FCC Test Report

Report No.:	RF190902E13-1
FCC ID:	TLZ-CM358SM
Test Model:	AW-CM358SM
Received Date:	Sep. 02, 2019
Test Date:	Sep. 12 to Oct. 07, 2019
Issued Date:	Jan. 13, 2020
Applicant:	AzureWave Technologies, Inc.
Address:	8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF190902E13-1	Original release.	Jan. 13, 2020

1 Certificate of Conformity

Product:	IEEE 802.11a/b/g/n/ac WLAN with Bluetooth 5 Combo Stamp Module
Brand:	AzureWave
Test Model:	AW-CM358SM
Sample Status:	ENGINEERING SAMPLE
Applicant:	AzureWave Technologies, Inc.
Test Date:	Sep. 12 to Oct. 07, 2019
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10: 2013

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

Prepared by : _____ , **Date:** Jan. 13, 2020

Joyce Kuo / Specialist

Approved by : _____ , **Date:** Jan. 13, 2020

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -18.43dB at 0.15391MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.4dB at 5350.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

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

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	9kHz~30MHz	3.0 dB
	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	IEEE 802.11a/b/g/n/ac WLAN with Bluetooth 5 Combo Stamp Module
Brand	AzureWave
Test Model	AW-CM358SM
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18~ 5.24GHz, 5.26GHz ~ 5.32GHz, 5.50GHz ~ 5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	**2.412 ~ 2.462GHz:** 553.35 mW **5.18 ~ 5.24GHz:** 135.519 mW **5.26 ~ 5.32GHz:** 122.744 mW **5.5 ~ 5.72GHz:** 100.313 mW **5.745 ~ 5.825GHz:** 136.458 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. WLAN & Bluetooth technology can't transmit at same time.
2. The antenna provided to the EUT, please refer to the following table:

Antenna No.	Brand	Model	Ant. Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type
1	NA	NA	2.98	2.4~2.4835	PIFA	i-pex(MHF)
			5.16	5.15~5.85		

3. The EUT incorporates a SISO function.

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	1TX	1RX
802.11g	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX
5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX
802.11ac (VHT20)	1TX	1RX
802.11ac (VHT40)	1TX	1RX
802.11ac (VHT80)	1TX	1RX
Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report.		

4. 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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

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

Radiated Emission Test (Above 1GHz):

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

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (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 (VHT20)	5180-5320, 5500-5720, 5745-5825	36 to 64, 100 to 144, 149 to 165	149	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

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

Antenna Port Conducted Measurement:

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

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:

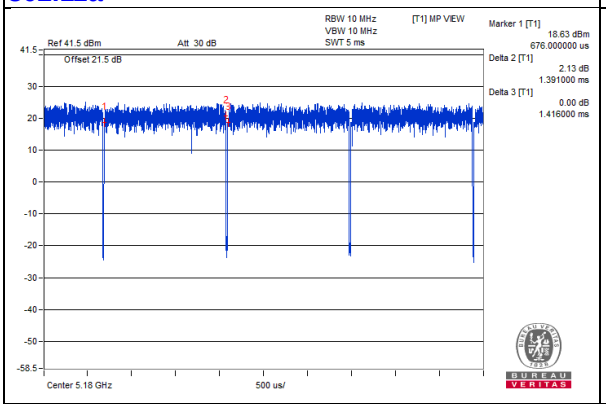
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (System)	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	25deg. C, 75%RH	120Vac, 60Hz	Kevin Ko
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

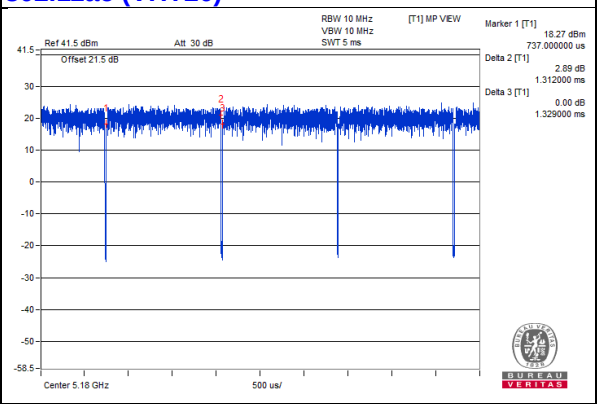
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.391 ms/1.416 ms = 0.982.
802.11ac (VHT20): Duty cycle = 1.312 ms/1.329 ms = 0.987.
802.11ac (VHT40): Duty cycle = 0.65 ms/0.668 ms = 0.973, Duty factor = 10 * log(1/Duty cycle) = 0.12
802.11ac (VHT80): Duty cycle = 0.323ms/0.344 ms = 0.939, Duty factor = 10 * log(1/Duty cycle) = 0.27

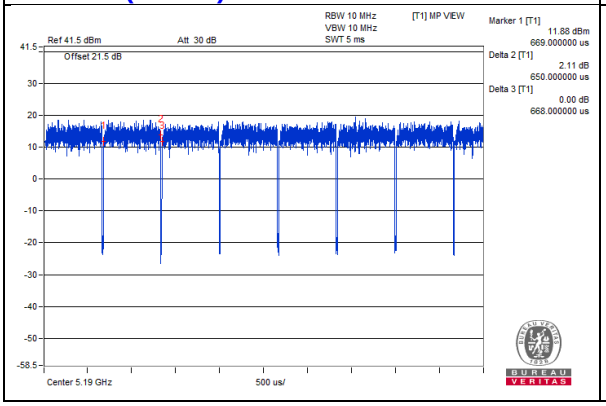
802.11a



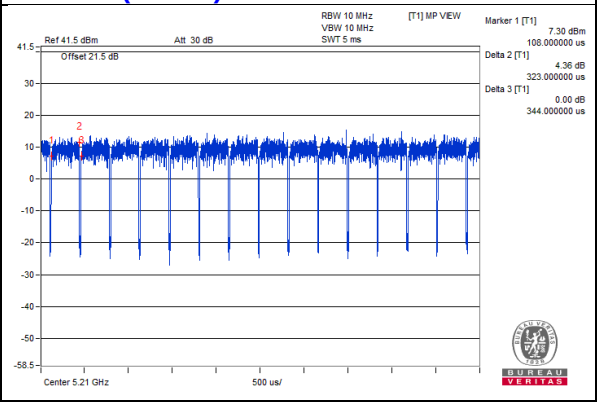
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	482T3R1	FCC DoC	Provided by Lab
B.	Laptop	Lenovo	81A4	YD02YN9H	PD93165NGU	Provided by Lab
C.	Test Tool	Azure Wave	NA	NA	NA	Supplied by client
D.	USB Disk	Transcend	NA	NA	NA	Supplied by client
E.	Test Tool	Azure Wave	NA	NA	NA	Supplied by client
F.	Adapter	Dell	LA65N52-01	NA	NA	Provided by Lab

Note:

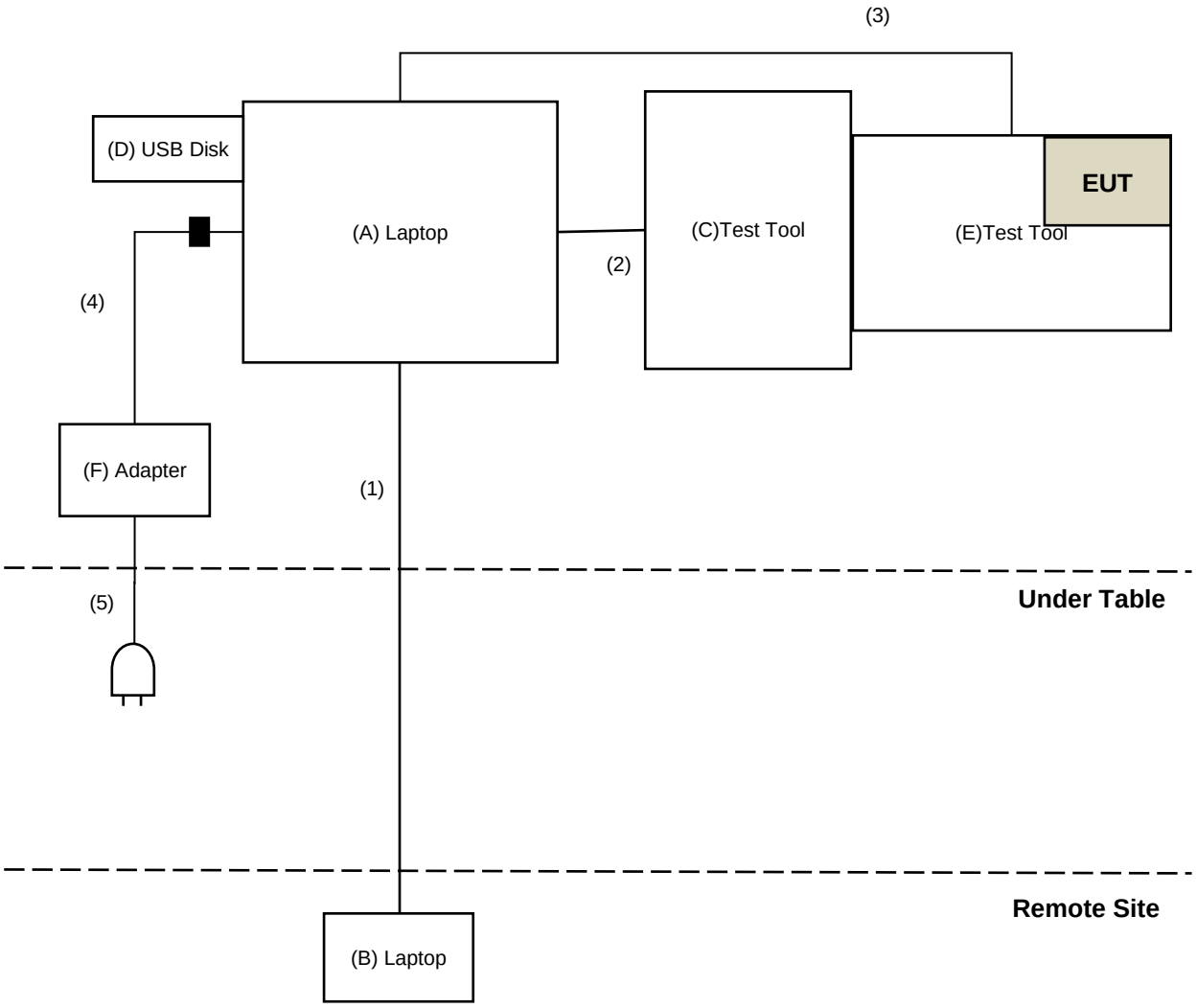
1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	USB Cable	1	1.5	Yes	0	Provided by Lab
3.	USB Cable	1	1	Yes	0	Supplied by client
4.	DC Cable	1	1.8	No	1	Provided by Lab
5.	AC Cable	1	0.8	No	0	Provided by Lab

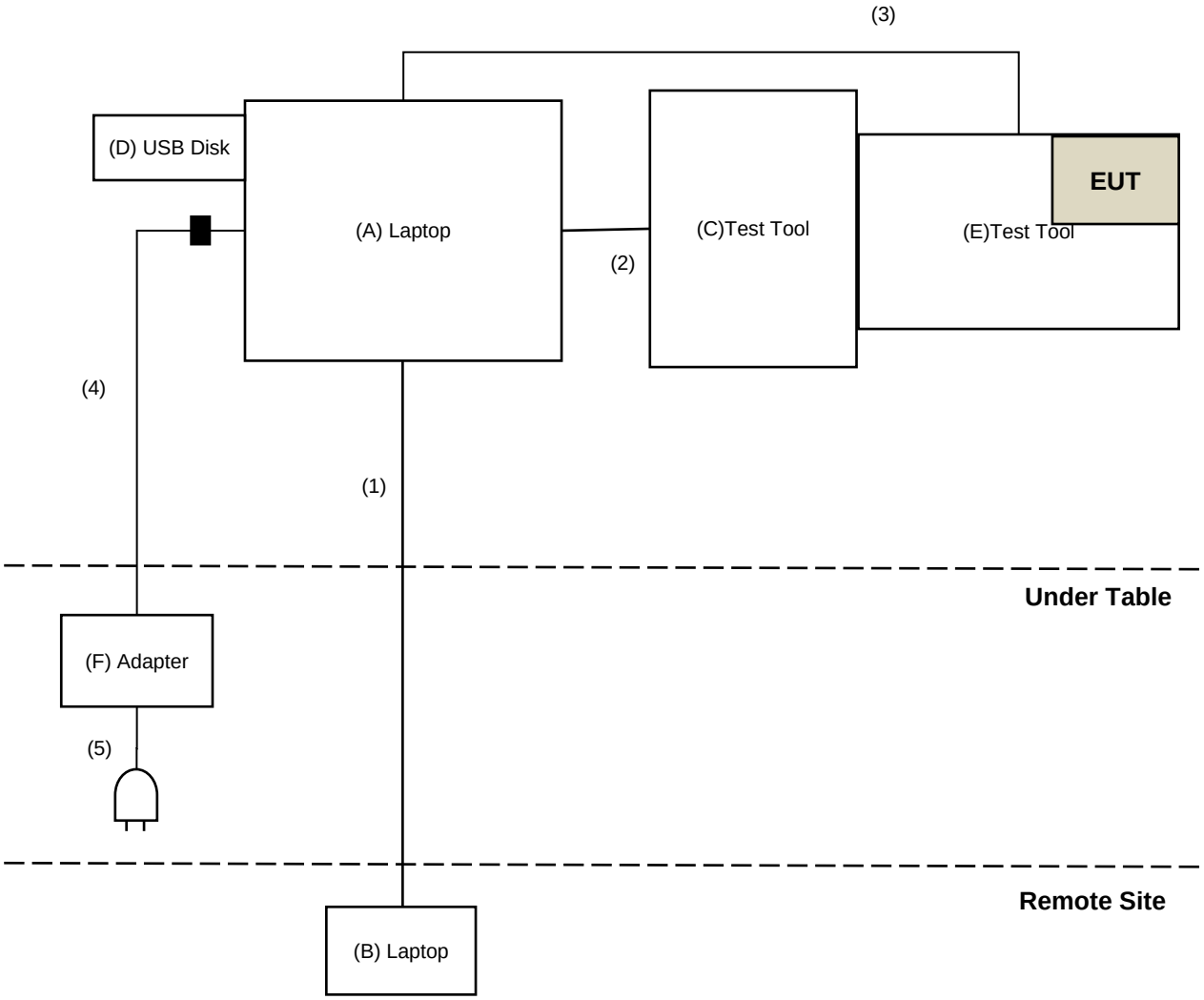
Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test

For conducted test:



For other test items:



3.5 General Description of Applied Standard

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

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="2">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK:74 (dBμV/m)</td><td>AV:54 (dBμV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK:-27 (dBm/MHz)</td><td rowspan="3">PK:68.2(dBμV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK:-27 (dBm/MHz) *1
PK:10 (dBm/MHz) *2
PK:15.6 (dBm/MHz) *3
PK:27 (dBm/MHz) *4</td><td>PK: 68.2(dBμV/m) *1
PK:105.2 (dBμV/m) *2
PK: 110.8(dBμV/m) *3
PK:122.2 (dBμV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="4">*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.</td></tr>
</table>

Note:

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

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

4.1.2 Test Instruments

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Jan. 22, 2019	Jan. 21, 2020
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 15, 2019	Aug. 14, 2020
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Sep. 12 to 28, 2019

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Oct. 07, 2019

4.1.3 Test Procedure

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

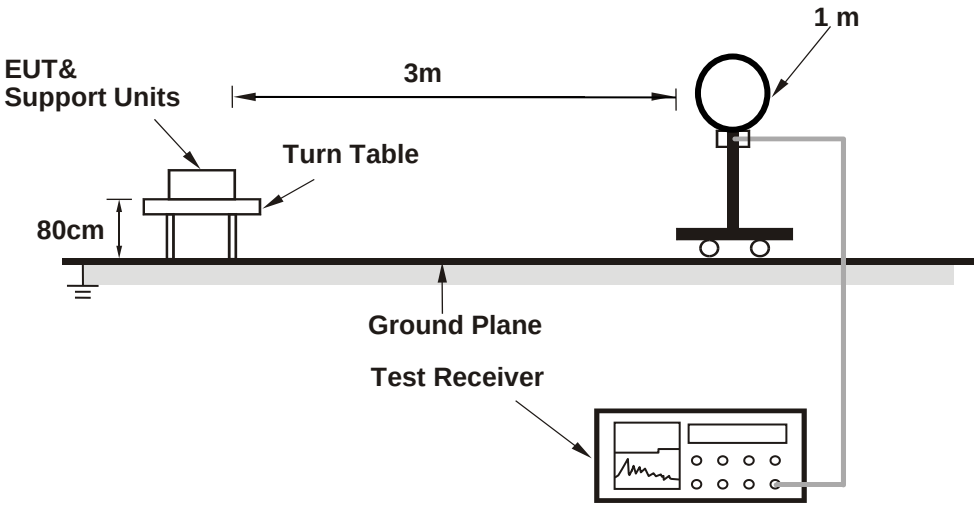
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

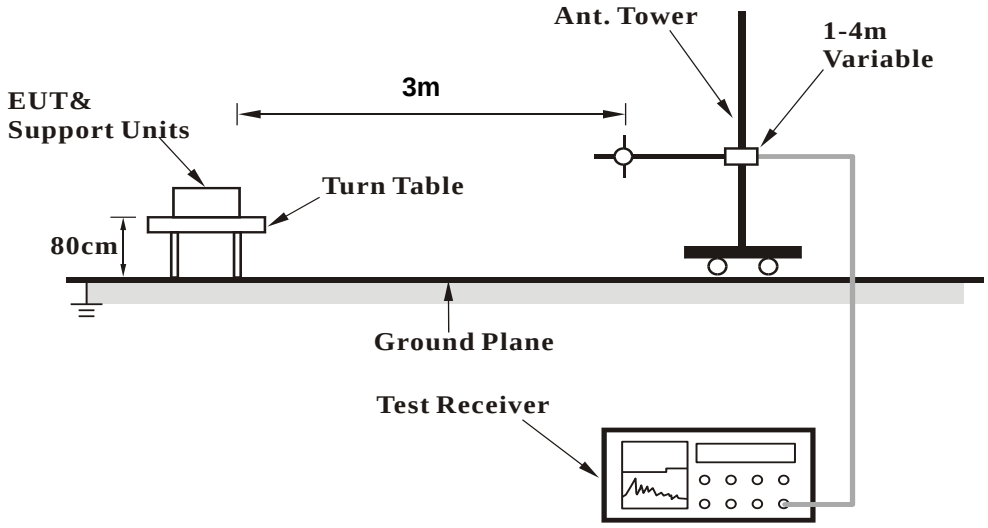
No deviation.

4.1.5 Test Setup

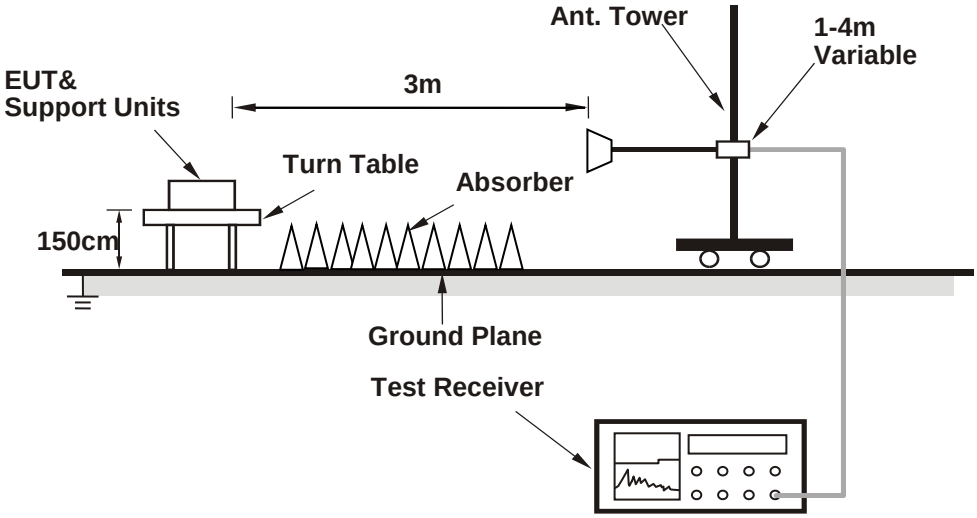
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

a. Connected the EUT with the Laptop which is placed on the testing table
b. Controlling software (DutApiSisoACDuallf.exe [v1.0.0.164]) has been activated to set the EUT under transmission condition continuously.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.3 PK	74.0	-6.7	1.09 H	154	63.8	3.5
2	5150.00	48.0 AV	54.0	-6.0	1.09 H	154	44.5	3.5
3	*5180.00	108.6 PK			1.09 H	154	105.2	3.4
4	*5180.00	96.0 AV			1.09 H	154	92.6	3.4
5	#10360.00	54.0 PK	68.2	-14.2	2.77 H	18	40.9	13.1
6	15540.00	61.0 PK	74.0	-13.0	2.75 H	41	47.4	13.6
7	15540.00	43.9 AV	54.0	-10.1	2.75 H	41	30.3	13.6
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	70.2 PK	74.0	-3.8	2.56 V	229	66.7	3.5
2	5150.00	51.0 AV	54.0	-3.0	2.56 V	229	47.5	3.5
3	*5180.00	111.4 PK			2.56 V	229	108.0	3.4
4	*5180.00	100.6 AV			2.56 V	229	97.2	3.4
5	#10360.00	57.7 PK	68.2	-10.5	3.20 V	263	44.6	13.1
6	15540.00	63.7 PK	74.0	-10.3	3.08 V	282	50.1	13.6
7	15540.00	45.8 AV	54.0	-8.2	3.08 V	282	32.2	13.6

REMARKS:

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

CHANNEL	TX Channel 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	67.4 PK	74.0	-6.6	2.80 H	8	63.9	3.5
2	5150.00	49.4 AV	54.0	-4.6	2.80 H	8	45.9	3.5
3	*5200.00	112.3 PK			2.80 H	8	108.9	3.4
4	*5200.00	101.5 AV			2.80 H	8	98.1	3.4
5	5350.00	55.7 PK	74.0	-18.3	2.80 H	8	52.4	3.3
6	5350.00	42.6 AV	54.0	-11.4	2.80 H	8	39.3	3.3
7	#10400.00	54.8 PK	68.2	-13.4	2.81 H	10	41.4	13.4
8	15600.00	60.7 PK	74.0	-13.3	2.83 H	34	47.3	13.4
9	15600.00	43.4 AV	54.0	-10.6	2.83 H	34	30.0	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	68.0 PK	74.0	-6.0	3.11 V	231	64.5	3.5
2	5150.00	52.4 AV	54.0	-1.6	3.11 V	231	48.9	3.5
3	*5200.00	116.6 PK			3.11 V	231	113.2	3.4
4	*5200.00	105.9 AV			3.11 V	231	102.5	3.4
5	5350.00	58.9 PK	74.0	-15.1	3.11 V	231	55.6	3.3
6	5350.00	45.9 AV	54.0	-8.1	3.11 V	231	42.6	3.3
7	#10400.00	56.8 PK	68.2	-11.4	3.16 V	283	43.4	13.4
8	15600.00	64.0 PK	74.0	-10.0	3.05 V	285	50.6	13.4
9	15600.00	46.2 AV	54.0	-7.8	3.05 V	285	32.8	13.4

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	109.5 PK			1.14 H	157	106.5	3.0
2	*5240.00	96.0 AV			1.14 H	157	93.0	3.0
3	5350.00	58.1 PK	74.0	-15.9	1.14 H	157	54.8	3.3
4	5350.00	42.6 AV	54.0	-11.4	1.14 H	157	39.3	3.3
5	#10480.00	54.6 PK	68.2	-13.6	2.86 H	6	41.1	13.5
6	15720.00	60.8 PK	74.0	-13.2	2.80 H	20	48.0	12.8
7	15720.00	43.2 AV	54.0	-10.8	2.80 H	20	30.4	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	113.4 PK			2.53 V	224	110.4	3.0
2	*5240.00	103.0 AV			2.53 V	224	100.0	3.0
3	5350.00	59.7 PK	74.0	-14.3	2.53 V	224	56.4	3.3
4	5350.00	44.1 AV	54.0	-9.9	2.53 V	224	40.8	3.3
5	#10480.00	57.4 PK	68.2	-10.8	3.15 V	273	43.9	13.5
6	15720.00	64.2 PK	74.0	-9.8	3.13 V	288	51.4	12.8
7	15720.00	46.0 AV	54.0	-8.0	3.13 V	288	33.2	12.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.8 PK	74.0	-19.2	2.78 H	14	51.3	3.5
2	5150.00	42.5 AV	54.0	-11.5	2.78 H	14	39.0	3.5
3	*5260.00	109.1 PK			2.78 H	14	106.1	3.0
4	*5260.00	95.9 AV			2.78 H	14	92.9	3.0
5	5350.00	61.3 PK	74.0	-12.7	2.78 H	14	58.0	3.3
6	5350.00	43.7 AV	54.0	-10.3	2.78 H	14	40.4	3.3
7	#10520.00	55.1 PK	68.2	-13.1	2.85 H	11	41.4	13.7
8	15780.00	61.0 PK	74.0	-13.0	2.82 H	31	48.1	12.9
9	15780.00	43.4 AV	54.0	-10.6	2.82 H	31	30.5	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	56.9 PK	74.0	-17.1	3.11 V	275	53.4	3.5
2	5150.00	44.6 AV	54.0	-9.4	3.11 V	275	41.1	3.5
3	*5260.00	113.2 PK			3.11 V	275	110.2	3.0
4	*5260.00	102.7 AV			3.11 V	275	99.7	3.0
5	5350.00	63.6 PK	74.0	-10.4	3.11 V	275	60.3	3.3
6	5350.00	45.9 AV	54.0	-8.1	3.11 V	275	42.6	3.3
7	#10520.00	56.6 PK	68.2	-11.6	3.16 V	290	42.9	13.7
8	15780.00	63.6 PK	74.0	-10.4	3.07 V	272	50.7	12.9
9	15780.00	45.9 AV	54.0	-8.1	3.07 V	272	33.0	12.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.7 PK			2.76 H	18	106.6	3.1
2	*5300.00	96.3 AV			2.76 H	18	93.2	3.1
3	5350.00	68.7 PK	74.0	-5.3	2.76 H	18	65.4	3.3
4	5350.00	51.1 AV	54.0	-2.9	2.76 H	18	47.8	3.3
5	10600.00	59.5 PK	74.0	-14.5	3.64 H	96	45.9	13.6
6	10600.00	45.6 AV	54.0	-8.4	3.64 H	96	32.0	13.6
7	15900.00	53.5 PK	74.0	-20.5	1.37 H	61	40.2	13.3
8	15900.00	40.2 AV	54.0	-13.8	1.37 H	61	26.9	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	113.2 PK			3.18 V	203	110.1	3.1
2	*5300.00	102.5 AV			3.18 V	203	99.4	3.1
3	5350.00	71.2 PK	74.0	-2.8	3.18 V	203	67.9	3.3
4	5350.00	53.2 AV	54.0	-0.8	3.18 V	203	49.9	3.3
5	10600.00	65.0 PK	74.0	-9.0	3.48 V	208	51.4	13.6
6	10600.00	49.9 AV	54.0	-4.1	3.48 V	208	36.3	13.6
7	15900.00	54.2 PK	74.0	-19.8	3.89 V	33	40.9	13.3
8	15900.00	41.0 AV	54.0	-13.0	3.89 V	33	27.7	13.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.5 PK			2.77 H	13	104.3	3.2
2	*5320.00	94.1 AV			2.77 H	13	90.9	3.2
3	5350.00	66.8 PK	74.0	-7.2	2.77 H	13	63.5	3.3
4	5350.00	47.6 AV	54.0	-6.4	2.77 H	13	44.3	3.3
5	10640.00	55.0 PK	74.0	-19.0	2.77 H	17	41.3	13.7
6	10640.00	42.7 AV	54.0	-11.3	2.77 H	17	29.0	13.7
7	15960.00	61.1 PK	74.0	-12.9	2.81 H	17	47.6	13.5
8	15960.00	43.4 AV	54.0	-10.6	2.81 H	17	29.9	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.8 PK			2.98 V	233	107.6	3.2
2	*5320.00	100.3 AV			2.98 V	233	97.1	3.2
3	5350.00	71.5 PK	74.0	-2.5	2.98 V	233	68.2	3.3
4	5350.00	50.1 AV	54.0	-3.9	2.98 V	233	46.8	3.3
5	10640.00	56.5 PK	74.0	-17.5	3.12 V	278	42.8	13.7
6	10640.00	44.5 AV	54.0	-9.5	3.12 V	278	30.8	13.7
7	15960.00	63.3 PK	74.0	-10.7	3.03 V	289	49.8	13.5
8	15960.00	45.4 AV	54.0	-8.6	3.03 V	289	31.9	13.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.9 PK	74.0	-13.1	2.83 H	20	57.2	3.7
2	5460.00	40.6 AV	54.0	-13.4	2.83 H	20	36.9	3.7
3	#5470.00	64.7 PK	68.2	-3.5	2.83 H	20	61.0	3.7
4	*5500.00	103.0 PK			2.83 H	20	99.4	3.6
5	*5500.00	92.4 AV			2.83 H	20	88.8	3.6
6	11000.00	54.6 PK	74.0	-19.4	2.82 H	4	40.2	14.4
7	11000.00	42.5 AV	54.0	-11.5	2.82 H	4	28.1	14.4
8	#16500.00	61.1 PK	68.2	-7.1	2.80 H	28	45.5	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.8 PK	74.0	-12.2	2.94 V	230	58.1	3.7
2	5460.00	41.7 AV	54.0	-12.3	2.94 V	230	38.0	3.7
3	#5470.00	66.4 PK	68.2	-1.8	2.94 V	230	62.7	3.7
4	*5500.00	108.0 PK			2.94 V	230	104.4	3.6
5	*5500.00	97.5 AV			2.94 V	230	93.9	3.6
6	11000.00	57.2 PK	74.0	-16.8	3.15 V	278	42.8	14.4
7	11000.00	44.9 AV	54.0	-9.1	3.15 V	278	30.5	14.4
8	#16500.00	63.8 PK	68.2	-4.4	3.09 V	275	48.2	15.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.4 PK			2.77 H	26	105.7	3.7
2	*5580.00	95.9 AV			2.77 H	26	92.2	3.7
3	11160.00	54.9 PK	74.0	-19.1	2.77 H	0	40.9	14.0
4	11160.00	42.8 AV	54.0	-11.2	2.77 H	0	28.8	14.0
5	#16740.00	61.8 PK	68.2	-6.4	2.79 H	32	44.7	17.1
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	*5580.00	113.2 PK			2.83 V	241	109.5	3.7
2	*5580.00	102.5 AV			2.83 V	241	98.8	3.7
3	11160.00	57.3 PK	74.0	-16.7	3.20 V	282	43.3	14.0
4	11160.00	44.9 AV	54.0	-9.1	3.20 V	282	30.9	14.0
5	#16740.00	63.2 PK	68.2	-5.0	3.08 V	260	46.1	17.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	103.7 PK			2.76 H	25	99.8	3.9
2	*5700.00	92.9 AV			2.76 H	25	89.0	3.9
3	#5725.00	65.2 PK	68.2	-3.0	2.76 H	25	61.4	3.8
4	11400.00	54.4 PK	74.0	-19.6	2.78 H	19	40.2	14.2
5	11400.00	42.6 AV	54.0	-11.4	2.78 H	19	28.4	14.2
6	#17100.00	61.1 PK	68.2	-7.1	2.81 H	34	44.2	16.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.9 PK			2.82 V	240	105.0	3.9
2	*5700.00	98.4 AV			2.82 V	240	94.5	3.9
3	#5725.00	67.2 PK	68.2	-1.0	2.82 V	240	63.4	3.8
4	11400.00	57.6 PK	74.0	-16.4	3.14 V	264	43.4	14.2
5	11400.00	45.3 AV	54.0	-8.7	3.14 V	264	31.1	14.2
6	#17100.00	63.6 PK	68.2	-4.6	3.05 V	277	46.7	16.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	68.9 PK	74.0	-5.1	2.83 H	8	65.2	3.7
2	5460.00	48.2 AV	54.0	-5.8	2.83 H	8	44.5	3.7
3	#5470.00	66.0 PK	68.2	-2.2	2.81 H	8	62.3	3.7
4	*5720.00	109.2 PK			2.77 H	33	105.3	3.9
5	*5720.00	95.7 AV			2.77 H	33	91.8	3.9
6	#5850.00	64.7 PK	68.2	-3.5	2.82 H	15	60.4	4.3
7	11440.00	55.2 PK	74.0	-18.8	2.76 H	10	41.0	14.2
8	11440.00	42.9 AV	54.0	-11.1	2.76 H	10	28.7	14.2
9	#17160.00	62.4 PK	68.2	-5.8	2.75 H	22	45.2	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	5460.00	69.3 PK	74.0	-4.7	2.85 V	242	65.6	3.7
2	5460.00	47.6 AV	54.0	-6.4	2.85 V	242	43.9	3.7
3	#5470.00	65.8 PK	68.2	-2.4	2.82 V	261	62.1	3.7
4	*5720.00	113.3 PK			2.83 V	237	109.4	3.9
5	*5720.00	102.5 AV			2.83 V	237	98.6	3.9
6	#5850.00	66.2 PK	68.2	-2.0	2.81 V	252	61.9	4.3
7	11440.00	57.4 PK	74.0	-16.6	3.18 V	273	43.2	14.2
8	11440.00	45.1 AV	54.0	-8.9	3.18 V	273	30.9	14.2
9	#17160.00	63.1 PK	68.2	-5.1	3.08 V	247	45.9	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	112.2 PK			2.78 H	297	108.3	3.9
2	*5745.00	98.8 AV			2.78 H	297	94.9	3.9
3	11490.00	54.5 PK	74.0	-19.5	2.82 H	11	40.3	14.2
4	11490.00	42.1 AV	54.0	-11.9	2.82 H	11	27.9	14.2
5	#17235.00	61.1 PK	68.2	-7.1	2.81 H	17	43.8	17.3
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	113.7 PK			2.73 V	236	109.8	3.9
2	*5745.00	100.5 AV			2.73 V	236	96.6	3.9
3	11490.00	56.9 PK	74.0	-17.1	3.12 V	273	42.7	14.2
4	11490.00	44.6 AV	54.0	-9.4	3.12 V	273	30.4	14.2
5	#17235.00	63.4 PK	68.2	-4.8	3.04 V	272	46.1	17.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	110.8 PK			2.66 H	272	106.8	4.0
2	*5785.00	97.6 AV			2.66 H	272	93.6	4.0
3	11570.00	54.5 PK	74.0	-19.5	2.78 H	6	40.3	14.2
4	11570.00	42.3 AV	54.0	-11.7	2.78 H	6	28.1	14.2
5	#17355.00	61.1 PK	68.2	-7.1	2.75 H	23	43.4	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	114.2 PK			2.61 V	242	110.2	4.0
2	*5785.00	100.9 AV			2.61 V	242	96.9	4.0
3	11570.00	57.0 PK	74.0	-17.0	3.17 V	268	42.8	14.2
4	11570.00	44.6 AV	54.0	-9.4	3.17 V	268	30.4	14.2
5	#17355.00	64.2 PK	68.2	-4.0	3.10 V	271	46.5	17.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	113.1 PK			2.65 H	287	108.9	4.2
2	*5825.00	99.3 AV			2.65 H	287	95.1	4.2
3	11650.00	54.8 PK	74.0	-19.2	2.80 H	17	40.9	13.9
4	11650.00	42.6 AV	54.0	-11.4	2.80 H	17	28.7	13.9
5	#17475.00	61.3 PK	68.2	-6.9	2.78 H	13	42.5	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	114.0 PK			2.51 V	244	109.8	4.2
2	*5825.00	100.6 AV			2.51 V	244	96.4	4.2
3	11650.00	57.1 PK	74.0	-16.9	3.16 V	272	43.2	13.9
4	11650.00	45.1 AV	54.0	-8.9	3.16 V	272	31.2	13.9
5	#17475.00	63.3 PK	68.2	-4.9	3.11 V	278	44.5	18.8

REMARKS:

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

802.11ac (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.1 PK	74.0	-8.9	2.70 H	13	61.6	3.5
2	5150.00	47.2 AV	54.0	-6.8	2.70 H	13	43.7	3.5
3	*5180.00	109.4 PK			2.70 H	13	106.0	3.4
4	*5180.00	96.4 AV			2.70 H	13	93.0	3.4
5	#10360.00	54.9 PK	68.2	-13.3	2.84 H	16	41.8	13.1
6	15540.00	61.9 PK	74.0	-12.1	2.82 H	28	48.3	13.6
7	15540.00	44.1 AV	54.0	-9.9	2.82 H	28	30.5	13.6
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	68.8 PK	74.0	-5.2	2.82 V	233	65.3	3.5
2	5150.00	51.1 AV	54.0	-2.9	2.82 V	233	47.6	3.5
3	*5180.00	113.9 PK			2.82 V	233	110.5	3.4
4	*5180.00	100.9 AV			2.82 V	233	97.5	3.4
5	#10360.00	57.8 PK	68.2	-10.4	3.16 V	282	44.7	13.1
6	15540.00	63.2 PK	74.0	-10.8	3.09 V	285	49.6	13.6
7	15540.00	45.5 AV	54.0	-8.5	3.09 V	285	31.9	13.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.1 PK	74.0	-8.9	2.73 H	20	61.6	3.5
2	5150.00	49.6 AV	54.0	-4.4	2.73 H	20	46.1	3.5
3	*5200.00	114.0 PK			2.73 H	20	110.6	3.4
4	*5200.00	103.2 AV			2.73 H	20	99.8	3.4
5	5350.00	57.7 PK	74.0	-16.3	2.73 H	20	54.4	3.3
6	5350.00	44.2 AV	54.0	-9.8	2.73 H	20	40.9	3.3
7	#10400.00	55.2 PK	68.2	-13.0	2.81 H	15	41.8	13.4
8	15600.00	61.7 PK	74.0	-12.3	2.78 H	19	48.3	13.4
9	15600.00	43.8 AV	54.0	-10.2	2.78 H	19	30.4	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.2 PK	74.0	-5.8	3.11 V	223	64.7	3.5
2	5150.00	52.8 AV	54.0	-1.2	3.11 V	223	49.3	3.5
3	*5200.00	116.6 PK			3.11 V	223	113.2	3.4
4	*5200.00	105.9 AV			3.11 V	223	102.5	3.4
5	5350.00	58.9 PK	74.0	-15.1	3.11 V	223	55.6	3.3
6	5350.00	45.6 AV	54.0	-8.4	3.11 V	223	42.3	3.3
7	#10400.00	57.4 PK	68.2	-10.8	3.10 V	281	44.0	13.4
8	15600.00	64.2 PK	74.0	-9.8	3.03 V	273	50.8	13.4
9	15600.00	46.1 AV	54.0	-7.9	3.03 V	273	32.7	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.9 PK			2.76 H	32	107.9	3.0
2	*5240.00	97.7 AV			2.76 H	32	94.7	3.0
3	5350.00	57.4 PK	74.0	-16.6	2.76 H	32	54.1	3.3
4	5350.00	41.6 AV	54.0	-12.4	2.76 H	32	38.3	3.3
5	#10480.00	54.7 PK	68.2	-13.5	2.81 H	27	41.2	13.5
6	15720.00	62.3 PK	74.0	-11.7	2.78 H	28	49.5	12.8
7	15720.00	44.4 AV	54.0	-9.6	2.78 H	28	31.6	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	113.2 PK			2.54 V	217	110.2	3.0
2	*5240.00	102.5 AV			2.54 V	217	99.5	3.0
3	5350.00	59.1 PK	74.0	-14.9	2.54 V	217	55.8	3.3
4	5350.00	43.7 AV	54.0	-10.3	2.54 V	217	40.4	3.3
5	#10480.00	57.3 PK	68.2	-10.9	3.10 V	291	43.8	13.5
6	15720.00	63.4 PK	74.0	-10.6	3.11 V	273	50.6	12.8
7	15720.00	45.6 AV	54.0	-8.4	3.11 V	273	32.8	12.8

REMARKS:

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

CHANNEL	TX Channel 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	57.3 PK	74.0	-16.7	2.79 H	12	53.8	3.5
2	5150.00	41.3 AV	54.0	-12.7	2.79 H	12	37.8	3.5
3	*5260.00	110.9 PK			2.79 H	12	107.9	3.0
4	*5260.00	97.7 AV			2.79 H	12	94.7	3.0
5	5350.00	60.3 PK	74.0	-13.7	2.79 H	12	57.0	3.3
6	5350.00	44.1 AV	54.0	-9.9	2.79 H	12	40.8	3.3
7	#10520.00	55.0 PK	68.2	-13.2	2.86 H	23	41.3	13.7
8	15780.00	62.2 PK	74.0	-11.8	2.77 H	30	49.3	12.9
9	15780.00	44.4 AV	54.0	-9.6	2.77 H	30	31.5	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	56.2 PK	74.0	-17.8	2.10 V	271	52.7	3.5
2	5150.00	44.2 AV	54.0	-9.8	2.10 V	271	40.7	3.5
3	*5260.00	112.9 PK			2.10 V	271	109.9	3.0
4	*5260.00	102.5 AV			2.10 V	271	99.5	3.0
5	5350.00	64.0 PK	74.0	-10.0	3.10 V	271	60.7	3.3
6	5350.00	46.2 AV	54.0	-7.8	3.10 V	271	42.9	3.3
7	#10520.00	57.2 PK	68.2	-11.0	3.18 V	280	43.5	13.7
8	15780.00	63.7 PK	74.0	-10.3	3.07 V	286	50.8	12.9
9	15780.00	46.1 AV	54.0	-7.9	3.07 V	286	33.2	12.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	111.2 PK			2.76 H	29	108.1	3.1
2	*5300.00	98.1 AV			2.76 H	29	95.0	3.1
3	5350.00	68.1 PK	74.0	-5.9	2.76 H	29	64.8	3.3
4	5350.00	50.2 AV	54.0	-3.8	2.76 H	29	46.9	3.3
5	10600.00	55.2 PK	74.0	-18.8	2.89 H	31	41.6	13.6
6	10600.00	43.3 AV	54.0	-10.7	2.89 H	31	29.7	13.6
7	15900.00	62.5 PK	74.0	-11.5	2.84 H	33	49.2	13.3
8	15900.00	44.5 AV	54.0	-9.5	2.84 H	33	31.2	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.6 PK			3.22 V	209	109.5	3.1
2	*5300.00	102.2 AV			3.22 V	209	99.1	3.1
3	5350.00	70.9 PK	74.0	-3.1	3.22 V	209	67.6	3.3
4	5350.00	53.1 AV	54.0	-0.9	3.22 V	209	49.8	3.3
5	10600.00	57.4 PK	74.0	-16.6	3.18 V	283	43.8	13.6
6	10600.00	44.8 AV	54.0	-9.2	3.18 V	283	31.2	13.6
7	15900.00	63.6 PK	74.0	-10.4	3.08 V	288	50.3	13.3
8	15900.00	45.8 AV	54.0	-8.2	3.08 V	288	32.5	13.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.2 PK			2.80 H	31	106.0	3.2
2	*5320.00	96.1 AV			2.80 H	31	92.9	3.2
3	5350.00	68.9 PK	74.0	-5.1	2.80 H	31	65.6	3.3
4	5350.00	47.5 AV	54.0	-6.5	2.80 H	31	44.2	3.3
5	10640.00	55.0 PK	74.0	-19.0	2.83 H	5	41.3	13.7
6	10640.00	42.8 AV	54.0	-11.2	2.83 H	5	29.1	13.7
7	15960.00	62.1 PK	74.0	-11.9	2.87 H	26	48.6	13.5
8	15960.00	44.1 AV	54.0	-9.9	2.87 H	26	30.6	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.8 PK			2.95 V	231	107.6	3.2
2	*5320.00	100.1 AV			2.95 V	231	96.9	3.2
3	5350.00	71.6 PK	74.0	-2.4	2.95 V	231	68.3	3.3
4	5350.00	50.2 AV	54.0	-3.8	2.95 V	231	46.9	3.3
5	10640.00	57.3 PK	74.0	-16.7	3.11 V	273	43.6	13.7
6	10640.00	45.1 AV	54.0	-8.9	3.11 V	273	31.4	13.7
7	15960.00	63.3 PK	74.0	-10.7	3.14 V	278	49.8	13.5
8	15960.00	45.5 AV	54.0	-8.5	3.14 V	278	32.0	13.5

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.9 PK	74.0	-13.1	2.71 H	21	57.2	3.7
2	5460.00	40.8 AV	54.0	-13.2	2.71 H	21	37.1	3.7
3	#5470.00	65.2 PK	68.2	-3.0	2.71 H	21	61.5	3.7
4	*5500.00	104.6 PK			2.71 H	21	101.0	3.6
5	*5500.00	94.0 AV			2.71 H	21	90.4	3.6
6	11000.00	54.4 PK	74.0	-19.6	2.87 H	2	40.0	14.4
7	11000.00	42.5 AV	54.0	-11.5	2.87 H	2	28.1	14.4
8	#16500.00	61.2 PK	68.2	-7.0	2.76 H	36	45.6	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.5 PK	74.0	-12.5	2.94 V	231	57.8	3.7
2	5460.00	41.5 AV	54.0	-12.5	2.94 V	231	37.8	3.7
3	#5470.00	66.5 PK	68.2	-1.7	2.94 V	231	62.8	3.7
4	*5500.00	108.2 PK			2.94 V	231	104.6	3.6
5	*5500.00	97.7 AV			2.94 V	231	94.1	3.6
6	11000.00	56.9 PK	74.0	-17.1	3.15 V	270	42.5	14.4
7	11000.00	44.7 AV	54.0	-9.3	3.15 V	270	30.3	14.4
8	#16500.00	63.4 PK	68.2	-4.8	3.06 V	274	47.8	15.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	110.1 PK			2.78 H	32	106.4	3.7
2	*5580.00	99.1 AV			2.78 H	32	95.4	3.7
3	11160.00	55.5 PK	74.0	-18.5	2.81 H	1	41.5	14.0
4	11160.00	43.2 AV	54.0	-10.8	2.81 H	1	29.2	14.0
5	#16740.00	61.7 PK	68.2	-6.5	2.78 H	36	44.6	17.1
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	*5580.00	113.3 PK			2.82 V	235	109.6	3.7
2	*5580.00	102.4 AV			2.82 V	235	98.7	3.7
3	11160.00	57.0 PK	74.0	-17.0	3.20 V	270	43.0	14.0
4	11160.00	44.5 AV	54.0	-9.5	3.20 V	270	30.5	14.0
5	#16740.00	63.9 PK	68.2	-4.3	3.13 V	284	46.8	17.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.8 PK			2.75 H	33	101.9	3.9
2	*5700.00	95.4 AV			2.75 H	33	91.5	3.9
3	#5725.00	64.9 PK	68.2	-3.3	2.75 H	33	61.1	3.8
4	11400.00	54.6 PK	74.0	-19.4	2.78 H	18	40.4	14.2
5	11400.00	42.7 AV	54.0	-11.3	2.78 H	18	28.5	14.2
6	#17100.00	61.7 PK	68.2	-6.5	2.87 H	36	44.8	16.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.2 PK			2.83 V	242	105.3	3.9
2	*5700.00	98.9 AV			2.83 V	242	95.0	3.9
3	#5725.00	67.7 PK	68.2	-0.5	2.83 V	242	63.9	3.8
4	11400.00	57.2 PK	74.0	-16.8	3.16 V	267	43.0	14.2
5	11400.00	45.0 AV	54.0	-9.0	3.16 V	267	30.8	14.2
6	#17100.00	63.9 PK	68.2	-4.3	3.06 V	275	47.0	16.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	69.1 PK	74.0	-4.9	2.83 H	21	65.4	3.7
2	5460.00	48.3 AV	54.0	-5.7	2.83 H	21	44.6	3.7
3	#5470.00	65.8 PK	68.2	-2.4	2.83 H	21	62.1	3.7
4	*5720.00	108.8 PK			2.83 H	21	104.9	3.9
5	*5720.00	95.5 AV			2.83 H	21	91.6	3.9
6	#5850.00	65.2 PK	68.2	-3.0	2.83 H	21	60.9	4.3
7	11440.00	55.5 PK	74.0	-18.5	2.77 H	23	41.3	14.2
8	11440.00	43.2 AV	54.0	-10.8	2.77 H	23	29.0	14.2
9	#17160.00	62.7 PK	68.2	-5.5	2.79 H	17	45.5	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	5460.00	68.9 PK	74.0	-5.1	2.80 V	248	65.2	3.7
2	5460.00	47.4 AV	54.0	-6.6	2.80 V	248	43.7	3.7
3	#5470.00	65.8 PK	68.2	-2.4	2.80 V	248	62.1	3.7
4	*5720.00	113.2 PK			2.80 V	248	109.3	3.9
5	*5720.00	102.3 AV			2.80 V	248	98.4	3.9
6	#5850.00	65.9 PK	68.2	-2.3	2.80 V	248	61.6	4.3
7	11440.00	57.7 PK	74.0	-16.3	2.83 V	233	43.5	14.2
8	11440.00	45.3 AV	54.0	-8.7	2.83 V	233	31.1	14.2
9	#17160.00	63.9 PK	68.2	-4.3	2.82 V	238	46.7	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5745.00	113.7 PK			2.71 H	288	109.8	3.9
2	*5745.00	100.1 AV			2.71 H	288	96.2	3.9
3	11490.00	54.7 PK	74.0	-19.3	2.82 H	8	40.5	14.2
4	11490.00	42.8 AV	54.0	-11.2	2.82 H	8	28.6	14.2
5	#17235.00	61.9 PK	68.2	-6.3	2.84 H	16	44.6	17.3
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	113.3 PK			3.06 V	243	109.4	3.9
2	*5745.00	100.1 AV			3.06 V	243	96.2	3.9
3	11490.00	56.9 PK	74.0	-17.1	3.17 V	276	42.7	14.2
4	11490.00	44.6 AV	54.0	-9.4	3.17 V	276	30.4	14.2
5	#17235.00	64.4 PK	68.2	-3.8	3.12 V	260	47.1	17.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.2 PK			2.70 H	286	108.2	4.0
2	*5785.00	98.6 AV			2.70 H	286	94.6	4.0
3	11570.00	54.7 PK	74.0	-19.3	2.80 H	27	40.5	14.2
4	11570.00	42.3 AV	54.0	-11.7	2.80 H	27	28.1	14.2
5	#17355.00	62.4 PK	68.2	-5.8	2.84 H	32	44.7	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	113.6 PK			3.08 V	213	109.6	4.0
2	*5785.00	100.4 AV			3.08 V	213	96.4	4.0
3	11570.00	56.9 PK	74.0	-17.1	3.10 V	264	42.7	14.2
4	11570.00	44.9 AV	54.0	-9.1	3.10 V	264	30.7	14.2
5	#17355.00	63.5 PK	68.2	-4.7	3.06 V	277	45.8	17.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	111.9 PK			2.74 H	282	107.7	4.2
2	*5825.00	98.5 AV			2.74 H	282	94.3	4.2
3	11650.00	54.8 PK	74.0	-19.2	2.83 H	13	40.9	13.9
4	11650.00	42.5 AV	54.0	-11.5	2.83 H	13	28.6	13.9
5	#17475.00	61.8 PK	68.2	-6.4	2.82 H	43	43.0	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	114.1 PK			2.67 V	216	109.9	4.2
2	*5825.00	100.7 AV			2.67 V	216	96.5	4.2
3	11650.00	57.5 PK	74.0	-16.5	3.10 V	282	43.6	13.9
4	11650.00	45.0 AV	54.0	-9.0	3.10 V	282	31.1	13.9
5	#17475.00	63.7 PK	68.2	-4.5	3.12 V	264	44.9	18.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.8 PK	74.0	-9.2	2.75 H	268	61.3	3.5
2	5150.00	49.6 AV	54.0	-4.4	2.75 H	268	46.1	3.5
3	*5190.00	100.5 PK			2.75 H	268	97.1	3.4
4	*5190.00	91.1 AV			2.75 H	268	87.7	3.4
5	#10380.00	55.4 PK	68.2	-12.8	2.89 H	11	42.1	13.3
6	15570.00	62.0 PK	74.0	-12.0	2.79 H	30	48.6	13.4
7	15570.00	44.1 AV	54.0	-9.9	2.79 H	30	30.7	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	67.5 PK	74.0	-6.5	2.86 V	228	64.0	3.5
2	5150.00	52.4 AV	54.0	-1.6	2.86 V	228	48.9	3.5
3	*5190.00	104.1 PK			2.86 V	228	100.7	3.4
4	*5190.00	94.9 AV			2.86 V	228	91.5	3.4
5	#10380.00	57.6 PK	68.2	-10.6	3.13 V	281	44.3	13.3
6	15570.00	63.4 PK	74.0	-10.6	3.05 V	283	50.0	13.4
7	15570.00	45.7 AV	54.0	-8.3	3.05 V	283	32.3	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	107.0 PK			2.77 H	285	103.9	3.1
2	*5230.00	97.6 AV			2.77 H	285	94.5	3.1
3	5350.00	64.6 PK	74.0	-9.4	2.77 H	285	61.3	3.3
4	5350.00	48.5 AV	54.0	-5.5	2.77 H	285	45.2	3.3
5	#10460.00	54.1 PK	68.2	-14.1	2.79 H	15	40.6	13.5
6	15690.00	61.6 PK	74.0	-12.4	2.85 H	36	48.7	12.9
7	15690.00	44.1 AV	54.0	-9.9	2.85 H	36	31.2	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	*5230.00	109.9 PK			2.87 V	238	106.8	3.1
2	*5230.00	100.5 AV			2.87 V	238	97.4	3.1
3	5350.00	68.4 PK	74.0	-5.6	2.87 V	238	65.1	3.3
4	5350.00	50.9 AV	54.0	-3.1	2.87 V	238	47.6	3.3
5	#10460.00	57.0 PK	68.2	-11.2	3.15 V	291	43.5	13.5
6	15690.00	64.3 PK	74.0	-9.7	3.08 V	260	51.4	12.9
7	15690.00	46.3 AV	54.0	-7.7	3.08 V	260	33.4	12.9

REMARKS:

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

CHANNEL	TX Channel 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	58.7 PK	74.0	-15.3	2.75 H	284	55.2	3.5
2	5150.00	45.8 AV	54.0	-8.2	2.75 H	284	42.3	3.5
3	*5270.00	108.2 PK			2.75 H	284	105.2	3.0
4	*5270.00	98.5 AV			2.75 H	284	95.5	3.0
5	5350.00	68.0 PK	74.0	-6.0	2.75 H	284	64.7	3.3
6	5350.00	50.3 AV	54.0	-3.7	2.75 H	284	47.0	3.3
7	#10540.00	55.2 PK	68.2	-13.0	2.83 H	5	41.5	13.7
8	15810.00	61.2 PK	74.0	-12.8	2.87 H	36	48.1	13.1
9	15810.00	43.7 AV	54.0	-10.3	2.87 H	36	30.6	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	61.2 PK	74.0	-12.8	2.87 V	233	57.7	3.5
2	5150.00	48.4 AV	54.0	-5.6	2.87 V	233	44.9	3.5
3	*5270.00	110.7 PK			2.87 V	233	107.7	3.0
4	*5270.00	101.3 AV			2.87 V	233	98.3	3.0
5	5350.00	71.0 PK	74.0	-3.0	2.87 V	233	67.7	3.3
6	5350.00	53.5 AV	54.0	-0.5	2.87 V	233	50.2	3.3
7	#10540.00	57.3 PK	68.2	-10.9	3.16 V	288	43.6	13.7
8	15810.00	63.6 PK	74.0	-10.4	3.13 V	263	50.5	13.1
9	15810.00	45.9 AV	54.0	-8.1	3.13 V	263	32.8	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.4 PK			2.79 H	288	96.2	3.2
2	*5310.00	90.3 AV			2.79 H	288	87.1	3.2
3	5350.00	68.0 PK	74.0	-6.0	2.79 H	288	64.7	3.3
4	5350.00	50.1 AV	54.0	-3.9	2.79 H	288	46.8	3.3
5	10620.00	54.3 PK	74.0	-19.7	2.74 H	16	40.7	13.6
6	10620.00	42.7 AV	54.0	-11.3	2.74 H	16	29.1	13.6
7	15930.00	61.9 PK	74.0	-12.1	2.86 H	23	48.6	13.3
8	15930.00	44.4 AV	54.0	-9.6	2.86 H	23	31.1	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	101.4 PK			2.84 V	251	98.2	3.2
2	*5310.00	92.4 AV			2.84 V	251	89.2	3.2
3	5350.00	68.3 PK	74.0	-5.7	2.84 V	251	65.0	3.3
4	**5350.00**	**53.6 AV**	**54.0**	**-0.4**	**2.84 V**	**251**	**50.3**	**3.3**
5	10620.00	56.7 PK	74.0	-17.3	3.20 V	263	43.1	13.6
6	10620.00	44.6 AV	54.0	-9.4	3.20 V	263	31.0	13.6
7	15930.00	63.7 PK	74.0	-10.3	3.14 V	287	50.4	13.3
8	15930.00	45.7 AV	54.0	-8.3	3.14 V	287	32.4	13.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.0 PK	74.0	-14.0	2.77 H	269	56.3	3.7
2	5460.00	45.1 AV	54.0	-8.9	2.77 H	269	41.4	3.7
3	#5470.00	65.8 PK	68.2	-2.4	2.77 H	269	62.1	3.7
4	*5510.00	100.1 PK			2.77 H	269	96.5	3.6
5	*5510.00	90.8 AV			2.77 H	269	87.2	3.6
6	11020.00	53.9 PK	74.0	-20.1	2.77 H	22	39.6	14.3
7	11020.00	42.0 AV	54.0	-12.0	2.77 H	22	27.7	14.3
8	#16530.00	61.6 PK	68.2	-6.6	2.86 H	26	45.9	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	5460.00	62.4 PK	74.0	-11.6	3.24 V	240	58.7	3.7
2	5460.00	47.5 AV	54.0	-6.5	3.24 V	240	43.8	3.7
3	#5470.00	67.4 PK	68.2	-0.8	3.24 V	240	63.7	3.7
4	*5510.00	103.7 PK			3.24 V	240	100.1	3.6
5	*5510.00	94.2 AV			3.24 V	240	90.6	3.6
6	11020.00	56.6 PK	74.0	-17.4	3.20 V	293	42.3	14.3
7	11020.00	44.5 AV	54.0	-9.5	3.20 V	293	30.2	14.3
8	#16530.00	64.0 PK	68.2	-4.2	3.11 V	268	48.3	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	107.0 PK			2.73 H	289	103.3	3.7
2	*5550.00	98.0 AV			2.73 H	289	94.3	3.7
3	11100.00	54.7 PK	74.0	-19.3	2.79 H	28	40.5	14.2
4	11100.00	42.6 AV	54.0	-11.4	2.79 H	28	28.4	14.2
5	#16650.00	62.3 PK	68.2	-5.9	2.83 H	24	45.8	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	*5550.00	107.7 PK			3.60 V	304	104.0	3.7
2	*5550.00	99.0 AV			3.60 V	304	95.3	3.7
3	11100.00	57.3 PK	74.0	-16.7	3.14 V	290	43.1	14.2
4	11100.00	44.9 AV	54.0	-9.1	3.14 V	290	30.7	14.2
5	#16650.00	64.4 PK	68.2	-3.8	3.03 V	263	47.9	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	100.4 PK			2.77 H	289	96.7	3.7
2	*5670.00	91.0 AV			2.77 H	289	87.3	3.7
3	#5725.00	65.2 PK	68.2	-3.0	2.77 H	289	61.4	3.8
4	11340.00	53.8 PK	74.0	-20.2	2.84 H	12	39.7	14.1
5	11340.00	41.9 AV	54.0	-12.1	2.84 H	12	27.8	14.1
6	#17010.00	61.6 PK	68.2	-6.6	2.86 H	22	44.5	17.1
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	*5670.00	103.7 PK			2.47 V	233	100.0	3.7
2	*5670.00	94.8 AV			2.47 V	233	91.1	3.7
3	#5725.00	67.0 PK	68.2	-1.2	2.47 V	233	63.2	3.8
4	11340.00	57.7 PK	74.0	-16.3	3.16 V	284	43.6	14.1
5	11340.00	45.1 AV	54.0	-8.9	3.16 V	284	31.0	14.1
6	#17010.00	63.3 PK	68.2	-4.9	3.05 V	271	46.2	17.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	68.7 PK	74.0	-5.3	2.82 H	18	65.0	3.7
2	5460.00	48.1 AV	54.0	-5.9	2.82 H	18	44.4	3.7
3	#5470.00	66.0 PK	68.2	-2.2	2.84 H	18	62.3	3.7
4	*5710.00	109.0 PK			2.80 H	13	105.1	3.9
5	*5710.00	95.9 AV			2.80 H	13	92.0	3.9
6	#5850.00	65.1 PK	68.2	-3.1	2.80 H	6	60.8	4.3
7	11420.00	55.6 PK	74.0	-18.4	2.78 H	31	41.5	14.1
8	11420.00	43.2 AV	54.0	-10.8	2.78 H	31	29.1	14.1
9	#17130.00	62.4 PK	68.2	-5.8	2.77 H	24	45.3	17.1
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	5460.00	68.4 PK	74.0	-5.6	2.83 V	236	64.7	3.7
2	5460.00	47.1 AV	54.0	-6.9	2.83 V	236	43.4	3.7
3	#5470.00	65.8 PK	68.2	-2.4	2.76 V	253	62.1	3.7
4	*5710.00	113.1 PK			2.83 V	257	109.2	3.9
5	*5710.00	102.0 AV			2.83 V	257	98.1	3.9
6	#5850.00	65.8 PK	68.2	-2.4	2.80 V	261	61.5	4.3
7	11420.00	57.9 PK	74.0	-16.1	2.87 V	220	43.8	14.1
8	11420.00	45.2 AV	54.0	-8.8	2.87 V	220	31.1	14.1
9	#17130.00	64.0 PK	68.2	-4.2	2.84 V	250	46.9	17.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5755.00	110.1 PK			2.70 H	288	106.2	3.9
2	*5755.00	100.6 AV			2.70 H	288	96.7	3.9
3	11510.00	53.6 PK	74.0	-20.4	2.82 H	1	39.4	14.2
4	11510.00	42.1 AV	54.0	-11.9	2.82 H	1	27.9	14.2
5	#17265.00	61.0 PK	68.2	-7.2	2.80 H	20	43.8	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	*5755.00	110.5 PK			2.55 V	245	106.6	3.9
2	*5755.00	102.1 AV			2.55 V	245	98.2	3.9
3	11510.00	57.8 PK	74.0	-16.2	3.13 V	279	43.6	14.2
4	11510.00	45.2 AV	54.0	-8.8	3.13 V	279	31.0	14.2
5	#17265.00	64.1 PK	68.2	-4.1	3.03 V	288	46.9	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	108.7 PK			2.71 H	284	104.7	4.0
2	*5795.00	100.0 AV			2.71 H	284	96.0	4.0
3	11590.00	54.7 PK	74.0	-19.3	2.73 H	26	40.5	14.2
4	11590.00	42.6 AV	54.0	-11.4	2.73 H	26	28.4	14.2
5	#17385.00	61.6 PK	68.2	-6.6	2.84 H	28	43.8	17.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	111.2 PK			2.51 V	247	107.2	4.0
2	*5795.00	102.5 AV			2.51 V	247	98.5	4.0
3	11590.00	57.3 PK	74.0	-16.7	3.11 V	287	43.1	14.2
4	11590.00	45.0 AV	54.0	-9.0	3.11 V	287	30.8	14.2
5	#17385.00	63.6 PK	68.2	-4.6	3.13 V	273	45.8	17.8

REMARKS:

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

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	2.75 H	279	62.3	3.5
2	5150.00	50.6 AV	54.0	-3.4	2.75 H	279	47.1	3.5
3	*5210.00	98.1 PK			2.75 H	279	94.8	3.3
4	*5210.00	88.5 AV			2.75 H	279	85.2	3.3
5	5350.00	55.3 PK	74.0	-18.7	2.75 H	279	52.0	3.3
6	5350.00	42.5 AV	54.0	-11.5	2.75 H	279	39.2	3.3
7	#10420.00	53.5 PK	68.2	-14.7	2.81 H	28	40.0	13.5
8	15630.00	61.2 PK	74.0	-12.8	2.91 H	31	48.0	13.2
9	15630.00	43.7 AV	54.0	-10.3	2.91 H	31	30.5	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.2 PK	74.0	-6.8	2.46 V	226	63.7	3.5
2	5150.00	52.3 AV	54.0	-1.7	2.46 V	226	48.8	3.5
3	*5210.00	100.2 PK			2.46 V	226	96.9	3.3
4	*5210.00	90.8 AV			2.46 V	226	87.5	3.3
5	5350.00	55.7 PK	74.0	-18.3	2.46 V	226	52.4	3.3
6	5350.00	42.9 AV	54.0	-11.1	2.46 V	226	39.6	3.3
7	#10420.00	57.0 PK	68.2	-11.2	3.17 V	280	43.5	13.5
8	15630.00	64.1 PK	74.0	-9.9	3.05 V	277	50.9	13.2
9	15630.00	46.4 AV	54.0	-7.6	3.05 V	277	33.2	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.2 PK	74.0	-18.8	2.76 H	266	51.7	3.5
2	5150.00	42.2 AV	54.0	-11.8	2.76 H	266	38.7	3.5
3	*5290.00	95.9 PK			2.76 H	266	92.8	3.1
4	*5290.00	85.8 AV			2.76 H	266	82.7	3.1
5	5350.00	64.8 PK	74.0	-9.2	2.76 H	266	61.5	3.3
6	5350.00	50.9 AV	54.0	-3.1	2.76 H	266	47.6	3.3
7	#10580.00	54.1 PK	68.2	-14.1	2.77 H	27	40.5	13.6
8	15870.00	61.6 PK	74.0	-12.4	2.80 H	28	48.4	13.2
9	15870.00	44.4 AV	54.0	-9.6	2.80 H	28	31.2	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	5150.00	56.0 PK	74.0	-18.0	3.40 V	231	52.5	3.5
2	5150.00	43.1 AV	54.0	-10.9	3.40 V	231	39.6	3.5
3	*5290.00	98.8 PK			3.40 V	231	95.7	3.1
4	*5290.00	88.6 AV			3.40 V	231	85.5	3.1
5	5350.00	66.0 PK	74.0	-8.0	3.40 V	231	62.7	3.3
6	5350.00	52.2 AV	54.0	-1.8	3.40 V	231	48.9	3.3
7	#10580.00	57.1 PK	68.2	-11.1	3.14 V	290	43.5	13.6
8	15870.00	63.7 PK	74.0	-10.3	3.11 V	283	50.5	13.2
9	15870.00	45.5 AV	54.0	-8.5	3.11 V	283	32.3	13.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.9 PK	74.0	-8.1	2.74 H	271	62.2	3.7
2	5460.00	50.6 AV	54.0	-3.4	2.74 H	271	46.9	3.7
3	#5470.00	64.9 PK	68.2	-3.3	2.74 H	271	61.2	3.7
4	*5530.00	98.7 PK			2.74 H	271	95.0	3.7
5	*5530.00	88.8 AV			2.74 H	271	85.1	3.7
6	11060.00	54.0 PK	74.0	-20.0	2.84 H	15	39.7	14.3
7	11060.00	42.5 AV	54.0	-11.5	2.84 H	15	28.2	14.3
8	#16590.00	61.8 PK	68.2	-6.4	2.83 H	40	45.9	15.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	67.7 PK	74.0	-6.3	2.71 V	228	64.0	3.7
2	5460.00	52.8 AV	54.0	-1.2	2.71 V	228	49.1	3.7
3	#5470.00	67.5 PK	68.2	-0.7	2.71 V	228	63.8	3.7
4	*5530.00	100.1 PK			2.71 V	228	96.4	3.7
5	*5530.00	90.0 AV			2.71 V	228	86.3	3.7
6	11060.00	57.2 PK	74.0	-16.8	3.11 V	263	42.9	14.3
7	11060.00	44.6 AV	54.0	-9.4	3.11 V	263	30.3	14.3
8	#16590.00	64.1 PK	68.2	-4.1	3.09 V	284	48.2	15.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	98.4 PK			2.69 H	278	94.7	3.7
2	*5610.00	88.5 AV			2.69 H	278	84.8	3.7
3	#5725.00	64.5 PK	68.2	-3.7	2.69 H	278	60.7	3.8
4	11220.00	54.2 PK	74.0	-19.8	2.74 H	2	40.4	13.8
5	11220.00	42.2 AV	54.0	-11.8	2.74 H	2	28.4	13.8
6	#16830.00	60.8 PK	68.2	-7.4	2.86 H	32	43.5	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	101.0 PK			2.47 V	233	97.3	3.7
2	*5610.00	90.7 AV			2.47 V	233	87.0	3.7
3	#5725.00	66.5 PK	68.2	-1.7	2.47 V	233	62.7	3.8
4	11220.00	57.4 PK	74.0	-16.6	3.09 V	294	43.6	13.8
5	11220.00	45.4 AV	54.0	-8.6	3.09 V	294	31.6	13.8
6	#16830.00	63.9 PK	68.2	-4.3	3.08 V	278	46.6	17.3

REMARKS:

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

CHANNEL	TX Channel 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	5460.00	69.0 PK	74.0	-5.0	2.77 H	6	65.3	3.7
2	5460.00	48.1 AV	54.0	-5.9	2.77 H	6	44.4	3.7
3	#5470.00	65.9 PK	68.2	-2.3	2.77 H	6	62.2	3.7
4	*5690.00	111.5 PK			2.77 H	6	107.6	3.9
5	*5690.00	100.1 AV			2.77 H	6	96.2	3.9
6	#5850.00	64.3 PK	68.2	-3.9	2.77 H	6	60.0	4.3
7	11380.00	55.8 PK	74.0	-18.2	2.78 H	34	41.6	14.2
8	11380.00	43.6 AV	54.0	-10.4	2.78 H	34	29.4	14.2
9	#17070.00	62.6 PK	68.2	-5.6	2.80 H	0	45.5	17.1
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	5460.00	68.8 PK	74.0	-5.2	2.73 V	271	65.1	3.7
2	5460.00	47.5 AV	54.0	-6.5	2.73 V	271	43.8	3.7
3	#5470.00	65.6 PK	68.2	-2.6	2.73 V	271	61.9	3.7
4	*5690.00	117.6 PK			2.73 V	271	113.7	3.9
5	*5690.00	106.6 AV			2.73 V	271	102.7	3.9
6	#5850.00	66.6 PK	68.2	-1.6	2.73 V	271	62.3	4.3
7	11380.00	58.2 PK	74.0	-15.8	2.85 V	216	44.0	14.2
8	11380.00	45.5 AV	54.0	-8.5	2.85 V	216	31.3	14.2
9	#17070.00	64.2 PK	68.2	-4.0	2.80 V	235	47.1	17.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5775.00	102.7 PK			2.70 H	287	98.8	3.9
2	*5775.00	93.2 AV			2.70 H	287	89.3	3.9
3	11550.00	54.0 PK	74.0	-20.0	2.77 H	15	39.8	14.2
4	11550.00	42.3 AV	54.0	-11.7	2.77 H	15	28.1	14.2
5	#17325.00	61.3 PK	68.2	-6.9	2.82 H	21	43.9	17.4
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	*5775.00	104.2 PK			2.44 V	247	100.3	3.9
2	*5775.00	94.1 AV			2.44 V	247	90.2	3.9
3	11550.00	56.8 PK	74.0	-17.2	3.19 V	282	42.6	14.2
4	11550.00	44.5 AV	54.0	-9.5	3.19 V	282	30.3	14.2
5	#17325.00	64.2 PK	68.2	-4.0	3.07 V	282	46.8	17.4

REMARKS:

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

Below 1GHz Data:

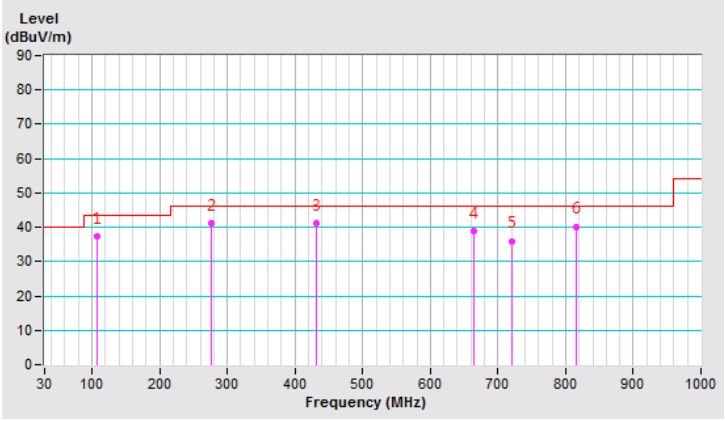
802.11ac (VHT20)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	108.02	37.4 QP	43.5	-6.1	2.50 H	110	48.2	-10.8
2	275.96	41.2 QP	46.0	-4.8	1.25 H	221	48.9	-7.7
3	432.03	41.2 QP	46.0	-4.8	1.50 H	310	44.3	-3.1
4	663.79	39.0 QP	46.0	-7.0	1.50 H	245	37.4	1.6
5	720.04	36.0 QP	46.0	-10.0	1.25 H	33	33.4	2.6
6	816.07	40.2 QP	46.0	-5.8	1.75 H	360	35.5	4.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

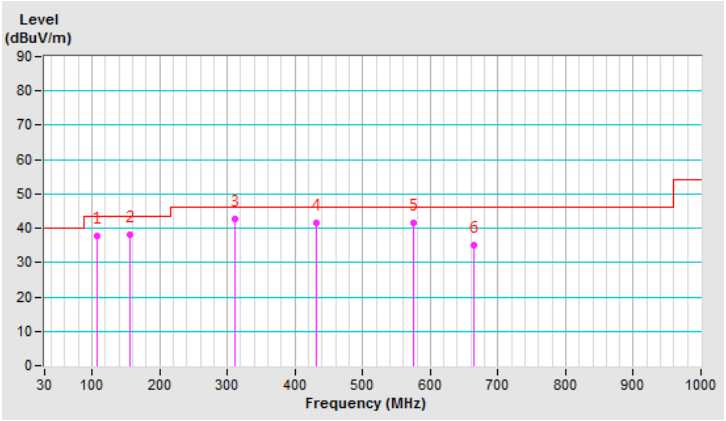


CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	108.03	37.9 QP	43.5	-5.6	2.50 V	15	48.7	-10.8
2	156.03	38.0 QP	43.5	-5.5	2.25 V	150	45.9	-7.9
3	311.97	42.7 QP	46.0	-3.3	2.00 V	360	49.3	-6.6
4	432.03	41.7 QP	46.0	-4.3	1.00 V	0	44.8	-3.1
5	575.96	41.7 QP	46.0	-4.3	1.25 V	331	41.8	-0.1
6	663.78	34.9 QP	46.0	-11.1	1.00 V	275	33.3	1.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: Sep. 19, 2019

4.2.3 Test Procedure

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

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

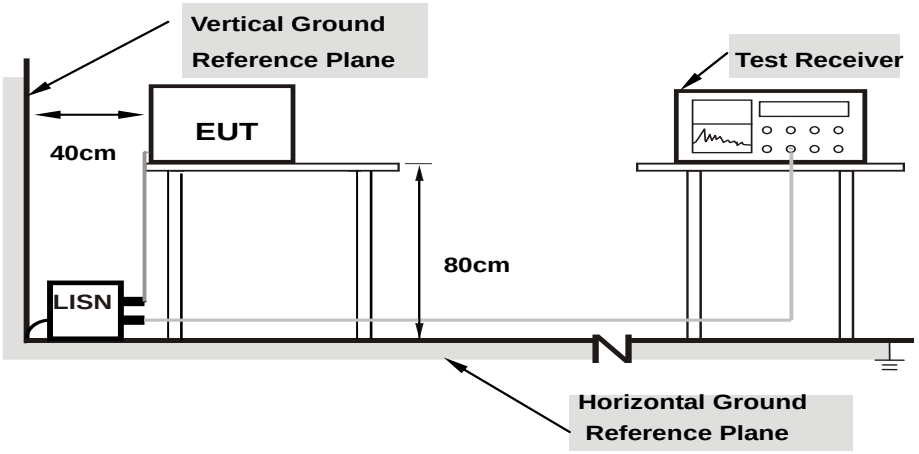
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

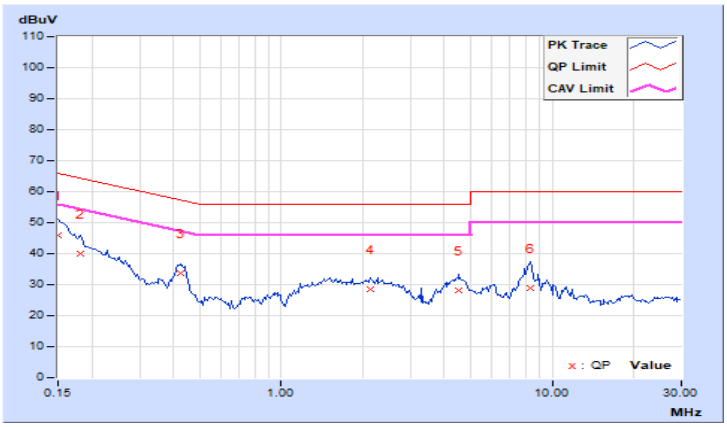
4.2.7 Test Results

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.95	35.96	17.14	45.91	27.09	66.00	56.00	-20.09	-28.91
2	0.18125	9.96	30.21	12.90	40.17	22.86	64.43	54.43	-24.26	-31.57
3	0.42734	9.97	23.88	17.74	33.85	27.71	57.30	47.30	-23.45	-19.59
4	2.12891	10.08	18.51	12.00	28.59	22.08	56.00	46.00	-27.41	-23.92
5	4.52734	10.20	18.11	9.21	28.31	19.41	56.00	46.00	-27.69	-26.59
6	8.32422	10.39	18.58	10.11	28.97	20.50	60.00	50.00	-31.03	-29.50

Remarks:

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

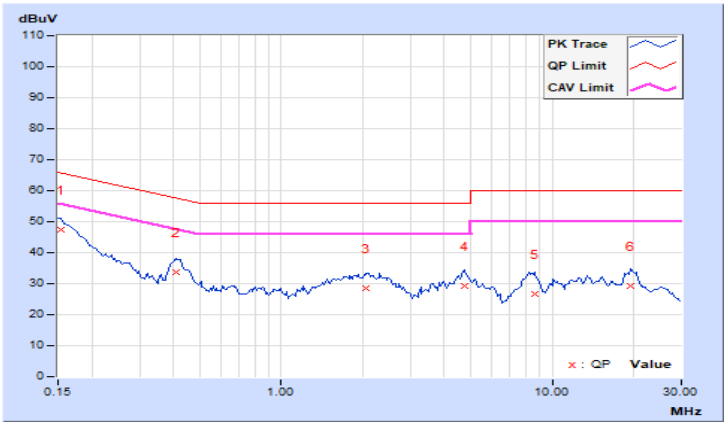


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15391**	**9.93**	**37.43**	**20.63**	**47.36**	**30.56**	**65.79**	**55.79**	**-18.43**	**-25.23**
2	0.40781	9.95	23.83	16.74	33.78	26.69	57.69	47.69	-23.91	-21.00
3	2.04297	10.04	18.60	13.89	28.64	23.93	56.00	46.00	-27.36	-22.07
4	4.75000	10.15	19.03	10.15	29.18	20.30	56.00	46.00	-26.82	-25.70
5	8.60156	10.31	16.37	6.52	26.68	16.83	60.00	50.00	-33.32	-33.17
6	19.51953	10.77	18.56	13.85	29.33	24.62	60.00	50.00	-30.67	-25.38

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

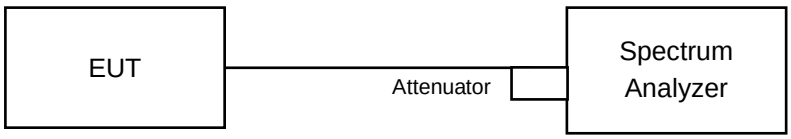
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

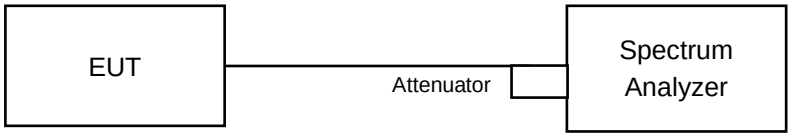
FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:



For other channels:

FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

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

For channel straddling 5725MHz:
For 802.11a, 802.11ac (VHT20)

Follow FCC KDB 789033 UNII test procedure:
Method SA-1

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

For 802.11ac (VHT40), 802.11ac (VHT80)

Follow FCC KDB 789033 UNII test procedure:
Method SA-2

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

802.11a

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	58.749	17.69	24.00	Pass
40	5200	130.918	21.17	24.00	Pass
48	5240	119.124	20.76	24.00	Pass
52	5260	118.032	20.72	24.00	Pass
60	5300	117.761	20.71	24.00	Pass
64	5320	58.345	17.66	24.00	Pass
100	5500	37.844	15.78	24.00	Pass
116	5580	76.913	18.86	24.00	Pass
140	5700	30.479	14.84	24.00	Pass
*144 (U-NII-2C Band)	5720	57.412	17.59	22.78	Pass
*144 (U-NII-3 Band)	5720	14.622	11.65	30.00	Pass
149	5745	133.045	21.24	30.00	Pass
157	5785	133.66	21.26	30.00	Pass
165	5825	130.617	21.16	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	72.034	18.58
Note: The total power was calculated through formula and record the value for reference only.			

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	38.10
60	5300	38.39
64	5320	20.39
100	5500	20.29
116	5580	28.53
140	5700	20.38
144 (U-NII-2C Band)	5720	15.10

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

Power Limit = 11dBm + 10logB < U_NII-2A, U_NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	38.10	26.8 > 24
60	5300	38.39	26.84 > 24
64	5320	20.39	24.09 > 24
100	5500	20.29	24.07 > 24
116	5580	28.53	25.55 > 24
140	5700	20.38	24.09 > 24
144 (U-NII-2C Band)	5720	15.10	22.78 < 24

802.11ac (VHT20)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	61.802	17.91	24.00	Pass
40	5200	135.519	21.32	24.00	Pass
48	5240	121.899	20.86	24.00	Pass
52	5260	121.06	20.83	24.00	Pass
60	5300	122.744	20.89	24.00	Pass
64	5320	61.376	17.88	24.00	Pass
100	5500	38.994	15.91	24.00	Pass
116	5580	78.886	18.97	24.00	Pass
140	5700	31.989	15.05	24.00	Pass
*144 (U-NII-2C Band)	5720	58.479	17.67	23.25	Pass
*144 (U-NII-3 Band)	5720	16.827	12.26	30.00	Pass
149	5745	136.458	21.35	30.00	Pass
157	5785	135.207	21.31	30.00	Pass
165	5825	134.276	21.28	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	75.306	18.77
Note: The total power was calculated through formula and record the value for reference only.			

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	48.85
60	5300	48.73
64	5320	21.52
100	5500	21.92
116	5580	44.94
140	5700	20.80
144 (U-NII-2C Band)	5720	16.82

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

Power Limit = 11dBm + 10logB < U_NII-2A, U_NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	48.85	27.88 > 24
60	5300	48.73	27.87 > 24
64	5320	21.52	24.32 > 24
100	5500	21.92	24.4 > 24
116	5580	44.94	27.52 > 24
140	5700	20.80	24.18 > 24
144 (U-NII-2C Band)	5720	16.82	23.25 < 24

802.11ac (VHT40)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	29.444	14.69	24.00	Pass
46	5230	97.949	19.91	24.00	Pass
54	5270	76.736	18.85	24.00	Pass
62	5310	24.044	13.81	24.00	Pass
102	5510	24.378	13.87	24.00	Pass
110	5550	61.094	17.86	24.00	Pass
134	5670	25.942	14.14	24.00	Pass
*142 (U-NII-2C Band)	5710	53.934	17.32	24.00	Pass
*142 (U-NII-3 Band)	5710	6.122	7.87	30.00	Pass
151	5755	113.501	20.55	30.00	Pass
159	5795	112.46	20.51	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	60.056	17.79
Note: The total power was calculated through formula and record the value for reference only.			

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
54	5270	80.69
62	5310	45.82
102	5510	45.62
110	5550	66.71
134	5670	47.01
142 (U-NII-2C Band)	5710	46.63

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

Power Limit = 11dBm + 10logB < U_NII-2A, U_NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	80.69	30.06 > 24
62	5310	45.82	27.61 > 24
102	5510	45.62	27.59 > 24
110	5550	66.71	29.24 > 24
134	5670	47.01	27.72 > 24
142 (U-NII-2C Band)	5710	46.63	27.68 > 24

802.11ac (VHT80)

POWER OUTPUT

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
42	5210	26.242	14.19	24.00	Pass
58	5290	16.331	12.13	24.00	Pass
106	5530	26.792	14.28	24.00	Pass
122	5610	26.73	14.27	24.00	Pass
*138 (U-NII-2C Band)	5690	100.313	20.01	24.00	Pass
*138 (U-NII-3 Band)	5690	5.062	7.04	30.00	Pass
155	5775	54.075	17.33	30.00	Pass

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

The Total Power for the straddle channel:

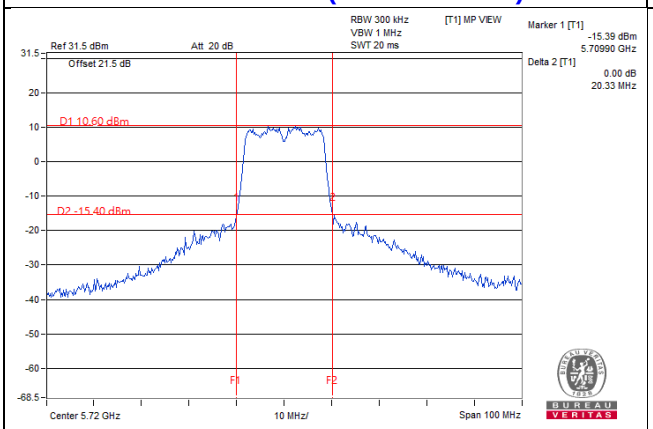
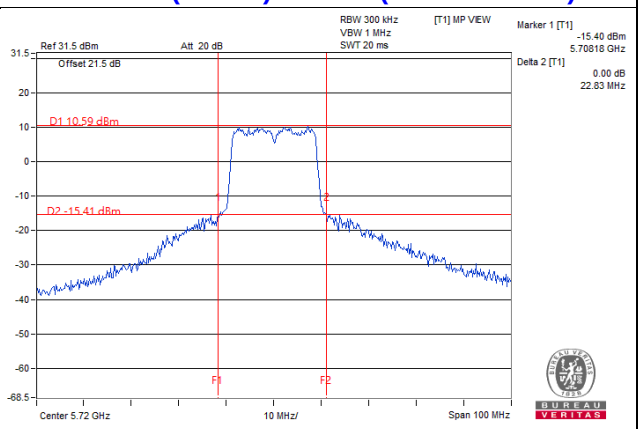
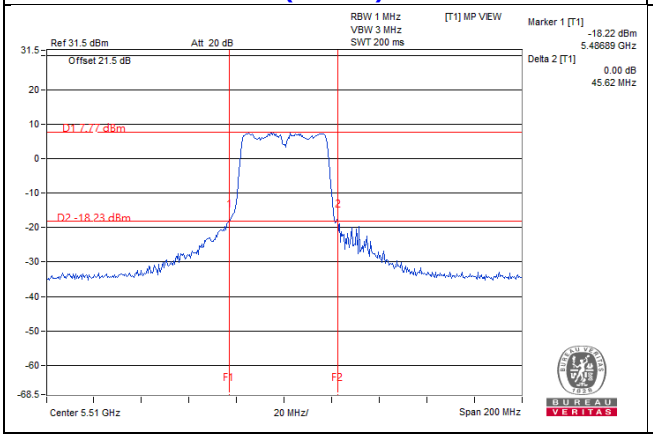
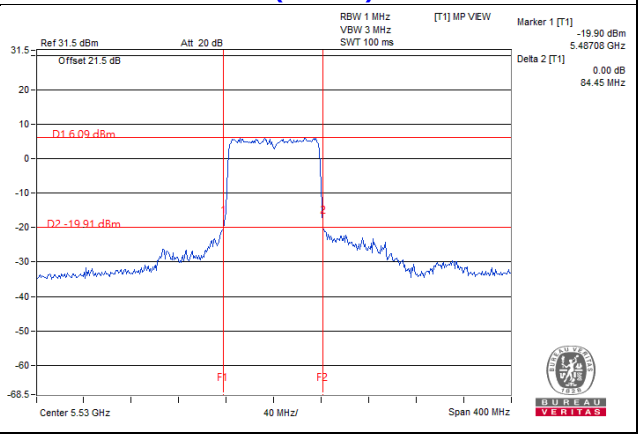
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	105.375	20.23
Note: The total power was calculated through formula and record the value for reference only.			

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
58	5290	85.31
106	5530	84.45
122	5610	85.18
138 (U-NII-2C Band)	5690	130.55

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

Power Limit = 11dBm + 10logB < U_NII-2A, U_NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	85.31	30.3 > 24
106	5530	84.45	30.26 > 24
122	5610	85.18	30.3 > 24
138 (U-NII-2C Band)	5690	130.55	32.15 > 24

Spectrum Plot of Worst Value	
802.11a: CH144 (U-NII-2C Band)	**802.11ac (VHT20): CH144 (U-NII-2C Band)**
	
802.11ac (VHT40): CH102	**802.11ac (VHT80): CH106**
	

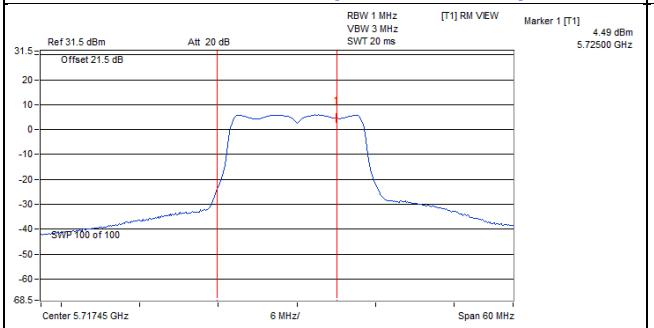
Note:

For CH144 (U-NII-2C) = 5725MHz - Marker 1
For CH142 (U-NII-2C) = 5725MHz - Marker 1
For CH138 (U-NII-2C) = 5725MHz - Marker 1

For channel straddling 5725MHz of Power

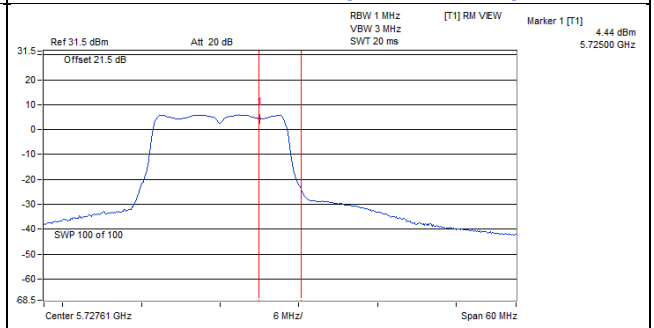
Spectrum Plot Value of Power

802.11a_ CH144 (U-NII-2C Band)



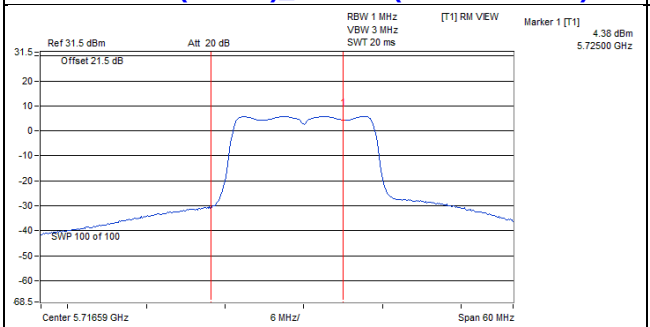
TX Channel Bandwidth 15.1 MHz Power 17.59 dBm

802.11a_ CH144 (U-NII-3 Band)



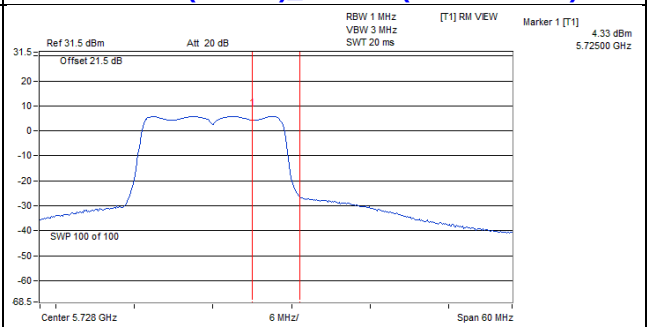
TX Channel Bandwidth 5.23 MHz Power 11.65 dBm

802.11ac (VHT20)_ CH144 (U-NII-2C Band)



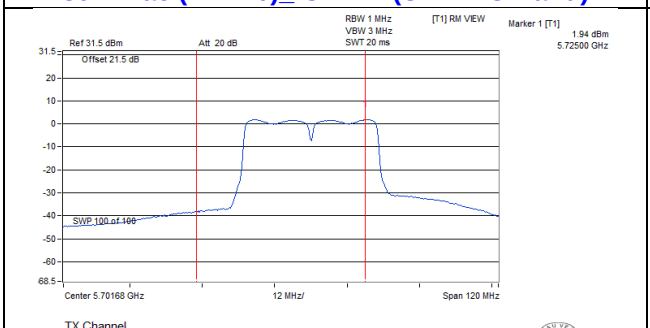
TX Channel Bandwidth 16.82 MHz Power 17.67 dBm

802.11ac (VHT20)_ CH144 (U-NII-3 Band)



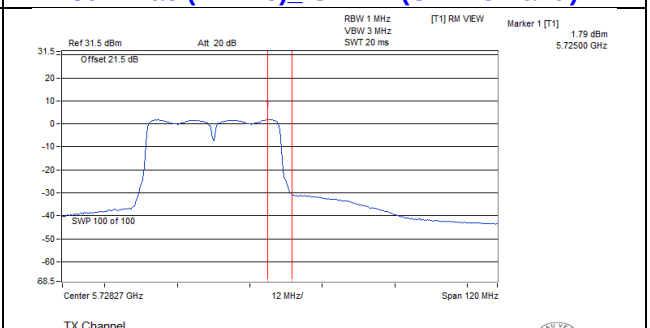
TX Channel Bandwidth 6.01 MHz Power 12.26 dBm

802.11ac (VHT40)_ CH142 (U-NII-2C Band)



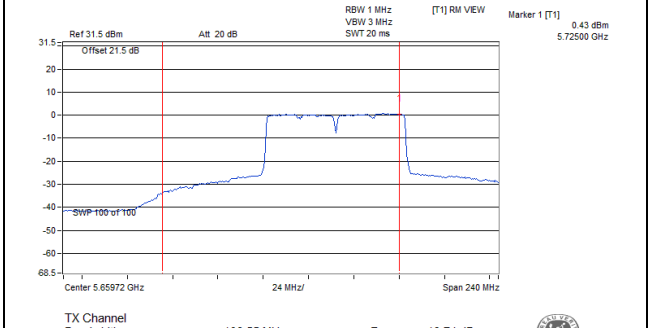
TX Channel Bandwidth 46.63 MHz Power 17.2 dBm

802.11ac (VHT40)_ CH142 (U-NII-3 Band)



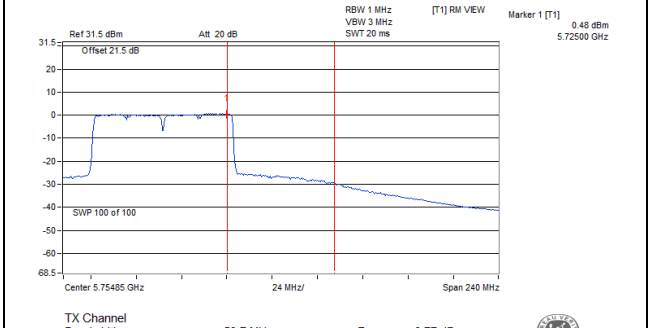
TX Channel Bandwidth 6.54 MHz Power 7.75 dBm

802.11ac (VHT80)_ CH138 (U-NII-2C Band)



TX Channel Bandwidth 130.55 MHz Power 19.74 dBm

802.11ac (VHT80)_ CH138 (U-NII-3 Band)

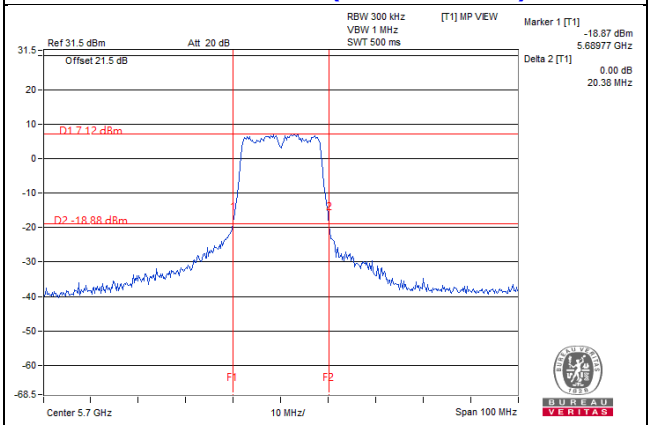


TX Channel Bandwidth 59.7 MHz Power 6.77 dBm

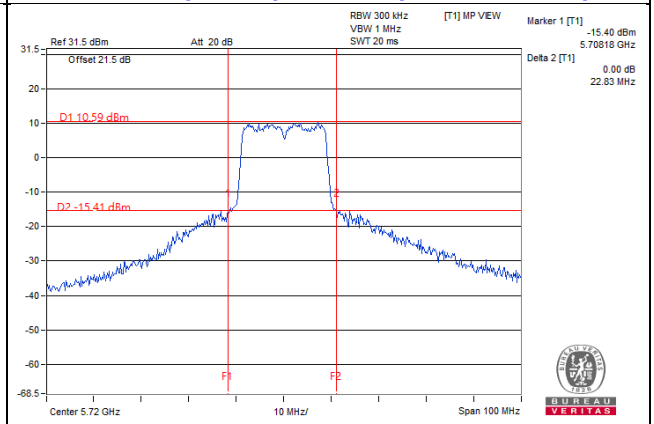
For channel straddling 5725MHz of 26dB BW

Spectrum Plot Value of 26dB BW

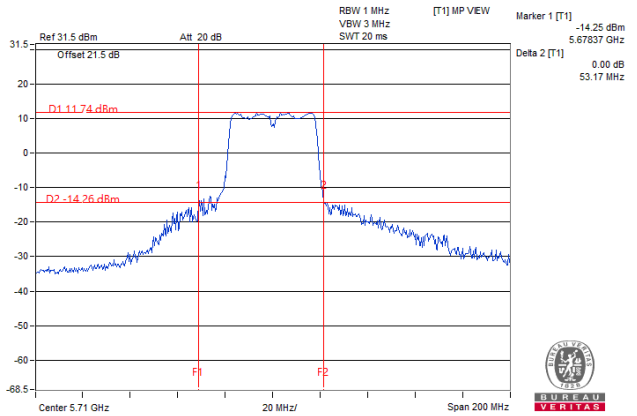
802.11a_ CH144 (U-NII-2C Band)



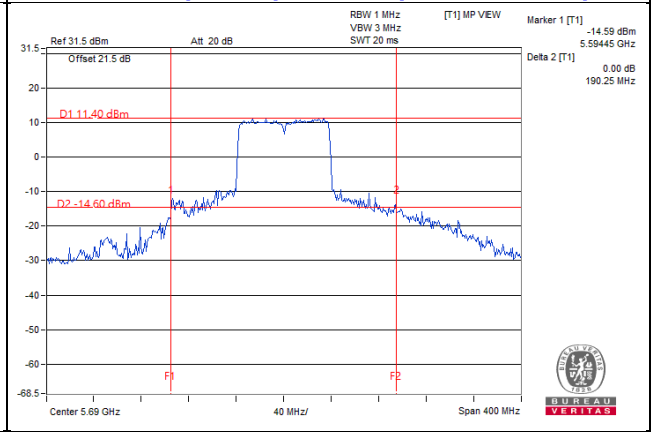
802.11ac (VHT20)_ CH144 (U-NII-2C Band)



802.11ac (VHT40)_ CH142 (U-NII-2C Band)

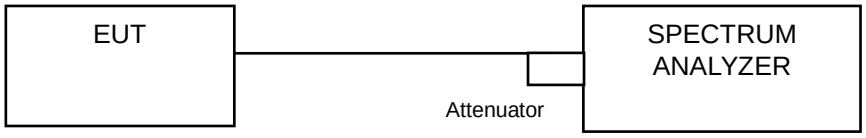


802.11ac (VHT80)_ CH138 (U-NII-2C Band)



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.80
40	5200	20.16
48	5240	17.16
52	5260	17.16
60	5300	17.16
64	5320	16.80
100	5500	16.80
116	5580	17.16
140	5700	16.80
144 (U-NII-2C Band)	5720	13.40
144 (U-NII-3 Band)	5720	3.52
149	5745	18.00
157	5785	18.24
165	5825	17.88

802.11ac (VHT20)

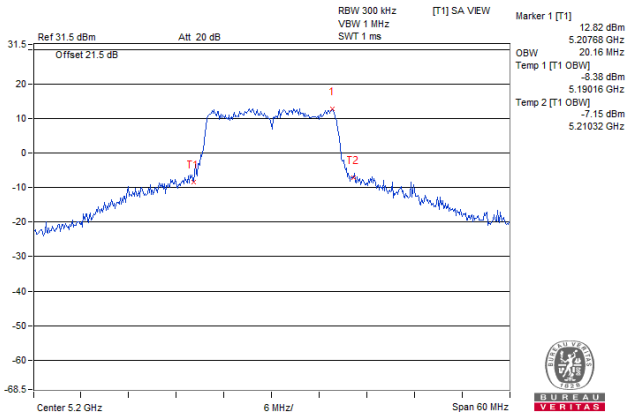
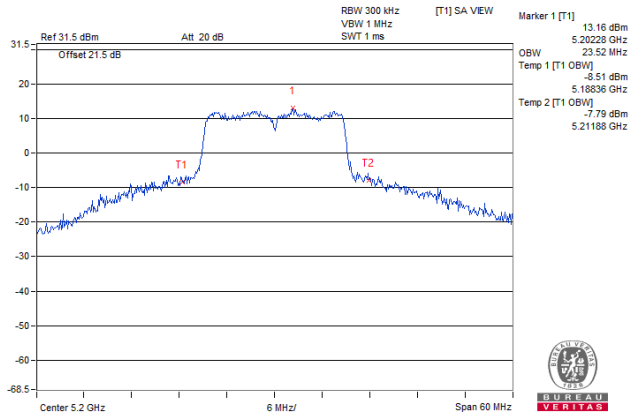
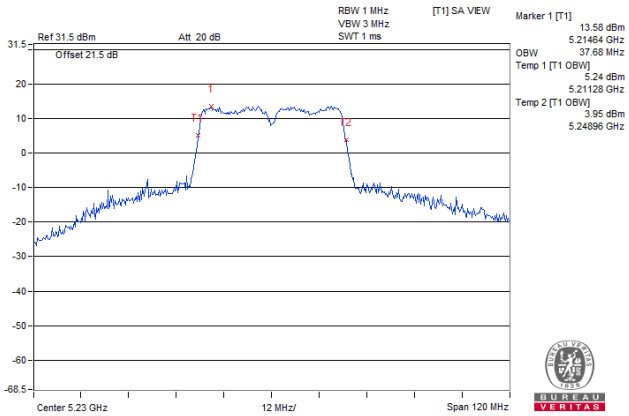
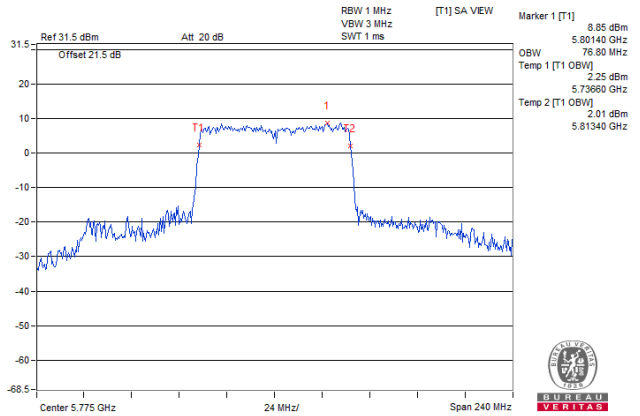
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.76
40	5200	23.52
48	5240	19.80
52	5260	19.56
60	5300	19.80
64	5320	17.88
100	5500	17.76
116	5580	18.00
140	5700	17.76
144 (U-NII-2C Band)	5720	14.00
144 (U-NII-3 Band)	5720	4.00
149	5745	19.80
157	5785	19.68
165	5825	19.44

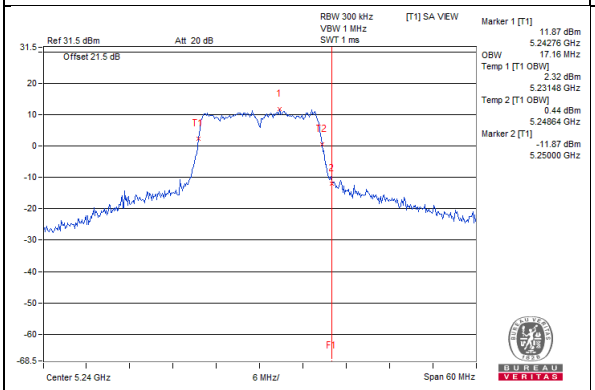
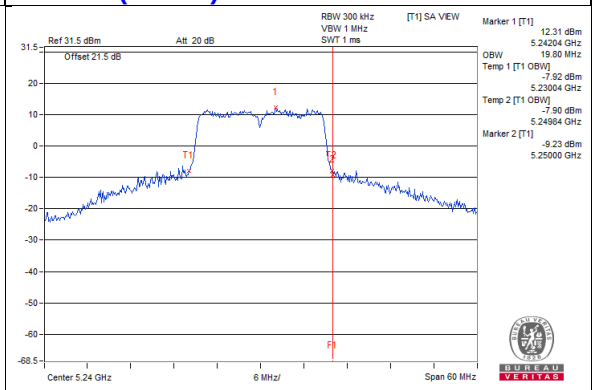
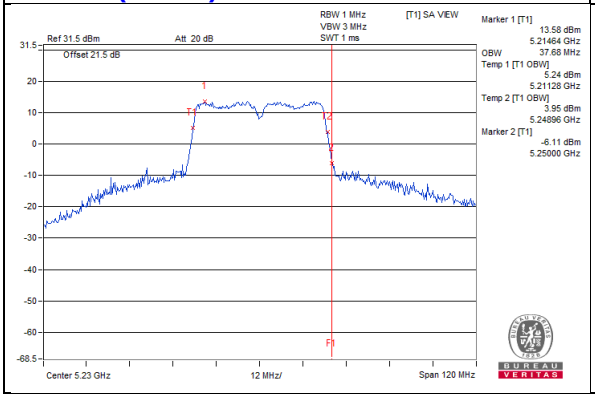
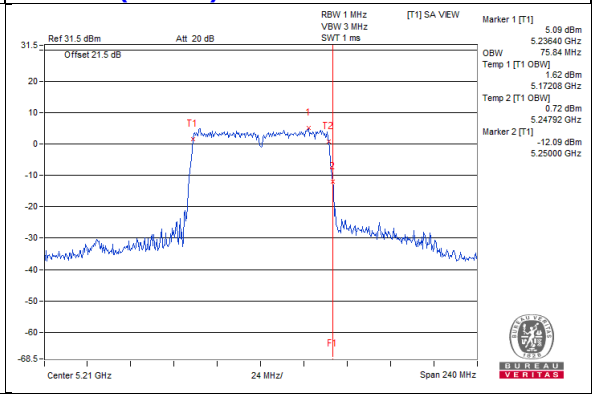
802.11ac (VHT40)

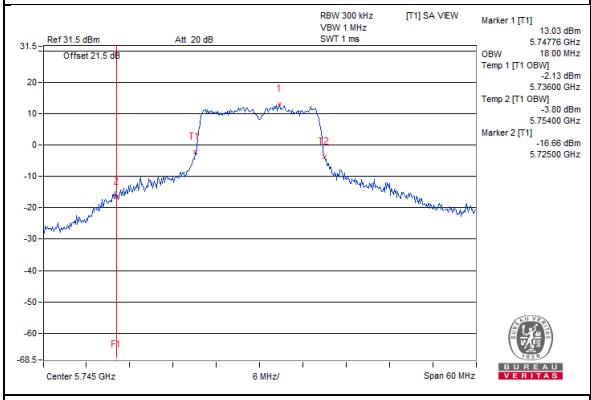
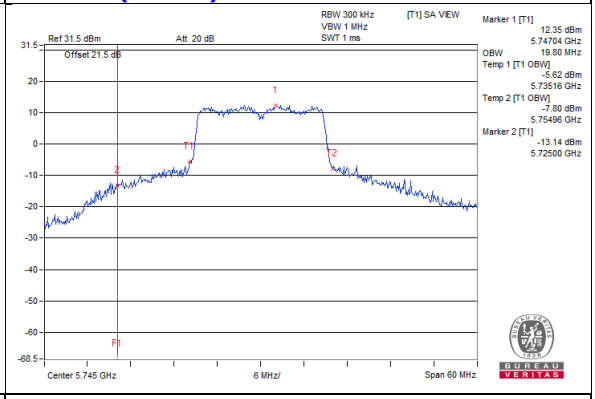
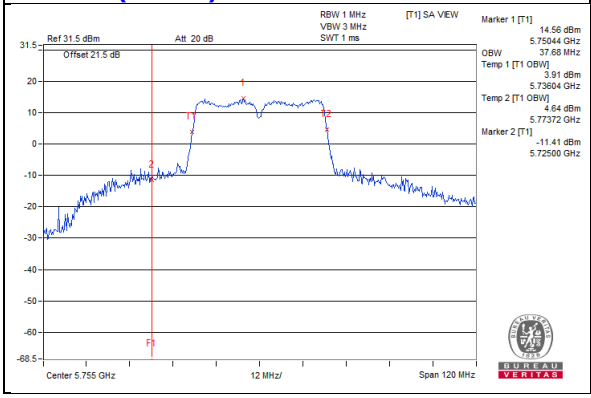
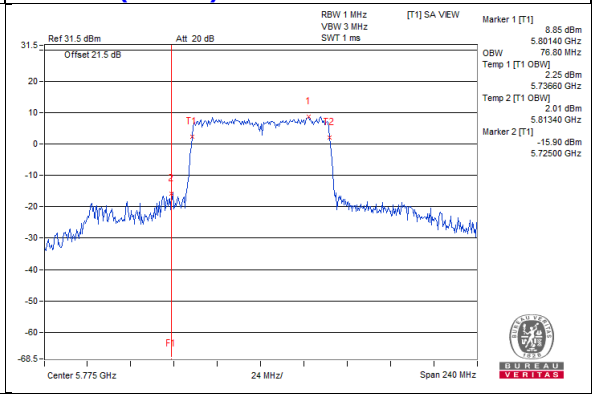
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	37.68
54	5270	37.20
62	5310	36.48
102	5510	36.48
110	5550	36.96
134	5670	36.48
142 (U-NII-2C Band)	5710	33.48
142 (U-NII-3 Band)	5710	3.24
151	5755	37.68
159	5795	37.68

802.11ac (VHT80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.84
58	5290	75.84
106	5530	75.84
122	5610	75.84
138 (U-NII-2C Band)	5690	73.40
138 (U-NII-3 Band)	5690	3.40
155	5775	76.80

Spectrum Plot of Max. Value	
802.11a: CH40	**802.11ac (VHT20): CH40**
	
802.11ac (VHT40): CH46	**802.11ac (VHT80): CH155**
	

Spectrum Plot for near by DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)	
802.11a / CH48	**802.11ac(VHT20) / CH48**
	
802.11ac(VHT40) / CH46	**802.11ac(VHT80) / CH42**
	

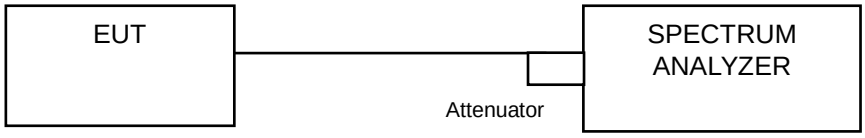
Spectrum Plot for near by DFS band (DFS is required, if 99% OCP straddle into U-NII-2C band)	
802.11a / CH149	**802.11ac(VHT20) / CH149**
	
802.11ac(VHT40) / CH151	**802.11ac(VHT80) / CH155**
	

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For 802.11a, 802.11ac (VHT20):

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

Using method SA-1

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

For U-NII-3:

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

For 802.11ac (VHT40), 802.11ac (VHT80):

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

Using method SA-2

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

For U-NII-3:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	5.50	11.00	Pass
40	5200	9.24	11.00	Pass
48	5240	7.45	11.00	Pass
52	5260	7.37	11.00	Pass
60	5300	7.42	11.00	Pass
64	5320	4.22	11.00	Pass
100	5500	2.97	11.00	Pass
116	5580	6.77	11.00	Pass
140	5700	2.78	11.00	Pass
144 (U-NII-2C Band)	5720	5.91	11.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	4.99	11.00	Pass
40	5200	8.67	11.00	Pass
48	5240	7.86	11.00	Pass
52	5260	7.80	11.00	Pass
60	5300	7.93	11.00	Pass
64	5320	4.91	11.00	Pass
100	5500	3.51	11.00	Pass
116	5580	6.82	11.00	Pass
140	5700	2.79	11.00	Pass
144 (U-NII-2C Band)	5720	5.81	11.00	Pass

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
38	5190	-1.16	0.12	-1.04	11.00	Pass
46	5230	4.03	0.12	4.15	11.00	Pass
54	5270	3.03	0.12	3.15	11.00	Pass
62	5310	-2.27	0.12	-2.15	11.00	Pass
102	5510	-2.53	0.12	-2.41	11.00	Pass
118	5590	2.91	0.12	3.03	11.00	Pass
134	5670	-1.20	0.12	-1.08	11.00	Pass
142 (U-NII-2C Band)	5710	1.88	0.12	2.00	11.00	Pass

Note:

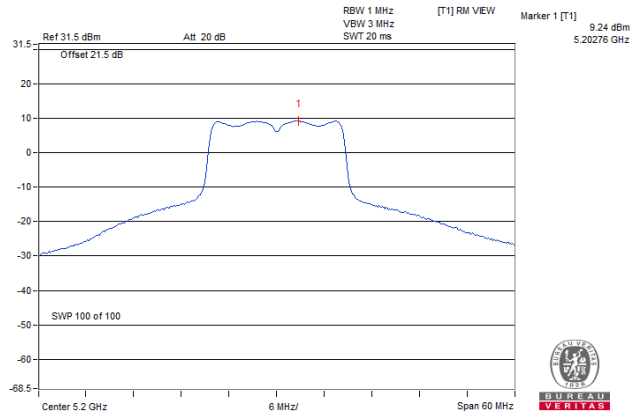
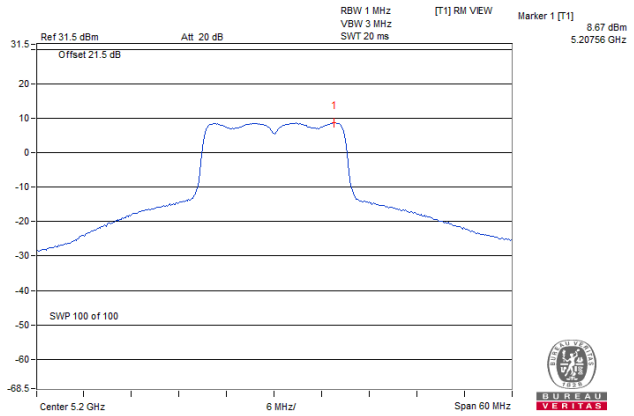
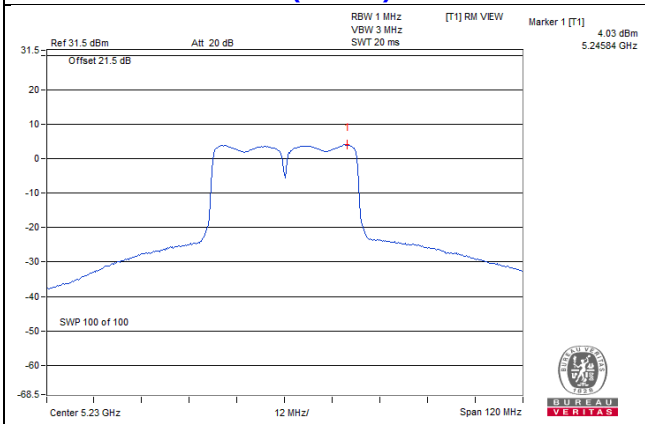
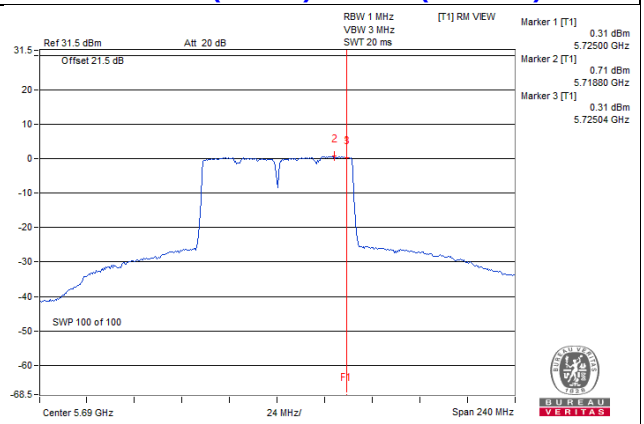
1. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
42	5210	-5.49	0.27	-5.22	11.00	Pass
58	5290	-7.74	0.27	-7.47	11.00	Pass
106	5530	-4.69	0.27	-4.42	11.00	Pass
122	5610	-4.50	0.27	-4.23	11.00	Pass
138 (U-NII-2C Band)	5690	0.71	0.27	0.98	11.00	Pass

Note:

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

Spectrum Plot of Worst Value	
802.11a: CH40	**802.11ac (VHT20): CH40**
	
802.11ac (VHT40): CH46	**802.11ac (VHT80): CH138 (U-NII-2C)**
	

For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
144 (U-NII-3 Band)	5720	-2.86	-0.64	30.00	Pass
149	5745	-0.08	2.14	30.00	Pass
157	5785	-0.04	2.18	30.00	Pass
165	5825	-0.13	2.09	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
144 (U-NII-3 Band)	5720	-2.76	-0.54	30.00	Pass
149	5745	-0.04	2.18	30.00	Pass
157	5785	-0.26	1.96	30.00	Pass
165	5825	-0.17	2.05	30.00	Pass

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
142 (U-NII-3 Band)	5710	-7.10	0.12	-6.98	-4.76	30.00	Pass
151	5755	-4.46	0.12	-4.34	-2.12	30.00	Pass
159	5795	-4.24	0.12	-4.12	-1.90	30.00	Pass

Note:

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

802.11ac (VHT80)

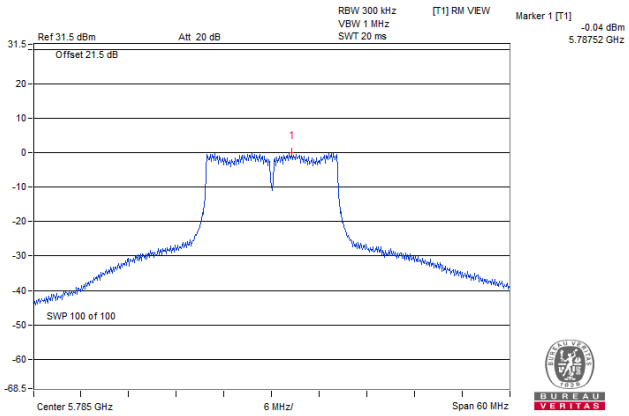
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
138 (U-NII-3 Band)	5690	-8.66	0.27	-8.39	-6.17	30.00	Pass
155	5775	-10.74	0.27	-10.47	-8.25	30.00	Pass

Note:

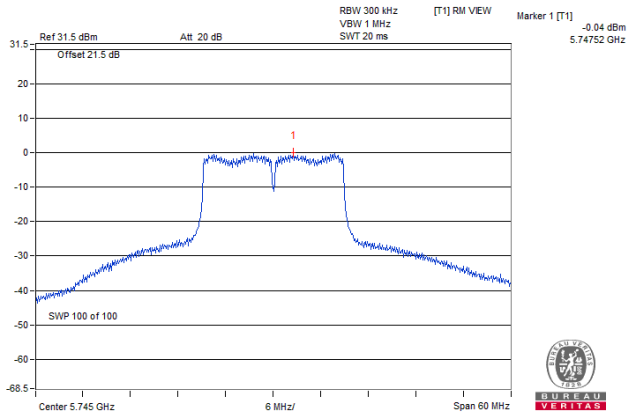
1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

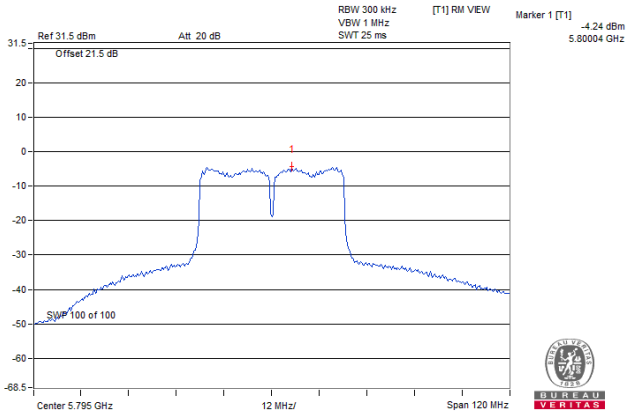
802.11a: CH157



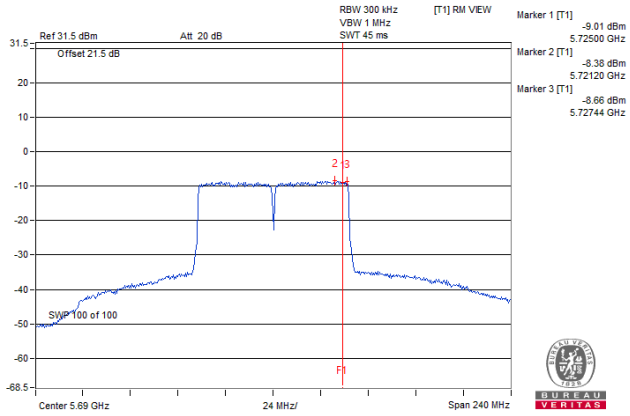
802.11ac (VHT20): CH149



802.11ac (VHT40): CH159



802.11ac (VHT80): CH138 (U-NII-3)

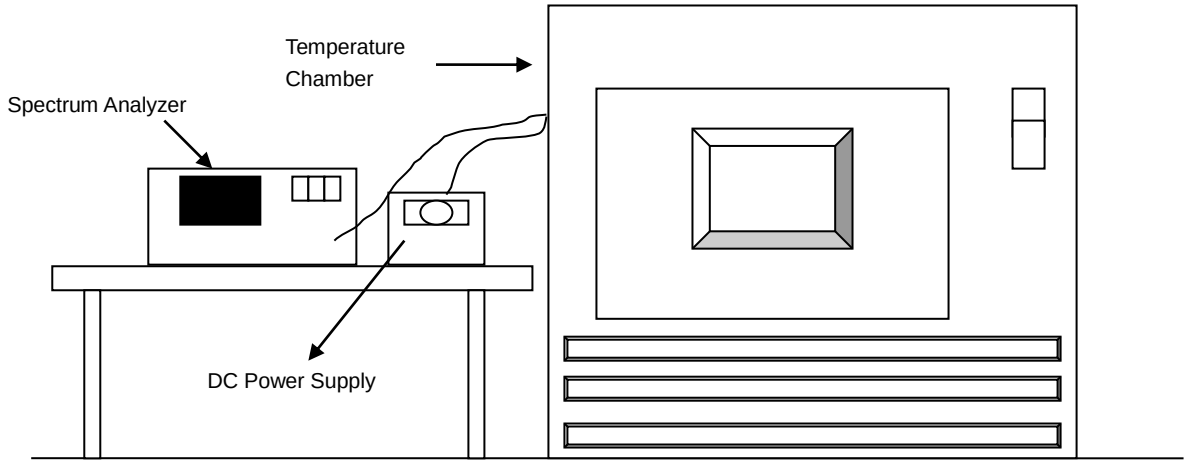


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (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
85	3.3	5179.9751	PASS	5179.9786	PASS	5179.9786	PASS	5179.9764	PASS
80	3.3	5179.9747	PASS	5179.9765	PASS	5179.9749	PASS	5179.9781	PASS
70	3.3	5180.0202	PASS	5180.0215	PASS	5180.0226	PASS	5180.0209	PASS
60	3.3	5180.015	PASS	5180.0131	PASS	5180.0157	PASS	5180.0147	PASS
50	3.3	5180.0122	PASS	5180.0138	PASS	5180.0173	PASS	5180.0168	PASS
40	3.3	5179.9921	PASS	5179.9915	PASS	5179.9888	PASS	5179.9894	PASS
30	3.3	5179.9965	PASS	5179.9979	PASS	5179.9958	PASS	5179.9971	PASS
20	3.3	5179.9946	PASS	5179.9943	PASS	5179.9953	PASS	5179.9938	PASS
10	3.3	5179.9786	PASS	5179.978	PASS	5179.9776	PASS	5179.9788	PASS
0	3.3	5179.9988	PASS	5179.9998	PASS	5179.997	PASS	5179.9995	PASS
-10	3.3	5180.0028	PASS	5180.0016	PASS	5180.0004	PASS	5180.0036	PASS
-20	3.3	5180.0018	PASS	5180.0044	PASS	5180.0047	PASS	5180.0023	PASS
-30	3.3	5180.0022	PASS	5180.0034	PASS	5180.0035	PASS	5180.0011	PASS

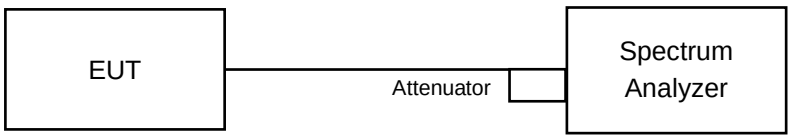
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	3.795	5179.9954	PASS	5179.9942	PASS	5179.9952	PASS	5179.9938	PASS
	3.3	5179.9946	PASS	5179.9943	PASS	5179.9953	PASS	5179.9938	PASS
	2.805	5179.9953	PASS	5179.9948	PASS	5179.9961	PASS	5179.9941	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	3.23	0.5	PASS
149	5745	16.43	0.5	PASS
157	5785	16.44	0.5	PASS
165	5825	16.44	0.5	PASS

802.11ac (VHT20)

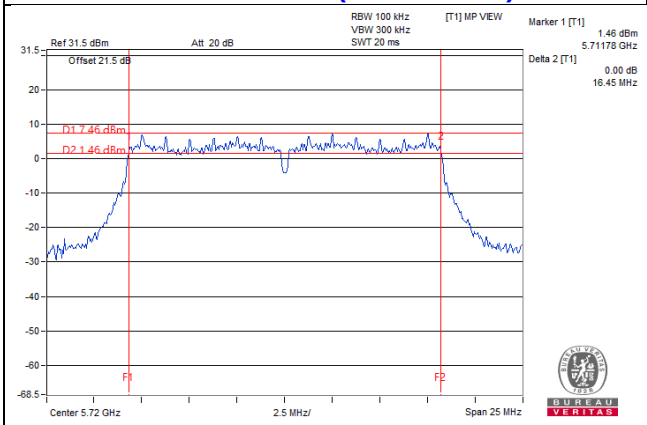
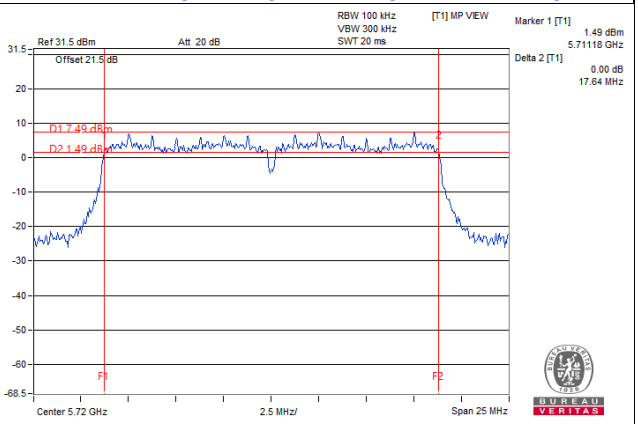
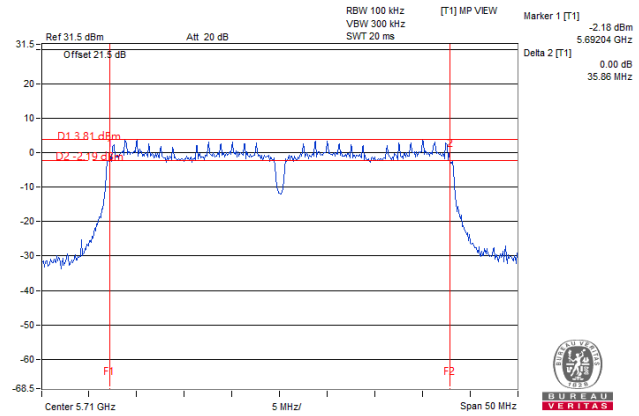
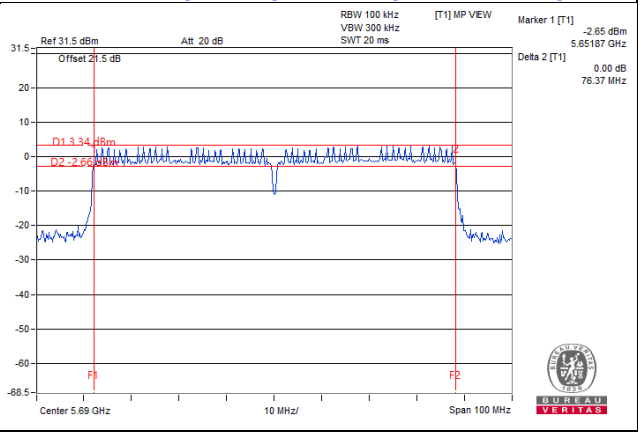
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144 (U-NII-3 Band)	5720	3.82	0.5	PASS
149	5745	17.62	0.5	PASS
157	5785	17.63	0.5	PASS
165	5825	17.63	0.5	PASS

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142 (U-NII-3 Band)	5710	2.90	0.5	Pass
151	5755	36.14	0.5	PASS
159	5795	35.92	0.5	PASS

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
138 (U-NII-3 Band)	5690	3.24	0.5	PASS
155	5775	76.49	0.5	PASS

Spectrum Plot of Worst Value	
802.11a: CH144 (U-NII-3 Band)	**802.11ac (VHT20): CH144 (U-NII-3 Band)**
	
802.11ac (VHT40): CH142 (U-NII-3 Band)	**802.11ac (VHT80): CH138 (U-NII-3 Band)**
	

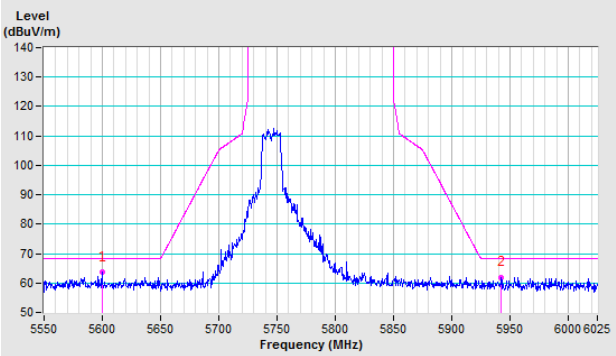
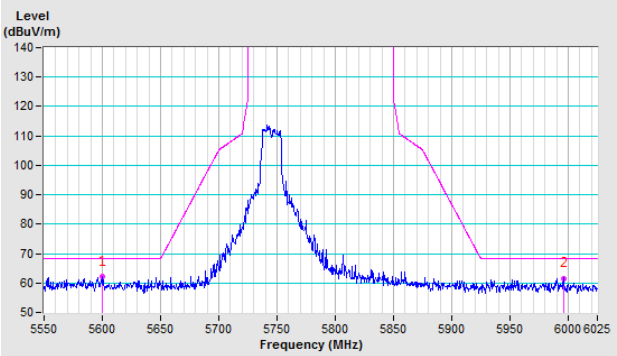
Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

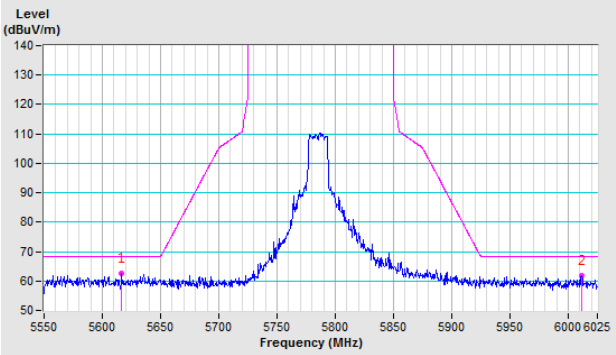
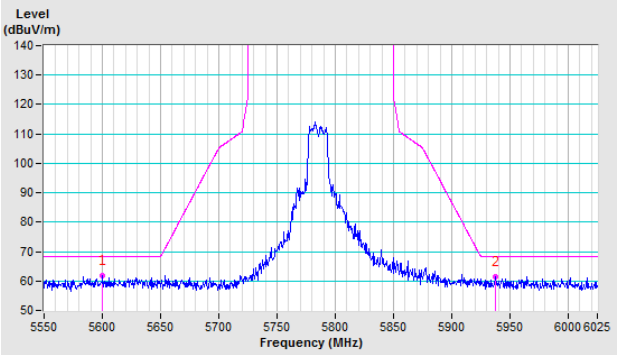
5 Pictures of Test Arrangements

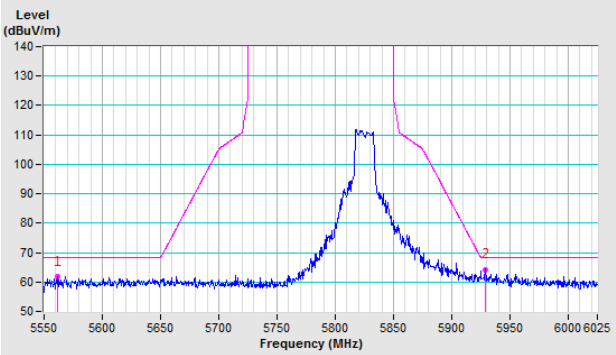
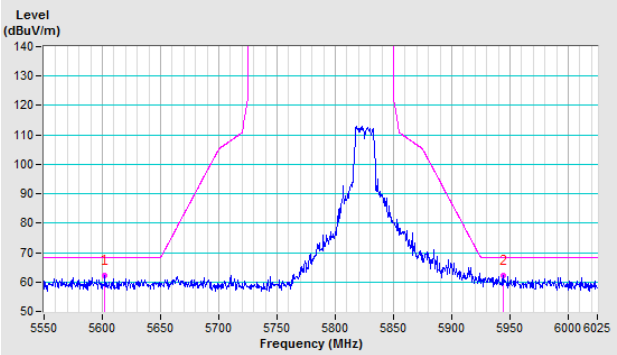
Please refer to the attached file (Test Setup Photo).

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

802.11a

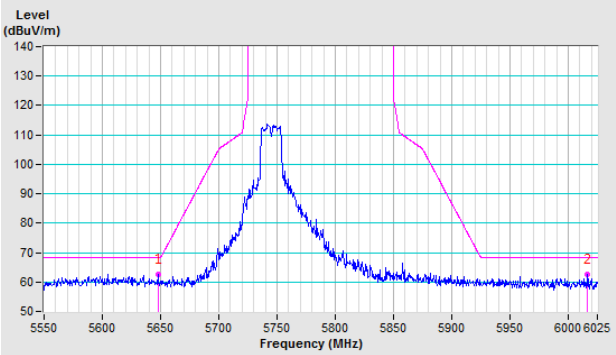
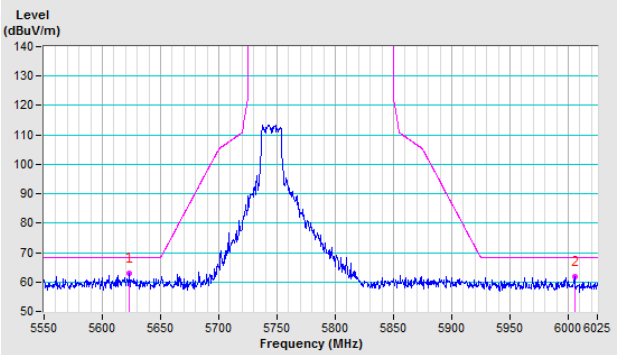
CH 149 5745 MHz	
Horizontal	**Vertical**
	

CH 157 5785 MHz	
Horizontal	**Vertical**
	

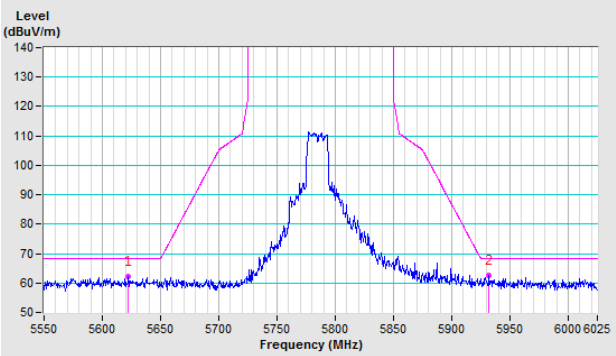
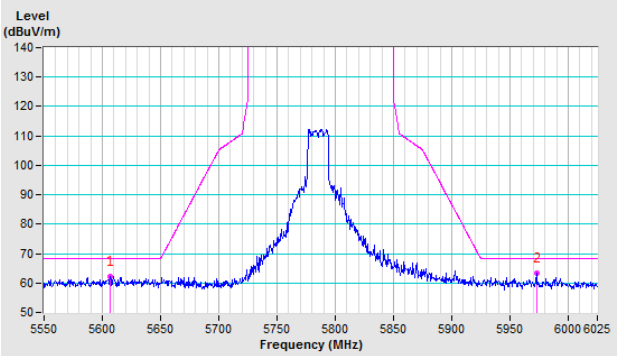
CH 165 5825 MHz	
Horizontal	**Vertical**
	

802.11ac (VHT20)

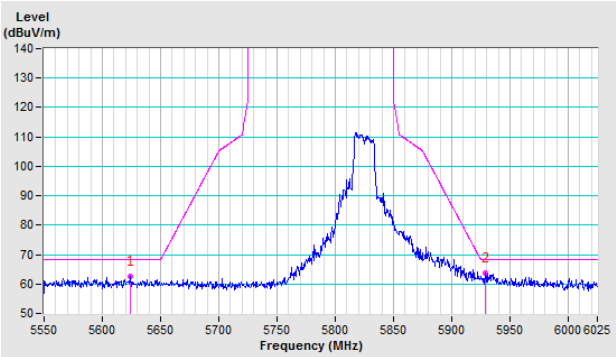
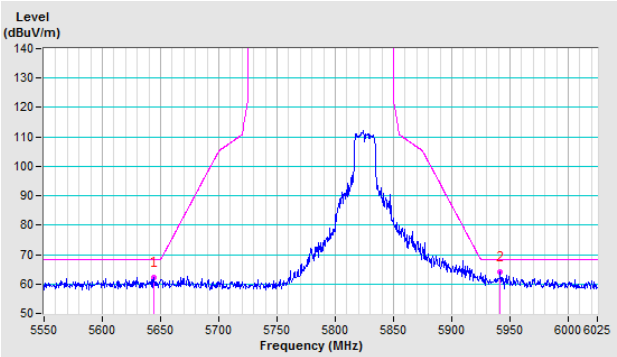
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

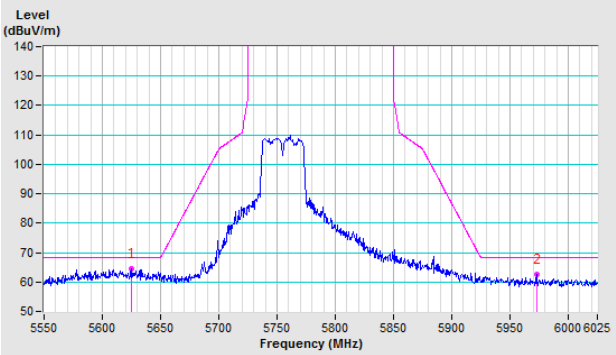
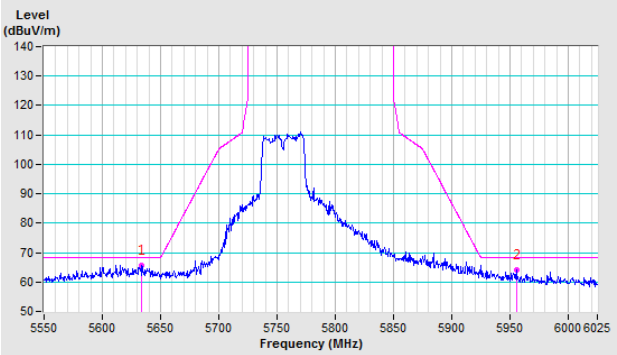
Horizontal	Vertical
	

CH 165 5825 MHz

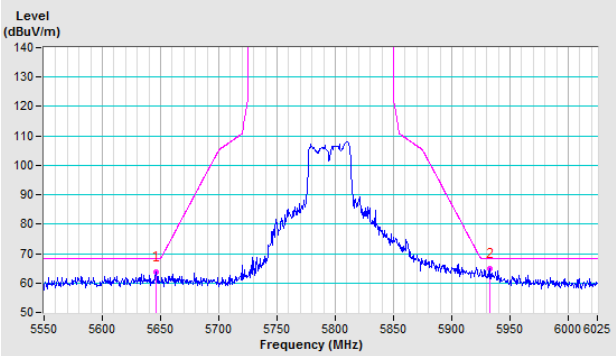
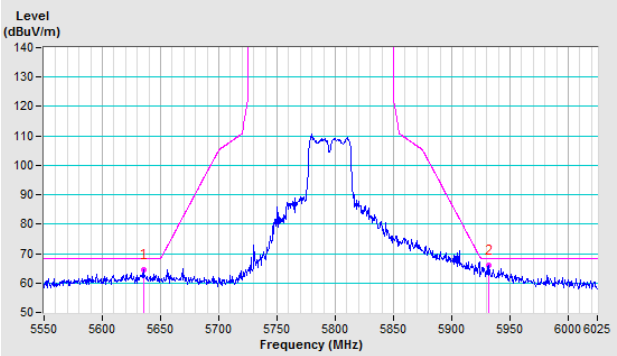
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

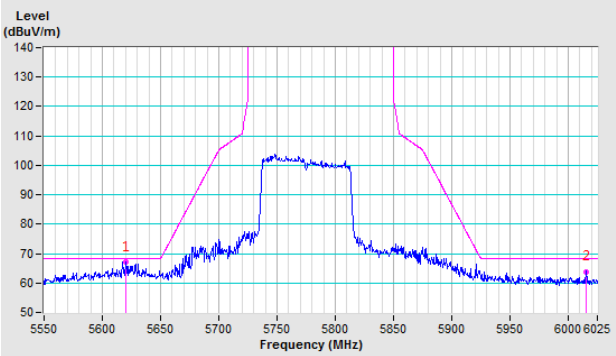
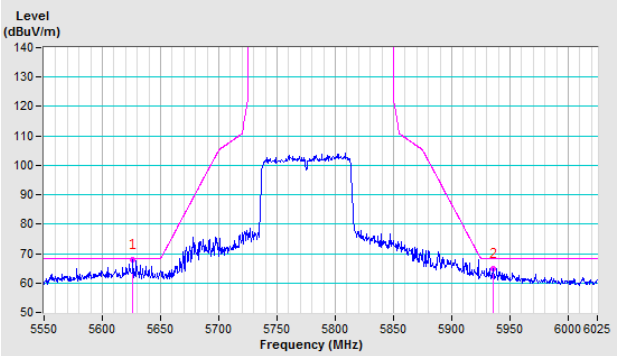
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ac (VHT80)

CH 155 5775 MHz

Horizontal	Vertical
	

Appendix – Information of the Testing Laboratories

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

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

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

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

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

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

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

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