FCC TEST REPORT (15.407)

REPORT NO.:	RF130221E04-1
MODEL NO.:	CUS227
FCC ID:	PPD-CUS227
IC:	4104A-CUS227
RECEIVED:	Feb. 21, 2013
TESTED:	Feb. 28 to June 19, 2013
ISSUED:	June 26, 2013

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
RF130221E04-1	Original release	June 26, 2013

1. CERTIFICATION

PRODUCT:	802.11a/b/g/n 2x2 WLAN card
BRAND NAME:	Qualcomm Atheros
MODEL NO.:	CUS227
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Qualcomm Atheros, Inc.
TESTED:	Feb. 28 to June 19, 2013
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: CUS227) 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:** *June 26, 2013*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *June 26, 2013*
(May Chen, 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 -9.49dB at 0.150MHz
15.407(b/1/2/3) (b)(5)	RSS-210 A9.2	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.4dB at 16980.0MHz & 15780.0MHz.
15.407(a/1/2/3)	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/1/2/3)	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	No antenna connector is used.

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)	5.59 dB
Radiated emissions (1GHz -6GHz)	3.54 dB
Radiated emissions (6GHz -18GHz)	4.08 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11a/b/g/n 2x2 WLAN card
MODEL NO.	CUS227
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n : up to 300Mbps
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
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) 7 for 802.11n (HT40) **For 15.247(5GHz)** 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 190.003mW 802.11n (HT20): 185.792mW 802.11n (HT40): 120.049mW **For 15.247(2.4GHz)** 802.11b: 121.264mW 802.11g: 243.414mW 802.11n (HT20): 239.950mW 802.11n (HT40): 118.997mW **For 15.247(5GHz)** 802.11a: 379.385mW 802.11n (HT20): 379.840mW 802.11n (HT40): 336.788mW

ANTENNA TYPE	See item 3.2
ANTENNA CONNECTOR	See item 3.2
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT is a 2.4GHz & 5GHz WLAN device.
2. The EUT is 2 * 2 MIMO with 802.11n beam forming function.

MODULATION MODE	TX/RX FUNCTION
802.11b	2TX/2RX
802.11g	2TX/2RX
802.11a	2TX/2RX
802.11n (HT20)	2TX/2RX
802.11n (HT40)	2TX/2RX

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

3. 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.

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

3.2 DESCRIPTION OF ANTENNA

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

Brand	Model	Antenna Type	Antenna gain 2.4G(dBi)	Antenna gain 5G(dBi)	Connector Type
Qualcomm	CUS227 V03-2	Integrated PCB antenna	2	3	NA

3.3 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

8 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

4 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:

8 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

3 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	UE < 1G	UE ³ 1G	APCM	
-	√	√	√	√	-

Where **PLC:** AC Power Line Conducted Emission **UE < 1G:** Unwanted Emission below 1GHz

UE ³ 1G: Unwanted 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.**

AC 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)
802.11a	36 to 140	132	OFDM	6

UNWANTED EMISSION TEST (BELOW 1 GHz):

☒ Radiated versus Conducted Measurements

☒ 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	132	OFDM	6

UNWANTED EMISSION TEST (ABOVE 1 GHz):

☒ Radiated versus Conducted Measurements
☒ 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	20deg. C, 70%RH	120Vac, 60Hz	Mike Hsieh
UE<1G	25deg. C, 74%RH	120Vac, 60Hz	Robert Cheng
UE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Robert Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Amos Chuang

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

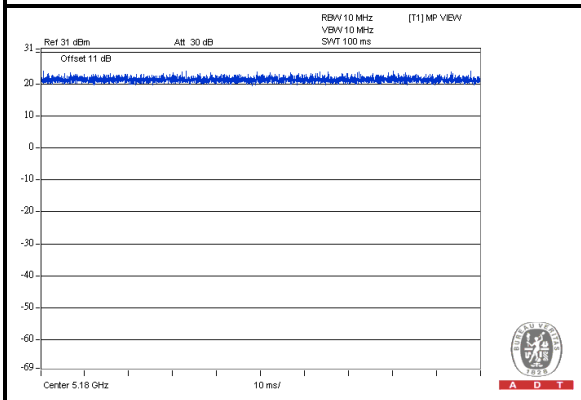
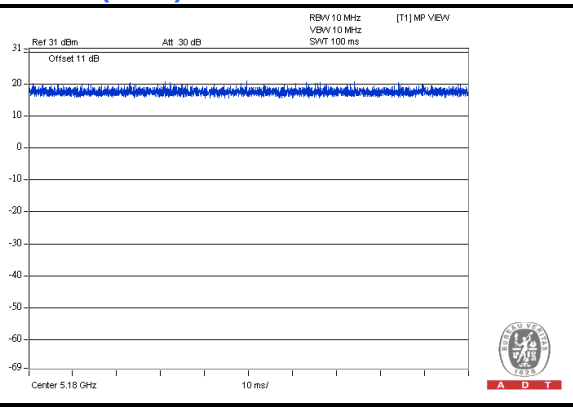
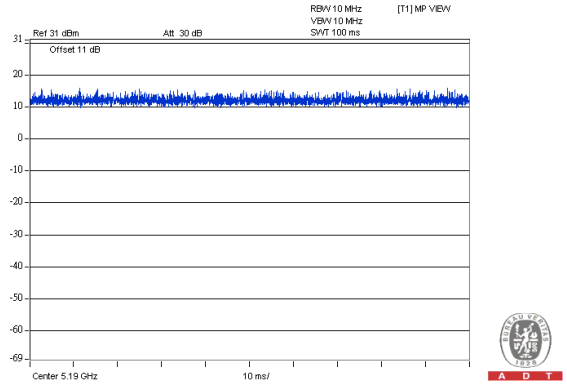
The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)
Canada RSS-210 Issue 8 (2010-12)
Canada RSS-Gen Issue 3 (2010-12)
789033 D01 General UNII Test Procedures v01 r03
662911 D01 Multiple Transmitter Output v01 r02
ANSI C63.10-2009

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 100 %, 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.

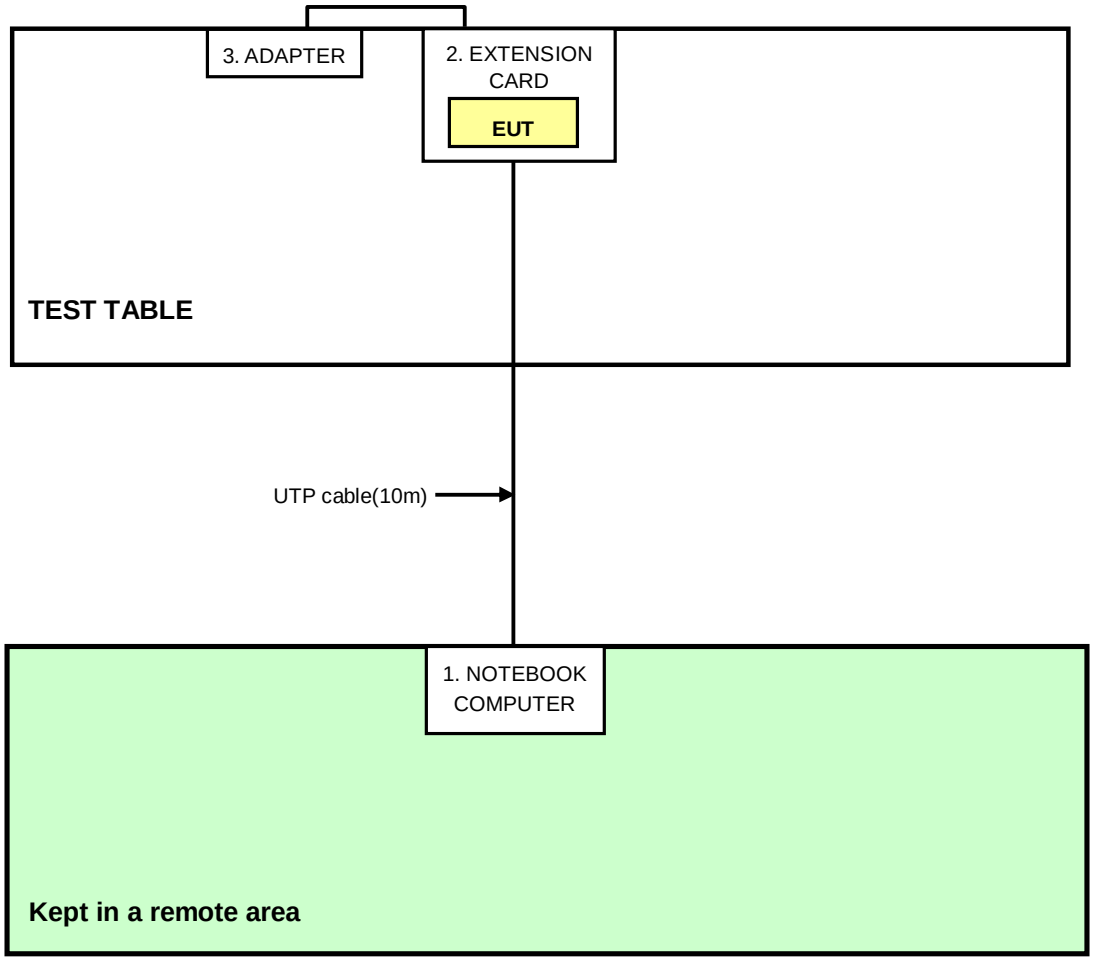
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER (For conducted emission test)	DELL	PP32LA	GSLB32S	FCC DoC
	NOTEBOOK COMPUTER (For other test items)	DELL	PP27L	7YLB32S	FCC DoC
2	EXTENSION CARD	Qualcomm Atheros	PB124	NA	NA
3	Adapter	JENTEC TECHNOLOGY CO,.LTD.	CF1205-B	795558	NA

No.	Signal cable description
1	UTP cable(10m)
2	NA
3	DC line (1.5m)

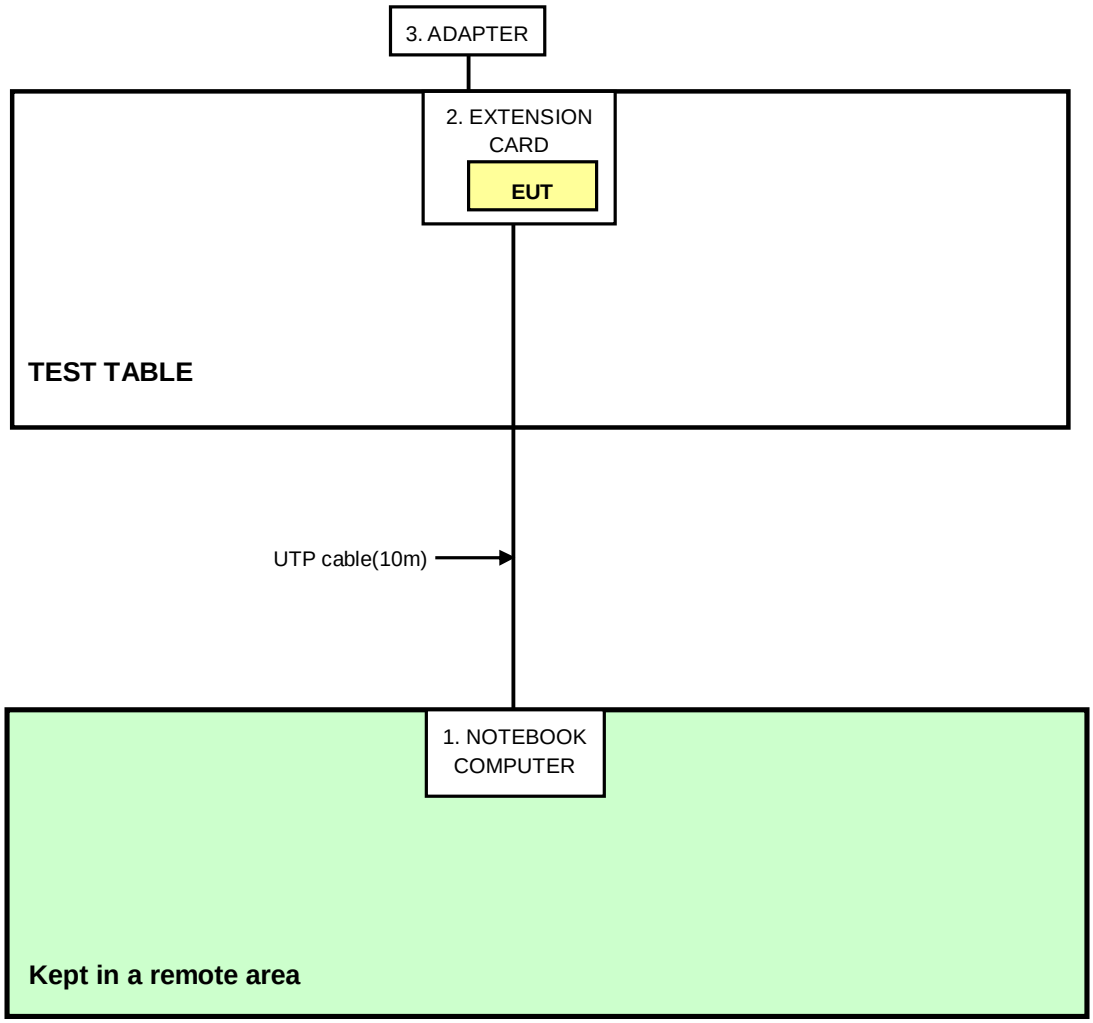
Note: The power cords of the above support units were unshielded (1.8m).

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.

Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

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
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 : June 19, 2013

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP40	100037	Nov. 01, 2012	Oct. 31, 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 : Apr. 11, 2013

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

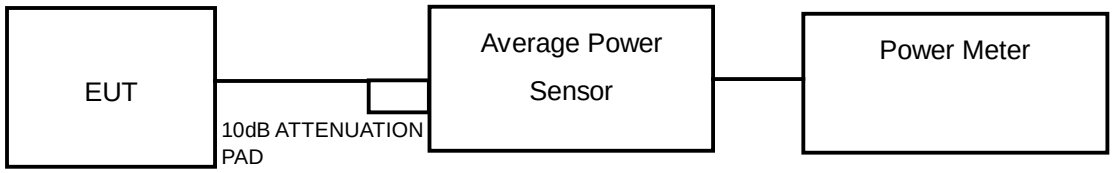
1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

4.1.4 DEVIATION FROM TEST STANDARD

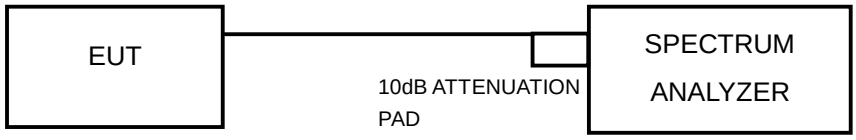
No deviation

4.1.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.1.6 EUT OPERATING CONDITIONS

The software (Atheros Radio test 2_Version:2.3) 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	13.03	12.88	39.500	15.97	16.13	PASS
40	5200	12.93	13.26	40.818	16.11	16.13	PASS
48	5240	12.85	13.31	40.704	16.10	16.13	PASS
52	5260	19.68	19.49	181.817	22.60	23.19	PASS
60	5300	19.22	19.55	173.717	22.40	23.19	PASS
64	5320	16.37	16.71	90.232	19.55	23.13	PASS
100	5500	14.61	15.44	63.902	18.06	23.16	PASS
116	5580	19.17	20.31	190.003	22.79	23.83	PASS
132	5660	18.73	18.96	153.350	21.86	23.19	PASS
140	5700	14.39	14.23	53.964	17.32	23.13	PASS

NOTE:

1. 5150~5250MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 17-(6.01-6) = 16.99dBm.
2. 5250~5350MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.
3. 5470~5725MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.

802.11a

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	18.49	18.40
40	5200	18.35	18.40
48	5240	18.60	18.45
52	5260	29.81	23.56
60	5300	22.32	28.38
64	5320	18.30	18.95
100	5500	18.58	18.55
116	5580	35.18	36.13
132	5660	31.32	26.01
140	5700	20.20	18.26

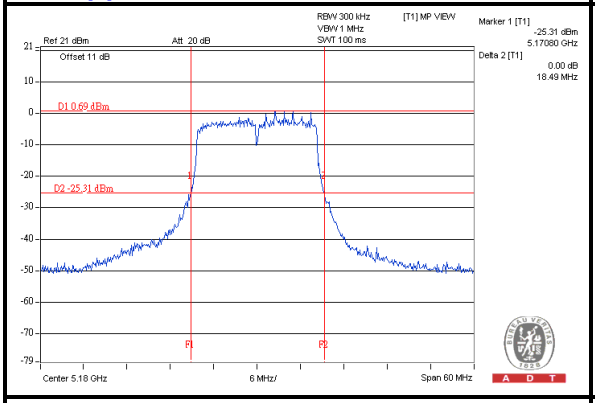
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a. 5180MHz: 16.65 dBm < 16.99dBm
b. 5200MHz: 16.64 dBm < 16.99dBm
c. 5240MHz: 16.66 dBm < 16.99dBm
d. 5260MHz: 24.72 dBm > 23.99dBm
e. 5300MHz: 24.49 dBm > 23.99dBm
f. 5320MHz: 23.62 dBm < 23.99dBm
g. 5500MHz: 23.68 dBm < 23.99dBm
h. 5580MHz: 26.46 dBm > 23.99dBm
i. 5660MHz: 25.15 dBm > 23.99dBm
j. 5700MHz: 23.62 dBm <> 23.99dBm

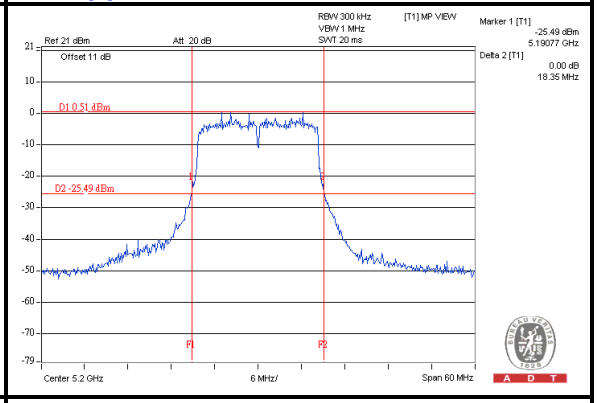
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a. 5180MHz: 16.13 dBm < 16.99dBm
b. 5200MHz: 16.13 dBm < 16.99dBm
c. 5240MHz: 16.13 dBm < 16.99dBm
d. 5260MHz: 23.19 dBm < 23.99dBm
e. 5300MHz: 23.19 dBm < 23.99dBm
f. 5320MHz: 23.13 dBm < 23.99dBm
g. 5500MHz: 23.16 dBm < 23.99dBm
h. 5580MHz: 23.83 dBm < 23.99dBm
i. 5660MHz: 23.19 dBm < 23.99dBm
j. 5700MHz: 23.13 dBm <> 23.99dBm

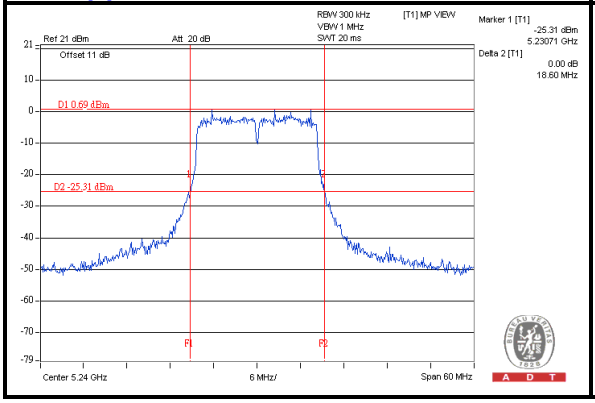
Chain(0) : CH36



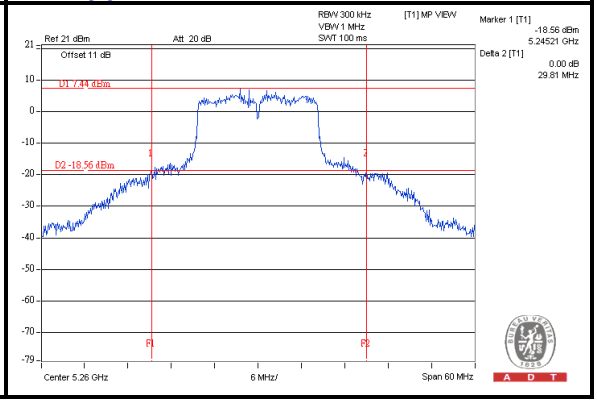
Chain(0) : CH40



Chain(0) : CH48



Chain(0) : CH52



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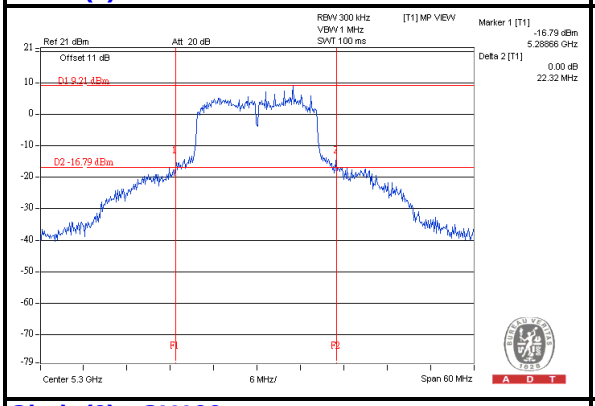
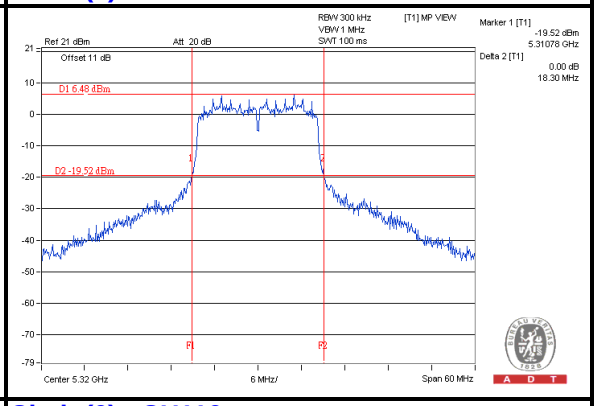
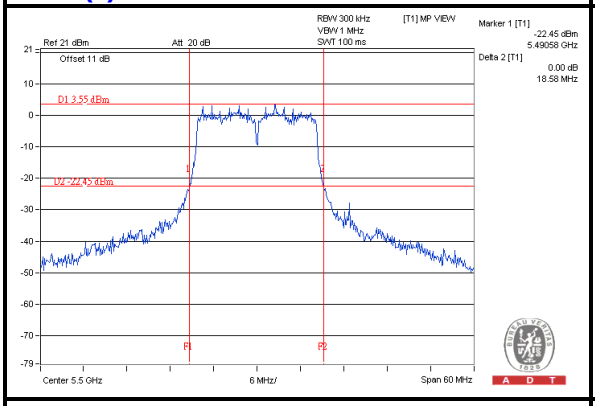


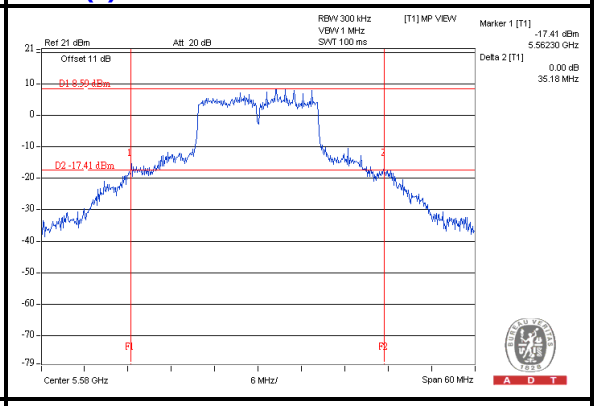
Chain(0) : CH64



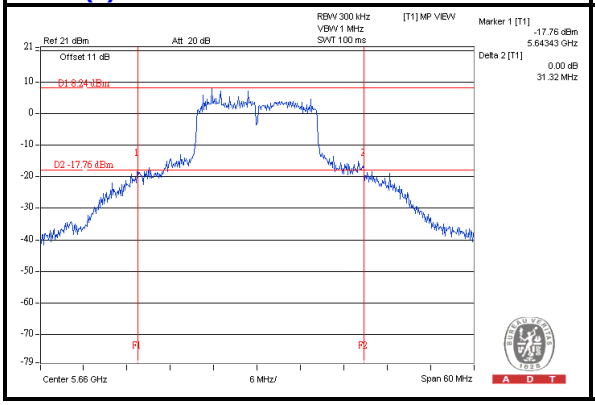
Chain(0) : CH100



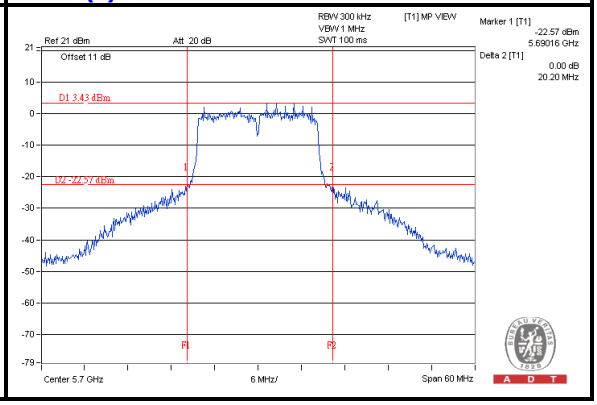
Chain(0) : CH116



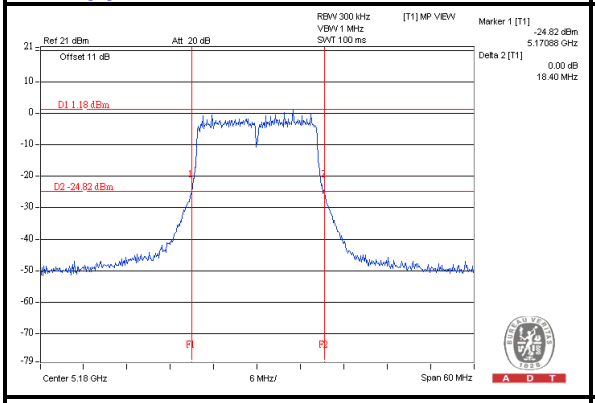
Chain(0) : CH132



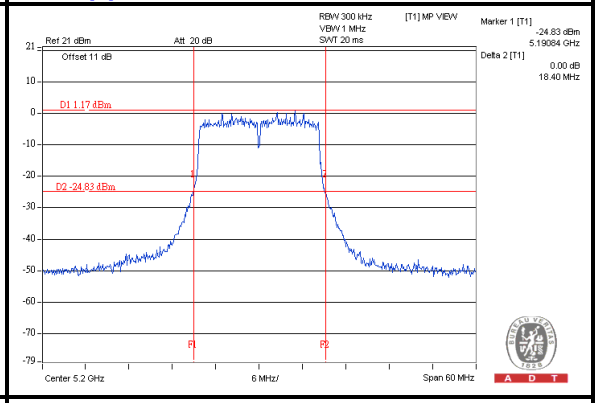
Chain(0) : CH140



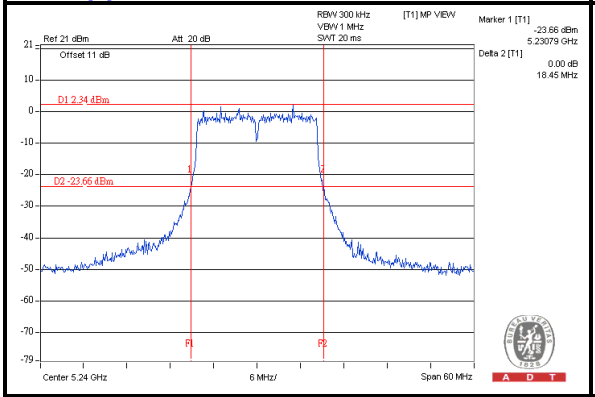
Chain(1) : CH36



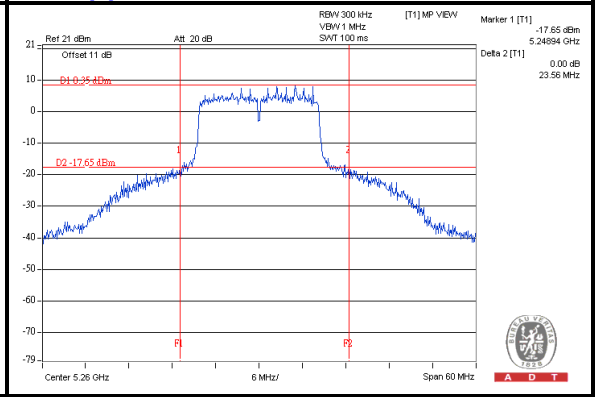
Chain(1) : CH40



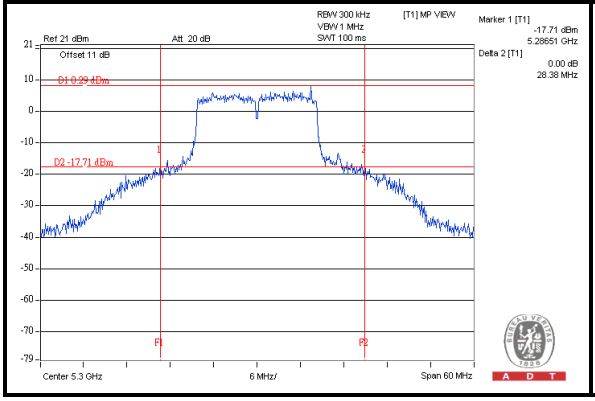
Chain(1) : CH48



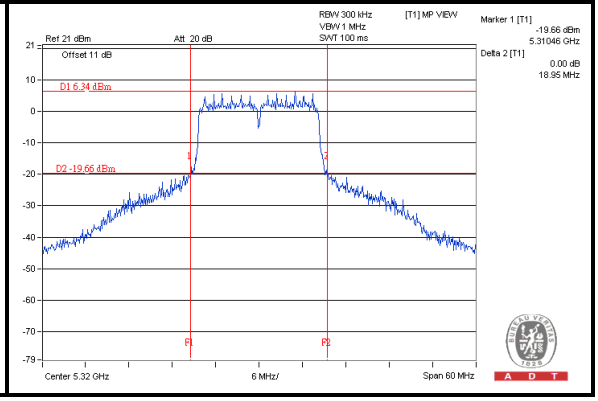
Chain(1) : CH52



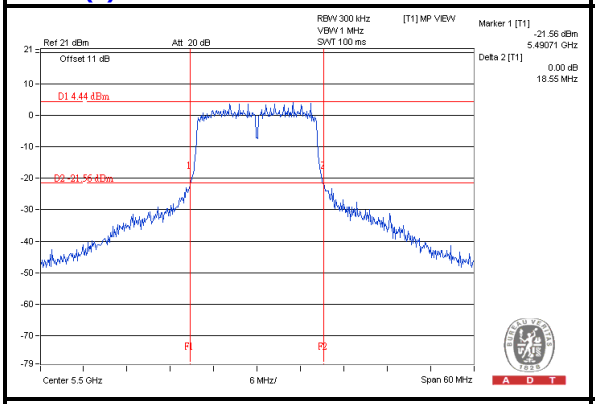
Chain(1) : CH60



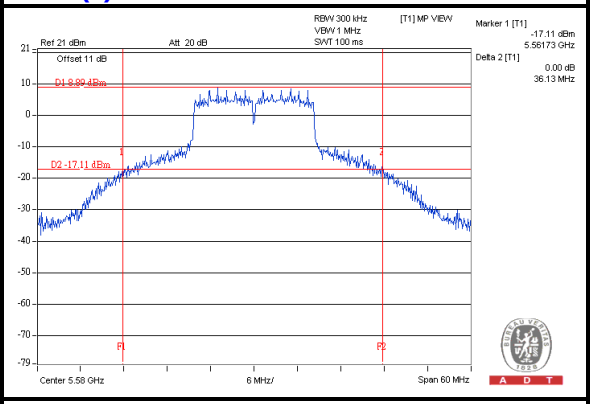
Chain(1) : CH64



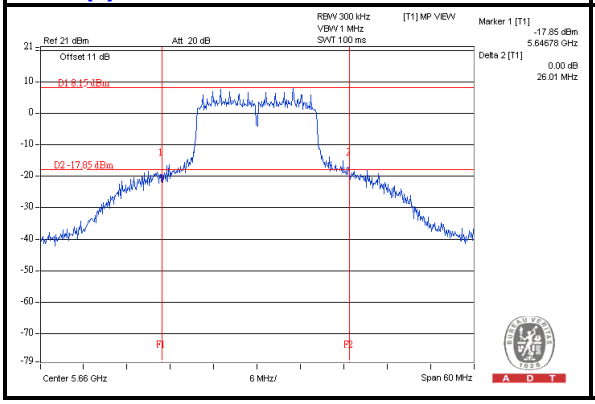
Chain(1) : CH100



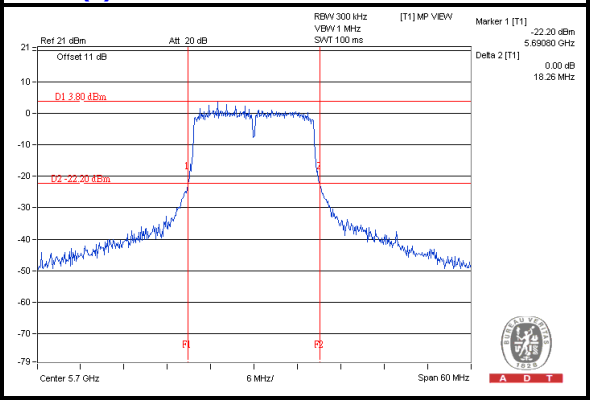
Chain(1) : CH116



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	13.36	13.27	42.909	16.33	16.43	PASS
40	5200	12.99	13.13	40.466	16.07	16.43	PASS
48	5240	12.96	13.82	43.869	16.42	16.43	PASS
52	5260	19.62	19.51	180.953	22.58	23.49	PASS
60	5300	19.06	19.55	170.695	22.32	23.49	PASS
64	5320	15.69	16.09	77.712	18.90	23.43	PASS
100	5500	15.45	16.27	77.439	18.89	23.43	PASS
116	5580	19.05	20.23	185.792	22.69	23.55	PASS
132	5660	19.01	19.39	166.512	22.21	23.49	PASS
140	5700	13.61	13.71	46.457	16.67	23.43	PASS

NOTE:

1. 5150~5250MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to 17-(6.01-6) = 16.99dBm.
2. 5250~5350MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.
3. 5470~5725MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.

802.11n (HT20)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	19.63	19.50
40	5200	19.80	19.33
48	5240	19.45	19.42
52	5260	25.24	23.54
60	5300	30.77	27.35
64	5320	19.80	19.76
100	5500	19.32	19.46
116	5580	33.48	37.61
132	5660	35.80	32.55
140	5700	20.59	19.54

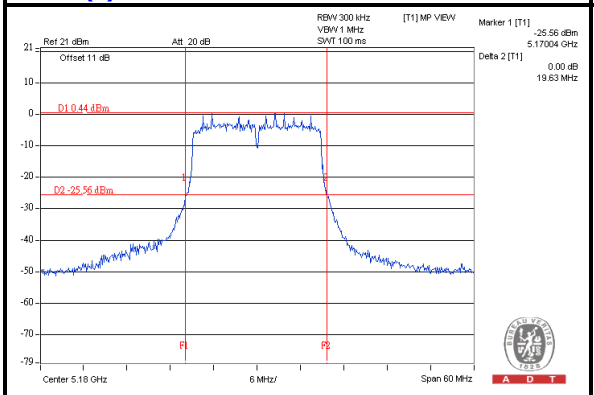
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a. 5180MHz: 16.90 dBm < 16.99dBm
b. 5200MHz: 16.86 dBm < 16.99dBm
c. 5240MHz: 16.88 dBm < 16.99dBm
d. 5260MHz: 24.72 dBm > 23.99dBm
e. 5300MHz: 25.37 dBm > 23.99dBm
f. 5320MHz: 23.96 dBm < 23.99dBm
g. 5500MHz: 23.86 dBm < 23.99dBm
h. 5580MHz: 26.25 dBm > 23.99dBm
i. 5660MHz: 26.13 dBm > 23.99dBm
j. 5700MHz: 23.91 dBm <> 23.99dBm

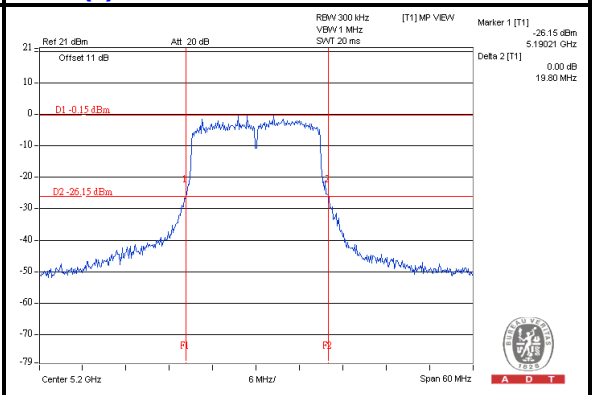
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a. 5180MHz: 16.43 dBm < 16.99dBm
b. 5200MHz: 16.43 dBm < 16.99dBm
c. 5240MHz: 16.43 dBm < 16.99dBm
d. 5260MHz: 23.49 dBm < 23.99dBm
e. 5300MHz: 23.49 dBm < 23.99dBm
f. 5320MHz: 23.43 dBm < 23.99dBm
g. 5500MHz: 23.43 dBm < 23.99dBm
h. 5580MHz: 23.55 dBm < 23.99dBm
i. 5660MHz: 23.49 dBm < 23.99dBm
j. 5700MHz: 23.43 dBm <> 23.99dBm

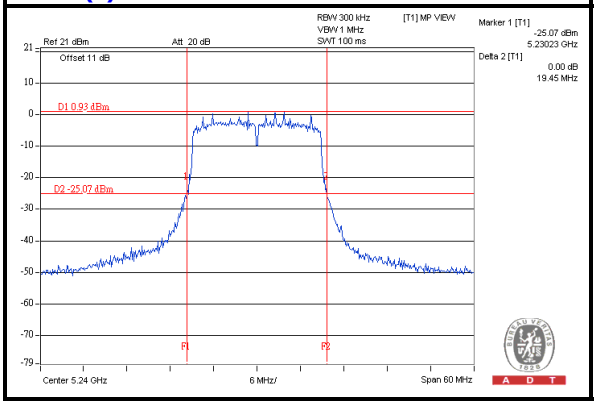
Chain(0) : CH36



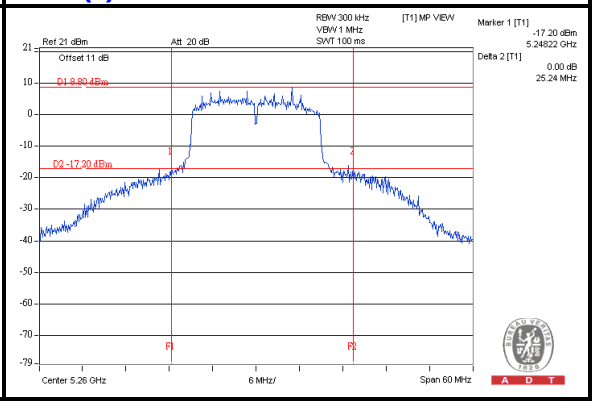
Chain(0) : CH40



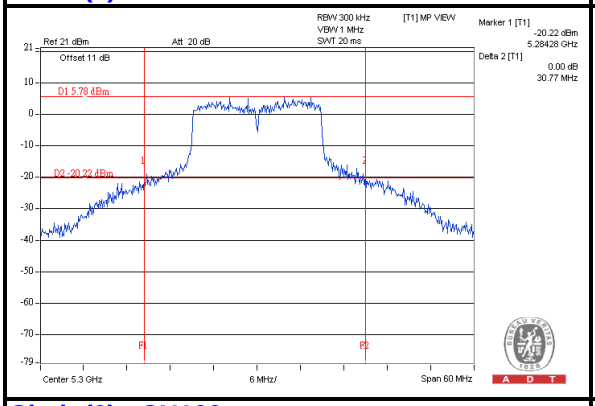
Chain(0) : CH48



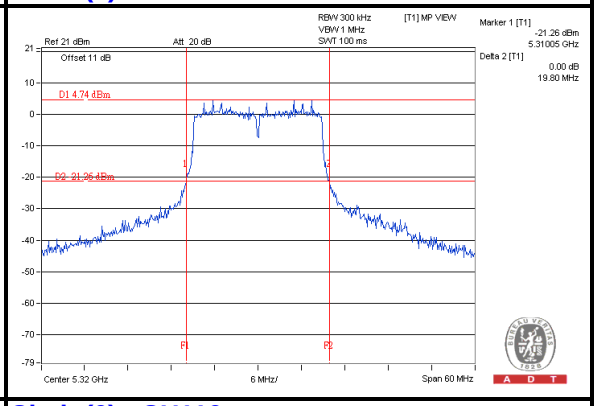
Chain(0) : CH52



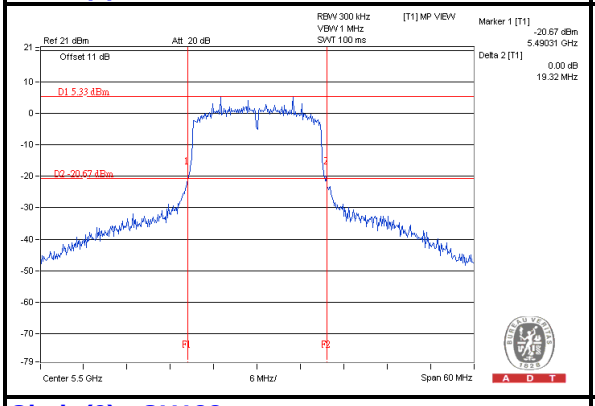
Chain(0) : CH60



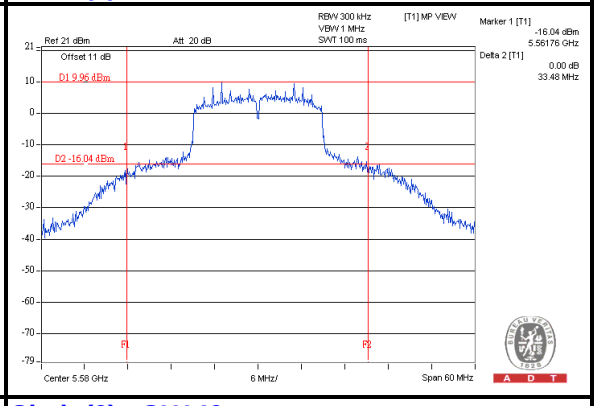
Chain(0) : CH64



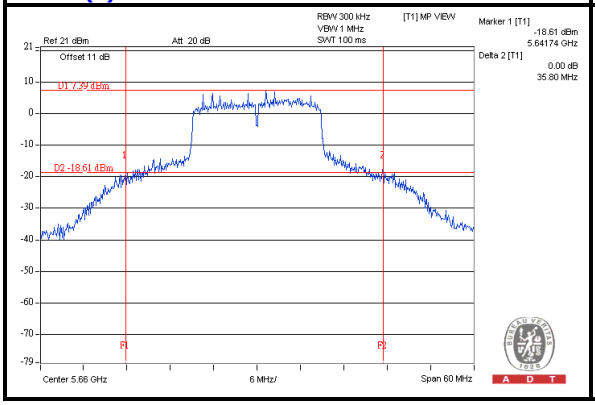
Chain(0) : CH100



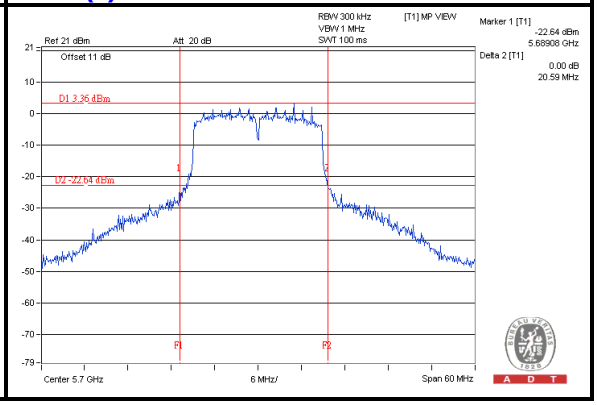
Chain(0) : CH116



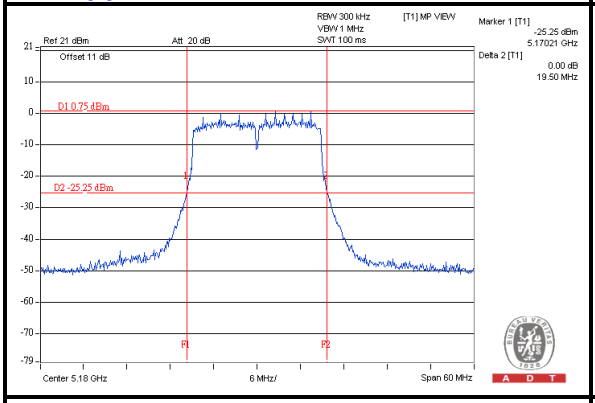
Chain(0) : CH132



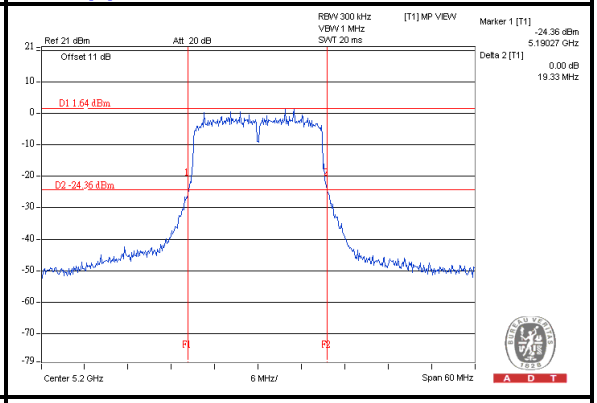
Chain(0) : CH140



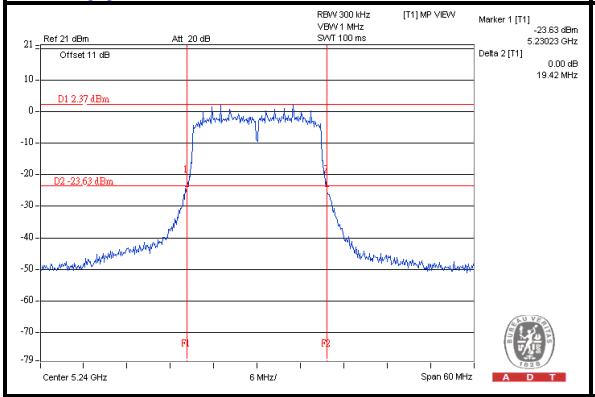
Chain(1) : CH36



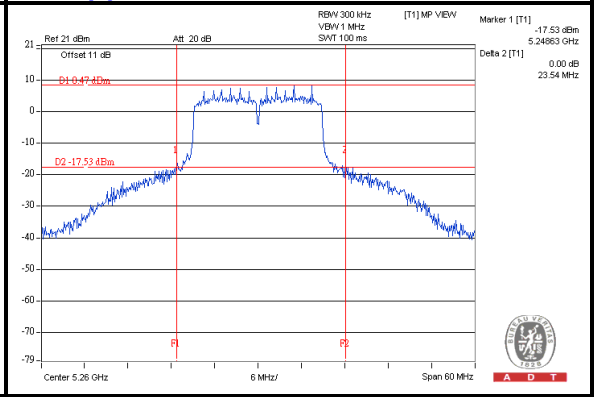
Chain(1) : CH40



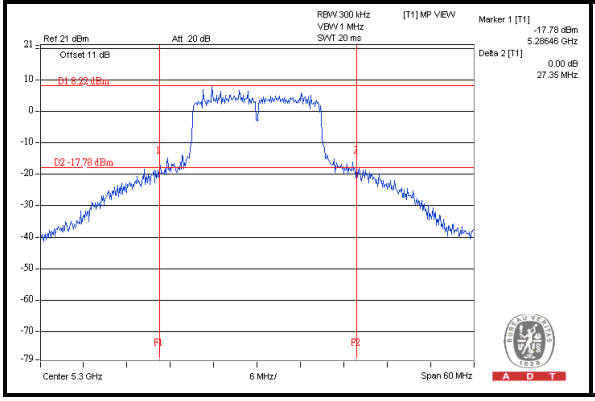
Chain(1) : CH48



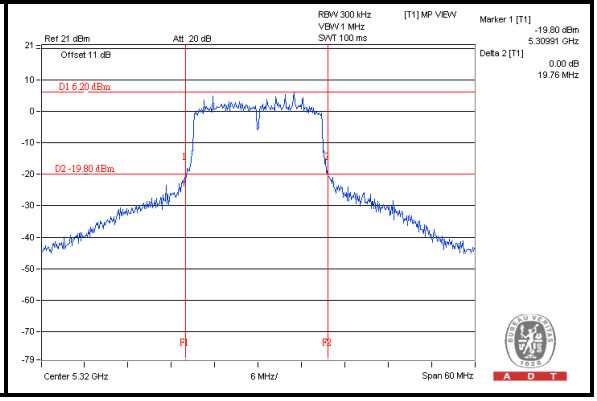
Chain(1) : CH52



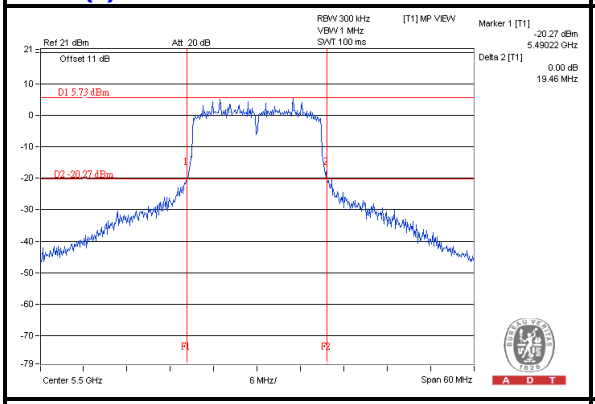
Chain(1) : CH60



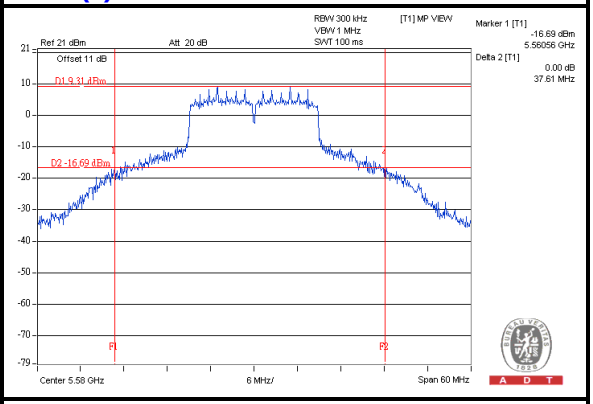
Chain(1) : CH64



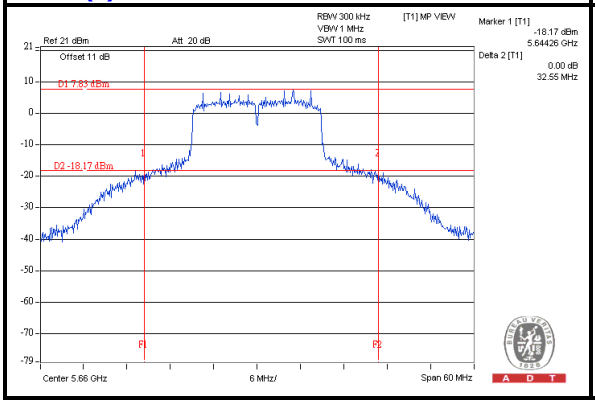
Chain(1) : CH100



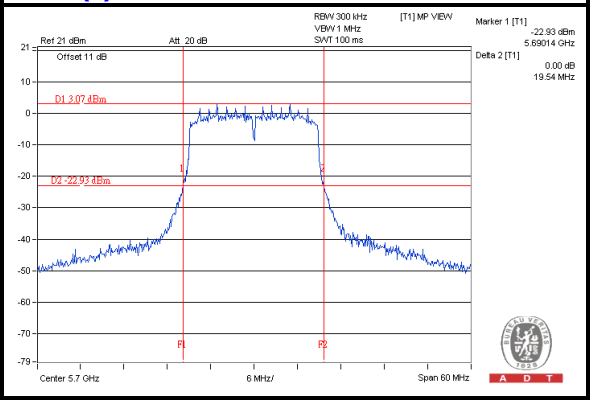
Chain(1) : CH116



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	13.87	13.67	47.659	16.78	16.99	PASS
46	5230	13.41	13.59	44.784	16.51	16.99	PASS
54	5270	17.61	17.24	110.643	20.44	23.99	PASS
62	5310	13.05	13.03	40.275	16.05	23.99	PASS
102	5510	13.28	13.93	45.998	16.63	23.99	PASS
110	5550	17.31	18.21	120.049	20.79	23.99	PASS
134	5670	16.05	16.75	87.587	19.42	23.99	PASS

NOTE:

1. 5150~5250MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 17-(6.01-6) = 16.99dBm.
2. 5250~5350MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.
3. 5470~5725MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , therefore the limit needs to reduce, so the power limit shall be reduced to 24-(6.01-6) = 23.99dBm.

802.11n (HT40)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	41.71	41.89
46	5230	41.86	41.79
54	5270	48.82	45.08
62	5310	42.03	41.45
102	5510	41.55	41.79
110	5550	53.14	72.66
134	5670	55.36	42.71

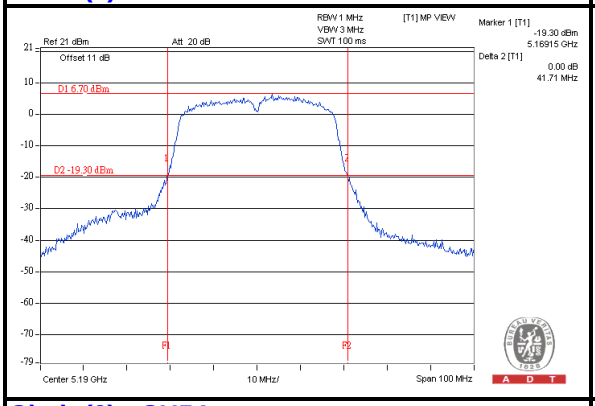
Note: For FCC output power limitation is determined based on 26dB bandwidth.

a. 5190MHz: 20.20 dBm > 16.99dBm
b. 5230MHz: 20.21 dBm > 16.99dBm
c. 5270MHz: 27.54 dBm > 23.99dBm
d. 5310MHz: 27.18 dBm > 23.99dBm
e. 5510MHz: 27.19 dBm > 23.99dBm
f. 5550MHz: 28.25 dBm > 23.99dBm
g. 5670MHz: 27.31 dBm > 23.99dBm

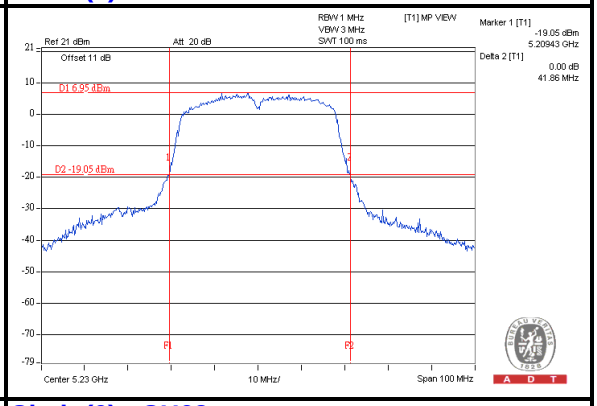
Note: For Industry Canada output power limitation is determined based on 99% bandwidth.

a. 5190MHz: 19.54 dBm > 16.99dBm
b. 5230MHz: 19.54 dBm > 16.99dBm
c. 5270MHz: 26.54 dBm > 16.99dBm
d. 5310MHz: 26.51 dBm > 23.99dBm
e. 5510MHz: 26.51 dBm > 23.99dBm
f. 5550MHz: 26.56 dBm > 23.99dBm
g. 5670MHz: 26.51 dBm > 23.99dBm

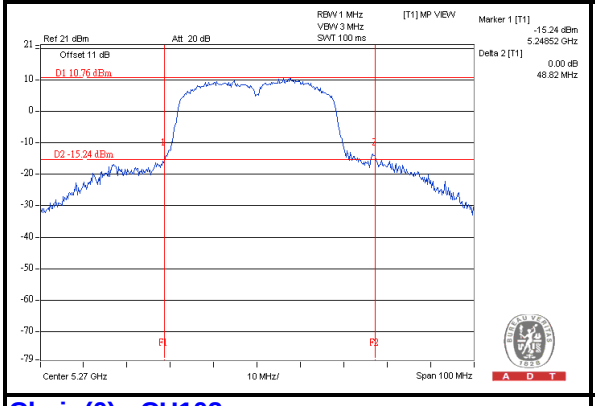
Chain(0) : CH38



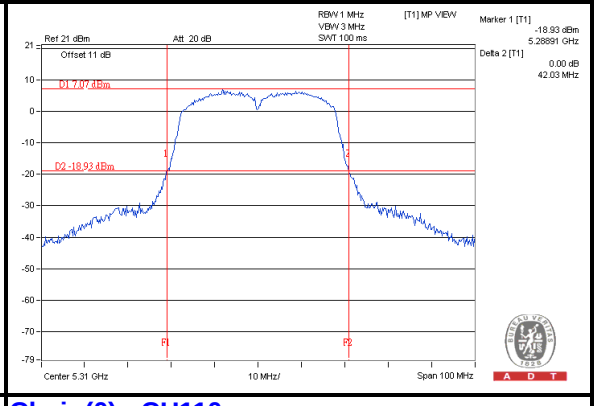
Chain(0) : CH46



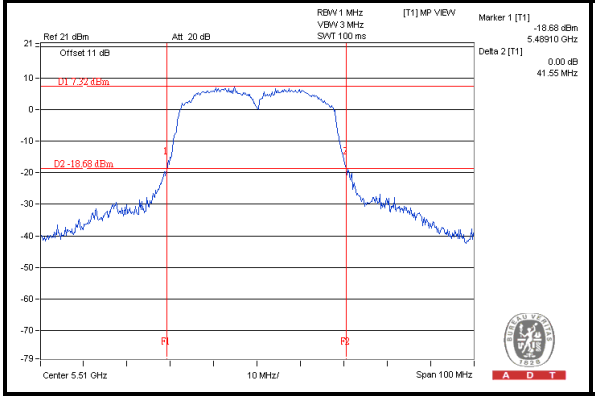
Chain(0) : CH54



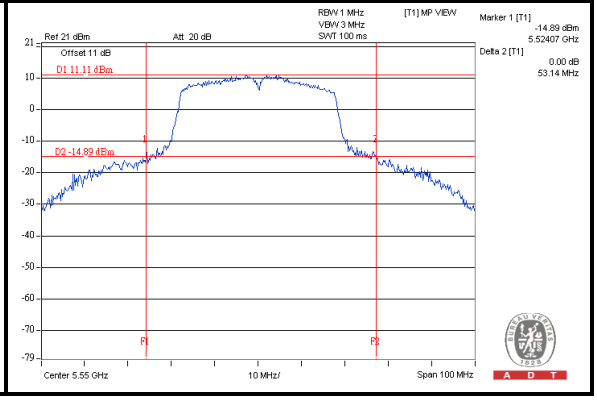
Chain(0) : CH62

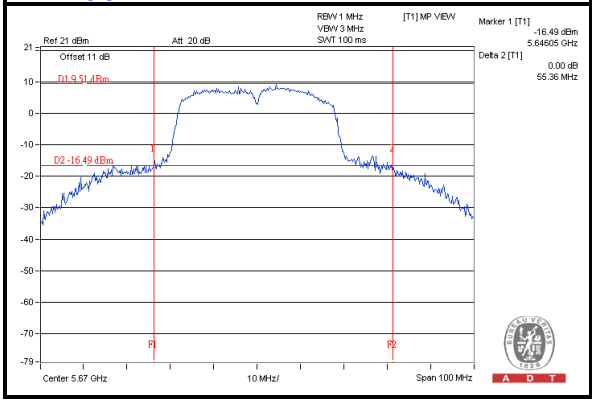


Chain(0) : CH102

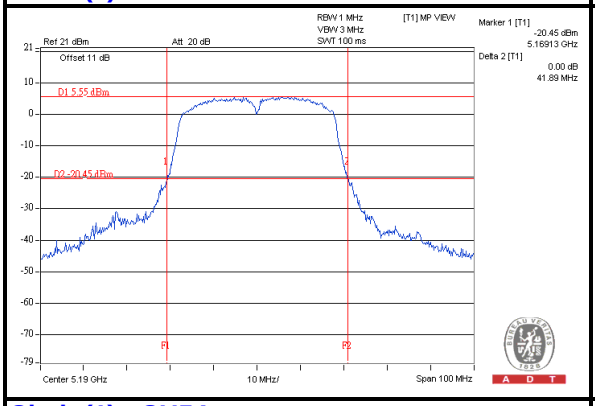


Chain(0) : CH110

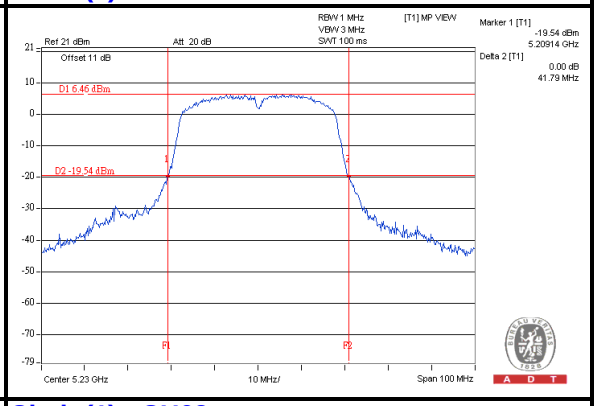


Chain(0) : CH134	
	

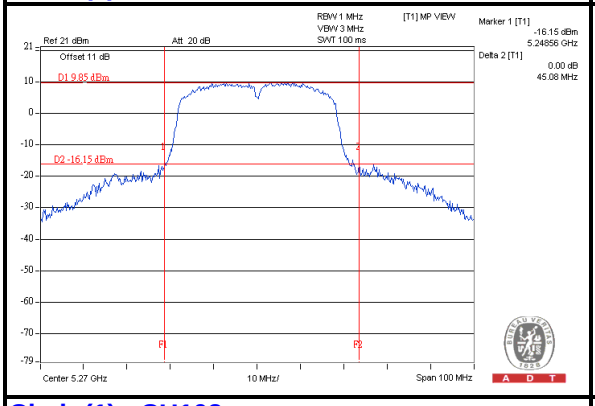
Chain(1) : CH38



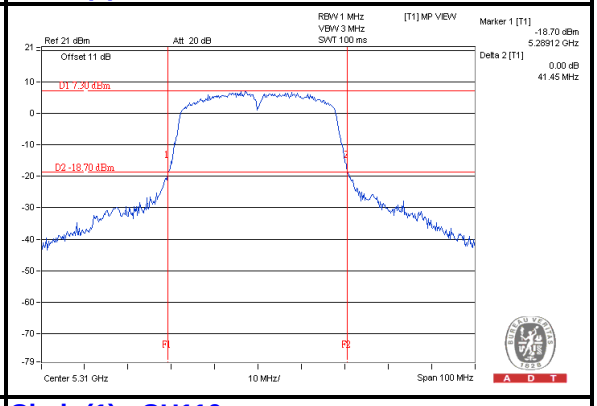
Chain(1) : CH46



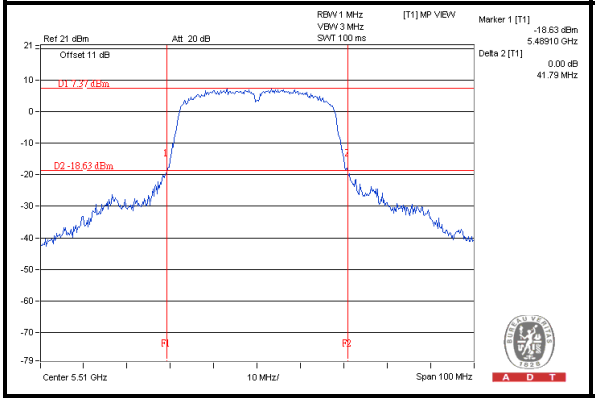
Chain(1) : CH54



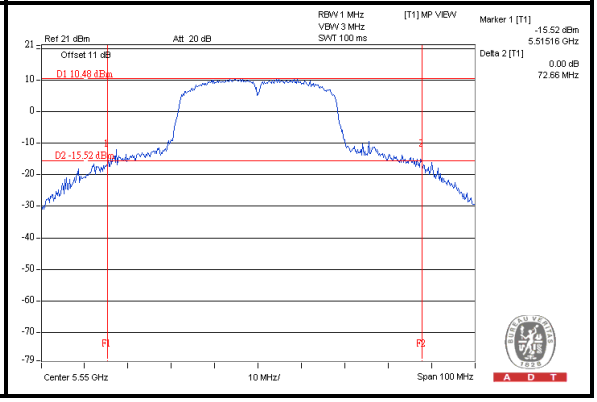
Chain(1) : CH62

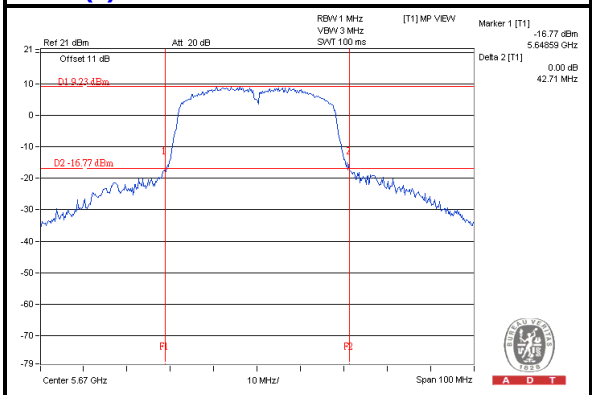


Chain(1) : CH102



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
R&S Spectrum Analyzer	FSP40	100037	Nov. 01, 2012	Oct. 31, 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 : June 19, 2013

4.2.3 TEST PROCEDURES

Using method SA-1

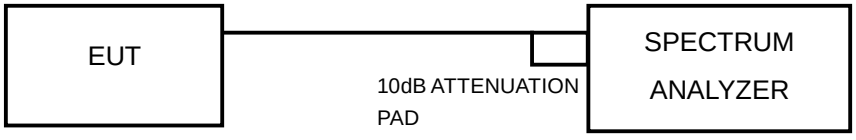
Set span to encompass the entire emission bandwidth (EBW) of the signal.

1. Set RBW = 30 KHz, Set VBW ≥ 1 MHz, Detector = RMS
2. Set Channel power measure = 1MHz
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

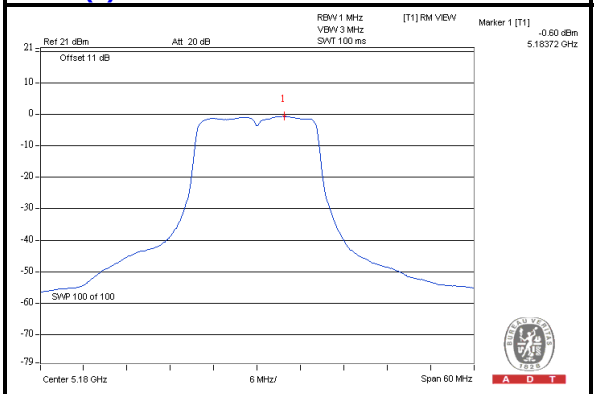
802.11a

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)				
36	5180	-0.61	-0.78	1.7046	2.32	3.99	PASS
40	5200	-0.75	-0.42	1.7492	2.43	3.99	PASS
48	5240	0.39	0.40	2.1905	3.41	3.99	PASS
52	5260	6.73	6.23	8.9074	9.50	10.99	PASS
60	5300	6.52	6.33	8.7829	9.44	10.99	PASS
64	5320	4.55	4.03	5.3803	7.31	10.99	PASS
100	5500	2.70	2.70	3.7242	5.71	10.99	PASS
116	5580	7.10	6.48	9.5749	9.81	10.99	PASS
132	5660	5.63	5.15	6.9293	8.41	10.99	PASS
140	5700	2.26	1.78	3.1893	5.04	10.99	PASS

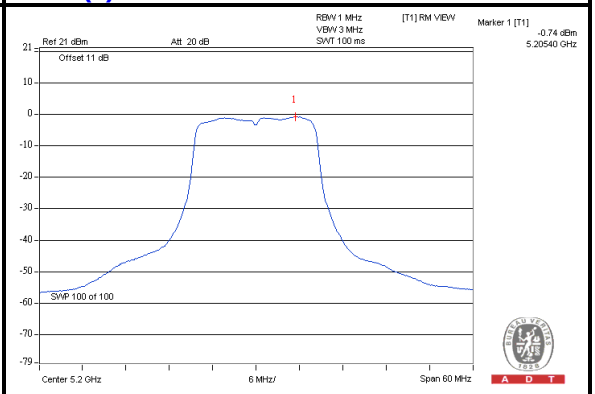
NOTE:

1. 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.
2. 5150~5250MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.01dBi > 6dBi , so the power density limit shall be reduced to 4-(6.01-6) = 3.99dBm.
3. 5250~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.01dBi > 6dBi , so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.
4. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.01dBi > 6dBi , so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.

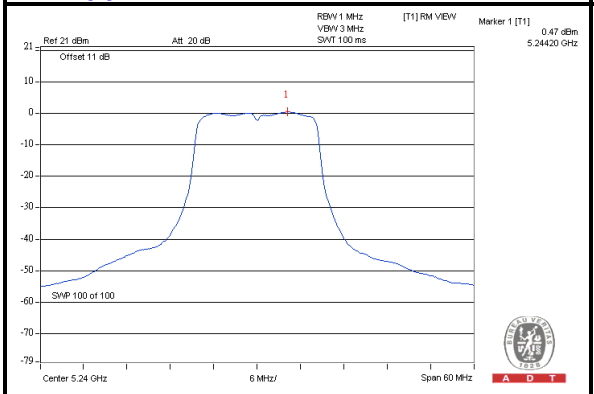
Chain(0) : CH36



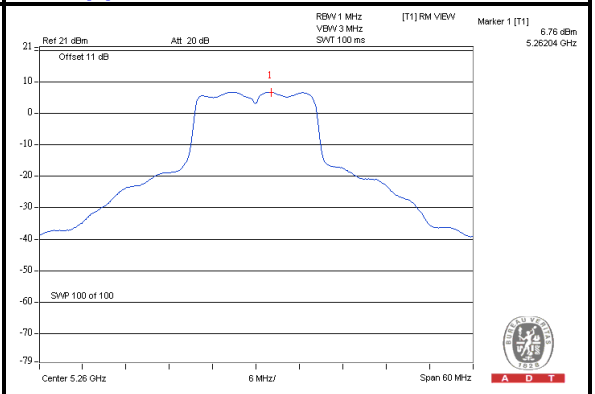
Chain(0) : CH40



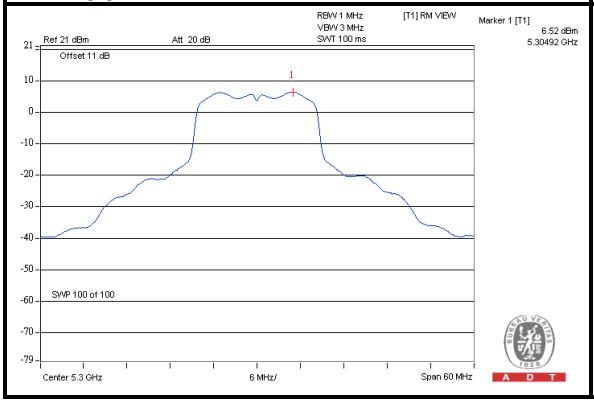
Chain(0) : CH48



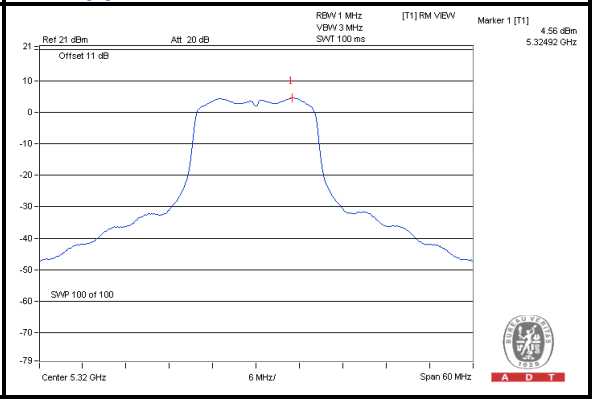
Chain(0) : CH52



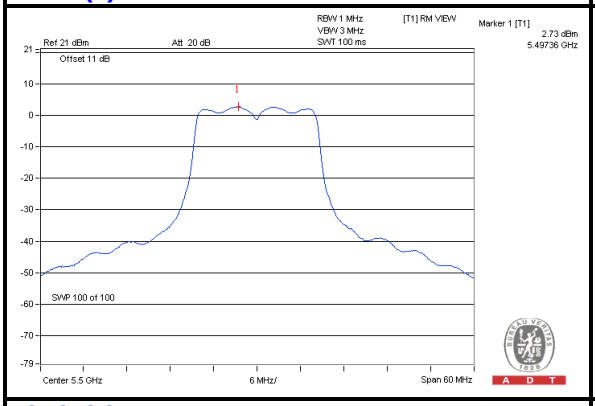
Chain(0) : CH60



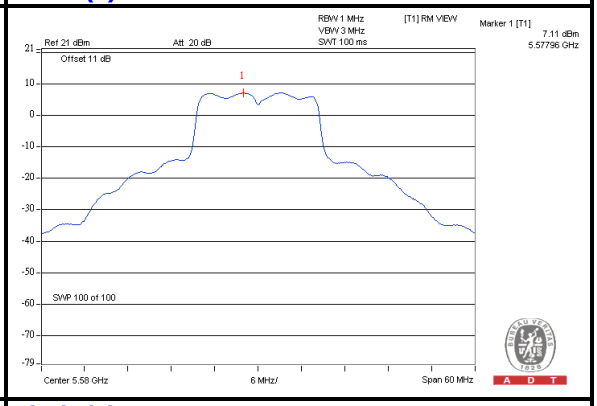
Chain(0) : CH64



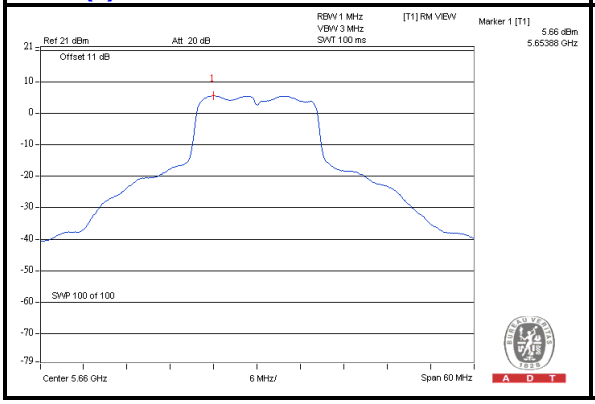
Chain(0) : CH100



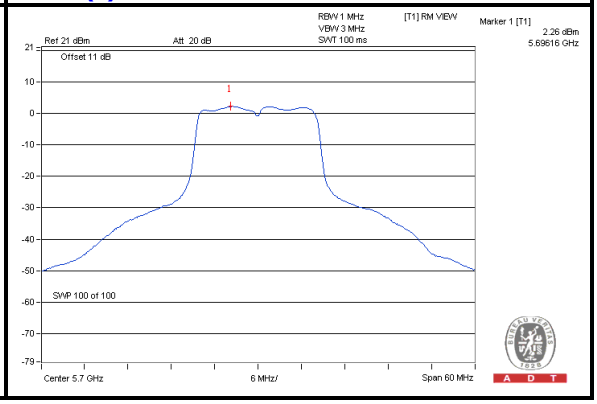
Chain(0) : CH116



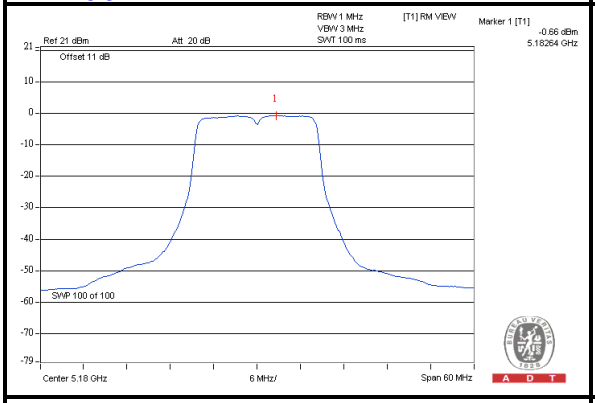
Chain(0) : CH132



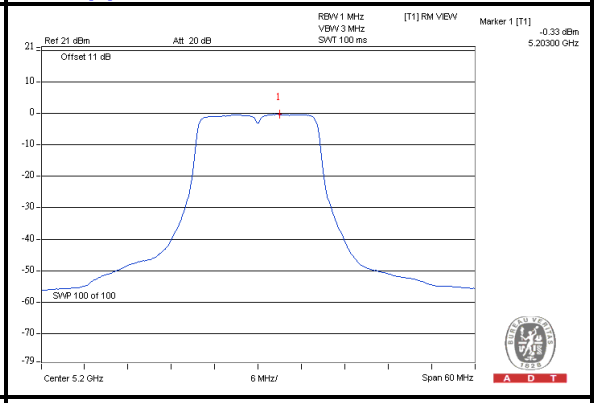
Chain(0) : CH140



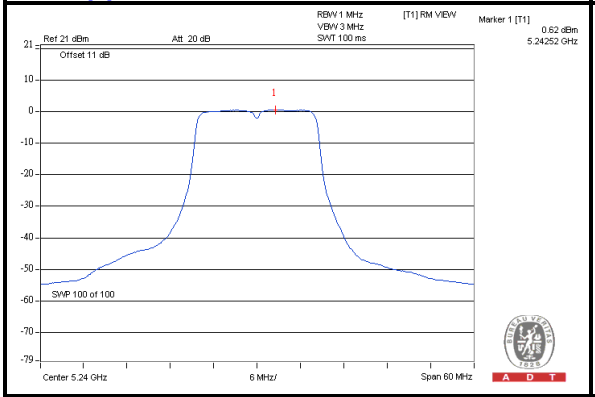
Chain(1) : CH36



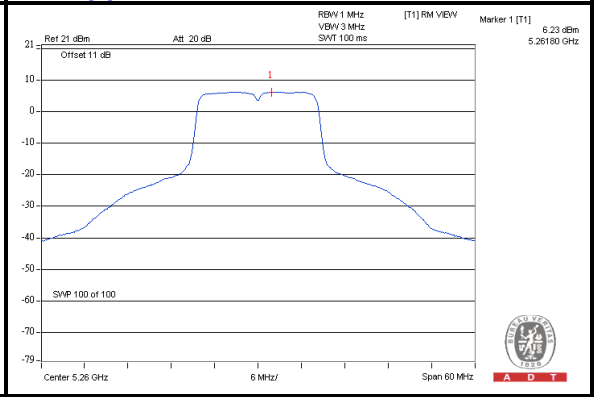
Chain(1) : CH40



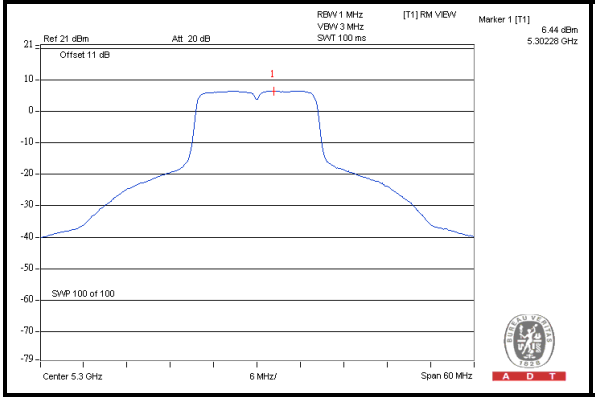
Chain(1) : CH48



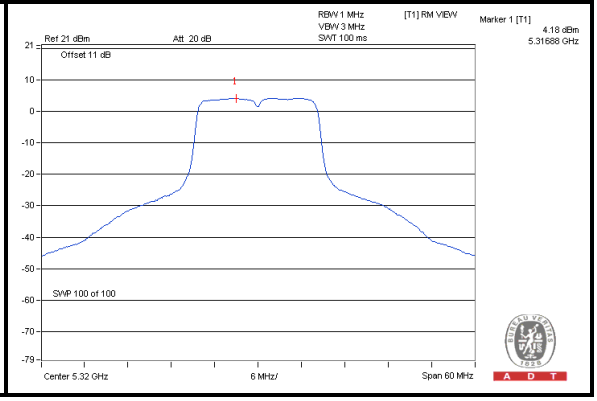
Chain(1) : CH52

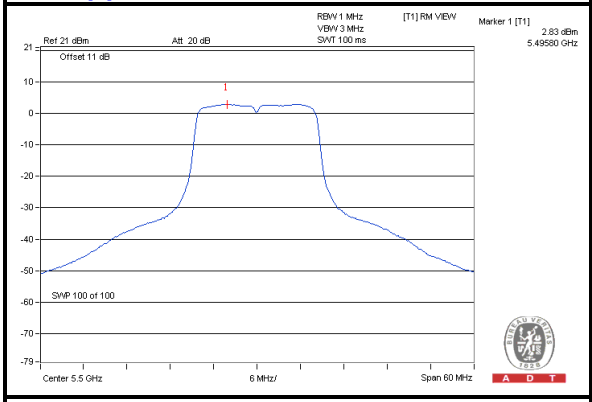
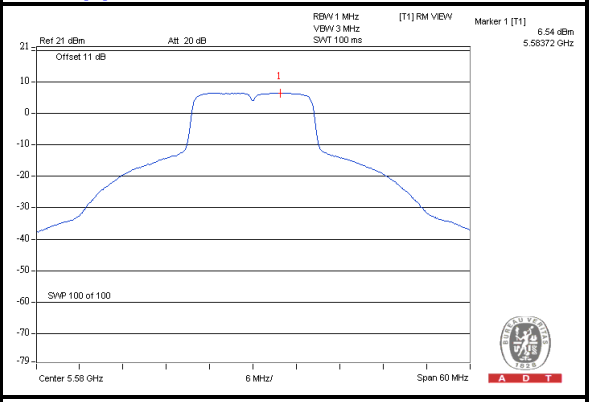
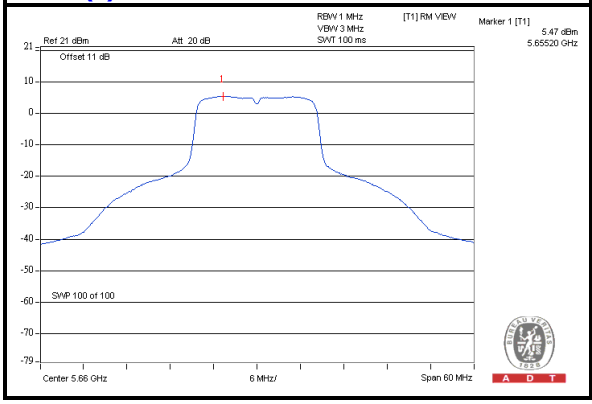
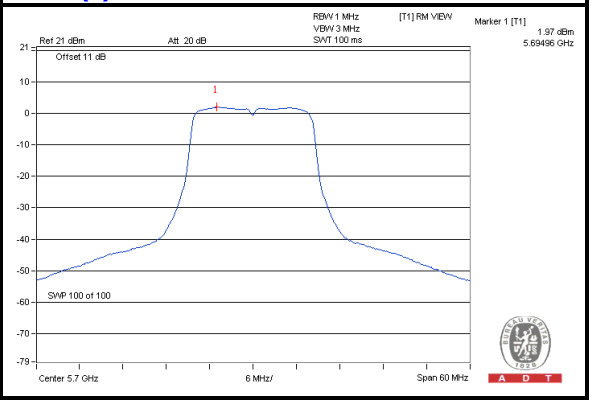


Chain(1) : CH60



Chain(1) : CH64



Chain(1) : CH100	Chain(1) : CH116
	
Chain(1) : CH132	**Chain(1) : CH140**
	

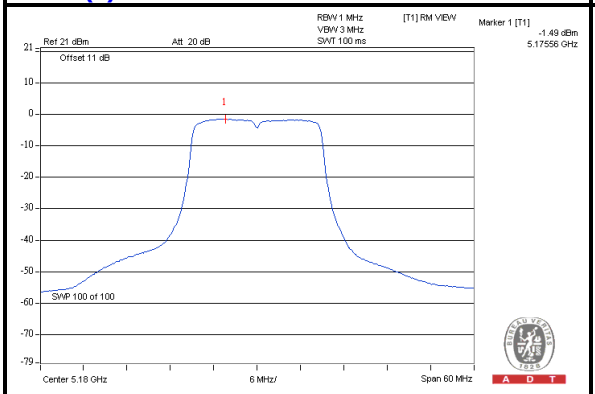
802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)				
36	5180	-1.73	-1.06	1.4548	1.63	3.99	PASS
40	5200	-0.23	-0.14	1.9167	2.83	3.99	PASS
48	5240	-0.68	-0.18	1.8145	2.59	3.99	PASS
52	5260	6.20	5.73	7.9098	8.98	10.99	PASS
60	5300	5.46	6.18	7.6651	8.85	10.99	PASS
64	5320	3.00	3.50	4.2340	6.27	10.99	PASS
100	5500	3.01	3.35	4.1626	6.19	10.99	PASS
116	5580	6.74	6.09	8.7850	9.44	10.99	PASS
132	5660	5.73	5.35	7.1688	8.55	10.99	PASS
140	5700	1.44	0.95	2.6377	4.21	10.99	PASS

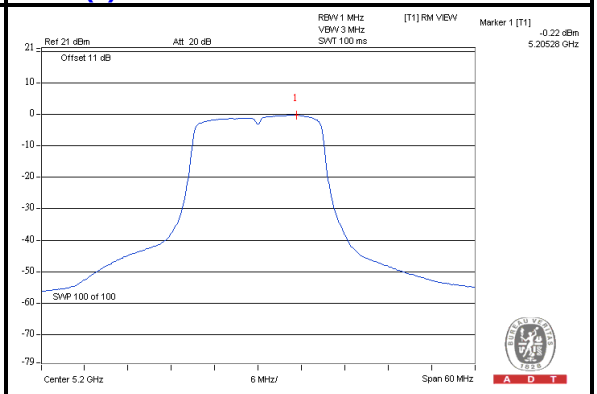
NOTE:

1. 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.
2. 5150~5250MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi, so the power density limit shall be reduced to 4-(6.01-6) = 3.99dBm.
3. 5250~5350MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.
4. 5470~5725MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.

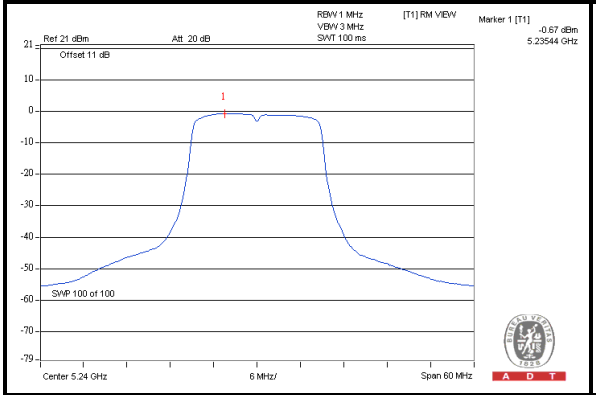
Chain(0) : CH36



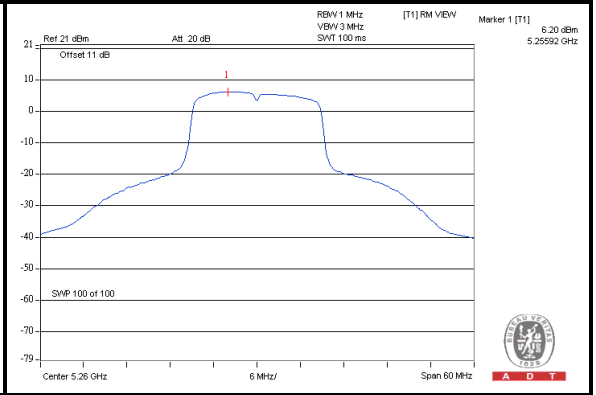
Chain(0) : CH40



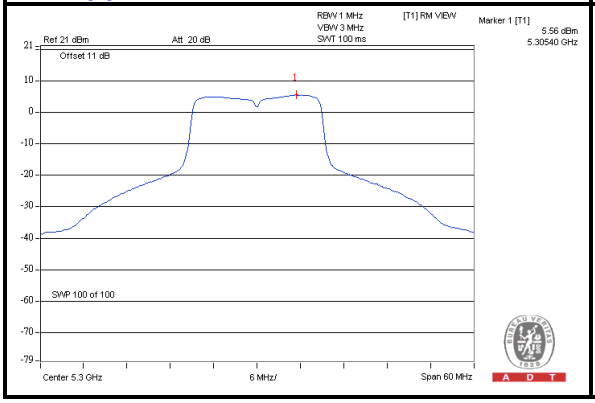
Chain(0) : CH48



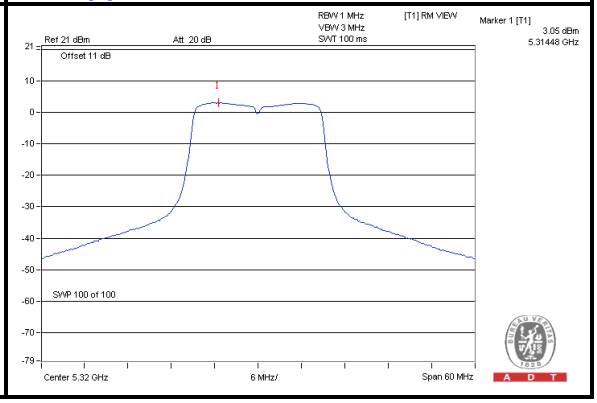
Chain(0) : CH52



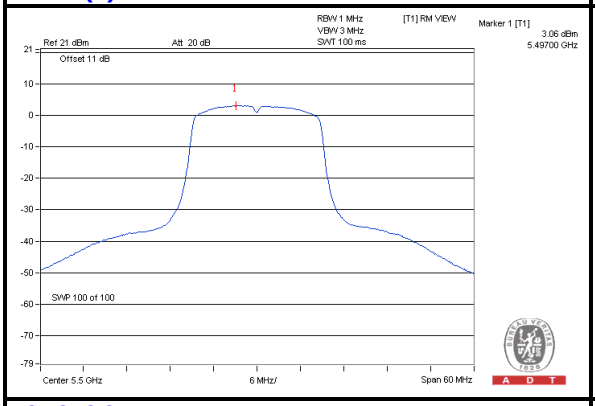
Chain(0) : CH60



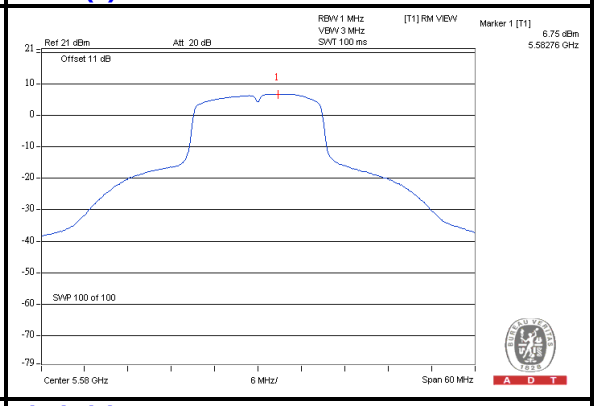
Chain(0) : CH64



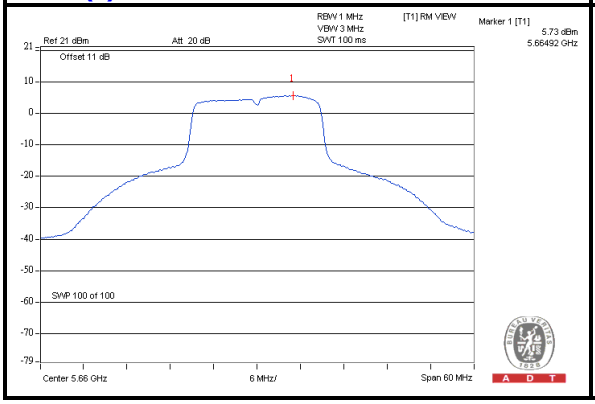
Chain(0) : CH100



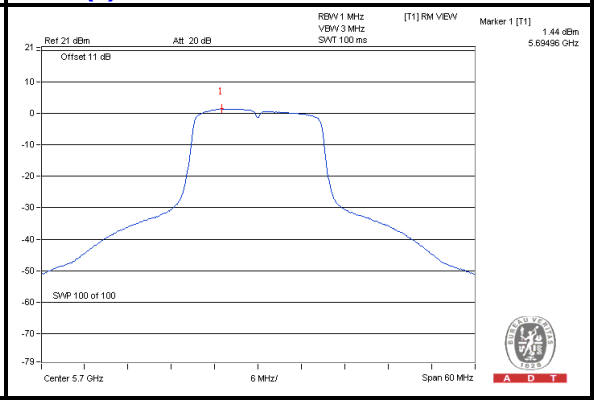
Chain(0) : CH116



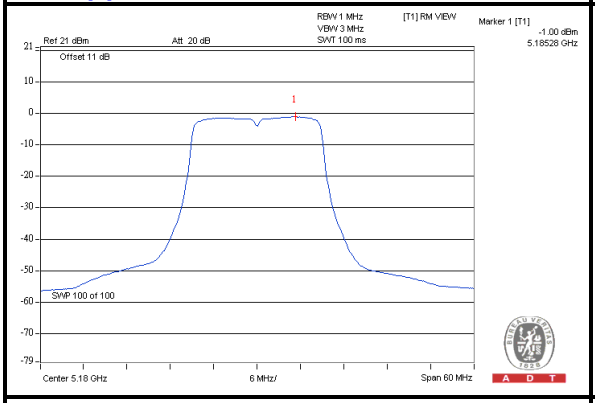
Chain(0) : CH132



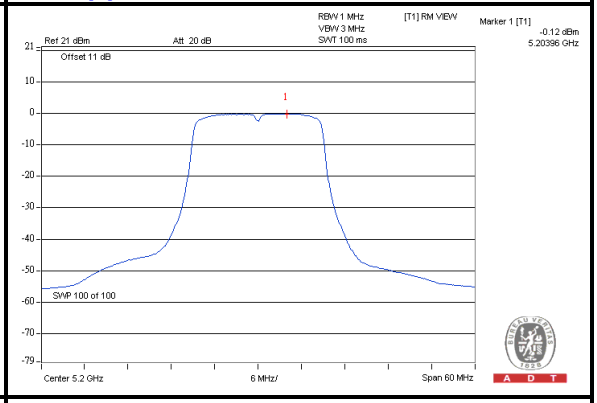
Chain(0) : CH140



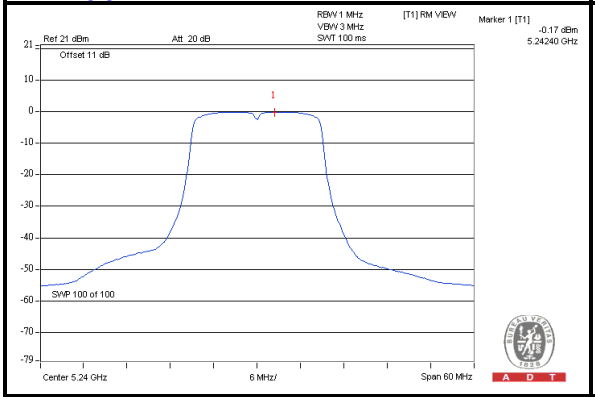
Chain(1) : CH36



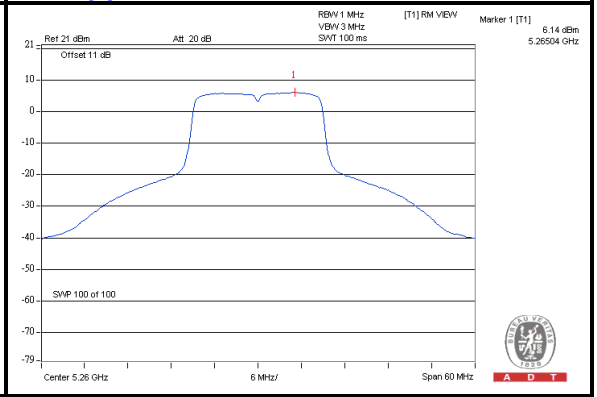
Chain(1) : CH40



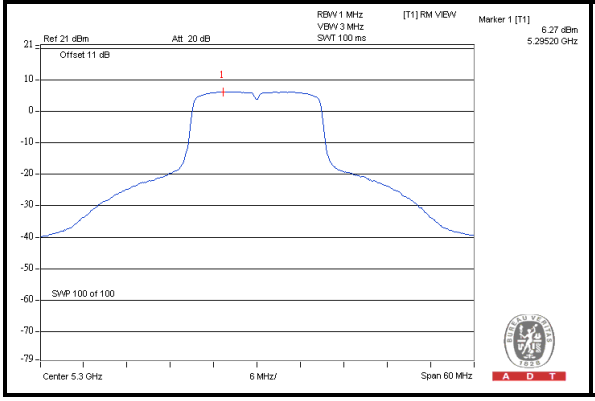
Chain(1) : CH48



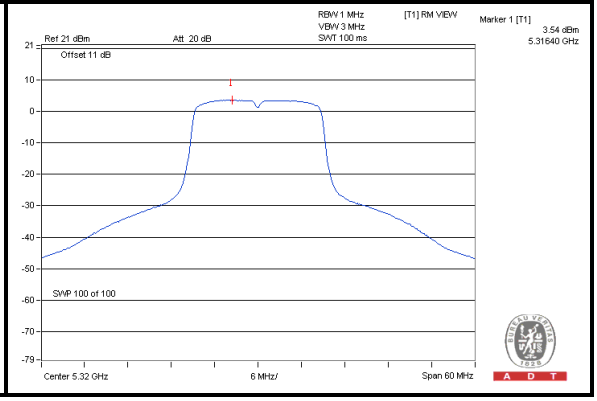
Chain(1) : CH52



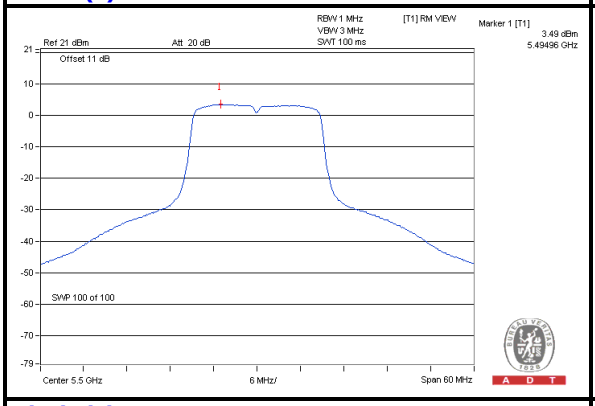
Chain(1) : CH60



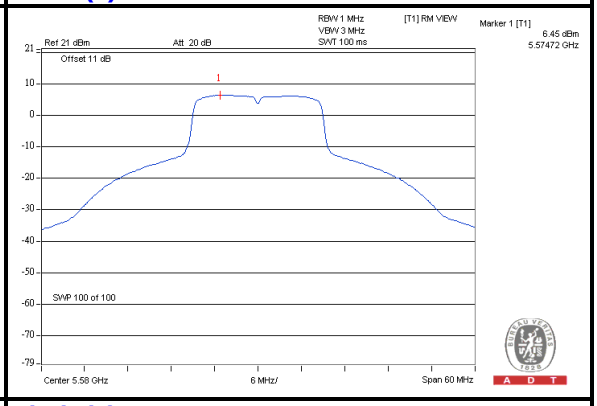
Chain(1) : CH64



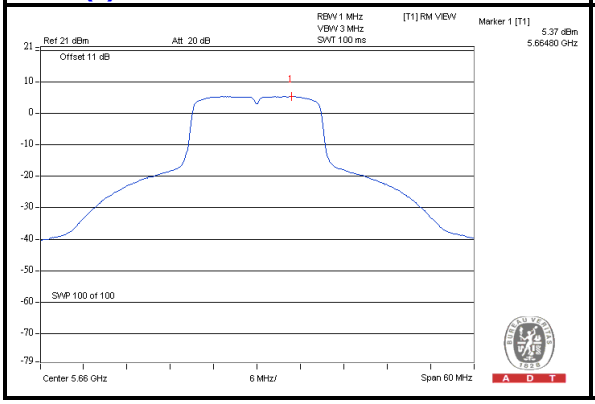
Chain(1) : CH100



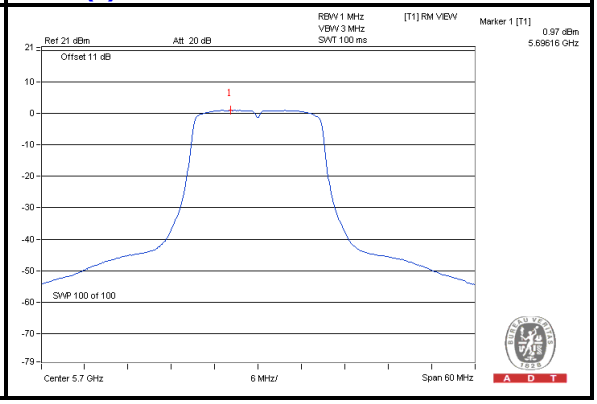
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



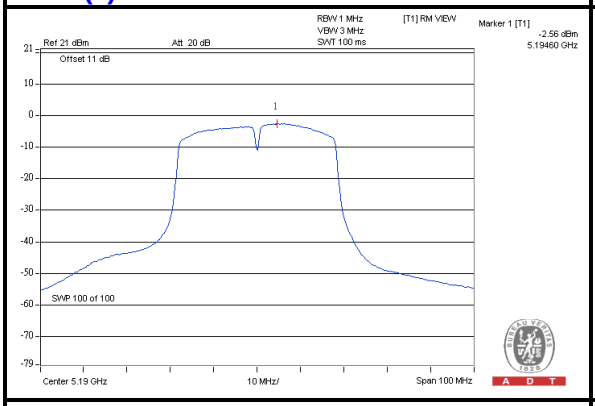
802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN (0)	CHAIN (1)				
38	5190	-2.60	-2.65	1.0928	0.39	3.99	PASS
46	5230	-2.32	-2.41	1.1602	0.65	3.99	PASS
54	5270	1.75	1.38	2.8702	4.58	10.99	PASS
62	5310	-2.00	-2.59	1.1818	0.73	10.99	PASS
102	5510	-2.01	-1.28	1.3742	1.38	10.99	PASS
110	5550	2.09	2.01	3.2066	5.06	10.99	PASS
134	5670	-0.06	0.27	2.0504	3.12	10.99	PASS

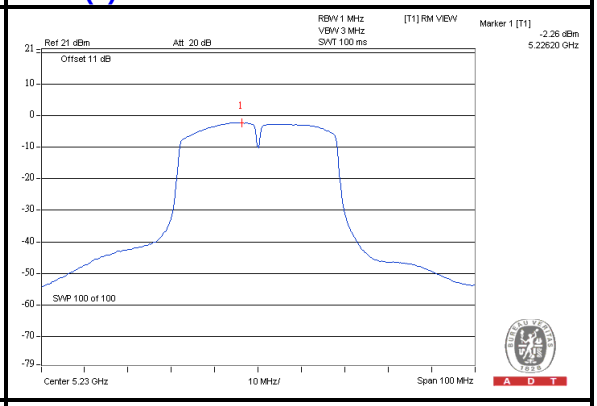
NOTE:

1. 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.
2. 5150~5250MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi, so the power density limit shall be reduced to 4-(6.01-6) = 3.99dBm.
3. 5250~5350MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi , so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.
4. 5470~5725MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi > 6dBi, so the power density limit shall be reduced to 11-(6.01-6) = 10.99dBm.

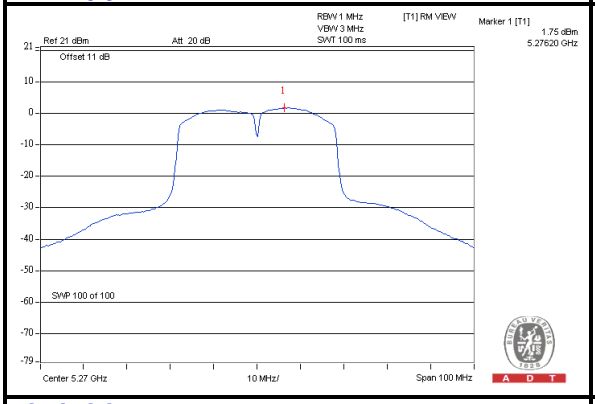
Chain(0) : CH38



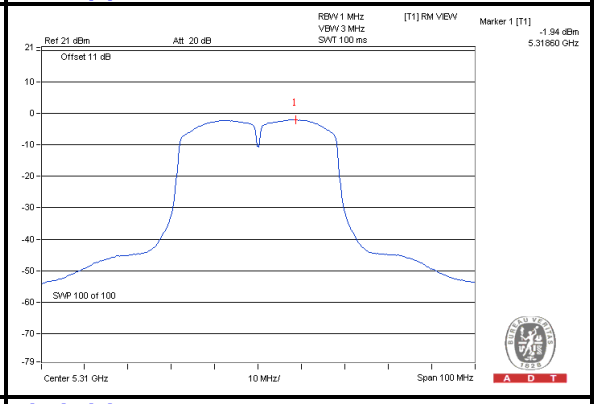
Chain(0) : CH46



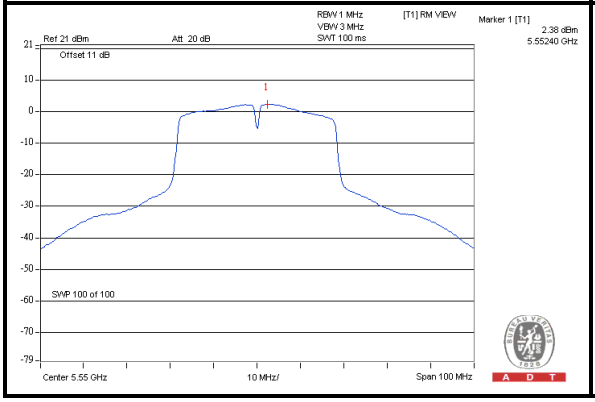
Chain(0) : CH54



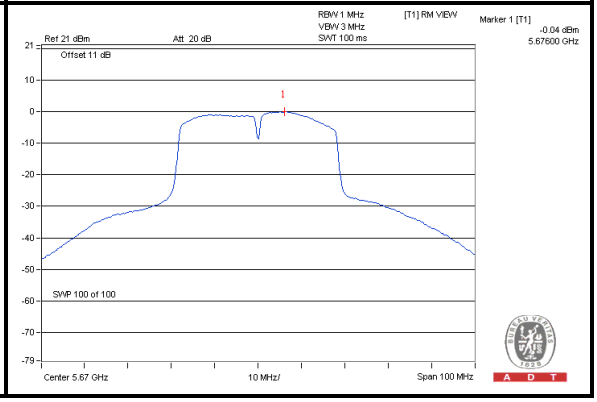
Chain(0) : CH62

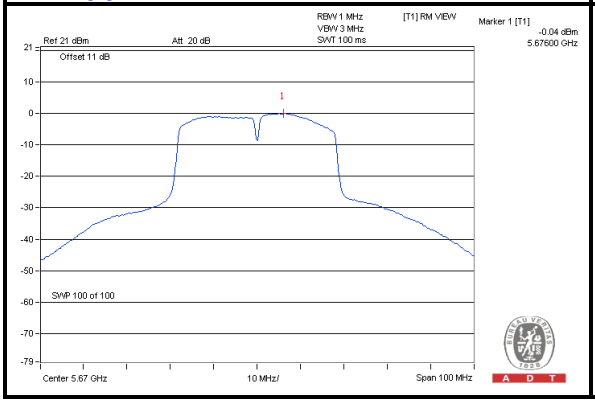


Chain(0) : CH102

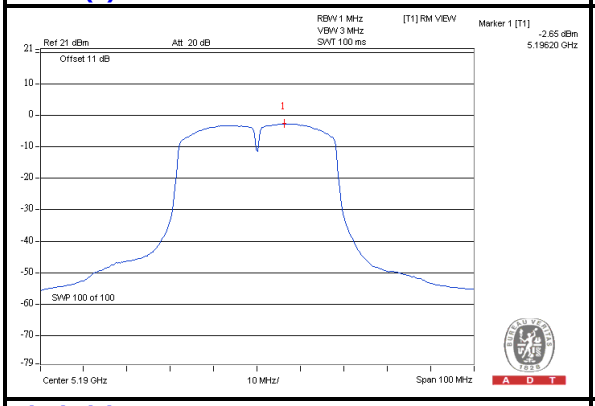


Chain(0) : CH110

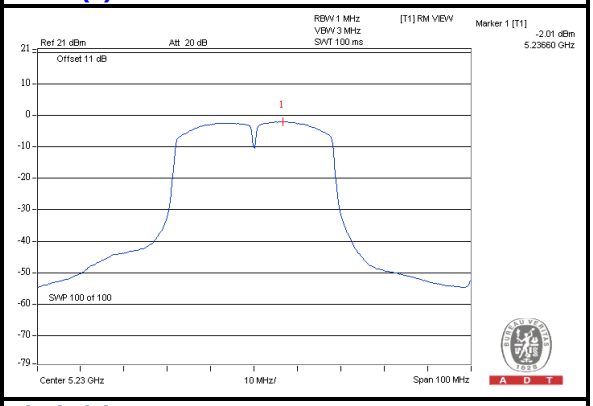


Chain(0) : CH134	
	

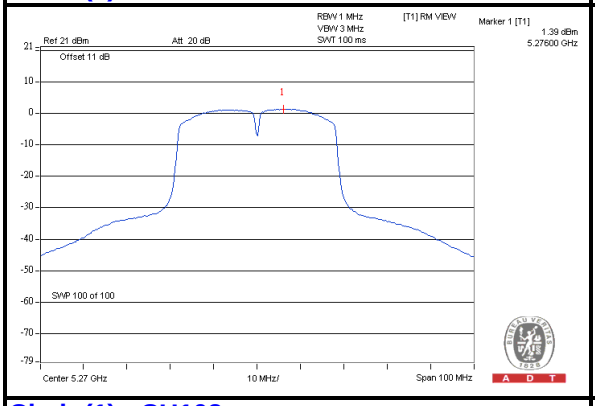
Chain(1) : CH38



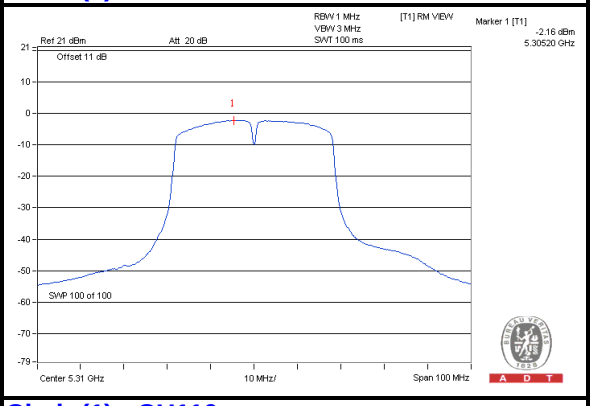
Chain(1) : CH46



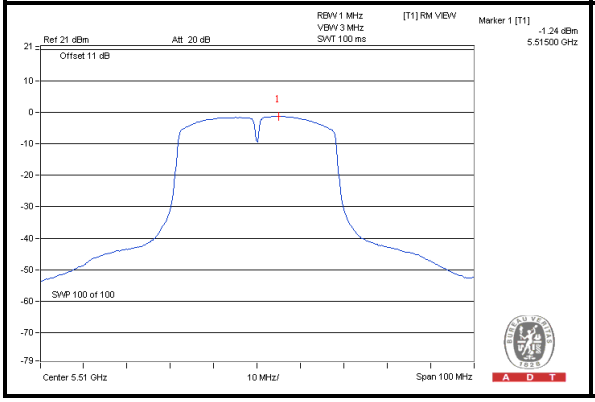
Chain(1) : CH54



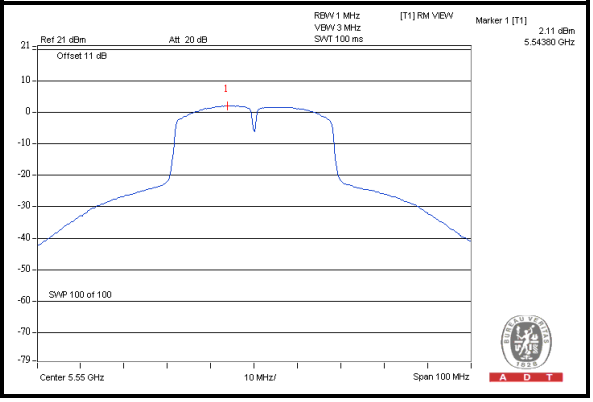
Chain(1) : CH62

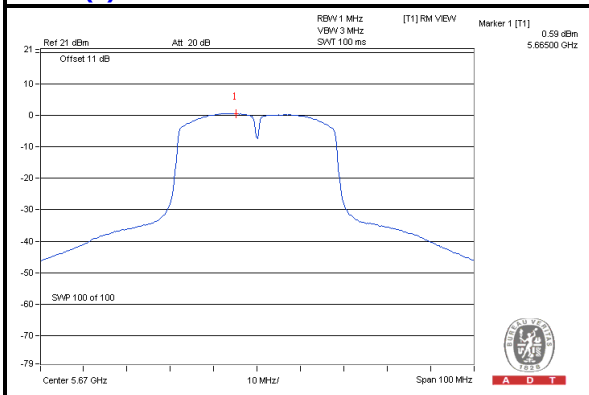


Chain(1) : CH102



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
R&S Spectrum Analyzer	FSP40	100037	Nov. 01, 2012	Oct. 31, 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 : Apr. 11, 2013

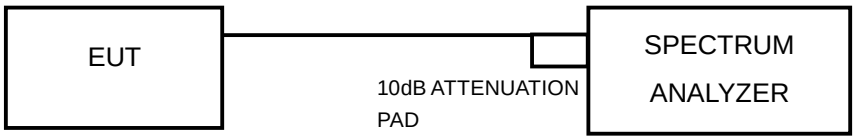
4.3.3 TEST PROCEDURE

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.
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



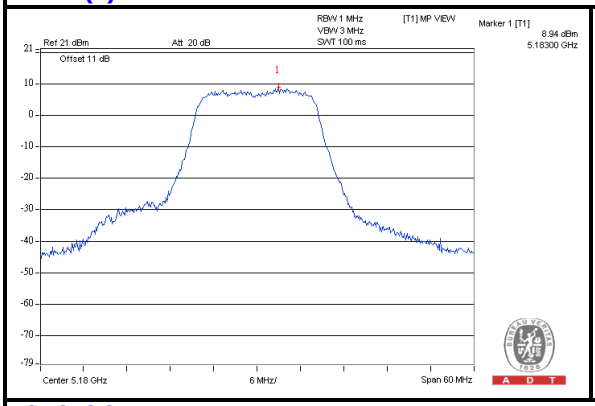
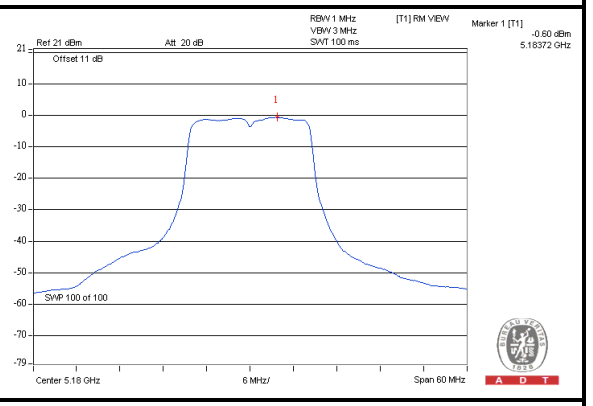
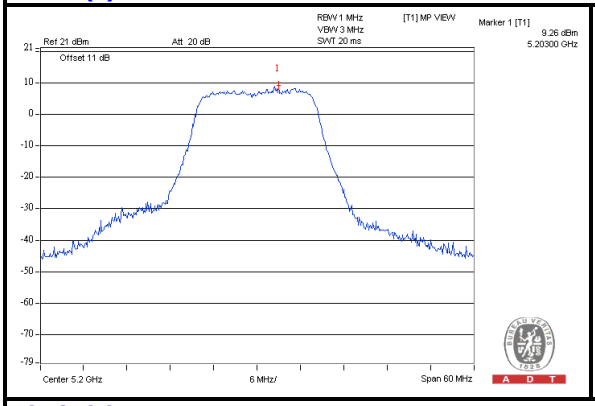
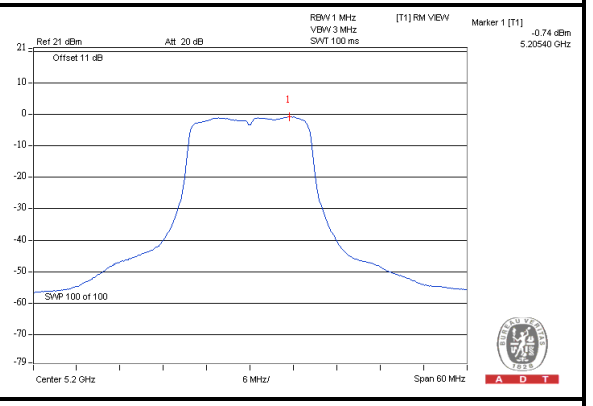
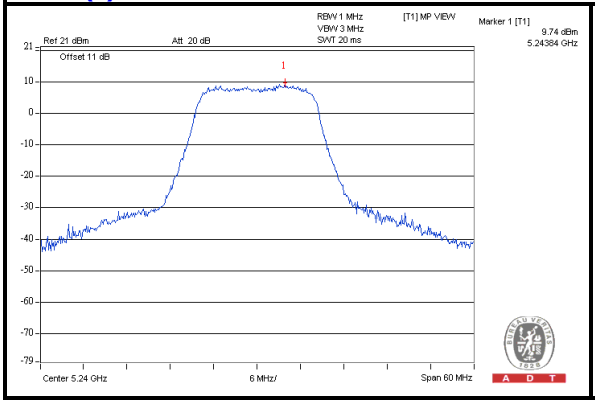
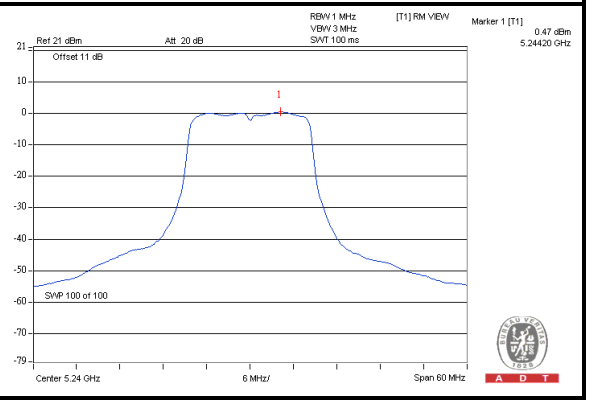
4.3.6 EUT OPERATING CONDITIONS

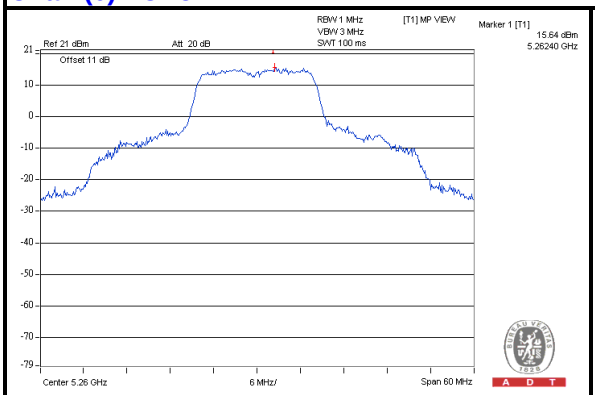
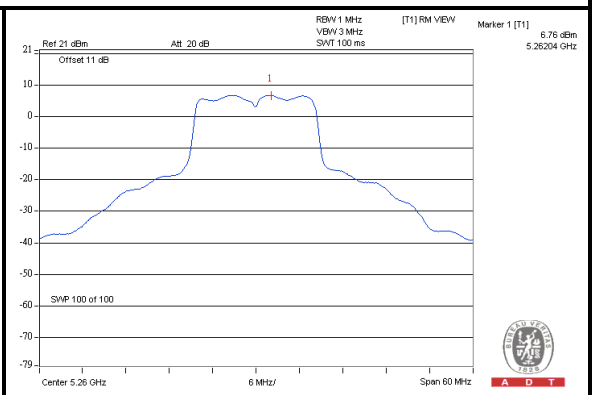
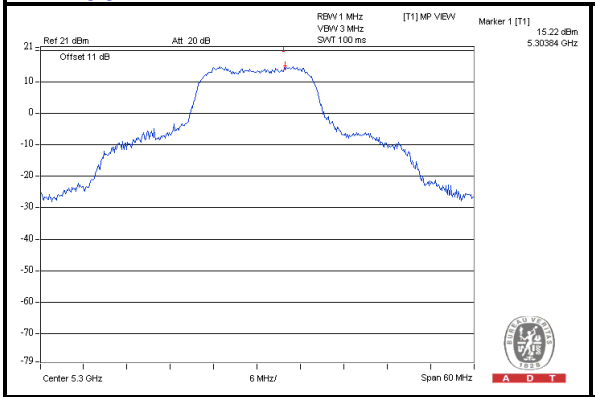
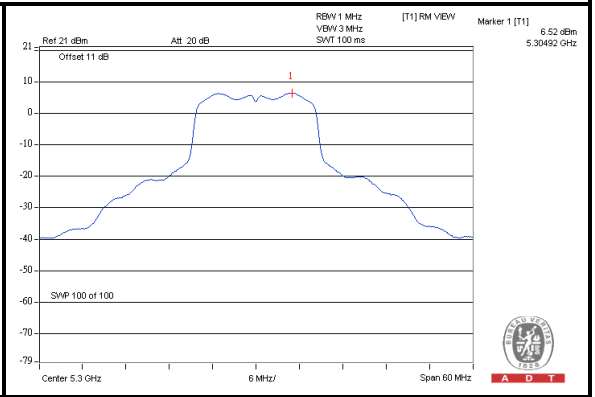
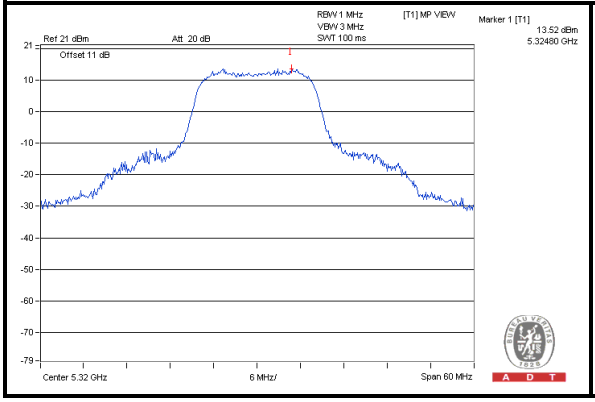
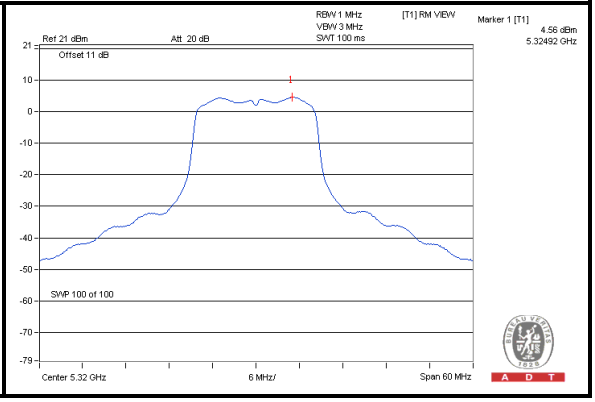
The software (Atheros Radio test 2_Version:2.3) provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

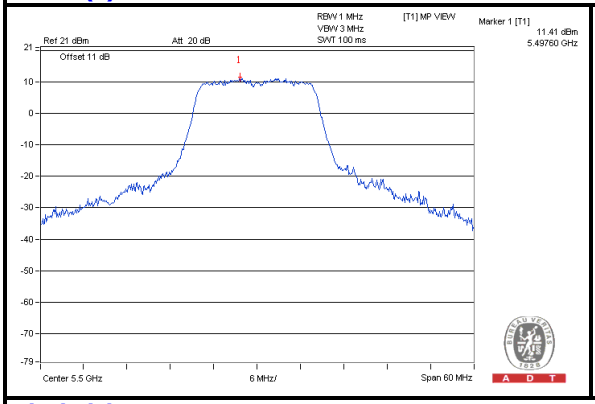
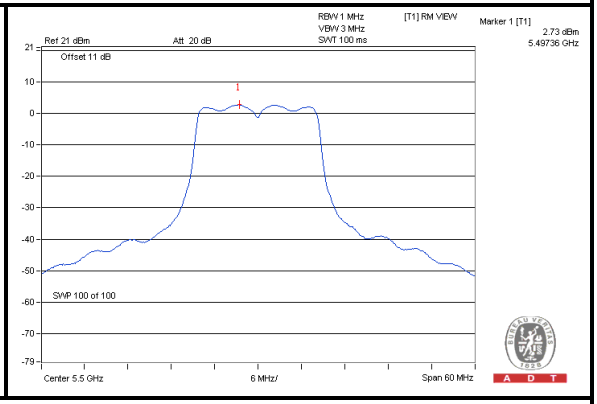
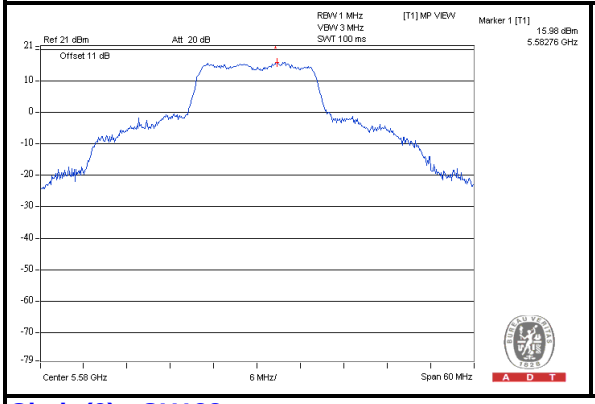
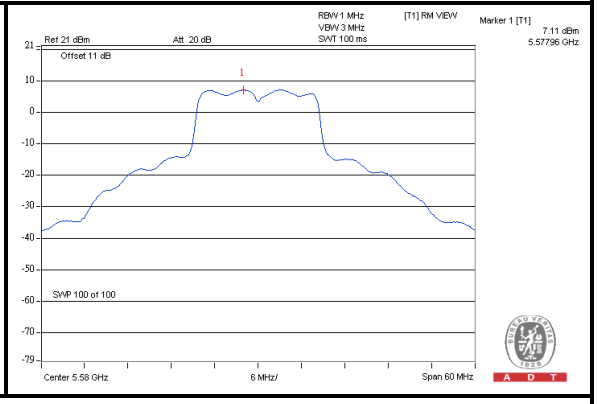
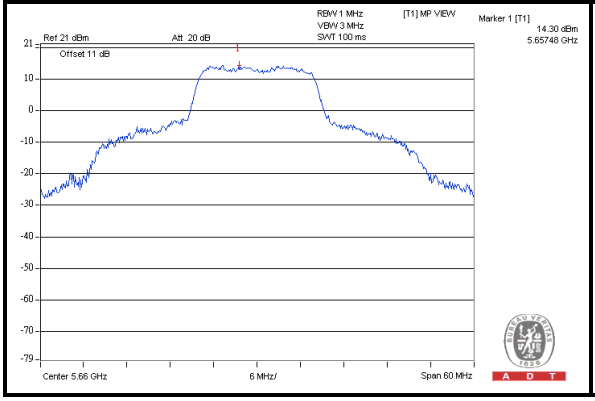
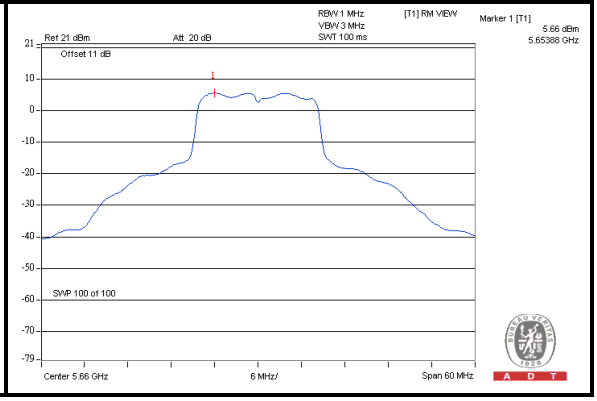
4.3.7 TEST RESULTS

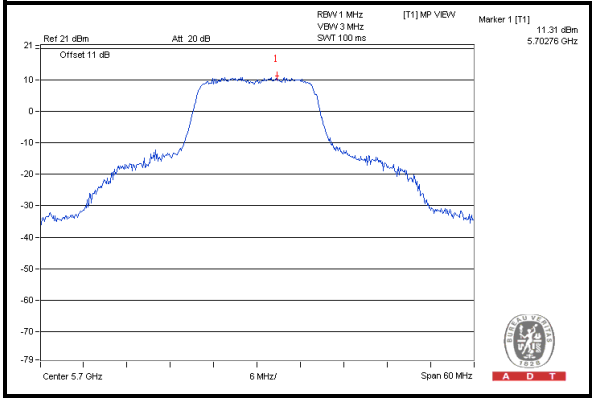
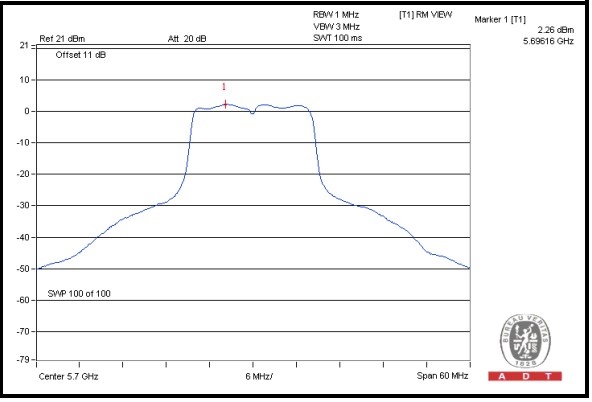
802.11a

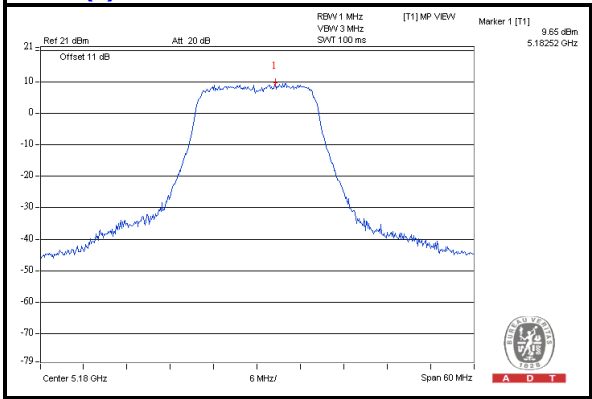
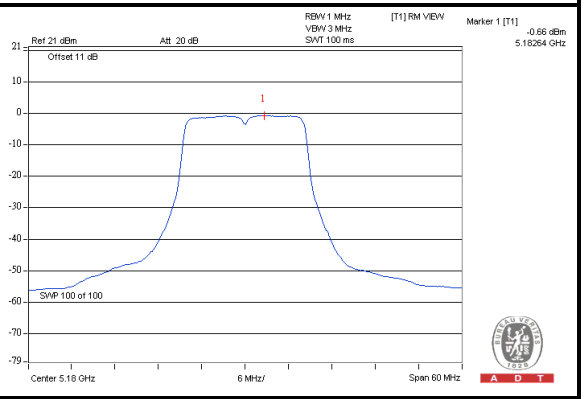
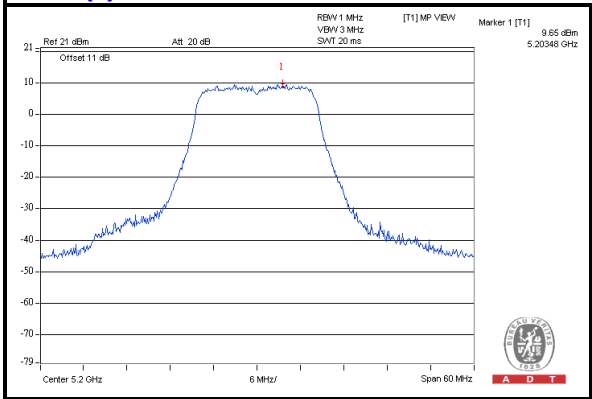
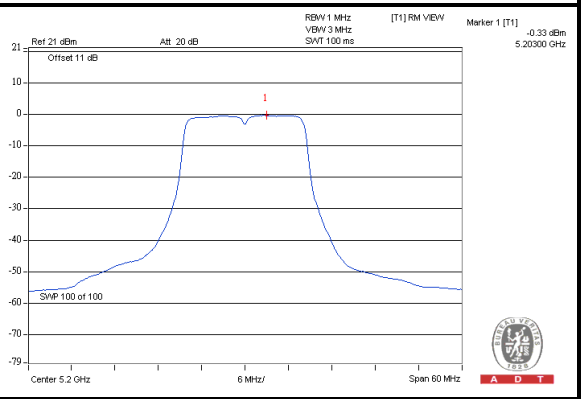
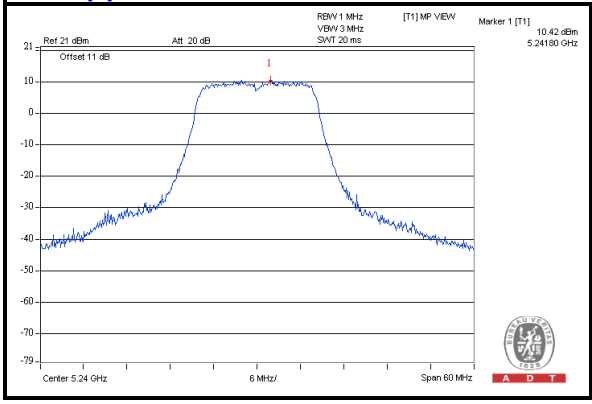
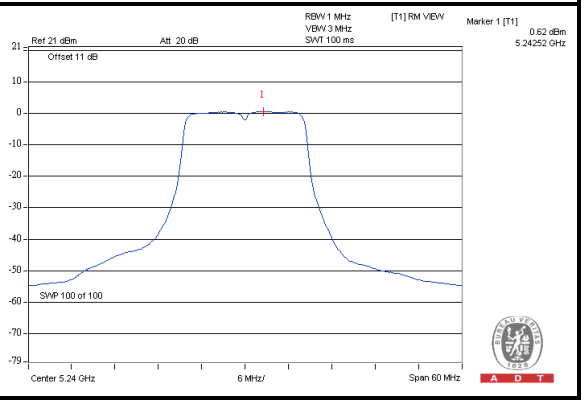
CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	8.94	9.65	-0.61	-0.78	9.55	10.43	13	PASS
40	5200	9.26	9.65	-0.75	-0.42	10.01	10.07	13	PASS
48	5240	9.74	10.42	0.39	0.40	9.35	10.02	13	PASS
52	5260	15.64	16.18	6.73	6.23	8.91	9.95	13	PASS
60	5300	15.22	16.64	6.52	6.33	8.70	10.31	13	PASS
64	5320	13.52	14.41	4.55	4.03	8.97	10.38	13	PASS
100	5500	11.41	12.38	2.70	2.70	8.71	9.68	13	PASS
116	5580	15.98	16.60	7.10	6.48	8.88	10.12	13	PASS
132	5660	14.30	14.93	5.63	5.15	8.67	9.78	13	PASS
140	5700	11.31	11.94	2.26	1.78	9.05	10.16	13	PASS

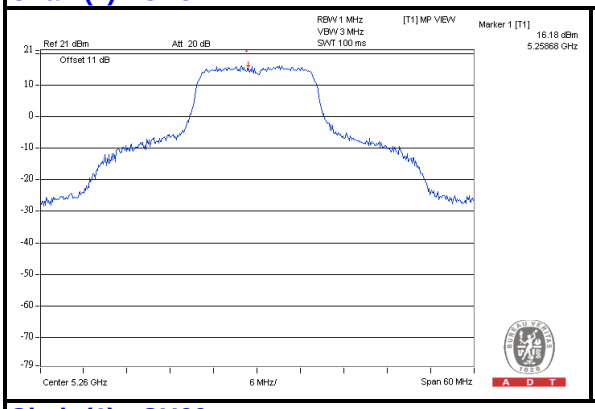
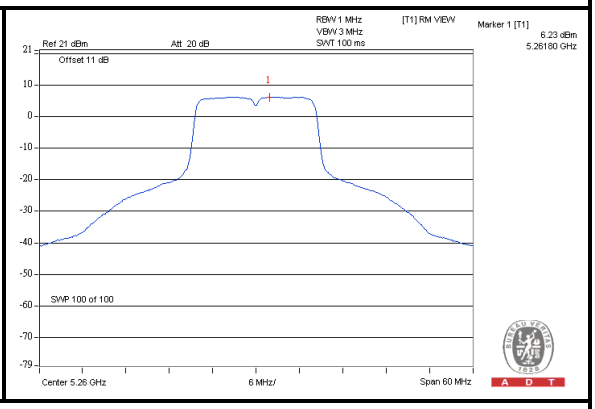
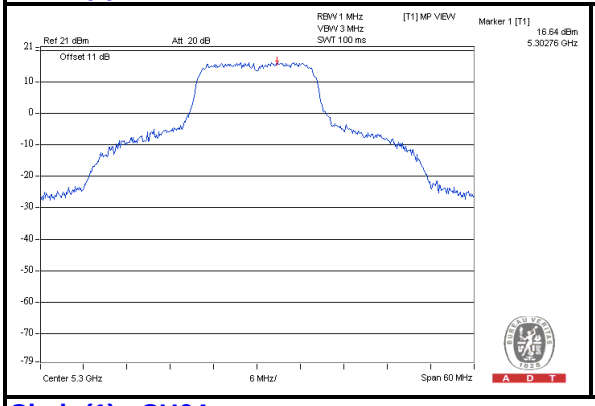
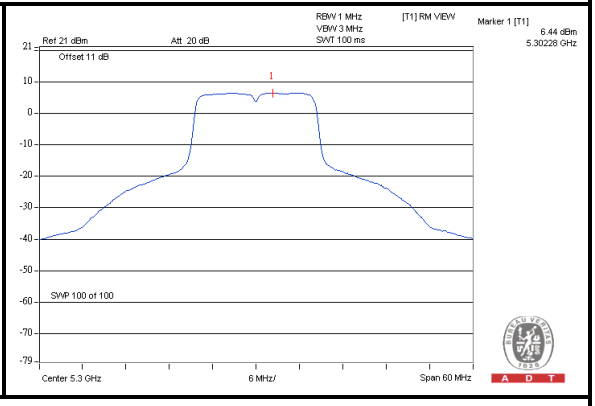
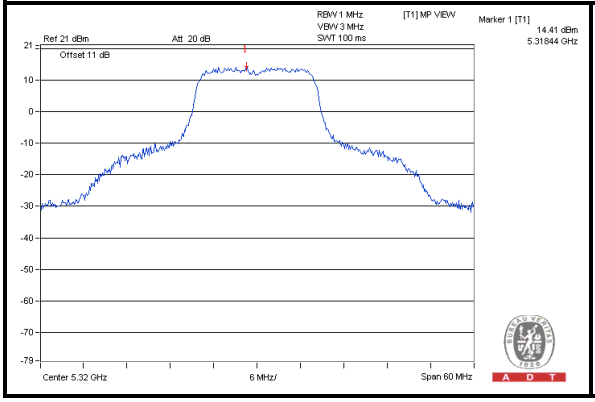
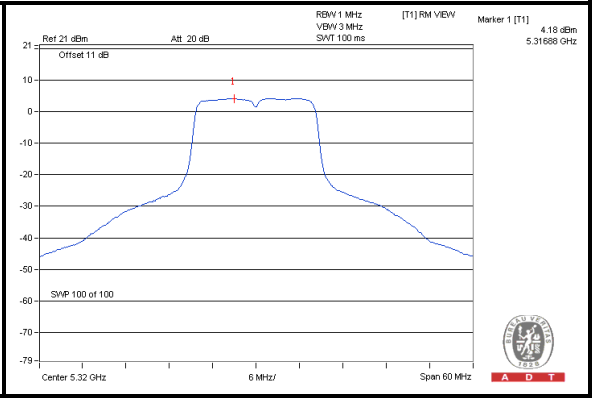
PEAK VALUE	PPSD
Chain(0) : CH36	
	
Chain(0) : CH40	
	
Chain(0) : CH48	
	

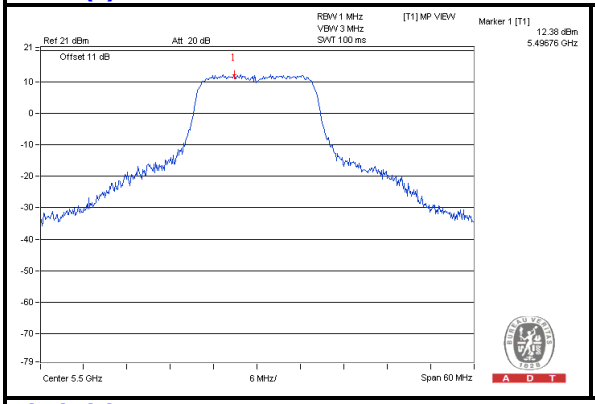
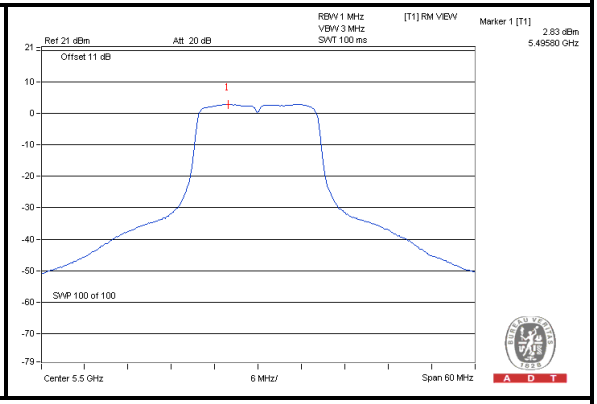
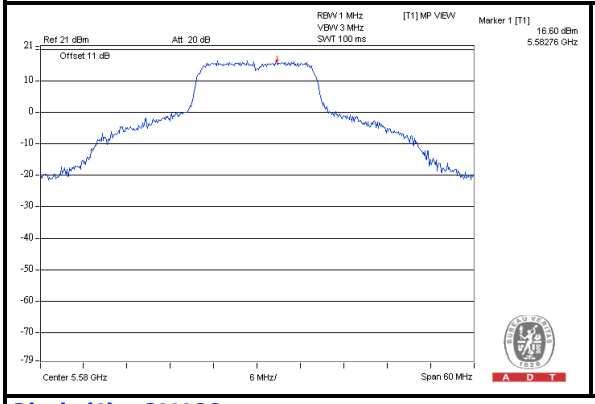
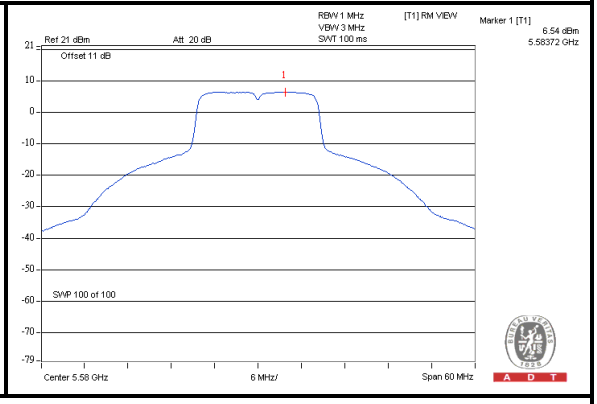
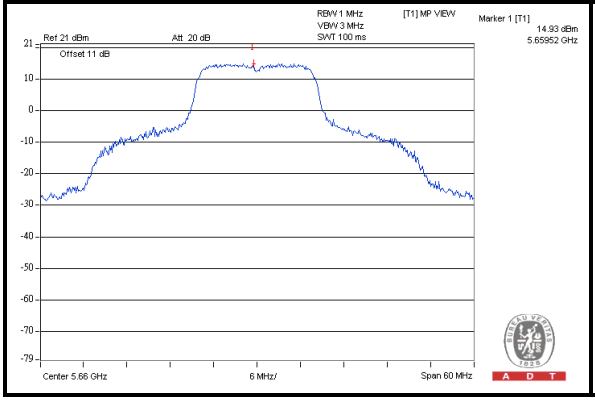
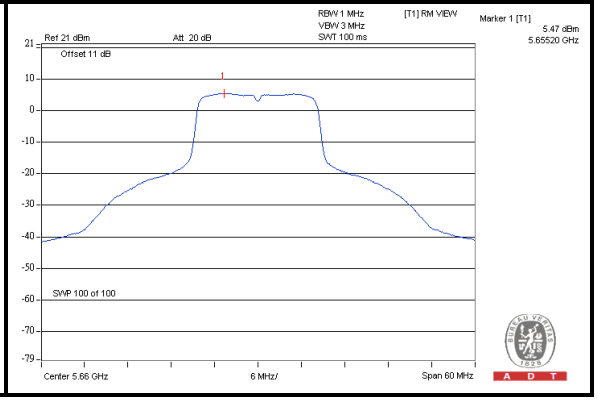
PEAK VALUE	PPSD
Chain(0) : CH52	
	
Chain(0) : CH60	
	
Chain(0) : CH64	
	

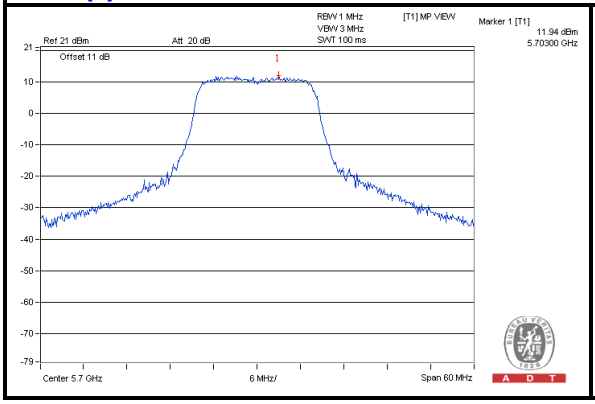
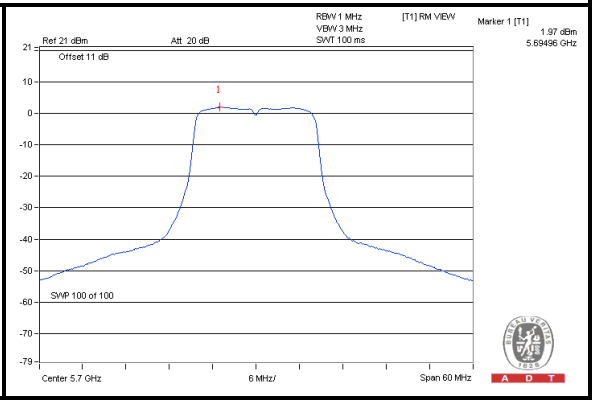
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

PEAK VALUE	PPSD
Chain(0) : CH140	
	

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

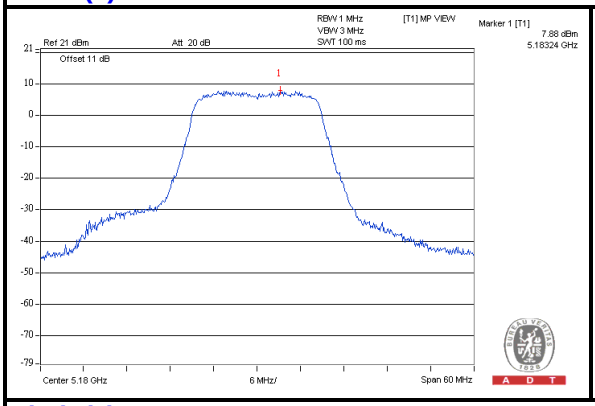
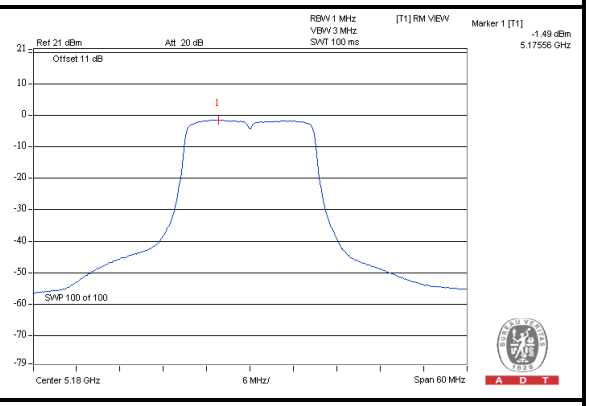
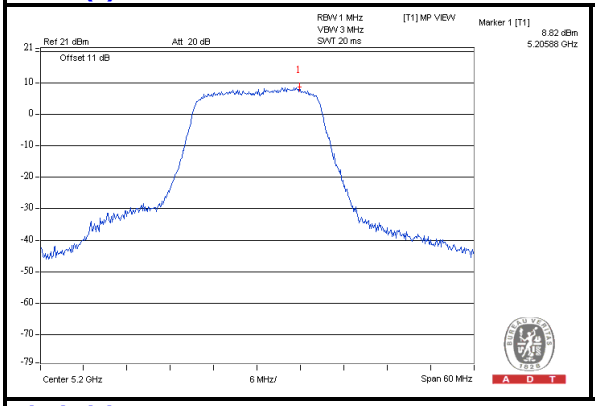
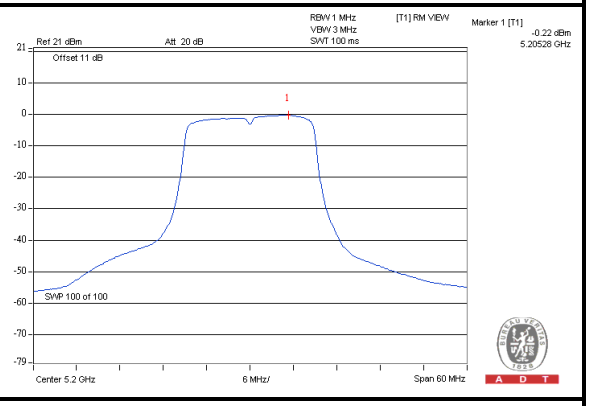
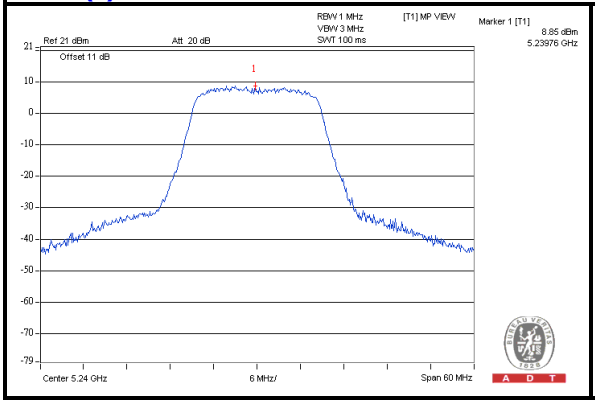
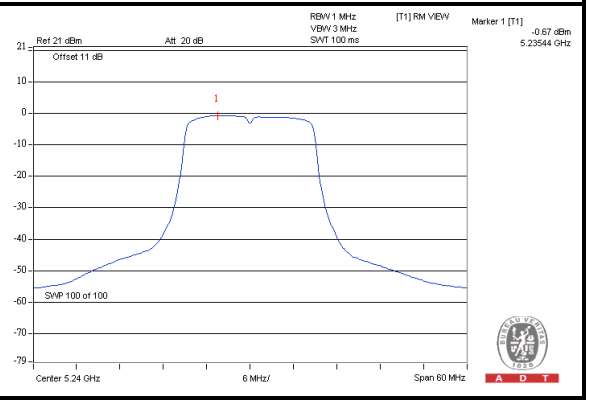
PEAK VALUE	PPSD
Chain(1) : CH52	
	
Chain(1) : CH60	
	
Chain(1) : CH64	
	

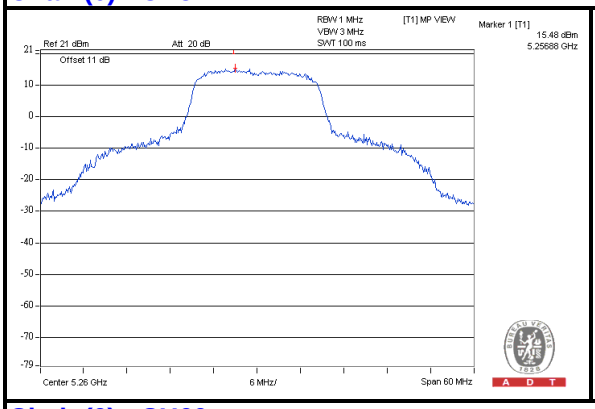
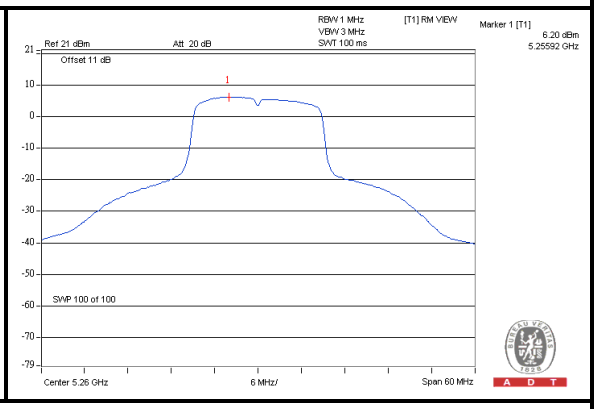
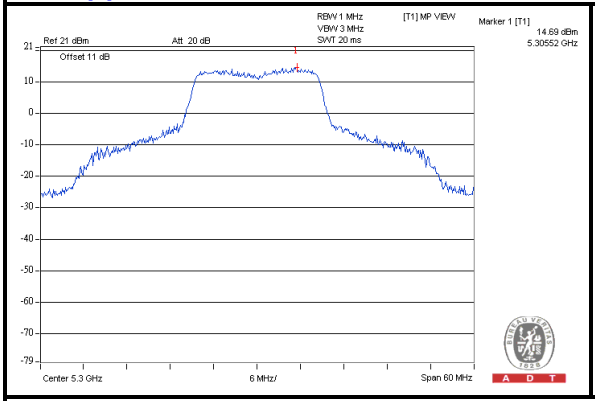
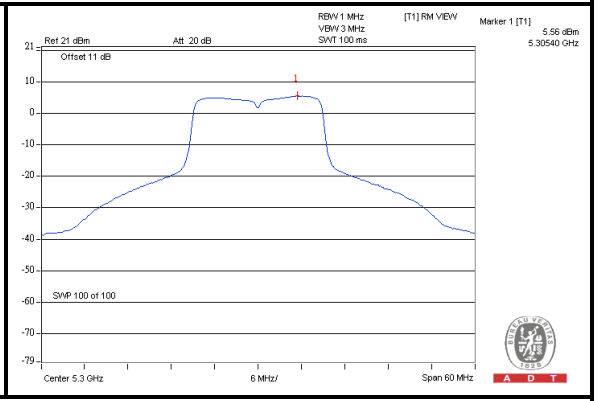
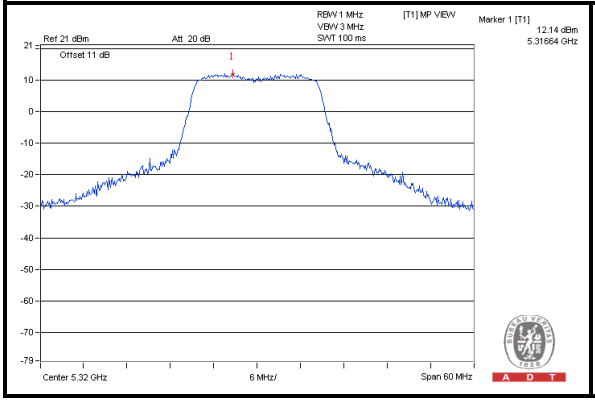
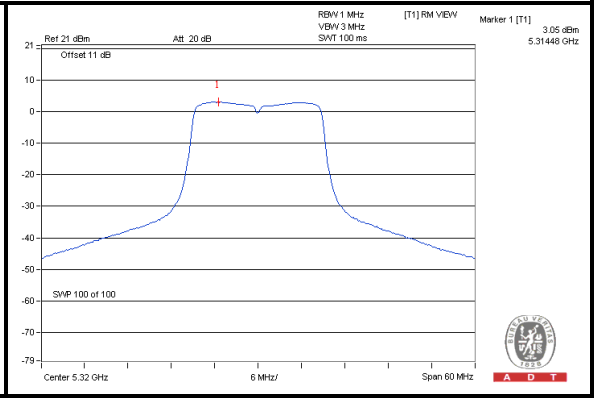
PEAK VALUE	PPSD
Chain(1) : CH100	
	
Chain(1) : CH116	
	
Chain(1) : CH132	
	

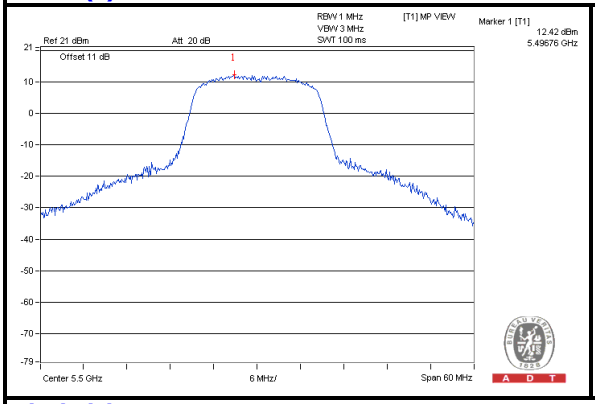
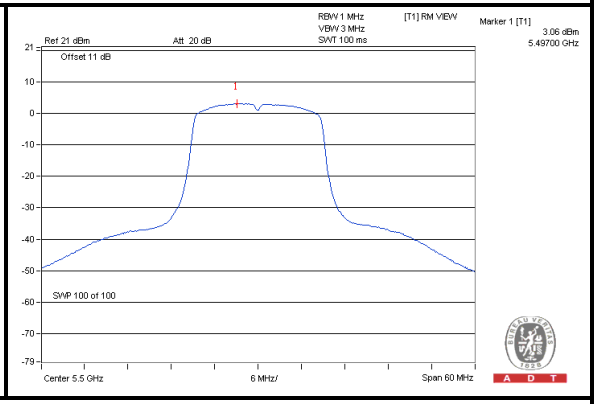
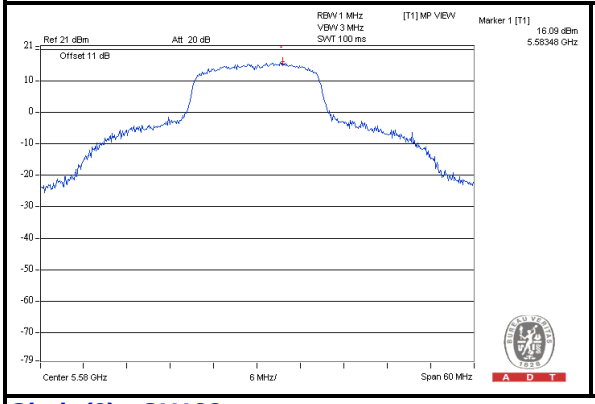
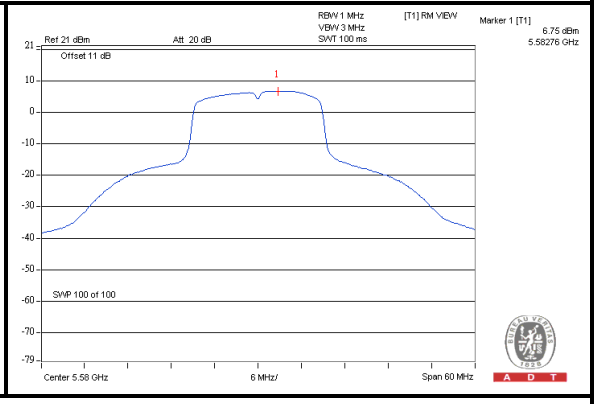
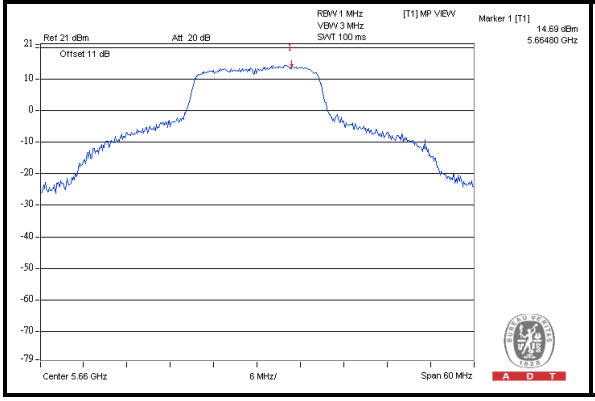
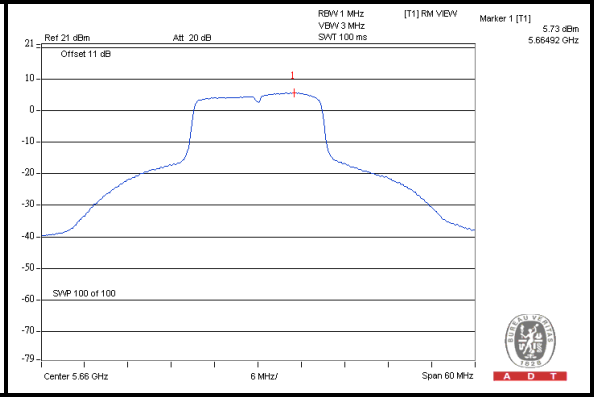
PEAK VALUE	PPSD
Chain(1) : CH140	
	

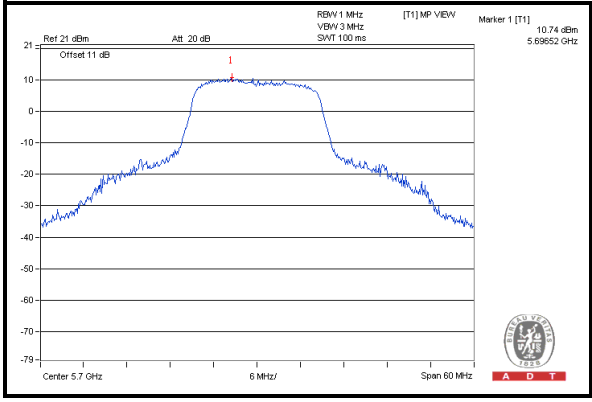
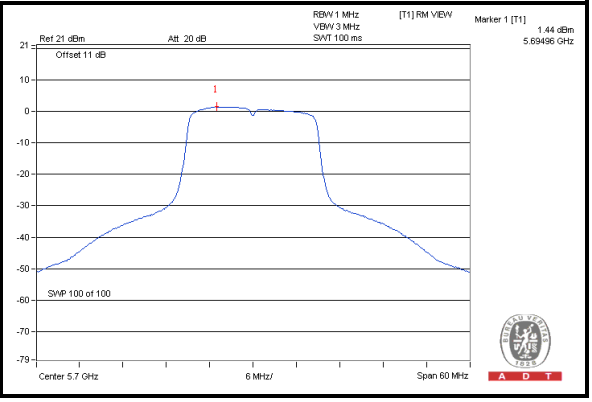
802.11n (HT20)

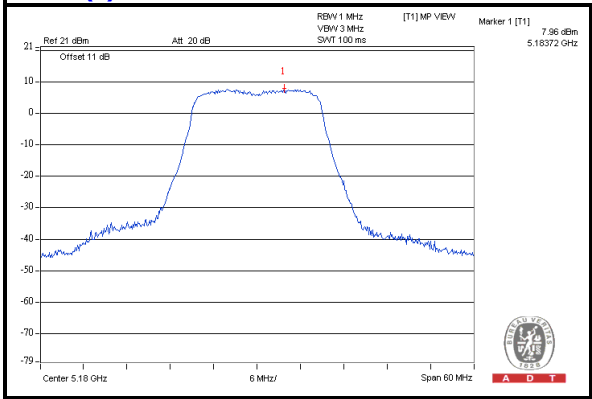
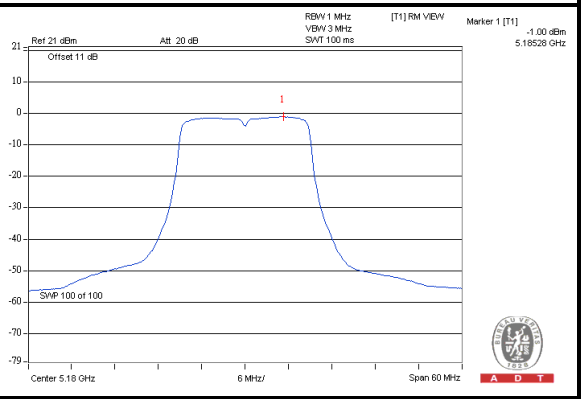
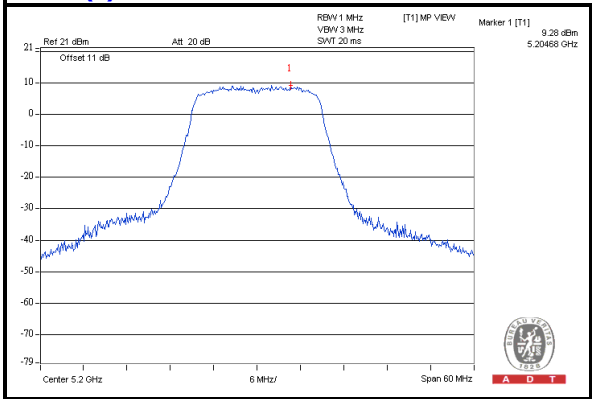
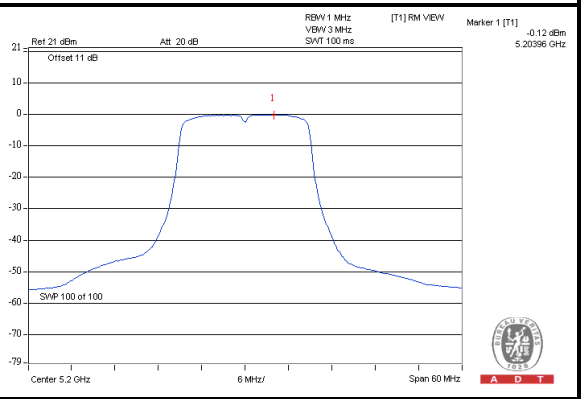
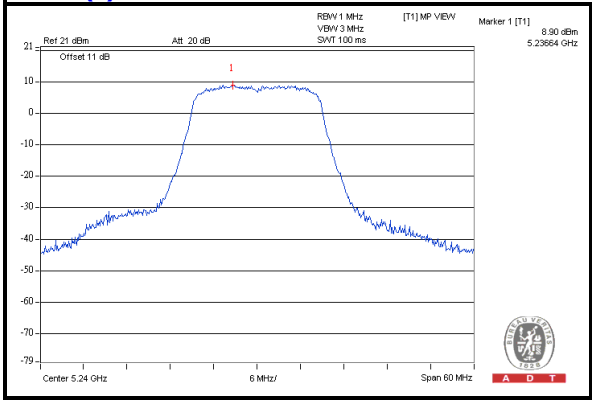
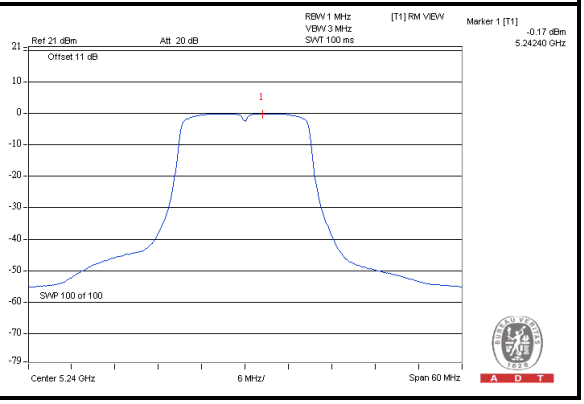
CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	7.88	7.96	-1.73	-1.06	9.61	9.02	13	PASS
40	5200	8.82	9.28	-0.23	-0.14	9.05	9.42	13	PASS
48	5240	8.85	8.90	-0.68	-0.18	9.53	9.08	13	PASS
52	5260	15.48	15.08	6.20	5.73	9.28	9.35	13	PASS
60	5300	14.69	15.34	5.46	6.18	9.23	9.16	13	PASS
64	5320	12.14	12.57	3.00	3.50	9.14	9.07	13	PASS
100	5500	12.42	12.39	3.01	3.35	9.41	9.04	13	PASS
116	5580	16.09	15.75	6.74	6.09	9.35	9.66	13	PASS
132	5660	14.69	14.42	5.73	5.35	8.96	9.07	13	PASS
140	5700	10.74	10.26	1.44	0.95	9.30	9.31	13	PASS

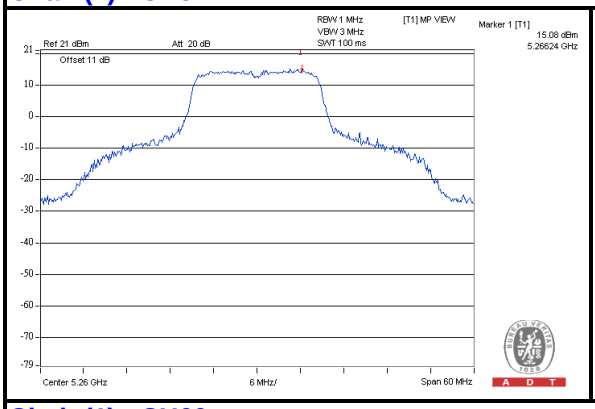
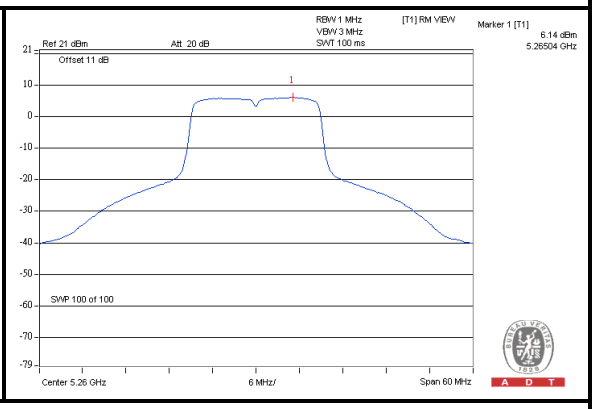
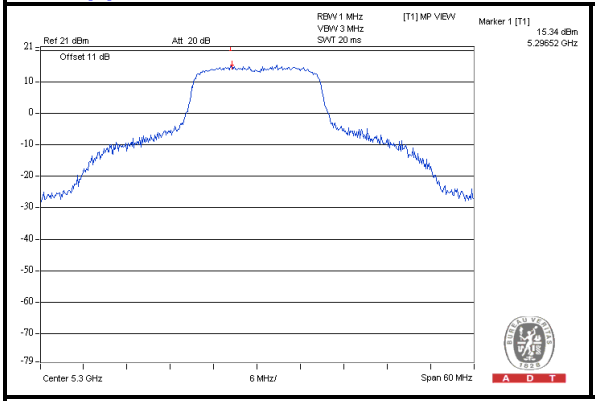
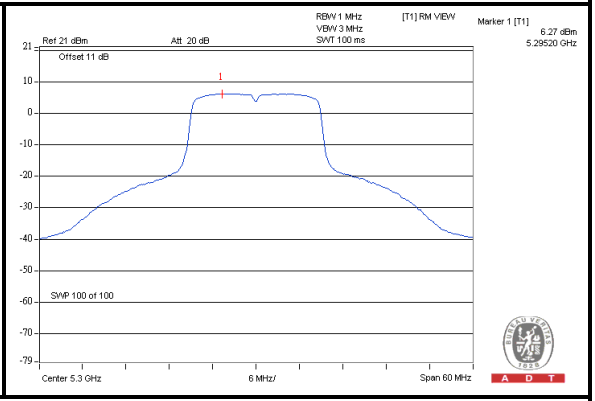
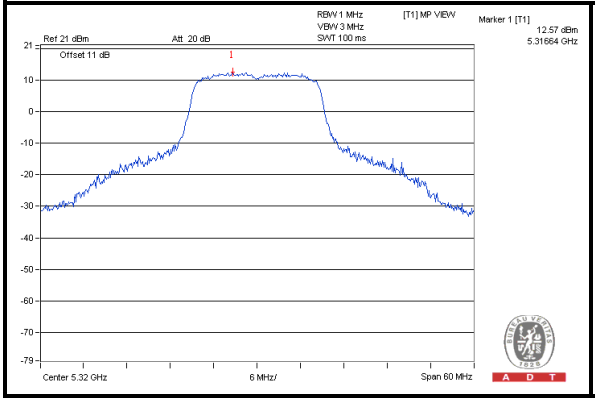
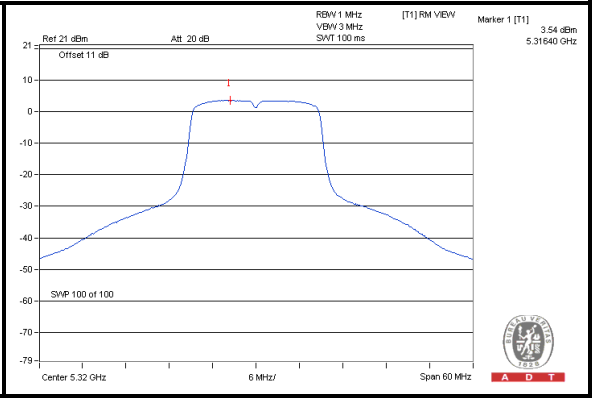
PEAK VALUE	PPSD
Chain(0) : CH36	
	
Chain(0) : CH40	
	
Chain(0) : CH48	
	

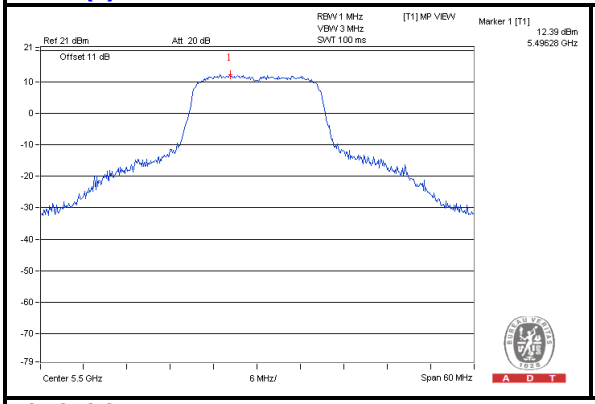
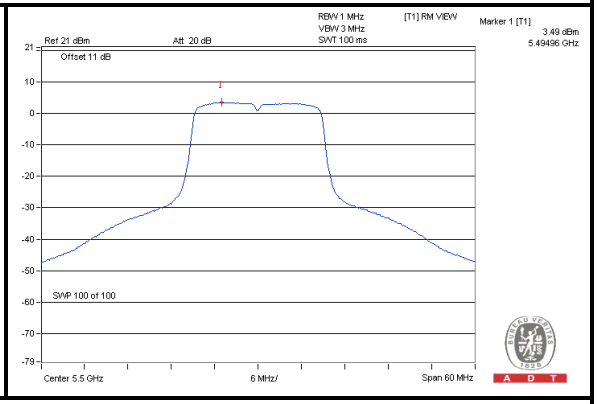
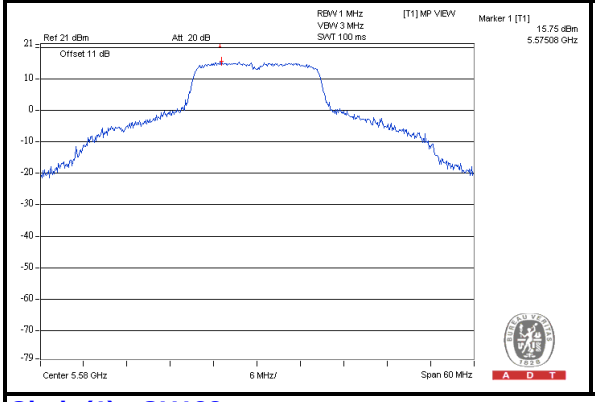
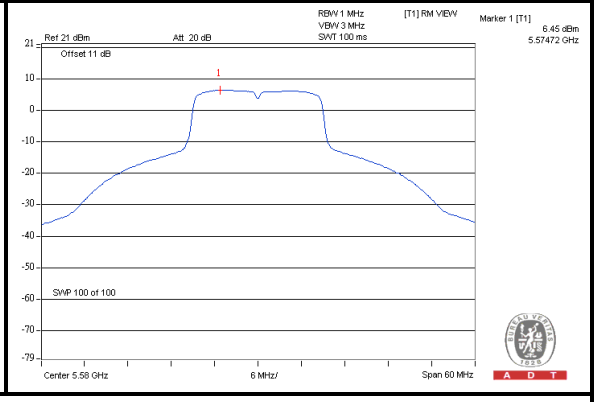
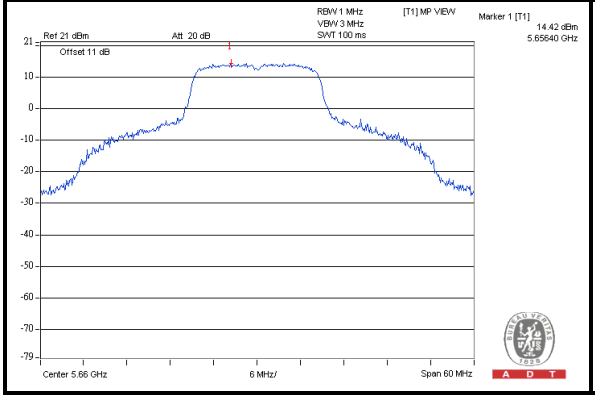
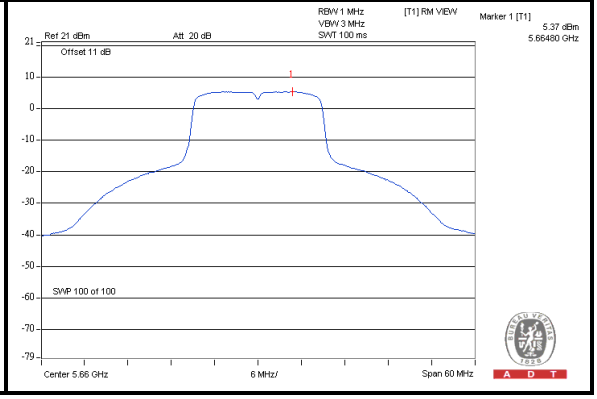
PEAK VALUE	PPSD
Chain(0) : CH52	
	
Chain(0) : CH60	
	
Chain(0) : CH64	
	

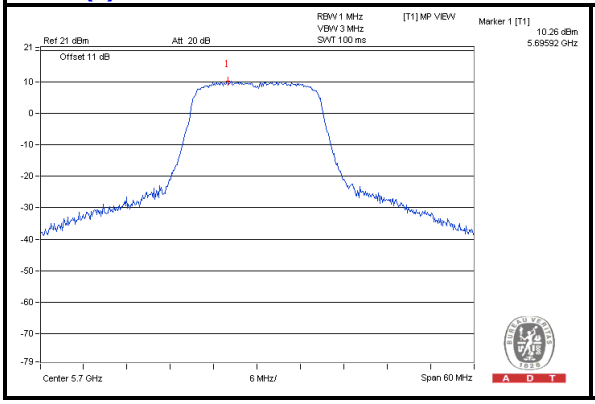
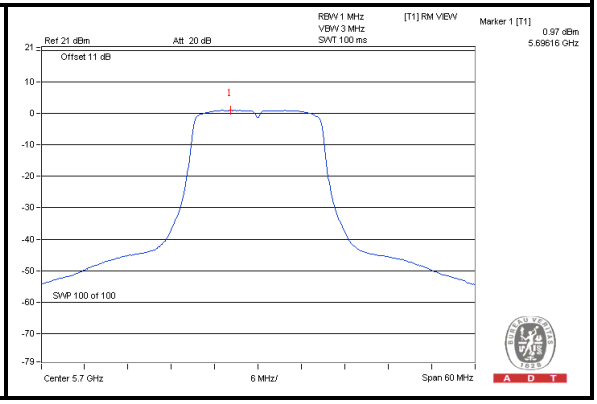
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

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	
	

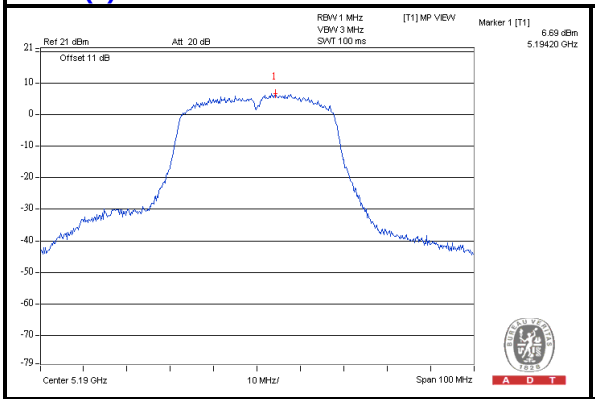
PEAK VALUE	PPSD
Chain(1) : CH140	
	

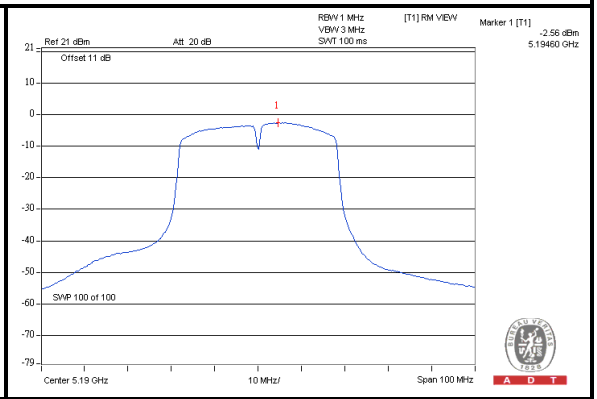
802.11n (HT40)

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	6.69	6.36	-2.60	-2.65	9.29	9.01	13	PASS
46	5230	6.95	7.42	-2.32	-2.41	9.27	9.83	13	PASS
54	5270	10.98	10.20	1.75	1.38	9.23	8.82	13	PASS
62	5310	7.48	7.88	-2.00	-2.59	9.48	10.47	13	PASS
102	5510	7.90	8.38	-2.01	-1.28	9.91	9.66	13	PASS
110	5550	11.78	11.10	2.09	2.01	9.69	9.09	13	PASS
134	5670	8.93	9.65	-0.06	0.27	8.99	9.38	13	PASS

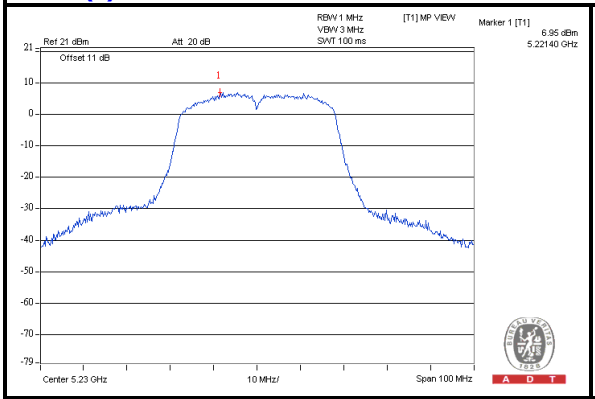
PEAK VALUE	PPSD

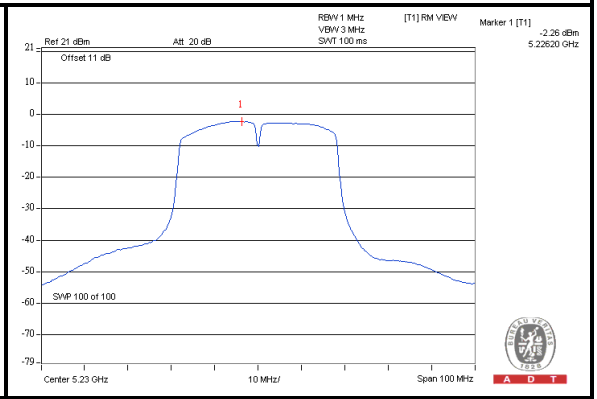
Chain(0) : CH38



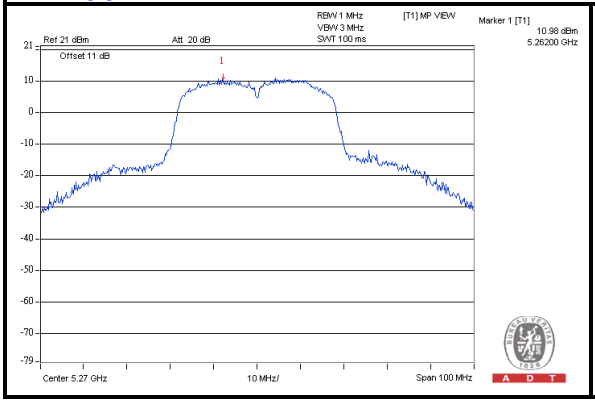


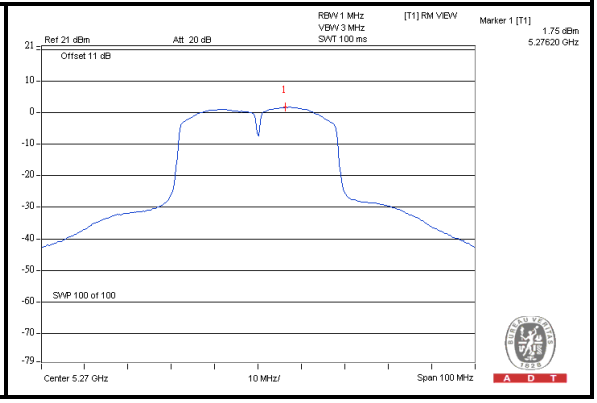
Chain(0) : CH46

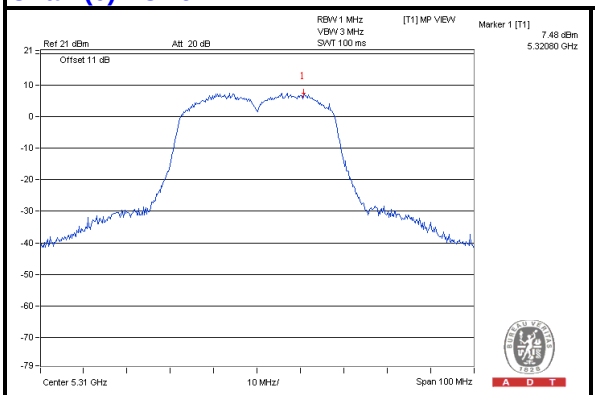
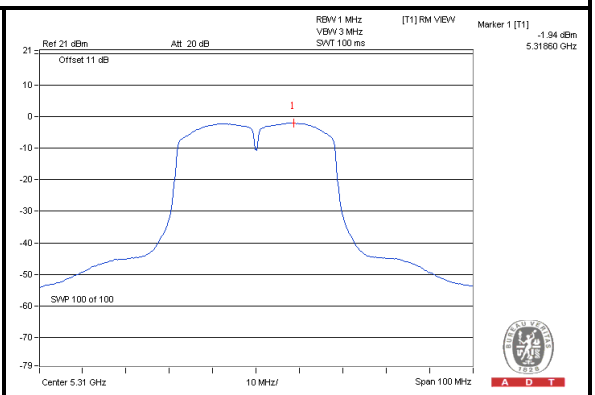
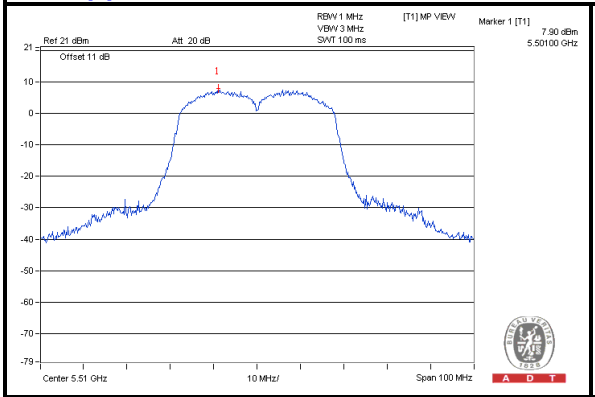
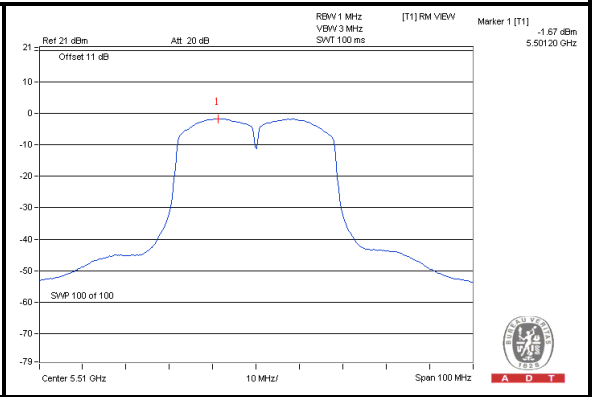
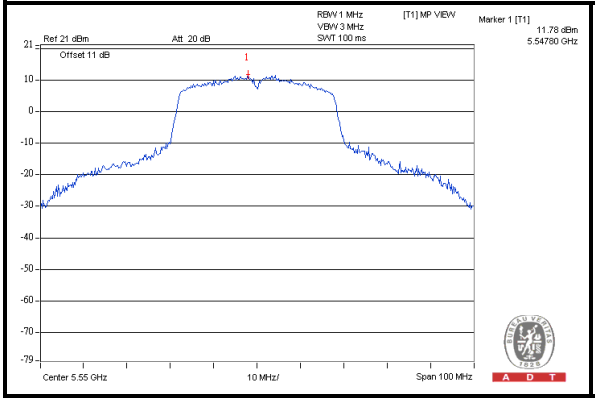
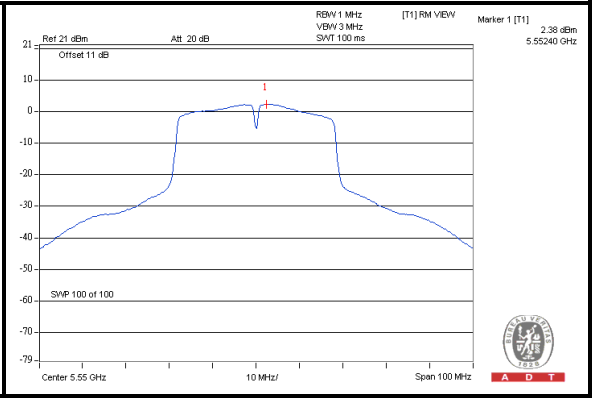


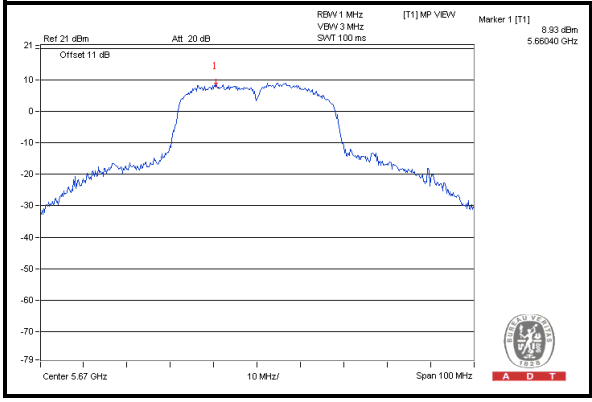
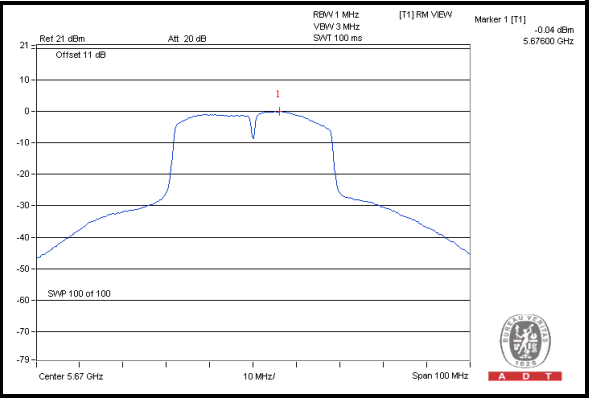


Chain(0) : CH54



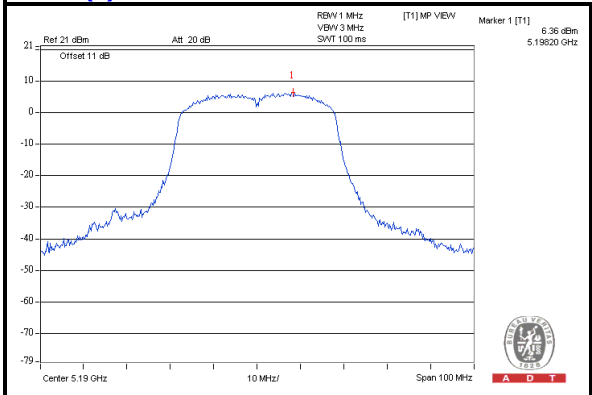


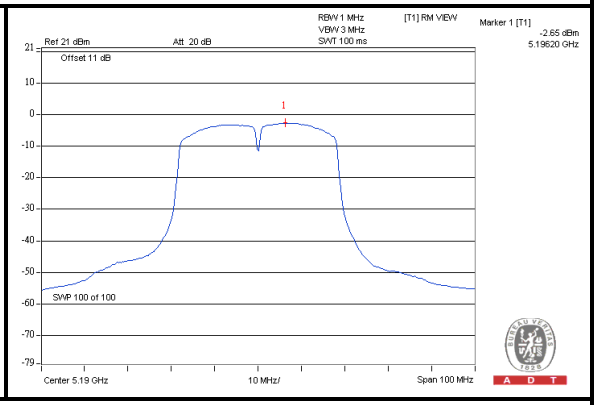
PEAK VALUE	PPSD
Chain(0) : CH62	
	
Chain(0) : CH102	
	
Chain(0) : CH110	
	

PEAK VALUE	PPSD
Chain(0) : CH134	
	

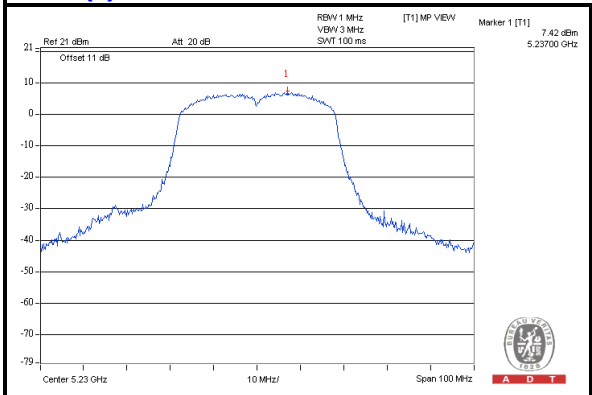
PEAK VALUE	PPSD

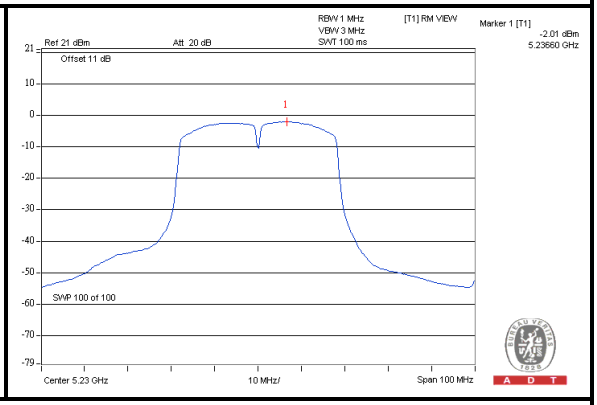
Chain(1) : CH38



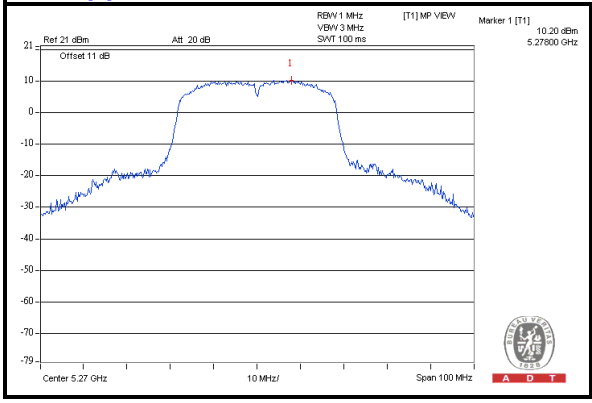


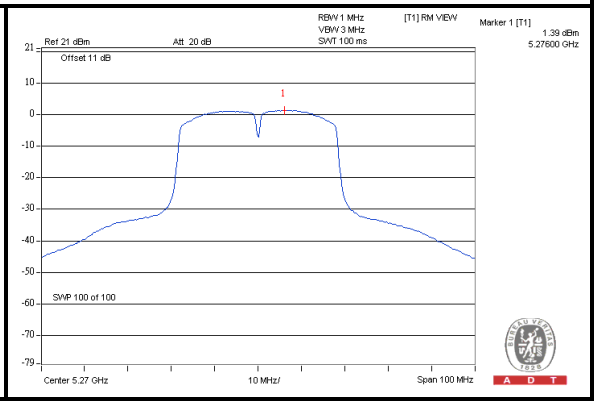
Chain(1) : CH46

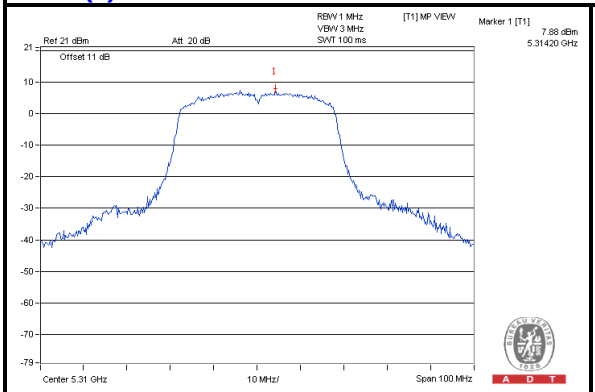
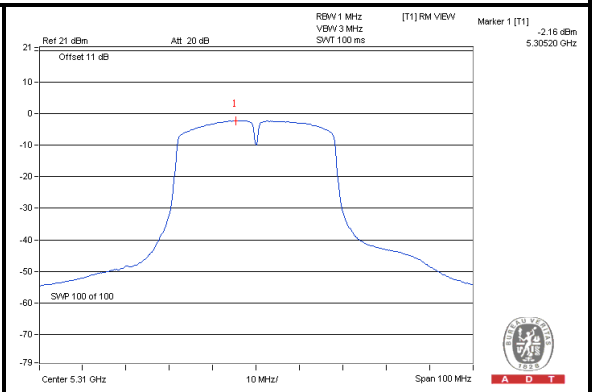
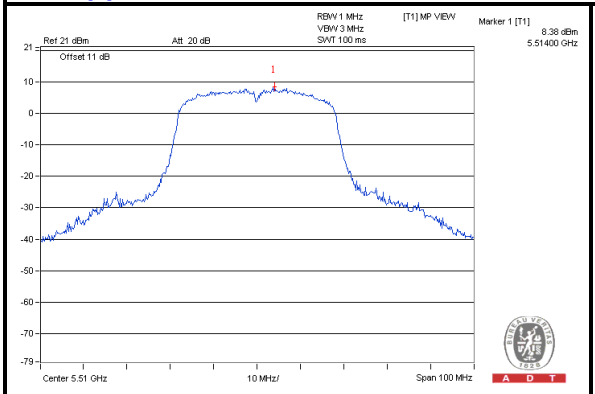
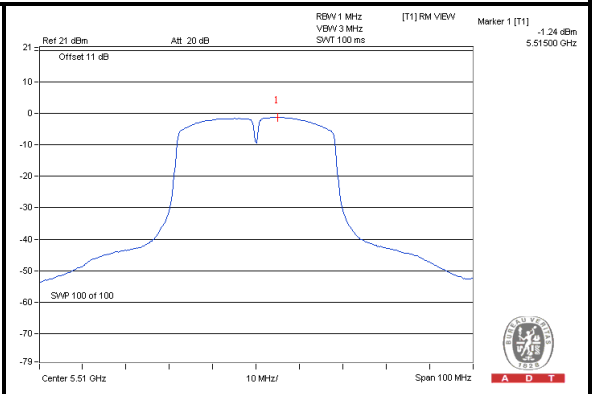
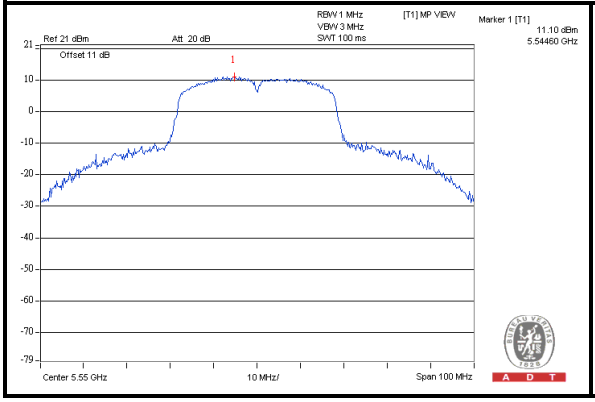
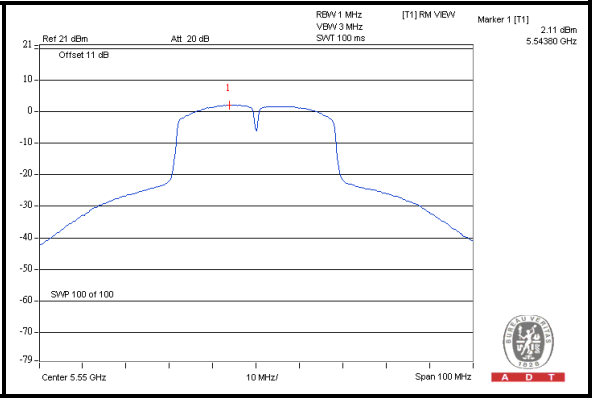


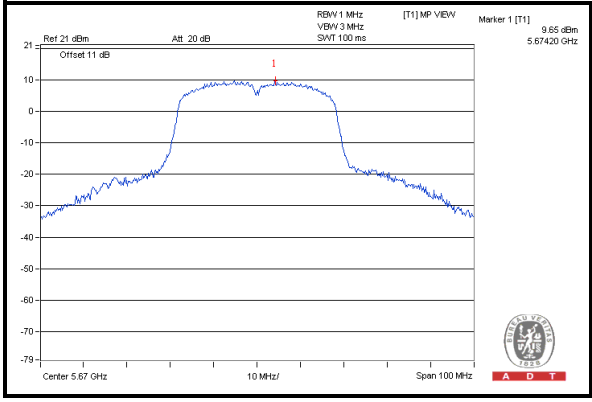
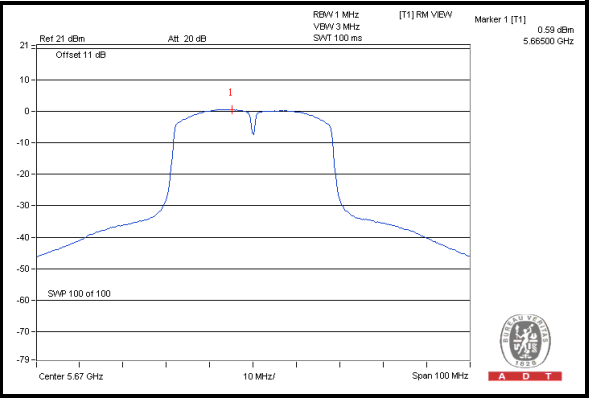


Chain(1) : CH54





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	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013

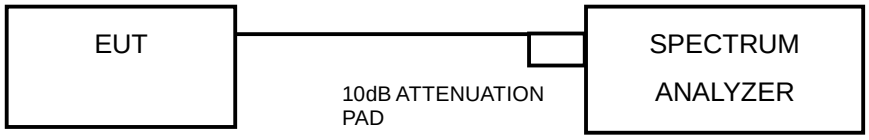
Note:

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 : Apr. 11, 2013

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

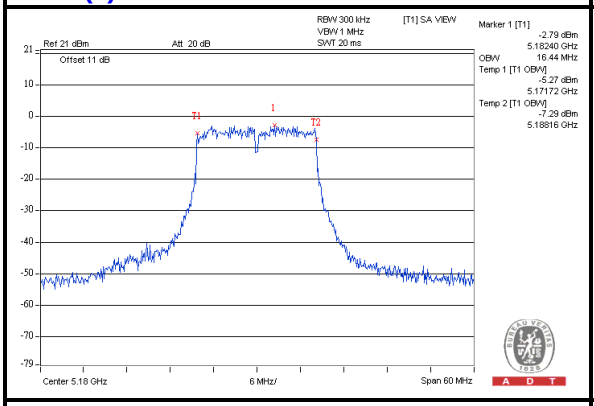
The software (Atheros Radio test 2_Version:2.3) provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.4.5 TEST RESULTS

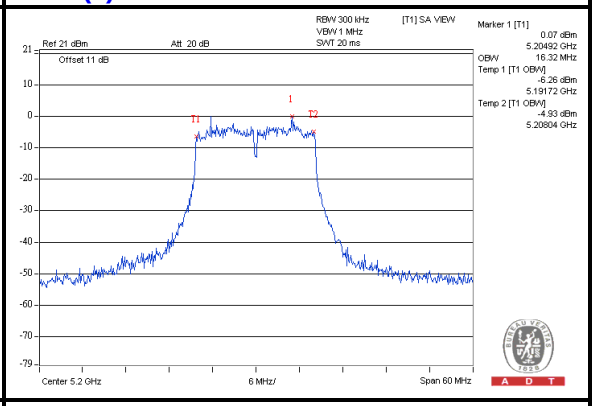
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	16.44	16.32
40	5200	16.32	16.32
48	5240	16.32	16.32
52	5260	16.56	16.56
60	5300	16.56	16.56
64	5320	16.32	16.44
100	5500	16.56	16.44
116	5580	19.20	21.12
132	5660	17.04	16.56
140	5700	16.56	16.32

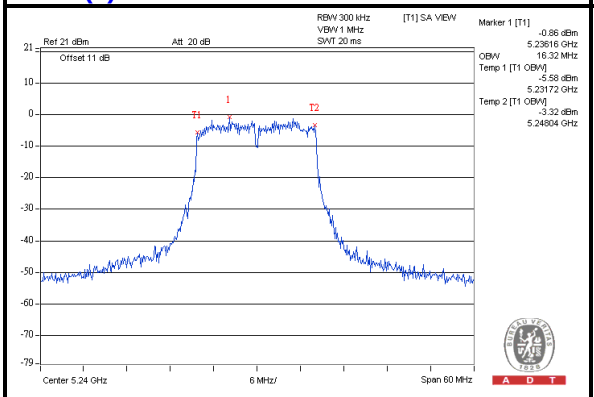
Chain(0) : CH36



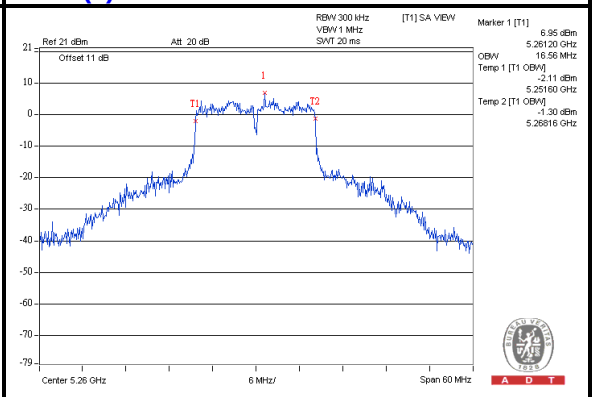
Chain(0) : CH40



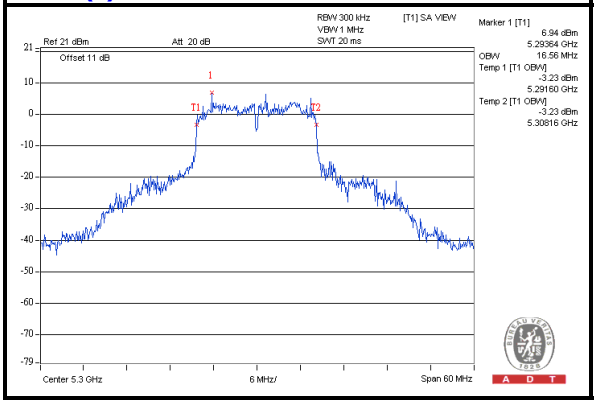
Chain(0) : CH48



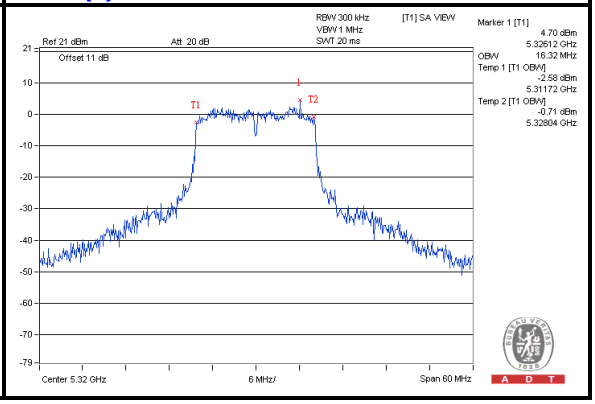
Chain(0) : CH52



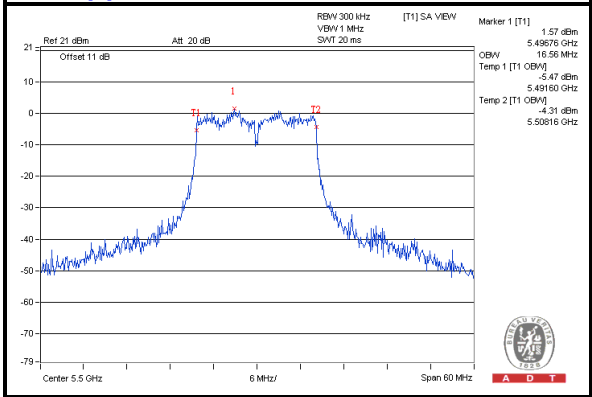
Chain(0) : CH60



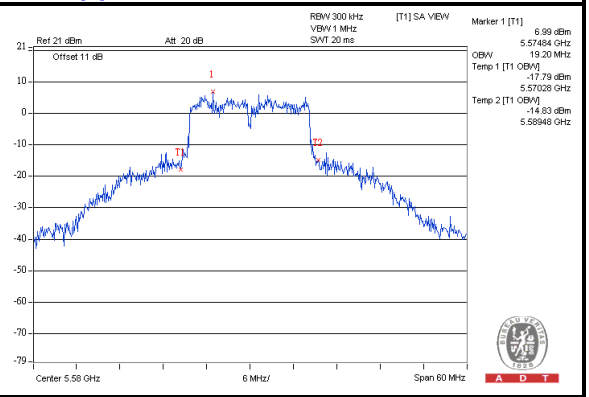
Chain(0) : CH64



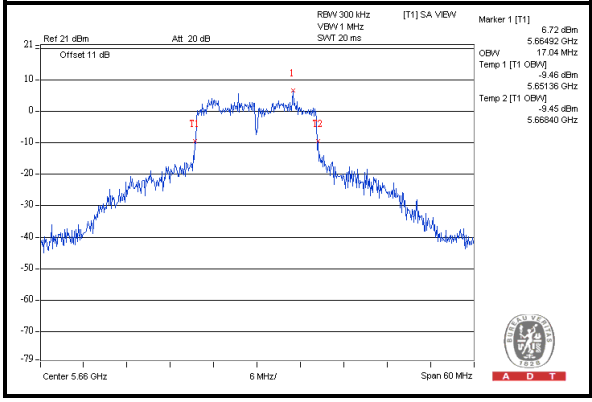
Chain(0) : CH100



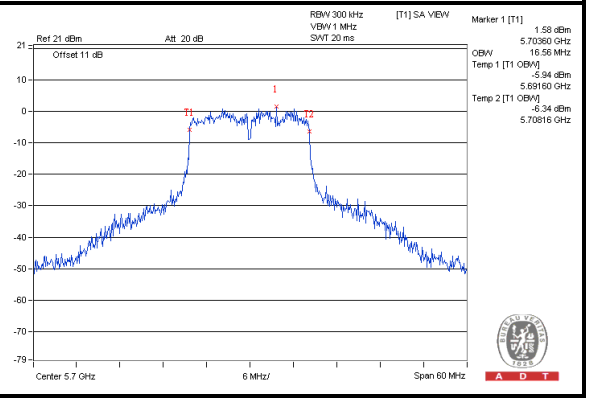
Chain(0) : CH116



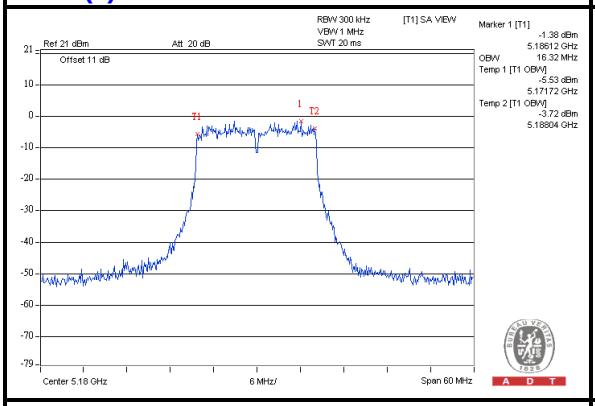
Chain(0) : CH132



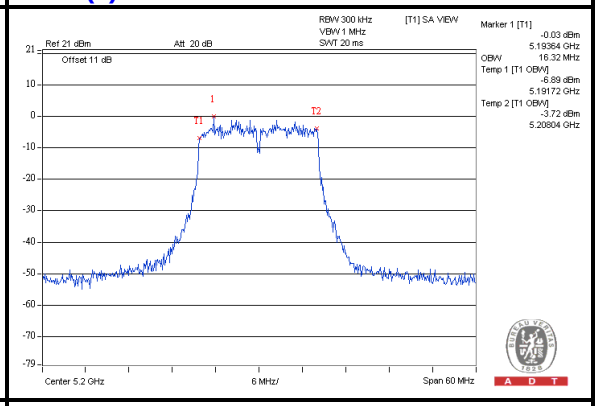
Chain(0) : CH140



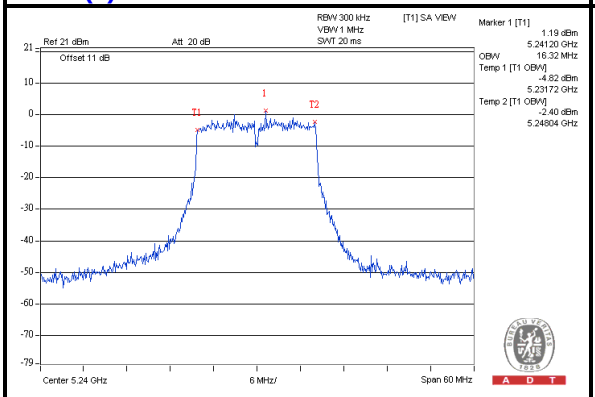
Chain(1) : CH36



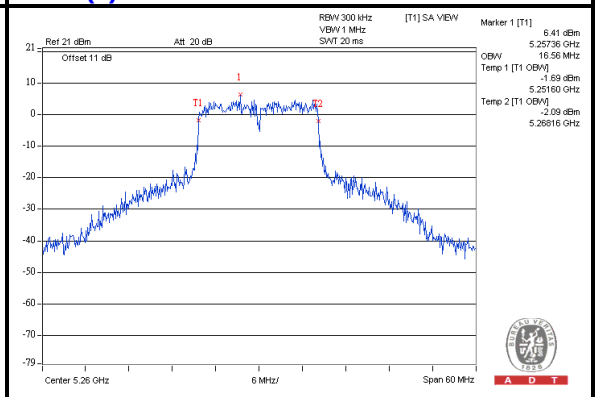
Chain(1) : CH40



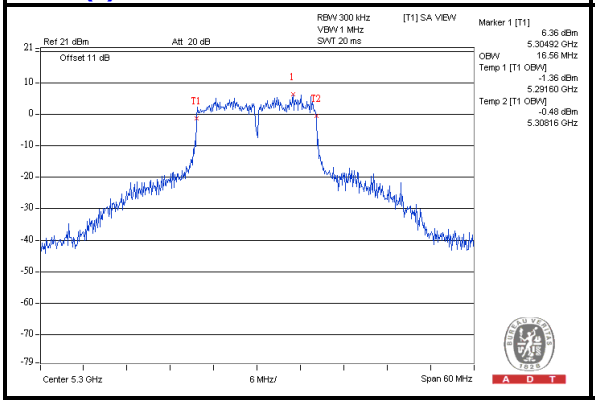
Chain(1) : CH48



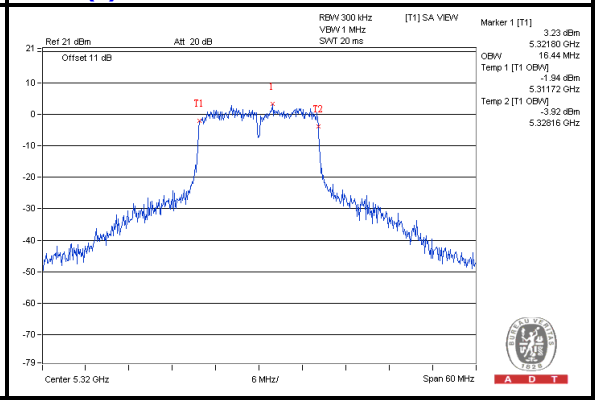
Chain(1) : CH52



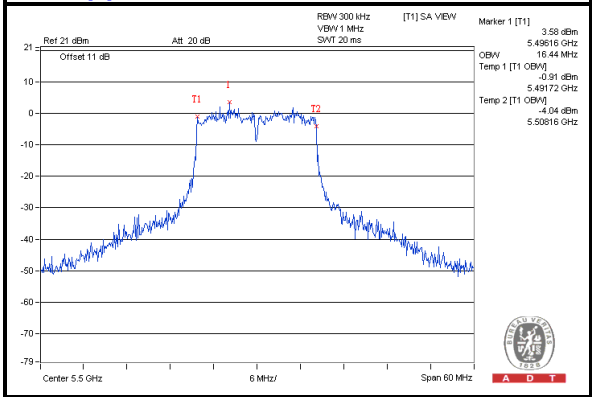
Chain(1) : CH60



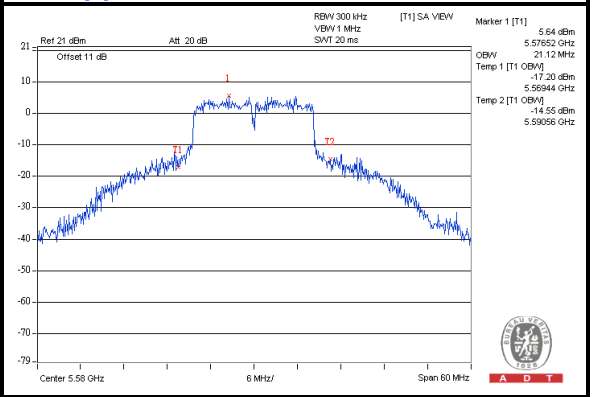
Chain(1) : CH64



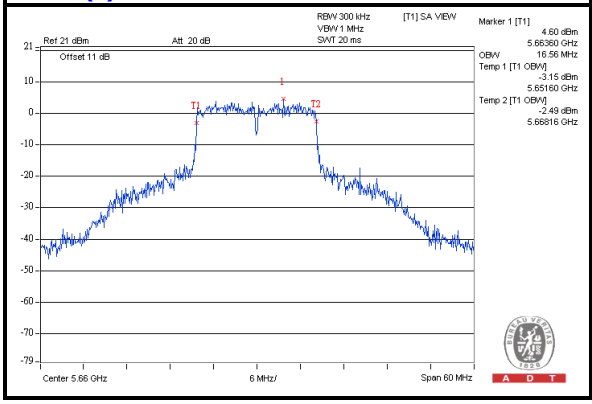
Chain(1) : CH100



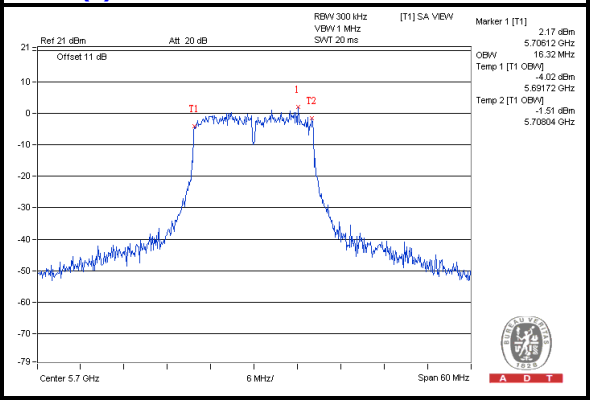
Chain(1) : CH116



Chain(1) : CH132



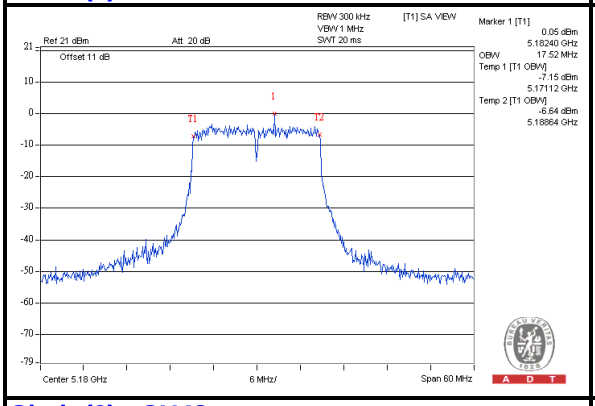
Chain(1) : CH140



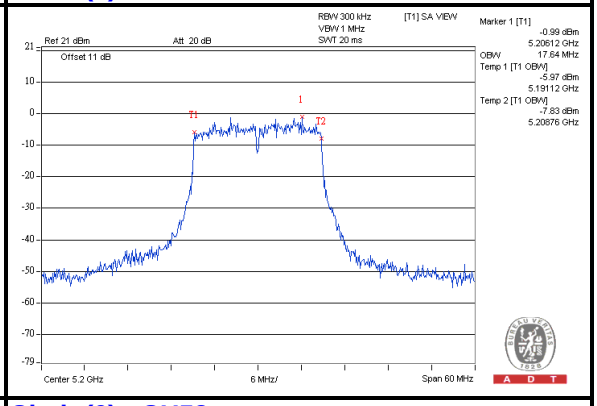
802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	17.52	17.52
40	5200	17.64	17.52
48	5240	17.52	17.52
52	5260	17.76	17.76
60	5300	17.76	17.76
64	5320	17.64	17.52
100	5500	17.52	17.52
116	5580	18.00	22.32
132	5660	18.72	17.76
140	5700	17.52	17.52

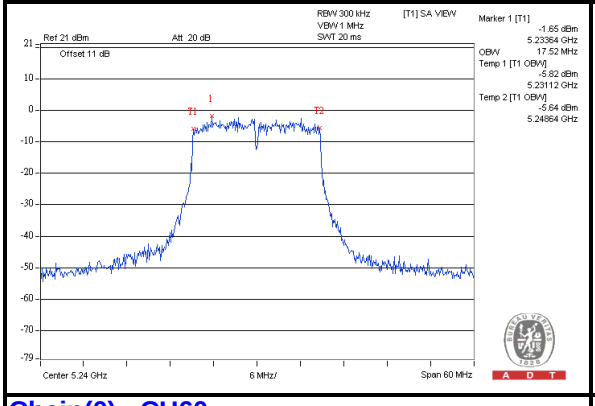
Chain(0) : CH36



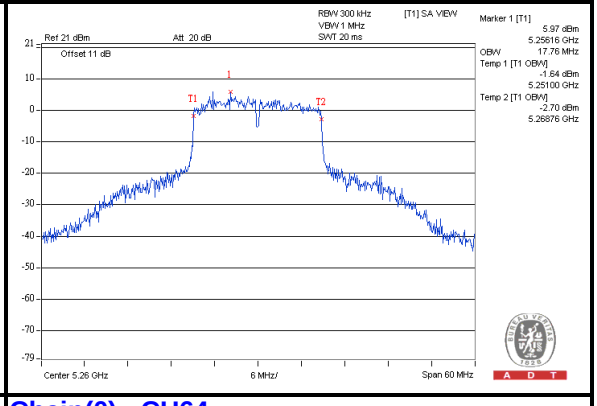
Chain(0) : CH40



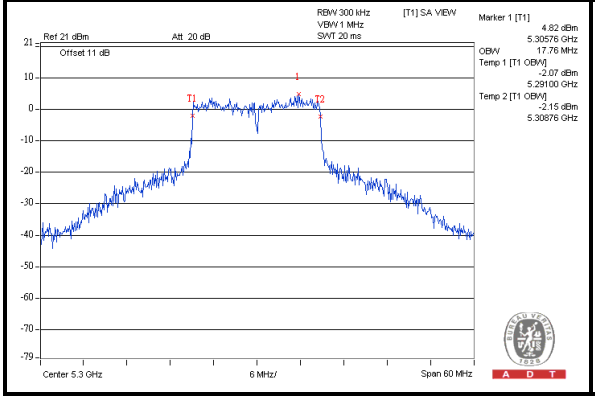
Chain(0) : CH48



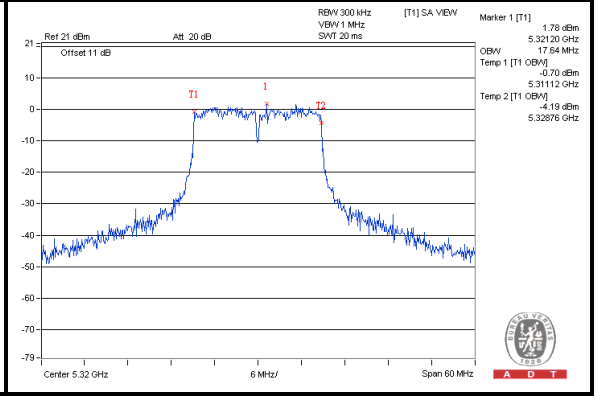
Chain(0) : CH52



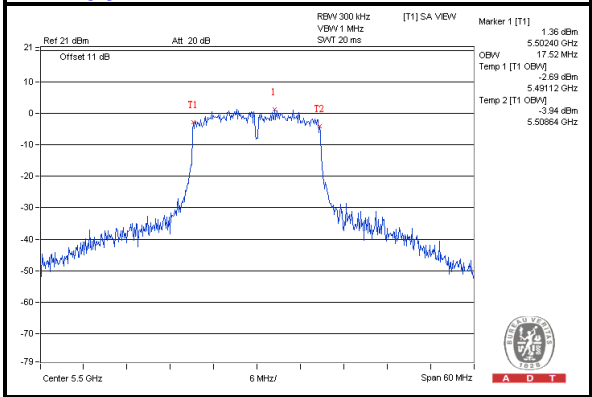
Chain(0) : CH60



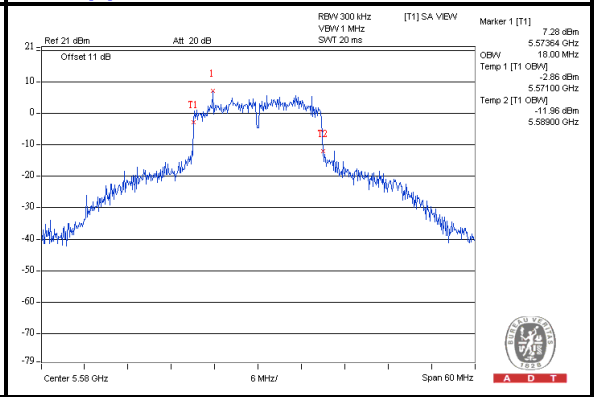
Chain(0) : CH64



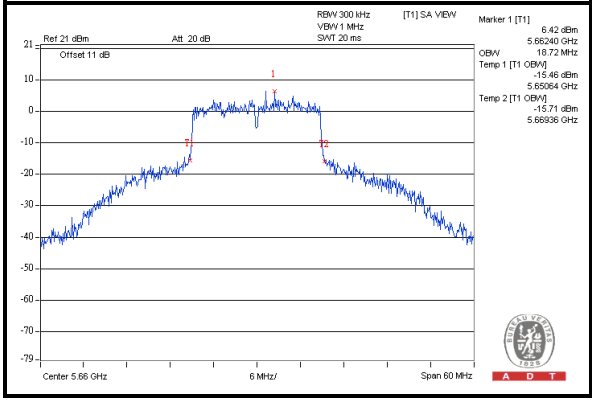
Chain(0) : CH100



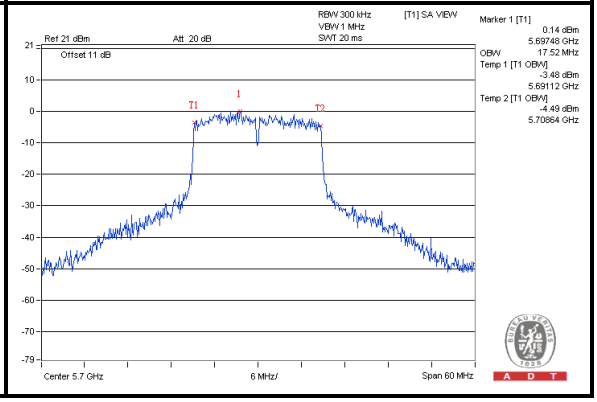
Chain(0) : CH116



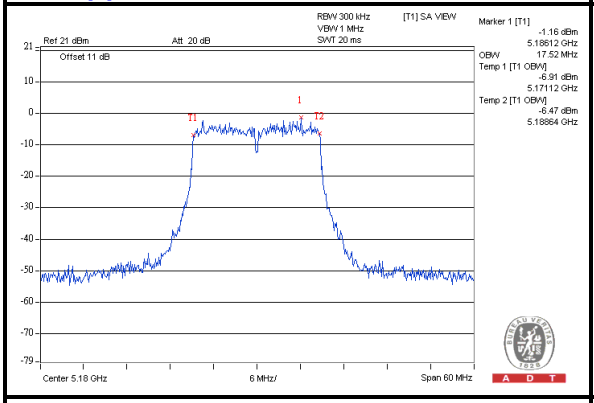
Chain(0) : CH132



Chain(0) : CH140



Chain(1) : CH36



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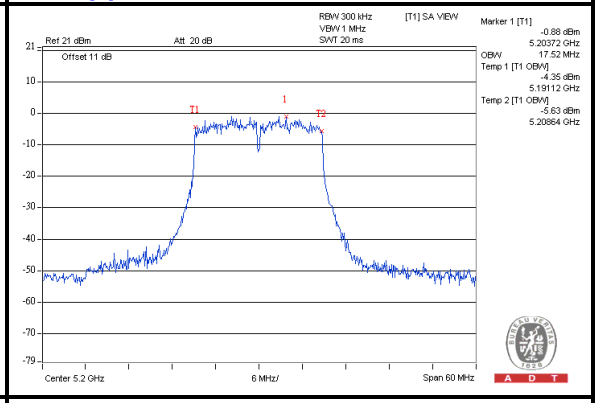
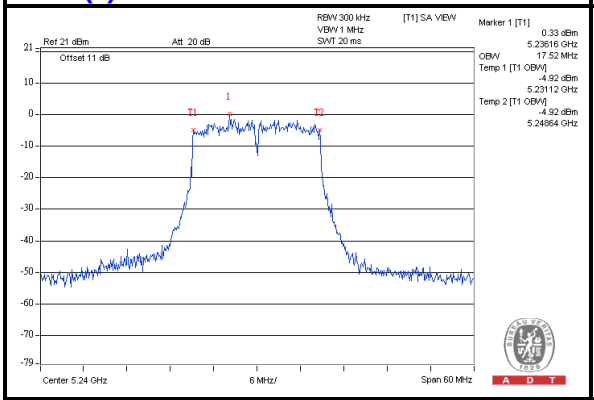
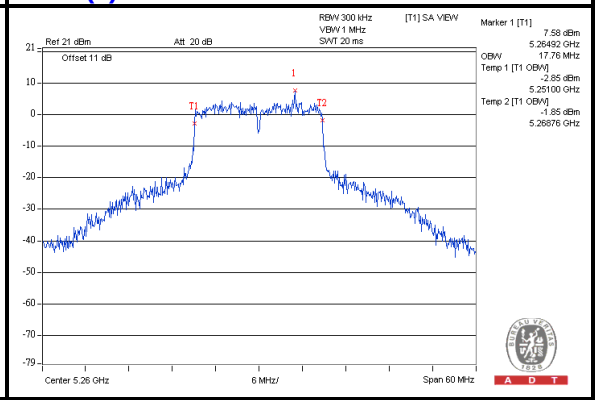


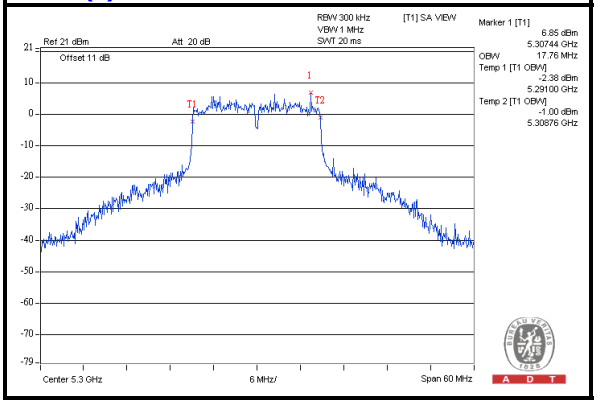
Chain(1) : CH48



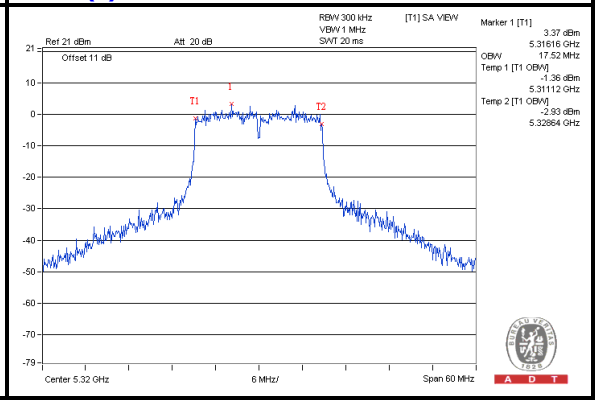
Chain(1) : CH52



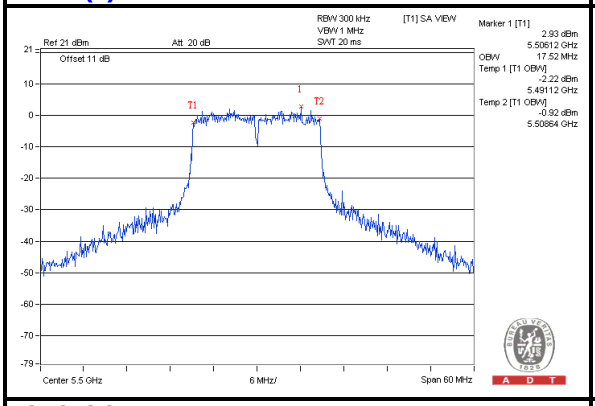
Chain(1) : CH60



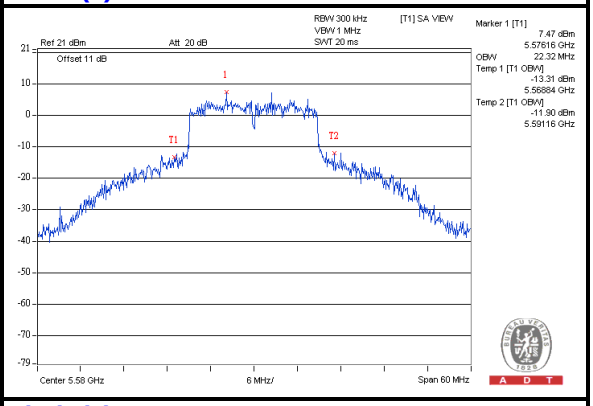
Chain(1) : CH64



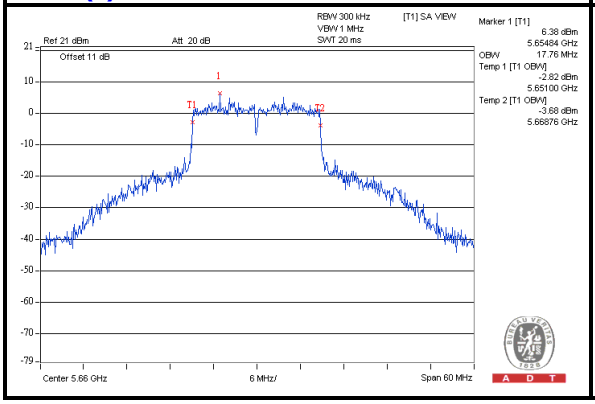
Chain(1) : CH100



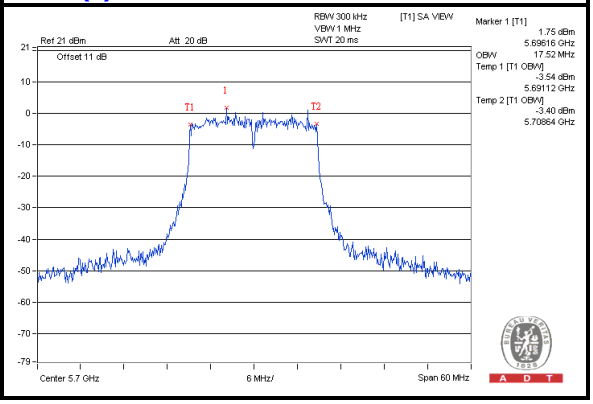
Chain(1) : CH116



Chain(1) : CH132



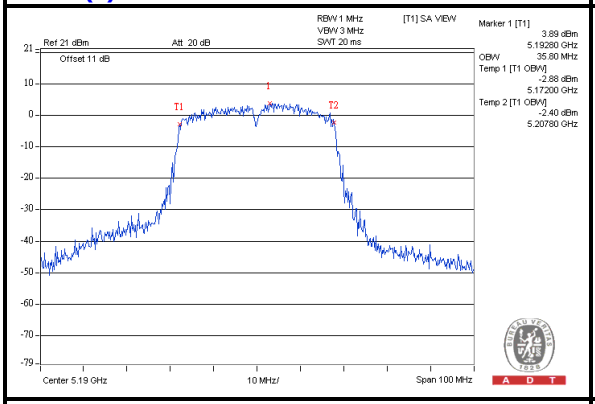
Chain(1) : CH140



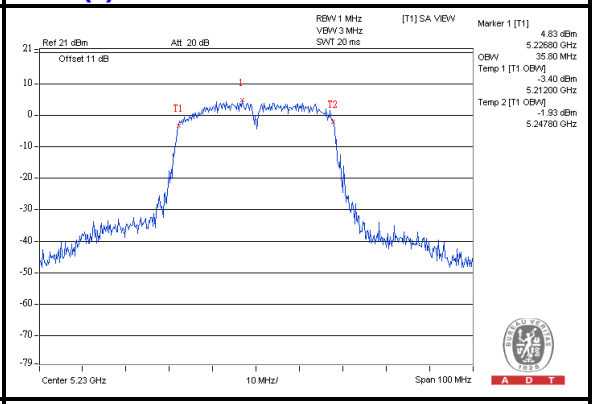
802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
38	5190	35.80	35.80
46	5230	35.80	35.80
54	5270	36.00	35.80
62	5310	35.60	36.00
102	5510	35.60	35.80
110	5550	36.00	36.20
134	5670	36.00	35.60

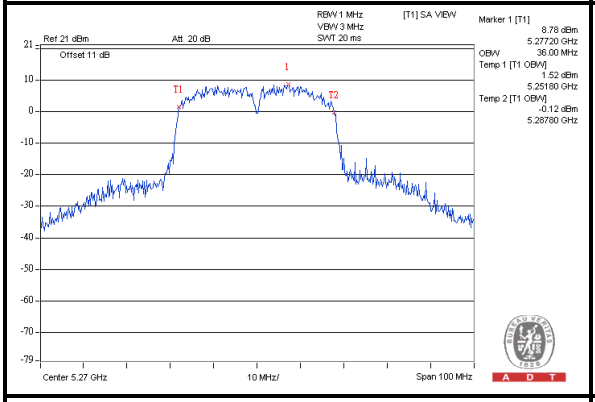
Chain(0) : CH38



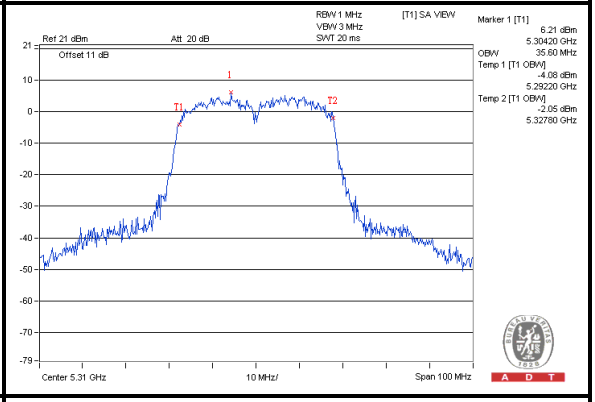
Chain(0) : CH46



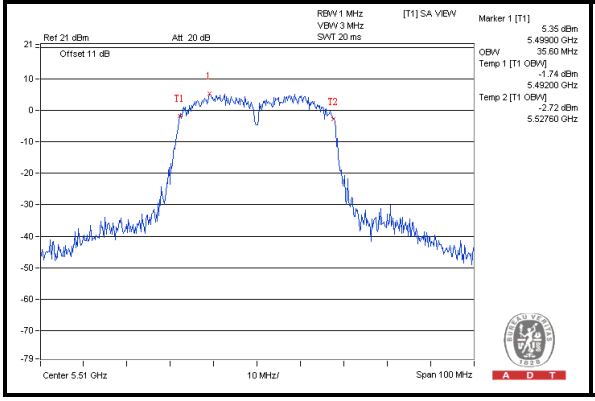
Chain(0) : CH54



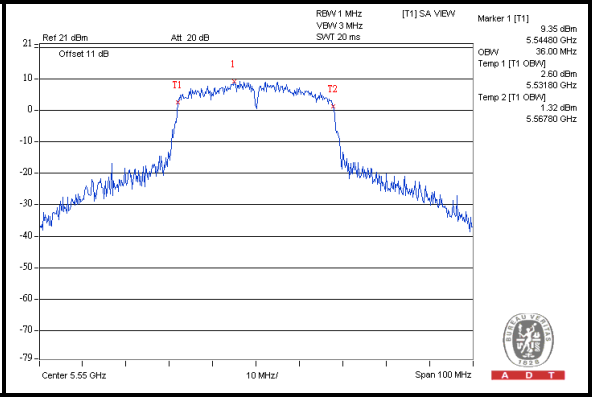
Chain(0) : CH62

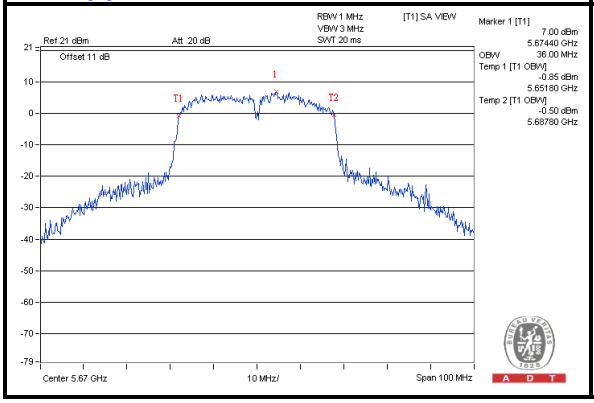


Chain(0) : CH102

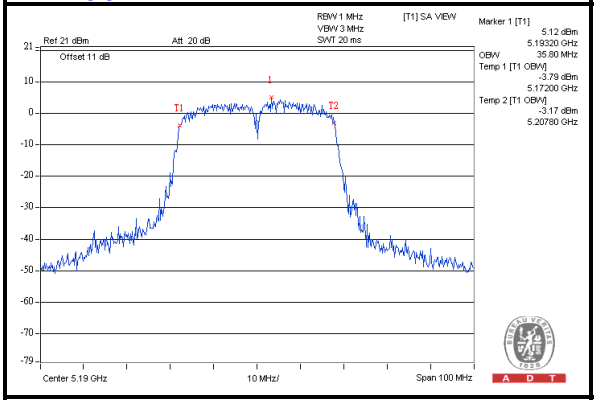


Chain(0) : CH110

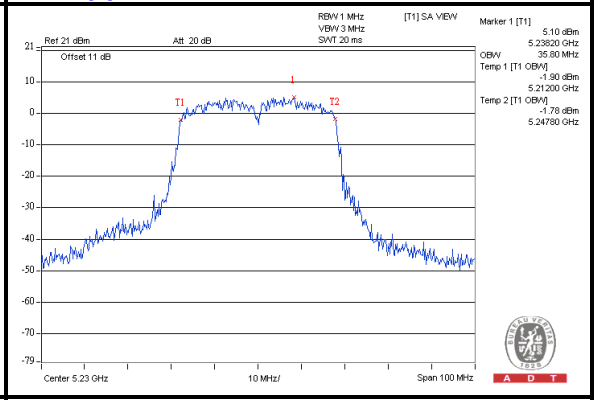


Chain(0) : CH134	
	

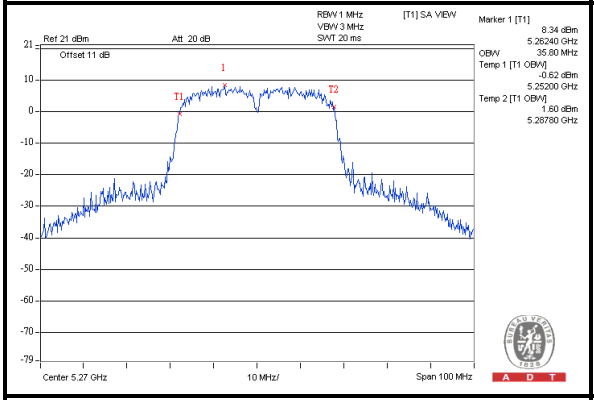
Chain(1) : CH38



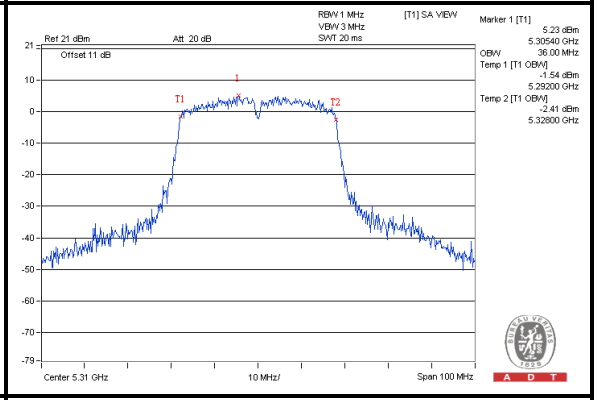
Chain(1) : CH46



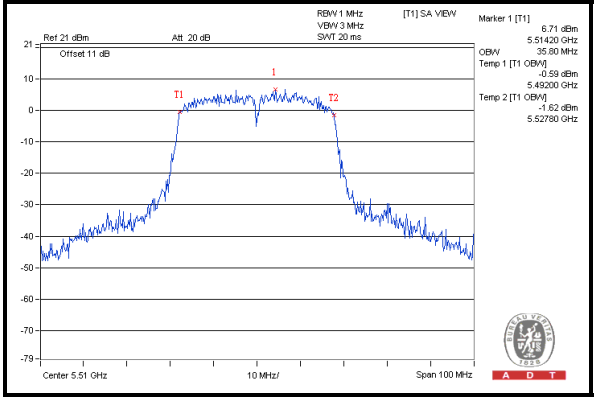
Chain(0) : CH54



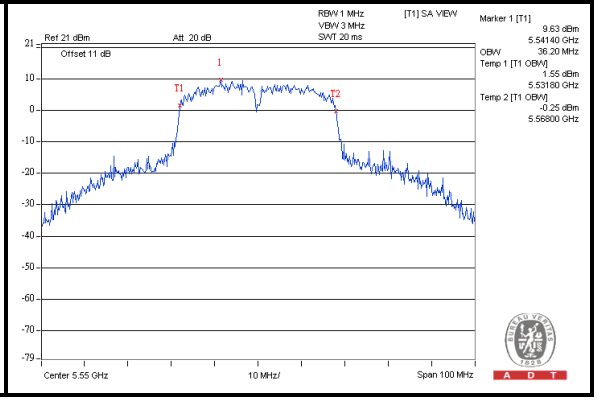
Chain(0) : CH62

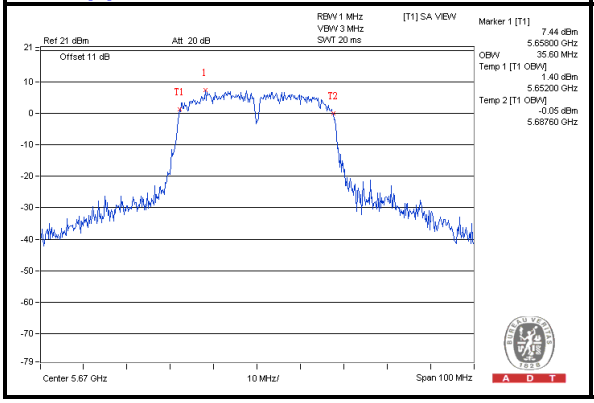


Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134	
	

4.5 UNWANTED EMISSION MEASUREMENT(RADIATED VERSUS CONDUCTED)

4.5.1 LIMITS OF UNWANTED EMISSION 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.

4.5.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

NOTE:

1. 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

Below 1GHz test

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 29,2013	Jan. 28,2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A02578	June 26, 2012	June 25, 2013
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Apr. 09, 2012	Apr. 08, 2013
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 19, 2012	Nov. 18, 2013
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 25, 2012	Dec. 24, 2013
RF Cable	NA	CHGCAB_001	Oct. 06, 2012	Oct. 05, 2013
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. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: Feb. 28, 2013

Above 1GHz test

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
MXE EMI Receiver Agilent	N9038A	MY50010156	Jan. 16, 2013	Jan. 15, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-04	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 30, 2012	Oct. 29, 2013
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 27, 2012	Nov. 26, 2013
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 26, 2012	Dec. 25, 2013
RF Cable	NA	CHHCAB_001	Oct. 07, 2012	Oct. 06, 2013
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: Mar. 06, 2013

4.5.4 TEST PROCEDURES

Following FCC KDB 789033 D01 General UNII Test Procedures:

Radiated versus Conducted Measurements.

The unwanted emission limits in both the restricted and non-restricted bands are based on antenna-port conducted measurements in conjunction with cabinet emissions tests are permitted to demonstrate compliance.

The following steps was performed:

a. Cabinet emissions measurements. Radiated measurement was performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna was replaced by a termination matching the nominal impedance of the antenna.

b. Conducted tests was performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT

c. EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater

d. EIRP adjustments for multiple outputs. (Follow the procedures specified in FCC KDB Publication 662911)

e. For all of Radiation emission test

e-1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

e-2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

e-3. 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.

e-4. 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-5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

e-6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for 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.

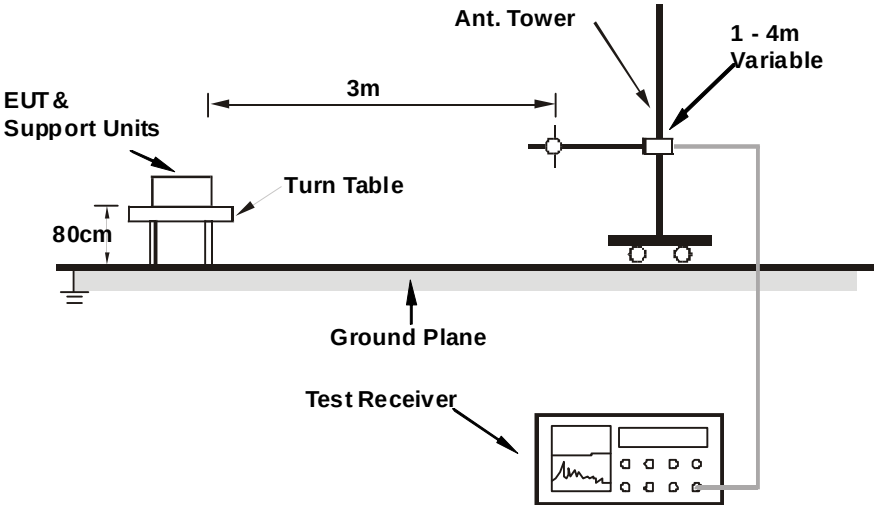
4.5.5 DEVIATION FROM TEST STANDARD

No deviation

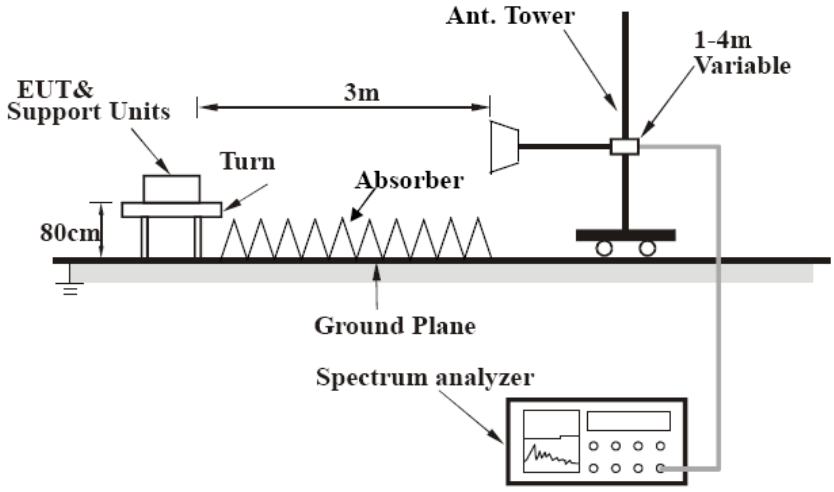
4.5.6 TEST SETUP

Radiation configuration:

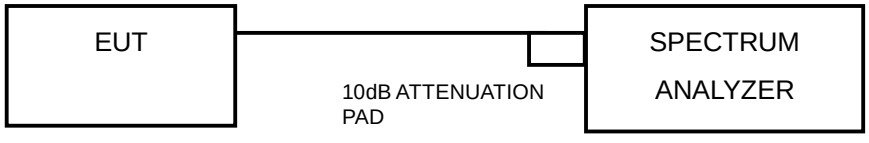
<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



Conducted configuration:



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 “Atheros Radio test 2_Version:2.3” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.5.8 TEST RESULTS (RADIATED MEASUREMENT)

Radiated versus Conducted Measurement	
☐Conducted measurement	☒Radiated measurement
For Radiated measurement: The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation) For Conducted measurement: The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).	

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 132	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	Below 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	33.93	33.7 QP	40.0	-6.3	1.40 H	178	20.76	12.98
2	76.10	32.2 QP	40.0	-7.8	1.41 H	175	21.37	10.84
3	136.92	35.6 QP	43.5	-7.9	1.75 H	87	21.86	13.72
4	476.86	30.2 QP	46.0	-15.8	1.75 H	65	10.36	19.81
5	625.00	33.0 QP	46.0	-13.0	1.41 H	157	10.03	22.98
6	875.02	40.1 QP	46.0	-5.9	1.24 H	65	13.01	27.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	66.26	33.7 QP	40.0	-6.3	1.45 V	245	20.66	13.01
2	108.60	28.5 QP	43.5	-15.1	1.34 V	124	17.41	11.04
3	132.60	31.7 QP	43.5	-11.9	1.10 V	65	18.22	13.43
4	622.00	31.2 QP	46.0	-14.9	1.65 V	210	8.21	22.94
5	750.01	39.9 QP	46.0	-6.1	1.75 V	97	15.01	24.91
6	875.00	36.2 QP	46.0	-9.8	1.10 V	65	9.09	27.12

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	#10360.00	58.3 PK	74.0	-15.7	1.02 H	133	8.89	49.41
2	#10360.00	47.0 AV	54.0	-7.0	1.02 H	133	-2.41	49.41
3	15540.00	60.5 PK	74.0	-13.5	1.14 H	160	5.05	55.45
4	15540.00	49.8 AV	54.0	-4.2	1.14 H	160	-5.65	55.45
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	#10360.00	58.8 PK	74.0	-15.2	1.17 V	182	9.39	49.41
2	#10360.00	47.4 AV	54.0	-6.6	1.17 V	182	-2.01	49.41
3	15540.00	61.9 PK	74.0	-12.1	1.25 V	304	6.45	55.45
4	15540.00	50.3 AV	54.0	-3.7	1.25 V	304	-5.15	55.45

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. " # ": 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	#10400.00	58.7 PK	74.0	-15.3	1.00 H	138	9.67	49.03
2	#10400.00	47.5 AV	54.0	-6.5	1.00 H	138	-1.53	49.03
3	15600.00	60.8 PK	74.0	-13.2	1.14 H	164	5.55	55.25
4	15600.00	50.1 AV	54.0	-3.9	1.14 H	164	-5.15	55.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10400.00	58.9 PK	74.0	-15.1	1.21 V	183	9.87	49.03
2	#10400.00	47.7 AV	54.0	-6.3	1.21 V	183	-1.33	49.03
3	15600.00	61.7 PK	74.0	-12.3	1.27 V	315	6.45	55.25
4	15600.00	50.3 AV	54.0	-3.7	1.27 V	315	-4.95	55.25

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	#10480.00	58.2 PK	74.0	-15.8	1.05 H	134	8.61	49.59
2	#10480.00	46.9 AV	54.0	-7.1	1.05 H	134	-2.69	49.59
3	15720.00	60.9 PK	74.0	-13.1	1.14 H	160	6.06	54.84
4	15720.00	50.1 AV	54.0	-3.9	1.14 H	160	-4.74	54.84
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	#10480.00	58.5 PK	74.0	-15.5	1.19 V	191	8.91	49.59
2	#10480.00	47.6 AV	54.0	-6.4	1.19 V	191	-1.99	49.59
3	15720.00	61.9 PK	74.0	-12.1	1.27 V	309	7.06	54.84
4	15720.00	50.5 AV	54.0	-3.5	1.27 V	309	-4.34	54.84

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. " # ": 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	#10520.00	61.4 PK	74.0	-12.6	1.00 H	143	11.71	49.69
2	#10520.00	49.0 AV	54.0	-5.0	1.00 H	143	-0.69	49.69
3	15780.00	61.0 PK	74.0	-13.0	1.16 H	149	6.05	54.95
4	15780.00	50.1 AV	54.0	-3.9	1.16 H	149	-4.85	54.95
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	#10520.00	60.5 PK	74.0	-13.5	1.22 V	174	10.81	49.69
2	#10520.00	49.1 AV	54.0	-4.9	1.22 V	174	-0.59	49.69
3	15780.00	61.9 PK	74.0	-12.1	1.27 V	299	6.95	54.95
4	**15780.00**	**50.6 AV**	**54.0**	**-3.4**	**1.27 V**	**299**	**-4.35**	**54.95**

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	10600.00	61.2 PK	74.0	-12.8	1.00 H	130	11.65	49.55
2	10600.00	49.0 AV	54.0	-5.0	1.00 H	130	-0.55	49.55
3	15900.00	60.6 PK	74.0	-13.4	1.12 H	161	5.59	55.01
4	15900.00	50.0 AV	54.0	-4.0	1.12 H	161	-5.01	55.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10600.00	60.9 PK	74.0	-13.1	1.26 V	170	11.35	49.55
2	10600.00	49.4 AV	54.0	-4.6	1.26 V	170	-0.15	49.55
3	15900.00	61.9 PK	74.0	-12.1	1.31 V	295	6.89	55.01
4	15900.00	50.5 AV	54.0	-3.5	1.31 V	295	-4.51	55.01

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.

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	10640.00	58.2 PK	74.0	-15.8	1.00 H	124	8.54	49.66
2	10640.00	47.2 AV	54.0	-6.8	1.00 H	124	-2.46	49.66
3	15960.00	60.6 PK	74.0	-13.4	1.20 H	148	5.92	54.68
4	15960.00	49.8 AV	54.0	-4.2	1.20 H	148	-4.88	54.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10640.00	58.5 PK	74.0	-15.5	1.25 V	199	8.84	49.66
2	10640.00	48.0 AV	54.0	-6.0	1.25 V	199	-1.66	49.66
3	15960.00	61.3 PK	74.0	-12.7	1.30 V	303	6.62	54.68
4	15960.00	50.2 AV	54.0	-3.8	1.30 V	303	-4.48	54.68

REMARKS:

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

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	11000.00	57.9 PK	74.0	-16.1	1.01 H	108	7.69	50.21
2	11000.00	46.8 AV	54.0	-7.2	1.01 H	108	-3.41	50.21
3	#16500.00	60.4 PK	74.0	-13.6	1.18 H	146	3.93	56.47
4	#16500.00	49.7 AV	54.0	-4.3	1.18 H	146	-6.77	56.47
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	11000.00	58.9 PK	74.0	-15.1	1.25 V	186	8.69	50.21
2	11000.00	48.1 AV	54.0	-5.9	1.25 V	186	-2.11	50.21
3	#16500.00	61.3 PK	74.0	-12.7	1.30 V	303	4.83	56.47
4	#16500.00	50.3 AV	54.0	-3.7	1.30 V	303	-6.17	56.47

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. " # ": 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	11160.00	60.8 PK	74.0	-13.2	1.02 H	144	10.82	49.98
2	11160.00	48.8 AV	54.0	-5.2	1.02 H	144	-1.18	49.98
3	#16740.00	60.2 PK	74.0	-13.8	1.20 H	150	3.49	56.71
4	#16740.00	49.6 AV	54.0	-4.4	1.20 H	150	-7.11	56.71
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11160.00	61.3 PK	74.0	-12.7	1.22 V	161	11.32	49.98
2	11160.00	49.6 AV	54.0	-4.4	1.22 V	161	-0.38	49.98
3	#16740.00	61.1 PK	74.0	-12.9	1.28 V	307	4.39	56.71
4	#16740.00	50.4 AV	54.0	-3.6	1.28 V	307	-6.31	56.71

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	11320.00	60.9 PK	74.0	-13.1	1.04 H	141	10.47	50.43
2	11320.00	48.7 AV	54.0	-5.3	1.04 H	141	-1.73	50.43
3	#16980.00	60.3 PK	74.0	-13.7	1.18 H	140	2.63	57.67
4	#16980.00	49.8 AV	54.0	-4.2	1.18 H	140	-7.87	57.67
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	11320.00	61.4 PK	74.0	-12.6	1.26 V	178	10.97	50.43
2	11320.00	49.7 AV	54.0	-4.3	1.26 V	178	-0.73	50.43
3	#16980.00	61.1 PK	74.0	-12.9	1.31 V	307	3.43	57.67
4	**#16980.00**	**50.6 AV**	**54.0**	**-3.4**	**1.31 V**	**307**	**-7.07**	**57.67**

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. " # ": 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	11400.00	58.4 PK	74.0	-15.6	1.06 H	120	8.12	50.28
2	11400.00	47.1 AV	54.0	-6.9	1.06 H	120	-3.18	50.28
3	#17100.00	60.5 PK	74.0	-13.5	1.22 H	154	3.04	57.46
4	#17100.00	49.9 AV	54.0	-4.1	1.22 H	154	-7.56	57.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11400.00	58.9 PK	74.0	-15.1	1.29 V	215	8.62	50.28
2	11400.00	48.2 AV	54.0	-5.8	1.29 V	215	-2.08	50.28
3	#17100.00	60.8 PK	74.0	-13.2	1.26 V	295	3.34	57.46
4	#17100.00	50.3 AV	54.0	-3.7	1.26 V	295	-7.16	57.46

REMARKS:

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

802.11n (HT20)

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	#10360.00	57.9 PK	74.0	-16.1	1.02 H	147	8.49	49.41
2	#10360.00	46.7 AV	54.0	-7.3	1.02 H	147	-2.71	49.41
3	15540.00	61.3 PK	74.0	-12.7	1.27 H	152	5.85	55.45
4	15540.00	50.4 AV	54.0	-3.6	1.27 H	152	-5.05	55.45
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	#10360.00	58.6 PK	74.0	-15.4	1.13 V	191	9.19	49.41
2	#10360.00	47.3 AV	54.0	-6.7	1.13 V	191	-2.11	49.41
3	15540.00	61.2 PK	74.0	-12.8	1.25 V	287	5.75	55.45
4	15540.00	50.5 AV	54.0	-3.5	1.25 V	287	-4.95	55.45

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. " # ": 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	#10400.00	58.3 PK	74.0	-15.7	1.00 H	138	9.27	49.03
2	#10400.00	46.8 AV	54.0	-7.2	1.00 H	138	-2.23	49.03
3	15600.00	61.0 PK	74.0	-13.0	1.21 H	139	5.75	55.25
4	15600.00	50.0 AV	54.0	-4.0	1.21 H	139	-5.25	55.25
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10400.00	58.7 PK	74.0	-15.3	1.15 V	207	9.67	49.03
2	#10400.00	47.2 AV	54.0	-6.8	1.15 V	207	-1.83	49.03
3	15600.00	60.4 PK	74.0	-13.6	1.30 V	284	5.15	55.25
4	15600.00	50.0 AV	54.0	-4.0	1.30 V	284	-5.25	55.25

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	#10480.00	57.8 PK	74.0	-16.2	1.00 H	119	8.21	49.59
2	#10480.00	46.8 AV	54.0	-7.2	1.00 H	119	-2.79	49.59
3	15720.00	60.7 PK	74.0	-13.3	1.22 H	123	5.86	54.84
4	15720.00	49.8 AV	54.0	-4.2	1.22 H	123	-5.04	54.84
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	#10480.00	58.9 PK	74.0	-15.1	1.16 V	184	9.31	49.59
2	#10480.00	47.4 AV	54.0	-6.6	1.16 V	184	-2.19	49.59
3	15720.00	60.0 PK	74.0	-14.0	1.30 V	294	5.16	54.84
4	15720.00	49.7 AV	54.0	-4.3	1.30 V	294	-5.14	54.84

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. " # ": 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	#10520.00	60.8 PK	74.0	-13.2	1.04 H	157	11.11	49.69
2	#10520.00	48.5 AV	54.0	-5.5	1.04 H	157	-1.19	49.69
3	15780.00	61.3 PK	74.0	-12.7	1.18 H	125	6.35	54.95
4	15780.00	50.2 AV	54.0	-3.8	1.18 H	125	-4.75	54.95
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	#10520.00	60.7 PK	74.0	-13.3	1.24 V	179	11.01	49.69
2	#10520.00	49.3 AV	54.0	-4.7	1.24 V	179	-0.39	49.69
3	15780.00	59.5 PK	74.0	-14.5	1.34 V	293	4.55	54.95
4	15780.00	49.5 AV	54.0	-4.5	1.34 V	293	-5.45	54.95

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	10600.00	61.4 PK	74.0	-12.6	1.02 H	146	11.85	49.55
2	10600.00	49.0 AV	54.0	-5.0	1.02 H	146	-0.55	49.55
3	15900.00	61.2 PK	74.0	-12.8	1.13 H	131	6.19	55.01
4	15900.00	50.3 AV	54.0	-3.7	1.13 H	131	-4.71	55.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10600.00	61.0 PK	74.0	-13.0	1.26 V	155	11.45	49.55
2	10600.00	49.4 AV	54.0	-4.6	1.26 V	155	-0.15	49.55
3	15900.00	59.7 PK	74.0	-14.3	1.30 V	304	4.69	55.01
4	15900.00	49.9 AV	54.0	-4.1	1.30 V	304	-5.11	55.01

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.

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	10640.00	58.4 PK	74.0	-15.6	1.01 H	127	8.74	49.66
2	10640.00	47.4 AV	54.0	-6.6	1.01 H	127	-2.26	49.66
3	15960.00	61.4 PK	74.0	-12.6	1.12 H	136	6.72	54.68
4	15960.00	50.5 AV	54.0	-3.5	1.12 H	136	-4.18	54.68
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10640.00	58.9 PK	74.0	-15.1	1.20 V	197	9.24	49.66
2	10640.00	48.5 AV	54.0	-5.5	1.20 V	197	-1.16	49.66
3	15960.00	60.0 PK	74.0	-14.0	1.31 V	309	5.32	54.68
4	15960.00	50.0 AV	54.0	-4.0	1.31 V	309	-4.68	54.68

REMARKS:

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

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	11000.00	58.5 PK	74.0	-15.5	1.00 H	140	8.29	50.21
2	11000.00	47.8 AV	54.0	-6.2	1.00 H	140	-2.41	50.21
3	#16500.00	61.1 PK	74.0	-12.9	1.15 H	138	4.63	56.47
4	#16500.00	50.0 AV	54.0	-4.0	1.15 H	138	-6.47	56.47
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	11000.00	58.9 PK	74.0	-15.1	1.22 V	211	8.69	50.21
2	11000.00	48.2 AV	54.0	-5.8	1.22 V	211	-2.01	50.21
3	#16500.00	59.9 PK	74.0	-14.1	1.30 V	304	3.43	56.47
4	#16500.00	50.0 AV	54.0	-4.0	1.30 V	304	-6.47	56.47

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. " # ": 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	11160.00	61.0 PK	74.0	-13.0	1.04 H	160	11.02	49.98
2	11160.00	48.8 AV	54.0	-5.2	1.04 H	160	-1.18	49.98
3	#16740.00	61.0 PK	74.0	-13.0	1.09 H	126	4.29	56.71
4	#16740.00	49.8 AV	54.0	-4.2	1.09 H	126	-6.91	56.71
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11160.00	61.1 PK	74.0	-12.9	1.26 V	139	11.12	49.98
2	11160.00	49.7 AV	54.0	-4.3	1.26 V	139	-0.28	49.98
3	#16740.00	60.2 PK	74.0	-13.8	1.33 V	305	3.49	56.71
4	#16740.00	50.2 AV	54.0	-3.8	1.33 V	305	-6.51	56.71

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	11320.00	60.3 PK	74.0	-13.7	1.08 H	156	9.87	50.43
2	11320.00	48.2 AV	54.0	-5.8	1.08 H	156	-2.23	50.43
3	#16980.00	60.7 PK	74.0	-13.3	1.10 H	111	3.03	57.67
4	#16980.00	49.7 AV	54.0	-4.3	1.10 H	111	-7.97	57.67
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	11320.00	60.5 PK	74.0	-13.5	1.32 V	142	10.07	50.43
2	11320.00	49.3 AV	54.0	-4.7	1.32 V	142	-1.13	50.43
3	#16980.00	60.2 PK	74.0	-13.8	1.28 V	316	2.53	57.67
4	#16980.00	50.1 AV	54.0	-3.9	1.28 V	316	-7.57	57.67

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. " # ": 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	11400.00	58.2 PK	74.0	-15.8	1.01 H	137	7.92	50.28
2	11400.00	47.2 AV	54.0	-6.8	1.01 H	137	-3.08	50.28
3	#17100.00	60.8 PK	74.0	-13.2	1.07 H	115	3.34	57.46
4	#17100.00	50.0 AV	54.0	-4.0	1.07 H	115	-7.46	57.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11400.00	58.8 PK	74.0	-15.2	1.28 V	203	8.52	50.28
2	11400.00	48.3 AV	54.0	-5.7	1.28 V	203	-1.98	50.28
3	#17100.00	60.2 PK	74.0	-13.8	1.31 V	318	2.74	57.46
4	#17100.00	50.0 AV	54.0	-4.0	1.31 V	318	-7.46	57.46

REMARKS:

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

802.11n (HT40)

CHANNEL	TX Channel 38	**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	#10380.00	57.8 PK	74.0	-16.2	1.06 H	156	8.58	49.22
2	#10380.00	46.5 AV	54.0	-7.5	1.06 H	156	-2.72	49.22
3	15570.00	60.4 PK	74.0	-13.6	1.07 H	126	5.05	55.35
4	15570.00	49.5 AV	54.0	-4.5	1.07 H	126	-5.85	55.35
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	#10380.00	58.7 PK	74.0	-15.3	1.12 V	242	9.48	49.22
2	#10380.00	47.6 AV	54.0	-6.4	1.12 V	242	-1.62	49.22
3	15570.00	60.3 PK	74.0	-13.7	1.26 V	326	4.95	55.35
4	15570.00	50.0 AV	54.0	-4.0	1.26 V	326	-5.35	55.35

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. " # ": 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	#10460.00	57.3 PK	74.0	-16.7	1.08 H	148	7.85	49.45
2	#10460.00	46.0 AV	54.0	-8.0	1.08 H	148	-3.45	49.45
3	15690.00	60.3 PK	74.0	-13.7	1.13 H	119	5.46	54.84
4	15690.00	49.3 AV	54.0	-4.7	1.13 H	119	-5.54	54.84
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	#10460.00	58.9 PK	74.0	-15.1	1.16 V	231	9.45	49.45
2	#10460.00	47.8 AV	54.0	-6.2	1.16 V	231	-1.65	49.45
3	15690.00	60.4 PK	74.0	-13.6	1.20 V	320	5.56	54.84
4	15690.00	49.8 AV	54.0	-4.2	1.20 V	320	-5.04	54.84

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. " # ": 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	#10540.00	61.3 PK	74.0	-12.7	1.01 H	161	11.64	49.66
2	#10540.00	49.0 AV	54.0	-5.0	1.01 H	161	-0.66	49.66
3	15810.00	60.2 PK	74.0	-13.8	1.08 H	133	5.21	54.99
4	15810.00	49.3 AV	54.0	-4.7	1.08 H	133	-5.69	54.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10540.00	60.9 PK	74.0	-13.1	1.21 V	134	11.24	49.66
2	#10540.00	49.6 AV	54.0	-4.4	1.21 V	134	-0.06	49.66
3	15810.00	60.5 PK	74.0	-13.5	1.18 V	313	5.51	54.99
4	15810.00	49.8 AV	54.0	-4.2	1.18 V	313	-5.19	54.99

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	10620.00	61.3 PK	74.0	-12.7	1.09 H	169	11.70	49.60
2	10620.00	49.2 AV	54.0	-4.8	1.09 H	169	-0.40	49.60
3	15930.00	60.6 PK	74.0	-13.4	1.04 H	140	5.76	54.84
4	15930.00	49.5 AV	54.0	-4.5	1.04 H	140	-5.34	54.84
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	10620.00	61.0 PK	74.0	-13.0	1.31 V	138	11.40	49.60
2	10620.00	49.9 AV	54.0	-4.1	1.31 V	138	0.30	49.60
3	15930.00	60.8 PK	74.0	-13.2	1.23 V	322	5.96	54.84
4	15930.00	50.0 AV	54.0	-4.0	1.23 V	322	-4.84	54.84

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.

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	11020.00	60.8 PK	74.0	-13.2	1.03 H	167	10.64	50.16
2	11020.00	48.9 AV	54.0	-5.1	1.03 H	167	-1.26	50.16
3	#16530.00	60.3 PK	74.0	-13.7	1.00 H	126	3.54	56.76
4	#16530.00	49.0 AV	54.0	-5.0	1.00 H	126	-7.76	56.76
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	11020.00	60.6 PK	74.0	-13.4	1.21 V	131	10.44	50.16
2	11020.00	49.4 AV	54.0	-4.6	1.21 V	131	-0.76	50.16
3	#16530.00	60.7 PK	74.0	-13.3	1.28 V	338	3.94	56.76
4	#16530.00	49.7 AV	54.0	-4.3	1.28 V	338	-7.06	56.76

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	11100.00	61.3 PK	74.0	-12.7	1.07 H	164	11.36	49.94
2	11100.00	49.1 AV	54.0	-4.9	1.07 H	164	-0.84	49.94
3	#16650.00	60.7 PK	74.0	-13.3	1.06 H	120	3.58	57.12
4	#16650.00	49.6 AV	54.0	-4.4	1.06 H	120	-7.52	57.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11100.00	61.5 PK	74.0	-12.5	1.24 V	135	11.56	49.94
2	11100.00	50.0 AV	54.0	-4.0	1.24 V	135	0.06	49.94
3	#16650.00	60.6 PK	74.0	-13.4	1.23 V	334	3.48	57.12
4	#16650.00	49.8 AV	54.0	-4.2	1.23 V	334	-7.32	57.12

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " # ": 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	11340.00	60.9 PK	74.0	-13.1	1.05 H	167	10.51	50.39
2	11340.00	48.4 AV	54.0	-5.6	1.05 H	167	-1.99	50.39
3	#17010.00	60.8 PK	74.0	-13.2	1.03 H	134	3.03	57.77
4	#17010.00	49.8 AV	54.0	-4.2	1.03 H	134	-7.97	57.77
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11340.00	61.4 PK	74.0	-12.6	1.29 V	149	11.01	50.39
2	11340.00	49.9 AV	54.0	-4.1	1.29 V	149	-0.49	50.39
3	#17010.00	60.9 PK	74.0	-13.1	1.19 V	328	3.13	57.77
4	#17010.00	50.1 AV	54.0	-3.9	1.19 V	328	-7.67	57.77

REMARKS:

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

4.5.9 TEST RESULTS (CONDUCTED MEASUREMENT)

Radiated versus Conducted Measurement	
☒Conducted measurement	☐Radiated measurement

For Radiated measurement:

The level of unwanted emissions was measured when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation)

For Conducted measurement:

The level of unwanted emissions was measured as their power in a specified load (conducted spurious emissions).

Conducted Measurement Factor
a. The composite gain will be used when signal support the correlated signal. (Composite gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.01dBi) b. For the out of band spurious the gain for the specific band may have been used rather than the highest gain across all bands. c. For the band edge the gain for the specific band may have been used. d. In restricted bands below 1000 MHz, add upper bound on ground plane reflection: For f = 30 – 1000 MHz, add 4.7 dB. Note: The conducted emission test was considered some factor to compute test result.

BELOW 1GHz WORST-CASE DATA

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
132	40.67 QP	-61.18	-63.14	-59.04	-55.26	-3.78	PASS
	167.4975 QP	-65.13	-60.8	-59.44	-51.76	-7.68	PASS
	313.4825 QP	-62.85	-61.65	-59.2	-49.26	-9.94	PASS
	516.455 QP	-63.26	-60.71	-58.79	-49.26	-9.53	PASS
	779.325 QP	-64.51	-60.27	-58.88	-49.26	-9.62	PASS
	1000 QP	-52.63	-49.97	-48.6	-41.26	-7.34	PASS

ABOVE 1GHz DATA
802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
36	3443.75 PK	-42.24	-43.9	-39.98	-21.26	-18.72	PASS
	3453.125 AV	-53.17	-54.34	-50.71	-41.26	-9.45	PASS
	10350 PK	-41.89	-44.03	-39.82	-21.26	-18.56	PASS
	10362.5 AV	-54.29	-54.17	-51.22	-41.26	-9.96	PASS
	15547 PK	-44.42	-43.63	-41	-21.26	-19.74	PASS
	15532.625 AV	-55.29	-54.74	-52	-41.26	-10.74	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
36	5106.4 PK	-37.16	-34.4	-32.55	-21.26	-11.29	PASS
	5103.6 AV	-49.26	-45.86	-44.23	-41.26	-2.97	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
40	3465.625 PK	-42.47	-44.02	-40.17	-21.26	-18.91	PASS
	3465.625 AV	-53.18	-54.34	-50.71	-41.26	-9.45	PASS
	10396.875 PK	-43.22	-44.82	-40.94	-21.26	-19.68	PASS
	10400 AV	-54.35	-54.61	-51.47	-41.26	-10.21	PASS
	15590.125 PK	-45.29	-44.53	-41.88	-21.26	-20.62	PASS
	15607.375 AV	-55.99	-55.93	-52.95	-41.26	-11.69	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
48	3487.5 PK	-43.24	-44.12	-40.65	-21.26	-19.39	PASS
	3493.75 AV	-53.49	-54.36	-50.89	-41.26	-9.63	PASS
	10481.25 PK	-44.33	-43.64	-40.96	-21.26	-19.7	PASS
	10478.125 AV	-54.42	-54.29	-51.34	-41.26	-10.08	PASS
	15728.125 PK	-45.9	-44.12	-41.91	-21.26	-20.65	PASS
	15725.25 AV	-56.06	-56	-53.02	-41.26	-11.76	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
52	3509.375 PK	-42.53	-43.42	-39.94	-21.26	-18.68	PASS
	3506.25 AV	-53.05	-54.06	-50.52	-41.26	-9.26	PASS
	10512.5 PK	-40.24	-38.98	-36.55	-21.26	-15.29	PASS
	10518.75 AV	-48.94	-51.83	-47.14	-41.26	-5.88	PASS
	15777 PK	-44.22	-41.39	-39.57	-21.26	-18.31	PASS
	15777 AV	-54.84	-52.95	-50.78	-41.26	-9.52	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
60	3525 PK	-43.42	-41.63	-39.42	-21.26	-18.16	PASS
	3531.25 AV	-53.27	-53.91	-50.57	-41.26	-9.31	PASS
	10603.125 PK	-38.24	-38.4	-35.31	-21.26	-14.05	PASS
	10596.875 AV	-49.05	-50.72	-46.79	-41.26	-5.53	PASS
	15897.75 PK	-41.29	-35.35	-34.36	-21.26	-13.1	PASS
	15900.625 AV	-53	-47.99	-46.8	-41.26	-5.54	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
64	3553.125 PK	-42.41	-42.04	-39.21	-21.26	-17.95	PASS
	3546.875 AV	-52.73	-53.93	-50.28	-41.26	-9.02	PASS
	10637.5 PK	-41.41	-42.65	-38.98	-21.26	-17.72	PASS
	10640.625 AV	-52.49	-51.78	-49.11	-41.26	-7.85	PASS
	15969.625 PK	-43.86	-40.88	-39.11	-21.26	-17.85	PASS
	15955.25 AV	-54.6	-51.71	-49.91	-41.26	-8.65	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
64	5350.8 PK	-24.68	-27.04	-22.69	-21.26	-1.43	PASS
	5350 AV	-46.12	-44.94	-42.48	-41.26	-1.22	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
100	3665.625 PK	-43.09	-42.43	-39.74	-21.26	-18.48	PASS
	3665.625 AV	-50.85	-52.77	-48.69	-41.26	-7.43	PASS
	11003.125 PK	-40.24	-43.89	-38.68	-21.26	-17.42	PASS
	11000 AV	-52.09	-54.04	-49.95	-41.26	-8.69	PASS
	16498.625 PK	-40.04	-41.68	-37.77	-21.26	-16.51	PASS
	16498.625 AV	-51.27	-52.57	-48.86	-41.26	-7.6	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
100	5469.5 PK	-28.24	-28.84	-25.52	-21.26	-4.26	PASS
	5424.5 AV	-44.56	-45.48	-41.99	-41.26	-0.73	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
116	3725 PK	-42.4	-42.73	-39.55	-21.26	-18.29	PASS
	3718.75 AV	-50.34	-53.12	-48.5	-41.26	-7.24	PASS
	11162.5 PK	-37.66	-41.24	-36.08	-21.26	-14.82	PASS
	11159.375 AV	-48.68	-51.83	-46.97	-41.26	-5.71	PASS
	16734.375 PK	-35.52	-34.89	-32.18	-21.26	-10.92	PASS
	16740.125 AV	-46.75	-46.67	-43.7	-41.26	-2.44	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
132	3771.875 PK	-41.17	-43.07	-39.01	-21.26	-17.75	PASS
	3771.875 AV	-46.77	-52.95	-45.83	-41.26	-4.57	PASS
	11318.75 PK	-37.92	-43.42	-36.84	-21.26	-15.58	PASS
	11321.875 AV	-48.62	-53.24	-47.33	-41.26	-6.07	PASS
	16981.625 PK	-37.96	-32.38	-31.32	-21.26	-10.06	PASS
	16975.875 AV	-48.84	-45.42	-43.79	-41.26	-2.53	PASS

802.11a

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
140	3800 PK	-40.64	-43.58	-38.86	-21.26	-17.6	PASS
	3800 AV	-44.51	-52.53	-43.87	-41.26	-2.61	PASS
	11403.125 PK	-42.62	-42.89	-39.74	-21.26	-18.48	PASS
	11400 AV	-51.8	-52.82	-49.27	-41.26	-8.01	PASS
	17096.625 PK	-39.65	-40.06	-36.84	-21.26	-15.58	PASS
	17096.625 AV	-53.2	-50.26	-48.48	-41.26	-7.22	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
140	5725 PK	-27.35	-27.63	-24.48	-21.26	-3.22	PASS
	5725 AV	-43.55	-48.86	-42.43	-41.26	-1.17	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
36	3456.25 PK	-42.41	-44.07	-40.15	-21.26	-18.89	PASS
	3453.125 AV	-53.13	-54.28	-50.66	-41.26	-9.4	PASS
	10362.5 PK	-43.77	-43.39	-40.57	-21.26	-19.31	PASS
	10362.5 AV	-54.42	-54.24	-51.32	-41.26	-10.06	PASS
	15541.25 PK	-43.8	-45.03	-41.36	-21.26	-20.1	PASS
	15544.125 AV	-55.17	-55.05	-52.1	-41.26	-10.84	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
36	5103.6 PK	-37.4	-34.96	-33	-21.26	-11.74	PASS
	5104 AV	-49.76	-46.4	-44.75	-41.26	-3.49	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
40	3471.875 PK	-43.56	-44.29	-40.9	-21.26	-19.64	PASS
	3465.625 AV	-53.49	-54.41	-50.92	-41.26	-9.66	PASS
	10400 PK	-44.41	-43.2	-40.75	-21.26	-19.49	PASS
	10400 AV	-54.58	-54.27	-51.41	-41.26	-10.15	PASS
	15598.75 PK	-45.72	-44.25	-41.91	-21.26	-20.65	PASS
	15590.125 AV	-55.91	-55.91	-52.9	-41.26	-11.64	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
48	3487.5 PK	-43.32	-43.16	-40.23	-21.26	-18.97	PASS
	3493.75 AV	-52.92	-54.22	-50.51	-41.26	-9.25	PASS
	10484.375 PK	-43.63	-44.09	-40.84	-21.26	-19.58	PASS
	10481.25 AV	-54.66	-54.38	-51.51	-41.26	-10.25	PASS
	15719.5 PK	-44.21	-46.43	-42.17	-21.26	-20.91	PASS
	15719.5 AV	-56.09	-56.06	-53.06	-41.26	-11.8	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
52	3515.625 PK	-44	-43.29	-40.62	-21.26	-19.36	PASS
	3506.25 AV	-53.52	-53.93	-50.71	-41.26	-9.45	PASS
	10525 PK	-40.38	-40.3	-37.33	-21.26	-16.07	PASS
	10521.875 AV	-50.48	-51.67	-48.02	-41.26	-6.76	PASS
	15785.625 PK	-43.72	-41.62	-39.53	-21.26	-18.27	PASS
	15782.75 AV	-55.13	-53.14	-51.01	-41.26	-9.75	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
60	3534.375 PK	-42.44	-42.42	-39.42	-21.26	-18.16	PASS
	3531.25 AV	-53.33	-53.96	-50.62	-41.26	-9.36	PASS
	10606.25 PK	-39.91	-39.85	-36.87	-21.26	-15.61	PASS
	10603.125 AV	-50.24	-51.5	-47.81	-41.26	-6.55	PASS
	15906.375 PK	-41.73	-36.1	-35.05	-21.26	-13.79	PASS
	15900.625 AV	-53.4	-48.06	-46.95	-41.26	-5.69	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
64	3556.25 PK	-43.45	-41.65	-39.45	-21.26	-18.19	PASS
	3546.875 AV	-52.86	-53.81	-50.3	-41.26	-9.04	PASS
	10637.5 PK	-42.61	-41.77	-39.16	-21.26	-17.9	PASS
	10643.75 AV	-53.16	-52.86	-50	-41.26	-8.74	PASS
	15969.625 PK	-44.15	-41.17	-39.4	-21.26	-18.14	PASS
	15961 AV	-54.49	-53.3	-50.84	-41.26	-9.58	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
64	5350 PK	-27.53	-25.37	-23.31	-21.26	-2.05	PASS
	5350 AV	-45.84	-44.42	-42.06	-41.26	-0.8	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
100	3671.875 PK	-41.75	-44.39	-39.86	-21.26	-18.6	PASS
	3665.625 AV	-50.98	-52.92	-48.83	-41.26	-7.57	PASS
	10990.625 PK	-42.04	-43.84	-39.84	-21.26	-18.58	PASS
	11000 AV	-52.5	-54.59	-50.41	-41.26	-9.15	PASS
	16498.625 PK	-40.03	-43.6	-38.45	-21.26	-17.19	PASS
	16501.5 AV	-51.71	-53.4	-49.46	-41.26	-8.2	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
100	5470 PK	-24.24	-28.05	-22.73	-21.26	-1.47	PASS
	5470 AV	-45.03	-45.88	-42.42	-41.26	-1.16	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
116	3718.75 PK	-41.44	-43.73	-39.43	-21.26	-18.17	PASS
	3718.75 AV	-50.44	-52.97	-48.51	-41.26	-7.25	PASS
	11165.625 PK	-37.69	-42.95	-36.56	-21.26	-15.3	PASS
	11162.5 AV	-48.63	-52.11	-47.02	-41.26	-5.76	PASS
	16740.125 PK	-33.83	-36.87	-32.08	-21.26	-10.82	PASS
	16740.125 AV	-46.16	-47.41	-43.73	-41.26	-2.47	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
132	3771.875 PK	-42.44	-42.95	-39.68	-21.26	-18.42	PASS
	3771.875 AV	-47.31	-52.73	-46.21	-41.26	-4.95	PASS
	11325 PK	-39.02	-42.6	-37.44	-21.26	-16.18	PASS
	11321.875 AV	-48.63	-53.54	-47.41	-41.26	-6.15	PASS
	16981.625 PK	-38.53	-35.11	-33.48	-21.26	-12.22	PASS
	16978.75 AV	-49.05	-46.21	-44.39	-41.26	-3.13	PASS

802.11n(HT20)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
140	3800 PK	-40.04	-44.57	-38.73	-21.26	-17.47	PASS
	3800 AV	-44.63	-52.62	-43.99	-41.26	-2.73	PASS
	11400 PK	-40.57	-43.2	-38.68	-21.26	-17.42	PASS
	11403.125 AV	-52.34	-52.82	-49.56	-41.26	-8.3	PASS
	17096.625 PK	-42.64	-38.43	-37.03	-21.26	-15.77	PASS
	17096.625 AV	-53.05	-50.41	-48.52	-41.26	-7.26	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
140	5725 PK	-27.53	-28.83	-25.12	-21.26	-3.86	PASS
	5725 AV	-43.39	-48.65	-42.26	-41.26	-1	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
38	3465.625 PK	-44	-43.06	-40.49	-21.26	-19.23	PASS
	3459.375 AV	-53.22	-54.19	-50.67	-41.26	-9.41	PASS
	10381.25 PK	-44.86	-43.88	-41.33	-21.26	-20.07	PASS
	10384.375 AV	-54.54	-54.54	-51.53	-41.26	-10.27	PASS
	15570 PK	-46.08	-43.32	-41.47	-21.26	-20.21	PASS
	15561.375 AV	-55.72	-55.17	-52.43	-41.26	-11.17	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
38	5150 PK	-27.7	-33.9	-26.77	-21.26	-5.51	PASS
	5150 AV	-44.81	-48.68	-43.32	-41.26	-2.06	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
46	3487.5 PK	-43.67	-43.24	-40.44	-21.26	-19.18	PASS
	3484.375 AV	-53	-54.39	-50.63	-41.26	-9.37	PASS
	10465.625 PK	-43.36	-43.86	-40.59	-21.26	-19.33	PASS
	10462.5 AV	-54.75	-54.87	-51.8	-41.26	-10.54	PASS
	15696.5 PK	-44.52	-44.85	-41.67	-21.26	-20.41	PASS
	15699.375 AV	-55.88	-56.26	-53.06	-41.26	-11.8	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
54	3521.875 PK	-44.02	-42.93	-40.43	-21.26	-19.17	PASS
	3512.5 AV	-53.13	-54.28	-50.66	-41.26	-9.4	PASS
	10537.5 PK	-42.35	-41.91	-39.11	-21.26	-17.85	PASS
	10543.75 AV	-52.79	-53.42	-50.08	-41.26	-8.82	PASS
	15811.5 PK	-44.44	-42.99	-40.64	-21.26	-19.38	PASS
	15805.75 AV	-54.87	-54.89	-51.87	-41.26	-10.61	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
62	3543.75 PK	-43.07	-42.79	-39.92	-21.26	-18.66	PASS
	3540.625 AV	-52.45	-53.91	-50.11	-41.26	-8.85	PASS
	10612.5 PK	-43.08	-42.96	-40.01	-21.26	-18.75	PASS
	10618.75 AV	-54.21	-53.37	-50.76	-41.26	-9.5	PASS
	15935.125 PK	-44.92	-42.57	-40.58	-21.26	-19.32	PASS
	15926.5 AV	-55.22	-54.9	-52.05	-41.26	-10.79	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
62	5350 PK	-29.81	-29.53	-26.66	-21.26	-5.4	PASS
	5350 AV	-45.66	-45.03	-42.32	-41.26	-1.06	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
102	3675 PK	-43.22	-43.49	-40.34	-21.26	-19.08	PASS
	3671.875 AV	-50.5	-52.09	-48.21	-41.26	-6.95	PASS
	11021.875 PK	-43.89	-44.42	-41.14	-21.26	-19.88	PASS
	11021.875 AV	-54.22	-55.52	-51.81	-41.26	-10.55	PASS
	16536 PK	-42.76	-43.15	-39.94	-21.26	-18.68	PASS
	16530.25 AV	-54.4	-54.64	-51.51	-41.26	-10.25	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
102	5470 PK	-30.42	-29.6	-26.98	-21.26	-5.72	PASS
	5470 AV	-46.03	-44.09	-41.94	-41.26	-0.68	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
110	3700 PK	-42	-41.67	-38.82	-21.26	-17.56	PASS
	3700 AV	-50.03	-52.59	-48.11	-41.26	-6.85	PASS
	11103.125 PK	-42.26	-44.71	-40.3	-21.26	-19.04	PASS
	11090.625 AV	-52.51	-54.71	-50.46	-41.26	-9.2	PASS
	16653.875 PK	-39.32	-42.62	-37.65	-21.26	-16.39	PASS
	16645.25 AV	-50.62	-52.32	-48.38	-41.26	-7.12	PASS

802.11n(HT40)

Conducted spurious emission table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
134	3778.125 PK	-39.7	-42.9	-38	-21.26	-16.74	PASS
	3778.125 AV	-46.34	-52.81	-45.46	-41.26	-4.2	PASS
	11337.5 PK	-40.79	-42.53	-38.56	-21.26	-17.3	PASS
	11340.625 AV	-51.36	-54.04	-49.49	-41.26	-8.23	PASS
	17010.375 PK	-41.33	-37.75	-36.17	-21.26	-14.91	PASS
	17001.75 AV	-51.58	-49.69	-47.52	-41.26	-6.26	PASS

Bandedge table

Channel	SPURIOUS EMISSION/ HARMONIC FREQ.(MHz)	POWER LEVEL (dBm)		TOTAL POWER LEVEL (dBm)	SPURIOUS EMISSION/ HARMONIC Limit(dBm)	Margin (dB)	PASS/FAIL
		Chain 0	Chain 1				
134	5725.4 PK	-29.59	-29.64	-26.6	-21.26	-5.34	PASS
	5725 AV	-44.27	-46.91	-42.38	-41.26	-1.12	PASS

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	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-SP-AR	MAA0812-008	Jan. 17, 2013	Jan. 16, 2014

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 : Apr. 11, 2013

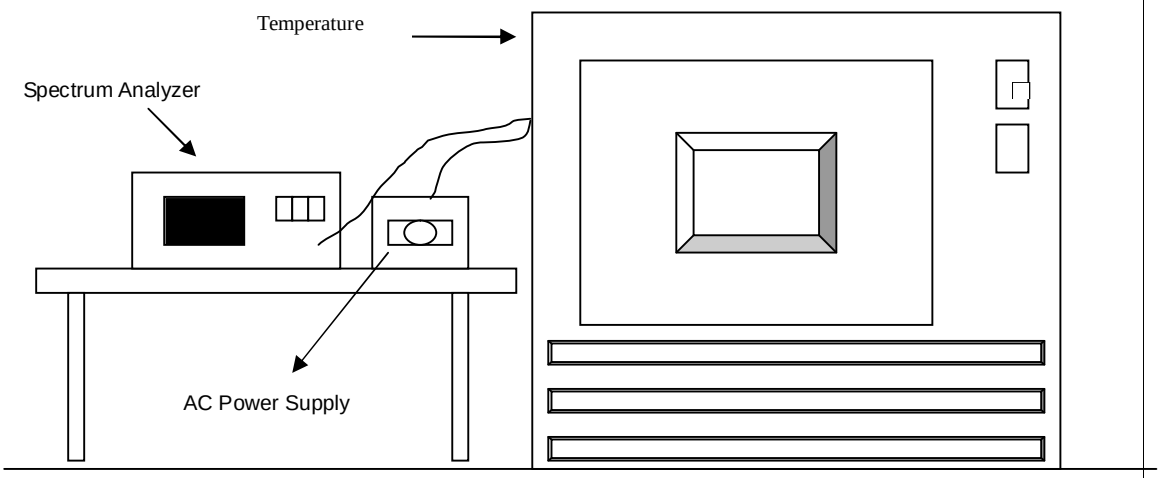
4.6.3 TEST PROCEDURE

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	5319.9863	-2.5752	5319.9937	-1.1842	5319.995	-0.9398	5319.9857	-2.6880
40	120	5320.0201	3.7782	5320.0267	5.0188	5320.0239	4.4925	5320.0253	4.7556
30	120	5320.0189	3.5526	5320.0165	3.1015	5320.0172	3.2331	5320.0181	3.4023
20	120	5320.0006	0.1128	5319.9992	-0.1504	5319.9989	-0.2068	5320.0027	0.5075
10	120	5320.0109	2.0489	5320.0078	1.4662	5320.0116	2.1805	5320.0114	2.1429
0	120	5319.9877	-2.3120	5319.9898	-1.9173	5319.9887	-2.1241	5319.9919	-1.5226
-10	120	5320.0069	1.2970	5320.0068	1.2782	5320.0035	0.6579	5320.0077	1.4474
-20	120	5320.0002	0.0376	5320.0065	1.2218	5320.0027	0.5075	5320.0055	1.0338
-30	120	5320.0203	3.8158	5320.0297	5.5827	5320.03	5.6391	5320.0252	4.7368

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	5320.0014	0.2632	5319.999	-0.1880	5319.9994	-0.1128	5320.0031	0.5827
	120	5320.0006	0.1128	5319.9992	-0.1504	5319.9989	-0.2068	5320.0027	0.5075
	102	5320.0008	0.1504	5319.9988	-0.2256	5319.9982	-0.3383	5320.0024	0.4511

4.7 AC POWER LINE CONDUCTED EMISSION MEASUREMENT

4.7.1 LIMITS OF AC POWER LINE 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	ESCS 30	100375	Mar.11, 2013	Mar.10, 2014
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 06, 2012	Sep. 05, 2013
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 08,2012	June 07,2013
RF Cable (JYEBAO)	5DFB	COCCAB-001	Aug. 28, 2012	Aug. 27, 2013
50 ohms Terminator	50	EMC-3	Sep. 25, 2012	Sep. 24, 2013
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. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Mar. 12, 2013

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.

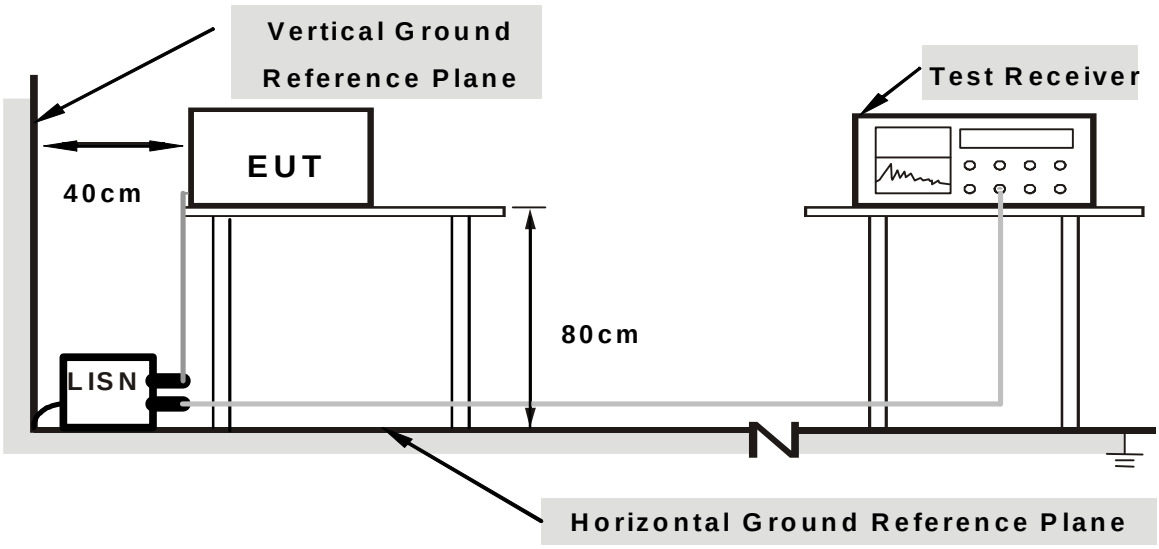
NOTE:

The resolution bandwidth of test receiver is 9kHz for Quasi-peak detection (QP) & Average detection (AV).

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

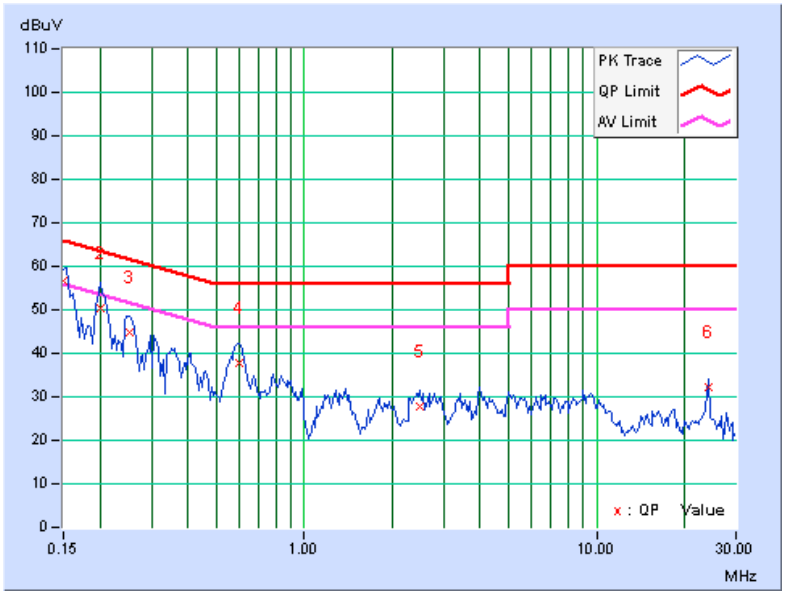
4.7.7 TEST RESULTS

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	**0.15000**	**0.11**	**56.40**	**45.91**	**56.51**	**46.02**	**66.00**	**56.00**	**-9.49**	**-9.98**
2	0.20078	0.12	50.43	40.33	50.55	40.45	63.58	53.58	-13.03	-13.13
3	0.25156	0.13	44.79	35.44	44.92	35.57	61.71	51.71	-16.79	-16.14
4	0.59922	0.17	37.43	32.76	37.60	32.93	56.00	46.00	-18.40	-13.07
5	2.49609	0.24	27.63	21.93	27.87	22.17	56.00	46.00	-28.13	-23.83
6	24.06641	1.04	31.14	27.89	32.18	28.93	60.00	50.00	-27.82	-21.07

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.

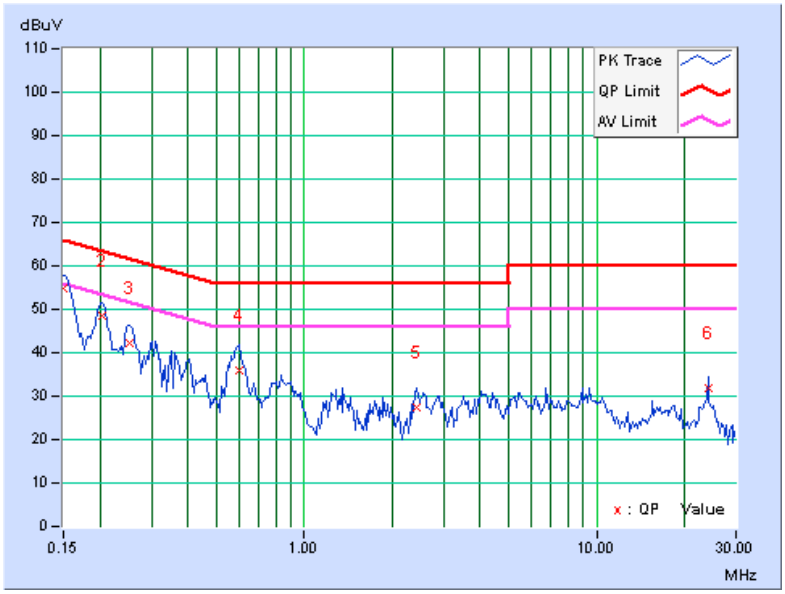


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	0.15000	0.09	54.65	44.06	54.74	44.15	66.00	56.00	-11.26	-11.85
2	0.20469	0.10	48.48	38.44	48.58	38.54	63.42	53.42	-14.84	-14.88
3	0.25156	0.11	42.16	32.66	42.27	32.77	61.71	51.71	-19.43	-18.93
4	0.59922	0.16	35.83	30.93	35.99	31.09	56.00	46.00	-20.01	-14.91
5	2.43359	0.22	27.21	21.43	27.43	21.65	56.00	46.00	-28.57	-24.35
6	24.06250	0.70	30.98	27.71	31.68	28.41	60.00	50.00	-28.32	-21.59

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:
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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 ---