FCC TEST REPORT (15.407)

REPORT NO.: RF980922L13-1

MODEL NO.: ZF7731

RECEIVED: Sep. 22 2009

TESTED: Sep. 24 ~ Oct. 8, 2009

ISSUED: Oct. 8, 2009

Applicant's Company	Senao Networks, Inc.
Applicant Address	3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan
FCC ID	U2M-ZF7731
Manufacturer's Company	Senao Networks, Inc.
Manufacturer Address	3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan

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

LAB LOCATION: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien, 244 Taiwan

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1. CERTIFICATION

PRODUCT:	Zone Flex 7731 802.11n Outdoor Point to Point Bridge
MODEL NO.:	ZF7731
BRAND:	Ruckus
APPLICANT:	Senao Networks Inc.
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Sep. 24 ~ Oct. 8, 2009
STANDARDS:	FCC Part 15, Subpart E (Section 15.407) ANSI C63.4-2003

The above equipment 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 : Annie Chang , **DATE:** Oct. 8, 2009
(Annie Chang / Senior Specialist)

TECHNICAL ACCEPTANCE : Jamison Chan , **DATE:** Oct. 8, 2009
Responsible for RF
(Jamison Chan / Supervisor)

APPROVED BY : Ken Liu , **DATE:** Oct. 8, 2009
(Ken Liu / 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 -9.26dB at 0.516MHz.
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 -0.79dB at 30.01MHz.
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:

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 1GHz	3.78 dB
	Above 1GHz	2.89 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Zone Flex 7731 802.11n Outdoor Point to Point Bridge
MODEL NO.	ZF7731
FCC ID	U2M-ZF7731
POWER SUPPLY	12Vdc from Adapter 48Vdc from POE
MODULATION TYPE	BPSK
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 270.0Mbps
OPERATING FREQUENCY	5180~5240MHz
NUMBER OF CHANNEL	4 for 802.11a, draft 802.11n (20MHz) 2 for draft 802.11n (40MHz)
OUTPUT POWER	7.791
ANTENNA TYPE	Refer to note below
I/O PORTS	Refer to user's manual
DATA CABLE	NA
ACCESSORY DEVICES	PoE, adapter(for PoE use)

NOTE:

1. The EUT was operated with following PoE:

MODEL:	NPE-5818at

The adapter of PoE:

BRAND:	Ruckus
MODEL:	GS60A48
INPUT:	100-240Vac, 50-60Hz, 1.4A
OUTPUT:	48Vdc, 1.25A
POWER LINE:	1.8m non-shielded cable with one core

2. The EUT is a Zone Flex 7731 802.11n Outdoor Point to Point Bridge. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11a, draft 802.11n (5745~5825 MHz)	FCC Part 15, Subpart C (Section 15.247)	RF980922L13
WLAN 802.11a, draft 802.11n (5180~ 5240MHz)	FCC Part 15, Subpart E (Section 15.407)	RF980922L13-1

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

Frequency Band (MHz)	5180~5240	5745~5825
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	
	INTERNAL ANTENNA	EXTERNAL ANTENNA
802.11a	2TX	2TX
Draft 802.11n (20MHz)	2TX	2TX
Draft 802.11n (40MHz)	2TX	2TX

5. The internal and external works separately. In user FW, when external antenna plug in, the major transmission would program from external antenna. Two antennas will not transmit simultaneously. It was controlled by user FW.

6. The following antennas were applied to the EUT:

ITEM	TYPE	CONNECTOR	GAIN	OPTION
INTERNAL ANTENNA	Patch	U.FL	14dBi	X
EXTERNAL ANTENNA	Patch	N-Type	23dBi	Option

7. 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

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

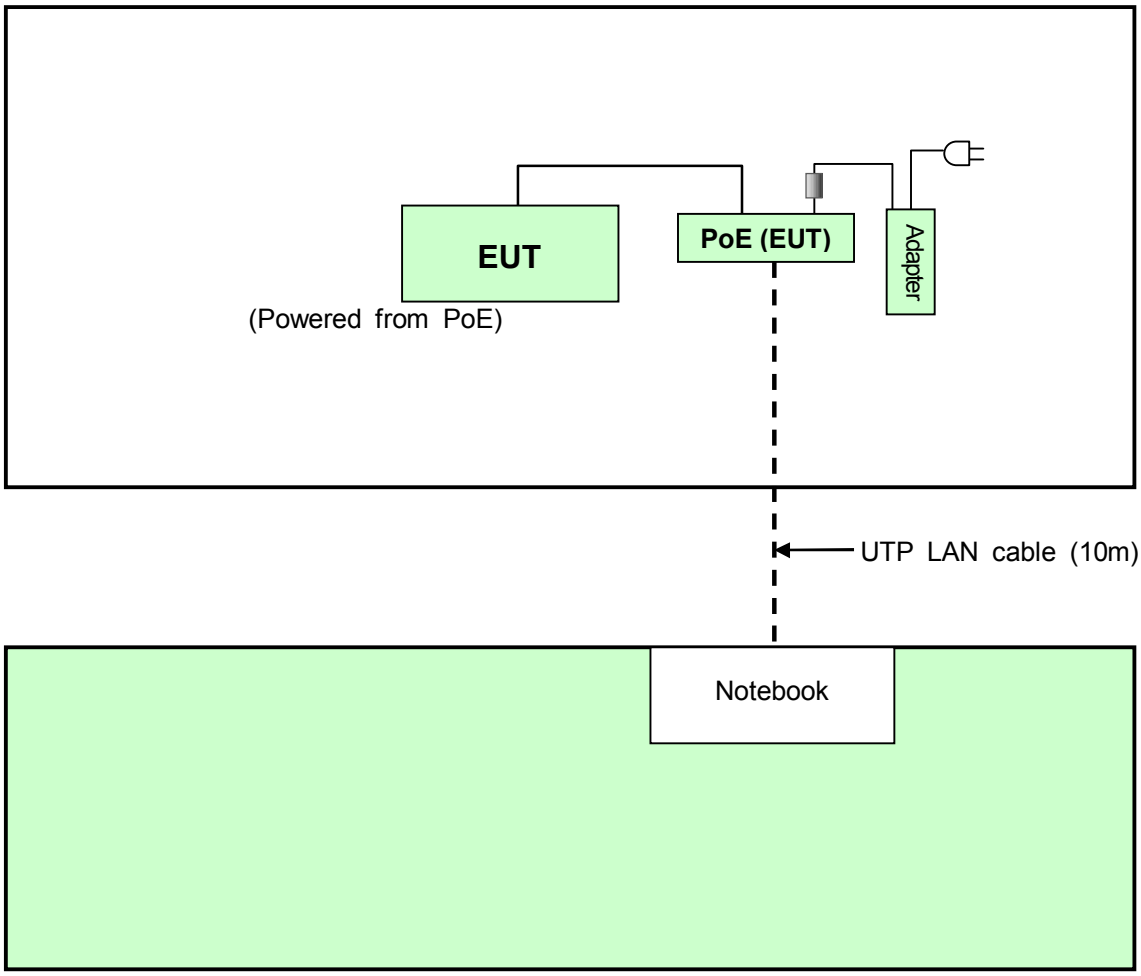
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

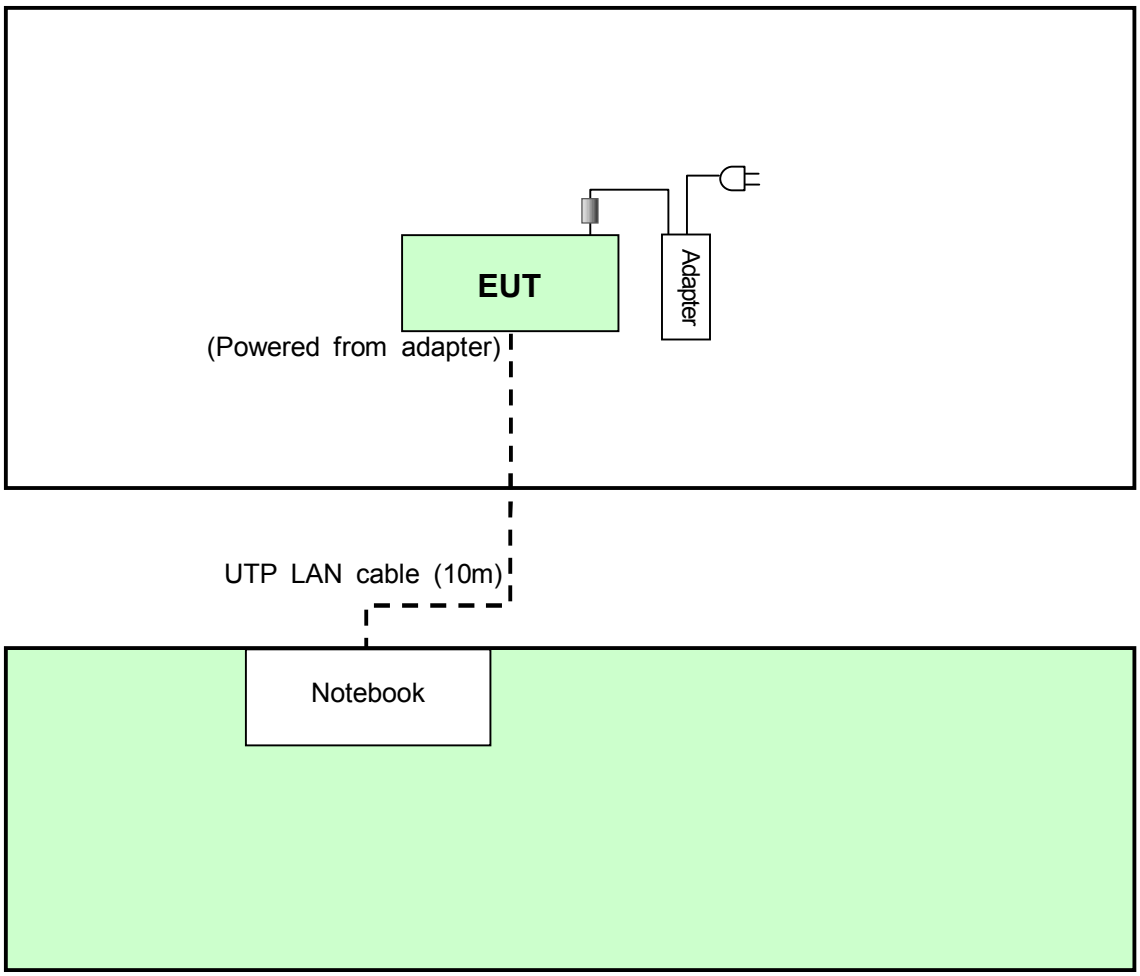
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190MHz	46	5230MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

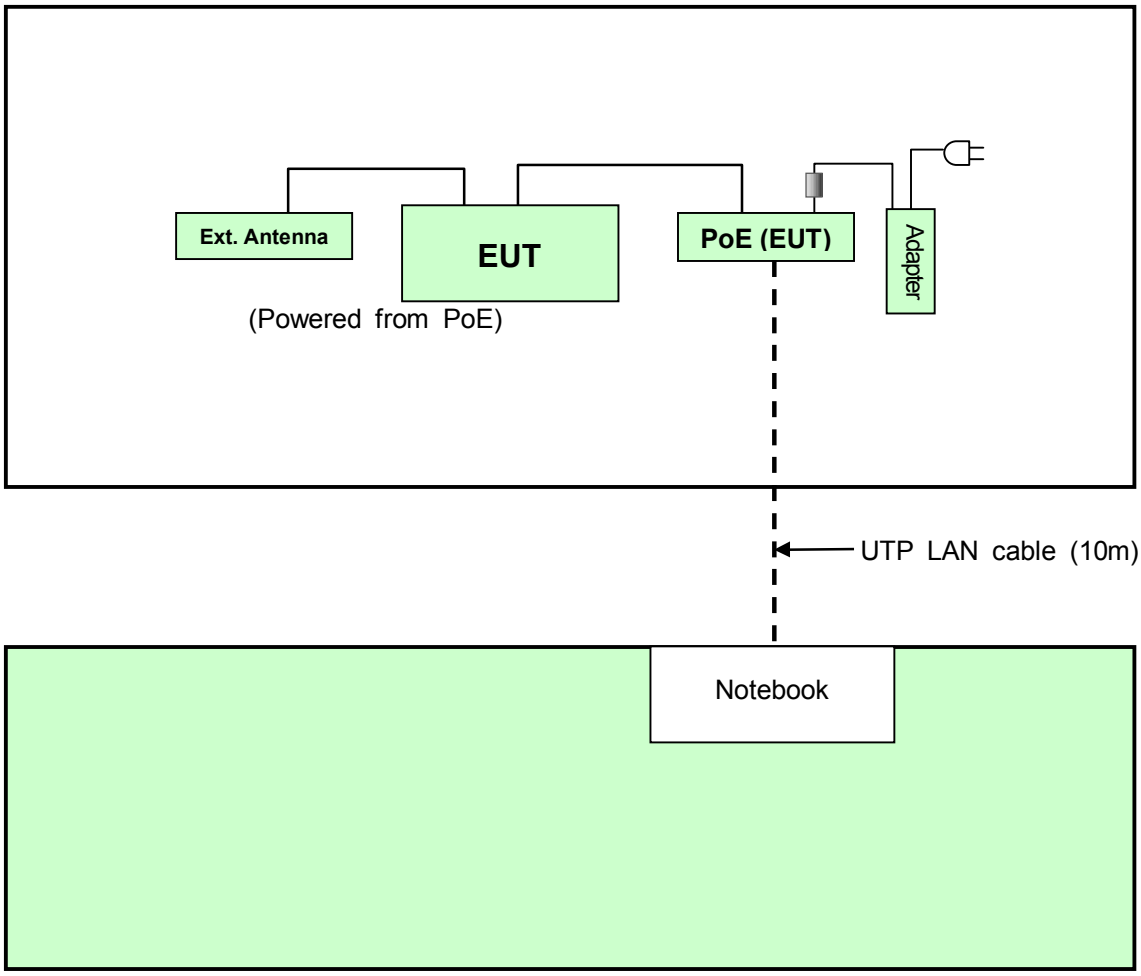
Mode A:



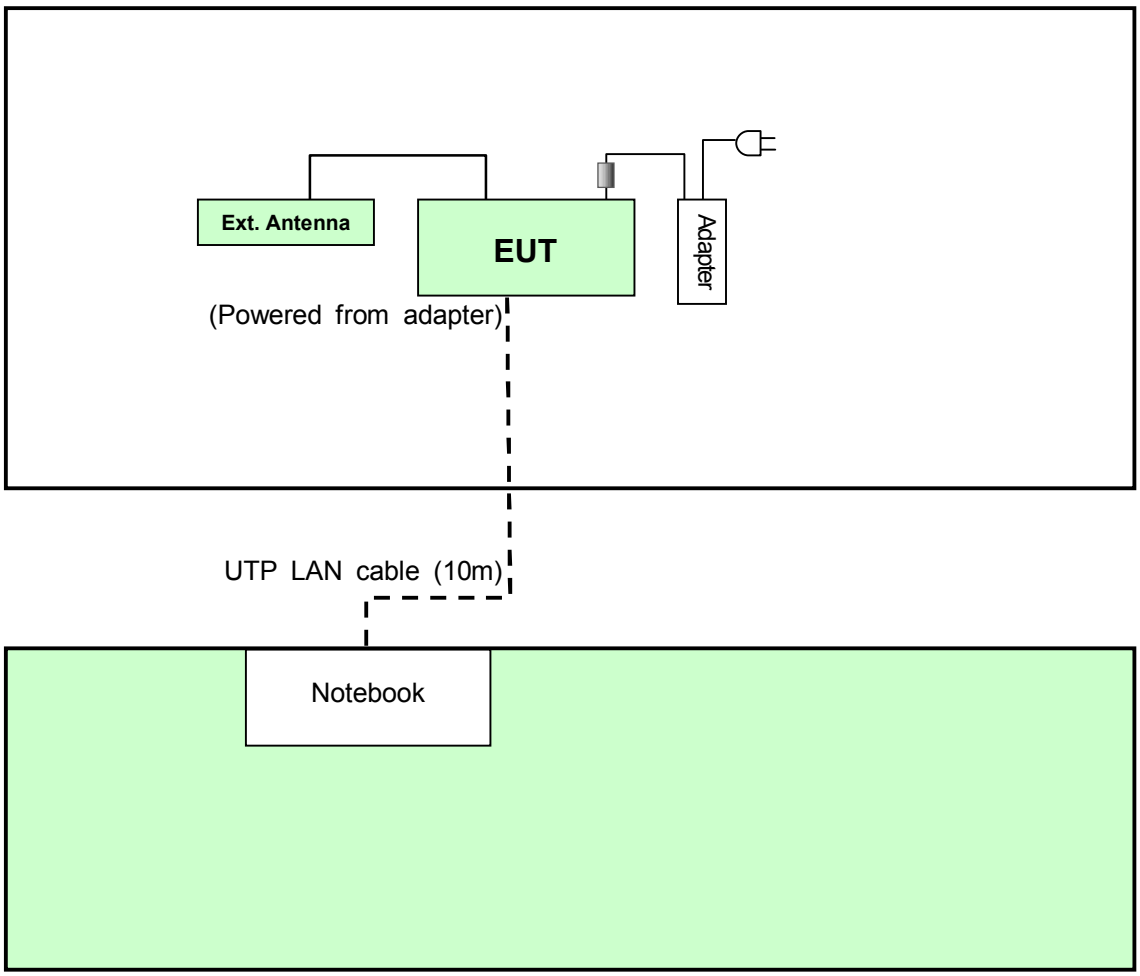
Mode B:


EUT
Adapter
(Powered from adapter)
UTP LAN cable (10m)
Notebook

Mode C:


Ext. Antenna
EUT
(Powered from PoE)
PoE (EUT)
Adapter
UTP LAN cable (10m)
Notebook

Mode D:


Ext. Antenna
EUT
Adapter
(Powered from adapter)
UTP LAN cable (10m)
Notebook

3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION	
	RE≥1G	RE<1G	PLC	APCM	Antenna	Power Source
A	√	√	√	√	Internal	Powered from POE
B	-	√	√	-		Powered from Adapter
C	√	√	√	√	External	Powered from POE
D	-	√	√	-		Powered from Adapter

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0	Z
C	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0	X
A	Draft 802.11n (20MHz)	36 to 48	36, 40, 48	OFDM	BPSK	6.5	Z
C	Draft 802.11n (20MHz)	36 to 48	36, 40, 48	OFDM	BPSK	6.5	X
A	Draft 802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	13.5	Z
C	Draft 802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	13.5	X

RADIATED EMISSION TEST (BELOW 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A & B	Draft 802.11n (20MHz)	36 to 48	40	OFDM	BPSK	6.5	Z
C & D	Draft 802.11n (20MHz)	36 to 48	40	OFDM	BPSK	6.5	X

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A ~ D	Draft 802.11n (20MHz)	36 to 48	40	OFDM	BPSK	6.5

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11a	36 to 48	36, 48	OFDM	BPSK	6.0	Z
C	802.11a	36 to 48	36, 48	OFDM	BPSK	6.0	X
A	Draft 802.11n (20MHz)	36 to 48	36, 48	OFDM	BPSK	6.5	Z
C	Draft 802.11n (20MHz)	36 to 48	36, 48	OFDM	BPSK	6.5	X
A	Draft 802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	13.5	Z
C	Draft 802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	13.5	X

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A & C	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A & C	Draft 802.11n (20MHz)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
A & C	Draft 802.11n (40MHz)	38 to 46	38, 46	OFDM	BPSK	13.5

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	Adapter	AMIGO	AM-121000	NA	NA
2	NOTEBOOK COMPUTER	DELL	PP05L	20375526736	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	10m RJ45 cable

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 2 acted as communication partners to transfer data.
3. The support unit 1 was provided by client.

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	
	AV	PK	AV
5150 ~ 5350	-27	88.3	68.3
5470 ~ 5725	-27	88.3	68.3

NOTE:

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

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

4.1.3 TEST INSTRUMENTS

<Frequency Range 30MHz~1GHz>

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ TEST RECEIVER	ESVS 30	841977/008	Apr. 24, 2009	Apr. 23, 2010
SCHAFFNER BILOG Antenna	CBL6111C	2793	Apr. 29, 2009	Apr. 28, 2010
ADT. Turn Table	TT100	0201	NA	NA
ADT. Tower	AT100	0201	NA	NA
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
ADT RF Switches BOX	EM-H-01-1	1004	Dec. 19, 2008	Dec. 18, 2009
WOKEN RF cable	8D	CABLE-ST10-01	Dec. 19, 2008	Dec. 18, 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 Open Site No. 10.
3. The VCCI Site Registration No. R-1625.
4. The Industry Canada Reference No. IC 7450E-10.
5. The FCC Site Registration No. 698148.

<Frequency Range above 1GHz>

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum	8564EC	4208A00659	Jul. 24, 2009	Jul. 23, 2010
Agilent Preamplifier	8449B	3008A01924	Aug. 31, 2009	Aug. 30, 2010
Agilent Preamplifier	8449B	3008A01292	Aug. 10, 2009	Aug. 09, 2010
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Aug. 31, 2009	Aug. 30, 2010
Schwarzbeck Horn Antenna	BBHA-9170	BBHA9170190	Sep. 24, 2009	Sep. 23, 2010
Schwarzbeck Horn Antenna	BBHA-9120	D130	May 15, 2009	May 14, 2010
ADT. Turn Table	TT100	0201	NA	NA
ADT. Tower	AT100	0201	NA	NA
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
SUHNER RF cable	SF106-18	PHACAB-1G-40 GHz	Aug. 20, 2009	Aug. 19, 2010

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Open Site No. 10.
3. The Industry Canada Reference No. IC 7450E-10.
4. The FCC Site Registration No. 698148.

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 10-meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

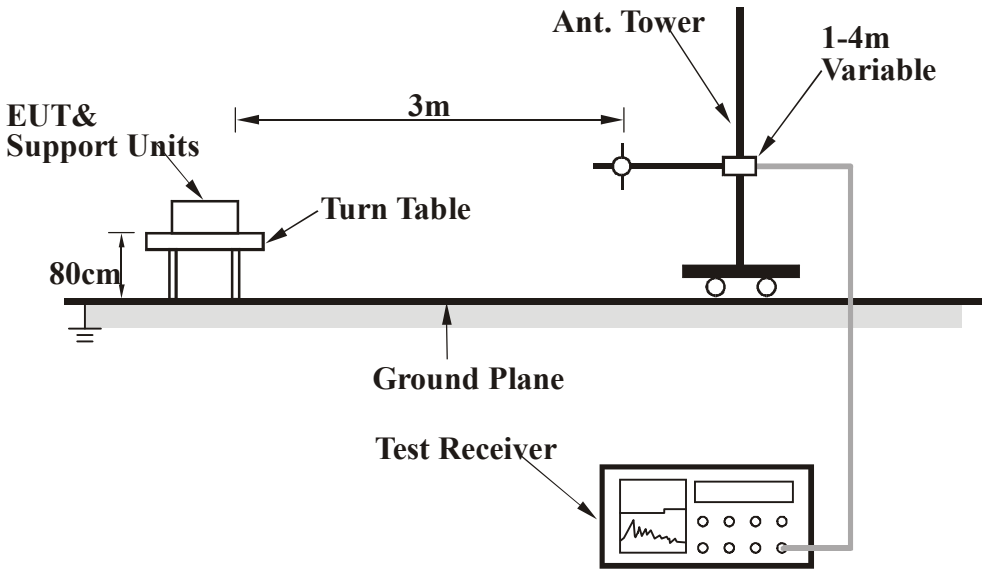
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

a. Placed the EUT on the testing table.
b. Prepared a notebook system to act as communication partners and placed them outside of testing area.
c. The communication partners run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency via RJ45 cables.

4.1.8 TEST RESULT

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1009hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	59.99 PK	74.00	-14.01	1.00 H	5	21.64	38.35
2	5150.00	47.53 AV	54.00	-6.47	1.00 H	5	9.18	38.35
3	*5180.00	111.70 PK			1.00 H	5	73.28	38.42
4	*5180.00	101.04 AV			1.00 H	5	62.62	38.42
5	#10360.00	57.58 PK	88.30	-30.72	1.00 H	40	8.49	49.09
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.75 PK	74.00	-14.25	1.32 V	6	21.40	38.35
2	5150.00	45.96 AV	54.00	-8.04	1.32 V	6	7.61	38.35
3	*5180.00	112.80 PK			1.32 V	6	74.38	38.42
4	*5180.00	102.09 AV			1.30 V	6	63.67	38.42
5	#10360.00	58.99 PK	88.30	-29.31	1.00 V	38	9.90	49.09

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1009hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	111.26 PK			1.00 H	356	72.79	38.47
2	*5200.00	100.39 AV			1.00 H	356	61.92	38.47
3	#10400.00	58.33 PK	88.30	-29.97	1.03 H	25	9.18	49.15
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	*5200.00	113.55 PK			1.25 V	3	75.08	38.47
2	*5200.00	102.97 AV			1.25 V	3	64.50	38.47
3	#10400.00	57.54 PK	88.30	-30.76	1.00 V	354	8.39	49.15

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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1009hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	113.99 PK			1.00 H	1	75.49	38.50
2	*5240.00	101.25 AV			1.00 H	1	62.75	38.50
3	5350.00	48.52 PK	74.00	-25.48	1.00 H	1	9.89	38.63
4	5350.00	37.87 AV	54.00	-16.13	1.00 H	1	-0.76	38.63
5	#10480.00	58.53 PK	88.30	-29.77	1.00 H	346	9.27	49.26
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	114.46 PK			1.23 V	3	75.96	38.50
2	*5240.00	103.80 AV			1.23 V	3	65.30	38.50
3	5350.00	48.67 PK	74.00	-25.33	1.25 V	3	10.04	38.63
4	5350.00	37.80 AV	54.00	-16.20	1.25 V	3	-0.83	38.63
5	#10480.00	58.08 PK	88.30	-30.22	1.00 V	0	8.82	49.26

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 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1008hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	61.12 PK	74.00	-12.88	1.00 H	355	22.77	38.35
2	5150.00	48.21 AV	54.00	-5.79	1.00 H	355	9.86	38.35
3	*5180.00	115.02 PK			1.00 H	355	76.60	38.42
4	*5180.00	103.11 AV			1.00 H	355	64.69	38.42
5	#10360.00	59.41 PK	88.30	-28.89	1.00 H	6	10.32	49.09
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	62.22 PK	74.00	-11.78	1.00 V	356	23.87	38.35
2	5150.00	48.32 AV	54.00	-5.68	1.00 V	356	9.97	38.35
3	*5180.00	112.57 PK			1.00 V	356	74.15	38.42
4	*5180.00	100.14 AV			1.00 V	356	61.72	38.42
5	#10360.00	60.33 PK	88.30	-27.97	1.00 V	21	11.24	49.09

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1008hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	115.42 PK			1.00 H	356	76.95	38.47
2	*5200.00	103.15 AV			1.00 H	356	64.68	38.47
3	#10400.00	59.44 PK	88.30	-28.86	1.00 H	8	10.29	49.15
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	*5200.00	114.56 PK			1.00 V	355	76.09	38.47
2	*5200.00	102.53 AV			1.00 V	355	64.06	38.47
3	#10400.00	60.68 PK	88.30	-27.62	1.00 V	7	11.53	49.15

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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1008hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	116.48 PK			1.00 H	354	77.98	38.50
2	*5240.00	104.66 AV			1.00 H	354	66.16	38.50
3	5350.00	56.10 PK	74.00	-17.90	1.00 H	354	17.47	38.63
4	5350.00	42.01 AV	54.00	-11.99	1.00 H	354	3.38	38.63
5	#10480.00	59.66 PK	88.30	-28.64	1.00 H	10	10.40	49.26
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	114.71 PK			1.00 V	358	76.21	38.50
2	*5240.00	102.82 AV			1.00 V	358	64.32	38.50
3	5350.00	55.98 PK	74.00	-18.02	1.00 V	358	17.35	38.63
4	5350.00	42.96 AV	54.00	-11.04	1.00 V	358	4.33	38.63
5	#10480.00	61.64 PK	88.30	-26.66	1.00 V	15	12.38	49.26

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	60.01 PK	74.00	-13.99	1.00 H	6	21.66	38.35
2	5150.00	47.55 AV	54.00	-6.45	1.00 H	6	9.20	38.35
3	*5180.00	112.69 PK			1.00 H	6	74.27	38.42
4	*5180.00	102.07 AV			1.00 H	6	63.65	38.42
5	#10360.00	58.76 PK	88.30	-29.54	1.00 H	39	9.67	49.09
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	60.79 PK	74.00	-13.21	1.30 V	6	22.44	38.35
2	5150.00	47.03 AV	54.00	-6.97	1.30 V	6	8.68	38.35
3	*5180.00	114.90 PK			1.30 V	6	76.48	38.42
4	*5180.00	104.10 AV			1.30 V	6	65.68	38.42
5	#10360.00	59.01 PK	88.30	-29.29	1.00 V	41	9.92	49.09

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	112.30 PK			1.00 H	355	73.83	38.47
2	*5200.00	101.51 AV			1.00 H	355	63.04	38.47
3	#10400.00	59.40 PK	88.30	-28.90	1.03 H	3	10.25	49.15
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	*5200.00	114.66 PK			1.28 V	4	76.19	38.47
2	*5200.00	103.87 AV			1.28 V	4	65.40	38.47
3	#10400.00	58.24 PK	88.30	-30.06	1.00 V	352	9.09	49.15

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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	115.09 PK			1.00 H	1	76.59	38.50
2	*5240.00	104.66 AV			1.00 H	1	66.16	38.50
3	5350.00	49.63 PK	74.00	-24.37	1.00 H	1	11.00	38.63
4	5350.00	38.90 AV	54.00	-15.10	1.00 H	1	0.27	38.63
5	#10480.00	59.55 PK	88.30	-28.75	1.00 H	343	10.29	49.26
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	115.51 PK			1.27 V	4	77.01	38.50
2	*5240.00	104.92 AV			1.27 V	4	66.42	38.50
3	5350.00	49.79 PK	74.00	-24.21	1.27 V	4	11.16	38.63
4	5350.00	38.92 AV	54.00	-15.08	1.27 V	4	0.29	38.63
5	#10480.00	59.18 PK	88.30	-29.12	1.00 V	0	9.92	49.26

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 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1011hPa	TESTED BY	Chad Lee
TEST MODE	C		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.33 PK	74.00	-11.67	1.00 H	355	23.98	38.35
2	5150.00	49.44 AV	54.00	-4.56	1.00 H	355	11.09	38.35
3	*5180.00	116.26 PK			1.00 H	355	77.84	38.42
4	*5180.00	104.25 AV			1.00 H	355	65.83	38.42
5	#10360.00	60.33 PK	88.30	-27.97	1.00 H	6	11.24	49.09
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	63.42 PK	74.00	-10.58	1.00 V	357	25.07	38.35
2	5150.00	49.51 AV	54.00	-4.49	1.00 V	357	11.16	38.35
3	*5180.00	113.70 PK			1.00 V	357	75.28	38.42
4	*5180.00	101.11 AV			1.00 V	357	62.69	38.42
5	#10360.00	61.55 PK	88.30	-26.75	1.00 V	16	12.46	49.09

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1011hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	116.51 PK			1.00 H	354	78.04	38.47
2	*5200.00	104.39 AV			1.00 H	354	65.92	38.47
3	#10400.00	60.59 PK	88.30	-27.71	1.00 H	6	11.44	49.15
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	*5200.00	115.72 PK			1.00 V	357	77.25	38.47
2	*5200.00	103.76 AV			1.00 V	357	65.29	38.47
3	#10400.00	61.86 PK	88.30	-26.44	1.00 V	5	12.71	49.15

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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1011hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	117.69 PK			1.00 H	353	79.19	38.50
2	*5240.00	105.83 AV			1.00 H	353	67.33	38.50
3	5350.00	57.22 PK	74.00	-16.78	1.00 H	353	18.59	38.63
4	5350.00	43.04 AV	54.00	-10.96	1.00 H	353	4.41	38.63
5	#10480.00	60.71 PK	88.30	-27.59	1.00 H	12	11.45	49.26
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	115.86 PK			1.00 V	357	77.36	38.50
2	*5240.00	103.92 AV			1.00 V	357	65.42	38.50
3	5350.00	57.03 PK	74.00	-16.97	1.00 V	357	18.40	38.63
4	5350.00	43.01 AV	54.00	-10.99	1.00 V	357	4.38	38.63
5	#10480.00	62.80 PK	88.30	-25.50	1.00 V	16	13.54	49.26

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	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1009hPa	TESTED BY	Chad Lee
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.07 PK	74.00	-11.93	1.00 H	349	23.72	38.35
2	5150.00	49.64 AV	54.00	-4.36	1.00 H	349	11.29	38.35
3	*5190.00	105.40 PK			1.00 H	349	66.95	38.45
4	*5190.00	94.64 AV			1.00 H	349	56.19	38.45
5	#10380.00	58.06 PK	88.30	-30.24	1.00 H	13	8.95	49.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.12 PK	74.00	-9.88	1.00 V	12	25.77	38.35
2	5150.00	51.28 AV	54.00	-2.72	1.00 V	12	12.93	38.35
3	*5190.00	107.40 PK			1.00 V	12	68.95	38.45
4	*5190.00	96.97 AV			1.00 V	12	58.52	38.45
5	#10380.00	58.27 PK	88.30	-30.03	1.00 V	20	9.16	49.12

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1009hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	105.22 PK			1.00 H	349	66.73	38.49
2	*5230.00	94.71 AV			1.00 H	349	56.22	38.49
3	5350.00	61.50 PK	74.00	-12.50	1.00 H	349	22.87	38.63
4	5350.00	49.14 AV	54.00	-4.86	1.00 H	349	10.51	38.63
5	#10460.00	58.59 PK	88.30	-29.71	1.00 H	323	9.35	49.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	107.59 PK			1.00 V	360	69.10	38.49
2	*5230.00	97.32 AV			1.00 V	360	58.83	38.49
3	5350.00	61.98 PK	74.00	-12.02	1.00 V	360	23.35	38.63
4	5350.00	50.18 AV	54.00	-3.82	1.00 V	360	11.55	38.63
5	#10460.00	57.62 PK	88.30	-30.68	1.00 V	0	8.39	49.23

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	63.87 PK	74.00	-10.13	1.00 H	353	25.52	38.35
2	5150.00	50.67 AV	54.00	-3.33	1.00 H	353	12.32	38.35
3	*5190.00	111.61 PK			1.00 H	353	73.16	38.45
4	*5190.00	100.30 AV			1.00 H	353	61.85	38.45
5	#10380.00	60.19 PK	88.30	-28.11	1.00 H	12	11.07	49.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.15 PK	74.00	-10.85	1.00 V	352	24.80	38.35
2	5150.00	49.37 AV	54.00	-4.63	1.00 V	352	11.02	38.35
3	*5190.00	109.67 PK			1.00 V	352	71.22	38.45
4	*5190.00	98.56 AV			1.00 V	352	60.11	38.45
5	#10380.00	60.34 PK	88.30	-27.96	1.00 V	351	11.22	49.12

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	112.95 PK			1.00 H	356	74.46	38.49
2	*5230.00	101.15 AV			1.00 H	356	62.66	38.49
3	5350.00	58.25 PK	74.00	-15.75	1.00 H	356	19.62	38.63
4	5350.00	43.09 AV	54.00	-10.91	1.00 H	356	4.46	38.63
5	#10460.00	60.31 PK	88.30	-27.99	1.00 H	14	11.08	49.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	112.52 PK			1.00 V	356	74.03	38.49
2	*5230.00	101.07 AV			1.00 V	356	62.58	38.49
3	5350.00	58.35 PK	74.00	-15.65	1.00 V	356	19.72	38.63
4	5350.00	43.20 AV	54.00	-10.80	1.00 V	356	4.57	38.63
5	#10460.00	60.54 PK	88.30	-27.76	1.00 V	19	11.31	49.23

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1011hPa	TESTED BY	Chad Lee
TEST MODE	A		

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	39.74	37.74 QP	40.00	-2.26	1.16 H	241	23.92	13.82
2	66.24	38.55 QP	40.00	-1.45	1.09 H	265	30.93	7.62
3	146.25	37.98 QP	43.50	-5.52	1.02 H	332	24.30	13.68
4	250.14	43.65 QP	46.00	-2.35	1.00 H	117	28.09	15.56
5	500.36	41.32 QP	46.00	-4.68	1.22 H	321	18.00	23.32
6	575.22	39.62 QP	46.00	-6.38	1.15 H	241	14.92	24.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.11	39.11 QP	40.00	-0.89	1.00 V	128	20.10	19.01
2	125.07	41.01 QP	43.50	-2.49	1.00 V	256	28.24	12.77
3	142.25	40.95 QP	43.50	-2.55	1.00 V	302	27.50	13.45
4	250.03	43.66 QP	46.00	-2.34	1.00 V	195	28.10	15.56
5	425.31	41.65 QP	46.00	-4.35	1.00 V	36	20.72	20.93
6	575.02	39.65 QP	46.00	-6.35	1.00 V	218	14.95	24.70

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1007hPa	TESTED BY	Chad Lee
TEST MODE	B		

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	35.25	33.66 QP	40.00	-6.34	2.73 H	17	17.84	15.82
2	85.40	38.10 QP	40.00	-1.90	2.32 H	107	28.40	9.70
3	250.00	44.68 QP	46.00	-1.32	1.48 H	104	29.12	15.56
4	500.01	35.24 QP	46.00	-10.76	1.12 H	292	11.93	23.31
5	625.00	33.25 QP	46.00	-12.75	1.25 H	191	7.92	25.33
6	750.01	30.61 QP	46.00	-15.39	1.00 H	9	3.82	26.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.34	34.01 QP	40.00	-5.99	1.00 V	20	18.68	15.33
2	87.15	37.77 QP	40.00	-2.23	1.00 V	0	27.83	9.94
3	250.01	42.00 QP	46.00	-4.00	1.19 V	113	26.44	15.56
4	500.01	33.60 QP	46.00	-12.40	1.37 V	57	10.29	23.31
5	625.01	30.63 QP	46.00	-15.37	1.22 V	53	5.30	25.33
6	750.01	29.64 QP	46.00	-16.36	1.64 V	204	2.85	26.79

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1011hPa	TESTED BY	Chad Lee
TEST MODE	C		

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	39.69	38.25 QP	40.00	-1.75	1.04 H	1	24.41	13.84
2	66.92	38.10 QP	40.00	-1.90	1.13 H	309	30.45	7.65
3	146.65	41.27 QP	43.50	-2.23	1.27 H	211	27.57	13.70
4	500.02	40.32 QP	46.00	-5.68	1.03 H	112	17.01	23.31
5	574.98	39.26 QP	46.00	-6.74	1.41 H	232	14.57	24.69
6	624.98	39.32 QP	46.00	-6.68	1.49 H	133	13.99	25.33
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**30.01**	**39.21 QP**	**40.00**	**-0.79**	**1.12 V**	**12**	**20.14**	**19.07**
2	125.03	41.37 QP	43.50	-2.13	1.02 V	327	28.60	12.77
3	142.72	41.96 QP	43.50	-1.54	1.14 V	296	28.48	13.48
4	250.01	44.29 QP	46.00	-1.71	1.37 V	224	28.73	15.56
5	425.02	40.97 QP	46.00	-5.03	1.09 V	318	20.04	20.93
6	575.00	39.11 QP	46.00	-6.89	1.37 V	231	14.41	24.70

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	28deg. C, 75%RH 1010hPa	TESTED BY	Chad Lee
TEST MODE	D		

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	35.79	37.29 QP	40.00	-2.71	1.07 H	115	21.71	15.58
2	86.28	38.51 QP	40.00	-1.49	1.29 H	317	28.69	9.82
3	250.01	44.29 QP	46.00	-1.71	1.02 H	111	28.73	15.56
4	500.02	39.98 QP	46.00	-6.02	1.11 H	154	16.67	23.31
5	625.01	39.16 QP	46.00	-6.84	1.08 H	217	13.83	25.33
6	776.38	35.19 QP	46.00	-10.81	1.08 H	116	7.96	27.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.68	38.49 QP	40.00	-1.51	1.19 V	213	20.47	18.02
2	86.29	38.96 QP	40.00	-1.04	1.17 V	218	29.14	9.82
3	249.97	44.92 QP	46.00	-1.08	1.43 V	311	29.36	15.56
4	425.01	38.16 QP	46.00	-7.84	1.22 V	31	17.23	20.93
5	500.02	38.19 QP	46.00	-7.81	1.27 V	314	14.88	23.31
6	625.02	38.91 QP	46.00	-7.09	1.14 V	356	13.58	25.33

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Mar. 05, 2009	Mar. 04, 2010
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Nov. 26, 2008	Nov. 25, 2009
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 26, 2008	Nov. 25, 2009
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Nov. 20, 2008	Nov. 19, 2009
Software	ADT_Cond_V7.3.7	NA	NA	NA
Software	ADT_ISN_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Feb. 26, 2009	Feb. 25, 2010
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 27, 2009	Feb. 26, 2010

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in Shielded Room No. 10.

3. The VCCI Site Registration No. C-1852.

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.

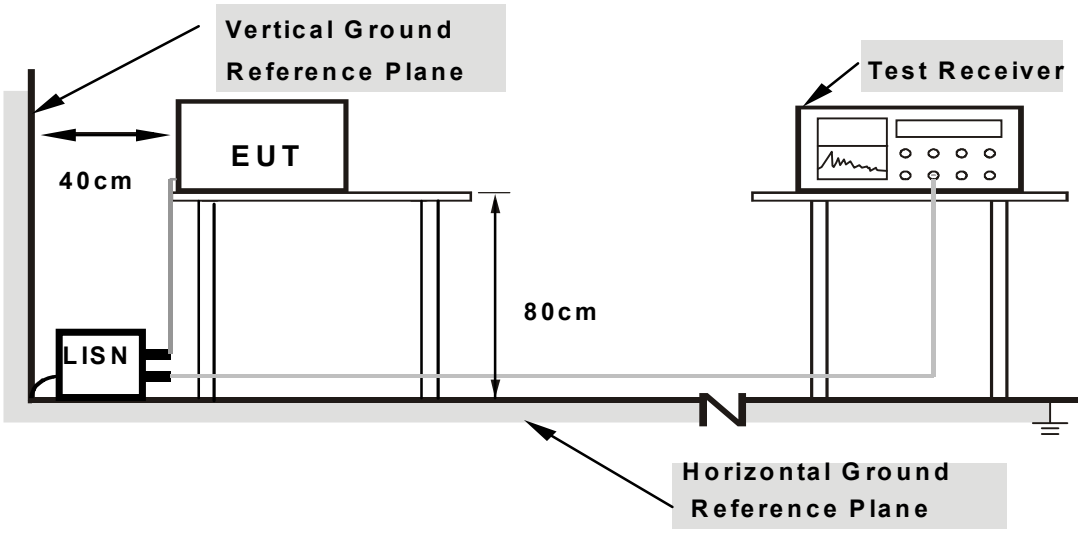
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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.

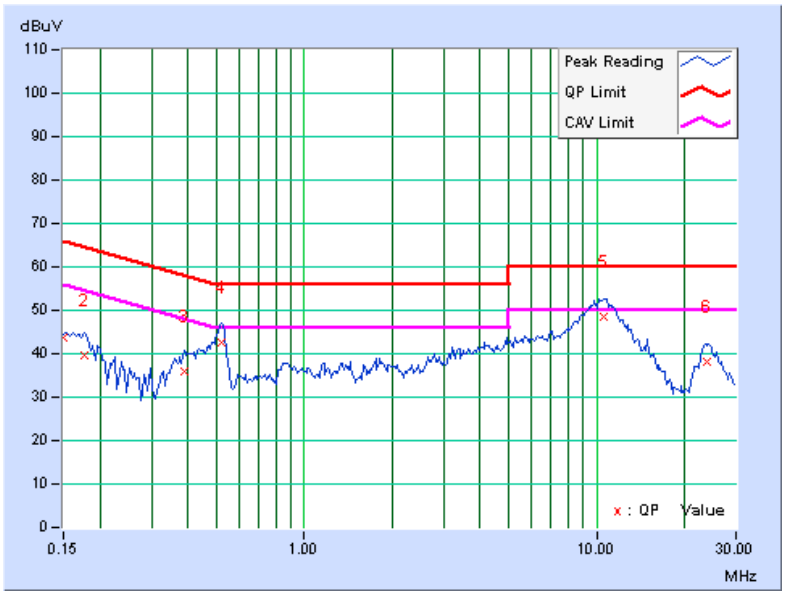
4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 1
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 72%RH, 1011hPa	TESTED BY	Nick Chen
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.12	43.47	-	43.59	-	66.00	56.00	-22.41	-
2	0.177	0.12	39.35	-	39.47	-	64.61	54.61	-25.14	-
3	0.389	0.21	35.55	-	35.76	-	58.09	48.09	-22.33	-
4	0.521	0.22	42.42	-	42.64	-	56.00	46.00	-13.36	-
5	10.638	0.70	47.67	-	48.37	-	60.00	50.00	-11.63	-
6	23.953	1.49	36.62	-	38.11	-	60.00	50.00	-21.89	-

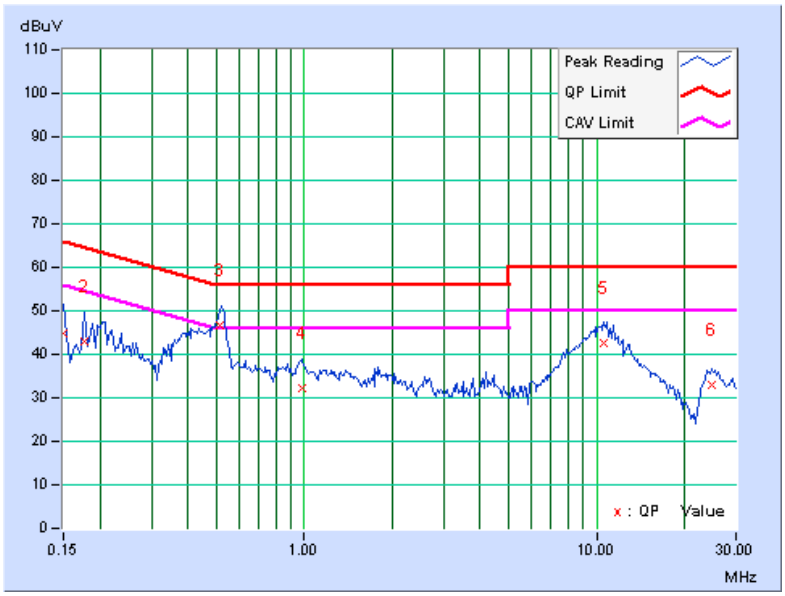
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 2
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 72%RH, 1011hPa	TESTED BY	Nick Chen
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	44.91	-	45.00	-	66.00	56.00	-21.00	-
2	0.178	0.09	43.04	-	43.13	-	64.60	54.60	-21.47	-
3	**0.516**	**0.20**	**46.54**	**33.18**	**46.74**	**33.38**	**56.00**	**46.00**	**-9.26**	**-12.62**
4	0.980	0.22	32.05	-	32.27	-	56.00	46.00	-23.73	-
5	10.592	0.55	42.14	-	42.69	-	60.00	50.00	-17.31	-
6	24.687	1.13	31.70	-	32.83	-	60.00	50.00	-27.17	-

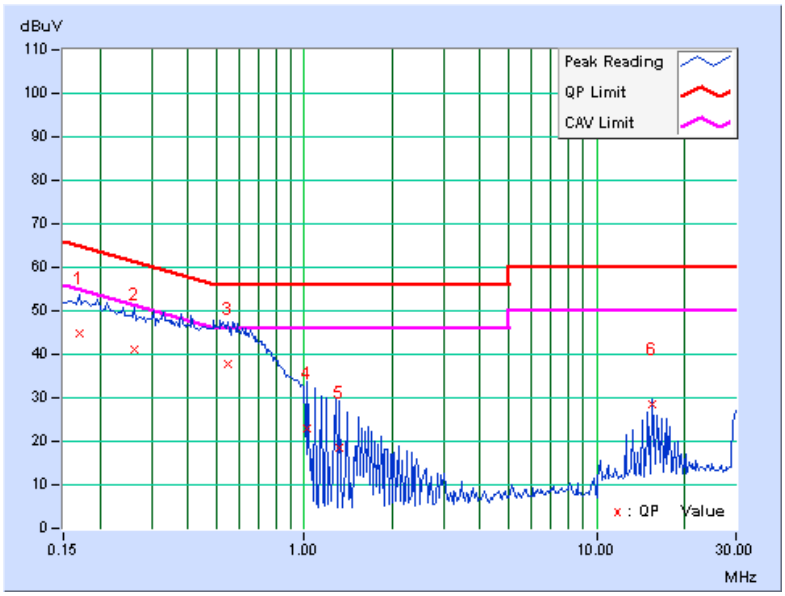
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 1
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	28deg. C, 77%RH, 1008hPa	TESTED BY	Nick Chen
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.171	0.12	44.86	-	44.98	-	64.89	54.89	-19.91	-
2	0.262	0.15	41.05	-	41.20	-	61.37	51.37	-20.17	-
3	0.551	0.23	37.68	-	37.91	-	56.00	46.00	-18.09	-
4	1.028	0.24	22.57	-	22.81	-	56.00	46.00	-33.19	-
5	1.322	0.25	18.26	-	18.51	-	56.00	46.00	-37.49	-
6	15.543	1.07	27.49	-	28.56	-	60.00	50.00	-31.44	-

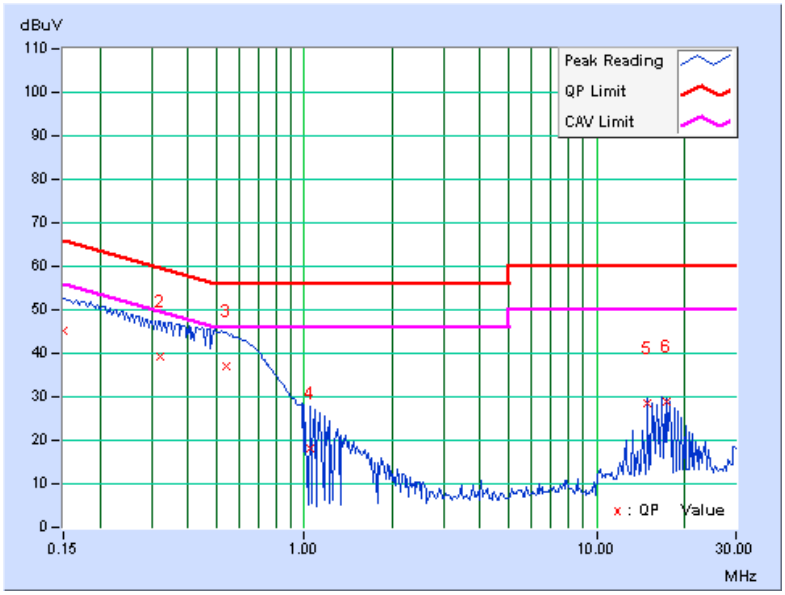
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 2
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	28deg. C, 77%RH, 1008hPa	TESTED BY	Nick Chen
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	45.16	-	45.25	-	65.99	55.99	-20.74	-
2	0.320	0.16	38.99	-	39.15	-	59.72	49.72	-20.57	-
3	0.542	0.20	36.99	-	37.19	-	56.00	46.00	-18.81	-
4	1.043	0.22	17.99	-	18.21	-	56.00	46.00	-37.79	-
5	14.967	0.79	27.70	-	28.49	-	60.00	50.00	-31.51	-
6	17.266	0.91	27.93	-	28.84	-	60.00	50.00	-31.16	-

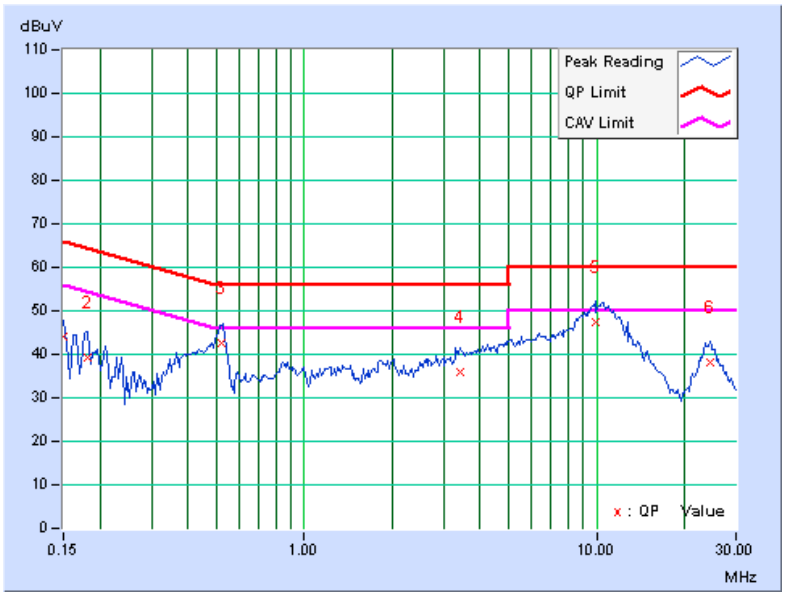
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 1
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 72%RH, 1011hPa	TESTED BY	Nick Chen
TEST MODE	C		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.12	44.03	-	44.15	-	66.00	56.00	-21.85	-
2	0.181	0.12	39.16	-	39.28	-	64.43	54.43	-25.15	-
3	0.524	0.22	42.47	-	42.69	-	56.00	46.00	-13.31	-
4	3.410	0.34	35.52	-	35.86	-	56.00	46.00	-20.14	-
5	9.910	0.65	46.91	-	47.56	-	60.00	50.00	-12.44	-
6	24.406	1.50	36.50	-	38.00	-	60.00	50.00	-22.00	-

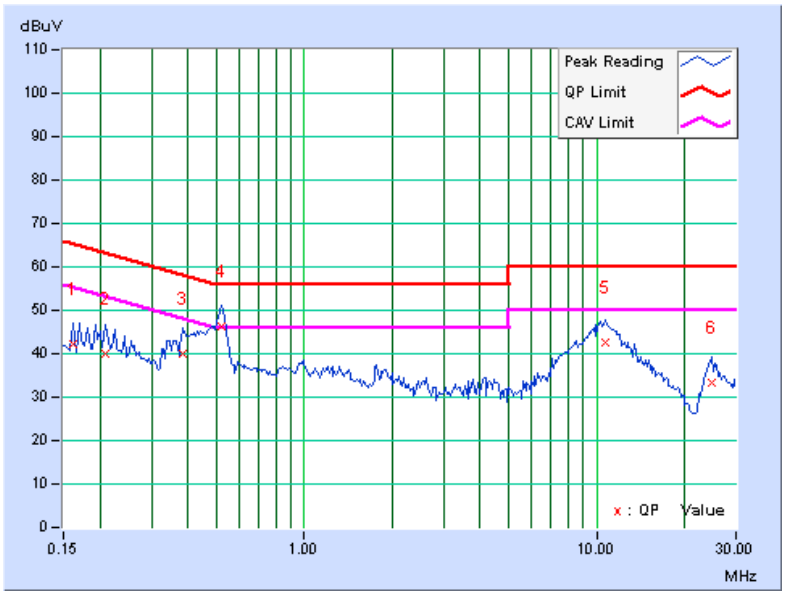
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 2
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	25deg. C, 72%RH, 1011hPa	TESTED BY	Nick Chen
TEST MODE	C		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.09	41.97	-	42.06	-	65.37	55.37	-23.31	-
2	0.209	0.09	40.03	-	40.12	-	63.26	53.26	-23.13	-
3	0.386	0.19	39.74	-	39.93	-	58.16	48.16	-18.22	-
4	0.521	0.20	46.15	33.16	46.35	33.36	56.00	46.00	-9.65	-12.64
5	10.696	0.56	41.96	-	42.52	-	60.00	50.00	-17.48	-
6	24.672	1.13	32.07	-	33.20	-	60.00	50.00	-26.80	-

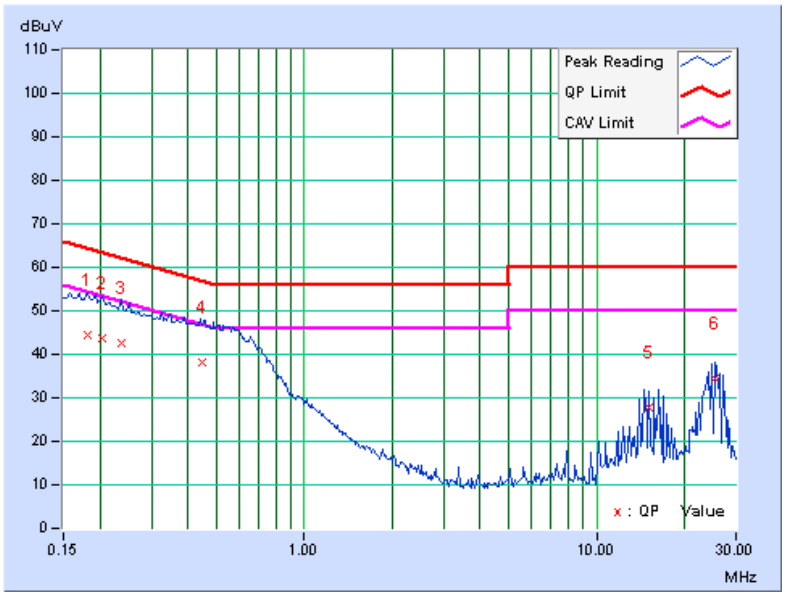
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 1
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	28deg. C, 77%RH, 1008hPa	TESTED BY	Nick Chen
TEST MODE	D		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.12	44.44	-	44.56	-	64.43	54.43	-19.87	-
2	0.205	0.12	43.55	-	43.67	-	63.42	53.42	-19.75	-
3	0.236	0.14	42.44	-	42.58	-	62.24	52.24	-19.66	-
4	0.446	0.22	37.99	-	38.21	-	56.96	46.96	-18.75	-
5	15.191	1.04	26.66	-	27.70	-	60.00	50.00	-32.30	-
6	25.318	1.52	32.75	-	34.27	-	60.00	50.00	-25.73	-

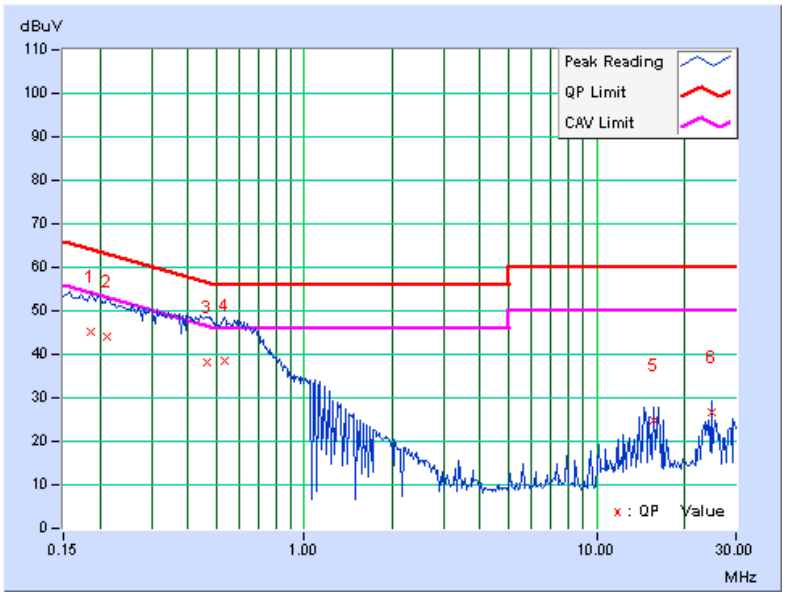
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	PHASE	Line 2
INPUT POWER	120Vac, 60Hz	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	28deg. C, 77%RH, 1008hPa	TESTED BY	Nick Chen
TEST MODE	D		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.187	0.09	45.00	-	45.09	-	64.17	54.17	-19.08	-
2	0.213	0.10	44.07	-	44.17	-	63.11	53.11	-18.94	-
3	0.466	0.20	37.95	-	38.15	-	56.58	46.58	-18.42	-
4	0.534	0.20	38.47	-	38.67	-	56.00	46.00	-17.33	-
5	15.760	0.83	23.94	-	24.77	-	60.00	50.00	-35.23	-
6	24.762	1.13	25.56	-	26.69	-	60.00	50.00	-33.31	-

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

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

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Agilent SPECTRUM ANALYZER	E4446A	MY46180403	June 22, 2009	June 21, 2010

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

4.3.3 TEST PROCEDURES

a. The transmitter output was connected to the spectrum analyzer.

b. Set span to encompass the entire emission bandwidth of the signal.

c. Set RBW to 1MHz, VBW to 3MHz.

d. Using the spectrum analyzer's channel power measurement function to measure the output power.

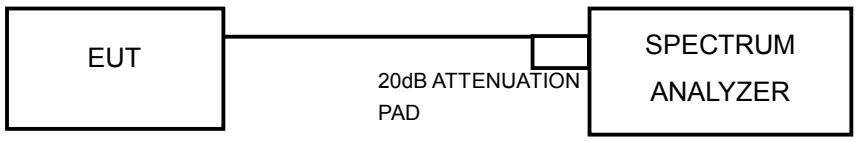
NOTE: The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

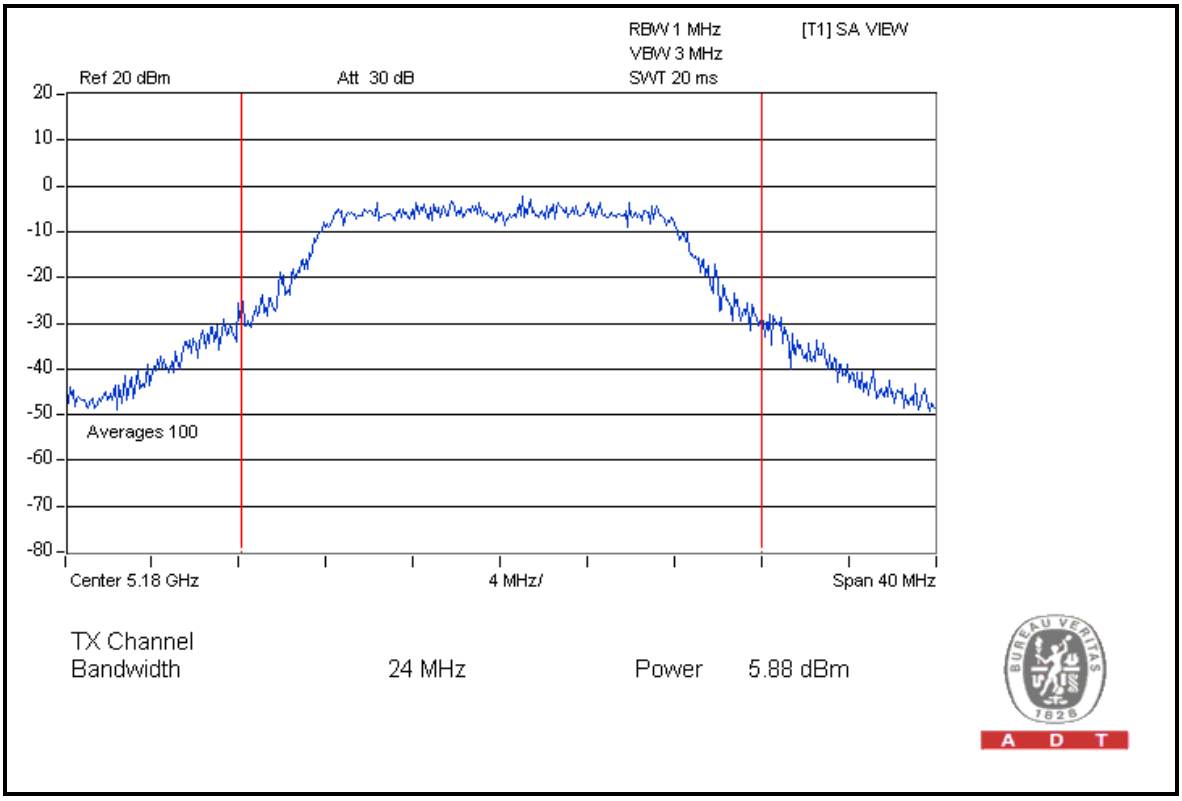
POWER OUTPUT: 802.11a OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	5.88	5.71	7.596	8.81	9	PASS
40	5200	5.87	5.73	7.605	8.81	9	PASS
48	5240	5.87	5.77	7.639	8.83	9	PASS

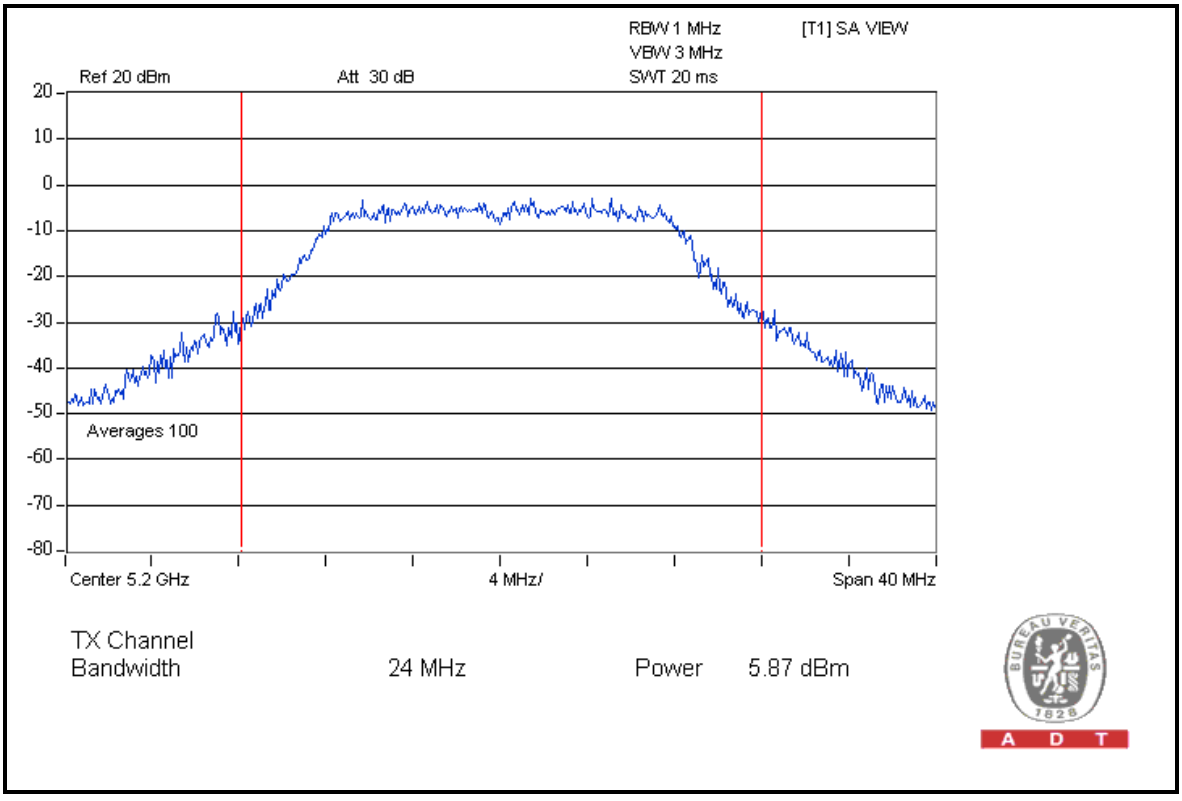
NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 14dBi is higher than 6dBi, so the limit of output power shall be reduced by 8 dB.

CHAIN 0 CH 36



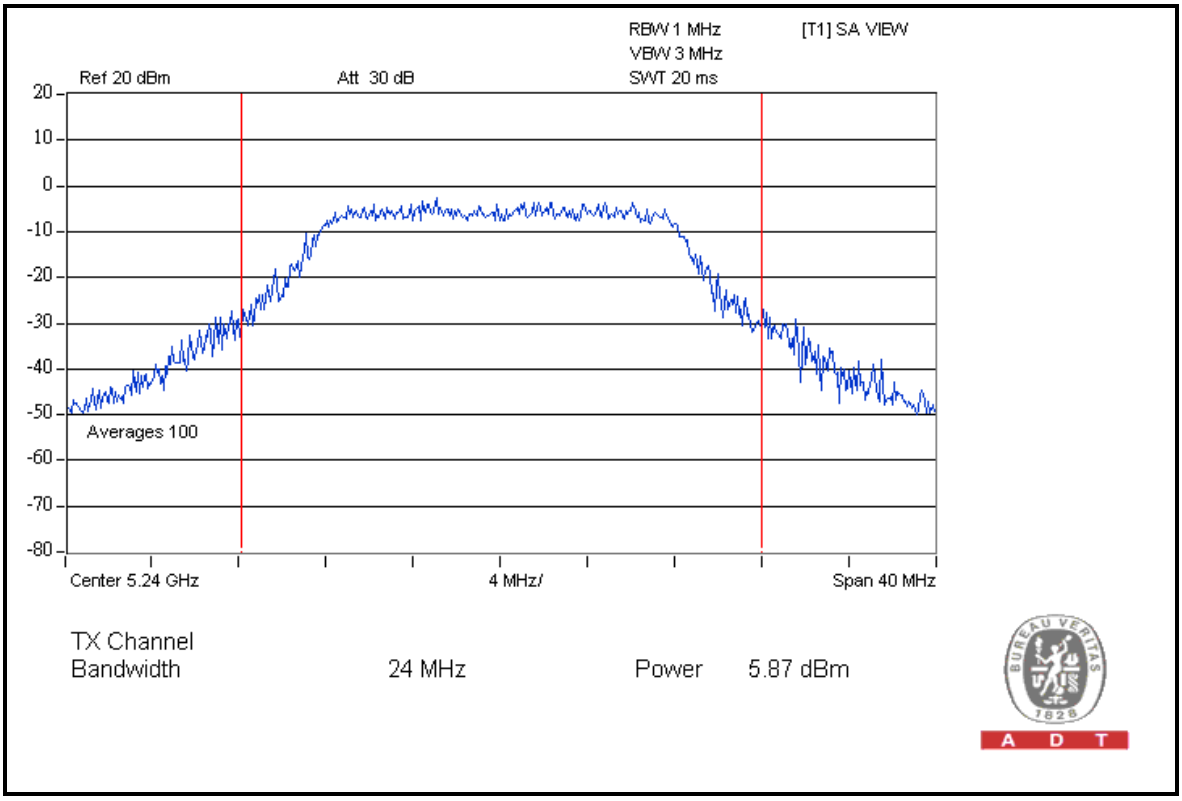
TX Channel Bandwidth 24 MHz Power 5.88 dBm

CH 40



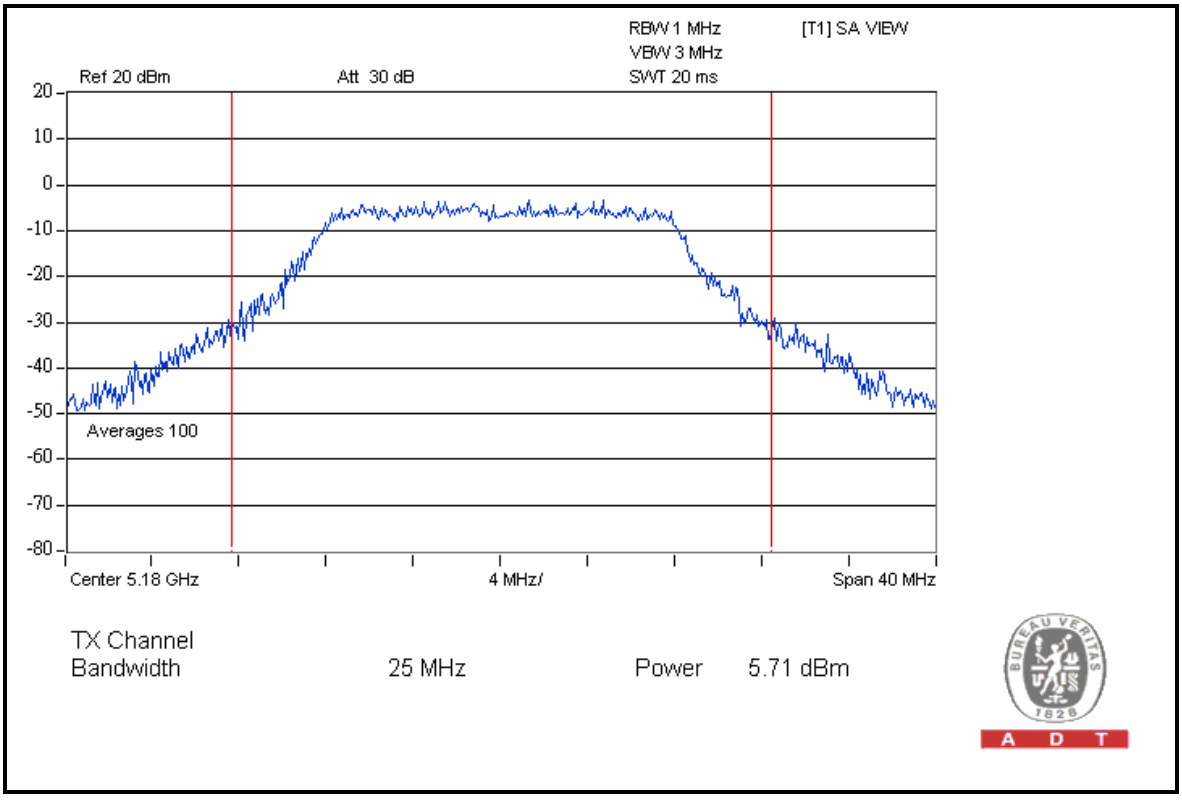
TX Channel Bandwidth 24 MHz Power 5.87 dBm

CH 48



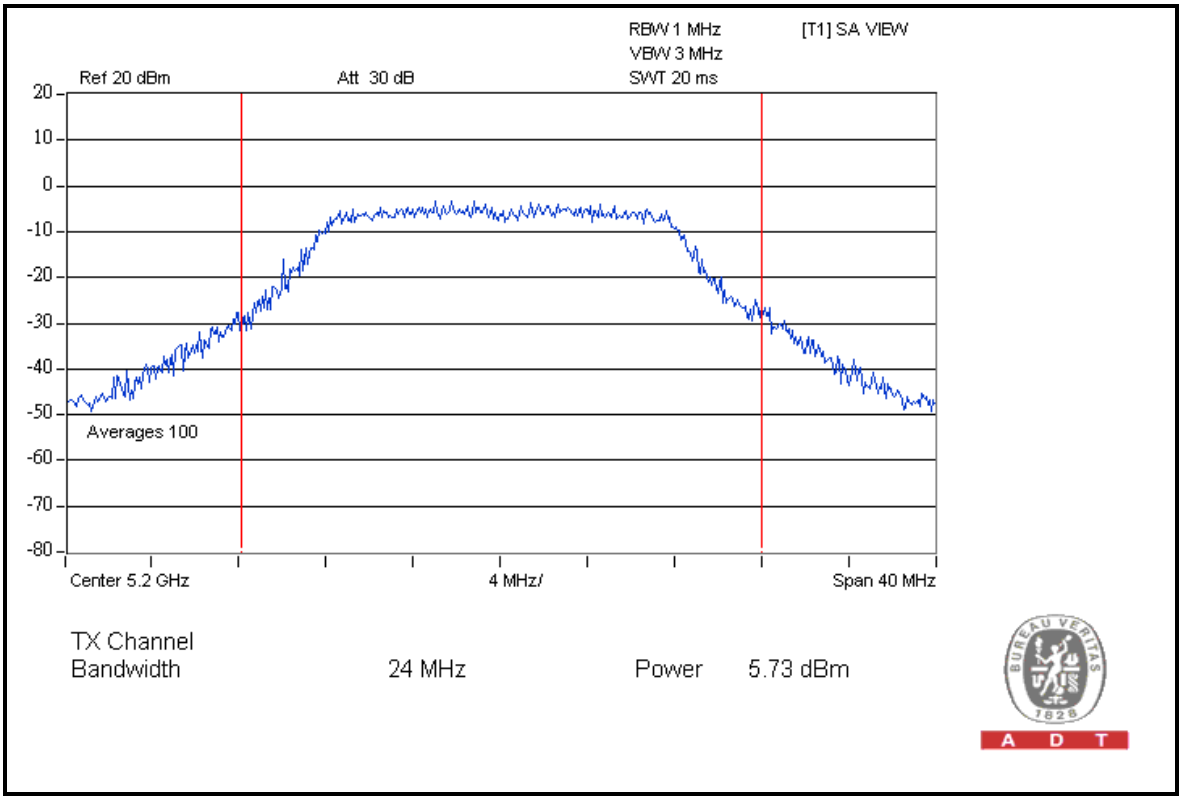
TX Channel Bandwidth 24 MHz Power 5.87 dBm

CHAIN 1 CH 36



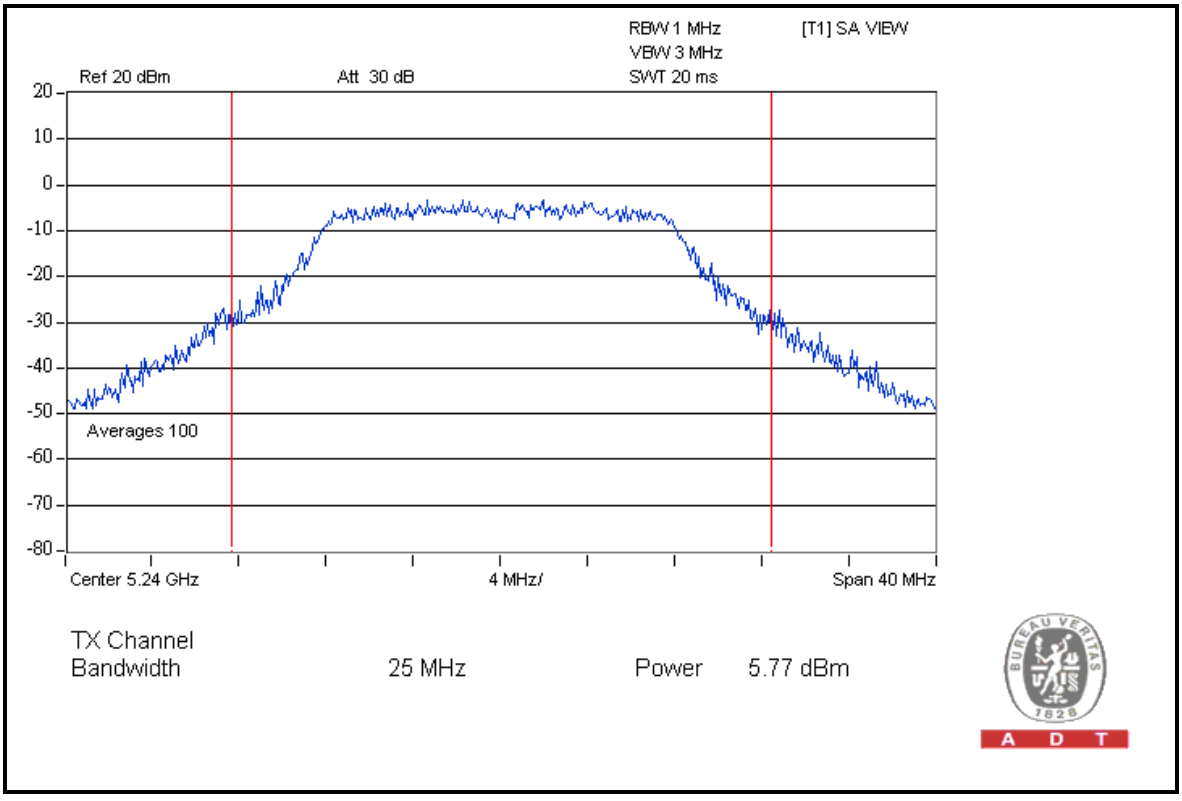
TX Channel Bandwidth 25 MHz Power 5.71 dBm

CH 40



TX Channel Bandwidth 24 MHz Power 5.73 dBm

CH 48



TX Channel Bandwidth 25 MHz Power 5.77 dBm

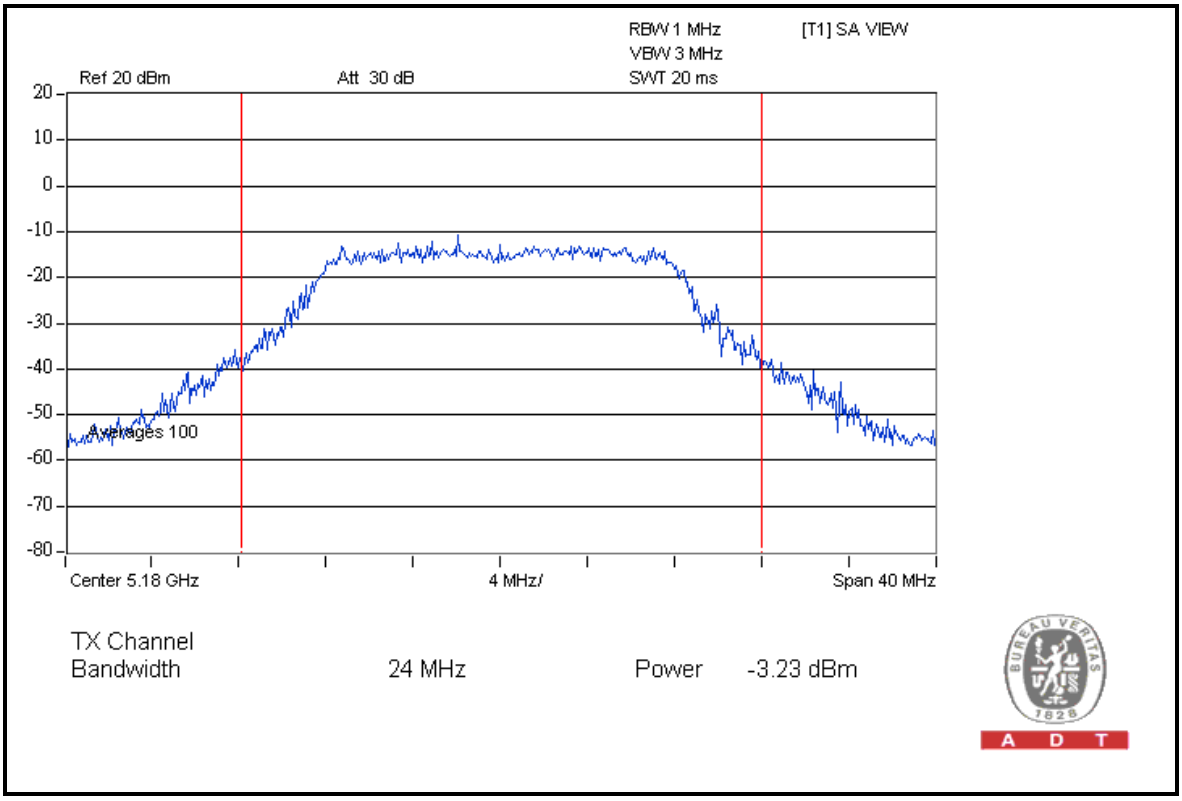
802.11a OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-3.23	-3.50	0.922	-0.35	0	PASS
40	5200	-3.32	-3.57	0.905	-0.43	0	PASS
48	5240	-3.27	-3.49	0.919	-0.37	0	PASS

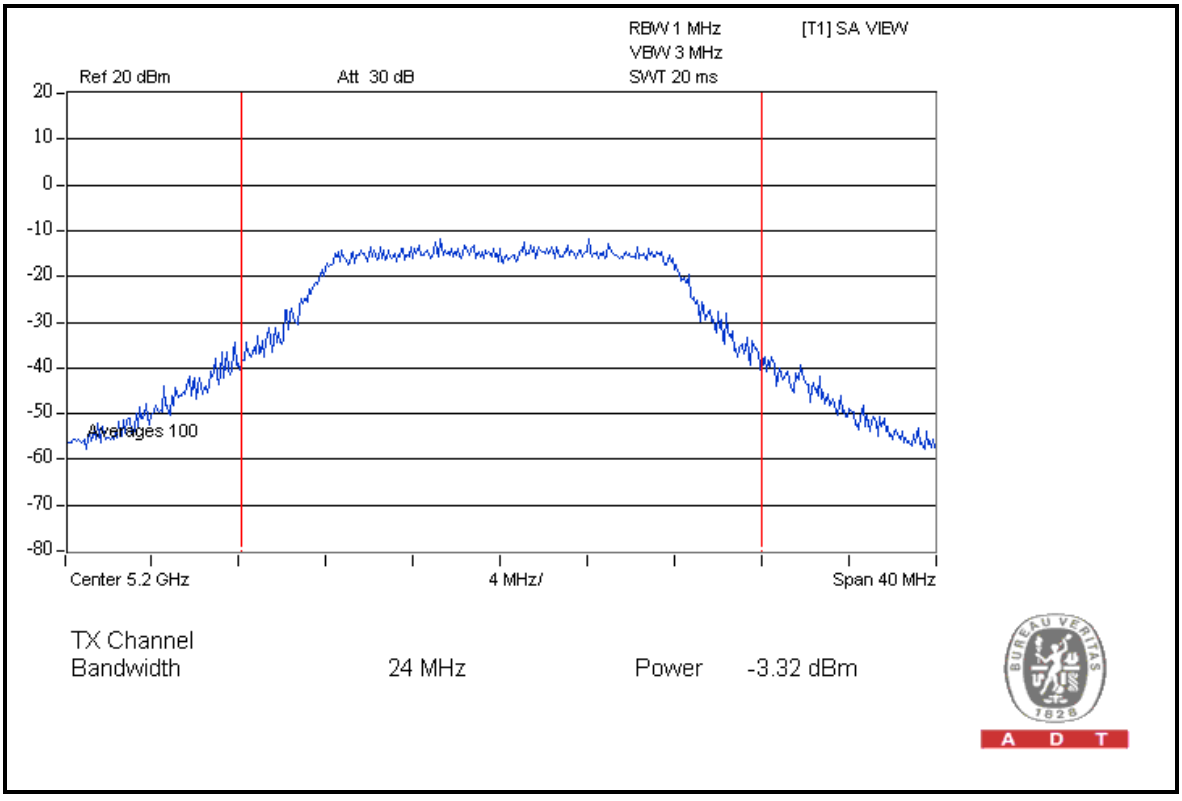
NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 23dBi is higher than 6dBi, so the limit of output power shall be reduced by 17 dB.

CHAIN 0 CH 36



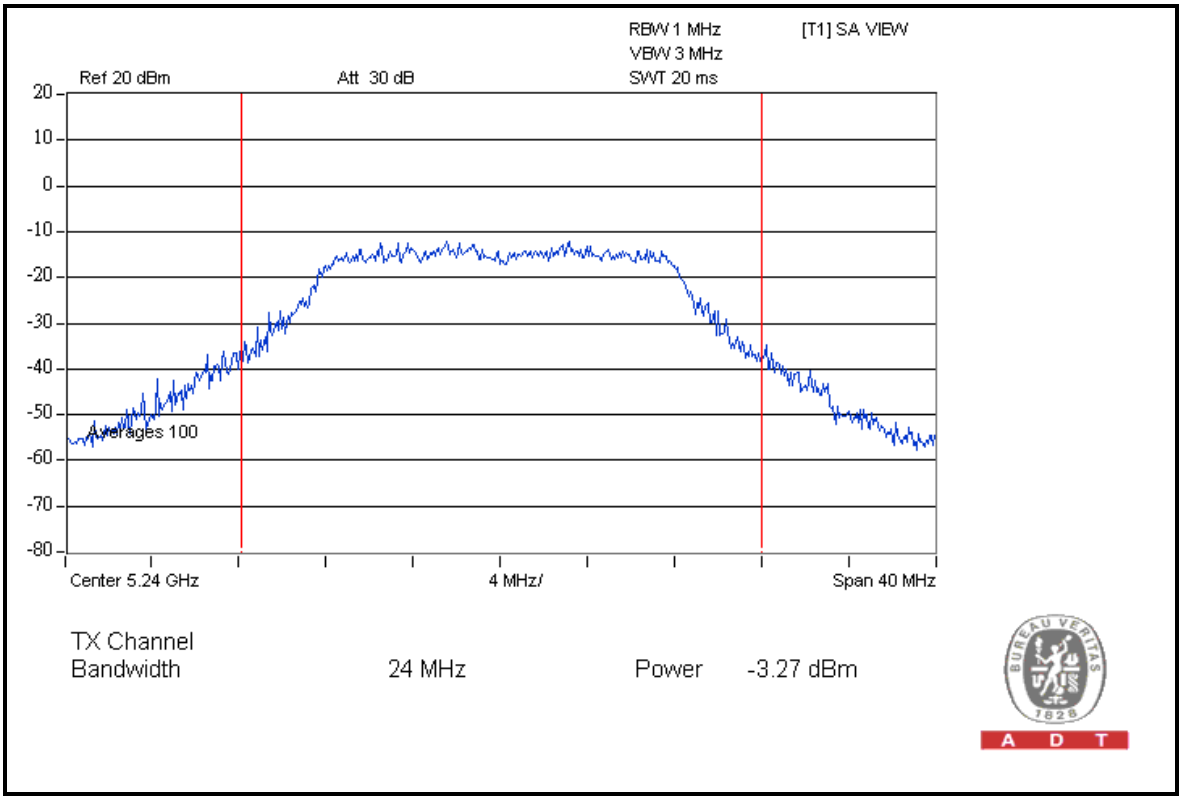
TX Channel Bandwidth 24 MHz Power -3.23 dBm

CH 40



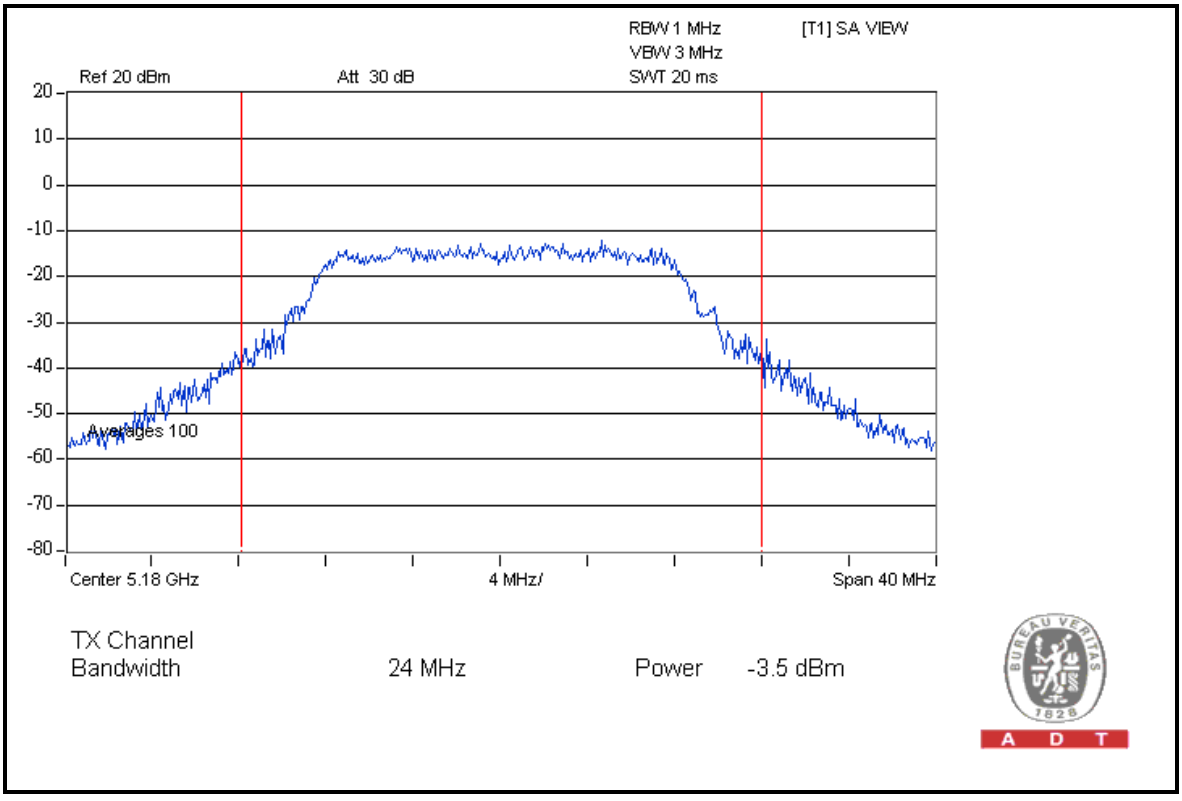
TX Channel Bandwidth 24 MHz Power -3.32 dBm

CH 48



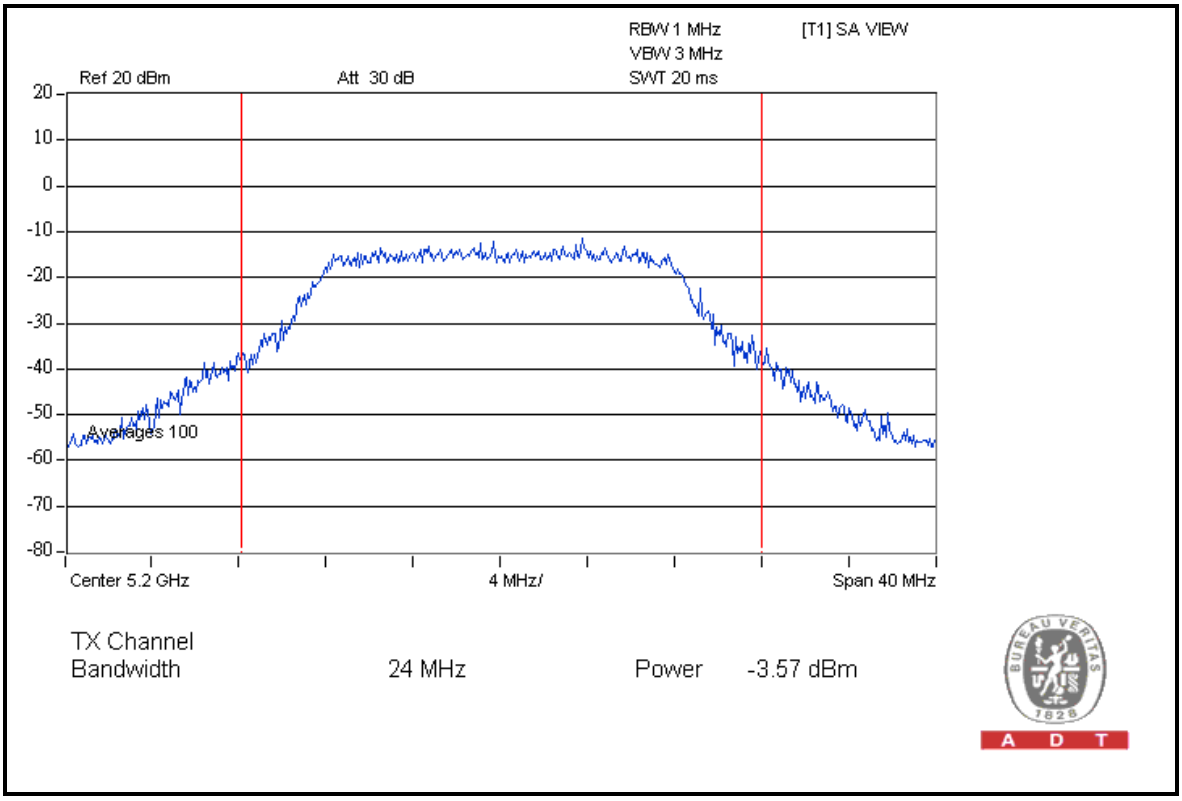
TX Channel Bandwidth 24 MHz Power -3.27 dBm

CHAIN 1 CH 36



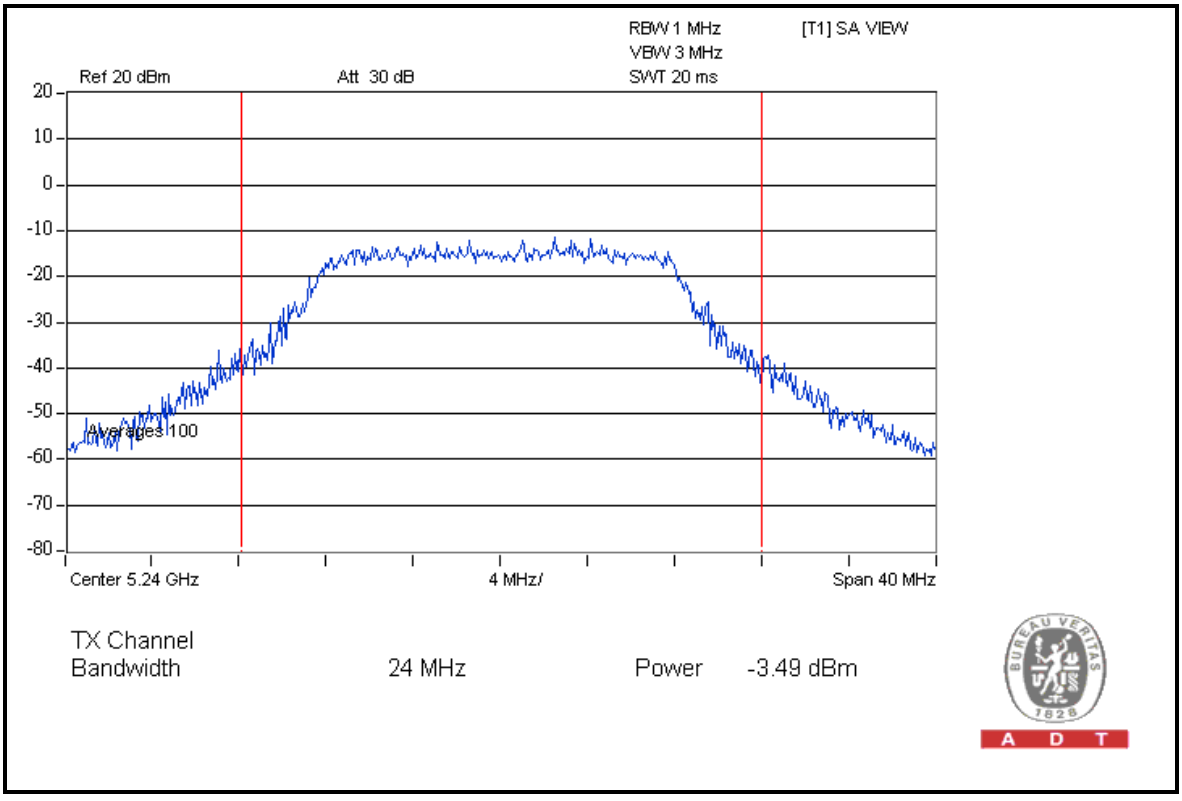
TX Channel Bandwidth 24 MHz Power -3.5 dBm

CH 40



TX Channel Bandwidth 24 MHz Power -3.57 dBm

CH 48



TX Channel Bandwidth 24 MHz Power -3.49 dBm

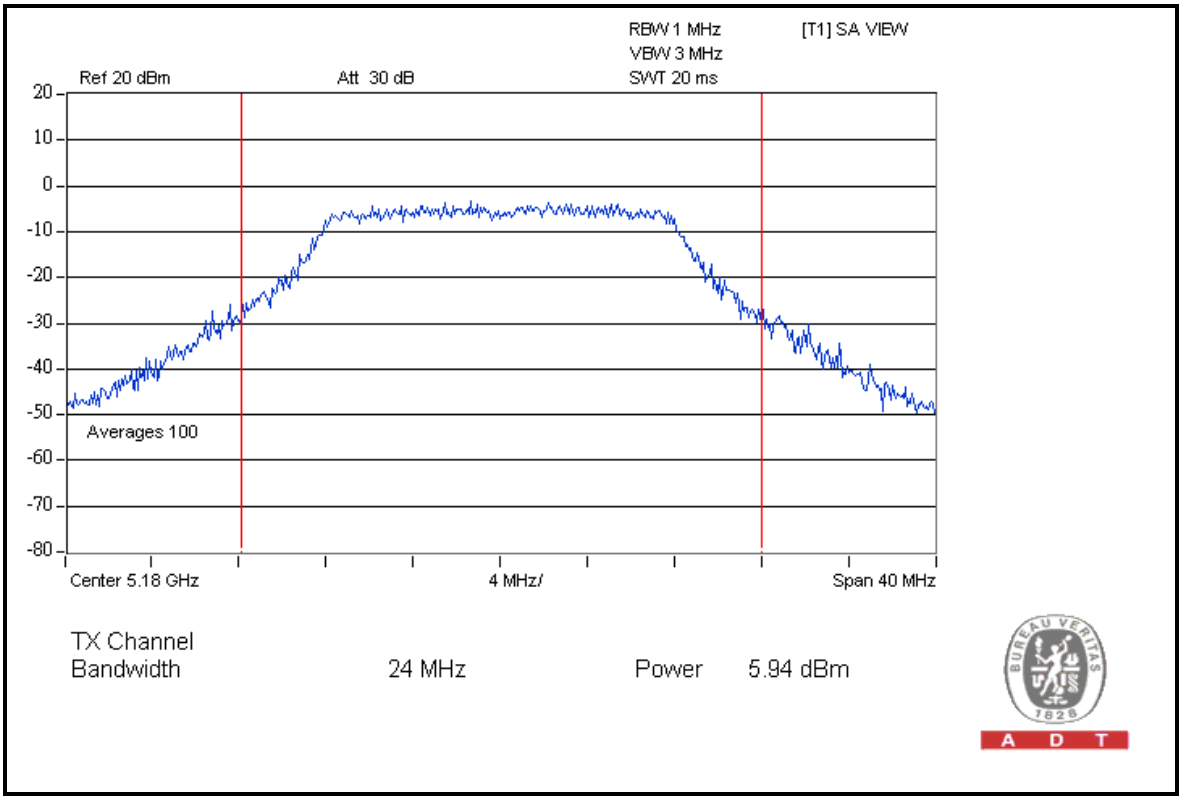
DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

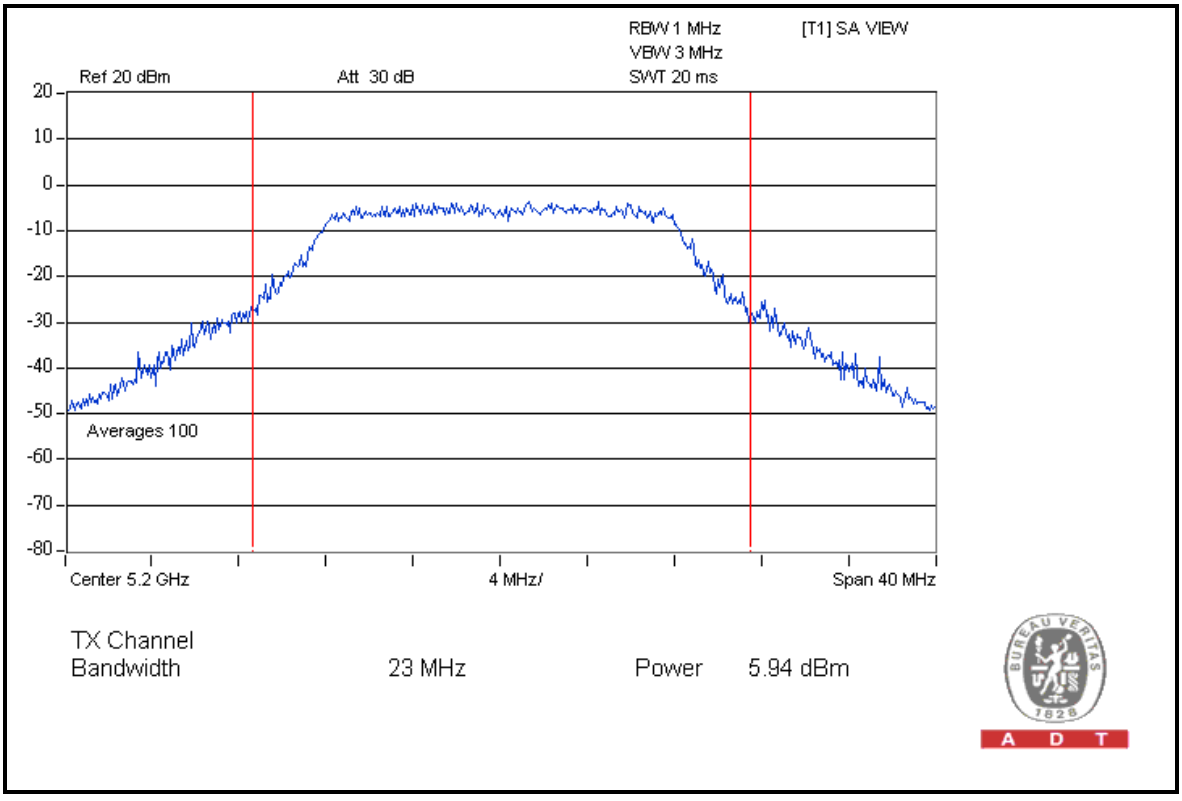
CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	5.94	5.83	7.755	8.90	9	PASS
40	5200	5.94	5.81	7.737	8.89	9	PASS
48	5240	5.91	5.78	7.684	8.86	9	PASS

NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 14dBi is higher than 6dBi, so the limit of output power shall be reduced by 8 dB.

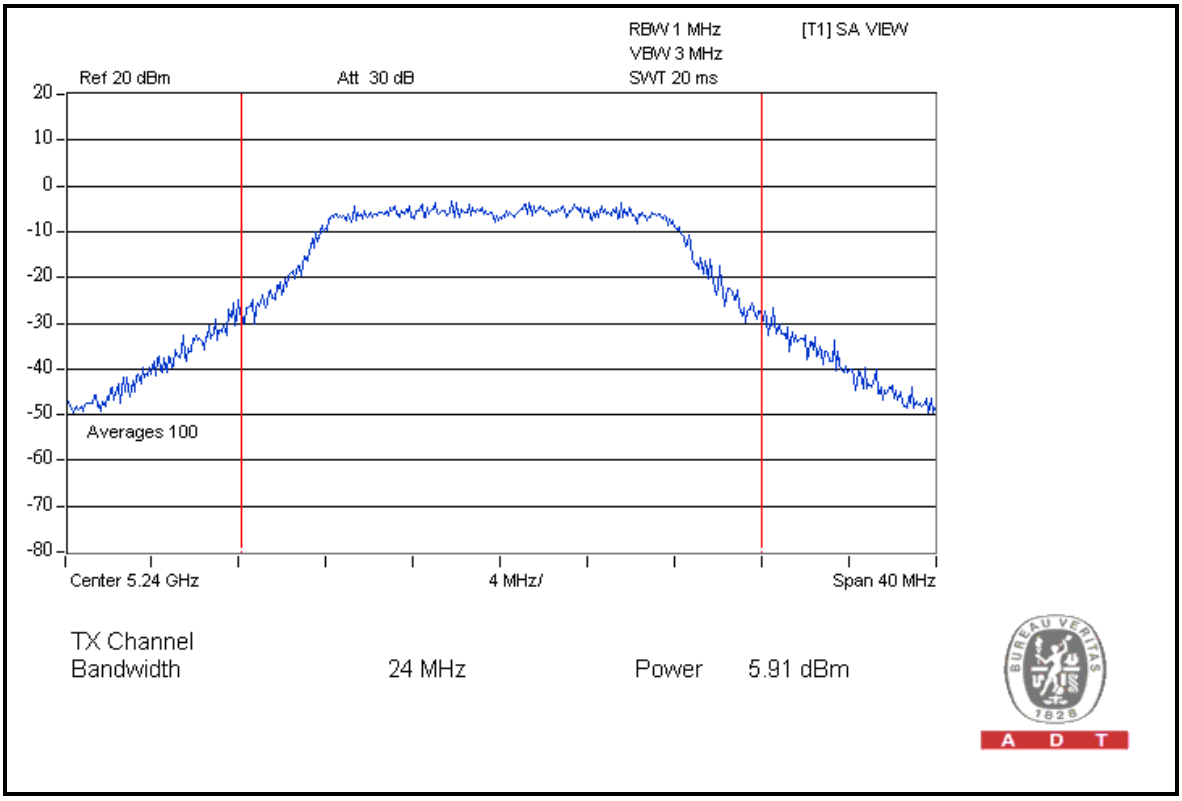
CHAIN 0 CH 36



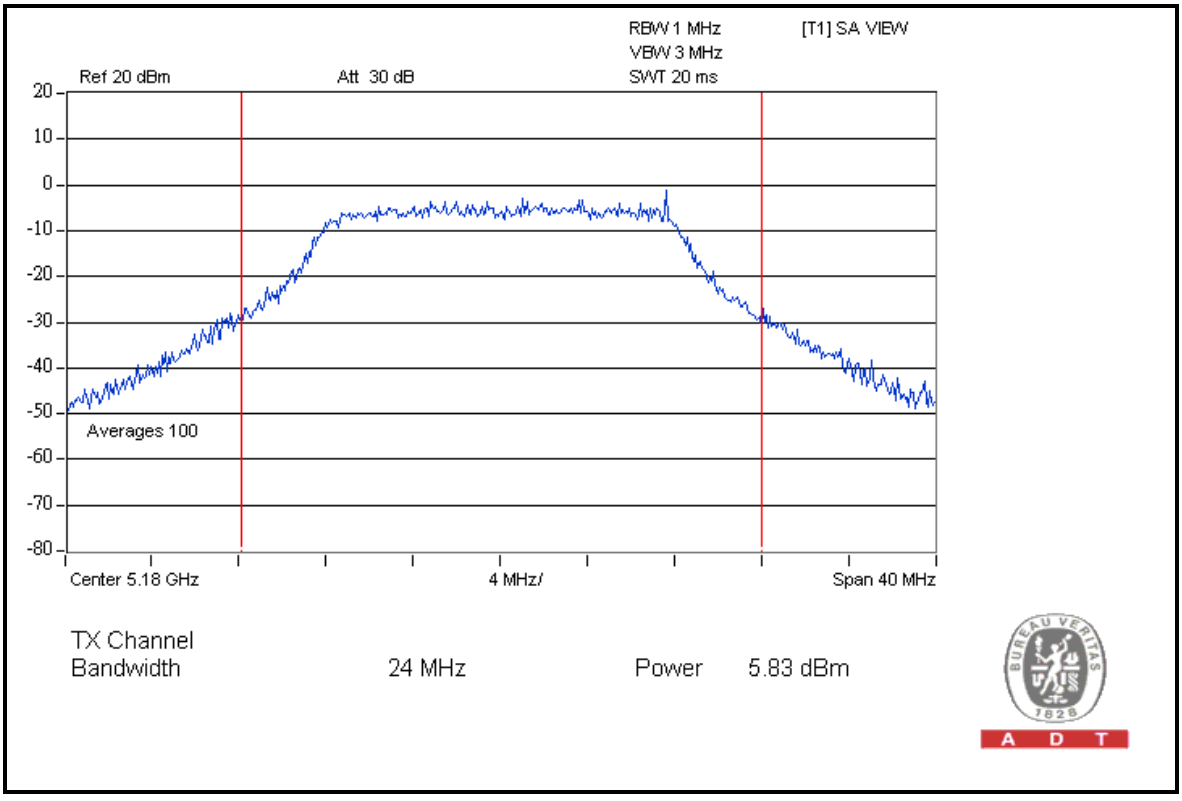
CH 40



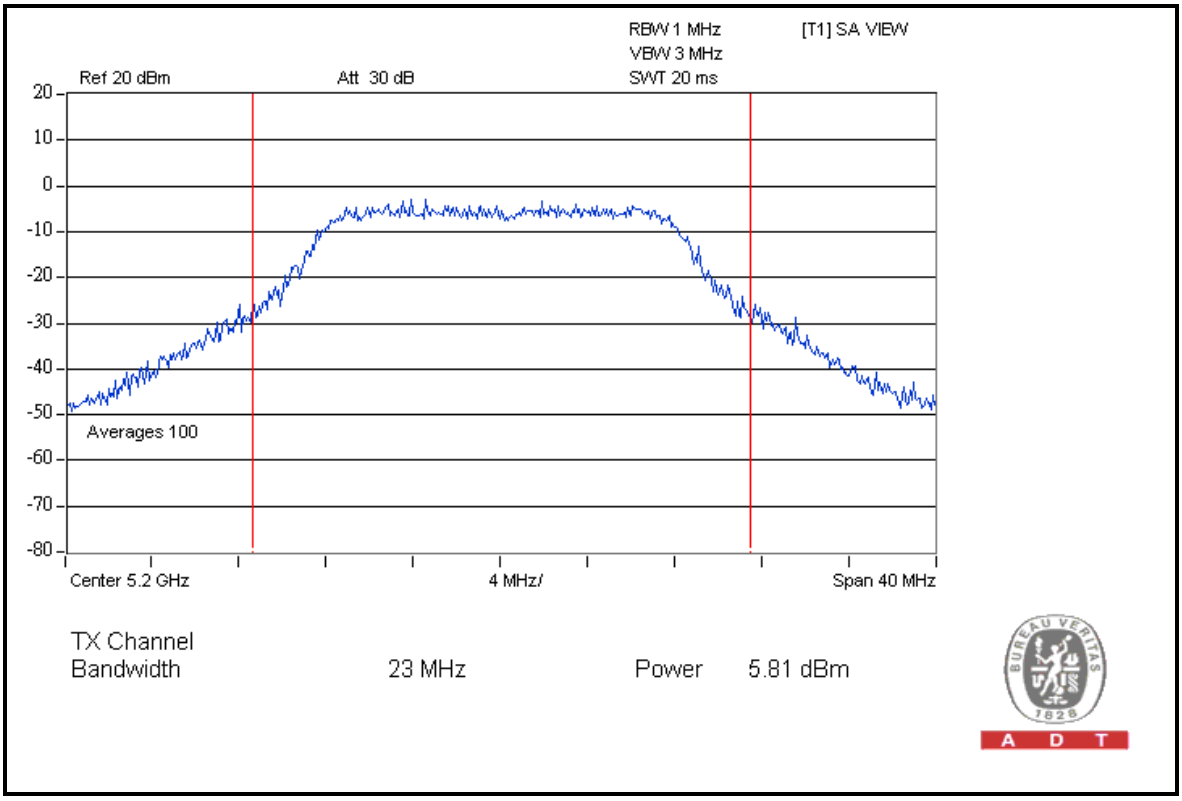
CH 48



CHAIN 1 CH 36

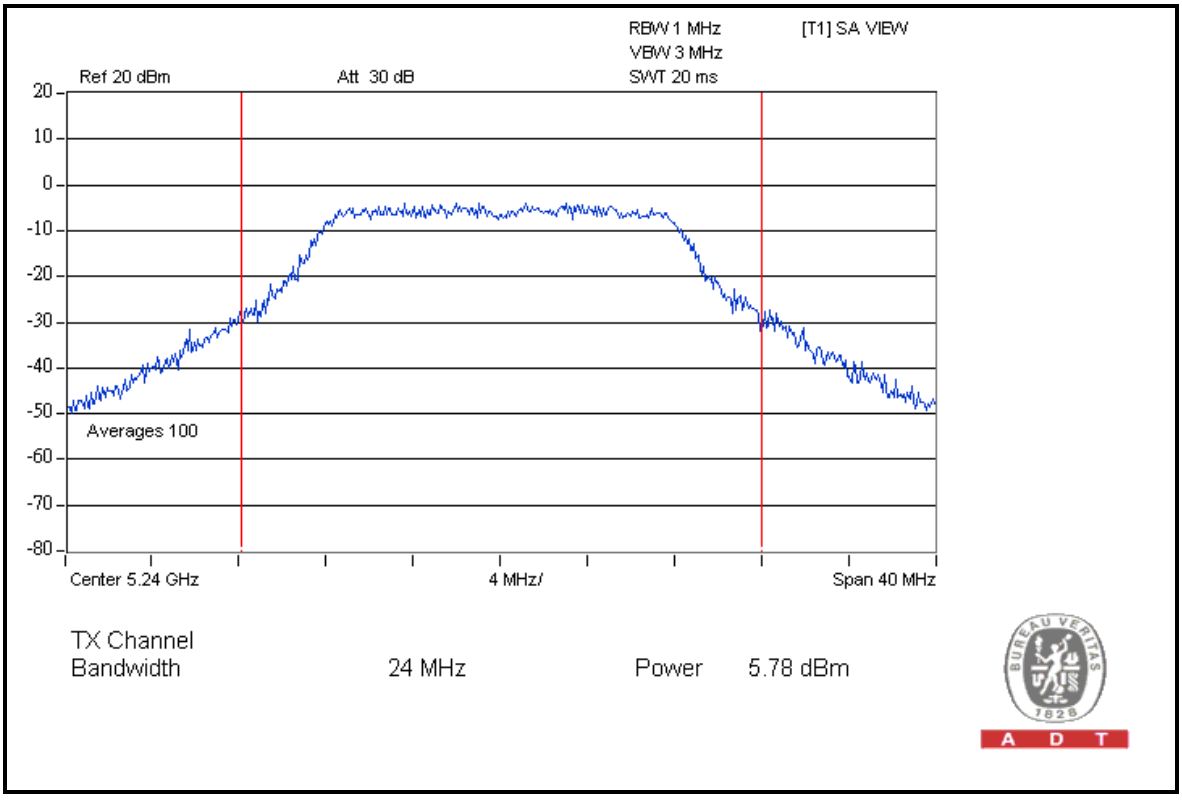


CH 40



TX Channel Bandwidth 23 MHz Power 5.81 dBm

CH 48



TX Channel Bandwidth 24 MHz Power 5.78 dBm

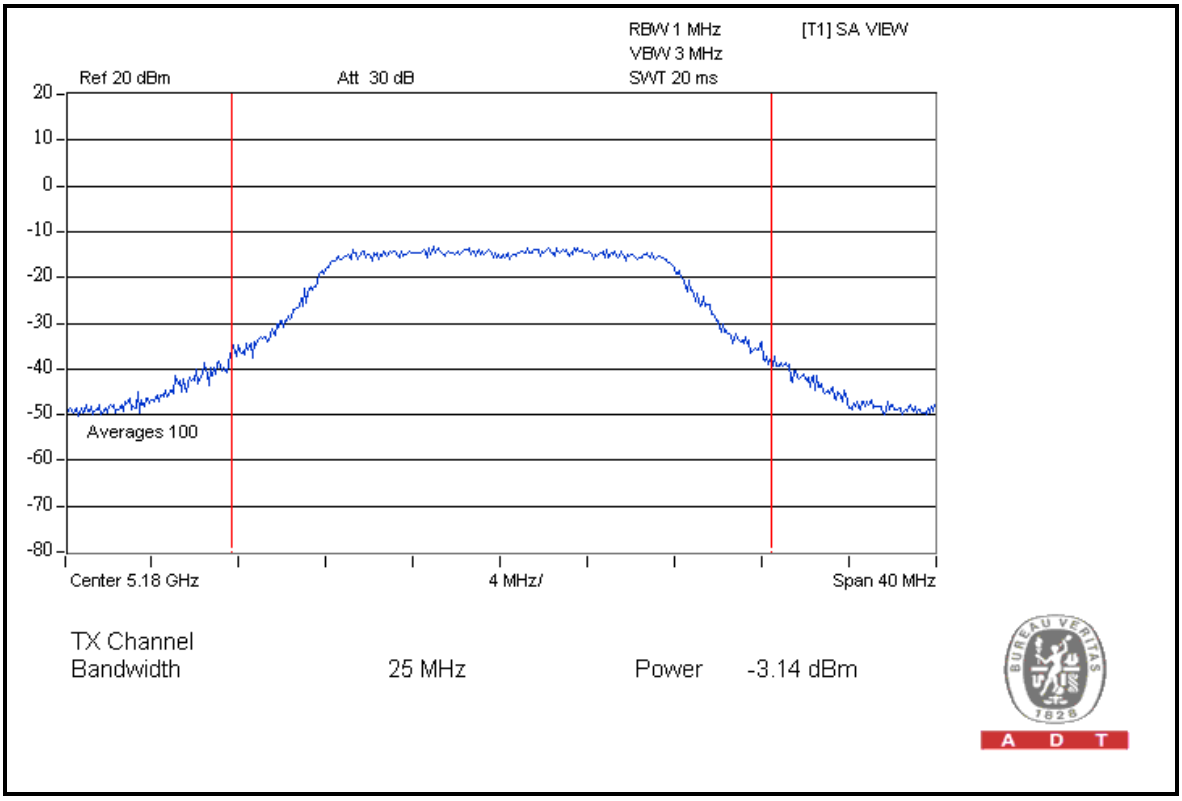
DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-3.14	-3.44	0.938	-0.28	0	PASS
40	5200	-3.24	-3.46	0.925	-0.34	0	PASS
48	5240	-3.24	-3.44	0.927	-0.33	0	PASS

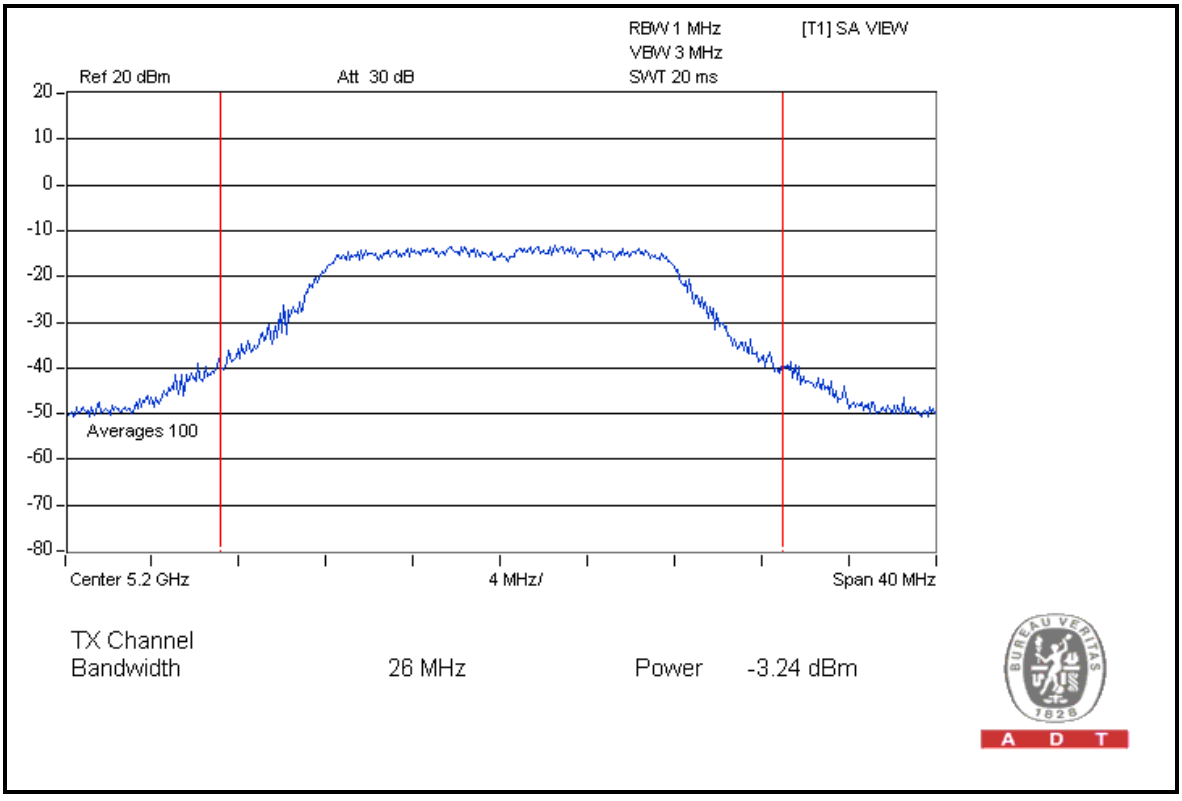
NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 23dBi is higher than 6dBi, so the limit of output power shall be reduced by 17 dB.

CHAIN 0 CH 36



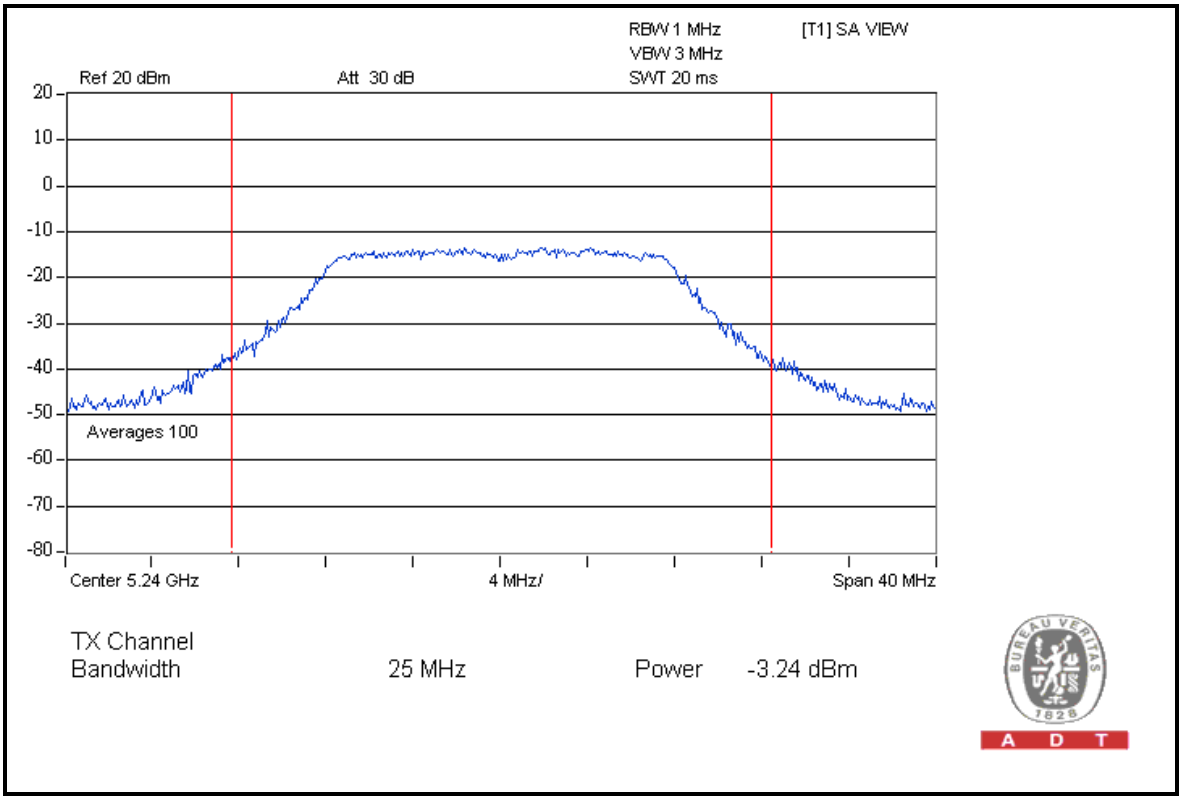
TX Channel Bandwidth 25 MHz Power -3.14 dBm

CH 40



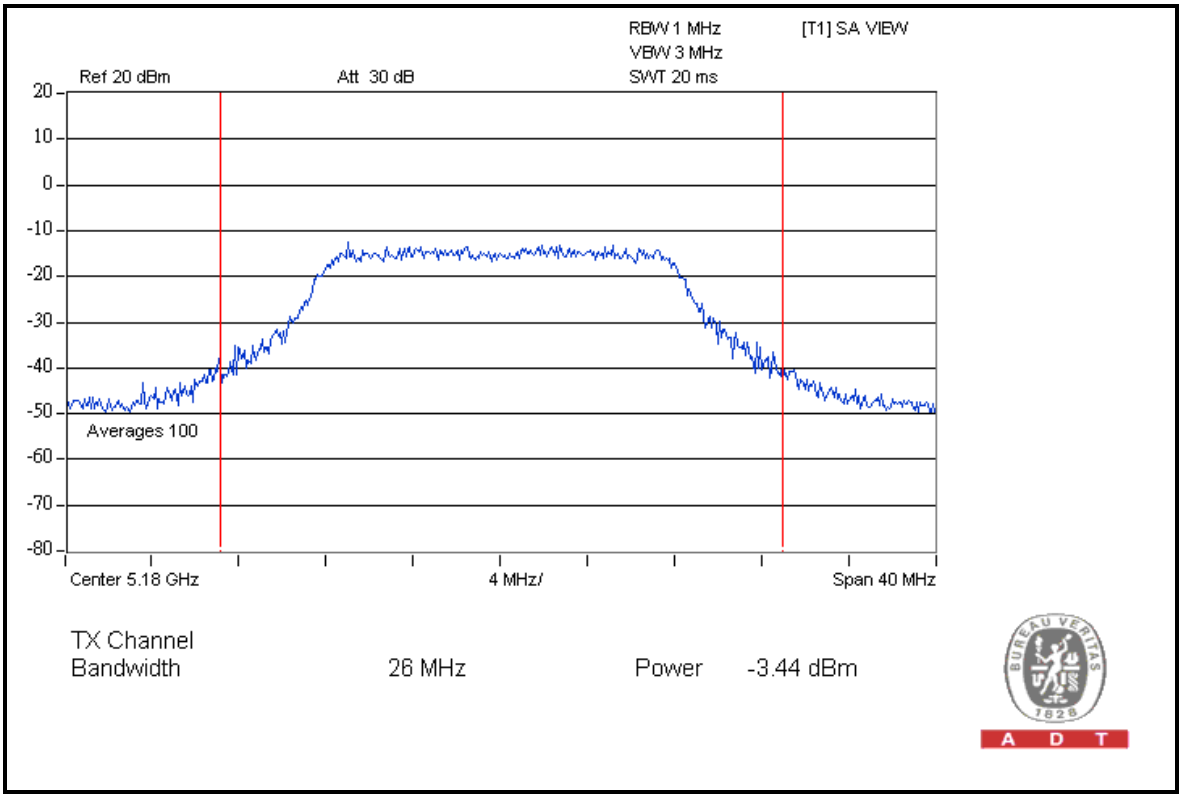
TX Channel Bandwidth 26 MHz Power -3.24 dBm

CH 48



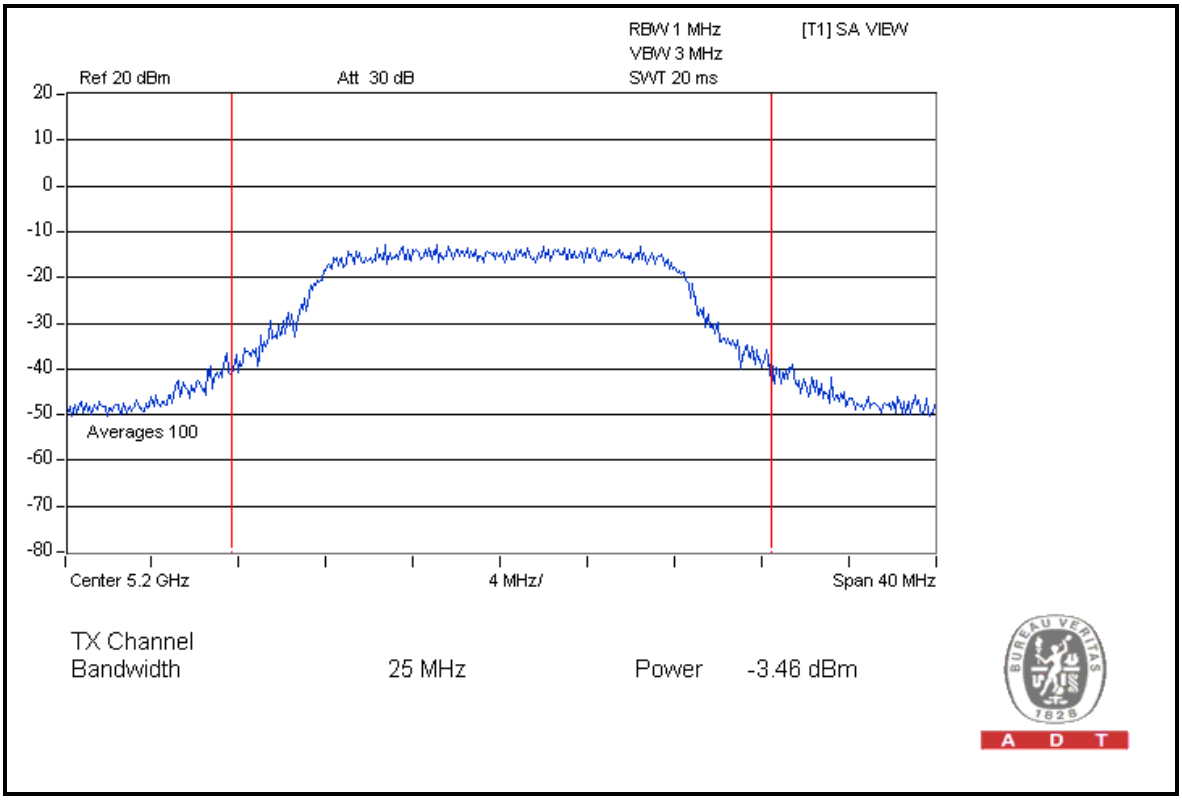
TX Channel Bandwidth 25 MHz Power -3.24 dBm

CHAIN 1 CH 36



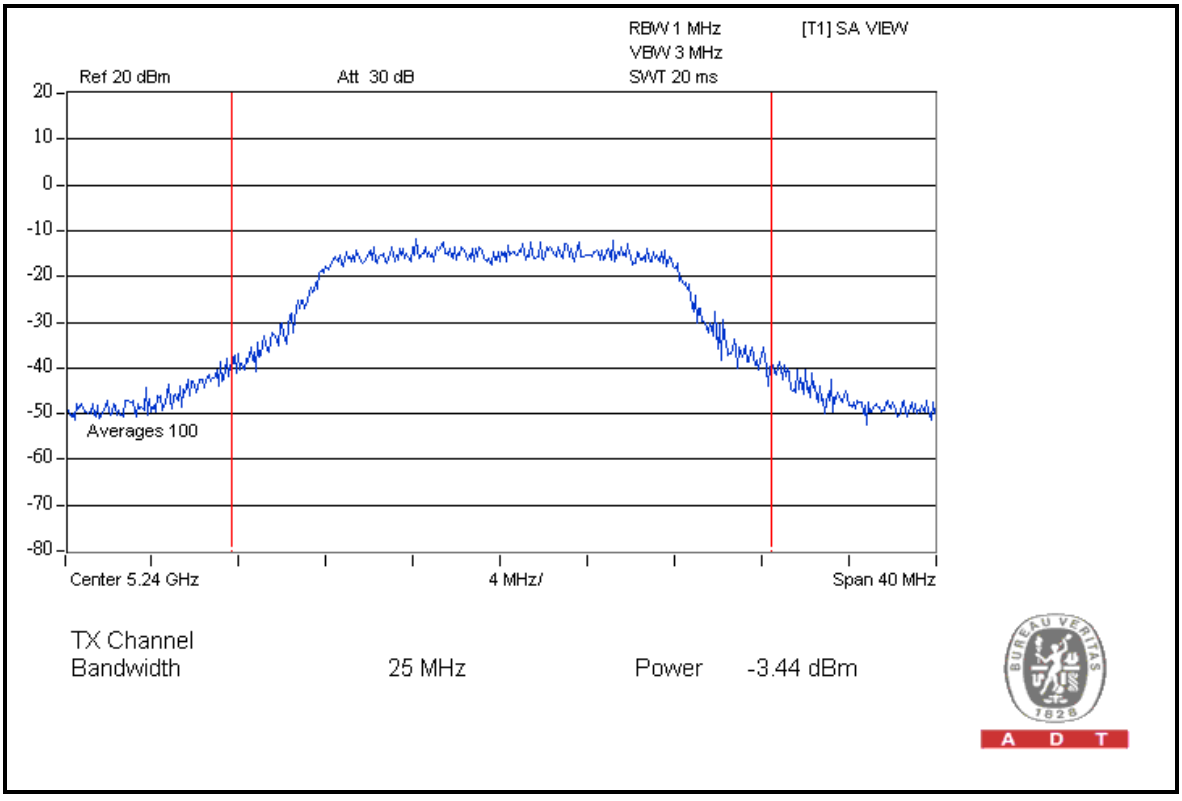
TX Channel Bandwidth 26 MHz Power -3.44 dBm

CH 40



TX Channel Bandwidth 25 MHz Power -3.46 dBm

CH 48



TX Channel Bandwidth 25 MHz Power -3.44 dBm

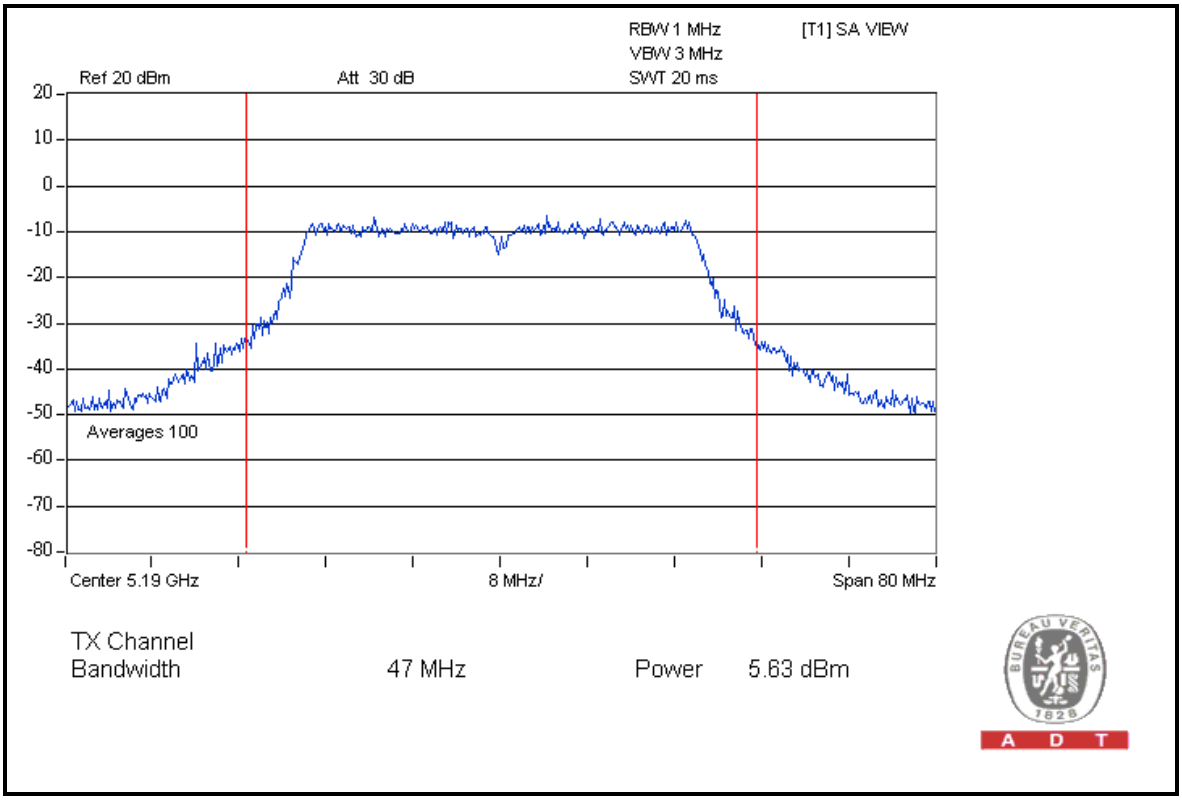
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

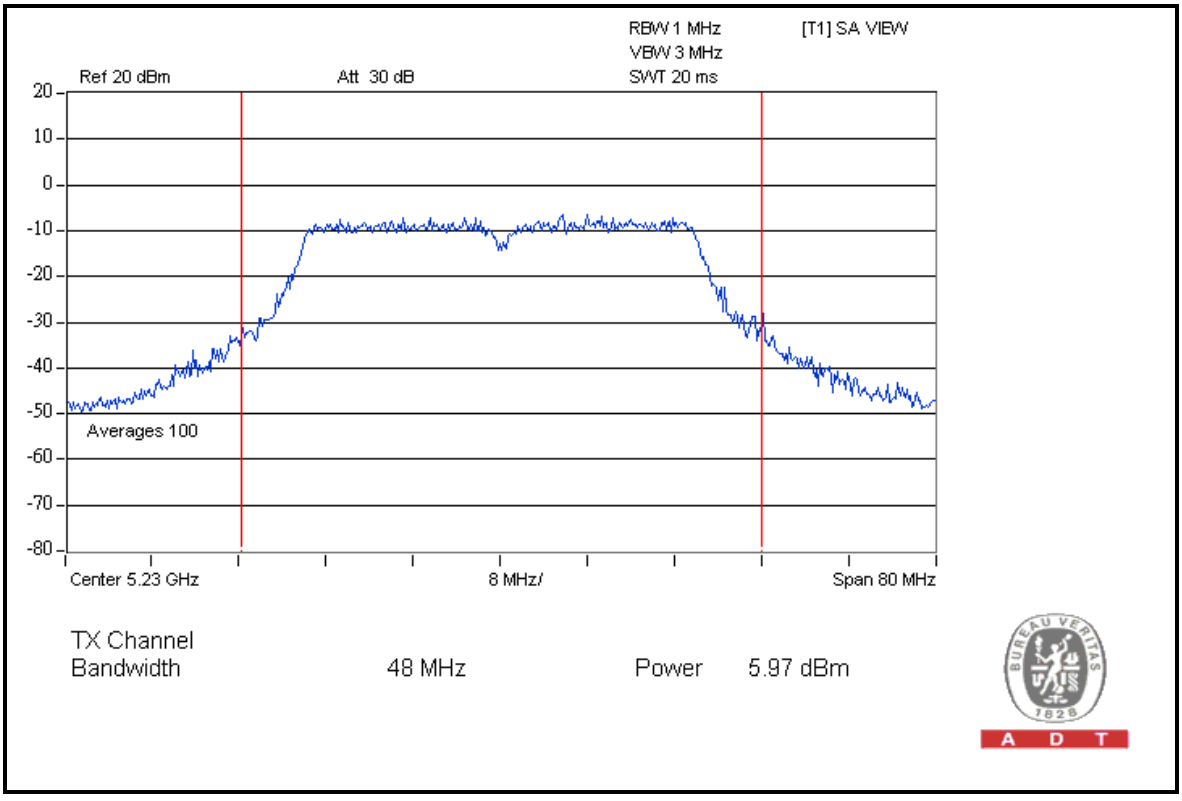
CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	5.63	5.30	7.044	8.48	9	PASS
46	5230	5.97	5.84	7.791	8.92	9	PASS

NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 14dBi is higher than 6dBi, so the limit of output power shall be reduced by 8 dB.

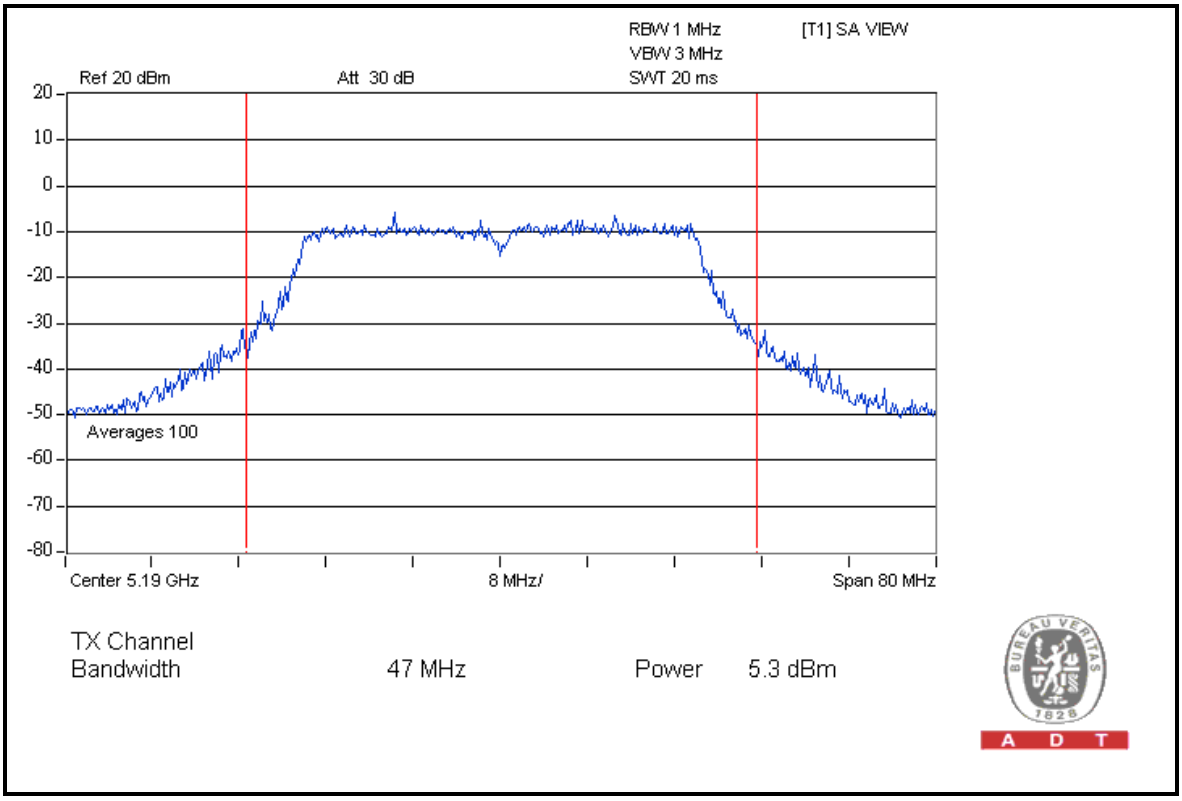
CHAIN 0 CH 38



CH 46

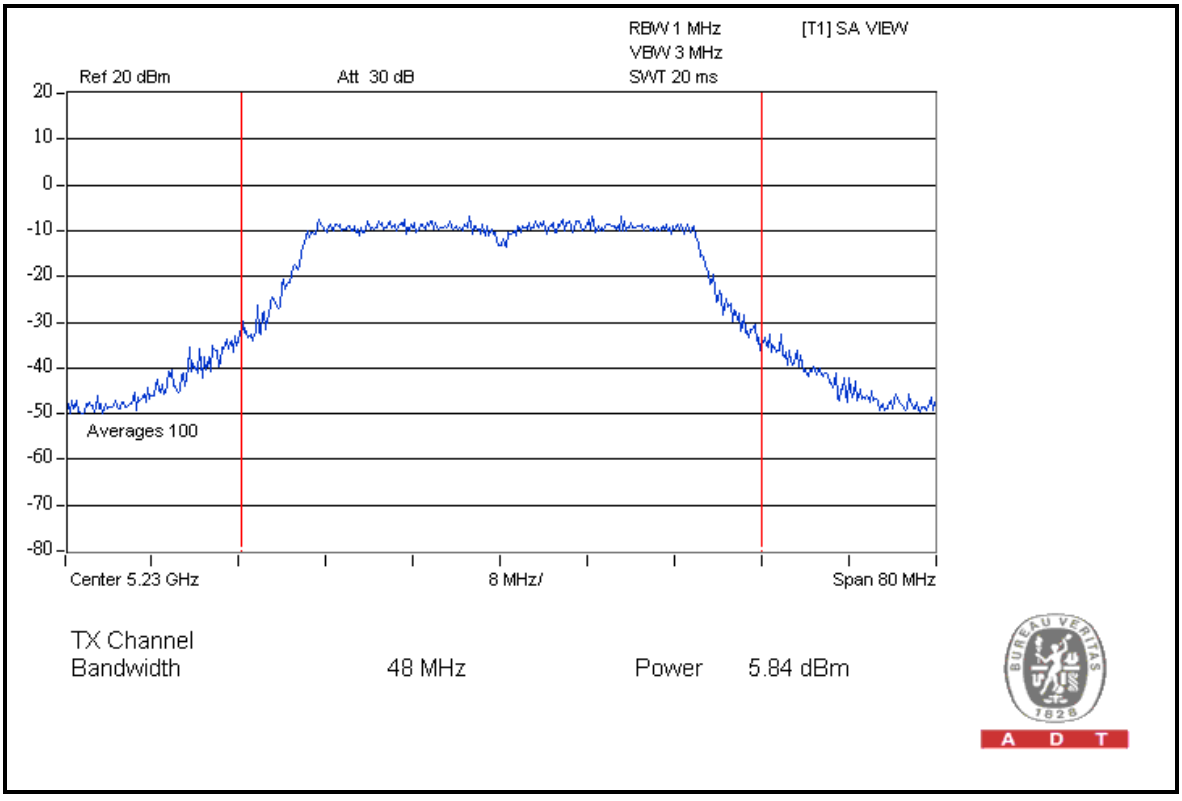


CHAIN 1 CH 38



TX Channel Bandwidth 47 MHz Power 5.3 dBm

CH 46



TX Channel Bandwidth 48 MHz Power 5.84 dBm

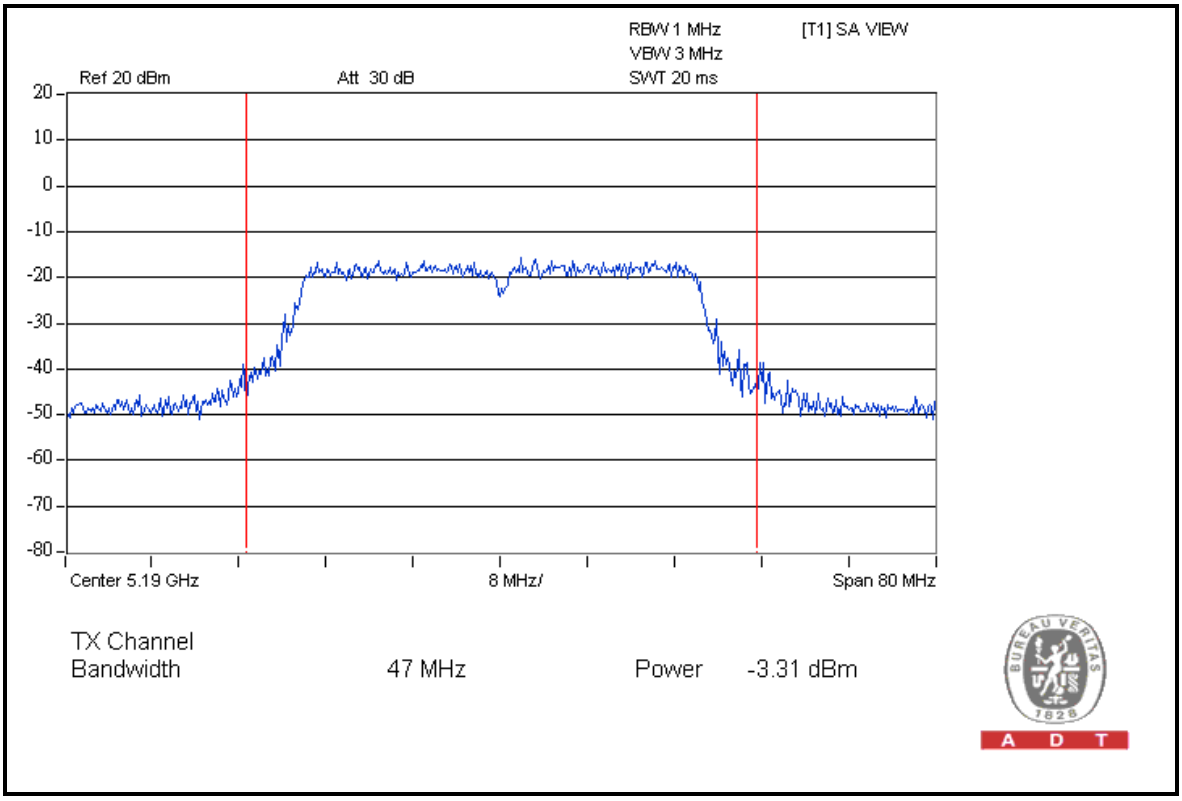
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65%RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-3.31	-3.07	0.960	-0.18	17	PASS
46	5230	-3.40	-3.29	0.926	-0.33	17	PASS

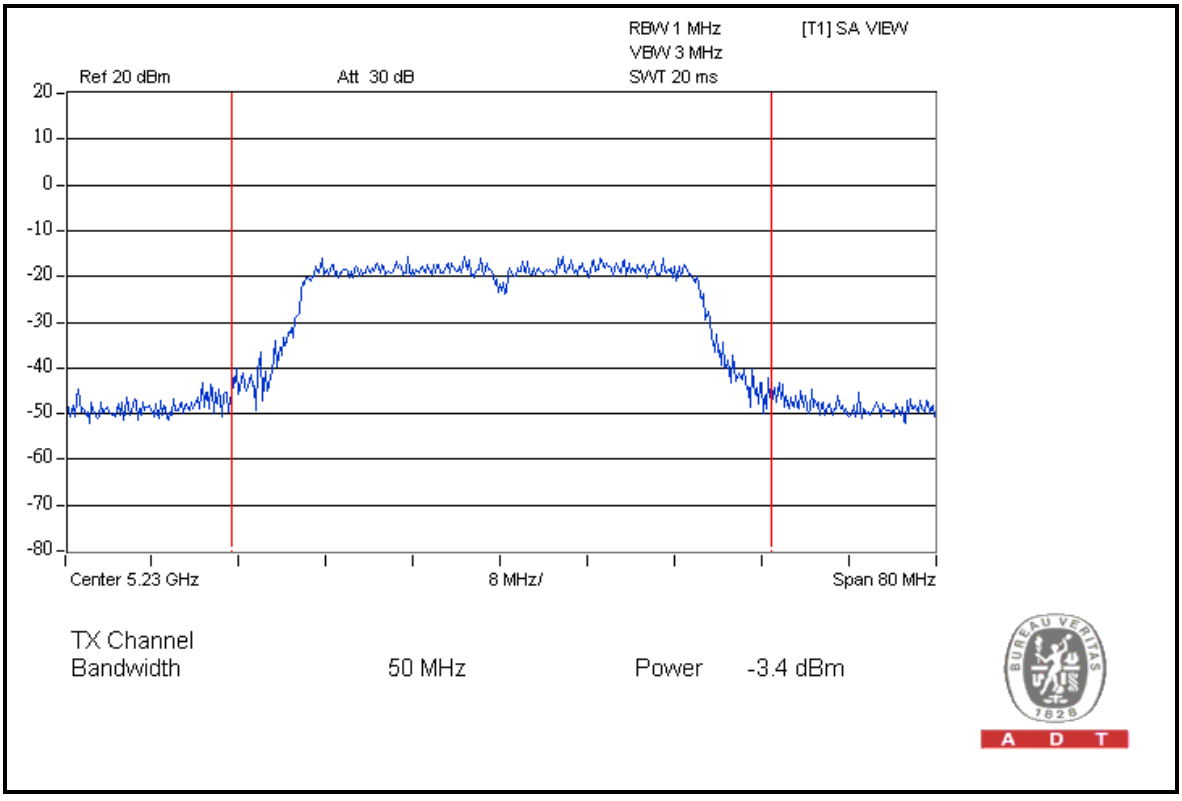
NOTE: According to 15.407 (a) (1) (2), the maximum antenna gain 23dBi is higher than 6dBi, so the limit of output power shall be reduced by 17 dB.

CHAIN 0 CH 38



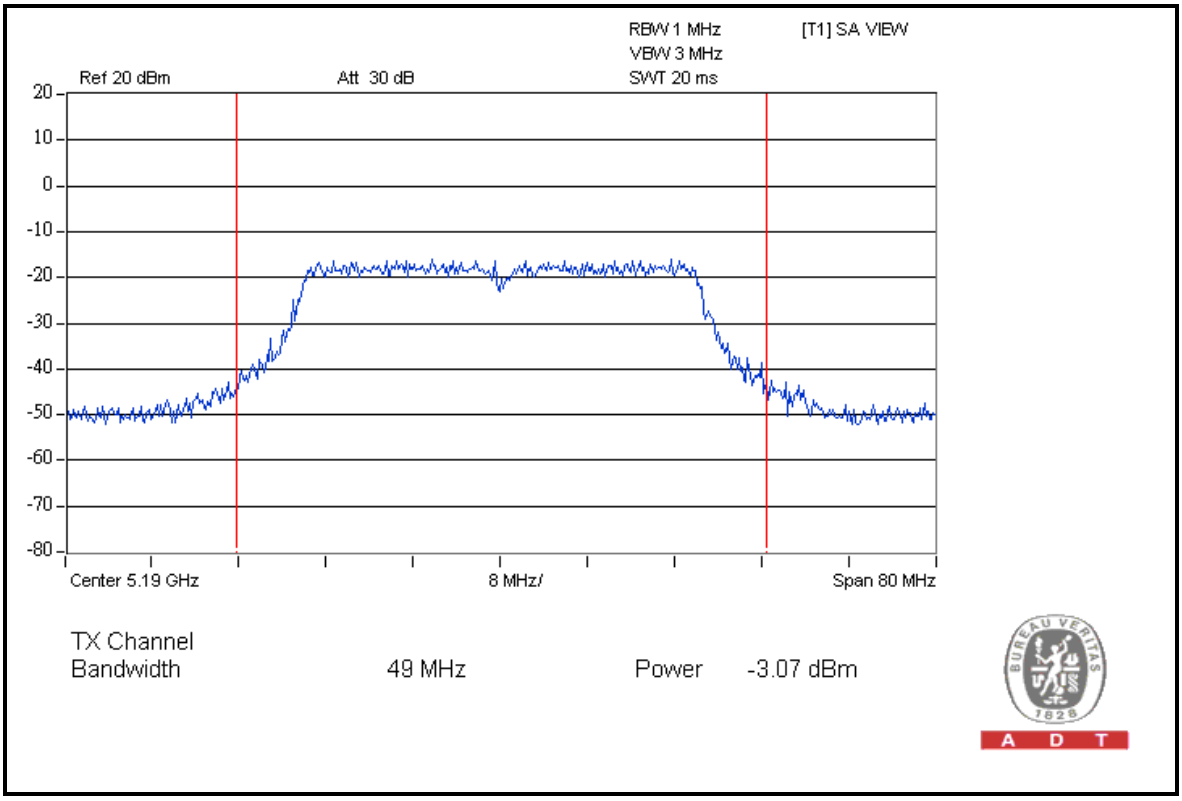
TX Channel Bandwidth 47 MHz Power -3.31 dBm

CH 46

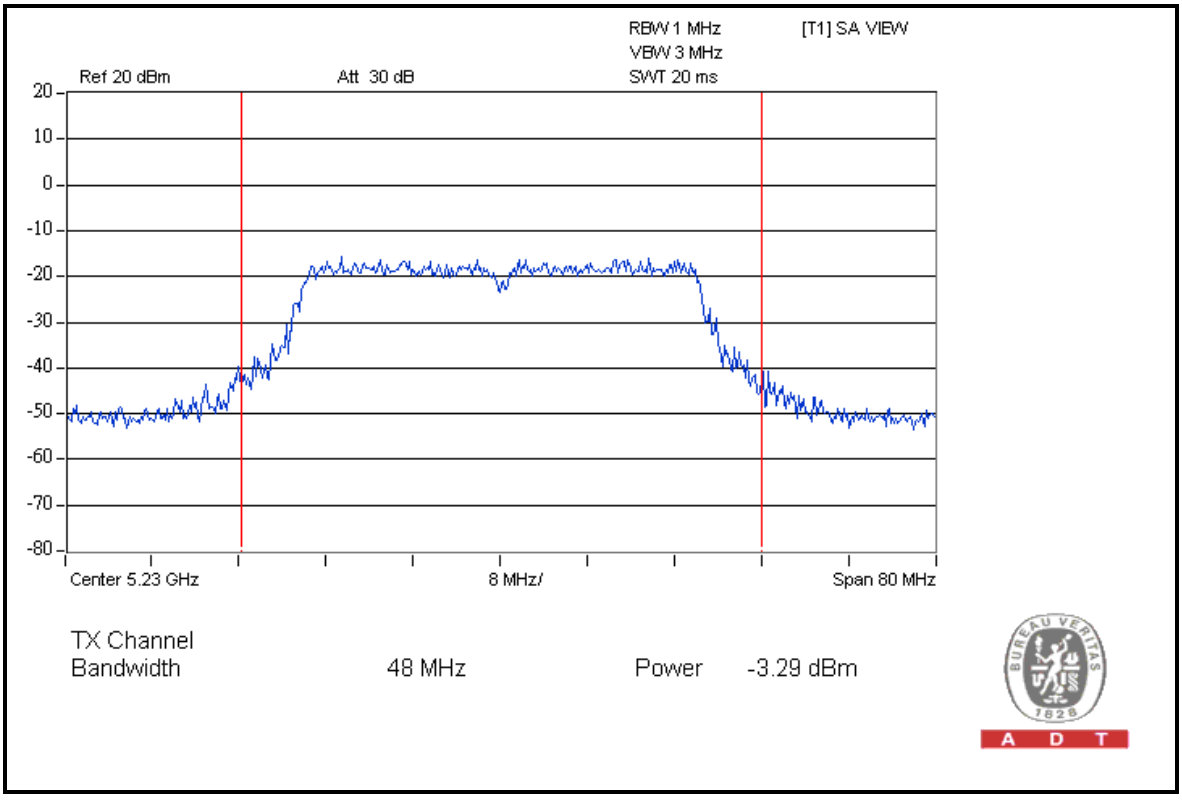


TX Channel Bandwidth 50 MHz Power -3.4 dBm

CHAIN 1 CH 38



CH 46

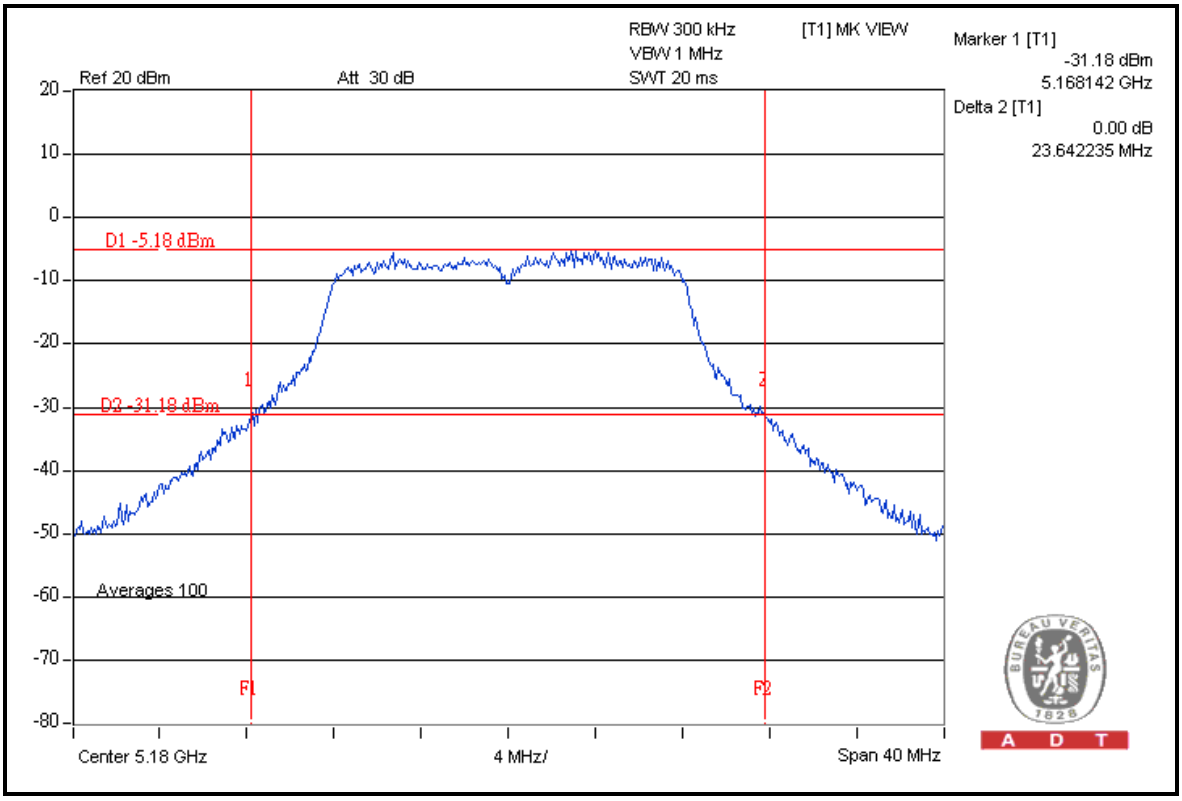


26dB OCCUPIED BANDWIDTH: 802.11a OFDM MODULATION

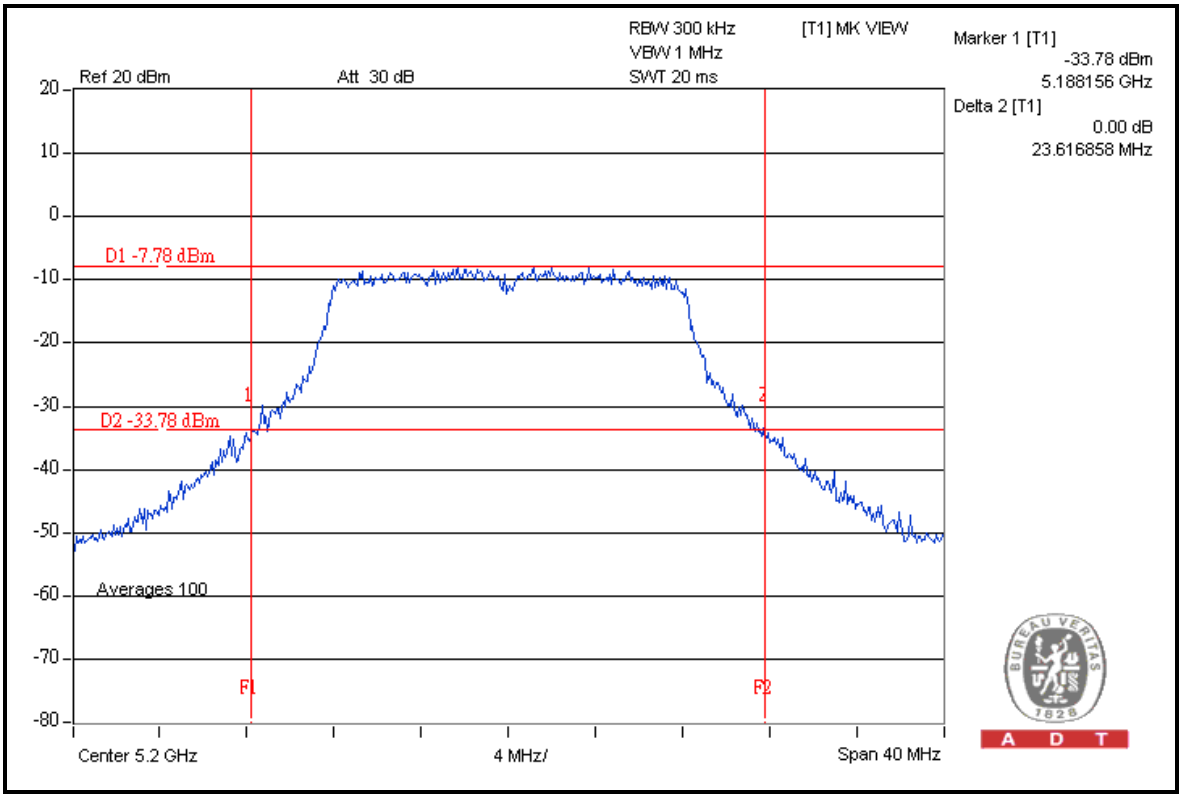
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	TEST MODE	A

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	23.64	24.11	PASS
40	5200	23.61	23.41	PASS
48	5240	23.61	24.13	PASS

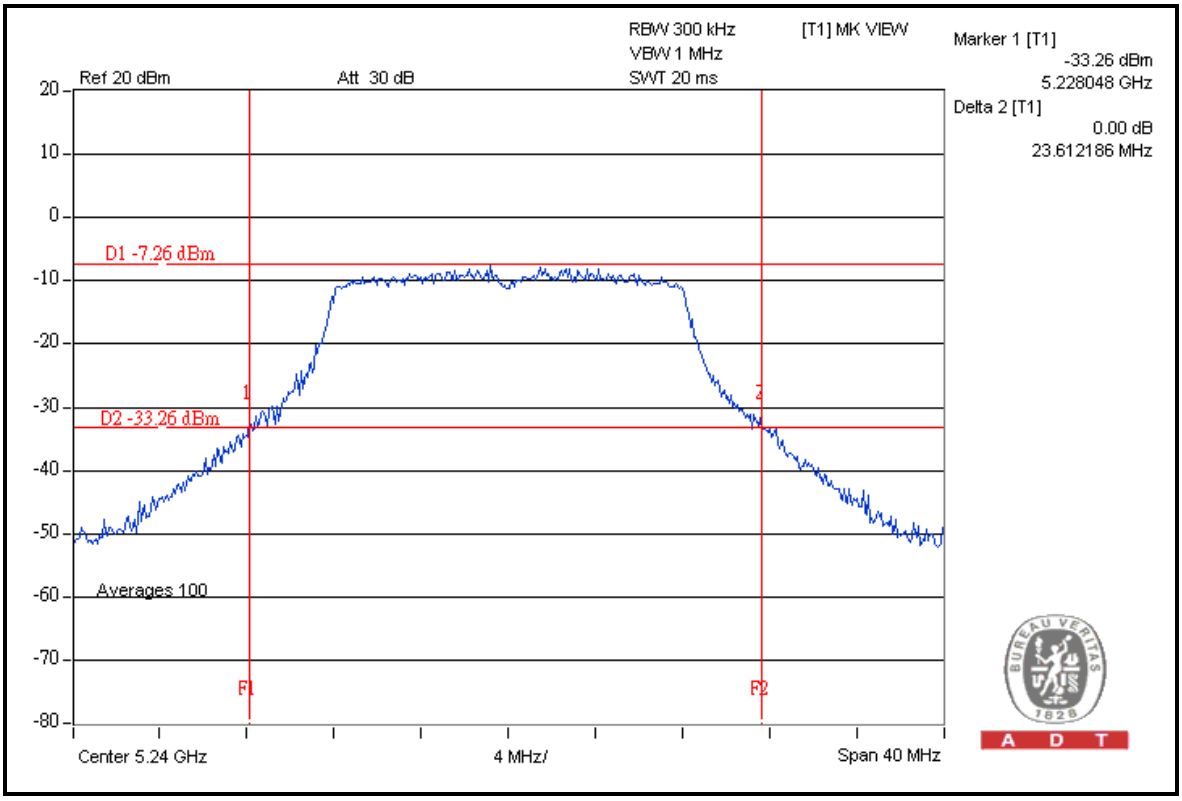
CHAIN 0 CH 36



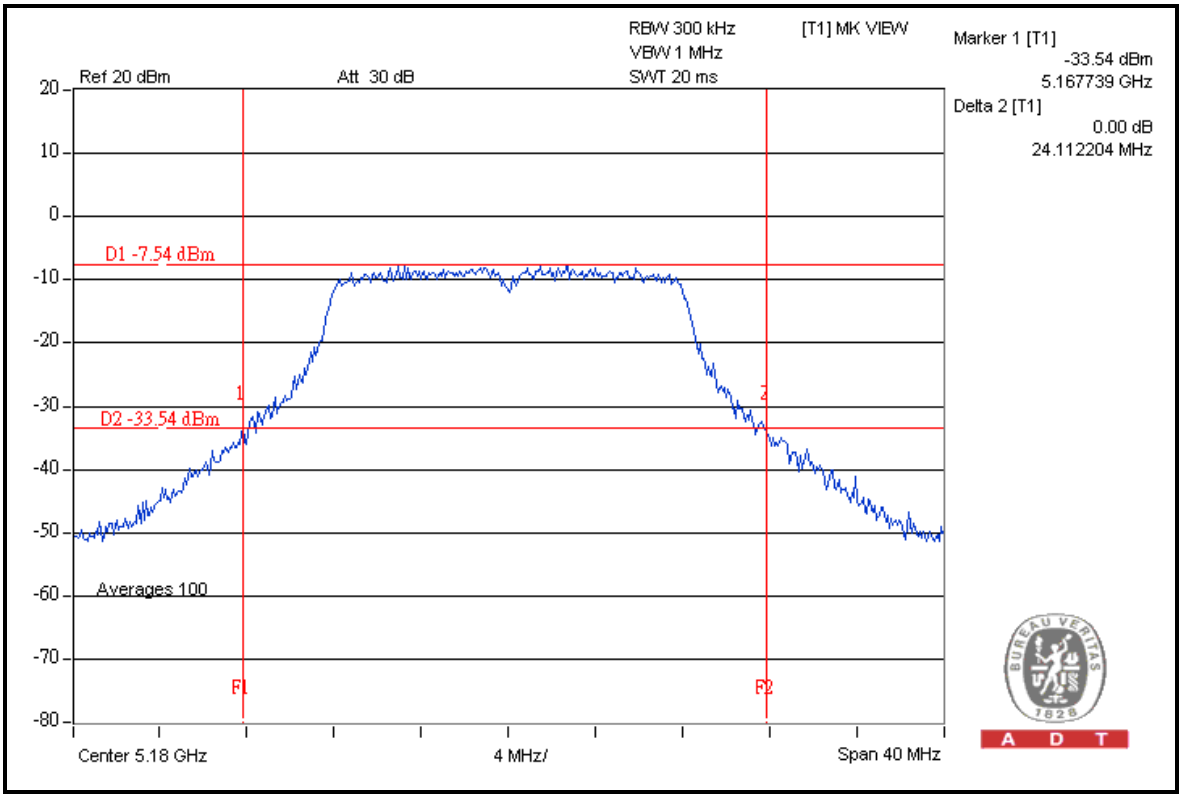
CH 40



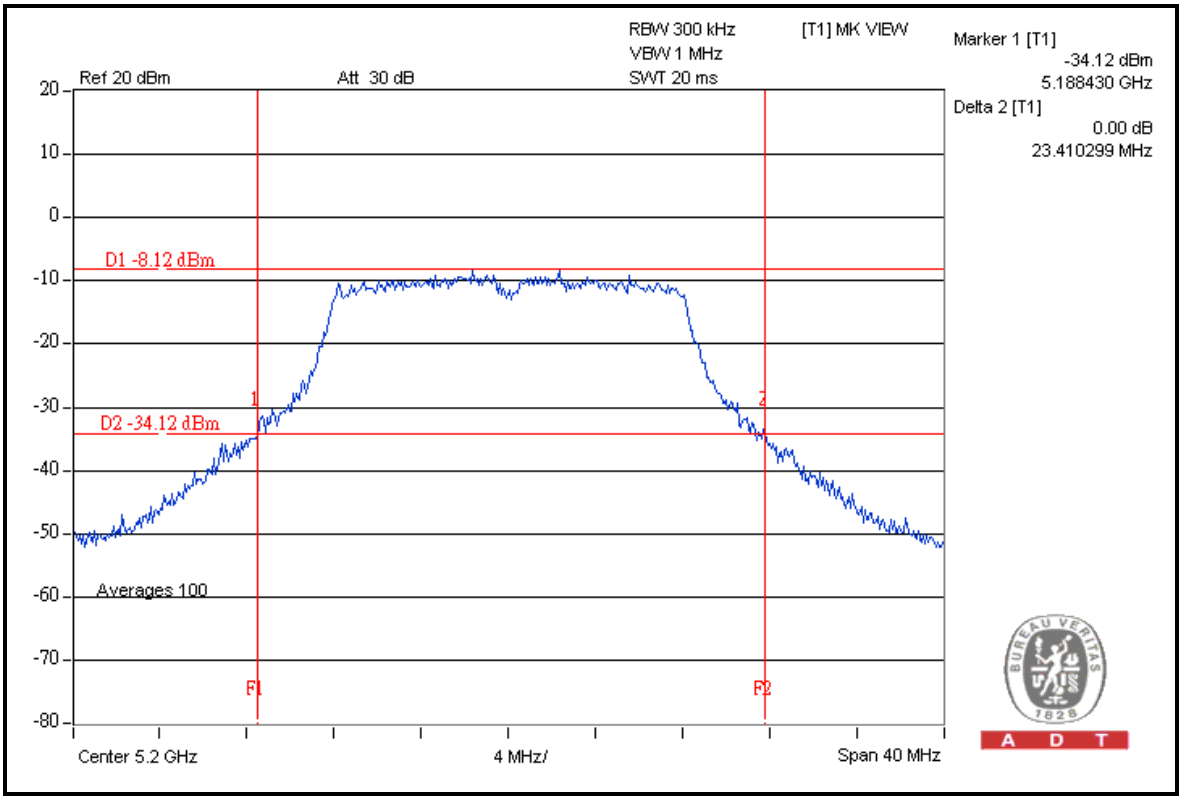
CH 48



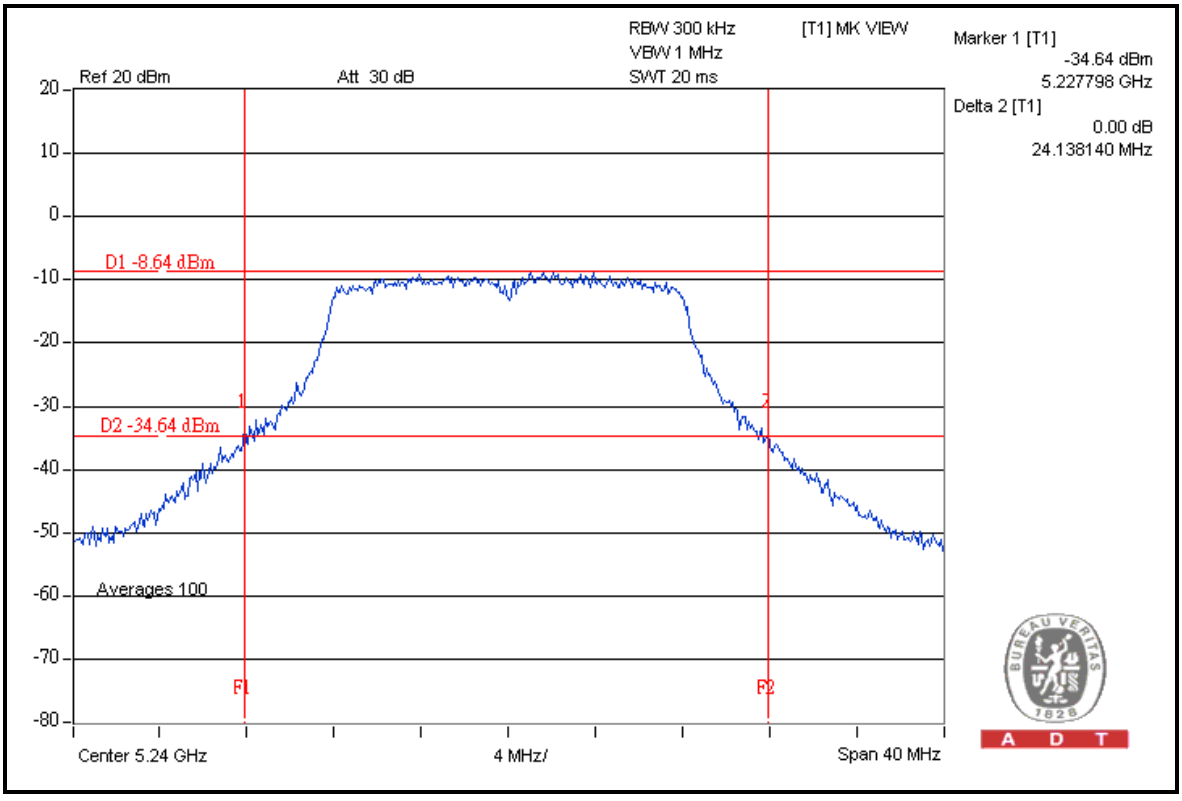
CHAIN 1 CH 36



CH 40


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-34.12 dBm
5.188430 GHz
Delta 2 [T1]
0.00 dB
23.410299 MHz
Ref 20 dBm
Att 30 dB
D1 -8.12 dBm
D2 -34.12 dBm
Averages 100
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

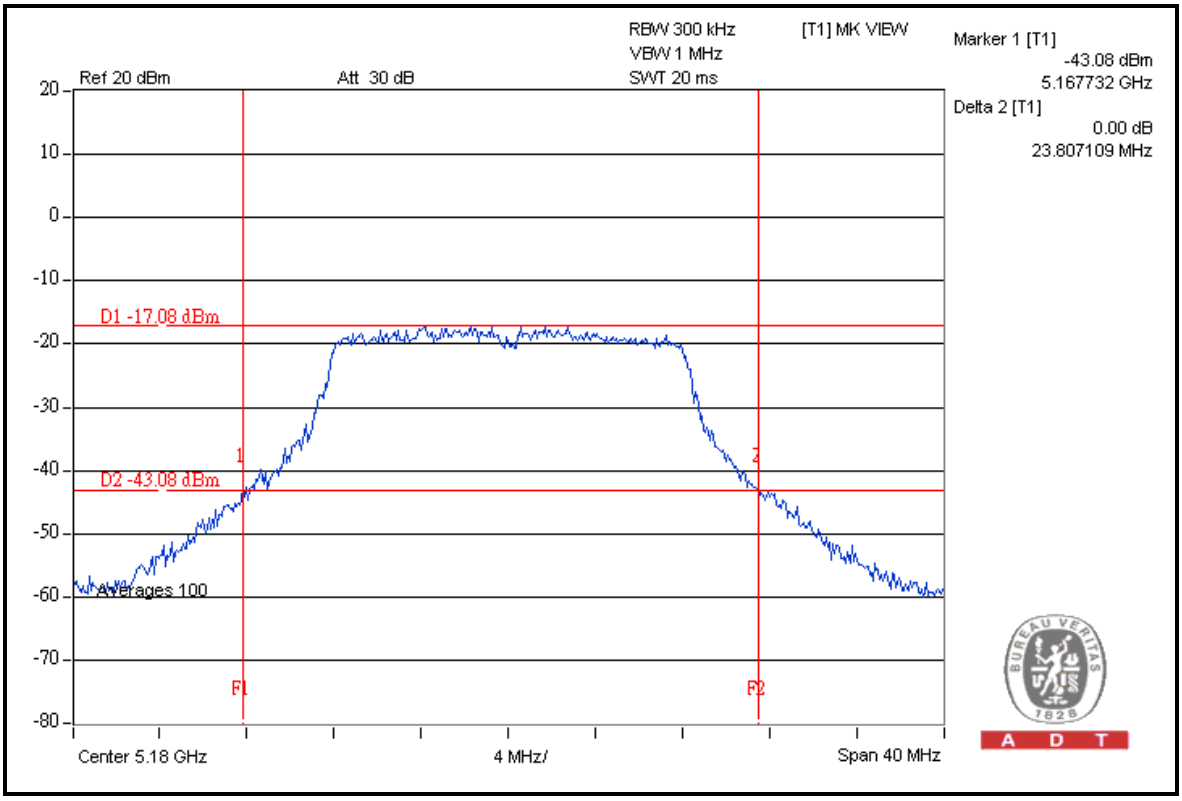
CH 48


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-34.64 dBm
5.227798 GHz
Delta 2 [T1]
0.00 dB
24.138140 MHz
Ref 20 dBm
Att 30 dB
D1 -8.64 dBm
D2 -34.64 dBm
Averages 100
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

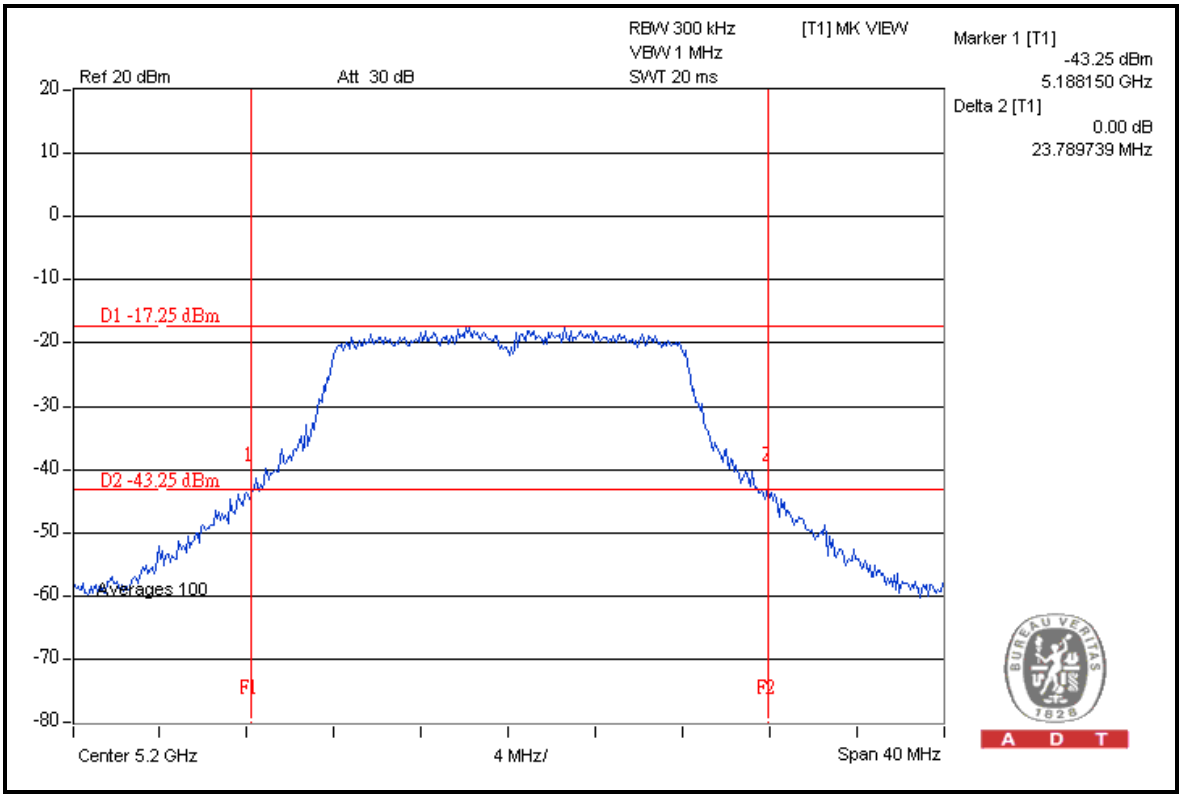
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHANNEL	**CHANNEL FREQUENCY (MHz)**	**26dBc OCCUPIED BANDWIDTH (MHz)**		**PASS / FAIL**
		CHAIN 0	**CHAIN 1**	
36	5180	23.80	23.23	PASS
40	5200	23.78	23.86	PASS
48	5240	23.77	23.48	PASS

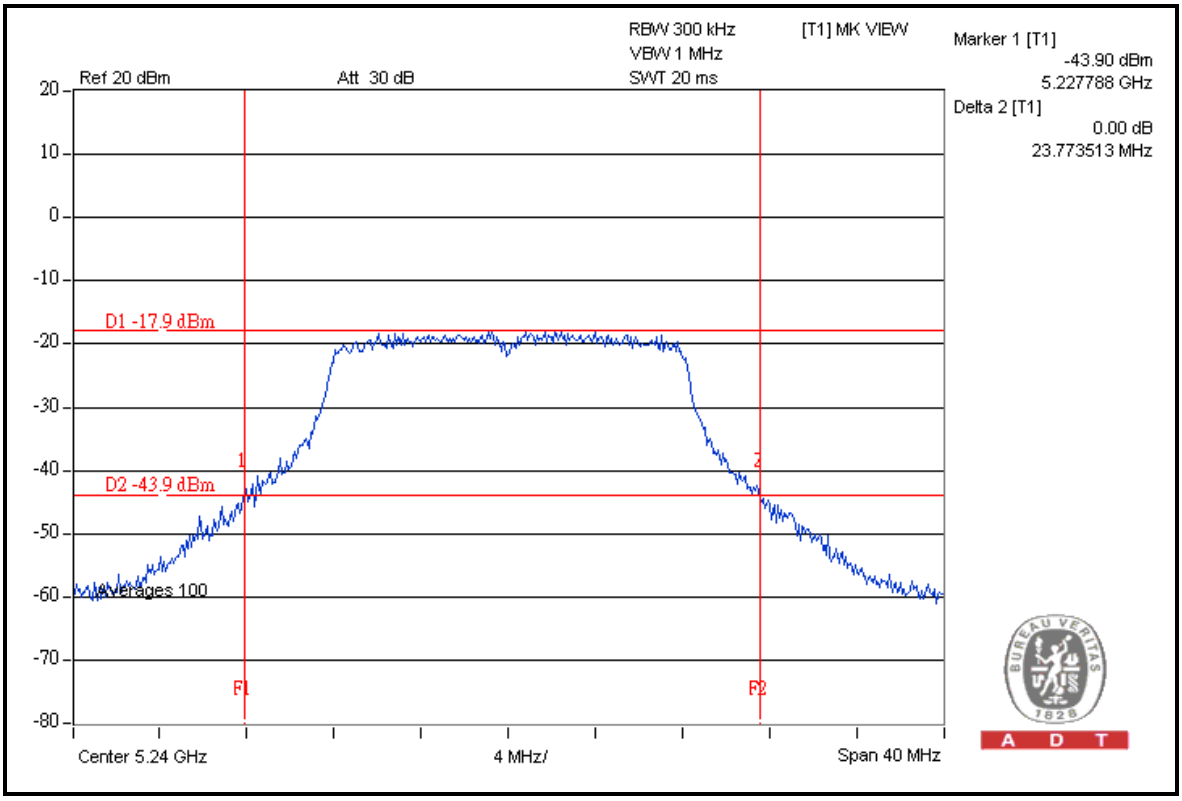
CHAIN 0 CH 36



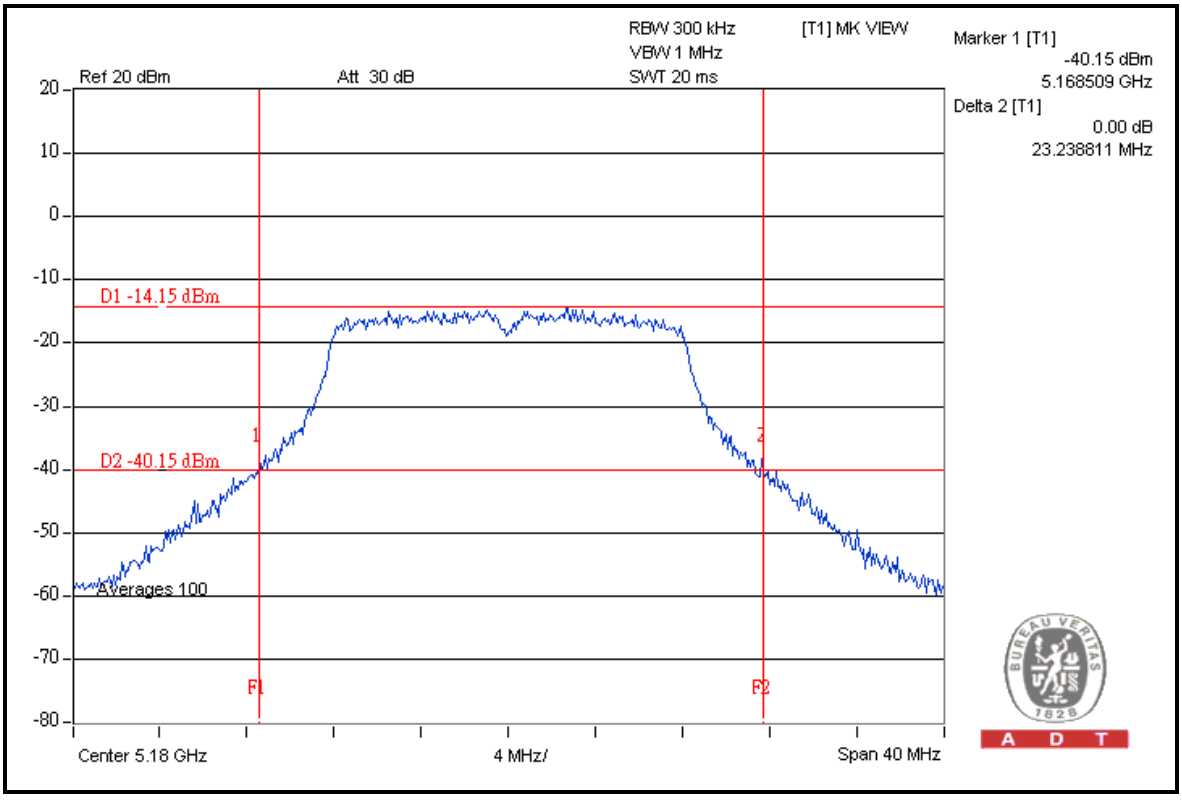
CH 40



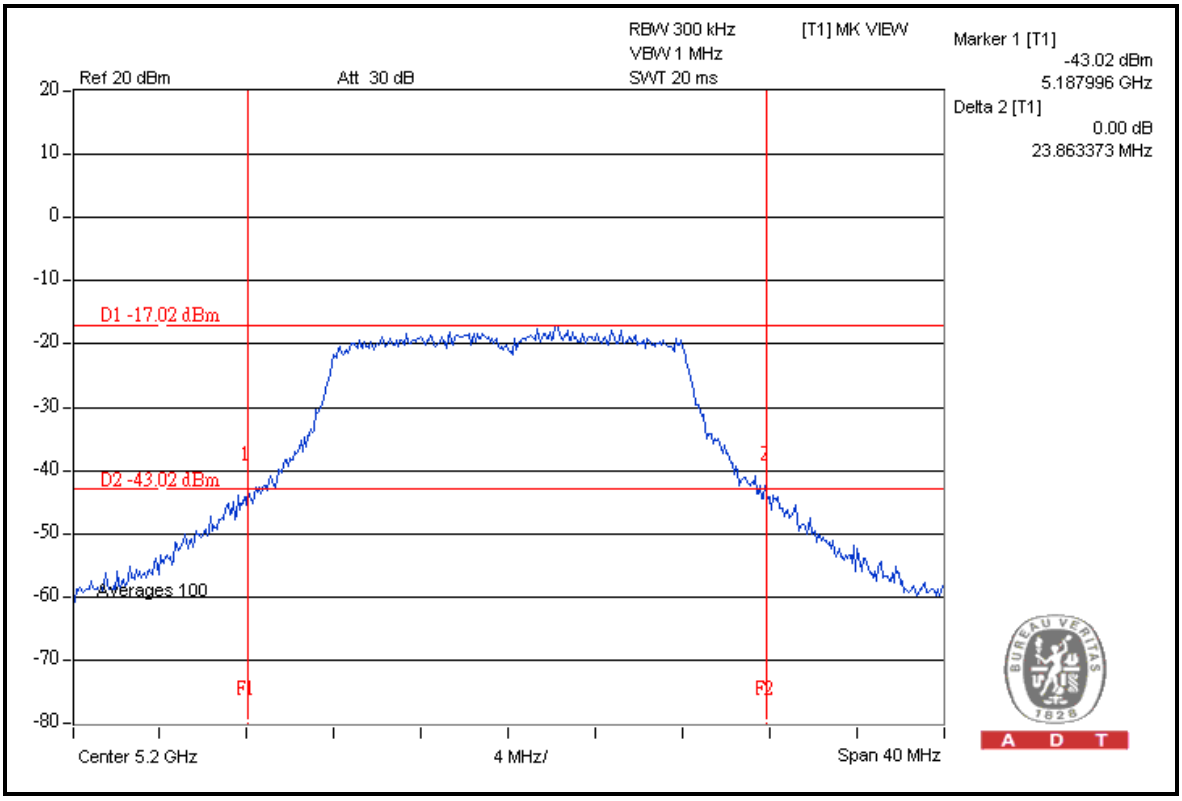
CH 48



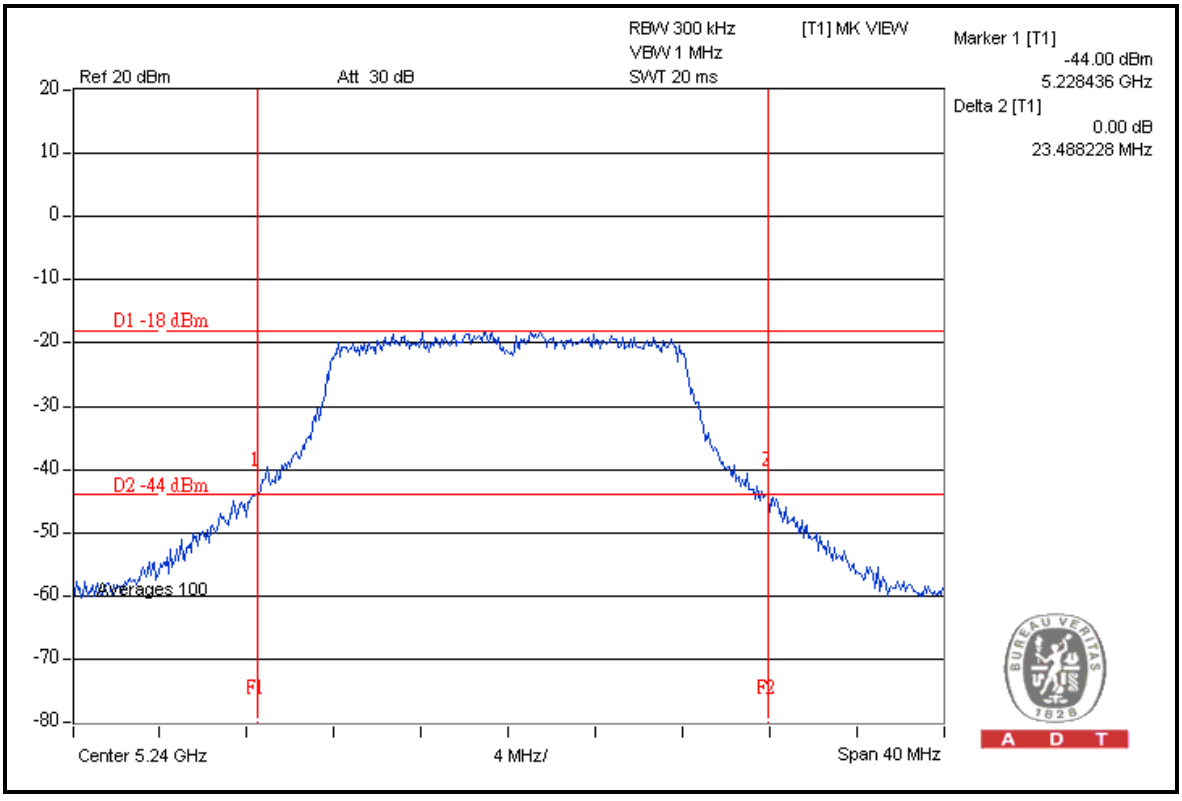
CHAIN 1 CH 36



CH 40


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-43.02 dBm
5.187996 GHz
Delta 2 [T1]
0.00 dB
23.863373 MHz
Ref 20 dBm
Att 30 dB
D1 -17.02 dBm
D2 -43.02 dBm
Averages 100
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

CH 48

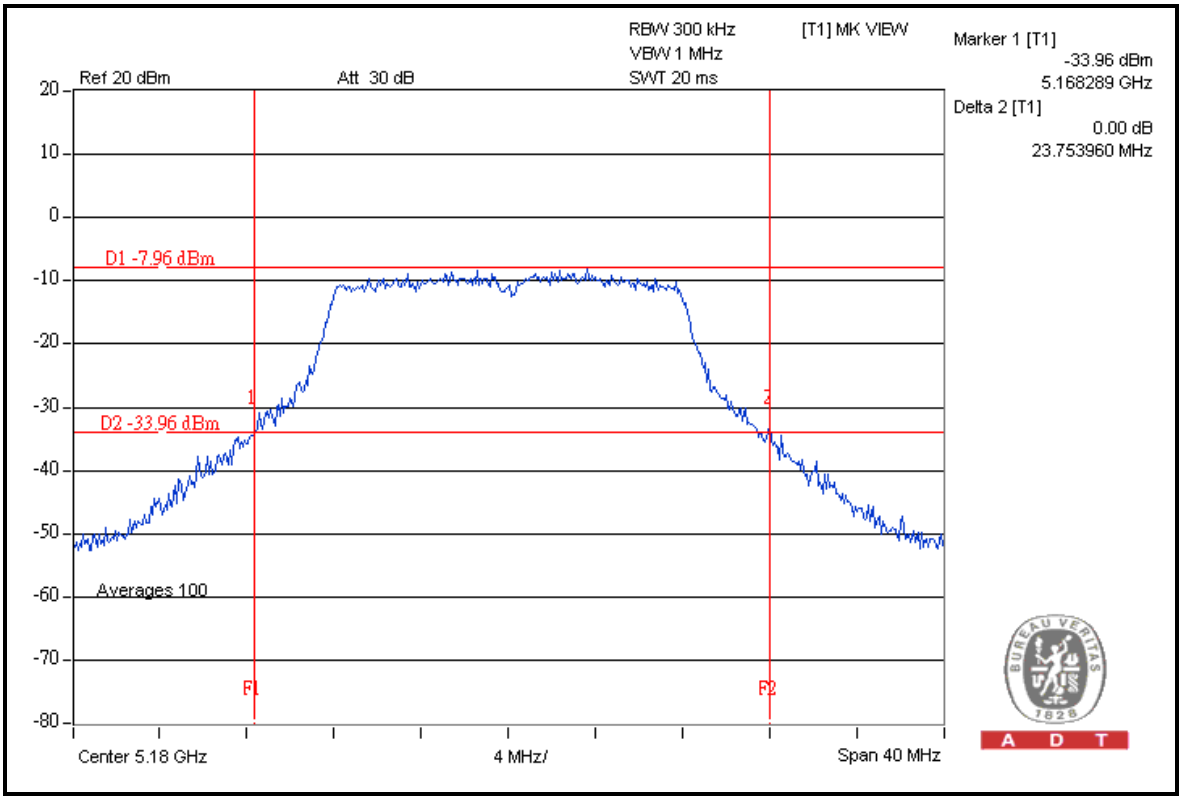

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-44.00 dBm
5.228436 GHz
Delta 2 [T1]
0.00 dB
23.488228 MHz
Ref 20 dBm
Att 30 dB
D1 -18 dBm
D2 -44 dBm
Averages 100
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

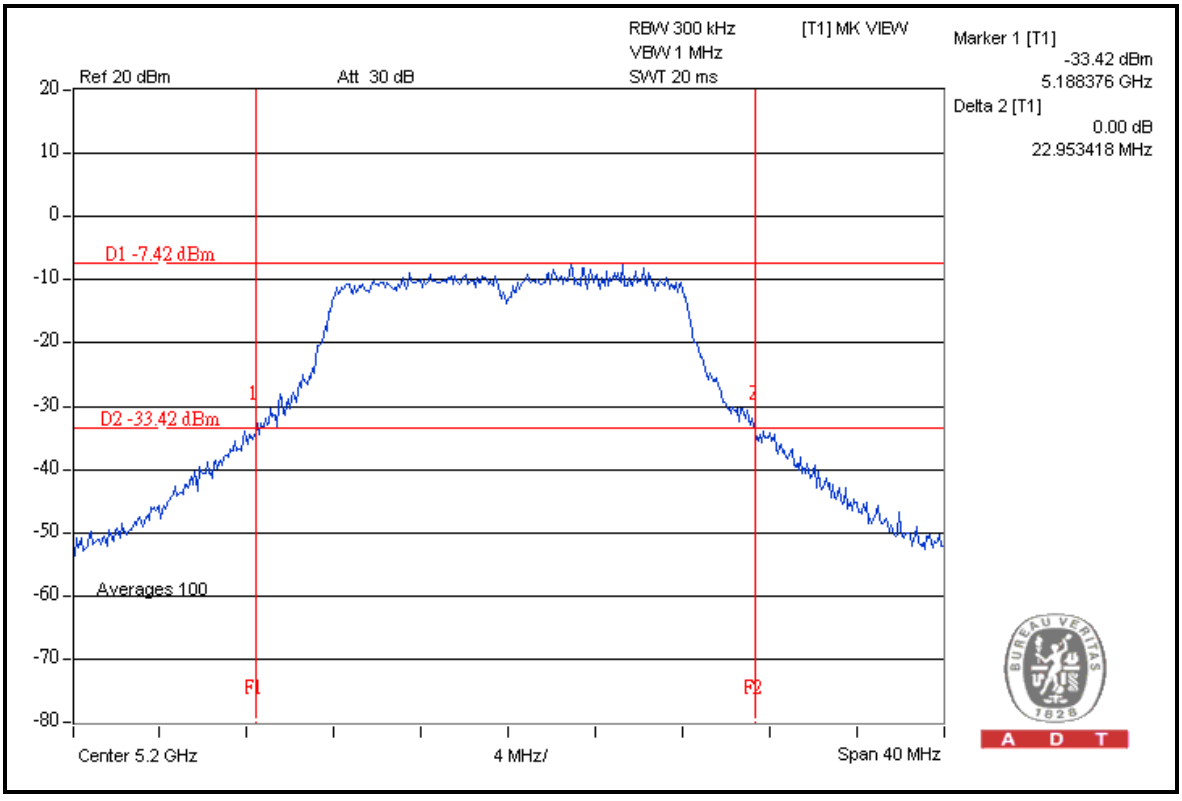
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc OCCUPIED BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	23.75	23.11	PASS
40	5200	22.95	22.89	PASS
48	5240	23.70	23.28	PASS

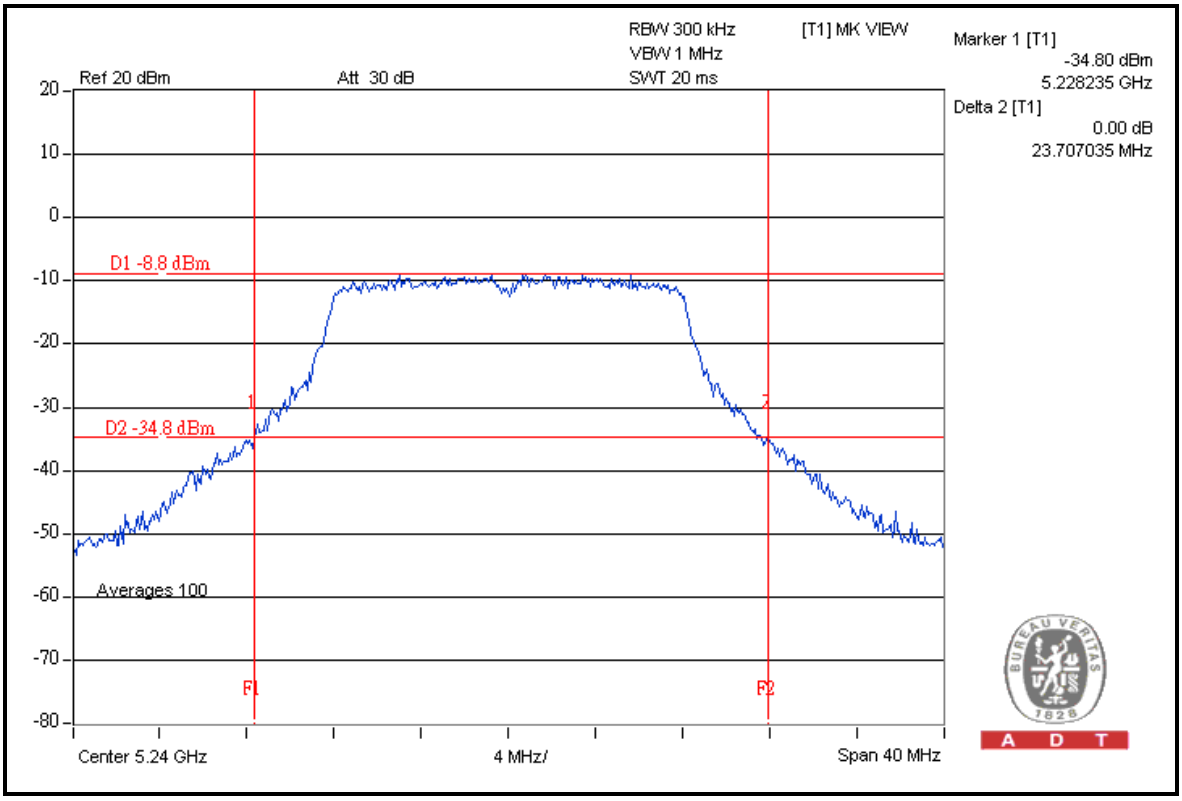
CHAIN 0 CH 36



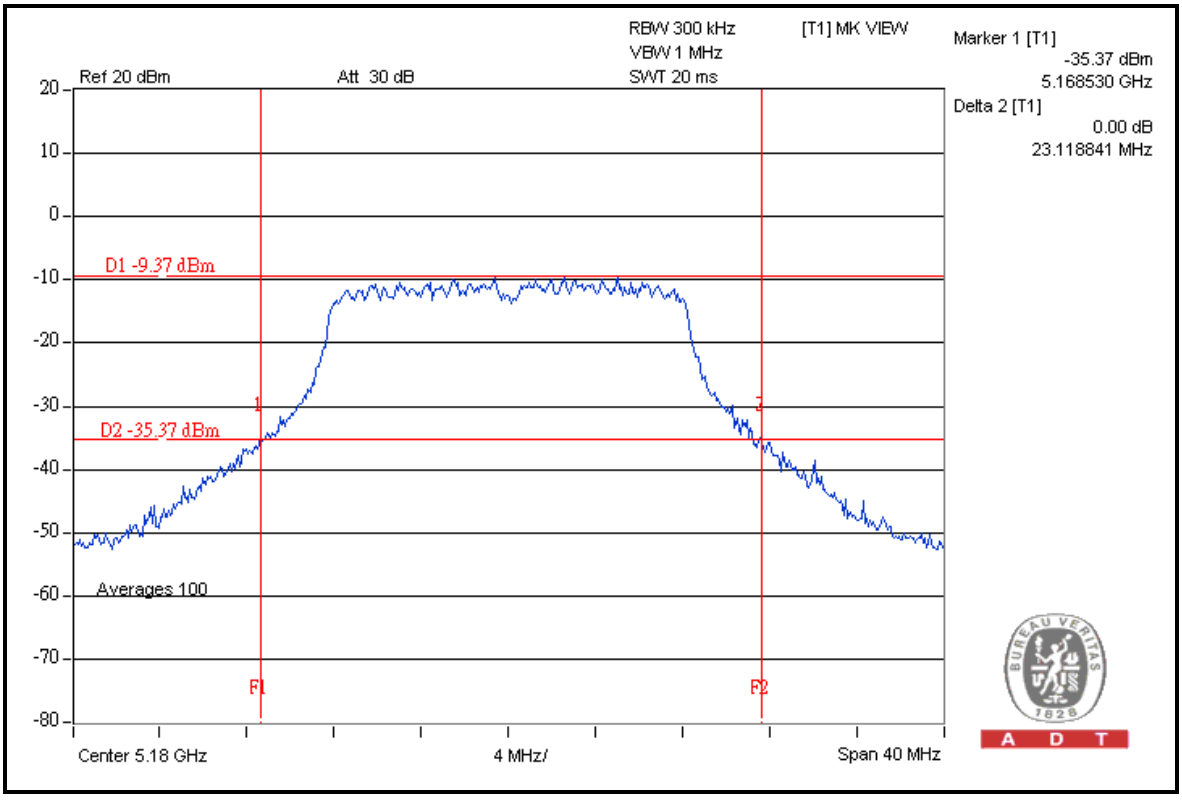
CH 40



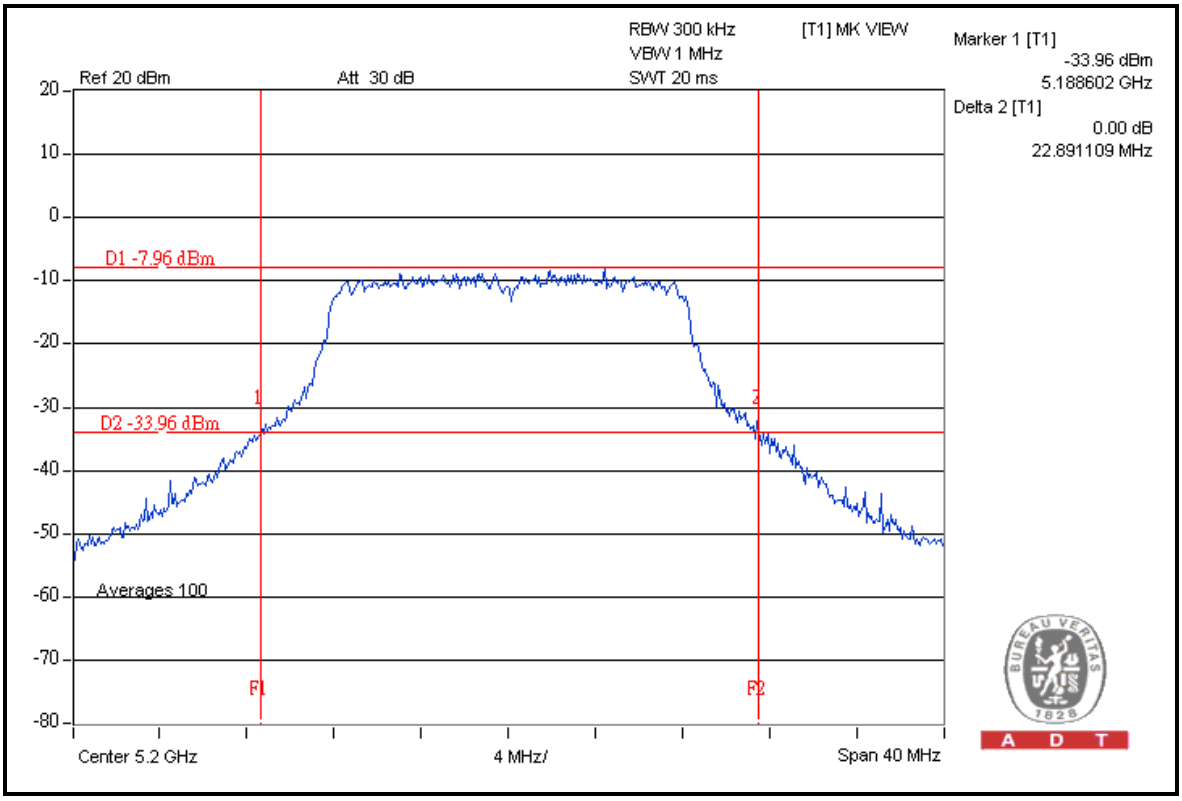
CH 48



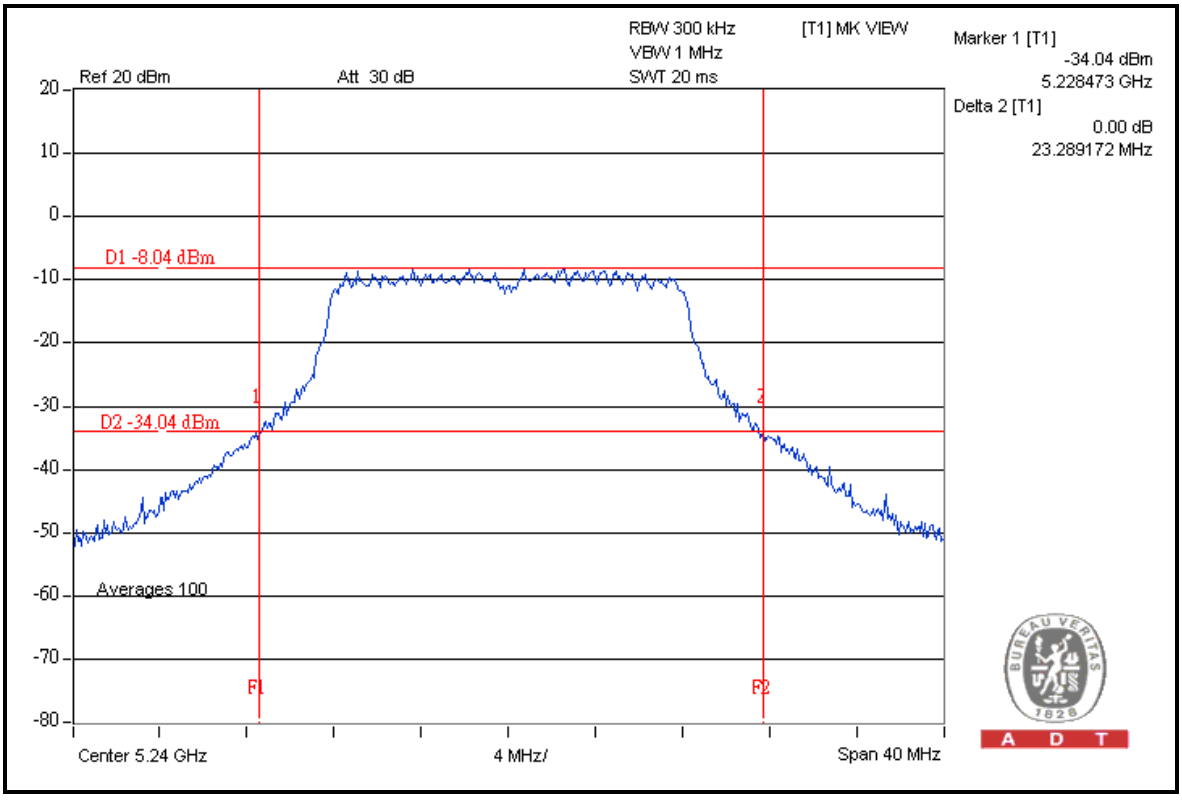
CHAIN 1 CH 36



CH 40


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-33.96 dBm
5.188602 GHz
Delta 2 [T1]
0.00 dB
22.891109 MHz
Ref 20 dBm
Att 30 dB
D1 -7.96 dBm
D2 -33.96 dBm
Averages 100
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

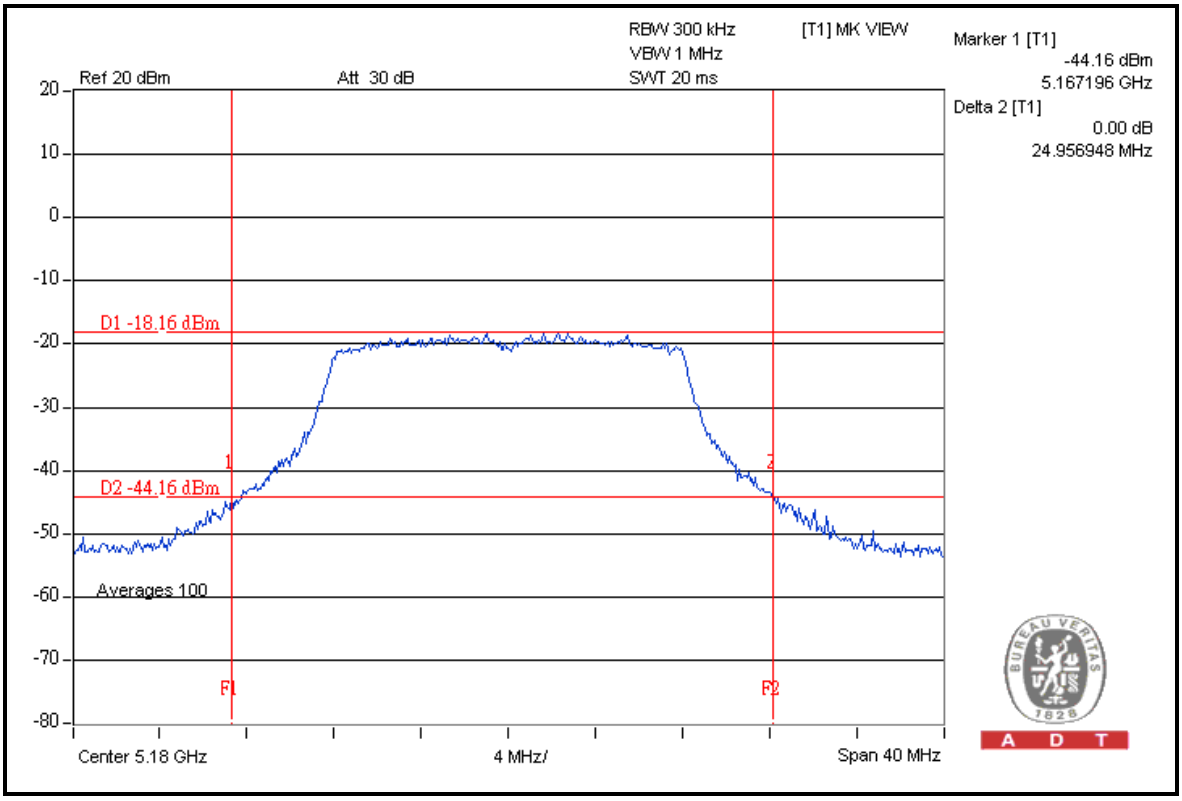
CH 48


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-34.04 dBm
5.228473 GHz
Delta 2 [T1]
0.00 dB
23.289172 MHz
Ref 20 dBm
Att 30 dB
D1 -8.04 dBm
D2 -34.04 dBm
Averages 100
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

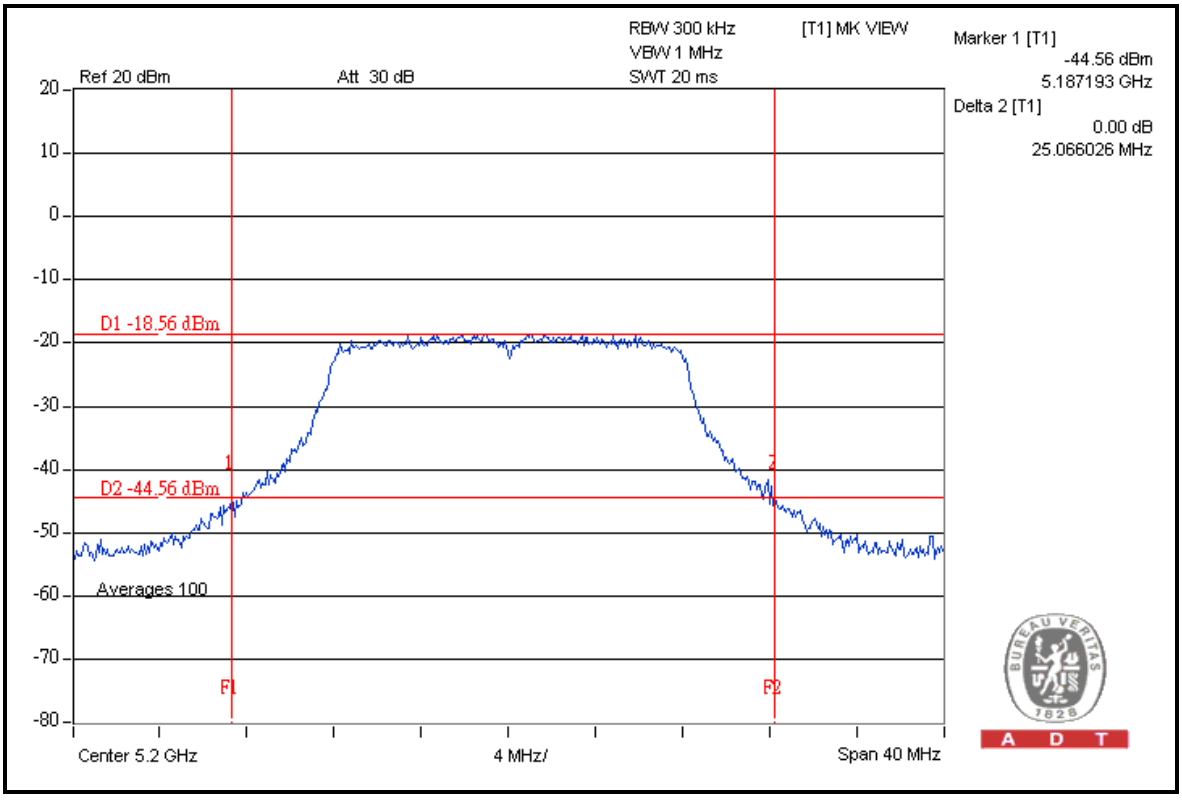
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHANNEL	**CHANNEL FREQUENCY (MHz)**	**26dBc OCCUPIED BANDWIDTH (MHz)**		**PASS / FAIL**
		CHAIN 0	**CHAIN 1**	
36	5180	24.95	25.08	PASS
40	5200	25.06	24.17	PASS
48	5240	24.48	24.20	PASS

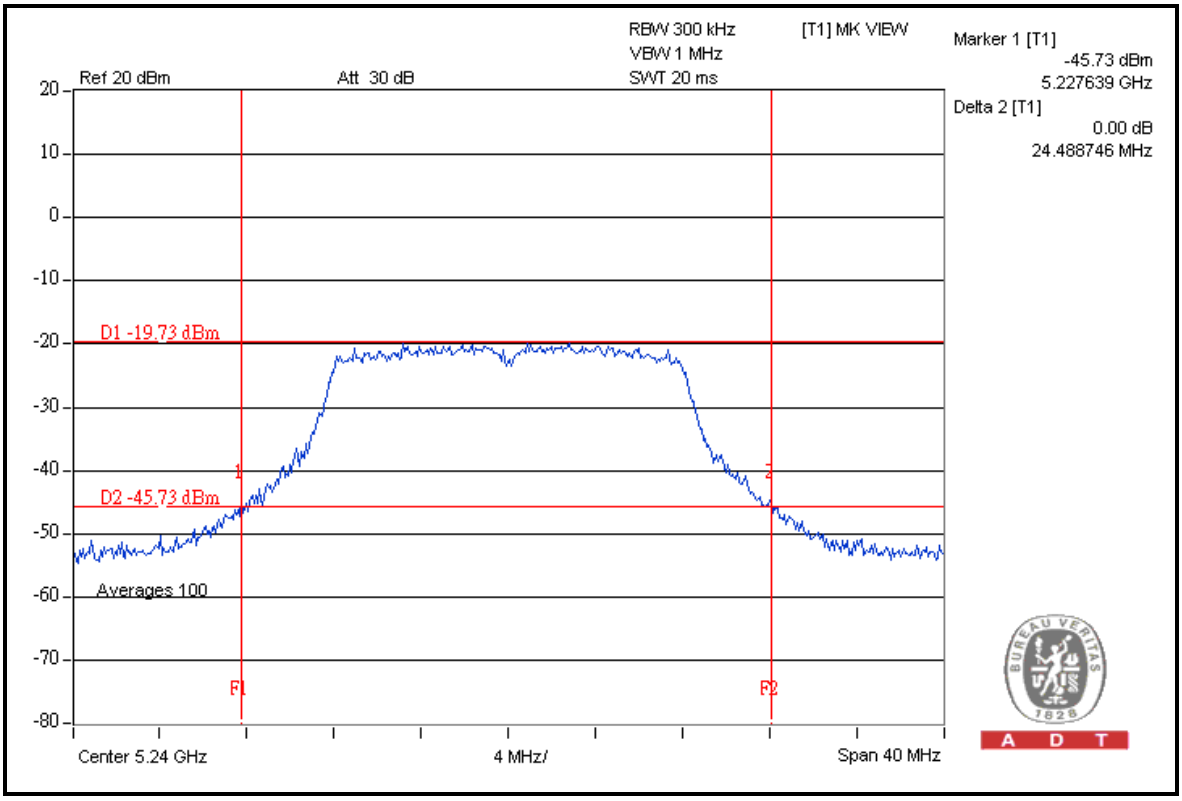
CHAIN 0 CH 36



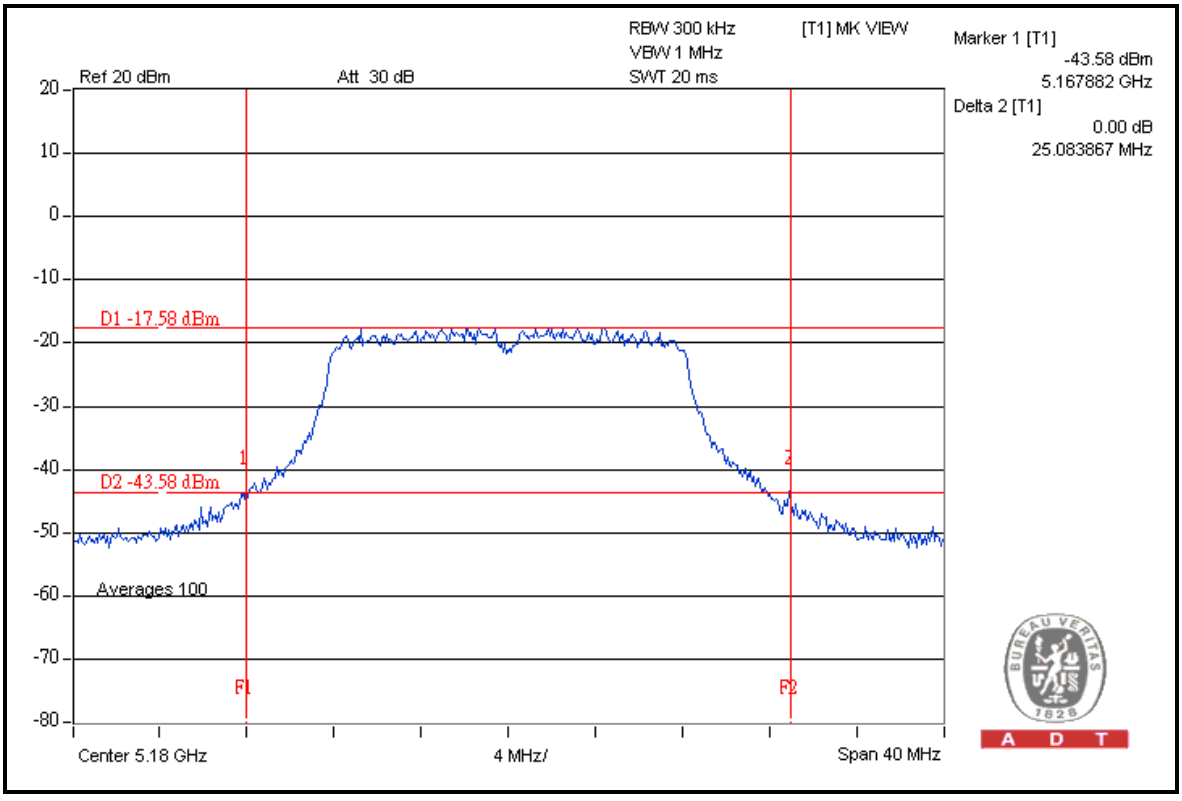
CH 40



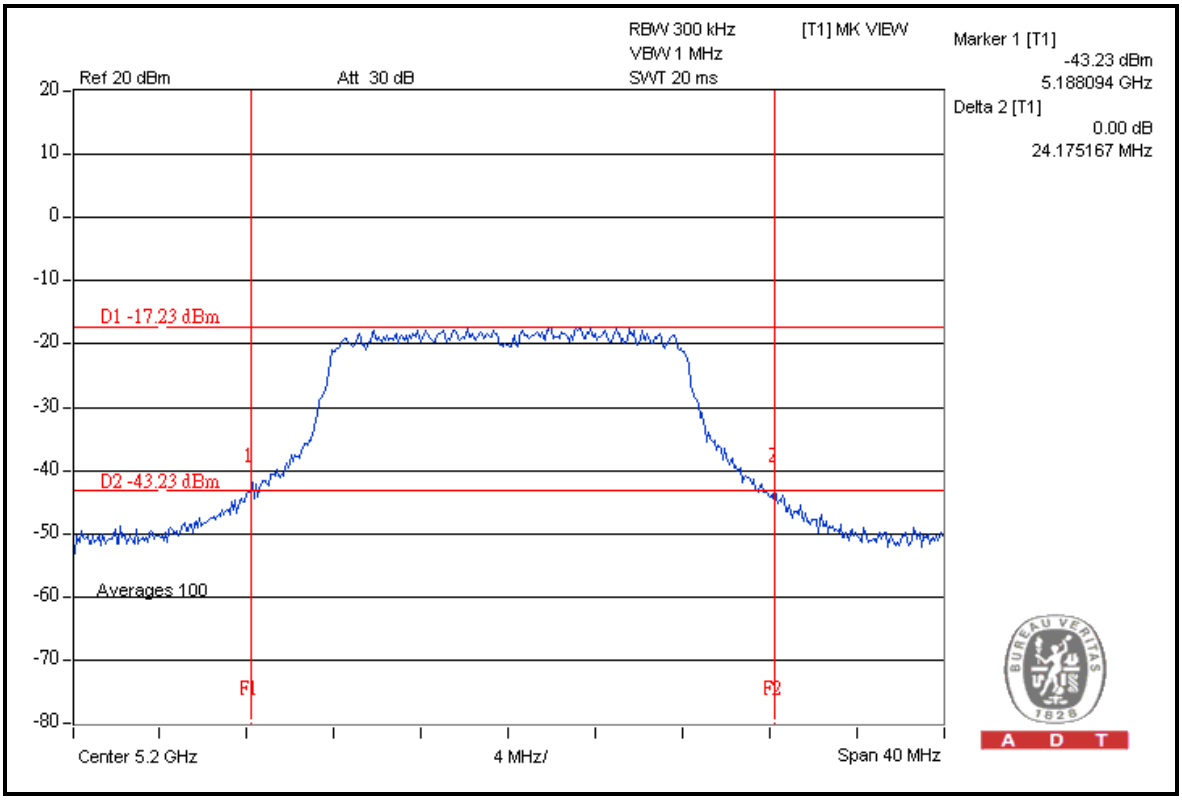
CH 48



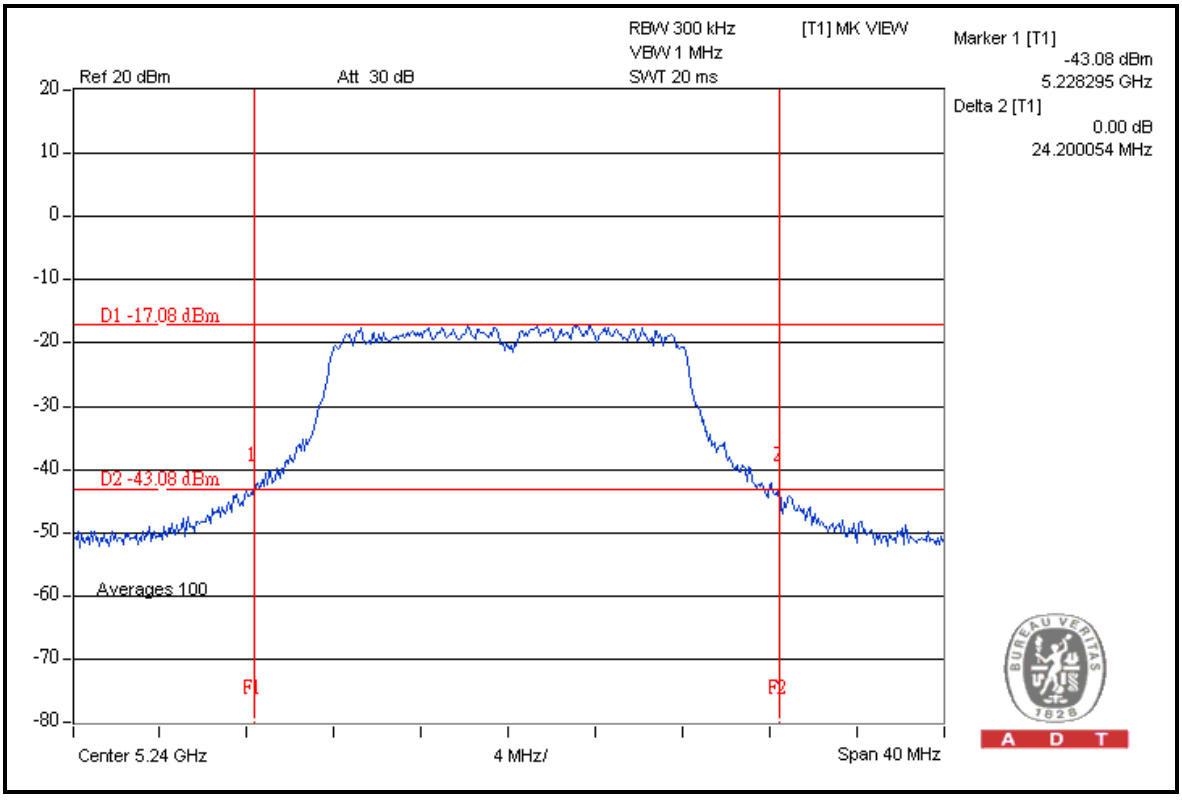
CHAIN 1 CH 36



CH 40


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-43.23 dBm
5.188094 GHz
Delta 2 [T1]
0.00 dB
24.175167 MHz
Ref 20 dBm
Att 30 dB
D1 -17.23 dBm
D2 -43.23 dBm
Averages 100
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

CH 48

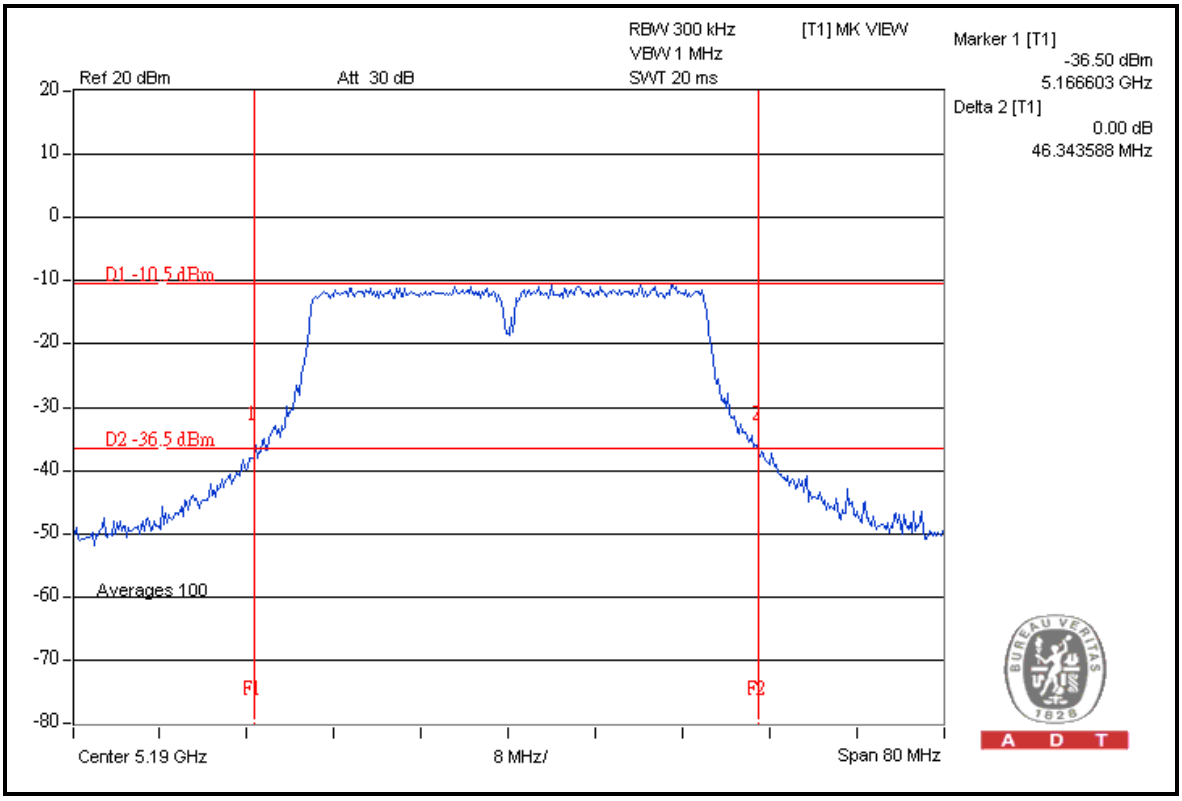

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-43.08 dBm
5.228295 GHz
Delta 2 [T1]
0.00 dB
24.200054 MHz
Ref 20 dBm
Att 30 dB
D1 -17.08 dBm
D2 -43.08 dBm
Averages 100
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

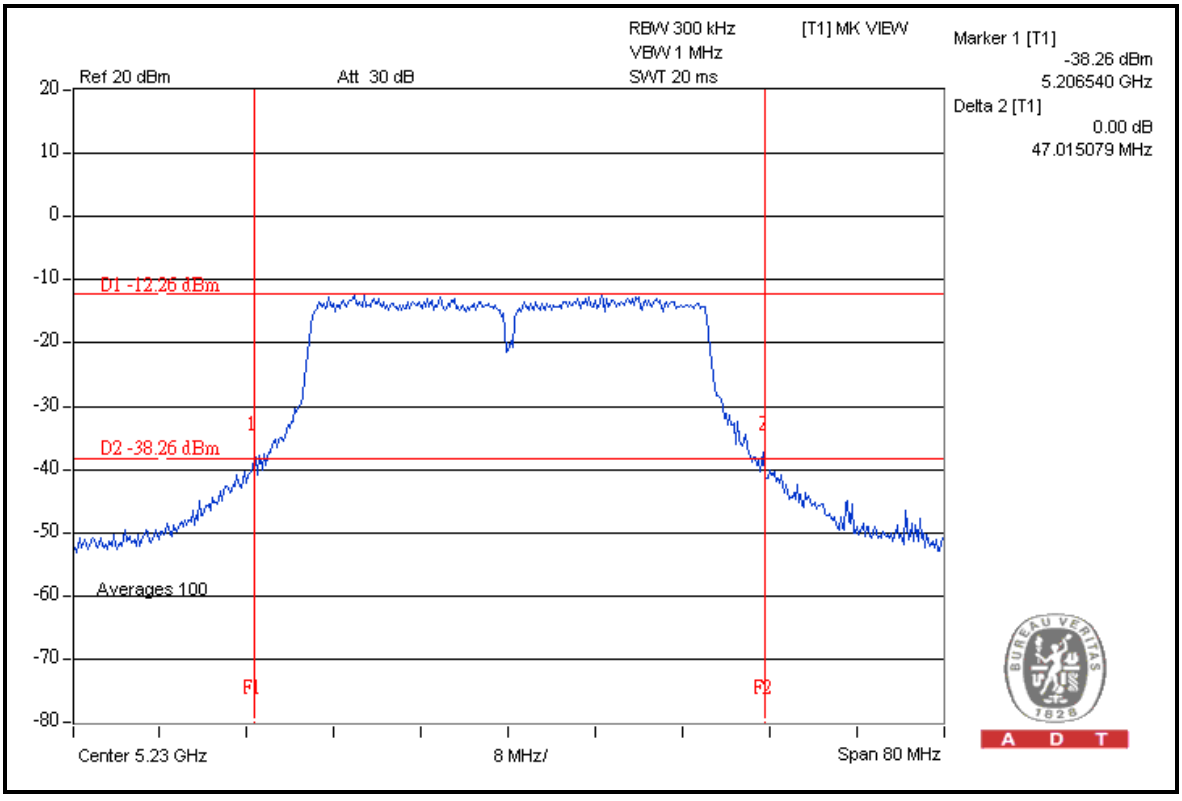
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

CHANNEL	**CHANNEL FREQUENCY (MHz)**	**26dBc OCCUPIED BANDWIDTH (MHz)**		**PASS / FAIL**
		CHAIN 0	**CHAIN 1**	
38	5190	46.34	46.49	PASS
46	5230	47.01	47.80	PASS

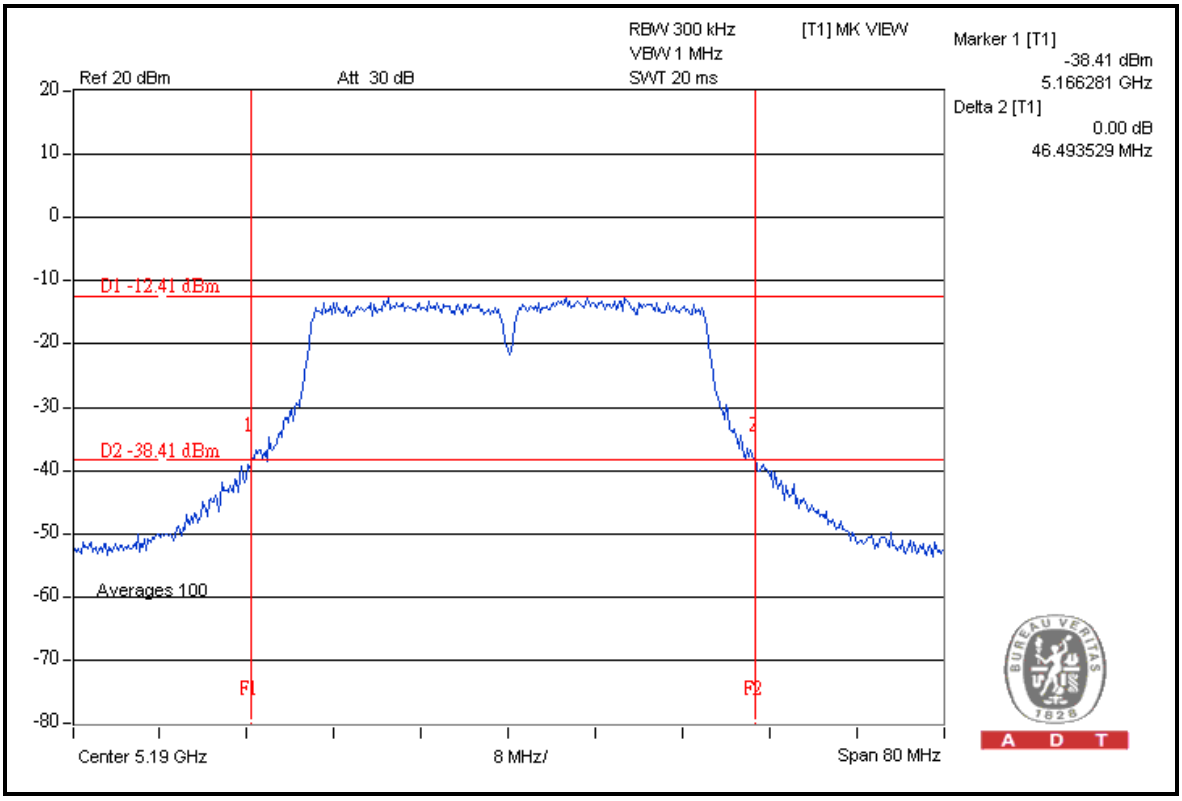
CHAIN 0 CH 38



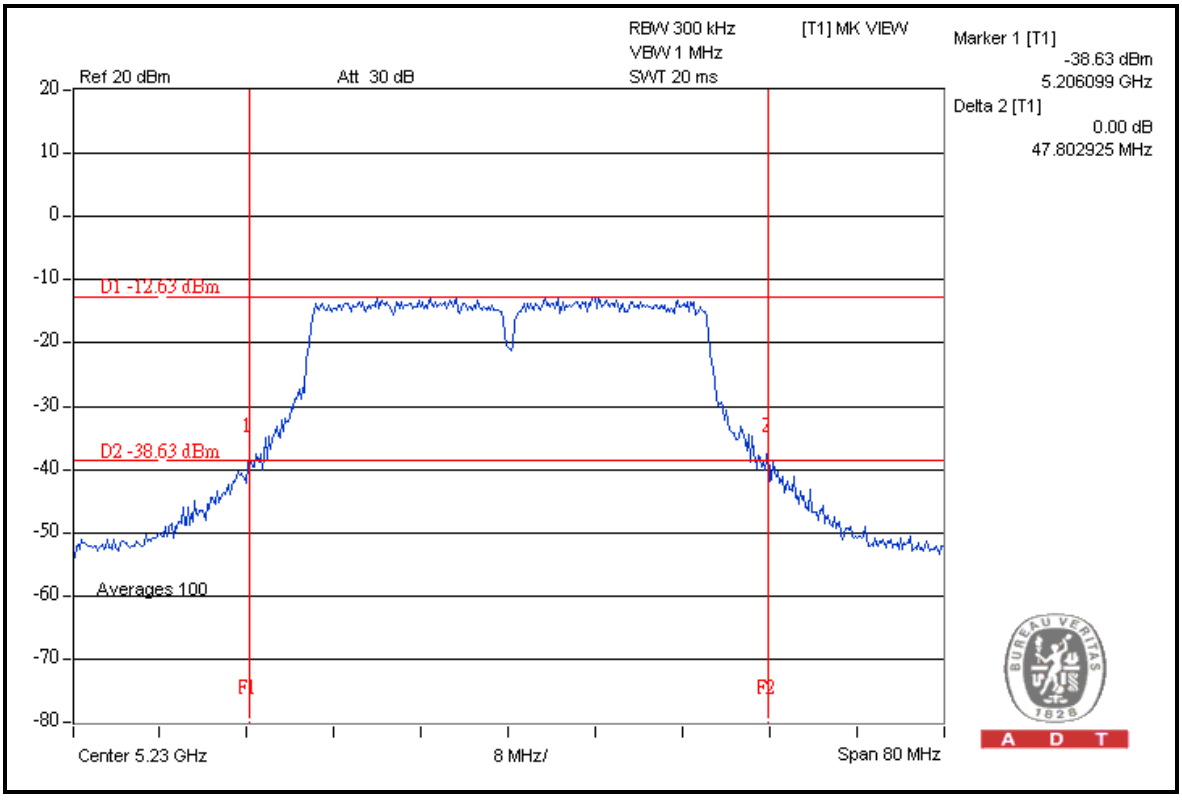
CH 46



CHAIN 1 CH 38



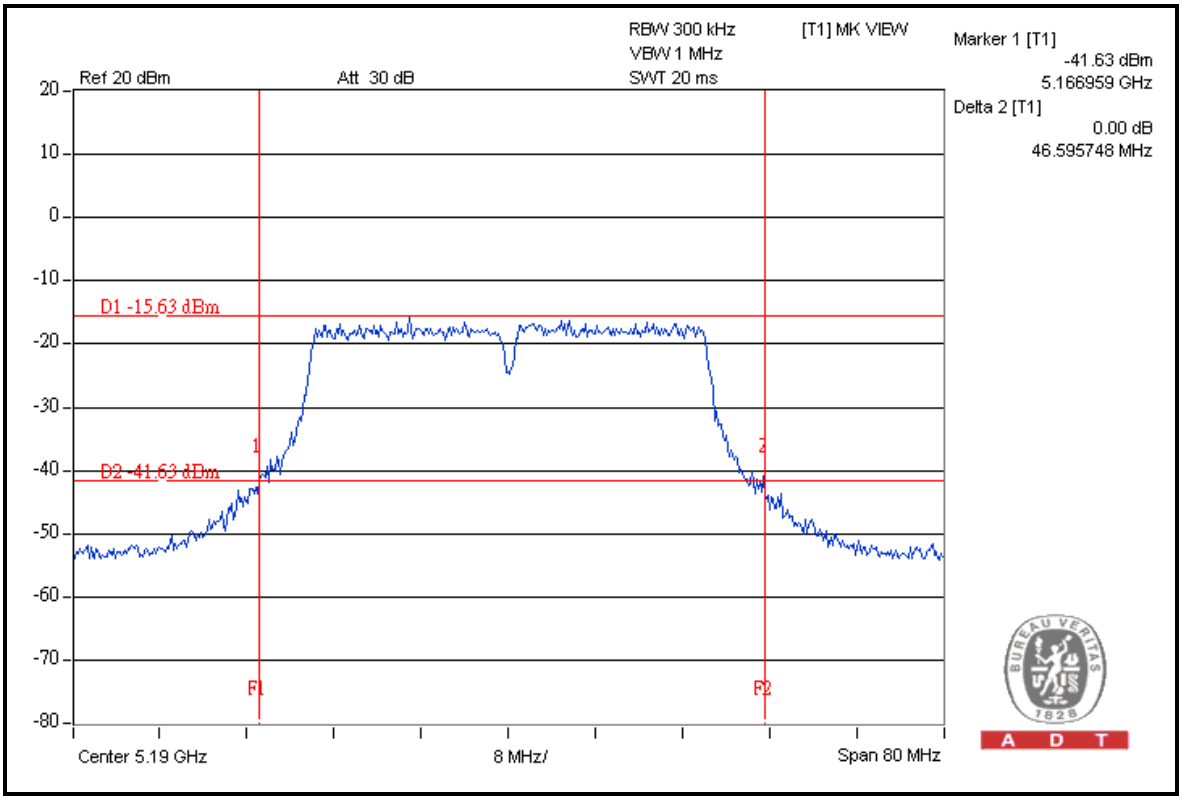
CH 46



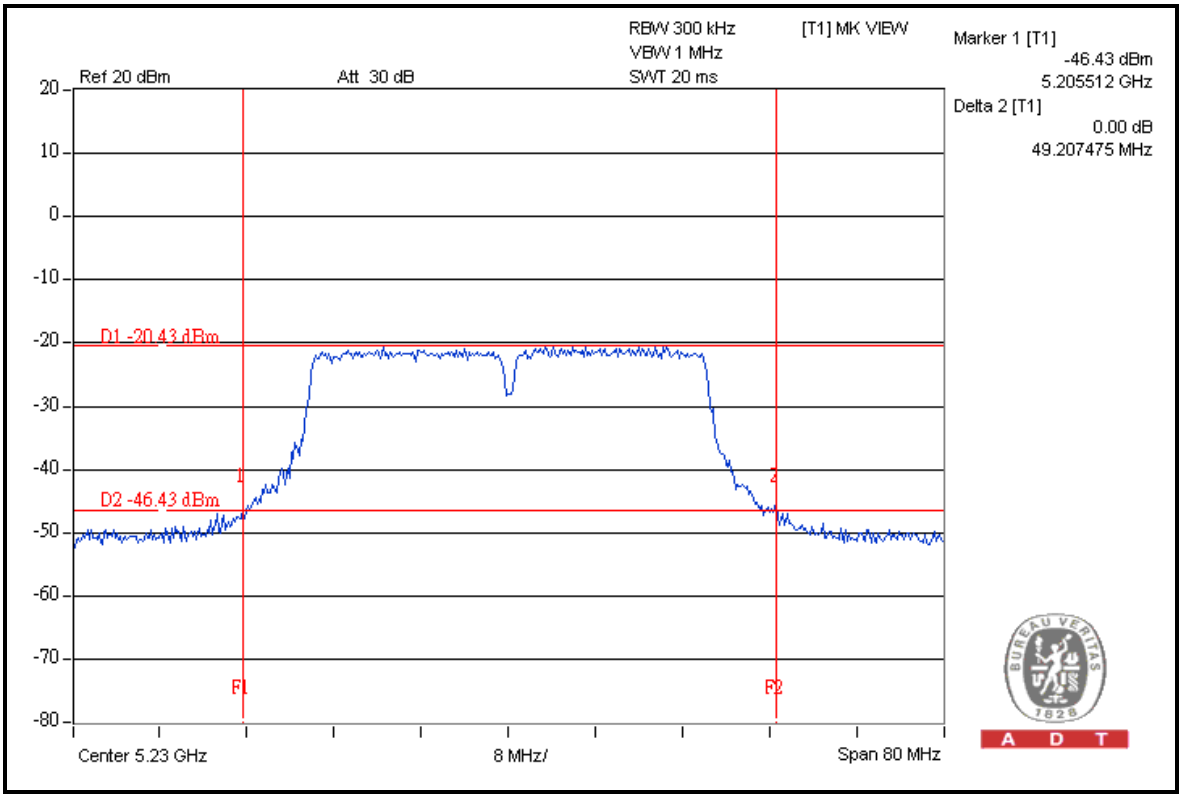
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

CHANNEL	**CHANNEL FREQUENCY (MHz)**	**26dBc OCCUPIED BANDWIDTH (MHz)**		**PASS / FAIL**
		CHAIN 0	**CHAIN 1**	
38	5190	46.59	48.14	PASS
46	5230	49.20	47.58	PASS

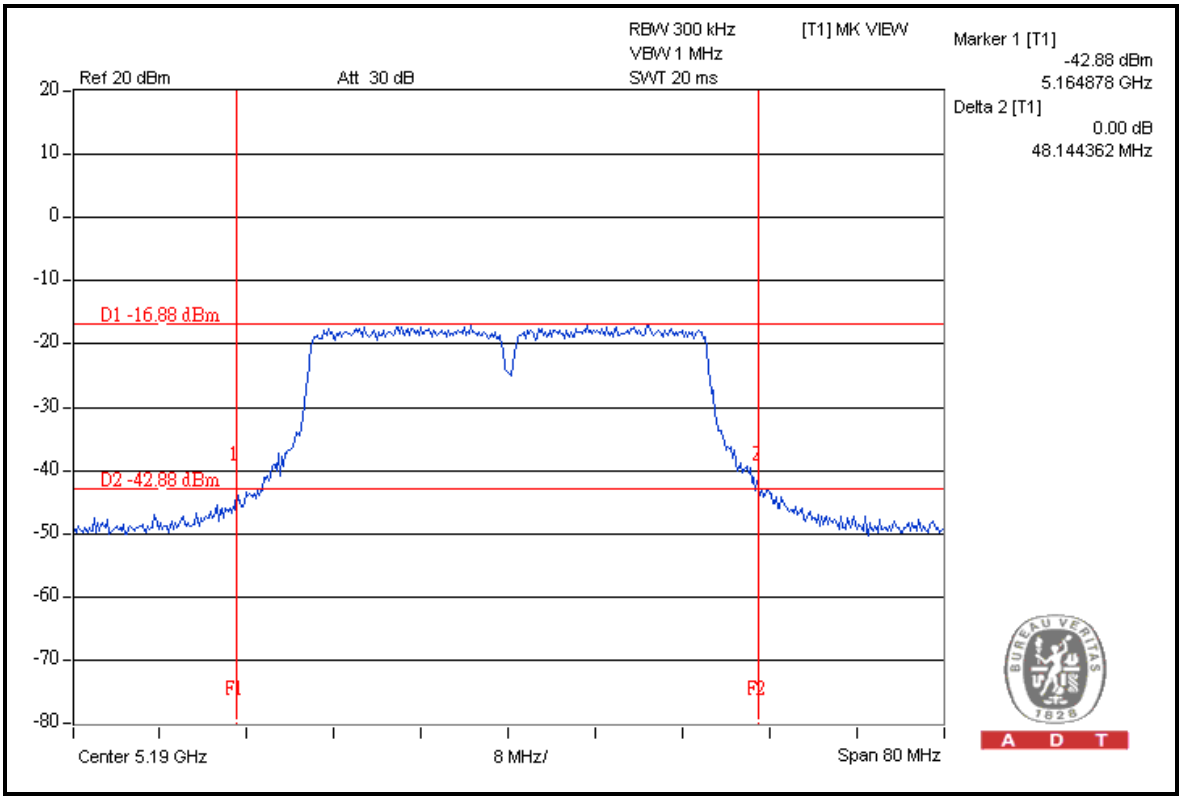
CHAIN 0 CH 38



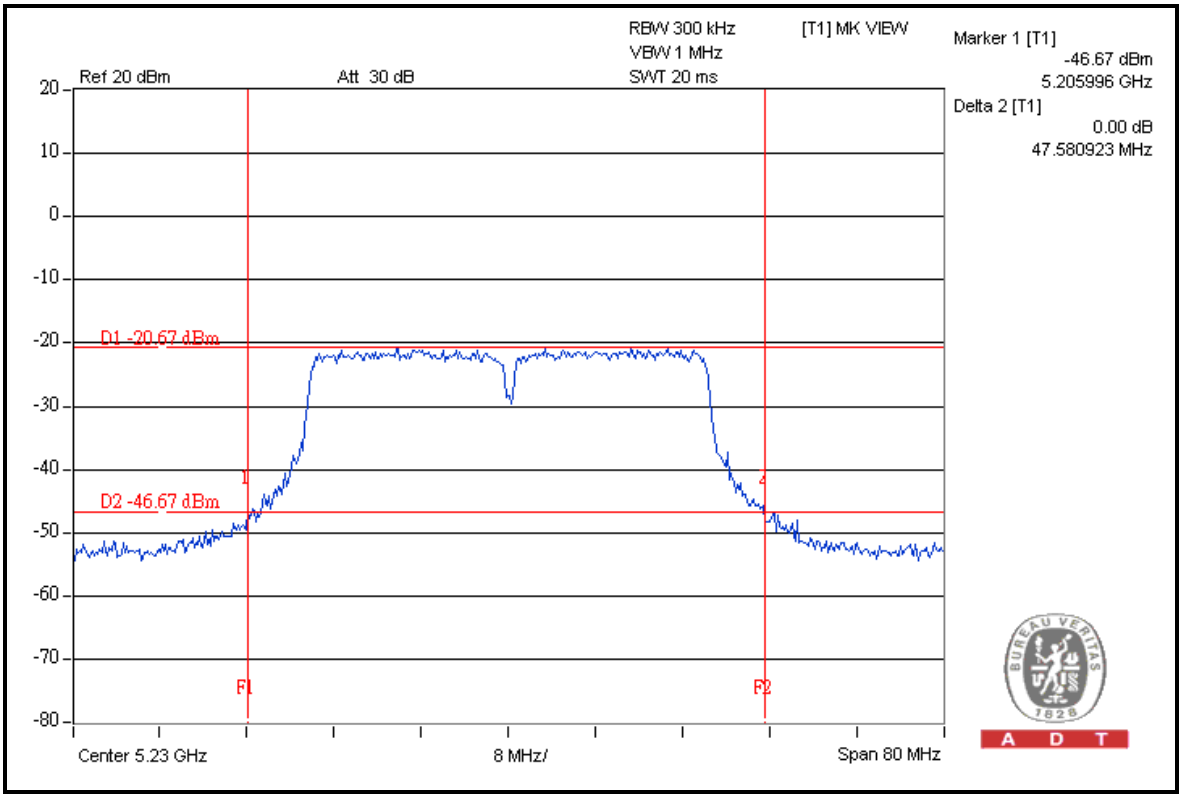
CH 46



CHAIN 1 CH 38



CH 46



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER	FSP 40	100036	Apr. 3, 2009	Apr. 2, 2010

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

4.4.3 TEST PROCEDURE

a. The transmitter output was connected to the spectrum analyzer.

b. Set the spectrum bandwidth span to view the entire spectrum.

c. Using peak detector and Max-hold function for Trace 1 (RB = 1MHz, VB = 3MHz) and 2 (RB = 1MHz, VB = 300 kHz).

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

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

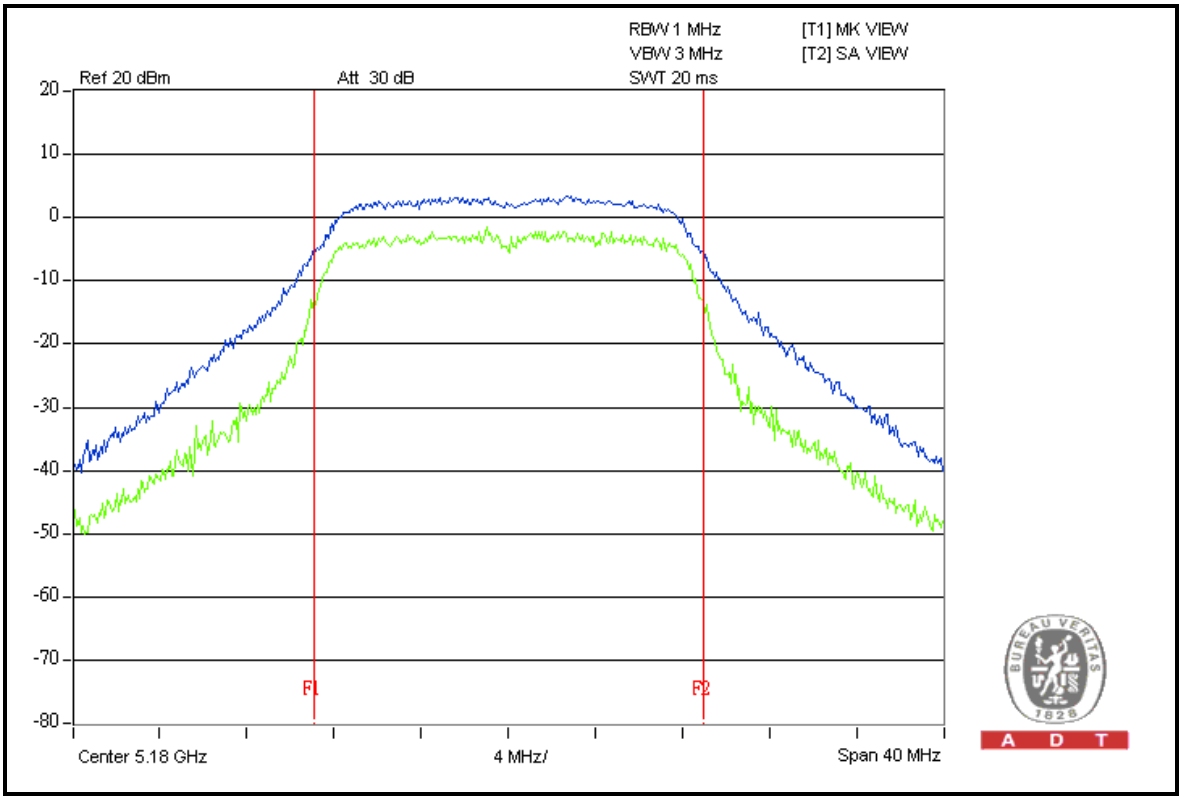
4.4.7 TEST RESULTS

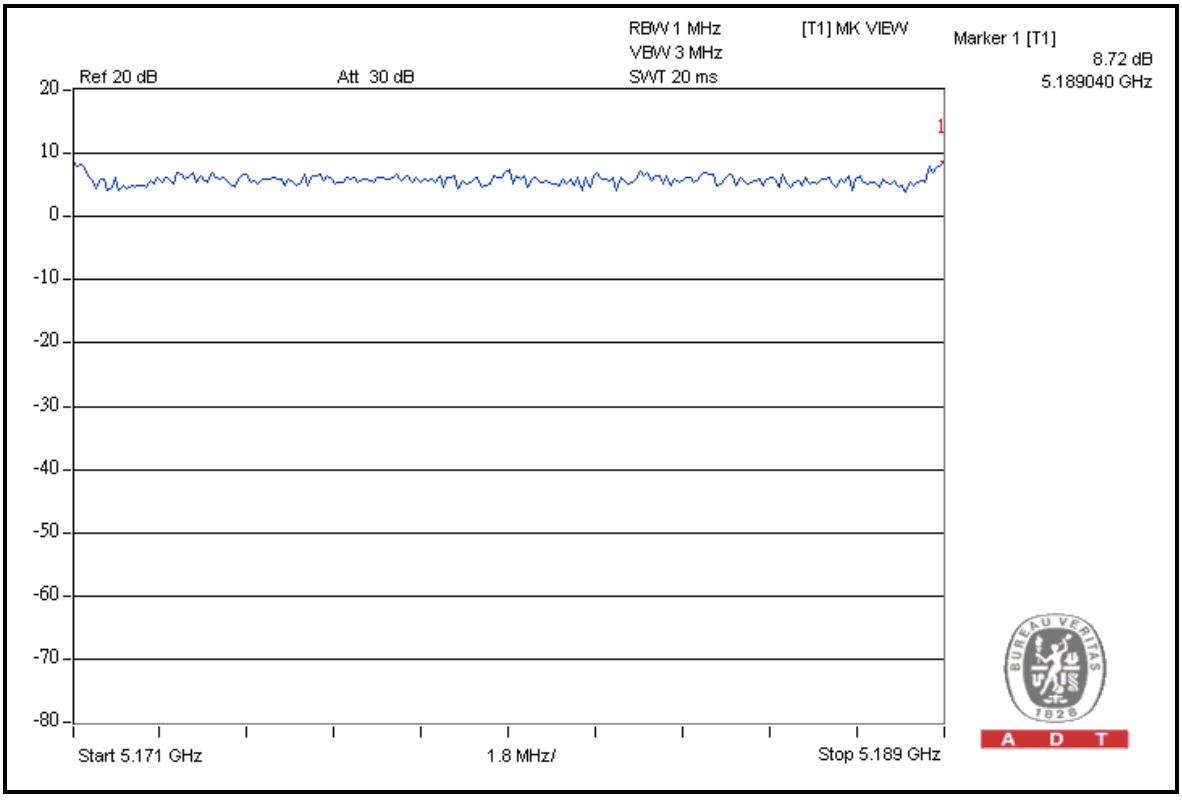
802.11a OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	TEST MODE	A

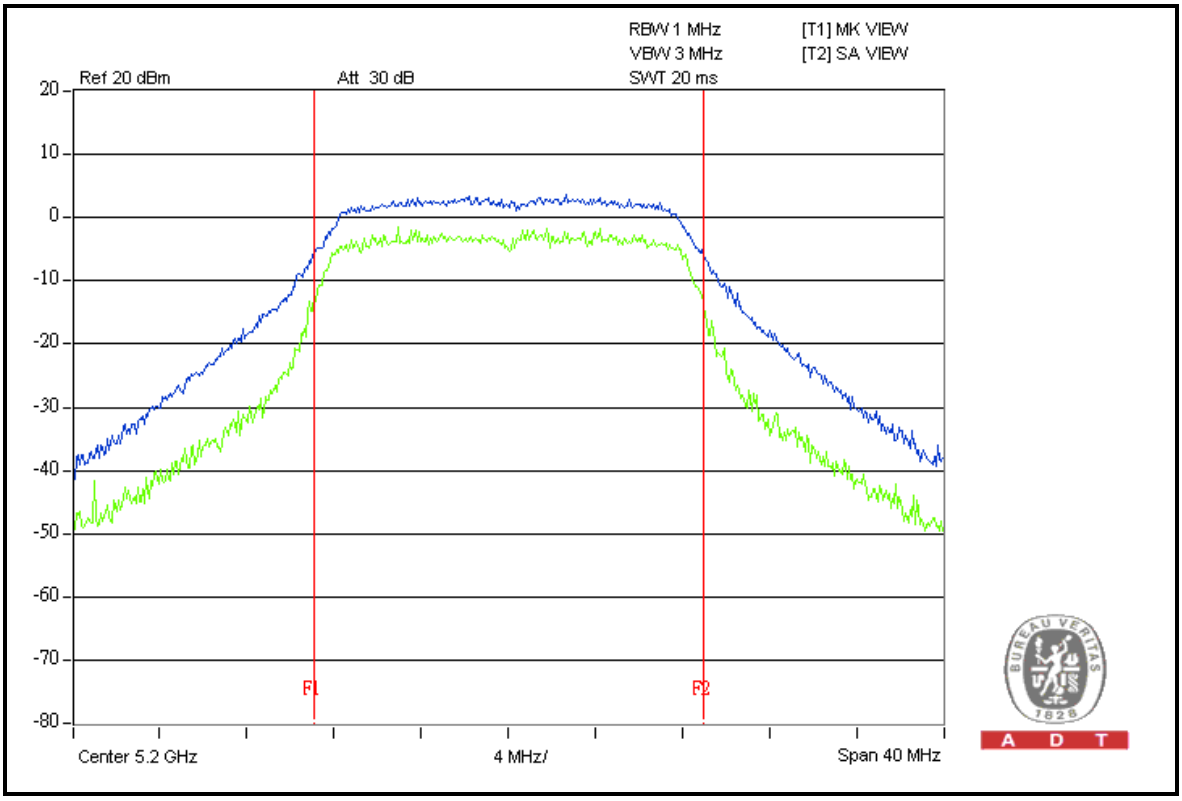
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	8.72	8.74	13	PASS
40	5200	9.40	9.15	13	PASS
48	5240	9.10	7.92	13	PASS

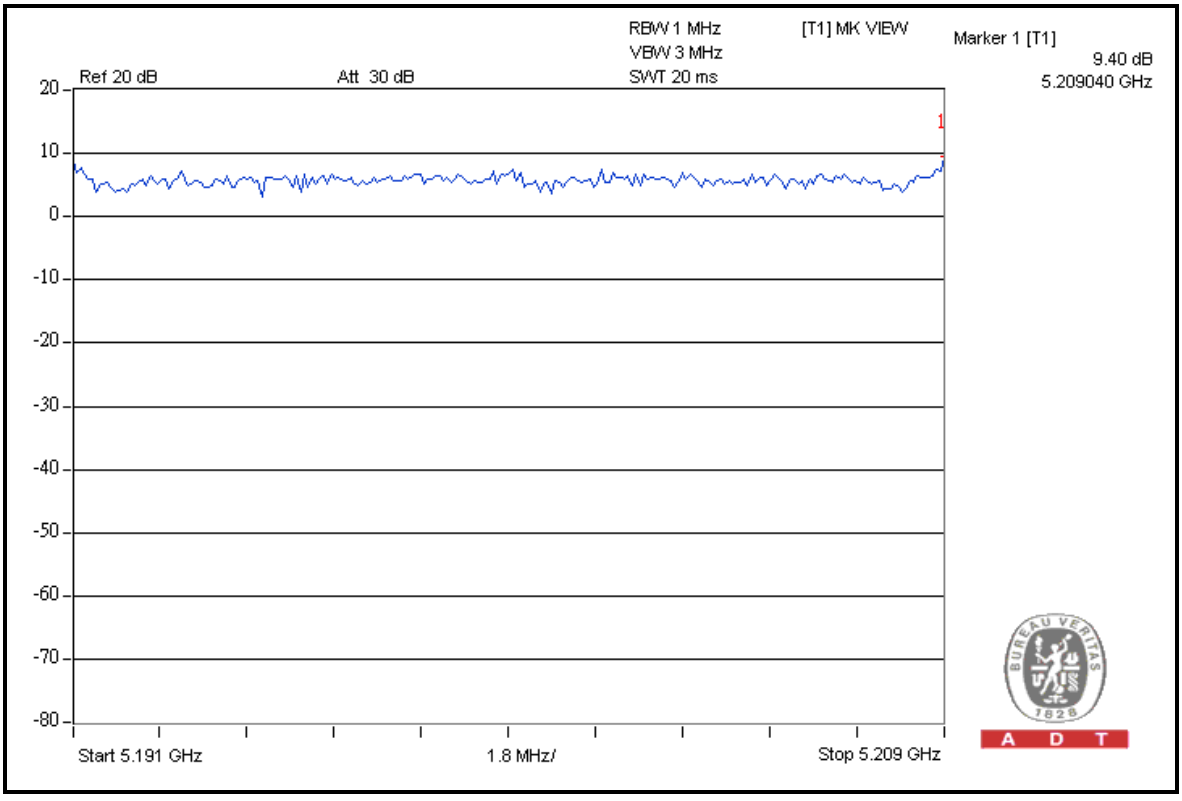
CHAIN 0 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

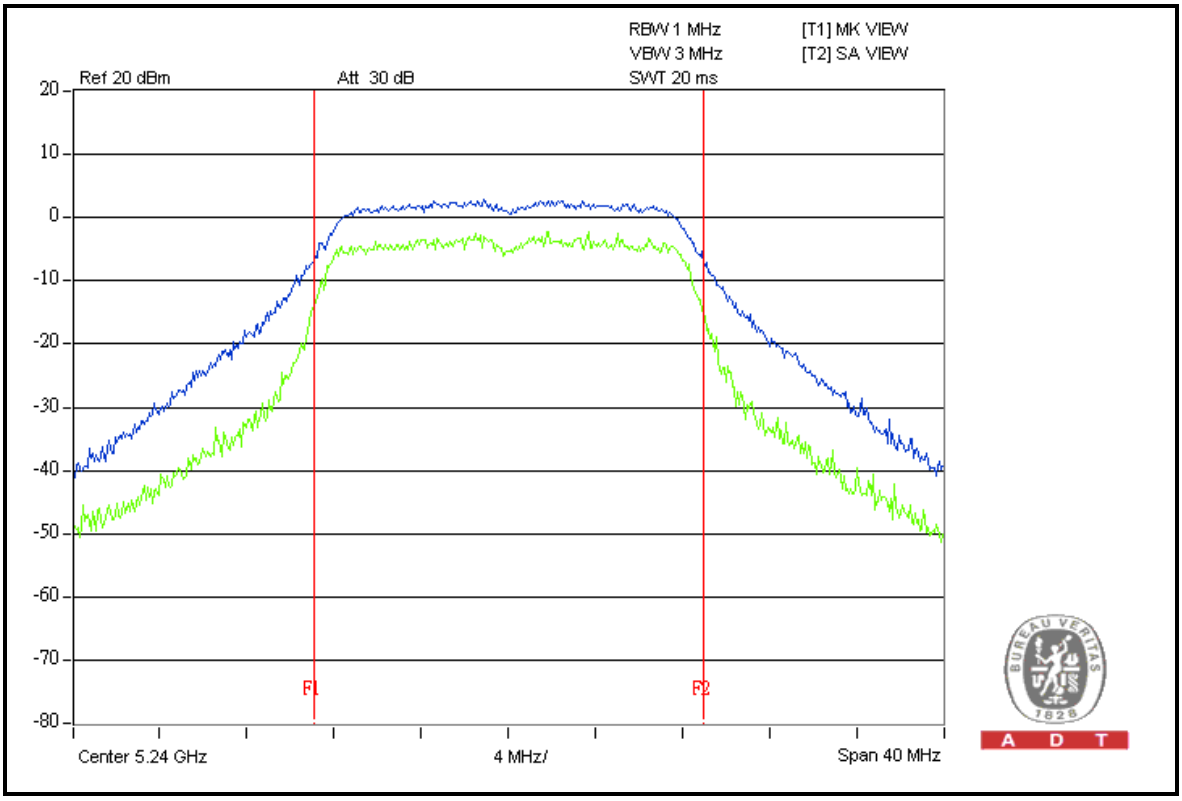

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.72 dB
5.189040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

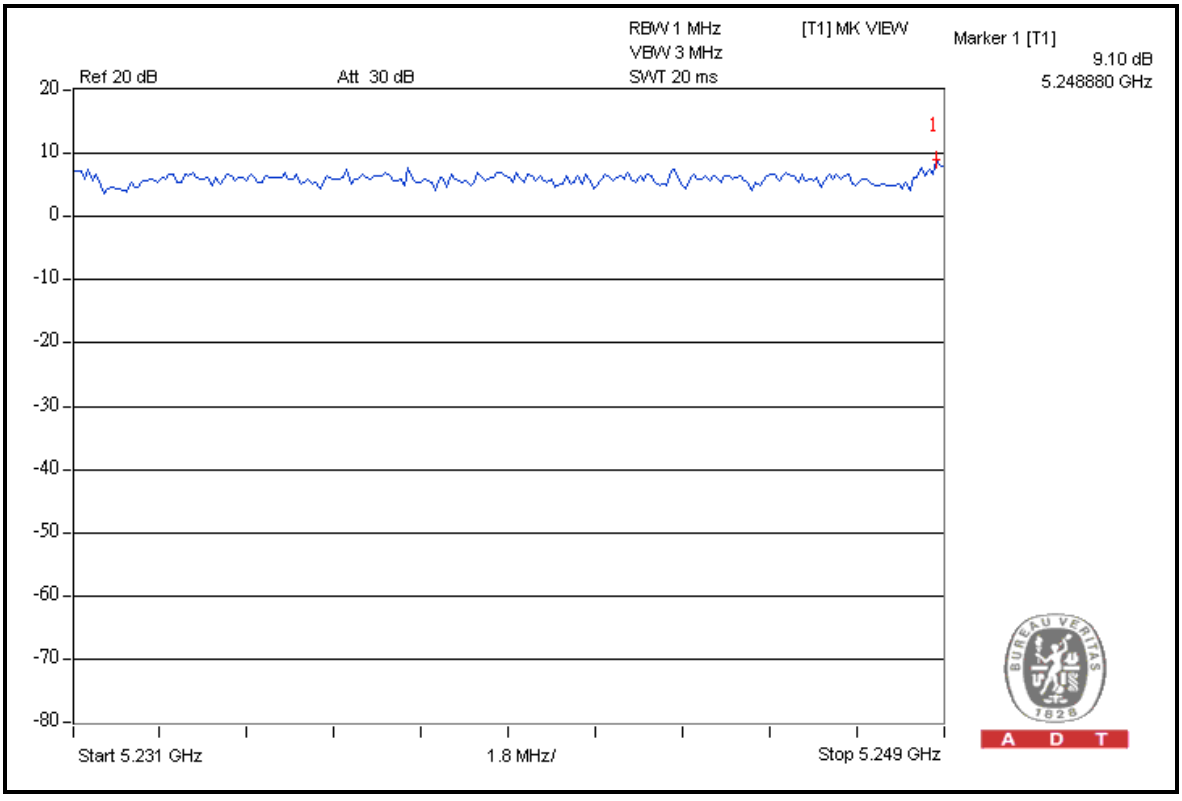
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

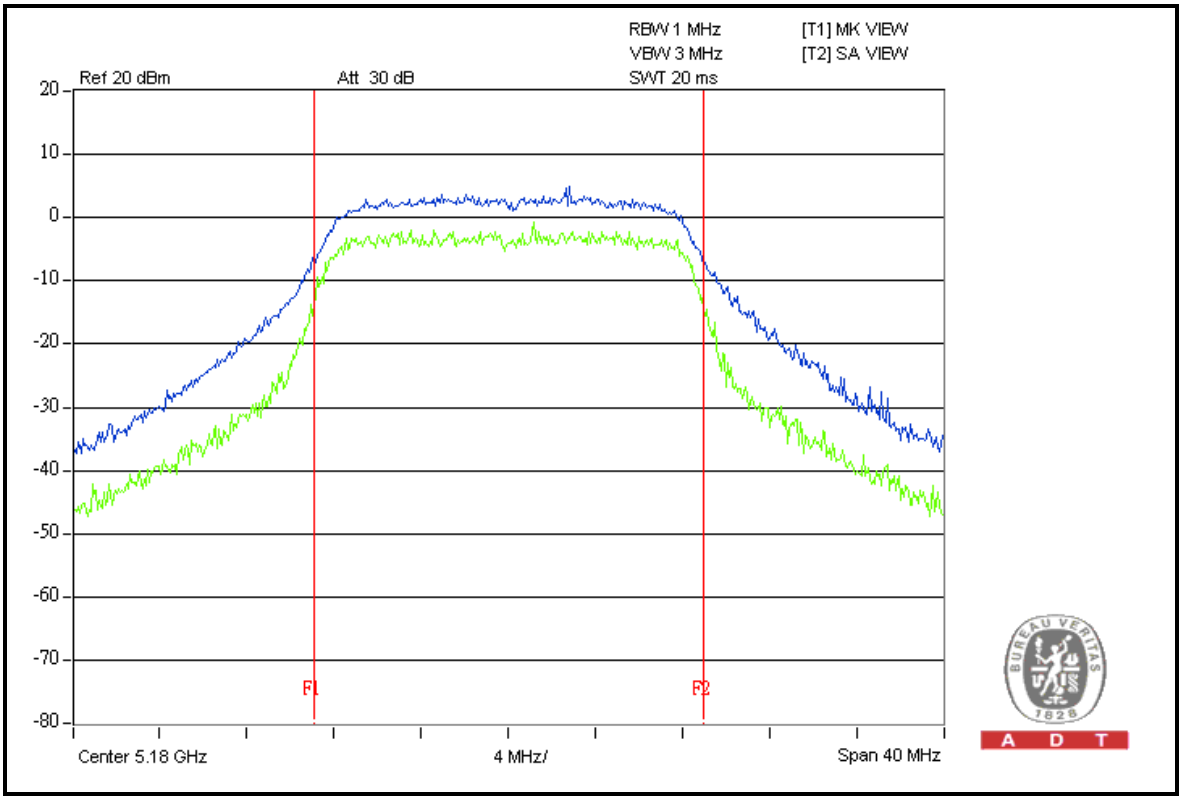

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.40 dB
5.209040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

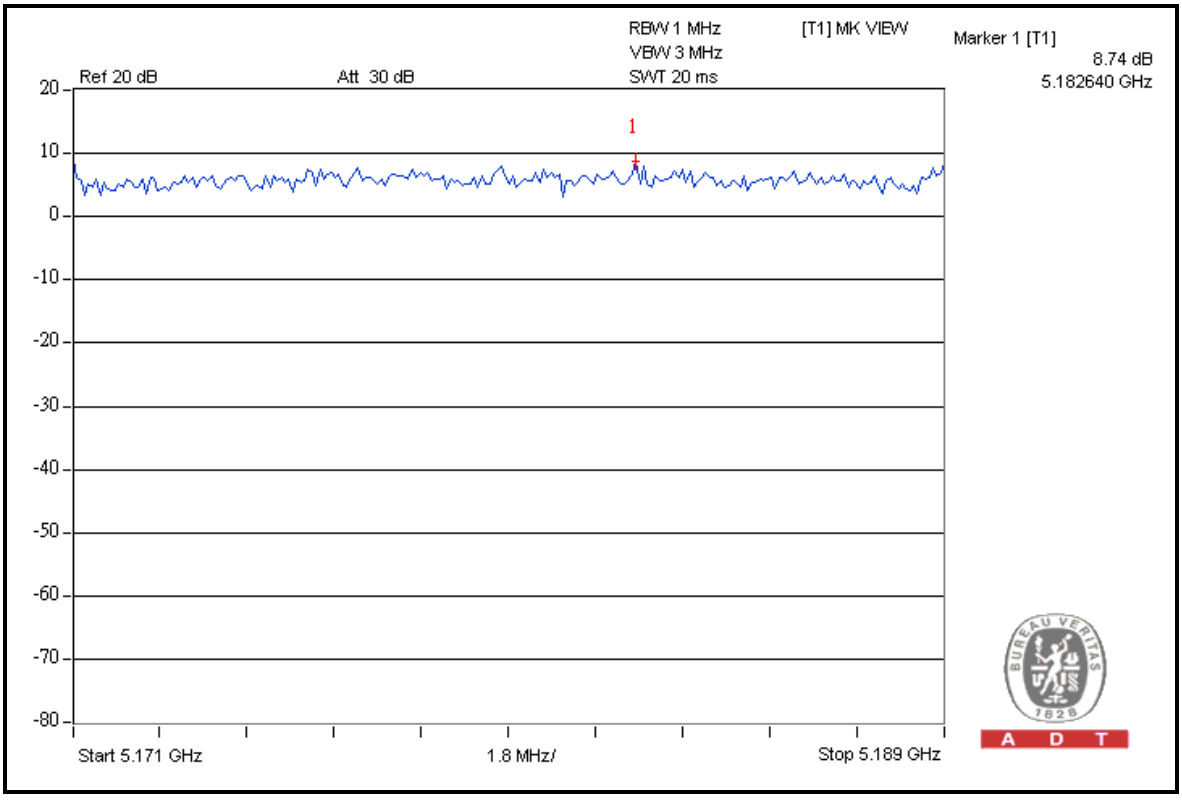
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

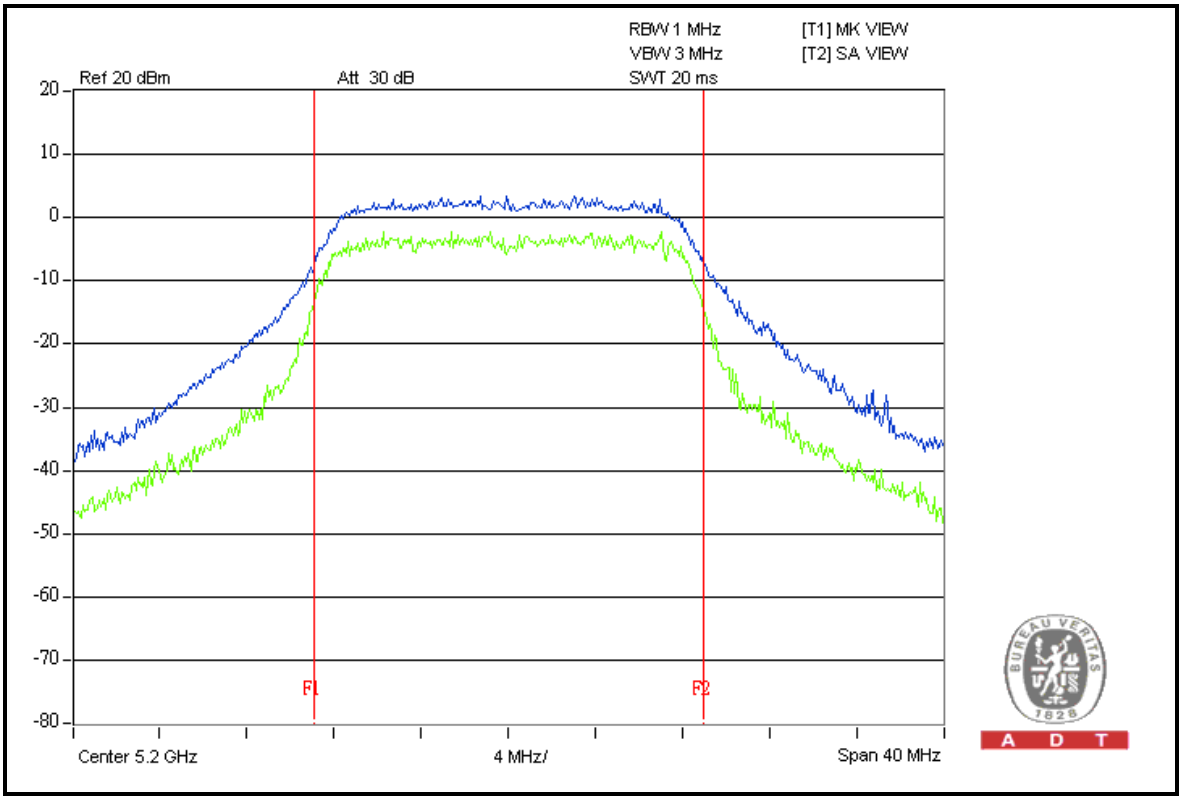

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.10 dB
5.248880 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

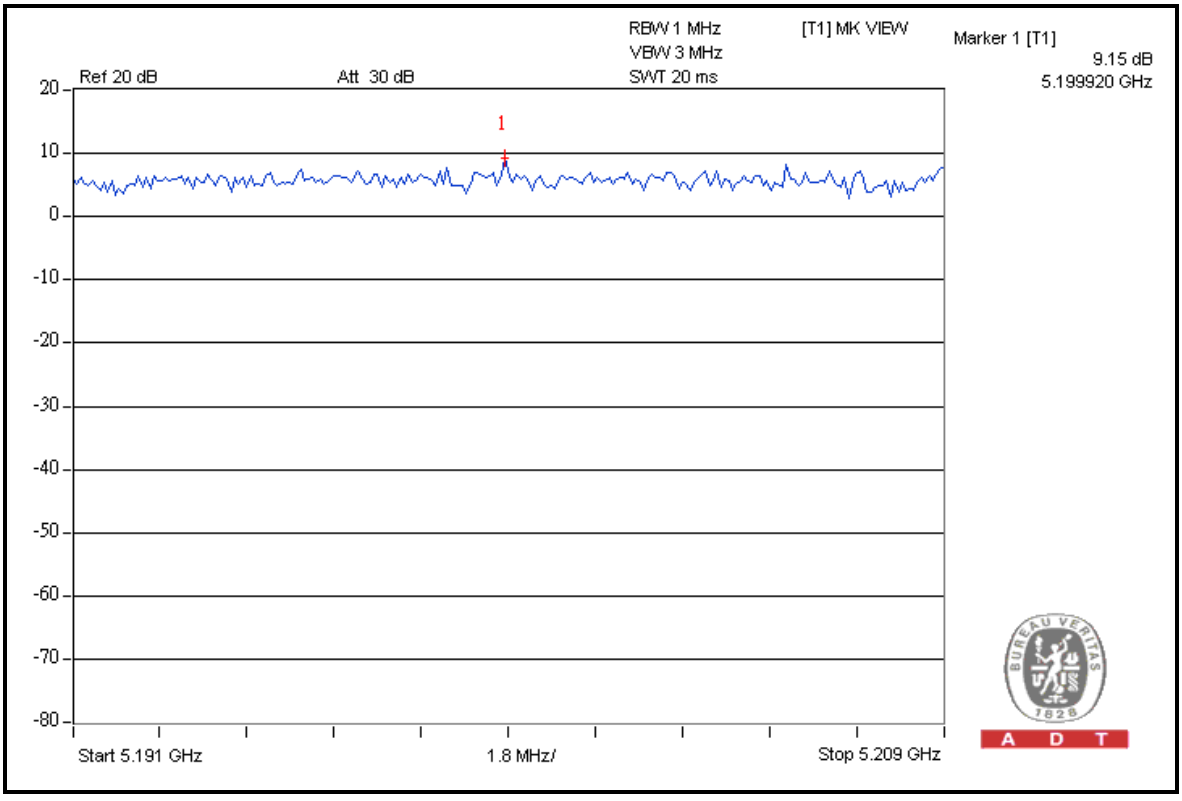
CHAIN 1 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

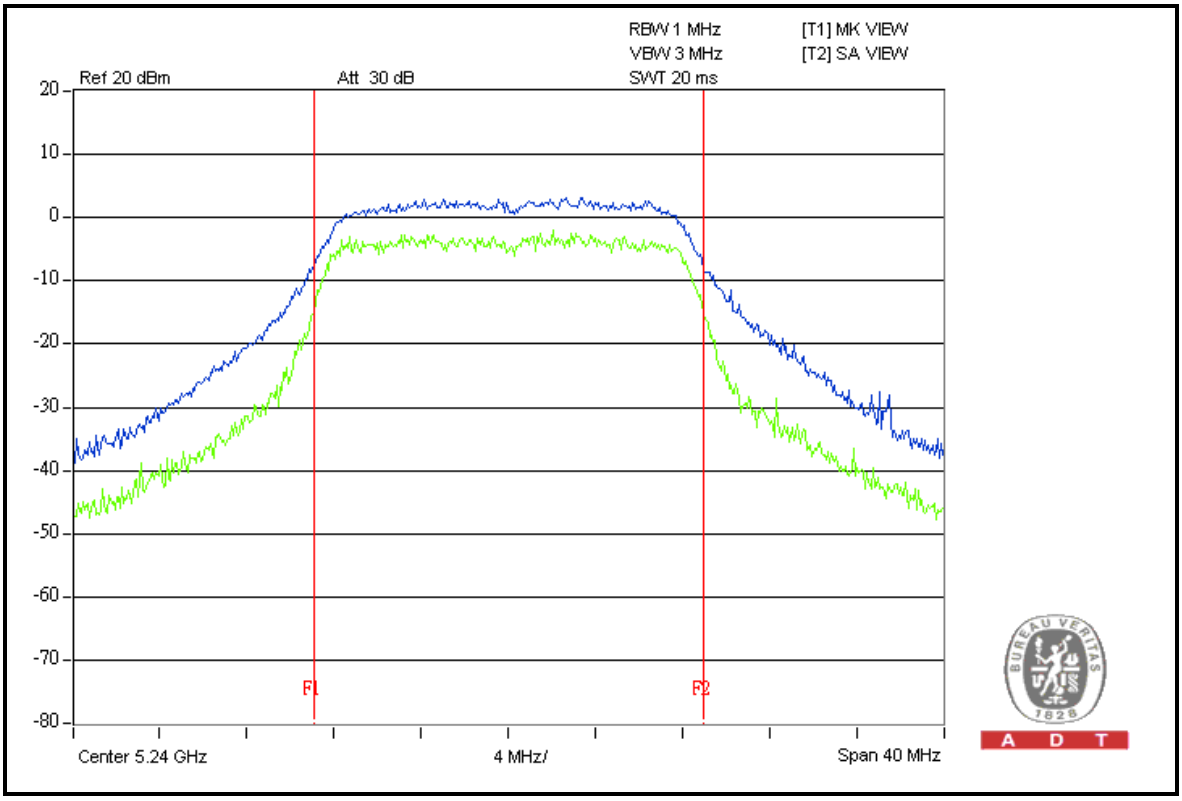

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.74 dB
5.182640 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

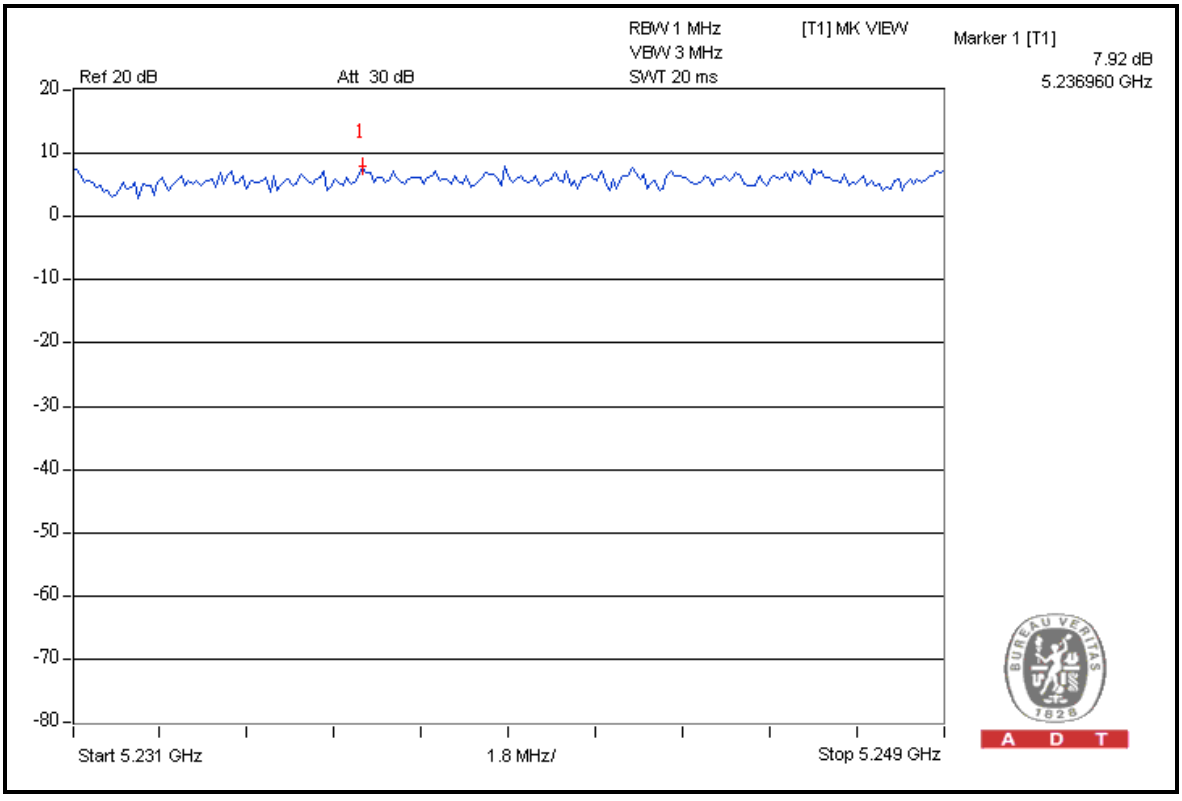
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.15 dB
5.199920 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

CH 48

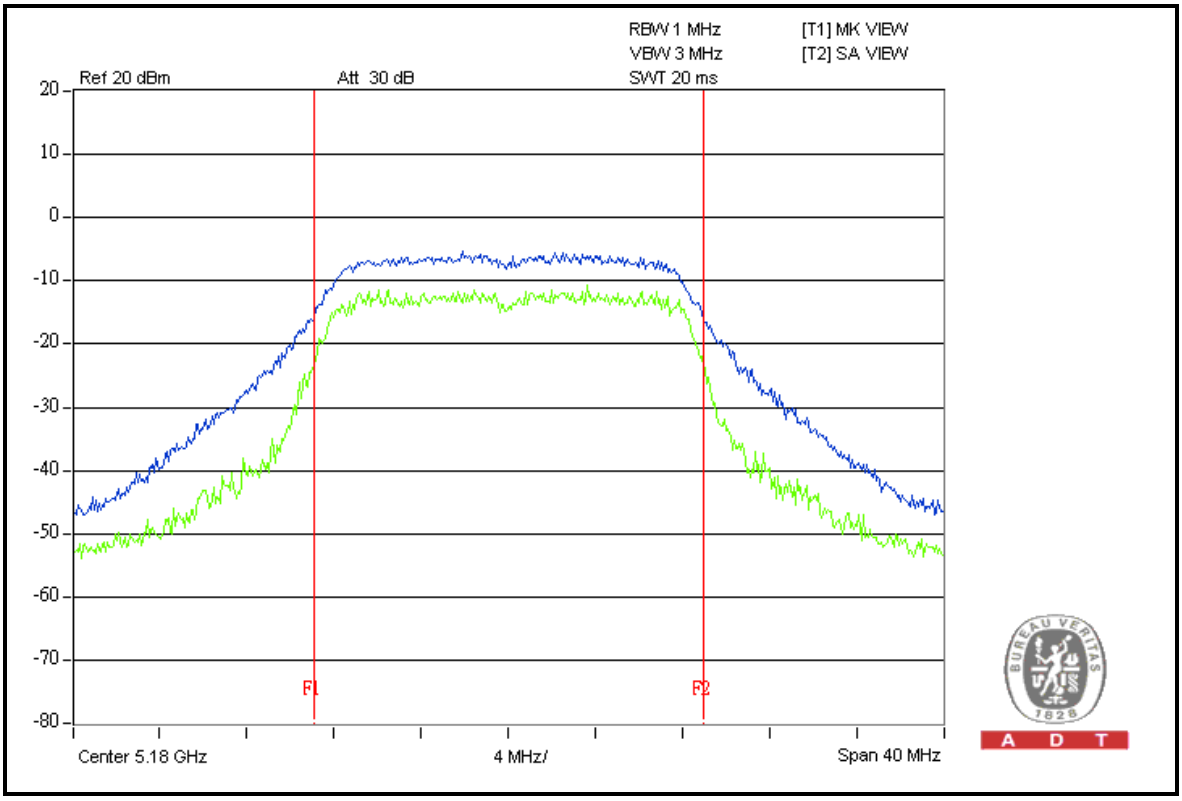

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

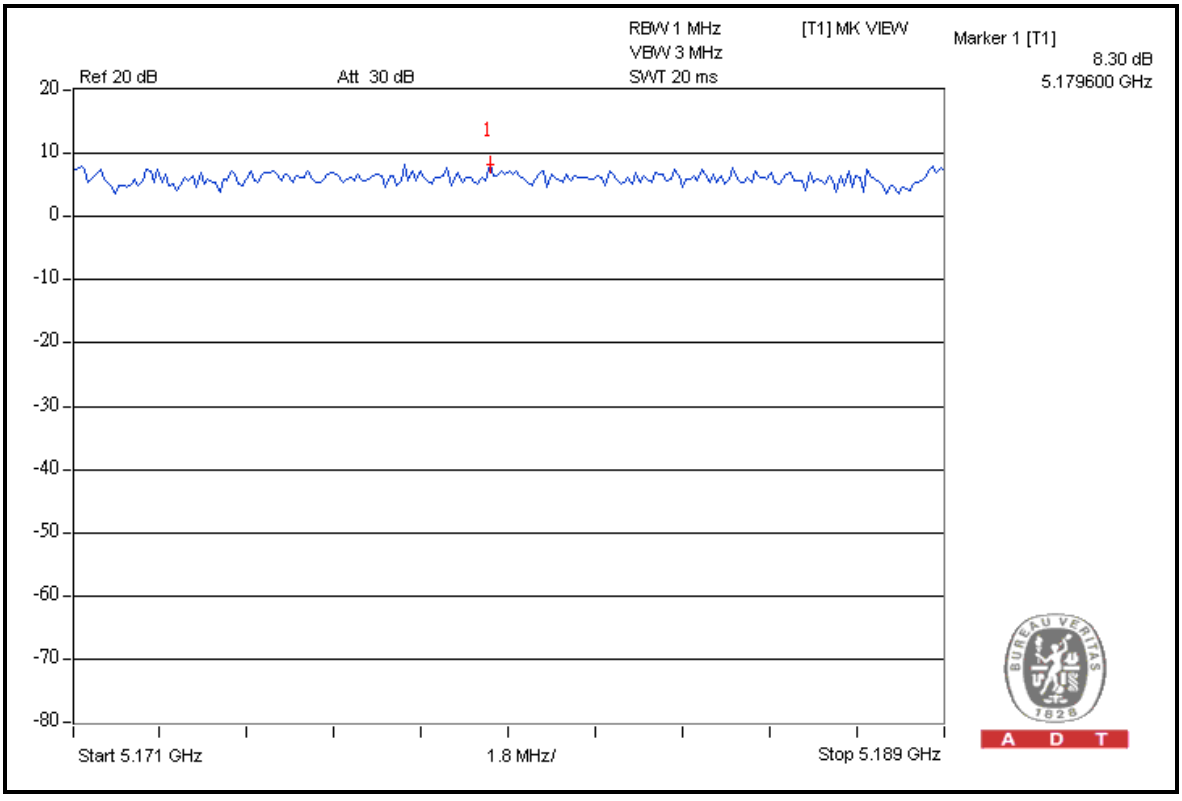

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
7.92 dB
5.236960 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

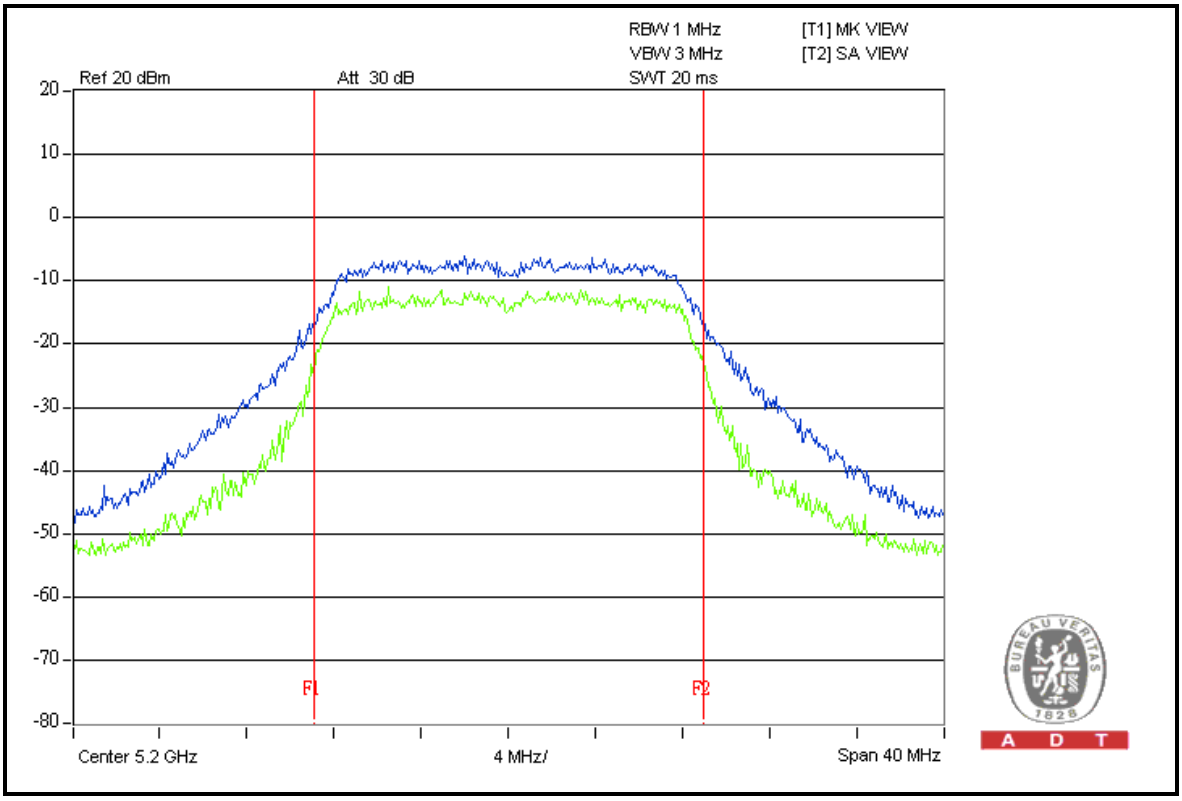
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	8.30	8.15	13	PASS
40	5200	7.70	8.85	13	PASS
48	5240	9.78	8.36	13	PASS

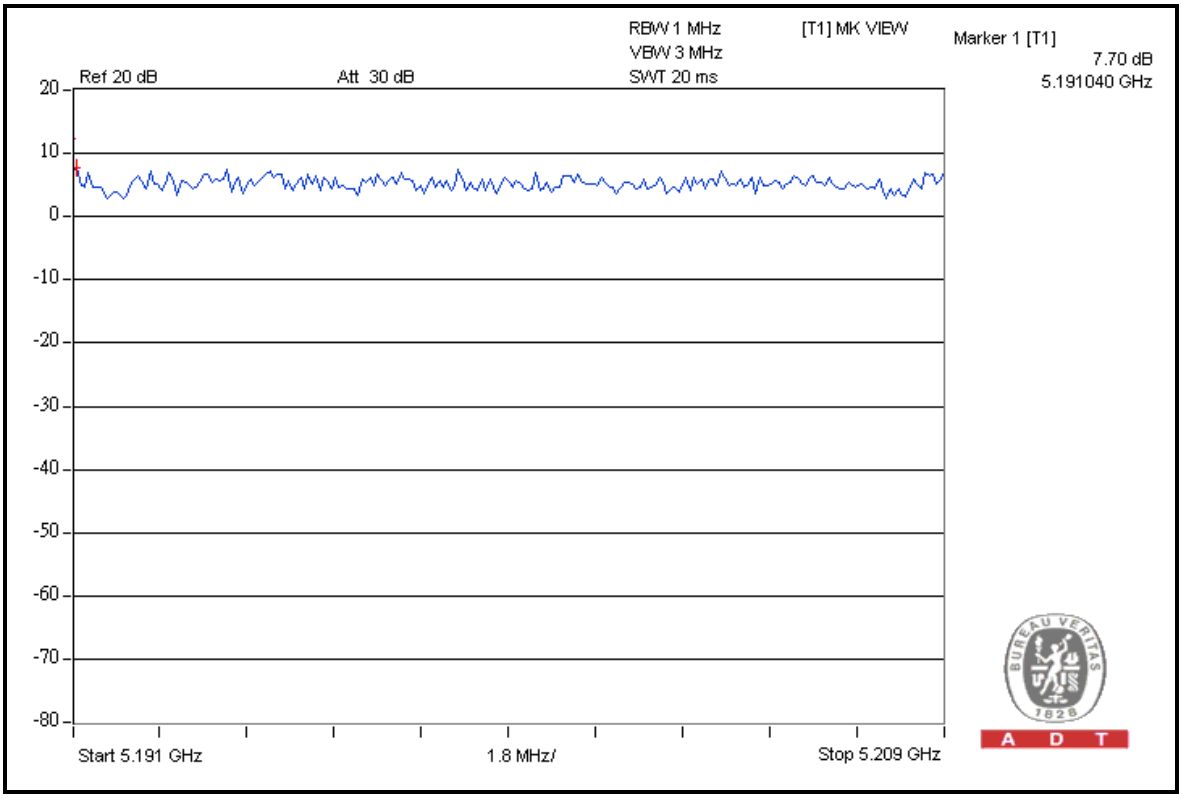
CHAIN 0 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

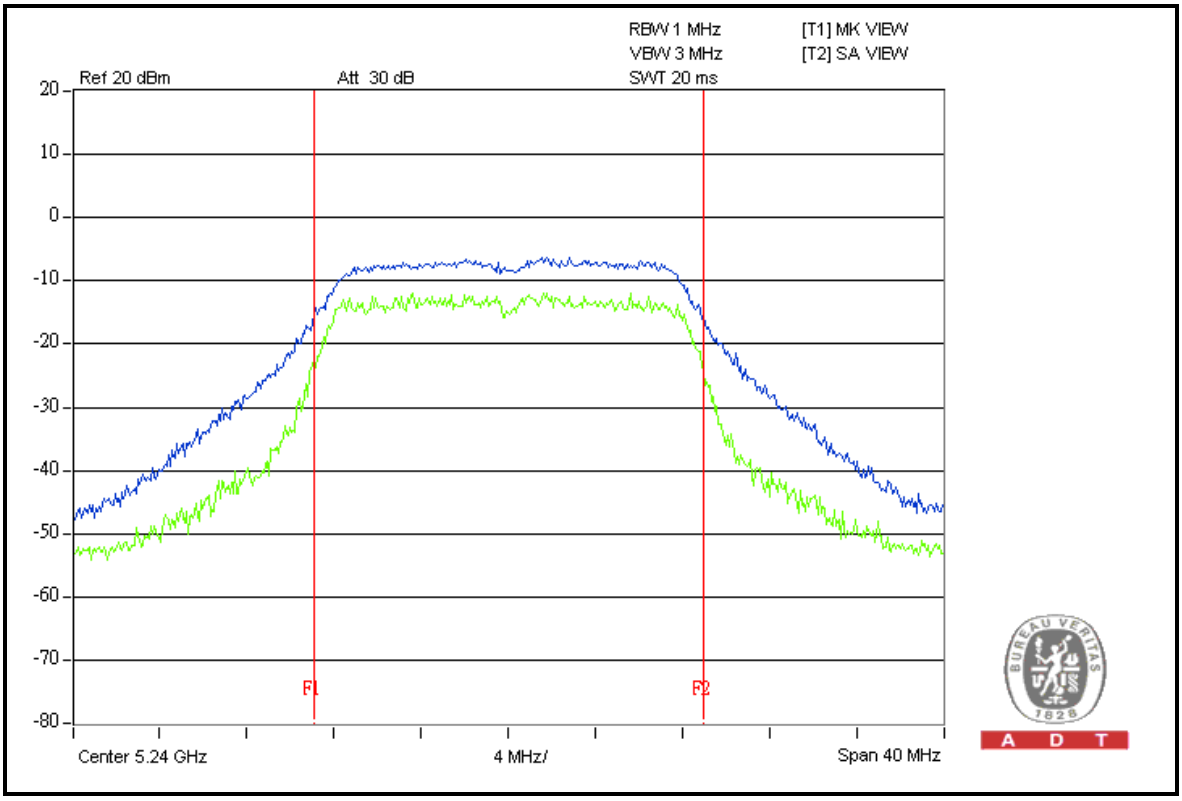

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.30 dB
5.179600 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

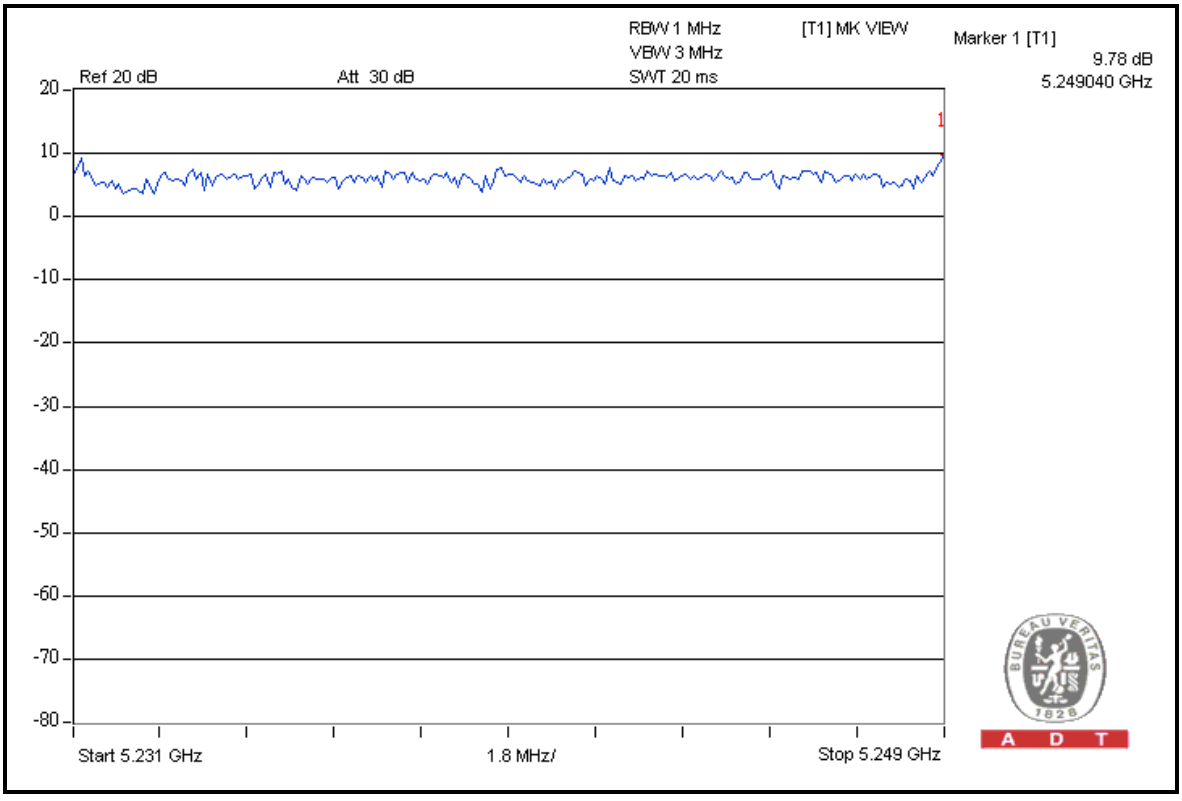
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

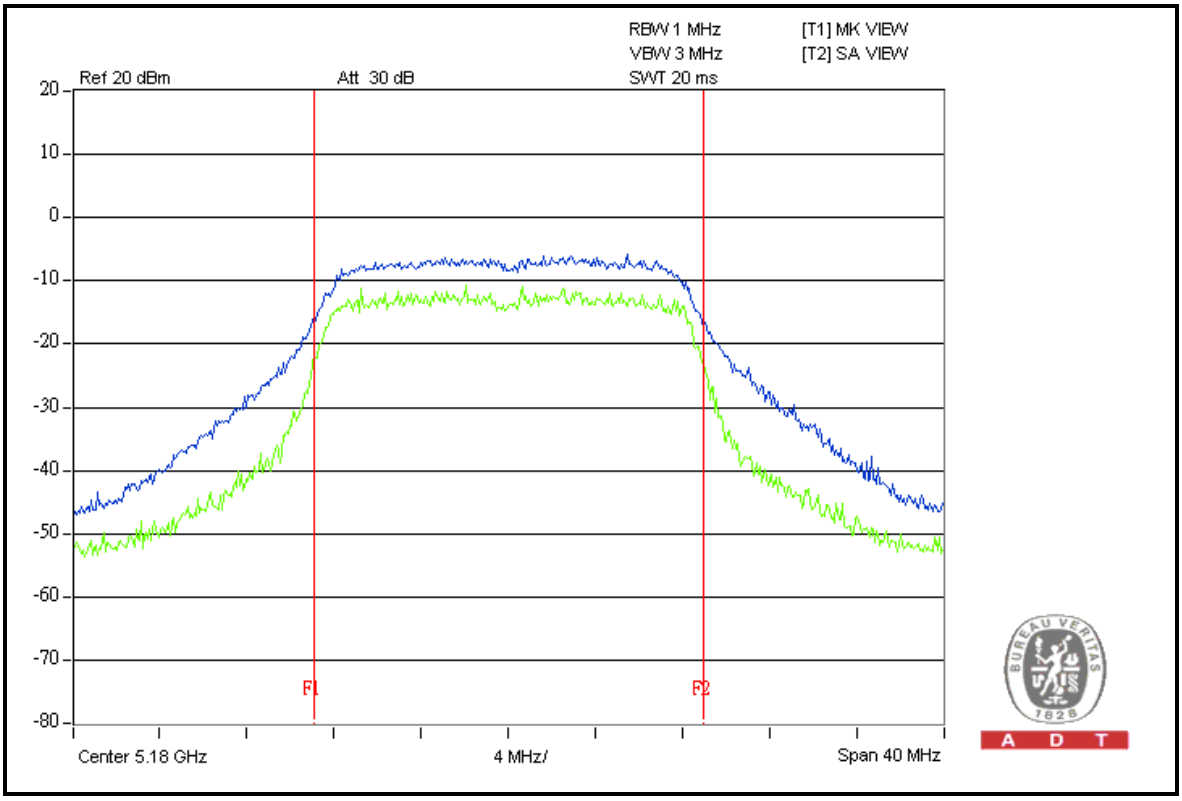

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
7.70 dB
5.191040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

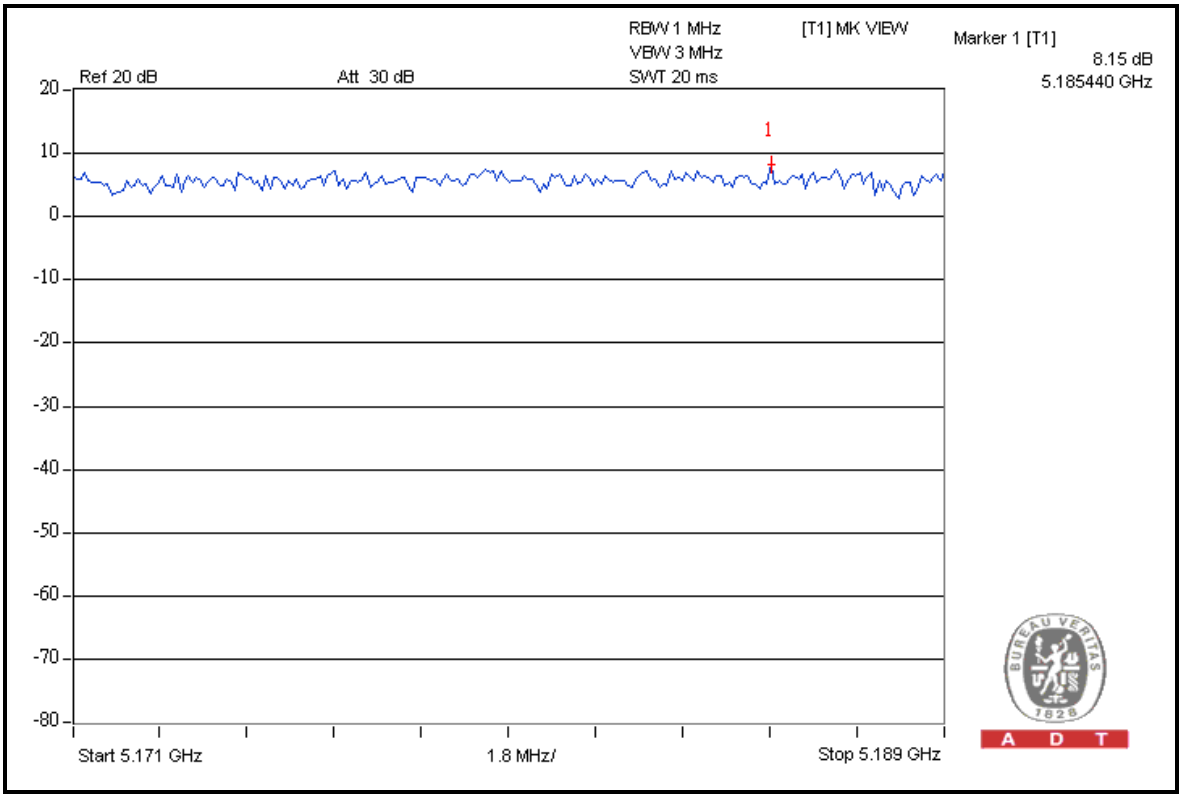
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

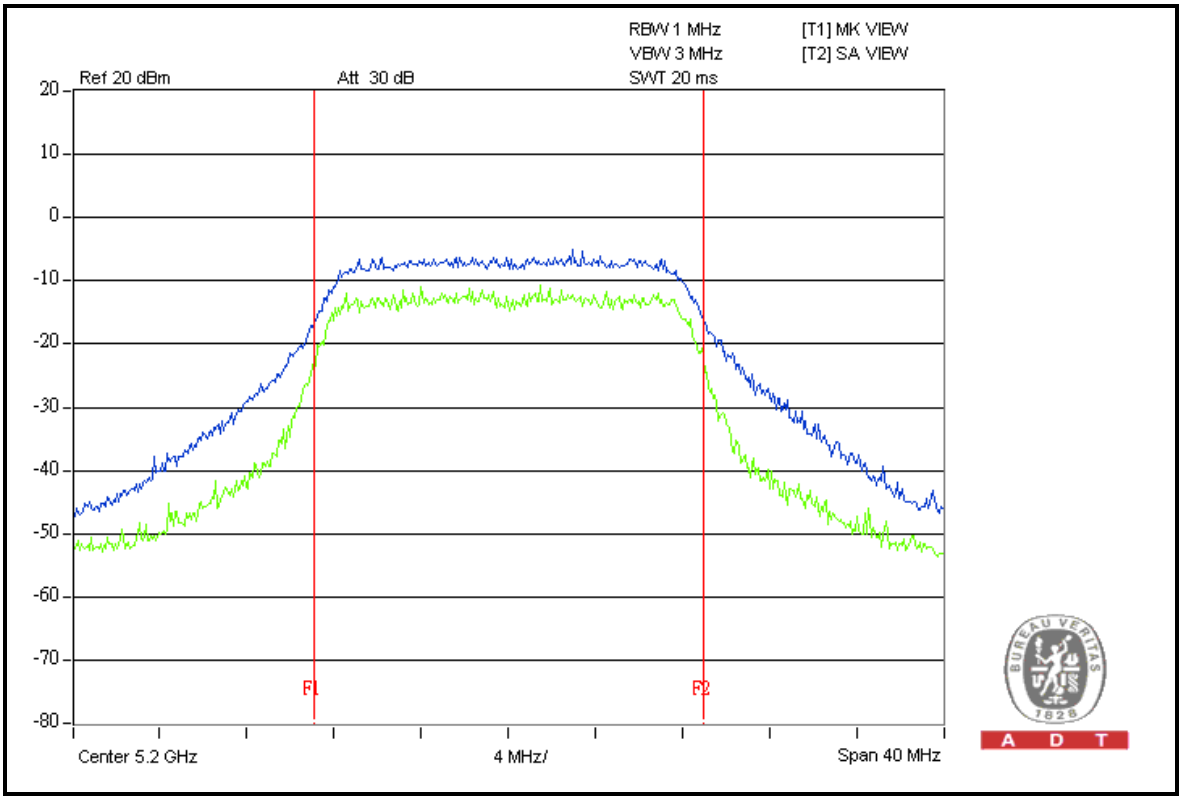

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.78 dB
5.249040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

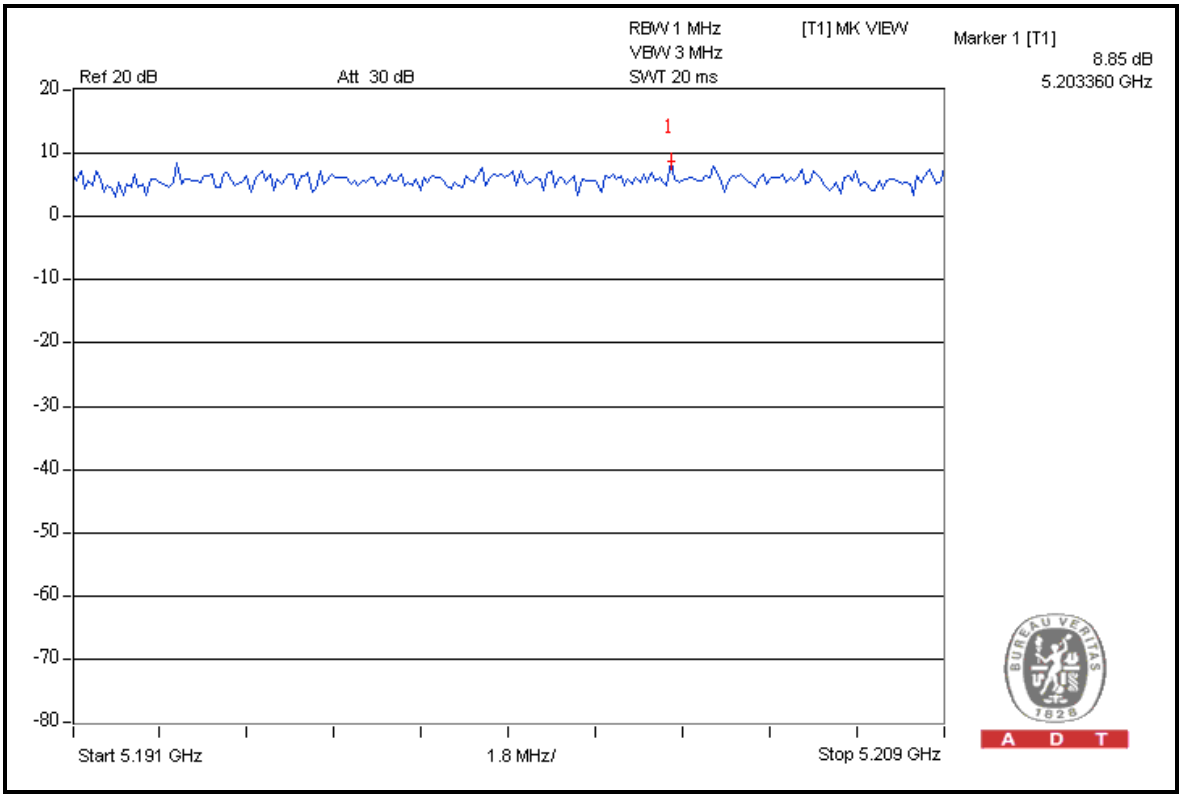
CHAIN 1 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

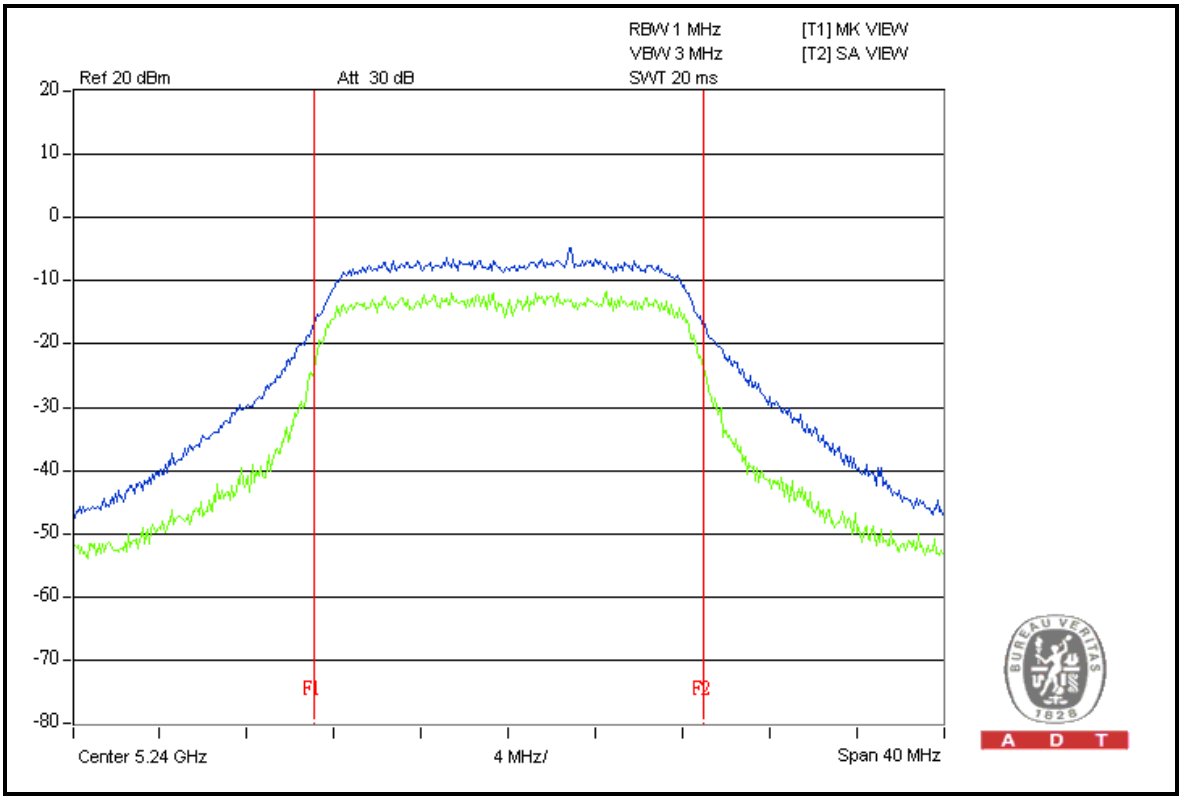

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.15 dB
5.185440 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

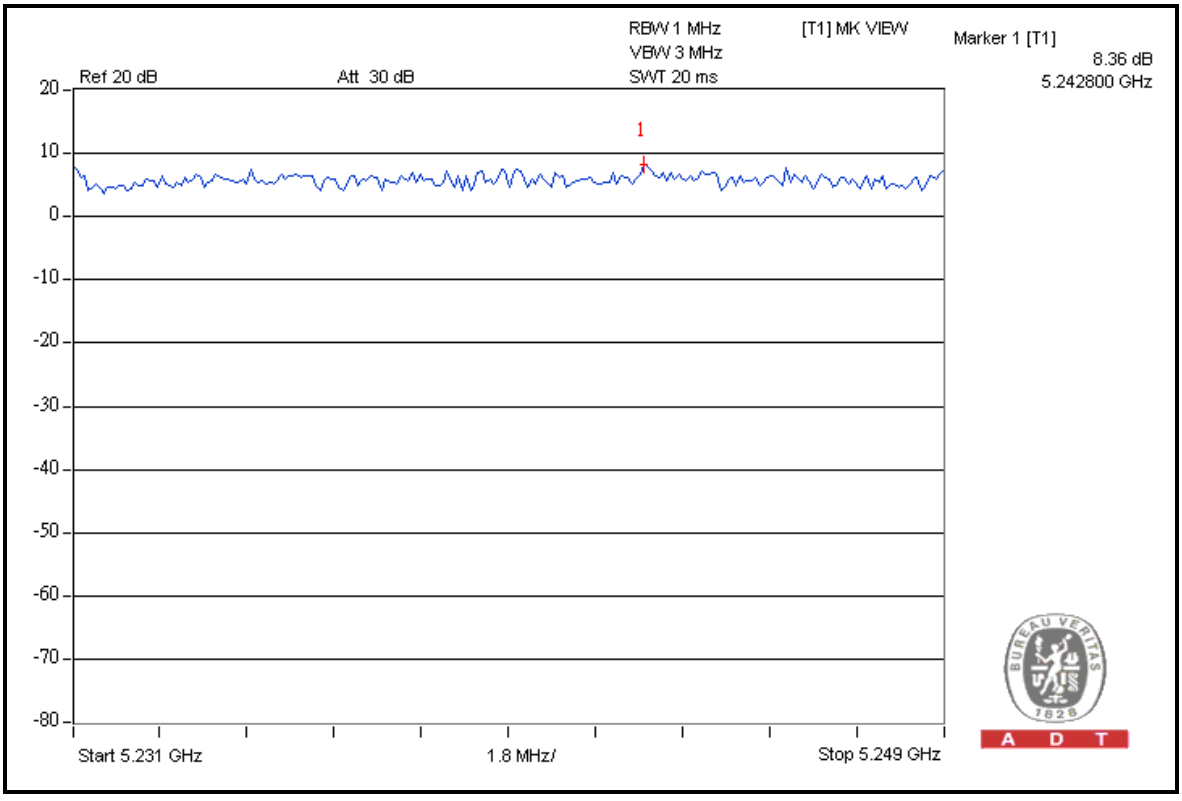
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.85 dB
5.203360 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

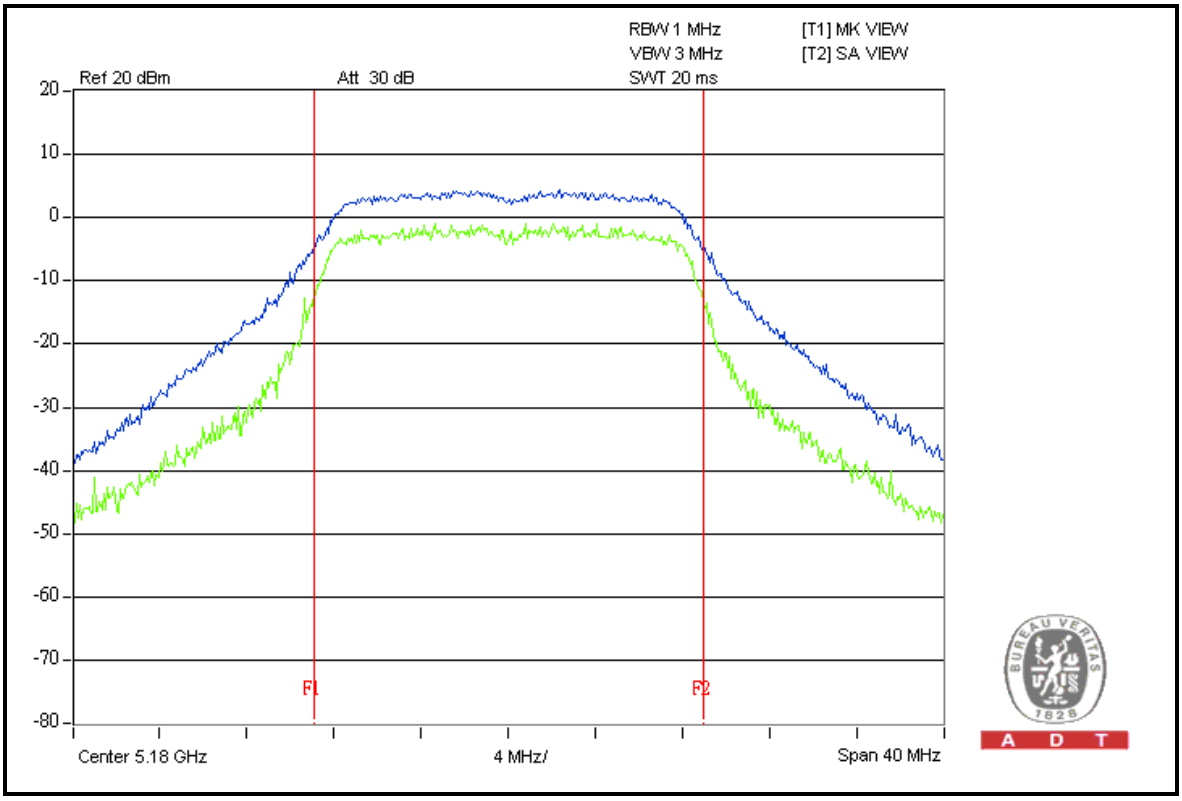

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.36 dB
5.242800 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

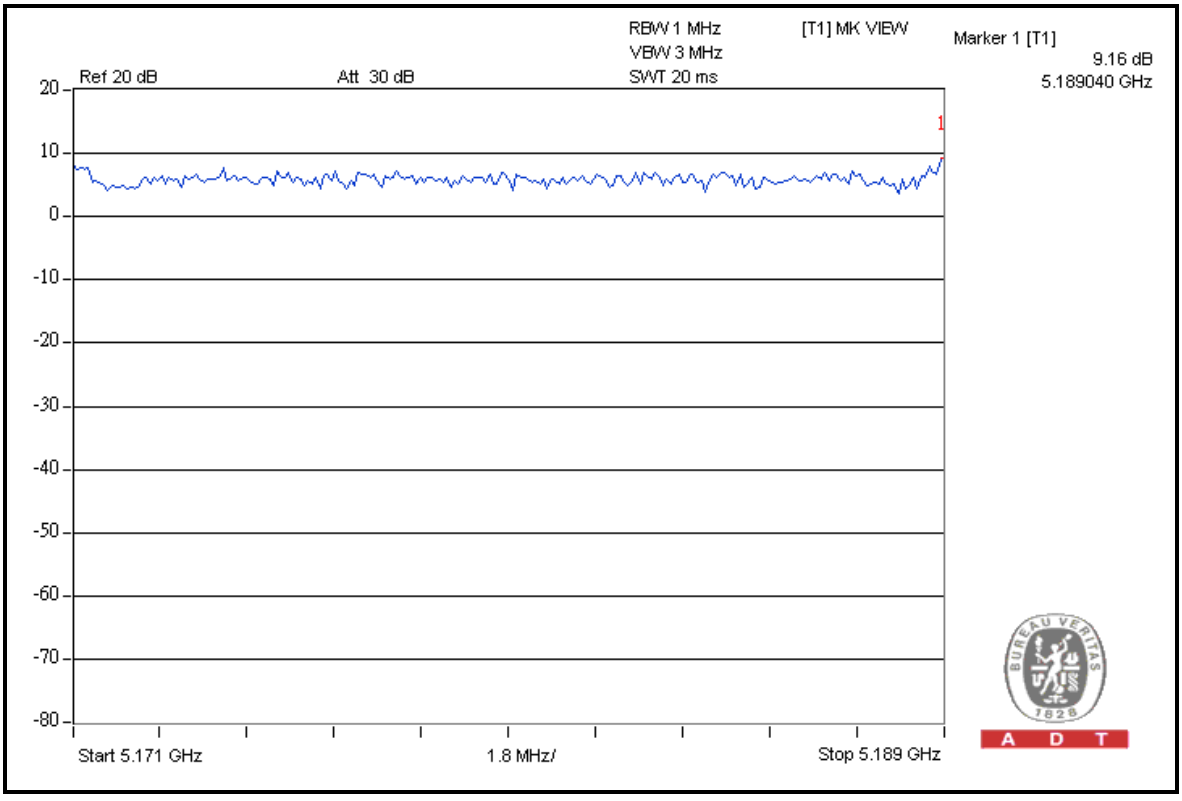
DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

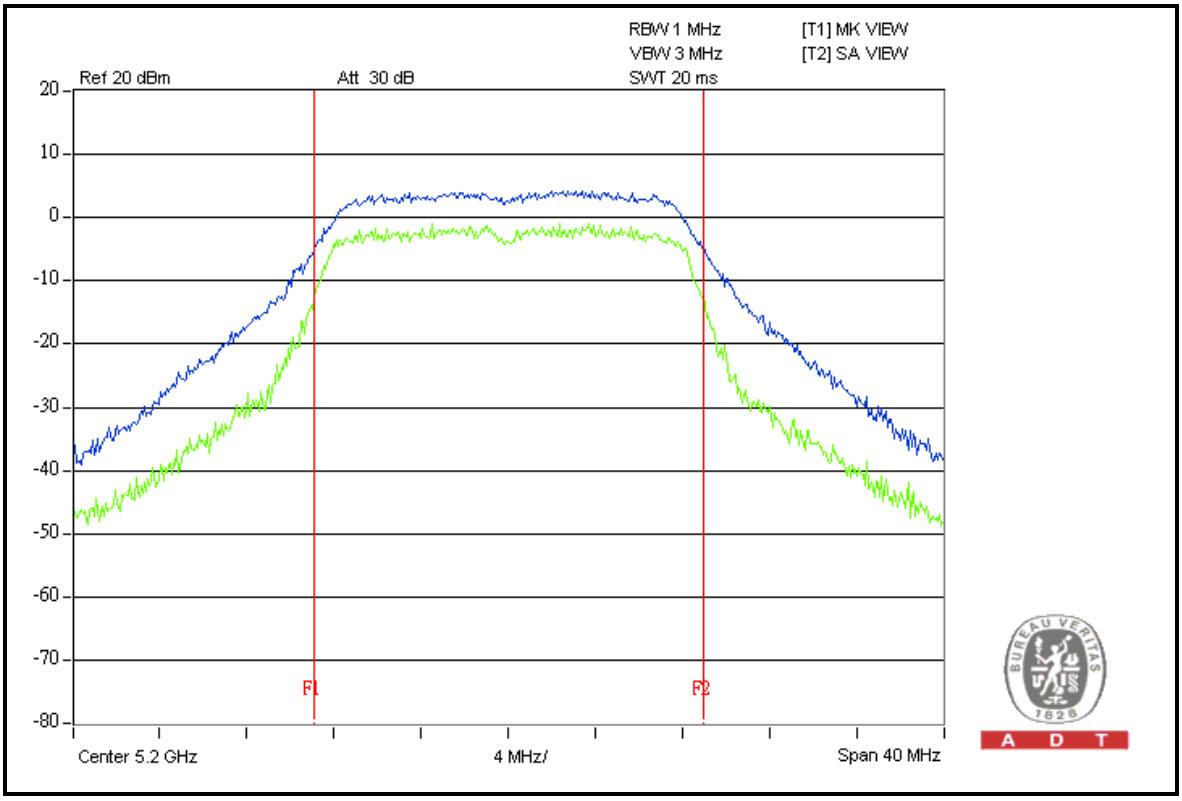
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	9.16	8.18	13	PASS
40	5200	8.33	8.40	13	PASS
48	5240	9.35	7.97	13	PASS

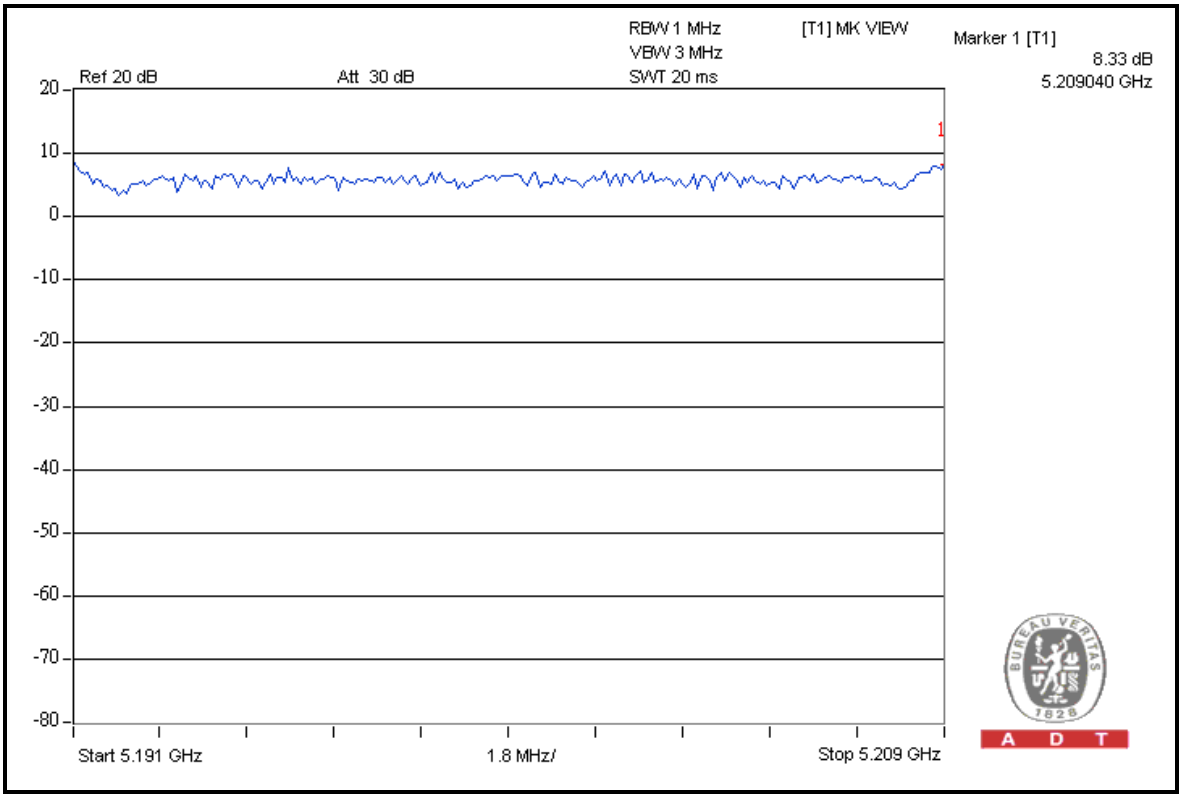
CHAIN 0 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

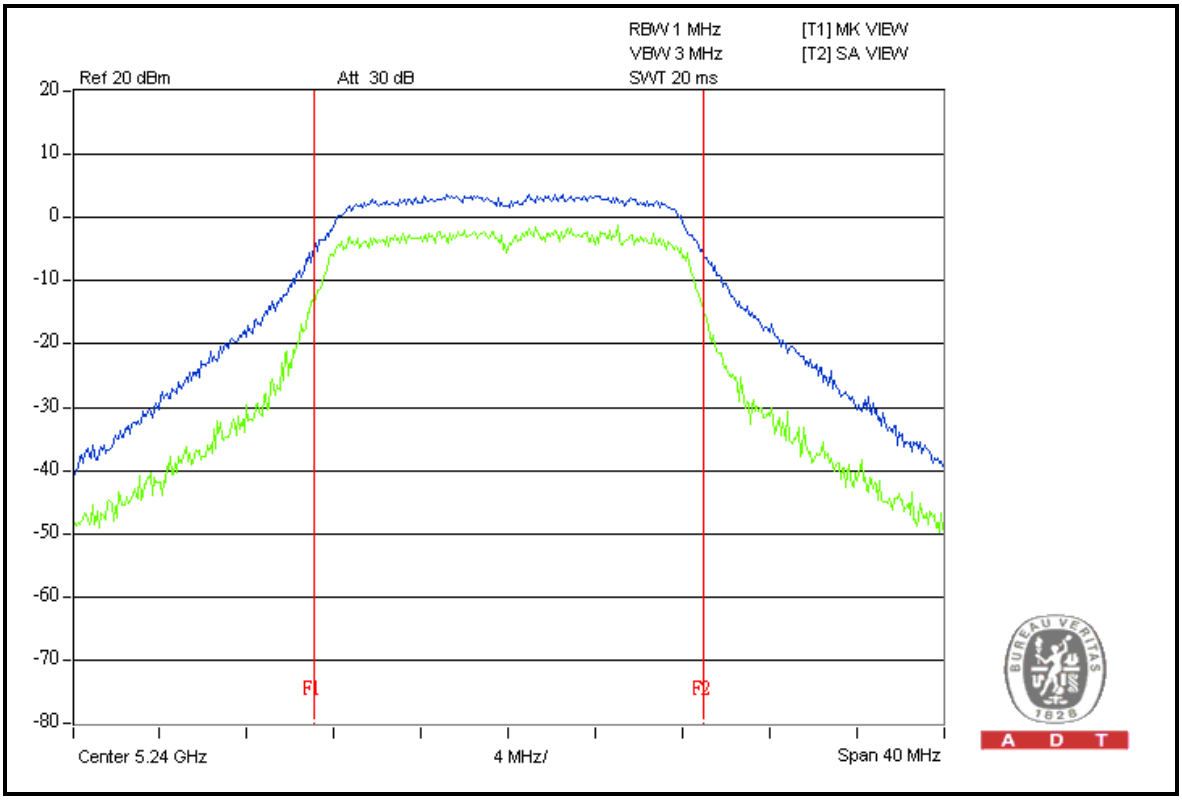

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.16 dB
5.189040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

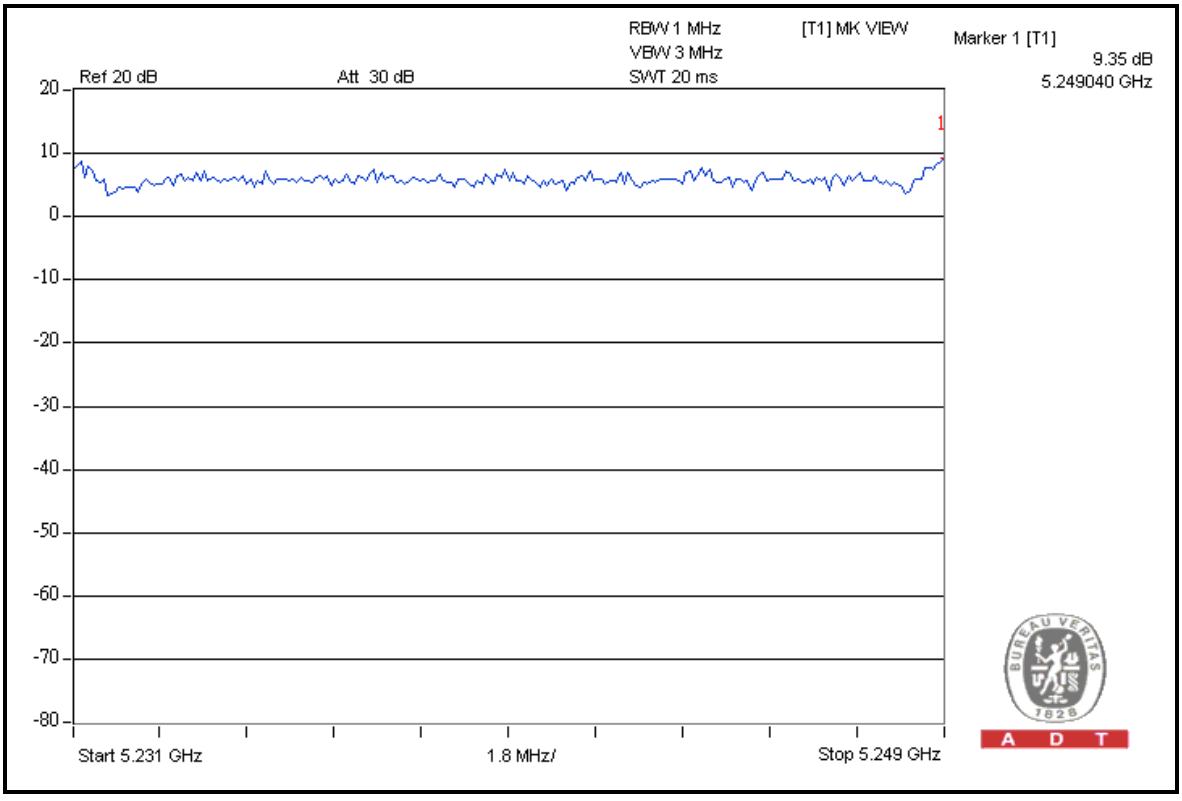
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

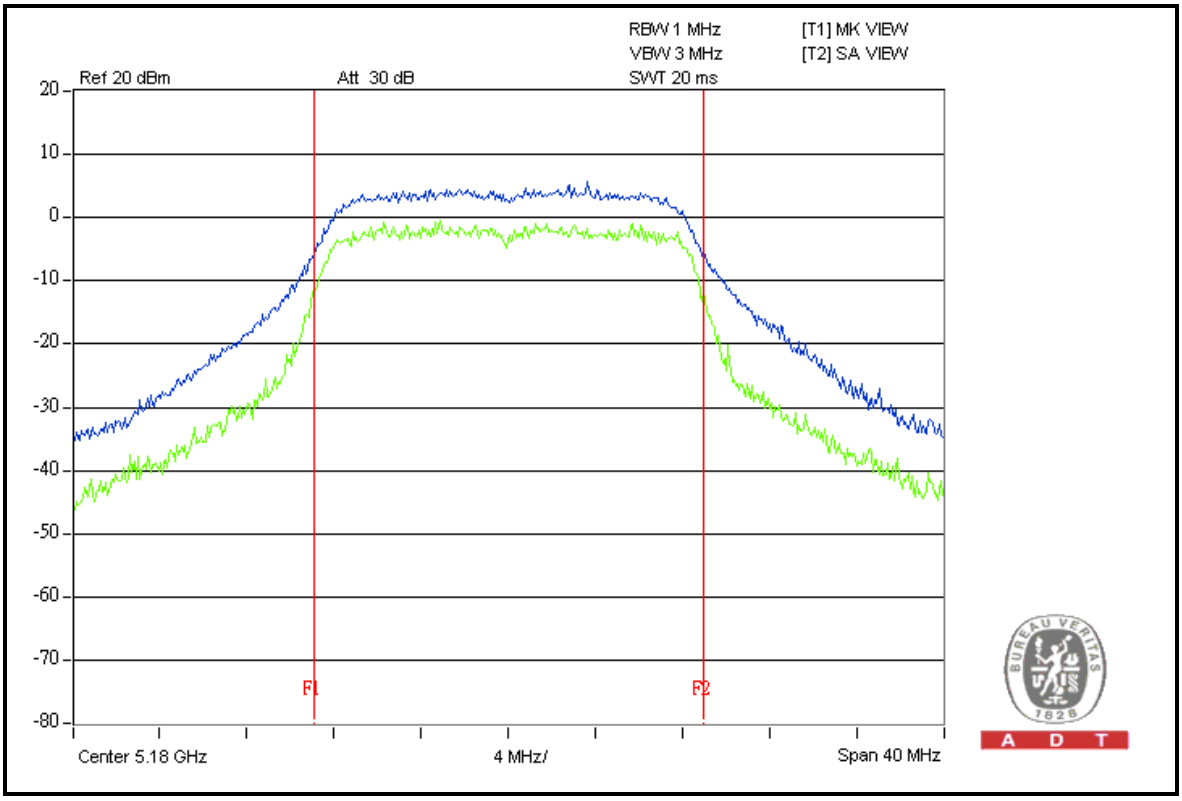

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.33 dB
5.209040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

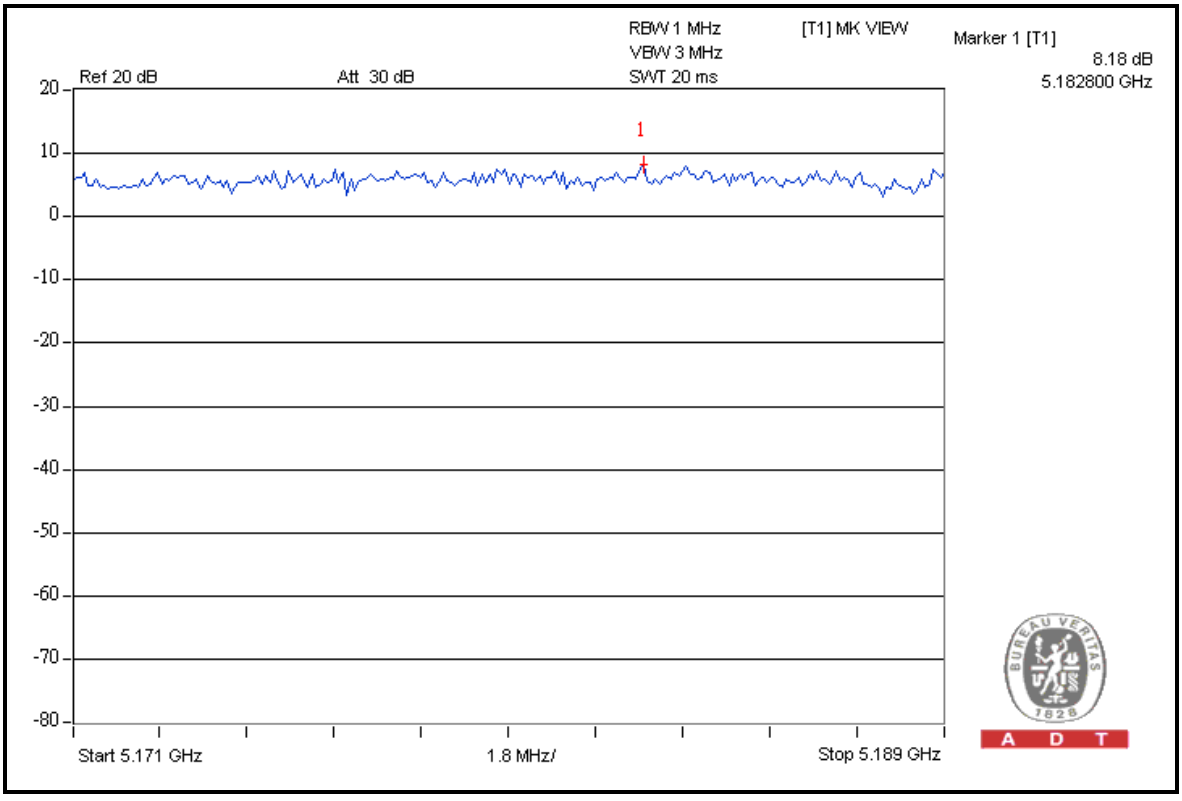
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

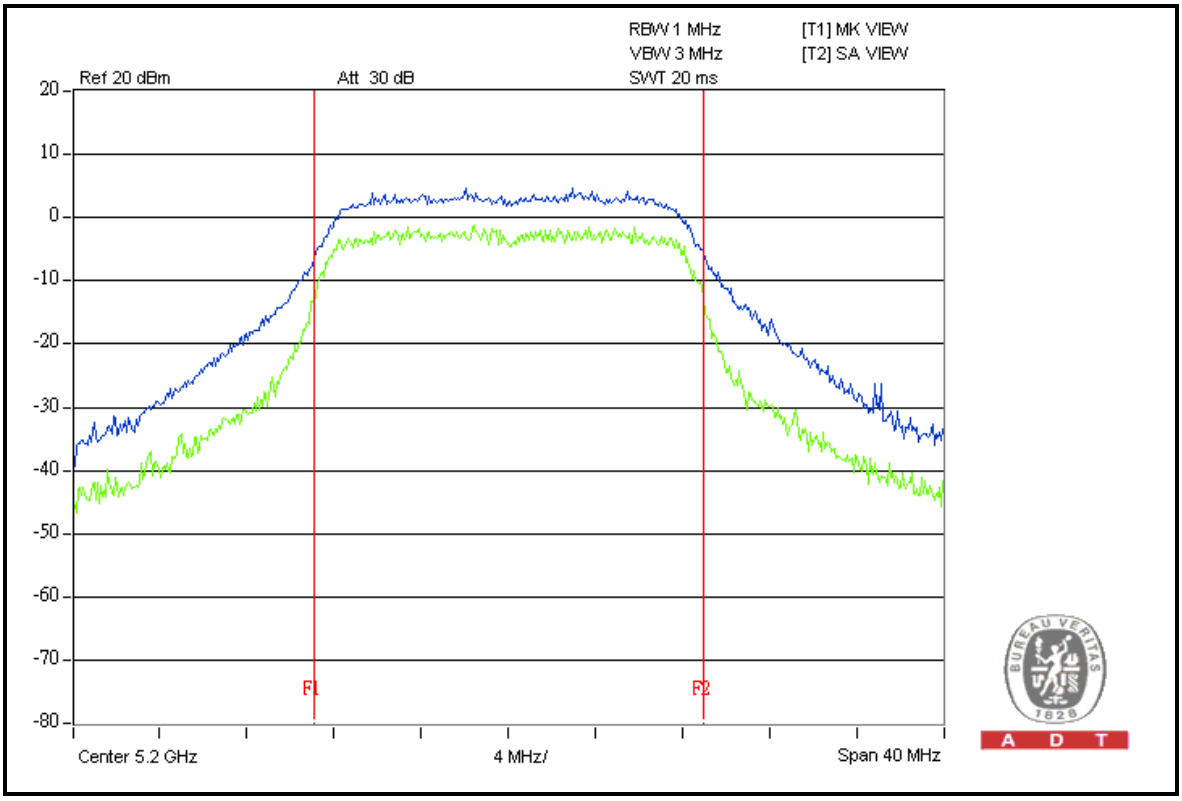

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.35 dB
5.249040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

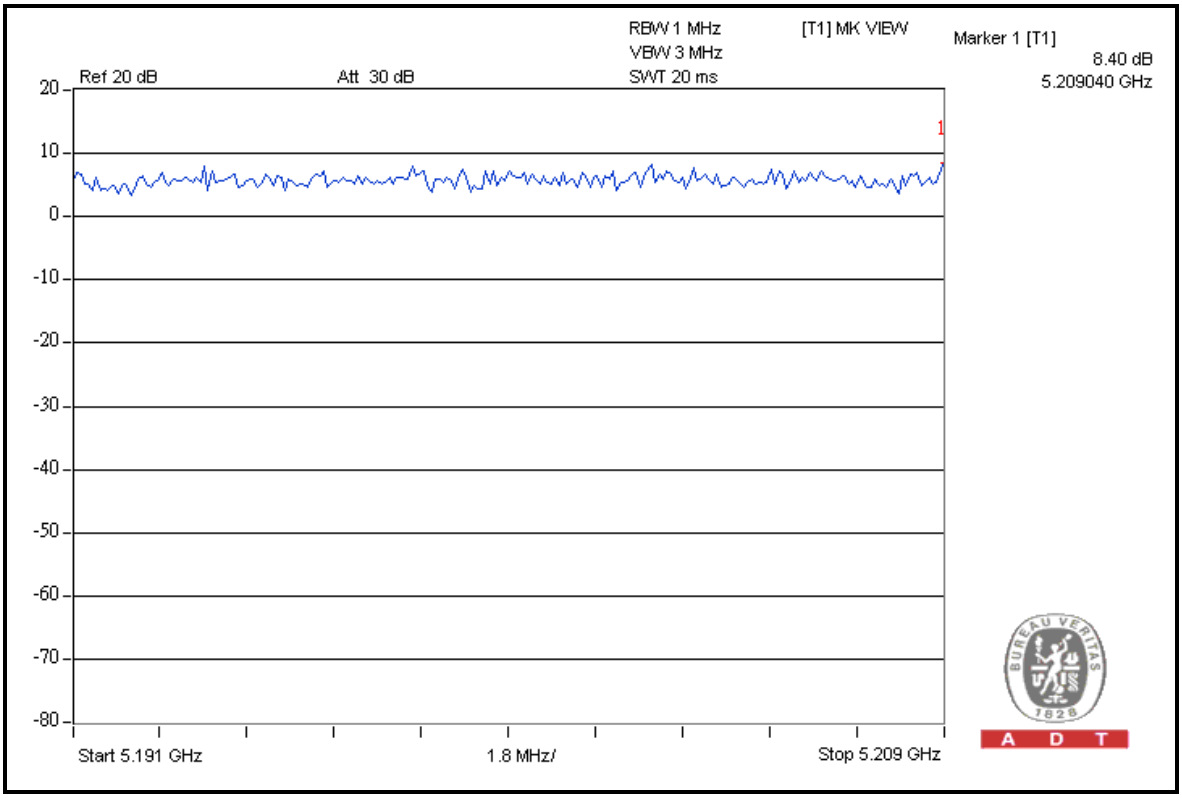
CHAIN 1 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

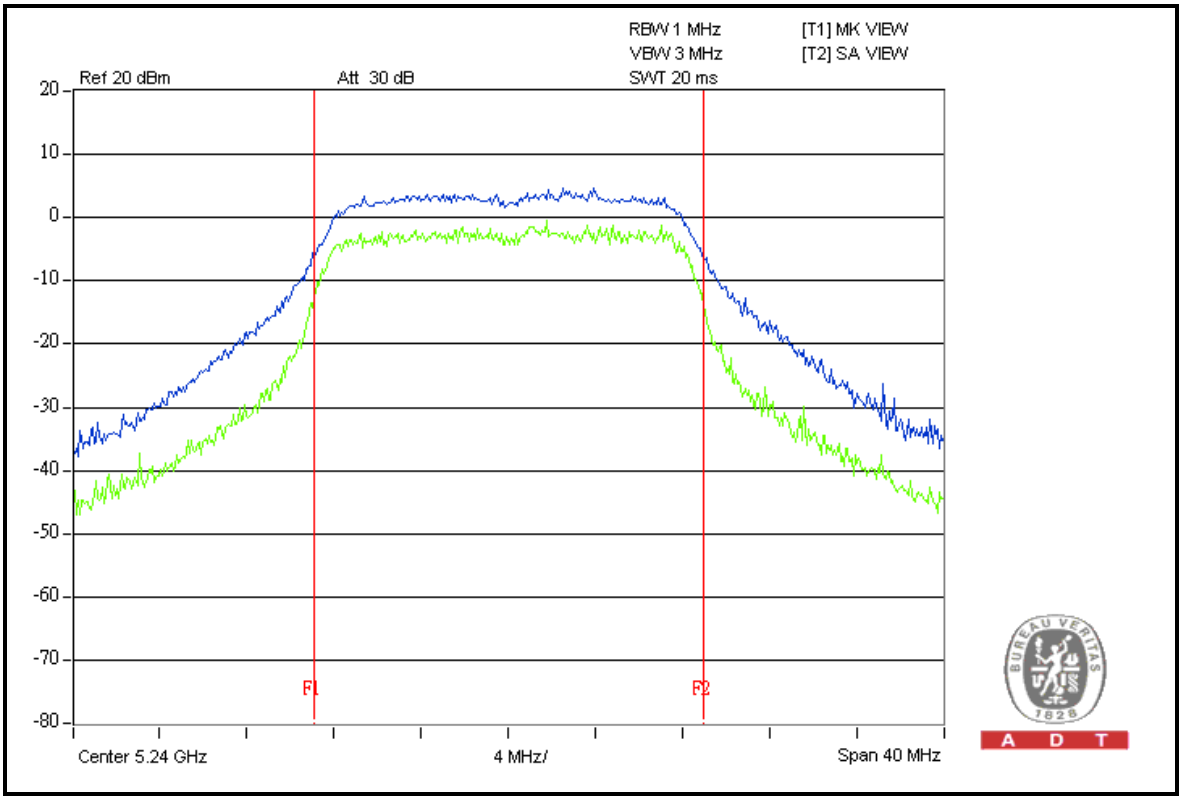

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.18 dB
5.182800 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

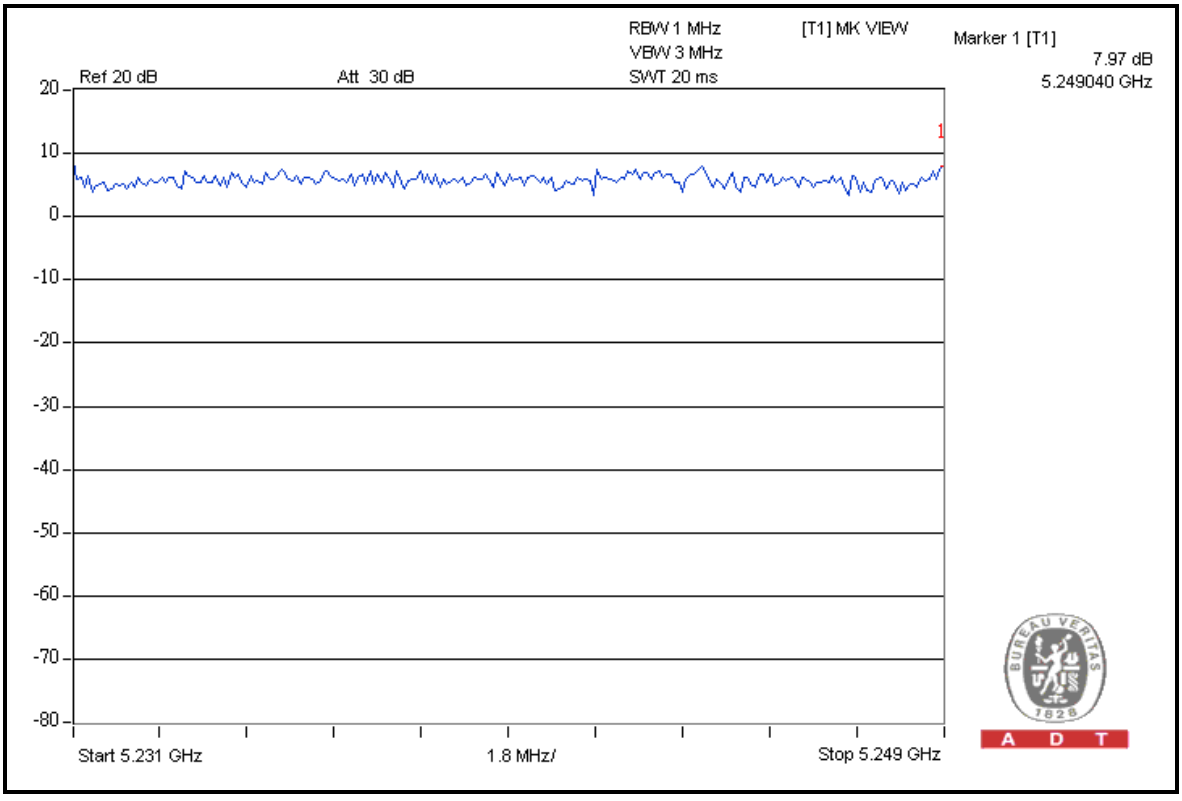
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.40 dB
5.209040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

CH 48

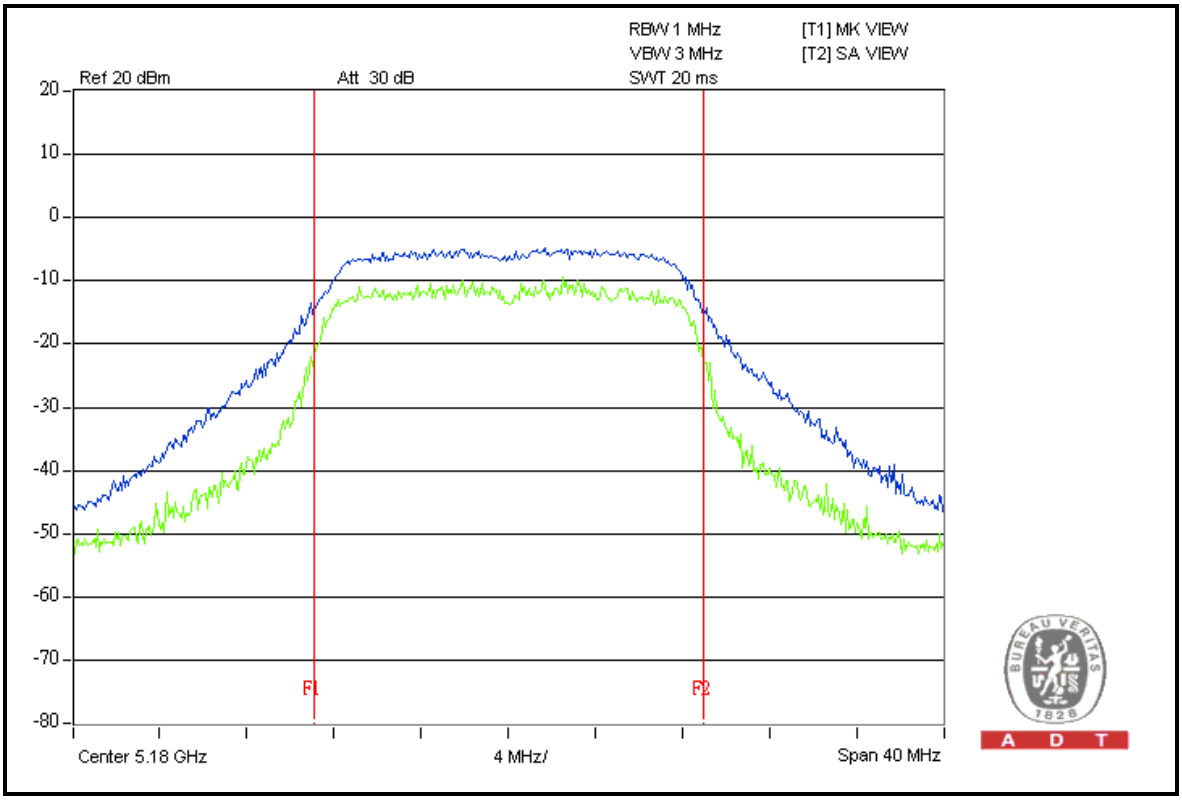

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

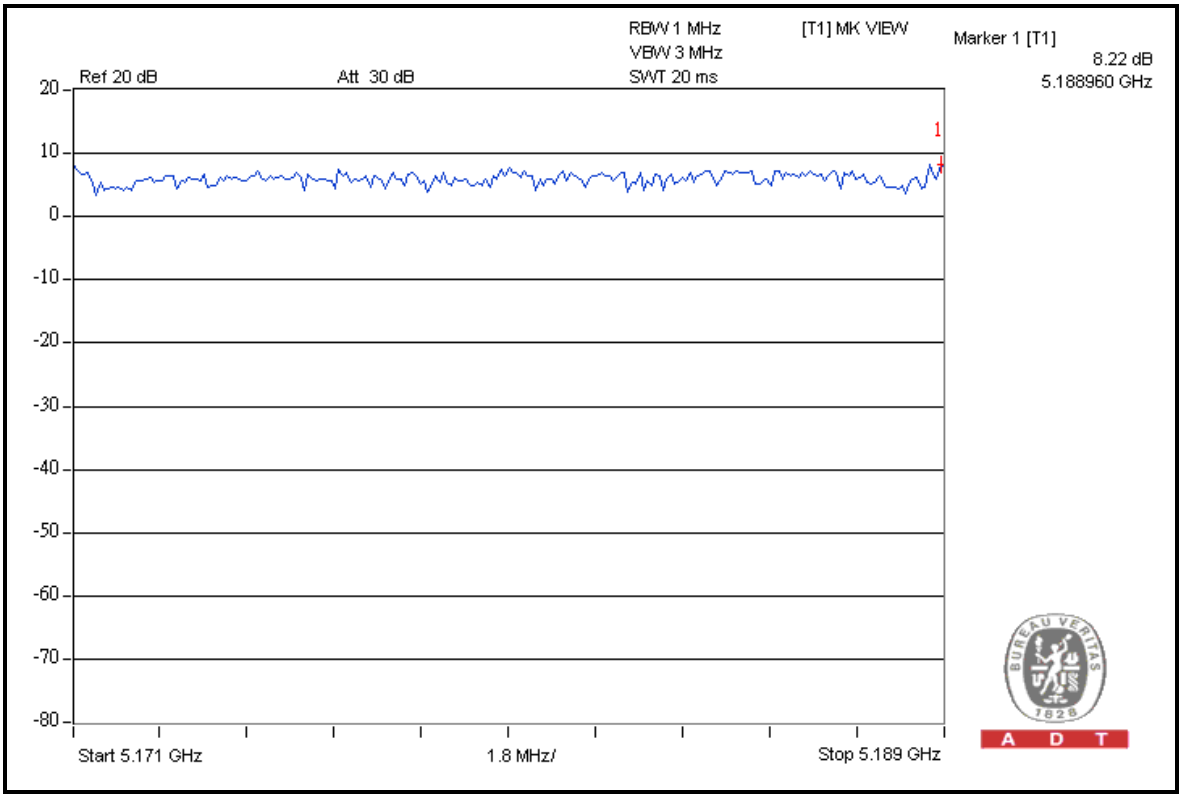

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
7.97 dB
5.249040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

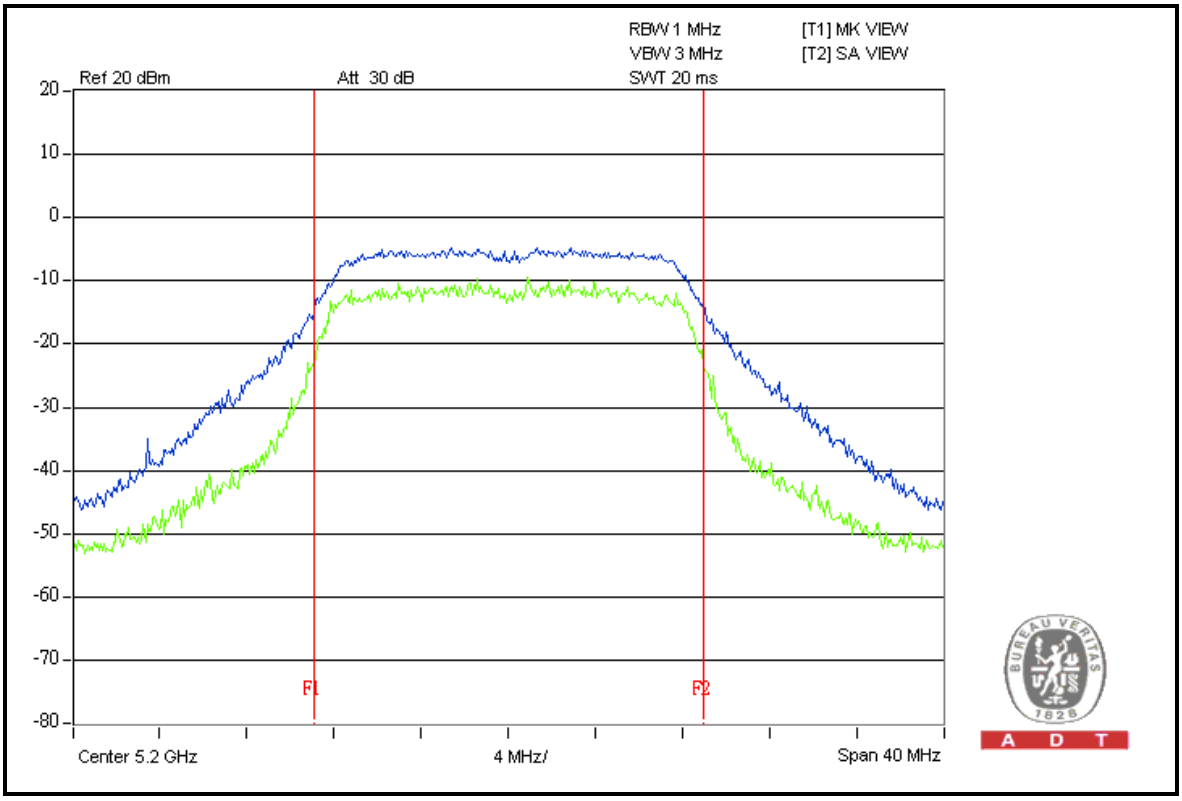
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK TO AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
36	5180	8.22	7.85	13	PASS
40	5200	9.98	8.45	13	PASS
48	5240	8.79	8.01	13	PASS

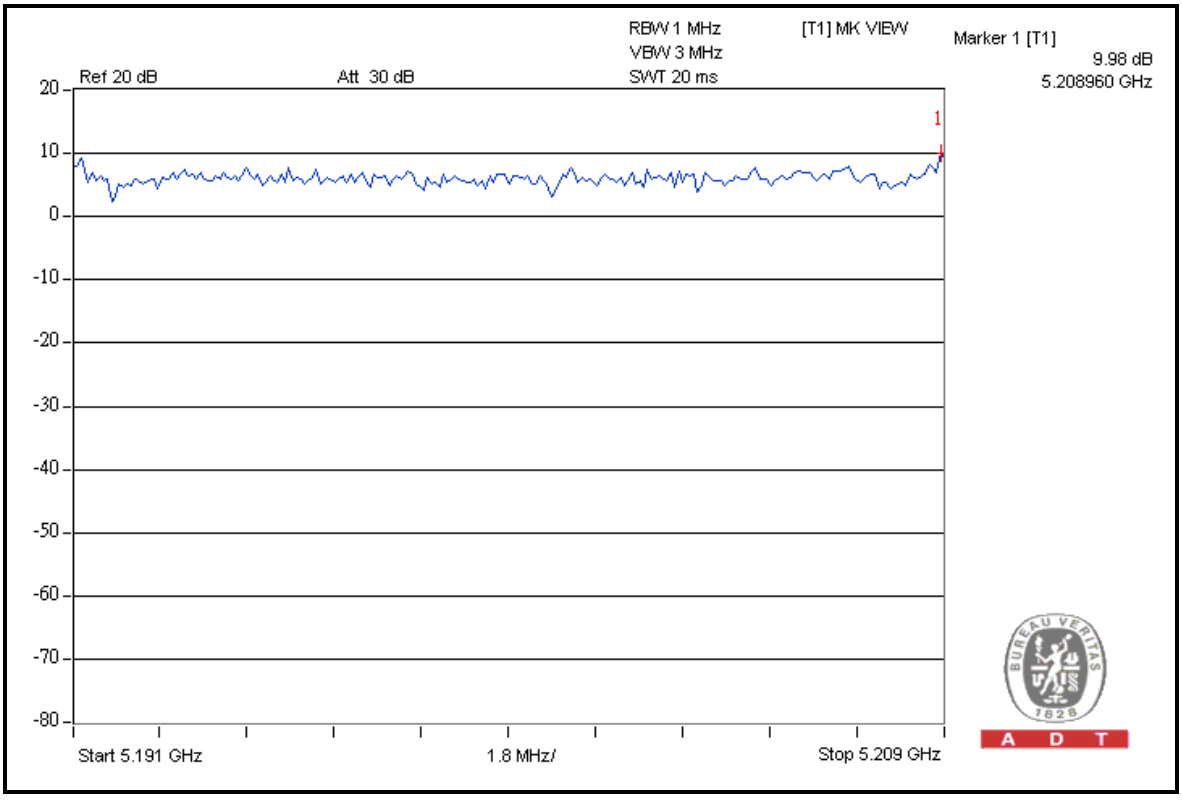
CHAIN 0 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

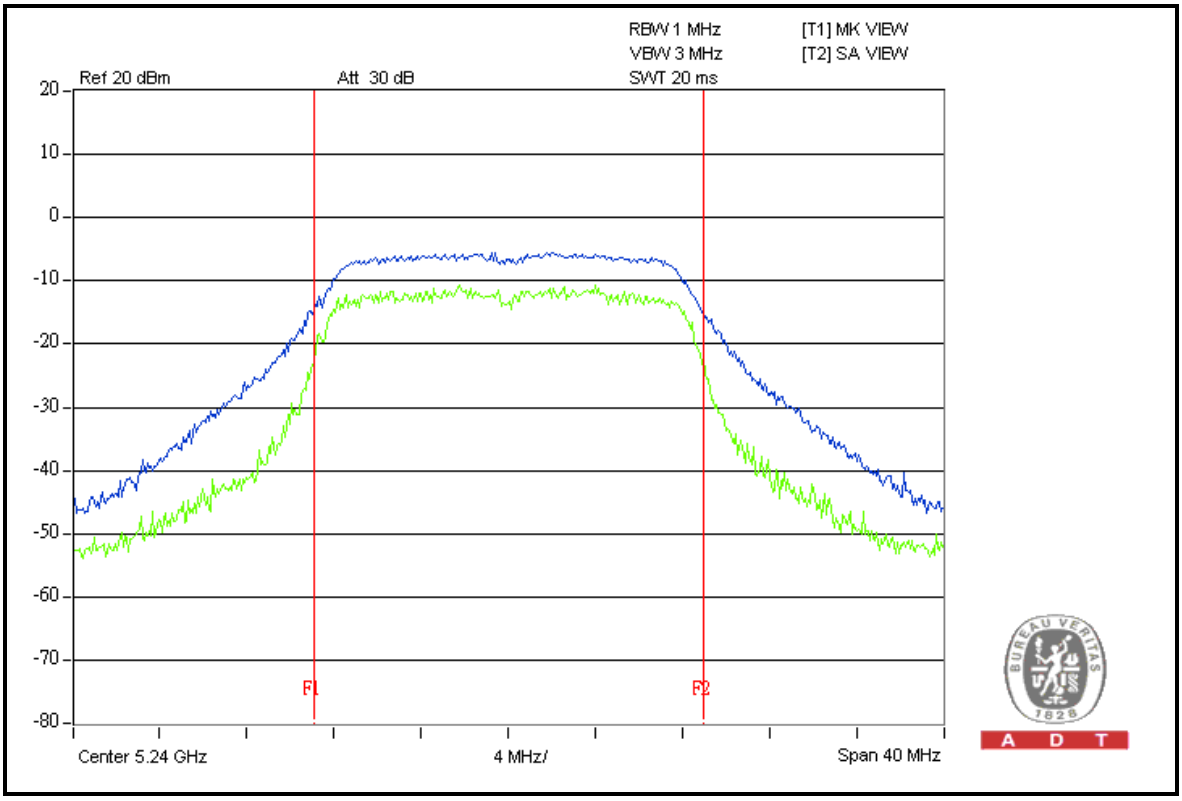

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.22 dB
5.188960 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

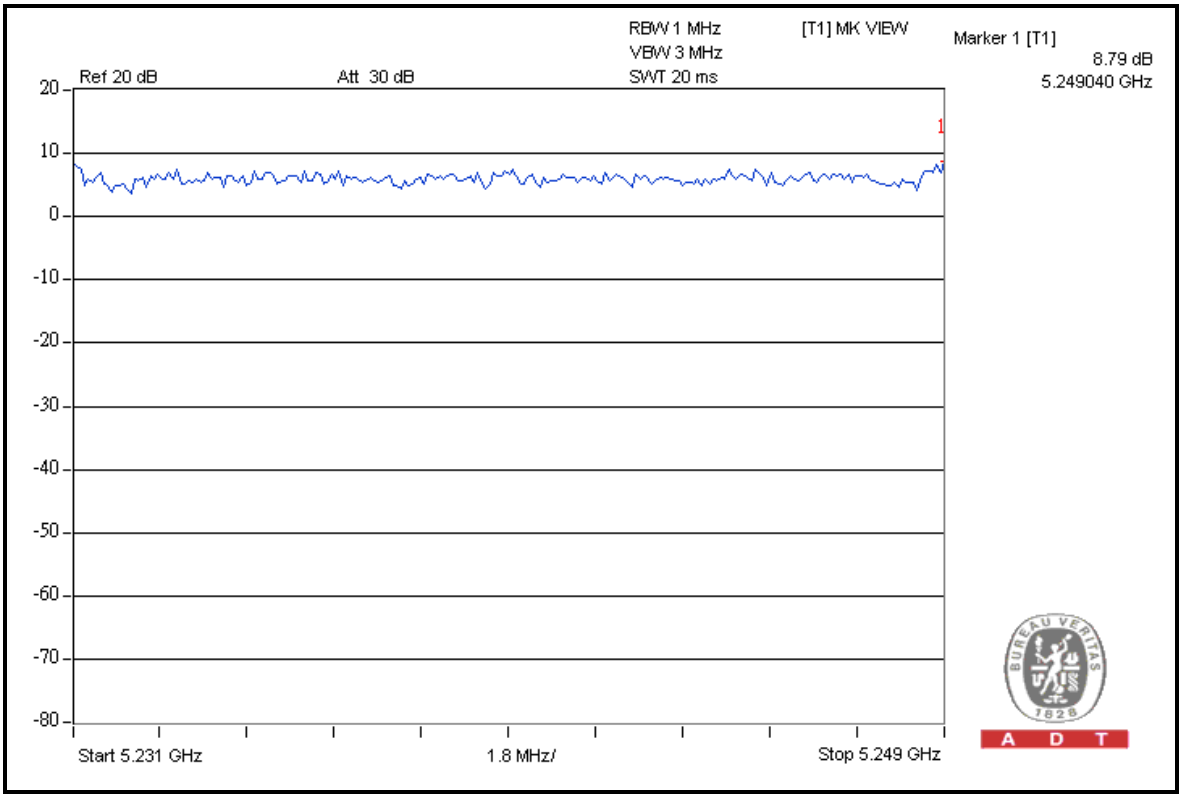
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz

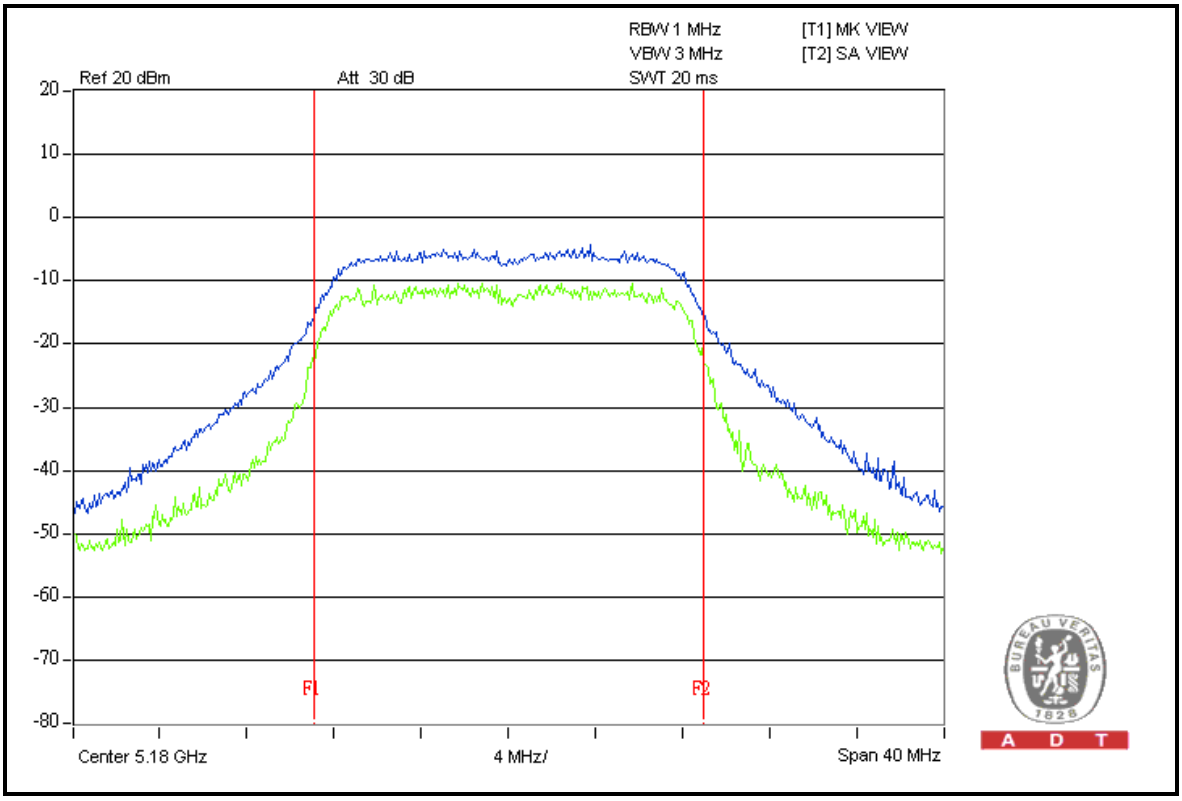

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
9.98 dB
5.208960 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

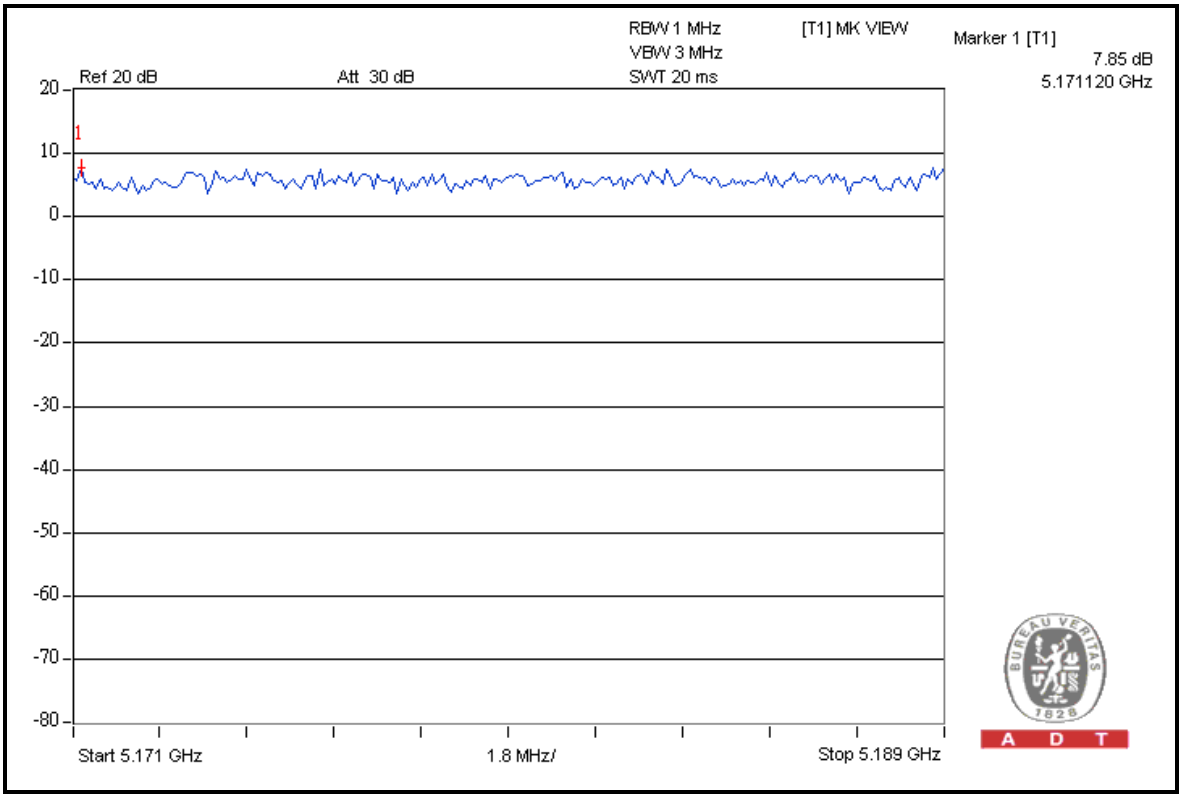
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

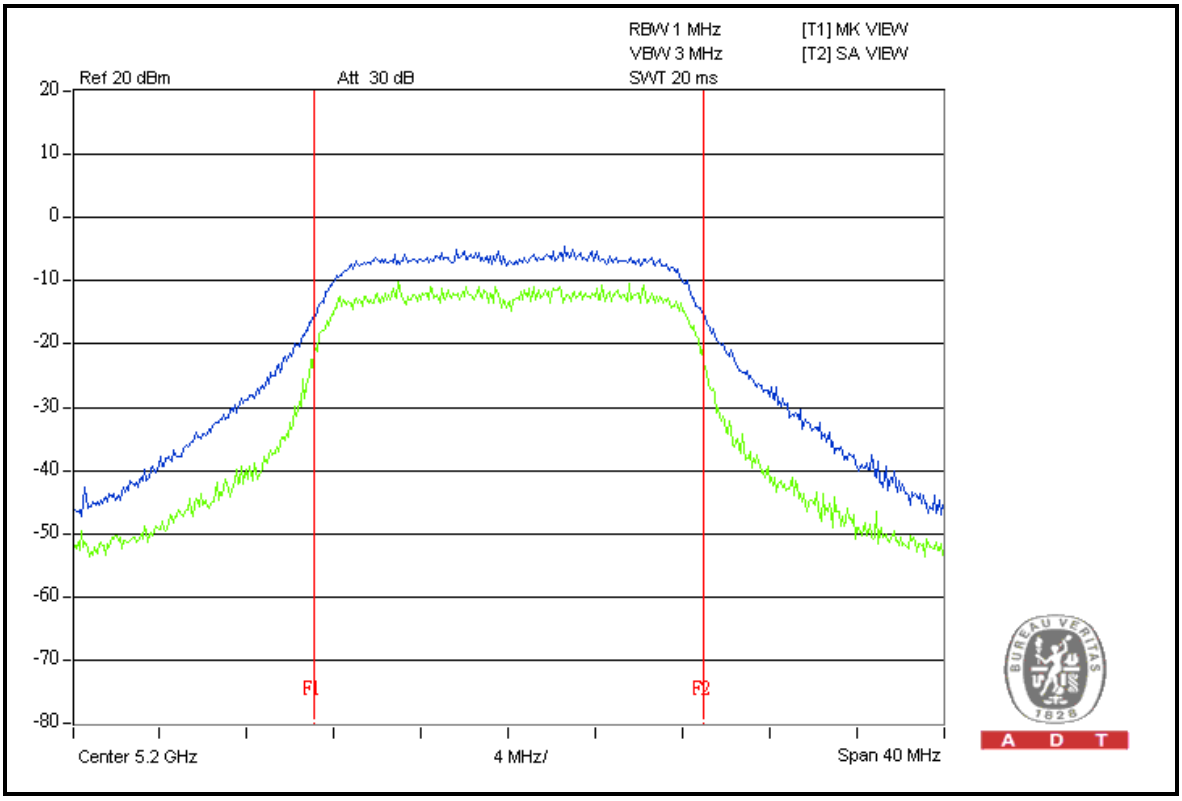

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.79 dB
5.249040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

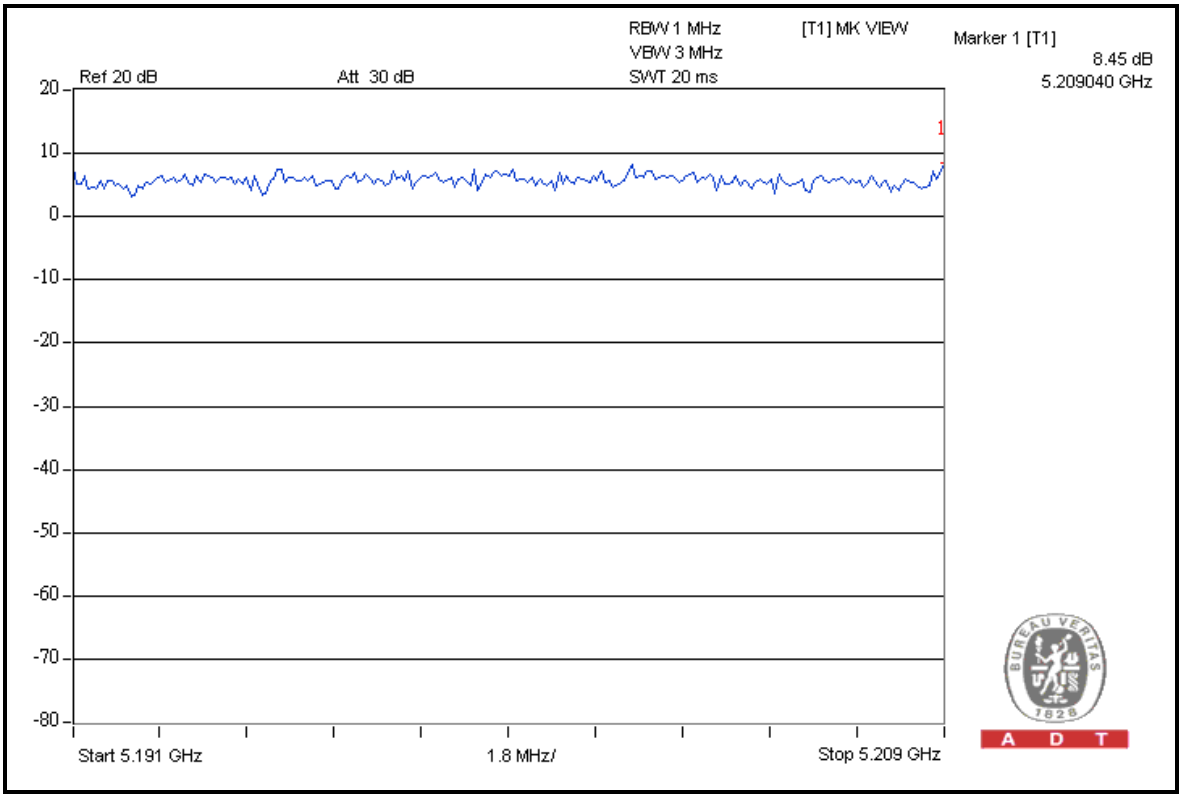
CHAIN 1 CH 36


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz

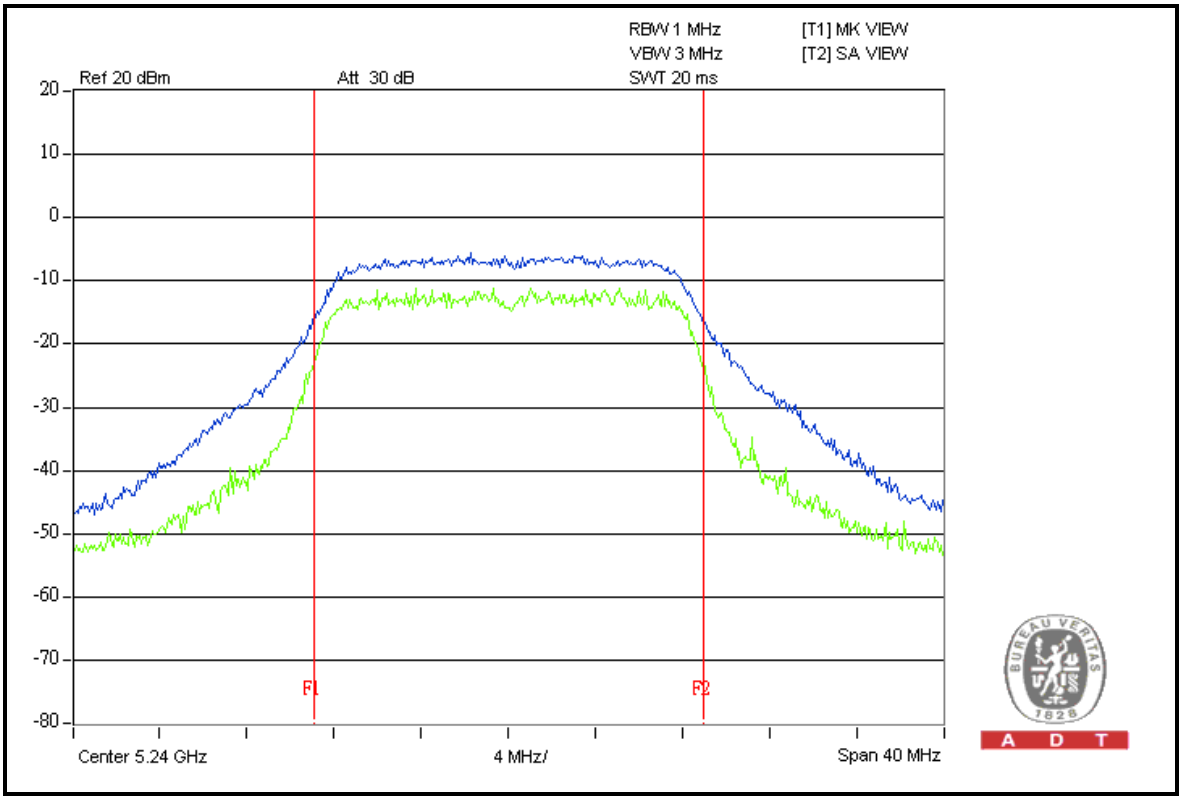

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
7.85 dB
5.171120 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.171 GHz
1.8 MHz/
Stop 5.189 GHz

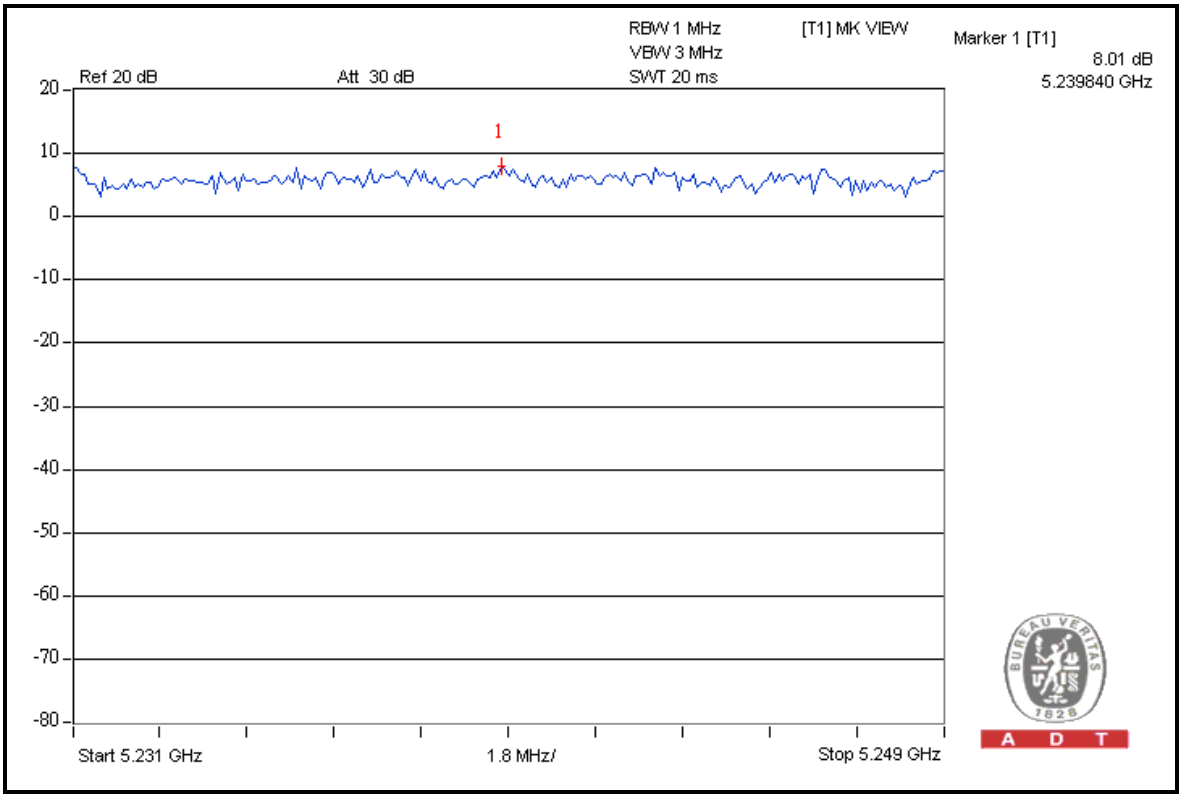
CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.2 GHz
4 MHz/
Span 40 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.45 dB
5.209040 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.191 GHz
1.8 MHz/
Stop 5.209 GHz

CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.24 GHz
4 MHz/
Span 40 MHz

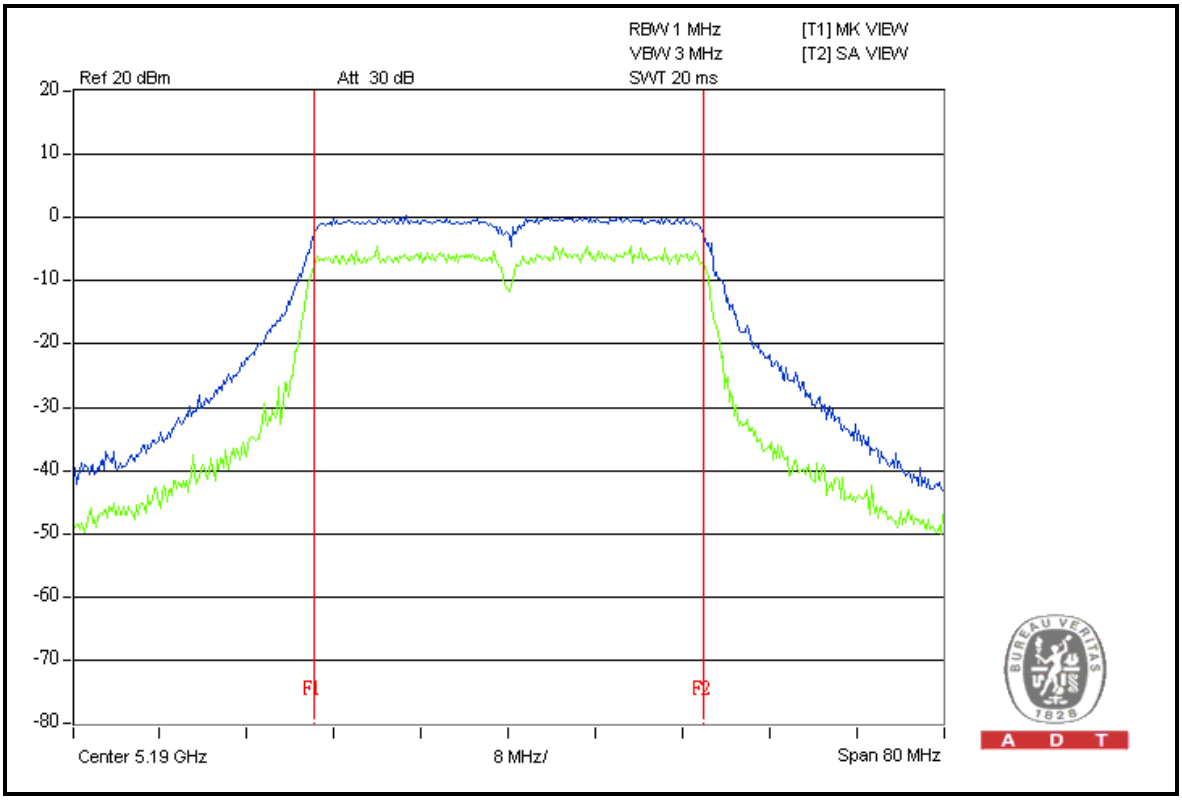

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.01 dB
5.239840 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.231 GHz
1.8 MHz/
Stop 5.249 GHz

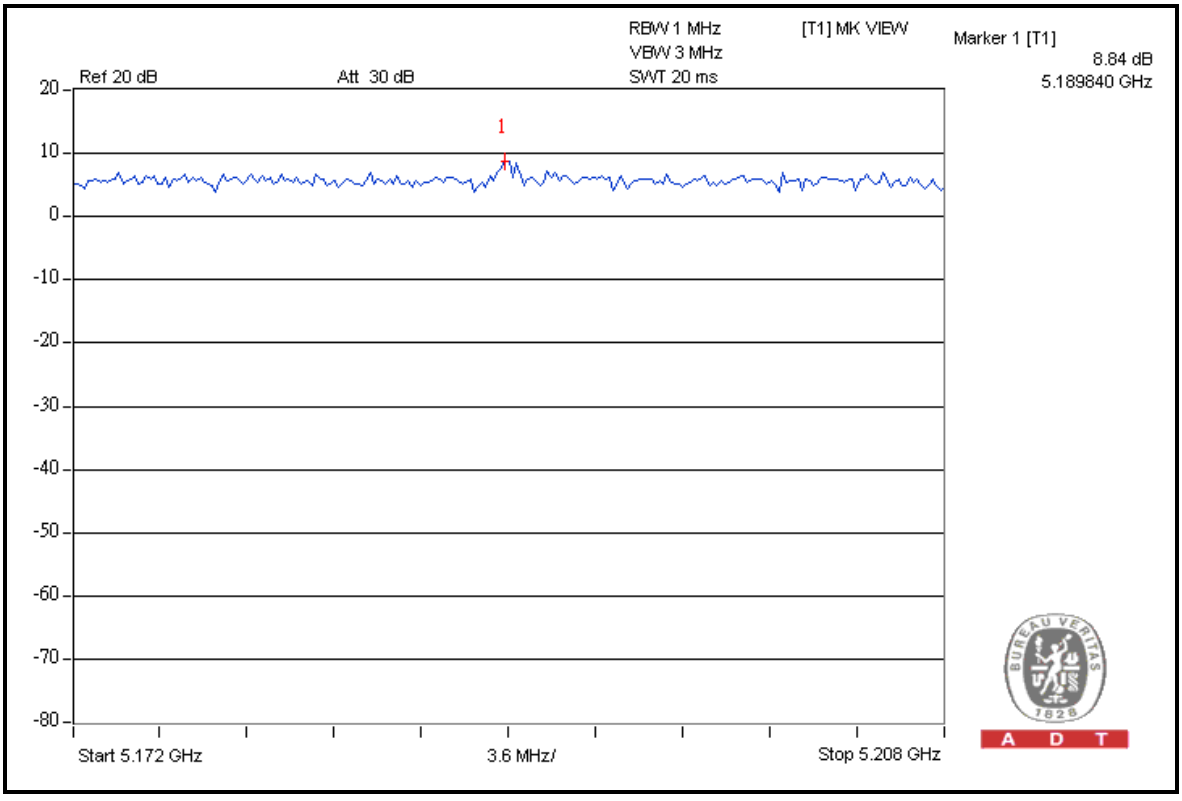
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

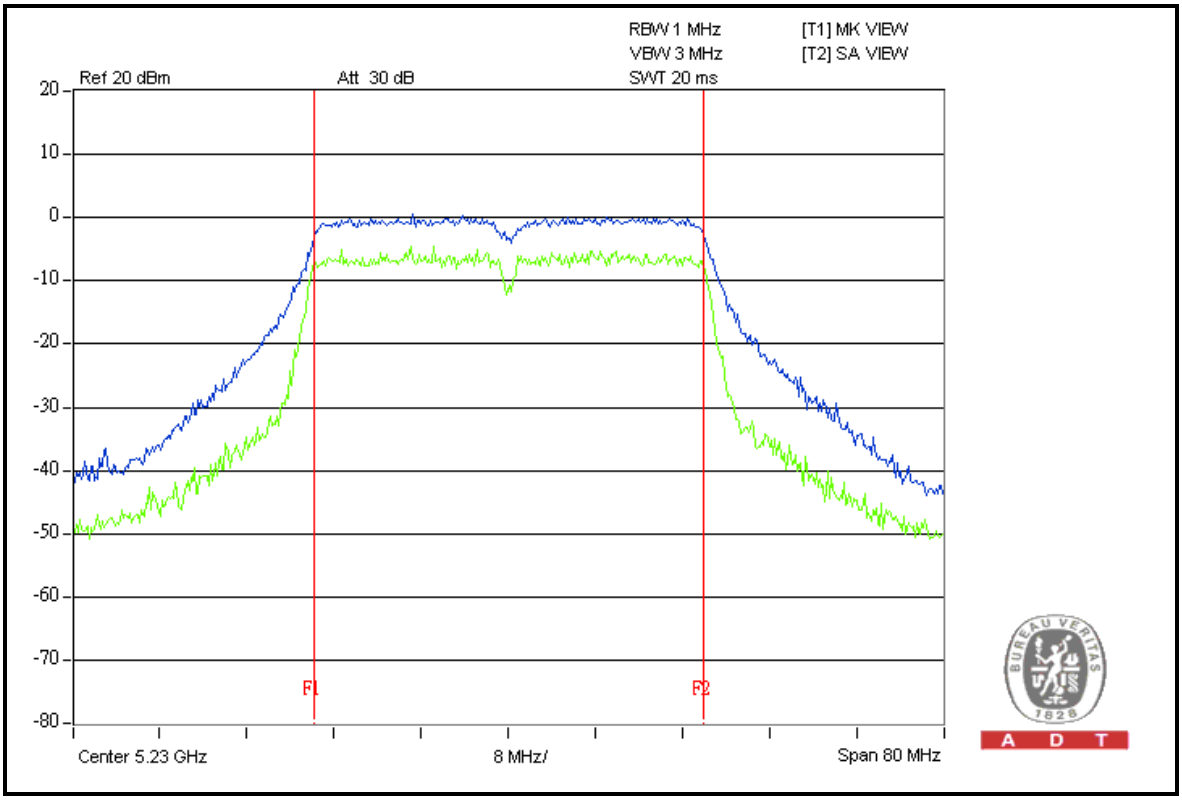
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)		PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
		CHAIN 0	CHAIN 1		
38	5190	8.84	8.89	13	PASS
46	5230	8.74	10.08	13	PASS

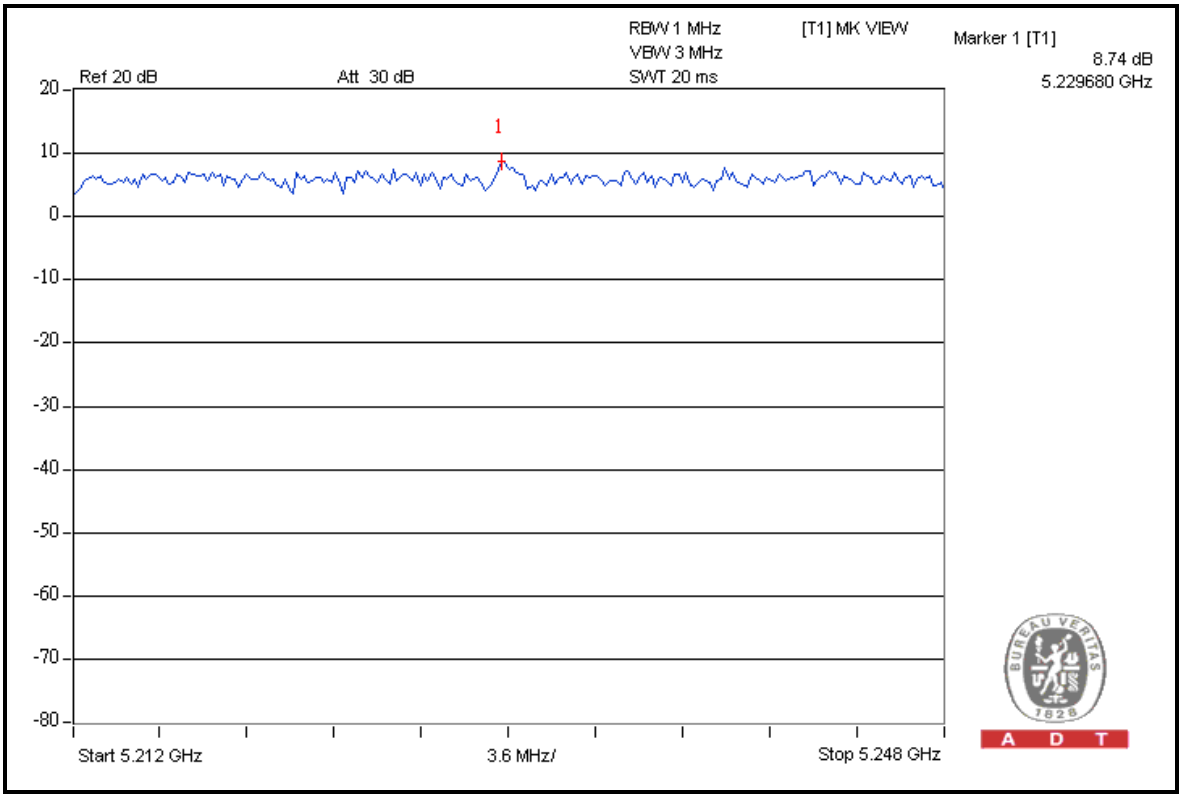
CHAIN 0 CH 38


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.19 GHz
8 MHz/
Span 80 MHz

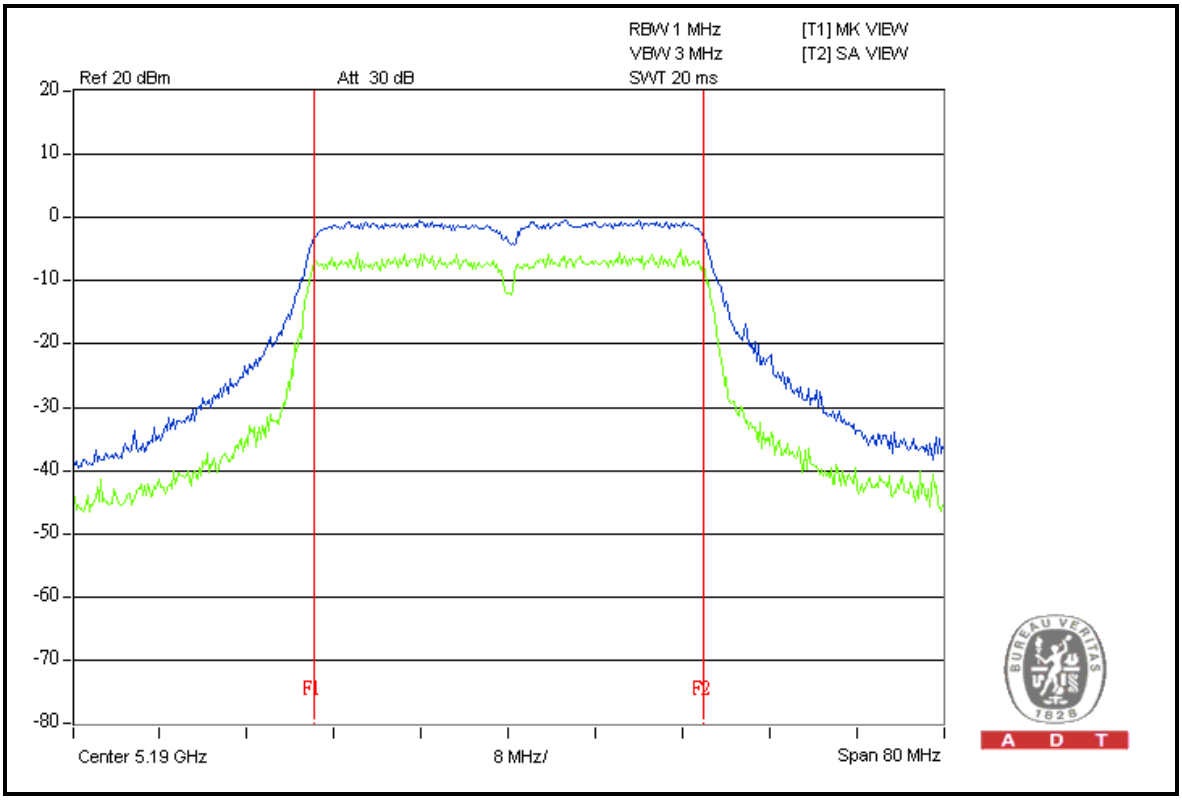

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.84 dB
5.189840 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.172 GHz
3.6 MHz/
Stop 5.208 GHz

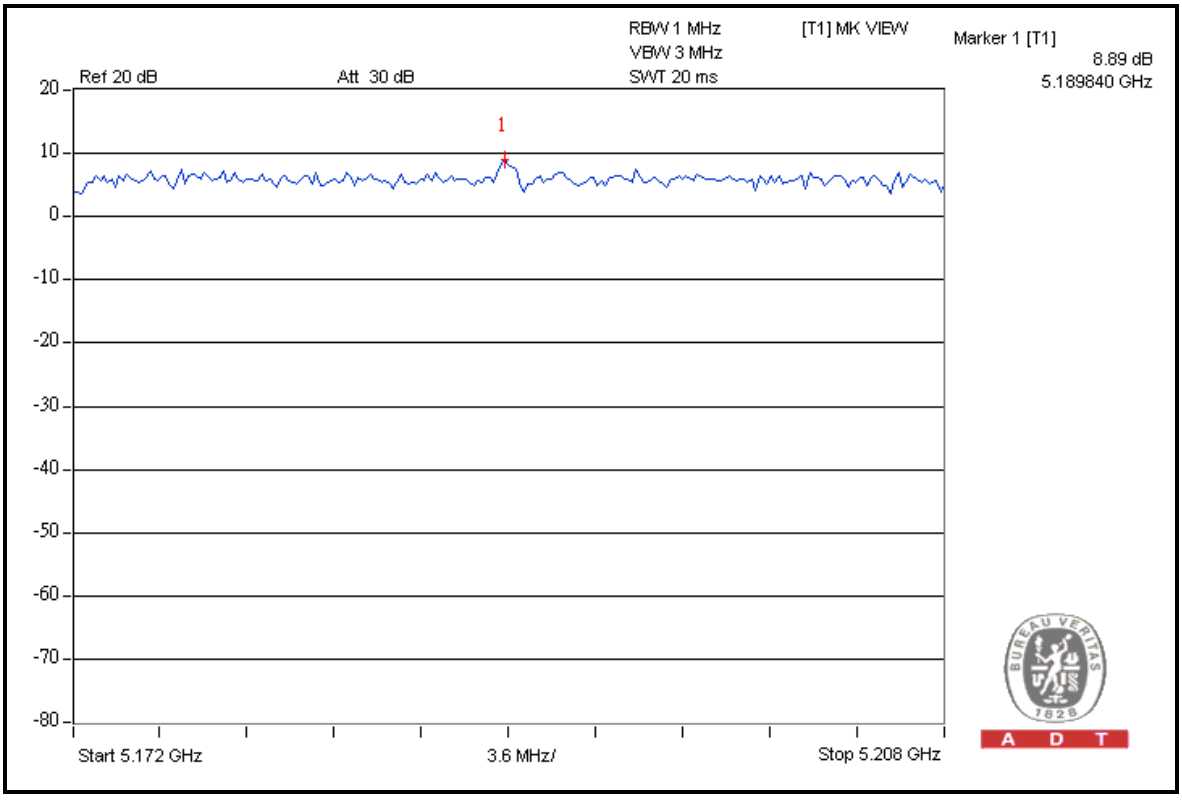
CH 46


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.23 GHz
8 MHz/
Span 80 MHz

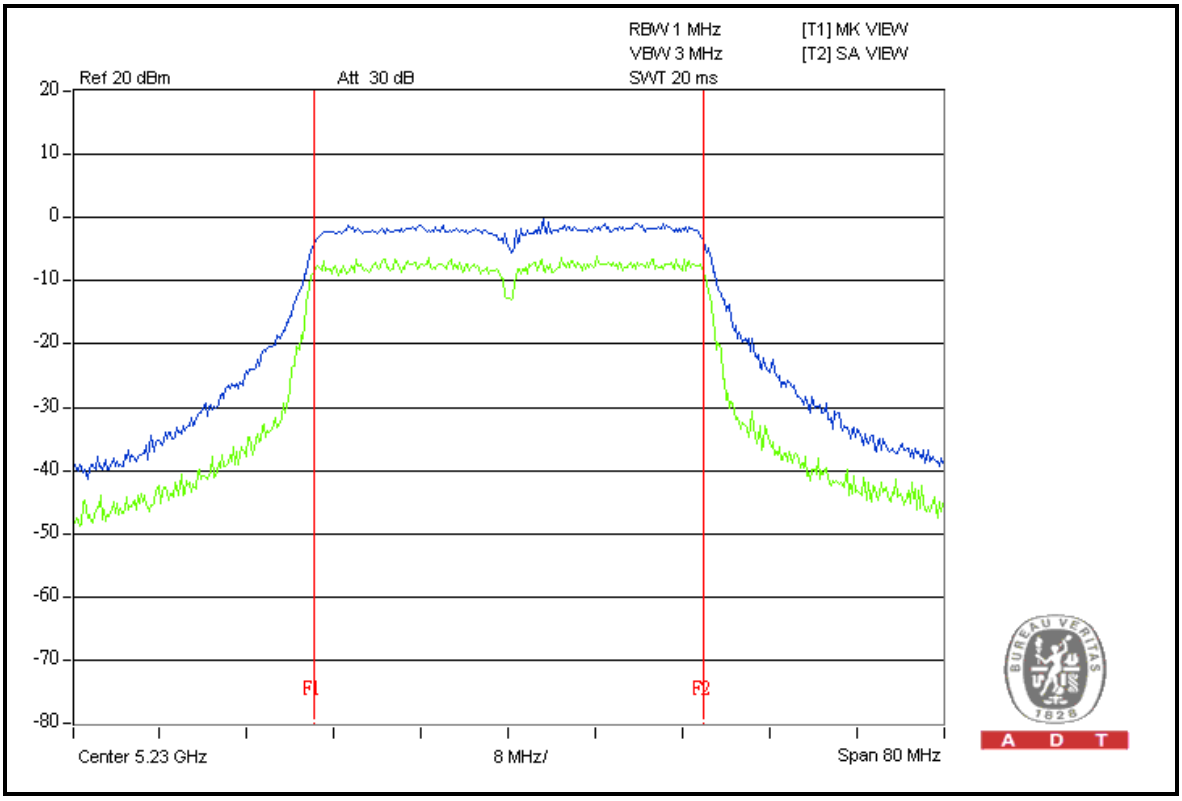

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.74 dB
5.229680 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.212 GHz
3.6 MHz/
Stop 5.248 GHz

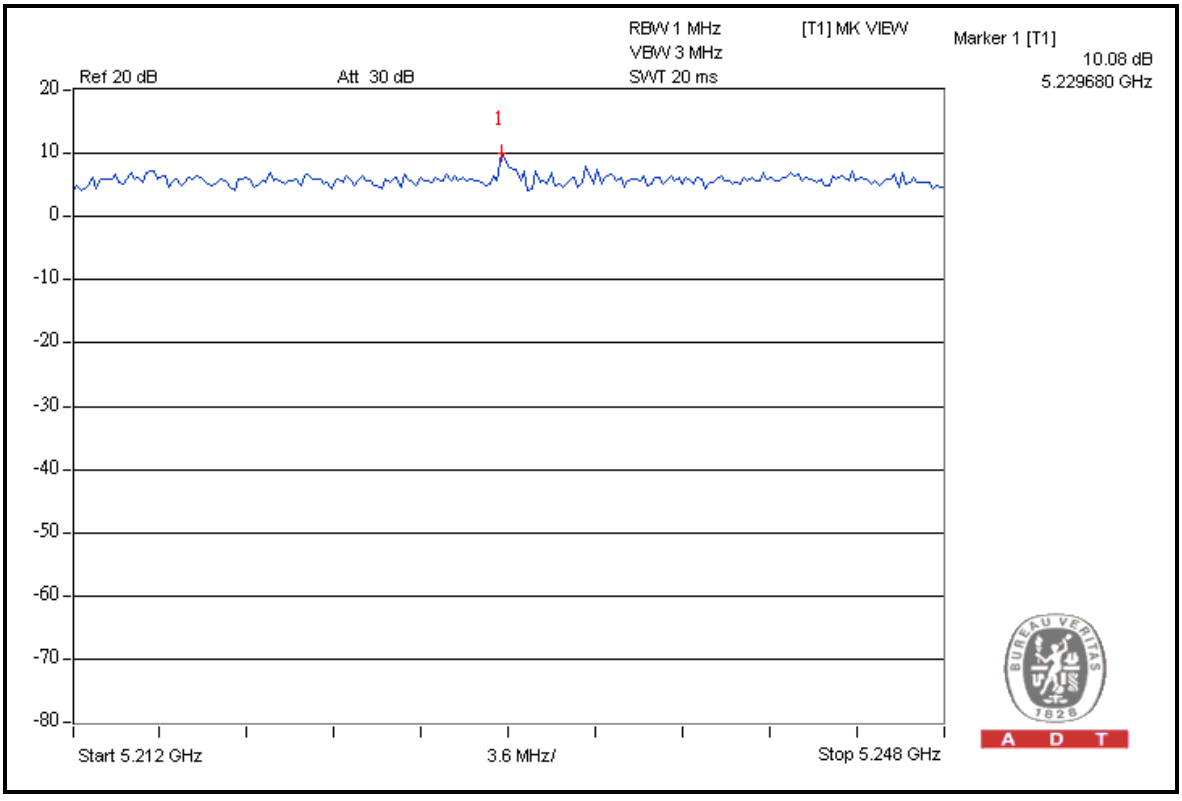
CHAIN 1 CH 38


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.19 GHz
8 MHz/
Span 80 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.89 dB
5.189840 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.172 GHz
3.6 MHz/
Stop 5.208 GHz

CH 46

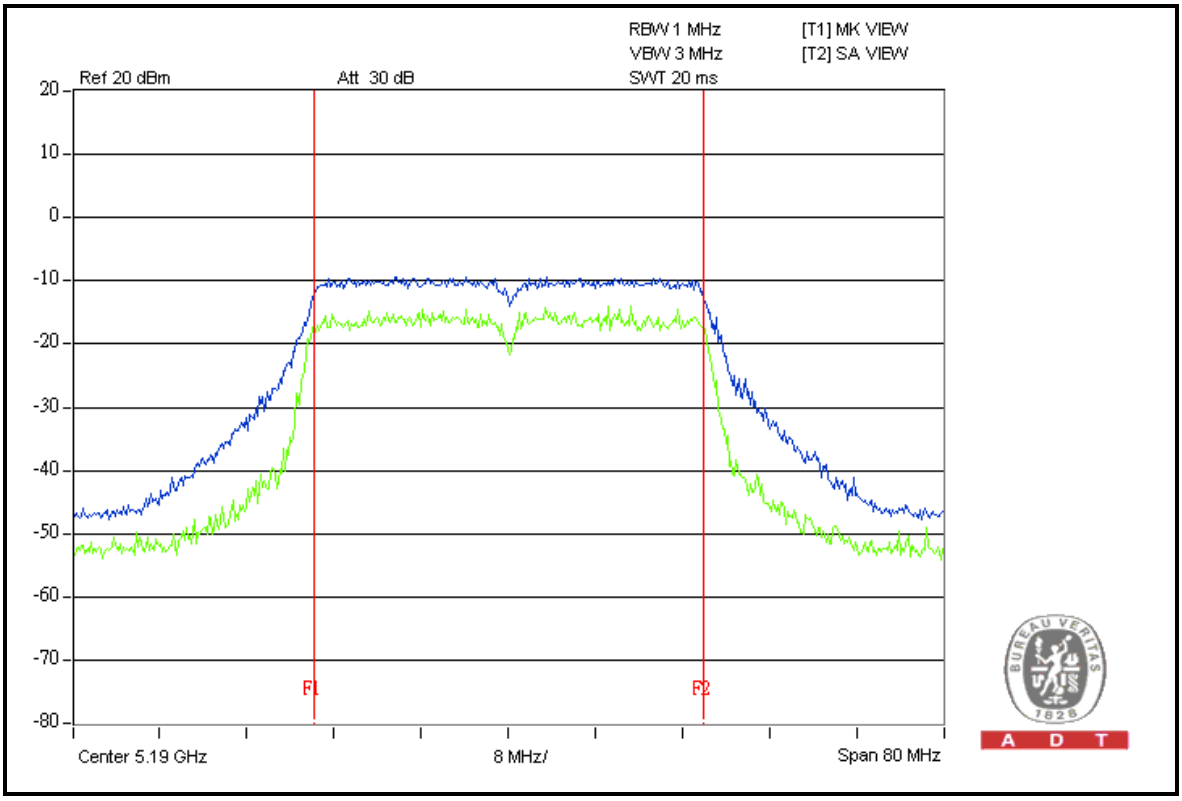

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.23 GHz
8 MHz/
Span 80 MHz

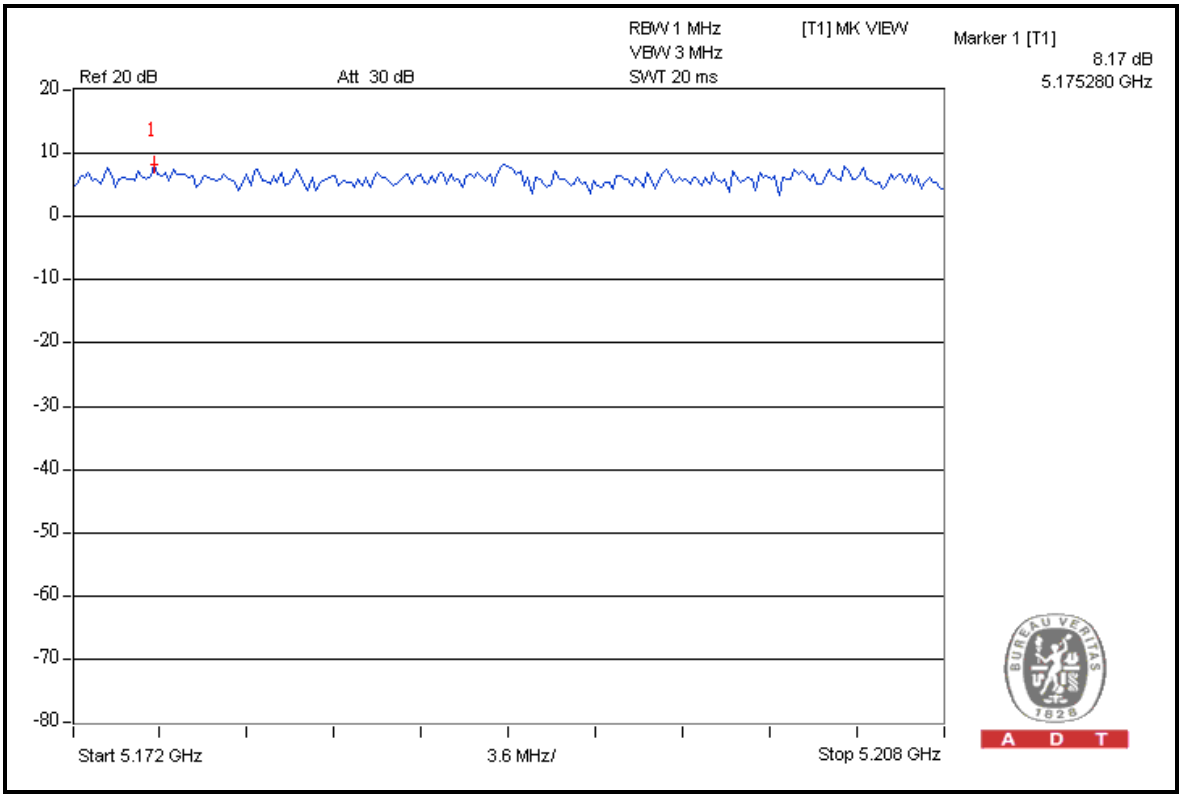

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
10.08 dB
5.229680 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.212 GHz
3.6 MHz/
Stop 5.248 GHz

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

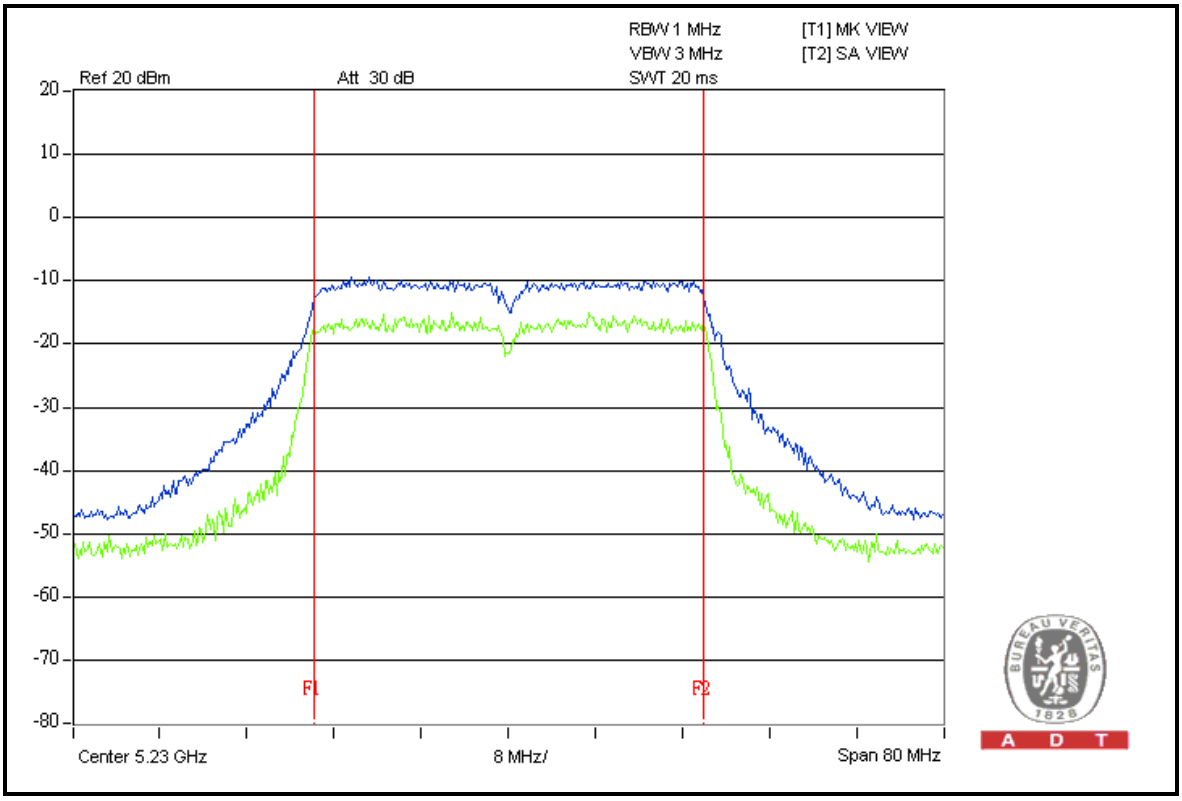
CHANNEL	**CHANNEL FREQUENCY (MHz)**	**PEAK POWER EXCURSION (dB)**		**PEAK to AVERAGE EXCURSION LIMIT (dB)**	**PASS/FAIL**
		CHAIN 0	**CHAIN 1**		
38	5190	8.17	8.63	13	PASS
46	5230	8.65	10.26	13	PASS

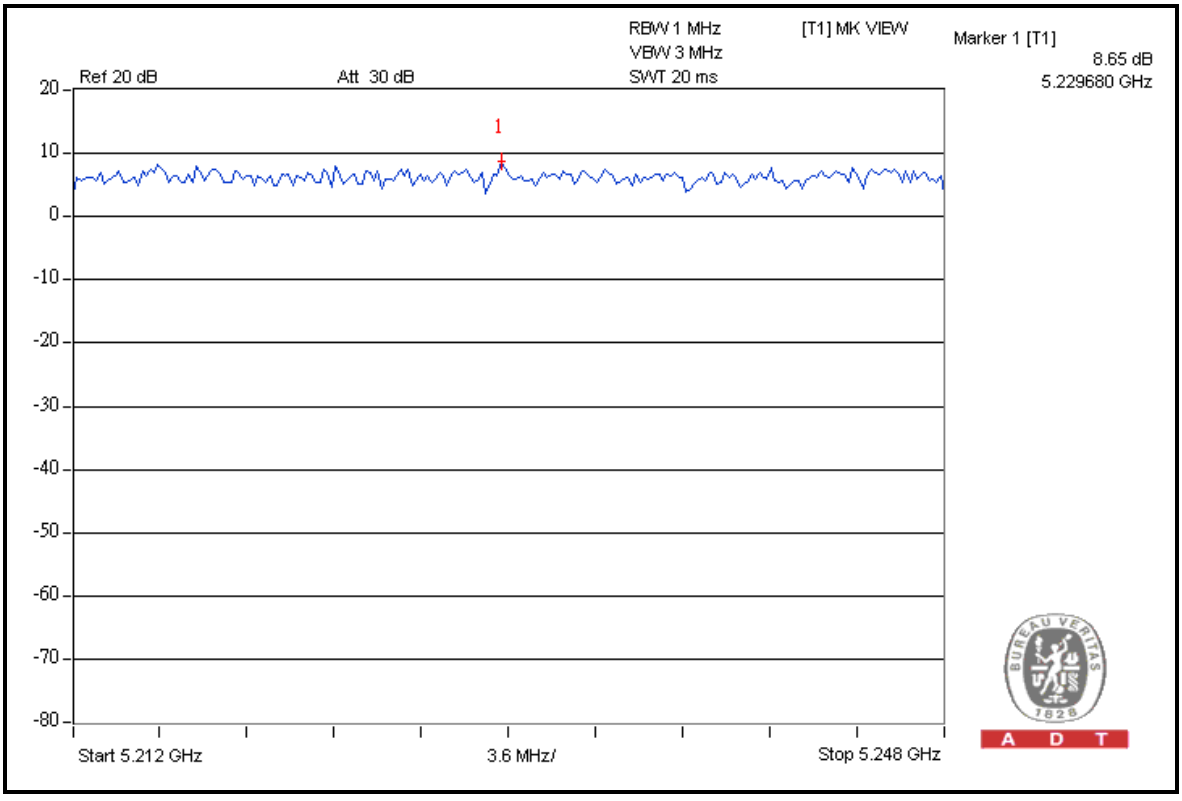
CHAIN 0 CH 38


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.19 GHz
8 MHz/
Span 80 MHz

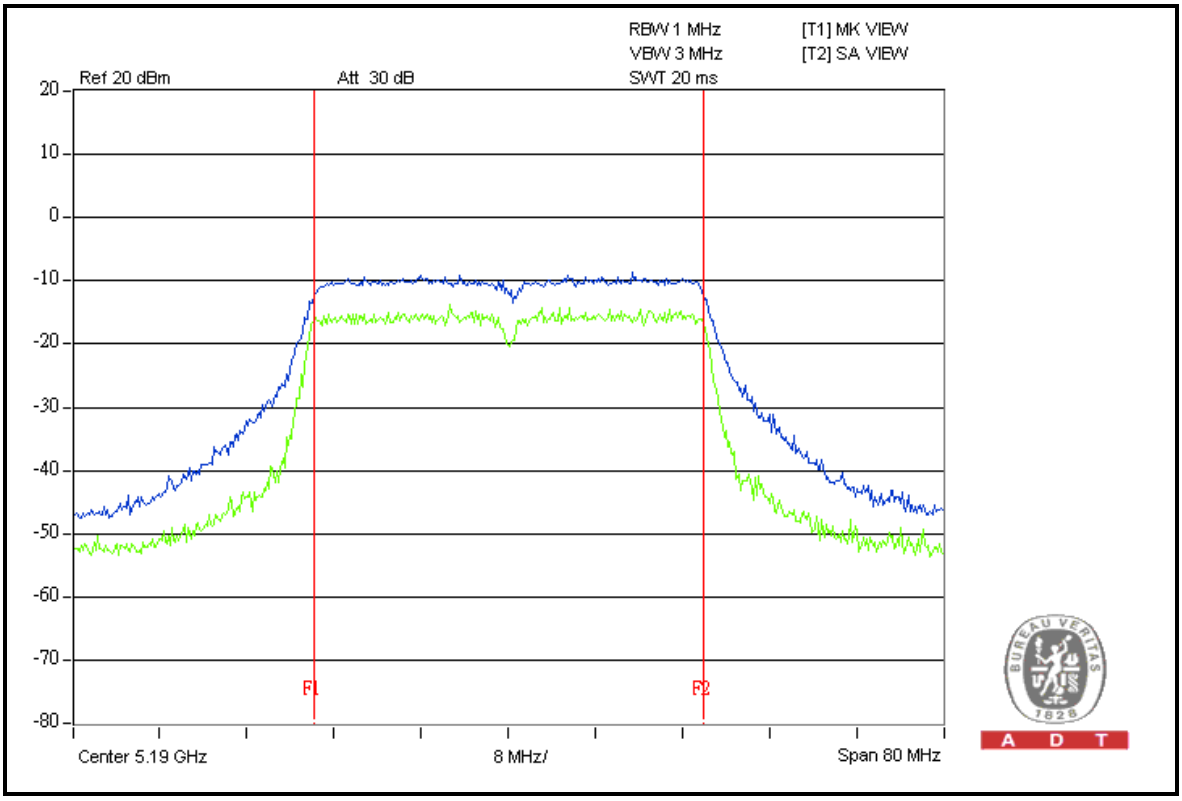

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.17 dB
5.175280 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.172 GHz
3.6 MHz/
Stop 5.208 GHz

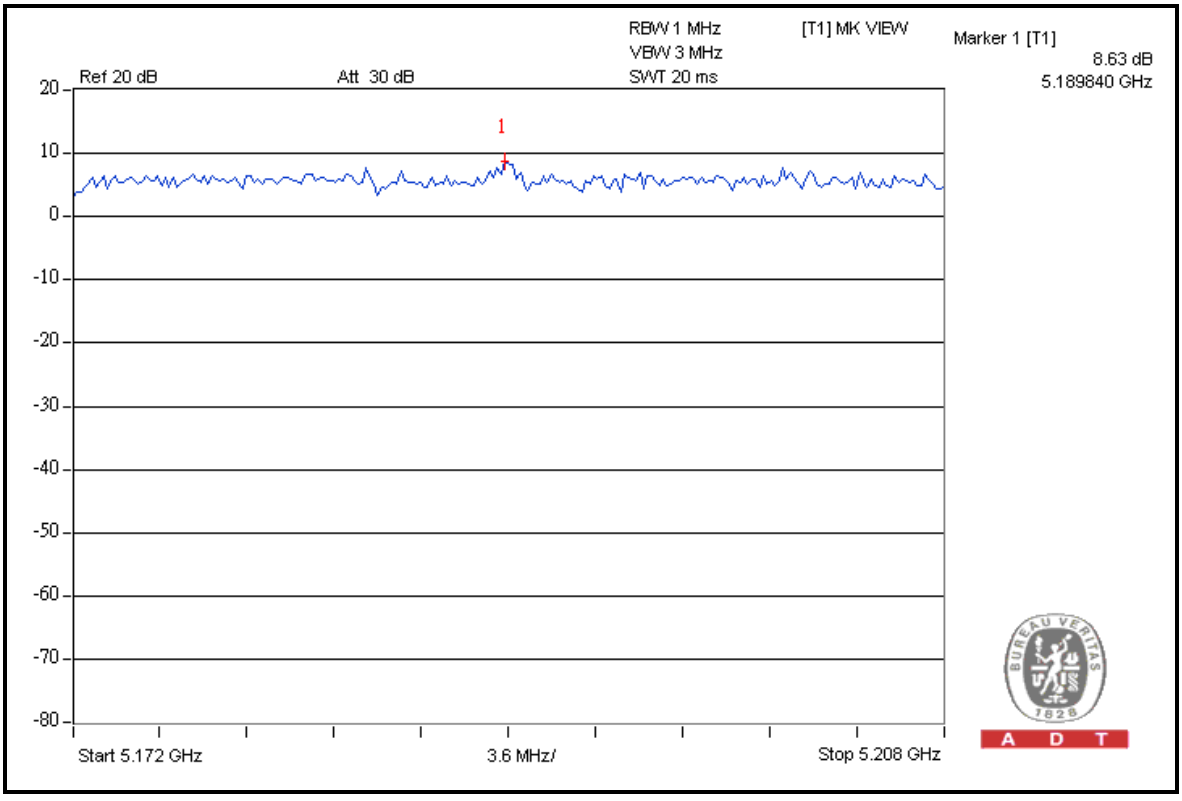
CH 46


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.23 GHz
8 MHz/
Span 80 MHz

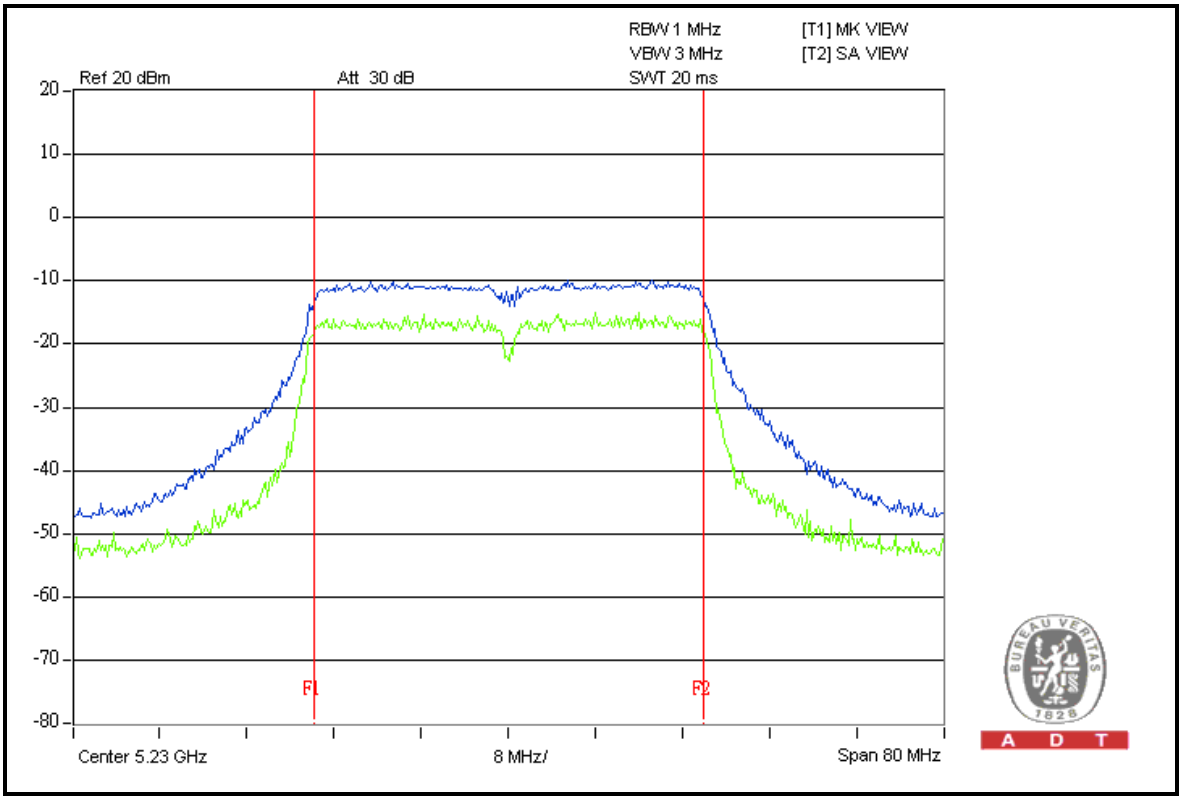

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.65 dB
5.229680 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.212 GHz
3.6 MHz/
Stop 5.248 GHz

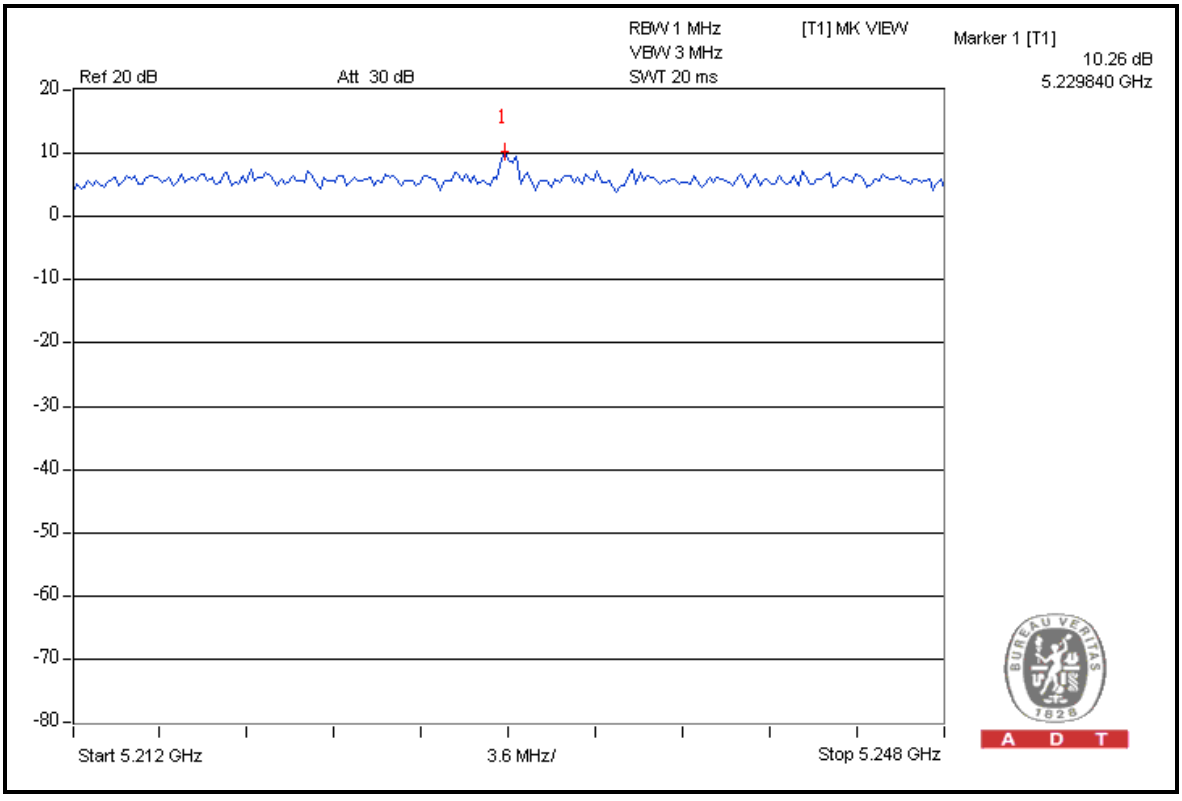
CHAIN 1 CH 38


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.19 GHz
8 MHz/
Span 80 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
8.63 dB
5.189840 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.172 GHz
3.6 MHz/
Stop 5.208 GHz

CH 46


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
[T2] SA VIEW
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 5.23 GHz
8 MHz/
Span 80 MHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
10.26 dB
5.229840 GHz
Ref 20 dB
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Start 5.212 GHz
3.6 MHz/
Stop 5.248 GHz

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER	FSP 40	100036	Apr. 3, 2009	Apr. 2, 2010

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

USA.

4.5.3 TEST PROCEDURES

a. The transmitter output was connected to the spectrum analyzer.

b. Set RBW = 1MHz, VBW = 3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

4.5.6 EUT OPERATING CONDITIONS

Same as 4.4.6

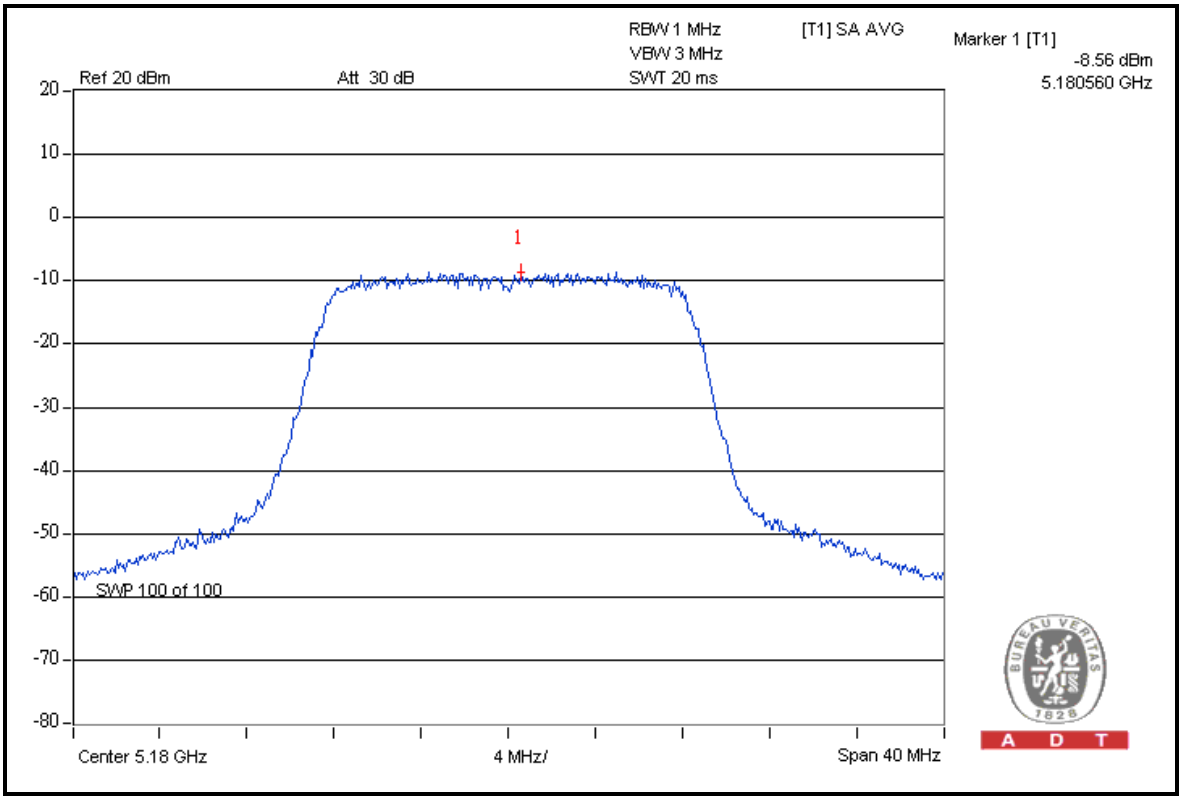
4.5.7 TEST RESULTS

802.11a OFDM MODULATION

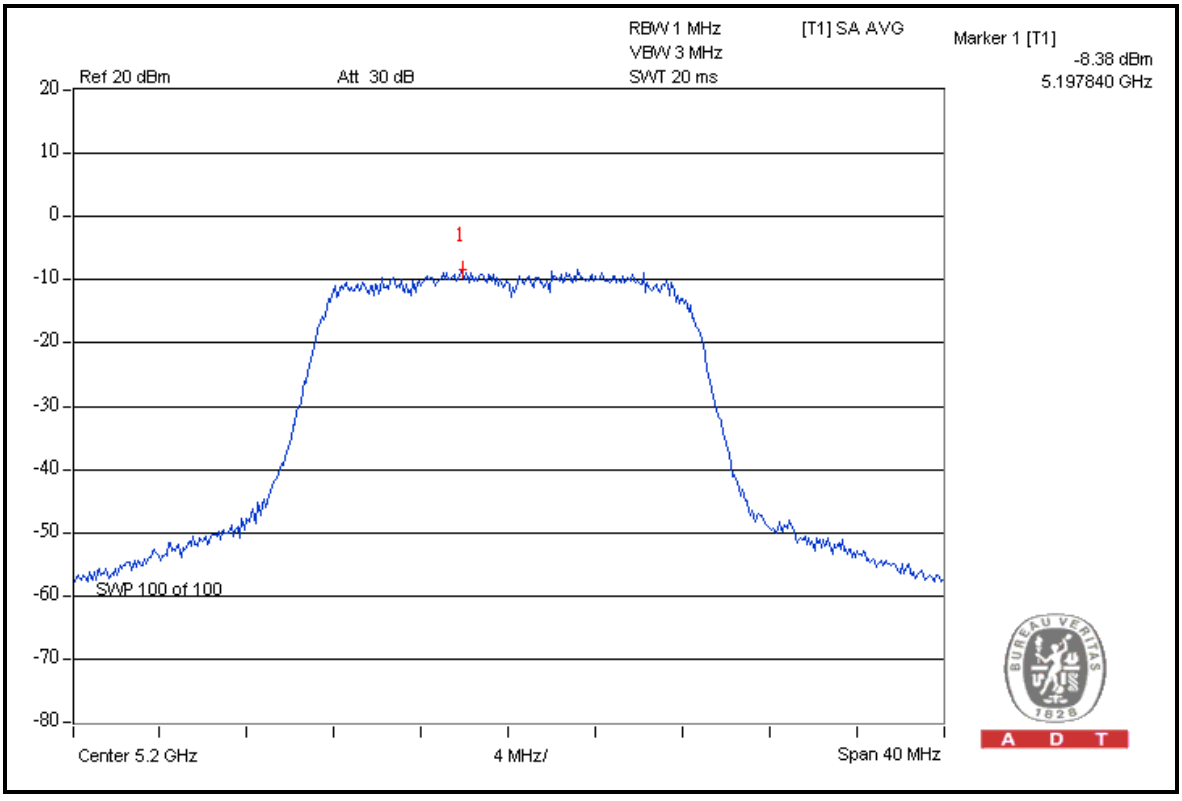
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	TEST MODE	A

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	-8.56	-8.74	0.273	-5.64	-4	PASS
40	5200	-8.38	-9.01	0.271	-5.67	-4	PASS
48	5240	-9.17	-8.52	0.262	-5.82	-4	PASS

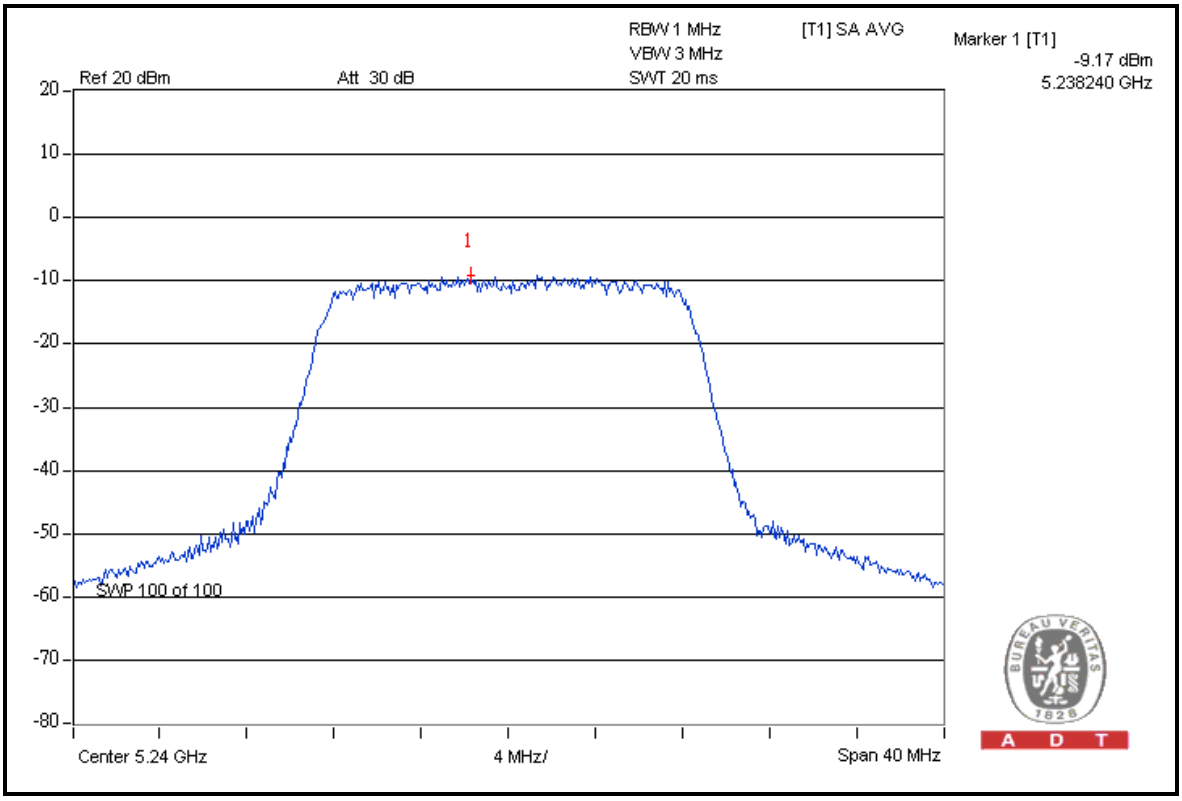
CHAIN 0 CH 36



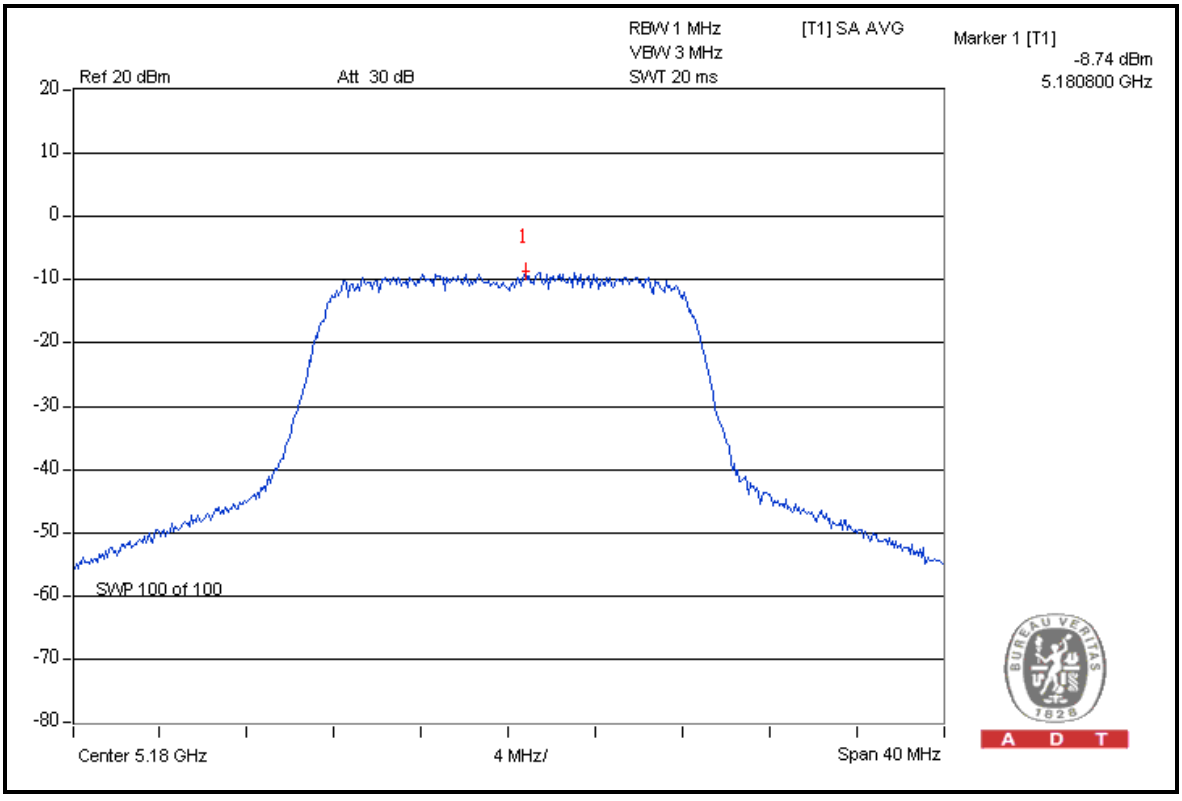
CH 40



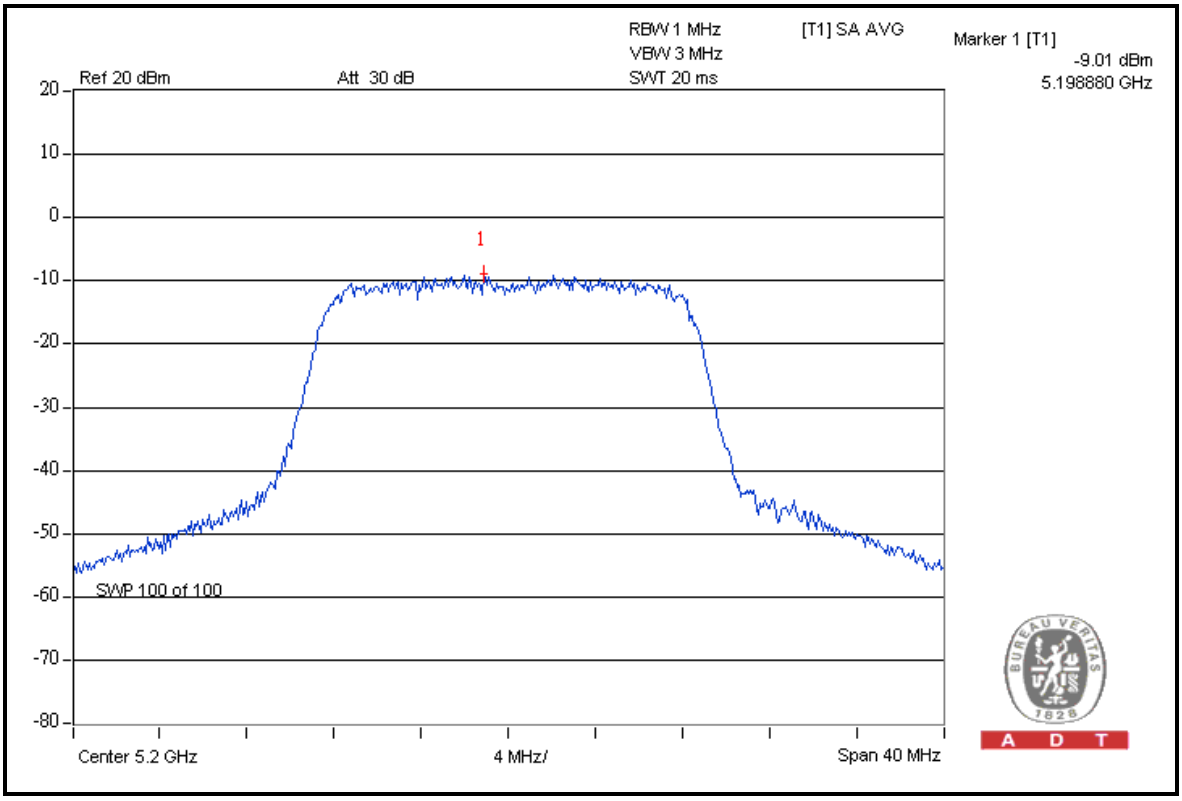
CH 48



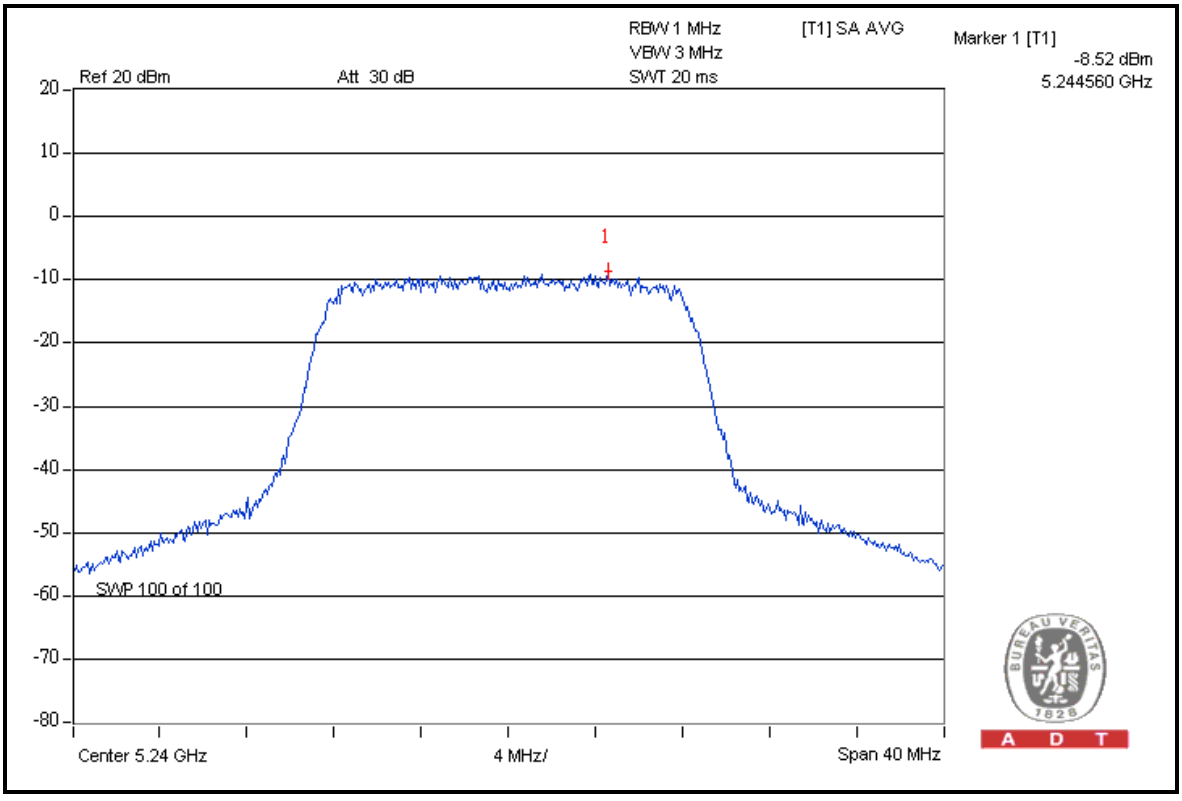
CHAIN 1 CH 36



CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-9.01 dBm
5.198880 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.2 GHz
4 MHz/
Span 40 MHz

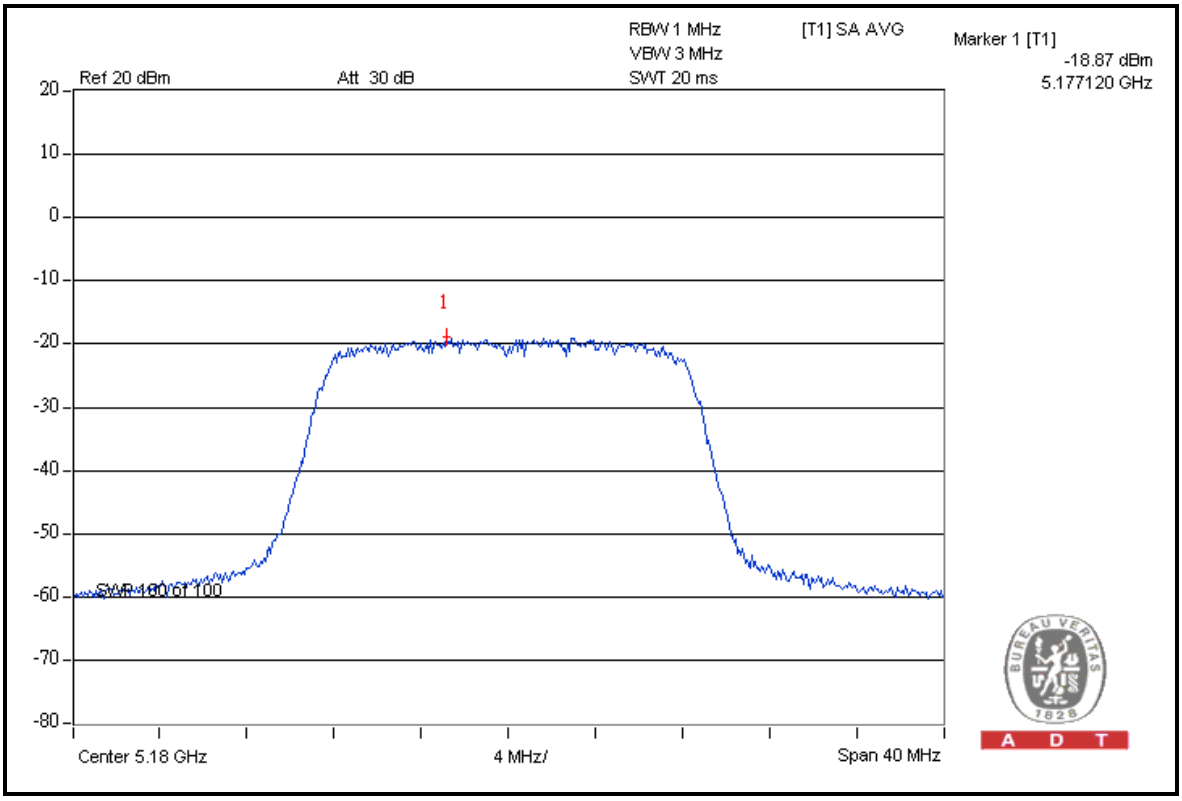
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-8.52 dBm
5.244560 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.24 GHz
4 MHz/
Span 40 MHz

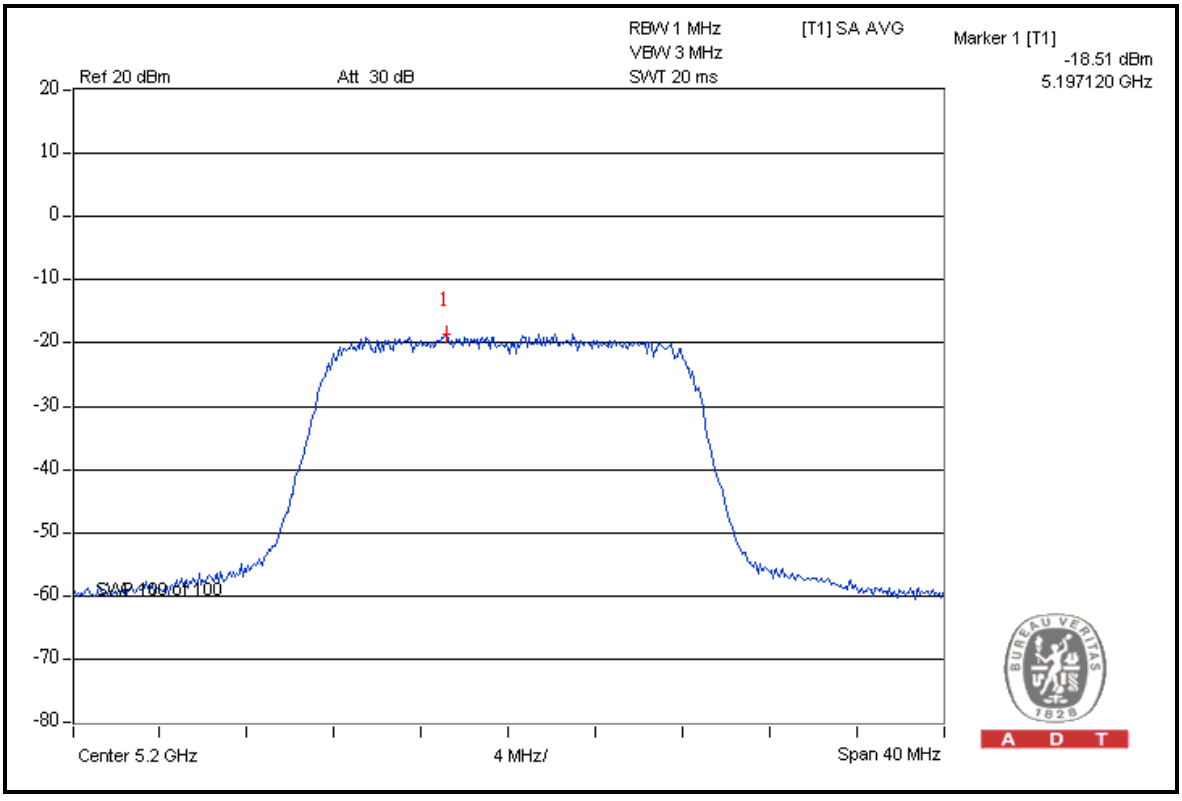
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	TEST MODE	C

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	-18.87	-18.16	0.028	-15.49	-13	PASS
40	5200	-18.51	-18.33	0.029	-15.41	-13	PASS
48	5240	-18.02	-18.58	0.030	-15.28	-13	PASS

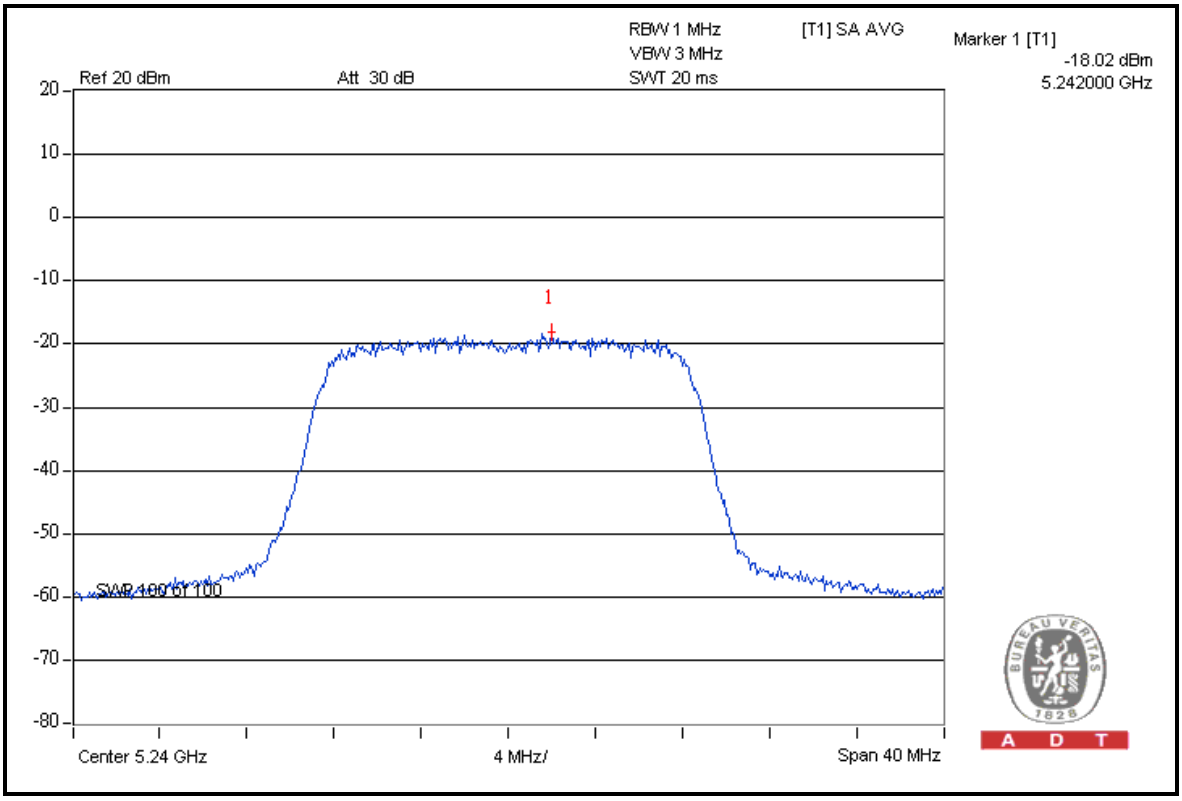
CHAIN 0 CH 36



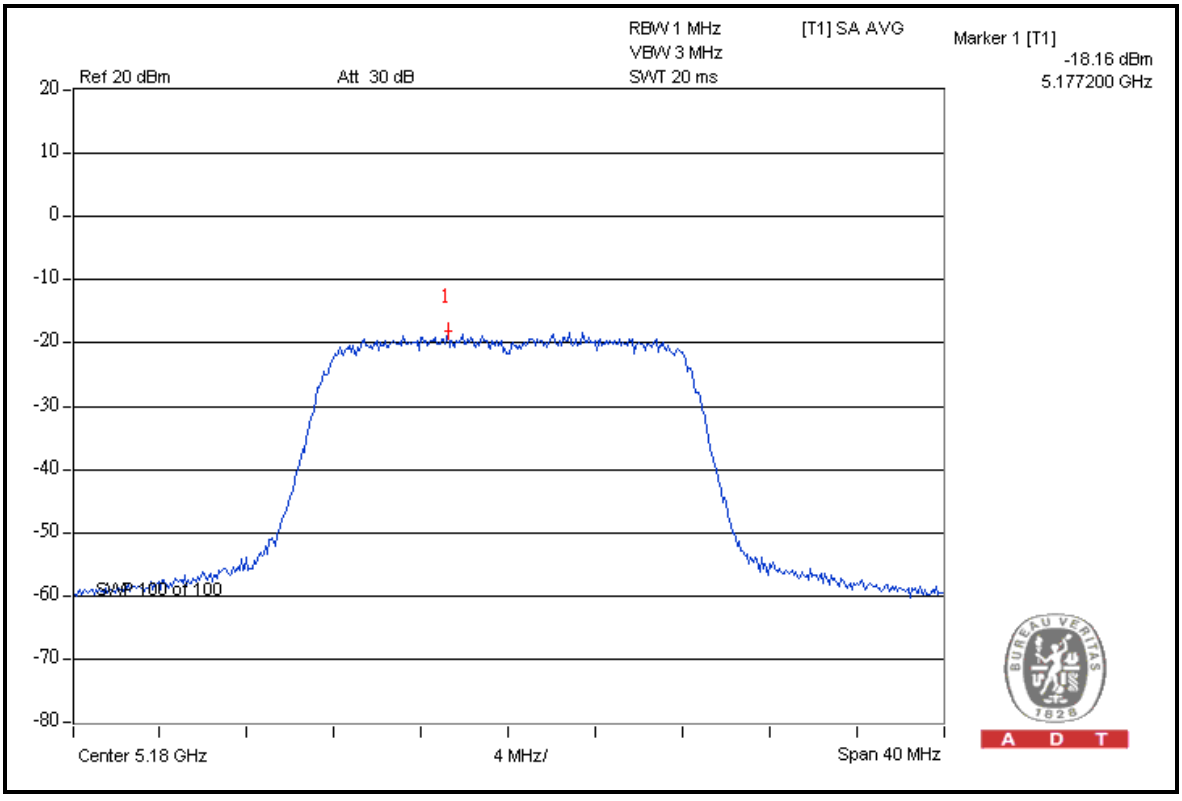
CH 40



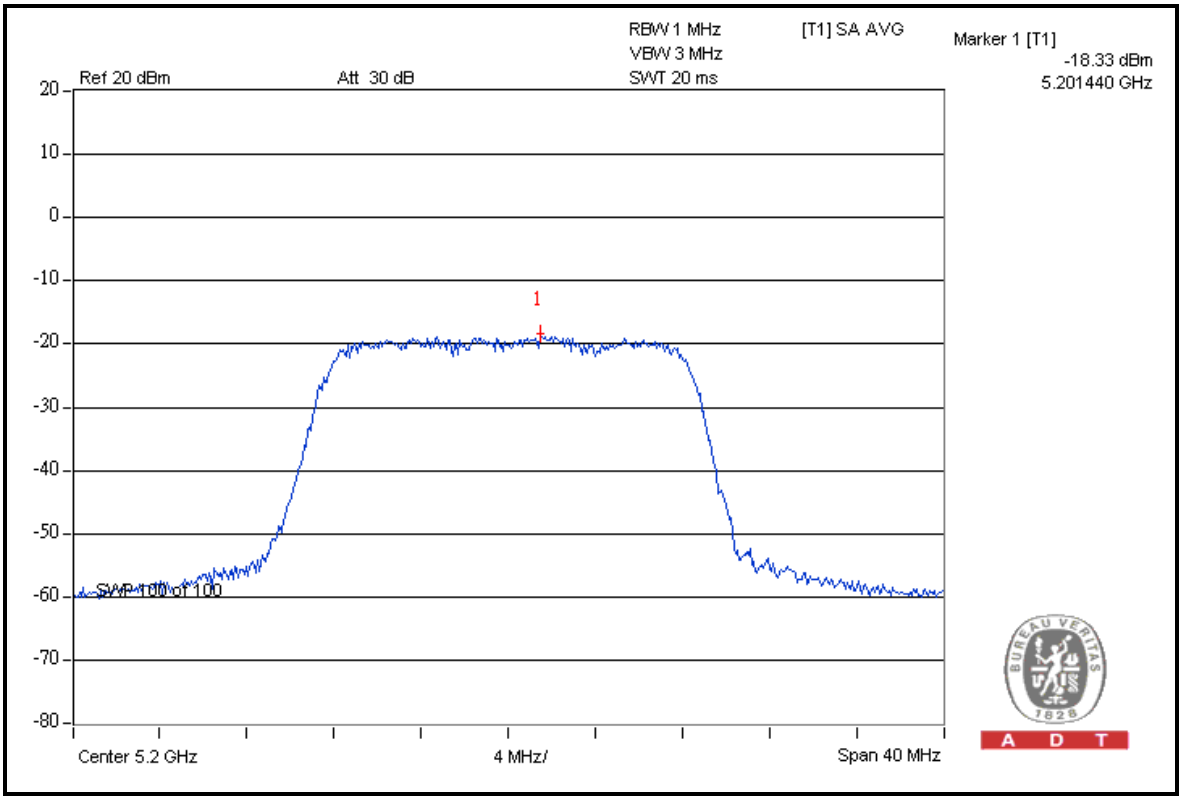
CH 48



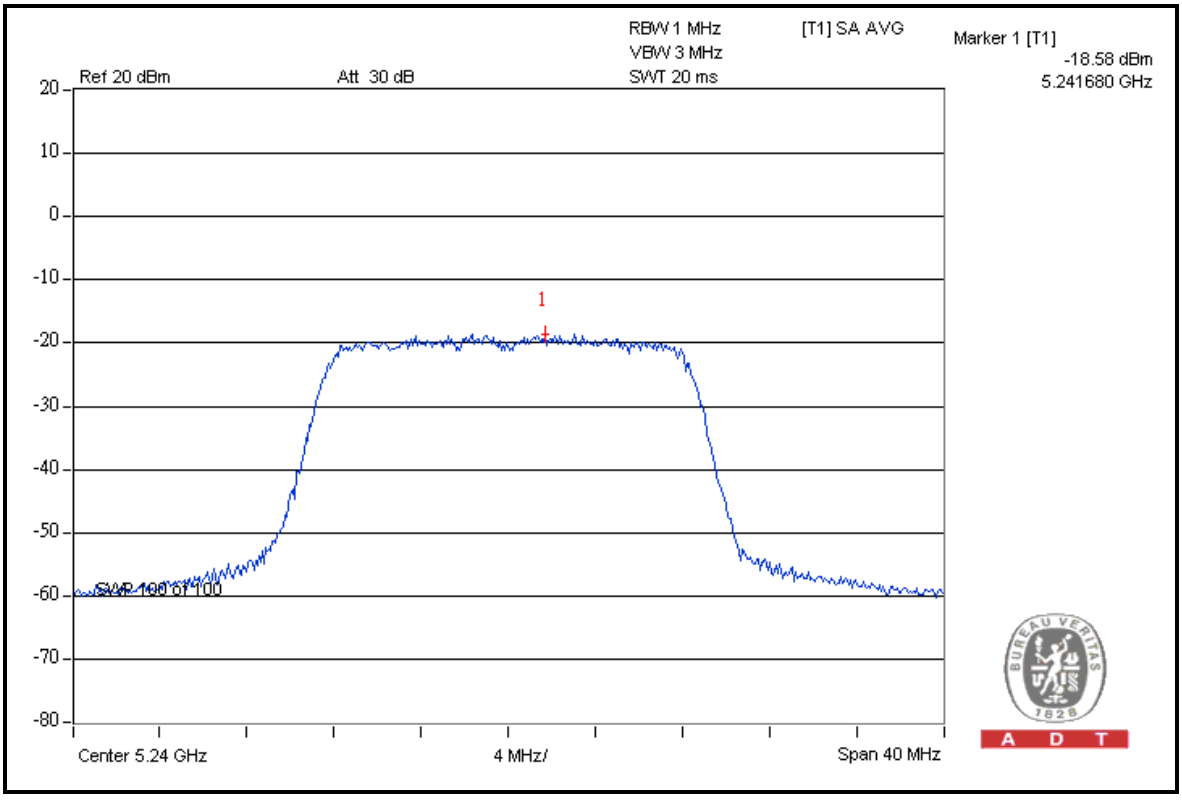
CHAIN 1 CH 36



CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-18.33 dBm
5.201440 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.2 GHz
4 MHz/
Span 40 MHz

CH 48

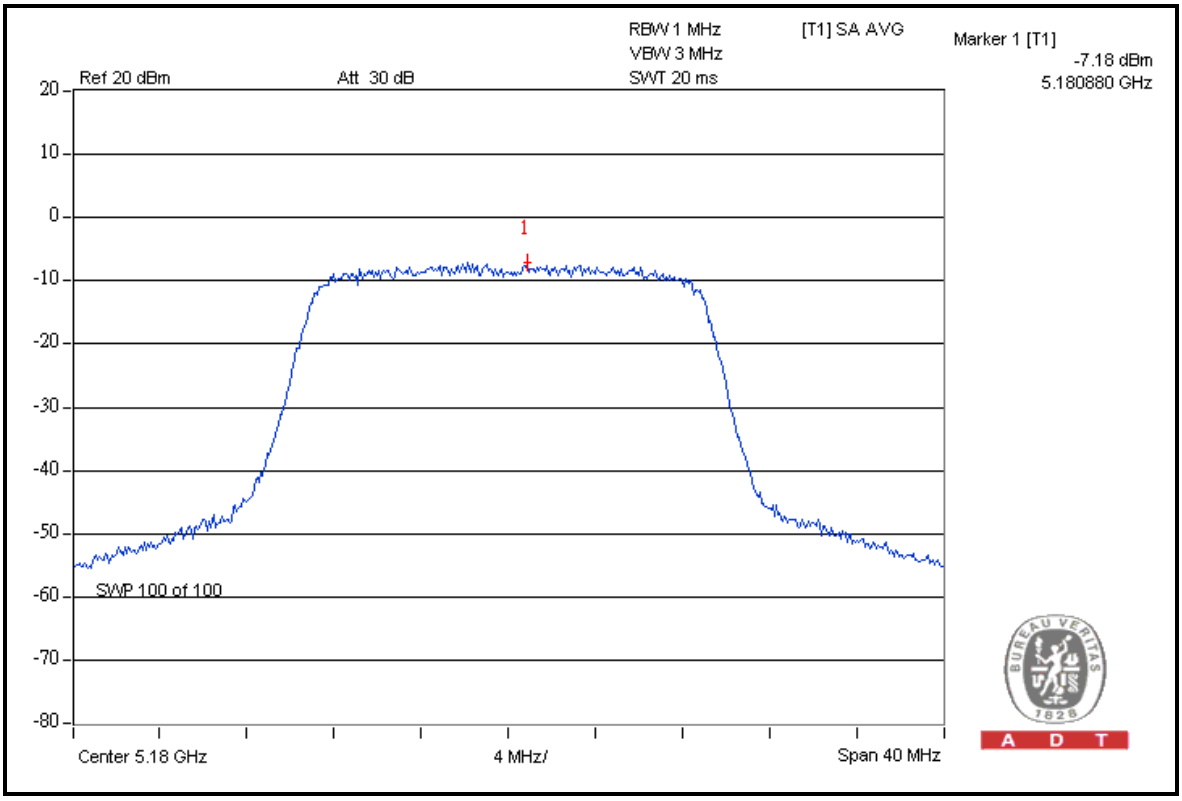

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-18.58 dBm
5.241680 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.24 GHz
4 MHz/
Span 40 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

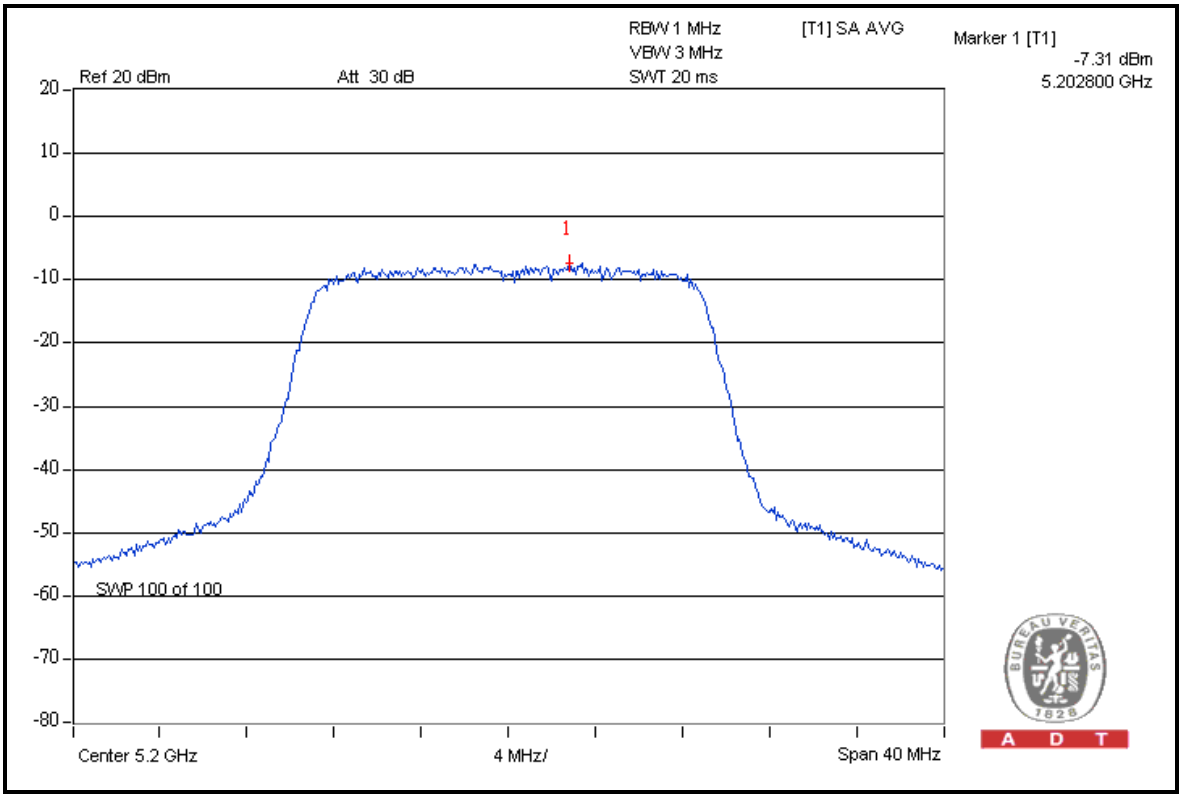
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

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	-7.18	-7.47	0.370	-4.31	-4	PASS
40	5200	-7.31	-8.16	0.339	-4.70	-4	PASS
48	5240	-7.23	-7.81	0.355	-4.50	-4	PASS

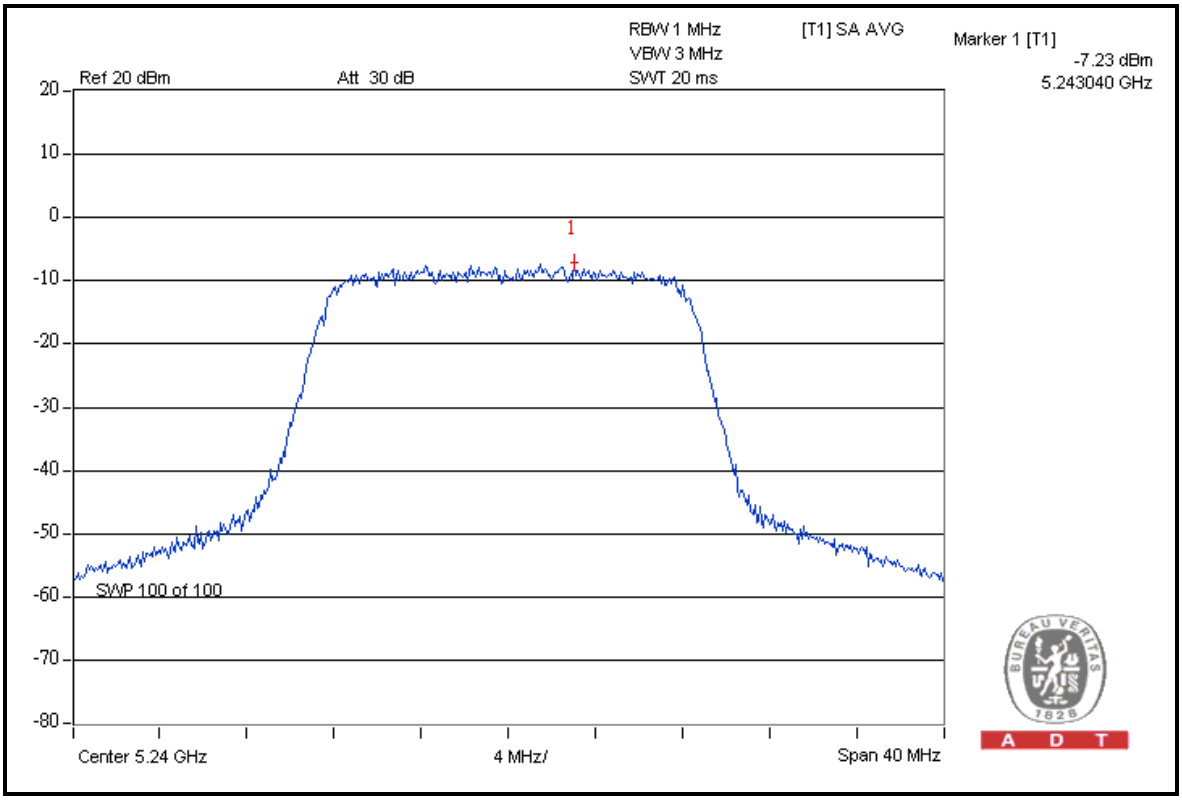
CHAIN 0 CH 36



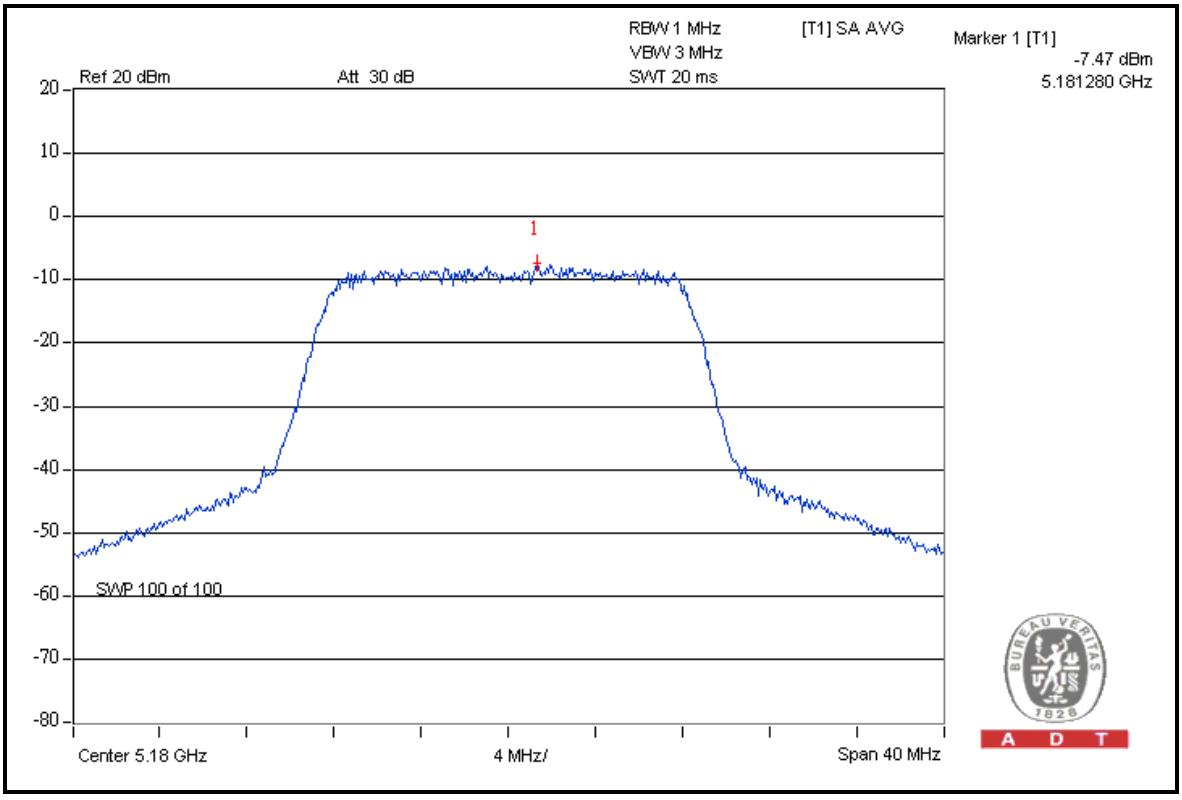
CH 40



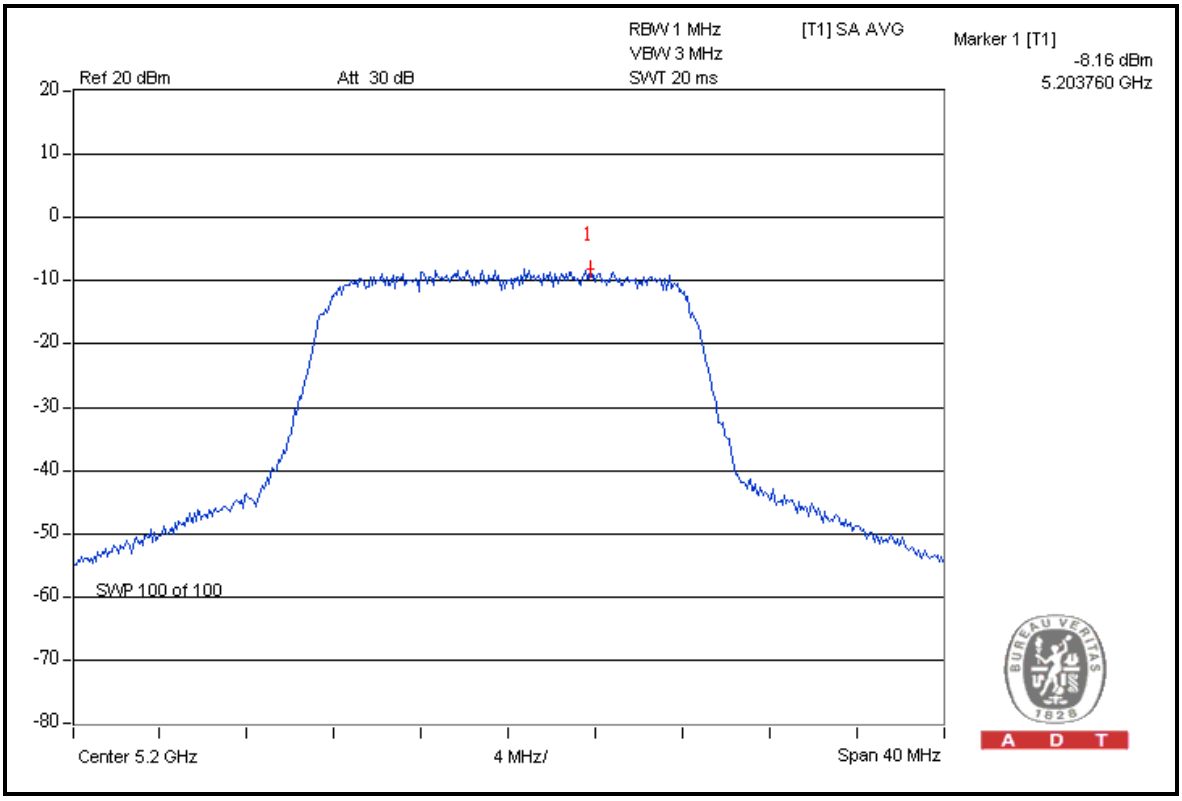
CH 48



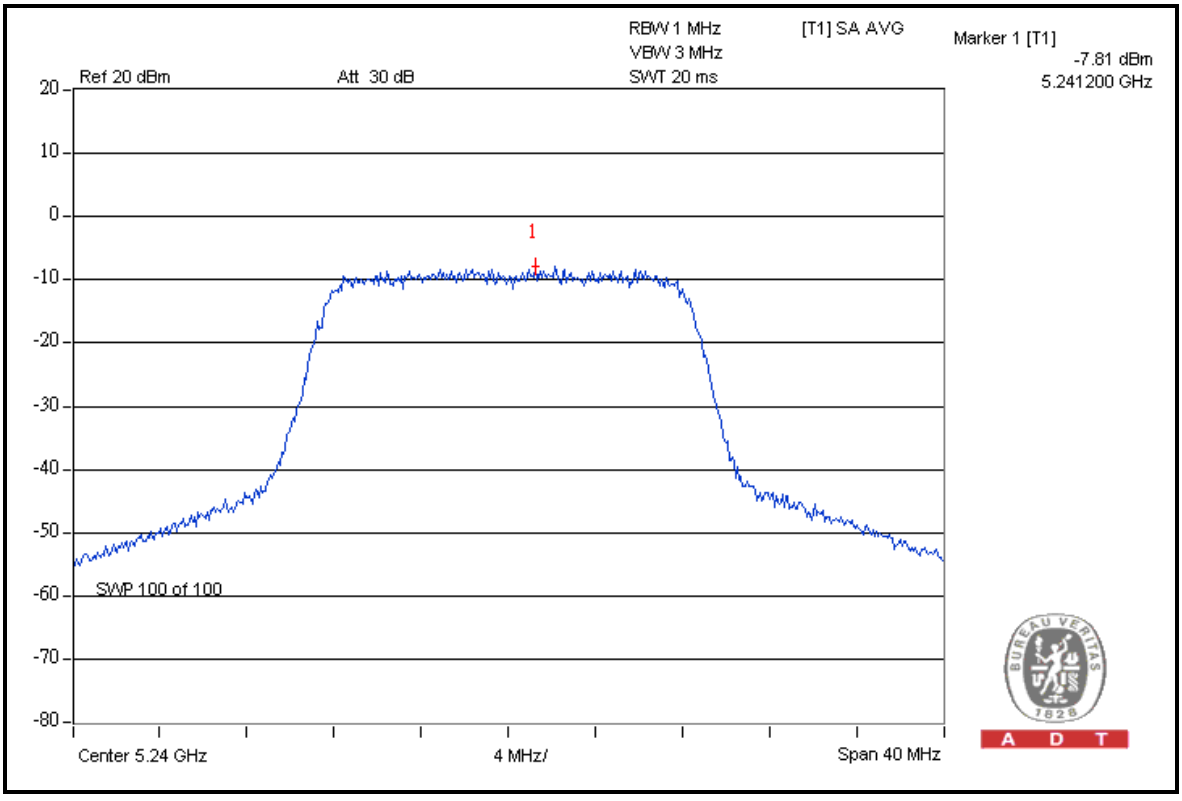
CHAIN 1 CH 36



CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-8.16 dBm
5.203760 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.2 GHz
4 MHz/
Span 40 MHz

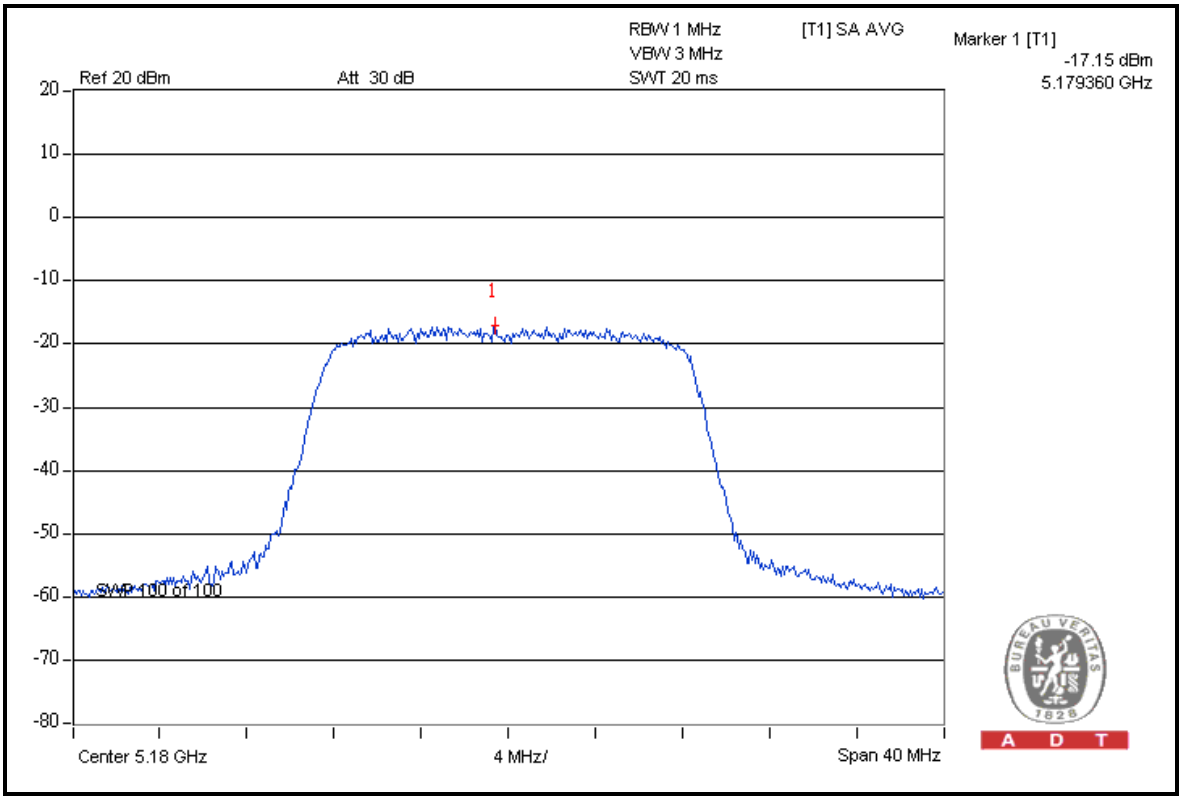
CH 48


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-7.81 dBm
5.241200 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.24 GHz
4 MHz/
Span 40 MHz

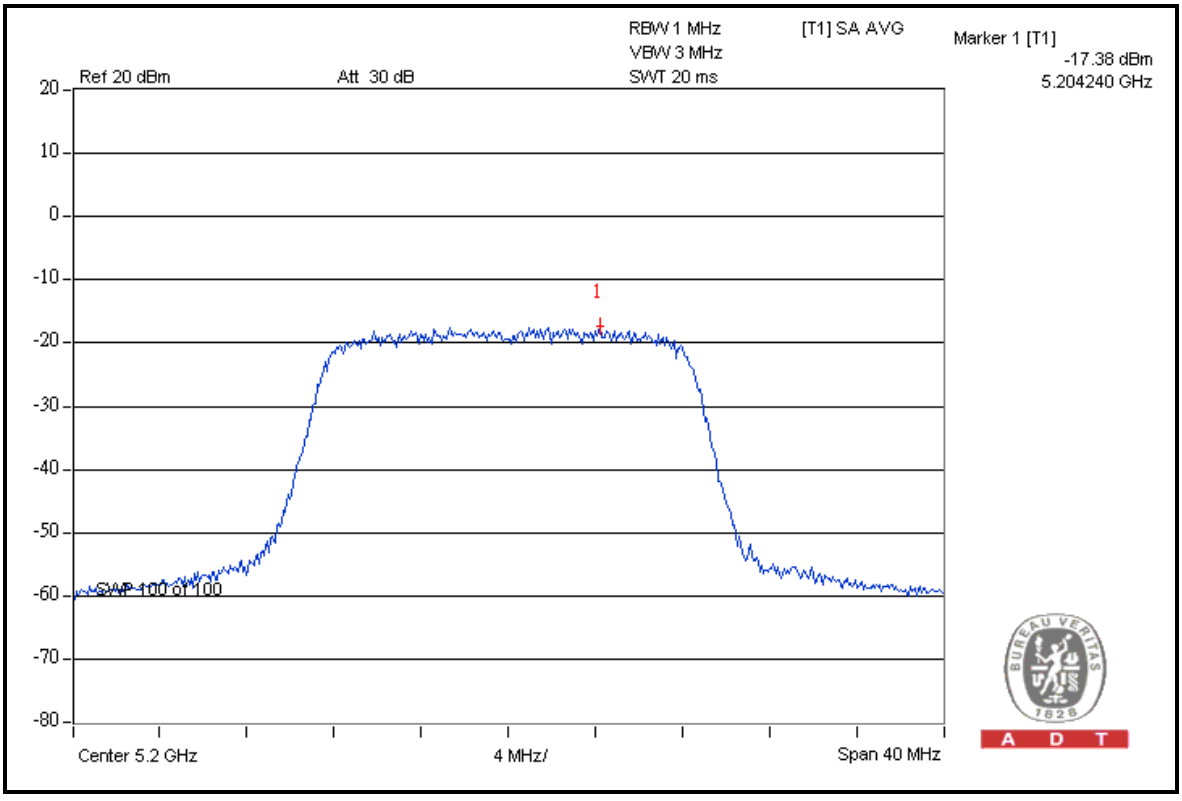
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

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	-17.15	-17.21	0.038	-14.17	-13	PASS
40	5200	-17.38	-17.72	0.035	-14.54	-13	PASS
48	5240	-17.57	-18.16	0.033	-14.84	-13	PASS

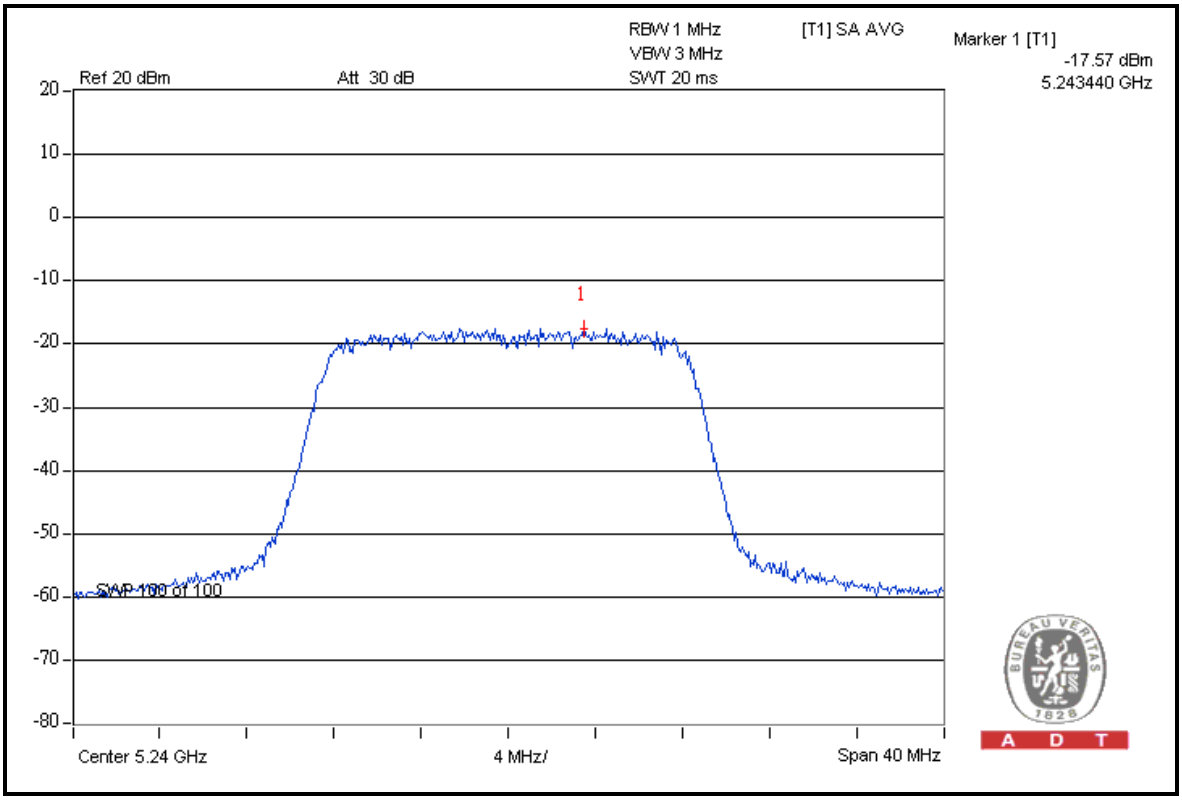
CHAIN 0 CH 36



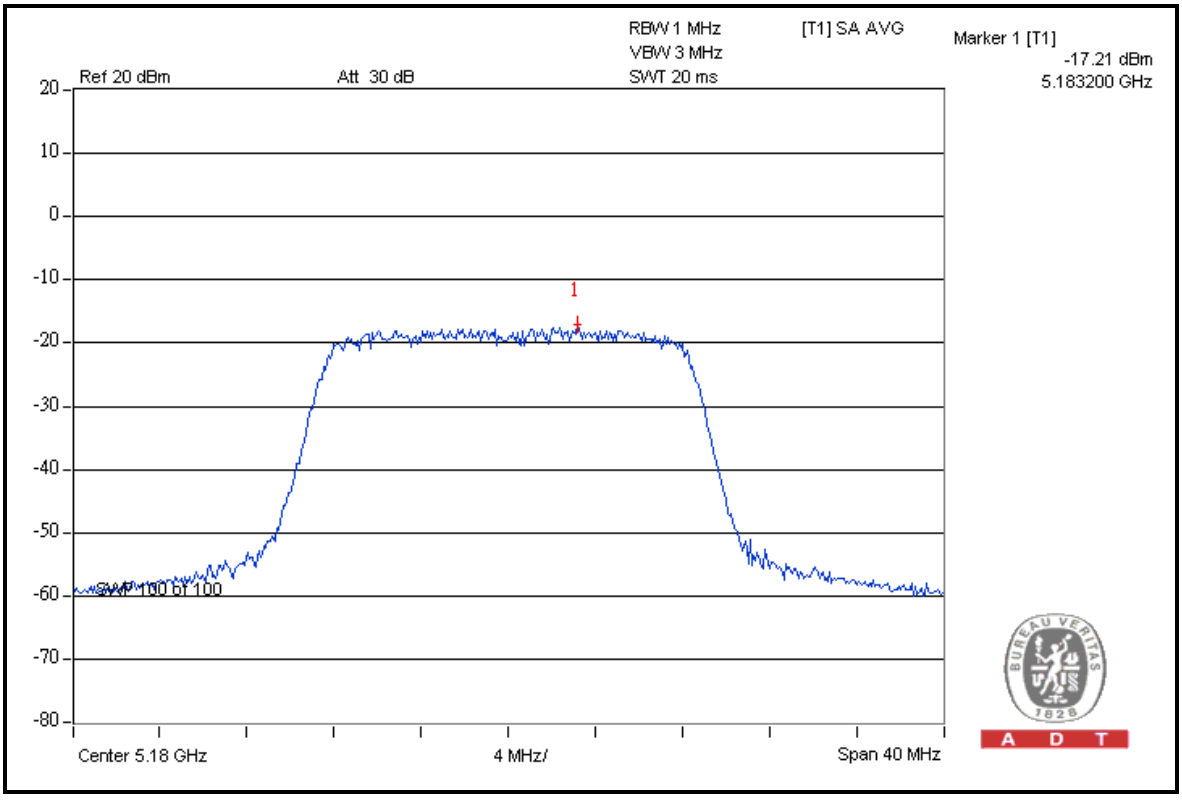
CH 40



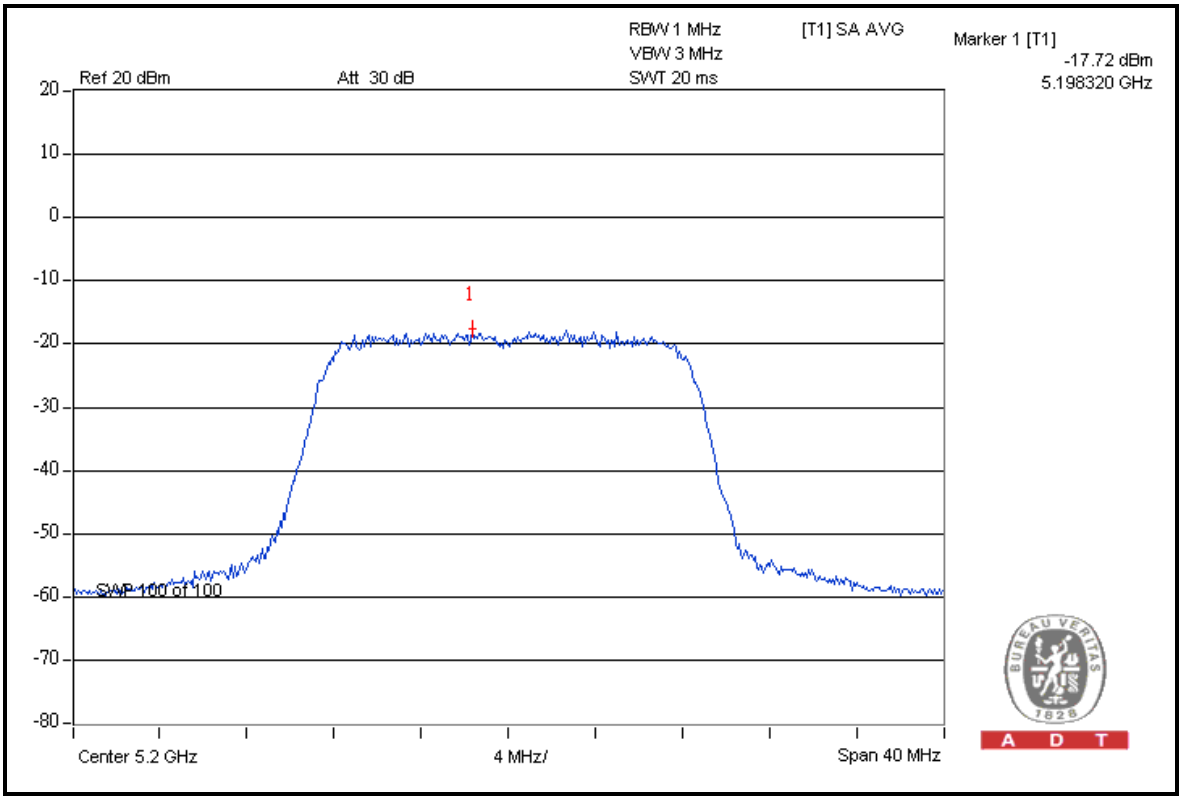
CH 48



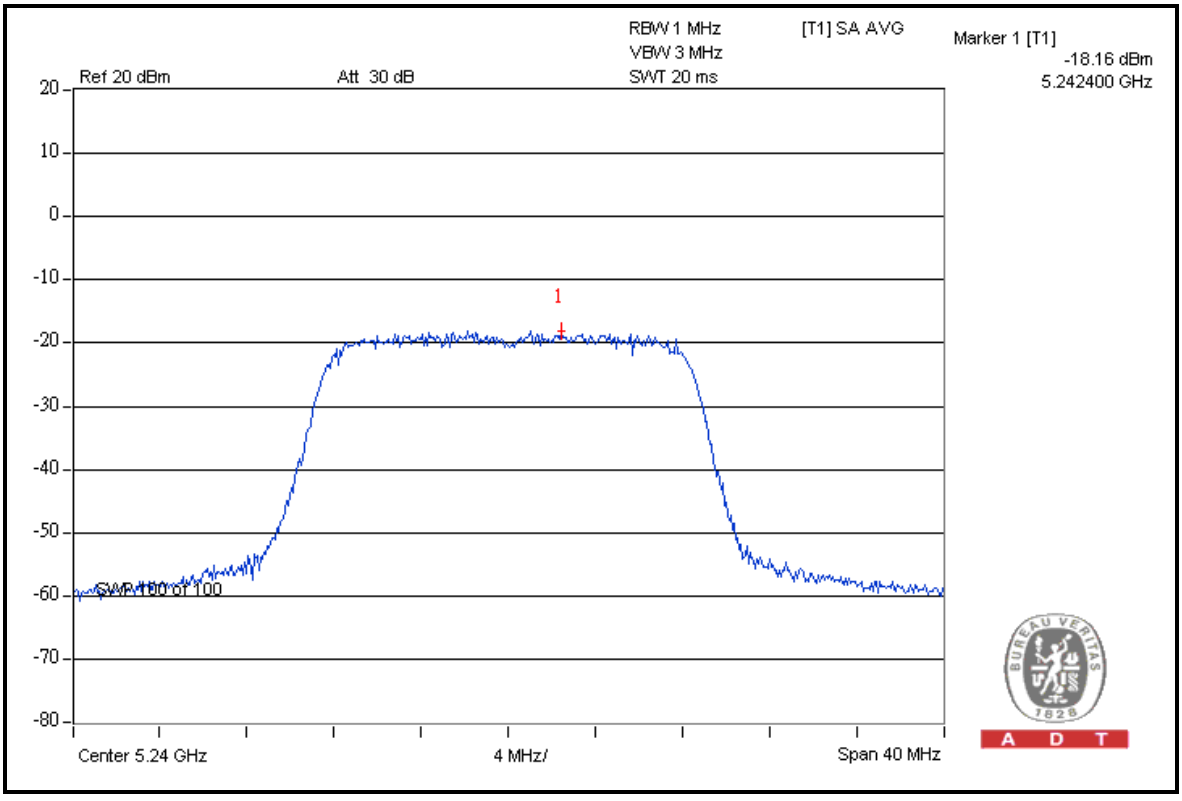
CHAIN 1 CH 36



CH 40


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-17.72 dBm
5.198320 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.2 GHz
4 MHz/
Span 40 MHz

CH 48

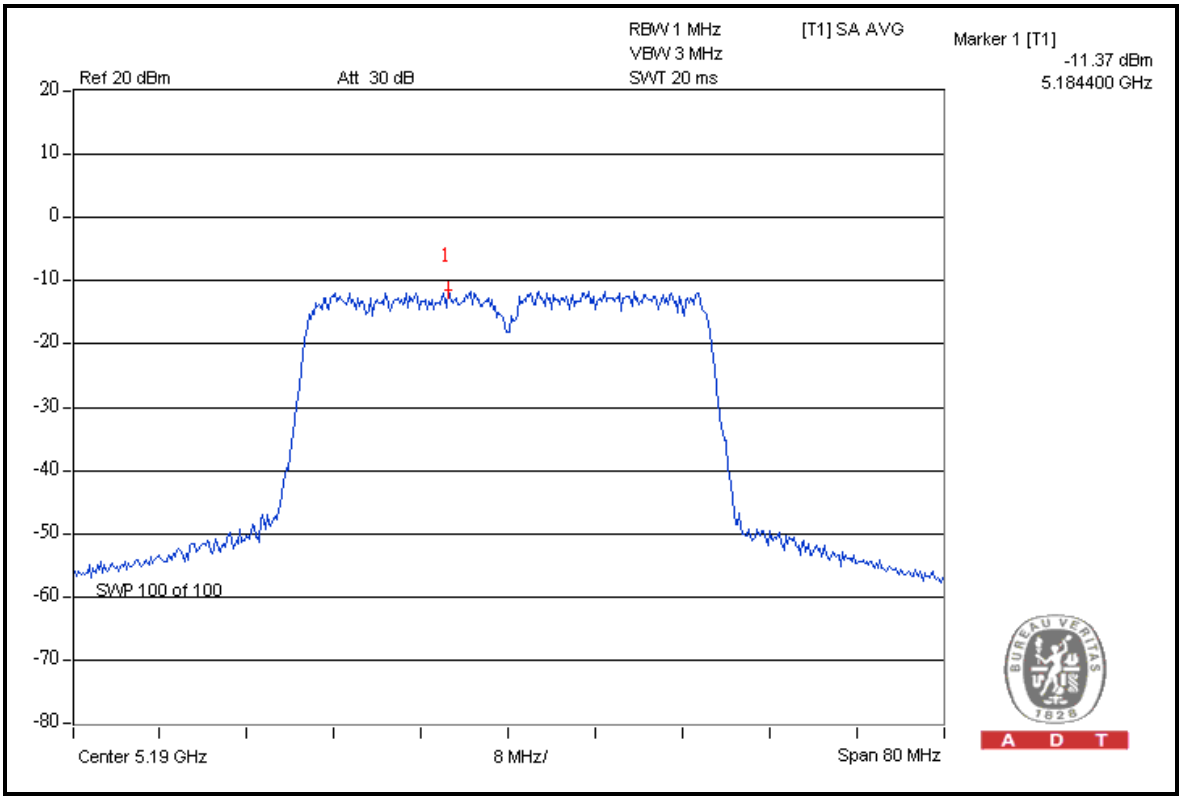

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] SA AVG
Marker 1 [T1]
-18.16 dBm
5.242400 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
SWP 100 of 100
Center 5.24 GHz
4 MHz/
Span 40 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

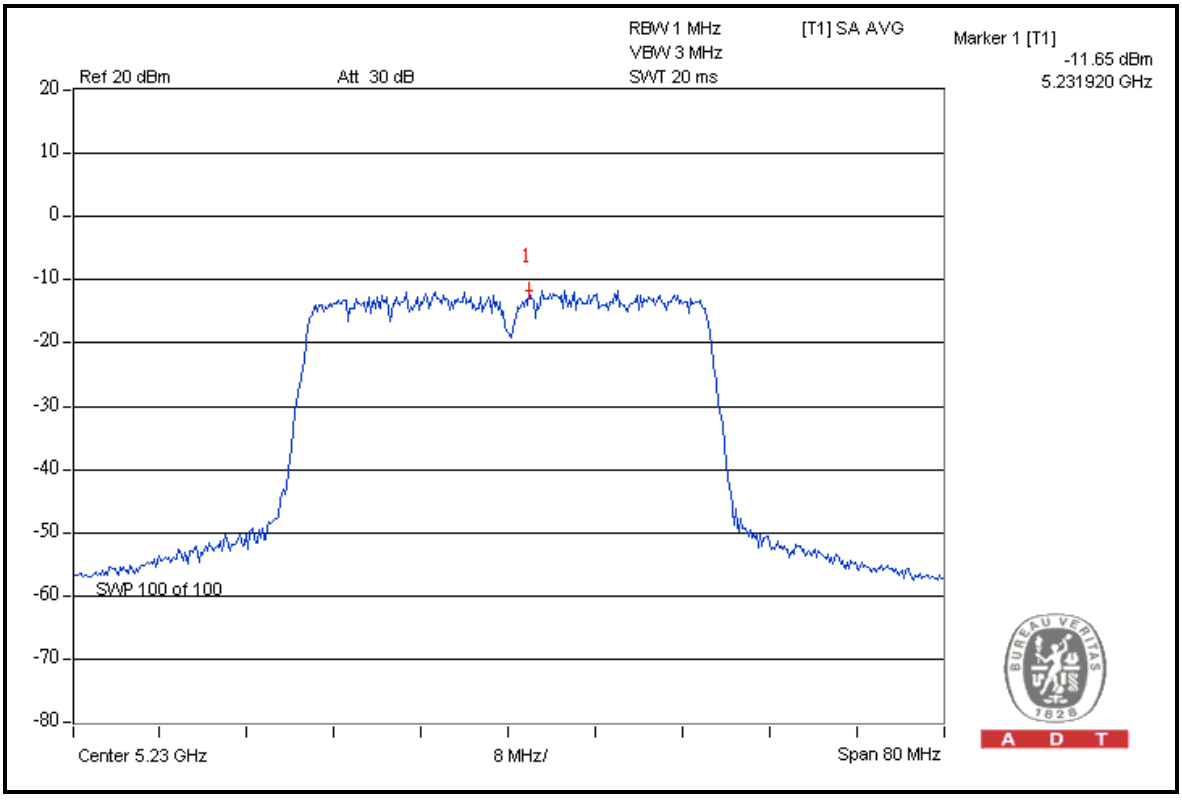
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	A

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	-11.37	-12.28	0.132	-8.79	-4	PASS
46	5230	-11.65	-12.89	0.120	-9.22	-4	PASS

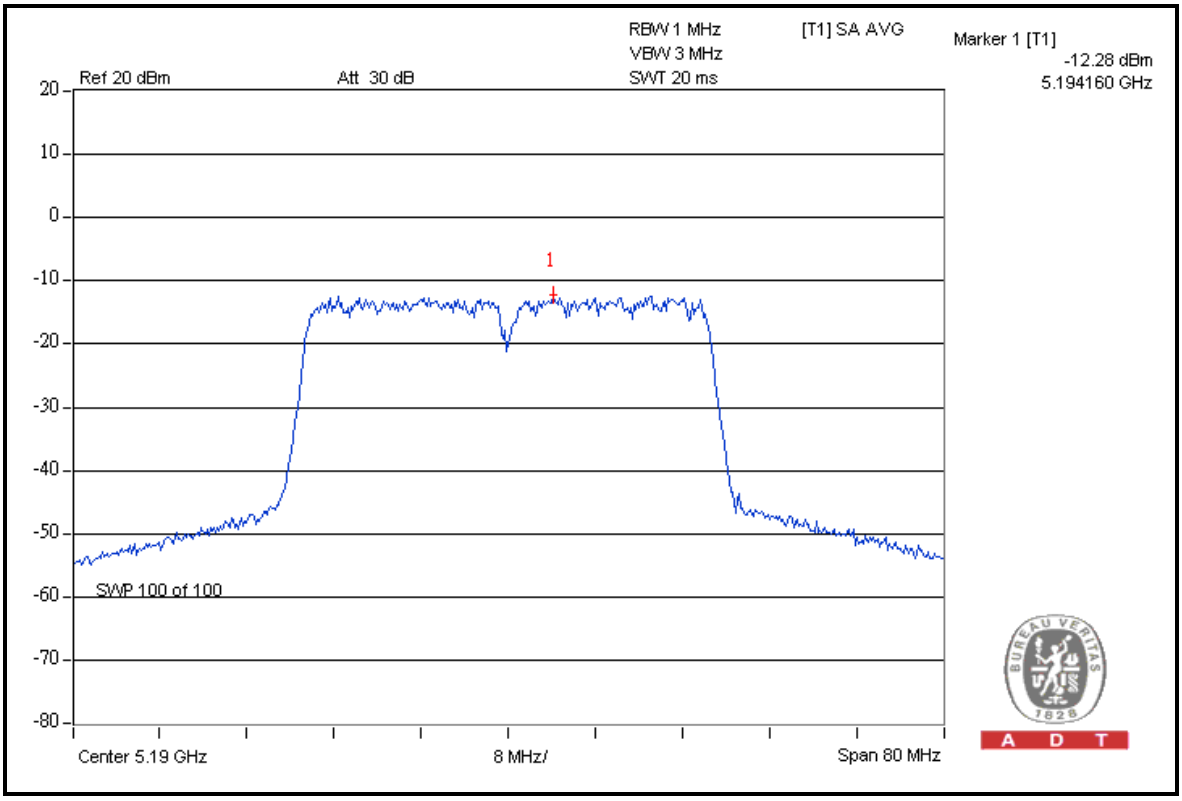
CHAIN 0 CH 38



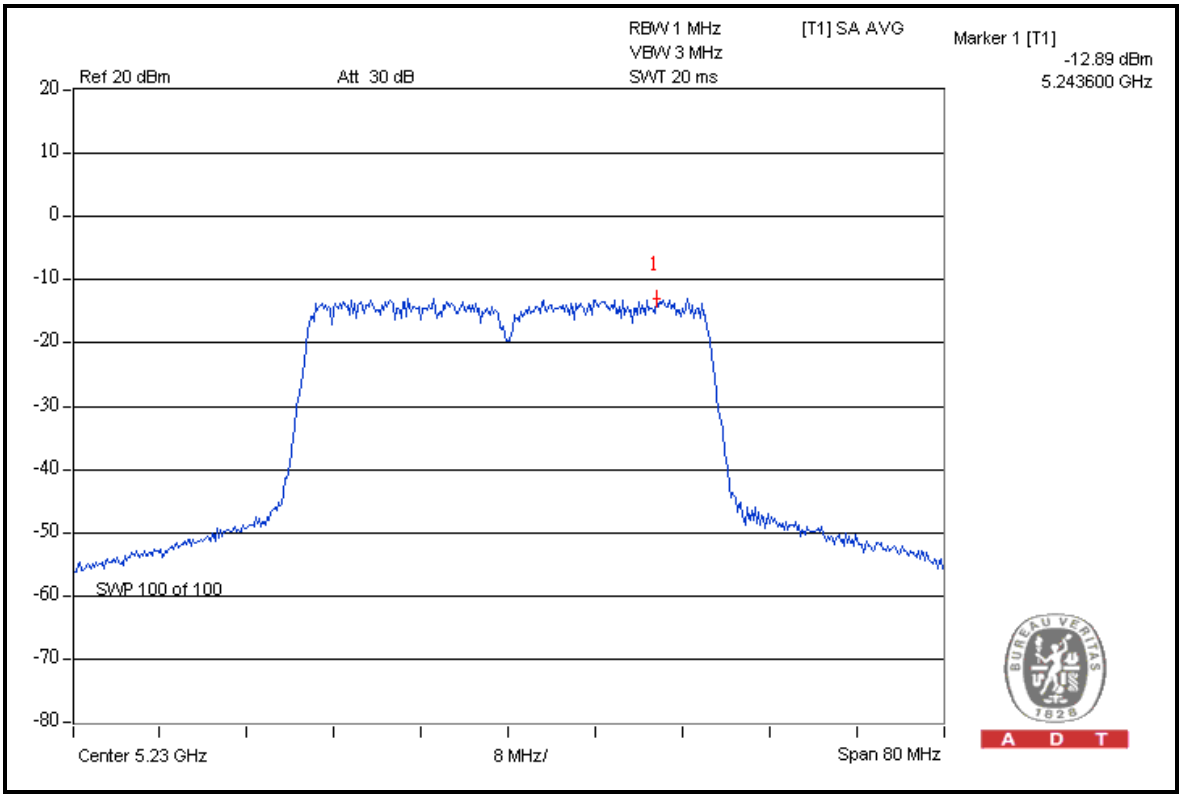
CH 46



CHAIN 1 CH 38



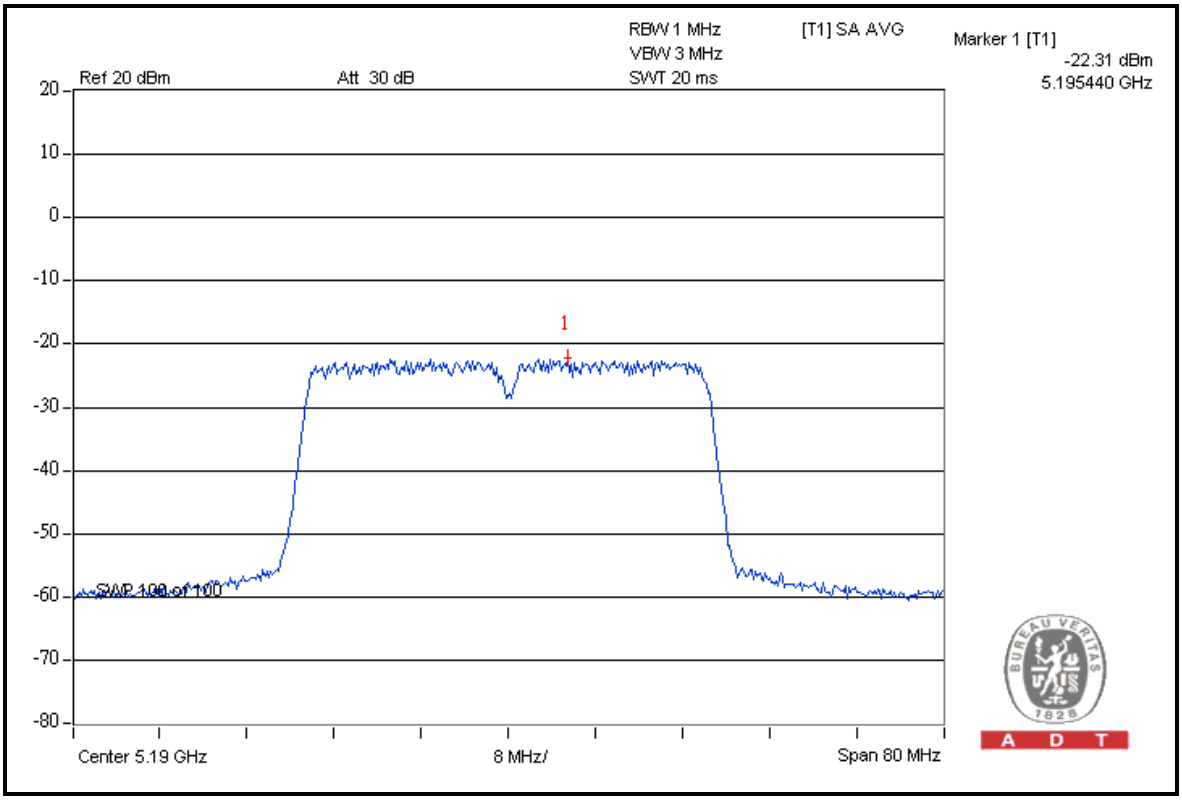
CH 46



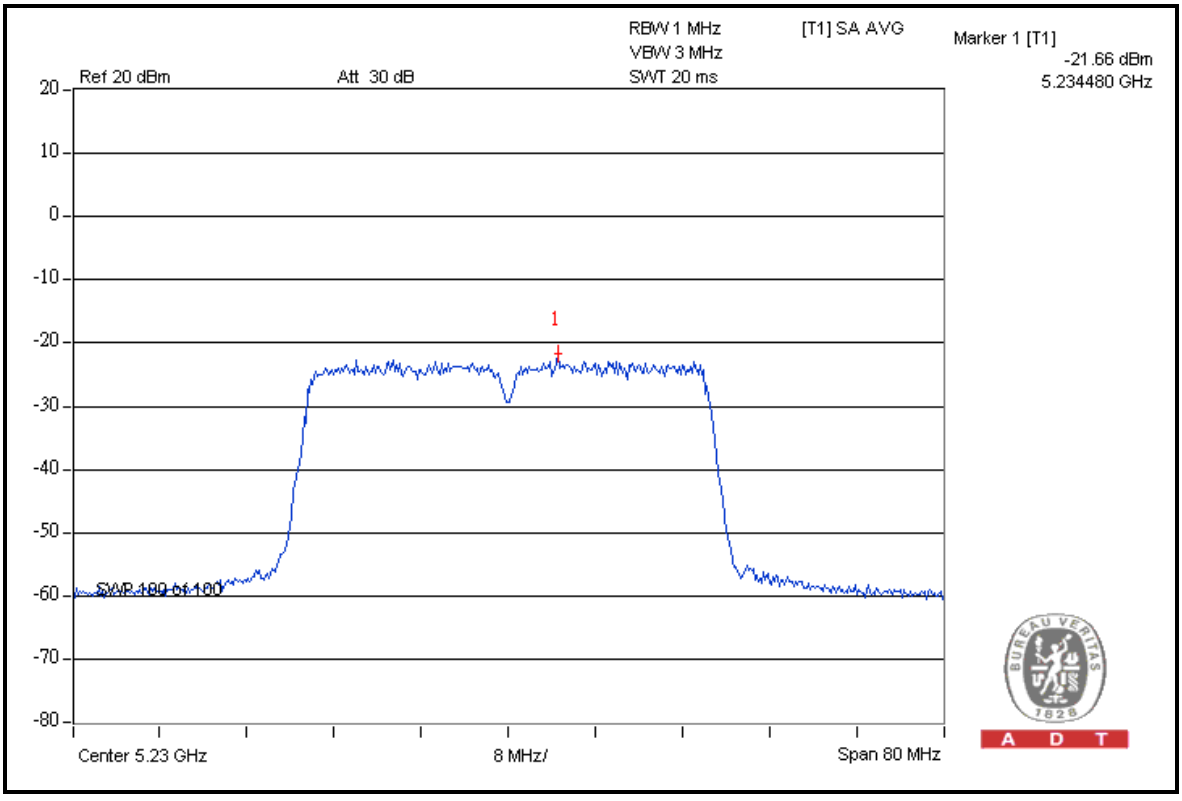
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 65 %RH, 1008hPa
TESTED BY	Chad Lee	**TEST MODE**	C

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	-22.31	-20.89	0.013	-18.92	-13	PASS
46	5230	-21.66	-21.77	0.013	-18.70	-13	PASS

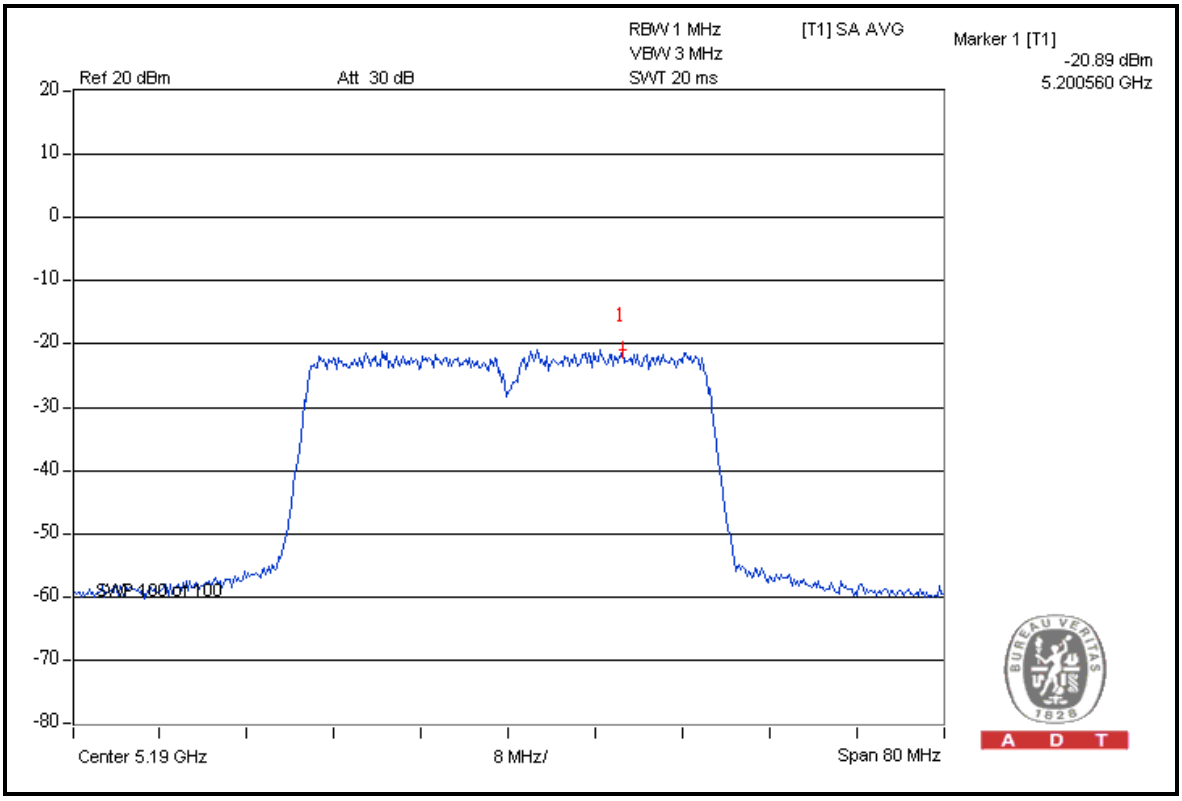
CHAIN 0 CH 38



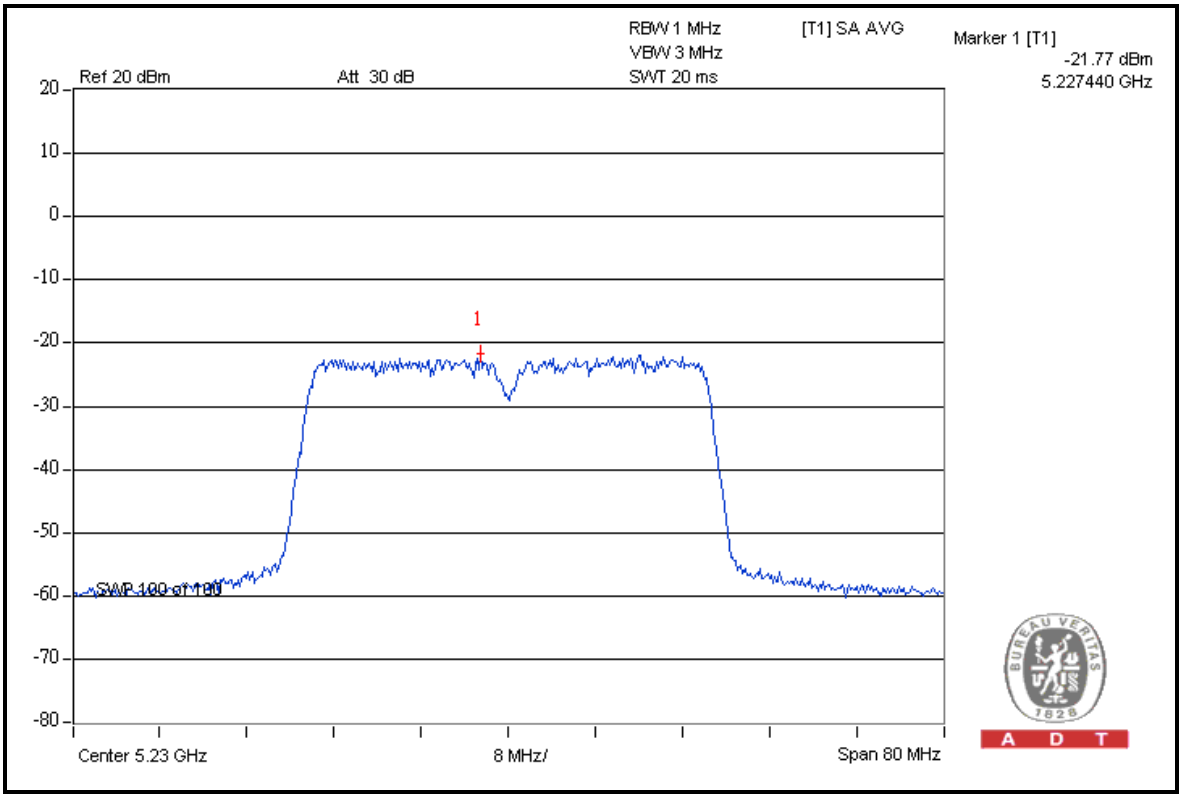
CH 46



CHAIN 1 CH 38



CH 46



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within the band of the operating frequency over a temperature variation of –40 degrees to 65 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER	FSP 40	100036	Apr. 3, 2009	Apr. 2, 2010
Temperature & Humidity Chamber	MHU-225AU	920409	Apr. 30, 2009	Apr. 29, 2010

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

4.6.3 TEST PROCEDURE

a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

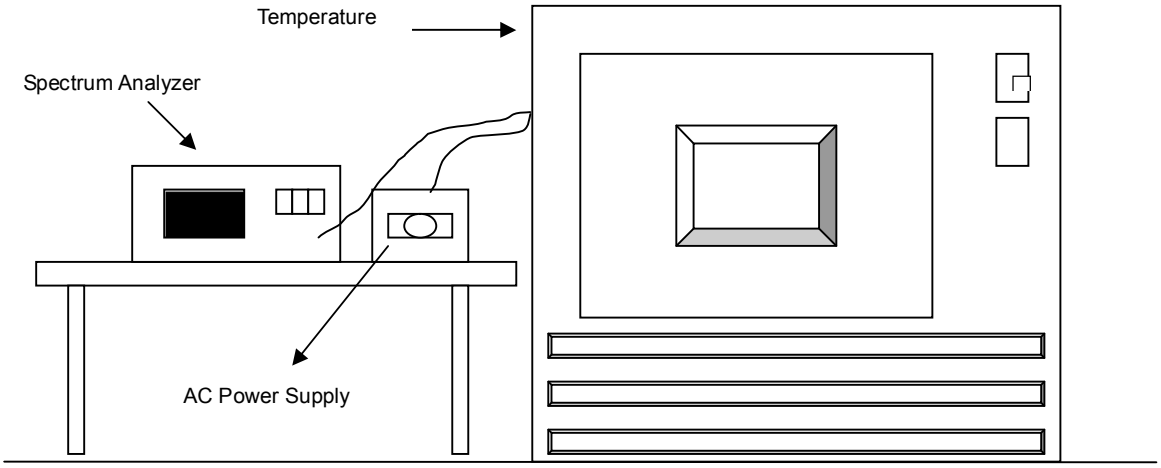
e. Repeat step b and c with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.7

4.6.7 TEST RESULTS

For Mode A:

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
65	120.0	5179.973266	-0.0005161	5179.973293	-0.0005156	5179.973381	-0.0005139	5179.973175	-0.0005179
50	120.0	5179.972981	-0.0005216	5179.97299	-0.0005214	5179.972802	-0.0005251	5179.97298	-0.0005216
40	120.0	5179.973186	-0.0005176	5179.973204	-0.0005173	5179.9734	-0.0005135	5179.97323	-0.0005168
30	120.0	5179.973265	-0.0005161	5179.973334	-0.0005148	5179.973299	-0.0005155	5179.973444	-0.0005127
20	120.0	5179.973224	-0.0005169	5179.97348	-0.0005120	5179.973293	-0.0005156	5179.973187	-0.0005176
10	120.0	5179.973484	-0.0005119	5179.973321	-0.0005150	5179.97355	-0.0005106	5179.973615	-0.0005094
0	120.0	5179.973309	-0.0005153	5179.973398	-0.0005136	5179.97302	-0.0005208	5179.973095	-0.0005194
-10	120.0	5179.973538	-0.0005108	5179.973709	-0.0005075	5179.973389	-0.0005137	5179.973694	-0.0005078
-20	120.0	5179.973453	-0.0005125	5179.973578	-0.0005101	5179.973515	-0.0005113	5179.973436	-0.0005128
-30	120.0	5179.973072	-0.0005198	5179.972981	-0.0005216	5179.973173	-0.0005179	5179.972785	-0.0005254
-40	120.0	5179.972981	-0.0005216	5179.972777	-0.0005255	5179.972722	-0.0005266	5179.973007	-0.0005211

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138.0	5179.973542	-0.0005108	5179.973748	-0.0005068	5179.973868	-0.0005045	5179.973503	-0.0005115
	120.0	5179.973224	-0.0005169	5179.97348	-0.0005120	5179.973293	-0.0005156	5179.973187	-0.0005176
	102.0	5179.973202	-0.0005173	5179.97314	-0.0005185	5179.972937	-0.0005225	5179.973249	-0.0005164

For Mode C:

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
65	120.0	5179.973272	-0.0005160	5179.973437	-0.0005128	5179.973231	-0.0005168	5179.973359	-0.0005143
50	120.0	5179.973194	-0.0005175	5179.973127	-0.0005188	5179.973123	-0.0005189	5179.972947	-0.0005223
40	120.0	5179.973188	-0.0005176	5179.973043	-0.0005204	5179.973312	-0.0005152	5179.973303	-0.0005154
30	120.0	5179.97319	-0.0005176	5179.973149	-0.0005184	5179.973325	-0.0005150	5179.973244	-0.0005165
20	120.0	5179.973091	-0.0005195	5179.973131	-0.0005187	5179.972973	-0.0005218	5179.97304	-0.0005205
10	120.0	5179.973472	-0.0005121	5179.973477	-0.0005120	5179.973602	-0.0005096	5179.973521	-0.0005112
0	120.0	5179.973477	-0.0005120	5179.973629	-0.0005091	5179.973483	-0.0005119	5179.973435	-0.0005128
-10	120.0	5179.973823	-0.0005053	5179.973899	-0.0005039	5179.973786	-0.0005061	5179.974087	-0.0005003
-20	120.0	5179.973287	-0.0005157	5179.973261	-0.0005162	5179.973385	-0.0005138	5179.973243	-0.0005165
-30	120.0	5179.973017	-0.0005209	5179.973161	-0.0005181	5179.972886	-0.0005234	5179.973133	-0.0005187
-40	120.0	5179.972694	-0.0005271	5179.972738	-0.0005263	5179.972609	-0.0005288	5179.972403	-0.0005328

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138.0	5179.973437	-0.0005128	5179.973423	-0.0005131	5179.973499	-0.0005116	5179.973479	-0.0005120
	120.0	5179.973091	-0.0005195	5179.973131	-0.0005187	5179.972973	-0.0005218	5179.97304	-0.0005205
	102.0	5179.973374	-0.0005140	5179.973561	-0.0005104	5179.973385	-0.0005138	5179.973491	-0.0005118

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum	8564EC	4208A00659	Jul. 24, 2009	Jul. 23, 2010
Agilent Preamplifier	8449B	3008A01924	Aug. 31, 2009	Aug. 30, 2010
Agilent Preamplifier	8449B	3008A01292	Aug. 10, 2009	Aug. 09, 2010
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Aug. 31, 2009	Aug. 30, 2010
Schwarzbeck Horn Antenna	BBHA-9170	BBHA9170190	Sep. 24, 2009	Sep. 23, 2010
Schwarzbeck Horn Antenna	BBHA-9120	D130	May 15, 2009	May 14, 2010
ADT. Turn Table	TT100	0201	NA	NA
ADT. Tower	AT100	0201	NA	NA
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
SUHNER RF cable	SF106-18	PHACAB-1G-40GHz	Aug. 20, 2009	Aug. 19, 2010

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Open Site No. 10.
3. The Industry Canada Reference No. IC 7450E-10.
4. The FCC Site Registration No. 698148.

4.7.2 TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

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

4.7.3 EUT OPERATING CONDITION

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

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.18 to 5.24GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

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

802.11a OFDM MODULATION

TEST MODE A

Channel 36 (5180MHz)

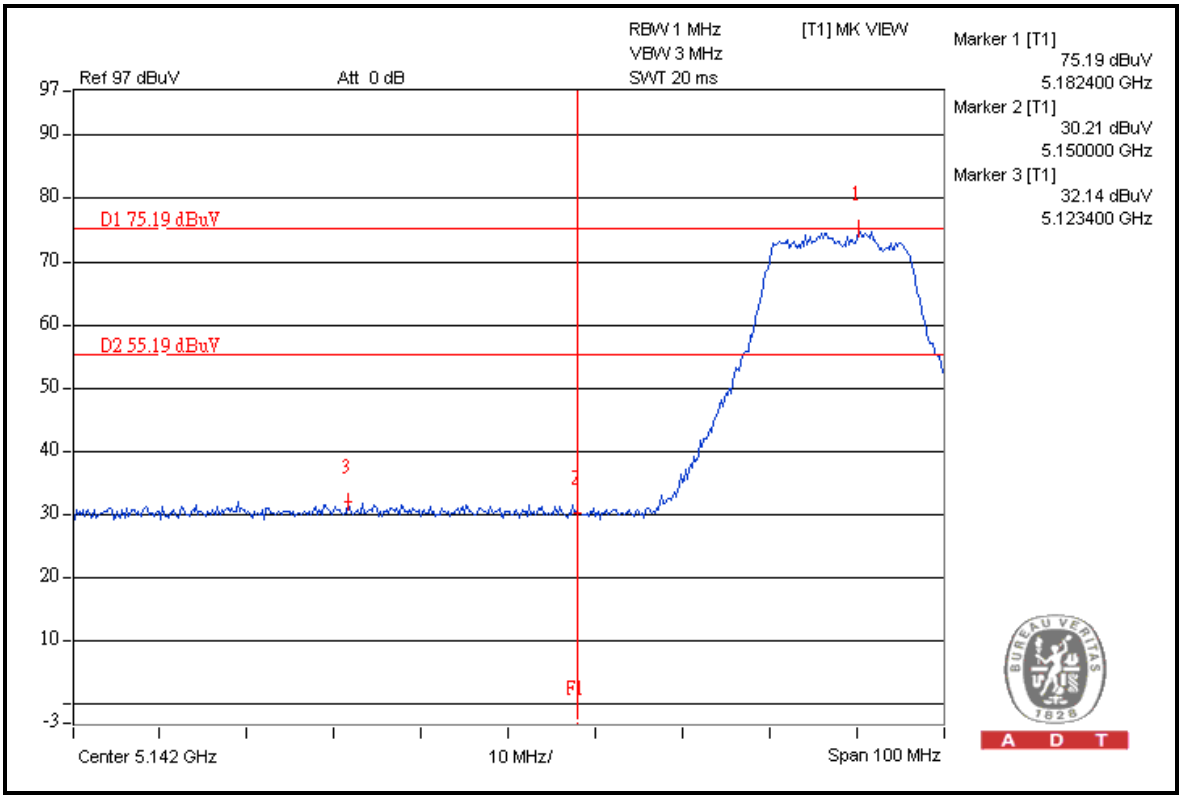
The band edge emission plot on the next page shows 43.05dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 112.80dBuV/m (Peak), so the maximum field strength in restrict band is 112.80 – 43.05 = 69.75dBuV/m which is under 74dBuV/m limit.

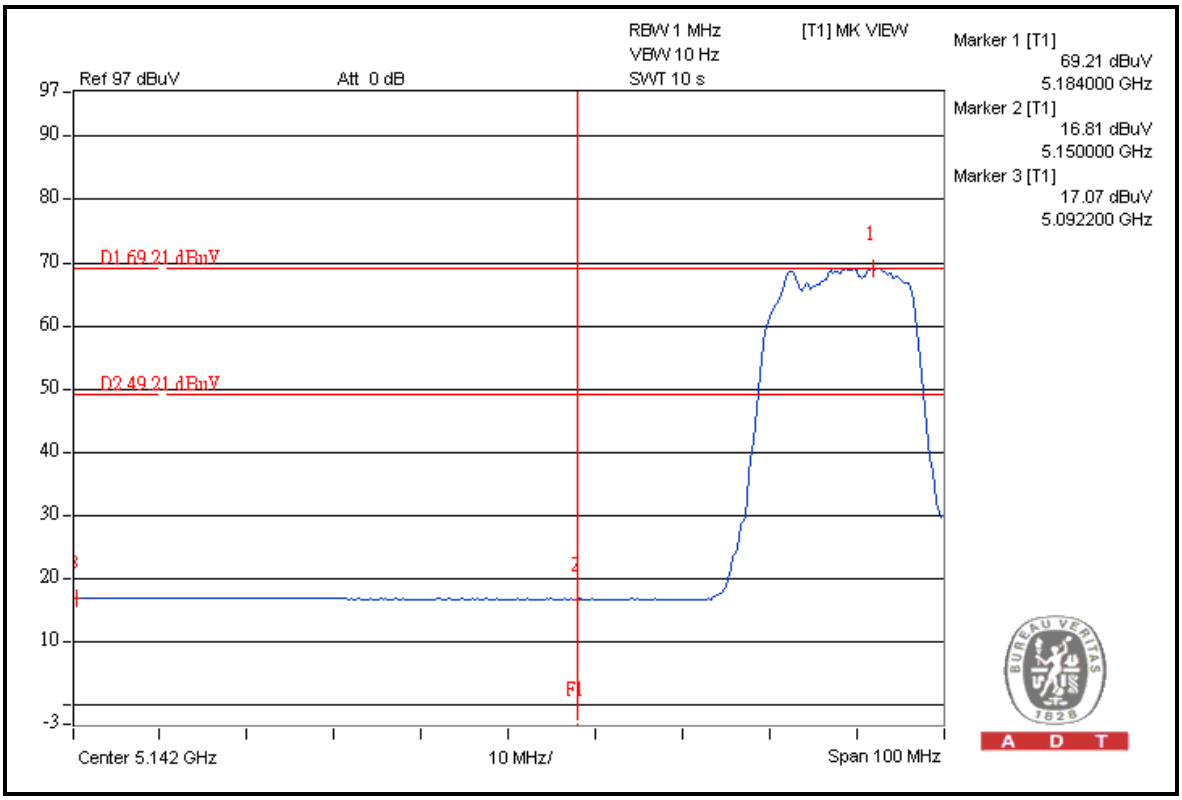
The band edge emission plot on the next page shows 52.14dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 102.09dBuV/m (Average), so the maximum field strength in restrict band is 102.09 – 52.14 = 50.76dBuV/m which is under 54dBuV/m limit.

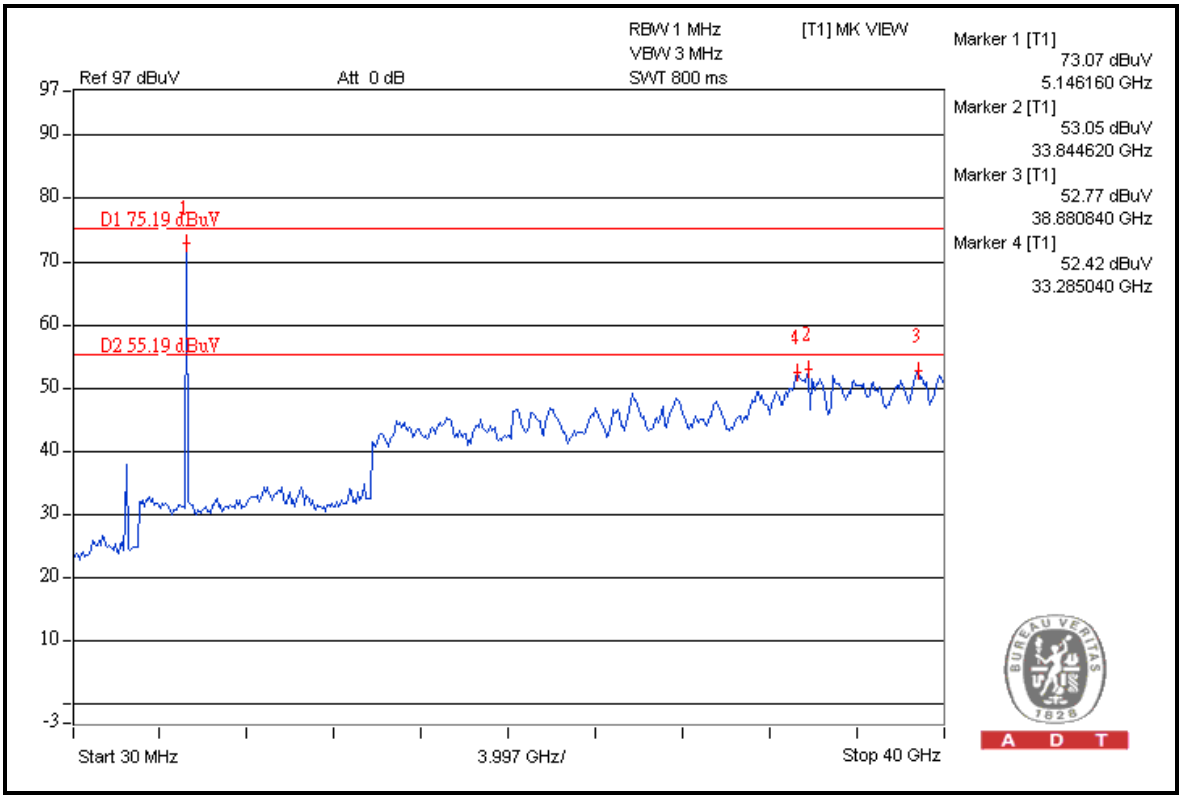
Channel 48 (5240MHz)

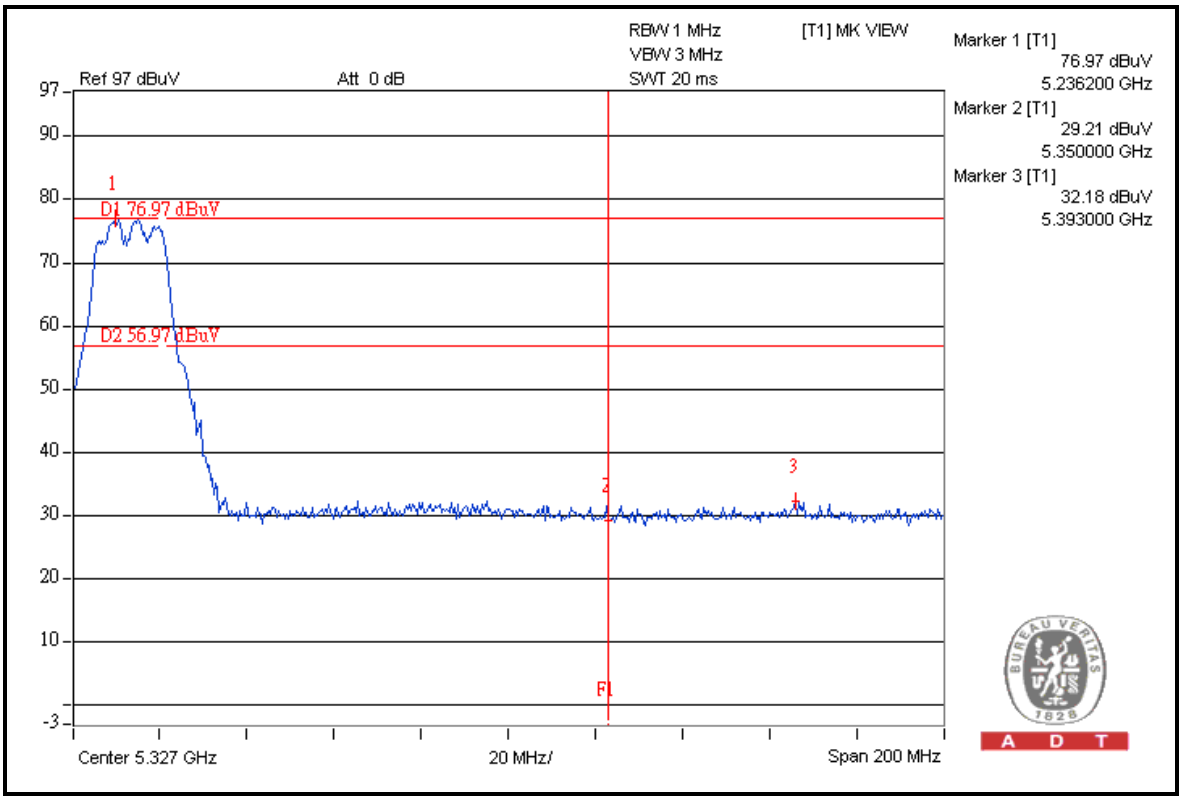
The band edge emission plot on the next second page shows 44.79dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 114.46dBuV/m (Peak), so the maximum field strength in restrict band is 114.46–44.79 = 69.67dBuV/m which is under 74dBuV/m limit.

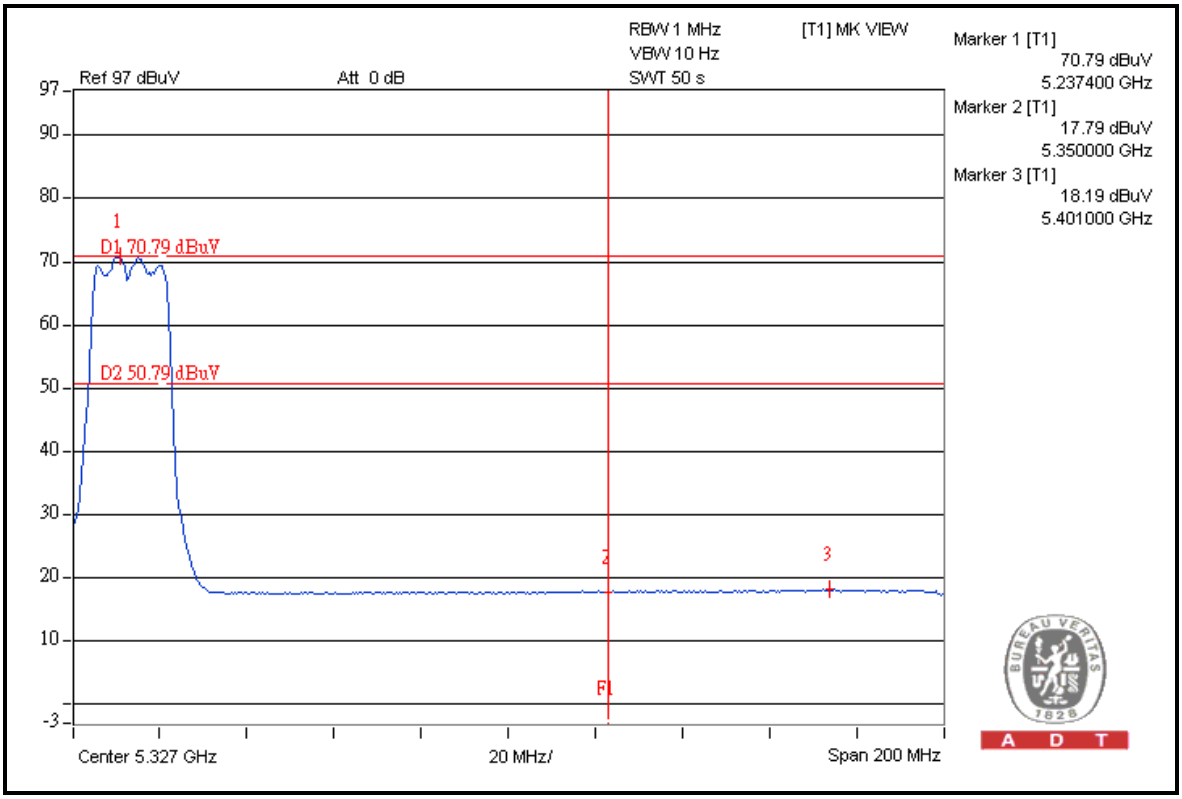
The band edge emission plot on the next third page shows 52.60dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 103.80dBuV/m (Average), so the maximum field strength in restrict band is 103.80 – 52.60 = 51.20dBuV/m which is under 54dBuV/m limit.

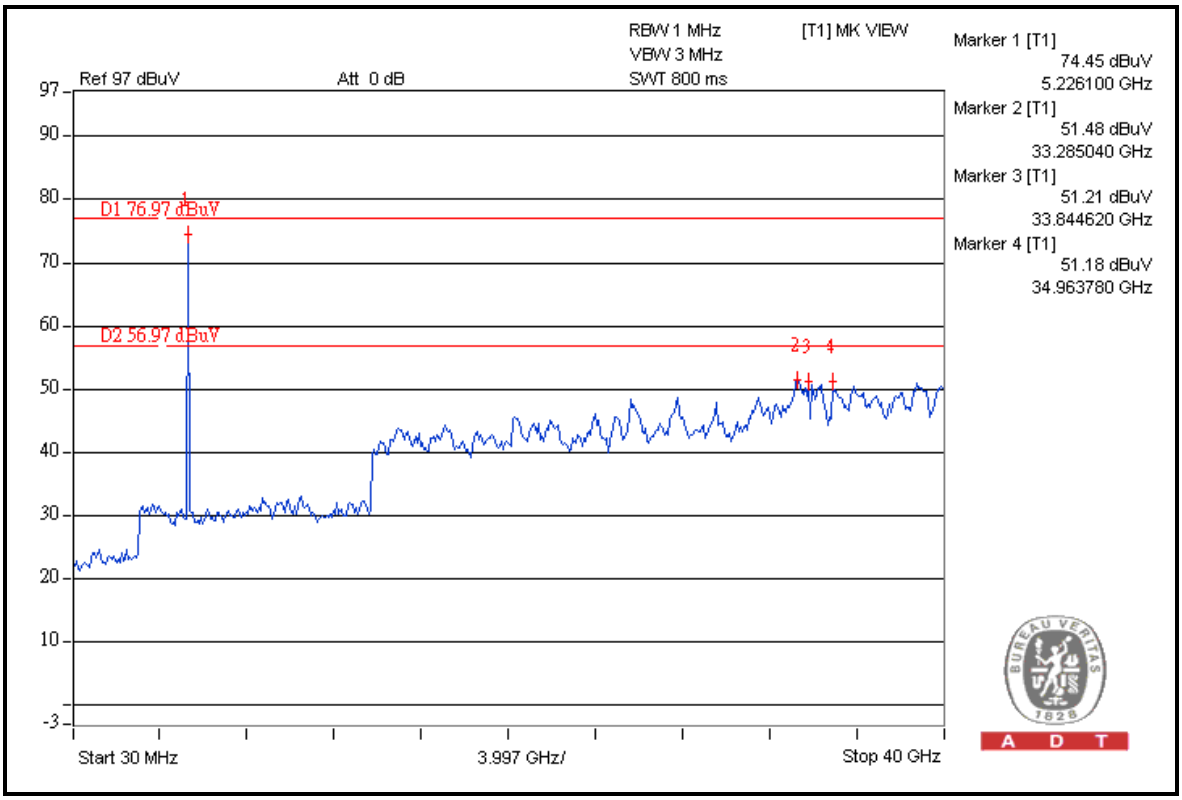

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
75.19 dBuV
5.182400 GHz
Marker 2 [T1]
30.21 dBuV
5.150000 GHz
Marker 3 [T1]
32.14 dBuV
5.123400 GHz
D1 75.19 dBuV
D2 55.19 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 10 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
69.21 dBuV
5.184000 GHz
Marker 2 [T1]
16.81 dBuV
5.150000 GHz
Marker 3 [T1]
17.07 dBuV
5.092200 GHz
D1 69.21 dBuV
D2 49.21 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
73.07 dBuV
5.146160 GHz
Marker 2 [T1]
53.05 dBuV
33.844620 GHz
Marker 3 [T1]
52.77 dBuV
38.880840 GHz
Marker 4 [T1]
52.42 dBuV
33.285040 GHz
D1 75.19 dBuV
D2 55.19 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
76.97 dBuV
5.236200 GHz
Marker 2 [T1]
29.21 dBuV
5.350000 GHz
Marker 3 [T1]
32.18 dBuV
5.393000 GHz
D1 76.97 dBuV
D2 56.97 dBuV
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
70.79 dBuV
5.237400 GHz
Marker 2 [T1]
17.79 dBuV
5.350000 GHz
Marker 3 [T1]
18.19 dBuV
5.401000 GHz
D1 70.79 dBuV
D2 50.79 dBuV
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
74.45 dBuV
5.226100 GHz
Marker 2 [T1]
51.48 dBuV
33.285040 GHz
Marker 3 [T1]
51.21 dBuV
33.844620 GHz
Marker 4 [T1]
51.18 dBuV
34.963780 GHz
D1 76.97 dBuV
D2 56.97 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

TEST MODE C

Channel 36 (5180MHz)

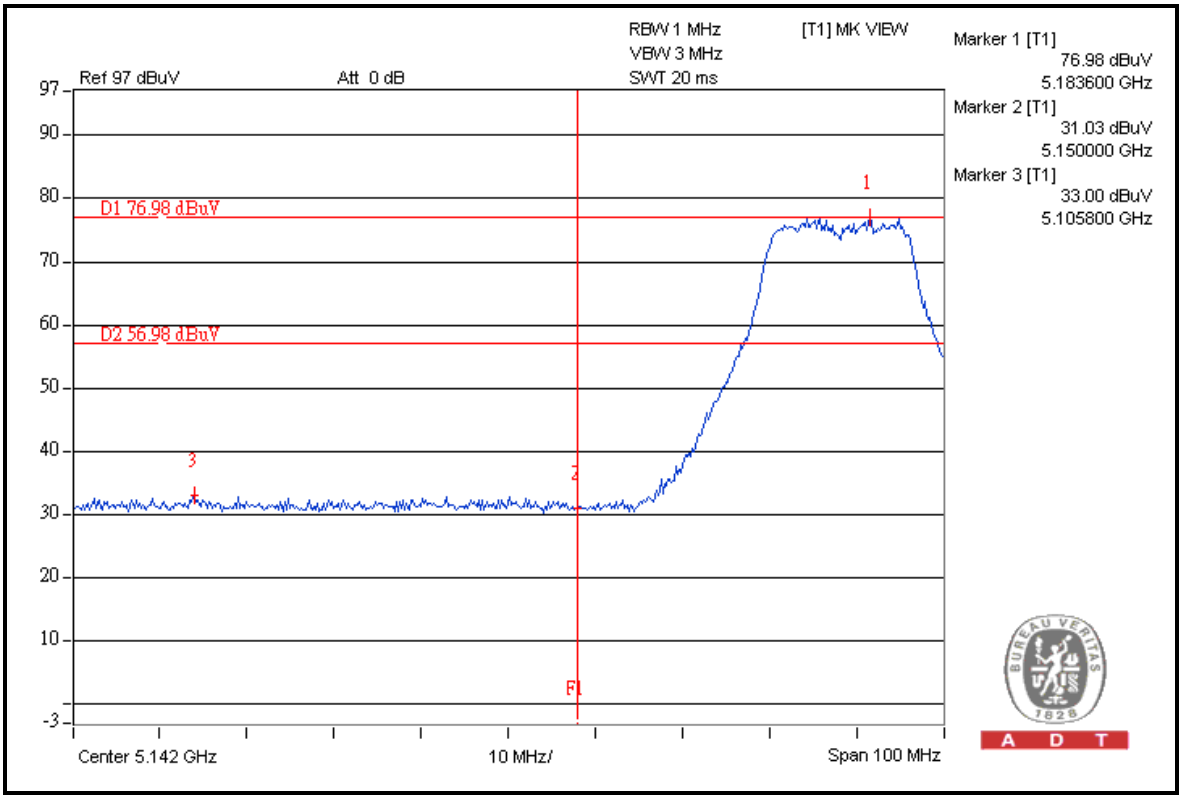
The band edge emission plot on the next page shows 43.98dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 115.02dBuV/m (Peak), so the maximum field strength in restrict band is 115.02 –43.98 = 71.04dBuV/m which is under 74dBuV/m limit.

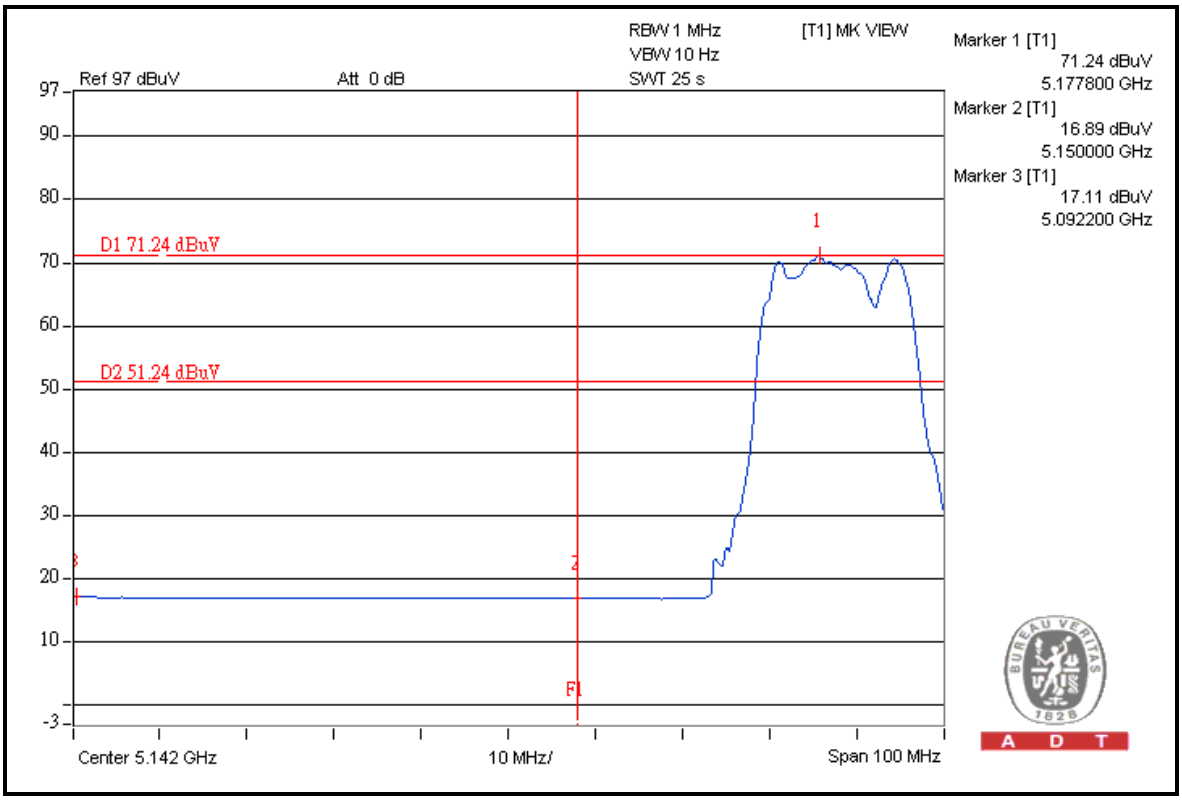
The band edge emission plot on the next page shows 54.13dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 103.11dBuV/m (Average), so the maximum field strength in restrict band is 103.11 –54.13 = 48.98dBuV/m which is under 54dBuV/m limit.

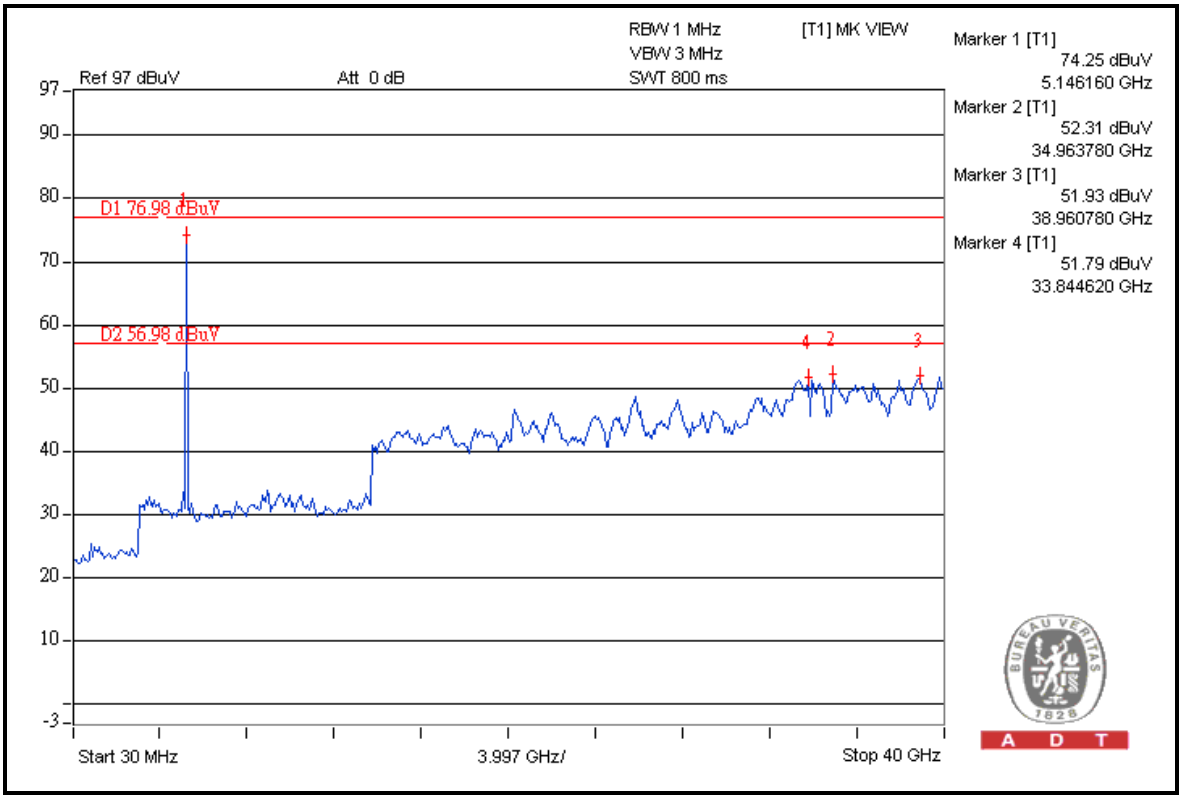
Channel 48 (5240MHz)

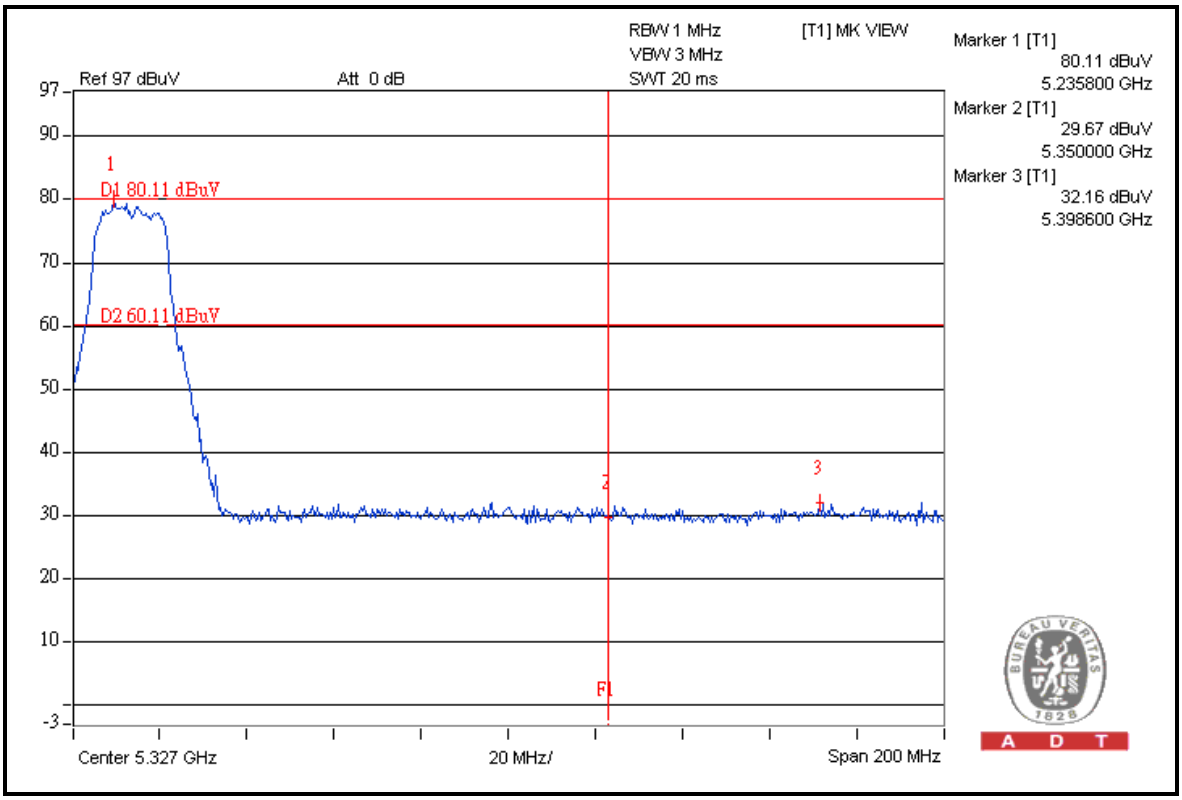
The band edge emission plot on the next second page shows 47.95dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 116.48dBuV/m (Peak), so the maximum field strength in restrict band is 116.48 – 47.95 = 68.53dBuV/m which is under 74dBuV/m limit.

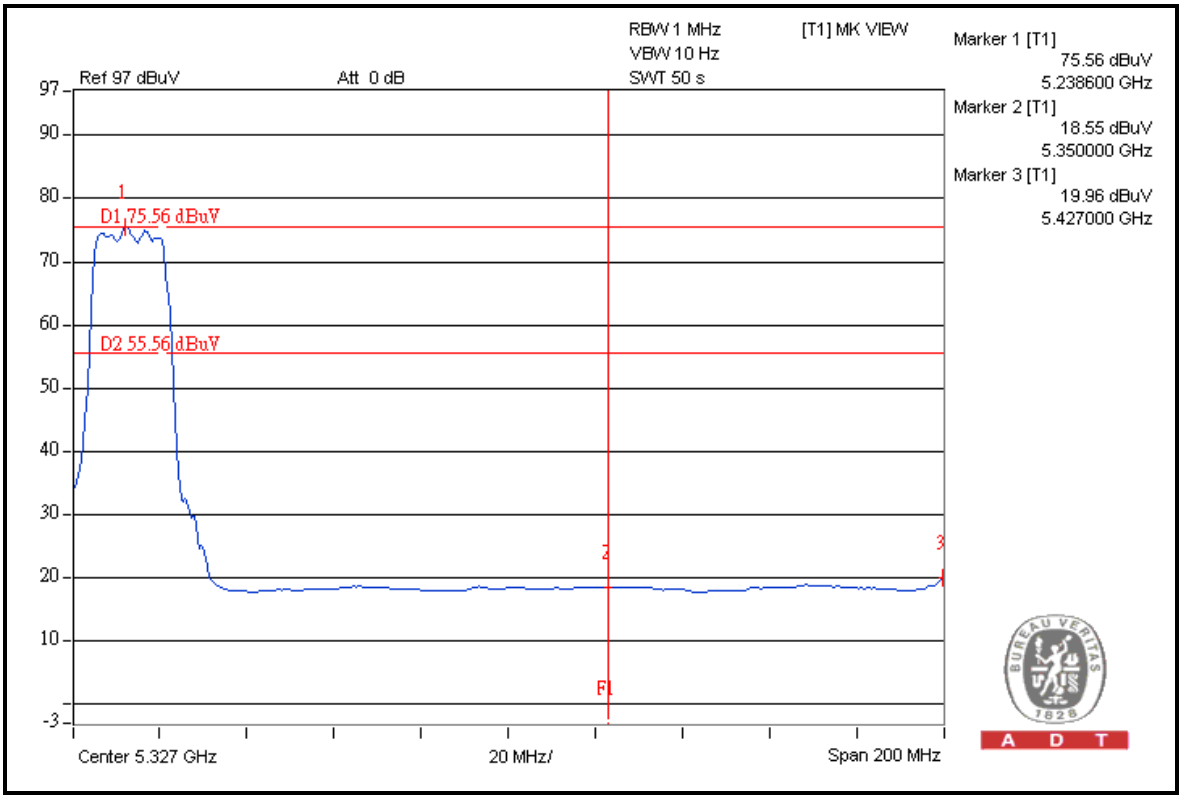
The band edge emission plot on the next third page shows 55.60dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 104.66dBuV/m (Average), so the maximum field strength in restrict band is 104.66 – 55.60 = 49.06dBuV/m which is under 54dBuV/m limit.

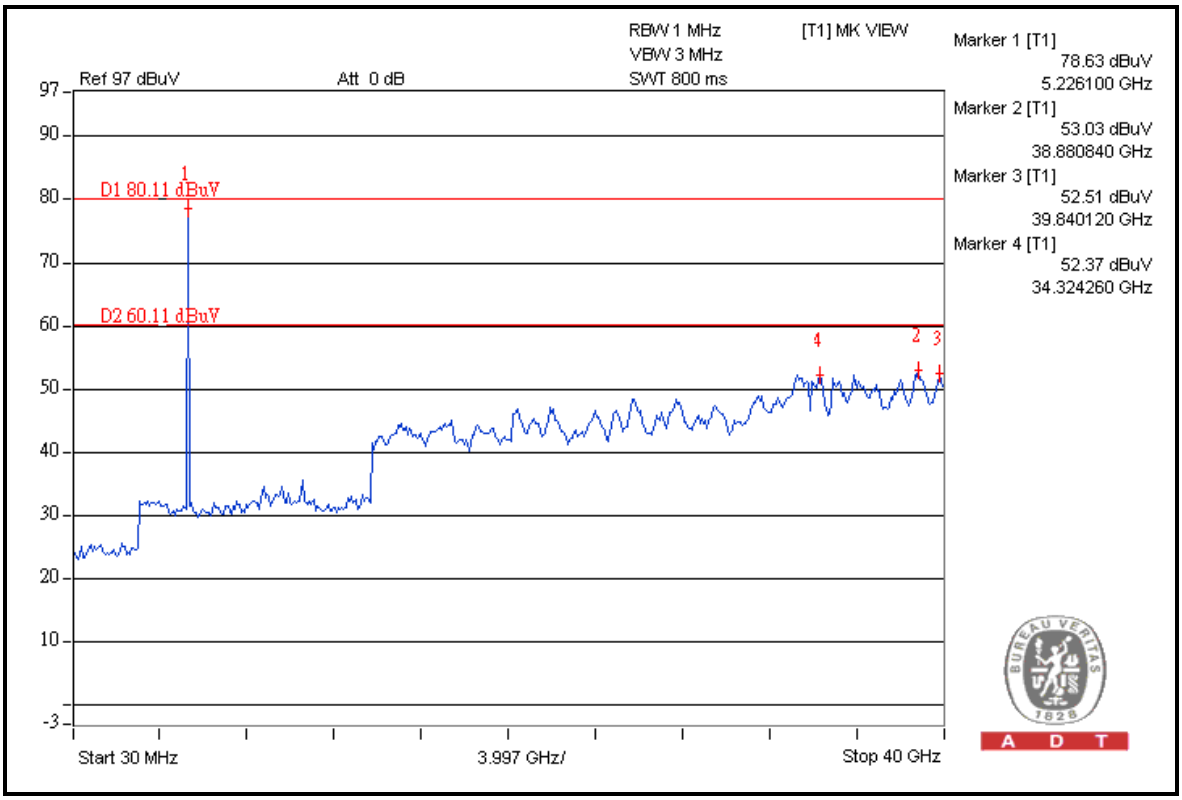

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 76.98 dBuV
D2 56.98 dBuV
Marker 1 [T1]
76.98 dBuV
5.183600 GHz
Marker 2 [T1]
31.03 dBuV
5.150000 GHz
Marker 3 [T1]
33.00 dBuV
5.105800 GHz
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 71.24 dBuV
D2 51.24 dBuV
Marker 1 [T1]
71.24 dBuV
5.177800 GHz
Marker 2 [T1]
16.89 dBuV
5.150000 GHz
Marker 3 [T1]
17.11 dBuV
5.092200 GHz
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
74.25 dBuV
5.146160 GHz
Marker 2 [T1]
52.31 dBuV
34.963780 GHz
Marker 3 [T1]
51.93 dBuV
38.960780 GHz
Marker 4 [T1]
51.79 dBuV
33.844620 GHz
D1 76.98 dBuV
D2 56.98 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
80.11 dBuV
5.235800 GHz
Marker 2 [T1]
29.67 dBuV
5.350000 GHz
Marker 3 [T1]
32.16 dBuV
5.398600 GHz
D1 80.11 dBuV
D2 60.11 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
75.56 dBuV
5.238600 GHz
Marker 2 [T1]
18.55 dBuV
5.350000 GHz
Marker 3 [T1]
19.96 dBuV
5.427000 GHz
D1 75.56 dBuV
D2 55.56 dBuV
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
78.63 dBuV
5.226100 GHz
Marker 2 [T1]
53.03 dBuV
38.880840 GHz
Marker 3 [T1]
52.51 dBuV
39.840120 GHz
Marker 4 [T1]
52.37 dBuV
34.324260 GHz
D1 80.11 dBuV
D2 60.11 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION

TEST MODE A

Channel 36 (5180MHz)

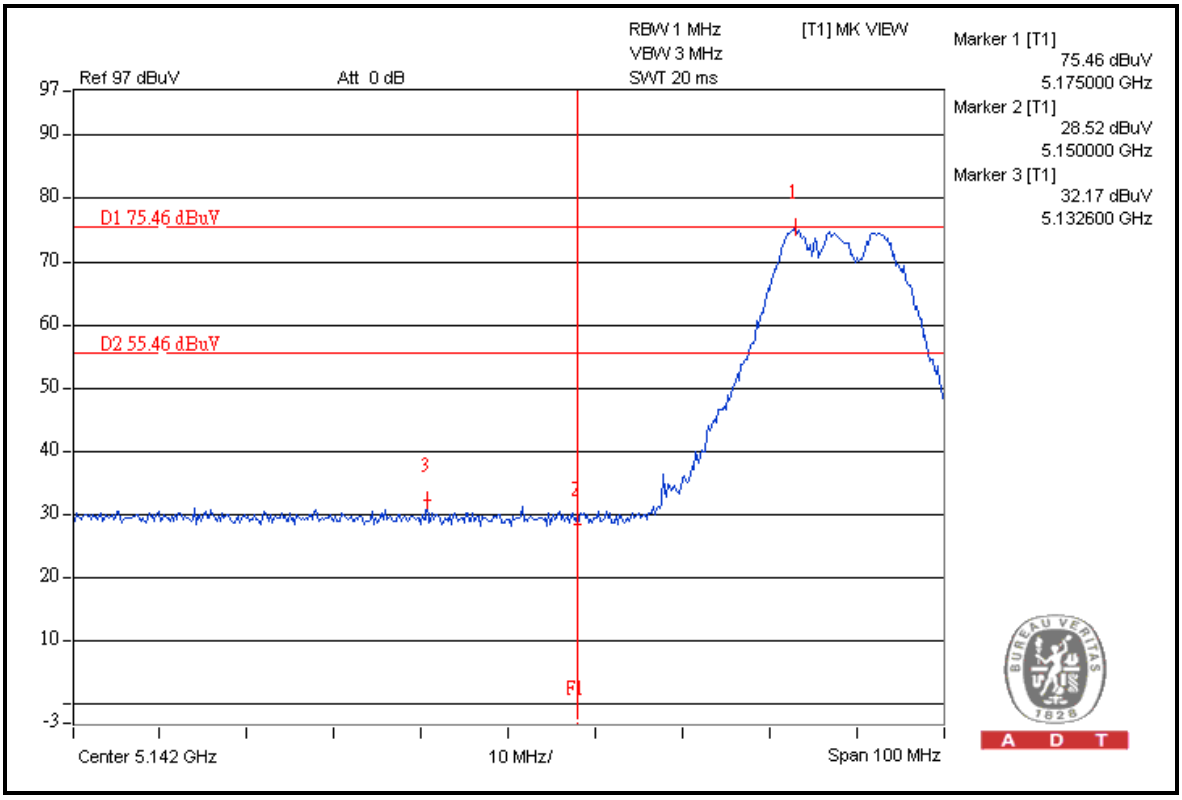
The band edge emission plot on the next page shows 43.29dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 114.90dBuV/m (Peak), so the maximum field strength in restrict band is 114.90 – 43.29 = 71.61dBuV/m which is under 74dBuV/m limit.

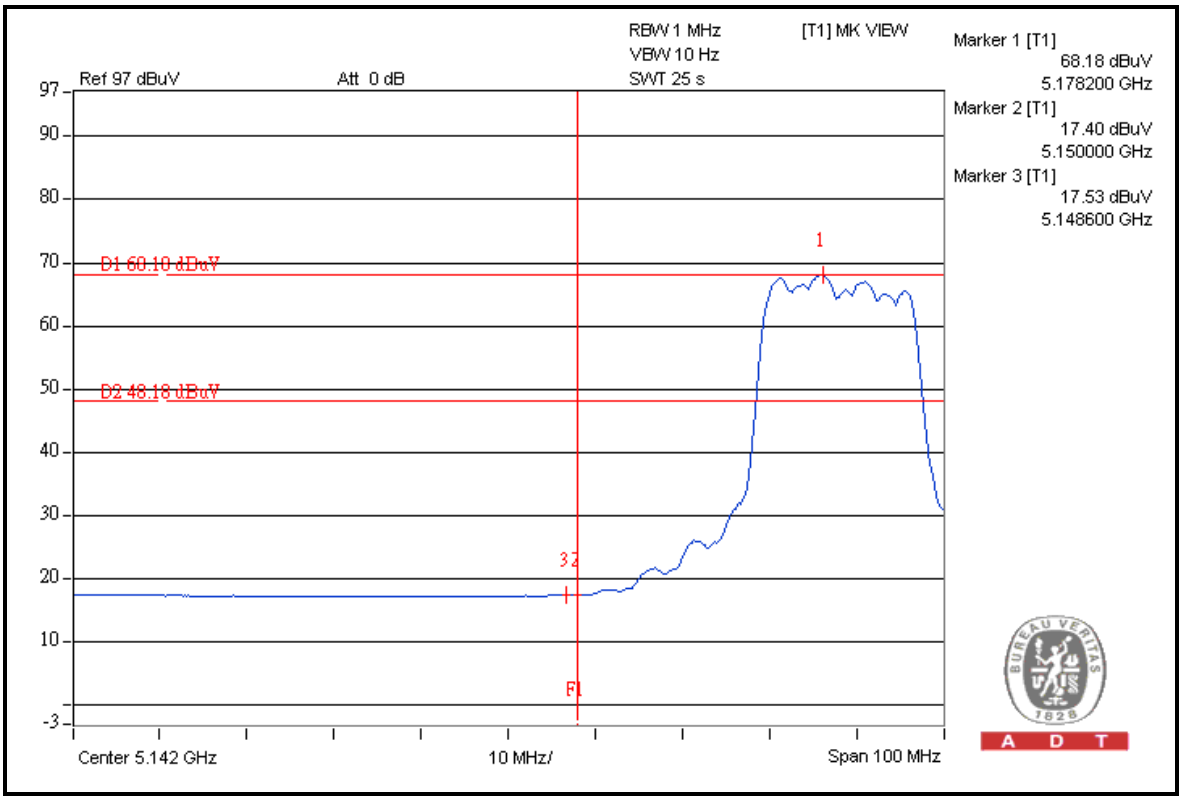
The band edge emission plot on the next page shows 50.65dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 104.10dBuV/m (Average), so the maximum field strength in restrict band is 104.10 – 50.65 = 53.45dBuV/m which is under 54dBuV/m limit.

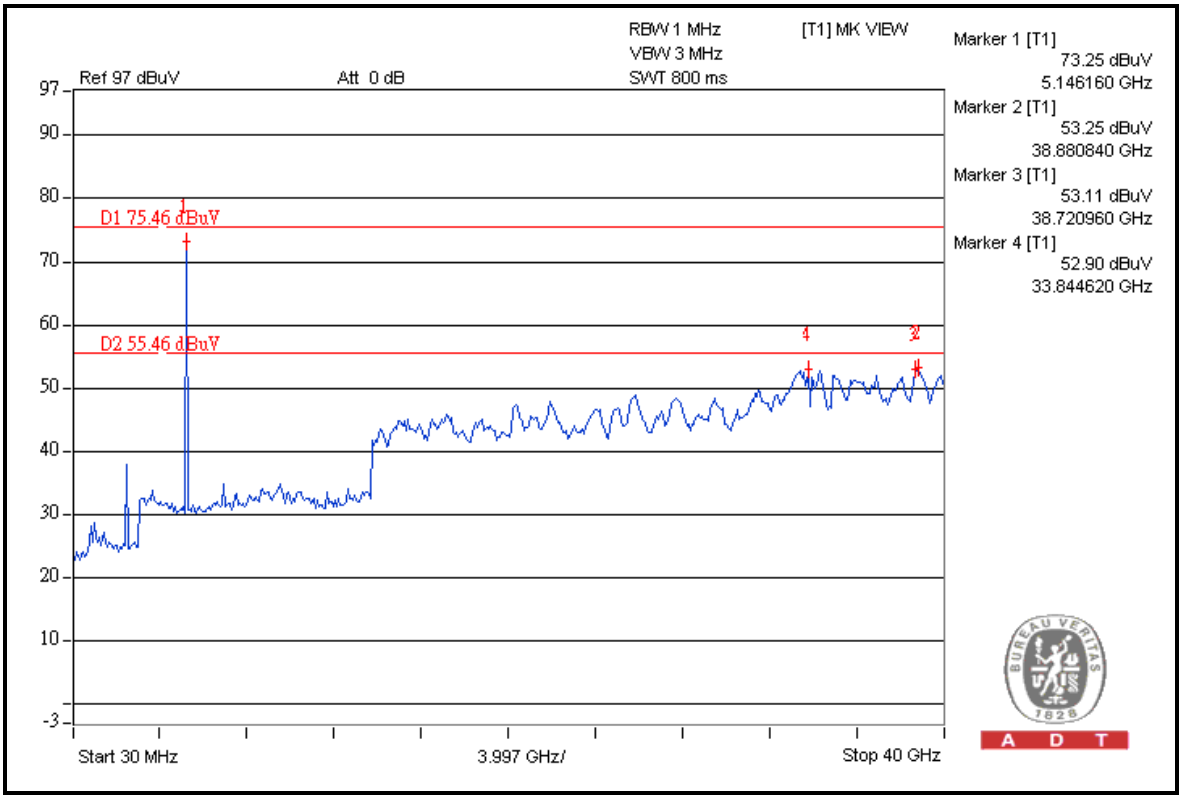
Channel 48 (5240MHz)

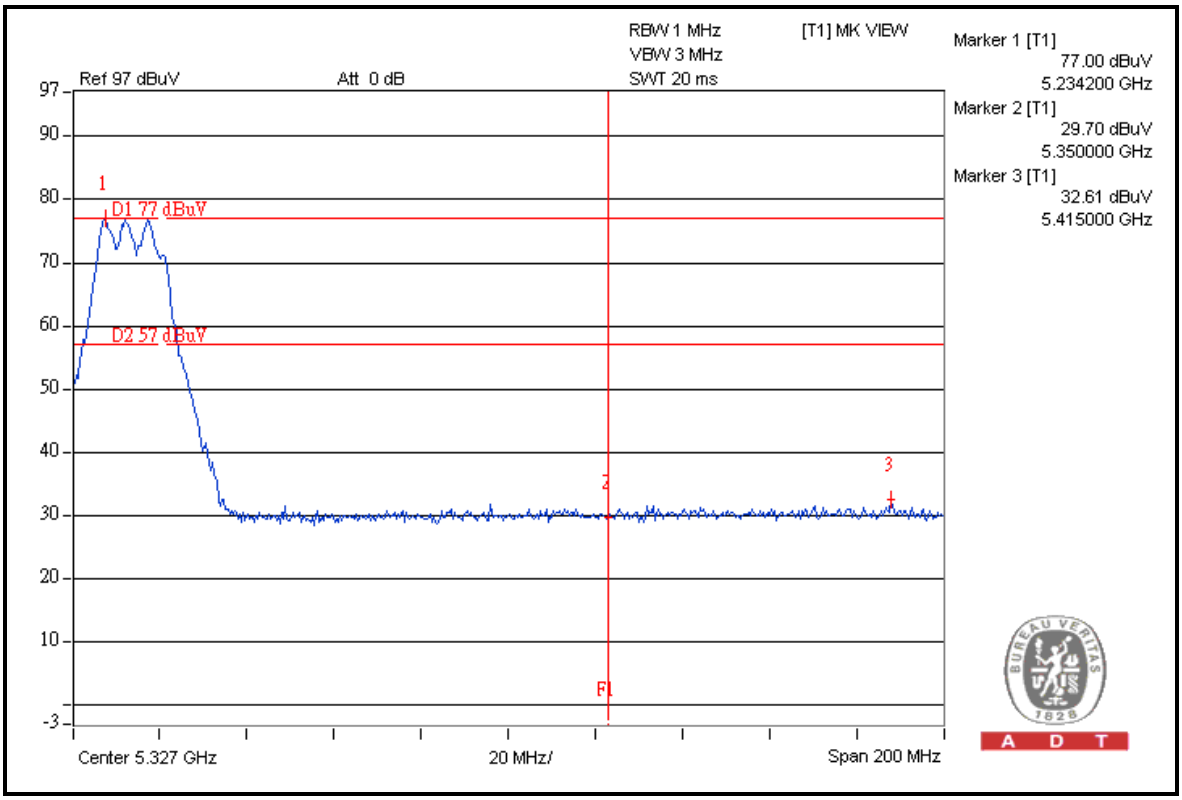
The band edge emission plot on the next second page shows 44.39dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 115.51dBuV/m (Peak), so the maximum field strength in restrict band is 115.51 – 44.39 = 71.12dBuV/m which is under 74dBuV/m limit.

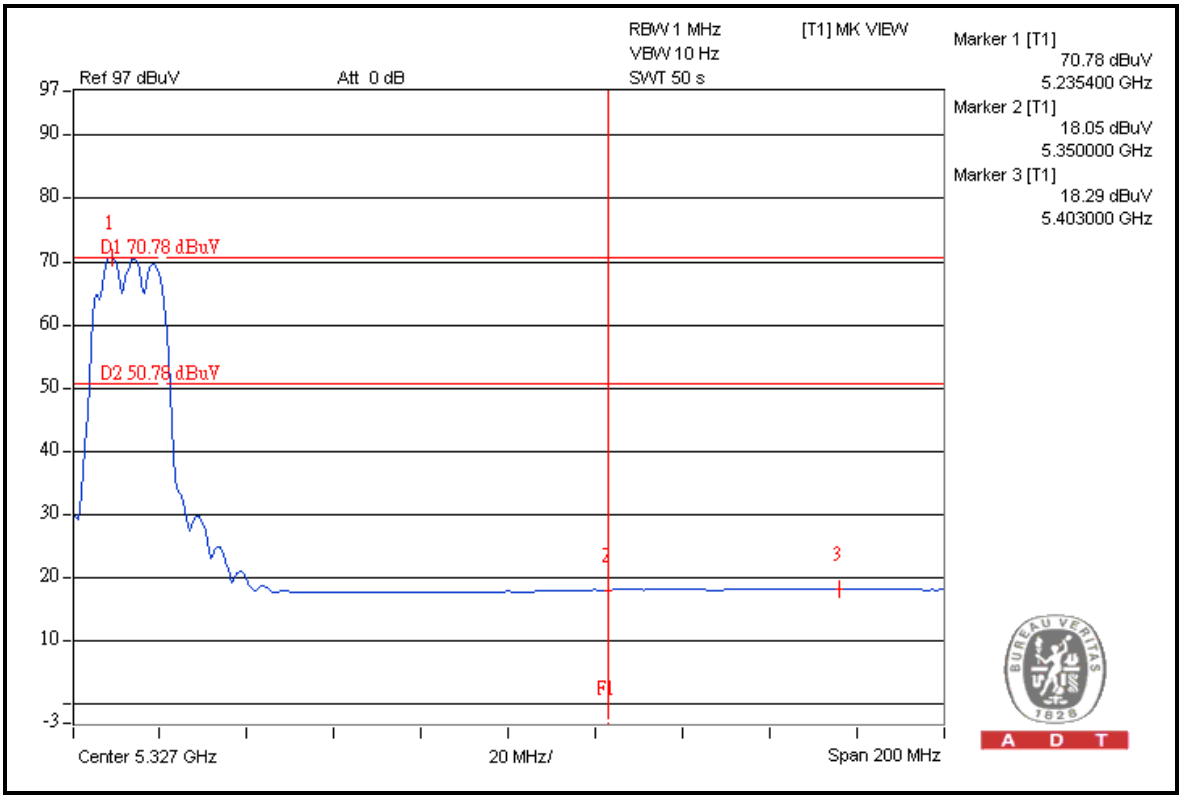
The band edge emission plot on the next third page shows 52.49dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 104.92dBuV/m (Average), so the maximum field strength in restrict band is 104.92 – 52.49 = 52.43dBuV/m which is under 54dBuV/m limit.

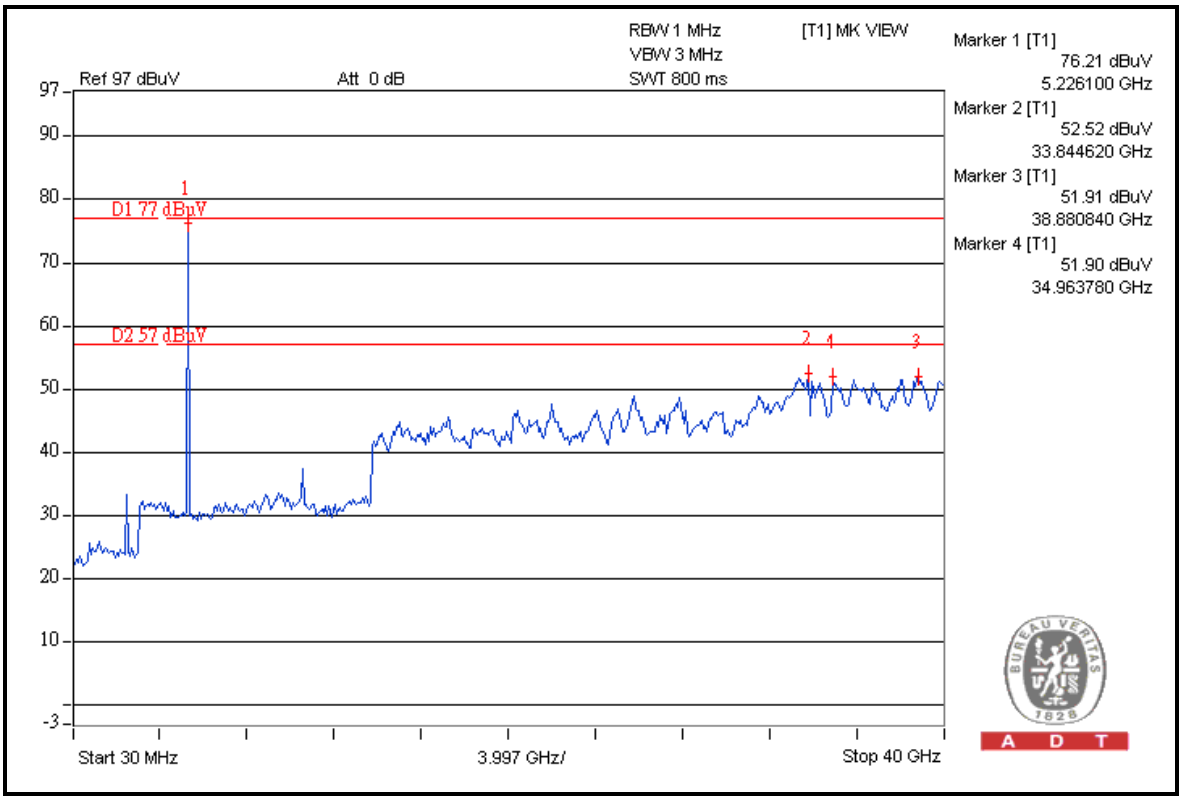

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
75.46 dBuV
5.175000 GHz
Marker 2 [T1]
28.52 dBuV
5.150000 GHz
Marker 3 [T1]
32.17 dBuV
5.132600 GHz
D1 75.46 dBuV
D2 55.46 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.18 dBuV
5.178200 GHz
Marker 2 [T1]
17.40 dBuV
5.150000 GHz
Marker 3 [T1]
17.53 dBuV
5.148600 GHz
D1 60.10 dBuV
D2 48.18 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
73.25 dBuV
5.146160 GHz
Marker 2 [T1]
53.25 dBuV
38.880840 GHz
Marker 3 [T1]
53.11 dBuV
38.720960 GHz
Marker 4 [T1]
52.90 dBuV
33.844620 GHz
D1 75.46 dBuV
D2 55.46 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
77.00 dBuV
5.234200 GHz
Marker 2 [T1]
29.70 dBuV
5.350000 GHz
Marker 3 [T1]
32.61 dBuV
5.415000 GHz
D1 77 dBuV
D2 57 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
70.78 dBuV
5.235400 GHz
Marker 2 [T1]
18.05 dBuV
5.350000 GHz
Marker 3 [T1]
18.29 dBuV
5.403000 GHz
D1 70.78 dBuV
D2 50.78 dBuV
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
76.21 dBuV
5.226100 GHz
Marker 2 [T1]
52.52 dBuV
33.844620 GHz
Marker 3 [T1]
51.91 dBuV
38.880840 GHz
Marker 4 [T1]
51.90 dBuV
34.963780 GHz
D1 77 dBuV
D2 57 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

TEST MODE C

Channel 36 (5180MHz)

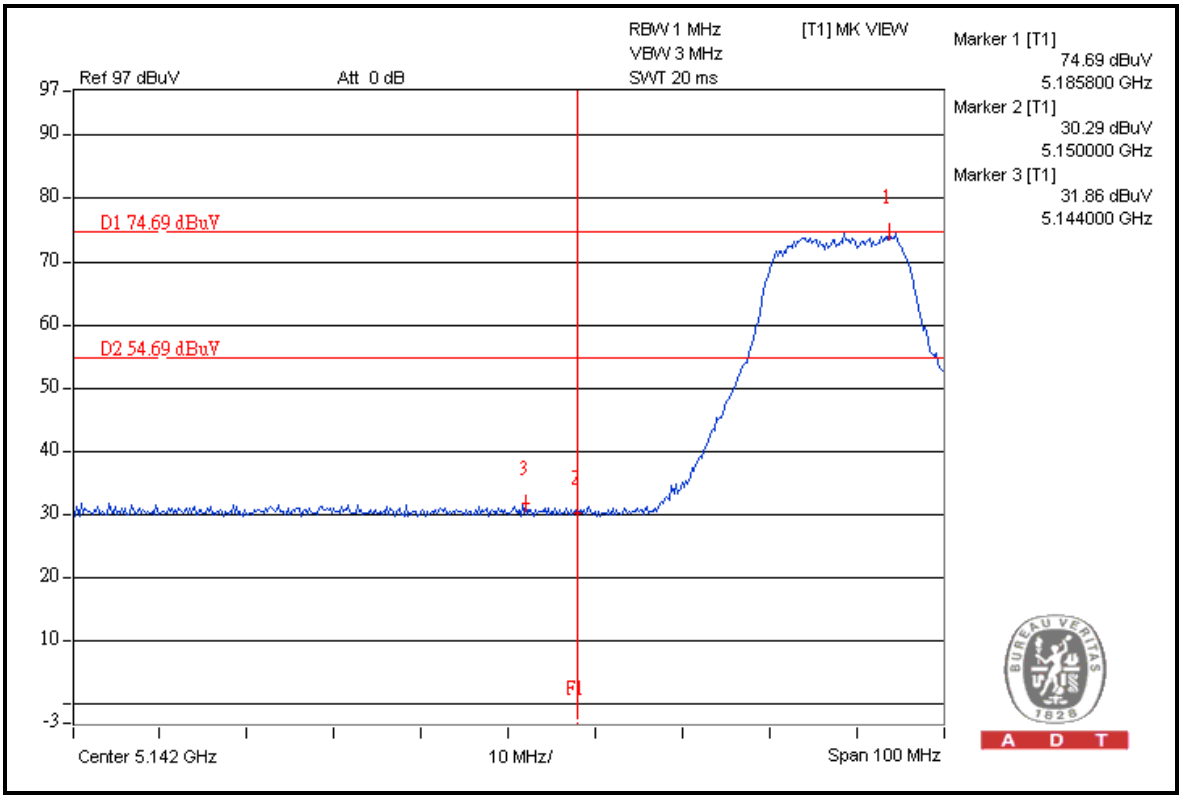
The band edge emission plot on the next page shows 42.83dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 116.26dBuV/m (Peak), so the maximum field strength in restrict band is 116.26 –42.83 = 73.43dBuV/m which is under 74dBuV/m limit.

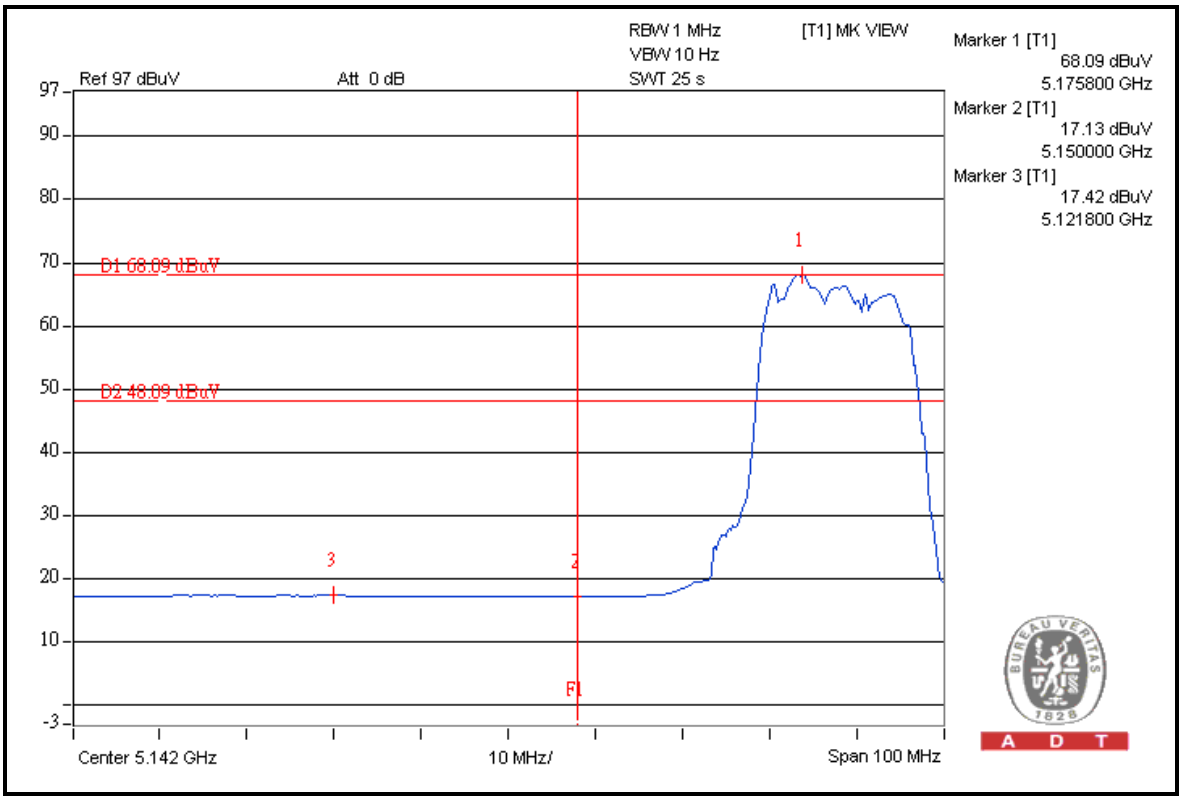
The band edge emission plot on the next page shows 50.67dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 36 is 104.25dBuV/m (Average), so the maximum field strength in restrict band is104.25 – 50.67 = 53.58dBuV/m which is under 54dBuV/m limit.

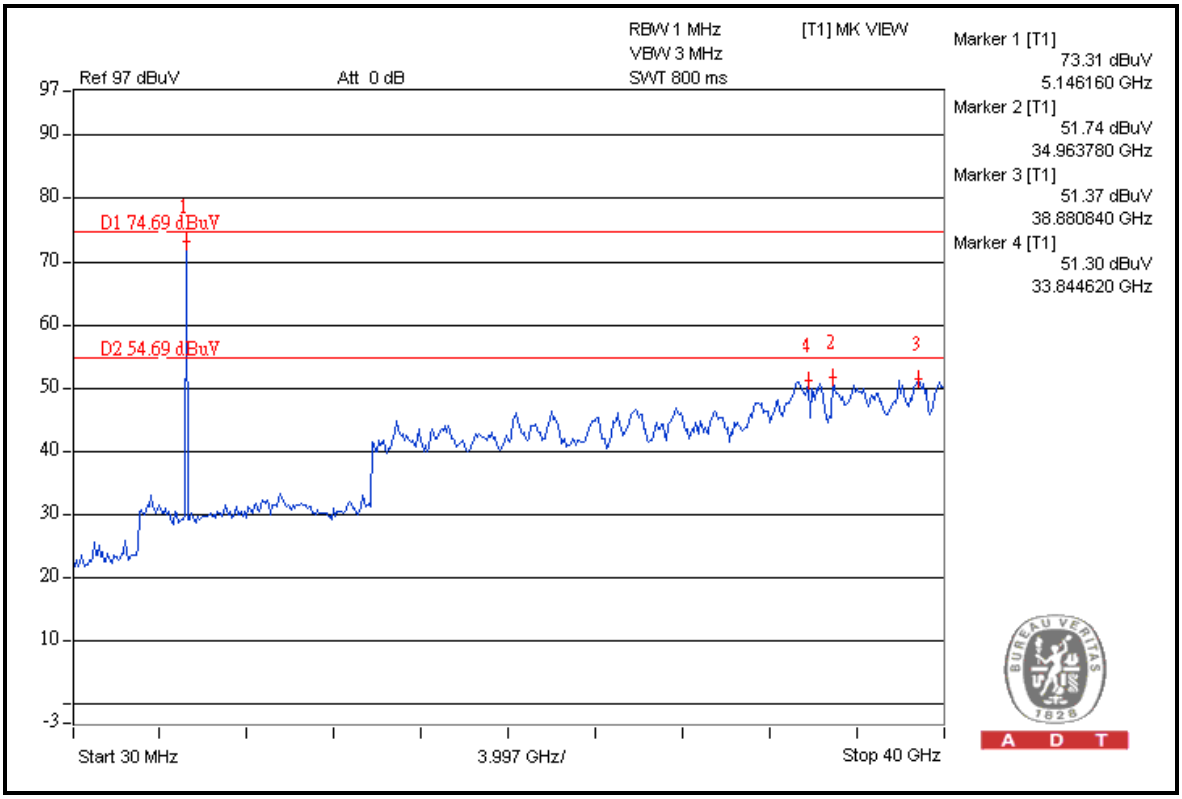
Channel 48 (5240MHz)

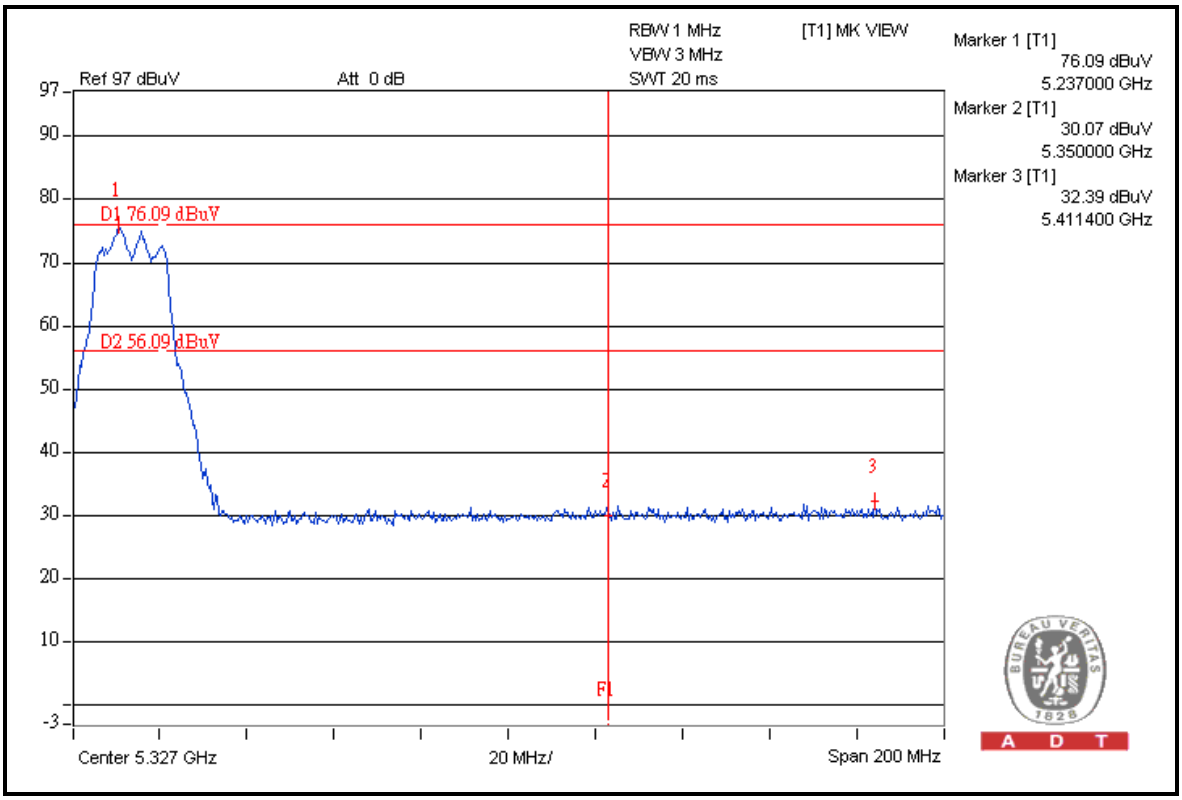
The band edge emission plot on the next second page shows 43.70dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 117.69dBuV/m (Peak), so the maximum field strength in restrict band is 117.69 – 43.70 = 73.99dBuV/m which is under 74dBuV/m limit.

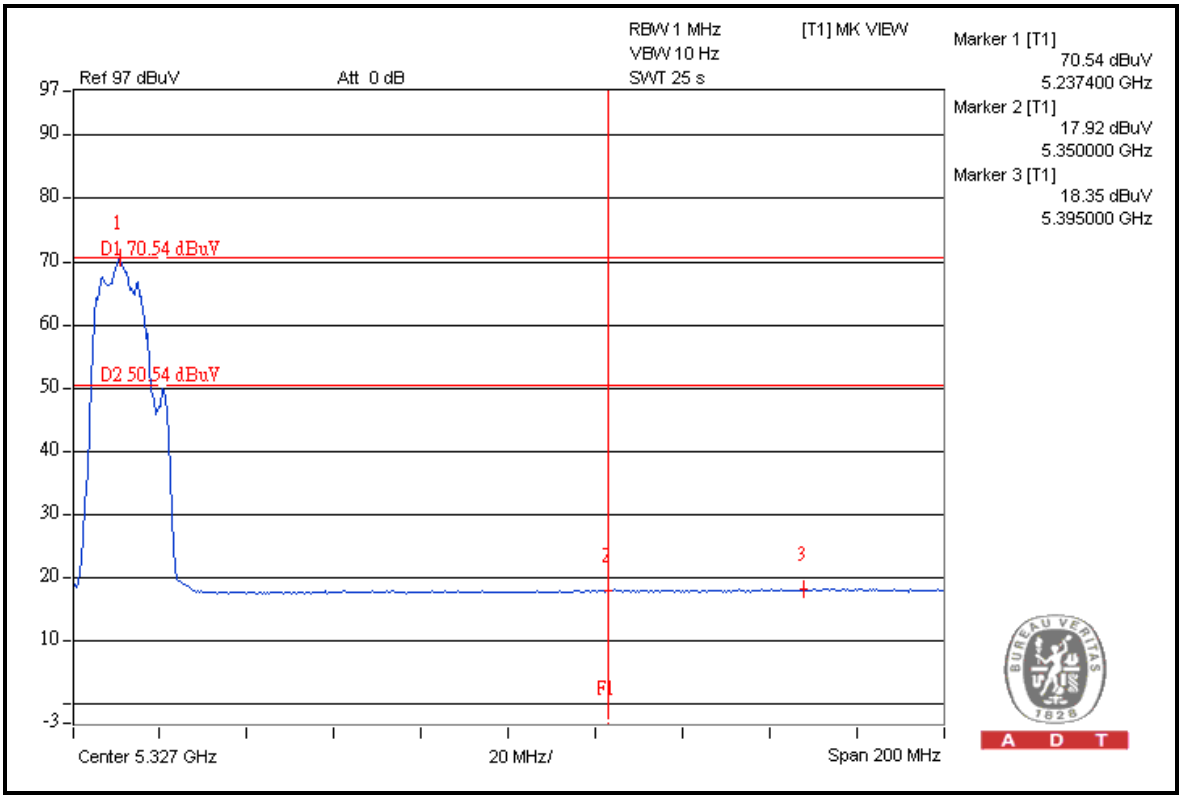
The band edge emission plot on the next third page shows 52.19dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 48 is 105.83dBuV/m (Average), so the maximum field strength in restrict band is 105.83 – 52.19 = 53.64dBuV/m which is under 54dBuV/m limit.

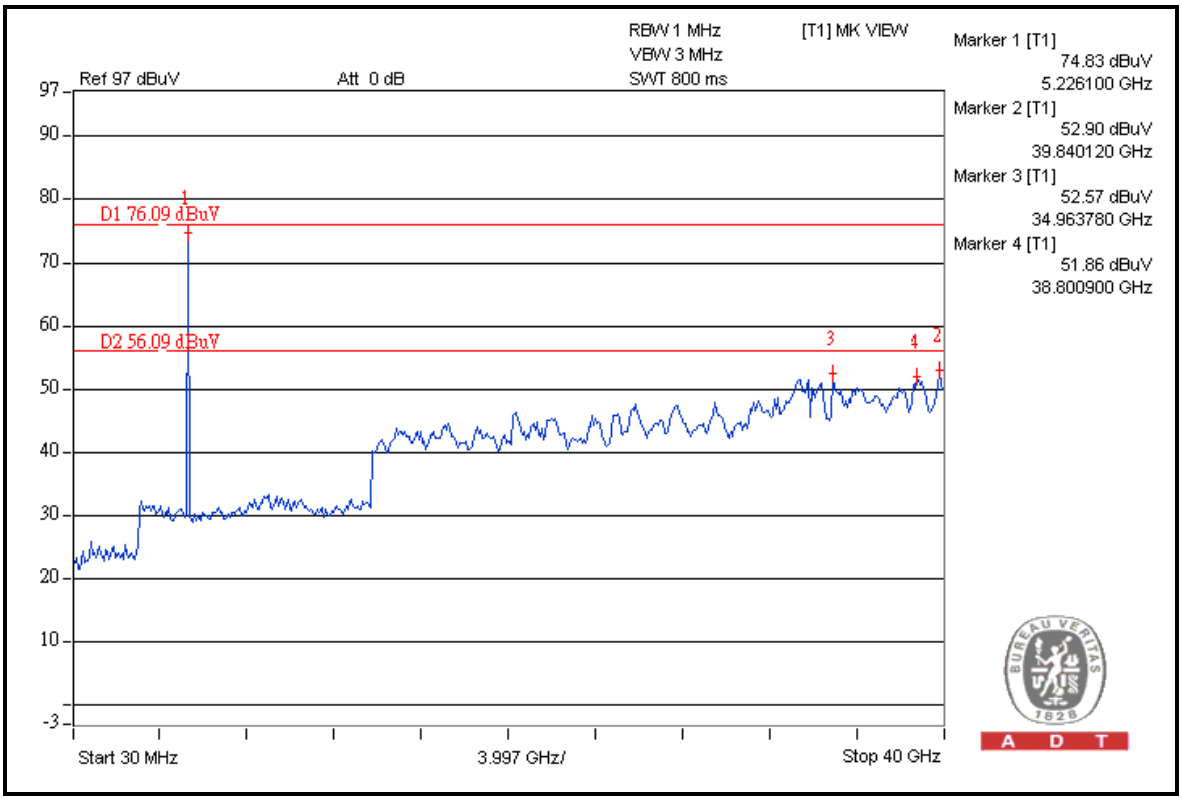

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
74.69 dBuV
5.185800 GHz
Marker 2 [T1]
30.29 dBuV
5.150000 GHz
Marker 3 [T1]
31.86 dBuV
5.144000 GHz
D1 74.69 dBuV
D2 54.69 dBuV
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.09 dBuV
5.175800 GHz
Marker 2 [T1]
17.13 dBuV
5.150000 GHz
Marker 3 [T1]
17.42 dBuV
5.121800 GHz
D1 68.09 dBuV
D2 48.09 dBuV
Center 5.142 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
73.31 dBuV
5.146160 GHz
Marker 2 [T1]
51.74 dBuV
34.963780 GHz
Marker 3 [T1]
51.37 dBuV
38.880840 GHz
Marker 4 [T1]
51.30 dBuV
33.844620 GHz
D1 74.69 dBuV
D2 54.69 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
76.09 dBuV
5.237000 GHz
Marker 2 [T1]
30.07 dBuV
5.350000 GHz
Marker 3 [T1]
32.39 dBuV
5.411400 GHz
D1 76.09 dBuV
D2 56.09 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
70.54 dBuV
5.237400 GHz
Marker 2 [T1]
17.92 dBuV
5.350000 GHz
Marker 3 [T1]
18.35 dBuV
5.395000 GHz
D1 70.54 dBuV
D2 50.54 dBuV
Center 5.327 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
74.83 dBuV
5.226100 GHz
Marker 2 [T1]
52.90 dBuV
39.840120 GHz
Marker 3 [T1]
52.57 dBuV
34.963780 GHz
Marker 4 [T1]
51.86 dBuV
38.800900 GHz
D1 76.09 dBuV
D2 56.09 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION

TEST MODE A

Channel 38 (5190MHz)

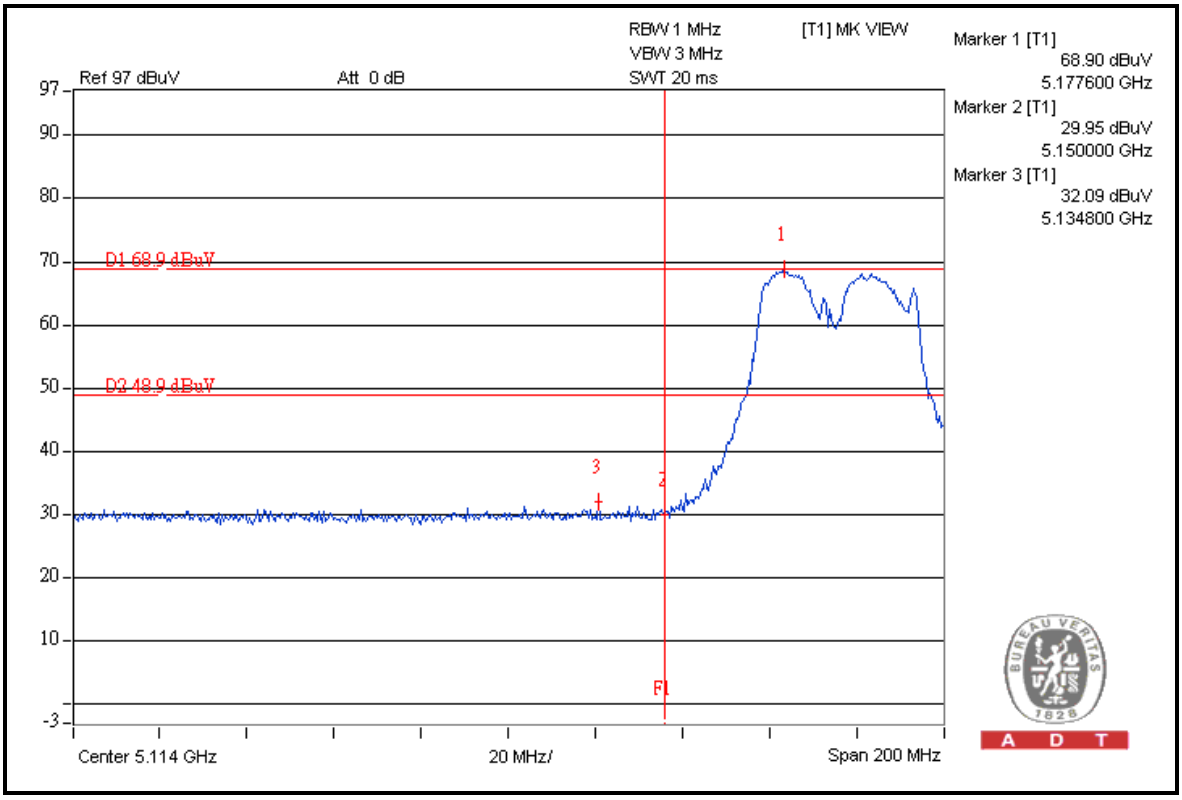
The band edge emission plot on the next page shows 36.81dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 107.40dBuV/m (Peak), so the maximum field strength in restrict band is 107.40 – 36.81 = 70.59dBuV/m which is under 74dBuV/m limit.

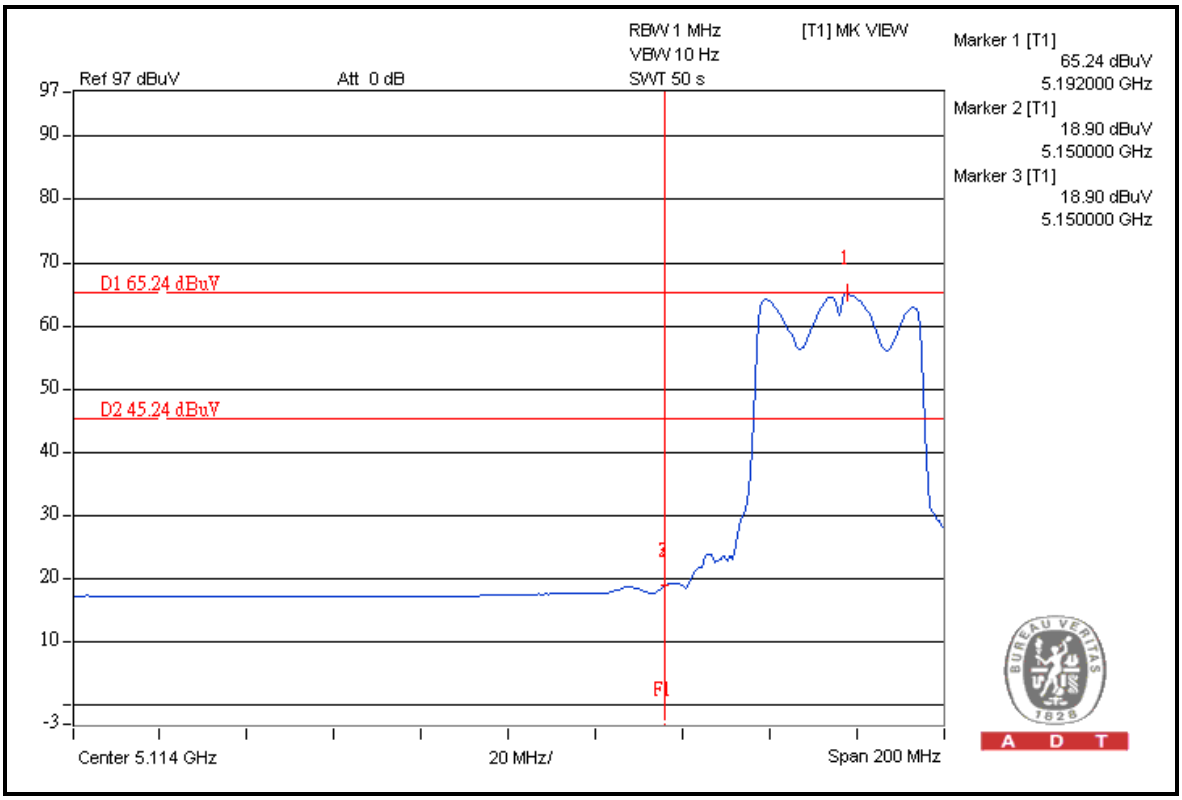
The band edge emission plot on the next page shows 46.34dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 96.97dBuV/m (Average), so the maximum field strength in restrict band is 96.97 – 46.34 = 50.63dBuV/m which is under 54dBuV/m limit.

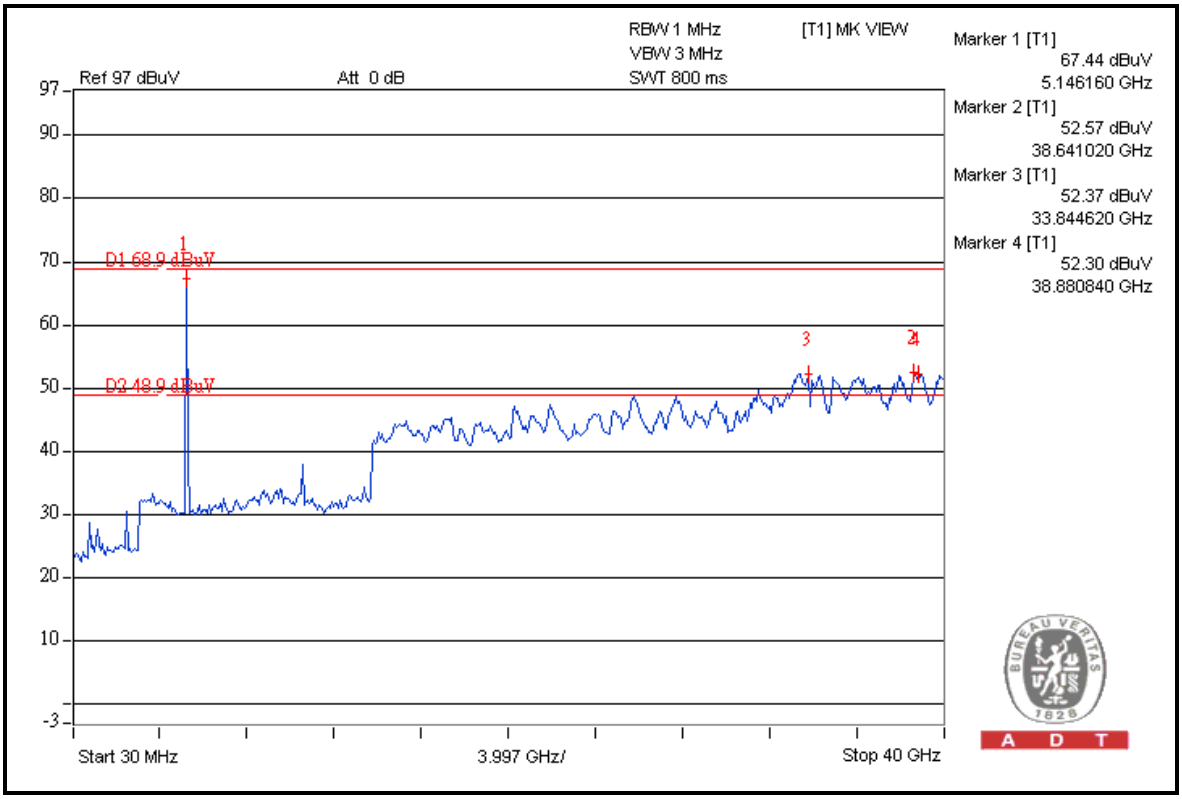
Channel 46 (5230MHz)

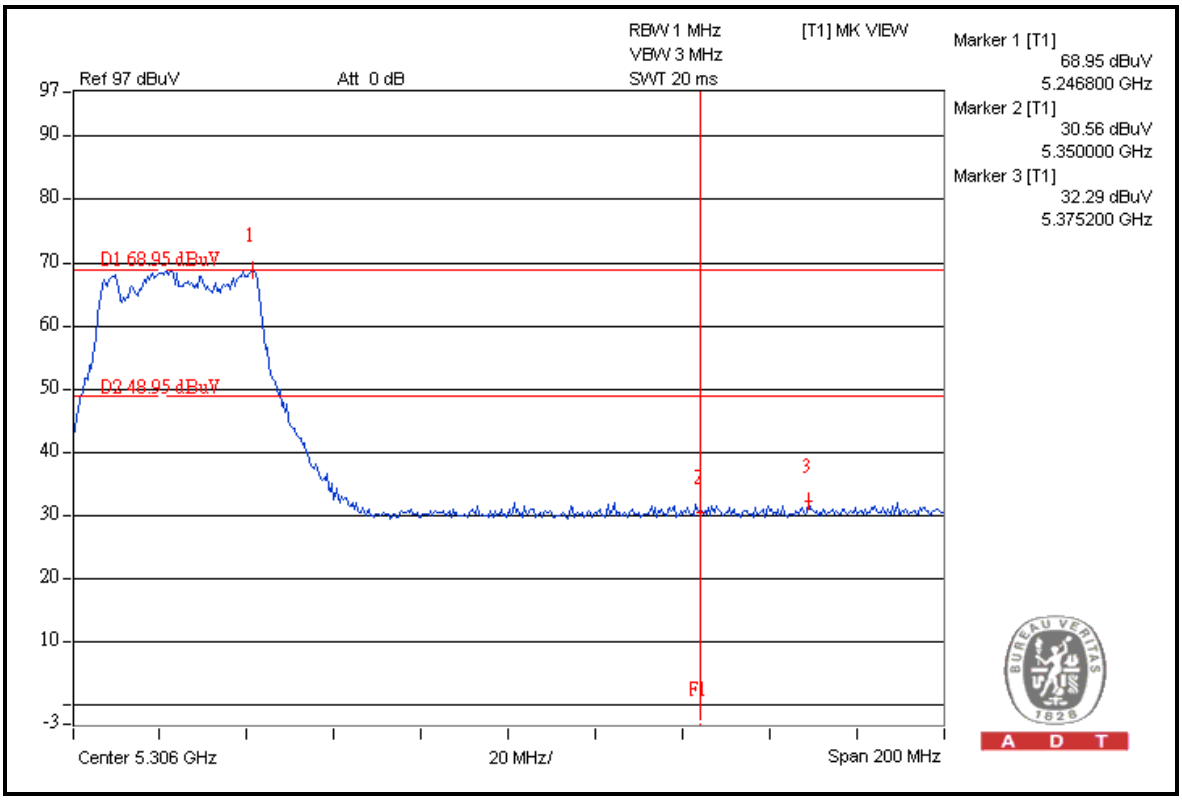
The band edge emission plot on the next second page shows 36.66dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 46 is 107.59dBuV/m (Peak), so the maximum field strength in restrict band is 107.59 – 36.66 = 70.93dBuV/m which is under 74dBuV/m limit.

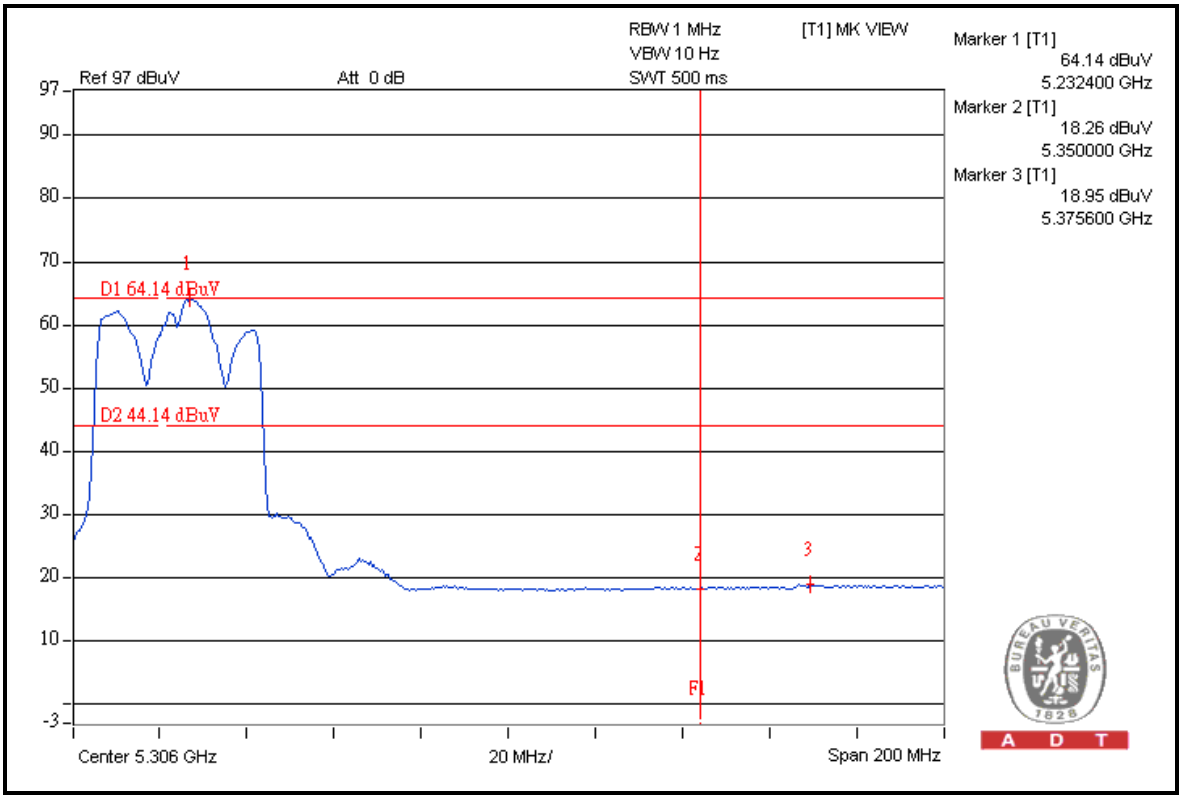
The band edge emission plot on the next third page shows 45.19dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 46 is 97.32dBuV/m (Average), so the maximum field strength in restrict band is 97.32 – 45.19 = 52.13dBuV/m which is under 54dBuV/m limit.

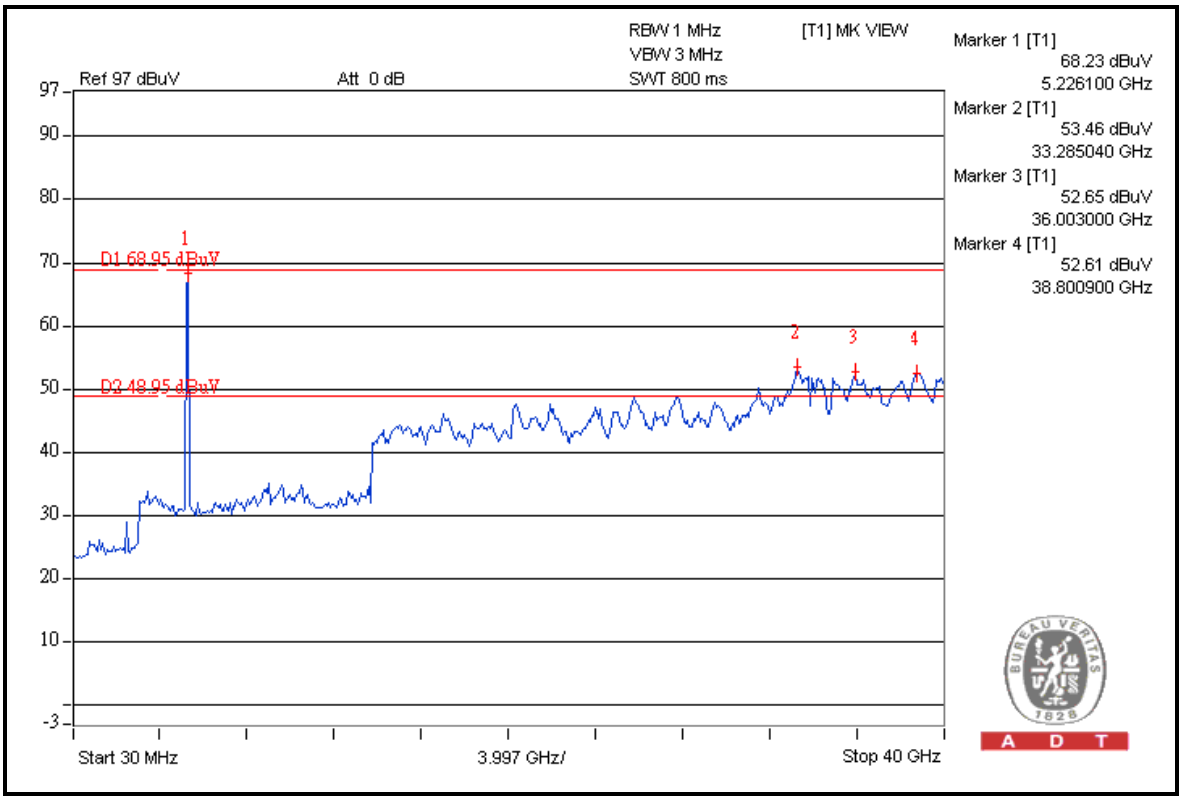

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.90 dBuV
5.177600 GHz
Marker 2 [T1]
29.95 dBuV
5.150000 GHz
Marker 3 [T1]
32.09 dBuV
5.134800 GHz
D1 68.9 dBuV
D2 48.9 dBuV
Center 5.114 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
65.24 dBuV
5.192000 GHz
Marker 2 [T1]
18.90 dBuV
5.150000 GHz
Marker 3 [T1]
18.90 dBuV
5.150000 GHz
D1 65.24 dBuV
D2 45.24 dBuV
Center 5.114 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
67.44 dBuV
5.146160 GHz
Marker 2 [T1]
52.57 dBuV
38.641020 GHz
Marker 3 [T1]
52.37 dBuV
33.844620 GHz
Marker 4 [T1]
52.30 dBuV
38.880840 GHz
D1 68.9 dBuV
D2 48.9 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.95 dBuV
5.246800 GHz
Marker 2 [T1]
30.56 dBuV
5.350000 GHz
Marker 3 [T1]
32.29 dBuV
5.375200 GHz
D1 68.95 dBuV
D2 48.95 dBuV
Center 5.306 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 500 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
64.14 dBuV
5.232400 GHz
Marker 2 [T1]
18.26 dBuV
5.350000 GHz
Marker 3 [T1]
18.95 dBuV
5.375600 GHz
D1 64.14 dBuV
D2 44.14 dBuV
Center 5.306 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.23 dBuV
5.226100 GHz
Marker 2 [T1]
53.46 dBuV
33.285040 GHz
Marker 3 [T1]
52.65 dBuV
36.003000 GHz
Marker 4 [T1]
52.61 dBuV
38.800900 GHz
D1 68.95 dBuV
D2 48.95 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

TEST MODE C

Channel 38 (5190MHz)

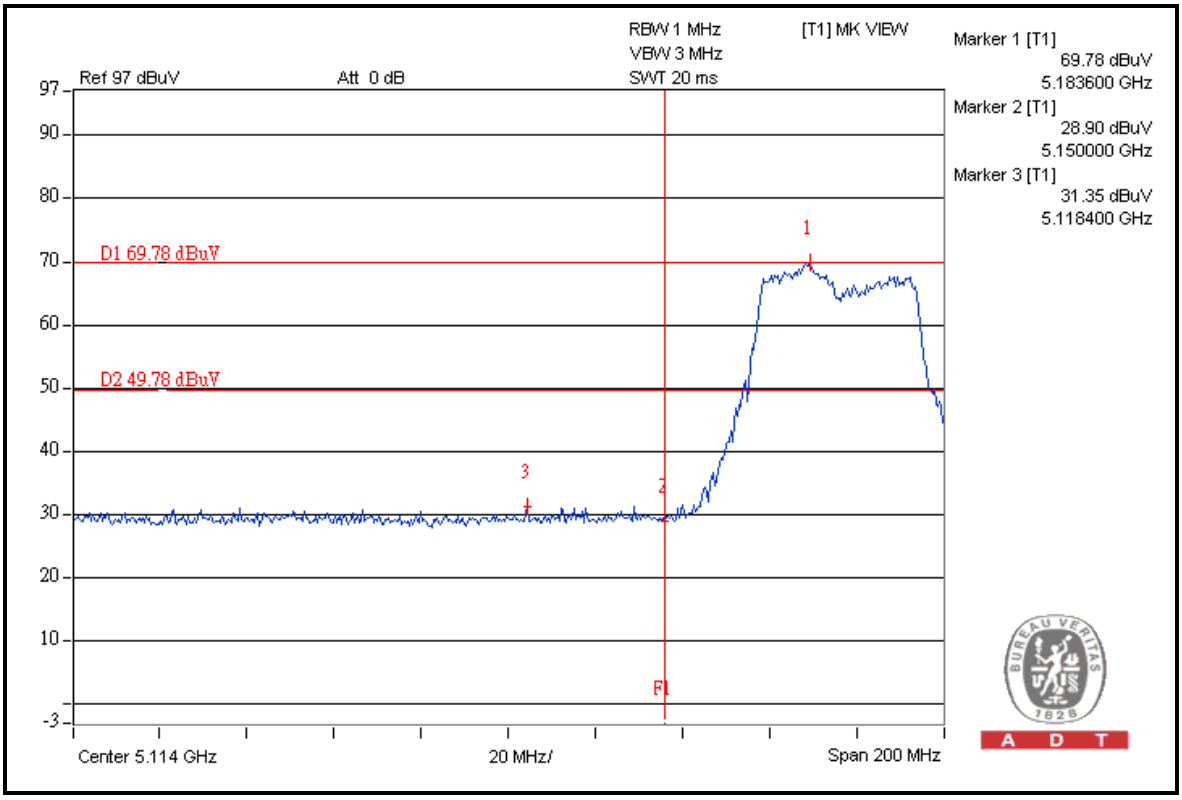
The band edge emission plot on the next page shows 38.43dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 111.61dBuV/m (Peak), so the maximum field strength in restrict band is 111.61 – 38.43 = 73.18dBuV/m which is under 74dBuV/m limit.

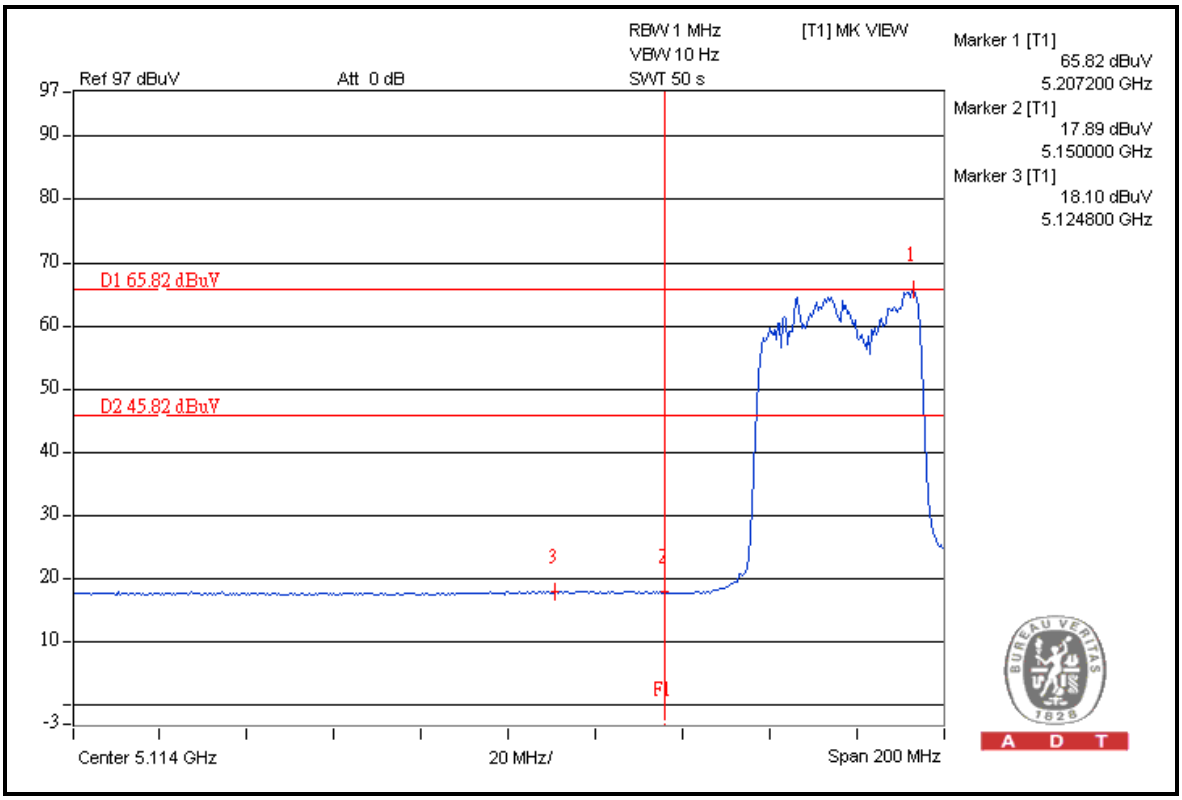
The band edge emission plot on the next page shows 47.72dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 38 is 100.30dBuV/m (Average), so the maximum field strength in restrict band is 100.30 – 47.72 = 52.58dBuV/m which is under 54dBuV/m limit.

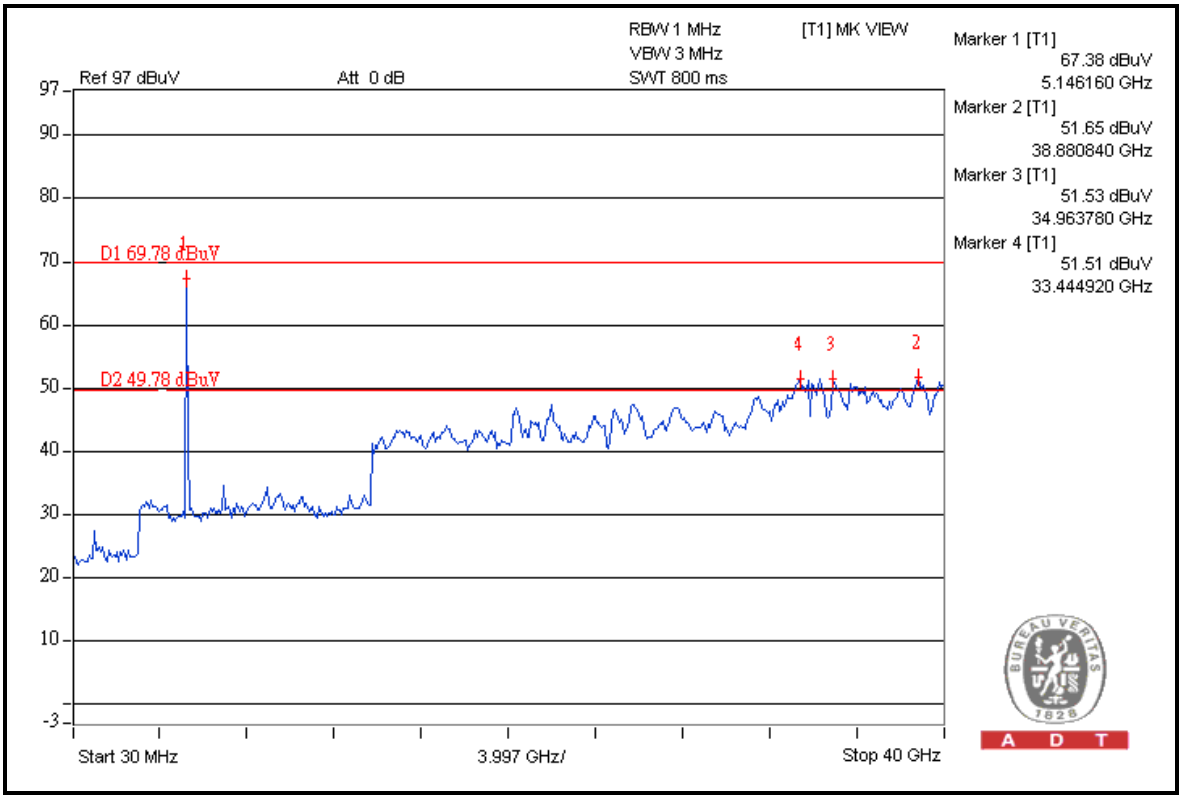
Channel 46 (5230MHz)

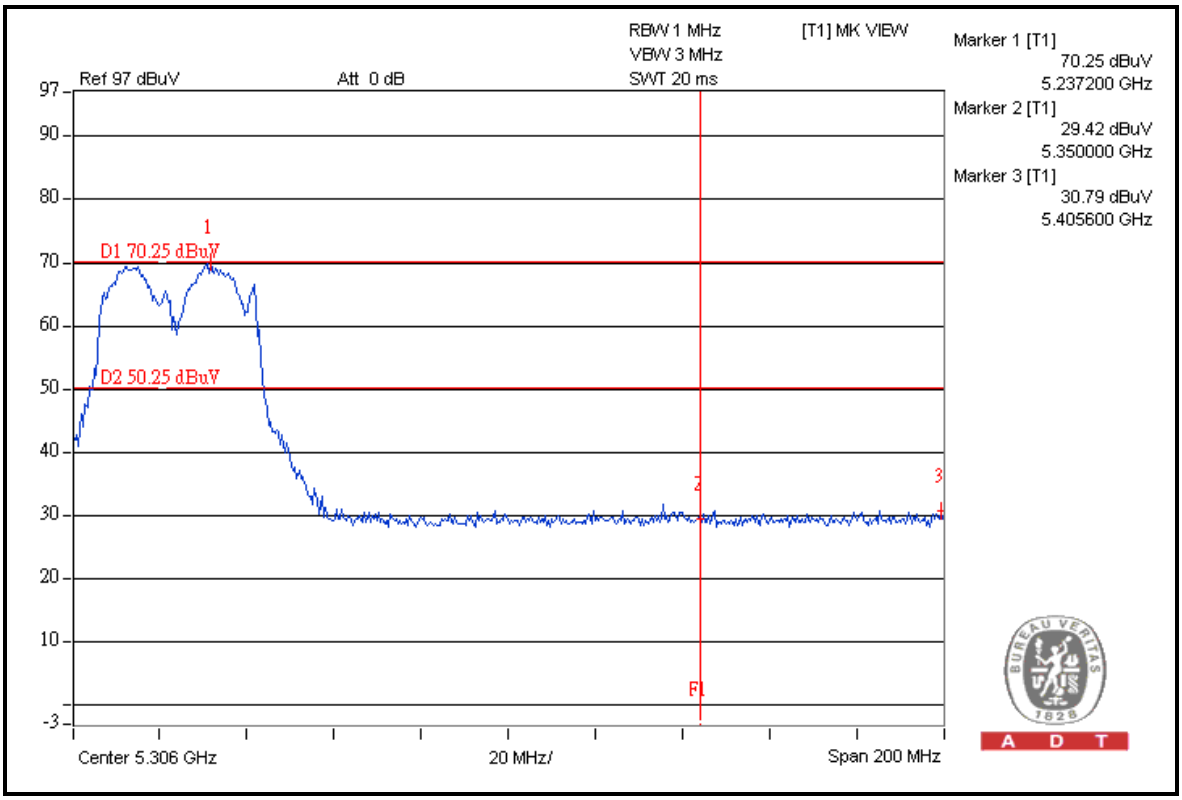
The band edge emission plot on the next second page shows 39.46dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 46 is 112.95dBuV/m (Peak), so the maximum field strength in restrict band is 112.95– 39.46 = 73.49dBuV/m which is under 74dBuV/m limit.

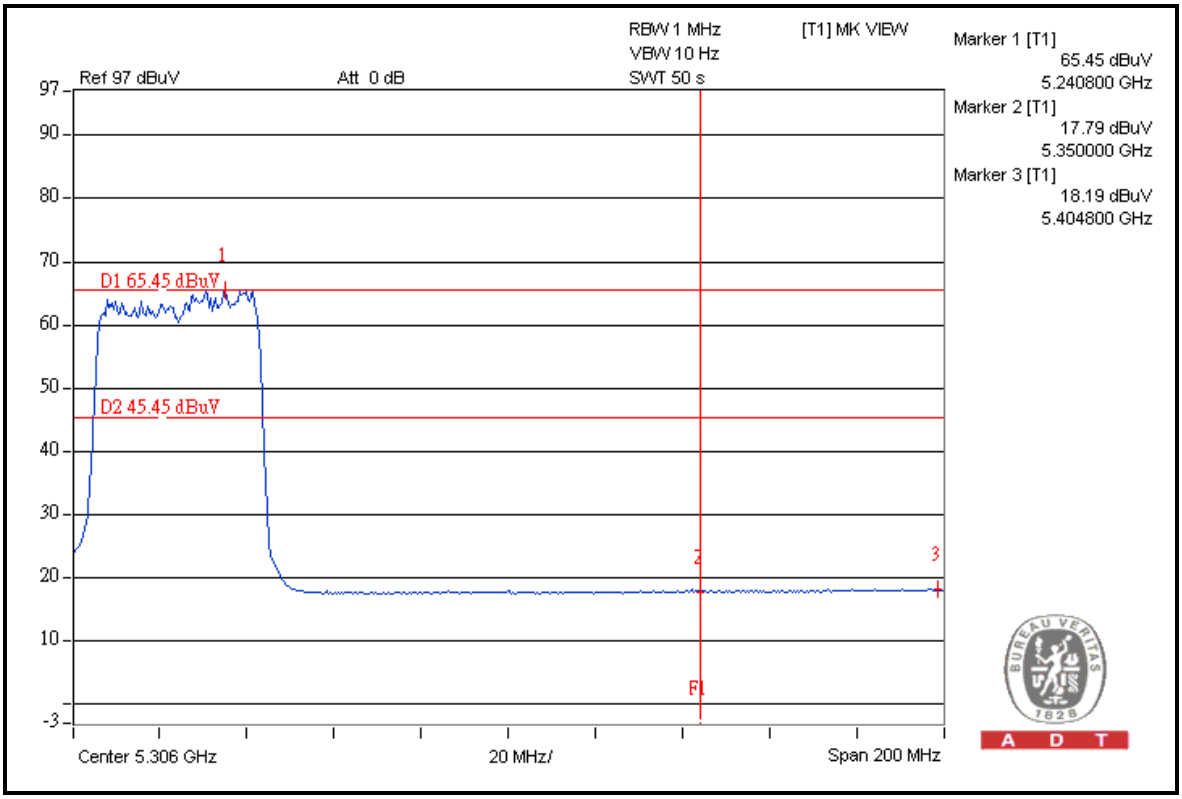
The band edge emission plot on the next third page shows 47.26dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 46 is 101.15dBuV/m (Average), so the maximum field strength in restrict band is 101.15 – 47.26 = 53.89dBuV/m which is under 54dBuV/m limit.

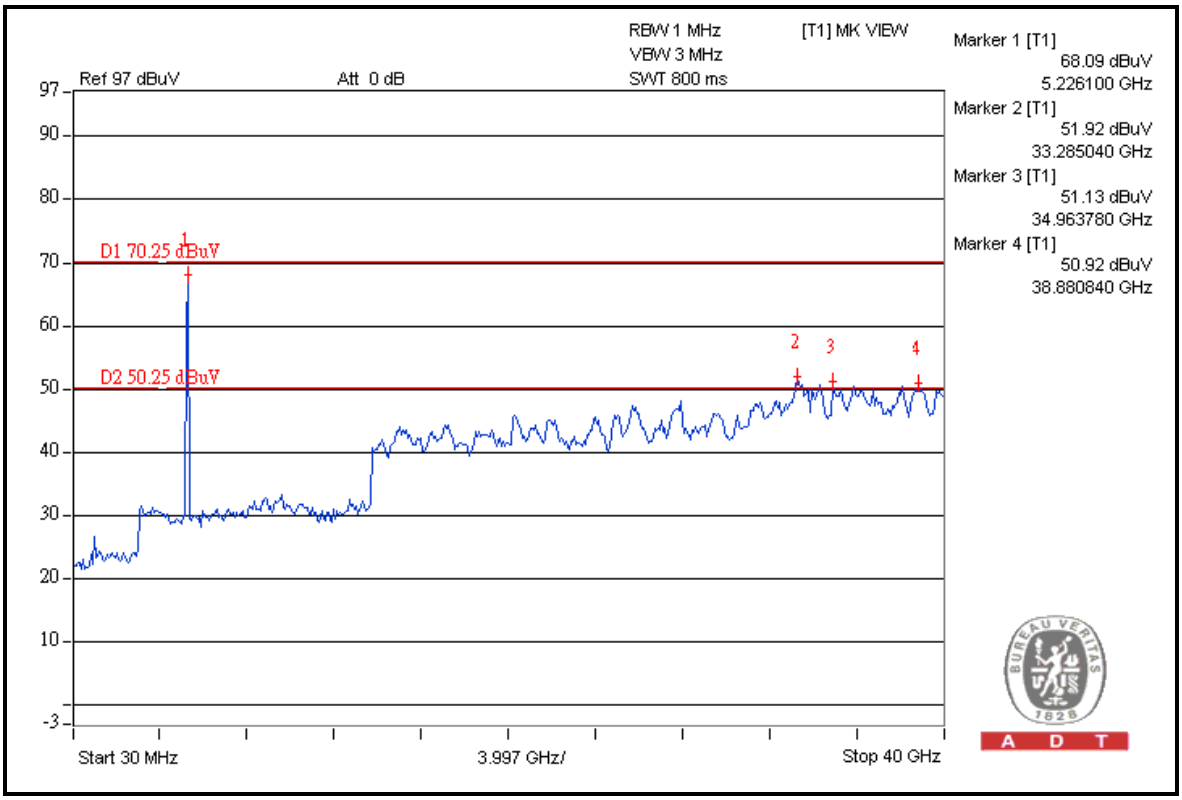

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
69.78 dBuV
5.183600 GHz
Marker 2 [T1]
28.90 dBuV
5.150000 GHz
Marker 3 [T1]
31.35 dBuV
5.118400 GHz
D1 69.78 dBuV
D2 49.78 dBuV
Center 5.114 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
65.82 dBuV
5.207200 GHz
Marker 2 [T1]
17.89 dBuV
5.150000 GHz
Marker 3 [T1]
18.10 dBuV
5.124800 GHz
D1 65.82 dBuV
D2 45.82 dBuV
Center 5.114 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
67.38 dBuV
5.146160 GHz
Marker 2 [T1]
51.65 dBuV
38.880840 GHz
Marker 3 [T1]
51.53 dBuV
34.963780 GHz
Marker 4 [T1]
51.51 dBuV
33.444920 GHz
D1 69.78 dBuV
D2 49.78 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Start 30 MHz
3.997 GHz/
Stop 40 GHz


RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
70.25 dBuV
5.237200 GHz
Marker 2 [T1]
29.42 dBuV
5.350000 GHz
Marker 3 [T1]
30.79 dBuV
5.405600 GHz
D1 70.25 dBuV
D2 50.25 dBuV
97
90
80
70
60
50
40
30
20
10
-3
Center 5.306 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 50 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
65.45 dBuV
5.240800 GHz
Marker 2 [T1]
17.79 dBuV
5.350000 GHz
Marker 3 [T1]
18.19 dBuV
5.404800 GHz
D1 65.45 dBuV
D2 45.45 dBuV
Center 5.306 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
68.09 dBuV
5.226100 GHz
Marker 2 [T1]
51.92 dBuV
33.285040 GHz
Marker 3 [T1]
51.13 dBuV
34.963780 GHz
Marker 4 [T1]
50.92 dBuV
38.880840 GHz
D1 70.25 dBuV
D2 50.25 dBuV
Start 30 MHz
3.997 GHz/
Stop 40 GHz

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 internal: Patch antenna with U.FL connector and external: Patch antenna with N-Type connector. The maximum gain of the antenna is 23dBi.

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---