

FCC Test Report (WLAN)

Report No.: RF170605E03-1

FCC ID: JNZS00157

Test Model: S-00157

Received Date: June 05, 2017

Test Date: June 15 to Aug. 30, 2017

Issued Date: Aug. 04, 2017

Applicant: LOGITECH FAR EAST LTD.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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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	9
3.2.1 Test Mode Applicability and Tested Channel Detail	11
3.3 Duty Cycle of Test Signal	13
3.4 Description of Support Units	14
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standard	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement.....	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedure	21
4.1.4 Deviation from Test Standard	21
4.1.5 Test Setup.....	22
4.1.6 EUT Operating Condition	23
4.1.7 Test Results	24
4.2 Conducted Emission Measurement	61
4.2.1 Limits of Conducted Emission Measurement	61
4.2.2 Test Instruments	61
4.2.3 Test Procedure	62
4.2.4 Deviation from Test Standard	62
4.2.5 Test Setup.....	62
4.2.6 EUT Operating Condition	62
4.2.7 Test Results (Mode 1).....	63
4.3 Transmit Power Measurement	65
4.3.1 Limits of Transmit Power Measurement	65
4.3.2 Test Setup.....	65
4.3.3 Test Instruments	65
4.3.4 Test Procedure	66
4.3.5 Deviation from Test Standard	66
4.3.6 EUT Operating Condition	66
4.3.7 Test Result.....	67
4.4 Occupied Bandwidth Measurement	74
4.4.1 Test Setup.....	74
4.4.2 Test Instruments	74
4.4.3 Test Procedure	74
4.4.4 Test Results	75
4.5 Peak Power Spectral Density Measurement	80
4.5.1 Limits of Peak Power Spectral Density Measurement	80
4.5.2 Test Setup.....	80
4.5.3 Test Instruments	80
4.5.4 Test Procedure	81
4.5.5 Deviation from Test Standard	81
4.5.6 EUT Operating Condition	81
4.5.7 Test Results	82
4.6 Frequency Stability Measurement.....	87
4.6.1 Limits of Frequency Stability Measurement	87

4.6.2 Test Setup.....	87
4.6.3 Test Instruments	87
4.6.4 Test Procedure	87
4.6.5 Deviation from Test Standard	87
4.6.6 EUT Operating Condition	87
4.6.7 Test Results	88
4.7 6dB Bandwidth Measurment.....	89
4.7.1 Limits of 6dB Bandwidth Measurement.....	89
4.7.2 Test Setup.....	89
4.7.3 Test Instruments	89
4.7.4 Test Procedure	89
4.7.5 Deviation from Test Standard	89
4.7.6 EUT Operating Condition	89
4.7.7 Test Results	90
5 Pictures of Test Arrangements.....	92
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	93
Appendix – Information on the Testing Laboratories	96

Release Control Record

Issue No.	Description	Date Issued
RF170605E03-1	Original release.	Aug. 04, 2017

1 Certificate of Conformity

Product: Wireless Speaker

Brand: ULTIMATE EARS

Test Model: S-00157

Sample Status: ENGINEERING SAMPLE

Applicant: LOGITECH FAR EAST LTD.

Test Date: June 15 to Aug. 30, 2017

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

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

Prepared by : Cindy Hsin , **Date:** Aug. 04, 2017
Cindy Hsin / Specialist

Approved by : May Chen , **Date:** Aug. 04, 2017
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.79dB at 0.15000MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5725.00MHz, 17355.00MHz, 15600.00MHz, 15900.00MHz, 15540.00MHz, 15780.00MHz, 15960.00MHz, 16740.00MHz, 15690.00MHz, 15810.00MHz, 5350.00MHz, 16650.00MHz, 17265.00MHz
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.30 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.16 dB
	6GHz ~ 18GHz	4.91 dB
	18GHz ~ 40GHz	5.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Speaker
Brand	ULTIMATE EARS
PMN	MEGABLAST
Test Model	S-00157
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 7.2V from battery DC 5V / 12V from power adapter DC 5V from Charging Dock
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 150Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50GHz ~ 5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20): 25 802.11n (HT40): 12
Output Power	2.4GHz: 274.789mW 5.18 ~ 5.24GHz: 49.545mW 5.26 ~ 5.32GHz: 47.534mW 5.5 ~ 5.72GHz: 50.582mW 5.745 ~ 5.825GHz: 67.608mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1 Charging Dock x 1
Data Cable Supplied	USB to Micro USB cable (Unshielded, 1.2m) x 1

Note:

1. The EUT may have a lot of colors for marketing requirement.
2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	Bluetooth
2	WLAN 5GHz	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. The EUT could be supplied with 7.2V battery, power adapter or charging dock as the following table:

Adapter		
Brand Name	Model No.	Spec.
ULTIMATE EARS	AD2026J20	AC Input: 100-240Vac, 50/60Hz, 0.5A DC Output: 5V, 2A or 9V, 2A or 12V, 1.5A DC output cable shielded, 1.2m
Battery		
Brand Name	Model No.	Spec.
SANYO ENERGY (SUZHOU) CO LTD	533-000138	7.2 V 3130mAh
Charging Dock		
Brand Name	Model No.	Spec.
ULTIMATE EARS	S-00165	Input: 5.1V, 2A Output :5V, 2A

4. For radiated emissions, the EUT was pre-tested under the following modes:

Test Mode	Description
Mode A	Power from adapter
Mode B	Power from Battery
Mode C	Power from Charging Dock

From the above modes, the worst case was found in **Mode A**. Therefore only the test data of the mode was recorded in this report.

5. The USB port of the EUT is only for charging the rechargeable battery. And the EUT has Bluetooth function and WiFi function under charging mode.

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

Antenna No.	Chain No.	Brand	Model	Antenna Gain (dBi)	Frequency range (GHz)	Antenna Type
WiFi Ant 1	chain 0	NA	NA	0.16	2.4-2.4835	Printed
				3.90	5.150-5.725	
				4.27	5.725-5.850	
WiFi Ant 2	chain 1			2.58	2.4-2.4835	
				3.38	5.150-5.725	
				2.48	5.725-5.850	
BT	chain 0			1.4	2.4-2.4835	

Note: From the above antennas, **WiFi Ant 1** was selected as representative antenna test and its data was recorded in this report.

7. The EUT incorporates a SISO function.

2.4GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	1TX diversity	1RX
802.11g	6 ~ 54Mbps	1TX diversity	1RX
802.11n (HT20)	MCS 0~7	1TX diversity	1RX
802.11n (HT40)	MCS 0~7	1TX diversity	1RX
5GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX diversity	1RX
802.11n (HT20)	MCS 0~7	1TX diversity	1RX
802.11n (HT40)	MCS 0~7	1TX diversity	1RX

8. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz

FOR 5260 ~ 5320MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310MHz

FOR 5500 ~ 5720MHz

12 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	144	5720 MHz

6 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	142	5710 MHz

FOR 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 **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.

Radiated Emission Test (Above 1GHz):

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 157	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 157	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT40)	5180-5240	38 to 46	159	OFDM	BPSK	13.5
	5260-5320	54 to 62				
	5500-5720	102 to 142				
	5745-5825	151 to 159				

Power Line Conducted Emission Test:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT40)	5180-5240	38 to 46	159	OFDM	BPSK	13.5
	5260-5320	54 to 62				
	5500-5720	102 to 142				
	5745-5825	151 to 159				

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 157	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 157	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	27deg. C, 69%RH	120Vac, 60Hz	Andy Ho
RE<1G	26deg. C, 70%RH	120Vac, 60Hz	Andy Ho
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	24deg. C, 61%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

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

If duty cycle of test signal is $< 98\%$, duty factor is required

802.11a: Duty cycle = $2.063/2.099 = 0.983$

802.11n (HT20): Duty cycle = $1.918/1.953 = 0.982$

802.11n (HT40): Duty cycle = $0.945/0.977 = 0.967$, Duty factor = $10 * \log(1/0.967) = 0.14$



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.

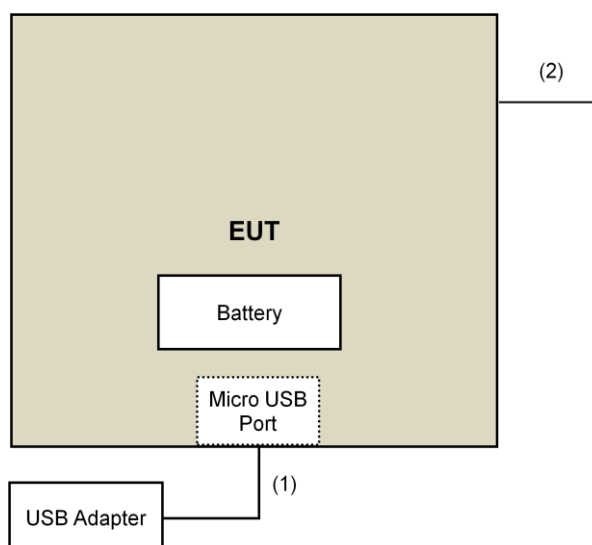
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items E–F acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.2	Yes	0	Supplied by client
2.	Console Cable	1	0.1	No	0	Supplied by client (for RF Setup)

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v01r04

ANSI C63.10-2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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 v01r04		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/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(dBuV/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(dBuV/m) ^{*1} PK:105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK:122.2 (dBuV/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

For Except channel straddling 5725MHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 20, 2016	July 19, 2017
Pre-Amplifier ^(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Dec. 13, 2016	Dec. 12, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 27, 2016	Dec. 26, 2017
Pre-Amplifier EMCI	EMC12630SE	980385	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Pre-Amplifier EMCI	EMC184045SE	980387	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSP40	100060	May 11, 2017	May 10, 2018
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 11, 2017	Jan. 10, 2018
DC Power Supply Topward	6603D	795558	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
- 6 Tested Date: July 15, 2017

For channel straddling 5725MHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
Pre-Amplifier ^(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Dec. 13, 2016	Dec. 12, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 27, 2016	Dec. 26, 2017
Pre-Amplifier EMCI	EMC12630SE	980385	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Pre-Amplifier EMCI	EMC184045SE	980387	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSP40	100060	May 11, 2017	May 10, 2018
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 11, 2017	Jan. 10, 2018
DC Power Supply Topward	6603D	795558	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
- 6 Tested Date: Aug. 30, 2017

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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:

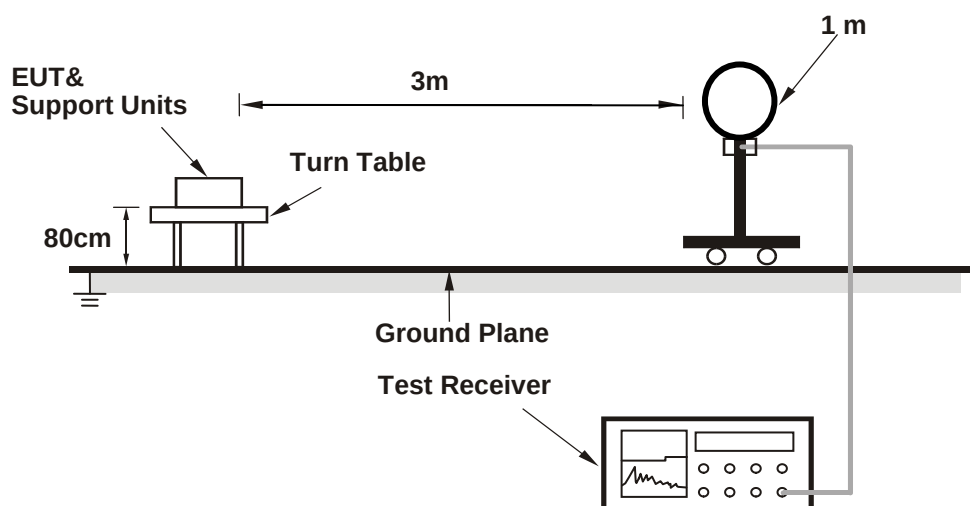
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

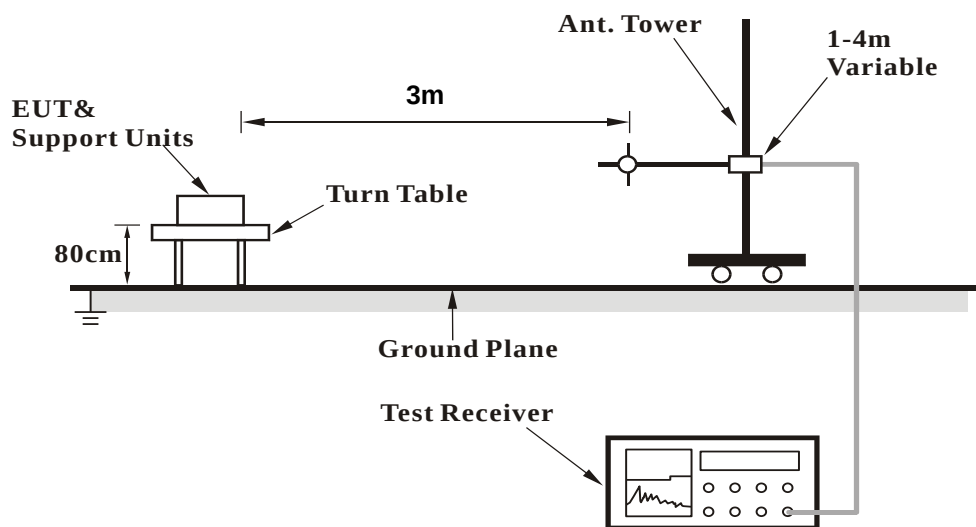
No deviation.

4.1.5 Test Setup

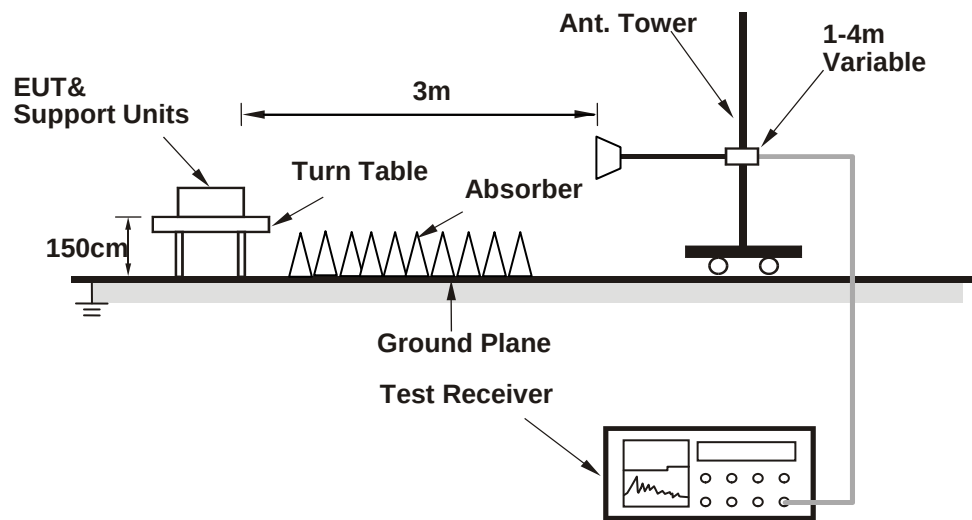
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- Placed the EUT on the testing table.
- Controlling software (MTool_2.0.2.6) has been activated to set the EUT on specific status.

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	65.2 PK	74.0	-8.8	2.00 H	196	61.2	4.0
2	5150.00	49.6 AV	54.0	-4.4	2.00 H	196	45.6	4.0
3	*5180.00	106.9 PK			2.00 H	196	102.9	4.0
4	*5180.00	97.2 AV			2.00 H	196	93.2	4.0
5	#10360.00	57.8 PK	74.0	-16.2	1.28 H	337	44.2	13.6
6	#10360.00	42.8 AV	54.0	-11.2	1.28 H	337	29.2	13.6
7	15540.00	69.2 PK	74.0	-4.8	1.86 H	181	56.0	13.2
8	15540.00	53.1 AV	54.0	-0.9	1.86 H	181	39.9	13.2
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	5150.00	61.8 PK	74.0	-12.2	2.51 V	219	57.8	4.0
2	5150.00	46.2 AV	54.0	-7.8	2.51 V	219	42.2	4.0
3	*5180.00	102.8 PK			2.51 V	219	98.8	4.0
4	*5180.00	93.3 AV			2.51 V	219	89.3	4.0
5	#10360.00	59.8 PK	74.0	-14.2	1.20 V	208	46.2	13.6
6	#10360.00	44.6 AV	54.0	-9.4	1.20 V	208	31.0	13.6
7	15540.00	71.6 PK	74.0	-2.4	1.70 V	197	58.4	13.2
8	15540.00	53.9 AV	54.0	-0.1	1.70 V	197	40.7	13.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	106.6 PK			2.12 H	193	102.6	4.0
2	*5200.00	96.7 AV			2.12 H	193	92.7	4.0
3	#10400.00	57.9 PK	74.0	-16.1	1.31 H	347	44.3	13.6
4	#10400.00	43.2 AV	54.0	-10.8	1.31 H	347	29.6	13.6
5	15600.00	69.9 PK	74.0	-4.1	2.36 H	195	56.5	13.4
6	15600.00	52.8 AV	54.0	-1.2	2.36 H	195	39.4	13.4
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	*5200.00	102.6 PK			2.56 V	219	98.6	4.0
2	*5200.00	92.8 AV			2.56 V	219	88.8	4.0
3	#10400.00	59.5 PK	74.0	-14.5	1.19 V	206	45.9	13.6
4	#10400.00	44.4 AV	54.0	-9.6	1.19 V	206	30.8	13.6
5	15600.00	71.1 PK	74.0	-2.9	1.81 V	120	57.7	13.4
6	15600.00	53.8 AV	54.0	-0.2	1.81 V	120	40.4	13.4

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 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	108.4 PK			2.61 H	197	104.2	4.2
2	*5240.00	98.9 AV			2.61 H	197	94.7	4.2
3	5350.00	52.1 PK	74.0	-21.9	2.61 H	197	47.7	4.4
4	5350.00	38.1 AV	54.0	-15.9	2.61 H	197	33.7	4.4
5	#10480.00	57.8 PK	74.0	-16.2	1.26 H	340	44.1	13.7
6	#10480.00	43.0 AV	54.0	-11.0	1.26 H	340	29.3	13.7
7	15720.00	66.0 PK	74.0	-8.0	2.95 H	173	52.0	14.0
8	15720.00	49.9 AV	54.0	-4.1	2.95 H	173	35.9	14.0
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	*5240.00	104.4 PK			2.46 V	228	100.2	4.2
2	*5240.00	95.0 AV			2.46 V	228	90.8	4.2
3	5350.00	51.9 PK	74.0	-22.1	2.46 V	228	47.5	4.4
4	5350.00	37.6 AV	54.0	-16.4	2.46 V	228	33.2	4.4
5	#10480.00	60.2 PK	74.0	-13.8	1.17 V	202	46.5	13.7
6	#10480.00	44.9 AV	54.0	-9.1	1.17 V	202	31.2	13.7
7	15720.00	71.4 PK	74.0	-2.6	1.75 V	159	57.4	14.0
8	15720.00	53.6 AV	54.0	-0.4	1.75 V	159	39.6	14.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.2 PK	74.0	-22.8	2.61 H	198	47.2	4.0
2	5150.00	38.7 AV	54.0	-15.3	2.61 H	198	34.7	4.0
3	*5260.00	108.8 PK			2.61 H	198	104.6	4.2
4	*5260.00	99.5 AV			2.61 H	198	95.3	4.2
5	#10520.00	57.7 PK	74.0	-16.3	1.31 H	347	43.9	13.8
6	#10520.00	43.2 AV	54.0	-10.8	1.31 H	347	29.4	13.8
7	15780.00	66.0 PK	74.0	-8.0	2.96 H	187	51.9	14.1
8	15780.00	49.8 AV	54.0	-4.2	2.96 H	187	35.7	14.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.4 PK	74.0	-23.6	2.51 V	226	46.4	4.0
2	5150.00	37.6 AV	54.0	-16.4	2.51 V	226	33.6	4.0
3	*5260.00	104.7 PK			2.51 V	226	100.5	4.2
4	*5260.00	95.7 AV			2.51 V	226	91.5	4.2
5	#10520.00	60.0 PK	74.0	-14.0	1.15 V	203	46.2	13.8
6	#10520.00	44.5 AV	54.0	-9.5	1.15 V	203	30.7	13.8
7	15780.00	72.4 PK	74.0	-1.6	1.84 V	159	58.3	14.1
8	15780.00	53.9 AV	54.0	-0.1	1.84 V	159	39.8	14.1

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.5 PK			2.33 H	190	105.2	4.3
2	*5300.00	99.3 AV			2.33 H	190	95.0	4.3
3	10600.00	57.5 PK	74.0	-16.5	1.25 H	332	43.7	13.8
4	10600.00	43.0 AV	54.0	-11.0	1.25 H	332	29.2	13.8
5	15900.00	67.5 PK	74.0	-6.5	1.84 H	167	54.3	13.2
6	15900.00	50.7 AV	54.0	-3.3	1.84 H	167	37.5	13.2
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	105.4 PK			2.56 V	213	101.1	4.3
2	*5300.00	95.5 AV			2.56 V	213	91.2	4.3
3	10600.00	60.3 PK	74.0	-13.7	1.16 V	209	46.5	13.8
4	10600.00	44.9 AV	54.0	-9.1	1.16 V	209	31.1	13.8
5	15900.00	72.3 PK	74.0	-1.7	1.95 V	135	59.1	13.2
6	15900.00	53.9 AV	54.0	-0.1	1.95 V	135	40.7	13.2

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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.4 PK			2.41 H	180	105.1	4.3
2	*5320.00	99.4 AV			2.41 H	180	95.1	4.3
3	5350.00	69.9 PK	74.0	-4.1	2.41 H	180	65.5	4.4
4	5350.00	51.1 AV	54.0	-2.9	2.41 H	180	46.7	4.4
5	10640.00	60.8 PK	74.0	-13.2	3.61 H	339	46.8	14.0
6	10640.00	44.8 AV	54.0	-9.2	3.61 H	339	30.8	14.0
7	15960.00	68.2 PK	74.0	-5.8	1.84 H	166	54.7	13.5
8	15960.00	50.5 AV	54.0	-3.5	1.84 H	166	37.0	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.4 PK			2.54 V	229	101.1	4.3
2	*5320.00	95.5 AV			2.54 V	229	91.2	4.3
3	5350.00	66.8 PK	74.0	-7.2	2.54 V	229	62.4	4.4
4	5350.00	48.0 AV	54.0	-6.0	2.54 V	229	43.6	4.4
5	10640.00	64.9 PK	74.0	-9.1	3.08 V	13	50.9	14.0
6	10640.00	48.3 AV	54.0	-5.7	3.08 V	13	34.3	14.0
7	15960.00	70.8 PK	74.0	-3.2	1.83 V	193	57.3	13.5
8	15960.00	53.6 AV	54.0	-0.4	1.83 V	193	40.1	13.5

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	70.8 PK	74.0	-3.2	2.88 H	179	66.3	4.5
2	#5470.00	53.8 AV	54.0	-0.2	2.88 H	179	49.3	4.5
3	*5500.00	109.3 PK			2.88 H	179	104.8	4.5
4	*5500.00	99.4 AV			2.88 H	179	94.9	4.5
5	11000.00	60.6 PK	74.0	-13.4	3.59 H	344	45.8	14.8
6	11000.00	44.4 AV	54.0	-9.6	3.59 H	344	29.6	14.8
7	#16500.00	68.0 PK	74.0	-6.0	1.82 H	170	52.4	15.6
8	#16500.00	50.2 AV	54.0	-3.8	1.82 H	170	34.6	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	64.7 PK	74.0	-9.3	2.47 V	223	60.2	4.5
2	#5470.00	49.0 AV	54.0	-5.0	2.47 V	223	44.5	4.5
3	*5500.00	104.9 PK			2.47 V	223	100.4	4.5
4	*5500.00	95.2 AV			2.47 V	223	90.7	4.5
5	11000.00	65.5 PK	74.0	-8.5	3.05 V	25	50.7	14.8
6	11000.00	48.7 AV	54.0	-5.3	3.05 V	25	33.9	14.8
7	#16500.00	69.2 PK	74.0	-4.8	2.44 V	177	53.6	15.6
8	#16500.00	53.0 AV	54.0	-1.0	2.44 V	177	37.4	15.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.8 PK			2.59 H	203	104.2	4.6
2	*5580.00	99.3 AV			2.59 H	203	94.7	4.6
3	11160.00	60.6 PK	74.0	-13.4	3.56 H	339	46.2	14.4
4	11160.00	44.5 AV	54.0	-9.5	3.56 H	339	30.1	14.4
5	#16740.00	68.1 PK	74.0	-5.9	1.86 H	176	51.6	16.5
6	#16740.00	50.2 AV	54.0	-3.8	1.86 H	176	33.7	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	104.8 PK			2.43 V	220	100.2	4.6
2	*5580.00	95.4 AV			2.43 V	220	90.8	4.6
3	11160.00	64.6 PK	74.0	-9.4	3.06 V	2	50.2	14.4
4	11160.00	48.3 AV	54.0	-5.7	3.06 V	2	33.9	14.4
5	#16740.00	70.2 PK	74.0	-3.8	2.73 V	200	53.7	16.5
6	#16740.00	53.3 AV	54.0	-0.7	2.73 V	200	36.8	16.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.5 PK			2.59 H	201	103.7	4.8
2	*5700.00	98.6 AV			2.59 H	201	93.8	4.8
3	#5725.00	68.5 PK	74.0	-5.5	2.59 H	201	63.6	4.9
4	#5725.00	53.9 AV	54.0	-0.1	2.59 H	201	49.0	4.9
5	11400.00	60.5 PK	74.0	-13.5	3.57 H	342	46.1	14.4
6	11400.00	44.8 AV	54.0	-9.2	3.57 H	342	30.4	14.4
7	#17100.00	67.9 PK	74.0	-6.1	1.89 H	174	49.4	18.5
8	#17100.00	50.2 AV	54.0	-3.8	1.89 H	174	31.7	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.4 PK			2.49 V	227	99.6	4.8
2	*5700.00	94.8 AV			2.49 V	227	90.0	4.8
3	#5725.00	65.0 PK	74.0	-9.0	2.49 V	227	60.1	4.9
4	#5725.00	50.4 AV	54.0	-3.6	2.49 V	227	45.5	4.9
5	11400.00	65.2 PK	74.0	-8.8	3.11 V	0	50.8	14.4
6	11400.00	48.3 AV	54.0	-5.7	3.11 V	0	33.9	14.4
7	#17100.00	68.6 PK	74.0	-5.4	2.50 V	186	50.1	18.5
8	#17100.00	51.3 AV	54.0	-2.7	2.50 V	186	32.8	18.5

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	49.4 PK	74.0	-24.6	1.50 H	354	44.9	4.5
2	#5470.00	36.8 AV	54.0	-17.2	1.50 H	354	32.3	4.5
3	*5720.00	108.1 PK			1.50 H	354	103.2	4.9
4	*5720.00	98.3 AV			1.50 H	354	93.4	4.9
5	#5850.00	49.1 PK	74.0	-24.9	1.50 H	354	44.0	5.1
6	#5850.00	36.7 AV	54.0	-17.3	1.50 H	354	31.6	5.1
7	11440.00	60.4 PK	74.0	-13.6	3.60 H	342	46.2	14.2
8	11440.00	44.3 AV	54.0	-9.7	3.60 H	342	30.1	14.2
9	#17160.00	68.2 PK	74.0	-5.8	1.85 H	170	49.9	18.3
10	#17160.00	50.1 AV	54.0	-3.9	1.85 H	170	31.8	18.3
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	#5470.00	50.1 PK	74.0	-23.9	1.07 V	140	45.6	4.5
2	#5470.00	36.5 AV	54.0	-17.5	1.07 V	140	32.0	4.5
3	*5720.00	105.3 PK			1.07 V	140	100.4	4.9
4	*5720.00	95.6 AV			1.07 V	140	90.7	4.9
5	#5850.00	49.8 PK	74.0	-24.2	1.07 V	140	44.7	5.1
6	#5850.00	36.6 AV	54.0	-17.4	1.07 V	140	31.5	5.1
7	11440.00	64.5 PK	74.0	-9.5	3.07 V	0	50.3	14.2
8	11440.00	48.2 AV	54.0	-5.8	3.07 V	0	34.0	14.2
9	#17160.00	70.5 PK	74.0	-3.5	2.68 V	213	52.2	18.3
10	#17160.00	53.6 AV	54.0	-0.4	2.68 V	213	35.3	18.3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5631.05	51.6 PK	68.2	-16.6	2.67 H	160	46.8	4.8
2	*5745.00	108.7 PK			2.67 H	160	103.7	5.0
3	*5745.00	98.8 AV			2.67 H	160	93.8	5.0
4	#5985.61	51.6 PK	68.2	-16.6	2.67 H	160	46.0	5.6
5	11490.00	60.5 PK	74.0	-13.5	3.65 H	338	46.4	14.1
6	11490.00	44.7 AV	54.0	-9.3	3.65 H	338	30.6	14.1
7	#17235.00	68.2 PK	74.0	-5.8	1.85 H	158	49.9	18.3
8	#17235.00	50.5 AV	54.0	-3.5	1.85 H	158	32.2	18.3
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	#5558.12	52.1 PK	68.2	-16.1	1.50 V	299	47.5	4.6
2	*5745.00	105.6 PK			1.50 V	299	100.6	5.0
3	*5745.00	95.0 AV			1.50 V	299	90.0	5.0
4	#5977.32	51.6 PK	68.2	-16.6	1.50 V	299	46.1	5.5
5	11490.00	64.9 PK	74.0	-9.1	3.12 V	15	50.8	14.1
6	11490.00	48.2 AV	54.0	-5.8	3.12 V	15	34.1	14.1
7	#17235.00	69.7 PK	74.0	-4.3	2.50 V	186	51.4	18.3
8	#17235.00	53.8 AV	54.0	-0.2	2.50 V	186	35.5	18.3

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 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	#5645.96	55.8 PK	68.2	-12.4	2.64 H	169	51.0	4.8
2	*5785.00	108.9 PK			2.64 H	169	103.9	5.0
3	*5785.00	99.0 AV			2.64 H	169	94.0	5.0
4	#6010.17	52.1 PK	68.2	-16.1	2.64 H	169	46.4	5.7
5	11570.00	60.7 PK	74.0	-13.3	3.57 H	330	46.7	14.0
6	11570.00	44.6 AV	54.0	-9.4	3.57 H	330	30.6	14.0
7	#17355.00	68.4 PK	74.0	-5.6	1.82 H	180	49.5	18.9
8	#17355.00	50.7 AV	54.0	-3.3	1.82 H	180	31.8	18.9
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	#5566.76	50.9 PK	68.2	-17.3	1.53 V	291	46.3	4.6
2	*5785.00	104.7 PK			1.53 V	291	99.7	5.0
3	*5785.00	94.5 AV			1.53 V	291	89.5	5.0
4	#5989.80	52.6 PK	68.2	-15.6	1.53 V	291	47.0	5.6
5	11570.00	64.2 PK	74.0	-9.8	3.13 V	13	50.2	14.0
6	11570.00	47.8 AV	54.0	-6.2	3.13 V	13	33.8	14.0
7	#17355.00	70.5 PK	74.0	-3.5	2.49 V	176	51.6	18.9
8	#17355.00	53.9 AV	54.0	-0.1	2.49 V	176	35.0	18.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.74	53.6 PK	68.2	-14.6	2.70 H	155	48.8	4.8
2	*5825.00	108.6 PK			2.70 H	155	103.4	5.2
3	*5825.00	99.1 AV			2.70 H	155	93.9	5.2
4	#6023.72	52.5 PK	68.2	-15.7	2.70 H	155	46.9	5.6
5	11650.00	61.0 PK	74.0	-13.0	3.58 H	343	46.9	14.1
6	11650.00	45.0 AV	54.0	-9.0	3.58 H	343	30.9	14.1
7	#17475.00	68.4 PK	74.0	-5.6	1.78 H	158	48.7	19.7
8	#17475.00	50.7 AV	54.0	-3.3	1.78 H	158	31.0	19.7
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	#5621.86	51.5 PK	68.2	-16.7	1.50 V	305	46.8	4.7
2	*5825.00	104.8 PK			1.50 V	305	99.6	5.2
3	*5825.00	94.7 AV			1.50 V	305	89.5	5.2
4	#5968.84	50.5 PK	68.2	-17.7	1.50 V	305	45.0	5.5
5	11650.00	65.1 PK	74.0	-8.9	3.13 V	22	51.0	14.1
6	11650.00	48.4 AV	54.0	-5.6	3.13 V	22	34.3	14.1
7	#17475.00	70.6 PK	74.0	-3.4	2.50 V	186	50.9	19.7
8	#17475.00	53.7 AV	54.0	-0.3	2.50 V	186	34.0	19.7

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.

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.1 PK	74.0	-6.9	2.54 H	190	63.1	4.0
2	5150.00	52.8 AV	54.0	-1.2	2.54 H	190	48.8	4.0
3	*5180.00	106.9 PK			2.54 H	190	102.9	4.0
4	*5180.00	97.2 AV			2.54 H	190	93.2	4.0
5	#10360.00	61.1 PK	74.0	-12.9	3.57 H	331	47.5	13.6
6	#10360.00	45.0 AV	54.0	-9.0	3.57 H	331	31.4	13.6
7	15540.00	67.8 PK	74.0	-6.2	1.84 H	179	54.6	13.2
8	15540.00	50.2 AV	54.0	-3.8	1.84 H	179	37.0	13.2
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	5150.00	64.0 PK	74.0	-10.0	2.40 V	207	60.0	4.0
2	5150.00	49.4 AV	54.0	-4.6	2.40 V	207	45.4	4.0
3	*5180.00	102.9 PK			2.40 V	207	98.9	4.0
4	*5180.00	93.3 AV			2.40 V	207	89.3	4.0
5	#10360.00	64.3 PK	74.0	-9.7	3.08 V	22	50.7	13.6
6	#10360.00	47.9 AV	54.0	-6.1	3.08 V	22	34.3	13.6
7	15540.00	72.4 PK	74.0	-1.6	1.79 V	199	59.2	13.2
8	15540.00	53.6 AV	54.0	-0.4	1.79 V	199	40.4	13.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.6 PK	74.0	-21.4	2.63 H	194	48.6	4.0
2	5150.00	40.6 AV	54.0	-13.4	2.63 H	194	36.6	4.0
3	*5200.00	107.4 PK			2.63 H	194	103.4	4.0
4	*5200.00	97.7 AV			2.63 H	194	93.7	4.0
5	#10400.00	60.4 PK	74.0	-13.6	3.65 H	342	46.8	13.6
6	#10400.00	44.4 AV	54.0	-9.6	3.65 H	342	30.8	13.6
7	15600.00	68.4 PK	74.0	-5.6	1.88 H	158	55.0	13.4
8	15600.00	50.8 AV	54.0	-3.2	1.88 H	158	37.4	13.4
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	5150.00	49.1 PK	74.0	-24.9	2.34 V	207	45.1	4.0
2	5150.00	37.4 AV	54.0	-16.6	2.34 V	207	33.4	4.0
3	*5200.00	103.3 PK			2.34 V	207	99.3	4.0
4	*5200.00	93.8 AV			2.34 V	207	89.8	4.0
5	#10400.00	64.7 PK	74.0	-9.3	3.10 V	11	51.1	13.6
6	#10400.00	48.3 AV	54.0	-5.7	3.10 V	11	34.7	13.6
7	15600.00	71.3 PK	74.0	-2.7	1.78 V	196	57.9	13.4
8	15600.00	53.9 AV	54.0	-0.1	1.78 V	196	40.5	13.4

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 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	107.3 PK			2.61 H	192	103.1	4.2
2	*5240.00	98.0 AV			2.61 H	192	93.8	4.2
3	5350.00	50.6 PK	74.0	-23.4	2.61 H	192	46.2	4.4
4	5350.00	38.3 AV	54.0	-15.7	2.61 H	192	33.9	4.4
5	#10480.00	60.8 PK	74.0	-13.2	3.56 H	331	47.1	13.7
6	#10480.00	45.0 AV	54.0	-9.0	3.56 H	331	31.3	13.7
7	15720.00	68.7 PK	74.0	-5.3	1.89 H	154	54.7	14.0
8	15720.00	50.9 AV	54.0	-3.1	1.89 H	154	36.9	14.0
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	*5240.00	103.2 PK			2.38 V	197	99.0	4.2
2	*5240.00	94.1 AV			2.38 V	197	89.9	4.2
3	5350.00	48.4 PK	74.0	-25.6	2.38 V	197	44.0	4.4
4	5350.00	37.2 AV	54.0	-16.8	2.38 V	197	32.8	4.4
5	#10480.00	65.3 PK	74.0	-8.7	3.02 V	26	51.6	13.7
6	#10480.00	48.5 AV	54.0	-5.5	3.02 V	26	34.8	13.7
7	15720.00	72.4 PK	74.0	-1.6	1.97 V	160	58.4	14.0
8	15720.00	53.5 AV	54.0	-0.5	1.97 V	160	39.5	14.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.7 PK	74.0	-25.3	2.60 H	194	44.7	4.0
2	5150.00	38.6 AV	54.0	-15.4	2.60 H	194	34.6	4.0
3	*5260.00	107.7 PK			2.60 H	194	103.5	4.2
4	*5260.00	98.3 AV			2.60 H	194	94.1	4.2
5	#10520.00	60.5 PK	74.0	-13.5	3.65 H	353	46.7	13.8
6	#10520.00	44.6 AV	54.0	-9.4	3.65 H	353	30.8	13.8
7	15780.00	68.3 PK	74.0	-5.7	1.78 H	171	54.2	14.1
8	15780.00	50.4 AV	54.0	-3.6	1.78 H	171	36.3	14.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	47.2 PK	74.0	-26.8	2.36 V	207	43.2	4.0
2	5150.00	37.1 AV	54.0	-16.9	2.36 V	207	33.1	4.0
3	*5260.00	103.5 PK			2.36 V	207	99.3	4.2
4	*5260.00	94.4 AV			2.36 V	207	90.2	4.2
5	#10520.00	65.1 PK	74.0	-8.9	3.03 V	13	51.3	13.8
6	#10520.00	48.5 AV	54.0	-5.5	3.03 V	13	34.7	13.8
7	15780.00	72.0 PK	74.0	-2.0	1.97 V	137	57.9	14.1
8	15780.00	53.9 AV	54.0	-0.1	1.97 V	137	39.8	14.1

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.0 PK			2.64 H	196	104.7	4.3
2	*5300.00	98.3 AV			2.64 H	196	94.0	4.3
3	10600.00	61.0 PK	74.0	-13.0	3.66 H	340	47.2	13.8
4	10600.00	44.9 AV	54.0	-9.1	3.66 H	340	31.1	13.8
5	15900.00	68.1 PK	74.0	-5.9	1.85 H	164	54.9	13.2
6	15900.00	50.3 AV	54.0	-3.7	1.85 H	164	37.1	13.2
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	104.9 PK			2.32 V	200	100.6	4.3
2	*5300.00	94.4 AV			2.32 V	200	90.1	4.3
3	10600.00	64.4 PK	74.0	-9.6	3.02 V	24	50.6	13.8
4	10600.00	47.9 AV	54.0	-6.1	3.02 V	24	34.1	13.8
5	15900.00	71.0 PK	74.0	-3.0	1.96 V	135	57.8	13.2
6	15900.00	53.8 AV	54.0	-0.2	1.96 V	135	40.6	13.2

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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.8 PK			2.62 H	194	105.5	4.3
2	*5320.00	99.5 AV			2.62 H	194	95.2	4.3
3	5350.00	66.4 PK	74.0	-7.6	2.62 H	194	62.0	4.4
4	5350.00	53.1 AV	54.0	-0.9	2.62 H	194	48.7	4.4
5	10640.00	60.7 PK	74.0	-13.3	3.56 H	343	46.7	14.0
6	10640.00	44.4 AV	54.0	-9.6	3.56 H	343	30.4	14.0
7	15960.00	67.6 PK	74.0	-6.4	1.83 H	169	54.1	13.5
8	15960.00	50.1 AV	54.0	-3.9	1.83 H	169	36.6	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.7 PK			2.28 V	214	101.4	4.3
2	*5320.00	95.6 AV			2.28 V	214	91.3	4.3
3	5350.00	63.0 PK	74.0	-11.0	2.28 V	214	58.6	4.4
4	5350.00	49.7 AV	54.0	-4.3	2.28 V	214	45.3	4.4
5	10640.00	64.6 PK	74.0	-9.4	3.13 V	20	50.6	14.0
6	10640.00	48.3 AV	54.0	-5.7	3.13 V	20	34.3	14.0
7	15960.00	69.4 PK	74.0	-4.6	1.82 V	194	55.9	13.5
8	15960.00	53.9 AV	54.0	-0.1	1.82 V	194	40.4	13.5

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	71.1 PK	74.0	-2.9	2.64 H	198	66.6	4.5
2	#5470.00	53.8 AV	54.0	-0.2	2.64 H	198	49.3	4.5
3	*5500.00	109.0 PK			2.64 H	198	104.5	4.5
4	*5500.00	99.2 AV			2.64 H	198	94.7	4.5
5	11000.00	60.8 PK	74.0	-13.2	3.66 H	327	46.0	14.8
6	11000.00	44.8 AV	54.0	-9.2	3.66 H	327	30.0	14.8
7	#16500.00	68.4 PK	74.0	-5.6	1.82 H	174	52.8	15.6
8	#16500.00	48.5 AV	54.0	-5.5	1.82 H	174	32.9	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	66.9 PK	74.0	-7.1	2.24 V	226	62.4	4.5
2	#5470.00	49.6 AV	54.0	-4.4	2.24 V	226	45.1	4.5
3	*5500.00	104.9 PK			2.24 V	226	100.4	4.5
4	*5500.00	95.3 AV			2.24 V	226	90.8	4.5
5	11000.00	65.3 PK	74.0	-8.7	3.06 V	17	50.5	14.8
6	11000.00	48.4 AV	54.0	-5.6	3.06 V	17	33.6	14.8
7	#16500.00	70.4 PK	74.0	-3.6	1.83 V	140	54.8	15.6
8	#16500.00	50.5 AV	54.0	-3.5	1.83 V	140	34.9	15.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.0 PK			1.42 H	213	104.4	4.6
2	*5580.00	99.3 AV			1.42 H	213	94.7	4.6
3	11160.00	60.7 PK	74.0	-13.3	3.60 H	336	46.3	14.4
4	11160.00	44.3 AV	54.0	-9.7	3.60 H	336	29.9	14.4
5	#16740.00	67.2 PK	74.0	-6.8	1.89 H	163	50.7	16.5
6	#16740.00	49.8 AV	54.0	-4.2	1.89 H	163	33.3	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	104.9 PK			2.28 V	237	100.3	4.6
2	*5580.00	95.4 AV			2.28 V	237	90.8	4.6
3	11160.00	64.9 PK	74.0	-9.1	3.10 V	26	50.5	14.4
4	11160.00	48.1 AV	54.0	-5.9	3.10 V	26	33.7	14.4
5	#16740.00	69.2 PK	74.0	-4.8	3.39 V	184	52.7	16.5
6	#16740.00	53.9 AV	54.0	-0.1	3.39 V	184	37.4	16.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.0 PK			2.71 H	200	103.2	4.8
2	*5700.00	98.2 AV			2.71 H	200	93.4	4.8
3	#5725.00	70.6 PK	74.0	-3.4	2.71 H	200	65.7	4.9
4	#5725.00	53.8 AV	54.0	-0.2	2.71 H	200	48.9	4.9
5	11400.00	60.5 PK	74.0	-13.5	3.62 H	336	46.1	14.4
6	11400.00	44.2 AV	54.0	-9.8	3.62 H	336	29.8	14.4
7	#17100.00	65.7 PK	74.0	-8.3	1.87 H	177	47.2	18.5
8	#17100.00	48.8 AV	54.0	-5.2	1.87 H	177	30.3	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.9 PK			2.28 V	227	99.1	4.8
2	*5700.00	94.3 AV			2.28 V	227	89.5	4.8
3	#5725.00	67.2 PK	74.0	-6.8	2.28 V	227	62.3	4.9
4	#5725.00	50.2 AV	54.0	-3.8	2.28 V	227	45.3	4.9
5	11400.00	64.9 PK	74.0	-9.1	3.11 V	2	50.5	14.4
6	11400.00	48.5 AV	54.0	-5.5	3.11 V	2	34.1	14.4
7	#17100.00	66.5 PK	74.0	-7.5	2.65 V	186	48.0	18.5
8	#17100.00	49.2 AV	54.0	-4.8	2.65 V	186	30.7	18.5

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	51.2 PK	74.0	-22.8	1.50 H	356	46.7	4.5
2	#5470.00	36.7 AV	54.0	-17.3	1.50 H	356	32.2	4.5
3	*5720.00	108.8 PK			1.42 H	210	103.9	4.9
4	*5720.00	98.9 AV			1.42 H	210	94.0	4.9
5	#5850.00	49.1 PK	74.0	-24.9	1.50 H	356	44.0	5.1
6	#5850.00	36.6 AV	54.0	-17.4	1.50 H	356	31.5	5.1
7	11440.00	60.9 PK	74.0	-13.1	3.54 H	331	46.7	14.2
8	11440.00	44.4 AV	54.0	-9.6	3.54 H	331	30.2	14.2
9	#17160.00	66.8 PK	74.0	-7.2	1.86 H	153	48.5	18.3
10	#17160.00	49.6 AV	54.0	-4.4	1.86 H	153	31.3	18.3

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	#5470.00	49.1 PK	74.0	-24.9	1.46 V	12	44.6	4.5
2	#5470.00	36.1 AV	54.0	-17.9	1.46 V	12	31.6	4.5
3	*5720.00	104.4 PK			2.33 V	252	99.5	4.9
4	*5720.00	95.0 AV			2.33 V	252	90.1	4.9
5	#5850.00	48.6 PK	74.0	-25.4	1.46 V	12	43.5	5.1
6	#5850.00	35.9 AV	54.0	-18.1	1.46 V	12	30.8	5.1
7	11440.00	64.9 PK	74.0	-9.1	3.15 V	29	50.7	14.2
8	11440.00	47.9 AV	54.0	-6.1	3.15 V	29	33.7	14.2
9	#17160.00	69.8 PK	74.0	-4.2	3.43 V	193	51.5	18.3
10	#17160.00	53.5 AV	54.0	-0.5	3.43 V	193	35.2	18.3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5593.08	51.1 PK	68.2	-17.1	1.30 H	212	46.5	4.6
2	*5745.00	108.3 PK			1.30 H	212	103.3	5.0
3	*5745.00	98.7 AV			1.30 H	212	93.7	5.0
4	#5953.68	50.4 PK	68.2	-17.8	1.30 H	212	45.0	5.4
5	11490.00	60.7 PK	74.0	-13.3	3.67 H	340	46.6	14.1
6	11490.00	44.6 AV	54.0	-9.4	3.67 H	340	30.5	14.1
7	#17235.00	65.8 PK	74.0	-8.2	1.93 H	162	47.5	18.3
8	#17235.00	48.9 AV	54.0	-5.1	1.93 H	162	30.6	18.3
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	#5599.16	51.3 PK	68.2	-16.9	1.20 V	221	46.7	4.6
2	*5745.00	106.1 PK			1.20 V	223	101.1	5.0
3	*5745.00	95.8 AV			1.20 V	223	90.8	5.0
4	#5969.16	50.6 PK	68.2	-17.6	1.20 V	221	45.1	5.5
5	11490.00	64.4 PK	74.0	-9.6	3.02 V	1	50.3	14.1
6	11490.00	48.1 AV	54.0	-5.9	3.02 V	1	34.0	14.1
7	#17235.00	69.3 PK	74.0	-4.7	3.00 V	182	51.0	18.3
8	#17235.00	53.7 AV	54.0	-0.3	3.00 V	182	35.4	18.3

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 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	#5619.41	54.2 PK	68.2	-14.0	1.28 H	199	49.5	4.7
2	*5785.00	108.7 PK			1.28 H	199	103.7	5.0
3	*5785.00	99.0 AV			1.28 H	199	94.0	5.0
4	#5964.32	52.8 PK	68.2	-15.4	1.28 H	199	47.3	5.5
5	11570.00	60.3 PK	74.0	-13.7	3.68 H	339	46.3	14.0
6	11570.00	43.9 AV	54.0	-10.1	3.68 H	339	29.9	14.0
7	#17355.00	65.1 PK	74.0	-8.9	1.93 H	167	46.2	18.9
8	#17355.00	48.4 AV	54.0	-5.6	1.93 H	167	29.5	18.9
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	#5636.31	52.3 PK	68.2	-15.9	1.21 V	219	47.5	4.8
2	*5785.00	106.6 PK			1.21 V	219	101.6	5.0
3	*5785.00	96.3 AV			1.21 V	219	91.3	5.0
4	#5955.07	50.3 PK	68.2	-17.9	1.21 V	219	44.8	5.5
5	11570.00	64.6 PK	74.0	-9.4	3.13 V	15	50.6	14.0
6	11570.00	47.8 AV	54.0	-6.2	3.13 V	15	33.8	14.0
7	#17355.00	68.4 PK	74.0	-5.6	1.70 V	134	49.5	18.9
8	#17355.00	53.6 AV	54.0	-0.4	1.70 V	134	34.7	18.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5601.06	52.4 PK	68.2	-15.8	1.33 H	192	47.8	4.6
2	*5825.00	108.9 PK			1.33 H	192	103.7	5.2
3	*5825.00	99.1 AV			1.33 H	192	93.9	5.2
4	#5946.11	50.8 PK	68.2	-17.4	1.33 H	192	45.4	5.4
5	11650.00	60.8 PK	74.0	-13.2	3.57 H	344	46.7	14.1
6	11650.00	44.2 AV	54.0	-9.8	3.57 H	344	30.1	14.1
7	#17475.00	65.7 PK	74.0	-8.3	1.87 H	162	46.0	19.7
8	#17475.00	49.0 AV	54.0	-5.0	1.87 H	162	29.3	19.7
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	#5582.19	51.5 PK	68.2	-16.7	1.18 V	229	46.9	4.6
2	*5825.00	106.8 PK			1.18 V	229	101.6	5.2
3	*5825.00	96.3 AV			1.18 V	229	91.1	5.2
4	#5978.89	50.9 PK	68.2	-17.3	1.18 V	229	45.4	5.5
5	11650.00	65.6 PK	74.0	-8.4	3.06 V	29	51.5	14.1
6	11650.00	48.7 AV	54.0	-5.3	3.06 V	29	34.6	14.1
7	#17475.00	68.6 PK	74.0	-5.4	1.88 V	189	48.9	19.7
8	#17475.00	53.6 AV	54.0	-0.4	1.88 V	189	33.9	19.7

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.

802.11n (HT40)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.1 PK	74.0	-3.9	2.64 H	193	66.1	4.0
2	5150.00	53.8 AV	54.0	-0.2	2.64 H	193	49.8	4.0
3	*5190.00	104.1 PK			2.64 H	193	100.1	4.0
4	*5190.00	93.5 AV			2.64 H	193	89.5	4.0
5	5350.00	51.9 PK	74.0	-22.1	2.64 H	193	47.5	4.4
6	5350.00	39.0 AV	54.0	-15.0	2.64 H	193	34.6	4.4
7	#10380.00	60.5 PK	74.0	-13.5	3.52 H	350	46.9	13.6
8	#10380.00	43.7 AV	54.0	-10.3	3.52 H	350	30.1	13.6
9	15570.00	65.0 PK	74.0	-9.0	1.87 H	165	51.7	13.3
10	15570.00	49.2 AV	54.0	-4.8	1.87 H	165	35.9	13.3
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	5150.00	66.0 PK	74.0	-8.0	2.26 V	227	62.0	4.0
2	5150.00	49.6 AV	54.0	-4.4	2.26 V	227	45.6	4.0
3	*5190.00	100.2 PK			2.26 V	227	96.2	4.0
4	*5190.00	89.9 AV			2.26 V	227	85.9	4.0
5	5350.00	50.3 PK	74.0	-23.7	2.26 V	227	45.9	4.4
6	5350.00	37.4 AV	54.0	-16.6	2.26 V	227	33.0	4.4
7	#10380.00	64.9 PK	74.0	-9.1	3.01 V	35	51.3	13.6
8	#10380.00	48.2 AV	54.0	-5.8	3.01 V	35	34.6	13.6
9	15570.00	66.2 PK	74.0	-7.8	1.83 V	120	52.9	13.3
10	15570.00	50.4 AV	54.0	-3.6	1.83 V	120	37.1	13.3

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- " # ": 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	5150.00	62.9 PK	74.0	-11.1	2.64 H	195	58.9	4.0
2	5150.00	47.6 AV	54.0	-6.4	2.64 H	195	43.6	4.0
3	*5230.00	107.6 PK			2.64 H	195	103.4	4.2
4	*5230.00	96.8 AV			2.64 H	195	92.6	4.2
5	5350.00	53.8 PK	74.0	-20.2	2.64 H	195	49.4	4.4
6	5350.00	40.7 AV	54.0	-13.3	2.64 H	195	36.3	4.4
7	#10460.00	60.1 PK	74.0	-13.9	3.56 H	342	46.4	13.7
8	#10460.00	43.4 AV	54.0	-10.6	3.56 H	342	29.7	13.7
9	15690.00	65.3 PK	74.0	-8.7	1.89 H	155	51.3	14.0
10	15690.00	49.6 AV	54.0	-4.4	1.89 H	155	35.6	14.0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.5 PK	74.0	-14.5	2.24 V	226	55.5	4.0
2	5150.00	44.2 AV	54.0	-9.8	2.24 V	226	40.2	4.0
3	*5230.00	103.5 PK			2.24 V	226	99.3	4.2
4	*5230.00	92.9 AV			2.24 V	226	88.7	4.2
5	5350.00	50.4 PK	74.0	-23.6	2.24 V	226	46.0	4.4
6	5350.00	37.3 AV	54.0	-16.7	2.24 V	226	32.9	4.4
7	#10460.00	64.8 PK	74.0	-9.2	3.00 V	32	51.1	13.7
8	#10460.00	48.1 AV	54.0	-5.9	3.00 V	32	34.4	13.7
9	15690.00	69.7 PK	74.0	-4.3	1.84 V	121	55.7	14.0
10	15690.00	53.9 AV	54.0	-0.1	1.84 V	121	39.9	14.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.8 PK	74.0	-21.2	2.68 H	193	48.8	4.0
2	5150.00	40.0 AV	54.0	-14.0	2.68 H	193	36.0	4.0
3	*5270.00	107.2 PK			2.68 H	193	103.0	4.2
4	*5270.00	96.5 AV			2.68 H	193	92.3	4.2
5	#10540.00	60.8 PK	74.0	-13.2	3.56 H	348	47.1	13.7
6	#10540.00	44.1 AV	54.0	-9.9	3.56 H	348	30.4	13.7
7	15810.00	64.9 PK	74.0	-9.1	1.87 H	171	50.9	14.0
8	15810.00	48.9 AV	54.0	-5.1	1.87 H	171	34.9	14.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.4 PK	74.0	-24.6	2.25 V	217	45.4	4.0
2	5150.00	36.6 AV	54.0	-17.4	2.25 V	217	32.6	4.0
3	*5270.00	103.1 PK			2.25 V	217	98.9	4.2
4	*5270.00	92.6 AV			2.25 V	217	88.4	4.2
5	#10540.00	64.8 PK	74.0	-9.2	3.03 V	47	51.1	13.7
6	#10540.00	47.9 AV	54.0	-6.1	3.03 V	47	34.2	13.7
7	15810.00	69.6 PK	74.0	-4.4	1.81 V	194	55.6	14.0
8	15810.00	53.9 AV	54.0	-0.1	1.81 V	194	39.9	14.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	105.6 PK			2.66 H	196	101.3	4.3
2	*5310.00	94.8 AV			2.66 H	196	90.5	4.3
3	5350.00	70.1 PK	74.0	-3.9	2.66 H	196	65.7	4.4
4	5350.00	53.9 AV	54.0	-0.1	2.66 H	196	49.5	4.4
5	10620.00	60.8 PK	74.0	-13.2	3.46 H	354	46.9	13.9
6	10620.00	44.2 AV	54.0	-9.8	3.46 H	354	30.3	13.9
7	15930.00	64.8 PK	74.0	-9.2	1.92 H	171	51.5	13.3
8	15930.00	48.9 AV	54.0	-5.1	1.92 H	171	35.6	13.3
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	101.4 PK			2.29 V	222	97.1	4.3
2	*5310.00	90.9 AV			2.29 V	222	86.6	4.3
3	5350.00	66.7 PK	74.0	-7.3	2.29 V	222	62.3	4.4
4	5350.00	50.5 AV	54.0	-3.5	2.29 V	222	46.1	4.4
5	10620.00	65.3 PK	74.0	-8.7	2.99 V	32	51.4	13.9
6	10620.00	48.2 AV	54.0	-5.8	2.99 V	32	34.3	13.9
7	15930.00	65.7 PK	74.0	-8.3	1.84 V	194	52.4	13.3
8	15930.00	51.4 AV	54.0	-2.6	1.84 V	194	38.1	13.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	69.8 PK	74.0	-4.2	2.64 H	198	65.3	4.5
2	#5470.00	53.8 AV	54.0	-0.2	2.64 H	198	49.3	4.5
3	*5510.00	104.8 PK			2.64 H	198	100.2	4.6
4	*5510.00	93.5 AV			2.64 H	198	88.9	4.6
5	11020.00	60.1 PK	74.0	-13.9	3.52 H	360	45.4	14.7
6	11020.00	43.4 AV	54.0	-10.6	3.52 H	360	28.7	14.7
7	#16530.00	64.6 PK	74.0	-9.4	1.83 H	173	48.8	15.8
8	#16530.00	49.1 AV	54.0	-4.9	1.83 H	173	33.3	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	#5470.00	65.6 PK	74.0	-8.4	2.29 V	225	61.1	4.5
2	#5470.00	49.6 AV	54.0	-4.4	2.29 V	225	45.1	4.5
3	*5510.00	100.7 PK			2.29 V	225	96.1	4.6
4	*5510.00	89.6 AV			2.29 V	225	85.0	4.6
5	11020.00	64.3 PK	74.0	-9.7	2.99 V	57	49.6	14.7
6	11020.00	47.4 AV	54.0	-6.6	2.99 V	57	32.7	14.7
7	#16530.00	65.2 PK	74.0	-8.8	1.84 V	140	49.4	15.8
8	#16530.00	50.0 AV	54.0	-4.0	1.84 V	140	34.2	15.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	64.0 PK	74.0	-10.0	2.64 H	198	59.5	4.5
2	#5470.00	49.4 AV	54.0	-4.6	2.64 H	198	44.9	4.5
3	*5550.00	107.5 PK			2.64 H	198	103.0	4.5
4	*5550.00	96.3 AV			2.64 H	198	91.8	4.5
5	11100.00	60.3 PK	74.0	-13.7	3.56 H	339	45.9	14.4
6	11100.00	43.7 AV	54.0	-10.3	3.56 H	339	29.3	14.4
7	#16650.00	65.1 PK	74.0	-8.9	1.89 H	179	48.7	16.4
8	#16650.00	49.2 AV	54.0	-4.8	1.89 H	179	32.8	16.4
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	#5470.00	60.6 PK	74.0	-13.4	2.24 V	217	56.1	4.5
2	#5470.00	46.0 AV	54.0	-8.0	2.24 V	217	41.5	4.5
3	*5550.00	103.4 PK			2.24 V	217	98.9	4.5
4	*5550.00	92.4 AV			2.24 V	217	87.9	4.5
5	11100.00	64.7 PK	74.0	-9.3	2.99 V	45	50.3	14.4
6	11100.00	47.8 AV	54.0	-6.2	2.99 V	45	33.4	14.4
7	#16650.00	68.6 PK	74.0	-5.4	1.84 V	140	52.2	16.4
8	#16650.00	53.9 AV	54.0	-0.1	1.84 V	140	37.5	16.4

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	108.2 PK			2.64 H	201	103.4	4.8
2	*5670.00	97.2 AV			2.64 H	201	92.4	4.8
3	#5725.00	68.9 PK	74.0	-5.1	2.64 H	201	64.0	4.9
4	#5725.00	53.7 AV	54.0	-0.3	2.64 H	201	48.8	4.9
5	11340.00	60.5 PK	74.0	-13.5	3.51 H	352	46.1	14.4
6	11340.00	43.6 AV	54.0	-10.4	3.51 H	352	29.2	14.4
7	#17010.00	65.0 PK	74.0	-9.0	1.93 H	176	46.8	18.2
8	#17010.00	49.2 AV	54.0	-4.8	1.93 H	176	31.0	18.2
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	*5670.00	104.1 PK			2.24 V	229	99.3	4.8
2	*5670.00	93.3 AV			2.24 V	229	88.5	4.8
3	#5725.00	65.5 PK	74.0	-8.5	2.24 V	229	60.6	4.9
4	#5725.00	50.3 AV	54.0	-3.7	2.24 V	229	45.4	4.9
5	11340.00	64.8 PK	74.0	-9.2	3.01 V	49	50.4	14.4
6	11340.00	48.0 AV	54.0	-6.0	3.01 V	49	33.6	14.4
7	#17010.00	68.3 PK	74.0	-5.7	1.84 V	150	50.1	18.2
8	#17010.00	53.5 AV	54.0	-0.5	1.84 V	150	35.3	18.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	50.3 PK	74.0	-23.7	1.50 H	353	45.8	4.5
2	#5470.00	37.4 AV	54.0	-16.6	1.50 H	353	32.9	4.5
3	*5710.00	103.2 PK			1.50 H	353	98.3	4.9
4	*5710.00	94.4 AV			1.50 H	353	89.5	4.9
5	#5850.00	49.2 PK	74.0	-24.8	1.50 H	353	44.1	5.1
6	#5850.00	37.0 AV	54.0	-17.0	1.50 H	353	31.9	5.1
7	11420.00	60.2 PK	74.0	-13.8	2.16 H	219	45.9	14.3
8	11420.00	43.5 AV	54.0	-10.5	2.16 H	219	29.2	14.3
9	#17130.00	65.1 PK	74.0	-8.9	1.86 H	158	46.6	18.5
10	#17130.00	49.5 AV	54.0	-4.5	1.86 H	158	31.0	18.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	49.1 PK	74.0	-24.9	1.04 V	15	44.6	4.5
2	#5470.00	36.3 AV	54.0	-17.7	1.04 V	15	31.8	4.5
3	*5710.00	102.8 PK			1.04 V	15	97.9	4.9
4	*5710.00	91.4 AV			1.04 V	15	86.5	4.9
5	#5850.00	49.8 PK	74.0	-24.2	1.04 V	15	44.7	5.1
6	#5850.00	37.1 AV	54.0	-16.9	1.04 V	15	32.0	5.1
7	11420.00	65.1 PK	74.0	-8.9	2.20 V	210	50.8	14.3
8	11420.00	48.2 AV	54.0	-5.8	2.20 V	210	33.9	14.3
9	#17130.00	69.5 PK	74.0	-4.5	1.88 V	160	51.0	18.5
10	#17130.00	53.6 AV	54.0	-0.4	1.88 V	160	35.1	18.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5634.55	62.0 PK	68.2	-6.2	2.64 H	202	57.2	4.8
2	*5755.00	108.2 PK			2.64 H	202	103.2	5.0
3	*5755.00	97.5 AV			2.64 H	202	92.5	5.0
4	#5980.35	53.6 PK	68.2	-14.6	2.64 H	202	48.1	5.5
5	11510.00	60.4 PK	74.0	-13.6	3.57 H	352	46.4	14.0
6	11510.00	43.5 AV	54.0	-10.5	3.57 H	352	29.5	14.0
7	#17265.00	65.3 PK	74.0	-8.7	1.81 H	155	46.8	18.5
8	#17265.00	49.3 AV	54.0	-4.7	1.81 H	155	30.8	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.85	61.2 PK	68.2	-7.0	1.15 V	226	56.4	4.8
2	*5755.00	105.0 PK			1.15 V	226	100.0	5.0
3	*5755.00	93.8 AV			1.15 V	226	88.8	5.0
4	#6021.20	53.0 PK	68.2	-15.2	1.15 V	226	47.3	5.7
5	11510.00	64.9 PK	74.0	-9.1	3.02 V	62	50.9	14.0
6	11510.00	48.2 AV	54.0	-5.8	3.02 V	62	34.2	14.0
7	#17265.00	68.3 PK	74.0	-5.7	1.84 V	133	49.8	18.5
8	#17265.00	53.9 AV	54.0	-0.1	1.84 V	133	35.4	18.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5627.43	56.7 PK	68.2	-11.5	2.63 H	202	52.0	4.7
2	*5795.00	108.0 PK			2.63 H	202	102.9	5.1
3	*5795.00	97.3 AV			2.63 H	202	92.2	5.1
4	#5933.32	53.8 PK	68.2	-14.4	2.63 H	202	48.4	5.4
5	11590.00	59.9 PK	74.0	-14.1	3.52 H	348	45.9	14.0
6	11590.00	43.3 AV	54.0	-10.7	3.52 H	348	29.3	14.0
7	#17385.00	64.7 PK	74.0	-9.3	1.85 H	166	45.6	19.1
8	#17385.00	48.7 AV	54.0	-5.3	1.85 H	166	29.6	19.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.75	55.8 PK	68.2	-12.4	1.29 V	229	51.0	4.8
2	*5795.00	104.4 PK			1.29 V	229	99.3	5.1
3	*5795.00	93.5 AV			1.29 V	229	88.4	5.1
4	#5958.02	52.8 PK	68.2	-15.4	1.29 V	229	47.3	5.5
5	11590.00	64.2 PK	74.0	-9.8	3.00 V	56	50.2	14.0
6	11590.00	47.6 AV	54.0	-6.4	3.00 V	56	33.6	14.0
7	#17385.00	68.0 PK	74.0	-6.0	1.82 V	147	48.9	19.1
8	#17385.00	53.8 AV	54.0	-0.2	1.82 V	147	34.7	19.1

REMARKS:

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

Below 1GHz Data:

802.11n (HT40)

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	117.30	28.5 QP	43.5	-15.0	1.00 H	203	38.5	-10.0
2	191.02	32.2 QP	43.5	-11.3	1.05 H	143	43.2	-11.0
3	305.48	38.1 QP	46.0	-7.9	1.43 H	254	45.6	-7.5
4	573.20	31.3 QP	46.0	-14.7	1.53 H	284	32.7	-1.4
5	639.16	29.8 QP	46.0	-16.2	1.51 H	287	29.8	0.0
6	868.08	29.4 QP	46.0	-16.6	1.55 H	247	26.0	3.4
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	43.58	29.3 QP	40.0	-10.7	1.00 V	116	37.1	-7.8
2	125.06	28.7 QP	43.5	-14.8	1.00 V	205	38.3	-9.6
3	191.02	30.2 QP	43.5	-13.3	1.03 V	187	41.2	-11.0
4	454.86	28.4 QP	46.0	-17.6	1.42 V	255	31.9	-3.5
5	643.04	29.2 QP	46.0	-16.8	1.46 V	143	29.1	0.1
6	871.96	30.1 QP	46.0	-15.9	1.50 V	223	26.7	3.4

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

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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 03, 2017	June 02, 2018
50 ohms Terminator	N/A	EMC-02	Sep. 29, 2016	Sep. 28, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
- 3 Tested Date: June 15, 2017

4.2.3 Test Procedure

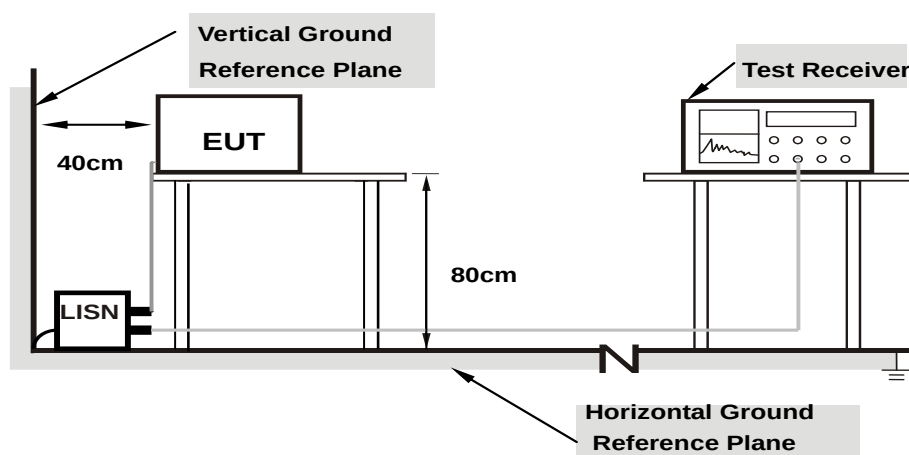
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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: All modes of operation were investigated and the worst-case emissions are reported.

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 Condition

Same as 4.1.6.

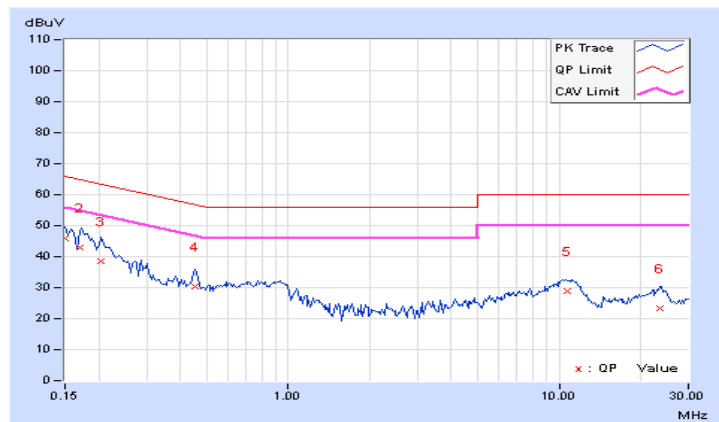
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
		(dB)								
1	0.15000	10.20	35.68	17.76	45.88	27.96	66.00	56.00	-20.12	-28.04
2	0.16953	10.20	32.93	16.01	43.13	26.21	64.98	54.98	-21.85	-28.77
3	0.20469	10.20	28.22	13.71	38.42	23.91	63.42	53.42	-25.00	-29.51
4	0.45469	10.25	20.01	11.40	30.26	21.65	56.79	46.79	-26.53	-25.14
5	10.73828	10.81	18.24	10.82	29.05	21.63	60.00	50.00	-30.95	-28.37
6	23.48047	11.75	11.75	5.97	23.50	17.72	60.00	50.00	-36.50	-32.28

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.

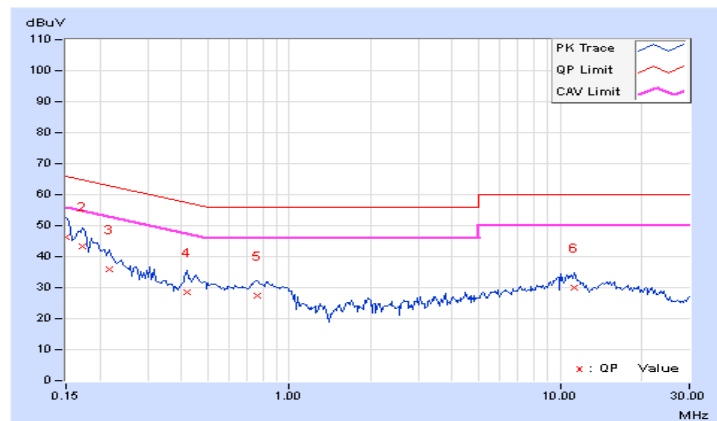


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	36.02	16.83	46.21	27.02	66.00	56.00	-19.79	-28.98
2	0.17344	10.18	33.09	13.86	43.27	24.04	64.79	54.79	-21.52	-30.75
3	0.21641	10.18	25.78	11.20	35.96	21.38	62.96	52.96	-27.00	-31.58
4	0.41953	10.24	18.27	9.98	28.51	20.22	57.46	47.46	-28.95	-27.24
5	0.76328	10.25	17.31	9.69	27.56	19.94	56.00	46.00	-28.44	-26.06
6	11.28906	10.75	19.35	11.71	30.10	22.46	60.00	50.00	-29.90	-27.54

REMARKS:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

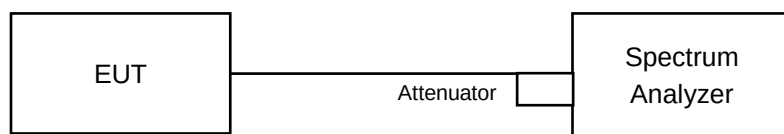
Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	✓	Mobile and Portable client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

*B is the 26 dB emission bandwidth in megahertz

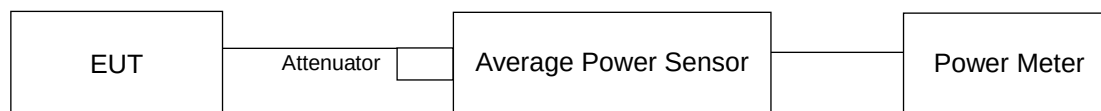
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

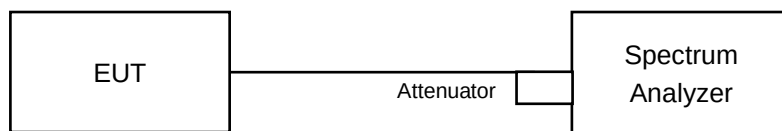
For channel straddling 5725MHz:



For other channels:



FOR 26dB 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 channel straddling 5725MHz:

802.11a, 802.11n (HT20):

Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Set trigger to free run (duty cycle ≥ 98 percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

802.11 (HT40):

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

802.11a

Power Output:

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	33.113	15.20	24.00	Pass
40	5200	32.81	15.16	24.00	Pass
48	5240	36.728	15.65	24.00	Pass
52	5260	32.734	15.15	24.00	Pass
60	5300	37.239	15.71	24.00	Pass
64	5320	40.458	16.07	24.00	Pass
100	5500	39.628	15.98	24.00	Pass
116	5580	44.668	16.50	24.00	Pass
140	5700	34.995	15.44	24.00	Pass
*144 (UNII-2C Band)	5720	19.815	12.97	24.00	Pass
*144 (UNII-3 Band)	5720	3.491	5.43	30.00	Pass
149	5745	42.855	16.32	30.00	Pass
157	5785	42.462	16.28	30.00	Pass
165	5825	42.17	16.25	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	23.306	13.67

Note: The total power was calculated through formula and record the value for reference only.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	21.95
60	5300	25.19
64	5320	28.88
100	5500	31.80
116	5580	25.14
140	5700	31.55
144 (UNII-2C Band)	5720	20.52

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.95	24.41 > 24
60	5300	25.19	25.01 > 24
64	5320	28.88	25.6 > 24
100	5500	31.80	26.02 > 24
116	5580	25.14	25 > 24
140	5700	31.55	25.98 > 24
144 (UNII-2C Band)	5720	20.52	24.12 > 24

802.11n (HT20)

Power Output:

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	33.343	15.23	24.00	Pass
40	5200	34.356	15.36	24.00	Pass
48	5240	31.55	14.99	24.00	Pass
52	5260	32.81	15.16	24.00	Pass
60	5300	35.975	15.56	24.00	Pass
64	5320	42.267	16.26	24.00	Pass
100	5500	35.563	15.51	24.00	Pass
116	5580	44.463	16.48	24.00	Pass
140	5700	29.174	14.65	24.00	Pass
*144 (UNII-2C Band)	5720	17.579	12.45	24.00	Pass
*144 (UNII-3 Band)	5720	3.614	5.58	30.00	Pass
149	5745	50.816	17.06	30.00	Pass
157	5785	55.081	17.41	30.00	Pass
165	5825	54.2	17.34	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	21.193	13.26

Note: The total power was calculated through formula and record the value for reference only.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	32.34
60	5300	33.60
64	5320	32.19
100	5500	31.07
116	5580	35.53
140	5700	32.56
144 (UNII-2C Band)	5720	21.51

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	32.34	26.09 > 24
60	5300	33.60	26.26 > 24
64	5320	32.19	26.07 > 24
100	5500	31.07	25.92 > 24
116	5580	35.53	27.31 > 24
140	5700	32.56	27.07 > 24
144 (UNII-2C Band)	5720	21.51	24.32 > 24

802.11n (HT40)

Power Output:

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	25.061	13.99	24.00	Pass
46	5230	49.545	16.95	24.00	Pass
54	5270	47.534	16.77	24.00	Pass
62	5310	28.51	14.55	24.00	Pass
102	5510	23.605	13.73	24.00	Pass
110	5550	50.582	17.04	24.00	Pass
134	5670	44.771	16.51	24.00	Pass
*142 (UNII-2C Band)	5710	22.986	13.61	24.00	Pass
*142 (UNII-3 Band)	5710	1.684	2.26	30.00	Pass
151	5755	67.143	18.27	30.00	Pass
159	5795	67.608	18.30	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	24.67	13.92

Note: The total power was calculated through formula and record the value for reference only.

26dB BANDWIDTH:

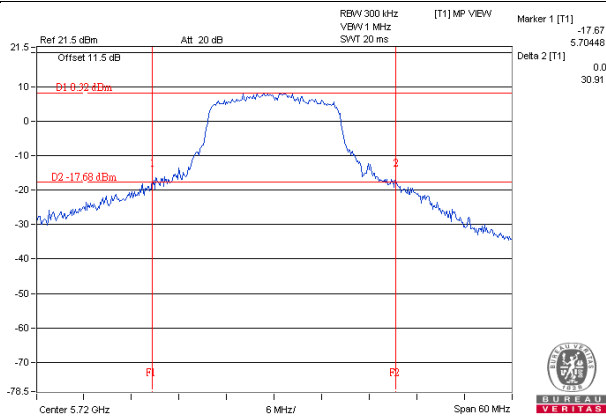
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
62	5310	47.44
102	5510	46.66
110	5550	90.67
134	5670	82.66
142 (UNII-2C Band)	5710	55.72

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

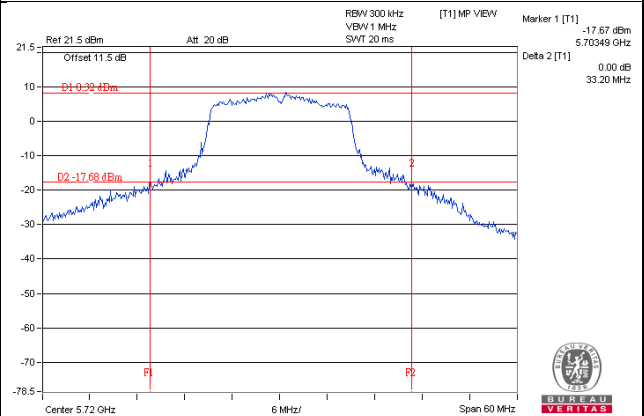
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	84.25	30.25 > 24
62	5310	47.44	27.76 > 24
102	5510	46.66	27.68 > 24
110	5550	90.67	30.57 > 24
134	5670	82.66	30.17 > 24
142 (UNII-2C Band)	5710	55.72	28.46 > 24

Spectrum Plot of Worst Value

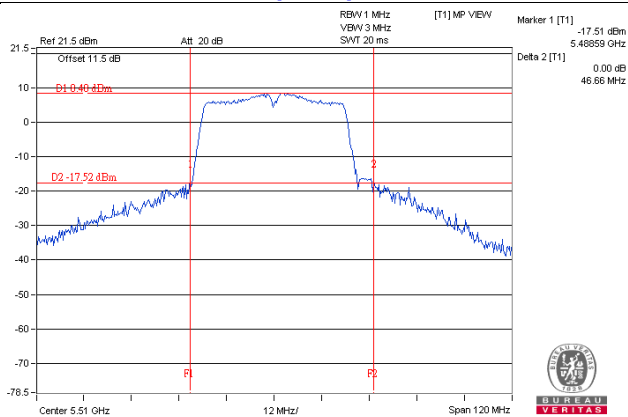
802.11a / CH144 (UNII-2C Band)



802.11n (HT20) / CH144 (UNII-2C Band)



802.11n (HT40) / CH102

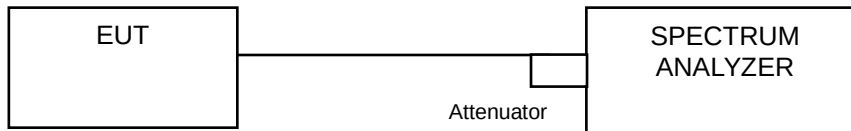


NOTE:

For CH144 (UNII-2C Band) = 5725MHz - Marker 1
For CH142 (UNII-2C Band) = 5725MHz - Marker 1

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 SAMPLE. 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 Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.92
40	5200	17.04
48	5240	17.04
52	5260	16.92
60	5300	17.04
64	5320	17.16
100	5500	17.40
116	5580	17.40
140	5700	17.76
144 (UNII-2C Band)	5720	13.88
144 (UNII-3 Band)	5720	3.76
149	5745	20.28
157	5785	19.68
165	5825	20.04

802.11n (HT20)

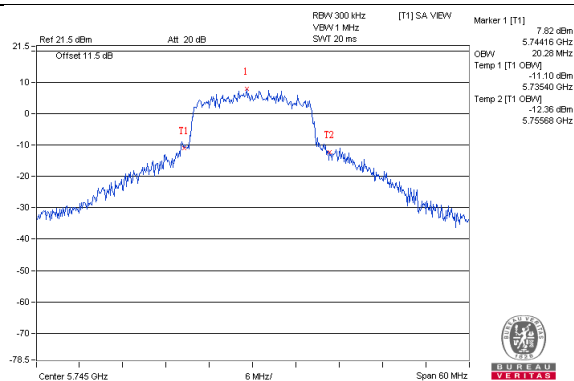
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	18.12
40	5200	18.24
48	5240	18.12
52	5260	18.12
60	5300	18.48
64	5320	18.48
100	5500	18.24
116	5580	18.60
140	5700	18.24
144 (UNII-2C Band)	5720	14.24
144 (UNII-3 Band)	5720	4.24
149	5745	19.08
157	5785	18.96
165	5825	18.96

802.11n (HT40)

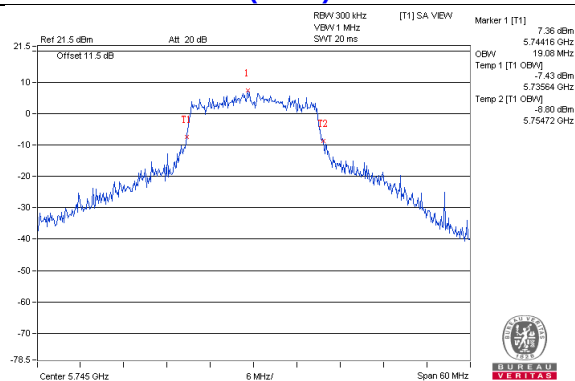
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	37.20
54	5270	38.16
62	5310	36.72
102	5510	36.72
110	5550	43.20
134	5670	39.12
142 (UNII-2C Band)	5710	34.00
142 (UNII-3 Band)	5710	3.80
151	5755	50.64
159	5795	49.44

Spectrum Plot of Worst Value

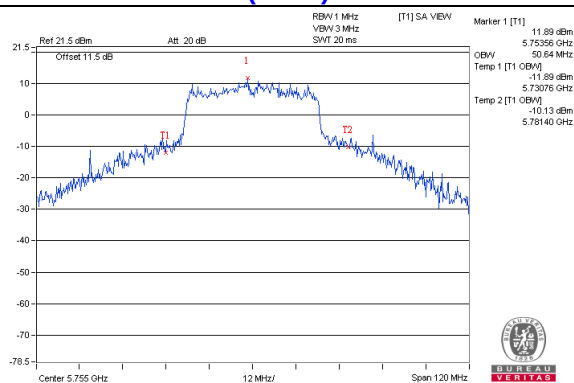
802.11a / CH149



802.11n (HT20) / CH149

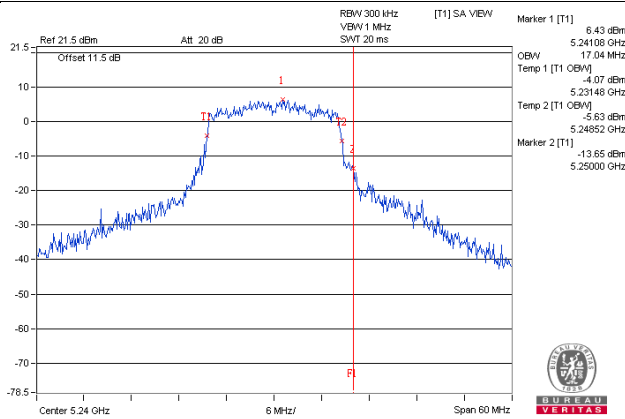


802.11n (HT40) / CH151

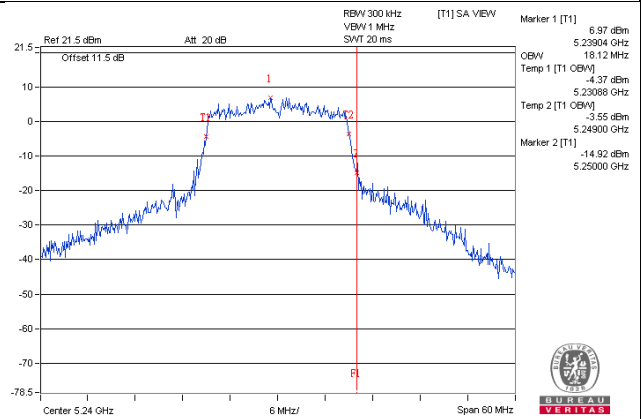


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

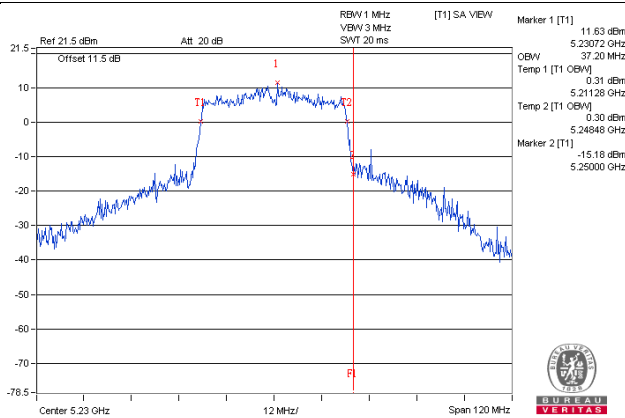
802.11a / CH48



802.11 (HT20) / CH48

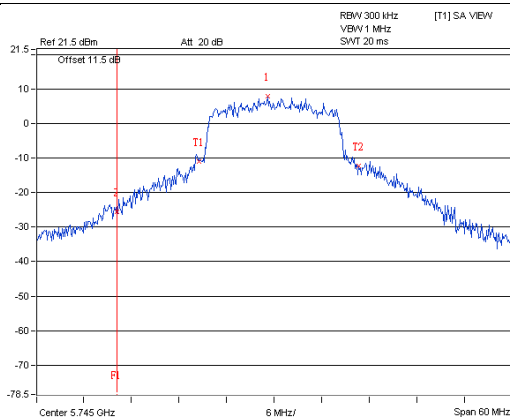


802.11n (HT40) / CH46

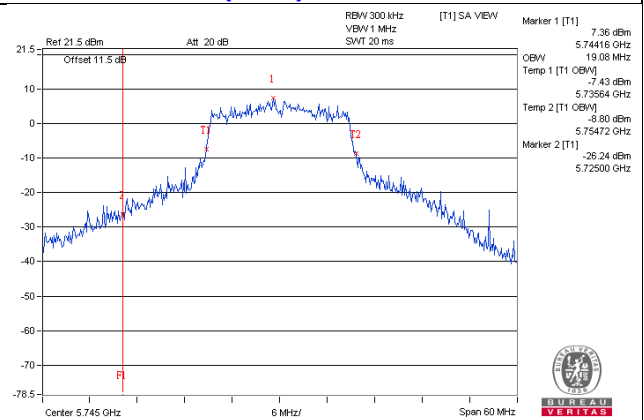


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

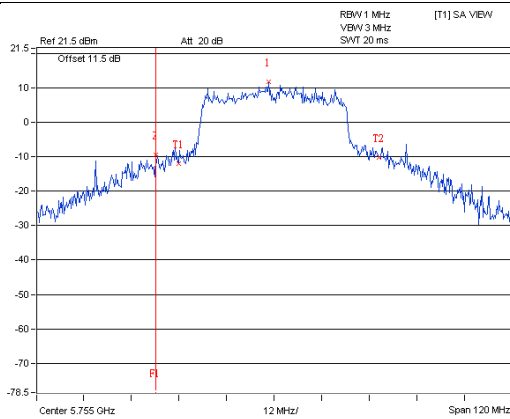
802.11a_Chain0 / CH149



802.11n (HT20)_Chain0 / CH149



802.11n (HT40)_Chain0 / CH151

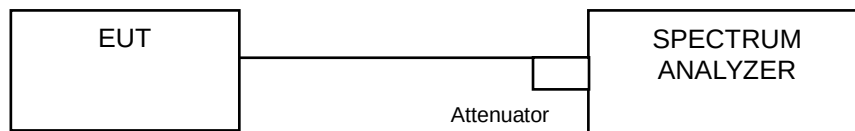


4.5 Peak Power Spectral Density Measurement

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 Procedure

802.11a , 802.11n (HT20) :

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

Using method SA-1

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

For U-NII-3 band:

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

802.11n (HT40):

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

Using method SA-2

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

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	2.14	11.00	Pass
40	5200	2.32	11.00	Pass
48	5240	3.07	11.00	Pass
52	5260	2.56	11.00	Pass
60	5300	3.35	11.00	Pass
64	5320	3.84	11.00	Pass
100	5500	4.17	11.00	Pass
116	5580	4.32	11.00	Pass
140	5700	2.64	11.00	Pass
144 (UNII-2C Band)	5720	3.86	11.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	2.76	11.00	Pass
40	5200	2.91	11.00	Pass
48	5240	3.04	11.00	Pass
52	5260	3.33	11.00	Pass
60	5300	4.22	11.00	Pass
64	5320	3.66	11.00	Pass
100	5500	3.20	11.00	Pass
116	5580	5.76	11.00	Pass
140	5700	4.23	11.00	Pass
144 (UNII-2C Band)	5720	3.31	11.00	Pass

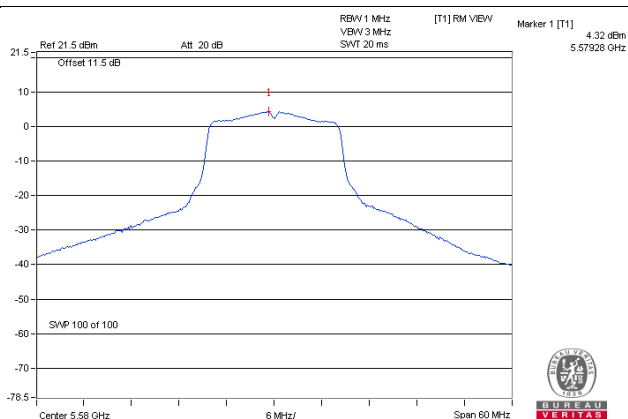
802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Conducted PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
38	5190	-3.36	0.14	-3.22	11.00	Pass
46	5230	0.78	0.14	0.92	11.00	Pass
54	5270	1.73	0.14	1.87	11.00	Pass
62	5310	-2.63	0.14	-2.48	11.00	Pass
102	5510	-2.34	0.14	-2.20	11.00	Pass
110	5550	2.19	0.14	2.33	11.00	Pass
134	5670	0.62	0.14	0.76	11.00	Pass
142 (UNII-2C Band)	5710	0.67	0.14	0.81	11.00	Pass

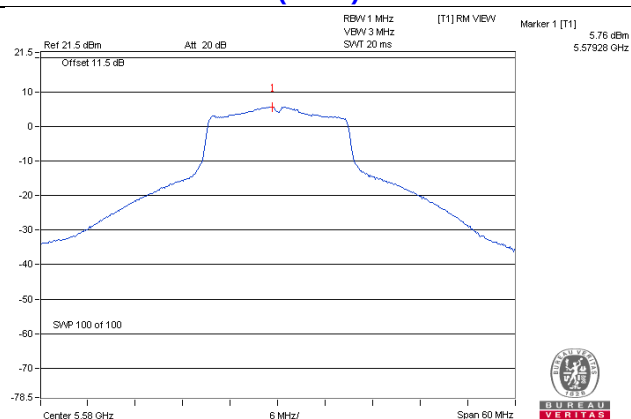
Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

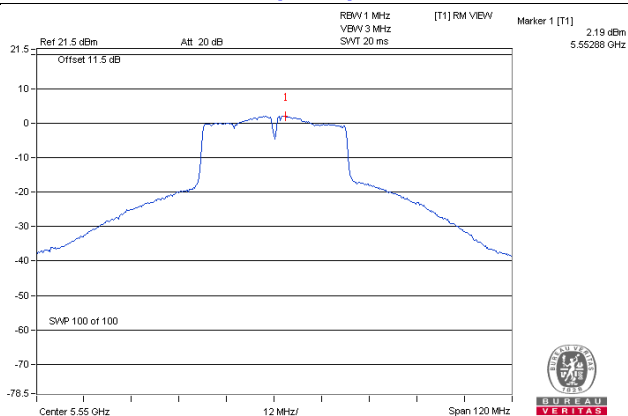
802.11a / CH116



802.11n (HT20) / CH116



802.11n (HT40) / CH110



For UNII-3:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
144 (UNII-3 Band)	5720	-6.89	-4.67	30	Pass
149	5745	-4.33	-2.11	30	Pass
157	5785	-4.62	-2.40	30	Pass
165	5825	-4.45	-2.23	30	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
144 (UNII-3 Band)	5720	-7.69	-5.47	30	Pass
149	5745	-4.80	-2.58	30	Pass
157	5785	-5.08	-2.86	30	Pass
165	5825	-4.99	-2.77	30	Pass

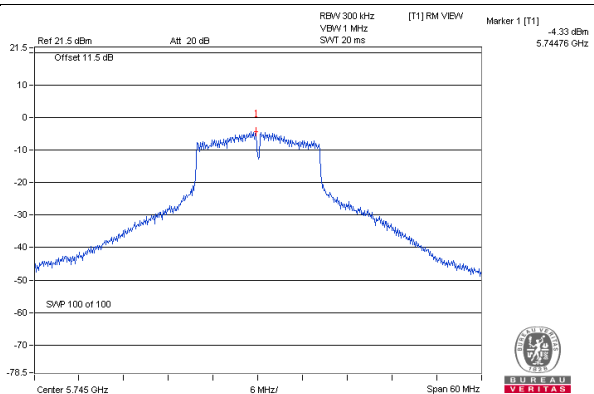
802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
		(dBm/300kHz)	(dBm/500kHz)				
142 (UNII-3 Band)	5710	-10.46	-8.24	0.14	-8.10	30	Pass
151	5755	-7.18	-4.96	0.14	-4.82	30	Pass
159	5795	-7.71	-5.49	0.14	-5.35	30	Pass

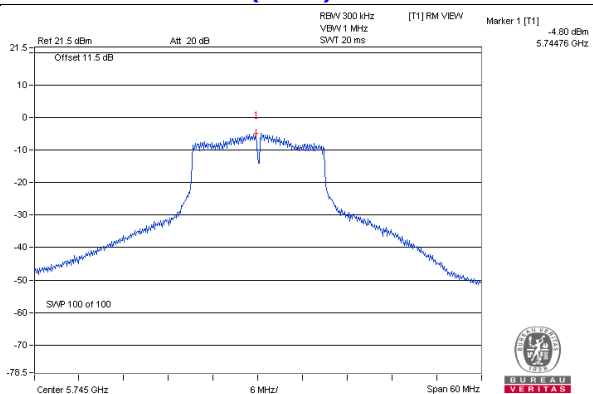
Note: 1. Refer to section 3.3 for duty cycle spectrum plot.the various outputs by computer.

Spectrum Plot of Worst Value

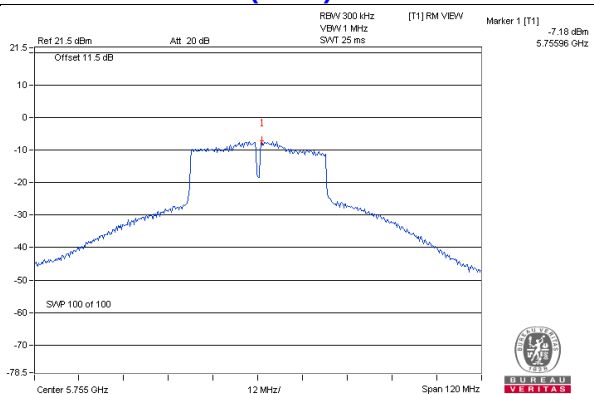
802.11a : CH 149



802.11n (HT20) : CH 149



802.11n (HT40) : CH 151

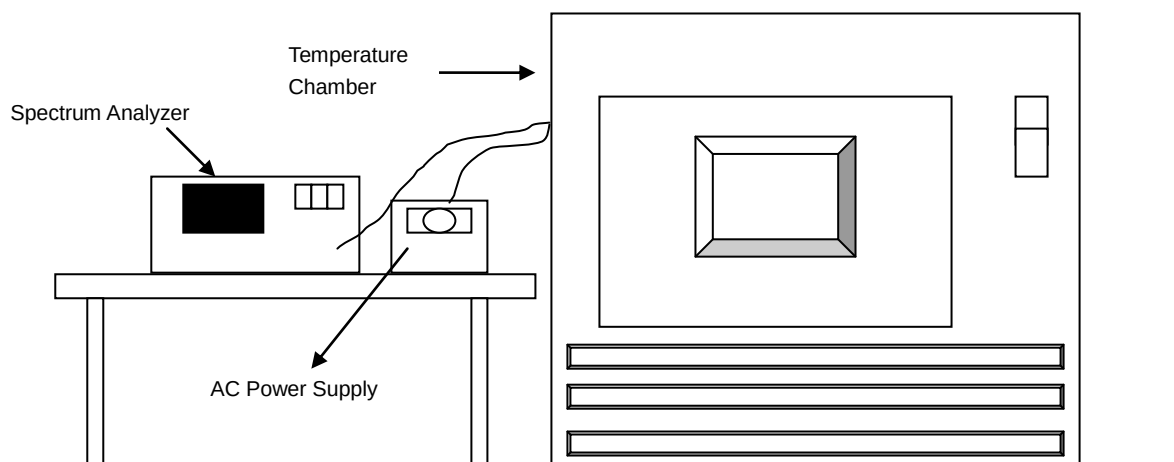


4.6 Frequency Stability Measurement

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: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5179.9964	PASS	5179.9957	PASS	5179.9934	PASS	5179.9962	PASS
40	120	5179.9984	PASS	5179.9993	PASS	5179.9983	PASS	5179.9956	PASS
30	120	5179.9871	PASS	5179.9857	PASS	5179.9853	PASS	5179.9861	PASS
20	120	5180.0016	PASS	5180.0008	PASS	5179.9981	PASS	5179.9981	PASS
10	120	5180.0056	PASS	5180.0072	PASS	5180.0061	PASS	5180.0072	PASS
0	120	5180.0037	PASS	5180.0079	PASS	5180.0043	PASS	5180.0031	PASS
-10	120	5180.0161	PASS	5180.018	PASS	5180.0149	PASS	5180.0175	PASS
-20	120	5179.9969	PASS	5179.997	PASS	5180.0002	PASS	5179.998	PASS
-30	120	5179.987	PASS	5179.9895	PASS	5179.9856	PASS	5179.9851	PASS

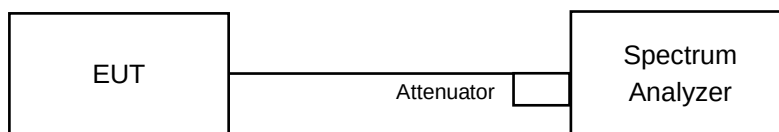
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0013	PASS	5180.0017	PASS	5179.9988	PASS	5179.9987	PASS
	120	5180.0016	PASS	5180.0008	PASS	5179.9981	PASS	5179.9981	PASS
	102	5180.0017	PASS	5180.0008	PASS	5179.9989	PASS	5179.9978	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
144 (UNII-3 Band)	5720	2.92	0.5	Pass
149	5745	16.07	0.5	Pass
157	5785	16.11	0.5	Pass
165	5825	16.12	0.5	Pass

802.11n (HT20)

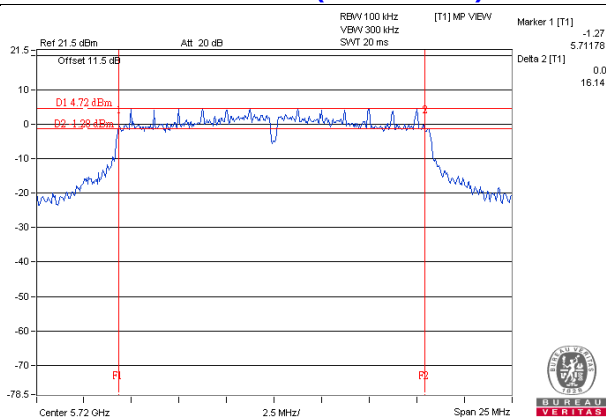
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144 (UNII-3 Band)	5720	3.40	0.5	Pass
149	5745	17.31	0.5	Pass
157	5785	17.53	0.5	Pass
165	5825	17.31	0.5	Pass

802.11n (HT40)

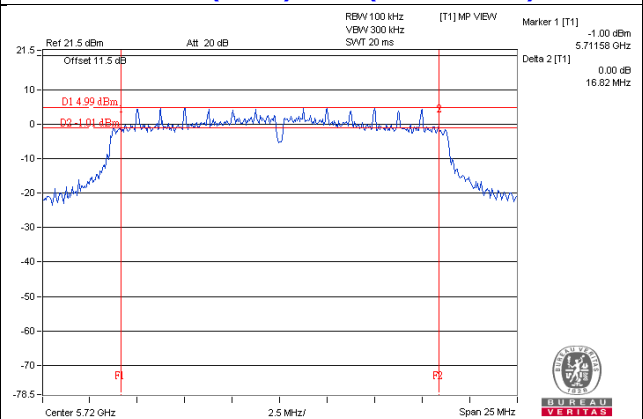
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142 (UNII-3 Band)	5710	2.67	0.5	Pass
151	5755	35.82	0.5	Pass
159	5795	35.87	0.5	Pass

Spectrum Plot of Worst Value

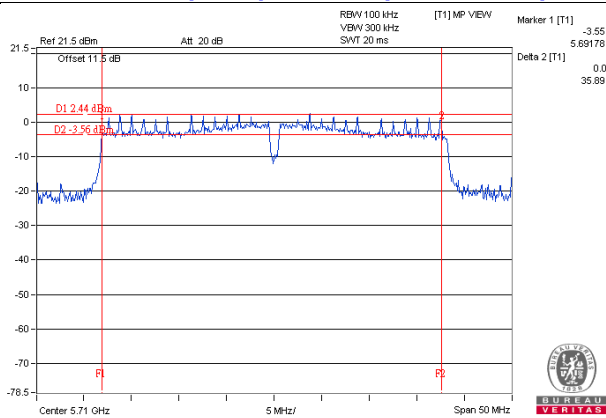
802.11a / 144 (UNII-3 Band)



802.11n (HT20) / 144 (UNII-3 Band)



802.11n (HT40) / CH142 (UNII-3 Band)



Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

5 Pictures of Test Arrangements

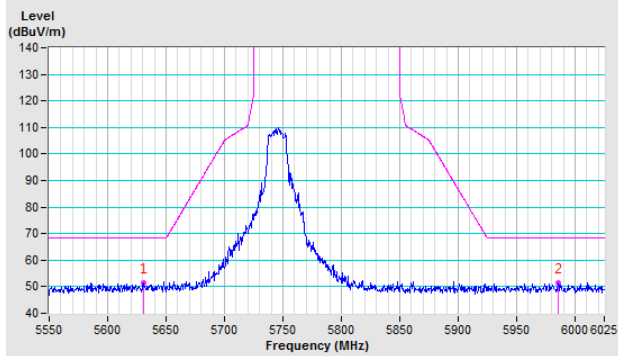
Please refer to the attached file (Test Setup Photo).

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

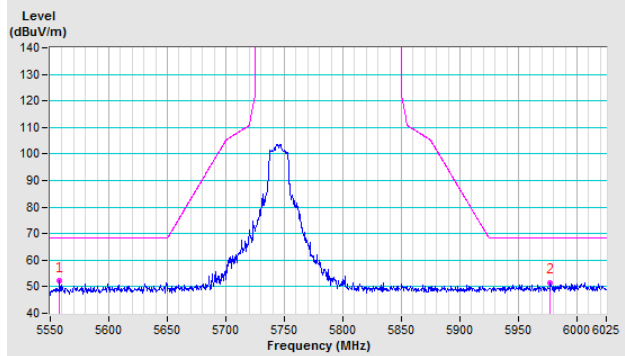
802.11a

CH 149 5745 MHz

Horizontal

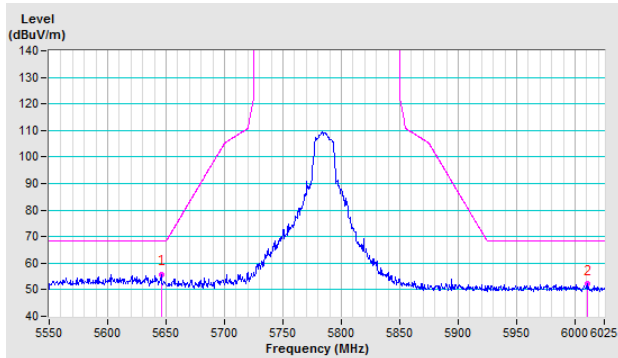


Vertical

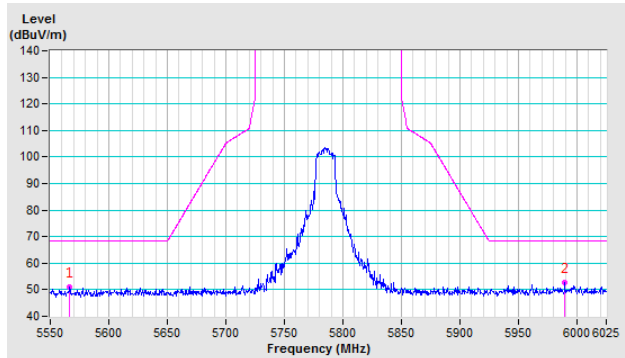


CH 157 5785 MHz

Horizontal

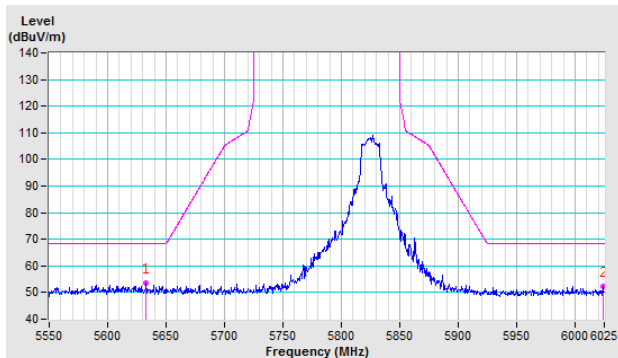


Vertical

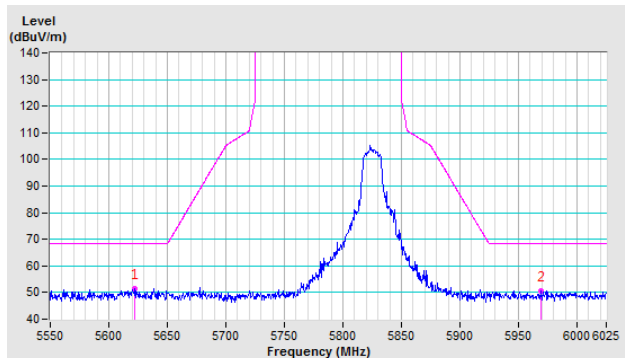


CH 165 5825 MHz

Horizontal



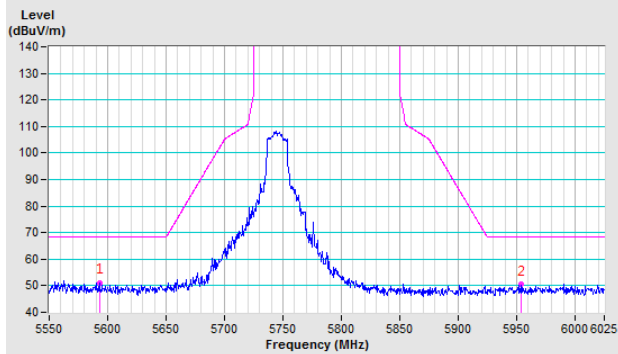
Vertical



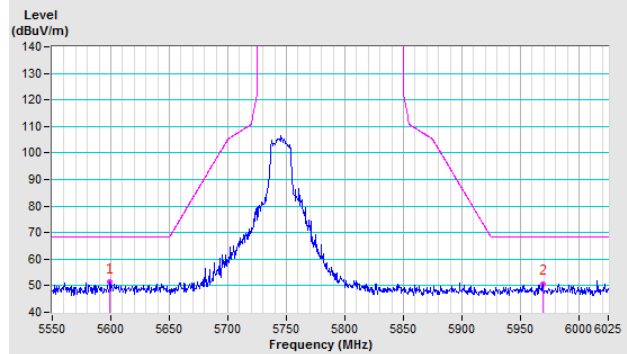
802.11n (HT20)

CH 149 5745 MHz

Horizontal

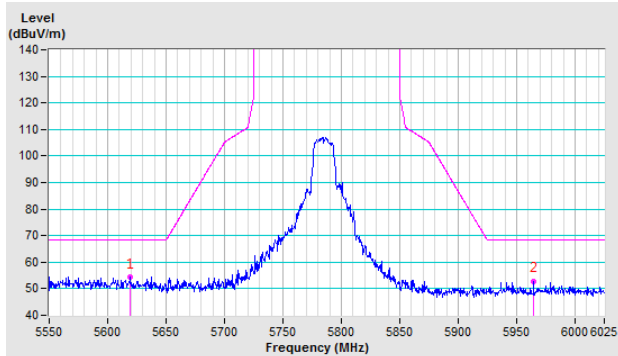


Vertical

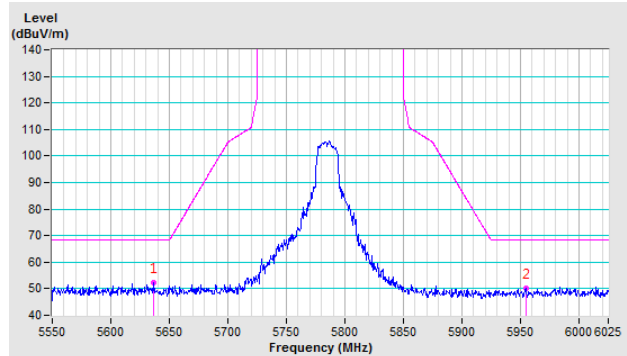


CH 157 5785 MHz

Horizontal

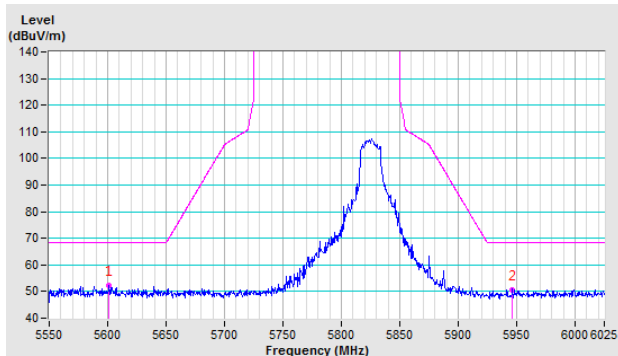


Vertical

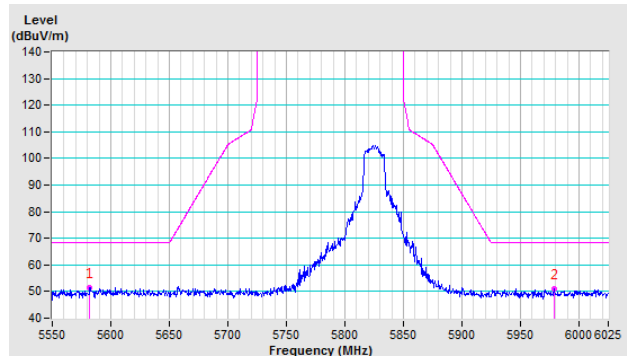


CH 165 5825 MHz

Horizontal



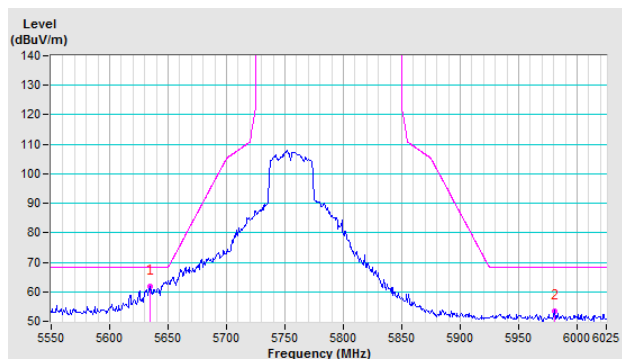
Vertical



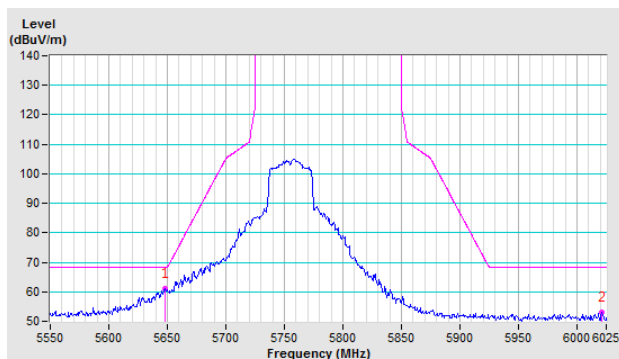
802.11n (HT40)

CH 151 5755 MHz

Horizontal

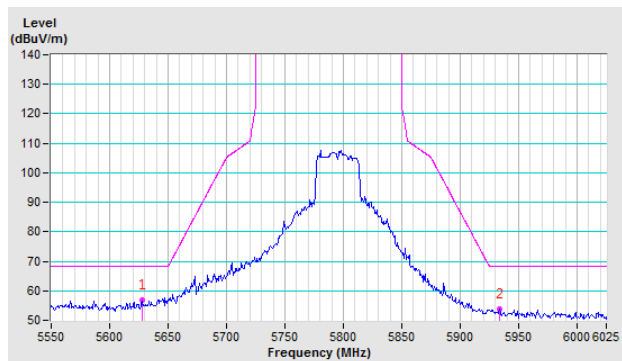


Vertical

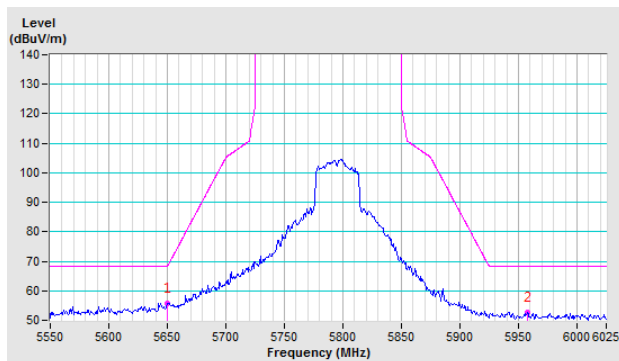


CH 159 5795 MHz

Horizontal



Vertical



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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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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