

FCC Test Report

Report No.: RF181018E12A-1

FCC ID: BKMFBM359A

Test Model: M359A

Received Date: Apr. 02, 2019

Test Date: Apr. 25 to June 11, 2019

Issued Date: June 19, 2019

Applicant: Seiko Epson Corporation

Address: 80 Harashinden, Hirooka Shiojiri-shi, Nagano, 399-0785 Japan

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

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

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

**FCC Registration /
Designation Number:** 723255 / TW2022



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

Table of Contents

Release Control Record	4
1 Certificate of Conformity.....	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information.....	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	10
3.2.1 Test Mode Applicability and Tested Channel Detail	12
3.3 Duty Cycle of Test Signal	14
3.4 Description of Support Units	15
3.4.1 Configuration of System under Test	15
3.5 General Description of Applied Standard	16
4 Test Types and Results	17
4.1 Radiated Emission and Bandedge Measurement.....	17
4.1.1 Limits of Radiated Emission and Bandedge Measurement	17
4.1.2 Test Instruments	18
4.1.3 Test Procedure	21
4.1.4 Deviation from Test Standard	22
4.1.5 Test Setup.....	22
4.1.6 EUT Operating Condition	23
4.1.7 Test Results	24
4.2 Conducted Emission Measurement	64
4.2.1 Limits of Conducted Emission Measurement	64
4.2.2 Test Instruments	64
4.2.3 Test Procedure	65
4.2.4 Deviation from Test Standard	65
4.2.5 Test Setup.....	65
4.2.6 EUT Operating Condition	65
4.2.7 Test Results	66
4.3 Transmit Power Measurement	68
4.3.1 Limits of Transmit Power Measurement	68
4.3.2 Test Setup.....	68
4.3.3 Test Instruments	68
4.3.4 Test Procedure	69
4.3.5 Deviation from Test Standard	69
4.3.6 EUT Operating Condition	69
4.3.7 Test Result.....	70
4.4 Occupied Bandwidth Measurement	75
4.4.1 Test Setup.....	75
4.4.2 Test Instruments	75
4.4.3 Test Procedure	75
4.4.4 Test Results	76
4.5 Peak Power Spectral Density Measurement	79
4.5.1 Limits of Peak Power Spectral Density Measurement	79
4.5.2 Test Setup.....	79
4.5.3 Test Instruments	79
4.5.4 Test Procedure	79
4.5.5 Deviation from Test Standard	80
4.5.6 EUT Operating Condition	80
4.5.7 Test Results	81
4.6 Frequency Stability Measurement.....	86
4.6.1 Limits of Frequency Stability Measurement	86

4.6.2	Test Setup.....	86
4.6.3	Test Instruments	86
4.6.4	Test Procedure	86
4.6.5	Deviation from Test Standard	86
4.6.6	EUT Operating Condition	86
4.6.7	Test Results	87
4.7	6dB Bandwidth Measurement	88
4.7.1	Limits of 6dB Bandwidth Measurement	88
4.7.2	Test Setup.....	88
4.7.3	Test Instruments	88
4.7.4	Test Procedure	88
4.7.5	Deviation from Test Standard	88
4.7.6	EUT Operating Condition	88
4.7.7	Test Results	89
5	Pictures of Test Arrangements.....	91
	Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	92
	Appendix – Information of the Testing Laboratories	95

Release Control Record

Issue No.	Description	Date Issued
RF181018E12A-1	Original release.	June 19, 2019

1 Certificate of Conformity

Product: OT-WL06

Brand: Epson

Test Model: M359A

Sample Status: ENGINEERING SAMPLE

Applicant: Seiko Epson Corporation

Test Date: Apr. 25 to June 11, 2019

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

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

Prepared by : Wendy Wu , **Date:** June 19, 2019
Wendy Wu / Specialist

Approved by : May Chen , **Date:** June 19, 2019
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -15.72dB at 0.17734MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5725.00MHz, 5150.00MHz, 5470.00MHz, 5350.00MHz.
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.

Note:

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

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	1.8 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.8 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.0 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	OT-WL06
Brand	Epson
Test Model	M359A
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	5Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.70GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 24 802.11n (HT40), 802.11ac (VHT40): 11 802.11ac (VHT80): 5
Output Power	2.4GHz: 452.898 mW 5.18 ~ 5.24GHz: 129.122 mW 5.26 ~ 5.32GHz: 137.721 mW 5.50 ~ 5.70GHz: 130.918 mW 5.745 ~ 5.825GHz: 100.231 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. The EUT has below matrix, which are identical to each other in all aspects except for the following information:

Matrix	A	B	C
PCB	VGT	AVARY	AVARY
Chip	RTL8821CU	RTL8821CU	RTL8821CU
Cystal	TXC	Hosonic	TXC
Power Inductor	MAGLAYERS	TAIYO	MAGLAYERS
Shielding cover	Foxconn	Foxconn	Foxconn
RF diplexer	ACX	ACX	ACX
RF Capacitor	MURATA	WALSIN	MURATA
RF inductor	MURATA	Cyntec	MURATA
DC Capacitor (MLCC)	MURATA	WALSIN/SAMSUNG	MURATA
Resistor	YAGEO	WALSIN	YAGEO
RF switch connector	MURATA	MURATA	MURATA
MHF4 CONN	I-PEX	I-PEX	I-PEX
USB connector	Powerway	Powerway	Powerway

1. Matrix A and C only PCB is different.
2. Matrix B is for verifying second source.

2. For conducted emissions and radiated emissions, the EUT was pre-tested under the following modes:

Test Mode	Description
Mode A	Matrix A
Mode B	Matrix B
Mode C	Matrix C

Note:

1. From the above modes, the worst conducted emissions and radiated emissions (below 1GHz) was found in **Mode A**. Therefore only the test data of the mode was recorded in this report.
2. From the above modes, the worst radiated emissions (above 1GHz) was found in **Mode C**. Therefore only the test data of the mode was recorded in this report.

3. The antenna provided to the EUT, please refer to the following table:

Antenna No.	Antenna Type	Antenna Net. Gain(dBi)	Frequency range (GHz)	Connector Type
1	PCB Printed antenna	3.26	2.4~2.4835	NA
		3.12	5.15~5.25	
		3.28	5.25~5.35	
		3.11	5.47~5.725	
		2.95	5.725~5.85	

4. The EUT incorporates a SISO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	1TX	1RX
802.11g	1TX	1RX
802.11n (HT20)	1TX	1RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX
802.11ac (VHT20)	1TX	1RX
802.11ac (VHT40)	1TX	1RX
802.11ac (VHT80)	1TX	1RX

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

FOR 5500 ~ 5700MHz

11 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

5 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530MHz	122	5610 MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane (below 1GHz) & X-plane (above 1GHz)**.

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
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

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)
802.11ac (VHT40)	5180-5240	38 to 46	54	OFDM	BPSK	13.5
	5260-5320	54 to 62				
	5500-5700	102 to 134				
	5745-5825	151 to 159				

Power Line Conducted Emission Test:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5240	38 to 46	54	OFDM	BPSK	13.5
	5260-5320	54 to 62				
	5500-5700	102 to 134				
	5745-5825	151 to 159				

Antenna Port Conducted Measurement:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE $\geq$ 1G	23deg. C, 70%RH	120Vac, 60Hz	Ryan Du
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100 %, duty factor is not required.



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.

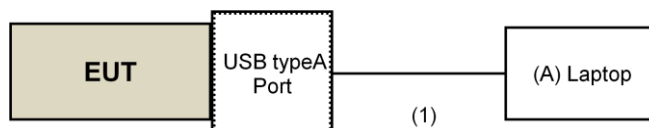
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.5	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

4.1.2 Test Instruments

For below 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ESR7 R&S	ESR7	102026	Apr. 24, 2019	Apr. 23, 2020
Spectrum Analyzer Keysight	N9030B	MY57141948	June 01, 2018	May 31, 2019
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier EMCI	EMC330N	980538	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 21, 2018	Nov. 20, 2019
RF Cable	8D	966-5-1	May 03, 2019	May 02, 2020
RF Cable	8D	966-5-2	May 03, 2019	May 02, 2020
RF Cable	8D	966-5-3	May 03, 2019	May 02, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 5.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: May 08, 2019

For OOBE test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ESR7 R&S	ESR7	102026	Apr. 24, 2019	Apr. 23, 2020
Spectrum Analyzer Keysight	N9030B	MY57141948	June 01, 2018	May 31, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980509	May 07, 2018	May 06, 2019
RF Cable EMCI	EMC104-SM-SM-1500	180503	May 07, 2018	May 06, 2019
RF Cable EMCI	EMC104-SM-SM-2000	180501	May 07, 2018	May 06, 2019
RF Cable EMCI	EMC104-SM-SM-6000	180505	May 07, 2018	May 06, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 5.
3. Tested Date: Apr. 25, 2019

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ESR7 R&S	ESR7	102026	Apr. 24, 2019	Apr. 23, 2020
Spectrum Analyzer Keysight	N9030B	MY57141948	May 25, 2019	May 24, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980509	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-1500	180503	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-2000	180501	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-6000	180505	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 5.
3. Tested Date: June 06 to 11, 2019

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

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

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

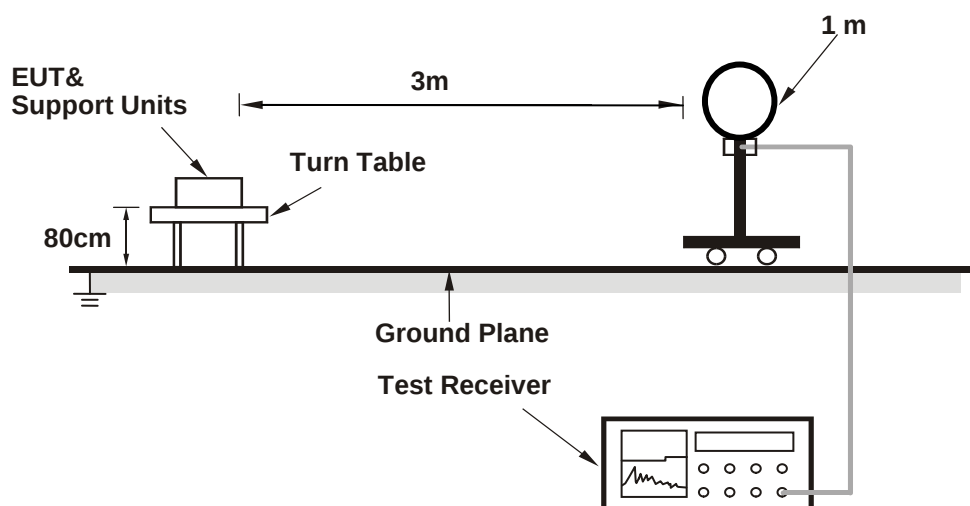
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

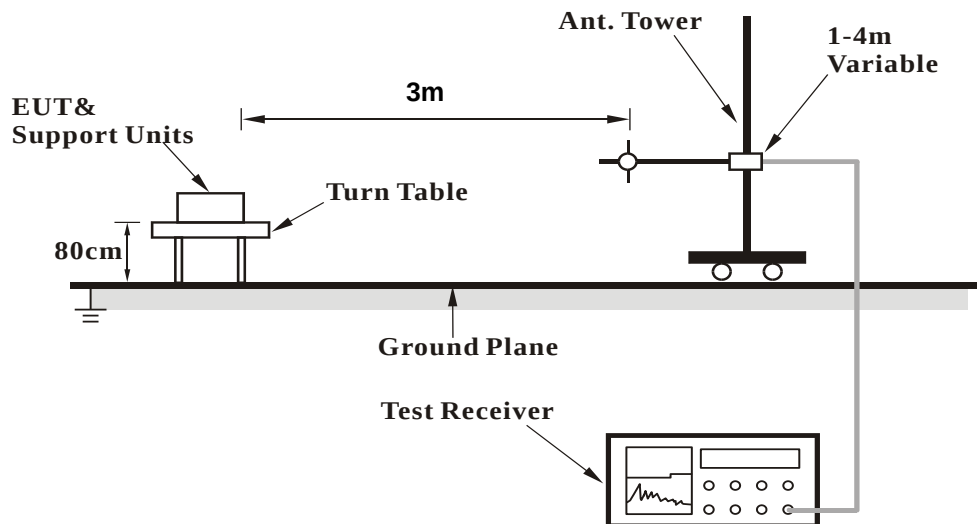
No deviation.

4.1.5 Test Setup

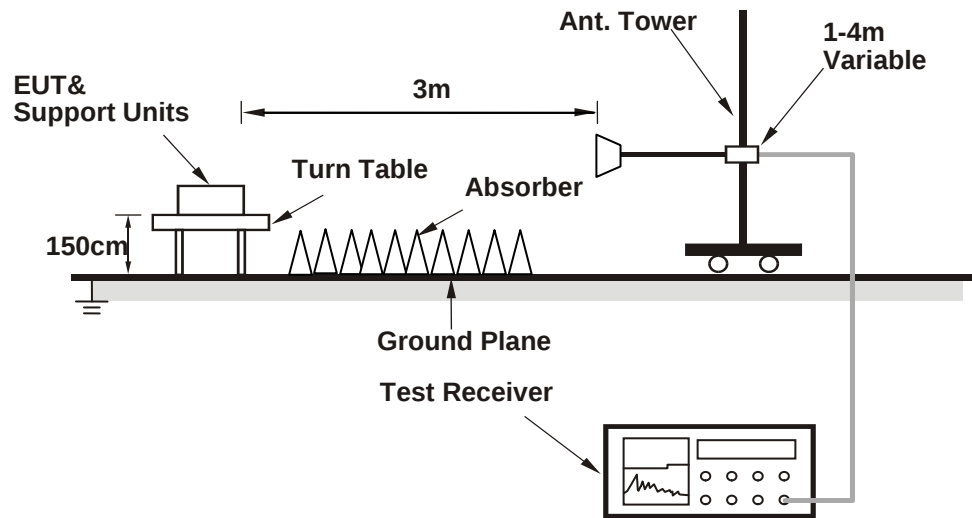
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- a. Connected the EUT with the Laptop which is placed on remote site.
- b. Controlling software (MP tool (1.0.0.10)) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.8 PK	74.0	-7.2	2.17 H	276	64.7	2.1
2	5150.00	53.5 AV	54.0	-0.5	2.17 H	276	51.4	2.1
3	*5180.00	109.4 PK			2.17 H	276	107.6	1.8
4	*5180.00	101.4 AV			2.17 H	276	99.6	1.8
5	#10360.00	42.3 PK	68.2	-25.9	1.74 H	88	30.2	12.1
6	15540.00	47.2 PK	74.0	-26.8	2.14 H	168	35.0	12.2
7	15540.00	35.1 AV	54.0	-18.9	2.14 H	168	22.9	12.2
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	63.9 PK	74.0	-10.1	1.07 V	292	61.8	2.1
2	5150.00	50.6 AV	54.0	-3.4	1.07 V	292	48.5	2.1
3	*5180.00	104.0 PK			1.07 V	292	102.2	1.8
4	*5180.00	95.8 AV			1.07 V	292	94.0	1.8
5	#10360.00	42.6 PK	68.2	-25.6	1.69 V	100	30.5	12.1
6	15540.00	47.2 PK	74.0	-26.8	2.18 V	184	35.0	12.2
7	15540.00	34.9 AV	54.0	-19.1	2.18 V	184	22.7	12.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	109.1 PK			2.13 H	278	107.4	1.7
2	*5200.00	101.2 AV			2.13 H	278	99.5	1.7
3	#10400.00	42.4 PK	68.2	-25.8	1.78 H	99	30.0	12.4
4	15600.00	46.6 PK	74.0	-27.4	2.10 H	155	34.6	12.0
5	15600.00	34.7 AV	54.0	-19.3	2.10 H	155	22.7	12.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.6 PK			1.04 V	292	101.9	1.7
2	*5200.00	95.5 AV			1.04 V	292	93.8	1.7
3	#10400.00	42.6 PK	68.2	-25.6	1.77 V	302	30.2	12.4
4	15600.00	46.5 PK	74.0	-27.5	2.11 V	85	34.5	12.0
5	15600.00	34.6 AV	54.0	-19.4	2.11 V	85	22.6	12.0

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	108.1 PK			2.29 H	275	106.7	1.4
2	*5240.00	99.8 AV			2.29 H	275	98.4	1.4
3	5350.00	49.4 PK	74.0	-24.6	2.29 H	275	47.9	1.5
4	5350.00	37.2 AV	54.0	-16.8	2.29 H	275	35.7	1.5
5	#10480.00	42.1 PK	68.2	-26.1	1.81 H	84	29.3	12.8
6	15720.00	46.2 PK	74.0	-27.8	2.10 H	141	34.6	11.6
7	15720.00	34.3 AV	54.0	-19.7	2.10 H	141	22.7	11.6
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	*5240.00	102.6 PK			1.07 V	300	101.2	1.4
2	*5240.00	94.7 AV			1.07 V	300	93.3	1.4
3	5350.00	49.8 PK	74.0	-24.2	1.07 V	300	48.3	1.5
4	5350.00	37.5 AV	54.0	-16.5	1.07 V	300	36.0	1.5
5	#10480.00	42.1 PK	68.2	-26.1	1.74 V	107	29.3	12.8
6	15720.00	47.9 PK	74.0	-26.1	2.13 V	189	36.3	11.6
7	15720.00	35.4 AV	54.0	-18.6	2.13 V	189	23.8	11.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.9 PK	74.0	-24.1	2.14 H	286	47.8	2.1
2	5150.00	37.4 AV	54.0	-16.6	2.14 H	286	35.3	2.1
3	*5260.00	109.2 PK			2.14 H	286	107.9	1.3
4	*5260.00	101.4 AV			2.14 H	286	100.1	1.3
5	5350.00	50.5 PK	74.0	-23.5	2.14 H	286	49.0	1.5
6	5350.00	40.1 AV	54.0	-13.9	2.14 H	286	38.6	1.5
7	#10520.00	41.8 PK	68.2	-26.4	1.82 H	99	29.0	12.8
8	15780.00	46.7 PK	74.0	-27.3	2.09 H	130	35.0	11.7
9	15780.00	34.7 AV	54.0	-19.3	2.09 H	130	23.0	11.7
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	5150.00	49.3 PK	74.0	-24.7	1.11 V	279	47.2	2.1
2	5150.00	37.1 AV	54.0	-16.9	1.11 V	279	35.0	2.1
3	*5260.00	104.5 PK			1.11 V	279	103.2	1.3
4	*5260.00	96.3 AV			1.11 V	279	95.0	1.3
5	5350.00	50.7 PK	74.0	-23.3	1.11 V	279	49.2	1.5
6	5350.00	40.5 AV	54.0	-13.5	1.11 V	279	39.0	1.5
7	#10520.00	42.3 PK	68.2	-25.9	1.72 V	96	29.5	12.8
8	15780.00	47.6 PK	74.0	-26.4	2.11 V	185	35.9	11.7
9	15780.00	35.3 AV	54.0	-18.7	2.11 V	185	23.6	11.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.4 PK			2.19 H	289	108.0	1.4
2	*5300.00	101.3 AV			2.19 H	289	99.9	1.4
3	5350.00	50.9 PK	74.0	-23.1	2.19 H	289	49.4	1.5
4	5350.00	40.3 AV	54.0	-13.7	2.19 H	289	38.8	1.5
5	10600.00	42.3 PK	74.0	-31.7	1.77 H	95	29.2	13.1
6	10600.00	30.3 AV	54.0	-23.7	1.77 H	95	17.2	13.1
7	15900.00	46.3 PK	74.0	-27.7	2.14 H	141	34.8	11.5
8	15900.00	34.2 AV	54.0	-19.8	2.14 H	141	22.7	11.5
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	*5300.00	104.7 PK			1.05 V	290	103.3	1.4
2	*5300.00	96.5 AV			1.05 V	290	95.1	1.4
3	5350.00	51.2 PK	74.0	-22.8	1.05 V	290	49.7	1.5
4	5350.00	40.2 AV	54.0	-13.8	1.05 V	290	38.7	1.5
5	10600.00	41.8 PK	74.0	-32.2	1.72 V	86	28.7	13.1
6	10600.00	30.1 AV	54.0	-23.9	1.72 V	86	17.0	13.1
7	15900.00	46.5 PK	74.0	-27.5	2.14 V	201	35.0	11.5
8	15900.00	34.3 AV	54.0	-19.7	2.14 V	201	22.8	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.3 PK			2.13 H	270	107.8	1.5
2	*5320.00	101.4 AV			2.13 H	270	99.9	1.5
3	5350.00	71.4 PK	74.0	-2.6	2.30 H	275	69.9	1.5
4	5350.00	52.4 AV	54.0	-1.6	2.30 H	275	50.9	1.5
5	10640.00	42.3 PK	74.0	-31.7	1.80 H	90	29.1	13.2
6	10640.00	30.0 AV	54.0	-24.0	1.80 H	90	16.8	13.2
7	15960.00	46.2 PK	74.0	-27.8	2.11 H	148	34.7	11.5
8	15960.00	34.1 AV	54.0	-19.9	2.11 H	148	22.6	11.5
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	104.7 PK			1.06 V	270	103.2	1.5
2	*5320.00	96.5 AV			1.06 V	270	95.0	1.5
3	5350.00	68.3 PK	74.0	-5.7	1.06 V	270	66.8	1.5
4	5350.00	49.1 AV	54.0	-4.9	1.06 V	270	47.6	1.5
5	10640.00	41.1 PK	74.0	-32.9	1.76 V	93	27.9	13.2
6	10640.00	29.7 AV	54.0	-24.3	1.76 V	93	16.5	13.2
7	15960.00	46.8 PK	74.0	-27.2	2.20 V	208	35.3	11.5
8	15960.00	34.7 AV	54.0	-19.3	2.20 V	208	23.2	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	69.6 PK	74.0	-4.4	1.83 H	277	67.7	1.9
2	5460.00	53.3 AV	54.0	-0.7	1.83 H	277	51.4	1.9
3	#5470.00	66.9 PK	68.2	-1.3	1.83 H	277	65.0	1.9
4	*5500.00	109.0 PK			1.83 H	277	107.1	1.9
5	*5500.00	101.1 AV			1.83 H	277	99.2	1.9
6	11000.00	42.4 PK	74.0	-31.6	1.83 H	104	28.8	13.6
7	11000.00	30.3 AV	54.0	-23.7	1.83 H	104	16.7	13.6
8	#16500.00	45.5 PK	68.2	-22.7	2.12 H	146	31.3	14.2
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	5460.00	66.5 PK	74.0	-7.5	1.09 V	293	64.6	1.9
2	5460.00	50.6 AV	54.0	-3.4	1.09 V	293	48.7	1.9
3	#5470.00	64.4 PK	68.2	-3.8	1.09 V	293	62.5	1.9
4	*5500.00	104.5 PK			1.09 V	293	102.6	1.9
5	*5500.00	96.3 AV			1.09 V	293	94.4	1.9
6	11000.00	41.1 PK	74.0	-32.9	1.79 V	79	27.5	13.6
7	11000.00	30.2 AV	54.0	-23.8	1.79 V	79	16.6	13.6
8	#16500.00	46.6 PK	68.2	-21.6	2.21 V	199	32.4	14.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.6 PK			1.80 H	281	107.5	2.1
2	*5580.00	101.6 AV			1.80 H	281	99.5	2.1
3	11160.00	42.3 PK	74.0	-31.7	1.89 H	116	29.6	12.7
4	11160.00	30.5 AV	54.0	-23.5	1.89 H	116	17.8	12.7
5	#16740.00	45.2 PK	68.2	-23.0	2.09 H	131	29.3	15.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	104.1 PK			1.14 V	278	102.0	2.1
2	*5580.00	95.9 AV			1.14 V	278	93.8	2.1
3	11160.00	42.8 PK	74.0	-31.2	1.83 V	80	30.1	12.7
4	11160.00	31.0 AV	54.0	-23.0	1.83 V	80	18.3	12.7
5	#16740.00	44.8 PK	68.2	-23.4	2.21 V	203	28.9	15.9

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.3 PK			1.78 H	278	105.1	2.2
2	*5700.00	99.2 AV			1.78 H	278	97.0	2.2
3	#5725.00	67.8 PK	68.2	-0.4	1.78 H	278	65.6	2.2
4	11400.00	42.7 PK	74.0	-31.3	1.84 H	106	29.2	13.5
5	11400.00	30.9 AV	54.0	-23.1	1.84 H	106	17.4	13.5
6	#17100.00	45.4 PK	68.2	-22.8	2.14 H	124	28.6	16.8
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	*5700.00	102.2 PK			1.10 V	294	100.0	2.2
2	*5700.00	93.2 AV			1.10 V	294	91.0	2.2
3	#5725.00	64.2 PK	68.2	-4.0	1.10 V	294	62.0	2.2
4	11400.00	42.6 PK	74.0	-31.4	1.77 V	95	29.1	13.5
5	11400.00	31.1 AV	54.0	-22.9	1.77 V	95	17.6	13.5
6	#17100.00	44.6 PK	68.2	-23.6	2.25 V	214	27.8	16.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5638.49	51.3 PK	68.2	-16.9	1.65 H	278	49.6	1.7
2	*5745.00	109.6 PK			1.65 H	278	107.3	2.3
3	*5745.00	101.9 AV			1.65 H	278	99.6	2.3
4	#5975.28	51.5 PK	68.2	-16.7	1.65 H	278	49.0	2.5
5	11490.00	53.4 PK	74.0	-20.6	1.25 H	296	39.3	14.1
6	11490.00	40.5 AV	54.0	-13.5	1.25 H	296	26.4	14.1
7	#17235.00	51.8 PK	68.2	-16.4	1.60 H	155	34.1	17.7
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	#5645.53	51.4 PK	68.2	-16.8	1.06 V	300	48.5	2.9
2	*5745.00	105.5 PK			1.06 V	300	103.2	2.3
3	*5745.00	96.7 AV			1.06 V	300	94.4	2.3
4	#5982.14	51.7 PK	68.2	-16.5	1.06 V	300	48.1	3.6
5	11490.00	52.8 PK	74.0	-21.2	1.72 V	89	38.7	14.1
6	11490.00	40.1 AV	54.0	-13.9	1.72 V	89	26.0	14.1
7	#17235.00	51.7 PK	68.2	-16.5	2.26 V	227	34.0	17.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5635.76	51.9 PK	68.2	-16.3	2.01 H	277	50.2	1.7
2	*5785.00	109.2 PK			2.01 H	277	106.8	2.4
3	*5785.00	101.1 AV			2.01 H	277	98.7	2.4
4	#5967.01	50.9 PK	68.2	-17.3	2.01 H	277	48.4	2.5
5	11570.00	53.3 PK	74.0	-20.7	1.26 H	311	39.2	14.1
6	11570.00	40.4 AV	54.0	-13.6	1.26 H	311	26.3	14.1
7	#17355.00	51.6 PK	68.2	-16.6	1.68 H	139	33.3	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	#5619.06	52.2 PK	68.2	-16.0	1.05 V	299	49.2	3.0
2	*5785.00	106.2 PK			1.05 V	299	103.8	2.4
3	*5785.00	97.1 AV			1.05 V	299	94.7	2.4
4	#5990.86	52.2 PK	68.2	-16.0	1.05 V	299	48.6	3.6
5	11570.00	52.4 PK	74.0	-21.6	1.76 V	105	38.3	14.1
6	11570.00	39.6 AV	54.0	-14.4	1.76 V	105	25.5	14.1
7	#17355.00	52.2 PK	68.2	-16.0	2.23 V	226	33.9	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5602.53	51.2 PK	68.2	-17.0	1.99 H	271	49.5	1.7
2	*5825.00	110.1 PK			1.99 H	271	107.6	2.5
3	*5825.00	101.9 AV			1.99 H	271	99.4	2.5
4	#5950.05	51.5 PK	68.2	-16.7	1.99 H	271	49.1	2.4
5	11650.00	53.5 PK	74.0	-20.5	1.22 H	299	39.6	13.9
6	11650.00	40.3 AV	54.0	-13.7	1.22 H	299	26.4	13.9
7	#17475.00	51.5 PK	68.2	-16.7	1.65 H	155	32.0	19.5
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	#5629.68	51.4 PK	68.2	-16.8	1.07 V	298	48.5	2.9
2	*5825.00	106.1 PK			1.07 V	298	103.6	2.5
3	*5825.00	97.0 AV			1.07 V	298	94.5	2.5
4	#6007.23	52.2 PK	68.2	-16.0	1.07 V	298	48.6	3.6
5	11650.00	52.3 PK	74.0	-21.7	1.69 V	74	38.4	13.9
6	11650.00	39.7 AV	54.0	-14.3	1.69 V	74	25.8	13.9
7	#17475.00	51.9 PK	68.2	-16.3	2.32 V	215	32.4	19.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.1 PK	74.0	-1.9	1.63 H	274	70.0	2.1
2	5150.00	53.7 AV	54.0	-0.3	1.63 H	274	51.6	2.1
3	*5180.00	109.5 PK			1.63 H	274	107.7	1.8
4	*5180.00	101.7 AV			1.63 H	274	99.9	1.8
5	#10360.00	42.3 PK	68.2	-25.9	1.71 H	80	30.2	12.1
6	15540.00	47.9 PK	74.0	-26.1	2.17 H	167	35.7	12.2
7	15540.00	35.5 AV	54.0	-18.5	2.17 H	167	23.3	12.2
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	63.4 PK	74.0	-10.6	1.07 V	281	61.3	2.1
2	5150.00	50.2 AV	54.0	-3.8	1.07 V	281	48.1	2.1
3	*5180.00	104.1 PK			1.07 V	281	102.3	1.8
4	*5180.00	96.2 AV			1.07 V	281	94.4	1.8
5	#10360.00	43.0 PK	68.2	-25.2	1.67 V	98	30.9	12.1
6	15540.00	47.3 PK	74.0	-26.7	2.22 V	179	35.1	12.2
7	15540.00	35.2 AV	54.0	-18.8	2.22 V	179	23.0	12.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	109.7 PK			2.29 H	278	108.0	1.7
2	*5200.00	101.8 AV			2.29 H	278	100.1	1.7
3	#10400.00	42.4 PK	68.2	-25.8	1.77 H	89	30.0	12.4
4	15600.00	46.6 PK	74.0	-27.4	2.09 H	169	34.6	12.0
5	15600.00	34.7 AV	54.0	-19.3	2.09 H	169	22.7	12.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.5 PK			1.05 V	299	101.8	1.7
2	*5200.00	95.5 AV			1.05 V	299	93.8	1.7
3	#10400.00	43.0 PK	68.2	-25.2	1.77 V	294	30.6	12.4
4	15600.00	46.0 PK	74.0	-28.0	2.09 V	87	34.0	12.0
5	15600.00	34.3 AV	54.0	-19.7	2.09 V	87	22.3	12.0

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.5 PK			1.66 H	276	106.1	1.4
2	*5240.00	99.2 AV			1.66 H	276	97.8	1.4
3	5350.00	49.5 PK	74.0	-24.5	1.66 H	276	48.0	1.5
4	5350.00	37.3 AV	54.0	-16.7	1.66 H	276	35.8	1.5
5	#10480.00	41.8 PK	68.2	-26.4	1.77 H	68	29.0	12.8
6	15720.00	46.0 PK	74.0	-28.0	2.06 H	130	34.4	11.6
7	15720.00	34.3 AV	54.0	-19.7	2.06 H	130	22.7	11.6
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	*5240.00	101.5 PK			1.04 V	300	100.1	1.4
2	*5240.00	93.3 AV			1.04 V	300	91.9	1.4
3	5350.00	50.0 PK	74.0	-24.0	1.04 V	300	48.5	1.5
4	5350.00	37.7 AV	54.0	-16.3	1.04 V	300	36.2	1.5
5	#10480.00	42.3 PK	68.2	-25.9	1.80 V	285	29.5	12.8
6	15720.00	47.3 PK	74.0	-26.7	2.15 V	90	35.7	11.6
7	15720.00	35.0 AV	54.0	-19.0	2.15 V	90	23.4	11.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.1 PK	74.0	-23.9	2.25 H	279	48.0	2.1
2	5150.00	37.8 AV	54.0	-16.2	2.25 H	279	35.7	2.1
3	*5260.00	109.7 PK			2.25 H	279	108.4	1.3
4	*5260.00	101.6 AV			2.25 H	279	100.3	1.3
5	#10520.00	41.8 PK	68.2	-26.4	1.80 H	86	29.0	12.8
6	15780.00	46.5 PK	74.0	-27.5	2.06 H	130	34.8	11.7
7	15780.00	34.3 AV	54.0	-19.7	2.06 H	130	22.6	11.7
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	5150.00	49.3 PK	74.0	-24.7	1.14 V	306	47.2	2.1
2	5150.00	37.3 AV	54.0	-16.7	1.14 V	306	35.2	2.1
3	*5260.00	103.6 PK			1.14 V	306	102.3	1.3
4	*5260.00	95.4 AV			1.14 V	306	94.1	1.3
5	#10520.00	42.1 PK	68.2	-26.1	1.67 V	106	29.3	12.8
6	15780.00	47.4 PK	74.0	-26.6	2.10 V	200	35.7	11.7
7	15780.00	35.4 AV	54.0	-18.6	2.10 V	200	23.7	11.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.3 PK			2.27 H	274	107.9	1.4
2	*5300.00	101.2 AV			2.27 H	274	99.8	1.4
3	10600.00	42.5 PK	74.0	-31.5	1.72 H	79	29.4	13.1
4	10600.00	30.3 AV	54.0	-23.7	1.72 H	79	17.2	13.1
5	15900.00	46.3 PK	74.0	-27.7	2.18 H	155	34.8	11.5
6	15900.00	34.2 AV	54.0	-19.8	2.18 H	155	22.7	11.5
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	*5300.00	103.2 PK			1.15 V	313	101.8	1.4
2	*5300.00	94.9 AV			1.15 V	313	93.5	1.4
3	10600.00	42.0 PK	74.0	-32.0	1.70 V	72	28.9	13.1
4	10600.00	30.4 AV	54.0	-23.6	1.70 V	72	17.3	13.1
5	15900.00	46.9 PK	74.0	-27.1	2.14 V	207	35.4	11.5
6	15900.00	34.5 AV	54.0	-19.5	2.14 V	207	23.0	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.1 PK			2.27 H	287	107.6	1.5
2	*5320.00	101.0 AV			2.27 H	287	99.5	1.5
3	5350.00	71.4 PK	74.0	-2.6	1.80 H	275	69.9	1.5
4	5350.00	52.3 AV	54.0	-1.7	1.80 H	275	50.8	1.5
5	10640.00	43.0 PK	74.0	-31.0	1.70 H	94	29.8	13.2
6	10640.00	30.7 AV	54.0	-23.3	1.70 H	94	17.5	13.2
7	15960.00	46.3 PK	74.0	-27.7	2.20 H	149	34.8	11.5
8	15960.00	33.9 AV	54.0	-20.1	2.20 H	149	22.4	11.5
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	102.5 PK			1.15 V	304	101.0	1.5
2	*5320.00	94.5 AV			1.15 V	304	93.0	1.5
3	5350.00	68.6 PK	74.0	-5.4	1.15 V	304	67.1	1.5
4	5350.00	49.5 AV	54.0	-4.5	1.15 V	304	48.0	1.5
5	10640.00	40.8 PK	74.0	-33.2	1.73 V	67	27.6	13.2
6	10640.00	29.2 AV	54.0	-24.8	1.73 V	67	16.0	13.2
7	15960.00	46.3 PK	74.0	-27.7	2.14 V	207	34.8	11.5
8	15960.00	34.2 AV	54.0	-19.8	2.14 V	207	22.7	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.5 PK	74.0	-11.5	1.89 H	278	60.6	1.9
2	5460.00	45.5 AV	54.0	-8.5	1.89 H	278	43.6	1.9
3	#5470.00	68.0 PK	68.2	-0.2	1.89 H	278	66.1	1.9
4	*5500.00	108.5 PK			1.89 H	278	106.6	1.9
5	*5500.00	100.2 AV			1.89 H	278	98.3	1.9
6	11000.00	42.6 PK	74.0	-31.4	1.83 H	80	29.0	13.6
7	11000.00	30.3 AV	54.0	-23.7	1.83 H	80	16.7	13.6
8	#16500.00	45.8 PK	68.2	-22.4	2.07 H	154	31.6	14.2
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	5460.00	56.8 PK	74.0	-17.2	1.13 V	296	54.9	1.9
2	5460.00	40.4 AV	54.0	-13.6	1.13 V	296	38.5	1.9
3	#5470.00	64.8 PK	68.2	-3.4	1.13 V	296	62.9	1.9
4	*5500.00	101.3 PK			1.13 V	296	99.4	1.9
5	*5500.00	93.6 AV			1.13 V	296	91.7	1.9
6	11000.00	41.4 PK	74.0	-32.6	1.80 V	79	27.8	13.6
7	11000.00	30.6 AV	54.0	-23.4	1.80 V	79	17.0	13.6
8	#16500.00	46.3 PK	68.2	-21.9	2.20 V	186	32.1	14.2

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.6 PK			2.21 H	275	107.5	2.1
2	*5580.00	101.3 AV			2.21 H	275	99.2	2.1
3	11160.00	42.2 PK	74.0	-31.8	1.86 H	127	29.5	12.7
4	11160.00	30.4 AV	54.0	-23.6	1.86 H	127	17.7	12.7
5	#16740.00	45.4 PK	68.2	-22.8	2.09 H	132	29.5	15.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.8 PK			1.13 V	320	100.7	2.1
2	*5580.00	94.8 AV			1.13 V	320	92.7	2.1
3	11160.00	42.3 PK	74.0	-31.7	1.82 V	66	29.6	12.7
4	11160.00	30.6 AV	54.0	-23.4	1.82 V	66	17.9	12.7
5	#16740.00	44.5 PK	68.2	-23.7	2.20 V	212	28.6	15.9

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.6 PK			1.79 H	277	103.4	2.2
2	*5700.00	96.9 AV			1.79 H	277	94.7	2.2
3	#5725.00	68.1 PK	68.2	-0.1	1.79 H	277	65.9	2.2
4	11400.00	42.8 PK	74.0	-31.2	1.90 H	122	29.3	13.5
5	11400.00	30.8 AV	54.0	-23.2	1.90 H	122	17.3	13.5
6	#17100.00	46.0 PK	68.2	-22.2	2.09 H	118	29.2	16.8
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	*5700.00	99.1 PK			1.05 V	295	96.9	2.2
2	*5700.00	90.6 AV			1.05 V	295	88.4	2.2
3	#5725.00	63.6 PK	68.2	-4.6	1.13 V	280	61.4	2.2
4	11400.00	42.5 PK	74.0	-31.5	1.76 V	99	29.0	13.5
5	11400.00	31.2 AV	54.0	-22.8	1.76 V	99	17.7	13.5
6	#17100.00	44.3 PK	68.2	-23.9	2.30 V	207	27.5	16.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5592.37	51.5 PK	68.2	-16.7	1.84 H	275	48.6	2.9
2	*5745.00	110.1 PK			1.99 H	265	107.8	2.3
3	*5745.00	101.8 AV			1.99 H	265	99.5	2.3
4	#5984.93	51.5 PK	68.2	-16.7	1.84 H	275	47.9	3.6
5	11490.00	42.8 PK	74.0	-31.2	1.83 H	125	28.7	14.1
6	11490.00	30.7 AV	54.0	-23.3	1.83 H	125	16.6	14.1
7	#17235.00	45.6 PK	68.2	-22.6	2.15 H	144	27.9	17.7
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	#5616.43	50.9 PK	68.2	-17.3	1.05 V	297	49.1	1.8
2	*5745.00	105.6 PK			1.01 V	311	103.3	2.3
3	*5745.00	96.7 AV			1.01 V	311	94.4	2.3
4	#5939.00	51.3 PK	68.2	-16.9	1.05 V	297	48.9	2.4
5	11490.00	52.6 PK	74.0	-21.4	1.67 V	81	38.5	14.1
6	11490.00	39.7 AV	54.0	-14.3	1.67 V	81	25.6	14.1
7	#17235.00	51.8 PK	68.2	-16.4	2.27 V	223	34.1	17.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5650.38	51.4 PK	68.5	-17.1	1.81 H	272	48.5	2.9
2	*5785.00	109.6 PK			2.05 H	264	107.2	2.4
3	*5785.00	101.1 AV			2.05 H	264	98.7	2.4
4	#5962.92	51.5 PK	68.2	-16.7	1.81 H	272	47.9	3.6
5	11570.00	42.0 PK	74.0	-32.0	1.91 H	120	27.9	14.1
6	11570.00	30.5 AV	54.0	-23.5	1.91 H	120	16.4	14.1
7	#17355.00	45.5 PK	68.2	-22.7	2.10 H	140	27.2	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	#5591.61	51.6 PK	68.2	-16.6	1.03 V	299	48.7	2.9
2	*5785.00	106.0 PK			1.03 V	294	103.6	2.4
3	*5785.00	96.9 AV			1.03 V	294	94.5	2.4
4	#5958.52	51.6 PK	68.2	-16.6	1.03 V	299	48.0	3.6
5	11570.00	52.5 PK	74.0	-21.5	1.72 V	77	38.4	14.1
6	11570.00	40.1 AV	54.0	-13.9	1.72 V	77	26.0	14.1
7	#17355.00	52.2 PK	68.2	-16.0	2.24 V	233	33.9	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.08	51.3 PK	68.2	-16.9	1.79 H	270	48.3	3.0
2	*5825.00	110.0 PK			2.07 H	290	107.5	2.5
3	*5825.00	102.0 AV			2.07 H	290	99.5	2.5
4	#5968.89	51.9 PK	68.2	-16.3	1.79 H	270	48.3	3.6
5	11650.00	42.5 PK	74.0	-31.5	1.91 H	125	28.6	13.9
6	11650.00	30.9 AV	54.0	-23.1	1.91 H	125	17.0	13.9
7	#17475.00	45.8 PK	68.2	-22.4	2.10 H	144	26.3	19.5
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	#5628.52	51.9 PK	68.2	-16.3	1.06 V	302	50.1	1.8
2	*5825.00	106.3 PK			1.03 V	290	103.8	2.5
3	*5825.00	97.4 AV			1.03 V	290	94.9	2.5
4	#5956.28	52.4 PK	68.2	-15.8	1.06 V	302	50.0	2.4
5	11650.00	51.9 PK	74.0	-22.1	1.77 V	119	38.0	13.9
6	11650.00	39.1 AV	54.0	-14.9	1.77 V	119	25.2	13.9
7	#17475.00	52.1 PK	68.2	-16.1	2.24 V	227	32.6	19.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.4 PK	74.0	-4.6	1.66 H	278	67.3	2.1
2	5150.00	53.9 AV	54.0	-0.1	1.66 H	278	51.8	2.1
3	*5190.00	103.4 PK			1.66 H	278	101.6	1.8
4	*5190.00	93.3 AV			1.66 H	278	91.5	1.8
5	5350.00	60.9 PK	74.0	-13.1	1.66 H	278	59.4	1.5
6	5350.00	44.6 AV	54.0	-9.4	1.66 H	278	43.1	1.5
7	#10380.00	42.4 PK	68.2	-25.8	1.88 H	117	30.1	12.3
8	15570.00	45.1 PK	74.0	-28.9	2.14 H	127	32.9	12.2
9	15570.00	33.5 AV	54.0	-20.5	2.14 H	127	21.3	12.2
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	66.5 PK	74.0	-7.5	1.09 V	299	64.4	2.1
2	5150.00	51.2 AV	54.0	-2.8	1.09 V	299	49.1	2.1
3	*5190.00	98.2 PK			1.09 V	299	96.4	1.8
4	*5190.00	87.9 AV			1.09 V	299	86.1	1.8
5	5350.00	59.2 PK	74.0	-14.8	1.09 V	299	57.7	1.5
6	5350.00	43.0 AV	54.0	-11.0	1.09 V	299	41.5	1.5
7	#10380.00	42.1 PK	68.2	-26.1	1.81 V	119	29.8	12.3
8	15570.00	45.9 PK	74.0	-28.1	2.30 V	224	33.7	12.2
9	15570.00	34.0 AV	54.0	-20.0	2.30 V	224	21.8	12.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	106.2 PK			1.66 H	277	104.7	1.5
2	*5230.00	97.8 AV			1.66 H	277	96.3	1.5
3	5350.00	50.9 PK	74.0	-23.1	1.66 H	277	49.4	1.5
4	5350.00	38.8 AV	54.0	-15.2	1.66 H	277	37.3	1.5
5	#10460.00	41.9 PK	68.2	-26.3	1.91 H	131	29.2	12.7
6	15690.00	45.8 PK	74.0	-28.2	2.13 H	146	34.2	11.6
7	15690.00	34.4 AV	54.0	-19.6	2.13 H	146	22.8	11.6
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	*5230.00	101.8 PK			1.03 V	298	100.3	1.5
2	*5230.00	91.3 AV			1.03 V	298	89.8	1.5
3	5350.00	50.8 PK	74.0	-23.2	1.03 V	298	49.3	1.5
4	5350.00	38.8 AV	54.0	-15.2	1.03 V	298	37.3	1.5
5	#10460.00	41.2 PK	68.2	-27.0	1.84 V	126	28.5	12.7
6	15690.00	46.2 PK	74.0	-27.8	2.28 V	214	34.6	11.6
7	15690.00	34.6 AV	54.0	-19.4	2.28 V	214	23.0	11.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.5 PK	74.0	-22.5	1.68 H	269	49.4	2.1
2	5150.00	39.3 AV	54.0	-14.7	1.68 H	269	37.2	2.1
3	*5270.00	109.1 PK			1.69 H	262	107.8	1.3
4	*5270.00	101.2 AV			1.69 H	262	99.9	1.3
5	#10540.00	42.6 PK	68.2	-25.6	1.95 H	122	29.7	12.9
6	15810.00	46.1 PK	74.0	-27.9	2.11 H	146	34.4	11.7
7	15810.00	34.6 AV	54.0	-19.4	2.11 H	146	22.9	11.7
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	5150.00	51.5 PK	74.0	-22.5	1.11 V	309	49.4	2.1
2	5150.00	39.1 AV	54.0	-14.9	1.11 V	309	37.0	2.1
3	*5270.00	101.5 PK			1.11 V	309	100.2	1.3
4	*5270.00	93.4 AV			1.11 V	309	92.1	1.3
5	#10540.00	42.5 PK	68.2	-25.7	1.79 V	121	29.6	12.9
6	15810.00	45.7 PK	74.0	-28.3	2.33 V	226	34.0	11.7
7	15810.00	34.2 AV	54.0	-19.8	2.33 V	226	22.5	11.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	102.5 PK			1.82 H	277	101.1	1.4
2	*5310.00	91.8 AV			1.82 H	277	90.4	1.4
3	5350.00	67.7 PK	74.0	-6.3	1.82 H	277	66.2	1.5
4	5350.00	53.3 AV	54.0	-0.7	1.82 H	277	51.8	1.5
5	10620.00	42.2 PK	74.0	-31.8	1.92 H	122	29.1	13.1
6	10620.00	30.0 AV	54.0	-24.0	1.92 H	122	16.9	13.1
7	15930.00	46.5 PK	74.0	-27.5	2.12 H	140	35.0	11.5
8	15930.00	34.8 AV	54.0	-19.2	2.12 H	140	23.3	11.5
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	*5310.00	97.5 PK			1.07 V	317	96.1	1.4
2	*5310.00	87.1 AV			1.07 V	317	85.7	1.4
3	5350.00	64.9 PK	74.0	-9.1	1.07 V	317	63.4	1.5
4	5350.00	51.0 AV	54.0	-3.0	1.07 V	317	49.5	1.5
5	10620.00	41.6 PK	74.0	-32.4	1.80 V	123	28.5	13.1
6	10620.00	29.6 AV	54.0	-24.4	1.80 V	123	16.5	13.1
7	15930.00	46.7 PK	74.0	-27.3	2.35 V	239	35.2	11.5
8	15930.00	34.8 AV	54.0	-19.2	2.35 V	239	23.3	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.8 PK	74.0	-14.2	1.75 H	275	57.9	1.9
2	5460.00	46.0 AV	54.0	-8.0	1.75 H	275	44.1	1.9
3	#5470.00	68.1 PK	68.2	-0.1	1.75 H	275	66.2	1.9
4	*5510.00	103.8 PK			1.75 H	275	101.9	1.9
5	*5510.00	93.1 AV			1.75 H	275	91.2	1.9
6	11020.00	42.9 PK	74.0	-31.1	1.92 H	136	29.5	13.4
7	11020.00	31.0 AV	54.0	-23.0	1.92 H	136	17.6	13.4
8	#16530.00	46.4 PK	68.2	-21.8	2.17 H	130	31.9	14.5
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	5460.00	59.7 PK	74.0	-14.3	1.12 V	321	57.8	1.9
2	5460.00	46.1 AV	54.0	-7.9	1.12 V	321	44.2	1.9
3	#5470.00	67.7 PK	68.2	-0.5	1.12 V	321	65.8	1.9
4	*5510.00	99.2 PK			1.12 V	321	97.3	1.9
5	*5510.00	88.5 AV			1.12 V	321	86.6	1.9
6	11020.00	43.0 PK	74.0	-31.0	1.81 V	121	29.6	13.4
7	11020.00	31.4 AV	54.0	-22.6	1.81 V	121	18.0	13.4
8	#16530.00	46.6 PK	68.2	-21.6	2.32 V	254	32.1	14.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	108.4 PK			1.77 H	280	106.4	2.0
2	*5550.00	100.1 AV			1.77 H	280	98.1	2.0
3	11100.00	42.7 PK	74.0	-31.3	1.88 H	152	29.8	12.9
4	11100.00	30.8 AV	54.0	-23.2	1.88 H	152	17.9	12.9
5	#16650.00	46.9 PK	68.2	-21.3	2.13 H	141	31.7	15.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	101.4 PK			1.13 V	313	99.4	2.0
2	*5550.00	93.0 AV			1.13 V	313	91.0	2.0
3	11100.00	43.5 PK	74.0	-30.5	1.84 V	112	30.6	12.9
4	11100.00	31.7 AV	54.0	-22.3	1.84 V	112	18.8	12.9
5	#16650.00	46.2 PK	68.2	-22.0	2.37 V	269	31.0	15.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	106.2 PK			1.79 H	277	104.1	2.1
2	*5670.00	97.8 AV			1.79 H	277	95.7	2.1
3	#5725.00	67.9 PK	68.2	-0.3	1.79 H	277	65.7	2.2
4	11340.00	42.9 PK	74.0	-31.1	1.89 H	139	29.9	13.0
5	11340.00	31.2 AV	54.0	-22.8	1.89 H	139	18.2	13.0
6	#17010.00	46.7 PK	68.2	-21.5	2.15 H	131	29.8	16.9
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	*5670.00	99.9 PK			1.08 V	334	97.8	2.1
2	*5670.00	91.2 AV			1.08 V	334	89.1	2.1
3	#5725.00	65.4 PK	68.2	-2.8	1.08 V	334	63.2	2.2
4	11340.00	43.2 PK	74.0	-30.8	1.75 V	136	30.2	13.0
5	11340.00	31.6 AV	54.0	-22.4	1.75 V	136	18.6	13.0
6	#17010.00	46.3 PK	68.2	-21.9	2.26 V	243	29.4	16.9

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5640.01	52.0 PK	68.2	-16.2	1.93 H	274	50.3	1.7
2	*5755.00	108.9 PK			1.93 H	274	106.6	2.3
3	*5755.00	100.7 AV			1.93 H	274	98.4	2.3
4	#5968.05	52.4 PK	68.2	-15.8	1.93 H	274	49.9	2.5
5	11510.00	42.4 PK	74.0	-31.6	1.92 H	141	28.3	14.1
6	11510.00	30.4 AV	54.0	-23.6	1.92 H	141	16.3	14.1
7	#17265.00	46.9 PK	68.2	-21.3	2.17 H	141	29.1	17.8
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	#5611.36	51.5 PK	68.2	-16.7	1.07 V	307	48.5	3.0
2	*5755.00	102.1 PK			1.07 V	307	99.8	2.3
3	*5755.00	93.8 AV			1.07 V	307	91.5	2.3
4	#5979.03	52.5 PK	68.2	-15.7	1.07 V	307	48.9	3.6
5	11510.00	43.4 PK	74.0	-30.6	1.79 V	127	29.3	14.1
6	11510.00	31.7 AV	54.0	-22.3	1.79 V	127	17.6	14.1
7	#17265.00	45.7 PK	68.2	-22.5	2.29 V	255	27.9	17.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.98	51.0 PK	68.2	-17.2	1.88 H	271	49.3	1.7
2	*5795.00	108.8 PK			1.88 H	271	106.3	2.5
3	*5795.00	100.9 AV			1.88 H	271	98.4	2.5
4	#5936.65	51.9 PK	68.2	-16.3	1.88 H	271	49.5	2.4
5	11590.00	42.4 PK	74.0	-31.6	1.92 H	142	28.3	14.1
6	11590.00	30.4 AV	54.0	-23.6	1.92 H	142	16.3	14.1
7	#17385.00	47.4 PK	68.2	-20.8	2.18 H	140	28.9	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	#5593.82	51.2 PK	68.2	-17.0	1.02 V	301	48.3	2.9
2	*5795.00	101.7 PK			1.02 V	301	99.2	2.5
3	*5795.00	93.6 AV			1.02 V	301	91.1	2.5
4	#5964.16	52.1 PK	68.2	-16.1	1.02 V	301	48.5	3.6
5	11590.00	43.7 PK	74.0	-30.3	1.77 V	142	29.6	14.1
6	11590.00	32.0 AV	54.0	-22.0	1.77 V	142	17.9	14.1
7	#17385.00	46.2 PK	68.2	-22.0	2.27 V	242	27.7	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT80)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.3 PK	74.0	-6.7	2.21 H	287	65.2	2.1
2	5150.00	53.6 AV	54.0	-0.4	2.21 H	287	51.5	2.1
3	*5210.00	101.1 PK			2.21 H	287	99.5	1.6
4	*5210.00	91.7 AV			2.21 H	287	90.1	1.6
5	5350.00	50.1 PK	74.0	-23.9	2.21 H	287	48.6	1.5
6	5350.00	37.1 AV	54.0	-16.9	2.21 H	287	35.6	1.5
7	#10420.00	42.3 PK	68.2	-25.9	1.93 H	145	29.9	12.4
8	15630.00	47.4 PK	74.0	-26.6	2.21 H	136	35.6	11.8
9	15630.00	36.1 AV	54.0	-17.9	2.21 H	136	24.3	11.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.2 PK	74.0	-8.8	1.06 V	320	63.1	2.1
2	5150.00	51.3 AV	54.0	-2.7	1.06 V	320	49.2	2.1
3	*5210.00	93.8 PK			1.06 V	320	92.2	1.6
4	*5210.00	83.3 AV			1.06 V	320	81.7	1.6
5	5350.00	50.3 PK	74.0	-23.7	1.06 V	320	48.8	1.5
6	5350.00	37.3 AV	54.0	-16.7	1.06 V	320	35.8	1.5
7	#10420.00	42.6 PK	68.2	-25.6	1.80 V	122	30.2	12.4
8	15630.00	47.2 PK	74.0	-26.8	2.24 V	230	35.4	11.8
9	15630.00	36.1 AV	54.0	-17.9	2.24 V	230	24.3	11.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.8 PK	74.0	-25.2	2.22 H	274	46.7	2.1
2	5150.00	36.8 AV	54.0	-17.2	2.22 H	274	34.7	2.1
3	*5290.00	100.2 PK			2.22 H	274	98.8	1.4
4	*5290.00	90.7 AV			2.22 H	274	89.3	1.4
5	5350.00	67.8 PK	74.0	-6.2	2.22 H	274	66.3	1.5
6	5350.00	53.9 AV	54.0	-0.1	2.22 H	274	52.4	1.5
7	#10580.00	42.0 PK	68.2	-26.2	1.89 H	129	29.1	12.9
8	15870.00	47.4 PK	74.0	-26.6	2.19 H	155	35.8	11.6
9	15870.00	36.0 AV	54.0	-18.0	2.19 H	155	24.4	11.6
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	5150.00	50.2 PK	74.0	-23.8	1.09 V	322	48.1	2.1
2	5150.00	36.9 AV	54.0	-17.1	1.09 V	322	34.8	2.1
3	*5290.00	92.5 PK			1.09 V	322	91.1	1.4
4	*5290.00	82.1 AV			1.09 V	322	80.7	1.4
5	5350.00	64.6 PK	74.0	-9.4	1.09 V	322	63.1	1.5
6	5350.00	50.8 AV	54.0	-3.2	1.09 V	322	49.3	1.5
7	#10580.00	41.6 PK	68.2	-26.6	1.79 V	109	28.7	12.9
8	15870.00	47.1 PK	74.0	-26.9	2.27 V	241	35.5	11.6
9	15870.00	35.9 AV	54.0	-18.1	2.27 V	241	24.3	11.6

REMARKS:

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

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.0 PK	74.0	-8.0	1.75 H	278	64.1	1.9
2	5460.00	53.8 AV	54.0	-0.2	1.75 H	278	51.9	1.9
3	#5470.00	67.2 PK	68.2	-1.0	1.75 H	278	65.3	1.9
4	*5530.00	101.5 PK			1.75 H	278	99.5	2.0
5	*5530.00	92.1 AV			1.75 H	278	90.1	2.0
6	#5725.00	58.5 PK	68.2	-9.7	1.75 H	178	56.3	2.2
7	11060.00	42.5 PK	74.0	-31.5	1.96 H	128	29.3	13.2
8	11060.00	30.2 AV	54.0	-23.8	1.96 H	128	17.0	13.2
9	#16590.00	47.8 PK	68.2	-20.4	2.24 H	142	33.0	14.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.9 PK	74.0	-10.1	1.15 V	327	62.0	1.9
2	5460.00	51.7 AV	54.0	-2.3	1.15 V	327	49.8	1.9
3	#5470.00	64.7 PK	68.2	-3.5	1.15 V	327	62.8	1.9
4	*5530.00	94.2 PK			1.15 V	327	92.2	2.0
5	*5530.00	83.6 AV			1.15 V	327	81.6	2.0
6	#5725.00	58.8 PK	68.2	-9.4	1.15 V	327	56.6	2.2
7	11060.00	42.3 PK	74.0	-31.7	1.83 V	131	29.1	13.2
8	11060.00	30.2 AV	54.0	-23.8	1.83 V	131	17.0	13.2
9	#16590.00	47.9 PK	68.2	-20.3	2.29 V	261	33.1	14.8

REMARKS:

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

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	107.6 PK			1.74 H	278	105.5	2.1
2	*5610.00	99.8 AV			1.74 H	278	97.7	2.1
3	#5725.00	65.8 PK	68.2	-2.4	1.74 H	278	63.6	2.2
4	11220.00	42.3 PK	74.0	-31.7	1.87 H	157	29.7	12.6
5	11220.00	30.1 AV	54.0	-23.9	1.87 H	157	17.5	12.6
6	#16830.00	47.9 PK	68.2	-20.3	2.12 H	135	31.6	16.3
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	*5610.00	100.5 PK			1.20 V	318	98.4	2.1
2	*5610.00	92.2 AV			1.20 V	318	90.1	2.1
3	#5725.00	63.3 PK	68.2	-4.9	1.20 V	318	61.1	2.2
4	11220.00	42.3 PK	74.0	-31.7	1.84 V	126	29.7	12.6
5	11220.00	30.4 AV	54.0	-23.6	1.84 V	126	17.8	12.6
6	#16830.00	47.7 PK	68.2	-20.5	2.35 V	241	31.4	16.3

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5651.25	57.1 PK	69.1	-12.0	1.77 H	275	54.2	2.9
2	*5775.00	105.4 PK			1.77 H	275	103.0	2.4
3	*5775.00	97.7 AV			1.77 H	275	95.3	2.4
4	#5927.74	59.2 PK	68.2	-9.0	1.77 H	275	55.6	3.6
5	11550.00	42.6 PK	74.0	-31.4	1.96 H	140	28.4	14.2
6	11550.00	30.8 AV	54.0	-23.2	1.96 H	140	16.6	14.2
7	#17325.00	47.9 PK	68.2	-20.3	2.22 H	144	29.8	18.1
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	#5645.55	54.6 PK	68.2	-13.6	1.02 V	305	52.9	1.7
2	*5775.00	100.1 PK			1.02 V	305	97.7	2.4
3	*5775.00	91.5 AV			1.02 V	305	89.1	2.4
4	#5927.74	59.1 PK	68.2	-9.1	1.02 V	305	56.8	2.3
5	11550.00	42.2 PK	74.0	-31.8	1.80 V	124	28.0	14.2
6	11550.00	30.5 AV	54.0	-23.5	1.80 V	124	16.3	14.2
7	#17325.00	48.0 PK	68.2	-20.2	2.27 V	260	29.9	18.1

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Data:

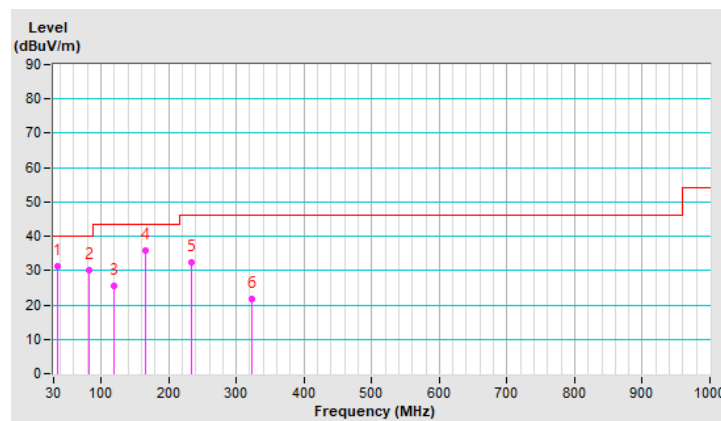
802.11ac (VHT40)

CHANNEL	TX Channel 54	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	35.24	31.3 QP	40.0	-8.7	3.00 H	272	45.4	-14.1
2	82.29	30.1 QP	40.0	-9.9	3.00 H	1	48.2	-18.1
3	119.97	25.5 QP	43.5	-18.0	2.00 H	54	40.6	-15.1
4	166.58	35.8 QP	43.5	-7.7	1.00 H	292	49.0	-13.2
5	233.23	32.3 QP	46.0	-13.7	2.00 H	47	47.1	-14.8
6	323.25	21.6 QP	46.0	-24.4	1.00 H	360	33.1	-11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

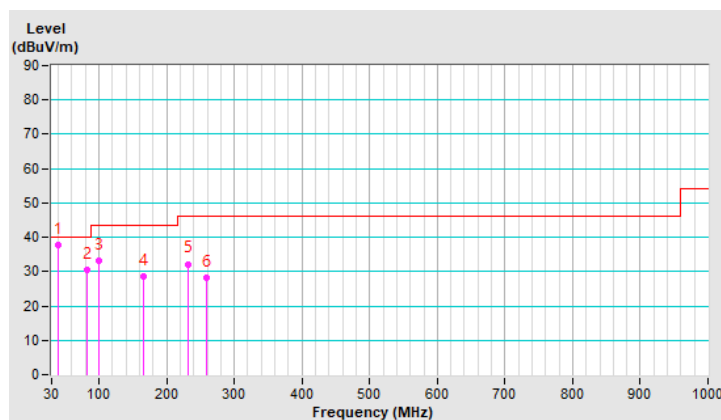


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.94	36.8 QP	40.0	-3.2	1.00 V	332	50.4	-13.6
2	82.29	30.5 QP	40.0	-9.5	1.00 V	3	48.6	-18.1
3	99.60	33.1 QP	43.5	-10.4	1.00 V	266	50.4	-17.3
4	166.58	28.5 QP	43.5	-15.0	1.00 V	62	41.7	-13.2
5	232.40	32.2 QP	46.0	-13.8	1.00 V	225	47.1	-14.9
6	259.76	28.3 QP	46.0	-17.7	2.00 V	343	42.0	-13.7

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 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, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
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 Conduction 1.
- 3 Tested Date: Apr. 29, 2019

4.2.3 Test Procedure

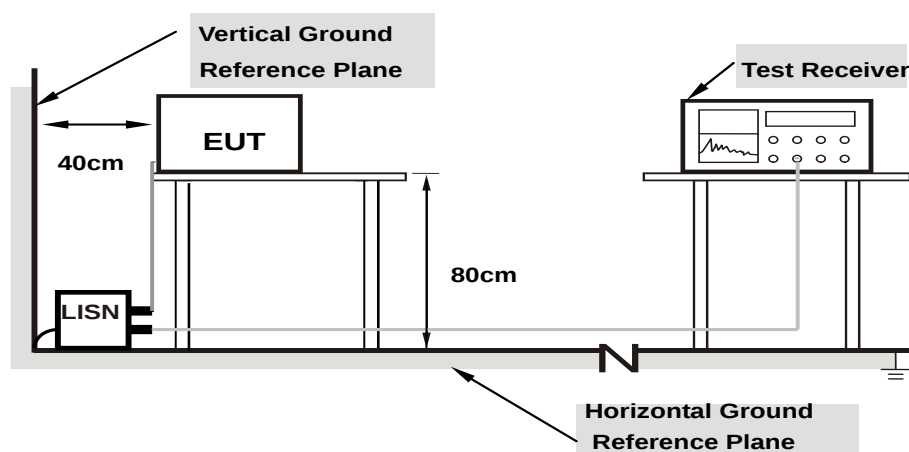
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

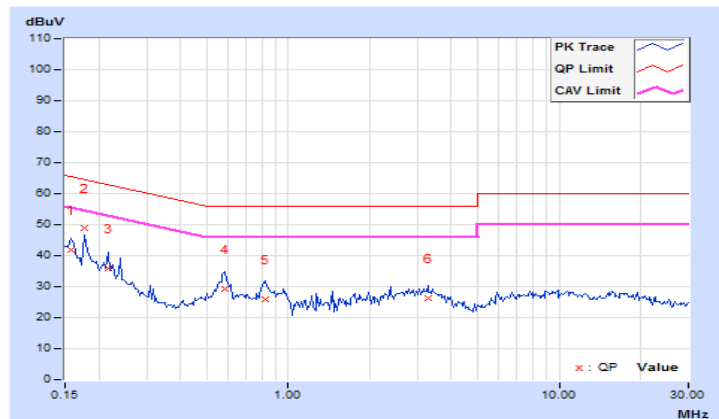
4.2.7 Test Results

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

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.02	31.89	22.64	41.91	32.66	65.58	55.58	-23.67	-22.92
2	0.17734	10.03	38.86	16.97	48.89	27.00	64.61	54.61	-15.72	-27.61
3	0.21641	10.04	25.85	13.11	35.89	23.15	62.96	52.96	-27.07	-29.81
4	0.58359	10.08	19.32	11.31	29.40	21.39	56.00	46.00	-26.60	-24.61
5	0.82188	10.10	15.97	6.48	26.07	16.58	56.00	46.00	-29.93	-29.42
6	3.26953	10.22	16.13	10.48	26.35	20.70	56.00	46.00	-29.65	-25.30

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.

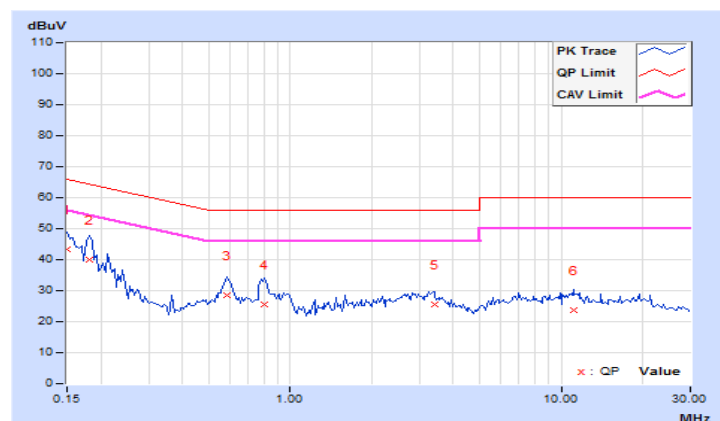


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.93	33.48	20.60	43.41	30.53	66.00	56.00	-22.59	-25.47
2	0.18125	9.94	30.23	18.13	40.17	28.07	64.43	54.43	-24.26	-26.36
3	0.58750	9.97	18.70	11.01	28.67	20.98	56.00	46.00	-27.33	-25.02
4	0.79844	9.98	15.50	5.89	25.48	15.87	56.00	46.00	-30.52	-30.13
5	3.39453	10.10	15.53	10.50	25.63	20.60	56.00	46.00	-30.37	-25.40
6	11.07422	10.43	13.24	7.41	23.67	17.84	60.00	50.00	-36.33	-32.16

REMARKS:

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



4.3 Transmit Power Measurement

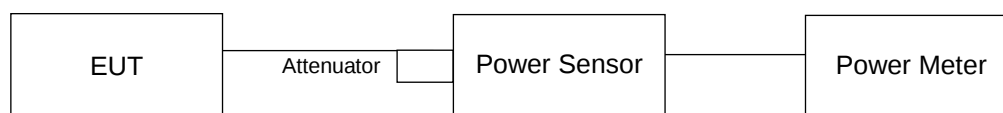
4.3.1 Limits of Transmit Power Measurement

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

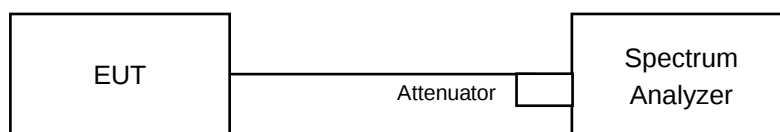
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 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

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	117.761	20.71	24.00	Pass
40	5200	113.763	20.56	24.00	Pass
48	5240	90.365	19.56	24.00	Pass
52	5260	111.429	20.47	24.00	Pass
60	5300	118.85	20.75	24.00	Pass
64	5320	99.541	19.98	24.00	Pass
100	5500	96.828	19.86	24.00	Pass
116	5580	103.753	20.16	24.00	Pass
140	5700	64.565	18.10	24.00	Pass
149	5745	79.799	19.02	30.00	Pass
157	5785	80.353	19.05	30.00	Pass
165	5825	76.913	18.86	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	42.60
60	5300	42.47
64	5320	42.43
100	5500	42.13
116	5580	42.27
140	5700	39.49

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	42.60	27.29 > 24
60	5300	42.47	27.28 > 24
64	5320	42.43	27.27 > 24
100	5500	42.13	27.24 > 24
116	5580	42.27	27.26 > 24
140	5700	39.49	26.96 > 24

802.11ac (VHT20)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	120.504	20.81	24.00	Pass
40	5200	129.122	21.11	24.00	Pass
48	5240	86.099	19.35	24.00	Pass
52	5260	121.339	20.84	24.00	Pass
60	5300	117.761	20.71	24.00	Pass
64	5320	113.763	20.56	24.00	Pass
100	5500	95.719	19.81	24.00	Pass
116	5580	103.514	20.15	24.00	Pass
140	5700	47.424	16.76	24.00	Pass
149	5745	85.31	19.31	30.00	Pass
157	5785	84.528	19.27	30.00	Pass
165	5825	82.414	19.16	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	46.42
60	5300	46.58
64	5320	46.71
100	5500	45.42
116	5580	46.08
140	5700	38.88

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	46.42	27.66 > 24
60	5300	46.58	27.68 > 24
64	5320	46.71	27.69 > 24
100	5500	45.42	27.57 > 24
116	5580	46.08	27.63 > 24
140	5700	38.88	26.89 > 24

802.11ac (VHT40)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	37.757	15.77	24.00	Pass
46	5230	88.716	19.48	24.00	Pass
54	5270	137.721	21.39	24.00	Pass
62	5310	34.594	15.39	24.00	Pass
102	5510	43.251	16.36	24.00	Pass
110	5550	130.918	21.17	24.00	Pass
134	5670	89.125	19.50	24.00	Pass
151	5755	100.231	20.01	30.00	Pass
159	5795	89.743	19.53	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
54	5270	99.38
62	5310	49.02
102	5510	51.81
110	5550	98.72
134	5670	66.53

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	99.38	30.97 > 24
62	5310	49.02	27.9 > 24
102	5510	51.81	28.14 > 24
110	5550	98.72	30.94 > 24
134	5670	66.53	29.23 > 24

802.11ac (VHT80)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
42	5210	31.842	15.03	24.00	Pass
58	5290	27.164	14.34	24.00	Pass
106	5530	32.434	15.11	24.00	Pass
122	5610	109.396	20.39	24.00	Pass
155	5775	88.105	19.45	30.00	Pass

26dB BANDWIDTH:

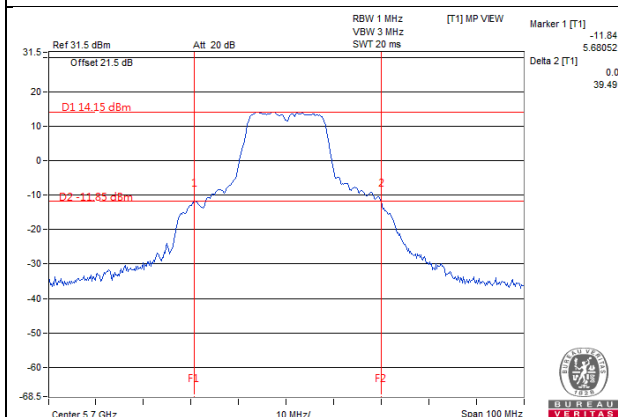
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
58	5290	83.77
106	5530	83.01
122	5610	199.01

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

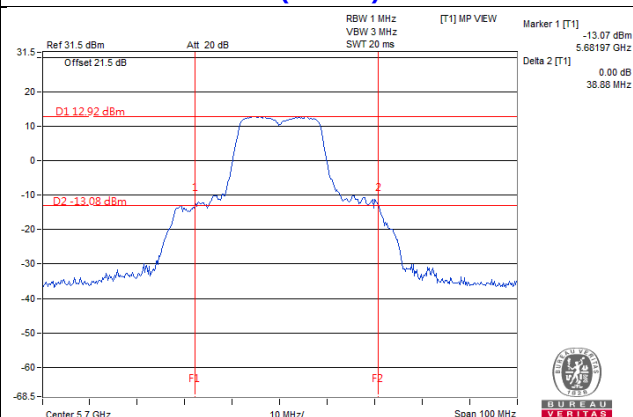
Power Limit = 11dBm + 10logB < U_NII-2A, U_NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	83.77	30.23 > 24
106	5530	83.01	30.19 > 24
122	5610	199.01	33.98 > 24

Spectrum Plot of Worst Value

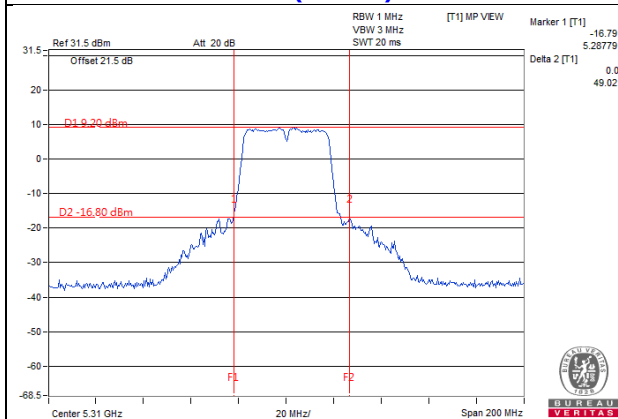
802.11a: CH140



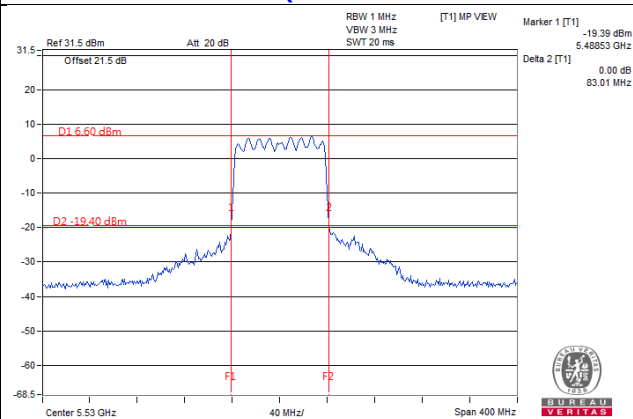
802.11ac (VHT20): CH140



802.11ac (VHT40): CH62

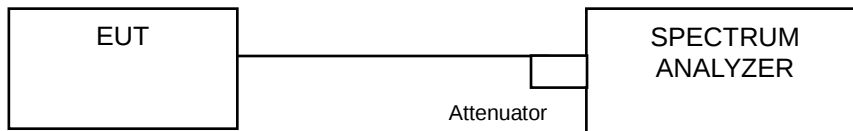


802.11ac (VHT80): CH106



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	23.40
40	5200	23.52
48	5240	17.52
52	5260	21.96
60	5300	22.32
64	5320	22.32
100	5500	20.28
116	5580	21.24
140	5700	17.40
149	5745	19.44
157	5785	18.60
165	5825	18.60

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	22.32
40	5200	21.96
48	5240	18.36
52	5260	22.44
60	5300	22.68
64	5320	22.20
100	5500	18.84
116	5580	21.48
140	5700	18.00
149	5745	19.92
157	5785	19.32
165	5825	18.72

802.11ac (VHT40)

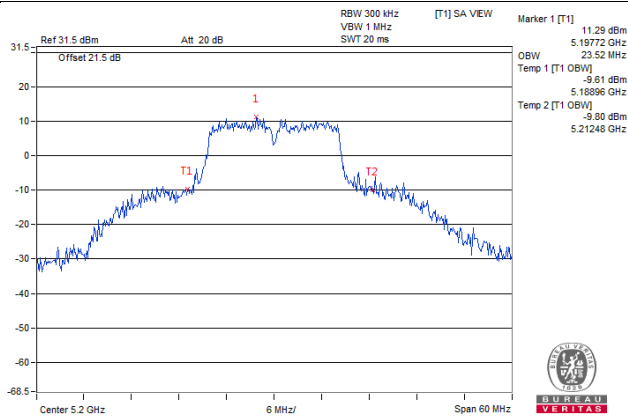
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.48
46	5230	37.20
54	5270	44.16
62	5310	36.72
102	5510	36.72
110	5550	43.44
134	5670	36.72
151	5755	38.16
159	5795	38.88

802.11ac (VHT80)

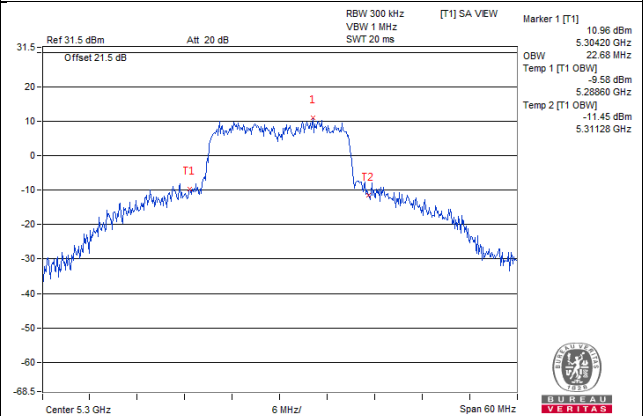
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.84
58	5290	75.84
106	5530	76.32
122	5610	81.60
155	5775	78.24

Spectrum Plot of Max. Value

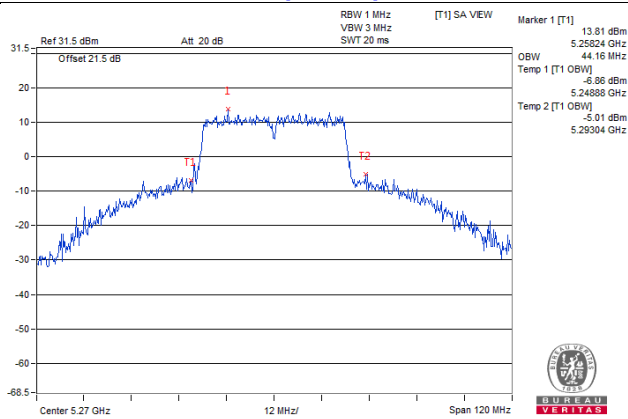
802.11a: CH40



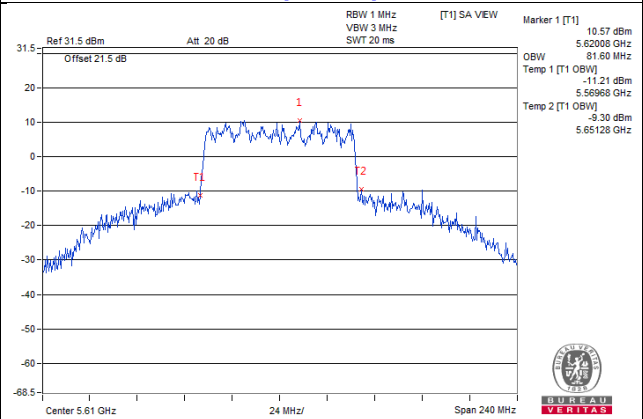
802.11ac (VHT20): CH60



802.11ac (VHT40): CH54



802.11ac (VHT80): CH122

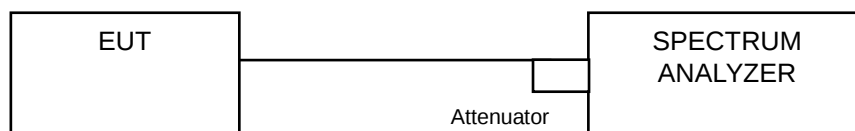


4.5 Peak Power Spectral Density Measurement

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	
	√	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

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 $BWCF = 10\log(500\text{ kHz}/300\text{ kHz})$
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	6.85	11.00	Pass
40	5200	6.98	11.00	Pass
48	5240	5.43	11.00	Pass
52	5260	6.70	11.00	Pass
60	5300	6.61	11.00	Pass
64	5320	6.54	11.00	Pass
100	5500	6.43	11.00	Pass
116	5580	6.57	11.00	Pass
140	5700	4.18	11.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	6.09	11.00	Pass
40	5200	6.34	11.00	Pass
48	5240	5.20	11.00	Pass
52	5260	6.47	11.00	Pass
60	5300	6.44	11.00	Pass
64	5320	6.31	11.00	Pass
100	5500	5.56	11.00	Pass
116	5580	6.47	11.00	Pass
140	5700	2.64	11.00	Pass

802.11ac (VHT40)

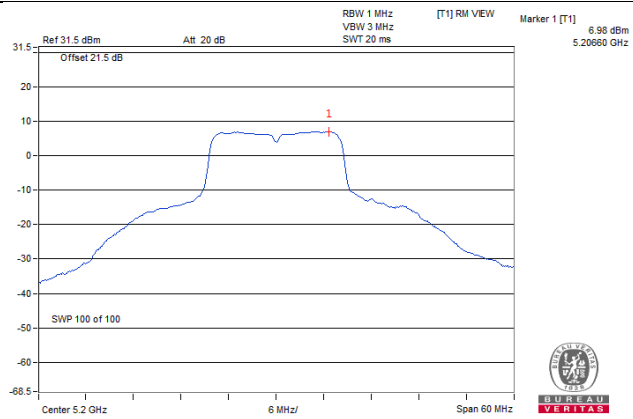
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
38	5190	-1.39	11.00	Pass
46	5230	1.99	11.00	Pass
54	5270	3.35	11.00	Pass
62	5310	-1.38	11.00	Pass
102	5510	-0.52	11.00	Pass
110	5550	3.64	11.00	Pass
134	5670	-0.13	11.00	Pass

802.11ac (VHT80)

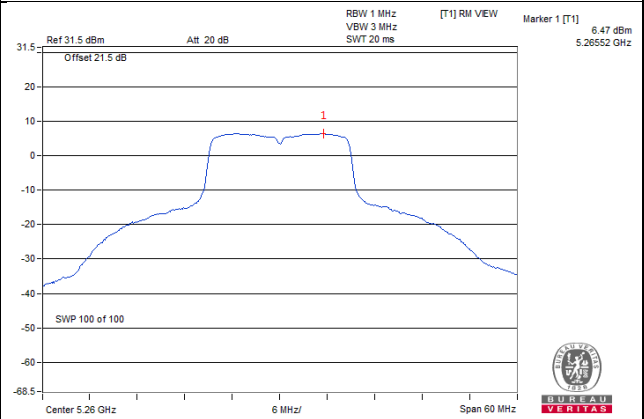
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
42	5210	-3.83	11.00	Pass
58	5290	-4.70	11.00	Pass
106	5530	-3.93	11.00	Pass
122	5610	1.62	11.00	Pass

Spectrum Plot of Worst Value

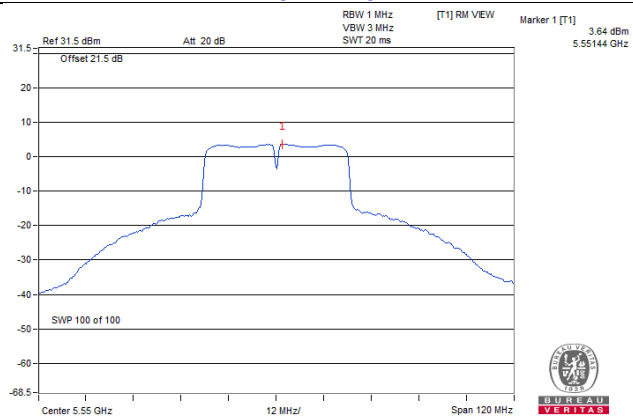
802.11a: CH40



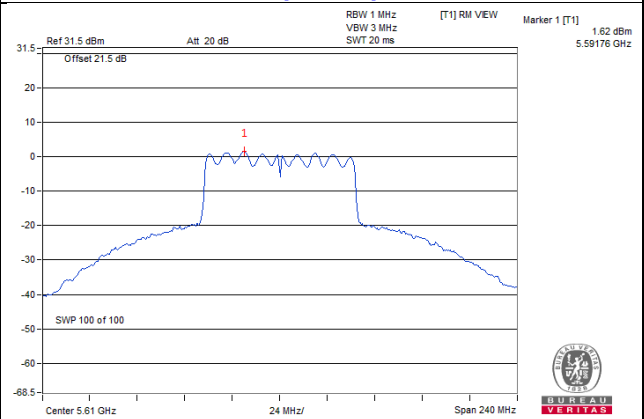
802.11ac (VHT20): CH52



802.11ac (VHT40): CH110



802.11ac (VHT80): CH122



For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-2.72	-0.50	30.00	Pass
157	5785	-2.85	-0.63	30.00	Pass
165	5825	-3.58	-1.36	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-2.90	-0.68	30.00	Pass
157	5785	-3.29	-1.07	30.00	Pass
165	5825	-3.58	-1.36	30.00	Pass

802.11ac (VHT40)

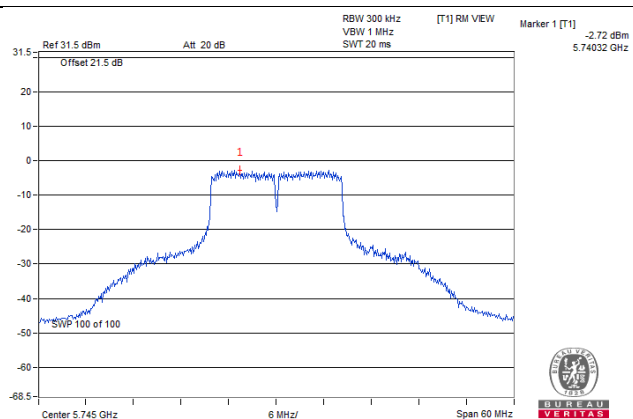
Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
151	5755	-6.63	-4.41	30.00	Pass
159	5795	-6.81	-4.59	30.00	Pass

802.11ac (VHT80)

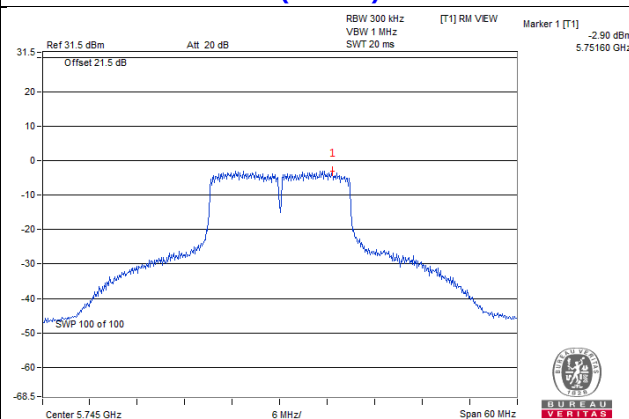
Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
155	5775	-8.46	-6.24	30.00	Pass

Spectrum Plot of Worst Value

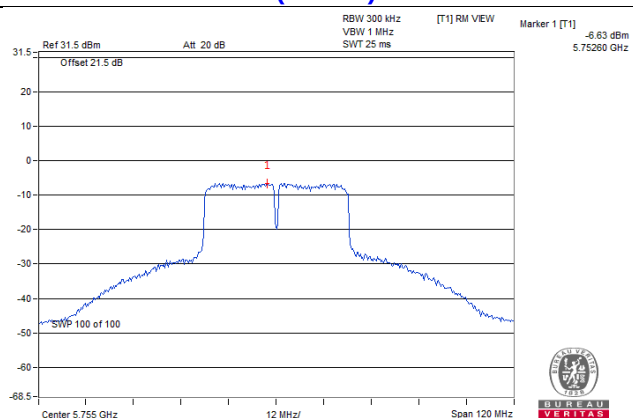
802.11a: CH149



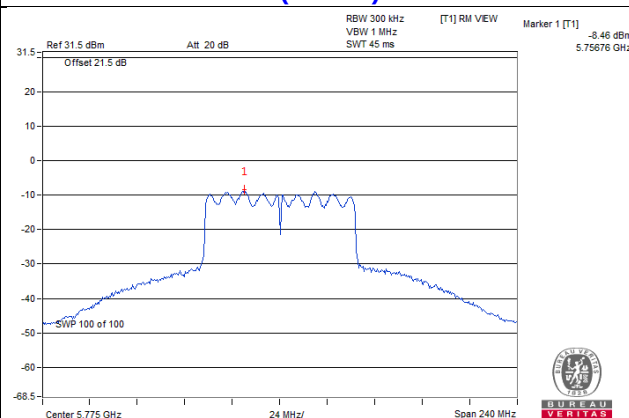
802.11ac (VHT20): CH149



802.11ac (VHT40): CH151



802.11ac (VHT80): CH155

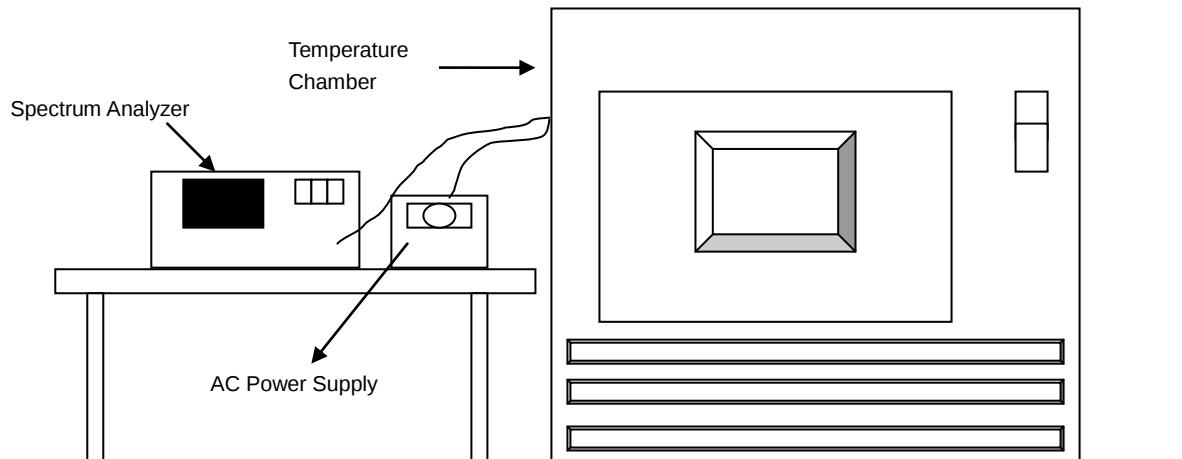


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5180.017	PASS	5180.013	PASS	5180.0141	PASS	5180.0158	PASS
40	120	5180.0188	PASS	5180.0174	PASS	5180.0171	PASS	5180.0211	PASS
30	120	5180.0211	PASS	5180.0222	PASS	5180.0234	PASS	5180.0233	PASS
20	120	5179.9836	PASS	5179.9855	PASS	5179.9836	PASS	5179.985	PASS
10	120	5180.025	PASS	5180.0211	PASS	5180.0246	PASS	5180.021	PASS
0	120	5179.9887	PASS	5179.9888	PASS	5179.9911	PASS	5179.9915	PASS
-10	120	5179.9883	PASS	5179.9859	PASS	5179.9841	PASS	5179.9865	PASS
-20	120	5179.9897	PASS	5179.992	PASS	5179.9925	PASS	5179.9916	PASS
-30	120	5179.9937	PASS	5179.9935	PASS	5179.9963	PASS	5179.9949	PASS

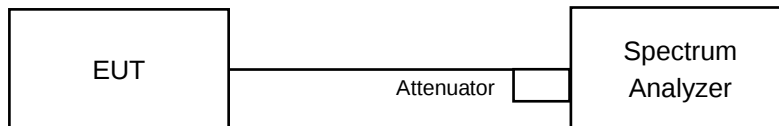
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9828	PASS	5179.9858	PASS	5179.9829	PASS	5179.9847	PASS
	120	5179.9836	PASS	5179.9855	PASS	5179.9836	PASS	5179.985	PASS
	102	5179.9831	PASS	5179.9861	PASS	5179.9846	PASS	5179.9844	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.58	0.5	PASS
157	5785	16.55	0.5	PASS
165	5825	16.56	0.5	PASS

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.77	0.5	PASS
157	5785	17.75	0.5	PASS
165	5825	17.75	0.5	PASS

802.11ac (VHT40)

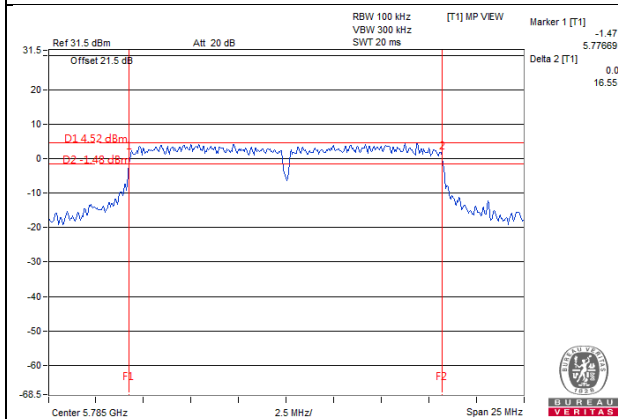
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	36.54	0.5	PASS
159	5795	36.54	0.5	PASS

802.11ac (VHT80)

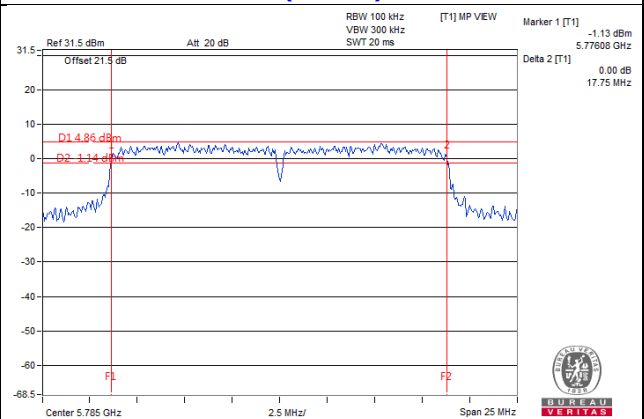
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	76.50	0.5	PASS

Spectrum Plot of Worst Value

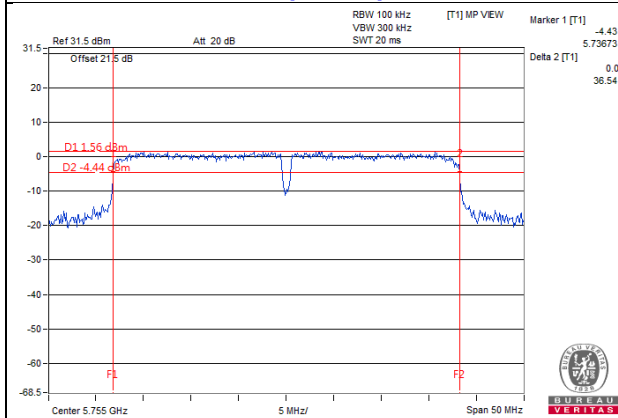
802.11a: CH157



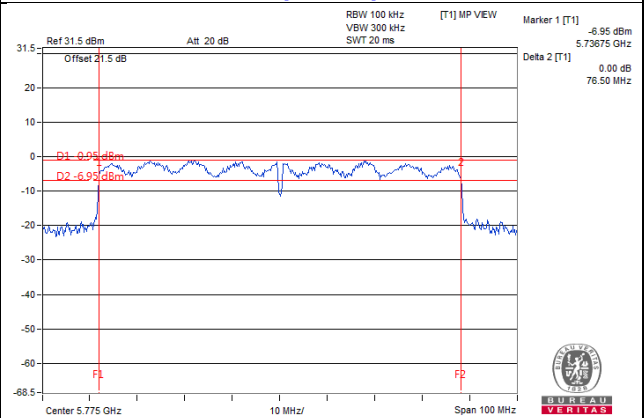
802.11ac (VHT20): CH157



802.11ac (VHT40): CH151



802.11ac (VHT80): CH155



5 Pictures of Test Arrangements

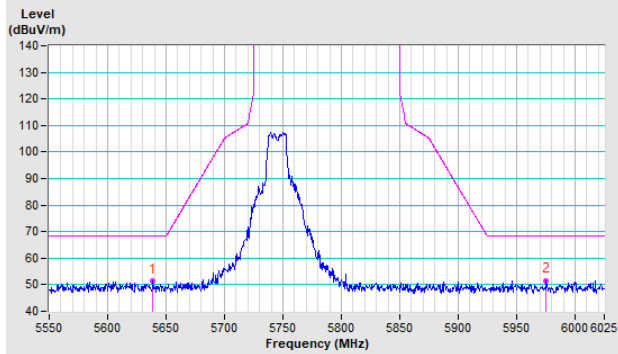
Please refer to the attached file (Test Setup Photo).

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

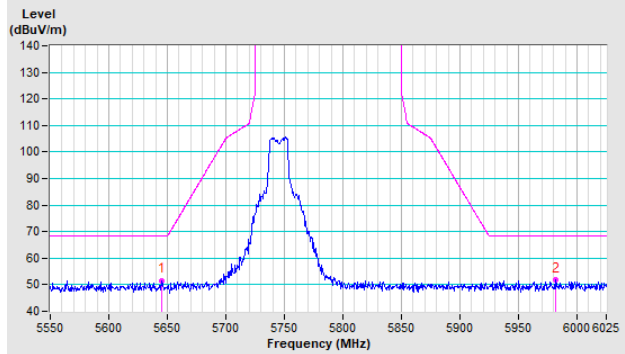
802.11a

CH 149 5745 MHz

Horizontal

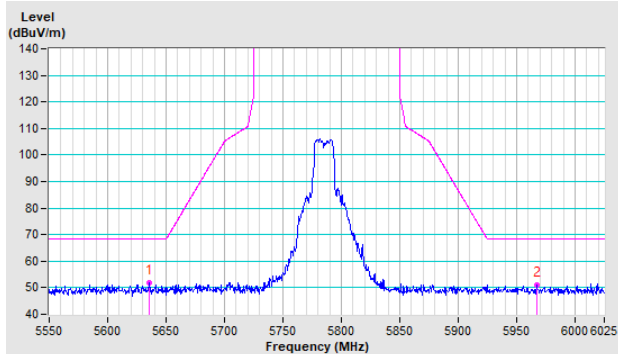


Vertical

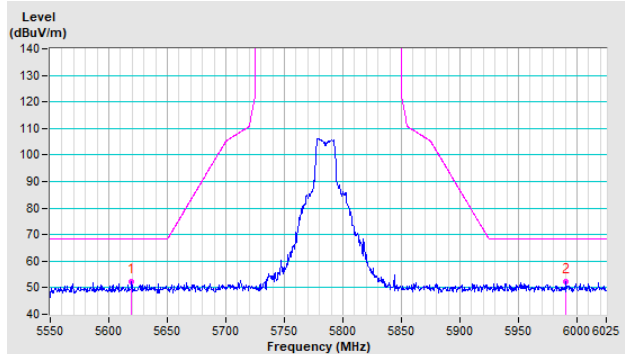


CH 157 5785 MHz

Horizontal

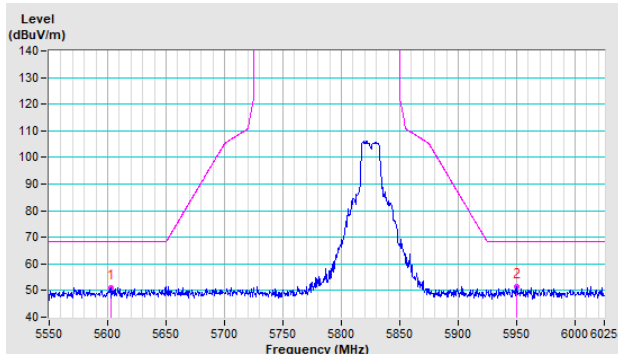


Vertical

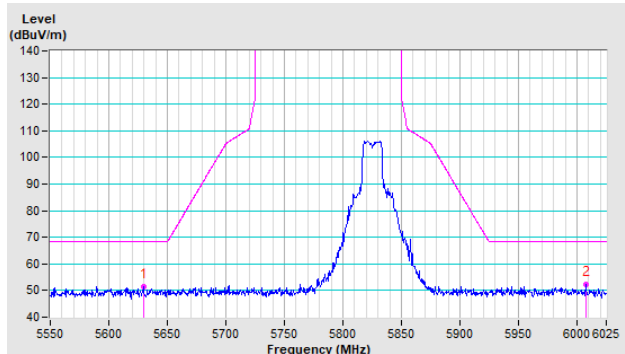


CH 165 5825 MHz

Horizontal



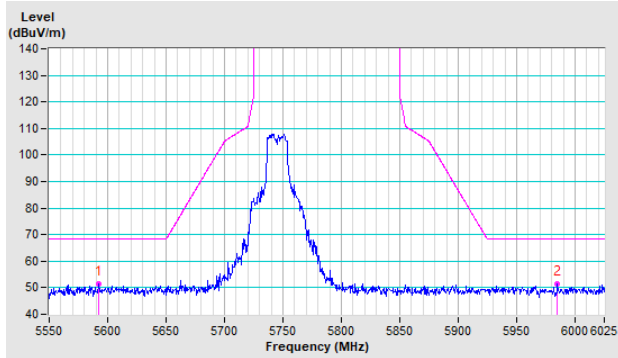
Vertical



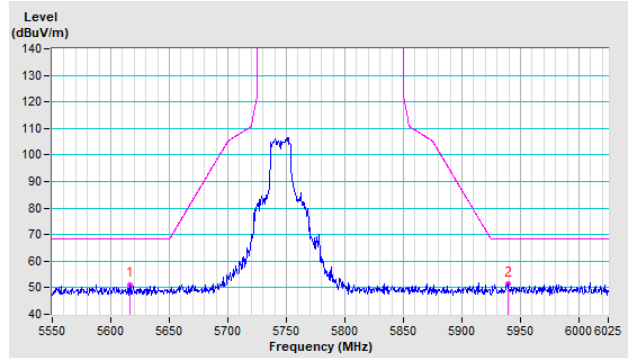
802.11ac (VHT20)

CH 149 5745 MHz

Horizontal

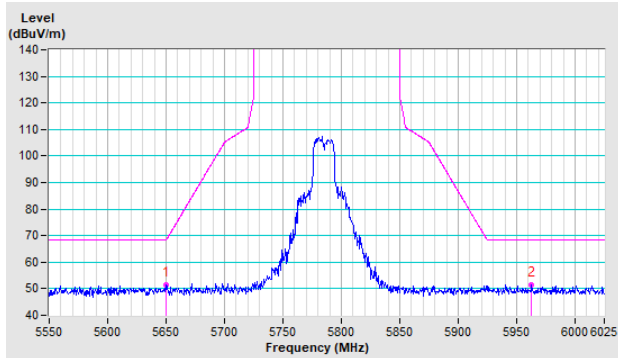


Vertical

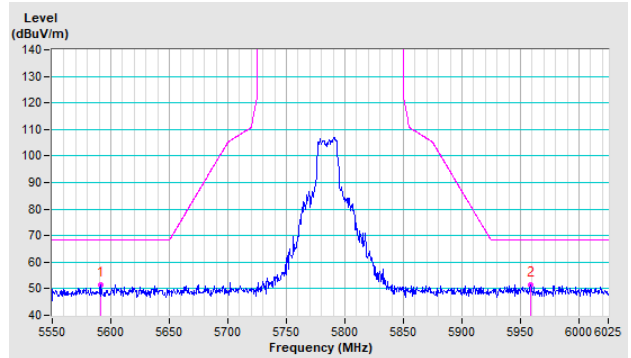


CH 157 5785 MHz

Horizontal

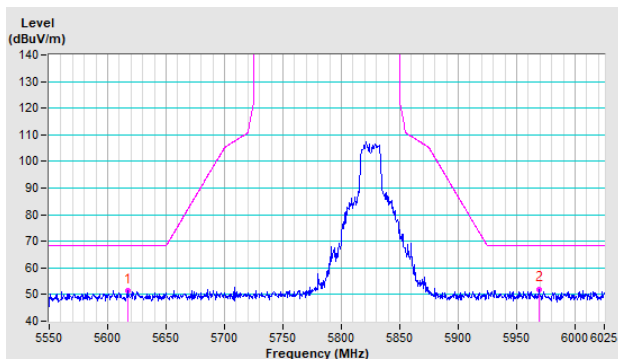


Vertical

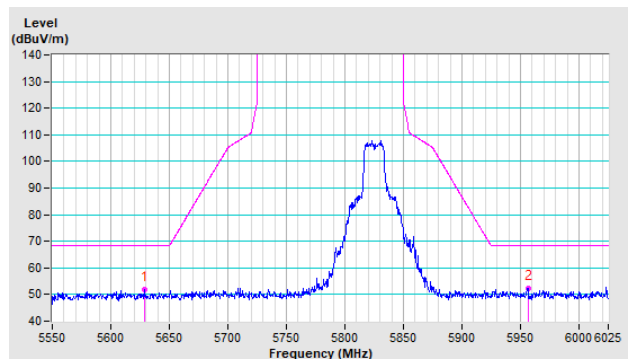


CH 165 5825 MHz

Horizontal



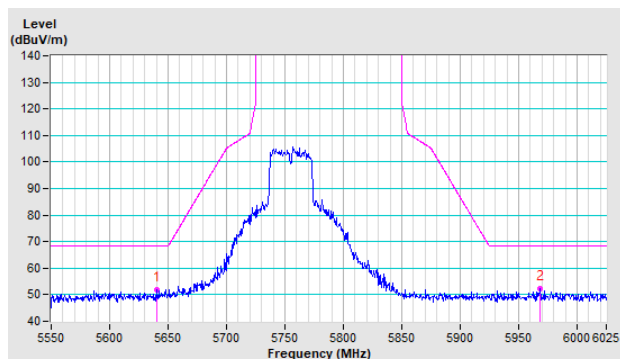
Vertical



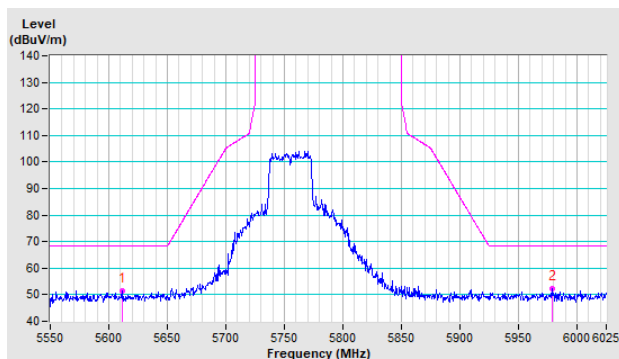
802.11ac (VHT40)

CH 151 5755 MHz

Horizontal

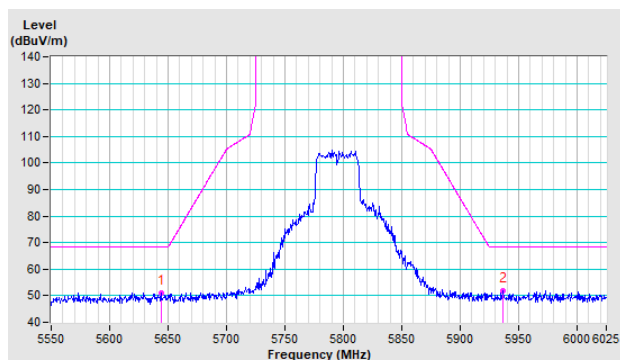


Vertical

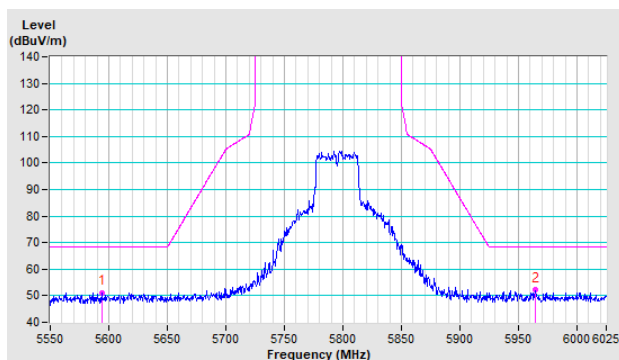


CH 159 5795 MHz

Horizontal



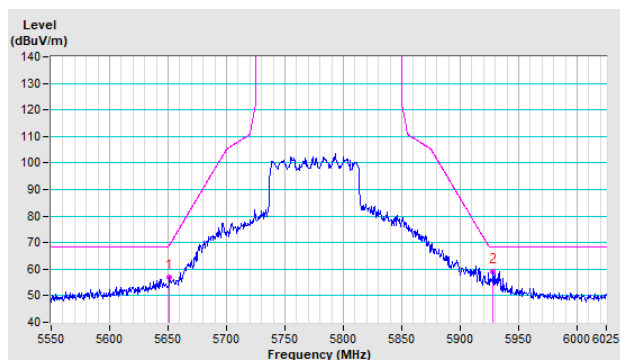
Vertical



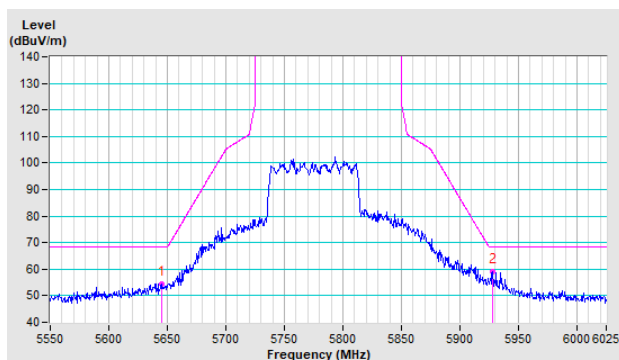
802.11ac (VHT80)

CH 155 5775 MHz

Horizontal



Vertical



Appendix – Information of the Testing Laboratories

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

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

Lin Kou 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 ---