FCC Test Report (WLAN)

Report No.: RF170605E04-1

FCC ID: JNZS00166

Test Model: S-00166

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 Hsin Chu Laboratory

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Release Control Record

Issue No.	Description	Date Issued
RF170605E04-1	Original release.	Aug. 04, 2017

1 Certificate of Conformity

Product: Wireless Speaker

Brand: ULTIMATE EARS

Test Model: S-00166

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 : , **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 -5.89dB at 0.36875MHz.
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 17355.00MHz, 17475.00MHz, 5470.00MHz, 17265.00MHz, 17385.00MHz
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) (±)
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 (WLAN)

Product	Wireless Speaker
Brand	ULTIMATE EARS
PMN	BLAST
Test Model	S-00166
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.6V from battery DC 5.1V from Adapter DC 5.1V 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, 5.5 ~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:** 281.19mW **5.18 ~ 5.24GHz:** 118.032mW **5.26 ~ 5.32GHz:** 70.146mW **5.5 ~ 5.72GHz:** 59.293mW **5.745 ~ 5.825GHz:** 65.013mW
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 (shielded, 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 3.6V battery, power adapter or charging dock as the following table:

Adapter		
Brand Name	Model No.	Spec.
ULTIMATE EARS	AD2051J20	AC Input: 100-240Vac, 50/60Hz, 0.3A DC Output: 5.1Vdc, 2.0A DC output cable shielded, 1.2m
Battery		
Brand Name	Model No.	Spec.
SANYO ENERGY (TAIWAN) CO LTD (Logitech)	533-000104	3.6 V 3200mAh
Charging Dock		
Brand Name	Model No.	Spec.
ULTIMATE EARS	S-00165	Input: 5.1V, 2A Output :5.1V, 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	-4.73	2.4-2.4835	Printed
				-3.23	5.150-5.725	
				-8.04	5.725-5.850	
WiFi Ant 2	chain 1			-4.11	2.4-2.4835	
				-1.74	5.150-5.725	
				-4.18	5.725-5.850	
BT	chain 0			-3.81	2.4-2.4835	

Note: From the above antennas, **WiFi Ant 2** 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
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	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	Powered by Adapter
2			√		Powered by Laptop

Where **RE≥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 **X-plane**.

Radiated Emission Test (Above 1GHz):

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

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)
802.11a	5180-5240	36 to 48	40	OFDM	BPSK	6
	5260-5320	52 to 64				
	5500-5720	100 to 144				
	5745-5825	149 to 157				

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)
802.11a	5180-5240	36 to 48	40	OFDM	BPSK	6
	5260-5320	52 to 64				
	5500-5720	100 to 144				
	5745-5825	149 to 157				

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

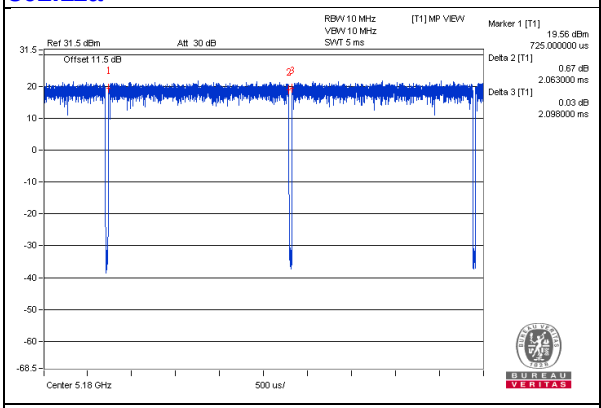
Test Condition:

Applicable To	Environmental Conditions	Input Power (SYSTEM)	Tested By
RE≥1G	25deg. C, 68%RH	120Vac, 60Hz	Andy Ho
RE<1G	24deg. C, 65%RH	120Vac, 60Hz	JyunChun.Lin
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

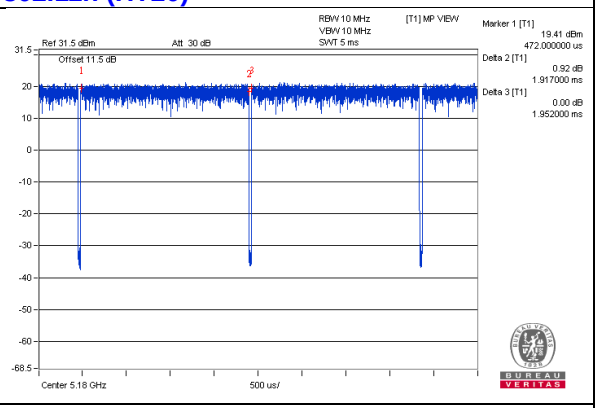
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98 %, duty factor is required
802.11a: Duty cycle = 2.063/2.098 = 0.983
802.11n (HT20): Duty cycle = 1.917/1.952 = 0.982
802.11n (HT40): Duty cycle = 0.943/0.977 = 0.965, Duty factor = 10 * log(1/0.965) = 0.15

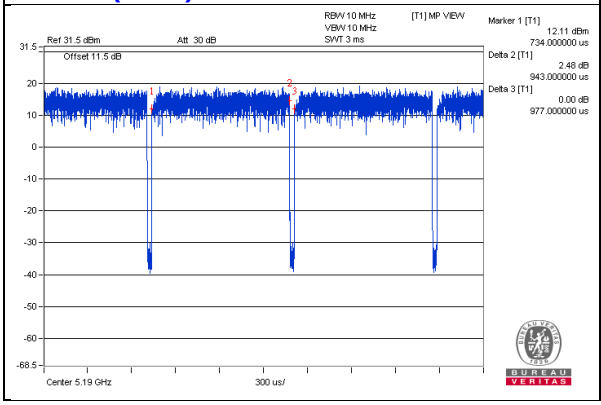
802.11a



802.11n (HT20)



802.11n (HT40)



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

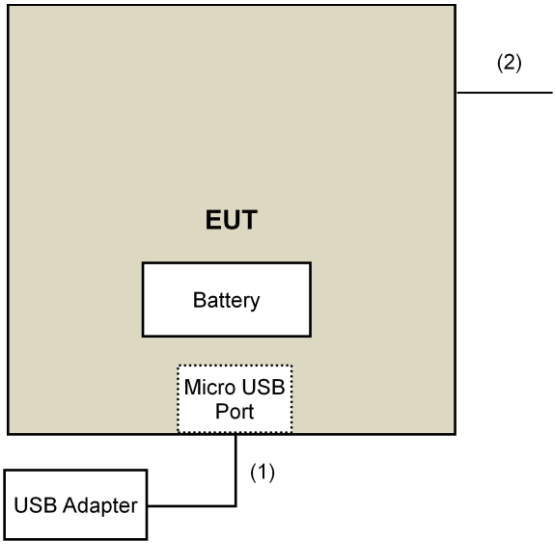
Note:

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.

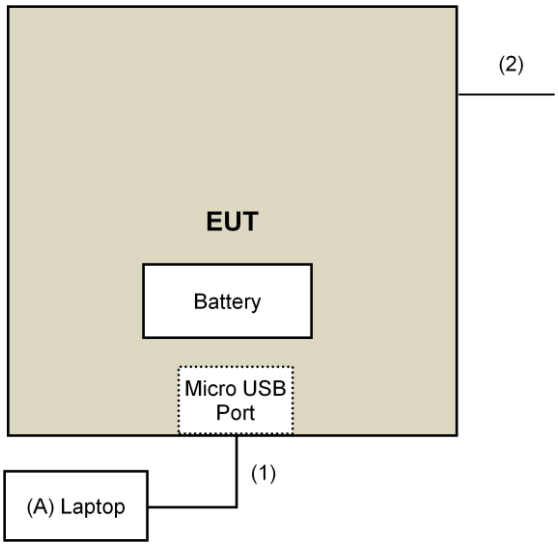
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.2	No	0	Supplied by client
2.	Console Cable	1	0.1	No	0	Supplied by client (for RF Setup)

3.4.1 Configuration of System under Test

For Mode 1 (Powered by Adapter):



For Mode 2 (Powered by Laptop):



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:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v01r04			Field Strength at 3m	
			PK:74 (dBμV/m)	AV:54 (dBμV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK:122.2 (dBμV/m) *4
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/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
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
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017

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: June 27 to July 19, 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:

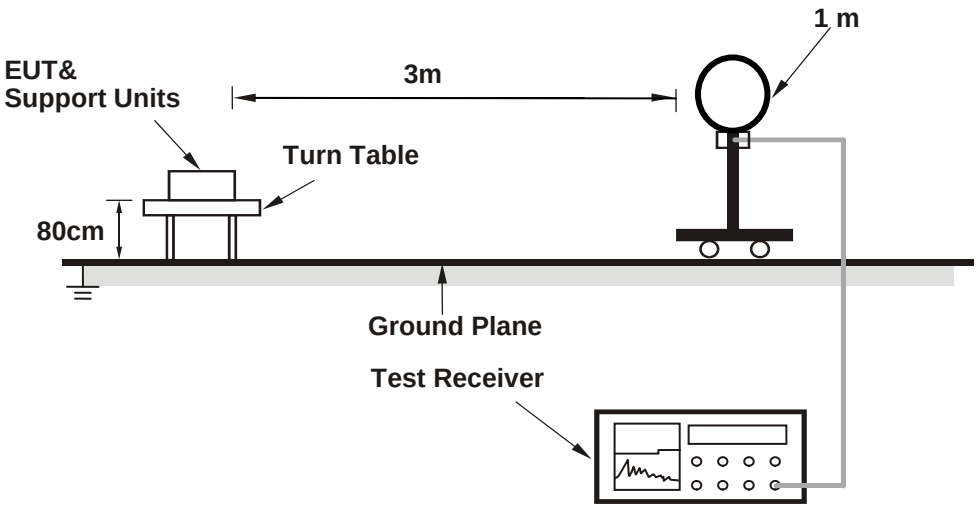
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 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

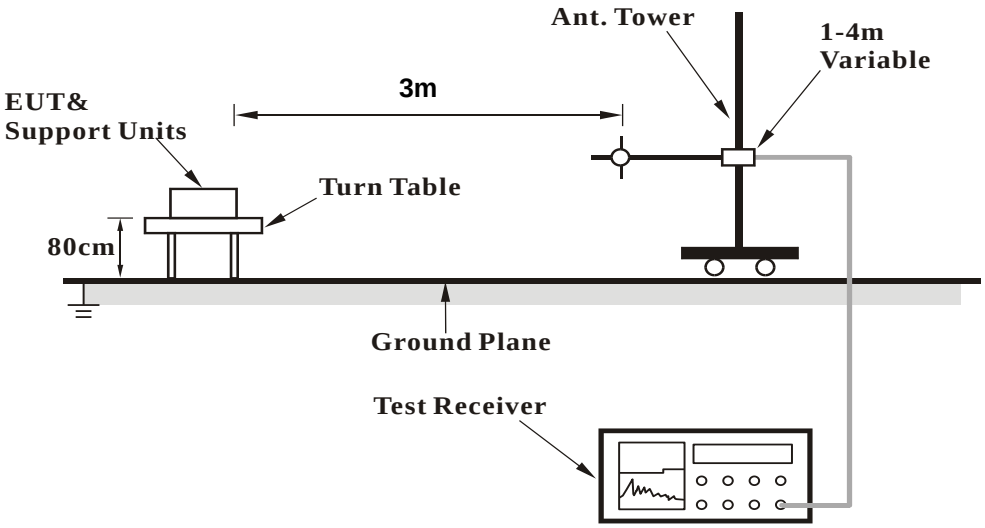
No deviation.

4.1.5 Test Setup

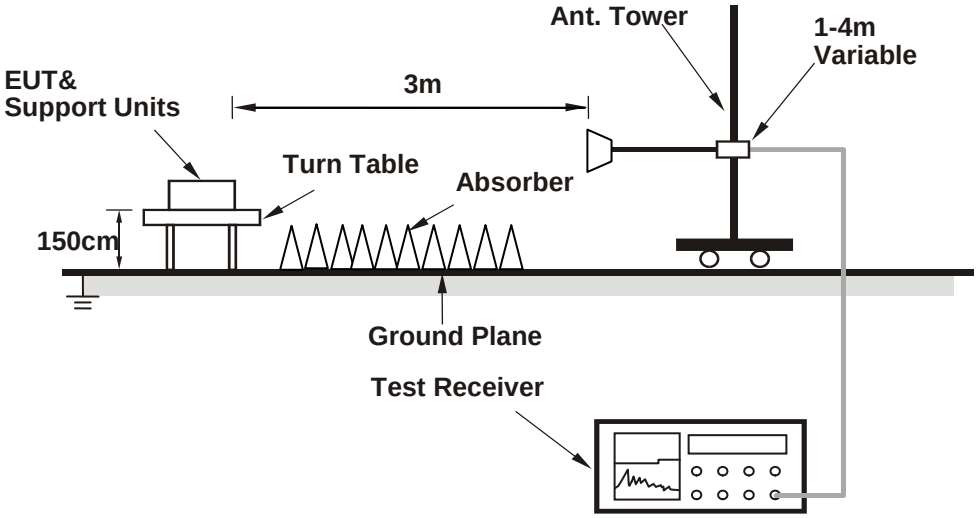
For Radiated emission below 30MHz



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

a. Connected the EUT with the Laptop which is placed on remote site.
b. Contorlling software (MTool_3.1.0.1) 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	67.8 PK	74.0	-6.2	1.50 H	84	63.8	4.0
2	5150.00	53.6 AV	54.0	-0.4	1.50 H	84	49.6	4.0
3	*5180.00	105.2 PK			1.50 H	84	101.2	4.0
4	*5180.00	96.3 AV			1.50 H	84	92.3	4.0
5	#10360.00	57.9 PK	74.0	-16.1	1.32 H	60	44.3	13.6
6	#10360.00	45.6 AV	54.0	-8.4	1.32 H	60	32.0	13.6
7	15540.00	51.7 PK	74.0	-22.3	2.87 H	165	38.5	13.2
8	15540.00	39.2 AV	54.0	-14.8	2.87 H	165	26.0	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	67.1 PK	74.0	-6.9	1.16 V	114	63.1	4.0
2	5150.00	53.0 AV	54.0	-1.0	1.16 V	114	49.0	4.0
3	*5180.00	105.4 PK			1.16 V	114	101.4	4.0
4	*5180.00	96.1 AV			1.16 V	114	92.1	4.0
5	#10360.00	60.2 PK	74.0	-13.8	2.09 V	147	46.6	13.6
6	#10360.00	46.4 AV	54.0	-7.6	2.09 V	147	32.8	13.6
7	15540.00	51.2 PK	74.0	-22.8	3.74 V	118	38.0	13.2
8	15540.00	38.1 AV	54.0	-15.9	3.74 V	118	24.9	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.2 PK	74.0	-10.8	1.50 H	81	59.2	4.0
2	5150.00	49.5 AV	54.0	-4.5	1.50 H	81	45.5	4.0
3	*5200.00	108.1 PK			1.50 H	81	104.1	4.0
4	*5200.00	98.5 AV			1.50 H	81	94.5	4.0
5	#10400.00	61.0 PK	74.0	-13.0	1.35 H	60	47.4	13.6
6	#10400.00	48.8 AV	54.0	-5.2	1.35 H	60	35.2	13.6
7	15600.00	51.5 PK	74.0	-22.5	2.88 H	169	38.1	13.4
8	15600.00	39.0 AV	54.0	-15.0	2.88 H	169	25.6	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	64.2 PK	74.0	-9.8	1.09 V	102	60.2	4.0
2	5150.00	49.7 AV	54.0	-4.3	1.09 V	102	45.7	4.0
3	*5200.00	109.4 PK			1.09 V	102	105.4	4.0
4	*5200.00	99.7 AV			1.09 V	102	95.7	4.0
5	#10400.00	63.0 PK	74.0	-11.0	2.14 V	137	49.4	13.6
6	#10400.00	49.5 AV	54.0	-4.5	2.14 V	137	35.9	13.6
7	15600.00	52.1 PK	74.0	-21.9	3.73 V	130	38.7	13.4
8	15600.00	39.2 AV	54.0	-14.8	3.73 V	130	25.8	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	105.6 PK			1.55 H	68	101.4	4.2
2	*5240.00	96.2 AV			1.55 H	68	92.0	4.2
3	5350.00	49.3 PK	74.0	-24.7	1.55 H	68	44.9	4.4
4	5350.00	36.1 AV	54.0	-17.9	1.55 H	68	31.7	4.4
5	#10480.00	56.6 PK	74.0	-17.4	1.36 H	51	42.9	13.7
6	#10480.00	44.7 AV	54.0	-9.3	1.36 H	51	31.0	13.7
7	15720.00	52.1 PK	74.0	-21.9	2.83 H	157	38.1	14.0
8	15720.00	39.4 AV	54.0	-14.6	2.83 H	157	25.4	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	106.0 PK			1.12 V	106	101.8	4.2
2	*5240.00	96.6 AV			1.12 V	106	92.4	4.2
3	5350.00	49.6 PK	74.0	-24.4	1.12 V	106	45.2	4.4
4	5350.00	36.3 AV	54.0	-17.7	1.12 V	106	31.9	4.4
5	#10480.00	59.1 PK	74.0	-14.9	2.11 V	129	45.4	13.7
6	#10480.00	45.3 AV	54.0	-8.7	2.11 V	129	31.6	13.7
7	15720.00	52.0 PK	74.0	-22.0	3.78 V	146	38.0	14.0
8	15720.00	39.2 AV	54.0	-14.8	3.78 V	146	25.2	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	48.4 PK	74.0	-25.6	1.53 H	57	44.4	4.0
2	5150.00	35.9 AV	54.0	-18.1	1.53 H	57	31.9	4.0
3	*5260.00	106.1 PK			1.53 H	57	101.9	4.2
4	*5260.00	96.6 AV			1.53 H	57	92.4	4.2
5	#10520.00	56.4 PK	74.0	-17.6	1.39 H	48	42.6	13.8
6	#10520.00	44.2 AV	54.0	-9.8	1.39 H	48	30.4	13.8
7	15780.00	52.3 PK	74.0	-21.7	2.81 H	148	38.2	14.1
8	15780.00	39.6 AV	54.0	-14.4	2.81 H	148	25.5	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	48.6 PK	74.0	-25.4	1.05 V	115	44.6	4.0
2	5150.00	36.1 AV	54.0	-17.9	1.05 V	115	32.1	4.0
3	*5260.00	106.5 PK			1.05 V	115	102.3	4.2
4	*5260.00	97.0 AV			1.05 V	115	92.8	4.2
5	#10520.00	59.1 PK	74.0	-14.9	2.15 V	141	45.3	13.8
6	#10520.00	45.0 AV	54.0	-9.0	2.15 V	141	31.2	13.8
7	15780.00	51.8 PK	74.0	-22.2	3.76 V	132	37.7	14.1
8	15780.00	39.2 AV	54.0	-14.8	3.76 V	132	25.1	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	106.4 PK			1.59 H	57	102.1	4.3
2	*5300.00	96.9 AV			1.59 H	57	92.6	4.3
3	5350.00	53.5 PK	74.0	-20.5	1.59 H	57	49.1	4.4
4	5350.00	41.6 AV	54.0	-12.4	1.59 H	57	37.2	4.4
5	10600.00	56.5 PK	74.0	-17.5	1.30 H	36	42.7	13.8
6	10600.00	44.4 AV	54.0	-9.6	1.30 H	36	30.6	13.8
7	15900.00	52.3 PK	74.0	-21.7	2.81 H	168	39.1	13.2
8	15900.00	39.5 AV	54.0	-14.5	2.81 H	168	26.3	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	105.9 PK			1.08 V	111	101.6	4.3
2	*5300.00	96.6 AV			1.08 V	111	92.3	4.3
3	5350.00	53.0 PK	74.0	-21.0	1.08 V	111	48.6	4.4
4	5350.00	41.2 AV	54.0	-12.8	1.08 V	111	36.8	4.4
5	10600.00	59.2 PK	74.0	-14.8	2.09 V	132	45.4	13.8
6	10600.00	45.5 AV	54.0	-8.5	2.09 V	132	31.7	13.8
7	15900.00	51.9 PK	74.0	-22.1	3.83 V	139	38.7	13.2
8	15900.00	39.1 AV	54.0	-14.9	3.83 V	139	25.9	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	105.4 PK			1.63 H	64	101.1	4.3
2	*5320.00	95.9 AV			1.63 H	64	91.6	4.3
3	5350.00	68.3 PK	74.0	-5.7	1.63 H	64	63.9	4.4
4	5350.00	52.8 AV	54.0	-1.2	1.63 H	64	48.4	4.4
5	10640.00	56.8 PK	74.0	-17.2	1.36 H	47	42.8	14.0
6	10640.00	45.1 AV	54.0	-8.9	1.36 H	47	31.1	14.0
7	15960.00	51.5 PK	74.0	-22.5	2.87 H	172	38.0	13.5
8	15960.00	39.1 AV	54.0	-14.9	2.87 H	172	25.6	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	105.8 PK			1.04 V	106	101.5	4.3
2	*5320.00	96.0 AV			1.04 V	106	91.7	4.3
3	5350.00	68.5 PK	74.0	-5.5	1.04 V	106	64.1	4.4
4	5350.00	53.1 AV	54.0	-0.9	1.04 V	106	48.7	4.4
5	10640.00	59.2 PK	74.0	-14.8	2.07 V	141	45.2	14.0
6	10640.00	45.6 AV	54.0	-8.4	2.07 V	141	31.6	14.0
7	15960.00	52.5 PK	74.0	-21.5	3.81 V	140	39.0	13.5
8	15960.00	39.6 AV	54.0	-14.4	3.81 V	140	26.1	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	72.5 PK	74.0	-1.5	1.01 H	351	68.0	4.5
2	**#5470.00**	**53.9 AV**	**54.0**	**-0.1**	**1.01 H**	**351**	**49.4**	**4.5**
3	*5500.00	106.5 PK			1.01 H	351	102.0	4.5
4	*5500.00	96.7 AV			1.01 H	351	92.2	4.5
5	11000.00	56.9 PK	74.0	-17.1	1.40 H	36	42.1	14.8
6	11000.00	45.4 AV	54.0	-8.6	1.40 H	36	30.6	14.8
7	#16500.00	51.6 PK	74.0	-22.4	2.83 H	179	36.0	15.6
8	#16500.00	40.1 AV	54.0	-13.9	2.83 H	179	24.5	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	69.6 PK	74.0	-4.4	1.21 V	310	65.1	4.5
2	#5470.00	53.2 AV	54.0	-0.8	1.21 V	310	48.7	4.5
3	*5500.00	105.0 PK			1.21 V	310	100.5	4.5
4	*5500.00	95.6 AV			1.21 V	310	91.1	4.5
5	11000.00	59.5 PK	74.0	-14.5	2.08 V	129	44.7	14.8
6	11000.00	46.0 AV	54.0	-8.0	2.08 V	129	31.2	14.8
7	#16500.00	51.2 PK	74.0	-22.8	3.84 V	148	35.6	15.6
8	#16500.00	38.9 AV	54.0	-15.1	3.84 V	148	23.3	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	106.1 PK			1.58 H	74	101.5	4.6
2	*5580.00	98.4 AV			1.58 H	74	93.8	4.6
3	11160.00	55.1 PK	74.0	-18.9	1.35 H	52	40.7	14.4
4	11160.00	45.2 AV	54.0	-8.8	1.35 H	52	30.8	14.4
5	#16740.00	55.6 PK	74.0	-18.4	2.86 H	181	39.1	16.5
6	#16740.00	44.2 AV	54.0	-9.8	2.86 H	181	27.7	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	106.5 PK			1.07 V	49	101.9	4.6
2	*5580.00	98.7 AV			1.07 V	49	94.1	4.6
3	11160.00	58.6 PK	74.0	-15.4	2.03 V	144	44.2	14.4
4	11160.00	45.1 AV	54.0	-8.9	2.03 V	144	30.7	14.4
5	#16740.00	56.8 PK	74.0	-17.2	1.50 V	360	40.3	16.5
6	#16740.00	44.5 AV	54.0	-9.5	1.50 V	360	28.0	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	103.4 PK			1.02 H	360	98.6	4.8
2	*5700.00	93.6 AV			1.02 H	360	88.8	4.8
3	#5725.00	66.8 PK	74.0	-7.2	1.02 H	360	61.9	4.9
4	#5725.00	53.8 AV	54.0	-0.2	1.02 H	360	48.9	4.9
5	11400.00	54.9 PK	74.0	-19.1	2.14 H	54	40.5	14.4
6	11400.00	45.1 AV	54.0	-8.9	2.14 H	54	30.7	14.4
7	#17100.00	65.5 PK	74.0	-8.5	3.44 H	321	47.0	18.5
8	#17100.00	49.9 AV	54.0	-4.1	3.44 H	321	31.4	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	104.1 PK			1.00 V	51	99.3	4.8
2	*5700.00	94.2 AV			1.00 V	51	89.4	4.8
3	#5725.00	67.9 PK	74.0	-6.1	1.00 V	51	63.0	4.9
4	#5725.00	53.7 AV	54.0	-0.3	1.00 V	51	48.8	4.9
5	11400.00	58.7 PK	74.0	-15.3	2.07 V	151	44.3	14.4
6	11400.00	45.1 AV	54.0	-8.9	2.07 V	151	30.7	14.4
7	#17100.00	65.1 PK	74.0	-8.9	2.61 V	190	46.6	18.5
8	#17100.00	49.2 AV	54.0	-4.8	2.61 V	190	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	49.1 PK	74.0	-24.9	1.06 H	335	44.6	4.5
2	#5470.00	36.3 AV	54.0	-17.7	1.06 H	335	31.8	4.5
3	*5720.00	102.7 PK			1.02 H	353	97.8	4.9
4	*5720.00	93.1 AV			1.02 H	353	88.2	4.9
5	#5850.00	47.9 PK	74.0	-26.1	1.02 H	353	42.8	5.1
6	#5850.00	36.2 AV	54.0	-17.8	1.02 H	353	31.1	5.1
7	11440.00	56.1 PK	74.0	-17.9	1.37 H	51	41.9	14.2
8	11440.00	43.1 AV	54.0	-10.9	1.37 H	51	28.9	14.2
9	#17160.00	70.0 PK	74.0	-4.0	3.25 H	230	51.7	18.3
10	#17160.00	53.7 AV	54.0	-0.3	3.25 H	230	35.4	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	48.7 PK	74.0	-25.3	1.01 V	55	44.2	4.5
2	#5470.00	35.9 AV	54.0	-18.1	1.01 V	55	31.4	4.5
3	*5720.00	104.5 PK			1.01 V	55	99.6	4.9
4	*5720.00	94.5 AV			1.01 V	55	89.6	4.9
5	#5850.00	47.4 PK	74.0	-26.6	1.01 V	55	42.3	5.1
6	#5850.00	35.7 AV	54.0	-18.3	1.01 V	55	30.6	5.1
7	11440.00	57.6 PK	74.0	-16.4	1.04 V	337	43.4	14.2
8	11440.00	44.9 AV	54.0	-9.1	1.04 V	337	30.7	14.2
9	#17160.00	66.8 PK	74.0	-7.2	4.00 V	284	48.5	18.3
10	#17160.00	51.4 AV	54.0	-2.6	4.00 V	284	33.1	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5628.98	59.4 PK	68.2	-8.8	1.00 H	330	54.6	4.8
2	*5745.00	102.0 PK			1.00 H	330	97.0	5.0
3	*5745.00	92.6 AV			1.00 H	330	87.6	5.0
4	#5966.28	59.3 PK	68.2	-8.9	1.00 H	330	53.8	5.5
5	11490.00	55.8 PK	74.0	-18.2	1.40 H	51	41.7	14.1
6	11490.00	42.7 AV	54.0	-11.3	1.40 H	51	28.6	14.1
7	#17235.00	70.1 PK	74.0	-3.9	3.27 H	228	51.8	18.3
8	#17235.00	53.8 AV	54.0	-0.2	3.27 H	228	35.5	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	#5605.28	59.6 PK	68.2	-8.6	1.38 V	322	54.9	4.7
2	*5745.00	101.8 PK			1.38 V	322	96.8	5.0
3	*5745.00	92.4 AV			1.38 V	322	87.4	5.0
4	#5990.55	60.6 PK	68.2	-7.6	1.38 V	322	55.0	5.6
5	11490.00	57.8 PK	74.0	-16.2	1.10 V	322	43.7	14.1
6	11490.00	45.0 AV	54.0	-9.0	1.10 V	322	30.9	14.1
7	#17235.00	66.6 PK	74.0	-7.4	3.98 V	270	48.3	18.3
8	#17235.00	51.0 AV	54.0	-3.0	3.98 V	270	32.7	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.64	58.6 PK	68.2	-9.6	1.01 H	335	53.9	4.7
2	*5785.00	102.6 PK			1.01 H	335	97.6	5.0
3	*5785.00	93.0 AV			1.01 H	335	88.0	5.0
4	#5986.68	60.4 PK	68.2	-7.8	1.01 H	335	54.8	5.6
5	11570.00	56.3 PK	74.0	-17.7	1.41 H	41	42.3	14.0
6	11570.00	43.2 AV	54.0	-10.8	1.41 H	41	29.2	14.0
7	#17355.00	69.8 PK	74.0	-4.2	3.95 H	220	50.9	18.9
8	**#17355.00**	**53.9 AV**	**54.0**	**-0.1**	**3.95 H**	**220**	**35.0**	**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	#5611.43	60.1 PK	68.2	-8.1	1.30 V	311	55.4	4.7
2	*5785.00	102.8 PK			1.30 V	311	97.8	5.0
3	*5785.00	93.4 AV			1.30 V	311	88.4	5.0
4	#5953.29	60.7 PK	68.2	-7.5	1.30 V	311	55.3	5.4
5	11570.00	57.8 PK	74.0	-16.2	1.15 V	309	43.8	14.0
6	11570.00	45.2 AV	54.0	-8.8	1.15 V	309	31.2	14.0
7	#17355.00	67.0 PK	74.0	-7.0	3.96 V	266	48.1	18.9
8	#17355.00	51.1 AV	54.0	-2.9	3.96 V	266	32.2	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5633.77	59.6 PK	68.2	-8.6	1.03 H	317	54.8	4.8
2	*5825.00	101.7 PK			1.03 H	317	96.5	5.2
3	*5825.00	92.5 AV			1.03 H	317	87.3	5.2
4	#5938.34	59.5 PK	68.2	-8.7	1.03 H	317	54.1	5.4
5	11650.00	56.0 PK	74.0	-18.0	1.41 H	39	41.9	14.1
6	11650.00	43.1 AV	54.0	-10.9	1.41 H	39	29.0	14.1
7	#17475.00	69.5 PK	74.0	-4.5	3.68 H	228	49.8	19.7
8	**#17475.00**	**53.9 AV**	**54.0**	**-0.1**	**3.68 H**	**228**	**34.2**	**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	#5622.18	59.1 PK	68.2	-9.1	1.37 V	322	54.4	4.7
2	*5825.00	102.2 PK			1.37 V	322	97.0	5.2
3	*5825.00	92.6 AV			1.37 V	322	87.4	5.2
4	#5980.48	59.2 PK	68.2	-9.0	1.37 V	322	53.7	5.5
5	11650.00	58.2 PK	74.0	-15.8	1.16 V	309	44.1	14.1
6	11650.00	45.4 AV	54.0	-8.6	1.16 V	309	31.3	14.1
7	#17475.00	66.6 PK	74.0	-7.4	3.93 V	252	46.9	19.7
8	#17475.00	50.6 AV	54.0	-3.4	3.93 V	252	30.9	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 (HT20)

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

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	67.9 PK	74.0	-6.1	1.02 H	345	63.9	4.0
2	5150.00	53.6 AV	54.0	-0.4	1.02 H	345	49.6	4.0
3	*5180.00	106.2 PK			1.02 H	345	102.2	4.0
4	*5180.00	96.5 AV			1.02 H	345	92.5	4.0
5	#10360.00	60.2 PK	74.0	-13.8	2.19 H	150	46.6	13.6
6	#10360.00	46.5 AV	54.0	-7.5	2.19 H	150	32.9	13.6
7	15540.00	50.2 PK	74.0	-23.8	3.73 H	118	37.0	13.2
8	15540.00	38.1 AV	54.0	-15.9	3.73 H	118	24.9	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	65.3 PK	74.0	-8.7	1.01 V	14	61.3	4.0
2	5150.00	51.6 AV	54.0	-2.4	1.01 V	14	47.6	4.0
3	*5180.00	104.5 PK			1.01 V	14	100.5	4.0
4	*5180.00	94.8 AV			1.01 V	14	90.8	4.0
5	#10360.00	58.3 PK	74.0	-15.7	1.35 V	63	44.7	13.6
6	#10360.00	46.1 AV	54.0	-7.9	1.35 V	63	32.5	13.6
7	15540.00	50.6 PK	74.0	-23.4	2.83 V	148	37.4	13.2
8	15540.00	38.2 AV	54.0	-15.8	2.83 V	148	25.0	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	65.3 PK	74.0	-8.7	1.06 H	349	61.3	4.0
2	5150.00	51.2 AV	54.0	-2.8	1.06 H	349	47.2	4.0
3	*5200.00	108.6 PK			1.06 H	349	104.6	4.0
4	*5200.00	98.9 AV			1.06 H	349	94.9	4.0
5	5384.00	48.6 PK	74.0	-25.4	1.06 H	349	44.2	4.4
6	5384.00	37.2 AV	54.0	-16.8	1.06 H	349	32.8	4.4
7	#10400.00	63.3 PK	74.0	-10.7	2.14 H	140	49.7	13.6
8	#10400.00	49.6 AV	54.0	-4.4	2.14 H	140	36.0	13.6
9	15600.00	51.7 PK	74.0	-22.3	3.75 H	126	38.3	13.4
10	15600.00	39.0 AV	54.0	-15.0	3.75 H	126	25.6	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	64.9 PK	74.0	-9.1	1.05 V	20	60.9	4.0
2	5150.00	50.8 AV	54.0	-3.2	1.05 V	20	46.8	4.0
3	*5200.00	108.4 PK			1.05 V	20	104.4	4.0
4	*5200.00	98.5 AV			1.05 V	20	94.5	4.0
5	5384.00	48.2 PK	74.0	-25.8	1.05 V	20	43.8	4.4
6	5384.00	37.1 AV	54.0	-16.9	1.05 V	20	32.7	4.4
7	#10400.00	61.2 PK	74.0	-12.8	1.35 V	63	47.6	13.6
8	#10400.00	49.1 AV	54.0	-4.9	1.35 V	63	35.5	13.6
9	15600.00	51.8 PK	74.0	-22.2	2.84 V	163	38.4	13.4
10	15600.00	39.2 AV	54.0	-14.8	2.84 V	163	25.8	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	105.5 PK			1.36 H	346	101.3	4.2
2	*5240.00	96.4 AV			1.36 H	346	92.2	4.2
3	5350.00	48.5 PK	74.0	-25.5	1.36 H	346	44.1	4.4
4	5350.00	36.4 AV	54.0	-17.6	1.36 H	346	32.0	4.4
5	#10480.00	60.0 PK	74.0	-14.0	2.22 H	142	46.3	13.7
6	#10480.00	46.6 AV	54.0	-7.4	2.22 H	142	32.9	13.7
7	15720.00	51.0 PK	74.0	-23.0	3.67 H	129	37.0	14.0
8	15720.00	38.6 AV	54.0	-15.4	3.67 H	129	24.6	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	*5240.00	104.9 PK			1.05 V	44	100.7	4.2
2	*5240.00	95.4 AV			1.05 V	44	91.2	4.2
3	5350.00	47.9 PK	74.0	-26.1	1.05 V	44	43.5	4.4
4	5350.00	35.6 AV	54.0	-18.4	1.05 V	44	31.2	4.4
5	#10480.00	58.0 PK	74.0	-16.0	1.34 V	74	44.3	13.7
6	#10480.00	45.7 AV	54.0	-8.3	1.34 V	74	32.0	13.7
7	15720.00	50.7 PK	74.0	-23.3	2.78 V	140	36.7	14.0
8	15720.00	38.4 AV	54.0	-15.6	2.78 V	140	24.4	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	47.8 PK	74.0	-26.2	1.37 H	346	43.8	4.0
2	5150.00	36.2 AV	54.0	-17.8	1.37 H	346	32.2	4.0
3	*5260.00	107.2 PK			1.37 H	346	103.0	4.2
4	*5260.00	97.2 AV			1.37 H	346	93.0	4.2
5	5350.00	49.8 PK	74.0	-24.2	1.37 H	346	45.4	4.4
6	5350.00	36.6 AV	54.0	-17.4	1.37 H	346	32.2	4.4
7	#10520.00	60.6 PK	74.0	-13.4	2.13 H	158	46.8	13.8
8	#10520.00	46.8 AV	54.0	-7.2	2.13 H	158	33.0	13.8
9	15780.00	50.8 PK	74.0	-23.2	3.73 H	128	36.7	14.1
10	15780.00	38.6 AV	54.0	-15.4	3.73 H	128	24.5	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	46.8 PK	74.0	-27.2	1.14 V	50	42.8	4.0
2	5150.00	35.4 AV	54.0	-18.6	1.14 V	50	31.4	4.0
3	*5260.00	106.8 PK			1.14 V	50	102.6	4.2
4	*5260.00	96.5 AV			1.14 V	50	92.3	4.2
5	5350.00	48.5 PK	74.0	-25.5	1.14 V	50	44.1	4.4
6	5350.00	35.2 AV	54.0	-18.8	1.14 V	50	30.8	4.4
7	#10520.00	57.9 PK	74.0	-16.1	1.37 V	62	44.1	13.8
8	#10520.00	45.9 AV	54.0	-8.1	1.37 V	62	32.1	13.8
9	15780.00	50.2 PK	74.0	-23.8	2.80 V	137	36.1	14.1
10	15780.00	37.8 AV	54.0	-16.2	2.80 V	137	23.7	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	106.8 PK			1.30 H	345	102.5	4.3
2	*5300.00	96.7 AV			1.30 H	345	92.4	4.3
3	10600.00	60.7 PK	74.0	-13.3	2.08 H	173	46.9	13.8
4	10600.00	46.8 AV	54.0	-7.2	2.08 H	173	33.0	13.8
5	15900.00	51.0 PK	74.0	-23.0	3.74 H	120	37.8	13.2
6	15900.00	38.6 AV	54.0	-15.4	3.74 H	120	25.4	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	105.3 PK			1.07 V	65	101.0	4.3
2	*5300.00	95.7 AV			1.07 V	65	91.4	4.3
3	10600.00	57.5 PK	74.0	-16.5	1.34 V	74	43.7	13.8
4	10600.00	45.6 AV	54.0	-8.4	1.34 V	74	31.8	13.8
5	15900.00	50.0 PK	74.0	-24.0	2.84 V	124	36.8	13.2
6	15900.00	37.8 AV	54.0	-16.2	2.84 V	124	24.6	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	106.6 PK			1.20 H	347	102.3	4.3
2	*5320.00	96.4 AV			1.20 H	347	92.1	4.3
3	5350.00	68.3 PK	74.0	-5.7	1.20 H	347	63.9	4.4
4	5350.00	53.6 AV	54.0	-0.4	1.20 H	347	49.2	4.4
5	10640.00	60.5 PK	74.0	-13.5	2.16 H	156	46.5	14.0
6	10640.00	47.0 AV	54.0	-7.0	2.16 H	156	33.0	14.0
7	15960.00	51.0 PK	74.0	-23.0	3.73 H	138	37.5	13.5
8	15960.00	38.9 AV	54.0	-15.1	3.73 H	138	25.4	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	104.9 PK			1.00 V	26	100.6	4.3
2	*5320.00	94.9 AV			1.00 V	26	90.6	4.3
3	5350.00	68.5 PK	74.0	-5.5	1.00 V	26	64.1	4.4
4	5350.00	53.2 AV	54.0	-0.8	1.00 V	26	48.8	4.4
5	10640.00	57.2 PK	74.0	-16.8	1.37 V	47	43.2	14.0
6	10640.00	45.4 AV	54.0	-8.6	1.37 V	47	31.4	14.0
7	15960.00	50.4 PK	74.0	-23.6	2.77 V	142	36.9	13.5
8	15960.00	37.7 AV	54.0	-16.3	2.77 V	142	24.2	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	70.5 PK	74.0	-3.5	1.02 H	345	66.0	4.5
2	**#5470.00**	**53.9 AV**	**54.0**	**-0.1**	**1.02 H**	**345**	**49.4**	**4.5**
3	*5500.00	106.8 PK			1.02 H	345	102.3	4.5
4	*5500.00	96.7 AV			1.02 H	345	92.2	4.5
5	11000.00	56.9 PK	74.0	-17.1	1.39 H	34	42.1	14.8
6	11000.00	45.7 AV	54.0	-8.3	1.39 H	34	30.9	14.8
7	#16500.00	51.6 PK	74.0	-22.4	2.84 H	187	36.0	15.6
8	#16500.00	40.0 AV	54.0	-14.0	2.84 H	187	24.4	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	69.5 PK	74.0	-4.5	1.08 V	44	65.0	4.5
2	#5470.00	53.6 AV	54.0	-0.4	1.08 V	44	49.1	4.5
3	*5500.00	105.9 PK			1.08 V	44	101.4	4.5
4	*5500.00	95.8 AV			1.08 V	44	91.3	4.5
5	11000.00	59.8 PK	74.0	-14.2	2.03 V	140	45.0	14.8
6	11000.00	46.0 AV	54.0	-8.0	2.03 V	140	31.2	14.8
7	#16500.00	51.2 PK	74.0	-22.8	3.84 V	141	35.6	15.6
8	#16500.00	38.7 AV	54.0	-15.3	3.84 V	141	23.1	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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			1.11 H	345	104.2	4.6
2	*5580.00	98.1 AV			1.11 H	345	93.5	4.6
3	11160.00	55.1 PK	74.0	-18.9	1.38 H	46	40.7	14.4
4	11160.00	44.9 AV	54.0	-9.1	1.38 H	46	30.5	14.4
5	#16740.00	56.1 PK	74.0	-17.9	2.80 H	171	39.6	16.5
6	#16740.00	44.7 AV	54.0	-9.3	2.80 H	171	28.2	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	107.5 PK			1.10 V	53	102.9	4.6
2	*5580.00	97.5 AV			1.10 V	53	92.9	4.6
3	11160.00	58.6 PK	74.0	-15.4	2.03 V	153	44.2	14.4
4	11160.00	45.0 AV	54.0	-9.0	2.03 V	153	30.6	14.4
5	#16740.00	57.0 PK	74.0	-17.0	1.50 V	352	40.5	16.5
6	#16740.00	44.6 AV	54.0	-9.4	1.50 V	352	28.1	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	104.5 PK			1.15 H	344	99.7	4.8
2	*5700.00	94.2 AV			1.15 H	344	89.4	4.8
3	#5725.00	67.8 PK	74.0	-6.2	1.15 H	344	62.9	4.9
4	#5725.00	53.6 AV	54.0	-0.4	1.15 H	344	48.7	4.9
5	11400.00	54.4 PK	74.0	-19.6	2.16 H	55	40.0	14.4
6	11400.00	44.8 AV	54.0	-9.2	2.16 H	55	30.4	14.4
7	#17100.00	65.5 PK	74.0	-8.5	3.39 H	324	47.0	18.5
8	#17100.00	49.9 AV	54.0	-4.1	3.39 H	324	31.4	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	104.2 PK			1.02 V	36	99.4	4.8
2	*5700.00	93.5 AV			1.02 V	36	88.7	4.8
3	#5725.00	67.2 PK	74.0	-6.8	1.02 V	36	62.3	4.9
4	#5725.00	53.4 AV	54.0	-0.6	1.02 V	36	48.5	4.9
5	11400.00	59.1 PK	74.0	-14.9	2.11 V	137	44.7	14.4
6	11400.00	45.2 AV	54.0	-8.8	2.11 V	137	30.8	14.4
7	#17100.00	64.8 PK	74.0	-9.2	2.62 V	195	46.3	18.5
8	#17100.00	48.8 AV	54.0	-5.2	2.62 V	195	30.3	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	48.6 PK	74.0	-25.4	1.00 H	339	44.1	4.5
2	#5470.00	35.9 AV	54.0	-18.1	1.00 H	339	31.4	4.5
3	*5720.00	106.5 PK			1.00 H	339	101.6	4.9
4	*5720.00	96.3 AV			1.00 H	339	91.4	4.9
5	#5850.00	48.0 PK	74.0	-26.0	1.00 H	339	42.9	5.1
6	#5850.00	36.5 AV	54.0	-17.5	1.00 H	339	31.4	5.1
7	11440.00	51.4 PK	74.0	-22.6	2.09 H	179	37.2	14.2
8	11440.00	39.8 AV	54.0	-14.2	2.09 H	179	25.6	14.2
9	#17160.00	68.3 PK	74.0	-5.7	3.19 H	296	50.0	18.3
10	#17160.00	53.5 AV	54.0	-0.5	3.19 H	296	35.2	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	#5470.00	48.0 PK	74.0	-26.0	1.06 V	42	43.5	4.5
2	#5470.00	35.4 AV	54.0	-18.6	1.06 V	42	30.9	4.5
3	*5720.00	105.7 PK			1.06 V	42	100.8	4.9
4	*5720.00	95.7 AV			1.06 V	42	90.8	4.9
5	#5850.00	47.5 PK	74.0	-26.5	1.06 V	42	42.4	5.1
6	#5850.00	35.7 AV	54.0	-18.3	1.06 V	42	30.6	5.1
7	11440.00	54.4 PK	74.0	-19.6	1.33 V	200	40.2	14.2
8	11440.00	43.2 AV	54.0	-10.8	1.33 V	200	29.0	14.2
9	#17160.00	61.9 PK	74.0	-12.1	1.44 V	137	43.6	18.3
10	#17160.00	49.2 AV	54.0	-4.8	1.44 V	137	30.9	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5643.62	59.9 PK	68.2	-8.3	1.02 H	344	55.1	4.8
2	*5745.00	102.8 PK			1.02 H	344	97.8	5.0
3	*5745.00	93.1 AV			1.02 H	344	88.1	5.0
4	#5974.84	60.1 PK	68.2	-8.1	1.02 H	344	54.6	5.5
5	11490.00	51.8 PK	74.0	-22.2	2.05 H	168	37.7	14.1
6	11490.00	40.2 AV	54.0	-13.8	2.05 H	168	26.1	14.1
7	#17235.00	68.4 PK	74.0	-5.6	3.16 H	303	50.1	18.3
8	#17235.00	53.6 AV	54.0	-0.4	3.16 H	303	35.3	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	#5605.18	59.3 PK	68.2	-8.9	1.34 V	314	54.6	4.7
2	*5745.00	102.6 PK			1.34 V	314	97.6	5.0
3	*5745.00	92.9 AV			1.34 V	314	87.9	5.0
4	#5974.83	60.4 PK	68.2	-7.8	1.34 V	314	54.9	5.5
5	11490.00	54.7 PK	74.0	-19.3	1.32 V	216	40.6	14.1
6	11490.00	43.4 AV	54.0	-10.6	1.32 V	216	29.3	14.1
7	#17235.00	61.4 PK	74.0	-12.6	1.40 V	133	43.1	18.3
8	#17235.00	48.9 AV	54.0	-5.1	1.40 V	133	30.6	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5636.08	59.6 PK	68.2	-8.6	1.03 H	331	54.8	4.8
2	*5785.00	102.3 PK			1.03 H	331	97.3	5.0
3	*5785.00	92.4 AV			1.03 H	331	87.4	5.0
4	#5974.18	60.5 PK	68.2	-7.7	1.03 H	331	55.0	5.5
5	11570.00	52.0 PK	74.0	-22.0	2.07 H	172	38.0	14.0
6	11570.00	40.5 AV	54.0	-13.5	2.07 H	172	26.5	14.0
7	#17355.00	68.2 PK	74.0	-5.8	3.95 H	220	49.3	18.9
8	#17355.00	53.7 AV	54.0	-0.3	3.95 H	220	34.8	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	#5616.92	59.7 PK	68.2	-8.5	1.31 V	299	55.0	4.7
2	*5785.00	102.1 PK			1.31 V	299	97.1	5.0
3	*5785.00	92.3 AV			1.31 V	299	87.3	5.0
4	#6012.53	59.7 PK	68.2	-8.5	1.31 V	299	54.0	5.7
5	11570.00	55.1 PK	74.0	-18.9	1.30 V	227	41.1	14.0
6	11570.00	43.5 AV	54.0	-10.5	1.30 V	227	29.5	14.0
7	#17355.00	61.6 PK	74.0	-12.4	1.36 V	139	42.7	18.9
8	#17355.00	49.4 AV	54.0	-4.6	1.36 V	139	30.5	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5591.19	58.7 PK	68.2	-9.5	1.00 H	330	54.1	4.6
2	*5825.00	102.1 PK			1.01 H	330	96.9	5.2
3	*5825.00	92.5 AV			1.01 H	330	87.3	5.2
4	#5983.09	60.6 PK	68.2	-7.6	1.00 H	330	55.0	5.6
5	11650.00	51.2 PK	74.0	-22.8	2.02 H	158	37.1	14.1
6	11650.00	39.9 AV	54.0	-14.1	2.02 H	158	25.8	14.1
7	#17475.00	68.2 PK	74.0	-5.8	3.81 H	223	48.5	19.7
8	#17475.00	53.8 AV	54.0	-0.2	3.81 H	223	34.1	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	#5570.06	58.7 PK	68.2	-9.5	1.31 V	298	54.1	4.6
2	*5825.00	102.4 PK			1.31 V	298	97.2	5.2
3	*5825.00	92.6 AV			1.31 V	298	87.4	5.2
4	#5990.35	59.2 PK	68.2	-9.0	1.31 V	298	53.6	5.6
5	11650.00	54.8 PK	74.0	-19.2	1.30 V	216	40.7	14.1
6	11650.00	43.5 AV	54.0	-10.5	1.30 V	216	29.4	14.1
7	#17475.00	60.7 PK	74.0	-13.3	1.34 V	134	41.0	19.7
8	#17475.00	48.4 AV	54.0	-5.6	1.34 V	134	28.7	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	67.5 PK	74.0	-6.5	1.36 H	348	63.5	4.0
2	5150.00	53.7 AV	54.0	-0.3	1.36 H	348	49.7	4.0
3	*5190.00	100.7 PK			1.36 H	348	96.7	4.0
4	*5190.00	90.9 AV			1.36 H	348	86.9	4.0
5	5350.00	49.2 PK	74.0	-24.8	1.36 H	348	44.8	4.4
6	5350.00	36.2 AV	54.0	-17.8	1.36 H	348	31.8	4.4
7	#10380.00	62.8 PK	74.0	-11.2	2.11 H	154	49.2	13.6
8	#10380.00	49.3 AV	54.0	-4.7	2.11 H	154	35.7	13.6
9	15570.00	51.7 PK	74.0	-22.3	3.80 H	132	38.4	13.3
10	15570.00	38.9 AV	54.0	-15.1	3.80 H	132	25.6	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	5150.00	66.9 PK	74.0	-7.1	1.12 V	17	62.9	4.0
2	5150.00	53.2 AV	54.0	-0.8	1.12 V	17	49.2	4.0
3	*5190.00	98.9 PK			1.12 V	17	94.9	4.0
4	*5190.00	89.9 AV			1.12 V	17	85.9	4.0
5	5350.00	49.2 PK	74.0	-24.8	1.12 V	17	44.8	4.4
6	5350.00	36.2 AV	54.0	-17.8	1.12 V	17	31.8	4.4
7	#10380.00	61.4 PK	74.0	-12.6	1.40 V	74	47.8	13.6
8	#10380.00	49.1 AV	54.0	-4.9	1.40 V	74	35.5	13.6
9	15570.00	52.3 PK	74.0	-21.7	2.89 V	153	39.0	13.3
10	15570.00	39.6 AV	54.0	-14.4	2.89 V	153	26.3	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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	102.8 PK			1.41 H	345	98.6	4.2
2	*5230.00	93.4 AV			1.41 H	345	89.2	4.2
3	5350.00	48.9 PK	74.0	-25.1	1.41 H	345	44.5	4.4
4	5350.00	37.2 AV	54.0	-16.8	1.41 H	345	32.8	4.4
5	#10460.00	64.1 PK	74.0	-9.9	2.10 H	149	50.4	13.7
6	#10460.00	50.8 AV	54.0	-3.2	2.10 H	149	37.1	13.7
7	15690.00	52.0 PK	74.0	-22.0	3.82 H	146	38.0	14.0
8	15690.00	39.2 AV	54.0	-14.8	3.82 H	146	25.2	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	*5230.00	101.6 PK			1.18 V	8	97.4	4.2
2	*5230.00	92.5 AV			1.18 V	8	88.3	4.2
3	5350.00	47.6 PK	74.0	-26.4	1.00 V	0	43.2	4.4
4	5350.00	36.5 AV	54.0	-17.5	1.00 V	0	32.1	4.4
5	#10460.00	63.6 PK	74.0	-10.4	1.43 V	88	49.9	13.7
6	#10460.00	50.9 AV	54.0	-3.1	1.43 V	88	37.2	13.7
7	15690.00	52.6 PK	74.0	-21.4	2.93 V	152	38.6	14.0
8	15690.00	39.8 AV	54.0	-14.2	2.93 V	152	25.8	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	49.4 PK	74.0	-24.6	1.21 H	346	45.4	4.0
2	5150.00	38.2 AV	54.0	-15.8	1.21 H	346	34.2	4.0
3	*5270.00	104.0 PK			1.21 H	346	99.8	4.2
4	*5270.00	93.2 AV			1.21 H	346	89.0	4.2
5	5350.00	55.3 PK	74.0	-18.7	1.21 H	346	50.9	4.4
6	5350.00	42.6 AV	54.0	-11.4	1.21 H	346	38.2	4.4
7	#10540.00	63.5 PK	74.0	-10.5	2.07 H	134	49.8	13.7
8	#10540.00	50.4 AV	54.0	-3.6	2.07 H	134	36.7	13.7
9	15810.00	52.0 PK	74.0	-22.0	3.87 H	159	38.0	14.0
10	15810.00	39.4 AV	54.0	-14.6	3.87 H	159	25.4	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	48.6 PK	74.0	-25.4	1.14 V	21	44.6	4.0
2	5150.00	36.9 AV	54.0	-17.1	1.14 V	21	32.9	4.0
3	*5270.00	103.8 PK			1.14 V	21	99.6	4.2
4	*5270.00	82.5 AV			1.14 V	21	78.3	4.2
5	5350.00	54.3 PK	74.0	-19.7	1.14 V	21	49.9	4.4
6	5350.00	41.6 AV	54.0	-12.4	1.14 V	21	37.2	4.4
7	#10540.00	64.1 PK	74.0	-9.9	1.38 V	91	50.4	13.7
8	#10540.00	51.2 AV	54.0	-2.8	1.38 V	91	37.5	13.7
9	15810.00	52.0 PK	74.0	-22.0	2.94 V	152	38.0	14.0
10	15810.00	39.5 AV	54.0	-14.5	2.94 V	152	25.5	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 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	101.0 PK			1.31 H	346	96.7	4.3
2	*5310.00	91.1 AV			1.31 H	346	86.8	4.3
3	5350.00	72.6 PK	74.0	-1.4	1.31 H	346	68.2	4.4
4	5350.00	53.8 AV	54.0	-0.2	1.31 H	346	49.4	4.4
5	10620.00	62.9 PK	74.0	-11.1	2.11 H	167	49.0	13.9
6	10620.00	49.4 AV	54.0	-4.6	2.11 H	167	35.5	13.9
7	15930.00	51.6 PK	74.0	-22.4	3.78 H	128	38.3	13.3
8	15930.00	39.1 AV	54.0	-14.9	3.78 H	128	25.8	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	100.0 PK			1.16 V	10	95.7	4.3
2	*5310.00	90.6 AV			1.16 V	10	86.3	4.3
3	5350.00	70.9 PK	74.0	-3.1	1.16 V	10	66.5	4.4
4	5350.00	53.5 AV	54.0	-0.5	1.16 V	10	49.1	4.4
5	10620.00	61.2 PK	74.0	-12.8	1.35 V	86	47.3	13.9
6	10620.00	48.9 AV	54.0	-5.1	1.35 V	86	35.0	13.9
7	15930.00	51.9 PK	74.0	-22.1	2.85 V	152	38.6	13.3
8	15930.00	39.1 AV	54.0	-14.9	2.85 V	152	25.8	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	69.2 PK	74.0	-4.8	1.21 H	346	64.7	4.5
2	**#5470.00**	**53.9 AV**	**54.0**	**-0.1**	**1.21 H**	**346**	**49.4**	**4.5**
3	*5510.00	101.3 PK			1.21 H	346	96.7	4.6
4	*5510.00	90.7 AV			1.21 H	346	86.1	4.6
5	11020.00	63.3 PK	74.0	-10.7	2.06 H	165	48.6	14.7
6	11020.00	49.6 AV	54.0	-4.4	2.06 H	165	34.9	14.7
7	#16530.00	52.1 PK	74.0	-21.9	3.80 H	143	36.3	15.8
8	#16530.00	39.1 AV	54.0	-14.9	3.80 H	143	23.3	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	68.6 PK	74.0	-5.4	1.13 V	33	64.1	4.5
2	#5470.00	53.6 AV	54.0	-0.4	1.13 V	33	49.1	4.5
3	*5510.00	100.8 PK			1.13 V	33	96.2	4.6
4	*5510.00	89.6 AV			1.13 V	33	85.0	4.6
5	11020.00	61.1 PK	74.0	-12.9	1.39 V	89	46.4	14.7
6	11020.00	48.8 AV	54.0	-5.2	1.39 V	89	34.1	14.7
7	#16530.00	52.7 PK	74.0	-21.3	2.86 V	142	36.9	15.8
8	#16530.00	39.9 AV	54.0	-14.1	2.86 V	142	24.1	15.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	104.1 PK			1.05 H	349	99.6	4.5
2	*5550.00	93.7 AV			1.05 H	349	89.2	4.5
3	11100.00	55.7 PK	74.0	-18.3	1.41 H	55	41.3	14.4
4	11100.00	45.2 AV	54.0	-8.8	1.41 H	55	30.8	14.4
5	#16650.00	56.3 PK	74.0	-17.7	2.79 H	171	39.9	16.4
6	#16650.00	44.9 AV	54.0	-9.1	2.79 H	171	28.5	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	*5550.00	103.8 PK			1.18 V	29	99.3	4.5
2	*5550.00	93.1 AV			1.18 V	29	88.6	4.5
3	11100.00	59.2 PK	74.0	-14.8	2.03 V	156	44.8	14.4
4	11100.00	45.3 AV	54.0	-8.7	2.03 V	156	30.9	14.4
5	#16650.00	56.6 PK	74.0	-17.4	1.51 V	337	40.2	16.4
6	#16650.00	44.4 AV	54.0	-9.6	1.51 V	337	28.0	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	102.5 PK			1.01 H	345	97.7	4.8
2	*5670.00	91.9 AV			1.01 H	345	87.1	4.8
3	#5725.00	67.8 PK	74.0	-6.2	1.01 H	345	62.9	4.9
4	#5725.00	53.2 AV	54.0	-0.8	1.01 H	345	48.3	4.9
5	11340.00	53.9 PK	74.0	-20.1	2.20 H	54	39.5	14.4
6	11340.00	44.4 AV	54.0	-9.6	2.20 H	54	30.0	14.4
7	#17010.00	65.3 PK	74.0	-8.7	3.37 H	308	47.1	18.2
8	#17010.00	49.6 AV	54.0	-4.4	3.37 H	308	31.4	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	101.6 PK			1.16 V	25	96.8	4.8
2	*5670.00	90.8 AV			1.16 V	25	86.0	4.8
3	#5725.00	68.3 PK	74.0	-5.7	1.16 V	25	63.4	4.9
4	#5725.00	53.8 AV	54.0	-0.2	1.16 V	25	48.9	4.9
5	11340.00	59.6 PK	74.0	-14.4	2.06 V	143	45.2	14.4
6	11340.00	45.6 AV	54.0	-8.4	2.06 V	143	31.2	14.4
7	#17010.00	64.6 PK	74.0	-9.4	2.61 V	192	46.4	18.2
8	#17010.00	48.8 AV	54.0	-5.2	2.61 V	192	30.6	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	49.1 PK	74.0	-24.9	1.01 H	330	44.6	4.5
2	#5470.00	36.4 AV	54.0	-17.6	1.01 H	330	31.9	4.5
3	*5710.00	102.5 PK			1.01 H	330	97.6	4.9
4	*5710.00	92.1 AV			1.01 H	330	87.2	4.9
5	#5850.00	47.7 PK	74.0	-26.3	1.01 H	330	42.6	5.1
6	#5850.00	36.3 AV	54.0	-17.7	1.01 H	330	31.2	5.1
7	11420.00	52.5 PK	74.0	-21.5	2.10 H	180	38.2	14.3
8	11420.00	40.5 AV	54.0	-13.5	2.10 H	180	26.2	14.3
9	#17130.00	68.3 PK	74.0	-5.7	2.67 H	231	49.8	18.5
10	#17130.00	53.8 AV	54.0	-0.2	2.67 H	231	35.3	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	#5470.00	48.5 PK	74.0	-25.5	1.14 V	24	44.0	4.5
2	#5470.00	35.8 AV	54.0	-18.2	1.14 V	24	31.3	4.5
3	*5710.00	101.2 PK			1.14 V	24	96.3	4.9
4	*5710.00	90.6 AV			1.14 V	24	85.7	4.9
5	#5850.00	47.8 PK	74.0	-26.2	1.14 V	24	42.7	5.1
6	#5850.00	36.2 AV	54.0	-17.8	1.14 V	24	31.1	5.1
7	11420.00	54.8 PK	74.0	-19.2	1.32 V	241	40.5	14.3
8	11420.00	43.0 AV	54.0	-11.0	1.32 V	241	28.7	14.3
9	#17130.00	61.5 PK	74.0	-12.5	1.37 V	142	43.0	18.5
10	#17130.00	49.3 AV	54.0	-4.7	1.37 V	142	30.8	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 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.42	61.1 PK	68.2	-7.1	1.03 H	359	56.3	4.8
2	*5755.00	99.8 PK			1.03 H	359	94.8	5.0
3	*5755.00	89.1 AV			1.03 H	359	84.1	5.0
4	#5976.79	59.6 PK	68.2	-8.6	1.03 H	359	54.1	5.5
5	11510.00	51.8 PK	74.0	-22.2	2.11 H	184	37.8	14.0
6	11510.00	40.1 AV	54.0	-13.9	2.11 H	184	26.1	14.0
7	#17265.00	68.5 PK	74.0	-5.5	2.65 H	226	50.0	18.5
8	**#17265.00**	**53.9 AV**	**54.0**	**-0.1**	**2.65 H**	**226**	**35.4**	**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	#5628.89	60.5 PK	68.2	-7.7	1.46 V	316	55.7	4.8
2	*5755.00	100.3 PK			1.46 V	316	95.3	5.0
3	*5755.00	88.9 AV			1.46 V	316	83.9	5.0
4	#5968.50	60.8 PK	68.2	-7.4	1.46 V	316	55.3	5.5
5	11510.00	54.9 PK	74.0	-19.1	1.34 V	241	40.9	14.0
6	11510.00	43.3 AV	54.0	-10.7	1.34 V	241	29.3	14.0
7	#17265.00	61.2 PK	74.0	-12.8	1.34 V	129	42.7	18.5
8	#17265.00	49.1 AV	54.0	-4.9	1.34 V	129	30.6	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	#5581.21	57.5 PK	68.2	-10.7	1.06 H	344	52.9	4.6
2	*5795.00	99.9 PK			1.06 H	344	94.8	5.1
3	*5795.00	89.1 AV			1.06 H	344	84.0	5.1
4	#6004.69	59.5 PK	68.2	-8.7	1.06 H	344	53.8	5.7
5	11590.00	52.3 PK	74.0	-21.7	2.01 H	181	38.3	14.0
6	11590.00	40.7 AV	54.0	-13.3	2.01 H	181	26.7	14.0
7	#17385.00	67.9 PK	74.0	-6.1	3.44 H	226	48.8	19.1
8	**#17385.00**	**53.9 AV**	**54.0**	**-0.1**	**3.44 H**	**226**	**34.8**	**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	#5638.68	58.9 PK	68.2	-9.3	1.50 V	310	54.1	4.8
2	*5795.00	100.5 PK			1.50 V	310	95.4	5.1
3	*5795.00	89.2 AV			1.50 V	310	84.1	5.1
4	#6005.87	60.8 PK	68.2	-7.4	1.50 V	310	55.1	5.7
5	11590.00	54.3 PK	74.0	-19.7	1.33 V	238	40.3	14.0
6	11590.00	43.0 AV	54.0	-11.0	1.33 V	238	29.0	14.0
7	#17385.00	61.4 PK	74.0	-12.6	1.33 V	117	42.3	19.1
8	#17385.00	49.2 AV	54.0	-4.8	1.33 V	117	30.1	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:

802.11a

CHANNEL	TX Channel 40	**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	76.00	26.3 QP	40.0	-13.7	2.50 H	221	37.7	-11.4
2	172.78	31.0 QP	43.5	-12.5	1.50 H	67	39.6	-8.6
3	209.67	36.1 QP	43.5	-7.4	1.50 H	92	47.6	-11.5
4	244.18	35.9 QP	46.0	-10.1	1.00 H	273	45.6	-9.7
5	472.30	33.4 QP	46.0	-12.6	2.00 H	90	36.7	-3.3
6	640.08	31.5 QP	46.0	-14.5	1.50 H	0	31.4	0.1
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	40.04	33.1 QP	40.0	-6.9	1.00 V	0	41.7	-8.6
2	75.30	32.0 QP	40.0	-8.0	1.00 V	0	43.3	-11.3
3	209.67	31.1 QP	43.5	-12.4	1.50 V	347	42.6	-11.5
4	320.05	32.0 QP	46.0	-14.0	1.00 V	337	39.1	-7.1
5	640.06	28.4 QP	46.0	-17.6	1.00 V	188	28.3	0.1
6	786.43	29.5 QP	46.0	-16.5	1.50 V	123	27.0	2.5

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

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

a. 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.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

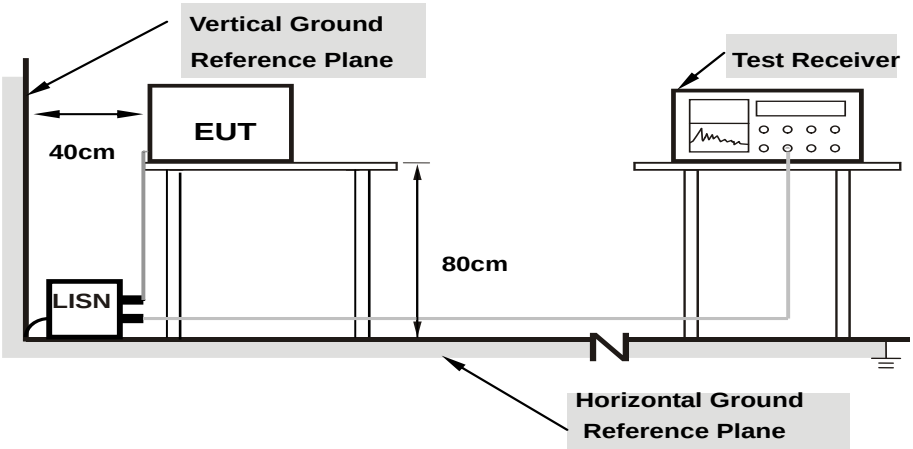
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

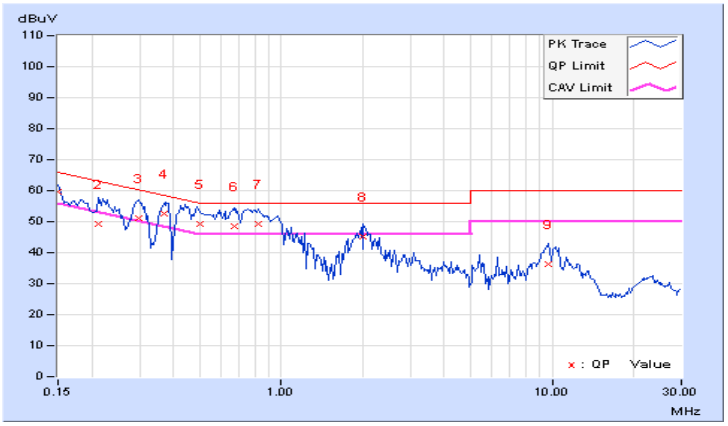
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.20	49.33	27.99	59.53	38.19	66.00	56.00	-6.47	-17.81
2	0.21250	10.20	39.08	24.16	49.28	34.36	63.11	53.11	-13.83	-18.75
3	0.29844	10.22	40.89	28.97	51.11	39.19	60.29	50.29	-9.18	-11.10
4	**0.36875**	**10.23**	**42.41**	**29.22**	**52.64**	**39.45**	**58.53**	**48.53**	**-5.89**	**-9.08**
5	0.50000	10.25	39.02	26.72	49.27	36.97	56.00	46.00	-6.73	-9.03
6	0.66953	10.27	38.17	26.29	48.44	36.56	56.00	46.00	-7.56	-9.44
7	0.82188	10.28	39.16	22.17	49.44	32.45	56.00	46.00	-6.56	-13.55
8	2.01563	10.29	34.81	21.94	45.10	32.23	56.00	46.00	-10.90	-13.77
9	9.70703	10.71	25.64	14.71	36.35	25.42	60.00	50.00	-23.65	-24.58

REMARKS:

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

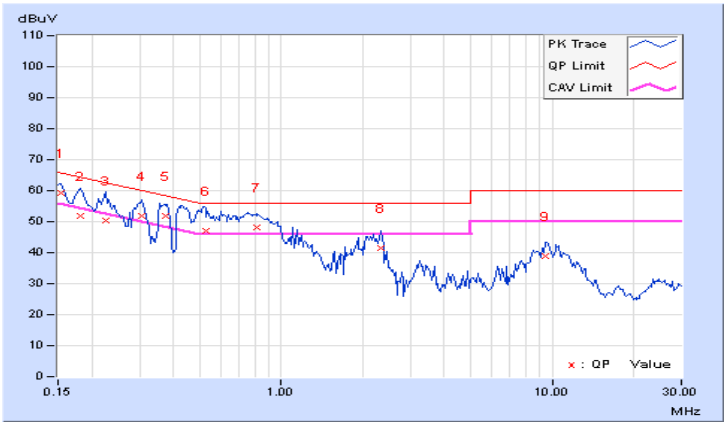


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.19	49.00	28.34	59.19	38.53	65.79	55.79	-6.60	-17.26
2	0.18125	10.18	41.84	24.93	52.02	35.11	64.43	54.43	-12.41	-19.32
3	0.22422	10.18	40.22	24.94	50.40	35.12	62.66	52.66	-12.26	-17.54
4	0.30625	10.21	41.65	28.93	51.86	39.14	60.07	50.07	-8.21	-10.93
5	0.37434	10.23	41.74	27.09	51.97	37.32	58.40	48.40	-6.43	-11.08
6	0.52500	10.24	36.82	23.08	47.06	33.32	56.00	46.00	-8.94	-12.68
7	0.81797	10.25	37.90	20.92	48.15	31.17	56.00	46.00	-7.85	-14.83
8	2.34375	10.29	31.01	18.57	41.30	28.86	56.00	46.00	-14.70	-17.14
9	9.43750	10.59	28.18	16.85	38.77	27.44	60.00	50.00	-21.23	-22.56

REMARKS:

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



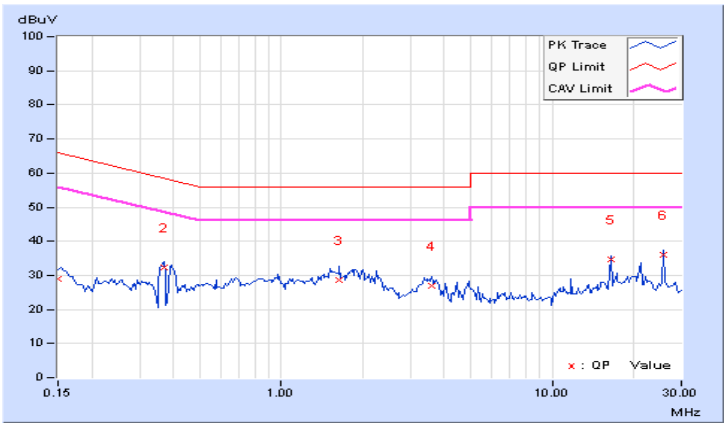
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.07	18.99	12.29	29.06	22.36	66.00	56.00	-36.94	-33.64
2	0.36875	10.10	22.23	18.62	32.33	28.72	58.53	48.53	-26.20	-19.81
3	1.63281	10.14	18.34	13.20	28.48	23.34	56.00	46.00	-27.52	-22.66
4	3.58203	10.27	16.68	12.30	26.95	22.57	56.00	46.00	-29.05	-23.43
5	16.46484	11.06	23.53	22.80	34.59	33.86	60.00	50.00	-25.41	-16.14
6	25.87500	11.33	24.83	24.73	36.16	36.06	60.00	50.00	-23.84	-13.94

REMARKS:

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

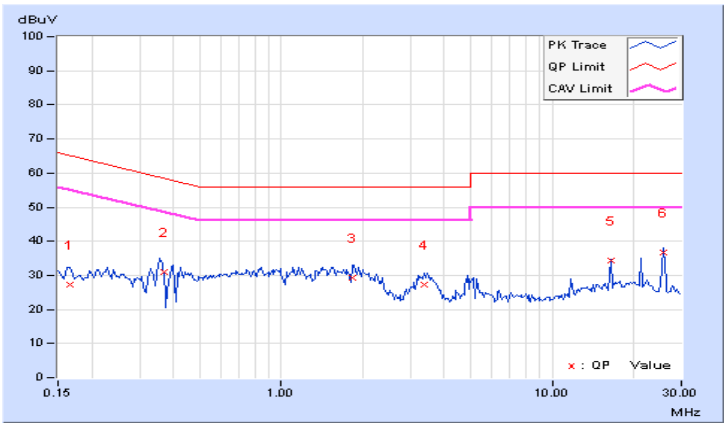


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	10.05	17.16	10.14	27.21	20.19	65.18	55.18	-37.97	-34.99
2	0.36778	10.09	20.86	16.32	30.95	26.41	58.55	48.55	-27.60	-22.14
3	1.84375	10.17	19.16	11.30	29.33	21.47	56.00	46.00	-26.67	-24.53
4	3.35547	10.21	16.95	8.36	27.16	18.57	56.00	46.00	-28.84	-27.43
5	16.46484	10.85	23.63	23.51	34.48	34.36	60.00	50.00	-25.52	-15.64
6	25.87334	10.97	25.86	25.84	36.83	36.81	60.00	50.00	-23.17	-13.19

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 Measurment

4.3.1 Limits of Transmit Power Measurement

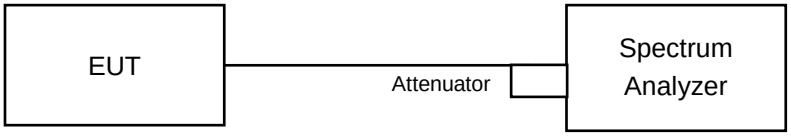
Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client 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

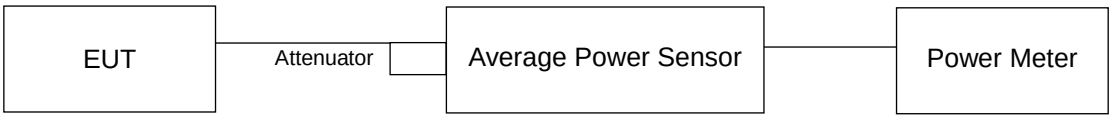
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

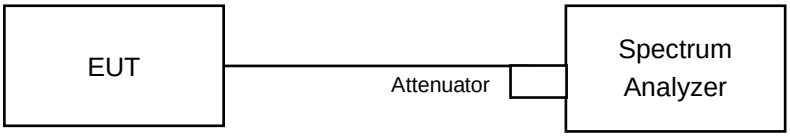
For channel straddling 5725MHz:



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 ≥ 3 x 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 ≥ 3 x 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	68.234	18.34	24.00	Pass
40	5200	118.032	20.72	24.00	Pass
48	5240	61.944	17.92	24.00	Pass
52	5260	70.146	18.46	24.00	Pass
60	5300	69.024	18.39	24.00	Pass
64	5320	65.917	18.19	24.00	Pass
100	5500	52.24	17.18	24.00	Pass
116	5580	59.293	17.73	24.00	Pass
140	5700	39.264	15.94	24.00	Pass
*144 (UNII-2C Band)	5720	17.14	12.34	23.76	Pass
*144 (UNII-3 Band)	5720	3.02	4.80	30.00	Pass
149	5745	41.783	16.21	30.00	Pass
157	5785	43.053	16.34	30.00	Pass
165	5825	42.073	16.24	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	20.16	13.04
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	37.70
60	5300	34.26
64	5320	34.16
100	5500	33.85
116	5580	34.40
140	5700	33.22
144 (UNII-2C Band)	5720	18.88

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	19.92	26.76 > 24
60	5300	18.84	26.34 > 24
64	5320	18.96	26.33 > 24
100	5500	18.00	26.29 > 24
116	5580	19.32	26.36 > 24
140	5700	18.36	26.21 > 24
144 (UNII-2C Band)	5720	13.64	23.76 < 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	61.944	17.92	24.00	Pass
40	5200	112.46	20.51	24.00	Pass
48	5240	56.885	17.55	24.00	Pass
52	5260	63.533	18.03	24.00	Pass
60	5300	60.256	17.80	24.00	Pass
64	5320	57.28	17.58	24.00	Pass
100	5500	43.451	16.38	24.00	Pass
116	5580	51.642	17.13	24.00	Pass
140	5700	32.81	15.16	24.00	Pass
*144 (UNII-2C Band)	5720	16.444	12.16	23.74	Pass
*144 (UNII-3 Band)	5720	3.251	5.12	30.00	Pass
149	5745	44.157	16.45	30.00	Pass
157	5785	38.815	15.89	30.00	Pass
165	5825	44.055	16.44	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	19.695	12.94
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	37.23
60	5300	38.29
64	5320	34.43
100	5500	32.66
116	5580	37.96
140	5700	31.39
144 (UNII-2C Band)	5720	18.81

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	19.32	26.7 > 24
60	5300	19.44	26.83 > 24
64	5320	19.08	26.36 > 24
100	5500	18.48	26.14 > 24
116	5580	19.44	26.79 > 24
140	5700	18.24	25.96 > 24
144 (UNII-2C Band)	5720	14.24	23.74 < 24

802.11n (HT40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	44.157	16.45	24.00	Pass
46	5230	54.2	17.34	24.00	Pass
54	5270	53.456	17.28	24.00	Pass
62	5310	35.645	15.52	24.00	Pass
102	5510	27.669	14.42	24.00	Pass
110	5550	49.545	16.95	24.00	Pass
134	5670	42.56	16.29	24.00	Pass
*142 (UNII-2C Band)	5710	24.911	13.96	24.00	Pass
*142 (UNII-3 Band)	5710	1.868	2.71	30.00	Pass
151	5755	62.951	17.99	30.00	Pass
159	5795	65.013	18.13	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:

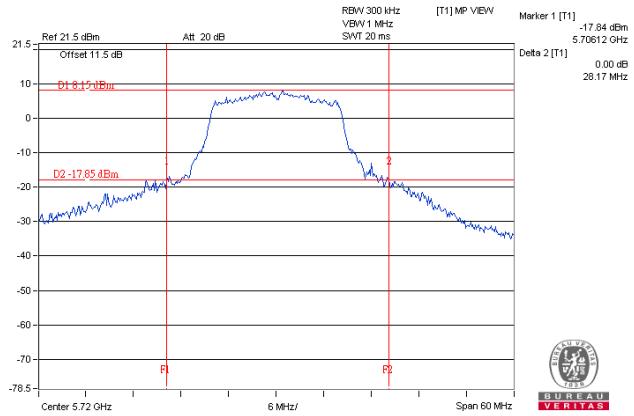
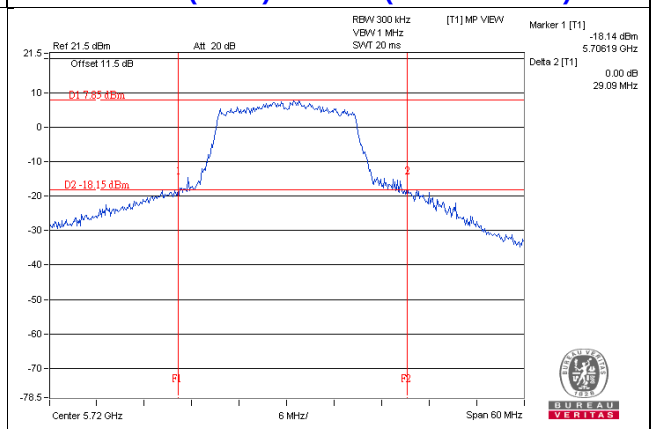
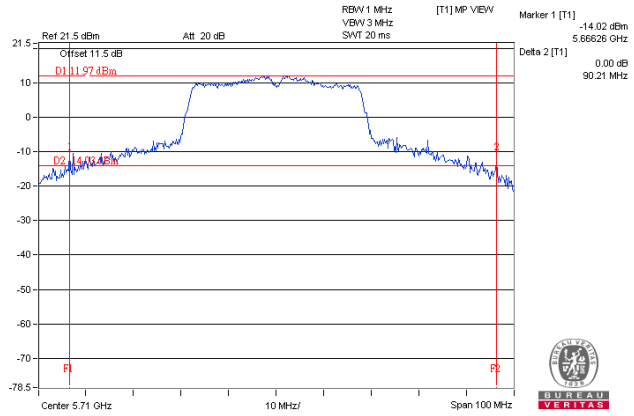
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	26.779	14.28
Note: The total power was calculated through formula and record the value for reference only.			

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
54	5270	78.82
62	5310	63.22
102	5510	62.73
110	5550	79.94
134	5670	84.30
142 (UNII-2C Band)	5710	58.74

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	37.44	29.96 > 24
62	5310	36.72	29 > 24
102	5510	36.72	28.97 > 24
110	5550	38.88	30.02 > 24
134	5670	38.40	30.25 > 24
142 (UNII-2C Band)	5710	35.00	28.68 > 24

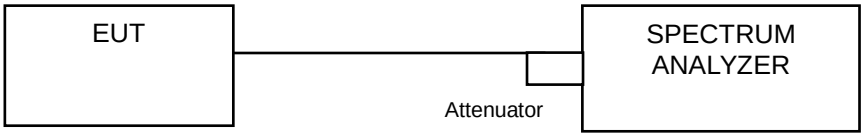
Spectrum Plot of Worst Value	
802.11a / CH144 (UNII-2C Band)	**802.11n (HT20) / CH144 (UNII-2C Band)**
	
802.11n (HT40) / CH142 (UNII-2C Band)	
	

NOTE:

For CH144 (UNII-2C Band) = 5725MHz - Marker 1
For CH142 (UNII-2C Band) = 5725MHz - Marker 1
For CH138 (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	21.36
40	5200	34.32
48	5240	18.84
52	5260	19.92
60	5300	18.84
64	5320	18.96
100	5500	18.00
116	5580	19.32
140	5700	18.36
144 (UNII-2C Band)	5720	13.64
144 (UNII-3 Band)	5720	3.52
149	5745	18.12
157	5785	17.64
165	5825	18.00

802.11n (HT20)

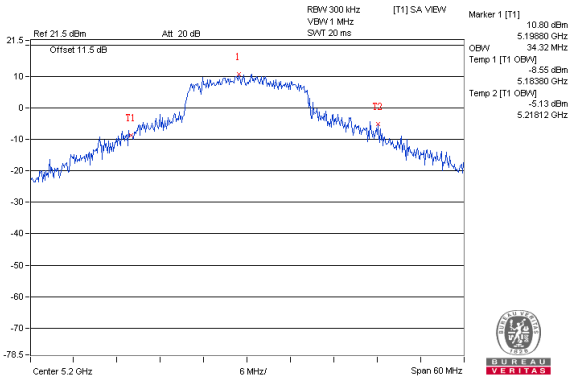
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	20.28
40	5200	35.40
48	5240	19.32
52	5260	19.32
60	5300	19.44
64	5320	19.08
100	5500	18.48
116	5580	19.44
140	5700	18.24
144 (UNII-2C Band)	5720	14.24
144 (UNII-3 Band)	5720	4.12
149	5745	18.48
157	5785	18.72
165	5825	18.60

802.11n (HT40)

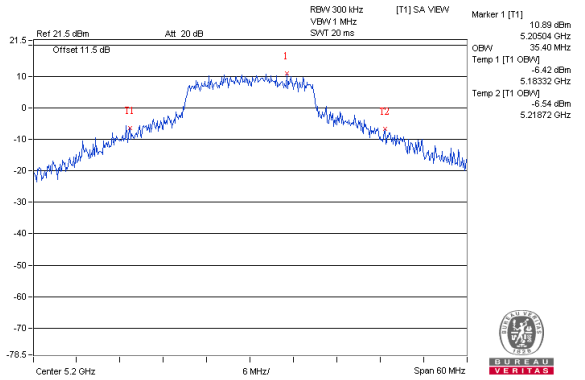
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	37.44
46	5230	38.16
54	5270	37.44
62	5310	36.72
102	5510	36.72
110	5550	38.88
134	5670	38.40
142 (UNII-2C Band)	5710	35.00
142 (UNII-3 Band)	5710	5.40
151	5755	53.76
159	5795	54.96

Spectrum Plot of Worst Value

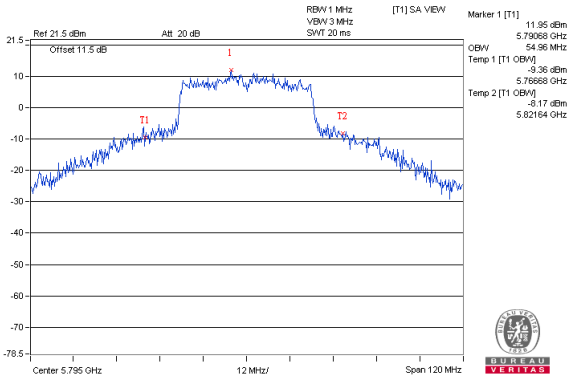
802.11a / CH40



802.11n (HT20) / CH40

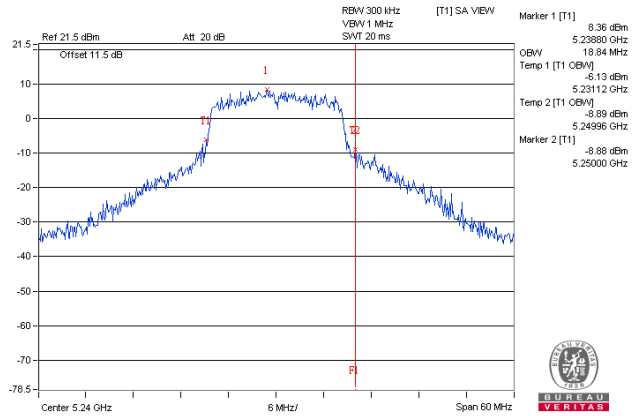


802.11n (HT40) / CH159

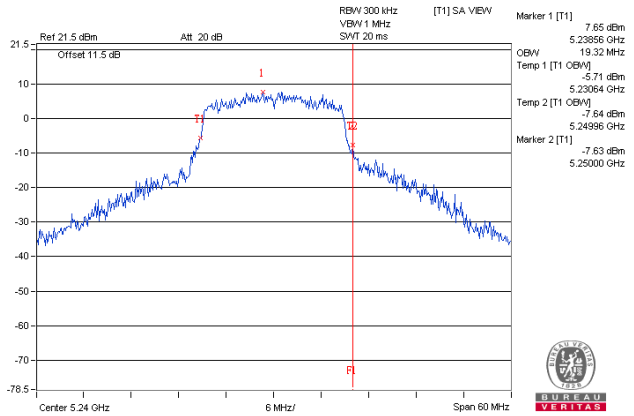


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

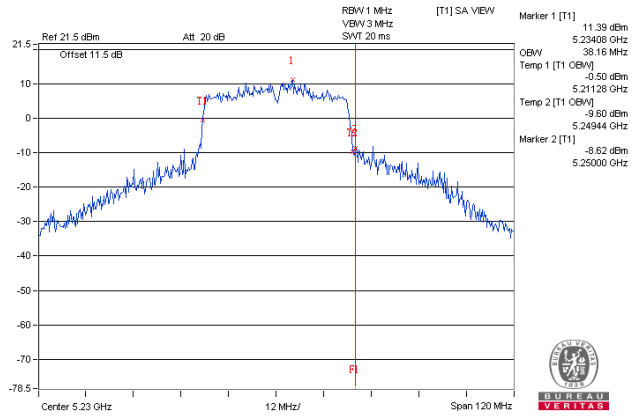
802.11a / CH48



802.11 (HT20) / CH48

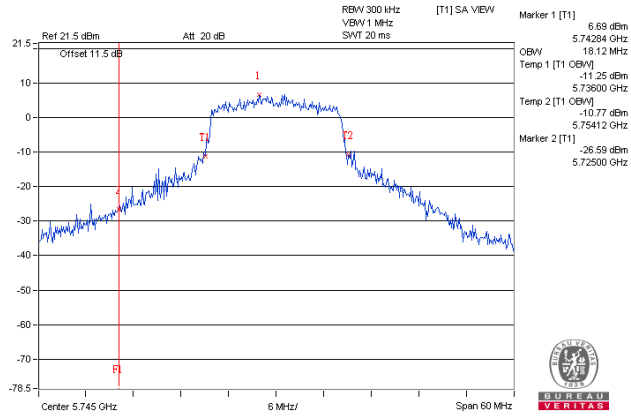


802.11n (HT40) / CH46

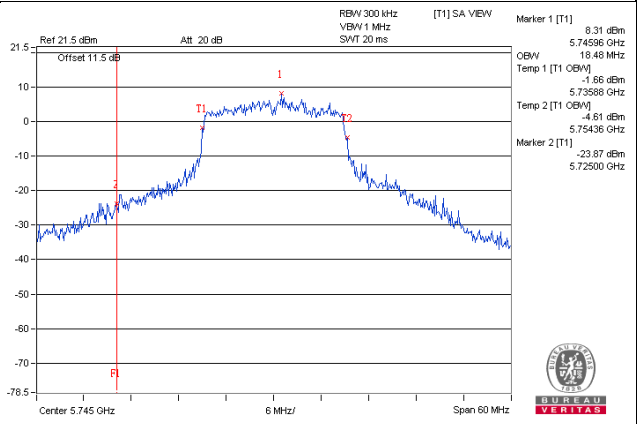


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

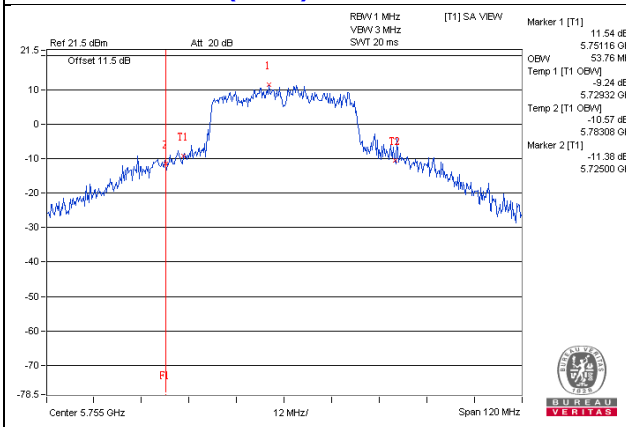
802.11a_Chain0 / CH149



802.11n (HT20) _Chain0 / CH149



802.11n (HT40) _Chain0 / CH151

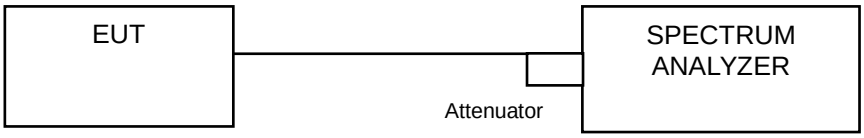


4.5 Peak Power Spectral Density Measurement

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 ≥ 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 ≥ 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 = 10log(500 kHz/300kHz)
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 ≥ 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/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 ≥ 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 = 10log(500 kHz/300kHz)
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/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	5.12	11.00	Pass
40	5200	7.28	11.00	Pass
48	5240	5.02	11.00	Pass
52	5260	5.81	11.00	Pass
60	5300	5.71	11.00	Pass
64	5320	5.70	11.00	Pass
100	5500	4.96	11.00	Pass
116	5580	4.97	11.00	Pass
140	5700	3.35	11.00	Pass
144 (UNII-2C Band)	5720	3.28	11.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	4.70	11.00	Pass
40	5200	7.19	11.00	Pass
48	5240	4.51	11.00	Pass
52	5260	4.99	11.00	Pass
60	5300	5.26	11.00	Pass
64	5320	5.11	11.00	Pass
100	5500	4.00	11.00	Pass
116	5580	4.52	11.00	Pass
140	5700	2.23	11.00	Pass
144 (UNII-2C Band)	5720	2.83	11.00	Pass

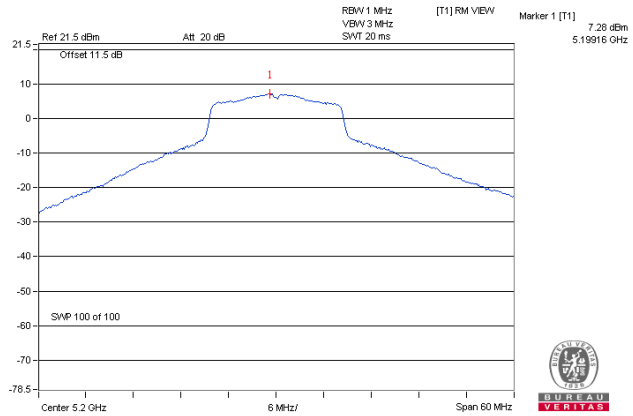
802.11n (HT40)

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	0.50	0.15	0.65	11.00	Pass
46	5230	1.36	0.15	1.51	11.00	Pass
54	5270	1.58	0.15	1.73	11.00	Pass
62	5310	0.02	0.15	0.17	11.00	Pass
102	5510	-1.00	0.15	-0.85	11.00	Pass
110	5550	1.60	0.15	1.75	11.00	Pass
134	5670	-0.10	0.15	0.05	11.00	Pass
142 (UNII-2C Band)	5710	1.16	0.15	1.31	11.00	Pass

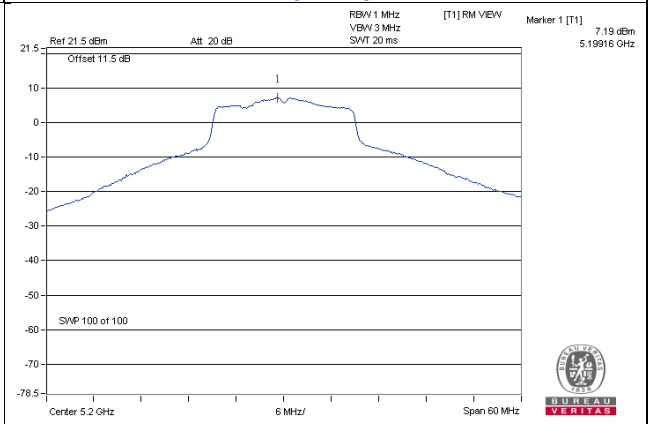
Note: 1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

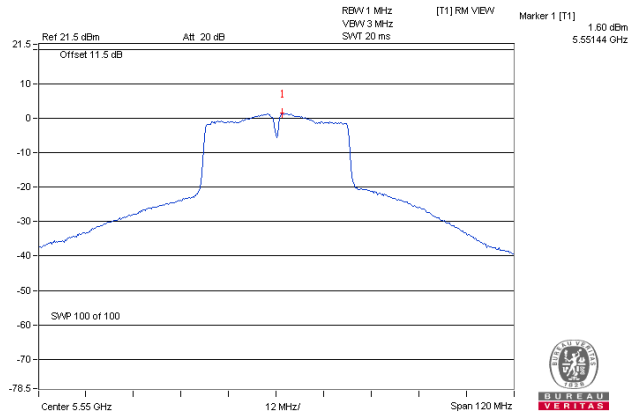
802.11a / CH40



802.11n (HT20) / CH40



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	-7.87	-5.65	30	Pass
149	5745	-4.25	-2.03	30	Pass
157	5785	-4.46	-2.24	30	Pass
165	5825	-4.36	-2.14	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	-8.13	-5.91	30	Pass
149	5745	-4.64	-2.42	30	Pass
157	5785	-4.72	-2.50	30	Pass
165	5825	-4.44	-2.22	30	Pass

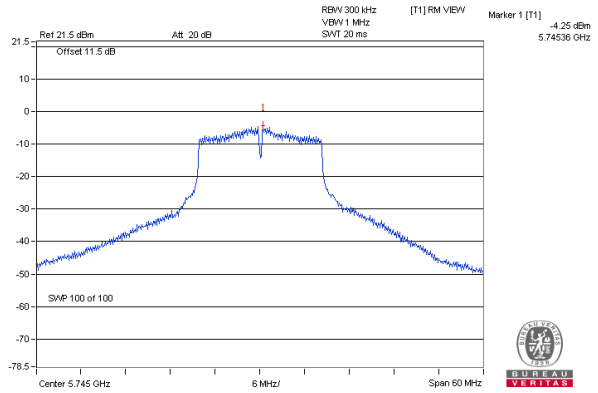
802.11n (HT40)

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	-9.86	-7.64	0.15	-7.49	30	Pass
151	5755	-6.55	-4.33	0.15	-4.18	30	Pass
159	5795	-6.83	-4.61	0.15	-4.46	30	Pass

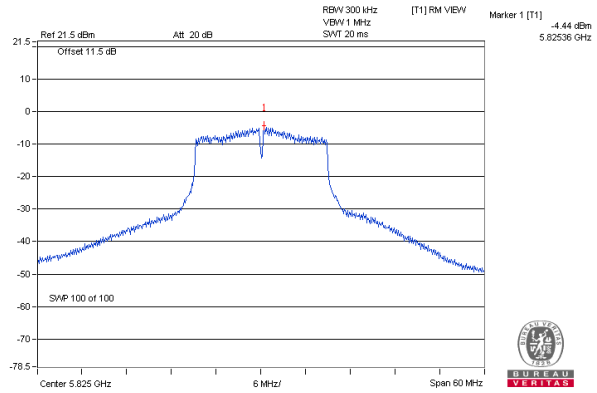
Note: 1. Refer to section 3.3 for duty cycle spectrum plot.the various outputs by computer.

Spectrum Plot of Worst Value

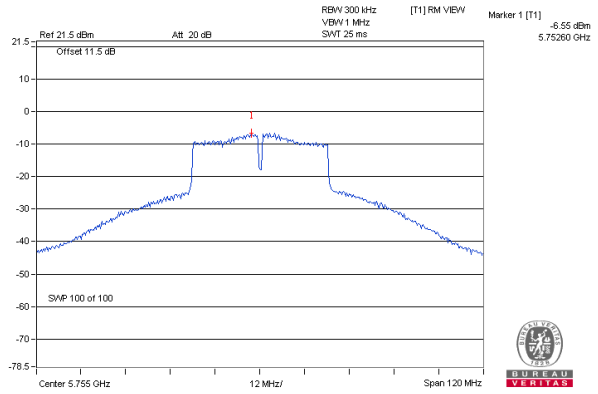
802.11a : CH 149



802.11n (HT20) : CH 165



802.11n (HT40) : CH 151

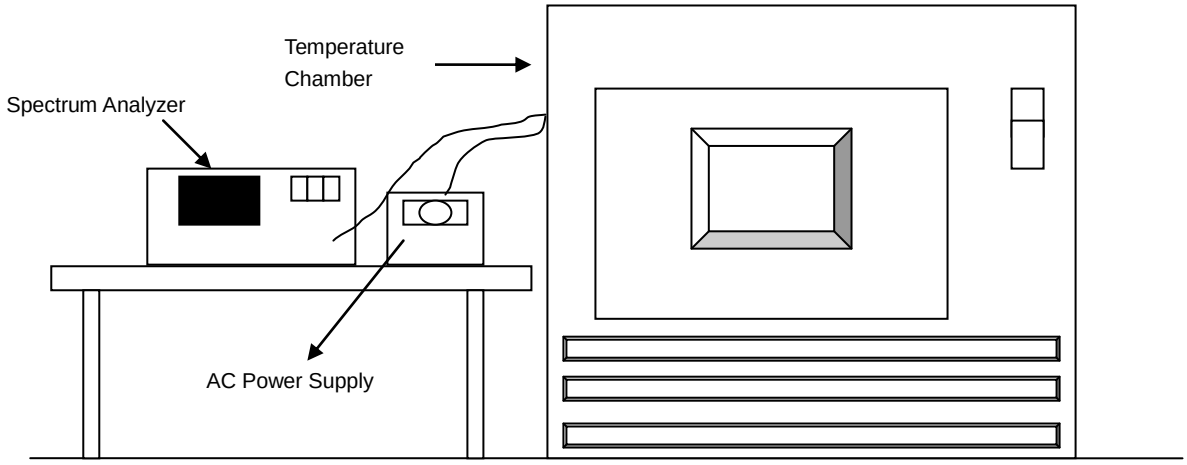


4.6 Frequency Stability Measurement

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

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. 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.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. 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. (℃)	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	5179.9727	PASS	5179.9765	PASS	5179.9759	PASS	5179.9746	PASS
40	120	5180.0206	PASS	5180.0241	PASS	5180.0214	PASS	5180.0208	PASS
30	120	5180.0244	PASS	5180.0238	PASS	5180.0232	PASS	5180.0229	PASS
20	120	5179.9791	PASS	5179.9801	PASS	5179.9755	PASS	5179.9757	PASS
10	120	5180.0077	PASS	5180.0034	PASS	5180.0043	PASS	5180.0053	PASS
0	120	5180.006	PASS	5180.0073	PASS	5180.0082	PASS	5180.0059	PASS
-10	120	5180.0002	PASS	5179.9997	PASS	5180.001	PASS	5179.9992	PASS
-20	120	5179.9751	PASS	5179.9777	PASS	5179.9771	PASS	5179.9753	PASS
-30	120	5179.9918	PASS	5179.992	PASS	5179.9895	PASS	5179.9909	PASS

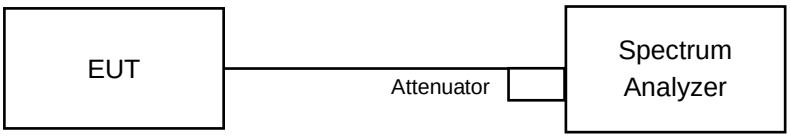
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9787	PASS	5179.98	PASS	5179.9763	PASS	5179.9747	PASS
	120	5179.9791	PASS	5179.9801	PASS	5179.9755	PASS	5179.9757	PASS
	102	5179.9785	PASS	5179.9801	PASS	5179.9753	PASS	5179.9759	PASS

4.7 6dB Bandwidth Measurment

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

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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	3.10	0.5	Pass
149	5745	16.33	0.5	Pass
157	5785	16.11	0.5	Pass
165	5825	16.32	0.5	Pass

802.11n (HT20)

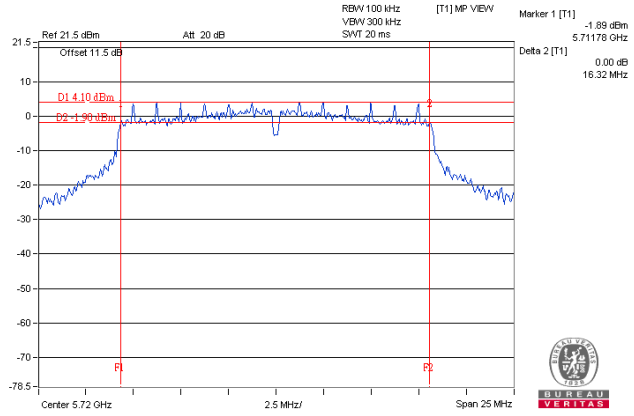
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144 (UNII-3 Band)	5720	3.37	0.5	Pass
149	5745	17.07	0.5	Pass
157	5785	16.95	0.5	Pass
165	5825	17.26	0.5	Pass

802.11n (HT40)

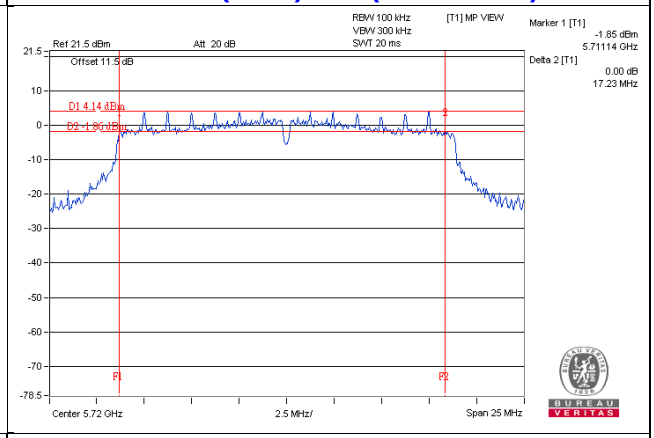
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142 (UNII-3 Band)	5710	2.90	0.5	Pass
151	5755	35.84	0.5	Pass
159	5795	36.42	0.5	Pass

Spectrum Plot of Worst Value

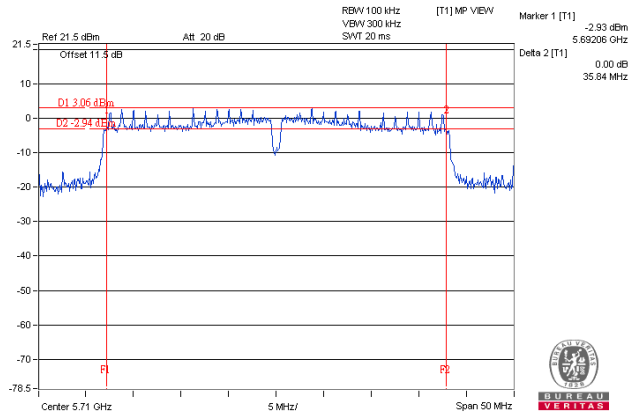
802.11a / 144 (UNII-3 Band)



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



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



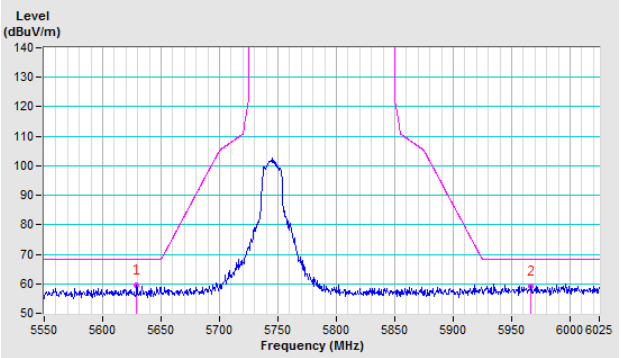
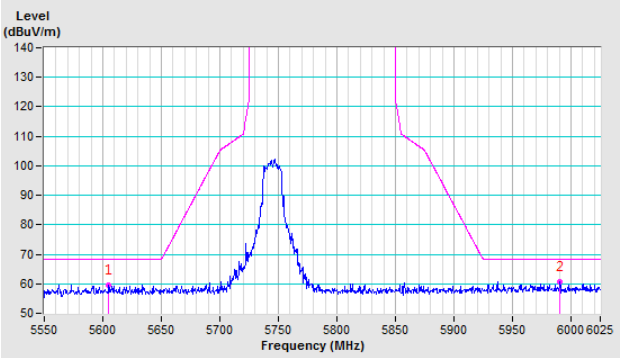
5 Pictures of Test Arrangements

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

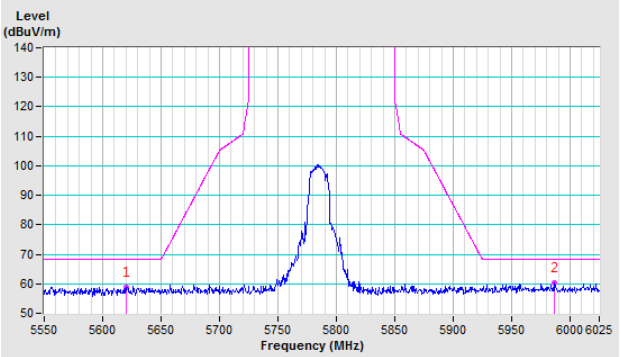
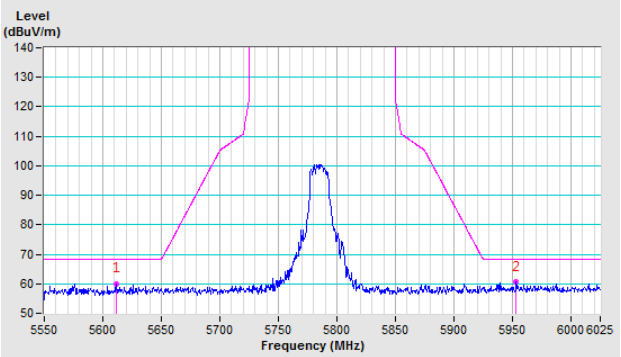
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

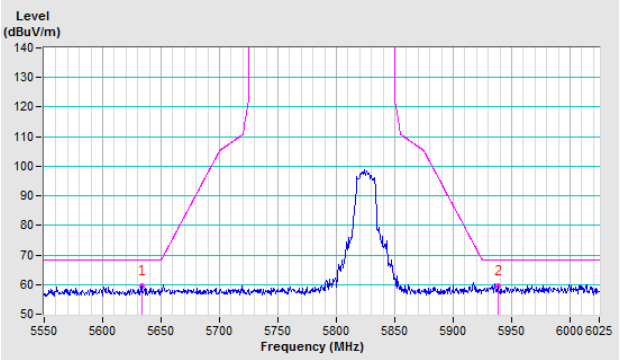
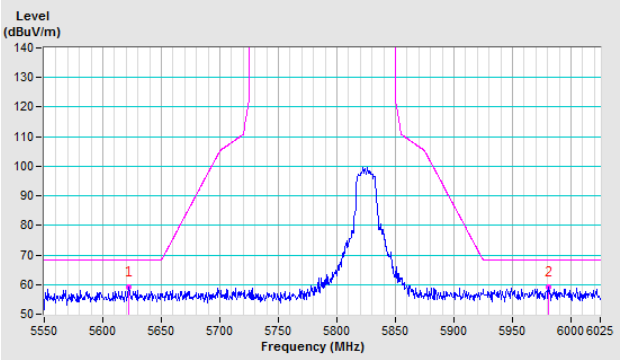
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

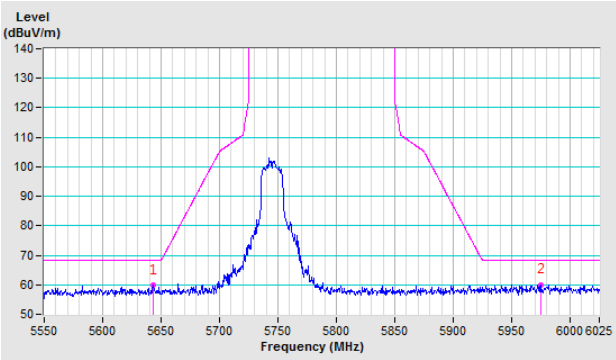
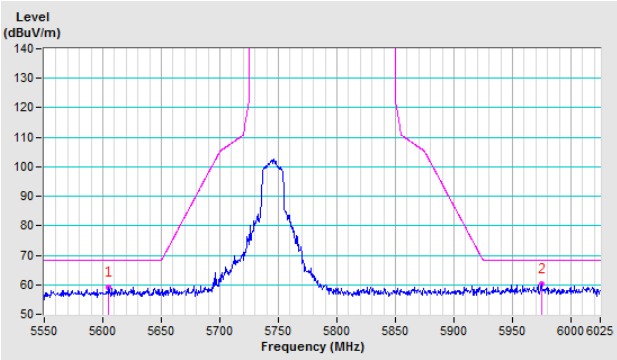
Horizontal	Vertical
	

CH 165 5825 MHz

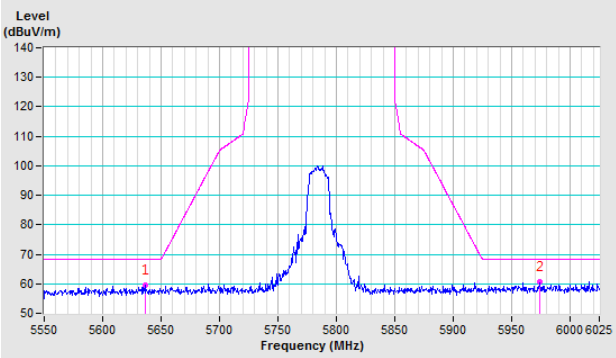
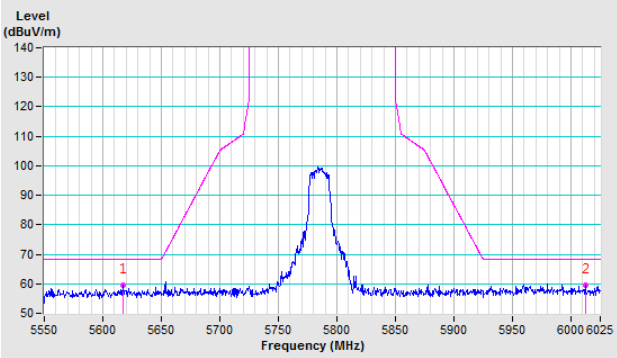
Horizontal	Vertical
	

802.11n (HT20)

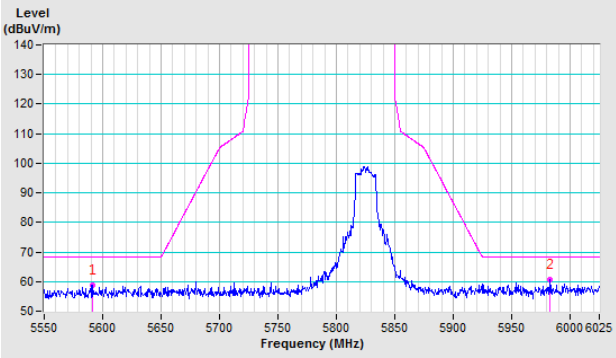
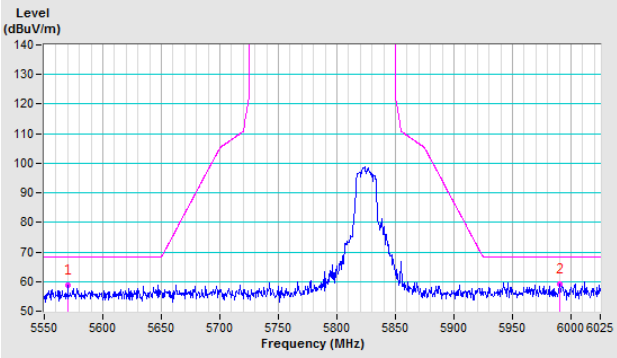
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

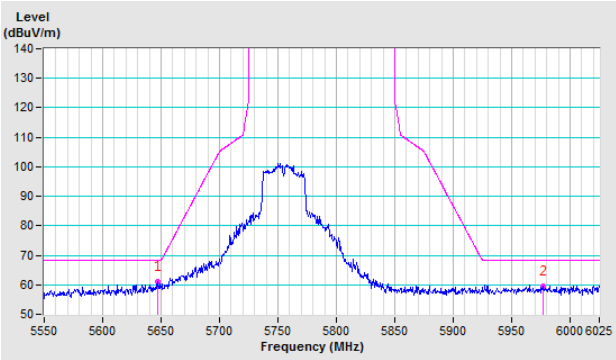
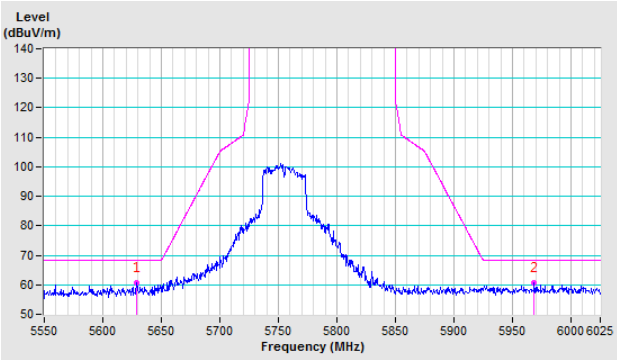
Horizontal	Vertical
	

CH 165 5825 MHz

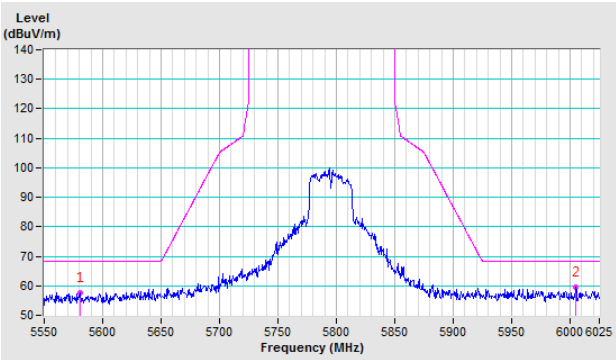
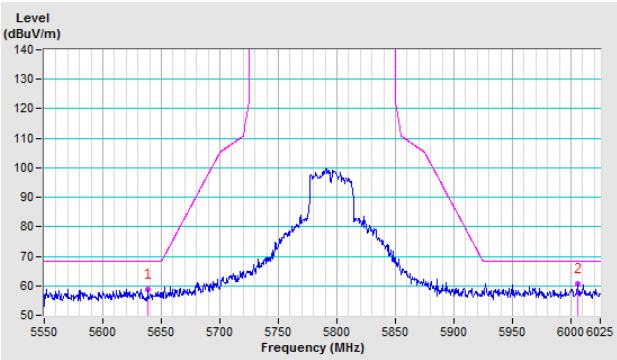
Horizontal	Vertical
	

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:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---