

FCC Test Report (WLAN)

Report No.: RF190610E05-1

FCC ID: 2AFDI-ITCOQ835S

Test Model: Open-Q 835 μ SOM

Received Date: June 10, 2019

Test Date: July 17 to Sep. 10, 2019

Issued Date: Oct. 14, 2019

Applicant: Intrinsyc Technologies Corporation

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



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Release Control Record

Issue No.	Description	Date Issued
RF190610E05-1	Original release.	Oct. 14, 2019

1 Certificate of Conformity

Product: Intrinsyc Open-Q 835 uSOM

Brand: Intrinsyc Technologies Corporation

Test Model: Open-Q 835 μ SOM

Sample Status: ENGINEERING SAMPLE

Applicant: Intrinsyc Technologies Corporation

Test Date: July 17 to Sep. 10, 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 :



Date:

Oct. 14, 2019

Claire Kuan / Specialist

Approved by :



Date:

Oct. 14, 2019

Clark Lin / Technical 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 -20.96dB at 22.70313MHz.
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 5350.00MHz & 5360.90MHz & 5470.00MHz & 5725.00MHz.
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	Antenna connector is Ipex MHF not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB 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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.0 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Intrinsyc Open-Q 835 uSOM
Brand	Intrinsyc Technologies Corporation
Test Model	Open-Q 835 μ SOM
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.7Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in for VHT20 and VHT40 mode of 2.4GHz Band
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.32GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.58GHz & 5.66 ~ 5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT20: 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 22 802.11n (HT40), 802.11ac (VHT40): 10 802.11ac (VHT80): 5
Output Power	CDD Mode: 2.4GHz: 618.782 mW 5.18 ~ 5.24GHz: 48.648 mW 5.26 ~ 5.32GHz: 118.757 mW 5.50 ~ 5.58GHz & 5.66 ~ 5.72GHz: 119.509 mW 5.745 ~ 5.825GHz: 124.319 mW Beamforming Mode: 2.4GHz: 610.427 mW 5.18 ~ 5.24GHz: 23.802 mW 5.26 ~ 5.32GHz: 118.757 mW 5.50 ~ 5.58GHz & 5.66 ~ 5.72GHz: 112.295 mW 5.745 ~ 5.825GHz: 124.319 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. The device has WLAN and Bluetooth technology.
2. Simultaneously transmission condition.

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

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

No.	Chain	Brand	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain0 (WLAN+BT)	Taoglas	FXP830.07.0100C	3.32 6.11	2.4 ~ 2.5 4.9 ~ 5.8	Dipole Antenna	Ipex MHF	100
2	Chain1 (WLAN only)	Taoglas	FXP830.07.0100C	3.32 6.11	2.4 ~ 2.5 4.9 ~ 5.8	Dipole Antenna	Ipex MHF	100

4. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

Note:

1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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	5210 MHz

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	5290 MHz

FOR 5500 ~ 5580MHz & 5660 ~ 5720MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	132	5660 MHz
104	5520 MHz	136	5680 MHz
108	5540 MHz	140	5700 MHz
112	5560 MHz	144	5720 MHz
116	5580 MHz		

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 MHz	142	5710 MHz

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

Radiated Emission Test (Above 1GHz):

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

CDD Mode						
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	5500-5580 & 5660-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 138	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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5180-5320 5500-5580 & 5660-5720 5745-5825	36 to 64 100 to 144 149 to 165	165	OFDM	BPSK	6.5

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5180-5320 5500-5580 & 5660-5720 5745-5825	36 to 64 100 to 144 149 to 165	165	OFDM	BPSK	6.5

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.

CDD Mode						
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	5500-5580 & 5660-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 138	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

Beamforming Mode (output power only)

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5180-5240	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
802.11ac (VHT20)	5260-5320	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
802.11ac (VHT20)	5500-5580 & 5660-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 138	OFDM	BPSK	29.3
802.11ac (VHT20)	5745-5825	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_≥1G	22deg. C, 68%RH	120Vac, 60Hz	Robert Cheng
RE_{<}1G	25deg. C, 65%RH	120Vac, 60Hz	Nelsom Teng
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

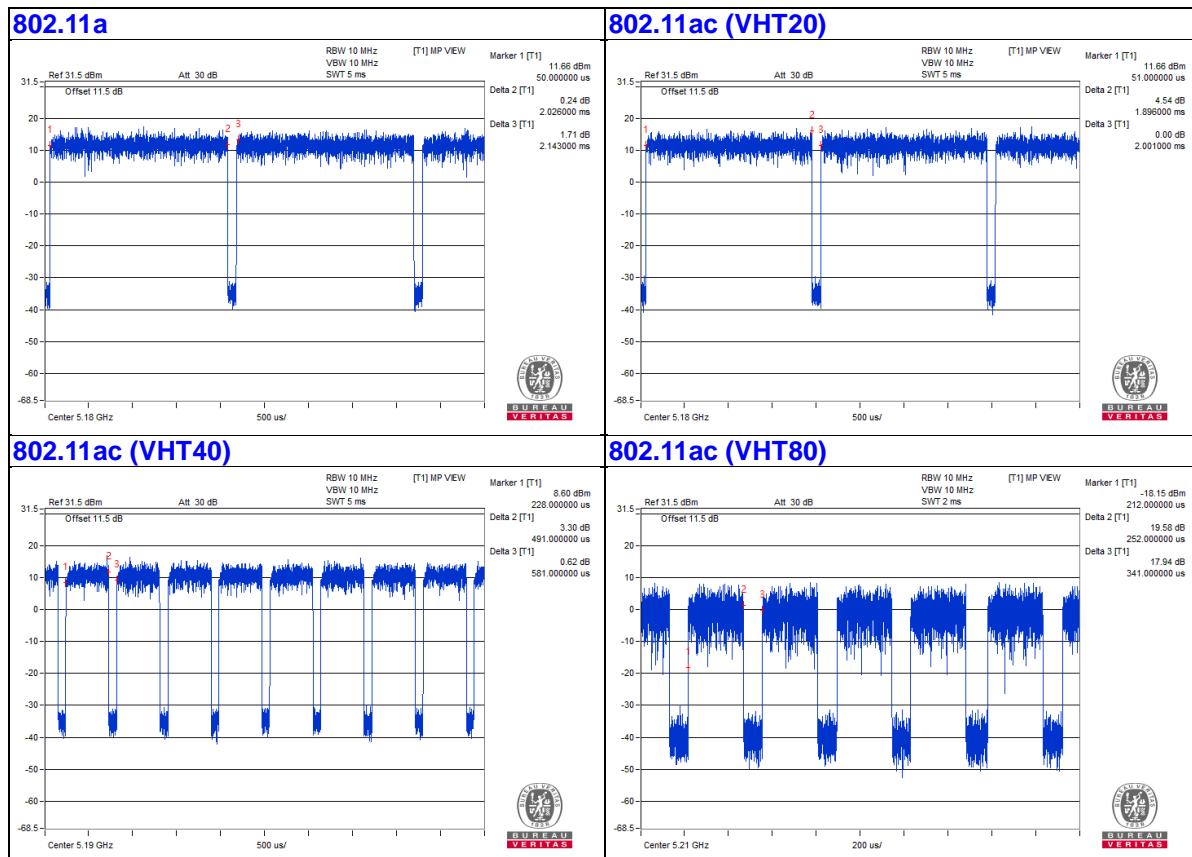
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.026 ms/2.143 ms = 0.945, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.24$

802.11ac (VHT20): Duty cycle = 1.896 ms/2.001 ms = 0.948, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.23$

802.11ac (VHT40): Duty cycle = 0.491 ms/0.581 ms = 0.845, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.73$

802.11ac (VHT80): Duty cycle = 0.252 ms/0.341 ms = 0.739, Duty factor = $10 * \log (1/\text{Duty cycle}) = 1.31$



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.

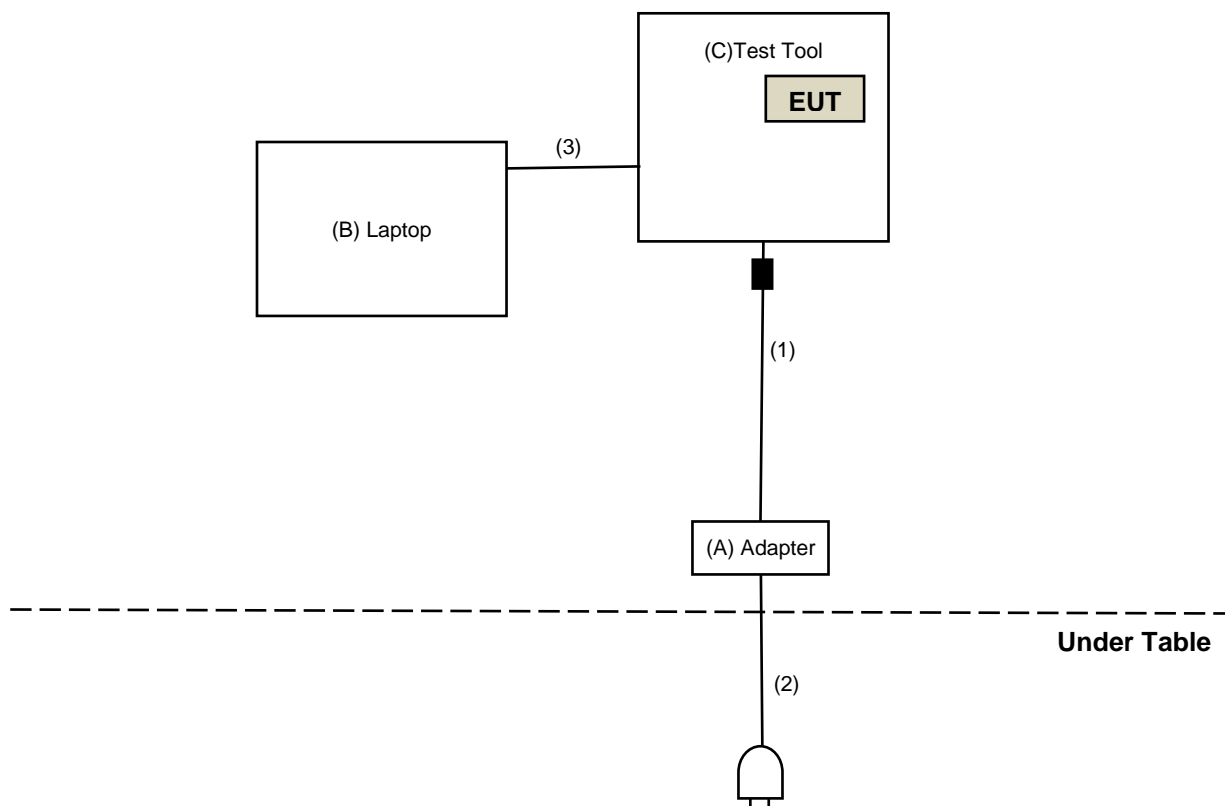
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	YINGHUIYUAN	YHY-12003000	NA	NA	Supplied by client
B.	Laptop	Lenovo	81LG	PF1N4C6B	PD99462NG	Supplied by client (for RF Setup)
C.	Test Tool	NA	NA	NA	NA	Supplied by client (for RF Setup)

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.2	NA	1	Supplied by client
2.	AC Cable	1	1.2	NA	0	Supplied by client
3.	USB Type C Cable	1	1	NA	0	Supplied by client (for RF Setup)

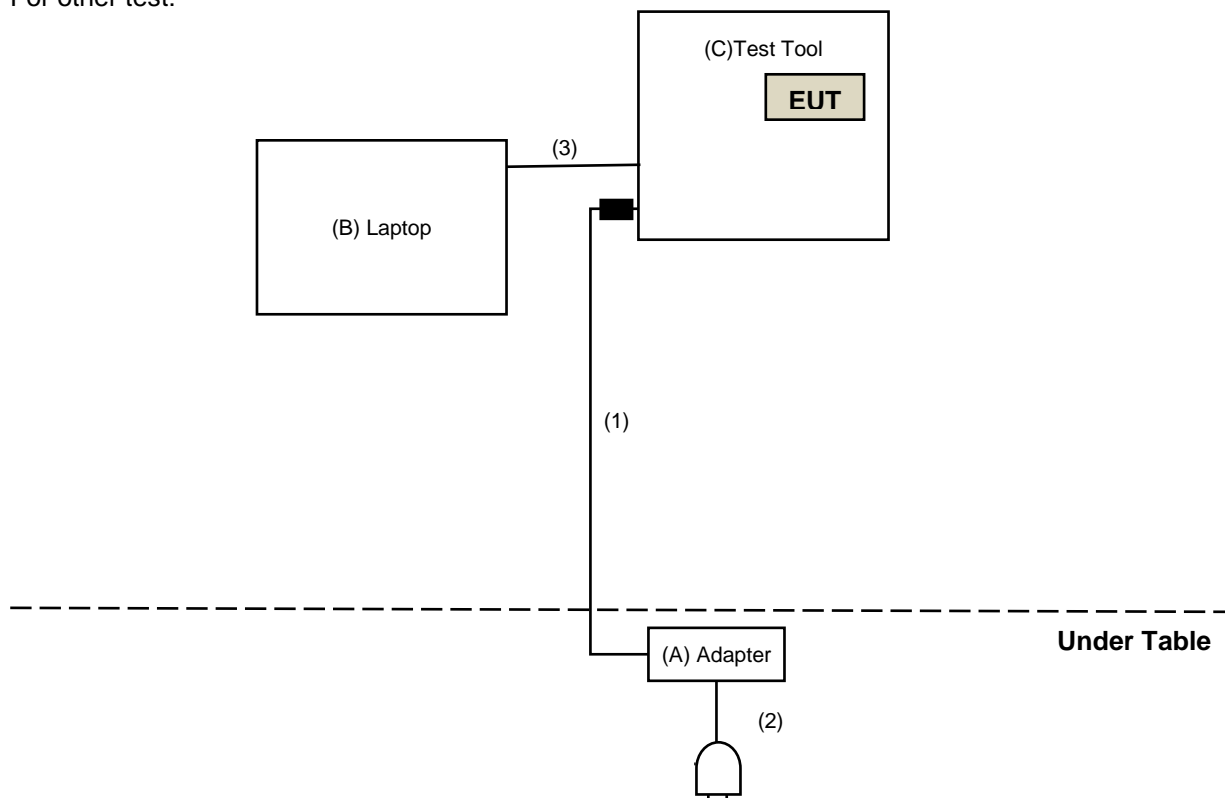
Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test

For Conducted Emissions test:



For other 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

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 30, 2019	May 29, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Jan. 22, 2019	Jan. 21, 2020
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-3-1	Mar. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-2	Mar. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-3	Mar. 18, 2019	Mar. 17, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-1200	160922	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-2000	180601	June 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 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
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 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. 3.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: July 17 to Sep. 10, 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:

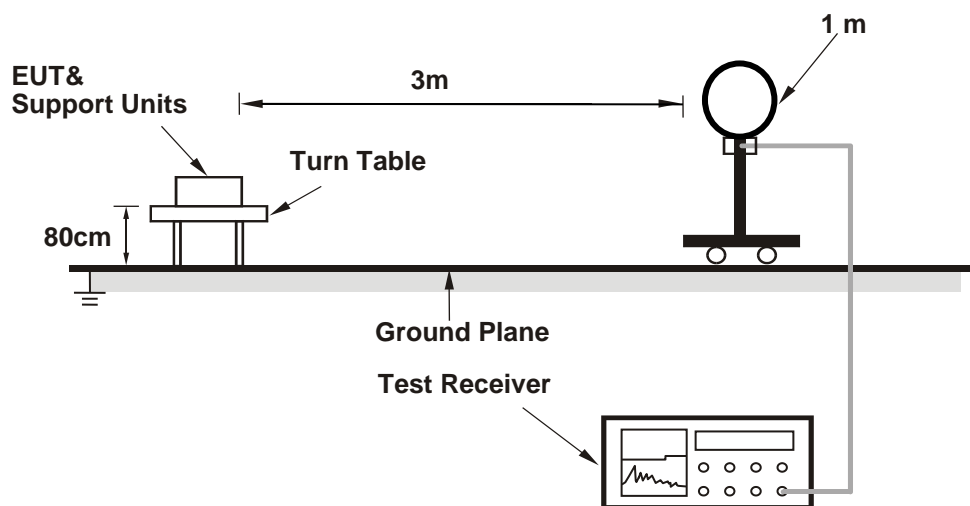
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

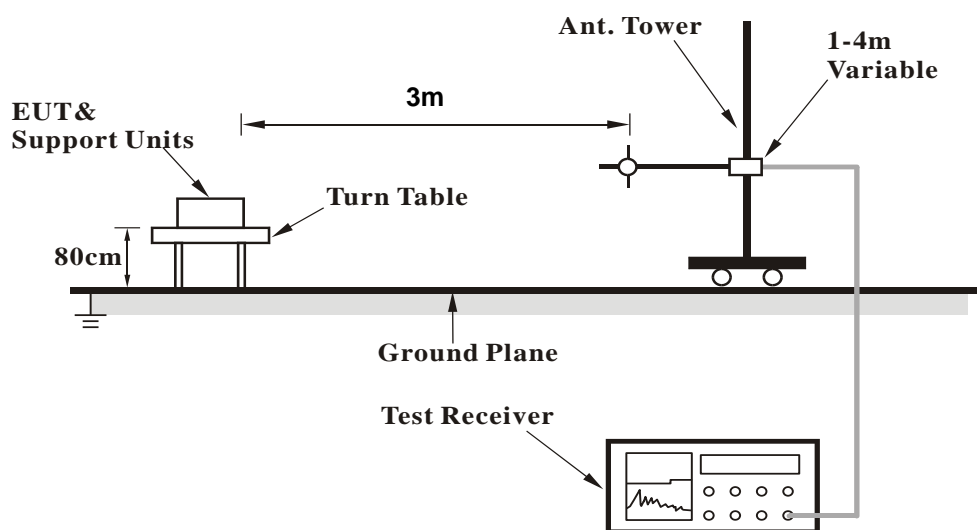
No deviation.

4.1.5 Test Setup

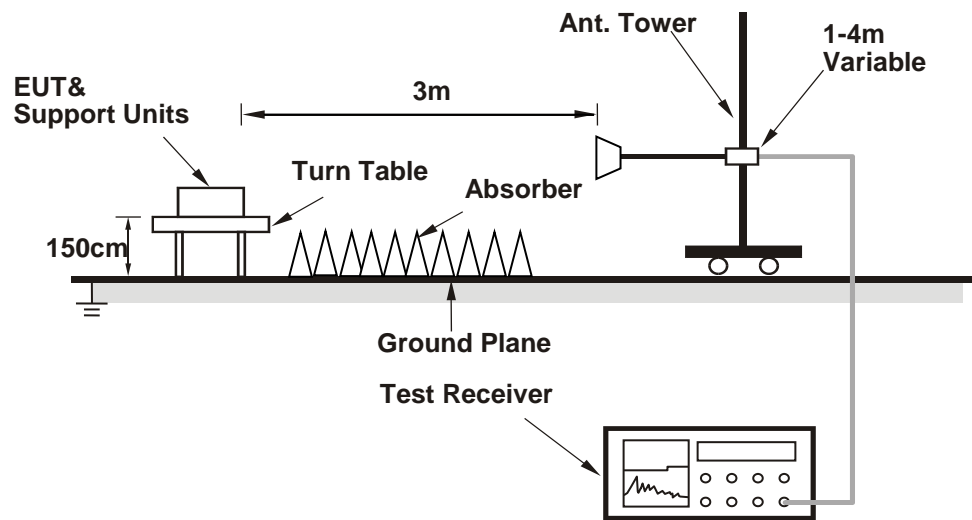
For Radiated emission below 30MHz



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

- Placed the EUT on the testing table.
- Controlling software (qdart_conn.win.1.0_installer_00066.1) 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	2.49 H	338	63.5	3.3
2	5150.00	47.8 AV	54.0	-6.2	2.49 H	338	44.5	3.3
3	*5180.00	117.2 PK			2.49 H	338	113.9	3.3
4	*5180.00	107.2 AV			2.49 H	338	103.9	3.3
5	#10360.00	47.8 PK	68.2	-20.4	1.45 H	151	35.6	12.2
6	15540.00	48.6 PK	74.0	-25.4	1.60 H	213	35.4	13.2
7	15540.00	35.1 AV	54.0	-18.9	1.60 H	213	21.9	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	3.33 V	145	57.2	3.3
2	5150.00	44.1 AV	54.0	-9.9	3.33 V	145	40.8	3.3
3	*5180.00	112.3 PK			3.33 V	145	109.0	3.3
4	*5180.00	103.4 AV			3.33 V	145	100.1	3.3
5	#10360.00	47.2 PK	68.2	-21.0	1.59 V	192	35.0	12.2
6	15540.00	47.6 PK	74.0	-26.4	2.06 V	171	34.4	13.2
7	15540.00	34.7 AV	54.0	-19.3	2.06 V	171	21.5	13.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	117.1 PK			2.47 H	350	114.0	3.1
2	*5200.00	107.4 AV			2.47 H	350	104.3	3.1
3	#10400.00	47.8 PK	68.2	-20.4	1.45 H	151	35.4	12.4
4	15600.00	48.9 PK	74.0	-25.1	1.65 H	197	35.7	13.2
5	15600.00	35.5 AV	54.0	-18.5	1.65 H	197	22.3	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	112.2 PK			3.38 V	138	109.1	3.1
2	*5200.00	103.4 AV			3.38 V	138	100.3	3.1
3	#10400.00	46.7 PK	68.2	-21.5	1.61 V	185	34.3	12.4
4	15600.00	47.6 PK	74.0	-26.4	2.08 V	173	34.4	13.2
5	15600.00	34.8 AV	54.0	-19.2	2.08 V	173	21.6	13.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	117.5 PK			2.50 H	356	114.7	2.8
2	*5240.00	107.6 AV			2.50 H	356	104.8	2.8
3	5350.00	62.3 PK	74.0	-11.7	2.50 H	356	59.3	3.0
4	5350.00	43.3 AV	54.0	-10.7	2.50 H	356	40.3	3.0
5	#10480.00	47.7 PK	68.2	-20.5	1.50 H	161	35.2	12.5
6	15720.00	49.1 PK	74.0	-24.9	1.61 H	199	36.8	12.3
7	15720.00	35.6 AV	54.0	-18.4	1.61 H	199	23.3	12.3
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	*5240.00	112.2 PK			3.31 V	160	109.4	2.8
2	*5240.00	103.1 AV			3.31 V	160	100.3	2.8
3	5350.00	56.8 PK	74.0	-17.2	3.31 V	160	53.8	3.0
4	5350.00	42.8 AV	54.0	-11.2	3.31 V	160	39.8	3.0
5	#10480.00	46.9 PK	68.2	-21.3	1.56 V	197	34.4	12.5
6	15720.00	47.7 PK	74.0	-26.3	2.05 V	182	35.4	12.3
7	15720.00	34.9 AV	54.0	-19.1	2.05 V	182	22.6	12.3

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 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	67.4 PK	74.0	-6.6	2.54 H	360	64.1	3.3
2	5150.00	46.4 AV	54.0	-7.6	2.54 H	360	43.1	3.3
3	*5260.00	117.4 PK			2.54 H	360	114.7	2.7
4	*5260.00	107.3 AV			2.54 H	360	104.6	2.7
5	#10520.00	47.3 PK	68.2	-20.9	1.44 H	148	34.7	12.6
6	15780.00	49.4 PK	74.0	-24.6	1.59 H	202	37.4	12.0
7	15780.00	36.1 AV	54.0	-17.9	1.59 H	202	24.1	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	5150.00	59.6 PK	74.0	-14.4	3.30 V	147	56.3	3.3
2	5150.00	43.2 AV	54.0	-10.8	3.30 V	147	39.9	3.3
3	*5260.00	111.9 PK			3.30 V	147	109.2	2.7
4	*5260.00	102.7 AV			3.30 V	147	100.0	2.7
5	#10520.00	46.7 PK	68.2	-21.5	1.55 V	195	34.1	12.6
6	15780.00	47.4 PK	74.0	-26.6	1.94 V	194	35.4	12.0
7	15780.00	34.7 AV	54.0	-19.3	1.94 V	194	22.7	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 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	117.2 PK			2.49 H	360	114.4	2.8
2	*5300.00	107.4 AV			2.49 H	360	104.6	2.8
3	10600.00	49.2 PK	74.0	-24.8	1.51 H	182	36.7	12.5
4	10600.00	37.4 AV	54.0	-16.6	1.51 H	182	24.9	12.5
5	15900.00	49.5 PK	74.0	-24.5	1.64 H	213	37.2	12.3
6	15900.00	36.0 AV	54.0	-18.0	1.64 H	213	23.7	12.3
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	*5300.00	112.6 PK			3.27 V	149	109.8	2.8
2	*5300.00	103.2 AV			3.27 V	149	100.4	2.8
3	10600.00	47.4 PK	74.0	-26.6	1.61 V	215	34.9	12.5
4	10600.00	35.6 AV	54.0	-18.4	1.61 V	215	23.1	12.5
5	15900.00	47.3 PK	74.0	-26.7	1.99 V	179	35.0	12.3
6	15900.00	34.6 AV	54.0	-19.4	1.99 V	179	22.3	12.3

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.

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	117.1 PK			2.65 H	340	114.3	2.8
2	*5320.00	107.3 AV			2.65 H	340	104.5	2.8
3	5350.00	66.2 PK	74.0	-7.8	2.65 H	340	63.2	3.0
4	5350.00	50.1 AV	54.0	-3.9	2.65 H	340	47.1	3.0
5	10640.00	49.3 PK	74.0	-24.7	1.47 H	191	36.8	12.5
6	10640.00	37.5 AV	54.0	-16.5	1.47 H	191	25.0	12.5
7	15960.00	49.4 PK	74.0	-24.6	1.61 H	220	36.7	12.7
8	15960.00	35.8 AV	54.0	-18.2	1.61 H	220	23.1	12.7
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	*5320.00	112.6 PK			3.23 V	152	109.8	2.8
2	*5320.00	103.2 AV			3.23 V	152	100.4	2.8
3	5350.00	63.1 PK	74.0	-10.9	3.23 V	152	60.1	3.0
4	5350.00	48.2 AV	54.0	-5.8	3.23 V	152	45.2	3.0
5	10640.00	47.0 PK	74.0	-27.0	1.59 V	216	34.5	12.5
6	10640.00	35.3 AV	54.0	-18.7	1.59 V	216	22.8	12.5
7	15960.00	47.7 PK	74.0	-26.3	2.01 V	178	35.0	12.7
8	15960.00	34.8 AV	54.0	-19.2	2.01 V	178	22.1	12.7

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.

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	59.8 PK	74.0	-14.2	2.45 H	343	56.5	3.3
2	5460.00	47.7 AV	54.0	-6.3	2.45 H	343	44.4	3.3
3	#5470.00	66.4 PK	68.2	-1.8	2.45 H	343	63.1	3.3
4	*5500.00	116.2 PK			2.45 H	343	112.9	3.3
5	*5500.00	106.2 AV			2.45 H	343	102.9	3.3
6	11000.00	49.5 PK	74.0	-24.5	1.52 H	181	36.4	13.1
7	11000.00	37.9 AV	54.0	-16.1	1.52 H	181	24.8	13.1
8	#16500.00	48.2 PK	68.2	-20.0	1.42 H	197	33.9	14.3

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	5460.00	57.6 PK	74.0	-16.4	3.27 V	155	54.3	3.3
2	5460.00	45.4 AV	54.0	-8.6	3.27 V	155	42.1	3.3
3	#5470.00	64.3 PK	68.2	-3.9	3.27 V	155	61.0	3.3
4	*5500.00	112.3 PK			3.27 V	155	109.0	3.3
5	*5500.00	102.9 AV			3.27 V	155	99.6	3.3
6	11000.00	46.8 PK	74.0	-27.2	1.62 V	221	33.7	13.1
7	11000.00	35.0 AV	54.0	-19.0	1.62 V	221	21.9	13.1
8	#16500.00	47.1 PK	68.2	-21.1	2.00 V	175	32.8	14.3

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 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	116.2 PK			2.45 H	356	112.9	3.3
2	*5580.00	106.2 AV			2.45 H	356	102.9	3.3
3	11160.00	49.9 PK	74.0	-24.1	1.55 H	178	37.0	12.9
4	11160.00	38.2 AV	54.0	-15.8	1.55 H	178	25.3	12.9
5	#16740.00	48.3 PK	68.2	-19.9	1.43 H	189	32.9	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.2 PK			3.30 V	304	105.9	3.3
2	*5580.00	101.1 AV			3.30 V	304	97.8	3.3
3	11160.00	46.8 PK	74.0	-27.2	1.58 V	213	33.9	12.9
4	11160.00	34.8 AV	54.0	-19.2	1.58 V	213	21.9	12.9
5	#16740.00	46.9 PK	68.2	-21.3	1.94 V	164	31.5	15.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	114.7 PK			2.45 H	355	111.3	3.4
2	*5700.00	105.1 AV			2.45 H	355	101.7	3.4
3	#5725.00	67.9 PK	68.2	-0.3	2.45 H	355	64.4	3.5
4	11400.00	50.3 PK	74.0	-23.7	1.60 H	193	37.0	13.3
5	11400.00	38.7 AV	54.0	-15.3	1.60 H	193	25.4	13.3
6	#17100.00	48.3 PK	68.2	-19.9	1.39 H	187	31.9	16.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.0 PK			3.32 V	296	104.6	3.4
2	*5700.00	100.0 AV			3.32 V	296	96.6	3.4
3	#5725.00	63.8 PK	68.2	-4.4	3.32 V	296	60.3	3.5
4	11400.00	46.8 PK	74.0	-27.2	1.53 V	212	33.5	13.3
5	11400.00	34.5 AV	54.0	-19.5	1.53 V	212	21.2	13.3
6	#17100.00	47.0 PK	68.2	-21.2	1.96 V	151	30.6	16.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.2 PK	74.0	-15.8	2.50 H	341	54.9	3.3
2	5460.00	43.8 AV	54.0	-10.2	2.50 H	341	40.5	3.3
3	#5470.00	66.3 PK	68.2	-1.9	2.50 H	341	63.0	3.3
4	*5720.00	115.0 PK			2.50 H	341	111.5	3.5
5	*5720.00	106.5 AV			2.50 H	341	103.0	3.5
6	#5850.00	62.1 PK	68.2	-6.1	2.50 H	341	58.1	4.0
7	11440.00	50.4 PK	74.0	-23.6	1.61 H	180	37.2	13.2
8	11440.00	38.7 AV	54.0	-15.3	1.61 H	180	25.5	13.2
9	#17160.00	49.8 PK	68.2	-18.4	1.42 H	196	33.0	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	5460.00	56.3 PK	74.0	-17.7	3.37 V	305	53.0	3.3
2	5460.00	44.6 AV	54.0	-9.4	3.37 V	305	41.3	3.3
3	#5470.00	64.2 PK	68.2	-4.0	3.37 V	305	60.9	3.3
4	*5720.00	109.0 PK			3.37 V	305	105.5	3.5
5	*5720.00	101.1 AV			3.37 V	305	97.6	3.5
6	#5850.00	63.4 PK	68.2	-4.8	3.37 V	305	59.4	4.0
7	11440.00	46.9 PK	74.0	-27.1	1.59 V	198	33.7	13.2
8	11440.00	34.5 AV	54.0	-19.5	1.59 V	198	21.3	13.2
9	#17160.00	47.6 PK	68.2	-20.6	1.97 V	135	30.8	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	#5574.90	53.1 PK	68.2	-15.1	2.55 H	344	49.8	3.3
2	*5745.00	115.1 PK			2.55 H	344	111.5	3.6
3	*5745.00	106.3 AV			2.55 H	344	102.7	3.6
4	#5989.94	54.2 PK	68.2	-14.0	2.55 H	344	50.1	4.1
5	11490.00	50.0 PK	74.0	-24.0	1.59 H	168	36.9	13.1
6	11490.00	38.3 AV	54.0	-15.7	1.59 H	168	25.2	13.1
7	#17235.00	50.4 PK	68.2	-17.8	1.47 H	187	33.4	17.0
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	#5571.85	53.0 PK	68.2	-15.2	3.36 V	297	49.7	3.3
2	*5745.00	108.7 PK			3.36 V	297	105.1	3.6
3	*5745.00	100.7 AV			3.36 V	297	97.1	3.6
4	#5999.34	53.3 PK	68.2	-14.9	3.36 V	297	49.2	4.1
5	11490.00	47.0 PK	74.0	-27.0	1.58 V	200	33.9	13.1
6	11490.00	34.5 AV	54.0	-19.5	1.58 V	200	21.4	13.1
7	#17235.00	47.3 PK	68.2	-20.9	1.94 V	135	30.3	17.0

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 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	#5580.93	54.0 PK	68.2	-14.2	2.52 H	341	50.7	3.3
2	*5785.00	114.9 PK			2.52 H	341	111.1	3.8
3	*5785.00	106.1 AV			2.52 H	341	102.3	3.8
4	#6002.85	55.2 PK	68.2	-13.0	2.52 H	341	51.1	4.1
5	11570.00	47.9 PK	74.0	-26.1	1.50 H	166	35.2	12.7
6	11570.00	35.8 AV	54.0	-18.2	1.50 H	166	23.1	12.7
7	#17355.00	52.6 PK	68.2	-15.6	1.65 H	211	35.7	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	#5566.13	52.5 PK	68.2	-15.7	3.34 V	295	49.2	3.3
2	*5785.00	108.4 PK			3.34 V	295	104.6	3.8
3	*5785.00	100.5 AV			3.34 V	295	96.7	3.8
4	#5966.19	54.2 PK	68.2	-14.0	3.34 V	295	50.0	4.2
5	11570.00	47.5 PK	74.0	-26.5	1.65 V	201	34.8	12.7
6	11570.00	35.5 AV	54.0	-18.5	1.65 V	201	22.8	12.7
7	#17355.00	51.1 PK	68.2	-17.1	2.11 V	177	34.2	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 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	#5571.08	54.0 PK	68.2	-14.2	2.50 H	344	50.7	3.3
2	*5825.00	115.8 PK			2.50 H	344	111.9	3.9
3	*5825.00	106.4 AV			2.50 H	344	102.5	3.9
4	#5925.59	56.7 PK	68.2	-11.5	2.50 H	344	52.6	4.1
5	11650.00	47.7 PK	74.0	-26.3	1.55 H	177	34.9	12.8
6	11650.00	35.3 AV	54.0	-18.7	1.55 H	177	22.5	12.8
7	#17475.00	52.1 PK	68.2	-16.1	1.61 H	226	34.6	17.5
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	#5568.48	53.7 PK	68.2	-14.5	3.36 V	300	50.4	3.3
2	*5825.00	107.8 PK			3.36 V	300	103.9	3.9
3	*5825.00	100.0 AV			3.36 V	300	96.1	3.9
4	#5957.76	54.7 PK	68.2	-13.5	3.36 V	300	50.5	4.2
5	11650.00	46.9 PK	74.0	-27.1	1.62 V	205	34.1	12.8
6	11650.00	35.2 AV	54.0	-18.8	1.62 V	205	22.4	12.8
7	#17475.00	51.7 PK	68.2	-16.5	2.08 V	173	34.2	17.5

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	64.1 PK	74.0	-9.9	2.58 H	348	60.8	3.3
2	5150.00	48.3 AV	54.0	-5.7	2.58 H	348	45.0	3.3
3	*5180.00	118.3 PK			2.58 H	348	115.0	3.3
4	*5180.00	107.9 AV			2.58 H	348	104.6	3.3
5	#10360.00	48.7 PK	68.2	-19.5	1.53 H	198	36.5	12.2
6	15540.00	49.5 PK	74.0	-24.5	1.61 H	199	36.3	13.2
7	15540.00	35.7 AV	54.0	-18.3	1.61 H	199	22.5	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	3.34 V	158	57.2	3.3
2	5150.00	44.4 AV	54.0	-9.6	3.34 V	158	41.1	3.3
3	*5180.00	112.2 PK			3.34 V	158	108.9	3.3
4	*5180.00	103.3 AV			3.34 V	158	100.0	3.3
5	#10360.00	47.5 PK	68.2	-20.7	1.60 V	195	35.3	12.2
6	15540.00	47.9 PK	74.0	-26.1	2.02 V	185	34.7	13.2
7	15540.00	34.3 AV	54.0	-19.7	2.02 V	185	21.1	13.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	118.0 PK			2.62 H	332	114.9	3.1
2	*5200.00	107.8 AV			2.62 H	332	104.7	3.1
3	#10400.00	48.8 PK	68.2	-19.4	1.54 H	205	36.4	12.4
4	15600.00	49.6 PK	74.0	-24.4	1.64 H	211	36.4	13.2
5	15600.00	35.9 AV	54.0	-18.1	1.64 H	211	22.7	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	112.7 PK			3.32 V	163	109.6	3.1
2	*5200.00	103.6 AV			3.32 V	163	100.5	3.1
3	#10400.00	48.2 PK	68.2	-20.0	1.63 V	211	35.8	12.4
4	15600.00	47.5 PK	74.0	-26.5	2.04 V	182	34.3	13.2
5	15600.00	34.1 AV	54.0	-19.9	2.04 V	182	20.9	13.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	117.5 PK			2.61 H	327	114.7	2.8
2	*5240.00	107.3 AV			2.61 H	327	104.5	2.8
3	5350.00	63.2 PK	74.0	-10.8	2.61 H	327	60.2	3.0
4	5350.00	46.2 AV	54.0	-7.8	2.61 H	327	43.2	3.0
5	#10480.00	48.7 PK	68.2	-19.5	1.52 H	190	36.2	12.5
6	15720.00	49.6 PK	74.0	-24.4	1.63 H	212	37.3	12.3
7	15720.00	35.9 AV	54.0	-18.1	1.63 H	212	23.6	12.3
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	*5240.00	113.4 PK			3.31 V	153	110.6	2.8
2	*5240.00	104.0 AV			3.31 V	153	101.2	2.8
3	5350.00	59.6 PK	74.0	-14.4	3.31 V	153	56.6	3.0
4	5350.00	43.2 AV	54.0	-10.8	3.31 V	153	40.2	3.0
5	#10480.00	48.7 PK	68.2	-19.5	1.58 V	202	36.2	12.5
6	15720.00	47.4 PK	74.0	-26.6	2.05 V	193	35.1	12.3
7	15720.00	34.1 AV	54.0	-19.9	2.05 V	193	21.8	12.3

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 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	*5260.00	117.3 PK			2.58 H	318	114.6	2.7
2	*5260.00	107.1 AV			2.58 H	318	104.4	2.7
3	#10520.00	48.6 PK	68.2	-19.6	1.52 H	174	36.0	12.6
4	15780.00	49.4 PK	74.0	-24.6	1.64 H	207	37.4	12.0
5	15780.00	35.7 AV	54.0	-18.3	1.64 H	207	23.7	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	*5260.00	113.4 PK			3.31 V	153	110.7	2.7
2	*5260.00	104.0 AV			3.31 V	153	101.3	2.7
3	#10520.00	49.0 PK	68.2	-19.2	1.57 V	203	36.4	12.6
4	15780.00	47.3 PK	74.0	-26.7	2.05 V	188	35.3	12.0
5	15780.00	34.3 AV	54.0	-19.7	2.05 V	188	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 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	117.1 PK			2.61 H	326	114.3	2.8
2	*5300.00	107.0 AV			2.61 H	326	104.2	2.8
3	10600.00	48.4 PK	74.0	-25.6	1.55 H	179	35.9	12.5
4	10600.00	36.9 AV	54.0	-17.1	1.55 H	179	24.4	12.5
5	15900.00	49.8 PK	74.0	-24.2	1.60 H	205	37.5	12.3
6	15900.00	36.0 AV	54.0	-18.0	1.60 H	205	23.7	12.3
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	*5300.00	113.4 PK			3.31 V	153	110.6	2.8
2	*5300.00	104.0 AV			3.31 V	153	101.2	2.8
3	10600.00	48.0 PK	74.0	-26.0	1.66 V	205	35.5	12.5
4	10600.00	36.1 AV	54.0	-17.9	1.66 V	205	23.6	12.5
5	15900.00	47.2 PK	74.0	-26.8	2.00 V	187	34.9	12.3
6	15900.00	34.2 AV	54.0	-19.8	2.00 V	187	21.9	12.3

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.

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	117.1 PK			2.63 H	341	114.3	2.8
2	*5320.00	106.7 AV			2.63 H	341	103.9	2.8
3	5350.00	67.2 PK	74.0	-6.8	2.63 H	341	64.2	3.0
4	5350.00	50.6 AV	54.0	-3.4	2.63 H	341	47.6	3.0
5	10640.00	49.1 PK	74.0	-24.9	1.54 H	180	36.6	12.5
6	10640.00	37.3 AV	54.0	-16.7	1.54 H	180	24.8	12.5
7	15960.00	50.2 PK	74.0	-23.8	1.58 H	219	37.5	12.7
8	15960.00	36.4 AV	54.0	-17.6	1.58 H	219	23.7	12.7
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	*5320.00	112.9 PK			3.26 V	148	110.1	2.8
2	*5320.00	103.6 AV			3.26 V	148	100.8	2.8
3	5350.00	65.2 PK	74.0	-8.8	3.26 V	148	62.2	3.0
4	5350.00	48.4 AV	54.0	-5.6	3.26 V	148	45.4	3.0
5	10640.00	47.8 PK	74.0	-26.2	1.69 V	194	35.3	12.5
6	10640.00	35.8 AV	54.0	-18.2	1.69 V	194	23.3	12.5
7	15960.00	46.8 PK	74.0	-27.2	2.04 V	185	34.1	12.7
8	15960.00	33.9 AV	54.0	-20.1	2.04 V	185	21.2	12.7

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.

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	58.6 PK	74.0	-15.4	2.61 H	343	55.3	3.3
2	5460.00	47.5 AV	54.0	-6.5	2.61 H	343	44.2	3.3
3	#5470.00	65.8 PK	68.2	-2.4	2.61 H	343	62.5	3.3
4	*5500.00	116.6 PK			2.61 H	343	113.3	3.3
5	*5500.00	106.3 AV			2.61 H	343	103.0	3.3
6	11000.00	48.8 PK	74.0	-25.2	1.54 H	167	35.7	13.1
7	11000.00	37.2 AV	54.0	-16.8	1.54 H	167	24.1	13.1
8	#16500.00	50.7 PK	68.2	-17.5	1.61 H	210	36.4	14.3
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	5460.00	56.4 PK	74.0	-17.6	3.20 V	154	53.1	3.3
2	5460.00	45.4 AV	54.0	-8.6	3.20 V	154	42.1	3.3
3	#5470.00	63.2 PK	68.2	-5.0	3.20 V	154	59.9	3.3
4	*5500.00	112.6 PK			3.20 V	154	109.3	3.3
5	*5500.00	103.1 AV			3.20 V	154	99.8	3.3
6	11000.00	47.3 PK	74.0	-26.7	1.71 V	205	34.2	13.1
7	11000.00	35.5 AV	54.0	-18.5	1.71 V	205	22.4	13.1
8	#16500.00	46.6 PK	68.2	-21.6	2.05 V	185	32.3	14.3

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 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	116.5 PK			2.66 H	346	113.2	3.3
2	*5580.00	106.3 AV			2.66 H	346	103.0	3.3
3	11160.00	49.4 PK	74.0	-24.6	1.50 H	180	36.5	12.9
4	11160.00	37.7 AV	54.0	-16.3	1.50 H	180	24.8	12.9
5	#16740.00	50.7 PK	68.2	-17.5	1.64 H	205	35.3	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	112.8 PK			3.16 V	144	109.5	3.3
2	*5580.00	103.4 AV			3.16 V	144	100.1	3.3
3	11160.00	47.4 PK	74.0	-26.6	1.66 V	219	34.5	12.9
4	11160.00	35.2 AV	54.0	-18.8	1.66 V	219	22.3	12.9
5	#16740.00	46.7 PK	68.2	-21.5	2.07 V	186	31.3	15.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	114.1 PK			2.47 H	356	110.7	3.4
2	*5700.00	104.1 AV			2.47 H	356	100.7	3.4
3	#5725.00	68.1 PK	68.2	-0.1	2.47 H	356	64.6	3.5
4	11400.00	49.9 PK	74.0	-24.1	1.45 H	192	36.6	13.3
5	11400.00	38.1 AV	54.0	-15.9	1.45 H	192	24.8	13.3
6	#17100.00	45.2 PK	68.2	-23.0	1.66 H	199	28.8	16.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.9 PK			3.16 V	156	107.5	3.4
2	*5700.00	100.9 AV			3.16 V	156	97.5	3.4
3	#5725.00	66.7 PK	68.2	-1.5	3.16 V	156	63.2	3.5
4	11400.00	47.3 PK	74.0	-26.7	1.66 V	213	34.0	13.3
5	11400.00	35.7 AV	54.0	-18.3	1.66 V	213	22.4	13.3
6	#17100.00	46.2 PK	68.2	-22.0	2.07 V	171	29.8	16.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.2 PK	74.0	-16.8	2.65 H	332	53.9	3.3
2	5460.00	47.7 AV	54.0	-6.3	2.65 H	332	44.4	3.3
3	#5470.00	66.2 PK	68.2	-2.0	2.65 H	332	62.9	3.3
4	*5720.00	116.8 PK			2.65 H	332	113.3	3.5
5	*5720.00	106.5 AV			2.65 H	332	103.0	3.5
6	#5850.00	66.3 PK	68.2	-1.9	2.65 H	332	62.3	4.0
7	11440.00	49.6 PK	74.0	-24.4	1.45 H	170	36.4	13.2
8	11440.00	37.9 AV	54.0	-16.1	1.45 H	170	24.7	13.2
9	#17160.00	50.2 PK	68.2	-18.0	1.59 H	214	33.4	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	5460.00	55.3 PK	74.0	-18.7	3.16 V	150	52.0	3.3
2	5460.00	44.6 AV	54.0	-9.4	3.16 V	150	41.3	3.3
3	#5470.00	63.1 PK	68.2	-5.1	3.16 V	150	59.8	3.3
4	*5720.00	112.9 PK			3.16 V	150	109.4	3.5
5	*5720.00	103.3 AV			3.16 V	150	99.8	3.5
6	#5850.00	65.4 PK	68.2	-2.8	3.16 V	150	61.4	4.0
7	11440.00	47.5 PK	74.0	-26.5	1.70 V	220	34.3	13.2
8	11440.00	35.0 AV	54.0	-19.0	1.70 V	220	21.8	13.2
9	#17160.00	46.6 PK	68.2	-21.6	2.09 V	194	29.8	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	#5594.26	53.4 PK	68.2	-14.8	2.51 H	10	50.1	3.3
2	*5745.00	114.7 PK			2.51 H	10	111.1	3.6
3	*5745.00	106.1 AV			2.51 H	10	102.5	3.6
4	#5987.18	55.0 PK	68.2	-13.2	2.51 H	10	50.9	4.1
5	11490.00	50.1 PK	74.0	-23.9	1.44 H	177	37.0	13.1
6	11490.00	38.1 AV	54.0	-15.9	1.44 H	177	25.0	13.1
7	#17235.00	48.2 PK	68.2	-20.0	1.61 H	208	31.2	17.0
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	#5569.74	54.3 PK	68.2	-13.9	3.36 V	297	51.0	3.3
2	*5745.00	108.4 PK			3.36 V	297	104.8	3.6
3	*5745.00	100.4 AV			3.36 V	297	96.8	3.6
4	#6005.18	54.5 PK	68.2	-13.7	3.36 V	297	50.4	4.1
5	11490.00	47.0 PK	74.0	-27.0	1.68 V	232	33.9	13.1
6	11490.00	34.7 AV	54.0	-19.3	1.68 V	232	21.6	13.1
7	#17235.00	46.7 PK	68.2	-21.5	2.08 V	199	29.7	17.0

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 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	#5603.65	54.3 PK	68.2	-13.9	2.53 H	7	51.0	3.3
2	*5785.00	115.0 PK			2.53 H	7	111.2	3.8
3	*5785.00	106.4 AV			2.53 H	7	102.6	3.8
4	#5981.47	55.3 PK	68.2	-12.9	2.53 H	7	51.2	4.1
5	11570.00	49.8 PK	74.0	-24.2	1.43 H	183	37.1	12.7
6	11570.00	37.6 AV	54.0	-16.4	1.43 H	183	24.9	12.7
7	#17355.00	47.7 PK	68.2	-20.5	1.65 H	192	30.8	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	#5599.64	53.5 PK	68.2	-14.7	3.31 V	295	50.2	3.3
2	*5785.00	108.0 PK			3.31 V	295	104.2	3.8
3	*5785.00	100.1 AV			3.31 V	295	96.3	3.8
4	#6000.74	54.5 PK	68.2	-13.7	3.31 V	295	50.4	4.1
5	11570.00	47.1 PK	74.0	-26.9	1.63 V	246	34.4	12.7
6	11570.00	34.9 AV	54.0	-19.1	1.63 V	246	22.2	12.7
7	#17355.00	46.5 PK	68.2	-21.7	2.04 V	210	29.6	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 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	#5591.31	52.6 PK	68.2	-15.6	2.50 H	8	49.3	3.3
2	*5825.00	114.9 PK			2.50 H	8	111.0	3.9
3	*5825.00	106.2 AV			2.50 H	8	102.3	3.9
4	#5952.25	55.2 PK	68.2	-13.0	2.50 H	8	51.0	4.2
5	11650.00	50.1 PK	74.0	-23.9	1.41 H	195	37.3	12.8
6	11650.00	37.9 AV	54.0	-16.1	1.41 H	195	25.1	12.8
7	#17475.00	47.6 PK	68.2	-20.6	1.61 H	197	30.1	17.5
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	#5552.61	53.0 PK	68.2	-15.2	3.30 V	301	49.7	3.3
2	*5825.00	107.1 PK			3.30 V	301	103.2	3.9
3	*5825.00	98.7 AV			3.30 V	301	94.8	3.9
4	#5969.70	55.2 PK	68.2	-13.0	3.30 V	301	51.0	4.2
5	11650.00	47.4 PK	74.0	-26.6	1.61 V	252	34.6	12.8
6	11650.00	35.2 AV	54.0	-18.8	1.61 V	252	22.4	12.8
7	#17475.00	45.9 PK	68.2	-22.3	2.00 V	216	28.4	17.5

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	72.3 PK	74.0	-1.7	2.45 H	14	69.0	3.3
2	5150.00	53.6 AV	54.0	-0.4	2.45 H	14	50.3	3.3
3	*5190.00	112.2 PK			2.45 H	14	109.0	3.2
4	*5190.00	102.8 AV			2.45 H	14	99.6	3.2
5	#10380.00	45.7 PK	68.2	-22.5	1.44 H	202	33.3	12.4
6	15570.00	47.3 PK	74.0	-26.7	1.62 H	208	34.0	13.3
7	15570.00	33.6 AV	54.0	-20.4	1.62 H	208	20.3	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	3.18 V	165	54.4	3.3
2	5150.00	47.2 AV	54.0	-6.8	3.18 V	165	43.9	3.3
3	*5190.00	104.4 PK			3.18 V	165	101.2	3.2
4	*5190.00	96.5 AV			3.18 V	165	93.3	3.2
5	#10380.00	47.9 PK	68.2	-20.3	1.70 V	193	35.5	12.4
6	15570.00	46.1 PK	74.0	-27.9	2.05 V	199	32.8	13.3
7	15570.00	33.5 AV	54.0	-20.5	2.05 V	199	20.2	13.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 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	113.1 PK			2.46 H	10	110.2	2.9
2	*5230.00	104.1 AV			2.46 H	10	101.2	2.9
3	5350.00	52.7 PK	74.0	-21.3	2.46 H	10	49.7	3.0
4	5350.00	43.3 AV	54.0	-10.7	2.46 H	10	40.3	3.0
5	#10460.00	45.7 PK	68.2	-22.5	1.39 H	197	33.2	12.5
6	15690.00	48.0 PK	74.0	-26.0	1.64 H	220	35.5	12.5
7	15690.00	34.4 AV	54.0	-19.6	1.64 H	220	21.9	12.5

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	*5230.00	105.3 PK			3.24 V	173	102.4	2.9
2	*5230.00	97.3 AV			3.24 V	173	94.4	2.9
3	5350.00	53.0 PK	74.0	-21.0	3.24 V	173	50.0	3.0
4	5350.00	43.4 AV	54.0	-10.6	3.24 V	173	40.4	3.0
5	#10460.00	47.6 PK	68.2	-20.6	1.75 V	180	35.1	12.5
6	15690.00	46.6 PK	74.0	-27.4	2.02 V	214	34.1	12.5
7	15690.00	33.8 AV	54.0	-20.2	2.02 V	214	21.3	12.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.3 PK	74.0	-21.7	2.50 H	339	49.0	3.3
2	5150.00	43.2 AV	54.0	-10.8	2.50 H	339	39.9	3.3
3	*5270.00	112.9 PK			2.50 H	339	110.2	2.7
4	*5270.00	104.0 AV			2.50 H	339	101.3	2.7
5	5350.00	57.8 PK	74.0	-16.2	2.50 H	339	54.8	3.0
6	5350.00	47.5 AV	54.0	-6.5	2.50 H	339	44.5	3.0
7	#10540.00	45.9 PK	68.2	-22.3	1.46 H	180	33.3	12.6
8	15810.00	47.8 PK	74.0	-26.2	1.64 H	227	35.8	12.0
9	15810.00	34.3 AV	54.0	-19.7	1.64 H	227	22.3	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	5150.00	52.7 PK	74.0	-21.3	3.21 V	182	49.4	3.3
2	5150.00	43.0 AV	54.0	-11.0	3.21 V	182	39.7	3.3
3	*5270.00	105.0 PK			3.21 V	182	102.3	2.7
4	*5270.00	97.2 AV			3.21 V	182	94.5	2.7
5	5350.00	55.1 PK	74.0	-18.9	3.21 V	182	52.1	3.0
6	5350.00	45.4 AV	54.0	-8.6	3.21 V	182	42.4	3.0
7	#10540.00	47.3 PK	68.2	-20.9	1.77 V	168	34.7	12.6
8	15810.00	46.4 PK	74.0	-27.6	1.97 V	214	34.4	12.0
9	15810.00	33.9 AV	54.0	-20.1	1.97 V	214	21.9	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 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	107.3 PK			2.47 H	343	104.5	2.8
2	*5310.00	98.5 AV			2.47 H	343	95.7	2.8
3	5350.00	68.3 PK	74.0	-5.7	2.47 H	343	65.3	3.0
4	5350.00	53.9 AV	54.0	-0.1	2.47 H	343	50.9	3.0
5	10620.00	46.2 PK	74.0	-27.8	1.37 H	188	33.7	12.5
6	10620.00	34.3 AV	54.0	-19.7	1.37 H	188	21.8	12.5
7	15930.00	47.8 PK	74.0	-26.2	1.65 H	198	35.4	12.4
8	15930.00	34.4 AV	54.0	-19.6	1.65 H	198	22.0	12.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.6 PK			3.23 V	173	96.8	2.8
2	*5310.00	92.2 AV			3.23 V	173	89.4	2.8
3	5350.00	58.1 PK	74.0	-15.9	3.23 V	173	55.1	3.0
4	5350.00	47.3 AV	54.0	-6.7	3.23 V	173	44.3	3.0
5	10620.00	47.4 PK	74.0	-26.6	1.69 V	200	34.9	12.5
6	10620.00	35.3 AV	54.0	-18.7	1.69 V	200	22.8	12.5
7	15930.00	46.4 PK	74.0	-27.6	2.00 V	200	34.0	12.4
8	15930.00	33.6 AV	54.0	-20.4	2.00 V	200	21.2	12.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	63.6 PK	74.0	-10.4	2.48 H	339	60.3	3.3
2	5460.00	48.9 AV	54.0	-5.1	2.48 H	339	45.6	3.3
3	#5470.00	67.9 PK	68.2	-0.3	2.48 H	339	64.6	3.3
4	*5510.00	109.3 PK			2.48 H	339	106.0	3.3
5	*5510.00	100.3 AV			2.48 H	339	97.0	3.3
6	11020.00	45.8 PK	74.0	-28.2	1.39 H	198	32.8	13.0
7	11020.00	34.1 AV	54.0	-19.9	1.39 H	198	21.1	13.0
8	#16530.00	48.0 PK	68.2	-20.2	1.63 H	215	33.4	14.6

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	5460.00	55.0 PK	74.0	-19.0	3.19 V	163	51.7	3.3
2	5460.00	45.4 AV	54.0	-8.6	3.19 V	163	42.1	3.3
3	#5470.00	66.5 PK	68.2	-1.7	3.19 V	163	63.2	3.3
4	*5510.00	101.3 PK			3.19 V	163	98.0	3.3
5	*5510.00	93.8 AV			3.19 V	163	90.5	3.3
6	11020.00	48.0 PK	74.0	-26.0	1.72 V	186	35.0	13.0
7	11020.00	35.8 AV	54.0	-18.2	1.72 V	186	22.8	13.0
8	#16530.00	46.8 PK	68.2	-21.4	1.94 V	208	32.2	14.6

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 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	112.7 PK			2.49 H	360	109.4	3.3
2	*5550.00	103.7 AV			2.49 H	360	100.4	3.3
3	11100.00	46.3 PK	74.0	-27.7	1.42 H	195	33.6	12.7
4	11100.00	34.5 AV	54.0	-19.5	1.42 H	195	21.8	12.7
5	#16650.00	47.4 PK	68.2	-20.8	1.73 H	198	32.2	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	105.4 PK			3.18 V	169	102.1	3.3
2	*5550.00	97.4 AV			3.18 V	169	94.1	3.3
3	11100.00	46.7 PK	74.0	-27.3	1.71 V	173	34.0	12.7
4	11100.00	34.8 AV	54.0	-19.2	1.71 V	173	22.1	12.7
5	#16650.00	46.7 PK	68.2	-21.5	1.97 V	221	31.5	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	112.6 PK			2.50 H	349	109.2	3.4
2	*5670.00	103.6 AV			2.50 H	349	100.2	3.4
3	#5725.00	67.9 PK	68.2	-0.3	2.50 H	349	64.4	3.5
4	11340.00	45.8 PK	74.0	-28.2	1.46 H	181	32.4	13.4
5	11340.00	34.2 AV	54.0	-19.8	1.46 H	181	20.8	13.4
6	#17010.00	47.5 PK	68.2	-20.7	1.67 H	200	31.3	16.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	105.4 PK			3.23 V	167	102.0	3.4
2	*5670.00	97.4 AV			3.23 V	167	94.0	3.4
3	#5725.00	66.5 PK	68.2	-1.7	3.23 V	167	63.0	3.5
4	11340.00	46.8 PK	74.0	-27.2	1.80 V	161	33.4	13.4
5	11340.00	34.9 AV	54.0	-19.1	1.80 V	161	21.5	13.4
6	#17010.00	47.0 PK	68.2	-21.2	1.98 V	206	30.8	16.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 142	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	65.9 PK	68.2	-2.3	2.49 H	360	62.6	3.3
2	*5710.00	112.6 PK			2.49 H	360	109.1	3.5
3	*5710.00	103.3 AV			2.49 H	360	99.8	3.5
4	#5850.00	66.3 PK	68.2	-1.9	2.49 H	360	62.3	4.0
5	11420.00	46.0 PK	74.0	-28.0	1.42 H	194	32.8	13.2
6	11420.00	34.2 AV	54.0	-19.8	1.42 H	194	21.0	13.2
7	#17130.00	47.6 PK	68.2	-20.6	1.66 H	211	31.0	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	63.4 PK	68.2	-4.8	3.26 V	161	60.1	3.3
2	*5710.00	105.1 PK			3.26 V	161	101.6	3.5
3	*5710.00	97.4 AV			3.26 V	161	93.9	3.5
4	#5850.00	65.7 PK	68.2	-2.5	3.26 V	161	61.7	4.0
5	11420.00	47.0 PK	74.0	-27.0	1.83 V	164	33.8	13.2
6	11420.00	35.3 AV	54.0	-18.7	1.83 V	164	22.1	13.2
7	#17130.00	46.6 PK	68.2	-21.6	1.93 V	192	30.0	16.6

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 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	#5585.40	52.8 PK	68.2	-15.4	2.50 H	10	49.5	3.3
2	*5755.00	112.2 PK			2.50 H	10	108.5	3.7
3	*5755.00	103.9 AV			2.50 H	10	100.2	3.7
4	#5965.22	55.1 PK	68.2	-13.1	2.50 H	10	50.9	4.2
5	11510.00	46.4 PK	74.0	-27.6	1.39 H	188	33.4	13.0
6	11510.00	34.7 AV	54.0	-19.3	1.39 H	188	21.7	13.0
7	#17265.00	47.1 PK	68.2	-21.1	1.62 H	205	30.2	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	#5566.48	53.3 PK	68.2	-14.9	3.32 V	298	50.0	3.3
2	*5755.00	105.3 PK			3.32 V	298	101.6	3.7
3	*5755.00	97.5 AV			3.32 V	298	93.8	3.7
4	#5981.02	55.0 PK	68.2	-13.2	3.32 V	298	50.9	4.1
5	11510.00	46.8 PK	74.0	-27.2	1.82 V	171	33.8	13.0
6	11510.00	34.4 AV	54.0	-19.6	1.82 V	171	21.4	13.0
7	#17265.00	46.9 PK	68.2	-21.3	1.91 V	185	30.0	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 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	#5568.86	52.4 PK	68.2	-15.8	2.49 H	11	49.1	3.3
2	*5795.00	112.0 PK			2.49 H	11	108.2	3.8
3	*5795.00	103.7 AV			2.49 H	11	99.9	3.8
4	#5932.52	56.3 PK	68.2	-11.9	2.49 H	11	52.2	4.1
5	11590.00	45.9 PK	74.0	-28.1	1.40 H	197	33.1	12.8
6	11590.00	34.1 AV	54.0	-19.9	1.40 H	197	21.3	12.8
7	#17385.00	47.6 PK	68.2	-20.6	1.72 H	226	30.8	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	#5554.88	53.6 PK	68.2	-14.6	3.30 V	295	50.3	3.3
2	*5795.00	104.7 PK			3.30 V	295	100.9	3.8
3	*5795.00	97.0 AV			3.30 V	295	93.2	3.8
4	#5953.13	54.7 PK	68.2	-13.5	3.30 V	295	50.5	4.2
5	11590.00	46.8 PK	74.0	-27.2	1.78 V	169	34.0	12.8
6	11590.00	34.5 AV	54.0	-19.5	1.78 V	169	21.7	12.8
7	#17385.00	46.4 PK	68.2	-21.8	1.88 V	195	29.6	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.

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	5145.90	70.0 PK	74.0	-4.0	2.54 H	9	66.7	3.3
2	5145.90	53.7 AV	54.0	-0.3	2.54 H	9	50.4	3.3
3	*5210.00	104.1 PK			2.54 H	9	101.1	3.0
4	*5210.00	95.0 AV			2.54 H	9	92.0	3.0
5	#10420.00	46.0 PK	68.2	-22.2	1.45 H	201	33.5	12.5
6	15630.00	47.3 PK	74.0	-26.7	1.64 H	223	34.4	12.9
7	15630.00	33.8 AV	54.0	-20.2	1.64 H	223	20.9	12.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.2 PK	74.0	-15.8	3.25 V	172	54.9	3.3
2	5150.00	47.3 AV	54.0	-6.7	3.25 V	172	44.0	3.3
3	*5210.00	97.3 PK			3.25 V	172	94.3	3.0
4	*5210.00	88.7 AV			3.25 V	172	85.7	3.0
5	#10420.00	46.5 PK	68.2	-21.7	1.78 V	175	34.0	12.5
6	15630.00	46.5 PK	74.0	-27.5	1.90 V	179	33.6	12.9
7	15630.00	34.0 AV	54.0	-20.0	1.90 V	179	21.1	12.9

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 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	*5290.00	100.6 PK			2.51 H	342	97.9	2.7
2	*5290.00	92.4 AV			2.51 H	342	89.7	2.7
3	5360.90	68.6 PK	74.0	-5.4	2.51 H	342	65.6	3.0
4	5360.90	53.9 AV	54.0	-0.1	2.51 H	342	50.9	3.0
5	#10580.00	46.1 PK	68.2	-22.1	1.44 H	190	33.5	12.6
6	15870.00	47.1 PK	74.0	-26.9	1.61 H	215	35.0	12.1
7	15870.00	33.7 AV	54.0	-20.3	1.61 H	215	21.6	12.1
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	*5290.00	93.4 PK			3.29 V	137	90.7	2.7
2	*5290.00	85.9 AV			3.29 V	137	83.2	2.7
3	5350.00	58.8 PK	74.0	-15.2	3.29 V	137	55.8	3.0
4	5350.00	47.7 AV	54.0	-6.3	3.29 V	137	44.7	3.0
5	#10580.00	46.2 PK	68.2	-22.0	1.80 V	184	33.6	12.6
6	15870.00	46.7 PK	74.0	-27.3	1.92 V	186	34.6	12.1
7	15870.00	34.2 AV	54.0	-19.8	1.92 V	186	22.1	12.1

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.

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	5447.80	68.5 PK	74.0	-5.5	2.47 H	343	65.2	3.3
2	5447.80	50.5 AV	54.0	-3.5	2.47 H	343	47.2	3.3
3	#5470.00	68.1 PK	68.2	-0.1	2.47 H	343	64.8	3.3
4	*5530.00	105.6 PK			2.47 H	343	102.3	3.3
5	*5530.00	96.0 AV			2.47 H	343	92.7	3.3
6	11060.00	45.8 PK	74.0	-28.2	1.39 H	207	32.9	12.9
7	11060.00	33.5 AV	54.0	-20.5	1.39 H	207	20.6	12.9
8	#16590.00	46.9 PK	68.2	-21.3	1.64 H	214	32.0	14.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.0 PK	74.0	-9.0	3.24 V	168	61.7	3.3
2	5460.00	48.0 AV	54.0	-6.0	3.24 V	168	44.7	3.3
3	#5470.00	65.9 PK	68.2	-2.3	3.24 V	168	62.6	3.3
4	*5530.00	98.3 PK			3.24 V	168	95.0	3.3
5	*5530.00	89.6 AV			3.24 V	168	86.3	3.3
6	11060.00	46.9 PK	74.0	-27.1	1.79 V	174	34.0	12.9
7	11060.00	35.4 AV	54.0	-18.6	1.79 V	174	22.5	12.9
8	#16590.00	46.2 PK	68.2	-22.0	1.93 V	190	31.3	14.9

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 138	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	65.6 PK	68.2	-2.6	2.58 H	347	62.3	3.3
2	*5690.00	108.9 PK			2.58 H	347	105.5	3.4
3	*5690.00	101.0 AV			2.58 H	347	97.6	3.4
4	#5850.00	66.6 PK	68.2	-1.6	2.58 H	347	62.6	4.0
5	11380.00	45.4 PK	74.0	-28.6	1.41 H	182	32.1	13.3
6	11380.00	33.2 AV	54.0	-20.8	1.41 H	182	19.9	13.3
7	#17070.00	46.9 PK	68.2	-21.3	1.74 H	219	30.6	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	#5470.00	63.5 PK	68.2	-4.7	3.40 V	305	60.2	3.3
2	*5690.00	102.2 PK			3.40 V	305	98.8	3.4
3	*5690.00	94.0 AV			3.40 V	305	90.6	3.4
4	#5850.00	65.9 PK	68.2	-2.3	3.40 V	305	61.9	4.0
5	11380.00	47.6 PK	74.0	-26.4	1.83 V	182	34.3	13.3
6	11380.00	35.7 AV	54.0	-18.3	1.83 V	182	22.4	13.3
7	#17070.00	45.5 PK	68.2	-22.7	2.00 V	183	29.2	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	#5645.83	56.7 PK	68.2	-11.5	2.53 H	344	53.4	3.3
2	*5775.00	108.9 PK			2.53 H	344	105.2	3.7
3	*5775.00	101.0 AV			2.53 H	344	97.3	3.7
4	#5927.58	57.8 PK	68.2	-10.4	2.53 H	344	53.7	4.1
5	11550.00	45.6 PK	74.0	-28.4	1.41 H	179	32.7	12.9
6	11550.00	33.6 AV	54.0	-20.4	1.41 H	179	20.7	12.9
7	#17325.00	46.6 PK	68.2	-21.6	1.70 H	225	29.6	17.0
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	#5644.52	54.7 PK	68.2	-13.5	3.35 V	296	51.4	3.3
2	*5775.00	101.7 PK			3.35 V	296	98.0	3.7
3	*5775.00	93.7 AV			3.35 V	296	90.0	3.7
4	#6006.99	56.0 PK	68.2	-12.2	3.35 V	296	51.9	4.1
5	11550.00	46.9 PK	74.0	-27.1	1.82 V	170	34.0	12.9
6	11550.00	35.2 AV	54.0	-18.8	1.82 V	170	22.3	12.9
7	#17325.00	45.9 PK	68.2	-22.3	1.94 V	180	28.9	17.0

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.

Below 1GHz Data:

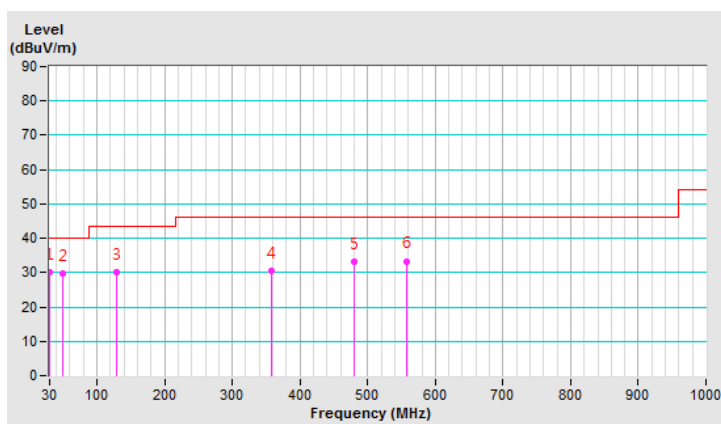
802.11ac (VHT20)

CHANNEL	TX Channel 165	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	30.51	30.2 QP	40.0	-9.8	2.00 H	295	39.6	-9.4
2	50.08	29.8 QP	40.0	-10.2	2.00 H	360	38.3	-8.5
3	129.18	30.0 QP	43.5	-13.5	3.00 H	258	39.4	-9.4
4	357.86	30.5 QP	46.0	-15.5	1.00 H	105	35.6	-5.1
5	480.03	33.2 QP	46.0	-12.8	2.00 H	338	35.3	-2.1
6	556.83	33.4 QP	46.0	-12.6	1.00 H	0	33.9	-0.5

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.

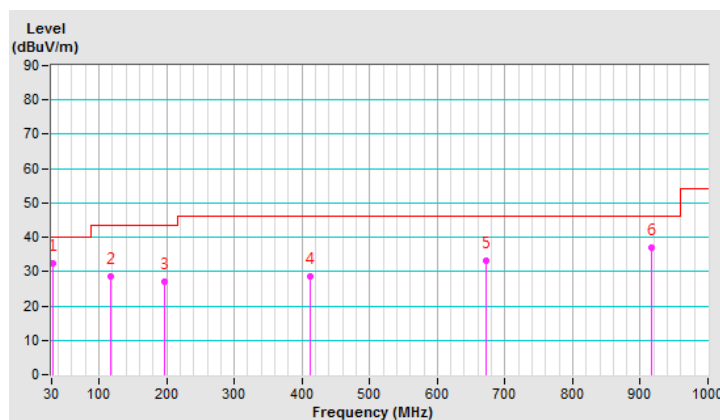


CHANNEL	TX Channel 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	31.72	32.5 QP	40.0	-7.5	1.00 V	68	41.9	-9.4
2	117.83	28.7 QP	43.5	-14.8	1.00 V	118	38.7	-10.0
3	196.04	26.9 QP	43.5	-16.6	4.00 V	16	37.0	-10.1
4	412.25	28.6 QP	46.0	-17.4	3.00 V	171	32.5	-3.9
5	672.96	33.2 QP	46.0	-12.8	1.00 V	360	31.3	1.9
6	916.00	37.1 QP	46.0	-8.9	2.00 V	122	30.7	6.4

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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: Aug. 19, 2019

4.2.3 Test Procedure

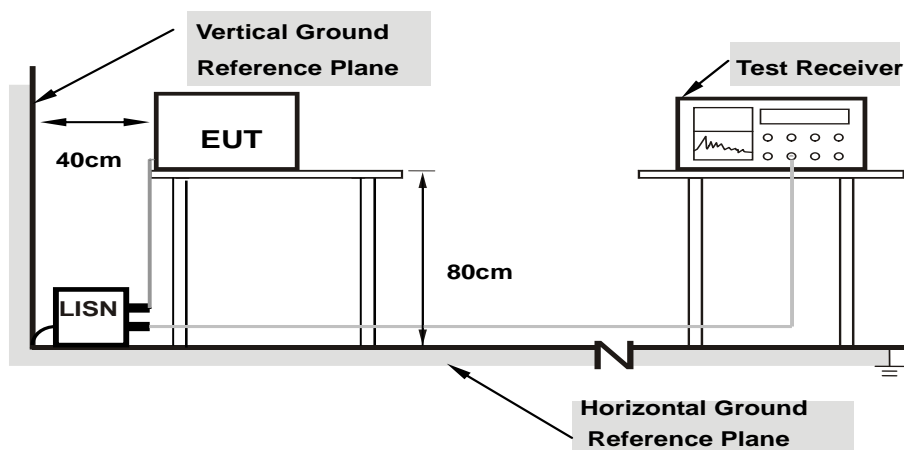
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

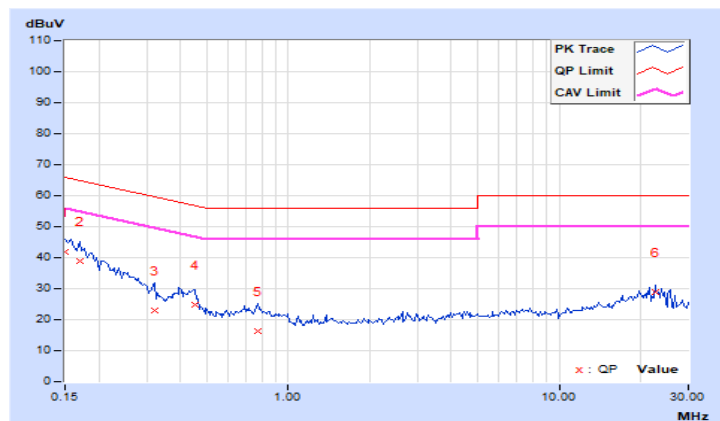
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.94	32.03	12.38	41.97	22.32	66.00	56.00	-24.03	-33.68
2	0.16953	9.95	28.88	9.33	38.83	19.28	64.98	54.98	-26.15	-35.70
3	0.32188	9.96	12.98	-1.15	22.94	8.81	59.66	49.66	-36.72	-40.85
4	0.45469	9.96	14.71	6.14	24.67	16.10	56.79	46.79	-32.12	-30.69
5	0.77500	9.99	6.48	-1.78	16.47	8.21	56.00	46.00	-39.53	-37.79
6	22.70313	11.10	17.78	17.02	28.88	28.12	60.00	50.00	-31.12	-21.88

REMARKS:

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

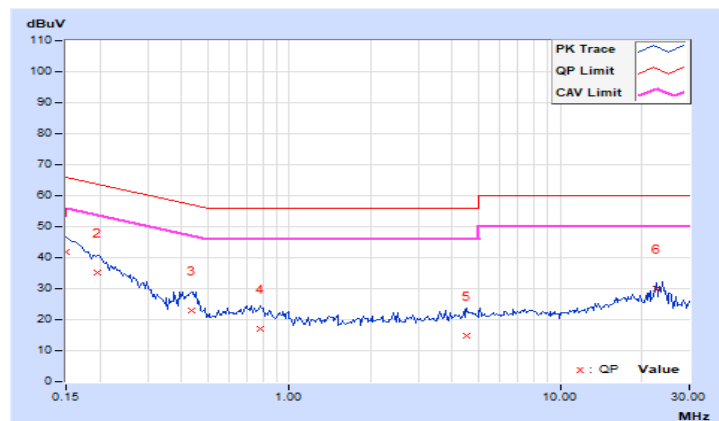


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.92	31.85	11.94	41.77	21.86	66.00	56.00	-24.23	-34.14
2	0.19687	9.93	25.12	5.65	35.05	15.58	63.74	53.74	-28.69	-38.16
3	0.43516	9.94	12.90	2.91	22.84	12.85	57.15	47.15	-34.31	-34.30
4	0.78281	9.97	7.23	-1.17	17.20	8.80	56.00	46.00	-38.80	-37.20
5	4.53516	10.13	4.57	-7.06	14.70	3.07	56.00	46.00	-41.30	-42.93
6	22.70313	10.81	19.36	18.23	30.17	29.04	60.00	50.00	-29.83	-20.96

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

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

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

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

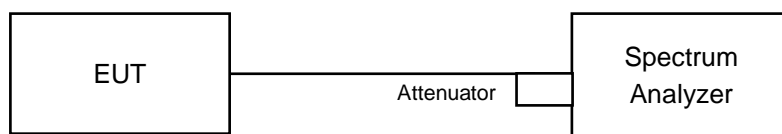
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

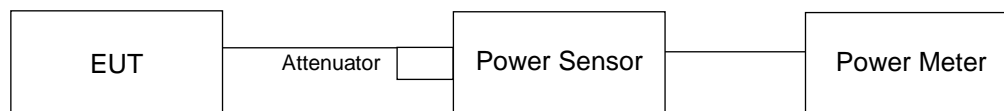
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

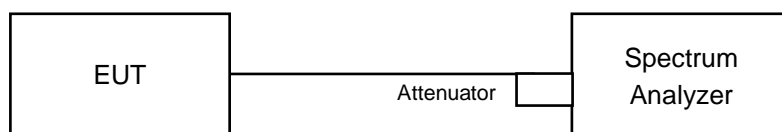
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For other channels:

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

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

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

FOR 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 Results

CDD Mode

802.11a

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	10.69	10.53	23.02	13.62	23.89	Pass
40	5200	10.64	10.55	22.938	13.61	23.89	Pass
48	5240	10.82	10.53	23.376	13.69	23.89	Pass
52	5260	17.53	17.21	109.226	20.38	23.89	Pass
60	5300	17.63	17.56	114.959	20.61	23.89	Pass
64	5320	17.77	17.06	110.657	20.44	23.89	Pass
100	5500	18.10	17.02	114.915	20.60	23.89	Pass
116	5580	17.42	17.01	105.442	20.23	23.89	Pass
140	5700	16.62	16.43	89.874	19.54	23.89	Pass
*144 (U-NII-2C Band)	5720	12.66	12.41	37.939	15.79	22.96	Pass
*144 (U-NII-3 Band)	5720	6.93	6.48	9.92	9.97	29.89	Pass
149	5745	17.82	17.79	120.651	20.82	29.89	Pass
157	5785	17.92	17.71	120.964	20.83	29.89	Pass
165	5825	17.82	17.87	121.769	20.86	29.89	Pass

Note: 1. For UNII-1: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

2. For UNII-2A: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

3. For UNII-2C: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

4. For CH 144 (U-NII-2C Band): The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $23.07-(6.11-6) = 22.96\text{dBm}$.

5. For UNII-3: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(6.11-6) = 29.89\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	47.859	16.8

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	25.70	23.19
60	5300	26.32	24.10
64	5320	24.37	23.85
100	5500	22.80	22.95
116	5580	26.48	25.89
140	5700	22.85	22.94
144 (U-NII-2C Band)	5720	16.12	16.22

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	23.19	24.65 > 24
60	5300	24.10	24.82 > 24
64	5320	23.85	24.77 > 24
100	5500	22.80	24.57 > 24
116	5580	25.89	25.13 > 24
140	5700	22.85	24.58 > 24
144 (U-NII-2C Band)	5720	16.12	23.07 < 24

802.11ac (VHT20)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	10.61	10.78	23.475	13.71	23.89	Pass
40	5200	10.62	10.69	23.257	13.67	23.89	Pass
48	5240	10.98	10.55	23.881	13.78	23.89	Pass
52	5260	17.63	17.32	111.894	20.49	23.89	Pass
60	5300	17.58	17.52	113.774	20.56	23.89	Pass
64	5320	17.84	17.63	118.757	20.75	23.89	Pass
100	5500	18.03	17.48	119.509	20.77	23.89	Pass
116	5580	17.56	17.03	107.482	20.31	23.89	Pass
140	5700	15.57	15.71	73.297	18.65	23.89	Pass
*144 (U-NII-2C Band)	5720	12.68	12.16	36.916	15.67	23.13	Pass
*144 (U-NII-3 Band)	5720	7.35	6.86	10.856	10.36	29.89	Pass
149	5745	17.87	17.77	121.076	20.83	29.89	Pass
157	5785	17.71	17.63	116.963	20.68	29.89	Pass
165	5825	17.91	17.96	124.319	20.95	29.89	Pass

Note: 1. For UNII-1: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

2. For UNII-2A: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

3. For UNII-2C: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(6.11-6) = 23.89\text{dBm}$.

4. For CH 144 (U-NII-2C Band): The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $23.24-(6.11-6) = 23.13\text{dBm}$.

5. For UNII-3: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(6.11-6) = 29.89\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	47.772	16.79

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	27.32	26.38
60	5300	27.12	24.27
64	5320	26.30	27.29
100	5500	25.46	25.36
116	5580	27.55	26.35
140	5700	23.80	24.00
144 (U-NII-2C Band)	5720	16.75	16.76

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	26.38	25.21 > 24
60	5300	24.27	24.85 > 24
64	5320	26.30	25.19 > 24
100	5500	25.36	25.04 > 24
116	5580	26.35	25.2 > 24
140	5700	23.80	24.76 > 24
144 (U-NII-2C Band)	5720	16.75	23.24 < 24

802.11ac (VHT40)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	13.78	13.78	47.756	16.79	23.89	Pass
46	5230	13.81	13.91	48.648	16.87	23.89	Pass
54	5270	17.56	17.62	114.826	20.60	23.89	Pass
62	5310	11.89	11.82	30.658	14.87	23.89	Pass
102	5510	14.06	14.21	51.831	17.15	23.89	Pass
110	5550	17.82	16.97	110.308	20.43	23.89	Pass
134	5670	17.67	17.10	109.765	20.40	23.89	Pass
*142 (U-NII-2C Band)	5710	12.05	11.21	34.606	15.39	23.89	Pass
*142 (U-NII-3 Band)	5710	2.71	1.57	3.906	5.92	29.89	Pass
151	5755	17.81	17.85	121.349	20.84	29.89	Pass
159	5795	17.66	17.97	121.006	20.83	29.89	Pass

Note: 1. For UNII-1: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

2. For UNII-2A: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

3. For UNII-2C: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

4. For UNII-3: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (6.11 - 6) = 29.89\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	38.512	15.86

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	53.35	52.09
62	5310	43.83	43.40
102	5510	43.83	44.17
110	5550	47.18	44.63
134	5670	45.66	50.94
142 (U-NII-2C Band)	5710	36.61	37.06

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	52.09	28.16 > 24
62	5310	43.40	27.37 > 24
102	5510	43.83	27.41 > 24
110	5550	44.63	27.49 > 24
134	5670	45.66	27.59 > 24
142 (U-NII-2C Band)	5710	36.61	26.63 > 24

802.11ac (VHT80)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	10.34	10.59	22.269	13.48	23.89	Pass
58	5290	8.03	8.04	12.721	11.05	23.89	Pass
106	5530	12.84	12.99	39.138	15.93	23.89	Pass
*138 (U-NII-2C Band)	5690	8.24	9.90	22.246	13.47	23.89	Pass
*138 (U-NII-3 Band)	5690	-4.11	-2.70	1.252	0.98	29.89	Pass
155	5775	17.11	17.40	106.358	20.27	29.89	Pass

Note: 1. For UNII-1: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

2. For UNII-2A: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

3. For UNII-2C: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (6.11 - 6) = 23.89\text{dBm}$.

4. For UNII-3: The Max gain is 6.11dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (6.11 - 6) = 29.89\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	23.498	13.71

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	85.92	86.35
106	5530	86.36	86.39
138 (U-NII-2C Band)	5690	85.45	78.24

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	85.92	30.34 > 24
106	5530	86.36	30.36 > 24
138 (U-NII-2C Band)	5690	78.24	29.93 > 24

Beamforming Mode

802.11ac (VHT20)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	10.10	10.17	20.632	13.15	20.88	Pass
40	5200	10.09	10.10	20.442	13.11	20.88	Pass
48	5240	10.48	10.02	21.215	13.27	20.88	Pass
52	5260	17.63	17.32	111.894	20.49	20.88	Pass
60	5300	17.58	17.52	113.774	20.56	20.88	Pass
64	5320	17.84	17.63	118.757	20.75	20.88	Pass
100	5500	17.53	17.12	108.147	20.34	20.88	Pass
116	5580	17.56	17.03	107.482	20.31	20.88	Pass
140	5700	15.57	15.71	73.297	18.65	20.88	Pass
*144 (U-NII-2C Band)	5720	12.68	12.16	36.916	15.67	20.12	Pass
*144 (U-NII-3 Band)	5720	7.35	6.86	10.856	10.36	26.88	Pass
149	5745	17.87	17.77	121.076	20.83	26.88	Pass
157	5785	17.71	17.63	116.963	20.68	26.88	Pass
165	5825	17.91	17.96	124.319	20.95	26.88	Pass

Note: 1. For UNII-1: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

2. For UNII-2A: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

3. For UNII-2C: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

4. For CH 144 (U-NII-2C Band): The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $23.24 - (9.12 - 6) = 20.12\text{dBm}$.

5. For UNII-3: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (9.12 - 6) = 26.88\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	47.772	16.79

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	27.32	26.38
60	5300	27.12	24.27
64	5320	26.30	27.29
100	5500	25.46	25.36
116	5580	27.55	26.35
140	5700	23.80	24.00
144 (U-NII-2C Band)	5720	16.75	16.76

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	26.38	25.21 > 24
60	5300	24.27	24.85 > 24
64	5320	26.30	25.19 > 24
100	5500	25.36	25.04 > 24
116	5580	26.35	25.2 > 24
140	5700	23.80	24.76 > 24
144 (U-NII-2C Band)	5720	16.75	23.24 < 24

802.11ac (VHT40)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	10.72	10.75	23.688	13.75	20.88	Pass
46	5230	10.67	10.84	23.802	13.77	20.88	Pass
54	5270	17.56	17.62	114.826	20.60	20.88	Pass
62	5310	11.89	11.82	30.658	14.87	20.88	Pass
102	5510	14.06	14.21	51.831	17.15	20.88	Pass
110	5550	17.82	17.14	112.295	20.50	20.88	Pass
134	5670	17.67	17.10	109.765	20.40	20.88	Pass
*142 (U-NII-2C Band)	5710	12.05	11.21	34.606	15.39	20.88	Pass
*142 (U-NII-3 Band)	5710	2.71	1.57	3.906	5.92	26.88	Pass
151	5755	17.81	17.85	121.349	20.84	26.88	Pass
159	5795	17.66	17.97	121.006	20.83	26.88	Pass

Note: 1. For UNII-1: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

2. For UNII-2A: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

3. For UNII-2C: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (9.12 - 6) = 20.88\text{dBm}$.

4. For CH 142 (U-NII-2C Band): The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $23.24 - (9.12 - 6) = 20.12\text{dBm}$.

5. For UNII-3: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (9.12 - 6) = 26.88\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	38.512	15.86

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	53.35	52.09
62	5310	43.83	43.40
102	5510	43.83	44.17
110	5550	47.18	44.63
134	5670	45.66	50.94
142 (U-NII-2C Band)	5710	36.61	37.06

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	52.09	28.16 > 24
62	5310	43.40	27.37 > 24
102	5510	43.83	27.41 > 24
110	5550	44.63	27.49 > 24
134	5670	45.66	27.59 > 24
142 (U-NII-2C Band)	5710	36.61	26.63 > 24

802.11ac (VHT80)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	10.34	10.59	22.269	13.48	20.88	Pass
58	5290	8.03	8.04	12.721	11.05	20.88	Pass
106	5530	12.84	12.99	39.138	15.93	20.88	Pass
*138 (U-NII-2C Band)	5690	8.24	9.90	22.246	13.47	20.88	Pass
*138 (U-NII-3 Band)	5690	-4.11	-2.70	1.252	0.98	26.88	Pass
155	5775	17.11	17.40	106.358	20.27	26.88	Pass

Note: 1. For UNII-1: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(9.12-6) = 20.88\text{dBm}$.

2. For UNII-2A: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(9.12-6) = 20.88\text{dBm}$.

3. For UNII-2C: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $24-(9.12-6) = 20.88\text{dBm}$.

4. For CH 144 (U-NII-2C Band): The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $23.24-(9.12-6) = 20.12\text{dBm}$.

5. For UNII-3: The Directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $30-(9.12-6) = 26.88\text{dBm}$.

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	23.498	13.71

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

26dB OCCUPIED BANDWIDTH

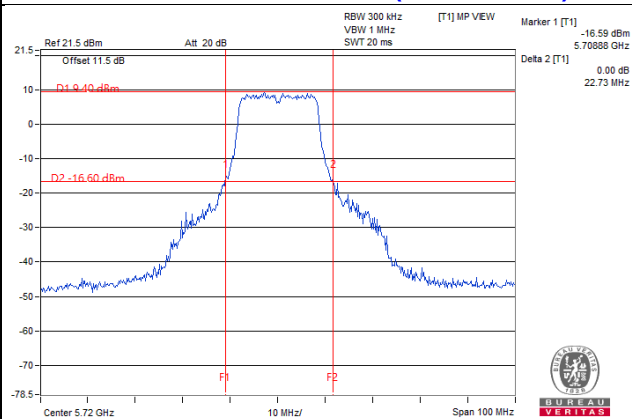
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	85.92	86.35
106	5530	86.36	86.39
138 (U-NII-2C Band)	5690	85.45	78.24

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

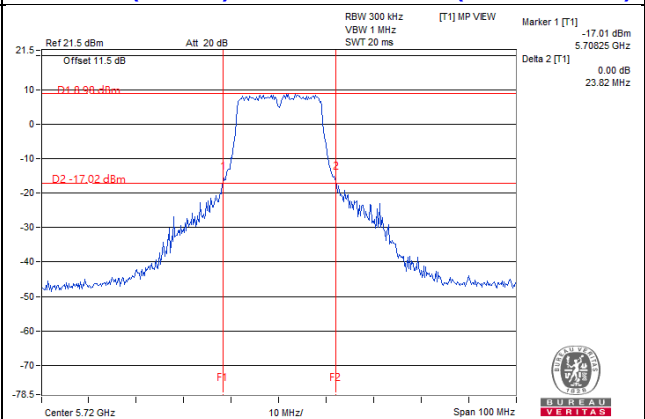
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	85.92	30.34 > 24
106	5530	86.36	30.36 > 24
138 (U-NII-2C Band)	5690	78.24	29.93 > 24

Spectrum Plot of Worst Value

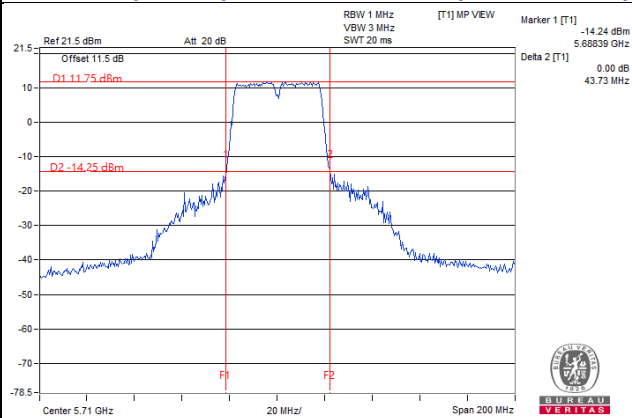
802.11a_Chain 0 / CH144 (U-NII-3 Band)



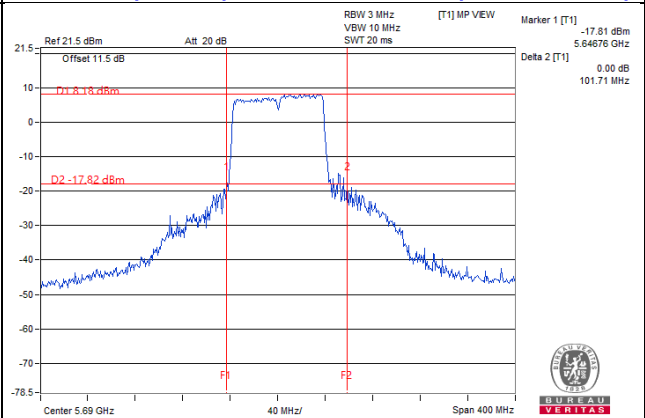
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)

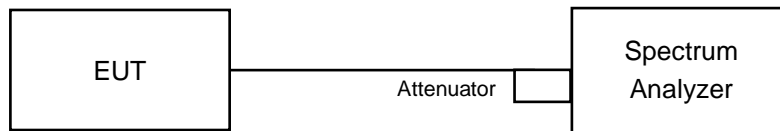


Note:

- For CH144 (U-NII-3) = 5725MHz - Marker 1
- For CH142 (U-NII-3) = 5725MHz - Marker 1
- For CH138 (U-NII-3) = 5725MHz - Marker 1

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.80	16.80
40	5200	16.92	16.92
48	5240	16.92	16.92
52	5260	16.92	16.80
60	5300	16.80	16.80
64	5320	16.92	17.04
100	5500	16.68	16.80
116	5580	16.92	16.80
140	5700	16.80	16.92
144 (U-NII-2C Band)	5720	13.40	13.40
144 (U-NII-3 Band)	5720	3.52	3.40
149	5745	16.80	16.80
157	5785	16.92	17.04
165	5825	16.92	16.80

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.12	18.00
40	5200	18.00	18.00
48	5240	17.88	18.00
52	5260	18.30	18.30
60	5300	18.58	18.58
64	5320	19.42	19.42
100	5500	18.00	17.88
116	5580	18.00	18.00
140	5700	17.88	17.88
144 (U-NII-2C Band)	5720	14.00	14.00
144 (U-NII-3 Band)	5720	4.00	4.00
149	5745	18.00	17.88
157	5785	18.12	18.00
165	5825	17.88	18.12

802.11ac (VHT40)

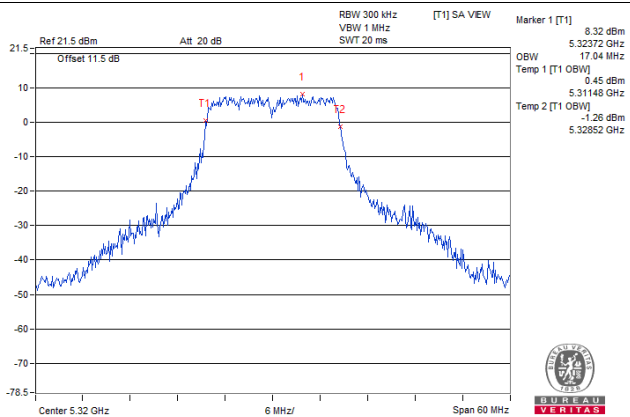
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.96	36.96
46	5230	36.72	36.72
54	5270	36.72	36.72
62	5310	36.96	36.96
102	5510	36.96	36.96
110	5550	36.96	36.96
134	5670	36.96	36.96
142 (U-NII-2C Band)	5710	33.48	33.48
142 (U-NII-3 Band)	5710	3.48	3.48
151	5755	37.20	36.96
159	5795	36.96	36.96

802.11ac (VHT80)

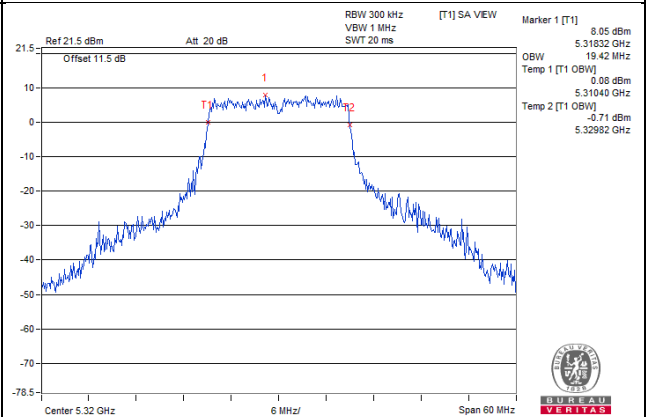
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
58	5290	75.84	75.84
106	5530	75.84	75.84
138 (U-NII-2C Band)	5690	72.92	72.92
138 (U-NII-3 Band)	5690	2.92	2.92
155	5775	76.32	76.32

Spectrum Plot of Max. Value

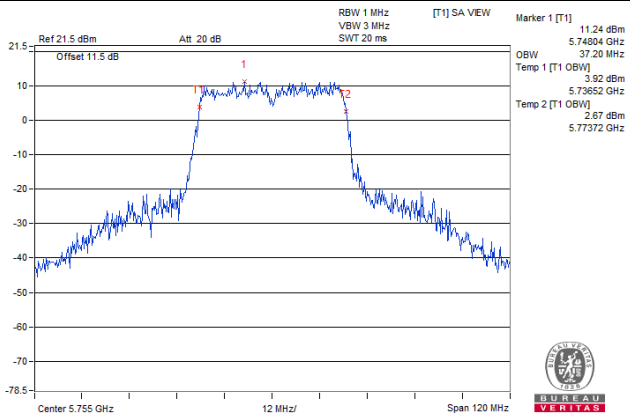
802.11a_Chain 1 / CH64



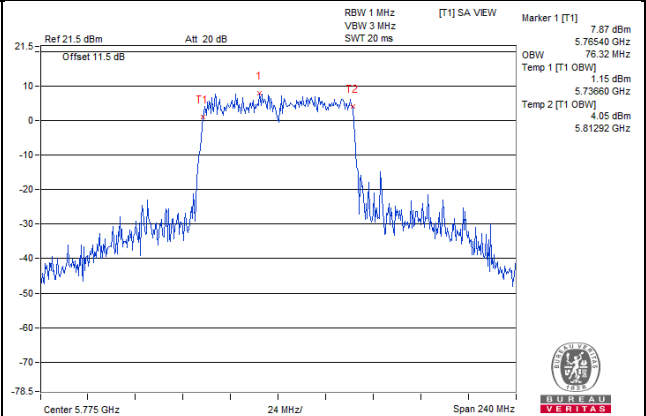
802.11ac (VHT20)_Chain 0 / CH64



802.11ac (VHT40)_Chain 0 / CH151

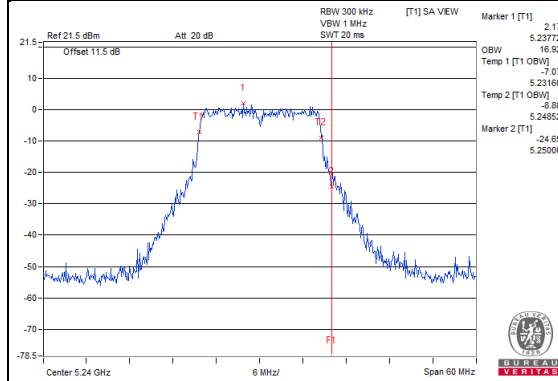


802.11ac (VHT80)_Chain 0 / CH155

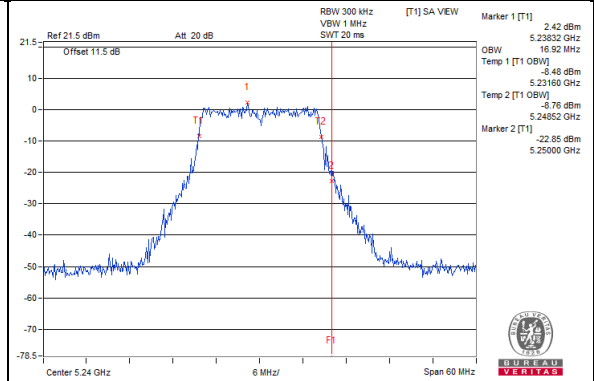


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

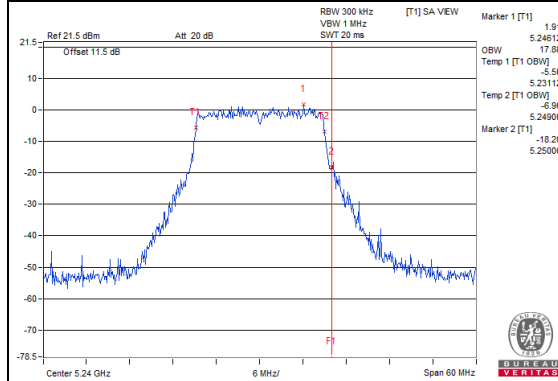
802.11a_Chain 0 / CH48



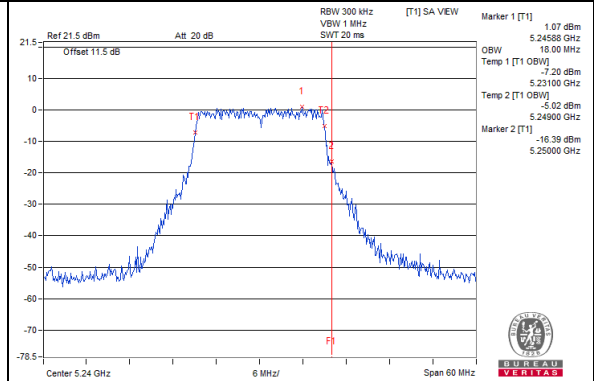
802.11a_Chain 1 / CH48



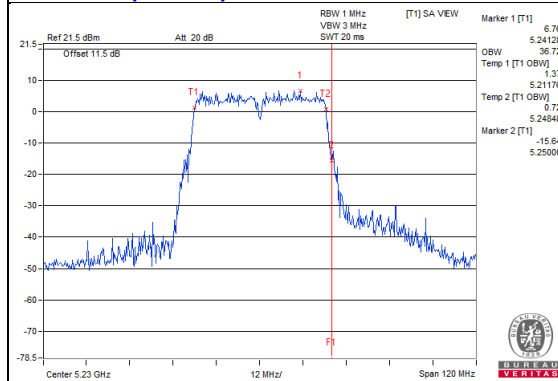
802.11ac (VHT20)_Chain 0 / CH48



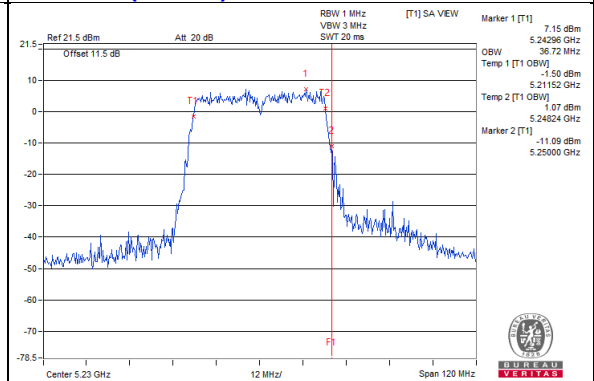
802.11ac (VHT20)_Chain 1 / CH48



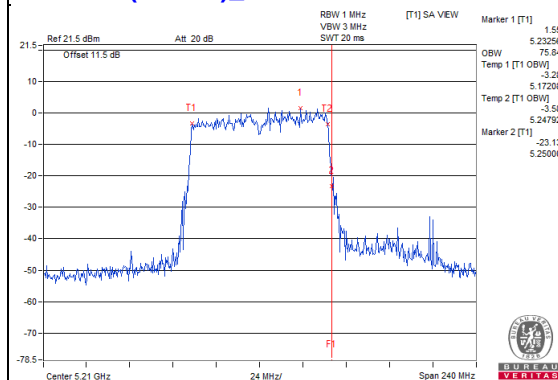
802.11ac (VHT40)_Chain 0 / CH46



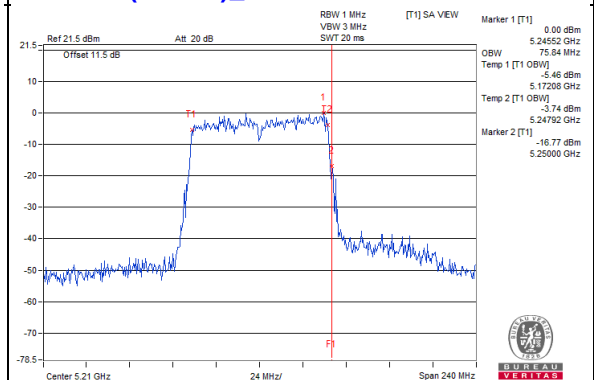
802.11ac (VHT40)_Chain 1 / CH46



802.11ac (VHT80)_Chain 0 / CH42

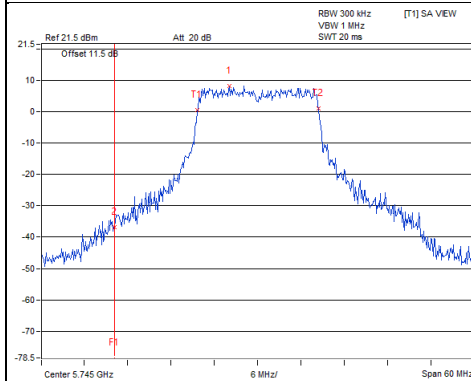


802.11ac (VHT80)_Chain 1 / CH42

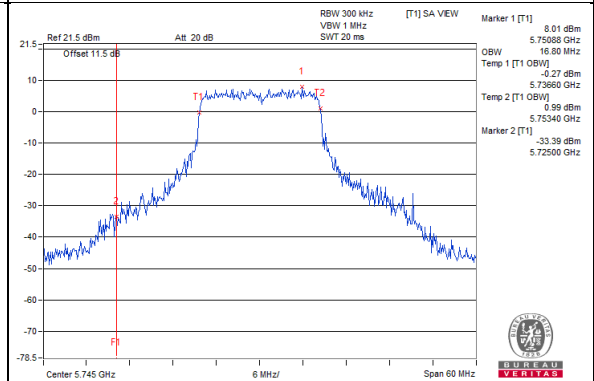


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

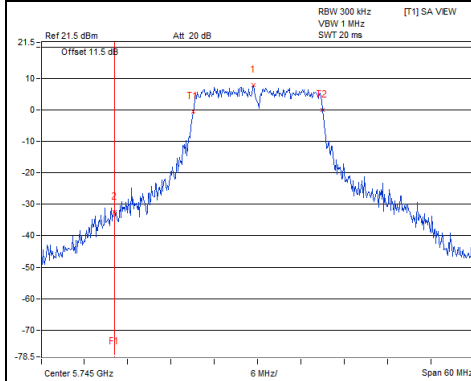
802.11a_Chain 0 / CH149



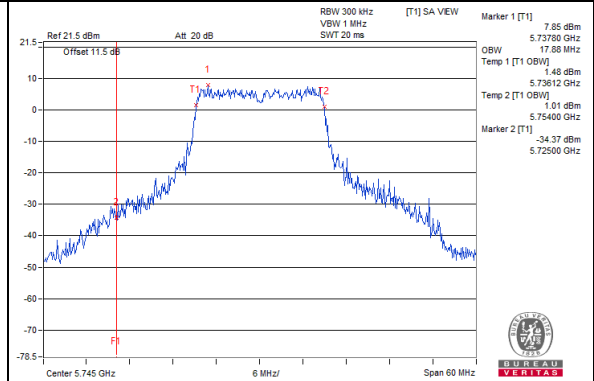
802.11a_Chain 1 / CH149



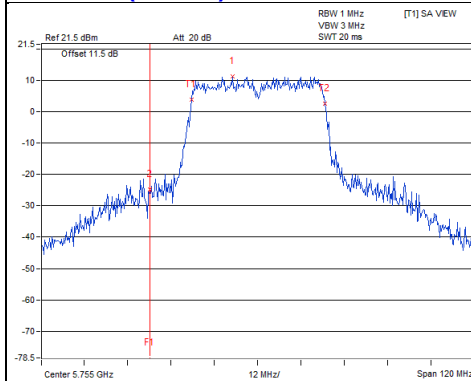
802.11ac (VHT20)_Chain 0 / CH149



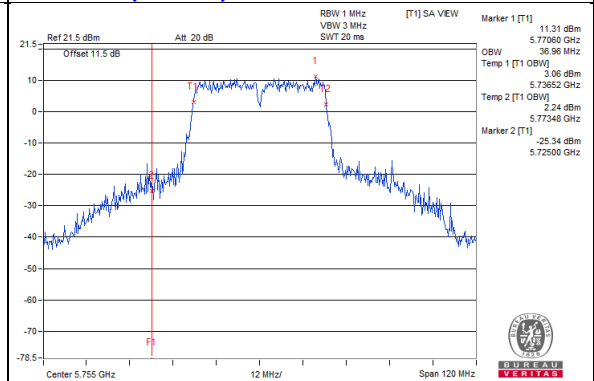
802.11ac (VHT20)_Chain 1 / CH149



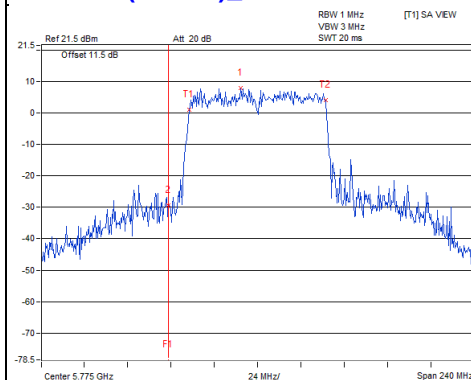
802.11ac (VHT40)_Chain 0 / CH151



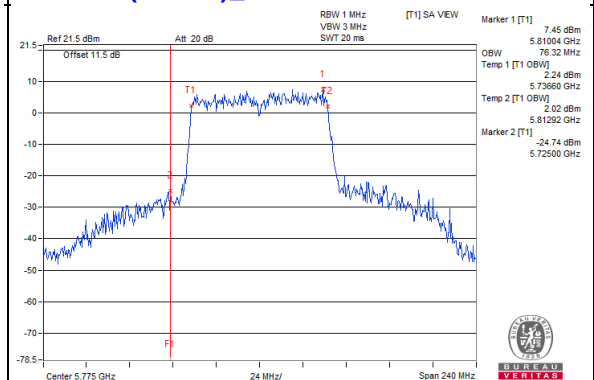
802.11ac (VHT40)_Chain 1 / CH151



802.11ac (VHT80)_Chain 0 / CH155



802.11ac (VHT80)_Chain 1 / CH155

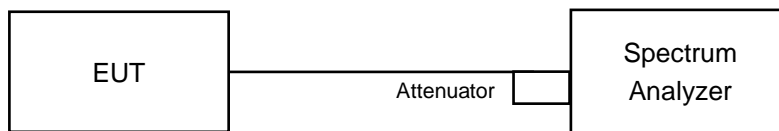


4.5 Peak Power Spectral Density Measurement

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-2

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

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-3.15	-3.62	0.24	-0.13	7.88	Pass
40	5200	-3.06	-3.22	0.24	0.11	7.88	Pass
48	5240	-2.75	-2.57	0.24	0.59	7.88	Pass
52	5260	3.81	3.03	0.24	6.69	7.88	Pass
60	5300	3.66	3.73	0.24	6.95	7.88	Pass
64	5320	3.79	3.10	0.24	6.71	7.88	Pass
100	5500	3.86	3.62	0.24	6.99	7.88	Pass
116	5580	3.60	3.25	0.24	6.68	7.88	Pass
140	5700	2.87	1.37	0.24	5.43	7.88	Pass
144 (U-NII-2C Band)	5720	3.70	3.52	0.24	6.86	7.88	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (9.12 - 6) = 7.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-3.53	-3.26	0.23	-0.15	7.88	Pass
40	5200	-3.57	-3.05	0.23	-0.06	7.88	Pass
48	5240	-3.42	-2.84	0.23	0.12	7.88	Pass
52	5260	3.38	2.38	0.23	6.15	7.88	Pass
60	5300	3.51	2.82	0.23	6.42	7.88	Pass
64	5320	3.47	3.53	0.23	6.74	7.88	Pass
100	5500	3.63	3.52	0.23	6.82	7.88	Pass
116	5580	3.64	2.50	0.23	6.35	7.88	Pass
140	5700	0.66	1.06	0.23	4.10	7.88	Pass
144 (U-NII-2C Band)	5720	2.50	3.13	0.23	6.07	7.88	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (9.12 - 6) = 7.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-8.21	-3.38	0.73	-1.42	7.88	Pass
46	5230	-4.98	-3.77	0.73	-0.59	7.88	Pass
54	5270	-2.62	-0.61	0.73	2.24	7.88	Pass
62	5310	-5.74	-5.45	0.73	-1.85	7.88	Pass
102	5510	-3.59	-4.91	0.73	-0.46	7.88	Pass
110	5550	-0.77	-0.18	0.73	3.28	7.88	Pass
134	5670	-2.71	-0.30	0.73	2.40	7.88	Pass
142 (U-NII-2C Band)	5710	0.89	0.15	0.73	4.28	7.88	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(9.12-6)=7.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

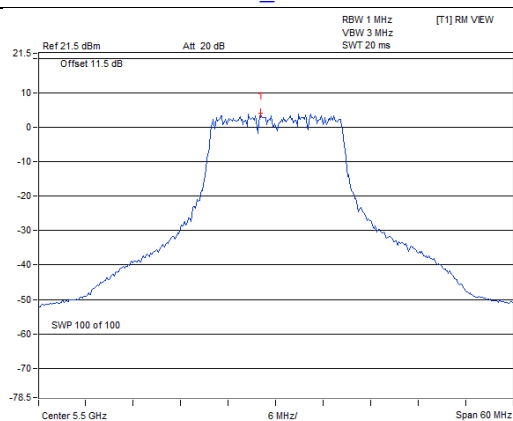
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-14.03	-11.27	1.31	-8.11	7.88	Pass
58	5290	-16.17	-12.99	1.31	-9.98	7.88	Pass
106	5530	-12.74	-8.59	1.31	-5.87	7.88	Pass
138 (U-NII-2C Band)	5690	-8.01	-4.21	1.31	-1.39	7.88	Pass

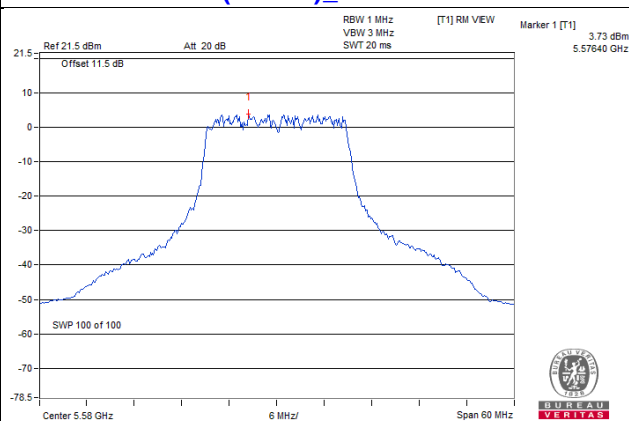
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(9.12-6)=7.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

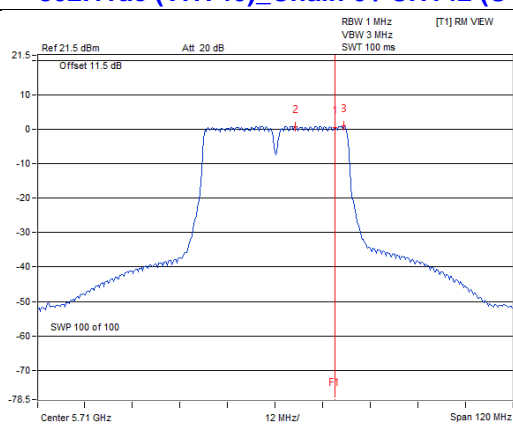
802.11a_Chain 0 / CH100



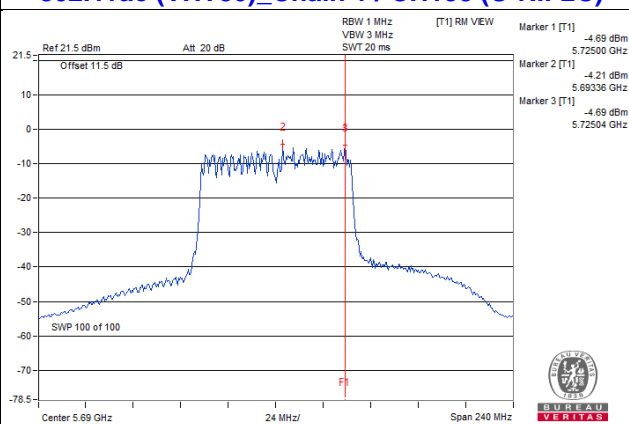
802.11ac (VHT20)_Chain 0 / CH116



802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C)



802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C)



For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
144 (U-NII-3 Band)	5720	-4.61	-4.89	0.24	0.709	-1.49	0.73	26.88	Pass
149	5745	-4.27	-4.38	0.24	0.7815	-1.07	1.15	26.88	Pass
157	5785	-3.93	-5.28	0.24	0.7415	-1.30	0.92	26.88	Pass
165	5825	-4.36	-4.18	0.24	0.7916	-1.01	1.21	26.88	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(9.12-6) = 26.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
144 (U-NII-3 Band)	5720	-5.08	-5.56	0.23	0.621	-2.07	0.15	26.88	Pass
149	5745	-4.15	-5.08	0.23	0.7335	-1.35	0.87	26.88	Pass
157	5785	-4.66	-4.98	0.23	0.6962	-1.57	0.65	26.88	Pass
165	5825	-4.60	-4.72	0.23	0.7219	-1.42	0.80	26.88	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(9.12-6) = 26.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
142 (U-NII-3 Band)	5710	-8.21	-8.70	0.73	0.3383	-4.71	-2.49	26.88	Pass
151	5755	-9.27	-8.34	0.73	0.3134	-5.04	-2.82	26.88	Pass
159	5795	-8.52	-8.45	0.73	0.3355	-4.74	-2.52	26.88	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(9.12-6) = 26.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

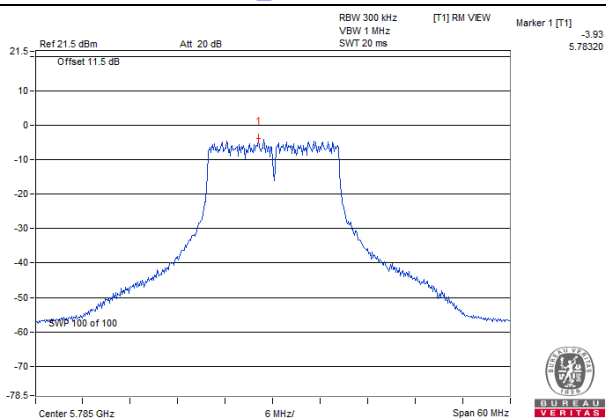
802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
138 (U-NII-3 Band)	5690	-12.33	-11.77	1.31	0.16916	-7.72	-5.50	26.88	Pass
155	5775	-11.47	-11.84	1.31	0.18505	-7.33	-5.11	26.88	Pass

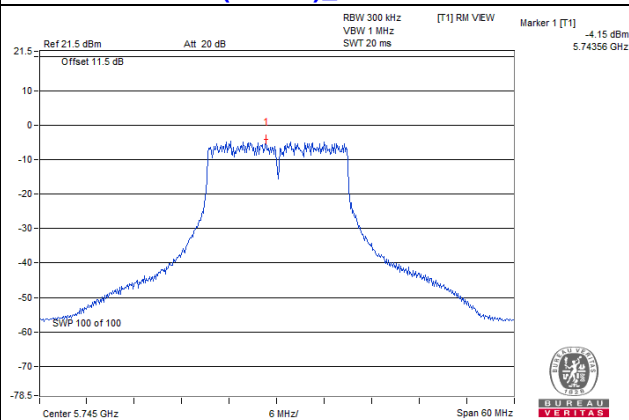
- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $6.11\text{dBi} + 10\log(2) = 9.12\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(9.12-6) = 26.88\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

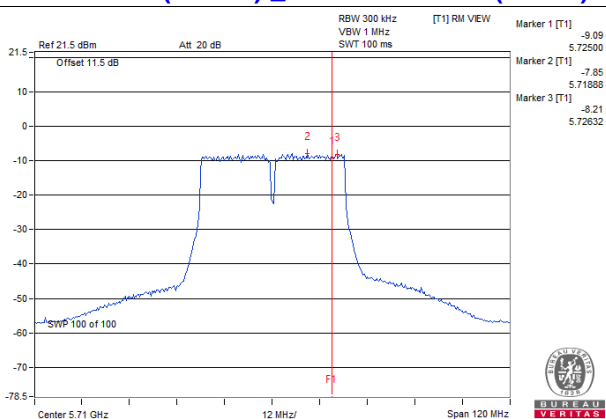
802.11a_Chain 0 / CH157



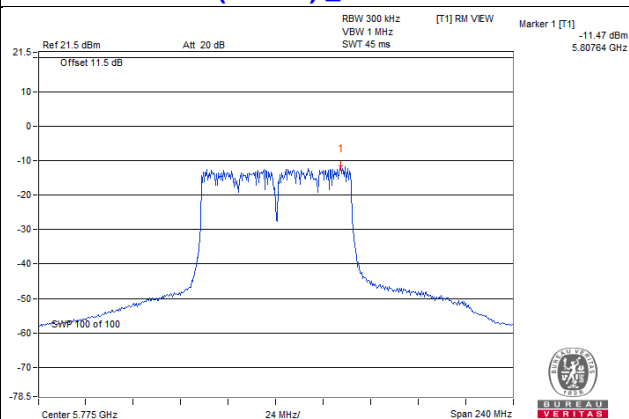
802.11ac (VHT20)_Chain 0 / CH149



802.11ac (VHT40)_Chain 0 / CH142 (UNII-3)



802.11ac (VHT80)_Chain 0 / CH155

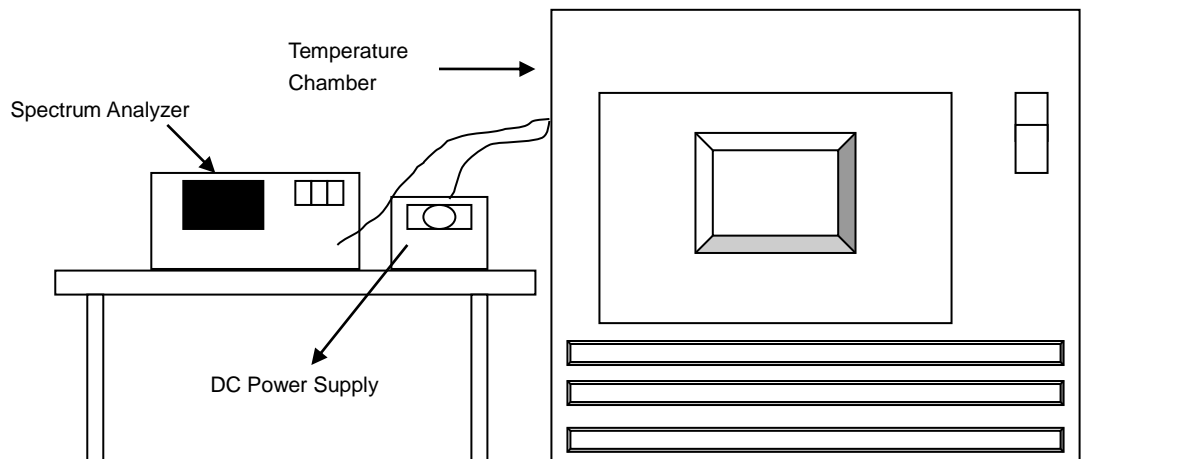


4.6 Frequency Stability Measurement

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 DC 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 (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
70	3.7	5180.0122	PASS	5180.0088	PASS	5180.0132	PASS	5180.0111	PASS
60	3.7	5179.9889	PASS	5179.9876	PASS	5179.9879	PASS	5179.9871	PASS
50	3.7	5180.0259	PASS	5180.024	PASS	5180.0259	PASS	5180.0221	PASS
40	3.7	5180.0142	PASS	5180.0134	PASS	5180.0128	PASS	5180.0153	PASS
30	3.7	5180.0236	PASS	5180.02	PASS	5180.0224	PASS	5180.0228	PASS
20	3.7	5180.0187	PASS	5180.0216	PASS	5180.0216	PASS	5180.021	PASS
10	3.7	5179.9947	PASS	5179.995	PASS	5179.9977	PASS	5179.9955	PASS
0	3.7	5180.014	PASS	5180.016	PASS	5180.0159	PASS	5180.0167	PASS
-10	3.7	5180.0106	PASS	5180.0115	PASS	5180.0106	PASS	5180.0112	PASS

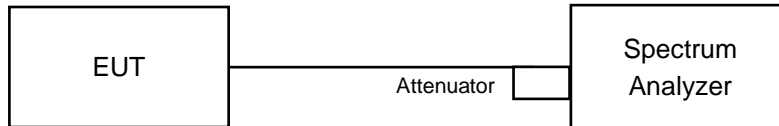
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	4.2	5180.0185	PASS	5180.0226	PASS	5180.0211	PASS	5180.0218	PASS
	3.7	5180.0187	PASS	5180.0216	PASS	5180.0216	PASS	5180.021	PASS
	3.5	5180.0186	PASS	5180.0226	PASS	5180.0224	PASS	5180.022	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
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.28	3.28	0.5	Pass
149	5745	16.42	16.42	0.5	Pass
157	5785	16.42	16.41	0.5	Pass
165	5825	16.42	16.43	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.91	3.91	0.5	Pass
149	5745	17.66	17.66	0.5	Pass
157	5785	17.63	17.63	0.5	Pass
165	5825	17.65	17.66	0.5	Pass

802.11ac (VHT40)

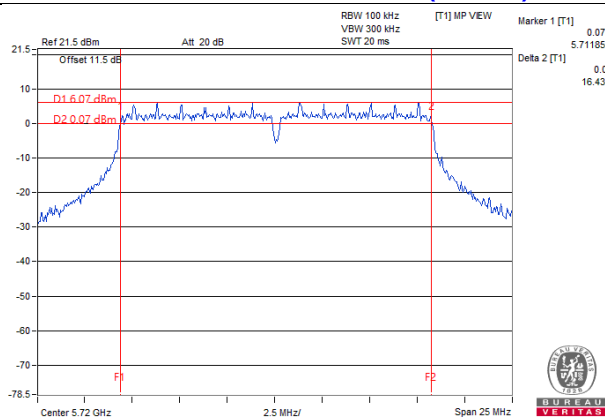
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (U-NII-3 Band)	5710	3.33	3.34	0.5	Pass
151	5755	36.49	36.49	0.5	Pass
159	5795	36.47	36.46	0.5	Pass

802.11ac (VHT80)

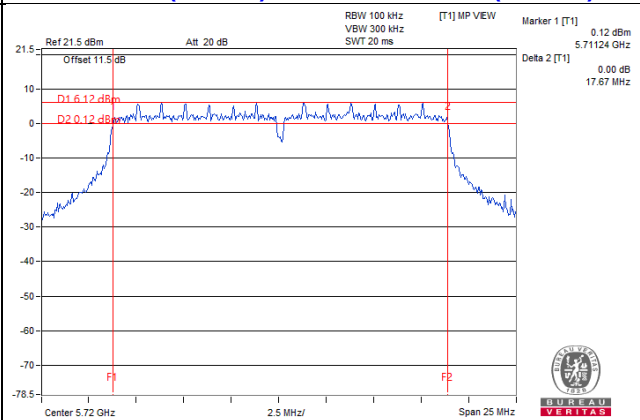
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (U-NII-3 Band)	5690	3.42	3.42	0.5	Pass
155	5775	76.65	76.23	0.5	Pass

Spectrum Plot of Worst Value

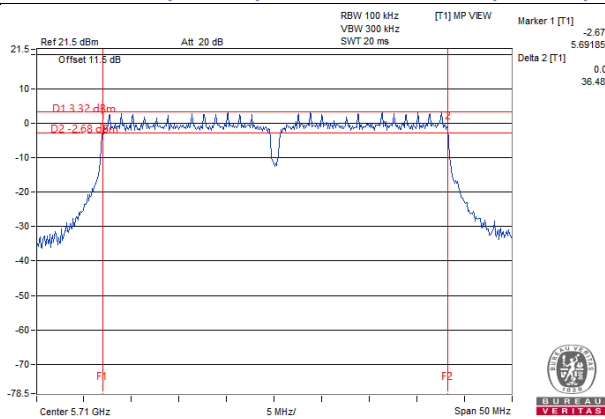
802.11a_Chain 0 / CH144 (U-NII-3)



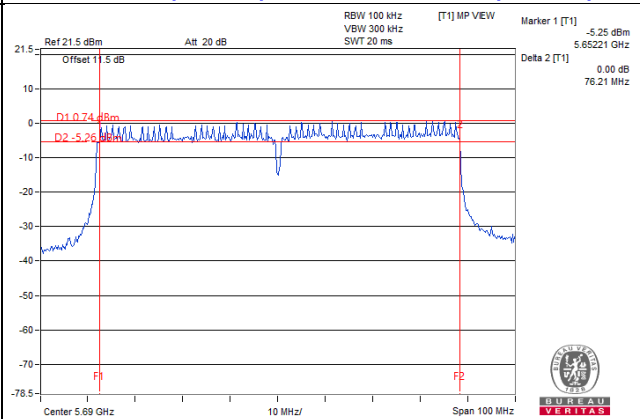
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3)



802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3)



802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3)



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

5 Pictures of Test Arrangements

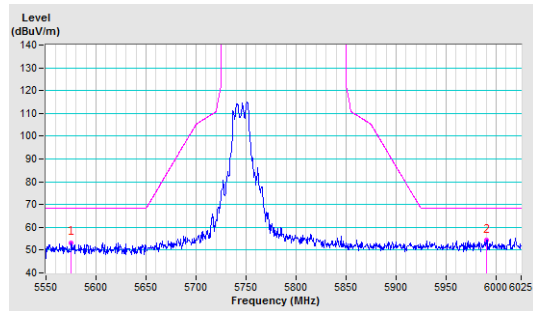
Please refer to the attached file (Test Setup Photo).

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

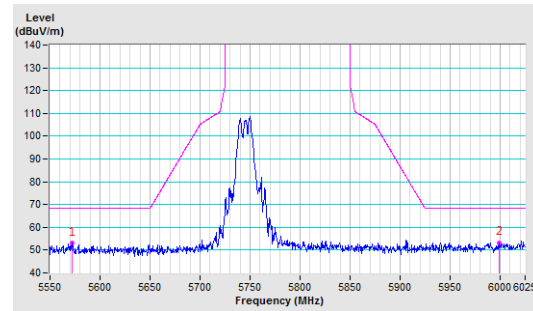
802.11a

CH 149 5745 MHz

Horizontal

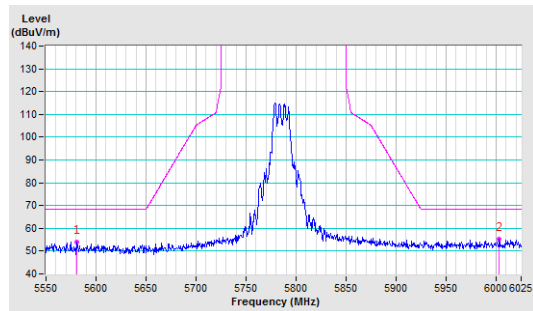


Vertical

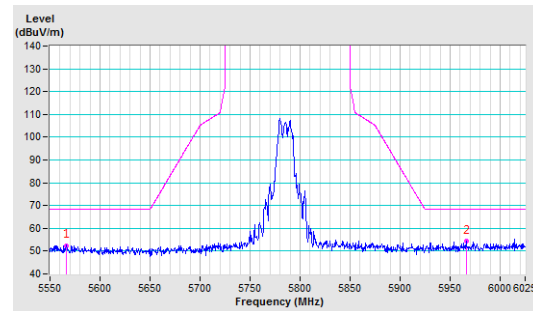


CH 157 5785 MHz

Horizontal

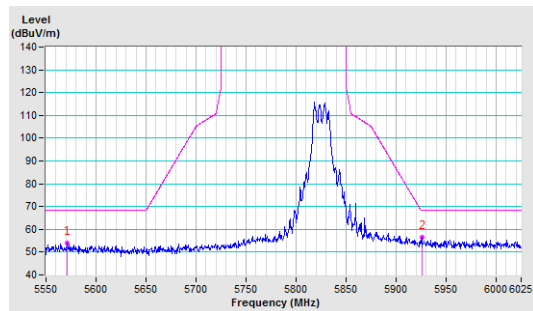


Vertical

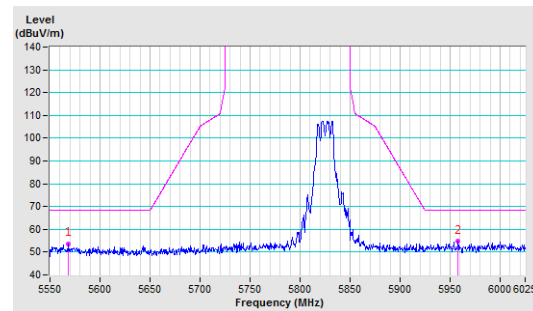


CH 165 5825 MHz

Horizontal



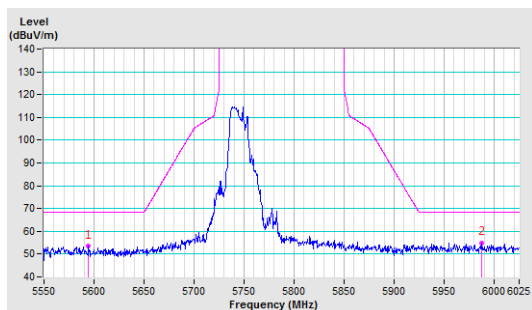
Vertical



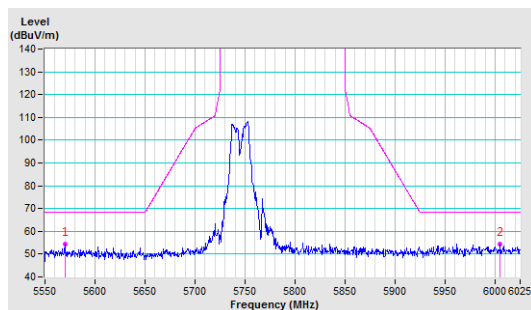
802.11ac (VHT20)

CH 149 5745 MHz

Horizontal

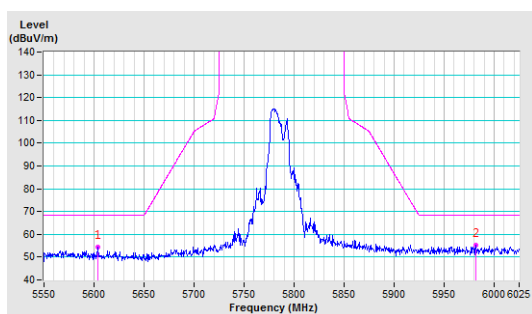


Vertical

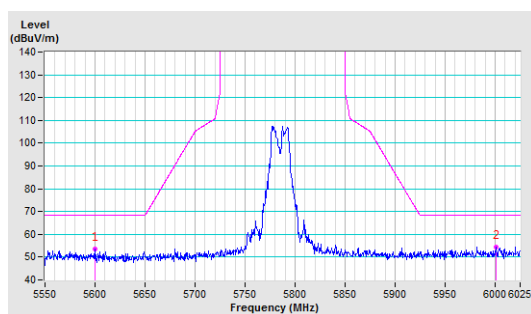


CH 157 5785 MHz

Horizontal

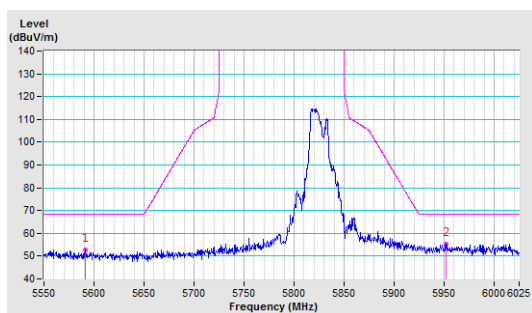


Vertical

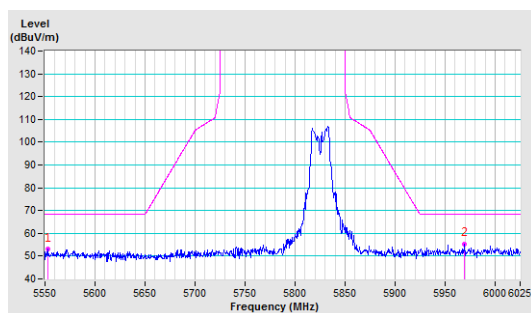


CH 165 5825 MHz

Horizontal



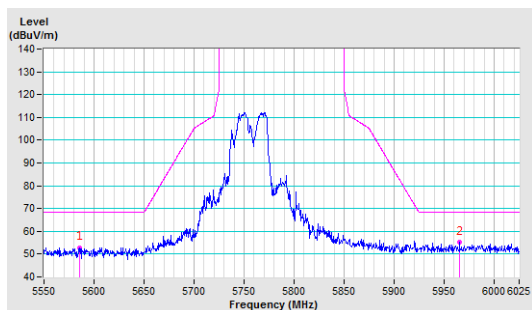
Vertical



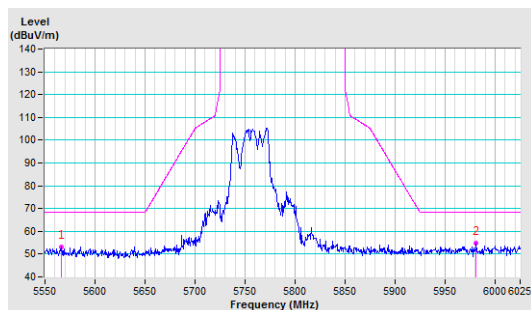
802.11ac (VHT40)

CH 151 5755 MHz

Horizontal

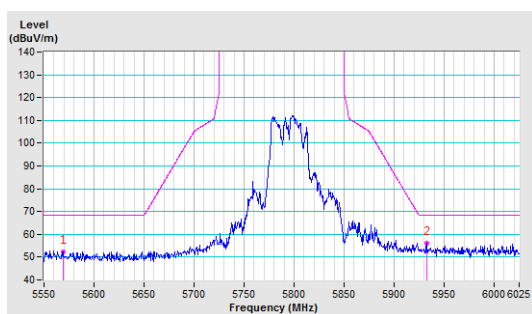


Vertical

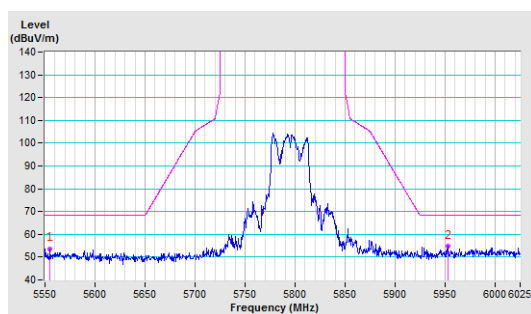


CH 159 5795 MHz

Horizontal



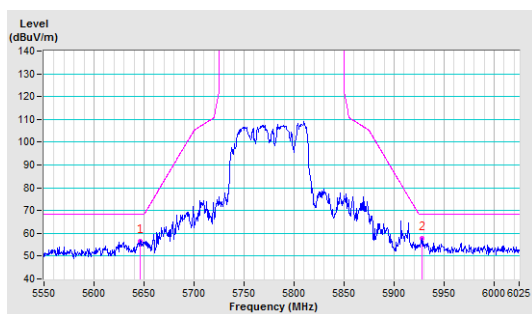
Vertical



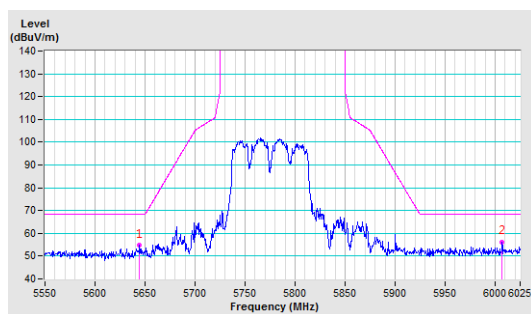
802.11ac (VHT80)

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:

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Web Site: www.bureauveritas-adt.com

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

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