Report No.:	RF191129E10A-1
FCC ID:	RRKC4000LG
Test Model:	C4000LG
Received Date:	Dec. 03, 2019
Test Date:	Dec. 03 to 17, 2019
Issued Date:	Aug. 07, 2020
Applicant:	Alpha Networks Inc.
Address:	No.8 Li-shing 7th Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF191129E10A-1	Original release.	Aug. 07, 2020

1 Certificate of Conformity

Product:	VDSL2 integrated access device (IAD)
Brand:	CenturyLink
Test Model:	C4000LG
Sample Status:	ENGINEERING SAMPLE
Applicant:	Alpha Networks Inc.
Test Date:	Dec. 03 to 17, 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 : Phoenix Huang , **Date:** Aug. 07, 2020

Phoenix Huang / Specialist

Approved by : , **Date:** Aug. 07, 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 -14.88 dB at 0.35313 MHz.
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 -0.1 dB at 5350.00 MHz and 5725.00 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

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

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

2.1 Measurement Uncertainty

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

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	VDSL2 integrated access device (IAD)
Brand	CenturyLink
Test Model	C4000LG
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	5.25 ~ 5.32 GHz, 5.5 ~ 5.72 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 16 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 8 802.11ac (VHT80), 802.11ax (HE80): 4 802.11ac (VHT160), 80211ax (HE160): 2
Output Power	**Non-Beamforming Mode:** **5.25 ~ 5.32 GHz:** 229.67 mW **5.5 ~ 5.72 GHz:** 242.719 mW **Beamforming Mode:** **5.25 ~ 5.32 GHz:** 170.801 mW **5.5 ~ 5.72 GHz:** 226.221 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	Refer to Note

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RF191129E10 as the following:
   - ◆ Add DFS band <5.25 ~ 5.35 GHz & 5.47 ~ 5.725 GHz> by software.
2. For above changes, all of test items need to be performed. And all data was verified to meet the requirements.

3. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

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

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4 ~ 2.5	5.1	PCB	i-pex(MHF)
5.15 ~ 5.25	6.3		
5.25 ~ 5.35	7.6		
5.47 ~ 5.725	6.4		
5.725 ~ 5.85	7.1		
Note: More detailed information, please refer to antenna specification.			

5. The EUT must be supplied with a power adapter as following table:

No.	Brand	Model No.	Spec.	Plug
1	Asian Power Devices Inc	WA-30P12FU	AC Input: 100-240Vac, 0.9A, 50-60Hz DC Output: 12V, 2.5A DC Output Cable: 1.83m, Unshielded	US
2	LEADER ELECTRONICS INC.	ML30B1120250-A1	AC Input: 100-120Vac, 0.8A, 50/60Hz DC Output: 12V, 2.5A DC Output Cable: 1.83m, Unshielded	US
Note: From the above conditions, the conducted emissions and radiated emissions worse case was found in **Adapter No. 2**. Therefore only the test data of the mode was recorded in this report.				

6. The EUT contains following data cable.

Product	Brand	Color	Quantity	Remark
RJ45 Cable	Nien-Yi/Hunter	Yellow	1	1.83M, unshielded
		White	1	1.83M, unshielded
RJ14 Cable		Green	1	3.66M, unshielded

7. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	1TX (Fixed Chain 0)	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	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
802.11ac (VHT160)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX
802.11ax (HE160)	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and Non-Beamforming mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz, 160MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz, 160MHz), therefore the manufacturer will control the power for 802.11n mode is the same as the 802.11ac or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

8. 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.
9. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5250 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
58	5290 MHz

1 straddle channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
50	5250 MHz

FOR 5500 ~ 5720MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

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), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 MHz		

1 straddle channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
114	5570 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.

Non-Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

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.

Non-Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE40)	5250-5320, 5500-5720	36 to 48 149 to 165	54	OFDMA	BPSK	MCS0

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.

Non-Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE40)	5250-5320, 5500-5720	36 to 48 149 to 165	54	OFDMA	BPSK	MCS0

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.

Non-Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (for output power)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40) (for output power)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80) (for output power)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160) (for output power)		50	50	OFDMA	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (for output power)		100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40) (for output power)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80) (for output power)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ac (VHT160) (for output power)		114	114	OFDMA	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20)	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160)		50	50	OFDMA	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ax (HE160)		50	50	OFDMA	BPSK	MCS0
802.11ac (VHT20)	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ac (VHT160)		114	114	OFDMA	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
802.11ax (HE160)		114	114	OFDMA	BPSK	MCS0

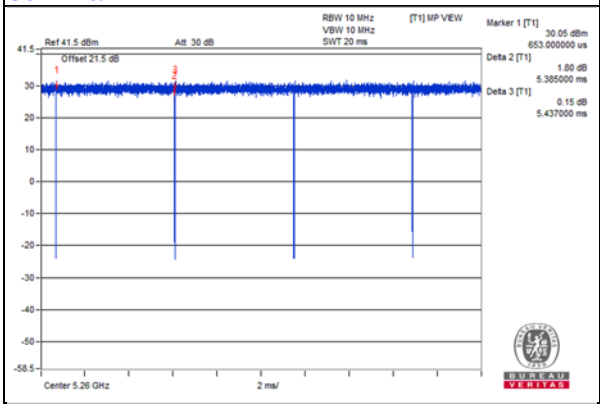
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Jeff Lee
RE<1G	23deg. C, 64%RH	120Vac, 60Hz	Tom Yang
PLC	23deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

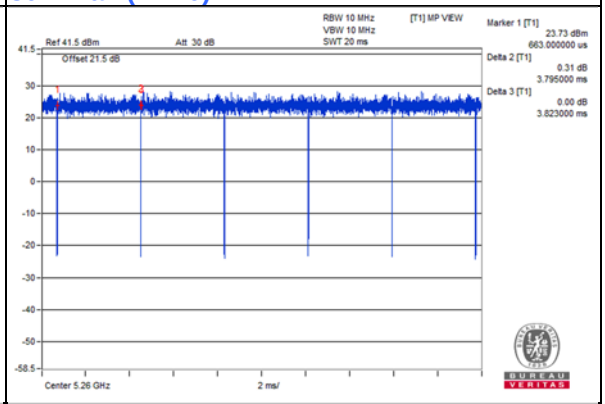
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.
802.11a: Duty cycle = 5.385 ms/5.437 ms = 0.99
802.11ax (HE20): Duty cycle = 3.795 ms/3.823 ms = 0.993
802.11ax (HE40): Duty cycle = 1.916 ms/1.959 ms = 0.978, Duty factor = 10 * log (1/Duty cycle) = 0.1
802.11ax (HE80): Duty cycle = 0.94 ms/0.984 ms = 0.955, Duty factor = 10 * log (1/Duty cycle) = 0.2
802.11ax (HE160): Duty cycle = 0.2 ms/0.216 ms = 0.926, Duty factor = 10 * log (1/Duty cycle) = 0.33

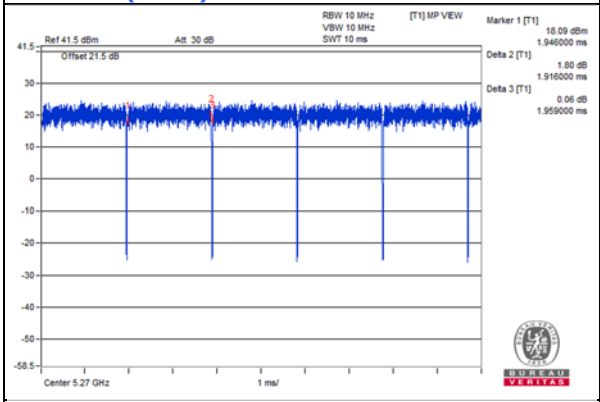
802.11a



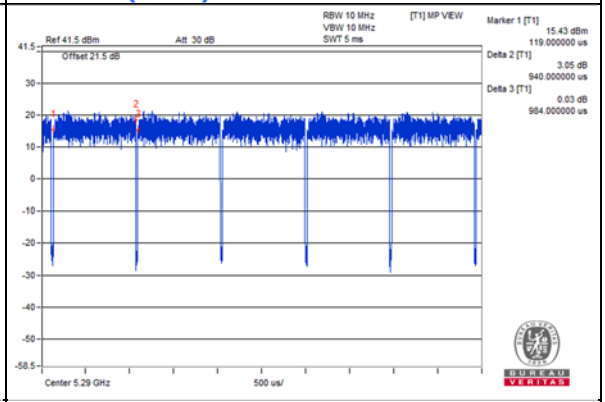
802.11ax (HE20)



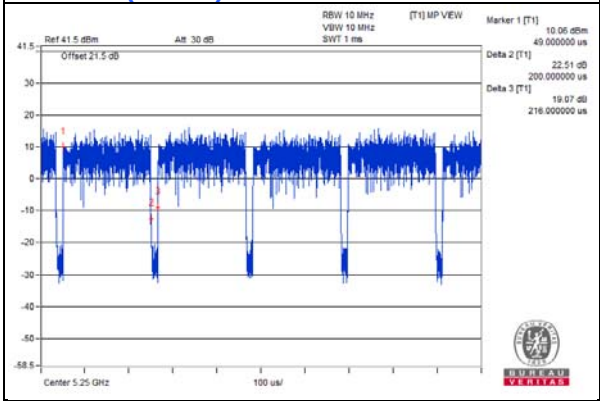
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



3.4 Description of Support Units

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

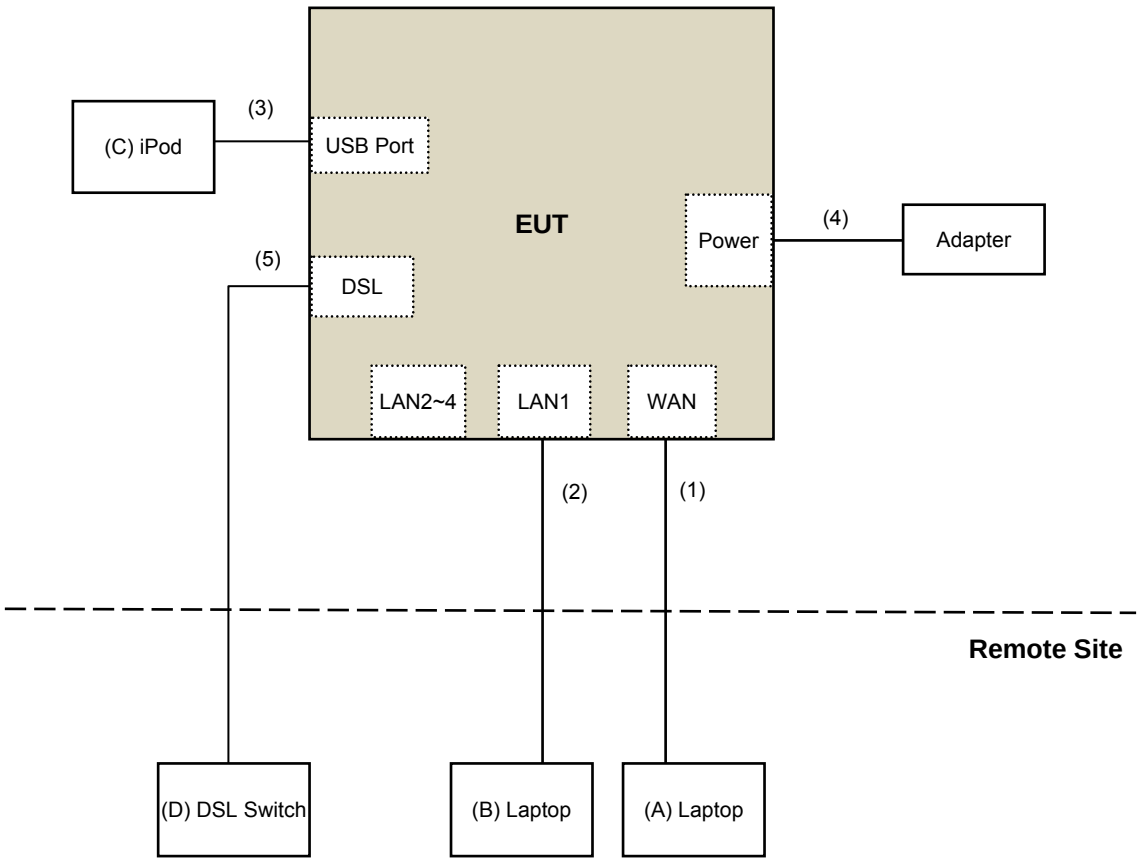
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	Laptop	DELL	E6420	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	iPod	Apple	MC749TA/A	CC4DM9M8DFDM	NA	Provided by Lab
D.	DSL Switch	D-LINK	DAS-3626	NA	NA	Supplied by client

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	USB Cable	1	0.1	Yes	0	Provided by Lab
4.	DC Cable	1	1.83	No	0	Supplied by client
5.	RJ-14 Cable	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards 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

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

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	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-01	Oct. 23, 2019	Oct. 22, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 15, 2019	Aug. 14, 2020
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 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
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Dec. 04 to 17, 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:

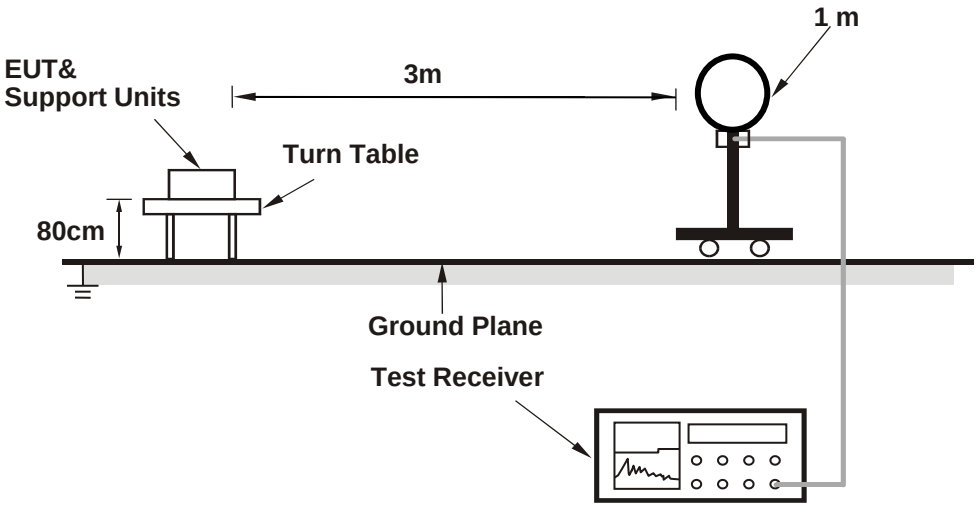
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

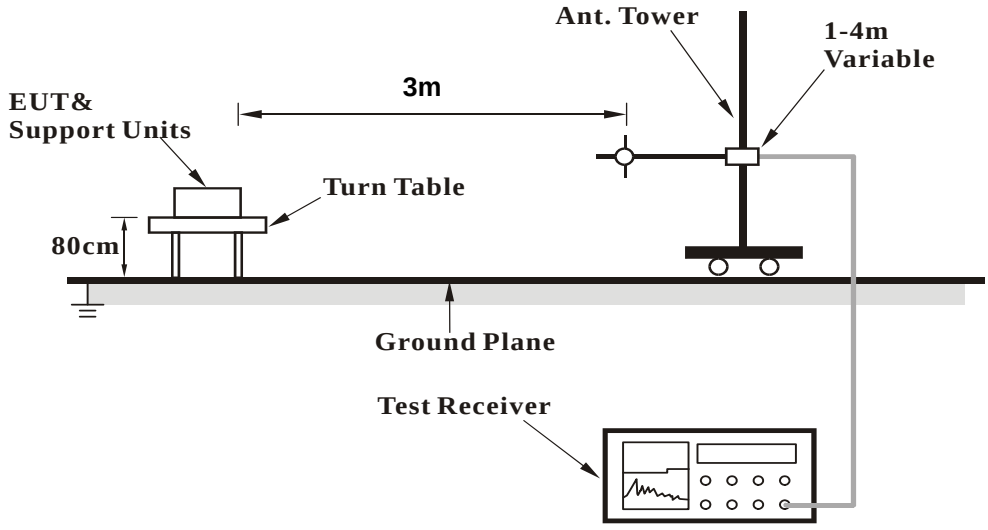
No deviation.

4.1.5 Test Setup

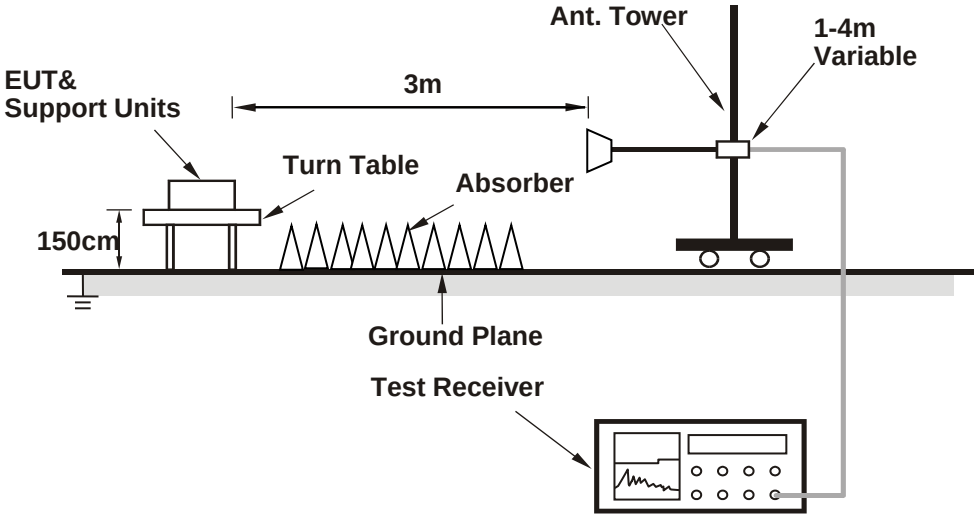
For Radiated emission below 30MHz



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. Placed the EUT on the testing table.
b. Controlling software (Intel DUT Ver.610.23) has been activated to set the EUT under transmission condition continuously.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.48 H	94	51.5	3.1
2	5150.00	42.3 AV	54.0	-11.7	1.48 H	94	39.2	3.1
3	*5260.00	113.3 PK			1.48 H	94	110.5	2.8
4	*5260.00	102.7 AV			1.48 H	94	99.9	2.8
5	#10520.00	56.4 PK	68.2	-11.8	1.53 H	228	43.0	13.4
6	15780.00	47.4 PK	74.0	-26.6	1.46 H	89	34.6	12.8
7	15780.00	35.0 AV	54.0	-19.0	1.46 H	89	22.2	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.4 PK	74.0	-16.6	1.26 V	350	54.3	3.1
2	5150.00	46.9 AV	54.0	-7.1	1.26 V	350	43.8	3.1
3	*5260.00	120.7 PK			1.26 V	350	117.9	2.8
4	*5260.00	111.3 AV			1.26 V	350	108.5	2.8
5	#10520.00	56.7 PK	68.2	-11.5	1.68 V	168	43.3	13.4
6	15780.00	49.0 PK	74.0	-25.0	1.66 V	201	36.2	12.8
7	15780.00	36.7 AV	54.0	-17.3	1.66 V	201	23.9	12.8

REMARKS:

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

CHANNEL	TX Channel 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	113.2 PK			1.44 H	74	110.3	2.9
2	*5300.00	102.9 AV			1.44 H	74	100.0	2.9
3	5350.00	56.3 PK	74.0	-17.7	1.44 H	74	53.2	3.1
4	5350.00	44.3 AV	54.0	-9.7	1.44 H	74	41.2	3.1
5	10600.00	55.8 PK	74.0	-18.2	1.49 H	242	42.6	13.2
6	10600.00	43.6 AV	54.0	-10.4	1.49 H	242	30.4	13.2
7	15900.00	47.5 PK	74.0	-26.5	1.51 H	86	34.4	13.1
8	15900.00	34.9 AV	54.0	-19.1	1.51 H	86	21.8	13.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	121.4 PK			1.32 V	310	118.5	2.9
2	*5300.00	111.8 AV			1.32 V	310	108.9	2.9
3	5350.00	67.2 PK	74.0	-6.8	1.32 V	310	64.1	3.1
4	5350.00	53.4 AV	54.0	-0.6	1.32 V	310	50.3	3.1
5	10600.00	56.7 PK	74.0	-17.3	1.52 V	169	43.5	13.2
6	10600.00	42.7 AV	54.0	-11.3	1.52 V	169	29.5	13.2
7	15900.00	49.5 PK	74.0	-24.5	1.72 V	229	36.4	13.1
8	15900.00	37.4 AV	54.0	-16.6	1.72 V	229	24.3	13.1

REMARKS:

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

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	112.3 PK			1.52 H	96	109.4	2.9
2	*5320.00	100.4 AV			1.52 H	96	97.5	2.9
3	5350.00	58.6 PK	74.0	-15.4	1.52 H	96	55.5	3.1
4	5350.00	45.7 AV	54.0	-8.3	1.52 H	96	42.6	3.1
5	10640.00	55.7 PK	74.0	-18.3	1.47 H	255	42.4	13.3
6	10640.00	43.3 AV	54.0	-10.7	1.47 H	255	30.0	13.3
7	15960.00	47.0 PK	74.0	-27.0	1.45 H	86	33.7	13.3
8	15960.00	34.4 AV	54.0	-19.6	1.45 H	86	21.1	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	118.2 PK			1.70 V	294	115.3	2.9
2	*5320.00	108.7 AV			1.70 V	294	105.8	2.9
3	5350.00	66.9 PK	74.0	-7.1	1.70 V	294	63.8	3.1
4	5350.00	53.6 AV	54.0	-0.4	1.70 V	294	50.5	3.1
5	10640.00	58.0 PK	74.0	-16.0	1.64 V	158	44.7	13.3
6	10640.00	43.6 AV	54.0	-10.4	1.64 V	158	30.3	13.3
7	15960.00	49.5 PK	74.0	-24.5	1.69 V	223	36.2	13.3
8	15960.00	37.6 AV	54.0	-16.4	1.69 V	223	24.3	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.

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	55.8 PK	74.0	-18.2	1.45 H	102	52.4	3.4
2	5460.00	43.1 AV	54.0	-10.9	1.45 H	102	39.7	3.4
3	#5470.00	57.4 PK	68.2	-10.8	1.00 H	0	54.0	3.4
4	*5500.00	108.6 PK			1.45 H	102	105.3	3.3
5	*5500.00	99.7 AV			1.45 H	102	96.4	3.3
6	11000.00	50.6 PK	74.0	-23.4	1.51 H	259	36.9	13.7
7	11000.00	36.8 AV	54.0	-17.2	1.51 H	259	23.1	13.7
8	#16500.00	47.6 PK	68.2	-20.6	1.48 H	66	32.6	15.0
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	5460.00	57.8 PK	74.0	-16.2	1.44 V	344	54.4	3.4
2	5460.00	46.9 AV	54.0	-7.1	1.44 V	344	43.5	3.4
3	#5470.00	67.9 PK	68.2	-0.3	1.44 V	344	64.5	3.4
4	*5500.00	116.5 PK			1.44 V	344	113.2	3.3
5	*5500.00	107.9 AV			1.44 V	344	104.6	3.3
6	11000.00	53.2 PK	74.0	-20.8	1.00 V	263	39.5	13.7
7	11000.00	40.3 AV	54.0	-13.7	1.00 V	263	26.6	13.7
8	#16500.00	48.5 PK	68.2	-19.7	1.27 V	224	33.5	15.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	114.9 PK			1.56 H	100	111.5	3.4
2	*5580.00	103.4 AV			1.56 H	100	100.0	3.4
3	#5725.00	53.6 PK	68.2	-14.6	1.56 H	100	50.0	3.6
4	11160.00	50.5 PK	74.0	-23.5	1.53 H	259	37.0	13.5
5	11160.00	36.9 AV	54.0	-17.1	1.53 H	259	23.4	13.5
6	#16740.00	48.1 PK	68.2	-20.1	1.44 H	68	31.5	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	120.3 PK			1.22 V	345	116.9	3.4
2	*5580.00	112.1 AV			1.22 V	345	108.7	3.4
3	#5725.00	58.1 PK	68.2	-10.1	1.22 V	345	54.5	3.6
4	11160.00	53.1 PK	74.0	-20.9	1.00 V	269	39.6	13.5
5	11160.00	40.0 AV	54.0	-14.0	1.00 V	269	26.5	13.5
6	#16740.00	48.6 PK	68.2	-19.6	1.28 V	218	32.0	16.6

REMARKS:

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

CHANNEL	TX Channel 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	109.3 PK			1.51 H	88	105.6	3.7
2	*5700.00	99.5 AV			1.51 H	88	95.8	3.7
3	#5725.00	58.9 PK	68.2	-9.3	1.51 H	88	55.3	3.6
4	11400.00	48.1 PK	74.0	-25.9	1.62 H	238	34.5	13.6
5	11400.00	35.8 AV	54.0	-18.2	1.62 H	238	22.2	13.6
6	#17100.00	50.9 PK	68.2	-17.3	1.49 H	95	34.2	16.7
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	*5700.00	115.9 PK			1.56 V	306	112.2	3.7
2	*5700.00	106.7 AV			1.56 V	306	103.0	3.7
3	**#5725.00**	**68.1 PK**	**68.2**	**-0.1**	**1.56 V**	**306**	**64.5**	**3.6**
4	11400.00	44.7 PK	74.0	-29.3	1.03 V	265	31.1	13.6
5	11400.00	37.0 AV	54.0	-17.0	1.03 V	265	23.4	13.6
6	#17100.00	46.9 PK	68.2	-21.3	1.36 V	220	30.2	16.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	49.3 PK	74.0	-24.7	1.37 H	111	45.9	3.4
2	5460.00	38.7 AV	54.0	-15.3	1.37 H	111	35.3	3.4
3	#5470.00	53.8 PK	68.2	-14.4	1.37 H	111	50.4	3.4
4	*5720.00	113.1 PK			1.37 H	111	109.4	3.7
5	*5720.00	103.7 AV			1.37 H	111	100.0	3.7
6	#5850.00	51.2 PK	68.2	-17.0	1.37 H	111	47.1	4.1
7	11440.00	48.0 PK	74.0	-26.0	1.57 H	248	34.4	13.6
8	11440.00	35.4 AV	54.0	-18.6	1.57 H	248	21.8	13.6
9	#17160.00	50.3 PK	68.2	-17.9	1.51 H	83	33.5	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	57.2 PK	74.0	-16.8	1.19 V	331	53.8	3.4
2	5460.00	43.2 AV	54.0	-10.8	1.19 V	331	39.8	3.4
3	#5470.00	60.3 PK	68.2	-7.9	1.19 V	331	56.9	3.4
4	*5720.00	119.7 PK			1.19 V	331	116.0	3.7
5	*5720.00	112.4 AV			1.19 V	331	108.7	3.7
6	#5850.00	56.2 PK	68.2	-12.0	1.19 V	331	52.1	4.1
7	11440.00	44.4 PK	74.0	-29.6	1.04 V	275	30.8	13.6
8	11440.00	36.5 AV	54.0	-17.5	1.04 V	275	22.9	13.6
9	#17160.00	47.1 PK	68.2	-21.1	1.34 V	223	30.3	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.

802.11ax (HE20)

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	52.4 PK	74.0	-21.6	1.51 H	88	49.3	3.1
2	5150.00	42.4 AV	54.0	-11.6	1.51 H	88	39.3	3.1
3	*5260.00	112.8 PK			1.51 H	88	110.0	2.8
4	*5260.00	102.0 AV			1.51 H	88	99.2	2.8
5	#10520.00	56.8 PK	68.2	-11.4	1.52 H	225	43.4	13.4
6	15780.00	47.1 PK	74.0	-26.9	1.45 H	74	34.3	12.8
7	15780.00	34.5 AV	54.0	-19.5	1.45 H	74	21.7	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.7 PK	74.0	-18.3	1.77 V	300	52.6	3.1
2	5150.00	43.4 AV	54.0	-10.6	1.77 V	300	40.3	3.1
3	*5260.00	121.4 PK			1.77 V	300	118.6	2.8
4	*5260.00	112.2 AV			1.77 V	300	109.4	2.8
5	#10520.00	57.2 PK	68.2	-11.0	1.64 V	157	43.8	13.4
6	15780.00	48.8 PK	74.0	-25.2	1.67 V	208	36.0	12.8
7	15780.00	36.8 AV	54.0	-17.2	1.67 V	208	24.0	12.8

REMARKS:

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

CHANNEL	TX Channel 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	112.7 PK			1.48 H	78	109.8	2.9
2	*5300.00	102.7 AV			1.48 H	78	99.8	2.9
3	5350.00	58.5 PK	74.0	-15.5	1.48 H	78	55.4	3.1
4	5350.00	45.9 AV	54.0	-8.1	1.48 H	78	42.8	3.1
5	10600.00	56.1 PK	74.0	-17.9	1.49 H	250	42.9	13.2
6	10600.00	43.8 AV	54.0	-10.2	1.49 H	250	30.6	13.2
7	15900.00	46.5 PK	74.0	-27.5	1.49 H	77	33.4	13.1
8	15900.00	34.1 AV	54.0	-19.9	1.49 H	77	21.0	13.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	120.9 PK			1.81 V	300	118.0	2.9
2	*5300.00	112.0 AV			1.81 V	300	109.1	2.9
3	5350.00	67.0 PK	74.0	-7.0	1.81 V	300	63.9	3.1
4	5350.00	53.5 AV	54.0	-0.5	1.81 V	300	50.4	3.1
5	10600.00	57.6 PK	74.0	-16.4	1.63 V	163	44.4	13.2
6	10600.00	43.5 AV	54.0	-10.5	1.63 V	163	30.3	13.2
7	15900.00	49.3 PK	74.0	-24.7	1.68 V	222	36.2	13.1
8	15900.00	37.3 AV	54.0	-16.7	1.68 V	222	24.2	13.1

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	110.3 PK			1.55 H	90	107.4	2.9
2	*5320.00	99.6 AV			1.55 H	90	96.7	2.9
3	5350.00	55.9 PK	74.0	-18.1	1.55 H	90	52.8	3.1
4	5350.00	44.1 AV	54.0	-9.9	1.55 H	90	41.0	3.1
5	10640.00	56.5 PK	74.0	-17.5	1.50 H	251	43.2	13.3
6	10640.00	44.1 AV	54.0	-9.9	1.50 H	251	30.8	13.3
7	15960.00	47.0 PK	74.0	-27.0	1.53 H	100	33.7	13.3
8	15960.00	34.6 AV	54.0	-19.4	1.53 H	100	21.3	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	118.6 PK			1.70 V	303	115.7	2.9
2	*5320.00	108.5 AV			1.70 V	303	105.6	2.9
3	5350.00	66.0 PK	74.0	-8.0	1.70 V	303	62.9	3.1
4	5350.00	53.2 AV	54.0	-0.8	1.70 V	303	50.1	3.1
5	10640.00	57.2 PK	74.0	-16.8	1.58 V	169	43.9	13.3
6	10640.00	43.1 AV	54.0	-10.9	1.58 V	169	29.8	13.3
7	15960.00	49.4 PK	74.0	-24.6	1.67 V	223	36.1	13.3
8	15960.00	37.3 AV	54.0	-16.7	1.67 V	223	24.0	13.3

REMARKS:

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

CHANNEL	TX Channel 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	52.5 PK	74.0	-21.5	1.41 H	107	49.1	3.4
2	5460.00	41.3 AV	54.0	-12.7	1.41 H	107	37.9	3.4
3	#5470.00	56.7 PK	68.2	-11.5	1.00 H	0	53.3	3.4
4	*5500.00	107.8 PK			1.41 H	107	104.5	3.3
5	*5500.00	98.5 AV			1.41 H	107	95.2	3.3
6	11000.00	50.6 PK	74.0	-23.4	1.47 H	259	36.9	13.7
7	11000.00	37.1 AV	54.0	-16.9	1.47 H	259	23.4	13.7
8	#16500.00	47.0 PK	68.2	-21.2	1.53 H	52	32.0	15.0
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	5460.00	57.4 PK	74.0	-16.6	1.73 V	306	54.0	3.4
2	5460.00	46.5 AV	54.0	-7.5	1.73 V	306	43.1	3.4
3	#5470.00	67.2 PK	68.2	-1.0	1.73 V	306	63.8	3.4
4	*5500.00	116.6 PK			1.73 V	306	113.3	3.3
5	*5500.00	107.4 AV			1.73 V	306	104.1	3.3
6	11000.00	53.6 PK	74.0	-20.4	1.00 V	272	39.9	13.7
7	11000.00	40.3 AV	54.0	-13.7	1.00 V	272	26.6	13.7
8	#16500.00	48.3 PK	68.2	-19.9	1.32 V	216	33.3	15.0

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	53.9 PK	74.0	-20.1	1.48 H	66	50.5	3.4
2	5460.00	42.7 AV	54.0	-11.3	1.48 H	66	39.3	3.4
3	#5470.00	55.4 PK	68.2	-12.8	1.48 H	66	52.0	3.4
4	*5580.00	114.3 PK			1.48 H	66	110.9	3.4
5	*5580.00	102.9 AV			1.48 H	66	99.5	3.4
6	#5725.00	51.2 PK	68.2	-17.0	1.48 H	66	47.6	3.6
7	11160.00	50.2 PK	74.0	-23.8	1.53 H	265	36.7	13.5
8	11160.00	36.6 AV	54.0	-17.4	1.53 H	265	23.1	13.5
9	#16740.00	48.3 PK	68.2	-19.9	1.42 H	55	31.7	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	58.2 PK	74.0	-15.8	1.57 V	305	54.8	3.4
2	5460.00	45.8 AV	54.0	-8.2	1.57 V	305	42.4	3.4
3	#5470.00	62.3 PK	68.2	-5.9	1.57 V	305	58.9	3.4
4	*5580.00	123.7 PK			1.57 V	305	120.3	3.4
5	*5580.00	113.6 AV			1.57 V	305	110.2	3.4
6	#5725.00	56.0 PK	68.2	-12.2	1.57 V	305	52.4	3.6
7	11160.00	53.0 PK	74.0	-21.0	1.00 V	265	39.5	13.5
8	11160.00	40.2 AV	54.0	-13.8	1.00 V	265	26.7	13.5
9	#16740.00	49.3 PK	68.2	-18.9	1.25 V	214	32.7	16.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	107.7 PK			1.39 H	74	104.0	3.7
2	*5700.00	98.9 AV			1.39 H	74	95.2	3.7
3	#5725.00	58.3 PK	68.2	-9.9	1.39 H	74	54.7	3.6
4	11400.00	47.9 PK	74.0	-26.1	1.59 H	247	34.3	13.6
5	11400.00	35.5 AV	54.0	-18.5	1.59 H	247	21.9	13.6
6	#17100.00	50.3 PK	68.2	-17.9	1.51 H	90	33.6	16.7
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	*5700.00	117.1 PK			1.56 V	311	113.4	3.7
2	*5700.00	107.7 AV			1.56 V	311	104.0	3.7
3	#5725.00	67.9 PK	68.2	-0.3	1.56 V	311	64.3	3.6
4	11400.00	44.6 PK	74.0	-29.4	1.05 V	262	31.0	13.6
5	11400.00	36.9 AV	54.0	-17.1	1.05 V	262	23.3	13.6
6	#17100.00	46.5 PK	68.2	-21.7	1.38 V	233	29.8	16.7

REMARKS:

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

CHANNEL	TX Channel 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	50.2 PK	74.0	-23.8	1.52 H	96	46.8	3.4
2	5460.00	38.1 AV	54.0	-15.9	1.52 H	96	34.7	3.4
3	#5470.00	51.3 PK	68.2	-16.9	1.52 H	96	47.9	3.4
4	*5720.00	114.6 PK			1.52 H	96	110.9	3.7
5	*5720.00	103.1 AV			1.52 H	96	99.4	3.7
6	#5850.00	53.9 PK	68.2	-14.3	1.52 H	96	49.8	4.1
7	11440.00	47.9 PK	74.0	-26.1	1.58 H	253	34.3	13.6
8	11440.00	35.1 AV	54.0	-18.9	1.58 H	253	21.5	13.6
9	#17160.00	50.1 PK	68.2	-18.1	1.56 H	79	33.3	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	5460.00	55.7 PK	74.0	-18.3	1.62 V	306	52.3	3.4
2	5460.00	42.9 AV	54.0	-11.1	1.62 V	306	39.5	3.4
3	#5470.00	56.3 PK	68.2	-11.9	1.62 V	306	52.9	3.4
4	*5720.00	122.0 PK			1.62 V	306	118.3	3.7
5	*5720.00	113.0 AV			1.62 V	306	109.3	3.7
6	#5850.00	57.8 PK	68.2	-10.4	1.62 V	306	53.7	4.1
7	11440.00	44.2 PK	74.0	-29.8	1.05 V	280	30.6	13.6
8	11440.00	36.7 AV	54.0	-17.3	1.05 V	280	23.1	13.6
9	#17160.00	46.8 PK	68.2	-21.4	1.34 V	217	30.0	16.8

REMARKS:

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

802.11ax (HE40)

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	52.9 PK	74.0	-21.1	1.56 H	98	49.8	3.1
2	5150.00	41.5 AV	54.0	-12.5	1.56 H	98	38.4	3.1
3	*5270.00	110.3 PK			1.56 H	98	107.5	2.8
4	*5270.00	101.6 AV			1.56 H	98	98.8	2.8
5	5350.00	58.3 PK	74.0	-15.7	1.56 H	98	55.2	3.1
6	5350.00	45.9 AV	54.0	-8.1	1.56 H	98	42.8	3.1
7	#10540.00	55.3 PK	68.2	-12.9	1.45 H	245	42.0	13.3
8	15810.00	45.9 PK	74.0	-28.1	1.58 H	84	33.0	12.9
9	15810.00	33.7 AV	54.0	-20.3	1.58 H	84	20.8	12.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	1.69 V	287	53.7	3.1
2	5150.00	46.8 AV	54.0	-7.2	1.69 V	287	43.7	3.1
3	*5270.00	119.1 PK			1.69 V	287	116.3	2.8
4	*5270.00	109.4 AV			1.69 V	287	106.6	2.8
5	5350.00	67.3 PK	74.0	-6.7	1.69 V	287	64.2	3.1
6	**5350.00**	**53.9 AV**	**54.0**	**-0.1**	**1.69 V**	**287**	**50.8**	**3.1**
7	#10540.00	57.2 PK	68.2	-11.0	1.63 V	159	43.9	13.3
8	15810.00	48.9 PK	74.0	-25.1	1.71 V	233	36.0	12.9
9	15810.00	36.9 AV	54.0	-17.1	1.71 V	233	24.0	12.9

REMARKS:

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

CHANNEL	TX Channel 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	105.8 PK			1.44 H	89	102.9	2.9
2	*5310.00	94.7 AV			1.44 H	89	91.8	2.9
3	5350.00	57.7 PK	74.0	-16.3	1.44 H	89	54.6	3.1
4	5350.00	45.4 AV	54.0	-8.6	1.44 H	89	42.3	3.1
5	10620.00	55.7 PK	74.0	-18.3	1.48 H	246	42.4	13.3
6	10620.00	43.4 AV	54.0	-10.6	1.48 H	246	30.1	13.3
7	15930.00	46.2 PK	74.0	-27.8	1.53 H	73	33.0	13.2
8	15930.00	33.9 AV	54.0	-20.1	1.53 H	73	20.7	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	*5310.00	112.0 PK			1.75 V	280	109.1	2.9
2	*5310.00	103.7 AV			1.75 V	280	100.8	2.9
3	5350.00	63.4 PK	74.0	-10.6	1.75 V	280	60.3	3.1
4	5350.00	53.3 AV	54.0	-0.7	1.75 V	280	50.2	3.1
5	10620.00	57.6 PK	74.0	-16.4	1.67 V	163	44.3	13.3
6	10620.00	43.8 AV	54.0	-10.2	1.67 V	163	30.5	13.3
7	15930.00	48.5 PK	74.0	-25.5	1.73 V	248	35.3	13.2
8	15930.00	36.7 AV	54.0	-17.3	1.73 V	248	23.5	13.2

REMARKS:

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

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	53.7 PK	74.0	-20.3	1.43 H	72	50.3	3.4
2	5460.00	41.4 AV	54.0	-12.6	1.43 H	72	38.0	3.4
3	#5470.00	58.9 PK	68.2	-9.3	1.43 H	72	55.5	3.4
4	*5510.00	105.5 PK			1.43 H	72	102.2	3.3
5	*5510.00	94.0 AV			1.43 H	72	90.7	3.3
6	11020.00	50.4 PK	74.0	-23.6	1.58 H	256	36.8	13.6
7	11020.00	36.7 AV	54.0	-17.3	1.58 H	256	23.1	13.6
8	#16530.00	48.5 PK	68.2	-19.7	1.37 H	44	33.3	15.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	2.18 V	223	56.2	3.4
2	5460.00	46.0 AV	54.0	-8.0	2.18 V	223	42.6	3.4
3	#5470.00	67.3 PK	68.2	-0.9	2.18 V	223	63.9	3.4
4	*5510.00	111.7 PK			2.18 V	223	108.4	3.3
5	*5510.00	102.3 AV			2.18 V	223	99.0	3.3
6	11020.00	52.7 PK	74.0	-21.3	1.00 V	265	39.1	13.6
7	11020.00	40.0 AV	54.0	-14.0	1.00 V	265	26.4	13.6
8	#16530.00	49.3 PK	68.2	-18.9	1.24 V	228	34.1	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 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	54.7 PK	74.0	-19.3	1.52 H	79	51.3	3.4
2	5460.00	42.2 AV	54.0	-11.8	1.52 H	79	38.8	3.4
3	#5470.00	58.3 PK	68.2	-9.9	1.52 H	79	54.9	3.4
4	*5550.00	109.5 PK			1.52 H	79	106.1	3.4
5	*5550.00	98.4 AV			1.52 H	79	95.0	3.4
6	11100.00	50.2 PK	74.0	-23.8	1.54 H	277	36.6	13.6
7	11100.00	36.8 AV	54.0	-17.2	1.54 H	277	23.2	13.6
8	#16650.00	49.0 PK	68.2	-19.2	1.41 H	42	32.9	16.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.8 PK	74.0	-13.2	1.67 V	305	57.4	3.4
2	5460.00	48.6 AV	54.0	-5.4	1.67 V	305	45.2	3.4
3	#5470.00	67.7 PK	68.2	-0.5	1.67 V	305	64.3	3.4
4	*5550.00	117.4 PK			1.67 V	305	114.0	3.4
5	*5550.00	107.9 AV			1.67 V	305	104.5	3.4
6	11100.00	52.5 PK	74.0	-21.5	1.00 V	271	38.9	13.6
7	11100.00	39.6 AV	54.0	-14.4	1.00 V	271	26.0	13.6
8	#16650.00	49.6 PK	68.2	-18.6	1.29 V	237	33.5	16.1

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 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	108.1 PK			1.44 H	69	104.5	3.6
2	*5670.00	97.6 AV			1.44 H	69	94.0	3.6
3	#5725.00	57.7 PK	68.2	-10.5	1.44 H	69	54.1	3.6
4	11340.00	48.3 PK	74.0	-25.7	1.55 H	243	34.7	13.6
5	11340.00	35.6 AV	54.0	-18.4	1.55 H	243	22.0	13.6
6	#17010.00	50.2 PK	68.2	-18.0	1.58 H	68	33.4	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	115.1 PK			1.64 V	305	111.5	3.6
2	*5670.00	106.2 AV			1.64 V	305	102.6	3.6
3	#5725.00	67.6 PK	68.2	-0.6	1.64 V	305	64.0	3.6
4	11340.00	44.4 PK	74.0	-29.6	1.07 V	276	30.8	13.6
5	11340.00	36.7 AV	54.0	-17.3	1.07 V	276	23.1	13.6
6	#17010.00	46.3 PK	68.2	-21.9	1.31 V	207	29.5	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 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	54.9 PK	74.0	-19.1	1.59 H	100	51.5	3.4
2	5460.00	40.3 AV	54.0	-13.7	1.59 H	100	36.9	3.4
3	#5470.00	53.1 PK	68.2	-15.1	1.59 H	100	49.7	3.4
4	*5710.00	111.3 PK			1.59 H	100	107.6	3.7
5	*5710.00	99.4 AV			1.59 H	100	95.7	3.7
6	#5850.00	55.3 PK	68.2	-12.9	1.59 H	100	51.2	4.1
7	11420.00	48.6 PK	74.0	-25.4	1.55 H	254	35.1	13.5
8	11420.00	36.0 AV	54.0	-18.0	1.55 H	254	22.5	13.5
9	#17130.00	50.0 PK	68.2	-18.2	1.64 H	55	33.2	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.4 PK	74.0	-16.6	1.56 V	305	54.0	3.4
2	5460.00	44.7 AV	54.0	-9.3	1.56 V	305	41.3	3.4
3	#5470.00	57.5 PK	68.2	-10.7	1.56 V	305	54.1	3.4
4	*5710.00	118.8 PK			1.56 V	305	115.1	3.7
5	*5710.00	108.7 AV			1.56 V	305	105.0	3.7
6	#5850.00	58.9 PK	68.2	-9.3	1.56 V	305	54.8	4.1
7	11420.00	44.3 PK	74.0	-29.7	1.03 V	271	30.8	13.5
8	11420.00	36.7 AV	54.0	-17.3	1.03 V	271	23.2	13.5
9	#17130.00	46.7 PK	68.2	-21.5	1.34 V	229	29.9	16.8

REMARKS:

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

802.11ax (HE80)

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	49.4 PK	74.0	-24.6	1.56 H	87	46.3	3.1
2	5150.00	38.5 AV	54.0	-15.5	1.56 H	87	35.4	3.1
3	*5290.00	103.7 PK			1.56 H	87	100.8	2.9
4	*5290.00	92.4 AV			1.56 H	87	89.5	2.9
5	5350.00	56.3 PK	74.0	-17.7	1.56 H	87	53.2	3.1
6	5350.00	45.6 AV	54.0	-8.4	1.56 H	87	42.5	3.1
7	#10580.00	54.8 PK	68.2	-13.4	1.43 H	253	41.6	13.2
8	15870.00	45.6 PK	74.0	-28.4	1.56 H	69	32.6	13.0
9	15870.00	33.6 AV	54.0	-20.4	1.56 H	69	20.6	13.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	53.5 PK	74.0	-20.5	1.61 V	281	50.4	3.1
2	5150.00	44.5 AV	54.0	-9.5	1.61 V	281	41.4	3.1
3	*5290.00	109.6 PK			1.61 V	281	106.7	2.9
4	*5290.00	100.4 AV			1.61 V	281	97.5	2.9
5	5350.00	63.4 PK	74.0	-10.6	1.61 V	281	60.3	3.1
6	5350.00	53.4 AV	54.0	-0.6	1.61 V	281	50.3	3.1
7	#10580.00	56.6 PK	68.2	-11.6	1.65 V	164	43.4	13.2
8	15870.00	47.8 PK	74.0	-26.2	1.75 V	225	34.8	13.0
9	15870.00	37.0 AV	54.0	-17.0	1.75 V	225	24.0	13.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	56.4 PK	74.0	-17.6	1.53 H	82	53.0	3.4
2	5460.00	45.7 AV	54.0	-8.3	1.53 H	82	42.3	3.4
3	#5470.00	54.5 PK	68.2	-13.7	1.53 H	82	51.1	3.4
4	*5530.00	104.0 PK			1.53 H	82	100.6	3.4
5	*5530.00	92.7 AV			1.53 H	82	89.3	3.4
6	#5725.00	51.3 PK	68.2	-16.9	1.53 H	82	47.7	3.6
7	11060.00	49.3 PK	74.0	-24.7	1.49 H	260	35.6	13.7
8	11060.00	36.7 AV	54.0	-17.3	1.49 H	260	23.0	13.7
9	#16590.00	48.2 PK	68.2	-20.0	1.45 H	58	32.6	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.1 PK	74.0	-7.9	1.62 V	234	62.7	3.4
2	5460.00	50.8 AV	54.0	-3.2	1.62 V	234	47.4	3.4
3	#5470.00	67.7 PK	68.2	-0.5	1.62 V	234	64.3	3.4
4	*5530.00	109.9 PK			1.62 V	234	106.5	3.4
5	*5530.00	100.0 AV			1.62 V	234	96.6	3.4
6	#5725.00	53.7 PK	68.2	-14.5	1.62 V	234	50.1	3.6
7	11060.00	51.3 PK	74.0	-22.7	1.00 V	276	37.6	13.7
8	11060.00	39.8 AV	54.0	-14.2	1.00 V	276	26.1	13.7
9	#16590.00	50.2 PK	68.2	-18.0	1.33 V	241	34.6	15.6

REMARKS:

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

CHANNEL	TX Channel 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	#5470.00	54.3 PK	68.2	-13.9	1.65 H	97	50.9	3.4
2	*5610.00	104.7 PK			1.65 H	97	101.3	3.4
3	*5610.00	95.9 AV			1.65 H	97	92.5	3.4
4	#5725.00	57.2 PK	68.2	-11.0	1.65 H	97	53.6	3.6
5	11220.00	50.1 PK	74.0	-23.9	1.53 H	270	36.7	13.4
6	11220.00	36.3 AV	54.0	-17.7	1.53 H	270	22.9	13.4
7	#16830.00	48.5 PK	68.2	-19.7	1.46 H	67	31.5	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	#5470.00	62.9 PK	68.2	-5.3	1.63 V	304	59.5	3.4
2	*5610.00	112.9 PK			1.63 V	304	109.5	3.4
3	*5610.00	103.5 AV			1.63 V	304	100.1	3.4
4	#5725.00	67.2 PK	68.2	-1.0	1.63 V	304	63.6	3.6
5	11220.00	51.0 PK	74.0	-23.0	1.00 V	280	37.6	13.4
6	11220.00	39.6 AV	54.0	-14.4	1.00 V	280	26.2	13.4
7	#16830.00	49.9 PK	68.2	-18.3	1.34 V	256	32.9	17.0

REMARKS:

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

CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	53.6 PK	74.0	-20.4	1.62 H	83	50.2	3.4
2	5460.00	41.3 AV	54.0	-12.7	1.62 H	83	37.9	3.4
3	#5470.00	52.8 PK	68.2	-15.4	1.62 H	83	49.4	3.4
4	*5690.00	106.5 PK			1.62 H	83	102.8	3.7
5	*5690.00	97.7 AV			1.62 H	83	94.0	3.7
6	#5850.00	60.1 PK	68.2	-8.1	1.62 H	83	56.0	4.1
7	11380.00	48.5 PK	74.0	-25.5	1.58 H	251	34.9	13.6
8	11380.00	35.7 AV	54.0	-18.3	1.58 H	251	22.1	13.6
9	#17070.00	49.5 PK	68.2	-18.7	1.68 H	69	32.7	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	59.8 PK	74.0	-14.2	1.57 V	304	56.4	3.4
2	5460.00	47.4 AV	54.0	-6.6	1.57 V	304	44.0	3.4
3	#5470.00	61.3 PK	68.2	-6.9	1.57 V	304	57.9	3.4
4	*5690.00	114.6 PK			1.57 V	304	110.9	3.7
5	*5690.00	106.0 AV			1.57 V	304	102.3	3.7
6	#5850.00	67.3 PK	68.2	-0.9	1.57 V	304	63.2	4.1
7	11380.00	44.6 PK	74.0	-29.4	1.00 V	268	31.0	13.6
8	11380.00	36.9 AV	54.0	-17.1	1.00 V	268	23.3	13.6
9	#17070.00	46.1 PK	68.2	-22.1	1.29 V	213	29.3	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.

802.11ax (HE160)

CHANNEL	TX Channel 50	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	58.9 PK	74.0	-15.1	1.57 H	97	55.8	3.1
2	5150.00	46.5 AV	54.0	-7.5	1.57 H	97	43.4	3.1
3	*5250.00	97.6 PK			1.57 H	97	94.8	2.8
4	*5250.00	88.4 AV			1.57 H	97	85.6	2.8
5	5350.00	57.2 PK	74.0	-16.8	1.57 H	97	54.1	3.1
6	5350.00	45.3 AV	54.0	-8.7	1.57 H	97	42.2	3.1
7	#10500.00	55.6 PK	68.2	-12.6	1.43 H	234	42.2	13.4
8	15750.00	46.2 PK	74.0	-27.8	1.60 H	89	33.4	12.8
9	15750.00	33.9 AV	54.0	-20.1	1.60 H	89	21.1	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.3 PK	74.0	-10.7	1.59 V	237	60.2	3.1
2	5150.00	53.5 AV	54.0	-0.5	1.59 V	237	50.4	3.1
3	*5250.00	105.3 PK			1.59 V	237	102.5	2.8
4	*5250.00	96.8 AV			1.59 V	237	94.0	2.8
5	5350.00	65.1 PK	74.0	-8.9	1.59 V	237	62.0	3.1
6	5350.00	52.7 AV	54.0	-1.3	1.59 V	237	49.6	3.1
7	#10500.00	57.0 PK	68.2	-11.2	1.69 V	165	43.6	13.4
8	15750.00	49.0 PK	74.0	-25.0	1.70 V	240	36.2	12.8
9	15750.00	36.8 AV	54.0	-17.2	1.70 V	240	24.0	12.8

REMARKS:

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

CHANNEL	TX Channel 114	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	57.5 PK	74.0	-16.5	1.54 H	74	54.1	3.4
2	5460.00	46.7 AV	54.0	-7.3	1.54 H	74	43.3	3.4
3	#5470.00	60.6 PK	68.2	-7.6	1.54 H	74	57.2	3.4
4	*5570.00	99.7 PK			1.54 H	74	96.3	3.4
5	*5570.00	90.3 AV			1.54 H	74	86.9	3.4
6	#5725.00	53.5 PK	68.2	-14.7	1.54 H	74	49.9	3.6
7	11140.00	50.2 PK	74.0	-23.8	1.53 H	277	36.7	13.5
8	11140.00	36.9 AV	54.0	-17.1	1.53 H	277	23.4	13.5
9	#16710.00	49.2 PK	68.2	-19.0	1.45 H	37	32.7	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.5 PK	74.0	-8.5	1.50 V	278	62.1	3.4
2	5460.00	53.3 AV	54.0	-0.7	1.50 V	278	49.9	3.4
3	#5470.00	67.0 PK	68.2	-1.2	1.50 V	278	63.6	3.4
4	*5570.00	107.2 PK			1.50 V	278	103.8	3.4
5	*5570.00	97.5 AV			1.50 V	278	94.1	3.4
6	#5725.00	59.6 PK	68.2	-8.6	1.50 V	278	56.0	3.6
7	11140.00	52.8 PK	74.0	-21.2	1.00 V	268	39.3	13.5
8	11140.00	40.1 AV	54.0	-13.9	1.00 V	268	26.6	13.5
9	#16710.00	50.0 PK	68.2	-18.2	1.24 V	241	33.5	16.5

REMARKS:

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

Below 1GHz Data:

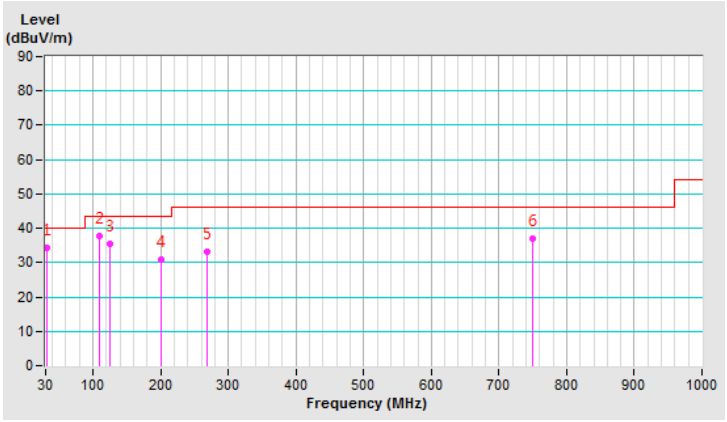
802.11ax (HE40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	31.43	34.4 QP	40.0	-5.6	3.00 H	183	43.9	-9.5
2	108.57	37.7 QP	43.5	-5.8	3.00 H	282	48.4	-10.7
3	125.04	35.3 QP	43.5	-8.2	3.00 H	74	44.8	-9.5
4	200.79	30.7 QP	43.5	-12.8	1.00 H	116	41.5	-10.8
5	268.98	33.0 QP	46.0	-13.0	1.00 H	228	41.0	-8.0
6	750.01	37.0 QP	46.0	-9.0	1.00 H	48	33.3	3.7

REMARKS:

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

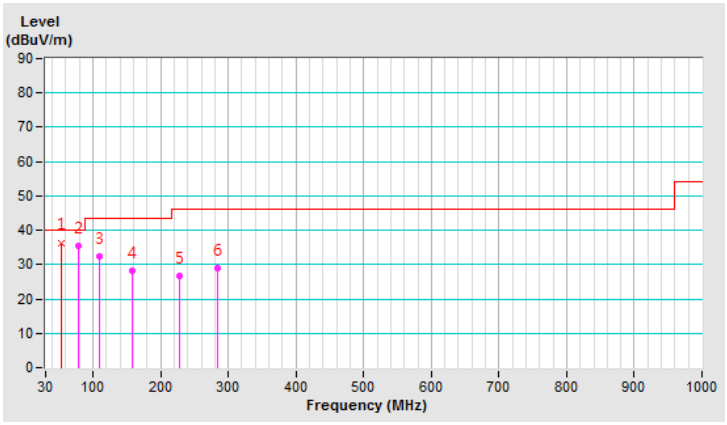


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	52.90	36.4 QP	40.0	-3.6	1.00 V	78	44.4	-8.0
2	78.80	35.5 QP	40.0	-4.5	1.50 V	159	48.0	-12.5
3	108.76	32.3 QP	43.5	-11.2	1.00 V	273	43.0	-10.7
4	157.58	28.3 QP	43.5	-15.2	1.50 V	132	36.0	-7.7
5	228.32	26.7 QP	46.0	-19.3	1.50 V	26	37.3	-10.6
6	283.44	28.9 QP	46.0	-17.1	2.00 V	310	36.2	-7.3

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 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. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
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: Dec. 03, 2019

4.2.3 Test Procedure

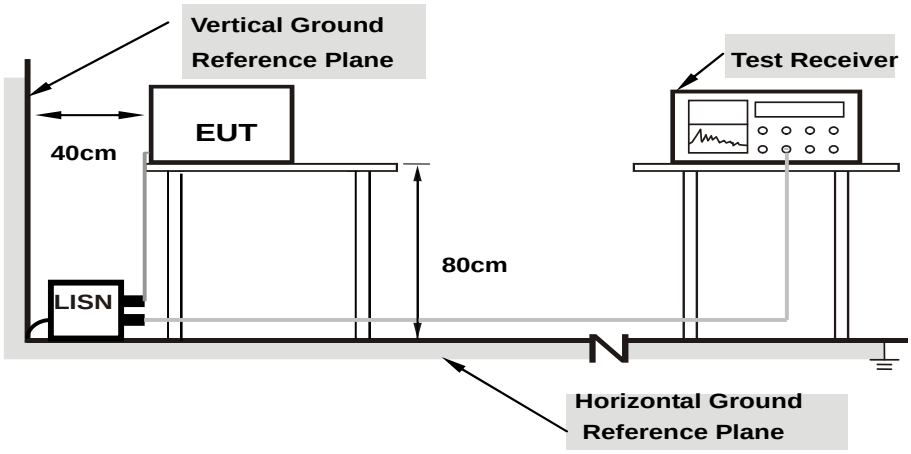
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

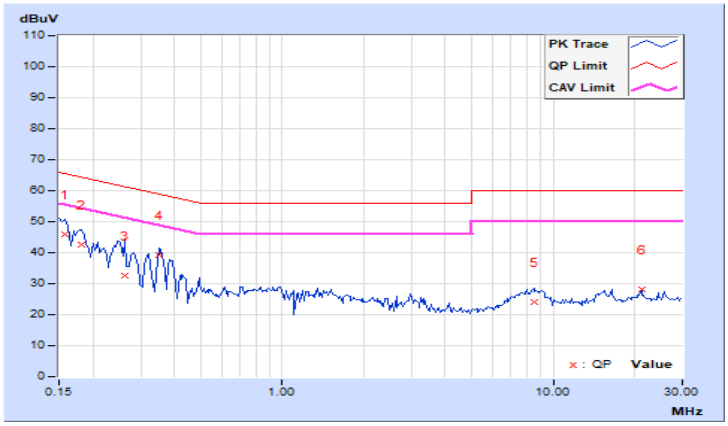
4.2.7 Test Results

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.97	36.10	23.84	46.07	33.81	65.58	55.58	-19.51	-21.77
2	0.18125	9.97	32.80	22.61	42.77	32.58	64.43	54.43	-21.66	-21.85
3	0.26328	9.97	22.62	13.12	32.59	23.09	61.33	51.33	-28.74	-28.24
4	**0.35313**	**9.98**	**29.26**	**24.03**	**39.24**	**34.01**	**58.89**	**48.89**	**-19.65**	**-14.88**
5	8.50391	10.59	13.30	7.73	23.89	18.32	60.00	50.00	-36.11	-31.68
6	21.16797	11.48	16.58	14.79	28.06	26.27	60.00	50.00	-31.94	-23.73

Remarks:

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

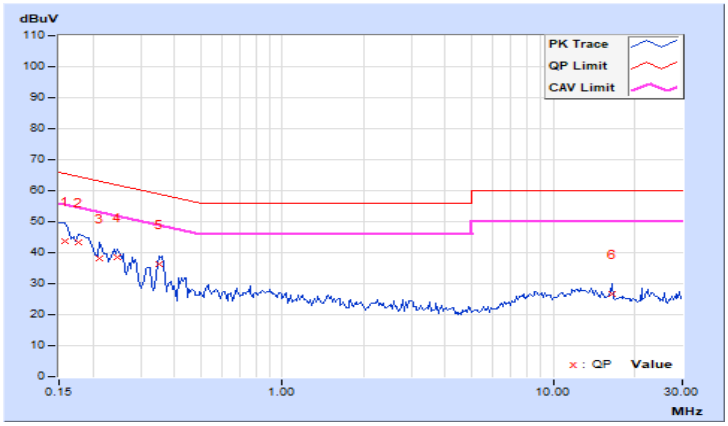


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.98	33.81	21.57	43.79	31.55	65.58	55.58	-21.79	-24.03
2	0.17734	9.98	33.26	23.10	43.24	33.08	64.61	54.61	-21.37	-21.53
3	0.21250	9.98	28.03	20.30	38.01	30.28	63.11	53.11	-25.10	-22.83
4	0.24766	9.98	28.49	22.10	38.47	32.08	61.84	51.84	-23.37	-19.76
5	0.35313	10.00	26.38	22.25	36.38	32.25	58.89	48.89	-22.51	-16.64
6	16.46484	10.99	15.86	14.04	26.85	25.03	60.00	50.00	-33.15	-24.97

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,

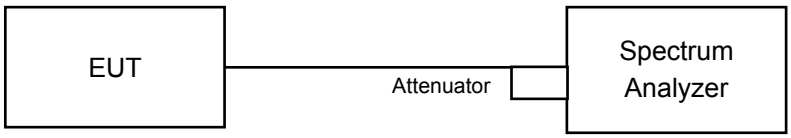
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

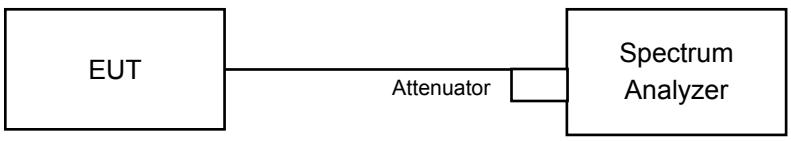
FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz or 5250MHz:



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 channel straddling 5725MHz or 5250MHz:

For 802.11ac (VHT20), 802.11ax (HE20)

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

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

For other modulation mode

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 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 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

Non-Beamforming Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.53	19.13	171.589	22.34	24.00	Pass
60	5300	19.61	18.85	168.147	22.26	24.00	Pass
64	5320	19.58	19.13	172.628	22.37	24.00	Pass
100	5500	20.61	20.26	221.25	23.45	24.00	Pass
116	5580	20.41	20.15	213.415	23.29	24.00	Pass
140	5700	20.25	19.80	201.424	23.04	24.00	Pass
*144 (U-NII-2C Band)	5720	17.09	16.78	98.811	19.95	23.55	Pass
*144 (U-NII-3 Band)	5720	11.12	10.80	24.965	13.97	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	123.776	20.93
Note: The total power was calculated through formula and record the value for reference only.			

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

Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	27.14	25.33 > 24
60	5300	27.11	25.33 > 24
64	5320	26.23	25.18 > 24
100	5500	26.31	25.2 > 24
116	5580	31.79	26.02 > 24
140	5700	25.71	25.1 > 24
144 (U-NII-2C Band)	5720	18.02	23.55 < 24

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.29	18.86	161.831	22.09	24.00	Pass
60	5300	18.95	18.68	152.314	21.83	24.00	Pass
64	5320	19.00	18.50	150.228	21.77	24.00	Pass
100	5500	20.18	20.00	204.232	23.10	24.00	Pass
116	5580	20.31	20.24	213.081	23.29	24.00	Pass
140	5700	20.60	19.88	212.09	23.27	24.00	Pass
*144 (U-NII-2C Band)	5720	16.74	16.17	88.606	19.47	23.40	Pass
*144 (U-NII-3 Band)	5720	11.68	10.71	26.499	14.23	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	115.105	20.61
Note: The total power was calculated through formula and record the value for reference only.			

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	24.99	24.97 > 24
60	5300	25.22	25.01 > 24
64	5320	25.03	24.98 > 24
100	5500	25.16	25 > 24
116	5580	28.82	25.59 > 24
140	5700	25.07	24.99 > 24
144 (U-NII-2C Band)	5720	17.38	23.4 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.26	20.44	216.832	23.36	24.00	Pass
62	5310	19.82	20.19	200.412	23.02	24.00	Pass
102	5510	19.84	19.79	191.663	22.83	24.00	Pass
110	5550	20.31	20.28	214.059	23.31	24.00	Pass
134	5670	20.53	20.71	230.741	23.63	24.00	Pass
*142 (U-NII-2C Band)	5710	17.65	17.67	119.308	20.77	24.00	Pass
*142 (U-NII-3 Band)	5710	8.11	7.98	13.038	11.15	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	132.346	21.22
Note: The total power was calculated through formula and record the value for reference only.			

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	46.79	27.7 > 24
62	5310	46.57	27.68 > 24
102	5510	46.89	27.71 > 24
110	5550	46.58	27.68 > 24
134	5670	46.67	27.69 > 24
142 (U-NII-2C Band)	5710	38.01	26.79 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	20.14	20.07	204.901	23.12	24.00	Pass
106	5530	20.13	19.98	202.58	23.07	24.00	Pass
122	5610	20.21	20.35	213.347	23.29	24.00	Pass
*138 (U-NII-2C Band)	5690	17.85	17.43	121.732	20.85	24.00	Pass
*138 (U-NII-3 Band)	5690	4.83	4.90	6.418	8.07	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	128.15	21.08
Note: The total power was calculated through formula and record the value for reference only.			

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	87.64	30.42 > 24
106	5530	88.26	30.45 > 24
122	5610	88.14	30.45 > 24
138 (U-NII-2C Band)	5690	79.27	29.99 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50 (U-NII-1 Band)	5250	13.62	13.46	48.812	16.89	30.00	Pass
*50 (U-NII-2A Band)	5250	14.54	13.94	57.477	17.59	24.00	Pass
114	5570	20.16	19.38	190.449	22.80	24.00	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)
50	5250	106.289	20.26
Note: The total power was calculated through formula and record the value for reference only.			

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)
50 (U-NII-2A Band)	5250	166.61	26.21 > 24
114	5570	167.40	33.23 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.51	19.11	170.801	22.32	24.00	Pass
60	5300	19.18	18.92	160.777	22.06	24.00	Pass
64	5320	19.28	18.73	159.368	22.02	24.00	Pass
100	5500	20.39	20.22	214.592	23.32	24.00	Pass
116	5580	20.51	20.50	224.662	23.52	24.00	Pass
140	5700	20.80	20.15	223.74	23.50	24.00	Pass
*144 (U-NII-2C Band)	5720	17.32	16.58	99.45	19.98	23.40	Pass
*144 (U-NII-3 Band)	5720	12.32	11.56	31.383	14.97	30.00	Pass

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

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	130.833	21.17
Note: The total power was calculated through formula and record the value for reference only.			

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	24.99	24.97 > 24
60	5300	25.22	25.01 > 24
64	5320	25.03	24.98 > 24
100	5500	25.16	25 > 24
116	5580	28.82	25.59 > 24
140	5700	25.07	24.99 > 24
144 (U-NII-2C Band)	5720	17.38	23.4 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.52	20.68	229.67	23.61	24.00	Pass
62	5310	20.04	20.46	212.098	23.27	24.00	Pass
102	5510	20.08	20.05	203.017	23.08	24.00	Pass
110	5550	20.52	20.55	226.221	23.55	24.00	Pass
134	5670	20.76	20.92	242.719	23.85	24.00	Pass
*142 (U-NII-2C Band)	5710	17.92	17.84	125.513	20.99	24.00	Pass
*142 (U-NII-3 Band)	5710	8.75	8.63	15.126	11.80	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	140.639	21.48
Note: The total power was calculated through formula and record the value for reference only.			

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	46.79	27.7 > 24
62	5310	46.57	27.68 > 24
102	5510	46.89	27.71 > 24
110	5550	46.58	27.68 > 24
134	5670	46.67	27.69 > 24
142 (U-NII-2C Band)	5710	38.01	26.79 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	20.42	20.34	218.297	23.39	24.00	Pass
106	5530	20.33	20.25	213.82	23.30	24.00	Pass
122	5610	20.45	20.56	224.68	23.52	24.00	Pass
*138 (U-NII-2C Band)	5690	18.02	17.68	127.712	21.06	24.00	Pass
*138 (U-NII-3 Band)	5690	5.30	5.18	6.997	8.45	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	134.709	21.29
Note: The total power was calculated through formula and record the value for reference only.			

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	87.64	30.42 > 24
106	5530	88.26	30.45 > 24
122	5610	88.14	30.45 > 24
138 (U-NII-2C Band)	5690	79.27	29.99 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50 (U-NII-1 Band)	5250	13.77	13.62	50.584	17.04	30.00	Pass
*50 (U-NII-2A Band)	5250	14.69	14.11	59.624	17.75	24.00	Pass
114	5570	20.37	19.62	200.515	23.02	24.00	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:

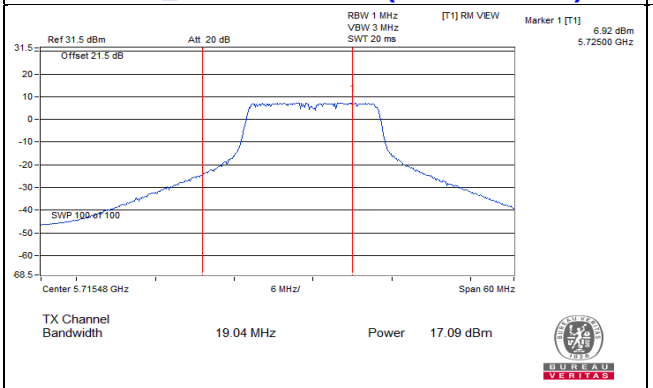
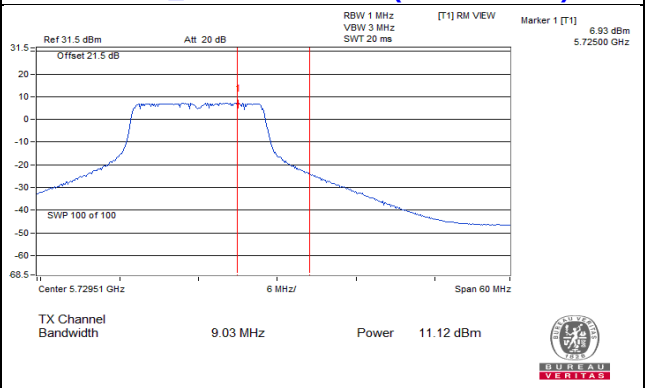
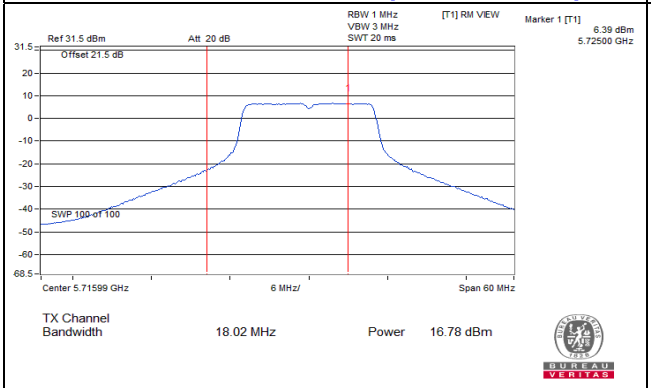
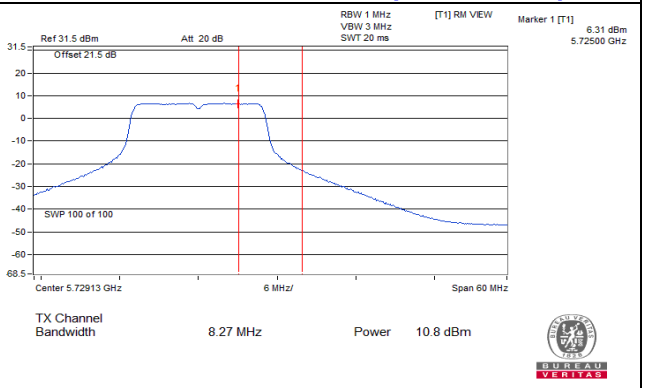
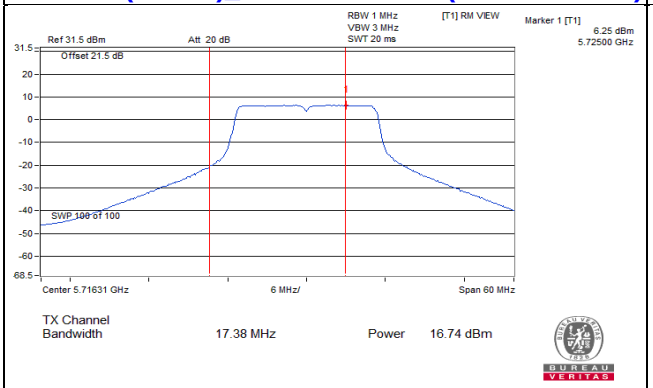
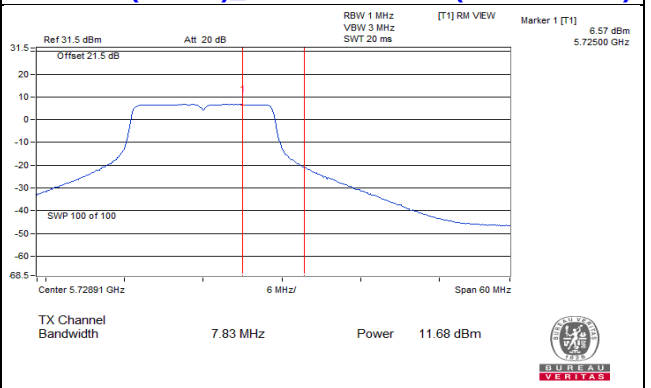
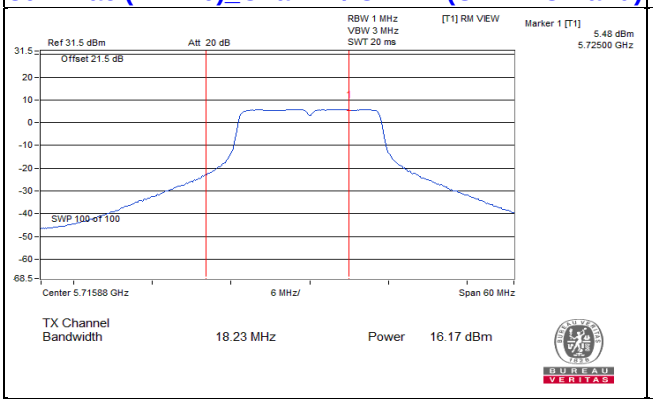
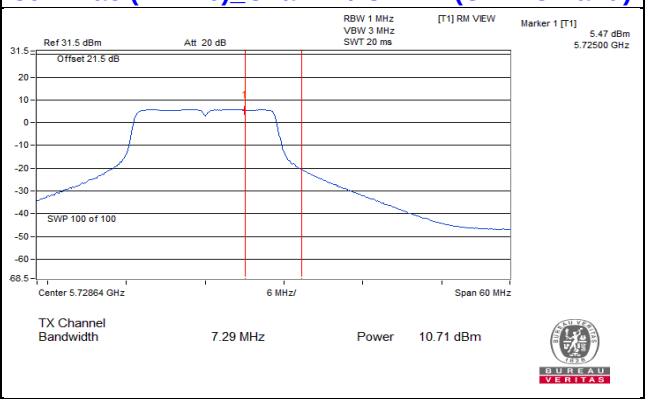
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
50	5250	110.208	20.42
Note: The total power was calculated through formula and record the value for reference only.			

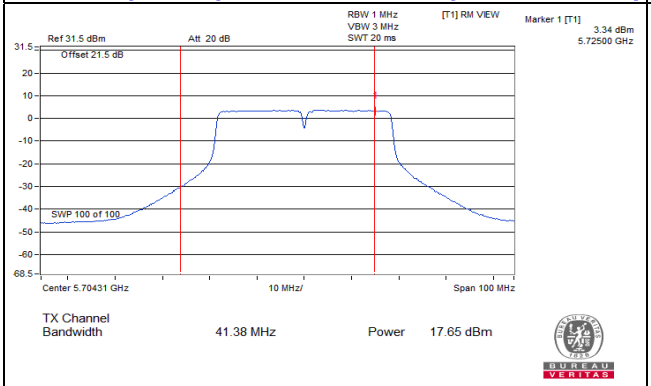
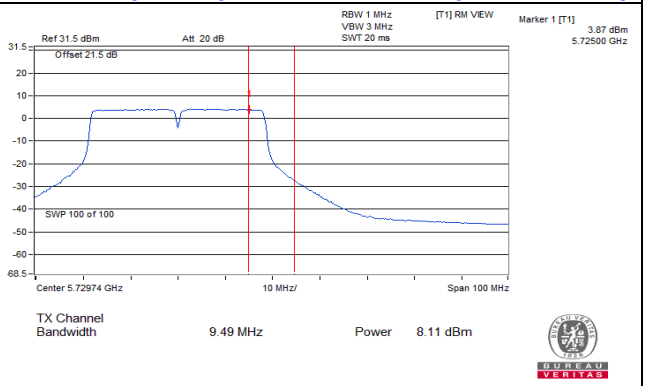
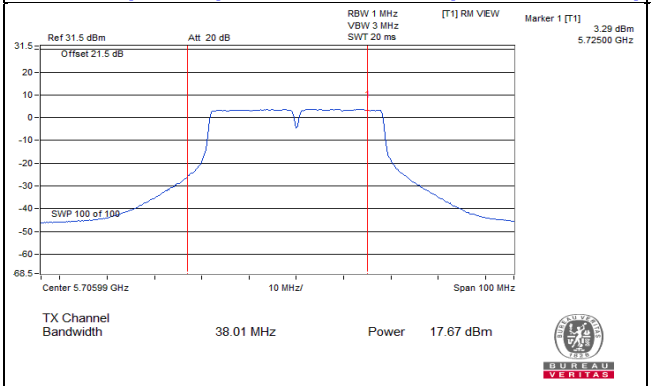
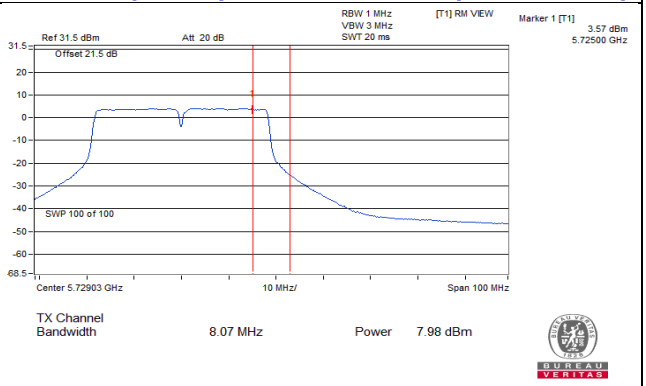
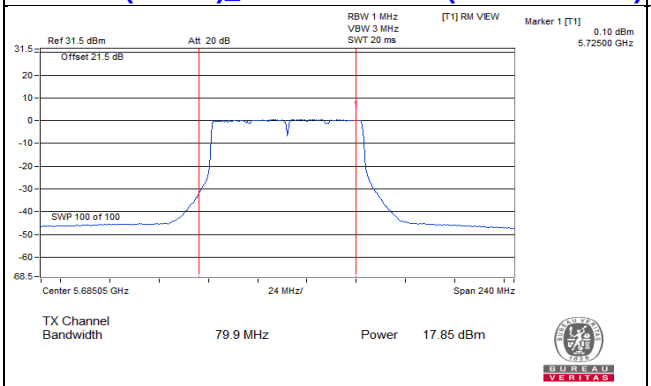
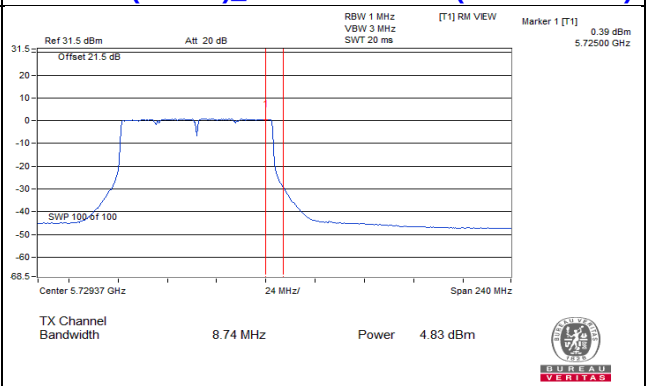
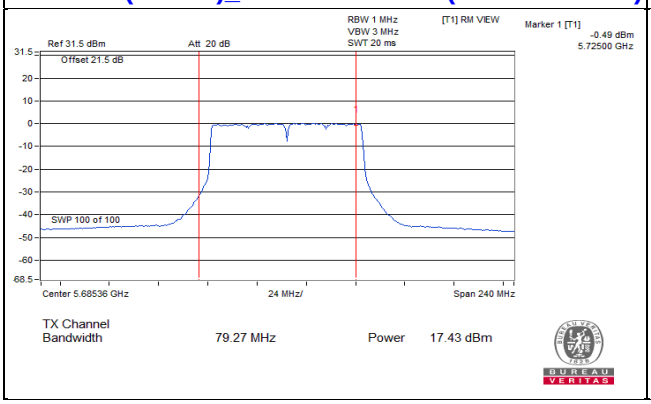
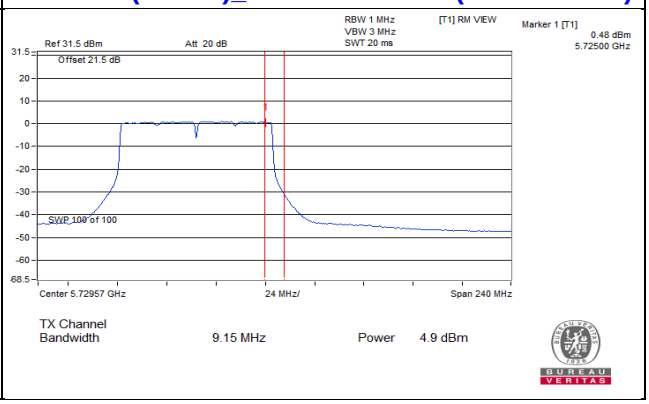
Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

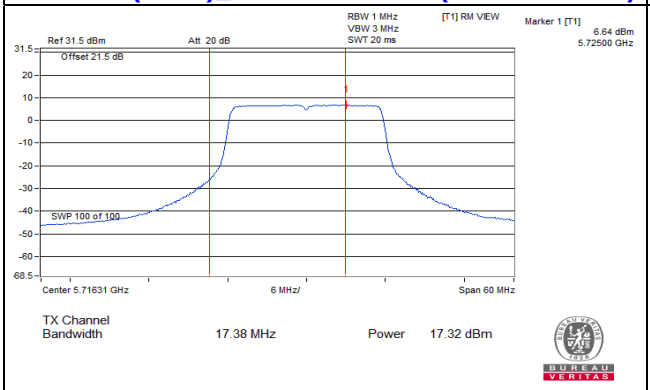
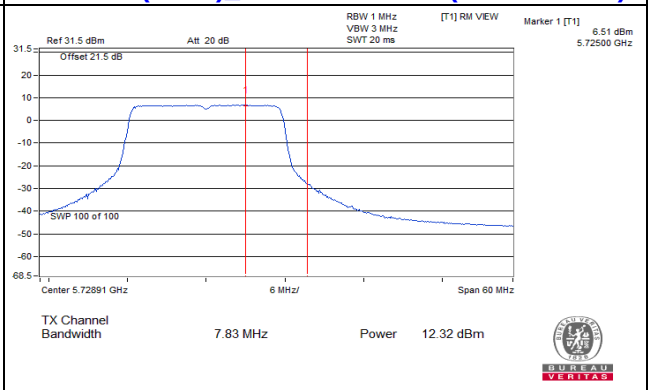
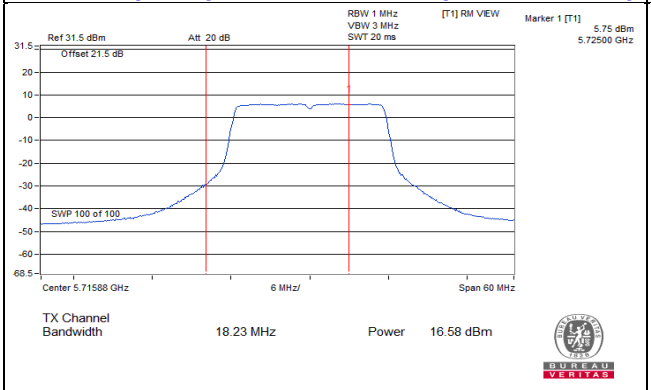
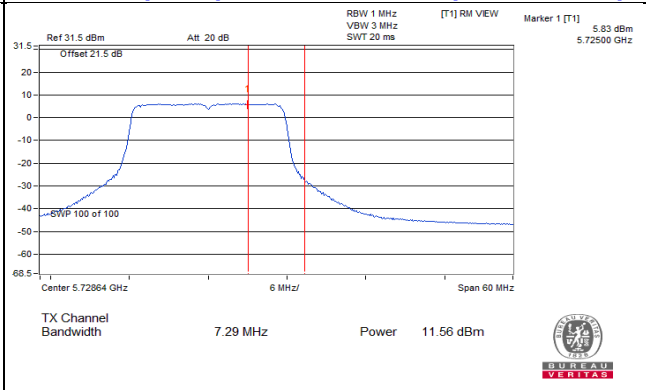
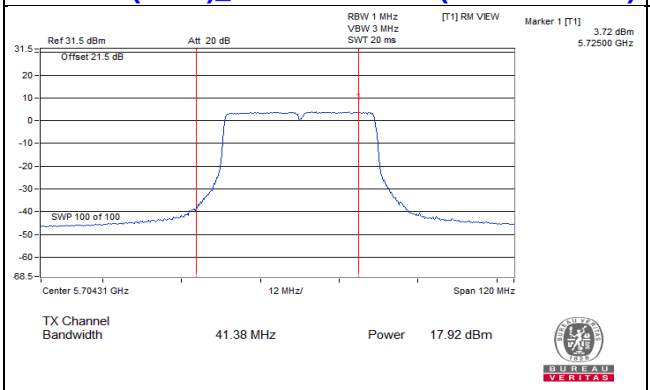
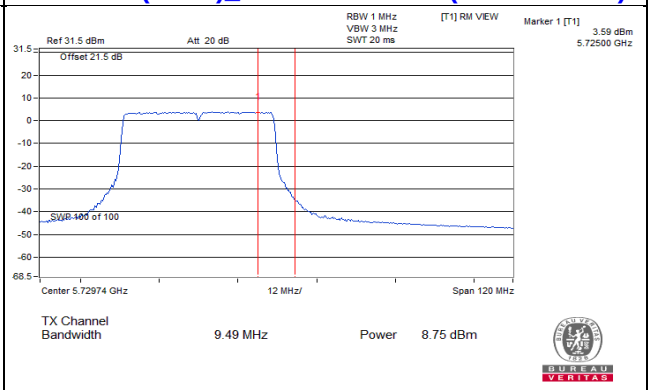
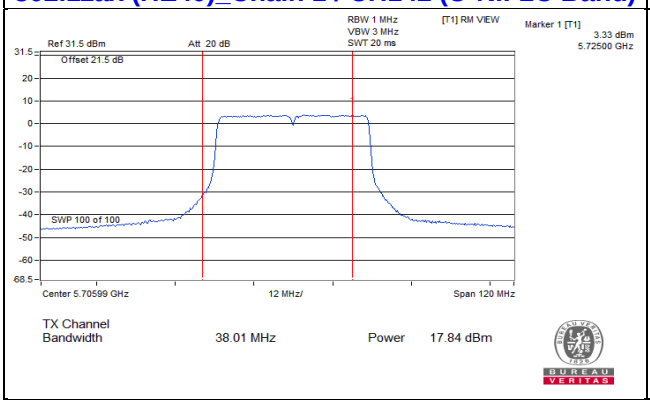
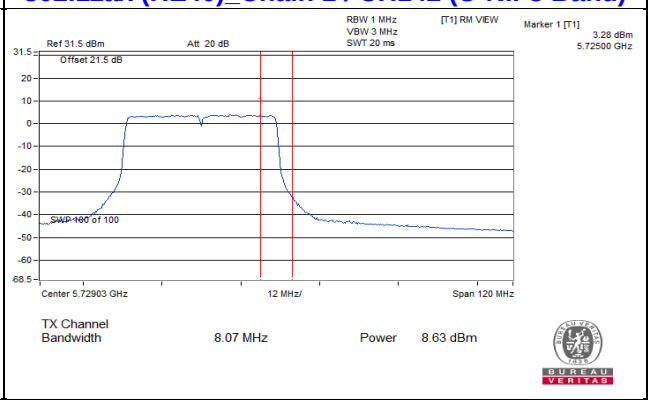
Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	166.61	26.21 > 24
114	5570	167.40	33.23 > 24

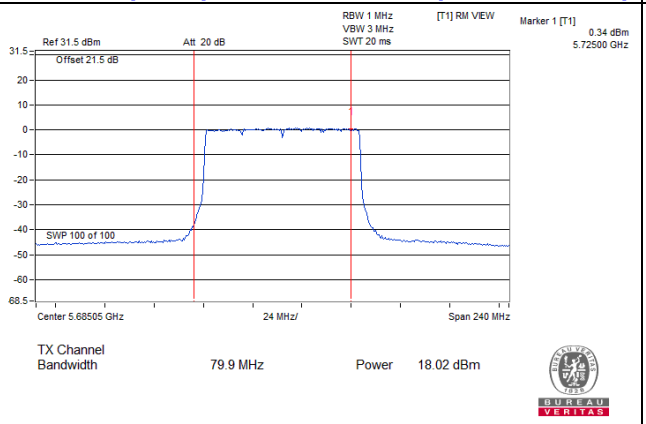
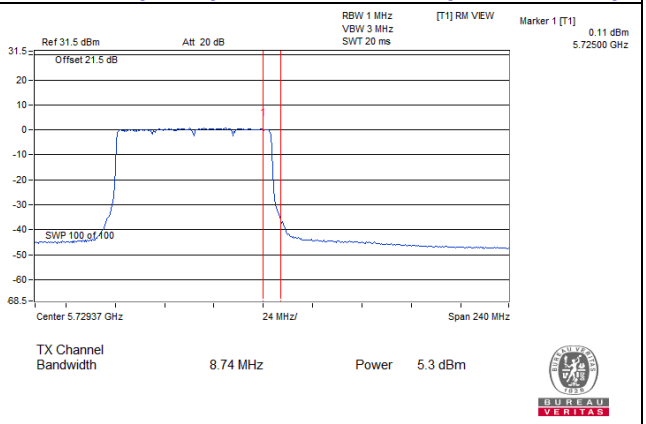
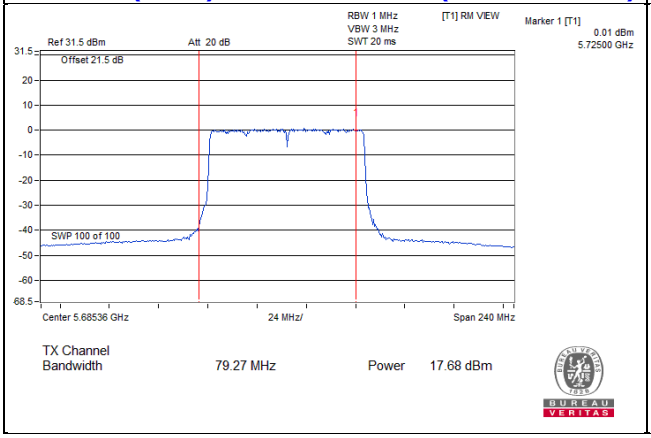
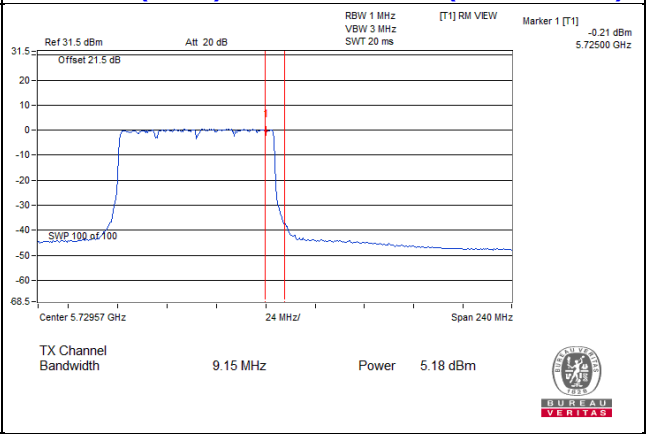
For channel straddling 5725MHz of Power

Non-Beamforming Mode

Spectrum Plot Value of Power	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11a_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 19.04 MHz Power 17.09 dBm	 TX Channel Bandwidth 9.03 MHz Power 11.12 dBm
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11a_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 18.02 MHz Power 16.78 dBm	 TX Channel Bandwidth 8.27 MHz Power 10.8 dBm
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 17.38 MHz Power 16.74 dBm	 TX Channel Bandwidth 7.83 MHz Power 11.68 dBm
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 18.23 MHz Power 16.17 dBm	 TX Channel Bandwidth 7.29 MHz Power 10.71 dBm

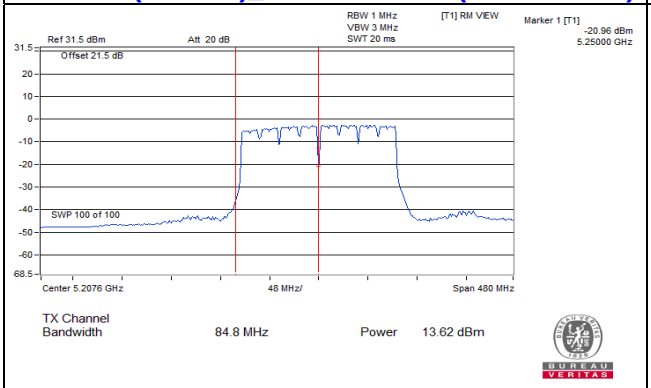
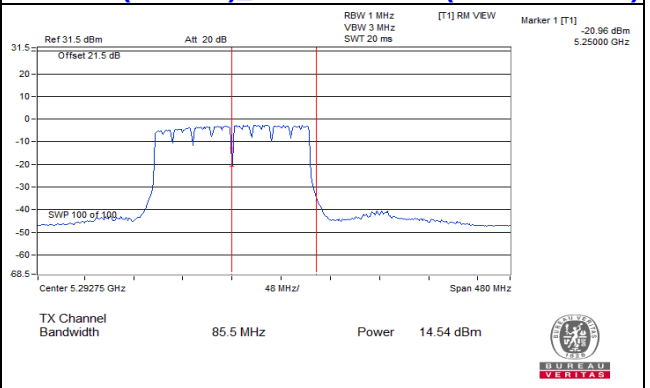
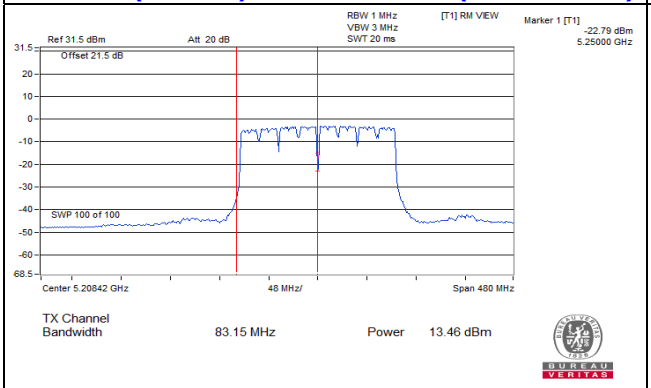
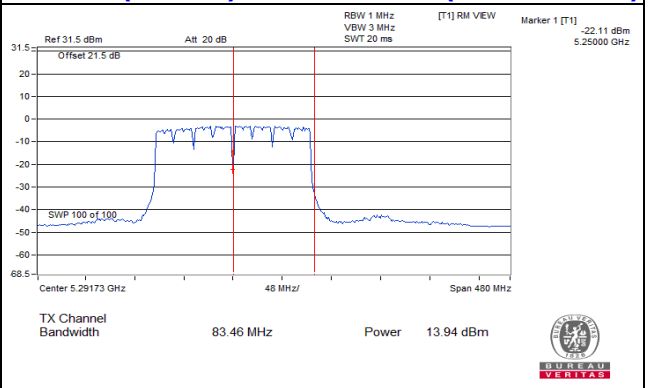
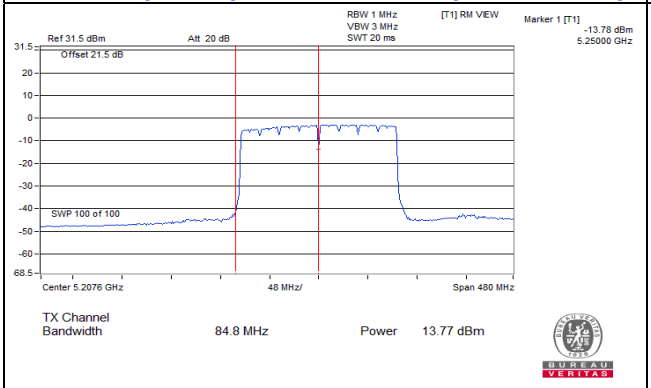
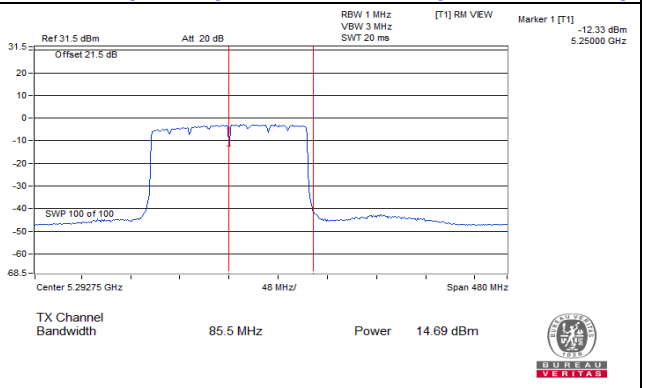
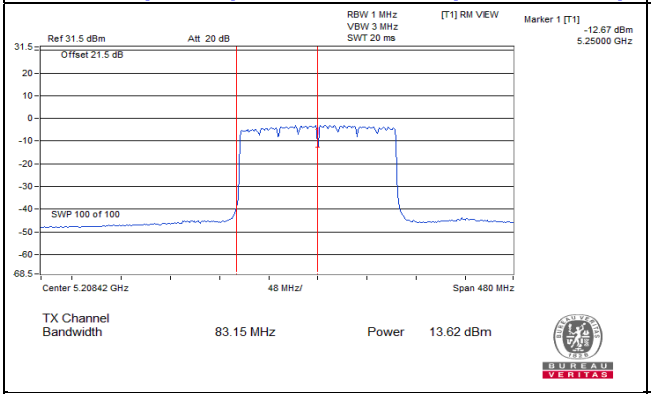
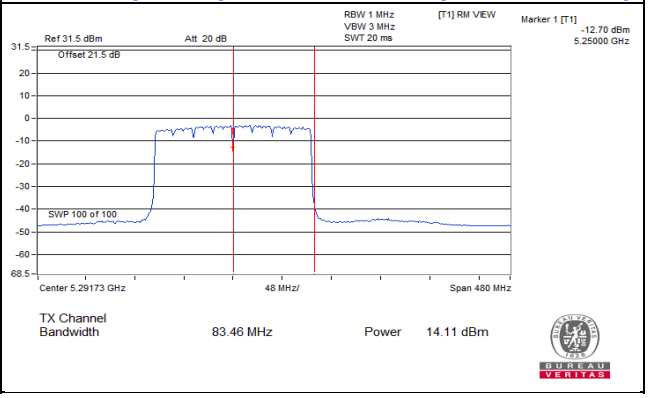
Spectrum Plot Value of Power	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 41.38 MHz Power 17.65 dBm	 TX Channel Bandwidth 9.49 MHz Power 8.11 dBm
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 38.01 MHz Power 17.67 dBm	 TX Channel Bandwidth 8.07 MHz Power 7.98 dBm
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 79.9 MHz Power 17.85 dBm	 TX Channel Bandwidth 8.74 MHz Power 4.83 dBm
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 79.27 MHz Power 17.43 dBm	 TX Channel Bandwidth 9.15 MHz Power 4.9 dBm

Spectrum Plot Value of Power	
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 17.38 MHz Power 17.32 dBm	 TX Channel Bandwidth 7.83 MHz Power 12.32 dBm
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 18.23 MHz Power 16.58 dBm	 TX Channel Bandwidth 7.29 MHz Power 11.56 dBm
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 41.38 MHz Power 17.92 dBm	 TX Channel Bandwidth 9.49 MHz Power 8.75 dBm
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 38.01 MHz Power 17.84 dBm	 TX Channel Bandwidth 8.07 MHz Power 8.63 dBm

Spectrum Plot Value of Power	
802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 79.9 MHz Power 18.02 dBm	 TX Channel Bandwidth 8.74 MHz Power 5.3 dBm
802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 79.27 MHz Power 17.68 dBm	 TX Channel Bandwidth 9.15 MHz Power 5.18 dBm

For channel straddling 5250MHz of Power

Non-Beamforming Mode

Spectrum Plot Value of Power	
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)	**802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 84.8 MHz Power 13.62 dBm	 TX Channel Bandwidth 85.5 MHz Power 14.54 dBm
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)	**802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 83.15 MHz Power 13.46 dBm	 TX Channel Bandwidth 83.46 MHz Power 13.94 dBm
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 84.8 MHz Power 13.77 dBm	 TX Channel Bandwidth 85.5 MHz Power 14.69 dBm
802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 83.15 MHz Power 13.62 dBm	 TX Channel Bandwidth 83.46 MHz Power 14.11 dBm

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.29	18.86	161.831	22.09	22.40	Pass
60	5300	18.95	18.68	152.314	21.83	22.40	Pass
64	5320	19.00	18.50	150.228	21.77	22.40	Pass
100	5500	20.18	20.00	204.232	23.10	23.60	Pass
116	5580	20.31	20.24	213.081	23.29	23.60	Pass
140	5700	20.60	19.88	212.09	23.27	23.60	Pass
*144 (U-NII-2C Band)	5720	16.74	16.17	88.606	19.47	23.00	Pass
*144 (U-NII-3 Band)	5720	11.68	10.71	26.499	14.23	28.90	Pass

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

1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	115.105	20.61
Note: The total power was calculated through formula and record the value for reference only.			

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	24.99	24.97 > 24
60	5300	25.22	25.01 > 24
64	5320	25.03	24.98 > 24
100	5500	25.16	25 > 24
116	5580	28.82	25.59 > 24
140	5700	25.07	24.99 > 24
144 (U-NII-2C Band)	5720	17.38	23.4 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	19.00	18.80	155.291	21.91	22.40	Pass
62	5310	18.89	18.90	155.071	21.91	22.40	Pass
102	5510	19.84	19.79	191.663	22.83	23.60	Pass
110	5550	20.31	20.28	214.059	23.31	23.60	Pass
134	5670	20.16	20.19	208.225	23.19	23.60	Pass
*142 (U-NII-2C Band)	5710	17.25	17.67	114.071	20.57	23.60	Pass
*142 (U-NII-3 Band)	5710	7.65	7.98	12.374	10.93	28.90	Pass

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

1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	126.445	21.02
Note: The total power was calculated through formula and record the value for reference only.			

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	46.79	27.7 > 24
62	5310	46.57	27.68 > 24
102	5510	46.89	27.71 > 24
110	5550	46.58	27.68 > 24
134	5670	46.67	27.69 > 24
142 (U-NII-2C Band)	5710	38.01	26.79 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	18.85	18.86	153.649	21.87	22.40	Pass
106	5530	20.13	19.98	202.58	23.07	23.60	Pass
122	5610	20.21	20.35	213.347	23.29	23.60	Pass
*138 (U-NII-2C Band)	5690	17.85	17.43	121.732	20.85	23.60	Pass
*138 (U-NII-3 Band)	5690	4.83	4.90	6.418	8.07	28.90	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.
1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	128.15	21.08
Note: The total power was calculated through formula and record the value for reference only.			

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	87.64	30.42 > 24
106	5530	88.26	30.45 > 24
122	5610	88.14	30.45 > 24
138 (U-NII-2C Band)	5690	79.27	29.99 > 24

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50 (U-NII-1 Band)	5250	13.13	12.86	43.069	16.34	29.70	Pass
*50 (U-NII-2A Band)	5250	14.00	13.50	51.306	17.10	22.40	Pass
114	5570	20.15	19.34	189.415	22.77	23.60	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.
1. For U-NII-1: The directional gain is 6.3 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.3-6)".
2. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
3. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
50	5250	94.375	19.75
Note: The total power was calculated through formula and record the value for reference only.			

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)
50 (U-NII-2A Band)	5250	166.61	26.21 > 24
114	5570	167.40	33.23 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.51	19.11	170.801	22.32	22.40	Pass
60	5300	19.18	18.92	160.777	22.06	22.40	Pass
64	5320	19.28	18.73	159.368	22.02	22.40	Pass
100	5500	20.39	20.22	214.592	23.32	23.60	Pass
116	5580	20.51	20.50	224.662	23.52	23.60	Pass
140	5700	20.80	20.15	223.74	23.50	23.60	Pass
*144 (U-NII-2C Band)	5720	17.32	16.58	99.45	19.98	23.00	Pass
*144 (U-NII-3 Band)	5720	12.32	11.56	31.383	14.97	28.90	Pass

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

1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	130.833	21.17
Note: The total power was calculated through formula and record the value for reference only.			

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	24.99	24.97 > 24
60	5300	25.22	25.01 > 24
64	5320	25.03	24.98 > 24
100	5500	25.16	25 > 24
116	5580	28.82	25.59 > 24
140	5700	25.07	24.99 > 24
144 (U-NII-2C Band)	5720	17.38	23.4 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	19.23	19.07	164.477	22.16	22.40	Pass
62	5310	19.17	19.15	164.828	22.17	22.40	Pass
102	5510	20.08	20.05	203.017	23.08	23.60	Pass
110	5550	20.52	20.55	226.221	23.55	23.60	Pass
134	5670	20.40	20.42	219.802	23.42	23.60	Pass
*142 (U-NII-2C Band)	5710	17.68	17.64	119.309	20.77	23.60	Pass
*142 (U-NII-3 Band)	5710	8.39	8.39	14.114	11.50	28.90	Pass

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

1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	133.423	21.25
Note: The total power was calculated through formula and record the value for reference only.			

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	46.79	27.7 > 24
62	5310	46.57	27.68 > 24
102	5510	46.89	27.71 > 24
110	5550	46.58	27.68 > 24
134	5670	46.67	27.69 > 24
142 (U-NII-2C Band)	5710	38.01	26.79 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	19.07	19.11	162.194	22.10	22.40	Pass
106	5530	20.33	20.25	213.82	23.30	23.60	Pass
122	5610	20.45	20.56	224.68	23.52	23.60	Pass
*138 (U-NII-2C Band)	5690	18.02	17.68	127.712	21.06	23.60	Pass
*138 (U-NII-3 Band)	5690	5.30	5.18	6.997	8.45	28.90	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.
1. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
2. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".
3. For U-NII-3: The directional gain is 7.1 dBi > 6dBi, so the power limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	134.709	21.29
Note: The total power was calculated through formula and record the value for reference only.			

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	87.64	30.42 > 24
106	5530	88.26	30.45 > 24
122	5610	88.14	30.45 > 24
138 (U-NII-2C Band)	5690	79.27	29.99 > 24

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50 (U-NII-1 Band)	5250	13.77	13.62	50.584	17.04	29.70	Pass
*50 (U-NII-2A Band)	5250	14.69	14.11	59.624	17.75	22.40	Pass
114	5570	20.37	19.62	200.515	23.02	23.60	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.
1. For U-NII-1: The directional gain is 6.3 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.3-6)".
2. For U-NII-2A: The directional gain is 7.6 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(7.6-6)".
3. For U-NII-2C: The directional gain is 6.4 dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit-(6.4-6)".

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
50	5250	110.208	20.42
Note: The total power was calculated through formula and record the value for reference only.			

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

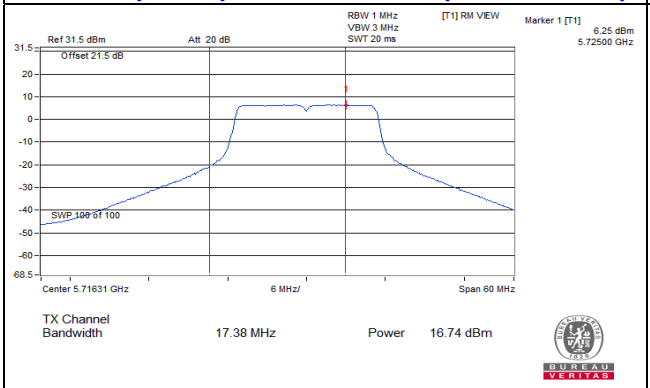
Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	166.61	26.21 > 24
114	5570	167.40	33.23 > 24

For channel straddling 5725MHz of Power

Beamforming Mode

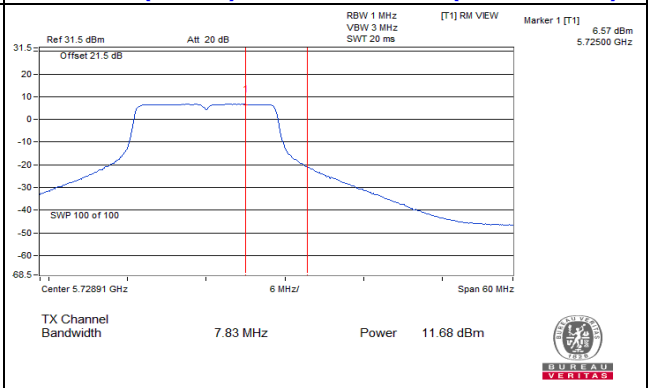
Spectrum Plot Value of Power

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



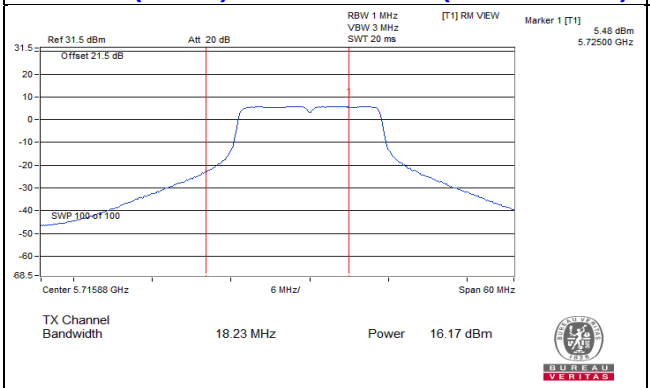
TX Channel Bandwidth 17.38 MHz Power 16.74 dBm

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



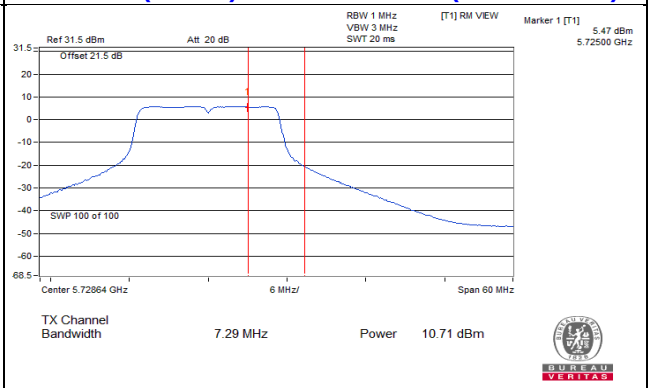
TX Channel Bandwidth 7.83 MHz Power 11.68 dBm

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



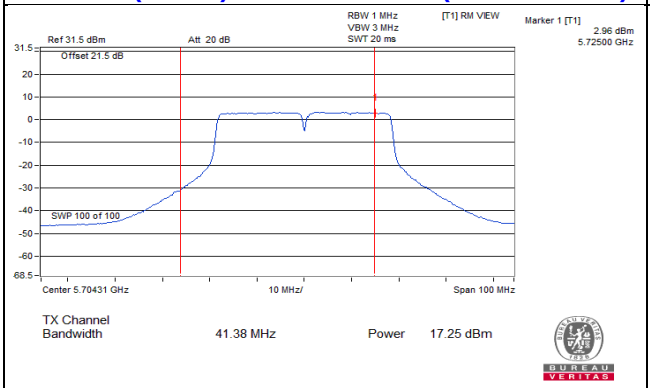
TX Channel Bandwidth 18.23 MHz Power 16.17 dBm

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



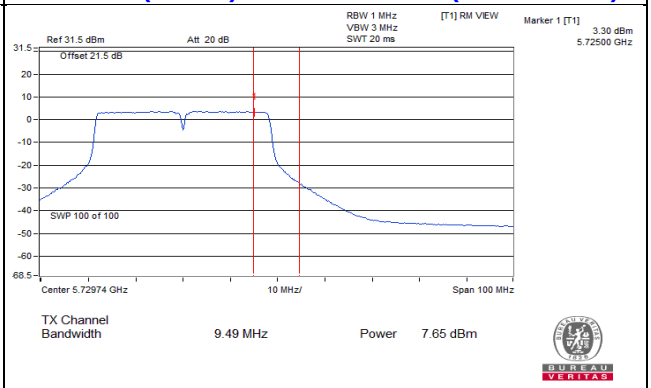
TX Channel Bandwidth 7.29 MHz Power 10.71 dBm

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



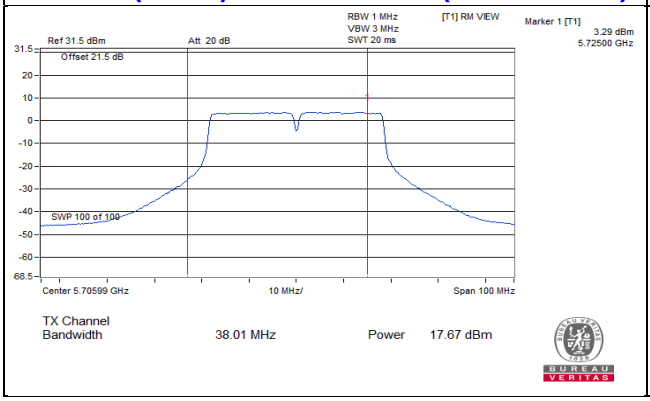
TX Channel Bandwidth 41.38 MHz Power 17.25 dBm

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



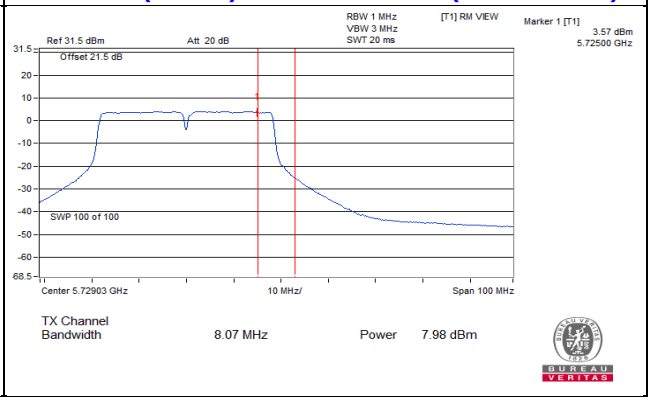
TX Channel Bandwidth 9.49 MHz Power 7.65 dBm

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



TX Channel Bandwidth 38.01 MHz Power 17.67 dBm

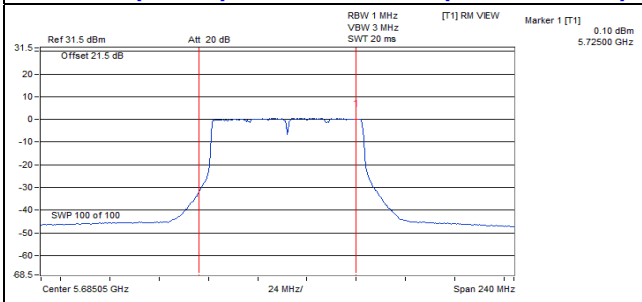
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



TX Channel Bandwidth 8.07 MHz Power 7.98 dBm

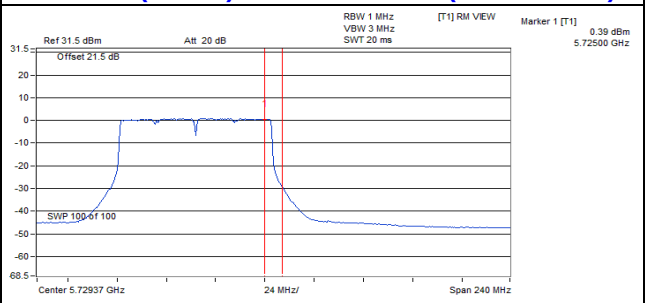
Spectrum Plot Value of Power

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



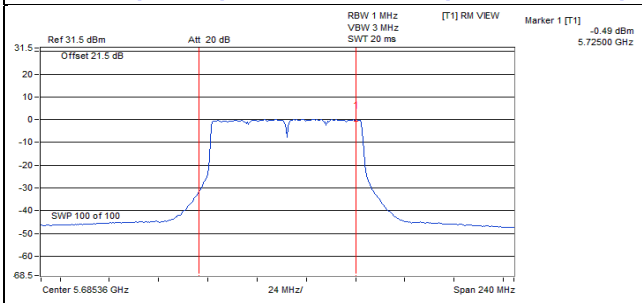
TX Channel Bandwidth 79.9 MHz Power 17.85 dBm

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



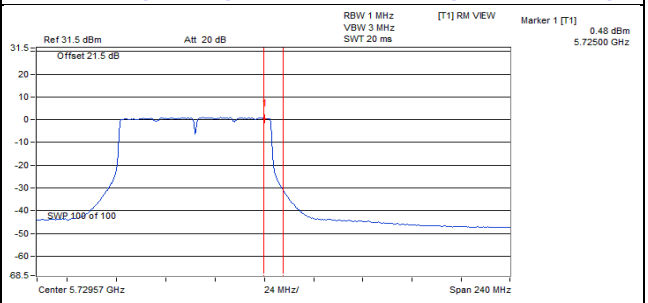
TX Channel Bandwidth 8.74 MHz Power 4.83 dBm

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



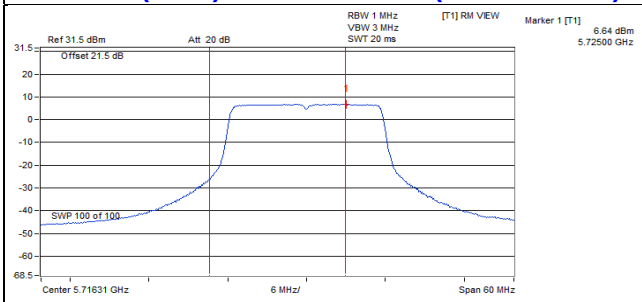
TX Channel Bandwidth 79.27 MHz Power 17.43 dBm

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



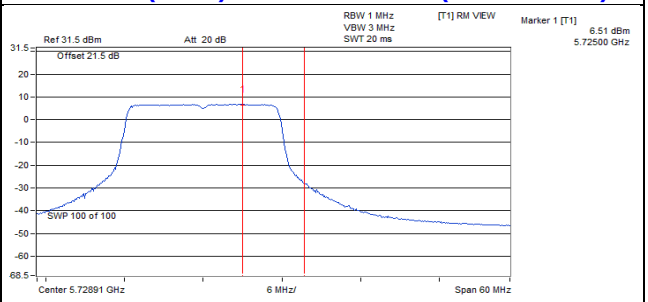
TX Channel Bandwidth 9.15 MHz Power 4.9 dBm

802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)



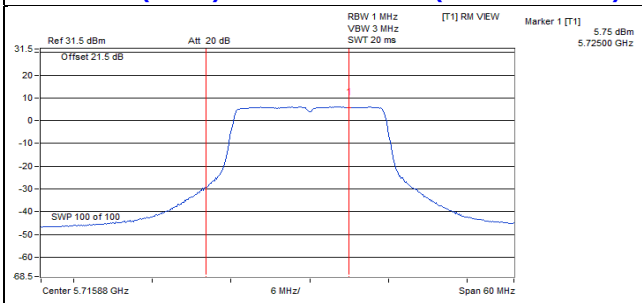
TX Channel Bandwidth 17.38 MHz Power 17.32 dBm

802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



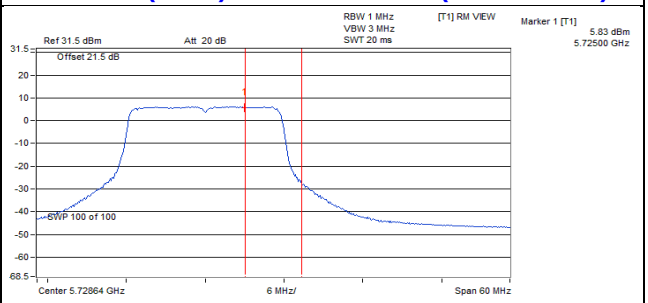
TX Channel Bandwidth 7.83 MHz Power 12.32 dBm

802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



TX Channel Bandwidth 18.23 MHz Power 16.58 dBm

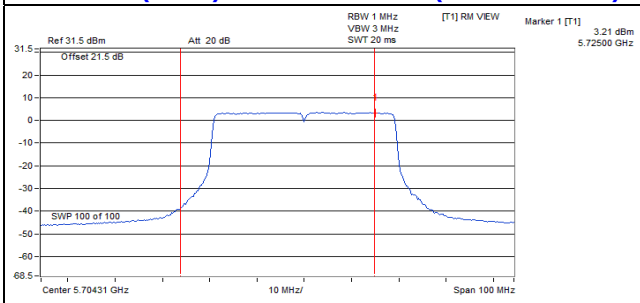
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



TX Channel Bandwidth 7.29 MHz Power 11.56 dBm

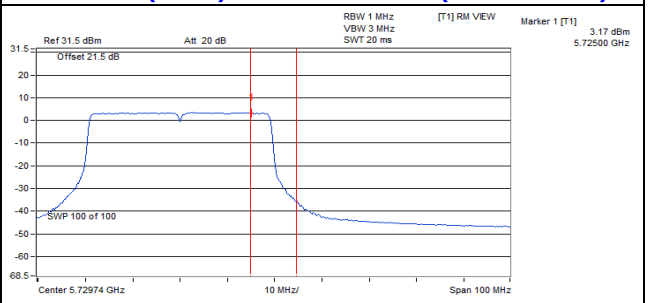
Spectrum Plot Value of Power

802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)



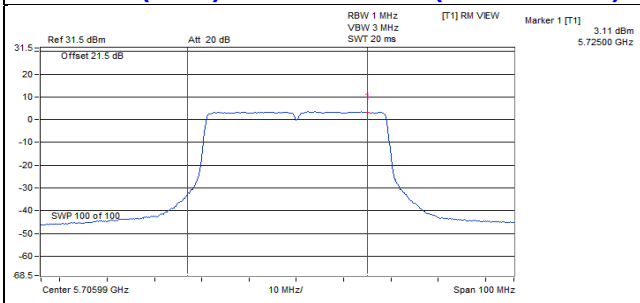
TX Channel Bandwidth 41.38 MHz Power 17.68 dBm

802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



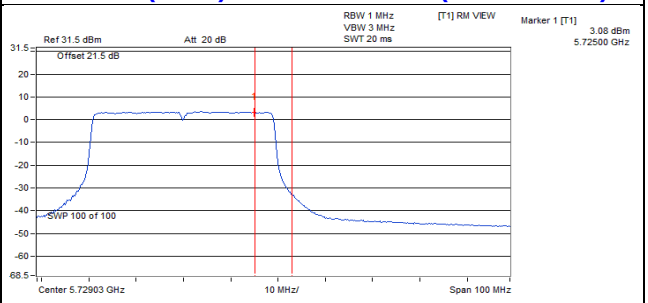
TX Channel Bandwidth 9.49 MHz Power 8.39 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



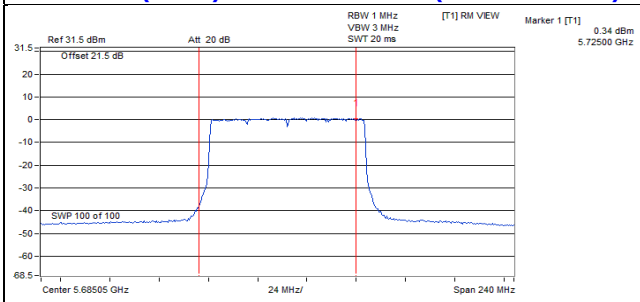
TX Channel Bandwidth 38.01 MHz Power 17.64 dBm

802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



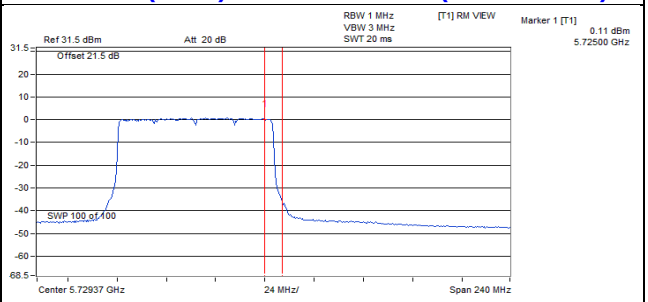
TX Channel Bandwidth 8.07 MHz Power 8.39 dBm

802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



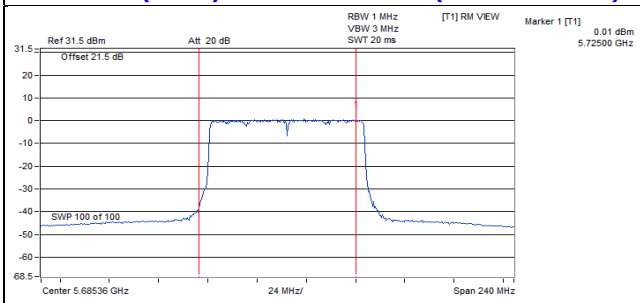
TX Channel Bandwidth 79.9 MHz Power 18.02 dBm

802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



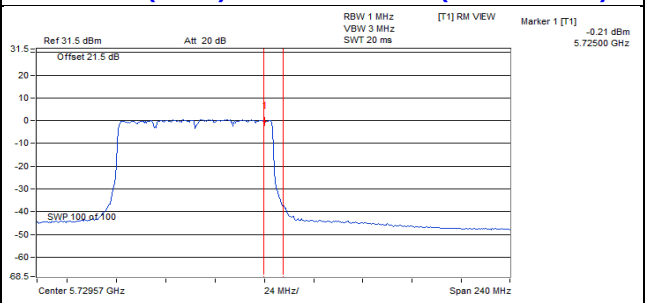
TX Channel Bandwidth 8.74 MHz Power 5.3 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 79.27 MHz Power 17.68 dBm

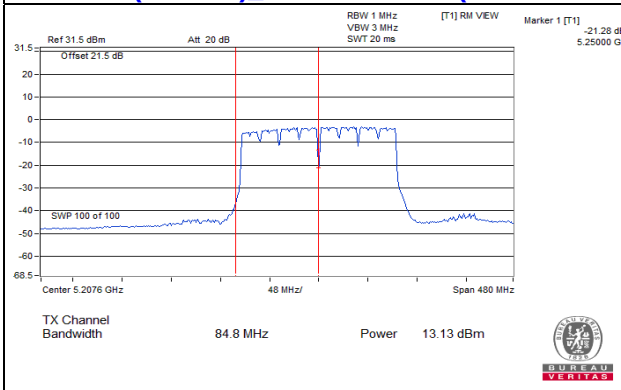
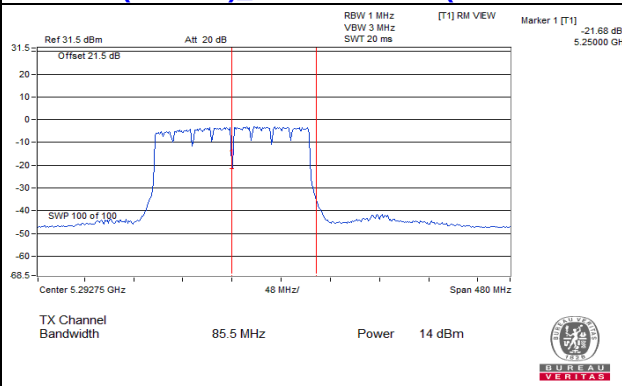
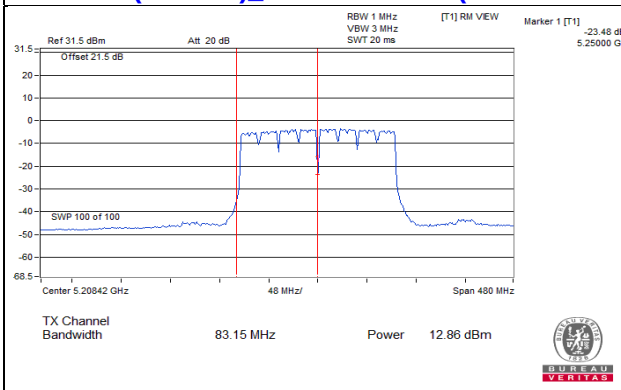
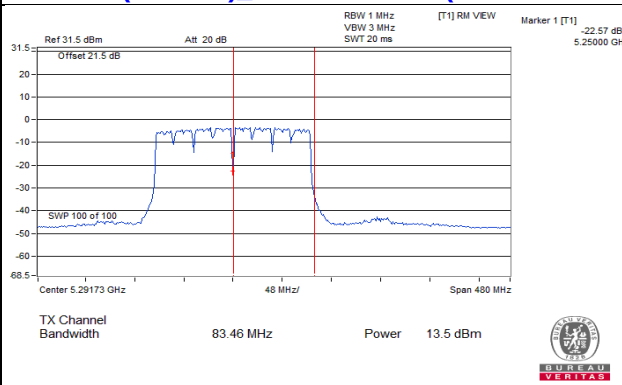
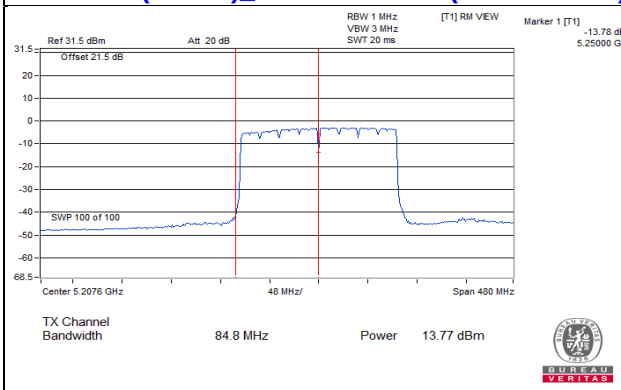
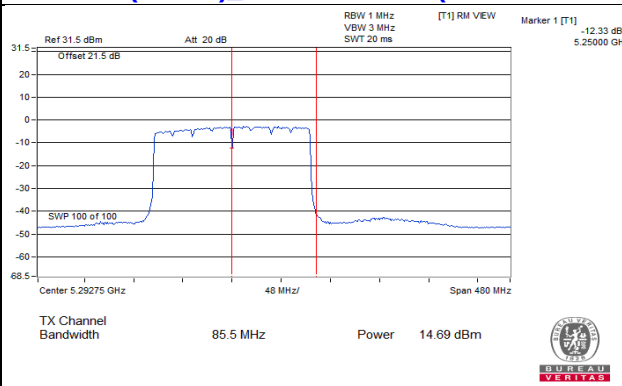
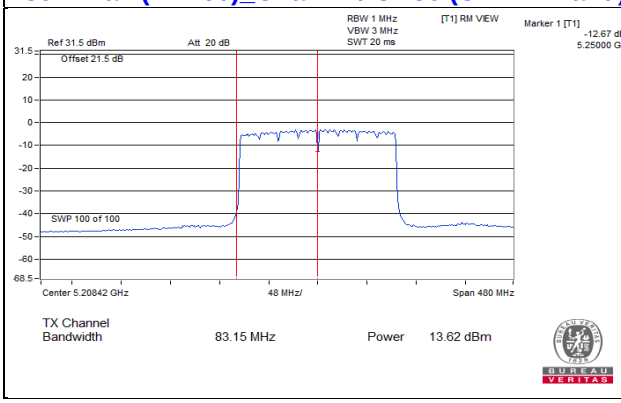
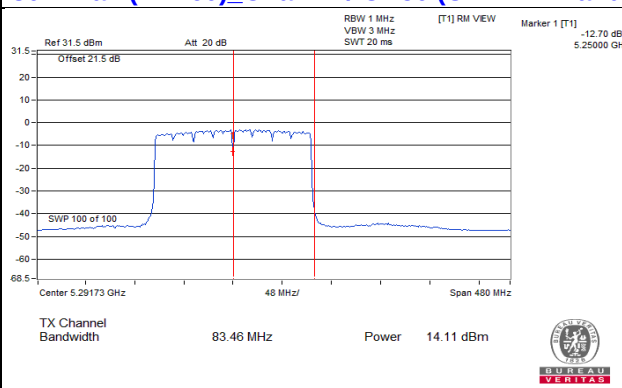
802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 9.15 MHz Power 5.18 dBm

For channel straddling 5250MHz of Power

Beamforming Mode

Spectrum Plot Value of Power	
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)	**802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 84.8 MHz Power 13.13 dBm	 TX Channel Bandwidth 85.5 MHz Power 14 dBm
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)	**802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 83.15 MHz Power 12.86 dBm	 TX Channel Bandwidth 83.46 MHz Power 13.5 dBm
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 84.8 MHz Power 13.77 dBm	 TX Channel Bandwidth 85.5 MHz Power 14.69 dBm
802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)**
 TX Channel Bandwidth 83.15 MHz Power 13.62 dBm	 TX Channel Bandwidth 83.46 MHz Power 14.11 dBm

26dB OCCUPIED BANDWIDTH

Non-Beamforming Mode

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	28.08	27.14
60	5300	27.97	27.11
64	5320	27.82	26.23
100	5500	28.56	26.31
116	5580	34.15	31.79
140	5700	28.03	25.71
144 (U-NII-2C Band)	5720	19.04	18.02

802.11ax (HE20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	24.99	25.22
60	5300	25.54	25.22
64	5320	25.59	25.03
100	5500	25.50	25.16
116	5580	29.87	28.82
140	5700	25.75	25.07
144 (U-NII-2C Band)	5720	17.38	18.23

802.11ax (HE40)

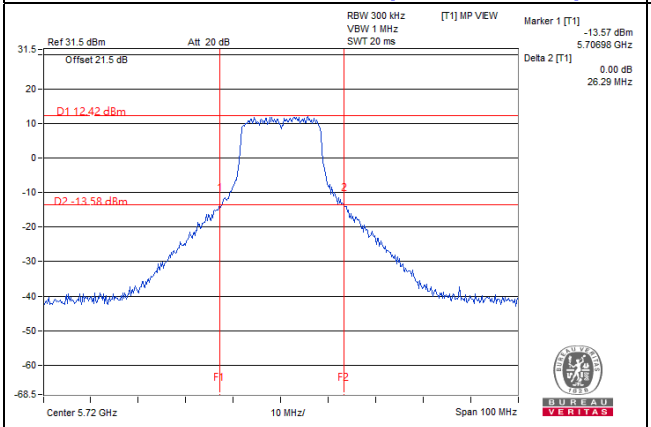
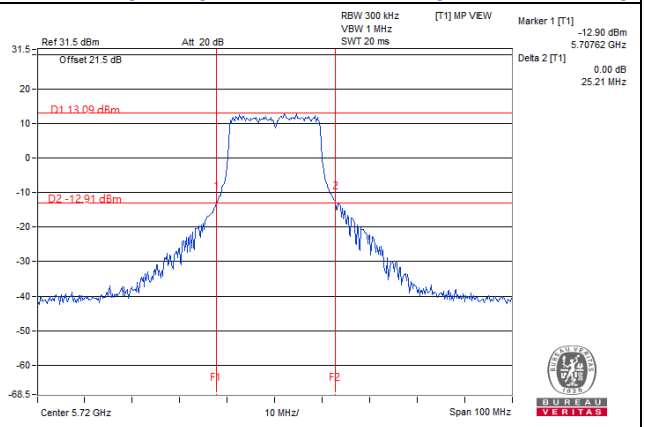
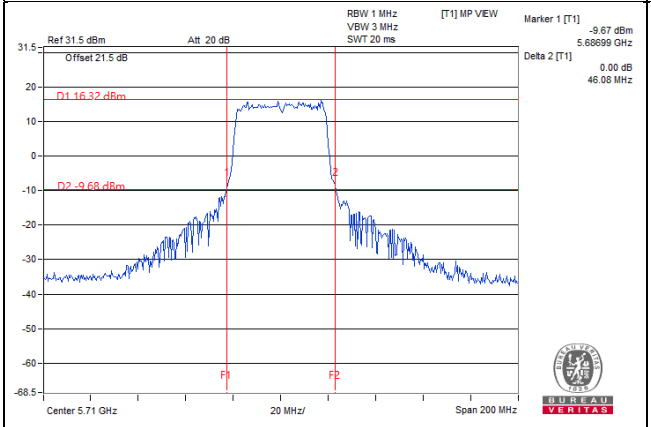
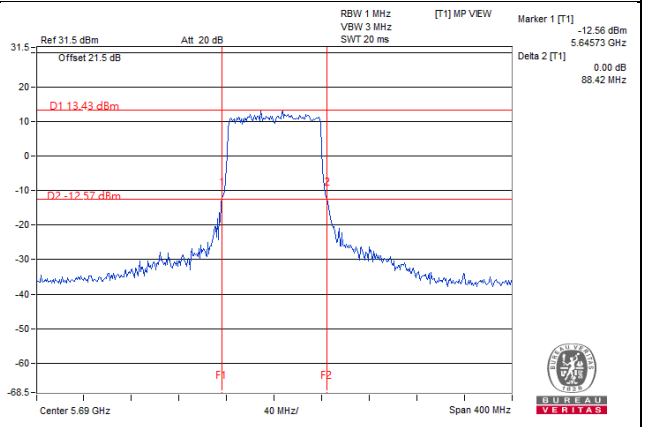
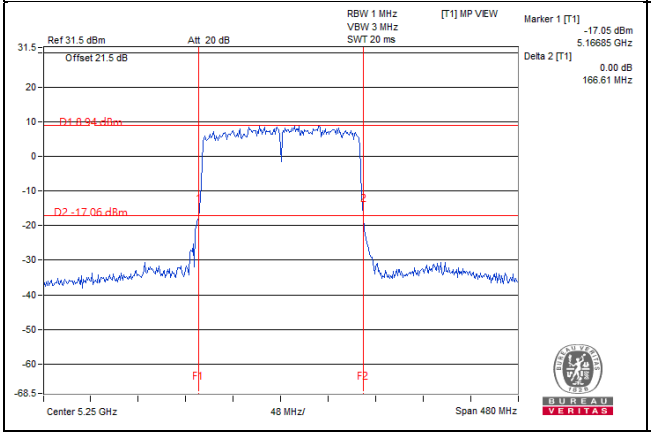
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	51.23	46.79
62	5310	51.51	46.57
102	5510	51.80	46.89
110	5550	51.55	46.58
134	5670	51.59	46.67
142 (U-NII-2C Band)	5710	41.38	38.01

802.11ax (HE80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	91.07	87.64
106	5530	90.58	88.26
122	5610	89.22	88.14
138 (U-NII-2C Band)	5690	79.90	79.27

802.11ax (HE160)

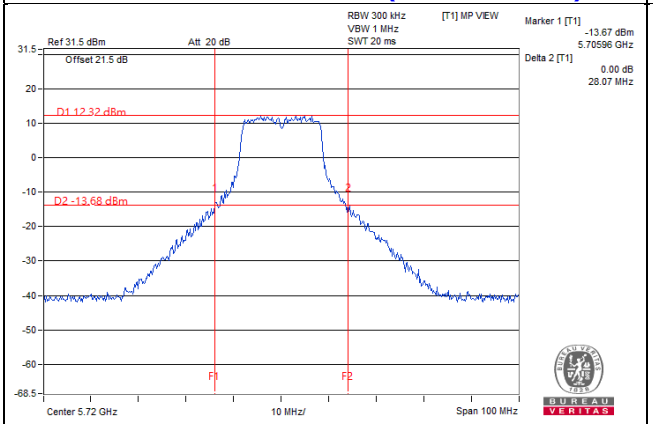
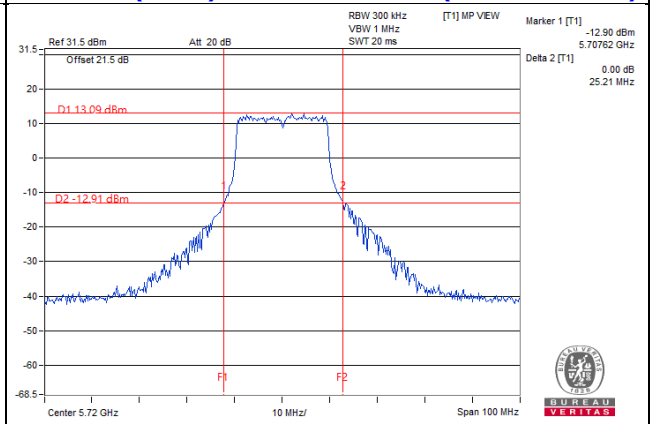
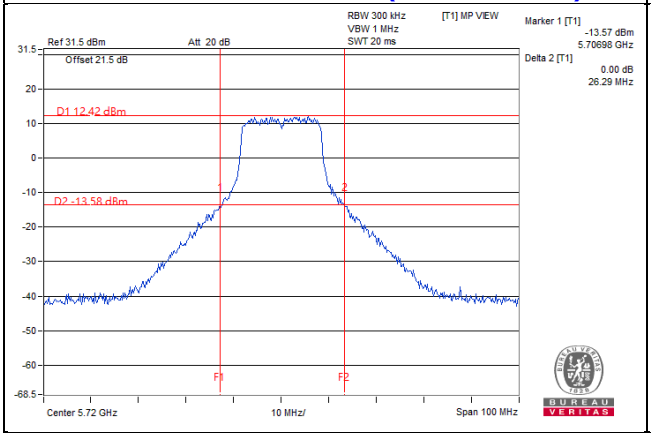
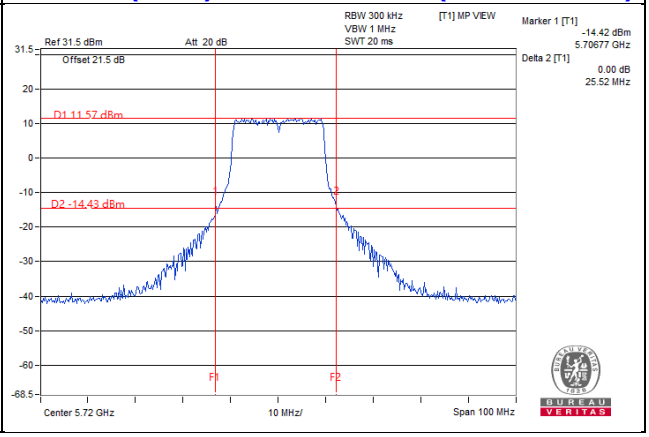
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50 (U-NII-1 Band)	5250	84.8	83.15
50 (U-NII-2A Band)	5250	85.5	83.46
114	5570	170.45	167.40

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)**
	
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)**
	
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)	
	

Note:

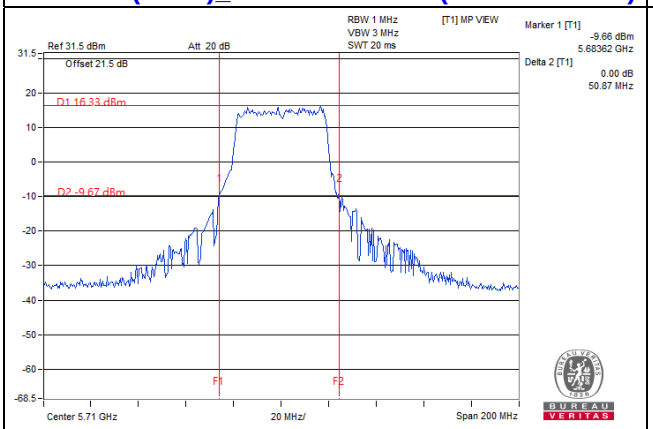
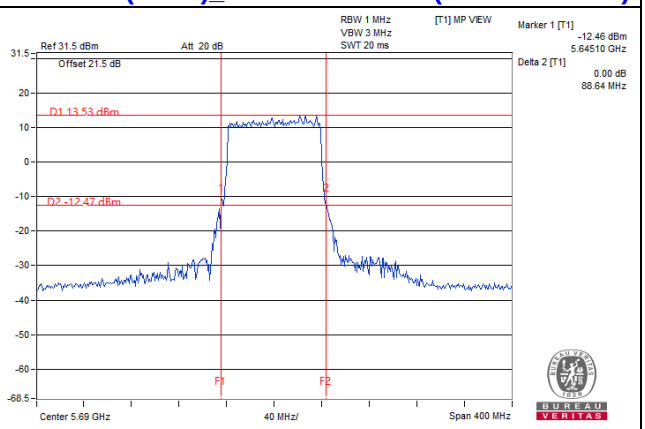
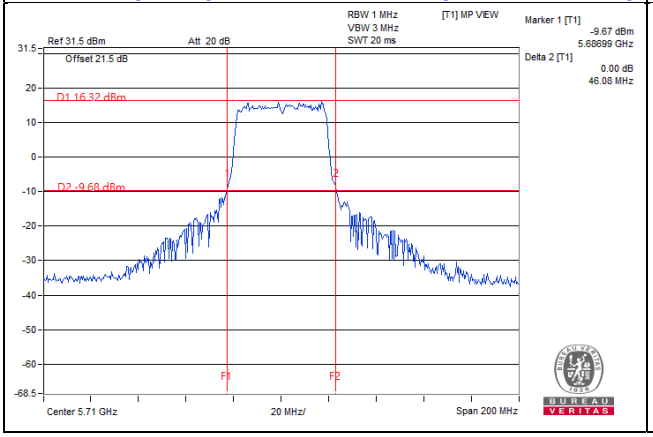
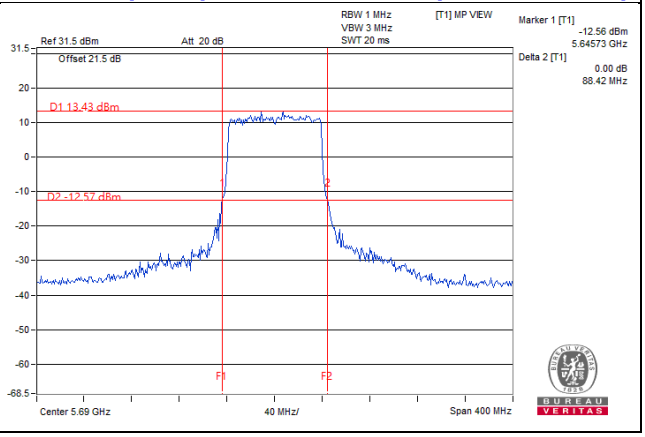
For CH50 (U-NII-2A Band) = Marker 1 + Delta 2 – 5250MHz
For CH144 (U-NII-2C Band) = 5725MHz - Marker 1
For CH142 (U-NII-2C Band) = 5725MHz - Marker 1
For CH138 (U-NII-2C Band) = 5725MHz - Marker 1

For channel straddling 5725MHz of 26dB BW

Spectrum Plot Value of 26dB BW	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)**
	
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)**
	

Note:

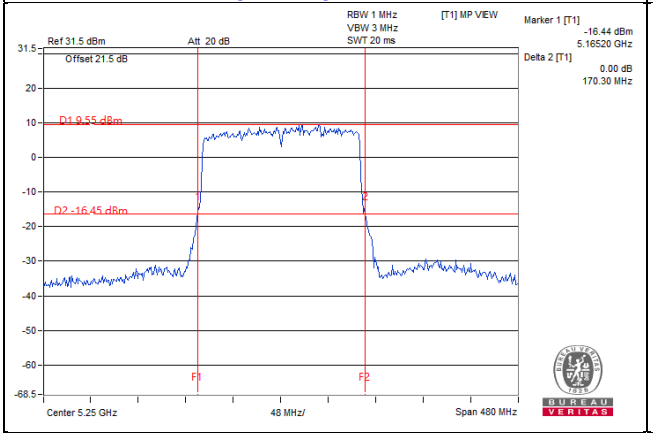
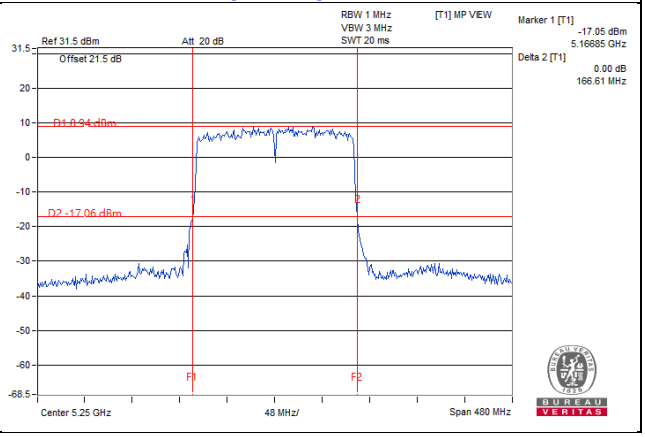
For CH144 (U-NII-2C) = 5725MHz - Marker 1

Spectrum Plot Value of 26dB BW	
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)**
	
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)**
	

Note:

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

For channel straddling 5250MHz of 26dB BW

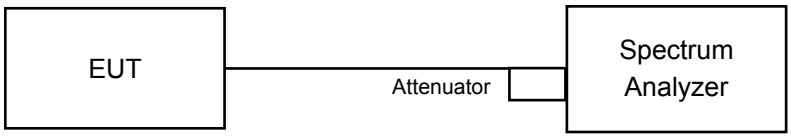
Spectrum Plot Value of 26dB BW	
802.11ax (HE160)_Chain 0 / CH50	**802.11ax (HE160)_Chain 1 / CH50**
	

Note:

For CH50 (U-NII-1) = 5250MHz - Marker 1
For CH50 (U-NII-2A) = Marker 1 + Delta 2 - 5250MHz

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

Non-Beamforming Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	17.04	17.04
60	5300	17.16	17.16
64	5320	17.16	16.92
100	5500	17.16	17.16
116	5580	16.92	17.16
140	5700	17.04	17.16
144 (U-NII-2C Band)	5720	13.64	13.64
144 (U-NII-3 Band)	5720	3.52	3.52

802.11ax (HE20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.08	19.08
60	5300	19.08	19.08
64	5320	19.20	19.08
100	5500	19.08	19.08
116	5580	19.08	19.08
140	5700	19.08	19.08
144 (U-NII-2C Band)	5720	14.60	14.60
144 (U-NII-3 Band)	5720	4.48	4.48

802.11ax (HE40)

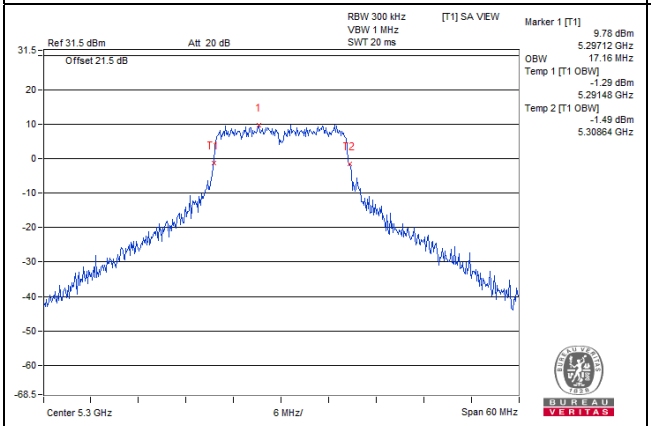
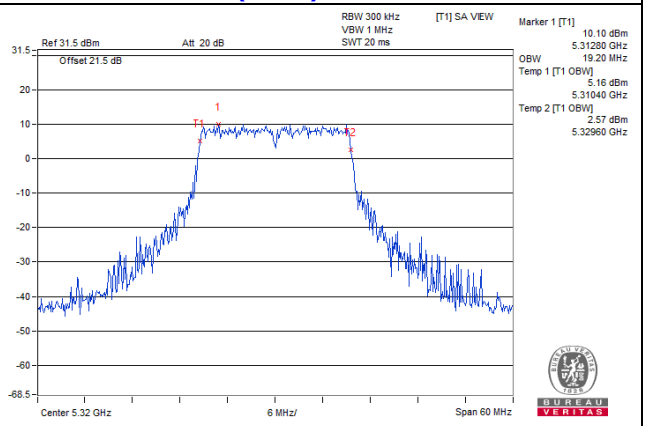
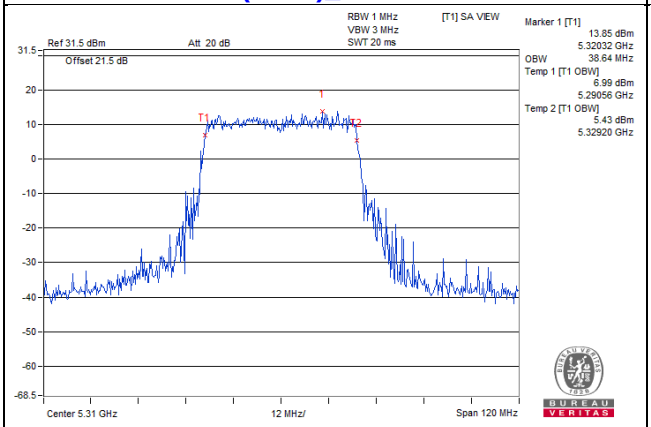
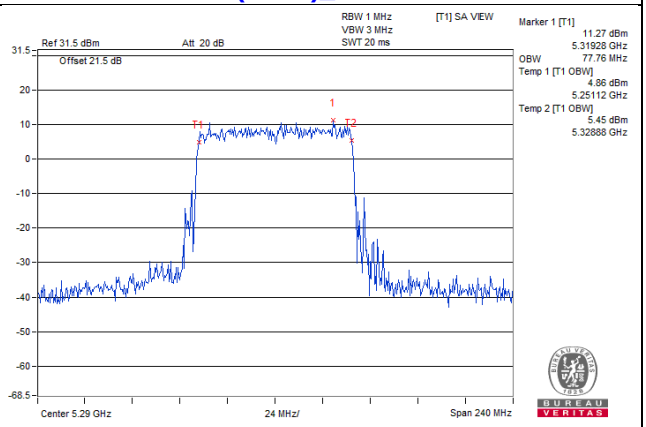
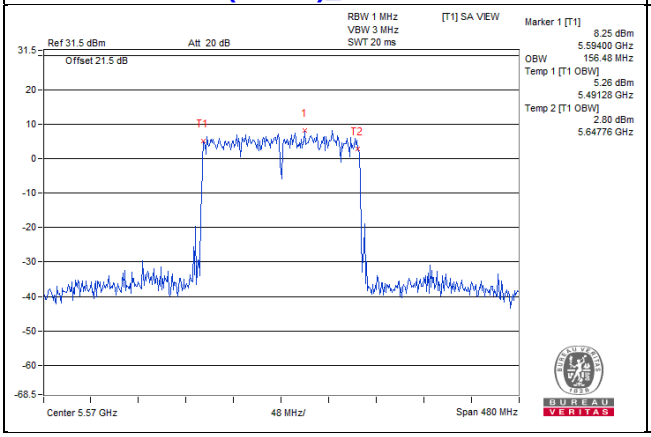
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	38.40	38.64
62	5310	38.64	38.16
102	5510	38.40	38.40
110	5550	38.40	38.16
134	5670	38.16	38.40
142 (U-NII-2C Band)	5710	34.20	34.20
142 (U-NII-3 Band)	5710	4.20	3.96

802.11ax (HE80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	77.76	77.76
106	5530	77.76	77.76
122	5610	77.76	77.28
138 (U-NII-2C Band)	5690	73.88	73.88
138 (U-NII-3 Band)	5690	3.40	3.88

802.11ax (HE160)

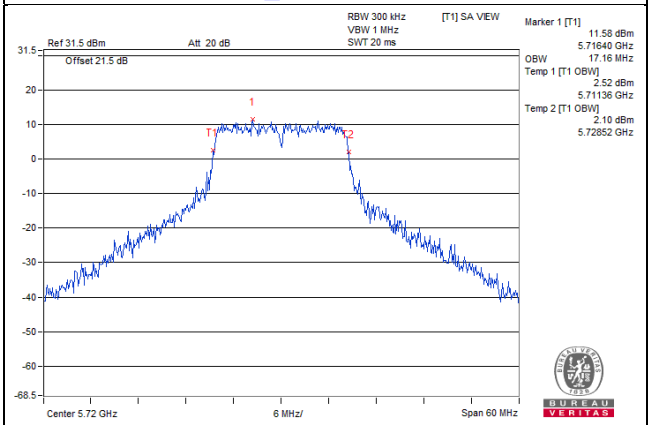
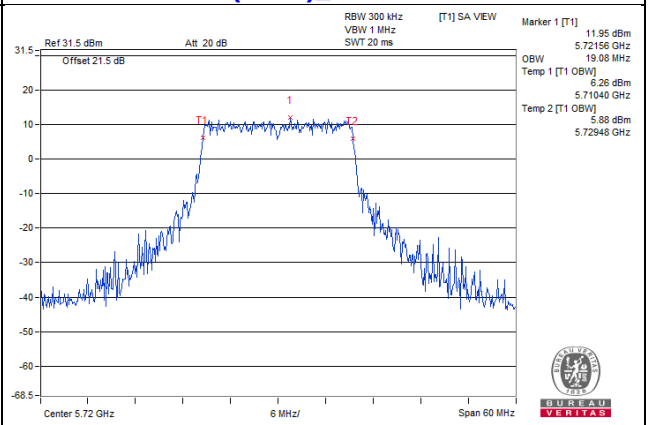
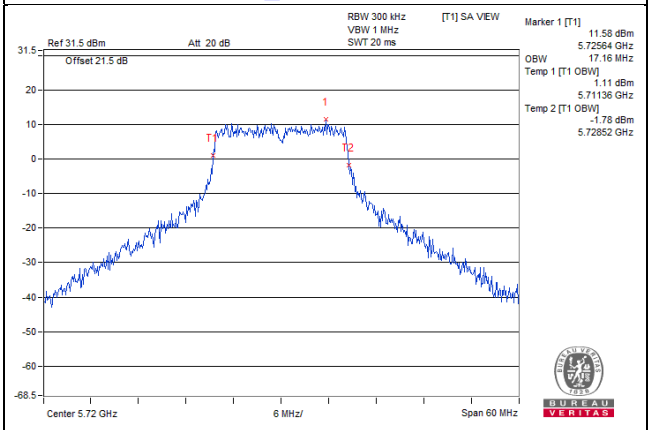
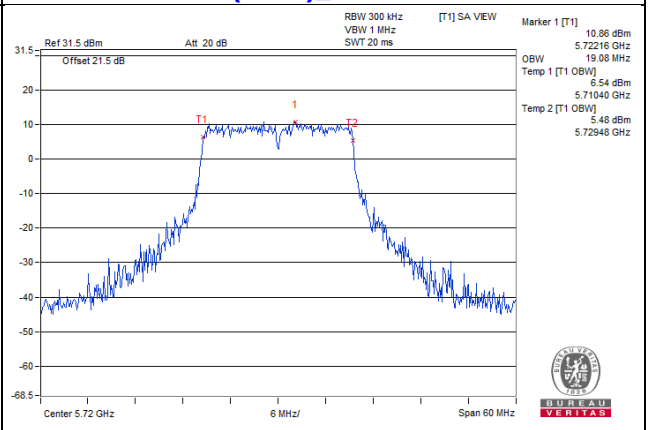
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
50 (U-NII-1 Band)	5250	78.72	78.72
50 (U-NII-2A Band)	5250	77.76	78.72
114	5570	156.48	156.48

Spectrum Plot of Max. Value	
802.11a_Chain 0 / CH60	**802.11ax (HE20)_Chain 0 / CH64**
	
802.11ax (HE40)_Chain 0 / CH62	**802.11ax (HE80)_Chain 0 / CH58**
	
802.11ax (HE160)_Chain 0 / CH114	
	

Note:

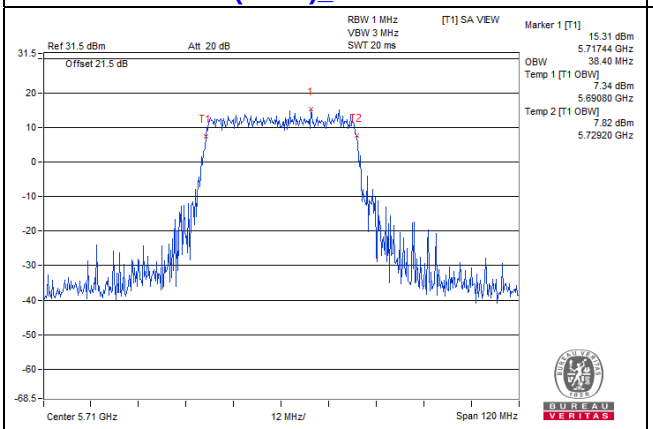
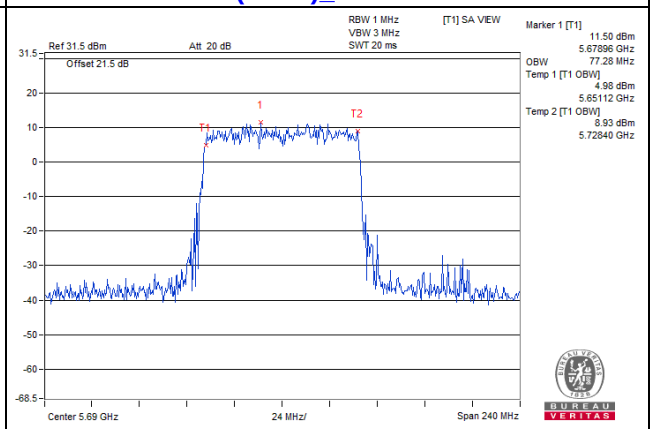
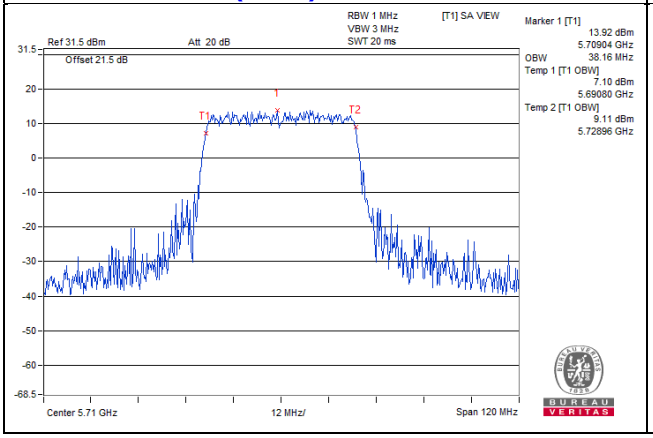
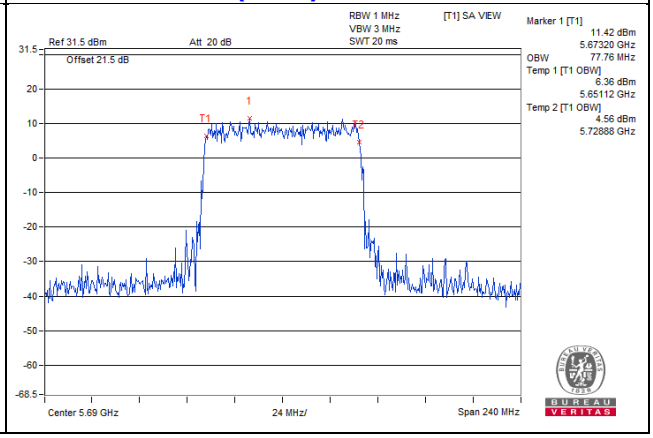
For CH50 (U-NII-2A Band) = Marker 1 + Delta 2 – 5250MHz

For channel straddling 5725MHz of OCP99 BW

Spectrum Plot Value of OCP99 BW	
802.11a_Chain 0 / CH144	**802.11ax (HE20)_Chain 0 / CH144**
	
802.11a_Chain 1 / CH144	**802.11ax (HE20)_Chain 1 / CH144**
	

Note:

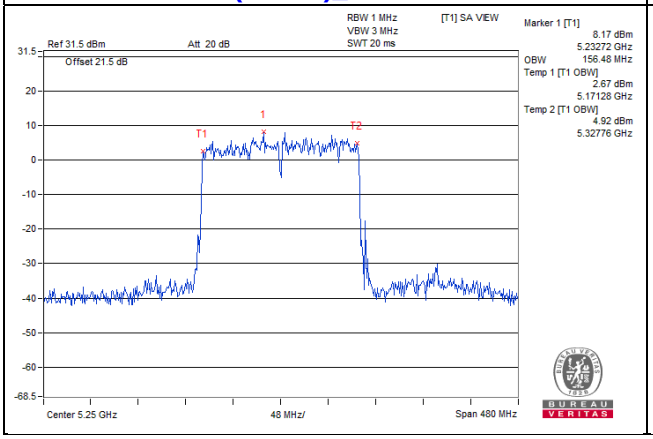
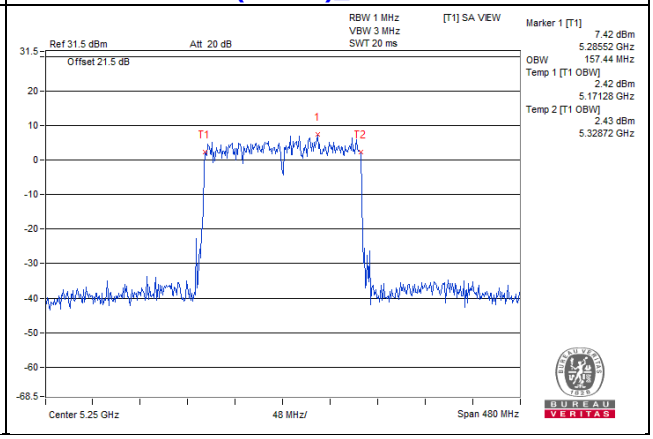
For CH144 (U-NII-2C) = 5725MHz - Temp 1
For CH144 (U-NII-3) = Temp 2 - 5725MHz

Spectrum Plot Value of OCP99 BW	
802.11ax (HE40)_Chain 0 / CH142	**802.11ax (HE80)_Chain 0 / CH138**
	
802.11ax (HE40)_Chain 1 / CH142	**802.11ax (HE80)_Chain 1 / CH138**
	

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

For channel straddling 5250MHz of OCP99 BW

Spectrum Plot Value of OCP99 BW	
802.11ax (HE160)_Chain 0 / CH50	**802.11ax (HE160)_Chain 1 / CH50**
	

Note:

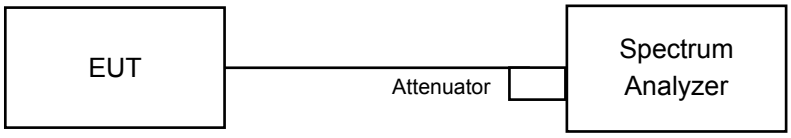
For CH50 (U-NII-1) = 5250MHz - Temp 1
For CH50 (U-NII-2A) = Temp 2 - 5250MHz

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:

For 801.11a, 802.11ax (HE20)

Using method SA-1

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

For 801.11ax (HE40), 802.11ax (HE80), 802.11ax (HE160)

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:

For 801.11a, 802.11ax (HE20)

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

For 801.11ax (HE40), 802.11ax (HE80), 802.11ax (HE160)

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(500kHz/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

Non-Beamforming Mode

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
52	5260	5.86	6.40	9.15	9.40	Pass
60	5300	6.24	5.10	8.72	9.40	Pass
64	5320	6.24	5.83	9.05	9.40	Pass
100	5500	6.99	6.52	9.77	10.60	Pass
116	5580	6.89	6.78	9.85	10.60	Pass
140	5700	6.77	6.53	9.66	10.60	Pass
144 (U-NII-2C Band)	5720	7.07	6.65	9.88	10.60	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-2A: The directional gain = 7.6 dBi > 6dBi, so the power density limit shall be reduced to 11-(7.6-6) = 9.4 dBm.
3. For U-NII-2C: The directional gain = 6.4 dBi > 6dBi, so the power density limit shall be reduced to 11-(6.4-6) = 10.6 dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
52	5260	5.49	5.41	8.46	9.40	Pass
60	5300	5.20	5.24	8.23	9.40	Pass
64	5320	5.37	5.31	8.35	9.40	Pass
100	5500	6.28	6.23	9.27	10.60	Pass
116	5580	6.29	6.24	9.28	10.60	Pass
140	5700	6.84	6.00	9.45	10.60	Pass
144 (U-NII-2C Band)	5720	6.69	6.10	9.42	10.60	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-2A: The directional gain = 7.6 dBi > 6dBi, so the power density limit shall be reduced to 11-(7.6-6) = 9.4 dBm.
3. For U-NII-2C: The directional gain = 6.4 dBi > 6dBi, so the power density limit shall be reduced to 11-(6.4-6) = 10.6 dBm.

802.11ax (HE40)

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				
54	5270	3.35	3.85	0.10	6.72	9.40	Pass
62	5310	2.78	3.91	0.10	6.49	9.40	Pass
102	5510	3.26	2.79	0.10	6.14	10.60	Pass
110	5550	3.60	3.34	0.10	6.58	10.60	Pass
134	5670	3.83	3.87	0.10	6.96	10.60	Pass
142 (U-NII-2C Band)	5710	3.78	3.82	0.10	6.91	10.60	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-2A: The directional gain = 7.6 dBi > 6dBi, so the power density limit shall be reduced to 11-(7.6-6) = 9.4 dBm.
3. For U-NII-2C: The directional gain = 6.4 dBi > 6dBi, so the power density limit shall be reduced to 11-(6.4-6) = 10.6 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

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				
58	5290	0.21	1.13	0.20	3.90	9.40	Pass
106	5530	0.48	0.61	0.20	3.76	10.60	Pass
122	5610	0.45	0.70	0.20	3.79	10.60	Pass
138 (U-NII-2C Band)	5690	0.54	0.56	0.20	3.76	10.60	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-2A: The directional gain = 7.6 dBi > 6dBi, so the power density limit shall be reduced to 11-(7.6-6) = 9.4 dBm.
3. For U-NII-2C: The directional gain = 6.4 dBi > 6dBi, so the power density limit shall be reduced to 11-(6.4-6) = 10.6 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

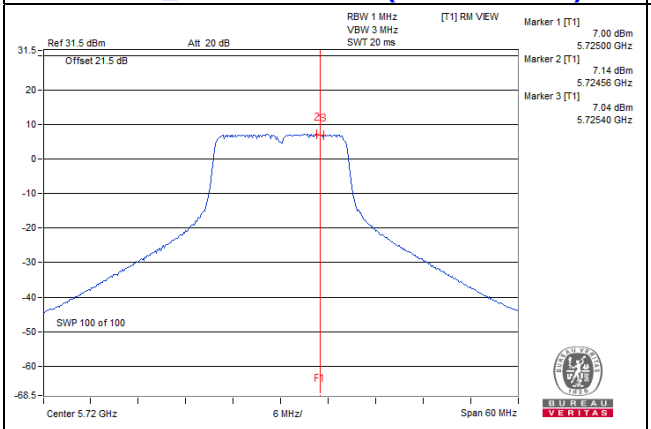
802.11ax (HE160)

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				
50 (U-NII-1 Band)	5250	-3.03	-3.05	0.33	0.30	15.40	Pass
50 (U-NII-2A Band)	5250	-3.03	-3.05	0.33	0.30	9.40	Pass
114	5570	-1.93	-3.18	0.33	0.83	10.60	Pass

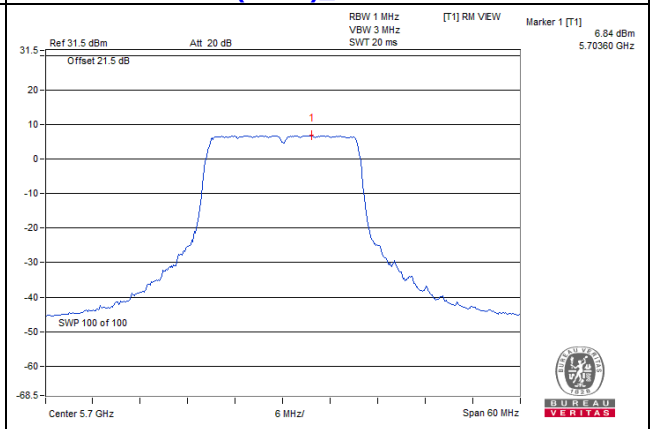
Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 6.3 dBi > 6dBi, so the power density limit shall be reduced to 17-(6.3-6) = 15.4 dBm.
3. For U-NII-2A: The directional gain = 7.6 dBi > 6dBi, so the power density limit shall be reduced to 11-(7.6-6) = 9.4 dBm.
4. For U-NII-2C: The directional gain = 6.4 dBi > 6dBi, so the power density limit shall be reduced to 11-(6.4-6) = 10.6 dBm.
5. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

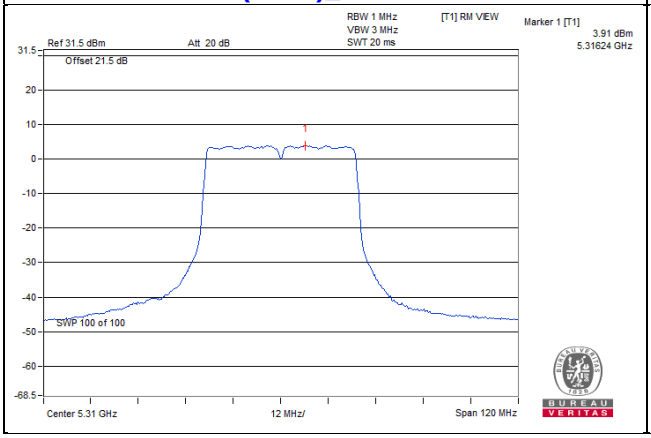
802.11a_Chain 0 / CH144 (U-NII-2C Band)



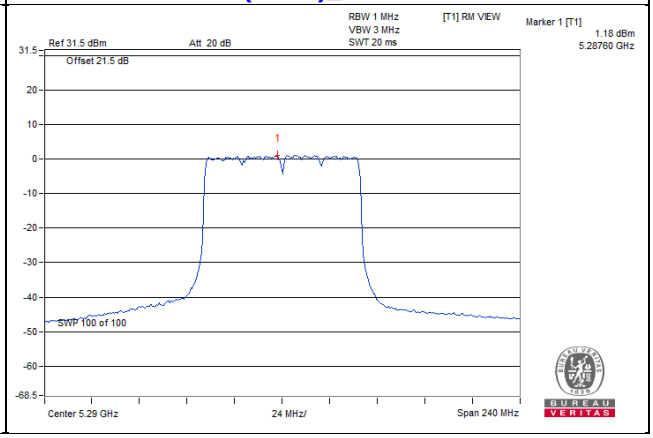
802.11ax (HE20)_Chain 0 / CH140

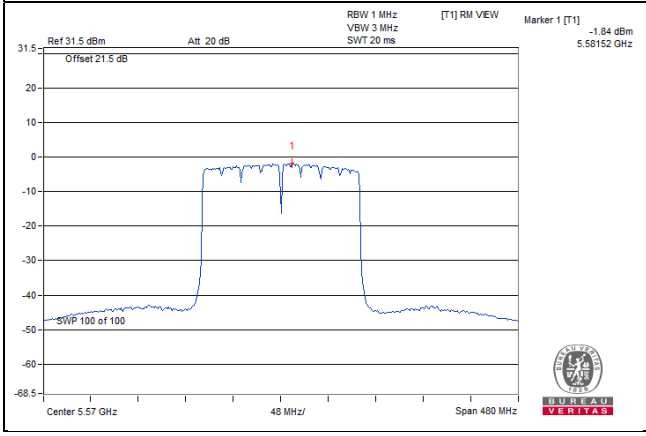


802.11ax (HE40)_Chain 1 / CH62



802.11ax (HE80)_Chain 1 / CH58



Spectrum Plot of Worst Value	
802.11ax (HE160)_Chain 0 / CH114	
	

For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300kHz)		Total PSD		Limit (dBm/500kHz)	Pass /Fail
		Chain 0	Chain 1	dBm/300kHz	dBm/500kHz		
144 (U-NII-3 Band)	5720	-0.98	-1.67	1.70	3.92	28.90	Pass

Note: 1. Method b) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 7.1 dBi > 6dBi, so the power density limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)		Total PSD		Limit (dBm/500kHz)	Pass /Fail
		Chain 0	Chain 1	dBm/300kHz	dBm/500kHz		
144 (U-NII-3 Band)	5720	-2.10	-2.85	0.55	2.77	28.90	Pass

Note: 1. Method b) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 7.1 dBi > 6dBi, so the power density limit shall be reduced to 30-(7.1-6) = 28.9 dBm.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Limit (dBm/500kHz)	Pass /Fail
		Chain 0	Chain 1		dBm/300kHz	dBm/500kHz		
142 (U-NII-3 Band)	5710	-5.22	-5.12	0.10	-2.06	0.16	28.90	Pass

Note: 1. Method b) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 7.1 dBi > 6dBi, so the power density limit shall be reduced to 30-(7.1-6) = 28.9 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

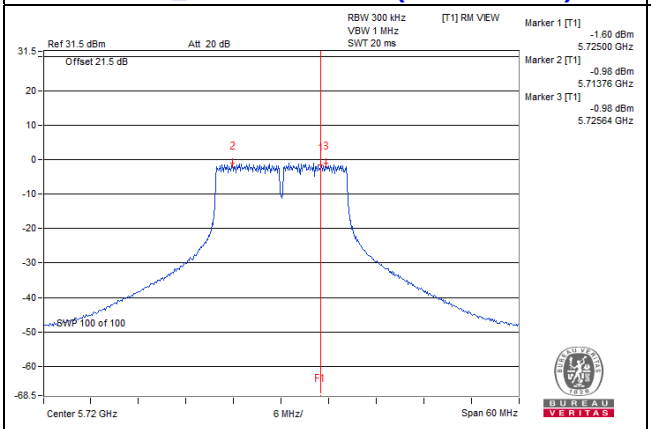
802.11ax (HE80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Limit (dBm/500kHz)	Pass /Fail
		Chain 0	Chain 1		dBm/300kHz	dBm/500kHz		
138 (U-NII-3 Band)	5690	-8.45	-8.70	0.20	-5.36	-3.14	28.90	Pass

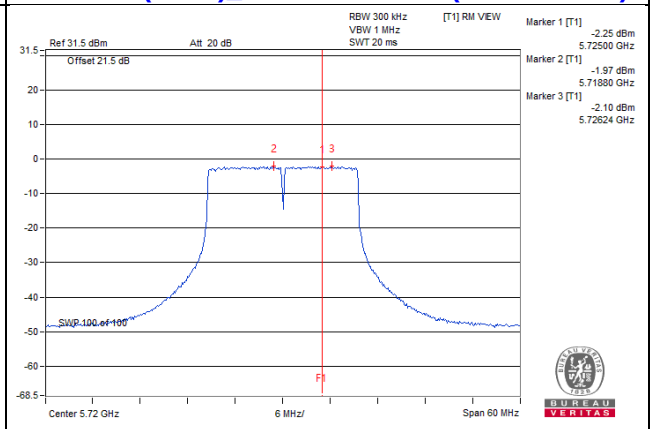
Note: 1. Method b) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 7.1 dBi > 6dBi, so the power density limit shall be reduced to 30-(7.1-6) = 28.9 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

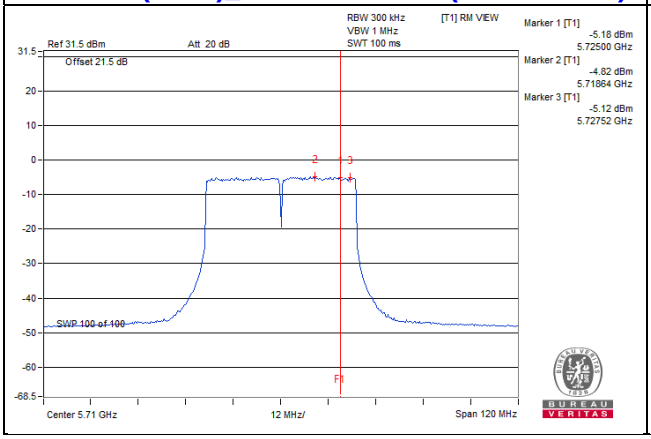
802.11a_Chain 0 / CH144 (U-NII-3 Band)



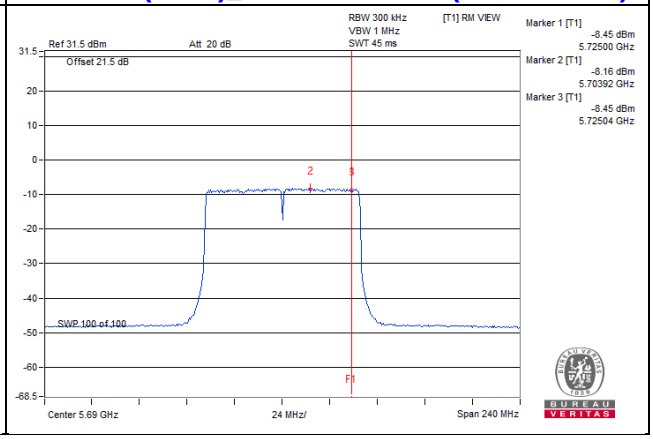
802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)

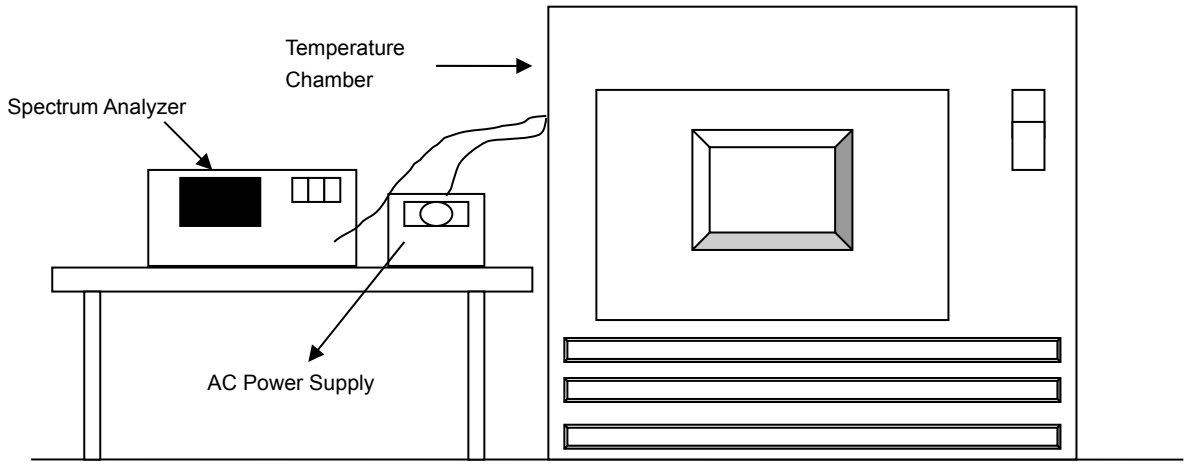


4.6 Frequency Stability Measurement

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: 5260 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	5260.0097	Pass	5260.0088	Pass	5260.0107	Pass	5260.0099	Pass
30	120	5259.9812	Pass	5259.9766	Pass	5259.9797	Pass	5259.9793	Pass
20	120	5260.0163	Pass	5260.0146	Pass	5260.0146	Pass	5260.0137	Pass
10	120	5260.0018	Pass	5260.005	Pass	5260.0042	Pass	5260.0022	Pass
0	120	5260.0007	Pass	5260	Pass	5259.9996	Pass	5259.9998	Pass

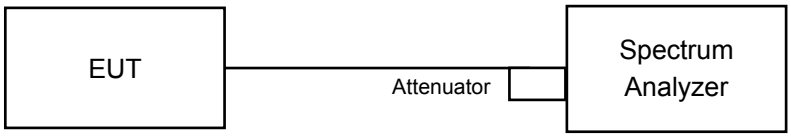
Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5260.0165	Pass	5260.0154	Pass	5260.0139	Pass	5260.0146	Pass
	120	5260.0163	Pass	5260.0146	Pass	5260.0146	Pass	5260.0137	Pass
	102	5260.0159	Pass	5260.0146	Pass	5260.0145	Pass	5260.0128	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

Non-Beamforming Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.23	3.17	0.5	Pass

802.11ax (HE20)

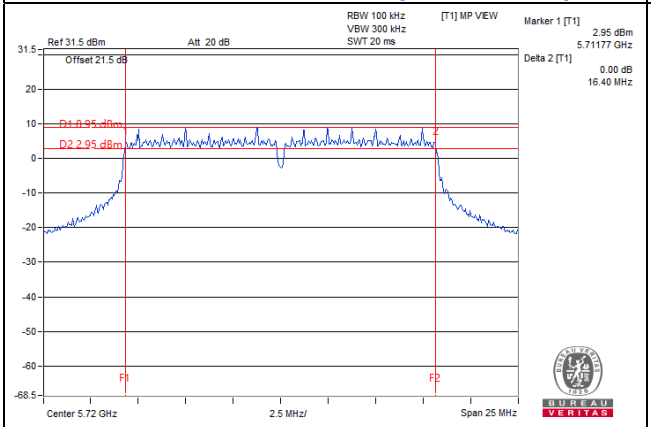
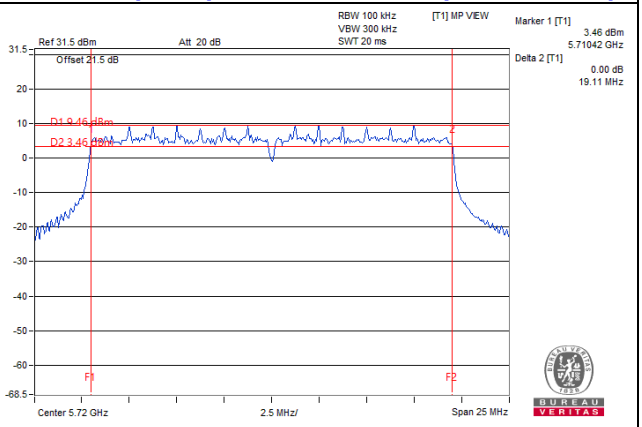
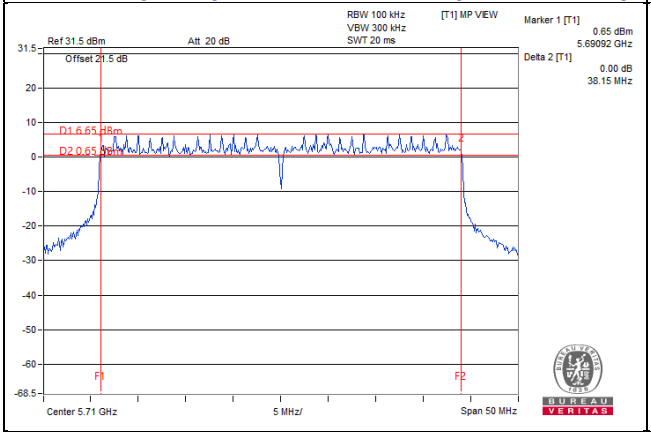
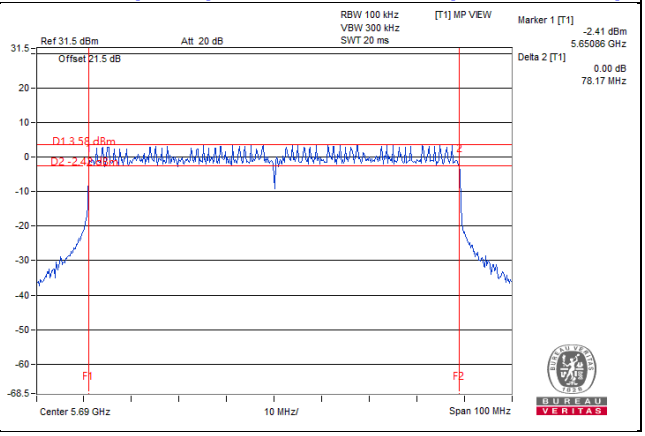
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	4.53	4.54	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (U-NII-3 Band)	5710	4.07	4.07	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (U-NII-3 Band)	5690	4.03	4.12	0.5	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH144 (U-NII-3 Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11ax (HE40) _Chain 0 / CH142 (U-NII-3 Band)	**802.11ax (HE80) _Chain 0 / CH138 (U-NII-3 Band)**
	

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

5 Pictures of Test Arrangements

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

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.

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Web Site: www.bureauveritas-adt.com

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

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