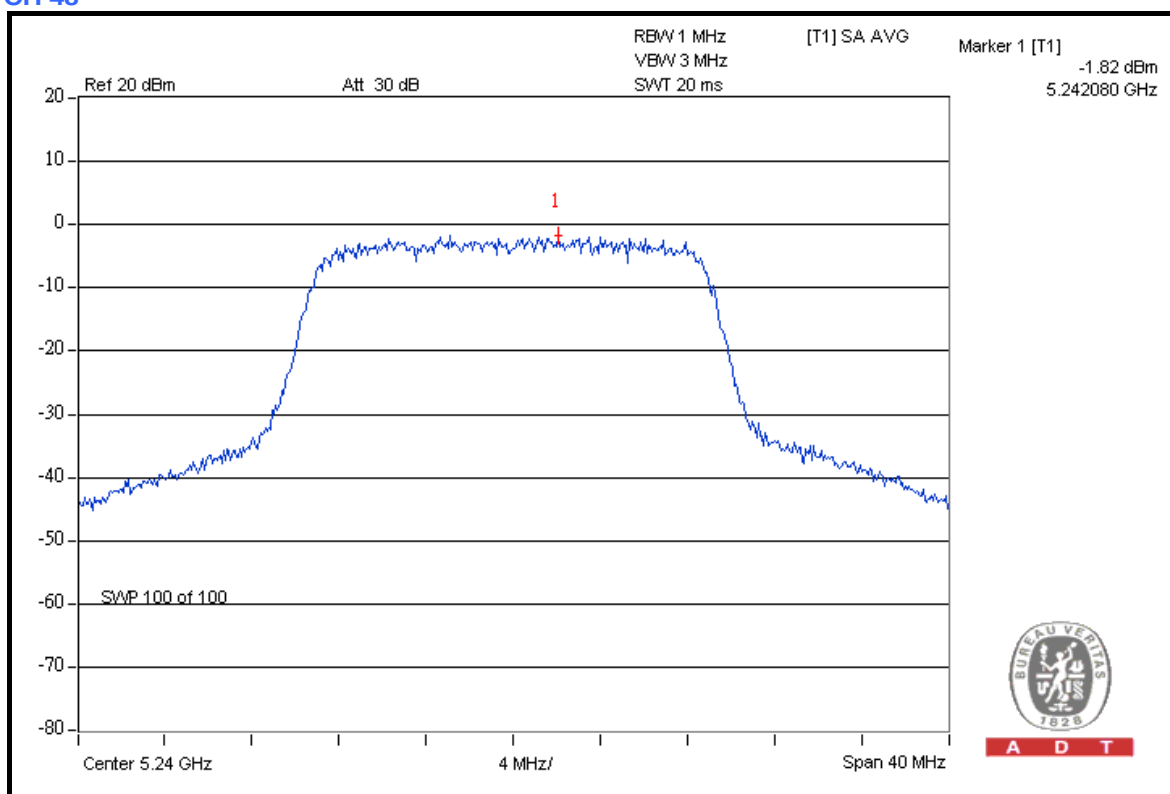
A D T

CH 40



A D T

CH 48

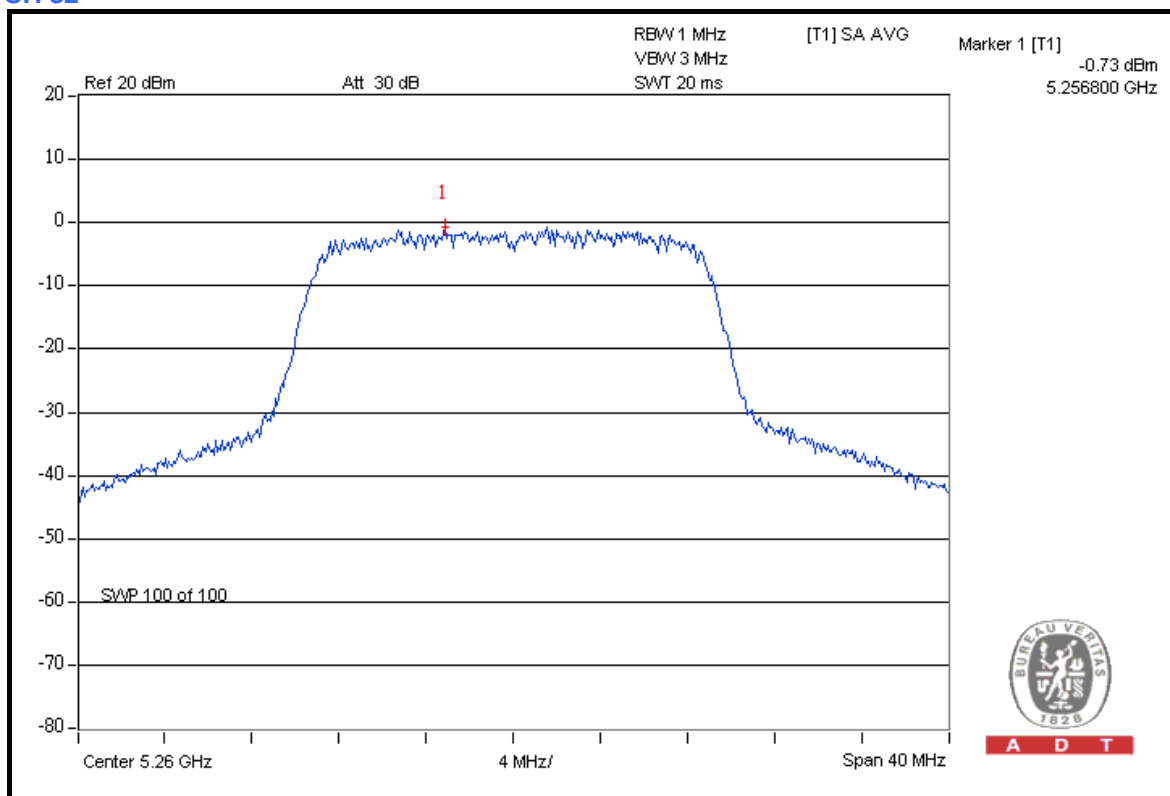


A D T



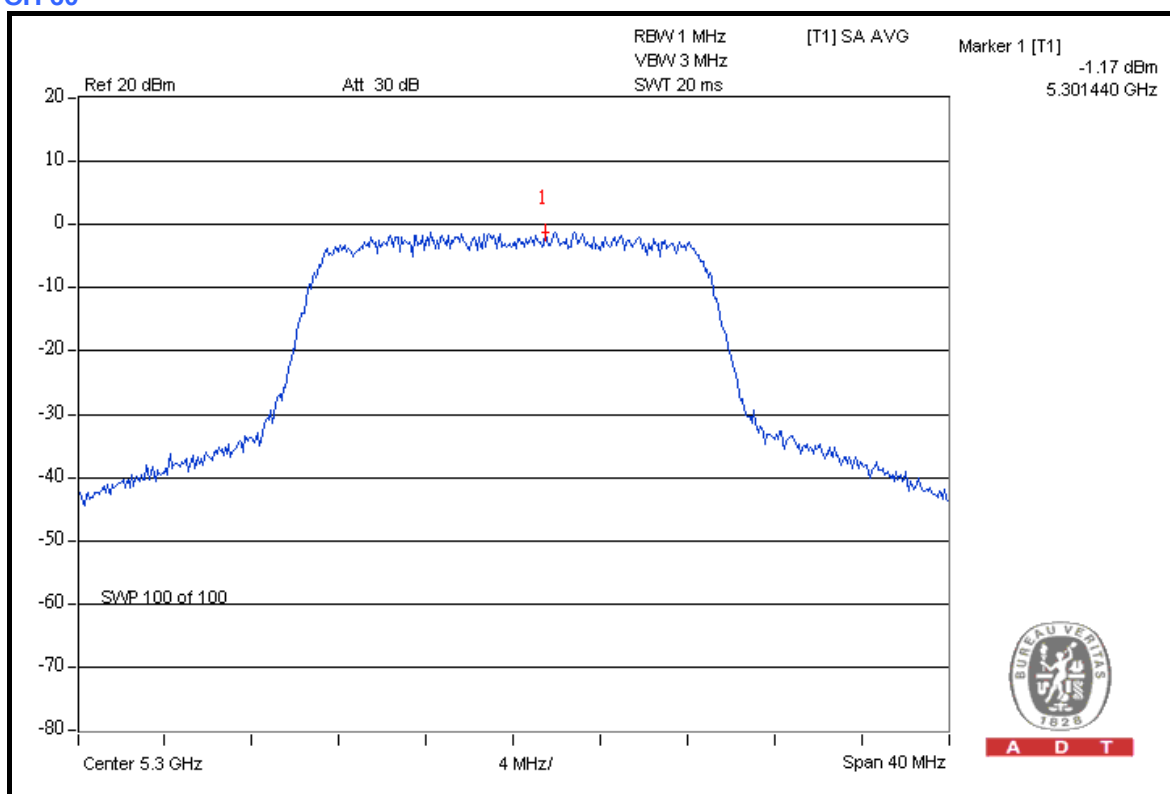
A D T

CH 52



A D T

CH 60

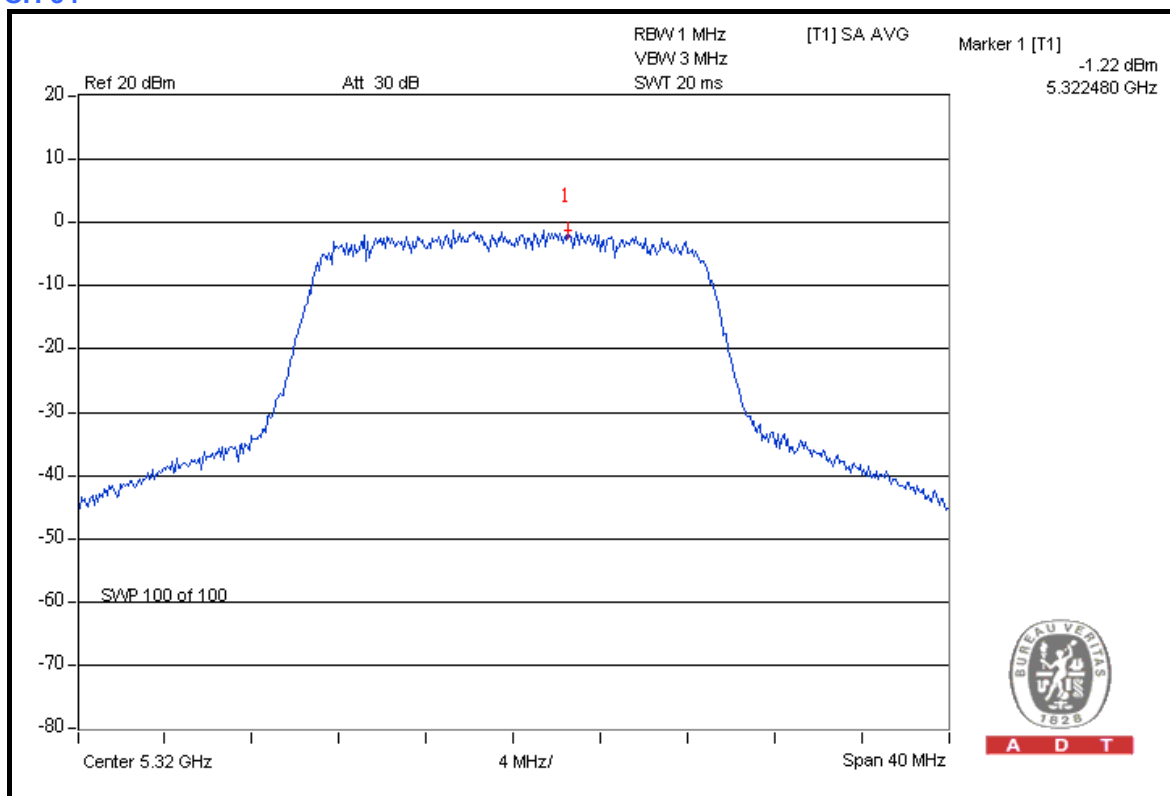


A D T

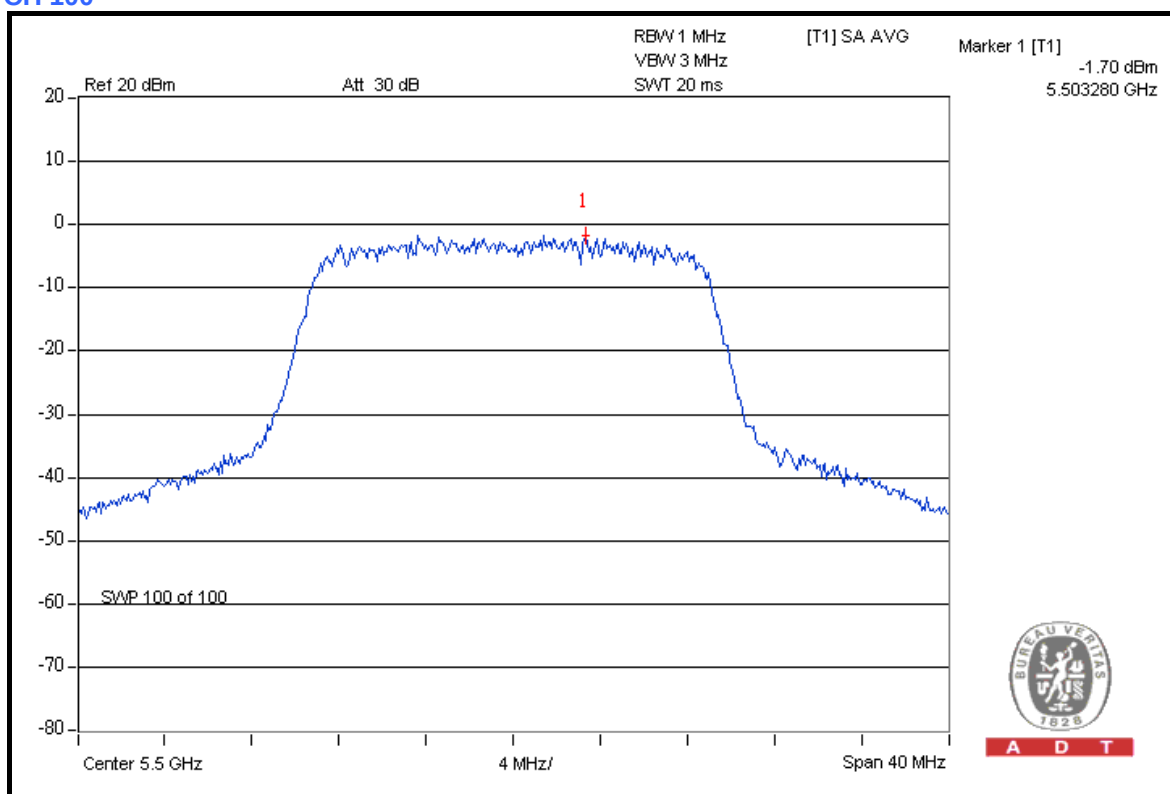


A D T

CH 64



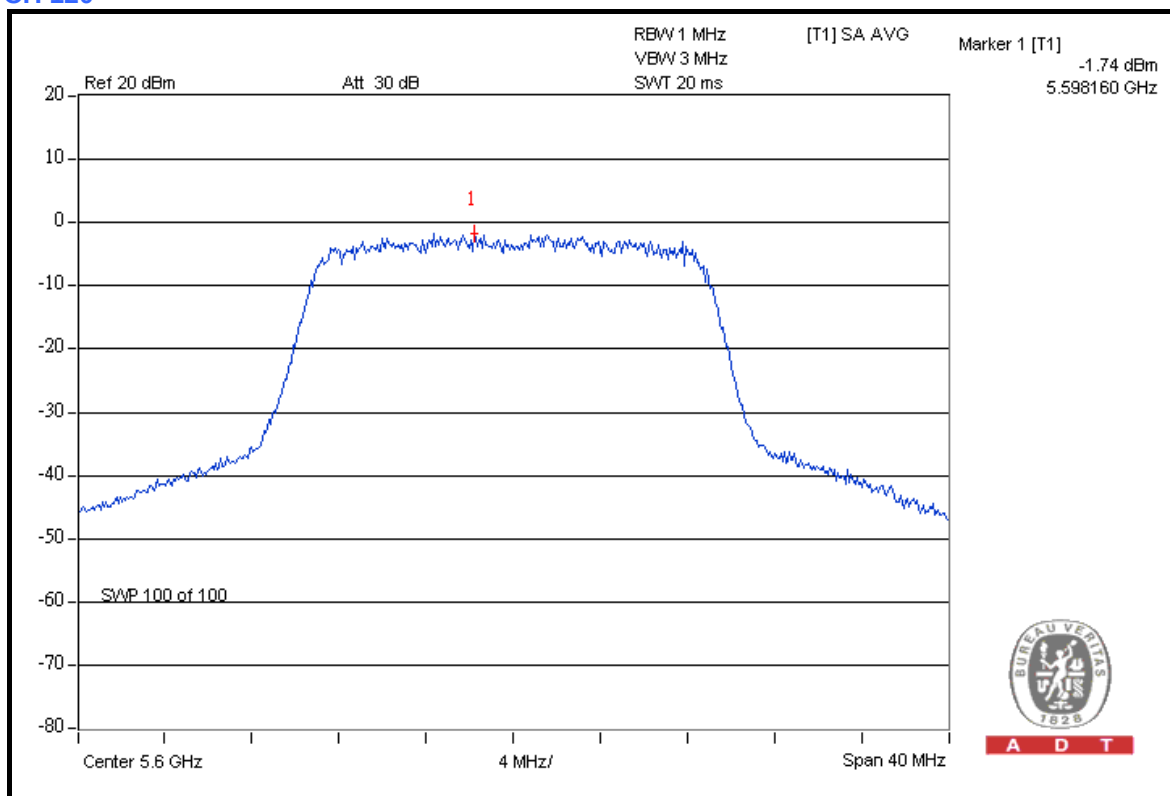
CH 100



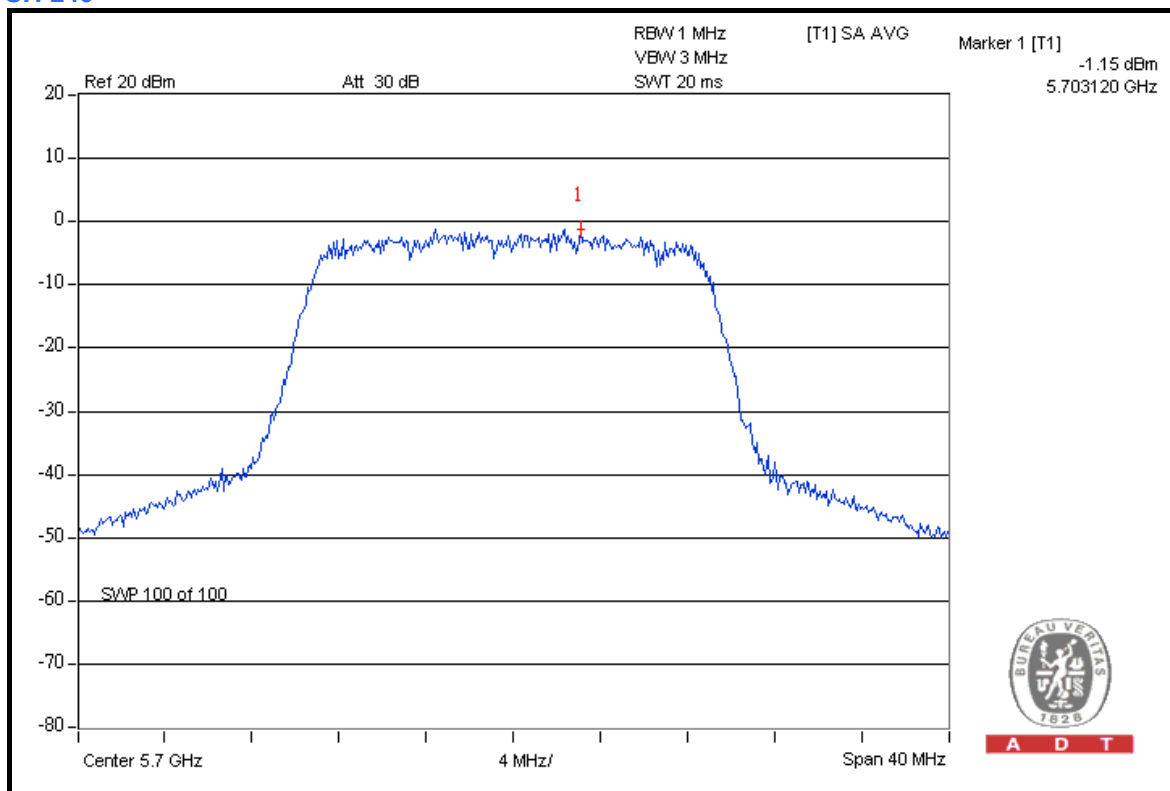


A D T

CH 120



CH 140



**A D T****DRAFT 802.11n (40MHz) OFDM MODULATION**

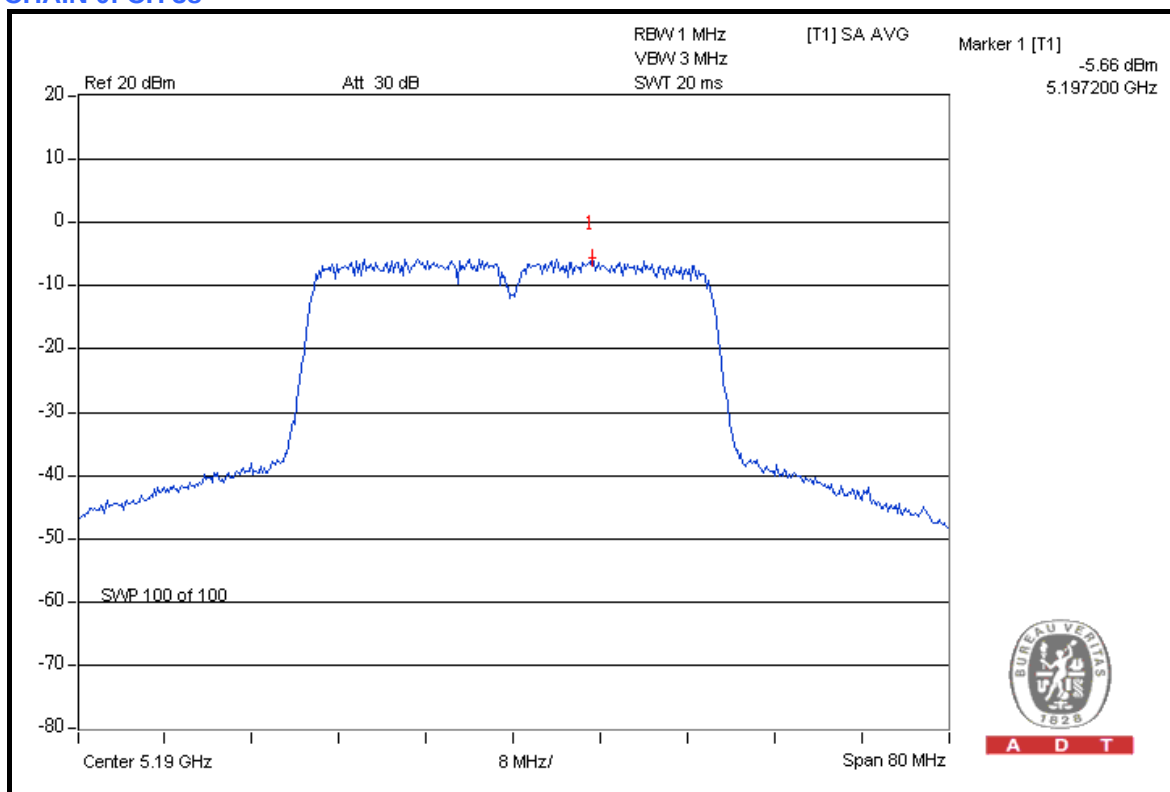
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 70%RH, 1021hPa
TESTED BY	Antony Lee		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-5.66	-5.75	0.538	-2.69	4	PASS
46	5230	-5.56	-5.64	0.551	-2.59	4	PASS
54	5270	-4.97	-5.08	0.629	-2.01	11	PASS
62	5310	-5.52	-5.54	0.560	-2.52	11	PASS
102	5510	-4.94	-5.58	0.597	-2.24	11	PASS
118	5590	-4.98	-5.47	0.601	-2.21	11	PASS
134	5670	-4.92	-4.09	0.712	-1.47	11	PASS



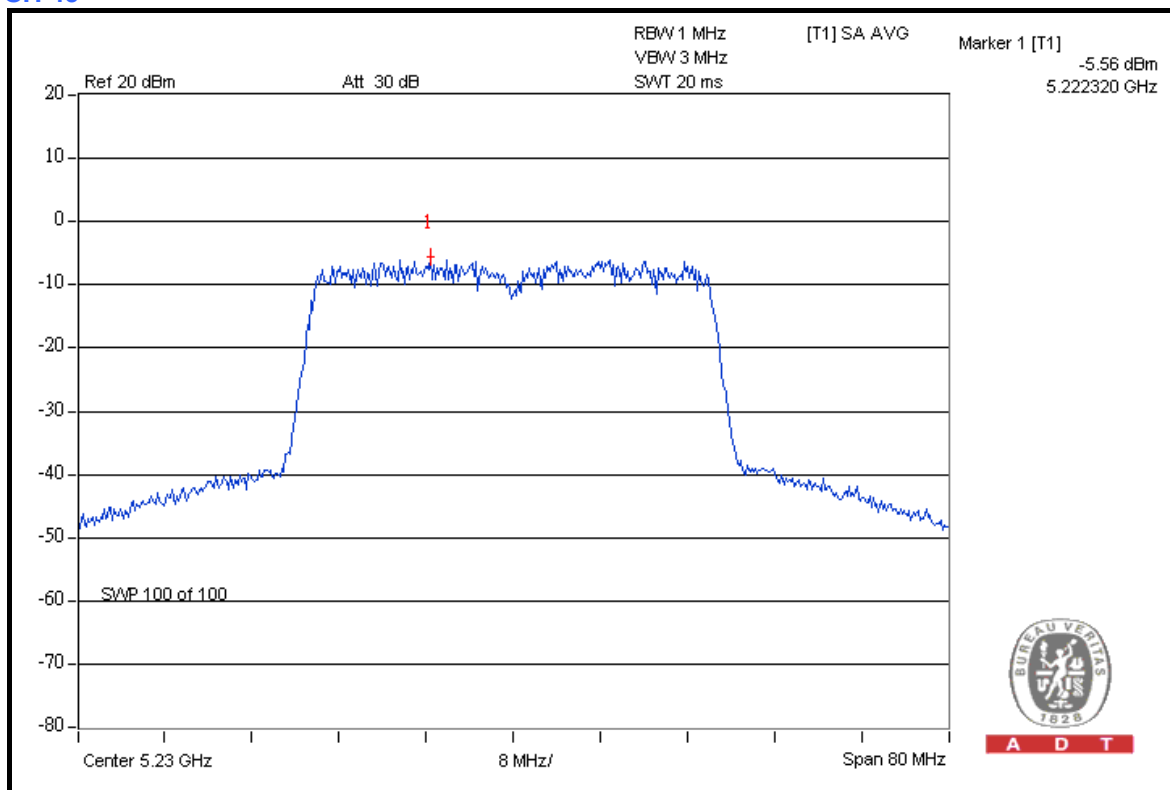
A D T

CHAIN 0: CH 38



A D T

CH 46

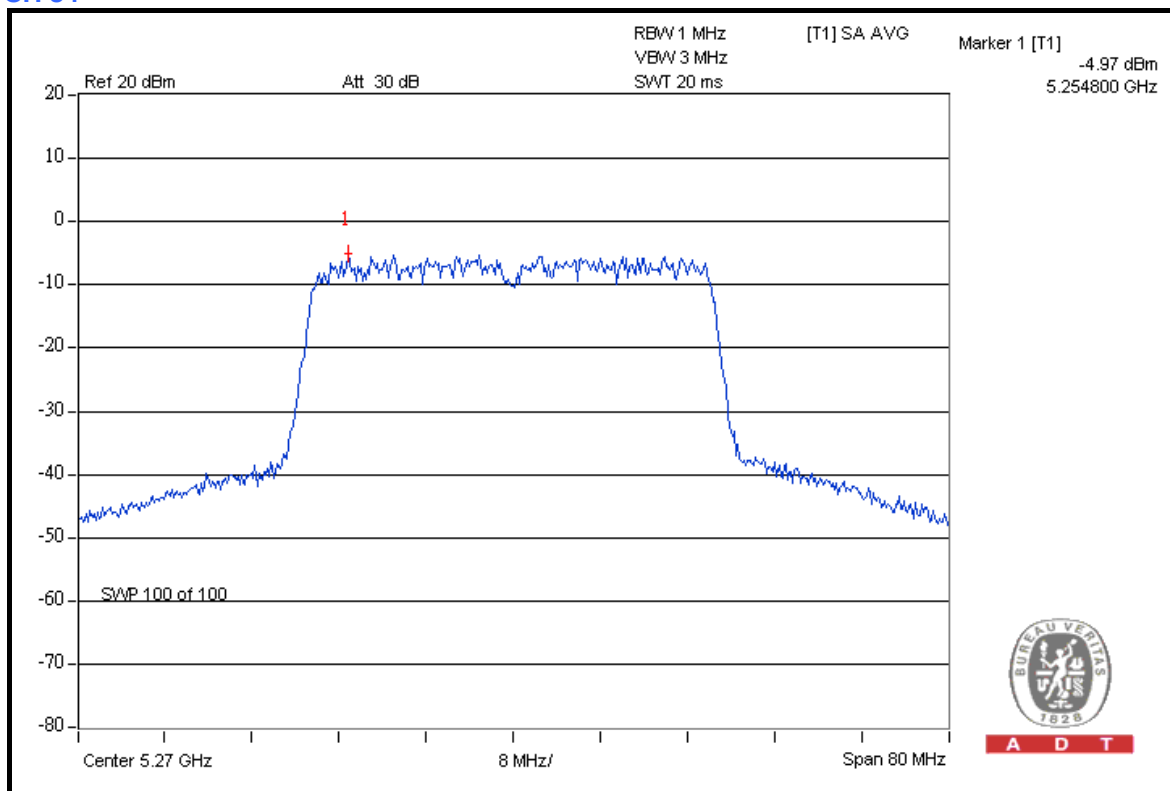


A D T

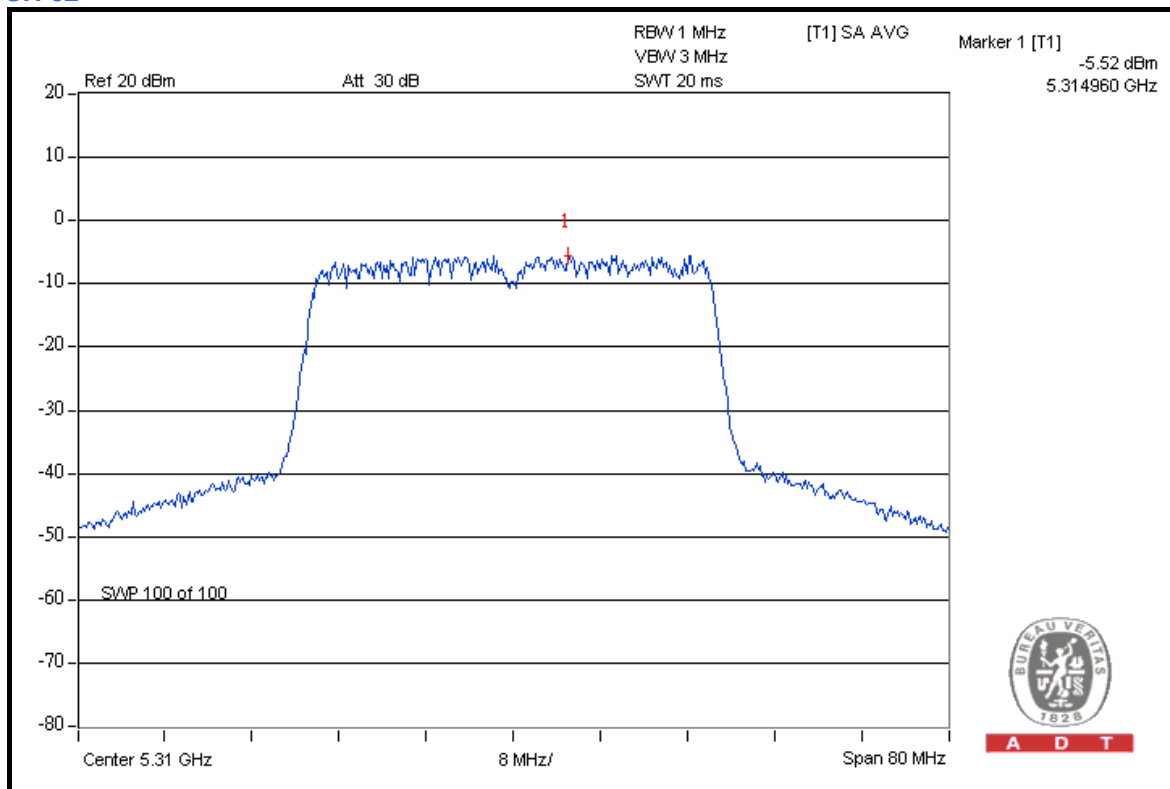


A D T

CH 54



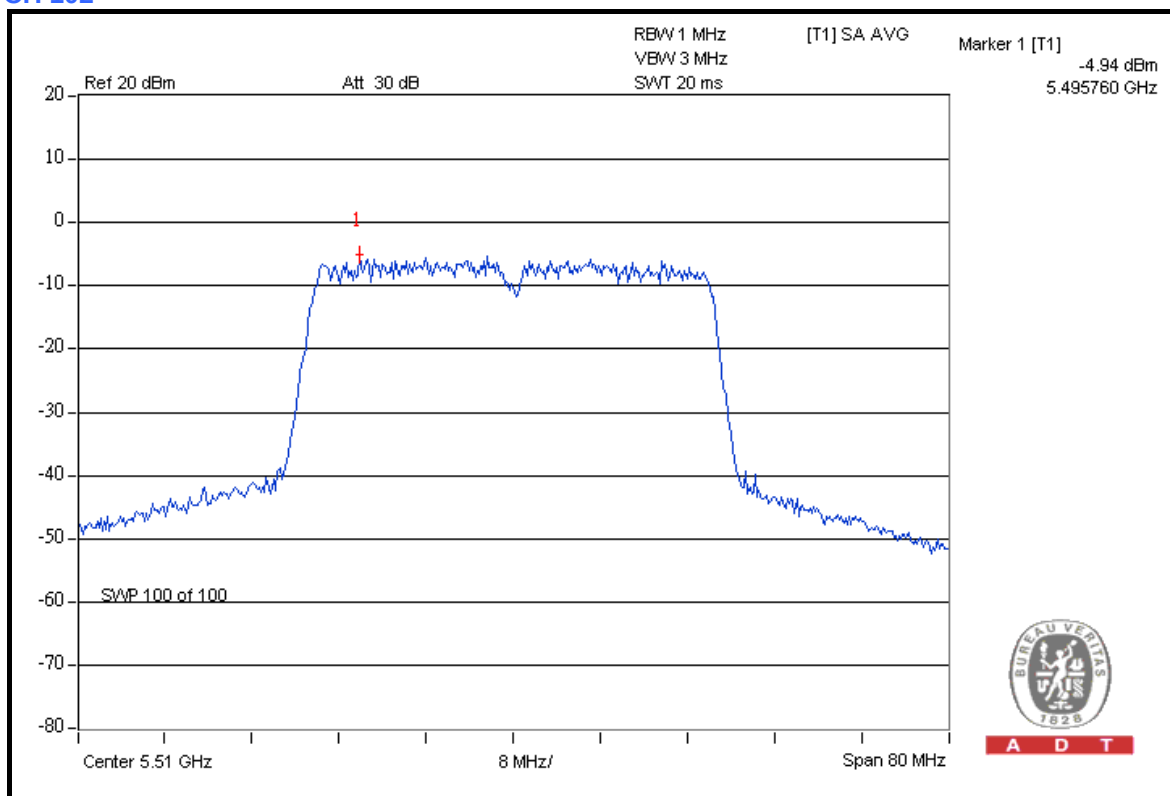
CH 62





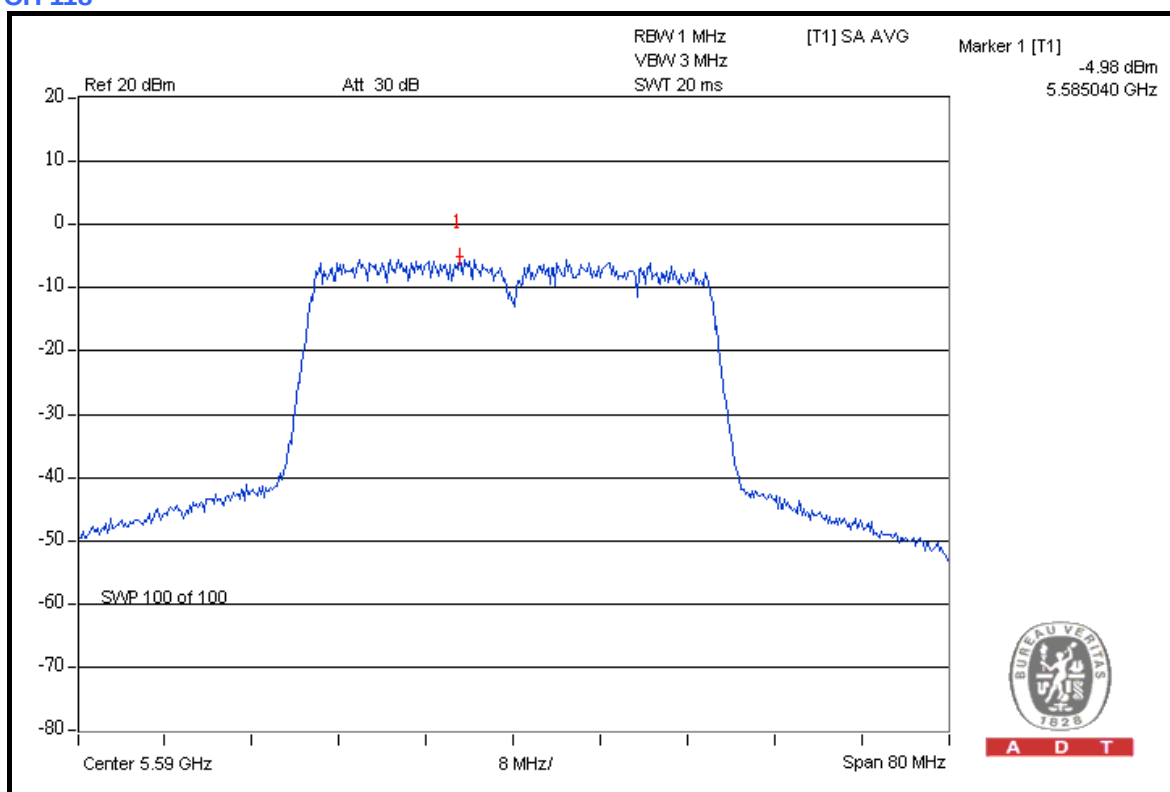
A D T

CH 102



A D T

CH 118

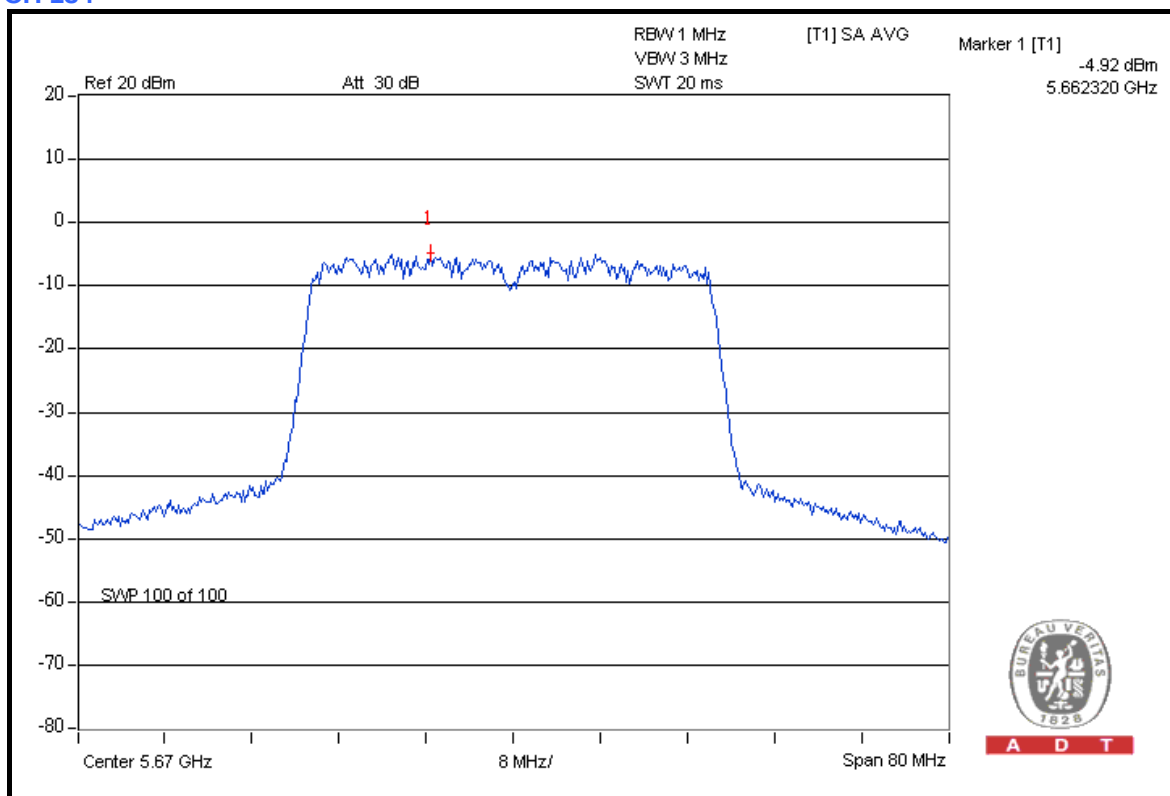


A D T



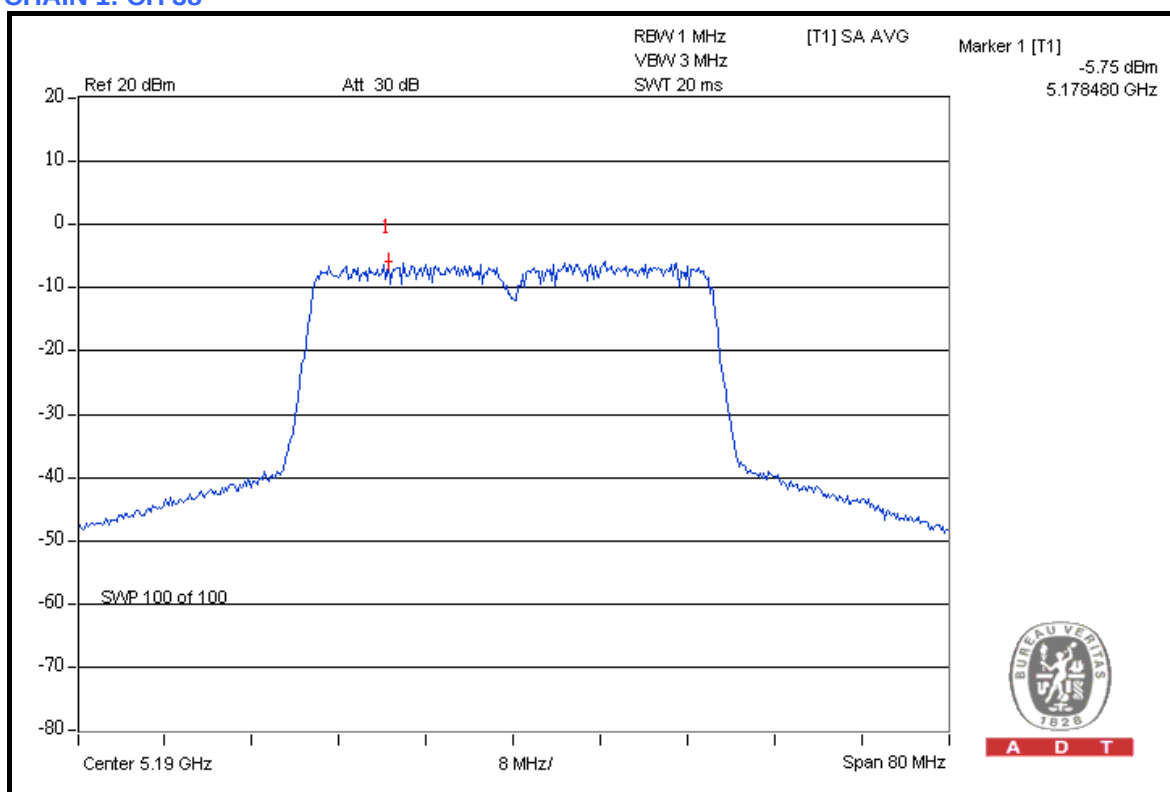
A D T

CH 134



A D T

CHAIN 1: CH 38

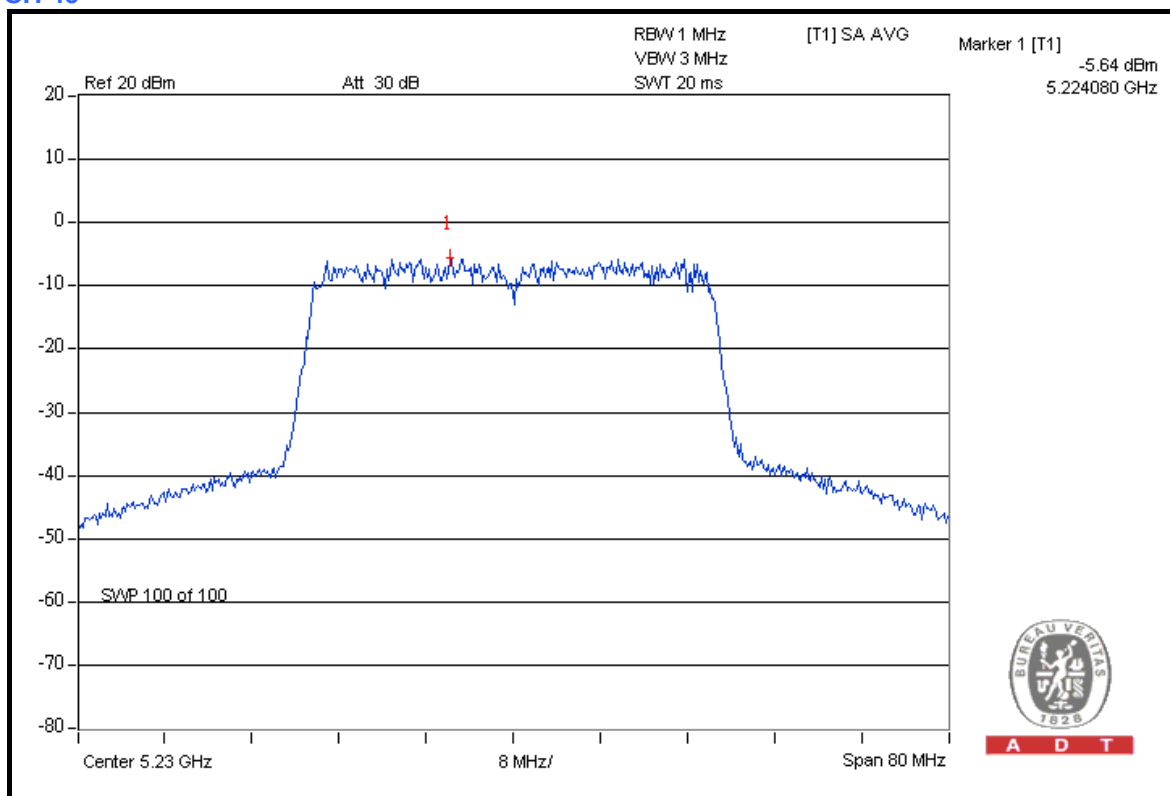


A D T



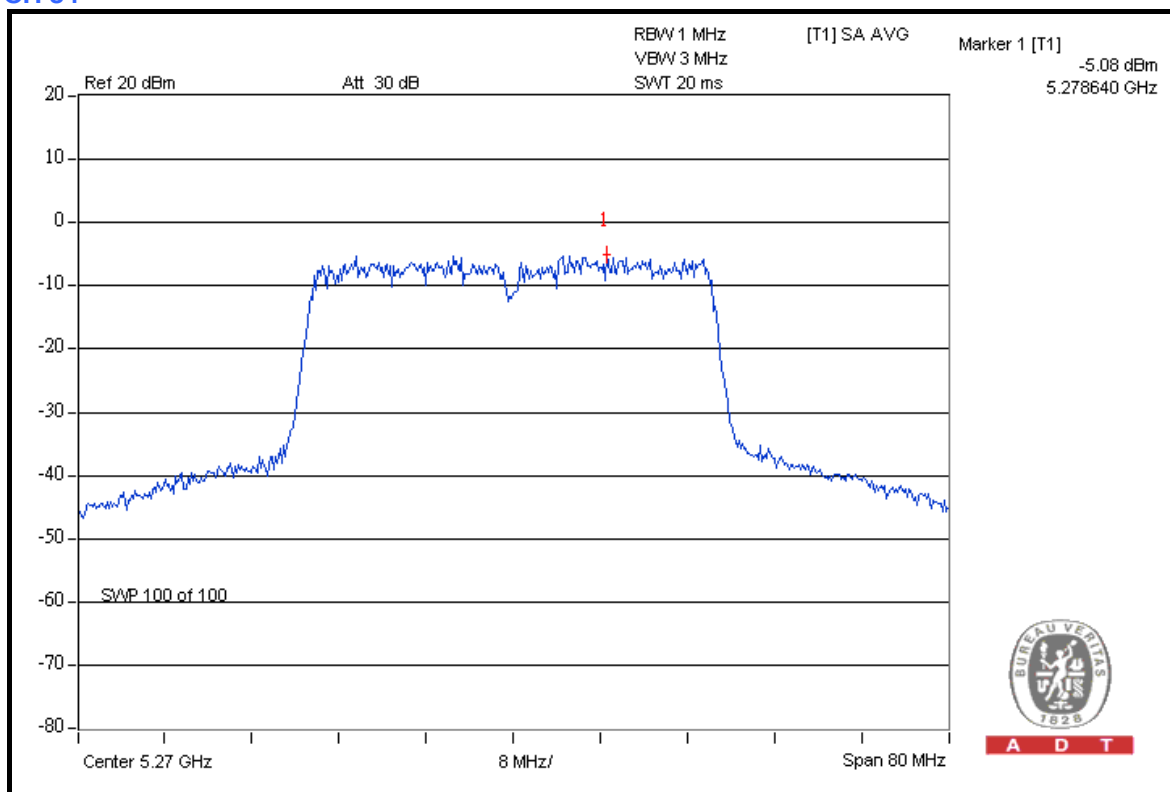
A D T

CH 46



A D T

CH 54

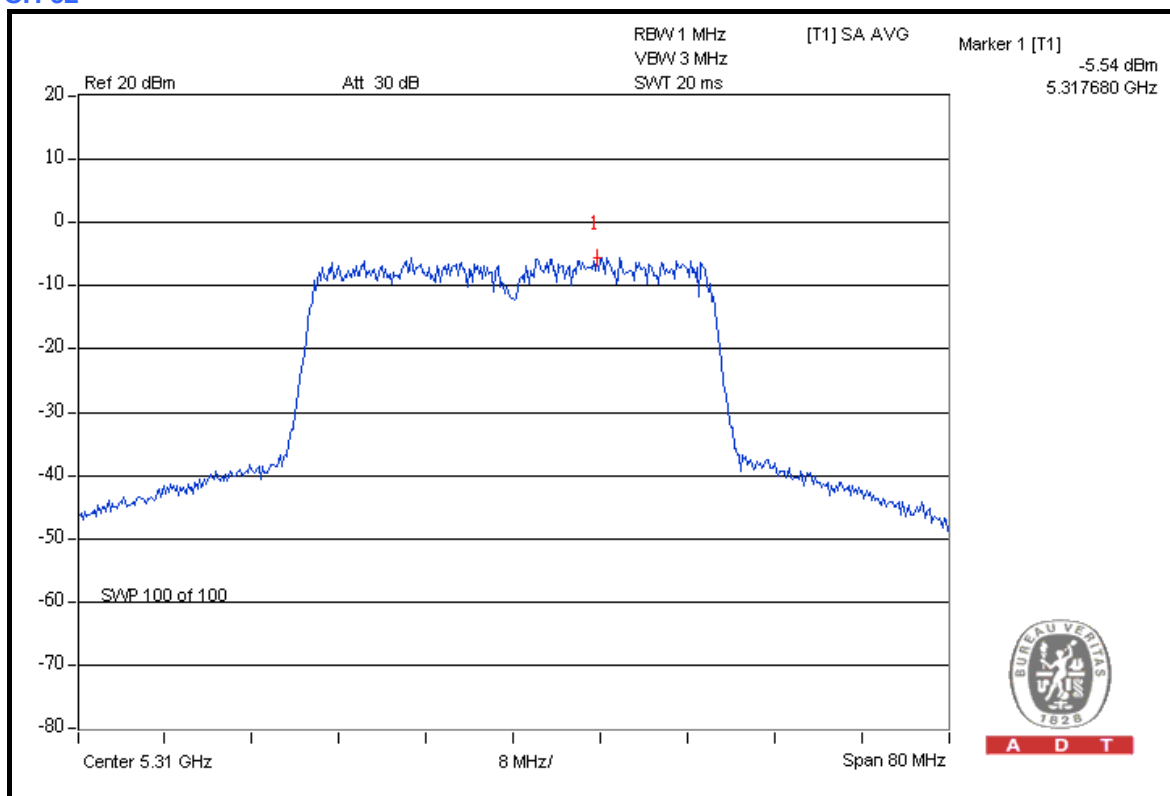


A D T



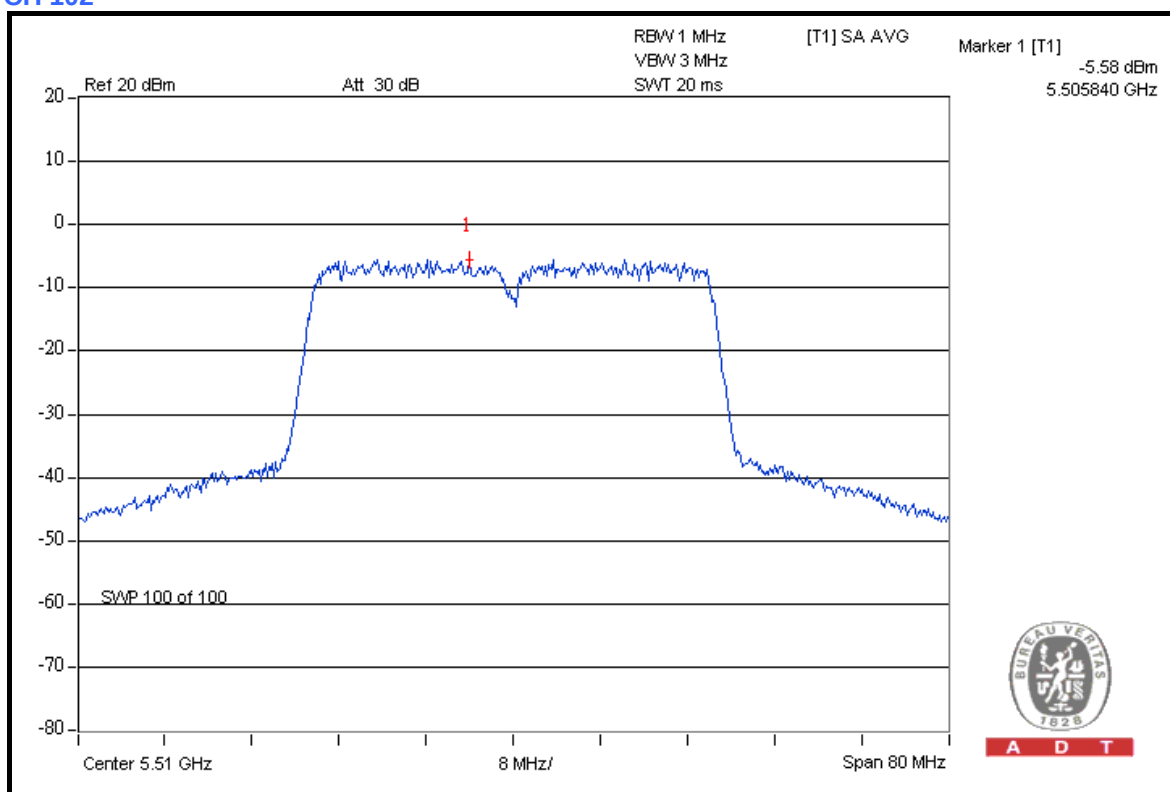
A D T

CH 62



A D T

CH 102

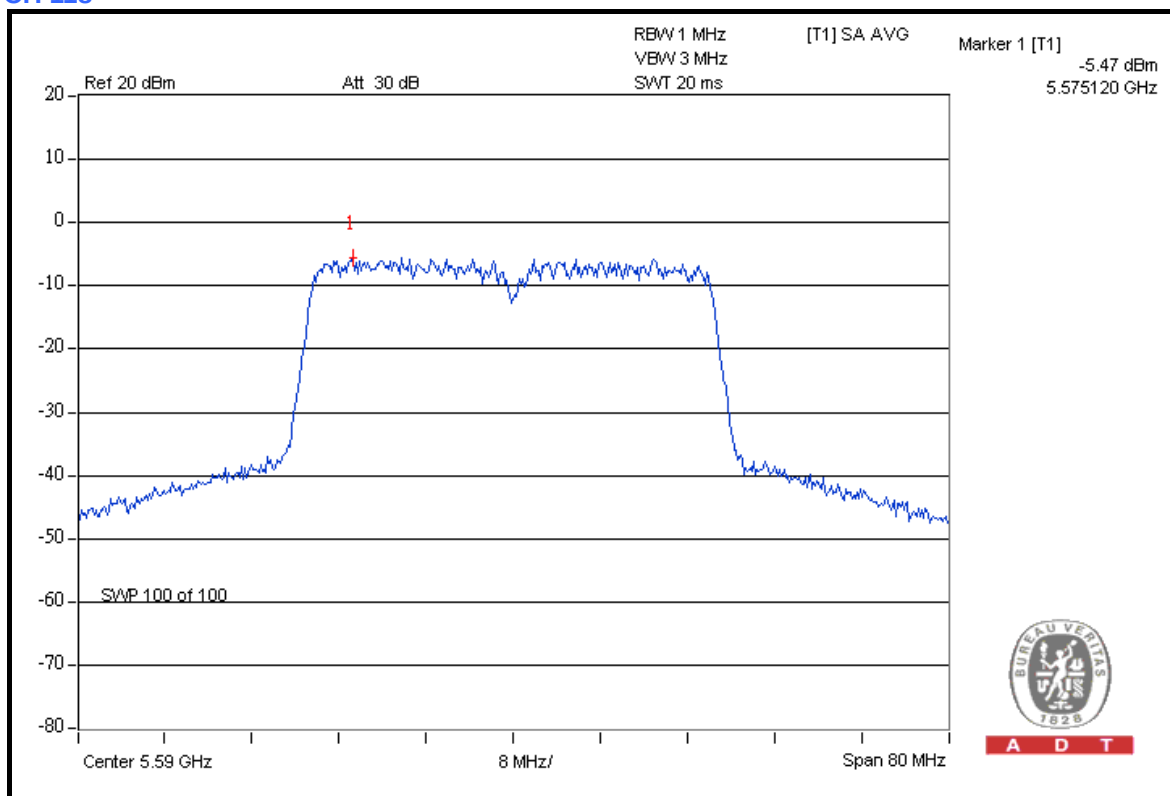


A D T



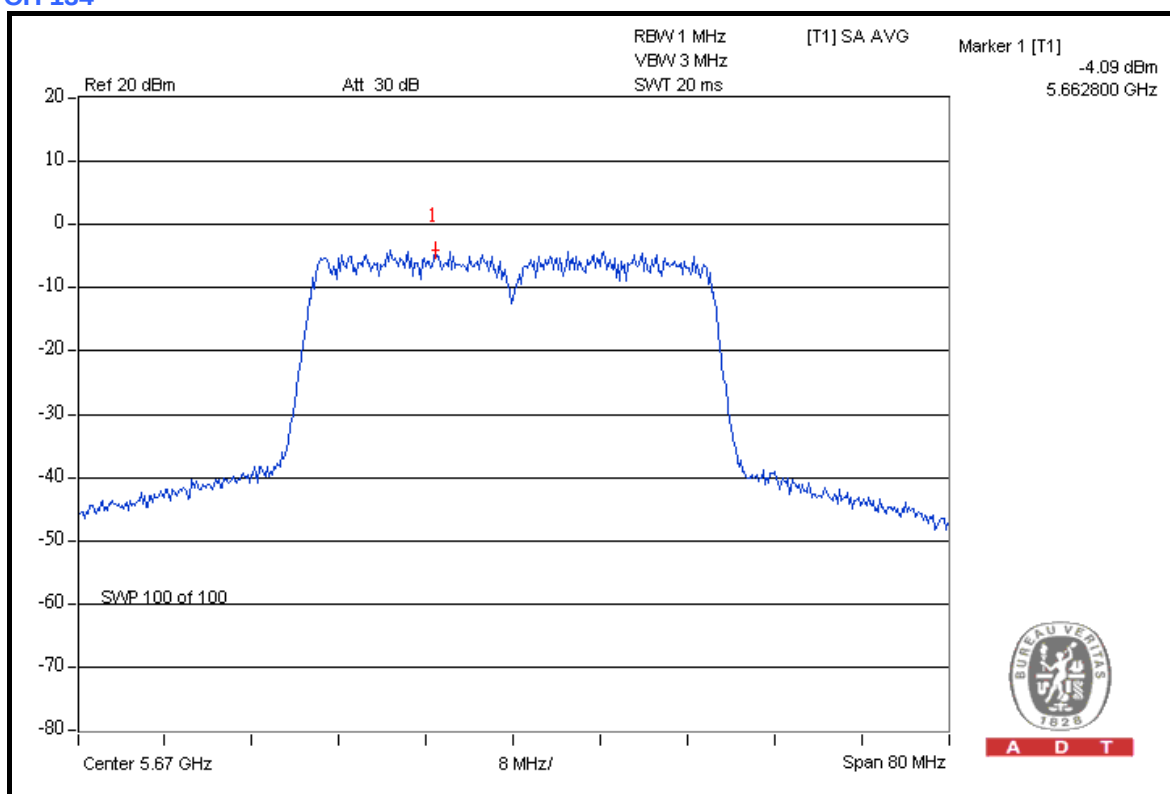
A D T

CH 118



A D T

CH 134



A D T

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

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

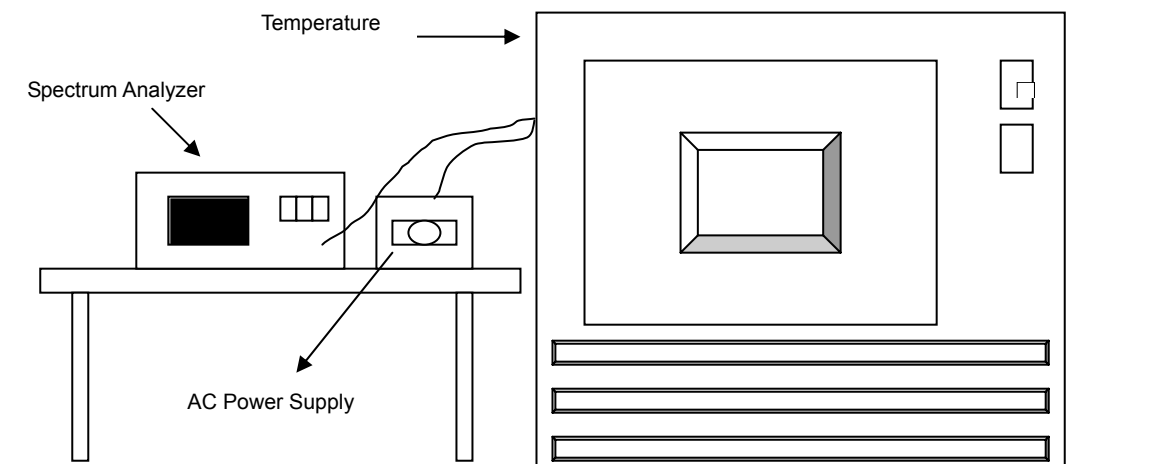
4.6.3 TEST PROCEDURE

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6.

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	ppm	(MHz)	ppm	(MHz)	ppm	(MHz)	ppm
50	110.0	5320.001767	0.332	5320.001978	0.372	5320.002327	0.437	5320.002635	0.495
40	110.0	5320.001403	0.264	5320.001779	0.334	5320.001854	0.348	5320.002127	0.400
30	110.0	5320.001401	0.263	5320.001817	0.342	5320.001971	0.370	5320.002222	0.418
20	110.0	5320.000524	0.098	5320.000981	0.184	5320.001514	0.285	5320.001788	0.336
10	110.0	5320.001459	0.274	5320.001645	0.309	5320.001759	0.331	5320.002009	0.378
0	110.0	5320.001182	0.222	5320.001151	0.216	5320.001671	0.314	5320.002136	0.402
-10	110.0	5320.001255	0.236	5320.001059	0.199	5320.001170	0.220	5320.001172	0.220
-20	110.0	5320.001260	0.237	5320.001253	0.236	5320.001483	0.279	5320.001794	0.337
-30	110.0	5320.001314	0.247	5320.001296	0.244	5320.001608	0.302	5320.001924	0.362

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		(MHz)	ppm	(MHz)	ppm	(MHz)	ppm	(MHz)	ppm
20	93.5	5320.001430	0.269	5320.000831	0.156	5320.001329	0.250	5320.001771	0.333
	110.0	5320.000524	0.098	5320.000981	0.184	5320.001514	0.285	5320.001788	0.336
	126.5	5320.001552	0.292	5320.001398	0.263	5320.001471	0.277	5320.001805	0.339

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
FOR CONDUCTED MEASUREMENT				
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009
FOR RADIATED MEASUREMENT				
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May 25, 2009	May 24, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 08, 2008	Aug. 07, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2009	Apr. 29, 2010
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Aug. 06, 2008	Aug. 05, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009	Jan. 05, 2010
Preamplifier Agilent	8449B	3008A01911	Sep. 10, 2008	Sep. 09, 2009
Preamplifier Agilent	8447D	2944A10638	Dec. 26, 2008	Dec. 25, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 13, 2009	May 12, 2010
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008	Aug. 08, 2009
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2008	Aug. 26, 2009

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

4.7.2 TEST PROCEDURE

FOR CONDUCTED MEASUREMENT:

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) are attached on the following pages.

FOR RADIATED MEASUREMENT:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

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

4.7.3 EUT OPERATING CONDITION

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

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.15 to 5.35GHz and 5.47 to 5.725GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak field strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

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

FOR 5180-5320MHz BAND: 802.11a OFDM MODULATION

Channel 36 (5180MHz)

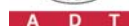
The band edge emission plot on the next second page shows 44.76dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 110.87dBuV/m (Peak), so the maximum field strength in restrict band is $110.87 - 44.76 = 66.11$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next second page shows 54.43dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 100.34dBuV/m (Average), so the maximum field strength in restrict band is $100.34 - 54.43 = 45.91$ dBuV/m which is under 54dBuV/m limit.

Channel 64 (5320MHz)

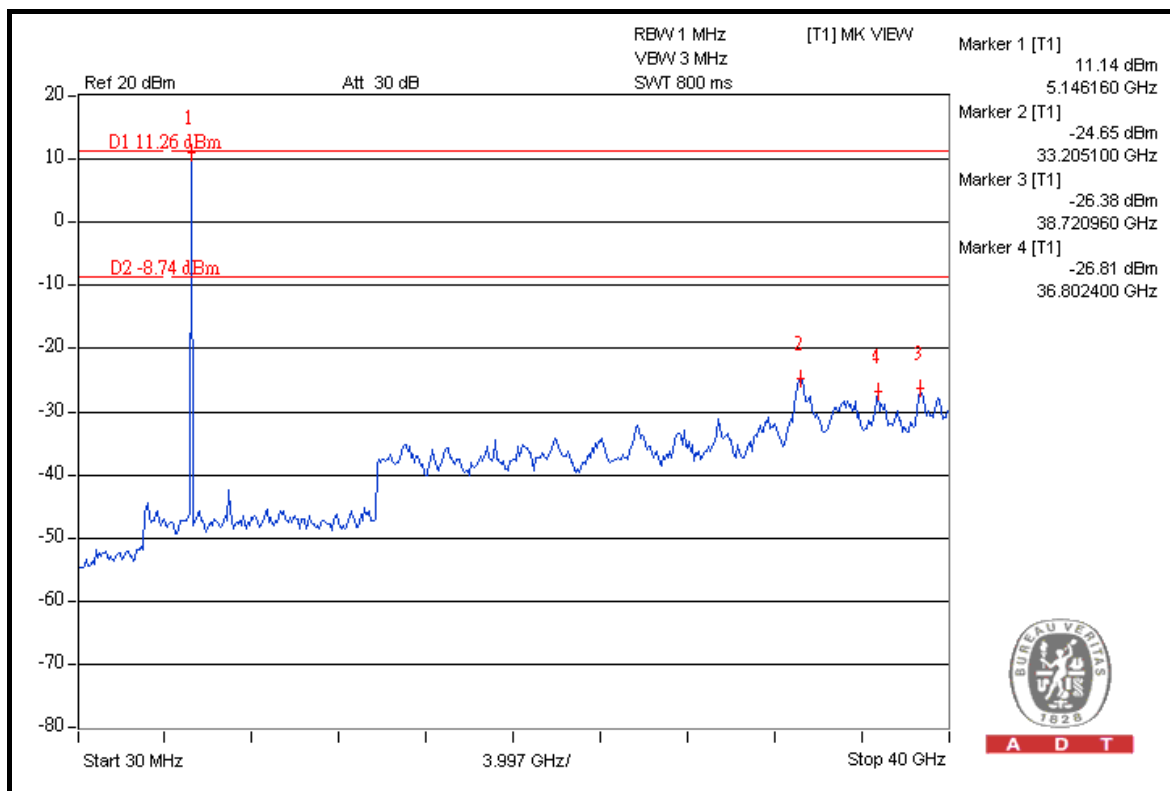
The band edge emission plot on the next third page shows 47.78dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 109.91dBuV/m (Peak), so the maximum field strength in restrict band is $109.91 - 47.78 = 62.13$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next fourth page shows 55.44dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 99.28dBuV/m (Average), so the maximum field strength in restrict band is $99.28 - 55.44 = 43.84$ dBuV/m which is under 54dBuV/m limit.

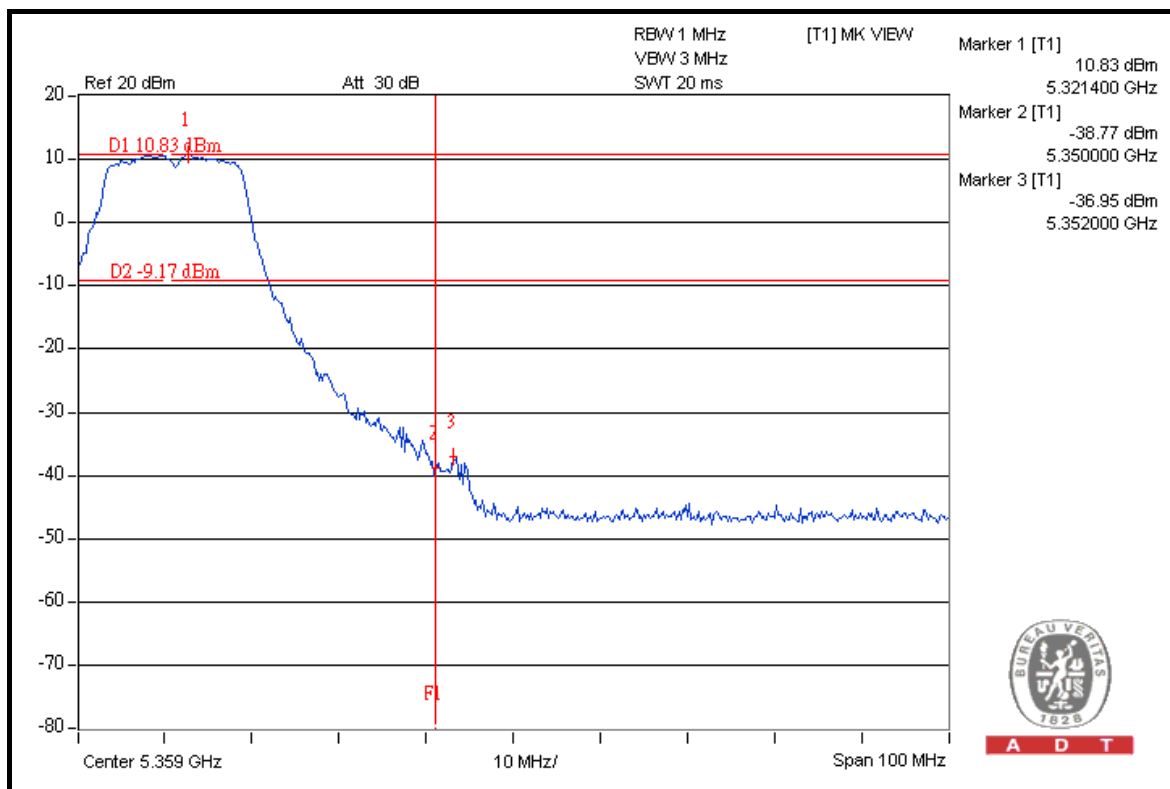




A D T



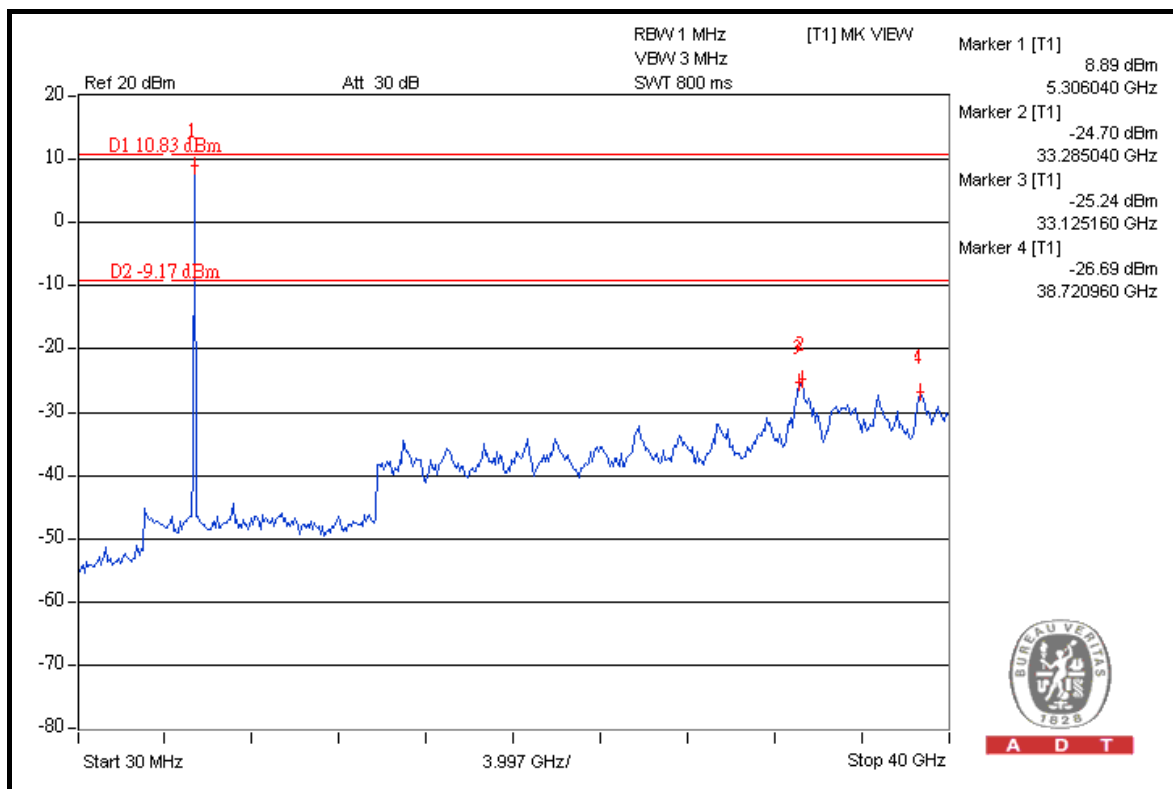
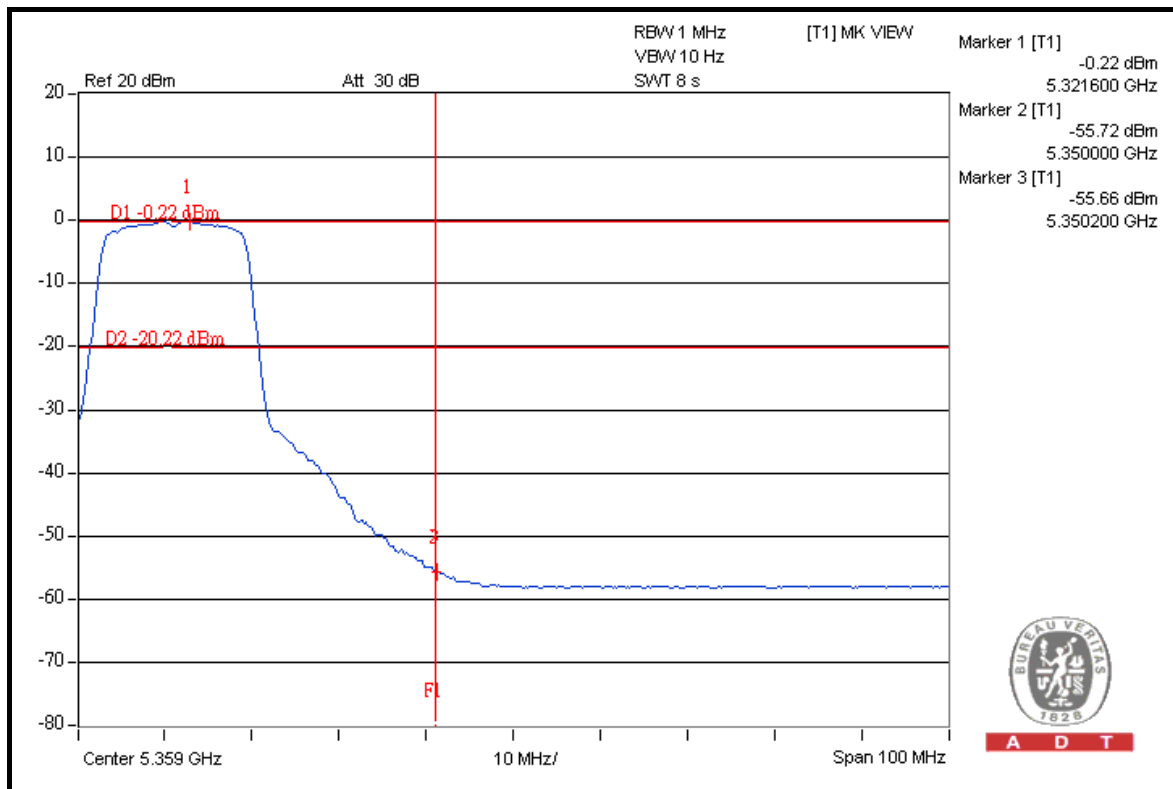
A D T



A D T



A D T



FOR 5500-5700MHz BAND: 802.11a OFDM MODULATION

Channel 100 (5500MHz)

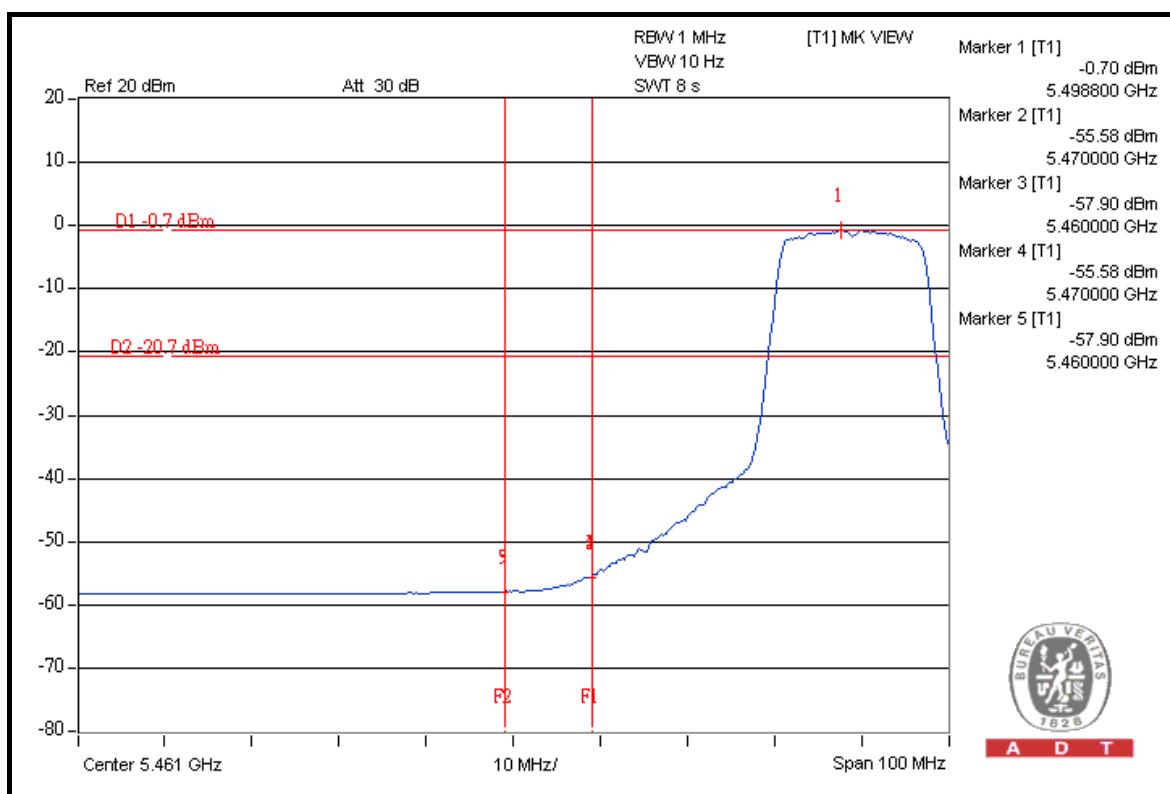
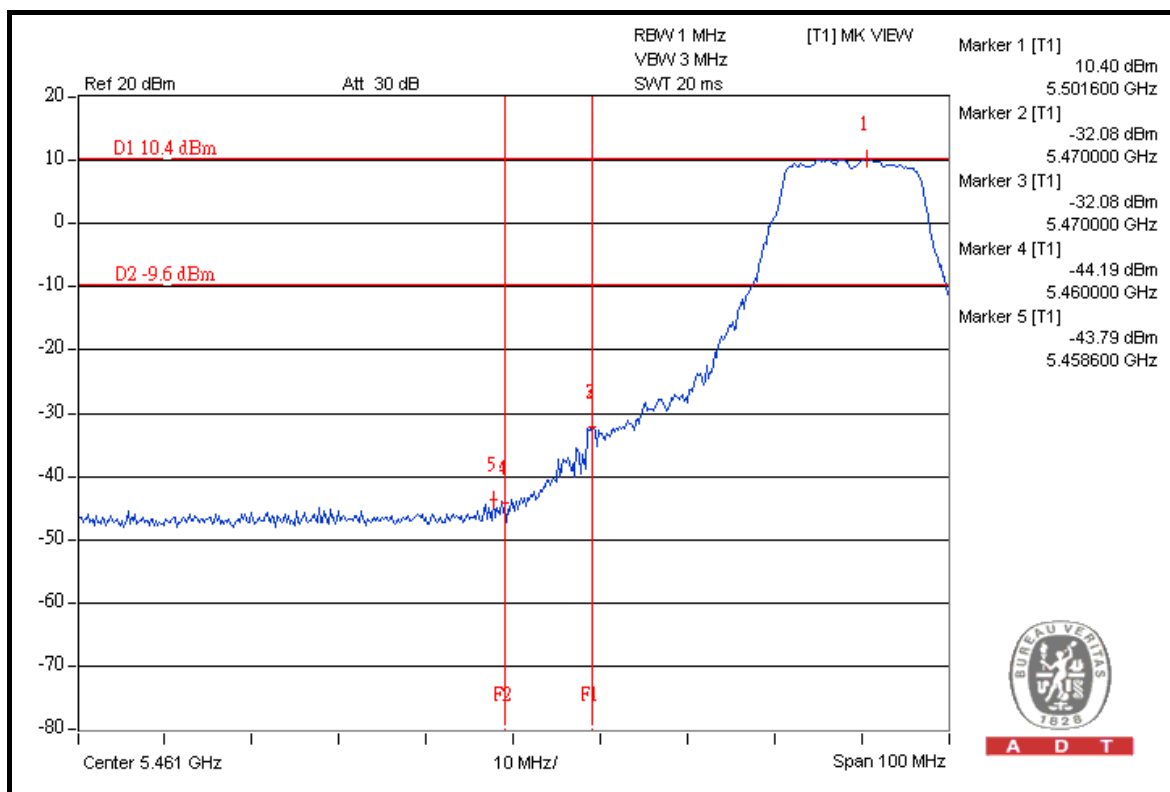
The band edge emission plot (5.460GHz) on the next second page shows 54.19dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 100 is 109.24dBuV/m (Peak), so the maximum field strength out of band emission is $109.24 - 54.19 = 55.05\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next second page shows 57.20dBc 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 98.02dBuV/m (Average), so the maximum field strength in restrict band is $98.02 - 57.20 = 40.82\text{dBuV/m}$ which is under 54dBuV/m limit.

The band edge emission plot (5.470GHz) on the next second page shows 42.48dBc 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 109.24dBuV/m (Peak), so the maximum field strength in restrict band is $109.24 - 42.48 = 66.76\text{dBuV/m}$ which is under 68.3dBuV/m limit.

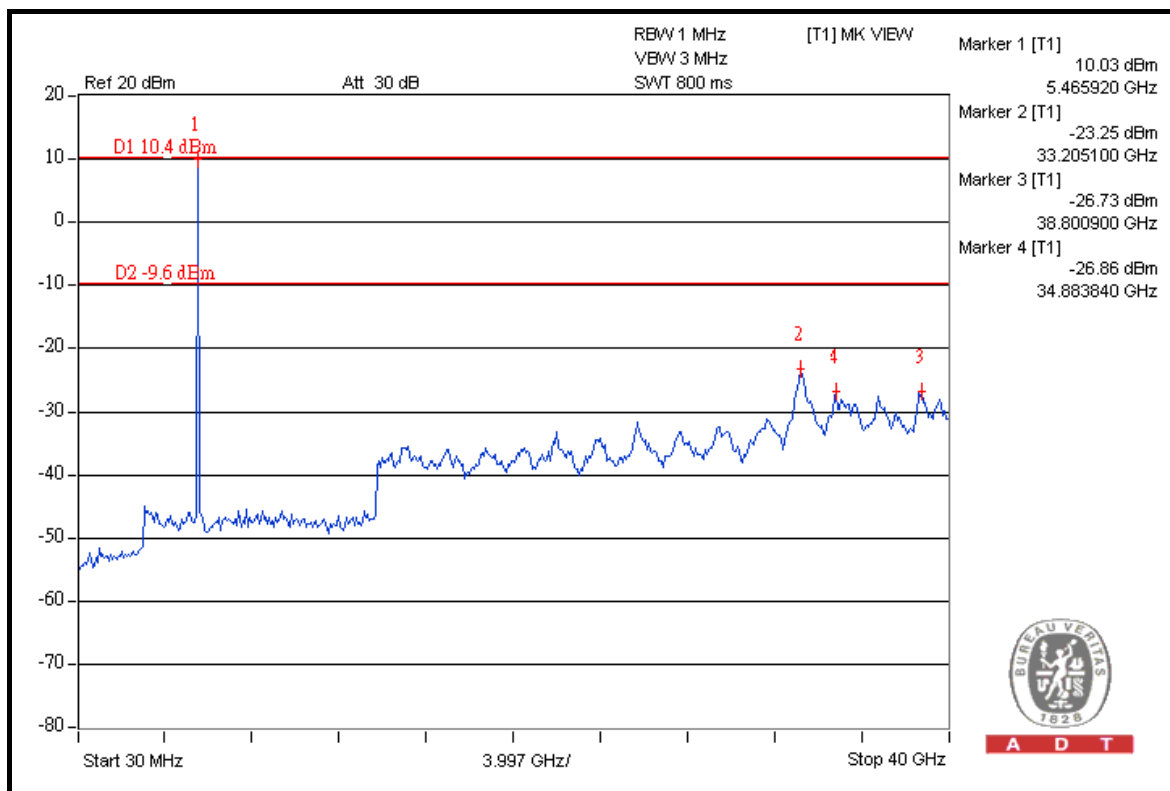
Channel 140 (5700MHz)

The band edge emission plot on the next third page shows 42.23dBc 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 109.42dBuV/m (Peak), so the maximum field strength in restrict band is $109.42 - 42.23 = 67.19\text{dBuV/m}$ which is under 68.3dBuV/m limit.

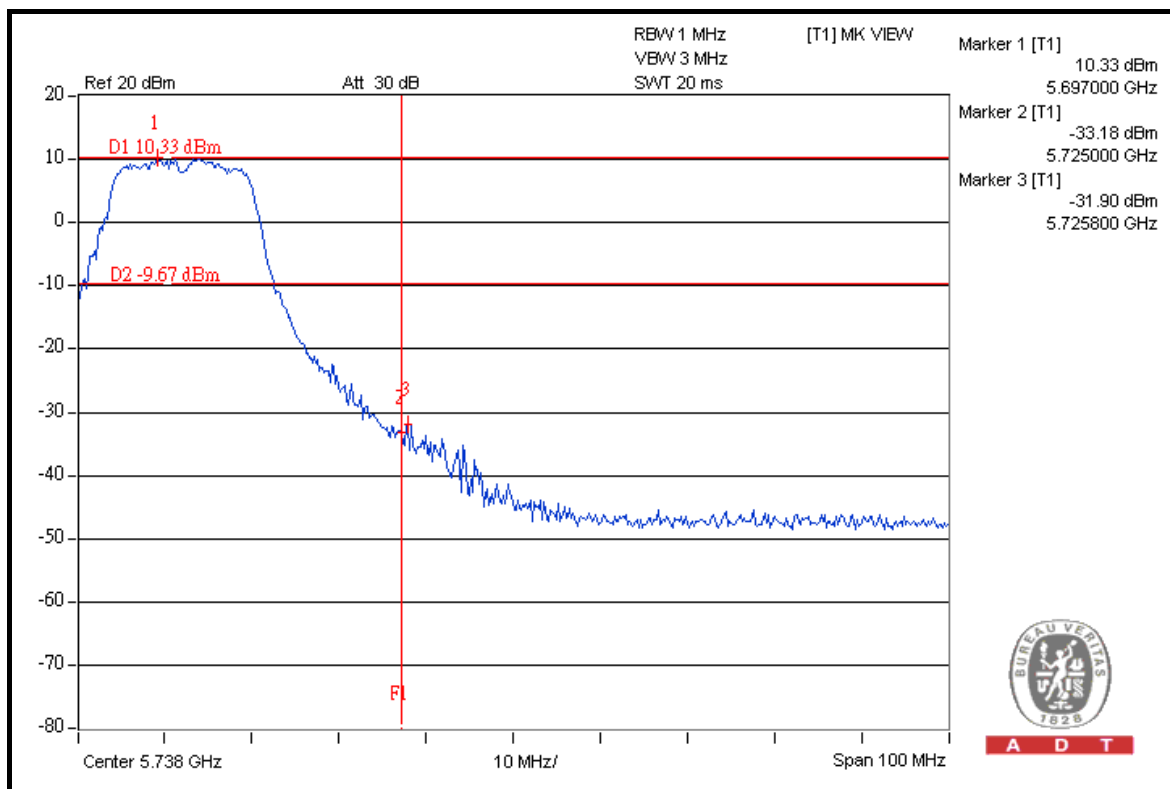




A D T



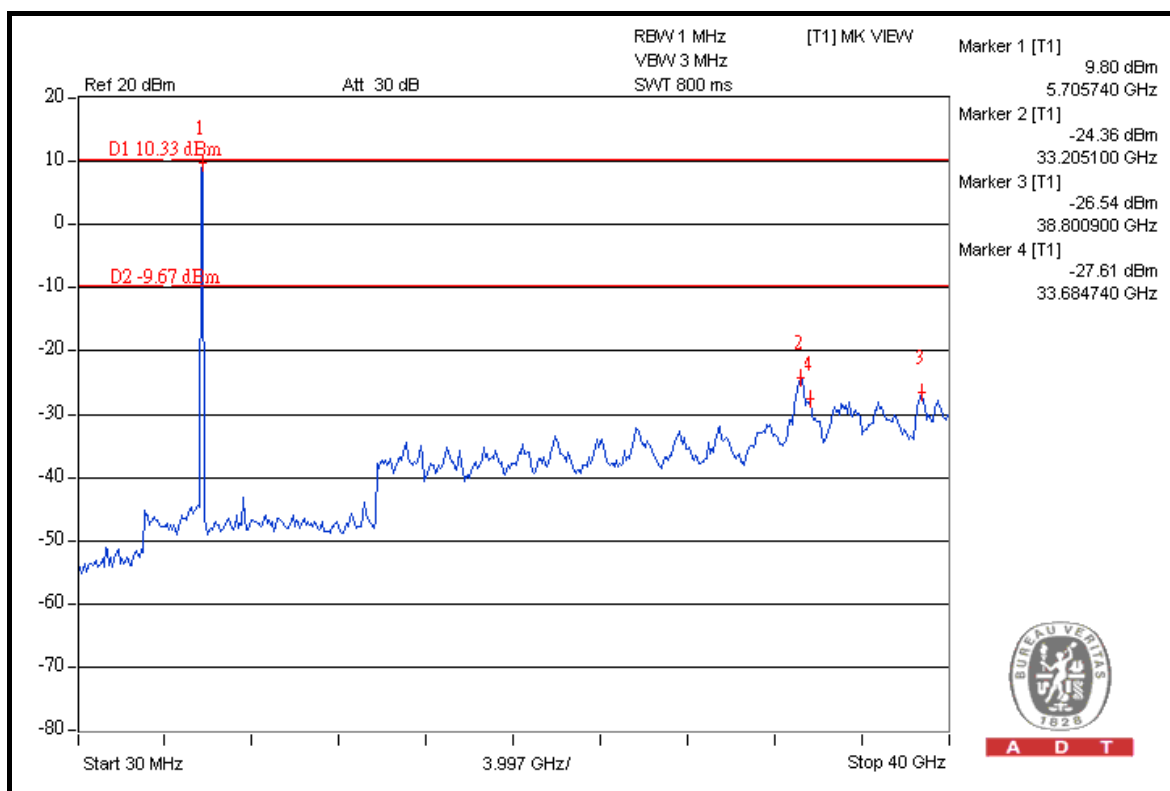
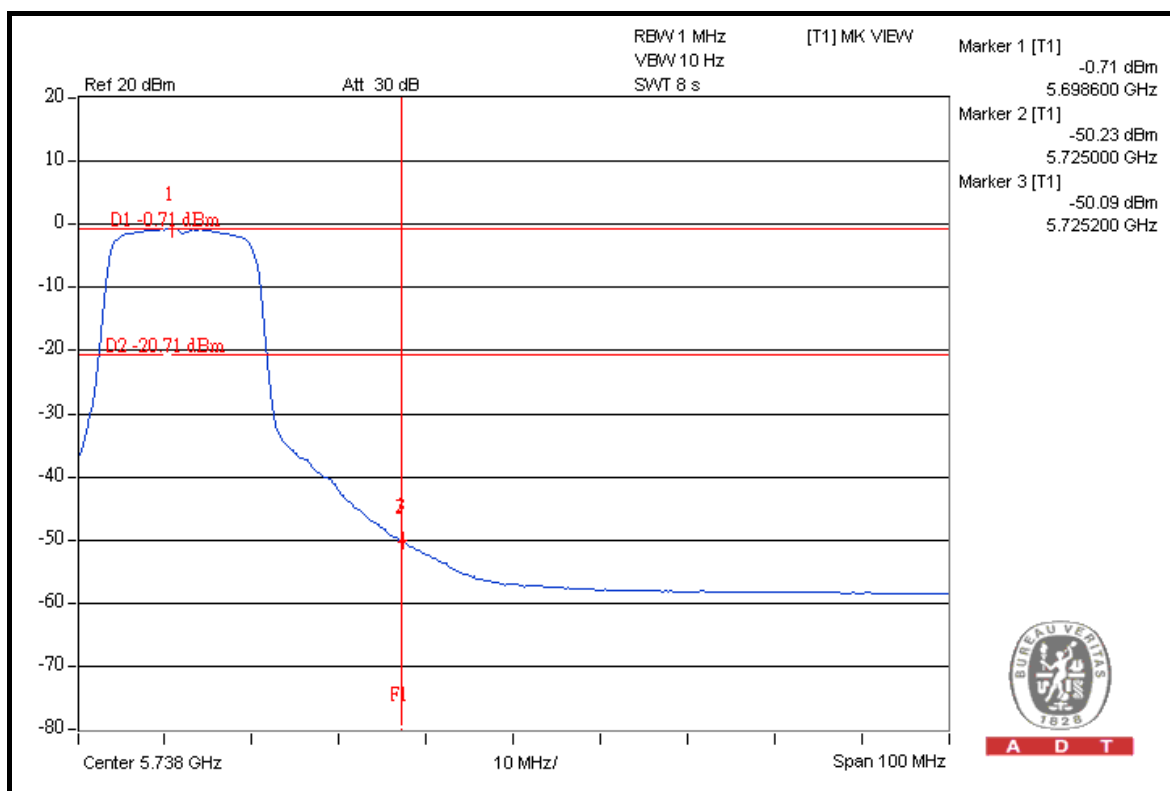
A D T



A D T



A D T



FOR 5180-5320MHz BAND: DRAFT 802.11n (20MHz) OFDM MODULATION

Channel 36 (5180MHz)

The band edge emission plot on the next page shows 45.89dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 113.46dBuV/m (Peak), so the maximum field strength in restrict band is $113.46 - 45.89 = 67.57$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 49.33dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 100.59dBuV/m (Average), so the maximum field strength in restrict band is $100.59 - 49.33 = 51.26$ dBuV/m which is under 54dBuV/m limit.

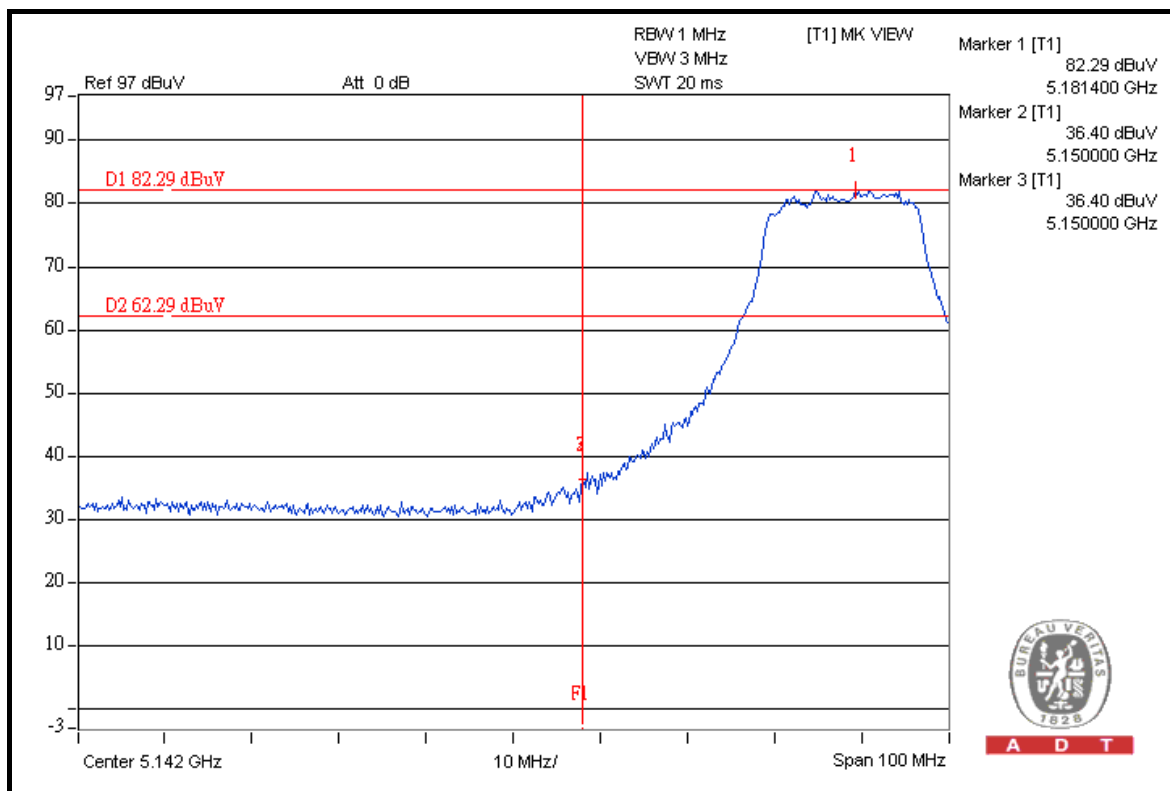
Channel 64 (5320MHz)

The band edge emission plot on the next second page shows 50.53dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 111.74dBuV/m (Peak), so the maximum field strength in restrict band is $111.74 - 50.53 = 61.21$ dBuV/m which is under 74dBuV/m limit.

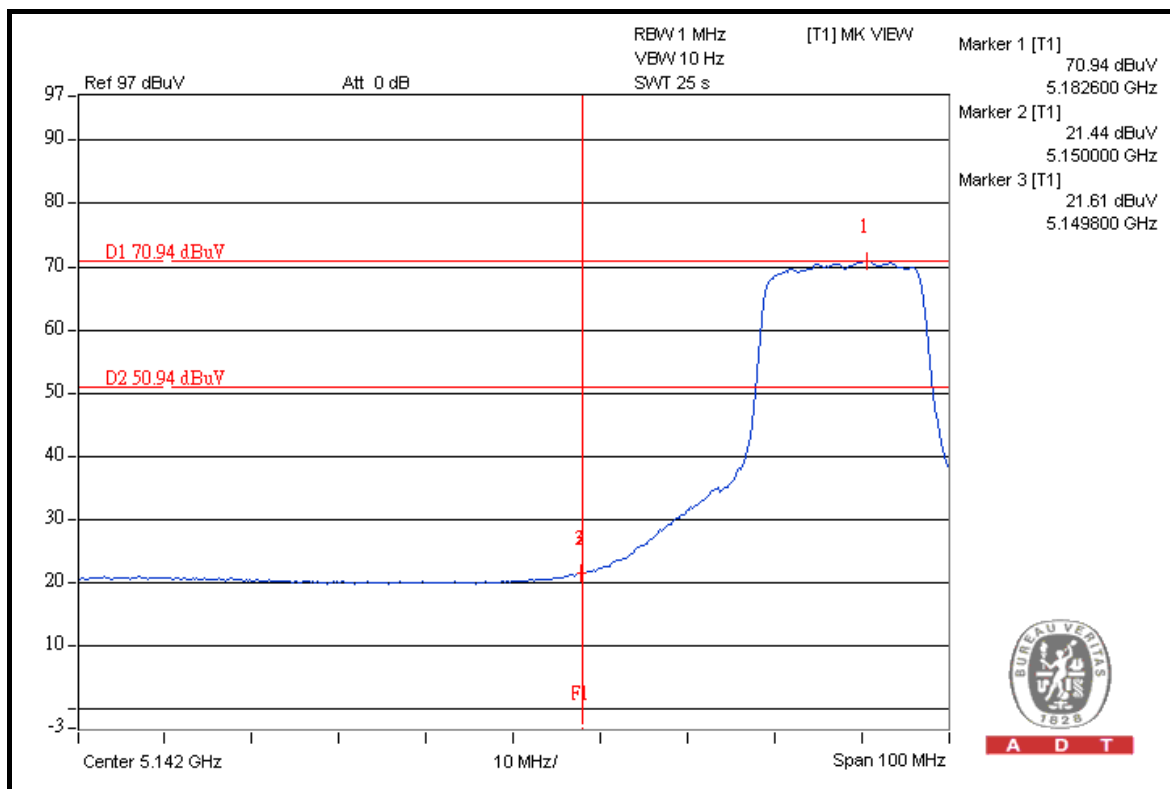
The band edge emission plot on the next third page shows 51.20dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 64 is 99.31dBuV/m (Average), so the maximum field strength in restrict band is $99.31 - 51.20 = 48.11$ dBuV/m which is under 54dBuV/m limit.



A D T



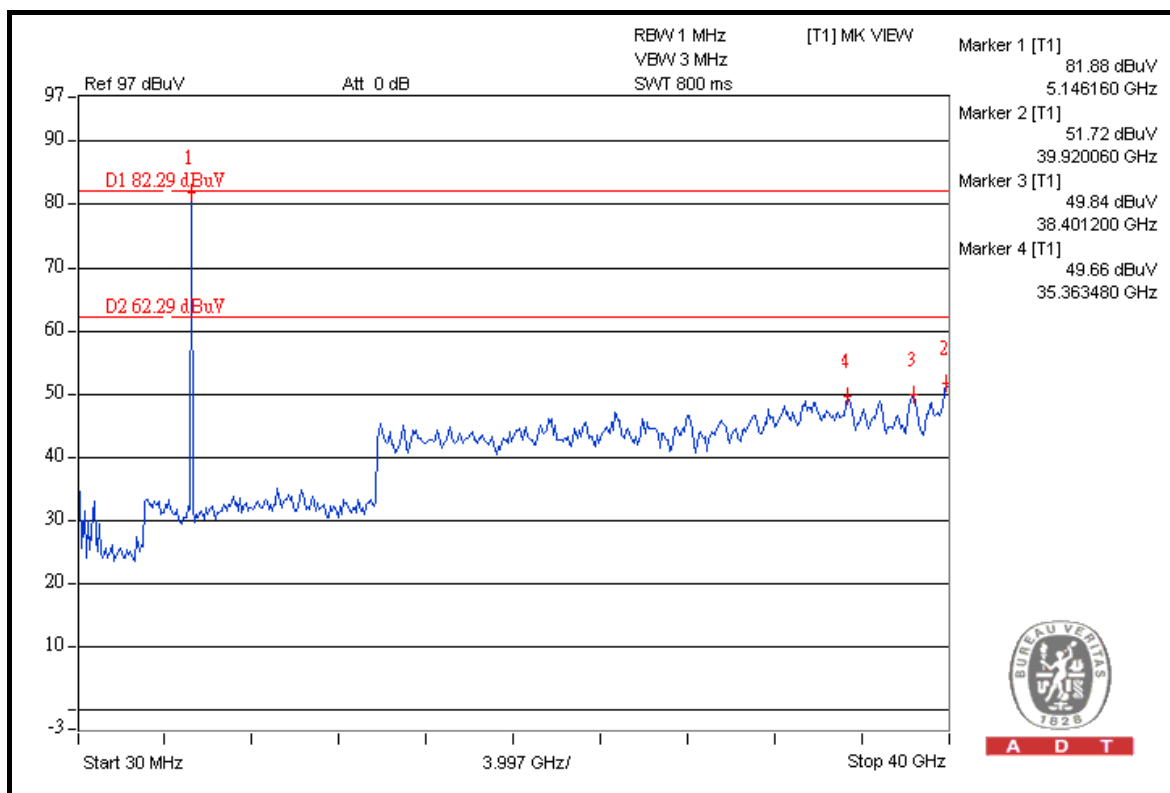
A D T



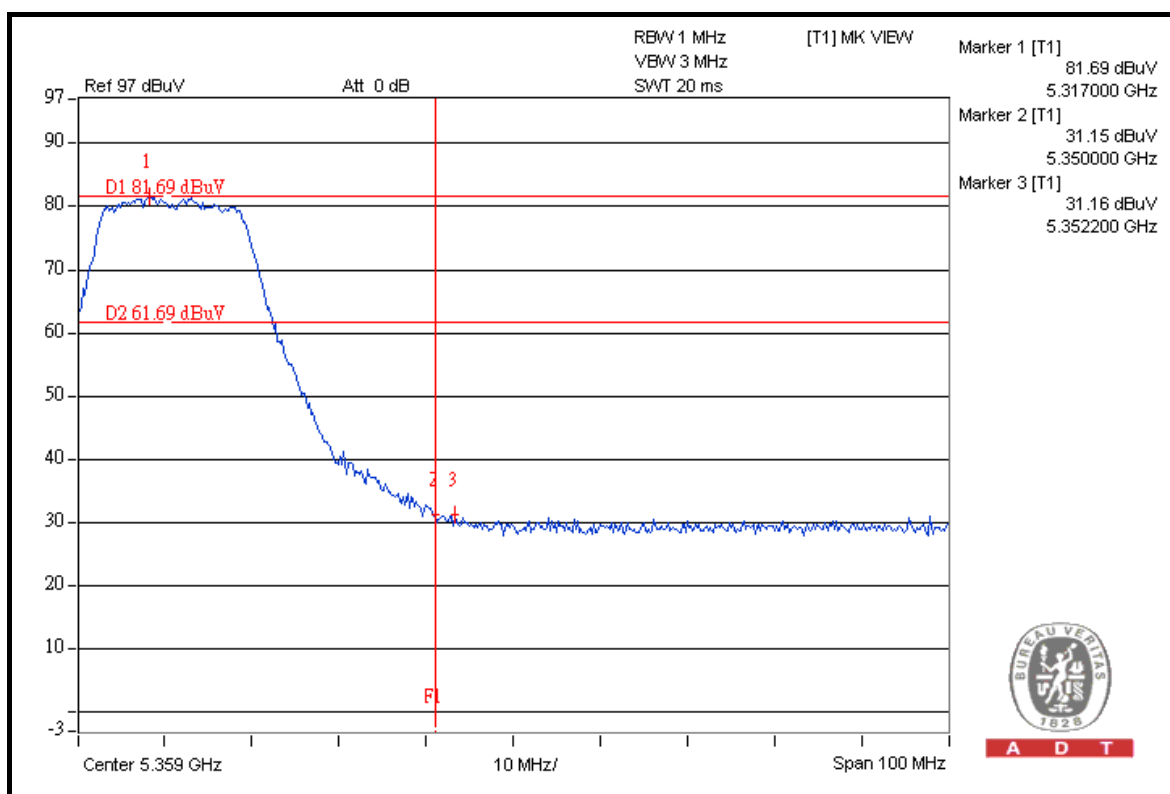
A D T



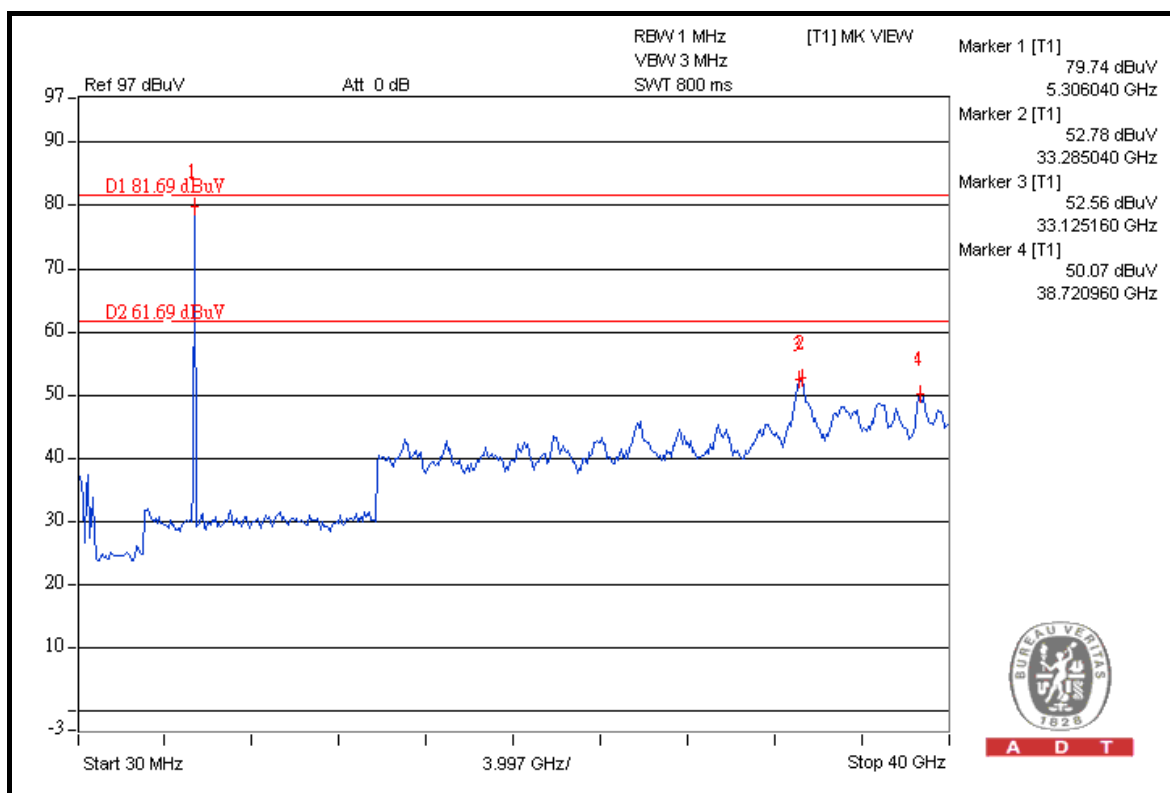
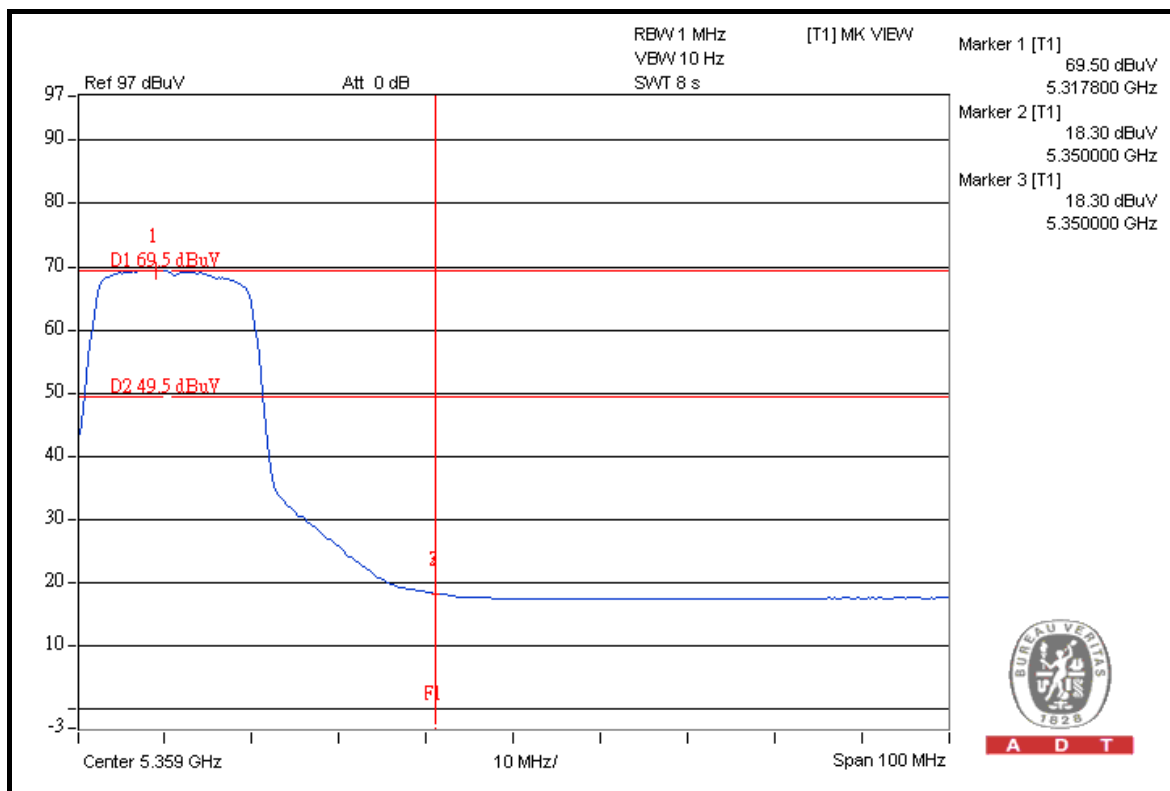
A D T



A D T



A D T



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 47.82dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 100 is 111.18dBuV/m (Peak), so the maximum field strength out of band emission is $111.18 - 47.82 = 63.36\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 50.70dBc 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 98.07dBuV/m (Average), so the maximum field strength in restrict band is $98.07 - 50.70 = 47.37\text{dBuV/m}$ which is under 54dBuV/m limit.

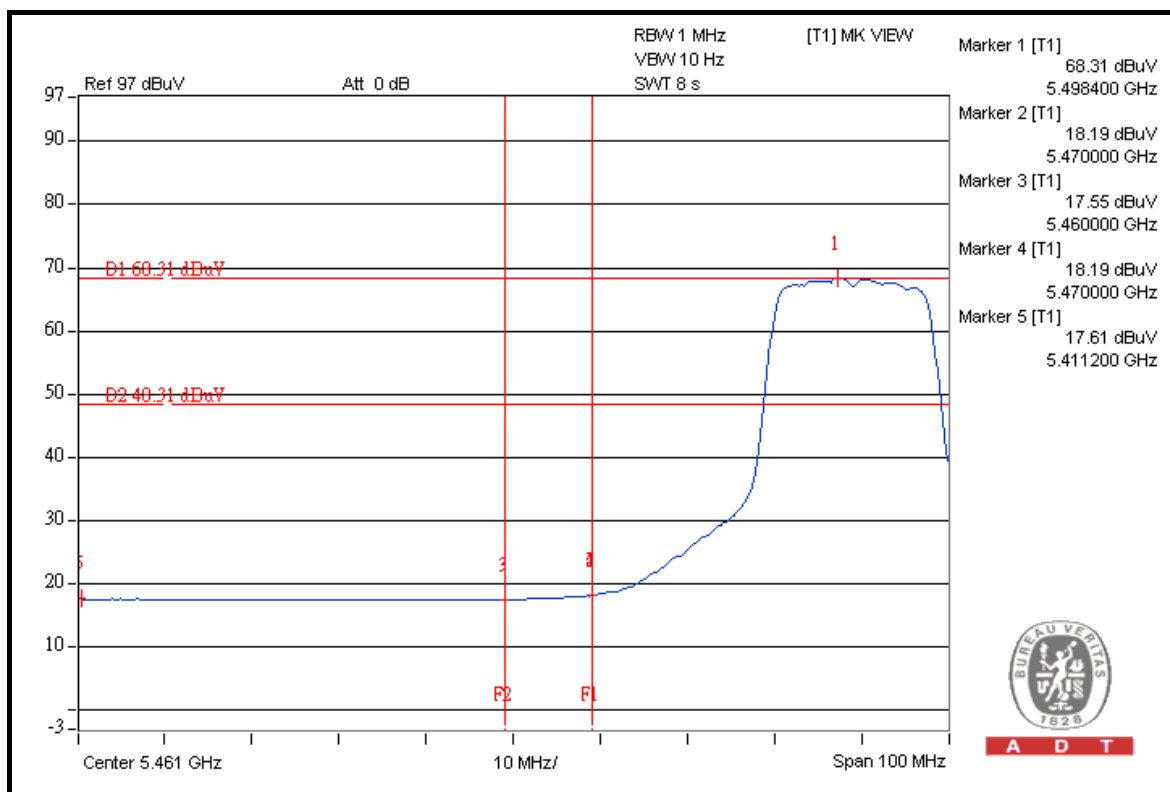
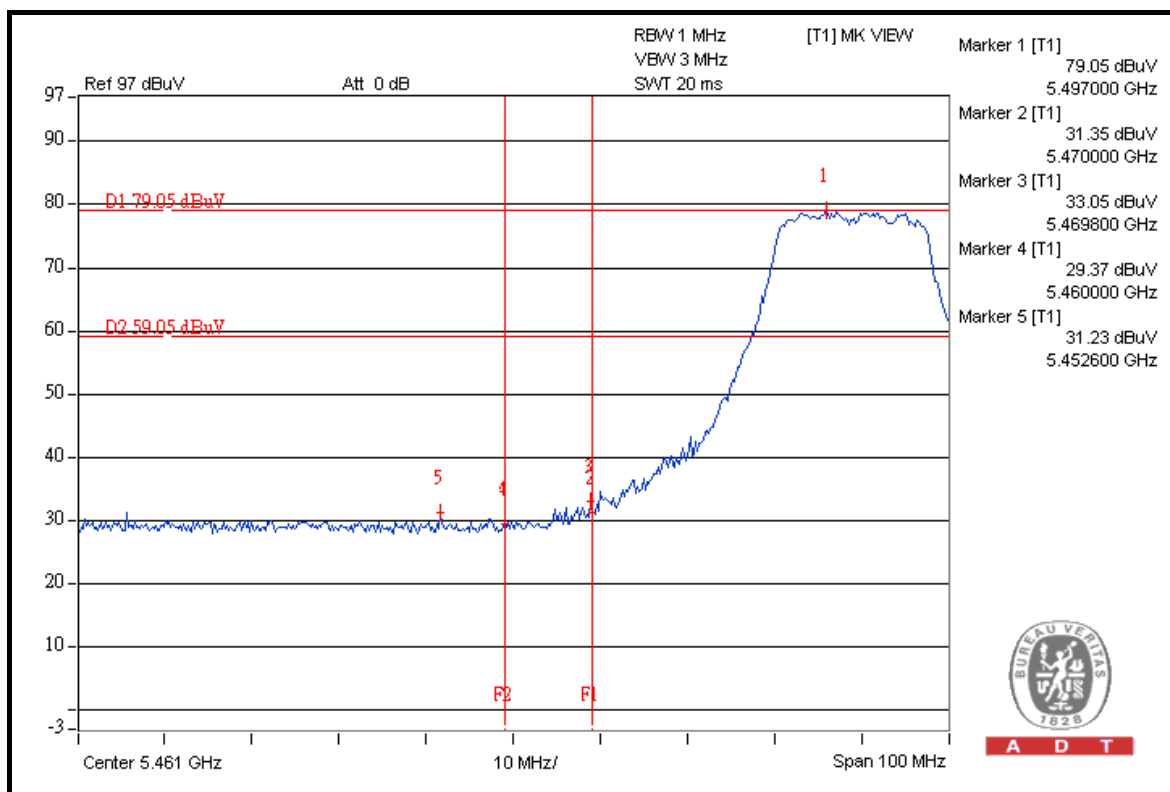
The band edge emission plot (5.470GHz) on the next page shows 46.00dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 100 is 111.18dBuV/m (Peak), so the maximum field strength in restrict band is $111.18 - 46.00 = 65.18\text{dBuV/m}$ which is under 68.3dBuV/m limit.

Channel 140 (5700MHz)

The band edge emission plot on the next second page shows 45.75dBc 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 111.58dBuV/m (Peak), so the maximum field strength in restrict band is $111.58 - 45.75 = 65.83\text{dBuV/m}$ which is under 68.3dBuV/m limit.

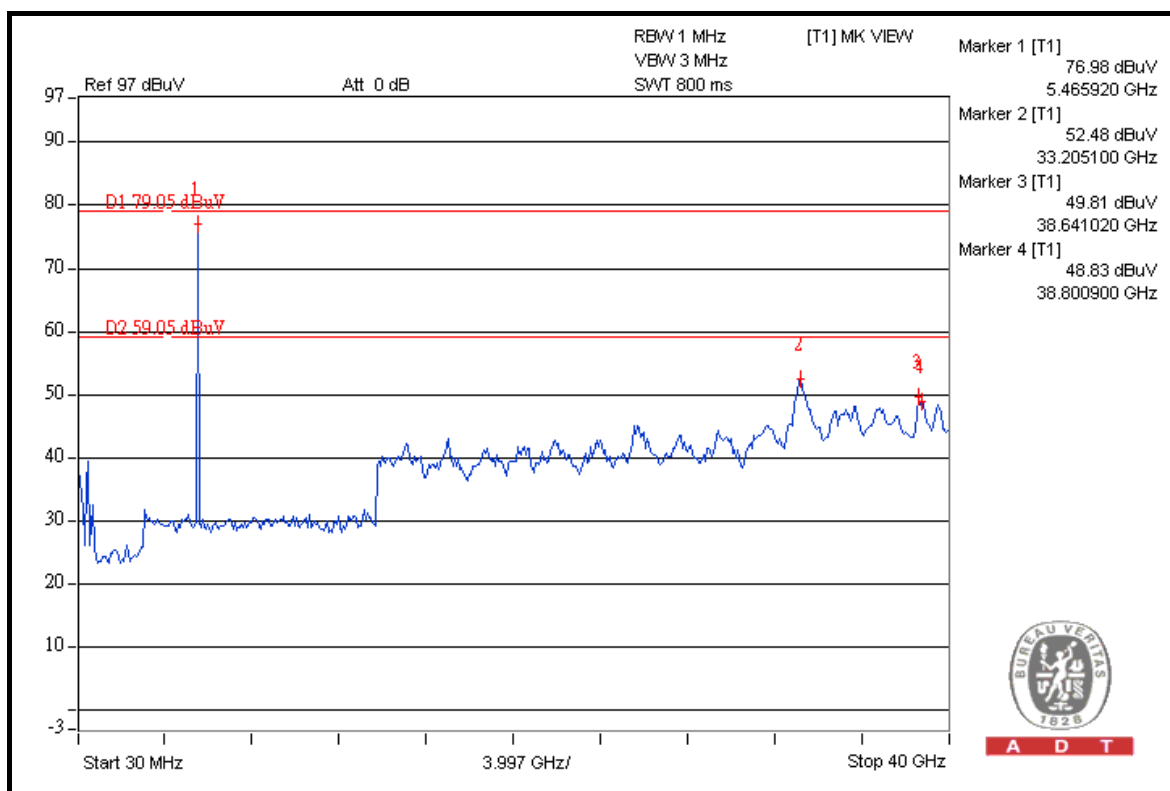


A D T

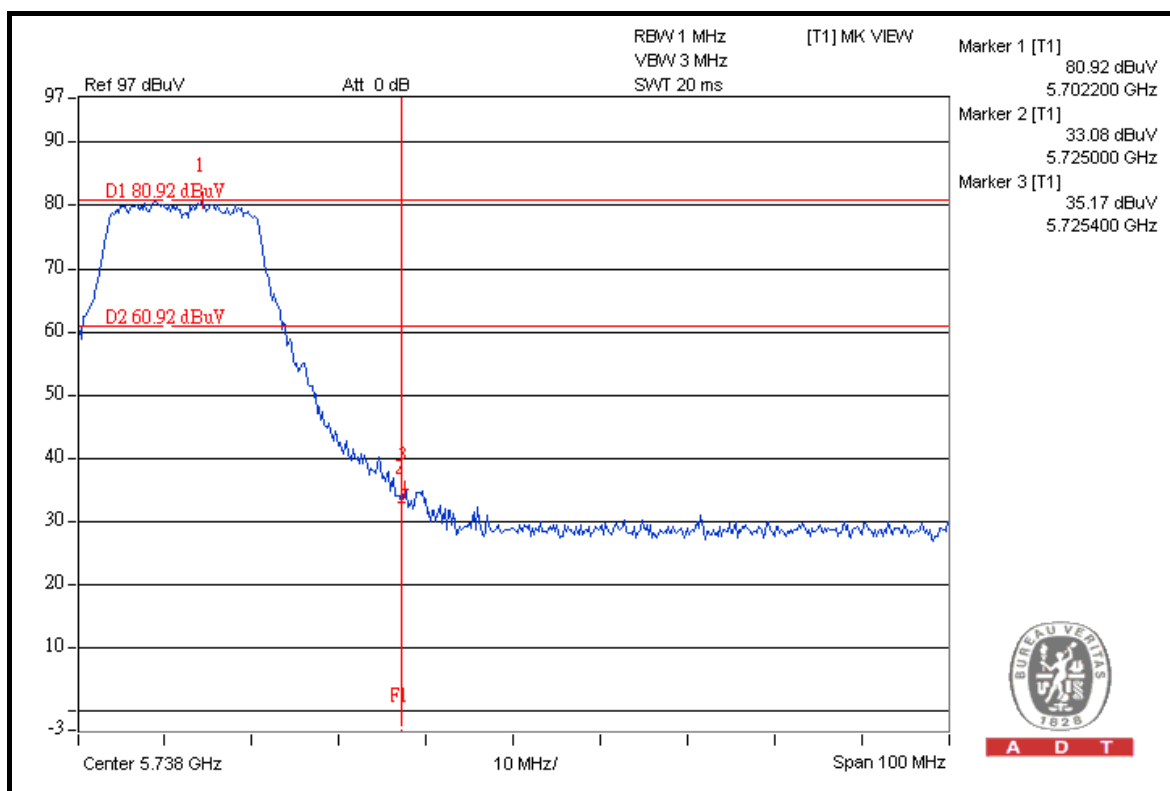




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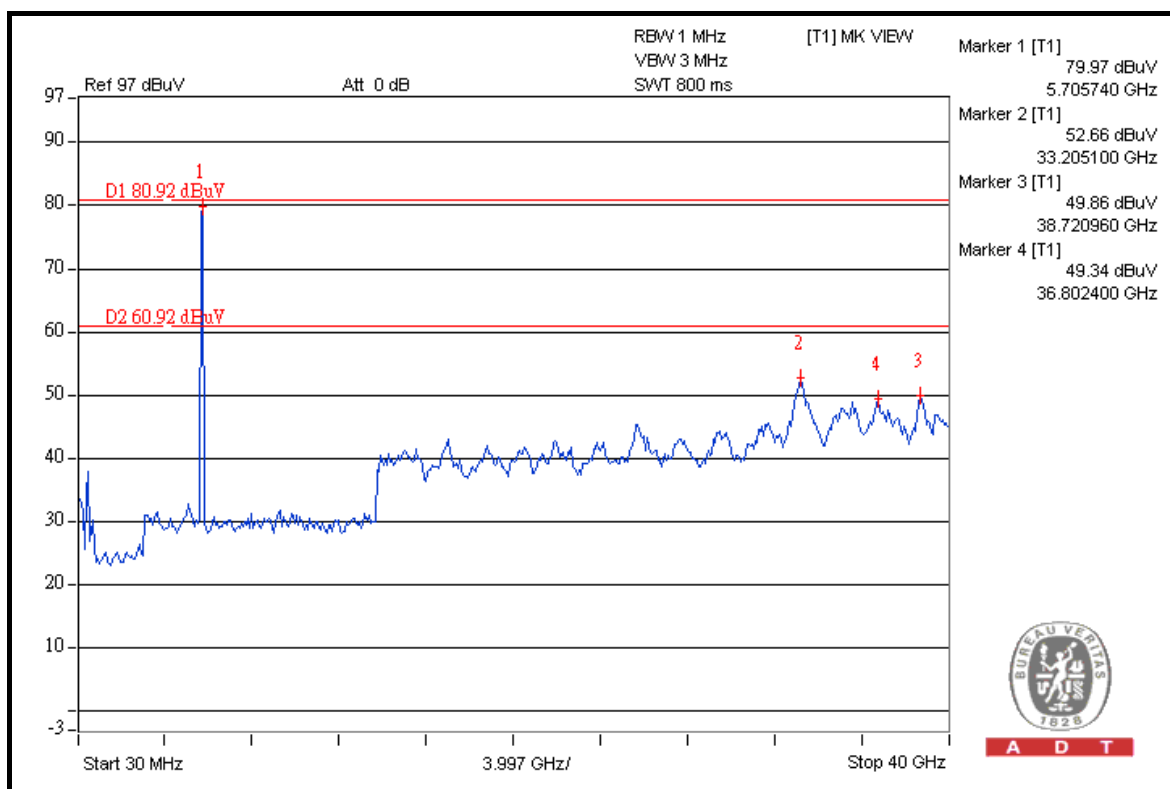
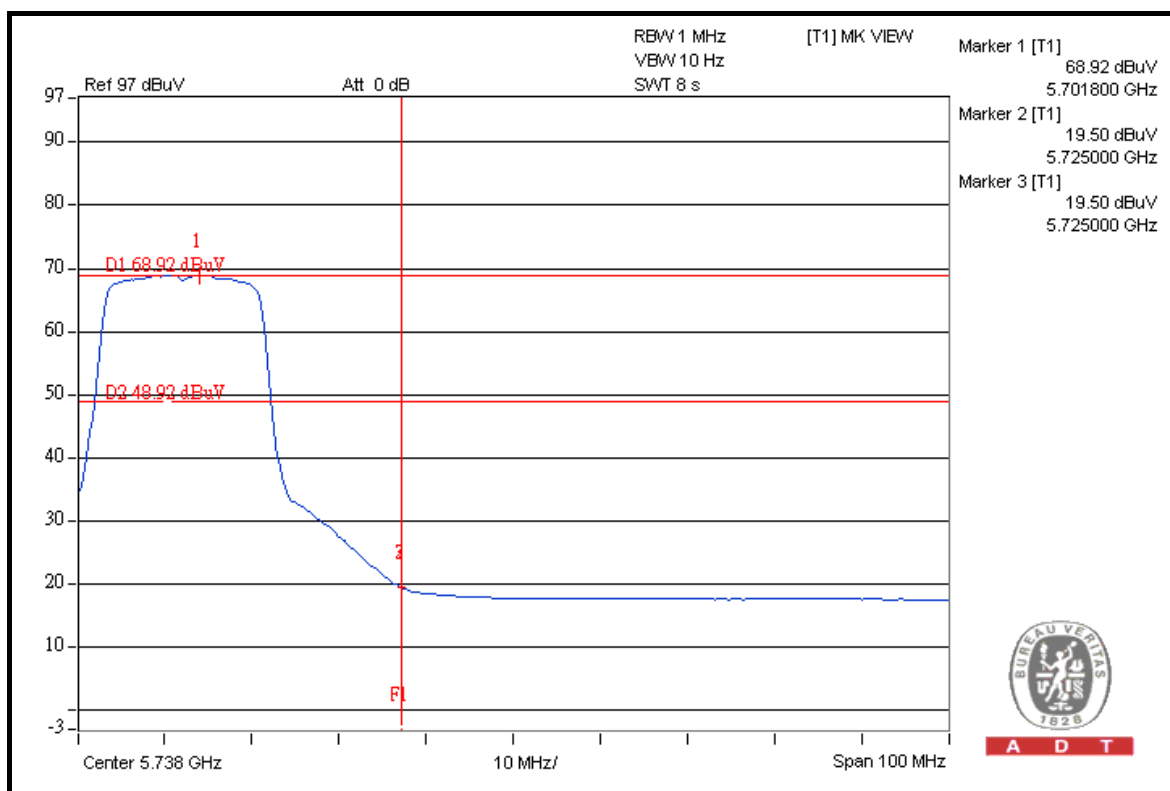
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FOR 5180-5320MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

Channel 38 (5190MHz)

The band edge emission plot on the next page shows 38.57dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 110.04dBuV/m (Peak), so the maximum field strength in restrict band is $110.04 - 38.57 = 71.47\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 43.77dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 95.98dBuV/m (Average), so the maximum field strength in restrict band is $95.98 - 43.77 = 52.21\text{dBuV/m}$ which is under 54dBuV/m limit.

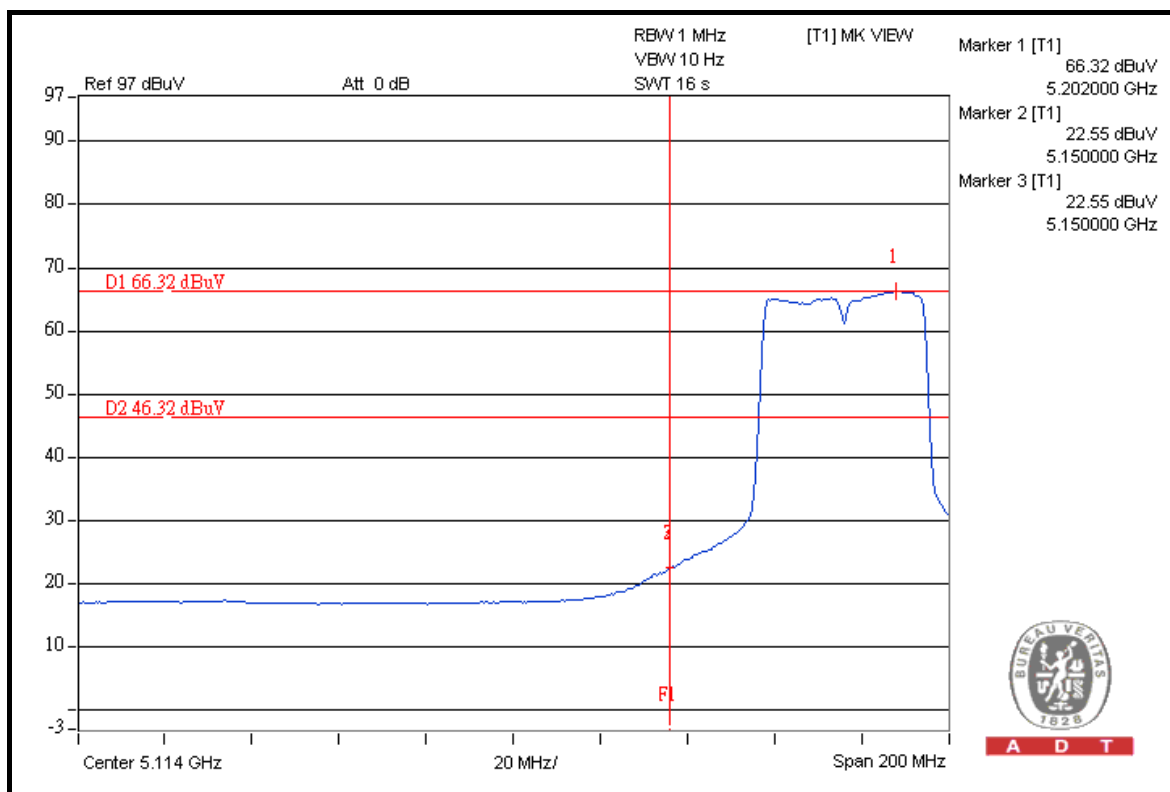
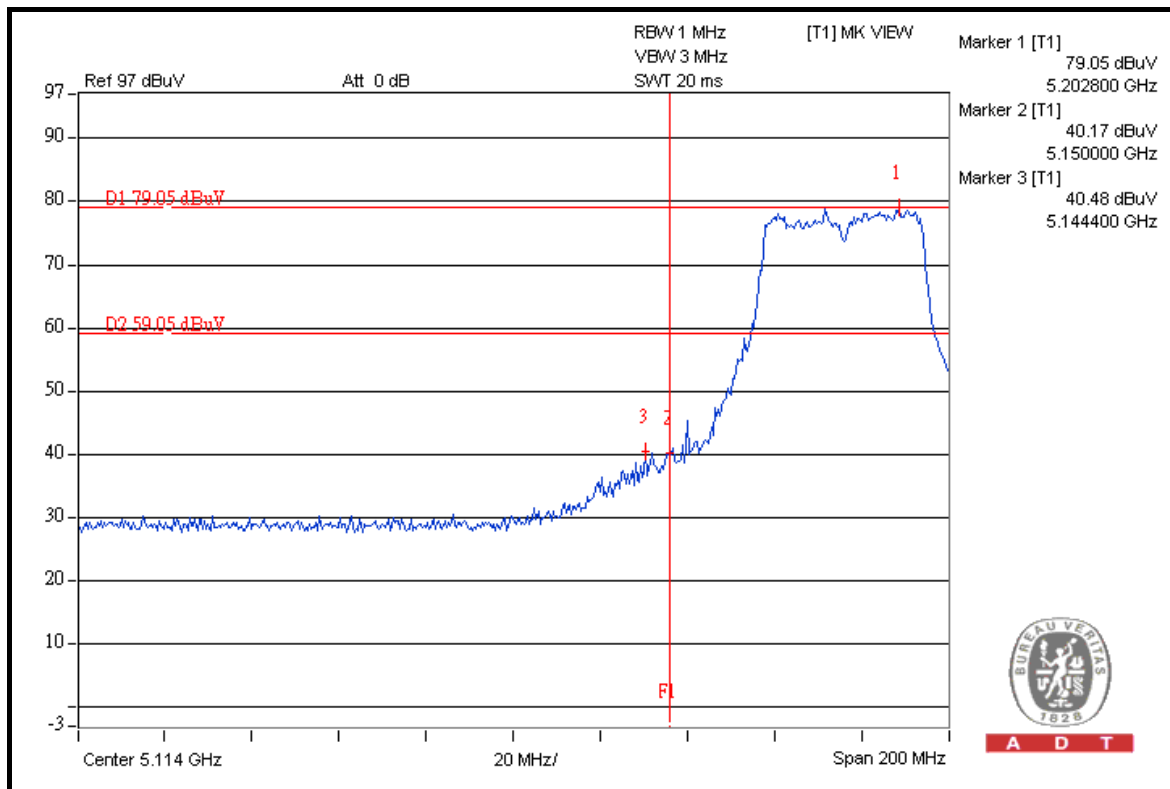
Channel 62 (5310MHz)

The band edge emission plot on the next second page shows 41.23dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 62 is 109.32dBuV/m (Peak), so the maximum field strength in restrict band is $109.32 - 41.23 = 68.09\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 45.68dBc 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 95.11dBuV/m (Average), so the maximum field strength in restrict band is $95.11 - 45.68 = 49.43\text{dBuV/m}$ which is under 54dBuV/m limit.

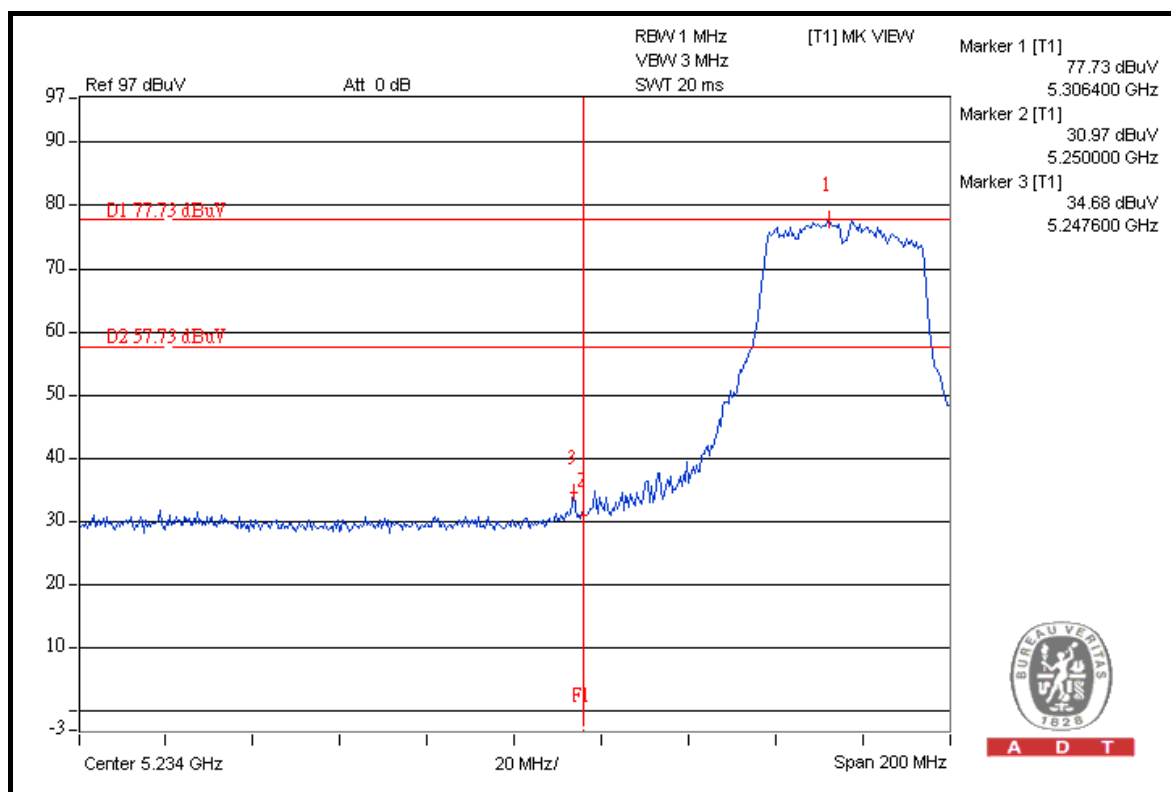
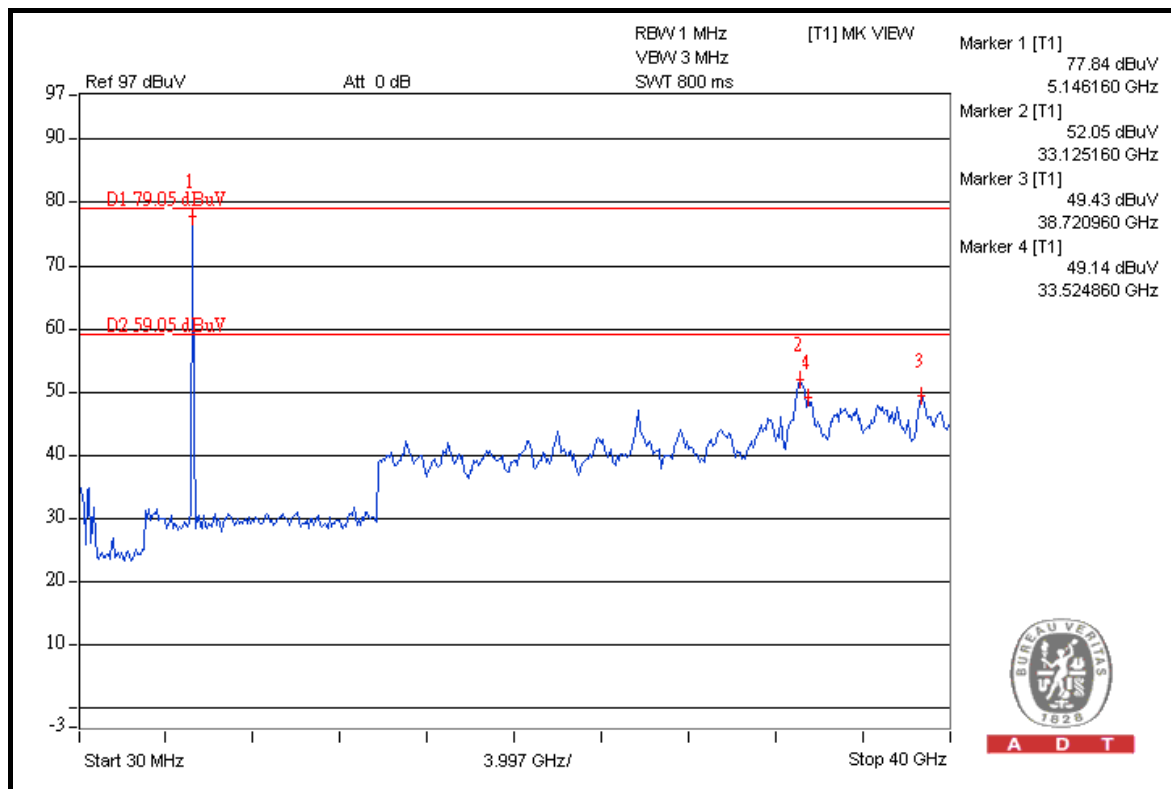


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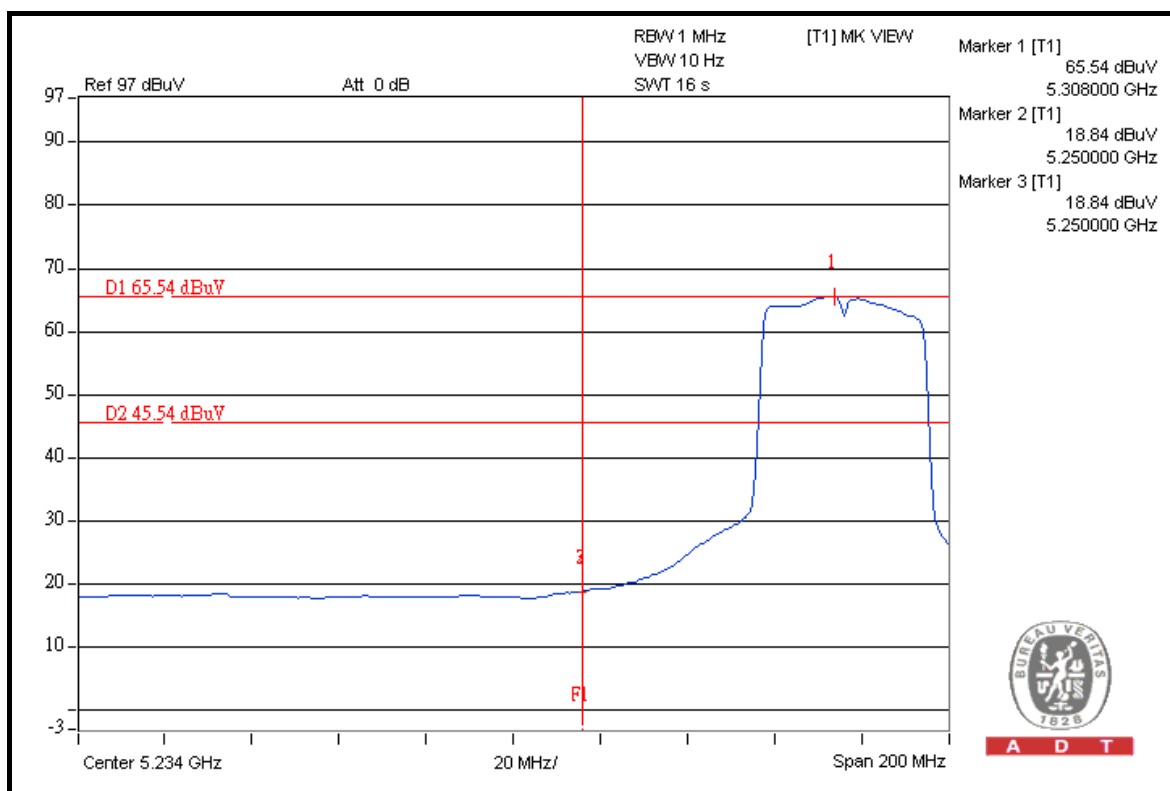


A D T

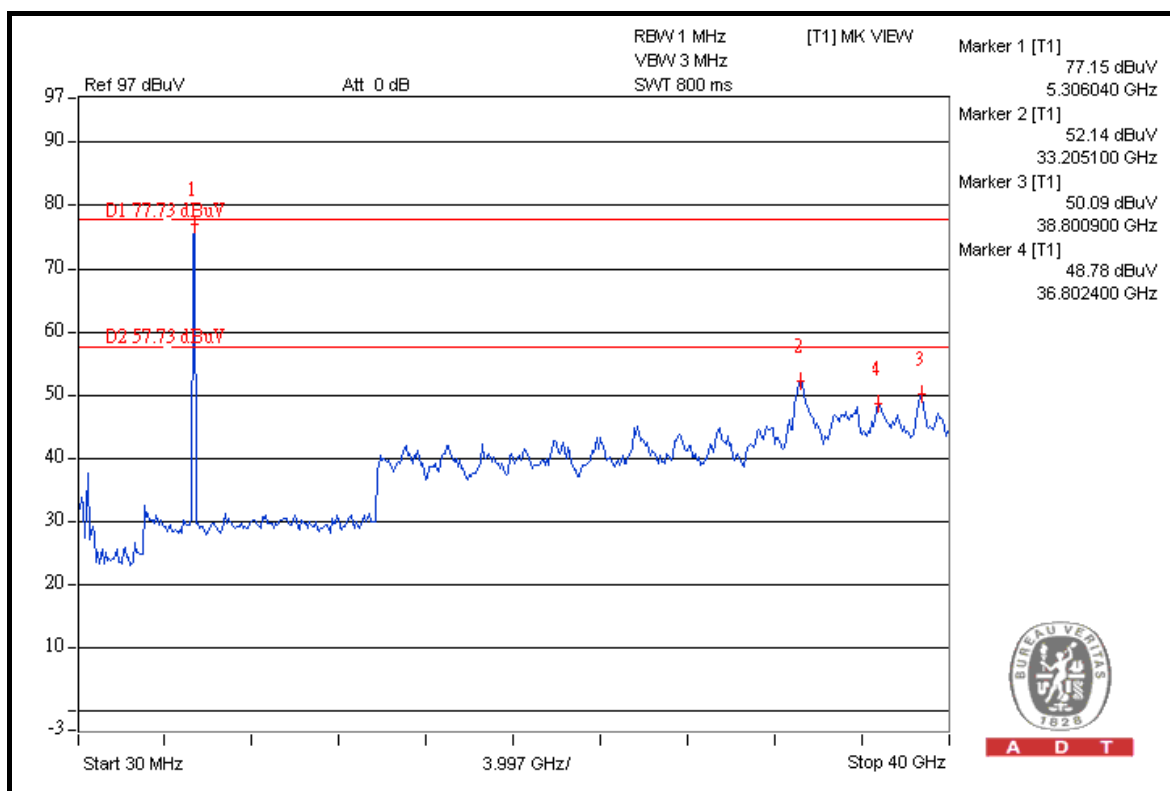




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FOR 5500-5700MHz BAND: DRAFT 802.11n (40MHz) OFDM MODULATION

Channel 102 (5510MHz)

The band edge emission plot (5.460GHz) on the next page shows 46.38dBc 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 109.45dBuV/m (Peak), so the maximum field strength in restrict band is $109.45 - 46.38 = 63.07\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot (5.460GHz) on the next page shows 46.13dBc 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 95.31dBuV/m (Average), so the maximum field strength in restrict band is $95.31 - 46.13 = 49.18\text{dBuV/m}$ which is under 54dBuV/m limit.

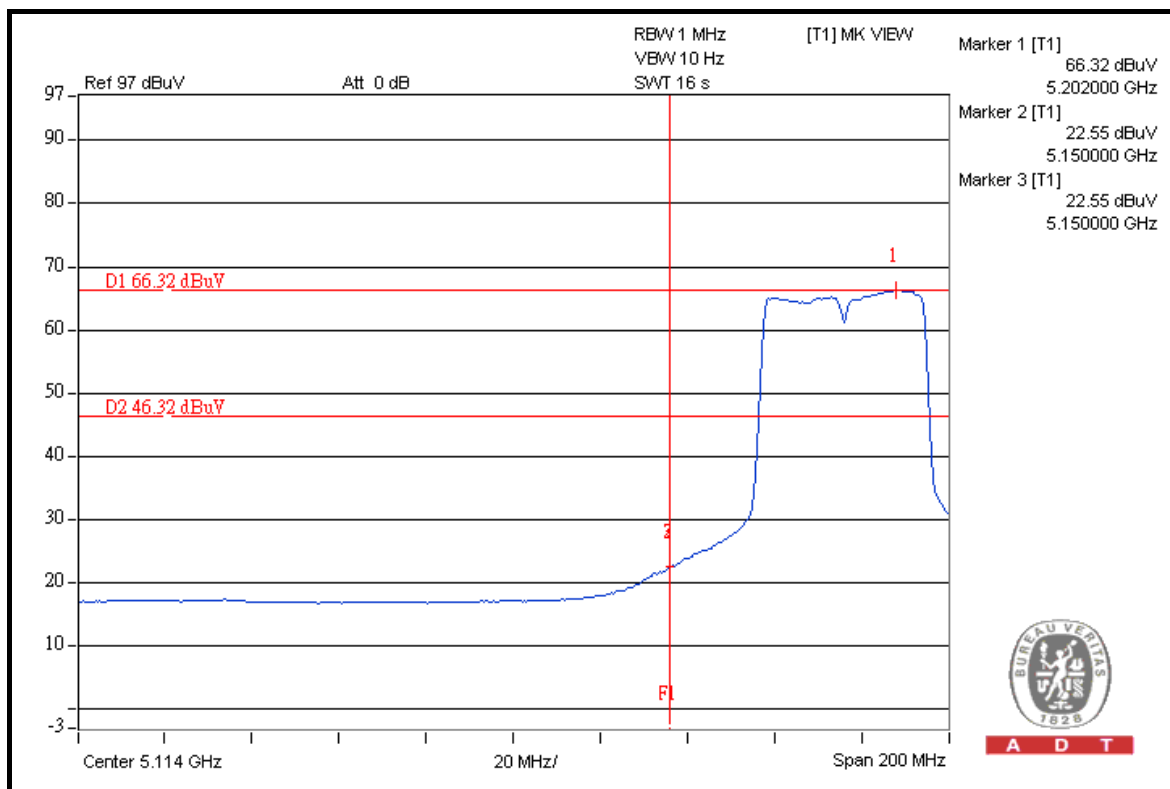
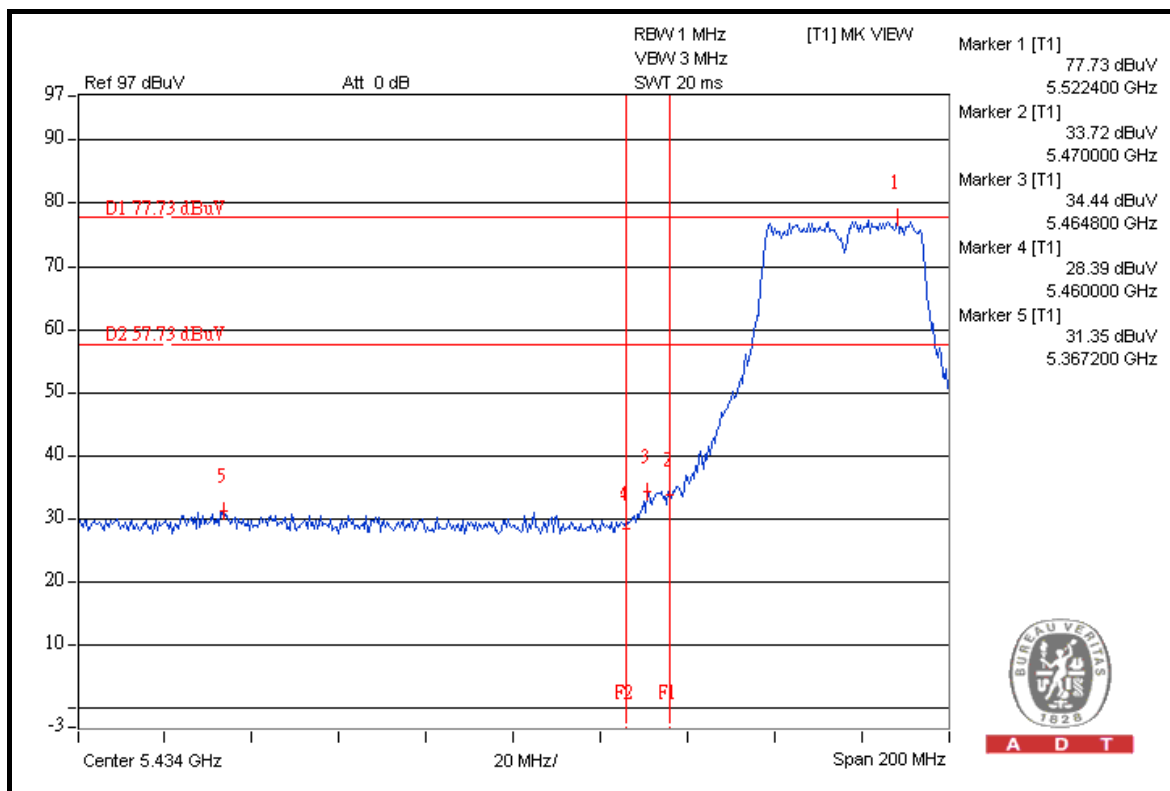
The band edge emission plot (5.470GHz) on the next page shows 43.29dBc between carrier maximum power and local maximum emission out of band emission. The emission of carrier strength list in the test result of channel 102 is 109.45dBuV/m (Peak), so the maximum field strength out of band emission is $109.45 - 43.29 = 66.16\text{dBuV/m}$ which is under 68.3dBuV/m limit.

Channel 134 (5670MHz)

The band edge emission plot on the next second page shows 48.16dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 134 is 109.64dBuV/m (Peak), so the maximum field strength in restrict band is $109.64 - 48.16 = 61.48\text{dBuV/m}$ which is under 68.3dBuV/m limit.

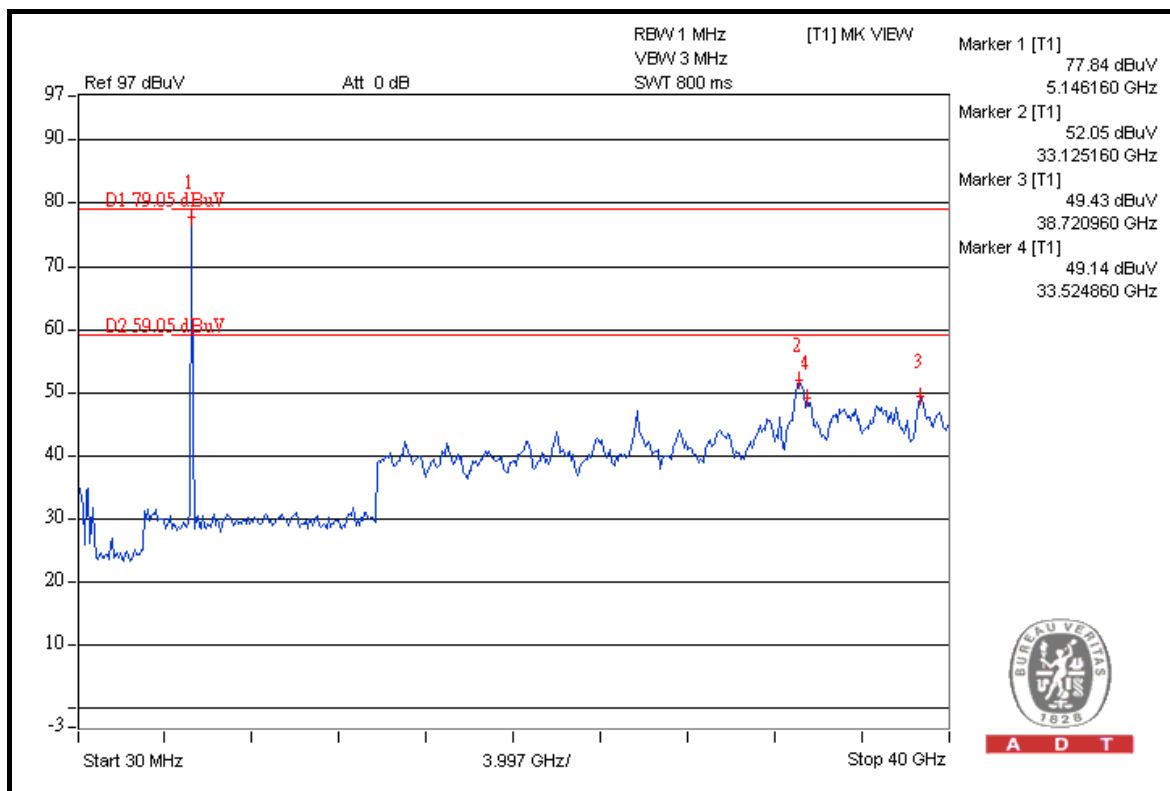


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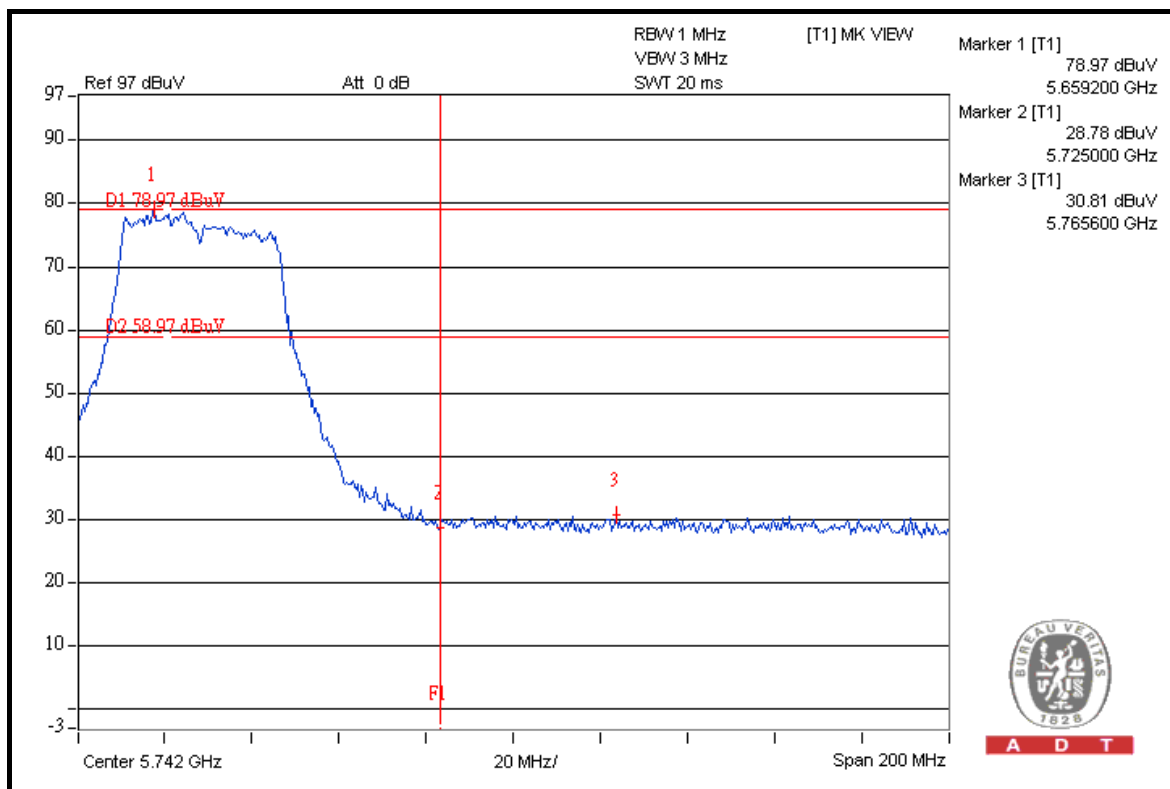




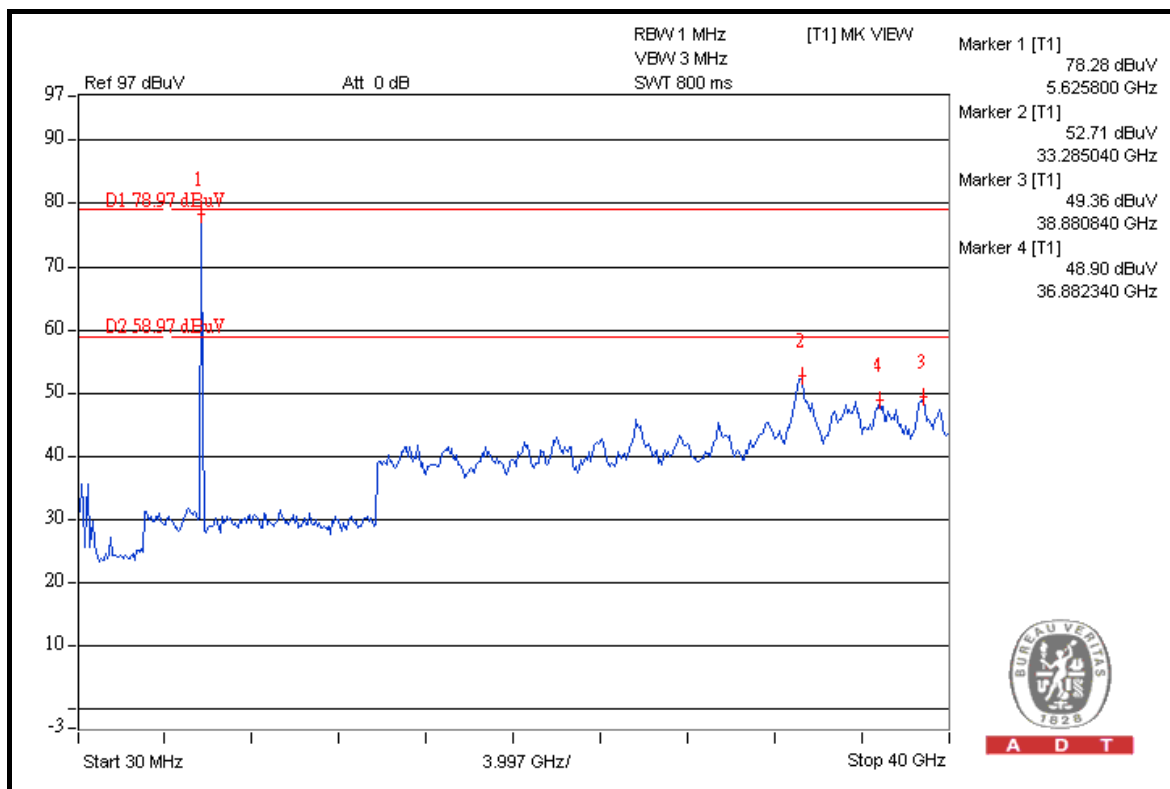
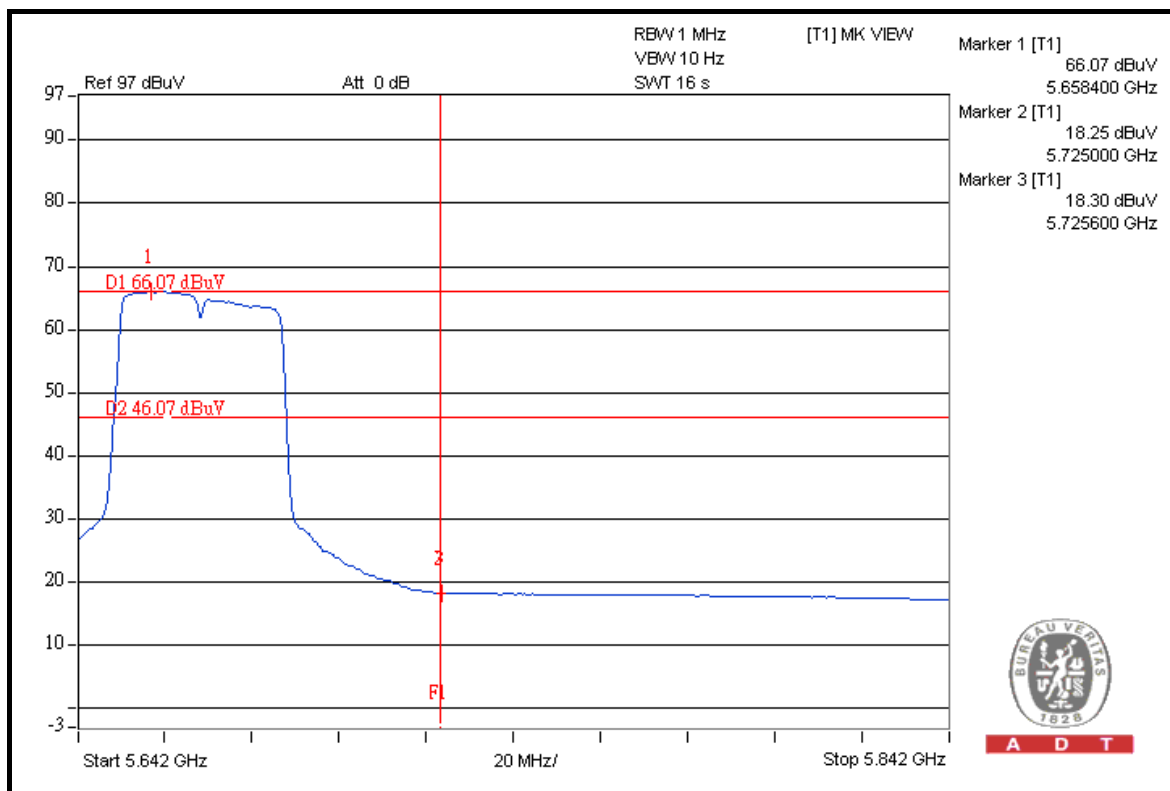
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4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

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

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

4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used in this product are Printed antenna without connector. The maximum gain of the antenna is 4.99dBi.

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---