

FCC TEST REPORT (WLAN 15.407)

REPORT NO.: RF130710E11E-1

MODEL NO.: T77H462

FCC ID: MCLT77H462

RECEIVED: Aug. 05, 2013

TESTED: Aug. 05, 2013 and Apr. 19 to 22, 2014

ISSUED: May 02, 2014

APPLICANT: Hon Hai PRECISION IND.CO.,LTD

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130710E11E-1	Original release	May 02, 2014



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1. CERTIFICATION

PRODUCT: 802.11abgn+BT4.0 module
BRAND NAME: FOXCONN
MODEL NO.: T77H462
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Hon Hai PRECISION IND.CO.,LTD
TESTED: Aug. 05, 2013 and Apr. 19 to 22, 2014
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (Model: T77H462) 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 : Midoli Peng , **DATE:** May 02, 2014
(Midoli Peng, Specialist)

APPROVED BY : May Chen , **DATE:** May 02, 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 -9.72dB at 12.57813MHz
15.407(b)(1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5470.00MHz.
15.407(a)(1/2)	Transmit Power	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

NOTE:

1. This report is prepared for FCC class II permissive change. Only conducted emission, radiated emission and transmit power were presented in this test report.
2. 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.

2.1 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)	5.43 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	802.11abgn+BT4.0 module
MODEL NO.	T77H462
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)



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MAXIMUM OUTPUT POWER	For 15.407 802.11a: 101.859mW 802.11n (HT20): 102.688mW 802.11n (HT40): 93.119mW For 15.247 (2.4GHz) 802.11b: 170.216mW 802.11g: 229.615mW 802.11n (HT20): 319.012mW BT-LE(GFSK): 6.237mW For 15.247 (5GHz) 802.11a: 137.404mW 802.11n (HT20): 161.918mW 802.11n (HT40): 166.074mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the Report No.: RF130710E11-1 design is as the following information:

u Add 4 sets of antennas (set 2~5) as following table:

Original antenna							
Antenna Set 1							
Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Frequency range (MHz to MHz)	Connector Type	
Chain (0)	Foxconn	T77H462	PIFA	-0.6	2400~2500	MHF4	
				-2.3	5150~5850		
Chain (1)	Foxconn	T77H462	PIFA	-0.6	2400~2500	MHF4	
				-2.3	5150~5850		
Newly antenna							
Antenna Set 2							
Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi) <Including cable loss>	Frequency range (MHz to MHz)	Cable Length (mm)	Connector Type
Chain (0) & Chain (1)	Wistron Neweb Corporation	DC33001GL00	PIFA	1.32	2400~2500	55	MHF4 (i-pex)
				1.62	5150-5350		
				-1.84	5470-5725		
				-2.12	5725-5850		



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Antenna Set 3									
Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi) <Including cable loss>	Frequency range (MHz to MHz)	Cable Length (mm)	Connector Type		
Chain (0) & Chain (1)	Wistron Neweb Corporation	DC33001GL10	PIFA	0.48	2400~2500	239	MHF4 (i-pex)		
				-2.19	5150-5350				
				-2.70	5470-5725				
				-1.77	5725-5850				
Antenna Set 4									
Transmitter Circuit	Antenna P/N	Manufacturer	Antenna Type	Cable Assembly P/N and Information	Frequency range (MHz to MHz)	Antenna Gain (dBi) <Including cable loss>	Antenna Gain (dBi) <Excluding cable loss>		
Chain (0)	Main Antenna (P/N: LA22RF754-1H)	LUXSHARE-ICT Co., Ltd.	PIFA	50 ohm coaxial cable Cable length:750 mm Diameter: Lowloss 1.13mm	2400-2500	0.43	2.68		
					5150-5350	-8.70	-5.15		
					5470-5725	-8.82	-5.15		
					5725-5850	-8.98	-5.25		
Chain (1)	Auxiliary Antenna (P/N: LA22RF755-1H)	LUXSHARE-ICT Co., Ltd.	PIFA	50 ohm coaxial cable Cable length: 750 mm Diameter: Lowloss1.13 mm	2400-2500	0.43	2.68		
					5150-5350	-8.70	-5.15		
					5470-5725	-8.82	-5.15		
					5725-5850	-8.98	-5.25		
Antenna Set 5									
Transmitter Circuit	Antenna P/N	Manufacturer	Antenna Type	Cable Assembly P/N and Information	Frequency range (MHz to MHz)	Antenna Gain (dBi) <Including cable loss>	Antenna Gain (dBi) <Excluding cable loss>	Cable loss max.(dB)	VSWR
Chain (0)	Main Antenna (P/N: LA22RF764-1H)	LUXSHARE -ICT Co., Ltd.	PIFA	50 ohm coaxial cable Cable length:220 mm Diameter:1.13mm	2400-2500	2.34	3.0	0.66	2.5 max
					5150-5350	0.67	1.71	1.04	2.5 max
					5470-5725	0.15	1.22	1.07	2.5 max
					5725-5850	-0.54	0.55	1.09	2.5 max
Chain (1)	Auxiliary Antenna (P/N: LA22RF765-1H)	LUXSHARE -ICT Co., Ltd.	PIFA	50 ohm coaxial cable Cable length: 250 mm Diameter:1.13 mm	2400-2500	0.83	1.58	0.75	2.5 max
					5150-5350	2.05	3.23	1.18	2.5 max
					5470-5725	0.61	1.84	1.23	2.5 max
					5725-5850	0.61	1.85	1.24	2.5 max

From the above new antennas, the antenna set 5 was selected as representative antennas for the test and their data were recorded in this report.

2. There are Bluetooth technology and WLAN technology used for the EUT
3. Bluetooth and WLAN technology can't transmit at same time.

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

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

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' antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane(below 1GHz) and Y-plane(above1GHz).

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)
802.11n (HT20)	36 to 140	116	OFDM	BPSK	13

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)
802.11n (HT20)	36 to 140	116	OFDM	BPSK	13

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	25deg. C, 76%RH	120Vac, 60Hz	Ping Liu
RE<1G	19deg. C, 65%RH	120Vac, 60Hz	Andy Ho
RE ³ 1G	25deg. C, 66%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee

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 v01r03

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

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.

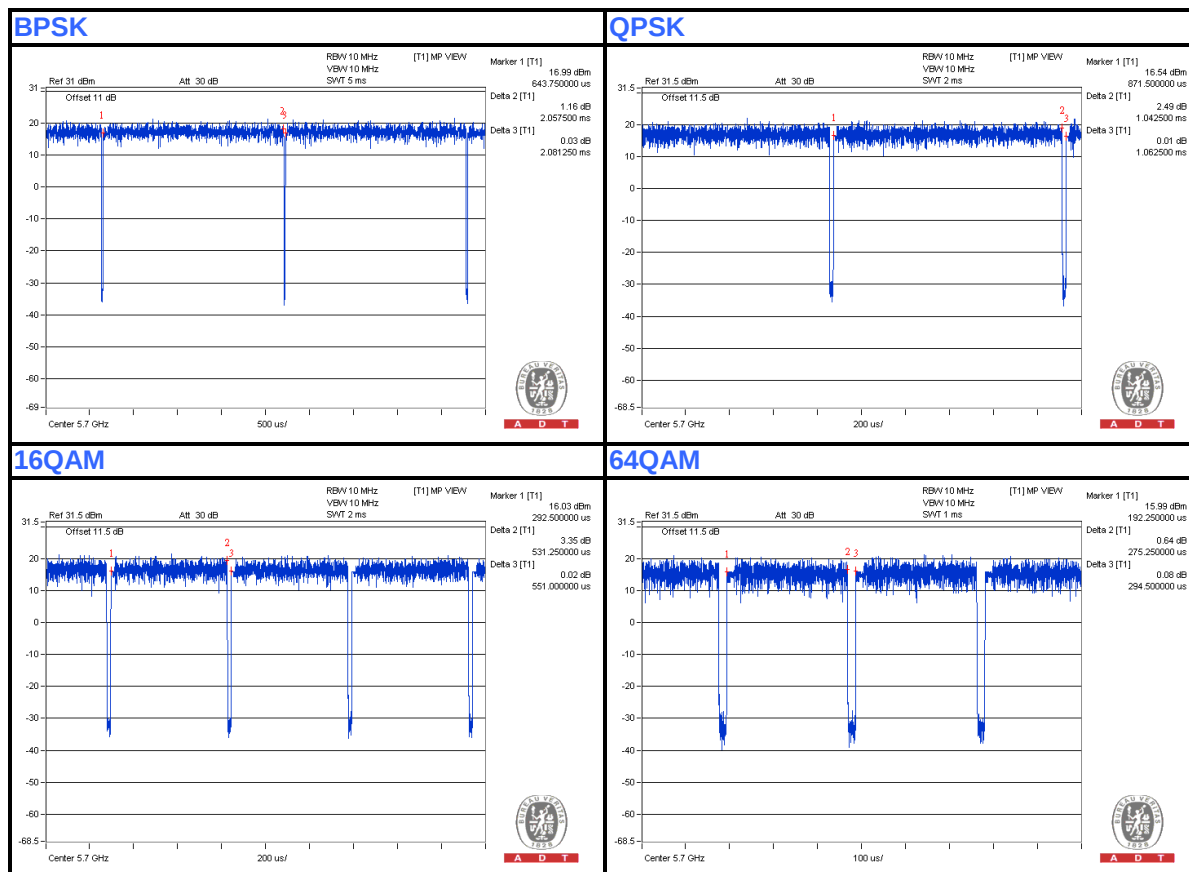
802.11a

BPSK: Duty cycle = 2.058 ms/2.081 ms = 0.989

QPSK: Duty cycle = 1.043 ms/1.063 ms = 0.981

16QAM: Duty cycle = 0.531 ms/0.551 ms = 0.964, Duty factor = $10 \cdot \log(1/0.964) = 0.16$

64QAM: Duty cycle = 0.275 ms/0.294 ms = 0.935, Duty factor = $10 \cdot \log(1/0.935) = 0.29$



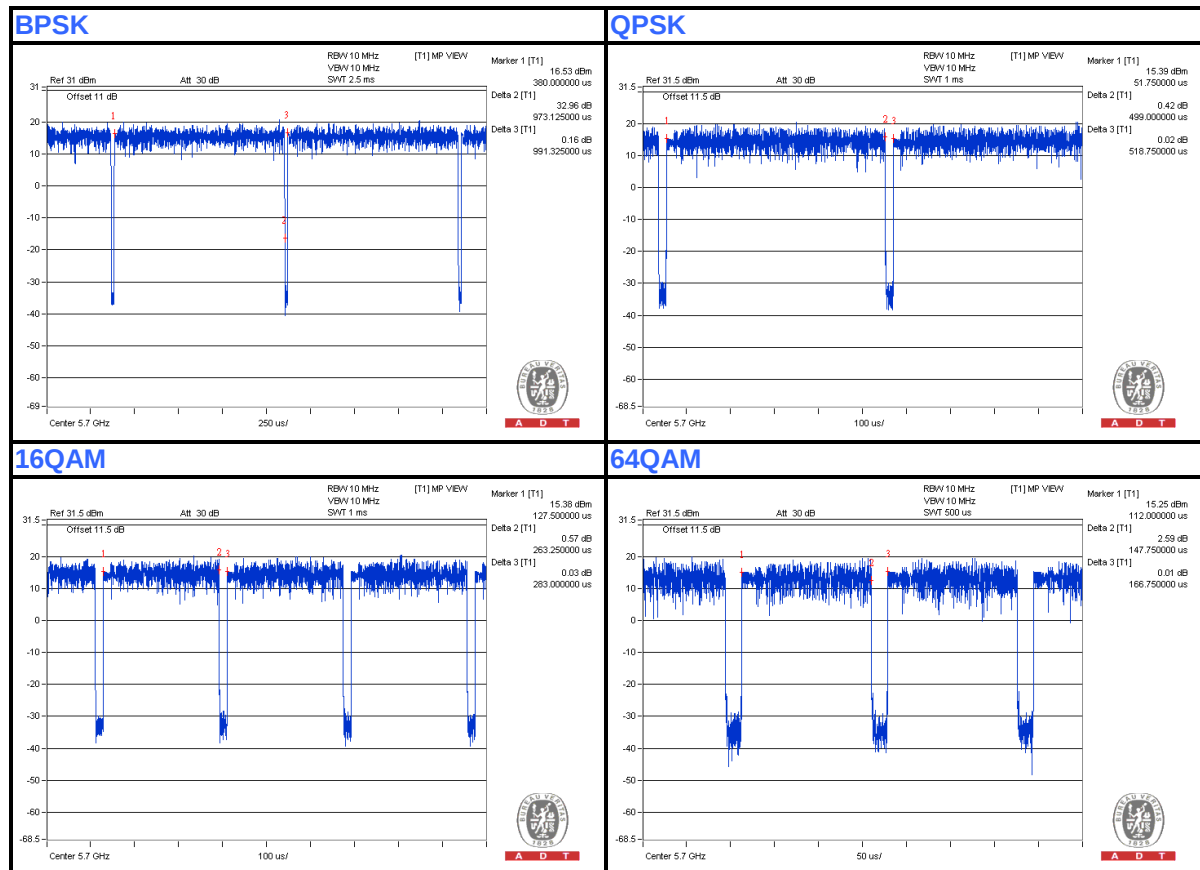
802.11n (HT20)

BPSK: Duty cycle = 0.973 ms/0.991 ms = 0.982

QPSK: Duty cycle = 0.499 ms/0.519 ms = 0.961, Duty factor = $10 \cdot \log(1/0.961) = 0.17$

16QAM: Duty cycle = 0.263 ms/0.283 ms = 0.929, Duty factor = $10 \cdot \log(1/0.929) = 0.32$

64QAM: Duty cycle = 0.148 ms/0.167 ms = 0.886, Duty factor = $10 \cdot \log(1/0.886) = 0.52$



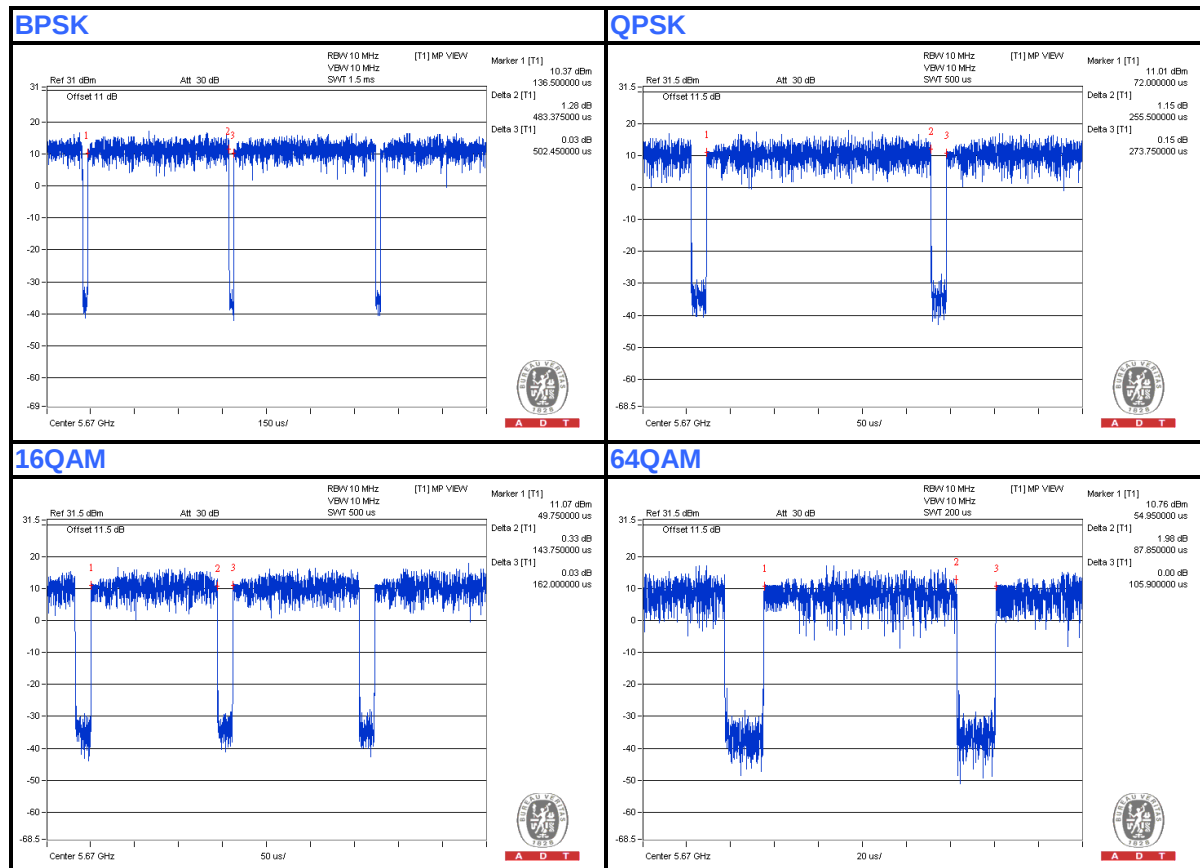
802.11n (HT40)

BPSK: Duty cycle = 0.483 ms/0.502 ms = 0.962, Duty factor = $10 \cdot \log(1/0.962) = 0.17$

QPSK: Duty cycle = 0.256 ms/0.274 ms = 0.934, Duty factor = $10 \cdot \log(1/0.934) = 0.3$

16QAM: Duty cycle = 0.144 ms/0.162 ms = 0.889, Duty factor = $10 \cdot \log(1/0.889) = 0.51$

64QAM: Duty cycle = 0.088 ms/0.106 ms = 0.83, Duty factor = $10 \cdot \log(1/0.83) = 0.81$



3.5 DESCRIPTION OF SUPPORT UNITS

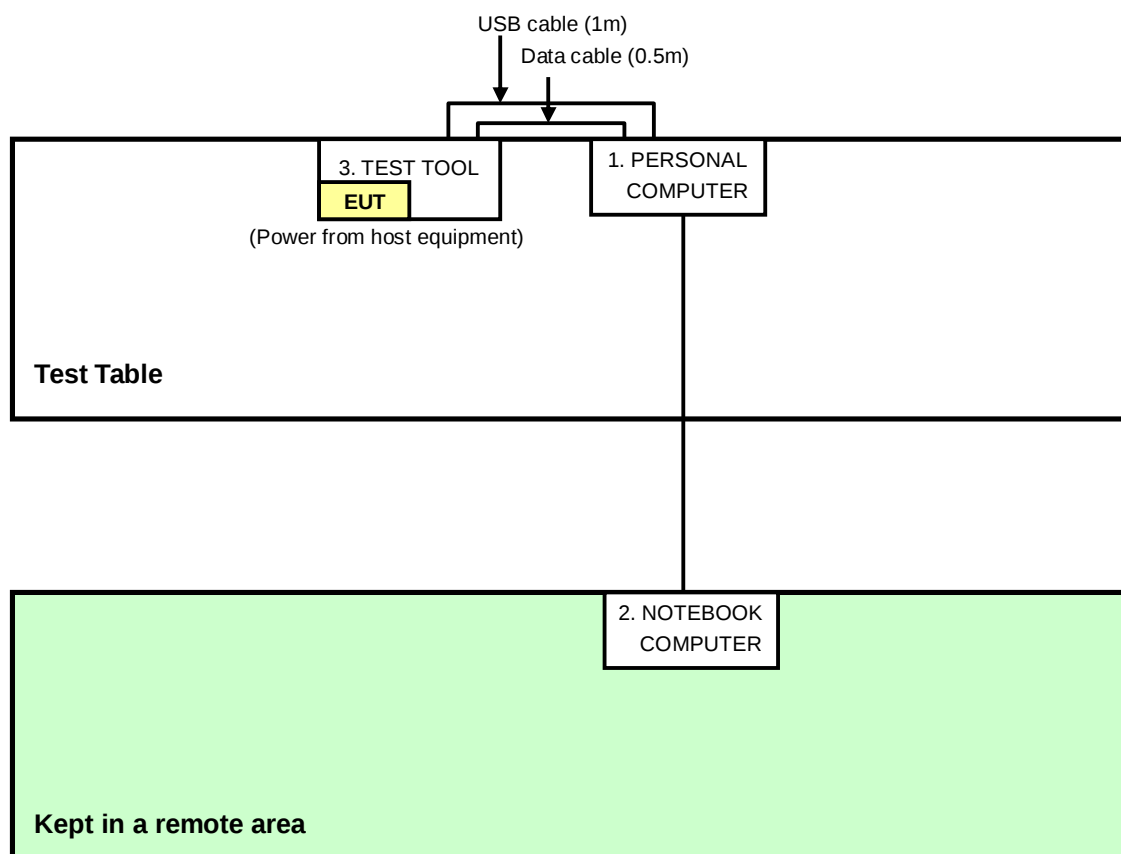
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PERSONAL COMPUTER	DELL	DCNE	HRJB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
3	TEST TOOL	Hon Hai	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB cable, 1m
2	UTP cable, 10m
3	Data cable, 0.5m

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

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
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 05, 2013	Sep. 04, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 06, 2013	June 05, 2014
RF Cable (JYEBAO)	5DFB	CONCAB-003	Mar. 07, 2014	Mar. 06, 2015
50 ohms Terminator	50	EMC-03	Sep. 24, 2013	Sep. 23, 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: Apr. 22, 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.

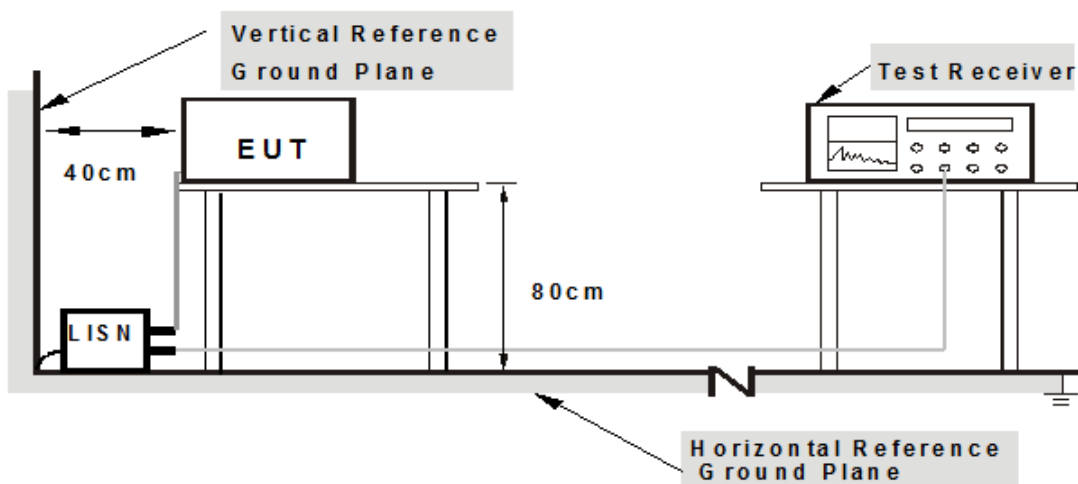
NOTE:

- 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.

4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit 1 (PC) which is placed on a testing table.
2. The communication partner run test program “MTool_2.0.0.8.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

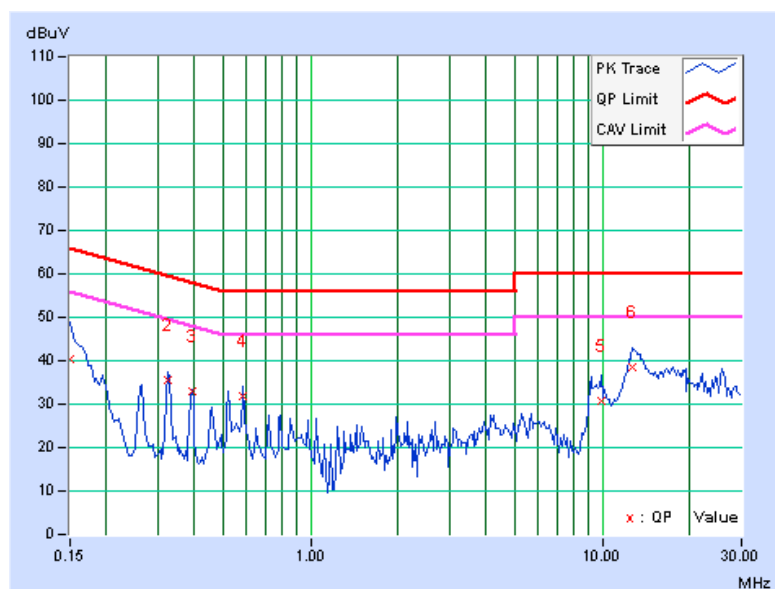
4.1.7 TEST RESULTS

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

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	0.06	40.34	24.39	40.40	24.45	66.00	56.00	-25.60	-31.55
2	0.32578	0.07	35.38	35.18	35.45	35.25	59.56	49.56	-24.11	-14.31
3	0.39219	0.07	32.79	31.83	32.86	31.90	58.02	48.02	-25.16	-16.12
4	0.58750	0.08	31.65	28.28	31.73	28.36	56.00	46.00	-24.27	-17.64
5	9.90625	0.39	30.30	24.39	30.69	24.78	60.00	50.00	-29.31	-25.22
6	12.75000	0.47	37.91	34.14	38.38	34.61	60.00	50.00	-21.62	-15.39

REMARKS:

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

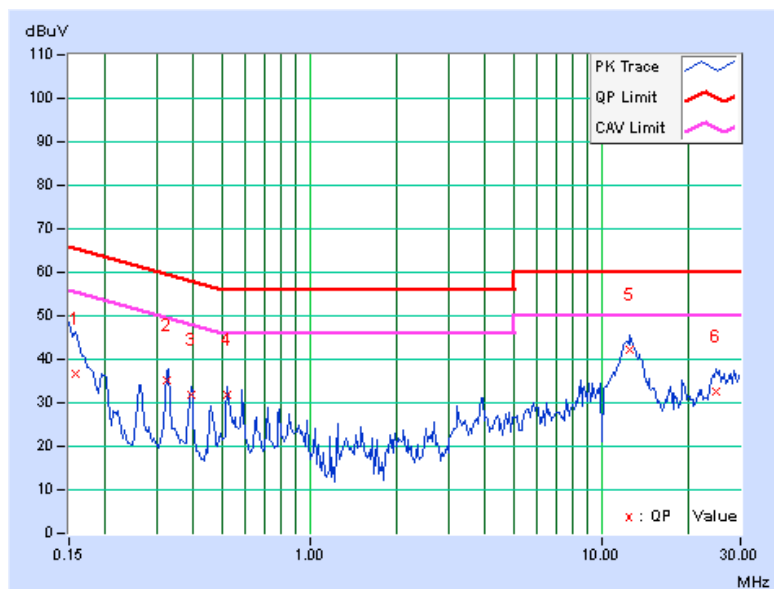


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.07	36.66	21.66	36.73	21.73	65.58	55.58	-28.85	-33.85
2	0.32578	0.07	35.12	34.41	35.19	34.48	59.56	49.56	-24.37	-15.08
3	0.39219	0.07	31.85	31.03	31.92	31.10	58.02	48.02	-26.10	-16.92
4	0.52500	0.07	31.77	30.26	31.84	30.33	56.00	46.00	-24.16	-15.67
5	12.57813	0.46	41.90	39.82	42.36	40.28	60.00	50.00	-17.64	-9.72
6	24.75000	0.79	31.82	24.46	32.61	25.25	60.00	50.00	-27.39	-24.75

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.

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:

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY50010156	Jan. 15, 2014	Jan. 14, 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 15, 2013	July 14, 2014
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
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 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: Apr. 19 to 21, 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:

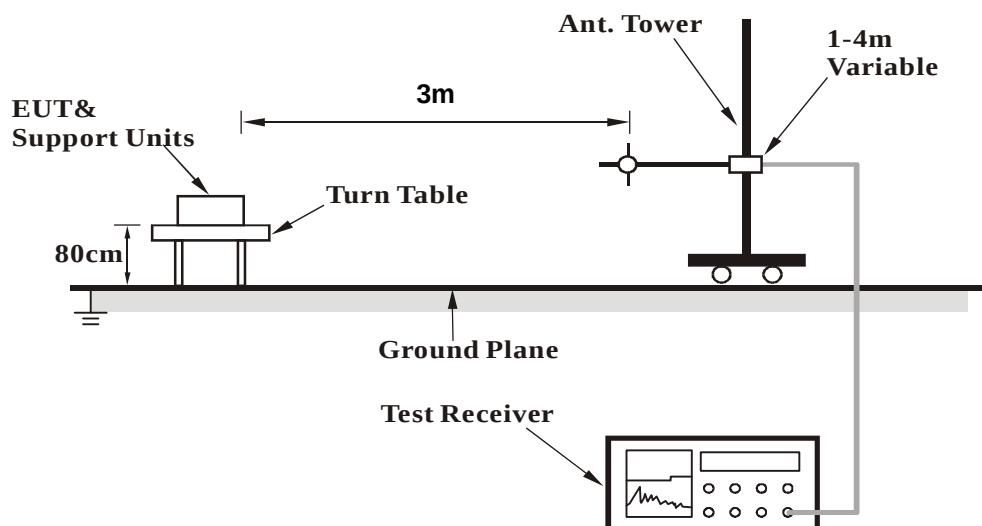
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

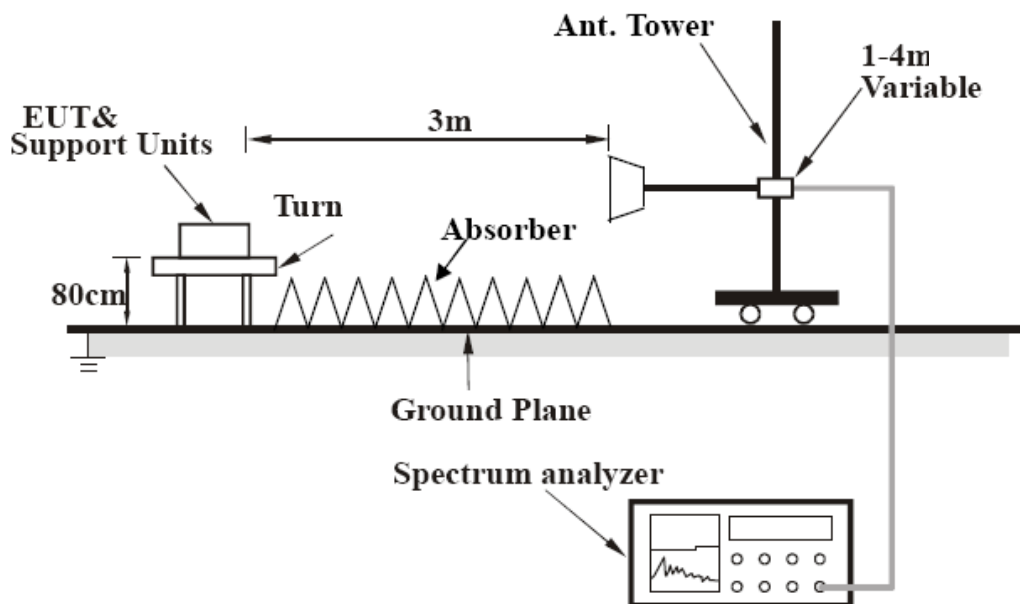
No deviation

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.13	30.4 QP	40.0	-9.6	1.40 H	229	44.26	-13.82
2	398.22	41.3 QP	46.0	-4.7	1.00 H	189	50.67	-9.37
3	433.08	39.4 QP	46.0	-6.7	1.52 H	263	47.41	-8.06
4	499.72	40.4 QP	46.0	-5.6	1.30 H	172	47.36	-6.92
5	533.05	39.8 QP	46.0	-6.2	1.63 H	224	46.17	-6.34
6	716.32	39.4 QP	46.0	-6.6	1.00 H	23	42.37	-2.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.20	33.6 QP	40.0	-6.4	1.00 V	155	47.80	-14.16
2	166.57	38.7 QP	43.5	-4.8	1.15 V	237	51.60	-12.94
3	333.12	40.7 QP	46.0	-5.3	2.00 V	127	51.34	-10.62
4	416.41	41.6 QP	46.0	-4.4	1.50 V	302	50.36	-8.80
5	448.02	41.2 QP	46.0	-4.8	1.41 V	283	48.99	-7.79
6	749.60	37.8 QP	46.0	-8.2	1.50 V	269	39.47	-1.64

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	71.7 PK	74.0	-2.3	1.00 H	176	67.40	4.30
2	5150.00	50.2 AV	54.0	-3.8	1.00 H	176	45.90	4.30
3	*5180.00	107.0 PK			1.00 H	176	102.60	4.40
4	*5180.00	96.7 AV			1.00 H	176	92.30	4.40
5	#10360.00	51.7 PK	74.0	-22.3	1.82 H	189	41.60	10.10
6	#10360.00	39.1 AV	54.0	-14.9	1.82 H	189	29.00	10.10
7	15540.00	57.6 PK	74.0	-16.4	1.54 H	219	42.80	14.80
8	15540.00	44.5 AV	54.0	-9.5	1.54 H	219	29.70	14.80
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	67.5 PK	74.0	-6.5	1.38 V	106	63.20	4.30
2	5150.00	51.6 AV	54.0	-2.4	1.38 V	106	47.30	4.30
3	*5180.00	109.1 PK			1.38 V	106	104.70	4.40
4	*5180.00	98.6 AV			1.38 V	106	94.20	4.40
5	#10360.00	51.7 PK	74.0	-22.3	1.12 V	50	41.60	10.10
6	#10360.00	38.8 AV	54.0	-15.2	1.12 V	50	28.70	10.10
7	15540.00	57.8 PK	74.0	-16.2	1.30 V	174	43.00	14.80
8	15540.00	44.6 AV	54.0	-9.4	1.30 V	174	29.80	14.80

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.

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	60.9 PK	74.0	-13.1	1.13 H	281	56.60	4.30
2	5150.00	46.8 AV	54.0	-7.2	1.13 H	281	42.50	4.30
3	*5200.00	110.2 PK			1.13 H	281	105.80	4.40
4	*5200.00	100.5 AV			1.13 H	281	96.10	4.40
5	#10400.00	51.7 PK	74.0	-22.3	1.82 H	189	41.70	10.00
6	#10400.00	39.1 AV	54.0	-14.9	1.82 H	189	29.10	10.00
7	15600.00	57.6 PK	74.0	-16.4	1.54 H	219	42.50	15.10
8	15600.00	44.5 AV	54.0	-9.5	1.54 H	219	29.40	15.10
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	5150.00	60.6 PK	74.0	-13.4	1.39 V	105	56.30	4.30
2	5150.00	46.6 AV	54.0	-7.4	1.39 V	105	42.30	4.30
3	*5200.00	108.3 PK			1.39 V	105	103.90	4.40
4	*5200.00	98.2 AV			1.39 V	105	93.80	4.40
5	#10400.00	50.8 PK	74.0	-23.2	1.13 V	35	40.80	10.00
6	#10400.00	38.0 AV	54.0	-16.0	1.13 V	35	28.00	10.00
7	15600.00	57.8 PK	74.0	-16.2	1.31 V	158	42.70	15.10
8	15600.00	44.6 AV	54.0	-9.4	1.31 V	158	29.50	15.10

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.
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	110.6 PK			1.10 H	260	106.10	4.50
2	*5240.00	101.0 AV			1.10 H	260	96.50	4.50
3	#10480.00	51.7 PK	74.0	-22.3	1.82 H	189	41.40	10.30
4	#10480.00	39.1 AV	54.0	-14.9	1.82 H	189	28.80	10.30
5	15720.00	57.6 PK	74.0	-16.4	1.54 H	219	42.90	14.70
6	15720.00	44.5 AV	54.0	-9.5	1.54 H	219	29.80	14.70
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	108.4 PK			1.51 V	104	103.90	4.50
2	*5240.00	98.9 AV			1.51 V	104	94.40	4.50
3	#10480.00	51.2 PK	74.0	-22.8	1.08 V	42	40.90	10.30
4	#10480.00	38.3 AV	54.0	-15.7	1.08 V	42	28.00	10.30
5	15720.00	57.6 PK	74.0	-16.4	1.32 V	186	42.90	14.70
6	15720.00	44.6 AV	54.0	-9.4	1.32 V	186	29.90	14.70

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	109.2 PK			1.00 H	186	104.80	4.40
2	*5260.00	99.1 AV			1.00 H	186	94.70	4.40
3	#10520.00	57.9 PK	74.0	-16.1	1.82 H	189	47.50	10.40
4	#10520.00	43.9 AV	54.0	-10.1	1.82 H	189	33.50	10.40
5	15780.00	63.6 PK	74.0	-10.4	1.54 H	219	48.90	14.70
6	15780.00	51.9 AV	54.0	-2.1	1.54 H	219	37.20	14.70
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	110.8 PK			1.14 V	102	106.40	4.40
2	*5260.00	101.2 AV			1.14 V	102	96.80	4.40
3	#10520.00	53.7 PK	74.0	-20.3	1.12 V	50	43.30	10.40
4	#10520.00	40.8 AV	54.0	-13.2	1.12 V	50	30.40	10.40
5	15780.00	65.2 PK	74.0	-8.8	1.78 V	45	50.50	14.70
6	15780.00	50.4 AV	54.0	-3.6	1.78 V	45	35.70	14.70

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	110.3 PK			1.09 H	290	105.90	4.40
2	*5300.00	100.7 AV			1.09 H	290	96.30	4.40
3	10600.00	57.9 PK	74.0	-16.1	1.78 H	177	47.30	10.60
4	10600.00	43.7 AV	54.0	-10.3	1.78 H	177	33.10	10.60
5	15900.00	63.4 PK	74.0	-10.6	1.51 H	217	48.30	15.10
6	15900.00	51.8 AV	54.0	-2.2	1.51 H	217	36.70	15.10
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	109.2 PK			1.24 V	106	104.80	4.40
2	*5300.00	99.2 AV			1.24 V	106	94.80	4.40
3	10600.00	53.8 PK	74.0	-20.2	1.07 V	34	43.20	10.60
4	10600.00	41.0 AV	54.0	-13.0	1.07 V	34	30.40	10.60
5	15900.00	64.7 PK	74.0	-9.3	1.67 V	16	49.60	15.10
6	15900.00	49.8 AV	54.0	-4.2	1.67 V	16	34.70	15.10

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.

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	104.2 PK			1.11 H	284	99.80	4.40
2	*5320.00	96.2 AV			1.11 H	284	91.80	4.40
3	5350.00	63.2 PK	74.0	-10.8	1.11 H	284	58.80	4.40
4	5350.00	51.2 AV	54.0	-2.8	1.11 H	284	46.80	4.40
5	10640.00	50.7 PK	74.0	-23.3	1.81 H	205	40.10	10.60
6	10640.00	38.4 AV	54.0	-15.6	1.81 H	205	27.80	10.60
7	15960.00	57.5 PK	74.0	-16.5	1.48 H	210	42.60	14.90
8	15960.00	44.6 AV	54.0	-9.4	1.48 H	210	29.70	14.90
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	107.1 PK			1.47 V	102	102.70	4.40
2	*5320.00	98.4 AV			1.47 V	102	94.00	4.40
3	5350.00	72.8 PK	74.0	-1.2	1.47 V	102	68.40	4.40
4	5350.00	53.5 AV	54.0	-0.5	1.47 V	102	49.10	4.40
5	10640.00	54.6 PK	74.0	-19.4	1.10 V	41	44.00	10.60
6	10640.00	41.3 AV	54.0	-12.7	1.10 V	41	30.70	10.60
7	15960.00	58.1 PK	74.0	-15.9	1.32 V	183	43.20	14.90
8	15960.00	45.4 AV	54.0	-8.6	1.32 V	183	30.50	14.90

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 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	64.5 PK	74.0	-9.5	1.09 H	253	59.90	4.60
2	5460.00	48.2 AV	54.0	-5.8	1.09 H	253	43.60	4.60
3	#5470.00	71.4 PK	74.0	-2.6	1.09 H	253	66.80	4.60
4	#5470.00	51.9 AV	54.0	-2.1	1.09 H	253	47.30	4.60
5	*5500.00	107.9 PK			1.09 H	253	103.30	4.60
6	*5500.00	97.9 AV			1.09 H	253	93.30	4.60
7	11000.00	57.9 PK	74.0	-16.1	1.75 H	183	47.10	10.80
8	11000.00	43.9 AV	54.0	-10.1	1.75 H	183	33.10	10.80
9	#16500.00	62.6 PK	74.0	-11.4	1.48 H	202	45.60	17.00
10	#16500.00	51.3 AV	54.0	-2.7	1.48 H	202	34.30	17.00
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	66.4 PK	74.0	-7.6	1.66 V	103	61.80	4.60
2	5460.00	48.6 AV	54.0	-5.4	1.66 V	103	44.00	4.60
3	#5470.00	71.8 PK	74.0	-2.2	1.66 V	103	67.20	4.60
4	#5470.00	51.5 AV	54.0	-2.5	1.66 V	103	46.90	4.60
5	*5500.00	108.5 PK			1.66 V	103	103.90	4.60
6	*5500.00	98.5 AV			1.66 V	103	93.90	4.60
7	11000.00	54.4 PK	74.0	-19.6	1.06 V	32	43.60	10.80
8	11000.00	41.4 AV	54.0	-12.6	1.06 V	32	30.60	10.80
9	#16500.00	64.6 PK	74.0	-9.4	1.66 V	19	47.60	17.00
10	#16500.00	49.7 AV	54.0	-4.3	1.66 V	19	32.70	17.00

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 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	*5580.00	111.7 PK			1.06 H	252	106.80	4.90
2	*5580.00	101.8 AV			1.06 H	252	96.90	4.90
3	11160.00	56.1 PK	74.0	-17.9	1.71 H	172	45.40	10.70
4	11160.00	42.5 AV	54.0	-11.5	1.71 H	172	31.80	10.70
5	#16740.00	59.8 PK	74.0	-14.2	1.25 H	157	41.90	17.90
6	#16740.00	48.0 AV	54.0	-6.0	1.25 H	157	30.10	17.90
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	*5580.00	110.4 PK			1.20 V	169	105.50	4.90
2	*5580.00	100.8 AV			1.20 V	169	95.90	4.90
3	11160.00	53.9 PK	74.0	-20.1	1.06 V	35	43.20	10.70
4	11160.00	41.1 AV	54.0	-12.9	1.06 V	35	30.40	10.70
5	#16740.00	64.2 PK	74.0	-9.8	1.69 V	14	46.30	17.90
6	#16740.00	49.3 AV	54.0	-4.7	1.69 V	14	31.40	17.90

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	5150.00	57.5 PK	74.0	-16.5	1.14 H	256	53.20	4.30
2	5150.00	46.1 AV	54.0	-7.9	1.14 H	256	41.80	4.30
3	5358.47	57.0 PK	74.0	-17.0	1.12 H	286	52.60	4.40
4	5358.47	45.3 AV	54.0	-8.7	1.12 H	286	40.90	4.40
5	*5660.00	111.4 PK			1.14 H	256	106.50	4.90
6	*5660.00	101.3 AV			1.14 H	256	96.40	4.90
7	11320.00	50.2 PK	74.0	-23.8	1.77 H	202	39.40	10.80
8	11320.00	38.1 AV	54.0	-15.9	1.77 H	202	27.30	10.80
9	#16980.00	56.7 PK	74.0	-17.3	1.42 H	220	38.30	18.40
10	#16980.00	43.9 AV	54.0	-10.1	1.42 H	220	25.50	18.40
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	60.8 PK	74.0	-13.2	1.59 V	103	56.50	4.30
2	5150.00	48.9 AV	54.0	-5.1	1.59 V	103	44.60	4.30
3	5359.00	63.9 PK	74.0	-10.1	1.09 V	334	59.50	4.40
4	5359.00	51.8 AV	54.0	-2.2	1.09 V	334	47.40	4.40
5	*5660.00	108.9 PK			1.38 V	104	104.00	4.90
6	*5660.00	99.5 AV			1.38 V	104	94.60	4.90
7	11320.00	50.5 PK	74.0	-23.5	1.07 V	40	39.70	10.80
8	11320.00	37.8 AV	54.0	-16.2	1.07 V	40	27.00	10.80
9	#16980.00	56.8 PK	74.0	-17.2	1.37 V	194	38.40	18.40
10	#16980.00	43.7 AV	54.0	-10.3	1.37 V	194	25.30	18.40

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	5403.00	60.2 PK	74.0	-13.8	1.24 H	315	55.50	4.70
2	5403.00	45.4 AV	54.0	-8.6	1.24 H	315	40.70	4.70
3	*5700.00	105.8 PK			1.12 H	274	100.90	4.90
4	*5700.00	98.1 AV			1.12 H	274	93.20	4.90
5	#5725.00	70.2 PK	74.0	-3.8	1.12 H	274	65.30	4.90
6	#5725.00	53.3 AV	54.0	-0.7	1.12 H	274	48.40	4.90
7	11400.00	50.0 PK	74.0	-24.0	1.71 H	193	39.30	10.70
8	11400.00	38.0 AV	54.0	-16.0	1.71 H	193	27.30	10.70
9	#17100.00	57.7 PK	74.0	-16.3	1.37 H	180	39.10	18.60
10	#17100.00	44.8 AV	54.0	-9.2	1.37 H	180	26.20	18.60
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	5403.00	58.9 PK	74.0	-15.1	1.18 V	100	54.20	4.70
2	5403.00	49.0 AV	54.0	-5.0	1.18 V	100	44.30	4.70
3	*5700.00	107.2 PK			1.61 V	100	102.30	4.90
4	*5700.00	98.4 AV			1.61 V	100	93.50	4.90
5	#5725.00	71.9 PK	74.0	-2.1	1.61 V	100	67.00	4.90
6	#5725.00	53.5 AV	54.0	-0.5	1.61 V	100	48.60	4.90
7	11400.00	51.5 PK	74.0	-22.5	1.12 V	26	40.80	10.70
8	11400.00	38.2 AV	54.0	-15.8	1.12 V	26	27.50	10.70
9	#17100.00	56.4 PK	74.0	-17.6	1.28 V	183	37.80	18.60
10	#17100.00	43.3 AV	54.0	-10.7	1.28 V	183	24.70	18.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	64.1 PK	74.0	-9.9	1.13 H	281	59.80	4.30
2	5150.00	49.2 AV	54.0	-4.8	1.13 H	281	44.90	4.30
3	*5180.00	110.9 PK			1.13 H	281	106.50	4.40
4	*5180.00	99.6 AV			1.13 H	281	95.20	4.40
5	#10360.00	50.2 PK	74.0	-23.8	1.79 H	209	40.10	10.10
6	#10360.00	38.2 AV	54.0	-15.8	1.79 H	209	28.10	10.10
7	15540.00	57.5 PK	74.0	-16.5	1.41 H	203	42.70	14.80
8	15540.00	44.7 AV	54.0	-9.3	1.41 H	203	29.90	14.80
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	66.0 PK	74.0	-8.0	1.41 V	104	61.70	4.30
2	5150.00	49.1 AV	54.0	-4.9	1.41 V	104	44.80	4.30
3	*5180.00	109.2 PK			1.41 V	104	104.80	4.40
4	*5180.00	99.3 AV			1.41 V	104	94.90	4.40
5	#10360.00	51.4 PK	74.0	-22.6	1.04 V	11	41.30	10.10
6	#10360.00	38.2 AV	54.0	-15.8	1.04 V	11	28.10	10.10
7	15540.00	56.4 PK	74.0	-17.6	1.27 V	180	41.60	14.80
8	15540.00	43.1 AV	54.0	-10.9	1.27 V	180	28.30	14.80

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.

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	110.0 PK			1.10 H	291	105.60	4.40
2	*5200.00	98.9 AV			1.10 H	291	94.50	4.40
3	#10400.00	49.4 PK	74.0	-24.6	1.76 H	219	39.40	10.00
4	#10400.00	37.3 AV	54.0	-16.7	1.76 H	219	27.30	10.00
5	15600.00	57.7 PK	74.0	-16.3	1.38 H	191	42.60	15.10
6	15600.00	45.0 AV	54.0	-9.0	1.38 H	191	29.90	15.10
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	*5200.00	109.7 PK			1.37 V	94	105.30	4.40
2	*5200.00	99.8 AV			1.37 V	94	95.40	4.40
3	#10400.00	51.9 PK	74.0	-22.1	1.07 V	21	41.90	10.00
4	#10400.00	38.3 AV	54.0	-15.7	1.07 V	21	28.30	10.00
5	15600.00	57.1 PK	74.0	-16.9	1.31 V	197	42.00	15.10
6	15600.00	43.8 AV	54.0	-10.2	1.31 V	197	28.70	15.10

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.
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	110.8 PK			1.18 H	272	106.30	4.50
2	*5240.00	99.4 AV			1.18 H	272	94.90	4.50
3	#10480.00	50.4 PK	74.0	-23.6	1.74 H	185	40.10	10.30
4	#10480.00	38.2 AV	54.0	-15.8	1.74 H	185	27.90	10.30
5	15720.00	57.5 PK	74.0	-16.5	1.39 H	201	42.80	14.70
6	15720.00	44.5 AV	54.0	-9.5	1.39 H	201	29.80	14.70
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	109.0 PK			1.35 V	104	104.50	4.50
2	*5240.00	99.0 AV			1.35 V	104	94.50	4.50
3	#10480.00	50.7 PK	74.0	-23.3	1.10 V	37	40.40	10.30
4	#10480.00	37.7 AV	54.0	-16.3	1.10 V	37	27.40	10.30
5	15720.00	55.7 PK	74.0	-18.3	1.14 V	175	41.00	14.70
6	15720.00	42.8 AV	54.0	-11.2	1.14 V	175	28.10	14.70

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	110.9 PK			1.16 H	274	106.50	4.40
2	*5260.00	102.2 AV			1.16 H	274	97.80	4.40
3	#10520.00	57.5 PK	74.0	-16.5	1.74 H	171	47.10	10.40
4	#10520.00	43.6 AV	54.0	-10.4	1.74 H	171	33.20	10.40
5	15780.00	61.7 PK	74.0	-12.3	1.53 H	163	47.00	14.70
6	15780.00	50.9 AV	54.0	-3.1	1.53 H	163	36.20	14.70
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	111.4 PK			1.49 V	101	107.00	4.40
2	*5260.00	102.5 AV			1.49 V	101	98.10	4.40
3	#10520.00	53.8 PK	74.0	-20.2	1.11 V	25	43.40	10.40
4	#10520.00	41.1 AV	54.0	-12.9	1.11 V	25	30.70	10.40
5	15780.00	64.4 PK	74.0	-9.6	1.59 V	31	49.70	14.70
6	15780.00	49.5 AV	54.0	-4.5	1.59 V	31	34.80	14.70

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	108.9 PK			1.14 H	276	104.50	4.40
2	*5300.00	100.0 AV			1.14 H	276	95.60	4.40
3	10600.00	58.2 PK	74.0	-15.8	1.71 H	187	47.60	10.60
4	10600.00	44.2 AV	54.0	-9.8	1.71 H	187	33.60	10.60
5	15900.00	62.3 PK	74.0	-11.7	1.42 H	194	47.20	15.10
6	15900.00	50.8 AV	54.0	-3.2	1.42 H	194	35.70	15.10
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	110.1 PK			1.39 V	105	105.70	4.40
2	*5300.00	100.4 AV			1.39 V	105	96.00	4.40
3	10600.00	53.9 PK	74.0	-20.1	1.11 V	2	43.30	10.60
4	10600.00	41.4 AV	54.0	-12.6	1.11 V	2	30.80	10.60
5	15900.00	64.2 PK	74.0	-9.8	1.65 V	18	49.10	15.10
6	15900.00	49.4 AV	54.0	-4.6	1.65 V	18	34.30	15.10

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.

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	109.1 PK			1.10 H	271	104.70	4.40
2	*5320.00	98.2 AV			1.10 H	271	93.80	4.40
3	5350.00	68.4 PK	74.0	-5.6	1.10 H	271	64.00	4.40
4	5350.00	52.9 AV	54.0	-1.1	1.10 H	271	48.50	4.40
5	10640.00	50.0 PK	74.0	-24.0	1.65 H	186	39.40	10.60
6	10640.00	38.2 AV	54.0	-15.8	1.65 H	186	27.60	10.60
7	15960.00	57.8 PK	74.0	-16.2	1.32 H	186	42.90	14.90
8	15960.00	45.2 AV	54.0	-8.8	1.32 H	186	30.30	14.90
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	108.5 PK			1.41 V	105	104.10	4.40
2	*5320.00	98.8 AV			1.41 V	105	94.40	4.40
3	5350.00	69.0 PK	74.0	-5.0	1.41 V	105	64.60	4.40
4	5350.00	53.2 AV	54.0	-0.8	1.41 V	105	48.80	4.40
5	10640.00	51.1 PK	74.0	-22.9	1.02 V	24	40.50	10.60
6	10640.00	37.8 AV	54.0	-16.2	1.02 V	24	27.20	10.60
7	15960.00	56.4 PK	74.0	-17.6	1.31 V	180	41.50	14.90
8	15960.00	43.3 AV	54.0	-10.7	1.31 V	180	28.40	14.90

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 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	65.6 PK	74.0	-8.4	1.01 H	330	61.00	4.60
2	5460.00	48.5 AV	54.0	-5.5	1.01 H	330	43.90	4.60
3	#5470.00	71.3 PK	74.0	-2.7	1.01 H	330	66.70	4.60
4	#5470.00	52.4 AV	54.0	-1.6	1.01 H	330	47.80	4.60
5	*5500.00	108.8 PK			1.01 H	330	104.20	4.60
6	*5500.00	97.1 AV			1.01 H	330	92.50	4.60
7	11000.00	58.1 PK	74.0	-15.9	1.70 H	164	47.30	10.80
8	11000.00	43.9 AV	54.0	-10.1	1.70 H	164	33.10	10.80
9	#16500.00	62.0 PK	74.0	-12.0	1.47 H	194	45.00	17.00
10	#16500.00	50.4 AV	54.0	-3.6	1.47 H	194	33.40	17.00
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	67.9 PK	74.0	-6.1	1.40 V	106	63.30	4.60
2	5460.00	50.2 AV	54.0	-3.8	1.40 V	106	45.60	4.60
3	#5470.00	73.3 PK	74.0	-0.7	1.40 V	106	68.70	4.60
4	#5470.00	53.6 AV	54.0	-0.4	1.40 V	106	49.00	4.60
5	*5500.00	110.4 PK			1.40 V	106	105.80	4.60
6	*5500.00	98.9 AV			1.40 V	106	94.30	4.60
7	11000.00	53.4 PK	74.0	-20.6	1.00 V	27	42.60	10.80
8	11000.00	40.5 AV	54.0	-13.5	1.00 V	27	29.70	10.80
9	#16500.00	64.6 PK	74.0	-9.4	1.55 V	33	47.60	17.00
10	#16500.00	49.7 AV	54.0	-4.3	1.55 V	33	32.70	17.00

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 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	#5283.14	64.5 PK	74.0	-9.5	1.11 H	271	60.20	4.30
2	#5283.14	52.6 AV	54.0	-1.4	1.11 H	271	48.30	4.30
3	*5580.00	113.3 PK			1.15 H	274	108.40	4.90
4	*5580.00	101.9 AV			1.15 H	274	97.00	4.90
5	11160.00	58.6 PK	74.0	-15.4	1.65 H	197	47.90	10.70
6	11160.00	44.5 AV	54.0	-9.5	1.65 H	197	33.80	10.70
7	#16740.00	62.5 PK	74.0	-11.5	1.39 H	197	44.60	17.90
8	#16740.00	51.3 AV	54.0	-2.7	1.39 H	197	33.40	17.90
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	#5278.01	62.0 PK	74.0	-12.0	1.15 V	99	57.70	4.30
2	#5278.01	52.6 AV	54.0	-1.4	1.15 V	99	48.30	4.30
3	*5580.00	112.7 PK			1.54 V	104	107.80	4.90
4	*5580.00	102.6 AV			1.54 V	104	97.70	4.90
5	11160.00	53.2 PK	74.0	-20.8	1.16 V	29	42.50	10.70
6	11160.00	40.7 AV	54.0	-13.3	1.16 V	29	30.00	10.70
7	#16740.00	64.2 PK	74.0	-9.8	1.62 V	25	46.30	17.90
8	#16740.00	49.5 AV	54.0	-4.5	1.62 V	25	31.60	17.90

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 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	*5660.00	113.0 PK			1.14 H	252	108.10	4.90
2	*5660.00	101.7 AV			1.14 H	252	96.80	4.90
3	11320.00	57.8 PK	74.0	-16.2	1.65 H	195	47.00	10.80
4	11320.00	44.1 AV	54.0	-9.9	1.65 H	195	33.30	10.80
5	#16980.00	62.5 PK	74.0	-11.5	1.36 H	200	44.10	18.40
6	#16980.00	50.7 AV	54.0	-3.3	1.36 H	200	32.30	18.40
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	*5660.00	113.2 PK			1.51 V	105	108.30	4.90
2	*5660.00	102.9 AV			1.51 V	105	98.00	4.90
3	11320.00	53.4 PK	74.0	-20.6	1.06 V	17	42.60	10.80
4	11320.00	40.6 AV	54.0	-13.4	1.06 V	17	29.80	10.80
5	#16980.00	64.6 PK	74.0	-9.4	1.55 V	30	46.20	18.40
6	#16980.00	49.8 AV	54.0	-4.2	1.55 V	30	31.40	18.40

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	106.9 PK			1.11 H	273	102.00	4.90
2	*5700.00	96.7 AV			1.11 H	273	91.80	4.90
3	#5725.00	70.5 PK	74.0	-3.5	1.11 H	273	65.60	4.90
4	#5725.00	50.0 AV	54.0	-4.0	1.11 H	273	45.10	4.90
5	11400.00	50.2 PK	74.0	-23.8	1.59 H	197	39.50	10.70
6	11400.00	38.3 AV	54.0	-15.7	1.59 H	197	27.60	10.70
7	#17100.00	57.0 PK	74.0	-17.0	1.28 H	186	38.40	18.60
8	#17100.00	44.4 AV	54.0	-9.6	1.28 H	186	25.80	18.60
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	107.0 PK			1.55 V	145	102.10	4.90
2	*5700.00	97.3 AV			1.55 V	145	92.40	4.90
3	#5725.00	70.3 PK	74.0	-3.7	1.55 V	145	65.40	4.90
4	#5725.00	53.5 AV	54.0	-0.5	1.55 V	145	48.60	4.90
5	11400.00	49.8 PK	74.0	-24.2	1.02 V	15	39.10	10.70
6	11400.00	36.8 AV	54.0	-17.2	1.02 V	15	26.10	10.70
7	#17100.00	55.9 PK	74.0	-18.1	1.27 V	158	37.30	18.60
8	#17100.00	42.8 AV	54.0	-11.2	1.27 V	158	24.20	18.60

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	63.3 PK	74.0	-10.7	1.13 H	279	59.00	4.30
2	5150.00	51.0 AV	54.0	-3.0	1.13 H	279	46.70	4.30
3	*5190.00	105.2 PK			1.13 H	279	100.80	4.40
4	*5190.00	93.7 AV			1.13 H	279	89.30	4.40
5	#10380.00	49.6 PK	74.0	-24.4	1.55 H	182	39.50	10.10
6	#10380.00	37.7 AV	54.0	-16.3	1.55 H	182	27.60	10.10
7	15570.00	56.5 PK	74.0	-17.5	1.23 H	197	41.60	14.90
8	15570.00	44.1 AV	54.0	-9.9	1.23 H	197	29.20	14.90
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	65.1 PK	74.0	-8.9	1.41 V	305	60.80	4.30
2	5150.00	51.7 AV	54.0	-2.3	1.41 V	305	47.40	4.30
3	*5190.00	103.8 PK			1.41 V	305	99.40	4.40
4	*5190.00	94.5 AV			1.41 V	305	90.10	4.40
5	#10380.00	49.5 PK	74.0	-24.5	1.07 V	23	39.40	10.10
6	#10380.00	37.0 AV	54.0	-17.0	1.07 V	23	26.90	10.10
7	15570.00	56.2 PK	74.0	-17.8	1.22 V	144	41.30	14.90
8	15570.00	43.1 AV	54.0	-10.9	1.22 V	144	28.20	14.90

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	106.4 PK			1.12 H	283	101.90	4.50
2	*5230.00	95.1 AV			1.12 H	283	90.60	4.50
3	#10460.00	50.2 PK	74.0	-23.8	1.54 H	191	40.00	10.20
4	#10460.00	38.5 AV	54.0	-15.5	1.54 H	191	28.30	10.20
5	15690.00	55.8 PK	74.0	-18.2	1.24 H	192	41.10	14.70
6	15690.00	43.7 AV	54.0	-10.3	1.24 H	192	29.00	14.70
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	105.7 PK			1.41 V	307	101.20	4.50
2	*5230.00	95.2 AV			1.41 V	307	90.70	4.50
3	#10460.00	49.2 PK	74.0	-24.8	1.03 V	34	39.00	10.20
4	#10460.00	36.9 AV	54.0	-17.1	1.03 V	34	26.70	10.20
5	15690.00	56.6 PK	74.0	-17.4	1.22 V	138	41.90	14.70
6	15690.00	43.6 AV	54.0	-10.4	1.22 V	138	28.90	14.70

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	108.0 PK			1.12 H	287	103.70	4.30
2	*5270.00	98.2 AV			1.12 H	287	93.90	4.30
3	#10540.00	50.7 PK	74.0	-23.3	1.57 H	167	40.30	10.40
4	#10540.00	38.7 AV	54.0	-15.3	1.57 H	167	28.30	10.40
5	15810.00	55.8 PK	74.0	-18.2	1.22 H	194	41.00	14.80
6	15810.00	46.9 AV	54.0	-7.1	1.22 H	194	32.10	14.80
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	*5270.00	109.0 PK			1.24 V	304	104.70	4.30
2	*5270.00	99.0 AV			1.24 V	304	94.70	4.30
3	#10540.00	48.5 PK	74.0	-25.5	1.07 V	14	38.10	10.40
4	#10540.00	36.3 AV	54.0	-17.7	1.07 V	14	25.90	10.40
5	15810.00	57.0 PK	74.0	-17.0	1.23 V	141	42.20	14.80
6	15810.00	46.7 AV	54.0	-7.3	1.23 V	141	31.90	14.80

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.

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	104.3 PK			1.11 H	273	99.90	4.40
2	*5310.00	95.8 AV			1.11 H	273	91.40	4.40
3	5350.00	71.2 PK	74.0	-2.8	1.11 H	273	66.80	4.40
4	5350.00	52.3 AV	54.0	-1.7	1.11 H	273	47.90	4.40
5	10620.00	50.7 PK	74.0	-23.3	1.57 H	167	40.10	10.60
6	10620.00	38.7 AV	54.0	-15.3	1.57 H	167	28.10	10.60
7	15930.00	55.8 PK	74.0	-18.2	1.22 H	194	40.90	14.90
8	15930.00	43.9 AV	54.0	-10.1	1.22 H	194	29.00	14.90
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	105.4 PK			1.14 V	308	101.00	4.40
2	*5310.00	96.9 AV			1.14 V	308	92.50	4.40
3	5350.00	71.7 PK	74.0	-2.3	1.14 V	308	67.30	4.40
4	5350.00	53.6 AV	54.0	-0.4	1.14 V	308	49.20	4.40
5	10620.00	48.5 PK	74.0	-25.5	1.07 V	14	37.90	10.60
6	10620.00	36.3 AV	54.0	-17.7	1.07 V	14	25.70	10.60
7	15930.00	57.0 PK	74.0	-17.0	1.23 V	141	42.10	14.90
8	15930.00	43.7 AV	54.0	-10.3	1.23 V	141	28.80	14.90

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 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	65.2 PK	74.0	-8.8	1.07 H	274	60.60	4.60
2	5460.00	49.1 AV	54.0	-4.9	1.07 H	274	44.50	4.60
3	#5470.00	72.1 PK	74.0	-1.9	1.07 H	274	67.50	4.60
4	#5470.00	53.9 AV	54.0	-0.1	1.07 H	274	49.30	4.60
5	*5510.00	105.5 PK			1.07 H	274	100.90	4.60
6	*5510.00	93.4 AV			1.07 H	274	88.80	4.60
7	11020.00	50.0 PK	74.0	-24.0	1.48 H	202	39.20	10.80
8	11020.00	38.1 AV	54.0	-15.9	1.48 H	202	27.30	10.80
9	#16530.00	55.4 PK	74.0	-18.6	1.13 H	182	38.30	17.10
10	#16530.00	43.5 AV	54.0	-10.5	1.13 H	182	26.40	17.10
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	5460.00	64.3 PK	74.0	-9.7	1.13 V	268	59.70	4.60
2	5460.00	47.0 AV	54.0	-7.0	1.13 V	268	42.40	4.60
3	#5470.00	72.6 PK	74.0	-1.4	1.13 V	268	68.00	4.60
4	#5470.00	53.1 AV	54.0	-0.9	1.13 V	268	48.50	4.60
5	*5510.00	104.3 PK			1.13 V	268	99.70	4.60
6	*5510.00	92.4 AV			1.13 V	268	87.80	4.60
7	11020.00	49.2 PK	74.0	-24.8	1.02 V	35	38.40	10.80
8	11020.00	36.9 AV	54.0	-17.1	1.02 V	35	26.10	10.80
9	#16530.00	55.6 PK	74.0	-18.4	1.12 V	140	38.50	17.10
10	#16530.00	42.9 AV	54.0	-11.1	1.12 V	140	25.80	17.10

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	110.0 PK			1.11 H	273	105.30	4.70
2	*5550.00	97.1 AV			1.11 H	273	92.40	4.70
3	11100.00	49.0 PK	74.0	-25.0	1.46 H	188	38.30	10.70
4	11100.00	37.3 AV	54.0	-16.7	1.46 H	188	26.60	10.70
5	#16650.00	56.1 PK	74.0	-17.9	1.22 H	181	38.60	17.50
6	#16650.00	44.0 AV	54.0	-10.0	1.22 H	181	26.50	17.50
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	*5550.00	110.4 PK			1.12 V	270	105.70	4.70
2	*5550.00	97.3 AV			1.12 V	270	92.60	4.70
3	11100.00	48.7 PK	74.0	-25.3	1.00 V	30	38.00	10.70
4	11100.00	36.6 AV	54.0	-17.4	1.00 V	30	25.90	10.70
5	#16650.00	56.5 PK	74.0	-17.5	1.22 V	135	39.00	17.50
6	#16650.00	43.2 AV	54.0	-10.8	1.22 V	135	25.70	17.50

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 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	5150.00	60.1 PK	74.0	-13.9	1.14 H	256	55.80	4.30
2	5150.00	46.4 AV	54.0	-7.6	1.14 H	256	42.10	4.30
3	*5670.00	105.8 PK			1.14 H	256	100.90	4.90
4	*5670.00	94.8 AV			1.14 H	256	89.90	4.90
5	#5725.00	66.9 PK	74.0	-7.1	1.14 H	256	62.00	4.90
6	#5725.00	50.4 AV	54.0	-3.6	1.14 H	256	45.50	4.90
7	11340.00	50.3 PK	74.0	-23.7	1.49 H	160	39.50	10.80
8	11340.00	38.7 AV	54.0	-15.3	1.49 H	160	27.90	10.80
9	#17010.00	55.6 PK	74.0	-18.4	1.22 H	172	37.20	18.40
10	#17010.00	43.5 AV	54.0	-10.5	1.22 H	172	25.10	18.40
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	62.5 PK	74.0	-11.5	1.34 V	276	58.20	4.30
2	5150.00	50.1 AV	54.0	-3.9	1.34 V	276	45.80	4.30
3	*5670.00	106.2 PK			1.34 V	276	101.30	4.90
4	*5670.00	95.2 AV			1.34 V	276	90.30	4.90
5	#5725.00	69.3 PK	74.0	-4.7	1.34 V	276	64.40	4.90
6	#5725.00	53.4 AV	54.0	-0.6	1.34 V	276	48.50	4.90
7	11340.00	48.2 PK	74.0	-25.8	1.02 V	47	37.40	10.80
8	11340.00	36.3 AV	54.0	-17.7	1.02 V	47	25.50	10.80
9	#17010.00	56.1 PK	74.0	-17.9	1.11 V	138	37.70	18.40
10	#17010.00	43.1 AV	54.0	-10.9	1.11 V	138	24.70	18.40

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

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

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

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

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

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 $NANT \geq 5$.

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



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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 : Apr. 22, 2014

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. 05, 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

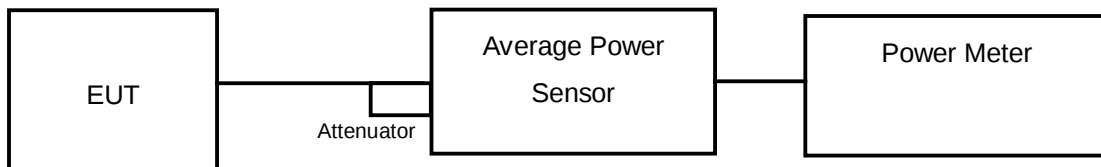
- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat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

4.3.4 DEVIATION FROM TEST STANDARD

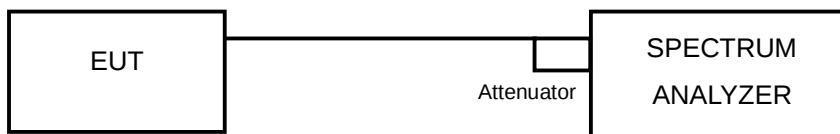
No deviation

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.

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	48.084	16.82	17	PASS
40	5200	46.666	16.69	17	PASS
48	5240	48.978	16.90	17	PASS
52	5260	97.499	19.89	24	PASS
60	5300	53.211	17.26	24	PASS
64	5320	47.973	16.81	24	PASS
100	5500	57.280	17.58	24	PASS
116	5580	101.859	20.08	24	PASS
132	5660	85.507	19.32	24	PASS
140	5700	47.643	16.78	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	29.13
40	5200	31.76
48	5240	26.06
52	5260	46.04
60	5300	35.81
64	5320	22.87
100	5500	37.65
116	5580	45.77
132	5660	38.61
140	5700	22.99

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	29.13	18.64 > 17
40	5200	31.76	19.01 > 17
48	5240	26.06	18.15 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	46.04	27.63 > 24
60	5300	35.81	26.54 > 24
64	5320	22.87	24.59 > 24
100	5500	37.65	26.75 > 24
116	5580	45.77	27.6 > 24
132	5660	38.61	26.86 > 24
140	5700	22.99	24.61 > 24

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	14.00	13.32	46.597	16.68	17	PASS
40	5200	14.25	13.45	48.738	16.88	17	PASS
48	5240	14.15	13.66	49.229	16.92	17	PASS
52	5260	17.46	16.46	99.978	20.00	24	PASS
60	5300	15.61	15.40	71.066	18.52	24	PASS
64	5320	15.02	14.92	62.815	17.98	24	PASS
100	5500	15.14	14.98	64.136	18.07	24	PASS
116	5580	17.10	17.07	102.219	20.10	24	PASS
132	5660	16.73	17.45	102.688	20.12	24	PASS
140	5700	13.87	15.10	56.737	17.54	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	22.99	22.15
40	5200	24.98	21.40
48	5240	23.02	22.37
52	5260	57.63	54.76
60	5300	33.29	31.25
64	5320	22.90	23.56
100	5500	39.90	38.38
116	5580	52.64	47.72
132	5660	39.10	37.76
140	5700	25.99	26.52

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	22.15	17.45 > 17
40	5200	21.40	17.3 > 17
48	5240	22.37	17.49 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	54.76	28.38 > 24
60	5300	31.25	25.94 > 24
64	5320	22.90	24.59 > 24
100	5500	38.38	26.84 > 24
116	5580	47.72	27.78 > 24
132	5660	37.76	26.77 > 24
140	5700	25.99	25.14 > 24

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	12.79	12.00	34.860	15.42	17	PASS
46	5230	13.95	13.55	47.477	16.76	17	PASS
54	5270	15.97	15.51	75.100	18.76	24	PASS
62	5310	14.78	14.22	56.485	17.52	24	PASS
102	5510	11.97	12.05	31.772	15.02	24	PASS
110	5550	16.66	16.70	93.119	19.69	24	PASS
134	5670	13.63	14.72	52.715	17.22	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	48.46	50.99
46	5230	65.05	57.20
54	5270	88.53	85.75
62	5310	47.11	47.72
102	5510	86.14	84.66
110	5550	110.02	113.62
134	5670	88.46	87.91

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	48.46	20.85 > 17
46	5230	57.20	21.57 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
54	5270	85.75	30.33 > 24
62	5310	47.11	27.73 > 24
102	5510	84.66	30.27 > 24
110	5550	110.02	31.41 > 24
134	5670	87.91	30.44 > 24

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

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Web Site: www.bureauveritas-adt.com

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



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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 ---