FCC TEST REPORT (WLAN -15.407)

REPORT NO.:	RF130207E09-1 R1
MODEL NO.:	QCSNFA282
FCC ID:	PPD-QCSNFA282
IC:	4104A-QCSNFA282
RECEIVED:	Feb. 07, 2013
TESTED:	July 30 to Aug. 06, 2013
ISSUED:	Aug. 28, 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.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130207E09-1	Original release	Aug. 14, 2013
RF130207E09-1 R1	Revise the “Product Name”.	Aug. 28, 2013

1. CERTIFICATION

PRODUCT:	Low Power 2x2 802.11 a/b/g/n + BT Card
BRAND NAME:	Qualcomm Atheros
MODEL NO.:	QCSNFA282
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Qualcomm Atheros, Inc.
TESTED:	July 30 to Aug. 06, 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: QCSNFA282) 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:** *Aug. 28, 2013*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Aug. 28, 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 -23.05dB at 2.08594MHz
15.407(b/1/2/3) (b)(6)	RSS-210 A9.2	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.9dB at 99.76MHz
15.407 (a/1/2)	RSS-210 A9.2	Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	RSS-210 A9.2	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407 (a/1/2)	RSS-210 A9.2 A9.4 (2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	RSS-Gen 4.7	Frequency Stability	PASS	Meet the requirement of limit.
-	RSS-Gen 4.6	Occupied Bandwidth Measurement	-	Meet the requirement.
15.203	-	Antenna Requirement	PASS	Antenna connector is IPEX not a standard connector.

NOTE: 1. 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. The DFS report 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)	5.63 dB
Radiated emissions (1GHz -6GHz) – chamber G	3.73 dB
Radiated emissions (6GHz -18GHz) – chamber G	3.90 dB
Radiated emissions (18GHz -40GHz) – chamber G	4.11 dB
Radiated emissions (1GHz -6GHz) – chamber H	3.54 dB
Radiated emissions (6GHz -18GHz) – chamber H	4.08 dB
Radiated emissions (18GHz -40GHz) – chamber H	4.11 dB

2. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT(WLAN/DTS)

PRODUCT	Low Power 2x2 802.11 a/b/g/n + BT Card
MODEL NO.	QCSNFA282
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM BT-LE (GFSK) for DTS
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n : up to 300Mbps BT-LE(GFSK): 1Mbps
OPERATING FREQUENCY	**For 15.407** 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.72GHz
	For 15.247 2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.745 ~ 5.825GHz BT-LE(GFSK): 2.402 ~ 2.480GHz
NUMBER OF CHANNEL	**For 15.407** 19 for 802.11a, 802.11n (HT20) 9 for 802.11n (HT40)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 40 for BT-LE(GFSK) **For 15.247(5GHz)** 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)

MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 63.077mW 802.11n (HT20): 67.027mW 802.11n (HT40): 42.841mW **For 15.247(2.4GHz)** 802.11b: 199.980mW 802.11g: 230.757mW 802.11n (HT20): 228.065mW 802.11n (HT40): 119.692mW BT-LE(GFSK): 7.228mW **For 15.247(5GHz)** 802.11a: 124.432mW 802.11n (HT20): 118.866mW 802.11n (HT40): 115.085mW
ANTENNA TYPE	See item 3.2
ANTENNA CONNECTOR	See item 3.2
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. There are Bluetooth technology and WLAN technology used for the EUT.

2. The EUT has two variant designs with different filter. Detail as described in table below.

Version	Description
Version 631	Use TDK D2033 (R081) filter
Version 731	Use TDK D6107 (R083) w/3G filter

From the above Versions, the worst case was found in **Version 731**. Therefore only the test data of the version was recorded in this report.

3. The device has below configurations

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

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

MODULATION MODE	TX/RX FUNCTION
802.11b	1TX/1RX(Diversity) or 2TX/2RX
802.11g	1TX/1RX(Diversity) or 2TX/2RX
802.11a	1TX/1RX(Diversity) or 2TX/2RX
802.11n (HT20)	1TX/1RX(Diversity) or 2TX/2RX
802.11n (HT40)	1TX/1RX(Diversity) or 2TX/2RX

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

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

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

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

Mode	Available Channel	Tested Channel	Modulation Technology
2.4 GHz (802.11g) + Bluetooth	1 to 11	6	OFDM
	0 to 78	39	FHSS
5 GHz (802.11a) + Bluetooth	149 to 165	149	OFDM
	0 to 78	39	FHSS

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

3.2 DESCRIPTION OF ANTENNA

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

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

Note:

1. Above antenna gains of antenna are Total (H+V).
2. All of antenna can be application for WLAN and Bluetooth.

3.3 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5350MHz bands:

8 channels are provided for 802.11a, 802.11n (HT20):

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

4 channels are provided for 802.11n (HT40):

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

Operated in 5470MHz ~ 5725MHz bands:

11 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
120	5600 MHz
124	5620 MHz
128	5640 MHz
132	5660 MHz
136	5680 MHz
140	5700 MHz

5 channels are provided for 802.11n (HT40)

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
118	5590 MHz
126	5630 MHz
134	5670 MHz

a. For FCC: The listed channels in the DFS band (5250~5350MHz and 5470~5725MHz) are passive scan only.

b. For IC: The listed channels in the DFS band (5250~5350MHz and 5470~5725MHz) are passive scan only. The device will not operate in 5600~5650MHz band.

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:** 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)
For 5 GHz 802.11n (HT20)	36 to 144	116	OFDM	6.5

UNWANTED EMISSION TEST (BELOW 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
For 5 GHz 802.11n (HT20)	36 to 144	116	OFDM	6.5

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 144	36, 40, 48, 52, 60, 64, 100, 116, 132, 140, 144	OFDM	6
For 5 GHz 802.11n (HT20)	36 to 144	36, 40, 48, 52, 60, 64, 100, 116, 132, 140, 144	OFDM	6.5
For 5 GHz 802.11n (HT40)	38 to 142	38, 46, 54, 62, 102, 110, 134, 142	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, 144	OFDM	6
For 5 GHz 802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140, 144	OFDM	6.5
For 5 GHz 802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134, 142	OFDM	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	26deg. C, 66%RH	120Vac, 60Hz	Jyunchun Lin
RE<1G	25deg. C, 66%RH	120Vac, 60Hz	Chilin Lee
RE≥1G	22deg. C, 63%RH	120Vac, 60Hz	Nelson Teng
APCM	25deg. C, 60%RH	120Vac, 60Hz	James Chan

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

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

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

3.5 DUTY CYCLE OF TEST SIGNAL

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

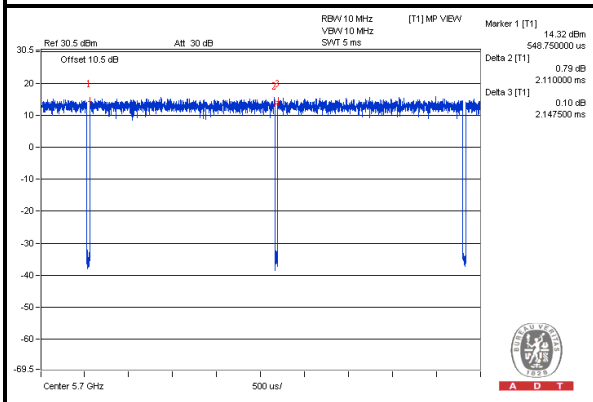
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.11 ms/2.147 ms = 0.983

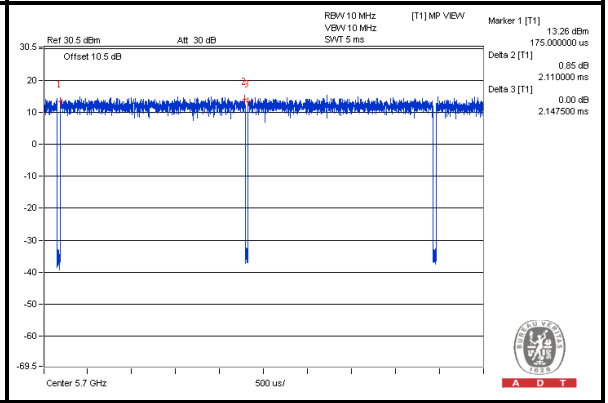
802.11n (HT20): Duty cycle = 2.11 ms/2.147 ms = 0.983

802.11n (HT40): Duty cycle = 0.966 ms/1.002 ms = 0.964, Duty factor = 10 * log(1/0.964) = 0.16

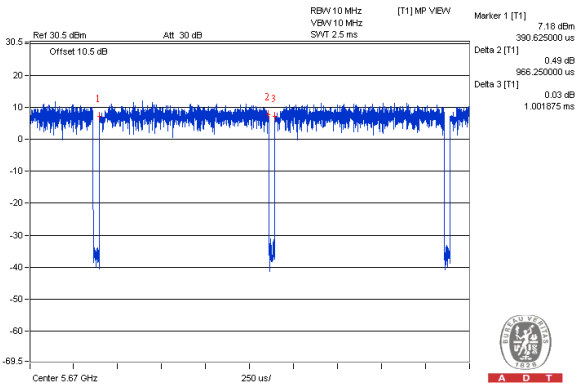
802.11a



802.11n (HT20)



802.11n (HT40)



3.6 DESCRIPTION OF SUPPORT UNITS

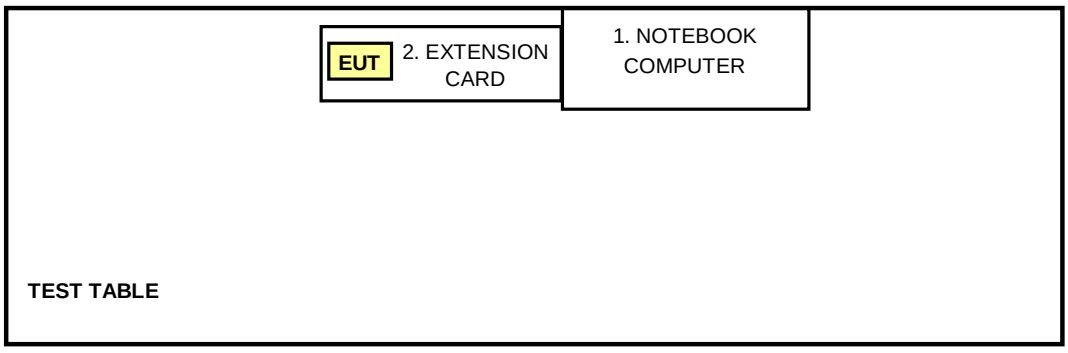
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	E6420	H62T3R1	FCC DoC
2	EXTENSION CARD	Qualcomm Atheros	TB686	250-02384-020	NA

No.	Signal cable description
1	NA
2	NA

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

3.7 CONFIGURATION OF SYSTEM UNDER TEST



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 Anritsu	ML2495A	0824006	May 20, 2013	May 19, 2014
Power Sensor Anritsu	MA2411B	0738172	May 20, 2013	May 19, 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 : July 30, 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 : July 30, 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

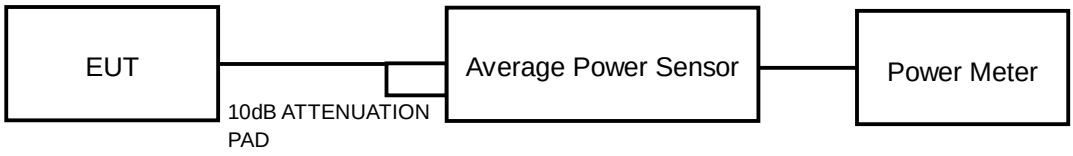
1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

4.1.4 DEVIATION FROM TEST STANDARD

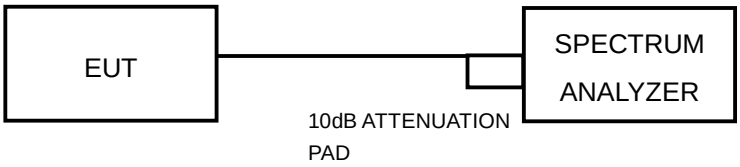
No deviation

4.1.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.1.6 EUT OPERATING CONDITIONS

The software (artgui.exe 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	11.52	14.46	42.116	16.24	16.28	PASS
40	5200	11.72	14.62	43.832	16.42	16.46	PASS
48	5240	10.29	13.24	31.777	15.02	16.16	PASS
52	5260	13.34	15.74	59.074	17.71	23.34	PASS
60	5300	12.16	14.88	47.205	16.74	23.31	PASS
64	5320	13.21	15.55	56.833	17.55	23.40	PASS
100	5500	13.54	15.94	61.858	17.91	21.78	PASS
116	5580	13.36	16.17	63.077	18.00	22.06	PASS
132	5660	11.37	14.21	40.072	16.03	21.54	PASS
140	5700	11.32	13.56	36.251	15.59	21.60	PASS

Note:

5180MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.37-(6.09-6) = 16.28dBm.

5200MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.55-(6.09-6) = 16.46dBm.

5240MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.25-(6.09-6) = 16.16dBm.

5260MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.43-(6.09-6) = 23.34dBm.

5300MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.4-(6.09-6) = 23.31dBm.

5320MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.49-(6.09-6) = 23.40dBm.

5500MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.55-(7.77-6) = 21.78dBm.

5580MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.83-(7.77-6) = 22.06dBm.

5660MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.31-(7.77-6) = 21.54dBm.

5700MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.37-(7.77-6) = 21.60dBm.

802.11a
26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	33.87	40.10
40	5200	36.95	42.81
48	5240	28.72	37.98
52	5260	37.17	43.54
60	5300	35.48	43.56
64	5320	34.54	41.01
100	5500	36.85	41.22
116	5580	37.59	44.21
132	5660	30.80	36.84
140	5700	35.23	38.71

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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	33.87	19.29 > 17
40	5200	36.95	19.67 > 17
48	5240	28.72	18.58 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	37.17	26.7 > 24
60	5300	35.48	26.49 > 24
64	5320	34.54	26.38 > 24
100	5500	36.85	26.66 > 24
116	5580	37.59	26.75 > 24
132	5660	30.80	25.88 > 24
140	5700	35.23	26.46 > 24

802.11a
99% OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	17.28	25.56
40	5200	18.00	26.16
48	5240	16.80	19.68
52	5260	17.52	26.64
60	5300	17.40	26.64
64	5320	17.76	23.76
100	5500	18.00	23.40
116	5580	19.20	26.76
132	5660	17.04	18.36
140	5700	17.28	23.28

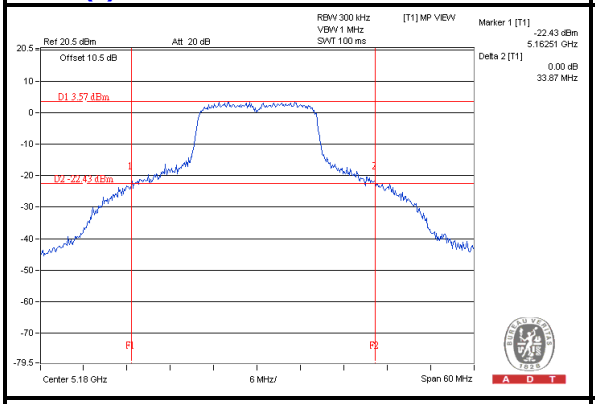
Refer to section 4.4 for spectrum plots.

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

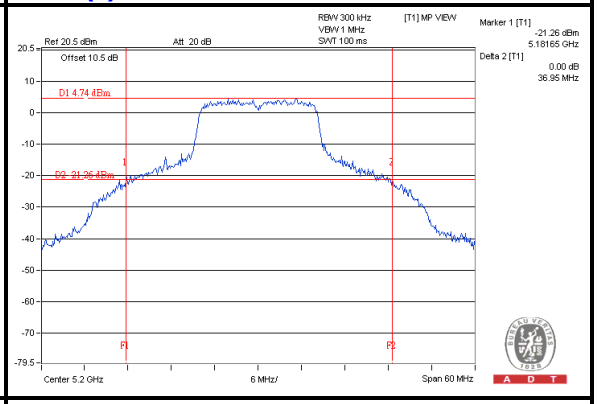
Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	17.28	16.37 < 17
40	5200	18.00	16.55 < 17
48	5240	16.80	16.25 < 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	17.52	23.43 < 24
60	5300	17.40	23.4 < 24
64	5320	17.76	23.49 < 24
100	5500	18.00	23.55 < 24
116	5580	19.20	23.83 < 24
132	5660	17.04	23.31 < 24
140	5700	17.28	23.37 < 24

26dB OCCUPIED BANDWIDTH

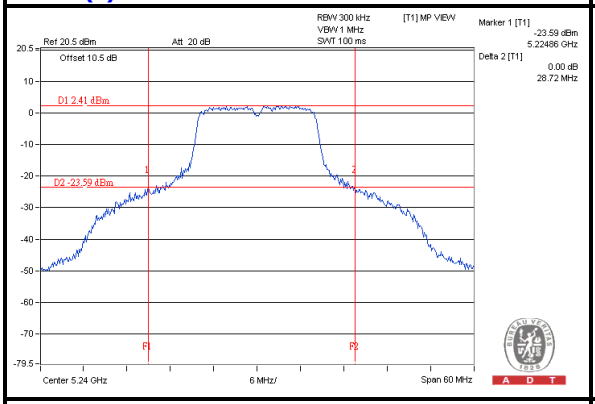
Chain(0) : CH36



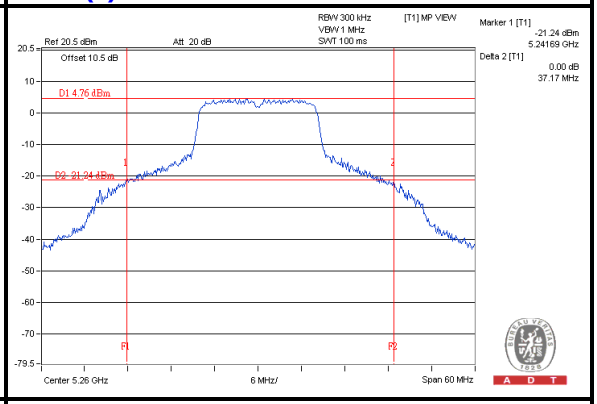
Chain(0) : CH40



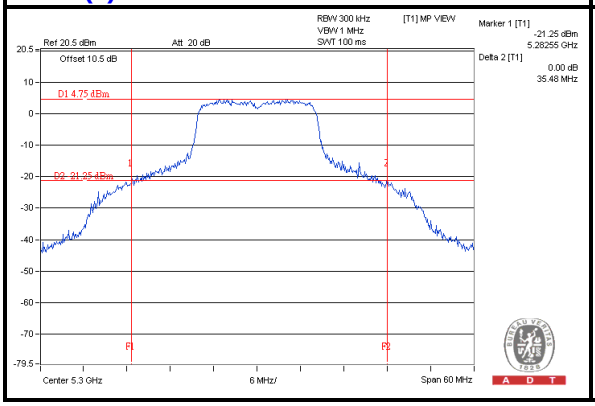
Chain(0) : CH48



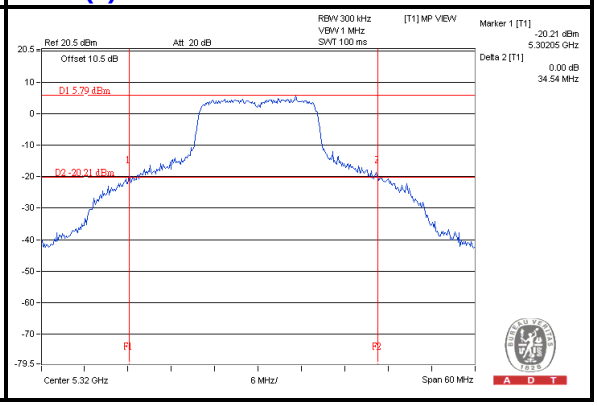
Chain(0) : CH52



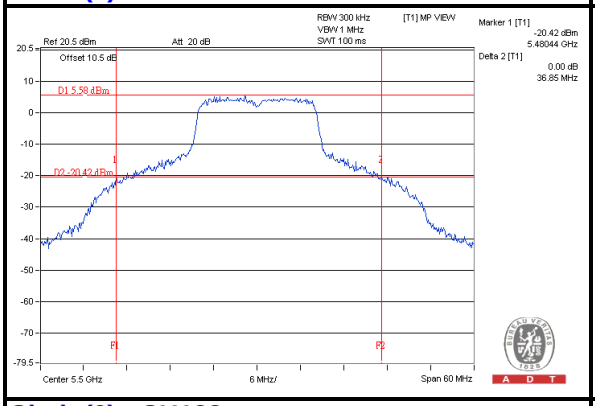
Chain(0) : CH60



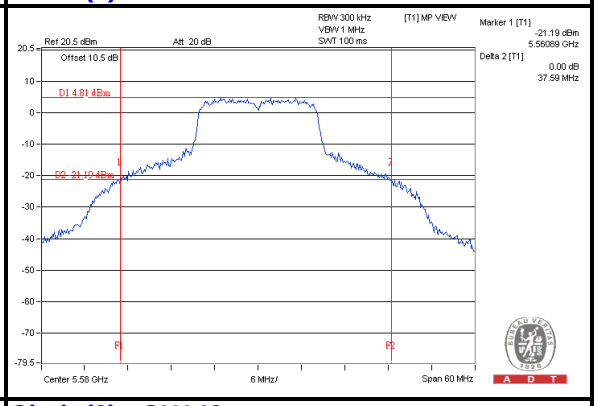
Chain(0) : CH64



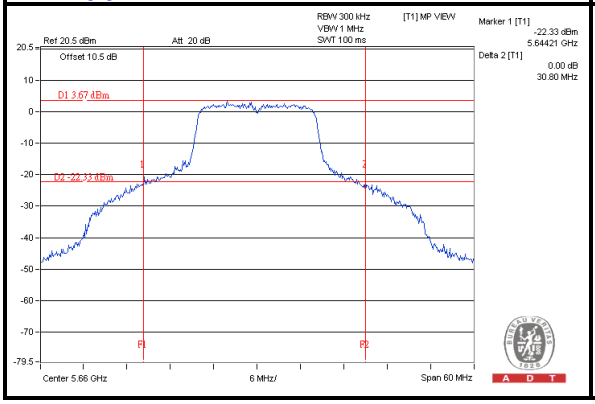
Chain(0) : CH100



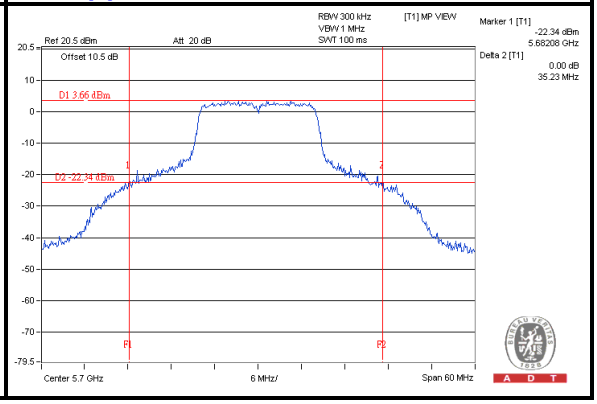
Chain(0) : CH116



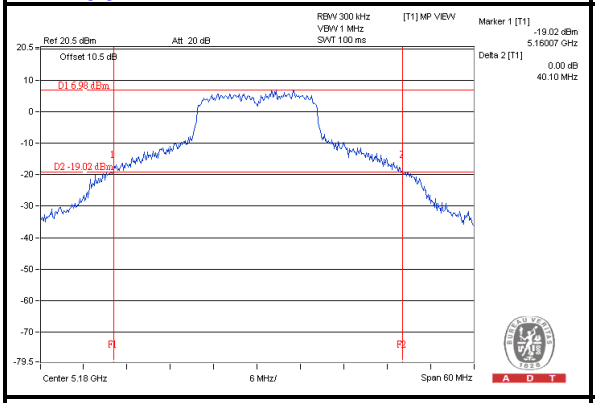
Chain(0) : CH132



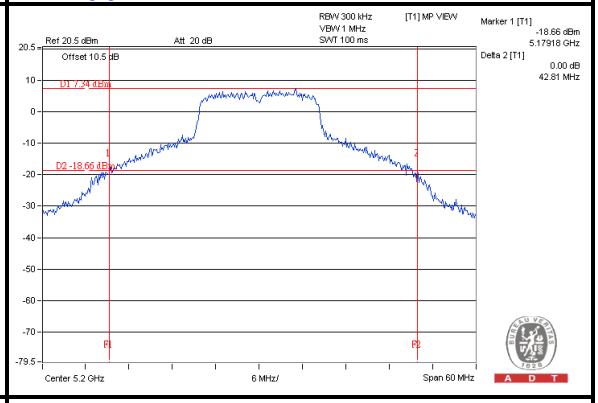
Chain(0) : CH140



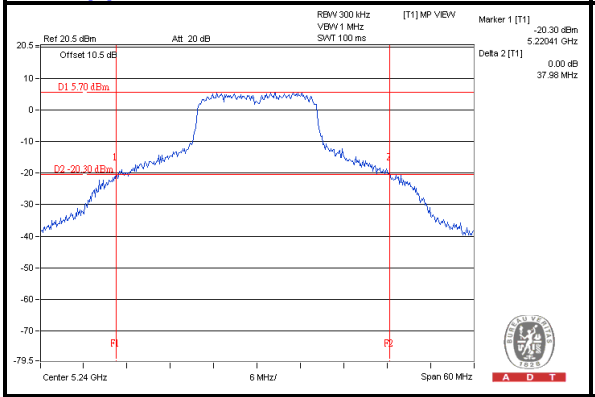
Chain(1) : CH36



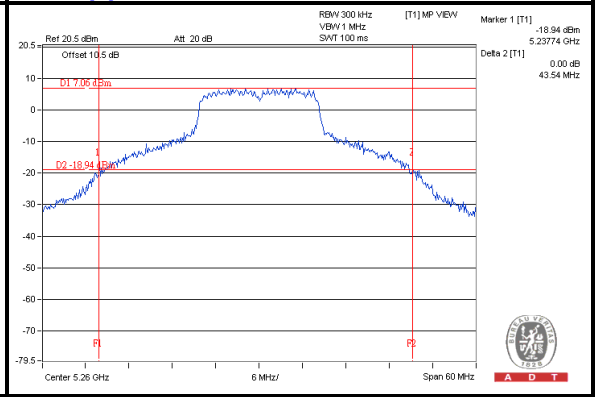
Chain(1) : CH40



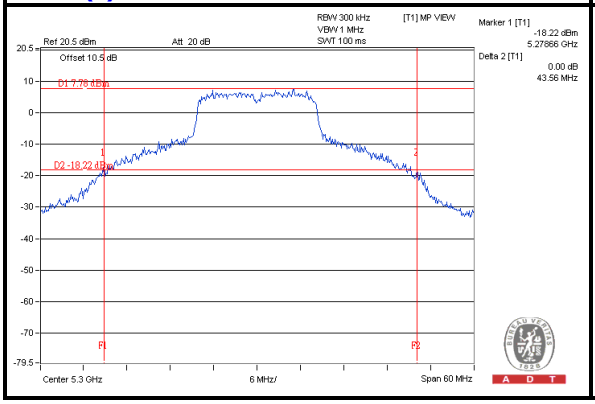
Chain(1) : CH48



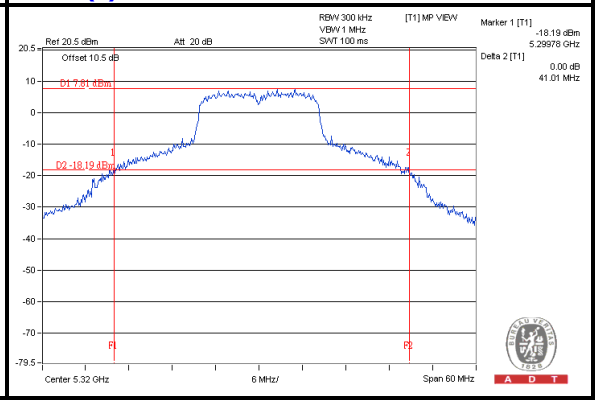
Chain(1) : CH52



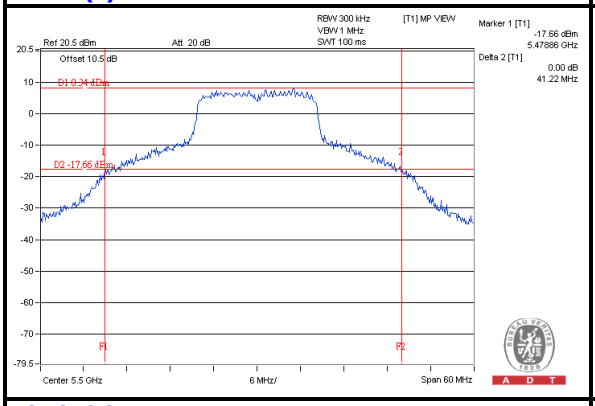
Chain(1) : CH60



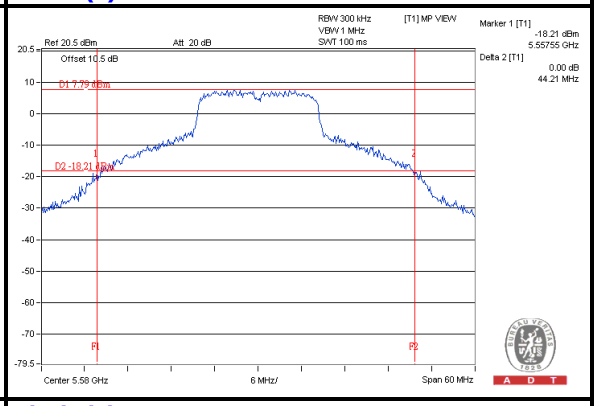
Chain(1) : CH64



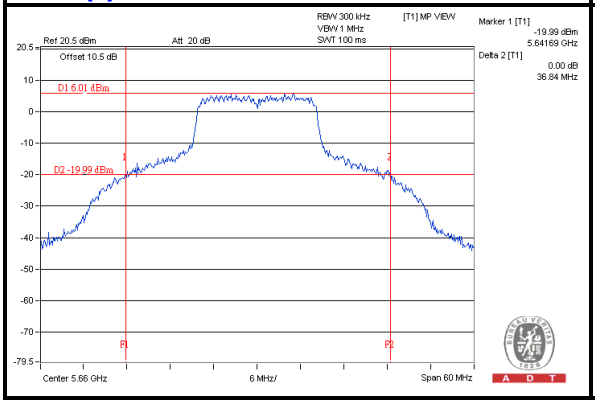
Chain(1) : CH100



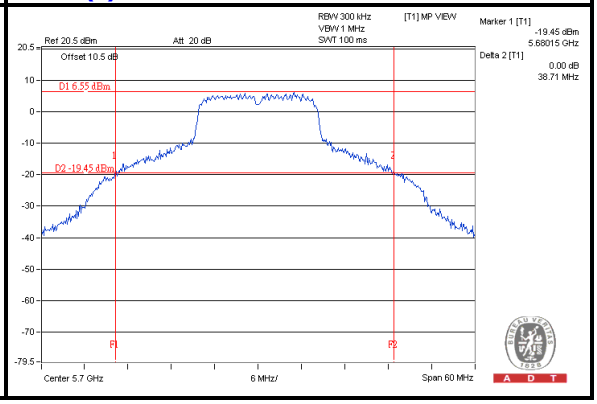
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



802.11n (HT20)

POWER OUTPUT

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	11.66	14.21	41.018	16.13	16.25	PASS
40	5200	11.73	14.33	41.996	16.23	16.25	PASS
48	5240	10.23	12.71	29.208	14.66	16.43	PASS
52	5260	13.57	15.91	61.745	17.91	23.34	PASS
60	5300	13.31	15.33	55.548	17.45	23.28	PASS
64	5320	13.42	15.86	60.527	17.82	23.22	PASS
100	5500	13.49	15.78	60.180	17.79	21.60	PASS
116	5580	13.33	16.58	67.027	18.26	22.11	PASS
132	5660	11.23	14.13	39.156	15.93	21.75	PASS
140	5700	11.25	13.93	38.052	15.80	21.72	PASS

Note:

5180MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.34-(6.09-6) = 16.25dBm.

5200MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.34-(6.09-6) = 16.25dBm.

5240MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 16.52-(6.09-6) = 16.43dBm.

5260MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.43-(6.09-6) = 23.34dBm.

5300MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.37-(6.09-6) = 23.28dBm.

5320MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.31-(6.09-6) = 23.22dBm.

5500MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.37-(7.77-6) = 21.60dBm.

5580MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.88-(7.77-6) = 22.11dBm.

5660MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.52-(7.77-6) = 21.75dBm.

5700MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 23.49-(7.77-6) = 21.72dBm.

802.11n (HT20)
26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	34.72	43.71
40	5200	33.24	43.63
48	5240	26.56	38.22
52	5260	35.98	42.85
60	5300	33.95	44.25
64	5320	33.64	43.61
100	5500	35.33	40.29
116	5580	37.58	45.39
132	5660	27.75	35.83
140	5700	26.97	36.29

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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	34.72	19.4 > 17
40	5200	33.24	19.21 > 17
48	5240	26.56	18.24 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	35.98	26.56 > 24
60	5300	33.95	26.3 > 24
64	5320	33.64	26.26 > 24
100	5500	35.33	26.48 > 24
116	5580	37.58	26.74 > 24
132	5660	27.75	25.43 > 24
140	5700	26.97	25.3 > 24

802.11n (HT20)
99% OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	17.16	25.44
40	5200	17.16	25.56
48	5240	17.88	19.44
52	5260	17.52	26.76
60	5300	17.28	26.76
64	5320	17.04	23.76
100	5500	17.28	22.92
116	5580	19.44	27.36
132	5660	17.88	18.72
140	5700	17.76	18.48

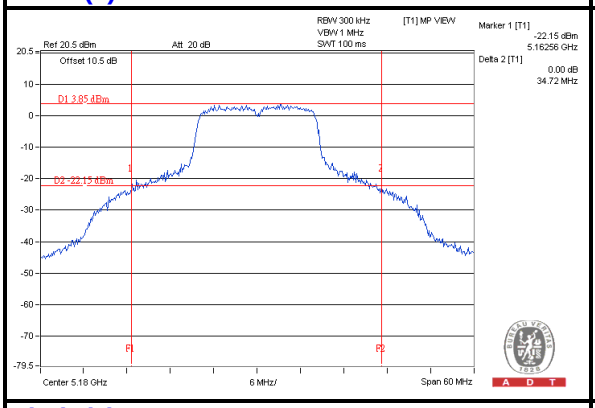
Refer to section 4.4 for spectrum plots.

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

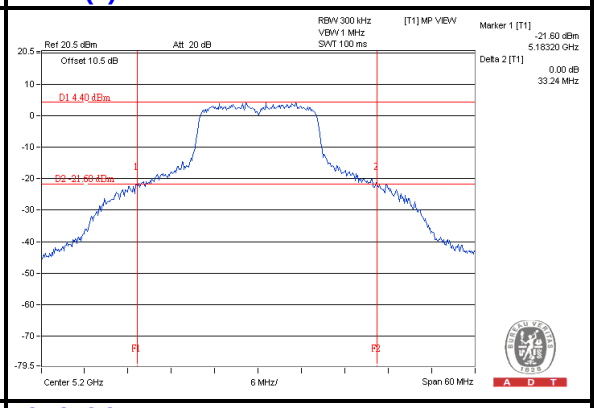
Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	17.16	16.34 < 17
40	5200	17.16	16.34 < 17
48	5240	17.88	16.52 < 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	17.52	23.43 < 24
60	5300	17.28	23.37 < 24
64	5320	17.04	23.31 < 24
100	5500	17.28	23.37 < 24
116	5580	19.44	23.88 < 24
132	5660	17.88	23.52 < 24
140	5700	17.76	23.49 < 24

26dB OCCUPIED BANDWIDTH

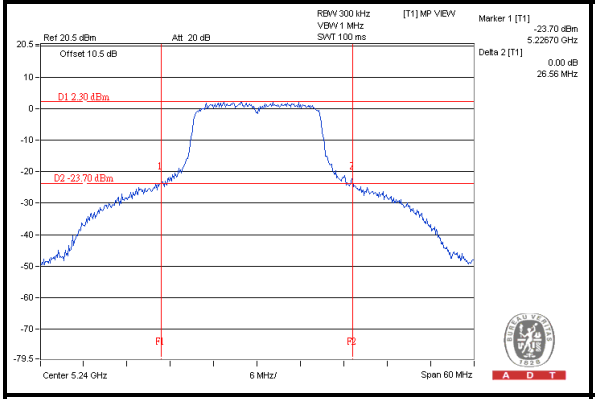
Chain(0) : CH36



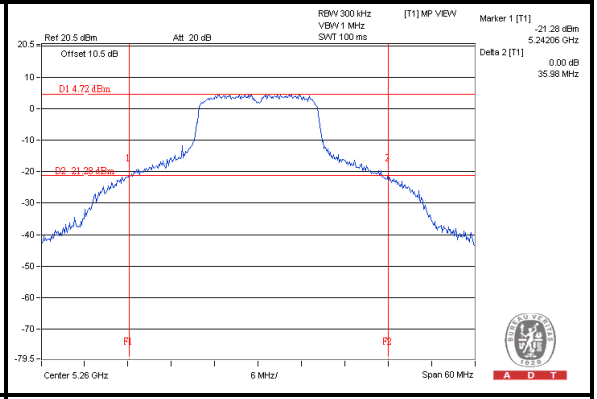
Chain(0) : CH40



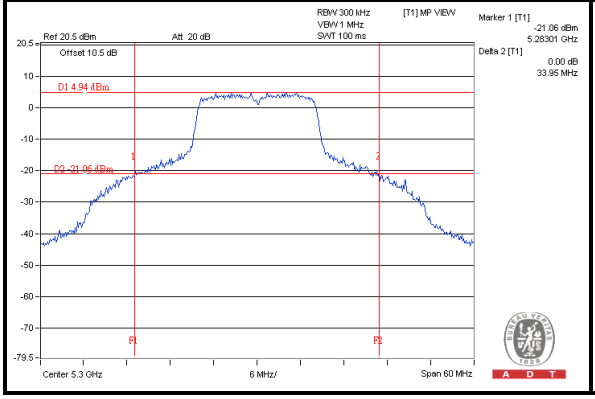
Chain(0) : CH48



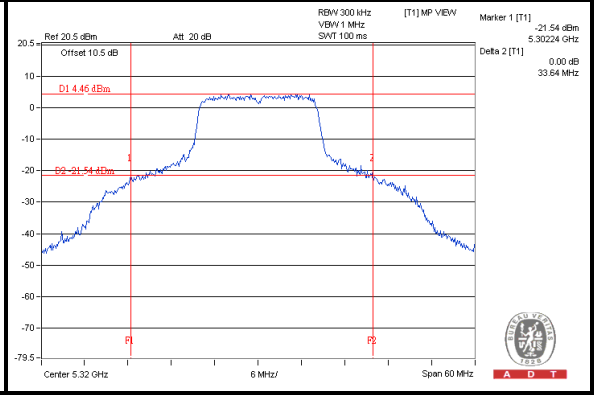
Chain(0) : CH52

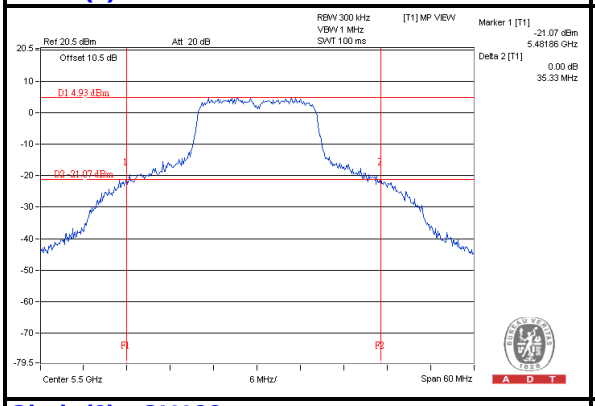
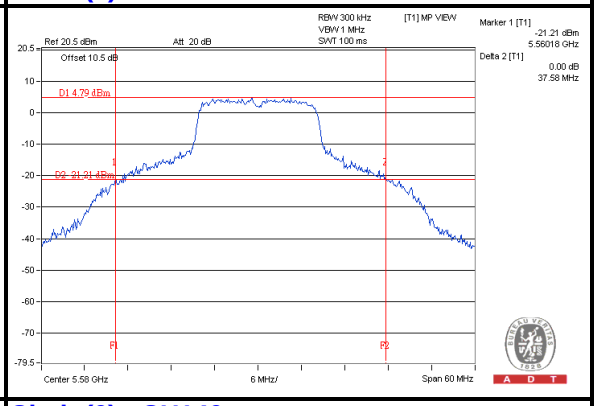
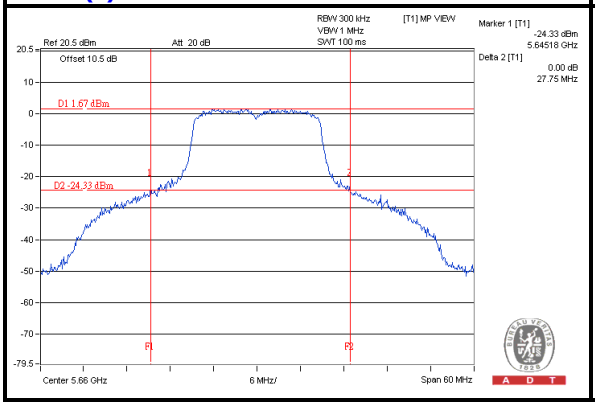
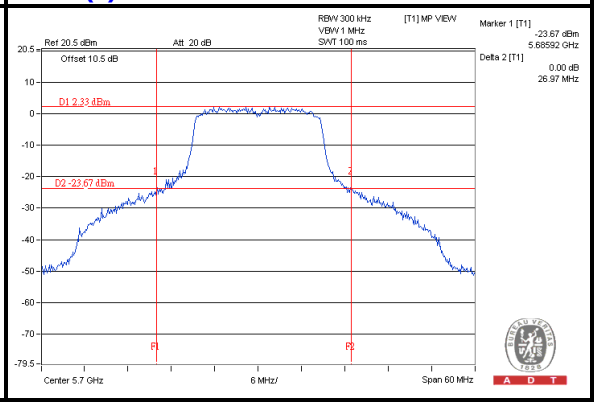


Chain(0) : CH60

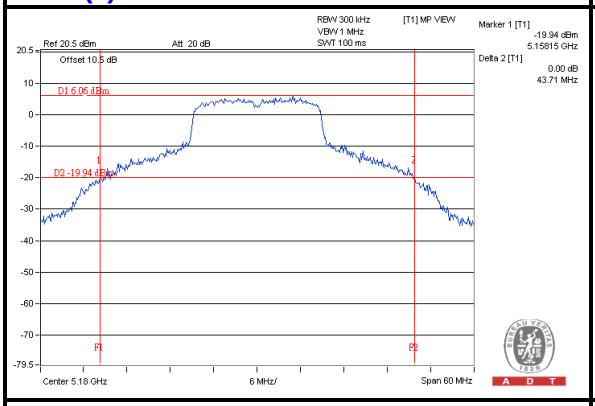


Chain(0) : CH64

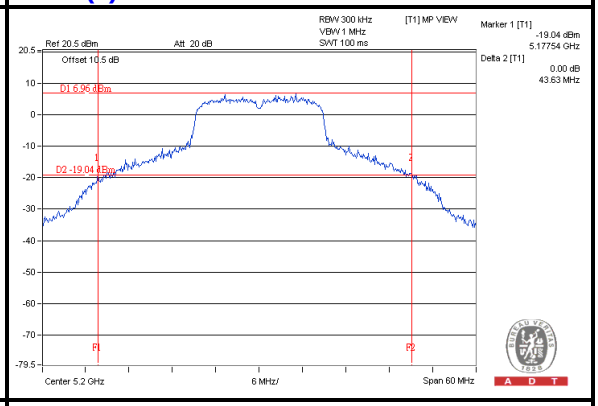


Chain(0) : CH100	Chain(0) : CH116
	
Chain(0) : CH132	**Chain(0) : CH140**
	

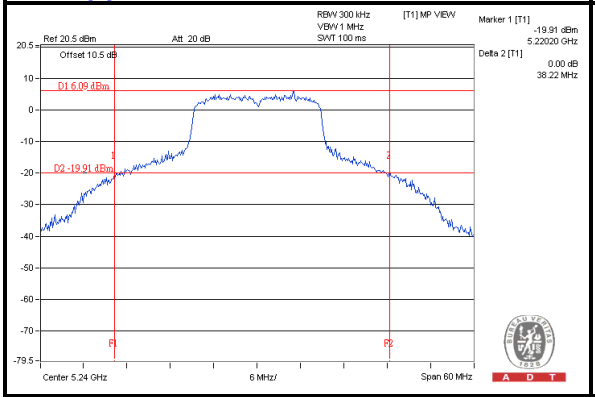
Chain(1) : CH36



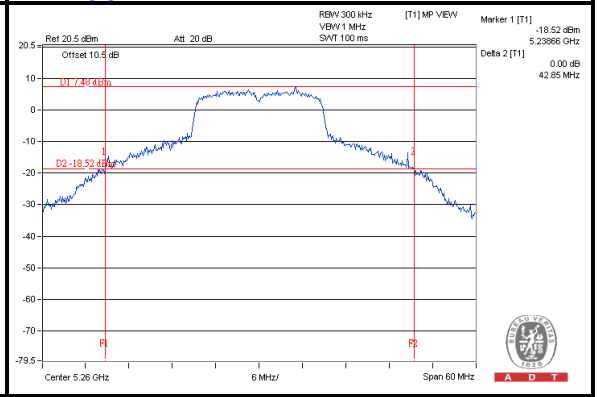
Chain(1) : CH40



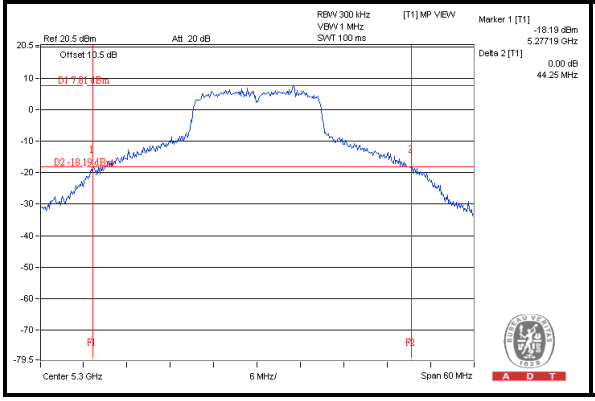
Chain(1) : CH48



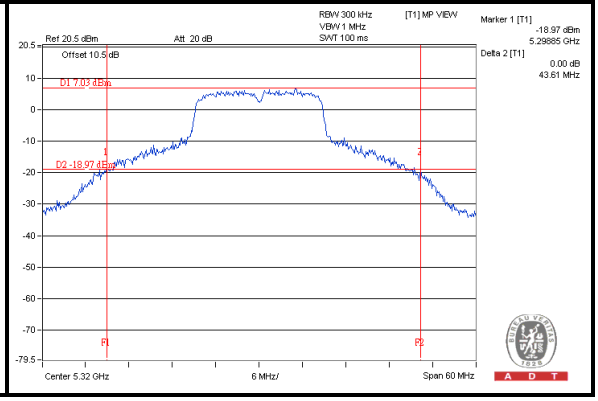
Chain(1) : CH52



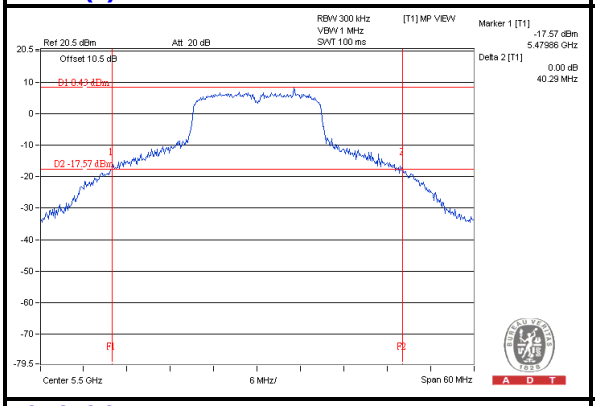
Chain(1) : CH60



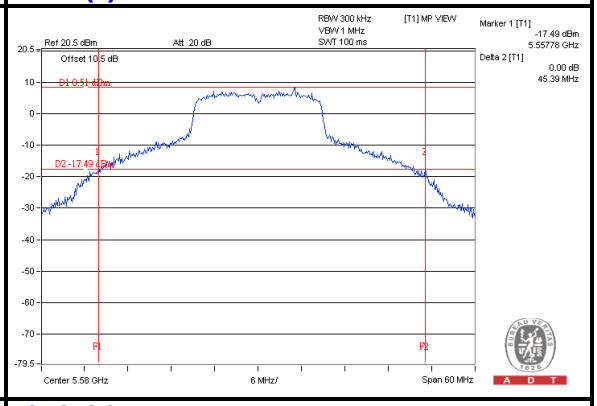
Chain(1) : CH64



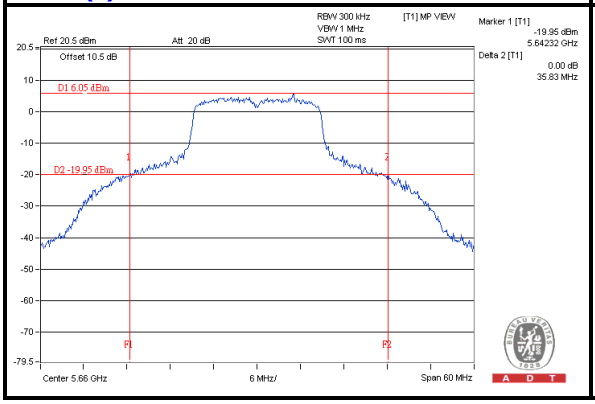
Chain(1) : CH100



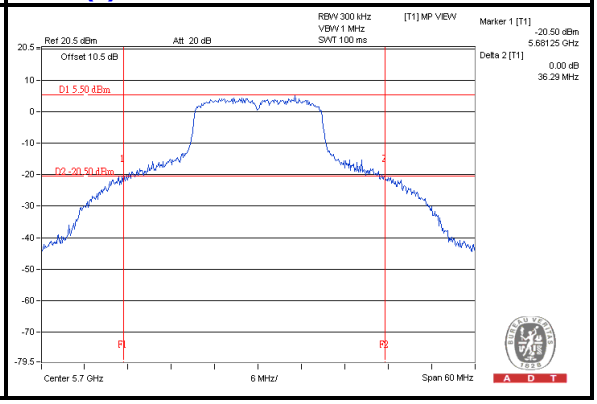
Chain(1) : CH116



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	6.84	9.72	14.207	11.53	16.91	PASS
46	5230	11.03	13.76	36.445	15.62	16.91	PASS
54	5270	11.11	14.22	39.336	15.95	23.91	PASS
62	5310	8.62	11.46	21.274	13.28	23.91	PASS
102	5510	7.74	11.04	18.649	12.71	22.23	PASS
110	5550	11.27	14.69	42.841	16.32	22.23	PASS
134	5670	11.45	13.55	36.610	15.64	22.23	PASS

Note:

5190MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 17-(6.09-6) = 16.91dBm.

5230MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 17-(6.09-6) = 16.91dBm.

5270MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 17-(6.09-6) = 23.91dBm.

5310MHz: The directional gain is 6.09dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 24-(6.09-6) = 23.91dBm.

5510MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 24-(7.77-6) = 22.23dBm.

5550MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 24-(7.77-6) = 22.23dBm.

5670MHz: The directional gain is 7.77dBi > 6dBi, therefore the limit needs to reduce, the power limit shall be reduced to 24-(7.77-6) = 22.23dBm.

802.11n (HT40)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	49.78	80.04
46	5230	78.47	90.88
54	5270	74.31	90.84
62	5310	50.34	78.53
102	5510	50.27	70.64
110	5550	78.66	88.24
134	5670	80.72	89.35

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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
38	5190	49.78	20.97 > 17
46	5230	78.47	22.94 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
54	5270	74.31	29.71 > 24
62	5310	50.34	28.01 > 24
102	5510	50.27	28.01 > 24
110	5550	78.66	29.95 > 24
134	5670	80.72	30.06 > 24

802.11n (HT40)

99% OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	36.60	37.00
46	5230	37.20	41.40
54	5270	37.00	41.00
62	5310	36.80	37.40
102	5510	36.60	36.80
110	5550	37.00	41.00
134	5670	37.20	38.60

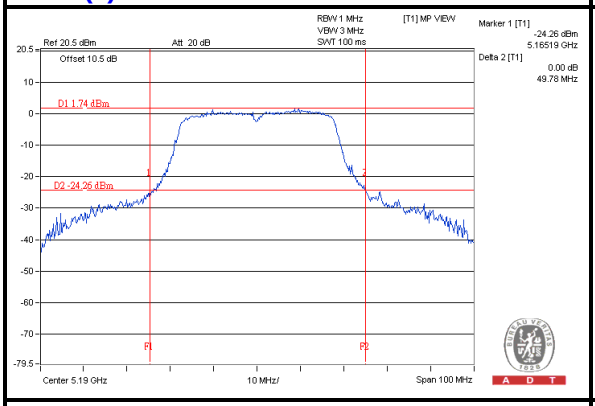
Refer to section 4.4 for spectrum plots.

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

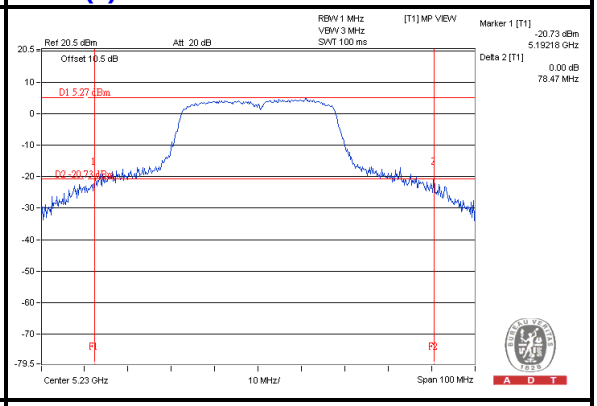
Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
38	5190	36.60	19.63 > 17
46	5230	37.20	19.7 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
54	5270	37.00	26.68 > 24
62	5310	36.80	26.65 > 24
102	5510	36.60	26.63 > 24
110	5550	37.00	26.68 > 24
134	5670	37.20	26.7 > 24

26dB OCCUPIED BANDWIDTH

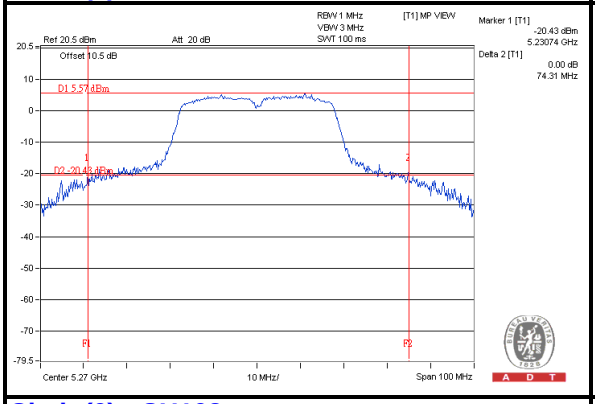
Chain(0) : CH38



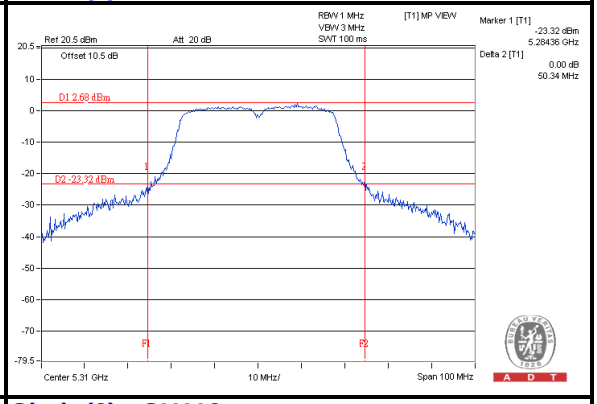
Chain(0) : CH46



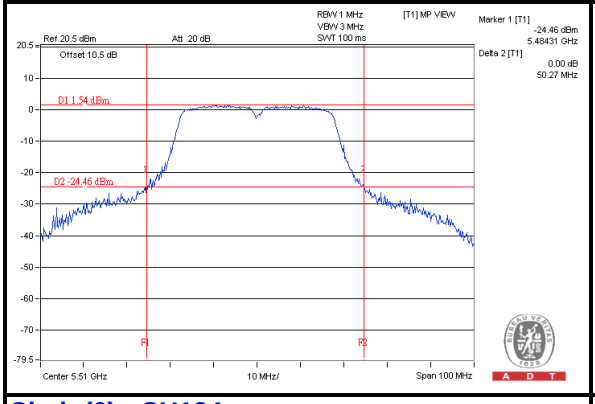
Chain(0) : CH54



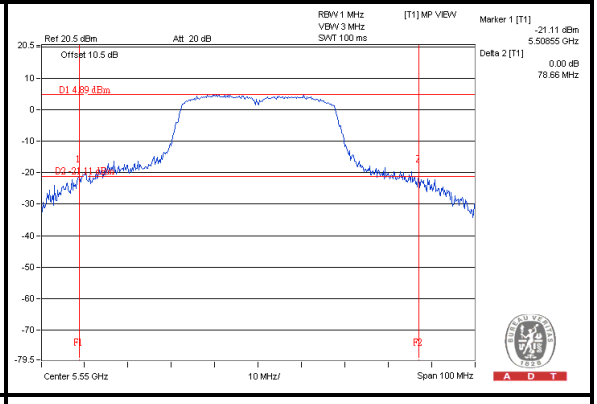
Chain(0) : CH62



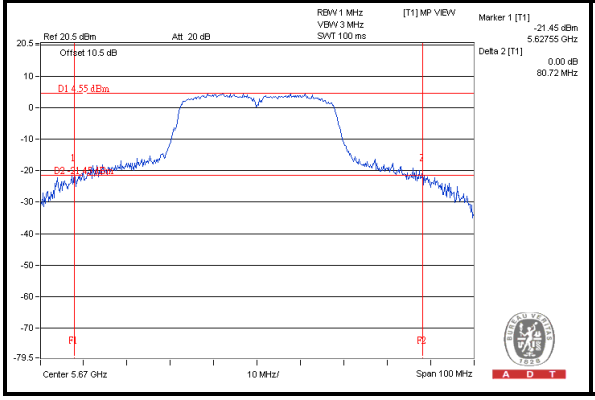
Chain(0) : CH102



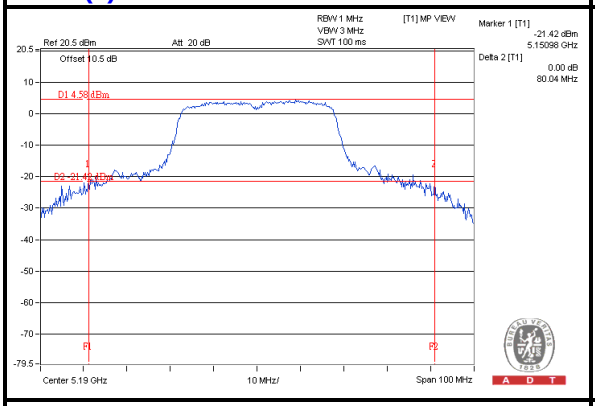
Chain(0) : CH110



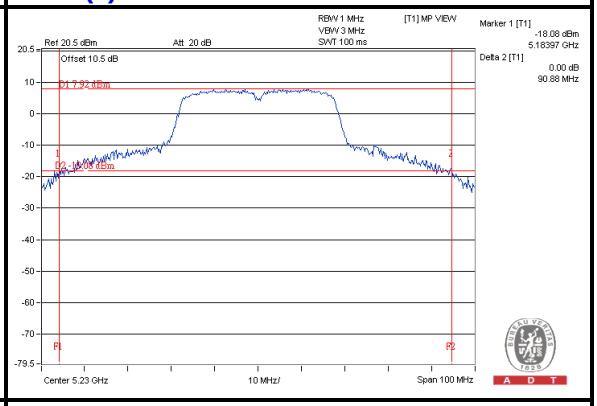
Chain(0) : CH134



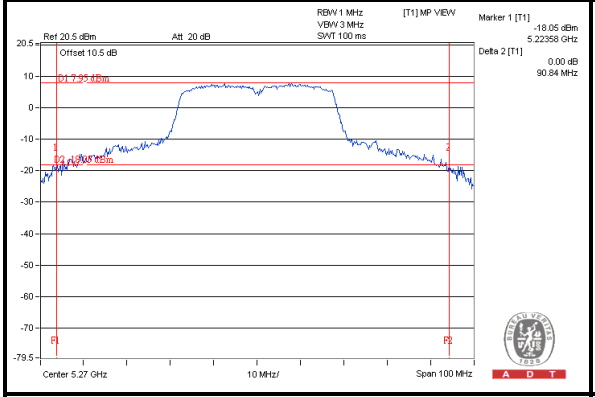
Chain(1) : CH38



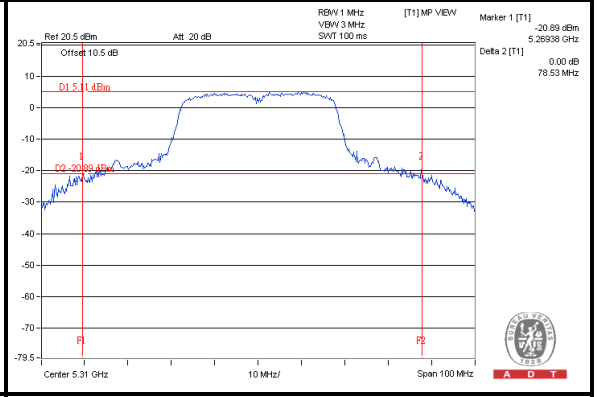
Chain(1) : CH46



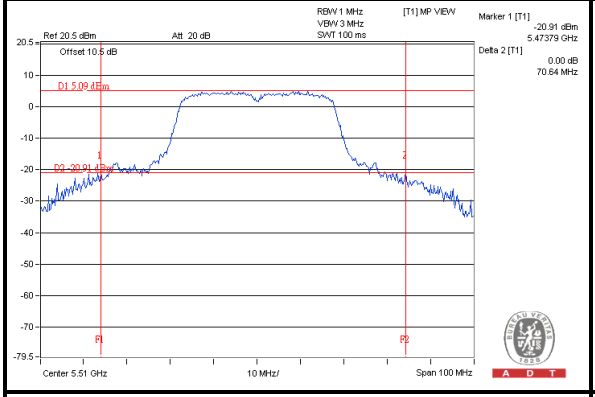
Chain(1) : CH54



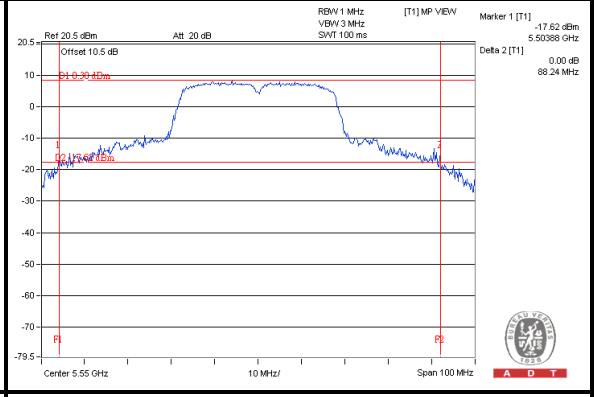
Chain(1) : CH62



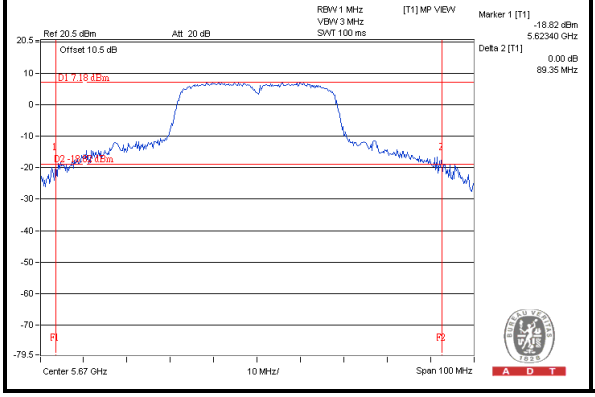
Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134



4.2 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.2.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP40	100036	Jan. 21, 2013	Jan. 20, 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 : July 30, 2013

4.2.3 TEST PROCEDURES

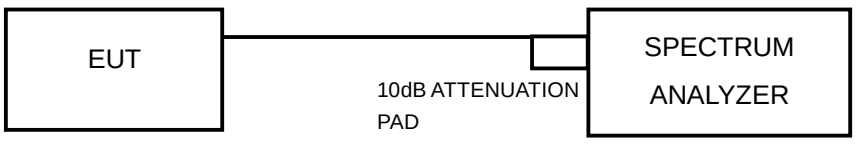
For 802.11a, 802.11n (HT20) test
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value

For 802.11n (HT40) test
Using method SA-2
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value and add 10 log (1/duty cycle)

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



4.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

4.2.7 TEST RESULTS

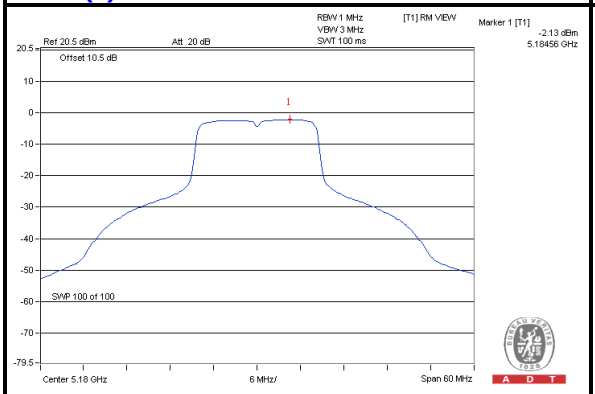
802.11a

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	-2.19	-0.12	1.98	3.91	PASS
40	5200	-1.37	0.37	2.60	3.91	PASS
48	5240	-3.06	-0.61	1.35	3.91	PASS
52	5260	-0.93	0.54	2.88	10.91	PASS
60	5300	-0.98	0.72	2.96	10.91	PASS
64	5320	-0.52	0.74	3.17	10.91	PASS
100	5500	-0.64	1.29	3.44	9.23	PASS
116	5580	-1.12	1.33	3.29	9.23	PASS
132	5660	-2.67	-0.58	1.51	9.23	PASS
140	5700	-2.11	-0.30	1.90	9.23	PASS

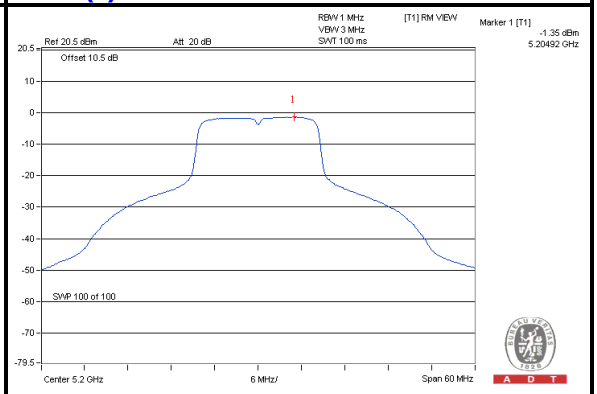
NOTE:

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 = 3.08dBi + 10log(2) = 6.09dBi > 6dBi , so the power density limit shall be reduced to 4-(6.09-6) = 3.91dBm.
3. 5250~5350MHz: Directional gain = 3.08dBi + 10log(2) = 6.09dBi > 6dBi, so the power density limit shall be reduced to 11-(6.09-6) = 10.91dBm.
4. 5470~5725MHz: Directional gain = 4.76dBi + 10log(2) = 7.77dBi > 6dB, so the power density limit shall be reduced to 11-(7.77-6) = 9.23dBm.

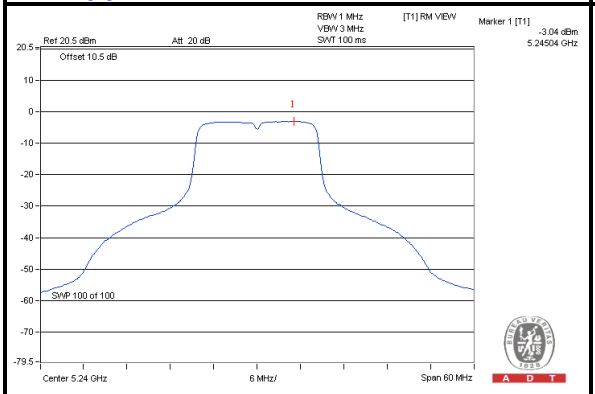
Chain(0) : CH36



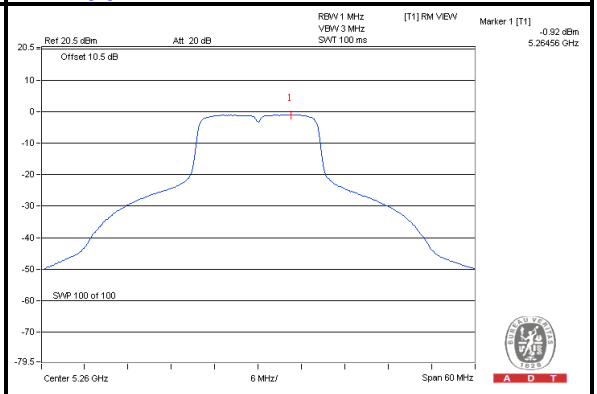
Chain(0) : CH40



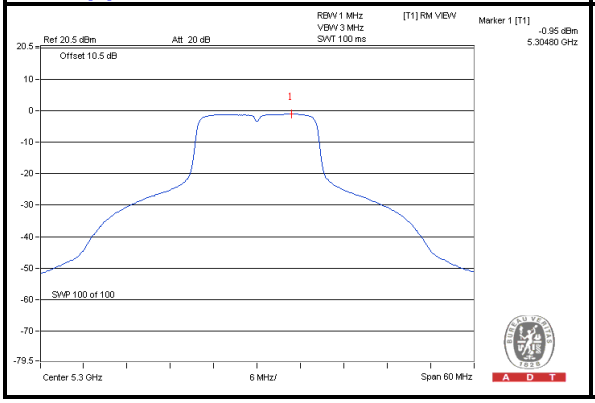
Chain(0) : CH48



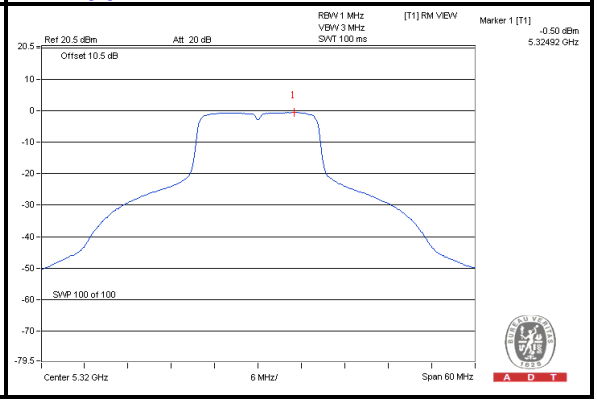
Chain(0) : CH52



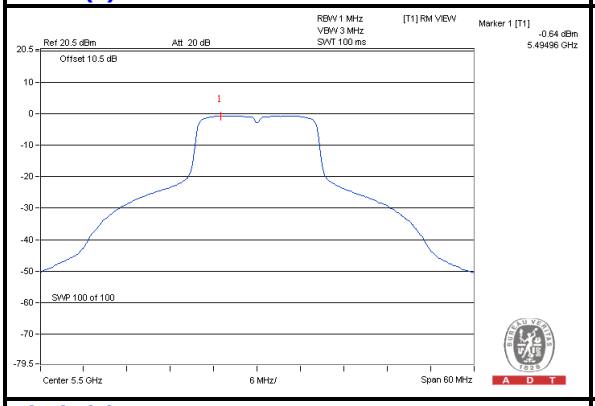
Chain(0) : CH60



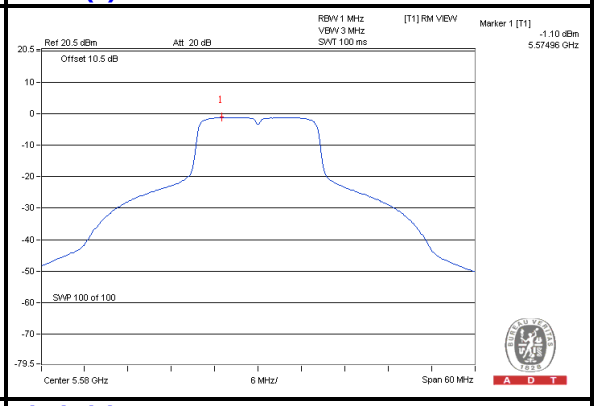
Chain(0) : CH64



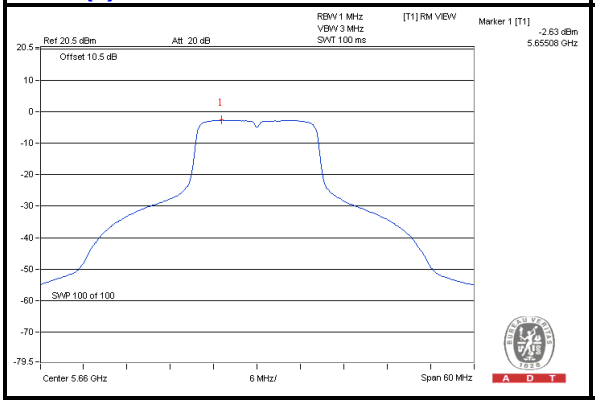
Chain(0) : CH100



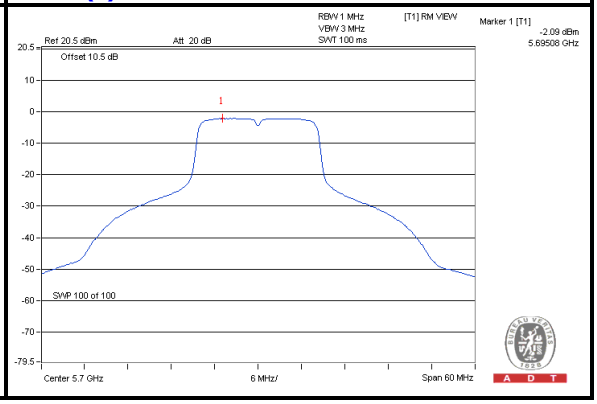
Chain(0) : CH116



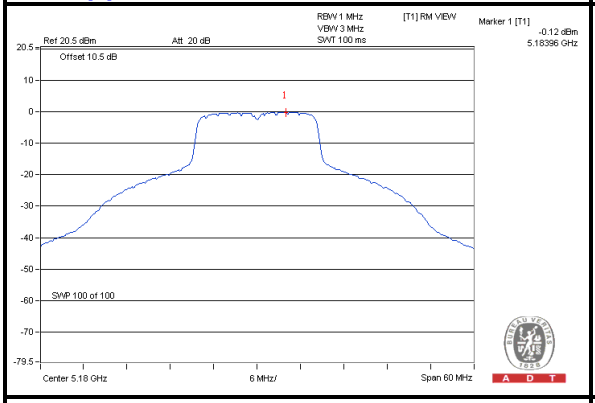
Chain(0) : CH132



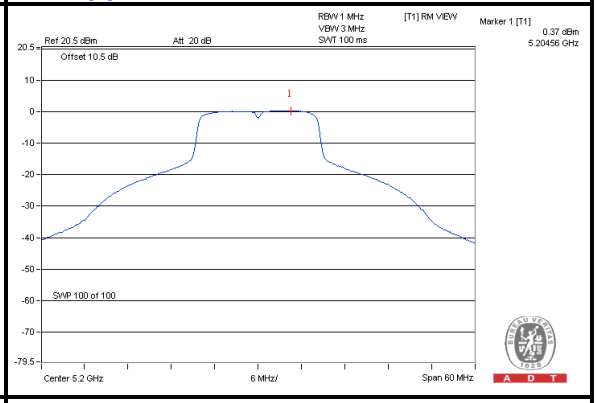
Chain(0) : CH140



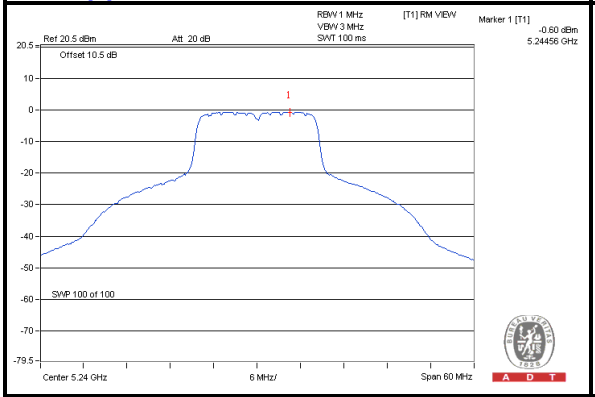
Chain(1) : CH36



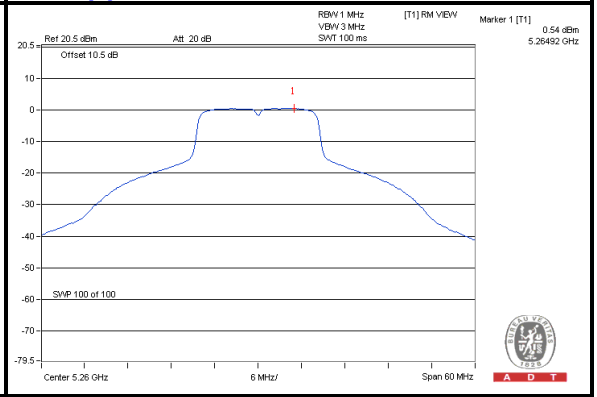
Chain(1) : CH40



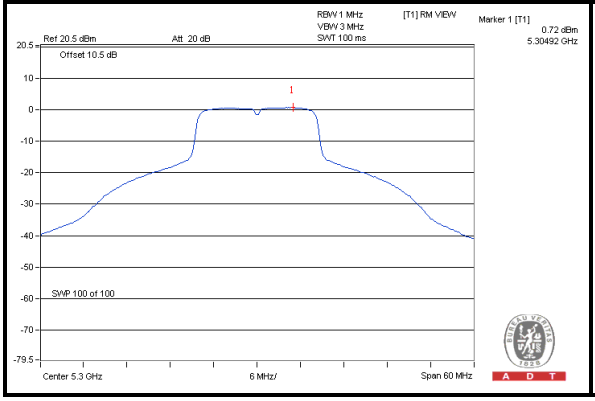
Chain(1) : CH48



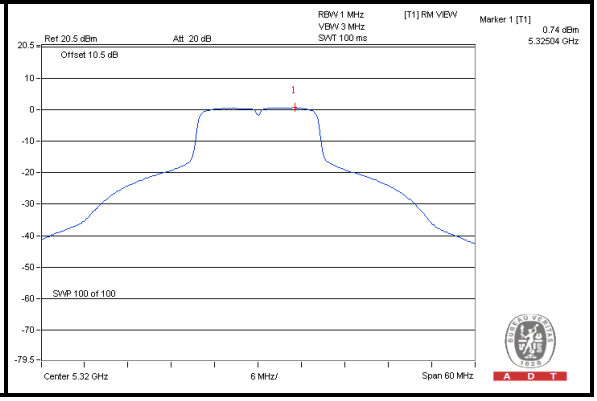
Chain(1) : CH52



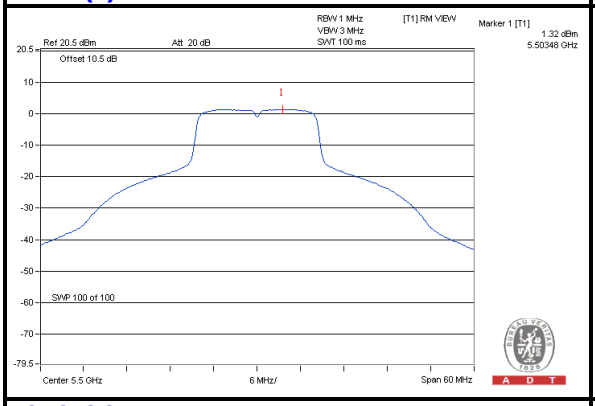
Chain(1) : CH60



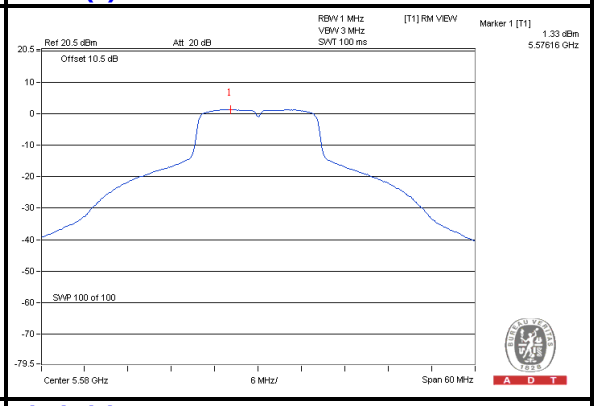
Chain(1) : CH64



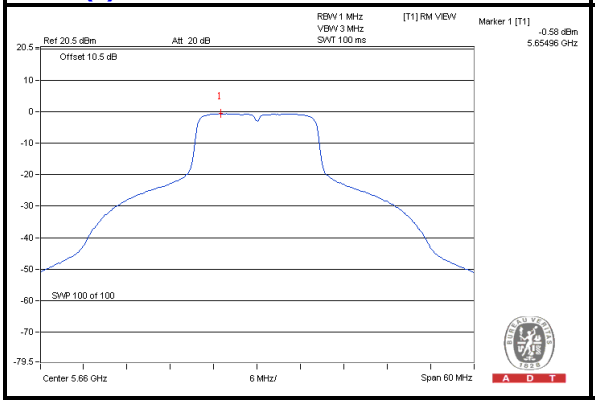
Chain(1) : CH100



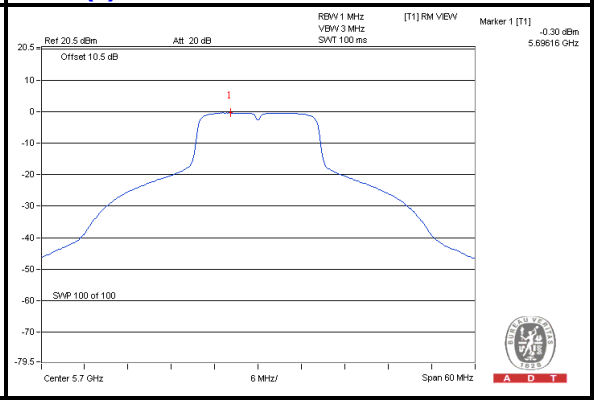
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



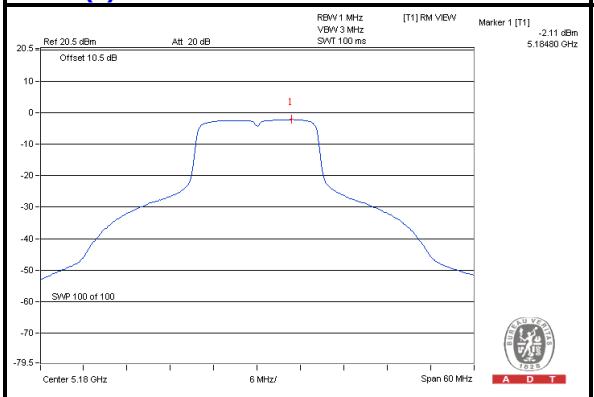
802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	-2.12	-0.50	1.78	3.91	PASS
40	5200	-1.56	-0.19	2.19	3.91	PASS
48	5240	-3.38	-0.88	1.06	3.91	PASS
52	5260	-0.73	0.24	2.79	10.91	PASS
60	5300	-0.88	0.43	2.83	10.91	PASS
64	5320	-1.15	0.41	2.71	10.91	PASS
100	5500	-1.04	0.98	3.10	9.23	PASS
116	5580	-1.04	1.07	3.15	9.23	PASS
132	5660	-3.84	-1.02	0.81	9.23	PASS
140	5700	-3.54	-1.28	0.75	9.23	PASS

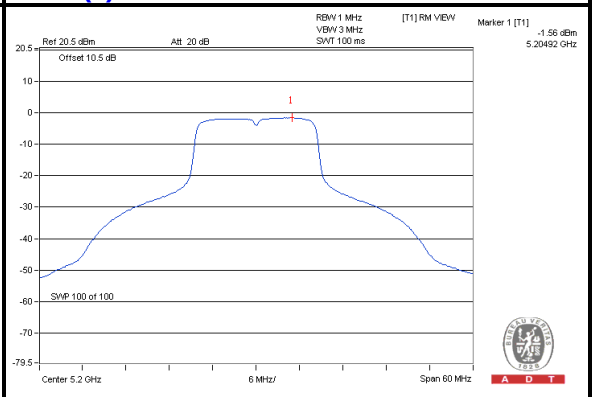
NOTE:

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 = 3.08dBi + 10log(2) = 6.09dBi > 6dBi, so the power density limit shall be reduced to 4-(6.09-6) = 3.91dBm.
3. 5250~5350MHz: Directional gain = 3.08dBi + 10log(2) = 6.09dBi > 6dBi, so the power density limit shall be reduced to 11-(6.09-6) = 10.91dBm.
4. 5470~5725MHz: Directional gain = 4.76dBi + 10log(2) = 7.77dBi > 6dBi , so the power density limit shall be reduced to 11-(7.77-6) = 9.23dBm.

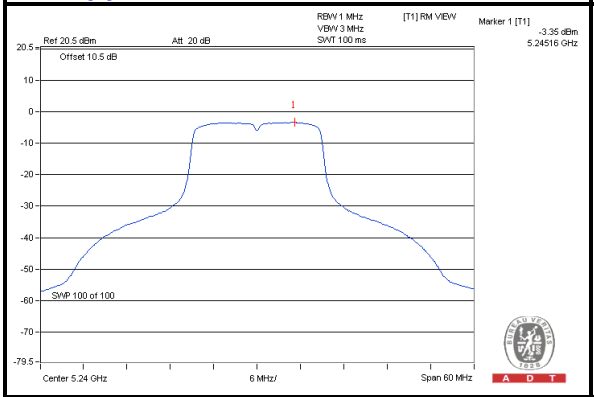
Chain(0) : CH36



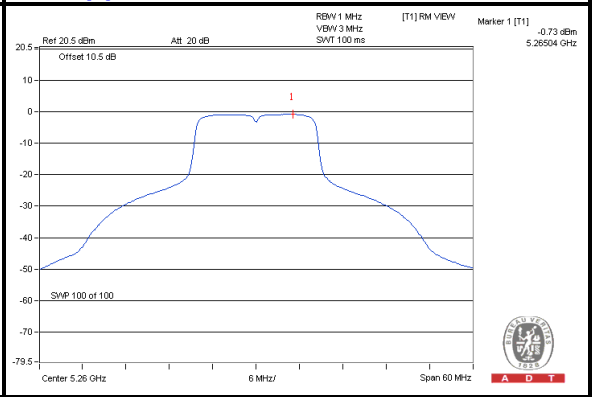
Chain(0) : CH40



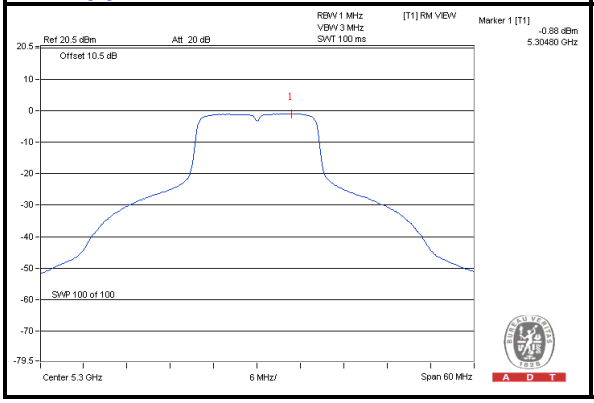
Chain(0) : CH48



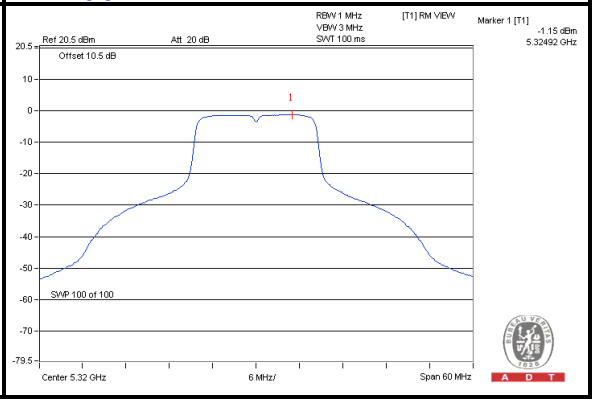
Chain(0) : CH52



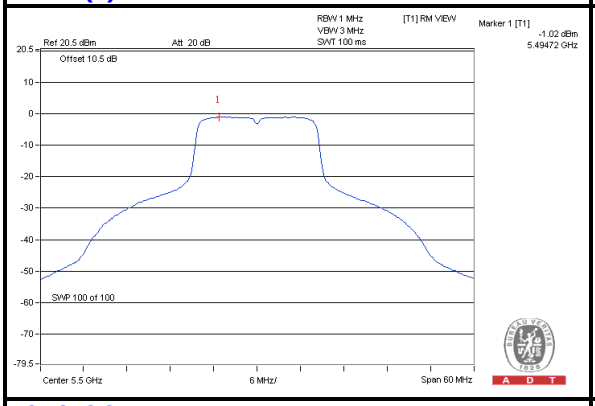
Chain(0) : CH60



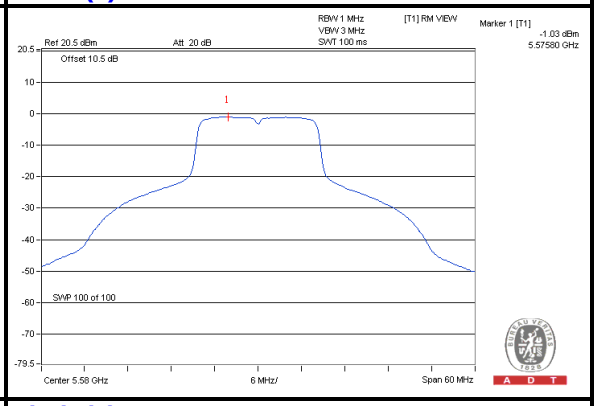
Chain(0) : CH64



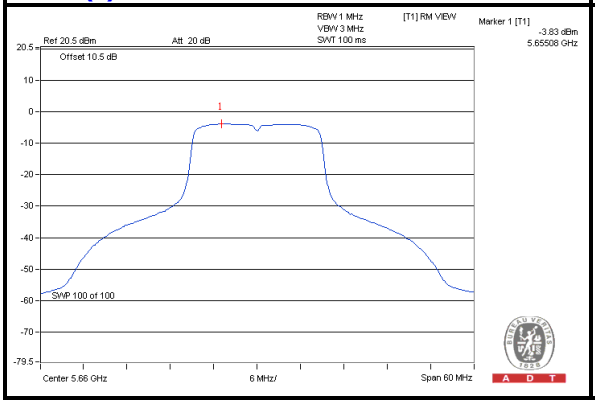
Chain(0) : CH100



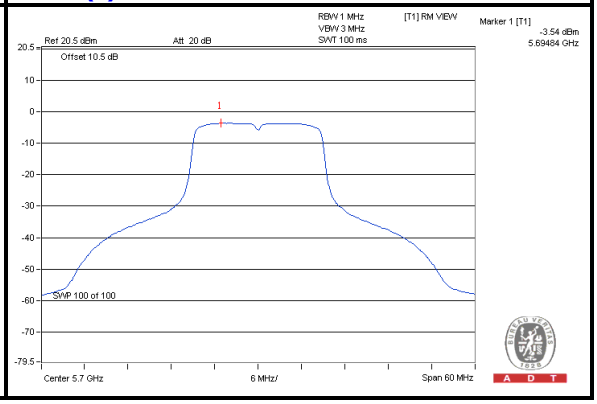
Chain(0) : CH116



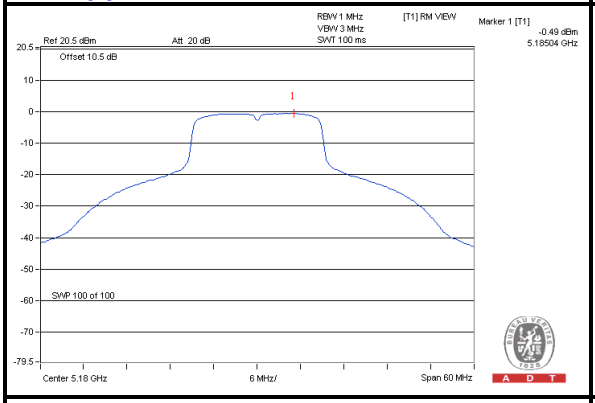
Chain(0) : CH132



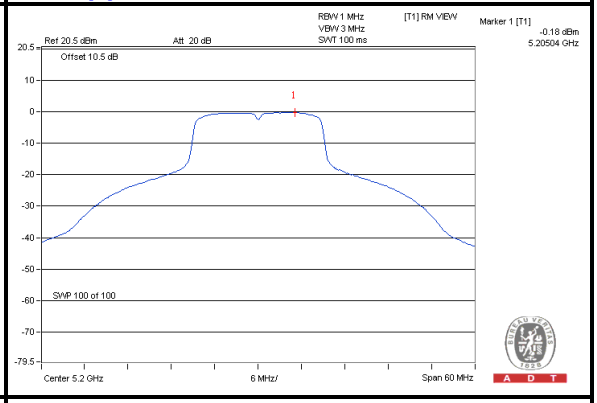
Chain(0) : CH140



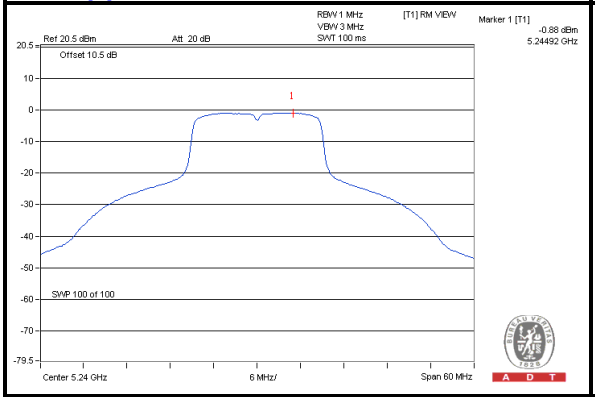
Chain(1) : CH36



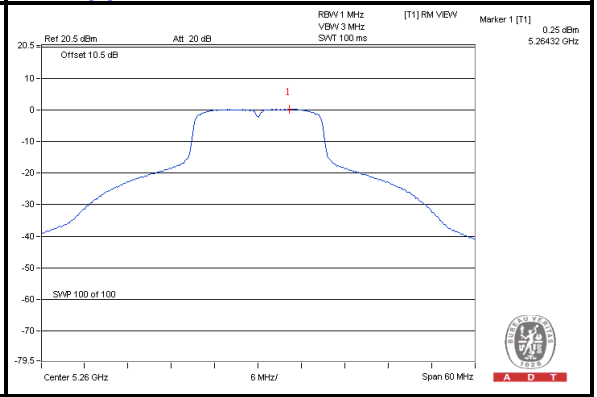
Chain(1) : CH40



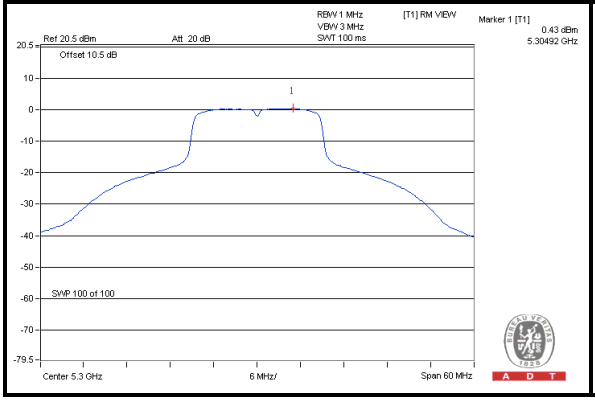
Chain(1) : CH48



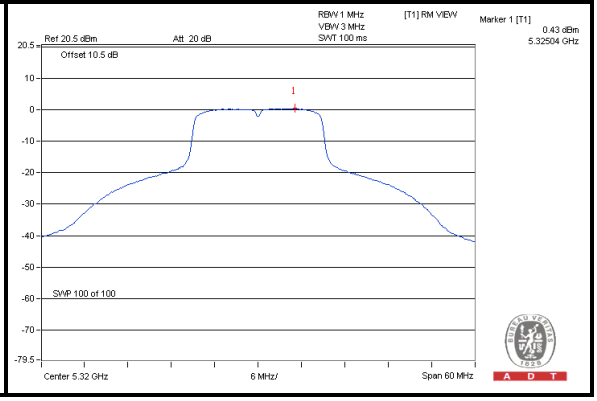
Chain(1) : CH52



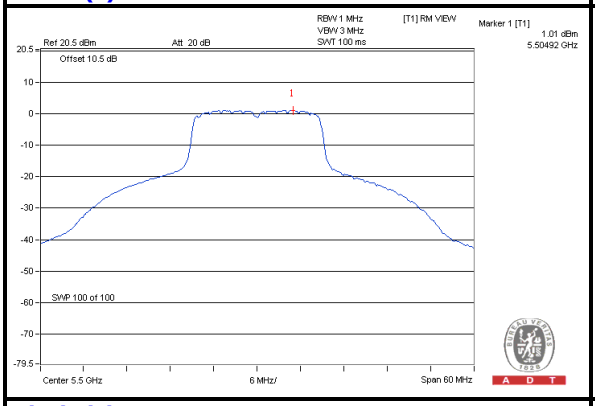
Chain(1) : CH60



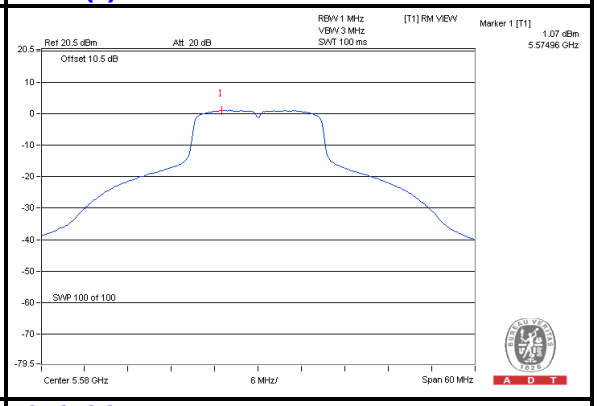
Chain(1) : CH64



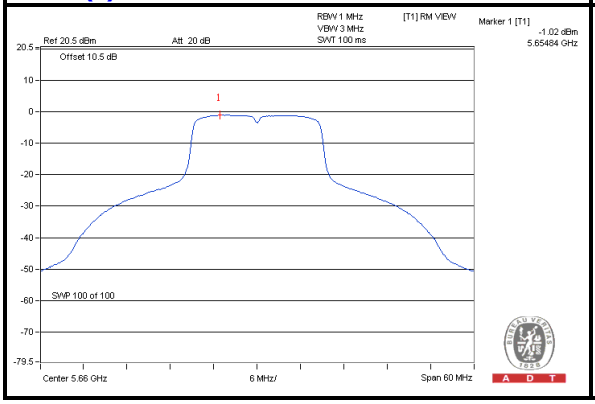
Chain(1) : CH100



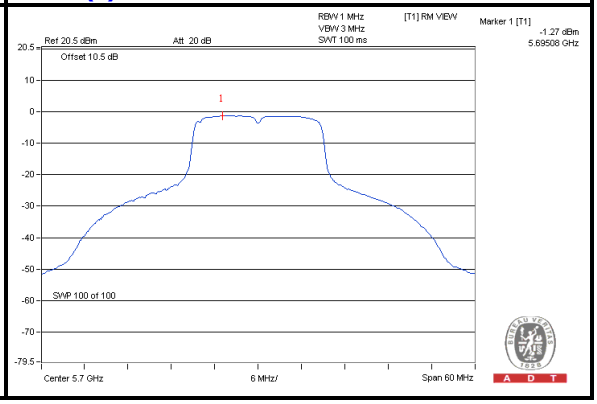
Chain(1) : CH116



Chain(1) : CH132



Chain(1) : CH140



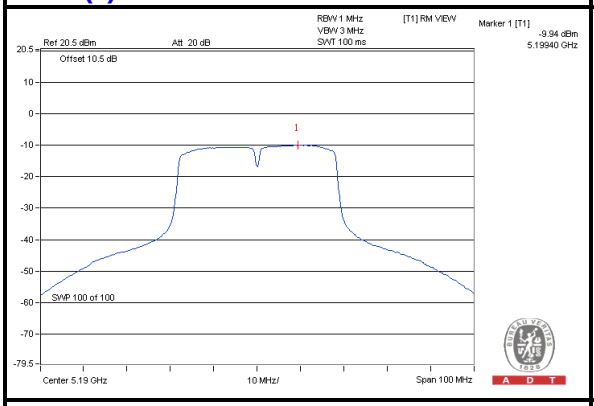
802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PSD W/O DUTY FACTOR (dBm)		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-9.96	-6.83	0.16	-4.95	3.91	PASS
46	5230	-6.44	-3.48	0.16	-1.54	3.91	PASS
54	5270	-6.35	-3.74	0.16	-1.68	10.91	PASS
62	5310	-9.44	-6.18	0.16	-4.34	10.91	PASS
102	5510	-9.60	-6.32	0.16	-4.49	9.23	PASS
110	5550	-6.40	-3.33	0.16	-1.43	9.23	PASS
134	5670	-6.78	-4.04	0.16	-2.03	9.23	PASS

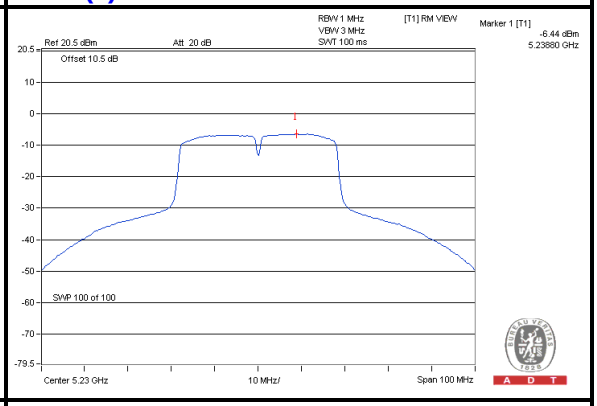
NOTE:

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 = 3.08dBi + 10log(2) = 6.09dBi > 6dBi , so the power density limit shall be reduced to 4-(6.09-6) = 3.91dBm.
3. 5250~5350MHz: Directional gain = 3.08dBi + 10log(2) = 6.09dBi > 6dBi, so the power density limit shall be reduced to 11-(6.09-6) = 10.91dBm.
4. 5470~5725MHz: Directional gain = 4.76dBi + 10log(2) = 7.77dBi > 6dBi, so the power density limit shall be reduced to 11-(7.77-6) = 9.23dBm.
5. Refer to section 3.5 for duty cycle spectrum plot.

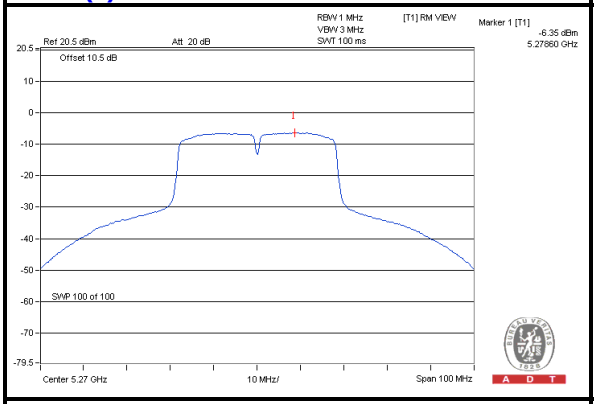
Chain(0) : CH38



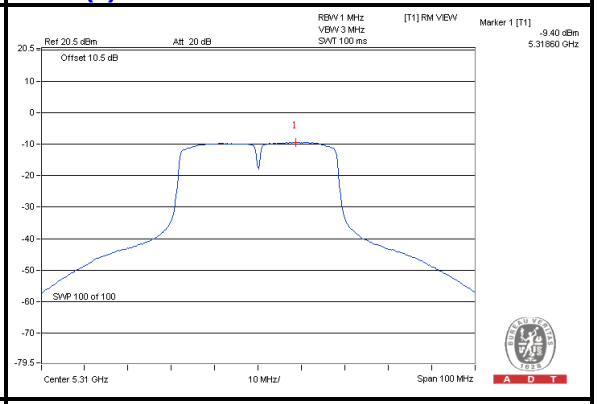
Chain(0) : CH46



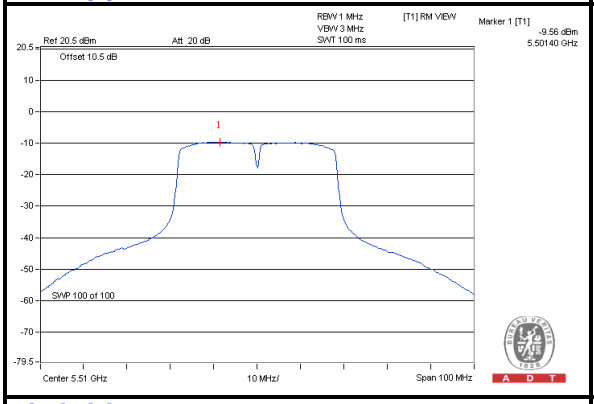
Chain(0) : CH54



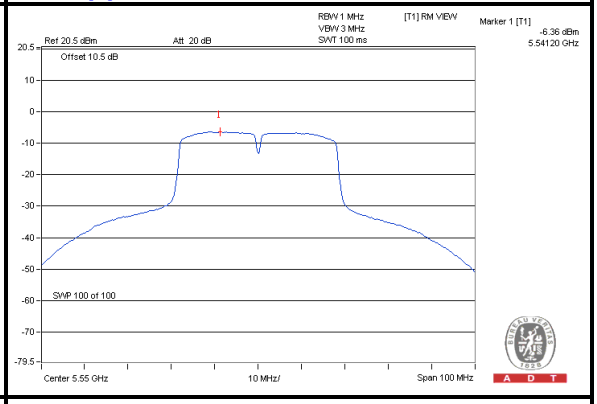
Chain(0) : CH62



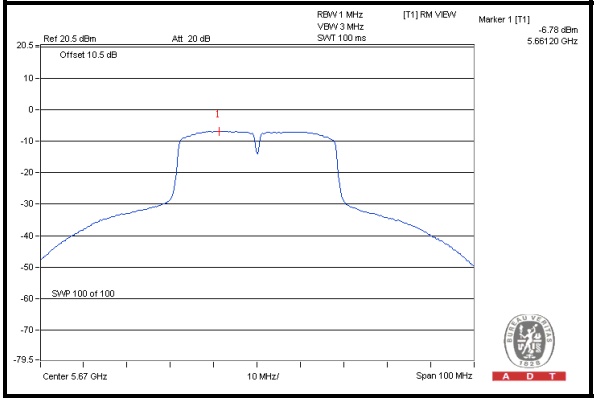
Chain(0) : CH102



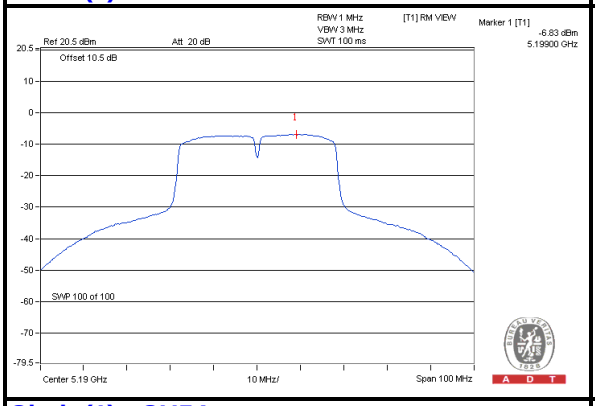
Chain(0) : CH110



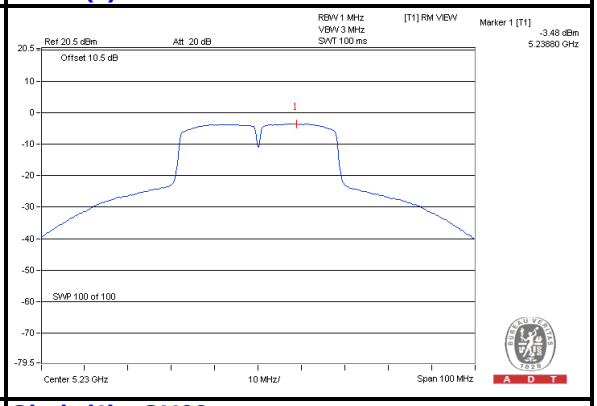
Chain(0) : CH134



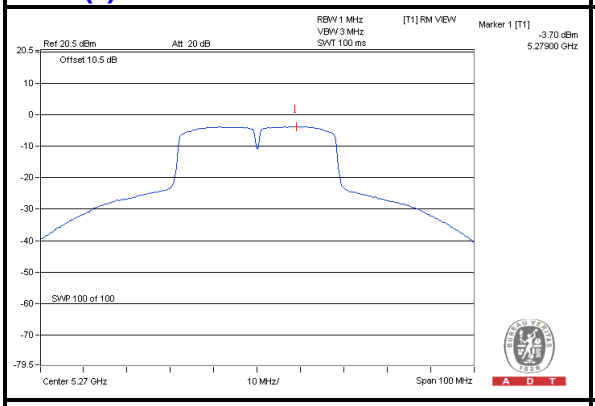
Chain(1) : CH38



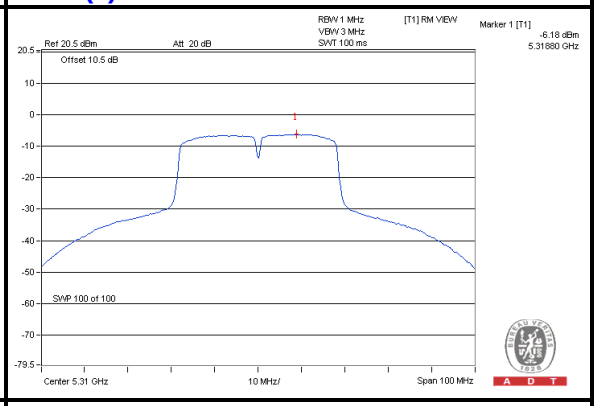
Chain(1) : CH46



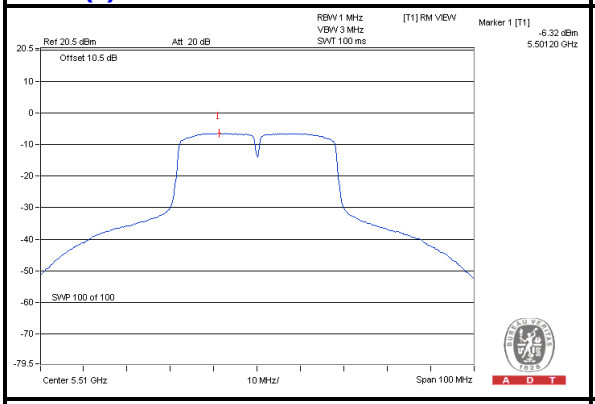
Chain(1) : CH54



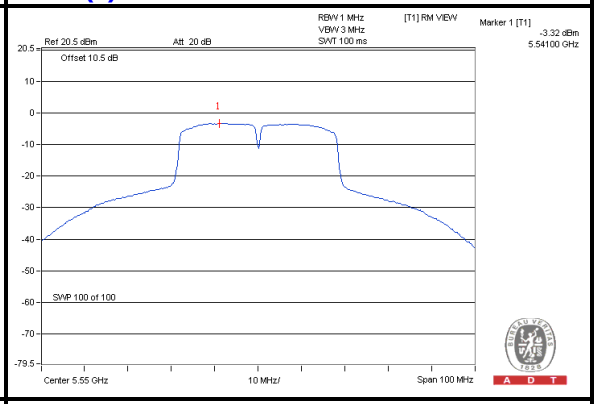
Chain(1) : CH62



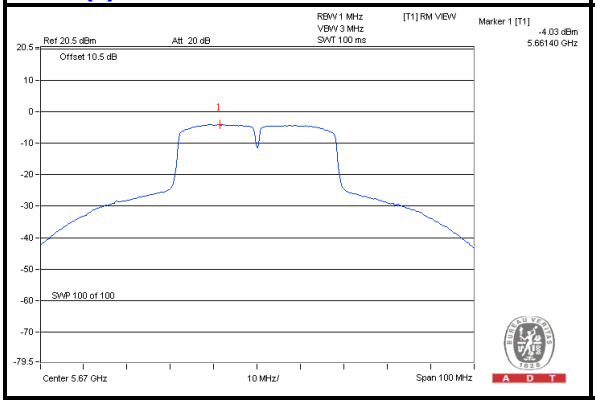
Chain(1) : CH102



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 : July 30, 2013

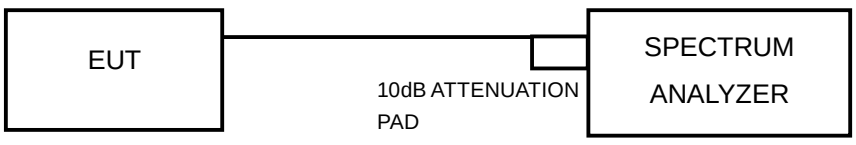
4.3.3 TEST PROCEDURE

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



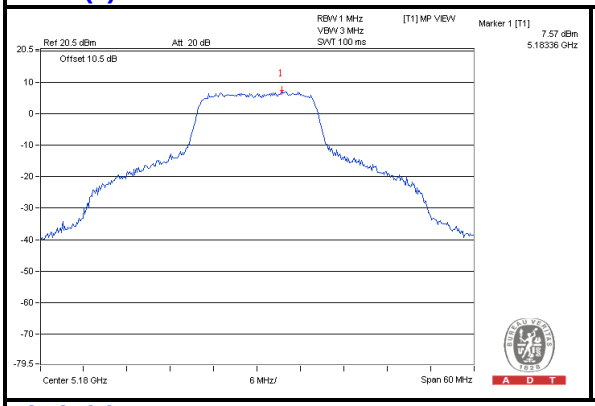
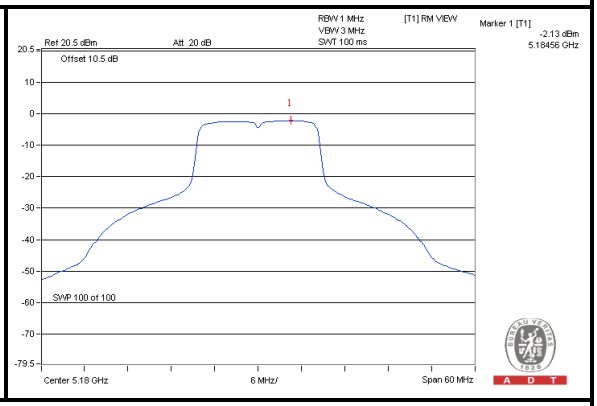
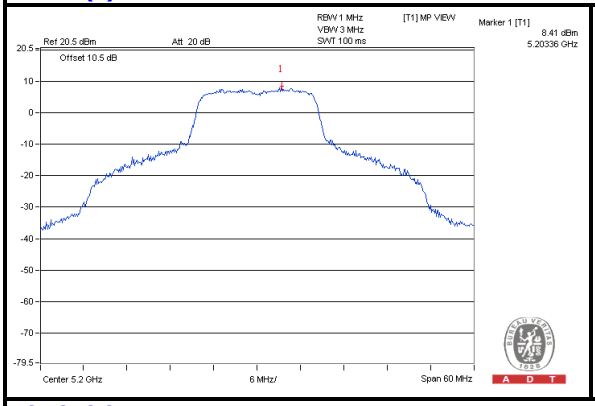
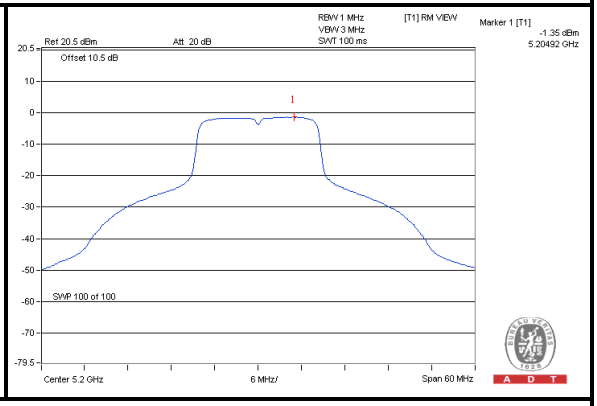
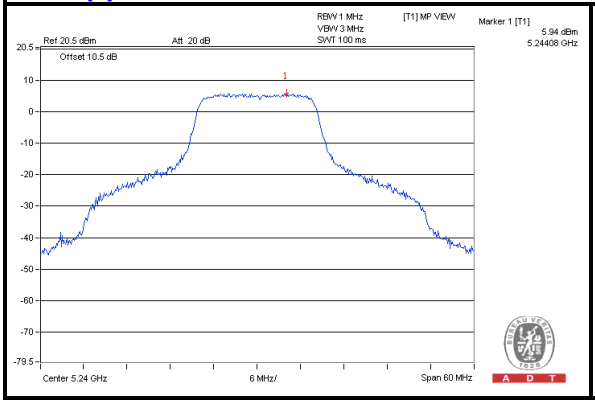
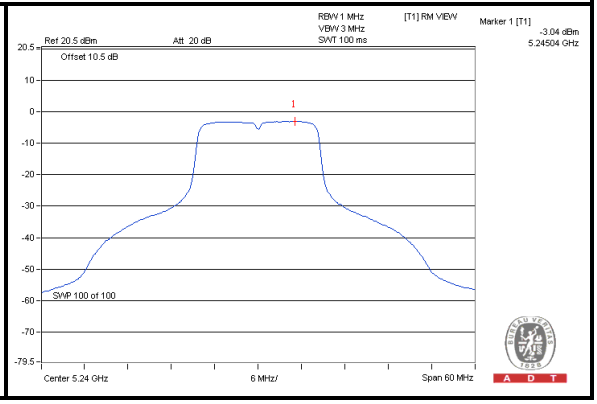
4.3.6 EUT OPERATING CONDITIONS

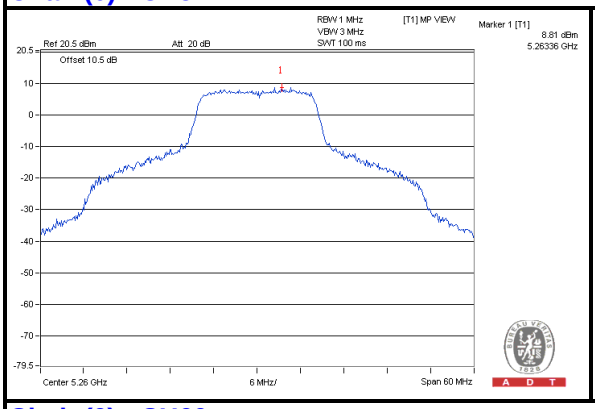
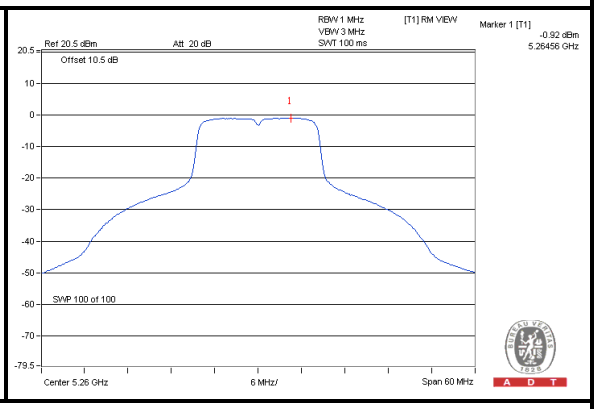
The software(artgui.exe Version:2.3) provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

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	7.57	10.51	-2.19	-0.12	9.76	10.63	13	PASS
40	5200	8.41	10.36	-1.37	0.37	9.78	9.99	13	PASS
48	5240	5.94	9.27	-3.06	-0.61	9.00	9.88	13	PASS
52	5260	8.81	10.84	-0.93	0.54	9.74	10.30	13	PASS
60	5300	8.09	10.76	-0.98	0.72	9.07	10.04	13	PASS
64	5320	8.88	10.68	-0.52	0.74	9.40	9.94	13	PASS
100	5500	9.15	11.10	-0.64	1.29	9.79	9.81	13	PASS
116	5580	8.66	11.14	-1.12	1.33	9.78	9.81	13	PASS
132	5660	6.64	9.15	-2.67	-0.58	9.31	9.73	13	PASS
140	5700	7.63	9.66	-2.11	-0.30	9.74	9.96	13	PASS

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

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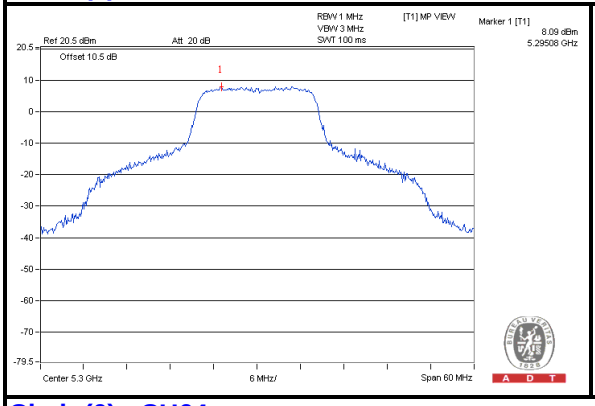
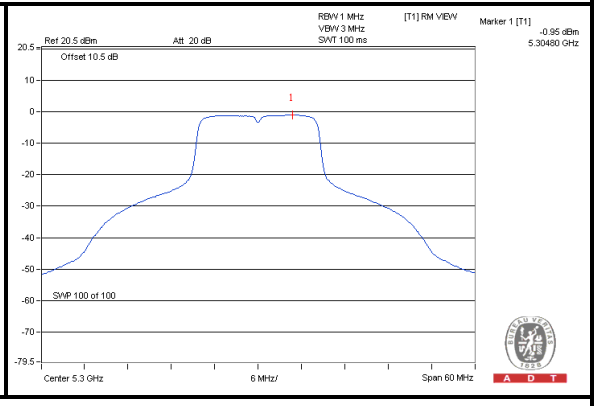
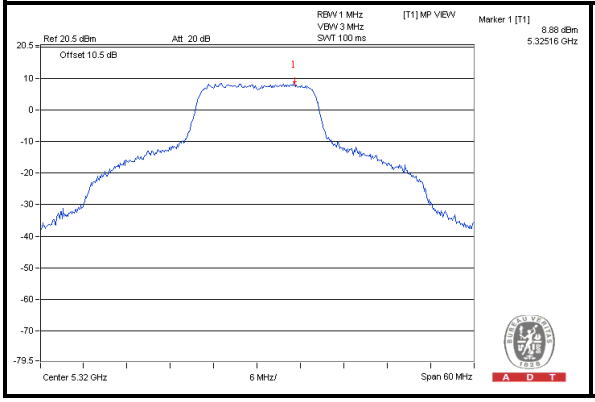
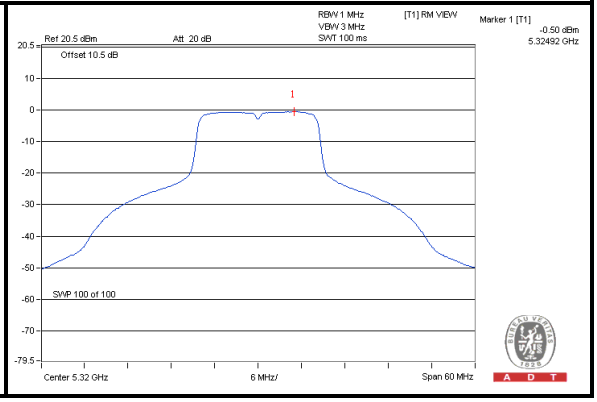
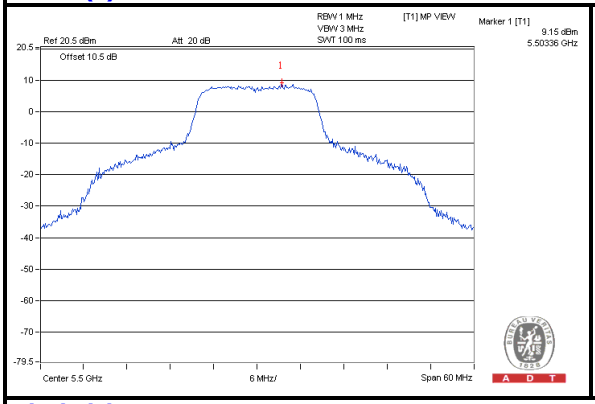
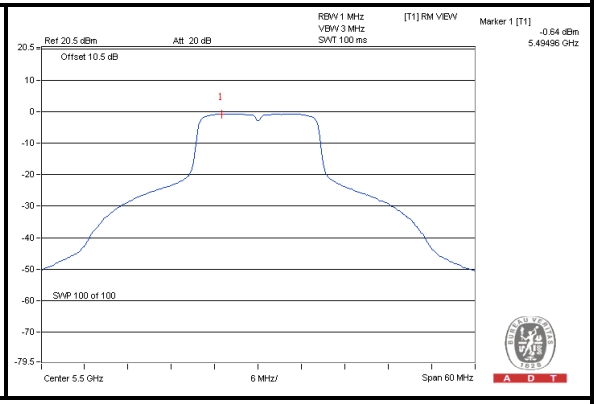
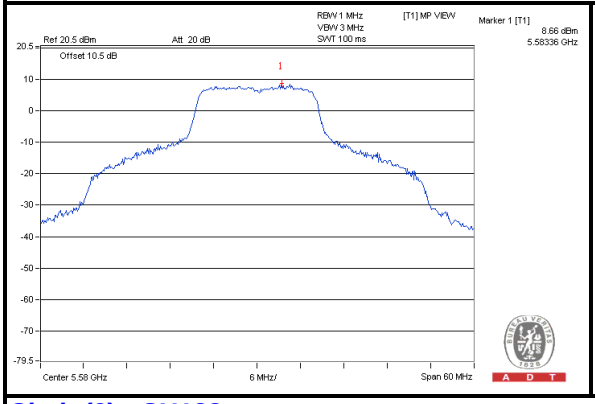
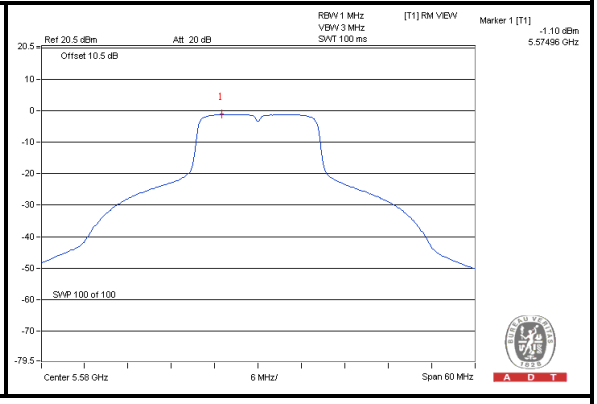
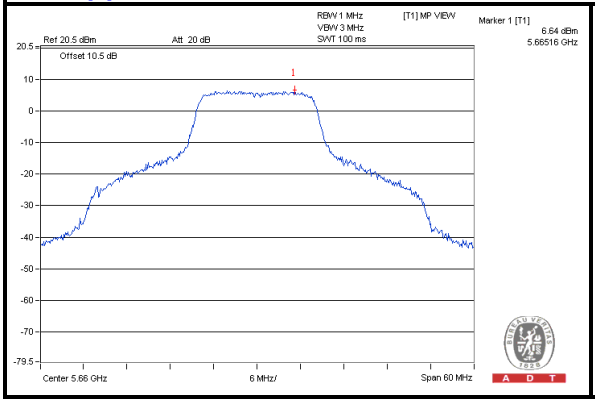
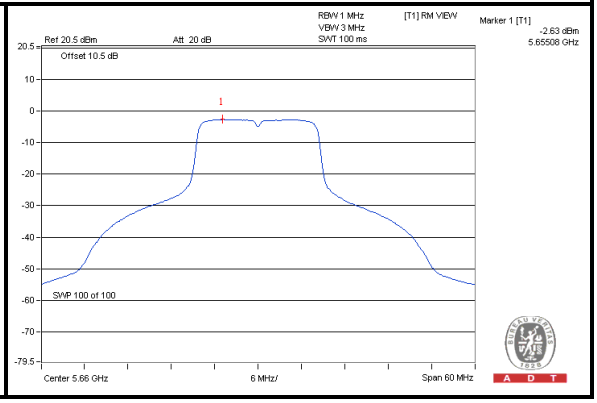
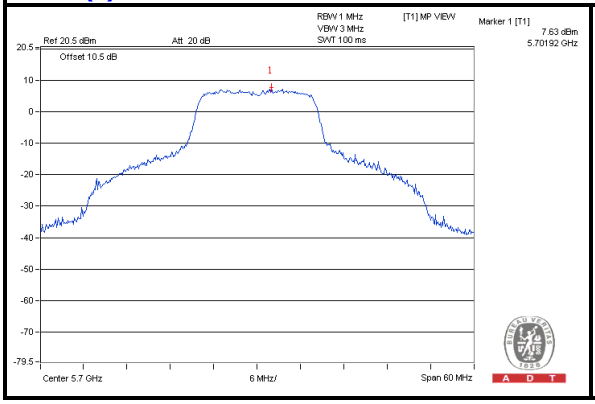
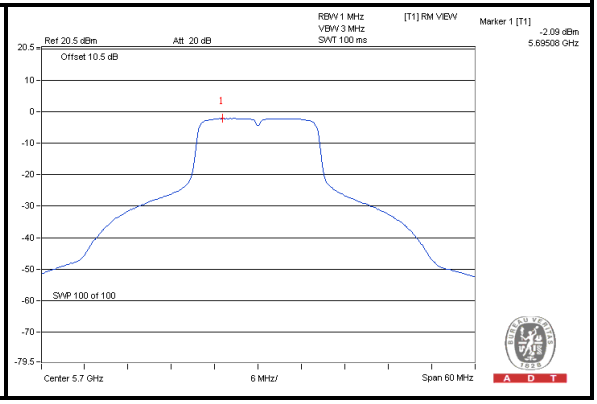
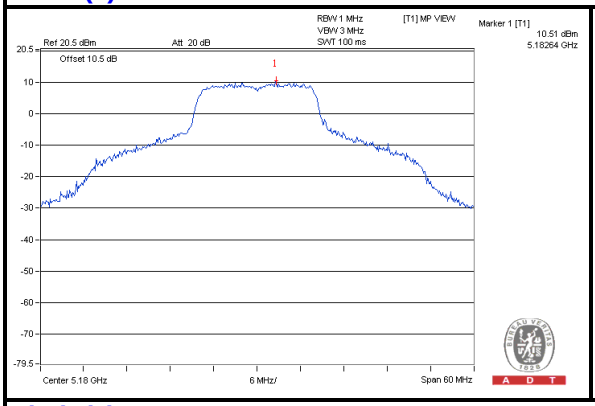
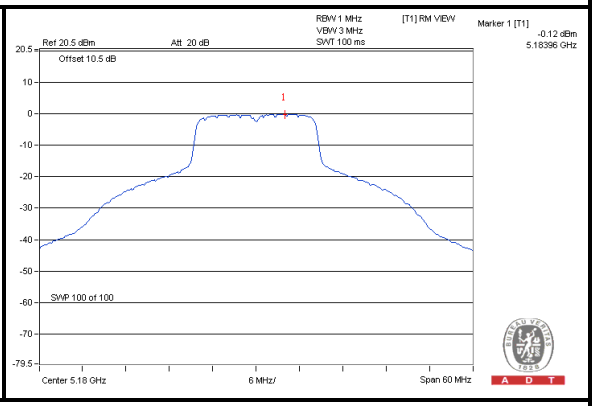
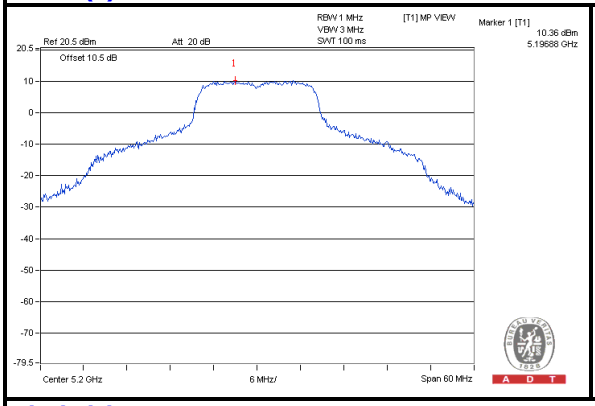
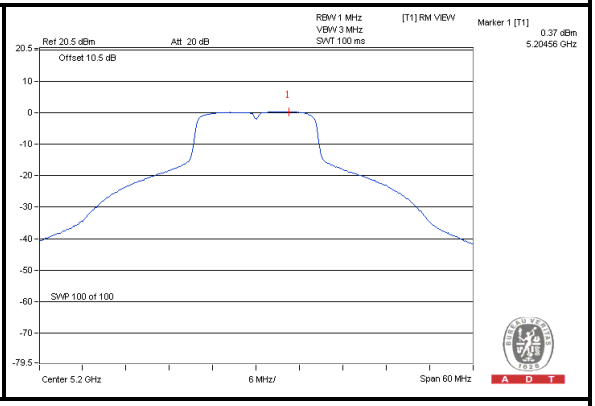
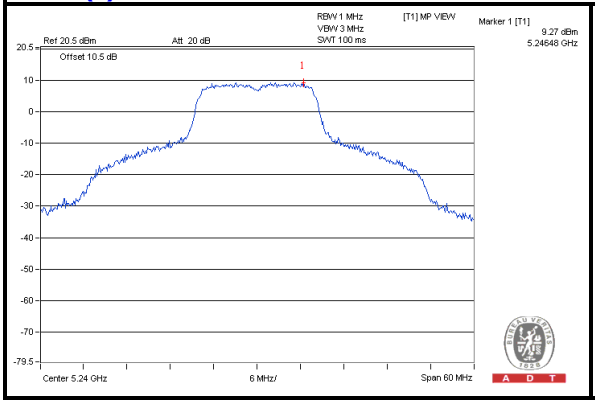
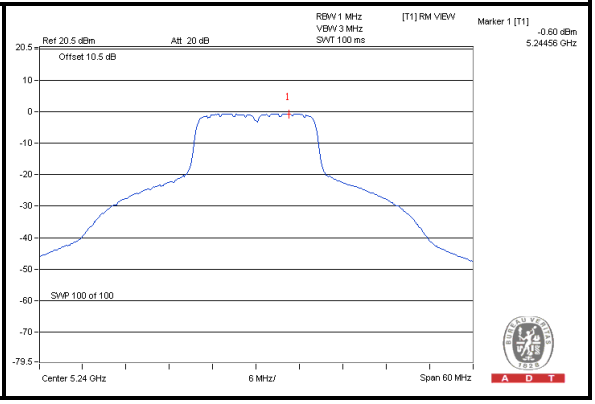
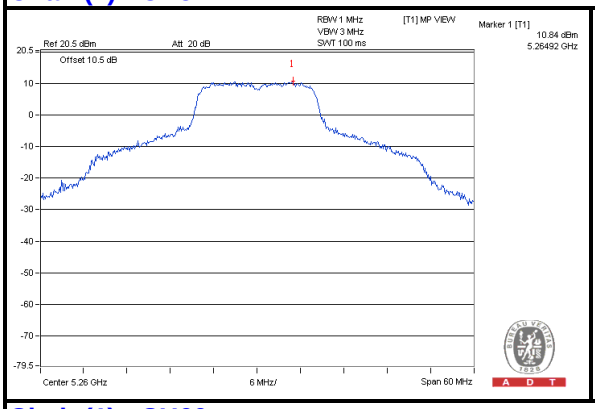
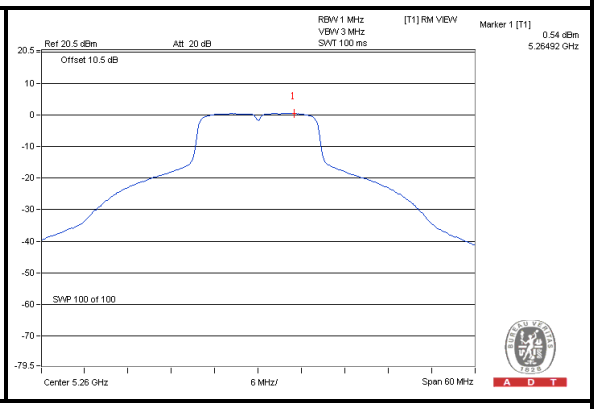
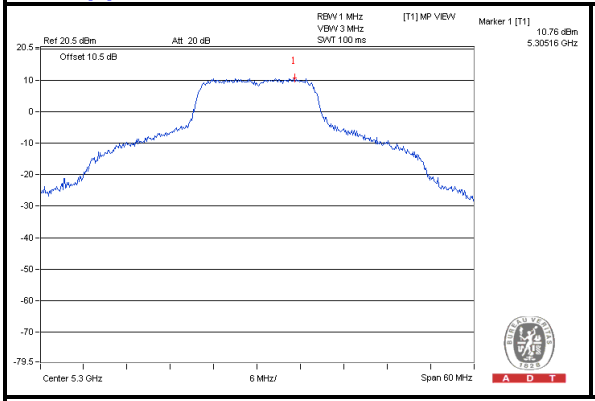
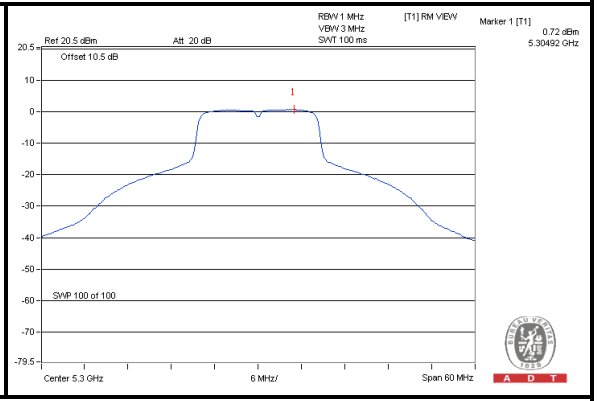
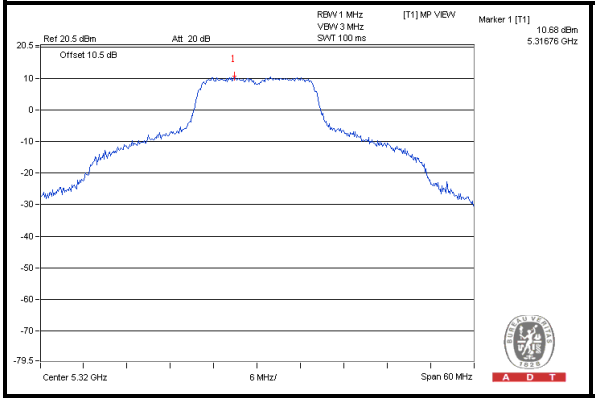
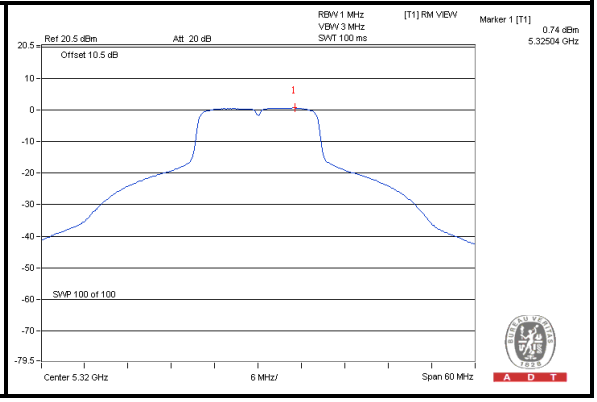
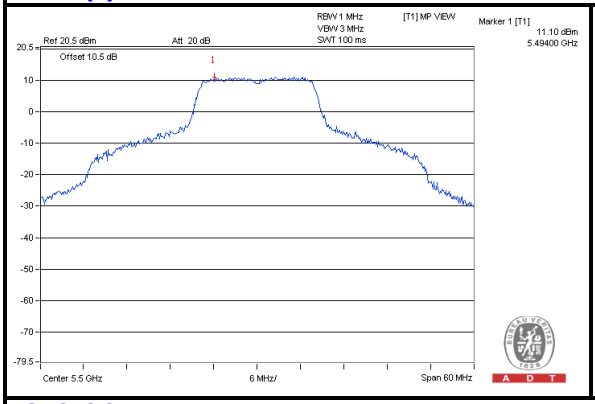
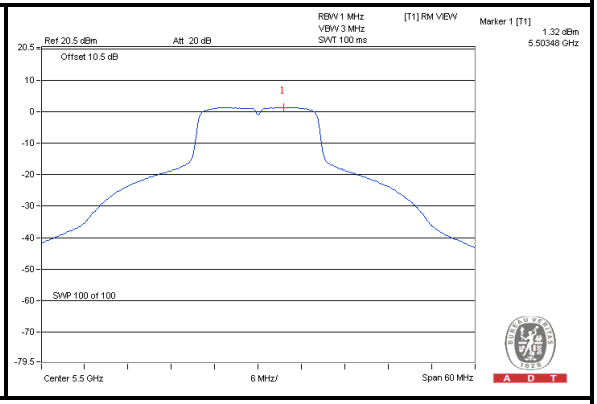
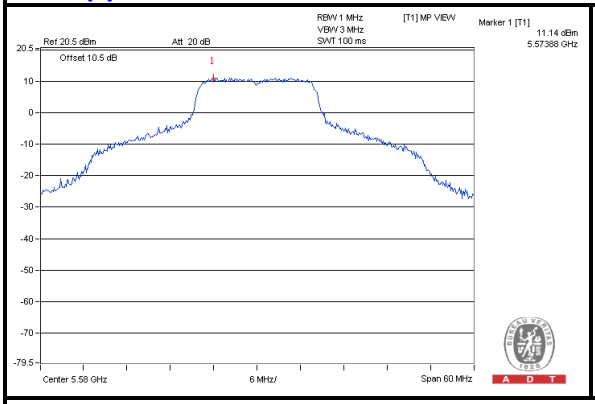
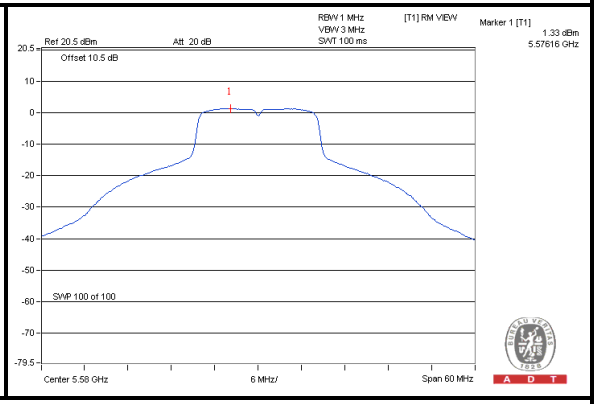
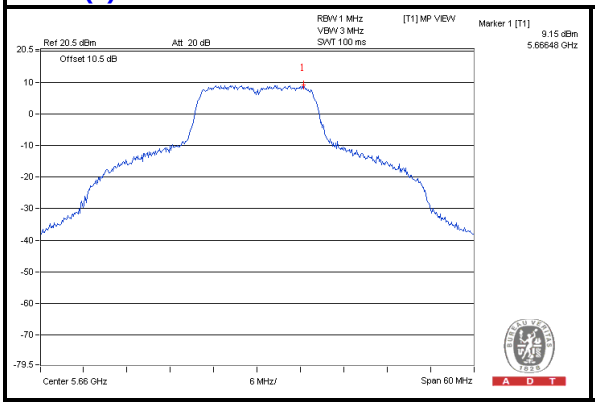
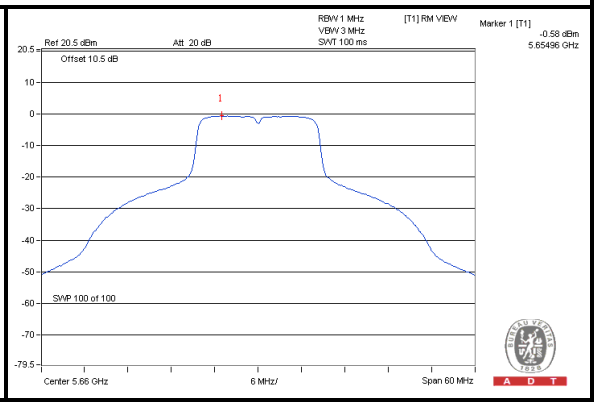
	
Chain(0) : CH64	
	

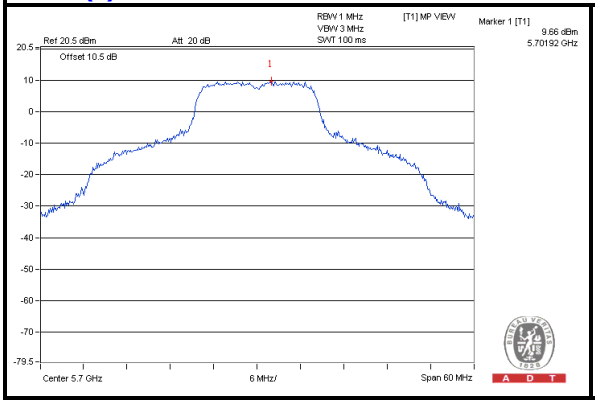
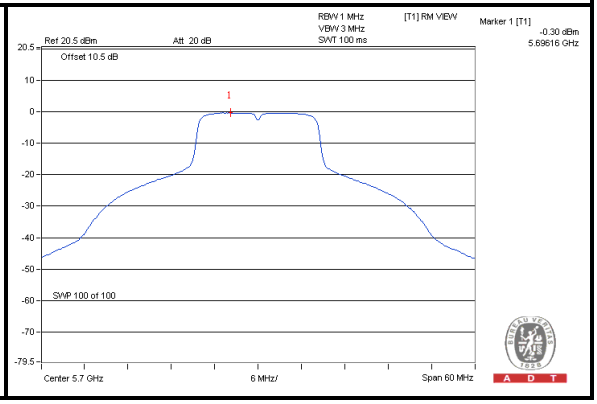
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

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	
	

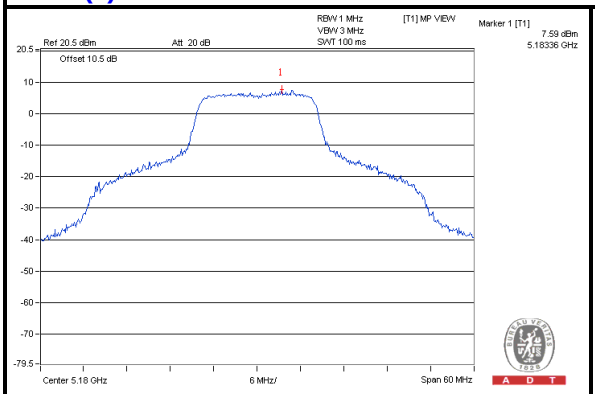
PEAK VALUE	PPSD
Chain(1) : CH140	
	

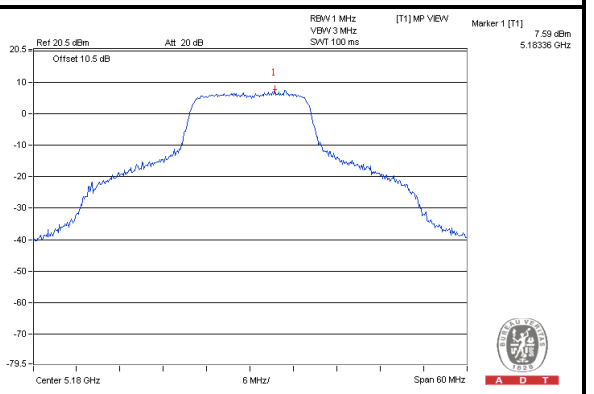
802.11n (HT20)

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	7.59	9.07	-2.12	-0.50	9.71	9.57	13	PASS
40	5200	8.22	9.41	-1.56	-0.19	9.78	9.60	13	PASS
48	5240	6.03	8.36	-3.38	-0.88	9.41	9.24	13	PASS
52	5260	8.74	9.91	-0.73	0.24	9.47	9.67	13	PASS
60	5300	8.63	9.91	-0.88	0.43	9.51	9.48	13	PASS
64	5320	8.60	9.55	-1.15	0.41	9.75	9.14	13	PASS
100	5500	8.86	10.27	-1.04	0.98	9.90	9.29	13	PASS
116	5580	8.60	10.49	-1.04	1.07	9.64	9.42	13	PASS
132	5660	5.95	8.19	-3.84	-1.02	9.79	9.21	13	PASS
140	5700	5.94	8.26	-3.54	-1.28	9.48	9.54	13	PASS

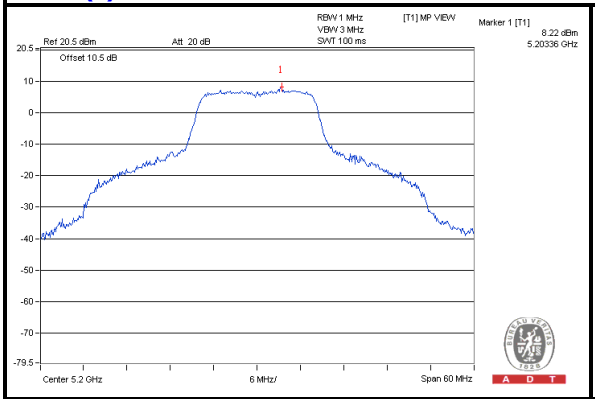
PEAK VALUE	PPSD

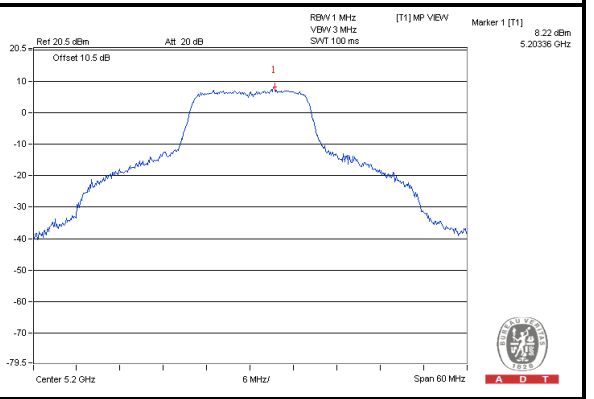
Chain(0) : CH36



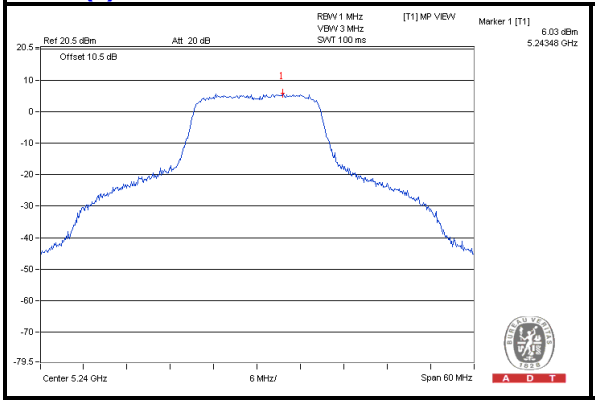


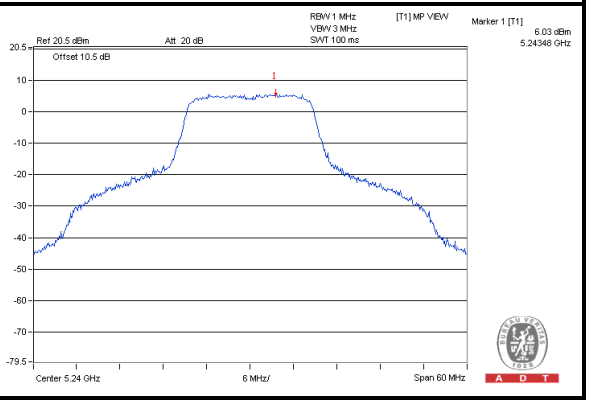
Chain(0) : CH40

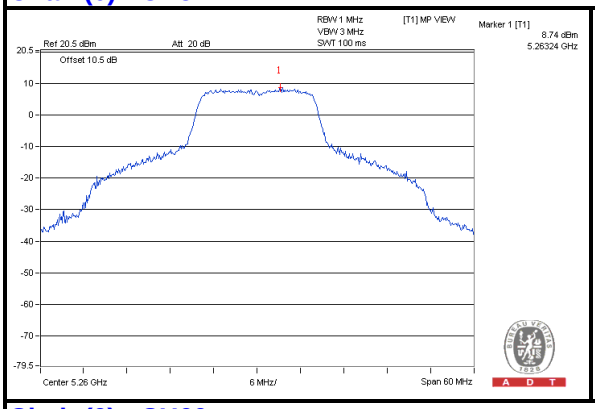
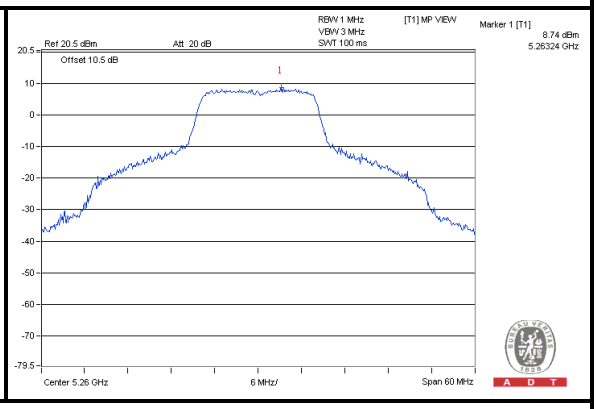
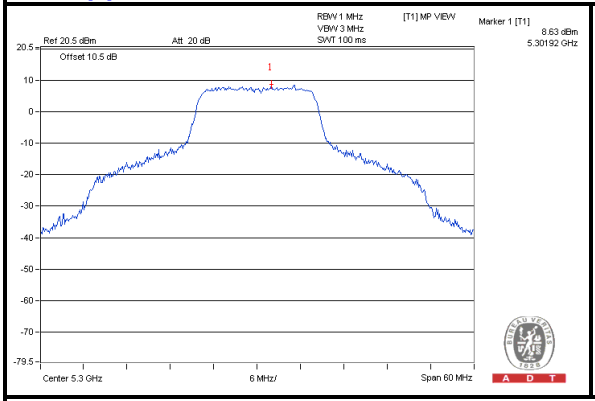
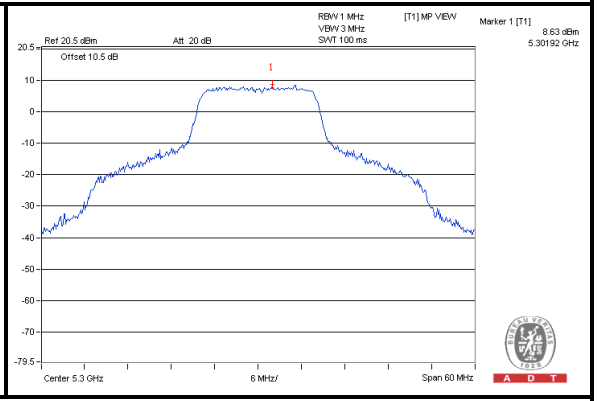
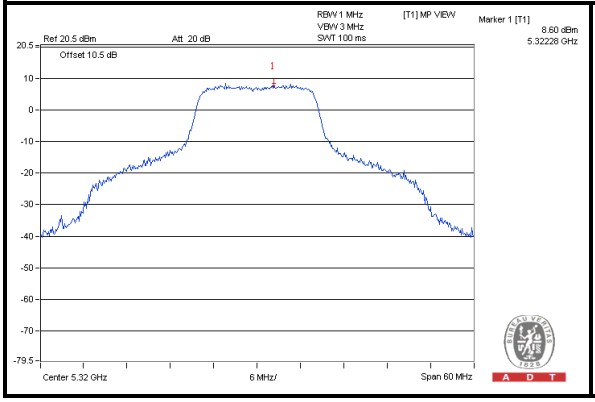
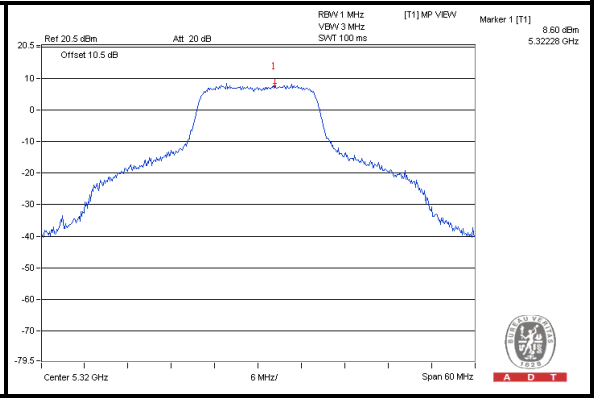


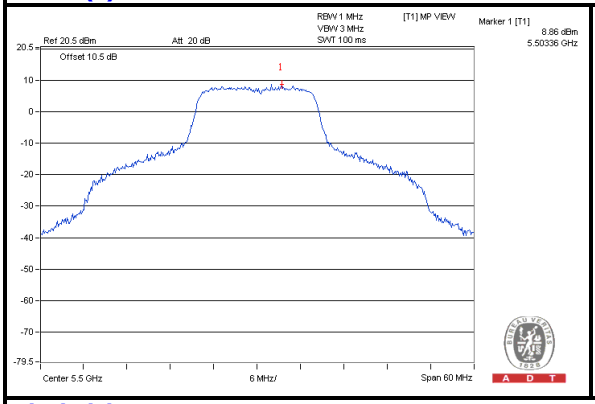
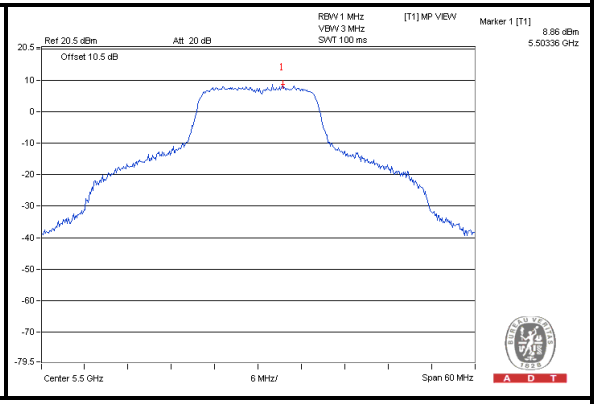
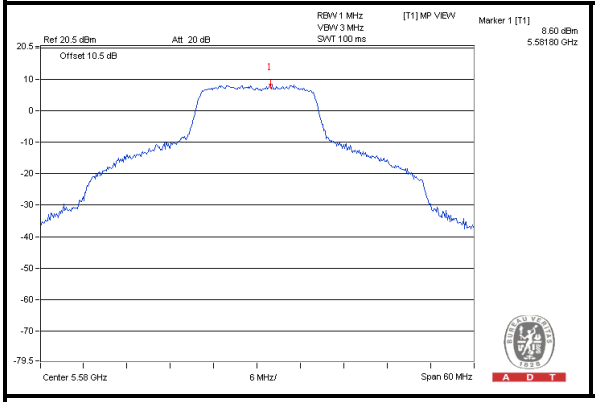
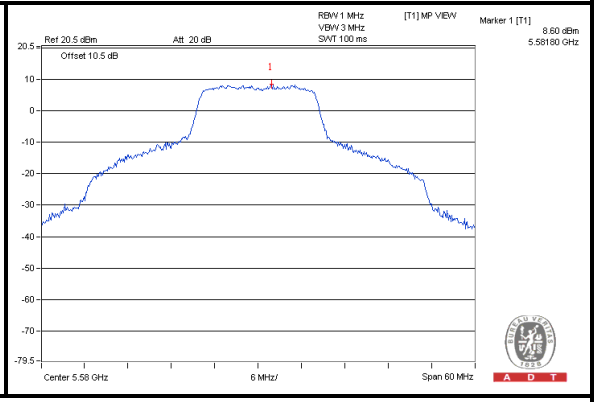
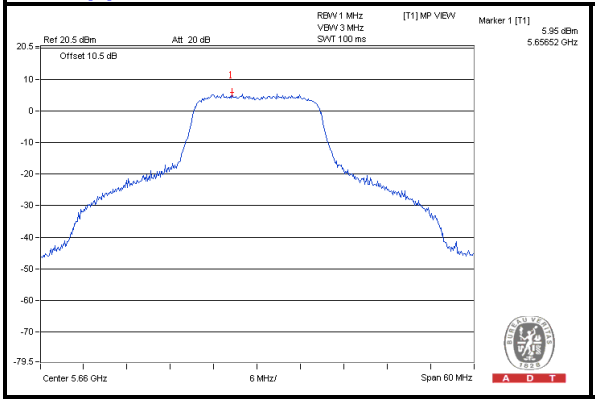
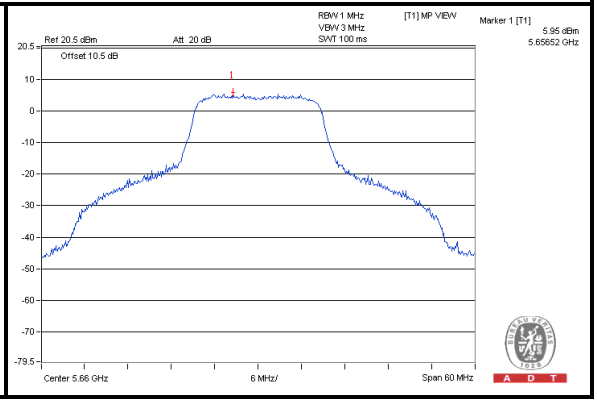


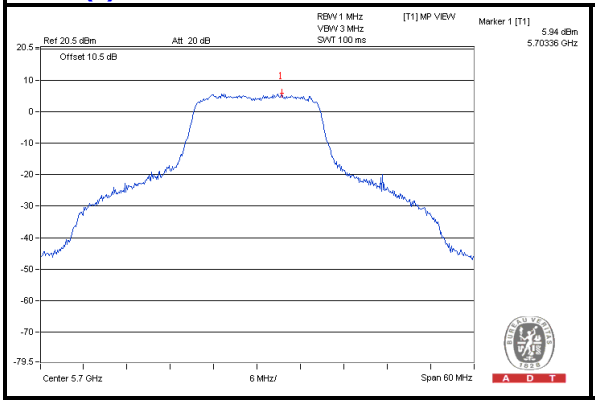
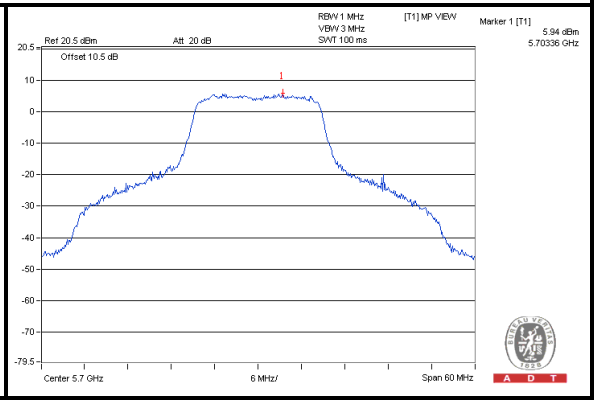
Chain(0) : CH48





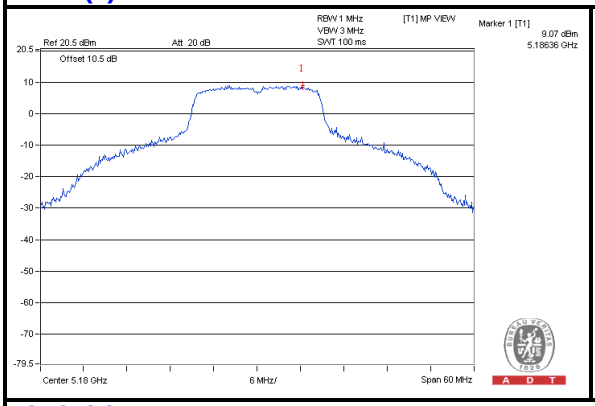
PEAK VALUE	PPSD
Chain(0) : CH52	
	
Chain(0) : CH60	
	
Chain(0) : CH64	
	

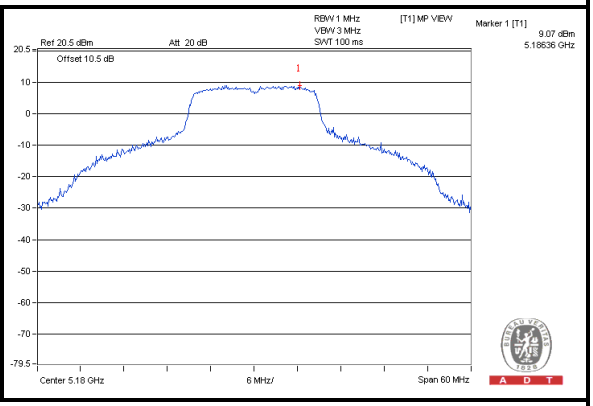
PEAK VALUE	PPSD
Chain(0) : CH100	
	
Chain(0) : CH116	
	
Chain(0) : CH132	
	

PEAK VALUE	PPSD
Chain(0) : CH140	
	

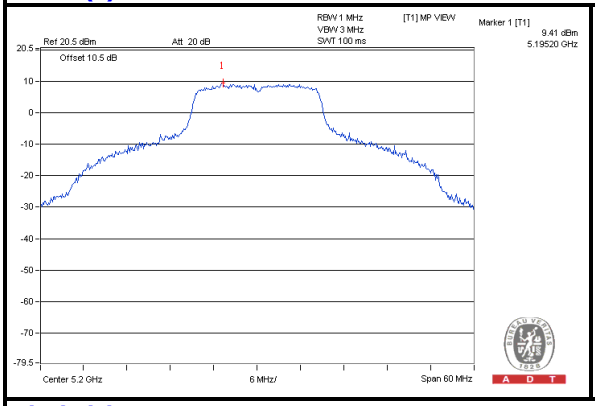
PEAK VALUE	PPSD

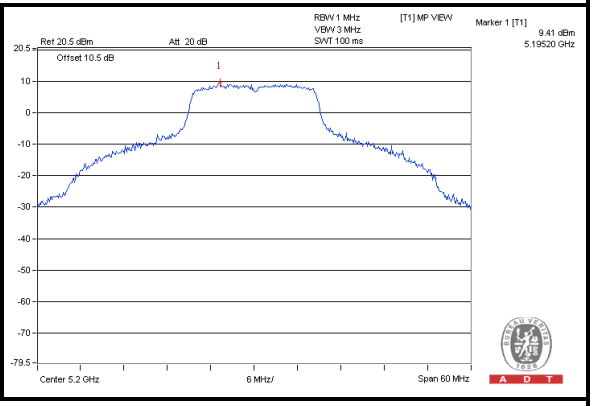
Chain(1) : CH36



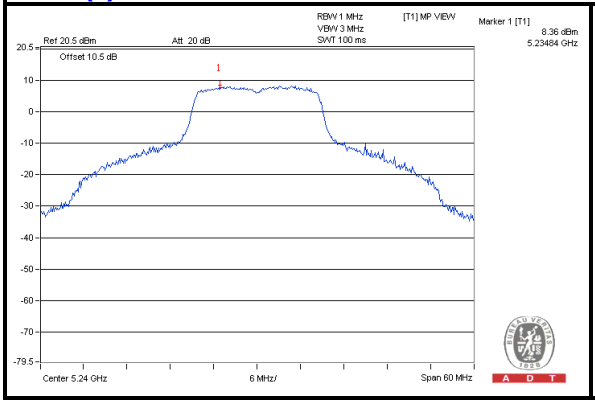


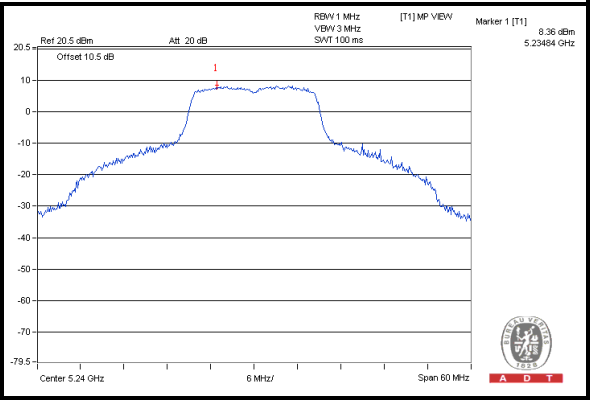
Chain(1) : CH40

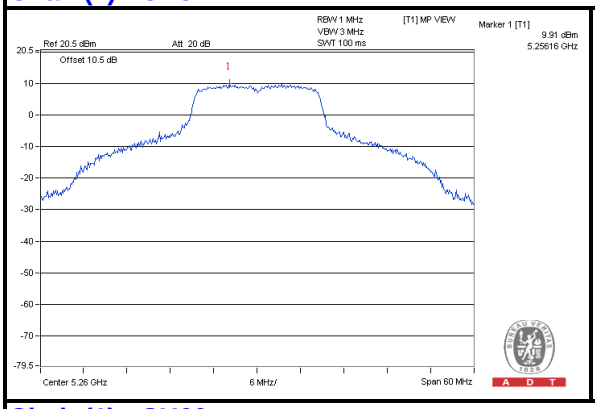
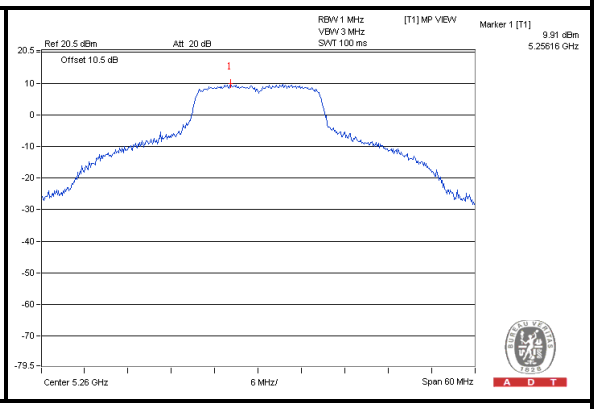
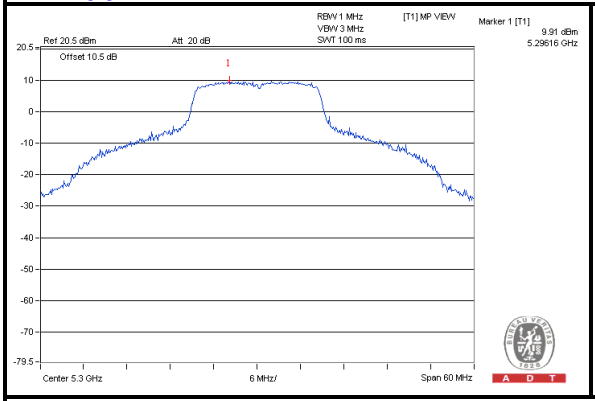
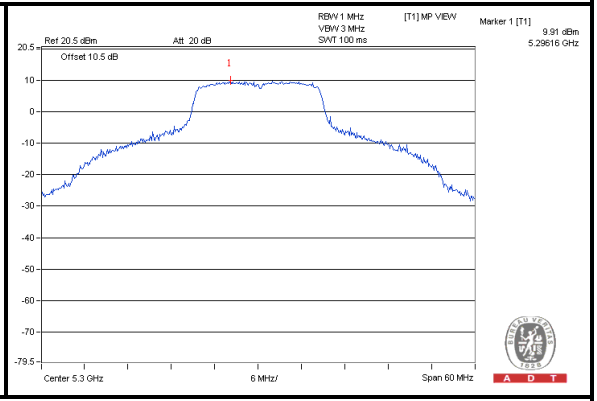
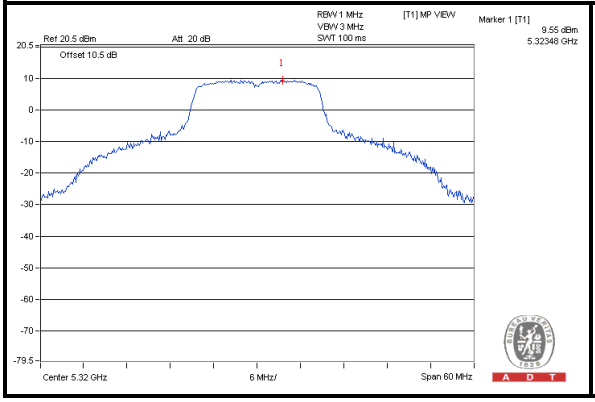
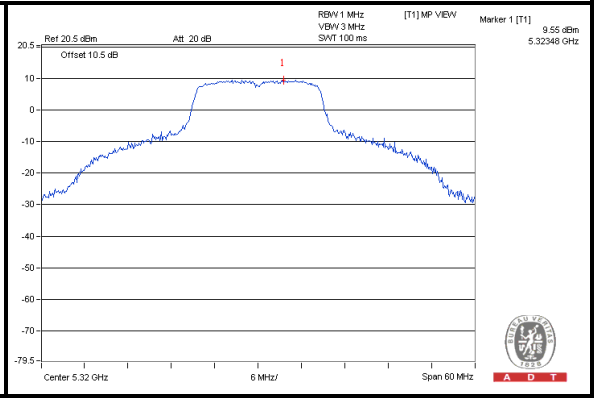


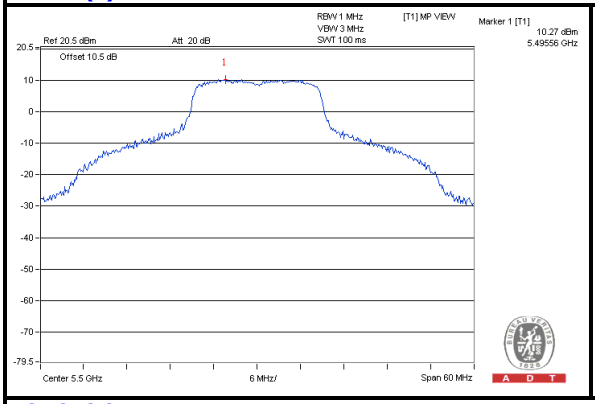
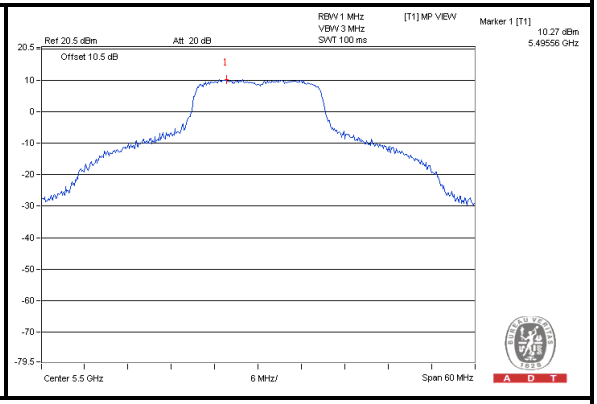
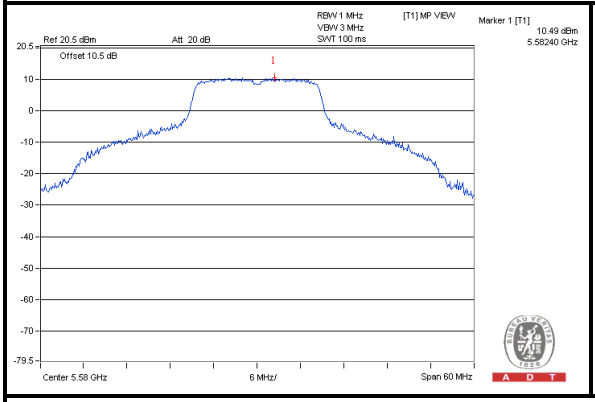
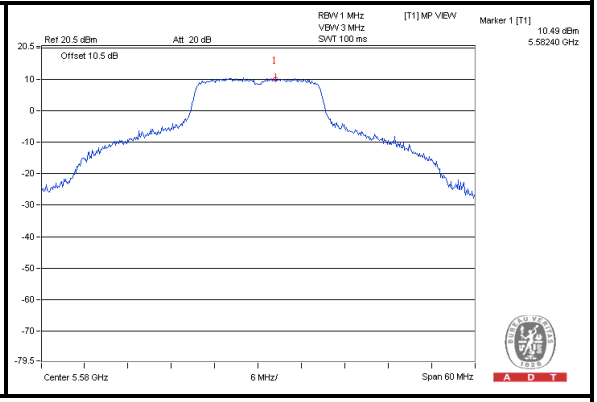
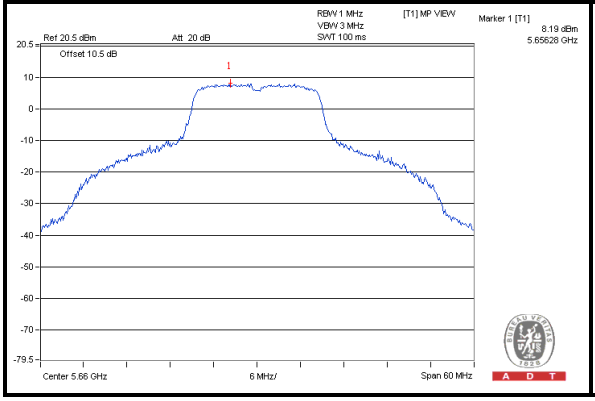
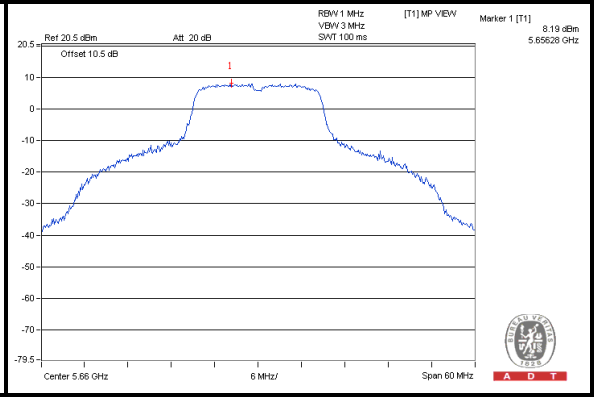


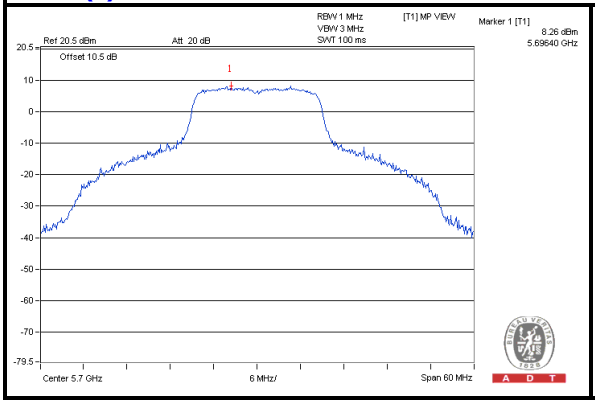
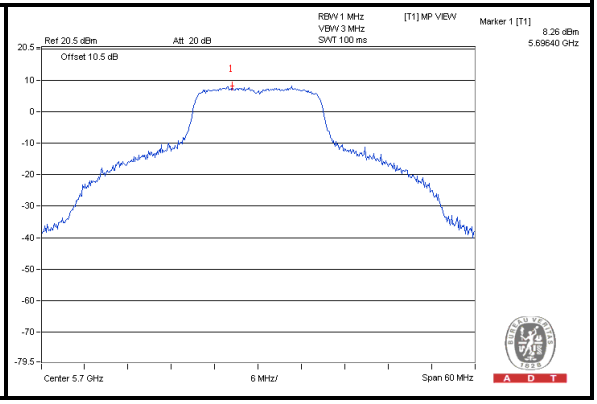
Chain(1) : CH48





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

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

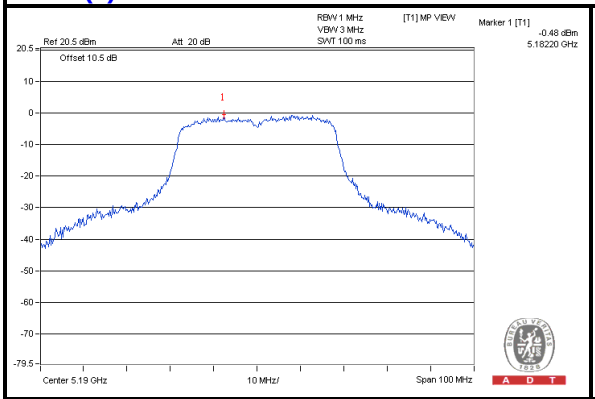
PEAK VALUE	PPSD
Chain(1) : CH140	
	

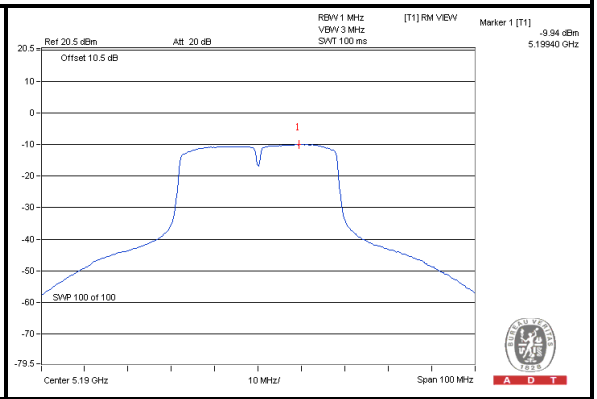
802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		DUTY FACTOR	PPSD WITH DUTY FACTOR (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
38	5190	-0.48	2.26	0.16	-9.80	-6.67	9.32	8.93	13	PASS
46	5230	3.61	5.55	0.16	-6.28	-3.32	9.89	8.87	13	PASS
54	5270	3.05	5.40	0.16	-6.19	-3.58	9.24	8.98	13	PASS
62	5310	0.05	3.18	0.16	-9.28	-6.02	9.33	9.20	13	PASS
102	5510	0.06	3.02	0.16	-9.44	-6.16	9.50	9.18	13	PASS
110	5550	2.95	5.89	0.16	-6.24	-3.17	9.19	9.06	13	PASS
134	5670	2.34	5.45	0.16	-6.62	-3.88	8.96	9.33	13	PASS

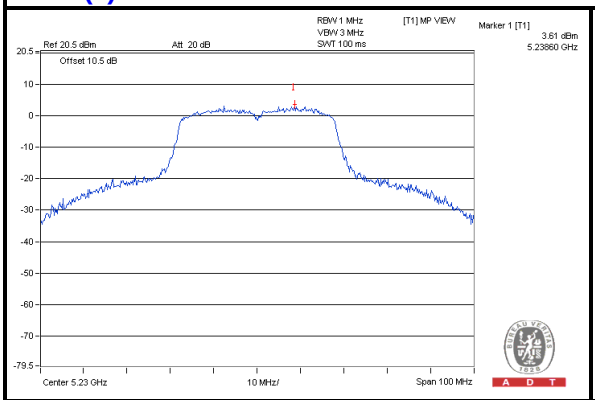
PEAK VALUE	PPSD

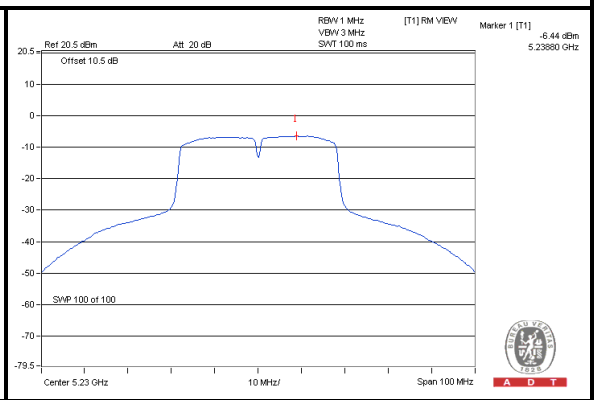
Chain(0) : CH38



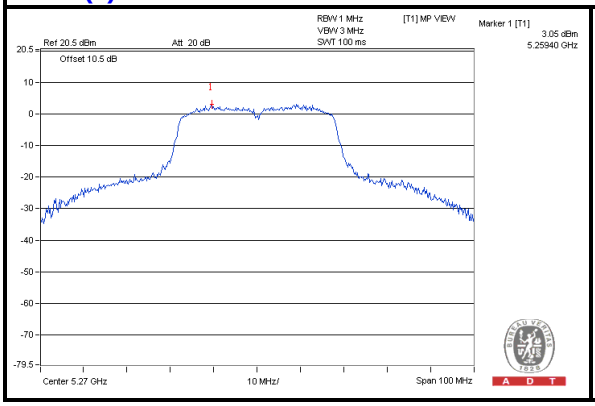


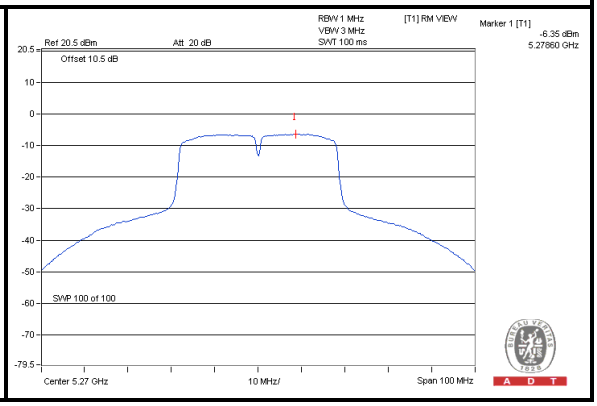
Chain(0) : CH46

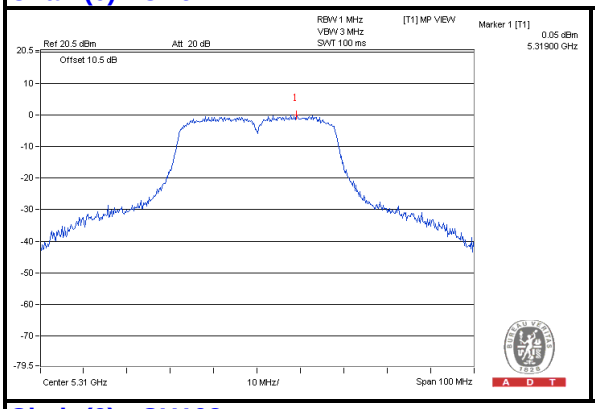
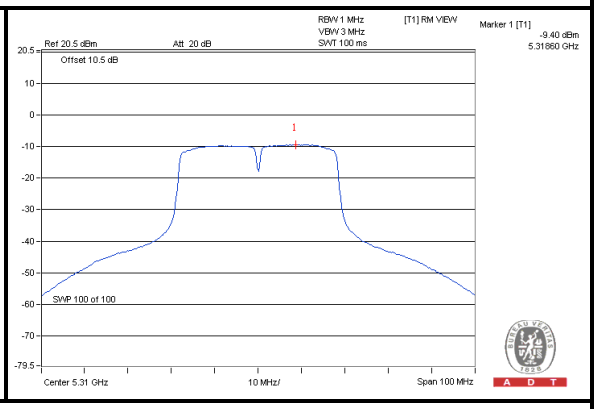
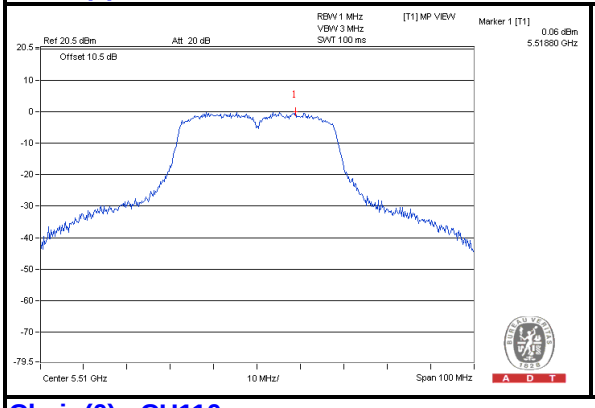
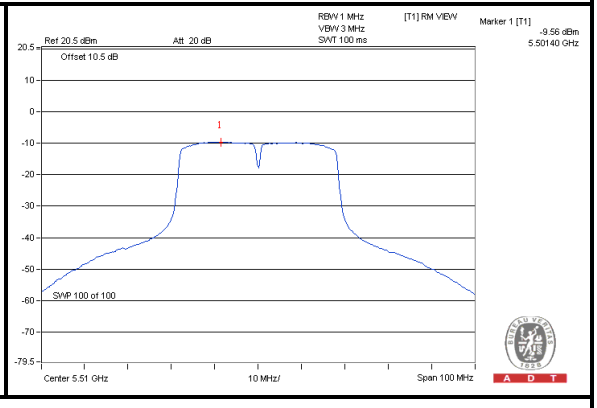
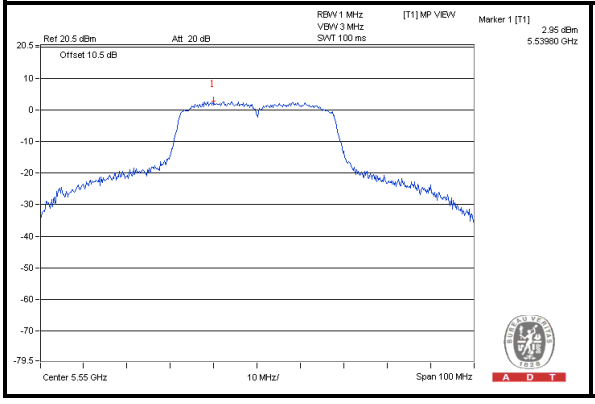
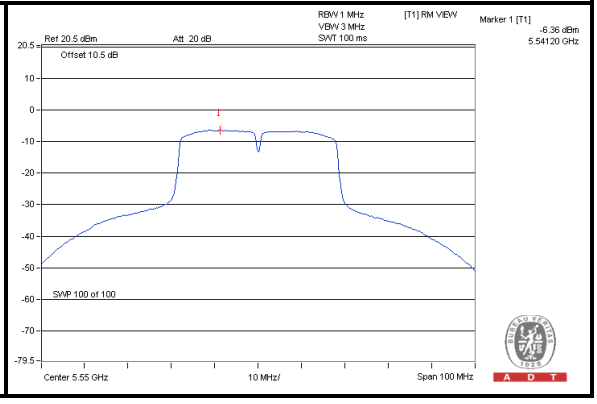


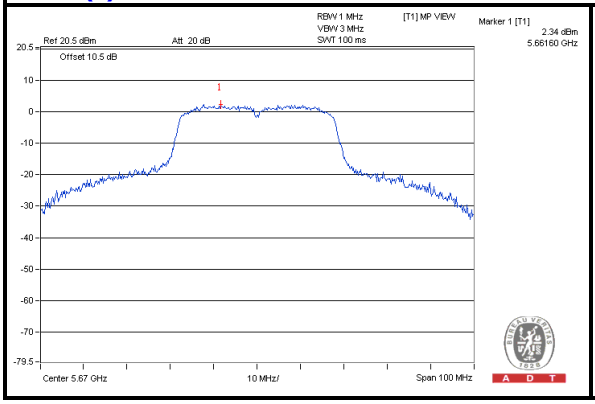
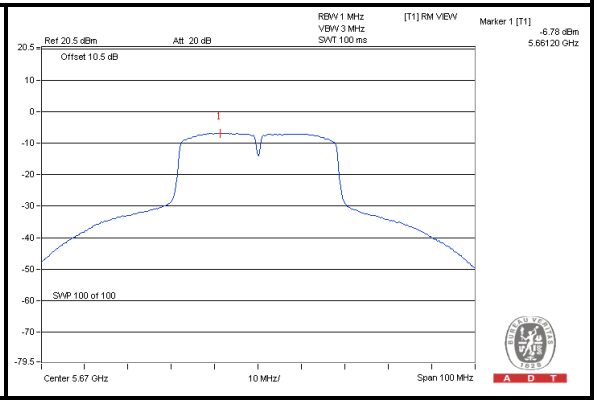


Chain(0) : CH54



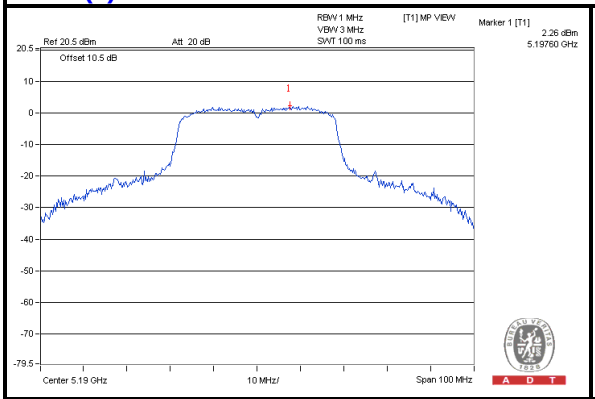


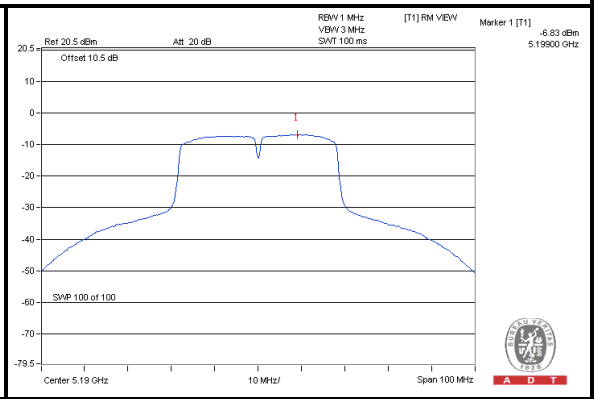
PEAK VALUE	PPSD
Chain(0) : CH62	
	
Chain(0) : CH102	
	
Chain(0) : CH110	
	

PEAK VALUE	PPSD
Chain(0) : CH134	
	

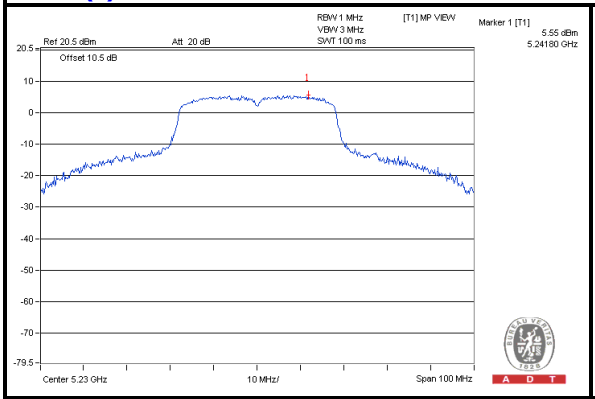
PEAK VALUE	PPSD

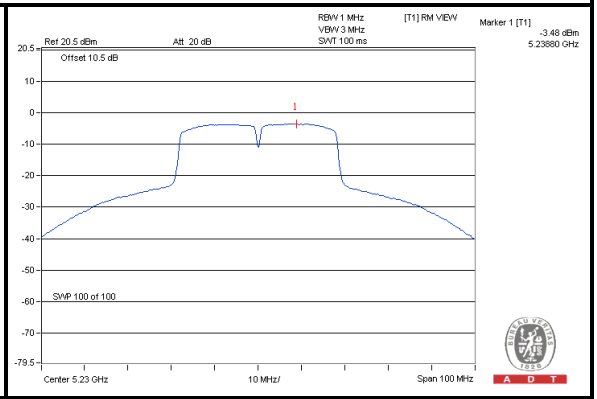
Chain(1) : CH38



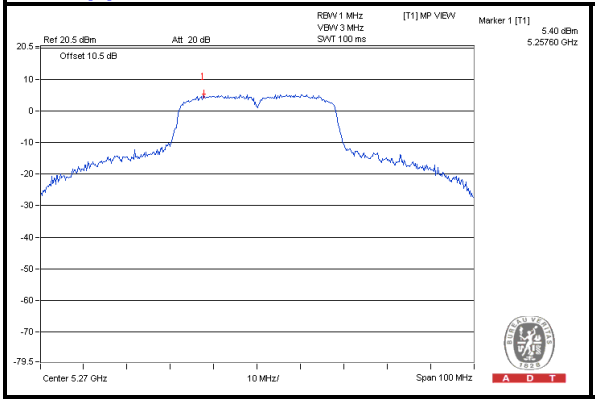


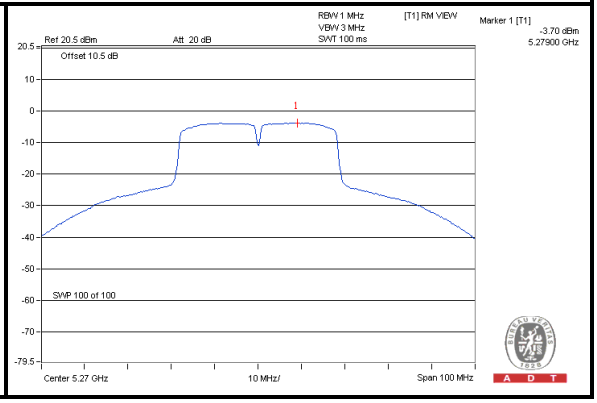
Chain(1) : CH46

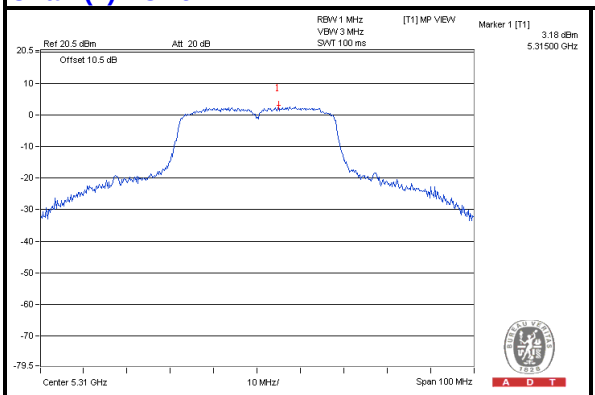
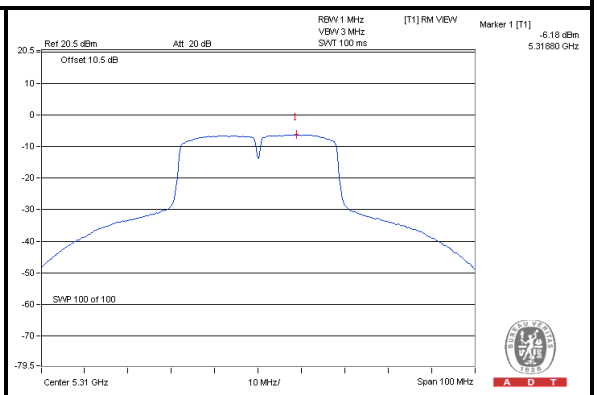
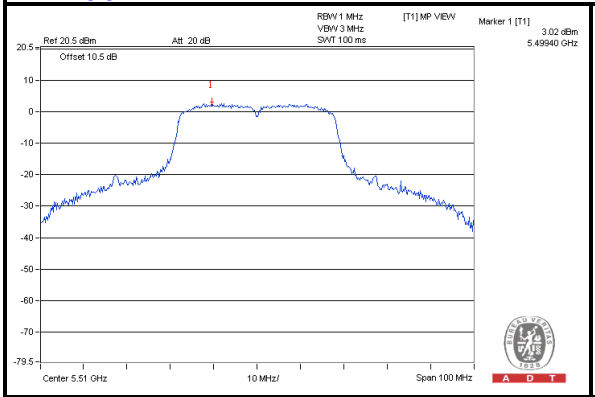
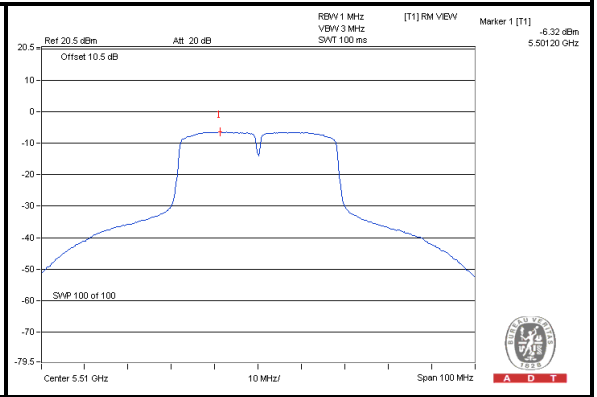
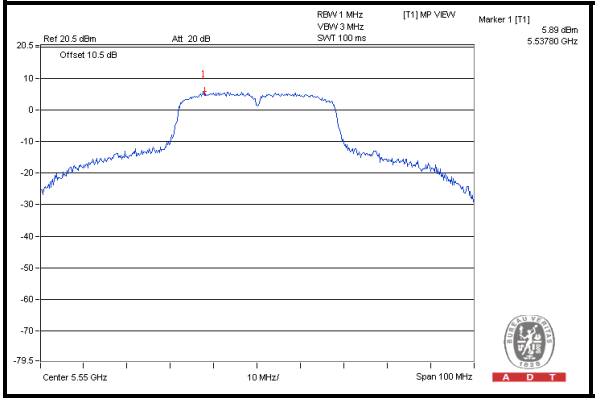
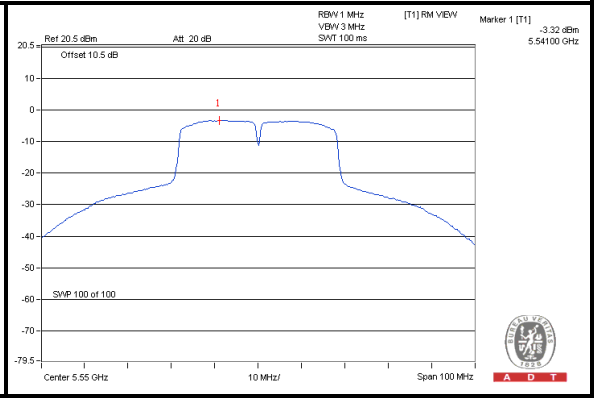


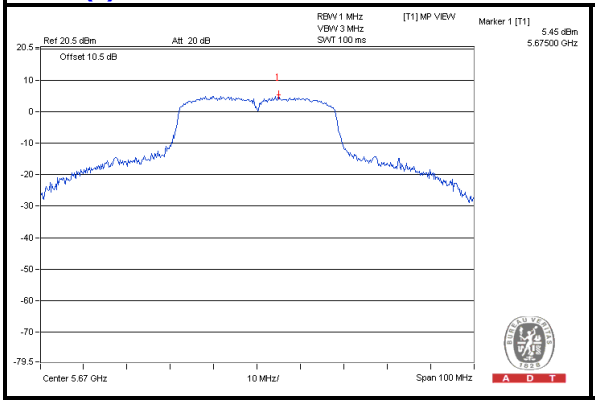
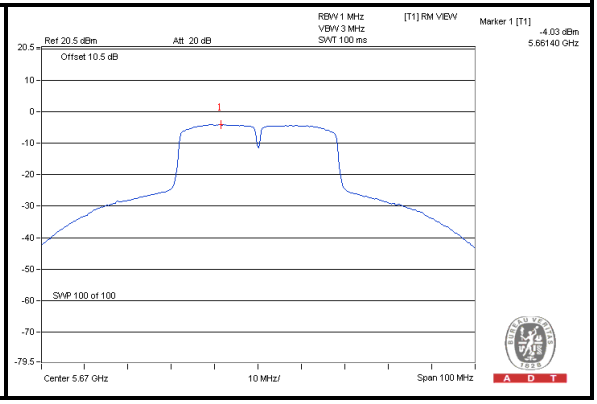


Chain(1) : CH54





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

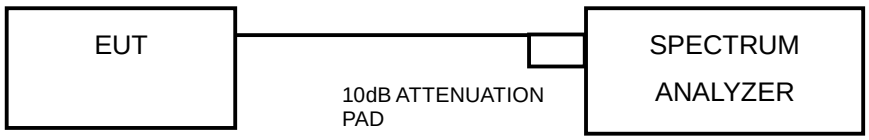
Note:

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 : July 30, 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

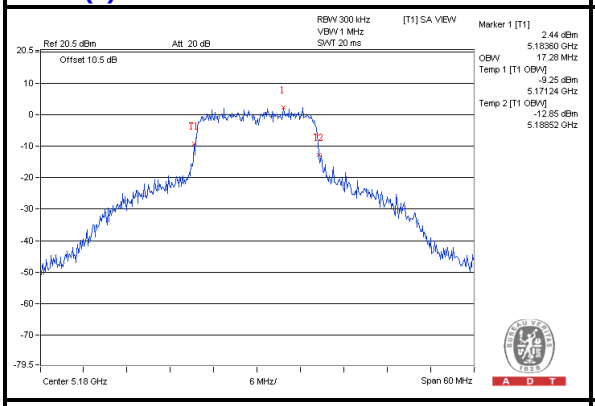
The software(artgui.exe Version:2.3) provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.4.5 TEST RESULTS

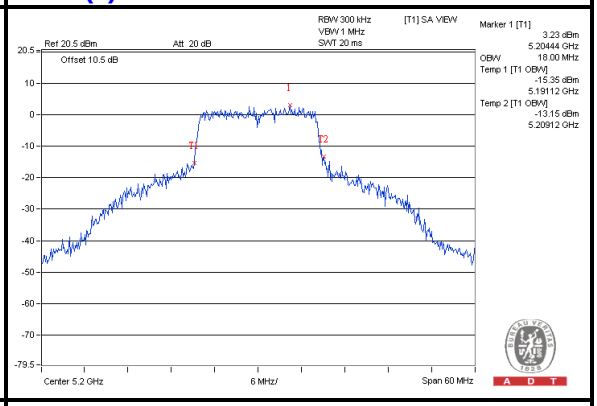
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	17.28	25.56
40	5200	18.00	26.16
48	5240	16.80	19.68
52	5260	17.52	26.64
60	5300	17.40	26.64
64	5320	17.76	23.76
100	5500	18.00	23.40
116	5580	19.20	26.76
132	5660	17.04	18.36
140	5700	17.28	23.28

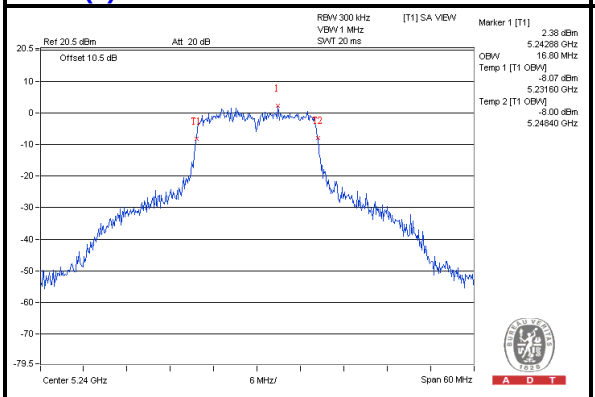
Chain(0) : CH36



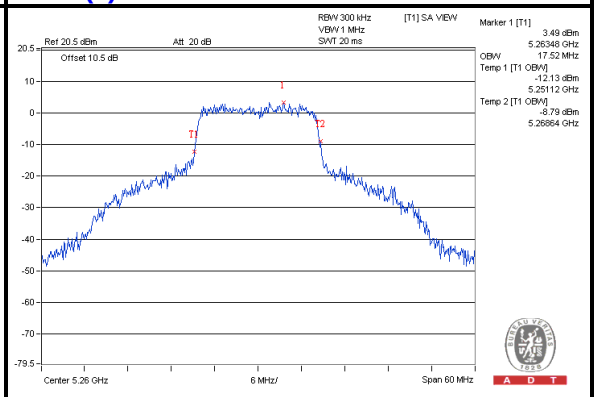
Chain(0) : CH40



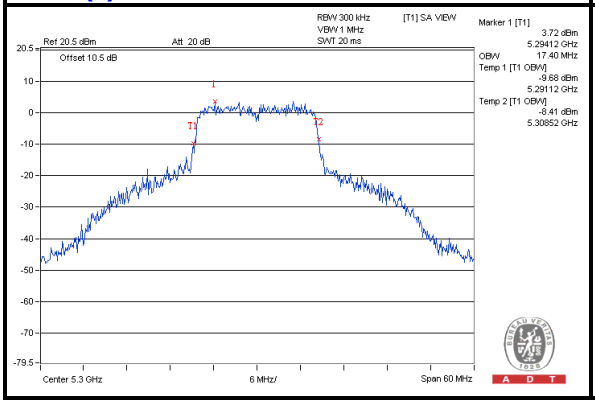
Chain(0) : CH48



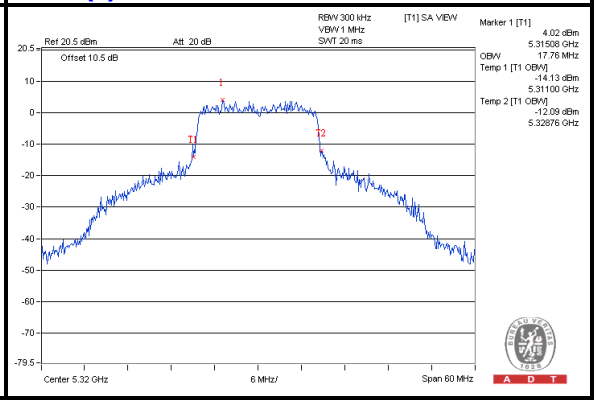
Chain(0) : CH52



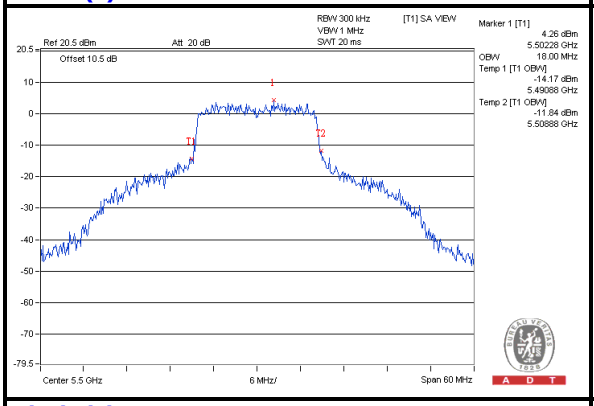
Chain(0) : CH60



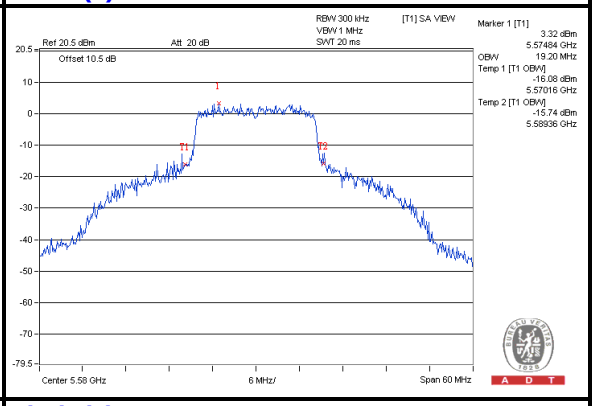
Chain(0) : CH64



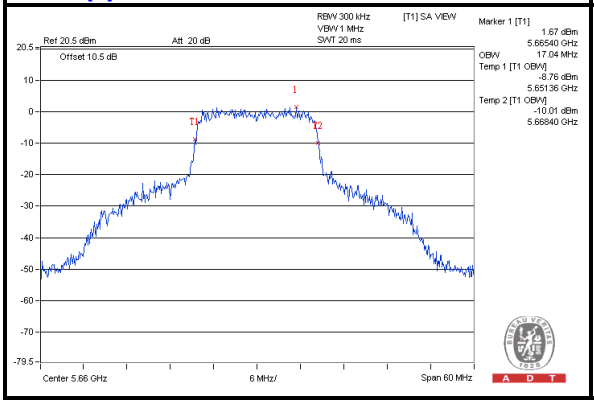
Chain(0) : CH100



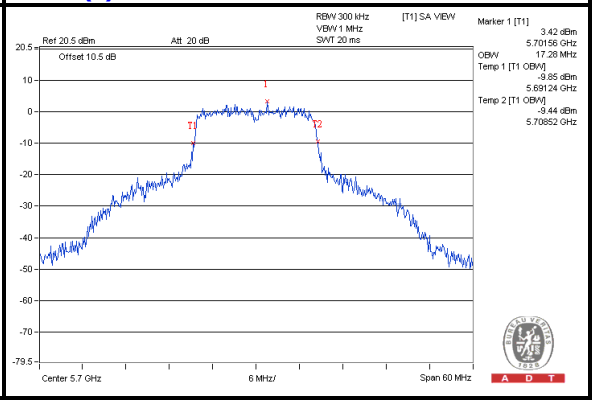
Chain(0) : CH116



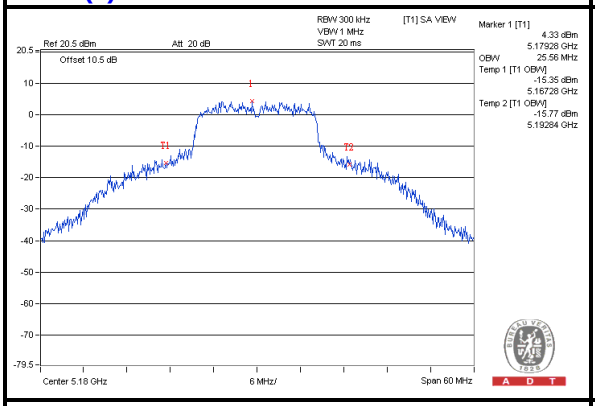
Chain(0) : CH132



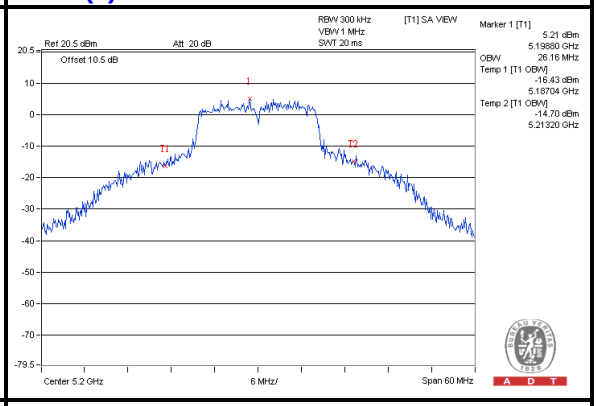
Chain(0) : CH140



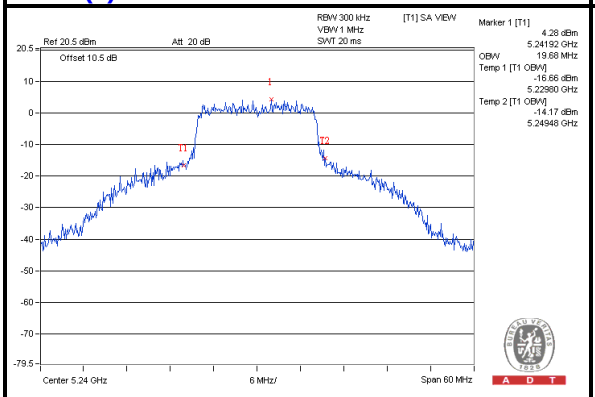
Chain(1) : CH36



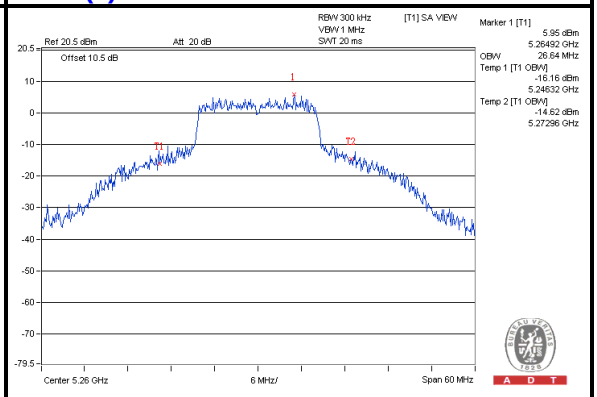
Chain(1) : CH40



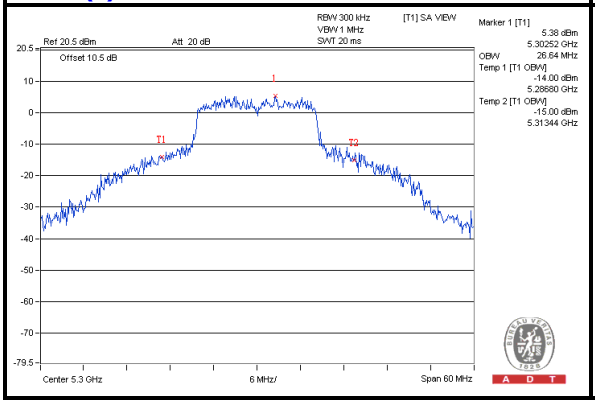
Chain(1) : CH48



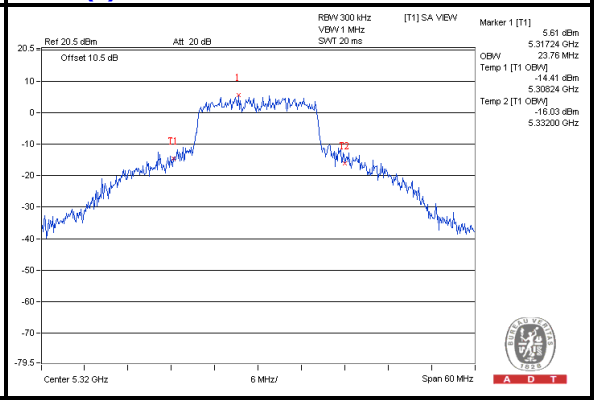
Chain(1) : CH52



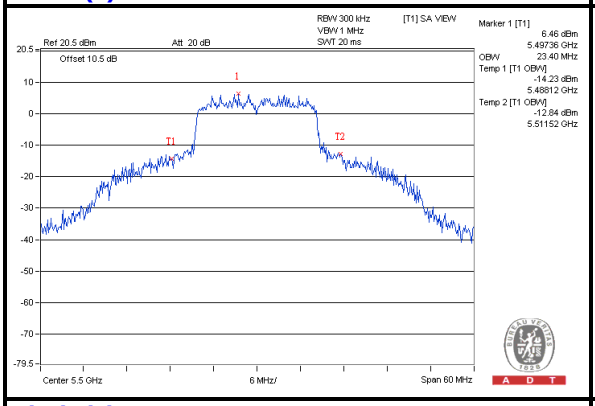
Chain(1) : CH60



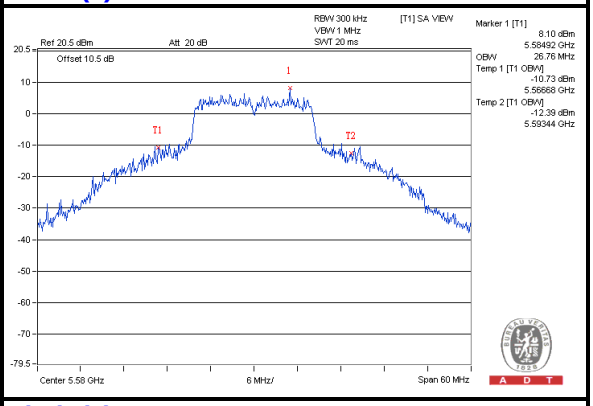
Chain(1) : CH64



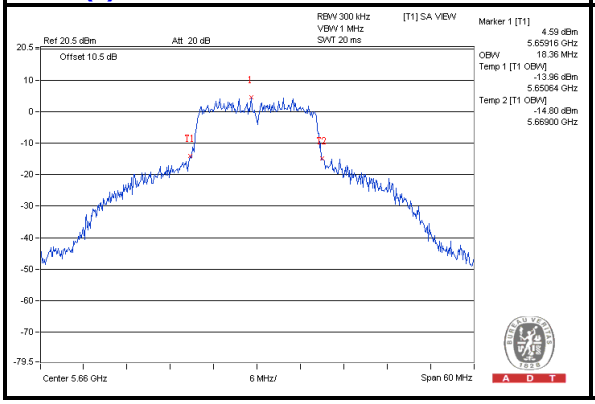
Chain(1) : CH100



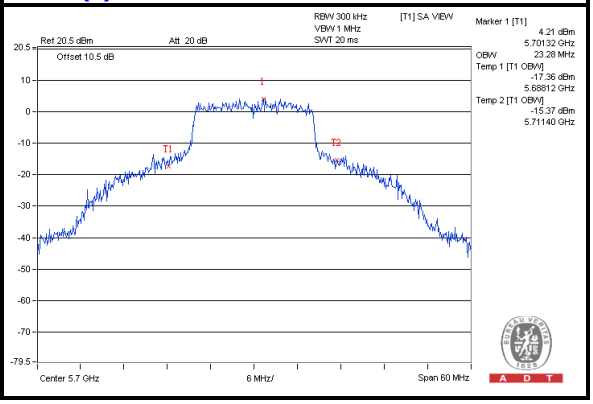
Chain(1) : CH116



Chain(1) : CH132



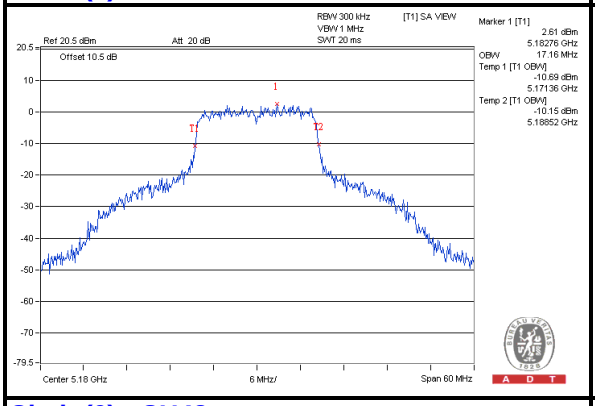
Chain(1) : CH140



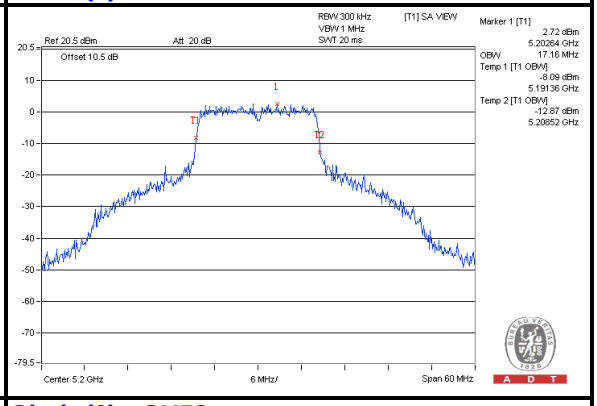
802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
36	5180	17.16	25.44
40	5200	17.16	25.56
48	5240	17.88	19.44
52	5260	17.52	26.76
60	5300	17.28	26.76
64	5320	17.04	23.76
100	5500	17.28	22.92
116	5580	19.44	27.36
132	5660	17.88	18.72
140	5700	17.76	18.48

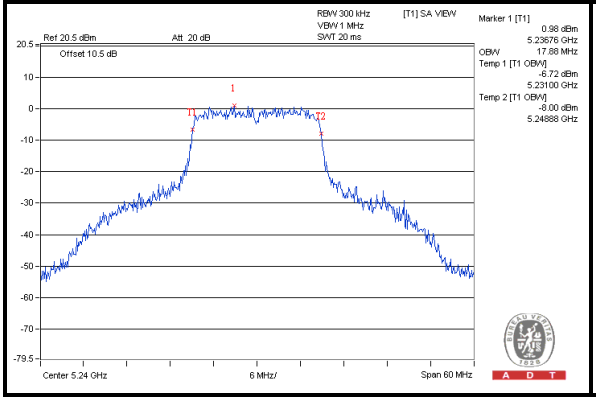
Chain(0) : CH36



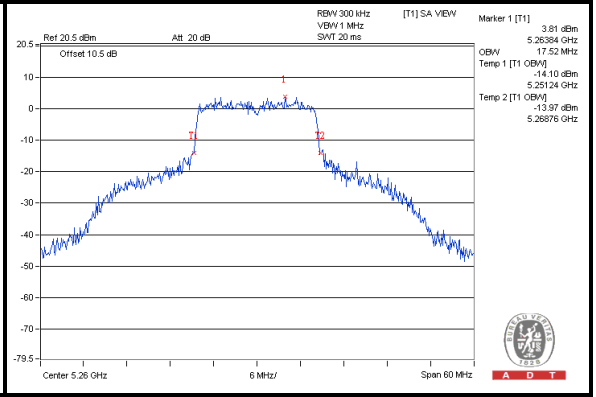
Chain(0) : CH40



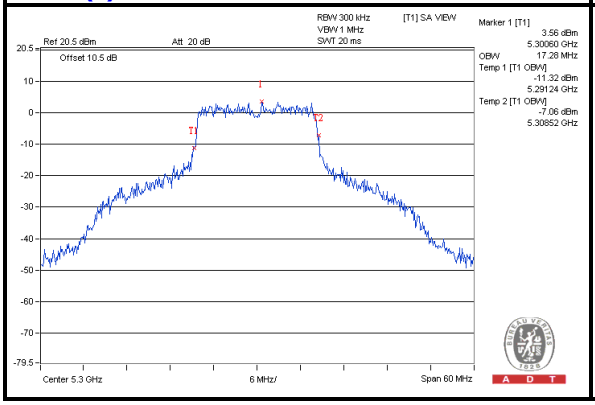
Chain(0) : CH48



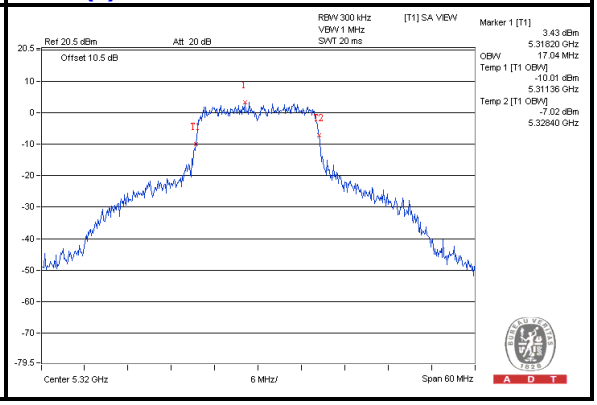
Chain(0) : CH52



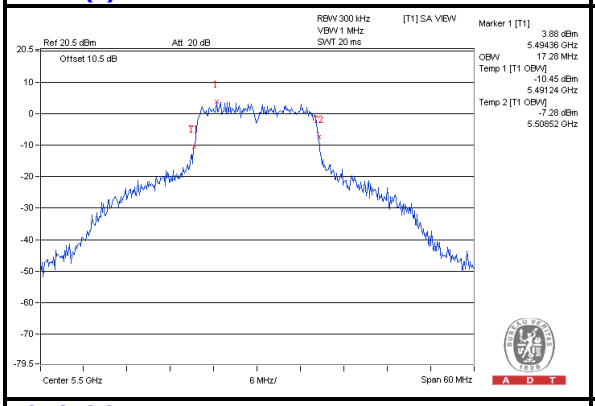
Chain(0) : CH60



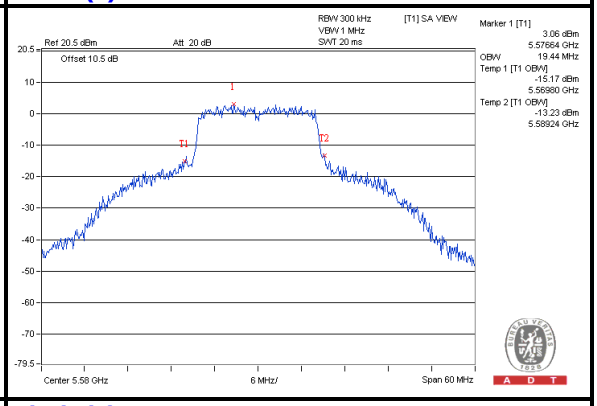
Chain(0) : CH64



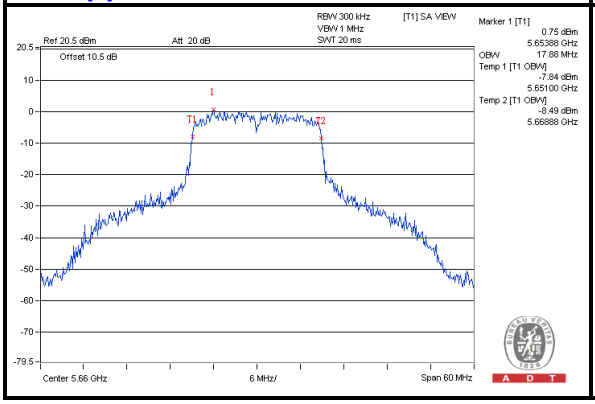
Chain(0) : CH100



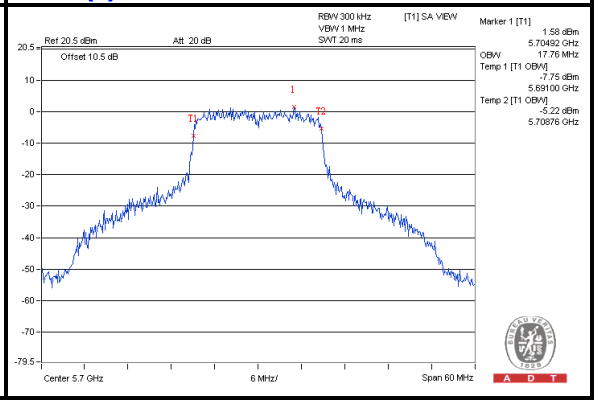
Chain(0) : CH116



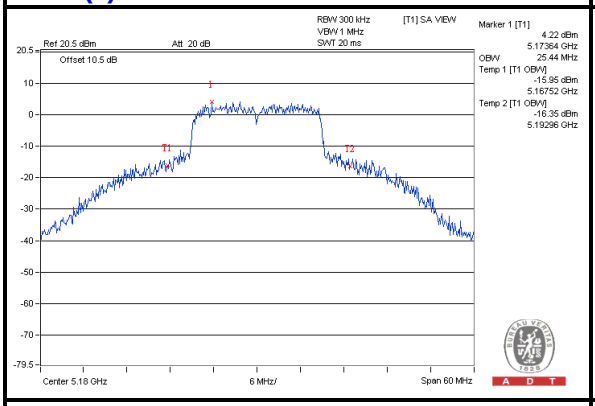
Chain(0) : CH132



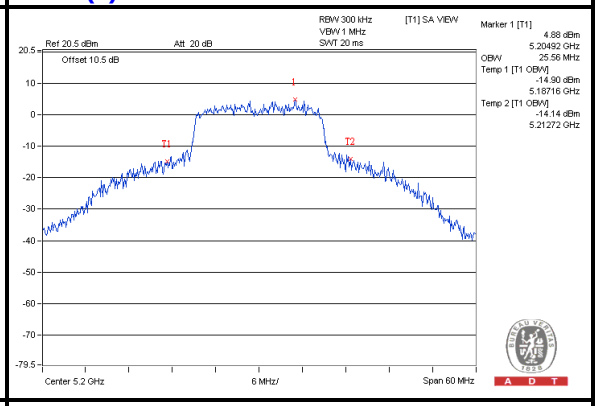
Chain(0) : CH140



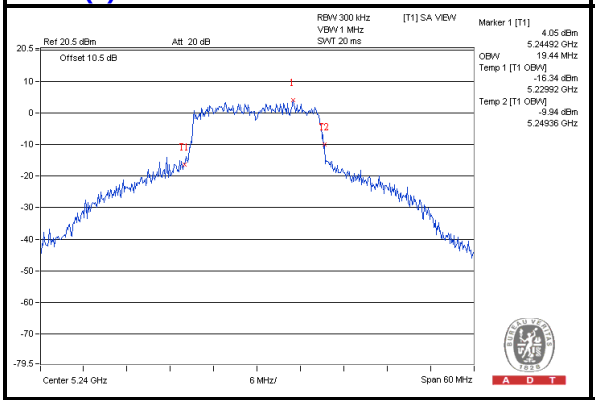
Chain(1) : CH36



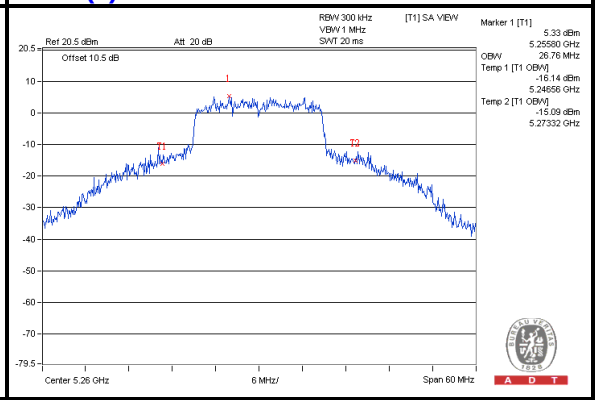
Chain(1) : CH40



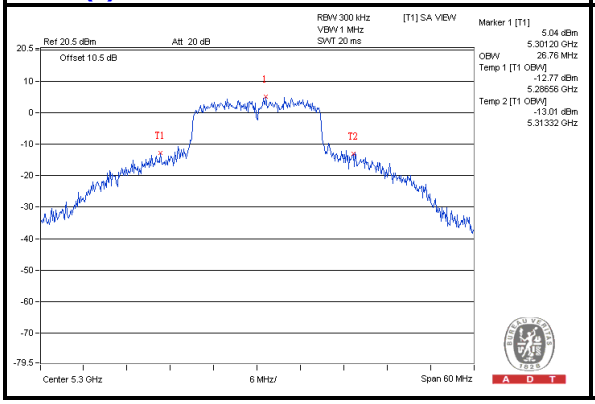
Chain(1) : CH48



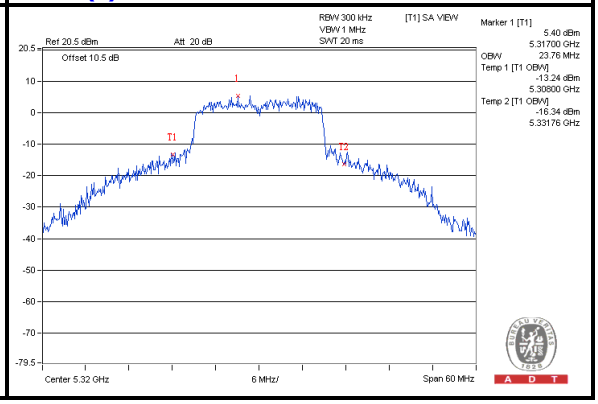
Chain(1) : CH52



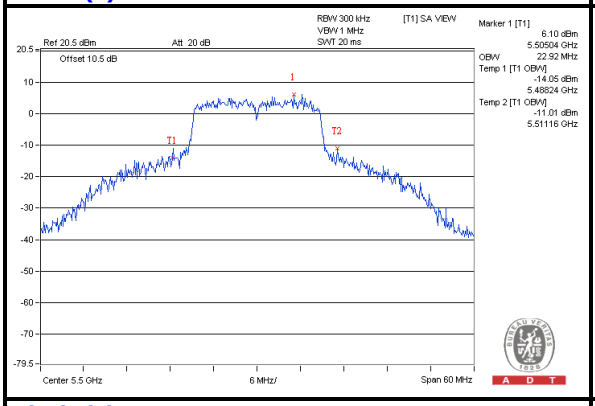
Chain(1) : CH60



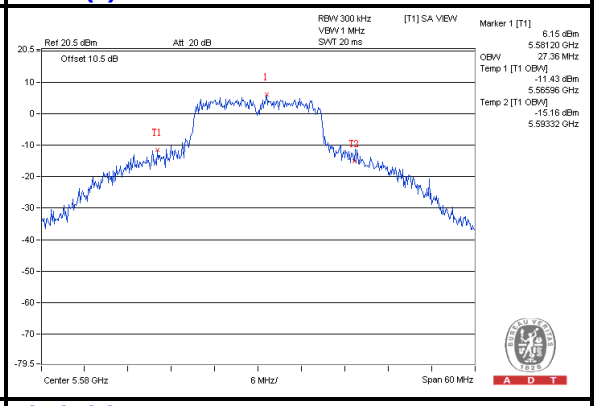
Chain(1) : CH64



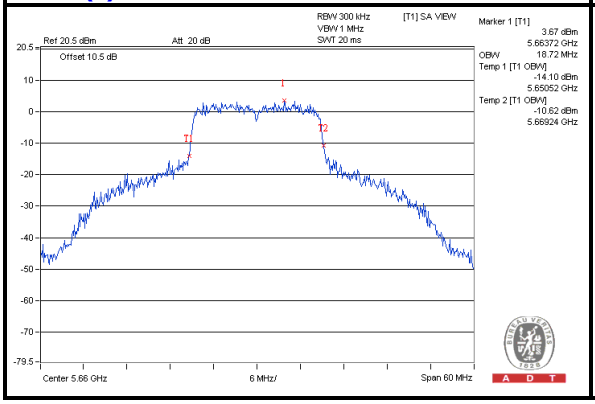
Chain(1) : CH100



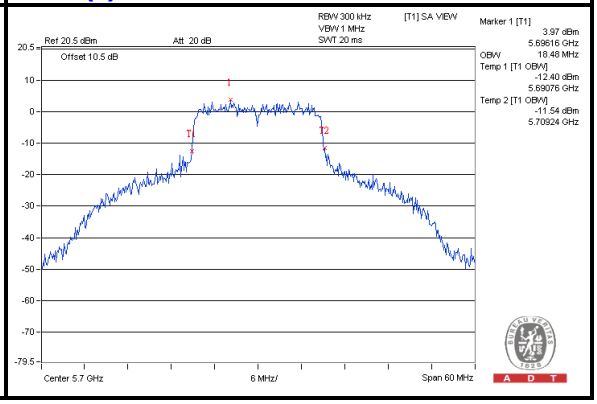
Chain(1) : CH116



Chain(1) : CH132



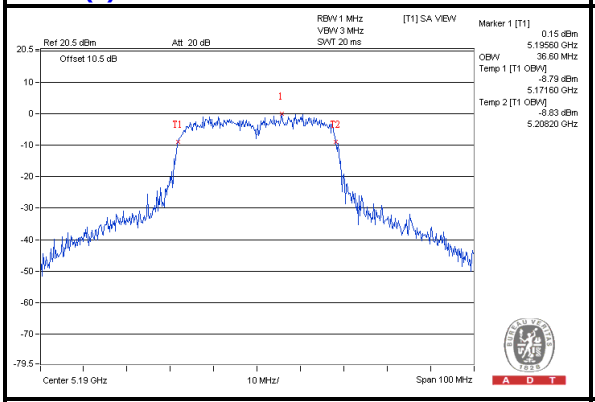
Chain(1) : CH140



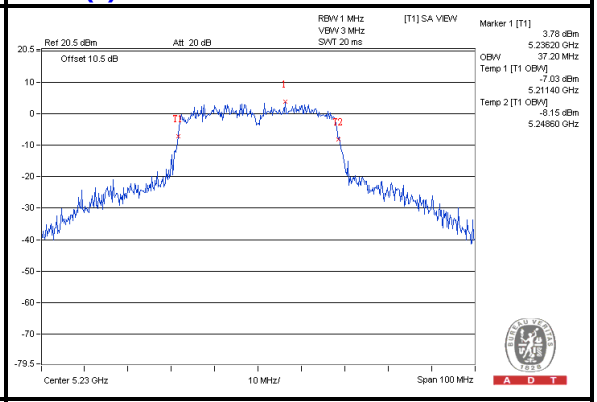
802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	
		CHAIN(0)	CHAIN(1)
38	5190	36.60	37.00
46	5230	37.20	41.40
54	5270	37.00	41.00
62	5310	36.80	37.40
102	5510	36.60	36.80
110	5550	37.00	41.00
134	5670	37.20	38.60

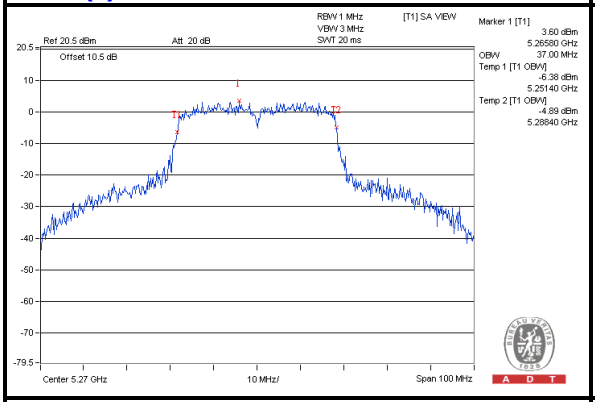
Chain(0) : CH38



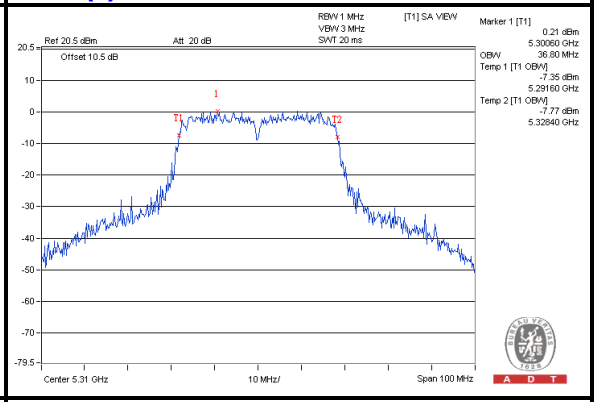
Chain(0) : CH46



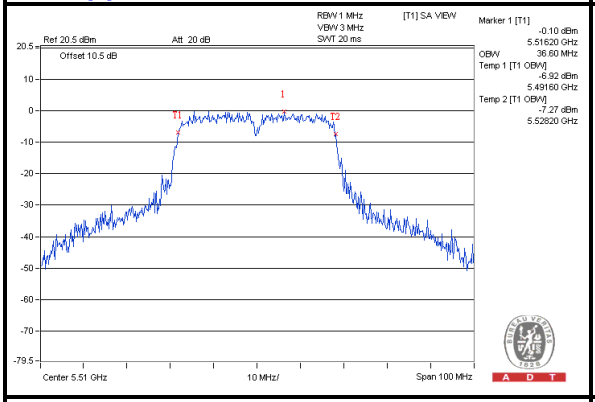
Chain(0) : CH54



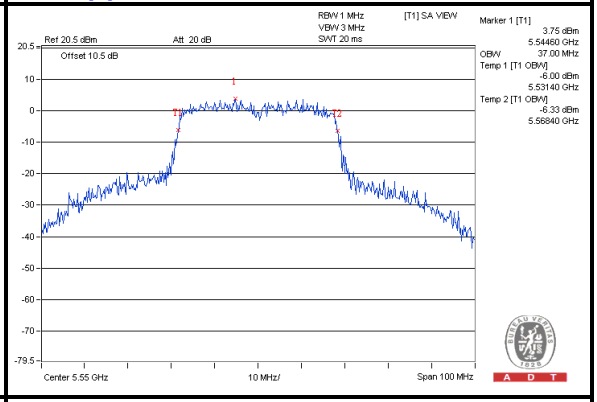
Chain(0) : CH62



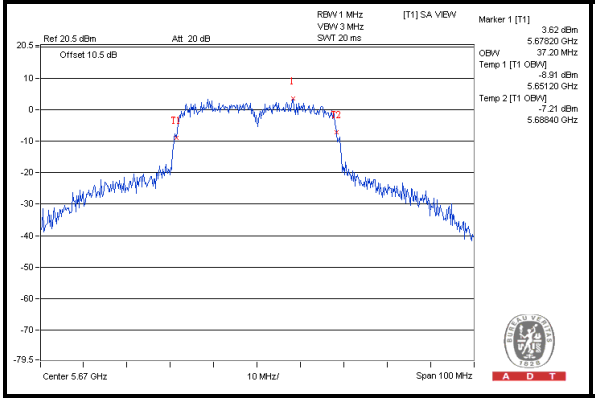
Chain(0) : CH102



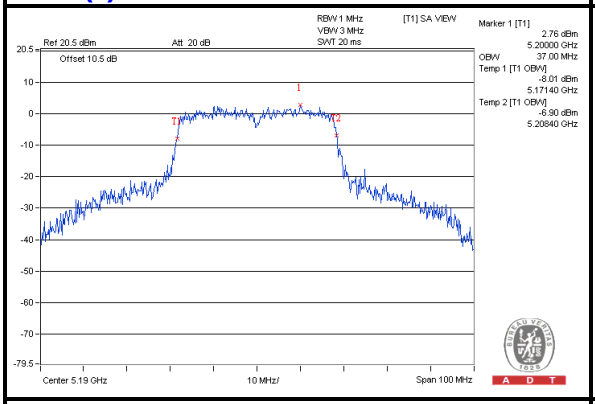
Chain(0) : CH110



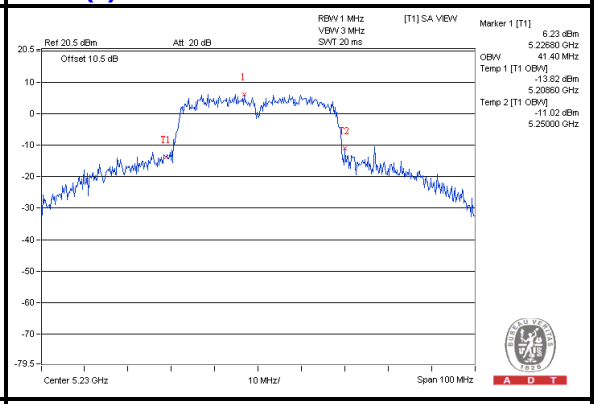
Chain(0) : CH134



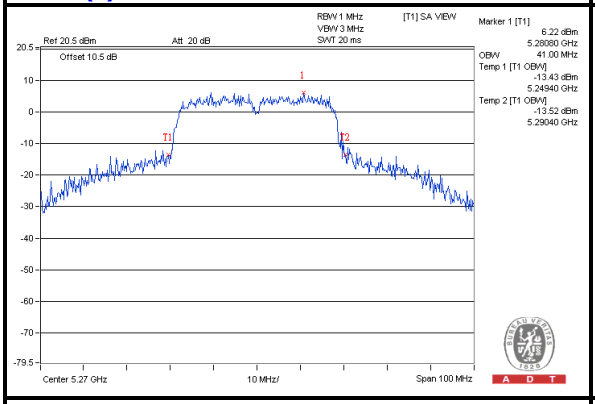
Chain(1) : CH38



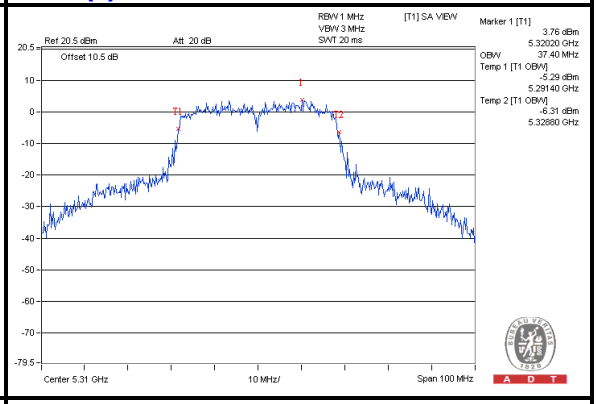
Chain(1) : CH46



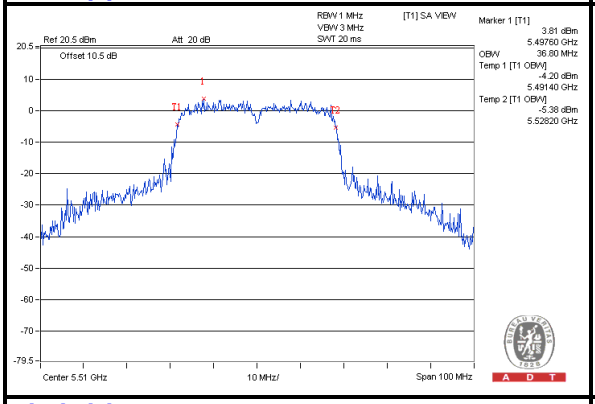
Chain(0) : CH54



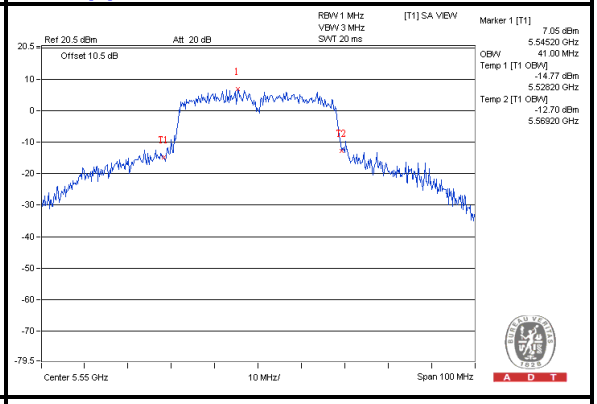
Chain(0) : CH62



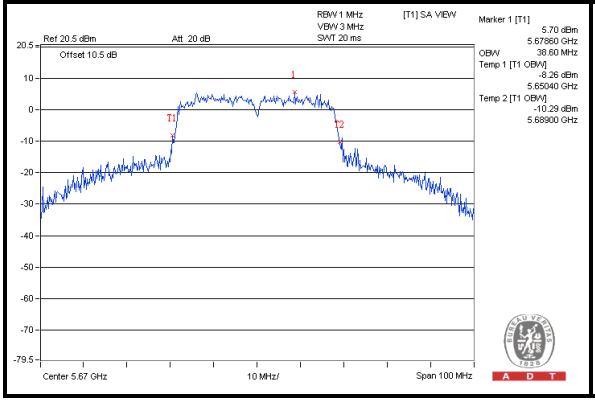
Chain(1) : CH102



Chain(1) : CH110



Chain(1) : CH134



4.5 UNWANTED EMISSION MEASUREMENT(RADIATED VERSUS CONDUCTED)

4.5.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

4.5.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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 25, 2013	June 24, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
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 _V8.7.07	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: Aug. 06, 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-1000VH2 B	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. 05, 2013

4.5.4 TEST PROCEDURES

For Below 1GHz test:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

For Above 1GHz test:

Following FCC KDB 789033 D01 UNII Meas. Guidance :

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 of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
2. 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.
3. All modes of operation were investigated and the worst-case emissions are reported.

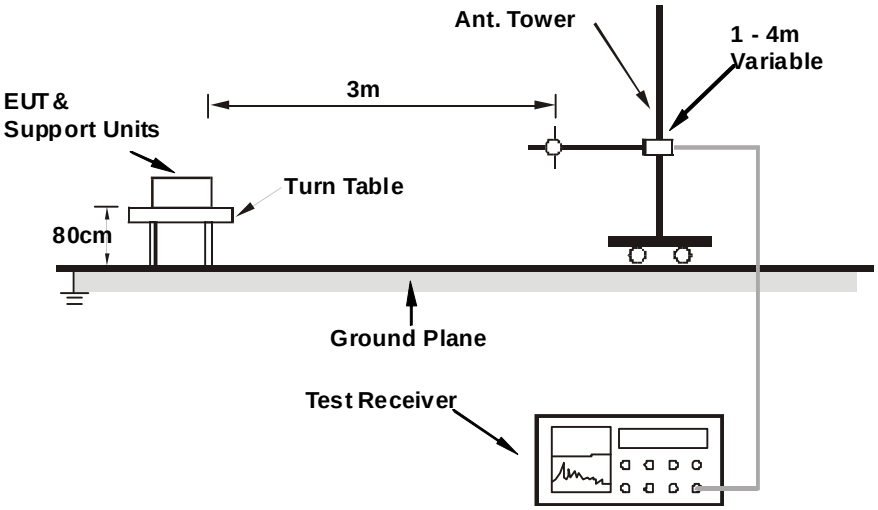
4.5.5 DEVIATION FROM TEST STANDARD

No deviation

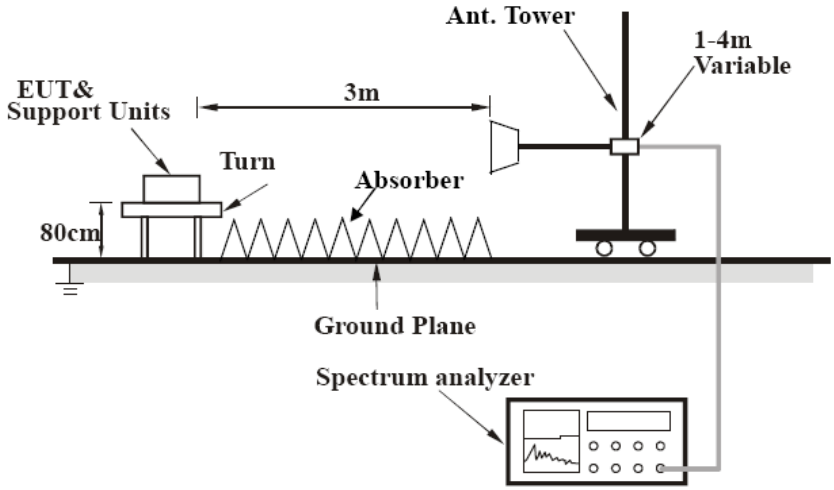
4.5.6 TEST SETUP

For radiated configuration:

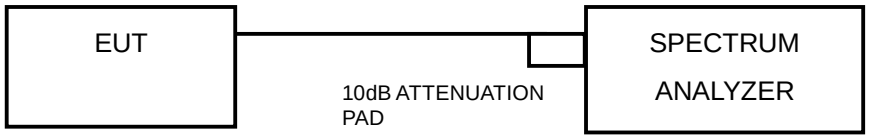
<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



For 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 “artgui.exe 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

802.11n (HT20)

CHANNEL	TX Channel 116	**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	**99.76**	**39.6 QP**	**43.5**	**-3.9**	**2.00 H**	**52**	**57.63**	**-17.99**
2	232.37	35.7 QP	46.0	-10.4	1.00 H	22	51.38	-15.73
3	647.75	41.1 QP	46.0	-4.9	1.00 H	241	45.65	-4.53
4	697.34	41.1 QP	46.0	-4.9	1.00 H	246	45.13	-3.99
5	799.69	40.9 QP	46.0	-5.1	1.50 H	231	42.79	-1.91
6	895.95	41.1 QP	46.0	-4.9	1.50 H	189	41.60	-0.51
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	99.46	33.7 QP	43.5	-9.8	2.00 V	292	51.85	-18.17
2	324.51	38.5 QP	46.0	-7.5	1.50 V	166	50.44	-11.94
3	647.31	36.0 QP	46.0	-10.0	1.50 V	184	40.52	-4.54
4	721.90	39.4 QP	46.0	-6.6	2.00 V	313	43.14	-3.73
5	846.69	39.4 QP	46.0	-6.6	1.50 V	27	40.71	-1.35
6	896.31	39.1 QP	46.0	-6.9	1.50 V	165	39.55	-0.49

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

Radiated test was done with 50ohm terminator on antenna port

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	58.0 PK	74.0	-16.0	1.50 H	225	8.59	49.41
2	#10360.00	46.4 AV	54.0	-7.6	1.50 H	225	-3.01	49.41
3	15540.00	59.1 PK	74.0	-14.9	1.77 H	194	3.65	55.45
4	15540.00	47.4 AV	54.0	-6.6	1.77 H	194	-8.05	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	59.2 PK	74.0	-14.8	1.23 V	159	9.79	49.41
2	#10360.00	47.7 AV	54.0	-6.3	1.23 V	159	-1.71	49.41
3	15540.00	59.0 PK	74.0	-15.0	1.32 V	109	3.55	55.45
4	15540.00	48.2 AV	54.0	-5.8	1.32 V	109	-7.25	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) – Pre-Amplifier 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	57.5 PK	74.0	-16.5	1.52 H	239	8.47	49.03
2	#10400.00	46.0 AV	54.0	-8.0	1.52 H	239	-3.03	49.03
3	15600.00	58.7 PK	74.0	-15.3	1.78 H	193	3.45	55.25
4	15600.00	47.2 AV	54.0	-6.8	1.78 H	193	-8.05	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	58.4 PK	74.0	-15.6	1.28 V	166	9.37	49.03
2	#10400.00	47.2 AV	54.0	-6.8	1.28 V	166	-1.83	49.03
3	15600.00	59.0 PK	74.0	-15.0	1.38 V	102	3.75	55.25
4	15600.00	48.0 AV	54.0	-6.0	1.38 V	102	-7.25	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) – Pre-Amplifier 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	57.4 PK	74.0	-16.6	1.51 H	245	7.81	49.59
2	#10480.00	46.2 AV	54.0	-7.8	1.51 H	245	-3.39	49.59
3	15720.00	59.3 PK	74.0	-14.7	1.80 H	208	4.46	54.84
4	15720.00	47.5 AV	54.0	-6.5	1.80 H	208	-7.34	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	#10480.00	58.4 PK	74.0	-15.6	1.24 V	174	8.81	49.59
2	#10480.00	47.4 AV	54.0	-6.6	1.24 V	174	-2.19	49.59
3	15720.00	58.4 PK	74.0	-15.6	1.38 V	105	3.56	54.84
4	15720.00	47.6 AV	54.0	-6.4	1.38 V	105	-7.24	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) – Pre-Amplifier 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	57.8 PK	74.0	-16.2	1.57 H	224	8.11	49.69
2	#10520.00	46.0 AV	54.0	-8.0	1.57 H	224	-3.69	49.69
3	15780.00	58.9 PK	74.0	-15.1	1.81 H	188	3.95	54.95
4	15780.00	47.4 AV	54.0	-6.6	1.81 H	188	-7.55	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	58.4 PK	74.0	-15.6	1.23 V	151	8.71	49.69
2	#10520.00	47.5 AV	54.0	-6.5	1.23 V	151	-2.19	49.69
3	15780.00	58.1 PK	74.0	-15.9	1.33 V	90	3.15	54.95
4	15780.00	47.4 AV	54.0	-6.6	1.33 V	90	-7.55	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) – Pre-Amplifier 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	57.1 PK	74.0	-16.9	1.50 H	236	7.55	49.55
2	10600.00	45.8 AV	54.0	-8.2	1.50 H	236	-3.75	49.55
3	15900.00	58.4 PK	74.0	-15.6	1.84 H	195	3.39	55.01
4	15900.00	47.0 AV	54.0	-7.0	1.84 H	195	-8.01	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	57.8 PK	74.0	-16.2	1.32 V	167	8.25	49.55
2	10600.00	46.7 AV	54.0	-7.3	1.32 V	167	-2.85	49.55
3	15900.00	59.3 PK	74.0	-14.7	1.36 V	91	4.29	55.01
4	15900.00	48.2 AV	54.0	-5.8	1.36 V	91	-6.81	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) – Pre-Amplifier 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	57.4 PK	74.0	-16.6	1.53 H	219	7.74	49.66
2	10640.00	45.8 AV	54.0	-8.2	1.53 H	219	-3.86	49.66
3	15960.00	59.5 PK	74.0	-14.5	1.81 H	199	4.82	54.68
4	15960.00	47.7 AV	54.0	-6.3	1.81 H	199	-6.98	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	58.0 PK	74.0	-16.0	1.24 V	184	8.34	49.66
2	10640.00	47.1 AV	54.0	-6.9	1.24 V	184	-2.56	49.66
3	15960.00	58.3 PK	74.0	-15.7	1.43 V	94	3.62	54.68
4	15960.00	47.6 AV	54.0	-6.4	1.43 V	94	-7.08	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) – Pre-Amplifier 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	57.7 PK	74.0	-16.3	1.52 H	257	7.49	50.21
2	11000.00	46.5 AV	54.0	-7.5	1.52 H	257	-3.71	50.21
3	#16500.00	59.7 PK	74.0	-14.3	1.84 H	208	3.23	56.47
4	#16500.00	48.0 AV	54.0	-6.0	1.84 H	208	-8.47	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	58.8 PK	74.0	-15.2	1.30 V	189	8.59	50.21
2	11000.00	47.5 AV	54.0	-6.5	1.30 V	189	-2.71	50.21
3	#16500.00	58.4 PK	74.0	-15.6	1.36 V	99	1.93	56.47
4	#16500.00	47.6 AV	54.0	-6.4	1.36 V	99	-8.87	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) – Pre-Amplifier 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	57.9 PK	74.0	-16.1	1.54 H	236	7.92	49.98
2	11160.00	46.6 AV	54.0	-7.4	1.54 H	236	-3.38	49.98
3	#16740.00	59.5 PK	74.0	-14.5	1.78 H	206	2.79	56.71
4	#16740.00	47.7 AV	54.0	-6.3	1.78 H	206	-9.01	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	58.6 PK	74.0	-15.4	1.26 V	200	8.62	49.98
2	11160.00	47.2 AV	54.0	-6.8	1.26 V	200	-2.78	49.98
3	#16740.00	58.8 PK	74.0	-15.2	1.34 V	105	2.09	56.71
4	#16740.00	47.7 AV	54.0	-6.3	1.34 V	105	-9.01	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) – Pre-Amplifier 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	57.8 PK	74.0	-16.2	1.54 H	238	7.37	50.43
2	11320.00	46.3 AV	54.0	-7.7	1.54 H	238	-4.13	50.43
3	#16980.00	59.9 PK	74.0	-14.1	1.82 H	195	2.23	57.67
4	#16980.00	48.1 AV	54.0	-5.9	1.82 H	195	-9.57	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	58.6 PK	74.0	-15.4	1.27 V	195	8.17	50.43
2	11320.00	47.0 AV	54.0	-7.0	1.27 V	195	-3.43	50.43
3	#16980.00	58.8 PK	74.0	-15.2	1.35 V	106	1.13	57.67
4	#16980.00	47.8 AV	54.0	-6.2	1.35 V	106	-9.87	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) – Pre-Amplifier 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	57.6 PK	74.0	-16.4	1.59 H	221	7.32	50.28
2	11400.00	46.4 AV	54.0	-7.6	1.59 H	221	-3.88	50.28
3	#17100.00	59.1 PK	74.0	-14.9	1.80 H	206	1.64	57.46
4	#17100.00	47.3 AV	54.0	-6.7	1.80 H	206	-10.16	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	57.6 PK	74.0	-16.4	1.25 V	170	7.32	50.28
2	11400.00	46.6 AV	54.0	-7.4	1.25 V	170	-3.68	50.28
3	#17100.00	59.0 PK	74.0	-15.0	1.48 V	79	1.54	57.46
4	#17100.00	48.0 AV	54.0	-6.0	1.48 V	79	-9.46	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) – Pre-Amplifier 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	57.4 PK	74.0	-16.6	1.56 H	226	7.99	49.41
2	#10360.00	46.3 AV	54.0	-7.7	1.56 H	226	-3.11	49.41
3	15540.00	59.7 PK	74.0	-14.3	1.77 H	200	4.25	55.45
4	15540.00	47.8 AV	54.0	-6.2	1.77 H	200	-7.65	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	58.7 PK	74.0	-15.3	1.22 V	165	9.29	49.41
2	#10360.00	47.6 AV	54.0	-6.4	1.22 V	165	-1.81	49.41
3	15540.00	58.4 PK	74.0	-15.6	1.35 V	122	2.95	55.45
4	15540.00	47.8 AV	54.0	-6.2	1.35 V	122	-7.65	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) – Pre-Amplifier 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	57.2 PK	74.0	-16.8	1.52 H	250	8.17	49.03
2	#10400.00	45.9 AV	54.0	-8.1	1.52 H	250	-3.13	49.03
3	15600.00	59.3 PK	74.0	-14.7	1.78 H	224	4.05	55.25
4	15600.00	47.4 AV	54.0	-6.6	1.78 H	224	-7.85	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	58.6 PK	74.0	-15.4	1.30 V	180	9.57	49.03
2	#10400.00	47.5 AV	54.0	-6.5	1.30 V	180	-1.53	49.03
3	15600.00	59.4 PK	74.0	-14.6	1.38 V	115	4.15	55.25
4	15600.00	48.3 AV	54.0	-5.7	1.38 V	115	-6.95	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) – Pre-Amplifier 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	57.7 PK	74.0	-16.3	1.55 H	233	8.11	49.59
2	#10480.00	46.7 AV	54.0	-7.3	1.55 H	233	-2.89	49.59
3	15720.00	59.4 PK	74.0	-14.6	1.75 H	195	4.56	54.84
4	15720.00	47.6 AV	54.0	-6.4	1.75 H	195	-7.24	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	58.7 PK	74.0	-15.3	1.35 V	169	9.11	49.59
2	#10480.00	47.9 AV	54.0	-6.1	1.35 V	169	-1.69	49.59
3	15720.00	59.5 PK	74.0	-14.5	1.38 V	105	4.66	54.84
4	15720.00	48.5 AV	54.0	-5.5	1.38 V	105	-6.34	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) – Pre-Amplifier 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	57.1 PK	74.0	-16.9	1.60 H	235	7.41	49.69
2	#10520.00	46.0 AV	54.0	-8.0	1.60 H	235	-3.69	49.69
3	15780.00	59.4 PK	74.0	-14.6	1.76 H	185	4.45	54.95
4	15780.00	47.4 AV	54.0	-6.6	1.76 H	185	-7.55	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	58.1 PK	74.0	-15.9	1.28 V	171	8.41	49.69
2	#10520.00	47.2 AV	54.0	-6.8	1.28 V	171	-2.49	49.69
3	15780.00	59.3 PK	74.0	-14.7	1.38 V	126	4.35	54.95
4	15780.00	48.5 AV	54.0	-5.5	1.38 V	126	-6.45	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) – Pre-Amplifier 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	57.7 PK	74.0	-16.3	1.61 H	248	8.15	49.55
2	10600.00	46.6 AV	54.0	-7.4	1.61 H	248	-2.95	49.55
3	15900.00	59.5 PK	74.0	-14.5	1.76 H	188	4.49	55.01
4	15900.00	47.9 AV	54.0	-6.1	1.76 H	188	-7.11	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	58.5 PK	74.0	-15.5	1.25 V	181	8.95	49.55
2	10600.00	47.3 AV	54.0	-6.7	1.25 V	181	-2.25	49.55
3	15900.00	59.6 PK	74.0	-14.4	1.42 V	131	4.59	55.01
4	15900.00	48.6 AV	54.0	-5.4	1.42 V	131	-6.41	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) – Pre-Amplifier 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	58.0 PK	74.0	-16.0	1.54 H	232	8.34	49.66
2	10640.00	46.7 AV	54.0	-7.3	1.54 H	232	-2.96	49.66
3	15960.00	59.0 PK	74.0	-15.0	1.80 H	199	4.32	54.68
4	15960.00	47.1 AV	54.0	-6.9	1.80 H	199	-7.58	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	58.0 PK	74.0	-16.0	1.22 V	197	8.34	49.66
2	10640.00	47.1 AV	54.0	-6.9	1.22 V	197	-2.56	49.66
3	15960.00	58.9 PK	74.0	-15.1	1.42 V	99	4.22	54.68
4	15960.00	47.9 AV	54.0	-6.1	1.42 V	99	-6.78	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) – Pre-Amplifier 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	56.5 PK	74.0	-17.5	1.56 H	227	6.29	50.21
2	11000.00	45.6 AV	54.0	-8.4	1.56 H	227	-4.61	50.21
3	#16500.00	59.1 PK	74.0	-14.9	1.77 H	198	2.63	56.47
4	#16500.00	47.2 AV	54.0	-6.8	1.77 H	198	-9.27	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	58.5 PK	74.0	-15.5	1.32 V	189	8.29	50.21
2	11000.00	47.2 AV	54.0	-6.8	1.32 V	189	-3.01	50.21
3	#16500.00	58.4 PK	74.0	-15.6	1.36 V	102	1.93	56.47
4	#16500.00	47.5 AV	54.0	-6.5	1.36 V	102	-8.97	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) – Pre-Amplifier 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	56.7 PK	74.0	-17.3	1.64 H	233	6.72	49.98
2	11160.00	45.9 AV	54.0	-8.1	1.64 H	233	-4.08	49.98
3	#16740.00	58.9 PK	74.0	-15.1	1.77 H	186	2.19	56.71
4	#16740.00	47.1 AV	54.0	-6.9	1.77 H	186	-9.61	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	57.7 PK	74.0	-16.3	1.27 V	208	7.72	49.98
2	11160.00	47.0 AV	54.0	-7.0	1.27 V	208	-2.98	49.98
3	#16740.00	59.1 PK	74.0	-14.9	1.42 V	88	2.39	56.71
4	#16740.00	47.8 AV	54.0	-6.2	1.42 V	88	-8.91	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) – Pre-Amplifier 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	57.4 PK	74.0	-16.6	1.69 H	223	6.97	50.43
2	11320.00	46.4 AV	54.0	-7.6	1.69 H	223	-4.03	50.43
3	#16980.00	59.5 PK	74.0	-14.5	1.75 H	193	1.83	57.67
4	#16980.00	47.5 AV	54.0	-6.5	1.75 H	193	-10.17	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	57.6 PK	74.0	-16.4	1.26 V	183	7.17	50.43
2	11320.00	46.9 AV	54.0	-7.1	1.26 V	183	-3.53	50.43
3	#16980.00	59.5 PK	74.0	-14.5	1.46 V	113	1.83	57.67
4	#16980.00	48.2 AV	54.0	-5.8	1.46 V	113	-9.47	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) – Pre-Amplifier 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	58.0 PK	74.0	-16.0	1.64 H	216	7.72	50.28
2	11400.00	46.9 AV	54.0	-7.1	1.64 H	216	-3.38	50.28
3	#17100.00	58.9 PK	74.0	-15.1	1.80 H	195	1.44	57.46
4	#17100.00	47.3 AV	54.0	-6.7	1.80 H	195	-10.16	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	57.5 PK	74.0	-16.5	1.29 V	166	7.22	50.28
2	11400.00	46.5 AV	54.0	-7.5	1.29 V	166	-3.78	50.28
3	#17100.00	58.8 PK	74.0	-15.2	1.49 V	78	1.34	57.46
4	#17100.00	47.5 AV	54.0	-6.5	1.49 V	78	-9.96	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) – Pre-Amplifier 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	57.6 PK	74.0	-16.4	1.64 H	219	8.38	49.22
2	#10380.00	46.5 AV	54.0	-7.5	1.64 H	219	-2.72	49.22
3	15570.00	58.7 PK	74.0	-15.3	1.84 H	191	3.35	55.35
4	15570.00	47.1 AV	54.0	-6.9	1.84 H	191	-8.25	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	57.8 PK	74.0	-16.2	1.23 V	188	8.58	49.22
2	#10380.00	47.1 AV	54.0	-6.9	1.23 V	188	-2.12	49.22
3	15570.00	59.2 PK	74.0	-14.8	1.42 V	120	3.85	55.35
4	15570.00	48.0 AV	54.0	-6.0	1.42 V	120	-7.35	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) – Pre-Amplifier 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	1.69 H	218	7.85	49.45
2	#10460.00	46.5 AV	54.0	-7.5	1.69 H	218	-2.95	49.45
3	15690.00	59.2 PK	74.0	-14.8	1.90 H	193	4.36	54.84
4	15690.00	47.5 AV	54.0	-6.5	1.90 H	193	-7.34	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	#10460.00	58.1 PK	74.0	-15.9	1.22 V	189	8.65	49.45
2	#10460.00	47.3 AV	54.0	-6.7	1.22 V	189	-2.15	49.45
3	15690.00	59.4 PK	74.0	-14.6	1.39 V	118	4.56	54.84
4	15690.00	48.0 AV	54.0	-6.0	1.39 V	118	-6.84	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) – Pre-Amplifier 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	58.0 PK	74.0	-16.0	1.62 H	206	8.34	49.66
2	#10540.00	46.9 AV	54.0	-7.1	1.62 H	206	-2.76	49.66
3	15810.00	58.5 PK	74.0	-15.5	1.82 H	179	3.51	54.99
4	15810.00	47.1 AV	54.0	-6.9	1.82 H	179	-7.89	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	58.2 PK	74.0	-15.8	1.16 V	205	8.54	49.66
2	#10540.00	47.2 AV	54.0	-6.8	1.16 V	205	-2.46	49.66
3	15810.00	59.8 PK	74.0	-14.2	1.43 V	120	4.81	54.99
4	15810.00	48.3 AV	54.0	-5.7	1.43 V	120	-6.69	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) – Pre-Amplifier 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	57.7 PK	74.0	-16.3	1.58 H	220	8.10	49.60
2	10620.00	46.7 AV	54.0	-7.3	1.58 H	220	-2.90	49.60
3	15930.00	58.7 PK	74.0	-15.3	1.90 H	187	3.86	54.84
4	15930.00	47.3 AV	54.0	-6.7	1.90 H	187	-7.54	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	10620.00	58.3 PK	74.0	-15.7	1.25 V	196	8.70	49.60
2	10620.00	47.4 AV	54.0	-6.6	1.25 V	196	-2.20	49.60
3	15930.00	58.7 PK	74.0	-15.3	1.47 V	111	3.86	54.84
4	15930.00	47.6 AV	54.0	-6.4	1.47 V	111	-7.24	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11020.00	57.3 PK	74.0	-16.7	1.55 H	227	7.14	50.16
2	11020.00	46.6 AV	54.0	-7.4	1.55 H	227	-3.56	50.16
3	#16530.00	59.0 PK	74.0	-15.0	1.86 H	180	2.24	56.76
4	#16530.00	47.3 AV	54.0	-6.7	1.86 H	180	-9.46	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	58.9 PK	74.0	-15.1	1.29 V	198	8.74	50.16
2	11020.00	47.8 AV	54.0	-6.2	1.29 V	198	-2.36	50.16
3	#16530.00	58.3 PK	74.0	-15.7	1.48 V	126	1.54	56.76
4	#16530.00	47.3 AV	54.0	-6.7	1.48 V	126	-9.46	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) – Pre-Amplifier 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	57.6 PK	74.0	-16.4	1.49 H	230	7.66	49.94
2	11100.00	46.8 AV	54.0	-7.2	1.49 H	230	-3.14	49.94
3	#16650.00	59.1 PK	74.0	-14.9	1.84 H	184	1.98	57.12
4	#16650.00	47.3 AV	54.0	-6.7	1.84 H	184	-9.82	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	58.8 PK	74.0	-15.2	1.25 V	189	8.86	49.94
2	11100.00	47.8 AV	54.0	-6.2	1.25 V	189	-2.14	49.94
3	#16650.00	59.0 PK	74.0	-15.0	1.44 V	122	1.88	57.12
4	#16650.00	47.8 AV	54.0	-6.2	1.44 V	122	-9.32	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) – Pre-Amplifier 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	57.5 PK	74.0	-16.5	1.59 H	228	7.11	50.39
2	11340.00	46.6 AV	54.0	-7.4	1.59 H	228	-3.79	50.39
3	#17010.00	58.7 PK	74.0	-15.3	1.94 H	203	0.93	57.77
4	#17010.00	47.4 AV	54.0	-6.6	1.94 H	203	-10.37	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	58.3 PK	74.0	-15.7	1.33 V	213	7.91	50.39
2	11340.00	47.3 AV	54.0	-6.7	1.33 V	213	-3.09	50.39
3	#17010.00	58.2 PK	74.0	-15.8	1.52 V	121	0.43	57.77
4	#17010.00	47.3 AV	54.0	-6.7	1.52 V	121	-10.47	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) – Pre-Amplifier 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] = 6.09dBi for Band 1~2 & 7.77dBi for Band 3)
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.

ABOVE 1GHz DATA
802.11a - Channel 36

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10362.5 PK	54.83	74	-19.17	-49.7	-49.36	6.09	-40.43
2	10359.375 AV	43.94	54	-10.06	-61.03	-59.88	6.09	-51.32
3	15541.25 PK	53.46	74	-20.54	-51.17	-50.64	6.09	-41.8
4	15544.125 AV	43.39	54	-10.61	-60.52	-61.47	6.09	-51.87

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5150 PK	72.26	74	-1.74	-40.51	-29.41	6.09	-23
2	5150 AV	56.2	54	* 2.2	-55.54	-45.57	6.09	-39.06

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11a - Channel 40

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10409.375 PK	54.25	74	-19.75	-50.17	-50.05	6.09	-41.01
2	10403.125 AV	43.85	54	-10.15	-61.32	-59.82	6.09	-51.41
3	15593 PK	53.59	74	-20.41	-51.32	-50.28	6.09	-41.67
4	15595.875 AV	42.86	54	-11.14	-61.03	-62.03	6.09	-52.4

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 48

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10484.375 PK	55.35	74	-18.65	-49.57	-48.51	6.09	-39.91
2	10484.375 AV	44.47	54	-9.53	-61.47	-58.74	6.09	-50.79
3	15728.125 PK	53.66	74	-20.34	-50.65	-50.76	6.09	-41.6
4	15716.625 AV	43.28	54	-10.72	-60.79	-61.39	6.09	-51.98

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 52

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10528.125 PK	54.85	74	-19.15	-50.65	-48.61	6.09	-40.41
2	10518.75 AV	44.54	54	-9.46	-60.77	-59.04	6.09	-50.72
3	15779.875 PK	53.86	74	-20.14	-49.09	-52.6	6.09	-41.4
4	15782.75 AV	43.51	54	-10.49	-60.39	-61.36	6.09	-51.75

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 60

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10596.875 PK	55.47	74	-18.53	-48.04	-49.96	6.09	-39.79
2	10603.125 AV	44.48	54	-9.52	-61.04	-58.96	6.09	-50.78
3	15897.75 PK	54.4	74	-19.6	-50.56	-49.43	6.09	-40.86
4	15900.625 AV	43.4	54	-10.6	-60.79	-61.13	6.09	-51.86

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 64

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10634.375 PK	55.14	74	-18.86	-50.15	-48.45	6.09	-40.12
2	10640.625 AV	44.45	54	-9.55	-60.56	-59.34	6.09	-50.81
3	15955.25 PK	54.74	74	-19.26	-48.52	-51.11	6.09	-40.52
4	15958.125 AV	42.92	54	-11.08	-61.39	-61.5	6.09	-52.34

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5350.8 PK	72.69	74	-1.31	-37.72	-29.24	6.09	-22.57
2	5350 AV	56.52	54	* 2.52	-52.61	-45.62	6.09	-38.74

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11a - Channel 100

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11003.125 PK	56.06	74	-17.94	-51.06	-49.12	7.77	-39.2
2	11000 AV	45.97	54	-8.03	-60.75	-59.49	7.77	-49.29
3	16501.5 PK	56.09	74	-17.91	-49.87	-50.04	7.77	-39.17
4	16498.625 AV	45.58	54	-8.42	-60.57	-60.35	7.77	-49.68

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5469.5 PK	73.16	74	-0.84	-37.6	-28.72	6.09	-22.1
2	5470 AV	57.13	54	* 3.13	-52.67	-44.89	6.09	-38.13

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11a - Channel 116

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11159.375 PK	56.88	74	-17.12	-50.48	-48.15	7.77	-38.38
2	11159.375 AV	47.23	54	-6.77	-60.29	-57.71	7.77	-48.03
3	16731.5 PK	55.84	74	-18.16	-50.1	-50.3	7.77	-39.42
4	16740.125 AV	44.43	54	-9.57	-61.99	-61.27	7.77	-50.83

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 132

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11321.875 PK	57.04	74	-16.96	-49.76	-48.35	7.77	-38.22
2	11321.875 AV	46.68	54	-7.32	-60.15	-58.7	7.77	-48.58
3	16975.875 PK	57.02	74	-16.98	-49.41	-48.66	7.77	-38.24
4	16978.75 AV	45.95	54	-8.05	-60.31	-59.89	7.77	-49.31

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11a - Channel 140

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11409.375 PK	57.85	74	-16.15	-47.99	-48.39	7.77	-37.41
2	11403.125 AV	47.53	54	-6.47	-60.12	-57.34	7.77	-47.73
3	17096.625 PK	55.73	74	-18.27	-50.95	-49.75	7.77	-39.53
4	17090.875 AV	44.97	54	-9.03	-61.46	-60.72	7.77	-50.29

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5725.4 PK	74.44	74	* 0.44	-41.68	-28.81	7.77	-20.82
2	5725 AV	59.01	54	* 5.01	-54.19	-44.46	7.77	-36.25

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT20) - Channel 36

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10356.25 PK	54.94	74	-19.06	-49.07	-49.8	6.09	-40.32
2	10356.25 AV	43.72	54	-10.28	-60.87	-60.42	6.09	-51.54
3	15535.5 PK	54.14	74	-19.86	-50.75	-49.75	6.09	-41.12
4	15538.375 AV	43.19	54	-10.81	-60.78	-61.6	6.09	-52.07

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5150 PK	72.1	74	-1.9	-40.63	-29.58	6.09	-23.16
2	5150 AV	57.21	54	* 3.21	-55.45	-44.47	6.09	-38.05

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT20) - Channel 40

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10400 PK	54.26	74	-19.74	-51.29	-49.16	6.09	-41
2	10396.875 AV	43.75	54	-10.25	-61.18	-60.1	6.09	-51.51
3	15598.75 PK	52.94	74	-21.06	-51.04	-51.84	6.09	-42.32
4	15604.5 AV	42.52	54	-11.48	-61.42	-62.3	6.09	-52.74

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 48

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10475 PK	53.59	74	-20.41	-51.77	-49.96	6.09	-41.67
2	10475 AV	43.25	54	-10.75	-61.43	-60.82	6.09	-52.01
3	15710.875 PK	53.49	74	-20.51	-50.3	-51.52	6.09	-41.77
4	15719.5 AV	42.55	54	-11.45	-61.29	-62.41	6.09	-52.71

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 52

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10515.625 PK	54.84	74	-19.16	-50.33	-48.84	6.09	-40.42
2	10515.625 AV	43.93	54	-10.07	-61.27	-59.72	6.09	-51.33
3	15771.25 PK	53.57	74	-20.43	-51.83	-49.96	6.09	-41.69
4	15782.75 AV	43.21	54	-10.79	-60.91	-61.4	6.09	-52.05

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 60

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10596.875 PK	54.43	74	-19.57	-50.15	-49.73	6.09	-40.83
2	10596.875 AV	44.19	54	-9.81	-60.85	-59.58	6.09	-51.07
3	15909.25 PK	54.78	74	-19.22	-49.5	-49.67	6.09	-40.48
4	15897.75 AV	43.37	54	-10.63	-60.9	-61.09	6.09	-51.89

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 64

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10640.625 PK	54.02	74	-19.98	-50.21	-50.48	6.09	-41.24
2	10634.375 AV	44.03	54	-9.97	-61.09	-59.68	6.09	-51.23
3	15952.375 PK	53.99	74	-20.01	-51.59	-49.42	6.09	-41.27
4	15961 AV	42.79	54	-11.21	-61.77	-61.37	6.09	-52.47

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5350.4 PK	71.8	74	-2.2	-40.65	-29.9	6.09	-23.46
2	5350 AV	56.83	54	* 2.83	-55.21	-44.91	6.09	-38.43

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT20) - Channel 100

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10996.875 PK	55.91	74	-18.09	-51.14	-49.31	7.77	-39.35
2	10996.875 AV	45.4	54	-8.6	-61.23	-60.13	7.77	-49.86
3	16507.25 PK	56.39	74	-17.61	-49.82	-49.49	7.77	-38.87
4	16490 AV	45.54	54	-8.46	-60.56	-60.45	7.77	-49.72

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5467.5 PK	73.51	74	-0.49	-42.73	-27.98	6.09	-21.75
2	5470 AV	57.84	54	* 3.84	-54.9	-43.84	6.09	-37.42

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT20) - Channel 116

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11153.125 PK	56.82	74	-17.18	-50.37	-48.31	7.77	-38.44
2	11156.25 AV	46.19	54	-7.81	-60.26	-59.48	7.77	-49.07
3	16737.25 PK	55.58	74	-18.42	-51.59	-49.57	7.77	-39.68
4	16745.875 AV	44.51	54	-9.49	-61.68	-61.38	7.77	-50.75

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 132

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11315.625 PK	56.8	74	-17.2	-49.34	-49.14	7.77	-38.46
2	11325 AV	45.48	54	-8.52	-60.69	-60.44	7.77	-49.78
3	16978.75 PK	57.23	74	-16.77	-48.27	-49.42	7.77	-38.03
4	16981.625 AV	45.86	54	-8.14	-60.25	-60.11	7.77	-49.4

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT20) - Channel 140

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11396.875 PK	56.77	74	-17.23	-50.43	-48.35	7.77	-38.49
2	11409.375 AV	45.63	54	-8.37	-61.35	-59.63	7.77	-49.63
3	17093.75 PK	56.02	74	-17.98	-49.42	-50.72	7.77	-39.24
4	17096.625 AV	44.67	54	-9.33	-61.34	-61.41	7.77	-50.59

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5725 PK	74.75	74	* 0.75	-41.25	-28.51	7.77	-20.51
2	5725 AV	57.46	54	* 3.46	-56.12	-45.97	7.77	-37.8

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT40) - Channel 38

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10375 PK	54.28	74	-19.72	-50.61	-49.61	6.09	-40.98
2	10371.875 AV	42.84	54	-11.16	-61.49	-61.56	6.09	-52.42
3	15564.25 PK	53.48	74	-20.52	-51.17	-50.6	6.09	-41.78
4	15564.25 AV	42.12	54	-11.88	-62.17	-62.31	6.09	-53.14

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5149.6 PK	76.08	74	* 2.08	-34.93	-25.77	6.09	-19.18
2	5150 AV	58.23	54	* 4.23	-51.92	-43.73	6.09	-37.03

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT40) - Channel 46

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10453.125 PK	53.49	74	-20.51	-52.61	-49.63	6.09	-41.77
2	10456.25 AV	42.73	54	-11.27	-62.14	-61.17	6.09	-52.53
3	15685 PK	52.51	74	-21.49	-51.89	-51.82	6.09	-42.75
4	15682.125 AV	41.93	54	-12.07	-62.41	-62.46	6.09	-53.33

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT40) - Channel 54

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10537.5 PK	54.04	74	-19.96	-50.69	-49.98	6.09	-41.22
2	10540.625 AV	43.49	54	-10.51	-61.18	-60.58	6.09	-51.77
3	15817.25 PK	53.7	74	-20.3	-50.01	-51.42	6.09	-41.56
4	15817.25 AV	42.65	54	-11.35	-61.66	-61.76	6.09	-52.61

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT40) - Channel 62

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	10628.125 PK	53.9	74	-20.1	-49.84	-51.18	6.09	-41.36
2	10612.5 AV	43.11	54	-10.89	-61.39	-61.11	6.09	-52.15
3	15932.25 PK	53.91	74	-20.09	-50.78	-50.14	6.09	-41.35
4	15923.625 AV	42.34	54	-11.66	-62.07	-61.98	6.09	-52.92

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5350 PK	77.42	74	* 3.42	-34.37	-24.34	6.09	-17.84
2	5350 AV	59.44	54	* 5.44	-51.49	-42.42	6.09	-35.82

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT40) - Channel 102

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11018.75 PK	55.08	74	-18.92	-51.77	-50.27	7.77	-40.18
2	11015.625 AV	44.06	54	-9.94	-62.23	-61.75	7.77	-51.2
3	16521.625 PK	55.31	74	-18.69	-50.11	-51.46	7.77	-39.95
4	16521.625 AV	44.35	54	-9.65	-61.75	-61.64	7.77	-50.91

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5470 PK	75.5	74	* 1.5	-36.79	-26.22	6.09	-19.76
2	5470 AV	57.94	54	* 3.94	-51.33	-44.17	6.09	-37.32

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

* The unwanted emission was verified and the test result was passed by radiated measurement. (Please refer APPENDIX A)

802.11n(HT40) - Channel 110

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11103.125 PK	54.96	74	-19.04	-50.38	-51.91	7.77	-40.3
2	11093.75 AV	44.33	54	-9.67	-62.24	-61.23	7.77	-50.93
3	16653.875 PK	54.11	74	-19.89	-52.77	-51.22	7.77	-41.15
4	16645.25 AV	43.34	54	-10.66	-62.84	-62.57	7.77	-51.92

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

802.11n(HT40) - Channel 134

Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	11331.25 PK	55.69	74	-18.31	-51.21	-49.64	7.77	-39.57
2	11334.375 AV	45.4	54	-8.6	-61.47	-59.95	7.77	-49.86
3	17016.125 PK	56.9	74	-17.1	-48.58	-49.79	7.77	-38.36
4	17010.375 AV	45.45	54	-8.55	-60.42	-60.77	7.77	-49.81

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)		Correction Factor (dB)	EIRP Level (dBm)
					Chain0	Chain1		
1	5726.6 PK	71.67	74	-2.33	-40.35	-31.95	7.77	-23.59
2	5725 AV	53.3	54	-0.7	-57.26	-50.57	7.77	-41.96

Note :
Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8
d = measurement distance in 3 meters.

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 : July 30, 2013

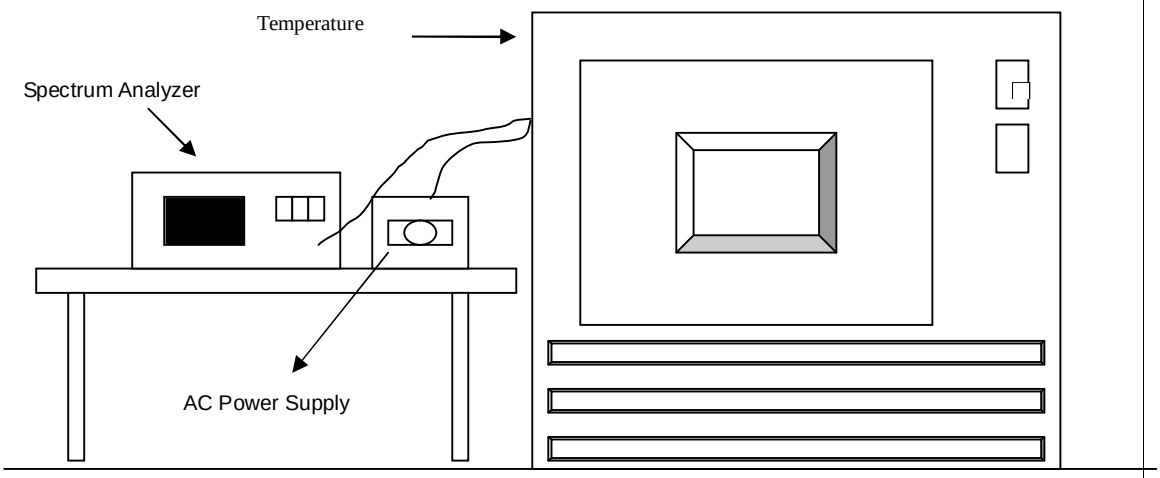
4.6.3 TEST PROCEDURE

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)	%	(MHz)	%	(MHz)	%	(MHz)	%
50	120	5319.9835	-0.00031	5319.9787	-0.00040	5319.9782	-0.00041	5319.976	-0.00045
40	120	5320.0017	0.00003	5319.9975	-0.00005	5320.0006	0.00001	5319.999	-0.00002
30	120	5320.0307	0.00058	5320.0226	0.00042	5320.0267	0.00050	5320.0301	0.00057
20	120	5319.9965	-0.00007	5319.9977	-0.00004	5319.9928	-0.00014	5319.9912	-0.00017
10	120	5320.0285	0.00054	5320.0288	0.00054	5320.0269	0.00051	5320.0254	0.00048
0	120	5320.0084	0.00016	5320.0084	0.00016	5320.0095	0.00018	5320.0012	0.00002
-10	120	5320.0073	0.00014	5320.0097	0.00018	5320.0148	0.00028	5320.0089	0.00017
-20	120	5320.0251	0.00047	5320.0186	0.00035	5320.0255	0.00048	5320.0236	0.00044
-30	120	5320.0162	0.00030	5320.0186	0.00035	5320.0142	0.00027	5320.0211	0.00040

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)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	138	5319.9957	-0.00008	5319.9983	-0.00003	5319.9929	-0.00013	5319.9903	-0.00018
	120	5319.9965	-0.00007	5319.9977	-0.00004	5319.9928	-0.00014	5319.9912	-0.00017
	102	5319.9957	-0.00008	5319.9972	-0.00005	5319.9932	-0.00013	5319.9903	-0.00018

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 ROHDE & SCHWARZ	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 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 07,2013	June 06,2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
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: July 24, 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.

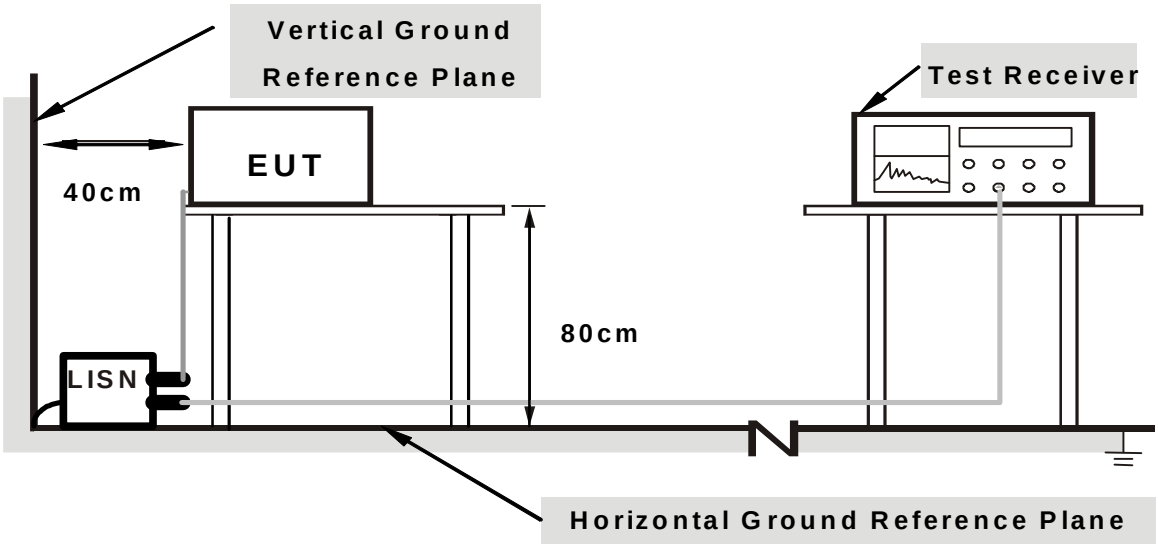
d. The frequency range from 150kHz to 30MHz was searched. Emission level under (Limit – 20dB) was not recorded.

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.

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

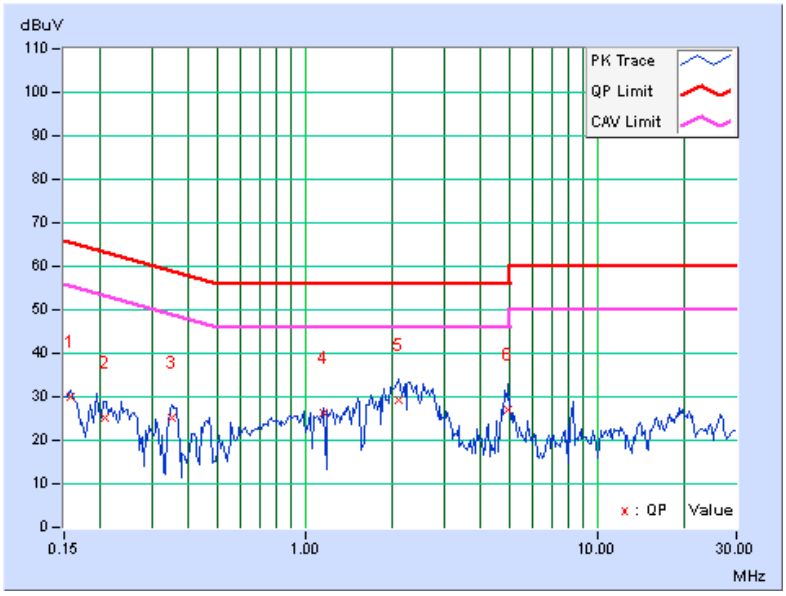
4.7.7 TEST RESULTS

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	0.15781	0.12	29.85	20.31	29.97	20.43	65.58	55.58	-35.61	-35.15
2	0.20697	0.14	25.03	20.50	25.17	20.64	63.33	53.33	-38.15	-32.68
3	0.34922	0.17	24.84	13.90	25.01	14.07	58.98	48.98	-33.97	-34.91
4	1.15234	0.23	26.07	18.77	26.30	19.00	56.00	46.00	-29.70	-27.00
5	**2.08594**	**0.28**	**28.91**	**22.67**	**29.19**	**22.95**	**56.00**	**46.00**	**-26.81**	**-23.05**
6	4.95703	0.41	26.60	10.99	27.01	11.40	56.00	46.00	-28.99	-34.60

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

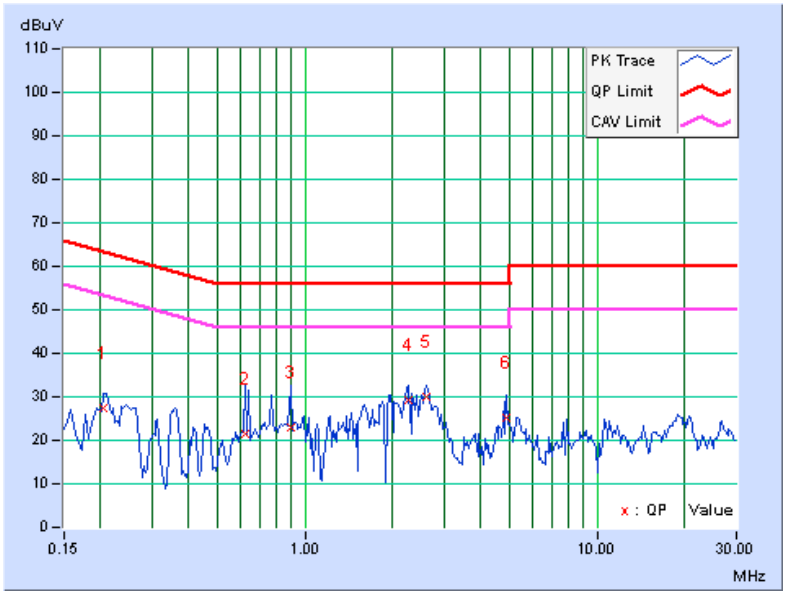


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	0.20469	0.12	27.39	21.39	27.51	21.51	63.42	53.42	-35.91	-31.91
2	0.62656	0.18	21.46	13.22	21.64	13.40	56.00	46.00	-34.36	-32.60
3	0.89219	0.19	22.91	15.21	23.10	15.40	56.00	46.00	-32.90	-30.60
4	2.26563	0.27	28.95	18.78	29.22	19.05	56.00	46.00	-26.78	-26.95
5	2.61328	0.28	29.62	20.24	29.90	20.52	56.00	46.00	-26.10	-25.48
6	4.90234	0.36	24.68	11.22	25.04	11.58	56.00	46.00	-30.96	-34.42

REMARKS:

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



5.PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
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Hwa Ya EMC/RF/Safety/Telecom Lab:
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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 - RADIATED EMISSION MEASUREMENT

7.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

7.1.2 TEST INSTRUMENTS

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 25, 2013	June 24, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
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 _V8.7.07	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: July 30, 2013

7.1.3 TEST PROCEDURES

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

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

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

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

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

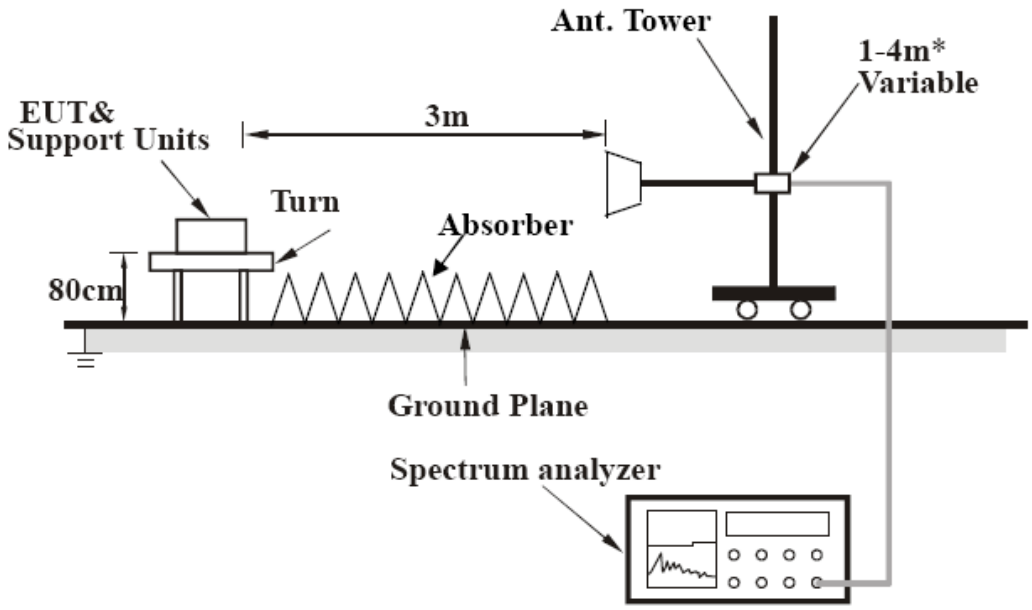
NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
2. 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.
3. All modes of operation were investigated and the worst-case emissions are reported.

7.1.4 DEVIATION FROM TEST STANDARD

No deviation

7.1.5 TEST SETUP



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

7.1.6 EUT OPERATING CONDITIONS

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 “artgui.exe Version:2.3” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

7.1.7 TEST RESULTS

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	66.1 PK	74.0	-7.9	1.00 H	124	58.66	7.44
2	5150.00	49.4 AV	54.0	-4.6	1.00 H	124	41.96	7.44
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	67.0 PK	74.0	-7.0	1.04 V	69	59.56	7.44
2	5150.00	50.4 AV	54.0	-3.6	1.04 V	69	42.96	7.44

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) – Pre-Amplifier 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	5350.00	60.6 PK	74.0	-13.4	1.00 H	119	52.49	8.11
2	5350.00	47.5 AV	54.0	-6.5	1.00 H	119	39.39	8.11
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	5350.00	64.1 PK	74.0	-9.9	1.04 V	69	55.99	8.11
2	5350.00	49.6 AV	54.0	-4.4	1.04 V	69	41.49	8.11

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) – Pre-Amplifier 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	5460.00	56.3 PK	74.0	-17.7	1.02 H	134	47.79	8.51
2	5460.00	43.4 AV	54.0	-10.6	1.02 H	134	34.89	8.51
3	#5470.00	65.4 PK	74.0	-8.6	1.02 H	134	56.83	8.57
4	#5470.00	49.1 AV	54.0	-4.9	1.02 H	134	40.53	8.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.9 PK	74.0	-17.1	1.04 V	70	48.39	8.51
2	5460.00	42.9 AV	54.0	-11.1	1.04 V	70	34.39	8.51
3	#5470.00	68.0 PK	74.0	-6.0	1.04 V	70	59.43	8.57
4	#5470.00	52.1 AV	54.0	-1.9	1.04 V	70	43.53	8.57

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) – Pre-Amplifier 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	#5725.00	66.0 PK	74.0	-8.0	1.02 H	233	56.81	9.19
2	#5725.00	52.2 AV	54.0	-1.8	1.02 H	233	43.01	9.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	64.4 PK	74.0	-9.6	1.04 V	69	55.21	9.19
2	#5725.00	51.2 AV	54.0	-2.8	1.04 V	69	42.01	9.19

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	5150.00	65.7 PK	74.0	-8.3	1.02 H	128	58.26	7.44
2	5150.00	51.1 AV	54.0	-2.9	1.02 H	128	43.66	7.44
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.1 PK	74.0	-5.9	1.04 V	69	60.66	7.44
2	5150.00	52.9 AV	54.0	-1.1	1.04 V	69	45.46	7.44

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) – Pre-Amplifier 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	5350.00	61.0 PK	74.0	-13.0	1.02 H	128	52.89	8.11
2	5350.00	47.1 AV	54.0	-6.9	1.02 H	128	38.99	8.11
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	5350.00	64.5 PK	74.0	-9.5	1.04 V	69	56.39	8.11
2	5350.00	50.0 AV	54.0	-4.0	1.04 V	69	41.89	8.11

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) – Pre-Amplifier 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	5460.00	61.6 PK	74.0	-12.4	1.00 H	128	53.09	8.51
2	5460.00	44.2 AV	54.0	-9.8	1.00 H	128	35.69	8.51
3	#5470.00	67.1 PK	74.0	-6.9	1.02 H	128	58.53	8.57
4	#5470.00	50.0 AV	54.0	-4.0	1.02 H	128	41.43	8.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.2 PK	74.0	-15.8	1.04 V	69	49.69	8.51
2	5460.00	44.0 AV	54.0	-10.0	1.04 V	69	35.49	8.51
3	#5470.00	67.9 PK	74.0	-6.1	1.04 V	69	59.33	8.57
4	#5470.00	52.5 AV	54.0	-1.5	1.04 V	69	43.93	8.57

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) – Pre-Amplifier 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	#5725.00	66.6 PK	74.0	-7.4	1.02 H	128	57.41	9.19
2	#5725.00	50.3 AV	54.0	-3.7	1.02 H	128	41.11	9.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	68.0 PK	74.0	-6.0	1.04 V	69	58.81	9.19
2	#5725.00	52.0 AV	54.0	-2.0	1.04 V	69	42.81	9.19

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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	5150.00	67.5 PK	74.0	-6.5	1.02 H	121	60.06	7.44
2	5150.00	51.3 AV	54.0	-2.7	1.02 H	121	43.86	7.44
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	67.8 PK	74.0	-6.2	1.04 V	69	60.36	7.44
2	5150.00	52.6 AV	54.0	-1.4	1.04 V	69	45.16	7.44

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

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	5350.00	66.1 PK	74.0	-7.9	1.02 H	121	57.99	8.11
2	5350.00	49.8 AV	54.0	-4.2	1.02 H	121	41.69	8.11
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	5350.00	69.9 PK	74.0	-4.1	1.04 V	69	61.79	8.11
2	5350.00	52.3 AV	54.0	-1.7	1.04 V	69	44.19	8.11

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.5 PK	74.0	-13.5	1.02 H	136	51.99	8.51
2	5460.00	44.6 AV	54.0	-9.4	1.02 H	136	36.09	8.51
3	#5470.00	69.1 PK	74.0	-4.9	1.02 H	136	60.53	8.57
4	#5470.00	52.2 AV	54.0	-1.8	1.02 H	136	43.63	8.57
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.7 PK	74.0	-14.3	1.04 V	69	51.19	8.51
2	5460.00	44.1 AV	54.0	-9.9	1.04 V	69	35.59	8.51
3	#5470.00	69.7 PK	74.0	-4.3	1.04 V	69	61.13	8.57
4	#5470.00	52.1 AV	54.0	-1.9	1.04 V	69	43.53	8.57

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) – Pre-Amplifier 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	#5725.00	63.9 PK	74.0	-10.1	1.00 H	134	54.71	9.19
2	#5725.00	47.1 AV	54.0	-6.9	1.00 H	134	37.91	9.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	65.4 PK	74.0	-8.6	1.04 V	69	56.21	9.19
2	#5725.00	47.7 AV	54.0	-6.3	1.04 V	69	38.51	9.19

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier 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.

8.APPENDIX B - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

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