

FCC TEST REPORT (WLAN 15.407)

REPORT NO.: RF140815C17-1

MODEL NO.: LBEN6ZZZTC

FCC ID: VPYLBZT

RECEIVED: Aug. 15, 2014

TESTED: Aug. 28 to Sep. 05, 2014

ISSUED: Oct. 27, 2014

APPLICANT: MURATA MANUFACTURING CO., LTD.

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140815C17-1	Original release	



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1. CERTIFICATION

PRODUCT: Communication Module
BRAND NAME: MURATA
MODEL NO.: LBEN6ZZZTC
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: MURATA MANUFACTURING CO., LTD.
TESTED: Aug. 28 to Sep. 05, 2014
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (Model: LBEN6ZZZTC) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE:** Oct. 27, 2014
(Elsie Hsu, Specialist)

APPROVED BY :  , **DATE:** Oct. 27, 2014
(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)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.87dB at 0.15000MHz
15.407 (b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -2.2dB at 15570.00MHz.
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 SMA-P. (The device is professionally installed)

- NOTE:** 1. For WLAN: The EUT was operating in 2400 ~ 2483.5MHz, 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, 5.47~5.725GHz and 5.725~5.850GHz. For the 2400 ~ 2483.5MHz 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	Communication Module
MODEL NO.	LBEN6ZZZTC
POWER SUPPLY	3.3Vdc (from host equipment)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS,OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a / g: up to 54Mbps 802.11n: up to 150Mbps
OPERATING FREQUENCY	For 15.407 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.70GHz, 5.745 ~ 5.825GHz
	For 15.247 2.412 ~ 2.462GHz
NUMBER OF CHANNEL	For 15.407 24 for 802.11a, 802.11n (HT20) 11 for 802.11n (HT40)
	For 15.247 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	For 15.407 802.11a: 9.908mW 802.11n (HT20): 9.75mW 802.11n (HT40): 7.603mW For 15.247 802.11b: 21.232mW 802.11g: 56.754mW 802.11n (HT20): 60.395mW 802.11n (HT40): 53.088mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

Note:

1. There are Bluetooth 4.0 and WLAN technology used for the EUT.
2. For WLAN, 2.4GHz and 5GHz technology can not transmit at same time.
3. WLAN and Bluetooth technology can transmit at same time.
4. The emission of the simultaneous operation (WLAN & Bluetooth) has been evaluated and no non-compliance was found.
5. There are antennas provided to the EUT, please refer to the following table:

There are antennas provided to the ES-1, please refer to the following table:

WLAN					
Brand	Model	Antenna Gain(dBi) <include cable loss>	Frequency range (GHz to GHz)	Antenna Type	Connector Type
JRC	NZA-606	1	2.4~2.4835	Monopole	SMA-P
		1.4	5.15~5.35		
		2	5.47~5.725		
		2	5.725~5.850		
BT					
Brand	Model	Antenna Gain(dBi) <include cable loss>	Frequency range (GHz to GHz)	Antenna Type	Connector Type
JRC	NZA-606	1	2.4~2.4835	Monopole	SMA-P

6. The EUT incorporates a SISO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX	1RX
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
802.11n (HT40)	MCS 0~7	1TX	1RX

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

3.2 DESCRIPTION OF TEST MODES

Operated in 5150 ~ 5250MHz band:

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

Operated in 5250 ~ 5350MHz band:

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

Operated in 5470MHz ~ 5725MHz bands:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n (HT40):

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

Operated in 5725 ~ 5850MHz band:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **PLC**: Power Line Conducted Emission

RE < 1G: Radiated Emission below 1GHz

RE ≥ 1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

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	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 165	140	OFDM	BPSK	6

RADIATED EMISSION TEST (BELOW 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 165	140	OFDM	BPSK	6

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 165	36, 40, 48, 52, 60, 64, 100, 120, 140, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 165	36, 40, 48, 52, 60, 64, 100, 120, 140, 149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)	38 to 159	38, 46, 54, 62, 102, 118, 134, 151, 159	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 165	36, 40, 48, 52, 60, 64, 100, 120, 140, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 165	36, 40, 48, 52, 60, 64, 100, 120, 140, 149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)	38 to 159	38, 46, 54, 62, 102, 118, 134, 151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	30deg. C, 70%RH	120Vac, 60Hz	Mike Hsieh
RE<1G	24deg. C, 69%RH	120Vac, 60Hz	Robert Cheng
RE ³ 1G	20deg. C, 65%RH 25deg. C, 67%RH	120Vac, 60Hz	Gary Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01

ANSI C63.10-2009

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

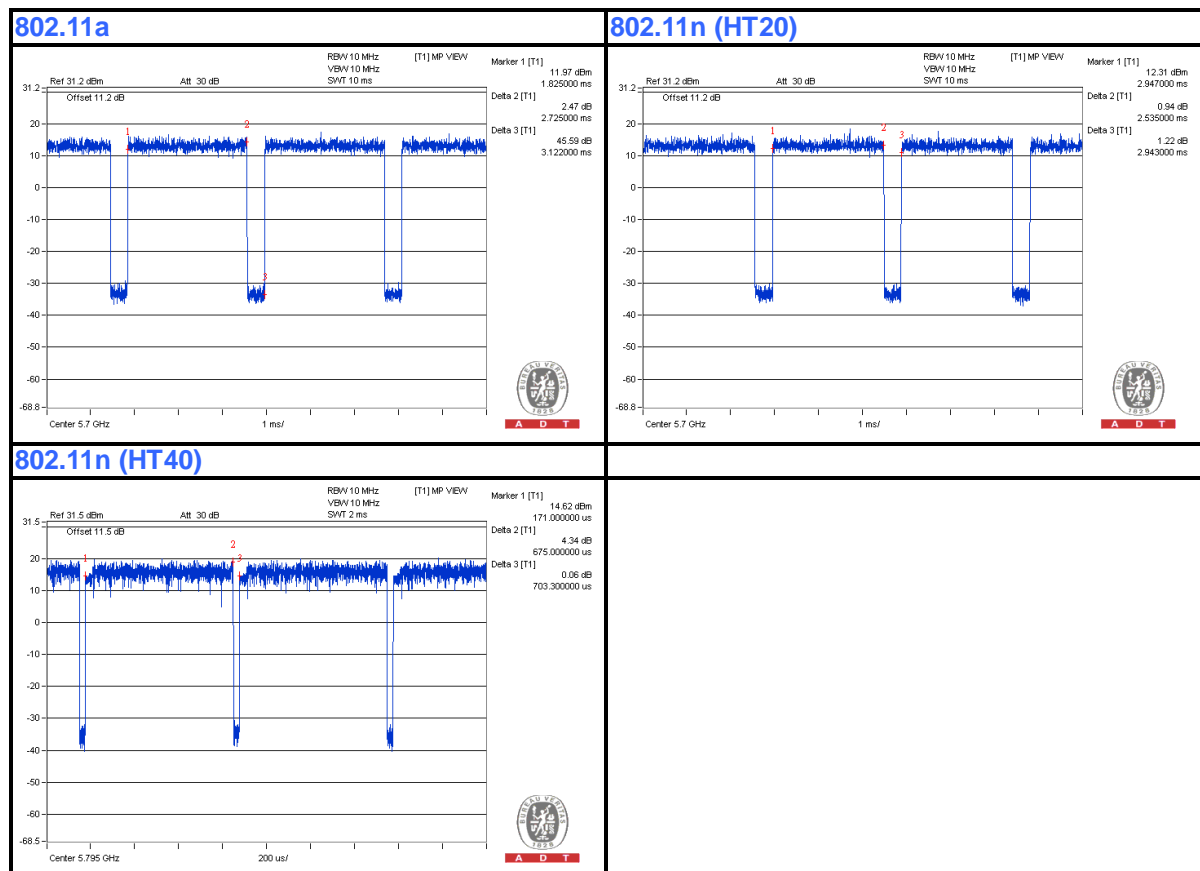
3.4 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = 2.725 ms/3.122 ms = 0.873, Duty factor = $10 * \log(1/0.873) = 0.6$

802.11n (HT20): Duty cycle = 2.535 ms/2.943 ms = 0.861, Duty factor = $10 * \log(1/0.861) = 0.6$

802.11n (HT40): Duty cycle = 1.239 ms/1.644 ms = 0.754, Duty factor = $10 * \log(1/0.754) = 1.2$





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3.5 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.

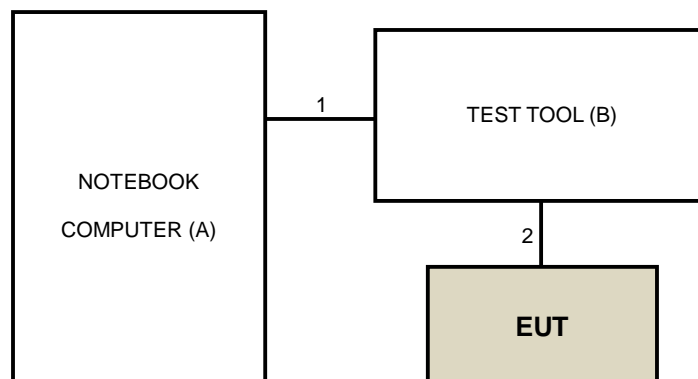
No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	NOTEBOOK COMPUTER	FCC	F-090407-1004-1	112450	NA	Provided by Lab
B	TEST TOOL	7Layers	NA	NA	NA	Supplied by client

NOTE:

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

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1.	USB	1	0.85	Yes	0	Supplied by client
2.	Data	1	0.3	Yes	0	Supplied by client

3.6 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF 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.

4.1.2 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	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
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. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 2014
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: Sep. 01, 2014

4.1.3 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.

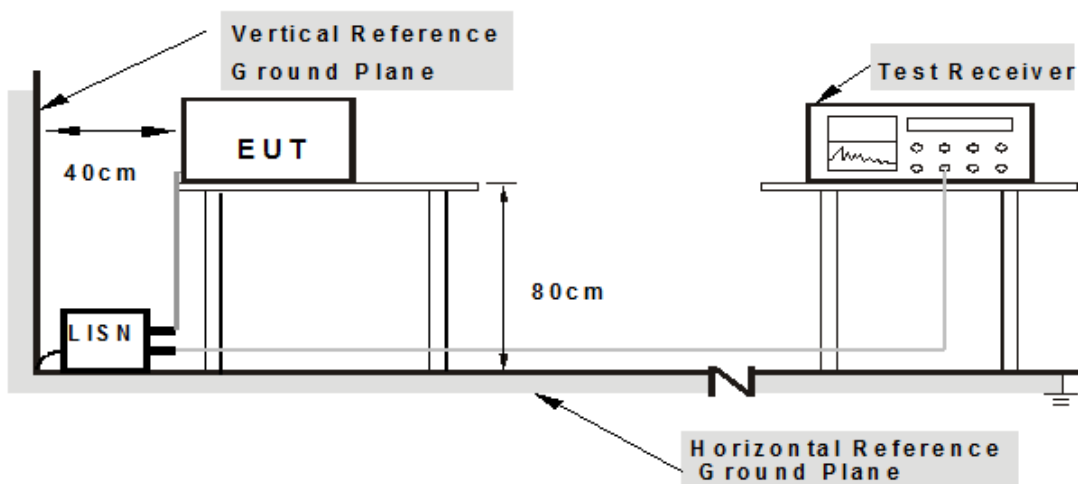
NOTE:

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 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.



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4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit A (PC) which is placed on a testing table.
2. The communication partner run test program “DutApiMimoBtFmBrdigeUart.exe [WIN-X86-2.1.0.44-14.2.201.p98]” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

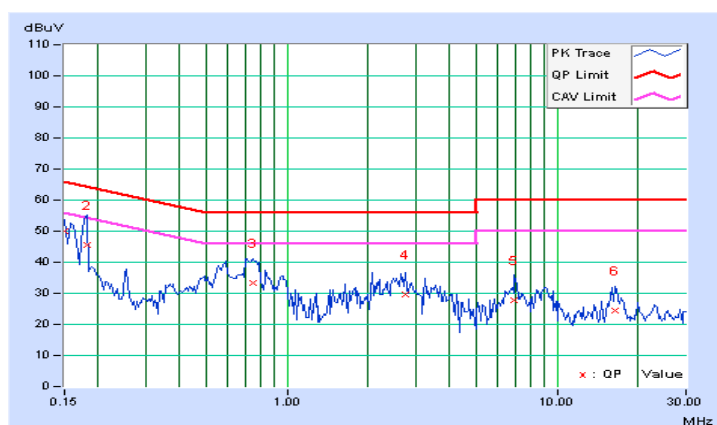
4.1.7 TEST RESULTS

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.07	50.06	34.52	50.13	34.59	66.00	56.00	-15.87	-21.41
2	0.18125	0.07	45.61	22.46	45.68	22.53	64.43	54.43	-18.75	-31.90
3	0.74375	0.11	33.17	17.70	33.28	17.81	56.00	46.00	-22.72	-28.19
4	2.73047	0.20	29.61	20.25	29.81	20.45	56.00	46.00	-26.19	-25.55
5	6.96875	0.35	27.29	17.90	27.64	18.25	60.00	50.00	-32.36	-31.75
6	16.33984	0.62	23.67	15.49	24.29	16.11	60.00	50.00	-35.71	-33.89

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

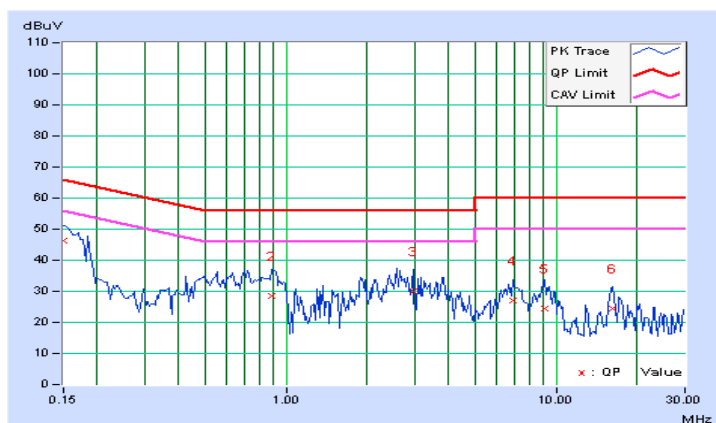


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor [dB]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.08	46.36	27.89	46.44	27.97	66.00	56.00	-19.56	-28.03
2	0.88438	0.12	28.47	14.21	28.59	14.33	56.00	46.00	-27.41	-31.67
3	2.94922	0.22	29.84	20.20	30.06	20.42	56.00	46.00	-25.94	-25.58
4	6.91016	0.35	26.68	17.77	27.03	18.12	60.00	50.00	-32.97	-31.88
5	9.05078	0.42	24.03	15.51	24.45	15.93	60.00	50.00	-35.55	-34.07
6	16.18359	0.61	23.90	15.88	24.51	16.49	60.00	50.00	-35.49	-33.51

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



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.2.2 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:

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

4.2.3 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. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 12, 2013	Dec. 11, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 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.
- 3 The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: Aug. 28, 2014



A D T

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. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Feb. 27, 2014	Feb. 26, 2015
RF Cable	NA	CHHCAB_001	Oct. 06, 2013	Oct. 05, 2014
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Horn_Antenna AISI	AIH.8018	0000220091110	Dec. 06, 2013	Dec. 05, 2014
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 29, 2013	Oct. 28, 2014
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 12, 2013	Dec. 11, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 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: Aug. 28 to Sep. 05, 2014

4.2.4 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:

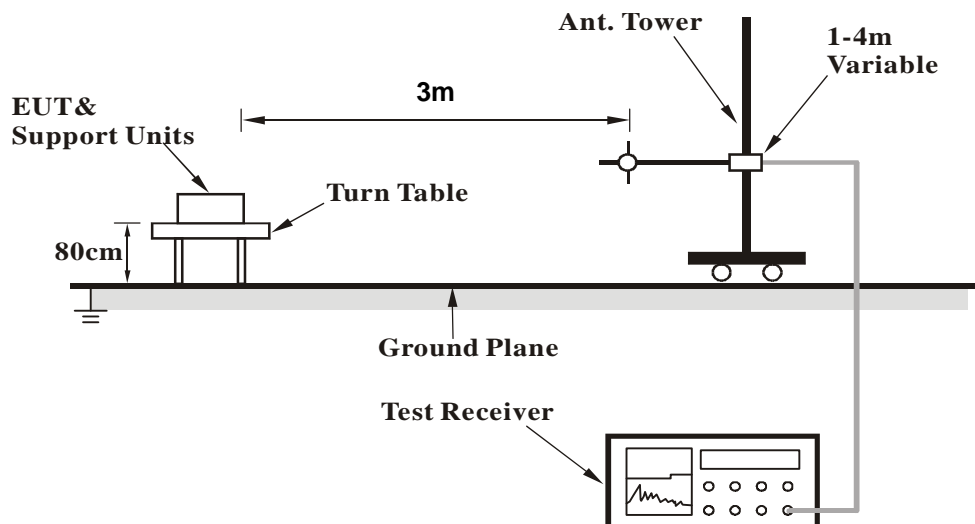
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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.

4.2.5 DEVIATION FROM TEST STANDARD

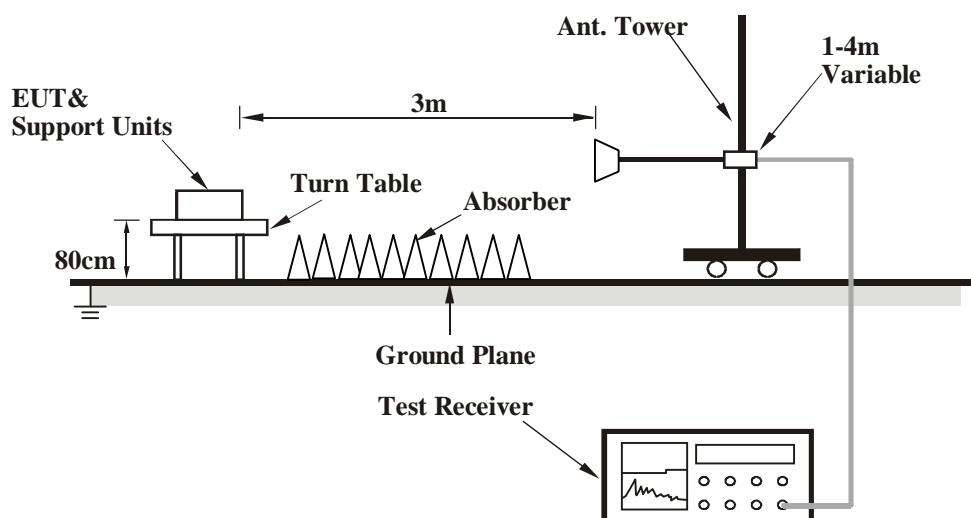
No deviation

4.2.6 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.

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	133.34	39.7 QP	43.5	-3.8	1.42 H	254	53.77	-14.05
2	220.65	40.8 QP	46.0	-5.3	1.67 H	100	56.86	-16.11
3	239.85	42.8 QP	46.0	-3.3	1.34 H	86	57.53	-14.78
4	328.62	42.4 QP	46.0	-3.6	1.64 H	274	53.91	-11.49
5	335.82	40.6 QP	46.0	-5.4	1.42 H	243	51.95	-11.34
6	359.85	40.4 QP	46.0	-5.6	1.34 H	175	51.22	-10.80
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	55.41	35.2 QP	40.0	-4.8	1.24 V	304	48.95	-13.74
2	93.87	31.1 QP	43.5	-12.4	1.31 V	242	49.94	-18.82
3	118.75	34.6 QP	43.5	-8.9	1.47 V	304	49.92	-15.29
4	132.75	31.4 QP	43.5	-12.1	1.45 V	245	45.53	-14.10
5	166.11	29.9 QP	43.5	-13.7	1.24 V	334	43.35	-13.50
6	666.52	33.7 QP	46.0	-12.3	1.64 V	304	37.71	-3.99

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

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	50.9 PK	74.0	-23.1	1.52 H	156	10.99	39.91
2	5150.00	40.0 AV	54.0	-14.0	1.52 H	156	0.09	39.91
3	*5180.00	91.0 PK			1.52 H	156	50.98	40.02
4	*5180.00	81.9 AV			1.52 H	156	41.88	40.02
5	#10360.00	54.3 PK	74.0	-19.7	1.04 H	162	8.24	46.06
6	#10360.00	42.3 AV	54.0	-11.7	1.04 H	162	-3.76	46.06
7	15540.00	64.0 PK	74.0	-10.0	1.10 H	165	13.23	50.77
8	15540.00	50.6 AV	54.0	-3.4	1.10 H	165	-0.17	50.77
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.5 PK	74.0	-22.5	1.00 V	159	11.59	39.91
2	5150.00	39.9 AV	54.0	-14.1	1.00 V	159	-0.01	39.91
3	*5180.00	103.1 PK			1.00 V	159	63.08	40.02
4	*5180.00	92.6 AV			1.00 V	159	52.58	40.02
5	#10360.00	56.2 PK	74.0	-17.8	1.02 V	53	10.14	46.06
6	#10360.00	44.1 AV	54.0	-9.9	1.02 V	53	-1.96	46.06
7	15540.00	65.0 PK	74.0	-9.0	1.01 V	14	14.23	50.77
8	15540.00	51.3 AV	54.0	-2.7	1.01 V	14	0.53	50.77

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	90.5 PK			1.53 H	157	50.40	40.10
2	*5200.00	81.5 AV			1.53 H	157	41.40	40.10
3	#10400.00	54.4 PK	74.0	-19.6	1.02 H	158	8.34	46.06
4	#10400.00	42.7 AV	54.0	-11.3	1.02 H	158	-3.36	46.06
5	15600.00	64.1 PK	74.0	-9.9	1.09 H	165	13.19	50.91
6	15600.00	50.4 AV	54.0	-3.6	1.09 H	165	-0.51	50.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.2 PK			1.00 V	159	63.10	40.10
2	*5200.00	92.3 AV			1.00 V	159	52.20	40.10
3	#10400.00	56.8 PK	74.0	-17.2	1.02 V	47	10.74	46.06
4	#10400.00	44.7 AV	54.0	-9.3	1.02 V	47	-1.36	46.06
5	15600.00	64.4 PK	74.0	-9.6	1.03 V	24	13.49	50.91
6	15600.00	50.8 AV	54.0	-3.2	1.03 V	24	-0.11	50.91

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.

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	5136.90	49.6 PK	74.0	-24.4	1.55 H	143	9.74	39.86
2	5136.90	39.8 AV	54.0	-14.2	1.55 H	143	-0.06	39.86
3	*5240.00	90.5 PK			1.55 H	143	50.28	40.22
4	*5240.00	81.7 AV			1.55 H	143	41.48	40.22
5	#10480.00	54.5 PK	74.0	-19.5	1.01 H	152	8.36	46.14
6	#10480.00	42.9 AV	54.0	-11.1	1.01 H	152	-3.24	46.14
7	15720.00	64.0 PK	74.0	-10.0	1.10 H	178	13.18	50.82
8	15720.00	50.1 AV	54.0	-3.9	1.10 H	178	-0.72	50.82
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	5136.90	50.4 PK	74.0	-23.6	1.00 V	0	10.54	39.86
2	5136.90	40.2 AV	54.0	-13.8	1.00 V	0	0.34	39.86
3	*5240.00	103.8 PK			1.00 V	0	63.58	40.22
4	*5240.00	94.1 AV			1.00 V	0	53.88	40.22
5	#10480.00	57.5 PK	74.0	-16.5	1.00 V	51	11.36	46.14
6	#10480.00	45.1 AV	54.0	-8.9	1.00 V	51	-1.04	46.14
7	15720.00	64.1 PK	74.0	-9.9	1.08 V	20	13.28	50.82
8	15720.00	50.5 AV	54.0	-3.5	1.08 V	20	-0.32	50.82

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.

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	91.0 PK			1.55 H	141	50.74	40.26
2	*5260.00	82.0 AV			1.55 H	141	41.74	40.26
3	5350.00	49.6 PK	74.0	-24.4	1.55 H	130	9.09	40.51
4	5350.00	39.2 AV	54.0	-14.8	1.55 H	130	-1.31	40.51
5	#10520.00	54.2 PK	74.0	-19.8	1.02 H	157	7.99	46.21
6	#10520.00	42.5 AV	54.0	-11.5	1.02 H	157	-3.71	46.21
7	15780.00	63.5 PK	74.0	-10.5	1.13 H	188	12.56	50.94
8	15780.00	49.3 AV	54.0	-4.7	1.13 H	188	-1.64	50.94
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	*5260.00	104.2 PK			1.00 V	0	63.94	40.26
2	*5260.00	94.7 AV			1.00 V	0	54.44	40.26
3	5350.00	52.4 PK	74.0	-21.6	1.00 V	0	11.89	40.51
4	5350.00	40.1 AV	54.0	-13.9	1.00 V	0	-0.41	40.51
5	#10520.00	57.2 PK	74.0	-16.8	1.03 V	42	10.99	46.21
6	#10520.00	45.1 AV	54.0	-8.9	1.03 V	42	-1.11	46.21
7	15780.00	63.8 PK	74.0	-10.2	1.07 V	11	12.86	50.94
8	15780.00	50.4 AV	54.0	-3.6	1.07 V	11	-0.54	50.94

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.

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	91.5 PK			1.51 H	151	51.12	40.38
2	*5300.00	82.5 AV			1.51 H	151	42.12	40.38
3	5350.00	50.1 PK	74.0	-23.9	1.51 H	151	9.59	40.51
4	5350.00	39.5 AV	54.0	-14.5	1.51 H	151	-1.01	40.51
5	10600.00	54.2 PK	74.0	-19.8	1.04 H	172	7.79	46.41
6	10600.00	42.4 AV	54.0	-11.6	1.04 H	172	-4.01	46.41
7	15900.00	63.9 PK	74.0	-10.1	1.19 H	183	12.86	51.04
8	15900.00	49.4 AV	54.0	-4.6	1.19 H	183	-1.64	51.04
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	*5300.00	103.5 PK			1.00 V	0	63.12	40.38
2	*5300.00	93.9 AV			1.00 V	0	53.52	40.38
3	5350.00	58.8 PK	74.0	-15.2	1.00 V	0	18.29	40.51
4	5350.00	42.8 AV	54.0	-11.2	1.00 V	0	2.29	40.51
5	10600.00	57.3 PK	74.0	-16.7	1.02 V	58	10.89	46.41
6	10600.00	44.7 AV	54.0	-9.3	1.02 V	58	-1.71	46.41
7	15900.00	63.7 PK	74.0	-10.3	1.11 V	31	12.66	51.04
8	15900.00	50.4 AV	54.0	-3.6	1.11 V	31	-0.64	51.04

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.

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	91.3 PK			1.54 H	149	50.86	40.44
2	*5320.00	82.4 AV			1.54 H	149	41.96	40.44
3	5350.00	49.7 PK	74.0	-24.3	1.54 H	149	9.19	40.51
4	5350.00	39.0 AV	54.0	-15.0	1.54 H	149	-1.51	40.51
5	10640.00	54.4 PK	74.0	-19.6	1.02 H	169	7.96	46.44
6	10640.00	42.6 AV	54.0	-11.4	1.02 H	169	-3.84	46.44
7	15960.00	63.7 PK	74.0	-10.3	1.16 H	179	12.62	51.08
8	15960.00	49.3 AV	54.0	-4.7	1.16 H	179	-1.78	51.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	102.5 PK			1.00 V	2	62.06	40.44
2	*5320.00	92.9 AV			1.00 V	2	52.46	40.44
3	5350.00	63.5 PK	74.0	-10.5	1.23 V	346	22.99	40.51
4	5350.00	46.8 AV	54.0	-7.2	1.23 V	346	6.29	40.51
5	10640.00	57.3 PK	74.0	-16.7	1.02 V	46	10.86	46.44
6	10640.00	44.9 AV	54.0	-9.1	1.02 V	46	-1.54	46.44
7	15960.00	63.7 PK	74.0	-10.3	1.07 V	34	12.62	51.08
8	15960.00	50.3 AV	54.0	-3.7	1.07 V	34	-0.78	51.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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	49.9 PK	74.0	-24.1	1.49 H	139	9.02	40.88
2	#5470.00	38.9 AV	54.0	-15.1	1.49 H	139	-1.98	40.88
3	*5500.00	90.9 PK			1.49 H	139	49.93	40.97
4	*5500.00	81.9 AV			1.49 H	139	40.93	40.97
5	11000.00	54.5 PK	74.0	-19.5	1.07 H	156	7.66	46.84
6	11000.00	42.6 AV	54.0	-11.4	1.07 H	156	-4.24	46.84
7	#16500.00	63.0 PK	74.0	-11.0	1.18 H	192	10.22	52.78
8	#16500.00	48.8 AV	54.0	-5.2	1.18 H	192	-3.98	52.78

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	#5470.00	54.7 PK	74.0	-19.3	1.08 V	344	13.82	40.88
2	#5470.00	41.1 AV	54.0	-12.9	1.08 V	344	0.22	40.88
3	*5500.00	102.3 PK			1.08 V	344	61.33	40.97
4	*5500.00	92.9 AV			1.08 V	344	51.93	40.97
5	11000.00	57.7 PK	74.0	-16.3	1.01 V	35	10.86	46.84
6	11000.00	45.6 AV	54.0	-8.4	1.01 V	35	-1.24	46.84
7	#16500.00	64.1 PK	74.0	-9.9	1.09 V	9	11.32	52.78
8	#16500.00	50.3 AV	54.0	-3.7	1.09 V	9	-2.48	52.78

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.

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	90.9 PK			1.50 H	146	49.64	41.26
2	*5600.00	81.8 AV			1.50 H	146	40.54	41.26
3	11200.00	54.6 PK	74.0	-19.4	1.05 H	168	7.77	46.83
4	11200.00	42.6 AV	54.0	-11.4	1.05 H	168	-4.23	46.83
5	#16800.00	62.3 PK	74.0	-11.7	1.17 H	196	9.65	52.65
6	#16800.00	48.4 AV	54.0	-5.6	1.17 H	196	-4.25	52.65
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	103.6 PK			1.04 V	353	62.34	41.26
2	*5600.00	94.5 AV			1.04 V	353	53.24	41.26
3	11200.00	57.6 PK	74.0	-16.4	1.02 V	56	10.77	46.83
4	11200.00	45.1 AV	54.0	-8.9	1.02 V	56	-1.73	46.83
5	#16800.00	63.8 PK	74.0	-10.2	1.12 V	13	11.15	52.65
6	#16800.00	50.5 AV	54.0	-3.5	1.12 V	13	-2.15	52.65

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.

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	91.1 PK			1.47 H	153	49.64	41.46
2	*5700.00	82.2 AV			1.47 H	153	40.74	41.46
3	#5725.00	62.4 PK	74.0	-11.6	1.47 H	153	20.89	41.51
4	#5725.00	45.3 AV	54.0	-8.7	1.47 H	153	3.79	41.51
5	11400.00	54.2 PK	74.0	-19.8	1.02 H	140	7.29	46.91
6	11400.00	42.3 AV	54.0	-11.7	1.02 H	140	-4.61	46.91
7	#17100.00	63.1 PK	74.0	-10.9	1.17 H	193	10.21	52.89
8	#17100.00	48.6 AV	54.0	-5.4	1.17 H	193	-4.29	52.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.4 PK			1.02 V	350	60.94	41.46
2	*5700.00	93.1 AV			1.02 V	350	51.64	41.46
3	#5725.00	64.4 PK	74.0	-9.6	1.02 V	350	22.89	41.51
4	#5725.00	46.4 AV	54.0	-7.6	1.02 V	350	4.89	41.51
5	11400.00	57.0 PK	74.0	-17.0	1.05 V	47	10.09	46.91
6	11400.00	44.8 AV	54.0	-9.2	1.05 V	47	-2.11	46.91
7	#17100.00	64.2 PK	74.0	-9.8	1.09 V	26	11.31	52.89
8	#17100.00	50.9 AV	54.0	-3.1	1.09 V	26	-1.99	52.89

REMARKS:

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

CHANNEL	TX Channel 149	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	#5715.00	53.6 PK	74.0	-20.4	1.49 H	119	12.11	41.49
2	#5715.00	39.2 AV	54.0	-14.8	1.49 H	119	-2.29	41.49
3	#5725.00	60.2 PK	78.2	-18.0	1.49 H	119	18.69	41.51
4	*5745.00	91.9 PK			1.49 H	119	50.35	41.55
5	*5745.00	83.1 AV			1.49 H	119	41.55	41.55
6	11490.00	54.3 PK	74.0	-19.7	1.08 H	143	7.21	47.09
7	11490.00	42.0 AV	54.0	-12.0	1.08 H	143	-5.09	47.09
8	#17235.00	63.1 PK	74.0	-10.9	1.14 H	188	9.48	53.62
9	#17235.00	48.5 AV	54.0	-5.5	1.14 H	188	-5.12	53.62

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	#5715.00	55.5 PK	74.0	-18.5	1.06 V	338	14.01	41.49
2	#5715.00	41.2 AV	54.0	-12.8	1.06 V	338	-0.29	41.49
3	#5725.00	62.8 PK	78.2	-15.4	1.06 V	338	21.29	41.51
4	*5745.00	101.4 PK			1.06 V	338	59.85	41.55
5	*5745.00	92.2 AV			1.06 V	338	50.65	41.55
6	11490.00	56.3 PK	74.0	-17.7	1.00 V	53	9.21	47.09
7	11490.00	44.3 AV	54.0	-9.7	1.00 V	53	-2.79	47.09
8	#17235.00	65.1 PK	74.0	-8.9	1.00 V	30	11.48	53.62
9	#17235.00	51.3 AV	54.0	-2.7	1.00 V	30	-2.32	53.62

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.

CHANNEL	TX Channel 157	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	*5785.00	91.6 PK			1.47 H	135	49.97	41.63
2	*5785.00	82.9 AV			1.47 H	135	41.27	41.63
3	11570.00	53.5 PK	74.0	-20.5	1.03 H	139	6.43	47.07
4	11570.00	41.4 AV	54.0	-12.6	1.03 H	139	-5.67	47.07
5	#17355.00	62.9 PK	74.0	-11.1	1.16 H	188	8.76	54.14
6	#17355.00	48.3 AV	54.0	-5.7	1.16 H	188	-5.84	54.14
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	*5785.00	101.1 PK			1.02 V	359	59.47	41.63
2	*5785.00	92.3 AV			1.02 V	359	50.67	41.63
3	11570.00	56.1 PK	74.0	-17.9	1.01 V	52	9.03	47.07
4	11570.00	44.2 AV	54.0	-9.8	1.01 V	52	-2.87	47.07
5	#17355.00	64.9 PK	74.0	-9.1	1.04 V	25	10.76	54.14
6	#17355.00	51.4 AV	54.0	-2.6	1.04 V	25	-2.74	54.14

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.

CHANNEL	TX Channel 165	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	*5825.00	90.3 PK			1.51 H	135	48.55	41.75
2	*5825.00	81.4 AV			1.51 H	135	39.65	41.75
3	#5850.00	58.3 PK	78.2	-19.9	1.51 H	135	16.46	41.84
4	#5860.00	57.6 PK	74.0	-16.4	1.51 H	135	15.72	41.88
5	#5860.00	41.6 AV	54.0	-12.4	1.51 H	135	-0.28	41.88
6	11650.00	53.6 PK	74.0	-20.4	1.07 H	153	6.51	47.09
7	11650.00	41.2 AV	54.0	-12.8	1.07 H	153	-5.89	47.09
8	#17475.00	62.8 PK	74.0	-11.2	1.10 H	174	8.21	54.59
9	#17475.00	48.1 AV	54.0	-5.9	1.10 H	174	-6.49	54.59

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	*5825.00	99.1 PK			1.05 V	349	57.35	41.75
2	*5825.00	90.4 AV			1.05 V	349	48.65	41.75
3	#5850.00	60.5 PK	78.2	-17.7	1.05 V	349	18.66	41.84
4	#5860.00	60.4 PK	74.0	-13.6	1.05 V	349	18.52	41.88
5	#5860.00	43.5 AV	54.0	-10.5	1.05 V	349	1.62	41.88
6	11650.00	56.1 PK	74.0	-17.9	1.00 V	47	9.01	47.09
7	11650.00	44.2 AV	54.0	-9.8	1.00 V	47	-2.89	47.09
8	#17475.00	64.8 PK	74.0	-9.2	1.06 V	20	10.21	54.59
9	#17475.00	50.9 AV	54.0	-3.1	1.06 V	20	-3.69	54.59

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.

802.11n (HT20)

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	62.0 PK	74.0	-12.0	1.43 H	140	22.09	39.91
2	5150.00	45.1 AV	54.0	-8.9	1.43 H	140	5.19	39.91
3	*5180.00	91.6 PK			1.43 H	140	51.58	40.02
4	*5180.00	82.5 AV			1.43 H	140	42.48	40.02
5	#10360.00	53.9 PK	74.0	-20.1	1.00 H	138	7.84	46.06
6	#10360.00	42.0 AV	54.0	-12.0	1.00 H	138	-4.06	46.06
7	15540.00	62.7 PK	74.0	-11.3	1.13 H	196	11.93	50.77
8	15540.00	48.3 AV	54.0	-5.7	1.13 H	196	-2.47	50.77
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.4 PK	74.0	-22.6	1.01 V	161	11.49	39.91
2	5150.00	40.1 AV	54.0	-13.9	1.01 V	161	0.19	39.91
3	*5180.00	102.9 PK			1.01 V	161	62.88	40.02
4	*5180.00	92.6 AV			1.01 V	161	52.58	40.02
5	#10360.00	56.3 PK	74.0	-17.7	1.01 V	47	10.24	46.06
6	#10360.00	44.4 AV	54.0	-9.6	1.01 V	47	-1.66	46.06
7	15540.00	64.8 PK	74.0	-9.2	1.05 V	16	14.03	50.77
8	15540.00	51.2 AV	54.0	-2.8	1.05 V	16	0.43	50.77

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	91.2 PK			1.39 H	139	51.10	40.10
2	*5200.00	82.2 AV			1.39 H	139	42.10	40.10
3	#10400.00	53.8 PK	74.0	-20.2	1.00 H	139	7.74	46.06
4	#10400.00	41.8 AV	54.0	-12.2	1.00 H	139	-4.26	46.06
5	15800.00	63.0 PK	74.0	-11.0	1.11 H	203	12.02	50.98
6	15800.00	48.6 AV	54.0	-5.4	1.11 H	203	-2.38	50.98
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.1 PK			1.00 V	346	63.00	40.10
2	*5200.00	93.5 AV			1.00 V	346	53.40	40.10
3	#10400.00	56.8 PK	74.0	-17.2	1.04 V	58	10.74	46.06
4	#10400.00	44.7 AV	54.0	-9.3	1.04 V	58	-1.36	46.06
5	15600.00	64.6 PK	74.0	-9.4	1.09 V	16	13.69	50.91
6	15600.00	51.0 AV	54.0	-3.0	1.09 V	16	0.09	50.91

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.

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	91.9 PK			1.45 H	135	51.68	40.22
2	*5240.00	82.9 AV			1.45 H	135	42.68	40.22
3	#10480.00	54.0 PK	74.0	-20.0	1.04 H	142	7.86	46.14
4	#10480.00	42.3 AV	54.0	-11.7	1.04 H	142	-3.84	46.14
5	15720.00	62.9 PK	74.0	-11.1	1.19 H	201	12.08	50.82
6	15720.00	48.6 AV	54.0	-5.4	1.19 H	201	-2.22	50.82
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.6 PK			1.02 V	8	63.38	40.22
2	*5240.00	93.9 AV			1.02 V	8	53.68	40.22
3	#10480.00	56.7 PK	74.0	-17.3	1.00 V	43	10.56	46.14
4	#10480.00	44.5 AV	54.0	-9.5	1.00 V	43	-1.64	46.14
5	15720.00	63.9 PK	74.0	-10.1	1.04 V	10	13.08	50.82
6	15720.00	50.9 AV	54.0	-3.1	1.04 V	10	0.08	50.82

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.

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	91.1 PK			1.44 H	124	50.84	40.26
2	*5260.00	82.0 AV			1.44 H	124	41.74	40.26
3	#10520.00	54.4 PK	74.0	-19.6	1.00 H	139	8.19	46.21
4	#10520.00	42.2 AV	54.0	-11.8	1.00 H	139	-4.01	46.21
5	15780.00	63.0 PK	74.0	-11.0	1.13 H	201	12.06	50.94
6	15780.00	48.5 AV	54.0	-5.5	1.13 H	201	-2.44	50.94
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	*5260.00	103.9 PK			1.01 V	13	63.64	40.26
2	*5260.00	93.6 AV			1.01 V	13	53.34	40.26
3	#10520.00	57.2 PK	74.0	-16.8	1.04 V	45	10.99	46.21
4	#10520.00	45.2 AV	54.0	-8.8	1.04 V	45	-1.01	46.21
5	15780.00	63.7 PK	74.0	-10.3	1.05 V	35	12.76	50.94
6	15780.00	50.7 AV	54.0	-3.3	1.05 V	35	-0.24	50.94

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.

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	92.1 PK			1.39 H	149	51.72	40.38
2	*5300.00	83.0 AV			1.39 H	149	42.62	40.38
3	10600.00	53.9 PK	74.0	-20.1	1.03 H	122	7.49	46.41
4	10600.00	42.3 AV	54.0	-11.7	1.03 H	122	-4.11	46.41
5	15900.00	62.3 PK	74.0	-11.7	1.18 H	183	11.26	51.04
6	15900.00	48.0 AV	54.0	-6.0	1.18 H	183	-3.04	51.04
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	*5300.00	104.1 PK			1.05 V	6	63.72	40.38
2	*5300.00	93.5 AV			1.05 V	6	53.12	40.38
3	10600.00	57.1 PK	74.0	-16.9	1.04 V	43	10.69	46.41
4	10600.00	44.8 AV	54.0	-9.2	1.04 V	43	-1.61	46.41
5	15900.00	64.0 PK	74.0	-10.0	1.07 V	19	12.96	51.04
6	15900.00	50.9 AV	54.0	-3.1	1.07 V	19	-0.14	51.04

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.

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	91.1 PK			1.43 H	129	50.66	40.44
2	*5320.00	82.0 AV			1.43 H	129	41.56	40.44
3	5350.00	60.4 PK	74.0	-13.6	1.43 H	129	19.89	40.51
4	5350.00	46.2 AV	54.0	-7.8	1.43 H	129	5.69	40.51
5	10640.00	53.5 PK	74.0	-20.5	1.00 H	142	7.06	46.44
6	10640.00	41.6 AV	54.0	-12.4	1.00 H	142	-4.84	46.44
7	15960.00	62.5 PK	74.0	-11.5	1.13 H	203	11.42	51.08
8	15960.00	47.9 AV	54.0	-6.1	1.13 H	203	-3.18	51.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.2 PK			1.11 V	0	62.76	40.44
2	*5320.00	93.4 AV			1.11 V	0	52.96	40.44
3	5350.00	61.3 PK	74.0	-12.7	1.11 V	346	20.79	40.51
4	5350.00	47.2 AV	54.0	-6.8	1.11 V	346	6.69	40.51
5	10640.00	56.4 PK	74.0	-17.6	1.02 V	61	9.96	46.44
6	10640.00	44.3 AV	54.0	-9.7	1.02 V	61	-2.14	46.44
7	15960.00	64.1 PK	74.0	-9.9	1.04 V	13	13.02	51.08
8	15960.00	50.6 AV	54.0	-3.4	1.04 V	13	-0.48	51.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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	52.4 PK	74.0	-21.6	1.45 H	129	11.52	40.88
2	#5470.00	39.4 AV	54.0	-14.6	1.45 H	129	-1.48	40.88
3	*5500.00	91.7 PK			1.45 H	129	50.73	40.97
4	*5500.00	82.9 AV			1.45 H	129	41.93	40.97
5	11000.00	53.8 PK	74.0	-20.2	1.02 H	144	6.96	46.84
6	11000.00	41.6 AV	54.0	-12.4	1.02 H	144	-5.24	46.84
7	#16500.00	63.0 PK	74.0	-11.0	1.10 H	187	10.22	52.78
8	#16500.00	48.4 AV	54.0	-5.6	1.10 H	187	-4.38	52.78
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	#5470.00	54.5 PK	74.0	-19.5	1.13 V	79	13.62	40.88
2	#5470.00	41.4 AV	54.0	-12.6	1.13 V	79	0.52	40.88
3	*5500.00	101.7 PK			1.13 V	79	60.73	40.97
4	*5500.00	92.5 AV			1.13 V	79	51.53	40.97
5	11000.00	57.5 PK	74.0	-16.5	1.00 V	54	10.66	46.84
6	11000.00	45.3 AV	54.0	-8.7	1.00 V	54	-1.54	46.84
7	#16500.00	64.6 PK	74.0	-9.4	1.07 V	41	11.82	52.78
8	#16500.00	51.1 AV	54.0	-2.9	1.07 V	41	-1.68	52.78

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.

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	91.9 PK			1.41 H	114	50.64	41.26
2	*5600.00	82.8 AV			1.41 H	114	41.54	41.26
3	11200.00	53.7 PK	74.0	-20.3	1.00 H	157	6.87	46.83
4	11200.00	41.8 AV	54.0	-12.2	1.00 H	157	-5.03	46.83
5	#16800.00	62.7 PK	74.0	-11.3	1.13 H	178	10.05	52.65
6	#16800.00	48.0 AV	54.0	-6.0	1.13 H	178	-4.65	52.65
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	102.4 PK			1.01 V	53	61.14	41.26
2	*5600.00	93.2 AV			1.01 V	53	51.94	41.26
3	11200.00	56.8 PK	74.0	-17.2	1.00 V	43	9.97	46.83
4	11200.00	44.4 AV	54.0	-9.6	1.00 V	43	-2.43	46.83
5	#16800.00	64.9 PK	74.0	-9.1	1.04 V	26	12.25	52.65
6	#16800.00	51.4 AV	54.0	-2.6	1.04 V	26	-1.25	52.65

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.

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	92.3 PK			1.47 H	122	50.84	41.46
2	*5700.00	83.4 AV			1.47 H	122	41.94	41.46
3	#5725.00	59.4 PK	74.0	-14.6	1.47 H	122	17.89	41.51
4	#5725.00	46.4 AV	54.0	-7.6	1.47 H	122	4.89	41.51
5	11400.00	54.5 PK	74.0	-19.5	1.04 H	155	7.59	46.91
6	11400.00	42.1 AV	54.0	-11.9	1.04 H	155	-4.81	46.91
7	#17100.00	62.4 PK	74.0	-11.6	1.15 H	193	9.51	52.89
8	#17100.00	47.9 AV	54.0	-6.1	1.15 H	193	-4.99	52.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.4 PK			1.02 V	350	60.94	41.46
2	*5700.00	93.0 AV			1.02 V	350	51.54	41.46
3	#5725.00	61.8 PK	74.0	-12.2	1.01 V	0	20.29	41.51
4	#5725.00	48.9 AV	54.0	-5.1	1.01 V	0	7.39	41.51
5	11400.00	57.1 PK	74.0	-16.9	1.01 V	46	10.19	46.91
6	11400.00	45.0 AV	54.0	-9.0	1.01 V	46	-1.91	46.91
7	#17100.00	64.4 PK	74.0	-9.6	1.14 V	36	11.51	52.89
8	#17100.00	51.3 AV	54.0	-2.7	1.14 V	36	-1.59	52.89

REMARKS:

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

CHANNEL	TX Channel 149	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	#5715.00	54.6 PK	74.0	-19.4	1.54 H	137	13.11	41.49
2	#5715.00	40.2 AV	54.0	-13.8	1.54 H	137	-1.29	41.49
3	#5725.00	60.3 PK	78.2	-17.9	1.54 H	137	18.79	41.51
4	*5745.00	90.5 PK			1.54 H	137	48.95	41.55
5	*5745.00	81.6 AV			1.54 H	137	40.05	41.55
6	11490.00	53.1 PK	74.0	-20.9	1.09 H	163	6.01	47.09
7	11490.00	41.0 AV	54.0	-13.0	1.09 H	163	-6.09	47.09
8	#17235.00	62.9 PK	74.0	-11.1	1.15 H	170	9.28	53.62
9	#17235.00	48.4 AV	54.0	-5.6	1.15 H	170	-5.22	53.62

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	#5715.00	55.8 PK	74.0	-18.2	1.01 V	349	14.31	41.49
2	#5715.00	41.6 AV	54.0	-12.4	1.01 V	349	0.11	41.49
3	#5725.00	62.1 PK	78.2	-16.1	1.01 V	349	20.59	41.51
4	*5745.00	101.1 PK			1.01 V	349	59.55	41.55
5	*5745.00	91.7 AV			1.01 V	349	50.15	41.55
6	11490.00	56.2 PK	74.0	-17.8	1.00 V	44	9.11	47.09
7	11490.00	44.4 AV	54.0	-9.6	1.00 V	44	-2.69	47.09
8	#17235.00	65.1 PK	74.0	-8.9	1.03 V	25	11.48	53.62
9	#17235.00	51.3 AV	54.0	-2.7	1.03 V	25	-2.32	53.62

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.

CHANNEL	TX Channel 157	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	*5785.00	91.6 PK			1.50 H	122	49.97	41.63
2	*5785.00	82.4 AV			1.50 H	122	40.77	41.63
3	11570.00	53.2 PK	74.0	-20.8	1.04 H	167	6.13	47.07
4	11570.00	41.0 AV	54.0	-13.0	1.04 H	167	-6.07	47.07
5	#17355.00	62.9 PK	74.0	-11.1	1.14 H	162	8.76	54.14
6	#17355.00	48.0 AV	54.0	-6.0	1.14 H	162	-6.14	54.14
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	*5785.00	101.2 PK			1.01 V	351	59.57	41.63
2	*5785.00	92.1 AV			1.01 V	351	50.47	41.63
3	11570.00	55.8 PK	74.0	-18.2	1.04 V	54	8.73	47.07
4	11570.00	44.0 AV	54.0	-10.0	1.04 V	54	-3.07	47.07
5	#17355.00	65.2 PK	74.0	-8.8	1.02 V	38	11.06	54.14
6	#17355.00	51.2 AV	54.0	-2.8	1.02 V	38	-2.94	54.14

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.

CHANNEL	TX Channel 165	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	*5825.00	89.8 PK			1.56 H	146	48.05	41.75
2	*5825.00	81.1 AV			1.56 H	146	39.35	41.75
3	#5850.00	57.6 PK	78.2	-20.6	1.56 H	146	15.76	41.84
4	#5860.00	58.4 PK	74.0	-15.6	1.56 H	146	16.52	41.88
5	#5860.00	41.6 AV	54.0	-12.4	1.56 H	146	-0.28	41.88
6	11650.00	52.4 PK	74.0	-21.6	1.12 H	159	5.31	47.09
7	11650.00	40.6 AV	54.0	-13.4	1.12 H	159	-6.49	47.09
8	#17475.00	63.3 PK	74.0	-10.7	1.20 H	161	8.71	54.59
9	#17475.00	48.8 AV	54.0	-5.2	1.20 H	161	-5.79	54.59

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	*5825.00	99.9 PK			1.00 V	351	58.15	41.75
2	*5825.00	90.9 AV			1.00 V	351	49.15	41.75
3	#5850.00	60.9 PK	78.2	-17.3	1.00 V	351	19.06	41.84
4	#5860.00	60.1 PK	74.0	-13.9	1.00 V	351	18.22	41.88
5	#5860.00	43.4 AV	54.0	-10.6	1.00 V	351	1.52	41.88
6	11650.00	56.3 PK	74.0	-17.7	1.04 V	52	9.21	47.09
7	11650.00	44.6 AV	54.0	-9.4	1.04 V	52	-2.49	47.09
8	#17475.00	65.4 PK	74.0	-8.6	1.04 V	19	10.81	54.59
9	#17475.00	51.7 AV	54.0	-2.3	1.04 V	19	-2.89	54.59

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.

802.11n (HT40)

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	58.8 PK	74.0	-15.2	1.53 H	113	18.89	39.91
2	5150.00	39.2 AV	54.0	-14.8	1.53 H	113	-0.71	39.91
3	*5190.00	89.3 PK			1.53 H	113	49.23	40.07
4	*5190.00	81.4 AV			1.53 H	113	41.33	40.07
5	#10380.00	54.6 PK	74.0	-19.4	1.02 H	140	8.54	46.06
6	#10380.00	42.4 AV	54.0	-11.6	1.02 H	140	-3.66	46.06
7	15570.00	62.3 PK	74.0	-11.7	1.11 H	178	11.46	50.84
8	15570.00	48.1 AV	54.0	-5.9	1.11 H	178	-2.74	50.84
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	51.6 PK	74.0	-22.4	1.12 V	358	11.69	39.91
2	5150.00	41.0 AV	54.0	-13.0	1.12 V	358	1.09	39.91
3	*5190.00	99.4 PK			1.12 V	358	59.33	40.07
4	*5190.00	90.1 AV			1.12 V	358	50.03	40.07
5	#10380.00	56.8 PK	74.0	-17.2	1.04 V	58	10.74	46.06
6	#10380.00	44.9 AV	54.0	-9.1	1.04 V	58	-1.16	46.06
7	15570.00	64.9 PK	74.0	-9.1	1.09 V	30	14.06	50.84
8	15570.00	51.8 AV	54.0	-2.2	1.09 V	30	0.96	50.84

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.

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	89.2 PK			1.59 H	120	49.02	40.18
2	*5230.00	81.4 AV			1.59 H	120	41.22	40.18
3	#10460.00	54.2 PK	74.0	-19.8	1.06 H	133	8.08	46.12
4	#10460.00	42.2 AV	54.0	-11.8	1.06 H	133	-3.92	46.12
5	15690.00	62.0 PK	74.0	-12.0	1.15 H	171	11.21	50.79
6	15690.00	48.0 AV	54.0	-6.0	1.15 H	171	-2.79	50.79
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	*5230.00	100.2 PK			1.00 V	347	60.02	40.18
2	*5230.00	90.8 AV			1.00 V	347	50.62	40.18
3	#10460.00	57.7 PK	74.0	-16.3	1.03 V	57	11.58	46.12
4	#10460.00	45.3 AV	54.0	-8.7	1.03 V	57	-0.82	46.12
5	15690.00	64.6 PK	74.0	-9.4	1.19 V	42	13.81	50.79
6	15690.00	51.5 AV	54.0	-2.5	1.19 V	42	0.71	50.79

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.

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	89.4 PK			1.55 H	108	49.10	40.30
2	*5270.00	81.3 AV			1.55 H	108	41.00	40.30
3	5350.00	50.4 PK	74.0	-23.6	1.55 H	108	9.89	40.51
4	5350.00	37.6 AV	54.0	-16.4	1.55 H	108	-2.91	40.51
5	#10540.00	54.7 PK	74.0	-19.3	1.03 H	145	8.44	46.26
6	#10540.00	42.8 AV	54.0	-11.2	1.03 H	145	-3.46	46.26
7	15810.00	62.7 PK	74.0	-11.3	1.16 H	176	11.71	50.99
8	15810.00	48.3 AV	54.0	-5.7	1.16 H	176	-2.69	50.99
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	*5270.00	100.7 PK			1.00 V	350	60.40	40.30
2	*5270.00	91.4 AV			1.00 V	350	51.10	40.30
3	5350.00	52.1 PK	74.0	-21.9	1.00 V	350	11.59	40.51
4	5350.00	40.2 AV	54.0	-13.8	1.00 V	350	-0.31	40.51
5	#10540.00	57.6 PK	74.0	-16.4	1.00 V	34	11.34	46.26
6	#10540.00	45.3 AV	54.0	-8.7	1.00 V	34	-0.96	46.26
7	15810.00	64.3 PK	74.0	-9.7	1.18 V	41	13.31	50.99
8	15810.00	51.0 AV	54.0	-3.0	1.18 V	41	0.01	50.99

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.

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	89.0 PK			1.60 H	95	48.60	40.40
2	*5310.00	80.9 AV			1.60 H	95	40.50	40.40
3	5350.00	50.9 PK	74.0	-23.1	1.58 H	97	10.39	40.51
4	5350.00	37.9 AV	54.0	-16.1	1.58 H	97	-2.61	40.51
5	10620.00	55.3 PK	74.0	-18.7	1.00 H	144	8.87	46.43
6	10620.00	43.1 AV	54.0	-10.9	1.00 H	144	-3.33	46.43
7	15930.00	62.2 PK	74.0	-11.8	1.21 H	183	11.14	51.06
8	15930.00	48.0 AV	54.0	-6.0	1.21 H	183	-3.06	51.06
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	*5310.00	101.3 PK			1.12 V	350	60.90	40.40
2	*5310.00	90.4 AV			1.12 V	350	50.00	40.40
3	5350.00	56.8 PK	74.0	-17.2	1.12 V	350	16.29	40.51
4	5350.00	45.4 AV	54.0	-8.6	1.12 V	350	4.89	40.51
5	10620.00	57.1 PK	74.0	-16.9	1.00 V	38	10.67	46.43
6	10620.00	45.2 AV	54.0	-8.8	1.00 V	38	-1.23	46.43
7	15930.00	64.4 PK	74.0	-9.6	1.13 V	35	13.34	51.06
8	15930.00	51.5 AV	54.0	-2.5	1.13 V	35	0.44	51.06

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.



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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	49.9 PK	74.0	-24.1	1.58 H	117	9.02	40.88
2	#5470.00	37.3 AV	54.0	-16.7	1.58 H	117	-3.58	40.88
3	*5510.00	89.5 PK			1.50 H	94	48.50	41.00
4	*5510.00	81.4 AV			1.50 H	94	40.40	41.00
5	11020.00	54.5 PK	74.0	-19.5	1.03 H	132	7.67	46.83
6	11020.00	42.5 AV	54.0	-11.5	1.03 H	132	-4.33	46.83
7	#16530.00	63.3 PK	74.0	-10.7	1.20 H	177	10.56	52.74
8	#16530.00	48.6 AV	54.0	-5.4	1.20 H	177	-4.14	52.74

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	56.6 PK	74.0	-17.4	1.00 V	99	15.72	40.88
2	#5470.00	42.3 AV	54.0	-11.7	1.00 V	99	1.42	40.88
3	*5510.00	98.6 PK			1.00 V	99	57.60	41.00
4	*5510.00	89.2 AV			1.00 V	99	48.20	41.00
5	11020.00	57.5 PK	74.0	-16.5	1.06 V	35	10.67	46.83
6	11020.00	45.2 AV	54.0	-8.8	1.06 V	35	-1.63	46.83
7	#16530.00	64.2 PK	74.0	-9.8	1.14 V	42	11.46	52.74
8	#16530.00	50.9 AV	54.0	-3.1	1.14 V	42	-1.84	52.74

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.

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	89.5 PK			1.46 H	107	48.27	41.23
2	*5590.00	81.5 AV			1.46 H	107	40.27	41.23
3	11180.00	54.8 PK	74.0	-19.2	1.03 H	145	7.97	46.83
4	11180.00	42.5 AV	54.0	-11.5	1.03 H	145	-4.33	46.83
5	#16770.00	63.3 PK	74.0	-10.7	1.15 H	185	10.62	52.68
6	#16770.00	48.4 AV	54.0	-5.6	1.15 H	185	-4.28	52.68
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	*5590.00	97.9 PK			1.00 V	52	56.67	41.23
2	*5590.00	89.1 AV			1.00 V	52	47.87	41.23
3	11180.00	56.8 PK	74.0	-17.2	1.02 V	36	9.97	46.83
4	11180.00	44.9 AV	54.0	-9.1	1.02 V	36	-1.93	46.83
5	#16770.00	63.8 PK	74.0	-10.2	1.09 V	40	11.12	52.68
6	#16770.00	50.9 AV	54.0	-3.1	1.09 V	40	-1.78	52.68

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.

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	92.1 PK			1.22 H	210	50.70	41.40
2	*5670.00	81.1 AV			1.22 H	210	39.70	41.40
3	#5725.00	53.5 PK	74.0	-20.5	1.22 H	210	11.99	41.51
4	#5725.00	41.4 AV	54.0	-12.6	1.22 H	210	-0.11	41.51
5	11340.00	55.0 PK	74.0	-19.0	1.03 H	144	8.11	46.89
6	11340.00	42.9 AV	54.0	-11.1	1.03 H	144	-3.99	46.89
7	#17010.00	63.5 PK	74.0	-10.5	1.21 H	181	10.94	52.56
8	#17010.00	48.3 AV	54.0	-5.7	1.21 H	181	-4.26	52.56
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	97.9 PK			1.00 V	36	56.50	41.40
2	*5670.00	89.2 AV			1.00 V	36	47.80	41.40
3	#5725.00	53.3 PK	74.0	-20.7	1.00 V	36	11.79	41.51
4	#5725.00	41.5 AV	54.0	-12.5	1.00 V	36	-0.01	41.51
5	11340.00	57.7 PK	74.0	-16.3	1.00 V	47	10.81	46.89
6	11340.00	45.4 AV	54.0	-8.6	1.00 V	47	-1.49	46.89
7	#17010.00	63.8 PK	74.0	-10.2	1.14 V	22	11.24	52.56
8	#17010.00	50.9 AV	54.0	-3.1	1.14 V	22	-1.66	52.56

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.

CHANNEL	TX Channel 151	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	#5715.00	53.1 PK	74.0	-20.9	1.54 H	101	11.61	41.49
2	#5715.00	40.2 AV	54.0	-13.8	1.54 H	101	-1.29	41.49
3	#5725.00	57.6 PK	78.2	-20.6	1.54 H	101	16.09	41.51
4	*5755.00	90.0 PK			1.54 H	101	48.43	41.57
5	*5755.00	81.6 AV			1.54 H	101	40.03	41.57
6	11510.00	55.0 PK	74.0	-19.0	1.04 H	141	7.90	47.10
7	11510.00	42.9 AV	54.0	-11.1	1.04 H	141	-4.20	47.10
8	#17265.00	63.6 PK	74.0	-10.4	1.20 H	188	9.83	53.77
9	#17265.00	48.9 AV	54.0	-5.1	1.20 H	188	-4.87	53.77

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	55.9 PK	74.0	-18.1	1.01 V	351	14.41	41.49
2	#5715.00	41.9 AV	54.0	-12.1	1.01 V	351	0.41	41.49
3	#5725.00	60.8 PK	78.2	-17.4	1.01 V	351	19.29	41.51
4	*5755.00	97.5 PK			1.01 V	351	55.93	41.57
5	*5755.00	88.7 AV			1.01 V	351	47.13	41.57
6	11510.00	55.4 PK	74.0	-18.6	1.06 V	63	8.30	47.10
7	11510.00	44.2 AV	54.0	-9.8	1.06 V	63	-2.90	47.10
8	#17265.00	63.2 PK	74.0	-10.8	1.04 V	28	9.43	53.77
9	#17265.00	50.0 AV	54.0	-4.0	1.04 V	28	-3.77	53.77

REMARKS:

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

CHANNEL	TX Channel 159	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	*5795.00	89.3 PK			1.53 H	84	47.65	41.65
2	*5795.00	81.4 AV			1.53 H	84	39.75	41.65
3	#5850.00	57.2 PK	78.2	-21.0	1.53 H	84	15.36	41.84
4	#5860.00	52.1 PK	74.0	-21.9	1.53 H	84	10.22	41.88
5	#5860.00	39.6 AV	54.0	-14.4	1.53 H	84	-2.28	41.88
6	11590.00	55.0 PK	74.0	-19.0	1.00 H	139	7.94	47.06
7	11590.00	42.8 AV	54.0	-11.2	1.00 H	139	-4.26	47.06
8	#17385.00	63.2 PK	74.0	-10.8	1.17 H	177	8.95	54.25
9	#17385.00	48.6 AV	54.0	-5.4	1.17 H	177	-5.65	54.25

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	97.2 PK			1.02 V	337	55.55	41.65
2	*5795.00	88.6 AV			1.02 V	337	46.95	41.65
3	#5850.00	60.8 PK	78.2	-17.4	1.01 V	349	18.96	41.84
4	#5860.00	55.6 PK	74.0	-18.4	1.03 V	341	13.72	41.88
5	#5860.00	41.5 AV	54.0	-12.5	1.03 V	341	-0.38	41.88
6	11590.00	55.6 PK	74.0	-18.4	1.07 V	66	8.54	47.06
7	11590.00	44.4 AV	54.0	-9.6	1.07 V	66	-2.66	47.06
8	#17385.00	63.6 PK	74.0	-10.4	1.10 V	31	9.35	54.25
9	#17385.00	50.4 AV	54.0	-3.6	1.10 V	31	-3.85	54.25

REMARKS:

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

4.3 TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF 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.

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

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 : July 02, 2014

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 29, 2014

4.3.3 TEST PROCEDURE

FOR POWER OUTPUT MEASUREMENT

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 OCCUPIED BANDWIDTH

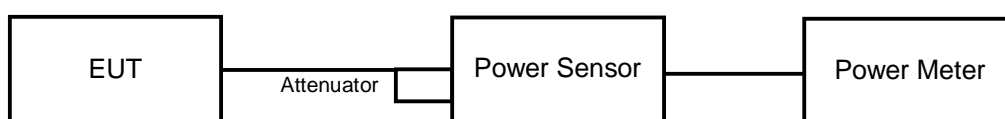
1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

4.3.4 DEVIATION FROM TEST STANDARD

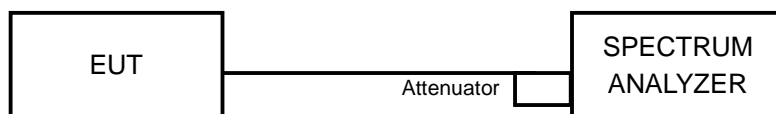
No deviation

4.3.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11a

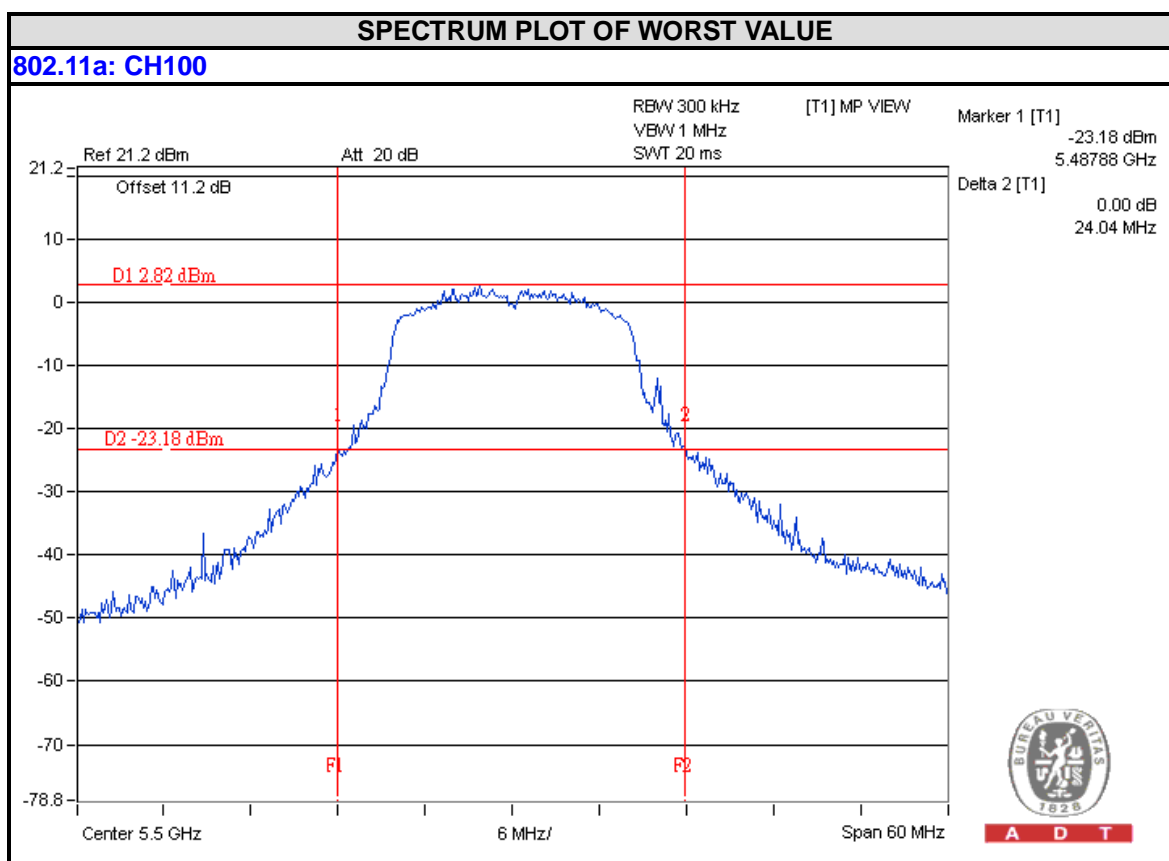
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.226	9.65	24.00	PASS
40	5200	9.419	9.74	24.00	PASS
48	5240	9.484	9.77	24.00	PASS
52	5260	9.29	9.68	24.00	PASS
60	5300	9.462	9.76	24.00	PASS
64	5320	9.594	9.82	24.00	PASS
100	5500	9.683	9.86	24.00	PASS
120	5600	9.594	9.82	24.00	PASS
140	5700	9.908	9.96	24.00	PASS
149	5745	7.603	8.81	30.00	PASS
157	5785	7.311	8.64	30.00	PASS
165	5825	7.499	8.75	30.00	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	25.34
40	5200	24.91
48	5240	25.36
52	5260	25.02
60	5300	24.90
64	5320	24.17
100	5500	24.04
120	5600	25.29
140	5700	24.95

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

Power Limit = 11dBm + 10logB < UNII Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	25.02	24.98 > 24
60	5300	24.90	24.96 > 24
64	5320	24.17	24.83 > 24
100	5500	24.04	24.8 > 24
120	5600	25.29	25.02 > 24
140	5700	24.95	24.97 > 24



802.11n (HT20)

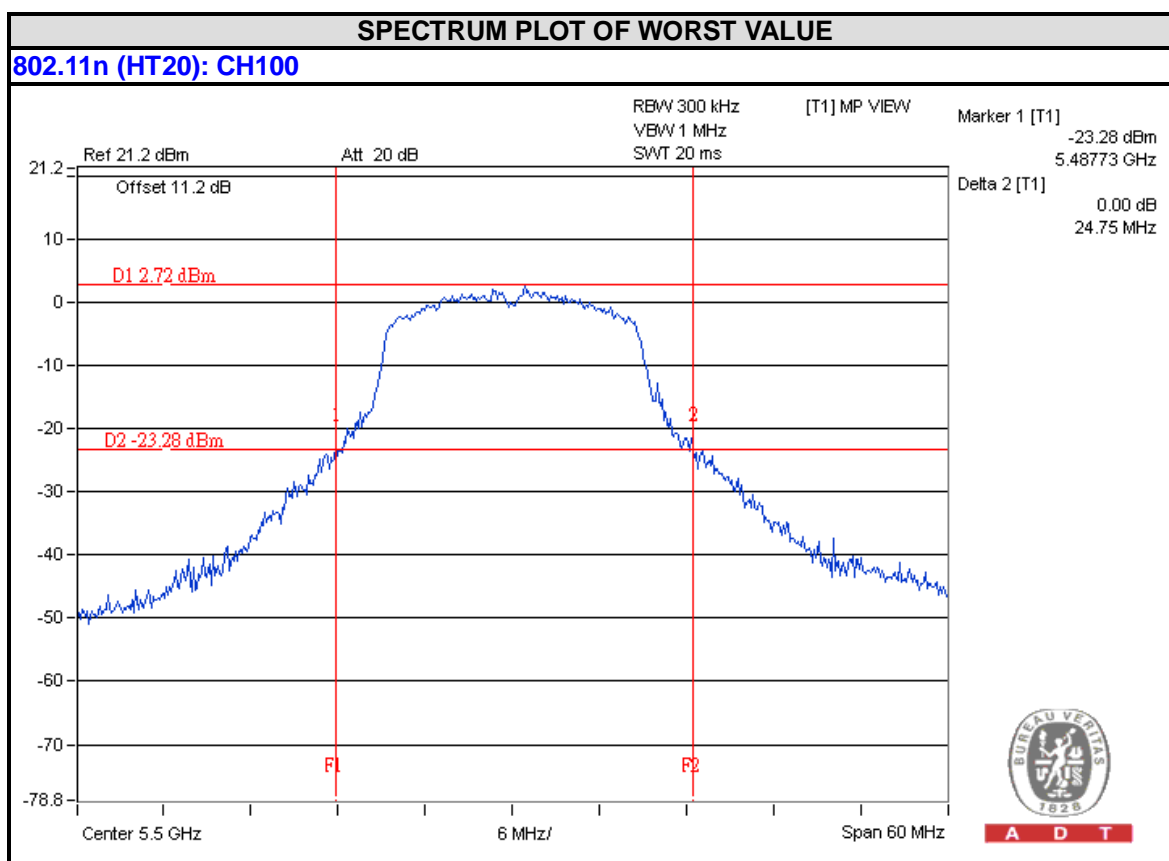
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.099	9.59	24.00	PASS
40	5200	9.204	9.64	24.00	PASS
48	5240	9.376	9.72	24.00	PASS
52	5260	9.29	9.68	24.00	PASS
60	5300	9.484	9.77	24.00	PASS
64	5320	9.572	9.81	24.00	PASS
100	5500	9.616	9.83	24.00	PASS
120	5600	9.55	9.80	24.00	PASS
140	5700	9.75	9.89	24.00	PASS
149	5745	7.551	8.78	30.00	PASS
157	5785	7.516	8.76	30.00	PASS
165	5825	7.396	8.69	30.00	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	26.06
40	5200	25.88
48	5240	25.47
52	5260	25.40
60	5300	25.46
64	5320	25.78
100	5500	24.75
120	5600	25.83
140	5700	25.16

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

Power Limit = 11dBm + 10logB < UNII Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	25.40	25.04 > 24
60	5300	25.46	25.05 > 24
64	5320	25.78	25.11 > 24
100	5500	24.75	24.93 > 24
120	5600	25.83	25.12 > 24
140	5700	25.16	25 > 24



802.11n (HT40)

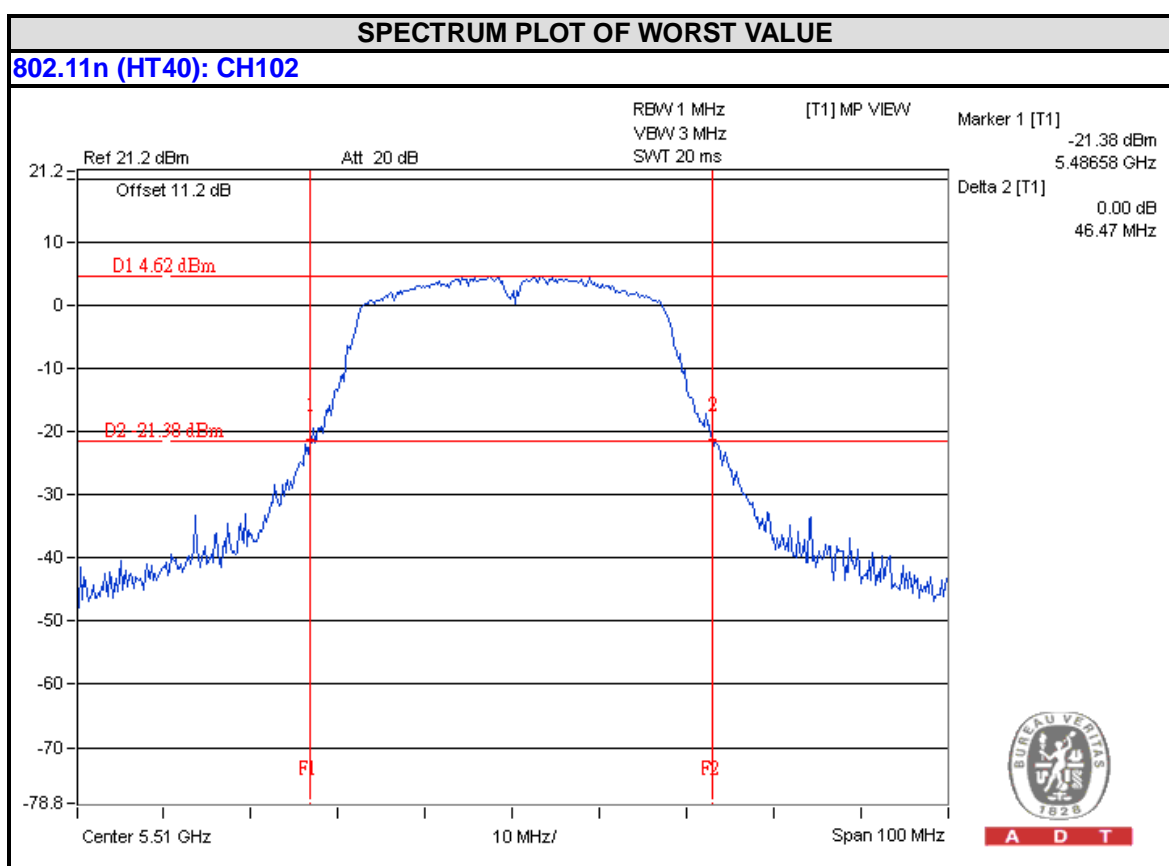
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	7.464	8.73	24.00	PASS
46	5230	7.396	8.69	24.00	PASS
54	5270	7.345	8.66	24.00	PASS
62	5310	7.295	8.63	24.00	PASS
102	5510	7.603	8.81	24.00	PASS
118	5590	7.482	8.74	24.00	PASS
134	5670	6.823	8.34	24.00	PASS
151	5755	6.237	7.95	30.00	PASS
159	5795	6.442	8.09	30.00	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
38	5190	45.96
46	5230	46.62
54	5270	47.04
62	5310	47.28
102	5510	46.47
118	5590	47.09
134	5670	47.30

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

Power Limit = 11dBm + 10logB < UNII Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	47.04	27.72 > 24
62	5310	47.28	27.74 > 24
102	5510	46.47	27.67 > 24
118	5590	47.09	27.72 > 24
134	5670	47.30	27.74 > 24



4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 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

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 29, 2014

4.4.3 TEST PROCEDURES

Using method SA-2

※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 add 10 log (1/duty cycle)

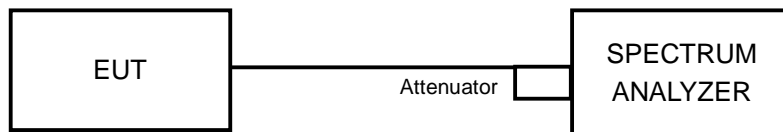
※For U-NII-3:

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 $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$
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 add 10 log (1/duty cycle)

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6

4.4.7 TEST RESULTS

For U-NII-1, U-NII-2A & U-NII-2C:
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-4.56	0.59	-3.97	11	PASS
40	5200	-4.28	0.59	-3.69	11	PASS
48	5240	-4.18	0.59	-3.59	11	PASS
52	5260	-4.01	0.59	-3.42	11	PASS
60	5300	-4.15	0.59	-3.56	11	PASS
64	5320	-4.20	0.59	-3.61	11	PASS
100	5500	-4.02	0.59	-3.43	11	PASS
120	5600	-3.33	0.59	-2.74	11	PASS
140	5700	-4.13	0.59	-3.54	11	PASS

Note: Refer to section 3.4 for duty cycle spectrum plot.

802.11n (HT20)

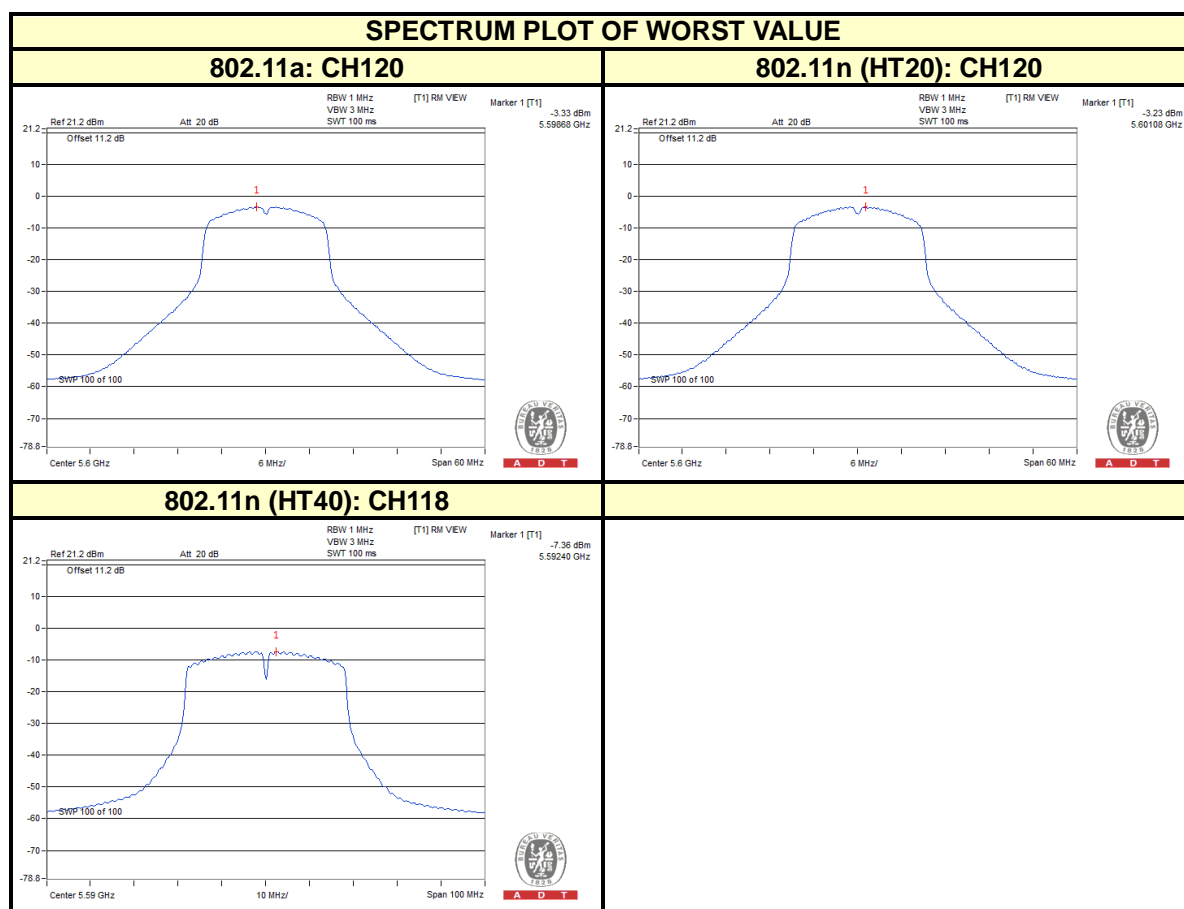
CHANNEL	CHANNEL FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-4.25	0.65	-3.60	11	PASS
40	5200	-4.28	0.65	-3.63	11	PASS
48	5240	-4.25	0.65	-3.60	11	PASS
52	5260	-3.94	0.65	-3.29	11	PASS
60	5300	-4.17	0.65	-3.52	11	PASS
64	5320	-4.20	0.65	-3.55	11	PASS
100	5500	-3.90	0.65	-3.25	11	PASS
120	5600	-3.23	0.65	-2.58	11	PASS
140	5700	-4.43	0.65	-3.78	11	PASS

Note: Refer to section 3.4 for duty cycle spectrum plot.

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-8.77	1.23	-7.54	11	PASS
46	5230	-8.62	1.23	-7.39	11	PASS
54	5270	-8.72	1.23	-7.49	11	PASS
62	5310	-8.85	1.23	-7.62	11	PASS
102	5510	-8.48	1.23	-7.25	11	PASS
118	5590	-7.36	1.23	-6.13	11	PASS
134	5670	-8.84	1.23	-7.61	11	PASS

Note: Refer to section 3.4 for duty cycle spectrum plot.



For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-9.48	-7.26	0.59	-6.67	30	PASS
157	5785	-9.11	-6.89	0.59	-6.30	30	PASS
165	5825	-9.27	-7.05	0.59	-6.46	30	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-8.83	-6.61	0.65	-5.96	30	PASS
157	5785	-8.94	-6.72	0.65	-6.07	30	PASS
165	5825	-9.00	-6.78	0.65	-6.13	30	PASS

802.11n (HT40)

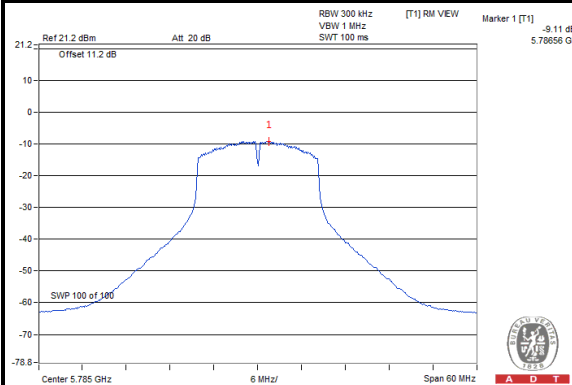
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-13.58	-11.36	1.23	-10.13	30	PASS
159	5795	-13.22	-11.00	1.23	-9.77	30	PASS



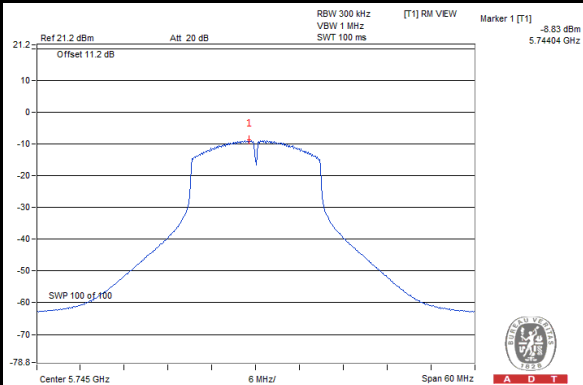
A D T

SPECTRUM PLOT OF WORST VALUE

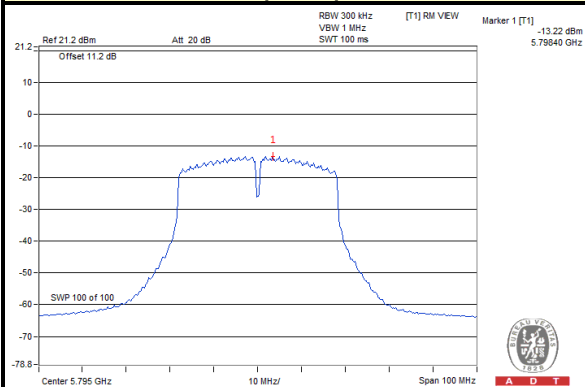
802.11a: CH157



802.11n (HT20): CH149



802.11n (HT40): CH159





A D T

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	FSV 40	100964	July 05, 2014	July 04, 2015
Temperature Humidity Chamber GIANTFORCE	& GTH-150-40-SP -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 : Aug. 29, 2014

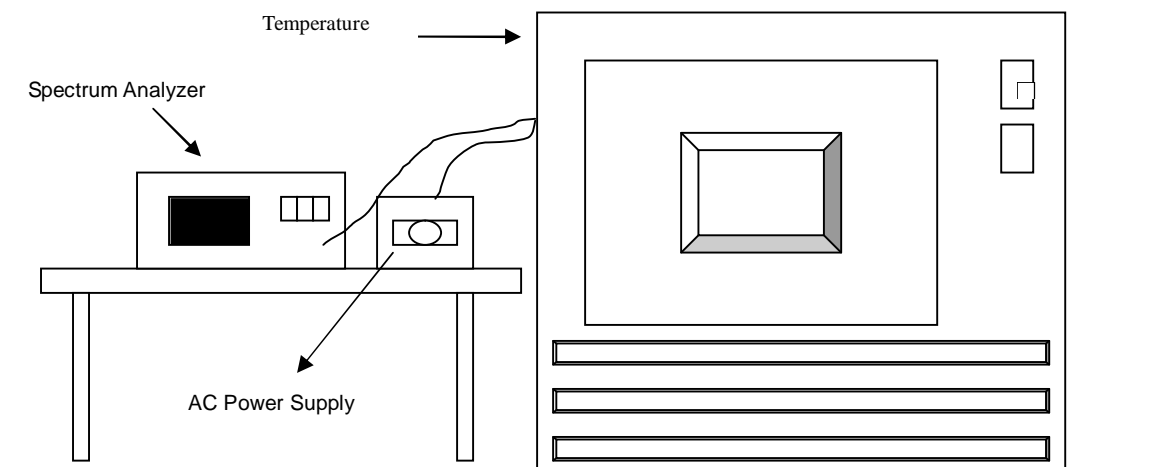
4.5.3 TEST PROCEDURE

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.

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	5319.9801	-0.00037	5319.9824	-0.00033	5319.9837	-0.00031	5319.9803	-0.00037
40	120	5320.0107	0.00020	5320.0069	0.00013	5320.0089	0.00017	5320.0095	0.00018
30	120	5320.0176	0.00033	5320.0185	0.00035	5320.0184	0.00035	5320.0176	0.00033
20	120	5319.9758	-0.00045	5319.9787	-0.00040	5319.9746	-0.00048	5319.9753	-0.00046
10	120	5319.9762	-0.00045	5319.976	-0.00045	5319.9772	-0.00043	5319.976	-0.00045
0	120	5320.0014	0.00003	5319.9988	-0.00002	5319.9994	-0.00001	5319.998	-0.00004
-10	120	5319.9782	-0.00041	5319.9783	-0.00041	5319.9776	-0.00042	5319.9772	-0.00043
-20	120	5320.0106	0.00020	5320.0146	0.00027	5320.0109	0.00020	5320.0102	0.00019
-30	120	5320.0166	0.00031	5320.0208	0.00039	5320.019	0.00036	5320.0167	0.00031

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	5319.9766	-0.00044	5319.9781	-0.00041	5319.9752	-0.00047	5319.9762	-0.00045
	120	5319.9758	-0.00045	5319.9787	-0.00040	5319.9746	-0.00048	5319.9753	-0.00046
	102	5319.9766	-0.00044	5319.9791	-0.00039	5319.9745	-0.00048	5319.9756	-0.00046

4.6 6dB BANDWIDTH MEASUREMENT

4.6.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 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 : Aug. 29, 2014

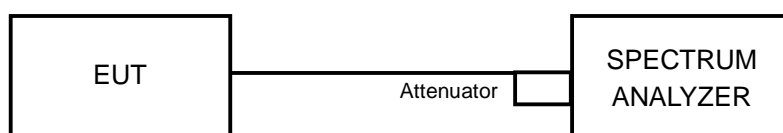
4.6.3 TEST PROCEDURE

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITIONS

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

4.6.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.15	0.5	PASS
157	5785	13.56	0.5	PASS
165	5825	15.10	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.15	0.5	PASS
157	5785	15.11	0.5	PASS
165	5825	15.14	0.5	PASS

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	33.89	0.5	PASS
159	5795	35.13	0.5	PASS

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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



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7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

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