

FCC Test Report (WLAN)

Report No.: RF171130C28-1

FCC ID: HD5-CN80L0N

Test Model: CN80L0N

Received Date: Dec. 04, 2017

Test Date: Jan. 13 to 25, 2018

Issued Date: Feb. 23, 2018

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



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Release Control Record

Issue No.	Description	Date Issued
RF171130C28-1	Original release.	Feb. 23, 2018

1 Certificate of Conformity

Product: Dolphin CN80

Brand: Honeywell

Test Model: CN80L0N

Sample Status: ENGINEERING SAMPLE

Applicant: Honeywell International Inc.

Test Date: Jan. 13 to 25, 2018

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 : Mary Ko, **Date:** Feb. 23, 2018
Mary Ko / Specialist

Approved by : May Chen, **Date:** Feb. 23, 2018
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	NA	Without AC power port of the EUT.
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 -2.3dB at 5150.00MHz.
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 POGO pin 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.

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) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.53 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.08 dB
	6GHz ~ 18GHz	4.98 dB
	18GHz ~ 40GHz	5.19 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	Dolphin CN80
Brand	Honeywell
Test Model	CN80L0N
Status of EUT	ENGINEERING SAMPLE
HW Version	Rev 1.1
HW P/N	DVT1
SW Version	351D
SW P/N	351D
Power Supply Rating	3.85Vdc from battery
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	2.4GHz: 403.711mW 5GHz: 5.18 ~ 5.24GHz: 52.558mW 5.26 ~ 5.32GHz: 52.889mW 5.50 ~ 5.72GHz: 85.088mW 5.745 ~ 5.825GHz: 84.701mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Battery x 1 Touch pen x 1
Data Cable Supplied	NA

Note:

- All Scanners are listed as below.

Item	Model	Difference
Scanner	EX20	20.53 mm (L) x 7.8 mm (W) x 3.97 mm (H) (8.08 in x 3.07 in x 1.56 in) Weight: 500 grams (17.6 oz) with battery pack
	N6603ER	20.4 mm (L) x 7.8 mm (W) x 3.32 mm (H) (8.03 in x 3.07 in x 1.31 in) Weight: 550 grams (19.4 oz) with battery pack

* All scanners are appearance and size different.

2. There are WLAN, Bluetooth, Zigbee and NFC technology used for the EUT. The EUT has three radios as following table:

Radio 1	Radio 2	Radio 3
WLAN+BT 1	Zigbee+BT 2	NFC

Note: For Bluetooth technology the Radio 1 support BT 5.0 dual mode, the Radio 2 support BT-LE (4.2) single mode only

3. There're 4 configurations for the EUT listed as below.

Sample A: Short K/B-number + Scanner (EX20)

Sample B: Short K/B-Qwety + Scanner (EX20)

Sample C: Short K/B-number + Scanner (N6603ER)

Sample D: Short K/B-Qwenty + Scanner (N6603ER)

From the above samples, the worst cases were found in **Sample C**. Therefore only the test data of the mode was recorded in this report.

4. Simultaneously transmission condition.

Condition	Technology		
1	WLAN 2.4GHz	NFC	Zigbee
2	WLAN 5GHz	NFC	Zigbee
3	Bluetooth	NFC	Zigbee

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

5. The EUT needs to be supplied from battery, the information is as below table:

Brand	Model No.	Spec.
Inventus Power, Inc. / Honeywell	CW-BAT	3.85Vdc, 5800mAh, 22.3Wh

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

Radio 1					
WLAN Antenna Spec. / Bluetooth Antenna No. 1 Spec.					
Chain No.	Antenna Gain include trace loss and cable loss (dBi)	Frequency range (GHz)	Antenna type	Connector type	Trace loss and cable loss (dB)
Chain 0	-0.38	2.4~2.4835	PIFA	POGO pin	1.6
	-0.39	5.15~5.25			3
	-0.39	5.25~5.35			
	-0.39	5.47~5.725			
	-0.39	5.725~5.85			
Chain 1	3.36	2.4~2.4835	PIFA	POGO pin	0.6
	3.46	5.15~5.25			1.2
	3.46	5.25~5.35			
	3.46	5.47~5.725			
	3.46	5.725~5.85			
Radio 2					
Bluetooth Antenna No. 2 Spec. / Zigbee Antenna Spec.					
Antenna Gain include trace loss (dBi)	Frequency range (GHz)	Antenna type	Connector type	Trace loss (dB)	
-0.03	2.4~2.4835	PIFA	POGO pin	0.8	
Radio 3					
NFC Antenna Spec.					
Frequency range (MHz)		Antenna type		Connector type	
13~14		Loop		NA	

7. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS0~8 Nss=1	2TX	2RX
	MCS0~8 Nss=2	2TX	2RX
802.11ac (VHT40)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX
802.11ac (VHT80)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 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 ~ 5720MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	-	√	-

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

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: 1. No need to concern of Conducted Emission due to the EUT is powered by battery.

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

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

- ☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	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, 122, 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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5240	38 to 46	134	OFDM	BPSK	13.5
	5745-5825	54 to 62				
	5500-5720	102 to 142				
	5745-5825	151 to 159				

Antenna Port Conducted Measurement:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (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	5500-5720	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, 122, 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

Test Condition:

Applicable To	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	26deg. C, 70%RH	120Vac, 60Hz	Weiwei Lo
RE<1G	24deg. C, 68%RH	120Vac, 60Hz	Weiwei Lo
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

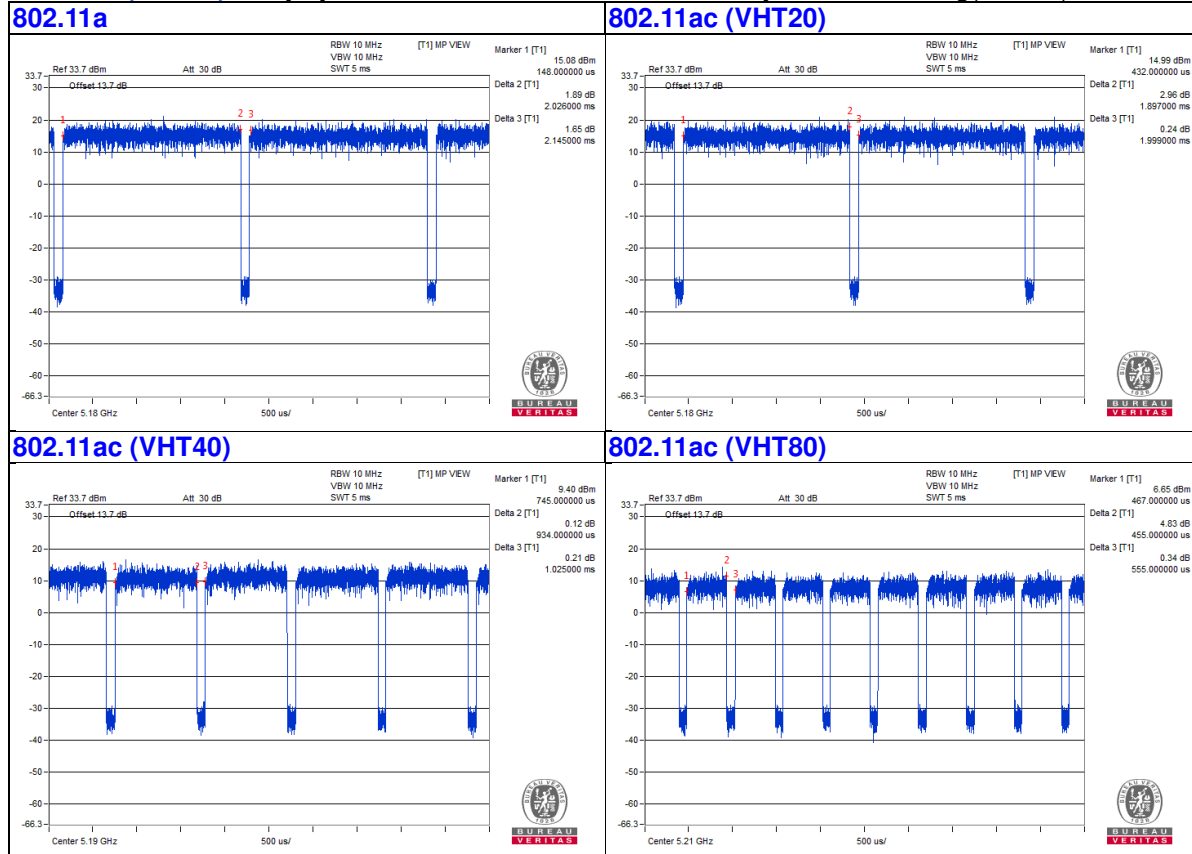
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.026 ms/2.145 ms = 0.945, Duty factor = $10 * \log(1/0.945) = 0.25$

802.11ac (VHT20): Duty cycle = 1.897 ms/1.999 ms = 0.949, Duty factor = $10 * \log(1/0.949) = 0.23$

802.11ac (VHT40): Duty cycle = 0.934 ms/1.025 ms = 0.911, Duty factor = $10 * \log(1/0.911) = 0.4$

802.11ac (VHT80): Duty cycle = 0.455 ms/0.555 ms = 0.82, Duty factor = $10 * \log(1/0.82) = 0.86$

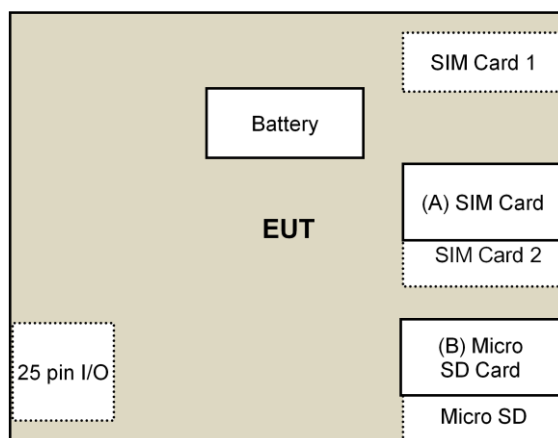


3.4 Description of Support Units

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.	SIM Card	NA	NA	NA	NA	Supplied by client
B.	SD Card	NA	NA	NA	NA	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
Loop Antenna ^(*) TESEQ	HLA 6121	45745	May 19, 2017	May 18, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 09, 2017	Nov. 08, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 03, 2017	Oct. 02, 2018
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980385	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Pre-Amplifier EMCI	EMC184045SE	980387	Feb. 02, 2017	Feb. 01, 2018
Horn Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 11, 2018	Jan. 10, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSV40	100964	July 1, 2017	June 30, 2018
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 10, 2018	Jan. 09, 2019
DC Power Supply Topward	6603D	795558	NA	NA
True RMS Clamp Meter FLUKE	325	31130711WS	May 29, 2017	May 28, 2018

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. Loop antenna was used for all emissions below 30 MHz.
5. The CANADA Site Registration No. is 20331-1
6. Tested Date: Jan. 13 to 25, 2018

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

NOTE:

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

For Radiated emission above 30MHz

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

Note:

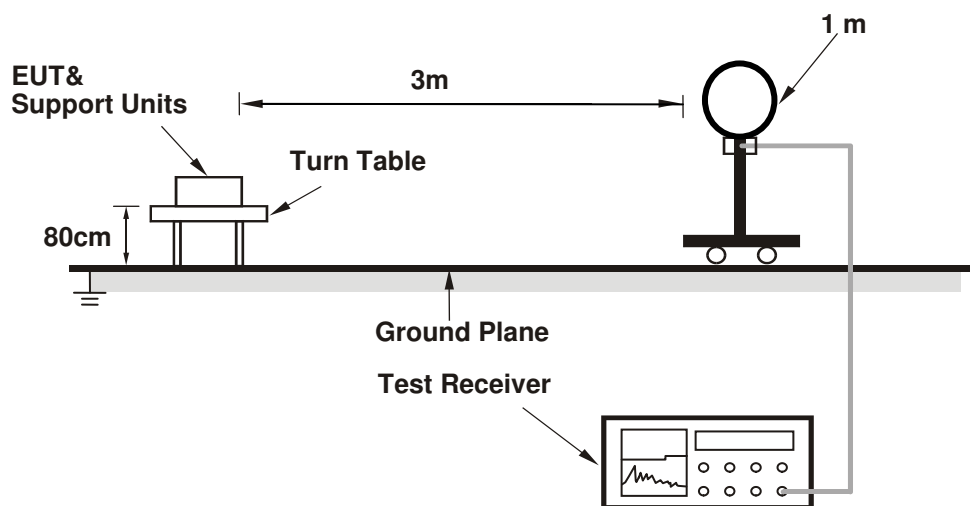
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

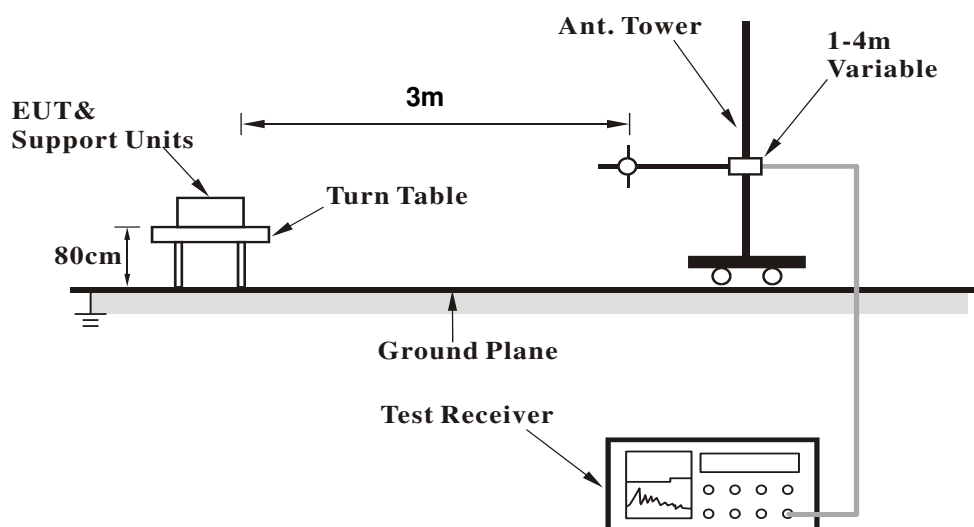
No deviation.

4.1.5 Test Setup

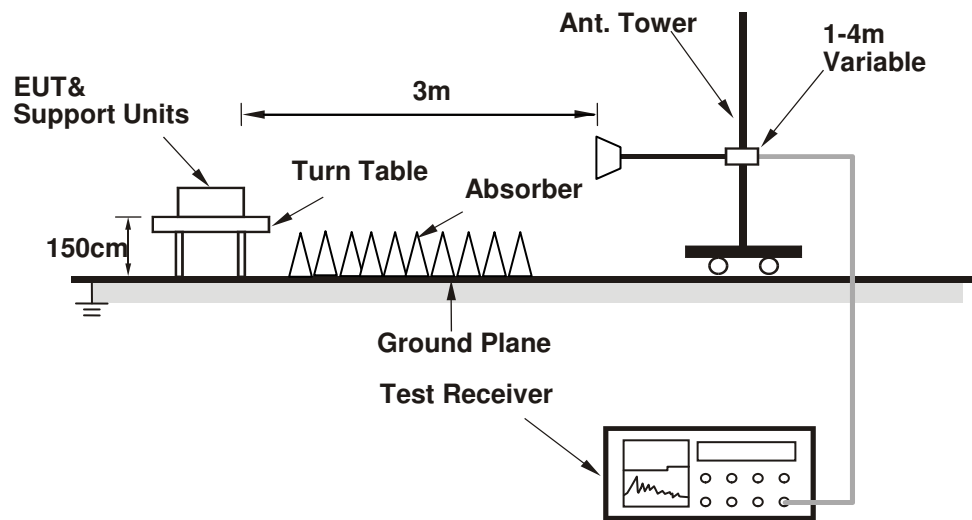
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- Placed the EUT on the testing table.
- Controlling software (QRCT.exe V3.0.268.0) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.0 PK	74.0	-14.0	1.26 H	257	56.0	4.0
2	5150.00	47.9 AV	54.0	-6.1	1.26 H	257	43.9	4.0
3	*5180.00	106.1 PK			1.26 H	257	102.2	3.9
4	*5180.00	97.2 AV			1.26 H	257	93.3	3.9
5	#10360.00	45.5 PK	74.0	-28.5	1.65 H	140	32.8	12.7
6	#10360.00	34.3 AV	54.0	-19.7	1.65 H	140	21.6	12.7
7	15540.00	47.9 PK	74.0	-26.1	1.81 H	233	35.0	12.9
8	15540.00	35.8 AV	54.0	-18.2	1.81 H	233	22.9	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	65.5 PK	74.0	-8.5	2.42 V	103	61.5	4.0
2	5150.00	49.6 AV	54.0	-4.4	2.42 V	103	45.6	4.0
3	*5180.00	107.0 PK			2.42 V	103	103.1	3.9
4	*5180.00	101.0 AV			2.42 V	103	97.1	3.9
5	#10360.00	45.7 PK	74.0	-28.3	1.66 V	360	33.0	12.7
6	#10360.00	34.7 AV	54.0	-19.3	1.66 V	360	22.0	12.7
7	15540.00	47.0 PK	74.0	-27.0	1.77 V	265	34.1	12.9
8	15540.00	35.2 AV	54.0	-18.8	1.77 V	265	22.3	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.6 PK	74.0	-22.4	1.06 H	251	47.6	4.0
2	5150.00	39.6 AV	54.0	-14.4	1.06 H	251	35.6	4.0
3	*5200.00	106.5 PK			1.06 H	251	102.7	3.8
4	*5200.00	97.7 AV			1.06 H	251	93.9	3.8
5	5350.00	46.0 PK	74.0	-28.0	1.06 H	251	42.2	3.8
6	5350.00	36.4 AV	54.0	-17.6	1.06 H	251	32.6	3.8
7	#10400.00	46.3 PK	74.0	-27.7	1.68 H	161	33.6	12.7
8	#10400.00	34.9 AV	54.0	-19.1	1.68 H	161	22.2	12.7
9	15600.00	47.4 PK	74.0	-26.6	1.85 H	228	34.3	13.1
10	15600.00	35.3 AV	54.0	-18.7	1.85 H	228	22.2	13.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	2.54 V	103	53.8	4.0
2	5150.00	41.8 AV	54.0	-12.2	2.54 V	103	37.8	4.0
3	*5200.00	108.1 PK			2.54 V	103	104.3	3.8
4	*5200.00	102.1 AV			2.54 V	103	98.3	3.8
5	5350.00	51.5 PK	74.0	-22.5	2.54 V	103	47.7	3.8
6	5350.00	38.2 AV	54.0	-15.8	2.54 V	103	34.4	3.8
7	#10400.00	45.8 PK	74.0	-28.2	1.60 V	360	33.1	12.7
8	#10400.00	35.2 AV	54.0	-18.8	1.60 V	360	22.5	12.7
9	15600.00	47.6 PK	74.0	-26.4	1.77 V	250	34.5	13.1
10	15600.00	35.6 AV	54.0	-18.4	1.77 V	250	22.5	13.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	108.1 PK			1.11 H	289	104.4	3.7
2	*5240.00	99.8 AV			1.11 H	289	96.1	3.7
3	5350.00	53.6 PK	74.0	-20.4	1.11 H	289	49.8	3.8
4	5350.00	38.0 AV	54.0	-16.0	1.11 H	289	34.2	3.8
5	#10480.00	45.9 PK	74.0	-28.1	1.65 H	155	32.6	13.3
6	#10480.00	34.6 AV	54.0	-19.4	1.65 H	155	21.3	13.3
7	15720.00	47.5 PK	74.0	-26.5	1.87 H	233	34.3	13.2
8	15720.00	35.6 AV	54.0	-18.4	1.87 H	233	22.4	13.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.3 PK			2.50 V	100	105.6	3.7
2	*5240.00	103.6 AV			2.50 V	100	99.9	3.7
3	5350.00	58.8 PK	74.0	-15.2	2.50 V	100	55.0	3.8
4	5350.00	39.6 AV	54.0	-14.4	2.50 V	100	35.8	3.8
5	#10480.00	45.6 PK	74.0	-28.4	1.66 V	354	32.3	13.3
6	#10480.00	34.7 AV	54.0	-19.3	1.66 V	354	21.4	13.3
7	15720.00	47.2 PK	74.0	-26.8	1.77 V	261	34.0	13.2
8	15720.00	35.4 AV	54.0	-18.6	1.77 V	261	22.2	13.2

REMARKS:

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

CHANNEL	TX Channel 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	44.0 PK	74.0	-30.0	1.19 H	266	40.0	4.0
2	5150.00	36.1 AV	54.0	-17.9	1.19 H	266	32.1	4.0
3	*5260.00	106.3 PK			1.19 H	266	102.6	3.7
4	*5260.00	99.0 AV			1.19 H	266	95.3	3.7
5	#10520.00	45.9 PK	74.0	-28.1	1.66 H	163	32.5	13.4
6	#10520.00	34.4 AV	54.0	-19.6	1.66 H	163	21.0	13.4
7	15780.00	46.9 PK	74.0	-27.1	1.84 H	221	33.8	13.1
8	15780.00	35.2 AV	54.0	-18.8	1.84 H	221	22.1	13.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.3 PK	74.0	-24.7	2.66 V	100	45.3	4.0
2	5150.00	37.7 AV	54.0	-16.3	2.66 V	100	33.7	4.0
3	*5260.00	107.9 PK			2.66 V	100	104.2	3.7
4	*5260.00	103.4 AV			2.66 V	100	99.7	3.7
5	#10520.00	45.5 PK	74.0	-28.5	1.63 V	343	32.1	13.4
6	#10520.00	34.6 AV	54.0	-19.4	1.63 V	343	21.2	13.4
7	15780.00	46.9 PK	74.0	-27.1	1.72 V	263	33.8	13.1
8	15780.00	35.0 AV	54.0	-19.0	1.72 V	263	21.9	13.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	108.7 PK			1.05 H	272	104.9	3.8
2	*5300.00	99.1 AV			1.05 H	272	95.3	3.8
3	10600.00	45.6 PK	74.0	-28.4	1.63 H	167	32.5	13.1
4	10600.00	34.5 AV	54.0	-19.5	1.63 H	167	21.4	13.1
5	15900.00	47.2 PK	74.0	-26.8	1.86 H	238	34.8	12.4
6	15900.00	35.5 AV	54.0	-18.5	1.86 H	238	23.1	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	*5300.00	109.9 PK			2.68 V	103	106.1	3.8
2	*5300.00	103.2 AV			2.68 V	103	99.4	3.8
3	10600.00	45.9 PK	74.0	-28.1	1.64 V	340	32.8	13.1
4	10600.00	34.8 AV	54.0	-19.2	1.64 V	340	21.7	13.1
5	15900.00	47.9 PK	74.0	-26.1	1.73 V	254	35.5	12.4
6	15900.00	35.9 AV	54.0	-18.1	1.73 V	254	23.5	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.0 PK			1.13 H	269	103.1	3.9
2	*5320.00	97.8 AV			1.13 H	269	93.9	3.9
3	5350.00	58.8 PK	74.0	-15.2	1.13 H	269	55.0	3.8
4	5350.00	44.2 AV	54.0	-9.8	1.13 H	269	40.4	3.8
5	10640.00	46.1 PK	74.0	-27.9	1.60 H	154	32.9	13.2
6	10640.00	34.6 AV	54.0	-19.4	1.60 H	154	21.4	13.2
7	15960.00	47.1 PK	74.0	-26.9	1.85 H	220	34.6	12.5
8	15960.00	35.2 AV	54.0	-18.8	1.85 H	220	22.7	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	*5320.00	108.6 PK			2.65 V	103	104.7	3.9
2	*5320.00	101.8 AV			2.65 V	103	97.9	3.9
3	5350.00	64.6 PK	74.0	-9.4	2.65 V	103	60.8	3.8
4	5350.00	46.2 AV	54.0	-7.8	2.65 V	103	42.4	3.8
5	10640.00	45.7 PK	74.0	-28.3	1.63 V	345	32.5	13.2
6	10640.00	35.0 AV	54.0	-19.0	1.63 V	345	21.8	13.2
7	15960.00	46.7 PK	74.0	-27.3	1.77 V	272	34.2	12.5
8	15960.00	34.9 AV	54.0	-19.1	1.77 V	272	22.4	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	63.9 PK	74.0	-10.1	1.13 H	269	59.9	4.0
2	#5470.00	48.6 AV	54.0	-5.4	1.13 H	269	44.6	4.0
3	*5500.00	105.1 PK			1.13 H	269	101.1	4.0
4	*5500.00	96.8 AV			1.13 H	269	92.8	4.0
5	11000.00	45.7 PK	74.0	-28.3	1.65 H	156	32.5	13.2
6	11000.00	34.3 AV	54.0	-19.7	1.65 H	156	21.1	13.2
7	#16500.00	48.0 PK	74.0	-26.0	1.88 H	246	33.8	14.2
8	#16500.00	36.0 AV	54.0	-18.0	1.88 H	246	21.8	14.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	70.2 PK	74.0	-3.8	2.63 V	103	66.2	4.0
2	#5470.00	51.0 AV	54.0	-3.0	2.63 V	103	47.0	4.0
3	*5500.00	106.2 PK			2.63 V	103	102.2	4.0
4	*5500.00	100.5 AV			2.63 V	103	96.5	4.0
5	11000.00	45.3 PK	74.0	-28.7	1.64 V	346	32.1	13.2
6	11000.00	34.5 AV	54.0	-19.5	1.64 V	346	21.3	13.2
7	#16500.00	47.6 PK	74.0	-26.4	1.82 V	264	33.4	14.2
8	#16500.00	35.9 AV	54.0	-18.1	1.82 V	264	21.7	14.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.4 PK			1.05 H	267	102.3	4.1
2	*5580.00	97.3 AV			1.05 H	267	93.2	4.1
3	11160.00	45.7 PK	74.0	-28.3	1.62 H	170	32.5	13.2
4	11160.00	34.5 AV	54.0	-19.5	1.62 H	170	21.3	13.2
5	#16740.00	47.7 PK	74.0	-26.3	1.84 H	249	32.3	15.4
6	#16740.00	36.0 AV	54.0	-18.0	1.84 H	249	20.6	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	107.7 PK			2.69 V	112	103.6	4.1
2	*5580.00	101.5 AV			2.69 V	112	97.4	4.1
3	11160.00	45.5 PK	74.0	-28.5	1.67 V	354	32.3	13.2
4	11160.00	34.4 AV	54.0	-19.6	1.67 V	354	21.2	13.2
5	#16740.00	47.8 PK	74.0	-26.2	1.73 V	247	32.4	15.4
6	#16740.00	35.7 AV	54.0	-18.3	1.73 V	247	20.3	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.2 PK			1.17 H	266	100.0	4.2
2	*5700.00	96.7 AV			1.17 H	266	92.5	4.2
3	#5725.00	60.1 PK	74.0	-13.9	1.17 H	266	55.9	4.2
4	#5725.00	48.0 AV	54.0	-6.0	1.17 H	266	43.8	4.2
5	11400.00	46.2 PK	74.0	-27.8	1.61 H	141	32.3	13.9
6	11400.00	34.7 AV	54.0	-19.3	1.61 H	141	20.8	13.9
7	#17100.00	47.2 PK	74.0	-26.8	1.86 H	248	30.6	16.6
8	#17100.00	35.1 AV	54.0	-18.9	1.86 H	248	18.5	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	*5700.00	105.0 PK			2.77 V	110	100.8	4.2
2	*5700.00	100.4 AV			2.77 V	110	96.2	4.2
3	#5725.00	65.5 PK	74.0	-8.5	2.77 V	110	61.3	4.2
4	#5725.00	49.7 AV	54.0	-4.3	2.77 V	110	45.5	4.2
5	11400.00	45.0 PK	74.0	-29.0	1.72 V	360	31.1	13.9
6	11400.00	34.3 AV	54.0	-19.7	1.72 V	360	20.4	13.9
7	#17100.00	47.6 PK	74.0	-26.4	1.74 V	276	31.0	16.6
8	#17100.00	35.7 AV	54.0	-18.3	1.74 V	276	19.1	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	45.3 PK	74.0	-28.7	1.20 H	273	41.3	4.0
2	#5470.00	36.2 AV	54.0	-17.8	1.20 H	273	32.2	4.0
3	*5720.00	103.4 PK			1.20 H	273	99.2	4.2
4	*5720.00	95.8 AV			1.20 H	273	91.6	4.2
5	#5850.00	44.2 PK	74.0	-29.8	1.20 H	273	39.6	4.6
6	#5850.00	37.0 AV	54.0	-17.0	1.20 H	273	32.4	4.6
7	11440.00	46.0 PK	74.0	-28.0	1.61 H	142	32.2	13.8
8	11440.00	34.6 AV	54.0	-19.4	1.61 H	142	20.8	13.8
9	#17160.00	47.3 PK	74.0	-26.7	1.81 H	234	30.9	16.4
10	#17160.00	35.5 AV	54.0	-18.5	1.81 H	234	19.1	16.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	50.6 PK	74.0	-23.4	2.78 V	109	46.6	4.0
2	#5470.00	37.9 AV	54.0	-16.1	2.78 V	109	33.9	4.0
3	*5720.00	104.8 PK			2.78 V	109	100.6	4.2
4	*5720.00	100.1 AV			2.78 V	109	95.9	4.2
5	#5850.00	50.2 PK	74.0	-23.8	2.78 V	109	45.6	4.6
6	#5850.00	38.9 AV	54.0	-15.1	2.78 V	109	34.3	4.6
7	11440.00	45.7 PK	74.0	-28.3	1.67 V	339	31.9	13.8
8	11440.00	35.0 AV	54.0	-19.0	1.67 V	339	21.2	13.8
9	#17160.00	47.8 PK	74.0	-26.2	1.75 V	272	31.4	16.4
10	#17160.00	35.8 AV	54.0	-18.2	1.75 V	272	19.4	16.4

REMARKS:

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

CHANNEL	TX Channel 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	*5745.00	105.1 PK			2.66 H	128	100.9	4.2
2	*5745.00	96.5 AV			2.66 H	128	92.3	4.2
3	11490.00	47.2 PK	74.0	-26.8	1.57 H	133	33.4	13.8
4	11490.00	35.2 AV	54.0	-18.8	1.57 H	133	21.4	13.8
5	#17235.00	50.9 PK	74.0	-23.1	1.69 H	211	34.6	16.3
6	#17235.00	38.8 AV	54.0	-15.2	1.69 H	211	22.5	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	*5745.00	110.4 PK			2.64 V	58	106.2	4.2
2	*5745.00	102.0 AV			2.64 V	58	97.8	4.2
3	11490.00	47.3 PK	74.0	-26.7	1.66 V	287	33.5	13.8
4	11490.00	35.3 AV	54.0	-18.7	1.66 V	287	21.5	13.8
5	#17235.00	51.2 PK	74.0	-22.8	1.98 V	156	34.9	16.3
6	#17235.00	38.9 AV	54.0	-15.1	1.98 V	156	22.6	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	105.0 PK			2.66 H	128	100.7	4.3
2	*5785.00	96.7 AV			2.66 H	128	92.4	4.3
3	11570.00	47.4 PK	74.0	-26.6	1.59 H	138	33.5	13.9
4	11570.00	35.6 AV	54.0	-18.4	1.59 H	138	21.7	13.9
5	#17355.00	51.3 PK	74.0	-22.7	1.68 H	219	34.1	17.2
6	#17355.00	39.1 AV	54.0	-14.9	1.68 H	219	21.9	17.2
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	*5785.00	109.3 PK			2.52 V	54	105.0	4.3
2	*5785.00	100.4 AV			2.52 V	54	96.1	4.3
3	11570.00	48.0 PK	74.0	-26.0	1.45 V	86	34.1	13.9
4	11570.00	36.7 AV	54.0	-17.3	1.45 V	86	22.8	13.9
5	#17355.00	51.0 PK	74.0	-23.0	1.45 V	308	33.8	17.2
6	#17355.00	39.3 AV	54.0	-14.7	1.45 V	308	22.1	17.2

REMARKS:

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

CHANNEL	TX Channel 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	*5825.00	104.4 PK			2.68 H	131	99.9	4.5
2	*5825.00	96.3 AV			2.68 H	131	91.8	4.5
3	11650.00	46.8 PK	74.0	-27.2	1.61 H	135	33.1	13.7
4	11650.00	34.9 AV	54.0	-19.1	1.61 H	135	21.2	13.7
5	#17475.00	50.7 PK	74.0	-23.3	1.63 H	211	32.6	18.1
6	#17475.00	38.7 AV	54.0	-15.3	1.63 H	211	20.6	18.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.2 PK			2.55 V	58	105.7	4.5
2	*5825.00	101.3 AV			2.55 V	58	96.8	4.5
3	11650.00	46.9 PK	74.0	-27.1	1.48 V	95	33.2	13.7
4	11650.00	35.9 AV	54.0	-18.1	1.48 V	95	22.2	13.7
5	#17475.00	50.6 PK	74.0	-23.4	1.45 V	299	32.5	18.1
6	#17475.00	39.4 AV	54.0	-14.6	1.45 V	299	21.3	18.1

REMARKS:

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

802.11ac (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	57.4 PK	74.0	-16.6	1.10 H	268	53.4	4.0
2	5150.00	48.5 AV	54.0	-5.5	1.10 H	268	44.5	4.0
3	*5180.00	105.4 PK			1.10 H	268	101.5	3.9
4	*5180.00	97.7 AV			1.10 H	268	93.8	3.9
5	#10360.00	46.2 PK	74.0	-27.8	1.64 H	157	33.5	12.7
6	#10360.00	34.6 AV	54.0	-19.4	1.64 H	157	21.9	12.7
7	15540.00	48.2 PK	74.0	-25.8	1.88 H	242	35.3	12.9
8	15540.00	36.1 AV	54.0	-17.9	1.88 H	242	23.2	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	63.8 PK	74.0	-10.2	2.65 V	288	59.8	4.0
2	5150.00	50.9 AV	54.0	-3.1	2.65 V	288	46.9	4.0
3	*5180.00	107.0 PK			2.65 V	288	103.1	3.9
4	*5180.00	101.8 AV			2.65 V	288	97.9	3.9
5	#10360.00	45.3 PK	74.0	-28.7	1.63 V	346	32.6	12.7
6	#10360.00	34.2 AV	54.0	-19.8	1.63 V	346	21.5	12.7
7	15540.00	46.6 PK	74.0	-27.4	1.76 V	245	33.7	12.9
8	15540.00	35.0 AV	54.0	-19.0	1.76 V	245	22.1	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.3 PK	74.0	-21.7	1.12 H	243	48.3	4.0
2	5150.00	41.3 AV	54.0	-12.7	1.12 H	243	37.3	4.0
3	*5200.00	107.0 PK			1.12 H	243	103.2	3.8
4	*5200.00	98.6 AV			1.12 H	243	94.8	3.8
5	5350.00	44.8 PK	74.0	-29.2	1.12 H	243	41.0	3.8
6	5350.00	36.4 AV	54.0	-17.6	1.12 H	243	32.6	3.8
7	#10400.00	45.8 PK	74.0	-28.2	1.63 H	148	33.1	12.7
8	#10400.00	34.7 AV	54.0	-19.3	1.63 H	148	22.0	12.7
9	15600.00	47.0 PK	74.0	-27.0	1.92 H	233	33.9	13.1
10	15600.00	35.4 AV	54.0	-18.6	1.92 H	233	22.3	13.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.2 PK	74.0	-15.8	2.64 V	295	54.2	4.0
2	5150.00	43.2 AV	54.0	-10.8	2.64 V	295	39.2	4.0
3	*5200.00	107.8 PK			2.64 V	295	104.0	3.8
4	*5200.00	102.3 AV			2.64 V	295	98.5	3.8
5	5350.00	50.6 PK	74.0	-23.4	2.64 V	295	46.8	3.8
6	5350.00	38.6 AV	54.0	-15.4	2.64 V	295	34.8	3.8
7	#10400.00	45.6 PK	74.0	-28.4	1.69 V	360	32.9	12.7
8	#10400.00	34.5 AV	54.0	-19.5	1.69 V	360	21.8	12.7
9	15600.00	47.0 PK	74.0	-27.0	1.77 V	256	33.9	13.1
10	15600.00	35.3 AV	54.0	-18.7	1.77 V	256	22.2	13.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.2 PK			1.21 H	260	103.5	3.7
2	*5240.00	98.5 AV			1.21 H	260	94.8	3.7
3	5350.00	46.7 PK	74.0	-27.3	1.21 H	260	42.9	3.8
4	5350.00	38.1 AV	54.0	-15.9	1.21 H	260	34.3	3.8
5	#10480.00	46.4 PK	74.0	-27.6	1.66 H	169	33.1	13.3
6	#10480.00	34.8 AV	54.0	-19.2	1.66 H	169	21.5	13.3
7	15720.00	47.5 PK	74.0	-26.5	1.90 H	219	34.3	13.2
8	15720.00	35.4 AV	54.0	-18.6	1.90 H	219	22.2	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	*5240.00	108.2 PK			2.65 V	291	104.5	3.7
2	*5240.00	102.4 AV			2.65 V	291	98.7	3.7
3	5350.00	51.8 PK	74.0	-22.2	2.65 V	291	48.0	3.8
4	5350.00	39.6 AV	54.0	-14.4	2.65 V	291	35.8	3.8
5	#10480.00	45.5 PK	74.0	-28.5	1.66 V	359	32.2	13.3
6	#10480.00	34.7 AV	54.0	-19.3	1.66 V	359	21.4	13.3
7	15720.00	46.7 PK	74.0	-27.3	1.78 V	272	33.5	13.2
8	15720.00	35.0 AV	54.0	-19.0	1.78 V	272	21.8	13.2

REMARKS:

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

CHANNEL	TX Channel 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	43.1 PK	74.0	-30.9	1.12 H	269	39.1	4.0
2	5150.00	35.6 AV	54.0	-18.4	1.12 H	269	31.6	4.0
3	*5260.00	107.3 PK			1.12 H	269	103.6	3.7
4	*5260.00	98.9 AV			1.12 H	269	95.2	3.7
5	#10520.00	45.9 PK	74.0	-28.1	1.69 H	151	32.5	13.4
6	#10520.00	34.3 AV	54.0	-19.7	1.69 H	151	20.9	13.4
7	15780.00	47.9 PK	74.0	-26.1	1.81 H	239	34.8	13.1
8	15780.00	35.9 AV	54.0	-18.1	1.81 H	239	22.8	13.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.6 PK	74.0	-25.4	2.64 V	291	44.6	4.0
2	5150.00	37.5 AV	54.0	-16.5	2.64 V	291	33.5	4.0
3	*5260.00	108.2 PK			2.64 V	291	104.5	3.7
4	*5260.00	102.5 AV			2.64 V	291	98.8	3.7
5	#10520.00	45.7 PK	74.0	-28.3	1.71 V	344	32.3	13.4
6	#10520.00	34.5 AV	54.0	-19.5	1.71 V	344	21.1	13.4
7	15780.00	47.6 PK	74.0	-26.4	1.77 V	276	34.5	13.1
8	15780.00	35.7 AV	54.0	-18.3	1.77 V	276	22.6	13.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.6 PK			1.20 H	260	102.8	3.8
2	*5300.00	98.5 AV			1.20 H	260	94.7	3.8
3	10600.00	46.3 PK	74.0	-27.7	1.71 H	168	33.2	13.1
4	10600.00	34.9 AV	54.0	-19.1	1.71 H	168	21.8	13.1
5	15900.00	47.8 PK	74.0	-26.2	1.88 H	232	35.4	12.4
6	15900.00	36.0 AV	54.0	-18.0	1.88 H	232	23.6	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	*5300.00	107.7 PK			2.68 V	295	103.9	3.8
2	*5300.00	102.2 AV			2.68 V	295	98.4	3.8
3	10600.00	45.8 PK	74.0	-28.2	1.65 V	357	32.7	13.1
4	10600.00	34.8 AV	54.0	-19.2	1.65 V	357	21.7	13.1
5	15900.00	46.9 PK	74.0	-27.1	1.80 V	258	34.5	12.4
6	15900.00	35.2 AV	54.0	-18.8	1.80 V	258	22.8	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.1 PK			1.11 H	291	102.2	3.9
2	*5320.00	95.9 AV			1.11 H	291	92.0	3.9
3	5350.00	58.1 PK	74.0	-15.9	1.11 H	291	54.3	3.8
4	5350.00	43.3 AV	54.0	-10.7	1.11 H	291	39.5	3.8
5	10640.00	45.5 PK	74.0	-28.5	1.66 H	153	32.3	13.2
6	10640.00	34.2 AV	54.0	-19.8	1.66 H	153	21.0	13.2
7	15960.00	47.5 PK	74.0	-26.5	1.83 H	220	35.0	12.5
8	15960.00	35.5 AV	54.0	-18.5	1.83 H	220	23.0	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	*5320.00	108.1 PK			2.63 V	297	104.2	3.9
2	*5320.00	100.3 AV			2.63 V	297	96.4	3.9
3	5350.00	63.9 PK	74.0	-10.1	2.63 V	297	60.1	3.8
4	5350.00	45.3 AV	54.0	-8.7	2.63 V	297	41.5	3.8
5	10640.00	45.7 PK	74.0	-28.3	1.60 V	360	32.5	13.2
6	10640.00	34.7 AV	54.0	-19.3	1.60 V	360	21.5	13.2
7	15960.00	46.9 PK	74.0	-27.1	1.73 V	248	34.4	12.5
8	15960.00	35.1 AV	54.0	-18.9	1.73 V	248	22.6	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	63.3 PK	74.0	-10.7	1.20 H	281	59.3	4.0
2	#5470.00	44.9 AV	54.0	-9.1	1.20 H	281	40.9	4.0
3	*5500.00	104.2 PK			1.20 H	281	100.2	4.0
4	*5500.00	95.9 AV			1.20 H	281	91.9	4.0
5	11000.00	45.6 PK	74.0	-28.4	1.61 H	159	32.4	13.2
6	11000.00	34.6 AV	54.0	-19.4	1.61 H	159	21.4	13.2
7	#16500.00	47.8 PK	74.0	-26.2	1.83 H	241	33.6	14.2
8	#16500.00	35.9 AV	54.0	-18.1	1.83 H	241	21.7	14.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	68.9 PK	74.0	-5.1	2.64 V	291	64.9	4.0
2	#5470.00	46.7 AV	54.0	-7.3	2.64 V	291	42.7	4.0
3	*5500.00	105.7 PK			2.64 V	291	101.7	4.0
4	*5500.00	99.9 AV			2.64 V	291	95.9	4.0
5	11000.00	45.1 PK	74.0	-28.9	1.70 V	357	31.9	13.2
6	11000.00	34.4 AV	54.0	-19.6	1.70 V	357	21.2	13.2
7	#16500.00	46.8 PK	74.0	-27.2	1.78 V	267	32.6	14.2
8	#16500.00	35.3 AV	54.0	-18.7	1.78 V	267	21.1	14.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	103.8 PK			1.17 H	291	99.7	4.1
2	*5580.00	96.5 AV			1.17 H	291	92.4	4.1
3	11160.00	46.0 PK	74.0	-28.0	1.63 H	161	32.8	13.2
4	11160.00	34.4 AV	54.0	-19.6	1.63 H	161	21.2	13.2
5	#16740.00	47.0 PK	74.0	-27.0	1.84 H	222	31.6	15.4
6	#16740.00	35.1 AV	54.0	-18.9	1.84 H	222	19.7	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	105.8 PK			2.68 V	295	101.7	4.1
2	*5580.00	101.0 AV			2.68 V	295	96.9	4.1
3	11160.00	45.4 PK	74.0	-28.6	1.71 V	360	32.2	13.2
4	11160.00	34.3 AV	54.0	-19.7	1.71 V	360	21.1	13.2
5	#16740.00	47.3 PK	74.0	-26.7	1.81 V	247	31.9	15.4
6	#16740.00	35.5 AV	54.0	-18.5	1.81 V	247	20.1	15.4

REMARKS:

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

CHANNEL	TX Channel 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	104.7 PK			1.08 H	264	100.5	4.2
2	*5700.00	96.3 AV			1.08 H	264	92.1	4.2
3	#5725.00	63.3 PK	74.0	-10.7	1.08 H	264	59.1	4.2
4	#5725.00	49.0 AV	54.0	-5.0	1.08 H	264	44.8	4.2
5	11400.00	45.7 PK	74.0	-28.3	1.65 H	156	31.8	13.9
6	11400.00	34.5 AV	54.0	-19.5	1.65 H	156	20.6	13.9
7	#17100.00	46.9 PK	74.0	-27.1	1.84 H	232	30.3	16.6
8	#17100.00	35.3 AV	54.0	-18.7	1.84 H	232	18.7	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	*5700.00	106.3 PK			2.57 V	306	102.1	4.2
2	*5700.00	100.3 AV			2.57 V	306	96.1	4.2
3	#5725.00	69.2 PK	74.0	-4.8	2.75 V	306	65.0	4.2
4	#5725.00	51.1 AV	54.0	-2.9	2.75 V	306	46.9	4.2
5	11400.00	45.5 PK	74.0	-28.5	1.63 V	359	31.6	13.9
6	11400.00	34.3 AV	54.0	-19.7	1.63 V	359	20.4	13.9
7	#17100.00	47.1 PK	74.0	-26.9	1.77 V	264	30.5	16.6
8	#17100.00	35.5 AV	54.0	-18.5	1.77 V	264	18.9	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	43.4 PK	74.0	-30.6	1.19 H	270	39.4	4.0
2	#5470.00	35.1 AV	54.0	-18.9	1.19 H	270	31.1	4.0
3	*5720.00	105.4 PK			1.19 H	270	101.2	4.2
4	*5720.00	96.6 AV			1.19 H	270	92.4	4.2
5	#5850.00	45.8 PK	74.0	-28.2	1.19 H	270	41.2	4.6
6	#5850.00	37.3 AV	54.0	-16.7	1.19 H	270	32.7	4.6
7	11440.00	46.3 PK	74.0	-27.7	1.70 H	141	32.5	13.8
8	11440.00	34.7 AV	54.0	-19.3	1.70 H	141	20.9	13.8
9	#17160.00	47.6 PK	74.0	-26.4	1.90 H	224	31.2	16.4
10	#17160.00	35.6 AV	54.0	-18.4	1.90 H	224	19.2	16.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	49.6 PK	74.0	-24.4	2.87 V	305	45.6	4.0
2	#5470.00	37.5 AV	54.0	-16.5	2.87 V	305	33.5	4.0
3	*5720.00	106.8 PK			2.87 V	305	102.6	4.2
4	*5720.00	100.5 AV			2.87 V	305	96.3	4.2
5	#5850.00	51.2 PK	74.0	-22.8	2.87 V	305	46.6	4.6
6	#5850.00	38.9 AV	54.0	-15.1	2.87 V	305	34.3	4.6
7	11440.00	45.1 PK	74.0	-28.9	1.61 V	340	31.3	13.8
8	11440.00	34.2 AV	54.0	-19.8	1.61 V	340	20.4	13.8
9	#17160.00	46.8 PK	74.0	-27.2	1.79 V	246	30.4	16.4
10	#17160.00	35.1 AV	54.0	-18.9	1.79 V	246	18.7	16.4

REMARKS:

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

CHANNEL	TX Channel 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	*5745.00	105.8 PK			2.63 H	130	101.6	4.2
2	*5745.00	97.4 AV			2.63 H	130	93.2	4.2
3	11490.00	46.8 PK	74.0	-27.2	1.60 H	145	33.0	13.8
4	11490.00	34.8 AV	54.0	-19.2	1.60 H	145	21.0	13.8
5	#17235.00	51.0 PK	74.0	-23.0	1.70 H	198	34.7	16.3
6	#17235.00	39.0 AV	54.0	-15.0	1.70 H	198	22.7	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	*5745.00	109.6 PK			2.61 V	56	105.4	4.2
2	*5745.00	101.5 AV			2.61 V	56	97.3	4.2
3	11490.00	47.1 PK	74.0	-26.9	1.46 V	97	33.3	13.8
4	11490.00	35.9 AV	54.0	-18.1	1.46 V	97	22.1	13.8
5	#17235.00	51.8 PK	74.0	-22.2	1.46 V	322	35.5	16.3
6	#17235.00	40.2 AV	54.0	-13.8	1.46 V	322	23.9	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	104.9 PK			2.67 H	131	100.6	4.3
2	*5785.00	96.4 AV			2.67 H	131	92.1	4.3
3	11570.00	47.4 PK	74.0	-26.6	1.55 H	124	33.5	13.9
4	11570.00	35.2 AV	54.0	-18.8	1.55 H	124	21.3	13.9
5	#17355.00	50.7 PK	74.0	-23.3	1.70 H	207	33.5	17.2
6	#17355.00	38.6 AV	54.0	-15.4	1.70 H	207	21.4	17.2
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	*5785.00	109.1 PK			2.60 V	59	104.8	4.3
2	*5785.00	101.2 AV			2.60 V	59	96.9	4.3
3	11570.00	47.6 PK	74.0	-26.4	1.56 V	92	33.7	13.9
4	11570.00	36.7 AV	54.0	-17.3	1.56 V	92	22.8	13.9
5	#17355.00	51.1 PK	74.0	-22.9	1.54 V	294	33.9	17.2
6	#17355.00	39.6 AV	54.0	-14.4	1.54 V	294	22.4	17.2

REMARKS:

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

CHANNEL	TX Channel 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	*5825.00	103.6 PK			2.71 H	128	99.1	4.5
2	*5825.00	95.6 AV			2.71 H	128	91.1	4.5
3	11650.00	47.7 PK	74.0	-26.3	1.57 H	143	34.0	13.7
4	11650.00	35.6 AV	54.0	-18.4	1.57 H	143	21.9	13.7
5	#17475.00	51.1 PK	74.0	-22.9	1.65 H	205	33.0	18.1
6	#17475.00	39.2 AV	54.0	-14.8	1.65 H	205	21.1	18.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	109.0 PK			2.59 V	60	104.5	4.5
2	*5825.00	100.3 AV			2.59 V	60	95.8	4.5
3	11650.00	47.0 PK	74.0	-27.0	1.45 V	112	33.3	13.7
4	11650.00	36.0 AV	54.0	-18.0	1.45 V	112	22.3	13.7
5	#17475.00	51.5 PK	74.0	-22.5	1.52 V	318	33.4	18.1
6	#17475.00	39.8 AV	54.0	-14.2	1.52 V	318	21.7	18.1

REMARKS:

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

802.11ac (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	68.9 PK	74.0	-5.1	1.08 H	240	64.9	4.0
2	5150.00	51.7 AV	54.0	-2.3	1.08 H	240	47.7	4.0
3	*5190.00	104.6 PK			1.08 H	240	100.7	3.9
4	*5190.00	95.7 AV			1.08 H	240	91.8	3.9
5	5350.00	50.6 PK	74.0	-23.4	1.08 H	240	47.0	3.6
6	5350.00	38.3 AV	54.0	-15.7	1.08 H	240	34.7	3.6
7	#10380.00	45.5 PK	74.0	-28.5	1.65 H	142	32.6	12.9
8	#10380.00	34.3 AV	54.0	-19.7	1.65 H	142	21.4	12.9
9	15570.00	47.4 PK	74.0	-26.6	1.90 H	223	34.0	13.4
10	15570.00	35.3 AV	54.0	-18.7	1.90 H	223	21.9	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	1.05 V	90	53.6	4.0
2	5150.00	47.6 AV	54.0	-6.4	1.05 V	90	43.6	4.0
3	*5190.00	104.4 PK			1.05 V	90	100.5	3.9
4	*5190.00	94.6 AV			1.05 V	90	90.7	3.9
5	5350.00	48.6 PK	74.0	-25.4	1.05 V	90	45.0	3.6
6	5350.00	37.7 AV	54.0	-16.3	1.05 V	90	34.1	3.6
7	#10380.00	46.0 PK	74.0	-28.0	1.68 V	350	33.1	12.9
8	#10380.00	34.7 AV	54.0	-19.3	1.68 V	350	21.8	12.9
9	15570.00	46.6 PK	74.0	-27.4	1.82 V	248	33.2	13.4
10	15570.00	34.7 AV	54.0	-19.3	1.82 V	248	21.3	13.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.6 PK	74.0	-29.4	1.11 H	254	40.6	4.0
2	5150.00	35.6 AV	54.0	-18.4	1.11 H	254	31.6	4.0
3	*5230.00	108.9 PK			1.11 H	254	105.2	3.7
4	*5230.00	100.8 AV			1.11 H	254	97.1	3.7
5	5350.00	46.5 PK	74.0	-27.5	1.11 H	254	42.7	3.8
6	5350.00	37.2 AV	54.0	-16.8	1.11 H	254	33.4	3.8
7	#10460.00	46.2 PK	74.0	-27.8	1.64 H	145	33.0	13.2
8	#10460.00	34.6 AV	54.0	-19.4	1.64 H	145	21.4	13.2
9	15690.00	47.2 PK	74.0	-26.8	1.84 H	236	33.8	13.4
10	15690.00	35.6 AV	54.0	-18.4	1.84 H	236	22.2	13.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.0 PK	74.0	-30.0	2.65 V	293	40.0	4.0
2	5150.00	36.6 AV	54.0	-17.4	2.65 V	293	32.6	4.0
3	*5230.00	108.6 PK			2.65 V	293	104.9	3.7
4	*5230.00	99.8 AV			2.65 V	293	96.1	3.7
5	5350.00	46.0 PK	74.0	-28.0	2.65 V	293	42.2	3.8
6	5350.00	38.2 AV	54.0	-15.8	2.65 V	293	34.4	3.8
7	#10460.00	45.2 PK	74.0	-28.8	1.71 V	353	32.0	13.2
8	#10460.00	34.5 AV	54.0	-19.5	1.71 V	353	21.3	13.2
9	15690.00	47.7 PK	74.0	-26.3	1.81 V	252	34.3	13.4
10	15690.00	35.8 AV	54.0	-18.2	1.81 V	252	22.4	13.4

REMARKS:

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

CHANNEL	TX Channel 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	47.0 PK	74.0	-27.0	1.14 H	231	43.0	4.0
2	5150.00	37.0 AV	54.0	-17.0	1.14 H	231	33.0	4.0
3	*5270.00	109.1 PK			1.14 H	231	105.4	3.7
4	*5270.00	100.2 AV			1.14 H	231	96.5	3.7
5	#10540.00	46.1 PK	74.0	-27.9	1.68 H	150	32.8	13.3
6	#10540.00	34.8 AV	54.0	-19.2	1.68 H	150	21.5	13.3
7	15810.00	48.0 PK	74.0	-26.0	1.88 H	221	35.0	13.0
8	15810.00	35.6 AV	54.0	-18.4	1.88 H	221	22.6	13.0

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	46.0 PK	74.0	-28.0	2.70 V	295	42.0	4.0
2	5150.00	36.3 AV	54.0	-17.7	2.70 V	295	32.3	4.0
3	*5270.00	108.4 PK			2.72 V	303	104.7	3.7
4	*5270.00	98.7 AV			2.72 V	303	95.0	3.7
5	#10540.00	45.2 PK	74.0	-28.8	1.66 V	347	31.9	13.3
6	#10540.00	33.8 AV	54.0	-20.2	1.66 V	347	20.5	13.3
7	15810.00	47.1 PK	74.0	-26.9	1.70 V	259	34.1	13.0
8	15810.00	35.2 AV	54.0	-18.8	1.70 V	259	22.2	13.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	100.6 PK			1.05 H	241	96.8	3.8
2	*5310.00	91.6 AV			1.05 H	241	87.8	3.8
3	5350.00	60.2 PK	74.0	-13.8	1.05 H	241	56.4	3.8
4	5350.00	44.8 AV	54.0	-9.2	1.05 H	241	41.0	3.8
5	10620.00	45.4 PK	74.0	-28.6	1.70 H	150	32.3	13.1
6	10620.00	34.3 AV	54.0	-19.7	1.70 H	150	21.2	13.1
7	15930.00	47.3 PK	74.0	-26.7	1.83 H	222	34.9	12.4
8	15930.00	35.7 AV	54.0	-18.3	1.83 H	222	23.3	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	104.1 PK			2.62 V	286	100.3	3.8
2	*5310.00	94.5 AV			2.62 V	286	90.7	3.8
3	5350.00	48.2 PK	74.0	-25.8	2.57 V	300	44.4	3.8
4	5350.00	37.5 AV	54.0	-16.5	2.57 V	300	33.7	3.8
5	10620.00	45.3 PK	74.0	-28.7	1.69 V	338	32.2	13.1
6	10620.00	34.6 AV	54.0	-19.4	1.69 V	338	21.5	13.1
7	15930.00	47.4 PK	74.0	-26.6	1.79 V	268	35.0	12.4
8	15930.00	35.4 AV	54.0	-18.6	1.79 V	268	23.0	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	68.9 PK	74.0	-5.1	1.06 H	238	64.9	4.0
2	#5470.00	46.9 AV	54.0	-7.1	1.06 H	238	42.9	4.0
3	*5510.00	99.6 PK			1.06 H	238	95.6	4.0
4	*5510.00	91.4 AV			1.06 H	238	87.4	4.0
5	11020.00	45.6 PK	74.0	-28.4	1.70 H	146	32.3	13.3
6	11020.00	34.2 AV	54.0	-19.8	1.70 H	146	20.9	13.3
7	#16530.00	46.7 PK	74.0	-27.3	1.86 H	246	32.2	14.5
8	#16530.00	35.1 AV	54.0	-18.9	1.86 H	246	20.6	14.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	48.5 PK	74.0	-25.5	2.56 V	295	44.5	4.0
2	#5470.00	37.8 AV	54.0	-16.2	2.56 V	295	33.8	4.0
3	*5510.00	103.8 PK			2.56 V	293	99.8	4.0
4	*5510.00	94.3 AV			2.56 V	293	90.3	4.0
5	11020.00	46.1 PK	74.0	-27.9	1.66 V	349	32.8	13.3
6	11020.00	34.9 AV	54.0	-19.1	1.66 V	349	21.6	13.3
7	#16530.00	47.8 PK	74.0	-26.2	1.72 V	258	33.3	14.5
8	#16530.00	36.0 AV	54.0	-18.0	1.72 V	258	21.5	14.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	47.0 PK	74.0	-27.0	1.05 H	241	43.0	4.0
2	#5470.00	37.0 AV	54.0	-17.0	1.05 H	241	33.0	4.0
3	*5550.00	106.2 PK			1.05 H	241	102.2	4.0
4	*5550.00	96.1 AV			1.05 H	241	92.1	4.0
5	#5725.00	49.0 PK	74.0	-25.0	1.05 H	241	44.8	4.2
6	#5725.00	40.0 AV	54.0	-14.0	1.05 H	241	35.8	4.2
7	11100.00	45.7 PK	74.0	-28.3	1.70 H	161	32.3	13.4
8	11100.00	34.6 AV	54.0	-19.4	1.70 H	161	21.2	13.4
9	#16650.00	47.2 PK	74.0	-26.8	1.90 H	228	31.9	15.3
10	#16650.00	35.4 AV	54.0	-18.6	1.90 H	228	20.1	15.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	46.5 PK	74.0	-27.5	2.57 V	302	42.5	4.0
2	#5470.00	36.9 AV	54.0	-17.1	2.57 V	302	32.9	4.0
3	*5550.00	106.1 PK			2.60 V	310	102.1	4.0
4	*5550.00	95.3 AV			2.60 V	310	91.3	4.0
5	#5725.00	48.6 PK	74.0	-25.4	2.54 V	294	44.4	4.2
6	#5725.00	39.0 AV	54.0	-15.0	2.54 V	294	34.8	4.2
7	11100.00	45.0 PK	74.0	-29.0	1.62 V	360	31.6	13.4
8	11100.00	34.1 AV	54.0	-19.9	1.62 V	360	20.7	13.4
9	#16650.00	47.8 PK	74.0	-26.2	1.89 V	255	32.5	15.3
10	#16650.00	36.3 AV	54.0	-17.7	1.89 V	255	21.0	15.3

REMARKS:

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

CHANNEL	TX Channel 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	105.3 PK			1.03 H	227	101.2	4.1
2	*5670.00	97.1 AV			1.03 H	227	93.0	4.1
3	#5725.00	46.6 PK	74.0	-27.4	1.03 H	227	42.4	4.2
4	#5725.00	37.0 AV	54.0	-17.0	1.03 H	227	32.8	4.2
5	11340.00	45.6 PK	74.0	-28.4	1.67 H	167	32.0	13.6
6	11340.00	34.3 AV	54.0	-19.7	1.67 H	167	20.7	13.6
7	#17010.00	47.7 PK	74.0	-26.3	1.88 H	239	31.2	16.5
8	#17010.00	35.8 AV	54.0	-18.2	1.88 H	239	19.3	16.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	105.5 PK			2.52 V	280	101.4	4.1
2	*5670.00	95.6 AV			2.52 V	280	91.5	4.1
3	#5725.00	46.3 PK	74.0	-27.7	2.46 V	290	42.1	4.2
4	#5725.00	36.4 AV	54.0	-17.6	2.46 V	290	32.2	4.2
5	11340.00	45.1 PK	74.0	-28.9	1.64 V	360	31.5	13.6
6	11340.00	34.5 AV	54.0	-19.5	1.64 V	360	20.9	13.6
7	#17010.00	46.9 PK	74.0	-27.1	1.87 V	268	30.4	16.5
8	#17010.00	35.7 AV	54.0	-18.3	1.87 V	268	19.2	16.5

REMARKS:

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

CHANNEL	TX Channel 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	52.3 PK	74.0	-21.7	1.07 H	228	48.3	4.0
2	#5470.00	38.6 AV	54.0	-15.4	1.07 H	228	34.6	4.0
3	*5710.00	106.4 PK			1.07 H	228	102.1	4.3
4	*5710.00	97.5 AV			1.07 H	228	93.2	4.3
5	#5850.00	52.0 PK	74.0	-22.0	1.07 H	228	47.4	4.6
6	#5850.00	39.2 AV	54.0	-14.8	1.07 H	228	34.6	4.6
7	11420.00	46.3 PK	74.0	-27.7	1.61 H	150	32.5	13.8
8	11420.00	34.9 AV	54.0	-19.1	1.61 H	150	21.1	13.8
9	#17130.00	47.9 PK	74.0	-26.1	1.89 H	235	31.4	16.5
10	#17130.00	35.8 AV	54.0	-18.2	1.89 H	235	19.3	16.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	51.4 PK	74.0	-22.6	2.50 V	288	47.4	4.0
2	#5470.00	37.7 AV	54.0	-16.3	2.50 V	288	33.7	4.0
3	*5710.00	106.1 PK			2.50 V	293	101.8	4.3
4	*5710.00	96.3 AV			2.50 V	293	92.0	4.3
5	#5850.00	51.3 PK	74.0	-22.7	2.53 V	288	46.7	4.6
6	#5850.00	38.9 AV	54.0	-15.1	2.53 V	288	34.3	4.6
7	11420.00	45.7 PK	74.0	-28.3	1.68 V	343	31.9	13.8
8	11420.00	34.4 AV	54.0	-19.6	1.68 V	343	20.6	13.8
9	#17130.00	46.7 PK	74.0	-27.3	1.79 V	237	30.2	16.5
10	#17130.00	34.6 AV	54.0	-19.4	1.79 V	237	18.1	16.5

REMARKS:

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

CHANNEL	TX Channel 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	*5755.00	102.5 PK			3.23 H	344	98.2	4.3
2	*5755.00	94.7 AV			3.23 H	344	90.4	4.3
3	11510.00	47.1 PK	74.0	-26.9	1.51 H	137	33.2	13.9
4	11510.00	35.0 AV	54.0	-19.0	1.51 H	137	21.1	13.9
5	#17265.00	51.3 PK	74.0	-22.7	1.72 H	226	34.7	16.6
6	#17265.00	39.3 AV	54.0	-14.7	1.72 H	226	22.7	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	*5755.00	106.8 PK			2.63 V	128	102.5	4.3
2	*5755.00	98.6 AV			2.63 V	128	94.3	4.3
3	11510.00	47.5 PK	74.0	-26.5	1.48 V	84	33.6	13.9
4	11510.00	36.0 AV	54.0	-18.0	1.48 V	84	22.1	13.9
5	#17265.00	50.8 PK	74.0	-23.2	1.44 V	307	34.2	16.6
6	#17265.00	39.3 AV	54.0	-14.7	1.44 V	307	22.7	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	102.5 PK			2.48 H	52	98.2	4.3
2	*5795.00	94.8 AV			2.48 H	52	90.5	4.3
3	11590.00	47.1 PK	74.0	-26.9	1.62 H	128	33.2	13.9
4	11590.00	35.3 AV	54.0	-18.7	1.62 H	128	21.4	13.9
5	#17385.00	50.7 PK	74.0	-23.3	1.75 H	216	33.2	17.5
6	#17385.00	38.8 AV	54.0	-15.2	1.75 H	216	21.3	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	*5795.00	105.9 PK			2.65 V	129	101.6	4.3
2	*5795.00	98.1 AV			2.65 V	129	93.8	4.3
3	11590.00	47.8 PK	74.0	-26.2	1.56 V	105	33.9	13.9
4	11590.00	36.7 AV	54.0	-17.3	1.56 V	105	22.8	13.9
5	#17385.00	50.6 PK	74.0	-23.4	1.56 V	321	33.1	17.5
6	#17385.00	39.4 AV	54.0	-14.6	1.56 V	321	21.9	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.1 PK	74.0	-4.9	1.08 H	333	65.1	4.0
2	5150.00	51.7 AV	54.0	-2.3	1.08 H	333	47.7	4.0
3	*5210.00	99.6 PK			1.08 H	333	95.8	3.8
4	*5210.00	91.3 AV			1.08 H	333	87.5	3.8
5	5365.00	51.3 PK	74.0	-22.7	1.08 H	333	47.6	3.7
6	5365.00	38.2 AV	54.0	-15.8	1.08 H	333	34.5	3.7
7	#10420.00	45.3 PK	74.0	-28.7	1.63 H	146	32.2	13.1
8	#10420.00	34.3 AV	54.0	-19.7	1.63 H	146	21.2	13.1
9	15630.00	47.6 PK	74.0	-26.4	1.85 H	219	34.2	13.4
10	15630.00	35.5 AV	54.0	-18.5	1.85 H	219	22.1	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	1.31 V	20	61.8	4.0
2	5150.00	51.5 AV	54.0	-2.5	1.31 V	20	47.5	4.0
3	*5210.00	101.6 PK			1.31 V	20	97.8	3.8
4	*5210.00	93.2 AV			1.31 V	20	89.4	3.8
5	5365.00	52.7 PK	74.0	-21.3	1.31 V	20	49.0	3.7
6	5365.00	39.9 AV	54.0	-14.1	1.31 V	20	36.2	3.7
7	#10420.00	46.4 PK	74.0	-27.6	1.50 V	10	33.3	13.1
8	#10420.00	34.9 AV	54.0	-19.1	1.50 V	10	21.8	13.1
9	15630.00	46.9 PK	74.0	-27.1	1.50 V	50	33.5	13.4
10	15630.00	35.4 AV	54.0	-18.6	1.50 V	50	22.0	13.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	47.6 PK	74.0	-26.4	1.19 H	331	43.6	4.0
2	5150.00	37.7 AV	54.0	-16.3	1.19 H	331	33.7	4.0
3	*5290.00	98.1 PK			1.19 H	331	94.3	3.8
4	*5290.00	88.7 AV			1.19 H	331	84.9	3.8
5	5350.00	59.6 PK	74.0	-14.4	1.19 H	331	55.8	3.8
6	5350.00	47.5 AV	54.0	-6.5	1.19 H	331	43.7	3.8
7	#10580.00	46.2 PK	74.0	-27.8	1.70 H	165	33.1	13.1
8	#10580.00	34.8 AV	54.0	-19.2	1.70 H	165	21.7	13.1
9	15870.00	47.1 PK	74.0	-26.9	1.87 H	223	34.5	12.6
10	15870.00	35.3 AV	54.0	-18.7	1.87 H	223	22.7	12.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.3 PK	74.0	-25.7	1.49 V	297	44.3	4.0
2	5150.00	38.6 AV	54.0	-15.4	1.49 V	297	34.6	4.0
3	*5290.00	101.7 PK			1.49 V	297	97.9	3.8
4	*5290.00	93.2 AV			1.49 V	297	89.4	3.8
5	5350.00	60.2 PK	74.0	-13.8	1.49 V	297	56.4	3.8
6	5350.00	48.1 AV	54.0	-5.9	1.49 V	297	44.3	3.8
7	#10580.00	45.3 PK	74.0	-28.7	1.62 V	352	32.2	13.1
8	#10580.00	34.4 AV	54.0	-19.6	1.62 V	352	21.3	13.1
9	15870.00	47.1 PK	74.0	-26.9	1.74 V	260	34.5	12.6
10	15870.00	35.0 AV	54.0	-19.0	1.74 V	260	22.4	12.6

REMARKS:

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

CHANNEL	TX Channel 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	#5470.00	60.2 PK	74.0	-13.8	1.20 H	351	56.2	4.0
2	#5470.00	45.8 AV	54.0	-8.2	1.20 H	351	41.8	4.0
3	*5530.00	98.8 PK			1.20 H	351	94.8	4.0
4	*5530.00	90.0 AV			1.20 H	351	86.0	4.0
5	#5725.00	48.5 PK	74.0	-25.5	1.20 H	351	44.3	4.2
6	#5725.00	37.9 AV	54.0	-16.1	1.20 H	351	33.7	4.2
7	11060.00	45.5 PK	74.0	-28.5	1.62 H	139	32.2	13.3
8	11060.00	34.3 AV	54.0	-19.7	1.62 H	139	21.0	13.3
9	#16590.00	47.6 PK	74.0	-26.4	1.84 H	225	32.4	15.2
10	#16590.00	35.5 AV	54.0	-18.5	1.84 H	225	20.3	15.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	61.0 PK	74.0	-13.0	1.54 V	311	57.0	4.0
2	#5470.00	46.2 AV	54.0	-7.8	1.54 V	311	42.2	4.0
3	*5530.00	102.2 PK			1.54 V	311	98.2	4.0
4	*5530.00	93.4 AV			1.54 V	311	89.4	4.0
5	#5725.00	49.0 PK	74.0	-25.0	1.54 V	311	44.8	4.2
6	#5725.00	38.6 AV	54.0	-15.4	1.54 V	311	34.4	4.2
7	11060.00	45.0 PK	74.0	-29.0	1.64 V	350	31.7	13.3
8	11060.00	34.3 AV	54.0	-19.7	1.64 V	350	21.0	13.3
9	#16590.00	47.2 PK	74.0	-26.8	1.81 V	254	32.0	15.2
10	#16590.00	35.5 AV	54.0	-18.5	1.81 V	254	20.3	15.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	103.0 PK			1.20 H	360	98.8	4.2
2	*5610.00	94.3 AV			1.20 H	360	90.1	4.2
3	#5725.00	48.0 PK	74.0	-26.0	1.20 H	360	43.8	4.2
4	#5725.00	37.4 AV	54.0	-16.6	1.20 H	360	33.2	4.2
5	11220.00	46.3 PK	74.0	-27.7	1.66 H	148	33.0	13.3
6	11220.00	34.9 AV	54.0	-19.1	1.66 H	148	21.6	13.3
7	#16830.00	48.2 PK	74.0	-25.8	1.91 H	225	32.5	15.7
8	#16830.00	36.1 AV	54.0	-17.9	1.91 H	225	20.4	15.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	106.8 PK			1.68 V	308	102.6	4.2
2	*5610.00	98.1 AV			1.68 V	308	93.9	4.2
3	#5725.00	49.4 PK	74.0	-24.6	1.70 V	308	45.2	4.2
4	#5725.00	38.7 AV	54.0	-15.3	1.70 V	308	34.5	4.2
5	11220.00	45.5 PK	74.0	-28.5	1.61 V	339	32.2	13.3
6	11220.00	34.7 AV	54.0	-19.3	1.61 V	339	21.4	13.3
7	#16830.00	46.7 PK	74.0	-27.3	1.80 V	252	31.0	15.7
8	#16830.00	35.0 AV	54.0	-19.0	1.80 V	252	19.3	15.7

REMARKS:

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

CHANNEL	TX Channel 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	48.9 PK	74.0	-25.1	1.19 H	360	44.9	4.0
2	#5470.00	37.2 AV	54.0	-16.8	1.19 H	360	33.2	4.0
3	*5690.00	106.1 PK			1.19 H	360	101.9	4.2
4	*5690.00	96.7 AV			1.19 H	360	92.5	4.2
5	#5850.00	54.3 PK	74.0	-19.7	1.19 H	360	49.7	4.6
6	#5850.00	40.6 AV	54.0	-13.4	1.19 H	360	36.0	4.6
7	11380.00	45.7 PK	74.0	-28.3	1.63 H	160	32.0	13.7
8	11380.00	34.4 AV	54.0	-19.6	1.63 H	160	20.7	13.7
9	#17070.00	47.8 PK	74.0	-26.2	1.88 H	232	31.2	16.6
10	#17070.00	35.9 AV	54.0	-18.1	1.88 H	232	19.3	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	50.6 PK	74.0	-23.4	1.76 V	307	46.6	4.0
2	#5470.00	38.7 AV	54.0	-15.3	1.76 V	307	34.7	4.0
3	*5690.00	108.8 PK			1.76 V	307	104.6	4.2
4	*5690.00	99.6 AV			1.76 V	307	95.4	4.2
5	#5850.00	55.8 PK	74.0	-18.2	1.76 V	307	51.2	4.6
6	#5850.00	41.6 AV	54.0	-12.4	1.76 V	307	37.0	4.6
7	11380.00	45.9 PK	74.0	-28.1	1.69 V	344	32.2	13.7
8	11380.00	34.8 AV	54.0	-19.2	1.69 V	344	21.1	13.7
9	#17070.00	48.0 PK	74.0	-26.0	1.73 V	252	31.4	16.6
10	#17070.00	35.9 AV	54.0	-18.1	1.73 V	252	19.3	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 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	*5775.00	100.4 PK			3.77 H	215	96.2	4.2
2	*5775.00	91.1 AV			3.77 H	215	86.9	4.2
3	11550.00	47.4 PK	74.0	-26.6	1.50 H	50	33.5	13.9
4	11550.00	36.0 AV	54.0	-18.0	1.50 H	50	22.1	13.9
5	#17325.00	51.1 PK	74.0	-22.9	1.50 H	55	34.1	17.0
6	#17325.00	39.8 AV	54.0	-14.2	1.50 H	55	22.8	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	*5775.00	102.2 PK			1.50 V	211	98.0	4.2
2	*5775.00	92.9 AV			1.50 V	211	88.7	4.2
3	11550.00	47.5 PK	74.0	-26.5	1.50 V	100	33.6	13.9
4	11550.00	36.3 AV	54.0	-17.7	1.50 V	100	22.4	13.9
5	#17325.00	51.2 PK	74.0	-22.8	1.50 V	308	34.2	17.0
6	#17325.00	39.8 AV	54.0	-14.2	1.50 V	308	22.8	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Data:

802.11ac (VHT40)

CHANNEL	TX Channel 134	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	160.61	24.3 QP	43.5	-19.2	2.00 H	22	32.4	-8.1
2	373.65	25.1 QP	46.0	-20.9	2.00 H	336	30.7	-5.6
3	521.89	28.5 QP	46.0	-17.5	3.00 H	143	30.7	-2.2
4	626.23	30.5 QP	46.0	-15.5	1.50 H	360	30.6	-0.1
5	827.90	33.1 QP	46.0	-12.9	1.50 H	99	30.3	2.8
6	924.61	34.4 QP	46.0	-11.6	1.50 H	7	30.5	3.9
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	160.90	23.7 QP	43.5	-19.8	2.00 V	2	31.8	-8.1
2	229.12	23.4 QP	46.0	-22.6	2.00 V	196	34.2	-10.8
3	461.46	27.8 QP	46.0	-18.2	3.00 V	17	31.2	-3.4
4	615.71	30.5 QP	46.0	-15.5	3.00 V	313	30.8	-0.3
5	673.01	30.8 QP	46.0	-15.2	3.00 V	197	30.4	0.4
6	827.70	33.4 QP	46.0	-12.6	1.00 V	23	30.6	2.8

REMARKS:

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

4.2 Transmit Power Measurement

4.2.1 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} ;

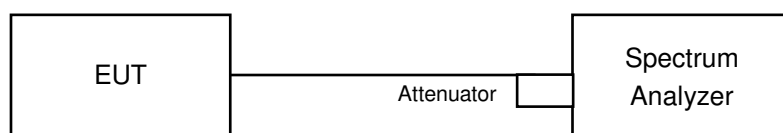
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

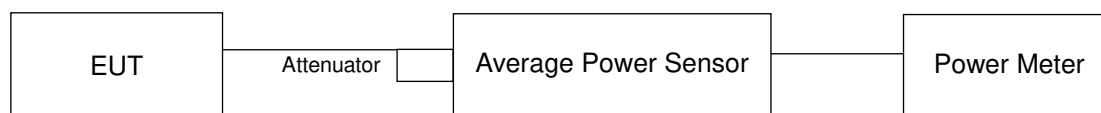
4.2.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

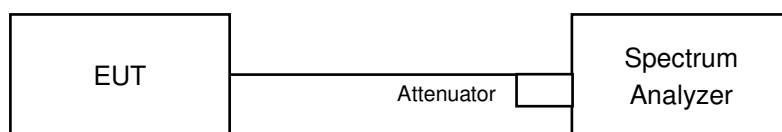
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

For Average Power Measurement

For channel straddling 5725MHz:

Method SA-2

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

Other Modulation mode

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Condition

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

4.2.7 Test Result

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	14.06	13.32	46.946	16.72	24.00	Pass
40	5200	13.62	13.37	44.741	16.51	24.00	Pass
48	5240	13.56	13.74	46.358	16.66	24.00	Pass
52	5260	14.03	14.33	52.395	17.19	24.00	Pass
60	5300	14.05	14.32	52.45	17.20	24.00	Pass
64	5320	13.88	14.42	52.103	17.17	24.00	Pass
100	5500	16.23	16.32	84.831	19.29	24.00	Pass
120	5600	16.07	16.46	84.717	19.28	24.00	Pass
140	5700	15.88	16.61	84.54	19.27	24.00	Pass
*144 (UNII-2C Band)	5720	12.03	12.00	33.676	15.27	23.07	Pass
*144 (UNII-3 Band)	5720	6.18	6.10	8.707	9.40	30.00	Pass
149	5745	15.52	16.62	81.565	19.12	30.00	Pass
157	5785	15.57	16.75	83.373	19.21	30.00	Pass
165	5825	15.65	16.81	84.701	19.28	30.00	Pass

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

The Average Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	42.383	16.27

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	27.27	32.53
60	5300	30.26	29.61
64	5320	27.54	25.90
100	5500	29.47	28.70
116	5580	28.81	27.87
140	5700	32.15	24.97
144 (UNII-2C Band)	5720	18.98	16.11

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	27.27	25.35 > 24
60	5300	29.61	25.71 > 24
64	5320	25.90	25.13 > 24
100	5500	28.70	25.57 > 24
116	5580	27.87	25.45 > 24
140	5700	24.97	24.97 > 24
144 (UNII-2C Band)	5720	16.11	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	13.78	13.27	45.11	16.54	24.00	Pass
40	5200	13.72	13.71	47.046	16.73	24.00	Pass
48	5240	13.40	13.85	46.144	16.64	24.00	Pass
52	5260	13.96	14.45	52.75	17.22	24.00	Pass
60	5300	13.99	14.38	52.477	17.20	24.00	Pass
64	5320	13.88	14.24	50.98	17.07	24.00	Pass
100	5500	16.12	16.43	84.88	19.29	24.00	Pass
116	5580	16.09	16.45	84.801	19.28	24.00	Pass
140	5700	15.77	16.67	84.209	19.25	24.00	Pass
*144 (UNII-2C Band)	5720	12.02	12.06	33.711	15.28	23.79	Pass
*144 (UNII-3 Band)	5720	6.59	6.69	9.723	9.88	30.00	Pass
149	5745	15.52	16.76	83.069	19.19	30.00	Pass
157	5785	15.51	16.68	82.122	19.14	30.00	Pass
165	5825	15.54	16.54	80.892	19.08	30.00	Pass

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

The Average Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	43.434	16.38

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	28.44	36.10
60	5300	28.60	39.64
64	5320	30.21	30.33
100	5500	38.29	30.18
116	5580	37.69	34.23
140	5700	36.05	30.37
144 (UNII-2C Band)	5720	19.05	20.61

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	28.44	25.53 > 24
60	5300	28.60	25.56 > 24
64	5320	30.21	25.8 > 24
100	5500	30.18	25.79 > 24
116	5580	34.23	26.34 > 24
140	5700	30.37	25.82 > 24
144 (UNII-2C Band)	5720	19.05	23.79 < 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	12.90	13.10	39.915	16.01	24.00	Pass
46	5230	13.96	14.42	52.558	17.21	24.00	Pass
54	5270	14.05	14.39	52.889	17.23	24.00	Pass
62	5310	11.76	12.36	32.216	15.08	24.00	Pass
102	5510	14.22	14.35	53.651	17.30	24.00	Pass
110	5550	15.98	16.12	80.554	19.06	24.00	Pass
134	5670	16.01	16.55	85.088	19.30	24.00	Pass
*142 (UNII-2C Band)	5710	11.75	11.53	32.029	15.06	24.00	Pass
*142 (UNII-3 Band)	5710	1.38	1.78	3.162	5.00	30.00	Pass
151	5755	15.52	16.67	82.097	19.14	30.00	Pass
159	5795	15.67	16.68	83.457	19.21	30.00	Pass

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

The Average Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	35.191	15.46

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	78.77	80.03
62	5310	43.51	57.26
102	5510	57.71	54.57
110	5550	85.49	75.42
134	5670	87.45	59.69
142 (UNII-2C Band)	5710	55.22	39.09

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	78.77	29.96 > 24
62	5310	43.51	27.38 > 24
102	5510	54.57	28.36 > 24
110	5550	75.42	29.77 > 24
134	5670	59.69	28.75 > 24
142 (UNII-2C Band)	5710	39.09	26.92 > 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	13.55	13.38	44.423	16.48	24.00	Pass
58	5290	12.56	12.99	37.937	15.79	24.00	Pass
106	5530	13.62	13.92	47.674	16.78	24.00	Pass
122	5610	15.78	16.21	79.627	19.01	24.00	Pass
*138 (UNII-2C Band)	5690	8.75	9.66	20.426	13.10	24.00	Pass
*138 (UNII-3 Band)	5690	-3.66	-4.49	0.9589	-0.18	30.00	Pass
155	5775	15.52	16.67	82.097	19.14	30.00	Pass

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

The Average Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	21.3849	13.3

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

26dB OCCUPIED BANDWIDTH

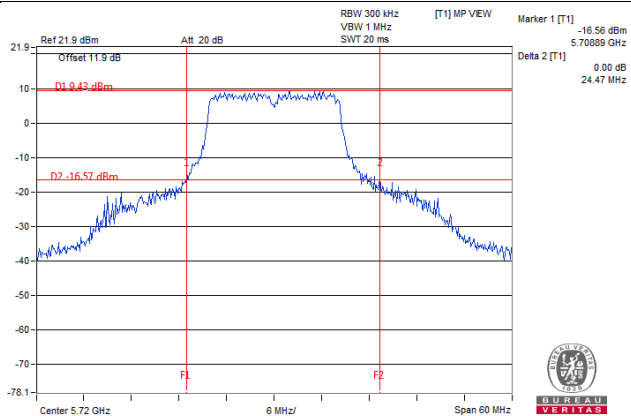
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	86.15	85.91
106	5530	85.49	85.52
122	5610	114.81	88.63
138 (UNII-2C Band)	5690	91.71	80.18

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

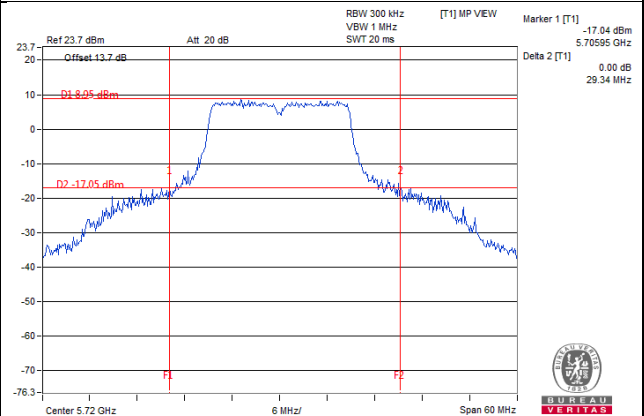
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	85.91	30.34 > 24
106	5530	85.49	30.31 > 24
122	5610	88.63	30.47 > 24
138 (UNII-2C Band)	5690	80.18	30.04 > 24

Spectrum Plot of Worst Value

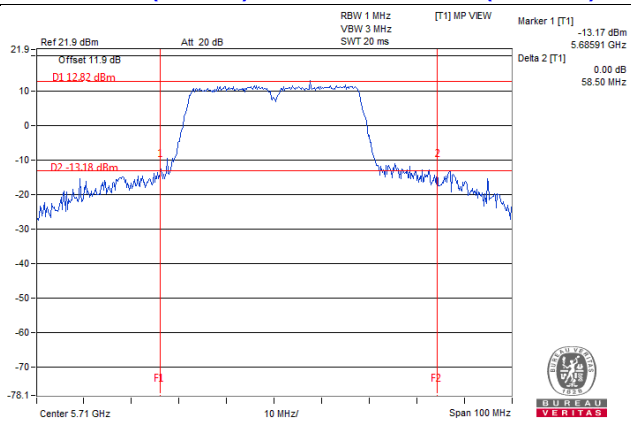
802.11a / Chain 1 : CH144 (UNII-2C)



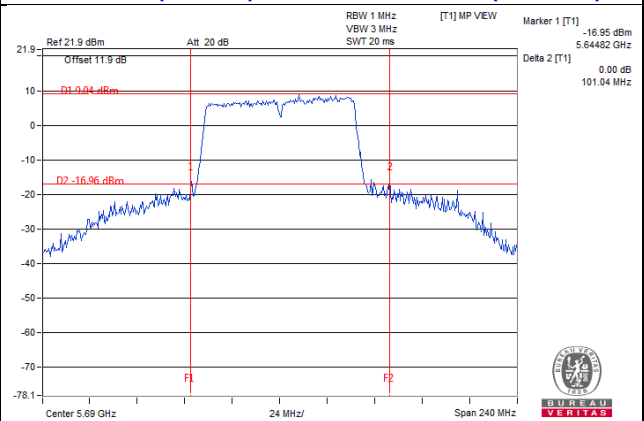
802.11ac (VHT20) / Chain 0 : CH144 (UNII-2C)



802.11ac (VHT40) / Chain 1 : CH142 (UNII-2C)



802.11ac (VHT80) / Chain 1 : CH138 (UNII-2C)



NOTE:

- For CH144 (UNII-2C Band) = 5725MHz - Marker 1
- For CH142 (UNII-2C Band) = 5725MHz - Marker 1
- For CH138 (UNII-2C Band) = 5725MHz - Marker 1

For Reference only – Power meter value

The power value was measured by power meter with average sensor.

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	83.136	19.20

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	83.18	19.20

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	83.074	19.19

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	79.782	19.02

4.3 Occupied Bandwidth Measurement

4.3.1 Test Setup



4.3.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.3 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.

4.3.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.80	16.80
40	5200	16.80	16.80
48	5240	16.92	16.92
52	5260	17.04	17.04
60	5300	17.04	16.92
64	5320	16.92	16.92
100	5500	17.28	17.04
116	5580	16.92	16.92
140	5700	17.04	16.80
144 (UNII-2C Band)	5720	13.52	13.52
144 (UNII-3 Band)	5720	3.52	3.40
149	5745	17.04	16.80
157	5785	16.92	16.92
165	5825	16.92	16.92

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.00	18.00
40	5200	18.00	18.00
48	5240	18.12	18.12
52	5260	18.00	18.36
60	5300	18.00	18.12
64	5320	18.12	18.24
100	5500	18.36	18.12
116	5580	18.12	18.12
140	5700	18.12	18.12
144 (UNII-2C Band)	5720	14.24	14.12
144 (UNII-3 Band)	5720	4.00	4.00
149	5745	18.00	18.12
157	5785	18.00	18.12
165	5825	18.12	18.00

802.11ac (VHT40)

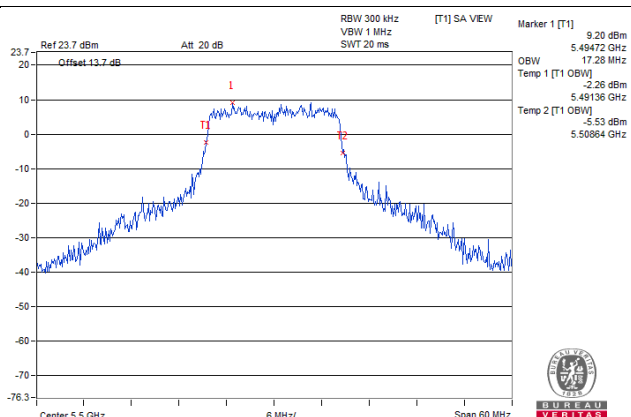
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.96	36.96
46	5230	37.20	37.44
54	5270	36.96	36.96
62	5310	36.96	36.96
102	5510	36.72	36.72
110	5550	36.96	36.96
134	5670	37.44	37.20
142 (UNII-2C Band)	5710	33.60	33.40
142 (UNII-3 Band)	5710	3.40	3.40
151	5755	37.44	37.44
159	5795	37.68	36.96

802.11ac (VHT80)

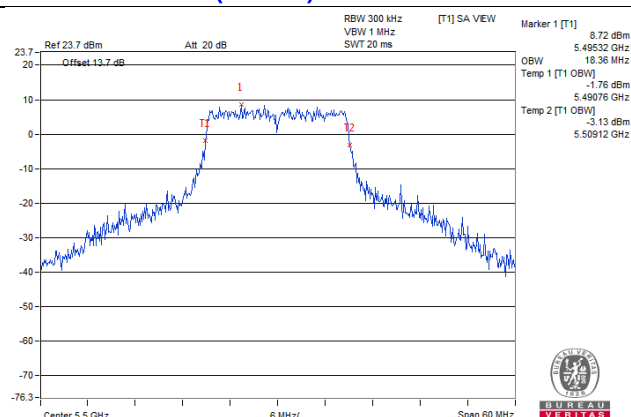
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
58	5290	75.84	76.32
106	5530	76.32	76.32
122	5610	76.32	76.32
138 (UNII-2C Band)	5690	72.92	72.92
138 (UNII-3 Band)	5690	2.92	2.92
155	5775	76.32	76.32

Spectrum Plot of Worst Value

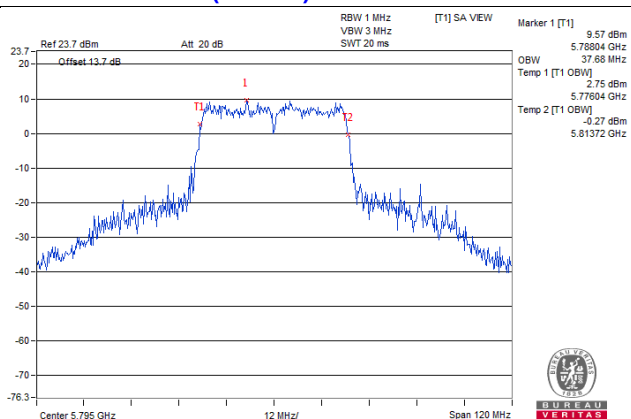
802.11a / Chain 0 : CH100



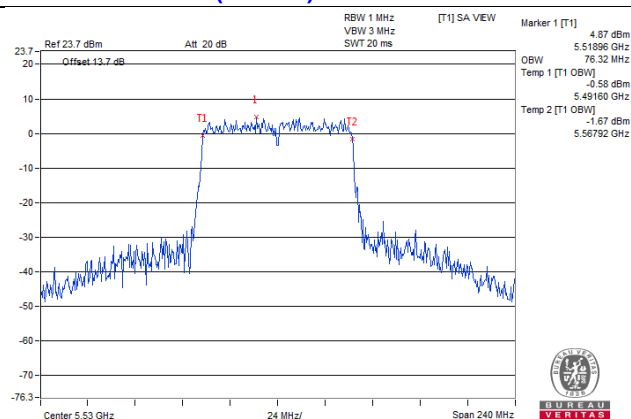
802.11ac (VHT20) / Chain 0 : CH100



802.11ac (VHT40) / Chain 0 : CH159

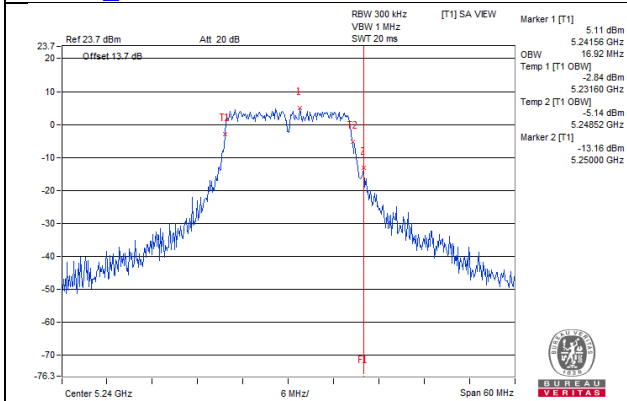


802.11ac (VHT80) / Chain 0 : CH106

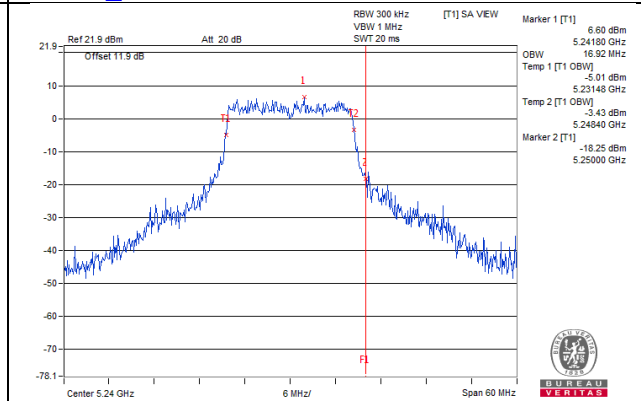


Spectrum Plot for near by DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)

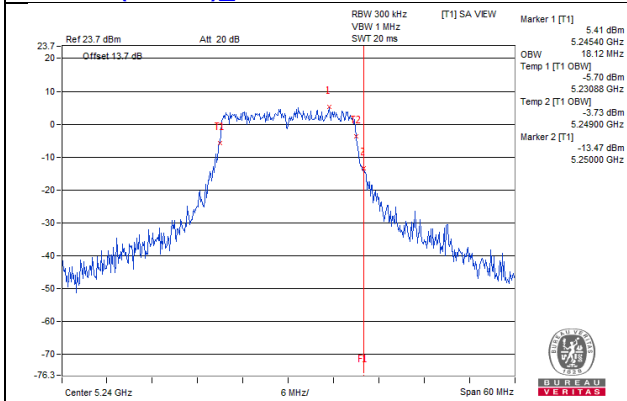
802.11a_Chain0 / CH48



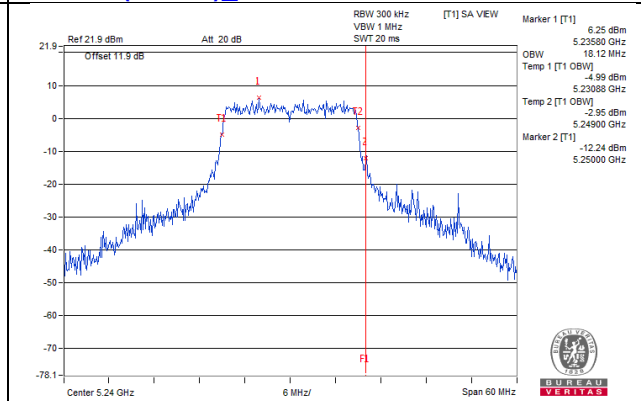
802.11a_Chain1 / CH48



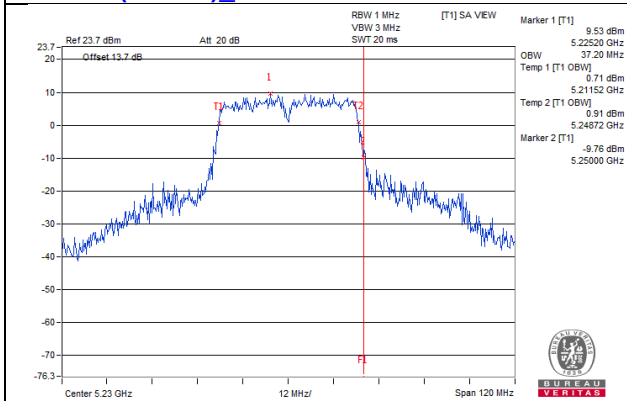
802.11ac(VHT20)_Chain0 / CH48



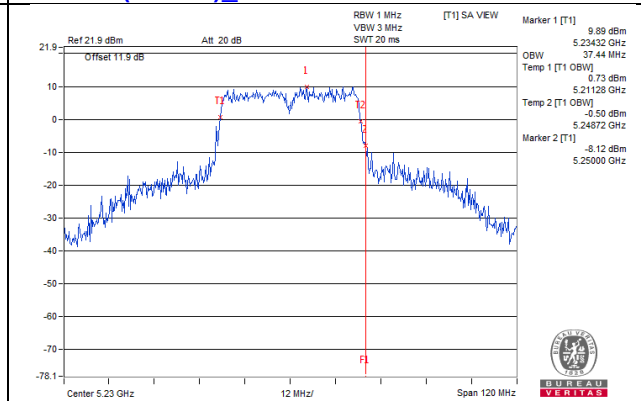
802.11ac(VHT20)_Chain1 / CH48



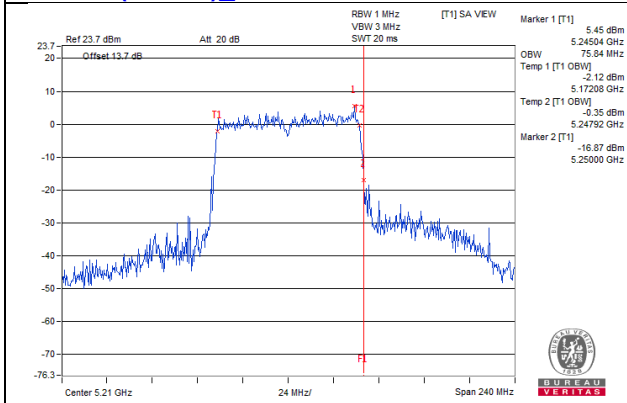
802.11ac(VHT40)_Chain0 / CH46



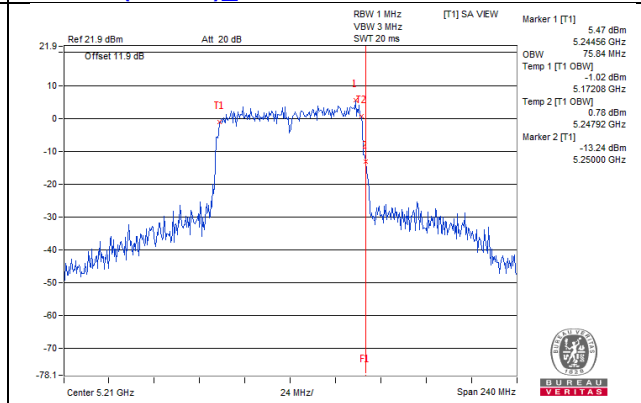
802.11ac(VHT40)_Chain1 / CH46



802.11ac(VHT80)_Chain0 / CH42

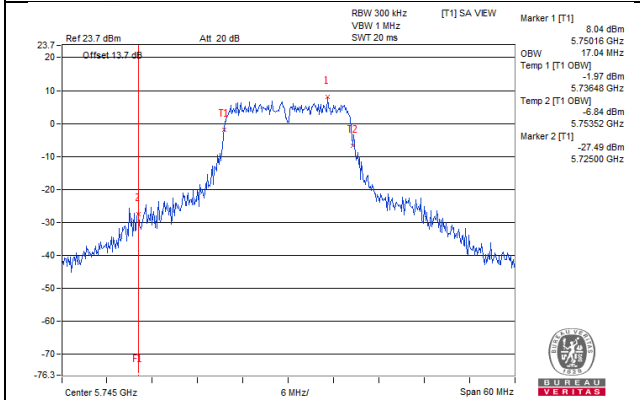


802.11ac(VHT80)_Chain1 / CH42

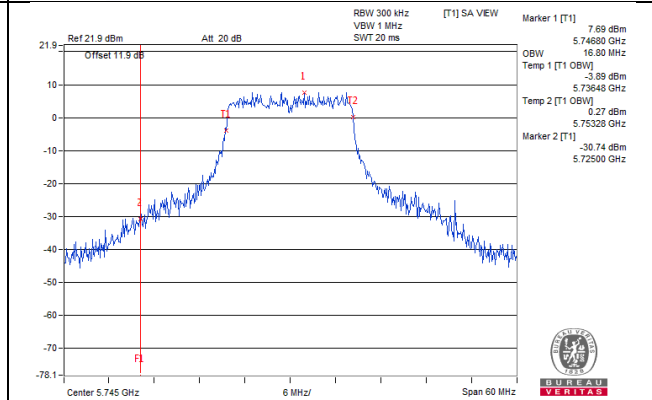


Spectrum Plot for near by DFS band (DFS is required, if 99% OCP straddle into U-NII-2C band)

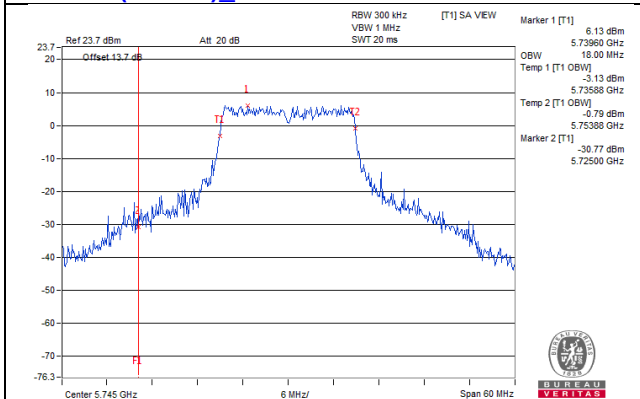
802.11a_Chain0 / CH149



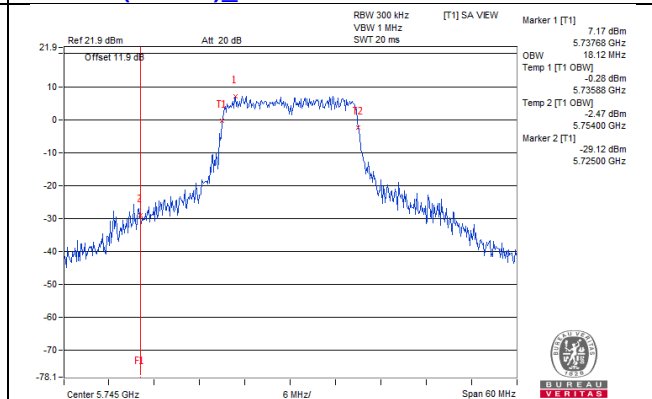
802.11a_Chain1 / CH149



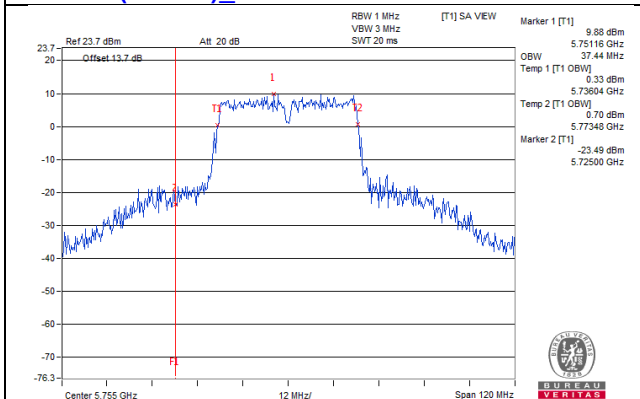
802.11ac(VHT20)_Chain0 / CH149



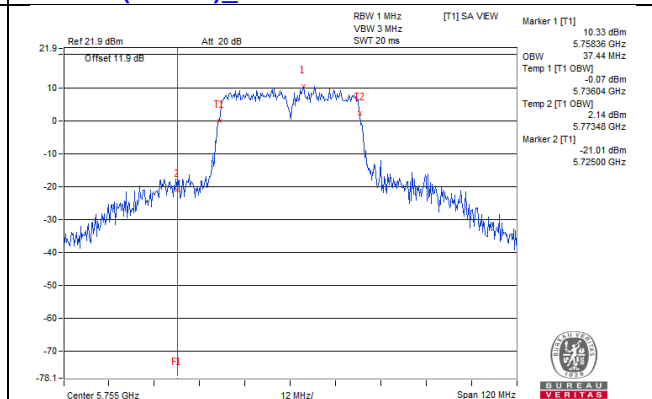
802.11ac(VHT20)_Chain1 / CH149



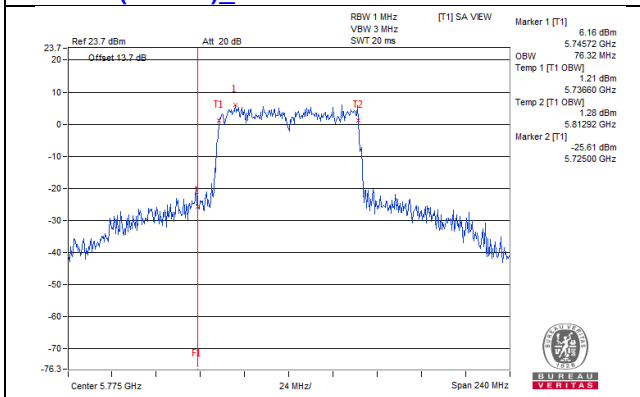
802.11ac(VHT40)_Chain0 / CH151



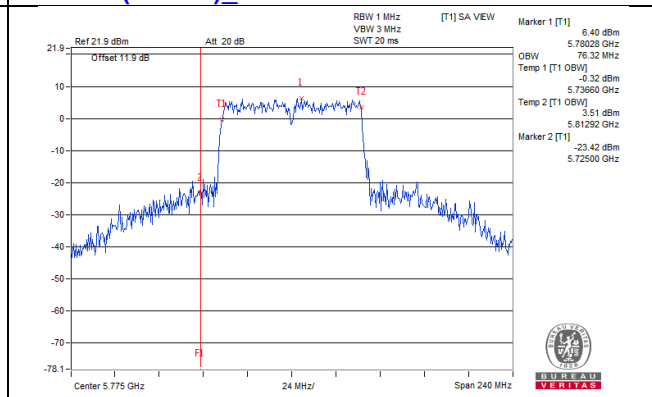
802.11ac(VHT40)_Chain1 / CH151



802.11ac(VHT80)_Chain0 / CH155



802.11ac(VHT80)_Chain1 / CH155



4.4 Peak Power Spectral Density Measurement

4.4.1 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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedure

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

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:

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)

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.2.6.

4.4.7 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	-0.11	0.42	0.25	3.42	11.00	Pass
40	5200	-0.02	1.01	0.25	3.78	11.00	Pass
48	5240	0.21	0.66	0.25	3.70	11.00	Pass
52	5260	1.77	2.68	0.25	5.51	11.00	Pass
60	5300	2.70	2.94	0.25	6.08	11.00	Pass
64	5320	2.46	3.30	0.25	6.16	11.00	Pass
100	5500	3.63	3.31	0.25	6.73	11.00	Pass
116	5580	4.00	3.19	0.25	6.87	11.00	Pass
140	5700	2.91	3.33	0.25	6.38	11.00	Pass
144 (UNII-2C Band)	5720	2.64	2.42	0.25	5.79	11.00	Pass

- Note:**
- 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.
 - Directional gain = $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 4.76 < 6\text{dBi}$, so the power density limit shall not be reduced.
 - 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	-0.20	0.26	0.23	3.27	11.00	Pass
40	5200	0.03	0.13	0.23	3.32	11.00	Pass
48	5240	0.69	0.44	0.23	3.80	11.00	Pass
52	5260	2.13	2.10	0.23	5.35	11.00	Pass
60	5300	2.83	2.71	0.23	6.01	11.00	Pass
64	5320	2.51	2.14	0.23	5.57	11.00	Pass
100	5500	3.93	2.97	0.23	6.71	11.00	Pass
116	5580	3.58	3.28	0.23	6.67	11.00	Pass
140	5700	3.15	2.68	0.23	6.16	11.00	Pass
144 (UNII-2C Band)	5720	2.68	2.45	0.23	5.80	11.00	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. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 4.76 < 6\text{dBi}$, so the power density limit shall not be reduced.
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	-3.92	-5.15	0.40	-1.08	11.00	Pass
46	5230	-2.44	-0.09	0.40	2.31	11.00	Pass
54	5270	-1.91	-2.26	0.40	1.33	11.00	Pass
62	5310	-4.45	-3.75	0.40	-0.67	11.00	Pass
102	5510	-1.80	-3.17	0.40	0.98	11.00	Pass
110	5550	-0.19	-1.52	0.40	2.61	11.00	Pass
134	5670	-0.78	-0.82	0.40	2.61	11.00	Pass
142 (UNII-2C Band)	5710	0.42	0.04	0.40	3.65	11.00	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. Directional gain = $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 4.76 < 6\text{dBi}$, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

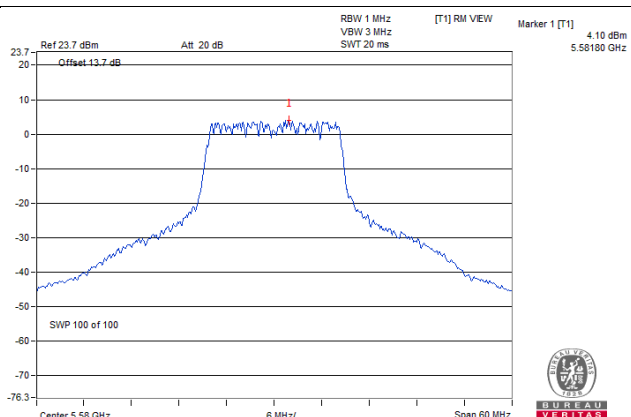
802.11ac (VHT80)

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	-10.22	-7.72	0.86	-4.92	11.00	Pass
58	5290	-7.56	-7.02	0.86	-3.41	11.00	Pass
106	5530	-6.35	-10.72	0.86	-4.13	11.00	Pass
122	5610	-5.05	-4.66	0.86	-0.98	11.00	Pass
138 (UNII-2C Band)	5690	-5.62	-4.67	0.86	-1.25	11.00	Pass

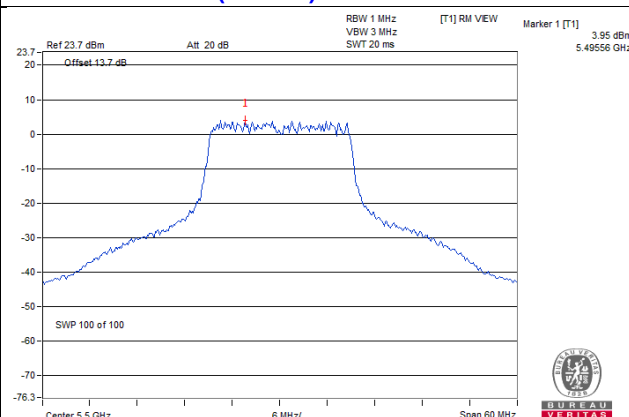
- Note:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 4.76 < 6\text{dBi}$, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

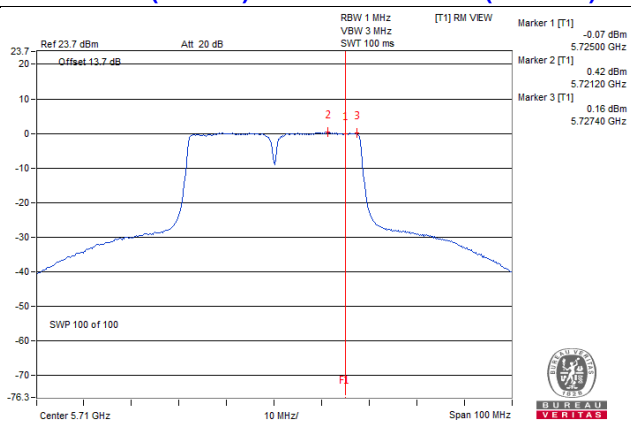
802.11a / Chain 0 : CH116



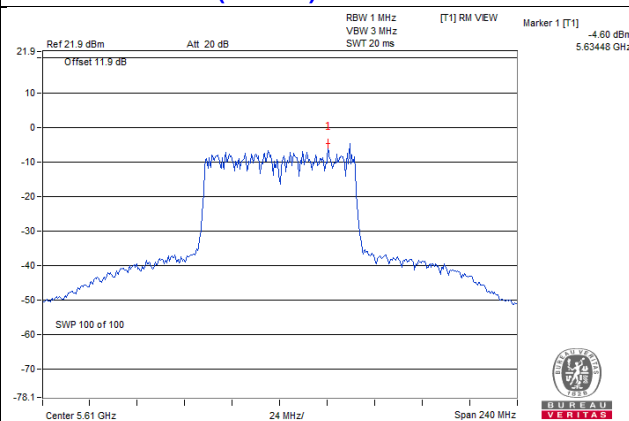
802.11ac (VHT20) / Chain 0 : CH100



802.11ac (VHT40) / Chain 0 : CH142 (UNII-2C)



802.11ac (VHT80) / Chain 1 : CH122



For U-NII-3:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144 (U-NII-3 Band)	5720	-5.82	-3.60	3.01	0.25	-0.34	30.00	Pass
	149	5745	-5.45	-3.23	3.01	0.25	0.03	30.00	Pass
	157	5785	-5.56	-3.34	3.01	0.25	-0.08	30.00	Pass
	165	5825	-5.02	-2.80	3.01	0.25	0.46	30.00	Pass
1	144 (U-NII-3 Band)	5720	-6.03	-3.81	3.01	0.25	-0.55	30.00	Pass
	149	5745	-5.37	-3.15	3.01	0.25	0.11	30.00	Pass
	157	5785	-4.65	-2.43	3.01	0.25	0.83	30.00	Pass
	165	5825	-4.92	-2.70	3.01	0.25	0.56	30.00	Pass

Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 4.76\text{dBi} < 6\text{dBi}$, so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144 (U-NII-3 Band)	5720	-5.08	-2.86	3.01	0.23	0.38	30.00	Pass
	149	5745	-5.11	-2.89	3.01	0.23	0.35	30.00	Pass
	157	5785	-5.93	-3.71	3.01	0.23	-0.47	30.00	Pass
	165	5825	-5.96	-3.74	3.01	0.23	-0.50	30.00	Pass
1	144 (U-NII-3 Band)	5720	-5.08	-2.86	3.01	0.23	0.38	30.00	Pass
	149	5745	-5.30	-3.08	3.01	0.23	0.16	30.00	Pass
	157	5785	-5.12	-2.90	3.01	0.23	0.34	30.00	Pass
	165	5825	-4.99	-2.77	3.01	0.23	0.47	30.00	Pass

Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 4.76\text{dBi} < 6\text{dBi}$, so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	142 (U-NII-3 Band)	5710	-8.00	-5.78	3.01	0.40	-2.37	30.00	Pass
	151	5755	-9.96	-7.74	3.01	0.40	-4.33	30.00	Pass
	159	5795	-10.30	-8.08	3.01	0.40	-4.67	30.00	Pass
1	142 (U-NII-3 Band)	5710	-8.14	-5.92	3.01	0.40	-2.51	30.00	Pass
	151	5755	-9.24	-7.02	3.01	0.40	-3.61	30.00	Pass
	159	5795	-9.05	-6.83	3.01	0.40	-3.42	30.00	Pass

Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 4.76\text{dBi} < 6\text{dBi}$, so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

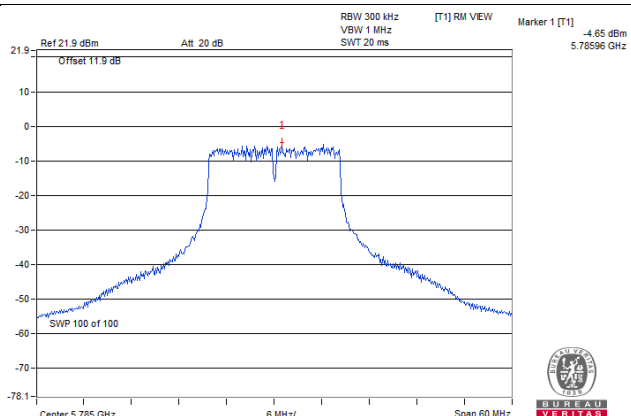
TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	138 (U-NII-3 Band)	5690	-13.18	-10.96	3.01	0.86	-7.09	30.00	Pass
	155	5775	-12.87	-10.65	3.01	0.86	-6.78	30.00	Pass
1	138 (U-NII-3 Band)	5690	-12.51	-10.29	3.01	0.86	-6.42	30.00	Pass
	155	5775	-12.44	-10.22	3.01	0.86	-6.35	30.00	Pass

Note: 1. Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 4.76\text{dBi} < 6\text{dBi}$, so the power density limit shall not be reduced.

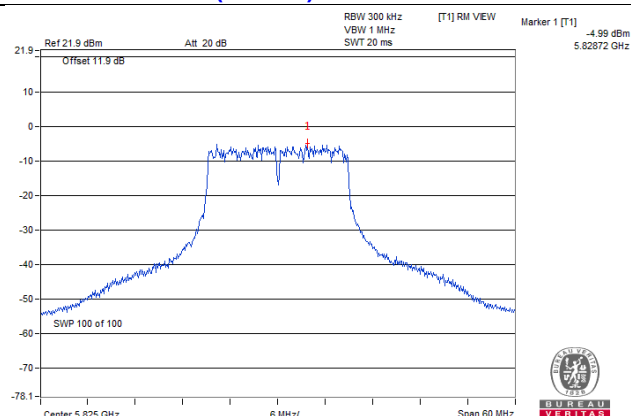
2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

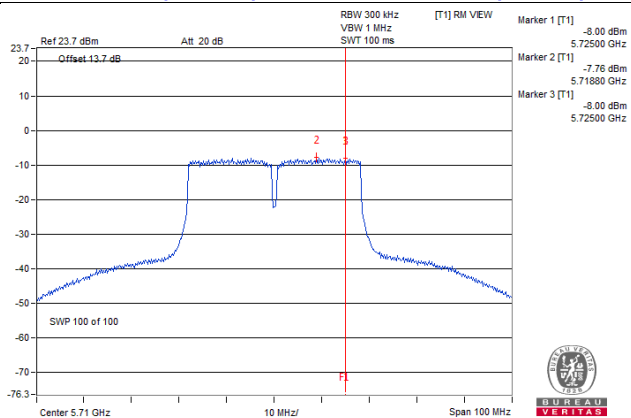
802.11a / Chain 1 : CH157



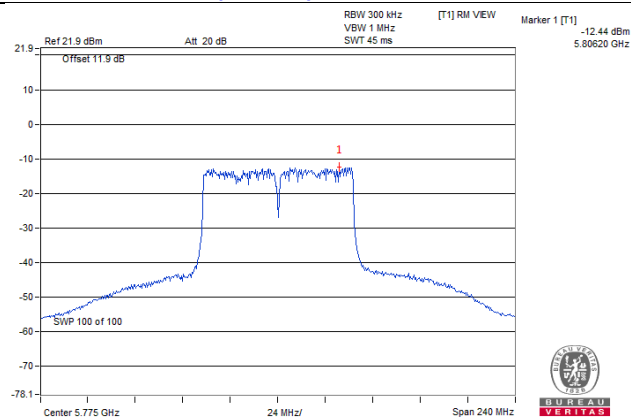
802.11ac (VHT20) / Chain 1 : CH165



802.11ac (VHT40) / Chain 0 : CH142 (UNII-3)



802.11ac (VHT80) / Chain 1 : CH155

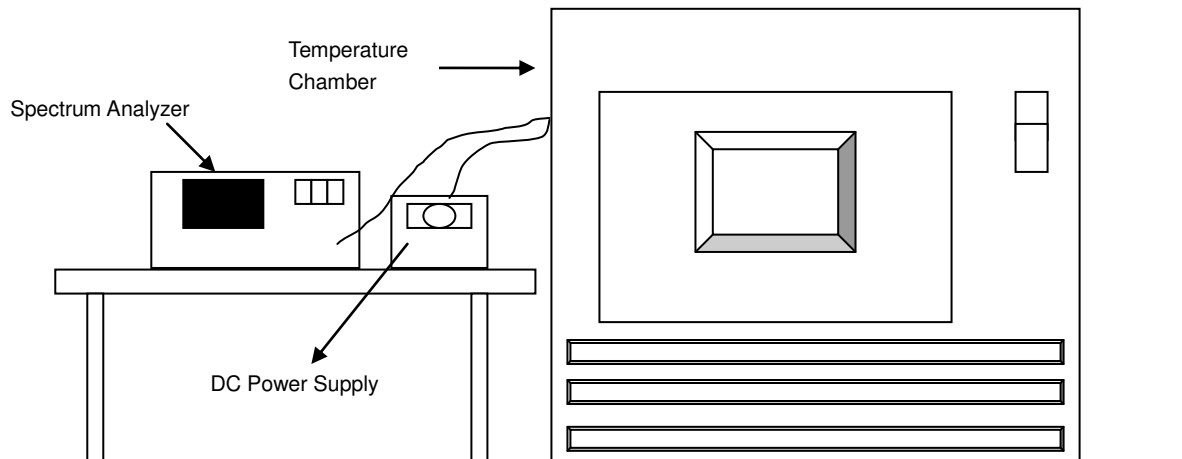


4.5 Frequency Stability Measurement

4.5.1 Limits of Frequency Stability Measurement

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

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

- 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 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 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
50	3.85	5179.9888	PASS	5179.9906	PASS	5179.9907	PASS	5179.9925	PASS
40	3.85	5180.0036	PASS	5180.0023	PASS	5180.0037	PASS	5180.0065	PASS
30	3.85	5179.9958	PASS	5180.0002	PASS	5180.0001	PASS	5179.9982	PASS
20	3.85	5179.9867	PASS	5179.9905	PASS	5179.9878	PASS	5179.9874	PASS
10	3.85	5179.9795	PASS	5179.9806	PASS	5179.9806	PASS	5179.9792	PASS
0	3.85	5180.0225	PASS	5180.0225	PASS	5180.022	PASS	5180.0242	PASS
-10	3.85	5179.9888	PASS	5179.9878	PASS	5179.9905	PASS	5179.9893	PASS
-20	3.85	5179.9977	PASS	5179.9988	PASS	5180.0025	PASS	5179.9984	PASS
-30	3.85	5179.9903	PASS	5179.9878	PASS	5179.988	PASS	5179.9866	PASS

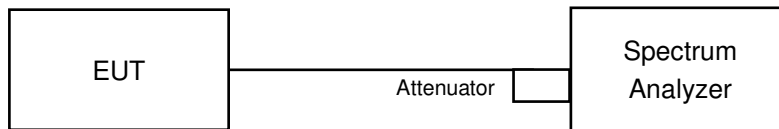
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	4.43	5179.9867	PASS	5179.9901	PASS	5179.9877	PASS	5179.988	PASS
	3.85	5179.9867	PASS	5179.9905	PASS	5179.9878	PASS	5179.9874	PASS
	3.27	5179.9869	PASS	5179.9915	PASS	5179.9884	PASS	5179.9868	PASS

4.6 6dB Bandwidth Measurement

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

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

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (UNII-3 Band)	5720	3.18	3.18	0.5	PASS
149	5745	16.43	16.42	0.5	PASS
157	5785	16.41	16.43	0.5	PASS
165	5825	16.43	16.41	0.5	PASS

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (UNII-3 Band)	5720	3.81	3.81	0.5	PASS
149	5745	17.67	17.65	0.5	PASS
157	5785	17.63	17.66	0.5	PASS
165	5825	17.64	17.64	0.5	PASS

802.11ac (VHT40)

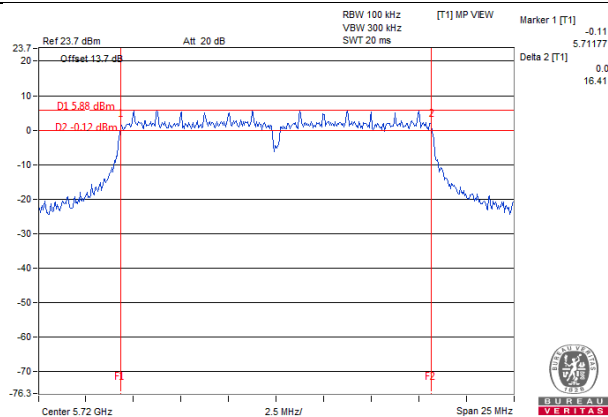
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (UNII-3 Band)	5710	3.23	3.24	0.5	PASS
151	5755	36.48	36.47	0.5	PASS
159	5795	36.49	36.46	0.5	PASS

802.11ac (VHT80)

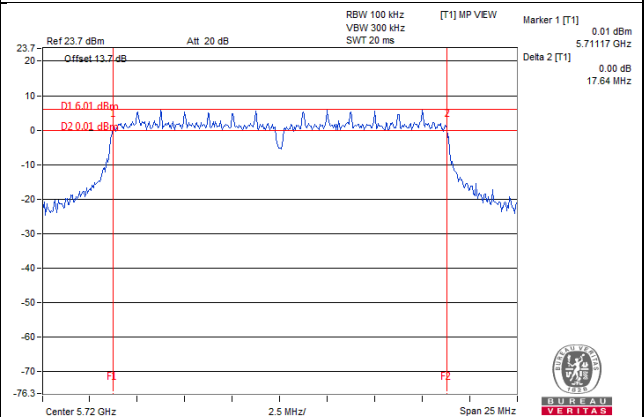
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (UNII-3 Band)	5690	3.21	3.25	0.5	PASS
155	5775	76.48	76.29	0.5	PASS

Spectrum Plot of Worst Value

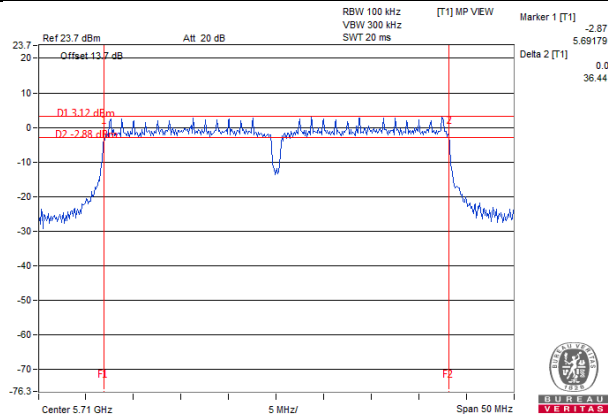
802.11a / Chain 0 : CH144 (U-NII-3)



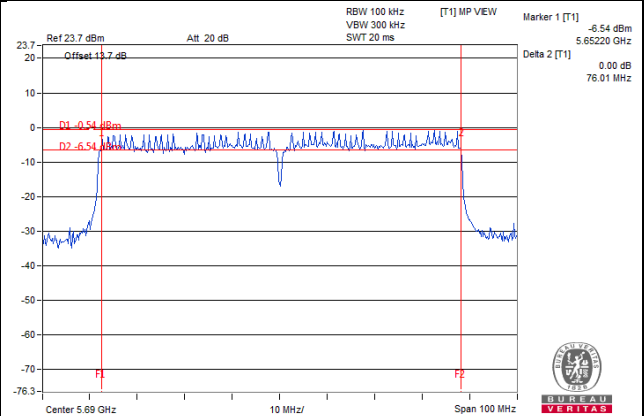
802.11ac (VHT20) / Chain 0 : CH144 (U-NII-3)



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

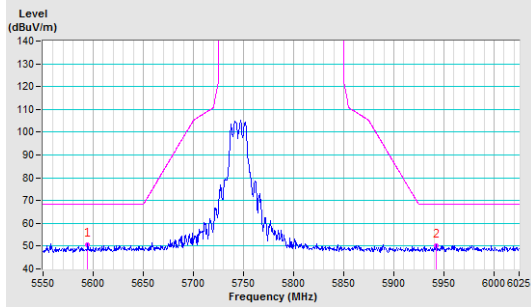
Please refer to the attached file (Test Setup Photo).

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

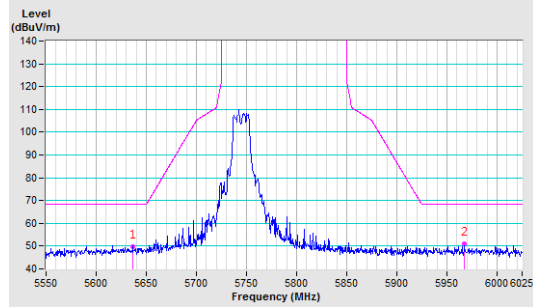
802.11a

CH 149 5745 MHz

Horizontal

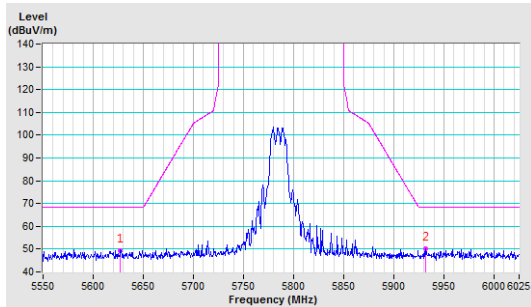


Vertical

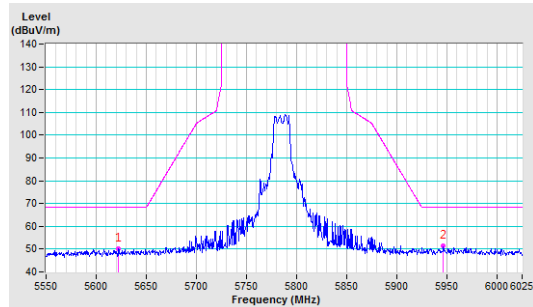


CH 157 5785 MHz

Horizontal

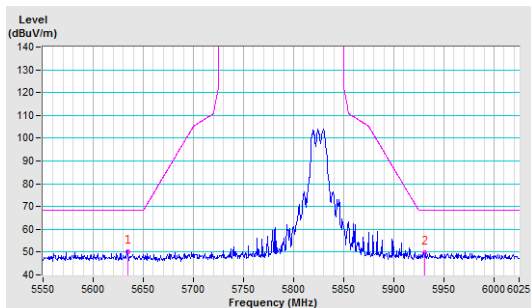


Vertical

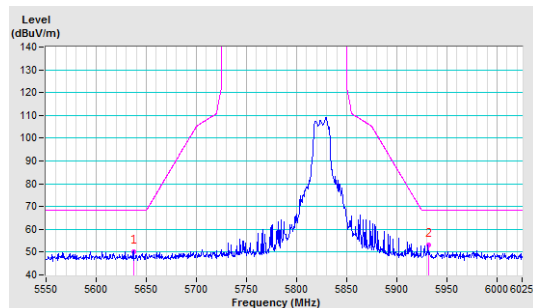


CH 165 5825 MHz

Horizontal



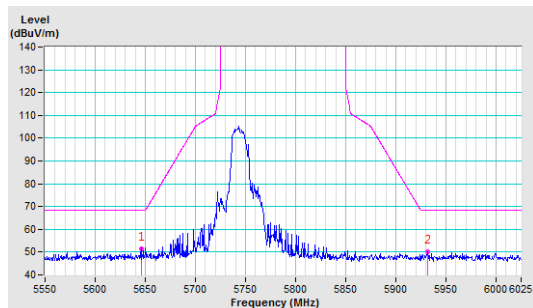
Vertical



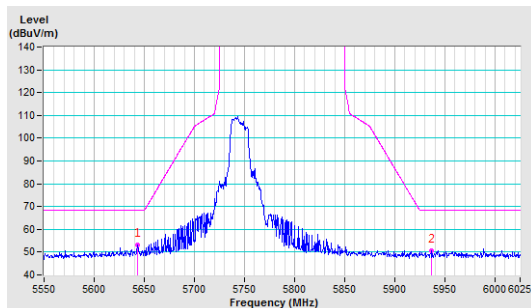
802.11ac (VHT20)

CH 149 5745 MHz

Horizontal

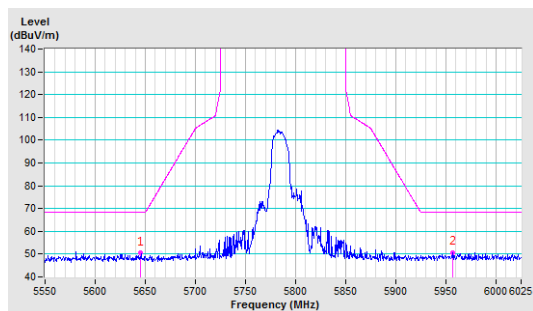


Vertical

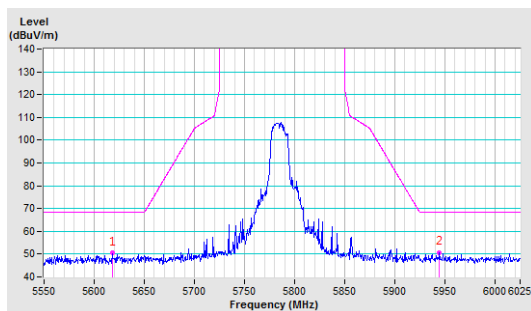


CH 157 5785 MHz

Horizontal

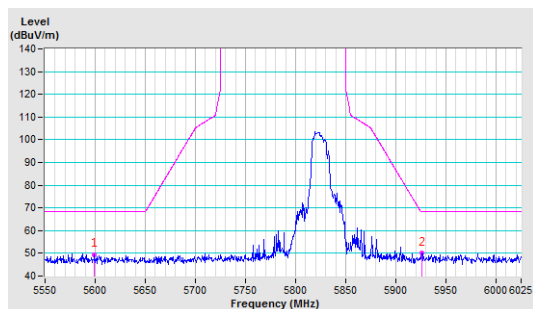


Vertical

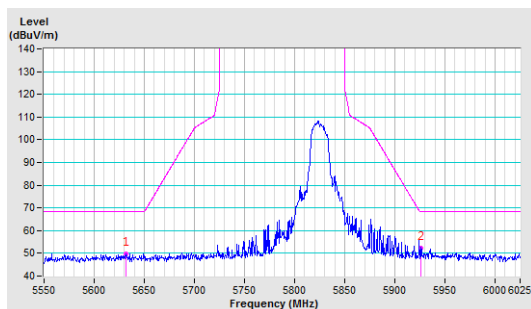


CH 165 5825 MHz

Horizontal



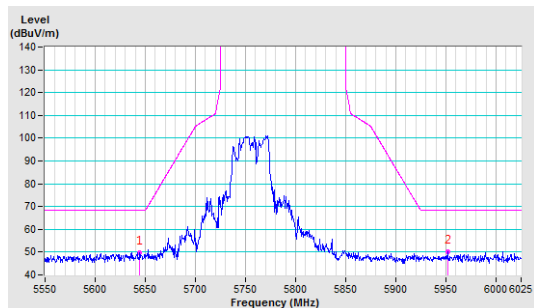
Vertical



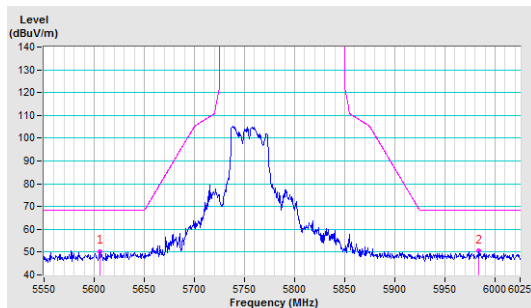
802.11ac (VHT40)

CH 151 5755 MHz

Horizontal

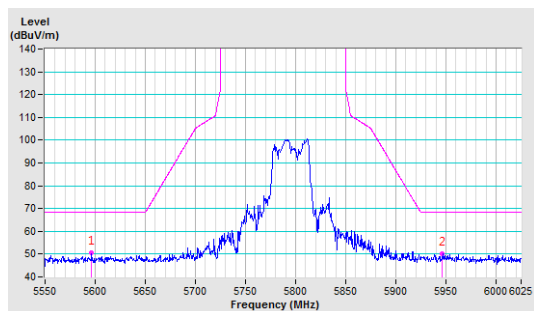


Vertical

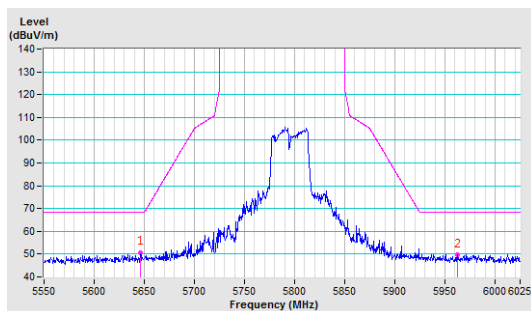


CH 159 5795 MHz

Horizontal



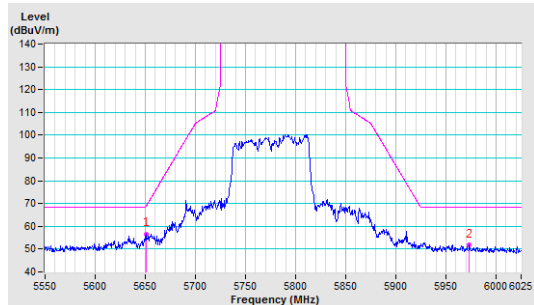
Vertical



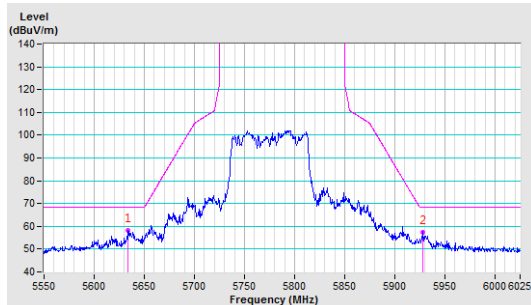
802.11ac (VHT80)

CH 155 5775 MHz

Horizontal



Vertical



Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are 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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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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