FCC TEST REPORT (WLAN-15.407)

REPORT NO.:	RF120625E05-1 R1
MODEL NO.:	QCSWB282
FCC ID:	PPD-QCSWB282
IC:	4104A-QCSWB282
RECEIVED:	June 25, 2012
TESTED:	Aug. 16 to 28, 2012
ISSUED:	Dec. 03, 2012

APPLICANT:	Qualcomm Atheros, Inc.
ADDRESS:	1700 Technology Drive, San Jose, CA 95110

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
LAB ADDRESS :	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120625E05-1	Original release	Nov. 06, 2012
RF120625E05-1 R1	Revised limit of section 4.1.6	Dec. 03, 2012

1. CERTIFICATION

PRODUCT:	Low Power 2x2 802.11 a/b/g/n + BT SDIO-WLAN/UART-BT Card
BRAND NAME:	Qualcomm Atheros
MODEL NO.:	QCSWB282
TEST SAMPLE:	R&D SAMPLE
APPLICANT:	Qualcomm Atheros, Inc.
TESTED:	Aug. 16 to 28, 2012
STANDARDS:	FCC Part 15, Subpart E (Section 15.407)
	ANSI C63.10-2009
	Canada RSS-210 Issue 8 (2010-12)
	Canada RSS-Gen Issue 3 (2010-12)

The above equipment (Model: QCSWB282) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and was in 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 : _____ **DATE:** *Dec. 03, 2012*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Dec. 03, 2012*
(May Chen, Deputy 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) ; RSS-210; RSS-Gen				
STANDARD SECTION		TEST TYPE	RESULT	REMARK
FCC Part 15	RSS-210; RSS-Gen			
15.407(b)(6)	RSS-Gen 7.2.4	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.95dB at 0.16562MHz
15.407(b/1/2/3) (b)(6)	RSS-210 A9.2	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5470.0MHz & 5150.0MHz.
15.407 (a/1/2)	RSS-210 A9.2	Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	RSS-210 A9.2	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407 (a/1/2)	RSS-210 A9.2 A9.4 (2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	RSS-Gen 4.7	Frequency Stability	PASS	Meet the requirement of limit.
-	RSS-Gen 4.6	Occupied Bandwidth Measurement	-	Meet the requirement.
15.203	-	Antenna Requirement	PASS	Antenna connector is IPEX not a standard connector.

NOTE: For WLAN: The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.850GHz RF parameters was recorded in another test report.

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	Value
Conducted emissions	2.98 dB
Radiated emissions (30MHz-1GHz)	5.69 dB
Radiated emissions (1GHz -6GHz)	3.84 dB
Radiated emissions (6GHz -18GHz)	4.09 dB
Radiated emissions (18GHz -40GHz)	4.24 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Low Power 2x2 802.11 a/b/g/n + BT SDIO-WLAN/UART-BT Card
MODEL NO.	QCSWB282
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GFSK(BT <LE> mode) for DSSS
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n (HT20, 800ns GI): up to 130Mbps 802.11n (HT20, 400ns GI): up to 144.4Mbps 802.11n (HT40, 800ns GI) : up to 270Mbps(5GHz only) 802.11n (HT40, 400ns GI) : up to 300Mbps(5GHz only) BT-LE(GFSK): 1Mbps
OPERATING FREQUENCY	**For 15.407** 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.58GHz & 5.66~5.7GHz
	For 15.247 2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.745 ~ 5.825GHz BT-LE(GFSK): 2.402 ~ 2.480GHz
NUMBER OF CHANNEL	**For 15.407** 16 for 802.11a, 802.11n (HT20) 7 for 802.11n (HT40)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 40 for BT-LE(GFSK) **For 15.247(5GHz)** 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)

MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 43.767mW 802.11n (HT20): 44.500mW 802.11n (HT40): 29.292mW **For 15.247(2.4GHz)** 802.11b: 158.908mW 802.11g: 209.481mW 802.11n (HT20): 221.967mW BT-LE(GFSK): 10.889 mW **For 15.247(5GHz)** 802.11a: 105.658mW 802.11n (HT20): 106.747mW 802.11n (HT40): 87.512mW
ANTENNA TYPE	See item 3.2
ANTENNA CONNECTOR	See item 3.2
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. There are Bluetooth technology and WLAN technology used for the EUT. And the report number corresponds with EUT functions are listed as below:

Function	Report No.
WLAN / BT(LE MODE)	RF120625E05 (15.247) RF120625E05-1(15.407) RF120625E05-3(DFS)
Bluetooth	RF120625E05-2

2. The device has below configurations

Working mode	chain 0	chain 1	Note
1X1+BT	11a/b/g/n (MCS0~7)	BT	WLAN/BT concurrent
2X2+BT	11a/n (MCS0~15)	11a/n (MCS0~15)+ BT	WLAN/BT concurrent only when WLAN is 802.11an.
2x2 WLAN only	11a/b/g/n (MCS0~15)	11a/b/g/n (MCS0~15)	-

3. Spurious Emission (radiated emission) of the simultaneous operation (WiFi & Bluetooth) have been evaluated and no non-compliance found. The detail combinations of transmitters / frequencies / modes as below table

Mode	Available Channel	Tested Channel	Modulation Technology
2.4 GHz (802.11n (HT20)) + Bluetooth	1 to 11	6	OFDM
	0 to 78	78	FHSS
5 GHz (802.11n (HT20)) + Bluetooth	149 to 165	149	OFDM
	0 to 78	78	FHSS

4. The EUT is 2 * 2 MIMO with 802.11n beam forming function.

MODULATION MODE	Tx/Rx FUNCTION
802.11b	1Tx/1Rx or 2Tx/2Rx
802.11g	1Tx/1Rx or 2Tx/2Rx
802.11a	1Tx/1Rx or 2Tx/2Rx
802.11n (HT20)	2Tx/2Rx
802.11n (HT40) <5GHz only>	2Tx/2Rx

The maximum compliance powers listed on the report are compliance with both Beam Forming and non-Beam Forming configurations.

5. The EUT was pre-tested under the following modes:

Test Mode	Data rate
Mode A	400ns GI
Mode B	**800ns GI**

From the above modes, the worst case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

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

3.2 DESCRIPTION OF ANTENNA

The antenna provided to the EUT, please refer to the following table:

Brand	Model	Antenna Type	Peak gain with cable loss 2.4G(dBi)	Peak gain with cable loss 5G(dBi)	Cable Loss 2.4G(dB)	Cable Loss 5G(dB)	Connector Type	Cable Length (mm)
WNC	81.EBJ15.005	PIFA	3.62	Band 1&2: 3.08 Band 3: 4.76 Band 4: 4.76	1.15	Band1&2: 1.70 Band 3: 1.74 Band 4: 1.79	IPEX	300

Note: Above antenna gains of antenna are Total (H+V).

3.3 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

Eight channels are provided for 802.11a and 802.11n (HT20):

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

Four channels are provided for 802.11n (HT40):

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

Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Eight channels are provided for 802.11a and 802.11n (HT20):

CHANNEL	FREQUENCY
100	5500 MHz
104	5520 MHz
108	5540 MHz
112	5560 MHz
116	5580 MHz
132	5660 MHz
136	5680 MHz
140	5700 MHz

Three channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
134	5670 MHz

3.3.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	
-	√	√	√	√	-

Where **PLC:** Power Line Conducted Emission **RE < 1G:** Radiated Emission below 1GHz

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

NOTE: The EUT's antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane.**

POWER LINE CONDUCTED EMISSION TEST:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
For 5 GHz 802.11n (HT20)	36 to 140	64	OFDM	6

RADIATED EMISSION TEST (BELOW 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
For 5 GHz 802.11n (HT20)	36 to 140	64	OFDM	6

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	6
For 5 GHz 802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	6.5
For 5 GHz 802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	6
For 5 GHz 802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	6.5
For 5 GHz 802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	25deg. C, 65%RH	120Vac, 60Hz	Kyle Huang
RE<1G	25deg. C, 74%RH	120Vac, 60Hz	Frank Liu
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang

3.4 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:

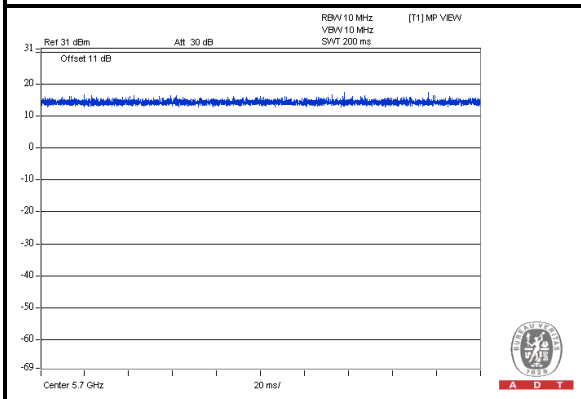
FCC Part 15, Subpart E (Section 15.407)
789033 D01 General UNII Test Procedures v01r01
ANSI C63.10-2009
Canada RSS-210 Issue 8 (2010-12)
Canada RSS-Gen Issue 3 (2010-12)

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

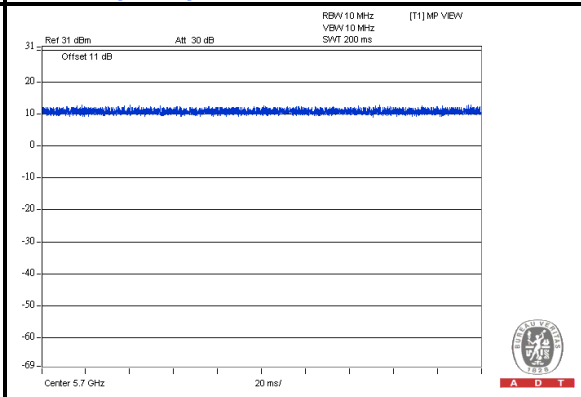
3.5 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is > 98 %, duty factor is not required.

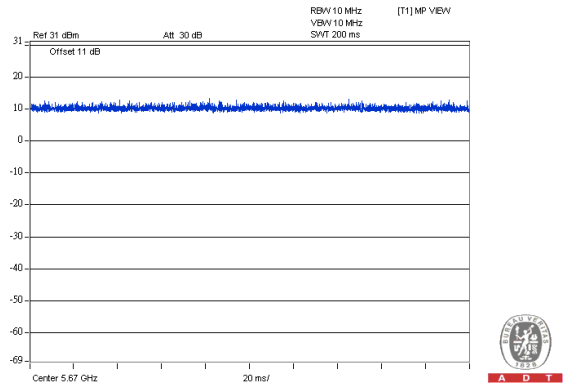
802.11a



802.11n (HT20)



802.11n (HT40)



3.6 DESCRIPTION OF SUPPORT UNITS

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

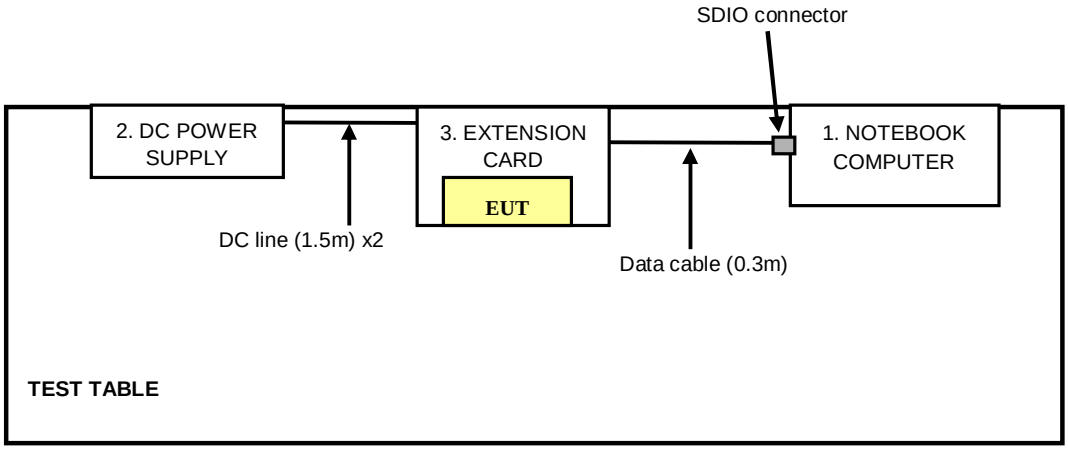
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
2	DC POWER SUPPLY	Topward	6603D	795558	NA
3	EXTENSION CARD	Qualcomm Atheros	NA	NA	NA

No.	Signal cable description
1	NA
2	DC line(1.5m)
3	Data cable(0.3m)

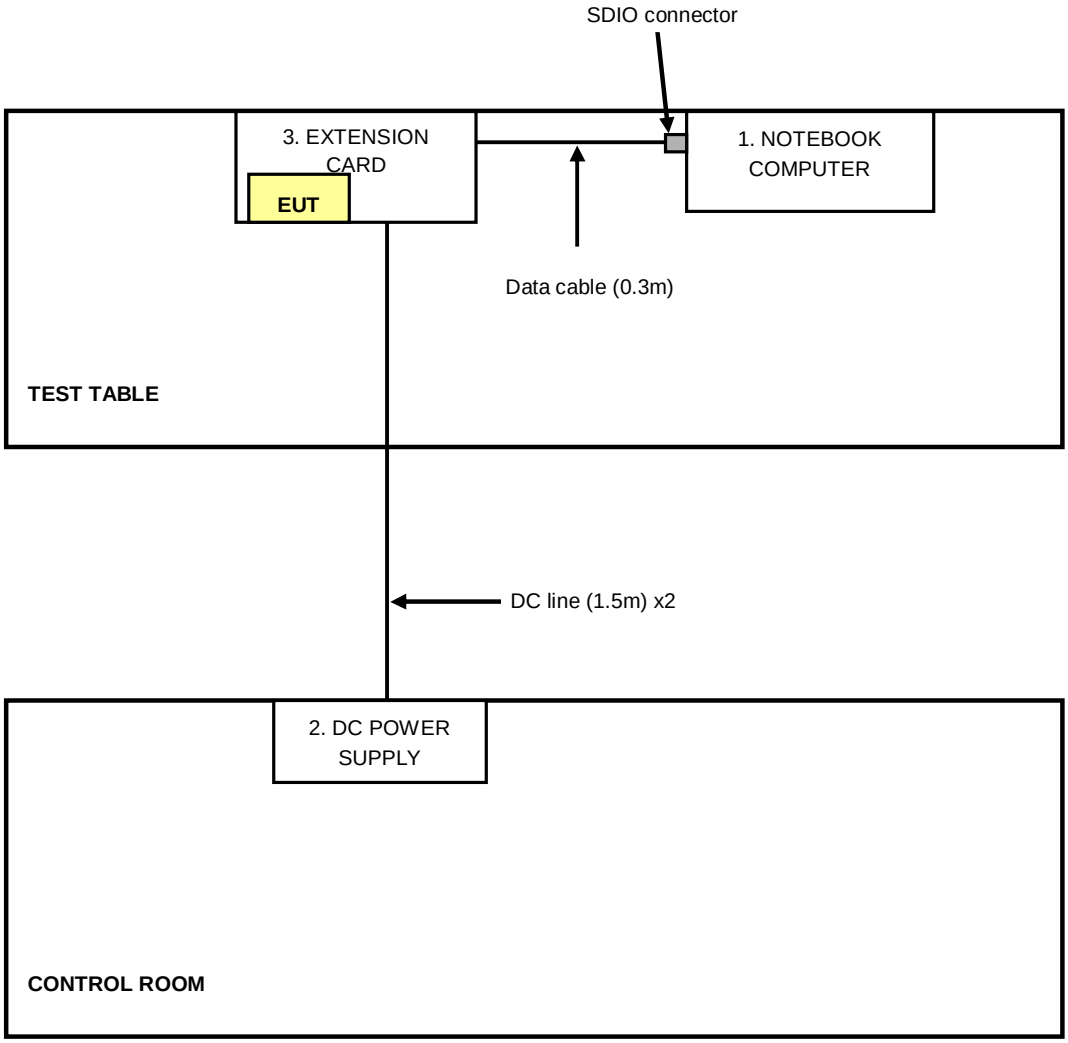
Note: The power cords of the above support units were unshielded (1.8m).

3.7 CONFIGURATION OF SYSTEM UNDER TEST

For conducted emission test



For other test items



4. TEST TYPES AND RESULTS

4.1 TRANSMIT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.47 – 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: 1. Where B is the 26dB emission bandwidth in MHz for FCC 15.407.
2. Where B is the 99% bandwidth in MHz for RSS-210 Annex 9.

4.1.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	0824006	May 10, 2012	May 09, 2013
Average Power Sensor	MA2411B	0738172	May 10, 2012	May 09, 2013

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. Tested date : Aug. 23, 2012

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250113	Nov. 30, 2011	Nov. 29, 2012

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. Tested date : Aug. 23, 2012

4.1.3 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

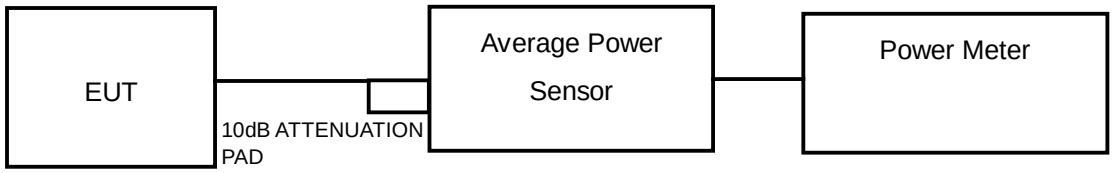
1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.1.4 DEVIATION FROM TEST STANDARD

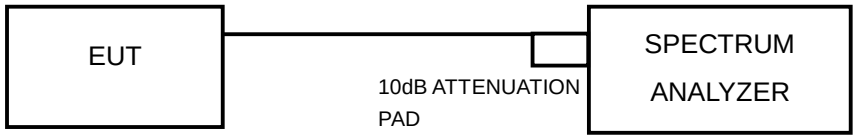
No deviation

4.1.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.1.6 EUT OPERATING CONDITIONS

The software(EMI_ART2_AR6K_2299Eng) provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.1.7 TEST RESULTS

802.11a

POWER OUTPUT

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	10.4	11.6	25.419	14.05	16.19	PASS
40	5200	10.5	11.7	26.011	14.15	16.19	PASS
48	5240	10.9	11.6	26.757	14.27	16.19	PASS
52	5260	13.0	13.7	43.395	16.37	23.19	PASS
60	5300	13.2	13.1	41.310	16.16	23.19	PASS
64	5320	13.1	13.3	41.797	16.21	23.19	PASS
100	5500	13.2	13.4	42.771	16.31	22.19	PASS
116	5580	13.1	13.4	42.295	16.26	21.51	PASS
132	5660	13.3	13.5	43.767	16.41	21.51	PASS
140	5700	12.4	12.5	35.161	15.46	21.51	PASS

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

802.11a

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	31.36	27.42
40	5200	33.43	24.94
48	5240	30.63	24.73
52	5260	37.23	29.60
60	5300	37.11	28.50
64	5320	33.79	33.04
100	5500	27.22	30.79
116	5580	27.65	33.14
132	5660	32.75	36.81
140	5700	34.87	35.98

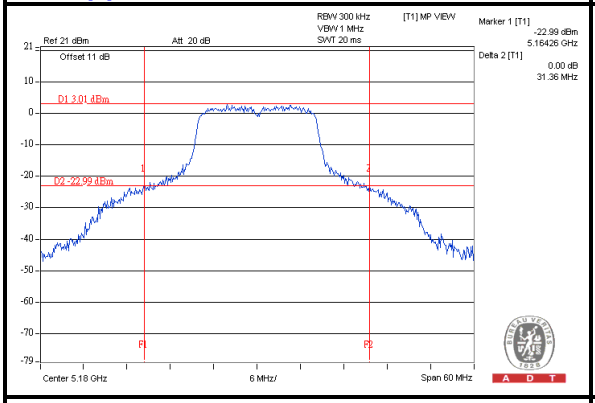
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a.5150~5250MHz: 17.84dBm > 16.91dBm
b.5250~5350MHz: 25.45dBm > 23.91dBm
c. 5470~5725MHz: 23.66dBm > 22.23dBm

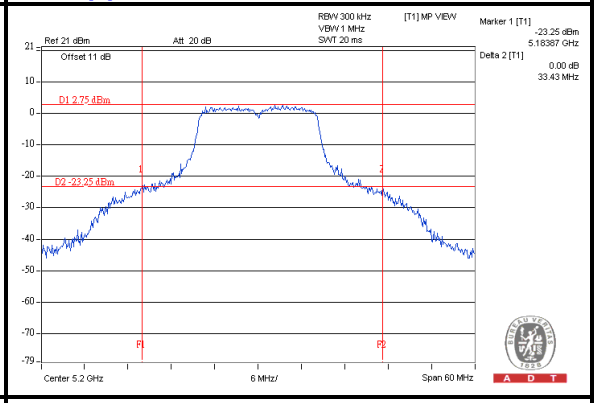
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a.5150~5250MHz: 16.19dBm ＜16.91dBm
b.5250~5350MHz: 23.19dBm ＜ 23.91dBm
c. 5470~5725MHz: 21.51dBm ＜ 22.23dBm

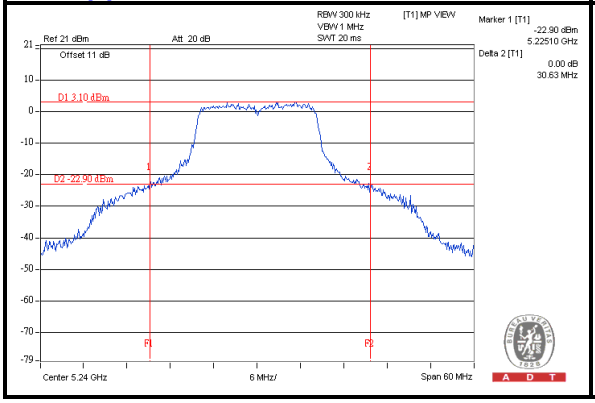
Chain(0) : CH36



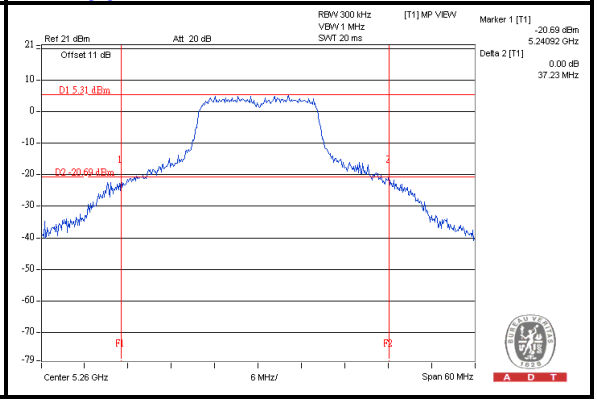
Chain(0) : CH40



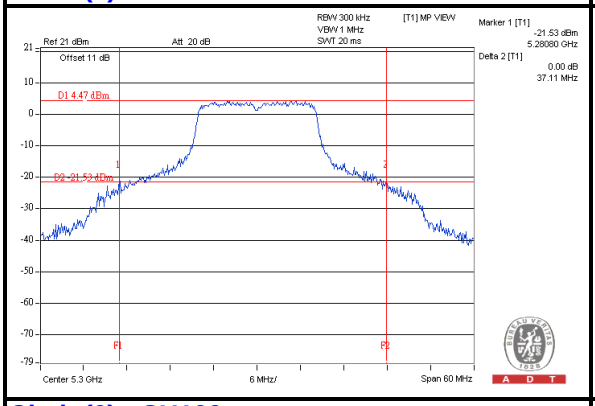
Chain(0) : CH48



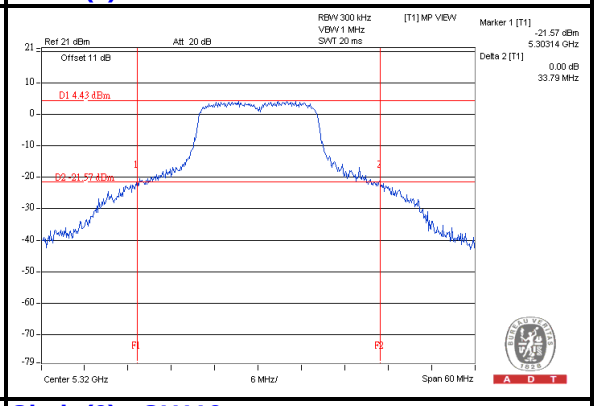
Chain(0) : CH52



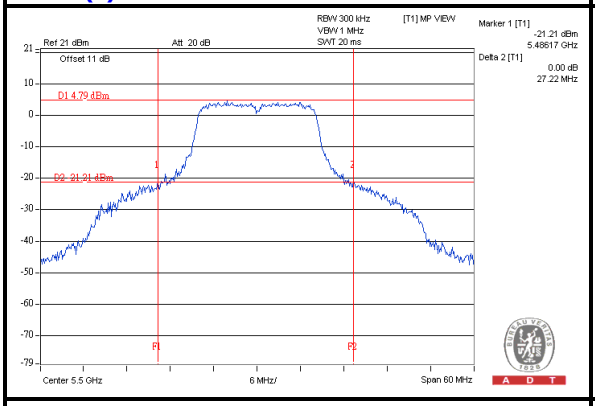
Chain(0) : CH60



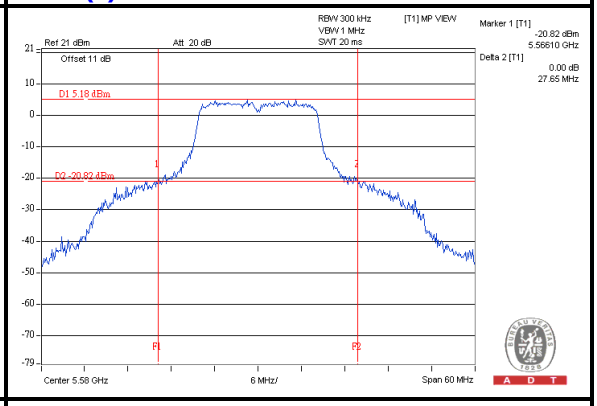
Chain(0) : CH64



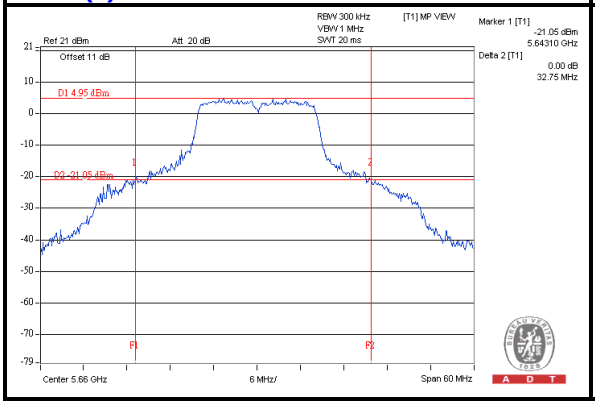
Chain(0) : CH100



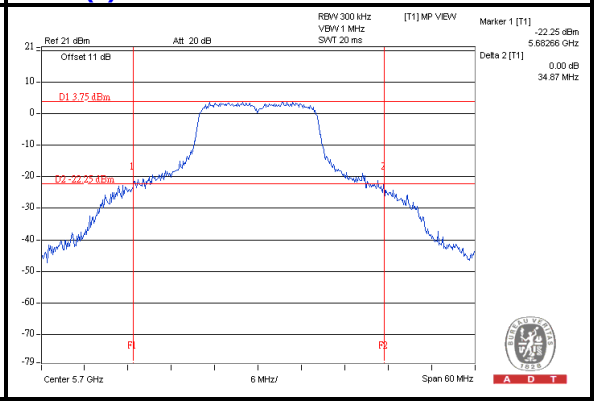
Chain(0) : CH116



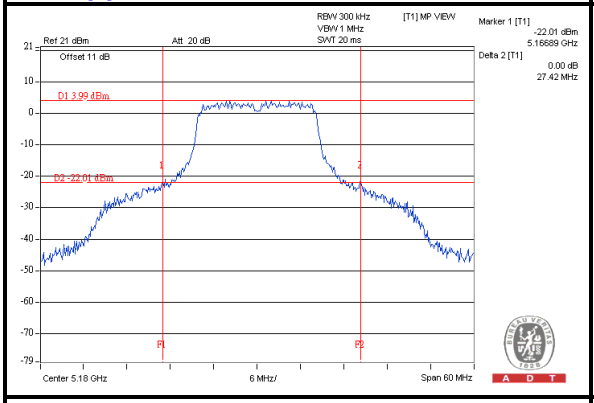
Chain(0) : CH132



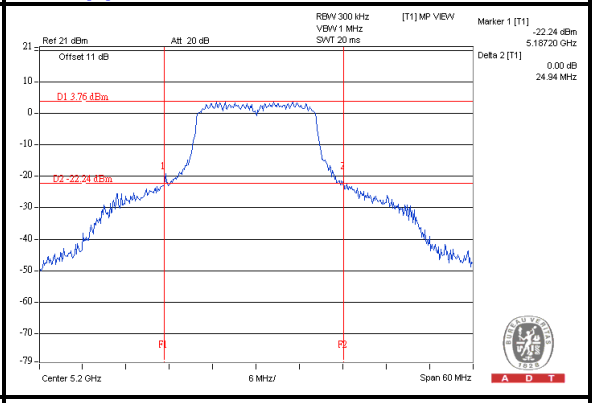
Chain(0) : CH140



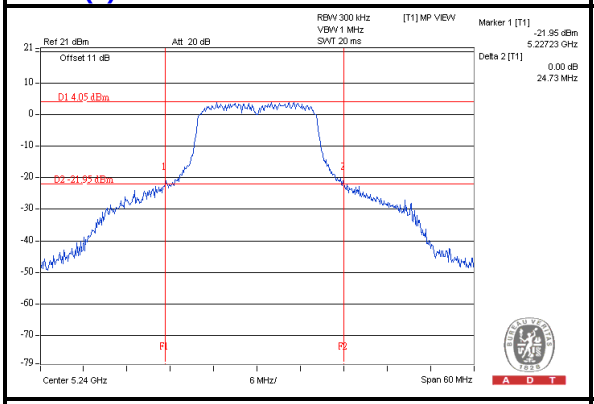
Chain(1) : CH36



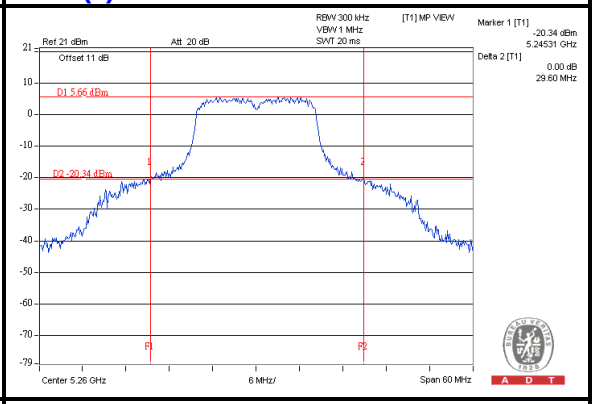
Chain(1) : CH40



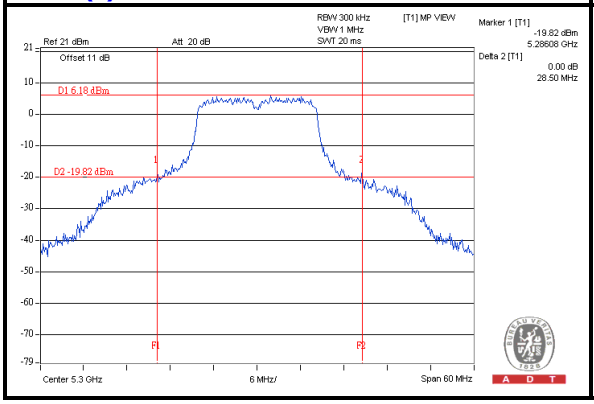
Chain(1) : CH48



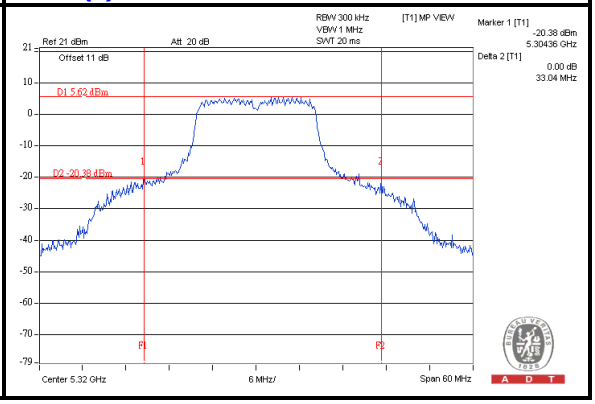
Chain(1) : CH52



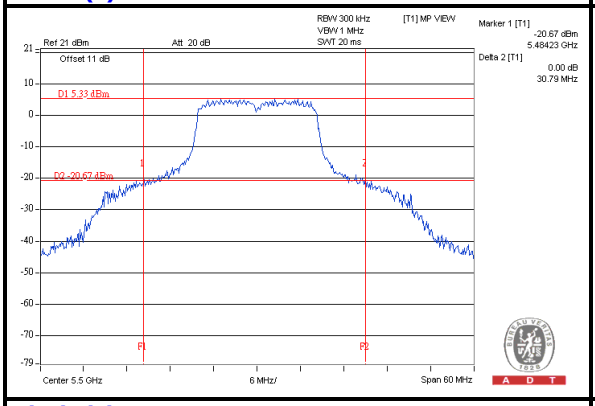
Chain(1) : CH60



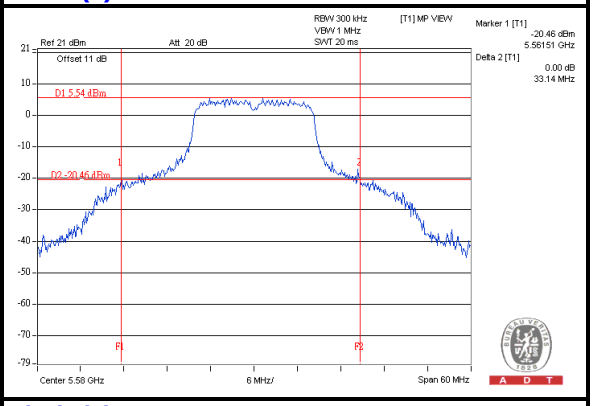
Chain(1) : CH64



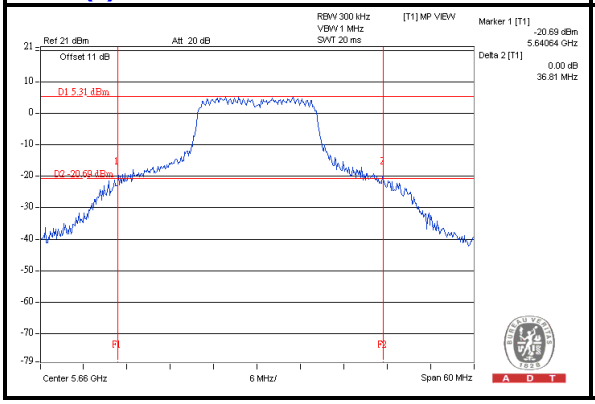
Chain(1) : CH100



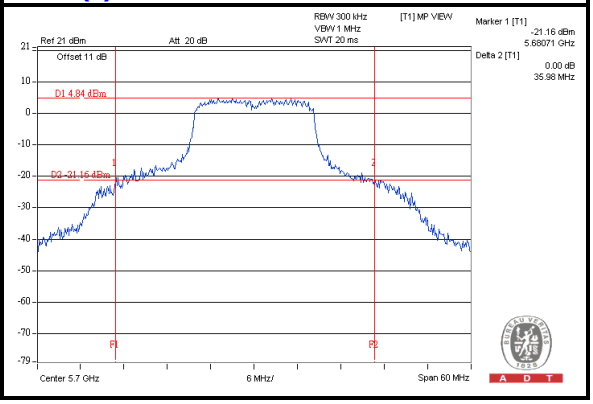
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



802.11n (HT20)

POWER OUTPUT

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	10.6	11.6	25.936	14.14	16.43	PASS
40	5200	11.0	11.5	26.714	14.27	16.43	PASS
48	5240	10.9	11.6	26.757	14.27	16.43	PASS
52	5260	13.0	13.9	44.500	16.48	23.49	PASS
60	5300	13.1	13.6	43.326	16.37	23.49	PASS
64	5320	13.1	13.3	41.797	16.21	23.49	PASS
100	5500	13.0	13.2	40.846	16.11	21.78	PASS
116	5580	13.1	13.8	44.405	16.47	21.78	PASS
132	5660	13.0	13.9	44.500	16.48	21.78	PASS
140	5700	11.9	12.1	31.706	15.01	21.78	PASS

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

802.11n (HT20)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	29.53	29.07
40	5200	34.01	26.95
48	5240	33.15	25.56
52	5260	38.18	30.33
60	5300	36.37	30.19
64	5320	35.33	32.73
100	5500	27.64	30.82
116	5580	29.85	34.39
132	5660	36.45	38.55
140	5700	34.29	35.31

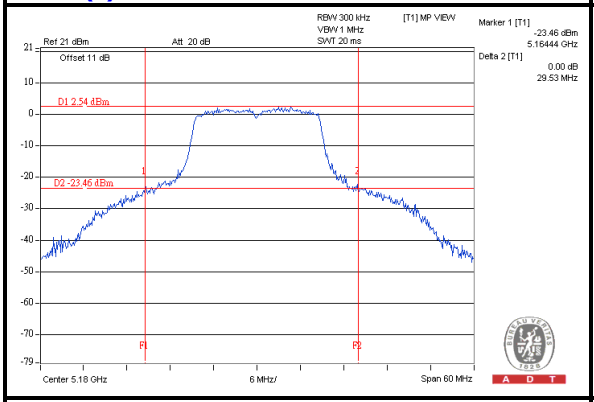
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a.5150~5250MHz: 17.98dBm > 16.91dBm
b.5250~5350MHz: 25.70dBm > 23.91dBm
c. 5470~5725MHz: 23.64dBm > 22.23dBm

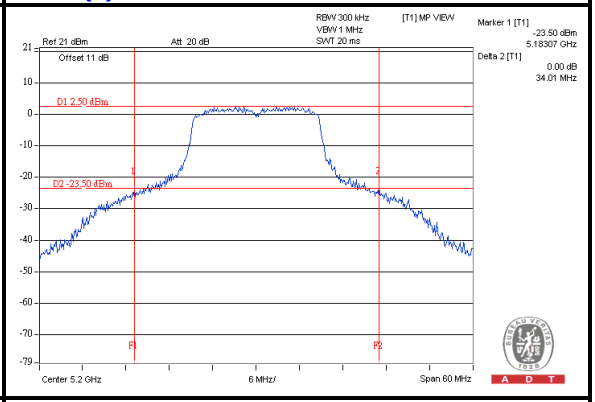
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a.5150~5250MHz: 16.43dBm ＜16.91dBm
b.5250~5350MHz: 23.49dBm ＜ 23.91dBm
c. 5470~5725MHz: 21.78dBm ＜ 22.23dBm

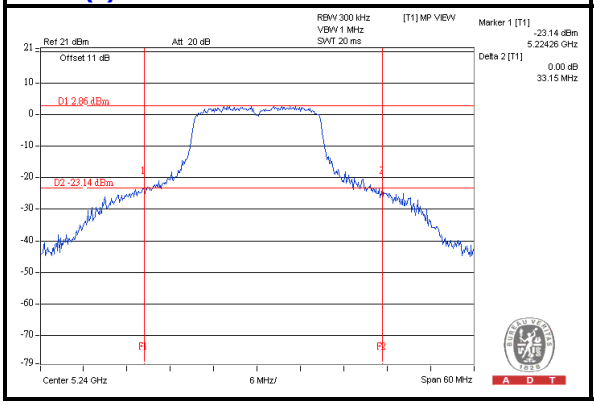
Chain(0) : CH36



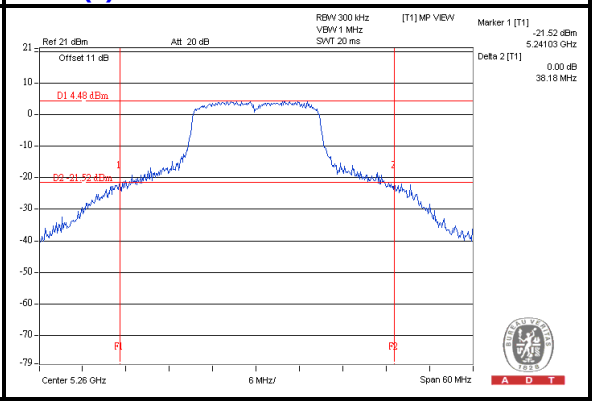
Chain(0) : CH40



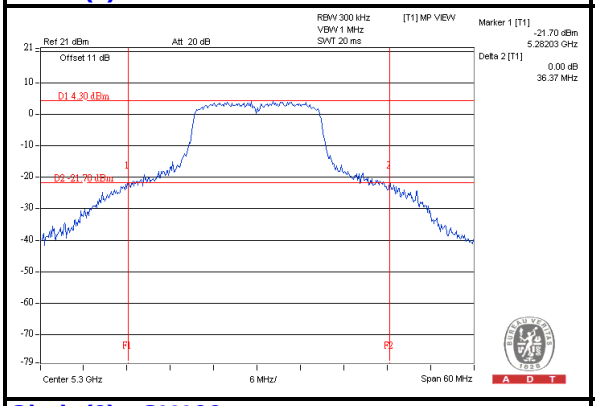
Chain(0) : CH48



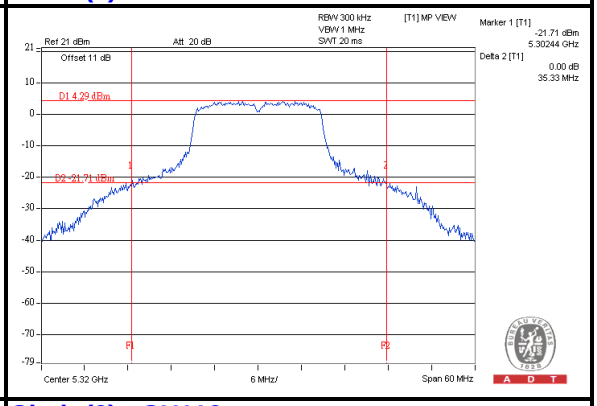
Chain(0) : CH52



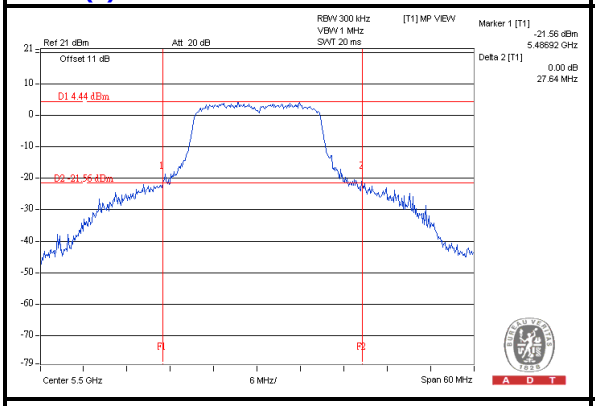
Chain(0) : CH60



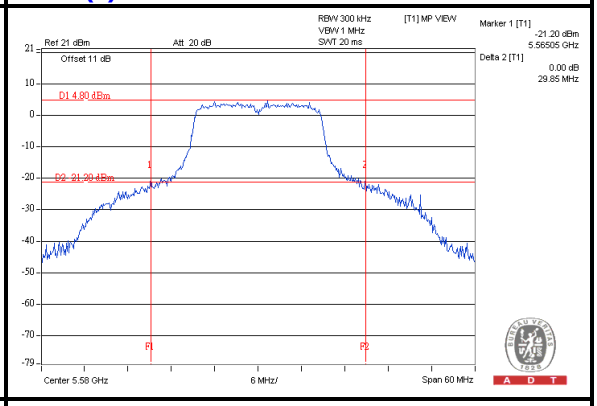
Chain(0) : CH64



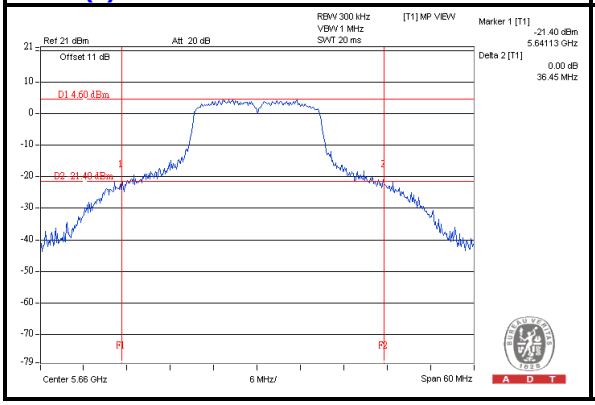
Chain(0) : CH100



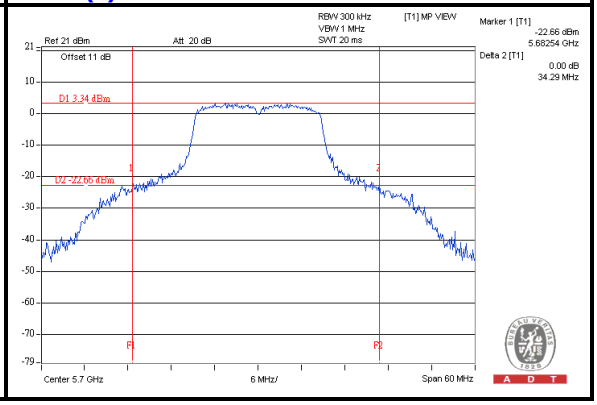
Chain(0) : CH116



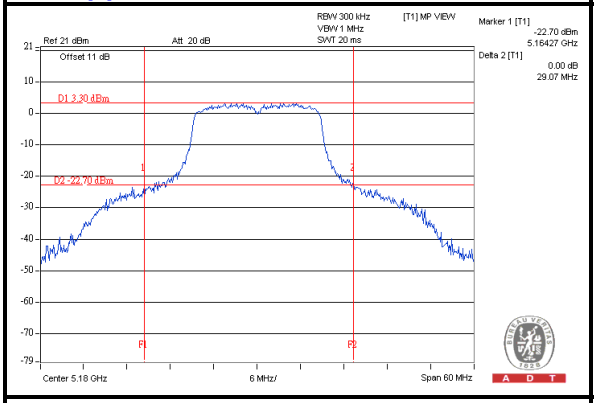
Chain(0) : CH132



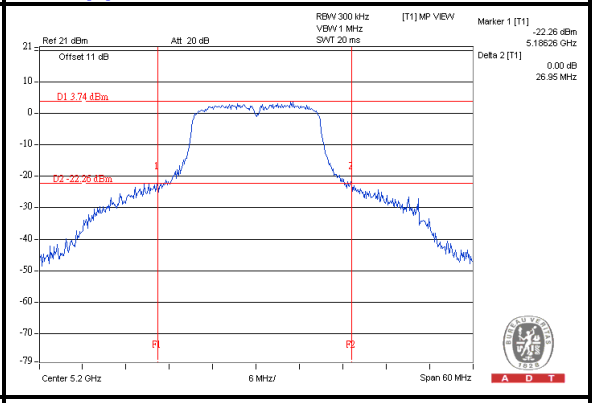
Chain(0) : CH140



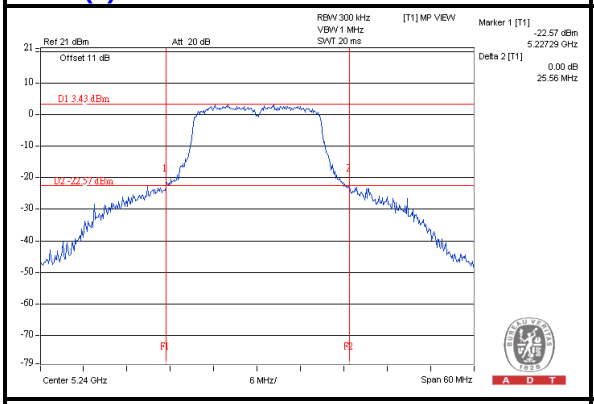
Chain(1) : CH36



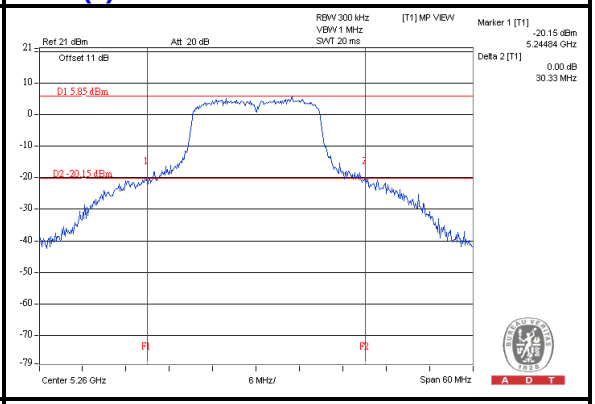
Chain(1) : CH40



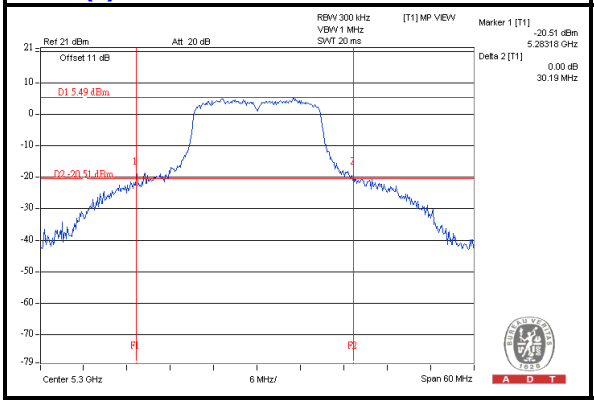
Chain(1) : CH48



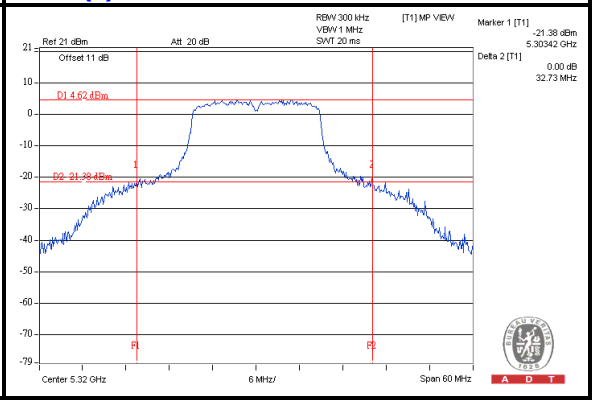
Chain(1) : CH52



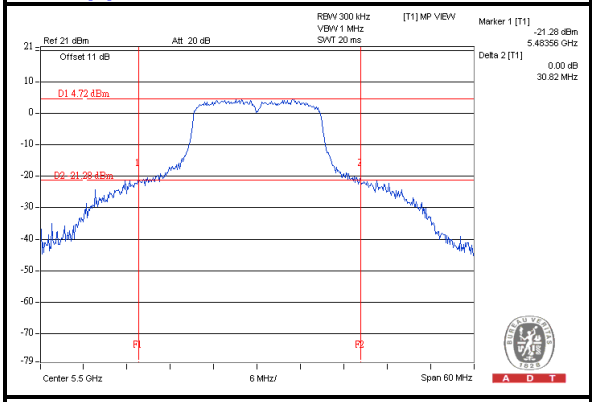
Chain(1) : CH60



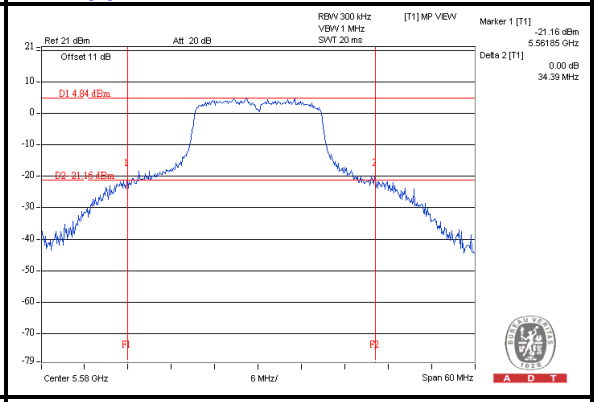
Chain(1) : CH64



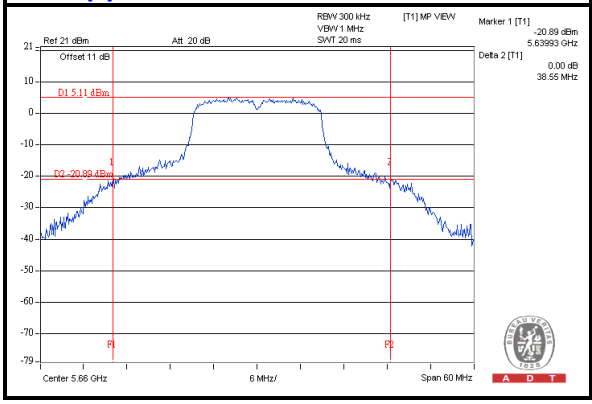
Chain(1) : CH100



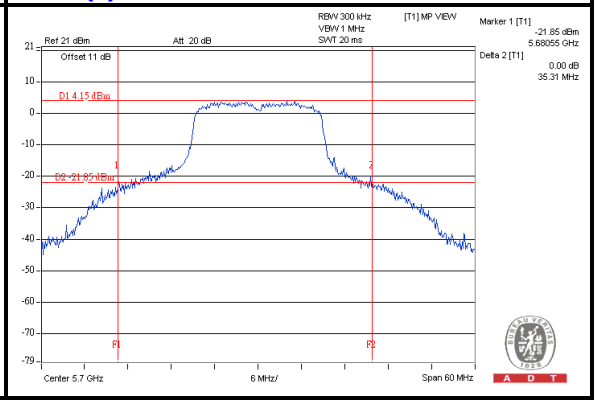
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



802.11n (HT40)

POWER OUTPUT

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	9.4	10.1	18.943	12.77	16.91	PASS
46	5230	11.0	11.4	26.393	14.21	16.91	PASS
54	5270	11.4	11.9	29.292	14.67	23.91	PASS
62	5310	10.1	10.3	20.948	13.21	23.91	PASS
102	5510	10.9	11.0	24.892	13.96	22.23	PASS
110	5550	11.1	11.8	28.018	14.47	22.23	PASS
134	5670	11.2	11.4	26.987	14.31	22.23	PASS

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

802.11n (HT40)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	61.49	51.83
46	5230	80.02	67.24
54	5270	71.46	62.15
62	5310	62.55	49.30
102	5510	50.64	60.64
110	5550	49.10	61.27
134	5670	72.29	68.09

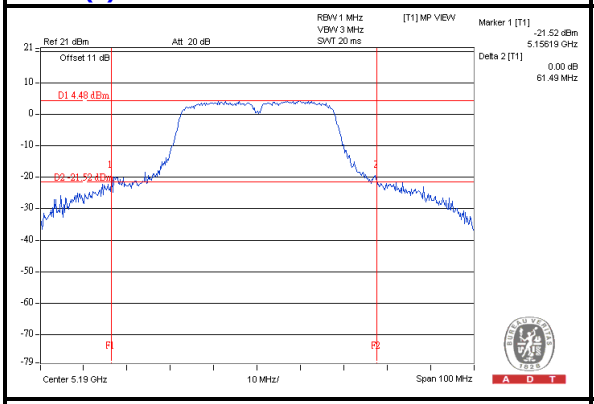
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a.5150~5250MHz: 21.14dBm > 16.91 dBm
b.5250~5350MHz: 27.92dBm > 23.91dBm
c. 5470~5725MHz: 27.91dBm > 22.23dBm

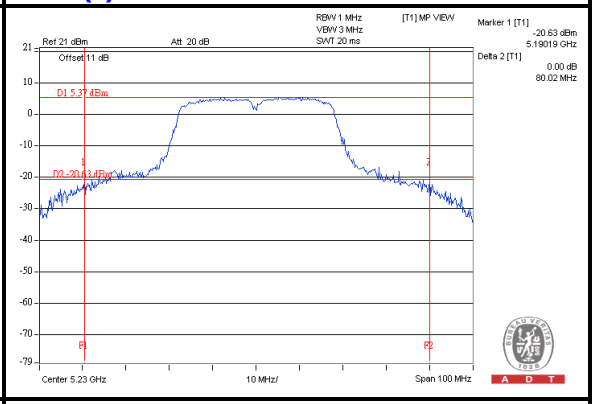
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a.5150~5250MHz: 19.54dBm > 16.91 dBm
b.5250~5350MHz: 26.56dBm > 23.91dBm
c. 5470~5725MHz: 24.88dBm > 22.23dBm

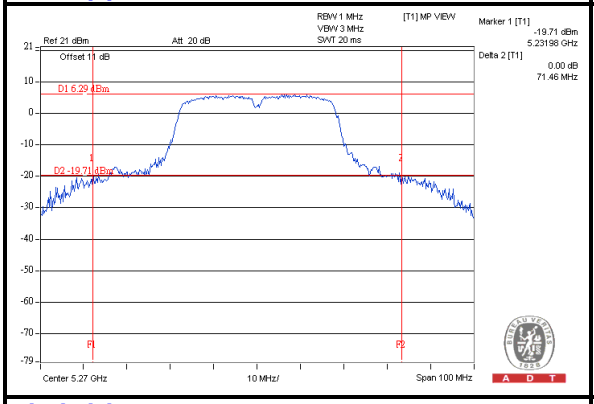
Chain(0) : CH38



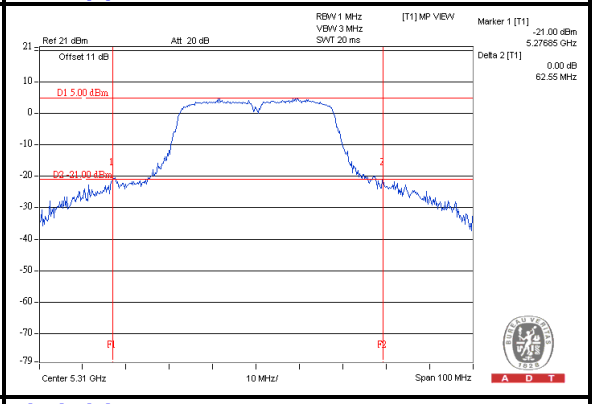
Chain(0) : CH46



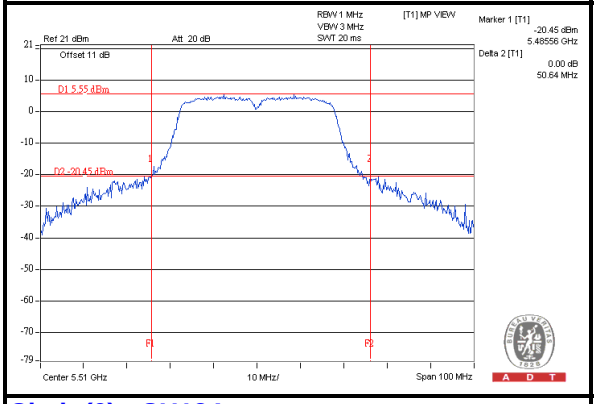
Chain(0) : CH54



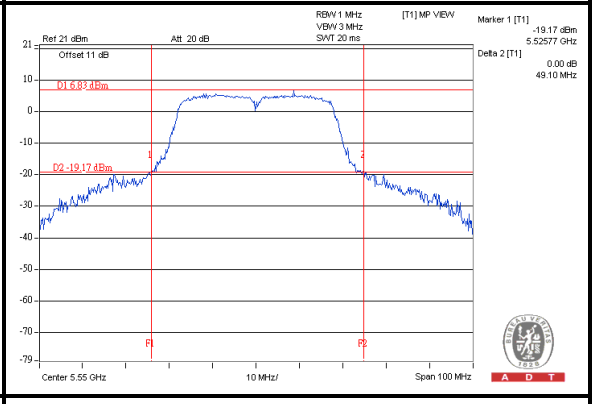
Chain(0) : CH62



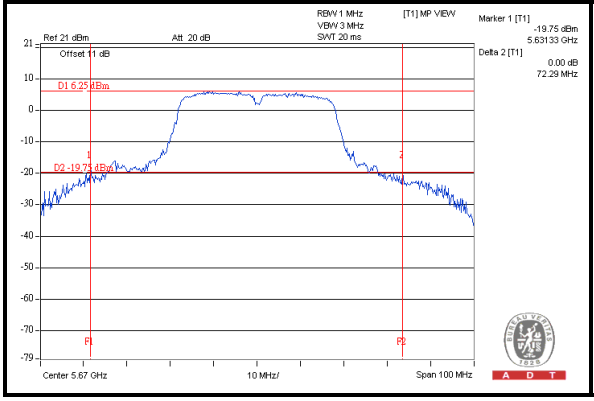
Chain(0) : CH102



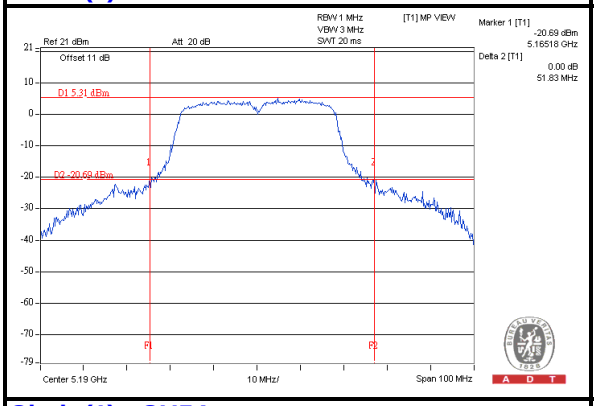
Chain(0) : CH110



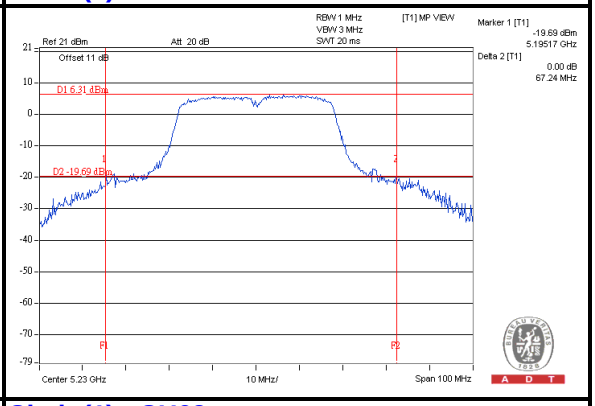
Chain(0) : CH134



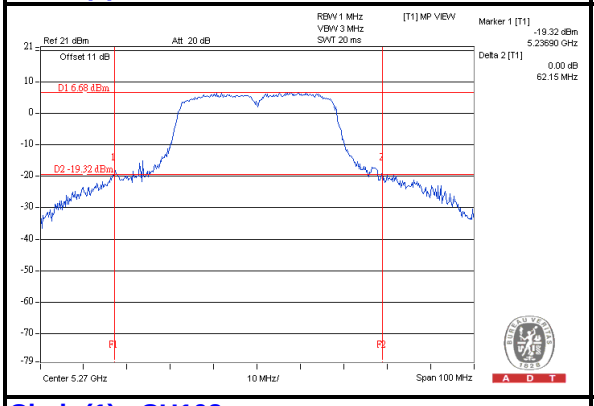
Chain(1) : CH38



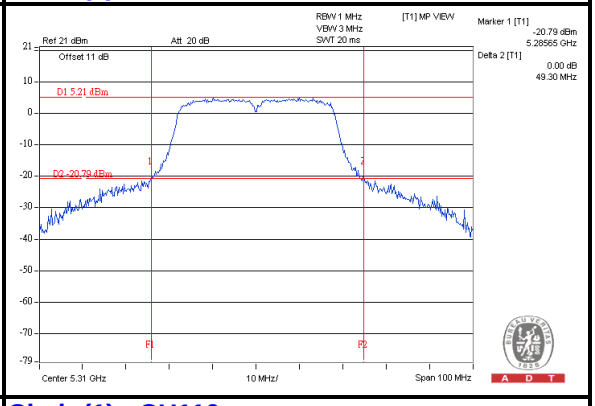
Chain(1) : CH46



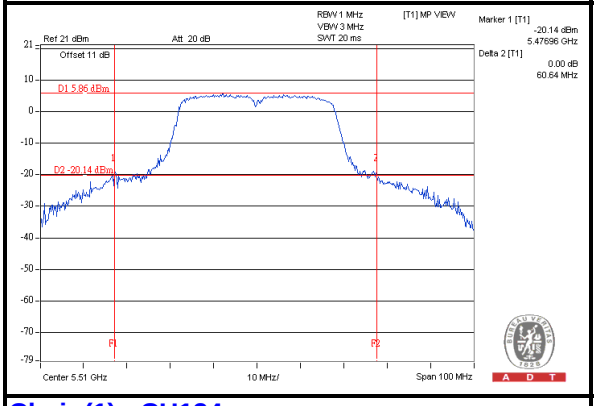
Chain(1) : CH54



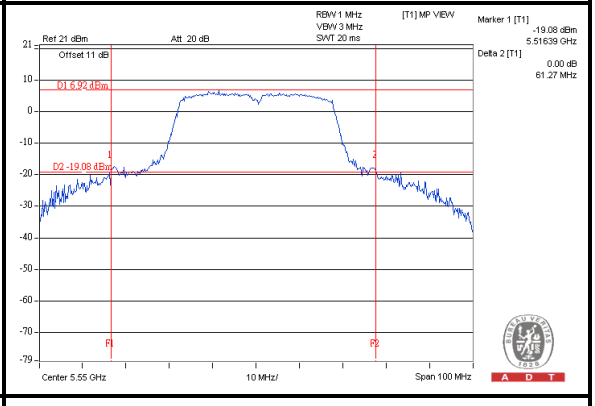
Chain(1) : CH62



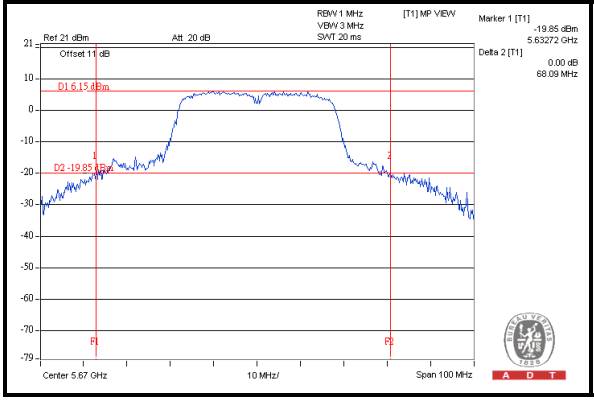
Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134



4.2 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.2.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.47 – 5.725GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250113	Nov. 30, 2011	Nov. 29, 2012

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. Tested date : Aug. 23, 2012

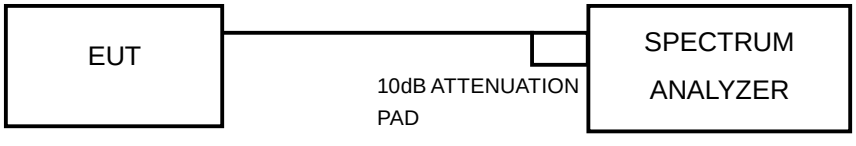
4.2.3 TEST PROCEDURES

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



4.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

4.2.7 TEST RESULTS

802.11a

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)			
36	5180	-1.09	0.31	2.68	3.91	PASS
40	5200	-0.68	0.02	2.64	3.91	PASS
48	5240	-0.40	0.26	2.94	3.91	PASS
52	5260	1.45	2.14	4.77	10.91	PASS
60	5300	1.23	1.96	4.54	10.91	PASS
64	5320	1.01	1.60	4.29	10.91	PASS
100	5500	1.13	1.58	4.35	9.23	PASS
116	5580	1.46	1.69	4.54	9.23	PASS
132	5660	1.50	1.73	4.60	9.23	PASS
140	5700	0.76	1.23	3.99	9.23	PASS

Note: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

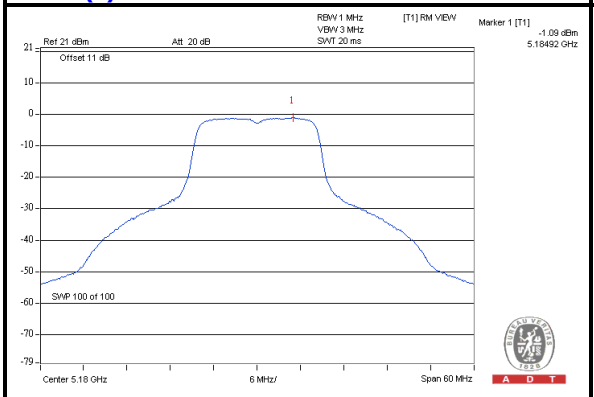
For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

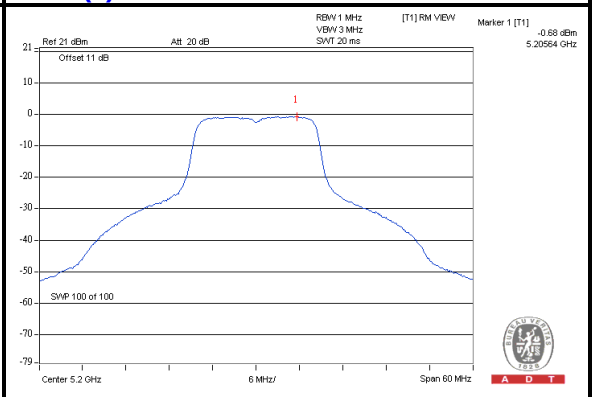
Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

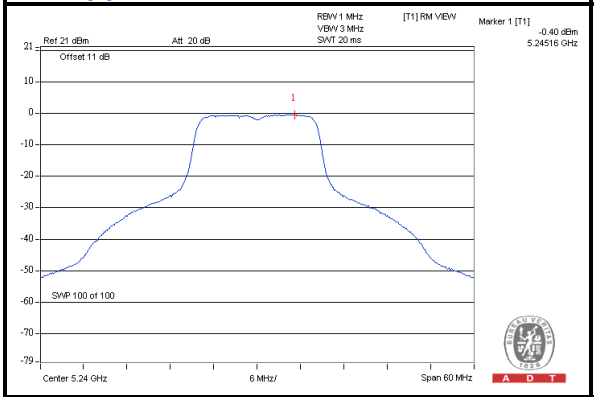
Chain(0) : CH36



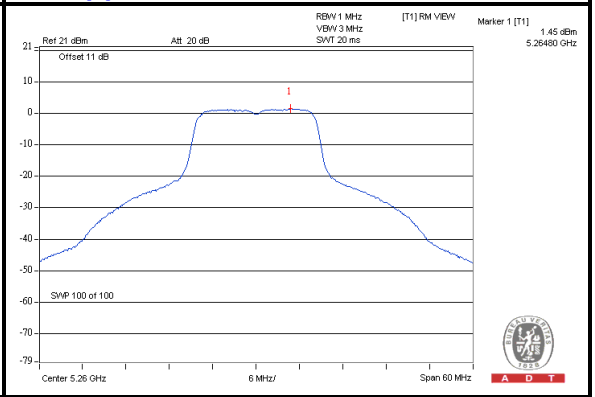
Chain(0) : CH40



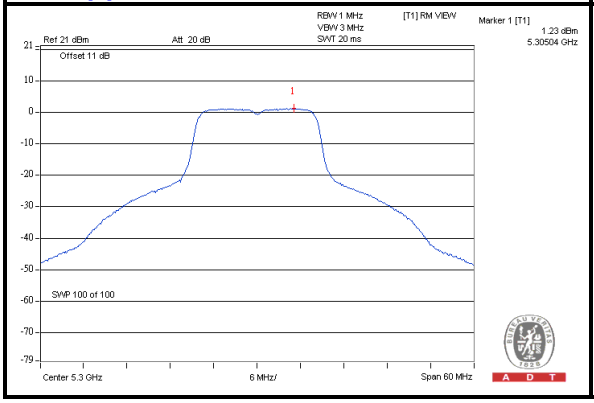
Chain(0) : CH48



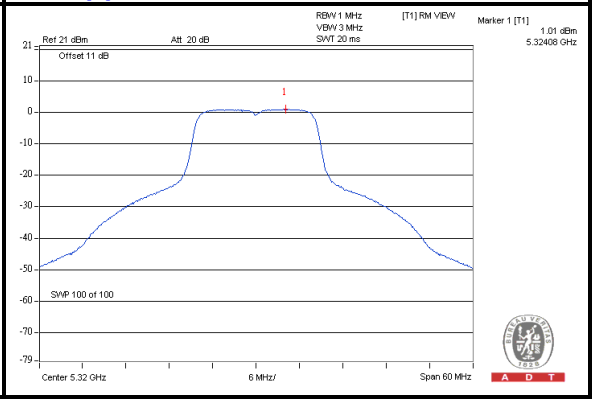
Chain(0) : CH52



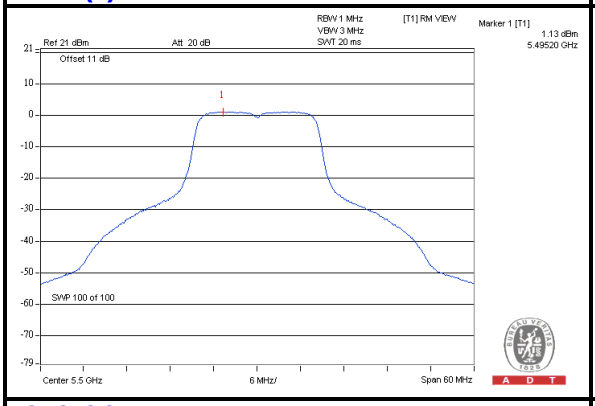
Chain(0) : CH60



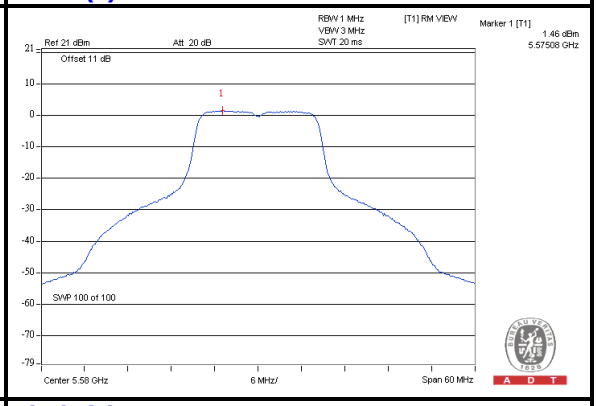
Chain(0) : CH64



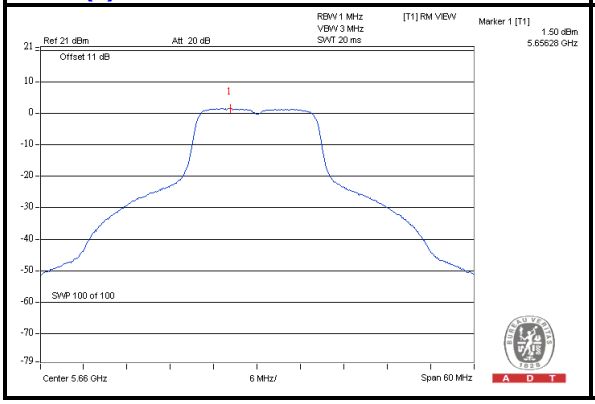
Chain(0) : CH100



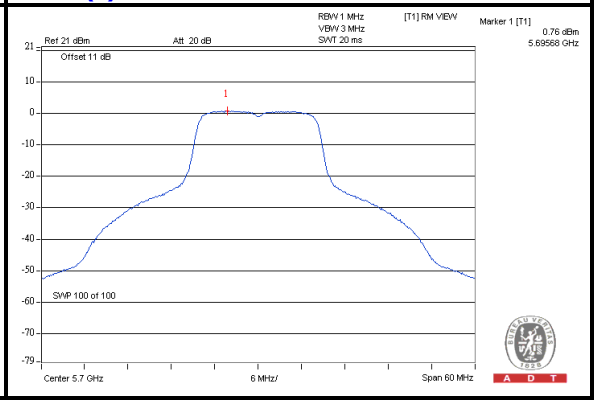
Chain(0) : CH116



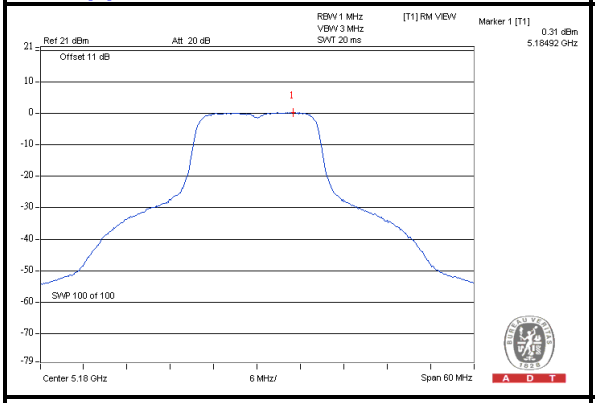
Chain(0) : CH132



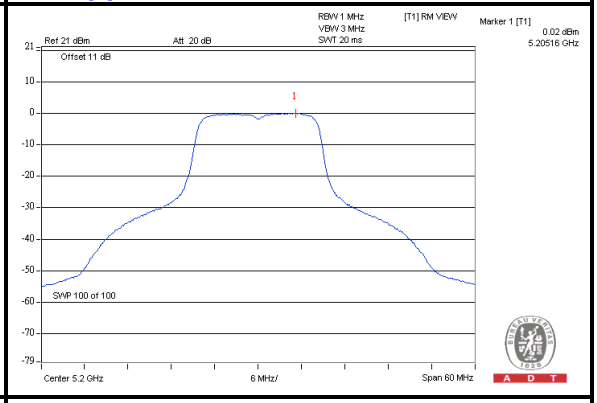
Chain(0) : CH140



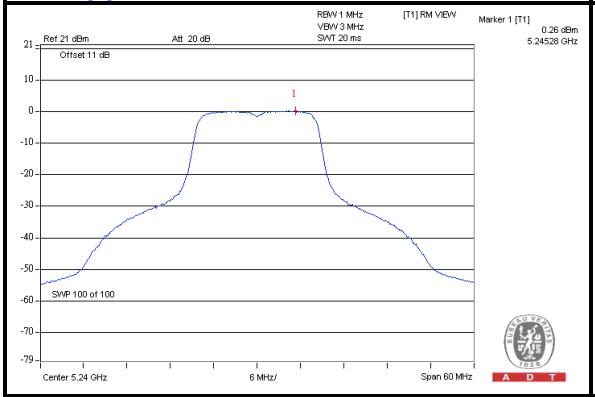
Chain(1) : CH36



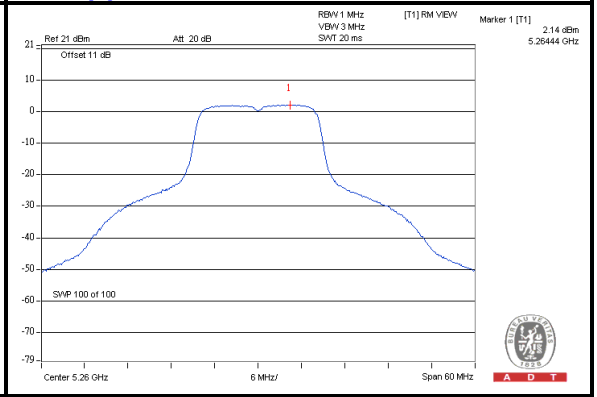
Chain(1) : CH40



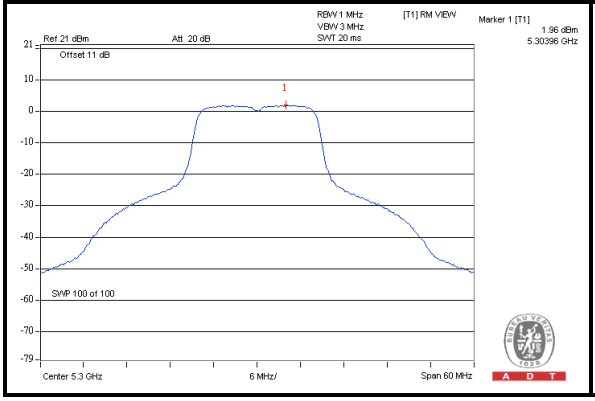
Chain(1) : CH48



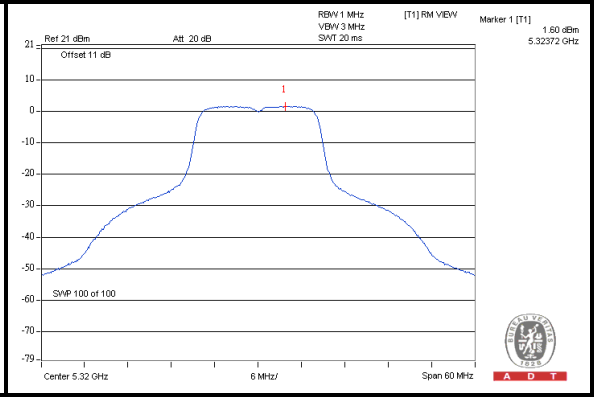
Chain(1) : CH52



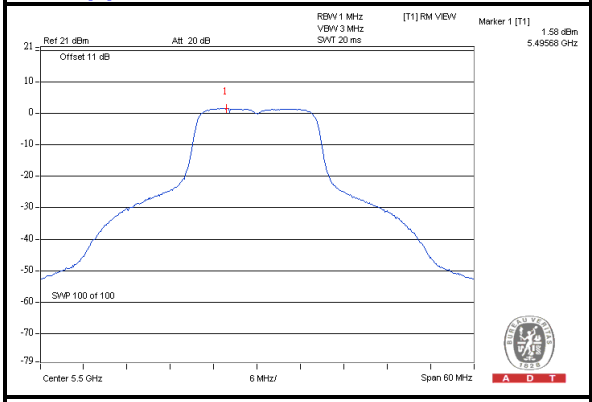
Chain(1) : CH60



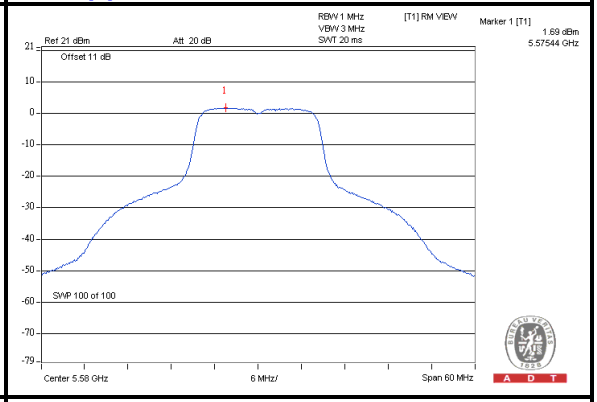
Chain(1) : CH64



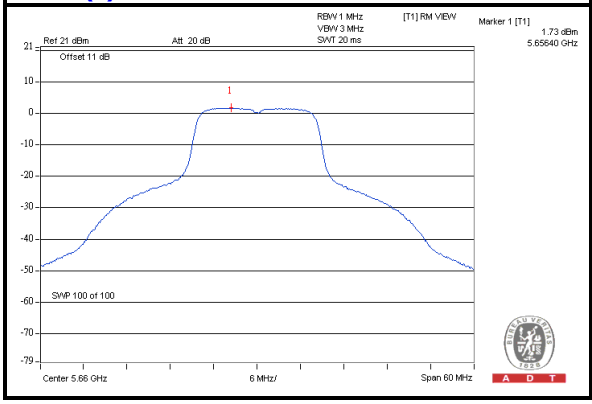
Chain(1) : CH100



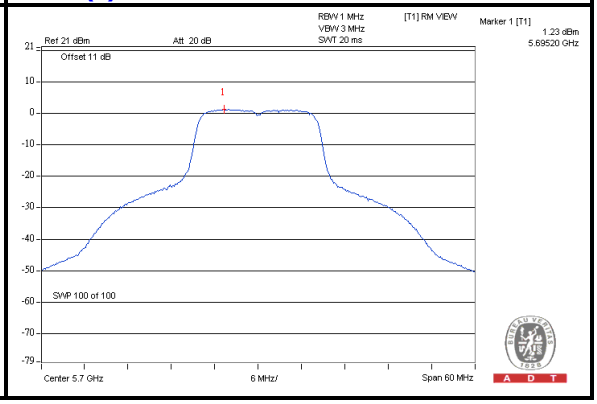
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PSD (DBM)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)			
36	5180	-0.97	0.13	2.62	3.91	PASS
40	5200	-0.65	-0.17	2.60	3.91	PASS
48	5240	-0.24	0.01	2.84	3.91	PASS
52	5260	1.32	1.85	4.56	10.91	PASS
60	5300	0.99	1.66	4.28	10.91	PASS
64	5320	1.12	1.35	4.21	10.91	PASS
100	5500	0.87	1.27	4.05	9.23	PASS
116	5580	1.16	1.45	4.27	9.23	PASS
132	5660	1.21	1.61	4.41	9.23	PASS
140	5700	0.16	0.51	3.31	9.23	PASS

Note: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

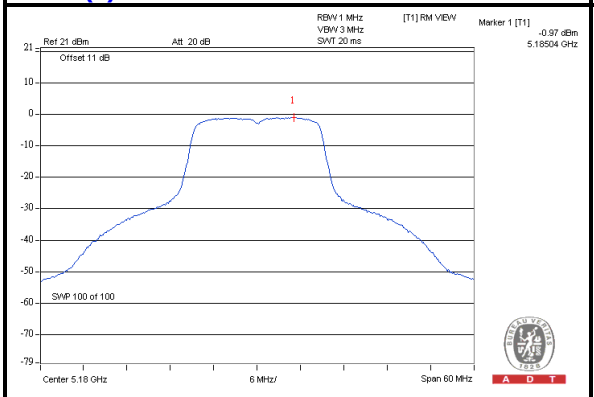
For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

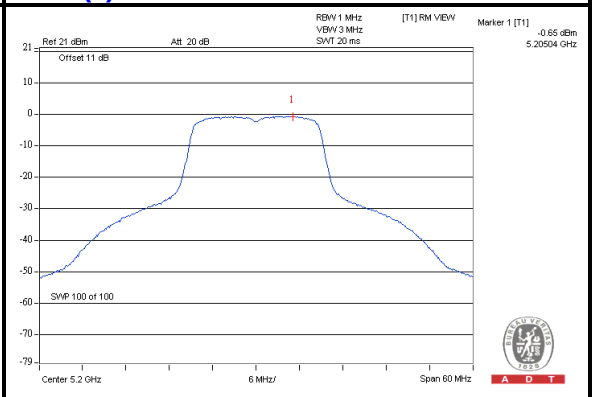
Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

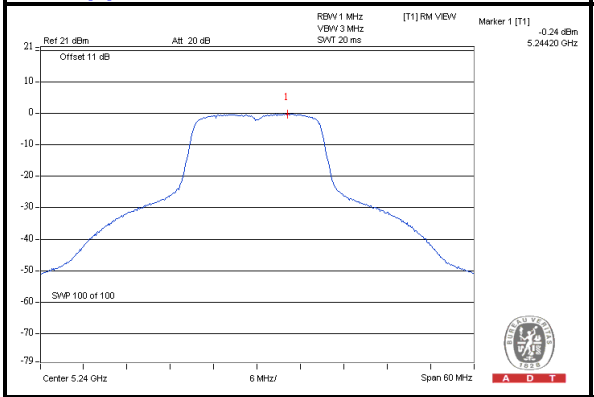
Chain(0) : CH36



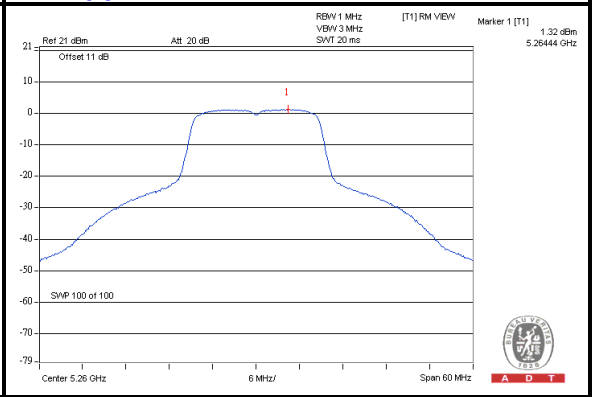
Chain(0) : CH40



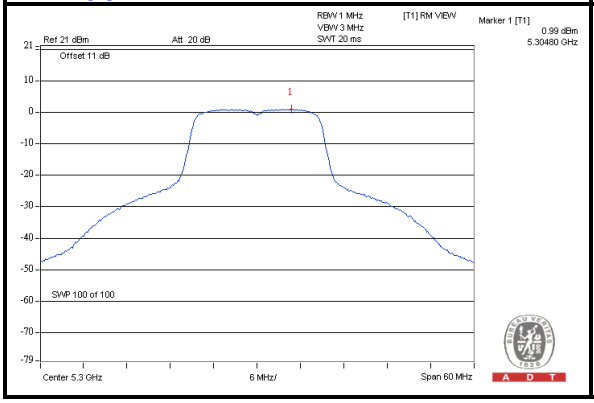
Chain(0) : CH48



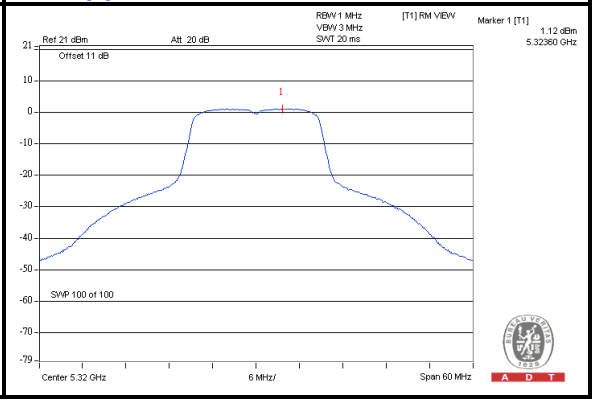
Chain(0) : CH52



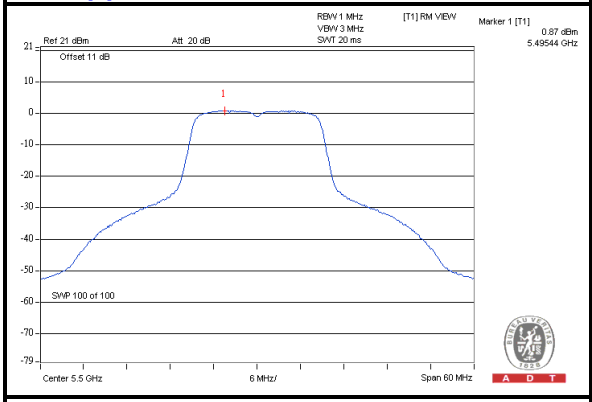
Chain(0) : CH60



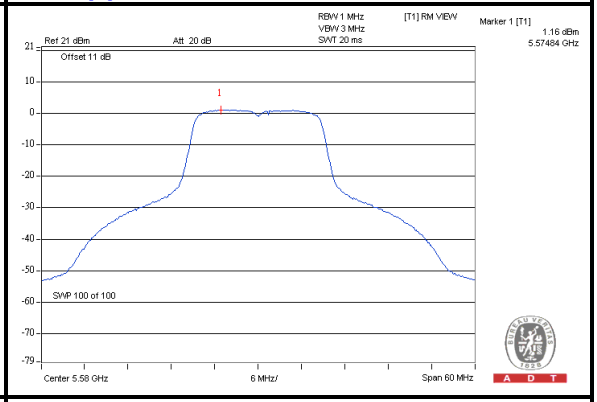
Chain(0) : CH64



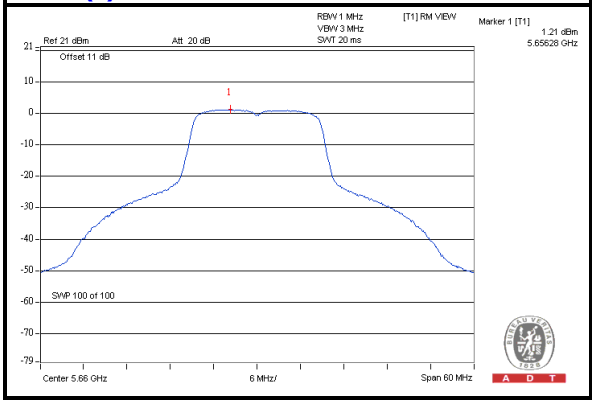
Chain(0) : CH100



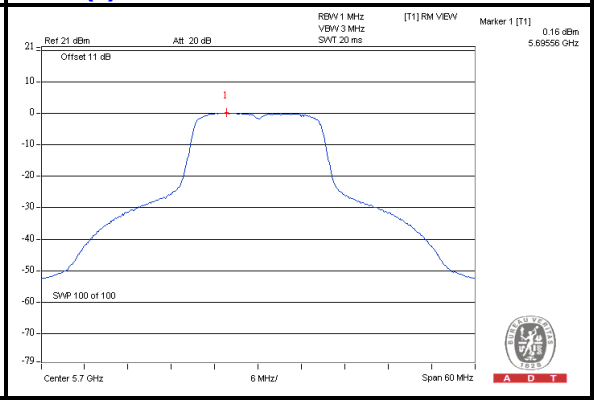
Chain(0) : CH116



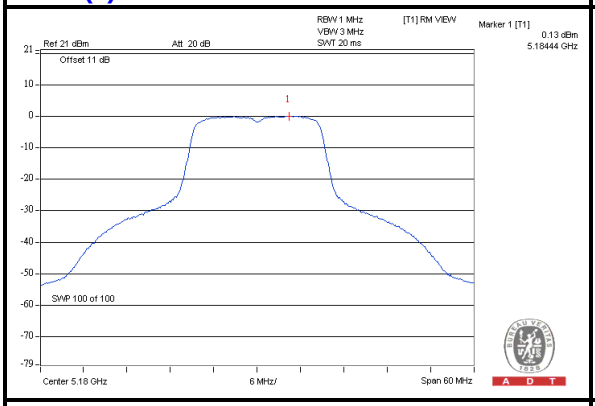
Chain(0) : CH132



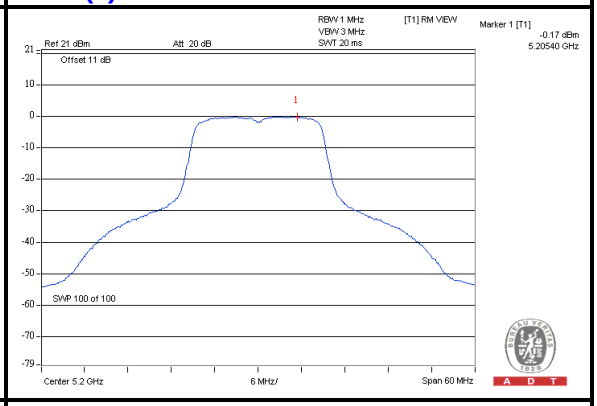
Chain(0) : CH140



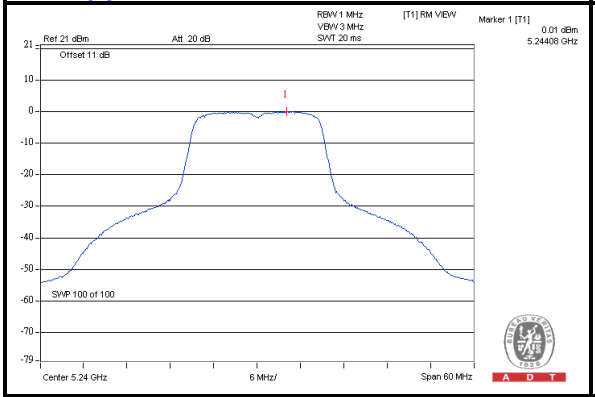
Chain(1) : CH36



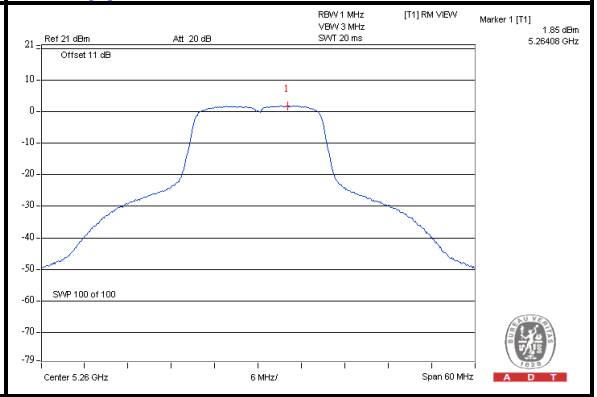
Chain(1) : CH40



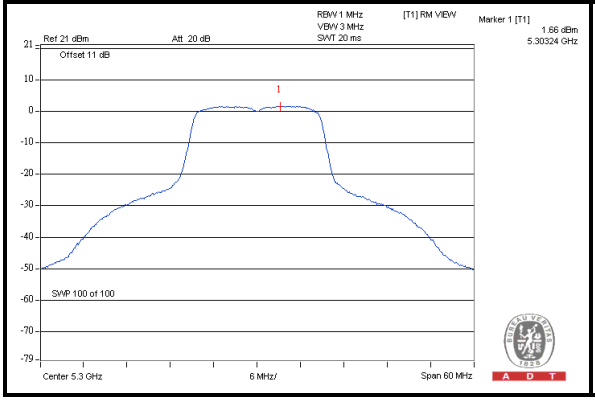
Chain(1) : CH48



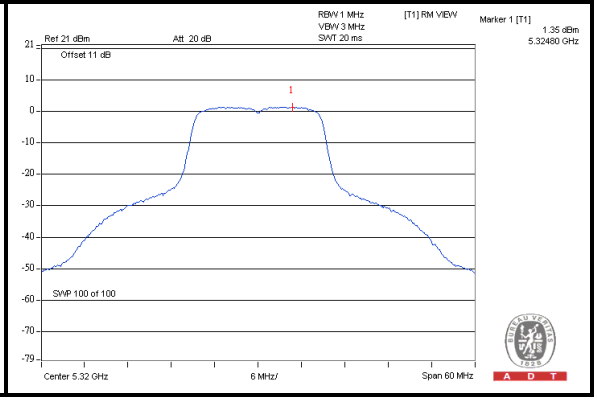
Chain(1) : CH52



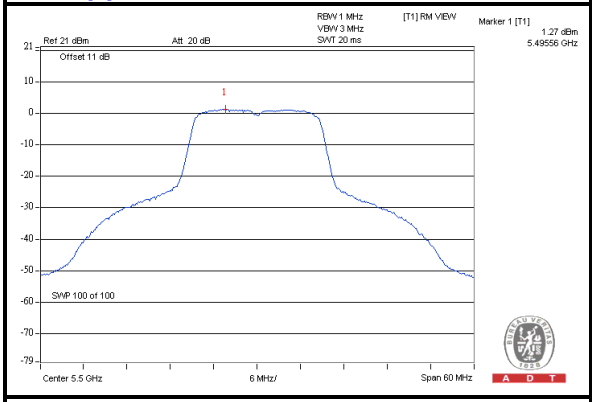
Chain(1) : CH60



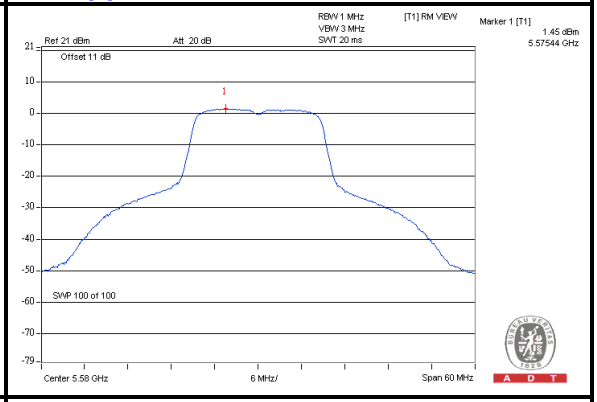
Chain(1) : CH64



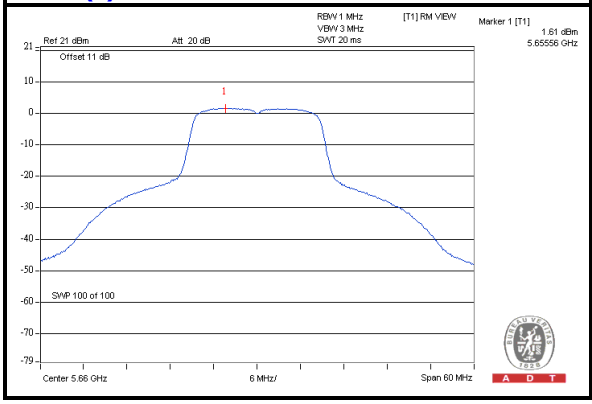
Chain(1) : CH100



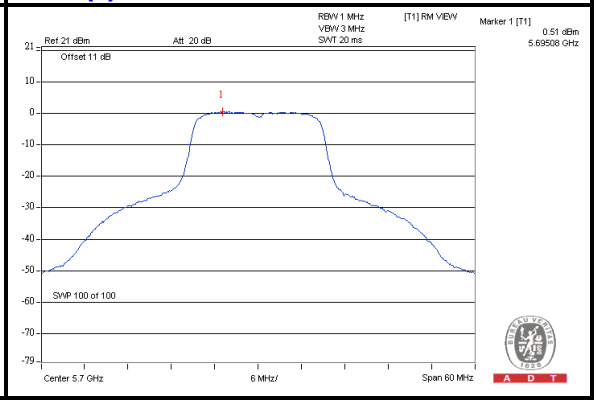
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PSD (DBM)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)			
38	5190	-4.66	-4.59	-1.68	3.91	PASS
46	5230	-3.46	-2.92	-0.28	3.91	PASS
54	5270	-3.20	-2.59	0.08	10.91	PASS
62	5310	-4.67	-4.28	-1.54	10.91	PASS
102	5510	-4.30	-3.43	-0.87	9.23	PASS
110	5550	-3.69	-2.90	-0.29	9.23	PASS
134	5670	-3.07	-3.08	-0.08	9.23	PASS

Note: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer

For Operated in 5150MHz ~ 5250MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) = 6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

For Operated in 5250MHz ~ 5350MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi) =6.09

The effective legacy gain is 6.09dBi, therefore the limit needs to reduce.

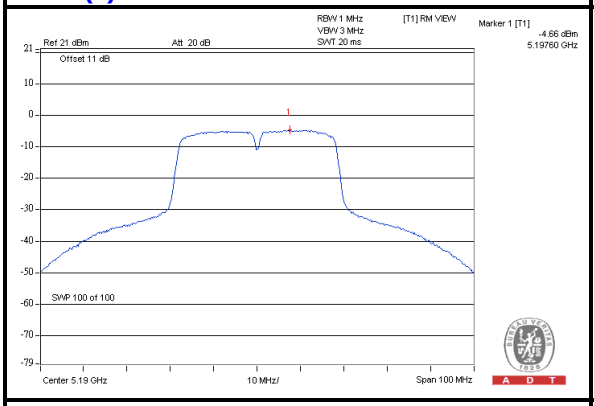
For Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

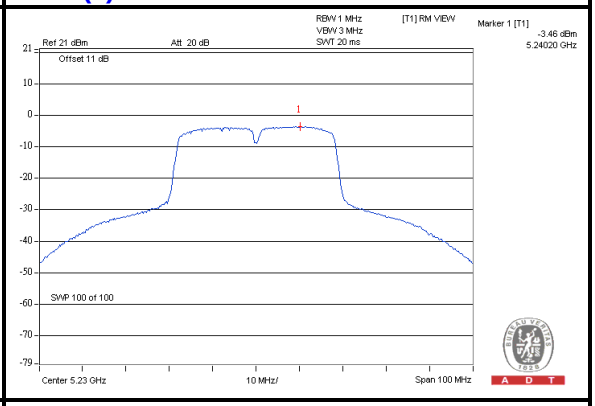
Effective Legacy Gain (dBi) = 7.77

The effective legacy gain is 7.77dBi, therefore the limit needs to reduce.

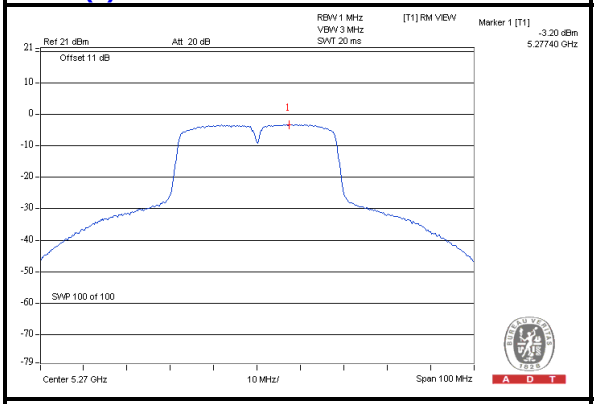
Chain(0) : CH38



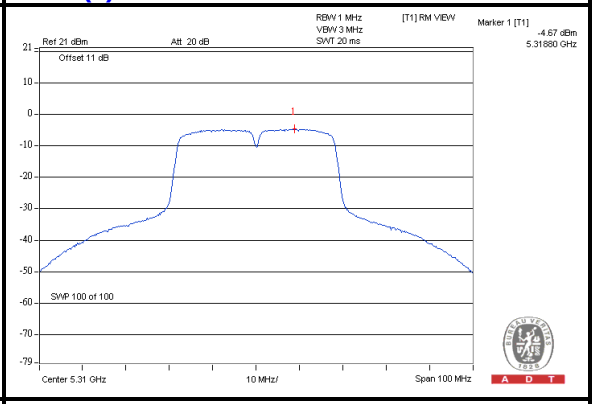
Chain(0) : CH46



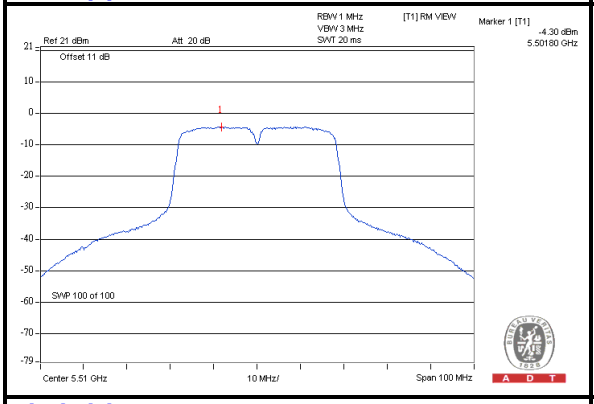
Chain(0) : CH54



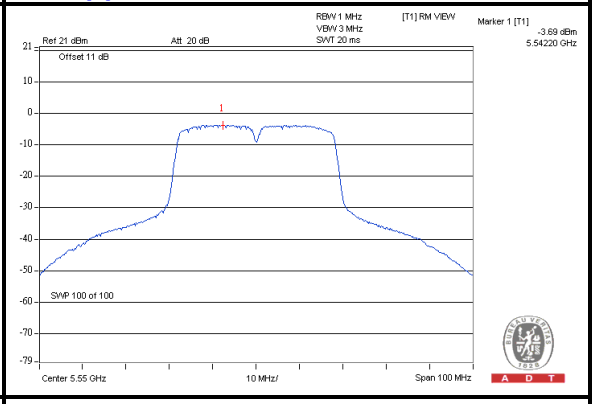
Chain(0) : CH62



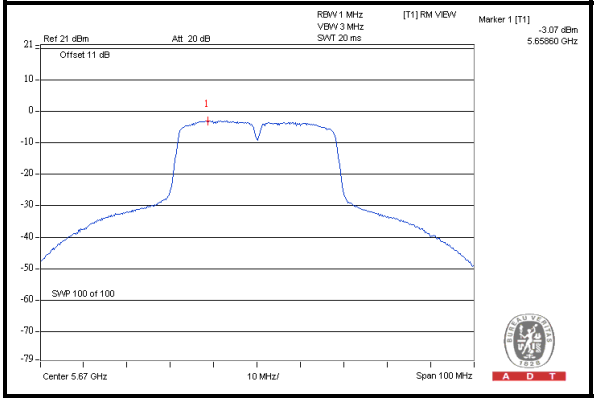
Chain(0) : CH102



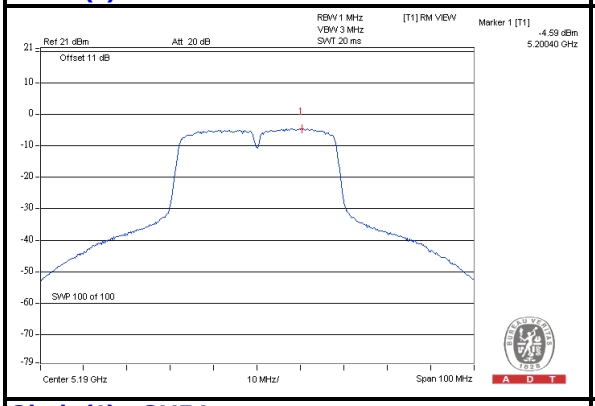
Chain(0) : CH110



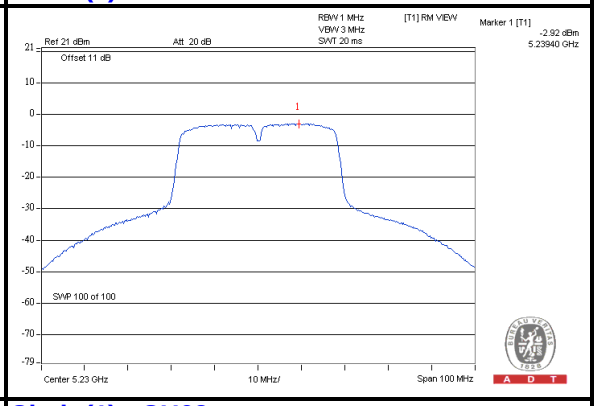
Chain(0) : CH134



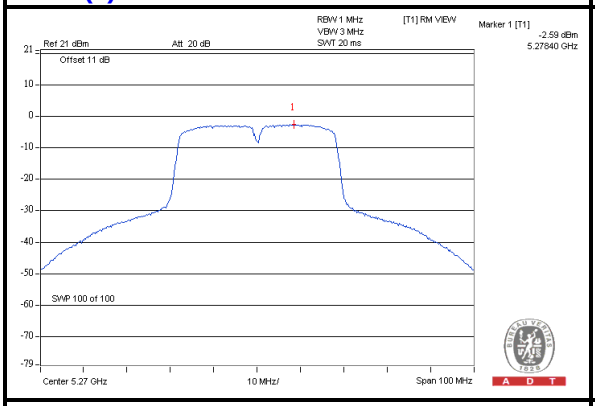
Chain(1) : CH38



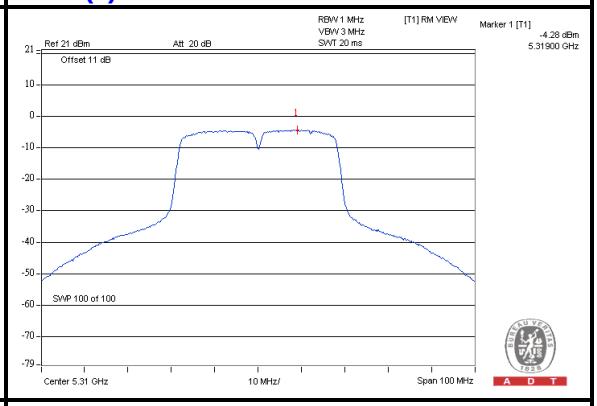
Chain(1) : CH46



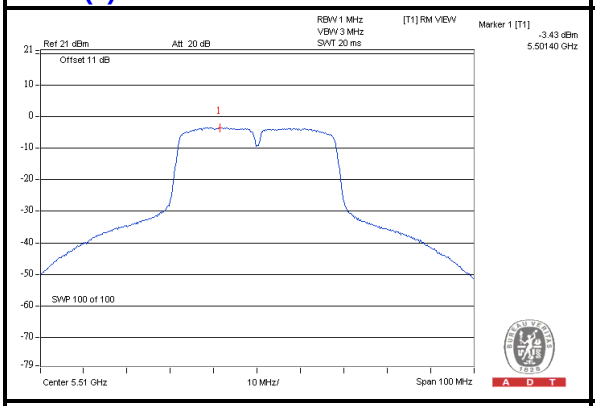
Chain(1) : CH54



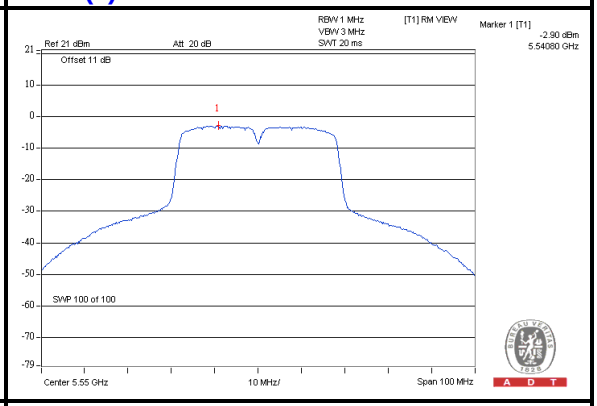
Chain(1) : CH62



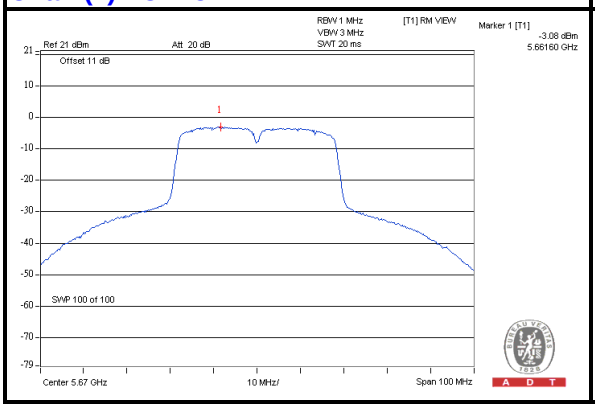
Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134



4.3 PEAK POWER EXCURSION MEASUREMENT

4.3.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	E4446A	MY48250113	Nov. 30, 2011	Nov. 29, 2012

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. Tested date : Aug. 23, 2012

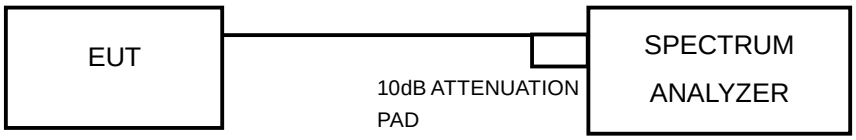
4.3.3 TEST PROCEDURE

1) Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak.
2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3) Use the peak search function to find the peak of the spectrum.
4) Measure the PPSD.
   (Detector = RMS, Sweep time = auto, trigger set to “free run”, Trace average at least 100 traces in power averaging mode.)
5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



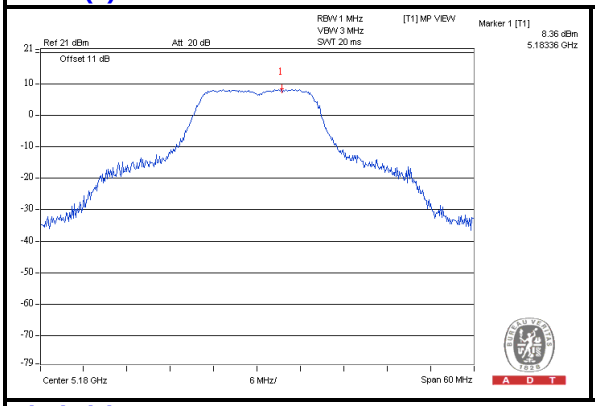
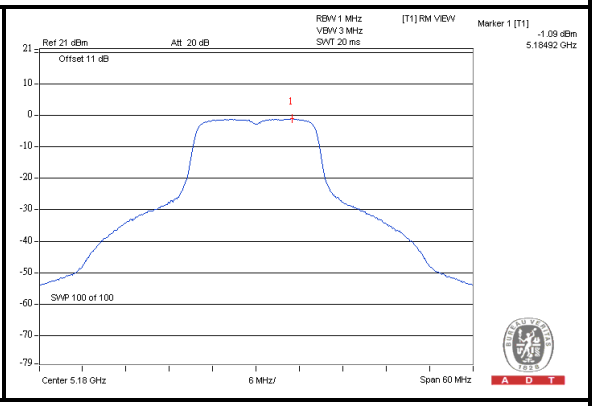
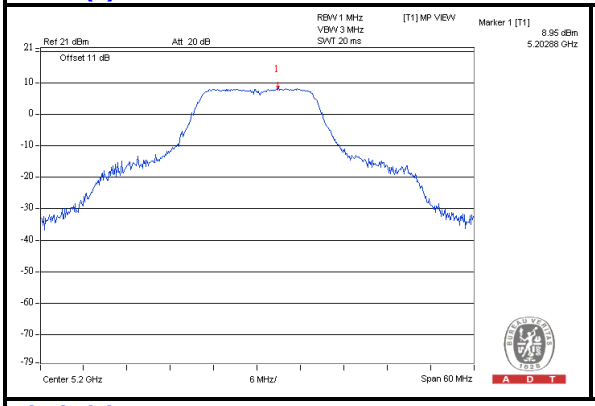
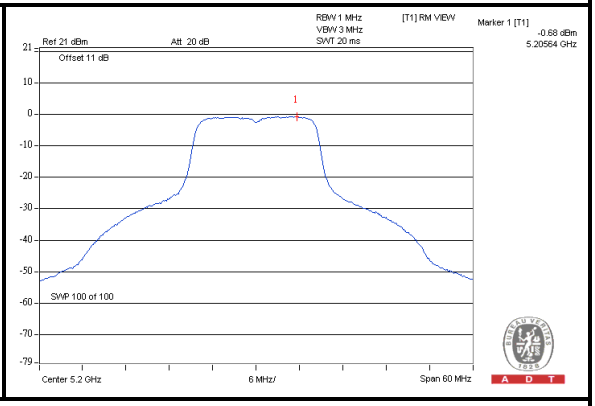
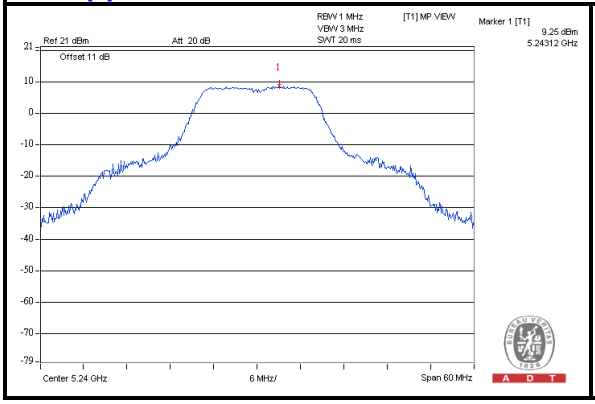
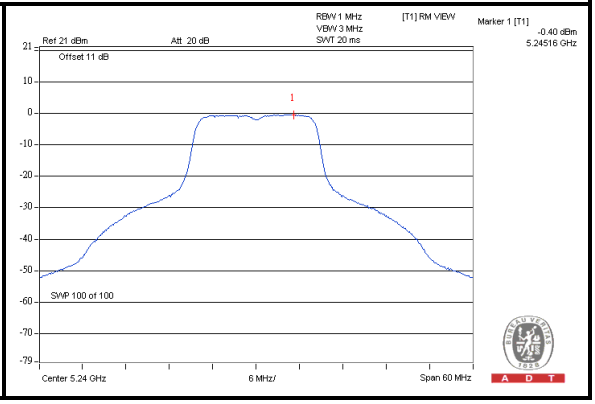
4.3.6 EUT OPERATING CONDITIONS

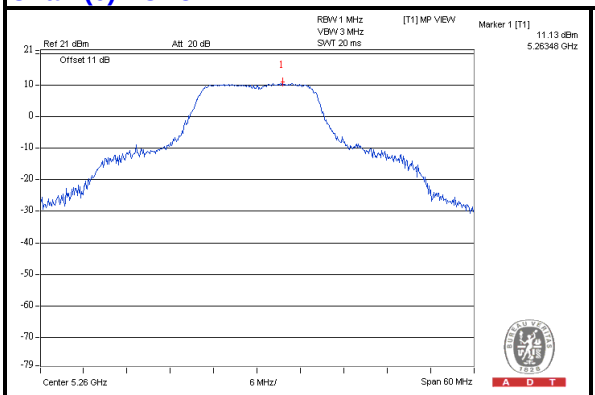
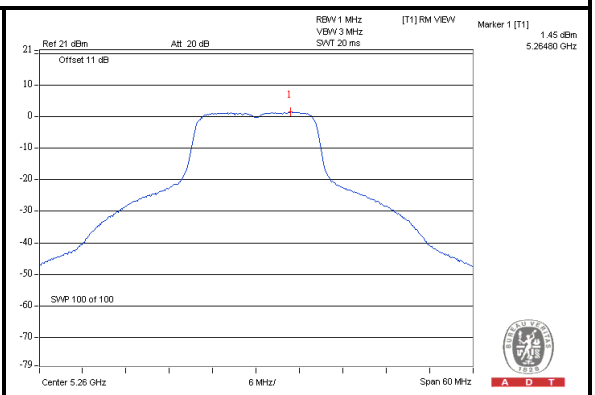
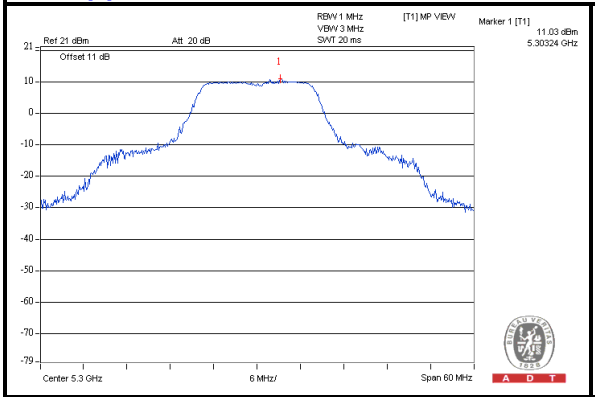
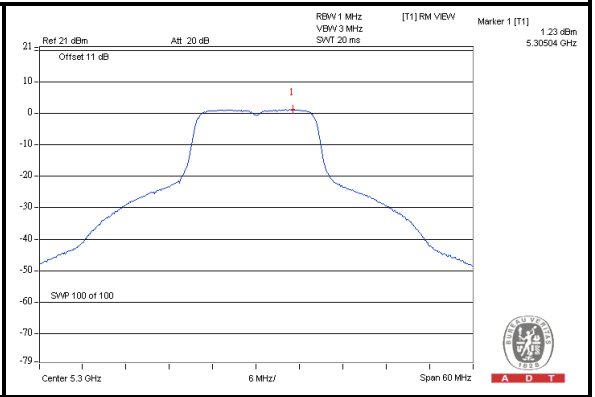
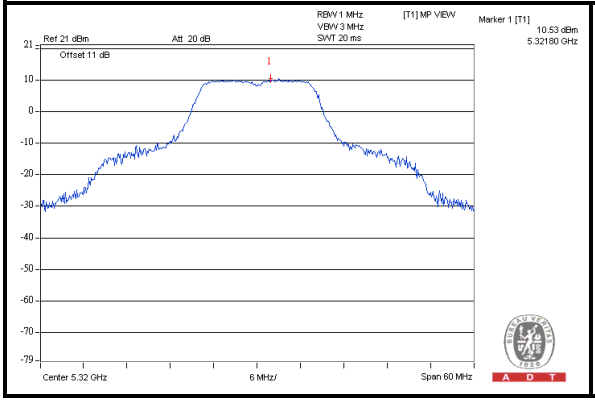
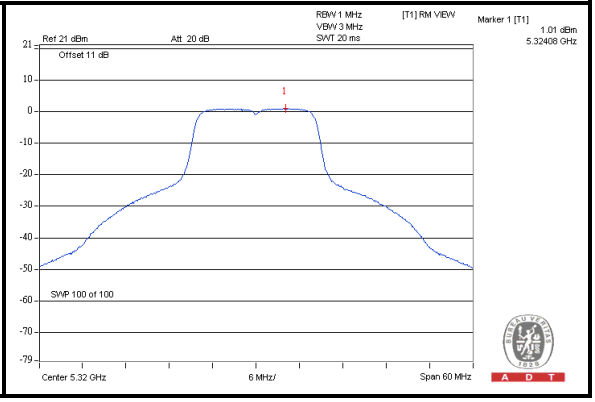
The software(EMI_ART2_AR6K_2299Eng) provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

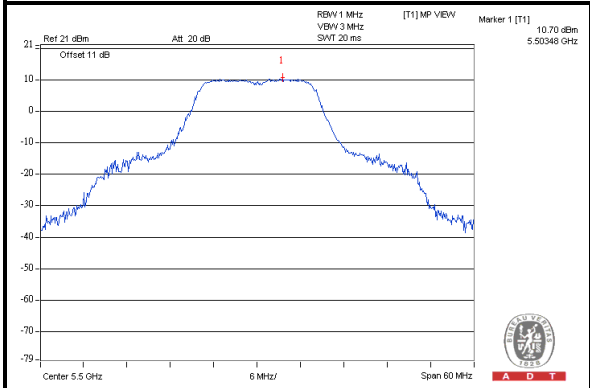
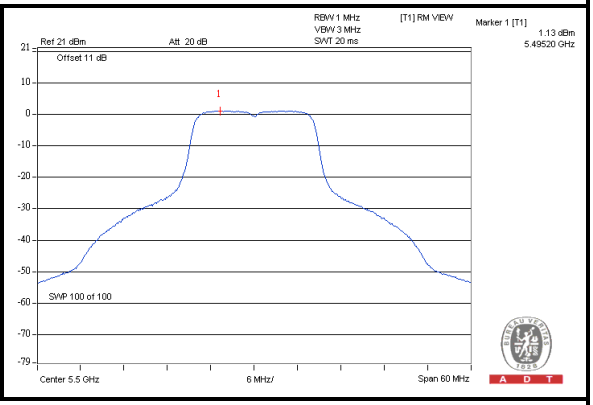
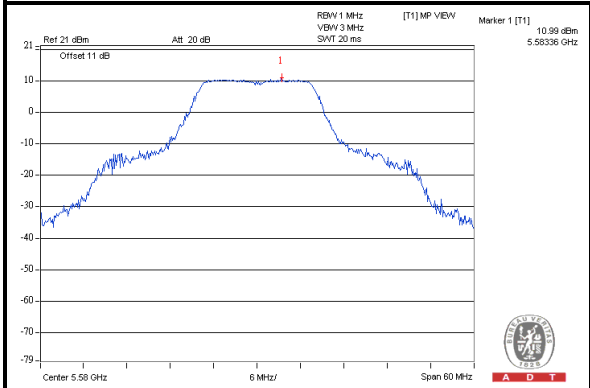
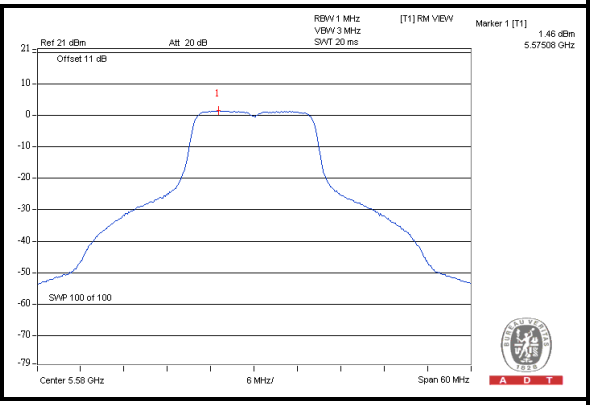
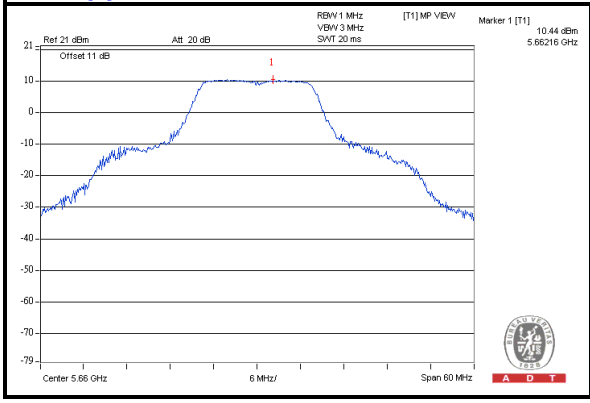
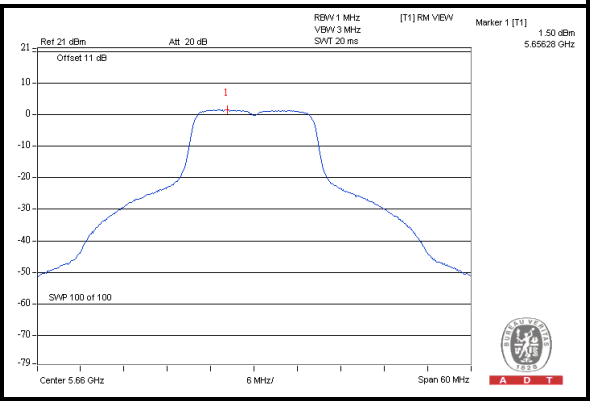
4.3.7 TEST RESULTS

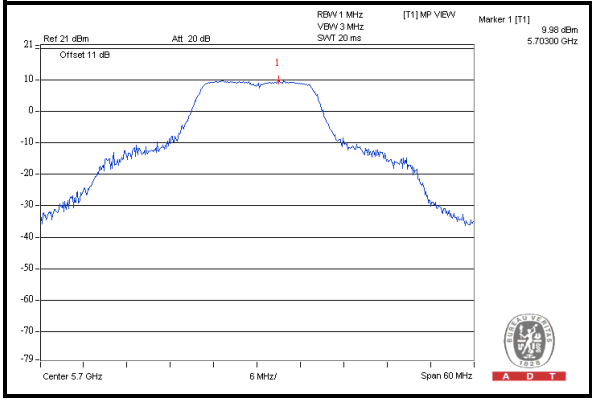
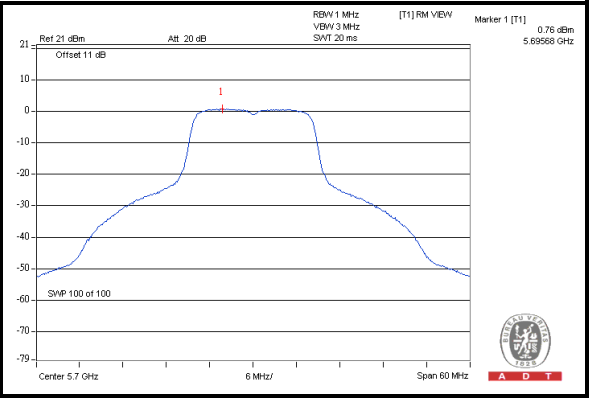
802.11a

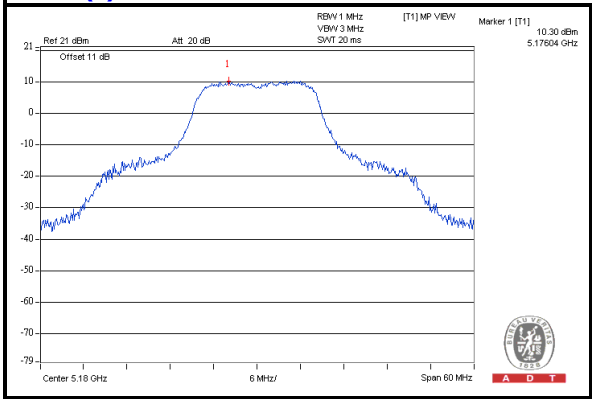
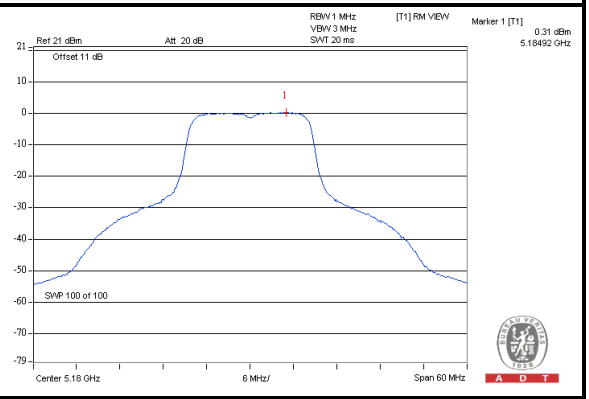
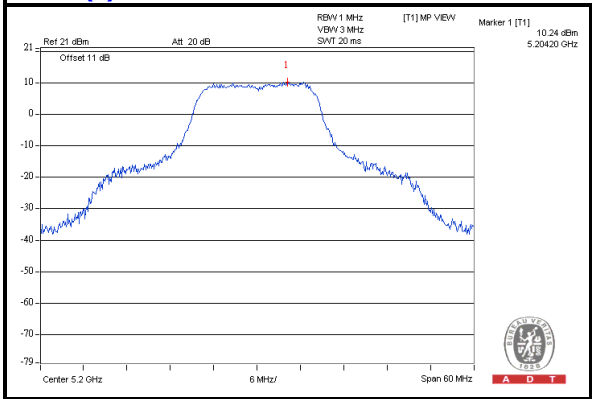
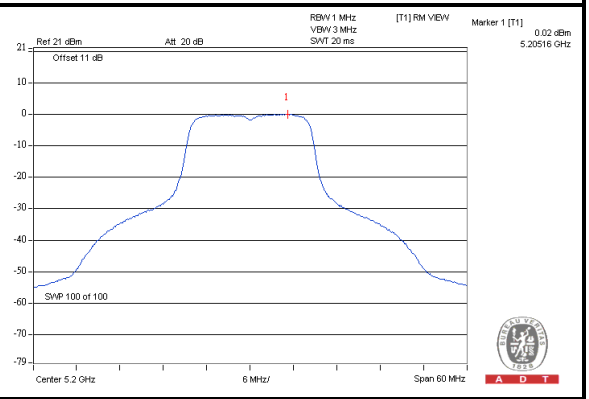
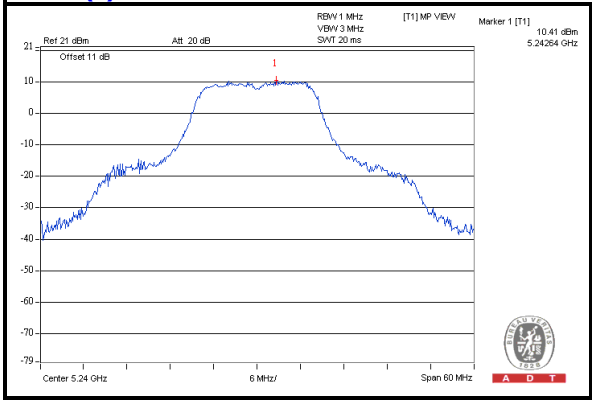
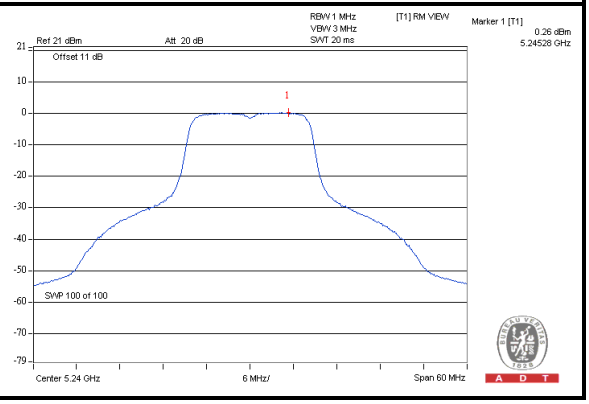
CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	8.36	10.30	-1.09	0.31	9.45	9.99	13	PASS
40	5200	8.95	10.24	-0.68	0.02	9.63	10.22	13	PASS
48	5240	9.25	10.41	-0.40	0.26	9.65	10.15	13	PASS
52	5260	11.13	12.16	1.45	2.14	9.68	10.02	13	PASS
60	5300	11.03	12.19	1.23	1.96	9.80	10.23	13	PASS
64	5320	10.53	11.68	1.01	1.60	9.52	10.08	13	PASS
100	5500	10.70	11.40	1.13	1.58	9.57	9.82	13	PASS
116	5580	10.99	11.36	1.46	1.69	9.53	9.67	13	PASS
132	5660	10.44	11.87	1.50	1.73	8.94	10.14	13	PASS
140	5700	9.98	11.43	0.76	1.23	9.22	10.20	13	PASS

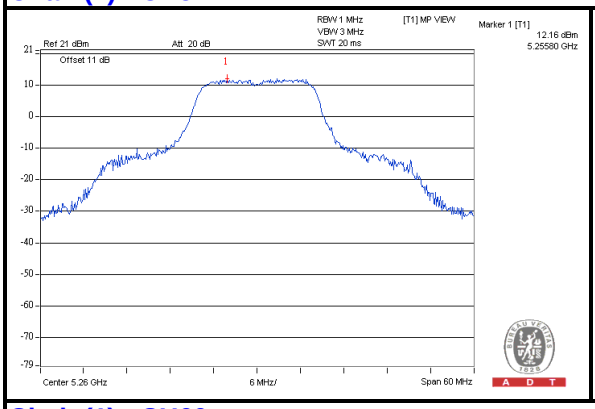
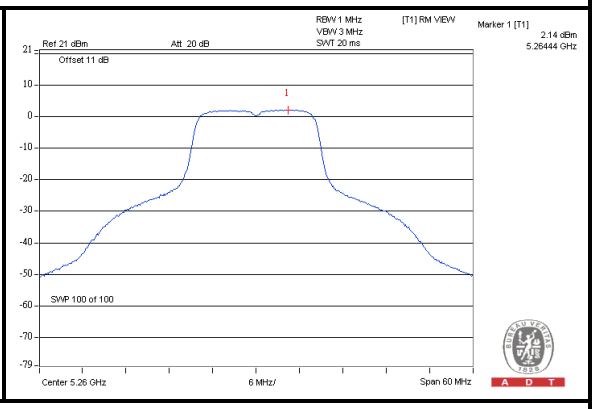
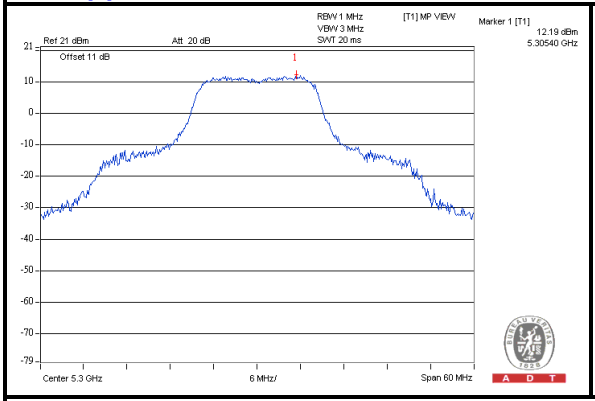
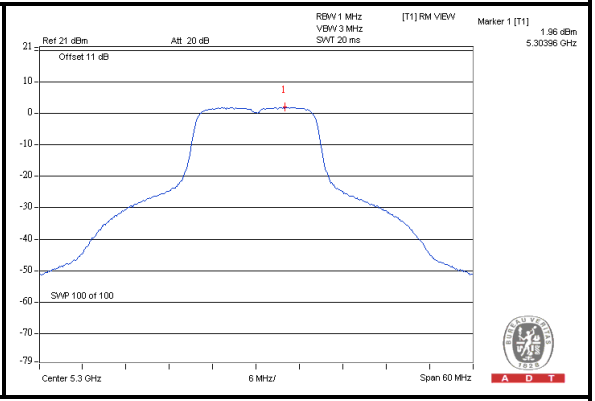
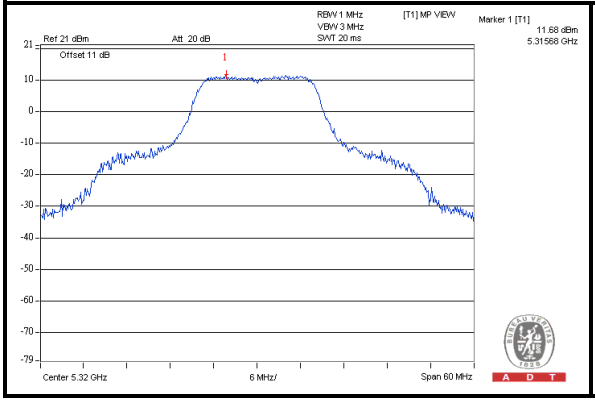
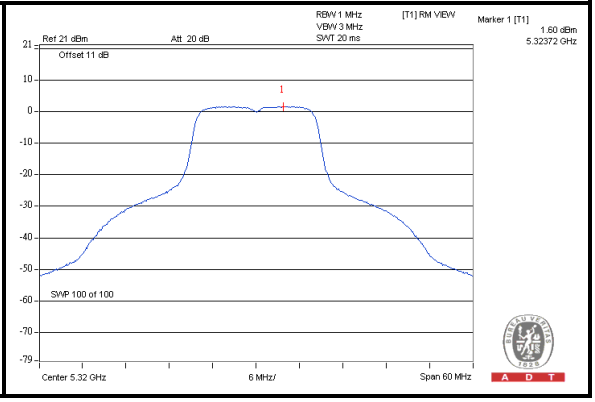
PEAK VALUE	PPSD
Chain(0) : CH36	
	
Chain(0) : CH40	
	
Chain(0) : CH48	
	

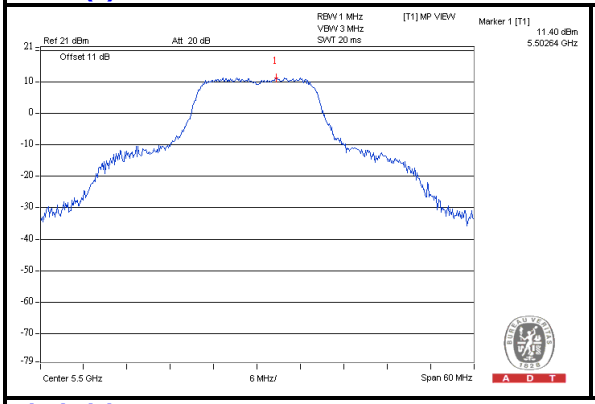
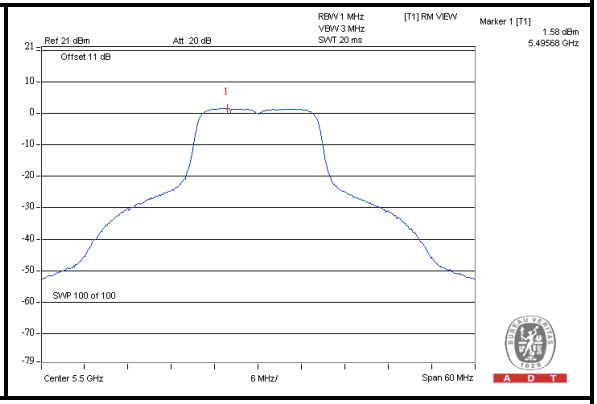
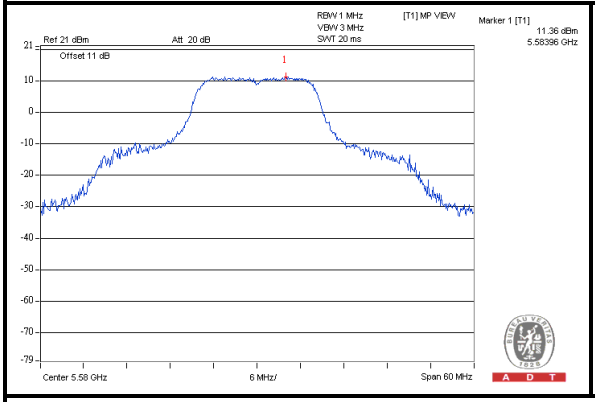
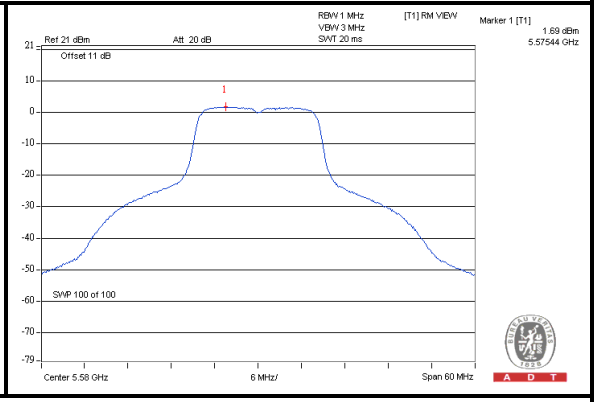
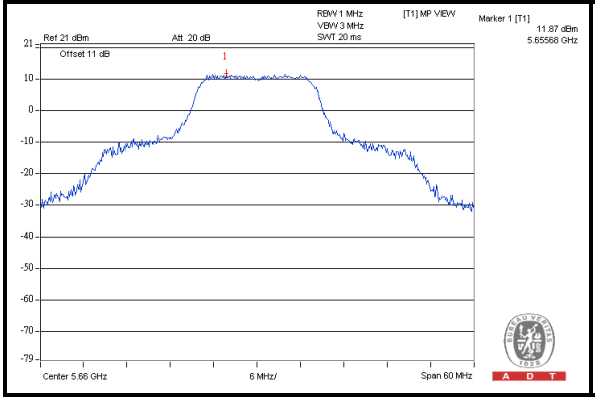
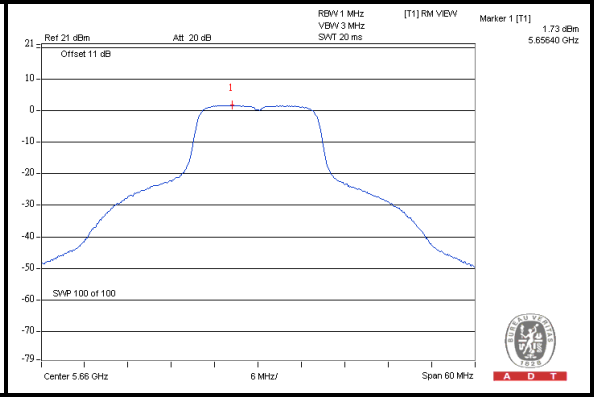
PEAK VALUE	PPSD
Chain(0) : CH52	
	
Chain(0) : CH60	
	
Chain(0) : CH64	
	

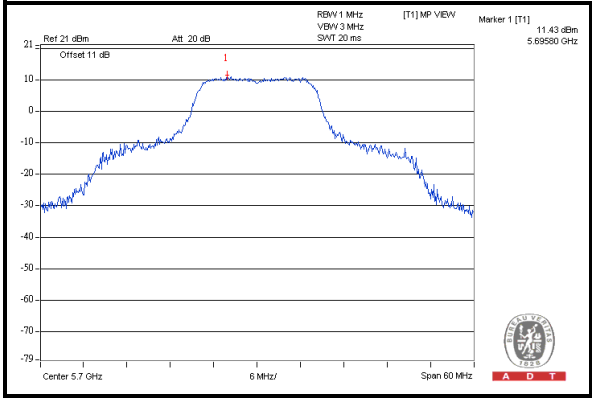
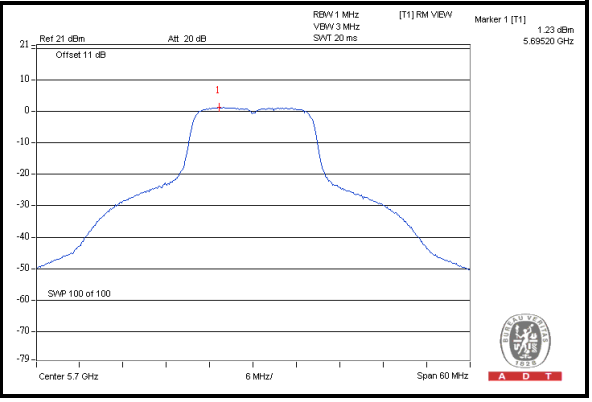
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

PEAK VALUE	PPSD
Chain(0) : CH140	
	

PEAK VALUE	PPSD
Chain(1) : CH36	
	
Chain(1) : CH40	
	
Chain(1) : CH48	
	

PEAK VALUE	PPSD
Chain(1) : CH52	
	
Chain(1) : CH60	
	
Chain(1) : CH64	
	

PEAK VALUE	PPSD
Chain(1) : CH100	
	
Chain(1) : CH116	
	
Chain(1) : CH132	
	

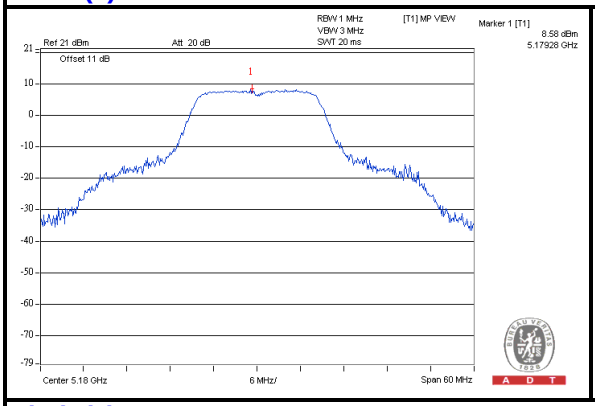
PEAK VALUE	PPSD
Chain(1) : CH140	
	

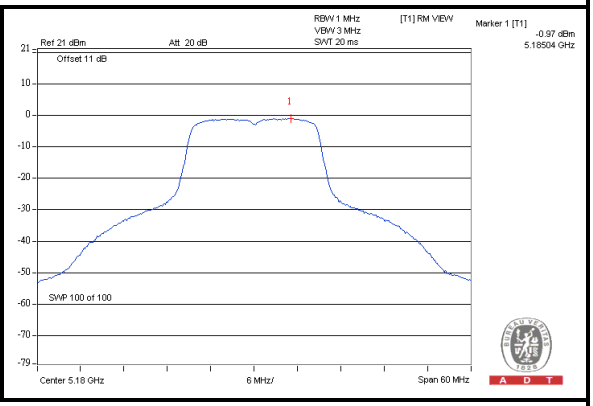
802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	8.58	9.89	-0.97	0.13	9.55	9.76	13	PASS
40	5200	8.37	9.24	-0.65	-0.17	9.02	9.41	13	PASS
48	5240	9.07	9.35	-0.24	0.01	9.31	9.34	13	PASS
52	5260	10.57	11.57	1.32	1.85	9.25	9.72	13	PASS
60	5300	10.88	11.07	0.99	1.66	9.89	9.41	13	PASS
64	5320	10.70	10.99	1.12	1.35	9.58	9.64	13	PASS
100	5500	10.06	10.50	0.87	1.27	9.19	9.23	13	PASS
116	5580	10.26	10.62	1.16	1.45	9.10	9.17	13	PASS
132	5660	10.47	10.97	1.21	1.61	9.26	9.36	13	PASS
140	5700	9.68	10.00	0.16	0.51	9.52	9.49	13	PASS

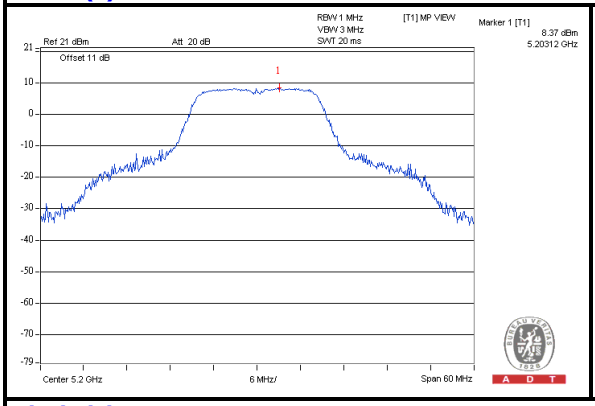
PEAK VALUE	PPSD

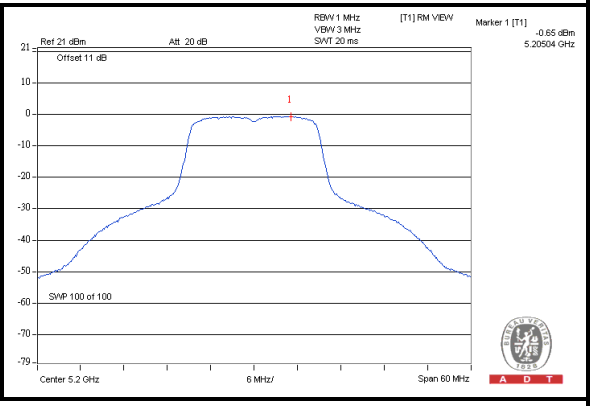
Chain(0) : CH36



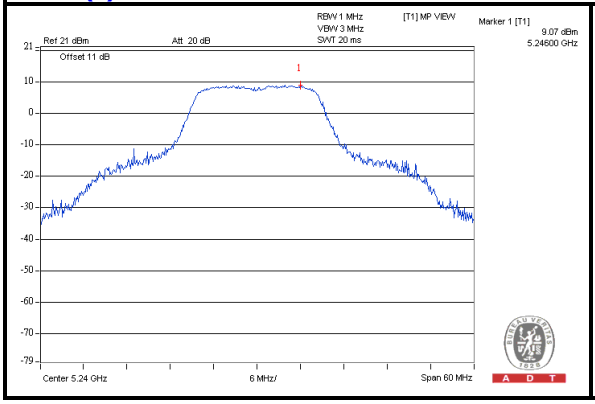


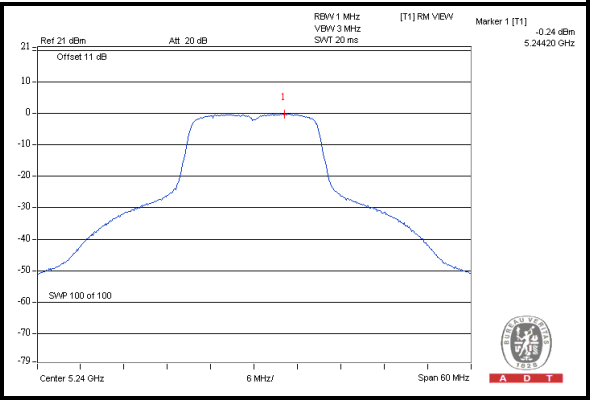
Chain(0) : CH40

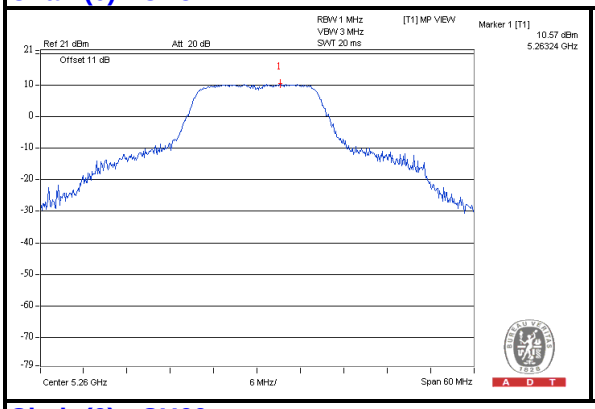
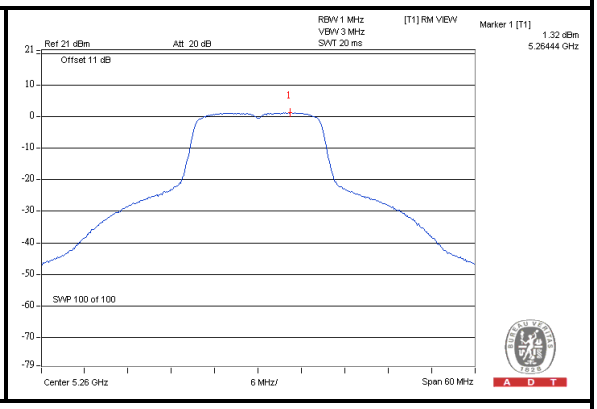
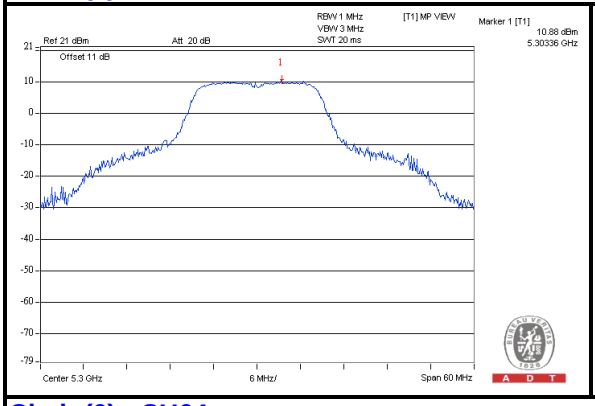
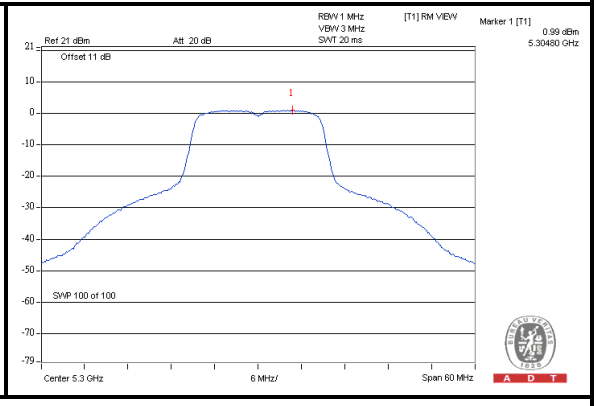
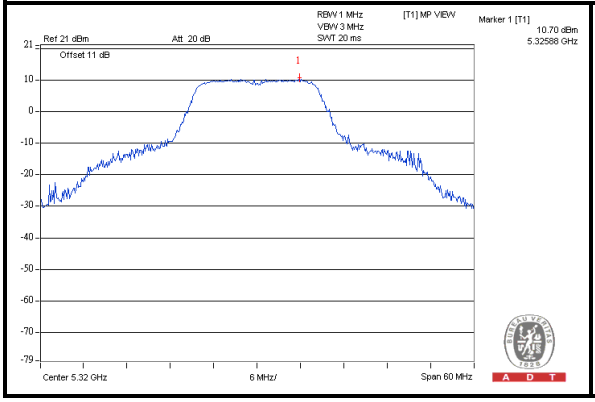
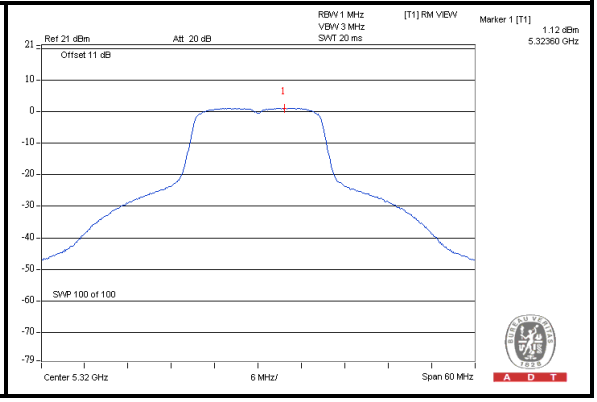


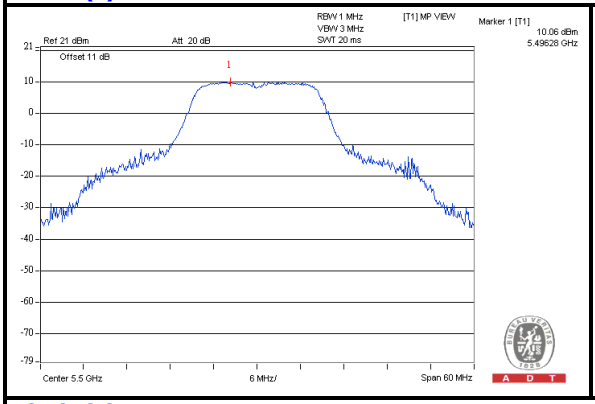
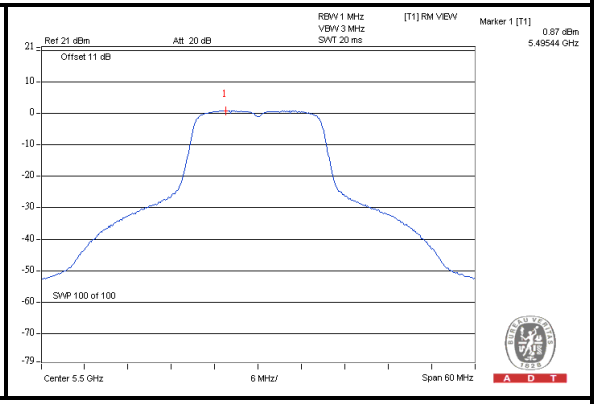
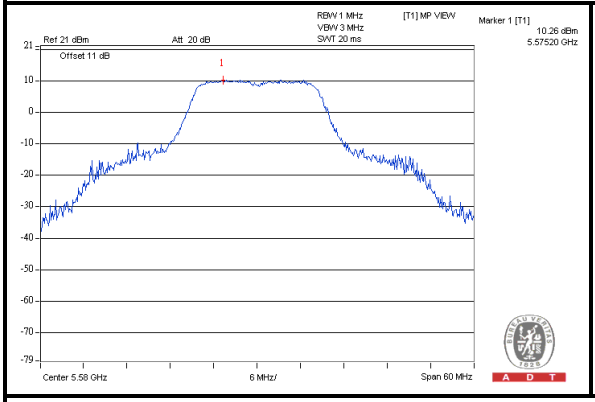
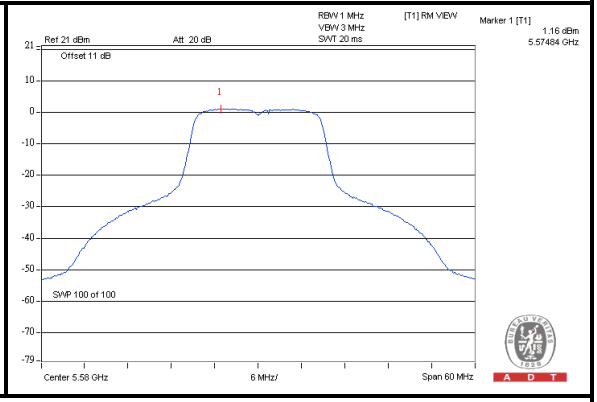
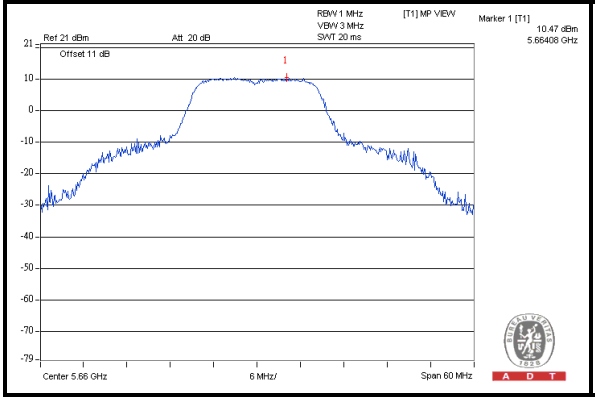
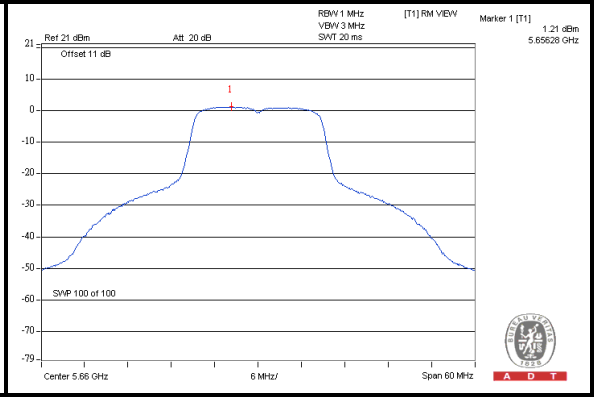


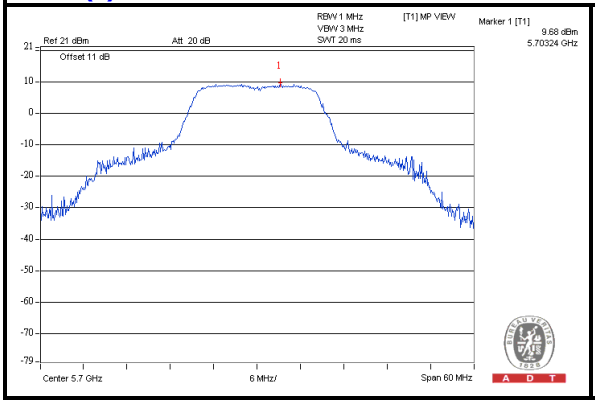
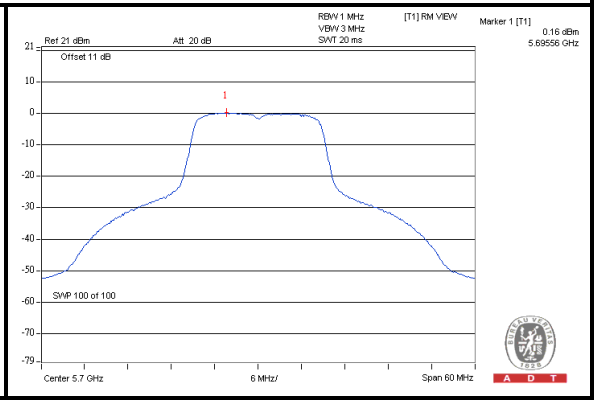
Chain(0) : CH48

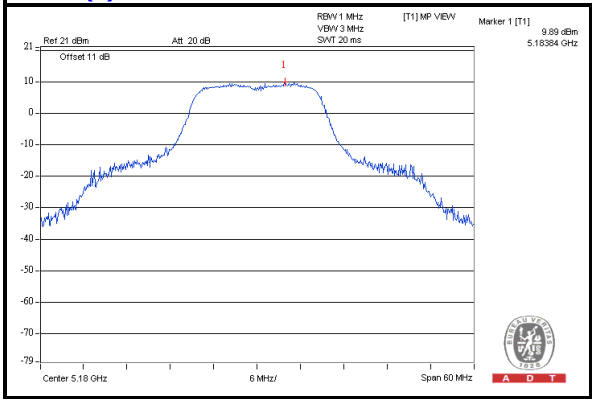
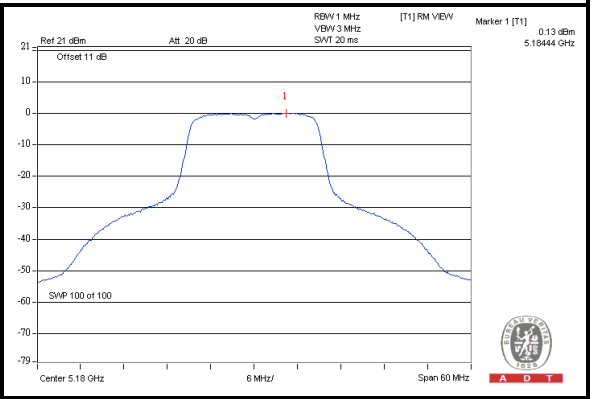
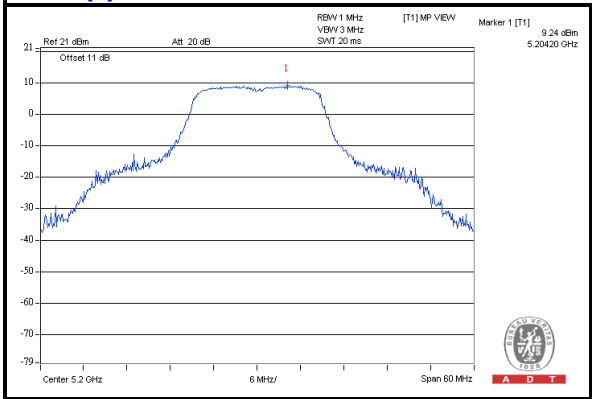
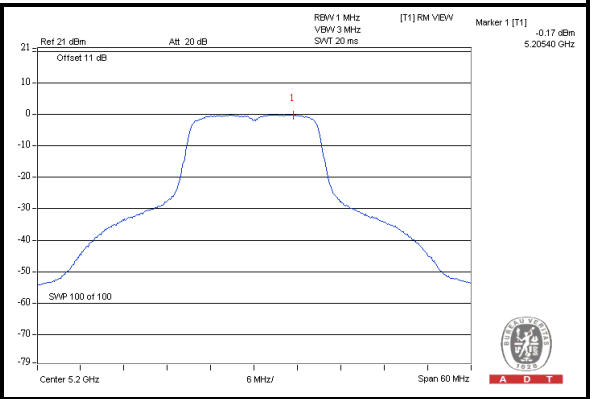
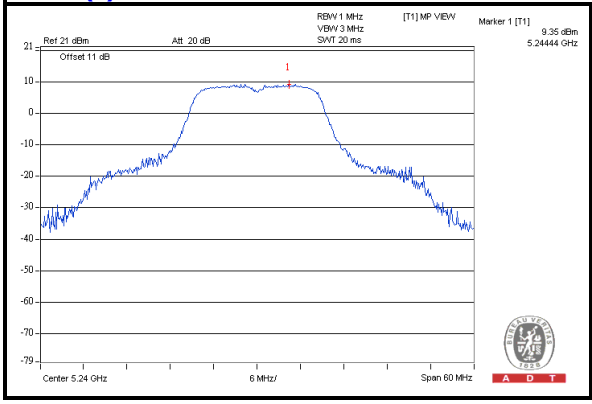
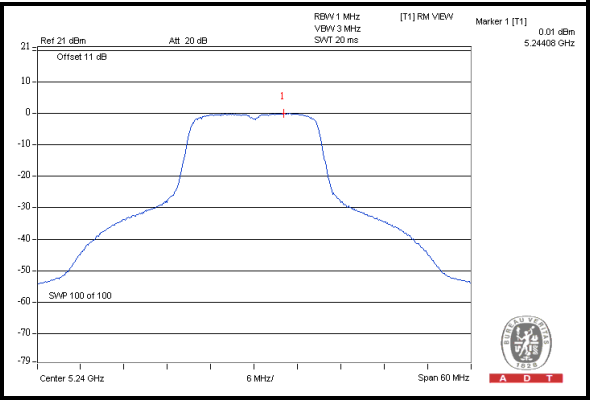


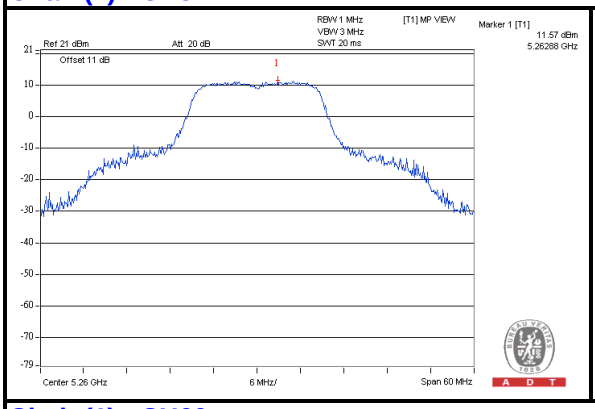
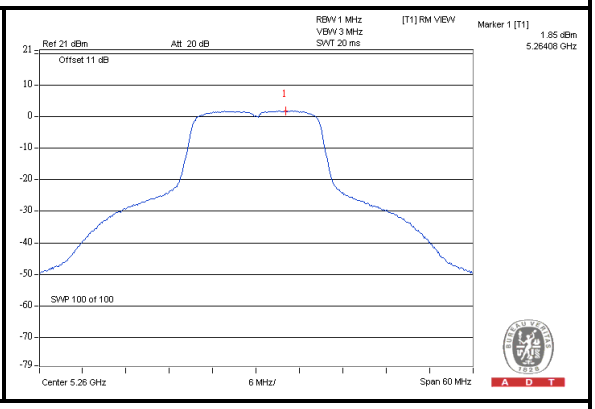
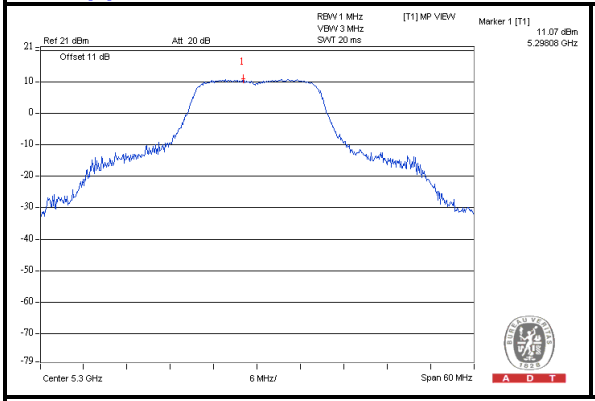
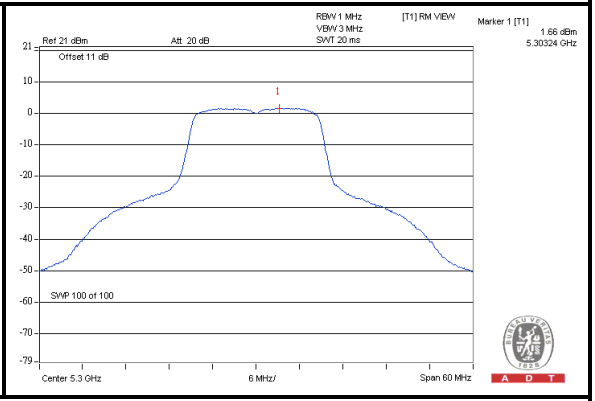
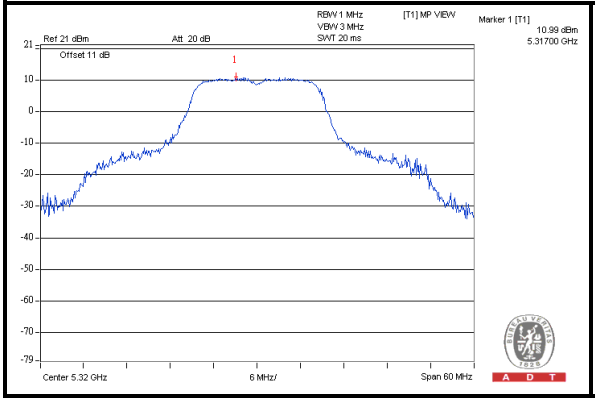
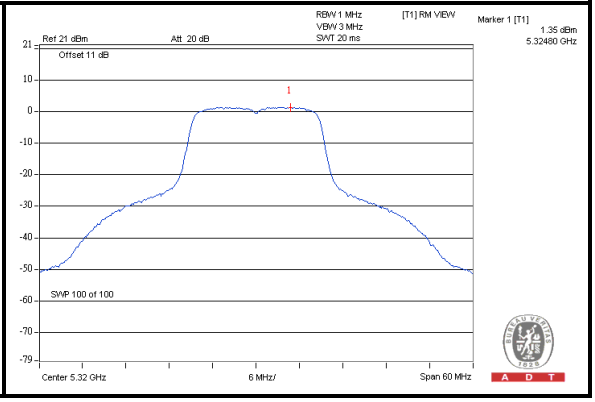


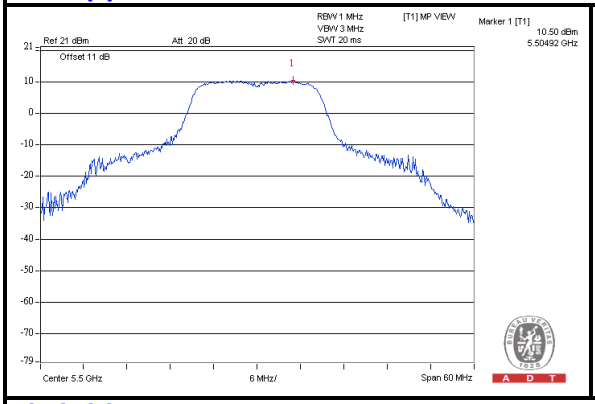
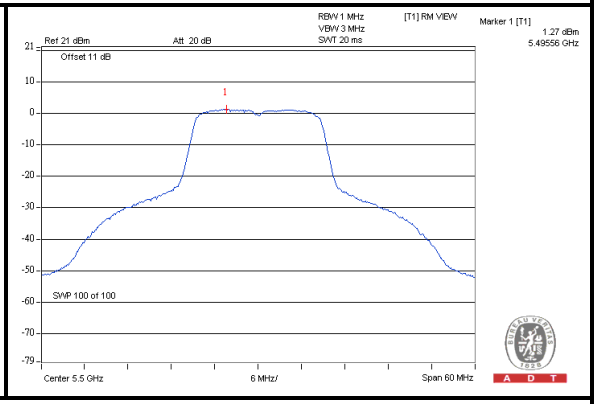
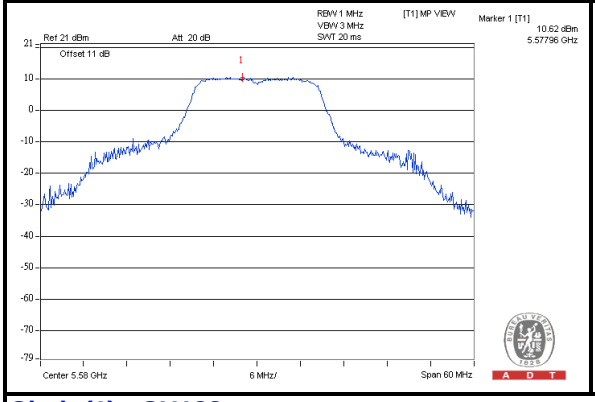
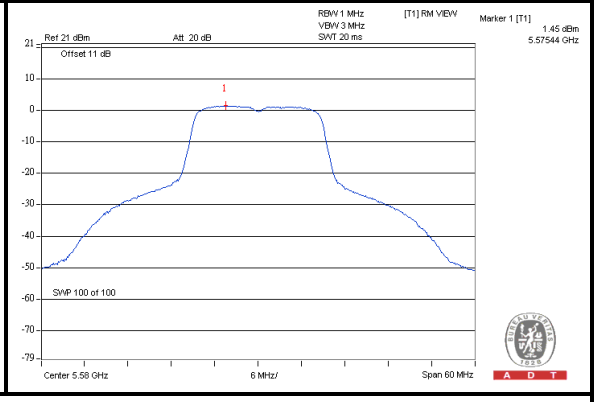
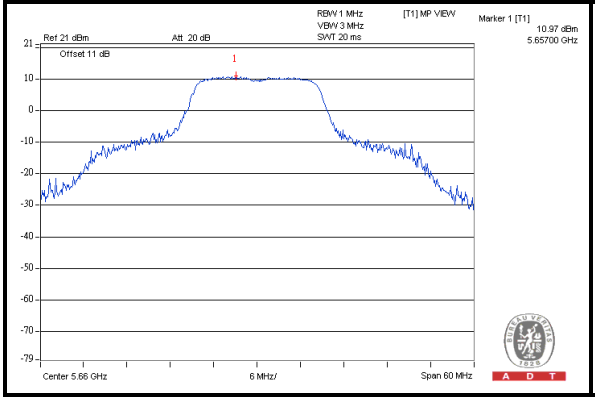
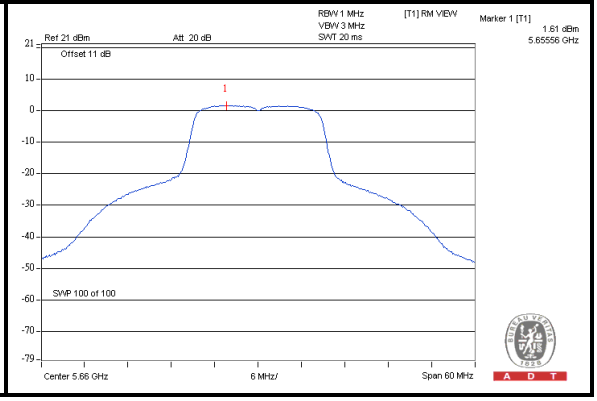
PEAK VALUE	PPSD
Chain(0) : CH52	
	
Chain(0) : CH60	
	
Chain(0) : CH64	
	

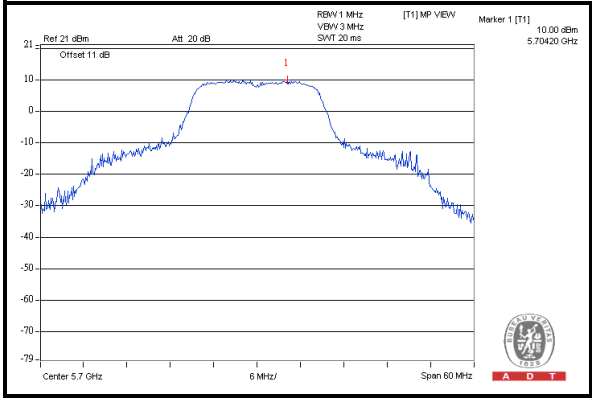
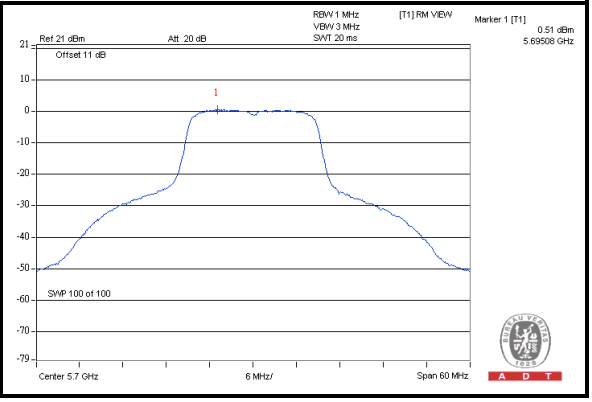
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

PEAK VALUE	PPSD
Chain(0) : CH140	
	

PEAK VALUE	PPSD
Chain(1) : CH36	
	
Chain(1) : CH40	
	
Chain(1) : CH48	
	

PEAK VALUE	PPSD
Chain(1) : CH52	
	
Chain(1) : CH60	
	
Chain(1) : CH64	
	

PEAK VALUE	PPSD
Chain(1) : CH100	
	
Chain(1) : CH116	
	
Chain(1) : CH132	
	

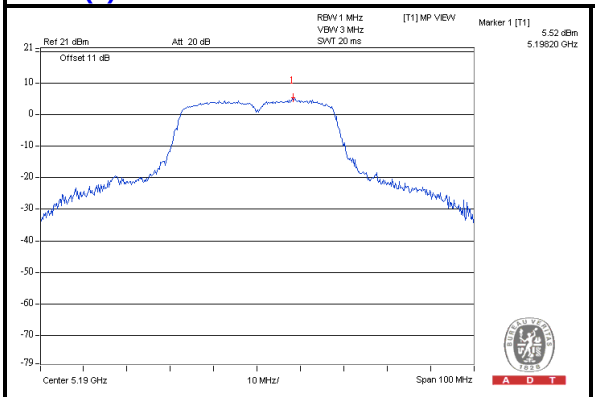
PEAK VALUE	PPSD
Chain(1) : CH140	
	

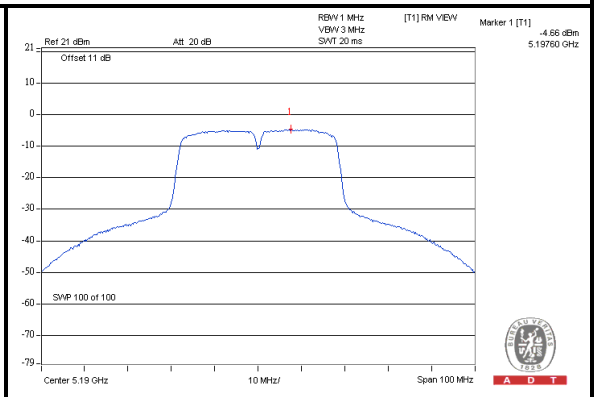
802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
38	5190	5.52	5.54	-4.66	-4.59	10.18	10.13	13	PASS
46	5230	6.91	7.04	-3.46	-2.92	10.37	9.96	13	PASS
54	5270	6.48	7.07	-3.20	-2.59	9.68	9.66	13	PASS
62	5310	4.66	5.31	-4.67	-4.28	9.33	9.59	13	PASS
102	5510	5.39	5.98	-4.30	-3.43	9.69	9.41	13	PASS
110	5550	6.85	6.67	-3.69	-2.90	10.54	9.57	13	PASS
134	5670	6.62	6.73	-3.07	-3.08	9.69	9.81	13	PASS

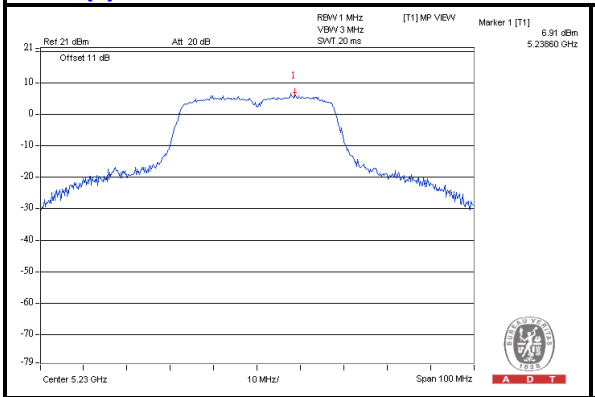
PEAK VALUE	PPSD

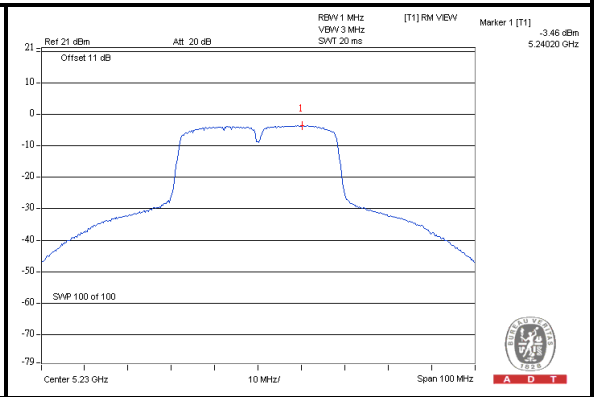
Chain(0) : CH38



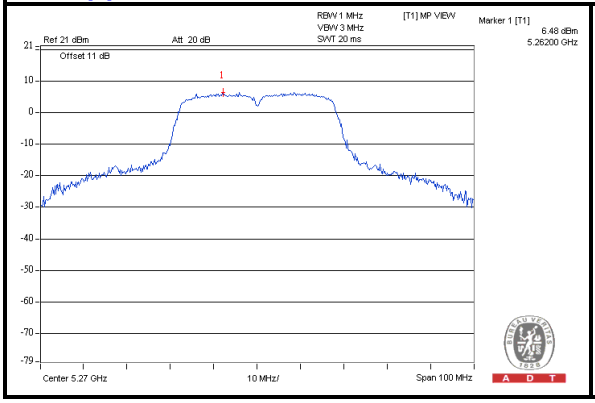


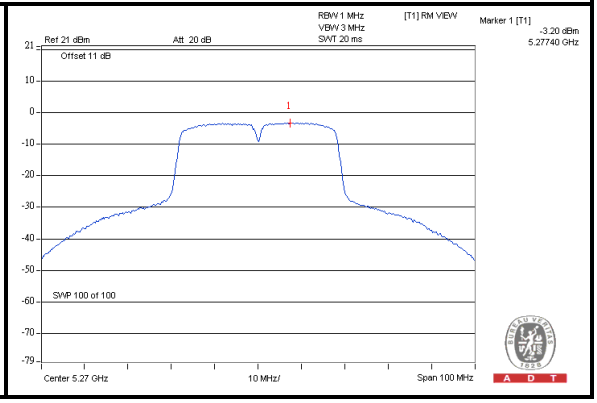
Chain(0) : CH46

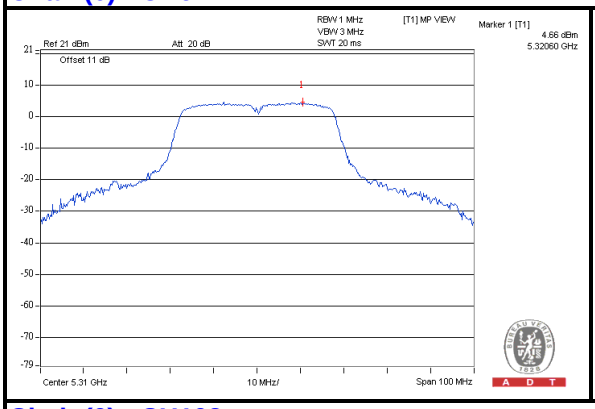
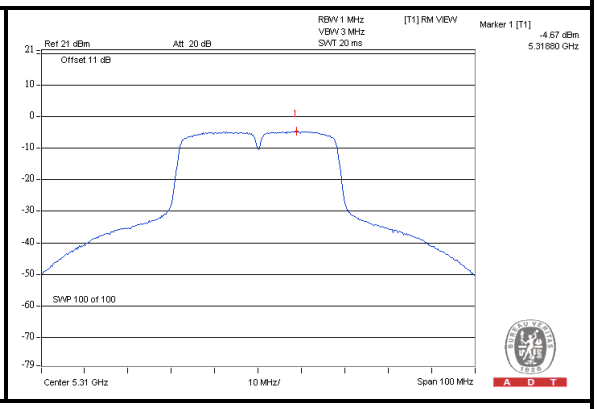
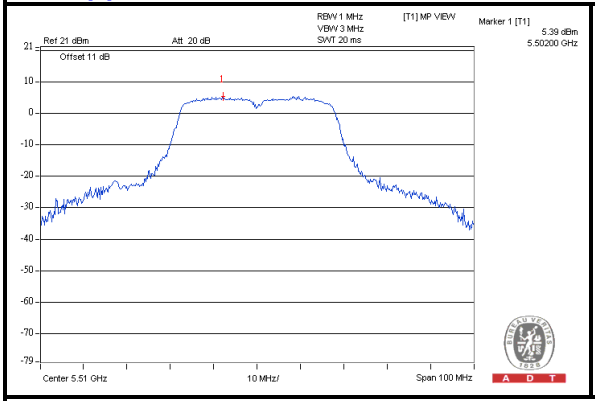
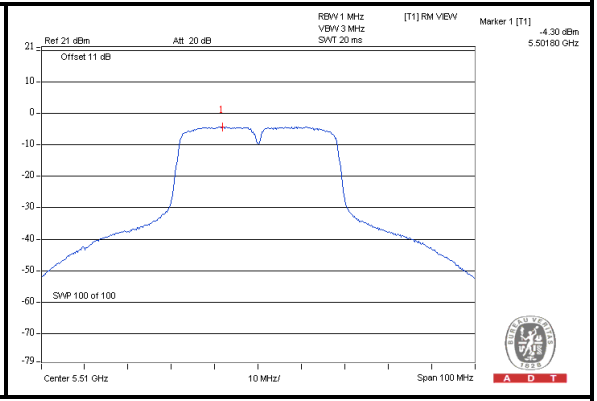
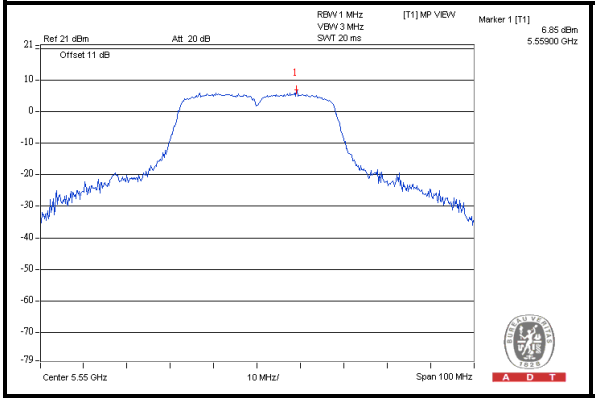
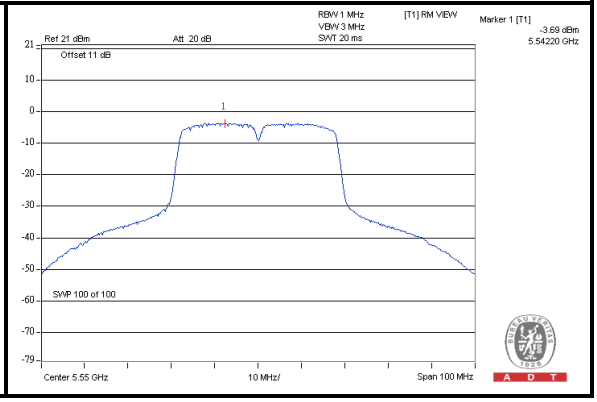


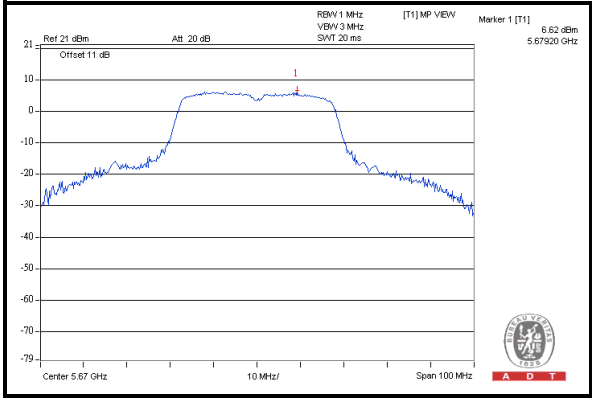
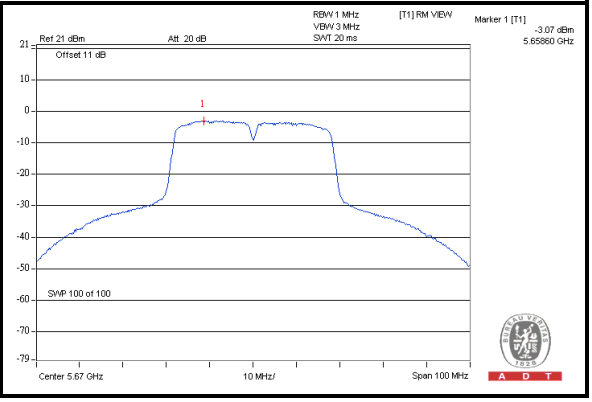


Chain(0) : CH54



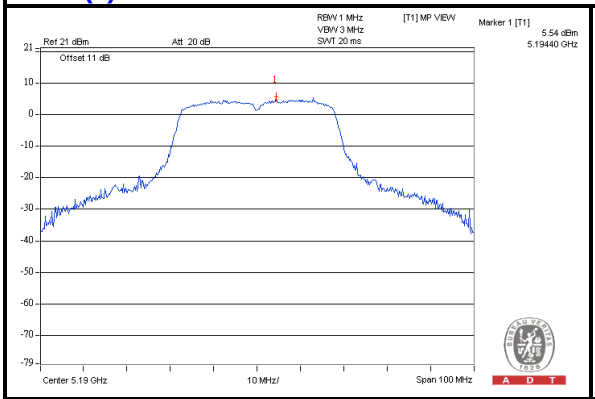


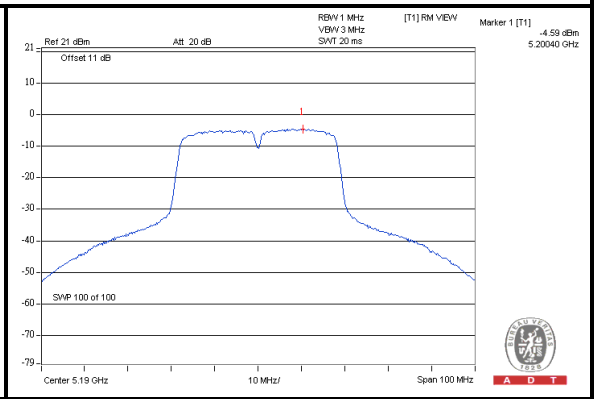
PEAK VALUE	PPSD
Chain(0) : CH62	
	
Chain(0) : CH102	
	
Chain(0) : CH110	
	

PEAK VALUE	PPSD
Chain(0) : CH134	
	

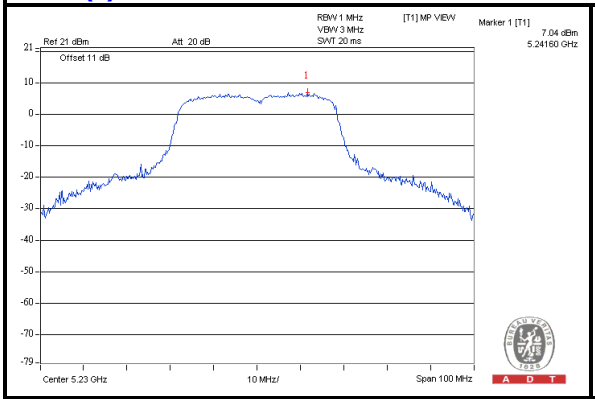
PEAK VALUE	PPSD

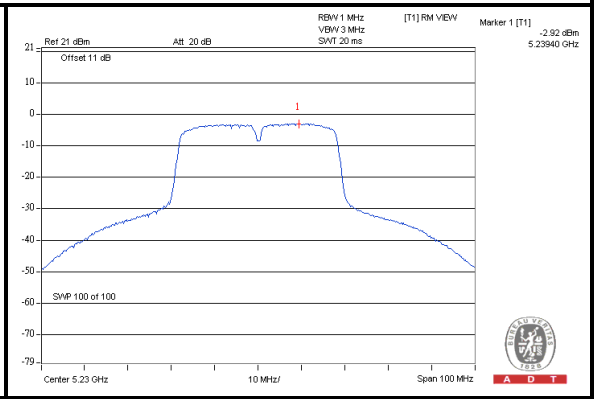
Chain(1) : CH38



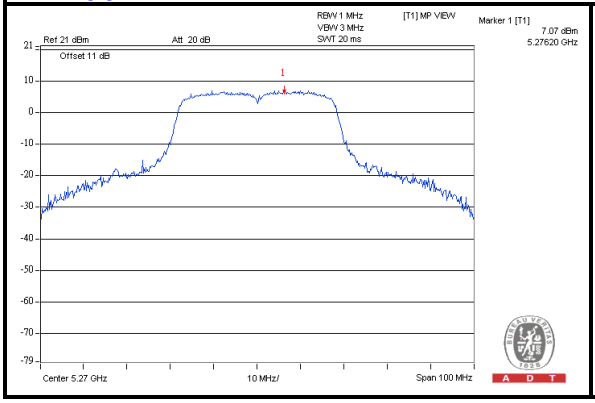


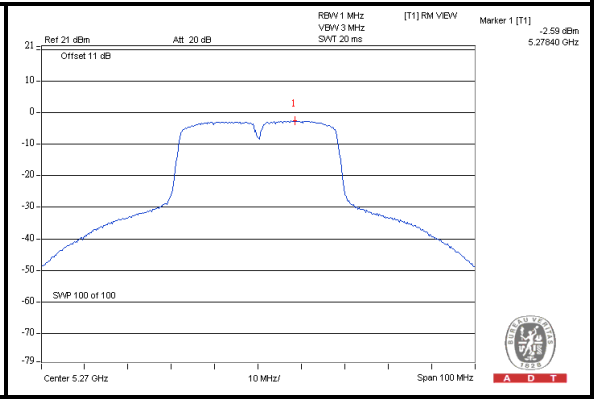
Chain(1) : CH46

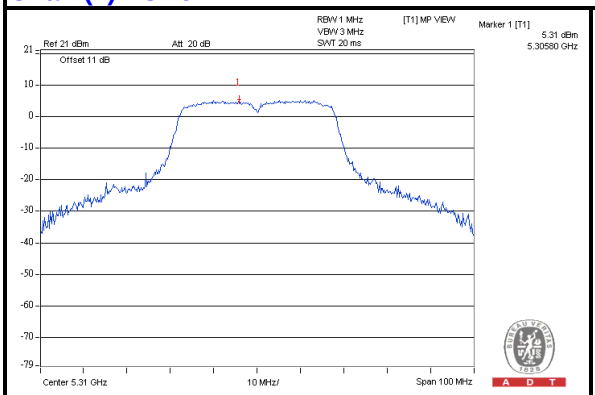
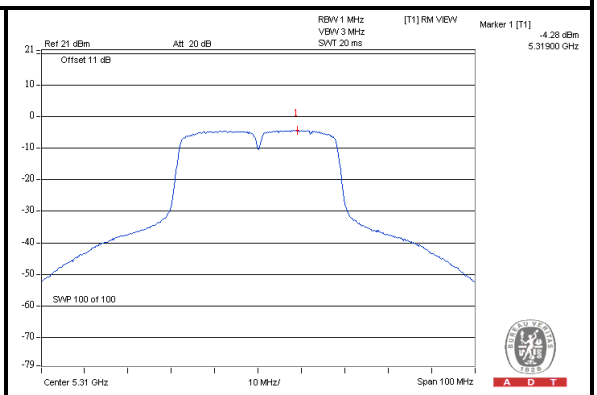
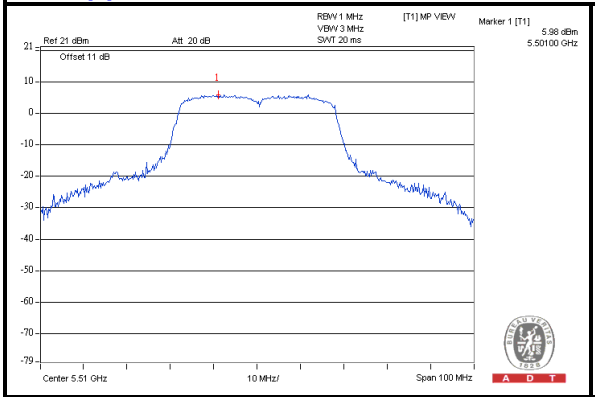
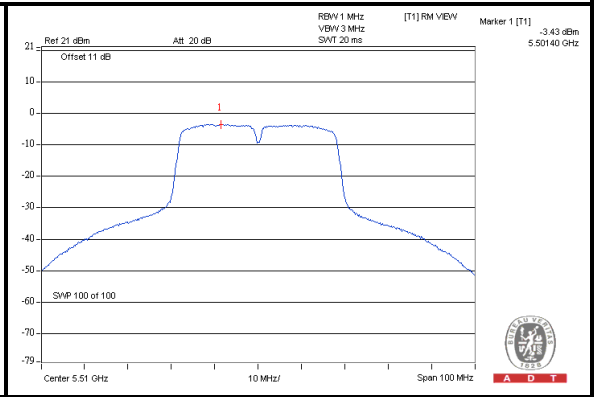
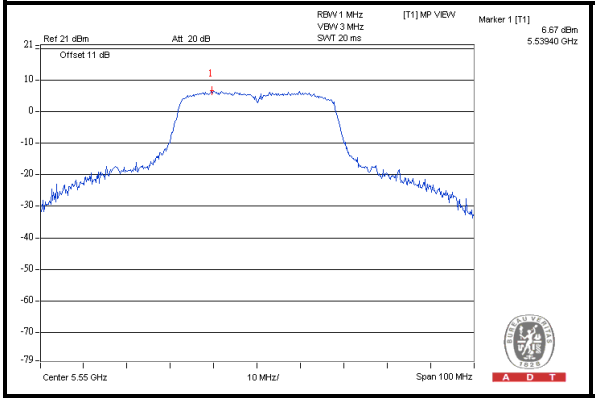
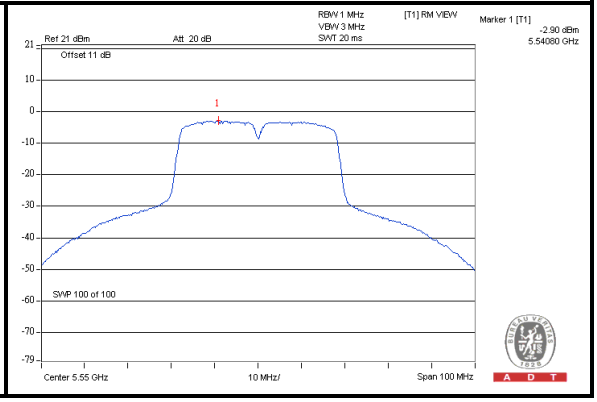


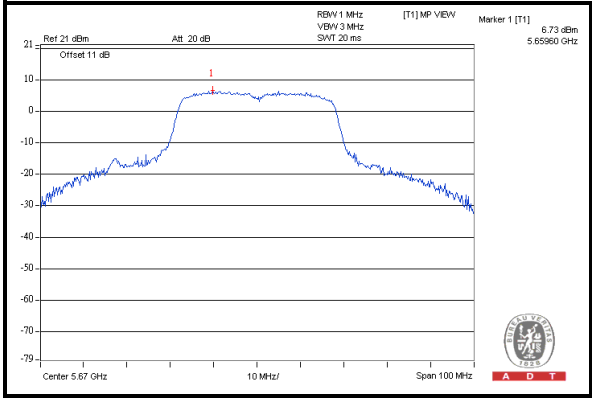
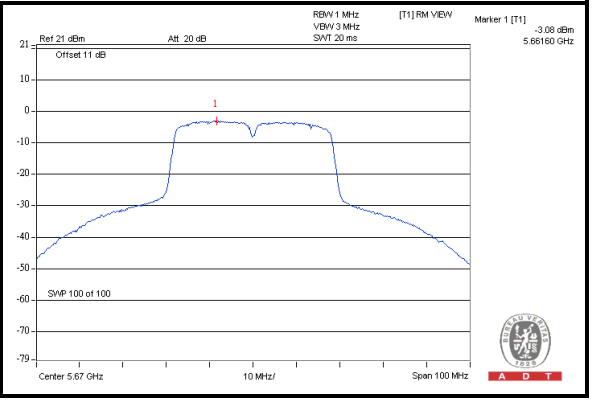


Chain(1) : CH54





PEAK VALUE	PPSD
Chain(1) : CH62	
	
Chain(1) : CH102	
	
Chain(1) : CH110	
	

PEAK VALUE	PPSD
Chain(1) : CH134	
	

4.4 OCCUPIED BANDWIDTH MEASUREMENT

4.4.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100036	Dec. 14, 2011	Dec. 13, 2012

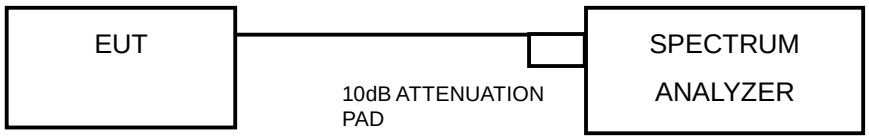
Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 23, 2012

4.4.2 TEST PROCEDURE

1. Set RBW ≥ 1% of the emission bandwidth.
2. Set the VBW > 3 × RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Record the 99% emission bandwidth.

4.4.3 TEST SETUP



4.4.4 EUT OPERATING CONDITIONS

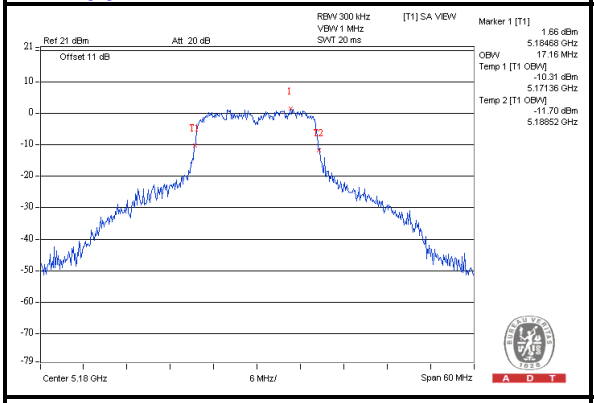
The software(EMI_ART2_AR6K_2299Eng) provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.4.5 TEST RESULTS

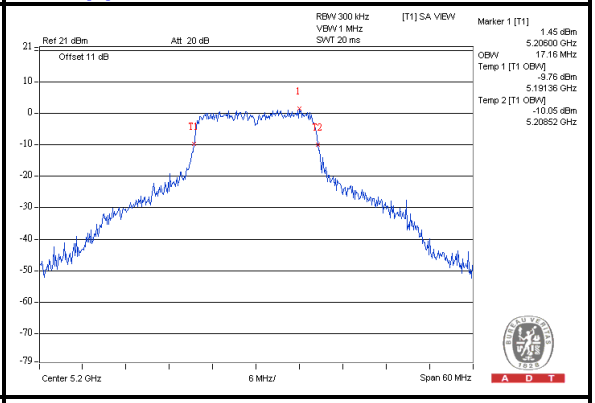
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	17.16	17.04
40	5200	17.16	16.92
48	5240	17.16	16.92
52	5260	17.88	16.92
60	5300	17.76	16.92
64	5320	17.40	16.92
100	5500	17.04	16.92
116	5580	17.16	17.28
132	5660	17.40	17.52
140	5700	17.16	17.28

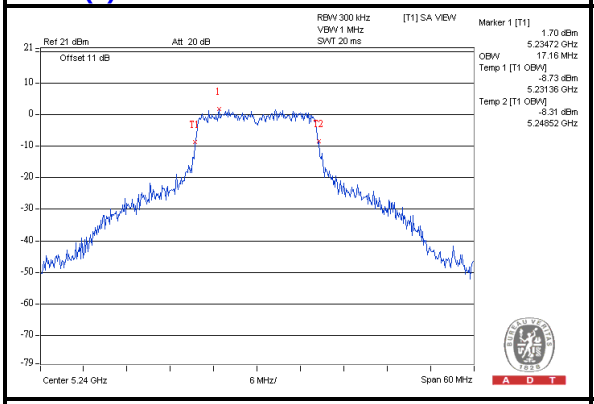
Chain(0) : CH36



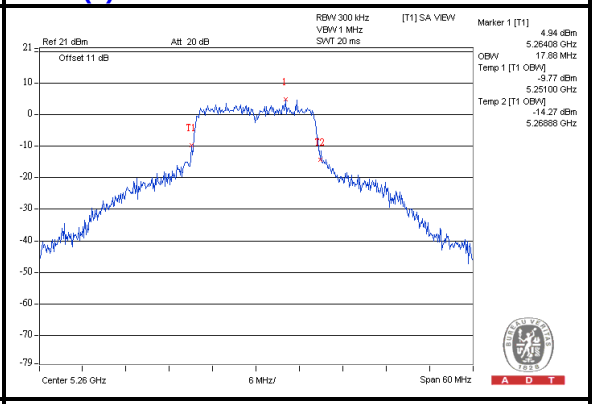
Chain(0) : CH40



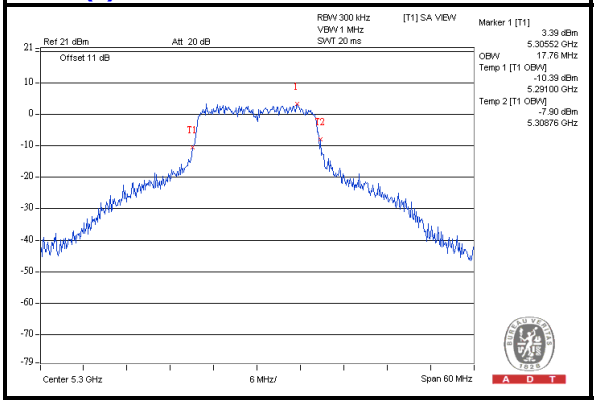
Chain(0) : CH48



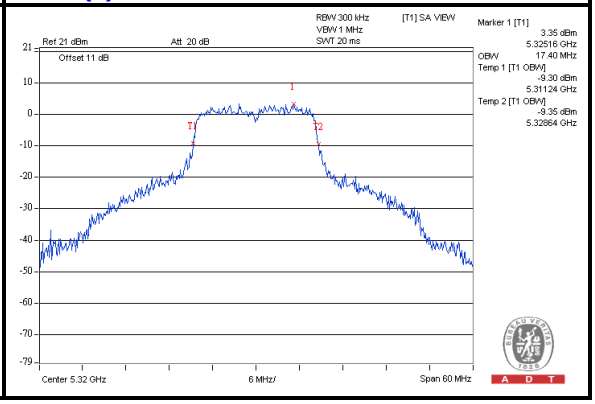
Chain(0) : CH52



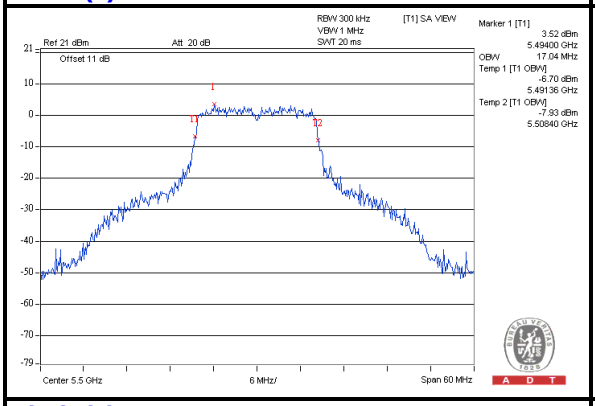
Chain(0) : CH60



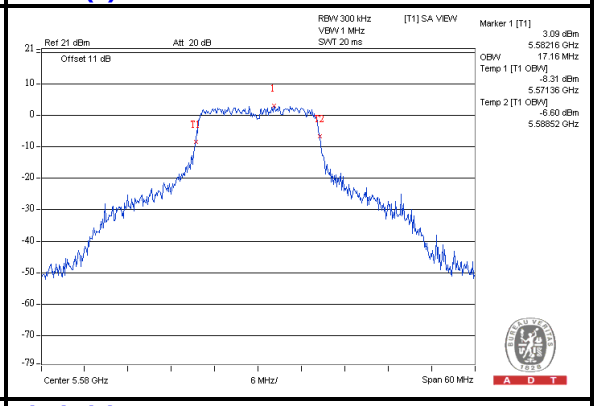
Chain(0) : CH64



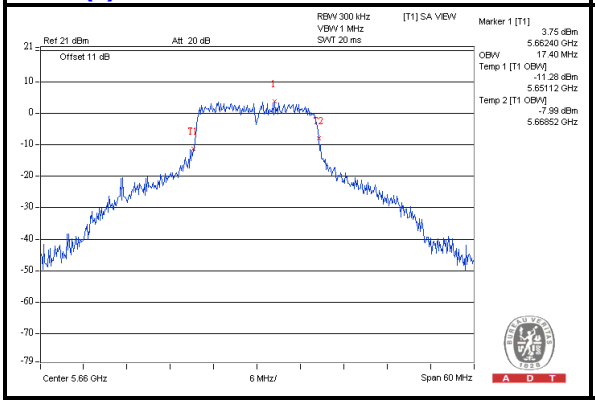
Chain(0) : CH100



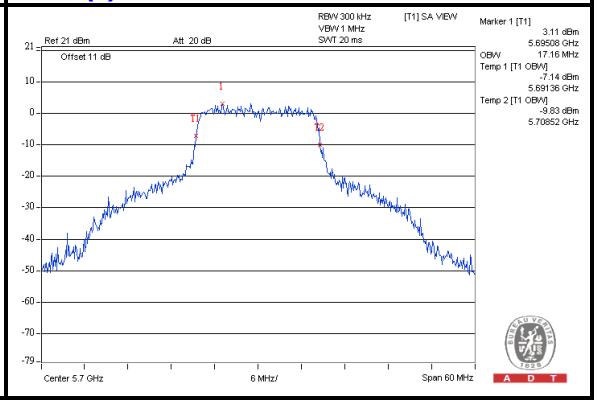
Chain(0) : CH116



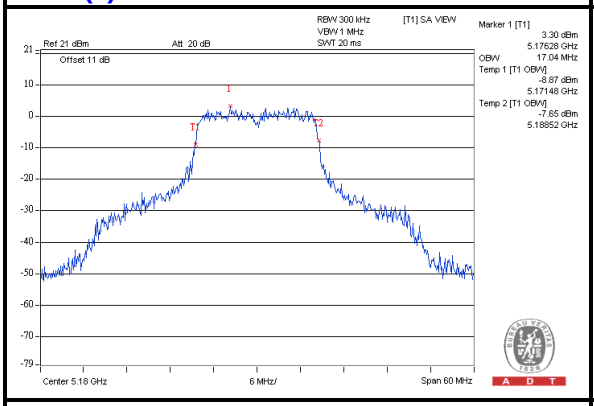
Chain(0) : CH132



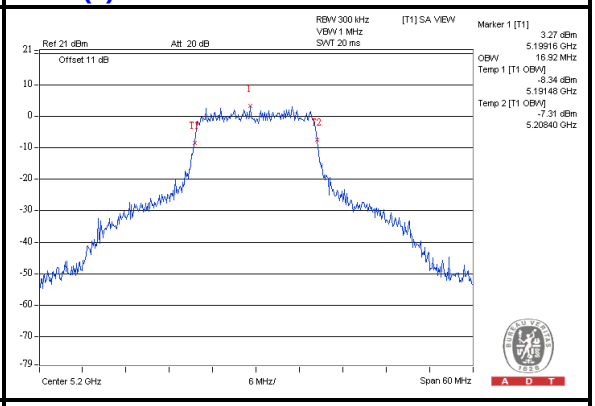
Chain(0) : CH140



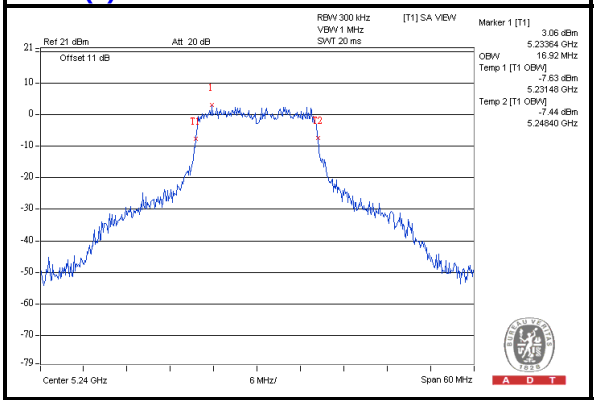
Chain(1) : CH36



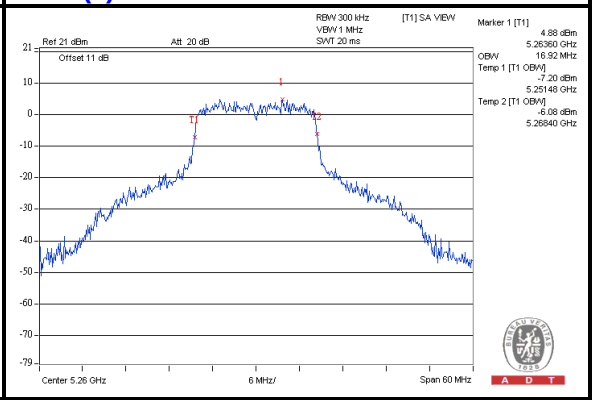
Chain(1) : CH40



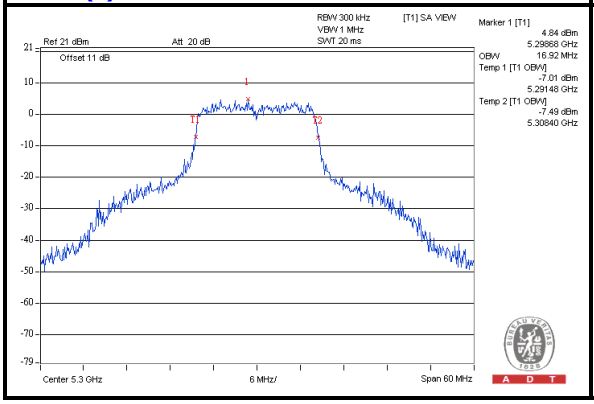
Chain(1) : CH48



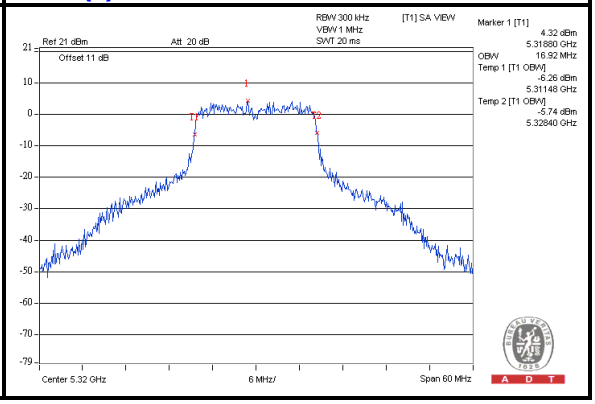
Chain(1) : CH52



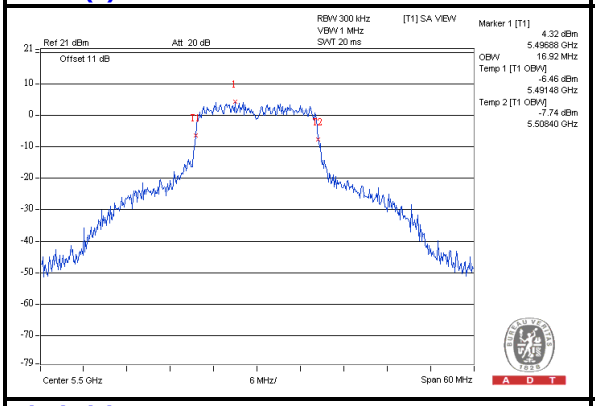
Chain(1) : CH60



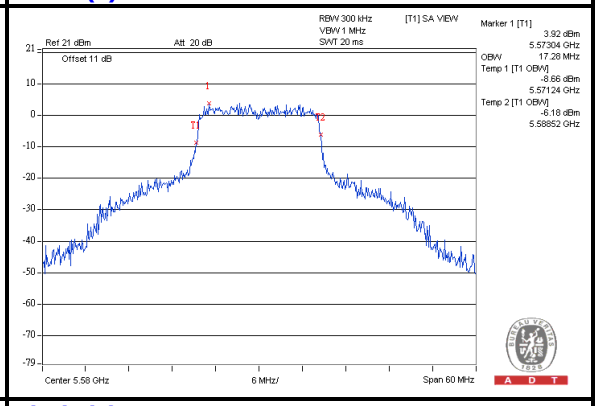
Chain(1) : CH64



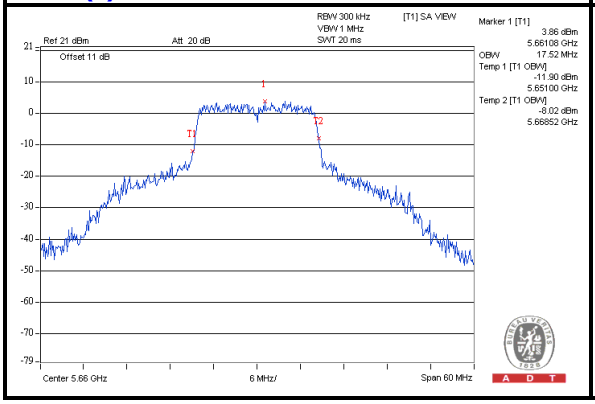
Chain(1) : CH100



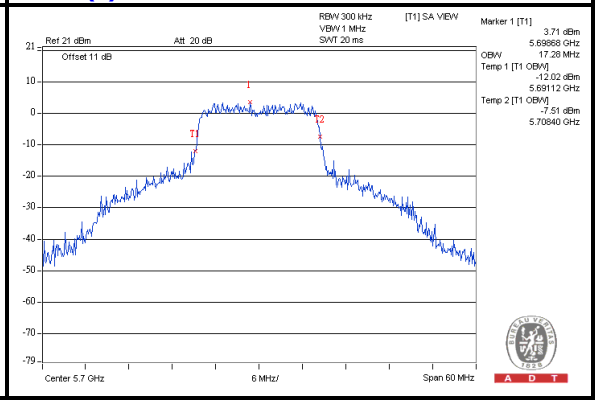
Chain(1) : CH116



Chain(1) : CH132



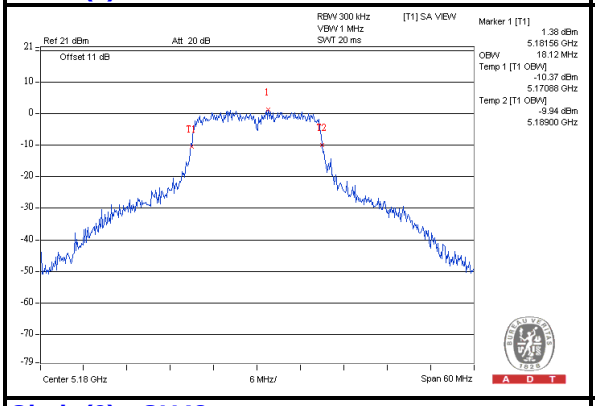
Chain(1) : CH140



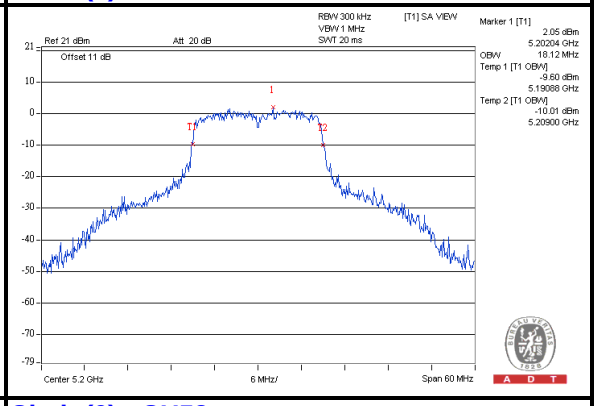
802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	18.12	18.00
40	5200	18.12	17.88
48	5240	18.12	17.88
52	5260	18.36	18.24
60	5300	18.24	18.24
64	5320	18.36	18.12
100	5500	18.00	18.00
116	5580	18.00	18.24
132	5660	18.24	18.36
140	5700	18.12	18.24

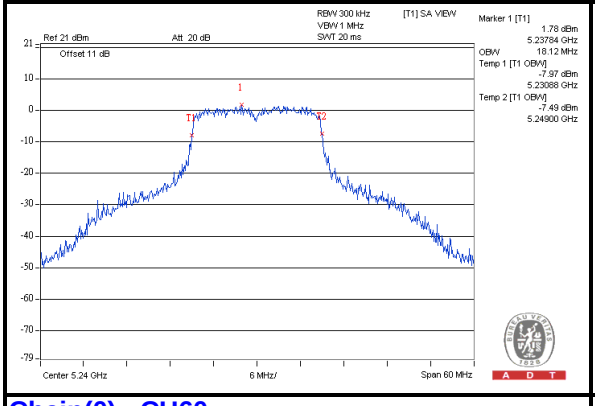
Chain(0) : CH36



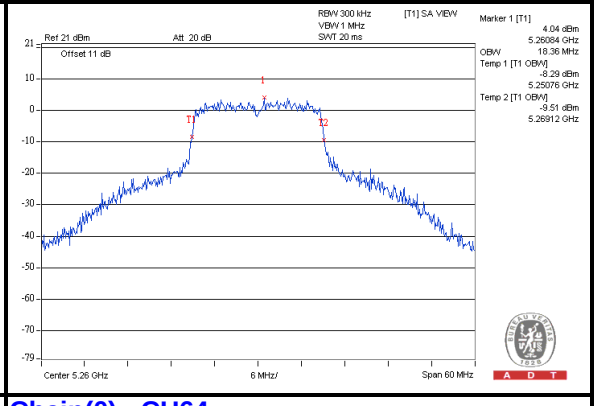
Chain(0) : CH40



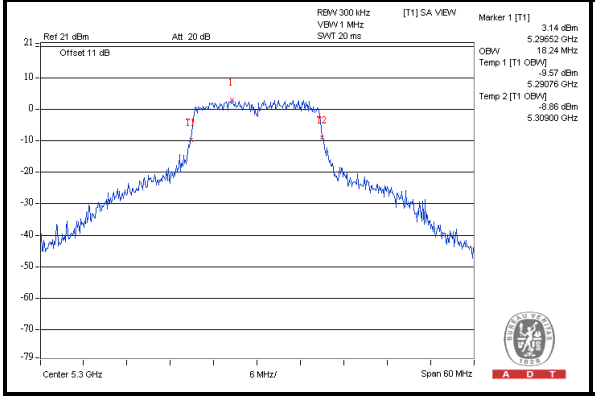
Chain(0) : CH48



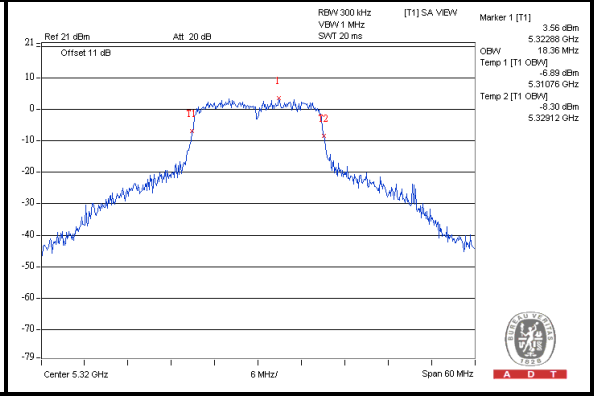
Chain(0) : CH52



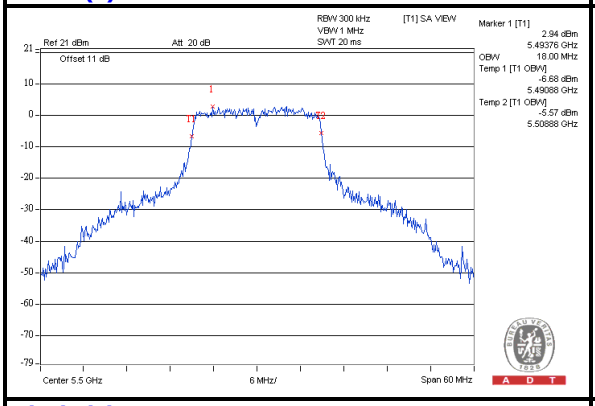
Chain(0) : CH60



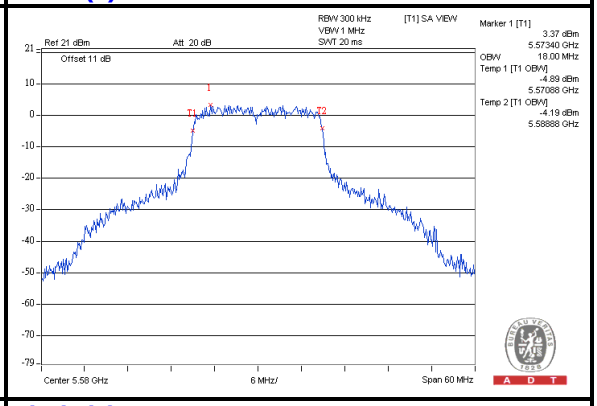
Chain(0) : CH64



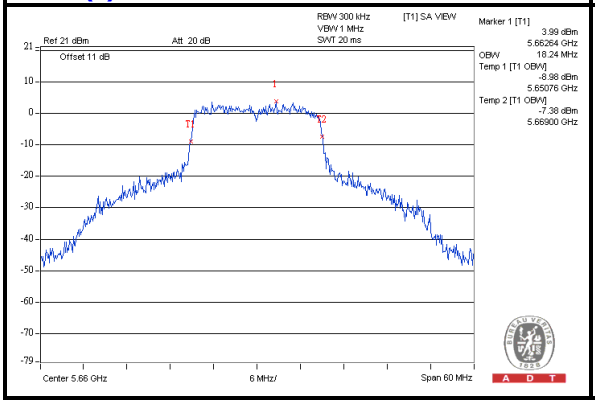
Chain(0) : CH100



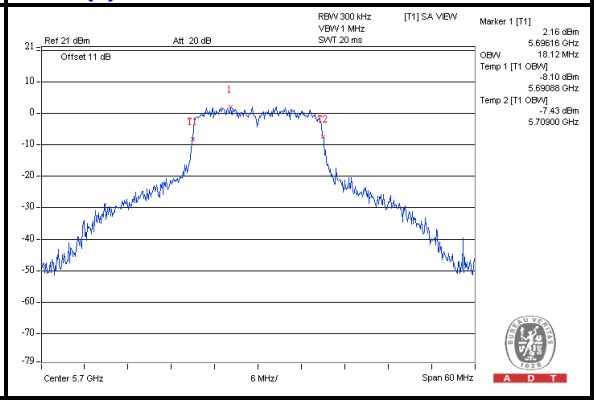
Chain(0) : CH116



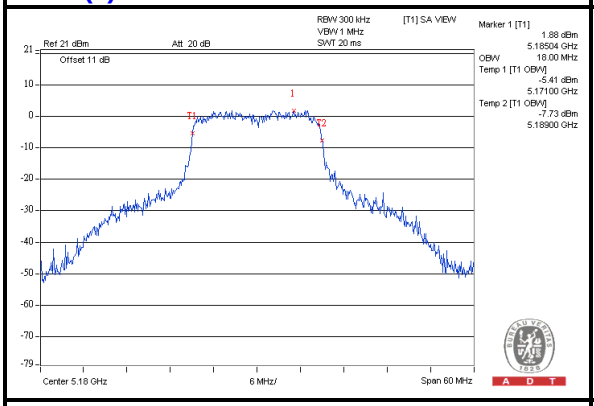
Chain(0) : CH132



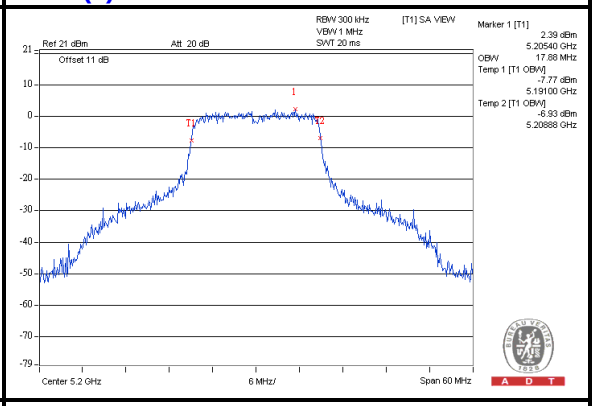
Chain(0) : CH140



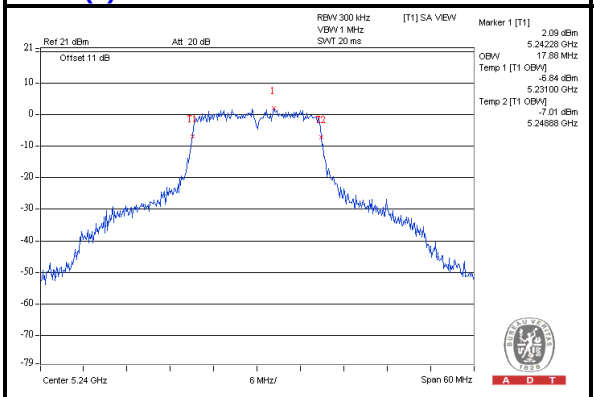
Chain(1) : CH36



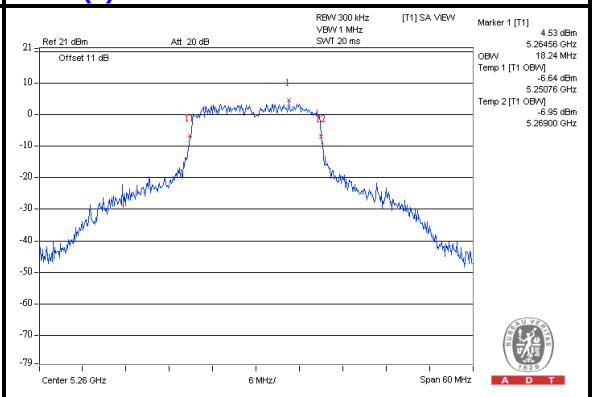
Chain(1) : CH40



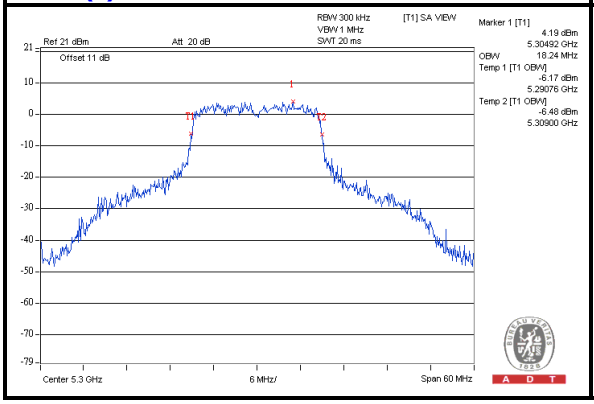
Chain(1) : CH48



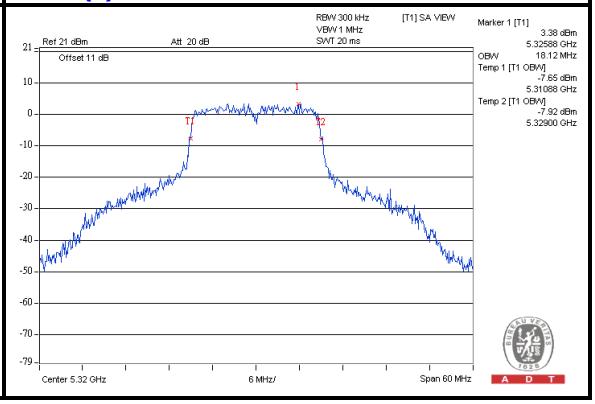
Chain(1) : CH52



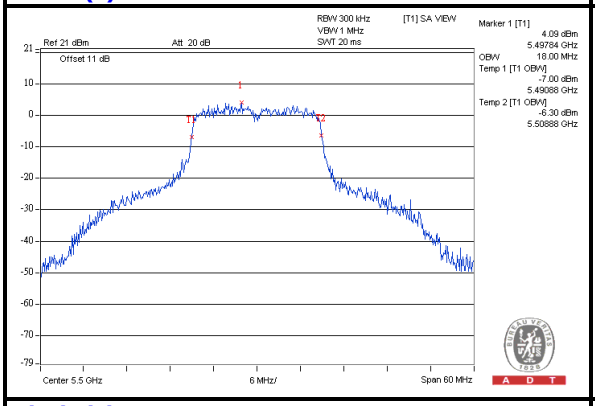
Chain(1) : CH60



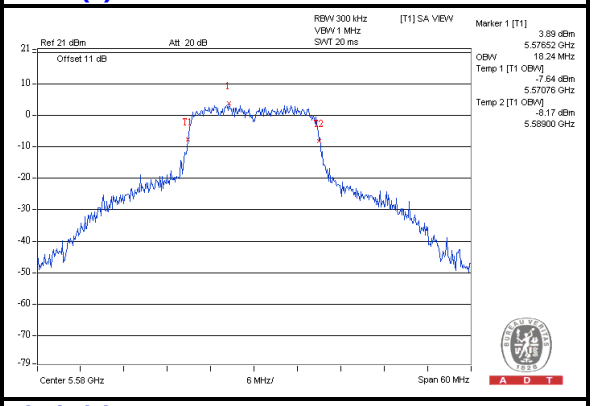
Chain(1) : CH64



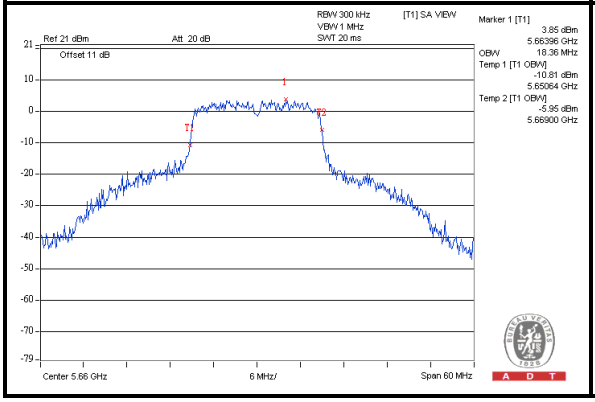
Chain(1) : CH100



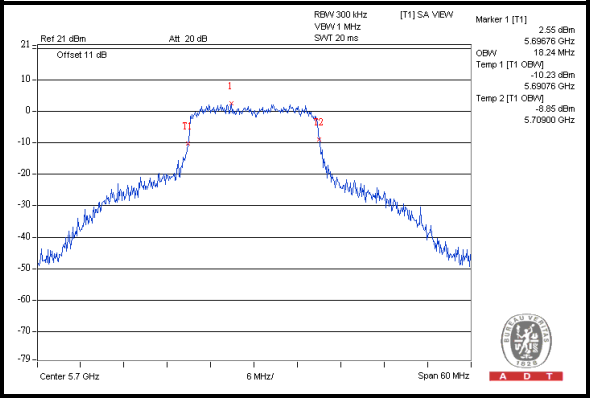
Chain(1) : CH116



Chain(1) : CH132



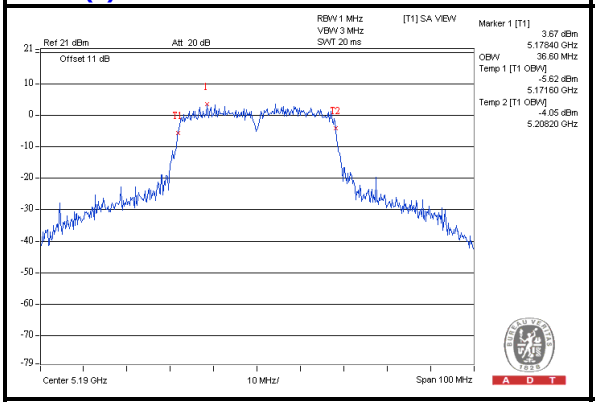
Chain(1) : CH140



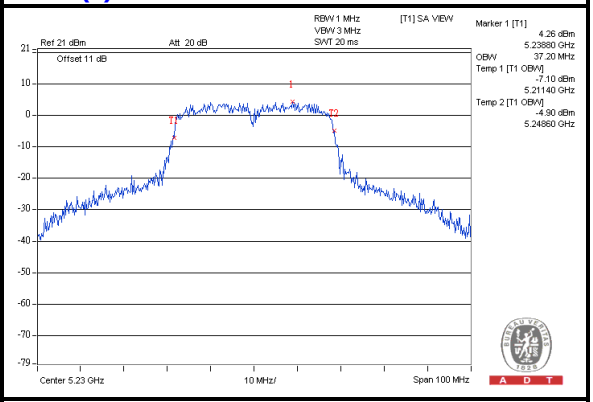
802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
38	5190	36.60	36.60
46	5230	37.20	36.80
54	5270	37.00	36.80
62	5310	36.80	36.80
102	5510	36.80	36.80
110	5550	37.00	37.00
134	5670	37.20	37.00

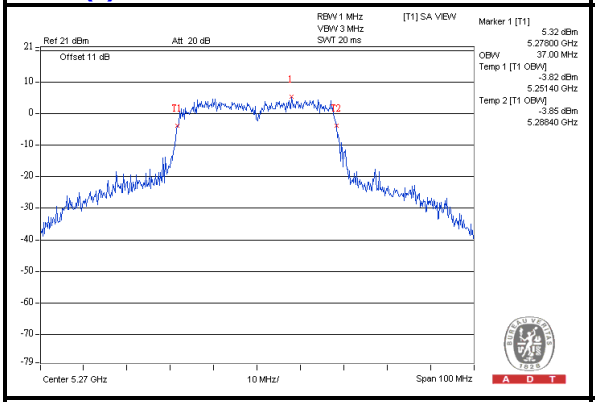
Chain(0) : CH38



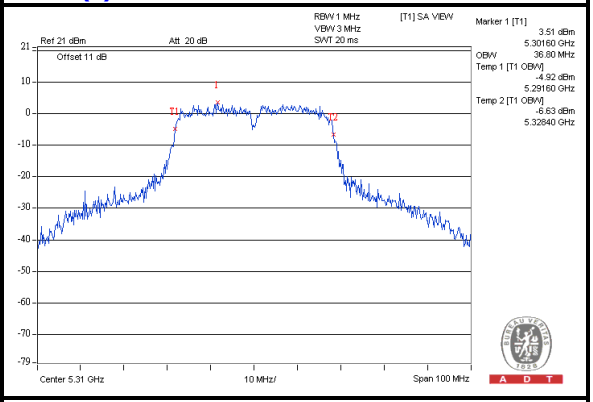
Chain(0) : CH46



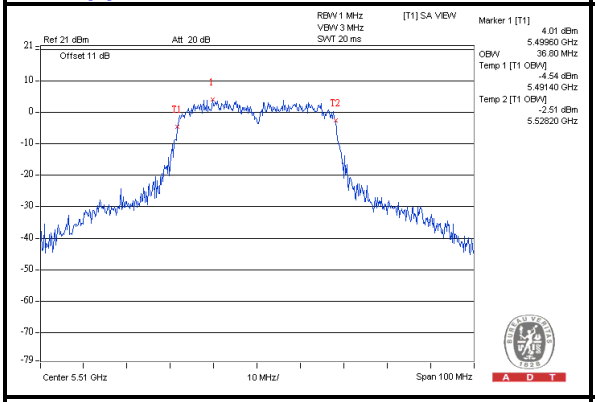
Chain(0) : CH54



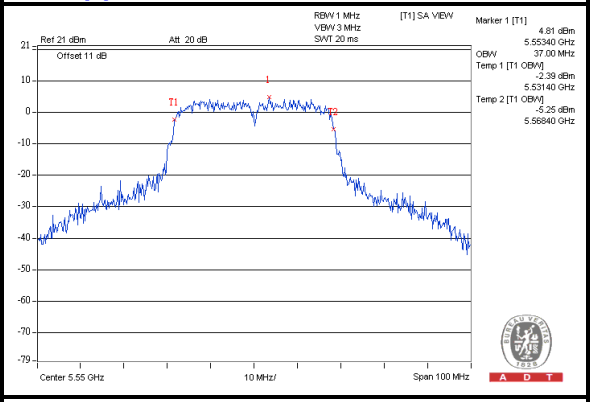
Chain(0) : CH62



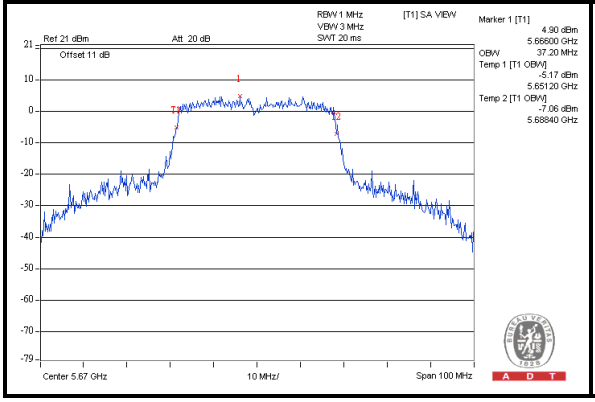
Chain(0) : CH102



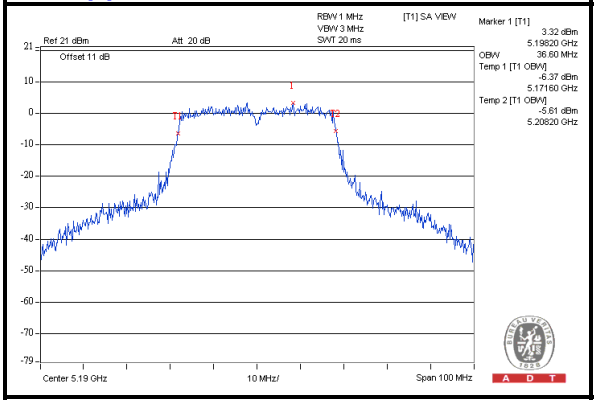
Chain(0) : CH110



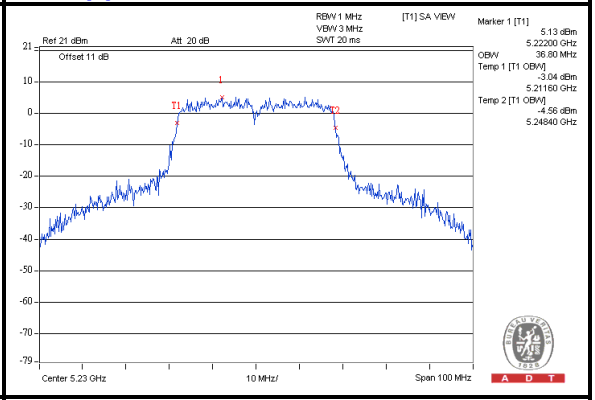
Chain(0) : CH134



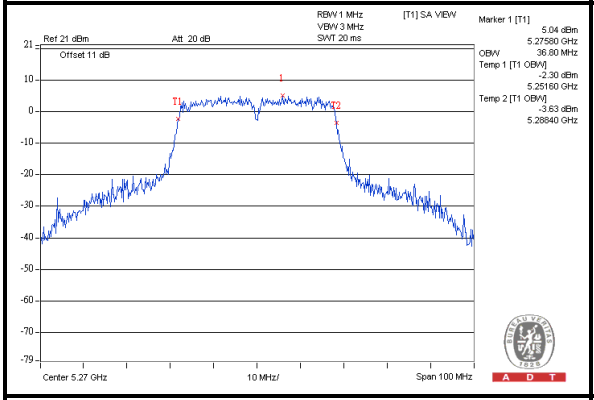
Chain(1) : CH38



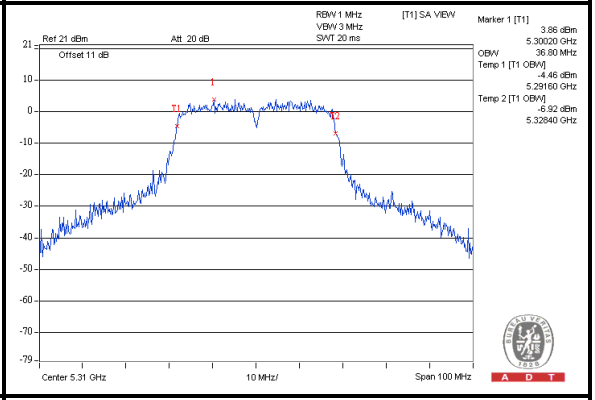
Chain(1) : CH46



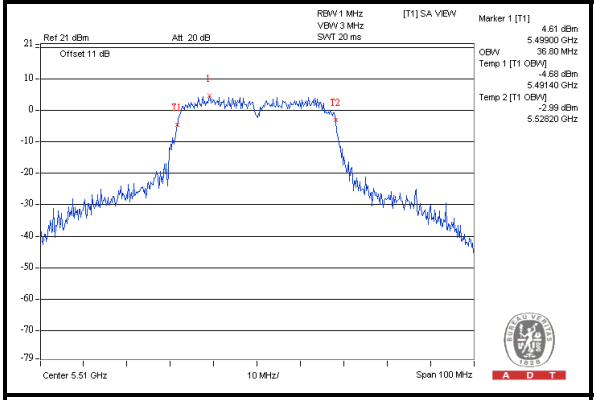
Chain(0) : CH54



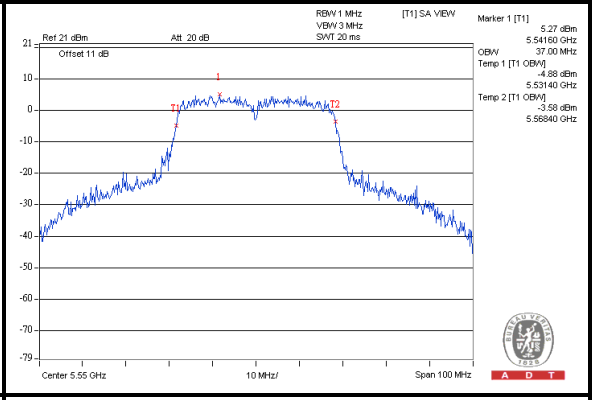
Chain(0) : CH62



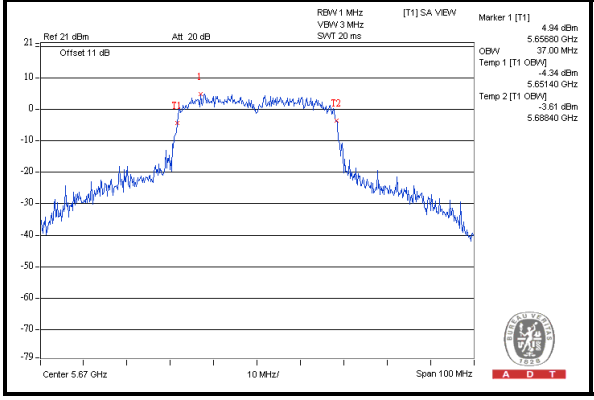
Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134



4.5 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.5.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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. 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.

4.5.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	**EIRP Limit (dBm)**	**Equivalent Field Strength at 3m (dBμV/m)** *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. 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)

4.5.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Pre-Selector Agilent	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Signal Generator Agilent	N5181A	MY49060347	July 24, 2012	July 23, 2013
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Pre-Amplifier Agilent	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 08, 2011	Oct. 07, 2012
Software	ADT_Radiated _V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5 The CANADA Site Registration No. is IC 7450H-3.
6 Tested Date: Aug. 16 to 20, 2012

4.5.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meters 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

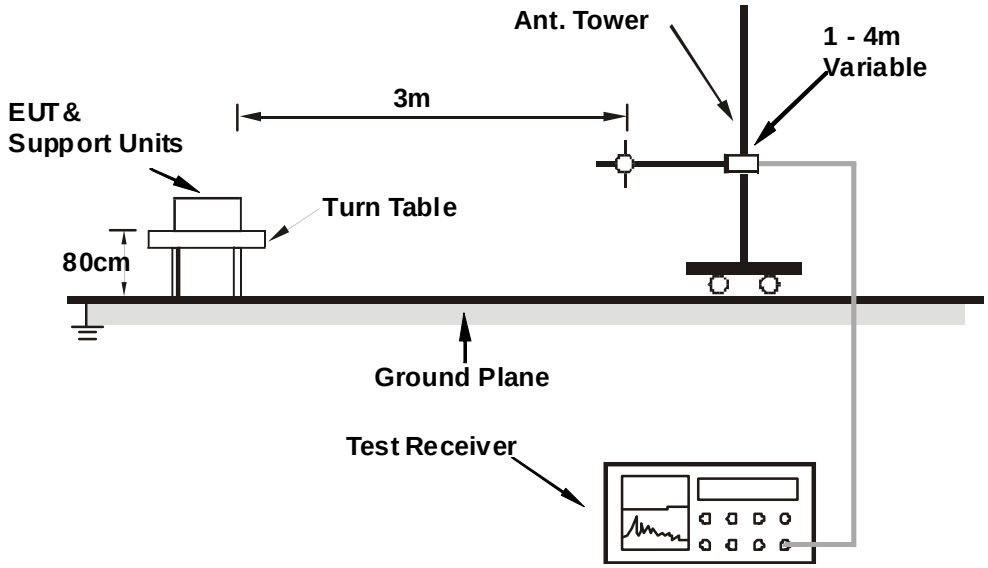
NOTE:

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation

4.5.6 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.5.7 EUT OPERATING CONDITION

1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.

2. The communication partner run test program “EMI_ART2_AR6K_2299Eng” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.5.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11n (20MHz)

CHANNEL	TX Channel 64	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	50.01	27.8 QP	40.0	-12.2	1.00 H	125	13.90	13.94
2	650.06	39.4 QP	46.0	-6.6	1.00 H	144	16.56	22.87
3	700.04	39.3 QP	46.0	-6.7	1.00 H	152	15.59	23.67
4	750.01	36.5 QP	46.0	-9.6	1.00 H	85	11.89	24.56
5	775.00	39.7 QP	46.0	-6.3	1.00 H	164	14.64	25.09
6	824.97	34.2 QP	46.0	-11.8	1.00 H	106	8.29	25.95
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	132.67	39.4 QP	43.5	-4.1	1.00 V	122	25.93	13.50
2	324.99	42.3 QP	46.0	-3.7	1.11 V	154	26.41	15.88
3	349.98	41.2 QP	46.0	-4.8	1.00 V	329	24.70	16.46
4	399.95	40.5 QP	46.0	-5.5	1.00 V	123	22.83	17.70
5	650.06	38.7 QP	46.0	-7.3	1.00 V	153	15.86	22.87
6	725.02	42.2 QP	46.0	-3.8	1.00 V	164	18.04	24.12

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.

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	58.9 PK	74.0	-15.1	1.06 H	101	16.60	42.30
2	5150.00	45.1 AV	54.0	-8.9	1.06 H	101	2.80	42.30
3	*5180.00	100.0 PK			1.06 H	101	57.60	42.40
4	*5180.00	89.1 AV			1.06 H	101	46.70	42.40
5	#10360.00	55.7 PK	68.3	-12.6	1.24 H	62	6.49	49.21
6	15540.00	62.1 PK	74.0	-11.9	1.07 H	52	7.00	55.10
7	15540.00	50.1 AV	54.0	-3.9	1.07 H	52	-5.00	55.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	61.3 PK	74.0	-12.7	1.12 V	260	19.00	42.30
2	5150.00	45.5 AV	54.0	-8.5	1.12 V	260	3.20	42.30
3	*5180.00	103.1 PK			1.12 V	260	60.70	42.40
4	*5180.00	91.5 AV			1.12 V	260	49.10	42.40
5	#10360.00	56.2 PK	68.3	-12.1	1.24 V	26	6.99	49.21
6	15540.00	63.1 PK	74.0	-10.9	1.00 V	69	8.00	55.10
7	15540.00	50.3 AV	54.0	-3.7	1.00 V	69	-4.80	55.10

REMARKS:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	100.2 PK			1.04 H	106	57.73	42.47
2	*5200.00	89.6 AV			1.04 H	106	47.13	42.47
3	#10400.00	55.3 PK	68.3	-13.0	1.24 H	59	6.47	48.83
4	15600.00	62.6 PK	74.0	-11.4	1.02 H	48	7.63	54.97
5	15600.00	50.3 AV	54.0	-3.7	1.02 H	48	-4.67	54.97
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	102.7 PK			1.13 V	259	60.23	42.47
2	*5200.00	91.4 AV			1.13 V	259	48.93	42.47
3	#10400.00	56.3 PK	68.3	-12.0	1.29 V	35	7.47	48.83
4	15600.00	63.1 PK	74.0	-10.9	1.00 V	59	8.13	54.97
5	15600.00	50.3 AV	54.0	-3.7	1.00 V	59	-4.67	54.97

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 of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	100.1 PK			1.03 H	102	57.59	42.51
2	*5240.00	89.5 AV			1.03 H	102	46.99	42.51
3	#10480.00	55.2 PK	68.3	-13.1	1.21 H	62	5.81	49.39
4	15720.00	62.4 PK	74.0	-11.6	1.01 H	66	7.70	54.70
5	15720.00	50.2 AV	54.0	-3.8	1.01 H	66	-4.50	54.70
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	*5240.00	102.5 PK			1.12 V	243	59.99	42.51
2	*5240.00	91.1 AV			1.12 V	243	48.59	42.51
3	#10480.00	55.6 PK	68.3	-12.7	1.27 V	35	6.21	49.39
4	15720.00	63.2 PK	74.0	-10.8	1.01 V	76	8.50	54.70
5	15720.00	50.7 AV	54.0	-3.3	1.01 V	76	-4.00	54.70

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.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	104.8 PK			1.00 H	124	62.26	42.54
2	*5260.00	94.2 AV			1.00 H	124	51.66	42.54
3	#10520.00	56.2 PK	68.3	-12.1	1.26 H	49	6.71	49.49
4	15780.00	62.9 PK	74.0	-11.1	1.06 H	79	8.01	54.89
5	15780.00	50.3 AV	54.0	-3.7	1.06 H	79	-4.59	54.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	105.2 PK			1.04 V	241	62.66	42.54
2	*5260.00	94.3 AV			1.04 V	241	51.76	42.54
3	#10520.00	56.1 PK	68.3	-12.2	1.25 V	42	6.61	49.49
4	15780.00	63.4 PK	74.0	-10.6	1.00 V	72	8.51	54.89
5	15780.00	50.6 AV	54.0	-3.4	1.00 V	72	-4.29	54.89

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.3 PK			1.00 H	129	62.72	42.58
2	*5300.00	94.3 AV			1.00 H	129	51.72	42.58
3	10600.00	56.4 PK	74.0	-17.6	1.23 H	53	7.05	49.35
4	10600.00	44.0 AV	54.0	-10.0	1.23 H	53	-5.35	49.35
5	15900.00	63.9 PK	74.0	-10.1	1.04 H	83	8.81	55.09
6	15900.00	50.4 AV	54.0	-3.6	1.04 H	83	-4.69	55.09
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	*5300.00	105.3 PK			1.07 V	257	62.72	42.58
2	*5300.00	94.2 AV			1.07 V	257	51.62	42.58
3	10600.00	55.0 PK	74.0	-19.0	1.21 V	37	5.65	49.35
4	10600.00	43.2 AV	54.0	-10.8	1.21 V	37	-6.15	49.35
5	15900.00	63.0 PK	74.0	-11.0	1.01 V	69	7.91	55.09
6	15900.00	50.4 AV	54.0	-3.6	1.01 V	69	-4.69	55.09

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.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.1 PK			1.00 H	126	62.51	42.59
2	*5320.00	94.1 AV			1.00 H	126	51.51	42.59
3	10640.00	56.4 PK	74.0	-17.6	1.21 H	63	6.94	49.46
4	10640.00	43.8 AV	54.0	-10.2	1.21 H	63	-5.66	49.46
5	15960.00	63.6 PK	74.0	-10.4	1.00 H	99	8.77	54.83
6	15960.00	50.7 AV	54.0	-3.3	1.00 H	99	-4.13	54.83
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.9 PK			1.08 V	262	63.31	42.59
2	*5320.00	94.3 AV			1.08 V	262	51.71	42.59
3	5350.00	65.7 PK	74.0	-8.3	1.11 V	256	23.11	42.59
4	5350.00	49.2 AV	54.0	-4.8	1.11 V	256	6.61	42.59
5	10640.00	55.2 PK	74.0	-18.8	1.24 V	27	5.74	49.46
6	10640.00	43.6 AV	54.0	-10.4	1.24 V	27	-5.86	49.46
7	15960.00	62.8 PK	74.0	-11.2	1.00 V	57	7.97	54.83
8	15960.00	50.4 AV	54.0	-3.6	1.00 V	57	-4.43	54.83

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.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.7 PK	74.0	-14.3	1.00 H	261	16.88	42.82
2	5460.00	48.6 AV	54.0	-5.4	1.00 H	261	5.78	42.82
3	#5470.00	61.0 PK	68.3	-7.3	1.00 H	112	18.15	42.85
4	*5500.00	99.4 PK			1.00 H	112	56.44	42.96
5	*5500.00	88.7 AV			1.00 H	112	45.74	42.96
6	11000.00	56.7 PK	74.0	-17.3	1.24 H	79	6.69	50.01
7	11000.00	43.4 AV	54.0	-10.6	1.24 H	79	-6.61	50.01
8	#16500.00	63.1 PK	68.3	-5.2	1.00 H	104	6.73	56.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.0 PK	74.0	-14.0	1.00 V	341	17.18	42.82
2	5460.00	48.8 AV	54.0	-5.2	1.00 V	341	5.98	42.82
3	**#5470.00**	**67.3 PK**	**68.3**	**-1.0**	**1.00 V**	**341**	**24.45**	**42.85**
4	*5500.00	100.7 PK			1.67 V	257	57.74	42.96
5	*5500.00	89.9 AV			1.67 V	257	46.94	42.96
6	11000.00	55.2 PK	74.0	-18.8	1.28 V	15	5.19	50.01
7	11000.00	43.6 AV	54.0	-10.4	1.28 V	15	-6.41	50.01
8	#16500.00	64.1 PK	68.3	-4.2	1.00 V	61	7.73	56.37

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 of the restricted band.

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5580.00	104.6 PK			1.14 H	62	61.46	43.14
2	*5580.00	92.7 AV			1.14 H	62	49.56	43.14
3	11160.00	58.2 PK	74.0	-15.8	1.02 H	72	8.49	49.71
4	11160.00	48.1 AV	54.0	-5.9	1.02 H	72	-1.61	49.71
5	#16740.00	64.7 PK	68.3	-3.6	1.00 H	132	8.28	56.42
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	*5580.00	103.6 PK			1.00 V	249	60.46	43.14
2	*5580.00	92.4 AV			1.00 V	249	49.26	43.14
3	11160.00	59.3 PK	74.0	-14.7	1.45 V	132	9.59	49.71
4	11160.00	48.4 AV	54.0	-5.6	1.45 V	132	-1.31	49.71
5	#16740.00	64.2 PK	68.3	-4.1	1.00 V	24	7.78	56.42

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 of the restricted band.

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5660.00	104.3 PK			1.16 H	98	61.06	43.24
2	*5660.00	92.3 AV			1.16 H	98	49.06	43.24
3	11320.00	58.4 PK	74.0	-15.6	1.01 H	69	8.30	50.10
4	11320.00	48.2 AV	54.0	-5.8	1.01 H	69	-1.90	50.10
5	#16980.00	64.3 PK	68.3	-4.0	1.00 H	104	7.12	57.18
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	*5660.00	103.1 PK			1.00 V	246	59.86	43.24
2	*5660.00	92.1 AV			1.00 V	246	48.86	43.24
3	11320.00	59.7 PK	74.0	-14.3	1.43 V	122	9.60	50.10
4	11320.00	48.7 AV	54.0	-5.3	1.43 V	122	-1.40	50.10
5	#16980.00	64.3 PK	68.3	-4.0	1.01 V	35	7.12	57.18

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 of the restricted band.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.6 PK			1.13 H	86	61.33	43.27
2	*5700.00	92.4 AV			1.13 H	86	49.13	43.27
3	#5725.00	62.4 PK	68.3	-5.9	1.00 H	126	19.10	43.30
4	11400.00	58.3 PK	74.0	-15.7	1.01 H	71	8.38	49.92
5	11400.00	48.3 AV	54.0	-5.7	1.01 H	71	-1.62	49.92
6	#17100.00	65.1 PK	68.3	-3.2	1.00 H	102	8.02	57.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.2 PK			1.00 V	250	59.93	43.27
2	*5700.00	92.4 AV			1.00 V	250	49.13	43.27
3	#5725.00	67.2 PK	68.3	-1.1	1.00 V	250	23.90	43.30
4	11400.00	59.2 PK	74.0	-14.8	1.48 V	131	9.28	49.92
5	11400.00	48.5 AV	54.0	-5.5	1.48 V	131	-1.42	49.92
6	#17100.00	64.3 PK	68.3	-4.0	1.02 V	41	7.22	57.08

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 of the restricted band.

802.11n (20MHz)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.7 PK	74.0	-8.3	1.11 H	77	23.40	42.30
2	5150.00	48.1 AV	54.0	-5.9	1.11 H	77	5.80	42.30
3	*5180.00	104.7 PK			1.11 H	77	62.30	42.40
4	*5180.00	92.7 AV			1.11 H	77	50.30	42.40
5	#10360.00	55.7 PK	68.3	-12.6	1.21 H	127	6.49	49.21
6	15540.00	65.3 PK	74.0	-8.7	1.00 H	106	10.20	55.10
7	15540.00	50.2 AV	54.0	-3.8	1.00 H	106	-4.90	55.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.9 PK	74.0	-12.1	1.08 V	142	19.60	42.30
2	5150.00	47.6 AV	54.0	-6.4	1.08 V	142	5.30	42.30
3	*5180.00	103.7 PK			1.08 V	142	61.30	42.40
4	*5180.00	91.8 AV			1.08 V	142	49.40	42.40
5	#10360.00	56.1 PK	68.3	-12.2	1.26 V	83	6.89	49.21
6	15540.00	62.8 PK	74.0	-11.2	1.03 V	85	7.70	55.10
7	15540.00	50.2 AV	54.0	-3.8	1.03 V	85	-4.90	55.10

REMARKS:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	104.4 PK			1.15 H	76	61.93	42.47
2	*5200.00	92.4 AV			1.15 H	76	49.93	42.47
3	#10400.00	55.6 PK	68.3	-12.7	1.23 H	126	6.77	48.83
4	15600.00	65.6 PK	74.0	-8.4	1.00 H	114	10.63	54.97
5	15600.00	50.4 AV	54.0	-3.6	1.00 H	114	-4.57	54.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.3 PK			1.06 V	265	60.83	42.47
2	*5200.00	91.4 AV			1.06 V	265	48.93	42.47
3	#10400.00	56.4 PK	68.3	-11.9	1.24 V	76	7.57	48.83
4	15600.00	62.2 PK	74.0	-11.8	1.00 V	99	7.23	54.97
5	15600.00	49.7 AV	54.0	-4.3	1.00 V	99	-5.27	54.97

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 of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	104.6 PK			1.13 H	124	62.09	42.51
2	*5240.00	92.9 AV			1.13 H	124	50.39	42.51
3	#10480.00	55.3 PK	68.3	-13.0	1.13 H	87	5.91	49.39
4	15720.00	65.3 PK	74.0	-8.7	1.00 H	109	10.60	54.70
5	15720.00	50.9 AV	54.0	-3.1	1.00 H	109	-3.80	54.70
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	*5240.00	103.1 PK			1.06 V	268	60.59	42.51
2	*5240.00	91.3 AV			1.06 V	268	48.79	42.51
3	#10480.00	56.2 PK	68.3	-12.1	1.23 V	68	6.81	49.39
4	15720.00	61.5 PK	74.0	-12.5	1.01 V	90	6.80	54.70
5	15720.00	49.3 AV	54.0	-4.7	1.01 V	90	-5.40	54.70

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.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	106.1 PK			1.38 H	114	63.56	42.54
2	*5260.00	93.9 AV			1.38 H	114	51.36	42.54
3	#10520.00	55.5 PK	68.3	-12.8	1.09 H	79	6.01	49.49
4	15780.00	65.2 PK	74.0	-8.8	1.00 H	113	10.31	54.89
5	15780.00	50.6 AV	54.0	-3.4	1.00 H	113	-4.29	54.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	104.5 PK			1.14 V	245	61.96	42.54
2	*5260.00	93.1 AV			1.14 V	245	50.56	42.54
3	#10520.00	56.4 PK	68.3	-11.9	1.22 V	56	6.91	49.49
4	15780.00	62.6 PK	74.0	-11.4	1.02 V	69	7.71	54.89
5	15780.00	50.2 AV	54.0	-3.8	1.02 V	69	-4.69	54.89

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.2 PK			1.43 H	98	63.62	42.58
2	*5300.00	94.2 AV			1.43 H	98	51.62	42.58
3	10600.00	55.5 PK	74.0	-18.5	1.04 H	75	6.15	49.35
4	10600.00	45.9 AV	54.0	-8.1	1.04 H	75	-3.45	49.35
5	15900.00	65.5 PK	74.0	-8.5	1.00 H	126	10.41	55.09
6	15900.00	50.4 AV	54.0	-3.6	1.00 H	126	-4.69	55.09
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	*5300.00	104.3 PK			1.10 V	250	61.72	42.58
2	*5300.00	93.0 AV			1.10 V	250	50.42	42.58
3	10600.00	55.4 PK	74.0	-18.6	1.22 V	42	6.05	49.35
4	10600.00	43.7 AV	54.0	-10.3	1.22 V	42	-5.65	49.35
5	15900.00	62.7 PK	74.0	-11.3	1.00 V	54	7.61	55.09
6	15900.00	50.5 AV	54.0	-3.5	1.00 V	54	-4.59	55.09

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.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.0 PK			1.46 H	102	63.41	42.59
2	*5320.00	93.8 AV			1.46 H	102	51.21	42.59
3	5350.00	66.3 PK	74.0	-7.7	1.46 H	102	23.71	42.59
4	5350.00	49.6 AV	54.0	-4.4	1.46 H	102	7.01	42.59
5	10640.00	55.6 PK	74.0	-18.4	1.05 H	80	6.14	49.46
6	10640.00	45.9 AV	54.0	-8.1	1.05 H	80	-3.56	49.46
7	15960.00	65.4 PK	74.0	-8.6	1.00 H	139	10.57	54.83
8	15960.00	50.4 AV	54.0	-3.6	1.00 H	139	-4.43	54.83
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.0 PK			1.07 V	260	62.41	42.59
2	*5320.00	93.5 AV			1.07 V	260	50.91	42.59
3	5350.00	62.3 PK	74.0	-11.7	1.07 V	260	19.71	42.59
4	5350.00	48.5 AV	54.0	-5.5	1.07 V	260	5.91	42.59
5	10640.00	55.5 PK	74.0	-18.5	1.21 V	29	6.04	49.46
6	10640.00	44.0 AV	54.0	-10.0	1.21 V	29	-5.46	49.46
7	15960.00	63.3 PK	74.0	-10.7	1.00 V	65	8.47	54.83
8	15960.00	50.9 AV	54.0	-3.1	1.00 V	65	-3.93	54.83

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.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.3 PK	74.0	-13.7	1.00 H	110	17.48	42.82
2	5460.00	48.4 AV	54.0	-5.6	1.00 H	110	5.58	42.82
3	#5470.00	65.8 PK	68.3	-2.5	1.00 H	110	22.95	42.85
4	*5500.00	103.8 PK			1.00 H	110	60.84	42.96
5	*5500.00	92.3 AV			1.00 H	110	49.34	42.96
6	11000.00	55.9 PK	74.0	-18.1	1.00 H	84	5.89	50.01
7	11000.00	46.2 AV	54.0	-7.8	1.00 H	84	-3.81	50.01
8	#16500.00	62.7 PK	68.3	-5.6	1.00 H	124	6.33	56.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.00 V	341	16.78	42.82
2	5460.00	48.1 AV	54.0	-5.9	1.00 V	341	5.28	42.82
3	**#5470.00**	**67.3 PK**	**68.3**	**-1.0**	**1.00 V**	**341**	**24.45**	**42.85**
4	*5500.00	107.0 PK			1.00 V	341	64.04	42.96
5	*5500.00	95.6 AV			1.00 V	341	52.64	42.96
6	11000.00	55.7 PK	74.0	-18.3	1.00 V	67	5.69	50.01
7	11000.00	45.3 AV	54.0	-8.7	1.00 V	67	-4.71	50.01
8	#16500.00	64.3 PK	68.3	-4.0	1.00 V	26	7.93	56.37

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 of the restricted band.

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5580.00	104.3 PK			1.00 H	106	61.16	43.14
2	*5580.00	92.4 AV			1.00 H	106	49.26	43.14
3	11160.00	55.4 PK	74.0	-18.6	1.00 H	79	5.69	49.71
4	11160.00	46.1 AV	54.0	-7.9	1.00 H	79	-3.61	49.71
5	#16740.00	62.3 PK	68.3	-6.0	1.00 H	126	5.88	56.42
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	*5580.00	106.3 PK			1.00 V	355	63.16	43.14
2	*5580.00	94.3 AV			1.00 V	355	51.16	43.14
3	11160.00	55.7 PK	74.0	-18.3	1.00 V	72	5.99	49.71
4	11160.00	45.0 AV	54.0	-9.0	1.00 V	72	-4.71	49.71
5	#16740.00	64.1 PK	68.3	-4.2	1.00 V	74	7.68	56.42

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 of the restricted band.

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5660.00	103.6 PK			1.00 H	110	60.36	43.24
2	*5660.00	92.0 AV			1.00 H	110	48.76	43.24
3	11320.00	55.3 PK	74.0	-18.7	1.00 H	83	5.20	50.10
4	11320.00	45.6 AV	54.0	-8.4	1.00 H	83	-4.50	50.10
5	#16980.00	62.5 PK	68.3	-5.8	1.00 H	127	5.32	57.18
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	*5660.00	106.4 PK			1.00 V	346	63.16	43.24
2	*5660.00	94.1 AV			1.00 V	346	50.86	43.24
3	11320.00	56.3 PK	74.0	-17.7	1.05 V	83	6.20	50.10
4	11320.00	45.7 AV	54.0	-8.3	1.05 V	83	-4.40	50.10
5	#16980.00	62.3 PK	68.3	-6.0	1.00 V	76	5.12	57.18

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 of the restricted band.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.7 PK			1.00 H	118	60.43	43.27
2	*5700.00	92.5 AV			1.00 H	118	49.23	43.27
3	#5725.00	65.7 PK	68.3	-2.6	1.00 H	118	22.40	43.30
4	11400.00	55.2 PK	74.0	-18.8	1.00 H	126	5.28	49.92
5	11400.00	43.5 AV	54.0	-10.5	1.00 H	126	-6.42	49.92
6	#17100.00	62.4 PK	68.3	-5.9	1.00 H	72	5.32	57.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.3 PK			1.00 V	283	61.03	43.27
2	*5700.00	92.4 AV			1.00 V	283	49.13	43.27
3	#5725.00	67.1 PK	68.3	-1.2	1.00 V	283	23.80	43.30
4	11400.00	54.9 PK	74.0	-19.1	1.00 V	57	4.98	49.92
5	11400.00	43.1 AV	54.0	-10.9	1.00 V	57	-6.82	49.92
6	#17100.00	63.4 PK	68.3	-4.9	1.00 V	62	6.32	57.08

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 of the restricted band.

802.11n (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.4 PK	74.0	-2.6	1.09 H	74	29.10	42.30
2	**5150.00**	**53.0 AV**	**54.0**	**-1.0**	**1.09 H**	**74**	**10.70**	**42.30**
3	*5190.00	99.4 PK			1.09 H	74	56.96	42.44
4	*5190.00	85.3 AV			1.09 H	74	42.86	42.44
5	#10380.00	55.4 PK	68.3	-12.9	1.00 H	75	6.38	49.02
6	15570.00	62.1 PK	74.0	-11.9	1.00 H	69	7.06	55.04
7	15570.00	50.1 AV	54.0	-3.9	1.00 H	69	-4.94	55.04
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	70.7 PK	74.0	-3.3	1.07 V	142	28.40	42.30
2	5150.00	52.8 AV	54.0	-1.2	1.07 V	142	10.50	42.30
3	*5190.00	99.2 PK			1.07 V	142	56.76	42.44
4	*5190.00	85.4 AV			1.07 V	142	42.96	42.44
5	#10380.00	55.1 PK	68.3	-13.2	1.00 V	51	6.08	49.02
6	15570.00	62.4 PK	74.0	-11.6	1.00 V	53	7.36	55.04
7	15570.00	50.3 AV	54.0	-3.7	1.00 V	53	-4.74	55.04

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 of the restricted band.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	99.0 PK			1.09 H	127	56.50	42.50
2	*5230.00	86.0 AV			1.09 H	127	43.50	42.50
3	#10460.00	55.1 PK	68.3	-13.2	1.00 H	69	5.85	49.25
4	15690.00	62.6 PK	74.0	-11.4	1.00 H	72	7.93	54.67
5	15690.00	50.2 AV	54.0	-3.8	1.00 H	72	-4.47	54.67
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	99.1 PK			1.07 V	144	56.60	42.50
2	*5230.00	85.2 AV			1.07 V	144	42.70	42.50
3	#10460.00	54.6 PK	68.3	-13.7	1.00 V	49	5.35	49.25
4	15690.00	62.9 PK	74.0	-11.1	1.00 V	52	8.23	54.67
5	15690.00	50.5 AV	54.0	-3.5	1.00 V	52	-4.17	54.67

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 of the restricted band.

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	98.5 PK			1.09 H	138	55.95	42.55
2	*5270.00	85.9 AV			1.09 H	138	43.35	42.55
3	#10540.00	54.6 PK	68.3	-13.7	1.00 H	74	5.14	49.46
4	15810.00	62.1 PK	74.0	-11.9	1.00 H	59	7.14	54.96
5	15810.00	50.1 AV	54.0	-3.9	1.00 H	59	-4.86	54.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	99.3 PK			1.08 V	149	56.75	42.55
2	*5270.00	85.5 AV			1.08 V	149	42.95	42.55
3	#10540.00	54.3 PK	68.3	-14.0	1.00 V	56	4.84	49.46
4	15810.00	62.7 PK	74.0	-11.3	1.02 V	42	7.74	54.96
5	15810.00	50.4 AV	54.0	-3.6	1.02 V	42	-4.56	54.96

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 of the restricted band.

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.4 PK			1.48 H	101	56.82	42.58
2	*5310.00	85.9 AV			1.48 H	101	43.32	42.58
3	5350.00	67.4 PK	74.0	-6.6	1.05 H	72	24.81	42.59
4	5350.00	52.9 AV	54.0	-1.1	1.05 H	72	10.31	42.59
5	10620.00	54.7 PK	74.0	-19.3	1.00 H	69	5.30	49.40
6	10620.00	46.3 AV	54.0	-7.7	1.00 H	69	-3.10	49.40
7	15930.00	62.3 PK	74.0	-11.7	1.00 H	124	7.34	54.96
8	15930.00	50.2 AV	54.0	-3.8	1.00 H	124	-4.76	54.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	98.1 PK			1.09 V	263	55.52	42.58
2	*5310.00	85.1 AV			1.09 V	263	42.52	42.58
3	5350.00	67.4 PK	74.0	-6.6	1.09 V	263	24.81	42.59
4	5350.00	52.0 AV	54.0	-2.0	1.09 V	263	9.41	42.59
5	10620.00	54.7 PK	74.0	-19.3	1.00 V	79	5.30	49.40
6	10620.00	43.6 AV	54.0	-10.4	1.00 V	79	-5.80	49.40
7	15930.00	62.9 PK	74.0	-11.1	1.07 V	56	7.94	54.96
8	15930.00	50.6 AV	54.0	-3.4	1.07 V	56	-4.36	54.96

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.

CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.3 PK	74.0	-14.7	1.14 H	148	16.48	42.82
2	5460.00	46.9 AV	54.0	-7.1	1.14 H	148	4.08	42.82
3	#5470.00	65.8 PK	68.3	-2.5	1.14 H	148	22.95	42.85
4	*5510.00	94.9 PK			1.14 H	148	51.92	42.98
5	*5510.00	82.6 AV			1.14 H	148	39.62	42.98
6	11020.00	55.1 PK	74.0	-18.9	1.00 H	73	5.15	49.95
7	11020.00	46.9 AV	54.0	-7.1	1.00 H	73	-3.05	49.95
8	#16530.00	62.1 PK	68.3	-6.2	1.07 H	59	5.47	56.63
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.9 PK	74.0	-15.1	1.00 V	0	16.08	42.82
2	5460.00	46.6 AV	54.0	-7.4	1.00 V	0	3.78	42.82
3	#5470.00	65.6 PK	68.3	-2.7	1.00 V	0	22.75	42.85
4	*5510.00	94.5 PK			1.04 V	255	51.52	42.98
5	*5510.00	82.5 AV			1.04 V	255	39.52	42.98
6	11020.00	54.3 PK	74.0	-19.7	1.00 V	83	4.35	49.95
7	11020.00	43.4 AV	54.0	-10.6	1.00 V	83	-6.55	49.95
8	#16530.00	62.4 PK	68.3	-5.9	1.04 V	62	5.77	56.63

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	*5550.00	98.7 PK			1.12 H	131	55.62	43.08
2	*5550.00	85.7 AV			1.12 H	131	42.62	43.08
3	11100.00	56.4 PK	74.0	-17.6	1.00 H	69	6.70	49.70
4	11100.00	48.3 AV	54.0	-5.7	1.00 H	69	-1.40	49.70
5	#16650.00	64.1 PK	68.3	-4.2	1.00 H	56	7.20	56.90
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	*5550.00	98.7 PK			1.07 V	277	55.62	43.08
2	*5550.00	86.0 AV			1.07 V	277	42.92	43.08
3	11100.00	54.2 PK	74.0	-19.8	1.00 V	79	4.50	49.70
4	11100.00	43.1 AV	54.0	-10.9	1.00 V	79	-6.60	49.70
5	#16650.00	64.7 PK	68.3	-3.6	1.03 V	84	7.80	56.90

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 of the restricted band.

CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	98.6 PK			1.09 H	137	55.35	43.25
2	*5670.00	85.8 AV			1.09 H	137	42.55	43.25
3	#5725.00	60.1 PK	68.3	-8.2	1.09 H	137	16.80	43.30
4	11340.00	56.7 PK	74.0	-17.3	1.00 H	57	6.64	50.06
5	11340.00	47.9 AV	54.0	-6.1	1.00 H	57	-2.16	50.06
6	#17010.00	64.3 PK	68.3	-4.0	1.00 H	64	7.02	57.28
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	99.1 PK			1.06 V	254	55.85	43.25
2	*5670.00	86.2 AV			1.06 V	254	42.95	43.25
3	#5725.00	60.3 PK	68.3	-8.0	1.00 V	0	17.00	43.30
4	11340.00	54.6 PK	74.0	-19.4	1.00 V	62	4.54	50.06
5	11340.00	43.3 AV	54.0	-10.7	1.00 V	62	-6.76	50.06
6	#17010.00	64.3 PK	68.3	-4.0	1.00 V	67	7.02	57.28

REMARKS:

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

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100036	Dec. 14, 2011	Dec. 13, 2012
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-SP-AR	GTA81158-2	Jan. 19, 2012	Jan. 18, 2013

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. Tested date : Aug. 23, 2012

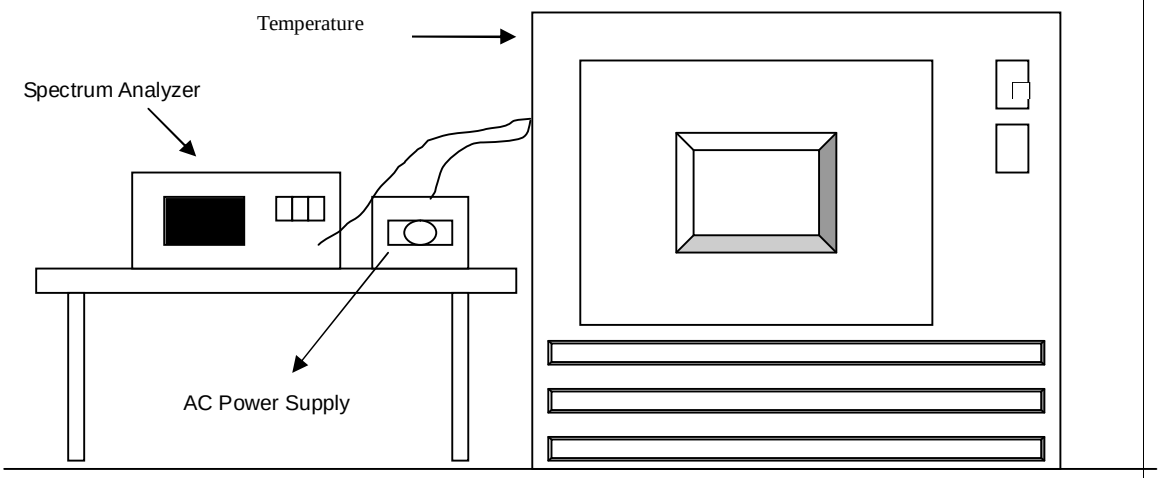
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. 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.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. 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

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	ppm	(MHz)	ppm	(MHz)	ppm	(MHz)	ppm
50	120	5319.9872	-2.4060	5319.9846	-2.8947	5319.9798	-3.7970	5319.9766	-4.3985
40	120	5320.0142	2.6692	5320.0128	2.4060	5320.012	2.2556	5320.0095	1.7857
30	120	5319.9923	-1.4474	5319.9936	-1.2030	5319.9971	-0.5451	5319.9974	-0.4887
20	120	5320.0059	1.1090	5320.0068	1.2782	5320.006	1.1278	5320.0029	0.5451
10	120	5320.0139	2.6128	5320.0103	1.9361	5320.0141	2.6504	5320.0172	3.2331
0	120	5320.0038	0.7143	5320.0023	0.4323	5319.999	-0.1880	5319.9991	-0.1692
-10	120	5319.991	-1.6917	5319.9956	-0.8271	5319.9992	-0.1504	5319.9977	-0.4323
-20	120	5319.9935	-1.2218	5319.9964	-0.6767	5319.9986	-0.2632	5320.0031	0.5827
-30	120	5320.0089	1.6729	5320.009	1.6917	5320.009	1.6917	5320.0146	2.7444

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	ppm	(MHz)	ppm	(MHz)	ppm	(MHz)	ppm
20	138	5320.0048	0.9023	5320.0065	1.2218	5320.0057	1.0714	5320.0036	0.6767
	120	5320.0059	1.1090	5320.0068	1.2782	5320.006	1.1278	5320.0029	0.5451
	102	5320.0067	1.2594	5320.006	1.1278	5320.0051	0.9586	5320.0045	0.8459

4.7 CONDUCTED EMISSION MEASUREMENT

4.7.1 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 0.50 MHz.

4.7.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100287	Feb. 29, 2012	Feb. 28, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK 8127	8127-523	Sep. 20, 2011	Sep. 19, 2012
Line-Impedance Stabilization Network (for Peripheral) ROHDE & SCHWARZ	ESH3-Z5	848773/004	Nov. 01, 2011	Oct. 31, 2012
RF Cable (JYEBAO)	5DFB	COACAB-002	Aug. 05, 2012	Aug. 04, 2013
50 ohms Terminator	50	4	Nov. 12, 2011	Nov. 11, 2012
Software ADT	BV ADT_Cond_V7.3.7 .3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. A.
3 The VCCI Con A Registration No. is C-817.
4. Tested Date: Aug. 28, 2012

4.7.3 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.

b. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

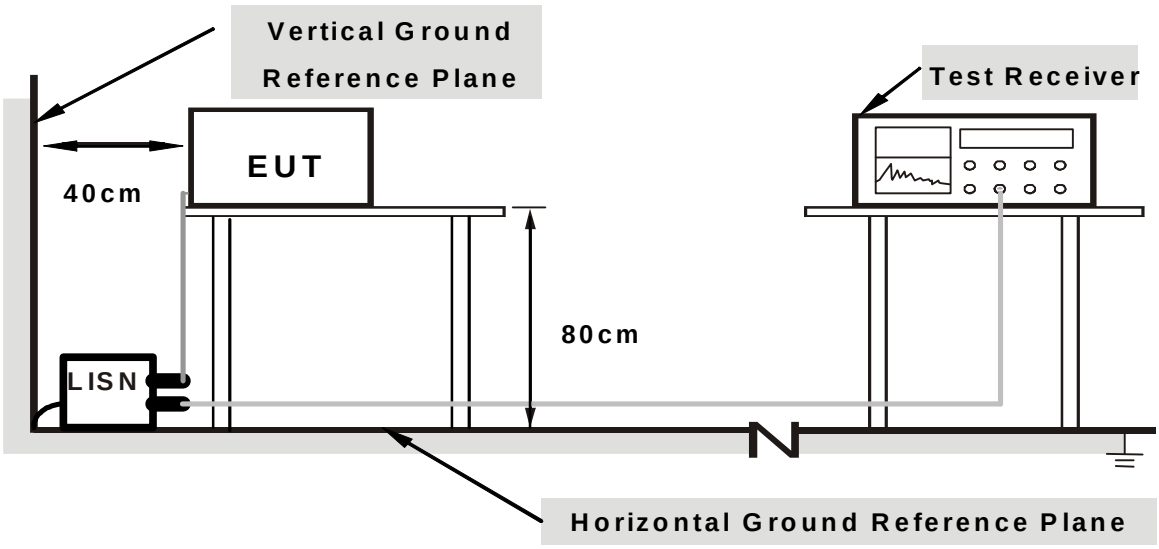
c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

d. The frequency range from 150kHz to 30MHz was searched. Emission level under (Limit – 20dB) was not recorded.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 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 related item – Photographs of the Test Configuration.

4.7.6 EUT OPERATING CONDITIONS

Same as the 4.6.6

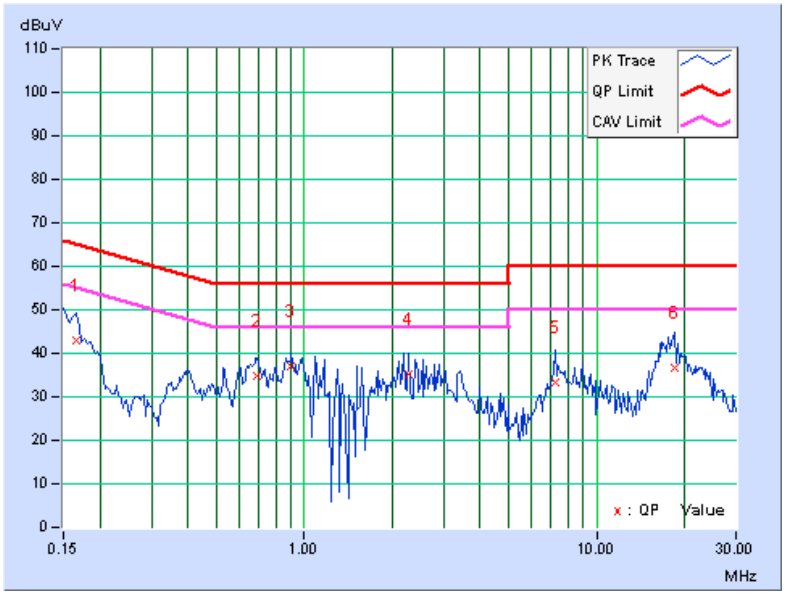
4.7.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.16562**	**0.06**	**42.83**	**39.17**	**42.89**	**39.23**	**65.18**	**55.18**	**-22.29**	**-15.95**
2	0.68906	0.09	34.86	16.50	34.95	16.59	56.00	46.00	-21.05	-29.41
3	0.90000	0.11	36.81	23.31	36.92	23.42	56.00	46.00	-19.08	-22.58
4	2.28516	0.20	34.94	23.17	35.14	23.37	56.00	46.00	-20.86	-22.63
5	7.22266	0.34	32.85	22.31	33.19	22.65	60.00	50.00	-26.81	-27.35
6	18.49609	0.59	35.91	29.04	36.50	29.63	60.00	50.00	-23.50	-20.37

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

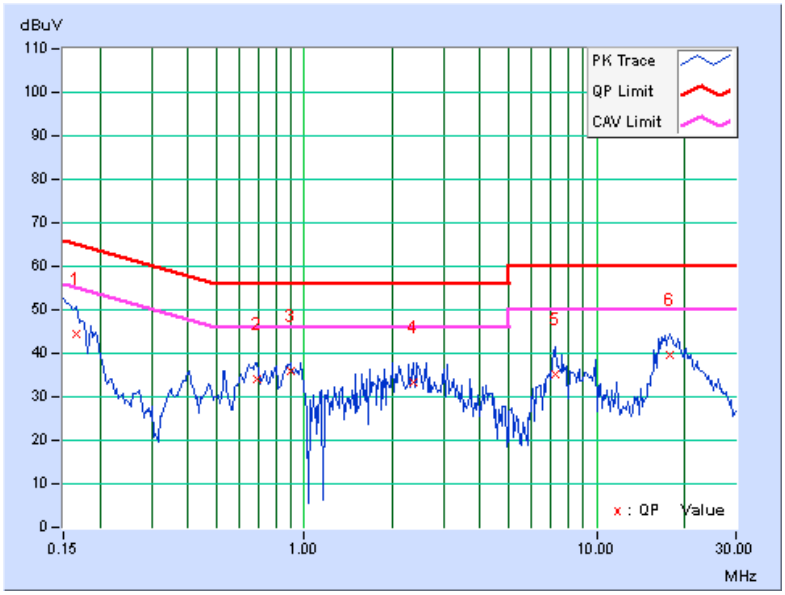


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	0.07	44.34	39.15	44.41	39.22	65.18	55.18	-20.77	-15.96
2	0.68516	0.10	34.06	15.50	34.16	15.60	56.00	46.00	-21.84	-30.40
3	0.90000	0.11	35.70	22.49	35.81	22.60	56.00	46.00	-20.19	-23.40
4	2.35547	0.19	33.26	21.02	33.45	21.21	56.00	46.00	-22.55	-24.79
5	7.21484	0.32	35.03	23.64	35.35	23.96	60.00	50.00	-24.65	-26.04
6	17.75391	0.56	39.21	32.27	39.77	32.83	60.00	50.00	-20.23	-17.17

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



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 according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

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: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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 modifications were made to the EUT by the lab during the test.

--- END ---