

FCC Test Report

Report No.: RF180102C33C-33

FCC ID: PZWBHT1700QG

Model: BHT-1700QWBG-2

Series Model: BHT-1700QWBG-1 (Refer to item 3.1 for the more details)

Received Date: Jan. 02, 2018

Test Date: Jan. 22 ~ Jul. 19, 2018

Issued Date: Jul. 31, 2018

Applicant: DENSO WAVE INCORPORATED

Address: 1, Yoshiike, Kusagi, Agui-cho, Chita-gun, Aichi, 470-2297 Japan

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

**FCC Registration/
Designation Number:** 788550 / TW0003



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty.....	6
2.2 Modification Record.....	6
3 General Information	7
3.1 General Description of EUT.....	7
3.2 Description of Test Modes.....	10
3.2.1 Test Mode Applicability and Tested Channel Detail.....	12
3.3 Duty Cycle of Test Signal.....	14
3.4 Description of Support Units.....	15
3.4.1 Configuration of System under Test.....	15
3.5 General Description of Applied Standards.....	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement.....	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement.....	16
4.1.2 Test Instruments.....	17
4.1.3 Test Procedures.....	18
4.1.4 Deviation from Test Standard.....	19
4.1.5 Test Set Up.....	19
4.1.6 EUT Operating Conditions.....	20
4.1.7 Test Results.....	21
4.2 Conducted Emission Measurement.....	55
4.2.1 Limits of Conducted Emission Measurement.....	55
4.2.2 Test Instruments.....	55
4.2.3 Test Procedures.....	56
4.2.4 Deviation from Test Standard.....	56
4.2.5 Test Setup.....	56
4.2.6 EUT Operating Conditions.....	56
4.2.7 Test Results.....	57
4.3 Transmit Power Measurement.....	59
4.3.1 Limits of Transmit Power Measurement.....	59
4.3.2 Test Setup.....	59
4.3.3 Test Instruments.....	60
4.3.4 Test Procedure.....	60
4.3.5 Deviation from Test Standard.....	60
4.3.6 EUT Operating Conditions.....	60
4.3.7 Test Result.....	60
4.4 Occupied Bandwidth Measurement.....	61
4.4.1 Test Setup.....	61
4.4.2 Test Instruments.....	61
4.4.3 Test Procedure.....	61
4.4.4 Test Result.....	61
4.5 Peak Power Spectral Density Measurement.....	62
4.5.1 Limits of Peak Power Spectral Density Measurement.....	62
4.5.2 Test Setup.....	62
4.5.3 Test Instruments.....	62
4.5.4 Test Procedures.....	63
4.5.5 Deviation from Test Standard.....	63
4.5.6 EUT Operating Conditions.....	63
4.5.7 Test Results.....	63
4.6 Frequency Stability.....	64
4.6.1 Limits of Frequency Stability Measurement.....	64

4.6.2 Test Setup.....	64
4.6.3 Test Instruments	64
4.6.4 Test Procedure	64
4.6.5 Deviation from Test Standard	64
4.6.6 EUT Operating Condition	64
4.6.7 Test Results	64
4.7 6dB Bandwidth Measurement.....	65
4.7.1 Limits of 6dB Bandwidth Measurement.....	65
4.7.2 Test Setup.....	65
4.7.3 Test Instruments	65
4.7.4 Test Procedure	65
4.7.5 Deviation from Test Standard	65
4.7.6 EUT Operating Condition	65
4.7.7 Test Results	65
5 Pictures of Test Arrangements.....	66
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band).....	67
Appendix – Information of the Testing Laboratories	70

Release Control Record

Issue No.	Description	Date Issued
RF180102C33C-33	Original release.	Jul. 31, 2018

1 Certificate of Conformity

Product: Barcode Handy Terminal, 2D Code Handy Terminal

Brand: DENSO

Model: BHT-1700QWBG-2

Series Model: BHT-1700QWBG-1 (Refer to item 3.1 for the more details)

Sample Status: Engineering sample

Applicant: DENSO WAVE INCORPORATED

Test Date: Jan. 22 ~ Jul. 19, 2018

Standards: 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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen, **Date:** Jul. 31, 2018
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Jul. 31, 2018
Bruce Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -21.87dB at 0.15719MHz.
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 -0.3dB at 5470.00MHz & 5725.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit. (Note)
---	Occupied Bandwidth Measurement	Pass	Meet the requirement of limit. (Note)
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit. (Note) (U-NII-3 Band only)
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (Note)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit. (Note)
15.203	Antenna Requirement	Pass	Antenna connector is Metal shrapnel not a standard connector.

Note: Refer to FCC ID: PZWBHT1700BQL.

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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Barcode Handy Terminal, 2D Code Handy Terminal
Brand	DENSO
Model	BHT-1700QWBG-2
Series Model	BHT-1700QWBG-1
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	3.7Vdc (battery) 12Vdc (Cradle)
Modulation Type	16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20): 4 802.11n (HT40): 2 5260~5320MHz: 802.11a, 802.11n (HT20): 4 802.11n (HT40): 2 5500~5700MHz: 802.11a, 802.11n (HT20): 11 802.11n (HT40): 5 5745~5825MHz: 802.11a, 802.11n (HT20): 5 802.11n (HT40): 2
Output Power	5180~5240MHz: 41.210mW 5260~5320MHz: 40.179mW 5500~5700MHz: 42.855mW 5745~5825MHz: 45.604mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	NA
Cable Supplied	NA

Note:

1. All models are listed as below.

Model Name	base module	CPU	Software	LCD	WLAN / WWAN / NFC						
			OS	4"	WLAN	GPS	LTE	LTE Antenna type	Docomo IoT	NFC	
BHT-1700QWBG-2	4inch WLAN/BT+LTE(USA)	MSM8909	Android	○	○	○	○	○	USA	○	○
BHT-1700QWBG-1	4inch WLAN/BT+LTE(USA)	MSM8909	Android	○	○	○	○	○	USA	○	○

Model Name	Audio				Sensor	Reading		keyboard
	speaker	Main MIC	Sub MIC	Receiver	IR Reader	2D	Camera (rear)	10Key
BHT-1700QWBG-2	○	○	○	○	○	○	○	○
BHT-1700QWBG-1	○	○	○	○	○	○	○	○

*Model: BHT-1700QWBG-2 was chosen for the final tests.

*NFC Limited module (Brand: DENSO, Model: DWI002, FCC ID: PZWDWI002) collocated in EUT (model: BHT-1700QWBG-2).

2. The EUT provides 1 completed transmitter and 1 receiver.

Modulation Mode	TX Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX

3. The EUT with follow antennas gain is listed as table below.

Brand	Antenna Gain(dBi) Including cable loss	Frequency range (MHz to MHz)	Antenna Type	Connecter Type	Cable Loss(dB) (External only)	Cable Length (External only)
WHAYU	2.27	2.4~2.4835GHz	PIFA	Metal shrapnel	1	30cm
	3.59	5.15~5.25GHz	PIFA	Metal shrapnel	1.7	30cm
	3.51	5.25~5.35GHz	PIFA	Metal shrapnel	1.7	30cm
	4.13	5.47~5.725GHz	PIFA	Metal shrapnel	1.7	30cm
	2.91	5.725~5.850GHz	PIFA	Metal shrapnel	1.7	30cm

4. The EUT consumes power from the following battery.

Battery 1 (For BHT-1700 Used)	
Brand	DENSO
Model	BT-110LA
Rating	2300mAh, 3.7Vdc,8.5Wh

Battery 2 (For BHT-1700 Used)	
Brand	DENSO
Model	BT-110L
Rating	3450mAh, 3.7Vdc,12.8Wh

*After pre-testing, battery 1 was the worst case for the final tests.

5. The client provides the following cradles for tests. (Support unit only)

LAN Cradle (For BHT-1700 Used) (Support unit)	
Brand	DENSO
Model	CU-BL-17
Output Power	12Vdc, 4.16A, 50W

USB Cradle (For BHT-1700 Used) (Support unit)	
Brand	DENSO
Model	CU-BU1-17
Output Power	12Vdc, 4.16A, 50W

Adapter for cradle (Support unit)	
Brand	FSP GROUP INC.
Model	FSP050-DBAE1
Input Power	100-240Vac, 1.5A, 50/60Hz
Output Power	12Vdc, 4.16A, 50W
Power Line	1.2m non-shielded DC cable with 1 core attached on adapter

*After pre-testing, USB cradle was the worst case for the final tests.

6. 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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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		

5 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

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		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE \geq 1G	RE<1G	PLC	APCM	
A	√	-	-	-	Power from battery
B	-	√	√	-	Power from Cradle

Where RE \geq 1G: Radiated Emission above 1GHz & Bandedge Measurement
 RE<1G: Radiated Emission below 1GHz
 PLC: Power Line Conducted Emission
 APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-" means no effect.
3. APCM refer to FCC ID: PZWBHT1700BQL.

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
B	802.11a	5180-5240	36 to 48	149	OFDM	6.0
		5260-5320	52 to 64		OFDM	6.0
		5500-5700	100 to 140		OFDM	6.0
		5745-5825	149 to 165		OFDM	6.0

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
B	802.11a	5180-5240	36 to 48	149	OFDM	6.0
		5260-5320	52 to 64		OFDM	6.0
		5500-5700	100 to 140		OFDM	6.0
		5745-5825	149 to 165		OFDM	6.0

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE \geq 1G	24deg. C, 66%RH 25deg. C, 70%RH	120Vac, 60Hz	Noah Chang Luis Lee
RE $<$ 1G	25deg. C, 70%RH	120Vac, 60Hz	Noah Chang
PLC	22deg. C, 66%RH	120Vac, 60Hz	Adair Peng

3.3 Duty Cycle of Test Signal

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

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

802.11a: Duty cycle = $1.348/1.584 = 0.851$, Duty factor = $10 * \log(1/0.851) = 0.70$

802.11n (HT20): Duty cycle = $1.276/1.476 = 0.864$, Duty factor = $10 * \log(1/0.864) = 0.63$

802.11n (HT40): Duty cycle = $0.628/0.828 = 0.758$, Duty factor = $10 * \log(1/0.758) = 1.20$



3.4 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.	Notebook	Lenovo	81A4	YD02TWF5	PPD-QCNFA435	-
B.	Cradle	DENSO	CU-BU1-17	NA	NA	Provided by manufacturer
C.	Adapter	FSP GROUP INC.	FSP050-DBAE1	NA	NA	Provided by manufacturer

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

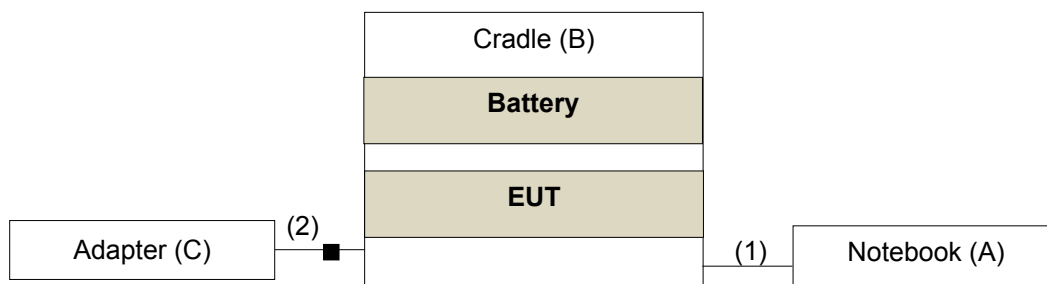
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.5	Y	0	-
2.	DC cable	1	1.2	N	1	Provided by manufacturer

3.4.1 Configuration of System under Test

Test Mode A



Test Mode B



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (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:

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

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 checked="" 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 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. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 17, 2017	Oct. 16, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 18, 2017	Aug. 17, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01960	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 08, 2017	Aug. 07, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier Agilent	8449B	3008A1960	Aug. 08, 2017	Aug. 07, 2018
High Speed Peak Power Meter	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018
Power Sensor	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018

- 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 HwaYa Chamber 4.
3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
4. The IC Site Registration No. is IC 7450F-4.

4.1.3 Test Procedures

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:

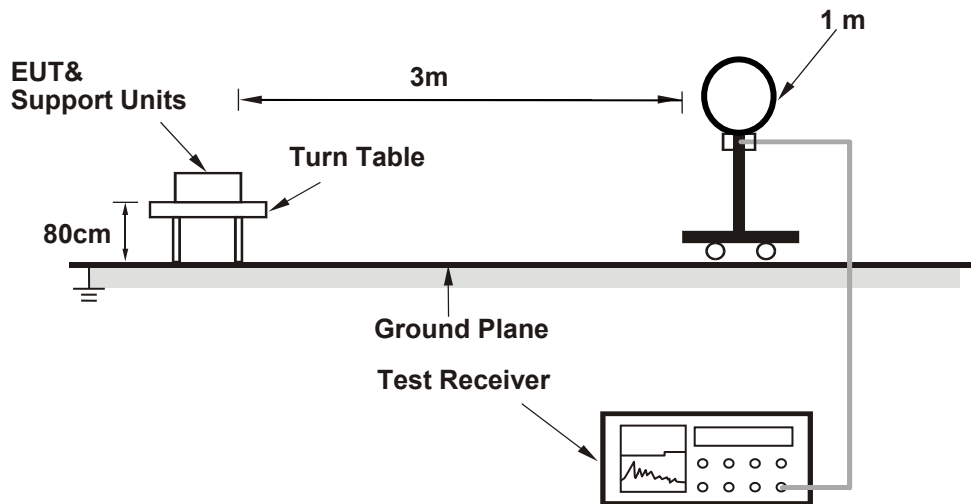
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

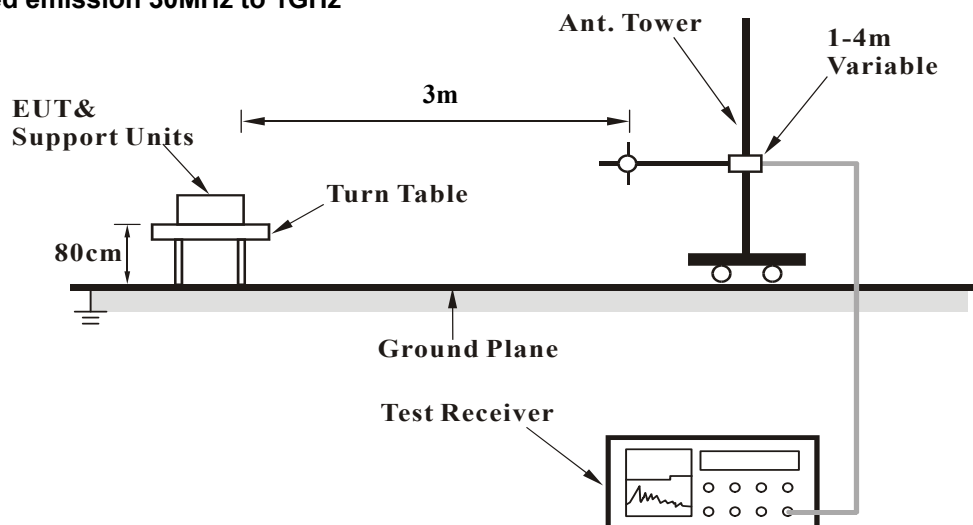
No deviation.

4.1.5 Test Set Up

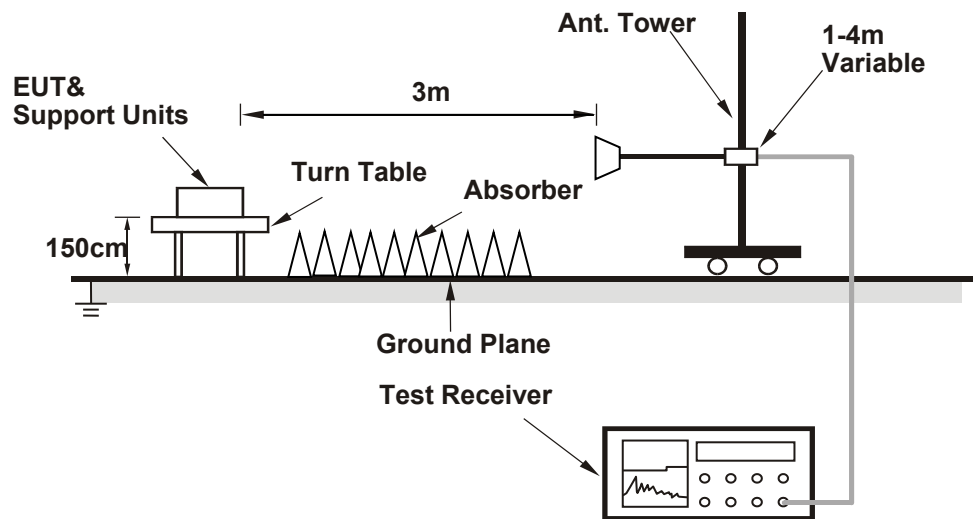
For Radiated emission below 30MHz



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 Conditions

Test Mode A

- a. Set the EUT under transmission condition continuously at specific channel frequency.

Test Mode B

- a. Set the EUT plugged in the cradle and connected with a notebook system via a USB cable and placed on a testing table.
- b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.8 PK	74.0	-1.2	2.76 H	188	70.2	2.6
2	5150.00	50.7 AV	54.0	-3.3	2.76 H	188	48.1	2.6
3	*5180.00	110.0 PK			3.01 H	178	69.1	40.9
4	*5180.00	98.8 AV			3.01 H	178	57.9	40.9
5	#10360.00	59.5 PK	68.2	-8.7	1.49 H	273	44.7	14.8

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	70.7 PK	74.0	-3.3	1.05 V	230	68.1	2.6
2	5150.00	49.6 AV	54.0	-4.4	1.05 V	230	47.0	2.6
3	*5180.00	105.9 PK			1.13 V	182	65.0	40.9
4	*5180.00	95.8 AV			1.13 V	182	54.9	40.9
5	#10360.00	58.8 PK	68.2	-9.4	1.25 V	89	44.0	14.8

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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	111.2 PK			2.59 H	188	70.3	40.9
2	*5200.00	100.9 AV			2.59 H	188	60.0	40.9
3	#10400.00	59.6 PK	68.2	-8.6	1.63 H	274	44.7	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	*5200.00	108.2 PK			1.15 V	204	67.3	40.9
2	*5200.00	97.5 AV			1.15 V	204	56.6	40.9
3	#10400.00	59.8 PK	68.2	-8.4	1.29 V	84	44.9	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 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			2.69 H	188	70.1	40.7
2	*5240.00	100.1 AV			2.69 H	188	59.4	40.7
3	5350.00	56.7 PK	74.0	-17.3	2.64 H	171	53.9	2.8
4	5350.00	43.8 AV	54.0	-10.2	2.64 H	171	41.0	2.8
5	#10480.00	59.1 PK	68.2	-9.1	1.84 H	290	44.4	14.7

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	*5240.00	107.3 PK			1.21 V	185	66.6	40.7
2	*5240.00	97.0 AV			1.21 V	185	56.3	40.7
3	5350.00	54.9 PK	74.0	-19.1	1.18 V	194	52.1	2.8
4	5350.00	42.8 AV	54.0	-11.2	1.18 V	194	40.0	2.8
5	#10480.00	59.5 PK	68.2	-8.7	1.30 V	59	44.8	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.1 PK	74.0	-19.9	2.48 H	187	51.5	2.6
2	5150.00	42.9 AV	54.0	-11.1	2.48 H	187	40.3	2.6
3	*5260.00	112.8 PK			2.70 H	193	72.1	40.7
4	*5260.00	101.5 AV			2.70 H	193	60.8	40.7
5	#10520.00	59.2 PK	68.2	-9.0	1.45 H	321	44.4	14.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.9 PK	74.0	-17.1	1.15 V	142	54.3	2.6
2	5150.00	43.8 AV	54.0	-10.2	1.15 V	142	41.2	2.6
3	*5260.00	109.1 PK			1.09 V	178	68.4	40.7
4	*5260.00	99.2 AV			1.09 V	178	58.5	40.7
5	#10520.00	59.4 PK	68.2	-8.8	1.69 V	43	44.6	14.8

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	110.2 PK			2.49 H	181	69.6	40.6
2	*5300.00	99.1 AV			2.49 H	181	58.5	40.6
3	10600.00	60.9 PK	74.0	-13.1	2.19 H	148	45.7	15.2
4	10600.00	46.2 AV	54.0	-7.8	2.19 H	148	31.0	15.2

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	*5300.00	107.2 PK			1.19 V	187	66.6	40.6
2	*5300.00	97.1 AV			1.19 V	187	56.5	40.6
3	10600.00	59.6 PK	74.0	-14.4	1.72 V	354	44.4	15.2
4	10600.00	46.1 AV	54.0	-7.9	1.72 V	354	30.9	15.2

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 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	109.8 PK			2.48 H	174	69.1	40.7
2	*5320.00	99.3 AV			2.48 H	174	58.6	40.7
3	5350.00	72.8 PK	74.0	-1.2	2.30 H	188	70.0	2.8
4	5350.00	53.3 AV	54.0	-0.7	2.30 H	188	50.5	2.8
5	10640.00	60.1 PK	74.0	-13.9	1.22 H	49	44.7	15.4
6	10640.00	47.3 AV	54.0	-6.7	1.22 H	49	31.9	15.4

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	106.7 PK			1.01 V	199	66.0	40.7
2	*5320.00	95.9 AV			1.01 V	199	55.2	40.7
3	5350.00	66.8 PK	74.0	-7.2	1.14 V	173	64.0	2.8
4	5350.00	50.2 AV	54.0	-3.8	1.14 V	173	47.4	2.8
5	10640.00	59.8 PK	74.0	-14.2	2.31 V	124	44.4	15.4
6	10640.00	47.2 AV	54.0	-6.8	2.31 V	124	31.8	15.4

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. 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 100	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	70.4 PK	74.0	-3.6	2.18 H	292	67.2	3.2
2	5460.00	50.1 AV	54.0	-3.9	2.18 H	292	46.9	3.2
3	#5470.00	67.9 PK	68.2	-0.3	2.30 H	303	64.7	3.2
4	*5500.00	109.4 PK			1.96 H	179	67.9	41.5
5	*5500.00	99.8 AV			1.96 H	179	58.3	41.5
6	11000.00	60.2 PK	74.0	-13.8	1.84 H	220	44.2	16.0
7	11000.00	48.1 AV	54.0	-5.9	1.84 H	220	32.1	16.0

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	5460.00	68.9 PK	74.0	-5.1	1.27 V	175	65.7	3.2
2	5460.00	47.7 AV	54.0	-6.3	1.27 V	175	44.5	3.2
3	#5470.00	64.8 PK	68.2	-3.4	1.36 V	191	61.6	3.2
4	*5500.00	106.8 PK			1.06 V	163	65.3	41.5
5	*5500.00	96.8 AV			1.06 V	163	55.3	41.5
6	11000.00	59.4 PK	74.0	-14.6	1.42 V	177	43.4	16.0
7	11000.00	46.7 AV	54.0	-7.3	1.42 V	177	30.7	16.0

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 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	110.4 PK			2.15 H	204	68.5	41.9
2	*5580.00	100.1 AV			2.15 H	204	58.2	41.9
3	11160.00	60.2 PK	74.0	-13.8	2.39 H	315	44.5	15.7
4	11160.00	47.1 AV	54.0	-6.9	2.39 H	315	31.4	15.7

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	*5580.00	109.2 PK			1.23 V	197	67.3	41.9
2	*5580.00	98.1 AV			1.23 V	197	56.2	41.9
3	11160.00	59.9 PK	74.0	-14.1	1.62 V	327	44.2	15.7
4	11160.00	47.1 AV	54.0	-6.9	1.62 V	327	31.4	15.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.8 PK			2.38 H	198	65.7	42.1
2	*5700.00	97.6 AV			2.38 H	198	55.5	42.1
3	#5725.00	67.9 PK	68.2	-0.3	2.48 H	211	64.2	3.7
4	11400.00	60.2 PK	74.0	-13.8	3.17 H	220	44.2	16.0
5	11400.00	47.5 AV	54.0	-6.5	3.17 H	220	31.5	16.0
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	*5700.00	105.7 PK			1.05 V	166	63.6	42.1
2	*5700.00	95.3 AV			1.05 V	166	53.2	42.1
3	#5725.00	64.9 PK	68.2	-3.3	1.14 V	182	61.2	3.7
4	11400.00	59.9 PK	74.0	-14.1	3.48 V	59	43.9	16.0
5	11400.00	47.6 AV	54.0	-6.4	3.48 V	59	31.6	16.0

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 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	#5629.60	58.2 PK	68.2	-10.0	2.48 H	200	54.7	3.5
2	*5745.00	111.0 PK			2.48 H	200	68.8	42.2
3	*5745.00	100.4 AV			2.48 H	200	58.2	42.2
4	#5952.00	58.5 PK	68.2	-9.7	2.48 H	200	53.9	4.6
5	11490.00	60.9 PK	74.0	-13.1	1.88 H	44	44.7	16.2
6	11490.00	48.1 AV	54.0	-5.9	1.88 H	44	31.9	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	#5627.20	57.2 PK	68.2	-11.0	1.05 V	177	53.7	3.5
2	*5745.00	107.5 PK			1.05 V	177	65.3	42.2
3	*5745.00	97.3 AV			1.05 V	177	55.1	42.2
4	#5959.20	59.2 PK	68.2	-9.0	1.05 V	177	54.5	4.7
5	11490.00	60.2 PK	74.0	-13.8	1.45 V	288	44.0	16.2
6	11490.00	47.5 AV	54.0	-6.5	1.45 V	288	31.3	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	#5640.00	57.5 PK	68.2	-10.7	2.33 H	198	54.1	3.4
2	*5785.00	110.8 PK			2.33 H	198	68.4	42.4
3	*5785.00	99.8 AV			2.33 H	198	57.4	42.4
4	#5984.80	58.6 PK	68.2	-9.6	2.33 H	198	54.0	4.6
5	11570.00	60.5 PK	74.0	-13.5	1.99 H	58	44.5	16.0
6	11570.00	47.8 AV	54.0	-6.2	1.99 H	58	31.8	16.0

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	#5640.00	57.9 PK	68.2	-10.3	1.06 V	162	54.5	3.4
2	*5785.00	108.0 PK			1.06 V	162	65.6	42.4
3	*5785.00	97.2 AV			1.06 V	162	54.8	42.4
4	#5956.00	59.8 PK	68.2	-8.4	1.06 V	162	55.1	4.7
5	11570.00	60.3 PK	74.0	-13.7	1.34 V	299	44.3	16.0
6	11570.00	47.8 AV	54.0	-6.2	1.34 V	299	31.8	16.0

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 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	#5600.00	57.1 PK	68.2	-11.1	2.55 H	207	53.4	3.7
2	*5825.00	109.8 PK			2.55 H	207	67.0	42.8
3	*5825.00	99.8 AV			2.55 H	207	57.0	42.8
4	#5948.80	58.2 PK	68.2	-10.0	2.55 H	207	53.6	4.6
5	11650.00	60.4 PK	74.0	-13.6	1.77 H	52	45.0	15.4
6	11650.00	47.2 AV	54.0	-6.8	1.77 H	52	31.8	15.4

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	#5608.80	57.8 PK	68.2	-10.4	2.66 V	332	54.3	3.5
2	*5825.00	107.5 PK			2.66 V	332	64.7	42.8
3	*5825.00	97.2 AV			2.66 V	332	54.4	42.8
4	#5933.60	58.7 PK	68.2	-9.5	2.66 V	332	54.2	4.5
5	11650.00	60.3 PK	74.0	-13.7	1.33 V	305	44.9	15.4
6	11650.00	47.1 AV	54.0	-6.9	1.33 V	305	31.7	15.4

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. 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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.4 PK	74.0	-1.6	2.51 H	187	69.8	2.6
2	5150.00	50.3 AV	54.0	-3.7	2.51 H	187	47.7	2.6
3	*5180.00	108.4 PK			2.42 H	193	67.5	40.9
4	*5180.00	97.9 AV			2.42 H	193	57.0	40.9
5	#10360.00	59.1 PK	68.2	-9.1	1.70 H	284	44.3	14.8

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	70.4 PK	74.0	-3.6	1.08 V	213	67.8	2.6
2	5150.00	49.3 AV	54.0	-4.7	1.08 V	213	46.7	2.6
3	*5180.00	106.2 PK			1.07 V	189	65.3	40.9
4	*5180.00	95.7 AV			1.07 V	189	54.8	40.9
5	#10360.00	58.8 PK	68.2	-9.4	1.29 V	117	44.0	14.8

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	109.9 PK			2.48 H	184	69.0	40.9
2	*5200.00	99.0 AV			2.48 H	184	58.1	40.9
3	#10400.00	58.7 PK	68.2	-9.5	1.63 H	346	43.8	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	*5200.00	106.9 PK			1.32 V	187	66.0	40.9
2	*5200.00	96.8 AV			1.32 V	187	55.9	40.9
3	#10400.00	58.8 PK	68.2	-9.4	1.33 V	120	43.9	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 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	109.1 PK			2.57 H	193	68.4	40.7
2	*5240.00	98.5 AV			2.57 H	193	57.8	40.7
3	5350.00	57.3 PK	74.0	-16.7	2.72 H	175	54.5	2.8
4	5350.00	44.1 AV	54.0	-9.9	2.72 H	175	41.3	2.8
5	#10480.00	59.8 PK	68.2	-8.4	1.77 H	301	45.1	14.7

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	*5240.00	105.9 PK			1.10 V	187	65.2	40.7
2	*5240.00	95.8 AV			1.10 V	187	55.1	40.7
3	5350.00	54.9 PK	74.0	-19.1	1.20 V	199	52.1	2.8
4	5350.00	42.8 AV	54.0	-11.2	1.20 V	199	40.0	2.8
5	#10480.00	58.8 PK	68.2	-9.4	1.42 V	109	44.1	14.7

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 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	56.5 PK	74.0	-17.5	2.68 H	190	53.9	2.6
2	5150.00	43.4 AV	54.0	-10.6	2.68 H	190	40.8	2.6
3	*5260.00	111.8 PK			2.49 H	178	71.1	40.7
4	*5260.00	100.9 AV			2.49 H	178	60.2	40.7
5	#10520.00	60.5 PK	68.2	-7.7	2.77 H	163	45.7	14.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	1.39 V	187	54.2	2.6
2	5150.00	43.6 AV	54.0	-10.4	1.39 V	187	41.0	2.6
3	*5260.00	108.5 PK			1.15 V	216	67.8	40.7
4	*5260.00	97.9 AV			1.15 V	216	57.2	40.7
5	#10520.00	59.8 PK	68.2	-8.4	2.44 V	128	45.0	14.8

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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	110.1 PK			2.38 H	187	69.5	40.6
2	*5300.00	100.3 AV			2.38 H	187	59.7	40.6
3	10600.00	60.1 PK	74.0	-13.9	3.40 H	241	44.9	15.2
4	10600.00	47.2 AV	54.0	-6.8	3.40 H	241	32.0	15.2

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	*5300.00	107.8 PK			1.19 V	197	67.2	40.6
2	*5300.00	96.9 AV			1.19 V	197	56.3	40.6
3	10600.00	59.9 PK	74.0	-14.1	2.38 V	142	44.7	15.2
4	10600.00	46.5 AV	54.0	-7.5	2.38 V	142	31.3	15.2

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 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	108.7 PK			2.49 H	188	68.0	40.7
2	*5320.00	98.4 AV			2.49 H	188	57.7	40.7
3	5350.00	69.2 PK	74.0	-4.8	2.15 H	191	66.4	2.8
4	5350.00	52.8 AV	54.0	-1.2	2.15 H	191	50.0	2.8
5	10640.00	59.8 PK	74.0	-14.2	1.79 H	136	44.4	15.4
6	10640.00	47.3 AV	54.0	-6.7	1.79 H	136	31.9	15.4

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	105.7 PK			1.07 V	188	65.0	40.7
2	*5320.00	94.8 AV			1.07 V	188	54.1	40.7
3	5350.00	66.8 PK	74.0	-7.2	1.12 V	190	64.0	2.8
4	5350.00	49.1 AV	54.0	-4.9	1.12 V	190	46.3	2.8
5	10640.00	60.2 PK	74.0	-13.8	3.18 V	94	44.8	15.4
6	10640.00	46.4 AV	54.0	-7.6	3.18 V	94	31.0	15.4

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. 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 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	69.8 PK	74.0	-4.2	2.20 H	193	66.6	3.2
2	5460.00	49.6 AV	54.0	-4.4	2.20 H	193	46.4	3.2
3	#5470.00	67.8 PK	68.2	-0.4	2.07 H	198	64.6	3.2
4	*5500.00	109.1 PK			2.10 H	186	67.6	41.5
5	*5500.00	98.6 AV			2.10 H	186	57.1	41.5
6	11000.00	60.2 PK	74.0	-13.8	2.99 H	158	44.2	16.0
7	11000.00	48.0 AV	54.0	-6.0	2.99 H	158	32.0	16.0

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	5460.00	69.4 PK	74.0	-4.6	1.28 V	191	66.2	3.2
2	5460.00	46.8 AV	54.0	-7.2	1.28 V	191	43.6	3.2
3	#5470.00	65.8 PK	68.2	-2.4	1.43 V	180	62.6	3.2
4	*5500.00	107.4 PK			1.01 V	156	65.9	41.5
5	*5500.00	96.8 AV			1.01 V	156	55.3	41.5
6	11000.00	60.8 PK	74.0	-13.2	1.25 V	49	44.8	16.0
7	11000.00	47.4 AV	54.0	-6.6	1.25 V	49	31.4	16.0

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 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	111.2 PK			2.11 H	187	69.3	41.9
2	*5580.00	100.3 AV			2.11 H	187	58.4	41.9
3	11160.00	59.9 PK	74.0	-14.1	3.01 H	161	44.2	15.7
4	11160.00	46.9 AV	54.0	-7.1	3.01 H	161	31.2	15.7

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	*5580.00	109.0 PK			1.17 V	159	67.1	41.9
2	*5580.00	98.7 AV			1.17 V	159	56.8	41.9
3	11160.00	59.5 PK	74.0	-14.5	1.73 V	315	43.8	15.7
4	11160.00	46.8 AV	54.0	-7.2	1.73 V	315	31.1	15.7

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 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	108.1 PK			2.38 H	215	66.0	42.1
2	*5700.00	96.7 AV			2.38 H	215	54.6	42.1
3	#5725.00	67.9 PK	68.2	-0.3	2.33 H	189	64.2	3.7
4	11140.00	60.2 PK	74.0	-13.8	2.18 H	49	44.5	15.7
5	11140.00	47.8 AV	54.0	-6.2	2.18 H	49	32.1	15.7

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	104.9 PK			1.05 V	148	62.8	42.1
2	*5700.00	93.8 AV			1.05 V	148	51.7	42.1
3	#5725.00	66.7 PK	68.2	-1.5	1.16 V	187	63.0	3.7
4	11400.00	60.5 PK	74.0	-13.5	1.33 V	51	44.5	16.0
5	11400.00	47.8 AV	54.0	-6.2	1.33 V	51	31.8	16.0

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 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	#5647.20	57.6 PK	68.2	-10.6	2.33 H	200	54.2	3.4
2	*5745.00	110.6 PK			2.33 H	200	68.4	42.2
3	*5745.00	99.4 AV			2.33 H	200	57.2	42.2
4	#5996.80	59.1 PK	68.2	-9.1	2.33 H	200	54.4	4.7
5	11490.00	61.3 PK	74.0	-12.7	1.99 H	32	45.1	16.2
6	11490.00	48.2 AV	54.0	-5.8	1.99 H	32	32.0	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	#5607.20	57.6 PK	68.2	-10.6	1.03 V	166	54.1	3.5
2	*5745.00	107.3 PK			1.03 V	166	65.1	42.2
3	*5745.00	96.7 AV			1.03 V	166	54.5	42.2
4	#5927.20	58.5 PK	68.2	-9.7	1.03 V	166	54.0	4.5
5	11490.00	60.8 PK	74.0	-13.2	1.44 V	266	44.6	16.2
6	11490.00	47.8 AV	54.0	-6.2	1.44 V	266	31.6	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	#5623.20	56.2 PK	68.2	-12.0	2.66 H	208	52.7	3.5
2	*5785.00	110.2 PK			2.66 H	208	67.8	42.4
3	*5785.00	99.4 AV			2.66 H	208	57.0	42.4
4	#5990.40	58.6 PK	68.2	-9.6	2.66 H	208	53.9	4.7
5	11570.00	61.2 PK	74.0	-12.8	1.99 H	44	45.2	16.0
6	11570.00	47.8 AV	54.0	-6.2	1.99 H	44	31.8	16.0

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	#5616.00	58.0 PK	68.2	-10.2	2.88 V	334	54.5	3.5
2	*5785.00	107.8 PK			2.88 V	334	65.4	42.4
3	*5785.00	97.0 AV			2.88 V	334	54.6	42.4
4	#5958.40	58.3 PK	68.2	-9.9	2.88 V	334	53.6	4.7
5	11570.00	60.8 PK	74.0	-13.2	1.55 V	233	44.8	16.0
6	11570.00	47.5 AV	54.0	-6.5	1.55 V	233	31.5	16.0

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 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	#5604.80	57.6 PK	68.2	-10.6	2.55 H	209	54.0	3.6
2	*5825.00	110.0 PK			2.55 H	209	67.2	42.8
3	*5825.00	99.4 AV			2.55 H	209	56.6	42.8
4	#5933.60	58.3 PK	68.2	-9.9	2.55 H	209	53.8	4.5
5	11650.00	60.6 PK	74.0	-13.4	2.00 H	44	45.2	15.4
6	11650.00	47.5 AV	54.0	-6.5	2.00 H	44	32.1	15.4

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	#5628.00	57.5 PK	68.2	-10.7	3.00 V	344	54.0	3.5
2	*5825.00	107.8 PK			3.00 V	344	65.0	42.8
3	*5825.00	97.5 AV			3.00 V	344	54.7	42.8
4	#5990.40	58.4 PK	68.2	-9.8	3.00 V	344	53.7	4.7
5	11650.00	60.0 PK	74.0	-14.0	1.33 V	225	44.6	15.4
6	11650.00	46.9 AV	54.0	-7.1	1.33 V	225	31.5	15.4

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. 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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.9 PK	74.0	-3.1	3.06 H	191	68.3	2.6
2	5150.00	52.4 AV	54.0	-1.6	3.06 H	191	49.8	2.6
3	*5190.00	102.6 PK			3.18 H	179	61.7	40.9
4	*5190.00	91.4 AV			3.18 H	179	50.5	40.9
5	#10380.00	60.2 PK	68.2	-8.0	2.20 H	342	45.4	14.8

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	70.1 PK	74.0	-3.9	1.10 V	199	67.5	2.6
2	5150.00	52.4 AV	54.0	-1.6	1.10 V	199	49.8	2.6
3	*5190.00	101.1 PK			1.03 V	182	60.2	40.9
4	*5190.00	90.3 AV			1.03 V	182	49.4	40.9
5	#10380.00	59.5 PK	68.2	-8.7	1.54 V	87	44.7	14.8

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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	106.5 PK			2.94 H	187	65.8	40.7
2	*5230.00	95.8 AV			2.94 H	187	55.1	40.7
3	5350.00	57.8 PK	74.0	-16.2	3.16 H	192	55.0	2.8
4	5350.00	44.6 AV	54.0	-9.4	3.16 H	192	41.8	2.8
5	#10460.00	59.8 PK	68.2	-8.4	2.14 H	339	45.0	14.8

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	104.9 PK			1.09 V	188	64.2	40.7
2	*5230.00	94.7 AV			1.09 V	188	54.0	40.7
3	5350.00	57.2 PK	74.0	-16.8	1.20 V	164	54.4	2.8
4	5350.00	44.1 AV	54.0	-9.9	1.20 V	164	41.3	2.8
5	#10460.00	59.4 PK	68.2	-8.8	1.55 V	83	44.6	14.8

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	5150.00	56.3 PK	74.0	-17.7	1.69 H	297	53.7	2.6
2	5150.00	43.8 AV	54.0	-10.2	1.69 H	297	41.2	2.6
3	*5270.00	108.5 PK			2.43 H	199	67.9	40.6
4	*5270.00	97.9 AV			2.43 H	199	57.3	40.6
5	#10540.00	60.2 PK	68.2	-8.0	1.39 H	320	45.3	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	5150.00	56.7 PK	74.0	-17.3	1.10 V	172	54.1	2.6
2	5150.00	43.8 AV	54.0	-10.2	1.10 V	172	41.2	2.6
3	*5270.00	105.6 PK			1.14 V	192	65.0	40.6
4	*5270.00	94.8 AV			1.14 V	192	54.2	40.6
5	#10540.00	58.8 PK	68.2	-9.4	2.59 V	132	43.9	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 62	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	103.6 PK			2.77 H	189	63.0	40.6
2	*5310.00	92.5 AV			2.77 H	189	51.9	40.6
3	5350.00	67.3 PK	74.0	-6.7	2.81 H	178	64.5	2.8
4	5350.00	52.6 AV	54.0	-1.4	2.81 H	178	49.8	2.8
5	10620.00	58.8 PK	74.0	-15.2	2.41 H	109	43.5	15.3
6	10620.00	45.3 AV	54.0	-8.7	2.41 H	109	30.0	15.3

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	*5310.00	100.2 PK			1.26 V	205	59.6	40.6
2	*5310.00	89.3 AV			1.26 V	205	48.7	40.6
3	5350.00	68.3 PK	74.0	-5.7	1.33 V	187	65.5	2.8
4	5350.00	49.8 AV	54.0	-4.2	1.33 V	187	47.0	2.8
5	10620.00	59.2 PK	74.0	-14.8	1.62 V	120	43.9	15.3
6	10620.00	45.7 AV	54.0	-8.3	1.62 V	120	30.4	15.3

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 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	65.1 PK	74.0	-8.9	2.11 H	187	61.9	3.2
2	5460.00	49.8 AV	54.0	-4.2	2.11 H	187	46.6	3.2
3	#5470.00	66.8 PK	68.2	-1.4	2.26 H	189	63.6	3.2
4	*5510.00	100.3 PK			2.18 H	177	58.7	41.6
5	*5510.00	90.7 AV			2.18 H	177	49.1	41.6
6	11020.00	60.4 PK	74.0	-13.6	2.49 H	348	44.6	15.8
7	11020.00	47.3 AV	54.0	-6.7	2.49 H	348	31.5	15.8

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	66.3 PK	74.0	-7.7	1.21 V	177	63.1	3.2
2	5460.00	46.7 AV	54.0	-7.3	1.21 V	177	43.5	3.2
3	#5470.00	67.5 PK	68.2	-0.7	1.05 V	181	64.3	3.2
4	*5510.00	97.8 PK			1.03 V	149	56.2	41.6
5	*5510.00	87.5 AV			1.03 V	149	45.9	41.6
6	11020.00	59.9 PK	74.0	-14.1	2.38 V	133	44.1	15.8
7	11020.00	47.2 AV	54.0	-6.8	2.38 V	133	31.4	15.8

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	108.3 PK			2.10 H	189	66.5	41.8
2	*5550.00	96.8 AV			2.10 H	189	55.0	41.8
3	11100.00	60.8 PK	74.0	-13.2	2.63 H	241	45.1	15.7
4	11100.00	47.5 AV	54.0	-6.5	2.63 H	241	31.8	15.7

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	*5550.00	105.6 PK			1.15 V	163	63.8	41.8
2	*5550.00	95.1 AV			1.15 V	163	53.3	41.8
3	11100.00	60.2 PK	74.0	-13.8	2.45 V	338	44.5	15.7
4	11100.00	46.8 AV	54.0	-7.2	2.45 V	338	31.1	15.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	106.5 PK			2.77 H	201	64.7	41.8
2	*5670.00	96.3 AV			2.77 H	201	54.5	41.8
3	#5725.00	67.7 PK	68.2	-0.5	2.88 H	193	64	3.7
4	11340.00	60.2 PK	74.0	-13.8	2.41 H	152	44.2	16.0
5	11340.00	47.1 AV	54.0	-6.9	2.41 H	152	31.1	16.0

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	*5670.00	104.8 PK			1.05 V	168	63.0	41.8
2	*5670.00	94.1 AV			1.05 V	168	52.3	41.8
3	#5725.00	62.1 PK	68.2	-6.1	1.16 V	187	58.4	3.7
4	11340.00	59.8 PK	74.0	-14.2	2.38 V	302	43.8	16.0
5	11340.00	47.1 AV	54.0	-6.9	2.38 V	302	31.1	16.0

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 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5650.40	60.7 PK	68.5	-7.8	2.55 H	211	57.3	3.4
2	*5755.00	107.0 PK			2.55 H	211	64.7	42.3
3	*5755.00	96.7 AV			2.55 H	211	54.4	42.3
4	#5935.20	58.1 PK	68.2	-10.1	2.55 H	211	53.6	4.5
5	11510.00	60.7 PK	74.0	-13.3	2.88 H	33	44.7	16.0
6	11510.00	47.6 AV	54.0	-6.4	2.88 H	33	31.6	16.0

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	#5646.40	59.7 PK	68.2	-8.5	1.03 V	160	56.3	3.4
2	*5755.00	104.2 PK			1.03 V	160	61.9	42.3
3	*5755.00	93.8 AV			1.03 V	160	51.5	42.3
4	#5960.00	58.8 PK	68.2	-9.4	1.03 V	160	54.1	4.7
5	11510.00	60.3 PK	74.0	-13.7	1.13 V	199	44.3	16.0
6	11510.00	47.2 AV	54.0	-6.8	1.13 V	199	31.2	16.0

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 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.20	57.1 PK	68.2	-11.1	2.48 H	206	53.7	3.4
2	*5795.00	106.8 PK			2.48 H	206	64.3	42.5
3	*5795.00	96.5 AV			2.48 H	206	54.0	42.5
4	#5932.80	59.3 PK	68.2	-8.9	2.48 H	206	54.8	4.5
5	11590.00	60.6 PK	74.0	-13.4	2.99 H	22	44.8	15.8
6	11590.00	47.5 AV	54.0	-6.5	2.99 H	22	31.7	15.8

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	#5644.80	57.5 PK	68.2	-10.7	1.02 V	166	54.1	3.4
2	*5795.00	104.0 PK			1.02 V	166	61.5	42.5
3	*5795.00	93.8 AV			1.02 V	166	51.3	42.5
4	#5958.40	58.7 PK	68.2	-9.5	1.02 V	166	54.0	4.7
5	11590.00	60.3 PK	74.0	-13.7	1.11 V	199	44.5	15.8
6	11590.00	47.2 AV	54.0	-6.8	1.11 V	199	31.4	15.8

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 Worst-Case Data: 802.11a

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

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	101.69	24.3 QP	43.5	-19.2	1.51 H	7	37.4	-13.1
2	243.34	26.7 QP	46.0	-19.3	1.01 H	82	36.1	-9.4
3	501.42	27.0 QP	46.0	-19.0	1.51 H	7	30.3	-3.3
4	668.29	30.2 QP	46.0	-15.8	1.01 H	22	29.7	0.5
5	860.39	33.9 QP	46.0	-12.1	1.01 H	180	29.5	4.4
6	972.93	36.4 QP	54.0	-17.6	1.01 H	257	30.1	6.3

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	60.95	26.7 QP	40.0	-13.3	1.00 V	308	36.1	-9.4
2	159.91	21.3 QP	43.5	-22.2	1.50 V	40	29.8	-8.5
3	344.24	25.9 QP	46.0	-20.1	1.50 V	46	32.3	-6.4
4	730.38	42.7 QP	46.0	-3.3	1.50 V	13	40.8	1.9
5	864.27	33.7 QP	46.0	-12.3	1.99 V	192	29.4	4.3
6	965.17	35.4 QP	54.0	-18.6	1.99 V	6	29.2	6.2

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	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 0.50MHz.

4.2.2 Test Instruments

Test Date: Jul. 19, 2018

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 23, 2017	Nov. 22, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2017	Sep. 04, 2018
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 26, 2018	Feb. 25, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 15, 2017	Aug. 14, 2018
Software ADT	BV ADT_Cond_ V7.3.7.4	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 HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

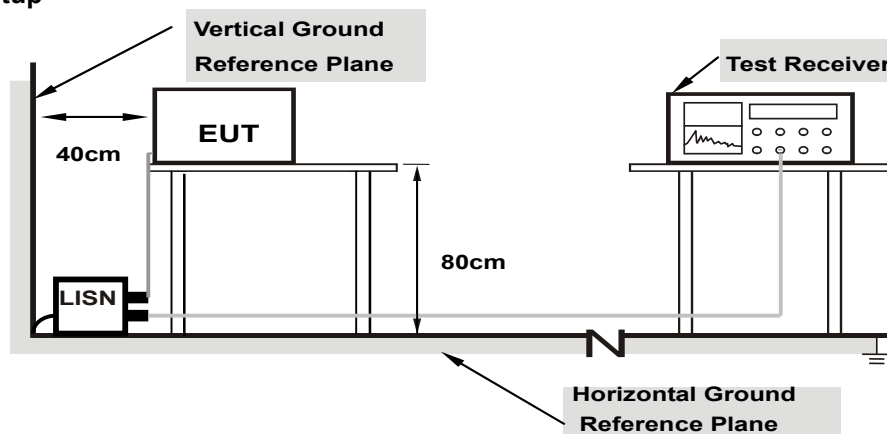
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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 levels under (Limit - 20dB) was not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

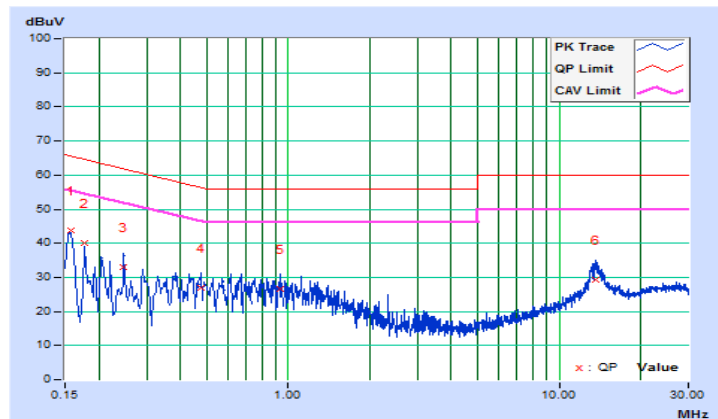
4.2.7 Test Results

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	0.15719	10.10	33.64	22.18	43.74	32.28	65.61
2	0.17737	10.10	29.92	17.67	40.02	27.77	64.61	54.61	-24.59	-26.84
3	0.24775	10.10	22.88	11.91	32.98	22.01	61.83	51.83	-28.85	-29.82
4	0.47453	10.11	16.85	8.24	26.96	18.35	56.43	46.43	-29.47	-28.08
5	0.93591	10.13	16.42	6.80	26.55	16.93	56.00	46.00	-29.45	-29.07
6	13.70206	10.85	18.58	12.48	29.43	23.33	60.00	50.00	-30.57	-26.67

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.

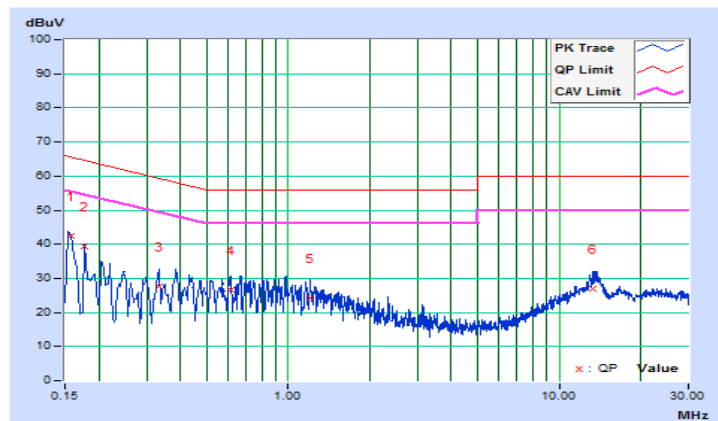


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

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	0.15782	10.09	32.29	21.23	42.38	31.32	65.58
2	0.17737	10.09	29.29	16.97	39.38	27.06	64.61	54.61	-25.23	-27.55
3	0.33377	10.10	17.67	8.51	27.77	18.61	59.36	49.36	-31.59	-30.75
4	0.61220	10.12	16.41	3.62	26.53	13.74	56.00	46.00	-29.47	-32.26
5	1.20570	10.14	14.09	3.08	24.23	13.22	56.00	46.00	-31.77	-32.78
6	13.35407	10.70	16.20	9.93	26.90	20.63	60.00	50.00	-33.10	-29.37

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.



4.3 Transmit Power Measurement

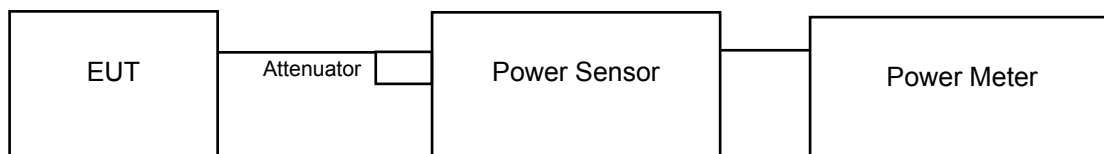
4.3.1 Limits of Transmit Power Measurement

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

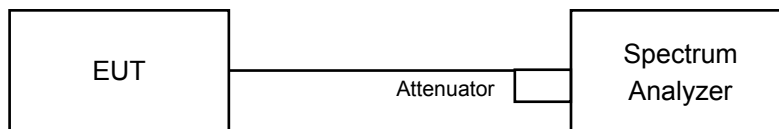
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

For Power Output
 802.11a, 802.11n (HT20), 802.11n (HT40)



For 26dB and Occupied Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11n (HT20), 802.11n (HT40)

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

For 26dB Bandwidth

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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%.

For Occupied Bandwidth

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

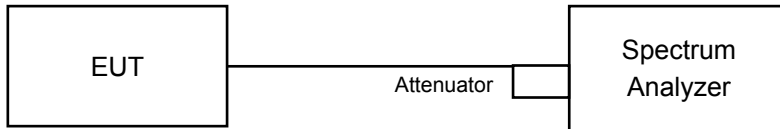
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

Refer to FCC ID: PZWBHT1700BQL.

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Test Result

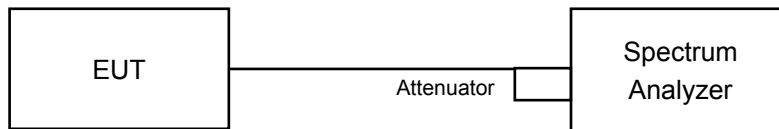
Refer to FCC ID: PZWBHT1700BQL.

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

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

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

Duty cycle of test signal is $< 98\%$

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add $10 \log (1/\text{duty cycle})$

For U-NII-3 band:

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

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

Duty cycle of test signal is $< 98\%$

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

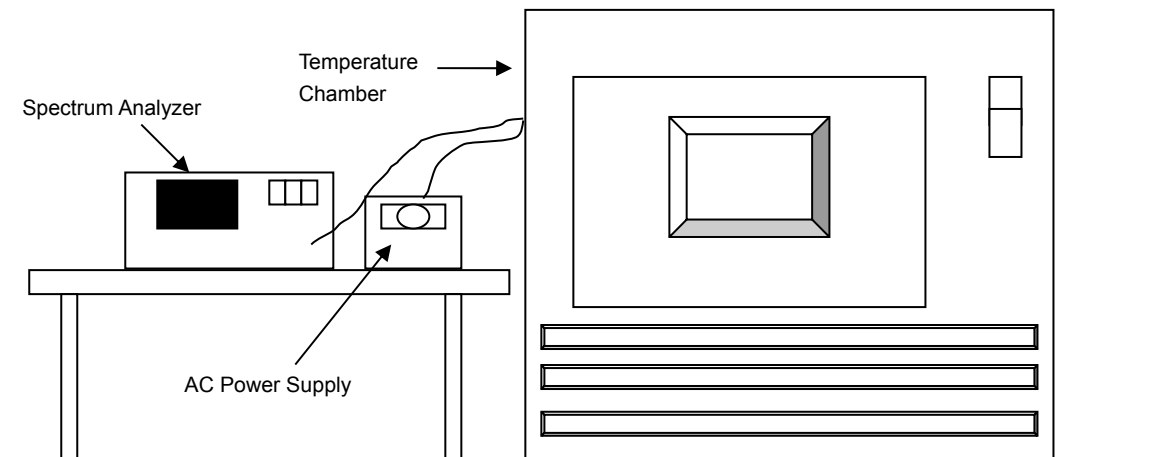
Refer to FCC ID: PZWBHT1700BQL.

4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

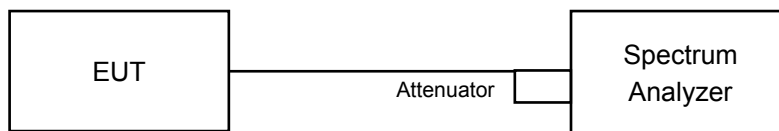
Refer to FCC ID: PZWBHT1700BQL.

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

Measurement Procedure REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

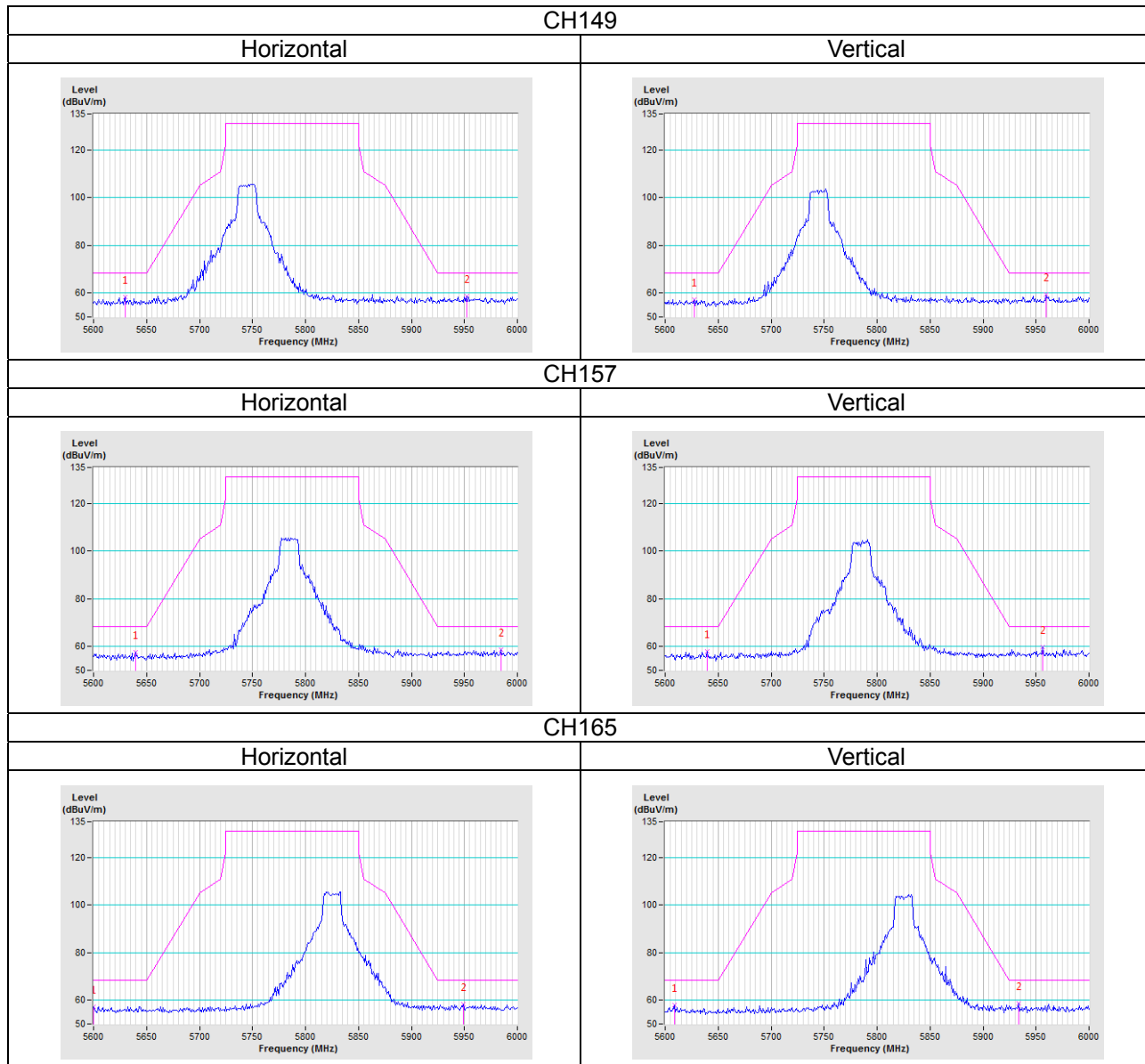
Refer to FCC ID: PZWBHT1700BQL.

5 Pictures of Test Arrangements

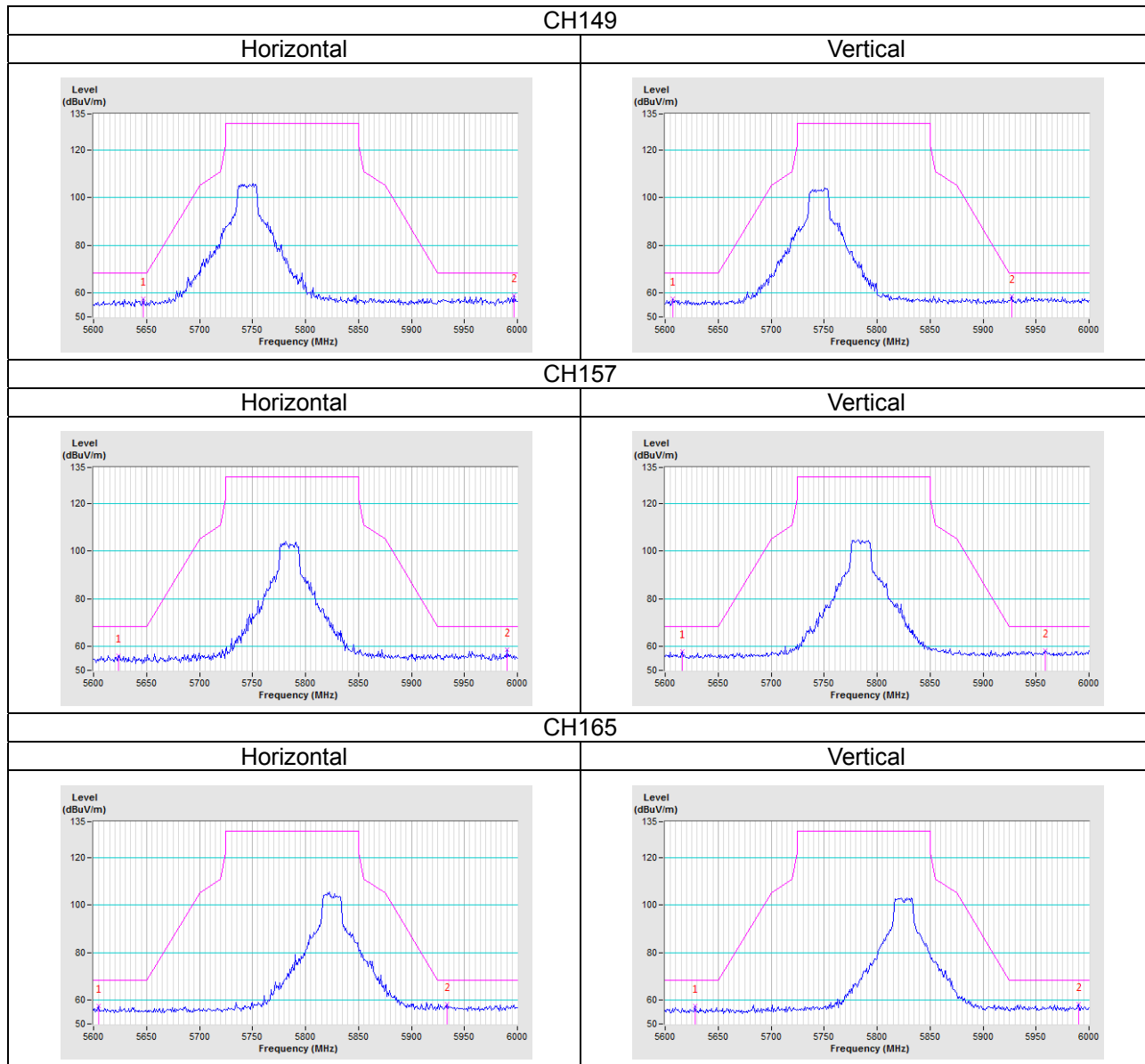
Please refer to the attached file (Test Setup Photo).

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

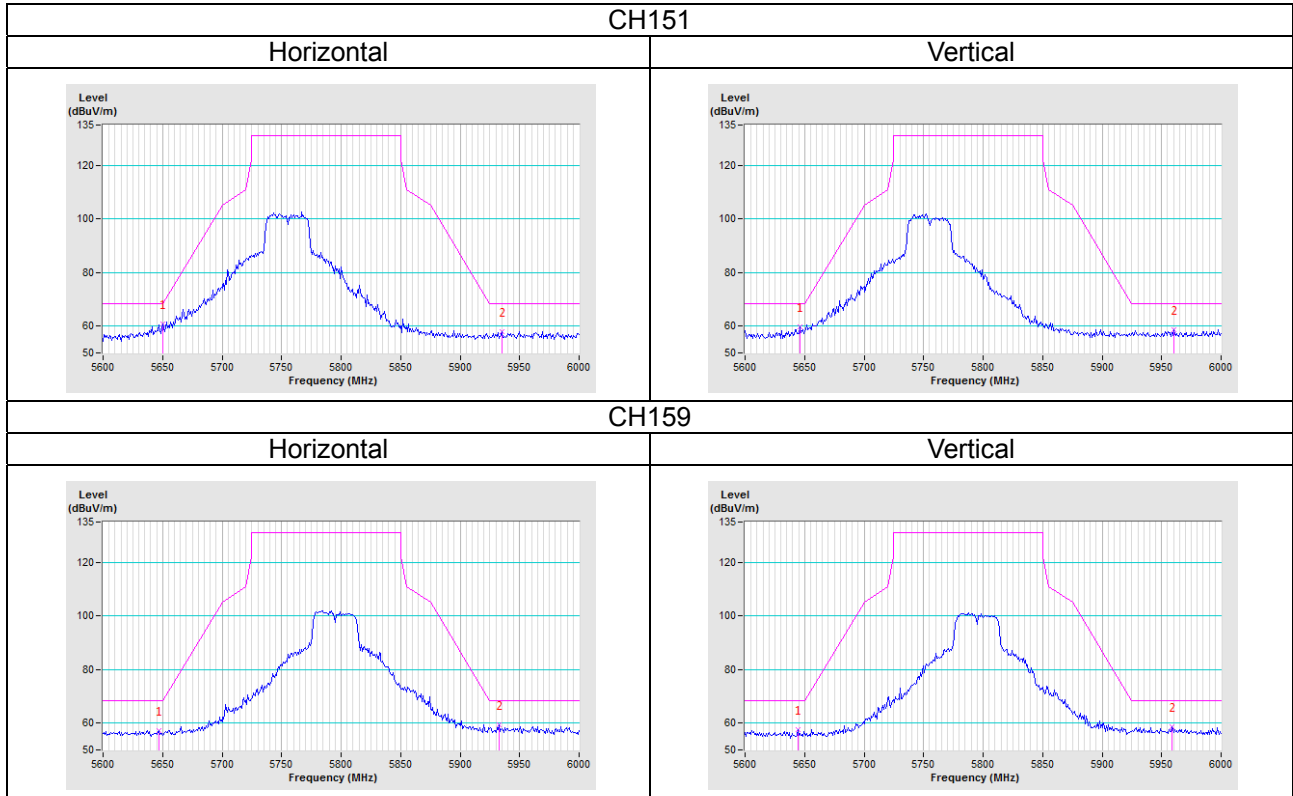
802.11a



802.11n (HT20)



802.11n (HT40)



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 accredited and approved according to ISO/IEC 17025.

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

--- END ---