

Supplementary FCC Test Report

Report No.: RF111028C08I-1

FCC ID: UZ7211486030B

Test Model: 21-148603-0B

Received Date: Jan. 09, 2019

Test Date: Jan. 19 to Feb. 27, 2019

Issued Date: Mar. 15, 2019

Applicant: Zebra Technologies Corporation

Address: 1 Zebra Plaza, Holtsville, NY 11742

Manufacturer: Symbol Technologies, Inc.

Address: 1 Zebra Plaza, Holtsville, NY 11742

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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Report Issue History Record of EUT (21-148603-0B)

Attachment No.	Issue Date	Description	
111028C08A	Mar. 09, 2012	Original release.	
111028C08F	Apr. 27, 2016	Upgrade the standard to section 15.407 under new rule.	
111028C08H-1	Sep. 13, 2017	Change RF Switch (2nd source pin to pin)	
111028C08I-1		2 nd source changed. Component changes as listed below table.	
		Alternative Parts Location	Description
		U14	WiFi Dual Band Diplexer
		C24	20pF cap for GPS
		C55,C57,C60	8.2pF cap for WiFi
		C9, C10, C11, C12, C13	1uF cap for WiFi BT
		FLT1	Band Pass Filter for 2.4GHz WiFi
		C23	1.8pF cap for GPS
		C31	68pF cap for XTAL
		C107,C108	10pF cap for WiFi

Release Control Record

Issue No.	Description	Date Issued
RF111028C08I-1	Original release.	Mar. 15, 2019

1 Certificate of Conformity

Product: Radio Module

Brand: Zebra

Test Model: 21-148603-0B


Sample Status: ENGINEERING SAMPLE

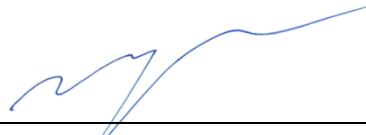
Applicant: Zebra Technologies Corporation

Test Date: Jan. 19 to Feb. 27, 2019

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10: 2013

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

Prepared by :  , **Date:** Mar. 15, 2019
Claire Kuan / Specialist

Approved by :  , **Date:** Mar. 15, 2019
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5350.00MHz, 5725.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.

NOTE: 1. This is a supplementary report. (2nd source changed)

2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.

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:

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Radio Module
Brand	Zebra
Test Model	21-148603-0B
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 72.2Mbps
Operating Frequency	For 2.4GHz: 2.412 ~ 2.472GHz For 5GHz: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.7GHz, 5.745 ~ 5.825GHz
Number of Channel	For 2.4GHz: 802.11b, 802.11g, 802.11n (HT20):13 For 5GHz: 802.11a, 802.11n (HT20): 24
Output Power	For 2.4GHz: 194.089mW For 5GHz: 5.18 ~ 5.24GHz 28.774mW 5.26 ~ 5.32GHz 91.411mW 5.5~5.7GHz 85.704mW 5.745 ~ 5.825GHz 89.95mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC Class II permissive change. The difference compared with the Report No.: RF111028C08H-1 design is as the following information:

- ◆ 2nd source changed. Component changes as listed below table.

Alternative Parts Location	Description
U14	WiFi Dual Band Diplexer
C24	20pF cap for GPS
C55,C57,C60	8.2pF cap for WiFi
C9, C10, C11, C12, C13	1uF cap for WiFi BT
FLT1	Band Pass Filter for 2.4GHz WiFi
C23	1.8pF cap for GPS
C31	68pF cap for XTAL
C107,C108	10pF cap for WiFi

2. According to above conditions, only Conducted power and Radiated emissions test item need to be performed. And all data was verified to meet the requirements.

3. There are Bluetooth technology, GPS technology and WLAN technology used for the EUT.

4. The antennas provided to the EUT, please refer to the following table:

No.	Type	Connector	Model	Peak Gain (dBi)	Cable loss (dB)	Net Peak Gain (dBi)	Trace
1	Dipole-1	Reverse SMA	ML-2452-APA2-01 Rev C	2.4GHz : 3 5GHz : 5	2.4GHz : 0.75 5GHz : 1.3	2.4GHz : 2.25 5GHz : 3.7	WiFi
2	Dipole-2	Reverse SMA	C492-510032-A	1.8	2.35	-0.55	BT
3	Chip	Reverse SMA	NA	-	-		GPS

5. The EUT was included two SKU, which are identical to each other in all aspects except for the following table:

	P/N	Description
SKU #1	21-148603-02	Diversity version with WLAN and BT on SHARED RF paths
SKU #2	21-148603-04	NON-Diversity version with WLAN and BT on SHARED RF paths

SKU #1, the worse case one, was chosen for final test.

6. Spurious Emission of the simultaneous operation (WiFi & Bluetooth) have been evaluated and no non-compliance found. (The device can transmit simultaneously on WLAN (5GHz) mode and Bluetooth mode; other modes can't support simultaneously ability.)
7. The EUT is 1 * 1 spatial SISO (1Tx & 1Rx) without beam forming function.
8. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

FOR 5260 ~ 5320MHz

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

FOR 5500 ~ 5700MHz

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

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

FOR 5745 ~ 5825MHz:

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

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To			Description
	RE \geq 1G	RE<1G	APCM	
-	√	√	√	-

Where **RE \geq 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

- ☒ 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	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5

Radiated Emission Test (Below 1GHz):

- ☒ 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	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320	36 to 48	52	OFDM	BPSK	6
	5260-5320	52 to 64				
	5500-5700	100 to 140				
	5745-5825	149 to 165				
802.11n (HT20)	5180-5320	36 to 48	52	OFDM	BPSK	6.5
	5260-5320	52 to 64				
	5500-5700	100 to 140				
	5745-5825	149 to 165				

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	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE \geq 1G	23deg. C, 68%RH	120Vac, 60Hz	Steven Chiang
RE<1G	24deg. C, 74%RH	120Vac, 60Hz	Steven Chiang
APCM	24deg. C, 60%RH	120Vac, 60Hz	Weiwei Lo

3.3 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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Test Tool	Zebra	NA	NA	NA	Supplied by client
B.	DC Powersupply	GOOD WILL INSTRUMENT CO., LTD	GPC-3030D	E847076	NA	Provided by Lab
C.	Laptop	Dell	E6400	NA	NA	Supplied by client

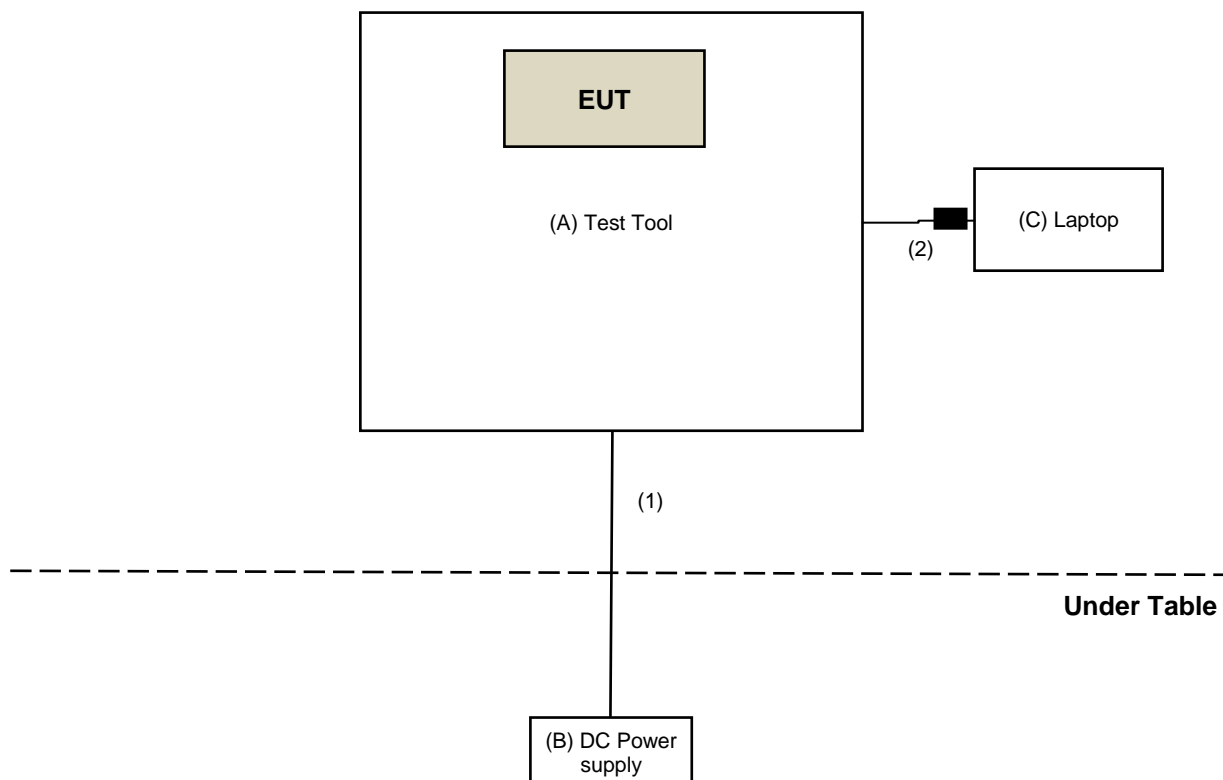
Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.8	No	0	Provided by Lab
2.	USB Cable	1	1	Yes	1	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standard

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)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 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:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	<input type="checkbox"/>	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4}
	<input checked="" type="checkbox"/>	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

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

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

4.1.2 Test Instruments

For radiated emissions test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 2019
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 05, 2018	May 04, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-3-1	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-2	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-3	Mar. 20, 2018	Mar. 19, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200	160922	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	180601	June 12, 2018	June 11, 2019
RF Cable	EMC104-SM-SM-6000	180602	June 12, 2018	June 11, 2019
Spectrum Analyzer Keysight	N9030A	MY54490679	July 23, 2018	July 22, 2019
Pre-Amplifier EMCI	EMC184045SE	980386	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	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 966 Chamber No. 3.
3. The CANADA Site Registration No. is 20331-1
4. Loop antenna was used for all emissions below 30 MHz.
5. Tested Date: Jan. 19, 2019

For output power test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019

Note:

1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Feb. 27, 2019

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) 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:

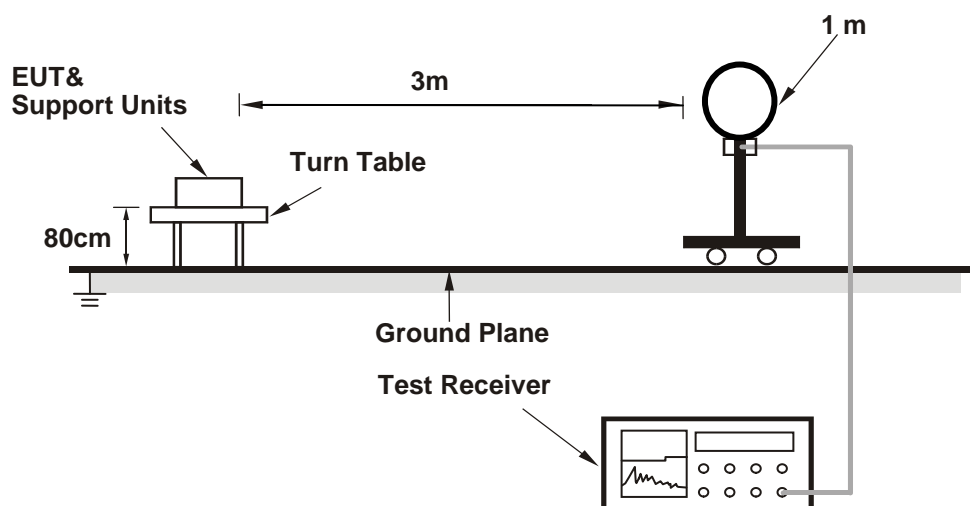
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

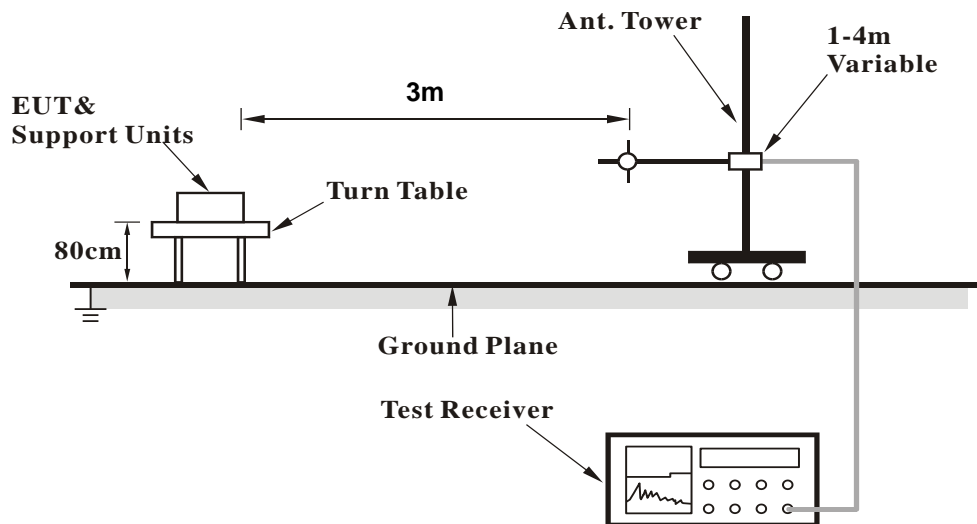
No deviation.

4.1.5 Test Setup

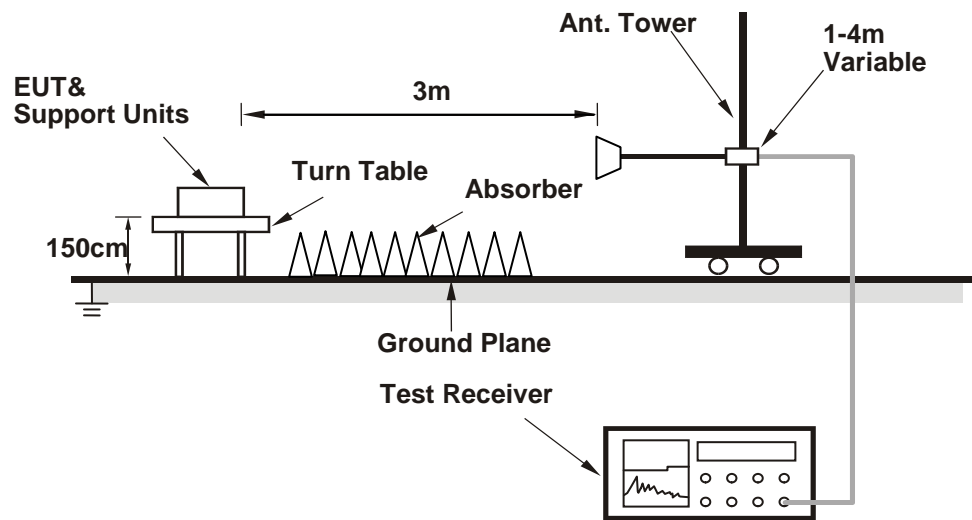
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Condition

1. Connect the EUT with the support unit C (Laptop) which is placed on a testing table.
2. The communication partner run test program "HCITester (3.0.0.12) load BT Script.txt" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results

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	62.3 PK	74.0	-11.7	2.25 H	322	59.2	3.1
2	5150.00	42.3 AV	54.0	-11.7	2.25 H	322	39.2	3.1
3	*5180.00	94.6 PK			2.25 H	322	91.5	3.1
4	*5180.00	85.0 AV			2.25 H	322	81.9	3.1
5	#10360.00	46.1 PK	68.2	-22.1	1.64 H	174	33.8	12.3
6	15540.00	44.7 PK	74.0	-29.3	1.45 H	188	31.7	13.0
7	15540.00	33.9 AV	54.0	-20.1	1.45 H	188	20.9	13.0
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	64.0 PK	74.0	-10.0	1.45 V	41	60.9	3.1
2	5150.00	44.4 AV	54.0	-9.6	1.45 V	41	41.3	3.1
3	*5180.00	107.1 PK			1.45 V	41	104.0	3.1
4	*5180.00	97.6 AV			1.45 V	41	94.5	3.1
5	#10360.00	46.6 PK	68.2	-21.6	1.24 V	323	34.3	12.3
6	15540.00	47.1 PK	74.0	-26.9	1.59 V	308	34.1	13.0
7	15540.00	34.7 AV	54.0	-19.3	1.59 V	308	21.7	13.0

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	48.3 PK	74.0	-25.7	2.24 H	317	45.2	3.1
2	5150.00	38.6 AV	54.0	-15.4	2.24 H	317	35.5	3.1
3	*5200.00	94.9 PK			2.24 H	317	91.9	3.0
4	*5200.00	85.5 AV			2.24 H	317	82.5	3.0
5	#10400.00	46.6 PK	68.2	-21.6	1.59 H	168	33.9	12.7
6	15600.00	44.9 PK	74.0	-29.1	1.42 H	171	31.4	13.5
7	15600.00	33.8 AV	54.0	-20.2	1.42 H	171	20.3	13.5
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	50.8 PK	74.0	-23.2	1.10 V	42	47.7	3.1
2	5150.00	39.6 AV	54.0	-14.4	1.10 V	42	36.5	3.1
3	*5200.00	107.0 PK			1.10 V	42	104.0	3.0
4	*5200.00	97.6 AV			1.10 V	42	94.6	3.0
5	#10400.00	46.4 PK	68.2	-21.8	1.25 V	332	33.7	12.7
6	15600.00	46.8 PK	74.0	-27.2	1.56 V	323	33.3	13.5
7	15600.00	34.5 AV	54.0	-19.5	1.56 V	323	21.0	13.5

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	95.8 PK			2.32 H	333	93.1	2.7
2	*5240.00	85.8 AV			2.32 H	333	83.1	2.7
3	5350.00	48.3 PK	74.0	-25.7	2.32 H	333	45.4	2.9
4	5350.00	36.5 AV	54.0	-17.5	2.32 H	333	33.6	2.9
5	#10480.00	46.7 PK	68.2	-21.5	1.67 H	162	34.2	12.5
6	15720.00	45.3 PK	74.0	-28.7	1.42 H	194	32.8	12.5
7	15720.00	34.1 AV	54.0	-19.9	1.42 H	194	21.6	12.5
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	108.2 PK			1.09 V	47	105.5	2.7
2	*5240.00	98.3 AV			1.09 V	47	95.6	2.7
3	5350.00	50.1 PK	74.0	-23.9	1.09 V	47	47.2	2.9
4	5350.00	38.8 AV	54.0	-15.2	1.09 V	47	35.9	2.9
5	#10480.00	46.3 PK	68.2	-21.9	1.24 V	337	33.8	12.5
6	15720.00	47.0 PK	74.0	-27.0	1.59 V	314	34.5	12.5
7	15720.00	34.6 AV	54.0	-19.4	1.59 V	314	22.1	12.5

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	5150.00	50.2 PK	74.0	-23.8	2.31 H	317	47.1	3.1
2	5150.00	38.6 AV	54.0	-15.4	2.31 H	317	35.5	3.1
3	*5260.00	101.8 PK			2.31 H	317	99.2	2.6
4	*5260.00	91.6 AV			2.31 H	317	89.0	2.6
5	#10520.00	46.6 PK	68.2	-21.6	1.61 H	161	34.2	12.4
6	15780.00	45.1 PK	74.0	-28.9	1.46 H	196	33.0	12.1
7	15780.00	33.6 AV	54.0	-20.4	1.46 H	196	21.5	12.1
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	52.1 PK	74.0	-21.9	2.15 V	110	49.0	3.1
2	5150.00	41.1 AV	54.0	-12.9	2.15 V	110	38.0	3.1
3	*5260.00	114.4 PK			2.15 V	110	111.8	2.6
4	*5260.00	104.7 AV			2.15 V	110	102.1	2.6
5	#10520.00	46.3 PK	68.2	-21.9	1.21 V	328	33.9	12.4
6	15780.00	47.1 PK	74.0	-26.9	1.60 V	303	35.0	12.1
7	15780.00	34.6 AV	54.0	-19.4	1.60 V	303	22.5	12.1

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	103.2 PK			2.31 H	332	100.5	2.7
2	*5300.00	93.0 AV			2.31 H	332	90.3	2.7
3	5350.00	68.5 PK	74.0	-5.5	2.31 H	332	65.6	2.9
4	5350.00	52.3 AV	54.0	-1.7	2.31 H	332	49.4	2.9
5	10600.00	46.9 PK	74.0	-27.1	1.61 H	156	34.6	12.3
6	10600.00	36.9 AV	54.0	-17.1	1.61 H	156	24.6	12.3
7	15900.00	45.2 PK	74.0	-28.8	1.47 H	204	33.2	12.0
8	15900.00	34.5 AV	54.0	-19.5	1.47 H	204	22.5	12.0
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	114.8 PK			2.06 V	104	112.1	2.7
2	*5300.00	105.1 AV			2.06 V	104	102.4	2.7
3	5350.00	70.2 PK	74.0	-3.8	2.06 V	104	67.3	2.9
4	5350.00	53.7 AV	54.0	-0.3	2.06 V	104	50.8	2.9
5	10600.00	46.5 PK	74.0	-27.5	1.29 V	312	34.2	12.3
6	10600.00	37.5 AV	54.0	-16.5	1.29 V	312	25.2	12.3
7	15900.00	47.0 PK	74.0	-27.0	1.54 V	310	35.0	12.0
8	15900.00	34.9 AV	54.0	-19.1	1.54 V	310	22.9	12.0

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	98.7 PK			2.22 H	306	96.0	2.7
2	*5320.00	89.4 AV			2.22 H	306	86.7	2.7
3	5350.00	69.2 PK	74.0	-4.8	2.22 H	306	66.3	2.9
4	5350.00	52.1 AV	54.0	-1.9	2.22 H	306	49.2	2.9
5	10640.00	46.5 PK	74.0	-27.5	1.63 H	151	34.3	12.2
6	10640.00	36.6 AV	54.0	-17.4	1.63 H	151	24.4	12.2
7	15960.00	44.9 PK	74.0	-29.1	1.48 H	206	32.6	12.3
8	15960.00	33.9 AV	54.0	-20.1	1.48 H	206	21.6	12.3
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	111.5 PK			2.05 V	103	108.8	2.7
2	*5320.00	101.7 AV			2.05 V	103	99.0	2.7
3	5350.00	71.3 PK	74.0	-2.7	2.05 V	103	68.4	2.9
4	5350.00	53.9 AV	54.0	-0.1	2.05 V	103	51.0	2.9
5	10640.00	46.1 PK	74.0	-27.9	1.21 V	339	33.9	12.2
6	10640.00	37.5 AV	54.0	-16.5	1.21 V	339	25.3	12.2
7	15960.00	47.4 PK	74.0	-26.6	1.59 V	305	35.1	12.3
8	15960.00	35.0 AV	54.0	-19.0	1.59 V	305	22.7	12.3

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	61.5 PK	74.0	-12.5	2.29 H	323	58.3	3.2
2	5460.00	42.2 AV	54.0	-11.8	2.29 H	323	39.0	3.2
3	#5470.00	64.3 PK	68.2	-3.9	2.29 H	323	61.1	3.2
4	*5500.00	98.1 PK			2.29 H	323	95.0	3.1
5	*5500.00	88.3 AV			2.29 H	323	85.2	3.1
6	11000.00	46.3 PK	74.0	-27.7	1.62 H	163	33.3	13.0
7	11000.00	36.3 AV	54.0	-17.7	1.62 H	163	23.3	13.0
8	#16500.00	44.7 PK	68.2	-23.5	1.42 H	189	30.4	14.3
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	63.7 PK	74.0	-10.3	1.99 V	100	60.5	3.2
2	5460.00	44.9 AV	54.0	-9.1	1.99 V	100	41.7	3.2
3	#5470.00	67.6 PK	68.2	-0.6	1.99 V	100	64.4	3.2
4	*5500.00	110.3 PK			1.99 V	100	107.2	3.1
5	*5500.00	100.6 AV			1.99 V	100	97.5	3.1
6	11000.00	46.6 PK	74.0	-27.4	1.19 V	338	33.6	13.0
7	11000.00	38.1 AV	54.0	-15.9	1.19 V	338	25.1	13.0
8	#16500.00	47.2 PK	68.2	-21.0	1.57 V	315	32.9	14.3

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	5460.00	52.1 PK	74.0	-21.9	2.23 H	327	48.9	3.2
2	5460.00	40.1 AV	54.0	-13.9	2.23 H	327	36.9	3.2
3	#5470.00	51.8 PK	68.2	-16.4	2.23 H	327	48.6	3.2
4	*5580.00	100.8 PK			2.23 H	327	97.6	3.2
5	*5580.00	91.6 AV			2.23 H	327	88.4	3.2
6	11160.00	47.5 PK	74.0	-26.5	1.63 H	177	35.0	12.5
7	11160.00	37.0 AV	54.0	-17.0	1.63 H	177	24.5	12.5
8	#16740.00	44.7 PK	68.2	-23.5	1.47 H	203	29.8	14.9

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	54.1 PK	74.0	-19.9	2.06 V	104	50.9	3.2
2	5460.00	43.0 AV	54.0	-11.0	2.06 V	104	39.8	3.2
3	#5470.00	54.9 PK	68.2	-13.3	2.06 V	104	51.7	3.2
4	*5580.00	113.6 PK			2.06 V	104	110.4	3.2
5	*5580.00	104.1 AV			2.06 V	104	100.9	3.2
6	11160.00	46.3 PK	74.0	-27.7	1.23 V	331	33.8	12.5
7	11160.00	37.5 AV	54.0	-16.5	1.23 V	331	25.0	12.5
8	#16740.00	47.1 PK	68.2	-21.1	1.56 V	306	32.2	14.9

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	97.9 PK			2.33 H	328	94.5	3.4
2	*5700.00	88.5 AV			2.33 H	328	85.1	3.4
3	#5725.00	66.5 PK	68.2	-1.7	2.33 H	328	63.1	3.4
4	11400.00	46.9 PK	74.0	-27.1	1.62 H	171	33.8	13.1
5	11400.00	36.2 AV	54.0	-17.8	1.62 H	171	23.1	13.1
6	#17100.00	44.8 PK	68.2	-23.4	1.45 H	189	28.1	16.7
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	109.8 PK			2.20 V	102	106.4	3.4
2	*5700.00	100.3 AV			2.20 V	102	96.9	3.4
3	#5725.00	68.1 PK	68.2	-0.1	2.20 V	102	64.7	3.4
4	11400.00	47.1 PK	74.0	-26.9	1.24 V	336	34.0	13.1
5	11400.00	38.2 AV	54.0	-15.8	1.24 V	336	25.1	13.1
6	#17100.00	47.2 PK	68.2	-21.0	1.54 V	321	30.5	16.7

REMARKS:

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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5571.72	52.4 PK	68.2	-15.8	2.28 H	319	49.1	3.3
2	*5745.00	101.9 PK			2.28 H	319	98.4	3.5
3	*5745.00	92.2 AV			2.28 H	319	88.7	3.5
4	#5941.09	51.7 PK	68.2	-16.5	2.28 H	319	47.5	4.2
5	11490.00	47.2 PK	74.0	-26.8	2.51 H	25	34.2	13.0
6	11490.00	35.8 AV	54.0	-18.2	2.51 H	25	22.8	13.0
7	#17235.00	49.5 PK	68.2	-18.7	2.54 H	156	33.3	16.2
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	#5640.19	56.5 PK	68.2	-11.7	2.30 V	110	53.2	3.3
2	*5745.00	114.4 PK			2.30 V	110	110.9	3.5
3	*5745.00	104.5 AV			2.30 V	110	101.0	3.5
4	#5926.86	54.2 PK	68.2	-14.0	2.30 V	110	50.1	4.1
5	11490.00	47.3 PK	74.0	-26.7	1.30 V	210	34.3	13.0
6	11490.00	37.4 AV	54.0	-16.6	1.30 V	210	24.4	13.0
7	#17235.00	50.1 PK	68.2	-18.1	1.25 V	145	33.9	16.2

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5640.01	52.5 PK	68.2	-15.7	2.29 H	297	49.2	3.3
2	*5785.00	102.3 PK			2.29 H	297	98.6	3.7
3	*5785.00	92.6 AV			2.29 H	297	88.9	3.7
4	#5967.36	52.2 PK	68.2	-16.0	2.29 H	297	48.0	4.2
5	11570.00	47.4 PK	74.0	-26.6	2.46 H	51	34.7	12.7
6	11570.00	36.1 AV	54.0	-17.9	2.46 H	51	23.4	12.7
7	#17355.00	50.2 PK	68.2	-18.0	2.54 H	162	33.5	16.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5590.30	56.1 PK	68.2	-12.1	2.13 V	108	52.8	3.3
2	*5785.00	113.9 PK			2.13 V	108	110.2	3.7
3	*5785.00	104.1 AV			2.13 V	108	100.4	3.7
4	#6000.35	53.5 PK	68.2	-14.7	2.13 V	108	49.4	4.1
5	11570.00	47.9 PK	74.0	-26.1	1.24 V	208	35.2	12.7
6	11570.00	37.6 AV	54.0	-16.4	1.24 V	208	24.9	12.7
7	#17355.00	50.6 PK	68.2	-17.6	1.22 V	138	33.9	16.7

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.83	53.0 PK	68.2	-15.2	2.28 H	296	49.7	3.3
2	*5825.00	101.7 PK			2.28 H	296	98.0	3.7
3	*5825.00	92.0 AV			2.28 H	296	88.3	3.7
4	#5974.77	52.8 PK	68.2	-15.4	2.28 H	296	48.7	4.1
5	11650.00	47.0 PK	74.0	-27.0	2.46 H	38	34.3	12.7
6	11650.00	35.7 AV	54.0	-18.3	2.46 H	38	23.0	12.7
7	#17475.00	50.1 PK	68.2	-18.1	2.59 H	151	32.1	18.0

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	#5573.51	55.5 PK	68.2	-12.7	2.05 V	98	52.2	3.3
2	*5825.00	113.7 PK			2.05 V	98	110.0	3.7
3	*5825.00	104.0 AV			2.05 V	98	100.3	3.7
4	#5978.83	53.7 PK	68.2	-14.5	2.05 V	98	49.6	4.1
5	11650.00	47.5 PK	74.0	-26.5	1.29 V	213	34.8	12.7
6	11650.00	37.4 AV	54.0	-16.6	1.29 V	213	24.7	12.7
7	#17475.00	50.3 PK	68.2	-17.9	1.22 V	129	32.3	18.0

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	59.2 PK	74.0	-14.8	2.29 H	307	56.1	3.1
2	5150.00	43.2 AV	54.0	-10.8	2.29 H	307	40.1	3.1
3	*5180.00	95.5 PK			2.29 H	307	92.4	3.1
4	*5180.00	85.9 AV			2.29 H	307	82.8	3.1
5	#10360.00	45.9 PK	68.2	-22.3	1.56 H	145	33.6	12.3
6	15540.00	45.4 PK	74.0	-28.6	1.50 H	169	32.4	13.0
7	15540.00	34.6 AV	54.0	-19.4	1.50 H	169	21.6	13.0
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	62.9 PK	74.0	-11.1	1.94 V	101	59.8	3.1
2	5150.00	46.0 AV	54.0	-8.0	1.94 V	101	42.9	3.1
3	*5180.00	107.4 PK			1.94 V	101	104.3	3.1
4	*5180.00	98.5 AV			1.94 V	101	95.4	3.1
5	#10360.00	45.9 PK	68.2	-22.3	1.24 V	337	33.6	12.3
6	15540.00	46.7 PK	74.0	-27.3	1.52 V	331	33.7	13.0
7	15540.00	34.3 AV	54.0	-19.7	1.52 V	331	21.3	13.0

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	96.1 PK			2.31 H	322	93.1	3.0
2	*5200.00	86.7 AV			2.31 H	322	83.7	3.0
3	#10400.00	46.2 PK	68.2	-22.0	1.51 H	147	33.5	12.7
4	15600.00	45.1 PK	74.0	-28.9	1.50 H	183	31.6	13.5
5	15600.00	34.2 AV	54.0	-19.8	1.50 H	183	20.7	13.5
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	108.3 PK			2.08 V	99	105.3	3.0
2	*5200.00	99.1 AV			2.08 V	99	96.1	3.0
3	#10400.00	46.4 PK	68.2	-21.8	1.26 V	337	33.7	12.7
4	15600.00	46.4 PK	74.0	-27.6	1.49 V	321	32.9	13.5
5	15600.00	34.0 AV	54.0	-20.0	1.49 V	321	20.5	13.5

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	96.0 PK			2.27 H	304	93.3	2.7
2	*5240.00	86.9 AV			2.27 H	304	84.2	2.7
3	5350.00	49.2 PK	74.0	-24.8	2.27 H	304	46.3	2.9
4	5350.00	36.3 AV	54.0	-17.7	2.27 H	304	33.4	2.9
5	#10480.00	46.2 PK	68.2	-22.0	1.56 H	156	33.7	12.5
6	15720.00	46.4 PK	74.0	-27.6	1.52 H	187	33.9	12.5
7	15720.00	34.9 AV	54.0	-19.1	1.52 H	187	22.4	12.5
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	108.6 PK			1.99 V	110	105.9	2.7
2	*5240.00	99.3 AV			1.99 V	110	96.6	2.7
3	5350.00	51.1 PK	74.0	-22.9	1.99 V	110	48.2	2.9
4	5350.00	39.4 AV	54.0	-14.6	1.99 V	110	36.5	2.9
5	#10480.00	46.0 PK	68.2	-22.2	1.23 V	344	33.5	12.5
6	15720.00	47.1 PK	74.0	-26.9	1.46 V	331	34.6	12.5
7	15720.00	34.6 AV	54.0	-19.4	1.46 V	331	22.1	12.5

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	5150.00	51.0 PK	74.0	-23.0	2.27 H	313	47.9	3.1
2	5150.00	40.0 AV	54.0	-14.0	2.27 H	313	36.9	3.1
3	*5260.00	101.0 PK			2.27 H	313	98.4	2.6
4	*5260.00	91.4 AV			2.27 H	313	88.8	2.6
5	#10520.00	46.6 PK	68.2	-21.6	1.54 H	155	34.2	12.4
6	15780.00	45.3 PK	74.0	-28.7	1.47 H	184	33.2	12.1
7	15780.00	33.9 AV	54.0	-20.1	1.47 H	184	21.8	12.1
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	53.0 PK	74.0	-21.0	2.10 V	107	49.9	3.1
2	5150.00	42.0 AV	54.0	-12.0	2.10 V	107	38.9	3.1
3	*5260.00	113.5 PK			2.10 V	107	110.9	2.6
4	*5260.00	104.1 AV			2.10 V	107	101.5	2.6
5	#10520.00	45.9 PK	68.2	-22.3	1.22 V	324	33.5	12.4
6	15780.00	46.3 PK	74.0	-27.7	1.49 V	336	34.2	12.1
7	15780.00	34.1 AV	54.0	-19.9	1.49 V	336	22.0	12.1

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	101.5 PK			2.25 H	309	98.8	2.7
2	*5300.00	92.1 AV			2.25 H	309	89.4	2.7
3	5350.00	65.3 PK	74.0	-8.7	2.25 H	309	62.4	2.9
4	5350.00	51.6 AV	54.0	-2.4	2.25 H	309	48.7	2.9
5	10600.00	46.5 PK	74.0	-27.5	1.58 H	153	34.2	12.3
6	10600.00	36.4 AV	54.0	-17.6	1.58 H	153	24.1	12.3
7	15900.00	45.4 PK	74.0	-28.6	1.52 H	172	33.4	12.0
8	15900.00	34.1 AV	54.0	-19.9	1.52 H	172	22.1	12.0
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	113.9 PK			2.10 V	103	111.2	2.7
2	*5300.00	104.6 AV			2.10 V	103	101.9	2.7
3	5350.00	67.2 PK	74.0	-6.8	2.10 V	103	64.3	2.9
4	5350.00	53.7 AV	54.0	-0.3	2.10 V	103	50.8	2.9
5	10600.00	46.3 PK	74.0	-27.7	1.26 V	349	34.0	12.3
6	10600.00	37.6 AV	54.0	-16.4	1.26 V	349	25.3	12.3
7	15900.00	47.2 PK	74.0	-26.8	1.47 V	339	35.2	12.0
8	15900.00	34.5 AV	54.0	-19.5	1.47 V	339	22.5	12.0

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	98.2 PK			2.29 H	324	95.5	2.7
2	*5320.00	88.0 AV			2.29 H	324	85.3	2.7
3	5350.00	68.9 PK	74.0	-5.1	2.29 H	324	66.0	2.9
4	5350.00	50.7 AV	54.0	-3.3	2.29 H	324	47.8	2.9
5	10640.00	45.9 PK	74.0	-28.1	1.55 H	166	33.7	12.2
6	10640.00	35.7 AV	54.0	-18.3	1.55 H	166	23.5	12.2
7	15960.00	44.4 PK	74.0	-29.6	1.58 H	185	32.1	12.3
8	15960.00	33.7 AV	54.0	-20.3	1.58 H	185	21.4	12.3
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	110.5 PK			2.13 V	101	107.8	2.7
2	*5320.00	100.7 AV			2.13 V	101	98.0	2.7
3	5350.00	71.4 PK	74.0	-2.6	2.13 V	101	68.5	2.9
4	5350.00	53.7 AV	54.0	-0.3	2.13 V	101	50.8	2.9
5	10640.00	45.5 PK	74.0	-28.5	1.28 V	350	33.3	12.2
6	10640.00	37.2 AV	54.0	-16.8	1.28 V	350	25.0	12.2
7	15960.00	47.0 PK	74.0	-27.0	1.49 V	336	34.7	12.3
8	15960.00	34.7 AV	54.0	-19.3	1.49 V	336	22.4	12.3

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	60.3 PK	74.0	-13.7	2.30 H	330	57.1	3.2
2	5460.00	43.2 AV	54.0	-10.8	2.30 H	330	40.0	3.2
3	#5470.00	66.9 PK	68.2	-1.3	2.30 H	330	63.7	3.2
4	*5500.00	97.9 PK			2.30 H	330	94.8	3.1
5	*5500.00	88.5 AV			2.30 H	330	85.4	3.1
6	11000.00	46.0 PK	74.0	-28.0	1.50 H	163	33.0	13.0
7	11000.00	35.7 AV	54.0	-18.3	1.50 H	163	22.7	13.0
8	#16500.00	45.1 PK	68.2	-23.1	1.50 H	182	30.8	14.3
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	62.3 PK	74.0	-11.7	2.00 V	101	59.1	3.2
2	5460.00	45.3 AV	54.0	-8.7	2.00 V	101	42.1	3.2
3	#5470.00	68.0 PK	68.2	-0.2	2.00 V	101	64.8	3.2
4	*5500.00	109.5 PK			2.00 V	101	106.4	3.1
5	*5500.00	100.2 AV			2.00 V	101	97.1	3.1
6	11000.00	46.3 PK	74.0	-27.7	1.20 V	332	33.3	13.0
7	11000.00	37.6 AV	54.0	-16.4	1.20 V	332	24.6	13.0
8	#16500.00	47.3 PK	68.2	-20.9	1.55 V	322	33.0	14.3

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	101.7 PK			2.33 H	317	98.5	3.2
2	*5580.00	91.7 AV			2.33 H	317	88.5	3.2
3	11160.00	45.6 PK	74.0	-28.4	1.65 H	133	33.1	12.5
4	11160.00	35.7 AV	54.0	-18.3	1.65 H	133	23.2	12.5
5	#16740.00	44.7 PK	68.2	-23.5	1.38 H	196	29.8	14.9
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	113.1 PK			2.03 V	100	109.9	3.2
2	*5580.00	103.6 AV			2.03 V	100	100.4	3.2
3	11160.00	46.1 PK	74.0	-27.9	1.25 V	331	33.6	12.5
4	11160.00	37.6 AV	54.0	-16.4	1.25 V	331	25.1	12.5
5	#16740.00	46.7 PK	68.2	-21.5	1.57 V	328	31.8	14.9

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	88.0 PK			2.30 H	335	84.6	3.4
2	*5700.00	88.0 AV			2.30 H	335	84.6	3.4
3	#5725.00	65.3 PK	68.2	-2.9	2.30 H	335	61.9	3.4
4	11400.00	46.1 PK	74.0	-27.9	1.58 H	165	33.0	13.1
5	11400.00	35.7 AV	54.0	-18.3	1.58 H	165	22.6	13.1
6	#17100.00	46.0 PK	68.2	-22.2	1.42 H	209	29.3	16.7
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	109.6 PK			2.22 V	103	106.2	3.4
2	*5700.00	100.2 AV			2.22 V	103	96.8	3.4
3	#5725.00	67.2 PK	68.2	-1.0	2.22 V	103	63.8	3.4
4	11400.00	45.9 PK	74.0	-28.1	1.20 V	324	32.8	13.1
5	11400.00	37.6 AV	54.0	-16.4	1.20 V	324	24.5	13.1
6	#17100.00	47.3 PK	68.2	-20.9	1.52 V	330	30.6	16.7

REMARKS:

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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5602.14	53.2 PK	68.2	-15.0	2.28 H	319	49.9	3.3
2	*5745.00	100.7 PK			2.28 H	319	97.2	3.5
3	*5745.00	91.4 AV			2.28 H	319	87.9	3.5
4	#5999.03	52.7 PK	68.2	-15.5	2.28 H	319	48.6	4.1
5	11490.00	47.3 PK	74.0	-26.7	2.47 H	58	34.3	13.0
6	11490.00	35.9 AV	54.0	-18.1	2.47 H	58	22.9	13.0
7	#17235.00	50.1 PK	68.2	-18.1	2.53 H	146	33.9	16.2
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	#5642.30	55.5 PK	68.2	-12.7	2.25 V	107	52.2	3.3
2	*5745.00	112.9 PK			2.25 V	107	109.4	3.5
3	*5745.00	103.9 AV			2.25 V	107	100.4	3.5
4	#5927.67	54.1 PK	68.2	-14.1	2.25 V	107	50.0	4.1
5	11490.00	48.0 PK	74.0	-26.0	1.19 V	212	35.0	13.0
6	11490.00	37.8 AV	54.0	-16.2	1.19 V	212	24.8	13.0
7	#17235.00	50.4 PK	68.2	-17.8	1.26 V	149	34.2	16.2

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.88	53.6 PK	68.2	-14.6	2.24 H	287	50.3	3.3
2	*5785.00	101.2 PK			2.24 H	287	97.5	3.7
3	*5785.00	91.9 AV			2.24 H	287	88.2	3.7
4	#5950.23	53.0 PK	68.2	-15.2	2.24 H	287	48.8	4.2
5	11570.00	47.2 PK	74.0	-26.8	2.44 H	44	34.5	12.7
6	11570.00	35.7 AV	54.0	-18.3	2.44 H	44	23.0	12.7
7	#17355.00	49.6 PK	68.2	-18.6	2.53 H	151	32.9	16.7

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	#5599.83	55.7 PK	68.2	-12.5	2.35 V	108	52.4	3.3
2	*5785.00	113.2 PK			2.35 V	108	109.5	3.7
3	*5785.00	104.0 AV			2.35 V	108	100.3	3.7
4	#5969.01	54.4 PK	68.2	-13.8	2.35 V	108	50.2	4.2
5	11570.00	47.4 PK	74.0	-26.6	1.20 V	192	34.7	12.7
6	11570.00	37.1 AV	54.0	-16.9	1.20 V	192	24.4	12.7
7	#17355.00	50.9 PK	68.2	-17.3	1.21 V	145	34.2	16.7

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5645.85	53.0 PK	68.2	-15.2	2.28 H	295	49.7	3.3
2	*5825.00	101.1 PK			2.28 H	295	97.4	3.7
3	*5825.00	91.7 AV			2.28 H	295	88.0	3.7
4	#5944.08	52.3 PK	68.2	-15.9	2.28 H	295	48.1	4.2
5	11650.00	47.4 PK	74.0	-26.6	2.45 H	62	34.7	12.7
6	11650.00	36.3 AV	54.0	-17.7	2.45 H	62	23.6	12.7
7	#17475.00	50.6 PK	68.2	-17.6	2.50 H	162	32.6	18.0

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	#5626.04	55.8 PK	68.2	-12.4	2.43 V	117	52.5	3.3
2	*5825.00	113.6 PK			2.43 V	117	109.9	3.7
3	*5825.00	104.1 AV			2.43 V	117	100.4	3.7
4	#5968.87	54.8 PK	68.2	-13.4	2.43 V	117	50.6	4.2
5	11650.00	47.9 PK	74.0	-26.1	1.21 V	218	35.2	12.7
6	11650.00	37.7 AV	54.0	-16.3	1.21 V	218	25.0	12.7
7	#17475.00	51.0 PK	68.2	-17.2	1.24 V	143	33.0	18.0

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.

Below 1GHz Data:

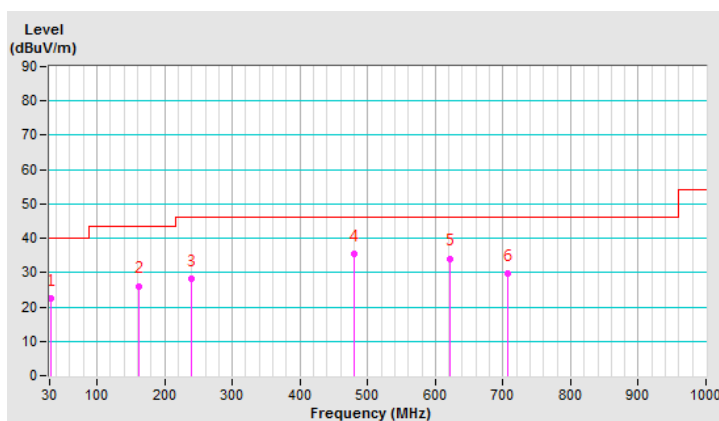
802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	31.82	22.6 QP	40.0	-17.4	1.00 H	150	32.4	-9.8
2	162.29	26.1 QP	43.5	-17.4	1.50 H	296	34.8	-8.7
3	239.91	28.2 QP	46.0	-17.8	1.50 H	102	37.5	-9.3
4	480.08	35.5 QP	46.0	-10.5	1.50 H	285	38.2	-2.7
5	621.84	34.1 QP	46.0	-11.9	1.50 H	187	33.6	0.5
6	707.16	29.6 QP	46.0	-16.4	1.00 H	208	28.0	1.6

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

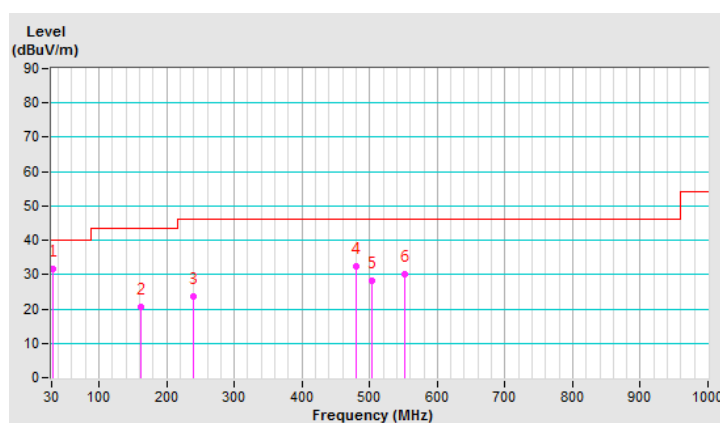


CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.57	31.7 QP	40.0	-8.3	1.00 V	165	41.6	-9.9
2	161.32	20.7 QP	43.5	-22.8	1.00 V	301	29.2	-8.5
3	240.28	23.6 QP	46.0	-22.4	1.00 V	155	32.9	-9.3
4	479.85	32.4 QP	46.0	-13.6	1.50 V	279	35.2	-2.8
5	504.12	28.3 QP	46.0	-17.7	1.50 V	315	30.2	-1.9
6	552.18	30.2 QP	46.0	-15.8	2.00 V	284	31.6	-1.4

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



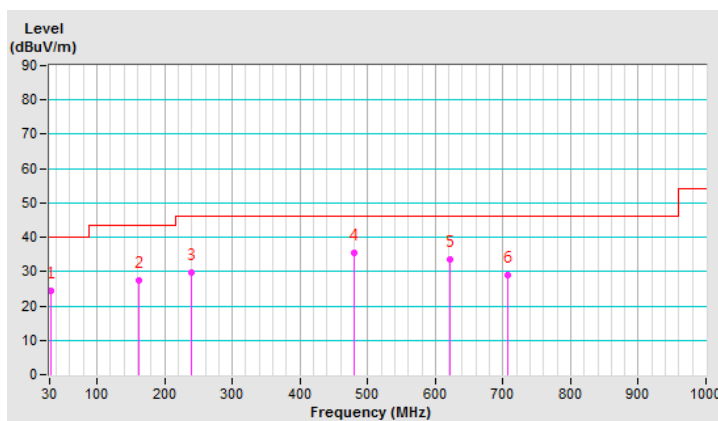
802.11n (HT20)

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	32.08	24.4 QP	40.0	-15.6	1.50 H	166	34.2	-9.8
2	161.87	27.5 QP	43.5	-16.0	1.50 H	251	36.1	-8.6
3	240.09	29.8 QP	46.0	-16.2	1.00 H	31	39.1	-9.3
4	479.87	35.6 QP	46.0	-10.4	1.00 H	293	38.4	-2.8
5	621.97	33.6 QP	46.0	-12.4	1.50 H	160	33.1	0.5
6	707.10	29.0 QP	46.0	-17.0	1.50 H	244	27.4	1.6

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

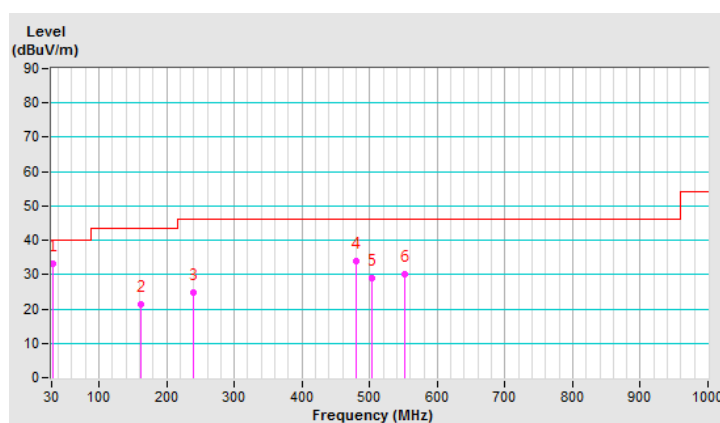


CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.12	33.1 QP	40.0	-6.9	1.50 V	295	42.9	-9.8
2	161.14	21.3 QP	43.5	-22.2	1.00 V	318	29.8	-8.5
3	240.09	24.7 QP	46.0	-21.3	1.00 V	165	34.0	-9.3
4	479.85	34.0 QP	46.0	-12.0	1.50 V	39	36.8	-2.8
5	504.10	28.8 QP	46.0	-17.2	1.00 V	312	30.7	-1.9
6	551.89	30.2 QP	46.0	-15.8	1.00 V	73	31.6	-1.4

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. Margin value = Emission Level – Limit value
4. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



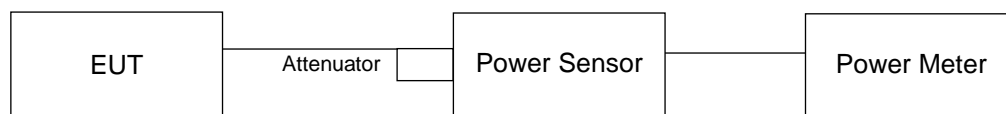
4.2 Transmit Power Measurement

4.2.1 Limits of Transmit Power Measurement

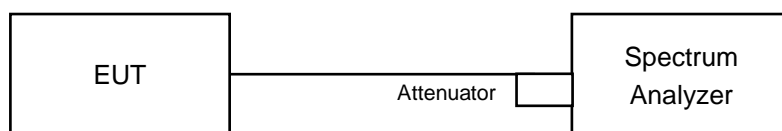
Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client device	250mW (24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

*B is the 26 dB emission bandwidth in megahertz

4.2.2 Test Setup FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Condition

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

4.2.7 Test Result

Power Output:

802.11a

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	28.445	14.54	24.00	Pass
40	5200	28.249	14.51	24.00	Pass
48	5240	28.249	14.51	24.00	Pass
52	5260	91.411	19.61	24.00	Pass
60	5300	89.743	19.53	24.00	Pass
64	5320	48.306	16.84	24.00	Pass
100	5500	35.563	15.51	24.00	Pass
116	5580	85.704	19.33	24.00	Pass
140	5700	31.842	15.03	24.00	Pass
149	5745	89.95	19.54	30.00	Pass
157	5785	89.536	19.52	30.00	Pass
165	5825	85.31	19.31	30.00	Pass

802.11n (HT20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	28.774	14.59	24.00	Pass
40	5200	27.925	14.46	24.00	Pass
48	5240	28.642	14.57	24.00	Pass
52	5260	80.353	19.05	24.00	Pass
60	5300	76.208	18.82	24.00	Pass
64	5320	48.753	16.88	24.00	Pass
100	5500	33.189	15.21	24.00	Pass
116	5580	79.616	19.01	24.00	Pass
140	5700	29.58	14.71	24.00	Pass
149	5745	76.736	18.85	30.00	Pass
157	5785	77.983	18.92	30.00	Pass
165	5825	77.804	18.91	30.00	Pass

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	32.86
60	5300	34.12
64	5320	28.06
100	5500	23.13
116	5580	36.87
140	5700	23.90

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	32.86	26.16 > 24
60	5300	34.12	26.33 > 24
64	5320	28.06	25.48 > 24
100	5500	23.13	24.64 > 24
116	5580	36.87	26.66 > 24
140	5700	23.90	24.78 > 24

802.11n (HT20)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	32.85
60	5300	34.72
64	5320	32.14
100	5500	24.48
116	5580	36.16
140	5700	25.52

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	32.85	26.16 > 24
60	5300	34.72	26.4 > 24
64	5320	32.14	26.07 > 24
100	5500	24.48	24.88 > 24
116	5580	36.16	26.58 > 24
140	5700	25.52	25.06 > 24

5 Pictures of Test Arrangements

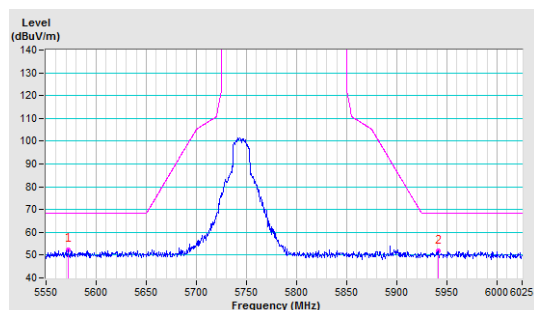
Please refer to the attached file (Test Setup Photo).

Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

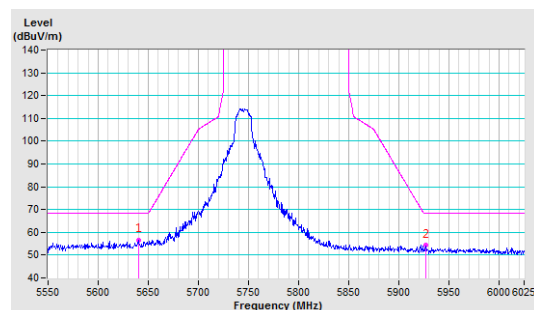
802.11a

CH 149 5745 MHz

Horizontal

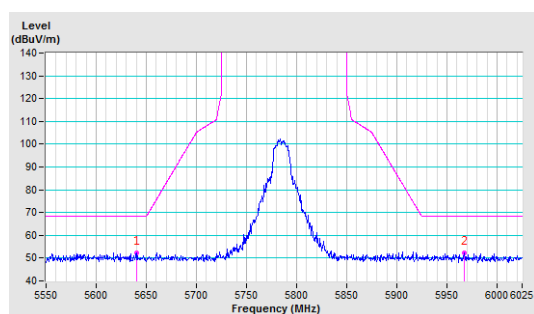


Vertical

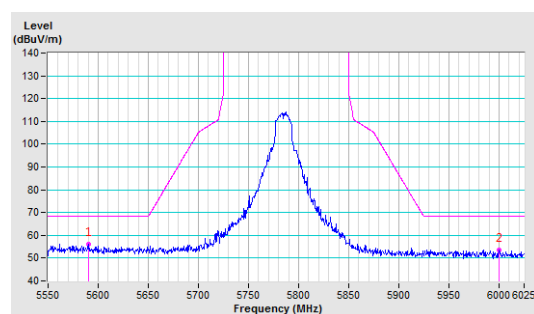


CH 157 5785 MHz

Horizontal

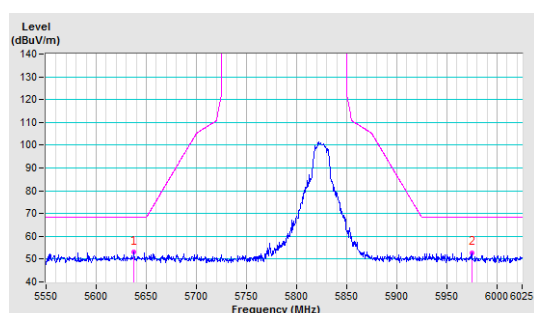


Vertical

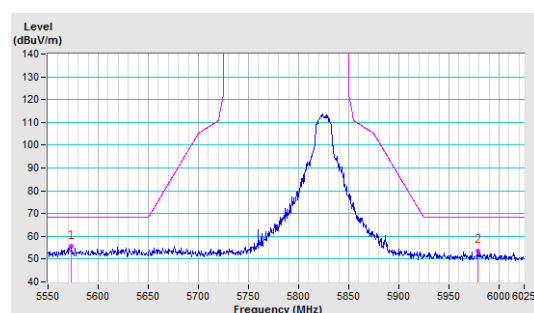


CH 165 5825 MHz

Horizontal



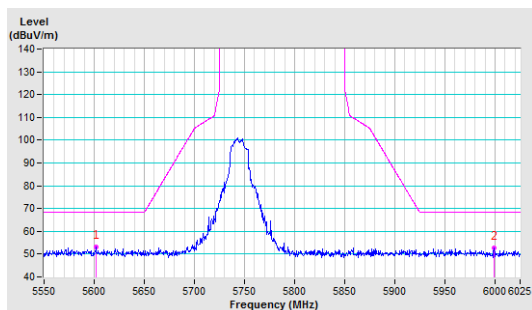
Vertical



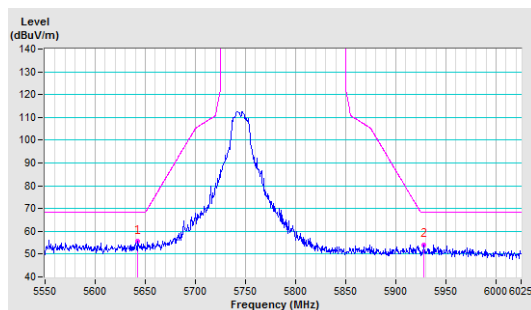
802.11n (HT20)

CH 149 5745 MHz

Horizontal

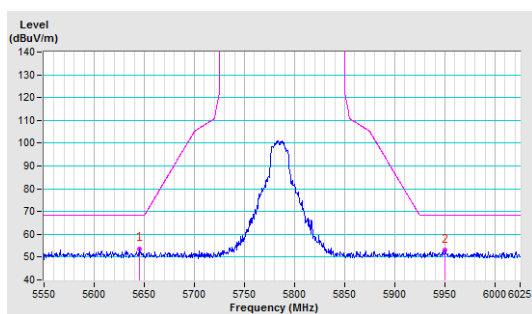


Vertical

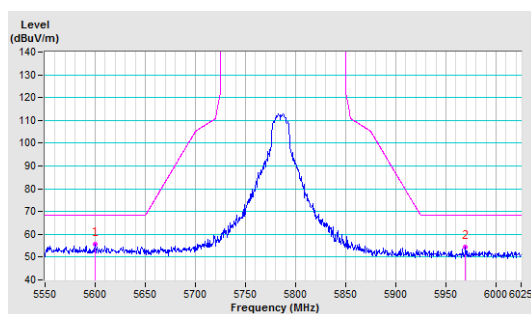


CH 157 5785 MHz

Horizontal

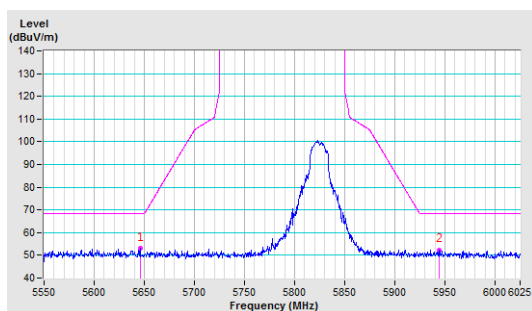


Vertical

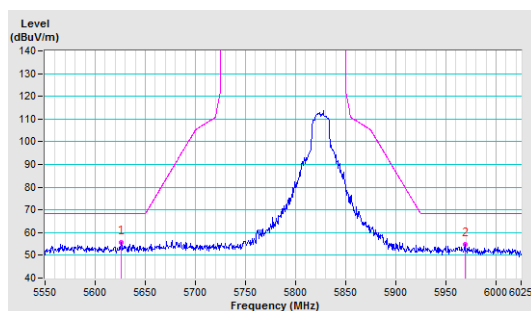


CH 165 5825 MHz

Horizontal



Vertical



Appendix – Information of 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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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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