FCC Test Report

Report No.: RF190904E03-1

FCC ID: 2AP7A-AMBERX

Test Model: AL11

Received Date: Sep. 04. 2019

Test Date: Sep. 12 to Oct. 07, 2019

Issued Date: Apr. 22, 2020

Applicant: LatticeWork, Inc.

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

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FCC Registration / Designation Number: 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF190904E03-1	Original release.	Apr. 22, 2020

1 Certificate of Conformity

Product: Amber X

Brand: Latticework

Test Model: AL11

Sample Status: ENGINEERING SAMPLE

Applicant: LatticeWork, 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:** Apr. 22, 2020
Phoenix Huang / Specialist

Approved by : _____ , **Date:** Apr. 22, 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 -8.11dB at 0.15000MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 15600.00MHz, 5350.00MHz, 5646.83MHz, 5850.00MHz, 5646.94MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is IPEX 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	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Amber X
Brand	Latticework
Test Model	AL11
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz band
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18~ 5.24GHz, 5.26GHz ~ 5.32GHz, 5.50GHz ~ 5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	**2.4GHz:** 975.486 mW **5.18 ~ 5.24GHz:** 244.669 mW **5.26 ~ 5.32GHz:** 177.977 mW **5.5 ~ 5.72GHz:** 243.839 mW **5.745 ~ 5.825GHz:** 353.643 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Cable Supplied	NA

Note:

1. 2.4GHz & 5GHz technology can't transmit at same time.
2. The EUT power needs to be supplied from a power adapter, the information is as below table:

No.	Brand	Model No.	Spec.
1	Jiangsu Chenyang	CYCQ24-120200U	Input: 100-240Vac, 50/60Hz, 0.6A Output: 12V, 2.0A DC Output Cable: unshielded, 1.5 m
2	TUE	A3P-1200200VU	Input: 100-240Vac, 50/60Hz, 1.0A Output: 12V, 2.0A DC Output Cable: unshielded, 1.2 m
3	APD	WB-24J12FU	Input: 100-240Vac, 50/60Hz, 0.7A Output: 12V, 2.0A DC Output Cable: unshielded, 1.2 m
Note: From the above adapters, the worst AC power conducted emission test was found in **Adapter 2;** the worst radiated emission test was found in **Adapter 3**. Therefore only the test data of the modes were recorded in this report.			

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

Ant. No.	Antenna Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
WiFi-1	3.19	2.4~2.4835	PIFA	IPEX
	3.57	5.15~5.25		
	3.29	5.25~5.35		
	4.28	5.47~5.725		
	4.37	5.725~5.85		
WiFi-2 / BT	3.14	2.4~2.4835	PIFA	IPEX
	4.69	5.15~5.25		
	4.21	5.25~5.35		
	3.81	5.47~5.725		
	4.55	5.725~5.85		

4. The EUT could be supplied with components and following different brand names could be chosen:

Item	Brand		
eMMc	KSI	Toshiba	Samsung
DDR	Samsung	Hynix	--
SSD	Kingston SATA	Liteon PCIe	Seagate
Note: From the above condiction, Toshiba eMMc, Hynix DDR and Liteon PCIe SSD was selected as representative model for the test and its data was recorded in this report.			

5. The EUT incorporates a MIMO function.

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

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 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

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	165	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

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

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	165	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	23deg. C, 68%RH	120Vac, 60Hz	Ryan Du
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

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

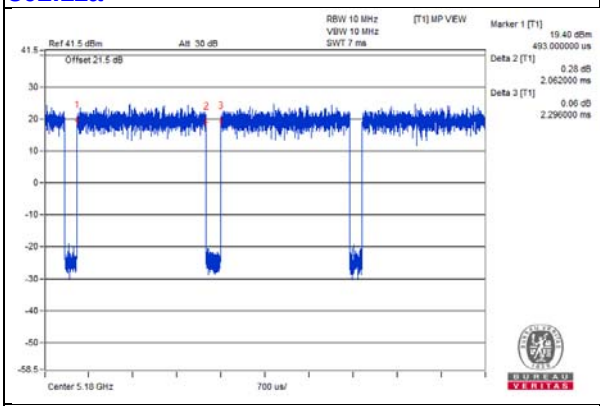
802.11a: Duty cycle = 2.062 ms/2.296 ms = 0.898, Duty factor = 10 * log (1/Duty cycle) = 0.47

802.11ac (VHT20): Duty cycle = 2.06 ms/2.257 ms = 0.913, Duty factor = 10 * log (1/Duty cycle) = 0.4

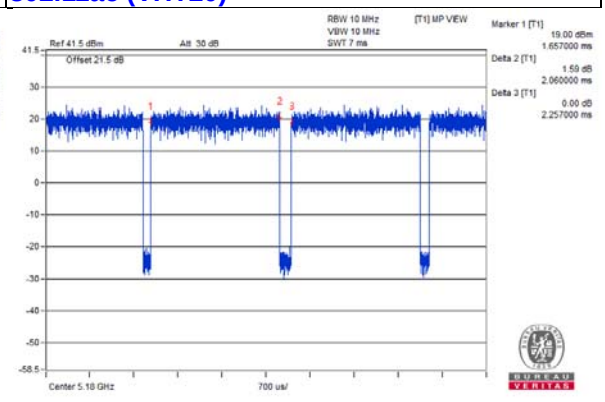
802.11ac (VHT40): Duty cycle = 0.951 ms/1.098 ms = 0.866, Duty factor = 10 * log (1/Duty cycle) = 0.62

802.11ac (VHT80): Duty cycle = 0.46 ms/0.624 ms = 0.737, Duty factor = 10 * log (1/Duty cycle) = 1.32

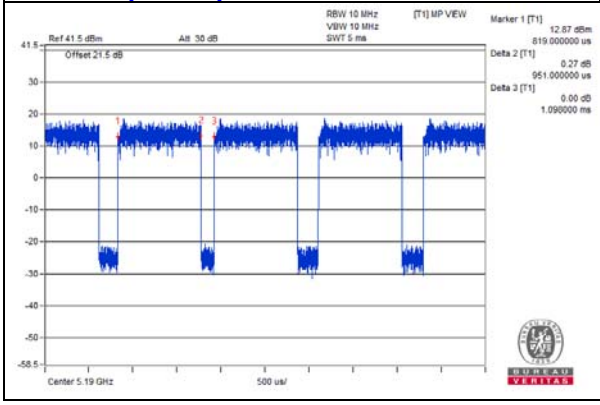
802.11a



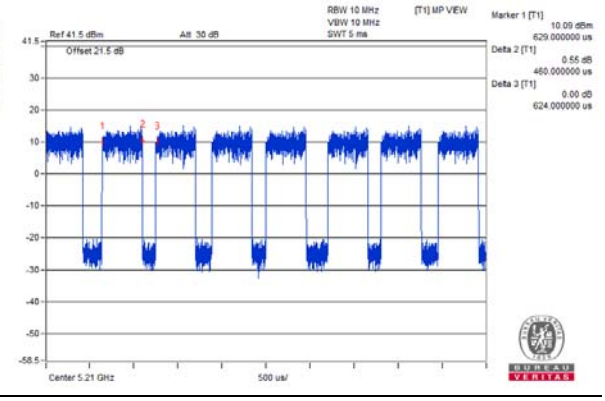
802.11ac (VHT20)



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.

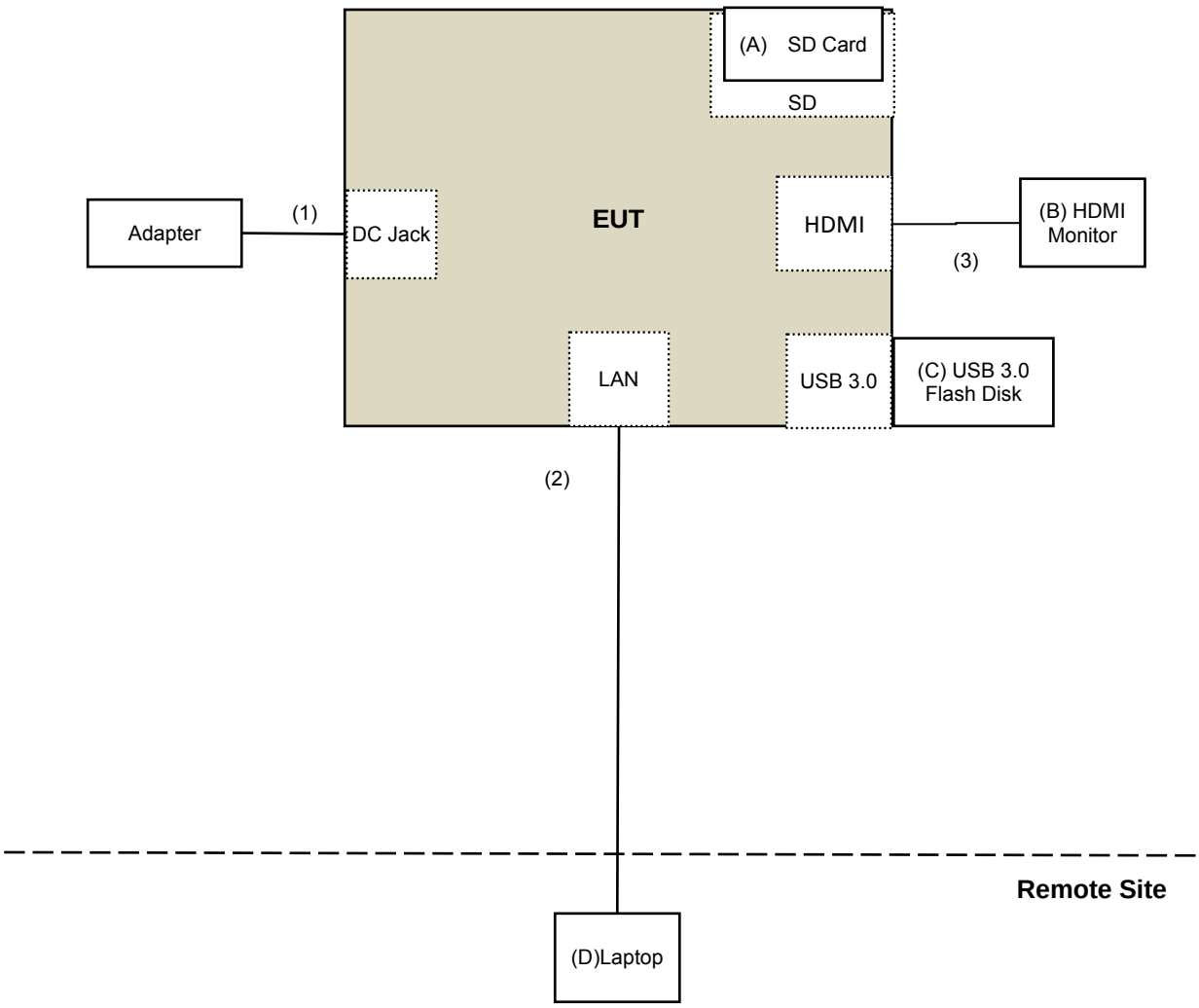
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	SD Card	Transcend	4GB	GM1SKV1	FCC DoC	Provided by Lab
B.	HDMI Monitor	DELL	P2415Q	CN-0J1P7F-QDC00-85L-13GB-A09	FCC DoC	Provided by Lab
C.	USB 3.0 Flash Disk	SanDisk	SDCZ73-064G-G46	NA	NA	Provided by Lab
D.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.2	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	HDMI Cable	1	2	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard and References

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

Test Standard:
FCC Part 15, Subpart E (15.407)
ANSI C63.10-2013

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

References Test Guidance:
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

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

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

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

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

Note:

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

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

4.1.2 Test Instruments

For OOBE test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 17, 2019	July 16, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-1200	160922	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-2000	180601	June 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

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

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 30, 2019	May 29, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Jan. 22, 2019	Jan. 21, 2020
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-3-1	Mar. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-2	Mar. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-3	Mar. 18, 2019	Mar. 17, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-1200	160922	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC104-SM-SM-2000	180601	June 10, 2019	June 09, 2020
RF Cable	EMC104-SM-SM-6000	180602	June 10, 2019	June 09, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Oct. 02 to 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:

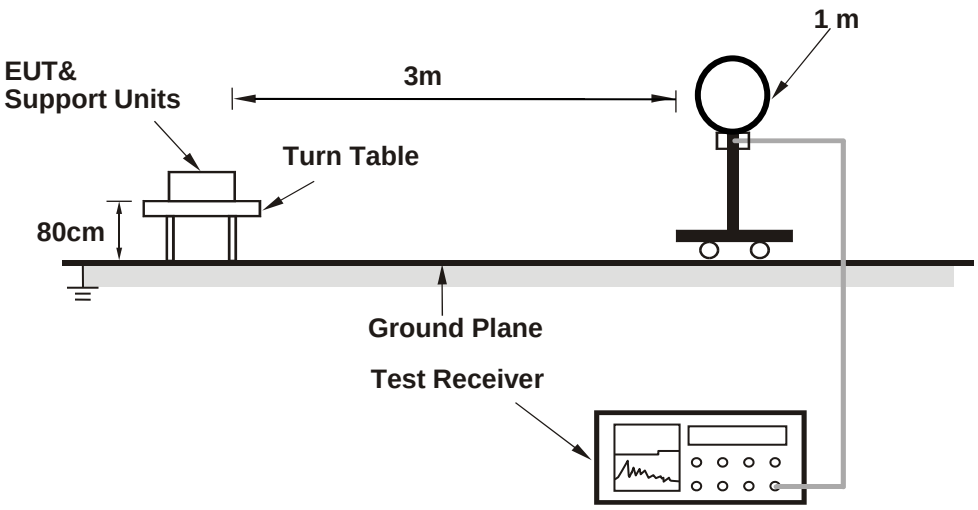
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

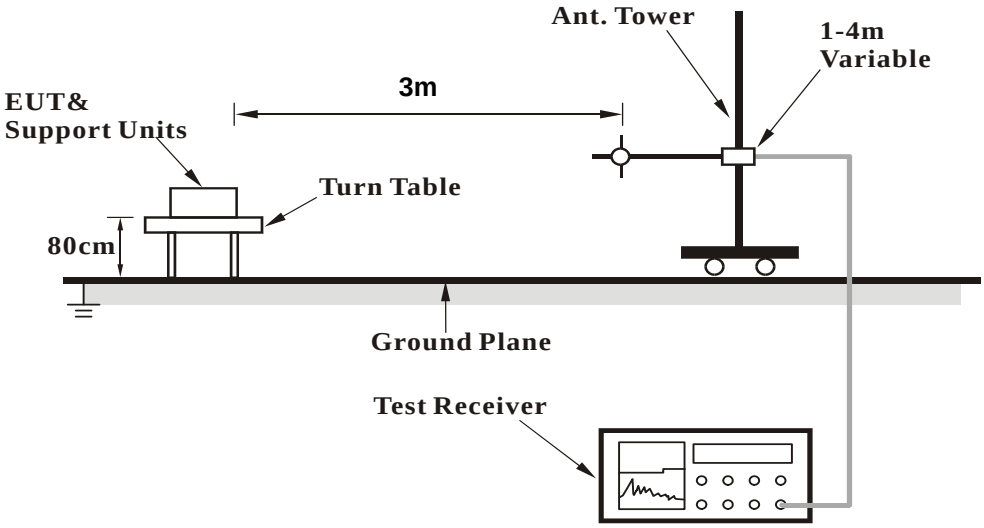
No deviation.

4.1.5 Test Setup

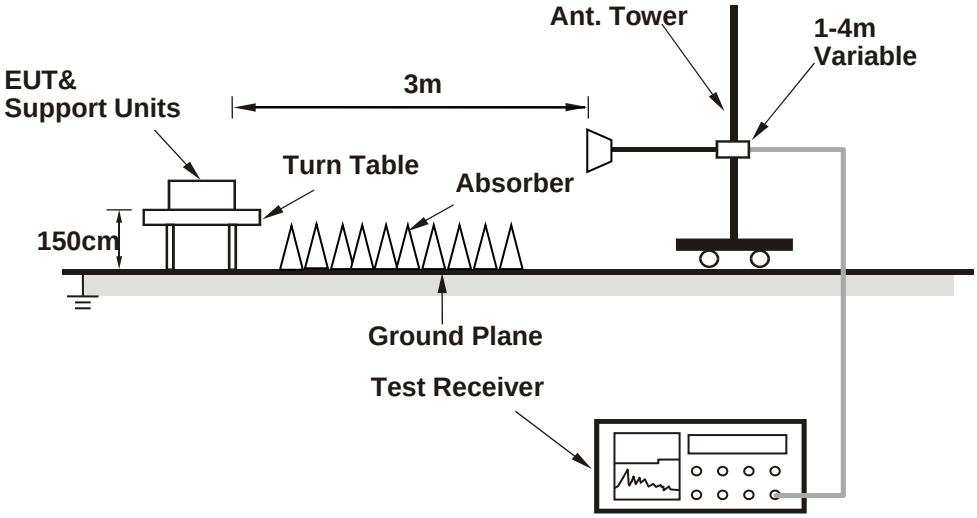
For Radiated emission below 30MHz



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 remote site.
b. Controlling software (HyperTerminal paste BB8_BLE_SOP.doc command) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) 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	69.1 PK	74.0	-4.9	3.83 H	250	65.8	3.3
2	5150.00	52.8 AV	54.0	-1.2	3.83 H	250	49.5	3.3
3	*5180.00	111.0 PK			3.83 H	250	107.7	3.3
4	*5180.00	102.0 AV			3.83 H	250	98.7	3.3
5	#10360.00	49.8 PK	68.2	-18.4	2.64 H	183	37.6	12.2
6	15540.00	58.4 PK	74.0	-15.6	2.24 H	80	45.2	13.2
7	15540.00	45.5 AV	54.0	-8.5	2.24 H	80	32.3	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	69.6 PK	74.0	-4.4	2.70 V	0	66.3	3.3
2	5150.00	53.7 AV	54.0	-0.3	2.70 V	0	50.4	3.3
3	*5180.00	111.8 PK			2.70 V	0	108.5	3.3
4	*5180.00	103.1 AV			2.70 V	0	99.8	3.3
5	#10360.00	55.6 PK	68.2	-12.6	1.23 V	14	43.4	12.2
6	15540.00	63.3 PK	74.0	-10.7	1.19 V	177	50.1	13.2
7	15540.00	50.5 AV	54.0	-3.5	1.19 V	177	37.3	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 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	64.7 PK	74.0	-9.3	3.89 H	236	61.4	3.3
2	5150.00	46.2 AV	54.0	-7.8	3.89 H	236	42.9	3.3
3	*5200.00	114.2 PK			3.89 H	236	111.1	3.1
4	*5200.00	105.4 AV			3.89 H	236	102.3	3.1
5	#10400.00	52.5 PK	68.2	-15.7	2.59 H	176	40.1	12.4
6	15600.00	60.9 PK	74.0	-13.1	2.30 H	82	47.7	13.2
7	15600.00	48.8 AV	54.0	-5.2	2.30 H	82	35.6	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	66.8 PK	74.0	-7.2	2.25 V	10	63.5	3.3
2	5150.00	48.4 AV	54.0	-5.6	2.25 V	10	45.1	3.3
3	*5200.00	115.0 PK			2.25 V	10	111.9	3.1
4	*5200.00	106.3 AV			2.25 V	10	103.2	3.1
5	#10400.00	58.5 PK	68.2	-9.7	1.20 V	18	46.1	12.4
6	15600.00	66.5 PK	74.0	-7.5	1.22 V	170	53.3	13.2
7	**15600.00**	**53.9 AV**	**54.0**	**-0.1**	**1.22 V**	**170**	**40.7**	**13.2**

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) 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	59.0 PK	74.0	-15.0	3.85 H	265	55.7	3.3
2	5150.00	38.9 AV	54.0	-15.1	3.85 H	265	35.6	3.3
3	*5240.00	113.7 PK			3.85 H	265	110.9	2.8
4	*5240.00	105.0 AV			3.85 H	265	102.2	2.8
5	5350.00	55.2 PK	74.0	-18.8	3.85 H	265	52.2	3.0
6	5350.00	39.8 AV	54.0	-14.2	3.85 H	265	36.8	3.0
7	#10480.00	50.7 PK	68.2	-17.5	2.65 H	173	38.2	12.5
8	15720.00	59.8 PK	74.0	-14.2	2.19 H	83	47.5	12.3
9	15720.00	46.7 AV	54.0	-7.3	2.19 H	83	34.4	12.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.3 PK	74.0	-14.7	2.24 V	8	56.0	3.3
2	5150.00	39.1 AV	54.0	-14.9	2.24 V	8	35.8	3.3
3	*5240.00	115.0 PK			2.24 V	8	112.2	2.8
4	*5240.00	106.0 AV			2.24 V	8	103.2	2.8
5	5350.00	55.1 PK	74.0	-18.9	2.24 V	8	52.1	3.0
6	5350.00	39.8 AV	54.0	-14.2	2.24 V	8	36.8	3.0
7	#10480.00	57.4 PK	68.2	-10.8	1.26 V	12	44.9	12.5
8	15720.00	65.3 PK	74.0	-8.7	1.24 V	172	53.0	12.3
9	15720.00	52.4 AV	54.0	-1.6	1.24 V	172	40.1	12.3

REMARKS:

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

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK) 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	58.7 PK	74.0	-15.3	3.82 H	259	55.4	3.3
2	5150.00	38.6 AV	54.0	-15.4	3.82 H	259	35.3	3.3
3	*5260.00	112.2 PK			3.82 H	259	109.5	2.7
4	*5260.00	103.3 AV			3.82 H	259	100.6	2.7
5	5350.00	53.9 PK	74.0	-20.1	3.82 H	259	50.9	3.0
6	5350.00	40.8 AV	54.0	-13.2	3.82 H	259	37.8	3.0
7	#10520.00	50.0 PK	68.2	-18.2	2.58 H	179	37.4	12.6
8	15780.00	58.0 PK	74.0	-16.0	2.25 H	85	46.0	12.0
9	15780.00	45.0 AV	54.0	-9.0	2.25 H	85	33.0	12.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	2.40 V	81	57.2	3.3
2	5150.00	38.8 AV	54.0	-15.2	2.40 V	81	35.5	3.3
3	*5260.00	113.4 PK			2.40 V	81	110.7	2.7
4	*5260.00	104.6 AV			2.40 V	81	101.9	2.7
5	5350.00	54.2 PK	74.0	-19.8	2.40 V	81	51.2	3.0
6	5350.00	42.6 AV	54.0	-11.4	2.40 V	81	39.6	3.0
7	#10520.00	55.8 PK	68.2	-12.4	1.27 V	28	43.2	12.6
8	15780.00	63.1 PK	74.0	-10.9	1.17 V	186	51.1	12.0
9	15780.00	50.1 AV	54.0	-3.9	1.17 V	186	38.1	12.0

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK) 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	113.5 PK			3.79 H	260	110.7	2.8
2	*5300.00	104.0 AV			3.79 H	260	101.2	2.8
3	5350.00	65.0 PK	74.0	-9.0	3.79 H	260	62.0	3.0
4	5350.00	44.6 AV	54.0	-9.4	3.79 H	260	41.6	3.0
5	10600.00	49.3 PK	74.0	-24.7	2.59 H	198	36.8	12.5
6	10600.00	37.8 AV	54.0	-16.2	2.59 H	198	25.3	12.5
7	15900.00	58.1 PK	74.0	-15.9	2.28 H	69	45.8	12.3
8	15900.00	45.2 AV	54.0	-8.8	2.28 H	69	32.9	12.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.4 PK			2.42 V	75	111.6	2.8
2	*5300.00	105.1 AV			2.42 V	75	102.3	2.8
3	5350.00	67.3 PK	74.0	-6.7	2.42 V	75	64.3	3.0
4	5350.00	46.9 AV	54.0	-7.1	2.42 V	75	43.9	3.0
5	10600.00	55.4 PK	74.0	-18.6	1.18 V	29	42.9	12.5
6	10600.00	43.1 AV	54.0	-10.9	1.18 V	29	30.6	12.5
7	15900.00	63.1 PK	74.0	-10.9	1.23 V	167	50.8	12.3
8	15900.00	50.1 AV	54.0	-3.9	1.23 V	167	37.8	12.3

REMARKS:

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

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	111.7 PK			3.84 H	255	108.9	2.8
2	*5320.00	102.6 AV			3.84 H	255	99.8	2.8
3	5350.00	66.8 PK	74.0	-7.2	3.84 H	255	63.8	3.0
4	5350.00	48.7 AV	54.0	-5.3	3.84 H	255	45.7	3.0
5	10640.00	49.6 PK	74.0	-24.4	2.63 H	178	37.1	12.5
6	10640.00	38.0 AV	54.0	-16.0	2.63 H	178	25.5	12.5
7	15960.00	57.6 PK	74.0	-16.4	2.30 H	88	44.9	12.7
8	15960.00	45.0 AV	54.0	-9.0	2.30 H	88	32.3	12.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	113.0 PK			2.30 V	78	110.2	2.8
2	*5320.00	104.0 AV			2.30 V	78	101.2	2.8
3	5350.00	71.0 PK	74.0	-3.0	2.30 V	78	68.0	3.0
4	**5350.00**	**53.9 AV**	**54.0**	**-0.1**	**2.30 V**	**78**	**50.9**	**3.0**
5	10640.00	55.7 PK	74.0	-18.3	1.21 V	15	43.2	12.5
6	10640.00	43.2 AV	54.0	-10.8	1.21 V	15	30.7	12.5
7	15960.00	62.6 PK	74.0	-11.4	1.25 V	156	49.9	12.7
8	15960.00	49.7 AV	54.0	-4.3	1.25 V	156	37.0	12.7

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) 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	60.5 PK	74.0	-13.5	3.87 H	239	57.2	3.3
2	5460.00	40.2 AV	54.0	-13.8	3.87 H	239	36.9	3.3
3	#5470.00	63.2 PK	68.2	-5.0	3.87 H	239	59.9	3.3
4	*5500.00	110.6 PK			3.87 H	239	107.3	3.3
5	*5500.00	101.5 AV			3.87 H	239	98.2	3.3
6	11000.00	50.0 PK	74.0	-24.0	2.57 H	183	36.9	13.1
7	11000.00	38.1 AV	54.0	-15.9	2.57 H	183	25.0	13.1
8	#16500.00	57.4 PK	68.2	-10.8	2.32 H	74	43.1	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.9 PK	74.0	-12.1	2.31 V	81	58.6	3.3
2	5460.00	41.7 AV	54.0	-12.3	2.31 V	81	38.4	3.3
3	#5470.00	67.9 PK	68.2	-0.3	2.31 V	81	64.6	3.3
4	*5500.00	112.1 PK			2.31 V	81	108.8	3.3
5	*5500.00	103.2 AV			2.31 V	81	99.9	3.3
6	11000.00	55.5 PK	74.0	-18.5	1.22 V	24	42.4	13.1
7	11000.00	43.3 AV	54.0	-10.7	1.22 V	24	30.2	13.1
8	#16500.00	63.3 PK	68.2	-4.9	1.26 V	171	49.0	14.3

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK) 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	49.7 PK	74.0	-24.3	3.86 H	246	46.4	3.3
2	5460.00	38.6 AV	54.0	-15.4	3.86 H	246	35.3	3.3
3	#5470.00	52.4 PK	68.2	-15.8	3.86 H	246	49.1	3.3
4	*5580.00	113.0 PK			3.86 H	246	109.7	3.3
5	*5580.00	104.5 AV			3.86 H	246	101.2	3.3
6	11160.00	50.2 PK	74.0	-23.8	2.66 H	177	37.3	12.9
7	11160.00	38.4 AV	54.0	-15.6	2.66 H	177	25.5	12.9
8	#16740.00	57.4 PK	68.2	-10.8	2.34 H	79	42.0	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	51.5 PK	74.0	-22.5	2.26 V	75	48.2	3.3
2	5460.00	40.3 AV	54.0	-13.7	2.26 V	75	37.0	3.3
3	#5470.00	52.7 PK	68.2	-15.5	2.26 V	75	49.4	3.3
4	*5580.00	116.3 PK			2.26 V	75	113.0	3.3
5	*5580.00	107.2 AV			2.26 V	75	103.9	3.3
6	11160.00	56.0 PK	74.0	-18.0	1.13 V	31	43.1	12.9
7	11160.00	43.4 AV	54.0	-10.6	1.13 V	31	30.5	12.9
8	#16740.00	62.8 PK	68.2	-5.4	1.19 V	171	47.4	15.4

REMARKS:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) 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	110.0 PK			3.84 H	253	106.6	3.4
2	*5700.00	101.1 AV			3.84 H	253	97.7	3.4
3	#5725.00	63.9 PK	68.2	-4.3	3.84 H	253	60.4	3.5
4	11400.00	46.1 PK	74.0	-27.9	2.59 H	180	32.8	13.3
5	11400.00	34.6 AV	54.0	-19.4	2.59 H	180	21.3	13.3
6	#17100.00	54.8 PK	68.2	-13.4	2.34 H	83	38.4	16.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	112.0 PK			2.37 V	82	108.6	3.4
2	*5700.00	102.2 AV			2.37 V	82	98.8	3.4
3	#5725.00	67.8 PK	68.2	-0.4	2.37 V	82	64.3	3.5
4	11400.00	50.4 PK	74.0	-23.6	1.13 V	30	37.1	13.3
5	11400.00	38.1 AV	54.0	-15.9	1.13 V	30	24.8	13.3
6	#17100.00	58.7 PK	68.2	-9.5	1.26 V	178	42.3	16.4

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK) 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	50.3 PK	74.0	-23.7	3.87 H	260	47.0	3.3
2	5460.00	38.1 AV	54.0	-15.9	3.87 H	260	34.8	3.3
3	#5470.00	51.2 PK	68.2	-17.0	3.87 H	260	47.9	3.3
4	*5720.00	114.8 PK			3.87 H	260	111.3	3.5
5	*5720.00	106.1 AV			3.87 H	260	102.6	3.5
6	#5850.00	55.8 PK	68.2	-12.4	3.87 H	260	51.8	4.0
7	11440.00	49.9 PK	74.0	-24.1	2.64 H	170	36.7	13.2
8	11440.00	38.1 AV	54.0	-15.9	2.64 H	170	24.9	13.2
9	#17160.00	57.5 PK	68.2	-10.7	2.40 H	72	40.7	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	50.6 PK	74.0	-23.4	2.91 V	88	47.3	3.3
2	5460.00	38.3 AV	54.0	-15.7	2.91 V	88	35.0	3.3
3	#5470.00	50.9 PK	68.2	-17.3	2.91 V	88	47.6	3.3
4	*5720.00	116.0 PK			2.91 V	88	112.5	3.5
5	*5720.00	107.5 AV			2.91 V	88	104.0	3.5
6	#5850.00	55.2 PK	68.2	-13.0	2.91 V	88	51.2	4.0
7	11440.00	55.7 PK	74.0	-18.3	1.16 V	43	42.5	13.2
8	11440.00	43.1 AV	54.0	-10.9	1.16 V	43	29.9	13.2
9	#17160.00	63.1 PK	68.2	-5.1	1.14 V	156	46.3	16.8

REMARKS:

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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) 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	#5646.89	61.0 PK	68.2	-7.2	2.42 H	271	57.7	3.3
2	*5745.00	117.0 PK			2.42 H	272	113.4	3.6
3	*5745.00	107.4 AV			2.42 H	272	103.8	3.6
4	#5952.59	51.2 PK	68.2	-17.0	2.42 H	271	47.0	4.2
5	11490.00	54.0 PK	74.0	-20.0	2.49 H	174	40.9	13.1
6	11490.00	41.9 AV	54.0	-12.1	2.49 H	174	28.8	13.1
7	#17235.00	62.7 PK	68.2	-5.5	2.31 H	96	45.7	17.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.11	55.1 PK	68.2	-13.1	2.91 V	76	51.8	3.3
2	*5745.00	117.2 PK			2.92 V	77	113.6	3.6
3	*5745.00	107.9 AV			2.92 V	77	104.3	3.6
4	#5983.68	51.0 PK	68.2	-17.2	2.91 V	76	46.9	4.1
5	11490.00	60.1 PK	74.0	-13.9	1.10 V	25	47.0	13.1
6	11490.00	47.3 AV	54.0	-6.7	1.10 V	25	34.2	13.1
7	#17235.00	67.1 PK	68.2	-1.1	1.14 V	164	50.1	17.0

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) 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	#5627.05	53.7 PK	68.2	-14.5	2.37 H	273	50.4	3.3
2	*5785.00	116.2 PK			2.38 H	274	112.4	3.8
3	*5785.00	106.8 AV			2.38 H	274	103.0	3.8
4	#5937.68	53.6 PK	68.2	-14.6	2.37 H	273	49.4	4.2
5	11570.00	54.0 PK	74.0	-20.0	2.46 H	181	41.3	12.7
6	11570.00	41.9 AV	54.0	-12.1	2.46 H	181	29.2	12.7
7	#17355.00	62.5 PK	68.2	-5.7	2.27 H	90	45.6	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	#5624.30	53.3 PK	68.2	-14.9	2.55 V	70	50.0	3.3
2	*5785.00	115.9 PK			2.55 V	70	112.1	3.8
3	*5785.00	106.7 AV			2.55 V	70	102.9	3.8
4	#5941.35	53.6 PK	68.2	-14.6	2.55 V	70	49.4	4.2
5	11570.00	60.3 PK	74.0	-13.7	1.12 V	178	47.6	12.7
6	11570.00	47.5 AV	54.0	-6.5	1.12 V	178	34.8	12.7
7	#17355.00	67.9 PK	68.2	-0.3	1.16 V	246	51.0	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 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	#5598.08	52.2 PK	68.2	-16.0	2.46 H	274	48.9	3.3
2	*5825.00	117.2 PK			2.47 H	274	113.3	3.9
3	*5825.00	108.1 AV			2.47 H	274	104.2	3.9
4	#5930.48	57.5 PK	68.2	-10.7	2.46 H	274	53.4	4.1
5	11650.00	54.1 PK	74.0	-19.9	2.42 H	183	41.3	12.8
6	11650.00	42.3 AV	54.0	-11.7	2.42 H	183	29.5	12.8
7	#17475.00	62.5 PK	68.2	-5.7	2.27 H	75	45.0	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5581.68	52.4 PK	68.2	-15.8	2.43 V	78	49.1	3.3
2	*5825.00	118.2 PK			2.43 V	78	114.3	3.9
3	*5825.00	109.0 AV			2.43 V	78	105.1	3.9
4	#5930.80	57.7 PK	68.2	-10.5	2.43 V	78	53.6	4.1
5	11650.00	60.3 PK	74.0	-13.7	1.14 V	28	47.5	12.8
6	11650.00	47.2 AV	54.0	-6.8	1.14 V	28	34.4	12.8
7	#17475.00	67.2 PK	68.2	-1.0	1.22 V	168	49.7	17.5

REMARKS:

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

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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	66.5 PK	74.0	-7.5	3.62 H	215	63.2	3.3
2	5150.00	51.7 AV	54.0	-2.3	3.62 H	215	48.4	3.3
3	*5180.00	109.4 PK			3.62 H	215	106.1	3.3
4	*5180.00	100.2 AV			3.62 H	215	96.9	3.3
5	#10360.00	53.3 PK	68.2	-14.9	2.40 H	176	41.1	12.2
6	15540.00	62.0 PK	74.0	-12.0	2.25 H	104	48.8	13.2
7	15540.00	48.8 AV	54.0	-5.2	2.25 H	104	35.6	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	68.7 PK	74.0	-5.3	2.82 V	9	65.4	3.3
2	5150.00	53.6 AV	54.0	-0.4	2.82 V	9	50.3	3.3
3	*5180.00	111.2 PK			2.82 V	9	107.9	3.3
4	*5180.00	102.2 AV			2.82 V	9	98.9	3.3
5	#10360.00	55.3 PK	68.2	-12.9	1.17 V	32	43.1	12.2
6	15540.00	62.9 PK	74.0	-11.1	1.20 V	172	49.7	13.2
7	15540.00	49.5 AV	54.0	-4.5	1.20 V	172	36.3	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 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	68.6 PK	74.0	-5.4	3.56 H	207	65.3	3.3
2	5150.00	49.9 AV	54.0	-4.1	3.56 H	207	46.6	3.3
3	*5200.00	112.3 PK			3.56 H	207	109.2	3.1
4	*5200.00	104.2 AV			3.56 H	207	101.1	3.1
5	#10400.00	53.9 PK	68.2	-14.3	2.45 H	181	41.5	12.4
6	15600.00	62.6 PK	74.0	-11.4	2.26 H	89	49.4	13.2
7	15600.00	49.9 AV	54.0	-4.1	2.26 H	89	36.7	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.3 PK	74.0	-3.7	2.91 V	10	67.0	3.3
2	5150.00	51.7 AV	54.0	-2.3	2.91 V	10	48.4	3.3
3	*5200.00	114.2 PK			2.91 V	10	111.1	3.1
4	*5200.00	106.4 AV			2.91 V	10	103.3	3.1
5	#10400.00	55.5 PK	68.2	-12.7	1.18 V	28	43.1	12.4
6	15600.00	63.1 PK	74.0	-10.9	1.19 V	142	49.9	13.2
7	15600.00	50.1 AV	54.0	-3.9	1.19 V	142	36.9	13.2

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) 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	50.4 PK	74.0	-23.6	3.60 H	230	47.1	3.3
2	5150.00	38.3 AV	54.0	-15.7	3.60 H	230	35.0	3.3
3	*5240.00	112.2 PK			3.60 H	230	109.4	2.8
4	*5240.00	104.3 AV			3.60 H	230	101.5	2.8
5	5350.00	51.8 PK	74.0	-22.2	3.60 H	230	48.8	3.0
6	5350.00	41.8 AV	54.0	-12.2	3.60 H	230	38.8	3.0
7	#10480.00	54.2 PK	68.2	-14.0	2.50 H	171	41.7	12.5
8	15720.00	62.1 PK	74.0	-11.9	2.30 H	75	49.8	12.3
9	15720.00	49.9 AV	54.0	-4.1	2.30 H	75	37.6	12.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.2 PK	74.0	-23.8	2.98 V	9	46.9	3.3
2	5150.00	38.3 AV	54.0	-15.7	2.98 V	9	35.0	3.3
3	*5240.00	114.4 PK			2.98 V	9	111.6	2.8
4	*5240.00	105.7 AV			2.98 V	9	102.9	2.8
5	5350.00	51.6 PK	74.0	-22.4	2.98 V	9	48.6	3.0
6	5350.00	41.5 AV	54.0	-12.5	2.98 V	9	38.5	3.0
7	#10480.00	55.9 PK	68.2	-12.3	1.13 V	35	43.4	12.5
8	15720.00	63.3 PK	74.0	-10.7	1.17 V	157	51.0	12.3
9	15720.00	50.4 AV	54.0	-3.6	1.17 V	157	38.1	12.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	3.67 H	212	46.5	3.3
2	5150.00	37.8 AV	54.0	-16.2	3.67 H	212	34.5	3.3
3	*5260.00	112.1 PK			3.67 H	212	109.4	2.7
4	*5260.00	104.3 AV			3.67 H	212	101.6	2.7
5	5350.00	51.4 PK	74.0	-22.6	3.67 H	212	48.4	3.0
6	5350.00	41.1 AV	54.0	-12.9	3.67 H	212	38.1	3.0
7	#10520.00	53.9 PK	68.2	-14.3	2.41 H	183	41.3	12.6
8	15780.00	62.4 PK	74.0	-11.6	2.25 H	97	50.4	12.0
9	15780.00	49.5 AV	54.0	-4.5	2.25 H	97	37.5	12.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	50.2 PK	74.0	-23.8	2.54 V	8	46.9	3.3
2	5150.00	38.3 AV	54.0	-15.7	2.54 V	8	35.0	3.3
3	*5260.00	114.7 PK			2.54 V	8	112.0	2.7
4	*5260.00	105.5 AV			2.54 V	8	102.8	2.7
5	5350.00	54.5 PK	74.0	-19.5	2.54 V	8	51.5	3.0
6	5350.00	41.7 AV	54.0	-12.3	2.54 V	8	38.7	3.0
7	#10520.00	55.5 PK	68.2	-12.7	1.15 V	31	42.9	12.6
8	15780.00	62.7 PK	74.0	-11.3	1.17 V	152	50.7	12.0
9	15780.00	49.8 AV	54.0	-4.2	1.17 V	152	37.8	12.0

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK) 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	112.1 PK			3.58 H	220	109.3	2.8
2	*5300.00	104.1 AV			3.58 H	220	101.3	2.8
3	10600.00	54.3 PK	74.0	-19.7	2.47 H	195	41.8	12.5
4	10600.00	41.0 AV	54.0	-13.0	2.47 H	195	28.5	12.5
5	15900.00	61.9 PK	74.0	-12.1	2.23 H	80	49.6	12.3
6	15900.00	49.2 AV	54.0	-4.8	2.23 H	80	36.9	12.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.8 PK			2.60 V	8	112.0	2.8
2	*5300.00	105.5 AV			2.60 V	8	102.7	2.8
3	10600.00	55.7 PK	74.0	-18.3	1.16 V	47	43.2	12.5
4	10600.00	42.9 AV	54.0	-11.1	1.16 V	47	30.4	12.5
5	15900.00	63.0 PK	74.0	-11.0	1.11 V	155	50.7	12.3
6	15900.00	49.7 AV	54.0	-4.3	1.11 V	155	37.4	12.3

REMARKS:

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

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK) 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	111.2 PK			3.60 H	200	108.4	2.8
2	*5320.00	102.1 AV			3.60 H	200	99.3	2.8
3	5350.00	68.7 PK	74.0	-5.3	3.60 H	200	65.7	3.0
4	5350.00	50.2 AV	54.0	-3.8	3.60 H	200	47.2	3.0
5	10640.00	52.6 PK	74.0	-21.4	2.41 H	197	40.1	12.5
6	10640.00	40.7 AV	54.0	-13.3	2.41 H	197	28.2	12.5
7	15960.00	61.3 PK	74.0	-12.7	2.24 H	102	48.6	12.7
8	15960.00	49.0 AV	54.0	-5.0	2.24 H	102	36.3	12.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	113.9 PK			2.49 V	5	111.1	2.8
2	*5320.00	104.1 AV			2.49 V	5	101.3	2.8
3	5350.00	70.1 PK	74.0	-3.9	2.49 V	5	67.1	3.0
4	**5350.00**	**53.9 AV**	**54.0**	**-0.1**	**2.49 V**	**5**	**50.9**	**3.0**
5	10640.00	55.1 PK	74.0	-18.9	1.12 V	37	42.6	12.5
6	10640.00	42.3 AV	54.0	-11.7	1.12 V	37	29.8	12.5
7	15960.00	62.0 PK	74.0	-12.0	1.18 V	146	49.3	12.7
8	15960.00	50.1 AV	54.0	-3.9	1.18 V	146	37.4	12.7

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) 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	59.0 PK	74.0	-15.0	3.58 H	201	55.7	3.3
2	5460.00	40.7 AV	54.0	-13.3	3.58 H	201	37.4	3.3
3	#5470.00	66.3 PK	68.2	-1.9	3.58 H	201	63.0	3.3
4	*5500.00	109.0 PK			3.58 H	201	105.7	3.3
5	*5500.00	99.9 AV			3.58 H	201	96.6	3.3
6	11000.00	51.8 PK	74.0	-22.2	2.47 H	171	38.7	13.1
7	11000.00	39.7 AV	54.0	-14.3	2.47 H	171	26.6	13.1
8	#16500.00	60.6 PK	68.2	-7.6	2.31 H	99	46.3	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.9 PK	74.0	-14.1	2.49 V	91	56.6	3.3
2	5460.00	41.4 AV	54.0	-12.6	2.49 V	91	38.1	3.3
3	#5470.00	68.0 PK	68.2	-0.2	2.49 V	91	64.7	3.3
4	*5500.00	110.4 PK			2.49 V	91	107.1	3.3
5	*5500.00	101.6 AV			2.49 V	91	98.3	3.3
6	11000.00	53.0 PK	74.0	-21.0	1.10 V	46	39.9	13.1
7	11000.00	40.3 AV	54.0	-13.7	1.10 V	46	27.2	13.1
8	#16500.00	60.0 PK	68.2	-8.2	1.12 V	170	45.7	14.3

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK) 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	50.3 PK	74.0	-23.7	3.61 H	216	47.0	3.3
2	5460.00	38.6 AV	54.0	-15.4	3.61 H	216	35.3	3.3
3	#5470.00	50.9 PK	68.2	-17.3	3.61 H	216	47.6	3.3
4	*5580.00	114.9 PK			3.61 H	216	111.6	3.3
5	*5580.00	105.9 AV			3.61 H	216	102.6	3.3
6	11160.00	54.4 PK	74.0	-19.6	2.47 H	179	41.5	12.9
7	11160.00	42.2 AV	54.0	-11.8	2.47 H	179	29.3	12.9
8	#16740.00	62.4 PK	68.2	-5.8	2.33 H	83	47.0	15.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	50.6 PK	74.0	-23.4	2.37 V	116	47.3	3.3
2	5460.00	38.8 AV	54.0	-15.2	2.37 V	116	35.5	3.3
3	#5470.00	51.3 PK	68.2	-16.9	2.37 V	116	48.0	3.3
4	*5580.00	116.3 PK			2.37 V	116	113.0	3.3
5	*5580.00	107.3 AV			2.37 V	116	104.0	3.3
6	11160.00	55.9 PK	74.0	-18.1	1.13 V	27	43.0	12.9
7	11160.00	43.5 AV	54.0	-10.5	1.13 V	27	30.6	12.9
8	#16740.00	63.9 PK	68.2	-4.3	1.11 V	157	48.5	15.4

REMARKS:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) 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	108.6 PK			3.64 H	213	105.2	3.4
2	*5700.00	99.4 AV			3.64 H	213	96.0	3.4
3	#5725.00	64.8 PK	68.2	-3.4	3.64 H	213	61.3	3.5
4	11400.00	49.7 PK	74.0	-24.3	2.48 H	186	36.4	13.3
5	11400.00	37.7 AV	54.0	-16.3	2.48 H	186	24.4	13.3
6	#17100.00	58.9 PK	68.2	-9.3	2.32 H	93	42.5	16.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.3 PK			2.29 V	98	106.9	3.4
2	*5700.00	101.8 AV			2.29 V	98	98.4	3.4
3	#5725.00	67.9 PK	68.2	-0.3	2.29 V	98	64.4	3.5
4	11400.00	52.9 PK	74.0	-21.1	1.20 V	56	39.6	13.3
5	11400.00	40.4 AV	54.0	-13.6	1.20 V	56	27.1	13.3
6	#17100.00	59.9 PK	68.2	-8.3	1.12 V	145	43.5	16.4

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK) 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	50.0 PK	74.0	-24.0	3.60 H	229	46.7	3.3
2	5460.00	38.3 AV	54.0	-15.7	3.60 H	229	35.0	3.3
3	#5470.00	50.6 PK	68.2	-17.6	3.60 H	229	47.3	3.3
4	*5720.00	114.6 PK			3.60 H	229	111.1	3.5
5	*5720.00	105.3 AV			3.60 H	229	101.8	3.5
6	#5850.00	54.9 PK	68.2	-13.3	3.60 H	229	50.9	4.0
7	11440.00	53.3 PK	74.0	-20.7	2.47 H	177	40.1	13.2
8	11440.00	41.3 AV	54.0	-12.7	2.47 H	177	28.1	13.2
9	#17160.00	62.3 PK	68.2	-5.9	2.23 H	82	45.5	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	50.8 PK	74.0	-23.2	2.33 V	111	47.5	3.3
2	5460.00	38.7 AV	54.0	-15.3	2.33 V	111	35.4	3.3
3	#5470.00	50.9 PK	68.2	-17.3	2.33 V	111	47.6	3.3
4	*5720.00	115.9 PK			2.33 V	111	112.4	3.5
5	*5720.00	107.1 AV			2.33 V	111	103.6	3.5
6	#5850.00	55.3 PK	68.2	-12.9	2.33 V	111	51.3	4.0
7	11440.00	55.8 PK	74.0	-18.2	1.18 V	43	42.6	13.2
8	11440.00	43.2 AV	54.0	-10.8	1.18 V	43	30.0	13.2
9	#17160.00	63.3 PK	68.2	-4.9	1.19 V	149	46.5	16.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.28	61.6 PK	68.2	-6.6	3.51 H	242	58.3	3.3
2	*5745.00	115.4 PK			3.52 H	242	111.8	3.6
3	*5745.00	106.5 AV			3.52 H	242	102.9	3.6
4	#6000.26	51.6 PK	68.2	-16.6	3.51 H	242	47.5	4.1
5	11490.00	53.5 PK	74.0	-20.5	2.50 H	193	40.4	13.1
6	11490.00	41.5 AV	54.0	-12.5	2.50 H	193	28.4	13.1
7	#17235.00	62.3 PK	68.2	-5.9	2.29 H	76	45.3	17.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.93	66.5 PK	68.2	-1.7	2.51 V	88	63.2	3.3
2	*5745.00	117.2 PK			2.51 V	88	113.6	3.6
3	*5745.00	107.6 AV			2.51 V	88	104.0	3.6
4	#5933.44	57.1 PK	68.2	-11.1	2.51 V	88	52.9	4.2
5	11490.00	55.3 PK	74.0	-18.7	1.15 V	44	42.2	13.1
6	11490.00	42.8 AV	54.0	-11.2	1.15 V	44	29.7	13.1
7	#17235.00	62.4 PK	68.2	-5.8	1.09 V	148	45.4	17.0

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) 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	#5631.98	52.1 PK	68.2	-16.1	3.51 H	272	48.8	3.3
2	*5785.00	118.0 PK			3.51 H	273	114.2	3.8
3	*5785.00	108.0 AV			3.51 H	273	104.2	3.8
4	#5935.62	53.2 PK	68.2	-15.0	3.51 H	272	49.0	4.2
5	11570.00	53.9 PK	74.0	-20.1	2.42 H	174	41.2	12.7
6	11570.00	41.6 AV	54.0	-12.4	2.42 H	174	28.9	12.7
7	#17355.00	62.5 PK	68.2	-5.7	2.22 H	88	45.6	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	#5632.86	53.7 PK	68.2	-14.5	2.58 V	89	50.4	3.3
2	*5785.00	117.4 PK			2.59 V	89	113.6	3.8
3	*5785.00	107.7 AV			2.59 V	89	103.9	3.8
4	#5924.56	57.5 PK	68.5	-11.0	2.58 V	89	53.4	4.1
5	11570.00	55.2 PK	74.0	-18.8	1.15 V	32	42.5	12.7
6	11570.00	42.8 AV	54.0	-11.2	1.15 V	32	30.1	12.7
7	#17355.00	62.7 PK	68.2	-5.5	1.18 V	142	45.8	16.9

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) 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	#5586.03	51.2 PK	68.2	-17.0	3.47 H	274	47.9	3.3
2	*5825.00	118.3 PK			3.47 H	274	114.4	3.9
3	*5825.00	108.6 AV			3.47 H	274	104.7	3.9
4	#5953.98	54.2 PK	68.2	-14.0	3.47 H	274	50.0	4.2
5	11650.00	53.9 PK	74.0	-20.1	2.47 H	168	41.1	12.8
6	11650.00	41.6 AV	54.0	-12.4	2.47 H	168	28.8	12.8
7	#17475.00	62.0 PK	68.2	-6.2	2.28 H	94	44.5	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5592.73	51.7 PK	68.2	-16.5	2.45 V	87	48.4	3.3
2	*5825.00	117.7 PK			2.45 V	87	113.8	3.9
3	*5825.00	107.9 AV			2.45 V	87	104.0	3.9
4	#5926.30	63.7 PK	68.2	-4.5	2.45 V	87	59.6	4.1
5	11650.00	55.8 PK	74.0	-18.2	1.14 V	37	43.0	12.8
6	11650.00	43.1 AV	54.0	-10.9	1.14 V	37	30.3	12.8
7	#17475.00	62.8 PK	68.2	-5.4	1.15 V	159	45.3	17.5

REMARKS:

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

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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	68.9 PK	74.0	-5.1	3.68 H	226	65.6	3.3
2	5150.00	51.5 AV	54.0	-2.5	3.68 H	226	48.2	3.3
3	*5190.00	105.4 PK			3.68 H	226	102.2	3.2
4	*5190.00	97.2 AV			3.68 H	226	94.0	3.2
5	#10380.00	47.6 PK	68.2	-20.6	2.42 H	191	35.2	12.4
6	15570.00	53.2 PK	74.0	-20.8	2.28 H	103	39.9	13.3
7	15570.00	39.7 AV	54.0	-14.3	2.28 H	103	26.4	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.6 PK	74.0	-3.4	2.45 V	7	67.3	3.3
2	5150.00	53.6 AV	54.0	-0.4	2.45 V	7	50.3	3.3
3	*5190.00	106.5 PK			2.45 V	7	103.3	3.2
4	*5190.00	98.4 AV			2.45 V	7	95.2	3.2
5	#10380.00	52.6 PK	68.2	-15.6	1.20 V	63	40.2	12.4
6	15570.00	57.6 PK	74.0	-16.4	1.09 V	150	44.3	13.3
7	15570.00	43.6 AV	54.0	-10.4	1.09 V	150	30.3	13.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	5150.00	62.5 PK	74.0	-11.5	3.71 H	231	59.2	3.3
2	5150.00	47.6 AV	54.0	-6.4	3.71 H	231	44.3	3.3
3	*5230.00	110.5 PK			3.71 H	231	107.6	2.9
4	*5230.00	101.9 AV			3.71 H	231	99.0	2.9
5	5350.00	62.5 PK	74.0	-11.5	3.71 H	231	59.5	3.0
6	5350.00	44.2 AV	54.0	-9.8	3.71 H	231	41.2	3.0
7	#10460.00	47.3 PK	68.2	-20.9	2.43 H	200	34.8	12.5
8	15690.00	53.2 PK	74.0	-20.8	2.23 H	96	40.7	12.5
9	15690.00	39.7 AV	54.0	-14.3	2.23 H	96	27.2	12.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.4 PK	74.0	-9.6	2.29 V	6	61.1	3.3
2	5150.00	49.8 AV	54.0	-4.2	2.29 V	6	46.5	3.3
3	*5230.00	112.6 PK			2.29 V	6	109.7	2.9
4	*5230.00	103.7 AV			2.29 V	6	100.8	2.9
5	5350.00	65.0 PK	74.0	-9.0	2.29 V	6	62.0	3.0
6	5350.00	46.9 AV	54.0	-7.1	2.29 V	6	43.9	3.0
7	#10460.00	51.9 PK	68.2	-16.3	1.16 V	51	39.4	12.5
8	15690.00	57.4 PK	74.0	-16.6	1.15 V	140	44.9	12.5
9	15690.00	43.2 AV	54.0	-10.8	1.15 V	140	30.7	12.5

REMARKS:

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

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) 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	54.7 PK	74.0	-19.3	3.62 H	220	51.4	3.3
2	5150.00	40.3 AV	54.0	-13.7	3.62 H	220	37.0	3.3
3	*5270.00	110.5 PK			3.62 H	220	107.8	2.7
4	*5270.00	101.9 AV			3.62 H	220	99.2	2.7
5	5350.00	62.9 PK	74.0	-11.1	3.62 H	220	59.9	3.0
6	5350.00	48.1 AV	54.0	-5.9	3.62 H	220	45.1	3.0
7	#10540.00	47.2 PK	68.2	-21.0	2.47 H	178	34.6	12.6
8	15810.00	53.6 PK	74.0	-20.4	2.31 H	91	41.6	12.0
9	15810.00	40.1 AV	54.0	-13.9	2.31 H	91	28.1	12.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.2 PK	74.0	-19.8	2.40 V	7	50.9	3.3
2	5150.00	40.0 AV	54.0	-14.0	2.40 V	7	36.7	3.3
3	*5270.00	112.5 PK			2.40 V	7	109.8	2.7
4	*5270.00	103.0 AV			2.40 V	7	100.3	2.7
5	5350.00	64.6 PK	74.0	-9.4	2.40 V	7	61.6	3.0
6	5350.00	49.5 AV	54.0	-4.5	2.40 V	7	46.5	3.0
7	#10540.00	52.1 PK	68.2	-16.1	1.15 V	53	39.5	12.6
8	15810.00	57.6 PK	74.0	-16.4	1.13 V	146	45.6	12.0
9	15810.00	43.5 AV	54.0	-10.5	1.13 V	146	31.5	12.0

REMARKS:

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

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) 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	105.0 PK			3.65 H	216	102.2	2.8
2	*5310.00	96.9 AV			3.65 H	216	94.1	2.8
3	5350.00	68.5 PK	74.0	-5.5	3.65 H	216	65.5	3.0
4	5350.00	51.3 AV	54.0	-2.7	3.65 H	216	48.3	3.0
5	10620.00	47.6 PK	74.0	-26.4	2.45 H	181	35.1	12.5
6	10620.00	37.3 AV	54.0	-16.7	2.45 H	181	24.8	12.5
7	15930.00	53.3 PK	74.0	-20.7	2.30 H	90	40.9	12.4
8	15930.00	39.9 AV	54.0	-14.1	2.30 H	90	27.5	12.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	108.6 PK			2.49 V	10	105.8	2.8
2	*5310.00	99.6 AV			2.49 V	10	96.8	2.8
3	5350.00	73.2 PK	74.0	-0.8	2.49 V	10	70.2	3.0
4	5350.00	53.6 AV	54.0	-0.4	2.49 V	10	50.6	3.0
5	10620.00	53.1 PK	74.0	-20.9	1.17 V	50	40.6	12.5
6	10620.00	40.2 AV	54.0	-13.8	1.17 V	50	27.7	12.5
7	15930.00	57.9 PK	74.0	-16.1	1.11 V	148	45.5	12.4
8	15930.00	43.8 AV	54.0	-10.2	1.11 V	148	31.4	12.4

REMARKS:

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

CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) 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	62.8 PK	74.0	-11.2	3.65 H	229	59.5	3.3
2	5460.00	45.5 AV	54.0	-8.5	3.65 H	229	42.2	3.3
3	#5470.00	64.8 PK	68.2	-3.4	3.65 H	229	61.5	3.3
4	*5510.00	104.9 PK			3.65 H	229	101.6	3.3
5	*5510.00	96.9 AV			3.65 H	229	93.6	3.3
6	11020.00	47.3 PK	74.0	-26.7	2.45 H	176	34.3	13.0
7	11020.00	36.7 AV	54.0	-17.3	2.45 H	176	23.7	13.0
8	#16530.00	53.7 PK	68.2	-14.5	2.22 H	94	39.1	14.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.2 PK	74.0	-9.8	2.42 V	338	60.9	3.3
2	5460.00	47.3 AV	54.0	-6.7	2.42 V	338	44.0	3.3
3	#5470.00	67.8 PK	68.2	-0.4	2.42 V	338	64.5	3.3
4	*5510.00	107.5 PK			2.42 V	338	104.2	3.3
5	*5510.00	98.6 AV			2.42 V	338	95.3	3.3
6	11020.00	52.9 PK	74.0	-21.1	1.24 V	56	39.9	13.0
7	11020.00	40.4 AV	54.0	-13.6	1.24 V	56	27.4	13.0
8	#16530.00	57.0 PK	68.2	-11.2	1.13 V	143	42.4	14.6

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) 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	54.1 PK	74.0	-19.9	3.71 H	221	50.8	3.3
2	5460.00	39.9 AV	54.0	-14.1	3.71 H	221	36.6	3.3
3	#5470.00	61.5 PK	68.2	-6.7	3.71 H	221	58.2	3.3
4	*5550.00	110.2 PK			3.71 H	221	106.9	3.3
5	*5550.00	101.6 AV			3.71 H	221	98.3	3.3
6	11100.00	47.0 PK	74.0	-27.0	2.38 H	206	34.3	12.7
7	11100.00	36.7 AV	54.0	-17.3	2.38 H	206	24.0	12.7
8	#16650.00	53.4 PK	68.2	-14.8	2.33 H	109	38.2	15.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.9 PK	74.0	-14.1	2.29 V	235	56.6	3.3
2	5460.00	43.5 AV	54.0	-10.5	2.29 V	235	40.2	3.3
3	#5470.00	62.7 PK	68.2	-5.5	2.29 V	235	59.4	3.3
4	*5550.00	112.4 PK			2.29 V	235	109.1	3.3
5	*5550.00	103.0 AV			2.29 V	235	99.7	3.3
6	11100.00	52.4 PK	74.0	-21.6	1.23 V	50	39.7	12.7
7	11100.00	39.9 AV	54.0	-14.1	1.23 V	50	27.2	12.7
8	#16650.00	57.0 PK	68.2	-11.2	1.05 V	147	41.8	15.2

REMARKS:

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

CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) 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	105.8 PK			3.62 H	216	102.4	3.4
2	*5670.00	97.3 AV			3.62 H	216	93.9	3.4
3	#5725.00	65.6 PK	68.2	-2.6	3.62 H	216	62.1	3.5
4	11340.00	47.6 PK	74.0	-26.4	2.40 H	182	34.2	13.4
5	11340.00	37.2 AV	54.0	-16.8	2.40 H	182	23.8	13.4
6	#17010.00	53.0 PK	68.2	-15.2	2.30 H	92	36.8	16.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	109.3 PK			2.44 V	225	105.9	3.4
2	*5670.00	99.9 AV			2.44 V	225	96.5	3.4
3	#5725.00	68.0 PK	68.2	-0.2	2.44 V	225	64.5	3.5
4	11340.00	52.6 PK	74.0	-21.4	1.21 V	59	39.2	13.4
5	11340.00	39.9 AV	54.0	-14.1	1.21 V	59	26.5	13.4
6	#17010.00	57.0 PK	68.2	-11.2	1.05 V	147	40.8	16.2

REMARKS:

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

CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) 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	50.6 PK	74.0	-23.4	3.70 H	225	47.3	3.3
2	5460.00	38.4 AV	54.0	-15.6	3.70 H	225	35.1	3.3
3	#5470.00	50.8 PK	68.2	-17.4	3.70 H	225	47.5	3.3
4	*5710.00	110.7 PK			3.70 H	225	107.2	3.5
5	*5710.00	102.0 AV			3.70 H	225	98.5	3.5
6	#5850.00	54.8 PK	68.2	-13.4	3.70 H	225	50.8	4.0
7	11420.00	48.1 PK	74.0	-25.9	2.48 H	201	34.9	13.2
8	11420.00	37.5 AV	54.0	-16.5	2.48 H	201	24.3	13.2
9	#17130.00	53.3 PK	68.2	-14.9	2.24 H	97	36.7	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	50.8 PK	74.0	-23.2	2.26 V	236	47.5	3.3
2	5460.00	38.6 AV	54.0	-15.4	2.26 V	236	35.3	3.3
3	#5470.00	51.2 PK	68.2	-17.0	2.26 V	236	47.9	3.3
4	*5710.00	112.4 PK			2.26 V	236	108.9	3.5
5	*5710.00	103.2 AV			2.26 V	236	99.7	3.5
6	#5850.00	55.3 PK	68.2	-12.9	2.26 V	236	51.3	4.0
7	11420.00	52.4 PK	74.0	-21.6	1.25 V	62	39.2	13.2
8	11420.00	40.0 AV	54.0	-14.0	1.25 V	62	26.8	13.2
9	#17130.00	57.9 PK	68.2	-10.3	1.11 V	165	41.3	16.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	#5642.72	67.8 PK	68.2	-0.4	3.32 H	280	64.5	3.3
2	*5755.00	112.4 PK			3.33 H	281	108.7	3.7
3	*5755.00	104.4 AV			3.33 H	281	100.7	3.7
4	#5932.86	65.1 PK	68.2	-3.1	3.32 H	280	61.0	4.1
5	11510.00	47.6 PK	74.0	-26.4	2.46 H	185	34.6	13.0
6	11510.00	37.4 AV	54.0	-16.6	2.46 H	185	24.4	13.0
7	#17265.00	52.7 PK	68.2	-15.5	2.33 H	115	35.8	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	**#5646.83**	**68.1 PK**	**68.2**	**-0.1**	**2.26 V**	**86**	**64.8**	**3.3**
2	*5755.00	114.2 PK			2.27 V	87	110.5	3.7
3	*5755.00	105.4 AV			2.27 V	87	101.7	3.7
4	#5928.44	66.9 PK	68.2	-1.3	2.26 V	86	62.8	4.1
5	11510.00	52.3 PK	74.0	-21.7	1.25 V	66	39.3	13.0
6	11510.00	39.9 AV	54.0	-14.1	1.25 V	66	26.9	13.0
7	#17265.00	57.1 PK	68.2	-11.1	1.12 V	148	40.2	16.9

REMARKS:

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

CHANNEL	TX Channel 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	#5636.09	55.6 PK	68.2	-12.6	3.50 H	273	52.3	3.3
2	*5795.00	113.3 PK			3.51 H	274	109.5	3.8
3	*5795.00	104.6 AV			3.51 H	274	100.8	3.8
4	#5935.59	63.7 PK	68.2	-4.5	3.50 H	273	59.5	4.2
5	11590.00	47.7 PK	74.0	-26.3	2.38 H	203	34.9	12.8
6	11590.00	37.0 AV	54.0	-17.0	2.38 H	203	24.2	12.8
7	#17385.00	53.1 PK	68.2	-15.1	2.27 H	103	36.3	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5638.84	58.9 PK	68.2	-9.3	1.16 V	75	55.6	3.3
2	*5795.00	113.4 PK			1.16 V	75	109.6	3.8
3	*5795.00	104.7 AV			1.16 V	75	100.9	3.8
4	#5934.94	66.8 PK	68.2	-1.4	1.16 V	75	62.6	4.2
5	11590.00	52.5 PK	74.0	-21.5	1.21 V	54	39.7	12.8
6	11590.00	40.2 AV	54.0	-13.8	1.21 V	54	27.4	12.8
7	#17385.00	57.5 PK	68.2	-10.7	1.13 V	163	40.7	16.8

REMARKS:

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

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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	68.6 PK	74.0	-5.4	2.63 H	273	65.3	3.3
2	5150.00	51.4 AV	54.0	-2.6	2.63 H	273	48.1	3.3
3	*5210.00	102.1 PK			2.63 H	273	99.1	3.0
4	*5210.00	92.9 AV			2.63 H	273	89.9	3.0
5	5350.00	58.8 PK	74.0	-15.2	2.63 H	273	55.8	3.0
6	5350.00	40.7 AV	54.0	-13.3	2.63 H	273	37.7	3.0
7	#10420.00	47.9 PK	68.2	-20.3	2.37 H	188	35.4	12.5
8	15630.00	53.6 PK	74.0	-20.4	2.28 H	118	40.7	12.9
9	15630.00	39.8 AV	54.0	-14.2	2.28 H	118	26.9	12.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.9 PK	74.0	-3.1	1.95 V	6	67.6	3.3
2	5150.00	53.8 AV	54.0	-0.2	1.95 V	6	50.5	3.3
3	*5210.00	104.6 PK			1.95 V	6	101.6	3.0
4	*5210.00	95.6 AV			1.95 V	6	92.6	3.0
5	5350.00	60.8 PK	74.0	-13.2	1.95 V	6	57.8	3.0
6	5350.00	42.9 AV	54.0	-11.1	1.95 V	6	39.9	3.0
7	#10420.00	52.9 PK	68.2	-15.3	1.17 V	64	40.4	12.5
8	15630.00	57.5 PK	74.0	-16.5	1.06 V	155	44.6	12.9
9	15630.00	43.2 AV	54.0	-10.8	1.06 V	155	30.3	12.9

REMARKS:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	2.72 H	273	46.5	3.3
2	5150.00	38.9 AV	54.0	-15.1	2.72 H	273	35.6	3.3
3	*5290.00	101.9 PK			2.72 H	273	99.2	2.7
4	*5290.00	92.7 AV			2.72 H	273	90.0	2.7
5	5350.00	68.7 PK	74.0	-5.3	2.72 H	273	65.7	3.0
6	5350.00	51.7 AV	54.0	-2.3	2.72 H	273	48.7	3.0
7	#10580.00	47.6 PK	68.2	-20.6	2.42 H	199	35.0	12.6
8	15870.00	53.8 PK	74.0	-20.2	2.23 H	94	41.7	12.1
9	15870.00	40.2 AV	54.0	-13.8	2.23 H	94	28.1	12.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.1 PK	74.0	-22.9	2.34 V	6	47.8	3.3
2	5150.00	40.3 AV	54.0	-13.7	2.34 V	6	37.0	3.3
3	*5290.00	104.2 PK			2.34 V	6	101.5	2.7
4	*5290.00	95.6 AV			2.34 V	6	92.9	2.7
5	5350.00	70.7 PK	74.0	-3.3	2.34 V	6	67.7	3.0
6	5350.00	53.7 AV	54.0	-0.3	2.34 V	6	50.7	3.0
7	#10580.00	53.0 PK	68.2	-15.2	1.16 V	72	40.4	12.6
8	15870.00	57.8 PK	74.0	-16.2	1.08 V	165	45.7	12.1
9	15870.00	44.0 AV	54.0	-10.0	1.08 V	165	31.9	12.1

REMARKS:

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

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) 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	64.7 PK	74.0	-9.3	2.62 H	274	61.4	3.3
2	5460.00	50.8 AV	54.0	-3.2	2.62 H	274	47.5	3.3
3	#5470.00	65.8 PK	68.2	-2.4	2.62 H	274	62.5	3.3
4	*5530.00	101.8 PK			2.62 H	274	98.5	3.3
5	*5530.00	92.7 AV			2.62 H	274	89.4	3.3
6	#5725.00	51.3 PK	68.2	-16.9	2.62 H	274	47.8	3.5
7	11060.00	48.2 PK	74.0	-25.8	2.47 H	189	35.3	12.9
8	11060.00	37.7 AV	54.0	-16.3	2.47 H	189	24.8	12.9
9	#16590.00	53.7 PK	68.2	-14.5	2.27 H	107	38.8	14.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.2 PK	74.0	-7.8	2.32 V	84	62.9	3.3
2	5460.00	52.1 AV	54.0	-1.9	2.32 V	84	48.8	3.3
3	#5470.00	67.9 PK	68.2	-0.3	2.32 V	84	64.6	3.3
4	*5530.00	103.5 PK			2.32 V	84	100.2	3.3
5	*5530.00	94.6 AV			2.32 V	84	91.3	3.3
6	#5725.00	51.6 PK	68.2	-16.6	2.32 V	84	48.1	3.5
7	11060.00	52.9 PK	74.0	-21.1	1.18 V	58	40.0	12.9
8	11060.00	40.1 AV	54.0	-13.9	1.18 V	58	27.2	12.9
9	#16590.00	58.1 PK	68.2	-10.1	1.10 V	147	43.2	14.9

REMARKS:

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

CHANNEL	TX Channel 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	103.4 PK			2.63 H	280	100.1	3.3
2	*5610.00	94.7 AV			2.63 H	280	91.4	3.3
3	#5725.00	64.2 PK	68.2	-4.0	2.63 H	280	60.7	3.5
4	11220.00	47.5 PK	74.0	-26.5	2.43 H	196	34.5	13.0
5	11220.00	37.0 AV	54.0	-17.0	2.43 H	196	24.0	13.0
6	#16830.00	53.3 PK	68.2	-14.9	2.34 H	107	38.0	15.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	106.2 PK			2.42 V	92	102.9	3.3
2	*5610.00	98.1 AV			2.42 V	92	94.8	3.3
3	#5725.00	68.0 PK	68.2	-0.2	2.42 V	92	64.5	3.5
4	11220.00	52.9 PK	74.0	-21.1	1.25 V	60	39.9	13.0
5	11220.00	40.4 AV	54.0	-13.6	1.25 V	60	27.4	13.0
6	#16830.00	57.7 PK	68.2	-10.5	1.09 V	154	42.4	15.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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) 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	55.3 PK	74.0	-18.7	2.62 H	277	52.0	3.3
2	5460.00	40.7 AV	54.0	-13.3	2.62 H	277	37.4	3.3
3	#5470.00	55.3 PK	68.2	-12.9	2.62 H	277	52.0	3.3
4	*5690.00	106.2 PK			2.62 H	277	102.8	3.4
5	*5690.00	97.8 AV			2.62 H	277	94.4	3.4
6	#5850.00	65.9 PK	68.2	-2.3	2.62 H	277	61.9	4.0
7	11380.00	47.5 PK	74.0	-26.5	2.43 H	179	34.2	13.3
8	11380.00	37.1 AV	54.0	-16.9	2.43 H	179	23.8	13.3
9	#17070.00	52.7 PK	68.2	-15.5	2.34 H	89	36.4	16.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.9 PK	74.0	-18.1	2.40 V	88	52.6	3.3
2	5460.00	41.1 AV	54.0	-12.9	2.40 V	88	37.8	3.3
3	#5470.00	56.1 PK	68.2	-12.1	2.40 V	88	52.8	3.3
4	*5690.00	109.9 PK			2.40 V	88	106.5	3.4
5	*5690.00	100.6 AV			2.40 V	88	97.2	3.4
6	**#5850.00**	**68.1 PK**	**68.2**	**-0.1**	**2.40 V**	**88**	**64.1**	**4.0**
7	11380.00	52.5 PK	74.0	-21.5	1.24 V	63	39.2	13.3
8	11380.00	40.2 AV	54.0	-13.8	1.24 V	63	26.9	13.3
9	#17070.00	58.3 PK	68.2	-9.9	1.10 V	153	42.0	16.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.98	67.4 PK	68.2	-0.8	2.66 H	274	64.1	3.3
2	*5775.00	107.5 PK			2.66 H	274	103.8	3.7
3	*5775.00	100.0 AV			2.66 H	274	96.3	3.7
4	#5930.64	62.7 PK	68.2	-5.5	2.66 H	274	58.6	4.1
5	11550.00	47.9 PK	74.0	-26.1	2.40 H	203	35.0	12.9
6	11550.00	37.4 AV	54.0	-16.6	2.40 H	203	24.5	12.9
7	#17325.00	52.7 PK	68.2	-15.5	2.22 H	112	35.7	17.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**#5646.94**	**68.1 PK**	**68.2**	**-0.1**	**1.08 V**	**296**	**64.8**	**3.3**
2	*5775.00	109.1 PK			1.09 V	297	105.4	3.7
3	*5775.00	101.4 AV			1.09 V	297	97.7	3.7
4	#5929.36	63.1 PK	68.2	-5.1	1.08 V	296	59.0	4.1
5	11550.00	52.0 PK	74.0	-22.0	1.26 V	71	39.1	12.9
6	11550.00	39.7 AV	54.0	-14.3	1.26 V	71	26.8	12.9
7	#17325.00	57.4 PK	68.2	-10.8	1.06 V	149	40.4	17.0

REMARKS:

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

Below 1GHz Data:

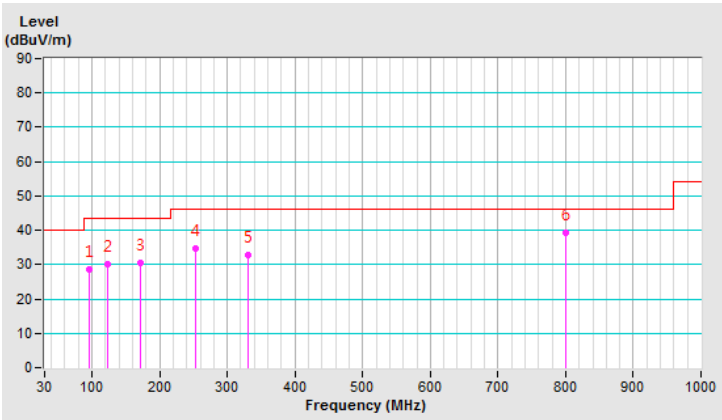
802.11ac (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	96.59	28.6 QP	43.5	-14.9	3.00 H	158	41.1	-12.5
2	124.02	30.2 QP	43.5	-13.3	3.00 H	276	40.0	-9.8
3	172.49	30.4 QP	43.5	-13.1	2.00 H	260	39.1	-8.7
4	253.71	34.8 QP	46.0	-11.2	1.00 H	344	43.0	-8.2
5	331.16	32.9 QP	46.0	-13.1	1.00 H	13	38.4	-5.5
6	800.01	39.3 QP	46.0	-6.7	2.00 H	51	35.2	4.1

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

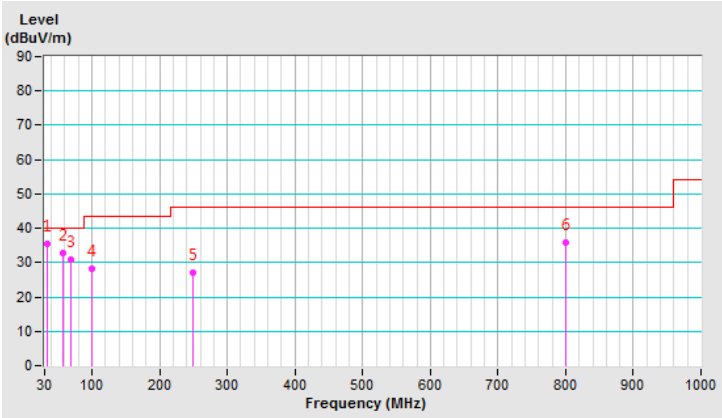


CHANNEL	TX Channel 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.27	35.6 QP	40.0	-4.4	1.00 V	15	44.9	-9.3
2	57.09	32.8 QP	40.0	-7.2	1.00 V	69	41.5	-8.7
3	68.39	30.8 QP	40.0	-9.2	1.00 V	127	41.0	-10.2
4	99.72	28.3 QP	43.5	-15.2	3.00 V	360	40.4	-12.1
5	249.03	27.0 QP	46.0	-19.0	2.00 V	294	35.4	-8.4
6	800.01	35.9 QP	46.0	-10.1	1.00 V	308	31.8	4.1

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 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. 27, 2019	Sep. 26, 2020
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: Oct. 07, 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.

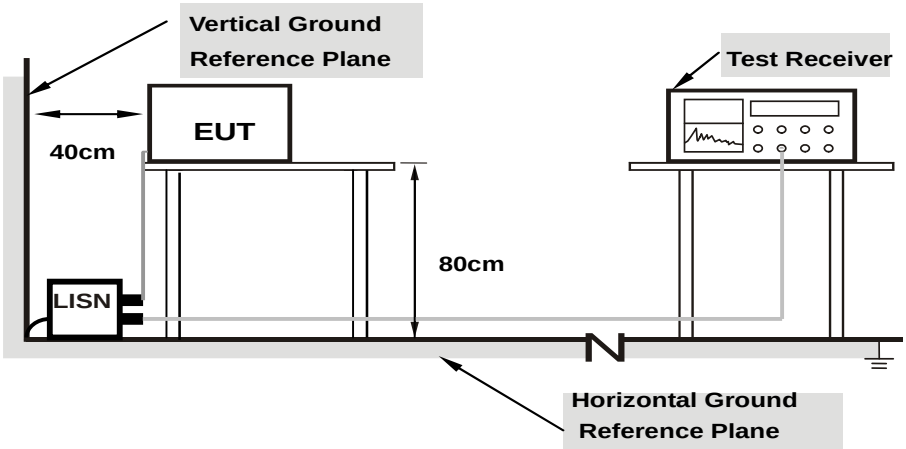
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

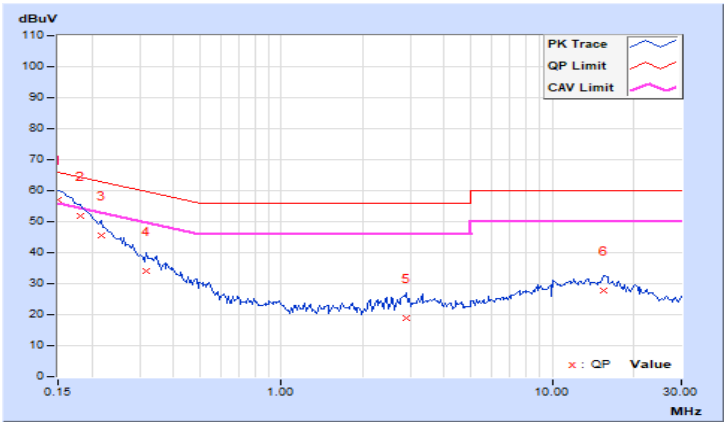
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.97	47.17	31.09	57.14	41.06	66.00	56.00	-8.86	-14.94
2	0.18125	9.98	41.72	25.56	51.70	35.54	64.43	54.43	-12.73	-18.89
3	0.21641	9.98	35.76	19.41	45.74	29.39	62.96	52.96	-17.22	-23.57
4	0.31797	9.99	24.11	9.31	34.10	19.30	59.76	49.76	-25.66	-30.46
5	2.90625	10.19	8.54	0.22	18.73	10.41	56.00	46.00	-37.27	-35.59
6	15.52344	11.05	16.66	10.82	27.71	21.87	60.00	50.00	-32.29	-28.13

REMARKS:

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

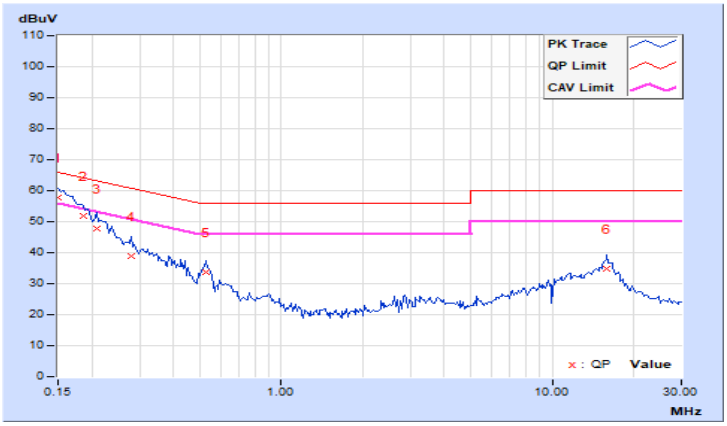


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15000**	**9.95**	**47.94**	**32.20**	**57.89**	**42.15**	**66.00**	**56.00**	**-8.11**	**-13.85**
2	0.18516	9.96	41.86	26.69	51.82	36.65	64.25	54.25	-12.43	-17.60
3	0.20859	9.96	37.90	22.58	47.86	32.54	63.26	53.26	-15.40	-20.72
4	0.27891	9.97	28.81	14.36	38.78	24.33	60.85	50.85	-22.07	-26.52
5	0.52891	9.99	23.82	17.12	33.81	27.11	56.00	46.00	-22.19	-18.89
6	15.91406	10.88	24.08	18.27	34.96	29.15	60.00	50.00	-25.04	-20.85

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,

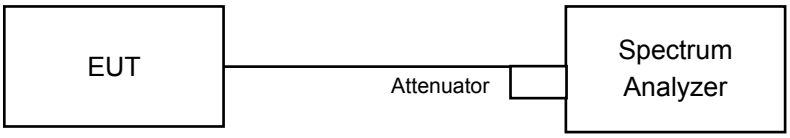
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

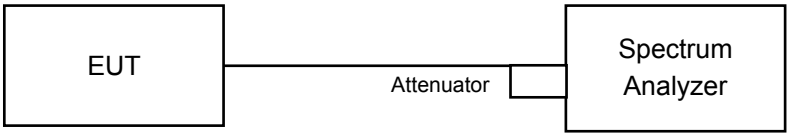
FOR POWER OUTPUT MEASUREMENT

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:
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 Results

802.11a

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	18.16	18.88	142.732	21.55	24.00	Pass
40	5200	20.81	20.91	243.814	23.87	24.00	Pass
48	5240	20.02	20.25	206.387	23.15	24.00	Pass
52	5260	19.32	19.66	177.977	22.50	24.00	Pass
60	5300	19.18	19.47	171.306	22.34	24.00	Pass
64	5320	18.42	18.45	139.486	21.45	24.00	Pass
100	5500	18.26	18.28	134.286	21.28	23.81	Pass
116	5580	19.22	19.53	173.303	22.39	24.00	Pass
140	5700	16.18	16.39	85.046	19.30	23.82	Pass
*144 (U-NII-2C Band)	5720	13.03	14.37	52.828	17.23	24.00	Pass
*144 (U-NII-3 Band)	5720	7.10	8.76	14.08	11.49	30.00	Pass
149	5745	22.25	22.29	337.314	25.28	30.00	Pass
157	5785	21.97	21.86	310.86	24.93	30.00	Pass
165	5825	22.37	22.43	347.569	25.41	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)
144	5720	66.908	18.25
Note: The total power was calculated through formula and record the value for reference only.			

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	37.37	25.29
60	5300	41.92	29.76
64	5320	24.12	27.09
100	5500	19.12	19.12
116	5580	27.91	29.88
140	5700	19.16	24.11
144 (U-NII-2C Band)	5720	21.72	21.90

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	25.29	25.02 > 24
60	5300	29.76	25.73 > 24
64	5320	24.12	24.82 > 24
100	5500	19.12	23.81 < 24
116	5580	27.91	25.45 > 24
140	5700	19.16	23.82 < 24
144 (U-NII-2C Band)	5720	21.72	24.36 > 24

802.11ac (VHT20)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	17.77	18.46	129.987	21.14	24.00	Pass
40	5200	20.81	20.94	244.669	23.89	24.00	Pass
48	5240	20.08	20.35	210.252	23.23	24.00	Pass
52	5260	19.39	19.52	176.432	22.47	24.00	Pass
60	5300	19.32	19.38	172.203	22.36	24.00	Pass
64	5320	17.92	18.07	126.065	21.01	24.00	Pass
100	5500	17.80	17.71	119.276	20.77	23.76	Pass
116	5580	19.23	19.59	174.744	22.42	24.00	Pass
140	5700	15.88	16.03	78.813	18.97	24.00	Pass
*144 (U-NII-2C Band)	5720	12.85	14.38	51.156	17.09	24.00	Pass
*144 (U-NII-3 Band)	5720	7.90	7.57	13.017	11.15	30.00	Pass
149	5745	22.34	22.48	348.407	25.42	30.00	Pass
157	5785	22.37	22.51	350.822	25.45	30.00	Pass
165	5825	22.42	22.53	353.643	25.49	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)
144	5720	64.173	18.07
Note: The total power was calculated through formula and record the value for reference only.			

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	42.13	25.44
60	5300	43.14	38.49
64	5320	37.22	28.03
100	5500	19.85	18.90
116	5580	35.26	30.20
140	5700	19.96	21.54
144 (U-NII-2C Band)	5720	22.95	21.42

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	25.44	25.05 > 24
60	5300	38.49	26.85 > 24
64	5320	28.03	25.47 > 24
100	5500	18.90	23.76 < 24
116	5580	30.20	25.8 > 24
140	5700	19.96	24 = 24
144 (U-NII-2C Band)	5720	21.42	24.3 > 24

802.11ac (VHT40)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	16.36	16.86	91.78	19.63	24.00	Pass
46	5230	20.66	20.71	234.174	23.70	24.00	Pass
54	5270	19.19	19.37	169.482	22.29	24.00	Pass
62	5310	15.29	15.32	67.847	18.32	24.00	Pass
102	5510	16.38	16.29	86.011	19.35	24.00	Pass
110	5550	20.78	20.94	243.839	23.87	24.00	Pass
134	5670	16.78	16.92	96.847	19.86	24.00	Pass
*142 (U-NII-2C Band)	5710	10.98	11.12	29.41	14.68	24.00	Pass
*142 (U-NII-3 Band)	5710	0.67	-0.74	2.3208	3.66	30.00	Pass
151	5755	21.82	21.86	305.517	24.85	30.00	Pass
159	5795	21.39	21.43	276.716	24.42	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	31.7308	15.01
Note: The total power was calculated through formula and record the value for reference only.			

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	67.88	80.77
62	5310	43.25	43.30
102	5510	42.89	42.98
110	5550	58.30	88.17
134	5670	43.35	43.55
142 (U-NII-2C Band)	5710	53.08	55.24

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	67.88	29.31 > 24
62	5310	43.25	27.35 > 24
102	5510	42.89	27.32 > 24
110	5550	58.30	28.65 > 24
134	5670	43.35	27.36 > 24
142 (U-NII-2C Band)	5710	53.08	28.24 > 24

802.11ac (VHT80)

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	16.53	16.72	91.967	19.64	24.00	Pass
58	5290	14.72	14.76	59.571	17.75	24.00	Pass
106	5530	16.08	16.14	81.666	19.12	24.00	Pass
122	5610	18.12	18.23	131.39	21.19	24.00	Pass
*138 (U-NII-2C Band)	5690	7.12	6.20	12.644	11.02	24.00	Pass
*138 (U-NII-3 Band)	5690	-9.54	-7.35	0.4006	-3.97	30.00	Pass
155	5775	18.61	18.37	141.318	21.50	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	13.0446	11.15
Note: The total power was calculated through formula and record the value for reference only.			

26dB OCCUPIED BANDWIDTH

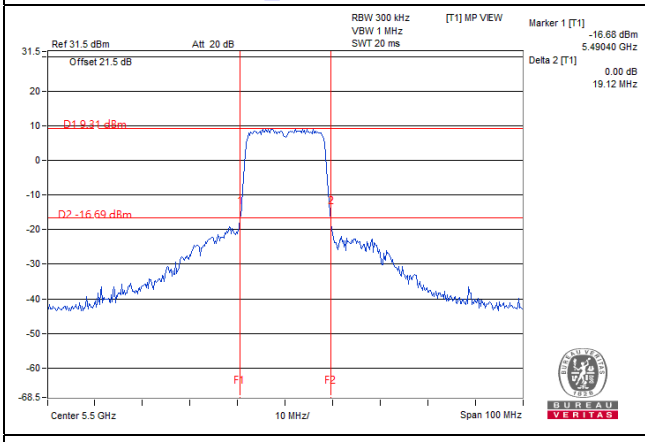
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.10	82.79
106	5530	84.49	82.83
122	5610	157.84	83.80
138 (U-NII-2C Band)	5690	121.00	110.33

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

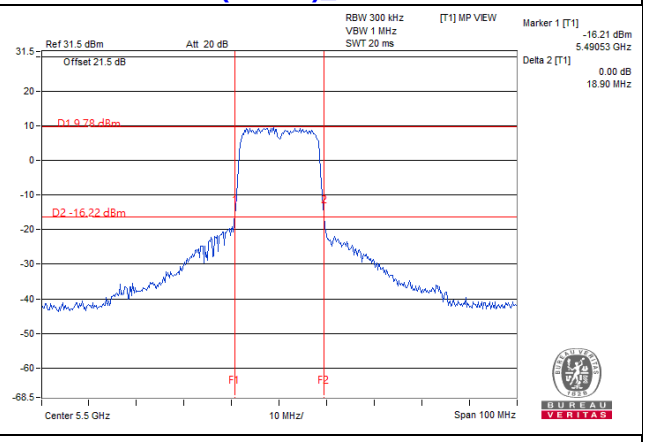
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.79	30.17 > 24
106	5530	82.83	30.18 > 24
122	5610	83.80	30.23 > 24
138 (U-NII-2C Band)	5690	110.33	31.42 > 24

Spectrum Plot of Worst Value

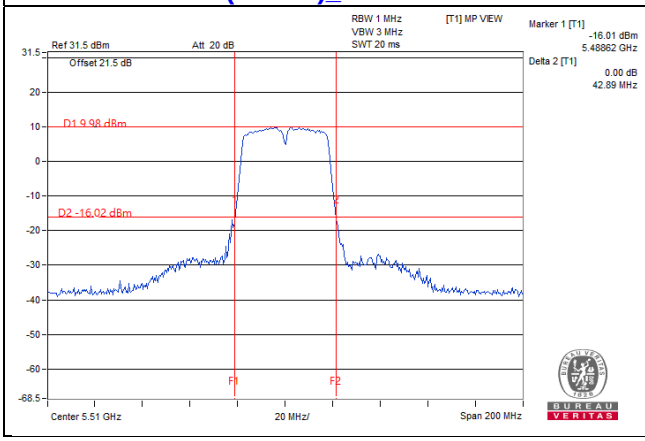
802.11a_Chain 0 / CH100



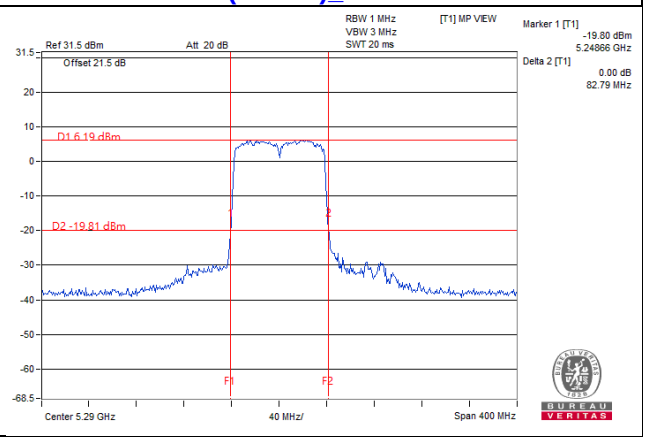
802.11ac (VHT20)_Chain 1 / CH100



802.11ac (VHT40)_Chain 0 / CH102



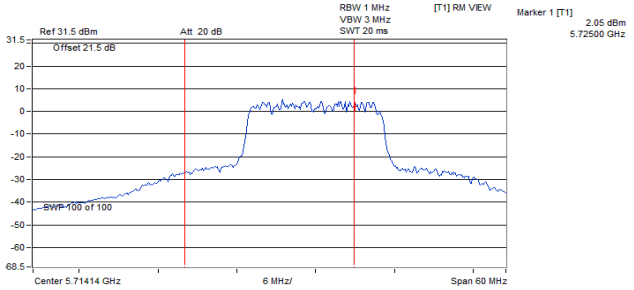
802.11ac (VHT80)_Chain 1 / CH58



For channel straddling 5725MHz of Power

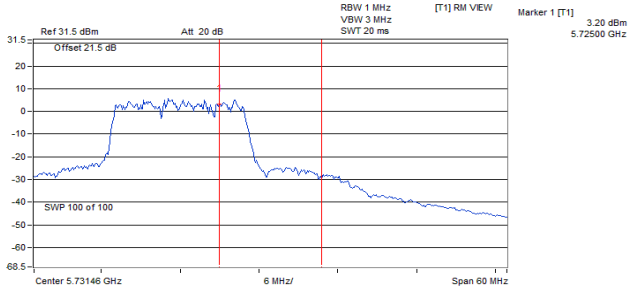
Spectrum Plot Value of Power

802.11a_Chain 0 / CH144 (U-NII-2C Band)



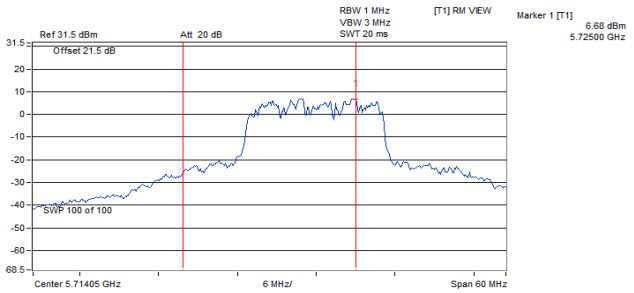
TX Channel Bandwidth 21.72 MHz Power 13.03 dBm

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



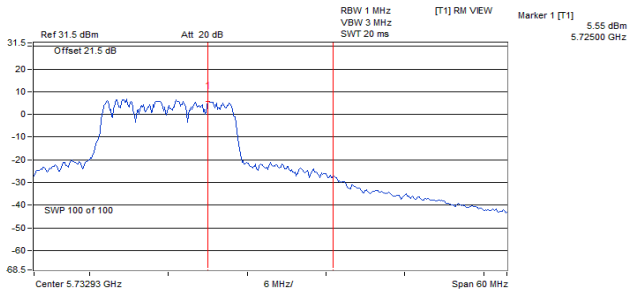
TX Channel Bandwidth 12.93 MHz Power 7.1 dBm

802.11a_Chain 1 / CH144 (U-NII-2C Band)



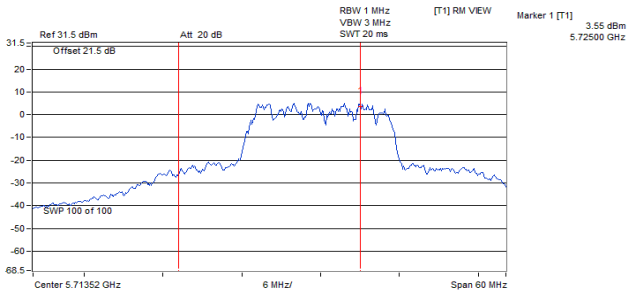
TX Channel Bandwidth 21.9 MHz Power 14.37 dBm

802.11a_Chain 1 / CH144 (U-NII-3 Band)



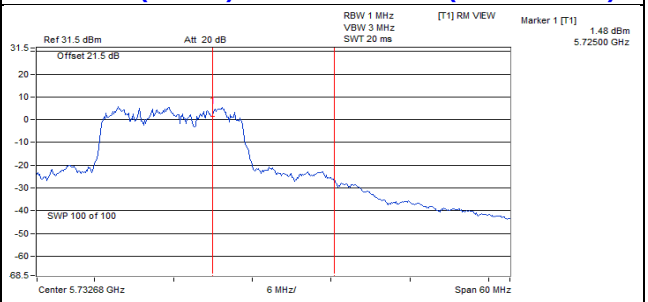
TX Channel Bandwidth 15.86 MHz Power 8.76 dBm

802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



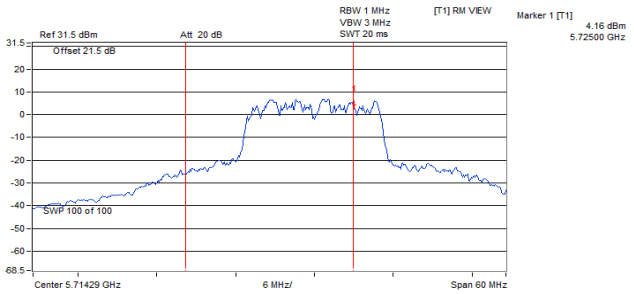
TX Channel Bandwidth 22.95 MHz Power 12.85 dBm

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



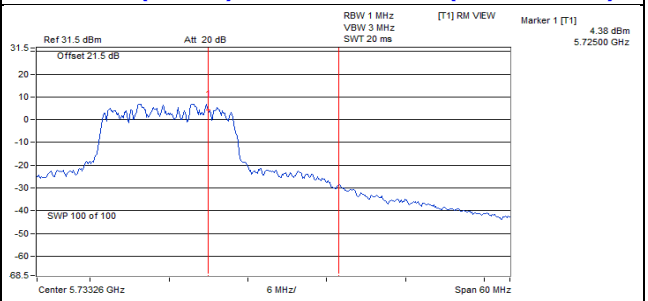
TX Channel Bandwidth 15.36 MHz Power 7.9 dBm

802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



TX Channel Bandwidth 21.42 MHz Power 14.38 dBm

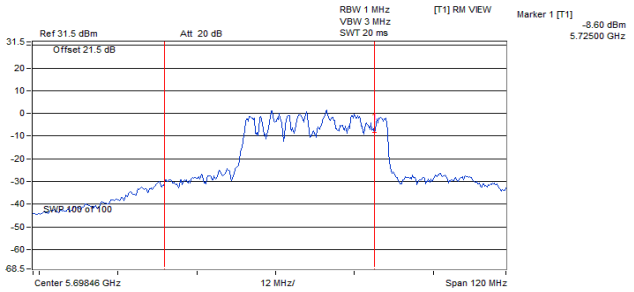
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



TX Channel Bandwidth 16.52 MHz Power 7.57 dBm

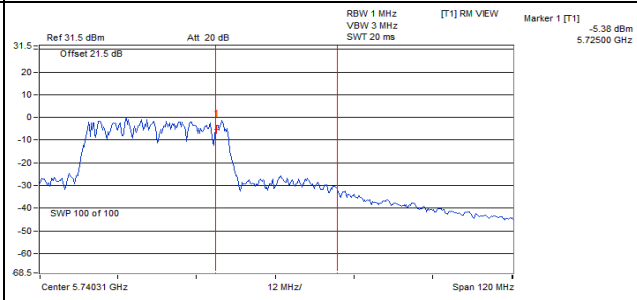
Spectrum Plot Value of Power

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



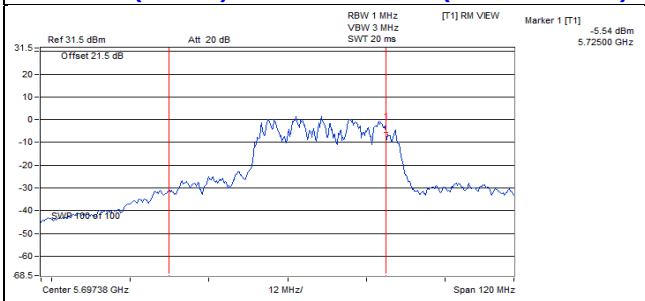
TX Channel Bandwidth 53.08 MHz Power 10.98 dBm

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



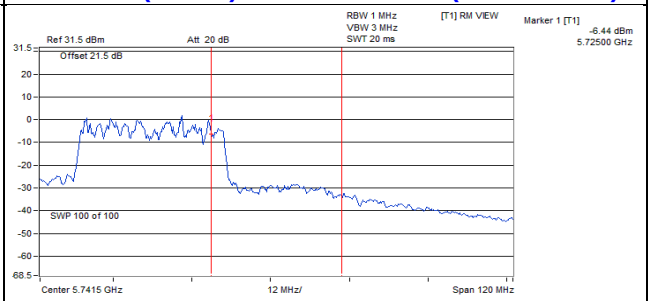
TX Channel Bandwidth 30.63 MHz Power 0.67 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



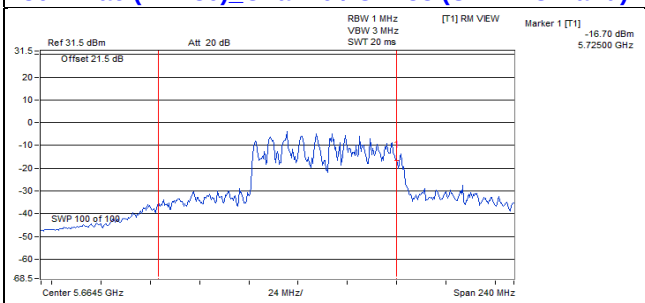
TX Channel Bandwidth 55.24 MHz Power 11.12 dBm

802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



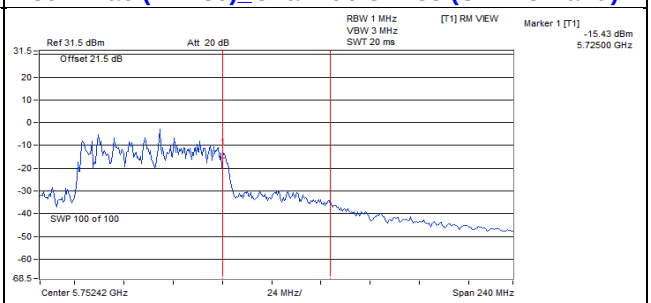
TX Channel Bandwidth 33.01 MHz Power -0.74 dBm

802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)



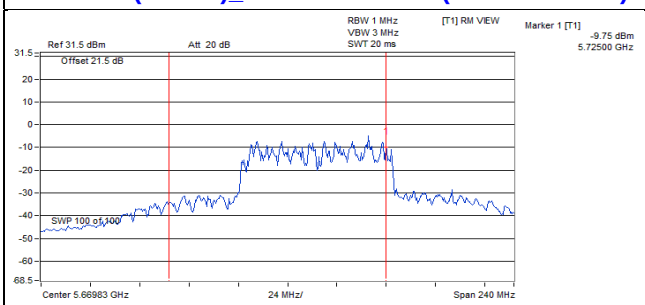
TX Channel Bandwidth 121 MHz Power 7.12 dBm

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



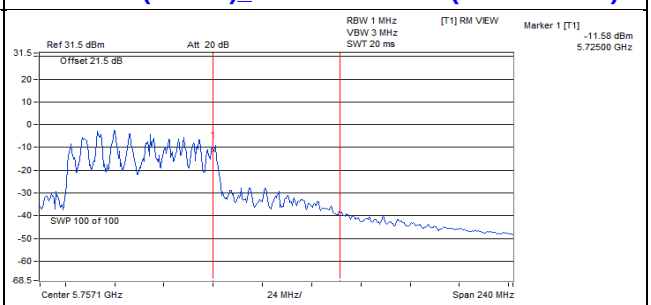
TX Channel Bandwidth 54.84 MHz Power -9.54 dBm

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



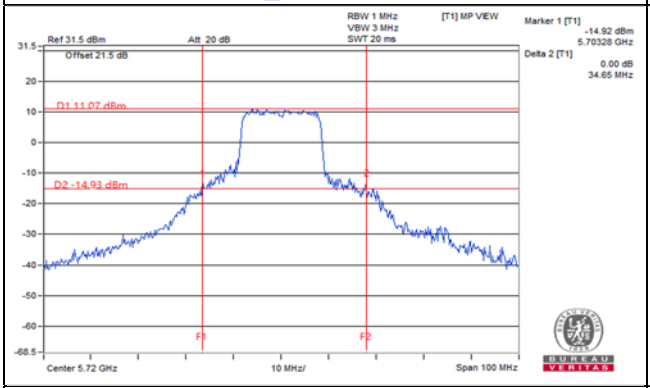
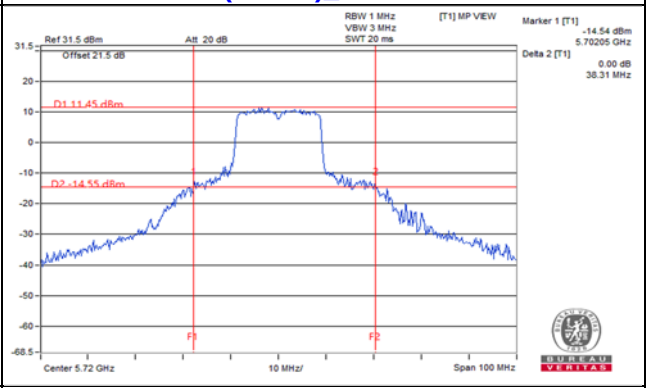
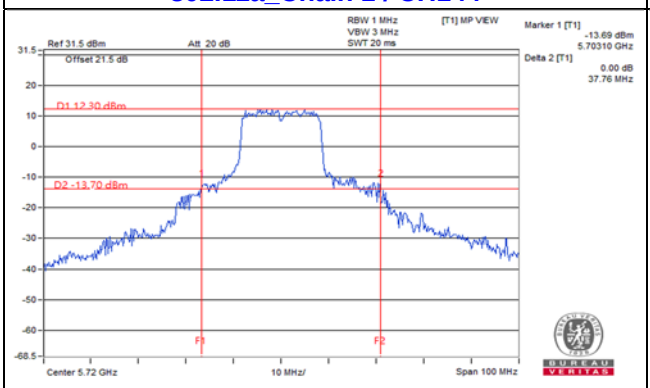
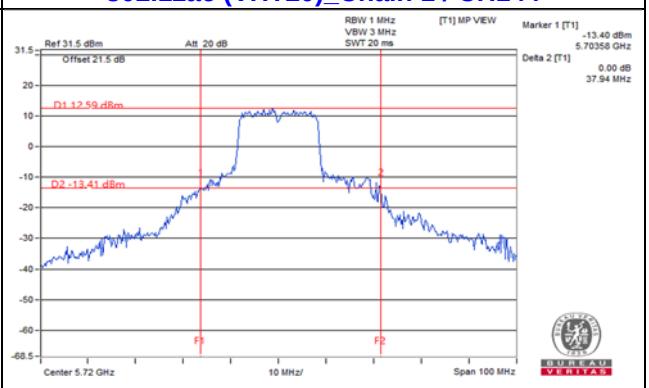
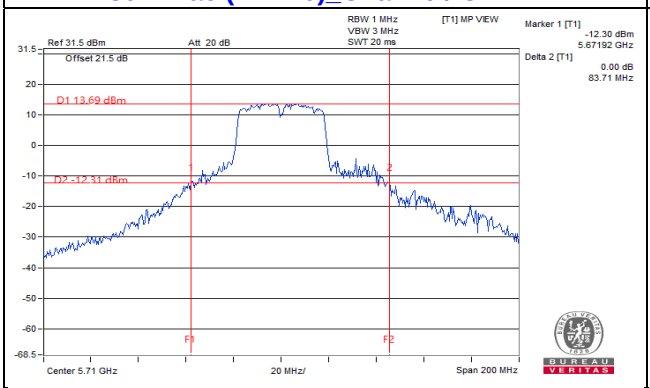
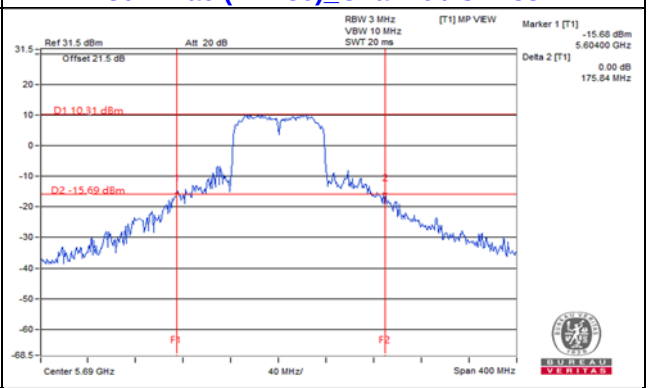
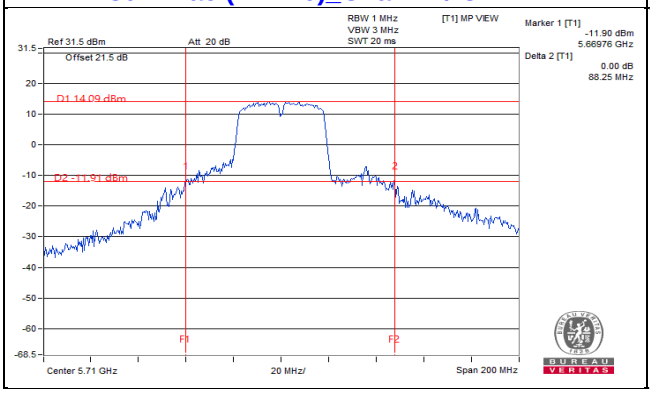
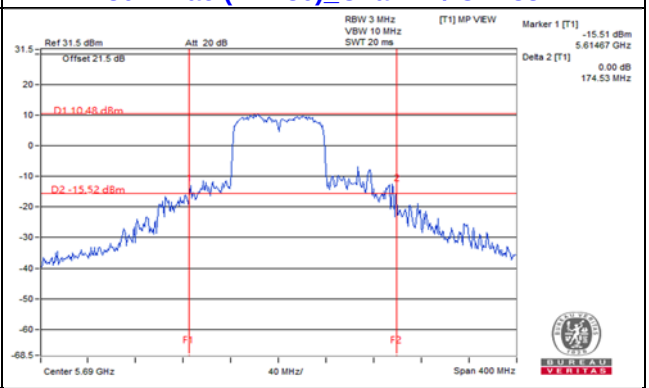
TX Channel Bandwidth 110.33 MHz Power 6.2 dBm

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



TX Channel Bandwidth 64.2 MHz Power -7.35 dBm

For channel straddling 5725MHz of 26dB BW

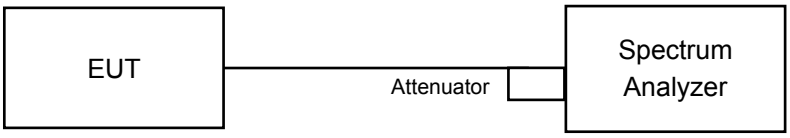
Spectrum Plot Value of 26dB BW	
802.11a_Chain 0 / CH144	**802.11ac (VHT20)_Chain 0 / CH144**
	
802.11a_Chain 1 / CH144	**802.11ac (VHT20)_Chain 1 / CH144**
	
802.11ac (VHT40)_Chain 0 / CH142	**802.11ac (VHT80)_Chain 0 / CH138**
	
802.11ac (VHT40)_Chain 1 / CH142	**802.11ac (VHT80)_Chain 1 / CH138**
	

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

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)	
		Chain 0	Chain 1
36	5180	16.56	16.44
40	5200	16.68	16.68
48	5240	16.56	16.68
52	5260	16.56	16.56
60	5300	16.68	16.56
64	5320	16.56	16.56
100	5500	16.44	16.44
116	5580	16.56	16.56
140	5700	16.56	16.56
144 (U-NII-2C Band)	5720	13.52	13.52
144 (U-NII-3 Band)	5720	3.28	3.40
149	5745	25.56	21.48
157	5785	26.88	21.48
165	5825	25.80	19.20

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.64	16.44
40	5200	18.00	16.80
48	5240	17.88	16.80
52	5260	17.76	16.56
60	5300	17.88	16.44
64	5320	17.76	16.56
100	5500	17.64	16.56
116	5580	17.76	16.56
140	5700	17.64	16.56
144 (U-NII-2C Band)	5720	14.00	13.52
144 (U-NII-3 Band)	5720	3.88	3.28
149	5745	27.36	20.52
157	5785	26.40	18.12
165	5825	23.40	18.12

802.11ac (VHT40)

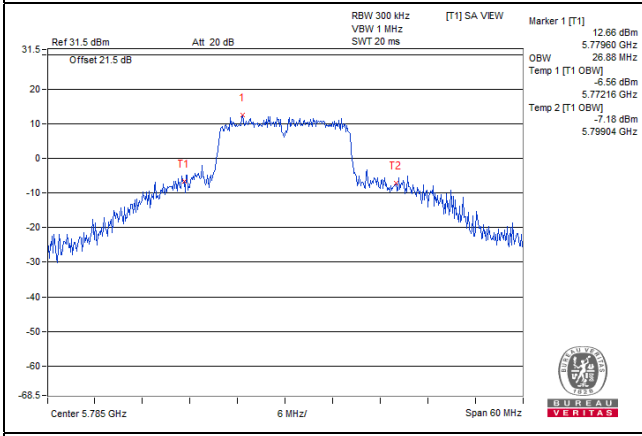
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.48	36.72
46	5230	36.72	36.72
54	5270	36.72	36.72
62	5310	36.48	36.24
102	5510	36.48	36.24
110	5550	36.48	36.48
134	5670	36.48	36.72
142 (U-NII-2C Band)	5710	33.72	33.72
142 (U-NII-3 Band)	5710	3.24	3.24
151	5755	36.72	37.44
159	5795	36.72	37.44

802.11ac (VHT80)

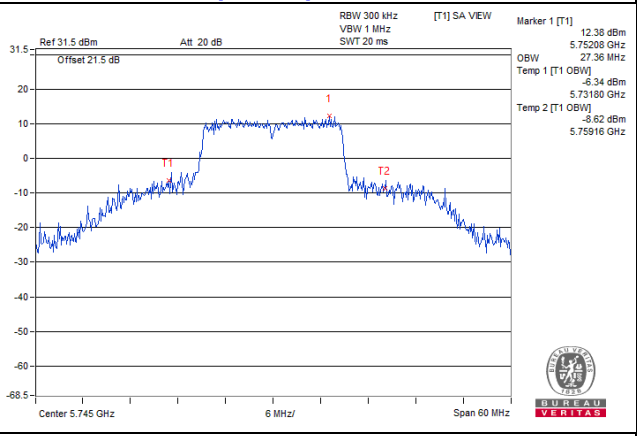
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.36
58	5290	75.36	75.36
106	5530	75.36	75.36
122	5610	75.84	75.36
138 (U-NII-2C Band)	5690	72.92	73.40
138 (U-NII-3 Band)	5690	2.92	2.92
155	5775	76.32	76.80

Spectrum Plot of Max. Value

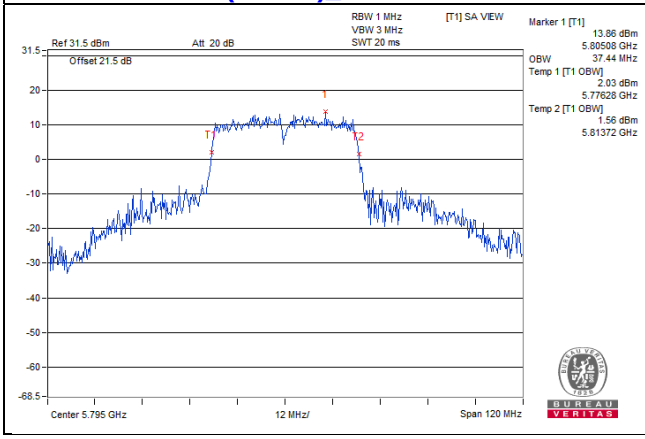
802.11a_Chain 0 / CH157



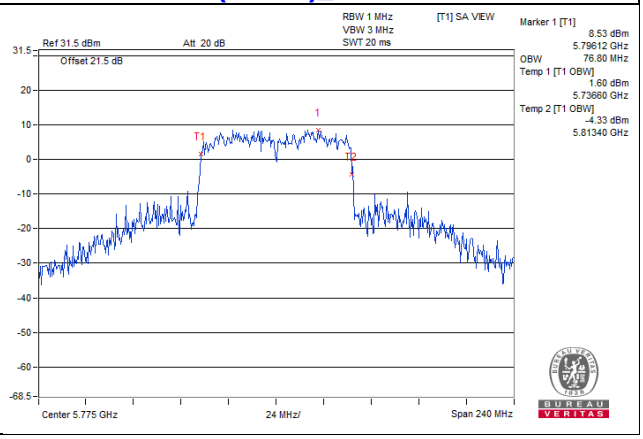
802.11ac (VHT20)_Chain 0 / CH149



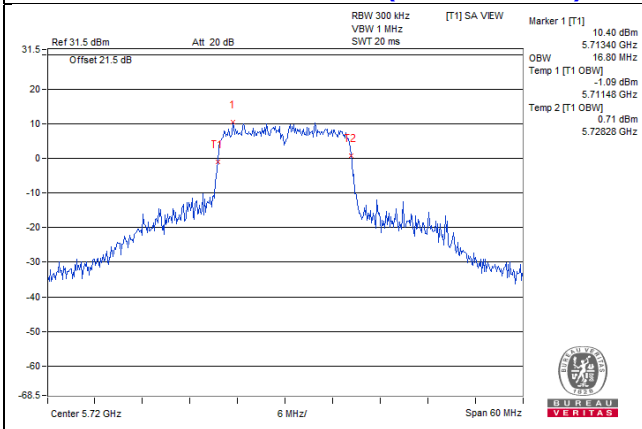
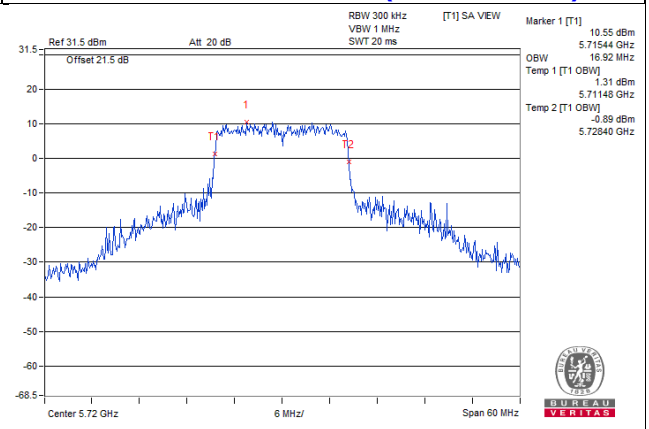
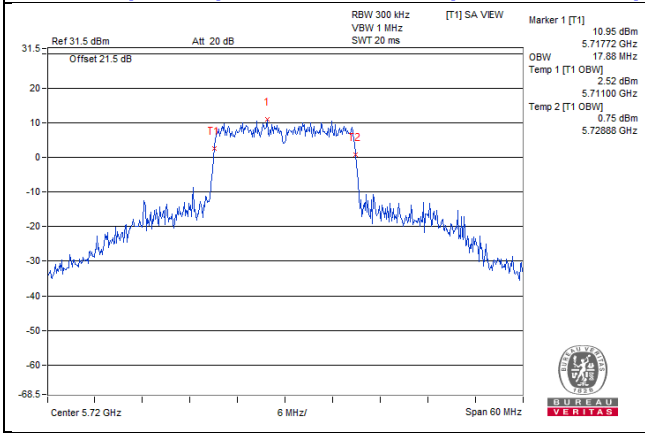
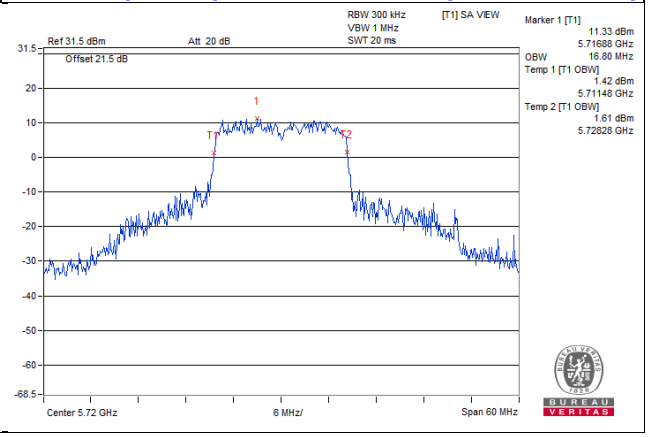
802.11ac (VHT40)_Chain 1 / CH159



802.11ac (VHT80)_Chain 1 / CH155

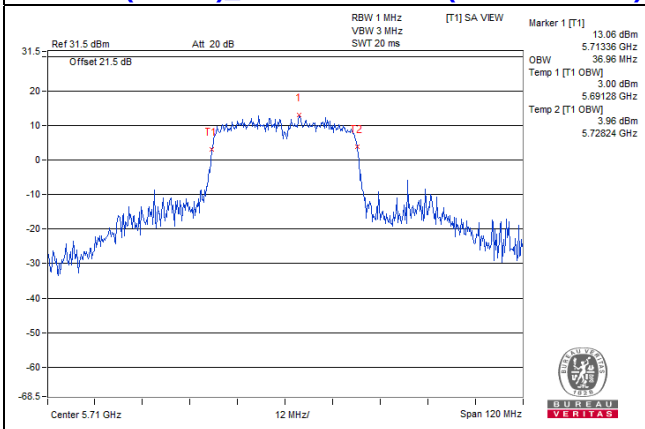
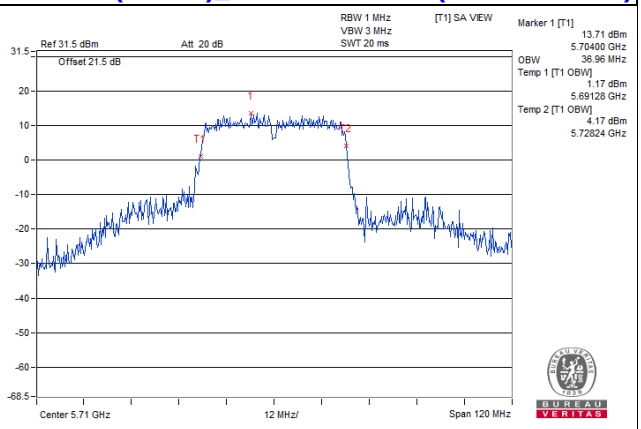
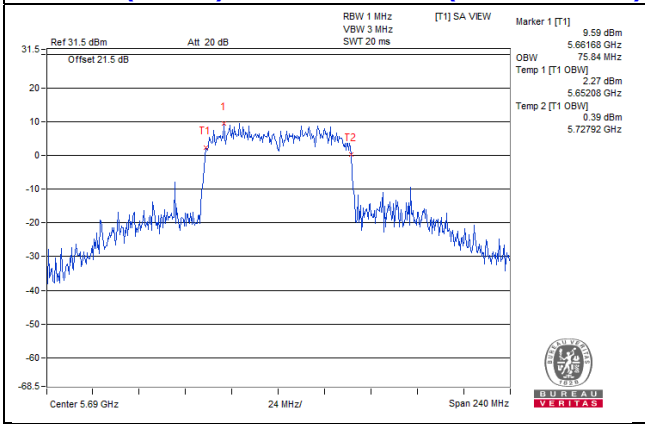
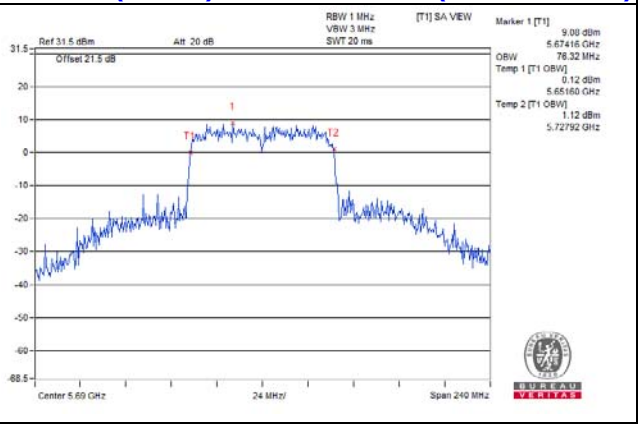


For channel straddling 5725MHz

Spectrum Plot Value of channel straddling 5725MHz	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11a_Chain 1 / CH144 (U-NII-2C Band)**
	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)**
	

Note:

For CH144 (U-NII-2C) = 5725MHz - Temp 1
For CH144 (U-NII-3) = Temp 2 - 5725MHz

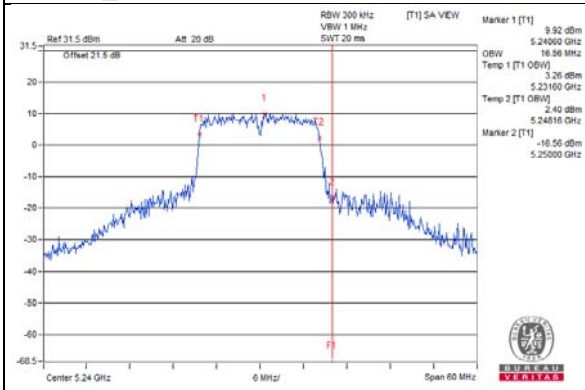
Spectrum Plot Value of channel straddling 5725MHz	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)**
	
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)**
	

Note:

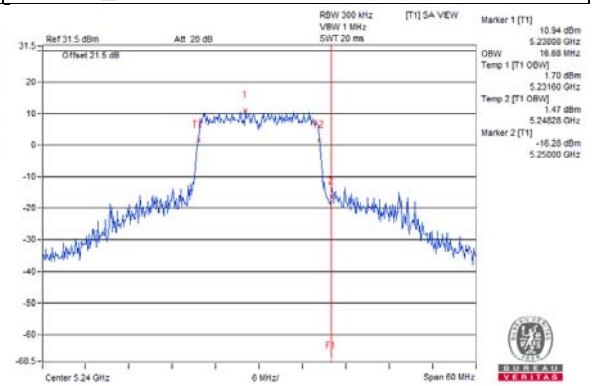
For CH142 (U-NII-2C) = 5725MHz - Temp 1
For CH138 (U-NII-2C) = 5725MHz - Temp 1
For CH142 (U-NII-3) = Temp 2 - 5725MHz
For CH138 (U-NII-3) = Temp 2 - 5725MHz

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

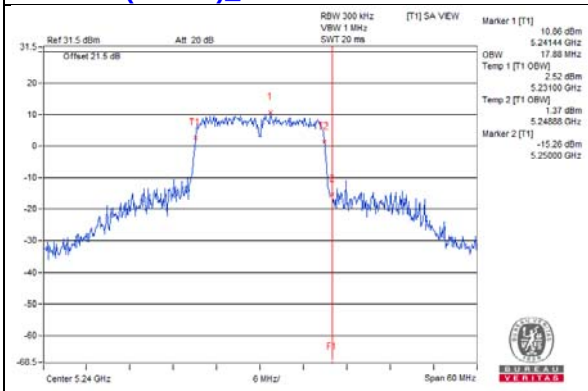
802.11a_Chain 0 / CH48



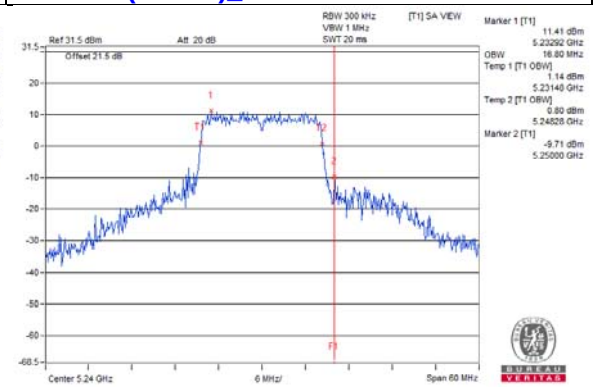
802.11a_Chain 1 / CH48



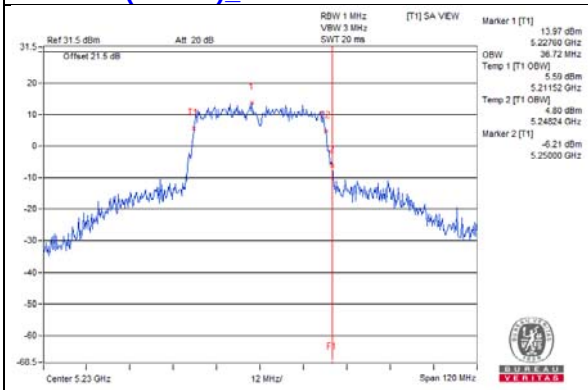
802.11ac (VHT20)_Chain 0 / CH48



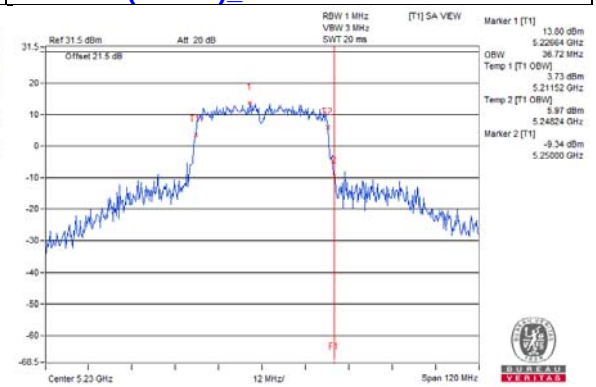
802.11ac (VHT20)_Chain 1 / CH48



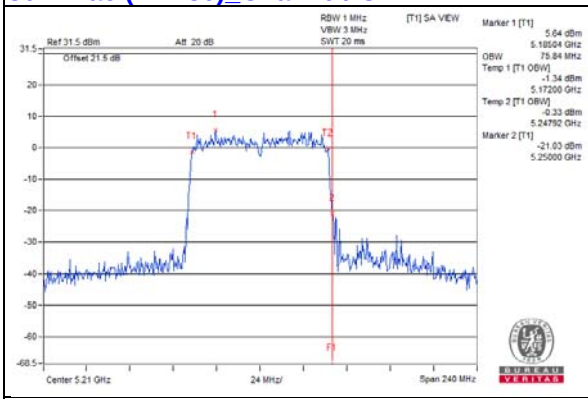
802.11ac (VHT40)_Chain 0 / CH46



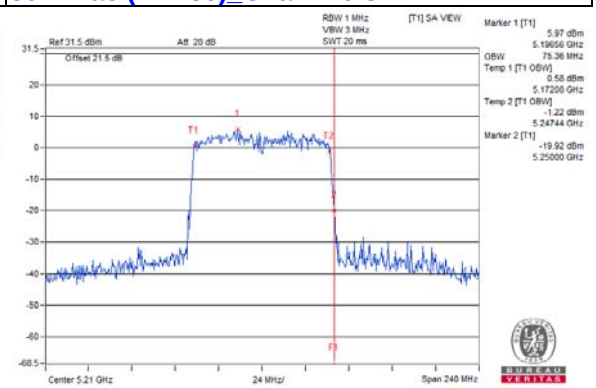
802.11ac (VHT40)_Chain 1 / CH46



802.11ac (VHT80)_Chain 0 / CH42

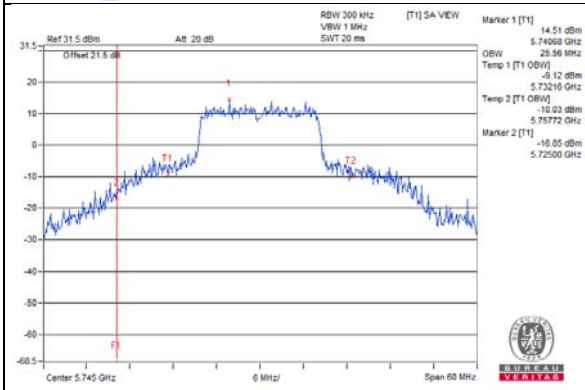


802.11ac (VHT80)_Chain 1 / CH42

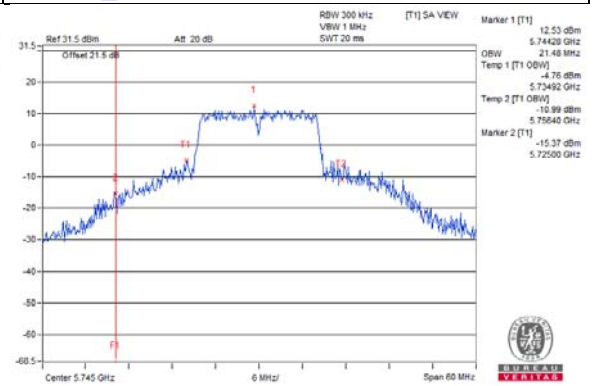


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

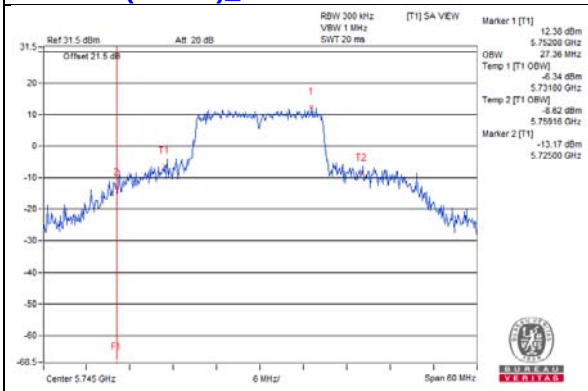
802.11a_Chain 0 / CH149



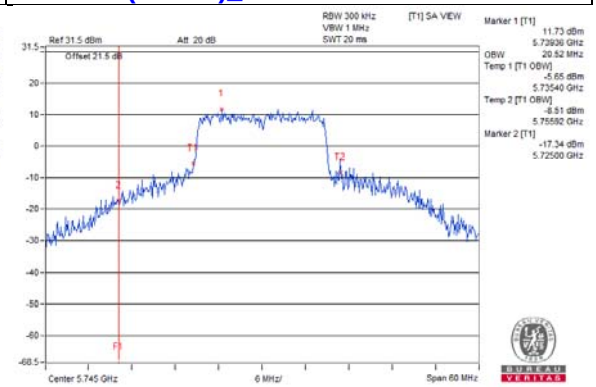
802.11a_Chain 1 / CH149



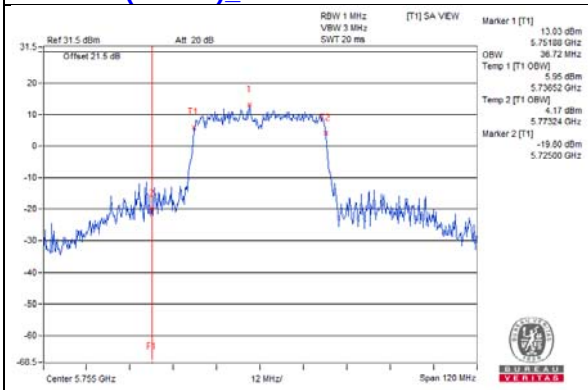
802.11ac (VHT20)_Chain 0 / CH149



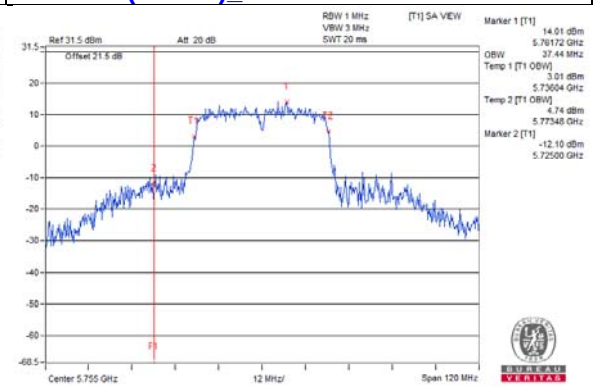
802.11ac (VHT20)_Chain 1 / CH149



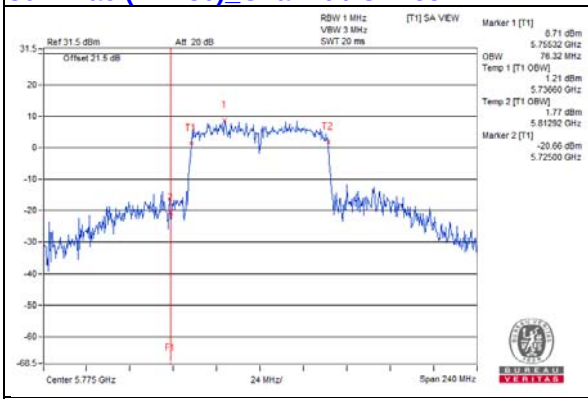
802.11ac (VHT40)_Chain 0 / CH151



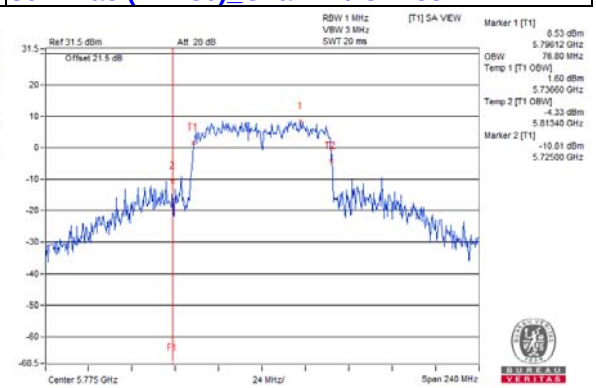
802.11ac (VHT40)_Chain 1 / CH151



802.11ac (VHT80)_Chain 0 / CH155



802.11ac (VHT80)_Chain 1 / CH155

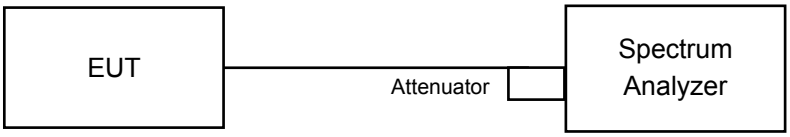


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

Using method SA-2

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

For U-NII-3 band:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 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 W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	2.76	3.90	0.47	6.85	9.84	Pass
40	5200	4.96	6.74	0.47	9.42	9.84	Pass
48	5240	5.66	6.38	0.47	9.52	9.84	Pass
52	5260	3.88	6.07	0.47	8.59	10.23	Pass
60	5300	5.19	5.65	0.47	8.91	10.23	Pass
64	5320	4.11	4.66	0.47	7.87	10.23	Pass
100	5500	2.70	2.96	0.47	6.31	9.94	Pass
116	5580	4.19	3.72	0.47	7.44	9.94	Pass
140	5700	2.26	2.15	0.47	5.69	9.94	Pass
144 (U-NII-2C Band)	5720	4.78	4.99	0.47	8.37	9.94	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.16dBi > 6dBi, so the power density limit shall be reduced to 11-(7.16-6) = 9.84dBm.
3. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.77dBi > 6dBi, so the power density limit shall be reduced to 11-(6.77-6) = 10.23dBm.
4. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.06dBi > 6dBi, so the power density limit shall be reduced to 11-(7.06-6) = 9.94dBm.
5. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	1.97	2.48	0.40	5.64	9.84	Pass
40	5200	2.97	6.92	0.40	8.79	9.84	Pass
48	5240	5.26	6.39	0.40	9.27	9.84	Pass
52	5260	4.55	4.83	0.40	8.10	10.23	Pass
60	5300	4.58	5.72	0.40	8.60	10.23	Pass
64	5320	3.02	5.97	0.40	8.15	10.23	Pass
100	5500	2.44	2.08	0.40	5.67	9.94	Pass
116	5580	3.60	4.22	0.40	7.33	9.94	Pass
140	5700	-0.46	1.15	0.40	3.83	9.94	Pass
144 (U-NII-2C Band)	5720	3.62	5.68	0.40	8.18	9.94	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.16dBi > 6dBi, so the power density limit shall be reduced to 11-(7.16-6) = 9.84dBm.
3. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.77dBi > 6dBi, so the power density limit shall be reduced to 11-(6.77-6) = 10.23dBm.
4. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.06dBi > 6dBi, so the power density limit shall be reduced to 11-(7.06-6) = 9.94dBm.
5. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

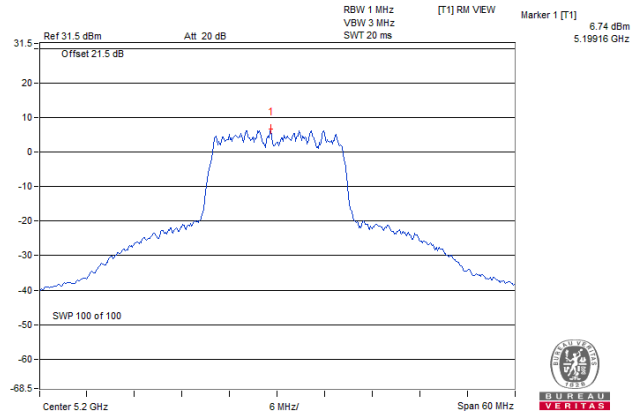
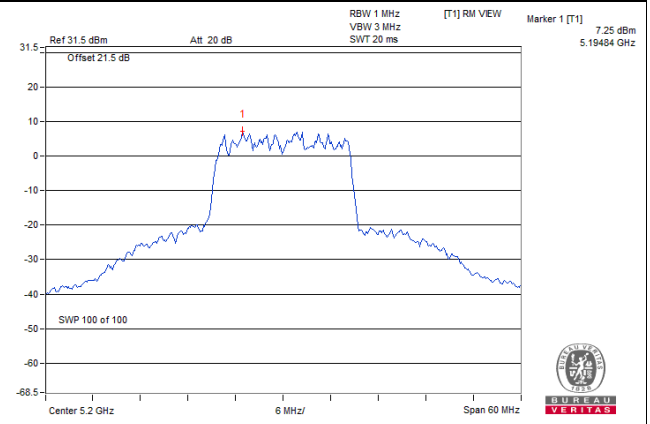
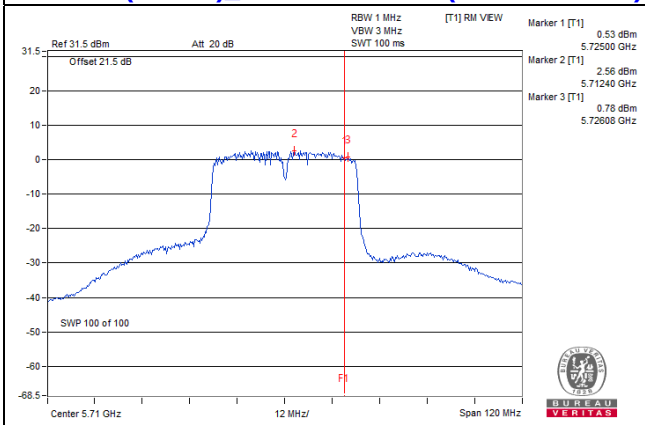
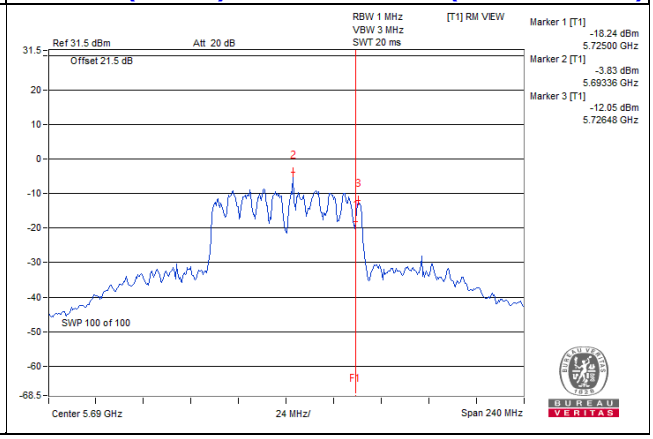
Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-6.59	-4.24	0.62	-1.63	9.84	Pass
46	5230	-1.64	0.27	0.62	3.05	9.84	Pass
54	5270	-1.42	0.00	0.62	2.98	10.23	Pass
62	5310	-2.21	-1.90	0.62	1.58	10.23	Pass
102	5510	-4.95	-5.58	0.62	-1.62	9.94	Pass
110	5550	-4.04	-1.16	0.62	1.26	9.94	Pass
134	5670	-6.87	-2.60	0.62	-0.60	9.94	Pass
142 (U-NII-2C Band)	5710	1.60	2.45	0.62	5.68	9.94	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.16dBi > 6dBi, so the power density limit shall be reduced to 11-(7.16-6) = 9.84dBm.
3. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.77dBi > 6dBi, so the power density limit shall be reduced to 11-(6.77-6) = 10.23dBm.
4. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.06dBi > 6dBi, so the power density limit shall be reduced to 11-(7.06-6) = 9.94dBm.
5. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-6.19	-7.20	1.32	-2.34	9.84	Pass
58	5290	-8.41	-10.96	1.32	-5.17	10.23	Pass
106	5530	-8.36	-10.59	1.32	-5.00	9.94	Pass
122	5610	-4.20	-6.00	1.32	-0.68	9.94	Pass
138 (U-NII-2C Band)	5690	-3.83	-3.94	1.32	0.45	9.94	Pass

Note:
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.16dBi > 6dBi, so the power density limit shall be reduced to 11-(7.16-6) = 9.84dBm.
3. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.77dBi > 6dBi, so the power density limit shall be reduced to 11-(6.77-6) = 10.23dBm.
4. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.06dBi > 6dBi, so the power density limit shall be reduced to 11-(7.06-6) = 9.94dBm.
5. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH40	**802.11ac (VHT20)_Chain 1 / CH40**
	
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)**
	

For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
144 (U-NII-3 Band)	5720	-3.34	-2.94	0.47	1.0819	0.34	2.56	28.53	Pass
149	5745	0.16	0.19	0.47	2.3185	3.65	5.87	28.53	Pass
157	5785	0.39	0.65	0.47	2.5114	4.00	6.22	28.53	Pass
165	5825	-0.57	0.40	0.47	2.1974	3.42	5.64	28.53	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.47dBi > 6dBi, so the power density limit shall be reduced to 30-(7.47-6) = 28.53dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
144 (U-NII-3 Band)	5720	-3.23	-3.02	0.40	1.0674	0.28	2.50	28.53	Pass
149	5745	-1.06	0.53	0.40	2.0962	3.21	5.43	28.53	Pass
157	5785	-0.07	-0.05	0.40	2.1612	3.35	5.57	28.53	Pass
165	5825	-0.66	0.72	0.40	2.2344	3.49	5.71	28.53	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.47dBi > 6dBi, so the power density limit shall be reduced to 30-(7.47-6) = 28.53dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

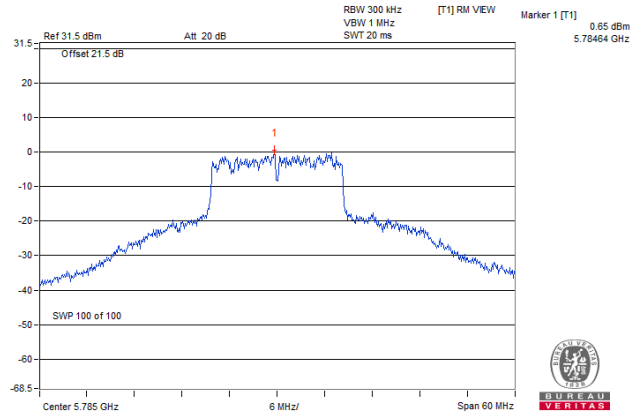
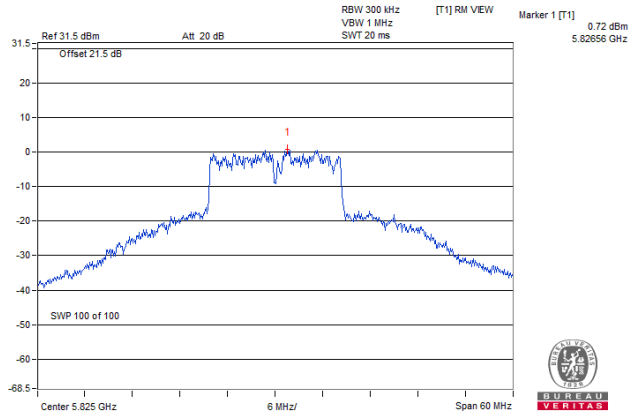
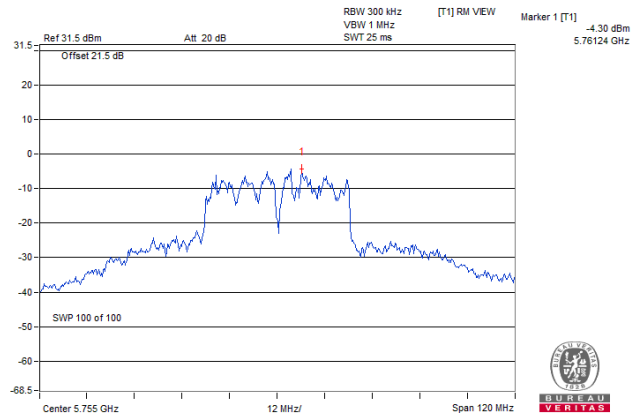
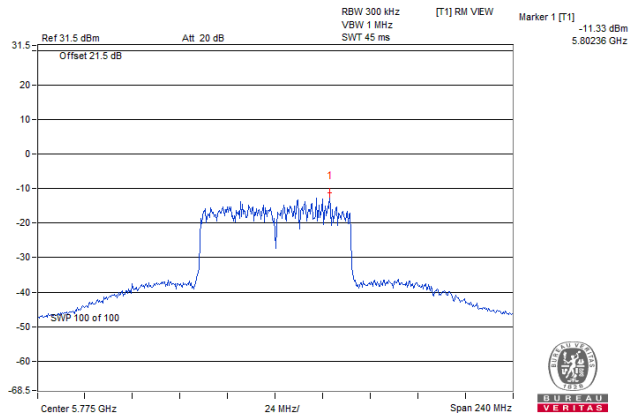
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
142 (U-NII-3 Band)	5710	-8.10	-7.87	0.62	0.3674	-4.35	-2.13	28.53	Pass
151	5755	-5.22	-4.30	0.62	0.776	-1.10	1.12	28.53	Pass
159	5795	-6.45	-6.12	0.62	0.5436	-2.65	-0.43	28.53	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.47dBi > 6dBi, so the power density limit shall be reduced to 30-(7.47-6) = 28.53dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
138 (U-NII-3 Band)	5690	-15.66	-15.86	1.32	0.07204	-11.42	-9.20	28.53	Pass
155	5775	-12.37	-11.33	1.32	0.17847	-7.48	-5.26	28.53	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 7.47dBi > 6dBi, so the power density limit shall be reduced to 30-(7.47-6) = 28.53dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

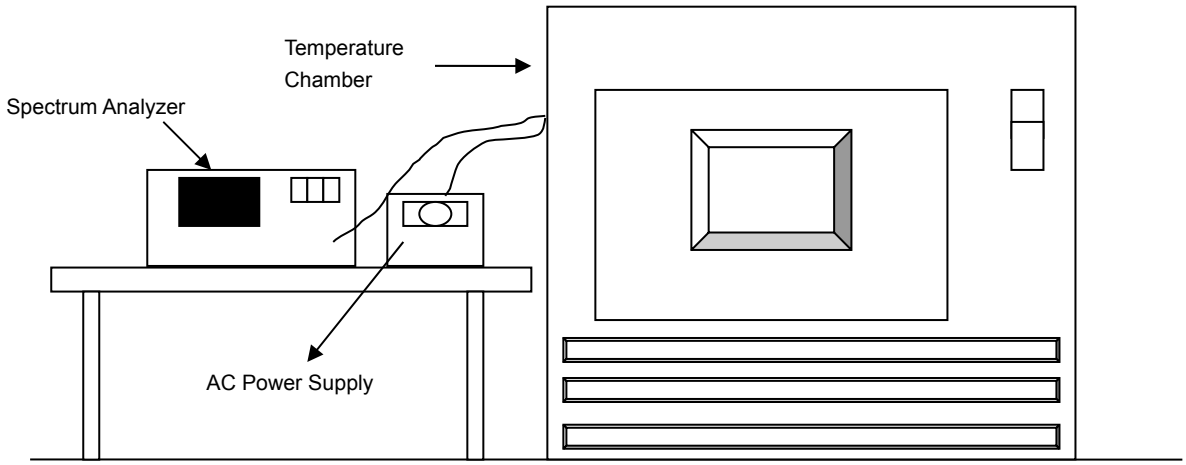
Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH157	**802.11ac (VHT20)_Chain 1 / CH165**
	
802.11ac (VHT40) _Chain 1 / CH151	**802.11ac (VHT80) _Chain 1 / CH155**
	

4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step (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 (Vac)	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
40	120	5180.0217	PASS	5180.0172	PASS	5180.0211	PASS	5180.021	PASS
30	120	5179.9771	PASS	5179.9782	PASS	5179.9767	PASS	5179.9806	PASS
20	120	5179.9908	PASS	5179.9888	PASS	5179.9902	PASS	5179.9907	PASS
10	120	5179.9913	PASS	5179.9903	PASS	5179.9883	PASS	5179.9912	PASS
0	120	5180.0123	PASS	5180.0081	PASS	5180.009	PASS	5180.009	PASS

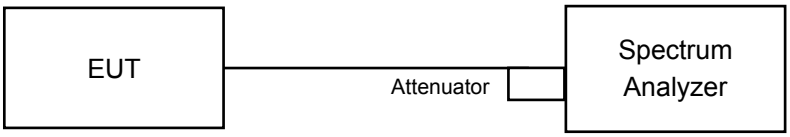
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9904	PASS	5179.9898	PASS	5179.9893	PASS	5179.9905	PASS
	120	5179.9913	PASS	5179.9903	PASS	5179.9883	PASS	5179.9912	PASS
	102	5179.9922	PASS	5179.9912	PASS	5179.9892	PASS	5179.9918	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
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.12	3.14	0.5	Pass
149	5745	16.37	16.35	0.5	Pass
157	5785	16.40	16.36	0.5	Pass
165	5825	16.37	16.35	0.5	Pass

802.11ac (VHT20)

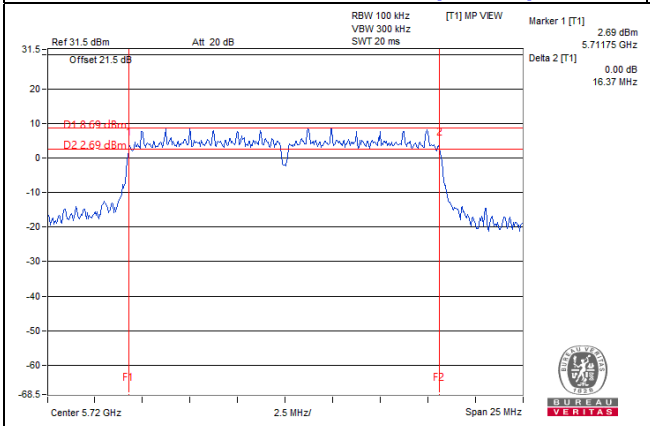
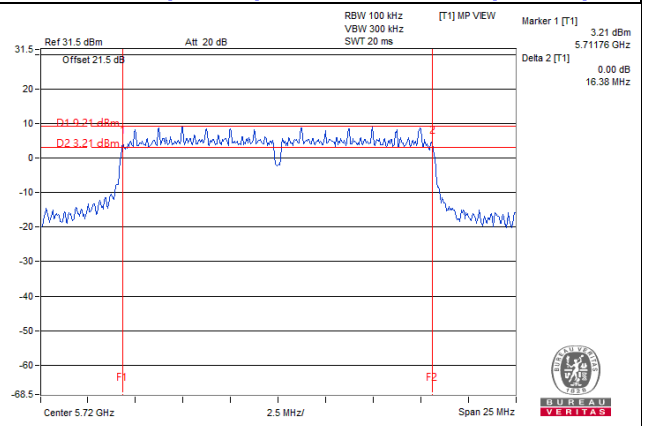
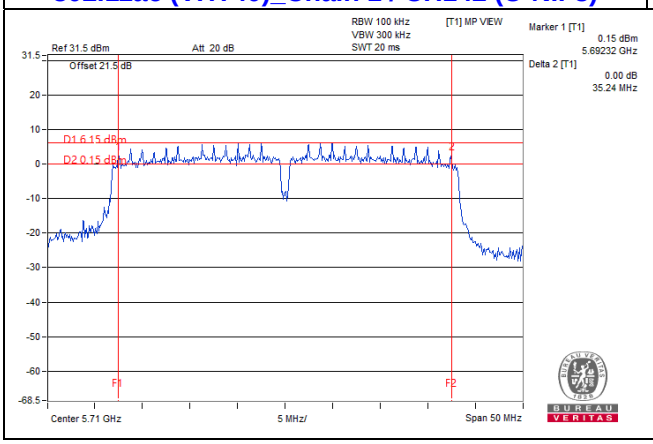
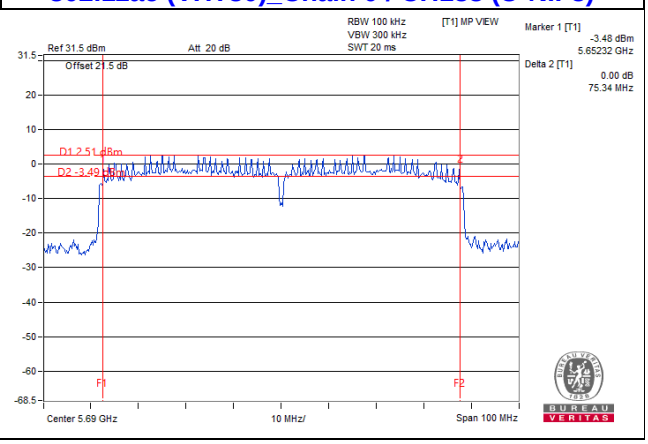
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.76	3.14	0.5	Pass
149	5745	17.58	17.59	0.5	Pass
157	5785	17.36	16.97	0.5	Pass
165	5825	17.60	17.35	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (U-NII-3 Band)	5710	2.63	2.56	0.5	Pass
151	5755	35.26	35.28	0.5	Pass
159	5795	35.28	35.21	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (U-NII-3 Band)	5690	2.66	2.66	0.5	Pass
155	5775	75.45	75.43	0.5	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH144 (U-NII-3)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3)**
	
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3)**
	

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

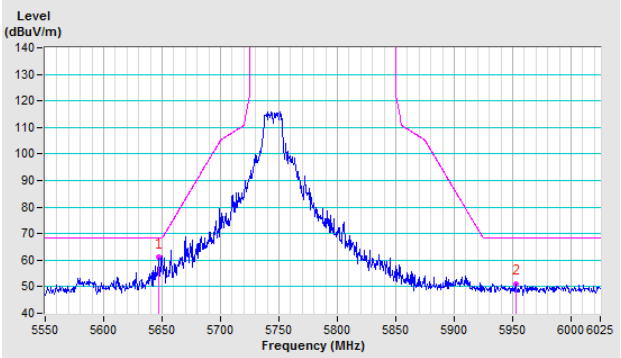
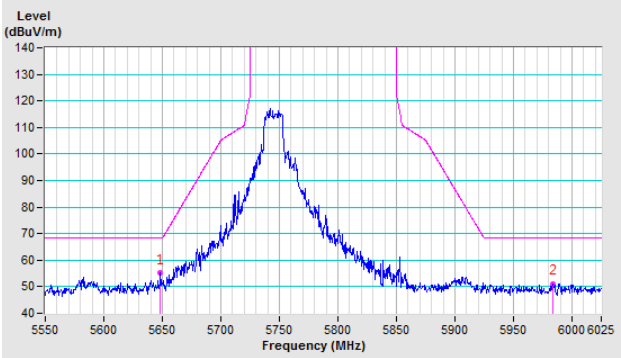
5 Pictures of Test Arrangements

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

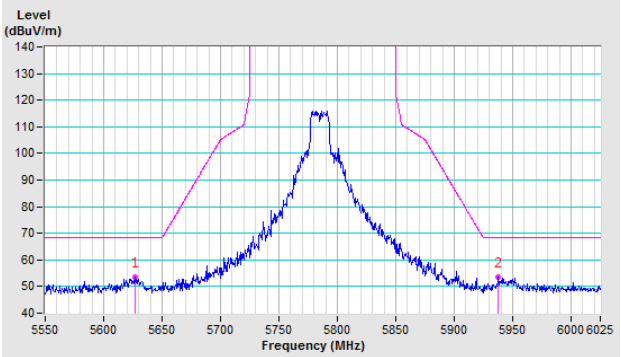
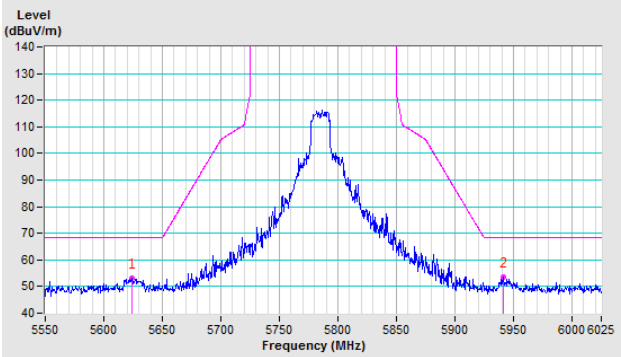
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

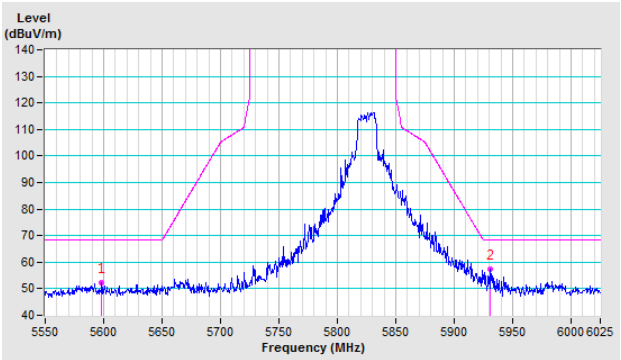
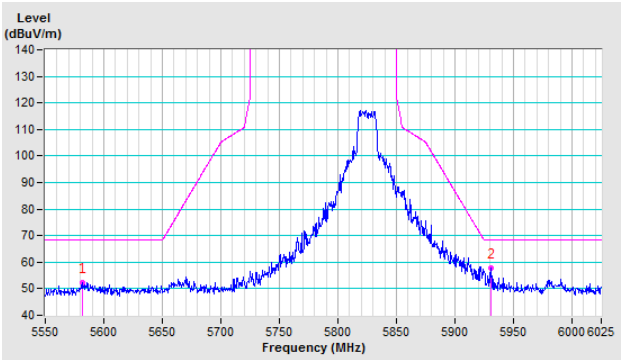
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

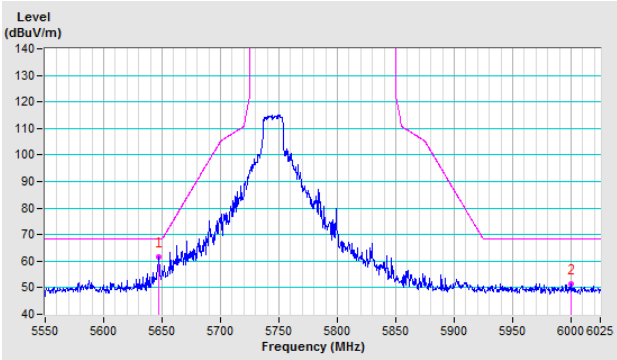
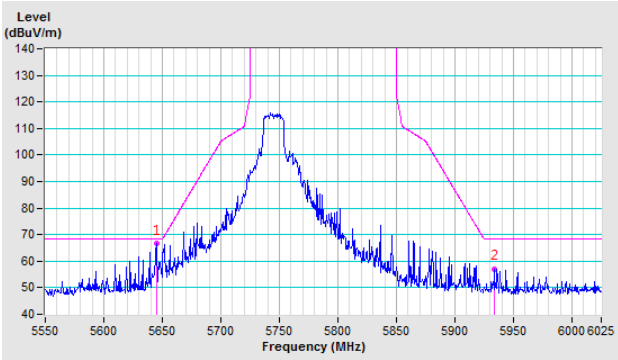
Horizontal	Vertical
	

CH 165 5825 MHz

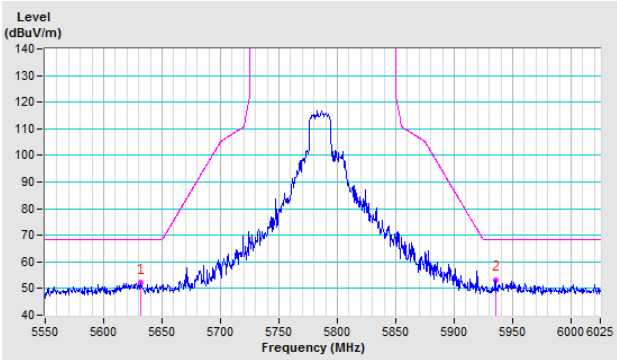
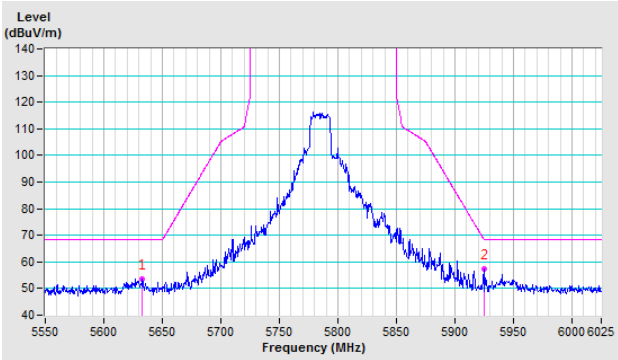
Horizontal	Vertical
	

802.11ac (VHT20)

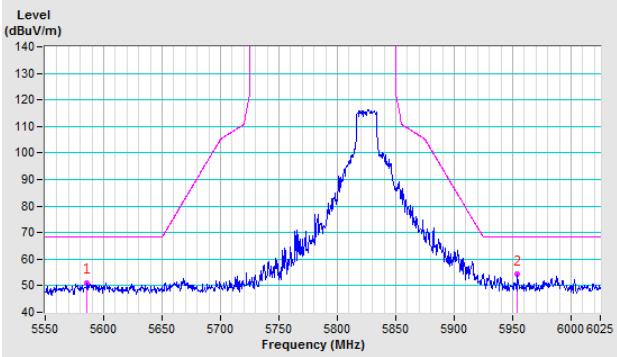
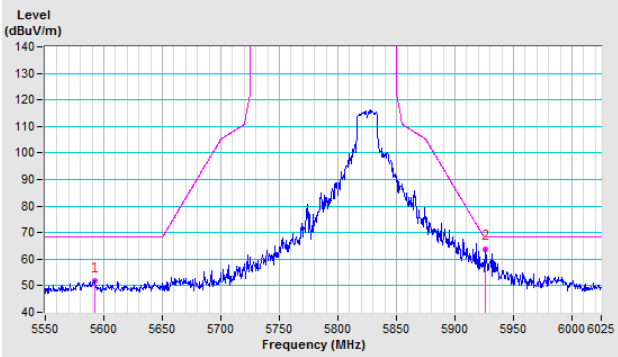
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

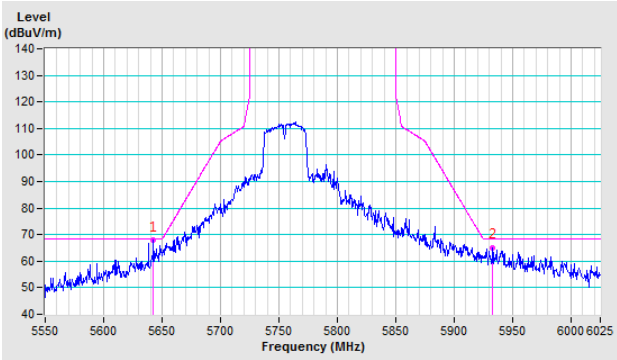
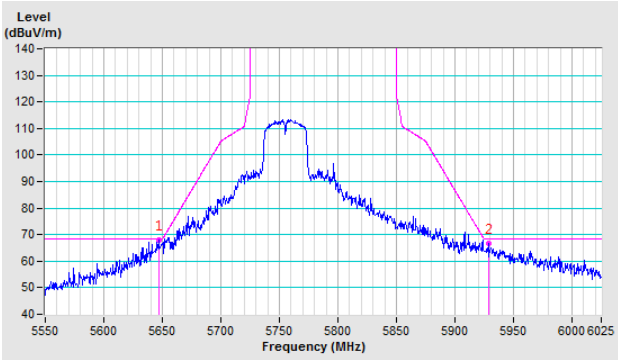
Horizontal	Vertical
	

CH 165 5825 MHz

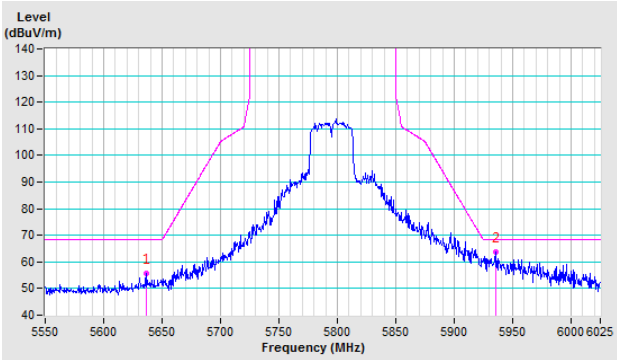
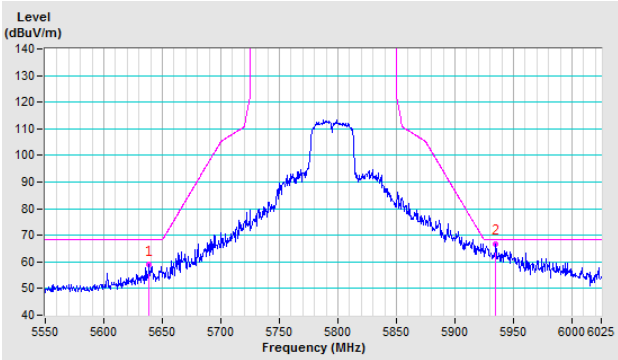
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

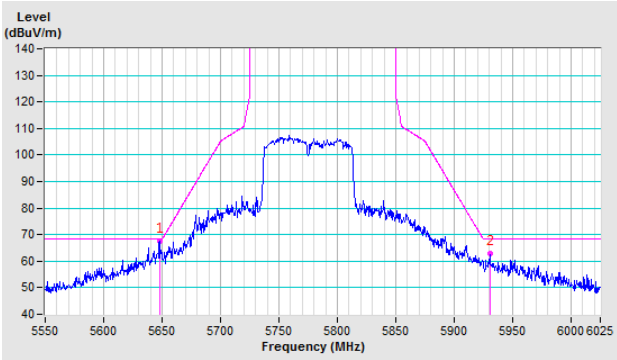
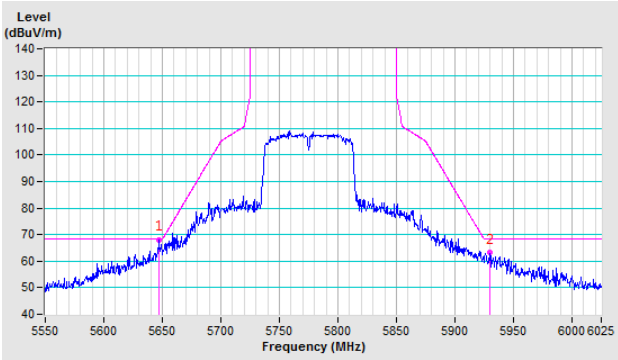
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ac (VHT80)

CH 155 5775 MHz

Horizontal	Vertical
	

Appendix – Information of the Testing Laboratories

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

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

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Fax: 886-2-26051924

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

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

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

--- END ---