



FCC TEST REPORT (15.407)

REPORT NO.: RF130723E04-1

MODEL NO.: T77H506

FCC ID: MCLT77H506

RECEIVED: July 12, 2013

TESTED: July 29 to Aug. 08, 2013

ISSUED: Sep. 02, 2013

APPLICANT: Hon Hai PRECISION IND.CO.,LTD

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R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130723E04-1	Original release	Sep. 02, 2013



1. CERTIFICATION

PRODUCT: 802.11abgn+BT4.0 module
BRAND NAME: FOXCONN
MODEL NO.: T77H506
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Hon Hai PRECISION IND.CO.,LTD
TESTED: July 29 to Aug. 08, 2013
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (Model: T77H506) 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 : *Lori Chung* , **DATE:** Sep. 02, 2013
(Lori Chung, Specialist)

APPROVED BY : *May Chen* , **DATE:** Sep. 02, 2013
(May Chen, Manager)



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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 -18.35dB at 0.36484MHz
15.407(b/1/2/3) (b)(5)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 5150.00MHz & 16740.00MHz.
15.407(a/1/2/3)	Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is MHF4 not a standard connector.

NOTE:

1. The EUT was operating in 2.400 ~ 2.4835GHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz. For the 2.400 ~ 2.4835GHz and 5.725~5.850GHz RF parameters was recorded in another test report.
2. The DFS report was recorded in another test report.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement	Value
Conducted emissions	2.98 dB
Radiated emissions (30MHz-1GHz)	5.63 dB
Radiated emissions (1GHz -6GHz)	3.73 dB
Radiated emissions (6GHz -18GHz)	3.90 dB
Radiated emissions (18GHz -40GHz)	4.11 dB



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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11abgn+BT4.0 module
MODEL NO.	T77H506
POWER SUPPLY	DC 3.3V
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GFSK(BT <LE> mode) for DTS
MODULATION TECHNOLOGY	DSSS,OFDM, DTS
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps BT-LE (GFSK): 1Mbps
OPERATING FREQUENCY	For 15.407 5GHz: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.58GHz & 5.66GHz ~ 5.70GHz
	For 15.247 2.4GHz: WLAN: 2.412 ~ 2.462GHz BT-LE(GFSK): 2.402 ~ 2.480GHz 5GHz: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	For 15.407 16 for 802.11a, 802.11n (HT20) 7 for 802.11n (HT40)
	For 15.247 (2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 40 for BT-LE(GFSK)
	For 15.247 (5GHz) 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	For 15.407 802.11a: 237.684mW 802.11n (HT20): 173.069mW 802.11n (HT40): 180.538mW For 15.247 (2.4GHz) 802.11b -Chain (0): 121.060mW 802.11b -Chain (1): 207.491mW 802.11g: 286.418mW 802.11n (HT20): 577.940mW BT-LE(GFSK): 3.614mW For 15.247 (5GHz) 802.11a: 304.089mW 802.11n (HT20): 587.181mW 802.11n (HT40): 562.171mW

ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

1. There are Bluetooth technology and WLAN technology used for the EUT
2. Bluetooth and WLAN technology can't transmit at same time.
3. The antennas provided to the EUT, please refer to the following table:

Antenna	Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Frequency range (MHz to MHz)	Connector Type
1	Chain (0)	Foxconn	NA	PIFA	-0.6	2400~2500	MHF4
					-2.3	5150~5850	
2	Chain (1)	Foxconn	NA	PIFA	-0.6	2400~2500	MHF4
					-2.3	5150~5850	

From the above antennas, Chain (1) was selected as representative antenna for the 802.11g and Chain (0) was selected as representative antenna for the 802.11a test and its data was recorded in this report.

4. The EUT incorporates a MIMO function without beam forming.

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

5. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
6. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



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3.2 DESCRIPTION OF TEST MODES

Operated in 5150 ~ 5350MHz band:

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

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

4 channels are provided for 802.11n (HT40):

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

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

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

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

3 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
134	5670 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

- NOTE:** 1. "-" means no effect.
2. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 140	116	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 140	116	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 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6
802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	13
802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	27

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 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6
802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	13
802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	27

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	26deg. C, 66%RH	120Vac, 60Hz	Jyunchun Lin
RE<1G	22deg. C, 71%RH	120Vac, 60Hz	Andy Ho
RE ³ 1G	23deg. C, 68%RH	120Vac, 60Hz	Tim Ho
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 D01 General UNII Test Procedures v01 r03

662911 D01 Multiple Transmitter Output v01 r02

ANSI C63.10-2009

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



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3.4 DUTY CYCLE OF TEST SIGNAL

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

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

802.11a: Duty cycle = 2.06 ms/2.085 ms = 0.988

802.11n (HT20): Duty cycle = 0.967 ms/0.991 ms = 0.976, Duty factor = $10 * \log(1/0.976) = 0.11$

802.11n (HT40): Duty cycle = 0.482 ms/0.501 ms = 0.962, Duty factor = $10 * \log(1/0.962) = 0.17$





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3.5 DESCRIPTION OF SUPPORT UNITS

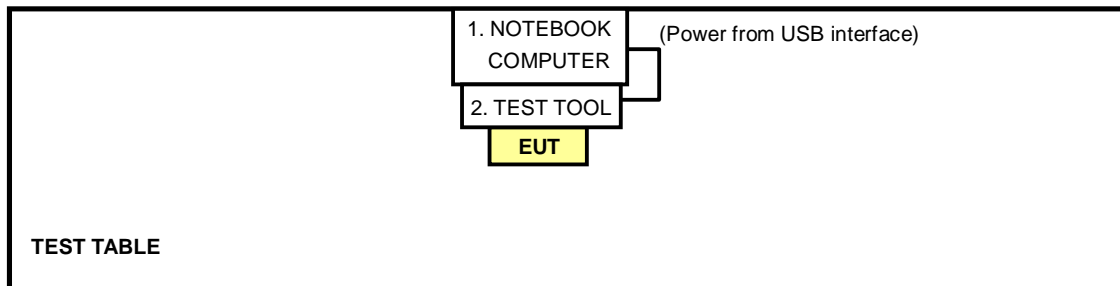
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP27L	7YLB32S	FCC DoC
2	TEST TOOL	Hon Hai	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB cable, 1m
2	NA

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

3.6 CONFIGURATION OF SYSTEM UNDER TEST





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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	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 2014
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 06, 2012	Sep. 05, 2013
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 07, 2013	June 06, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
50 ohms Terminator	50	EMC-3	Sep. 25, 2012	Sep. 24, 2013
Software ADT	BV ADT_Cond_V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: July 29, 2013

4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.
- b. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- d. The frequency range from 150kHz to 30MHz was searched. Emission level under (Limit – 20dB) was not recorded.

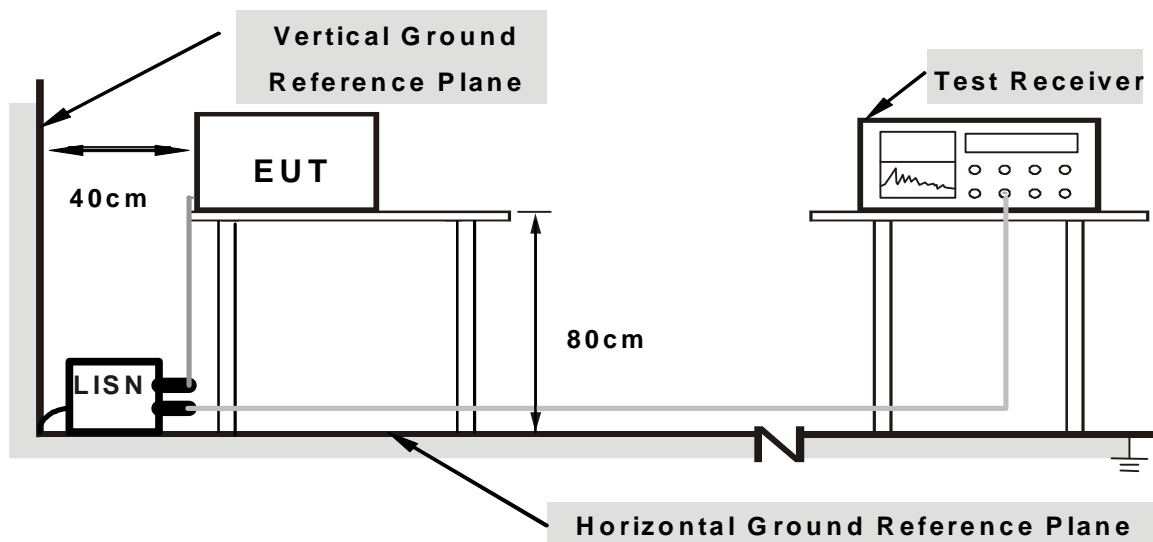
NOTE:

1. 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.

4.1.6 EUT OPERATING CONDITIONS

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

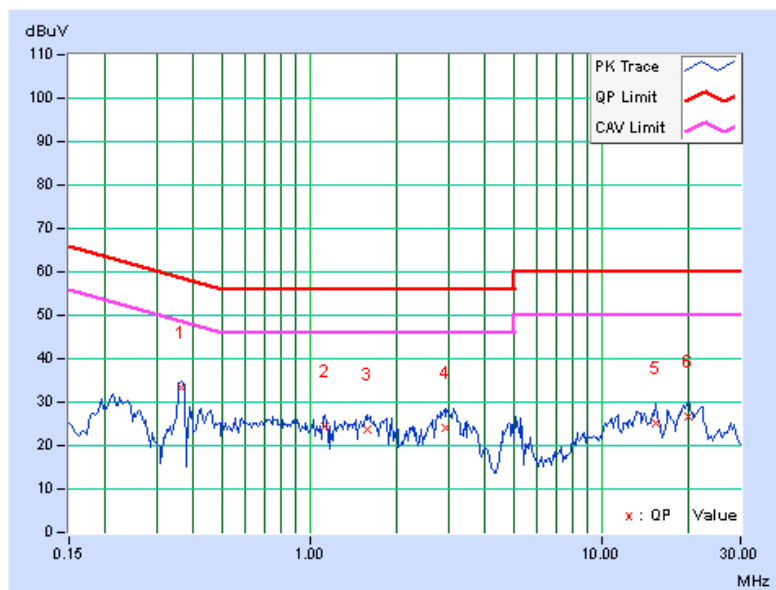
4.1.7 TEST RESULTS

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	0.36484	0.17	33.12	30.09	33.29	30.26	58.62	48.62	-25.32	-18.35
2	1.12500	0.23	24.16	16.83	24.39	17.06	56.00	46.00	-31.61	-28.94
3	1.57813	0.25	23.41	16.63	23.66	16.88	56.00	46.00	-32.34	-29.12
4	2.91406	0.32	23.92	19.34	24.24	19.66	56.00	46.00	-31.76	-26.34
5	15.32031	0.88	24.18	17.62	25.06	18.50	60.00	50.00	-34.94	-31.50
6	19.86719	1.03	25.55	19.06	26.58	20.09	60.00	50.00	-33.42	-29.91

REMARKS:

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





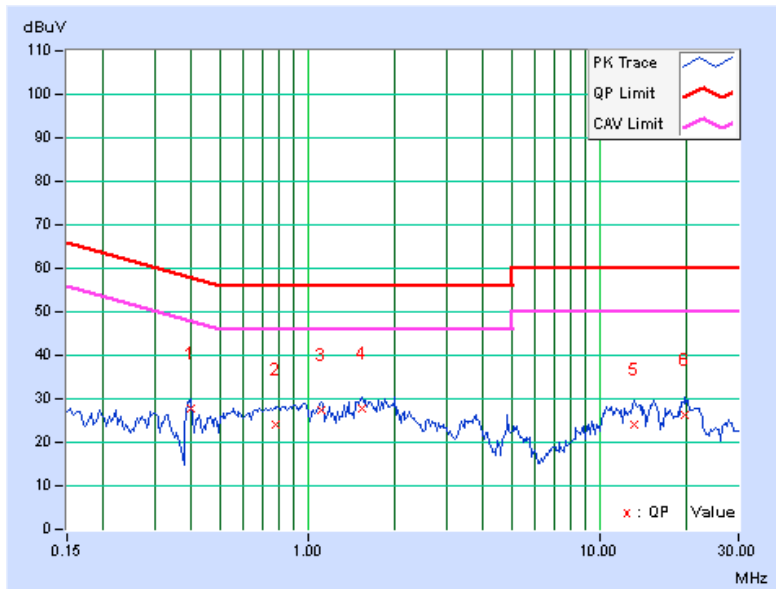
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PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.39609	0.17	27.43	21.59	27.60	21.76	57.93	47.93	-30.34	-26.18
2	0.77500	0.19	23.84	15.67	24.03	15.86	56.00	46.00	-31.97	-30.14
3	1.10938	0.21	27.09	20.01	27.30	20.22	56.00	46.00	-28.70	-25.78
4	1.53906	0.23	27.51	18.50	27.74	18.73	56.00	46.00	-28.26	-27.27
5	13.23047	0.60	23.37	17.76	23.97	18.36	60.00	50.00	-36.03	-31.64
6	19.72266	0.72	25.42	20.12	26.14	20.84	60.00	50.00	-33.86	-29.16

REMARKS:

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





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4.2 RADIATED EMISSION AND BANDEGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEGE MEASUREMENT

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

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

NOTE:

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

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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



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4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 29, 2013	Jan. 28, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A02578	June 25, 2013	June 24, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
Horn_Antenna AISi	AIH.8018	0000320091110	Nov. 19, 2012	Nov. 18, 2013
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 25, 2012	Dec. 24, 2013
RF Cable	NA	CHGCAB_001	Oct. 06, 2012	Oct. 05, 2013
Software	ADT_Radiated _V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 3 The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: July 31 to Aug. 03, 2013

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.

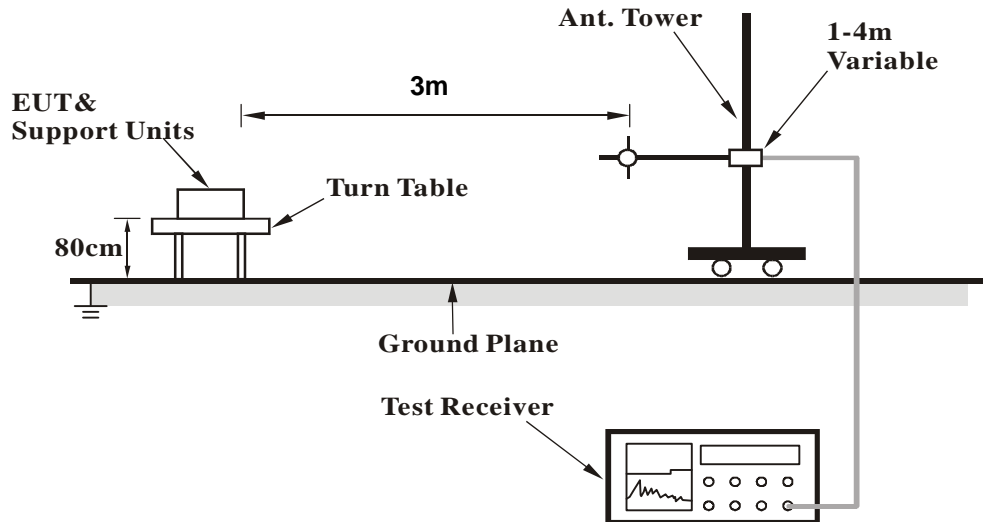
NOTE:

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 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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 116	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	83.20	36.4 QP	40.0	-3.6	1.02 H	331	55.53	-19.13
2	241.90	35.7 QP	46.0	-10.3	1.00 H	224	50.53	-14.81
3	271.14	37.3 QP	46.0	-8.7	1.50 H	221	51.03	-13.73
4	763.32	34.8 QP	46.0	-11.2	1.00 H	225	36.99	-2.19
5	782.65	38.4 QP	46.0	-7.6	1.00 H	302	40.47	-2.07
6	849.36	37.2 QP	46.0	-8.8	2.00 H	126	38.58	-1.35

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.82	31.9 QP	40.0	-8.2	1.12 V	182	45.43	-13.58
2	199.84	40.3 QP	43.5	-3.3	1.50 V	228	56.89	-16.64
3	272.30	39.9 QP	46.0	-6.1	1.00 V	129	53.54	-13.66
4	580.80	36.2 QP	46.0	-9.8	1.00 V	105	42.27	-6.09
5	616.22	40.6 QP	46.0	-5.4	2.00 V	226	45.42	-4.80
6	649.54	41.0 QP	46.0	-5.0	1.46 V	98	45.48	-4.48

REMARKS:

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



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ABOVE 1GHz DATA

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.1 PK	74.0	-1.9	1.24 H	328	63.50	8.60
2	5150.00	53.8 AV	54.0	-0.2	1.24 H	328	45.20	8.60
3	*5180.00	109.5 PK			1.24 H	328	100.74	8.76
4	*5180.00	98.2 AV			1.24 H	328	89.44	8.76
5	#10360.00	56.3 PK	74.0	-17.7	1.49 H	241	40.76	15.54
6	#10360.00	45.0 AV	54.0	-9.0	1.49 H	241	29.46	15.54
7	15540.00	60.9 PK	74.0	-13.1	1.12 H	258	38.53	22.37
8	15540.00	49.2 AV	54.0	-4.8	1.12 H	258	26.83	22.37

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.2 PK	74.0	-6.8	1.78 V	57	58.60	8.60
2	5150.00	48.9 AV	54.0	-5.1	1.78 V	57	40.30	8.60
3	*5180.00	104.6 PK			1.78 V	57	95.84	8.76
4	*5180.00	93.0 AV			1.78 V	57	84.24	8.76
5	#10360.00	54.3 PK	74.0	-19.7	1.01 V	318	38.76	15.54
6	#10360.00	41.8 AV	54.0	-12.2	1.01 V	318	26.26	15.54
7	15540.00	60.7 PK	74.0	-13.3	1.92 V	142	38.33	22.37
8	15540.00	48.3 AV	54.0	-5.7	1.92 V	142	25.93	22.37

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.0 PK	74.0	-4.0	1.51 H	327	61.40	8.60
2	5150.00	52.5 AV	54.0	-1.5	1.51 H	327	43.90	8.60
3	*5200.00	111.4 PK			1.51 H	327	102.53	8.87
4	*5200.00	101.1 AV			1.51 H	327	92.23	8.87
5	#10400.00	56.3 PK	74.0	-17.7	1.45 H	236	41.12	15.18
6	#10400.00	45.2 AV	54.0	-8.8	1.45 H	236	30.02	15.18
7	15600.00	60.3 PK	74.0	-13.7	1.08 H	232	38.18	22.12
8	15600.00	48.9 AV	54.0	-5.1	1.08 H	232	26.78	22.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.5 PK	74.0	-9.5	1.75 V	57	55.90	8.60
2	5150.00	46.9 AV	54.0	-7.1	1.75 V	57	38.30	8.60
3	*5200.00	105.5 PK			1.75 V	57	96.63	8.87
4	*5200.00	95.7 AV			1.75 V	57	86.83	8.87
5	#10400.00	53.8 PK	74.0	-20.2	1.00 V	312	38.62	15.18
6	#10400.00	41.5 AV	54.0	-12.5	1.00 V	312	26.32	15.18
7	15600.00	61.1 PK	74.0	-12.9	1.83 V	146	38.98	22.12
8	15600.00	47.6 AV	54.0	-6.4	1.83 V	146	25.48	22.12

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5017.00	51.9 PK	74.0	-22.1	1.24 H	325	43.73	8.17
2	5017.00	40.7 AV	54.0	-13.3	1.24 H	325	32.53	8.17
3	*5240.00	108.5 PK			1.24 H	325	99.49	9.01
4	*5240.00	98.6 AV			1.24 H	325	89.59	9.01
5	5382.00	54.4 PK	74.0	-19.6	1.24 H	325	45.02	9.38
6	5382.00	42.9 AV	54.0	-11.1	1.24 H	325	33.52	9.38
7	#10480.00	56.6 PK	74.0	-17.4	1.45 H	242	40.80	15.80
8	#10480.00	45.0 AV	54.0	-9.0	1.45 H	242	29.20	15.80
9	15720.00	60.9 PK	74.0	-13.1	1.07 H	245	39.10	21.80
10	15720.00	49.4 AV	54.0	-4.6	1.07 H	245	27.60	21.80

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	5150.00	51.6 PK	74.0	-22.4	1.70 V	32	43.00	8.60
2	5150.00	40.3 AV	54.0	-13.7	1.70 V	32	31.70	8.60
3	*5240.00	103.2 PK			1.70 V	32	94.19	9.01
4	*5240.00	93.2 AV			1.70 V	32	84.19	9.01
5	5350.00	54.7 PK	74.0	-19.3	1.70 V	32	45.39	9.31
6	5350.00	43.2 AV	54.0	-10.8	1.70 V	32	33.89	9.31
7	#10480.00	54.1 PK	74.0	-19.9	1.22 V	313	38.30	15.80
8	#10480.00	41.4 AV	54.0	-12.6	1.22 V	313	25.60	15.80
9	15720.00	58.4 PK	74.0	-15.6	1.88 V	159	36.60	21.80
10	15720.00	46.5 AV	54.0	-7.5	1.88 V	159	24.70	21.80

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.8 PK	74.0	-19.2	1.25 H	311	46.20	8.60
2	5150.00	40.5 AV	54.0	-13.5	1.25 H	311	31.90	8.60
3	*5260.00	108.6 PK			1.25 H	311	99.53	9.07
4	*5260.00	98.8 AV			1.25 H	311	89.73	9.07
5	5384.00	53.9 PK	74.0	-20.1	1.25 H	311	44.53	9.37
6	5384.00	42.6 AV	54.0	-11.4	1.25 H	311	33.23	9.37
7	#10520.00	56.0 PK	74.0	-18.0	1.44 H	238	40.02	15.98
8	#10520.00	45.0 AV	54.0	-9.0	1.44 H	238	29.02	15.98
9	15780.00	60.3 PK	74.0	-13.7	1.16 H	220	38.31	21.99
10	15780.00	48.9 AV	54.0	-5.1	1.16 H	220	26.91	21.99

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	5150.00	54.6 PK	74.0	-19.4	1.71 V	30	46.00	8.60
2	5150.00	40.4 AV	54.0	-13.6	1.71 V	30	31.80	8.60
3	*5260.00	102.8 PK			1.71 V	30	93.73	9.07
4	*5260.00	93.4 AV			1.71 V	30	84.33	9.07
5	5350.00	54.1 PK	74.0	-19.9	1.71 V	30	44.79	9.31
6	5350.00	42.9 AV	54.0	-11.1	1.71 V	30	33.59	9.31
7	#10520.00	54.4 PK	74.0	-19.6	1.21 V	307	38.42	15.98
8	#10520.00	41.8 AV	54.0	-12.2	1.21 V	307	25.82	15.98
9	15780.00	58.8 PK	74.0	-15.2	1.80 V	157	36.81	21.99
10	15780.00	47.0 AV	54.0	-7.0	1.80 V	157	25.01	21.99

REMARKS:

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



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CHANNEL	TX Channel 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	108.5 PK			1.28 H	324	99.29	9.21
2	*5300.00	99.0 AV			1.28 H	324	89.79	9.21
3	5350.00	64.2 PK	74.0	-9.8	1.28 H	324	54.89	9.31
4	5350.00	50.0 AV	54.0	-4.0	1.28 H	324	40.69	9.31
5	10600.00	56.2 PK	74.0	-17.8	1.45 H	231	40.08	16.12
6	10600.00	44.8 AV	54.0	-9.2	1.45 H	231	28.68	16.12
7	15900.00	61.0 PK	74.0	-13.0	1.16 H	241	38.90	22.10
8	15900.00	49.5 AV	54.0	-4.5	1.16 H	241	27.40	22.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	103.2 PK			1.77 V	37	93.99	9.21
2	*5300.00	94.3 AV			1.77 V	37	85.09	9.21
3	5350.00	59.3 PK	74.0	-14.7	1.77 V	37	49.99	9.31
4	5350.00	45.1 AV	54.0	-8.9	1.77 V	37	35.79	9.31
5	10600.00	54.0 PK	74.0	-20.0	1.19 V	308	37.88	16.12
6	10600.00	41.4 AV	54.0	-12.6	1.19 V	308	25.28	16.12
7	15900.00	58.6 PK	74.0	-15.4	1.62 V	162	36.50	22.10
8	15900.00	47.1 AV	54.0	-6.9	1.62 V	162	25.00	22.10

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.0 PK			1.00 H	24	94.75	9.25
2	*5320.00	94.3 AV			1.00 H	24	85.05	9.25
3	5350.00	66.2 PK	74.0	-7.8	1.00 H	24	56.89	9.31
4	5350.00	51.1 AV	54.0	-2.9	1.00 H	24	41.79	9.31
5	10640.00	56.5 PK	74.0	-17.5	1.38 H	257	40.24	16.26
6	10640.00	45.4 AV	54.0	-8.6	1.38 H	257	29.14	16.26
7	15960.00	59.8 PK	74.0	-14.2	1.05 H	249	37.82	21.98
8	15960.00	48.3 AV	54.0	-5.7	1.05 H	249	26.32	21.98

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	*5320.00	98.6 PK			1.75 V	32	89.35	9.25
2	*5320.00	89.2 AV			1.75 V	32	79.95	9.25
3	5350.00	61.9 PK	74.0	-12.1	1.75 V	32	52.59	9.31
4	5350.00	46.6 AV	54.0	-7.4	1.75 V	32	37.29	9.31
5	10640.00	53.8 PK	74.0	-20.2	1.25 V	304	37.54	16.26
6	10640.00	40.9 AV	54.0	-13.1	1.25 V	304	24.64	16.26
7	15960.00	56.6 PK	74.0	-17.4	1.81 V	154	34.62	21.98
8	15960.00	44.9 AV	54.0	-9.1	1.81 V	154	22.92	21.98

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	5460.00	58.4 PK	74.0	-15.6	1.22 H	13	48.75	9.65
2	5460.00	45.0 AV	54.0	-9.0	1.22 H	13	35.35	9.65
3	#5470.00	67.7 PK	74.0	-6.3	1.22 H	13	58.01	9.69
4	#5470.00	51.0 AV	54.0	-3.0	1.22 H	13	41.31	9.69
5	*5500.00	104.6 PK			1.22 H	13	94.79	9.81
6	*5500.00	94.2 AV			1.22 H	13	84.39	9.81
7	11000.00	56.0 PK	74.0	-18.0	1.49 H	236	38.40	17.60
8	11000.00	45.3 AV	54.0	-8.7	1.49 H	236	27.70	17.60
9	#16500.00	60.4 PK	74.0	-13.6	1.06 H	263	36.26	24.14
10	#16500.00	48.8 AV	54.0	-5.2	1.06 H	263	24.66	24.14

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	5460.00	58.6 PK	74.0	-15.4	1.74 V	20	48.95	9.65
2	5460.00	45.3 AV	54.0	-8.7	1.74 V	20	35.65	9.65
3	#5470.00	65.2 PK	74.0	-8.8	1.74 V	20	55.51	9.69
4	#5470.00	48.3 AV	54.0	-5.7	1.74 V	20	38.61	9.69
5	*5500.00	98.8 PK			1.74 V	20	88.99	9.81
6	*5500.00	88.7 AV			1.74 V	20	78.89	9.81
7	11000.00	53.9 PK	74.0	-20.1	1.26 V	281	36.30	17.60
8	11000.00	41.4 AV	54.0	-12.6	1.26 V	281	23.80	17.60
9	#16500.00	60.4 PK	74.0	-13.6	1.63 V	164	36.26	24.14
10	#16500.00	48.1 AV	54.0	-5.9	1.63 V	164	23.96	24.14

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	54.5 PK	74.0	-19.5	1.86 H	360	44.85	9.65
2	5460.00	41.2 AV	54.0	-12.8	1.86 H	360	31.55	9.65
3	#5470.00	53.7 PK	74.0	-20.3	1.86 H	360	44.01	9.69
4	#5470.00	41.3 AV	54.0	-12.7	1.86 H	360	31.61	9.69
5	*5580.00	109.2 PK			1.86 H	360	99.16	10.04
6	*5580.00	99.2 AV			1.86 H	360	89.16	10.04
7	#5725.00	55.3 PK	74.0	-18.7	1.86 H	360	44.92	10.38
8	#5725.00	41.8 AV	54.0	-12.2	1.86 H	360	31.42	10.38
9	11160.00	56.4 PK	74.0	-17.6	1.47 H	242	39.37	17.03
10	11160.00	45.4 AV	54.0	-8.6	1.47 H	242	28.37	17.03
11	#16740.00	60.7 PK	74.0	-13.3	1.12 H	247	36.20	24.50
12	#16740.00	49.3 AV	54.0	-4.7	1.12 H	247	24.80	24.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	53.9 PK	74.0	-20.1	1.75 V	20	44.25	9.65
2	5460.00	41.1 AV	54.0	-12.9	1.75 V	20	31.45	9.65
3	#5470.00	53.5 PK	74.0	-20.5	1.75 V	20	43.81	9.69
4	#5470.00	41.4 AV	54.0	-12.6	1.75 V	20	31.71	9.69
5	*5580.00	104.1 PK			1.75 V	20	94.06	10.04
6	*5580.00	94.3 AV			1.75 V	20	84.26	10.04
7	#5725.00	55.4 PK	74.0	-18.6	1.75 V	20	45.02	10.38
8	#5725.00	41.8 AV	54.0	-12.2	1.75 V	20	31.42	10.38
9	11160.00	54.0 PK	74.0	-20.0	1.26 V	320	36.97	17.03
10	11160.00	41.4 AV	54.0	-12.6	1.26 V	320	24.37	17.03
11	#16740.00	65.2 PK	74.0	-8.8	1.55 V	166	40.70	24.50
12	#16740.00	53.2 AV	54.0	-0.8	1.55 V	166	28.70	24.50

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.5 PK	74.0	-14.5	1.81 H	360	49.85	9.65
2	5460.00	44.3 AV	54.0	-9.7	1.81 H	360	34.65	9.65
3	#5470.00	55.7 PK	74.0	-18.3	1.81 H	360	46.01	9.69
4	#5470.00	43.4 AV	54.0	-10.6	1.81 H	360	33.71	9.69
5	*5660.00	108.8 PK			1.81 H	360	98.56	10.24
6	*5660.00	98.2 AV			1.81 H	360	87.96	10.24
7	#5725.00	61.5 PK	74.0	-12.5	1.81 H	360	51.12	10.38
8	#5725.00	46.1 AV	54.0	-7.9	1.81 H	360	35.72	10.38
9	11320.00	55.6 PK	74.0	-18.4	1.35 H	229	37.97	17.63
10	11320.00	44.5 AV	54.0	-9.5	1.35 H	229	26.87	17.63
11	#16980.00	60.1 PK	74.0	-13.9	1.05 H	269	34.66	25.44
12	#16980.00	48.9 AV	54.0	-5.1	1.05 H	269	23.46	25.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.80 V	20	49.95	9.65
2	5460.00	44.5 AV	54.0	-9.5	1.80 V	20	34.85	9.65
3	#5470.00	55.1 PK	74.0	-18.9	1.80 V	20	45.41	9.69
4	#5470.00	42.9 AV	54.0	-11.1	1.80 V	20	33.21	9.69
5	*5660.00	103.9 PK			1.80 V	20	93.66	10.24
6	*5660.00	93.2 AV			1.80 V	20	82.96	10.24
7	#5725.00	62.1 PK	74.0	-11.9	1.80 V	20	51.72	10.38
8	#5725.00	46.4 AV	54.0	-7.6	1.80 V	20	36.02	10.38
9	11320.00	54.4 PK	74.0	-19.6	1.19 V	321	36.77	17.63
10	11320.00	41.5 AV	54.0	-12.5	1.19 V	321	23.87	17.63
11	#16980.00	65.7 PK	74.0	-8.3	1.45 V	204	40.26	25.44
12	#16980.00	52.1 AV	54.0	-1.9	1.45 V	204	26.66	25.44

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.8 PK			1.66 H	360	94.46	10.34
2	*5700.00	95.1 AV			1.66 H	360	84.76	10.34
3	#5725.00	70.1 PK	74.0	-3.9	1.66 H	360	59.72	10.38
4	#5725.00	52.2 AV	54.0	-1.8	1.66 H	360	41.82	10.38
5	11400.00	56.3 PK	74.0	-17.7	1.40 H	249	38.78	17.52
6	11400.00	45.2 AV	54.0	-8.8	1.40 H	249	27.68	17.52
7	#17100.00	60.1 PK	74.0	-13.9	1.08 H	262	34.81	25.29
8	#17100.00	48.5 AV	54.0	-5.5	1.08 H	262	23.21	25.29

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	99.6 PK			1.83 V	18	89.26	10.34
2	*5700.00	89.8 AV			1.83 V	18	79.46	10.34
3	#5725.00	64.5 PK	74.0	-9.5	1.83 V	18	54.12	10.38
4	#5725.00	46.8 AV	54.0	-7.2	1.83 V	18	36.42	10.38
5	11400.00	53.5 PK	74.0	-20.5	1.25 V	304	35.98	17.52
6	11400.00	40.7 AV	54.0	-13.3	1.25 V	304	23.18	17.52
7	#17100.00	60.2 PK	74.0	-13.8	1.32 V	206	34.91	25.29
8	#17100.00	48.0 AV	54.0	-6.0	1.32 V	206	22.71	25.29

REMARKS:

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



A D T

802.11n (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	60.8 PK	74.0	-13.2	1.00 H	2	52.20	8.60
2	5150.00	50.4 AV	54.0	-3.6	1.00 H	2	41.80	8.60
3	*5180.00	110.6 PK			1.00 H	2	101.84	8.76
4	*5180.00	98.7 AV			1.00 H	2	89.94	8.76
5	#10360.00	55.0 PK	74.0	-19.0	1.37 H	219	39.46	15.54
6	#10360.00	44.0 AV	54.0	-10.0	1.37 H	219	28.46	15.54
7	15540.00	60.4 PK	74.0	-13.6	1.00 H	270	38.03	22.37
8	15540.00	49.2 AV	54.0	-4.8	1.00 H	270	26.83	22.37

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.7 PK	74.0	-17.3	1.77 V	20	48.10	8.60
2	5150.00	46.3 AV	54.0	-7.7	1.77 V	20	37.70	8.60
3	*5180.00	106.5 PK			1.77 V	20	97.74	8.76
4	*5180.00	94.3 AV			1.77 V	20	85.54	8.76
5	#10360.00	53.5 PK	74.0	-20.5	1.23 V	297	37.96	15.54
6	#10360.00	41.0 AV	54.0	-13.0	1.23 V	297	25.46	15.54
7	15540.00	62.4 PK	74.0	-11.6	1.76 V	89	40.03	22.37
8	15540.00	50.9 AV	54.0	-3.1	1.76 V	89	28.53	22.37

REMARKS:

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



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CHANNEL	TX Channel 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	4987.50	61.2 PK	74.0	-12.8	1.00 H	3	53.08	8.12
2	4987.50	49.1 AV	54.0	-4.9	1.00 H	3	40.98	8.12
3	*5200.00	109.9 PK			1.00 H	3	101.03	8.87
4	*5200.00	98.4 AV			1.00 H	3	89.53	8.87
5	5409.00	61.4 PK	74.0	-12.6	1.00 H	3	51.97	9.43
6	5409.00	49.3 AV	54.0	-4.7	1.00 H	3	39.87	9.43
7	#10400.00	55.0 PK	74.0	-19.0	1.34 H	237	39.82	15.18
8	#10400.00	44.1 AV	54.0	-9.9	1.34 H	237	28.92	15.18
9	15600.00	59.9 PK	74.0	-14.1	1.00 H	238	37.78	22.12
10	15600.00	48.7 AV	54.0	-5.3	1.00 H	238	26.58	22.12

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4987.50	57.3 PK	74.0	-16.7	1.69 V	13	49.18	8.12
2	4987.50	45.3 AV	54.0	-8.7	1.69 V	13	37.18	8.12
3	*5200.00	105.7 PK			1.69 V	13	96.83	8.87
4	*5200.00	94.5 AV			1.69 V	13	85.63	8.87
5	5409.00	57.9 PK	74.0	-16.1	1.69 V	13	48.47	9.43
6	5409.00	45.7 AV	54.0	-8.3	1.69 V	13	36.27	9.43
7	#10400.00	54.1 PK	74.0	-19.9	1.15 V	336	38.92	15.18
8	#10400.00	41.4 AV	54.0	-12.6	1.15 V	336	26.22	15.18
9	15600.00	60.6 PK	74.0	-13.4	1.83 V	87	38.48	22.12
10	15600.00	48.6 AV	54.0	-5.4	1.83 V	87	26.48	22.12

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4800.00	58.1 PK	74.0	-15.9	1.00 H	1	50.60	7.50
2	4800.00	46.3 AV	54.0	-7.7	1.00 H	1	38.80	7.50
3	*5240.00	114.1 PK			1.00 H	1	105.09	9.01
4	*5240.00	101.9 AV			1.00 H	1	92.89	9.01
5	5386.20	56.8 PK	74.0	-17.2	1.00 H	1	47.42	9.38
6	5386.20	43.7 AV	54.0	-10.3	1.00 H	1	34.32	9.38
7	#10480.00	55.6 PK	74.0	-18.4	1.34 H	225	39.80	15.80
8	#10480.00	44.4 AV	54.0	-9.6	1.34 H	225	28.60	15.80
9	15720.00	59.8 PK	74.0	-14.2	1.09 H	255	38.00	21.80
10	15720.00	48.6 AV	54.0	-5.4	1.09 H	255	26.80	21.80

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	4800.00	54.4 PK	74.0	-19.6	1.75 V	28	46.90	7.50
2	4800.00	42.3 AV	54.0	-11.7	1.75 V	28	34.80	7.50
3	*5240.00	110.1 PK			1.75 V	28	101.09	9.01
4	*5240.00	97.9 AV			1.75 V	28	88.89	9.01
5	5386.20	55.7 PK	74.0	-18.3	1.75 V	28	46.32	9.38
6	5386.20	42.8 AV	54.0	-11.2	1.75 V	28	33.42	9.38
7	#10480.00	54.0 PK	74.0	-20.0	1.19 V	327	38.20	15.80
8	#10480.00	41.5 AV	54.0	-12.5	1.19 V	327	25.70	15.80
9	15720.00	63.7 PK	74.0	-10.3	1.77 V	86	41.90	21.80
10	15720.00	51.1 AV	54.0	-2.9	1.77 V	86	29.30	21.80

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5036.00	64.7 PK	74.0	-9.3	1.00 H	2	56.50	8.20
2	5036.00	49.3 AV	54.0	-4.7	1.00 H	2	41.10	8.20
3	*5260.00	113.9 PK			1.00 H	2	104.83	9.07
4	*5260.00	101.7 AV			1.00 H	2	92.63	9.07
5	5406.00	56.6 PK	74.0	-17.4	1.00 H	2	47.19	9.41
6	5406.00	43.4 AV	54.0	-10.6	1.00 H	2	33.99	9.41
7	#10520.00	56.2 PK	74.0	-17.8	1.32 H	239	40.22	15.98
8	#10520.00	44.9 AV	54.0	-9.1	1.32 H	239	28.92	15.98
9	15780.00	59.8 PK	74.0	-14.2	1.00 H	245	37.81	21.99
10	15780.00	48.8 AV	54.0	-5.2	1.00 H	245	26.81	21.99

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	5036.00	59.8 PK	74.0	-14.2	1.74 V	42	51.60	8.20
2	5036.00	44.7 AV	54.0	-9.3	1.74 V	42	36.50	8.20
3	*5260.00	109.6 PK			1.74 V	42	100.53	9.07
4	*5260.00	97.6 AV			1.74 V	42	88.53	9.07
5	5406.00	56.7 PK	74.0	-17.3	1.74 V	42	47.29	9.41
6	5406.00	43.4 AV	54.0	-10.6	1.74 V	42	33.99	9.41
7	#10520.00	54.2 PK	74.0	-19.8	1.18 V	312	38.22	15.98
8	#10520.00	41.2 AV	54.0	-12.8	1.18 V	312	25.22	15.98
9	15780.00	63.4 PK	74.0	-10.6	1.84 V	83	41.41	21.99
10	15780.00	50.2 AV	54.0	-3.8	1.84 V	83	28.21	21.99

REMARKS:

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



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CHANNEL	TX Channel 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	5075.50	63.1 PK	74.0	-10.9	1.00 H	358	54.83	8.27
2	5075.50	49.1 AV	54.0	-4.9	1.00 H	358	40.83	8.27
3	*5300.00	112.9 PK			1.00 H	358	103.69	9.21
4	*5300.00	100.6 AV			1.00 H	358	91.39	9.21
5	5350.00	64.5 PK	74.0	-9.5	1.00 H	358	55.19	9.31
6	5350.00	50.1 AV	54.0	-3.9	1.00 H	358	40.79	9.31
7	10600.00	55.3 PK	74.0	-18.7	1.32 H	219	39.18	16.12
8	10600.00	44.1 AV	54.0	-9.9	1.32 H	219	27.98	16.12
9	15900.00	60.0 PK	74.0	-14.0	1.00 H	267	37.90	22.10
10	15900.00	49.0 AV	54.0	-5.0	1.00 H	267	26.90	22.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5075.50	59.1 PK	74.0	-14.9	1.73 V	26	50.83	8.27
2	5075.50	45.3 AV	54.0	-8.7	1.73 V	26	37.03	8.27
3	*5300.00	108.7 PK			1.73 V	26	99.49	9.21
4	*5300.00	96.1 AV			1.73 V	26	86.89	9.21
5	5350.00	60.6 PK	74.0	-13.4	1.73 V	26	51.29	9.31
6	5350.00	46.4 AV	54.0	-7.6	1.73 V	26	37.09	9.31
7	10600.00	54.2 PK	74.0	-19.8	1.13 V	320	38.08	16.12
8	10600.00	41.5 AV	54.0	-12.5	1.13 V	320	25.38	16.12
9	15900.00	60.8 PK	74.0	-13.2	1.89 V	85	38.70	22.10
10	15900.00	48.9 AV	54.0	-5.1	1.89 V	85	26.80	22.10

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5092.00	66.8 PK	74.0	-7.2	1.00 H	358	58.49	8.31
2	5092.00	53.2 AV	54.0	-0.8	1.00 H	358	44.89	8.31
3	*5320.00	109.7 PK			1.00 H	358	100.45	9.25
4	*5320.00	96.8 AV			1.00 H	358	87.55	9.25
5	5350.00	71.3 PK	74.0	-2.7	1.00 H	358	61.99	9.31
6	5350.00	52.5 AV	54.0	-1.5	1.00 H	358	43.19	9.31
7	10640.00	54.6 PK	74.0	-19.4	1.38 H	226	38.34	16.26
8	10640.00	44.1 AV	54.0	-9.9	1.38 H	226	27.84	16.26
9	15960.00	59.2 PK	74.0	-14.8	1.01 H	253	37.22	21.98
10	15960.00	48.0 AV	54.0	-6.0	1.01 H	253	26.02	21.98

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	5092.00	62.5 PK	74.0	-11.5	1.67 V	12	54.19	8.31
2	5092.00	49.1 AV	54.0	-4.9	1.67 V	12	40.79	8.31
3	*5320.00	105.7 PK			1.67 V	12	96.45	9.25
4	*5320.00	93.0 AV			1.67 V	12	83.75	9.25
5	5350.00	67.1 PK	74.0	-6.9	1.67 V	12	57.79	9.31
6	5350.00	48.0 AV	54.0	-6.0	1.67 V	12	38.69	9.31
7	10640.00	54.2 PK	74.0	-19.8	1.13 V	323	37.94	16.26
8	10640.00	42.0 AV	54.0	-12.0	1.13 V	323	25.74	16.26
9	15960.00	57.4 PK	74.0	-16.6	1.89 V	156	35.42	21.98
10	15960.00	46.1 AV	54.0	-7.9	1.89 V	156	24.12	21.98

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	5460.00	57.7 PK	74.0	-16.3	1.07 H	359	48.05	9.65
2	5460.00	44.6 AV	54.0	-9.4	1.07 H	359	34.95	9.65
3	#5470.00	61.9 PK	74.0	-12.1	1.07 H	359	52.21	9.69
4	#5470.00	49.8 AV	54.0	-4.2	1.07 H	359	40.11	9.69
5	*5500.00	106.1 PK			1.07 H	359	96.29	9.81
6	*5500.00	95.2 AV			1.07 H	359	85.39	9.81
7	11000.00	53.9 PK	74.0	-20.1	1.34 H	224	36.30	17.60
8	11000.00	43.2 AV	54.0	-10.8	1.34 H	224	25.60	17.60
9	#16500.00	59.2 PK	74.0	-14.8	1.03 H	277	35.06	24.14
10	#16500.00	48.5 AV	54.0	-5.5	1.03 H	277	24.36	24.14

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	5460.00	53.5 PK	74.0	-20.5	1.64 V	28	43.85	9.65
2	5460.00	40.5 AV	54.0	-13.5	1.64 V	28	30.85	9.65
3	#5470.00	57.4 PK	74.0	-16.6	1.64 V	28	47.71	9.69
4	#5470.00	45.5 AV	54.0	-8.5	1.64 V	28	35.81	9.69
5	*5500.00	102.5 PK			1.64 V	28	92.69	9.81
6	*5500.00	91.7 AV			1.64 V	28	81.89	9.81
7	11000.00	54.9 PK	74.0	-19.1	1.11 V	297	37.30	17.60
8	11000.00	42.0 AV	54.0	-12.0	1.11 V	297	24.40	17.60
9	#16500.00	66.9 PK	74.0	-7.1	1.18 V	255	42.76	24.14
10	#16500.00	52.6 AV	54.0	-1.4	1.18 V	255	28.46	24.14

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	55.1 PK	74.0	-18.9	1.01 H	359	45.41	9.69
2	#5470.00	42.7 AV	54.0	-11.3	1.01 H	359	33.01	9.69
3	*5580.00	106.5 PK			1.01 H	359	96.46	10.04
4	*5580.00	96.5 AV			1.01 H	359	86.46	10.04
5	#5725.00	54.8 PK	74.0	-19.2	1.01 H	359	44.42	10.38
6	#5725.00	42.6 AV	54.0	-11.4	1.01 H	359	32.22	10.38
7	11160.00	55.2 PK	74.0	-18.8	1.36 H	218	38.17	17.03
8	11160.00	44.3 AV	54.0	-9.7	1.36 H	218	27.27	17.03
9	#16740.00	59.7 PK	74.0	-14.3	1.10 H	281	35.20	24.50
10	#16740.00	48.9 AV	54.0	-5.1	1.10 H	281	24.40	24.50

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	1.66 V	19	45.01	9.69
2	#5470.00	42.8 AV	54.0	-11.2	1.66 V	19	33.11	9.69
3	*5580.00	102.1 PK			1.66 V	19	92.06	10.04
4	*5580.00	92.2 AV			1.66 V	19	82.16	10.04
5	#5725.00	54.7 PK	74.0	-19.3	1.66 V	19	44.32	10.38
6	#5725.00	42.2 AV	54.0	-11.8	1.66 V	19	31.82	10.38
7	11160.00	54.3 PK	74.0	-19.7	1.24 V	294	37.27	17.03
8	11160.00	41.7 AV	54.0	-12.3	1.24 V	294	24.67	17.03
9	#16740.00	67.0 PK	74.0	-7.0	1.29 V	255	42.50	24.50
10	#16740.00	53.8 AV	54.0	-0.2	1.29 V	255	29.30	24.50

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	56.4 PK	74.0	-17.6	1.00 H	2	46.71	9.69
2	#5470.00	43.8 AV	54.0	-10.2	1.00 H	2	34.11	9.69
3	*5660.00	109.1 PK			1.00 H	2	98.86	10.24
4	*5660.00	97.8 AV			1.00 H	2	87.56	10.24
5	#5725.00	59.2 PK	74.0	-14.8	1.00 H	2	48.82	10.38
6	#5725.00	45.5 AV	54.0	-8.5	1.00 H	2	35.12	10.38
7	11320.00	54.5 PK	74.0	-19.5	1.31 H	230	36.87	17.63
8	11320.00	43.6 AV	54.0	-10.4	1.31 H	230	25.97	17.63
9	#16980.00	59.8 PK	74.0	-14.2	1.06 H	252	34.36	25.44
10	#16980.00	48.5 AV	54.0	-5.5	1.06 H	252	23.06	25.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	56.1 PK	74.0	-17.9	1.56 V	15	46.41	9.69
2	#5470.00	43.3 AV	54.0	-10.7	1.56 V	15	33.61	9.69
3	*5660.00	104.7 PK			1.56 V	15	94.46	10.24
4	*5660.00	93.5 AV			1.56 V	15	83.26	10.24
5	#5725.00	59.1 PK	74.0	-14.9	1.56 V	15	48.72	10.38
6	#5725.00	45.6 AV	54.0	-8.4	1.56 V	15	35.22	10.38
7	11320.00	53.5 PK	74.0	-20.5	1.22 V	316	35.87	17.63
8	11320.00	40.5 AV	54.0	-13.5	1.22 V	316	22.87	17.63
9	#16980.00	65.3 PK	74.0	-8.7	1.17 V	293	39.86	25.44
10	#16980.00	53.2 AV	54.0	-0.8	1.17 V	293	27.76	25.44

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	107.1 PK			1.01 H	3	96.76	10.34
2	*5700.00	95.9 AV			1.01 H	3	85.56	10.34
3	#5725.00	68.9 PK	74.0	-5.1	1.01 H	3	58.52	10.38
4	#5725.00	53.6 AV	54.0	-0.4	1.01 H	3	43.22	10.38
5	11400.00	55.4 PK	74.0	-18.6	1.29 H	240	37.88	17.52
6	11400.00	44.2 AV	54.0	-9.8	1.29 H	240	26.68	17.52
7	#17100.00	60.1 PK	74.0	-13.9	1.02 H	262	34.81	25.29
8	#17100.00	49.0 AV	54.0	-5.0	1.02 H	262	23.71	25.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.0 PK			1.55 V	19	92.66	10.34
2	*5700.00	92.0 AV			1.55 V	19	81.66	10.34
3	#5725.00	65.2 PK	74.0	-8.8	1.55 V	19	54.82	10.38
4	#5725.00	49.6 AV	54.0	-4.4	1.55 V	19	39.22	10.38
5	11400.00	54.7 PK	74.0	-19.3	1.11 V	315	37.18	17.52
6	11400.00	41.7 AV	54.0	-12.3	1.11 V	315	24.18	17.52
7	#17100.00	58.0 PK	74.0	-16.0	1.28 V	292	32.71	25.29
8	#17100.00	46.1 AV	54.0	-7.9	1.28 V	292	20.81	25.29

REMARKS:

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



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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	67.5 PK	74.0	-6.5	1.00 H	1	58.90	8.60
2	5150.00	53.6 AV	54.0	-0.4	1.00 H	1	45.00	8.60
3	*5190.00	104.4 PK			1.00 H	1	95.58	8.82
4	*5190.00	92.8 AV			1.00 H	1	83.98	8.82
5	#10380.00	55.9 PK	74.0	-18.1	1.32 H	251	40.53	15.37
6	#10380.00	44.4 AV	54.0	-9.6	1.32 H	251	29.03	15.37
7	15570.00	59.6 PK	74.0	-14.4	1.07 H	256	37.36	22.24
8	15570.00	48.6 AV	54.0	-5.4	1.07 H	256	26.36	22.24

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	63.4 PK	74.0	-10.6	1.58 V	8	54.80	8.60
2	5150.00	49.4 AV	54.0	-4.6	1.58 V	8	40.80	8.60
3	*5190.00	100.1 PK			1.58 V	8	91.28	8.82
4	*5190.00	88.5 AV			1.58 V	8	79.68	8.82
5	#10380.00	54.4 PK	74.0	-19.6	1.05 V	323	39.03	15.37
6	#10380.00	41.3 AV	54.0	-12.7	1.05 V	323	25.93	15.37
7	15570.00	58.1 PK	74.0	-15.9	1.84 V	164	35.86	22.24
8	15570.00	46.1 AV	54.0	-7.9	1.84 V	164	23.86	22.24

REMARKS:

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



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CHANNEL	TX Channel 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	5150.00	67.5 PK	74.0	-6.5	1.00 H	358	58.90	8.60
2	5150.00	53.5 AV	54.0	-0.5	1.00 H	358	44.90	8.60
3	*5230.00	110.4 PK			1.00 H	358	101.43	8.97
4	*5230.00	97.9 AV			1.00 H	358	88.93	8.97
5	5350.00	55.8 PK	74.0	-18.2	1.00 H	358	46.49	9.31
6	5350.00	43.9 AV	54.0	-10.1	1.00 H	358	34.59	9.31
7	#10460.00	55.2 PK	74.0	-18.8	1.29 H	235	39.56	15.64
8	#10460.00	44.3 AV	54.0	-9.7	1.29 H	235	28.66	15.64
9	15690.00	60.0 PK	74.0	-14.0	1.02 H	236	38.22	21.78
10	15690.00	48.9 AV	54.0	-5.1	1.02 H	236	27.12	21.78

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	5150.00	63.2 PK	74.0	-10.8	1.58 V	12	54.60	8.60
2	5150.00	49.2 AV	54.0	-4.8	1.58 V	12	40.60	8.60
3	*5230.00	106.0 PK			1.58 V	12	97.03	8.97
4	*5230.00	93.6 AV			1.58 V	12	84.63	8.97
5	5350.00	55.9 PK	74.0	-18.1	1.58 V	12	46.59	9.31
6	5350.00	43.8 AV	54.0	-10.2	1.58 V	12	34.49	9.31
7	#10460.00	53.8 PK	74.0	-20.2	1.11 V	314	38.16	15.64
8	#10460.00	41.1 AV	54.0	-12.9	1.11 V	314	25.46	15.64
9	15690.00	58.0 PK	74.0	-16.0	1.87 V	170	36.22	21.78
10	15690.00	46.2 AV	54.0	-7.8	1.87 V	170	24.42	21.78

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.



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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	5150.00	59.3 PK	74.0	-14.7	1.00 H	357	50.70	8.60
2	5150.00	45.9 AV	54.0	-8.1	1.00 H	357	37.30	8.60
3	*5270.00	109.3 PK			1.00 H	357	100.19	9.11
4	*5270.00	98.1 AV			1.00 H	357	88.99	9.11
5	5350.00	62.5 PK	74.0	-11.5	1.00 H	357	53.19	9.31
6	5350.00	49.9 AV	54.0	-4.1	1.00 H	357	40.59	9.31
7	#10540.00	55.0 PK	74.0	-19.0	1.24 H	254	38.98	16.02
8	#10540.00	44.2 AV	54.0	-9.8	1.24 H	254	28.18	16.02
9	15810.00	59.5 PK	74.0	-14.5	1.00 H	263	37.45	22.05
10	15810.00	48.6 AV	54.0	-5.4	1.00 H	263	26.55	22.05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.4 PK	74.0	-18.6	1.53 V	9	46.80	8.60
2	5150.00	42.2 AV	54.0	-11.8	1.53 V	9	33.60	8.60
3	*5270.00	104.8 PK			1.53 V	9	95.69	9.11
4	*5270.00	93.7 AV			1.53 V	9	84.59	9.11
5	5350.00	58.1 PK	74.0	-15.9	1.53 V	9	48.79	9.31
6	5350.00	45.6 AV	54.0	-8.4	1.53 V	9	36.29	9.31
7	#10540.00	54.5 PK	74.0	-19.5	1.12 V	318	38.48	16.02
8	#10540.00	41.3 AV	54.0	-12.7	1.12 V	318	25.28	16.02
9	15810.00	63.1 PK	74.0	-10.9	1.88 V	178	41.05	22.05
10	15810.00	49.8 AV	54.0	-4.2	1.88 V	178	27.75	22.05

REMARKS:

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



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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	103.1 PK			1.00 H	357	93.87	9.23
2	*5310.00	91.5 AV			1.00 H	357	82.27	9.23
3	5350.00	71.8 PK	74.0	-2.2	1.00 H	357	62.49	9.31
4	5350.00	53.5 AV	54.0	-0.5	1.00 H	357	44.19	9.31
5	10620.00	55.3 PK	74.0	-18.7	1.30 H	243	39.12	16.18
6	10620.00	44.1 AV	54.0	-9.9	1.30 H	243	27.92	16.18
7	15930.00	59.8 PK	74.0	-14.2	1.00 H	266	37.75	22.05
8	15930.00	48.6 AV	54.0	-5.4	1.00 H	266	26.55	22.05

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	98.5 PK			1.51 V	3	89.27	9.23
2	*5310.00	87.2 AV			1.51 V	3	77.97	9.23
3	5350.00	67.6 PK	74.0	-6.4	1.51 V	3	58.29	9.31
4	5350.00	49.3 AV	54.0	-4.7	1.51 V	3	39.99	9.31
5	10620.00	55.0 PK	74.0	-19.0	1.06 V	297	38.82	16.18
6	10620.00	42.1 AV	54.0	-11.9	1.06 V	297	25.92	16.18
7	15930.00	58.4 PK	74.0	-15.6	1.22 V	293	36.35	22.05
8	15930.00	46.4 AV	54.0	-7.6	1.22 V	293	24.35	22.05

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.3 PK	74.0	-11.7	1.07 H	359	52.65	9.65
2	5460.00	49.5 AV	54.0	-4.5	1.07 H	359	39.85	9.65
3	#5470.00	70.8 PK	74.0	-3.2	1.07 H	359	61.11	9.69
4	#5470.00	53.7 AV	54.0	-0.3	1.07 H	359	44.01	9.69
5	*5510.00	101.7 PK			1.07 H	359	91.86	9.84
6	*5510.00	92.0 AV			1.07 H	359	82.16	9.84
7	11020.00	55.7 PK	74.0	-18.3	1.31 H	233	38.21	17.49
8	11020.00	44.4 AV	54.0	-9.6	1.31 H	233	26.91	17.49
9	#16530.00	59.9 PK	74.0	-14.1	1.07 H	244	35.48	24.42
10	#16530.00	48.9 AV	54.0	-5.1	1.07 H	244	24.48	24.42

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.5 PK	74.0	-15.5	1.52 V	10	48.85	9.65
2	5460.00	45.6 AV	54.0	-8.4	1.52 V	10	35.95	9.65
3	#5470.00	66.4 PK	74.0	-7.6	1.52 V	10	56.71	9.69
4	#5470.00	49.5 AV	54.0	-4.5	1.52 V	10	39.81	9.69
5	*5510.00	97.2 PK			1.52 V	10	87.36	9.84
6	*5510.00	87.8 AV			1.52 V	10	77.96	9.84
7	11020.00	54.9 PK	74.0	-19.1	1.02 V	315	37.41	17.49
8	11020.00	42.1 AV	54.0	-11.9	1.02 V	315	24.61	17.49
9	#16530.00	58.0 PK	74.0	-16.0	1.18 V	290	33.58	24.42
10	#16530.00	46.4 AV	54.0	-7.6	1.18 V	290	21.98	24.42

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	58.1 PK	74.0	-15.9	1.05 H	2	48.41	9.69
2	#5470.00	45.5 AV	54.0	-8.5	1.05 H	2	35.81	9.69
3	*5550.00	105.9 PK			1.05 H	2	95.95	9.95
4	*5550.00	94.5 AV			1.05 H	2	84.55	9.95
5	#5725.00	55.9 PK	74.0	-18.1	1.05 H	2	45.52	10.38
6	#5725.00	43.7 AV	54.0	-10.3	1.05 H	2	33.32	10.38
7	11100.00	55.0 PK	74.0	-19.0	1.26 H	232	37.92	17.08
8	11100.00	43.9 AV	54.0	-10.1	1.26 H	232	26.82	17.08
9	#16650.00	60.0 PK	74.0	-14.0	1.00 H	277	35.24	24.76
10	#16650.00	49.2 AV	54.0	-4.8	1.00 H	277	24.44	24.76

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	57.2 PK	74.0	-16.8	1.52 V	14	47.51	9.69
2	#5470.00	44.9 AV	54.0	-9.1	1.52 V	14	35.21	9.69
3	*5550.00	100.8 PK			1.52 V	14	90.85	9.95
4	*5550.00	90.0 AV			1.52 V	14	80.05	9.95
5	#5725.00	55.6 PK	74.0	-18.4	1.52 V	14	45.22	10.38
6	#5725.00	43.5 AV	54.0	-10.5	1.52 V	14	33.12	10.38
7	11100.00	54.4 PK	74.0	-19.6	1.13 V	305	37.32	17.08
8	11100.00	41.5 AV	54.0	-12.5	1.13 V	305	24.42	17.08
9	#16650.00	66.3 PK	74.0	-7.7	1.14 V	283	41.54	24.76
10	#16650.00	53.3 AV	54.0	-0.7	1.14 V	283	28.54	24.76

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	103.9 PK			1.00 H	3	93.64	10.26
2	*5670.00	92.8 AV			1.00 H	3	82.54	10.26
3	#5725.00	67.3 PK	74.0	-6.7	1.00 H	3	56.92	10.38
4	#5725.00	53.5 AV	54.0	-0.5	1.00 H	3	43.12	10.38
5	11340.00	55.3 PK	74.0	-18.7	1.32 H	253	37.69	17.61
6	11340.00	44.0 AV	54.0	-10.0	1.32 H	253	26.39	17.61
7	#17010.00	59.6 PK	74.0	-14.4	1.00 H	251	34.08	25.52
8	#17010.00	48.7 AV	54.0	-5.3	1.00 H	251	23.18	25.52

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	100.2 PK			1.39 V	22	89.94	10.26
2	*5670.00	89.1 AV			1.39 V	22	78.84	10.26
3	#5725.00	62.4 PK	74.0	-11.6	1.39 V	22	52.02	10.38
4	#5725.00	48.9 AV	54.0	-5.1	1.39 V	22	38.52	10.38
5	11340.00	54.8 PK	74.0	-19.2	1.09 V	323	37.19	17.61
6	11340.00	41.6 AV	54.0	-12.4	1.09 V	323	23.99	17.61
7	#17010.00	58.4 PK	74.0	-15.6	1.18 V	290	32.88	25.52
8	#17010.00	46.8 AV	54.0	-7.2	1.18 V	290	21.28	25.52

REMARKS:

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



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4.3 TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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

NOTE: Where B is the 26dB bandwidth in MHz.

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

- Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
- Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
- Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

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

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	1014008	Apr. 23, 2013	Apr. 22, 2014
Power Sensor	MA2411B	0917122	Apr. 23, 2013	Apr. 22, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 08, 2013

FOR 26dB OCCUPIED BANDWIDTH

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 08, 2013

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.

Duty cycle of test signal is < 98 %. 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

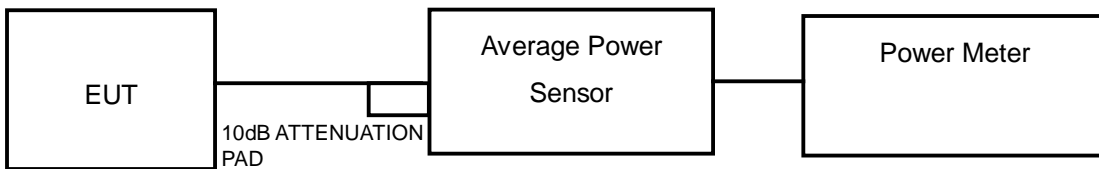
- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat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

4.3.4 DEVIATION FROM TEST STANDARD

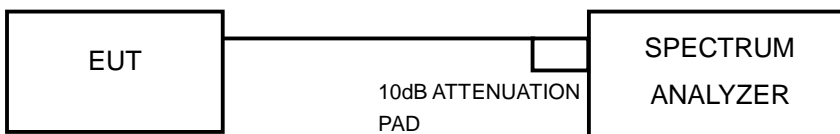
No deviation

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.



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4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	48.417	16.85	17	PASS
40	5200	45.814	16.61	17	PASS
48	5240	46.238	16.65	17	PASS
52	5260	218.273	23.39	24	PASS
60	5300	215.278	23.33	24	PASS
64	5320	81.658	19.12	24	PASS
100	5500	74.131	18.70	24	PASS
116	5580	237.684	23.76	24	PASS
132	5660	107.895	20.33	24	PASS
140	5700	60.814	17.84	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	28.40
40	5200	29.07
48	5240	28.42
52	5260	49.96
60	5300	51.24
64	5320	45.24
100	5500	35.31
116	5580	55.39
132	5660	40.28
140	5700	29.24



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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	28.40	18.53 > 17
40	5200	29.07	18.63 > 17
48	5240	28.42	18.53 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	49.96	27.98 > 24
60	5300	51.24	28.09 > 24
64	5320	45.24	27.55 > 24
100	5500	35.31	26.47 > 24
116	5580	55.39	28.43 > 24
132	5660	40.28	27.05 > 24
140	5700	29.24	25.65 > 24



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POWER OUTPUT:

802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	13.65	13.57	45.925	16.62	17	PASS
40	5200	13.81	13.42	46.023	16.63	17	PASS
48	5240	13.86	13.39	46.149	16.64	17	PASS
52	5260	19.02	19.54	169.749	22.30	24	PASS
60	5300	19.22	19.50	172.685	22.37	24	PASS
64	5320	19.27	19.34	170.429	22.32	24	PASS
100	5500	18.53	16.88	120.038	20.79	24	PASS
116	5580	20.12	17.46	158.521	22.00	24	PASS
132	5660	20.43	17.97	173.069	22.38	24	PASS
140	5700	18.44	17.49	125.928	21.00	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	26.84	26.99
40	5200	26.70	27.10
48	5240	26.66	27.64
52	5260	35.92	31.09
60	5300	38.06	34.10
64	5320	36.76	32.93
100	5500	35.22	30.76
116	5580	44.47	33.85
132	5660	37.18	33.54
140	5700	35.48	27.79



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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	26.84	18.28 > 17
40	5200	26.70	18.26 > 17
48	5240	26.66	18.25 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	31.09	25.92 > 24
60	5300	34.10	26.32 > 24
64	5320	32.93	26.17 > 24
100	5500	30.76	25.87 > 24
116	5580	33.85	26.29 > 24
132	5660	33.54	26.25 > 24
140	5700	27.79	25.43 > 24



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POWER OUTPUT:

802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	13.98	13.78	48.881	16.89	17	PASS
46	5230	14.02	13.82	49.334	16.93	17	PASS
54	5270	19.43	19.13	169.546	22.29	24	PASS
62	5310	16.63	15.53	81.753	19.13	24	PASS
102	5510	17.02	16.59	95.954	19.82	24	PASS
110	5550	20.54	18.28	180.538	22.57	24	PASS
134	5670	18.71	17.75	133.868	21.27	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	46.46	46.62
46	5230	46.09	45.67
54	5270	91.51	80.47
62	5310	56.44	48.30
102	5510	53.34	51.18
110	5550	94.48	82.77
134	5670	82.28	71.16



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

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
38	5190	46.46	20.67 > 17
46	5230	45.67	20.59 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
54	5270	80.47	30.05 > 24
62	5310	48.30	27.83 > 24
102	5510	51.18	28.09 > 24
110	5550	82.77	30.17 > 24
134	5670	71.16	29.52 > 24



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4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 08, 2013

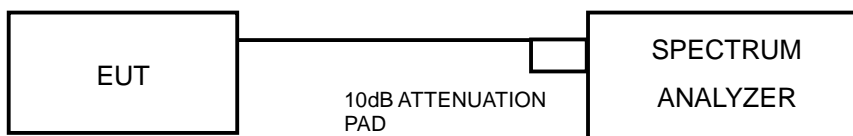
4.4.3 TEST PROCEDURES

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and for duty cycle of test signal is $<$ 98% add 10 log (1/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



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4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.68	4	PASS
40	5200	3.60	4	PASS
48	5240	3.57	4	PASS
52	5260	10.07	11	PASS
60	5300	9.96	11	PASS
64	5320	9.06	11	PASS
100	5500	5.93	11	PASS
116	5580	9.92	11	PASS
132	5660	6.96	11	PASS
140	5700	4.41	11	PASS

802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PSD W/O DUTY FACTOR (dBm)		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-0.68	-0.14	0.11	2.72	4	PASS
40	5200	-0.30	0.27	0.11	3.11	4	PASS
48	5240	-0.29	0.34	0.11	3.16	4	PASS
52	5260	5.20	5.13	0.11	8.29	11	PASS
60	5300	4.95	5.60	0.11	8.41	11	PASS
64	5320	4.96	4.02	0.11	7.64	11	PASS
100	5500	4.29	3.34	0.11	6.96	11	PASS
116	5580	6.65	3.85	0.11	8.59	11	PASS
132	5660	5.23	3.75	0.11	7.67	11	PASS
140	5700	4.90	3.23	0.11	7.27	11	PASS

- NOTE:**
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Refer to section 3.4 for duty cycle spectrum plot.



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802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PSD W/O DUTY FACTOR (dBm)		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-2.52	-2.09	0.17	0.88	4	PASS
46	5230	-2.27	-1.91	0.17	1.09	4	PASS
54	5270	2.91	2.31	0.17	5.80	11	PASS
62	5310	0.11	-0.21	0.17	3.13	11	PASS
102	5510	0.12	-0.14	0.17	3.17	11	PASS
110	5550	3.50	1.59	0.17	5.83	11	PASS
134	5670	1.25	0.98	0.17	4.30	11	PASS

- NOTE:**
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Refer to section 3.4 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

4.5.2 TEST INSTRUMENTS

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 08, 2013

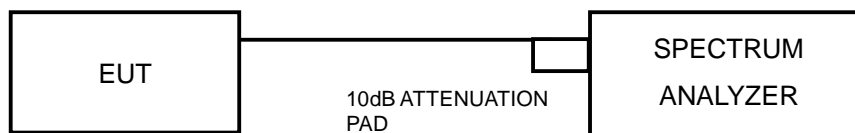
4.5.3 TEST PROCEDURE

1. Set RBW = 1 MHz, VBW \geq 3 MHz, Detector = peak.
2. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak search function to find the peak of the spectrum.
4. Measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

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



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4.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	12.78	3.68	9.10	13	PASS
40	5200	13.18	3.60	9.58	13	PASS
48	5240	13.00	3.57	9.43	13	PASS
52	5260	19.74	10.07	9.67	13	PASS
60	5300	19.59	9.96	9.63	13	PASS
64	5320	18.30	9.06	9.24	13	PASS
100	5500	15.40	5.93	9.47	13	PASS
116	5580	19.74	9.92	9.82	13	PASS
132	5660	16.16	6.96	9.20	13	PASS
140	5700	14.27	4.41	9.86	13	PASS

802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		DUTY FACTOR	PPSD WITH DUTY FACTOR (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	9.31	10.59	0.11	-0.57	-0.03	9.88	10.62	13	PASS
40	5200	8.74	10.72	0.11	-0.19	0.38	8.93	10.34	13	PASS
48	5240	10.20	10.67	0.11	-0.18	0.45	10.38	10.22	13	PASS
52	5260	15.54	15.50	0.11	5.31	5.24	10.23	10.26	13	PASS
60	5300	14.03	15.94	0.11	5.06	5.71	8.97	10.23	13	PASS
64	5320	14.18	14.59	0.11	5.07	4.13	9.11	10.46	13	PASS
100	5500	13.90	13.63	0.11	4.40	3.45	9.50	10.18	13	PASS
116	5580	15.68	14.29	0.11	6.76	3.96	8.92	10.33	13	PASS
132	5660	14.14	14.60	0.11	5.34	3.86	8.80	10.74	13	PASS
140	5700	14.27	13.52	0.11	5.01	3.34	9.26	10.18	13	PASS



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802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		DUTY FACTOR	PPSD WITH DUTY FACTOR (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
38	5190	7.28	8.76	0.17	-2.35	-1.92	9.63	10.68	13	PASS
46	5230	7.41	8.70	0.17	-2.10	-1.74	9.51	10.44	13	PASS
54	5270	12.37	12.79	0.17	3.08	2.48	9.29	10.31	13	PASS
62	5310	9.89	10.26	0.17	0.28	-0.04	9.61	10.30	13	PASS
102	5510	9.75	9.97	0.17	0.29	0.03	9.46	9.94	13	PASS
110	5550	12.97	12.23	0.17	3.67	1.76	9.30	10.47	13	PASS
134	5670	10.93	11.33	0.17	1.42	1.15	9.51	10.18	13	PASS



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4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-S P-AR	MAA0812-008	Jan. 17, 2013	Jan. 16, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 08, 2013

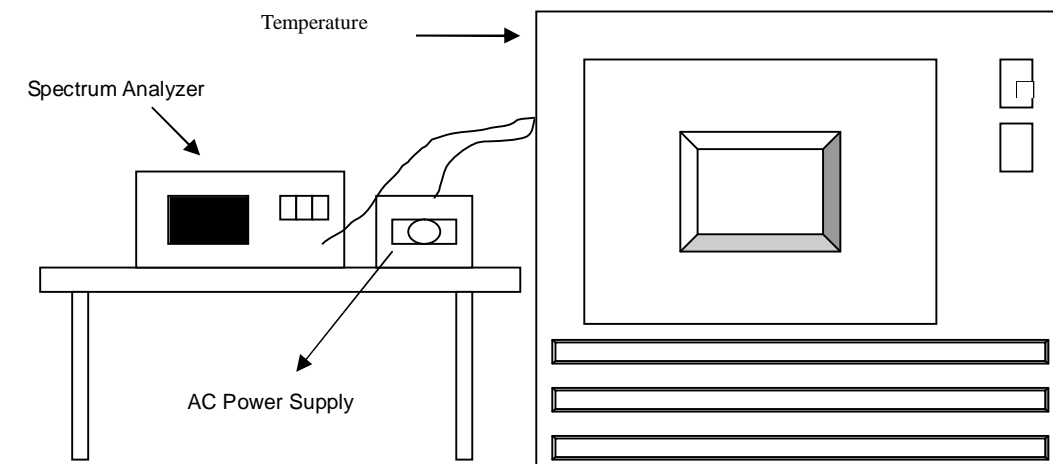
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

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



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4.6.7 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	5320.0088	0.00017	5320.0128	0.00024	5320.012	0.00023	5320.0082	0.00015
40	120	5320.0113	0.00021	5320.0165	0.00031	5320.0196	0.00037	5320.0138	0.00026
30	120	5319.9962	-0.00007	5319.9924	-0.00014	5319.9906	-0.00018	5319.9962	-0.00007
20	120	5320.0147	0.00028	5320.008	0.00015	5320.0162	0.00030	5320.0064	0.00012
10	120	5319.9732	-0.00050	5319.9718	-0.00053	5319.9693	-0.00058	5319.9714	-0.00054
0	120	5320.0115	0.00022	5320.0184	0.00035	5320.0216	0.00041	5320.0169	0.00032
-10	120	5319.9761	-0.00045	5319.9774	-0.00042	5319.9742	-0.00048	5319.9785	-0.00040
-20	120	5319.9968	-0.00006	5319.9921	-0.00015	5319.9973	-0.00005	5319.9878	-0.00023
-30	120	5320.0204	0.00038	5320.022	0.00041	5320.0261	0.00049	5320.0231	0.00043

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	138	5320.0138	0.00026	5320.0084	0.00016	5320.0173	0.00033	5320.0058	0.00011
	120	5320.0147	0.00028	5320.008	0.00015	5320.0162	0.00030	5320.0064	0.00012
	102	5320.0147	0.00028	5320.0084	0.00016	5320.0154	0.00029	5320.0058	0.00011



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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.

--- END ---