

FCC TEST REPORT (WLAN 15.407)

REPORT NO.: RF141008E03-1 R1

MODEL NO.: QCNFA435

FCC ID: PPD-QCNFA435

RECEIVED: Oct. 08, 2014

TESTED: Oct. 22 to Dec. 09, 2014

ISSUED: Jan. 06, 2015

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.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141008E03-1	Original release	Dec. 18, 2014
RF141008E03-1 R1	Revised the product name.	Jan. 06, 2015



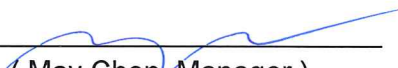
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1. CERTIFICATION

PRODUCT: Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card
BRAND NAME: Qualcomm Atheros
MODEL NO.: QCNFA435
TEST SAMPLE: R&D SAMPLE
APPLICANT: Qualcomm Atheros, Inc.
TESTED: Oct. 22 to Dec. 09, 2014
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (Model: QCNFA435) 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:** Jan. 06, 2015
(Lori Chung, Specialist)

Approved by :  , **Date:** Jan. 06, 2015
(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 Under New Rule)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.47dB at 0.49375MHz
15.407 (b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -3.2dB at 5350.00MHz & 5470.00MHz
15.407(a/1/2/3)	Transmit Power	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPEX not a standard connector.

- NOTE:** 1. For WLAN: The EUT was operating in 2.4 ~ 2.4835GHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz and 5.47~5.725GHz. For the 2.4 ~ 2.4835GHz 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	2.86 dB
Radiated emissions (30MHz-1GHz)	5.37 dB
Radiated emissions (1GHz -6GHz)	3.72 dB
Radiated emissions (6GHz -18GHz)	4.00 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT (WLAN)

PRODUCT	Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card
MODEL NO.	QCNFA435
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n : up to 150Mbps 802.11ac: up to 433.3Mbps
OPERATING FREQUENCY	For 15.407 5GHz: 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
NUMBER OF CHANNEL	For 15.407 20 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 10 for 802.11n (HT40), 802.11ac (VHT40) 5 for 802.11ac (VHT80) For 15.247 (2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20),VHT20 7 for 802.11n (HT40), VHT40 For 15.247 (5GHz) 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)



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MAXIMUM OUTPUT POWER	For 15.407 802.11a: 55.719 mW 802.11ac (VHT20): 54.075mW 802.11ac (VHT40): 45.186mW 802.11ac (VHT80): 25.351mW For 15.247 (2.4GHz) 802.11b: 234.963mW 802.11g: 303.389mW VHT20: 299.916mW VHT40: 244.906mW For 15.247 (5GHz) 802.11a: 106.66mW 802.11ac (VHT20): 111.429mW 802.11ac (VHT40): 109.901mW 802.11ac (VHT80): 295.801mW
ANTENNA TYPE	See item 3.2
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

- There are Bluetooth technology and WLAN technology used for the EUT.
- The EUT incorporates a 1T1R function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20) (2.4GHz)	MCS 0~7	1TX	1RX
802.11n (HT40) (2.4GHz)	MCS 0~7	1TX	1RX
VHT20 (2.4GHz)	MCS 0~8, Nss=1	1TX	1RX
VHT40 (2.4GHz)	MCS 0~8, Nss=1	1TX	1RX
802.11a	6 ~ 54Mbps	1TX	1RX
802.11n (HT20) (5GHz)	MCS 0~7	1TX	1RX
802.11n (HT40) (5GHz)	MCS 0~7	1TX	1RX
802.11ac (VHT20) (5GHz)	MCS 0~8, Nss=1	1TX	1RX
802.11ac (VHT40) (5GHz)	MCS 0~9, Nss=1	1TX	1RX
802.11ac (VHT80) (5GHz)	MCS 0~9, Nss=1	1TX	1RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.3.1)

- 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.

- WLAN/BT coexistence mode:

◆ 1x1 WLAN + BT:

- 5GHz 802.11a/an (or 11ac) transmit concurrent with BT.
- 2.4GHz: timely shared coexistence.

5. The Emission (conducted & radiated emission) of the simultaneous operation (WiFi <5GHz> & 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
5 GHz (802.11ac (VHT80))	155	155	OFDM
+ Bluetooth (GFSK)	0 to 78	39	FHSS

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

3.2 DESCRIPTION OF ANTENNA

The antenna gain was declared by client; please refer to the following table:

Ant. No.	Transmitter Circuit	Brand	Model	Ant. Type	2.4GHz Gain with cable loss (dBi)	5GHz Gain with cable loss (dBi)	2.4GHz Cable Loss (dBi)	5G Cable Loss (dBi)	Connector Type	Cable Length (mm)
1	Main	WNC	81-EBJ15.005	PIFA	3.00	Band 1&2: 2.56	1.15	Band 1&2: 1.70	IPEX	300
						Band 3: 4.76		Band 3: 1.74		
						Band 4: 4.76		Band 4: 1.79		
	Aux	WNC	81-EBJ15.005	PIFA	3.62	Band 1&2: 3.08	1.15	Band 1&2: 1.70	IPEX	300
						Band 3: 3.31		Band 3: 1.74		
						Band 4: 2.42		Band 4: 1.79		
2	Main	WNC	81.ED415.001	PIFA	0.22	Band 1&2: 5.56	0.96	Band 1&2: 1.29	IPEX	300
						Band 3: 5.03		Band 3: 1.36		
						Band 4: 3.14		Band 4: 1.38		
	Aux	WNC	81.ED415.001	PIFA	1.48	Band 1&2: 5.17	0.96	Band 1&2: 1.29	IPEX	300
						Band 3: 5.34		Band 3: 1.36		
						Band 4: 2.93		Band 4: 1.38		

- Note: 1. Above antenna gains of antenna are Total (H+V).
2. All of antenna can be application for WLAN and Bluetooth.
3. For 2.4GHz: From the above antennas, Ant. No. 1 (Aux) was selected as representative antennas for the test.
4. For 5GHz U-NII-1 & U-NII-2A band: From the above antennas, Ant. No. 2 (Main) was selected as representative antennas for the test.
5. For 5GHz U-NII-2C band: From the above antennas, Ant. No. 2 (Aux) was selected as representative antennas for the test.
6. For 5GHz U-NII-3 band: From the above antennas, Ant. No. 1 (Main) was selected as representative antennas for the test.

3.3 DESCRIPTION OF TEST MODES

Operated in 5150MHz ~ 5250MHz bands:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY
38	5190 MHz
46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
42	5210 MHz

Operated in 5250MHz ~ 5350MHz bands:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY
54	5270 MHz
62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
58	5290 MHz

Operated in 5470MHz ~ 5725MHz bands:

12 channels are provided for 802.11a and 802.11n (HT20), 802.11ac (VHT20):

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
144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40)

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
118	5590 MHz
126	5630 MHz
134	5670 MHz
142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
106	5530 MHz
122	5610 MHz
138	5690 MHz

3.3.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	UE < 1G	UE ≥ 1G	APCM	
-	√	√	√	√	-

Where **PLC**: Power Line Conducted Emission

UE < 1G: Unwanted Emission below 1GHz

UE ≥ 1G: Unwanted Emission above 1GHz

APCM: Antenna Port Conducted Measurement

Note

1. "-" means no effect.

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

AC POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
802.11a	36 to 144	60	OFDM	6

UNWANTED EMISSION TEST (BELOW 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
802.11a	36 to 144	60	OFDM	6

UNWANTED EMISSION TEST (ABOVE 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)
802.11a	36 to 144	36, 40, 48, 52, 60, 64, 100, 120, 140, 144	OFDM	6
802.11ac (VHT20)	36 to 144	36, 40, 48, 52, 60, 64, 100, 120, 140, 144	OFDM	6.5
802.11ac (VHT40)	38 to 142	38, 46, 54, 62, 102, 118, 134, 142	OFDM	13.5
802.11ac (VHT80)	42 to 138	42, 58, 106, 122, 138	OFDM	29.3

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 144	36, 40, 48, 52, 60, 64, 100, 120, 140, 144	OFDM	6
802.11ac (VHT20)	36 to 144	36, 40, 48, 52, 60, 64, 100, 120, 140, 144	OFDM	6.5
802.11ac (VHT40)	38 to 142	38, 46, 54, 62, 102, 118, 134, 142	OFDM	13.5
802.11ac (VHT80)	42 to 138	42, 58, 106, 122, 138	OFDM	29.3

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	30deg. C, 70%RH	120Vac, 60Hz	Mike Hsieh
RE<1G	25deg. C, 69%RH	120Vac, 60Hz	Robert Cheng
RE≥1G	25deg. C, 70%RH	120Vac, 60Hz	Gary Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.4 DUTY CYCLE OF TEST SIGNAL

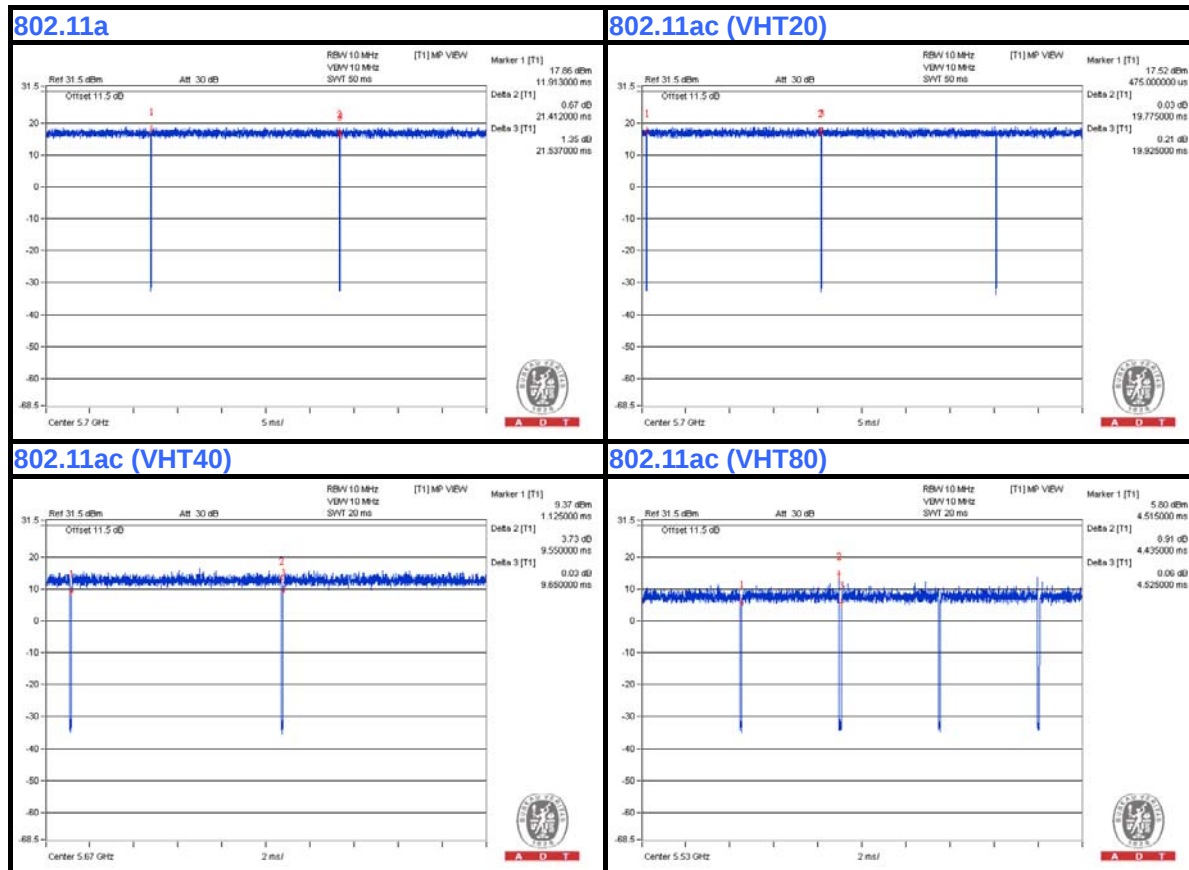
Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11a: Duty cycle = 21.412 ms/21.537 ms = 0.994

802.11ac (VHT20): Duty cycle = 19.775 ms/19.925 ms = 0.992

802.11ac (VHT40): Duty cycle = 9.55 ms/9.65 ms = 0.99

802.11ac (VHT80): Duty cycle = 4.435 ms/4.525 ms = 0.98





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3.5 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 D02 General UNII Test Procedures New Rules v01

644545 D03 Guidance for IEEE 802.11ac v01

ANSI C63.10-2009

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

3.6 DESCRIPTION OF SUPPORT UNITS

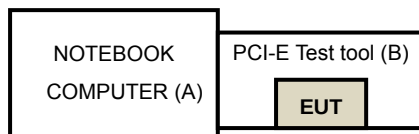
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	NOTEBOOK COMPUTER	DELL	E6420	H62T3R1	FCC DoC	Provided by Lab
B	PCI-E Test tool	Qualcomm Atheros	NA	NA	NA	Supplied by Client

NOTE:

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

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

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	---		1 Watt (30 dBm)

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



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4.1.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015

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 : Dec. 09, 2014

For other channels:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power Sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 2015

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 : Dec. 09, 2014

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015

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 : Dec. 09, 2014

4.1.3 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Set trigger to free run (duty cycle ≥ 98 percent) ; Set video trigger (duty cycle < 98 percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

For other channels:

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

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%.

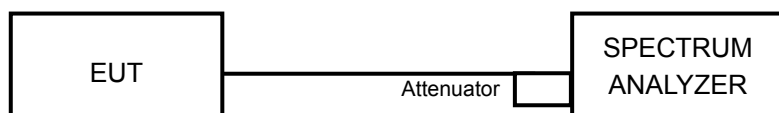
4.1.4 DEVIATION FROM TEST STANDARD

No deviation

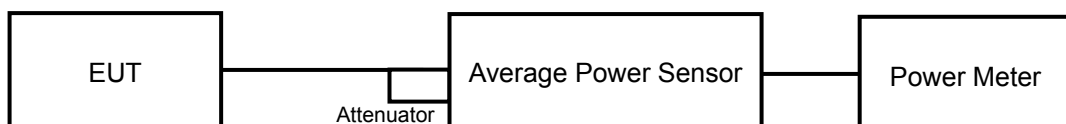
4.1.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

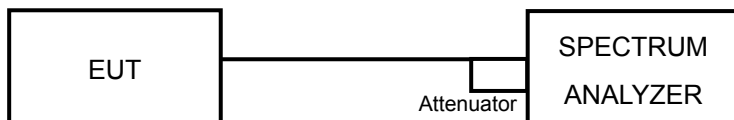
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.1.6 EUT OPERATING CONDITIONS

The software (QCRT Version3.0 33.0) 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

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.478	13.32	24.00	PASS
40	5200	54.2	17.34	24.00	PASS
48	5240	52.602	17.21	24.00	PASS
52	5260	54.702	17.38	24.00	PASS
60	5300	55.719	17.46	24.00	PASS
64	5320	29.854	14.75	24.00	PASS
100	5500	19.275	12.85	23.99	PASS
120	5600	53.333	17.27	24.00	PASS
140	5700	17.498	12.43	23.92	PASS
144 (UNII-2c Band)	5720	24.717	13.93	24.00	PASS
144 (UNII-3 Band)	5720	4.864	6.87	30.00	PASS

The Total Power for the straddle channel:

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
144	5720	29.581	14.71

802.11a

26dB OCCUPIED BANDWIDTH

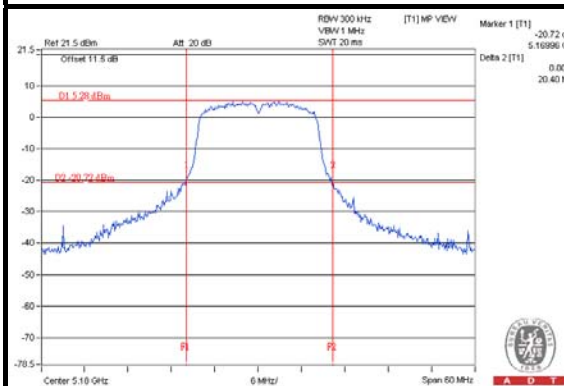
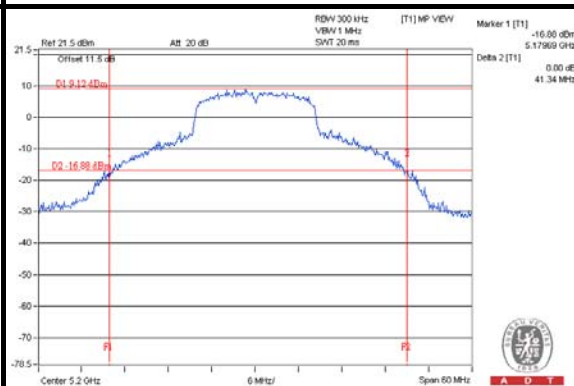
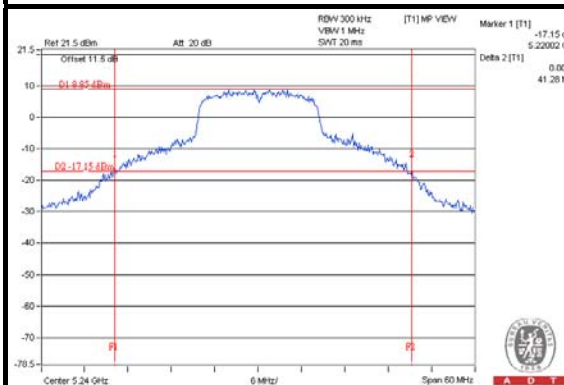
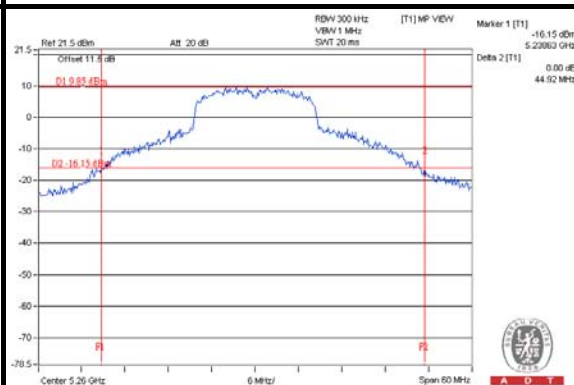
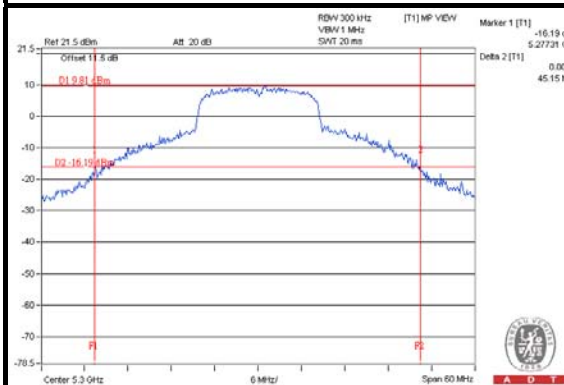
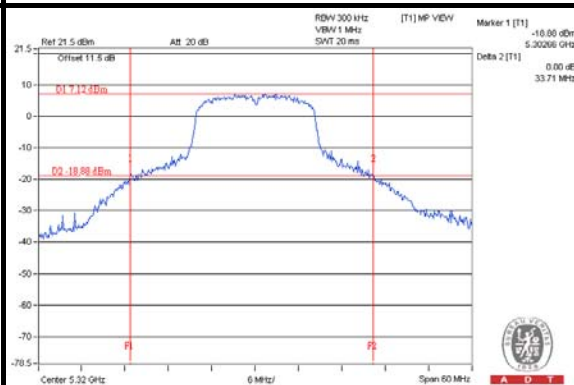
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	20.40
40	5200	41.34
48	5240	41.28
52	5260	44.92
60	5300	45.15
64	5320	33.71
100	5500	19.94
120	5600	41.26
140	5700	19.62
144 (UNII-2c Band)	5720	26.49

Note: For U-NII-2A, U-NII-2C, U-NII-3 Band output power limitation is determined based on 26dBc bandwidth.

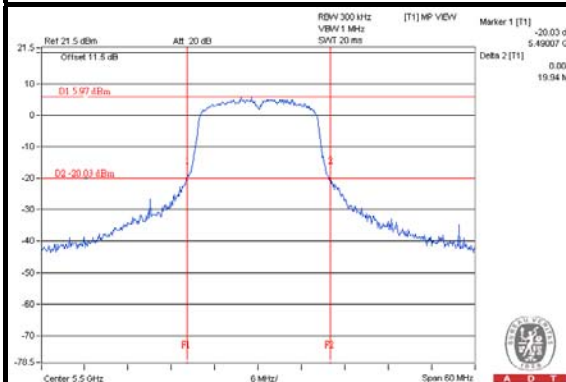
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	44.92	27.52 > 24
60	5300	45.15	27.54 > 24
64	5320	33.71	26.27 > 24
100	5500	19.94	23.99 < 24
120	5600	41.26	27.15 > 24
140	5700	19.62	23.92 < 24
144 (UNII-2c Band)	5720	26.49	25.23 > 24



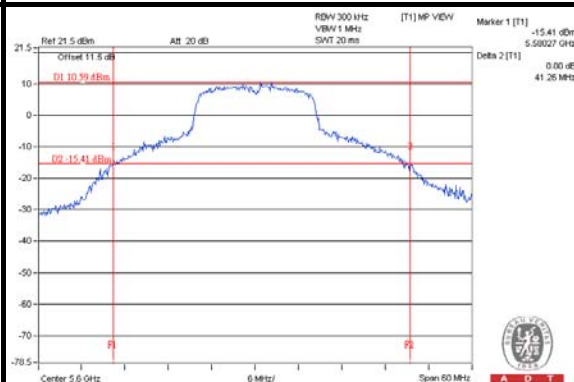
A D T

CH36**CH40****CH48****CH52****CH60****CH64**

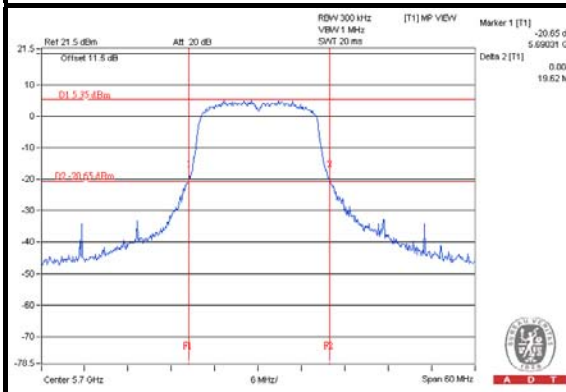
CH100



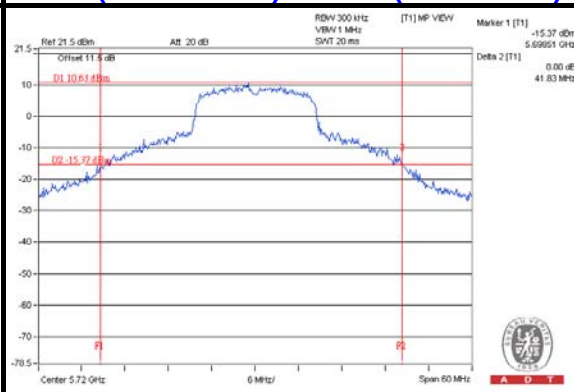
CH120



CH140



CH144 (UNII-2c Band) / CH144 (UNII-3 Band)



NOTE:

For CH144 (UNII-2c Band) = 5725 - Marker 1

802.11ac (VHT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	23.659	13.74	24.00	PASS
40	5200	54.075	17.33	24.00	PASS
48	5240	51.404	17.11	24.00	PASS
52	5260	53.088	17.25	24.00	PASS
60	5300	51.168	17.09	24.00	PASS
64	5320	21.577	13.34	24.00	PASS
100	5500	19.543	12.91	24.00	PASS
120	5600	50.582	17.04	24.00	PASS
140	5700	19.815	12.97	24.00	PASS
144 (UNII-2c Band)	5720	23.55	13.72	24.00	PASS
144 (UNII-3 Band)	5720	4.955	6.95	30.00	PASS

The Total Power for the straddle channel:

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
144	5720	28.505	14.55

802.11ac (VHT20)

26dB OCCUPIED BANDWIDTH

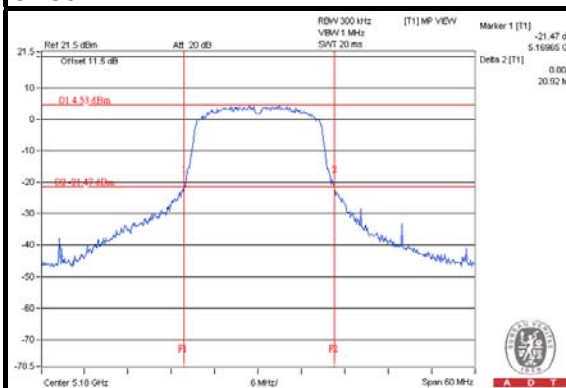
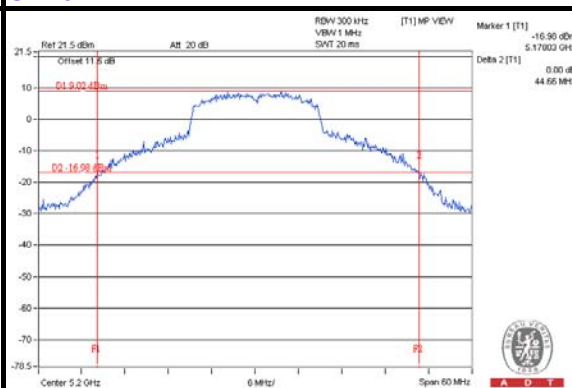
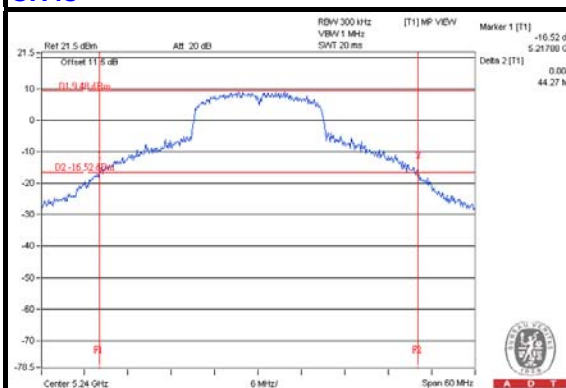
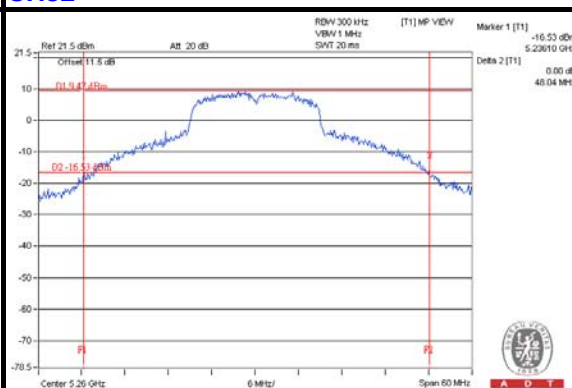
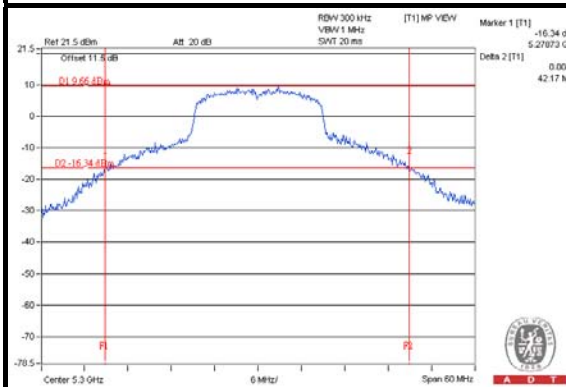
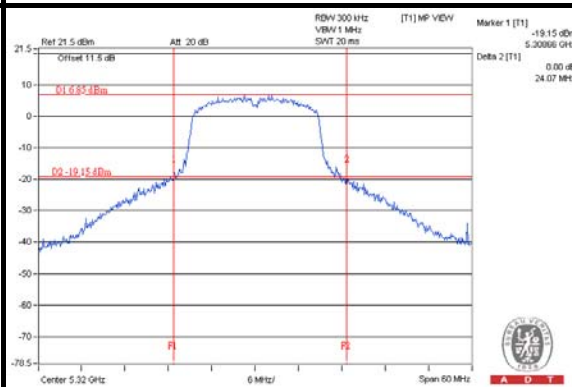
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	20.92
40	5200	44.66
48	5240	44.27
52	5260	48.04
60	5300	42.17
64	5320	24.07
100	5500	21.03
120	5600	45.72
140	5700	20.50
144 (UNII-2c Band)	5720	25.32

Note: For U-NII-2A, U-NII-2C, U-NII-3 Band output power limitation is determined based on 26dBc bandwidth.

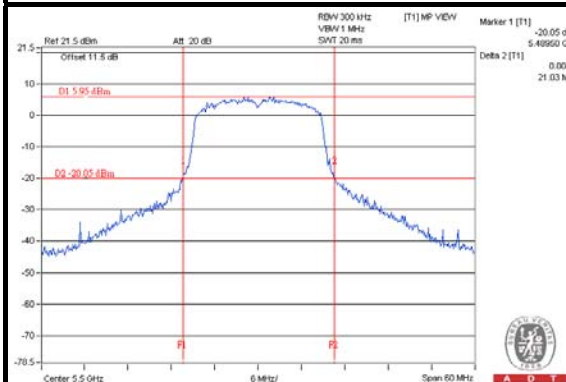
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	48.04	27.81 > 24
60	5300	42.17	27.25 > 24
64	5320	24.07	24.81 > 24
100	5500	21.03	24.22 > 24
120	5600	45.72	27.6 > 24
140	5700	20.50	24.11 > 24
144 (UNII-2c Band)	5720	25.32	25.03 > 24



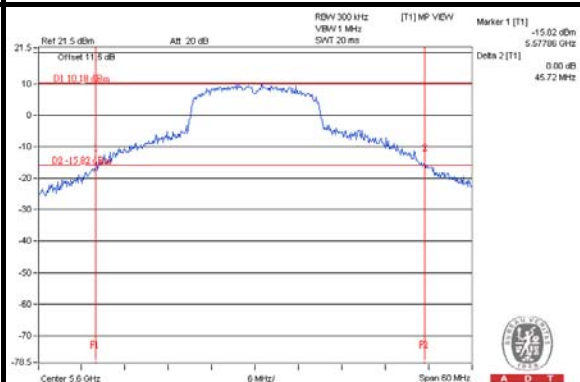
A D T

CH36**CH40****CH48****CH52****CH60****CH64**

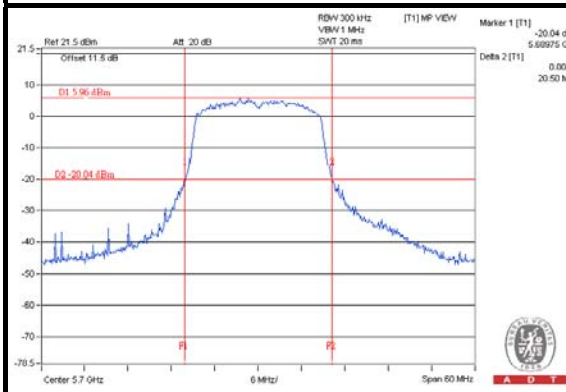
CH100



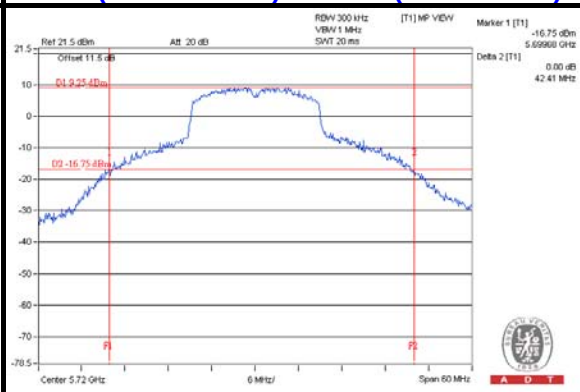
CH120



CH140



CH144 (UNII-2c Band) / CH144 (UNII-3 Band)



NOTE:

For CH144 (UNII-2c Band) = 5725 - Marker 1



A D T

802.11ac (VHT40)

POWER OUTPUT

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	10.023	10.01	24.00	PASS
46	5230	36.644	15.64	24.00	PASS
54	5270	29.376	14.68	24.00	PASS
62	5310	10.046	10.02	24.00	PASS
102	5510	11.967	10.78	24.00	PASS
118	5590	45.186	16.55	24.00	PASS
134	5670	22.803	13.58	24.00	PASS
142 (UNII-2c Band)	5710	22.751	13.57	24.00	PASS
142 (UNII-3 Band)	5710	1.409	1.49	30.00	PASS

The Total Power for the straddle channel:

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
142	5710	24.16	13.83

802.11ac (VHT40)

26dB OCCUPIED BANDWIDTH

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
38	5190	41.99
46	5230	81.48
54	5270	74.17
62	5310	42.39
102	5510	42.01
118	5590	83.97
134	5670	43.85
142 (UNII-2c Band)	5710	56.92

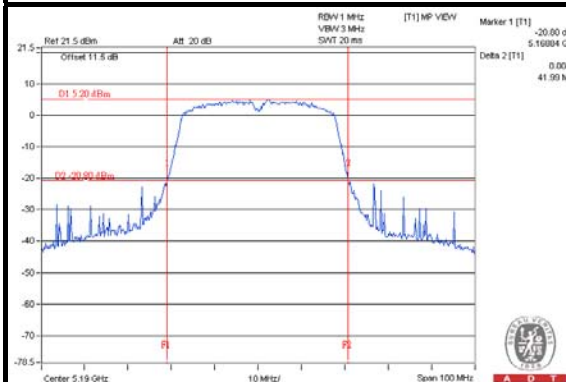
Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	74.17	29.7 > 24
62	5310	42.39	27.27 > 24
102	5510	42.01	27.23 > 24
110	5550	83.97	30.24 > 24
134	5670	43.85	27.41 > 24
142 (UNII-2c Band)	5710	56.92	28.55 > 24

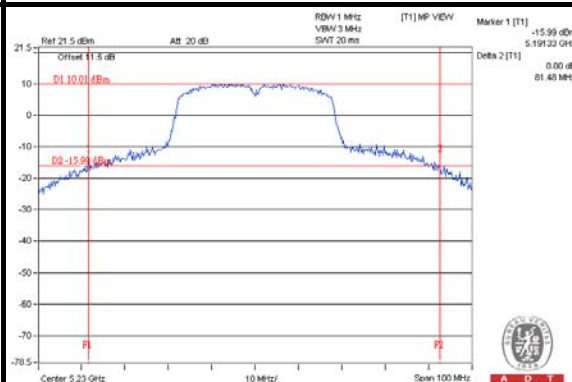


A D T

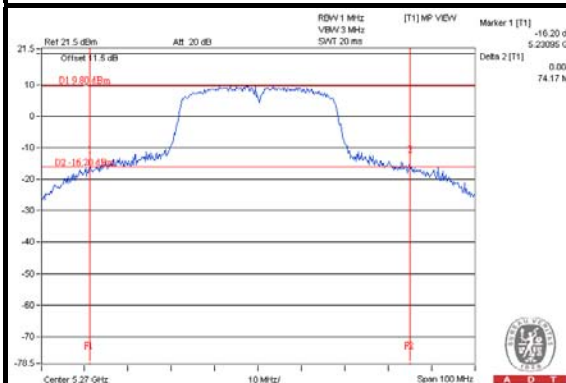
CH38



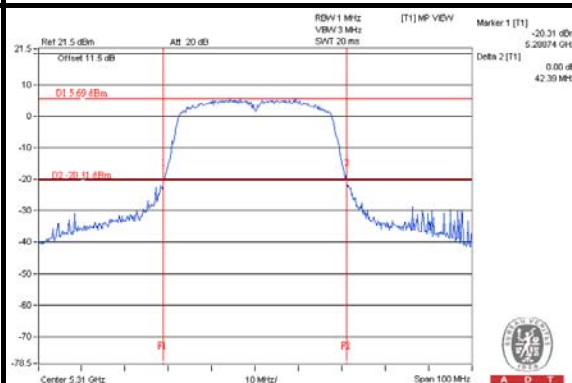
CH46



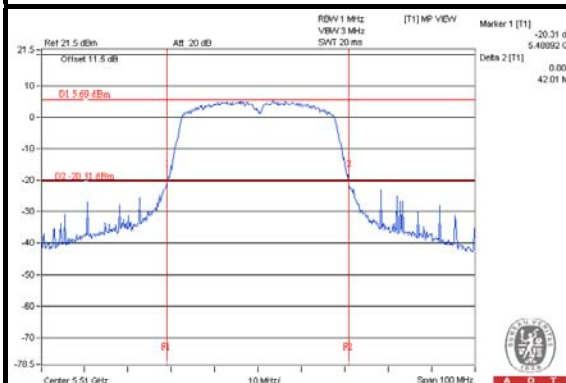
CH54



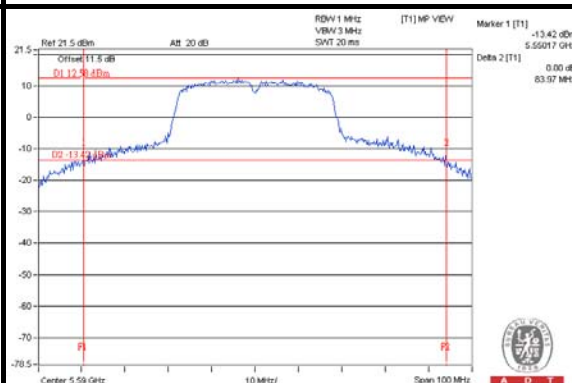
CH62



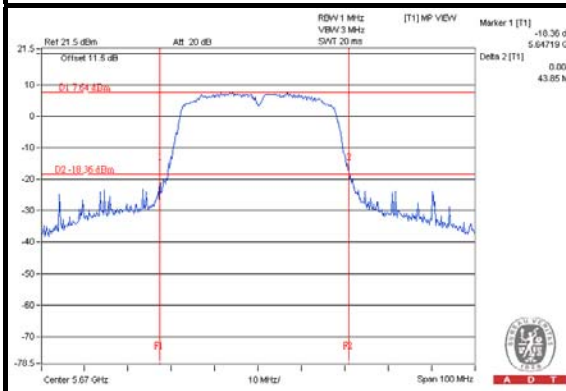
CH102



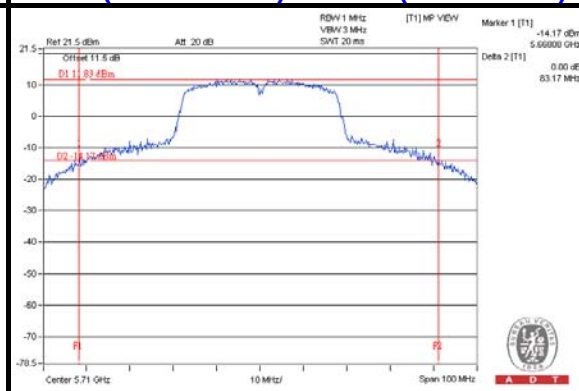
CH118



CH134



CH142 (UNII-2c Band) / CH142 (UNII-3 Band)



NOTE:

For CH142 (UNII-2c Band) = 5725 - Marker 1



A D T

802.11ac (VHT80)

POWER OUTPUT

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	15.631	11.94	24.00	PASS
58	5290	10.069	10.03	24.00	PASS
106	5530	10.52	10.22	24.00	PASS
122	5610	25.351	14.04	24.00	PASS
138 (UNII-2c Band)	5690	14.859	11.72	24.00	PASS
138 (UNII-3 Band)	5690	0.3281	-4.84	30.00	PASS

The Total Power for the straddle channel:

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)
138	5690	15.1871	11.81

802.11ac (VHT80)

26dB OCCUPIED BANDWIDTH

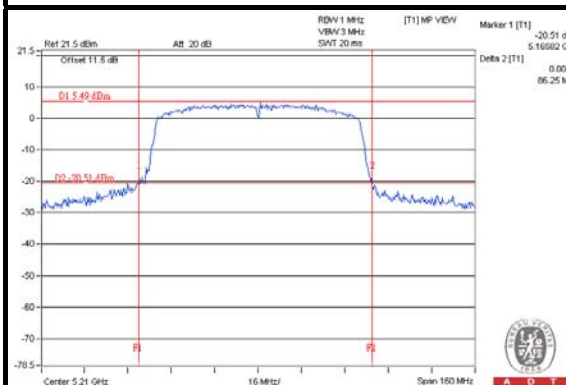
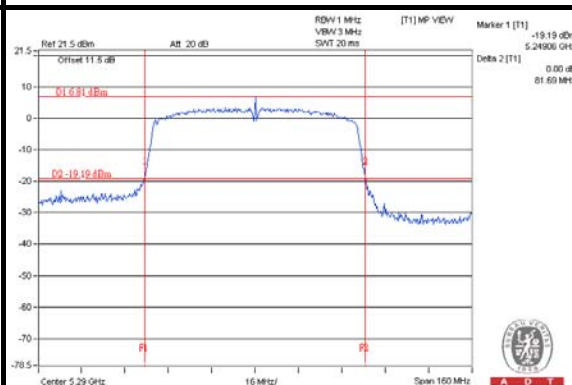
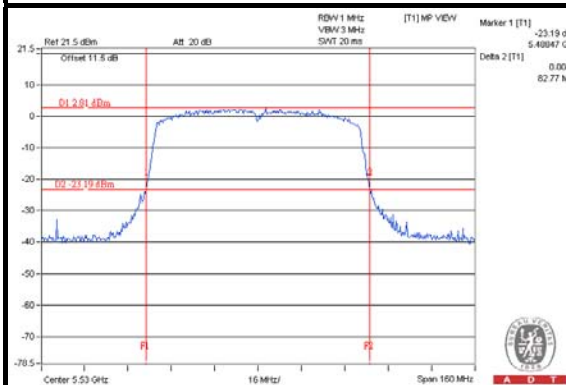
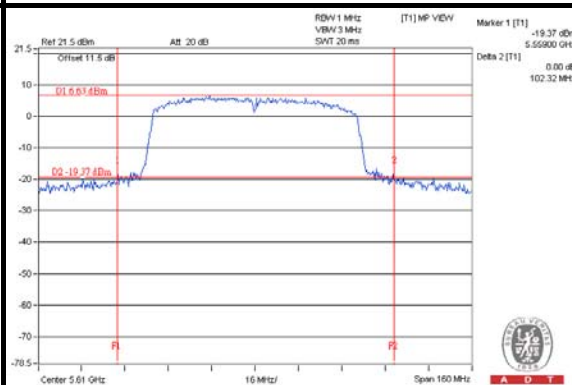
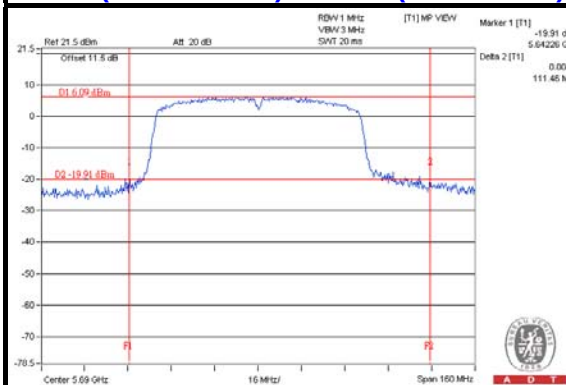
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
42	5210	86.25
58	5290	81.69
106	5530	82.77
122	5610	102.32
138 (UNII-2c Band)	5690	82.74

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	81.69	30.12 > 24
106	5530	82.77	30.17 > 24
122	5610	102.32	31.09 > 24
138 (UNII-2c Band)	5690	82.74	30.17 > 24



A D T

CH42**CH58****CH106****CH122****CH138 (UNII-2c Band) / CH138 (UNII-3 Band)****NOTE:**

For CH138 (UNII-2c Band) = 5725 - Marker 1



A D T

4.2 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.2.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	---		11dBm/ MHz
U-NII-2C	---		11dBm/ MHz
U-NII-3	---		30dBm/ 500kHz

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015

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 : Dec. 09, 2014

4.2.3 TEST PROCEDURES

For U-NII-1, U-NII-2A & U-NII-2C:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW $\geq$ 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 for duty cycle of test signal is $< 98\%$ add $10 \log (1/\text{duty cycle})$

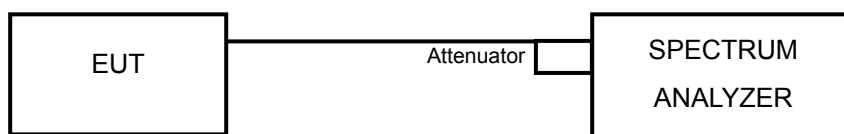
For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10 \log(500 \text{ kHz}/300 \text{ kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and for duty cycle of test signal is $< 98\%$ add $10 \log (1/\text{duty cycle})$

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



A D T

4.2.7 TEST RESULTS

For U-NII-1, U-NII-2A & U-NII-2C:

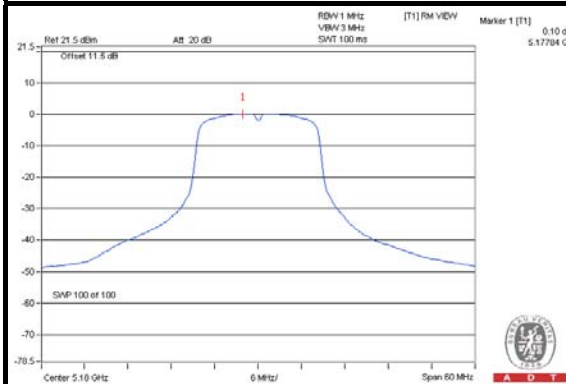
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.10	11.00	PASS
40	5200	3.02	11.00	PASS
48	5240	3.25	11.00	PASS
52	5260	3.81	11.00	PASS
60	5300	4.01	11.00	PASS
64	5320	1.91	11.00	PASS
100	5500	-0.49	11.00	PASS
120	5600	4.51	11.00	PASS
140	5700	-0.24	11.00	PASS
144 (UNII-2c Band)	5720	4.11	11.00	PASS

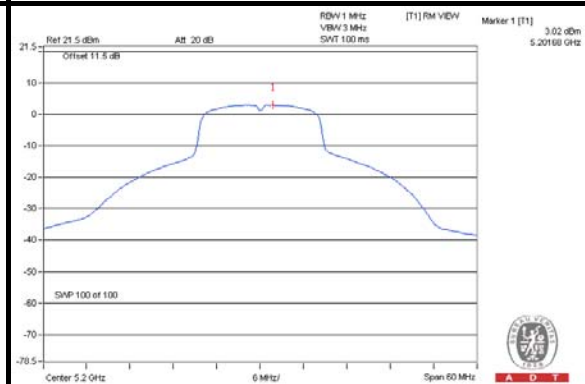


A D T

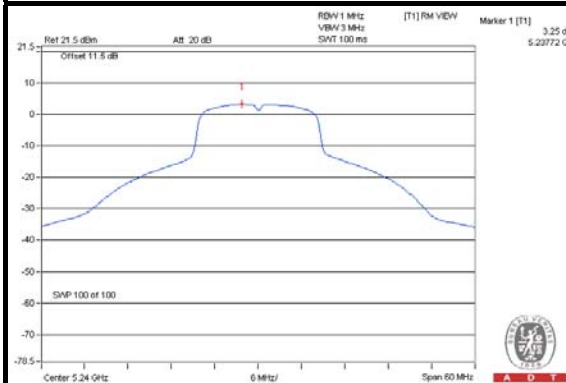
CH36



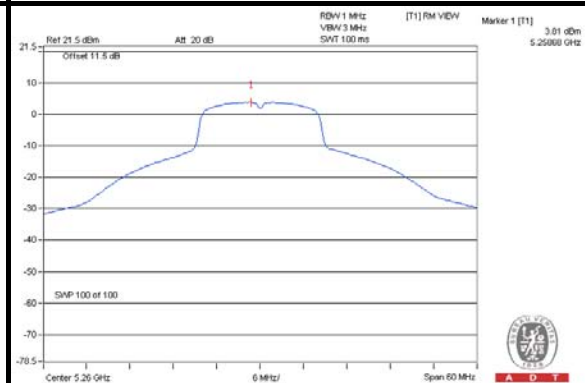
CH40



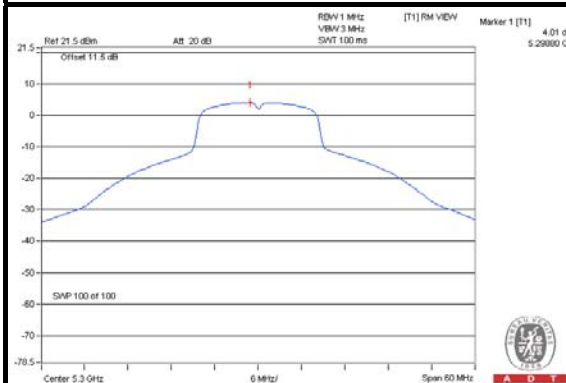
CH48



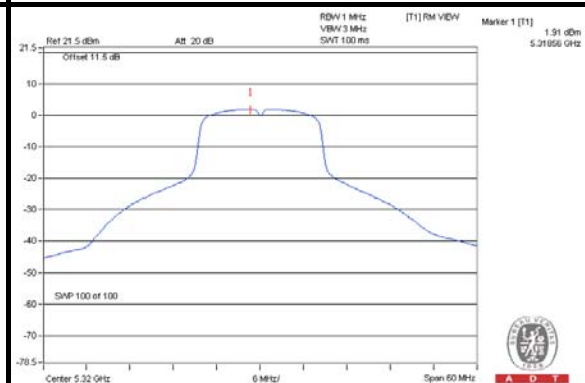
CH52



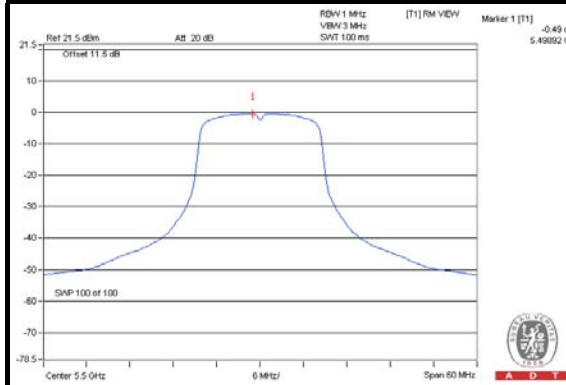
CH60



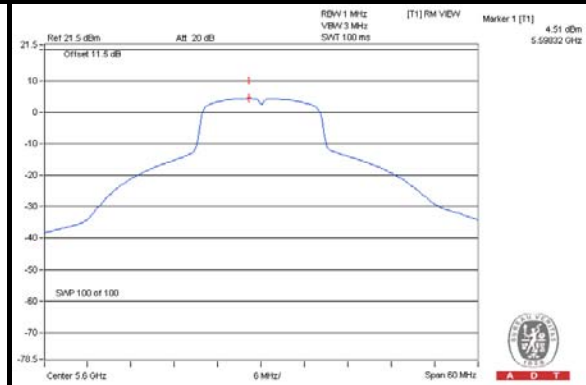
CH64



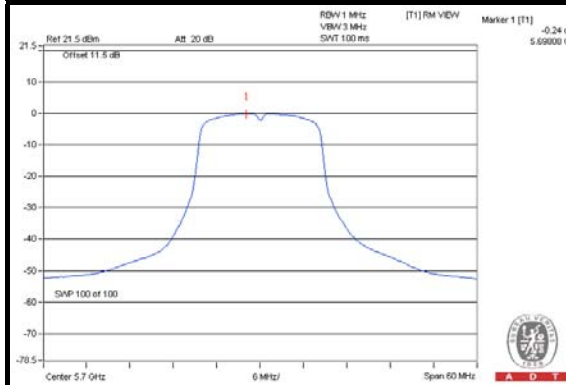
CH100



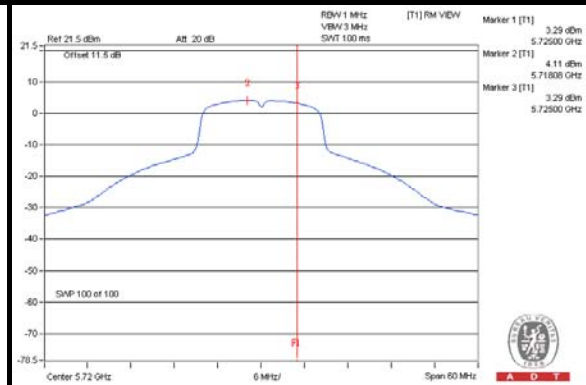
CH120



CH140



CH144 (UNII-2c Band)





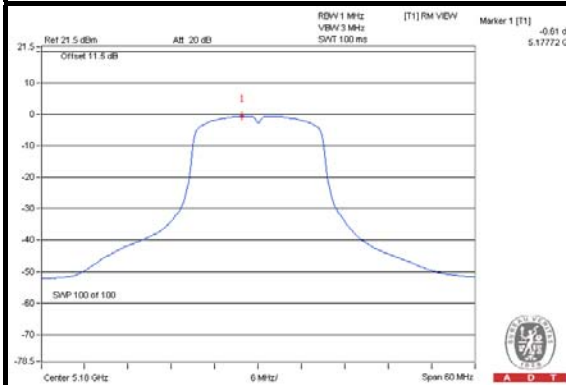
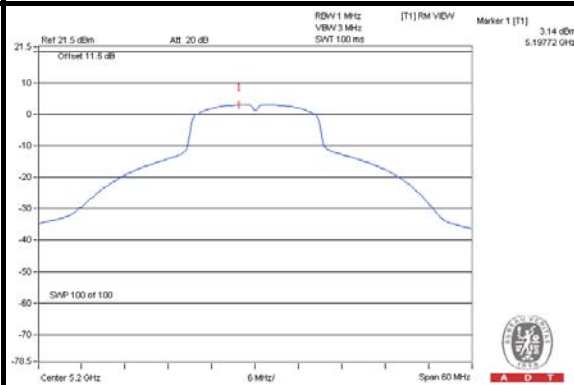
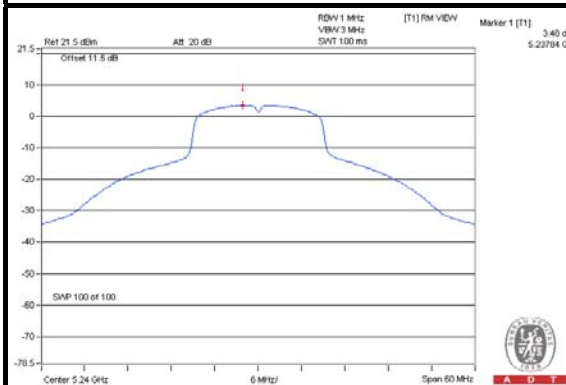
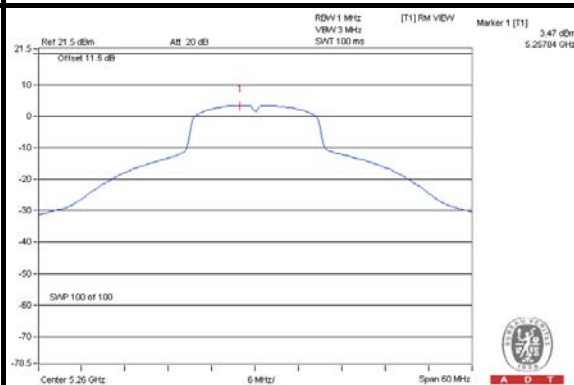
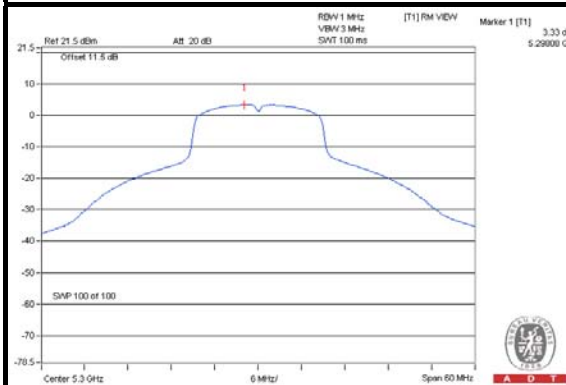
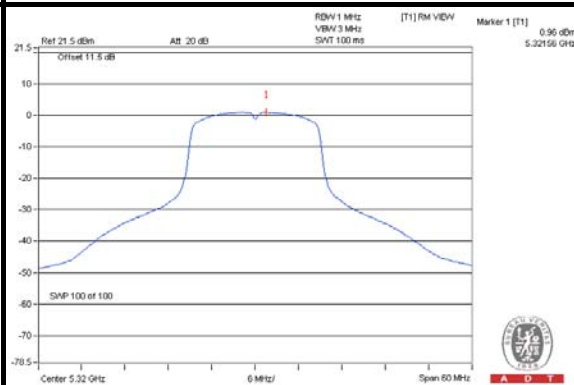
A D T

802.11ac (VHT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-0.61	11.00	PASS
40	5200	3.14	11.00	PASS
48	5240	3.48	11.00	PASS
52	5260	3.47	11.00	PASS
60	5300	3.33	11.00	PASS
64	5320	0.96	11.00	PASS
100	5500	0.37	11.00	PASS
120	5600	4.26	11.00	PASS
140	5700	0.15	11.00	PASS
144 (UNII-2c Band)	5720	3.93	11.00	PASS



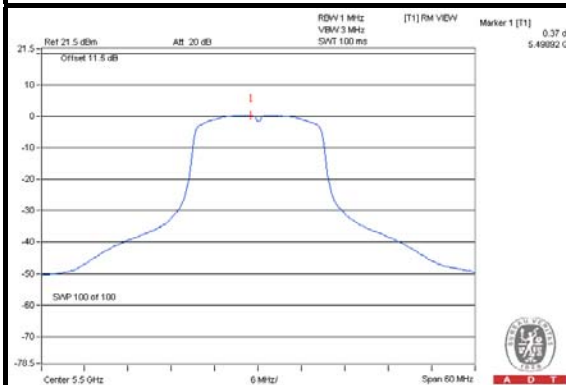
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CH36**CH40****CH48****CH52****CH60****CH64**

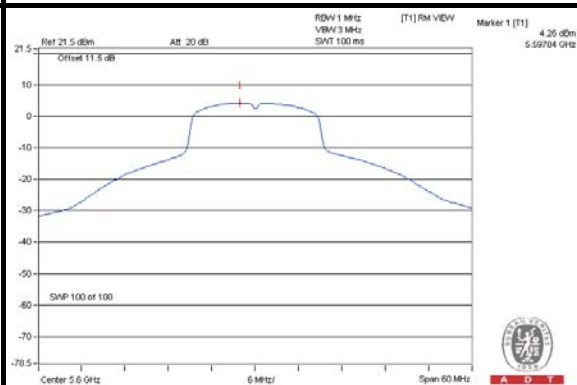


A D T

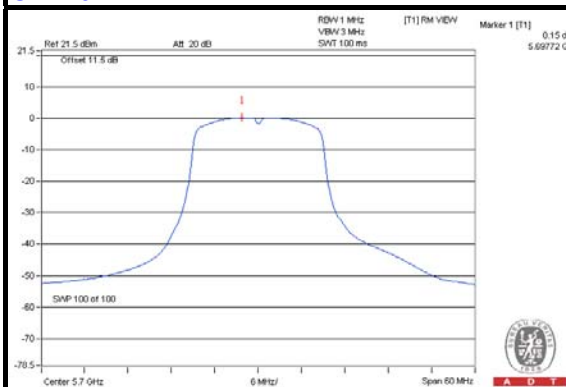
CH100



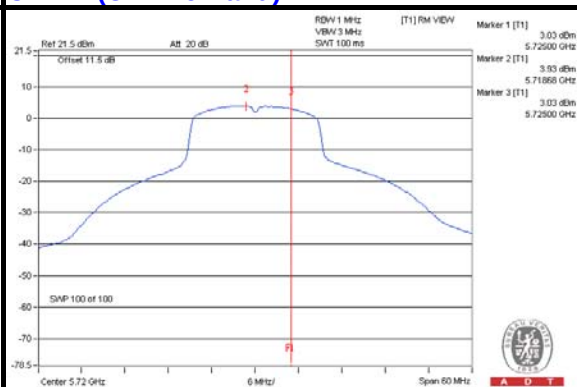
CH120



CH140



CH144 (UNII-2c Band)



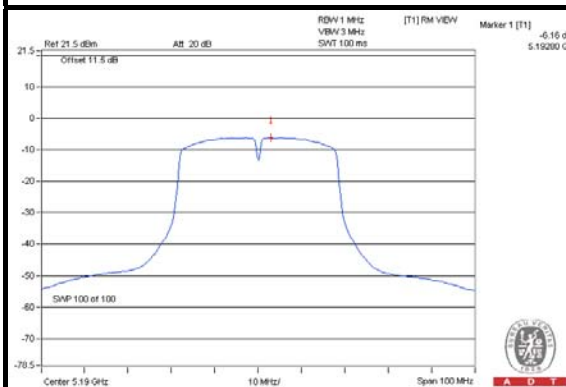


A D T

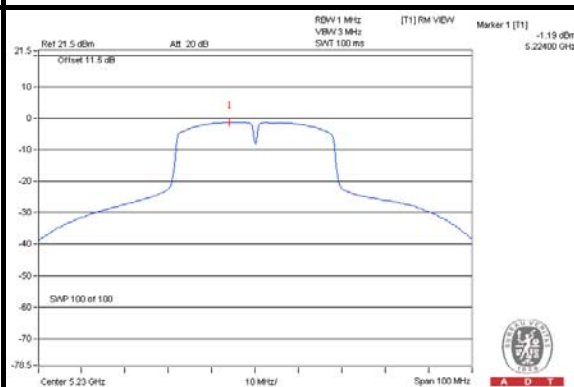
802.11ac (VHT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-6.16	11.00	PASS
46	5230	-1.19	11.00	PASS
54	5270	-1.76	11.00	PASS
62	5310	-6.94	11.00	PASS
102	5510	-6.08	11.00	PASS
118	5590	0.61	11.00	PASS
134	5670	-3.87	11.00	PASS
142 (UNII-2c Band)	5710	0.17	11.00	PASS

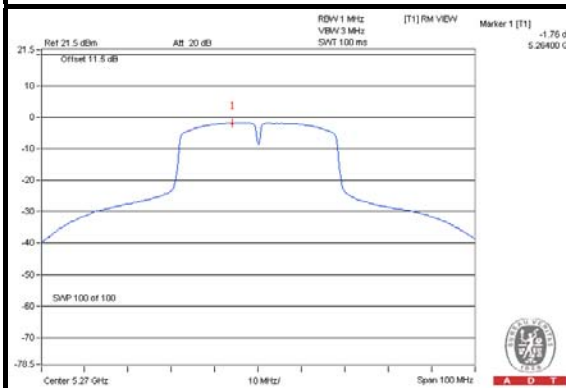
CH38



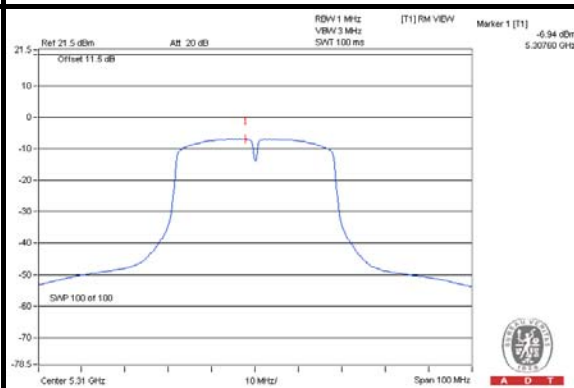
CH46



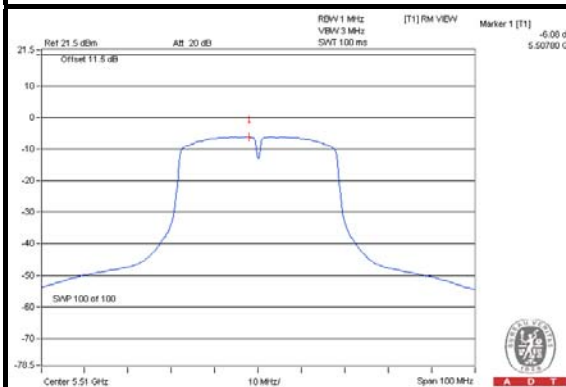
CH54



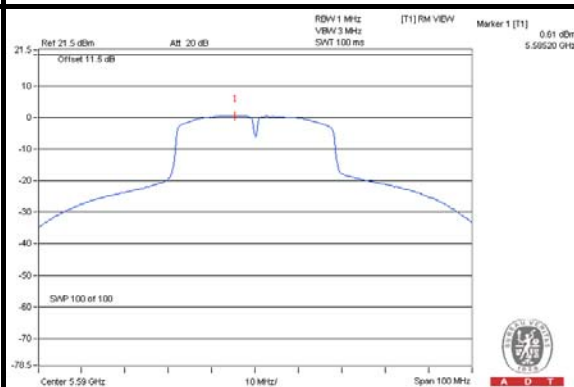
CH62



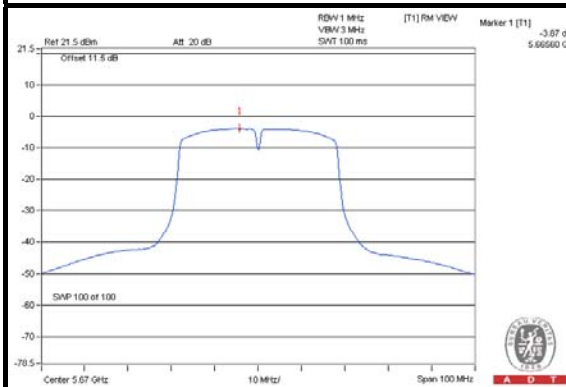
CH102



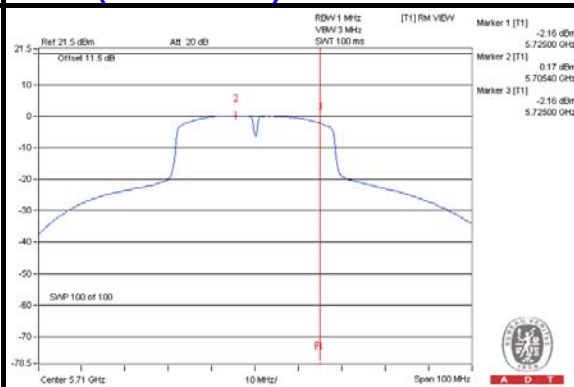
CH118



CH134



CH142 (UNII-2c Band)





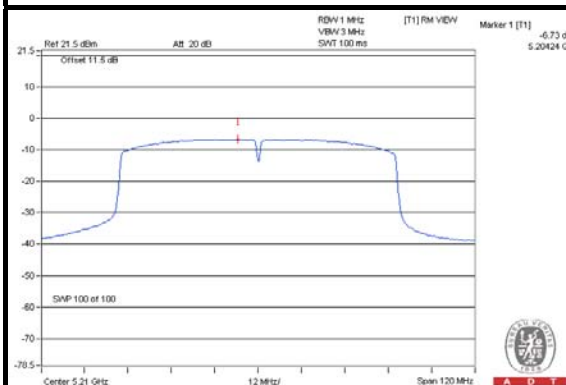
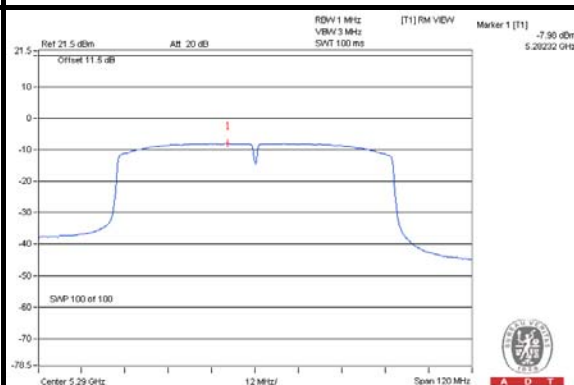
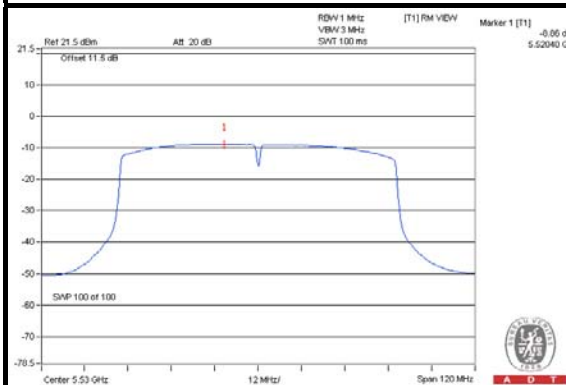
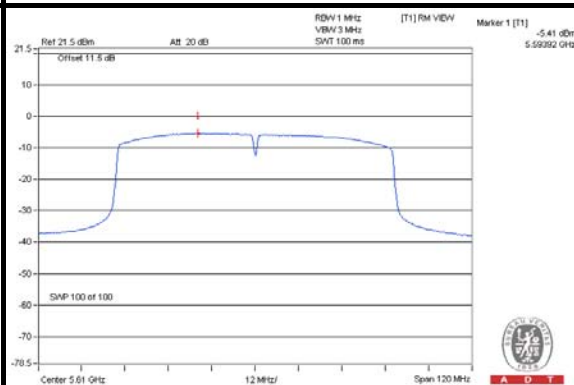
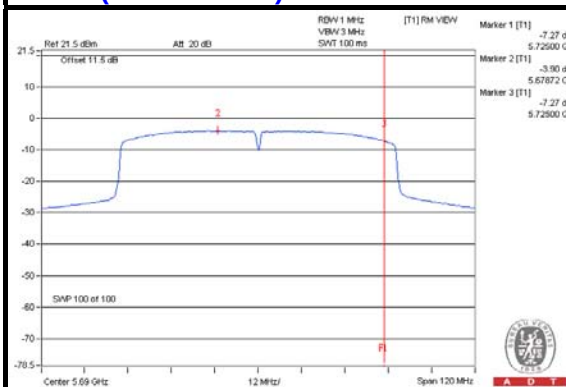
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802.11ac (VHT80)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-6.73	11.00	PASS
58	5290	-7.98	11.00	PASS
106	5530	-8.86	11.00	PASS
122	5610	-5.41	11.00	PASS
138 (UNII-2c Band)	5690	-3.90	11.00	PASS



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CH42**CH58****CH106****CH122****CH138 (UNII-2c Band)**



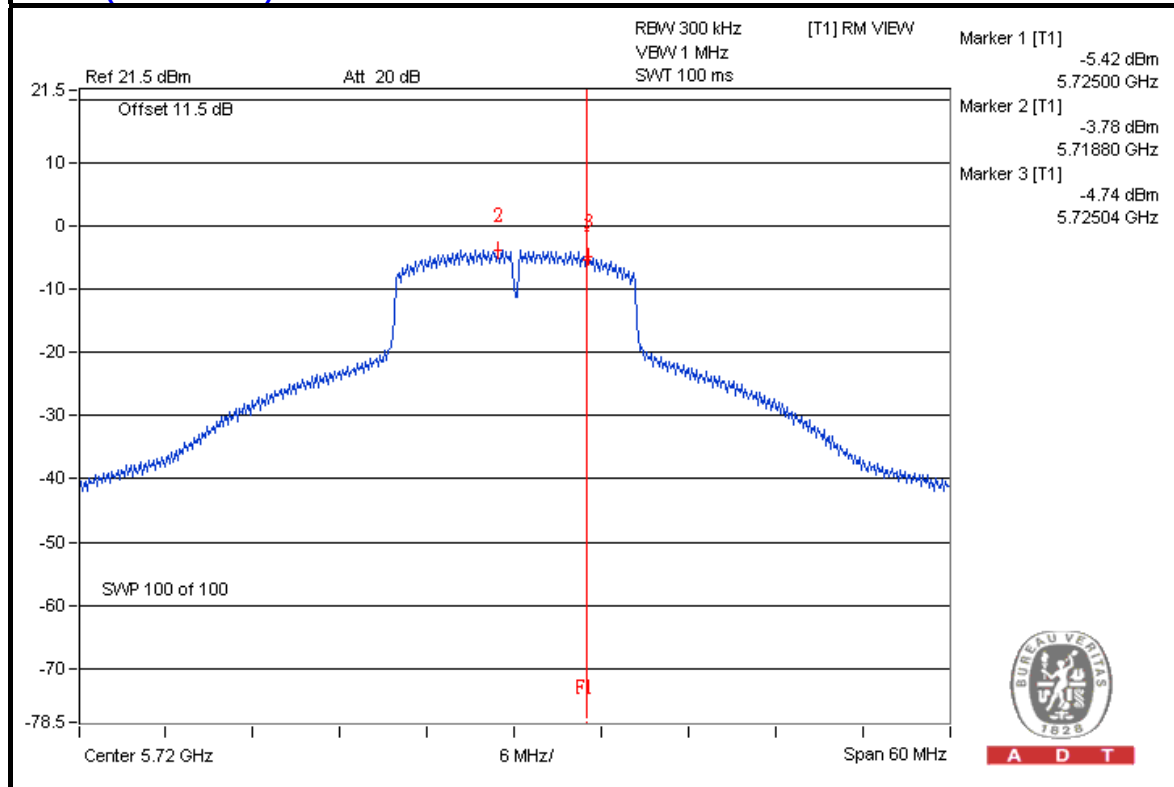
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For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS/FAIL
144 (UNII-3 Band)	5720	-5.42	-3.20	30	PASS

CH144 (UNII-3 Band)



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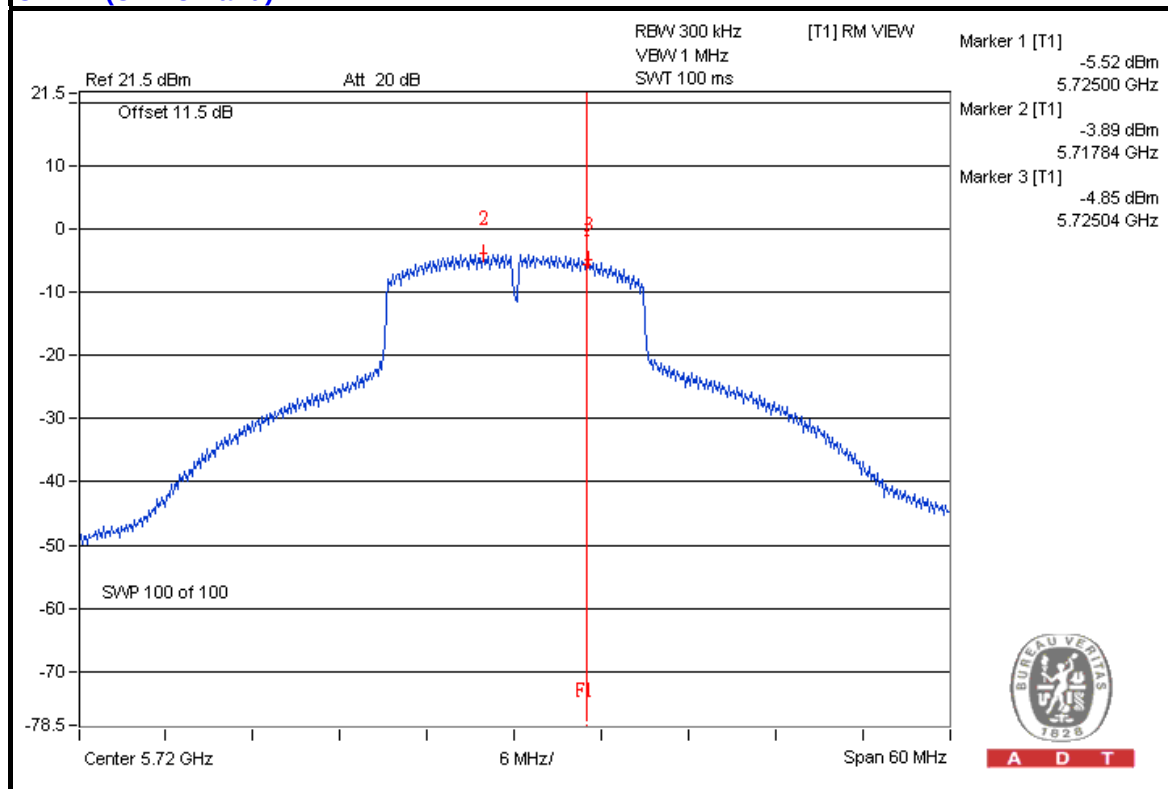


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802.11ac (VHT20)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS/FAIL
144 (UNII-3 Band)	5720	-5.52	-3.30	30	PASS

CH144 (UNII-3 Band)



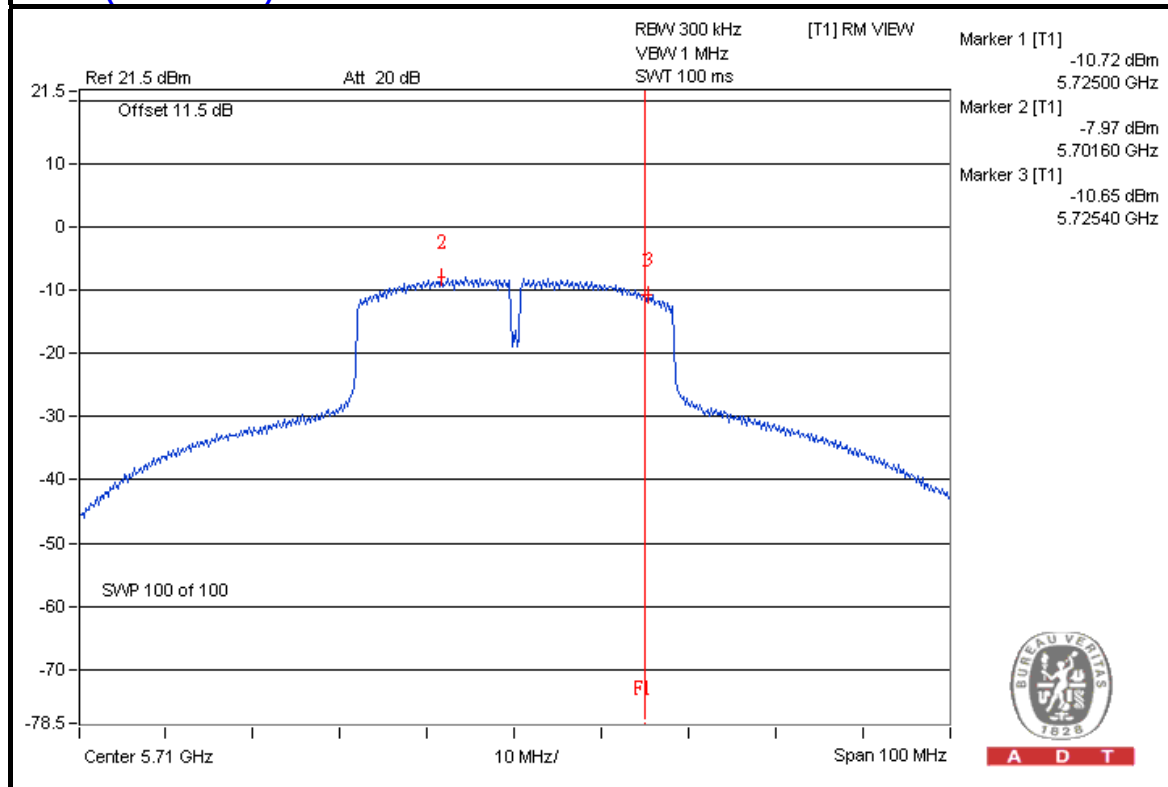


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802.11ac (VHT40)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS/FAIL
142 (UNII-3 Band)	5710	-10.72	-8.50	30	PASS

CH142 (UNII-3 Band)



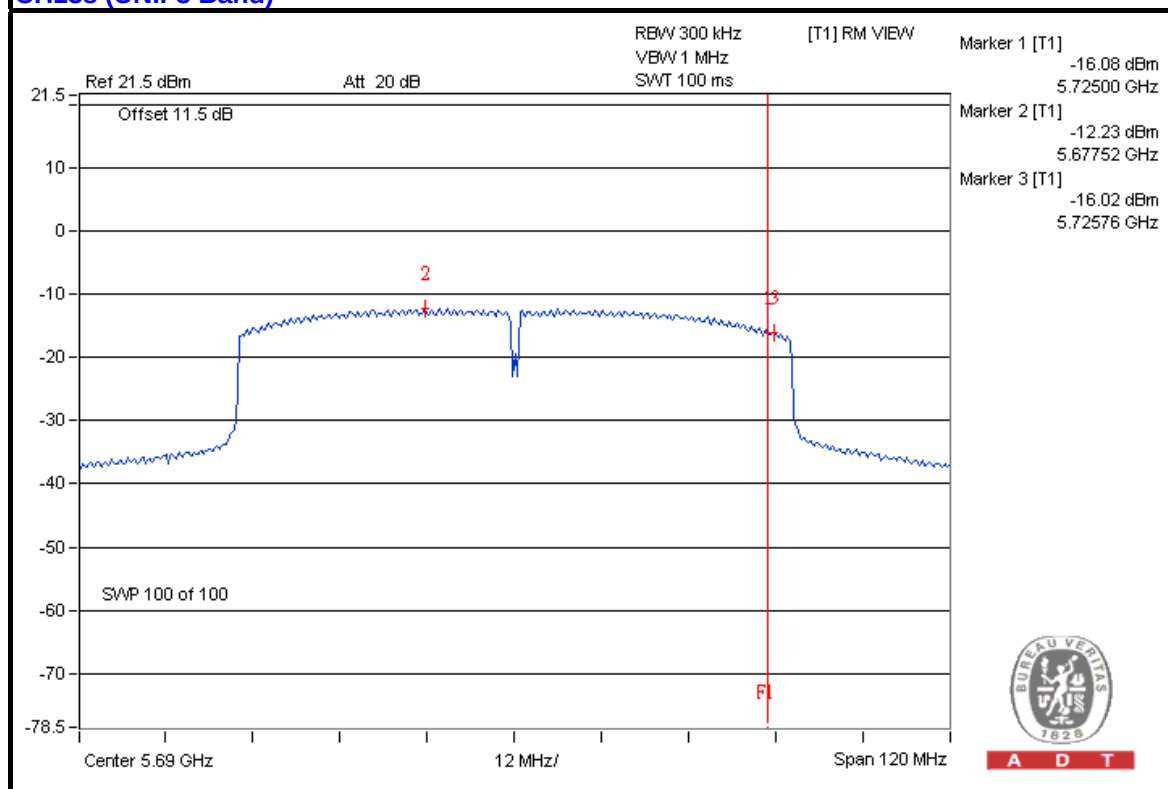


A D T

802.11ac (VHT80)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS/FAIL
138 (UNII-3 Band)	5690	-16.08	-13.86	30	PASS

CH138 (UNII-3 Band)



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015

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 : Dec. 09, 2014

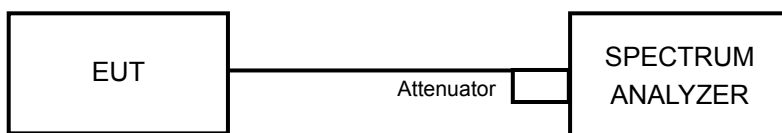
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

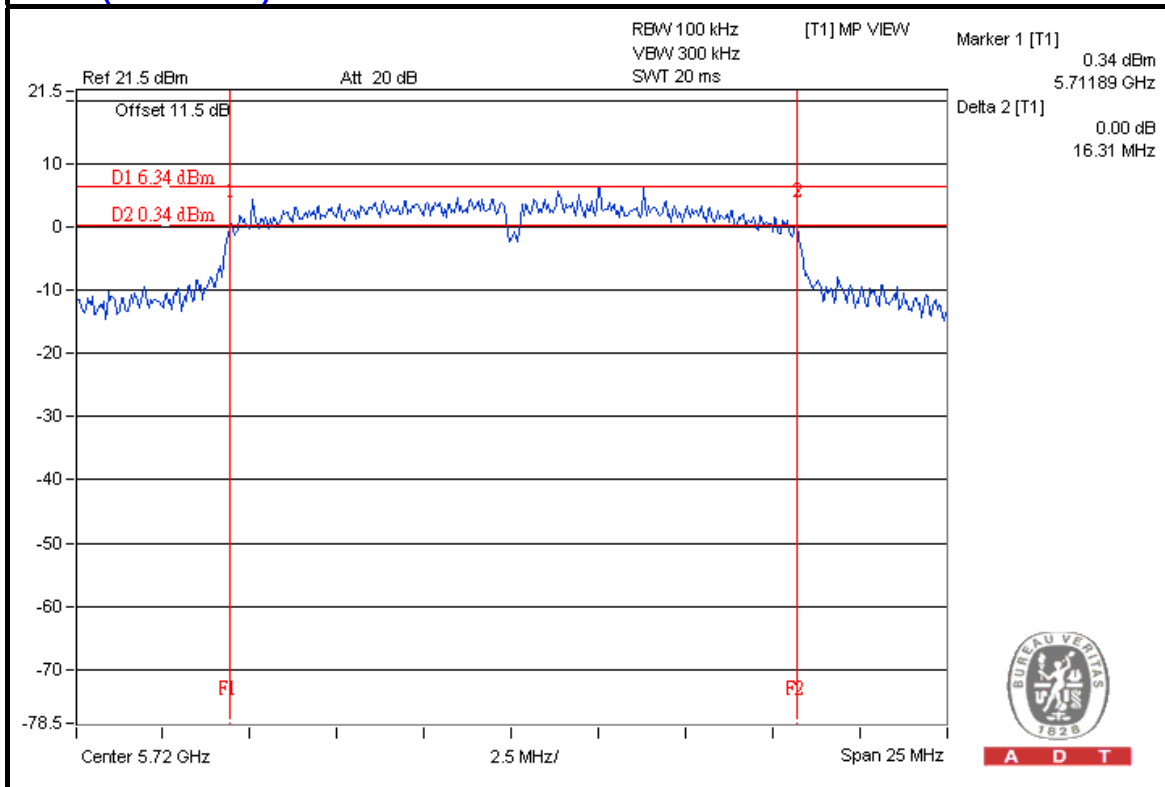
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	6dB BANDWIDTH ABOVE 5725MHz (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
144 (UNII-3 Band)	5720	16.31	3.2	0.5	PASS

NOTE:

The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

CH144 (UNII-3 Band)





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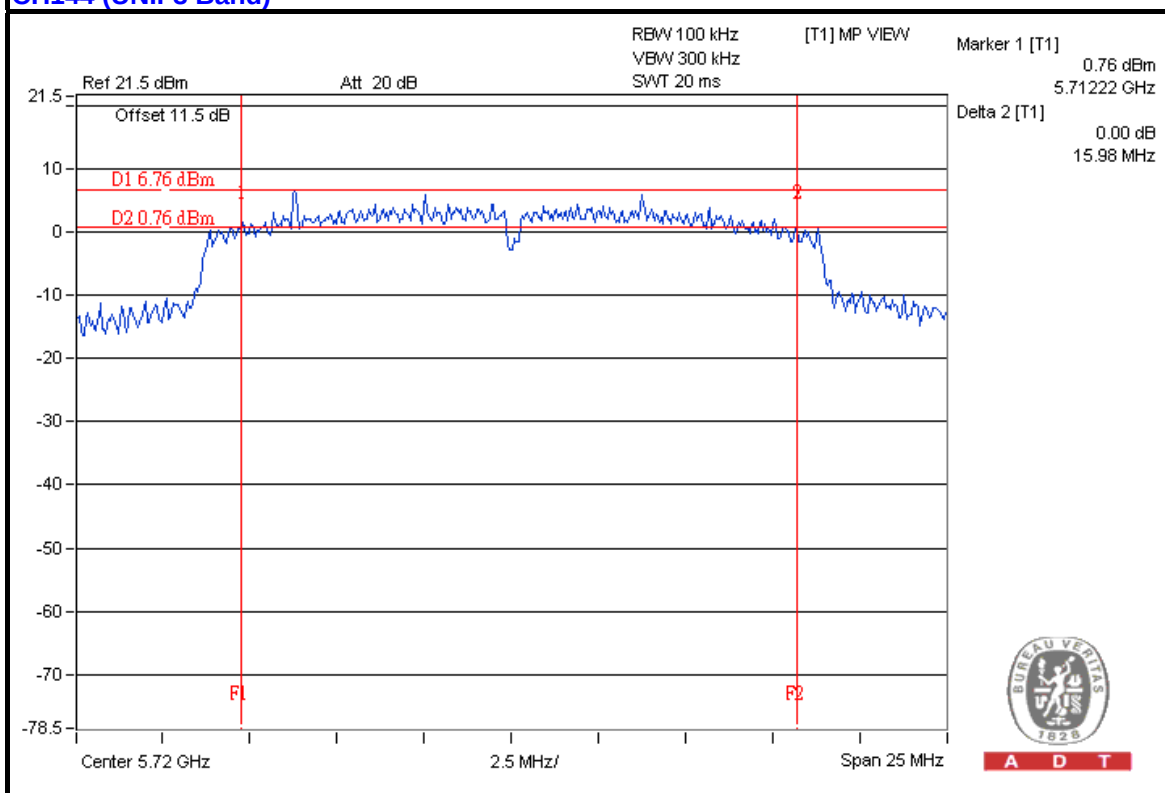
802.11ac (VHT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	6dB BANDWIDTH ABOVE 5725MHz (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
144 (UNII-3 Band)	5720	15.98	3.2	0.5	PASS

NOTE:

The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

CH144 (UNII-3 Band)



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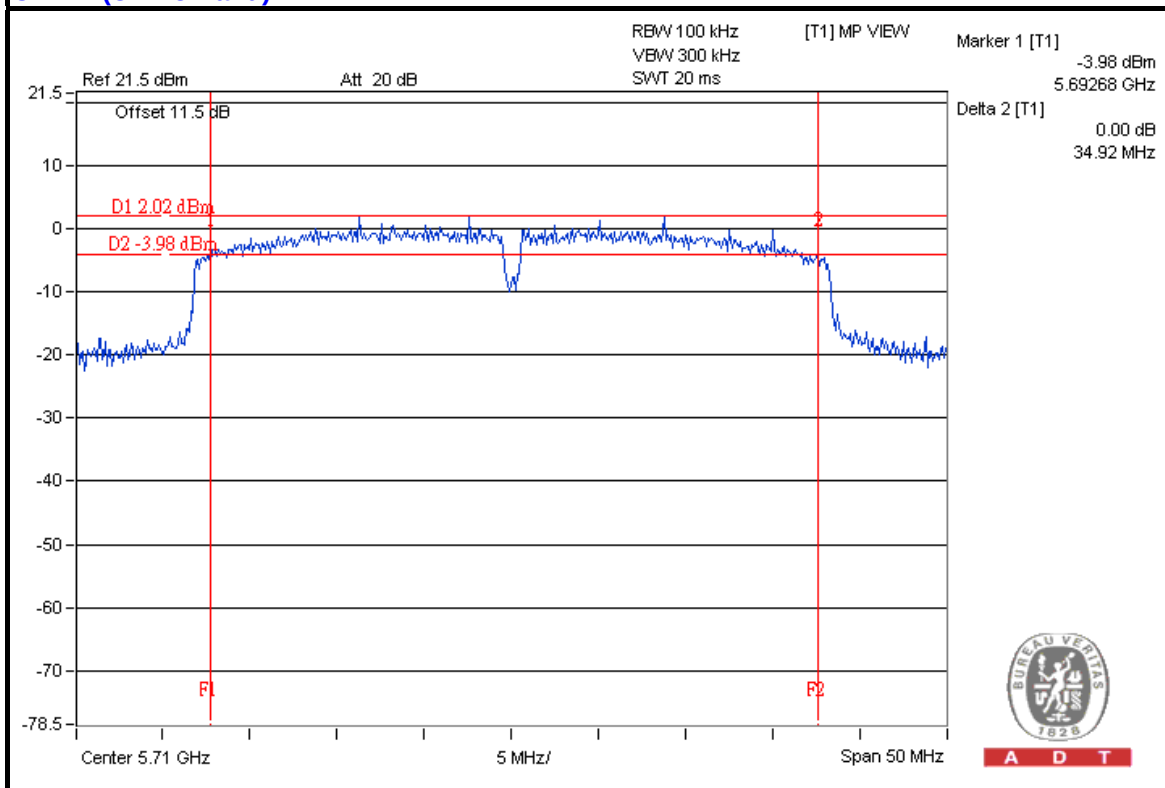
802.11ac (VHT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	6dB BANDWIDTH ABOVE 5725MHz (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
142 (UNII-3 Band)	5710	34.92	2.6	0.5	PASS

NOTE:

The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

CH142 (UNII-3 Band)



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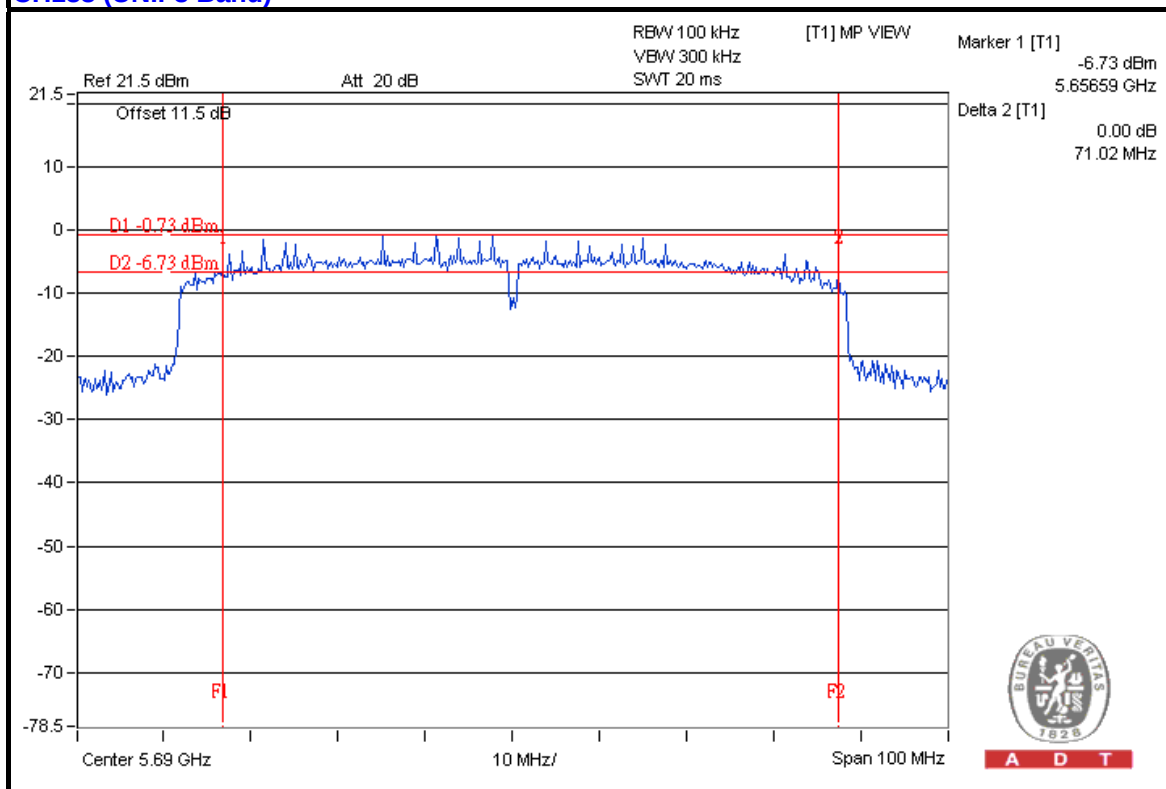
802.11ac (VHT80)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	6dB BANDWIDTH ABOVE 5725MHz (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
138 (UNII-3 Band)	5690	71.02	2.61	0.5	PASS

NOTE:

The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

CH138 (UNII-3 Band)



4.4 UNWANTED EMISSION MEASUREMENT (RADIATED)

4.4.1 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.

4.4.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) ^{*1} PK:-17 (dBm/MHz) ^{*2}	PK: 68.2(dBμV/m) ^{*1} PK:78.2 (dBμV/m) ^{*2}

NOTE: ^{*1} beyond 10MHz of the band edge ^{*2} within 10 MHz of band edge

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

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



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4.4.3 TEST INSTRUMENTS

For below 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 04, 2014	Oct. 03, 2015
Horn_Antenna AISI	AIH.8018	000032009111 0	Aug. 27, 2014	Aug. 26, 2015
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	131205 131214 SNMY23684/4	Jan. 17, 2014	Jan. 16, 2015
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier EMCI	EMC184045	980143	Jan. 17, 2014	Jan. 16, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	RF104-121 RF104-204	Dec. 12, 2013	Dec. 11, 2014
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: Nov. 18, 2014



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For above 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY50010156	Aug. 11, 2014	Aug. 10, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Feb. 27, 2014	Feb. 26, 2015
RF Cable	NA	CHHCAB_001	Oct. 05, 2014	Oct. 04, 2015
Horn_Antenna AISL	AIH.8018	000022009111 0	Aug. 26, 2014	Aug. 25, 2015
Pre-Amplifier Agilent	8449B	300801923	Oct. 28, 2014	Oct. 27, 2015
RF Cable	NA	131206 131215 SNMY23685/4	Jan. 17, 2014	Jan. 16, 2015
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier EMCI	EMC184045	980143	Jan. 17, 2014	Jan. 16, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	RF104-121 RF104-204	Dec. 12, 2013	Dec. 11, 2014
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. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: Dec. 09, 2014

4.4.4 TEST PROCEDURES

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

NOTE:

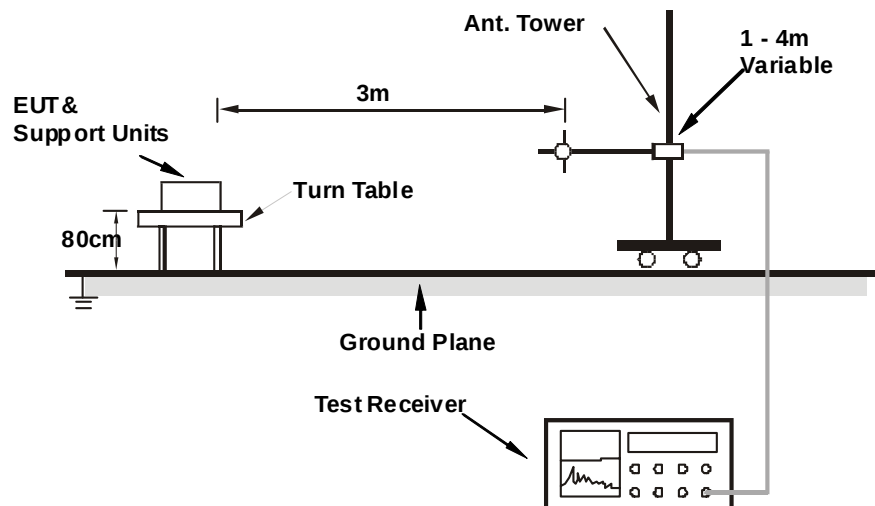
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.4.5 DEVIATION FROM TEST STANDARD

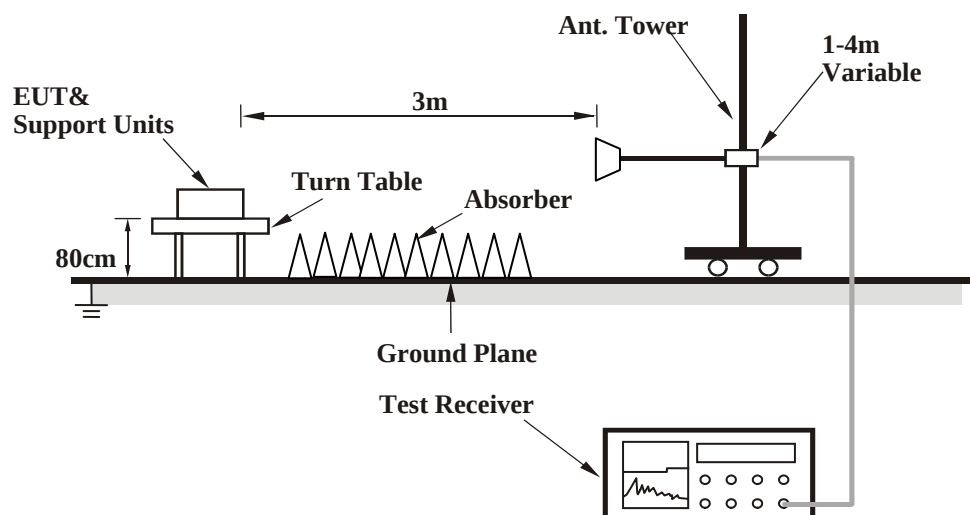
No deviation

4.4.6 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.4.7 EUT OPERATING CONDITION

1. Connect the EUT with the support unit A (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “QCRT Version3.0 33.0” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.4.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 60	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	113.87	36.7 QP	43.5	-6.8	1.49 H	324	52.37	-15.63
2	232.76	40.0 QP	46.0	-6.0	1.34 H	245	55.10	-15.13
3	299.31	39.2 QP	46.0	-6.8	1.24 H	45	51.16	-11.92
4	432.03	38.2 QP	46.0	-7.8	1.75 H	204	46.29	-8.08
5	528.02	40.5 QP	46.0	-5.6	1.45 H	245	46.60	-6.15
6	798.12	36.2 QP	46.0	-9.8	1.14 H	245	36.80	-0.59
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	38.21	33.7 QP	40.0	-6.3	1.24 V	34	47.38	-13.64
2	99.24	38.6 QP	43.5	-4.9	1.34 V	85	56.33	-17.72
3	118.55	33.2 QP	43.5	-10.3	1.85 V	245	48.23	-14.99
4	165.85	37.2 QP	43.5	-6.3	1.24 V	304	50.36	-13.12
5	432.12	36.6 QP	46.0	-9.4	1.24 V	264	44.72	-8.08
6	796.64	36.2 QP	46.0	-9.8	1.34 V	304	36.84	-0.60

REMARKS:

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



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ABOVE 1GHz DATA

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	68.3 PK	74.0	-5.7	1.24 H	41	64.02	4.28
2	5150.00	50.4 AV	54.0	-3.6	1.24 H	41	46.12	4.28
3	*5180.00	103.4 PK			1.23 H	57	99.01	4.39
4	*5180.00	92.6 AV			1.23 H	57	88.21	4.39
5	#10360.00	52.4 PK	74.0	-21.6	1.03 H	12	42.34	10.06
6	#10360.00	40.6 AV	54.0	-13.4	1.03 H	12	30.54	10.06
7	15540.00	59.4 PK	74.0	-14.6	1.06 H	14	44.56	14.84
8	15540.00	47.4 AV	54.0	-6.6	1.06 H	14	32.56	14.84
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	5150.00	58.0 PK	74.0	-16.0	1.02 V	149	53.72	4.28
2	5150.00	42.6 AV	54.0	-11.4	1.02 V	149	38.32	4.28
3	*5180.00	97.4 PK			1.02 V	149	93.01	4.39
4	*5180.00	87.6 AV			1.02 V	149	83.21	4.39
5	#10360.00	53.3 PK	74.0	-20.7	1.00 V	0	43.24	10.06
6	#10360.00	40.2 AV	54.0	-13.8	1.00 V	0	30.14	10.06
7	15540.00	58.3 PK	74.0	-15.7	1.02 V	0	43.46	14.84
8	15540.00	46.5 AV	54.0	-7.5	1.02 V	0	31.66	14.84

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



A D T

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	5150.00	63.5 PK	74.0	-10.5	1.20 H	64	59.22	4.28
2	5150.00	44.8 AV	54.0	-9.2	1.20 H	64	40.52	4.28
3	*5200.00	107.6 PK			1.22 H	61	103.16	4.44
4	*5200.00	97.2 AV			1.22 H	61	92.76	4.44
5	#10400.00	53.8 PK	74.0	-20.2	1.01 H	12	43.73	10.07
6	#10400.00	41.6 AV	54.0	-12.4	1.01 H	12	31.53	10.07
7	15600.00	59.9 PK	74.0	-14.1	1.03 H	16	44.84	15.06
8	15600.00	47.8 AV	54.0	-6.2	1.03 H	16	32.74	15.06

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	56.2 PK	74.0	-17.8	1.02 V	150	51.92	4.28
2	5150.00	37.5 AV	54.0	-16.5	1.02 V	150	33.22	4.28
3	*5200.00	102.4 PK			1.02 V	150	97.96	4.44
4	*5200.00	92.0 AV			1.02 V	150	87.56	4.44
5	#10400.00	54.2 PK	74.0	-19.8	1.02 V	0	44.13	10.07
6	#10400.00	41.7 AV	54.0	-12.3	1.02 V	0	31.63	10.07
7	15600.00	61.5 PK	74.0	-12.5	1.08 V	15	46.44	15.06
8	15600.00	48.4 AV	54.0	-5.6	1.08 V	15	33.34	15.06

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



A D T

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	5150.00	62.8 PK	74.0	-11.2	1.14 H	45	58.52	4.28
2	5150.00	40.2 AV	54.0	-13.8	1.14 H	45	35.92	4.28
3	*5240.00	106.8 PK			1.22 H	34	102.39	4.41
4	*5240.00	96.9 AV			1.22 H	34	92.49	4.41
5	#10480.00	53.8 PK	74.0	-20.2	1.04 H	0	43.54	10.26
6	#10480.00	41.6 AV	54.0	-12.4	1.04 H	0	31.34	10.26
7	15720.00	60.4 PK	74.0	-13.6	1.03 H	28	45.73	14.67
8	15720.00	48.2 AV	54.0	-5.8	1.03 H	28	33.53	14.67
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	5150.00	55.4 PK	74.0	-18.6	1.02 V	150	51.12	4.28
2	5150.00	37.2 AV	54.0	-16.8	1.02 V	150	32.92	4.28
3	*5240.00	101.6 PK			1.02 V	150	97.19	4.41
4	*5240.00	91.7 AV			1.02 V	150	87.29	4.41
5	#10480.00	54.1 PK	74.0	-19.9	1.00 V	8	43.84	10.26
6	#10480.00	41.8 AV	54.0	-12.2	1.00 V	8	31.54	10.26
7	15720.00	61.3 PK	74.0	-12.7	1.00 V	12	46.63	14.67
8	15720.00	48.5 AV	54.0	-5.5	1.00 V	12	33.83	14.67

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	106.3 PK			1.08 H	27	101.91	4.39
2	*5260.00	96.2 AV			1.08 H	27	91.81	4.39
3	#10520.00	53.6 PK	74.0	-20.4	1.00 H	10	43.23	10.37
4	#10520.00	41.2 AV	54.0	-12.8	1.00 H	10	30.83	10.37
5	15780.00	60.1 PK	74.0	-13.9	1.05 H	15	45.38	14.72
6	15780.00	47.7 AV	54.0	-6.3	1.05 H	15	32.98	14.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	101.8 PK			1.00 V	155	97.41	4.39
2	*5260.00	91.6 AV			1.00 V	155	87.21	4.39
3	#10520.00	54.0 PK	74.0	-20.0	1.00 V	10	43.63	10.37
4	#10520.00	42.0 AV	54.0	-12.0	1.00 V	10	31.63	10.37
5	15780.00	61.8 PK	74.0	-12.2	1.00 V	10	47.08	14.72
6	15780.00	49.0 AV	54.0	-5.0	1.00 V	10	34.28	14.72

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.0 PK			1.01 H	14	101.64	4.36
2	*5300.00	96.2 AV			1.01 H	14	91.84	4.36
3	5350.00	66.6 PK	74.0	-7.4	1.11 H	51	62.09	4.51
4	5350.00	50.3 AV	54.0	-3.7	1.11 H	51	45.79	4.51
5	10600.00	53.3 PK	74.0	-20.7	1.00 H	0	42.62	10.68
6	10600.00	40.8 AV	54.0	-13.2	1.00 H	0	30.12	10.68
7	15900.00	59.5 PK	74.0	-14.5	1.02 H	4	44.45	15.05
8	15900.00	47.3 AV	54.0	-6.7	1.02 H	4	32.25	15.05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	101.5 PK			1.03 V	140	97.14	4.36
2	*5300.00	91.2 AV			1.03 V	140	86.84	4.36
3	5350.00	59.3 PK	74.0	-14.7	1.03 V	140	54.79	4.51
4	5350.00	43.0 AV	54.0	-11.0	1.03 V	140	38.49	4.51
5	10600.00	53.8 PK	74.0	-20.2	1.00 V	12	43.12	10.68
6	10600.00	42.0 AV	54.0	-12.0	1.00 V	12	31.32	10.68
7	15900.00	62.0 PK	74.0	-12.0	1.02 V	20	46.95	15.05
8	15900.00	49.0 AV	54.0	-5.0	1.02 V	20	33.95	15.05

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. " * ": Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.5 PK			1.14 H	323	102.08	4.42
2	*5320.00	95.4 AV			1.14 H	323	90.98	4.42
3	5350.00	70.5 PK	74.0	-3.5	1.14 H	317	65.99	4.51
4	5350.00	50.6 AV	54.0	-3.4	1.14 H	317	46.09	4.51
5	10640.00	52.1 PK	74.0	-21.9	1.02 H	0	41.47	10.63
6	10640.00	39.4 AV	54.0	-14.6	1.02 H	0	28.77	10.63
7	15960.00	57.3 PK	74.0	-16.7	1.00 H	16	42.33	14.97
8	15960.00	45.4 AV	54.0	-8.6	1.00 H	16	30.43	14.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	101.3 PK			1.09 V	146	96.88	4.42
2	*5320.00	91.3 AV			1.09 V	146	86.88	4.42
3	5350.00	63.3 PK	74.0	-10.7	1.09 V	146	58.79	4.51
4	5350.00	43.3 AV	54.0	-10.7	1.09 V	146	38.79	4.51
5	10640.00	52.4 PK	74.0	-21.6	1.02 V	14	41.77	10.63
6	10640.00	41.6 AV	54.0	-12.4	1.02 V	14	30.97	10.63
7	15960.00	60.5 PK	74.0	-13.5	1.10 V	28	45.53	14.97
8	15960.00	48.2 AV	54.0	-5.8	1.10 V	28	33.23	14.97

REMARKS:

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



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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	#5470.00	70.3 PK	74.0	-3.7	1.09 H	326	65.69	4.61
2	#5470.00	50.5 AV	54.0	-3.5	1.09 H	326	45.89	4.61
3	*5500.00	104.4 PK			1.09 H	326	99.81	4.59
4	*5500.00	94.3 AV			1.09 H	326	89.71	4.59
5	11000.00	52.0 PK	74.0	-22.0	1.02 H	12	41.15	10.85
6	11000.00	39.1 AV	54.0	-14.9	1.02 H	12	28.25	10.85
7	#16500.00	56.7 PK	74.0	-17.3	1.00 H	19	39.71	16.99
8	#16500.00	45.2 AV	54.0	-8.8	1.00 H	19	28.21	16.99

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	#5470.00	62.9 PK	74.0	-11.1	1.09 V	152	58.29	4.61
2	#5470.00	43.3 AV	54.0	-10.7	1.09 V	152	38.69	4.61
3	*5500.00	99.2 PK			1.09 V	152	94.61	4.59
4	*5500.00	89.1 AV			1.09 V	152	84.51	4.59
5	11000.00	52.2 PK	74.0	-21.8	1.00 V	12	41.35	10.85
6	11000.00	41.7 AV	54.0	-12.3	1.00 V	12	30.85	10.85
7	#16500.00	60.3 PK	74.0	-13.7	1.10 V	15	43.31	16.99
8	#16500.00	48.0 AV	54.0	-6.0	1.10 V	15	31.01	16.99

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



A D T

CHANNEL	TX Channel 120	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	*5600.00	106.0 PK			1.05 H	8	101.04	4.96
2	*5600.00	95.7 AV			1.05 H	8	90.74	4.96
3	11200.00	53.3 PK	74.0	-20.7	1.08 H	10	42.56	10.74
4	11200.00	41.0 AV	54.0	-13.0	1.08 H	10	30.26	10.74
5	#16800.00	59.3 PK	74.0	-14.7	1.06 H	12	41.08	18.22
6	#16800.00	47.1 AV	54.0	-6.9	1.06 H	12	28.88	18.22
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	100.3 PK			1.01 V	129	95.34	4.96
2	*5600.00	90.8 AV			1.01 V	129	85.84	4.96
3	11200.00	53.3 PK	74.0	-20.7	1.11 V	34	42.56	10.74
4	11200.00	41.3 AV	54.0	-12.7	1.11 V	34	30.56	10.74
5	#16800.00	60.8 PK	74.0	-13.2	1.00 V	14	42.58	18.22
6	#16800.00	48.3 AV	54.0	-5.7	1.00 V	14	30.08	18.22

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.5 PK			1.02 H	346	100.59	4.91
2	*5700.00	94.8 AV			1.02 H	346	89.89	4.91
3	#5725.00	70.4 PK	74.0	-3.6	1.02 H	346	65.47	4.93
4	#5725.00	46.8 AV	54.0	-7.2	1.02 H	346	41.87	4.93
5	11400.00	51.2 PK	74.0	-22.8	1.00 H	7	40.57	10.63
6	11400.00	38.7 AV	54.0	-15.3	1.00 H	7	28.07	10.63
7	#17100.00	57.3 PK	74.0	-16.7	1.00 H	5	38.75	18.55
8	#17100.00	45.6 AV	54.0	-8.4	1.00 H	5	27.05	18.55

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.3 PK			1.13 V	316	95.39	4.91
2	*5700.00	89.6 AV			1.13 V	316	84.69	4.91
3	#5725.00	68.3 PK	74.0	-5.7	1.13 V	316	63.37	4.93
4	#5725.00	45.9 AV	54.0	-8.1	1.13 V	316	40.97	4.93
5	11400.00	51.4 PK	74.0	-22.6	1.04 V	10	40.77	10.63
6	11400.00	41.2 AV	54.0	-12.8	1.04 V	10	30.57	10.63
7	#17100.00	59.8 PK	74.0	-14.2	1.00 V	27	41.25	18.55
8	#17100.00	47.8 AV	54.0	-6.2	1.00 V	27	29.25	18.55

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



A D T

CHANNEL	TX Channel 144	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	*5720.00	105.7 PK			1.05 H	2	100.77	4.93
2	*5720.00	95.8 AV			1.05 H	2	90.87	4.93
3	#5850.00	53.2 PK	74.0	-20.8	1.05 H	2	48.18	5.02
4	#5850.00	40.2 AV	54.0	-13.8	1.05 H	2	35.18	5.02
5	11440.00	53.6 PK	74.0	-20.4	1.04 H	4	42.96	10.64
6	11440.00	41.1 AV	54.0	-12.9	1.04 H	4	30.46	10.64
7	#17160.00	58.9 PK	74.0	-15.1	1.03 H	9	39.87	19.03
8	#17160.00	46.7 AV	54.0	-7.3	1.03 H	9	27.67	19.03
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	*5720.00	100.0 PK			1.02 V	109	95.07	4.93
2	*5720.00	90.7 AV			1.02 V	109	85.77	4.93
3	#5850.00	46.0 PK	74.0	-28.0	1.02 V	109	40.98	5.02
4	#5850.00	35.0 AV	54.0	-19.0	1.02 V	109	29.98	5.02
5	11440.00	53.4 PK	74.0	-20.6	1.07 V	45	42.76	10.64
6	11440.00	41.3 AV	54.0	-12.7	1.07 V	45	30.66	10.64
7	#17160.00	60.5 PK	74.0	-13.5	1.01 V	9	41.47	19.03
8	#17160.00	48.0 AV	54.0	-6.0	1.01 V	9	28.97	19.03

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



A D T

802.11ac (VHT20)

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	68.3 PK	74.0	-5.7	1.14 H	54	64.02	4.28
2	5150.00	50.5 AV	54.0	-3.5	1.14 H	54	46.22	4.28
3	*5180.00	103.5 PK			1.14 H	54	99.11	4.39
4	*5180.00	92.9 AV			1.14 H	54	88.51	4.39
5	#10360.00	52.2 PK	74.0	-21.8	1.03 H	4	42.14	10.06
6	#10360.00	40.2 AV	54.0	-13.8	1.03 H	4	30.14	10.06
7	15540.00	58.2 PK	74.0	-15.8	1.02 H	19	43.36	14.84
8	15540.00	46.9 AV	54.0	-7.1	1.02 H	19	32.06	14.84
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	5150.00	57.9 PK	74.0	-16.1	1.03 V	143	53.62	4.28
2	5150.00	42.5 AV	54.0	-11.5	1.03 V	143	38.22	4.28
3	*5180.00	97.3 PK			1.03 V	143	92.91	4.39
4	*5180.00	87.4 AV			1.03 V	143	83.01	4.39
5	#10360.00	52.7 PK	74.0	-21.3	1.02 V	7	42.64	10.06
6	#10360.00	39.9 AV	54.0	-14.1	1.02 V	7	29.84	10.06
7	15540.00	57.6 PK	74.0	-16.4	1.06 V	2	42.76	14.84
8	15540.00	46.3 AV	54.0	-7.7	1.06 V	2	31.46	14.84

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.9 PK			1.24 H	18	103.46	4.44
2	*5200.00	97.7 AV			1.24 H	18	93.26	4.44
3	#10400.00	54.4 PK	74.0	-19.6	1.04 H	0	44.33	10.07
4	#10400.00	42.0 AV	54.0	-12.0	1.04 H	0	31.93	10.07
5	15600.00	59.8 PK	74.0	-14.2	1.00 H	9	44.74	15.06
6	15600.00	47.7 AV	54.0	-6.3	1.00 H	9	32.64	15.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	101.6 PK			1.04 V	161	97.16	4.44
2	*5200.00	91.4 AV			1.04 V	161	86.96	4.44
3	#10400.00	53.1 PK	74.0	-20.9	1.02 V	15	43.03	10.07
4	#10400.00	41.2 AV	54.0	-12.8	1.02 V	15	31.13	10.07
5	15600.00	61.3 PK	74.0	-12.7	1.07 V	20	46.24	15.06
6	15600.00	48.4 AV	54.0	-5.6	1.07 V	20	33.34	15.06

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.9 PK			1.27 H	5	103.49	4.41
2	*5240.00	97.6 AV			1.27 H	5	93.19	4.41
3	#10480.00	54.6 PK	74.0	-19.4	1.00 H	0	44.34	10.26
4	#10480.00	42.4 AV	54.0	-11.6	1.00 H	0	32.14	10.26
5	15720.00	58.9 PK	74.0	-15.1	1.00 H	0	44.23	14.67
6	15720.00	47.3 AV	54.0	-6.7	1.00 H	0	32.63	14.67
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	*5240.00	102.0 PK			1.09 V	152	97.59	4.41
2	*5240.00	91.5 AV			1.09 V	152	87.09	4.41
3	#10480.00	52.9 PK	74.0	-21.1	1.01 V	4	42.64	10.26
4	#10480.00	41.0 AV	54.0	-13.0	1.01 V	4	30.74	10.26
5	15720.00	61.1 PK	74.0	-12.9	1.07 V	17	46.43	14.67
6	15720.00	48.8 AV	54.0	-5.2	1.07 V	17	34.13	14.67

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	107.9 PK			1.29 H	6	103.51	4.39
2	*5260.00	97.9 AV			1.29 H	6	93.51	4.39
3	#10520.00	53.7 PK	74.0	-20.3	1.01 H	10	43.33	10.37
4	#10520.00	41.2 AV	54.0	-12.8	1.01 H	10	30.83	10.37
5	15780.00	59.3 PK	74.0	-14.7	1.05 H	9	44.58	14.72
6	15780.00	47.5 AV	54.0	-6.5	1.05 H	9	32.78	14.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	101.3 PK			1.06 V	155	96.91	4.39
2	*5260.00	91.1 AV			1.06 V	155	86.71	4.39
3	#10520.00	53.1 PK	74.0	-20.9	1.02 V	19	42.73	10.37
4	#10520.00	41.4 AV	54.0	-12.6	1.02 V	19	31.03	10.37
5	15780.00	60.9 PK	74.0	-13.1	1.02 V	22	46.18	14.72
6	15780.00	48.3 AV	54.0	-5.7	1.02 V	22	33.58	14.72

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.8 PK			1.11 H	324	102.44	4.36
2	*5300.00	96.4 AV			1.11 H	324	92.04	4.36
3	5350.00	66.8 PK	74.0	-7.2	1.11 H	324	62.29	4.51
4	5350.00	50.7 AV	54.0	-3.3	1.11 H	324	46.19	4.51
5	10600.00	53.3 PK	74.0	-20.7	1.02 H	8	42.62	10.68
6	10600.00	41.0 AV	54.0	-13.0	1.02 H	8	30.32	10.68
7	15900.00	59.7 PK	74.0	-14.3	1.01 H	11	44.65	15.05
8	15900.00	47.8 AV	54.0	-6.2	1.01 H	11	32.75	15.05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	101.4 PK			1.06 V	150	97.04	4.36
2	*5300.00	91.2 AV			1.06 V	150	86.84	4.36
3	5350.00	61.8 PK	74.0	-12.2	1.06 V	150	57.29	4.51
4	5350.00	44.2 AV	54.0	-9.8	1.06 V	150	39.69	4.51
5	10600.00	53.4 PK	74.0	-20.6	1.04 V	17	42.72	10.68
6	10600.00	41.4 AV	54.0	-12.6	1.04 V	17	30.72	10.68
7	15900.00	60.9 PK	74.0	-13.1	1.10 V	7	45.85	15.05
8	15900.00	48.3 AV	54.0	-5.7	1.10 V	7	33.25	15.05

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. " * ": Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.4 PK			1.10 H	329	101.98	4.42
2	*5320.00	95.2 AV			1.10 H	329	90.78	4.42
3	5350.00	70.4 PK	74.0	-3.6	1.10 H	329	65.89	4.51
4	5350.00	50.8 AV	54.0	-3.2	1.10 H	329	46.29	4.51
5	10640.00	51.8 PK	74.0	-22.2	1.02 H	0	41.17	10.63
6	10640.00	39.8 AV	54.0	-14.2	1.02 H	0	29.17	10.63
7	15960.00	57.8 PK	74.0	-16.2	1.06 H	7	42.83	14.97
8	15960.00	46.3 AV	54.0	-7.7	1.06 H	7	31.33	14.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.4 PK			1.02 V	146	98.98	4.42
2	*5320.00	92.0 AV			1.02 V	146	87.58	4.42
3	5350.00	64.6 PK	74.0	-9.4	1.02 V	145	60.09	4.51
4	5350.00	45.4 AV	54.0	-8.6	1.02 V	145	40.89	4.51
5	10640.00	52.0 PK	74.0	-22.0	1.05 V	0	41.37	10.63
6	10640.00	39.5 AV	54.0	-14.5	1.05 V	0	28.87	10.63
7	15960.00	57.4 PK	74.0	-16.6	1.02 V	11	42.43	14.97
8	15960.00	46.3 AV	54.0	-7.7	1.02 V	11	31.33	14.97

REMARKS:

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



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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	#5470.00	68.2 PK	74.0	-5.8	1.10 H	39	63.59	4.61
2	#5470.00	50.8 AV	54.0	-3.2	1.10 H	39	46.19	4.61
3	*5500.00	103.0 PK			1.07 H	37	98.41	4.59
4	*5500.00	92.6 AV			1.07 H	37	88.01	4.59
5	11000.00	52.2 PK	74.0	-21.8	1.00 H	3	41.35	10.85
6	11000.00	40.3 AV	54.0	-13.7	1.00 H	3	29.45	10.85
7	#16500.00	57.5 PK	74.0	-16.5	1.01 H	0	40.51	16.99
8	#16500.00	46.3 AV	54.0	-7.7	1.01 H	0	29.31	16.99

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	#5470.00	58.1 PK	74.0	-15.9	1.05 V	157	53.49	4.61
2	#5470.00	42.9 AV	54.0	-11.1	1.05 V	157	38.29	4.61
3	*5500.00	97.8 PK			1.05 V	157	93.21	4.59
4	*5500.00	87.4 AV			1.05 V	157	82.81	4.59
5	11000.00	52.6 PK	74.0	-21.4	1.06 V	12	41.75	10.85
6	11000.00	39.8 AV	54.0	-14.2	1.06 V	12	28.95	10.85
7	#16500.00	57.7 PK	74.0	-16.3	1.09 V	0	40.71	16.99
8	#16500.00	46.6 AV	54.0	-7.4	1.09 V	0	29.61	16.99

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



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CHANNEL	TX Channel 120	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	*5600.00	107.5 PK			1.27 H	8	102.54	4.96
2	*5600.00	97.4 AV			1.27 H	8	92.44	4.96
3	11200.00	52.1 PK	74.0	-21.9	1.11 H	0	41.36	10.74
4	11200.00	39.8 AV	54.0	-14.2	1.11 H	0	29.06	10.74
5	#16800.00	58.6 PK	74.0	-15.4	1.03 H	12	40.38	18.22
6	#16800.00	47.3 AV	54.0	-6.7	1.03 H	12	29.08	18.22

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5600.00	101.4 PK			1.07 V	96	96.44	4.96
2	*5600.00	91.3 AV			1.07 V	96	86.34	4.96
3	11200.00	51.7 PK	74.0	-22.3	1.00 V	0	40.96	10.74
4	11200.00	40.2 AV	54.0	-13.8	1.00 V	0	29.46	10.74
5	#16800.00	60.1 PK	74.0	-13.9	1.00 V	14	41.88	18.22
6	#16800.00	48.4 AV	54.0	-5.6	1.00 V	14	30.18	18.22

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.4 PK			1.05 H	44	98.49	4.91
2	*5700.00	94.2 AV			1.05 H	44	89.29	4.91
3	#5725.00	67.8 PK	74.0	-6.2	1.14 H	40	62.87	4.93
4	#5725.00	50.6 AV	54.0	-3.4	1.14 H	40	45.67	4.93
5	11400.00	51.7 PK	74.0	-22.3	1.00 H	4	41.07	10.63
6	11400.00	40.0 AV	54.0	-14.0	1.00 H	4	29.37	10.63
7	#17100.00	56.9 PK	74.0	-17.1	1.00 H	4	38.35	18.55
8	#17100.00	46.0 AV	54.0	-8.0	1.00 H	4	27.45	18.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	98.2 PK			1.05 V	169	93.29	4.91
2	*5700.00	89.0 AV			1.05 V	169	84.09	4.91
3	#5725.00	58.5 PK	74.0	-15.5	1.03 V	160	53.57	4.93
4	#5725.00	43.2 AV	54.0	-10.8	1.03 V	160	38.27	4.93
5	11400.00	52.5 PK	74.0	-21.5	1.00 V	11	41.87	10.63
6	11400.00	39.4 AV	54.0	-14.6	1.00 V	11	28.77	10.63
7	#17100.00	57.2 PK	74.0	-16.8	1.08 V	5	38.65	18.55
8	#17100.00	46.3 AV	54.0	-7.7	1.08 V	5	27.75	18.55

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



A D T

CHANNEL	TX Channel 144	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	*5720.00	106.0 PK			1.09 H	0	101.07	4.93
2	*5720.00	95.8 AV			1.09 H	0	90.87	4.93
3	#5850.00	53.3 PK	74.0	-20.7	1.09 H	0	48.28	5.02
4	#5850.00	40.2 AV	54.0	-13.8	1.09 H	0	35.18	5.02
5	11440.00	53.1 PK	74.0	-20.9	1.00 H	17	42.46	10.64
6	11440.00	40.6 AV	54.0	-13.4	1.00 H	17	29.96	10.64
7	#17160.00	58.8 PK	74.0	-15.2	1.01 H	0	39.77	19.03
8	#17160.00	46.4 AV	54.0	-7.6	1.01 H	0	27.37	19.03

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	*5720.00	99.5 PK			1.08 V	95	94.57	4.93
2	*5720.00	90.2 AV			1.08 V	95	85.27	4.93
3	#5850.00	45.6 PK	74.0	-28.4	1.08 V	95	40.58	5.02
4	#5850.00	34.9 AV	54.0	-19.1	1.08 V	95	29.88	5.02
5	11440.00	53.5 PK	74.0	-20.5	1.03 V	32	42.86	10.64
6	11440.00	41.4 AV	54.0	-12.6	1.03 V	32	30.76	10.64
7	#17160.00	60.2 PK	74.0	-13.8	1.03 V	23	41.17	19.03
8	#17160.00	47.7 AV	54.0	-6.3	1.03 V	23	28.67	19.03

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



A D T

802.11ac (VHT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.5 PK	74.0	-10.5	1.25 H	51	59.22	4.28
2	5150.00	50.0 AV	54.0	-4.0	1.25 H	51	45.72	4.28
3	*5190.00	100.1 PK			1.25 H	51	95.69	4.41
4	*5190.00	90.5 AV			1.25 H	51	86.09	4.41
5	#10380.00	51.3 PK	74.0	-22.7	1.00 H	6	41.23	10.07
6	#10380.00	39.4 AV	54.0	-14.6	1.00 H	6	29.33	10.07
7	15570.00	57.2 PK	74.0	-16.8	1.05 H	0	42.25	14.95
8	15570.00	45.4 AV	54.0	-8.6	1.05 H	0	30.45	14.95
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	5150.00	56.3 PK	74.0	-17.7	1.08 V	90	52.02	4.28
2	5150.00	42.8 AV	54.0	-11.2	1.08 V	90	38.52	4.28
3	*5190.00	94.9 PK			1.08 V	90	90.49	4.41
4	*5190.00	85.3 AV			1.08 V	90	80.89	4.41
5	#10380.00	51.3 PK	74.0	-22.7	1.00 V	22	41.23	10.07
6	#10380.00	40.2 AV	54.0	-13.8	1.00 V	22	30.13	10.07
7	15570.00	59.2 PK	74.0	-14.8	1.02 V	33	44.25	14.95
8	15570.00	46.2 AV	54.0	-7.8	1.02 V	33	31.25	14.95

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	104.2 PK			1.23 H	42	99.78	4.42
2	*5230.00	94.3 AV			1.23 H	42	89.88	4.42
3	#10460.00	52.4 PK	74.0	-21.6	1.00 H	16	42.19	10.21
4	#10460.00	40.2 AV	54.0	-13.8	1.00 H	16	29.99	10.21
5	15690.00	59.6 PK	74.0	-14.4	1.02 H	0	44.92	14.68
6	15690.00	47.3 AV	54.0	-6.7	1.02 H	0	32.62	14.68
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	*5230.00	99.0 PK			1.10 V	96	94.58	4.42
2	*5230.00	89.1 AV			1.10 V	96	84.68	4.42
3	#10460.00	50.7 PK	74.0	-23.3	1.06 V	15	40.49	10.21
4	#10460.00	39.4 AV	54.0	-14.6	1.06 V	15	29.19	10.21
5	15690.00	59.2 PK	74.0	-14.8	1.06 V	33	44.52	14.68
6	15690.00	46.2 AV	54.0	-7.8	1.06 V	33	31.52	14.68

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	103.6 PK			1.09 H	321	99.22	4.38
2	*5270.00	93.7 AV			1.09 H	321	89.32	4.38
3	5350.00	65.8 PK	74.0	-8.2	1.09 H	321	61.29	4.51
4	5350.00	50.1 AV	54.0	-3.9	1.09 H	321	45.59	4.51
5	#10540.00	52.2 PK	74.0	-21.8	1.00 H	29	41.75	10.45
6	#10540.00	40.1 AV	54.0	-13.9	1.00 H	29	29.65	10.45
7	15810.00	58.2 PK	74.0	-15.8	1.04 H	0	43.42	14.78
8	15810.00	46.2 AV	54.0	-7.8	1.04 H	0	31.42	14.78
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	99.0 PK			1.13 V	99	94.62	4.38
2	*5270.00	89.1 AV			1.13 V	99	84.72	4.38
3	5350.00	58.6 PK	74.0	-15.4	1.13 V	99	54.09	4.51
4	5350.00	42.9 AV	54.0	-11.1	1.13 V	99	38.39	4.51
5	#10540.00	50.5 PK	74.0	-23.5	1.00 V	3	40.05	10.45
6	#10540.00	39.1 AV	54.0	-14.9	1.00 V	3	28.65	10.45
7	15810.00	58.5 PK	74.0	-15.5	1.05 V	20	43.72	14.78
8	15810.00	45.7 AV	54.0	-8.3	1.05 V	20	30.92	14.78

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.8 PK			1.22 H	51	95.41	4.39
2	*5310.00	90.0 AV			1.22 H	51	85.61	4.39
3	5350.00	63.6 PK	74.0	-10.4	1.22 H	51	59.09	4.51
4	5350.00	50.2 AV	54.0	-3.8	1.22 H	51	45.69	4.51
5	10620.00	51.5 PK	74.0	-22.5	1.01 H	12	40.85	10.65
6	10620.00	39.4 AV	54.0	-14.6	1.01 H	12	28.75	10.65
7	15930.00	57.4 PK	74.0	-16.6	1.05 H	0	42.39	15.01
8	15930.00	45.7 AV	54.0	-8.3	1.05 H	0	30.69	15.01
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	*5310.00	94.7 PK			1.01 V	81	90.31	4.39
2	*5310.00	85.4 AV			1.01 V	81	81.01	4.39
3	5350.00	57.1 PK	74.0	-16.9	1.01 V	81	52.59	4.51
4	5350.00	43.2 AV	54.0	-10.8	1.01 V	81	38.69	4.51
5	10620.00	51.9 PK	74.0	-22.1	1.04 V	0	41.25	10.65
6	10620.00	40.6 AV	54.0	-13.4	1.04 V	0	29.95	10.65
7	15930.00	58.5 PK	74.0	-15.5	1.05 V	23	43.49	15.01
8	15930.00	45.2 AV	54.0	-8.8	1.05 V	23	30.19	15.01

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
5. " * ": Fundamental frequency.



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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	#5470.00	64.2 PK	74.0	-9.8	1.28 H	39	59.59	4.61
2	#5470.00	50.6 AV	54.0	-3.4	1.28 H	39	45.99	4.61
3	*5510.00	101.0 PK			1.13 H	53	96.37	4.63
4	*5510.00	91.4 AV			1.13 H	53	86.77	4.63
5	11020.00	52.0 PK	74.0	-22.0	1.05 H	0	41.18	10.82
6	11020.00	39.7 AV	54.0	-14.3	1.05 H	0	28.88	10.82
7	#16530.00	58.3 PK	74.0	-15.7	1.05 H	16	41.26	17.04
8	#16530.00	46.4 AV	54.0	-7.6	1.05 H	16	29.36	17.04

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	57.2 PK	74.0	-16.8	1.02 V	78	52.59	4.61
2	#5470.00	43.5 AV	54.0	-10.5	1.02 V	78	38.89	4.61
3	*5510.00	96.0 PK			1.02 V	78	91.37	4.63
4	*5510.00	86.2 AV			1.02 V	78	81.57	4.63
5	11020.00	51.3 PK	74.0	-22.7	1.07 V	0	40.48	10.82
6	11020.00	40.1 AV	54.0	-13.9	1.07 V	0	29.28	10.82
7	#16530.00	58.9 PK	74.0	-15.1	1.07 V	10	41.86	17.04
8	#16530.00	45.4 AV	54.0	-8.6	1.07 V	10	28.36	17.04

REMARKS:

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



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CHANNEL	TX Channel 118	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	*5590.00	103.8 PK			1.21 H	65	98.88	4.92
2	*5590.00	94.2 AV			1.21 H	65	89.28	4.92
3	11180.00	52.1 PK	74.0	-21.9	1.00 H	33	41.38	10.72
4	11180.00	39.7 AV	54.0	-14.3	1.00 H	33	28.98	10.72
5	#16770.00	59.8 PK	74.0	-14.2	1.02 H	7	41.76	18.04
6	#16770.00	47.1 AV	54.0	-6.9	1.02 H	7	29.06	18.04

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5590.00	98.6 PK			1.09 V	102	93.68	4.92
2	*5590.00	89.0 AV			1.09 V	102	84.08	4.92
3	11180.00	51.2 PK	74.0	-22.8	1.07 V	15	40.48	10.72
4	11180.00	39.5 AV	54.0	-14.5	1.07 V	15	28.78	10.72
5	#16770.00	59.7 PK	74.0	-14.3	1.13 V	46	41.66	18.04
6	#16770.00	47.0 AV	54.0	-7.0	1.13 V	46	28.96	18.04

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	102.3 PK			1.12 H	40	97.37	4.93
2	*5670.00	92.3 AV			1.12 H	40	87.37	4.93
3	#5725.00	63.8 PK	74.0	-10.2	1.12 H	40	58.87	4.93
4	#5725.00	50.1 AV	54.0	-3.9	1.12 H	40	45.17	4.93
5	11340.00	51.8 PK	74.0	-22.2	1.01 H	12	41.04	10.76
6	11340.00	39.7 AV	54.0	-14.3	1.01 H	12	28.94	10.76
7	#17010.00	58.3 PK	74.0	-15.7	1.01 H	23	39.93	18.37
8	#17010.00	46.4 AV	54.0	-7.6	1.01 H	23	28.03	18.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	97.1 PK			1.03 V	90	92.17	4.93
2	*5670.00	87.1 AV			1.03 V	90	82.17	4.93
3	#5725.00	57.4 PK	74.0	-16.6	1.03 V	90	52.47	4.93
4	#5725.00	43.8 AV	54.0	-10.2	1.03 V	90	38.87	4.93
5	11340.00	52.0 PK	74.0	-22.0	1.04 V	12	41.24	10.76
6	11340.00	40.5 AV	54.0	-13.5	1.04 V	12	29.74	10.76
7	#17010.00	59.1 PK	74.0	-14.9	1.09 V	3	40.73	18.37
8	#17010.00	45.7 AV	54.0	-8.3	1.09 V	3	27.33	18.37

REMARKS:

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



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CHANNEL	TX Channel 142	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	*5710.00	104.5 PK			1.22 H	34	99.59	4.91
2	*5710.00	94.7 AV			1.22 H	34	89.79	4.91
3	#5850.00	53.6 PK	74.0	-20.4	1.22 H	34	48.58	5.02
4	#5850.00	39.2 AV	54.0	-14.8	1.22 H	34	34.18	5.02
5	11420.00	52.0 PK	74.0	-22.0	1.00 H	28	41.36	10.64
6	11420.00	39.9 AV	54.0	-14.1	1.00 H	28	29.26	10.64
7	#17130.00	59.8 PK	74.0	-14.2	1.00 H	0	41.01	18.79
8	#17130.00	47.0 AV	54.0	-7.0	1.00 H	0	28.21	18.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5710.00	98.5 PK			1.06 V	105	93.59	4.91
2	*5710.00	88.7 AV			1.06 V	105	83.79	4.91
3	#5850.00	51.4 PK	74.0	-22.6	1.06 V	105	46.38	5.02
4	#5850.00	36.5 AV	54.0	-17.5	1.06 V	105	31.48	5.02
5	11420.00	50.9 PK	74.0	-23.1	1.12 V	20	40.26	10.64
6	11420.00	39.4 AV	54.0	-14.6	1.12 V	20	28.76	10.64
7	#17130.00	59.8 PK	74.0	-14.2	1.08 V	49	41.01	18.79
8	#17130.00	47.0 AV	54.0	-7.0	1.08 V	49	28.21	18.79

REMARKS:

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



A D T

802.11ac (VHT80)

CHANNEL	TX Channel 42	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	5144.00	63.2 PK	74.0	-10.8	1.02 H	21	58.94	4.26
2	5144.00	50.2 AV	54.0	-3.8	1.02 H	21	45.94	4.26
3	*5210.00	99.2 PK			1.02 H	21	94.77	4.43
4	*5210.00	89.6 AV			1.02 H	21	85.17	4.43
5	#10420.00	52.2 PK	74.0	-21.8	1.00 H	12	42.09	10.11
6	#10420.00	39.8 AV	54.0	-14.2	1.00 H	12	29.69	10.11
7	15630.00	60.1 PK	74.0	-13.9	1.00 H	7	45.16	14.94
8	15630.00	47.5 AV	54.0	-6.5	1.00 H	7	32.56	14.94
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	5144.00	61.6 PK	74.0	-12.4	1.07 V	332	57.34	4.26
2	5144.00	48.6 AV	54.0	-5.4	1.07 V	332	44.34	4.26
3	*5210.00	94.3 PK			1.07 V	332	89.87	4.43
4	*5210.00	84.7 AV			1.07 V	332	80.27	4.43
5	#10420.00	50.8 PK	74.0	-23.2	1.14 V	17	40.69	10.11
6	#10420.00	39.1 AV	54.0	-14.9	1.14 V	17	28.99	10.11
7	15630.00	59.5 PK	74.0	-14.5	1.06 V	44	44.56	14.94
8	15630.00	46.5 AV	54.0	-7.5	1.06 V	44	31.56	14.94

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



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CHANNEL	TX Channel 58	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	*5290.00	96.5 PK			1.04 H	20	92.13	4.37
2	*5290.00	87.7 AV			1.04 H	20	83.33	4.37
3	5350.00	65.6 PK	74.0	-8.4	1.04 H	20	61.09	4.51
4	5350.00	50.3 AV	54.0	-3.7	1.04 H	20	45.79	4.51
5	#10580.00	52.4 PK	74.0	-21.6	1.00 H	41	41.79	10.61
6	#10580.00	40.2 AV	54.0	-13.8	1.00 H	41	29.59	10.61
7	15870.00	60.4 PK	74.0	-13.6	1.04 H	0	45.44	14.96
8	15870.00	47.4 AV	54.0	-6.6	1.04 H	0	32.44	14.96

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	92.2 PK			1.07 V	327	87.83	4.37
2	*5290.00	82.8 AV			1.07 V	327	78.43	4.37
3	5350.00	63.5 PK	74.0	-10.5	1.07 V	327	58.99	4.51
4	5350.00	48.5 AV	54.0	-5.5	1.07 V	327	43.99	4.51
5	#10580.00	50.7 PK	74.0	-23.3	1.16 V	6	40.09	10.61
6	#10580.00	39.4 AV	54.0	-14.6	1.16 V	6	28.79	10.61
7	15870.00	60.1 PK	74.0	-13.9	1.07 V	54	45.14	14.96
8	15870.00	47.5 AV	54.0	-6.5	1.07 V	54	32.54	14.96

REMARKS:

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



A D T

CHANNEL	TX Channel 106	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	#5470.00	63.1 PK	74.0	-10.9	1.00 H	20	58.49	4.61
2	#5470.00	49.3 AV	54.0	-4.7	1.00 H	20	44.69	4.61
3	*5530.00	96.4 PK			1.00 H	20	91.70	4.70
4	*5530.00	86.7 AV			1.00 H	20	82.00	4.70
5	11060.00	51.9 PK	74.0	-22.1	1.00 H	36	41.15	10.75
6	11060.00	39.5 AV	54.0	-14.5	1.00 H	36	28.75	10.75
7	#16590.00	60.0 PK	74.0	-14.0	1.03 H	8	42.84	17.16
8	#16590.00	47.0 AV	54.0	-7.0	1.03 H	8	29.84	17.16
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	#5470.00	63.1 PK	74.0	-10.9	1.09 V	315	58.49	4.61
2	#5470.00	48.2 AV	54.0	-5.8	1.09 V	315	43.59	4.61
3	*5530.00	91.8 PK			1.08 V	324	87.10	4.70
4	*5530.00	82.1 AV			1.08 V	324	77.40	4.70
5	11060.00	50.2 PK	74.0	-23.8	1.11 V	11	39.45	10.75
6	11060.00	38.9 AV	54.0	-15.1	1.11 V	11	28.15	10.75
7	#16590.00	59.4 PK	74.0	-14.6	1.11 V	45	42.24	17.16
8	#16590.00	46.5 AV	54.0	-7.5	1.11 V	45	29.34	17.16

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



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CHANNEL	TX Channel 122	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	*5610.00	98.0 PK			1.21 H	57	93.04	4.96
2	*5610.00	88.9 AV			1.21 H	57	83.94	4.96
3	#5725.00	61.3 PK	74.0	-12.7	1.40 H	57	56.37	4.93
4	#5725.00	48.2 AV	54.0	-5.8	1.40 H	57	43.27	4.93
5	11220.00	52.0 PK	74.0	-22.0	1.00 H	35	41.23	10.77
6	11220.00	40.1 AV	54.0	-13.9	1.00 H	35	29.33	10.77
7	#16830.00	59.6 PK	74.0	-14.4	1.00 H	0	41.33	18.27
8	#16830.00	47.0 AV	54.0	-7.0	1.00 H	0	28.73	18.27

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	*5610.00	93.0 PK			1.00 V	353	88.04	4.96
2	*5610.00	84.0 AV			1.00 V	353	79.04	4.96
3	#5725.00	61.5 PK	74.0	-12.5	1.15 V	360	56.57	4.93
4	#5725.00	48.1 AV	54.0	-5.9	1.15 V	360	43.17	4.93
5	11220.00	50.5 PK	74.0	-23.5	1.18 V	20	39.73	10.77
6	11220.00	39.1 AV	54.0	-14.9	1.18 V	20	28.33	10.77
7	#16830.00	60.0 PK	74.0	-14.0	1.06 V	63	41.73	18.27
8	#16830.00	47.4 AV	54.0	-6.6	1.06 V	63	29.13	18.27

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



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CHANNEL	TX Channel 138	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	*5690.00	101.4 PK			1.22 H	55	96.49	4.91
2	*5690.00	91.3 AV			1.22 H	55	86.39	4.91
3	#5850.00	56.6 PK	74.0	-17.4	1.22 H	55	51.58	5.02
4	#5850.00	45.5 AV	54.0	-8.5	1.22 H	55	40.48	5.02
5	11380.00	52.0 PK	74.0	-22.0	1.00 H	33	41.33	10.67
6	11380.00	39.8 AV	54.0	-14.2	1.00 H	33	29.13	10.67
7	#17070.00	59.5 PK	74.0	-14.5	1.00 H	4	41.01	18.49
8	#17070.00	46.7 AV	54.0	-7.3	1.00 H	4	28.21	18.49

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	*5690.00	96.4 PK			1.02 V	355	91.49	4.91
2	*5690.00	86.3 AV			1.02 V	355	81.39	4.91
3	#5850.00	54.6 PK	74.0	-19.4	1.02 V	355	49.58	5.02
4	#5850.00	43.5 AV	54.0	-10.5	1.02 V	355	38.48	5.02
5	11380.00	51.1 PK	74.0	-22.9	1.12 V	18	40.43	10.67
6	11380.00	39.7 AV	54.0	-14.3	1.12 V	18	29.03	10.67
7	#17070.00	59.2 PK	74.0	-14.8	1.07 V	40	40.71	18.49
8	#17070.00	46.6 AV	54.0	-7.4	1.07 V	40	28.11	18.49

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

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4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100060	May 08, 2014	May 07, 2015
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-S P-AR	MAA0812-008	Jan. 13, 2014	Jan. 12, 2015

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 : Dec. 09, 2014

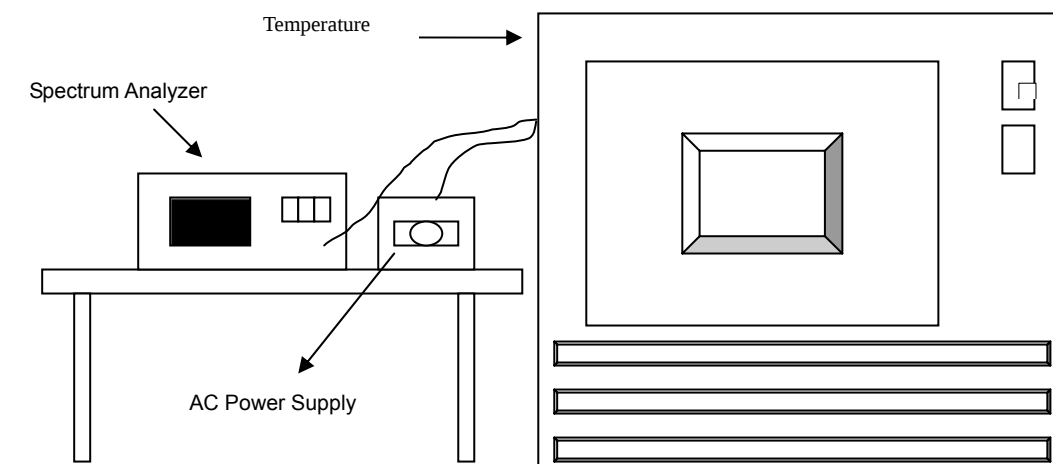
4.5.3 TEST PROCEDURE

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.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

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



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4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	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	5319.986	-0.00026	5319.9873	-0.00024	5319.9896	-0.00020	5319.989	-0.00021
40	120	5319.9977	-0.00004	5319.9978	-0.00004	5319.9942	-0.00011	5319.999	-0.00002
30	120	5320.0182	0.00034	5320.0153	0.00029	5320.0141	0.00027	5320.0173	0.00033
20	120	5320.0026	0.00005	5320.0033	0.00006	5320.0012	0.00002	5319.9992	-0.00002
10	120	5320.0083	0.00016	5320.0089	0.00017	5320.0108	0.00020	5320.0081	0.00015
0	120	5319.9846	-0.00029	5319.9863	-0.00026	5319.9851	-0.00028	5319.9871	-0.00024
-10	120	5320.0124	0.00023	5320.0125	0.00023	5320.0095	0.00018	5320.0115	0.00022
-20	120	5320.013	0.00024	5320.0157	0.00030	5320.0112	0.00021	5320.016	0.00030
-30	120	5320.0166	0.00031	5320.0152	0.00029	5320.0125	0.00023	5320.0132	0.00025

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	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	5320.0034	0.00006	5320.0034	0.00006	5320.0015	0.00003	5319.999	-0.00002
	120	5320.0026	0.00005	5320.0033	0.00006	5320.0012	0.00002	5319.9992	-0.00002
	102	5320.0016	0.00003	5320.0034	0.00006	5320.0009	0.00002	5319.9993	-0.00001

4.6 AC POWER LINE CONDUCTED EMISSION MEASUREMENT

4.6.1 LIMITS OF AC POWER LINE CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Sep. 15, 2014	Sep. 14, 2015
Line-Impedance Stabilization Network (for Peripheral) ROHDE & SCHWARZ	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 10, 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 22, 2014	Sep. 21, 2015
50 ohms Terminator	N/A	EMC-02	Sep. 30, 2014	Sep. 29, 2015
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: Oct. 22, 2014

4.6.3 TEST PROCEDURES

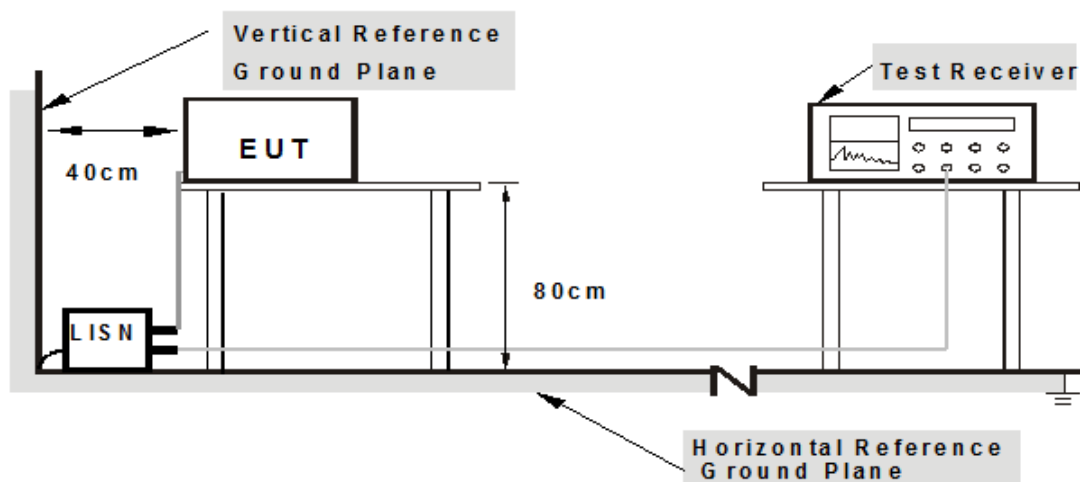
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.
- The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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).

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 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.

4.6.6 EUT OPERATING CONDITIONS

Same as the 4.4.7

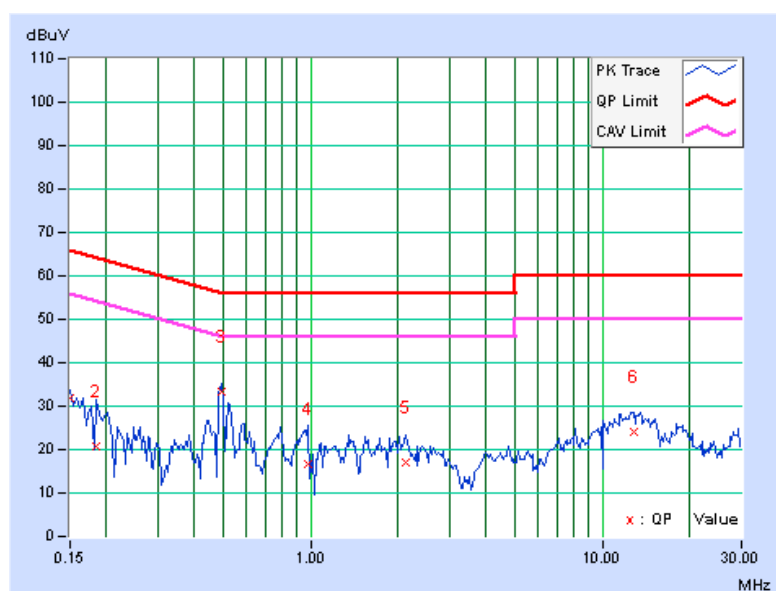
4.6.7 TEST RESULTS

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.07	31.77	23.58	31.84	23.65	66.00	56.00	-34.16	-32.35
2	0.18516	0.07	20.72	7.67	20.79	7.74	64.25	54.25	-43.46	-46.51
3	0.49375	0.10	33.31	32.54	33.41	32.64	56.10	46.10	-22.70	-13.47
4	0.97813	0.13	16.72	7.15	16.85	7.28	56.00	46.00	-39.15	-38.72
5	2.10938	0.18	16.78	9.77	16.96	9.95	56.00	46.00	-39.04	-36.05
6	12.82813	0.53	23.38	16.83	23.91	17.36	60.00	50.00	-36.09	-32.64

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

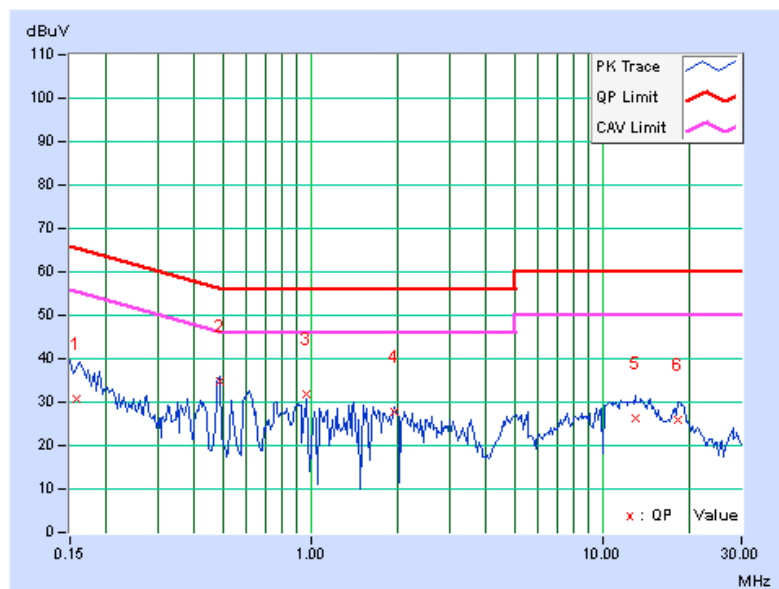


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15825	0.06	30.57	21.48	30.63	21.54	65.56	55.56	-34.92	-34.01
2	0.48984	0.10	34.68	31.94	34.78	32.04	56.17	46.17	-21.39	-14.13
3	0.97422	0.13	31.90	23.21	32.03	23.34	56.00	46.00	-23.97	-22.66
4	1.93359	0.18	27.75	21.37	27.93	21.55	56.00	46.00	-28.07	-24.45
5	12.99219	0.55	25.67	17.40	26.22	17.95	60.00	50.00	-33.78	-32.05
6	18.24609	0.69	25.22	19.10	25.91	19.79	60.00	50.00	-34.09	-30.21

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





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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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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/Telecom Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

7. APPENDIX A - UNWANTED EMISSION MEASUREMENT (CONDUCTED)

7.1 LIMITS OF UNWANTED EMISSION MEASUREMENT

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

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

NOTE:

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

7.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) ^{*1} PK:-17 (dBm/MHz) ^{*2}	PK: 68.2(dBμV/m) ^{*1} PK:78.2 (dBμV/m) ^{*2}

NOTE: ^{*1} beyond 10MHz of the band edge ^{*2} within 10 MHz of band edge

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

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

7.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2014	May 07, 2015

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 : Dec. 09, 2014

7.4 TEST PROCEDURES

Following FCC KDB 789033 D02 General UNII Test Procedures:

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

7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 TEST SETUP



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

7.7 EUT OPERATING CONDITION

1. Connect the EUT with the support unit A (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “QCRT Version3.0 33.0” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

7.8 TEST RESULTS

Conducted Measurement Factor	
a.	The composite gain will be used when signal support the correlated signal. (5150MHz~5350Mz : Antenna gain = 5.56dBi ; 5470MHz~5725Mz : Antenna gain = 5.34dBi 5725MHz~5825Mz : Antenna gain = 4.76dBi)
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)
1	3443.75 PK	51.45	74	-22.55	-49.37	5.56	-43.81
2	3453.125 AV	31.34	54	-22.66	-69.48	5.56	-63.92
3	6906.25 PK	58.87	68.2	-9.33	-41.95	5.56	-36.39
4	10359.375 PK	51.39	74	-22.61	-49.43	5.56	-43.87
5	10359.375 AV	32.36	54	-21.64	-68.46	5.56	-62.9
6	15549.875 PK	51.74	74	-22.26	-49.08	5.56	-43.52
7	15538.375 AV	39.57	54	-14.43	-61.25	5.56	-55.69

Note :

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



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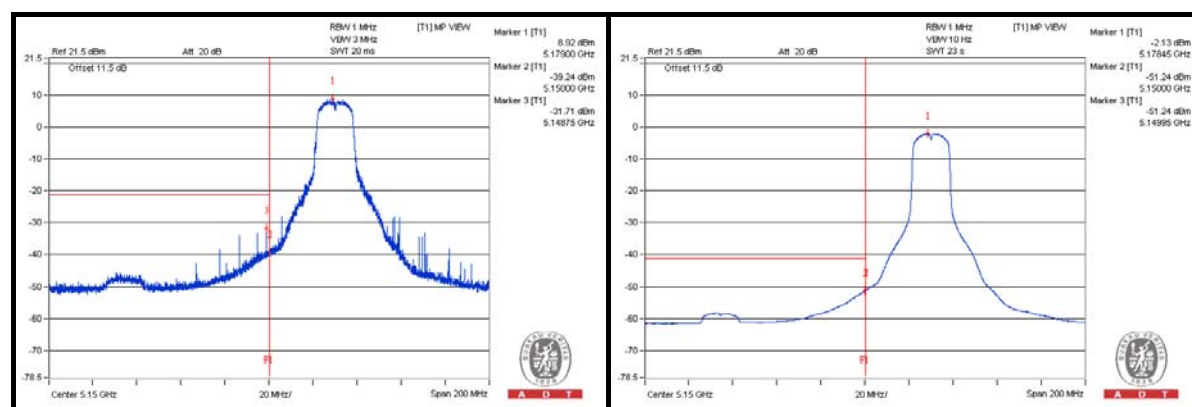
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5148.75 PK	69.11	74	-4.89	-31.71	5.56	-26.15
2	5149.95 AV	49.58	54	-4.42	-51.24	5.56	-45.68

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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)
1	3471.875 PK	50.97	74	-23.03	-49.85	5.56	-44.29
2	3465.625 AV	30.18	54	-23.82	-70.64	5.56	-65.08
3	6934.375 PK	58.23	68.2	-9.97	-42.59	5.56	-37.03
4	10406.25 PK	51.18	74	-22.82	-49.64	5.56	-44.08
5	10400 AV	33.05	54	-20.95	-67.77	5.56	-62.21
6	15593 PK	52.2	74	-21.8	-48.62	5.56	-43.06
7	15598.75 AV	41.03	54	-12.97	-59.79	5.56	-54.23

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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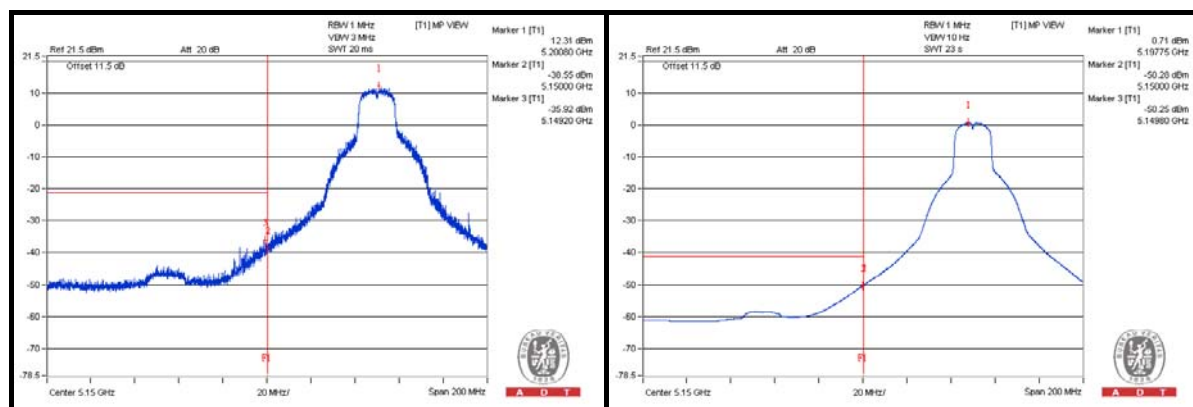
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5149.2 PK	64.9	74	-9.1	-35.92	5.56	-30.36
2	5149.8 AV	50.57	54	-3.43	-50.25	5.56	-44.69

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)
1	3500 PK	51.4	74	-22.6	-49.42	5.56	-43.86
2	3503.125 AV	30.3	54	-23.7	-70.52	5.56	-64.96
3	6987.5 PK	58.06	68.2	-10.14	-42.76	5.56	-37.2
4	10471.875 PK	51.16	74	-22.84	-49.66	5.56	-44.1
5	10481.25 AV	33.39	54	-20.61	-67.43	5.56	-61.87
6	15719.5 PK	51.83	74	-22.17	-48.99	5.56	-43.43
7	15716.625 AV	40.65	54	-13.35	-60.17	5.56	-54.61

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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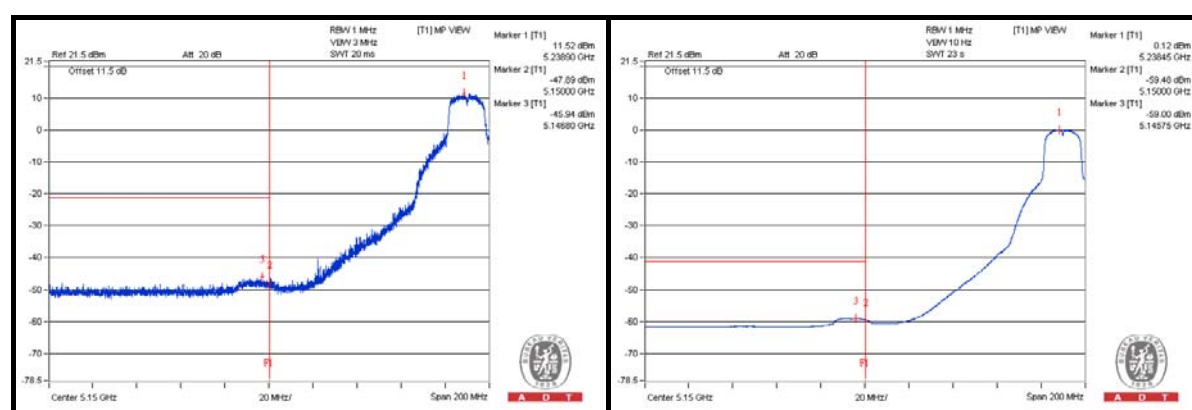
Bandedge table

No.	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5142.65 PK	54.61	74	-19.39	-46.21	5.56	-40.65
2	5145.35 AV	41.36	54	-12.64	-59.46	5.56	-53.9

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)
1	3496.875 PK	51.25	74	-22.75	-49.57	5.56	-44.01
2	3515.625 AV	30.67	54	-23.33	-70.15	5.56	-64.59
3	7012.5 PK	57.63	68.2	-10.57	-43.19	5.56	-37.63
4	10521.875 PK	52.15	74	-21.85	-48.67	5.56	-43.11
5	10521.875 AV	32.41	54	-21.59	-68.41	5.56	-62.85
6	15774.125 PK	53.26	74	-20.74	-47.56	5.56	-42
7	15777 AV	41.47	54	-12.53	-59.35	5.56	-53.79

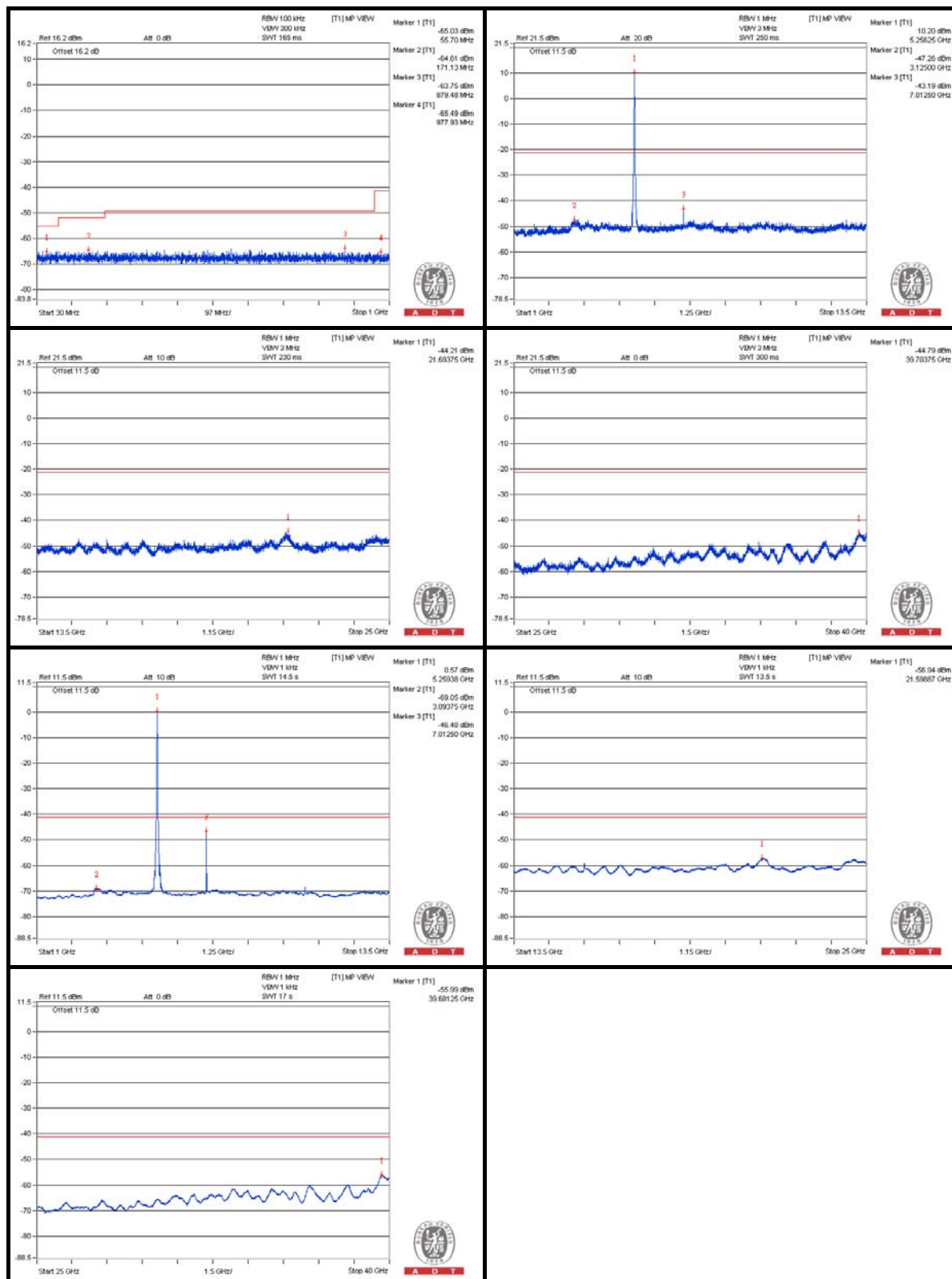
Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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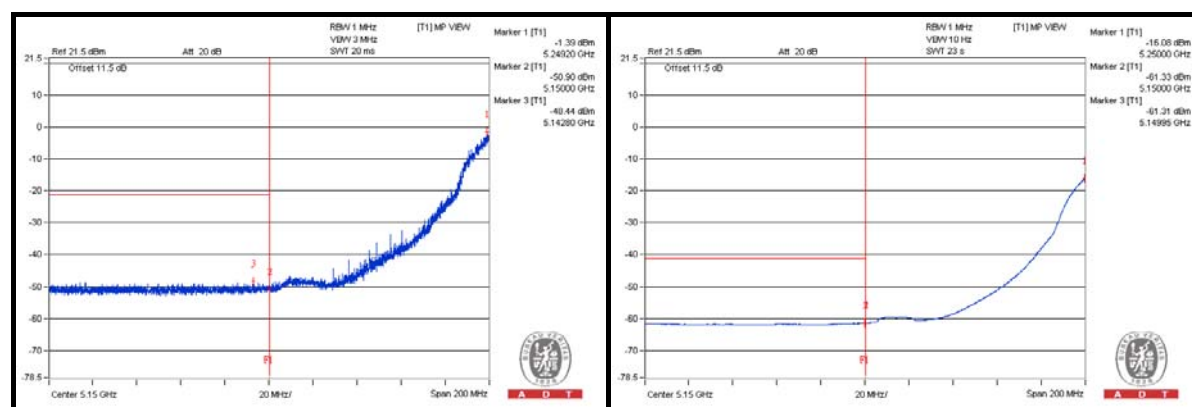
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5142.8 PK	52.38	74	-21.62	-48.44	5.56	-42.88
2	5149.95 AV	39.51	54	-14.49	-61.31	5.56	-55.75

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)
1	3534.375 PK	51.49	74	-22.51	-49.33	5.56	-43.77
2	3531.25 AV	30.96	54	-23.04	-69.86	5.56	-64.3
3	7068.75 PK	57.42	68.2	-10.78	-43.4	5.56	-37.84
4	10609.375 PK	51.47	74	-22.53	-49.35	5.56	-43.79
5	10600 AV	32.41	54	-21.59	-68.41	5.56	-62.85
6	15897.75 PK	51.95	74	-22.05	-48.87	5.56	-43.31
7	15897.75 AV	40.77	54	-13.23	-60.05	5.56	-54.49

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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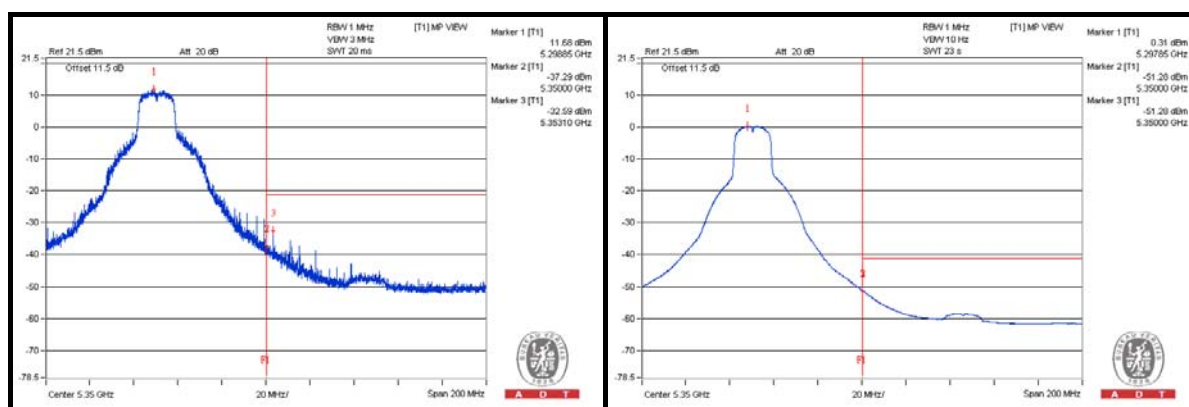
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5353.1 PK	68.23	74	-5.77	-32.59	5.56	-27.03
2	5350 AV	49.54	54	-4.46	-51.28	5.56	-45.72

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11a - Channel 64

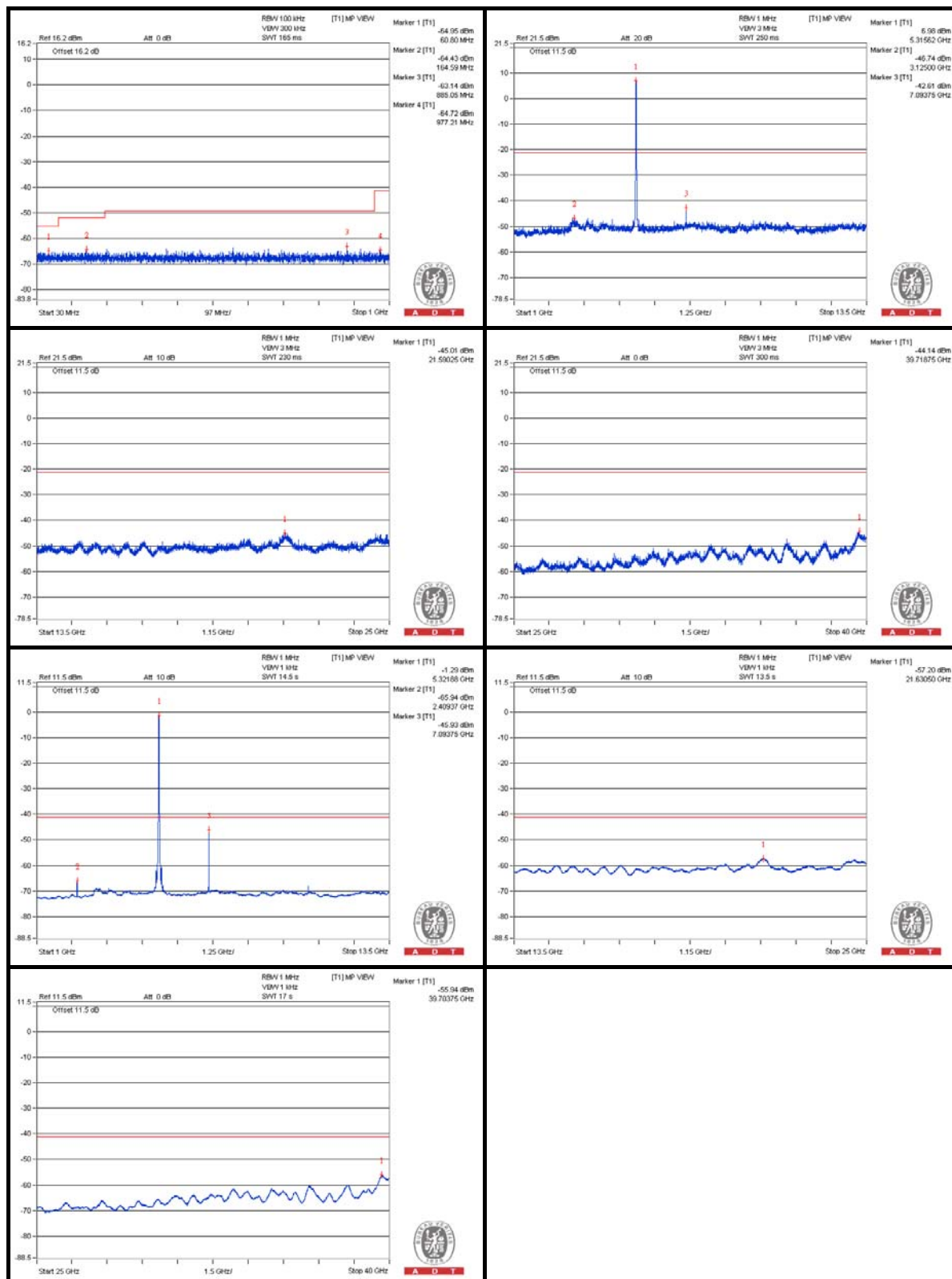
Conducted spurious emission table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	3543.75 PK	52.12	74	-21.88	-48.7	5.56	-43.14
2	3546.875 AV	31.66	54	-22.34	-69.16	5.56	-63.6
3	7093.75 PK	58.21	68.2	-9.99	-42.61	5.56	-37.05
4	10637.5 PK	51.46	74	-22.54	-49.36	5.56	-43.8
5	10640.625 AV	32.9	54	-21.1	-67.92	5.56	-62.36
6	15963.875 PK	51.38	74	-22.62	-49.44	5.56	-43.88
7	15952.375 AV	38.91	54	-15.09	-61.91	5.56	-56.35

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



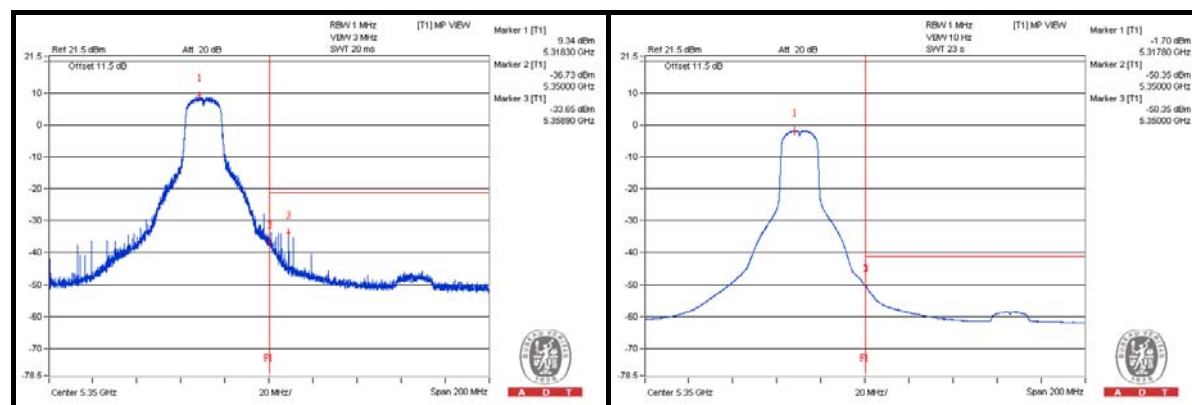
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5358.9 PK	67.17	74	-6.83	-33.65	5.56	-28.09
2	5350 AV	50.47	54	-3.53	-50.35	5.56	-44.79

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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)
1	3659.375 PK	53.29	74	-20.71	-47.53	5.56	-41.97
2	3665.625 AV	33.67	54	-20.33	-67.15	5.56	-61.59
3	7334.375 PK	55.5	74	-18.5	-45.32	5.56	-39.76
4	7334.375 AV	49.08	54	-4.92	-51.74	5.56	-46.18
5	11009.375 PK	51.04	74	-22.96	-49.78	5.56	-44.22
6	11000 AV	32.86	54	-21.14	-67.96	5.56	-62.4
7	16492.875 PK	50.54	74	-23.46	-50.28	5.56	-44.72
8	16490 AV	39.92	54	-14.08	-60.9	5.56	-55.34

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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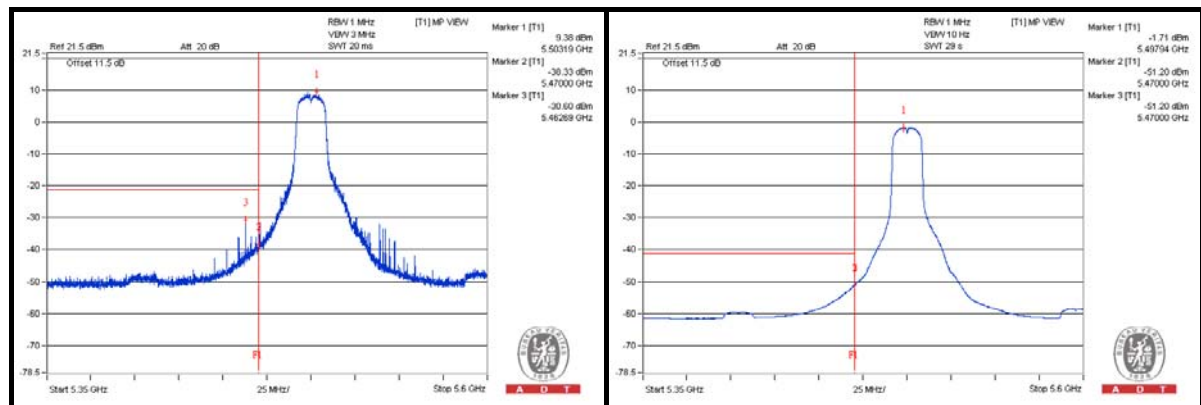
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5462.6875 PK	70	74	-4	-30.6	5.34	-25.26
2	5470 AV	49.4	54	-4.6	-51.2	5.34	-45.86

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



802.11a - Channel 120

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)
1	3725 PK	51.42	74	-22.58	-49.18	5.34	-43.84
2	3731.25 AV	32.41	54	-21.59	-68.19	5.34	-62.85
3	7465.625 PK	51.78	74	-22.22	-48.82	5.34	-43.48
4	7465.625 AV	44.69	54	-9.31	-55.91	5.34	-50.57
5	11200 PK	51.24	74	-22.76	-49.36	5.34	-44.02
6	11200 AV	37.35	54	-16.65	-63.25	5.34	-57.91
7	16797.625 PK	50.58	74	-23.42	-50.02	5.34	-44.68
8	16800.5 AV	39.59	54	-14.41	-61.01	5.34	-55.67

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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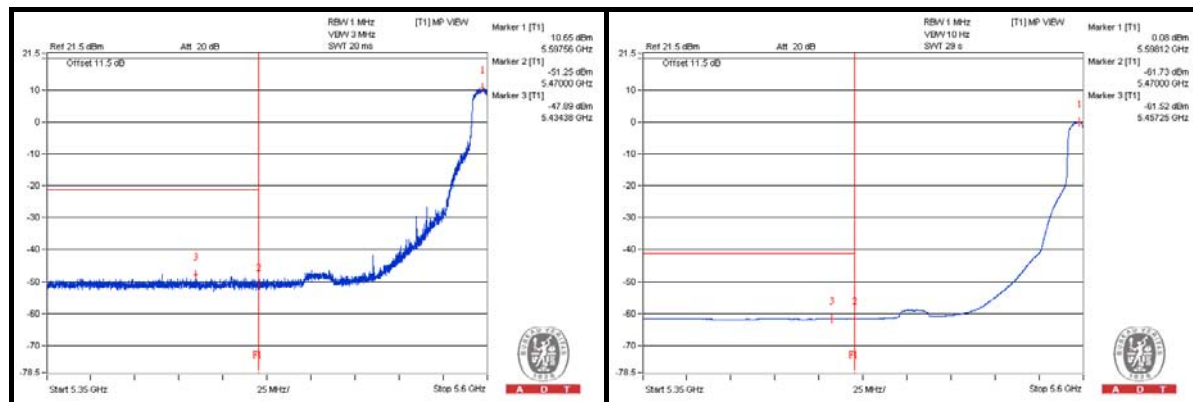
Bandedge table

No.	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw Value (dBm)	Correction Factor (dB)	EIRP Level (dBm)
1	5434.375 PK	52.71	74	-21.29	-47.89	5.34	-42.55
2	5457.25 AV	39.08	54	-14.92	-61.52	5.34	-56.18

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)
1	3793.75 PK	50.72	74	-23.28	-49.88	5.34	-44.54
2	3800 AV	35.3	54	-18.7	-65.3	5.34	-59.96
3	7600 PK	50.95	74	-23.05	-49.65	5.34	-44.31
4	7600 AV	41.02	54	-12.98	-59.58	5.34	-54.24
5	11393.75 PK	50.98	74	-23.02	-49.62	5.34	-44.28
6	11400 AV	34.77	54	-19.23	-65.83	5.34	-60.49
7	17096.625 PK	50.72	74	-23.28	-49.88	5.34	-44.54
8	17102.375 AV	39.53	54	-14.47	-61.07	5.34	-55.73

Note :

Emission Level (dBuV/m) = EIRP Level (dBm) – 20log(d) + 104.8

d = measurement distance in 3 meters.



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