

FCC Test Report

Report No.: RF180202C21-1 R2

FCC ID: ORS1708010318

Test Model: LKR01-C-303

Series Model: LKR01-YY303 ("Y" can be A-Z, "-", or blank, for marketing purpose)

Received Date: Feb. 02, 2018

Test Date: Feb. 12 ~ Feb. 24, 2018

Issued Date: Apr. 13, 2018

Applicant: SKARDIN INDUSTRIAL CORP.

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



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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	8
3.2.1 Test Mode Applicability and Tested Channel Detail	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	13
3.5 General Description of Applied Standards	13
4 Test Types and Results	14
4.1 Radiated Emission and Bandedge Measurement	14
4.1.1 Limits of Radiated Emission and Bandedge Measurement	14
4.1.2 Test Instruments	15
4.1.3 Test Procedures	16
4.1.4 Deviation from Test Standard	17
4.1.5 Test Set Up	17
4.1.6 EUT Operating Conditions	18
4.1.7 Test Results	19
4.2 Conducted Emission Measurement	53
4.2.1 Limits of Conducted Emission Measurement	53
4.2.2 Test Instruments	53
4.2.3 Test Procedures	54
4.2.4 Deviation from Test Standard	54
4.2.5 Test Setup	54
4.2.6 EUT Operating Conditions	54
4.2.7 Test Results	55
4.3 Transmit Power Measurement	57
4.3.1 Limits of Transmit Power Measurement	57
4.3.2 Test Setup	57
4.3.3 Test Instruments	58
4.3.4 Test Procedure	58
4.3.5 Deviation from Test Standard	58
4.3.6 EUT Operating Conditions	58
4.3.7 Test Result	59
4.4 Occupied Bandwidth Measurement	65
4.4.1 Test Setup	65
4.4.2 Test Instruments	65
4.4.3 Test Procedure	65
4.4.4 Test Result	66
4.5 Peak Power Spectral Density Measurement	68
4.5.1 Limits of Peak Power Spectral Density Measurement	68
4.5.2 Test Setup	68
4.5.3 Test Instruments	68
4.5.4 Test Procedures	69
4.5.5 Deviation from Test Standard	69
4.5.6 EUT Operating Conditions	69
4.5.7 Test Results	70
4.6 Frequency Stability	74
4.6.1 Limits of Frequency Stability Measurement	74

4.6.2 Test Setup	74
4.6.3 Test Instruments	74
4.6.4 Test Procedure	74
4.6.5 Deviation from Test Standard	74
4.6.6 EUT Operating Condition	74
4.6.7 Test Results	75
4.7 6dB Bandwidth Measurement	76
4.7.1 Limits of 6dB Bandwidth Measurement	76
4.7.2 Test Setup	76
4.7.3 Test Instruments	76
4.7.4 Test Procedure	76
4.7.5 Deviation from Test Standard	76
4.7.6 EUT Operating Condition	76
4.7.7 Test Results	77
5 Pictures of Test Arrangements	79
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	80
Appendix – Information on the Testing Laboratories	83

Release Control Record

Issue No.	Description	Date Issued
RF180202C21-1	Original release.	Mar. 01, 2018
RF180202C21-1 R1	Revise model.	Apr. 10, 2018
RF180202C21-1 R2	Revise address.	Apr. 13, 2018

1 Certificate of Conformity

Product: Set Top Box

Brand: DirecTV

Test Model: LKR01-C-303

Series Model: LKR01-YY303 ("Y" can be A-Z, "-", or blank, for marketing purpose)

Sample Status: Engineering sample

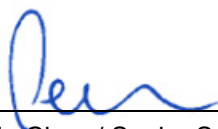
Applicant: SKARDIN INDUSTRIAL CORP.

Test Date: Feb. 12 ~ Feb. 24, 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 / Senior Specialist

Date:

Apr. 13, 2018

Approved by :



Bruce Chen / Project Engineer

Date:

Apr. 13, 2018

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 -16.39dB at 0.47062MHz.
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 -1.0dB at 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is UFL not a standard connector.

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	Set Top Box
Brand	DirecTV
Test Model	LKR01-C-303
Series Model	LKR01-YY303 ("Y" can be A-Z, "-", or blank, for marketing purpose)
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	12 Vdc (adapter)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps
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: 190.723mW 5260~5320MHz: 184.001mW 5500~5700MHz: 194.354mW 5745~5825MHz: 181.191mW
Antenna Type	Main Antenna: PIFA antenna with 4.41 dBi gain Aux. Antenna: PIFA antenna with 4.17 dBi gain
Antenna Connector	UFL
Accessory Device	Remote control
Cable Supplied	1.7m shielded HDMI cable

Note:

1. The following models are provided to this EUT.

Brand	Model	Description
DirecTV	LKR01-C-303	All models are electrically identical, different model names are for marketing purpose.
	LKR01-YY303 ("Y" can be A-Z, "-", or blank, for marketing purpose)	

2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11a	1TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX

* For 802.11a: Main antenna was the worst case for the final tests.

3. The EUT uses following adapter.

Adapter	
Brand	DIRECTV
Model	ADP-48HR B
Input Power	100-240Vac~50/60Hz 1.5A
Output Power	12.0Vdc / 4.0A
Power Line	0.42m AC cable without core 1.42m DC cable with one core

4. 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	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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 was positioned on **X-plane**.

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)
-	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
-	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
-	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
-	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)
-	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)
-	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

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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)
-	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
-	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
-	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
-	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

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	25deg. C, 70%RH	120Vac, 60Hz	Matthew Yang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Greg Lin
PLC	25deg. C, 75%RH	120Vac, 60Hz	Greg Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chris Lin

3.3 Duty Cycle of Test Signal

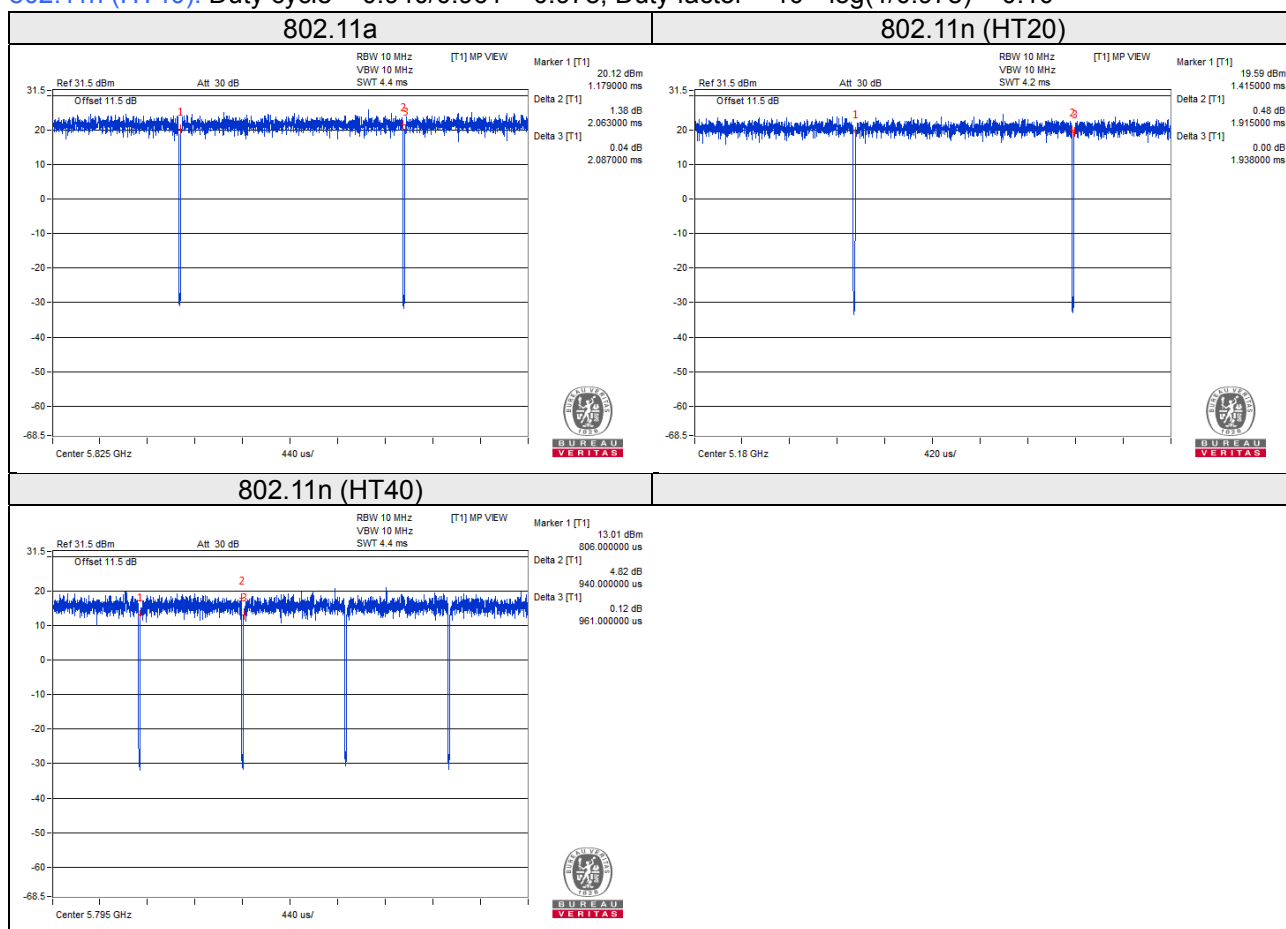
Duty cycle of test signal is $\geq 98\%$, duty factor is not required.

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

802.11a: Duty cycle = $2.063/2.087 = 0.989$

802.11n (HT20): Duty cycle = $1.915/1.938 = 0.988$

802.11n (HT40): Duty cycle = $0.940/0.961 = 0.978$, Duty factor = $10 * \log(1/0.978) = 0.10$



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.

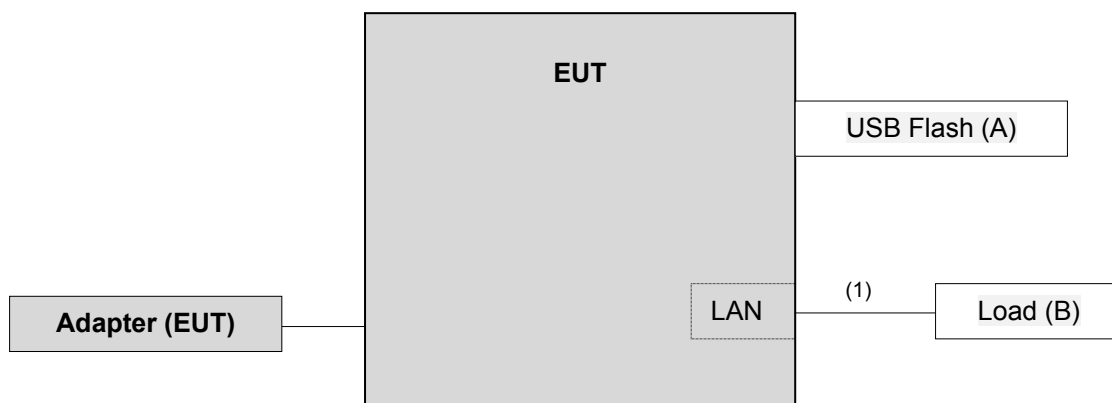
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	USB 3.0 Flash	HP	v250W	01	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-

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.	LAN cable	1	1.5	N	0	-

3.4.1 Configuration of System under Test



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

KDB 662911 D01 Multiple Transmitter Output 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	☒	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}
	☐	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

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_ V7.6.15.9.4	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. Both X and Y axes 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:

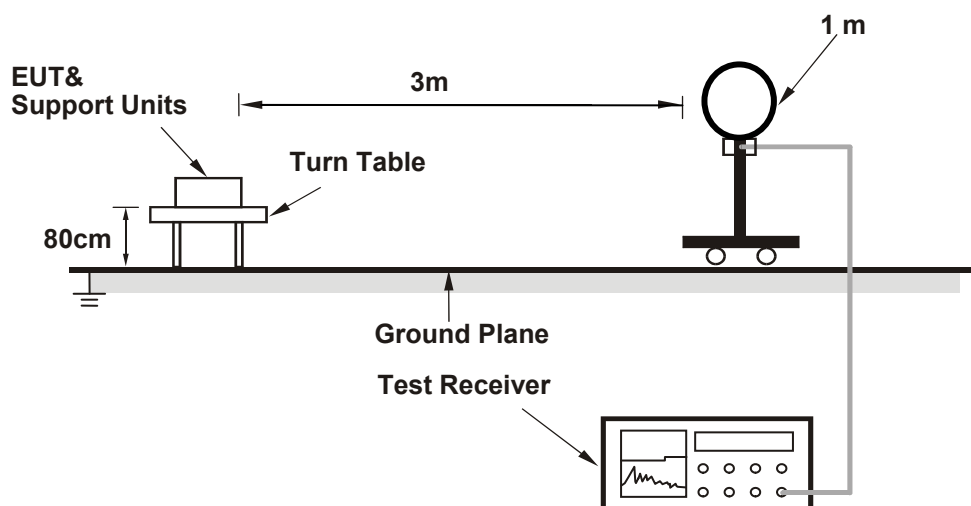
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

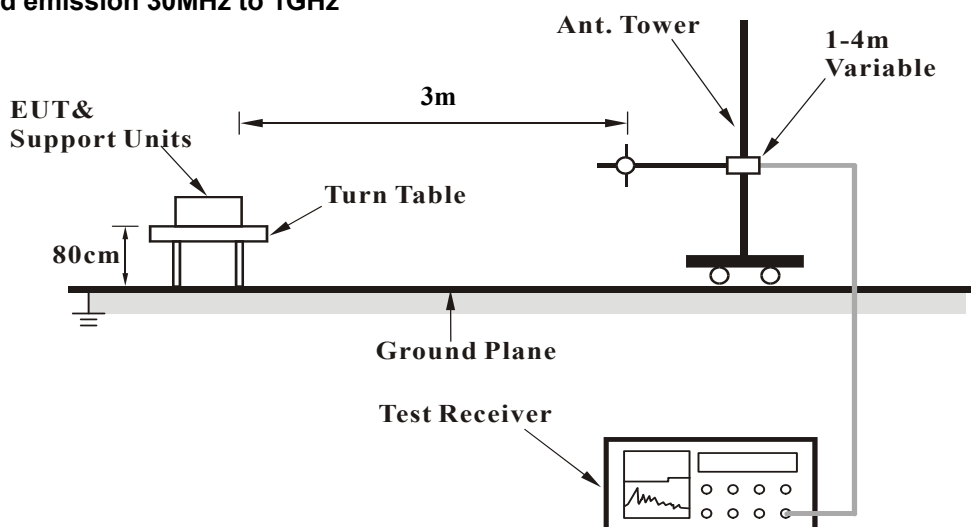
No deviation.

4.1.5 Test Set Up

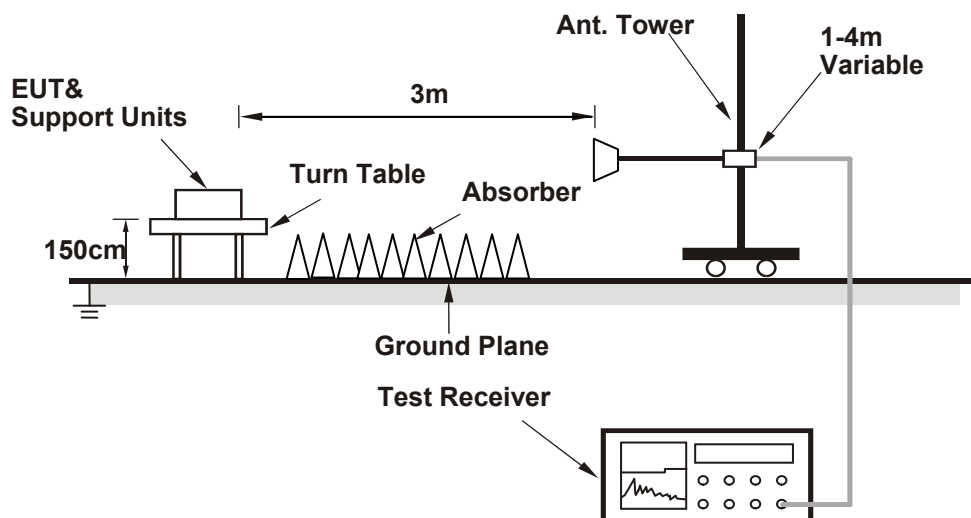
For Radiated emission below 30MHz



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

- Set the EUT under transmission 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	67.1 PK	74.0	-6.9	2.50 H	104	64.5	2.6
2	5150.00	50.2 AV	54.0	-3.8	2.50 H	104	47.6	2.6
3	*5180.00	111.5 PK			1.00 H	112	70.6	40.9
4	*5180.00	101.4 AV			1.00 H	112	60.5	40.9
5	#10360.00	59.5 PK	74.0	-14.5	1.65 H	147	44.7	14.8
6	#10360.00	46.5 AV	54.0	-7.5	1.65 H	147	31.7	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	62.3 PK	74.0	-11.7	3.60 V	184	59.7	2.6
2	5150.00	46.6 AV	54.0	-7.4	3.60 V	184	44.0	2.6
3	*5180.00	107.5 PK			3.91 V	159	66.6	40.9
4	*5180.00	96.7 AV			3.91 V	159	55.8	40.9
5	#10360.00	59.1 PK	74.0	-14.9	2.57 V	216	44.3	14.8
6	#10360.00	46.2 AV	54.0	-7.8	2.57 V	216	31.4	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	111.5 PK			1.02 H	111	70.6	40.9
2	*5200.00	101.0 AV			1.02 H	111	60.1	40.9
3	#10400.00	60.0 PK	74.0	-14.0	1.61 H	155	45.1	14.9
4	#10400.00	46.8 AV	54.0	-7.2	1.61 H	155	31.9	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	107.7 PK			3.88 V	162	66.8	40.9
2	*5200.00	97.0 AV			3.88 V	162	56.1	40.9
3	#10400.00	59.4 PK	74.0	-14.6	2.61 V	224	44.5	14.9
4	#10400.00	46.5 AV	54.0	-7.5	2.61 V	224	31.6	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	111.1 PK			2.62 H	113	70.4	40.7
2	*5240.00	100.4 AV			2.62 H	113	59.7	40.7
3	5350.00	57.7 PK	74.0	-16.3	2.66 H	118	54.9	2.8
4	5350.00	43.9 AV	54.0	-10.1	2.66 H	118	41.1	2.8
5	#10480.00	59.7 PK	74.0	-14.3	1.57 H	150	45.0	14.7
6	#10480.00	46.4 AV	54.0	-7.6	1.57 H	150	31.7	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	107.2 PK			3.86 V	169	66.5	40.7
2	*5240.00	96.5 AV			3.86 V	169	55.8	40.7
3	5350.00	56.0 PK	74.0	-18.0	3.77 V	177	53.2	2.8
4	5350.00	43.4 AV	54.0	-10.6	3.77 V	177	40.6	2.8
5	#10480.00	59.3 PK	74.0	-14.7	2.69 V	210	44.6	14.7
6	#10480.00	46.1 AV	54.0	-7.9	2.69 V	210	31.4	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	57.2 PK	74.0	-16.8	1.07 H	132	54.6	2.6
2	5150.00	44.1 AV	54.0	-9.9	1.07 H	132	41.5	2.6
3	*5260.00	110.1 PK			1.02 H	111	69.4	40.7
4	*5260.00	99.7 AV			1.02 H	111	59.0	40.7
5	#10520.00	57.7 PK	74.0	-16.3	1.42 H	185	42.9	14.8
6	#10520.00	44.1 AV	54.0	-9.9	1.42 H	185	29.3	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	57.0 PK	74.0	-17.0	3.93 V	160	54.4	2.6
2	5150.00	43.5 AV	54.0	-10.5	3.93 V	160	40.9	2.6
3	*5260.00	108.3 PK			3.99 V	167	67.6	40.7
4	*5260.00	96.8 AV			3.99 V	167	56.1	40.7
5	#10520.00	57.3 PK	74.0	-16.7	2.82 V	235	42.5	14.8
6	#10520.00	44.4 AV	54.0	-9.6	2.82 V	235	29.6	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	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	110.4 PK			1.03 H	107	69.8	40.6
2	*5300.00	99.8 AV			1.03 H	107	59.2	40.6
3	10600.00	58.4 PK	74.0	-15.6	1.47 H	180	43.2	15.2
4	10600.00	44.7 AV	54.0	-9.3	1.47 H	180	29.5	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	108.0 PK			3.95 V	171	67.4	40.6
2	*5300.00	97.2 AV			3.95 V	171	56.6	40.6
3	10600.00	57.8 PK	74.0	-16.2	2.79 V	241	42.6	15.2
4	10600.00	45.0 AV	54.0	-9.0	2.79 V	241	29.8	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	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	*5320.00	109.4 PK			1.14 H	99	68.7	40.7
2	*5320.00	99.6 AV			1.14 H	99	58.9	40.7
3	5350.00	57.7 PK	74.0	-16.3	1.05 H	89	54.9	2.8
4	5350.00	45.4 AV	54.0	-8.6	1.05 H	89	42.6	2.8
5	10640.00	58.9 PK	74.0	-15.1	1.38 H	197	43.5	15.4
6	10640.00	45.0 AV	54.0	-9.0	1.38 H	197	29.6	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	108.1 PK			4.00 V	173	67.4	40.7
2	*5320.00	96.9 AV			4.00 V	173	56.2	40.7
3	5350.00	55.7 PK	74.0	-18.3	3.90 V	185	52.9	2.8
4	5350.00	44.0 AV	54.0	-10.0	3.90 V	185	41.2	2.8
5	10640.00	58.2 PK	74.0	-15.8	2.91 V	239	42.8	15.4
6	10640.00	45.1 AV	54.0	-8.9	2.91 V	239	29.7	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.

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	59.1 PK	74.0	-14.9	1.10 H	97	55.9	3.2
2	5460.00	45.3 AV	54.0	-8.7	1.10 H	97	42.1	3.2
3	#5470.00	62.6 PK	74.0	-11.4	1.05 H	103	59.4	3.2
4	#5470.00	48.8 AV	54.0	-5.2	1.05 H	103	45.6	3.2
5	*5500.00	110.7 PK			1.06 H	79	69.2	41.5
6	*5500.00	100.0 AV			1.06 H	79	58.5	41.5
7	11000.00	57.8 PK	74.0	-16.2	1.50 H	201	41.8	16.0
8	11000.00	44.5 AV	54.0	-9.5	1.50 H	201	28.5	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	5460.00	55.7 PK	74.0	-18.3	3.89 V	182	52.5	3.2
2	5460.00	43.7 AV	54.0	-10.3	3.89 V	182	40.5	3.2
3	#5470.00	58.8 PK	74.0	-15.2	3.85 V	178	55.6	3.2
4	#5470.00	46.3 AV	54.0	-7.7	3.85 V	178	43.1	3.2
5	*5500.00	108.4 PK			4.00 V	174	66.9	41.5
6	*5500.00	97.3 AV			4.00 V	174	55.8	41.5
7	11000.00	58.1 PK	74.0	-15.9	3.02 V	285	42.1	16.0
8	11000.00	44.8 AV	54.0	-9.2	3.02 V	285	28.8	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 116	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	*5580.00	110.4 PK			1.16 H	81	68.5	41.9
2	*5580.00	100.0 AV			1.16 H	81	58.1	41.9
3	11160.00	57.7 PK	74.0	-16.3	1.49 H	209	42.0	15.7
4	11160.00	44.5 AV	54.0	-9.5	1.49 H	209	28.8	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	*5580.00	109.0 PK			3.96 V	171	67.1	41.9
2	*5580.00	97.6 AV			3.96 V	171	55.7	41.9
3	11160.00	57.9 PK	74.0	-16.1	2.99 V	278	42.2	15.7
4	11160.00	44.3 AV	54.0	-9.7	2.99 V	278	28.6	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	111.0 PK			1.05 H	74	68.9	42.1
2	*5700.00	100.2 AV			1.05 H	74	58.1	42.1
3	#5725.00	64.8 PK	74.0	-9.2	1.13 H	71	61.1	3.7
4	#5725.00	47.8 AV	54.0	-6.2	1.13 H	71	44.1	3.7
5	11400.00	58.3 PK	74.0	-15.7	1.43 H	198	42.3	16.0
6	11400.00	44.9 AV	54.0	-9.1	1.43 H	198	28.9	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	109.1 PK			3.94 V	168	67.0	42.1
2	*5700.00	98.0 AV			3.94 V	168	55.9	42.1
3	#5725.00	59.9 PK	74.0	-14.1	3.89 V	157	56.2	3.7
4	#5725.00	46.5 AV	54.0	-7.5	3.89 V	157	42.8	3.7
5	11400.00	58.0 PK	74.0	-16.0	3.00 V	288	42.0	16.0
6	11400.00	44.5 AV	54.0	-9.5	3.00 V	288	28.5	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 149	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	#5620.80	58.2 PK	68.2	-10.0	1.31 H	77	54.7	3.5
2	*5745.00	111.7 PK			1.31 H	77	69.5	42.2
3	*5745.00	100.7 AV			1.31 H	77	58.5	42.2
4	#5955.20	58.3 PK	68.2	-9.9	1.31 H	77	53.6	4.7
5	11490.00	58.0 PK	74.0	-16.0	1.97 H	250	41.8	16.2
6	11490.00	44.8 AV	54.0	-9.2	1.97 H	250	28.6	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	#5644.80	56.4 PK	68.2	-11.8	3.97 V	169	53.0	3.4
2	*5745.00	109.6 PK			3.97 V	169	67.4	42.2
3	*5745.00	98.3 AV			3.97 V	169	56.1	42.2
4	#5968.80	59.1 PK	68.2	-9.1	3.97 V	169	54.5	4.6
5	11490.00	58.3 PK	74.0	-15.7	2.77 V	314	42.1	16.2
6	11490.00	45.1 AV	54.0	-8.9	2.77 V	314	28.9	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	#5627.20	58.1 PK	68.2	-10.1	1.12 H	113	54.6	3.5
2	*5785.00	110.6 PK			1.12 H	113	68.2	42.4
3	*5785.00	99.8 AV			1.12 H	113	57.4	42.4
4	#5970.40	57.9 PK	68.2	-10.3	1.12 H	113	53.3	4.6
5	11570.00	58.4 PK	74.0	-15.6	1.94 H	258	42.4	16.0
6	11570.00	45.2 AV	54.0	-8.8	1.94 H	258	29.2	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	#5625.60	57.9 PK	68.2	-10.3	3.76 V	180	54.4	3.5
2	*5785.00	109.1 PK			3.76 V	180	66.7	42.4
3	*5785.00	98.3 AV			3.76 V	180	55.9	42.4
4	#5952.00	58.2 PK	68.2	-10.0	3.76 V	180	53.6	4.6
5	11570.00	58.2 PK	74.0	-15.8	2.74 V	320	42.2	16.0
6	11570.00	45.0 AV	54.0	-9.0	2.74 V	320	29.0	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	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	#5644.80	56.7 PK	68.2	-11.5	1.03 H	75	53.3	3.4
2	*5825.00	110.3 PK			1.03 H	75	67.5	42.8
3	*5825.00	99.8 AV			1.03 H	75	57.0	42.8
4	#5932.00	58.7 PK	68.2	-9.5	1.03 H	75	54.2	4.5
5	11650.00	57.7 PK	74.0	-16.3	1.99 H	263	42.3	15.4
6	11650.00	44.5 AV	54.0	-9.5	1.99 H	263	29.1	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	#5622.40	58.2 PK	68.2	-10.0	3.90 V	175	54.7	3.5
2	*5825.00	108.6 PK			3.90 V	175	65.8	42.8
3	*5825.00	98.2 AV			3.90 V	175	55.4	42.8
4	#5961.60	59.4 PK	68.2	-8.8	3.90 V	175	54.7	4.7
5	11650.00	57.3 PK	74.0	-16.7	3.11 V	301	41.9	15.4
6	11650.00	44.2 AV	54.0	-9.8	3.11 V	301	28.8	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.

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	64.0 PK	74.0	-10.0	2.57 H	111	61.4	2.6
2	5150.00	49.1 AV	54.0	-4.9	2.57 H	111	46.5	2.6
3	*5180.00	110.4 PK			1.09 H	104	69.5	40.9
4	*5180.00	100.0 AV			1.09 H	104	59.1	40.9
5	#10360.00	59.4 PK	74.0	-14.6	1.29 H	188	44.6	14.8
6	#10360.00	46.1 AV	54.0	-7.9	1.29 H	188	31.3	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	61.5 PK	74.0	-12.5	3.84 V	168	58.9	2.6
2	5150.00	47.7 AV	54.0	-6.3	3.84 V	168	45.1	2.6
3	*5180.00	108.3 PK			3.90 V	156	67.4	40.9
4	*5180.00	97.5 AV			3.90 V	156	56.6	40.9
5	#10360.00	58.9 PK	74.0	-15.1	2.68 V	256	44.1	14.8
6	#10360.00	45.8 AV	54.0	-8.2	2.68 V	256	31.0	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	110.7 PK			1.13 H	96	69.8	40.9
2	*5200.00	100.1 AV			1.13 H	96	59.2	40.9
3	#10400.00	60.0 PK	74.0	-14.0	1.33 H	179	45.1	14.9
4	#10400.00	46.4 AV	54.0	-7.6	1.33 H	179	31.5	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	108.5 PK			3.84 V	161	67.6	40.9
2	*5200.00	97.4 AV			3.84 V	161	56.5	40.9
3	#10400.00	59.3 PK	74.0	-14.7	2.71 V	260	44.4	14.9
4	#10400.00	46.1 AV	54.0	-7.9	2.71 V	260	31.2	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 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.6 PK			1.08 H	100	69.9	40.7
2	*5240.00	100.1 AV			1.08 H	100	59.4	40.7
3	5350.00	57.9 PK	74.0	-16.1	2.66 H	118	55.1	2.8
4	5350.00	44.3 AV	54.0	-9.7	2.66 H	118	41.5	2.8
5	#10480.00	59.7 PK	74.0	-14.3	1.35 H	183	45.0	14.7
6	#10480.00	46.1 AV	54.0	-7.9	1.35 H	183	31.4	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	108.5 PK			3.94 V	166	67.8	40.7
2	*5240.00	97.5 AV			3.94 V	166	56.8	40.7
3	5350.00	56.0 PK	74.0	-18.0	3.87 V	182	53.2	2.8
4	5350.00	43.6 AV	54.0	-10.4	3.87 V	182	40.8	2.8
5	#10480.00	59.2 PK	74.0	-14.8	2.77 V	261	44.5	14.7
6	#10480.00	45.8 AV	54.0	-8.2	2.77 V	261	31.1	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	59.0 PK	74.0	-15.0	2.25 H	1	56.4	2.6
2	5150.00	47.7 AV	54.0	-6.3	2.25 H	1	45.1	2.6
3	*5260.00	112.5 PK			1.32 H	359	71.8	40.7
4	*5260.00	100.5 AV			1.32 H	359	59.8	40.7
5	#10520.00	57.8 PK	74.0	-16.2	1.09 H	336	43.0	14.8
6	#10520.00	45.8 AV	54.0	-8.2	1.09 H	336	31.0	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	5150.00	57.8 PK	74.0	-16.2	3.06 V	96	55.2	2.6
2	5150.00	45.4 AV	54.0	-8.6	3.06 V	96	42.8	2.6
3	*5260.00	108.0 PK			3.38 V	161	67.3	40.7
4	*5260.00	97.3 AV			3.38 V	161	56.6	40.7
5	#10520.00	59.3 PK	74.0	-14.7	1.56 V	322	44.5	14.8
6	#10520.00	46.0 AV	54.0	-8.0	1.56 V	322	31.2	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	112.0 PK			1.03 H	84	71.4	40.6
2	*5300.00	101.3 AV			1.03 H	84	60.7	40.6
3	10600.00	59.7 PK	74.0	-14.3	2.62 H	153	44.5	15.2
4	10600.00	46.5 AV	54.0	-7.5	2.62 H	153	31.3	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	108.3 PK			3.69 V	159	67.7	40.6
2	*5300.00	97.4 AV			3.69 V	159	56.8	40.6
3	10600.00	59.5 PK	74.0	-14.5	1.52 V	26	44.3	15.2
4	10600.00	46.4 AV	54.0	-7.6	1.52 V	26	31.2	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	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	*5320.00	110.6 PK			1.27 H	92	69.9	40.7
2	*5320.00	100.0 AV			1.27 H	92	59.3	40.7
3	5350.00	59.1 PK	74.0	-14.9	1.34 H	90	56.3	2.8
4	5350.00	46.2 AV	54.0	-7.8	1.34 H	90	43.4	2.8
5	10640.00	59.0 PK	74.0	-15.0	1.59 H	236	43.6	15.4
6	10640.00	46.7 AV	54.0	-7.3	1.59 H	236	31.3	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	107.9 PK			3.74 V	162	67.2	40.7
2	*5320.00	97.7 AV			3.74 V	162	57.0	40.7
3	5350.00	57.6 PK	74.0	-16.4	3.70 V	152	54.8	2.8
4	5350.00	44.9 AV	54.0	-9.1	3.70 V	152	42.1	2.8
5	10640.00	58.9 PK	74.0	-15.1	1.99 V	222	43.5	15.4
6	10640.00	46.4 AV	54.0	-7.6	1.99 V	222	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	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	59.9 PK	74.0	-14.1	1.10 H	85	56.7	3.2
2	5460.00	46.8 AV	54.0	-7.2	1.10 H	85	43.6	3.2
3	#5470.00	64.8 PK	74.0	-9.2	1.00 H	90	61.6	3.2
4	#5470.00	50.3 AV	54.0	-3.7	1.00 H	90	47.1	3.2
5	*5500.00	111.4 PK			1.07 H	92	69.9	41.5
6	*5500.00	100.8 AV			1.07 H	92	59.3	41.5
7	11000.00	59.9 PK	74.0	-14.1	2.29 H	326	43.9	16.0
8	11000.00	46.9 AV	54.0	-7.1	2.29 H	326	30.9	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	58.0 PK	74.0	-16.0	3.66 V	185	54.8	3.2
2	5460.00	45.4 AV	54.0	-8.6	3.66 V	185	42.2	3.2
3	#5470.00	63.4 PK	74.0	-10.6	3.69 V	169	60.2	3.2
4	#5470.00	48.2 AV	54.0	-5.8	3.69 V	169	45.0	3.2
5	*5500.00	108.5 PK			3.61 V	170	67.0	41.5
6	*5500.00	98.0 AV			3.61 V	170	56.5	41.5
7	11000.00	59.5 PK	74.0	-14.5	1.52 V	226	43.5	16.0
8	11000.00	46.8 AV	54.0	-7.2	1.52 V	226	30.8	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 116	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	*5580.00	111.9 PK			1.45 H	353	70.0	41.9
2	*5580.00	100.4 AV			1.45 H	353	58.5	41.9
3	11160.00	60.0 PK	74.0	-14.0	3.56 H	25	44.3	15.7
4	11160.00	46.3 AV	54.0	-7.7	3.56 H	25	30.6	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	110.8 PK			3.66 V	174	68.9	41.9
2	*5580.00	98.8 AV			3.66 V	174	56.9	41.9
3	11160.00	59.6 PK	74.0	-14.4	2.88 V	152	43.9	15.7
4	11160.00	46.2 AV	54.0	-7.8	2.88 V	152	30.5	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	112.8 PK			1.60 H	350	70.7	42.1
2	*5700.00	101.3 AV			1.60 H	350	59.2	42.1
3	#5725.00	65.5 PK	74.0	-8.5	1.65 H	73	61.8	3.7
4	#5725.00	50.5 AV	54.0	-3.5	1.65 H	73	46.8	3.7
5	11400.00	59.9 PK	74.0	-14.1	1.99 H	122	43.9	16.0
6	11400.00	46.5 AV	54.0	-7.5	1.99 H	122	30.5	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	109.5 PK			3.55 V	196	67.4	42.1
2	*5700.00	98.6 AV			3.55 V	196	56.5	42.1
3	#5725.00	66.6 PK	74.0	-7.4	3.47 V	199	62.9	3.7
4	#5725.00	50.0 AV	54.0	-4.0	3.47 V	199	46.3	3.7
5	11400.00	59.6 PK	74.0	-14.4	1.96 V	89	43.6	16.0
6	11400.00	46.5 AV	54.0	-7.5	1.96 V	89	30.5	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 149	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	#5618.40	58.4 PK	68.2	-9.8	1.96 H	348	54.9	3.5
2	*5745.00	114.0 PK			1.96 H	348	71.8	42.2
3	*5745.00	102.0 AV			1.96 H	348	59.8	42.2
4	#5943.20	58.9 PK	68.2	-9.3	1.96 H	348	54.4	4.5
5	11490.00	60.5 PK	74.0	-13.5	2.36 H	335	44.3	16.2
6	11490.00	46.8 AV	54.0	-7.2	2.36 H	335	30.6	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	#5640.00	58.0 PK	68.2	-10.2	2.55 V	329	54.6	3.4
2	*5745.00	110.8 PK			2.55 V	329	68.6	42.2
3	*5745.00	99.4 AV			2.55 V	329	57.2	42.2
4	#5956.80	58.9 PK	68.2	-9.3	2.55 V	329	54.2	4.7
5	11490.00	59.8 PK	74.0	-14.2	3.33 V	150	43.6	16.2
6	11490.00	47.2 AV	54.0	-6.8	3.33 V	150	31.0	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	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	#5619.20	58.8 PK	68.2	-9.4	1.89 H	348	55.3	3.5
2	*5785.00	114.2 PK			1.89 H	348	71.8	42.4
3	*5785.00	101.5 AV			1.89 H	348	59.1	42.4
4	#5936.00	59.2 PK	68.2	-9.0	1.89 H	348	54.7	4.5
5	11570.00	60.1 PK	74.0	-13.9	2.36 H	126	44.1	16.0
6	11570.00	46.8 AV	54.0	-7.2	2.36 H	126	30.8	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	#5635.20	57.7 PK	68.2	-10.5	2.40 V	327	54.2	3.5
2	*5785.00	110.7 PK			2.40 V	327	68.3	42.4
3	*5785.00	99.2 AV			2.40 V	327	56.8	42.4
4	#5934.40	58.2 PK	68.2	-10.0	2.40 V	327	53.7	4.5
5	11570.00	60.0 PK	74.0	-14.0	3.60 V	155	44.0	16.0
6	11570.00	46.5 AV	54.0	-7.5	3.60 V	155	30.5	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	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	#5627.20	58.0 PK	68.2	-10.2	1.91 H	346	54.5	3.5
2	*5825.00	113.2 PK			1.91 H	346	70.4	42.8
3	*5825.00	101.5 AV			1.91 H	346	58.7	42.8
4	#5943.20	58.6 PK	68.2	-9.6	1.91 H	346	54.1	4.5
5	11650.00	59.0 PK	74.0	-15.0	1.63 H	236	43.6	15.4
6	11650.00	46.4 AV	54.0	-7.6	1.63 H	236	31.0	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	#5612.00	58.3 PK	68.2	-9.9	2.60 V	328	54.8	3.5
2	*5825.00	112.1 PK			2.60 V	328	69.3	42.8
3	*5825.00	100.2 AV			2.60 V	328	57.4	42.8
4	#5972.00	59.1 PK	68.2	-9.1	2.60 V	328	54.5	4.6
5	11650.00	58.9 PK	74.0	-15.1	2.26 V	325	43.5	15.4
6	11650.00	46.3 AV	54.0	-7.7	2.26 V	325	30.9	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	67.7 PK	74.0	-6.3	2.81 H	357	65.1	2.6
2	5150.00	53.0 AV	54.0	-1.0	2.81 H	357	50.4	2.6
3	*5190.00	107.8 PK			1.21 H	358	66.9	40.9
4	*5190.00	96.0 AV			1.21 H	358	55.1	40.9
5	#10380.00	59.4 PK	74.0	-14.6	1.41 H	12	44.6	14.8
6	#10380.00	45.8 AV	54.0	-8.2	1.41 H	12	31.0	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	5150.00	63.2 PK	74.0	-10.8	3.72 V	83	60.6	2.6
2	5150.00	49.7 AV	54.0	-4.3	3.72 V	83	47.1	2.6
3	*5190.00	103.4 PK			3.90 V	177	62.5	40.9
4	*5190.00	92.0 AV			3.90 V	177	51.1	40.9
5	#10380.00	58.9 PK	74.0	-15.1	2.58 V	214	44.1	14.8
6	#10380.00	45.5 AV	54.0	-8.5	2.58 V	214	30.7	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 FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	111.0 PK			1.26 H	1	70.3	40.7
2	*5230.00	99.3 AV			1.26 H	1	58.6	40.7
3	5350.00	57.1 PK	74.0	-16.9	2.77 H	355	54.3	2.8
4	5350.00	44.6 AV	54.0	-9.4	2.77 H	355	41.8	2.8
5	#10460.00	59.5 PK	74.0	-14.5	1.39 H	17	44.7	14.8
6	#10460.00	46.2 AV	54.0	-7.8	1.39 H	17	31.4	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	*5230.00	105.8 PK			3.69 V	186	65.1	40.7
2	*5230.00	95.7 AV			3.69 V	186	55.0	40.7
3	5350.00	56.0 PK	74.0	-18.0	3.78 V	164	53.2	2.8
4	5350.00	43.8 AV	54.0	-10.2	3.78 V	164	41.0	2.8
5	#10460.00	59.0 PK	74.0	-15.0	2.66 V	204	44.2	14.8
6	#10460.00	45.8 AV	54.0	-8.2	2.66 V	204	31.0	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 54	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	61.3 PK	74.0	-12.7	2.87 H	357	58.7	2.6
2	5150.00	47.8 AV	54.0	-6.2	2.87 H	357	45.2	2.6
3	*5270.00	110.7 PK			1.31 H	359	70.1	40.6
4	*5270.00	98.8 AV			1.31 H	359	58.2	40.6
5	#10540.00	58.3 PK	74.0	-15.7	1.84 H	27	43.4	14.9
6	#10540.00	45.7 AV	54.0	-8.3	1.84 H	27	30.8	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	5150.00	59.4 PK	74.0	-14.6	3.79 V	112	56.8	2.6
2	5150.00	46.6 AV	54.0	-7.4	3.79 V	112	44.0	2.6
3	*5270.00	107.4 PK			3.74 V	170	66.8	40.6
4	*5270.00	96.5 AV			3.74 V	170	55.9	40.6
5	#10540.00	58.0 PK	74.0	-16.0	2.79 V	197	43.1	14.9
6	#10540.00	45.4 AV	54.0	-8.6	2.79 V	197	30.5	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	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	*5310.00	108.4 PK			1.34 H	5	67.8	40.6
2	*5310.00	96.5 AV			1.34 H	5	55.9	40.6
3	5350.00	69.2 PK	74.0	-4.8	2.73 H	357	66.4	2.8
4	5350.00	52.8 AV	54.0	-1.2	2.73 H	357	50.0	2.8
5	10620.00	58.4 PK	74.0	-15.6	1.89 H	31	43.1	15.3
6	10620.00	45.9 AV	54.0	-8.1	1.89 H	31	30.6	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	103.7 PK			3.88 V	166	63.1	40.6
2	*5310.00	92.8 AV			3.88 V	166	52.2	40.6
3	5350.00	64.0 PK	74.0	-10.0	3.93 V	157	61.2	2.8
4	5350.00	50.2 AV	54.0	-3.8	3.93 V	157	47.4	2.8
5	10620.00	58.1 PK	74.0	-15.9	2.82 V	191	42.8	15.3
6	10620.00	45.6 AV	54.0	-8.4	2.82 V	191	30.3	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	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	59.8 PK	74.0	-14.2	2.82 H	359	56.6	3.2
2	5460.00	47.7 AV	54.0	-6.3	2.82 H	359	44.5	3.2
3	#5470.00	65.7 PK	74.0	-8.3	2.77 H	353	62.5	3.2
4	#5470.00	52.5 AV	54.0	-1.5	2.77 H	353	49.3	3.2
5	*5510.00	111.1 PK			1.14 H	354	69.5	41.6
6	*5510.00	99.1 AV			1.14 H	354	57.5	41.6
7	11020.00	59.5 PK	74.0	-14.5	1.64 H	47	43.7	15.8
8	11020.00	46.3 AV	54.0	-7.7	1.64 H	47	30.5	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	57.7 PK	74.0	-16.3	3.81 V	130	54.5	3.2
2	5460.00	45.8 AV	54.0	-8.2	3.81 V	130	42.6	3.2
3	#5470.00	62.9 PK	74.0	-11.1	3.66 V	124	59.7	3.2
4	#5470.00	50.2 AV	54.0	-3.8	3.66 V	124	47.0	3.2
5	*5510.00	108.4 PK			3.84 V	165	66.8	41.6
6	*5510.00	96.5 AV			3.84 V	165	54.9	41.6
7	11020.00	59.2 PK	74.0	-14.8	2.68 V	233	43.4	15.8
8	11020.00	46.1 AV	54.0	-7.9	2.68 V	233	30.3	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	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	*5550.00	112.1 PK			1.27 H	355	70.3	41.8
2	*5550.00	99.9 AV			1.27 H	355	58.1	41.8
3	11100.00	60.1 PK	74.0	-13.9	1.59 H	53	44.4	15.7
4	11100.00	46.6 AV	54.0	-7.4	1.59 H	53	30.9	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	108.9 PK			3.68 V	158	67.1	41.8
2	*5550.00	97.2 AV			3.68 V	158	55.4	41.8
3	11100.00	59.9 PK	74.0	-14.1	2.72 V	222	44.2	15.7
4	11100.00	46.4 AV	54.0	-7.6	2.72 V	222	30.7	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	111.7 PK			1.25 H	354	69.9	41.8
2	*5670.00	99.5 AV			1.25 H	354	57.7	41.8
3	#5725.00	61.0 PK	74.0	-13.0	2.76 H	4	57.3	3.7
4	#5725.00	47.6 AV	54.0	-6.4	2.76 H	4	43.9	3.7
5	11340.00	60.2 PK	74.0	-13.8	1.60 H	38	44.2	16.0
6	11340.00	47.1 AV	54.0	-6.9	1.60 H	38	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	108.0 PK			3.53 V	154	66.2	41.8
2	*5670.00	96.3 AV			3.53 V	154	54.5	41.8
3	#5725.00	58.6 PK	74.0	-15.4	3.60 V	142	54.9	3.7
4	#5725.00	45.8 AV	54.0	-8.2	3.60 V	142	42.1	3.7
5	11340.00	59.8 PK	74.0	-14.2	2.74 V	219	43.8	16.0
6	11340.00	46.7 AV	54.0	-7.3	2.74 V	219	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 151	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	#5632.00	57.9 PK	68.2	-10.3	1.49 H	15	54.4	3.5
2	*5755.00	112.6 PK			1.49 H	15	70.3	42.3
3	*5755.00	100.8 AV			1.49 H	15	58.5	42.3
4	#5927.20	59.2 PK	68.2	-9.0	1.49 H	15	54.7	4.5
5	11510.00	58.9 PK	74.0	-15.1	1.91 H	72	42.9	16.0
6	11510.00	46.4 AV	54.0	-7.6	1.91 H	72	30.4	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	#5604.00	57.4 PK	68.2	-10.8	3.81 V	179	53.8	3.6
2	*5755.00	108.3 PK			3.81 V	179	66.0	42.3
3	*5755.00	96.8 AV			3.81 V	179	54.5	42.3
4	#5994.40	57.5 PK	68.2	-10.7	3.81 V	179	52.8	4.7
5	11510.00	58.5 PK	74.0	-15.5	3.14 V	298	42.5	16.0
6	11510.00	45.9 AV	54.0	-8.1	3.14 V	298	29.9	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	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	#5606.40	58.0 PK	68.2	-10.2	1.25 H	348	54.5	3.5
2	*5795.00	112.0 PK			1.25 H	348	69.5	42.5
3	*5795.00	99.9 AV			1.25 H	348	57.4	42.5
4	#5943.20	58.9 PK	68.2	-9.3	1.25 H	348	54.4	4.5
5	11590.00	58.8 PK	74.0	-15.2	1.95 H	76	43.0	15.8
6	11590.00	46.4 AV	54.0	-7.6	1.95 H	76	30.6	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	#5628.80	57.2 PK	68.2	-11.0	3.68 V	176	53.7	3.5
2	*5795.00	107.7 PK			3.68 V	176	65.2	42.5
3	*5795.00	97.3 AV			3.68 V	176	54.8	42.5
4	#5929.60	58.3 PK	68.2	-9.9	3.68 V	176	53.8	4.5
5	11590.00	58.6 PK	74.0	-15.4	3.21 V	295	42.8	15.8
6	11590.00	45.9 AV	54.0	-8.1	3.21 V	295	30.1	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 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	27.8 QP	40.0	-12.2	2.00 H	16	42.9	-15.1
2	243.40	28.0 QP	46.0	-18.0	1.50 H	200	42.5	-14.5
3	323.91	33.8 QP	46.0	-12.2	1.25 H	186	45.5	-11.7
4	567.38	33.9 QP	46.0	-12.1	1.25 H	334	42.3	-8.4
5	718.70	40.2 QP	46.0	-5.8	1.50 H	16	45.7	-5.5
6	891.36	32.1 QP	46.0	-13.9	1.00 H	274	34.8	-2.7
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	30.00	32.6 QP	40.0	-7.4	1.25 V	183	47.7	-15.1
2	323.91	29.8 QP	46.0	-16.2	1.50 V	117	41.5	-11.7
3	567.38	32.1 QP	46.0	-13.9	1.00 V	302	40.5	-8.4
4	713.85	34.7 QP	46.0	-11.3	1.25 V	130	40.3	-5.6
5	891.36	37.3 QP	46.0	-8.7	1.00 V	246	40.0	-2.7
6	985.45	33.9 QP	54.0	-20.1	1.50 V	230	35.1	-1.2

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

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)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 15, 2017	Aug. 14, 2018
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA
Extension Cord	Extension Cord	1-1	Dec. 22, 2017	Dec. 21, 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 Shielded Room 1.

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

4.2.3 Test Procedures

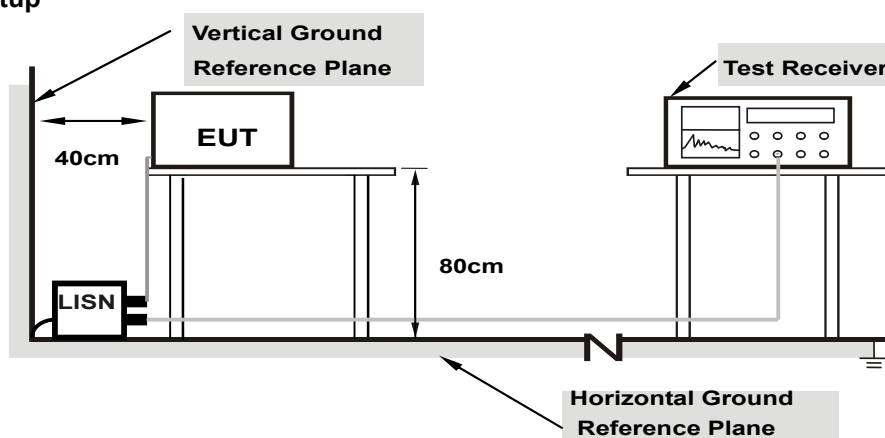
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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.

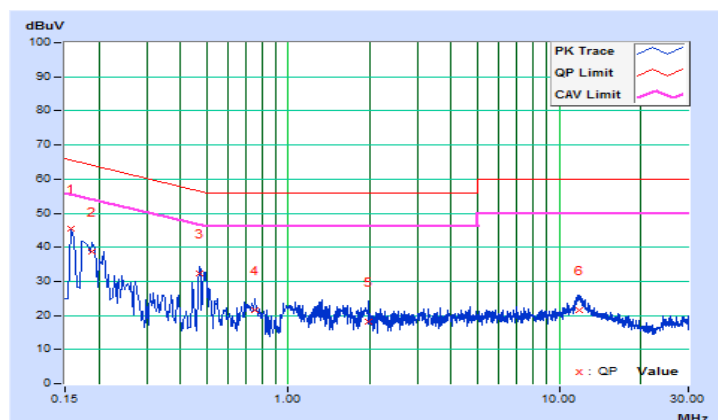
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	10.45	35.15	19.43	45.60	29.88	65.58	55.58	-19.98	-25.70
2	0.18903	10.45	28.30	14.37	38.75	24.82	64.08	54.08	-25.33	-29.26
3	0.47062	10.49	21.89	19.62	32.38	30.11	56.50	46.50	-24.12	-16.39
4	0.75214	10.47	11.10	2.69	21.57	13.16	56.00	46.00	-34.43	-32.84
5	1.96815	10.52	7.55	0.34	18.07	10.86	56.00	46.00	-37.93	-35.14
6	11.83327	10.98	10.51	5.08	21.49	16.06	60.00	50.00	-38.51	-33.94

REMARKS:

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

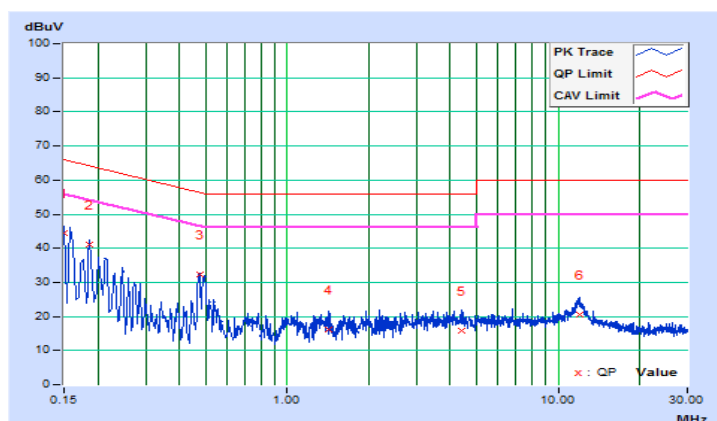


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	34.36	16.91	44.55	27.10	66.00	56.00	-21.45	-28.90
2	0.18519	10.21	30.76	17.78	40.97	27.99	64.25	54.25	-23.28	-26.26
3	0.47412	10.25	22.18	15.66	32.43	25.91	56.44	46.44	-24.01	-20.53
4	1.41684	10.27	5.96	1.10	16.23	11.37	56.00	46.00	-39.77	-34.63
5	4.37671	10.42	5.44	1.94	15.86	12.36	56.00	46.00	-40.14	-33.64
6	12.03249	10.71	9.91	4.50	20.62	15.21	60.00	50.00	-39.38	-34.79

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

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

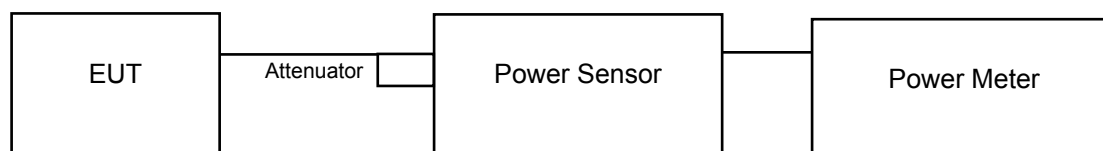
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

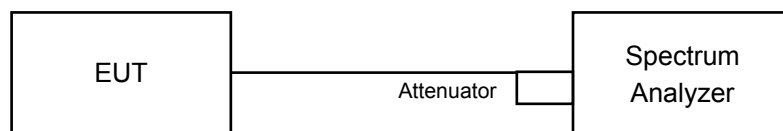
4.3.2 Test Setup

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

Power Output:

802.11a

Chan.	Freq. (MHz)	Conducted Power (mW)	Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	92.897	19.68	24.00	Pass
40	5200	93.325	19.70	24.00	Pass
48	5240	98.628	19.94	24.00	Pass
52	5260	94.842	19.77	24.00	Pass
60	5300	98.628	19.94	24.00	Pass
64	5320	98.855	19.95	24.00	Pass
100	5500	90.365	19.56	24.00	Pass
116	5580	96.383	19.84	24.00	Pass
140	5700	95.499	19.80	24.00	Pass
149	5745	90.782	19.58	30.00	Pass
157	5785	93.972	19.73	30.00	Pass
165	5825	93.756	19.72	30.00	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log(20.99) = 24.22\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(21.00) = 24.22\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(22.87) = 24.59\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(24.77) = 24.94\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(21.01) = 24.22\text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log(23.83) = 24.77\text{ dBm} > 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	19.89	19.23	181.252	22.58	24.00	Pass
40	5200	19.97	19.29	184.230	22.65	24.00	Pass
48	5240	19.94	19.30	183.742	22.64	24.00	Pass
52	5260	19.96	19.29	184.001	22.65	24.00	Pass
60	5300	19.87	19.01	176.667	22.47	24.00	Pass
64	5320	19.95	19.11	180.325	22.56	24.00	Pass
100	5500	19.96	19.30	184.197	22.65	24.00	Pass
116	5580	19.86	19.02	176.627	22.47	24.00	Pass
140	5700	19.99	19.03	179.753	22.55	24.00	Pass
149	5745	19.97	19.13	181.158	22.58	30.00	Pass
157	5785	19.79	19.21	178.648	22.52	30.00	Pass
165	5825	19.73	19.16	176.386	22.46	30.00	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(22.09) = 24.44\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(21.29) = 24.28\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(22.89) = 24.60\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(25.94) = 25.14\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(24.80) = 24.94\text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log(25.16) = 25.01\text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(21.03) = 24.23\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(21.06) = 24.23\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(21.31) = 24.29\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(21.64) = 24.35\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(21.00) = 24.22\text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log(21.13) = 24.25\text{ dBm} > 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	16.27	16.44	86.419	19.37	24.00	Pass
46	5230	19.61	19.97	190.723	22.80	24.00	Pass
54	5270	19.36	19.76	180.922	22.57	24.00	Pass
62	5310	18.19	18.62	138.695	21.42	24.00	Pass
102	5510	17.94	18.29	129.683	21.13	24.00	Pass
110	5550	19.41	19.95	186.152	22.70	24.00	Pass
134	5670	19.80	19.95	194.354	22.89	24.00	Pass
151	5755	19.29	19.68	177.815	22.50	30.00	Pass
159	5795	19.25	19.87	181.191	22.58	30.00	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log(51.32) = 28.10\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(47.60) = 27.78\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(51.66) = 28.13\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(49.54) = 27.95\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(51.35) = 28.11\text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log(48.59) = 27.87\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(46.28) = 27.65\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(47.04) = 27.72\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(49.14) = 27.91\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(51.87) = 28.15\text{ dBm} > 24\text{dBm}$

26dB Bandwidth:

802.11a

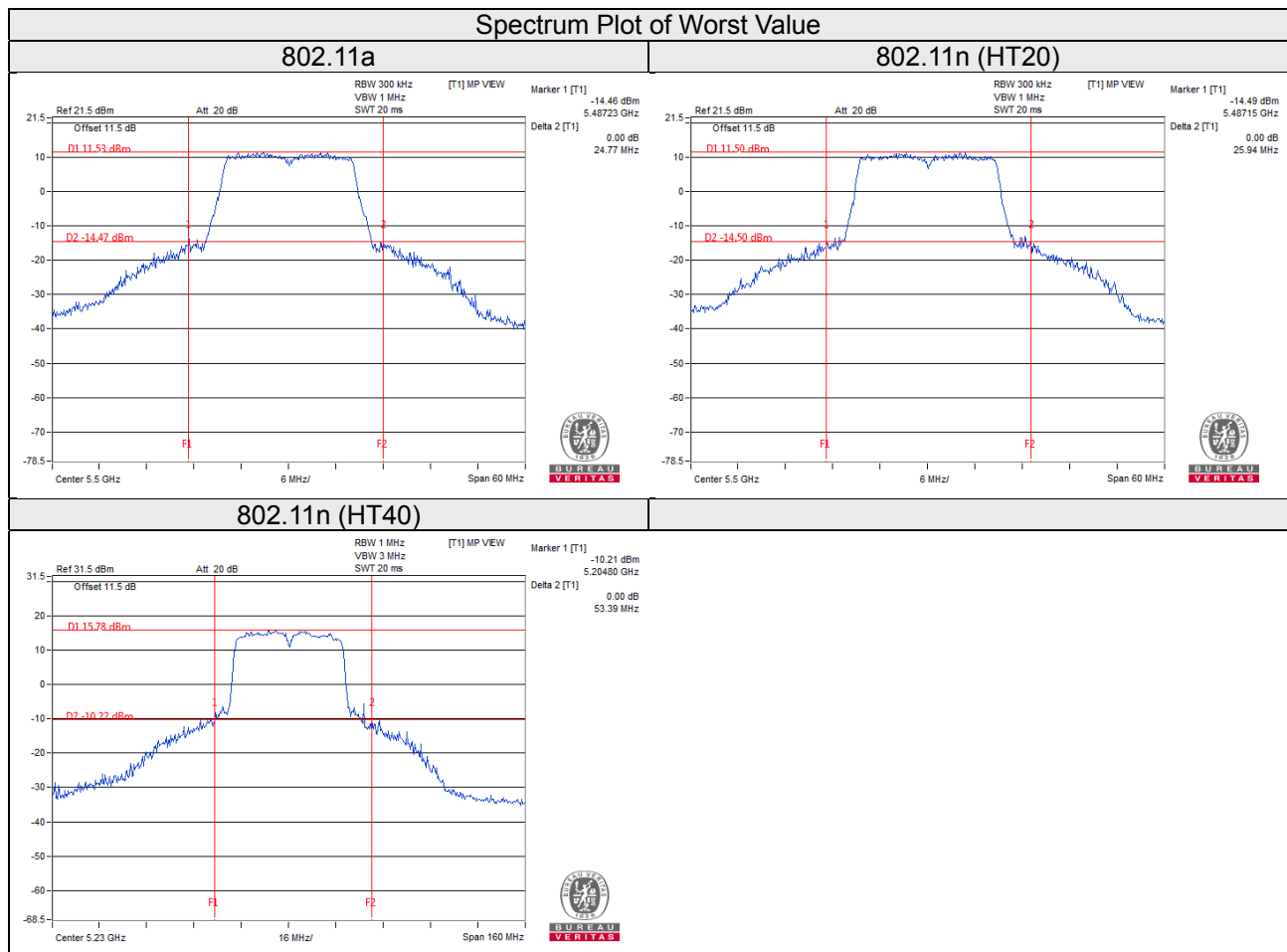
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	22.79
40	5200	20.93
48	5240	21.02
52	5260	20.99
60	5300	21.00
64	5320	22.87
100	5500	24.77
116	5580	21.01
140	5700	23.83

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	23.36	21.48
40	5200	22.68	21.11
48	5240	25.37	21.41
52	5260	22.09	21.03
60	5300	21.29	21.06
64	5320	22.89	21.31
100	5500	25.94	21.64
116	5580	24.80	21.00
140	5700	25.16	21.13

802.11n (HT40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	42.25	45.21
46	5230	53.39	52.98
54	5270	51.32	48.59
62	5310	47.60	46.28
102	5510	51.66	47.04
110	5550	49.54	49.14
134	5670	51.35	51.87



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	98.855	19.95
5470~5725	96.383	19.84

802.11n (HT20)

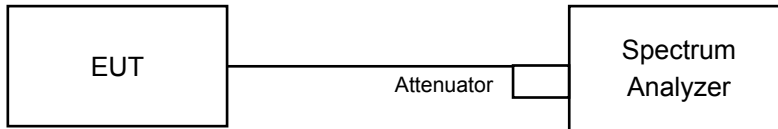
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	184.001	22.65
5470~5725	184.197	22.65

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	180.922	22.57
5470~5725	194.354	22.89

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

802.11a

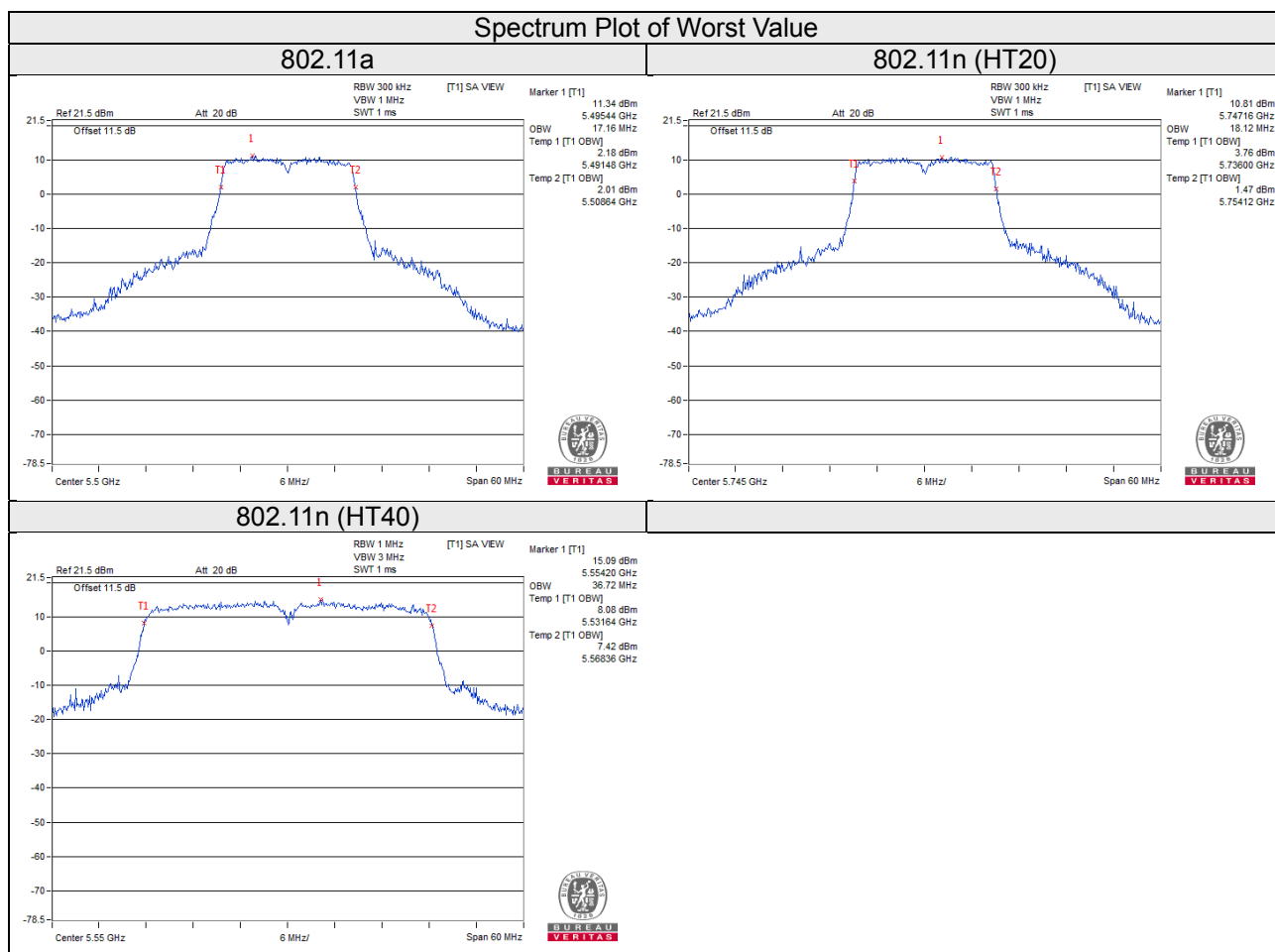
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.04
40	5200	17.04
48	5240	17.04
52	5260	17.04
60	5300	17.04
64	5320	17.04
100	5500	17.16
116	5580	17.04
140	5700	17.16
149	5745	17.04
157	5785	17.04
165	5825	17.04

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.00	17.88
40	5200	18.00	17.88
48	5240	18.00	17.88
52	5260	18.00	17.76
60	5300	18.00	17.88
64	5320	18.00	17.88
100	5500	18.00	17.88
116	5580	18.00	17.88
140	5700	18.00	17.76
149	5745	18.12	17.88
157	5785	18.00	17.88
165	5825	18.00	17.76

802.11n (HT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.36	36.36
46	5230	36.60	36.72
54	5270	36.60	36.60
62	5310	36.60	36.60
102	5510	36.48	36.72
110	5550	36.72	36.60
134	5670	36.60	36.60
151	5755	36.60	36.60
159	5795	36.60	36.72

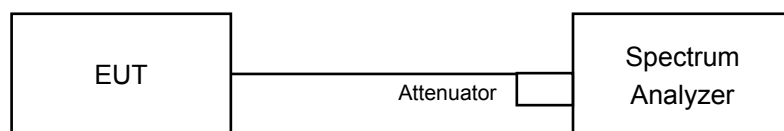


4.5 Peak Power Spectral Density Measurement

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 1) power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz} / 300 \text{ kHz})$.
- 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 $\text{BWCF} = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- 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

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

802.11a

Chan.	Freq. (MHz)	PSD (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	5.76	11	Pass
40	5200	5.67	11	Pass
48	5240	6.02	11	Pass
52	5260	6.33	11	Pass
60	5300	6.56	11	Pass
64	5320	6.58	11	Pass
100	5500	7.15	11	Pass
116	5580	6.05	11	Pass
140	5700	6.50	11	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	5.32	5.91	8.64	9.58	Pass
40	5200	5.36	6.06	8.73	9.58	Pass
48	5240	5.97	5.86	8.93	9.58	Pass
52	5260	5.99	5.94	8.98	9.58	Pass
60	5300	6.12	6.10	9.12	9.58	Pass
64	5320	6.27	6.14	9.22	9.58	Pass
100	5500	6.27	6.68	9.49	9.58	Pass
116	5580	5.92	5.16	8.57	9.58	Pass
140	5700	6.51	5.64	9.11	9.58	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $4.41\text{dBi} + 10\log(2) = 7.42\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11 - (7.42 - 6) = 9.58\text{dBm}$.

802.11n (HT40)

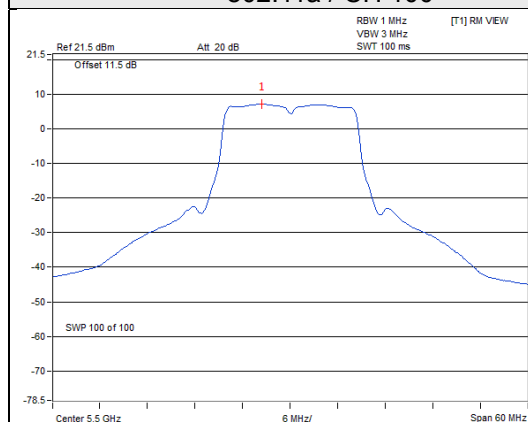
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	1.60	1.76	0.10	4.79	9.58	Pass
46	5230	4.99	4.88	0.10	8.04	9.58	Pass
54	5270	5.04	5.02	0.10	8.14	9.58	Pass
62	5310	3.70	3.65	0.10	6.78	9.58	Pass
102	5510	4.27	4.20	0.10	7.34	9.58	Pass
110	5550	4.18	4.07	0.10	7.23	9.58	Pass
134	5670	4.37	4.24	0.10	7.41	9.58	Pass

Note:

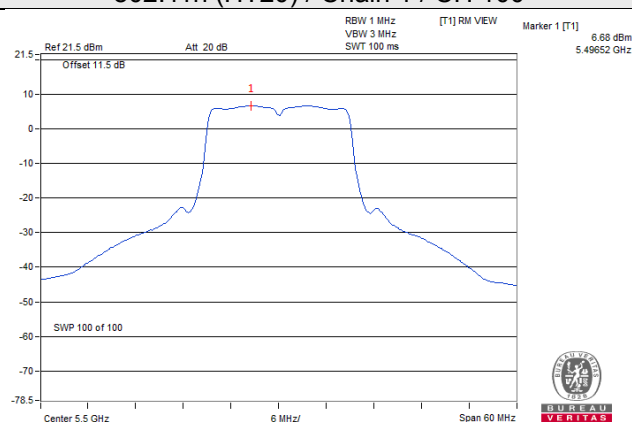
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $4.41\text{dBi} + 10\log(2) = 7.42\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11 - (7.42 - 6) = 9.58\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

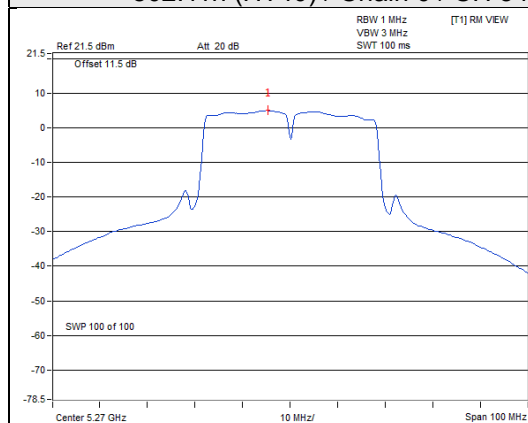
802.11a / CH 100



802.11n (HT20) / Chain 1 / CH 100



802.11n (HT40) / Chain 0 / CH 54



For U-NII-3 band:
802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)		
149	5745	-1.55	0.67	30.00	Pass
157	5785	-2.26	-0.04	30.00	Pass
165	5825	-2.18	0.04	30.00	Pass

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	149	5745	-1.36	0.86	3.01	3.87	28.58	Pass
	157	5785	-2.18	0.04	3.01	3.05	28.58	Pass
	165	5825	-1.87	0.35	3.01	3.36	28.58	Pass
1	149	5745	-2.45	-0.23	3.01	2.78	28.58	Pass
	157	5785	-3.33	-1.11	3.01	1.90	28.58	Pass
	165	5825	-3.29	-1.07	3.01	1.94	28.58	Pass

Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 5745~5825MHz: Directional gain = $4.41\text{dBi} + 10\log(2) = 7.42\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30 - (7.42 - 6) = 28.58\text{dBm}$.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	151	5755	-3.56	-1.34	3.01	0.10	1.77	28.58	Pass
	159	5795	-4.29	-2.07	3.01	0.10	1.04	28.58	Pass
1	151	5755	-3.45	-1.23	3.01	0.10	1.88	28.58	Pass
	159	5795	-4.11	-1.89	3.01	0.10	1.22	28.58	Pass

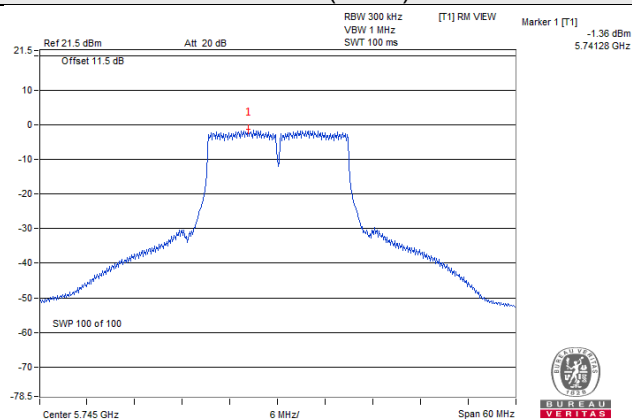
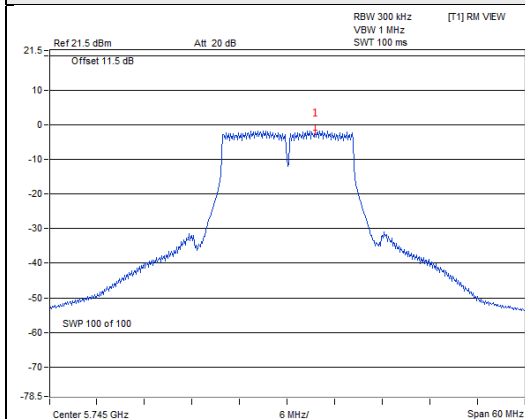
Note:

- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 5745~5825MHz: Directional gain = $4.41\text{dBi} + 10\log(2) = 7.42\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30 - (7.42 - 6) = 28.58\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

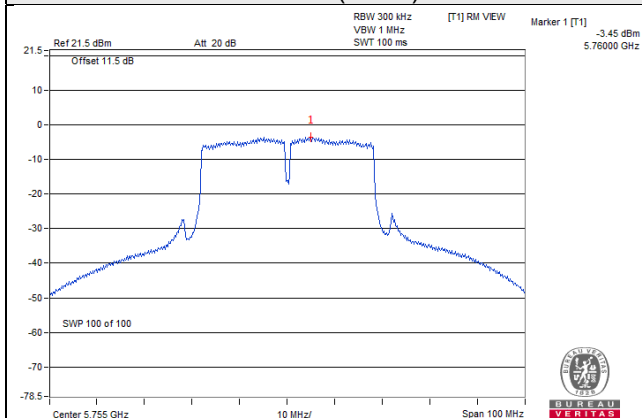
Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)

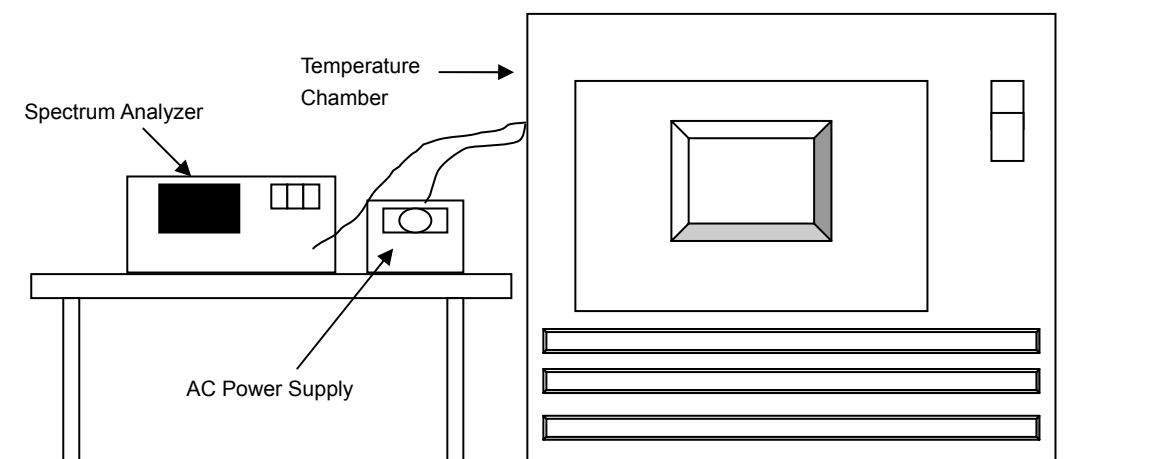


4.6 Frequency Stability

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

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5179.9893	Pass	5179.9893	Pass	5179.9884	Pass	5179.9918	Pass
40	120	5179.9842	Pass	5179.9879	Pass	5179.9835	Pass	5179.9866	Pass
30	120	5180.0179	Pass	5180.0154	Pass	5180.0192	Pass	5180.0202	Pass
20	120	5180.0087	Pass	5180.0117	Pass	5180.0102	Pass	5180.0098	Pass
10	120	5179.9769	Pass	5179.9761	Pass	5179.9755	Pass	5179.9747	Pass
0	120	5179.9851	Pass	5179.9836	Pass	5179.9865	Pass	5179.9875	Pass

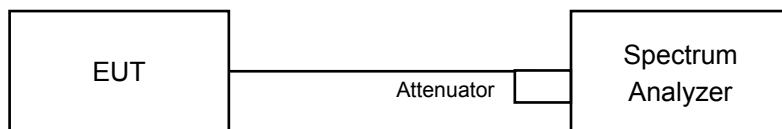
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5180.0079	Pass	5180.0109	Pass	5180.0108	Pass	5180.0107	Pass
	120	5180.0087	Pass	5180.0117	Pass	5180.0102	Pass	5180.0098	Pass
	102	5180.0087	Pass	5180.0125	Pass	5180.0104	Pass	5180.0090	Pass

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

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.43	0.5	Pass
157	5785	16.43	0.5	Pass
165	5825	16.47	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.63	17.64	0.5	Pass
157	5785	17.65	17.64	0.5	Pass
165	5825	17.68	17.63	0.5	Pass

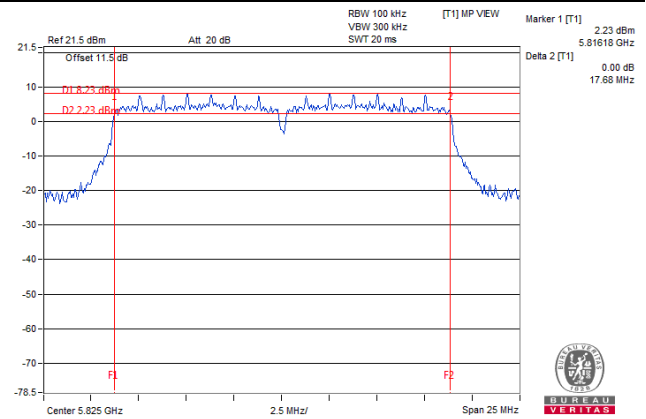
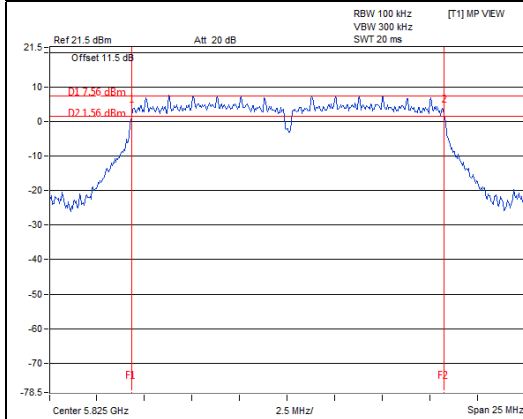
802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.88	35.94	0.5	Pass
159	5795	36.34	36.11	0.5	Pass

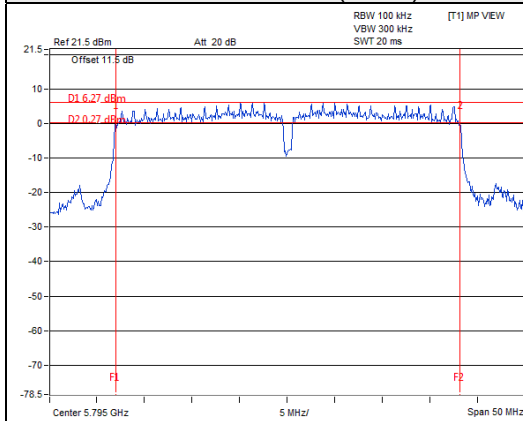
Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)

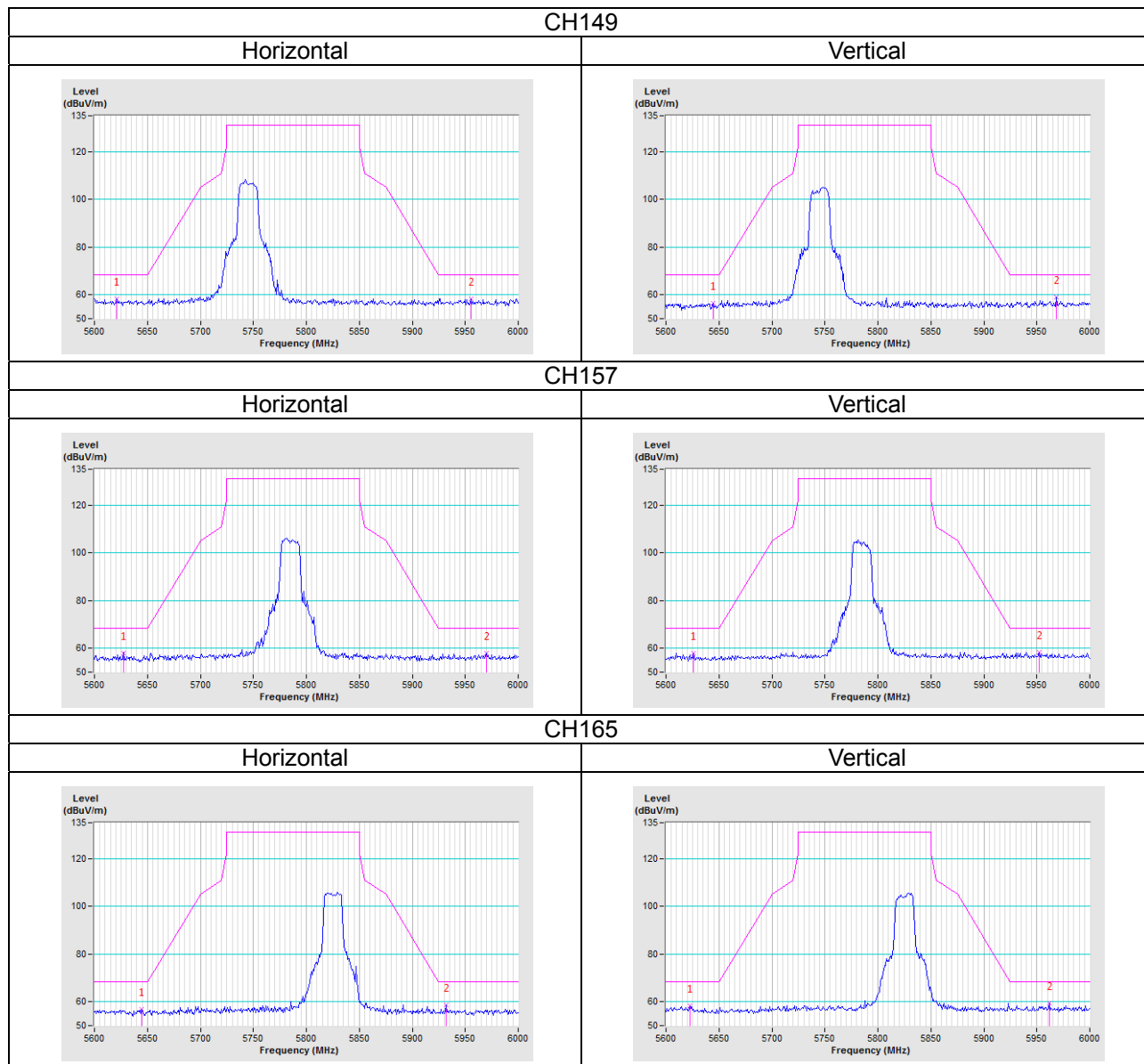


5 Pictures of Test Arrangements

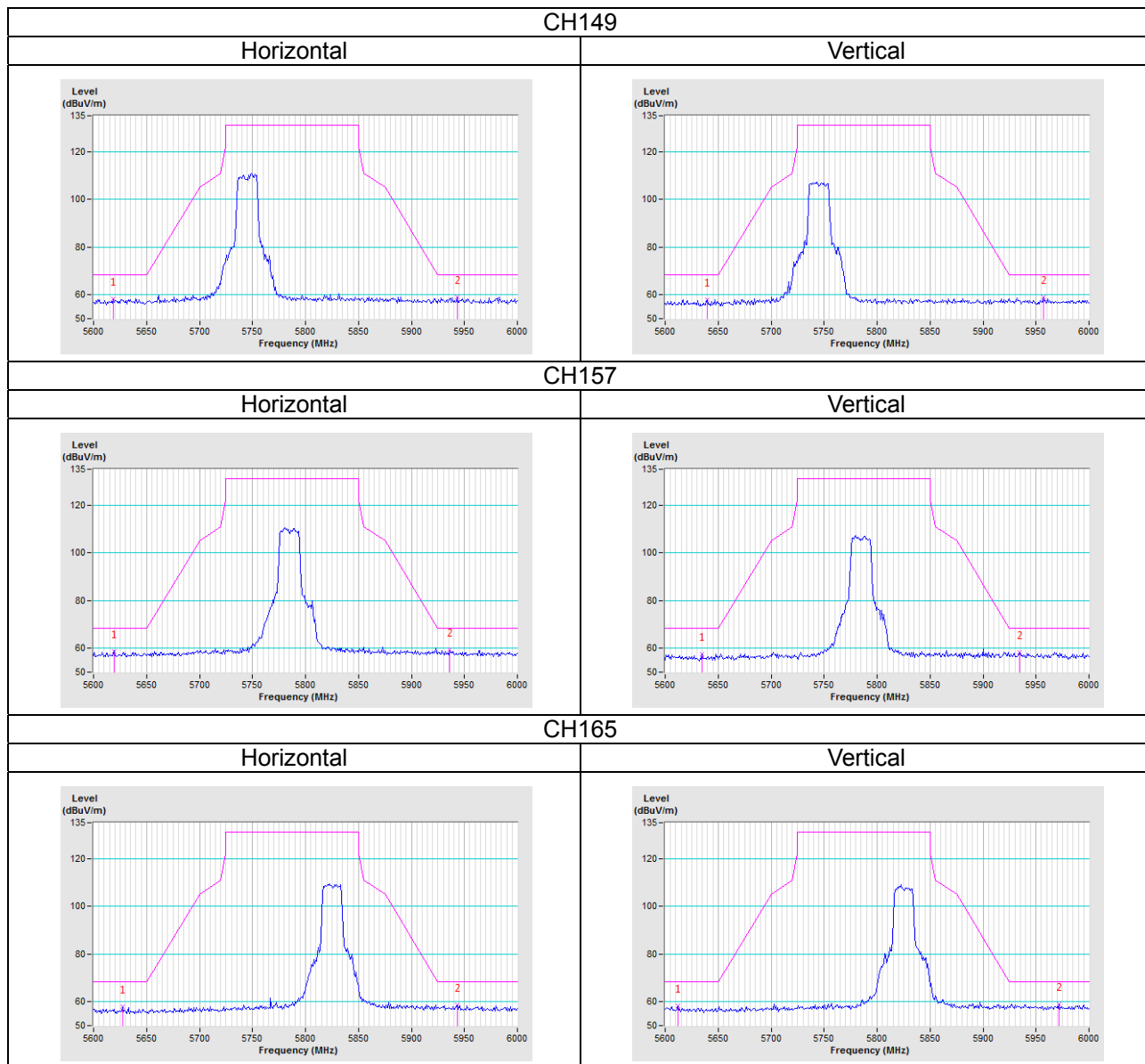
Please refer to the attached file (Test Setup Photo).

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

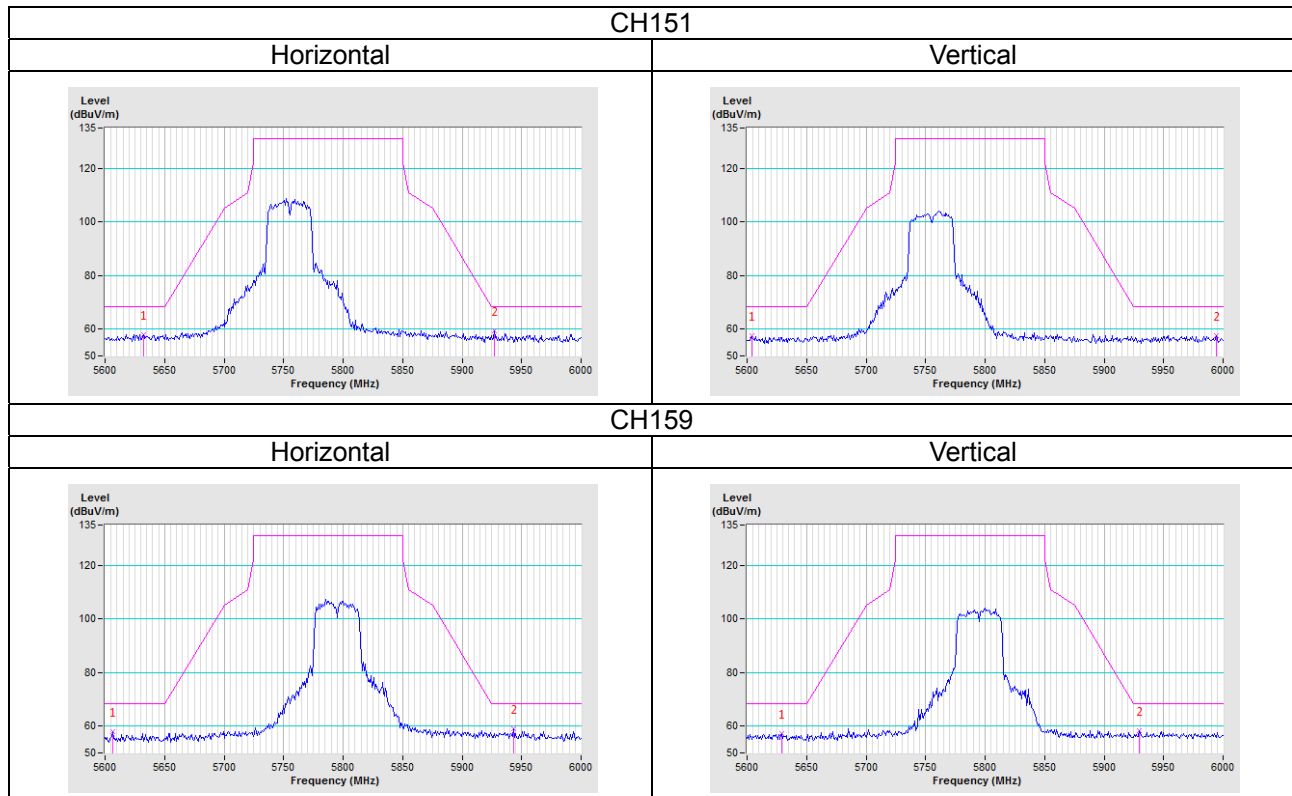
802.11a



802.11n (HT20)



802.11n (HT40)



Appendix – Information on the Testing Laboratories

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

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

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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.

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