

Report No.: RF191111E03A-1

FCC ID: RRC4000XG

Test Model: C4000XG

Received Date: Nov. 12, 2019

Test Date: Dec. 02 to 04, 2019

Issued Date: Aug. 08, 2020

Applicant: Alpha Networks Inc.

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

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



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Release Control Record

Issue No.	Description	Date Issued
RF191111E03A-1	Original release.	Aug. 08, 2020

1 Certificate of Conformity

Product: Wireless Gateway

Brand: CenturyLink

Test Model: C4000XG

Sample Status: ENGINEERING SAMPLE

Applicant: Alpha Networks Inc.

Test Date: Dec. 02 to 04, 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 : Joyce Kuo , **Date:** Aug. 08, 2020
Joyce Kuo / Specialist

Approved by : Clark Lin , **Date:** Aug. 08, 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 -9.43dB at 0.16172MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5850.00MHz, 5470.00MHz, and 5460.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

Note:

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.0 dB
	30MHz ~ 1GHz	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	Wireless Gateway
Brand	CenturyLink
Test Model	C4000XG
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 and VHT20/40 in 2.4GHz 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54Mbps 802.11n: up to 600Mbps 802.11ac: up to 3466.7Mbps 802.11ax: up to 4803.9Mbps
Operating Frequency	5.25 ~ 5.32GHz, 5.5 ~ 5.72GHz
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), 802.11ax (HE160): 2
Output Power	Non-Beamforming Mode: 5.25 ~ 5.32GHz: 239.913mW 5.5 ~ 5.72GHz: 250.727mW Beamforming Mode: 5.25 ~ 5.32GHz: 144.311mW 5.5 ~ 5.72GHz: 147.458mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	RJ45 Cable x2 (Brand: Nien-Yi/ Hunter, unshielded, 1.83m)

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RF191111E03-1 as the following information:

◆ Add DFS band <5.25~ 5.32GHz, 5.50 ~ 5.72GHz> by software.

2. According to above condition, for DFS band, the all test items need to be performed. And all data were 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.

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-48B12FU	AC Input: 100-240Vac, 0.6A, 50/60Hz DC Output: 12V, 4A DC Output Cable: 1.83m, Unshielded	US
2	LEADER ELECTRONICS INC.	ML48AY120400-A1	AC Input: 100-120Vac, 1.5A, 50/60Hz DC Output: 12V, 4A DC Output Cable: 1.83m, Unshielded	US

From the above adapters, the Emissions worse case was found in **Adapter 1**. Therefore only the test data of the mode was recorded in this report.

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

1st source

Antenna NO.	Brand	Model	Antenna Type	Connector Type	Cable Length(mm)
2.4G-1	Hongbo	290-20433	PCB	i-pex(MHF)	295
2.4G-2	Hongbo	290-20434	PCB	i-pex(MHF)	340
2.4G-3	Hongbo	290-20435	PCB	i-pex(MHF)	220
2.4G-4	Hongbo	290-20436	PCB	i-pex(MHF)	240
5G-1	Hongbo	290-20437	PCB	i-pex(MHF)	125
5G-2	Hongbo	290-20438	PCB	i-pex(MHF)	220
5G-3	Hongbo	290-20439	PCB	i-pex(MHF)	240
5G-4	Hongbo	290-20440	PCB	i-pex(MHF)	175
*5G-5	Hongbo	290-20441	PCB	i-pex(MHF)	350

*Reserved for future permissive change. (Not evaluation for 5G-5 antenna)

2nd source

Antenna NO.	Brand	Model	Antenna Type	Connector Type	Cable Length(mm)
2.4G-1	Walsin	RFPCA351129IMAB401	PCB	i-pex(MHF)	295
2.4G-2	Walsin	RFPCA351134IMAB401	PCB	i-pex(MHF)	340
2.4G-3	Walsin	RFPCA351122IMAB401	PCB	i-pex(MHF)	220
2.4G-4	Walsin	RFPCA351124IMAB401	PCB	i-pex(MHF)	240
5G-1	Walsin	RFPCA201112IM5B401	PCB	i-pex(MHF)	125
5G-2	Walsin	RFPCA201122IM5B401	PCB	i-pex(MHF)	220
5G-3	Walsin	RFPCA201124IM5B401	PCB	i-pex(MHF)	240
5G-4	Walsin	RFPCA201117IM5B401	PCB	i-pex(MHF)	175
*5G-5	Walsin	RFPCA201135IM5B401	PCB	i-pex(MHF)	350

*Reserved for future permissive change. (Not evaluation for 5G-5 antenna)

From the above brand, brand: **Hongbo** was selected as representative model for the test and its data was recorded in this report.

7. The directional antenna gain, please refer to the following table:

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4 ~ 2.5	7.4	PCB	i-pex(MHF)
5.15 ~ 5.25	9.1		
5.25 ~ 5.35	8.4		
5.47 ~ 5.725	8.3		
5.725 ~ 5.85	8.1		

Note: More detailed information, please refer to antenna specification.

8. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	1Tx Fixed Chain 3	4RX
802.11g	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
VHT20	4TX	4RX
VHT40	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ac (VHT160)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX
802.11ax (HE160)	4TX	4RX

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)

9. 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.

10. 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 5260 ~ 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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

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	5260-5320	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)	5260-5320 5500-5720	54 to 62 102 to 142	102	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)	5260-5320 5500-5720	54 to 62 102 to 142	102	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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (Output power only)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40) (Output power only)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80) (Output power only)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160) (Output power only)		50	50	OFDM	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) (Output power only)		100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40) (Output power only)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80) (Output power only)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ac (VHT160) (Output power only)		114	114	OFDM	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

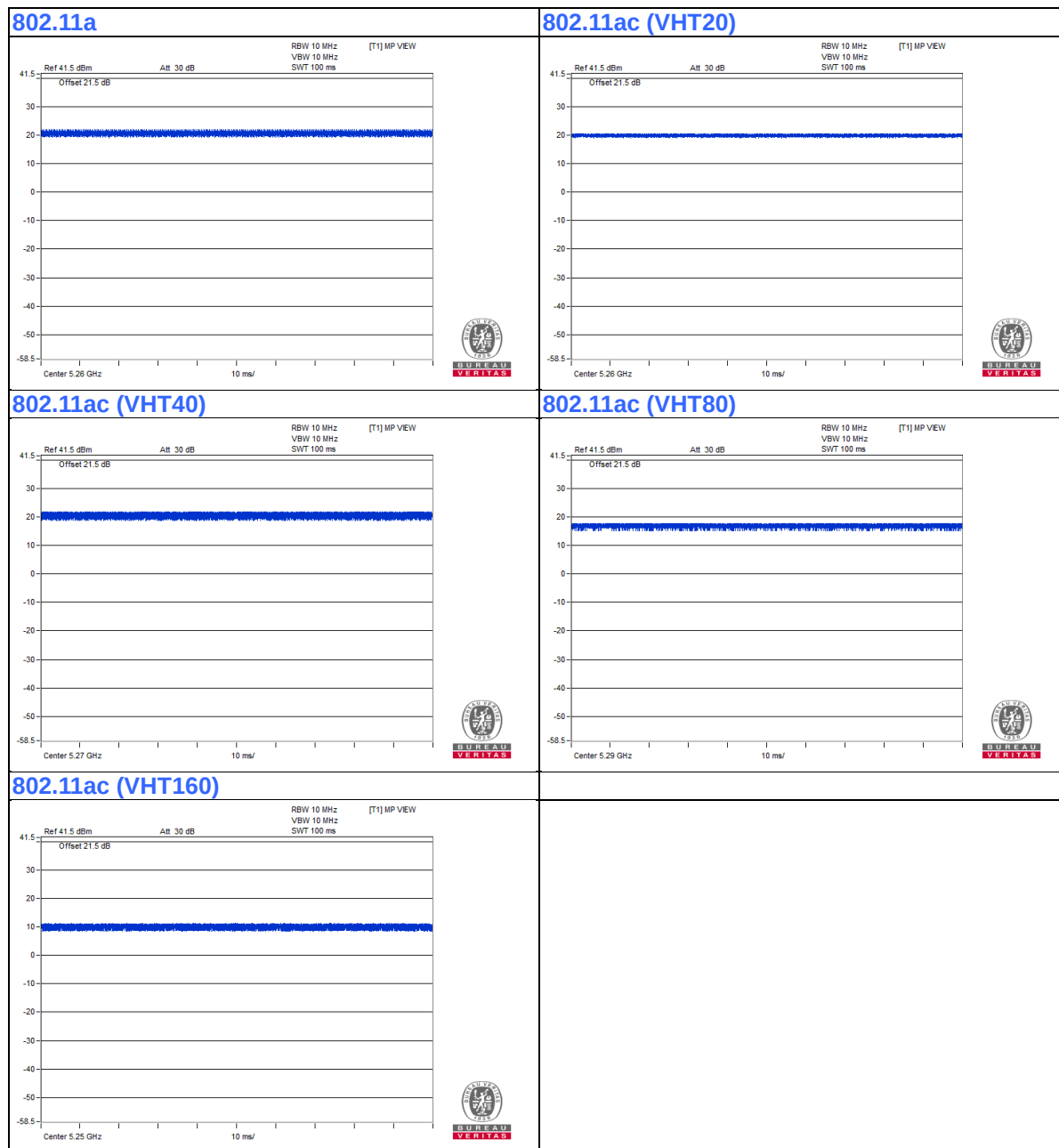
Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160)		50	50	OFDM	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	OFDM	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:

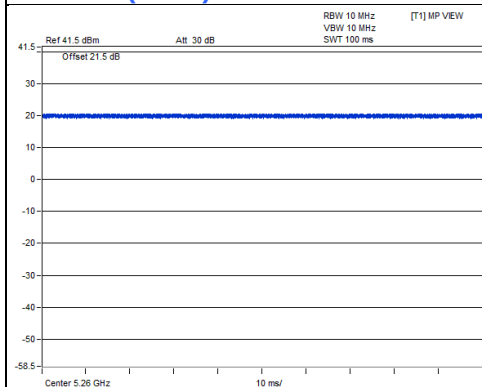
Applicable To	Environmental Conditions	Input Power	Tested By
RE $\geq$ 1G	25deg. C, 69%RH	120Vac, 60Hz	Tom Yang
RE<1G	24deg. C, 65%RH	120Vac, 60Hz	Tom Yang
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

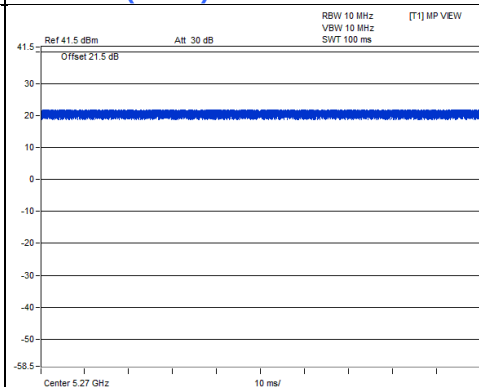
Duty cycle of test signal is 100 %, duty factor is not required.



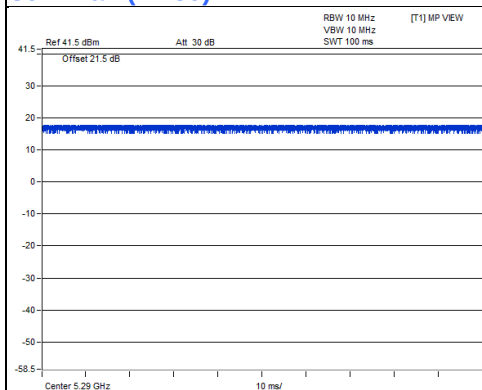
802.11ax (HE20)



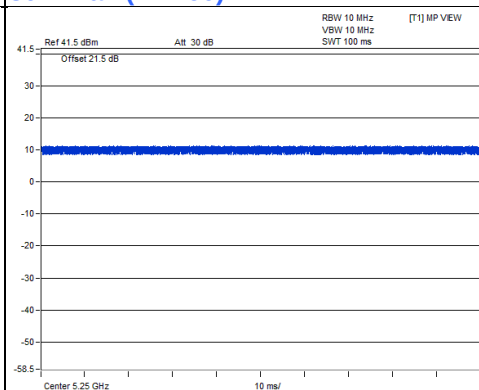
802.11ax (HE40)



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.

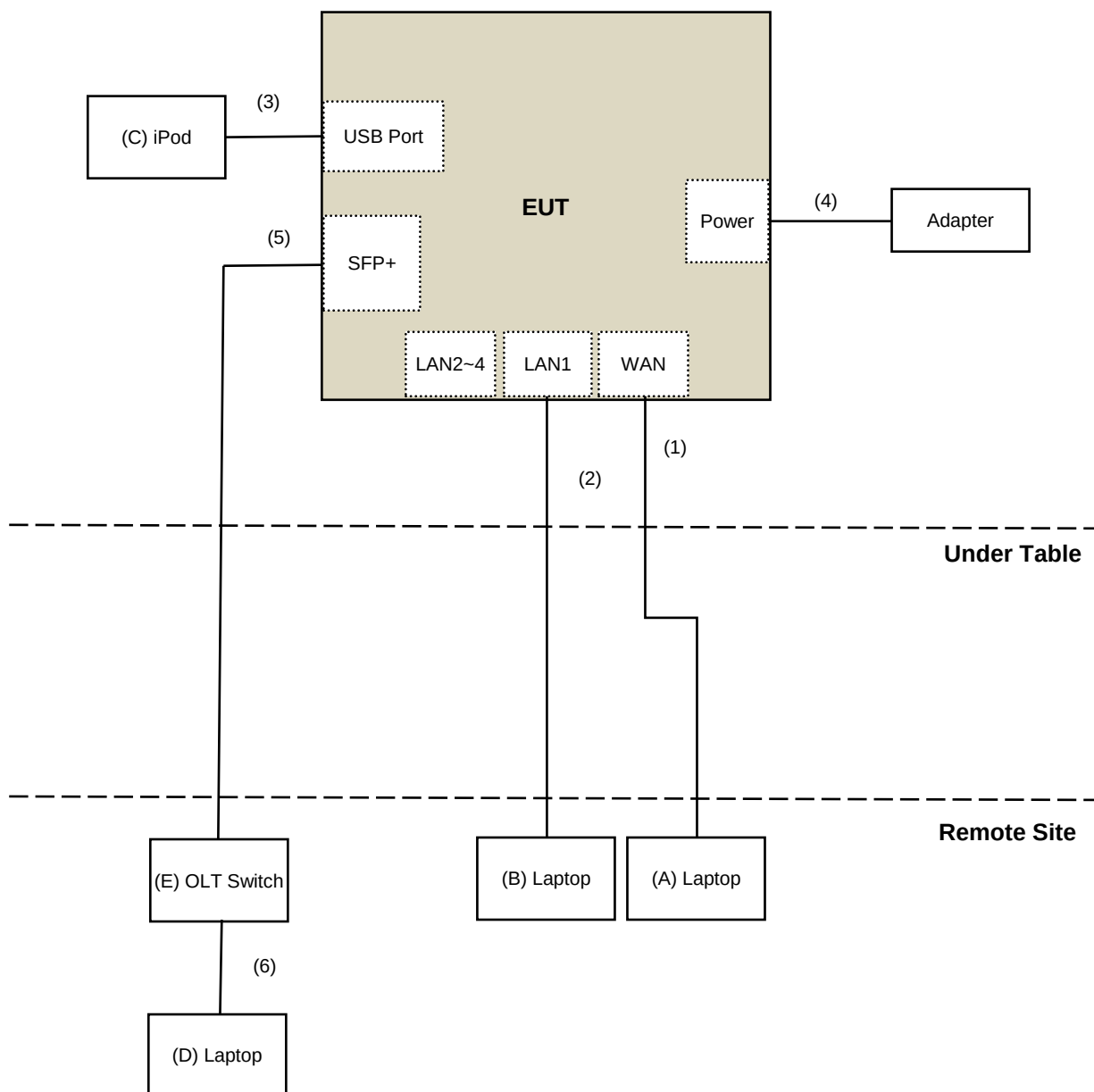
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	iPod	Apple	MC749TA/A	CC4DM9M8DFDM	NA	Provided by Lab
D.	Laptop	Lenovo	81A4	YD02YN7P	PD93165NGU	Provided by Lab
E.	OLT Switch	Alpha	NA	NA	NA	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.	Fiber Cable	1	10	No	0	Provided by Lab
6.	RJ-45 Cable	1	1.8	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard and references

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

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:

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

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 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

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. 02 to 04, 2019

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

NOTE:

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

For Radiated emission above 30MHz

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

Note:

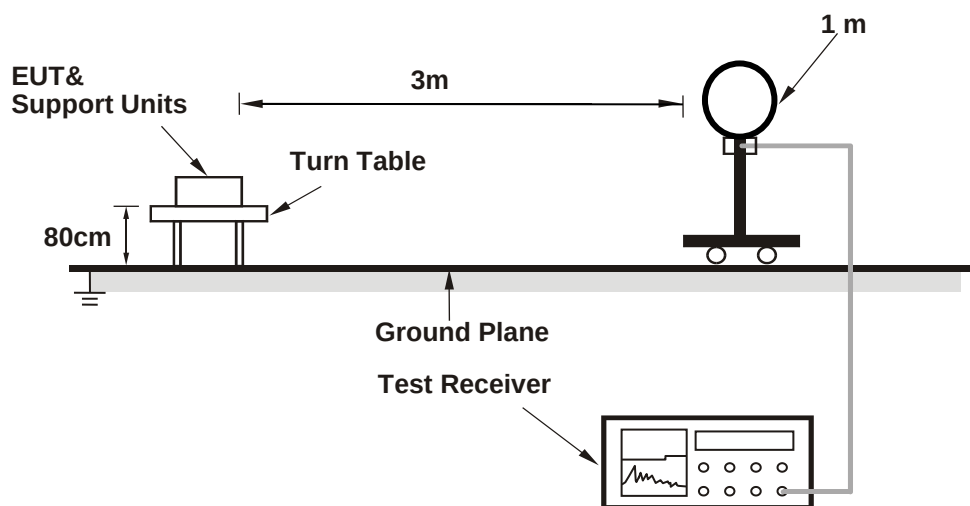
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

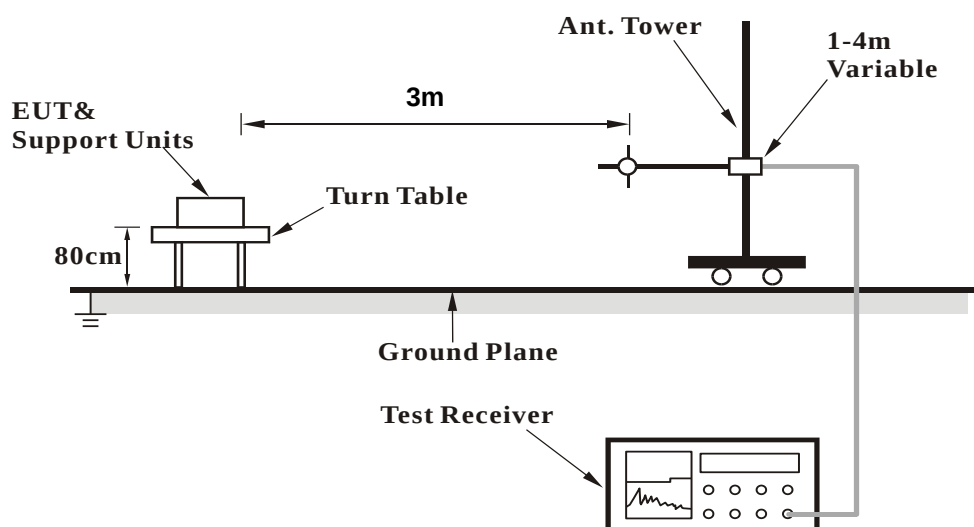
No deviation.

4.1.5 Test Setup

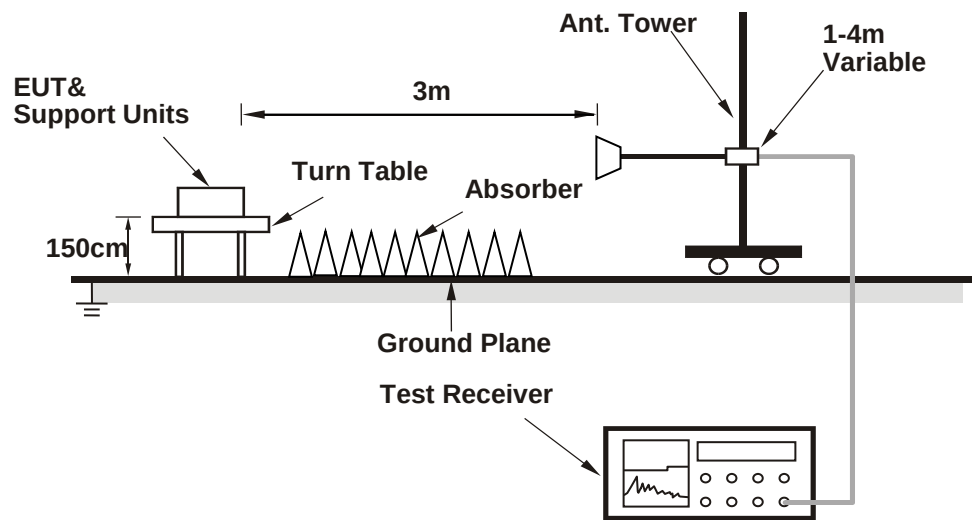
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- a. Connected the EUT with the Laptop which is placed on remote site.
- b. Controlling software (Intel DUT Ver.610.23) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	51.2 PK	74.0	-22.8	1.55 H	83	48.1	3.1
2	5150.00	43.2 AV	54.0	-10.8	1.55 H	83	40.1	3.1
3	*5260.00	112.6 PK			1.55 H	83	109.8	2.8
4	*5260.00	101.5 AV			1.55 H	83	98.7	2.8
5	5350.00	55.4 PK	74.0	-18.6	1.55 H	83	52.3	3.1
6	5350.00	45.6 AV	54.0	-8.4	1.55 H	83	42.5	3.1
7	#10520.00	53.2 PK	68.2	-15.0	1.25 H	294	39.8	13.4
8	15780.00	49.8 PK	74.0	-24.2	2.62 H	127	37.0	12.8
9	15780.00	36.7 AV	54.0	-17.3	2.62 H	127	23.9	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	56.3 PK	74.0	-17.7	1.64 V	227	53.2	3.1
2	5150.00	45.7 AV	54.0	-8.3	1.64 V	227	42.6	3.1
3	*5260.00	124.5 PK			1.64 V	227	121.7	2.8
4	*5260.00	116.0 AV			1.64 V	227	113.2	2.8
5	5350.00	60.8 PK	74.0	-13.2	1.64 V	227	57.7	3.1
6	5350.00	47.8 AV	54.0	-6.2	1.64 V	227	44.7	3.1
7	#10520.00	51.9 PK	68.2	-16.3	2.21 V	82	38.5	13.4
8	15780.00	50.1 PK	74.0	-23.9	2.22 V	6	37.3	12.8
9	15780.00	37.3 AV	54.0	-16.7	2.22 V	6	24.5	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.6 PK			1.88 H	179	107.7	2.9
2	*5300.00	109.5 AV			1.88 H	179	106.6	2.9
3	5350.00	65.6 PK	74.0	-8.4	1.88 H	179	62.5	3.1
4	5350.00	48.2 AV	54.0	-5.8	1.88 H	179	45.1	3.1
5	10600.00	53.7 PK	74.0	-20.3	2.18 H	108	40.5	13.2
6	10600.00	47.8 AV	54.0	-6.2	2.18 H	108	34.6	13.2
7	15900.00	50.5 PK	74.0	-23.5	2.54 H	289	37.4	13.1
8	15900.00	37.0 AV	54.0	-17.0	2.54 H	289	23.9	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	126.2 PK			1.58 V	224	123.3	2.9
2	*5300.00	117.3 AV			1.58 V	224	114.4	2.9
3	5350.00	70.9 PK	74.0	-3.1	1.58 V	224	67.8	3.1
4	5350.00	53.5 AV	54.0	-0.5	1.58 V	224	50.4	3.1
5	10600.00	52.6 PK	74.0	-21.4	2.41 V	338	39.4	13.2
6	10600.00	48.5 AV	54.0	-5.5	2.41 V	338	35.3	13.2
7	15900.00	49.1 PK	74.0	-24.9	2.13 V	316	36.0	13.1
8	15900.00	37.6 AV	54.0	-16.4	2.13 V	316	24.5	13.1

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	112.6 PK			1.62 H	126	109.7	2.9
2	*5320.00	105.4 AV			1.62 H	126	102.5	2.9
3	5350.00	62.3 PK	74.0	-11.7	1.62 H	126	59.2	3.1
4	5350.00	48.7 AV	54.0	-5.3	1.62 H	126	45.6	3.1
5	10640.00	52.4 PK	74.0	-21.6	1.78 H	3	39.1	13.3
6	10640.00	48.7 AV	54.0	-5.3	1.78 H	3	35.4	13.3
7	15960.00	50.2 PK	74.0	-23.8	1.17 H	26	36.9	13.3
8	15960.00	37.1 AV	54.0	-16.9	1.17 H	26	23.8	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	123.6 PK			1.56 V	224	120.7	2.9
2	*5320.00	114.8 AV			1.56 V	224	111.9	2.9
3	5350.00	68.3 PK	74.0	-5.7	1.56 V	224	65.2	3.1
4	5350.00	53.6 AV	54.0	-0.4	1.56 V	224	50.5	3.1
5	10640.00	52.6 PK	74.0	-21.4	2.14 V	302	39.3	13.3
6	10640.00	48.1 AV	54.0	-5.9	2.14 V	302	34.8	13.3
7	15960.00	50.5 PK	74.0	-23.5	2.56 V	18	37.2	13.3
8	15960.00	36.8 AV	54.0	-17.2	2.56 V	18	23.5	13.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.2 PK	74.0	-18.8	1.62 H	135	51.8	3.4
2	5460.00	45.4 AV	54.0	-8.6	1.62 H	135	42.0	3.4
3	#5470.00	67.1 PK	68.2	-1.1	1.62 H	135	63.7	3.4
4	*5500.00	112.6 PK			1.62 H	135	109.3	3.3
5	*5500.00	101.1 AV			1.62 H	135	97.8	3.3
6	11000.00	53.4 PK	74.0	-20.6	1.16 H	192	39.7	13.7
7	11000.00	47.1 AV	54.0	-6.9	1.16 H	192	33.4	13.7
8	#16500.00	49.8 PK	68.2	-18.4	2.10 H	250	34.8	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	59.5 PK	74.0	-14.5	1.68 V	220	56.1	3.4
2	5460.00	46.7 AV	54.0	-7.3	1.68 V	220	43.3	3.4
3	#5470.00	67.5 PK	68.2	-0.7	1.68 V	220	64.1	3.4
4	*5500.00	121.3 PK			1.68 V	220	118.0	3.3
5	*5500.00	112.3 AV			1.68 V	220	109.0	3.3
6	11000.00	53.7 PK	74.0	-20.3	1.08 V	248	40.0	13.7
7	11000.00	47.6 AV	54.0	-6.4	1.08 V	248	33.9	13.7
8	#16500.00	50.1 PK	68.2	-18.1	1.55 V	74	35.1	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	55.1 PK	74.0	-18.9	1.80 H	132	51.7	3.4
2	5460.00	43.5 AV	54.0	-10.5	1.80 H	132	40.1	3.4
3	#5470.00	54.3 PK	68.2	-13.9	1.80 H	132	50.9	3.4
4	*5580.00	112.6 PK			1.80 H	132	109.2	3.4
5	*5580.00	109.5 AV			1.80 H	132	106.1	3.4
6	11160.00	52.7 PK	74.0	-21.3	2.23 H	306	39.2	13.5
7	11160.00	47.3 AV	54.0	-6.7	2.23 H	306	33.8	13.5
8	#16740.00	48.1 PK	68.2	-20.1	2.43 H	114	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	5460.00	58.2 PK	74.0	-15.8	1.60 V	223	54.8	3.4
2	5460.00	46.1 AV	54.0	-7.9	1.60 V	223	42.7	3.4
3	#5470.00	59.7 PK	68.2	-8.5	1.60 V	223	56.3	3.4
4	*5580.00	126.4 PK			1.60 V	223	123.0	3.4
5	*5580.00	117.2 AV			1.60 V	223	113.8	3.4
6	11160.00	53.5 PK	74.0	-20.5	1.15 V	167	40.0	13.5
7	11160.00	48.7 AV	54.0	-5.3	1.15 V	167	35.2	13.5
8	#16740.00	48.2 PK	68.2	-20.0	1.99 V	137	31.6	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.6 PK			1.62 H	62	101.9	3.7
2	*5700.00	99.7 AV			1.62 H	62	96.0	3.7
3	#5725.00	62.4 PK	68.2	-5.8	1.62 H	62	58.8	3.6
4	11400.00	54.0 PK	74.0	-20.0	2.50 H	281	40.4	13.6
5	11400.00	48.9 AV	54.0	-5.1	2.50 H	281	35.3	13.6
6	#17100.00	50.8 PK	68.2	-17.4	1.29 H	200	34.1	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	114.3 PK			1.61 V	221	110.6	3.7
2	*5700.00	105.7 AV			1.61 V	221	102.0	3.7
3	#5725.00	68.0 PK	68.2	-0.2	1.61 V	221	64.4	3.6
4	11400.00	52.4 PK	74.0	-21.6	1.16 V	327	38.8	13.6
5	11400.00	47.9 AV	54.0	-6.1	1.16 V	327	34.3	13.6
6	#17100.00	51.0 PK	68.2	-17.2	1.52 V	162	34.3	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	53.1 PK	74.0	-20.9	1.72 H	198	49.7	3.4
2	5460.00	42.1 AV	54.0	-11.9	1.72 H	198	38.7	3.4
3	#5470.00	54.6 PK	68.2	-13.6	1.72 H	198	51.2	3.4
4	*5720.00	111.1 PK			1.72 H	198	107.4	3.7
5	*5720.00	101.1 AV			1.72 H	198	97.4	3.7
6	#5850.00	55.1 PK	68.2	-13.1	1.72 H	198	51.0	4.1
7	11440.00	55.6 PK	74.0	-18.4	1.09 H	199	42.0	13.6
8	11440.00	47.5 AV	54.0	-6.5	1.09 H	199	33.9	13.6
9	#17160.00	50.1 PK	68.2	-18.1	1.63 H	184	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	55.4 PK	74.0	-18.6	1.53 V	223	52.0	3.4
2	5460.00	42.8 AV	54.0	-11.2	1.53 V	223	39.4	3.4
3	#5470.00	55.6 PK	68.2	-12.6	1.53 V	223	52.2	3.4
4	*5720.00	124.6 PK			1.53 V	223	120.9	3.7
5	*5720.00	115.6 AV			1.53 V	223	111.9	3.7
6	#5850.00	56.7 PK	68.2	-11.5	1.53 V	223	52.6	4.1
7	11440.00	52.6 PK	74.0	-21.4	1.43 V	336	39.0	13.6
8	11440.00	48.5 AV	54.0	-5.5	1.43 V	336	34.9	13.6
9	#17160.00	48.5 PK	68.2	-19.7	1.37 V	316	31.7	16.8

REMARKS:

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

802.11ax (HE20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.6 PK	74.0	-25.4	1.49 H	332	45.5	3.1
2	5150.00	40.5 AV	54.0	-13.5	1.49 H	332	37.4	3.1
3	*5260.00	112.6 PK			1.49 H	332	109.8	2.8
4	*5260.00	105.3 AV			1.49 H	332	102.5	2.8
5	5350.00	52.6 PK	74.0	-21.4	1.49 H	332	49.5	3.1
6	5350.00	42.7 AV	54.0	-11.3	1.49 H	332	39.6	3.1
7	#10520.00	54.6 PK	68.2	-13.6	1.62 H	238	41.2	13.4
8	15780.00	47.8 PK	74.0	-26.2	1.88 H	236	35.0	12.8
9	15780.00	37.4 AV	54.0	-16.6	1.88 H	236	24.6	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	53.7 PK	74.0	-20.3	1.67 V	228	50.6	3.1
2	5150.00	44.0 AV	54.0	-10.0	1.67 V	228	40.9	3.1
3	*5260.00	121.4 PK			1.67 V	228	118.6	2.8
4	*5260.00	114.5 AV			1.67 V	228	111.7	2.8
5	5350.00	57.6 PK	74.0	-16.4	1.67 V	228	54.5	3.1
6	5350.00	46.7 AV	54.0	-7.3	1.67 V	228	43.6	3.1
7	#10520.00	50.7 PK	68.2	-17.5	2.60 V	92	37.3	13.4
8	15780.00	48.0 PK	74.0	-26.0	2.34 V	7	35.2	12.8
9	15780.00	37.3 AV	54.0	-16.7	2.34 V	7	24.5	12.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	111.9 PK			2.22 H	238	109.0	2.9
2	*5300.00	109.7 AV			2.22 H	238	106.8	2.9
3	5350.00	55.5 PK	74.0	-18.5	2.22 H	238	52.4	3.1
4	5350.00	47.2 AV	54.0	-6.8	2.22 H	238	44.1	3.1
5	10600.00	55.2 PK	74.0	-18.8	1.52 H	34	42.0	13.2
6	10600.00	47.4 AV	54.0	-6.6	1.52 H	34	34.2	13.2
7	15900.00	47.6 PK	74.0	-26.4	1.58 H	244	34.5	13.1
8	15900.00	36.7 AV	54.0	-17.3	1.58 H	244	23.6	13.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	123.1 PK			1.59 V	230	120.2	2.9
2	*5300.00	116.1 AV			1.59 V	230	113.2	2.9
3	5350.00	67.3 PK	74.0	-6.7	1.59 V	230	64.2	3.1
4	5350.00	53.6 AV	54.0	-0.4	1.59 V	230	50.5	3.1
5	10600.00	55.2 PK	74.0	-18.8	1.47 V	86	42.0	13.2
6	10600.00	48.6 AV	54.0	-5.4	1.47 V	86	35.4	13.2
7	15900.00	47.5 PK	74.0	-26.5	2.30 V	270	34.4	13.1
8	15900.00	37.3 AV	54.0	-16.7	2.30 V	270	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	108.4 PK			1.26 H	310	105.5	2.9
2	*5320.00	105.9 AV			1.26 H	310	103.0	2.9
3	5350.00	59.2 PK	74.0	-14.8	1.26 H	310	56.1	3.1
4	5350.00	47.1 AV	54.0	-6.9	1.26 H	310	44.0	3.1
5	10640.00	51.5 PK	74.0	-22.5	1.39 H	115	38.2	13.3
6	10640.00	47.3 AV	54.0	-6.7	1.39 H	115	34.0	13.3
7	15960.00	51.4 PK	74.0	-22.6	1.42 H	126	38.1	13.3
8	15960.00	37.4 AV	54.0	-16.6	1.42 H	126	24.1	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	120.7 PK			1.50 V	218	117.8	2.9
2	*5320.00	113.5 AV			1.50 V	218	110.6	2.9
3	5350.00	64.9 PK	74.0	-9.1	1.50 V	218	61.8	3.1
4	5350.00	53.7 AV	54.0	-0.3	1.50 V	218	50.6	3.1
5	10640.00	52.6 PK	74.0	-21.4	1.28 V	11	39.3	13.3
6	10640.00	47.9 AV	54.0	-6.1	1.28 V	11	34.6	13.3
7	15960.00	51.0 PK	74.0	-23.0	1.90 V	112	37.7	13.3
8	15960.00	36.4 AV	54.0	-17.6	1.90 V	112	23.1	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.1 PK	74.0	-14.9	1.59 H	79	55.7	3.4
2	5460.00	44.3 AV	54.0	-9.7	1.59 H	79	40.9	3.4
3	#5470.00	60.5 PK	68.2	-7.7	1.59 H	79	57.1	3.4
4	*5500.00	109.5 PK			1.59 H	79	106.2	3.3
5	*5500.00	99.1 AV			1.59 H	79	95.8	3.3
6	11000.00	53.9 PK	74.0	-20.1	1.22 H	2	40.2	13.7
7	11000.00	48.1 AV	54.0	-5.9	1.22 H	2	34.4	13.7
8	#16500.00	50.7 PK	68.2	-17.5	1.71 H	189	35.7	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	63.1 PK	74.0	-10.9	1.54 V	221	59.7	3.4
2	5460.00	46.2 AV	54.0	-7.8	1.54 V	221	42.8	3.4
3	#5470.00	68.1 PK	68.2	-0.1	1.54 V	221	64.7	3.4
4	*5500.00	120.6 PK			1.54 V	221	117.3	3.3
5	*5500.00	110.9 AV			1.54 V	221	107.6	3.3
6	11000.00	51.3 PK	74.0	-22.7	1.84 V	203	37.6	13.7
7	11000.00	48.8 AV	54.0	-5.2	1.84 V	203	35.1	13.7
8	#16500.00	48.4 PK	68.2	-19.8	2.50 V	109	33.4	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	44.5 PK	74.0	-29.5	2.42 H	297	41.1	3.4
2	5460.00	42.0 AV	54.0	-12.0	2.42 H	297	38.6	3.4
3	#5470.00	49.1 PK	68.2	-19.1	2.42 H	297	45.7	3.4
4	*5580.00	112.0 PK			2.42 H	297	108.6	3.4
5	*5580.00	104.3 AV			2.42 H	297	100.9	3.4
6	11160.00	51.8 PK	74.0	-22.2	2.02 H	232	38.3	13.5
7	11160.00	47.0 AV	54.0	-7.0	2.02 H	232	33.5	13.5
8	#16740.00	51.3 PK	68.2	-16.9	1.92 H	175	34.7	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	58.5 PK	74.0	-15.5	1.60 V	225	55.1	3.4
2	5460.00	46.0 AV	54.0	-8.0	1.60 V	225	42.6	3.4
3	#5470.00	59.1 PK	68.2	-9.1	1.60 V	225	55.7	3.4
4	*5580.00	124.9 PK			1.60 V	225	121.5	3.4
5	*5580.00	115.7 AV			1.60 V	225	112.3	3.4
6	11160.00	55.0 PK	74.0	-19.0	2.22 V	359	41.5	13.5
7	11160.00	47.9 AV	54.0	-6.1	2.22 V	359	34.4	13.5
8	#16740.00	48.3 PK	68.2	-19.9	1.05 V	346	31.7	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	113.5 PK			2.33 H	152	109.8	3.7
2	*5700.00	104.9 AV			2.33 H	152	101.2	3.7
3	#5725.00	60.5 PK	68.2	-7.7	2.33 H	152	56.9	3.6
4	11400.00	54.2 PK	74.0	-19.8	2.08 H	210	40.6	13.6
5	11400.00	48.2 AV	54.0	-5.8	2.08 H	210	34.6	13.6
6	#17100.00	49.6 PK	68.2	-18.6	2.15 H	145	32.9	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	121.6 PK			1.72 V	214	117.9	3.7
2	*5700.00	111.2 AV			1.72 V	214	107.5	3.7
3	#5725.00	67.5 PK	68.2	-0.7	1.72 V	214	63.9	3.6
4	11400.00	53.8 PK	74.0	-20.2	2.68 V	9	40.2	13.6
5	11400.00	48.2 AV	54.0	-5.8	2.68 V	9	34.6	13.6
6	#17100.00	50.4 PK	68.2	-17.8	1.13 V	248	33.7	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	51.2 PK	74.0	-22.8	1.42 H	146	47.8	3.4
2	5460.00	45.0 AV	54.0	-9.0	1.42 H	146	41.6	3.4
3	#5470.00	52.8 PK	68.2	-15.4	1.42 H	146	49.4	3.4
4	*5720.00	114.2 PK			1.42 H	146	110.5	3.7
5	*5720.00	101.5 AV			1.42 H	146	97.8	3.7
6	#5850.00	56.1 PK	68.2	-12.1	1.42 H	146	52.0	4.1
7	11440.00	54.3 PK	74.0	-19.7	1.65 H	155	40.7	13.6
8	11440.00	48.4 AV	54.0	-5.6	1.65 H	155	34.8	13.6
9	#17160.00	50.7 PK	68.2	-17.5	2.18 H	176	33.9	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	55.1 PK	74.0	-18.9	1.57 V	221	51.7	3.4
2	5460.00	43.0 AV	54.0	-11.0	1.57 V	221	39.6	3.4
3	#5470.00	55.1 PK	68.2	-13.1	1.57 V	221	51.7	3.4
4	*5720.00	124.1 PK			1.57 V	221	120.4	3.7
5	*5720.00	115.6 AV			1.57 V	221	111.9	3.7
6	#5850.00	57.0 PK	68.2	-11.2	1.57 V	221	52.9	4.1
7	11440.00	52.9 PK	74.0	-21.1	1.49 V	70	39.3	13.6
8	11440.00	47.5 AV	54.0	-6.5	1.49 V	70	33.9	13.6
9	#17160.00	51.2 PK	68.2	-17.0	2.30 V	352	34.4	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.2 PK	74.0	-19.8	1.77 H	168	51.1	3.1
2	5150.00	42.5 AV	54.0	-11.5	1.77 H	168	39.4	3.1
3	*5270.00	106.5 PK			1.77 H	168	103.7	2.8
4	*5270.00	99.4 AV			1.77 H	168	96.6	2.8
5	5350.00	61.5 PK	74.0	-12.5	1.77 H	168	58.4	3.1
6	5350.00	49.5 AV	54.0	-4.5	1.77 H	168	46.4	3.1
7	#10540.00	52.1 PK	68.2	-16.1	2.66 H	163	38.8	13.3
8	15810.00	50.8 PK	74.0	-23.2	1.68 H	150	37.9	12.9
9	15810.00	37.6 AV	54.0	-16.4	1.68 H	150	24.7	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	56.4 PK	74.0	-17.6	1.55 V	230	53.3	3.1
2	5150.00	45.2 AV	54.0	-8.8	1.55 V	230	42.1	3.1
3	*5270.00	117.7 PK			1.55 V	230	114.9	2.8
4	*5270.00	110.3 AV			1.55 V	230	107.5	2.8
5	5350.00	67.6 PK	74.0	-6.4	1.55 V	230	64.5	3.1
6	5350.00	53.6 AV	54.0	-0.4	1.55 V	230	50.5	3.1
7	#10540.00	53.0 PK	68.2	-15.2	2.58 V	164	39.7	13.3
8	15810.00	49.1 PK	74.0	-24.9	1.56 V	226	36.2	12.9
9	15810.00	37.5 AV	54.0	-16.5	1.56 V	226	24.6	12.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	106.5 PK			1.43 H	88	103.6	2.9
2	*5310.00	99.5 AV			1.43 H	88	96.6	2.9
3	5350.00	68.1 PK	74.0	-5.9	1.43 H	88	65.0	3.1
4	5350.00	49.5 AV	54.0	-4.5	1.43 H	88	46.4	3.1
5	10620.00	55.6 PK	74.0	-18.4	1.66 H	130	42.3	13.3
6	10620.00	47.2 AV	54.0	-6.8	1.66 H	130	33.9	13.3
7	15930.00	49.8 PK	74.0	-24.2	2.60 H	218	36.6	13.2
8	15930.00	36.5 AV	54.0	-17.5	2.60 H	218	23.3	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	114.1 PK			1.72 V	218	111.2	2.9
2	*5310.00	106.3 AV			1.72 V	218	103.4	2.9
3	5350.00	70.3 PK	74.0	-3.7	1.72 V	218	67.2	3.1
4	5350.00	53.5 AV	54.0	-0.5	1.72 V	218	50.4	3.1
5	10620.00	50.9 PK	74.0	-23.1	2.48 V	6	37.6	13.3
6	10620.00	47.6 AV	54.0	-6.4	2.48 V	6	34.3	13.3
7	15930.00	48.7 PK	74.0	-25.3	2.48 V	196	35.5	13.2
8	15930.00	36.8 AV	54.0	-17.2	2.48 V	196	23.6	13.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.9 PK	74.0	-18.1	2.44 H	142	52.5	3.4
2	5460.00	45.2 AV	54.0	-8.8	2.44 H	142	41.8	3.4
3	#5470.00	61.5 PK	68.2	-6.7	2.44 H	142	58.1	3.4
4	*5510.00	106.5 PK			2.44 H	142	103.2	3.3
5	*5510.00	94.5 AV			2.44 H	142	91.2	3.3
6	11020.00	53.9 PK	74.0	-20.1	2.31 H	256	40.3	13.6
7	11020.00	47.3 AV	54.0	-6.7	2.31 H	256	33.7	13.6
8	#16530.00	50.0 PK	68.2	-18.2	1.99 H	146	34.8	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	64.7 PK	74.0	-9.3	1.62 V	221	61.3	3.4
2	5460.00	48.6 AV	54.0	-5.4	1.62 V	221	45.2	3.4
3	#5470.00	67.7 PK	68.2	-0.5	1.62 V	221	64.3	3.4
4	*5510.00	115.7 PK			1.62 V	221	112.4	3.3
5	*5510.00	106.7 AV			1.62 V	221	103.4	3.3
6	11020.00	55.3 PK	74.0	-18.7	1.81 V	209	41.7	13.6
7	11020.00	48.9 AV	54.0	-5.1	1.81 V	209	35.3	13.6
8	#16530.00	51.6 PK	68.2	-16.6	1.21 V	86	36.4	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)
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	49.2 PK	74.0	-24.8	1.75 H	155	45.8	3.4
2	5460.00	40.0 AV	54.0	-14.0	1.75 H	155	36.6	3.4
3	#5470.00	55.6 PK	68.2	-12.6	1.75 H	155	52.2	3.4
4	*5550.00	106.9 PK			1.75 H	155	103.5	3.4
5	*5550.00	98.7 AV			1.75 H	155	95.3	3.4
6	11100.00	55.2 PK	74.0	-18.8	2.17 H	171	41.6	13.6
7	11100.00	47.6 AV	54.0	-6.4	2.17 H	171	34.0	13.6
8	#16650.00	52.1 PK	68.2	-16.1	1.72 H	244	36.0	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	50.8 PK	74.0	-23.2	1.62 V	225	47.4	3.4
2	5460.00	40.2 AV	54.0	-13.8	1.62 V	225	36.8	3.4
3	#5470.00	68.1 PK	68.2	-0.1	1.62 V	225	64.7	3.4
4	*5550.00	120.3 PK			1.62 V	225	116.9	3.4
5	*5550.00	112.0 AV			1.62 V	225	108.6	3.4
6	11100.00	52.8 PK	74.0	-21.2	1.60 V	51	39.2	13.6
7	11100.00	48.0 AV	54.0	-6.0	1.60 V	51	34.4	13.6
8	#16650.00	52.4 PK	68.2	-15.8	2.02 V	344	36.3	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	110.0 PK			1.55 H	341	106.4	3.6
2	*5670.00	101.5 AV			1.55 H	341	97.9	3.6
3	#5725.00	64.5 PK	68.2	-3.7	1.55 H	341	60.9	3.6
4	11340.00	52.6 PK	74.0	-21.4	2.68 H	62	39.0	13.6
5	11340.00	47.8 AV	54.0	-6.2	2.68 H	62	34.2	13.6
6	#17010.00	47.9 PK	68.2	-20.3	1.91 H	291	31.1	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	117.2 PK			1.50 V	221	113.6	3.6
2	*5670.00	107.9 AV			1.50 V	221	104.3	3.6
3	#5725.00	67.5 PK	68.2	-0.7	1.50 V	221	63.9	3.6
4	11340.00	50.5 PK	74.0	-23.5	1.92 V	354	36.9	13.6
5	11340.00	48.2 AV	54.0	-5.8	1.92 V	354	34.6	13.6
6	#17010.00	49.9 PK	68.2	-18.3	2.16 V	93	33.1	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)
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	55.1 PK	74.0	-18.9	2.13 H	332	51.7	3.4
2	5460.00	44.5 AV	54.0	-9.5	2.13 H	332	41.1	3.4
3	#5470.00	54.2 PK	68.2	-14.0	2.13 H	332	50.8	3.4
4	*5710.00	108.6 PK			2.13 H	332	104.9	3.7
5	*5710.00	104.2 AV			2.13 H	332	100.5	3.7
6	#5850.00	55.6 PK	68.2	-12.6	2.13 H	332	51.5	4.1
7	11420.00	51.7 PK	74.0	-22.3	1.75 H	181	38.2	13.5
8	11420.00	47.5 AV	54.0	-6.5	1.75 H	181	34.0	13.5
9	#17130.00	47.9 PK	68.2	-20.3	1.39 H	10	31.1	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	57.5 PK	74.0	-16.5	1.56 V	223	54.1	3.4
2	5460.00	45.9 AV	54.0	-8.1	1.56 V	223	42.5	3.4
3	#5470.00	57.8 PK	68.2	-10.4	1.56 V	223	54.4	3.4
4	*5710.00	120.7 PK			1.56 V	223	117.0	3.7
5	*5710.00	112.4 AV			1.56 V	223	108.7	3.7
6	#5850.00	59.8 PK	68.2	-8.4	1.56 V	223	55.7	4.1
7	11420.00	54.2 PK	74.0	-19.8	1.39 V	134	40.7	13.5
8	11420.00	48.7 AV	54.0	-5.3	1.39 V	134	35.2	13.5
9	#17130.00	47.9 PK	68.2	-20.3	2.52 V	49	31.1	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.5 PK	74.0	-24.5	2.49 H	47	46.4	3.1
2	5150.00	41.2 AV	54.0	-12.8	2.49 H	47	38.1	3.1
3	*5290.00	102.4 PK			2.49 H	47	99.5	2.9
4	*5290.00	92.6 AV			2.49 H	47	89.7	2.9
5	5350.00	59.2 PK	74.0	-14.8	2.49 H	47	56.1	3.1
6	5350.00	44.1 AV	54.0	-9.9	2.49 H	47	41.0	3.1
7	#10580.00	55.1 PK	68.2	-13.1	2.24 H	72	41.9	13.2
8	15870.00	48.9 PK	74.0	-25.1	1.11 H	218	35.9	13.0
9	15870.00	37.2 AV	54.0	-16.8	1.11 H	218	24.2	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	1.64 V	221	50.4	3.1
2	5150.00	42.2 AV	54.0	-11.8	1.64 V	221	39.1	3.1
3	*5290.00	111.0 PK			1.64 V	221	108.1	2.9
4	*5290.00	102.0 AV			1.64 V	221	99.1	2.9
5	5350.00	64.0 PK	74.0	-10.0	1.64 V	221	60.9	3.1
6	5350.00	53.5 AV	54.0	-0.5	1.64 V	221	50.4	3.1
7	#10580.00	55.1 PK	68.2	-13.1	1.47 V	126	41.9	13.2
8	15870.00	48.1 PK	74.0	-25.9	1.42 V	263	35.1	13.0
9	15870.00	37.5 AV	54.0	-16.5	1.42 V	263	24.5	13.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.4 PK	74.0	-14.6	1.96 H	75	56.0	3.4
2	5460.00	44.1 AV	54.0	-9.9	1.96 H	75	40.7	3.4
3	#5470.00	64.3 PK	68.2	-3.9	1.96 H	75	60.9	3.4
4	*5530.00	105.2 PK			1.96 H	75	101.8	3.4
5	*5530.00	95.6 AV			1.96 H	75	92.2	3.4
6	#5725.00	52.5 PK	68.2	-15.7	1.96 H	75	48.9	3.6
7	11060.00	51.0 PK	74.0	-23.0	1.20 H	152	37.3	13.7
8	11060.00	48.7 AV	54.0	-5.3	1.20 H	152	35.0	13.7
9	#16590.00	50.1 PK	68.2	-18.1	2.19 H	253	34.5	15.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.4 PK	74.0	-7.6	1.48 V	221	63.0	3.4
2	5460.00	53.9 AV	54.0	-0.1	1.48 V	221	50.5	3.4
3	#5470.00	68.1 PK	68.2	-0.1	1.48 V	221	64.7	3.4
4	*5530.00	113.4 PK			1.48 V	221	110.0	3.4
5	*5530.00	103.7 AV			1.48 V	221	100.3	3.4
6	#5725.00	53.6 PK	68.2	-14.6	1.48 V	221	50.0	3.6
7	11060.00	55.2 PK	74.0	-18.8	2.36 V	11	41.5	13.7
8	11060.00	48.8 AV	54.0	-5.2	2.36 V	11	35.1	13.7
9	#16590.00	51.3 PK	68.2	-16.9	2.68 V	99	35.7	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)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	106.5 PK			1.76 H	28	103.1	3.4
2	*5610.00	96.4 AV			1.76 H	28	93.0	3.4
3	#5725.00	62.2 PK	68.2	-6.0	1.76 H	28	58.6	3.6
4	11220.00	51.9 PK	74.0	-22.1	1.80 H	116	38.5	13.4
5	11220.00	48.5 AV	54.0	-5.5	1.80 H	116	35.1	13.4
6	#16830.00	49.7 PK	68.2	-18.5	1.65 H	48	32.7	17.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	115.2 PK			1.58 V	222	111.8	3.4
2	*5610.00	104.7 AV			1.58 V	222	101.3	3.4
3	#5725.00	67.0 PK	68.2	-1.2	1.58 V	222	63.4	3.6
4	11220.00	51.3 PK	74.0	-22.7	1.31 V	27	37.9	13.4
5	11220.00	48.5 AV	54.0	-5.5	1.31 V	27	35.1	13.4
6	#16830.00	52.0 PK	68.2	-16.2	2.47 V	144	35.0	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	54.3 PK	74.0	-19.7	2.38 H	231	50.9	3.4
2	5460.00	50.6 AV	54.0	-3.4	2.38 H	231	47.2	3.4
3	#5470.00	55.2 PK	68.2	-13.0	2.38 H	231	51.8	3.4
4	*5690.00	110.6 PK			2.38 H	231	106.9	3.7
5	*5690.00	100.5 AV			2.38 H	231	96.8	3.7
6	#5850.00	61.4 PK	68.2	-6.8	2.38 H	231	57.3	4.1
7	11380.00	55.2 PK	74.0	-18.8	1.74 H	260	41.6	13.6
8	11380.00	48.2 AV	54.0	-5.8	1.74 H	260	34.6	13.6
9	#17070.00	49.3 PK	68.2	-18.9	2.21 H	113	32.5	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	61.9 PK	74.0	-12.1	1.61 V	222	58.5	3.4
2	5460.00	49.9 AV	54.0	-4.1	1.61 V	222	46.5	3.4
3	#5470.00	59.8 PK	68.2	-8.4	1.61 V	222	56.4	3.4
4	*5690.00	118.1 PK			1.61 V	222	114.4	3.7
5	*5690.00	108.6 AV			1.61 V	222	104.9	3.7
6	#5850.00	68.1 PK	68.2	-0.1	1.61 V	222	64.0	4.1
7	11380.00	51.0 PK	74.0	-23.0	2.20 V	30	37.4	13.6
8	11380.00	47.8 AV	54.0	-6.2	2.20 V	30	34.2	13.6
9	#17070.00	50.3 PK	68.2	-17.9	1.67 V	177	33.5	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.

802.11ax (HE160)

CHANNEL	TX Channel 50	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.2 PK	74.0	-25.8	2.51 H	333	45.1	3.1
2	5150.00	40.3 AV	54.0	-13.7	2.51 H	333	37.2	3.1
3	*5250.00	92.5 PK			2.51 H	333	89.7	2.8
4	*5250.00	60.1 AV			2.51 H	333	57.3	2.8
5	5350.00	57.6 PK	74.0	-16.4	2.51 H	333	54.5	3.1
6	5350.00	48.2 AV	54.0	-5.8	2.51 H	333	45.1	3.1
7	#10500.00	51.5 PK	68.2	-16.7	1.89 H	221	38.1	13.4
8	15750.00	51.7 PK	74.0	-22.3	1.18 H	133	38.9	12.8
9	15750.00	37.3 AV	54.0	-16.7	1.18 H	133	24.5	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	54.4 PK	74.0	-19.6	1.61 V	230	51.3	3.1
2	5150.00	45.3 AV	54.0	-8.7	1.61 V	230	42.2	3.1
3	*5250.00	106.4 PK			1.61 V	230	103.6	2.8
4	*5250.00	96.1 AV			1.61 V	230	93.3	2.8
5	5350.00	63.6 PK	74.0	-10.4	1.61 V	230	60.5	3.1
6	5350.00	53.6 AV	54.0	-0.4	1.61 V	230	50.5	3.1
7	#10500.00	52.4 PK	68.2	-15.8	2.00 V	263	39.0	13.4
8	15750.00	47.7 PK	74.0	-26.3	1.78 V	221	34.9	12.8
9	15750.00	36.4 AV	54.0	-17.6	1.78 V	221	23.6	12.8

REMARKS:

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

CHANNEL	TX Channel 114	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	60.2 PK	74.0	-13.8	2.47 H	288	56.8	3.4
2	5460.00	48.1 AV	54.0	-5.9	2.47 H	288	44.7	3.4
3	#5470.00	56.4 PK	68.2	-11.8	2.47 H	288	53.0	3.4
4	*5570.00	99.5 PK			2.47 H	288	96.1	3.4
5	*5570.00	90.5 AV			2.47 H	288	87.1	3.4
6	#5725.00	55.2 PK	68.2	-13.0	2.47 H	288	51.6	3.6
7	11140.00	53.6 PK	74.0	-20.4	1.08 H	211	40.1	13.5
8	11140.00	47.1 AV	54.0	-6.9	1.08 H	211	33.6	13.5
9	#16710.00	51.3 PK	68.2	-16.9	1.49 H	233	34.8	16.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.3 PK	74.0	-8.7	1.60 V	222	61.9	3.4
2	5460.00	53.5 AV	54.0	-0.5	1.60 V	222	50.1	3.4
3	#5470.00	62.7 PK	68.2	-5.5	1.60 V	222	59.3	3.4
4	*5570.00	108.9 PK			1.60 V	222	105.5	3.4
5	*5570.00	99.8 AV			1.60 V	222	96.4	3.4
6	#5725.00	63.2 PK	68.2	-5.0	1.60 V	222	59.6	3.6
7	11140.00	52.6 PK	74.0	-21.4	1.46 V	231	39.1	13.5
8	11140.00	48.0 AV	54.0	-6.0	1.46 V	231	34.5	13.5
9	#16710.00	47.6 PK	68.2	-20.6	1.22 V	228	31.1	16.5

REMARKS:

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

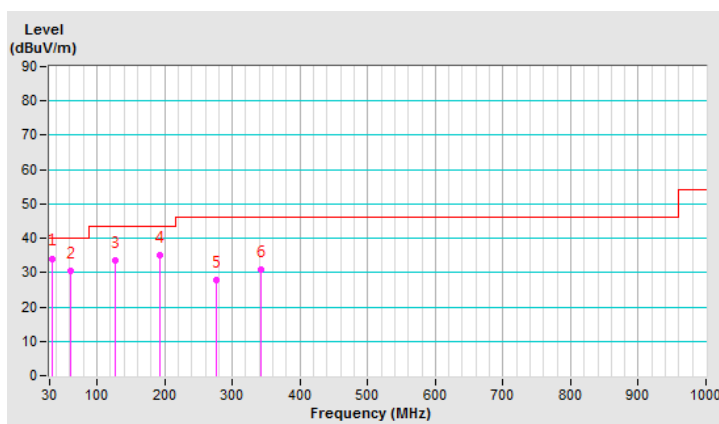
802.11ax (HE40)

CHANNEL	TX Channel 102	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	34.03	34.1 QP	40.0	-5.9	1.50 H	221	43.6	-9.5
2	61.45	30.4 QP	40.0	-9.6	3.00 H	89	39.2	-8.8
3	126.54	33.5 QP	43.5	-10.0	3.00 H	252	42.8	-9.3
4	193.35	35.1 QP	43.5	-8.4	1.50 H	103	45.9	-10.8
5	275.53	27.9 QP	46.0	-18.1	1.00 H	225	35.6	-7.7
6	343.09	31.0 QP	46.0	-15.0	1.00 H	168	37.0	-6.0

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 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.

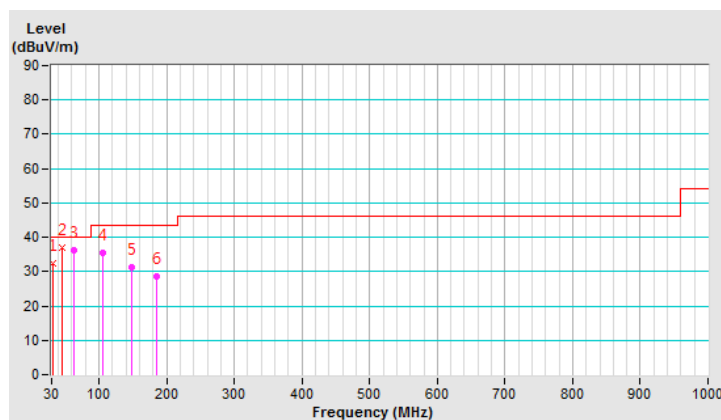


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.75	32.3 QP	40.0	-7.7	1.00 V	274	41.9	-9.6
2	45.96	37.0 QP	40.0	-3.0	1.00 V	0	45.0	-8.0
3	62.91	36.2 QP	40.0	-3.8	1.00 V	190	45.1	-8.9
4	106.00	35.3 QP	43.5	-8.2	1.00 V	250	46.5	-11.2
5	147.85	31.3 QP	43.5	-12.2	1.00 V	185	39.1	-7.8
6	186.12	28.7 QP	43.5	-14.8	1.00 V	292	38.8	-10.1

REMARKS:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 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. 02, 2019

4.2.3 Test Procedure

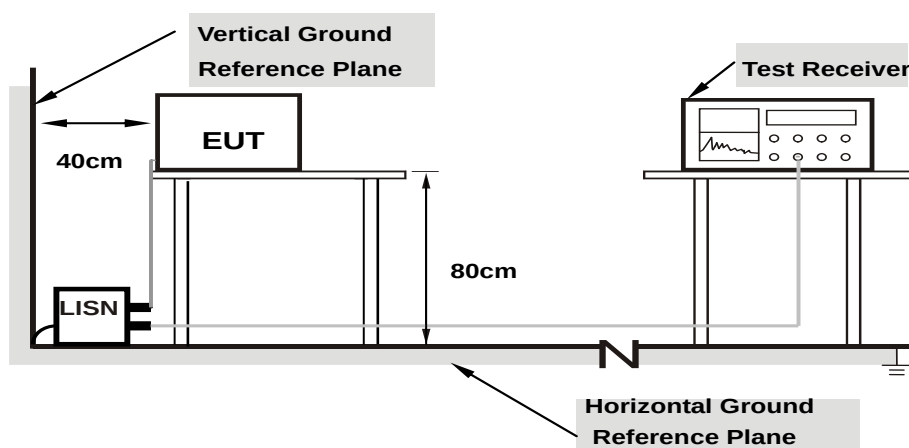
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

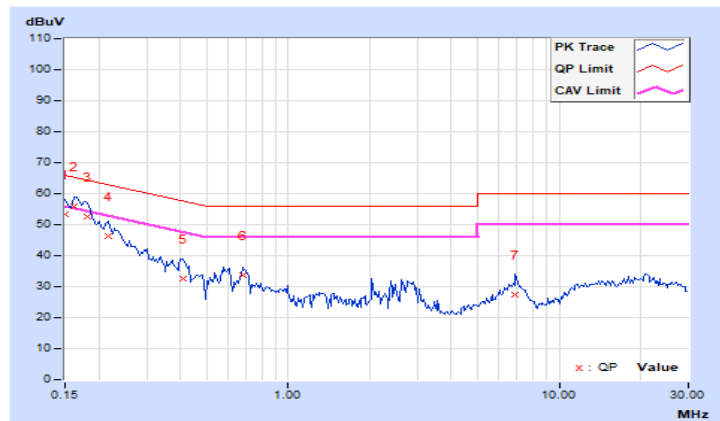
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.97	43.20	28.86	53.17	38.83	66.00	56.00	-12.83	-17.17
2	0.16172	9.97	45.98	31.46	55.95	41.43	65.38	55.38	-9.43	-13.95
3	0.18125	9.97	42.76	29.02	52.73	38.99	64.43	54.43	-11.70	-15.44
4	0.21641	9.97	36.30	24.34	46.27	34.31	62.96	52.96	-16.69	-18.65
5	0.40781	9.98	22.62	16.38	32.60	26.36	57.69	47.69	-25.09	-21.33
6	0.68125	10.00	23.58	13.43	33.58	23.43	56.00	46.00	-22.42	-22.57
7	6.90625	10.31	17.28	11.60	27.59	21.91	60.00	50.00	-32.41	-28.09

Remarks:

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

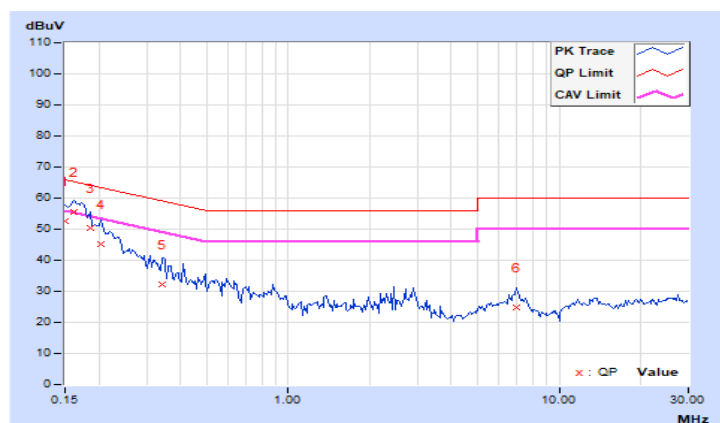


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.97	42.60	28.08	52.57	38.05	66.00	56.00	-13.43	-17.95
2	0.16172	9.97	45.69	30.83	55.66	40.80	65.38	55.38	-9.72	-14.58
3	0.18516	9.97	40.33	25.60	50.30	35.57	64.25	54.25	-13.95	-18.68
4	0.20469	9.97	35.39	21.85	45.36	31.82	63.42	53.42	-18.06	-21.60
5	0.34141	9.98	22.33	12.04	32.31	22.02	59.17	49.17	-26.86	-27.15
6	6.91797	10.26	14.70	9.14	24.96	19.40	60.00	50.00	-35.04	-30.60

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

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

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

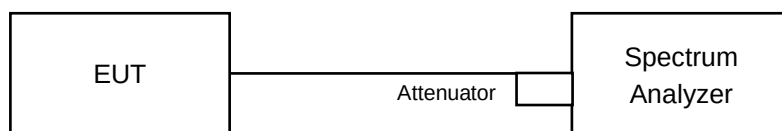
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

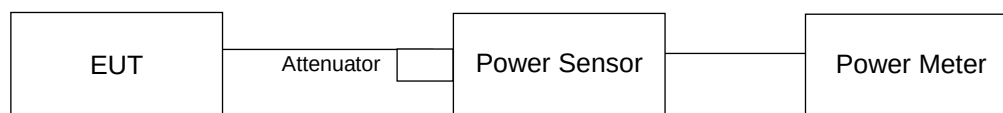
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

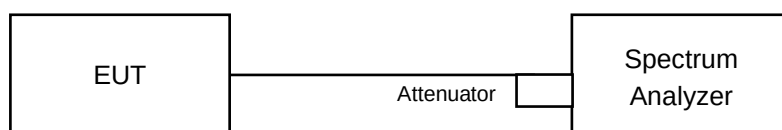
For channel straddling 5725MHz or 5250MHz:



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 other channels:

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

For channel straddling 5725MHz or 5250MHz:

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 $\geq 3 \times$ RBW.
4. Number of points in sweep $\geq 2 \times$ 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 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

Non-Beamforming Mode

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	15.97	15.53	15.06	15.63	143.886	21.58	24.00	Pass
60	5300	15.68	15.50	14.89	15.79	141.227	21.50	24.00	Pass
64	5320	15.76	15.68	14.93	15.84	144.141	21.59	24.00	Pass
100	5500	15.49	15.19	15.35	15.53	138.441	21.41	24.00	Pass
116	5580	15.28	14.99	15.16	15.96	137.535	21.38	24.00	Pass
140	5700	15.66	15.38	15.63	15.74	145.383	21.63	24.00	Pass
*144 (U-NII-2C Band)	5720	14.58	14.29	13.64	14.73	108.399	20.35	23.18	Pass
*144 (U-NII-3 Band)	5720	8.52	8.34	7.65	8.66	27.101	14.33	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	135.5	21.32

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	25.94	25.94	26.06	24.86
60	5300	25.94	25.98	25.98	24.92
64	5320	23.39	23.36	23.32	23.19
100	5500	23.36	23.28	23.35	23.16
116	5580	25.84	24.80	25.95	24.89
140	5700	25.94	24.90	26.01	24.77
144 (U-NII-2C Band)	5720	16.54	16.66	16.54	16.67

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	24.86	24.95 > 24
60	5300	24.92	24.96 > 24
64	5320	23.19	24.65 > 24
100	5500	23.16	24.64 > 24
116	5580	24.80	24.94 > 24
140	5700	24.77	24.93 > 24
144 (U-NII-2C Band)	5720	16.54	23.18 < 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	Chain 2	Chain 3				
52	5260	15.71	15.11	14.42	15.33	131.461	21.19	24.00	Pass
60	5300	15.57	15.04	14.28	15.16	127.575	21.06	24.00	Pass
64	5320	15.66	15.33	14.70	15.58	136.585	21.35	24.00	Pass
100	5500	15.30	15.11	15.25	15.73	137.226	21.37	24.00	Pass
116	5580	15.11	15.27	14.69	15.40	130.203	21.15	24.00	Pass
140	5700	15.33	14.90	15.49	15.49	135.822	21.33	24.00	Pass
*144 (U-NII-2C Band)	5720	13.47	13.51	13.03	13.34	86.34	19.36	23.25	Pass
*144 (U-NII-3 Band)	5720	7.99	8.02	7.61	7.85	24.497	13.89	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	110.837	20.45

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	22.18	23.31	24.95	24.28
60	5300	22.78	23.40	23.28	23.59
64	5320	22.55	21.41	23.58	21.83
100	5500	23.41	23.61	22.15	25.57
116	5580	23.77	23.41	22.63	24.87
140	5700	24.20	22.09	24.25	24.36
144 (U-NII-2C Band)	5720	16.81	18.08	17.99	17.14

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	22.18	24.45 > 24
60	5300	22.78	24.57 > 24
64	5320	21.41	24.3 > 24
100	5500	22.15	24.45 > 24
116	5580	22.63	24.54 > 24
140	5700	22.09	24.44 > 24
144 (U-NII-2C Band)	5720	16.81	23.25 < 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	Chain 2	Chain 3				
54	5270	17.83	17.42	17.06	17.62	224.508	23.51	24.00	Pass
62	5310	17.66	17.31	17.30	17.41	220.956	23.44	24.00	Pass
102	5510	17.43	17.67	17.56	18.12	235.693	23.72	24.00	Pass
110	5550	17.31	17.57	17.60	18.21	234.741	23.71	24.00	Pass
134	5670	17.58	17.49	17.52	17.75	229.445	23.61	24.00	Pass
*142 (U-NII-2C Band)	5710	16.56	16.66	16.25	16.63	179.831	22.55	24.00	Pass
*142 (U-NII-3 Band)	5710	6.46	6.62	6.18	6.50	17.635	12.46	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)
142	5710	197.466	22.95

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	44.28	47.23	47.31	44.47
62	5310	44.63	47.06	45.42	48.05
102	5510	45.22	44.53	44.75	46.66
110	5550	47.52	44.21	43.72	47.31
134	5670	45.71	48.19	43.55	41.69
142 (U-NII-2C Band)	5710	37.55	37.16	36.16	36.93

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	44.28	27.46 > 24
62	5310	44.63	27.49 > 24
102	5510	44.53	27.48 > 24
110	5550	43.72	27.4 > 24
134	5670	41.69	27.2 > 24
142 (U-NII-2C Band)	5710	36.16	26.58 > 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	Chain 2	Chain 3				
58	5290	18.07	17.69	17.20	17.19	227.711	23.57	24.00	Pass
106	5530	17.90	17.47	17.59	17.92	236.863	23.75	24.00	Pass
122	5610	17.59	17.57	17.85	17.76	235.218	23.72	24.00	Pass
*138 (U-NII-2C Band)	5690	16.87	16.65	16.65	16.92	190.321	22.79	24.00	Pass
*138 (U-NII-3 Band)	5690	3.05	3.13	3.16	3.41	8.337	9.21	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)
138	5690	198.658	22.98

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.56	85.15	82.88	84.58
106	5530	84.85	83.71	86.59	85.78
122	5610	85.05	85.26	83.59	84.31
138 (U-NII-2C Band)	5690	78.16	77.18	78.66	77.52

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

Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.56	30.16 > 24
106	5530	83.71	30.22 > 24
122	5610	83.59	30.22 > 24
138 (U-NII-2C Band)	5690	77.18	29.87 > 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	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.33	10.47	8.88	10.65	41.273	16.16	30.00	Pass
*50 (U-NII-2A Band)	5250	11.19	11.18	10.70	11.55	52.312	17.19	24.00	Pass
114	5570	15.42	15.36	15.41	15.77	141.701	21.51	24.00	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)
50	5250	93.585	19.71

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	163.94	165.69	163.80	164.21
114	5570	165.61	164.63	164.81	165.51

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	163.80	26.14 > 24
114	5570	164.63	33.16 > 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	Chain 2	Chain 3				
52	5260	15.91	15.41	14.67	15.54	138.867	21.43	24.00	Pass
60	5300	15.80	15.41	14.66	15.62	138.49	21.41	24.00	Pass
64	5320	15.84	15.78	14.82	15.77	144.311	21.59	24.00	Pass
100	5500	15.71	15.52	15.49	15.93	147.458	21.69	24.00	Pass
116	5580	15.19	15.64	15.10	15.77	139.797	21.45	24.00	Pass
140	5700	15.60	15.31	15.89	15.74	146.583	21.66	24.00	Pass
*144 (U-NII-2C Band)	5720	13.81	13.73	13.50	13.83	94.191	19.74	23.25	Pass
*144 (U-NII-3 Band)	5720	8.74	8.71	8.33	8.54	28.865	14.60	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	123.056	20.9

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	22.18	23.31	24.95	24.28
60	5300	22.78	23.40	23.28	23.59
64	5320	22.55	21.41	23.58	21.83
100	5500	23.41	23.61	22.15	25.57
116	5580	23.77	23.41	22.63	24.87
140	5700	24.20	22.09	24.25	24.36
144 (U-NII-2C Band)	5720	16.81	18.08	17.99	17.14

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	22.18	24.45 > 24
60	5300	22.78	24.57 > 24
64	5320	21.41	24.3 > 24
100	5500	22.15	24.45 > 24
116	5580	22.63	24.54 > 24
140	5700	22.09	24.44 > 24
144 (U-NII-2C Band)	5720	16.81	23.25 < 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	Chain 2	Chain 3				
54	5270	18.14	17.64	17.29	17.93	238.906	23.78	24.00	Pass
62	5310	17.97	17.53	17.53	17.72	235.065	23.71	24.00	Pass
102	5510	17.74	17.89	17.79	18.43	250.727	23.99	24.00	Pass
110	5550	17.62	17.79	17.83	18.52	249.722	23.97	24.00	Pass
134	5670	17.89	17.71	17.75	18.06	244.077	23.88	24.00	Pass
*142 (U-NII-2C Band)	5710	17.02	16.45	16.23	16.77	184.017	22.65	24.00	Pass
*142 (U-NII-3 Band)	5710	7.46	6.97	7.37	7.33	21.415	13.31	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)
142	5710	205.432	23.13

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	44.28	47.23	47.31	44.47
62	5310	44.63	47.06	45.42	48.05
102	5510	45.22	44.53	44.75	46.66
110	5550	47.52	44.21	43.72	47.31
134	5670	45.71	48.19	43.55	41.69
142 (U-NII-2C Band)	5710	37.55	37.16	36.16	36.93

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	44.28	27.46 > 24
62	5310	44.63	27.49 > 24
102	5510	44.53	27.48 > 24
110	5550	43.72	27.4 > 24
134	5670	41.69	27.2 > 24
142 (U-NII-2C Band)	5710	36.16	26.58 > 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	Chain 2	Chain 3				
58	5290	18.29	17.90	17.46	17.41	239.913	23.80	24.00	Pass
106	5530	18.12	17.68	17.85	18.14	249.594	23.97	24.00	Pass
122	5610	17.81	17.78	18.11	17.98	247.894	23.94	24.00	Pass
*138 (U-NII-2C Band)	5690	17.09	16.87	16.72	16.91	195.889	22.92	24.00	Pass
*138 (U-NII-3 Band)	5690	3.92	3.98	3.92	4.04	9.967	9.99	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)
138	5690	205.856	23.14

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.56	85.15	82.88	84.58
106	5530	84.85	83.71	86.59	85.78
122	5610	85.05	85.26	83.59	84.31
138 (U-NII-2C Band)	5690	78.16	77.18	78.66	77.52

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

Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.56	30.16 > 24
106	5530	83.71	30.22 > 24
122	5610	83.59	30.22 > 24
138 (U-NII-2C Band)	5690	77.18	29.87 > 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	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.63	10.47	10.08	11.05	45.625	16.59	30.00	Pass
*50 (U-NII-2A Band)	5250	11.49	11.38	10.78	11.65	54.422	17.36	24.00	Pass
114	5570	15.62	15.56	15.61	15.97	148.379	21.71	24.00	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)
50	5250	100.047	20

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	163.94	165.69	163.80	164.21
114	5570	165.61	164.63	164.81	165.51

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

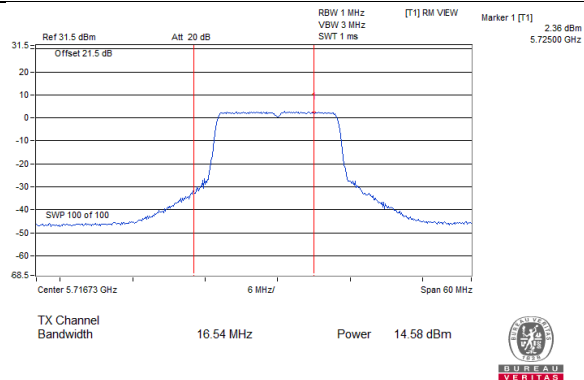
Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	163.80	26.14 > 24
114	5570	164.63	33.16 > 24

For channel straddling 5725MHz of Power

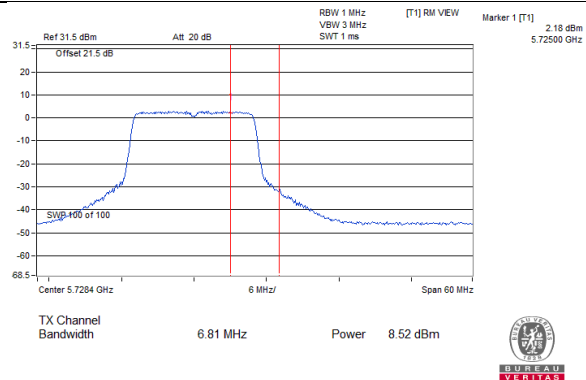
Non-Beamforming Mode

Spectrum Plot Value of Power

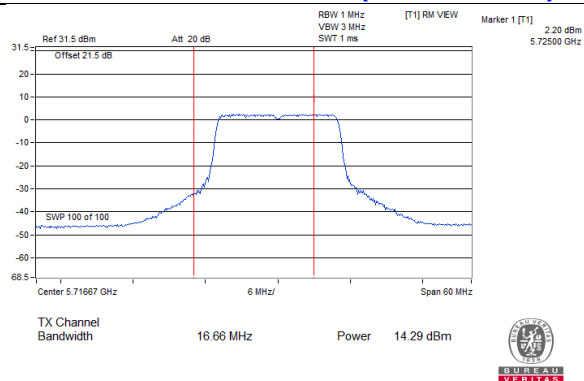
802.11a_Chain 0 / CH144 (U-NII-2C Band)



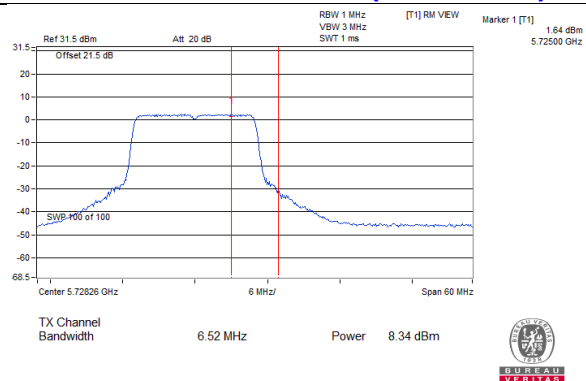
802.11a_Chain 0 / CH144 (U-NII-3 Band)



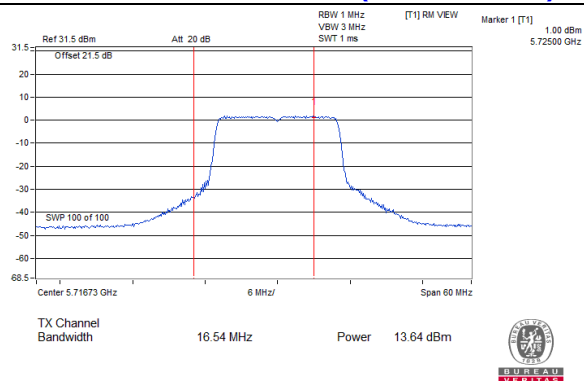
802.11a_Chain 1 / CH144 (U-NII-2C Band)



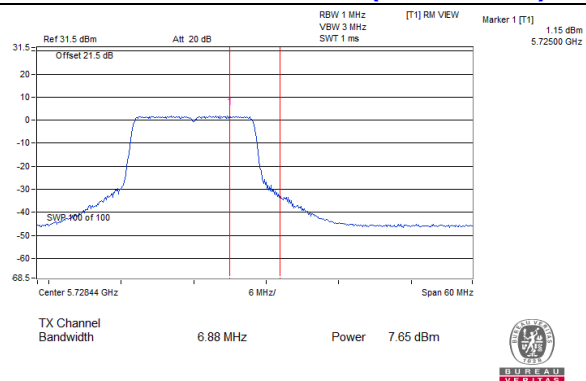
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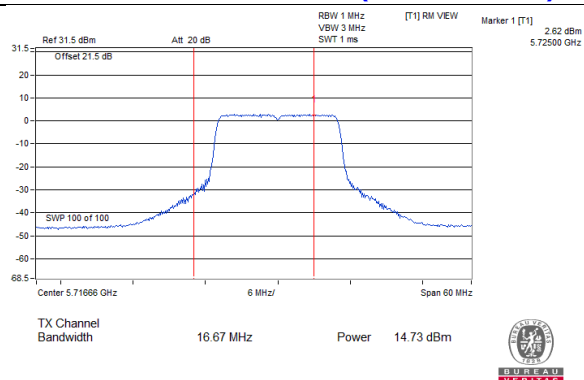
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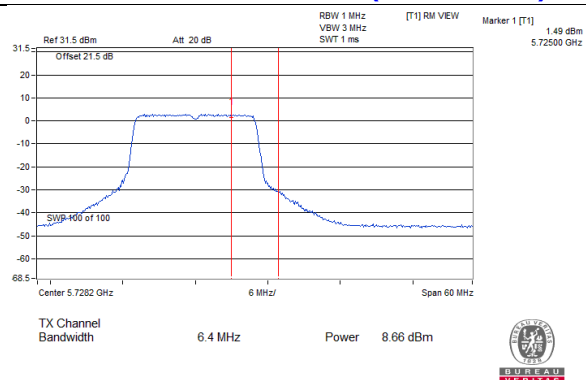
802.11a_Chain 2 / CH144 (U-NII-3 Band)



802.11a_Chain 3 / CH144 (U-NII-2C Band)

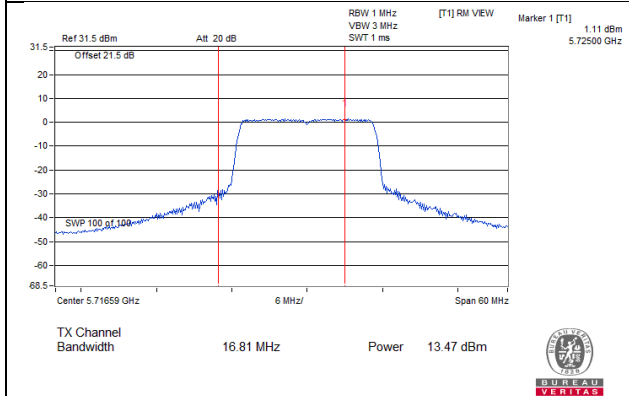


802.11a_Chain 3 / CH144 (U-NII-3 Band)

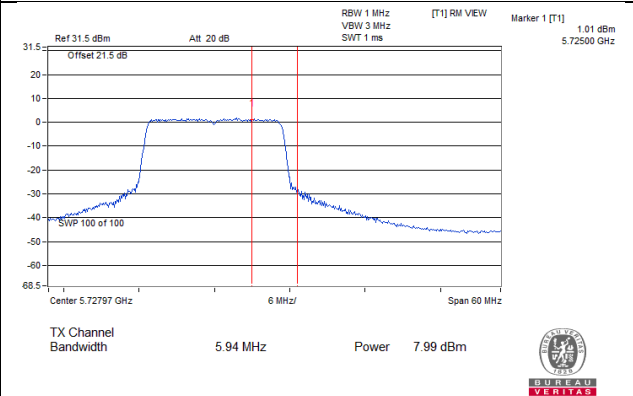


Spectrum Plot Value of Power

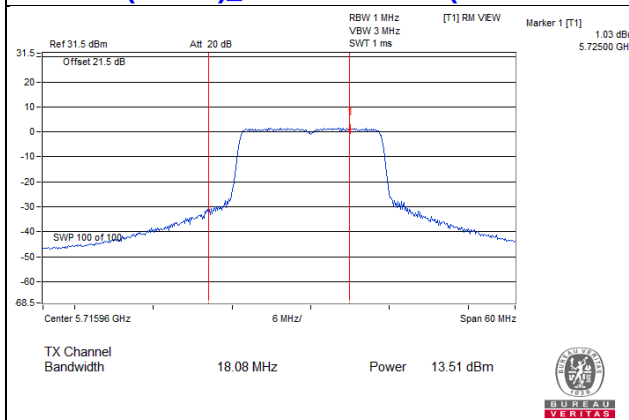
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



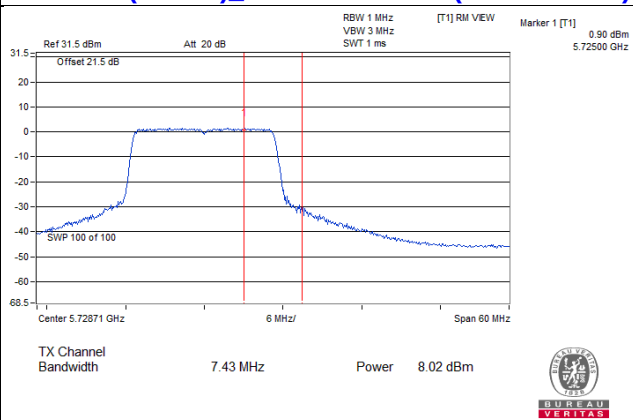
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



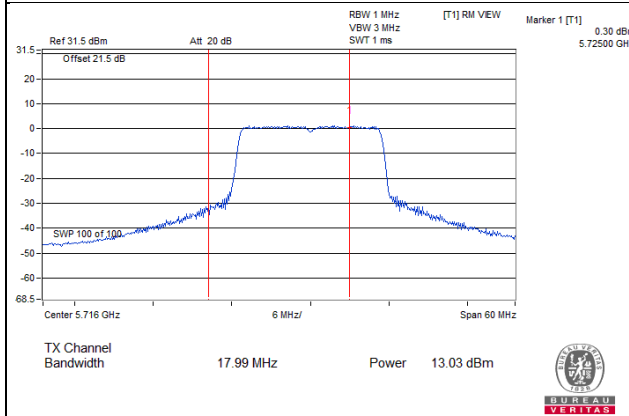
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



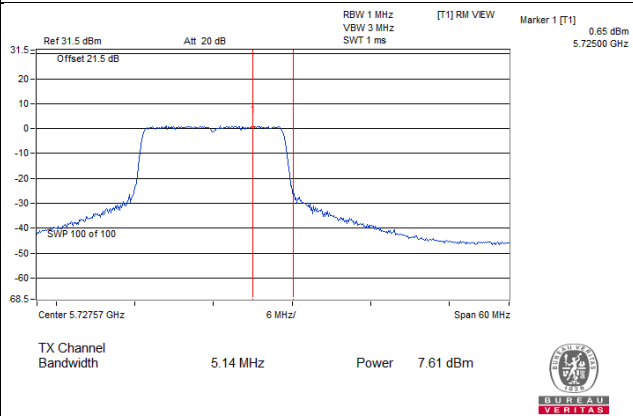
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



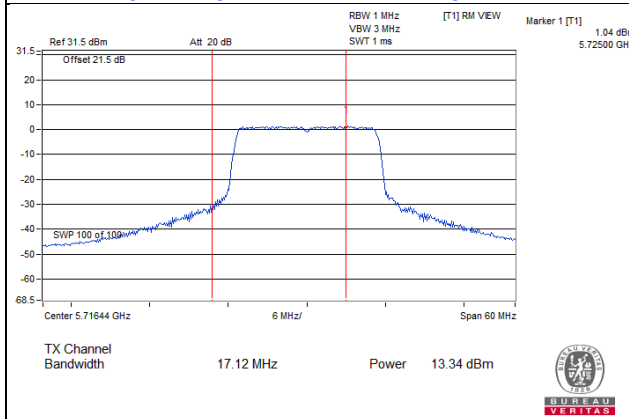
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



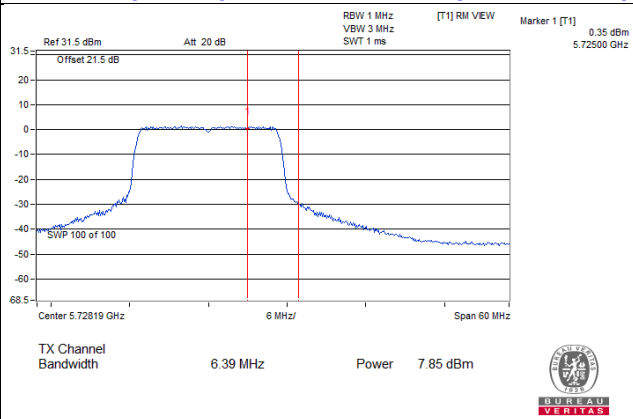
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)

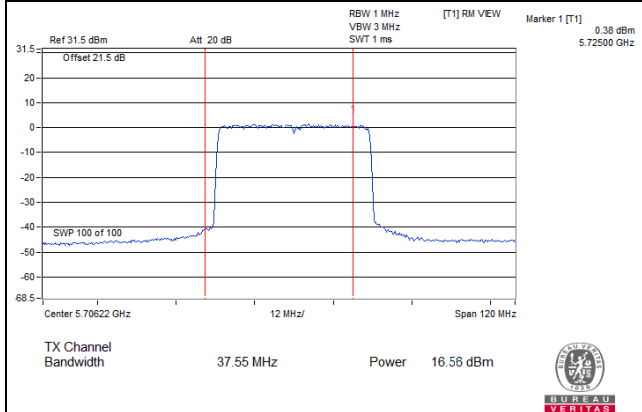


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)

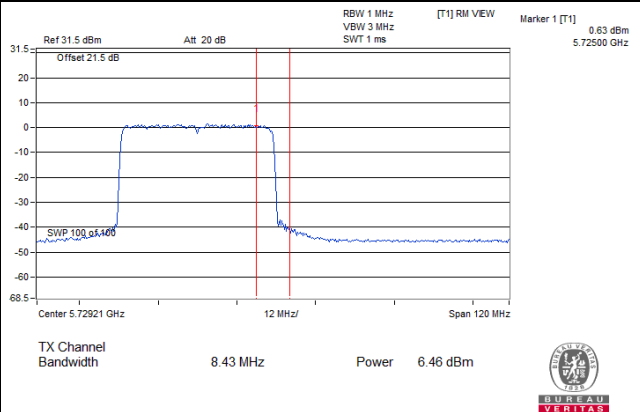


Spectrum Plot Value of Power

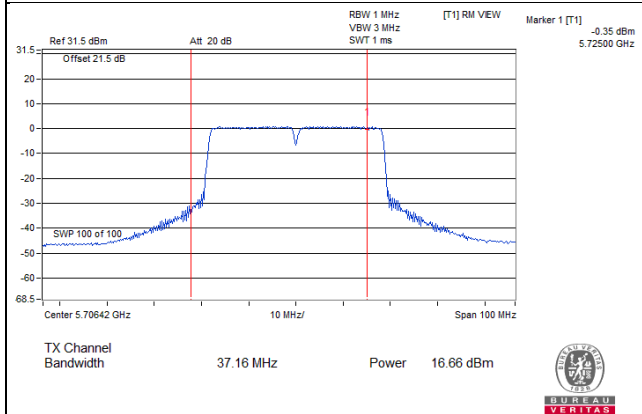
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



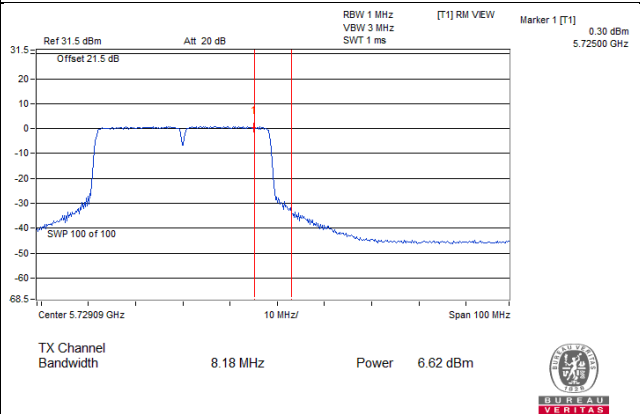
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



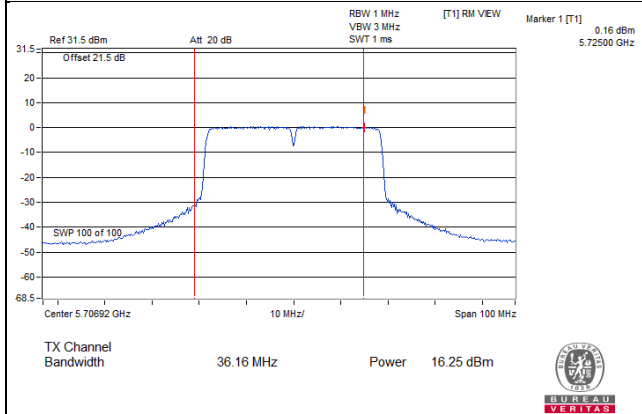
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



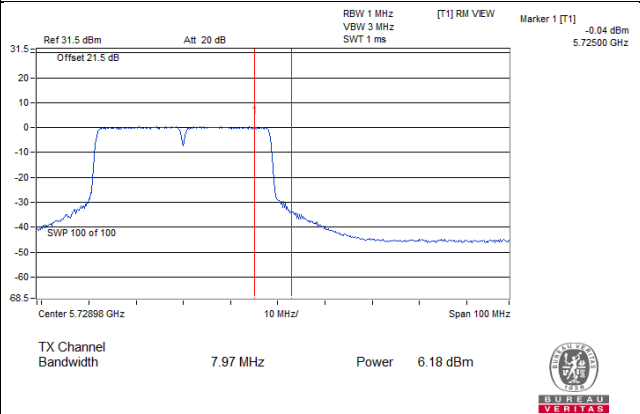
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



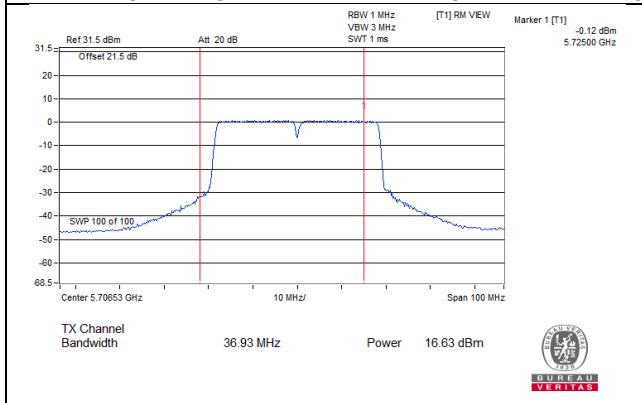
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)



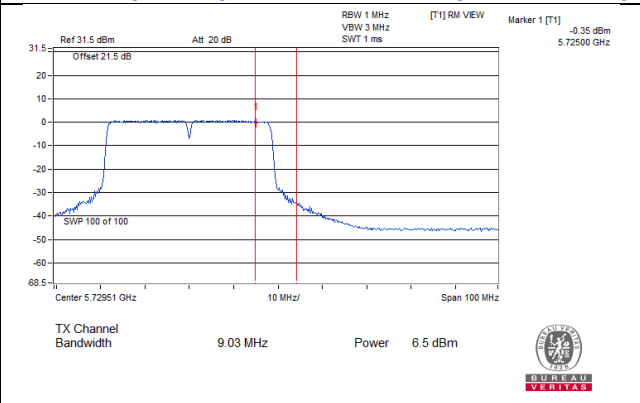
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)

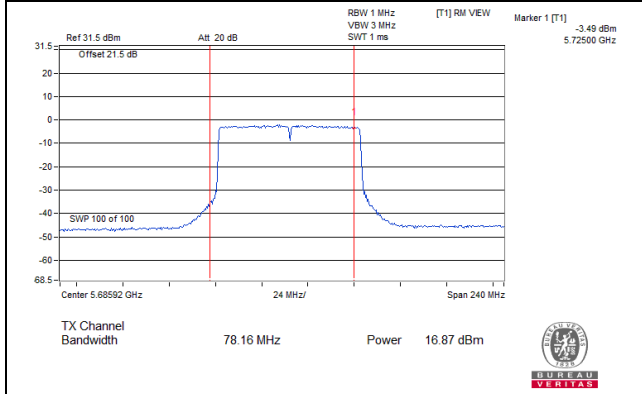


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

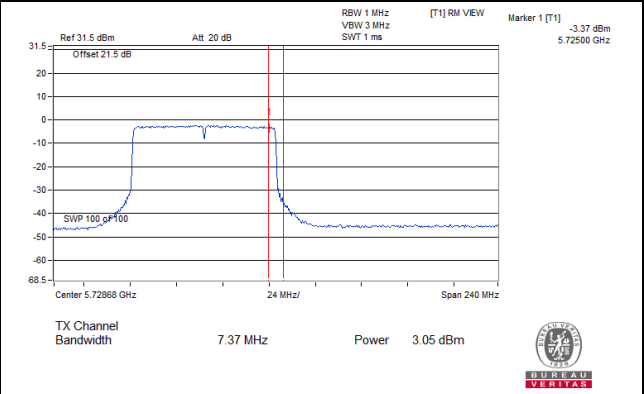


Spectrum Plot Value of Power

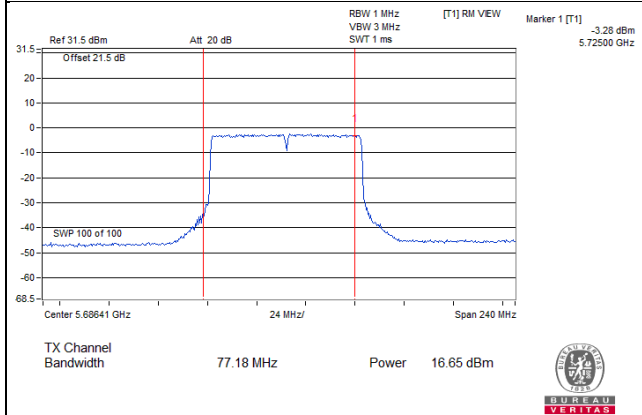
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)



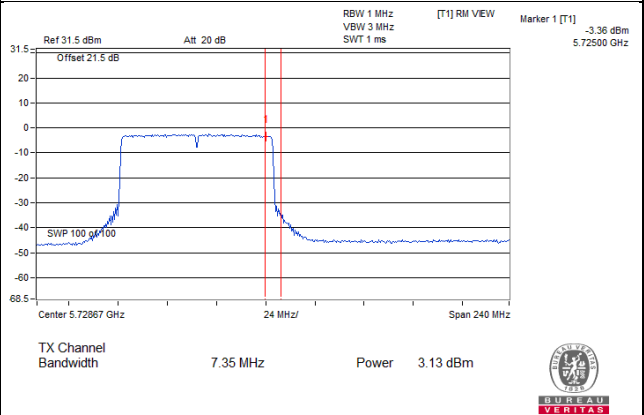
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



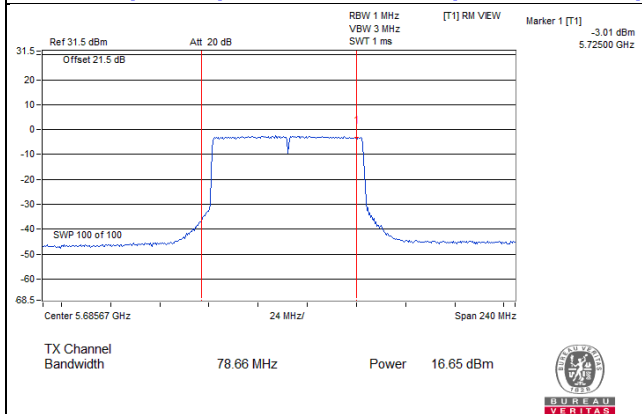
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)



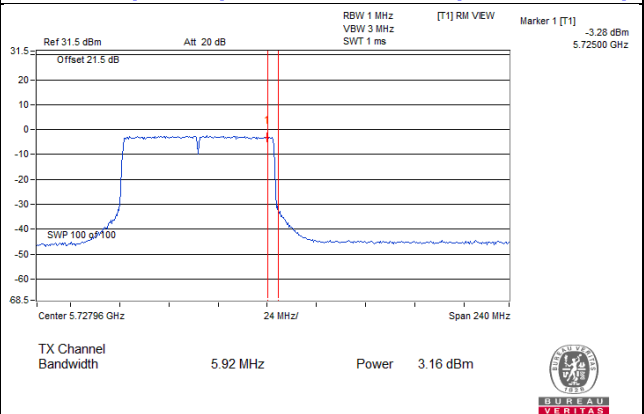
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



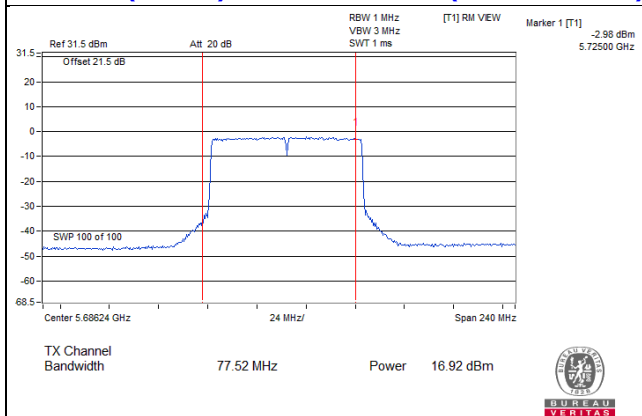
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)



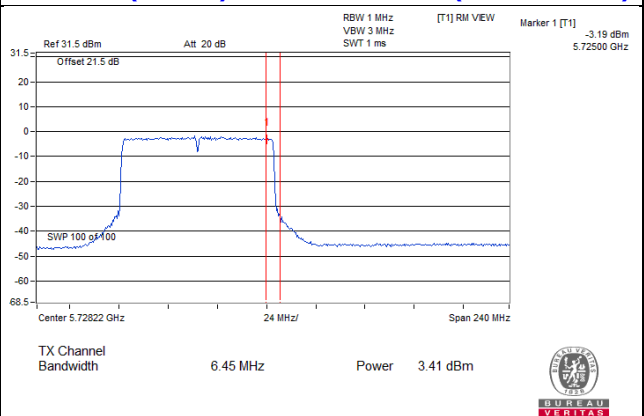
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)

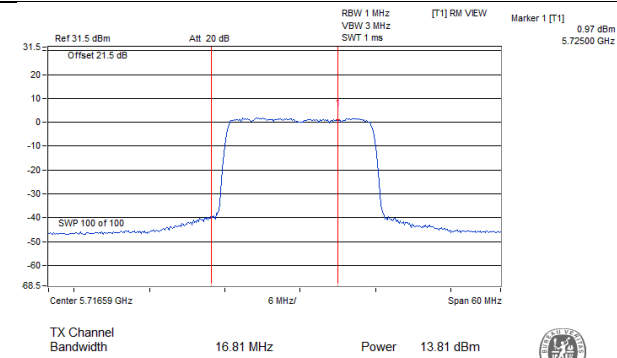


802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)

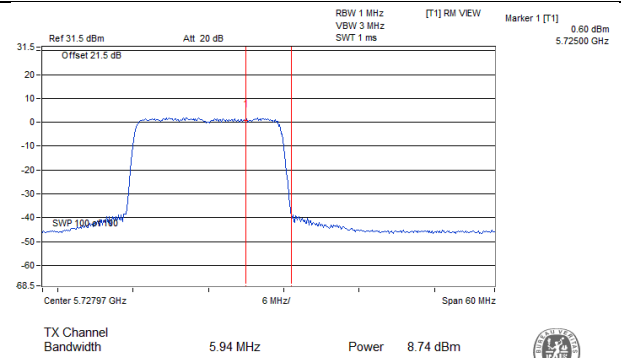


Spectrum Plot Value of Power

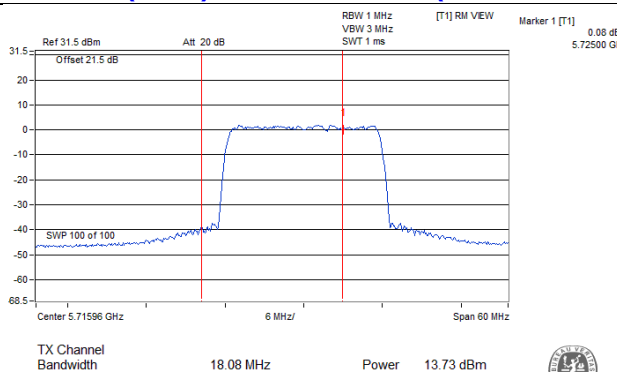
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)



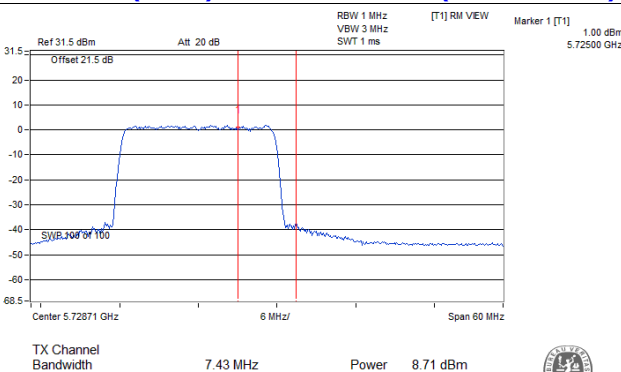
802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



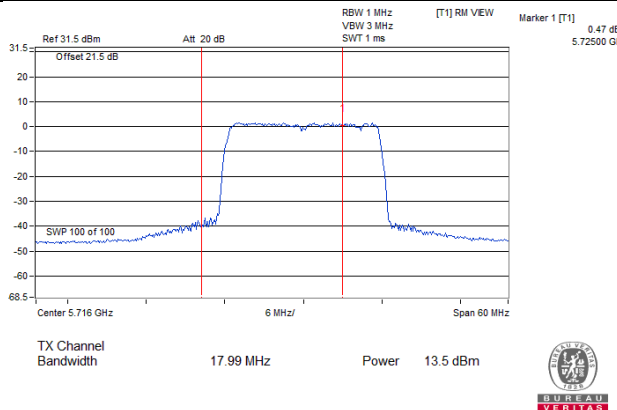
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



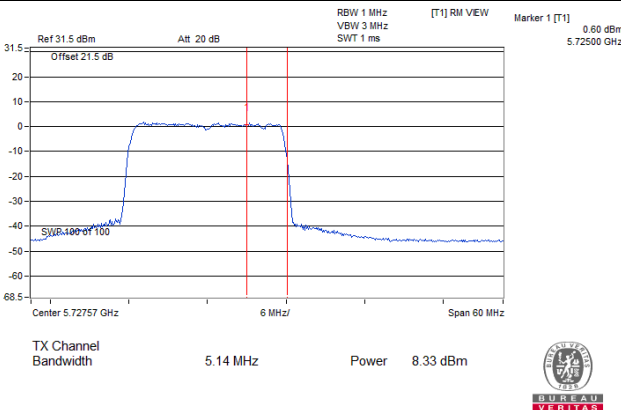
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



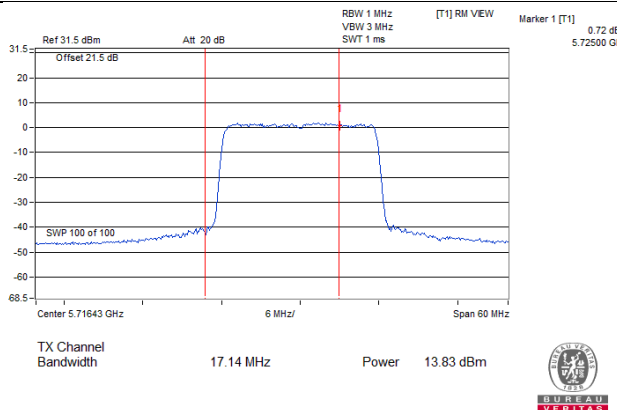
802.11ax (HE20)_Chain 2 / CH144 (U-NII-2C Band)



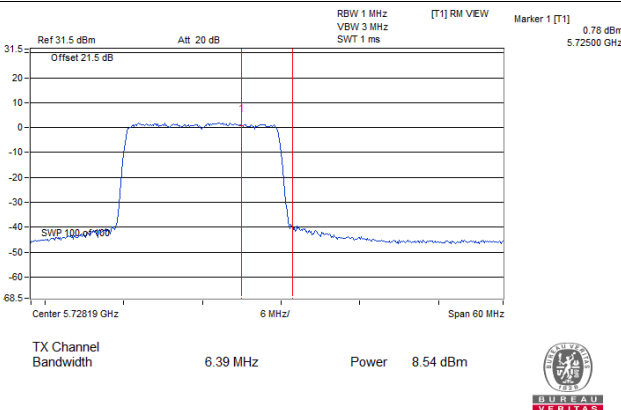
802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ax (HE20)_Chain 3 / CH144 (U-NII-2C Band)

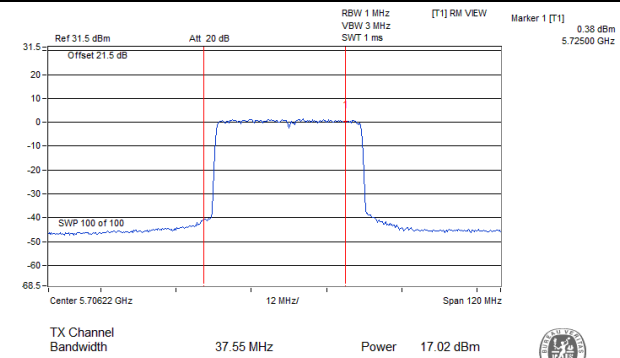


802.11ax (HE20)_Chain 3 / CH144 (U-NII-3 Band)

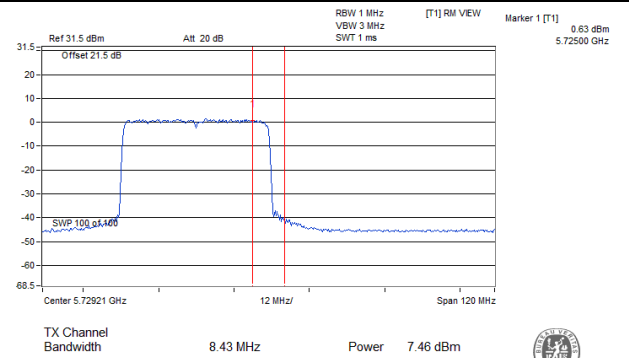


Spectrum Plot Value of Power

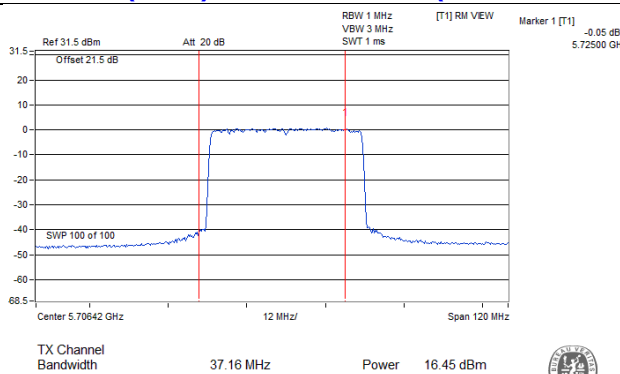
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)



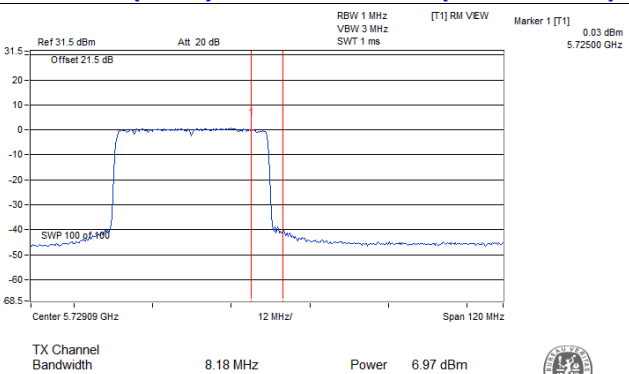
802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



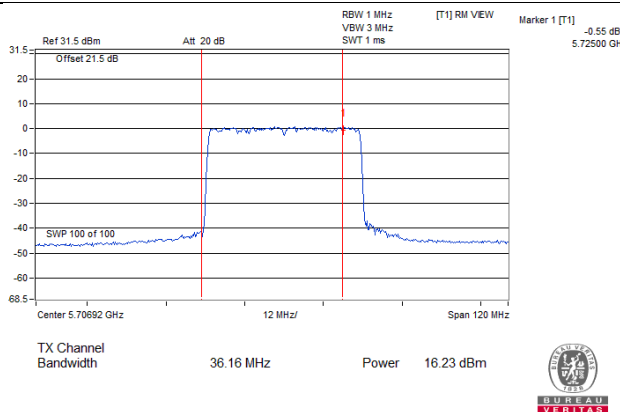
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



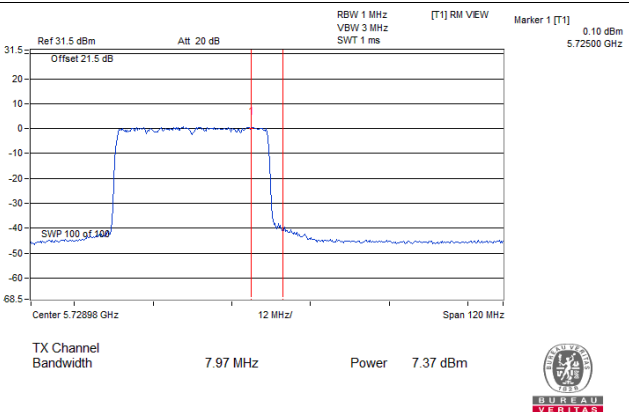
802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



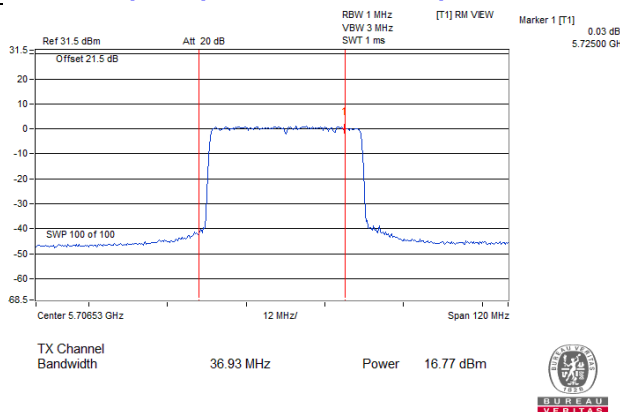
802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)



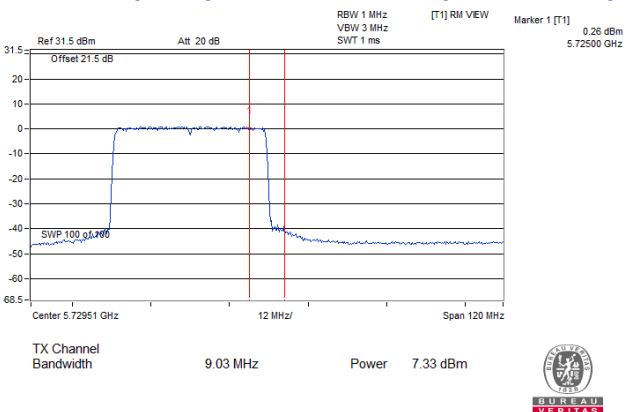
802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ax (HE40)_Chain 3 / CH142 (U-NII-2C Band)

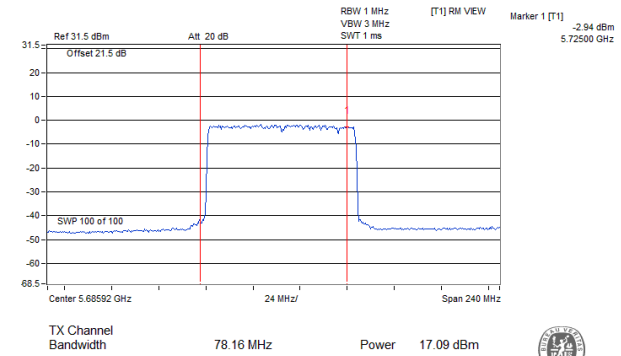


802.11ax (HE40)_Chain 3 / CH142 (U-NII-3 Band)

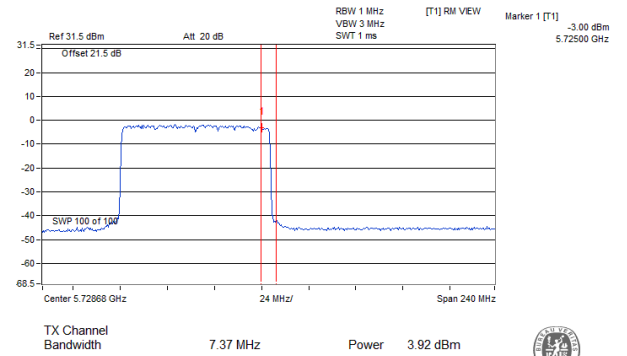


Spectrum Plot Value of Power

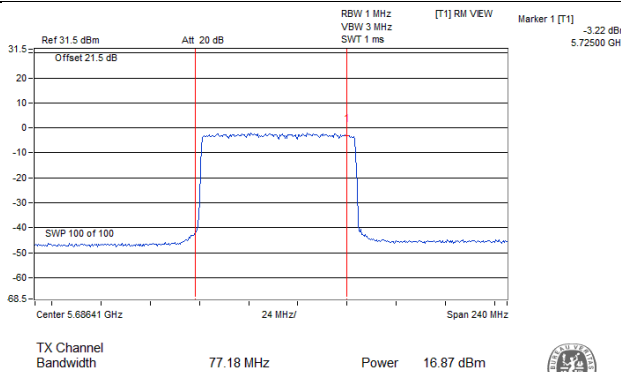
802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



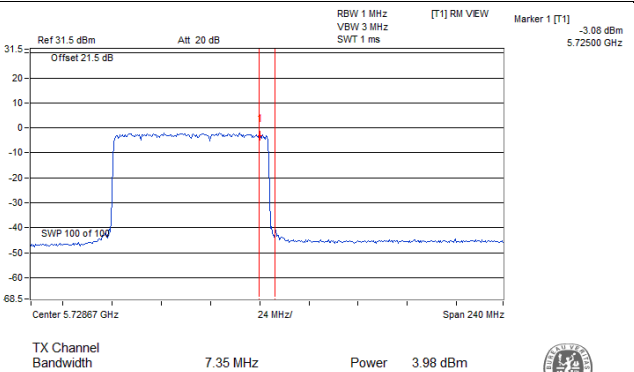
802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



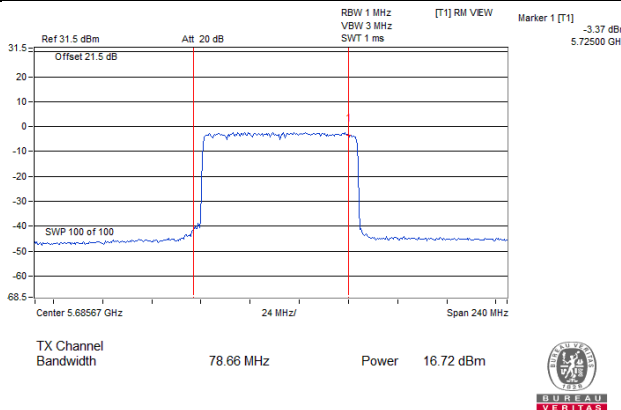
802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



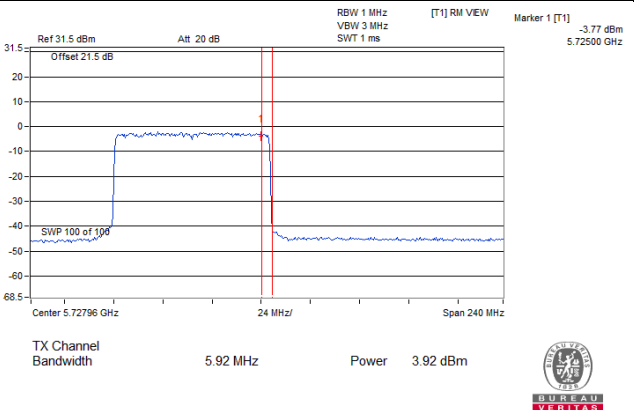
802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



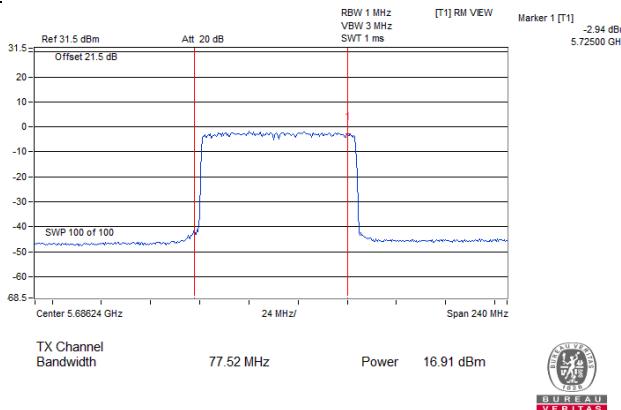
802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)



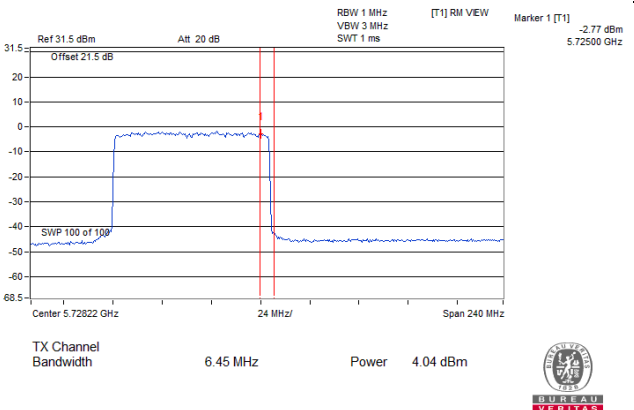
802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ax (HE80)_Chain 3 / CH138 (U-NII-2C Band)



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

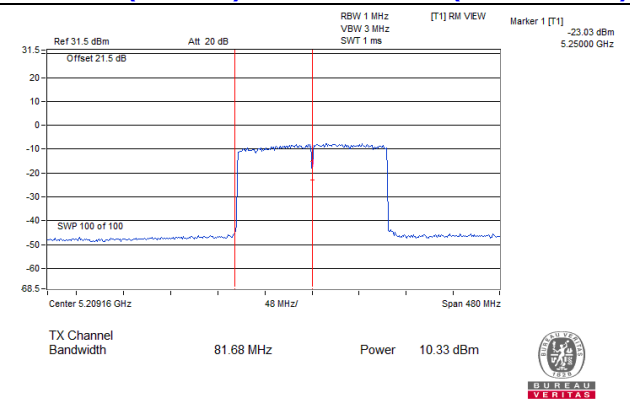


For channel straddling 5250MHz of Power

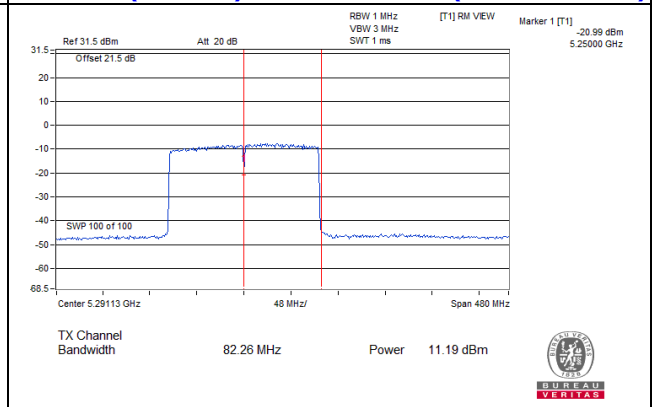
Non-Beamforming Mode

Spectrum Plot Value of Power

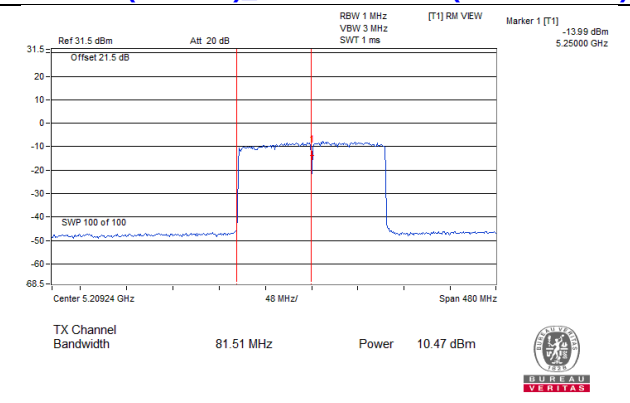
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)



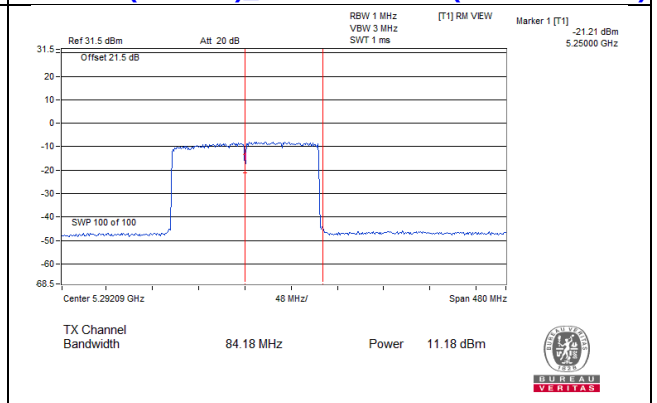
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)



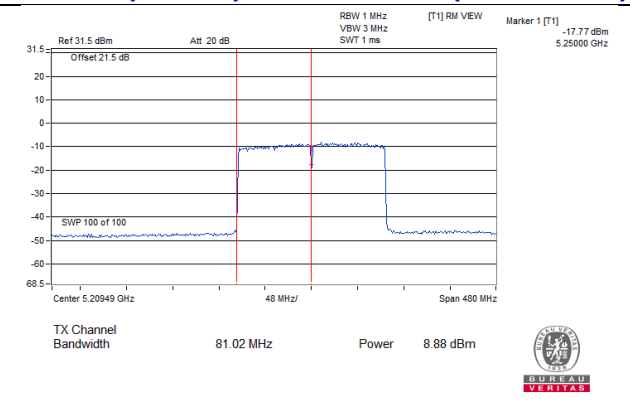
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)



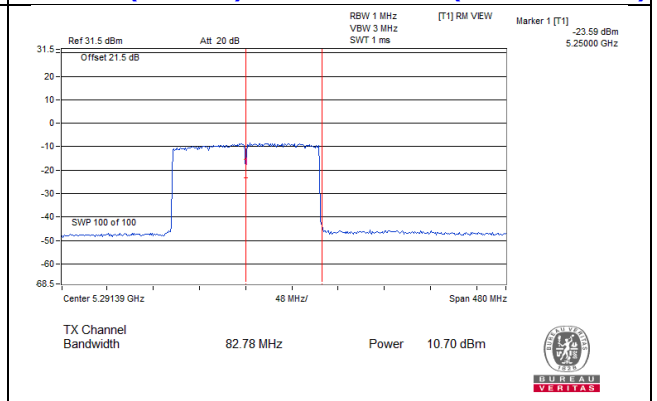
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



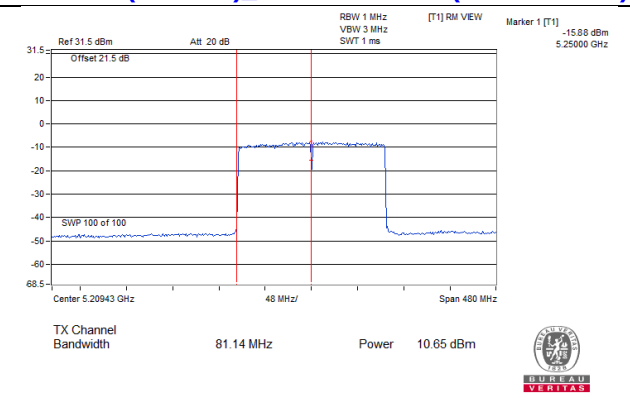
802.11ac (VHT160)_Chain 2 / CH50 (U-NII-1 Band)



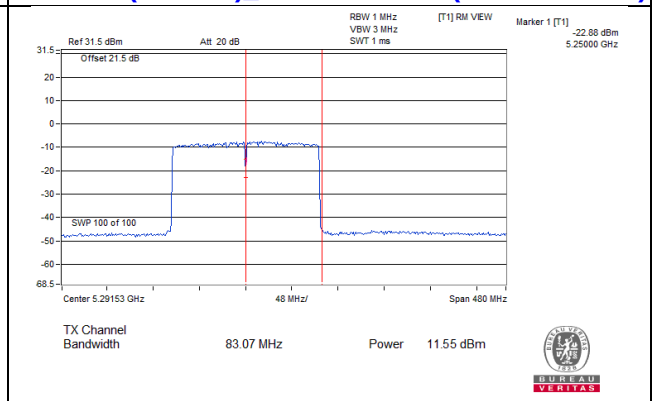
802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band)



802.11ac (VHT160)_Chain 3 / CH50 (U-NII-1 Band)

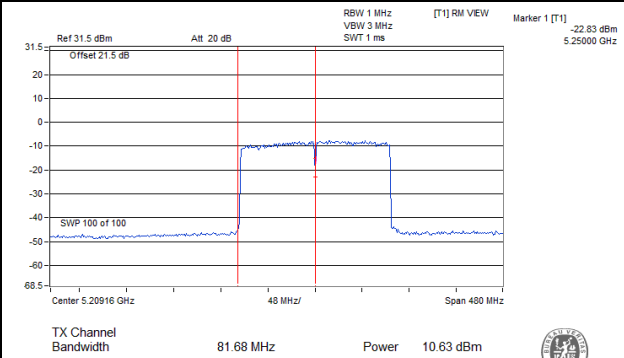


802.11ac (VHT160)_Chain 3 / CH50 (U-NII-2A Band)

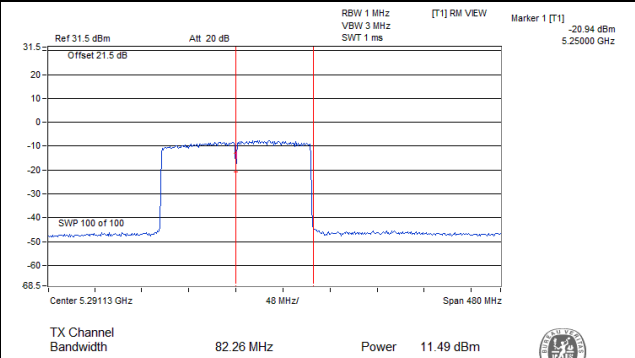


Spectrum Plot Value of Power

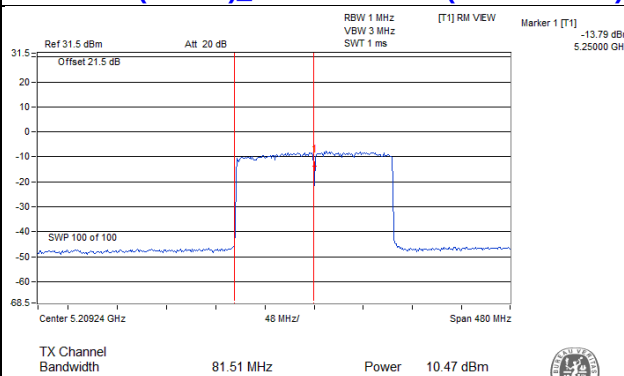
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



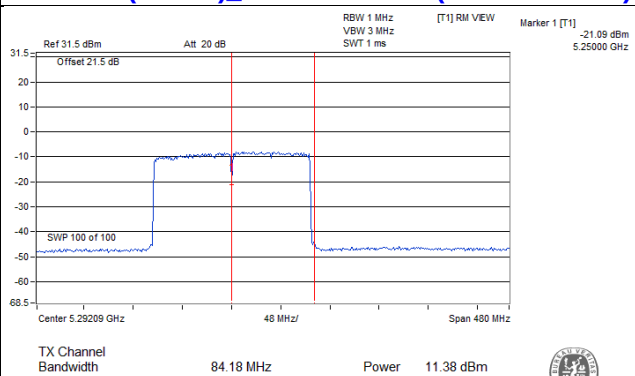
802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



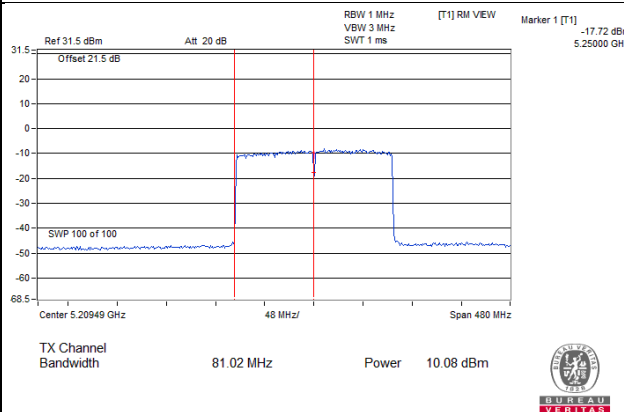
802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)



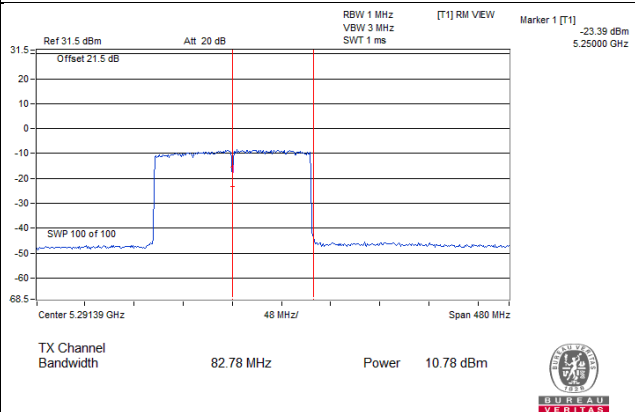
802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)



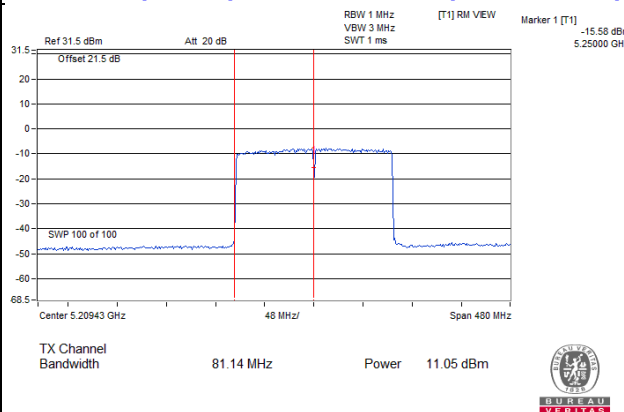
802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)



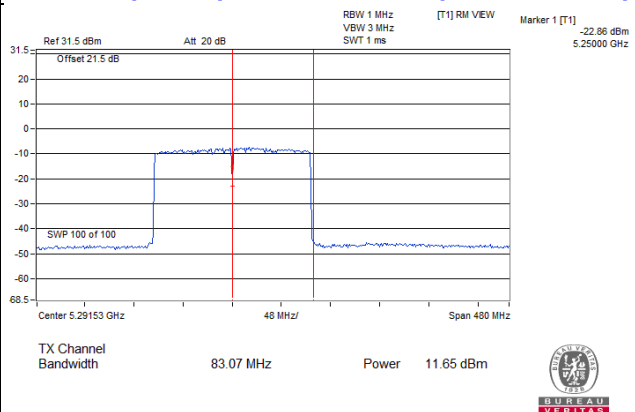
802.11ax (HE160)_Chain 2 / CH50 (U-NII-2A Band)



802.11ax (HE160)_Chain 3 / CH50 (U-NII-1 Band)



802.11ax (HE160)_Chain 3 / CH50 (U-NII-2A Band)



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	Chain 2	Chain 3				
52	5260	15.71	15.11	14.42	15.33	131.461	21.19	21.60	Pass
60	5300	15.57	15.04	14.28	15.16	127.575	21.06	21.60	Pass
64	5320	15.66	15.33	14.70	15.58	136.585	21.35	21.60	Pass
100	5500	15.30	15.11	15.25	15.73	137.226	21.37	21.70	Pass
116	5580	15.11	15.27	14.69	15.40	130.203	21.15	21.70	Pass
140	5700	15.33	14.90	15.49	15.49	135.822	21.33	21.70	Pass
*144 (U-NII-2C Band)	5720	13.47	13.51	13.03	13.34	86.34	19.36	20.95	Pass
*144 (U-NII-3 Band)	5720	7.99	8.02	7.61	7.85	24.497	13.89	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	110.837	20.45

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	22.18	23.31	24.95	24.28
60	5300	22.78	23.40	23.28	23.59
64	5320	22.55	21.41	23.58	21.83
100	5500	23.41	23.61	22.15	25.57
116	5580	23.77	23.41	22.63	24.87
140	5700	24.20	22.09	24.25	24.36
144 (U-NII-2C Band)	5720	16.81	18.08	17.99	17.14

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	22.18	24.45 > 24
60	5300	22.78	24.57 > 24
64	5320	21.41	24.3 > 24
100	5500	22.15	24.45 > 24
116	5580	22.63	24.54 > 24
140	5700	22.09	24.44 > 24
144 (U-NII-2C Band)	5720	16.81	23.25 < 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	Chain 2	Chain 3				
54	5270	15.94	14.97	15.04	15.26	136.158	21.34	21.60	Pass
62	5310	15.65	14.80	14.88	15.04	129.604	21.13	21.60	Pass
102	5510	15.07	15.26	14.89	15.36	130.899	21.17	21.70	Pass
110	5550	15.05	15.37	15.05	15.51	133.976	21.27	21.70	Pass
134	5670	15.14	15.13	15.16	15.21	131.242	21.18	21.70	Pass
*142 (U-NII-2C Band)	5710	14.49	14.34	14.32	14.68	111.699	20.48	21.70	Pass
*142 (U-NII-3 Band)	5710	4.34	4.31	4.27	4.54	10.931	10.39	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	122.63	20.89

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	44.28	47.23	47.31	44.47
62	5310	44.63	47.06	45.42	48.05
102	5510	45.22	44.53	44.75	46.66
110	5550	47.52	44.21	43.72	47.31
134	5670	45.71	48.19	43.55	41.69
142 (U-NII-2C Band)	5710	37.55	37.16	36.16	36.93

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	44.28	27.46 > 24
62	5310	44.63	27.49 > 24
102	5510	44.53	27.48 > 24
110	5550	43.72	27.4 > 24
134	5670	41.69	27.2 > 24
142 (U-NII-2C Band)	5710	36.16	26.58 > 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	Chain 2	Chain 3				
58	5290	15.71	15.08	15.01	15.40	135.82	21.33	21.60	Pass
106	5530	15.22	15.02	15.42	15.52	135.514	21.32	21.70	Pass
122	5610	15.11	15.05	15.20	15.82	135.73	21.33	21.70	Pass
*138 (U-NII-2C Band)	5690	14.63	14.46	14.27	14.56	112.271	20.50	21.70	Pass
*138 (U-NII-3 Band)	5690	0.79	0.79	0.61	0.89	4.776	6.79	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	117.047	20.68

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.56	85.15	82.88	84.58
106	5530	84.85	83.71	86.59	85.78
122	5610	85.05	85.26	83.59	84.31
138 (U-NII-2C Band)	5690	78.16	77.18	78.66	77.52

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

Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.56	30.16 > 24
106	5530	83.71	30.22 > 24
122	5610	83.59	30.22 > 24
138 (U-NII-2C Band)	5690	77.18	29.87 > 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	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.13	10.04	8.80	10.85	40.145	16.04	26.90	Pass
*50 (U-NII-2A Band)	5250	11.41	11.01	10.71	11.51	52.388	17.19	21.60	Pass
114	5570	15.14	15.00	15.03	15.11	128.558	21.09	21.70	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-1: The directional gain = 9.1dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (9.1-6)".
2. For U-NII-2A: The directional gain = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to 30-(8.3-6) = 21.70dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
50	5250	92.533	19.66

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	163.94	165.69	163.80	164.21
114	5570	165.61	164.63	164.81	165.51

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	163.80	26.14 > 24
114	5570	164.63	33.16 > 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	Chain 2	Chain 3				
52	5260	15.91	15.41	14.67	15.54	138.867	21.43	21.60	Pass
60	5300	15.80	15.41	14.66	15.62	138.49	21.41	21.60	Pass
64	5320	15.84	15.78	14.82	15.77	144.311	21.59	21.60	Pass
100	5500	15.71	15.52	15.49	15.93	147.458	21.69	21.70	Pass
116	5580	15.19	15.64	15.10	15.77	139.797	21.45	21.70	Pass
140	5700	15.60	15.31	15.89	15.74	146.583	21.66	21.70	Pass
*144 (U-NII-2C Band)	5720	13.81	13.73	13.50	13.83	94.191	19.74	20.95	Pass
*144 (U-NII-3 Band)	5720	8.74	8.71	8.33	8.54	28.865	14.60	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	123.056	20.9

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	22.18	23.31	24.95	24.28
60	5300	22.78	23.40	23.28	23.59
64	5320	22.55	21.41	23.58	21.83
100	5500	23.41	23.61	22.15	25.57
116	5580	23.77	23.41	22.63	24.87
140	5700	24.20	22.09	24.25	24.36
144 (U-NII-2C Band)	5720	16.81	18.08	17.99	17.14

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	22.18	24.45 > 24
60	5300	22.78	24.57 > 24
64	5320	21.41	24.3 > 24
100	5500	22.15	24.45 > 24
116	5580	22.63	24.54 > 24
140	5700	22.09	24.44 > 24
144 (U-NII-2C Band)	5720	16.81	23.25 < 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	Chain 2	Chain 3				
54	5270	16.20	15.19	15.29	15.50	144.011	21.58	21.60	Pass
62	5310	15.87	15.06	15.12	15.28	136.938	21.37	21.60	Pass
102	5510	15.31	15.47	15.11	15.62	138.109	21.40	21.70	Pass
110	5550	15.26	15.57	15.31	15.72	140.92	21.49	21.70	Pass
134	5670	15.37	15.38	15.43	15.42	138.697	21.42	21.70	Pass
*142 (U-NII-2C Band)	5710	14.05	13.88	13.87	13.74	97.881	19.91	21.70	Pass
*142 (U-NII-3 Band)	5710	4.71	4.62	4.61	4.01	11.264	10.52	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	109.145	20.38

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	44.28	47.23	47.31	44.47
62	5310	44.63	47.06	45.42	48.05
102	5510	45.22	44.53	44.75	46.66
110	5550	47.52	44.21	43.72	47.31
134	5670	45.71	48.19	43.55	41.69
142 (U-NII-2C Band)	5710	37.55	37.16	36.16	36.93

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	44.28	27.46 > 24
62	5310	44.63	27.49 > 24
102	5510	44.53	27.48 > 24
110	5550	43.72	27.4 > 24
134	5670	41.69	27.2 > 24
142 (U-NII-2C Band)	5710	36.16	26.58 > 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	Chain 2	Chain 3				
58	5290	15.93	15.34	15.25	15.64	143.513	21.57	21.60	Pass
106	5530	15.46	15.23	15.64	15.78	142.987	21.55	21.70	Pass
122	5610	15.32	15.25	15.46	16.03	142.781	21.55	21.70	Pass
*138 (U-NII-2C Band)	5690	14.61	14.39	14.24	14.51	111.181	20.46	21.70	Pass
*138 (U-NII-3 Band)	5690	1.24	1.66	1.48	1.73	5.691	7.55	27.90	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 = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
2. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.3-6)".
3. For U-NII-3: The directional gain = 8.1dBi > 6dBi, so the power limit shall be reduced to 30-(8.1-6) = 27.90dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	116.872	20.68

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.56	85.15	82.88	84.58
106	5530	84.85	83.71	86.59	85.78
122	5610	85.05	85.26	83.59	84.31
138 (U-NII-2C Band)	5690	78.16	77.18	78.66	77.52

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

Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.56	30.16 > 24
106	5530	83.71	30.22 > 24
122	5610	83.59	30.22 > 24
138 (U-NII-2C Band)	5690	77.18	29.87 > 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	Chain 2	Chain 3				
*50 (U-NII-1 Band)	5250	10.63	10.47	10.08	11.05	45.625	16.59	26.90	Pass
*50 (U-NII-2A Band)	5250	11.49	11.38	10.78	11.65	54.422	17.36	21.60	Pass
114	5570	15.34	15.21	15.31	15.38	135.864	21.33	21.70	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-1: The directional gain = 9.1dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (9.1-6)".
2. For U-NII-2A: The directional gain = 8.4dBi > 6dBi, so the power limit shall be reduced to "Determined Conducted Limit- (8.4-6)".
3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power limit shall be reduced to 30-(8.3-6) = 21.70dBm.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
50	5250	100.047	20

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

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	163.94	165.69	163.80	164.21
114	5570	165.61	164.63	164.81	165.51

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

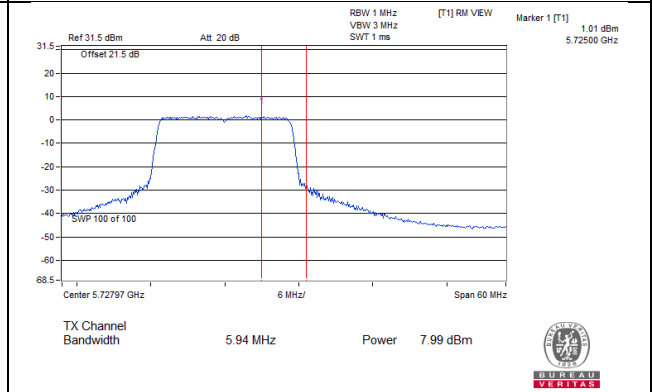
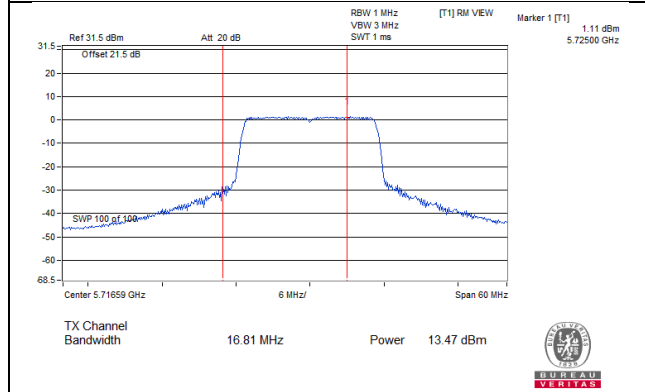
Power Limit = 11dBm + 10logB <U-NII-2A, U-NII-2C>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
50 (U-NII-2A Band)	5250	163.80	26.14 > 24
114	5570	164.63	33.16 > 24

For channel straddling 5725MHz of Power

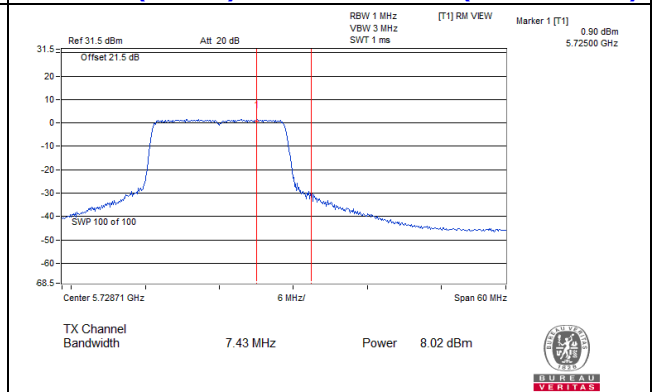
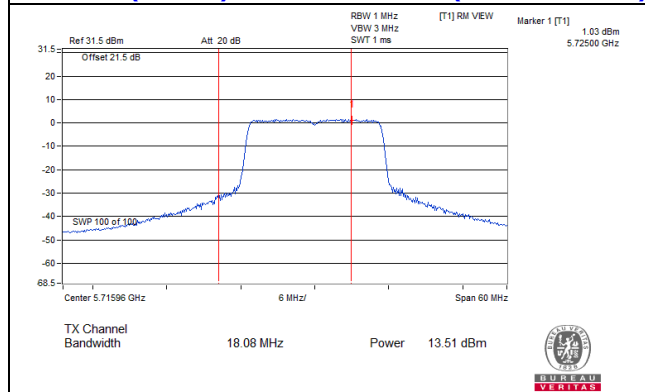
Beamforming Mode

Spectrum Plot Value of Power

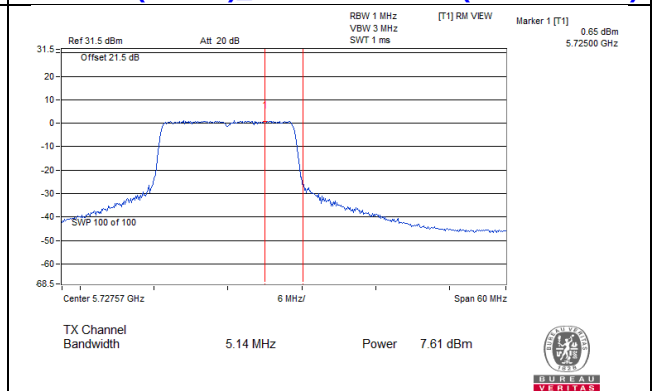
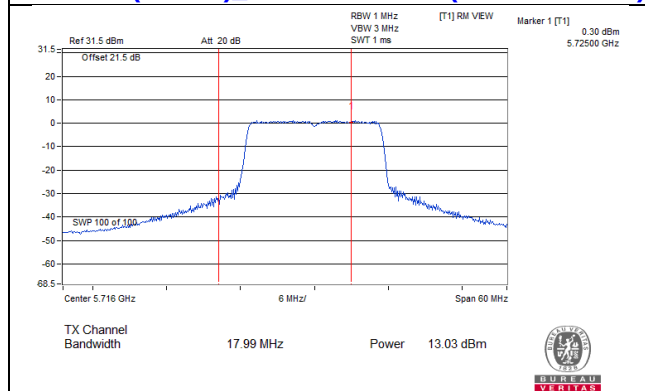
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band) 802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



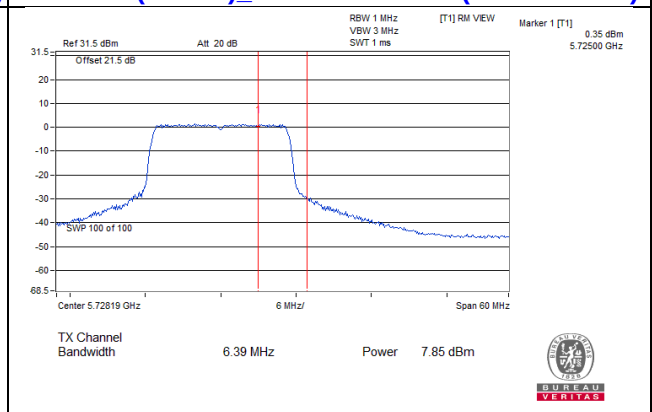
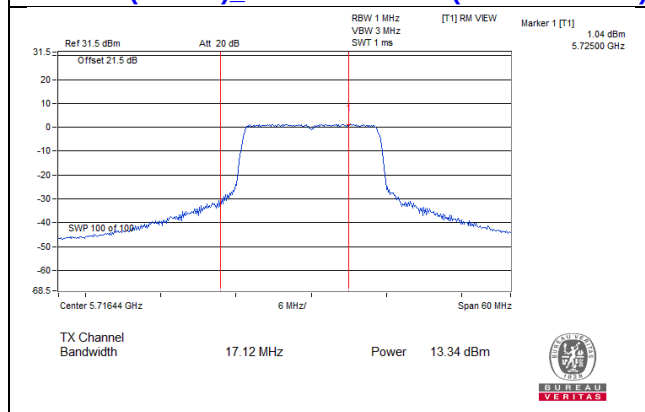
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band) 802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band) 802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)

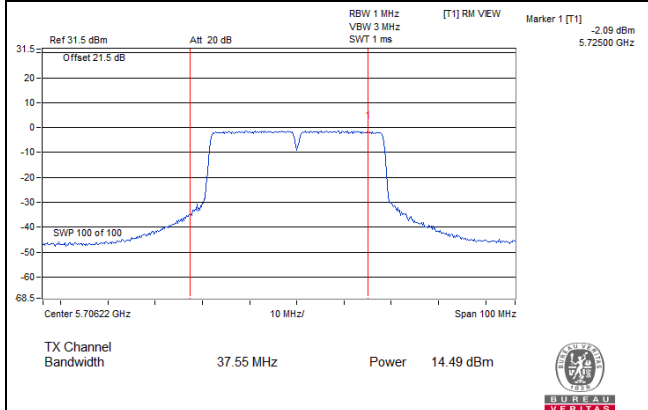


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band) 802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)

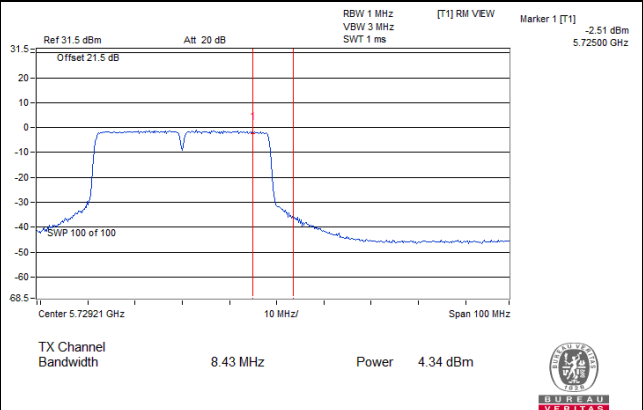


Spectrum Plot Value of Power

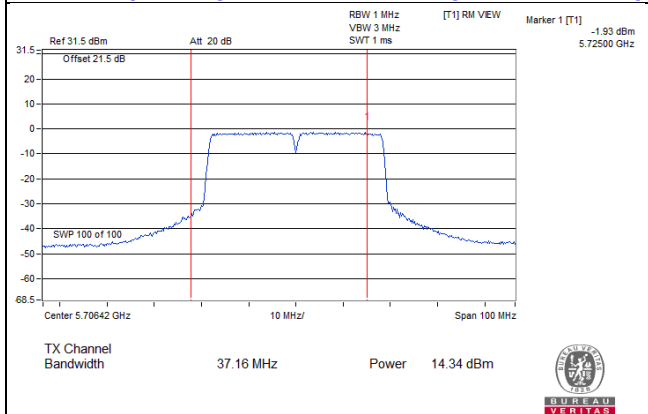
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



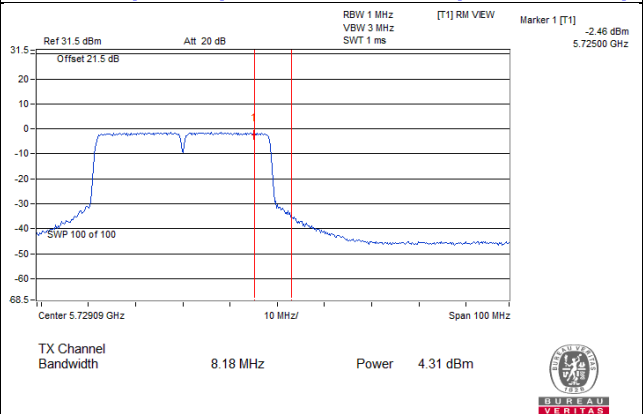
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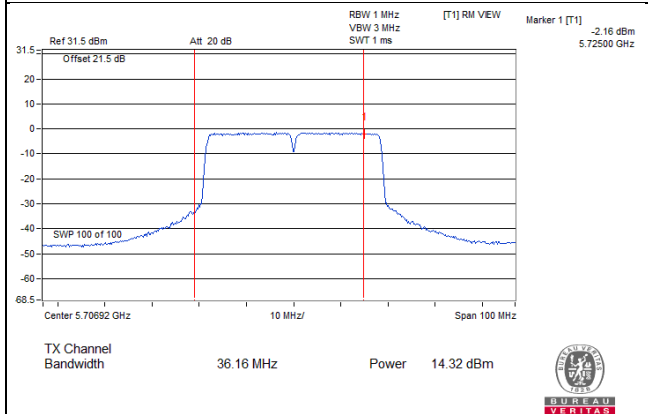
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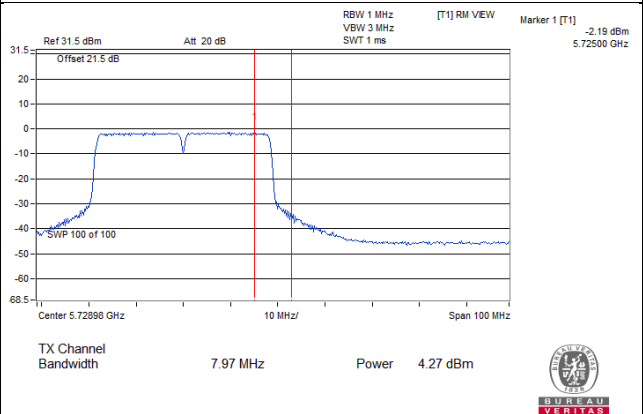
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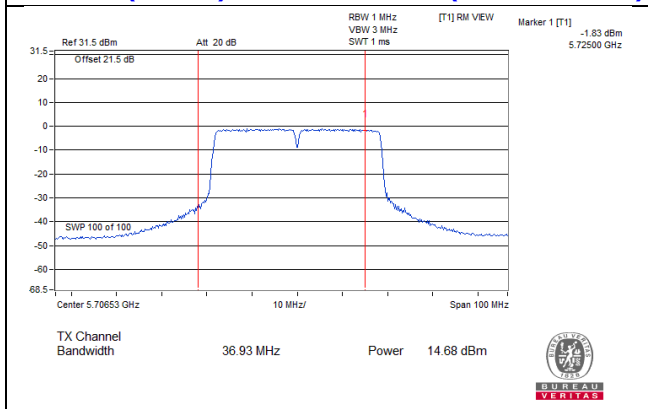
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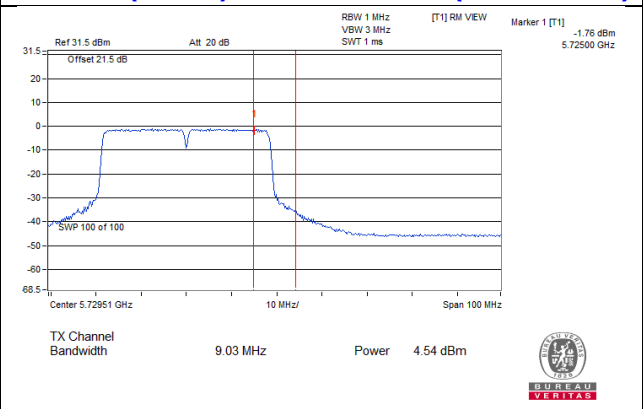
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)

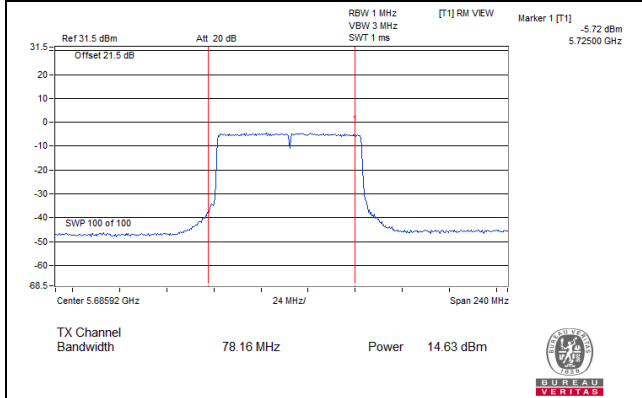


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

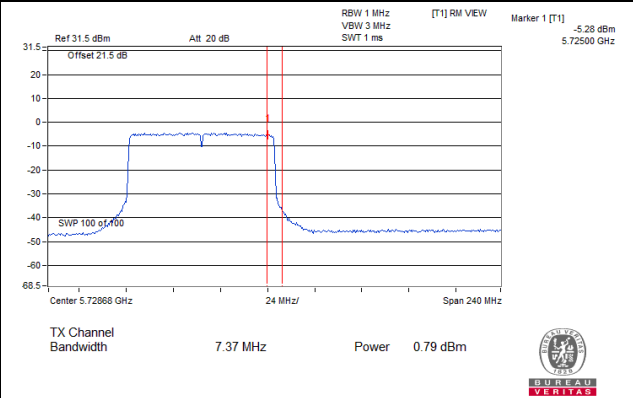


Spectrum Plot Value of Power

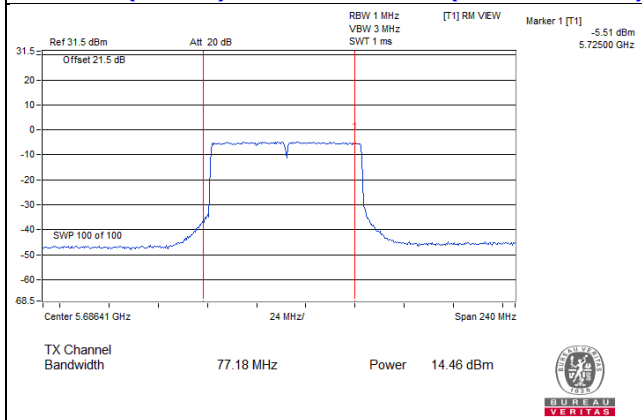
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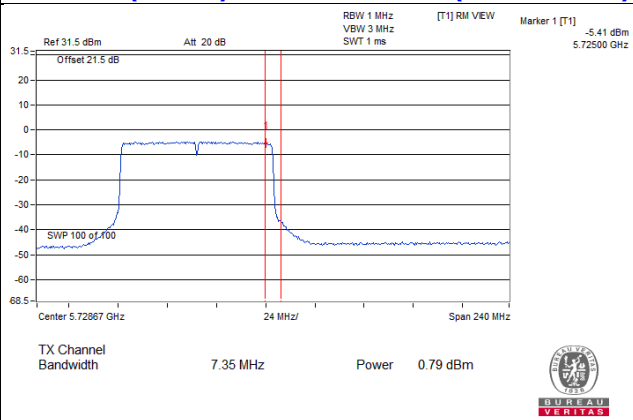
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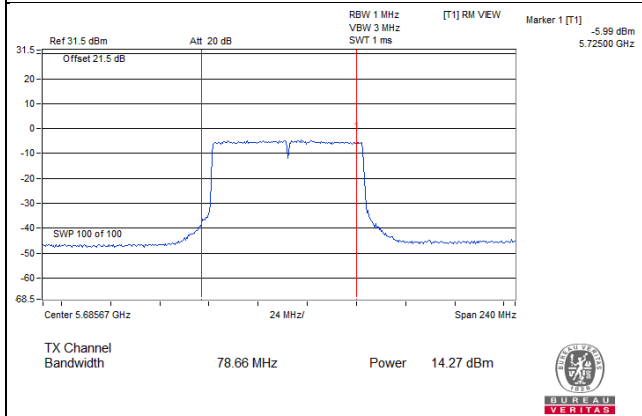
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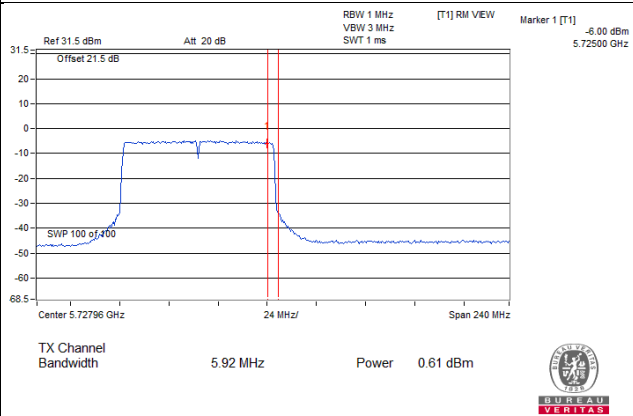
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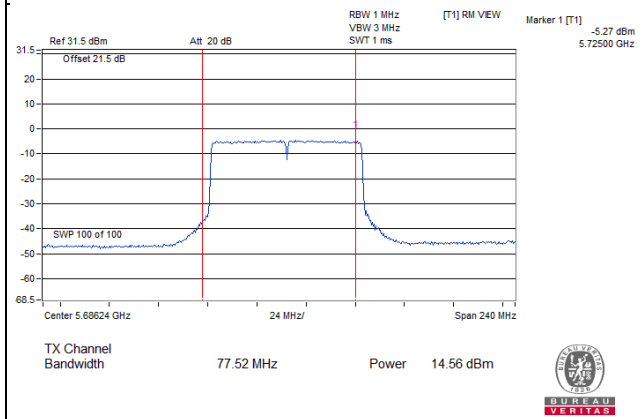
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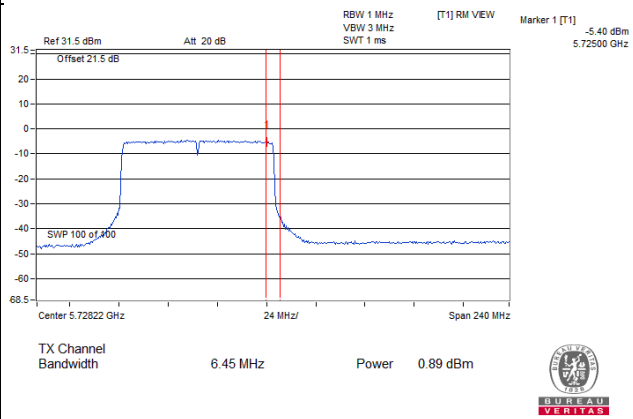
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)

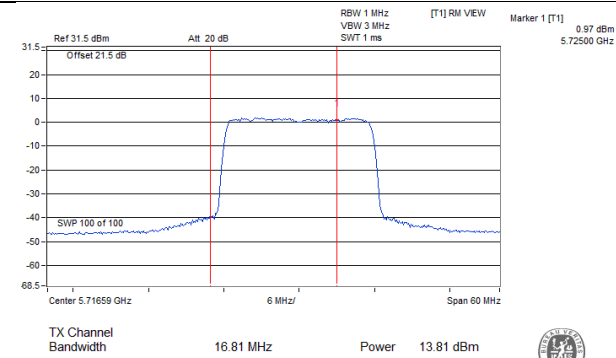


802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)

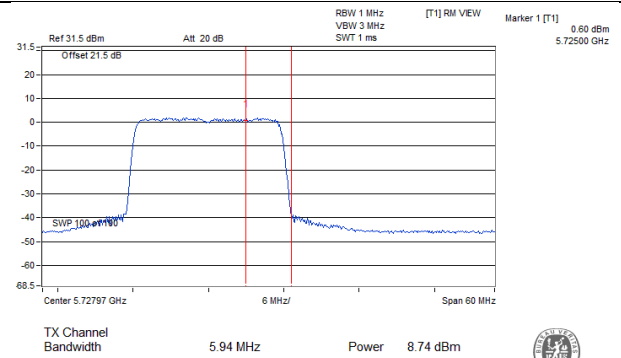


Spectrum Plot Value of Power

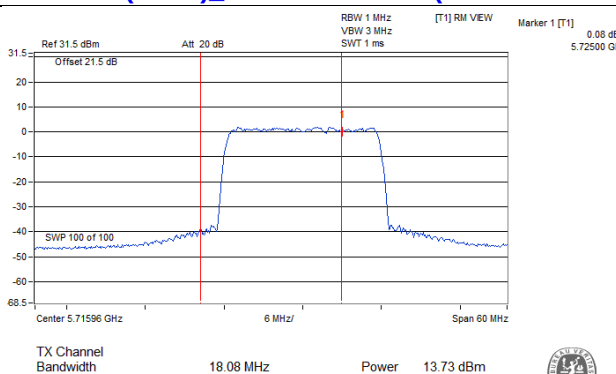
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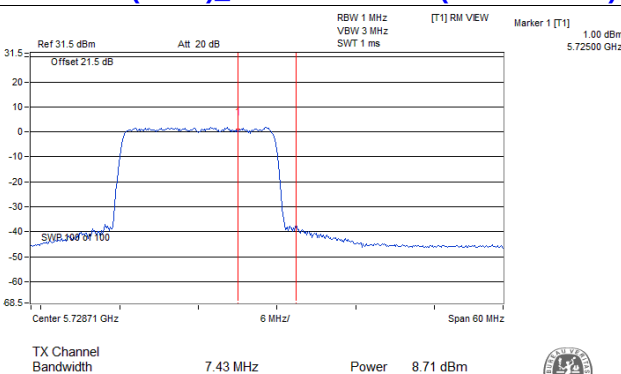
802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



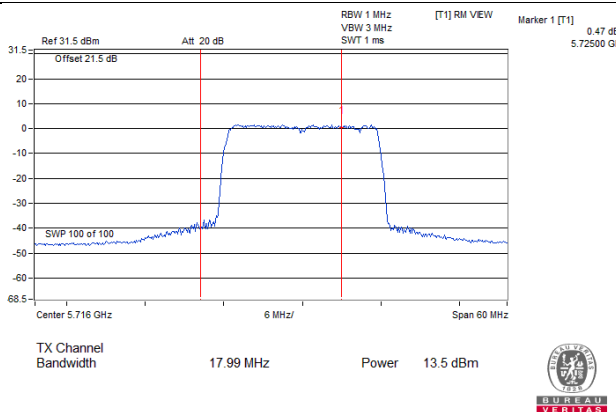
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



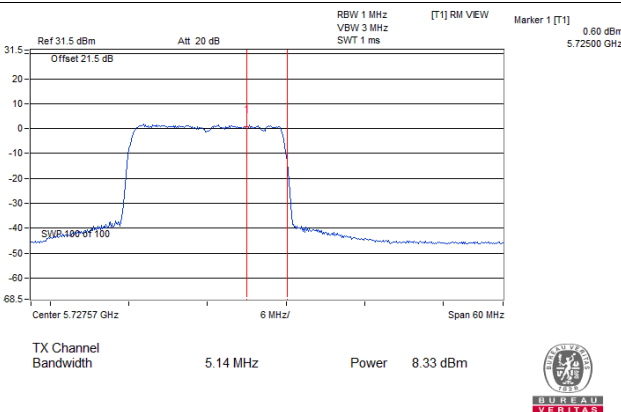
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



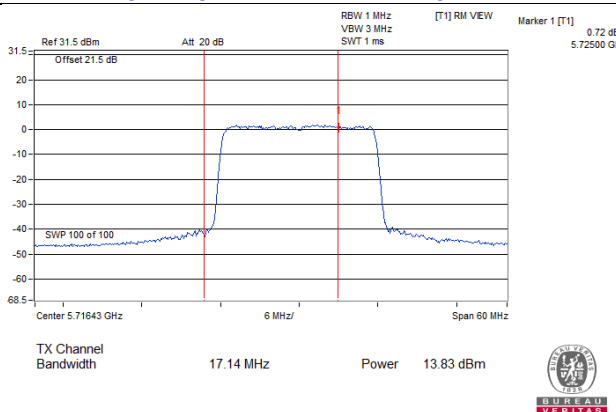
802.11ax (HE20)_Chain 2 / CH144 (U-NII-2C Band)



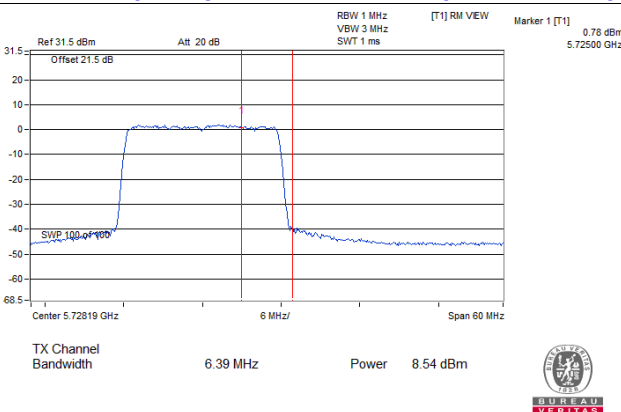
802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ax (HE20)_Chain 3 / CH144 (U-NII-2C Band)

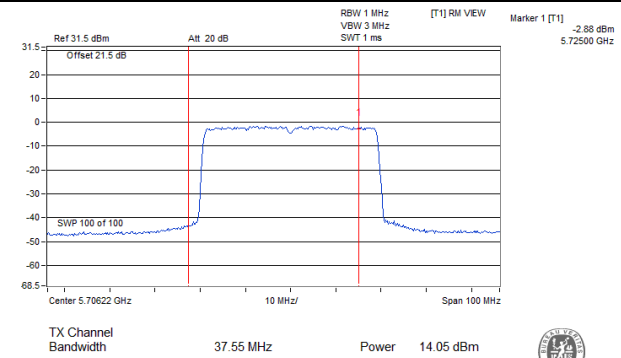


802.11ax (HE20)_Chain 3 / CH144 (U-NII-3 Band)

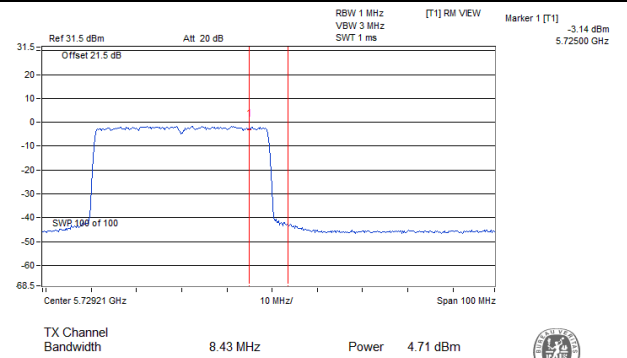


Spectrum Plot Value of Power

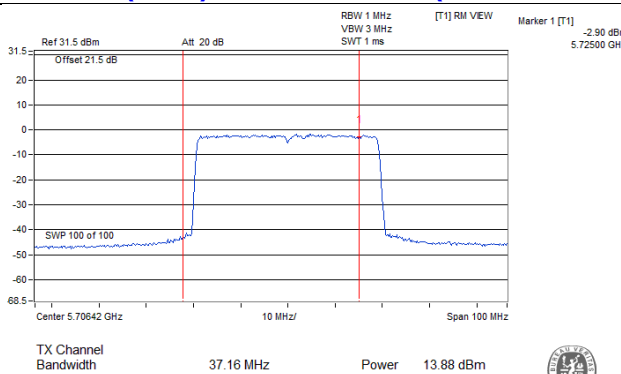
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)



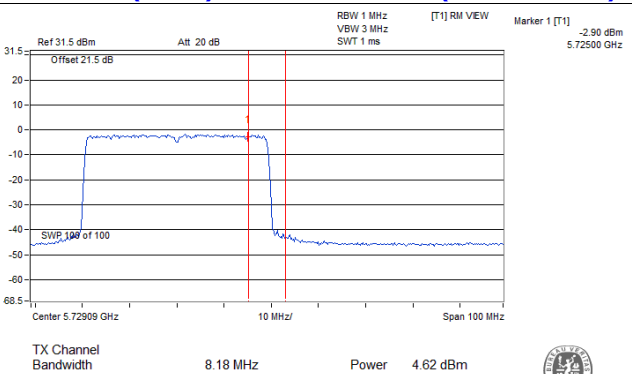
802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



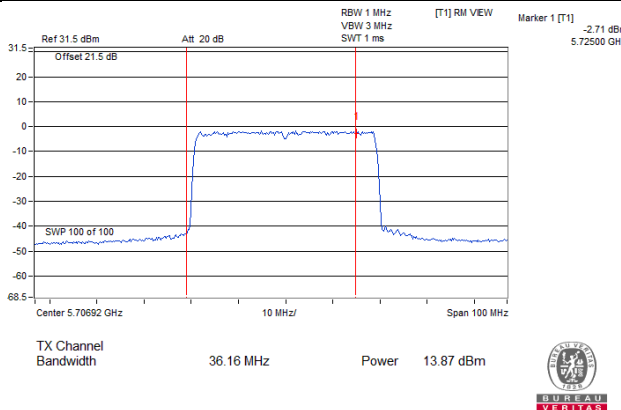
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



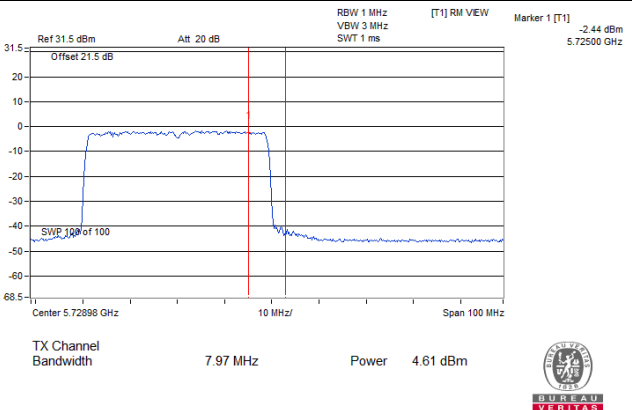
802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)



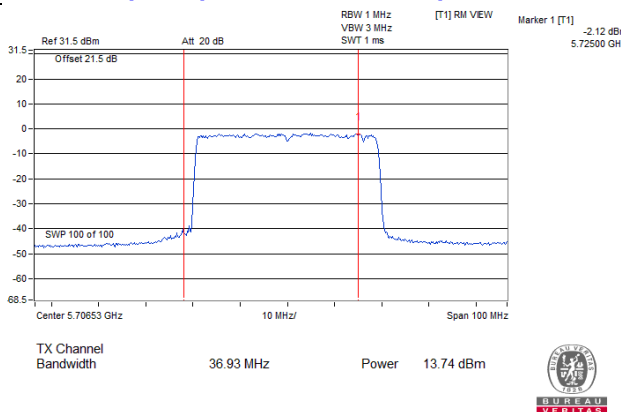
802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)



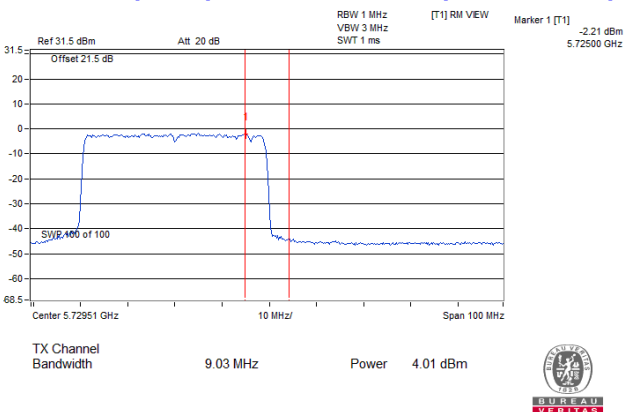
802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ax (HE40)_Chain 3 / CH142 (U-NII-2C Band)

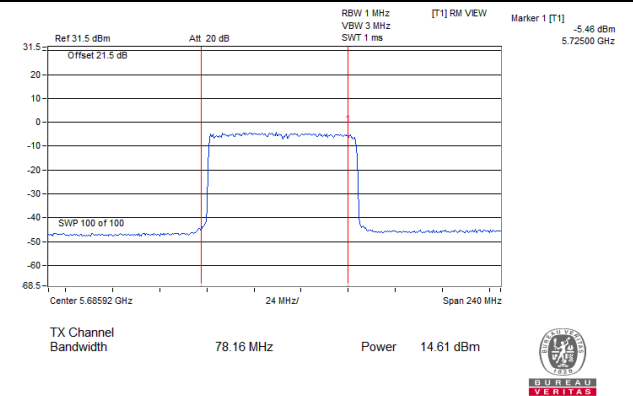


802.11ax (HE40)_Chain 3 / CH142 (U-NII-3 Band)

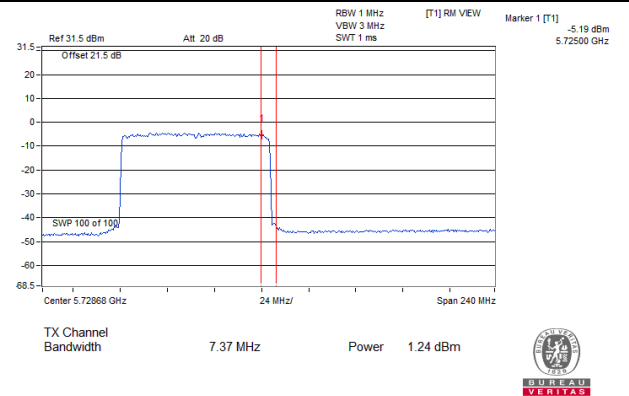


Spectrum Plot Value of Power

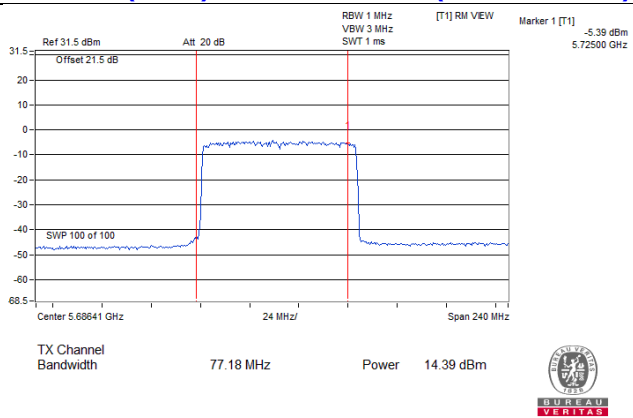
802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



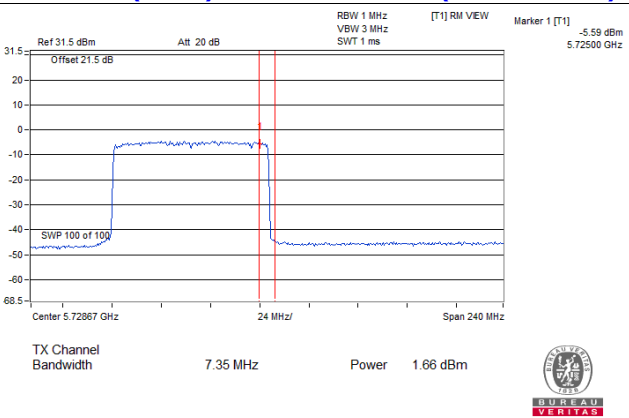
802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



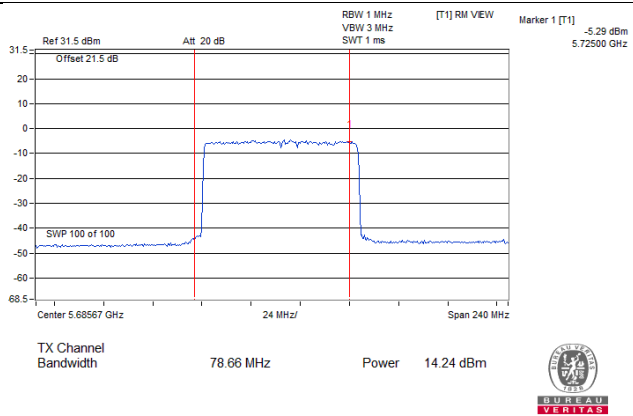
802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



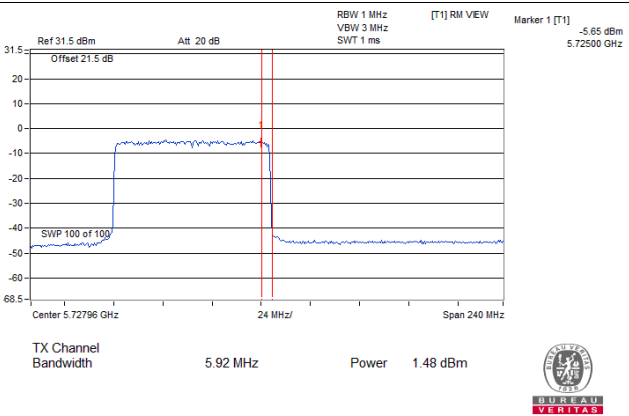
802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



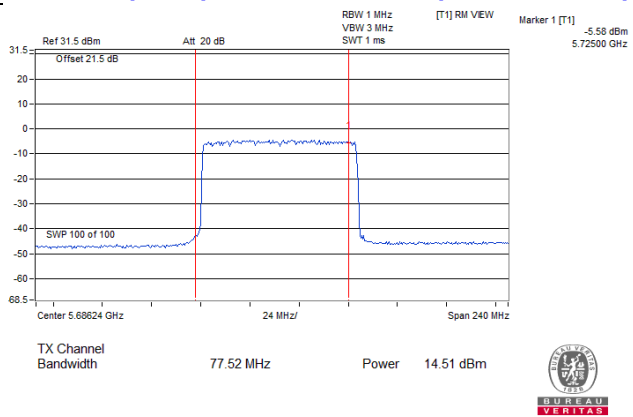
802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)



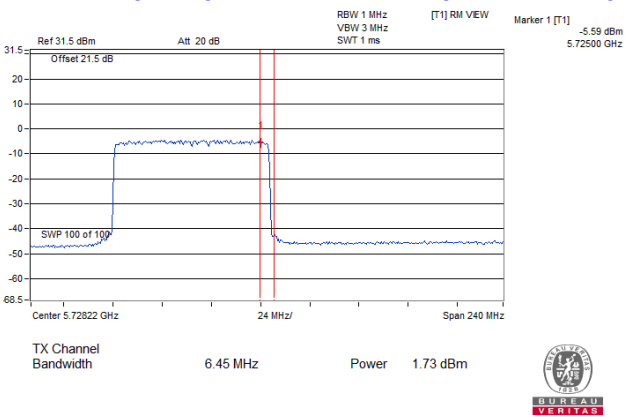
802.11ax (HE80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ax (HE80)_Chain 3 / CH138 (U-NII-2C Band)



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

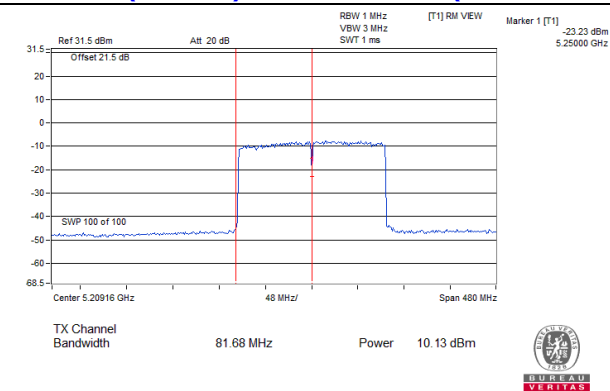


For channel straddling 5250MHz of Power

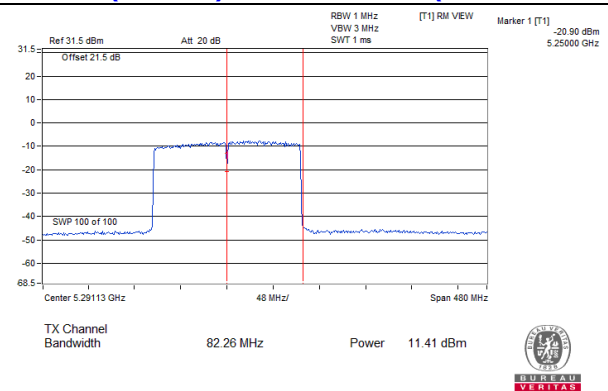
Beamforming Mode

Spectrum Plot Value of Power

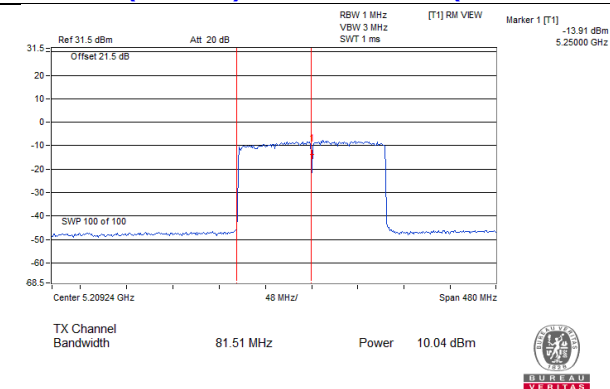
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-1 Band)



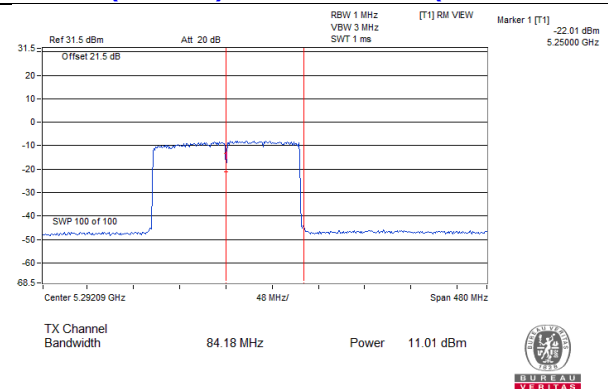
802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band)



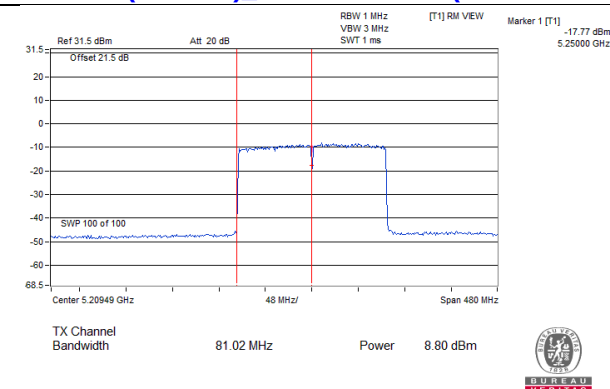
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-1 Band)



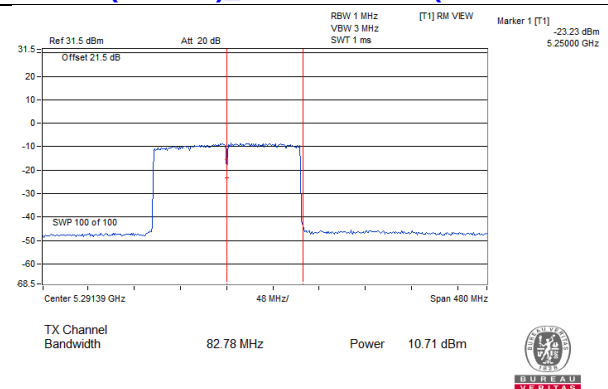
802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



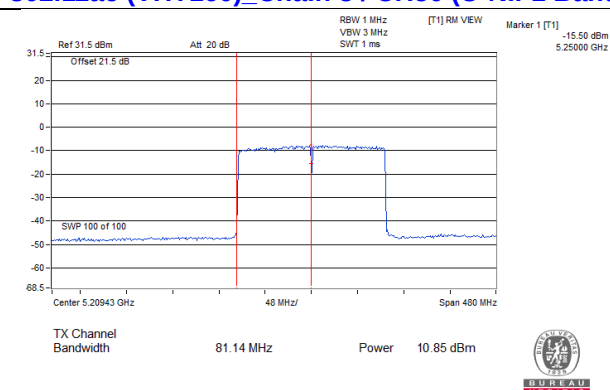
802.11ac (VHT160)_Chain 2 / CH50 (U-NII-1 Band)



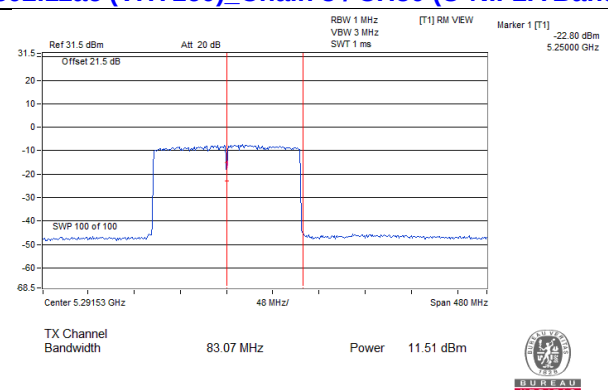
802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band)



802.11ac (VHT160)_Chain 3 / CH50 (U-NII-1 Band)

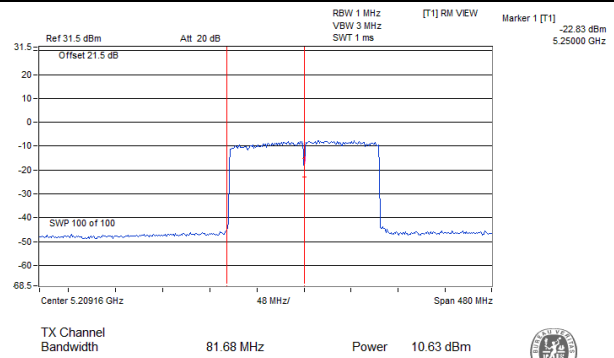


802.11ac (VHT160)_Chain 3 / CH50 (U-NII-2A Band)

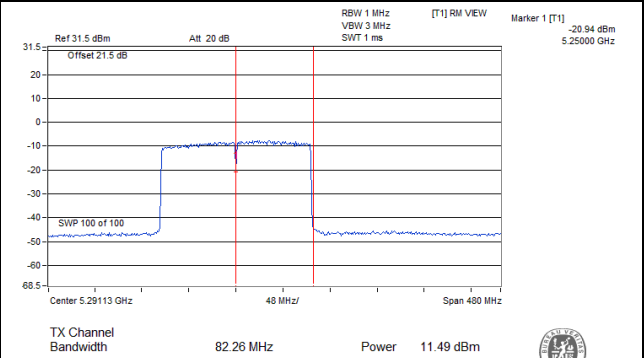


Spectrum Plot Value of Power

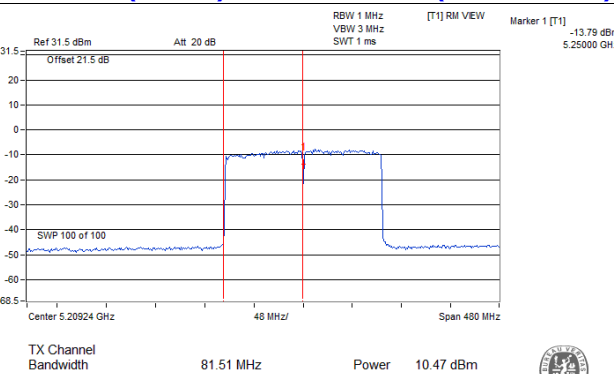
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)



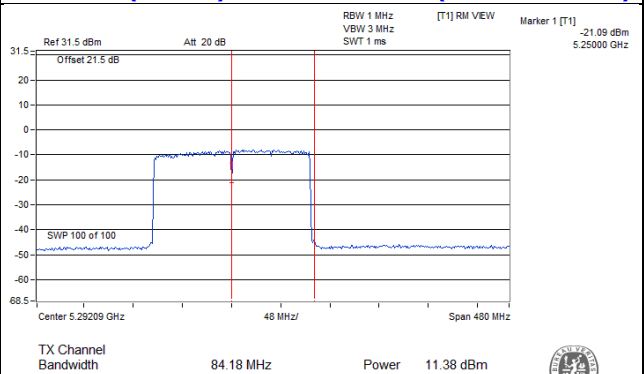
802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)



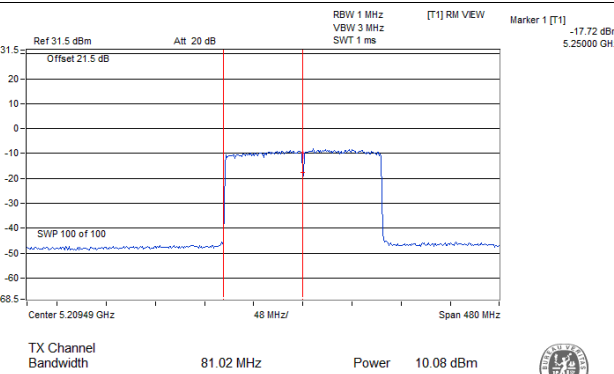
802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)



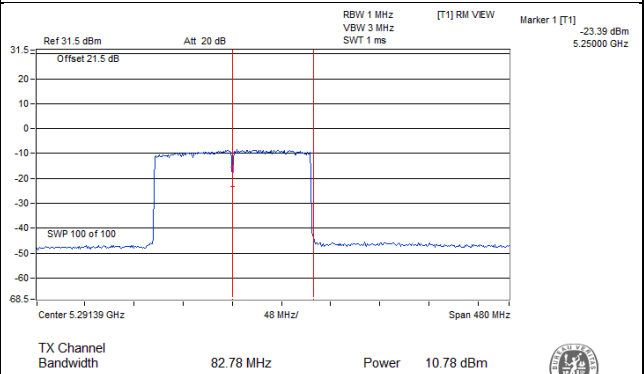
802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)



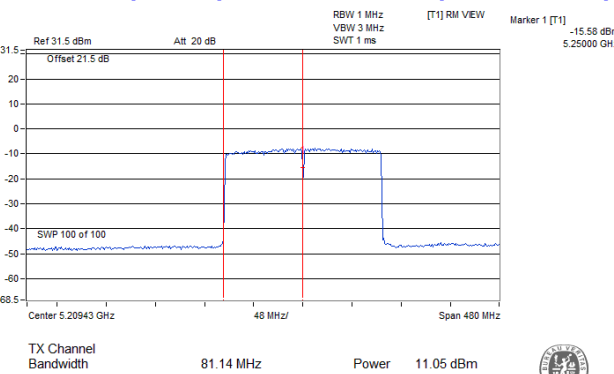
802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)



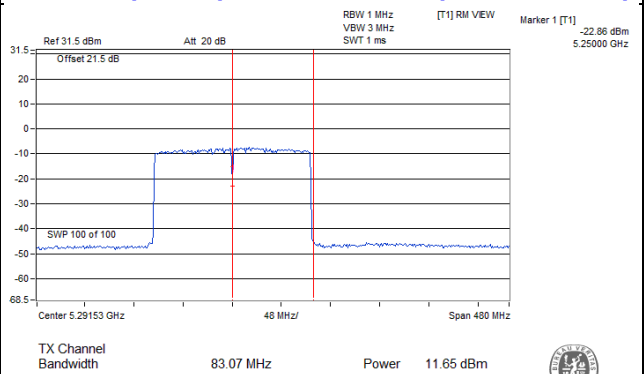
802.11ax (HE160)_Chain 2 / CH50 (U-NII-2A Band)



802.11ax (HE160)_Chain 3 / CH50 (U-NII-1 Band)



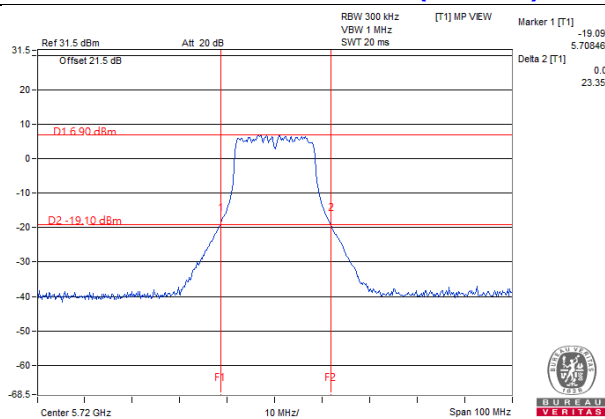
802.11ax (HE160)_Chain 3 / CH50 (U-NII-2A Band)



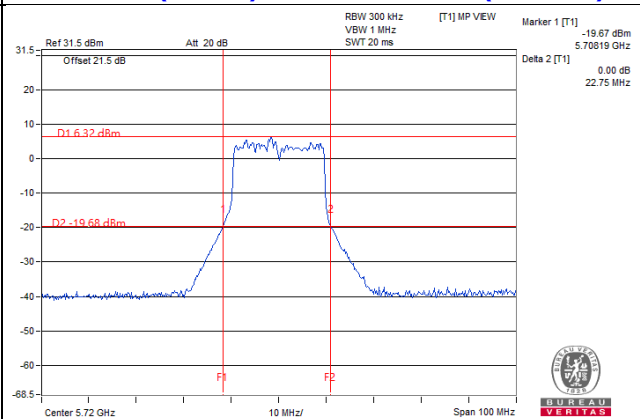
26dB Occupied Bandwidth

Spectrum Plot of Worst Value

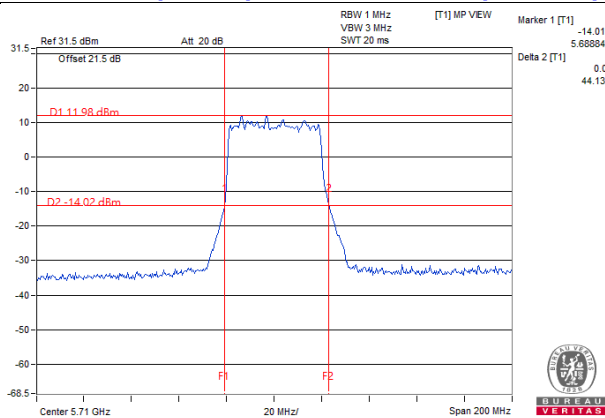
802.11a_Chain 0 / CH144 (U-NII-2C)



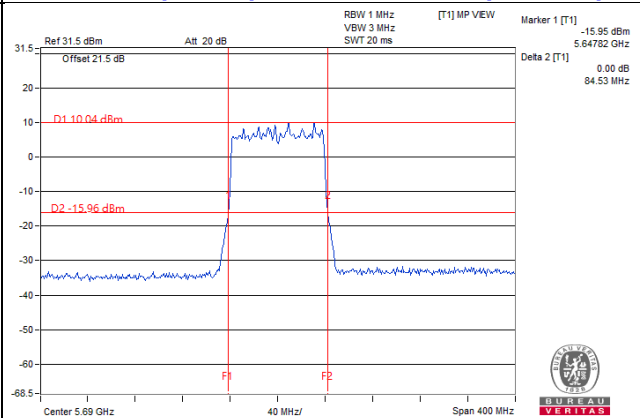
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C)



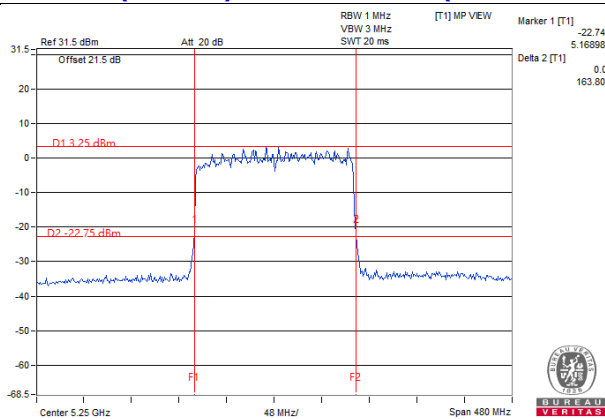
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C)



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



802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band)

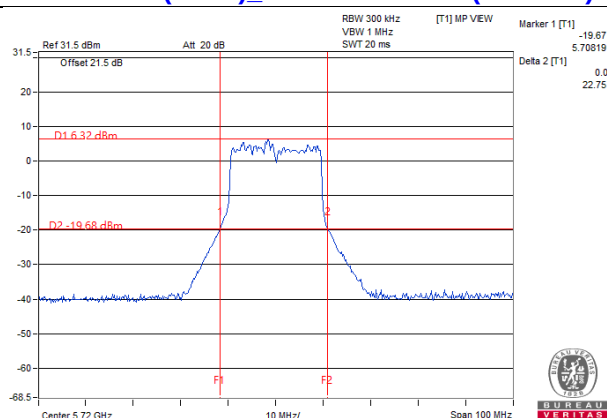


Note:

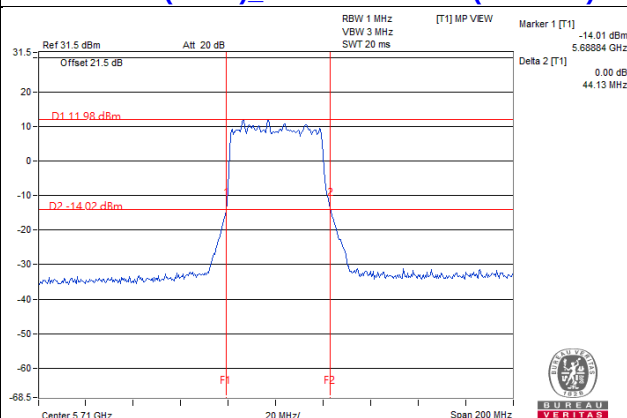
- For CH144 (U-NII-2C) = 5725MHz - Marker 1
- For CH142 (U-NII-2C) = 5725MHz - Marker 1
- For CH138 (U-NII-2C) = 5725MHz - Marker 1
- For CH50 (U-NII-2A) = Marker 1 + Delta 2 – 5250MHz

Spectrum Plot of Worst Value

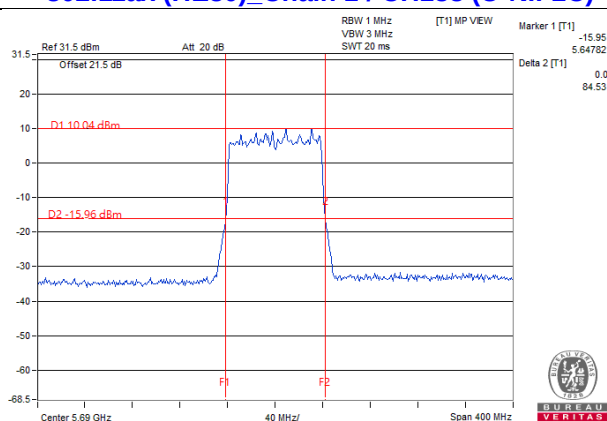
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C)



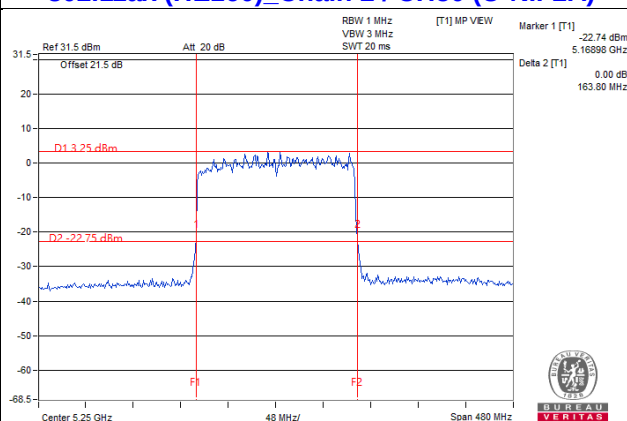
802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C)



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



802.11ax (HE160)_Chain 2 / CH50 (U-NII-2A)



Note:

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

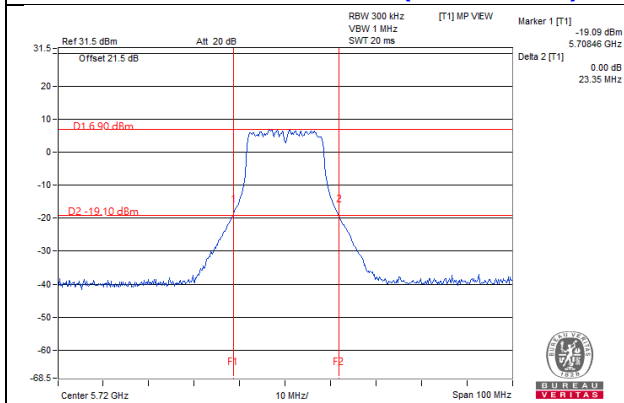
For CH142 (U-NII-2C) = 5725MHz - Marker 1

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

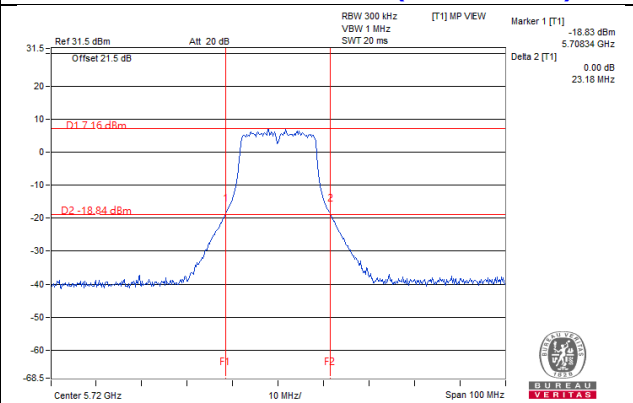
For channel straddling 5725MHz of 26dB BW

Spectrum Plot Value of 26dB BW

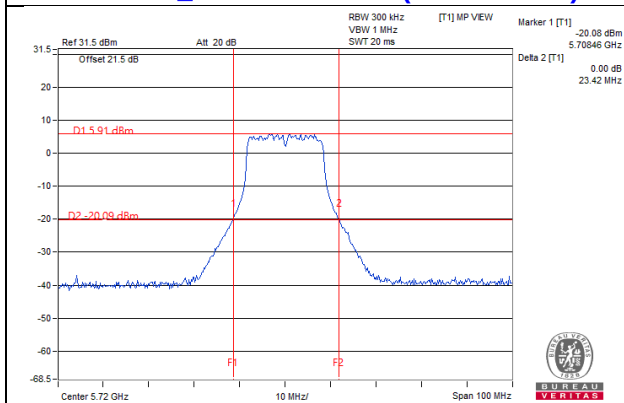
802.11a_Chain 0 / CH144 (U-NII-3 Band)



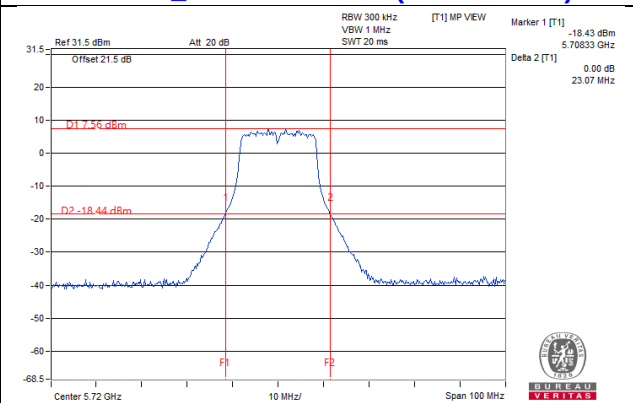
802.11a_Chain 1 / CH144 (U-NII-3 Band)



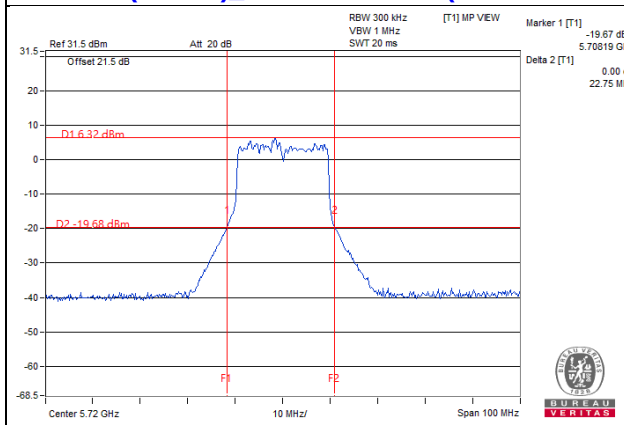
802.11a_Chain 2 / CH144 (U-NII-3 Band)



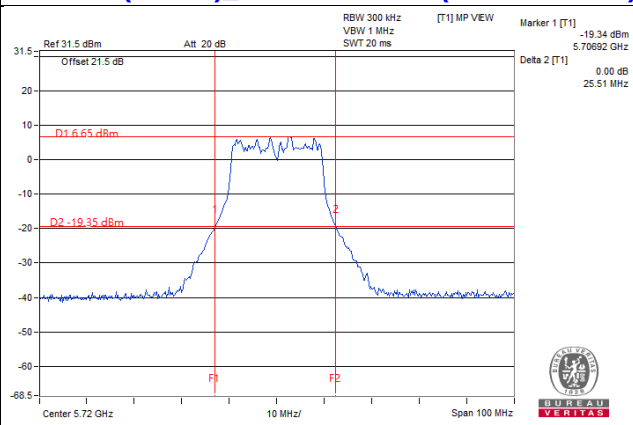
802.11a_Chain 3 / CH144 (U-NII-3 Band)



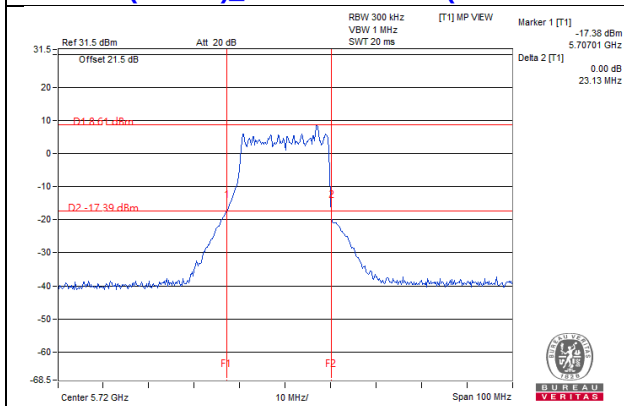
802.11ac (VHT20)_Chain 0/ CH144 (U-NII-2C Band)



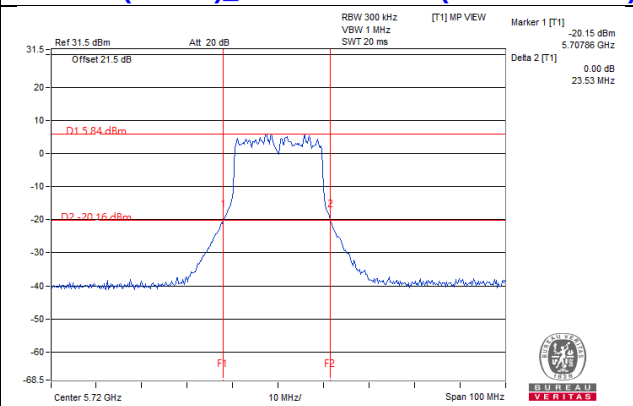
802.11ac (VHT20)_Chain 1/ CH144 (U-NII-2C Band)



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

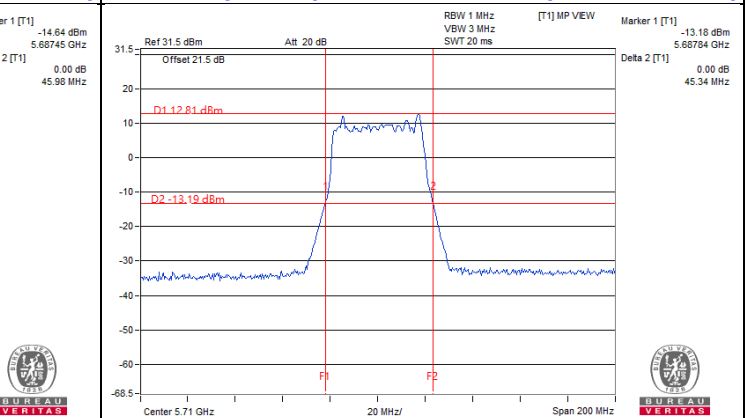
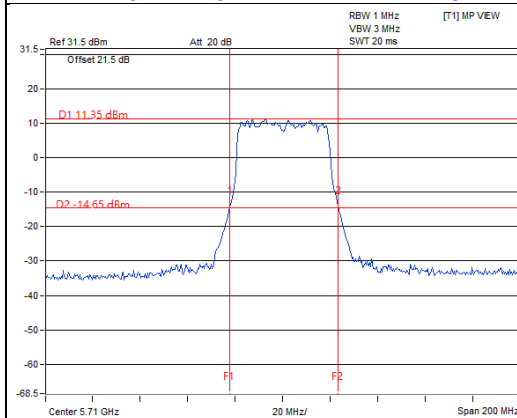


802.11ac (VHT20)_Chain 3/ CH144 (U-NII-2C Band)

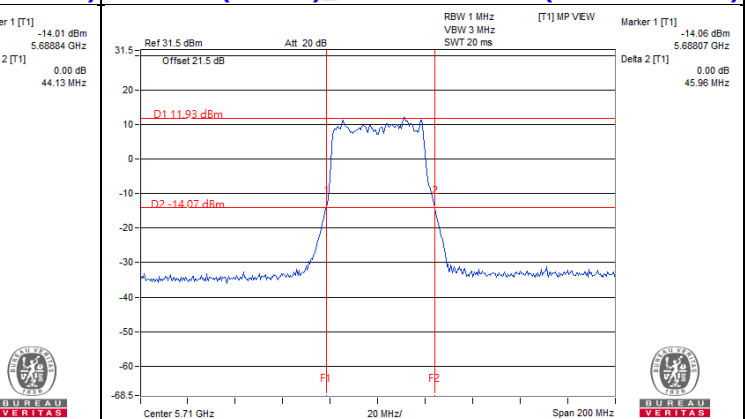
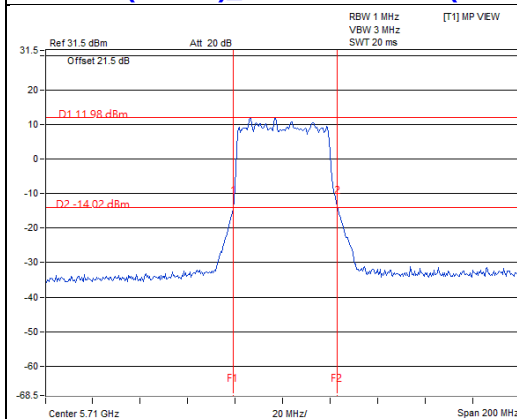


Spectrum Plot Value of 26dB BW

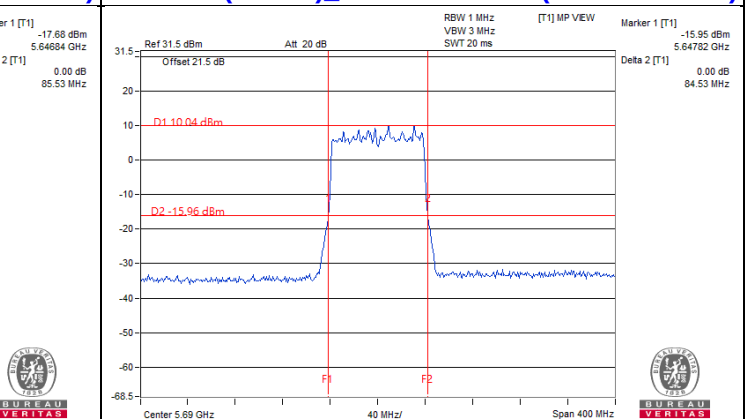
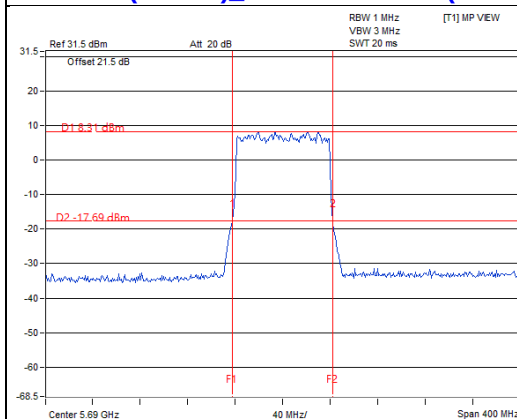
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



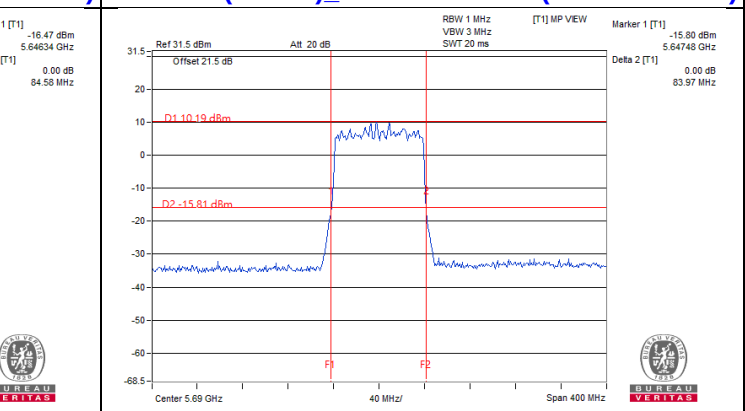
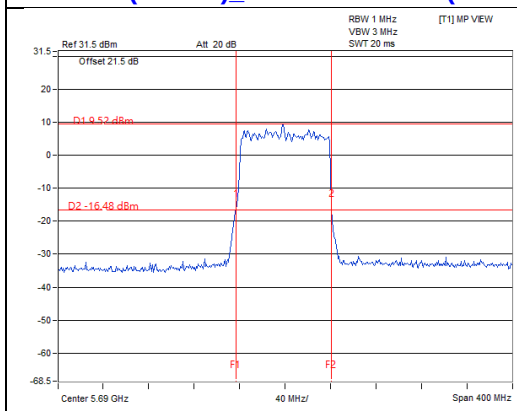
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)



802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)

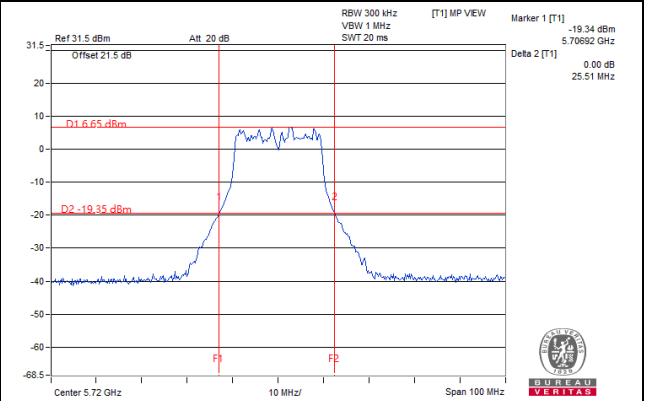
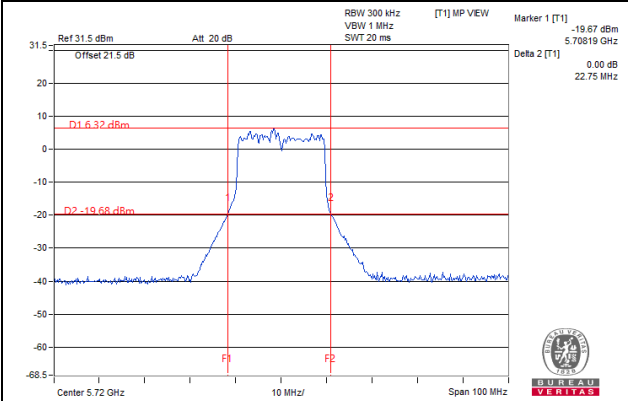


802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)

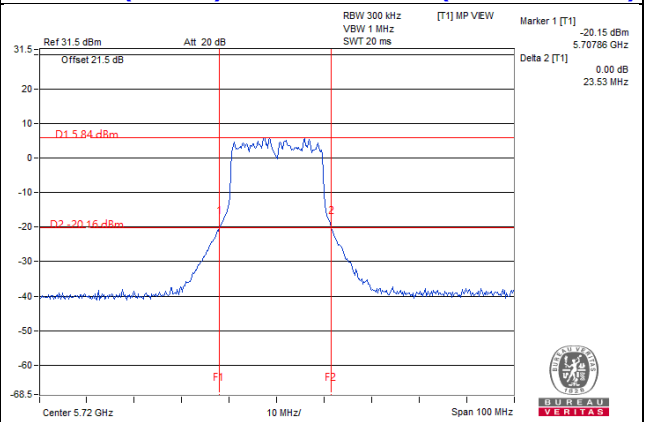
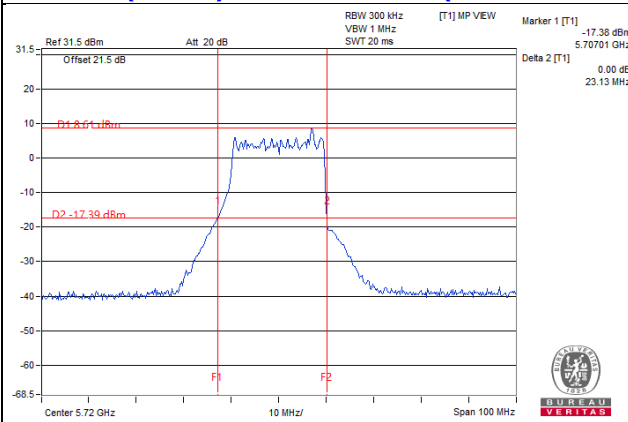


Spectrum Plot Value of 26dB BW

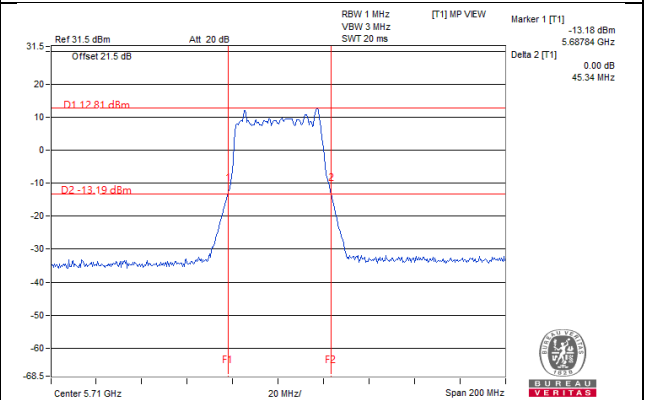
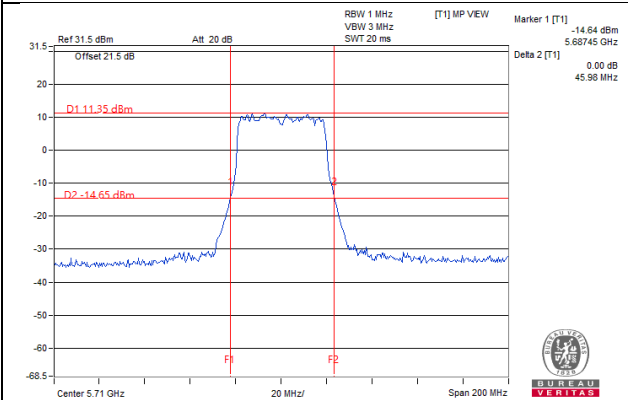
802.11ax (VHT20)_Chain 0/ CH144 (U-NII-2C Band) 802.11ax (VHT20)_Chain 1/ CH144 (U-NII-2C Band)



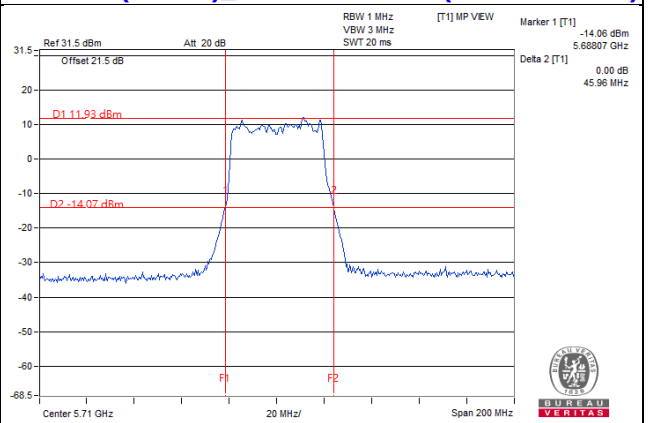
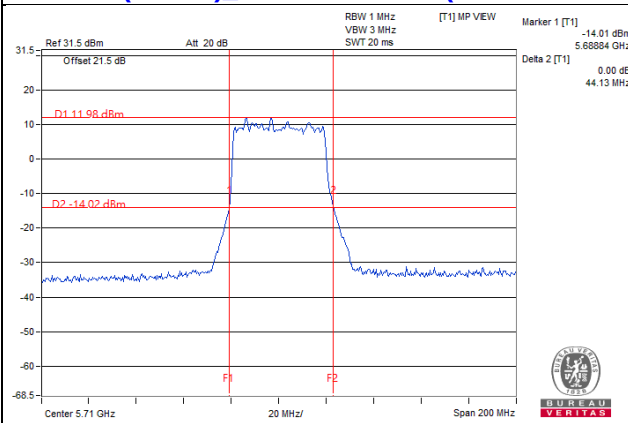
802.11ax (VHT20)_Chain 2/ CH144 (U-NII-2C Band) 802.11ax (VHT20)_Chain 3/ CH144 (U-NII-2C Band)



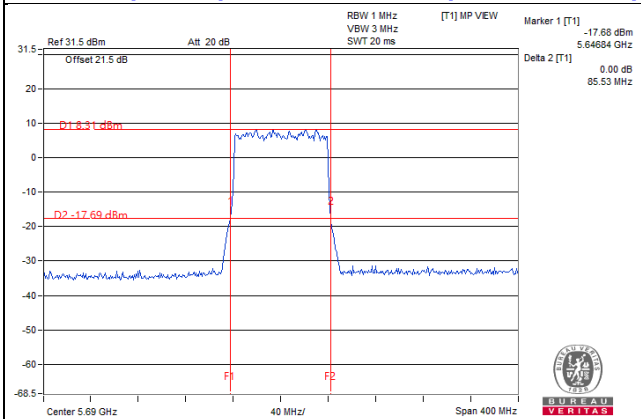
802.11ax (VHT40)_Chain 0/ CH142 (U-NII-2C Band) 802.11ax (VHT40)_Chain 1/ CH142 (U-NII-2C Band)



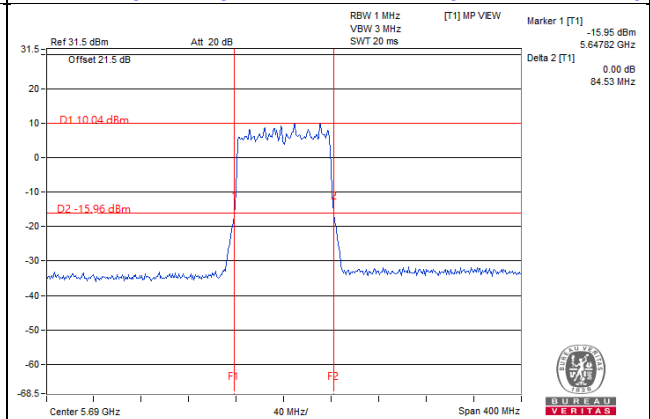
802.11ax (VHT40)_Chain 2/ CH142 (U-NII-2C Band) 802.11ax (VHT40)_Chain 3/ CH142 (U-NII-2C Band)



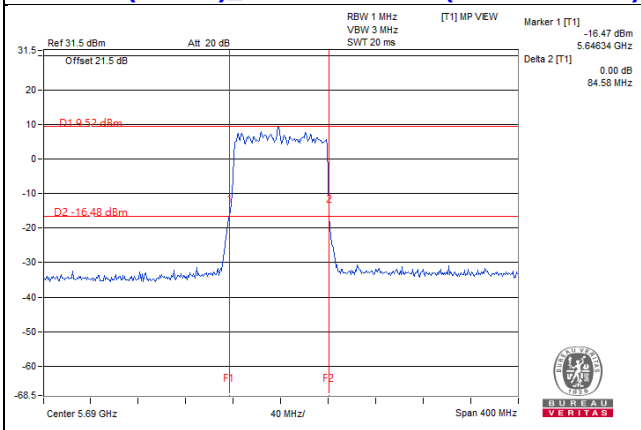
802.11ax (VHT80)_Chain 0/ CH138 (U-NII-2C Band)



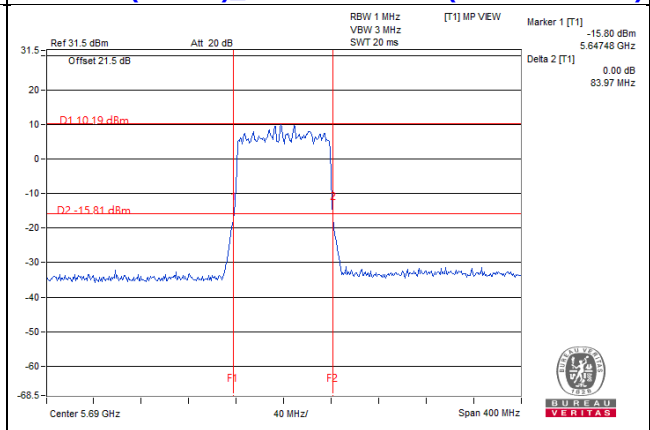
802.11ax (VHT80)_Chain 1/ CH138 (U-NII-2C Band)



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



802.11ax (VHT80)_Chain 3/ CH138 (U-NII-2C Band)



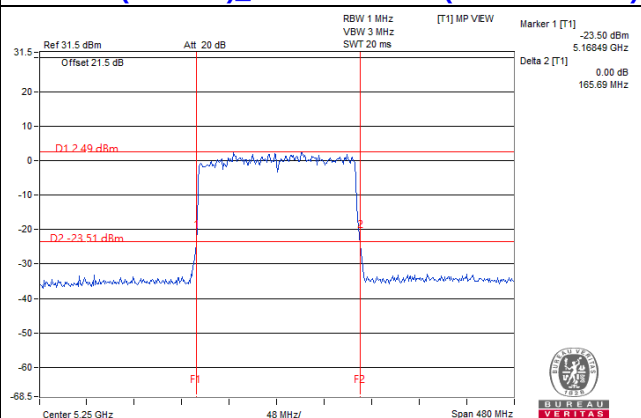
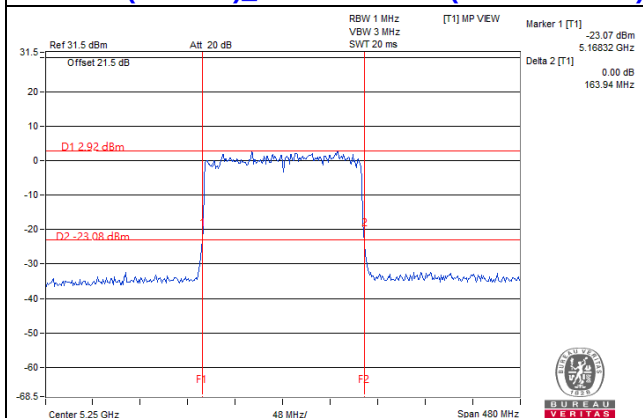
Note:

- 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

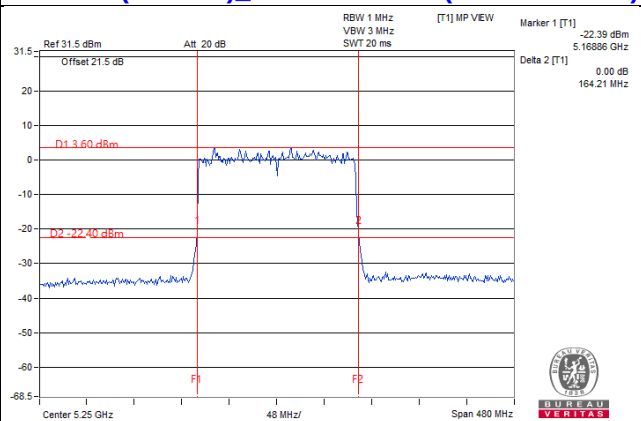
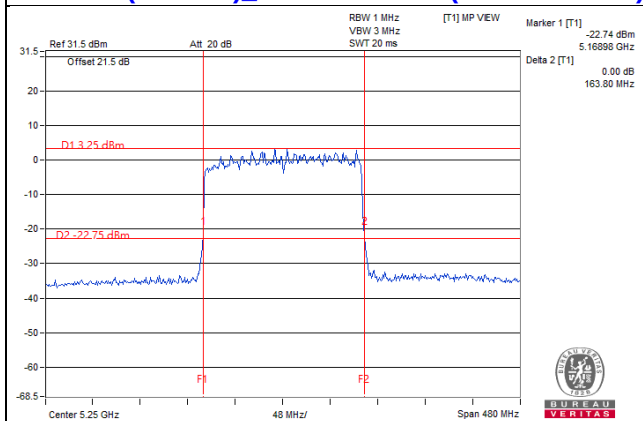
For channel straddling 5250MHz of 26dB BW

Spectrum Plot Value of 26dB BW

802.11ac (VHT160)_Chain 0 / CH50 (U-NII-2A Band) 802.11ac (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



802.11ac (VHT160)_Chain 2 / CH50 (U-NII-2A Band) 802.11ac (VHT160)_Chain 3 / CH50 (U-NII-2A Band)

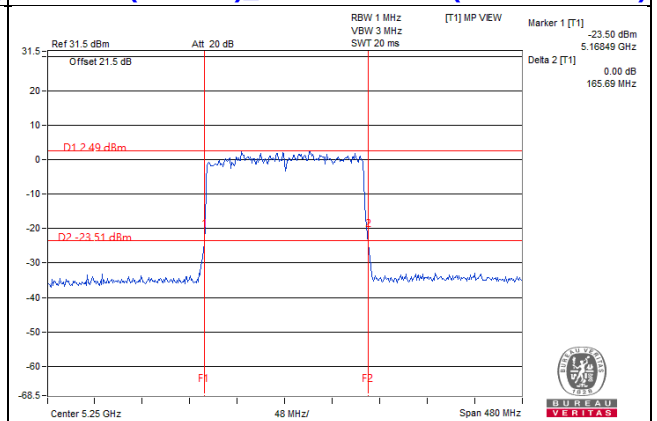
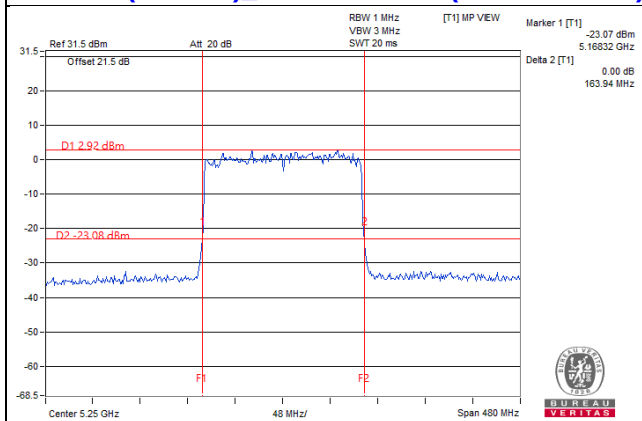


Note:

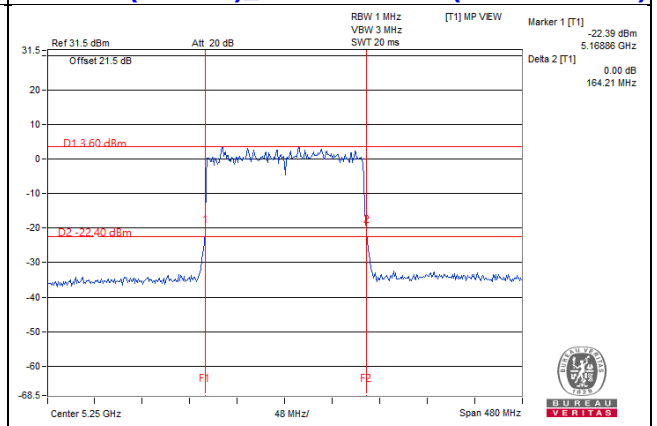
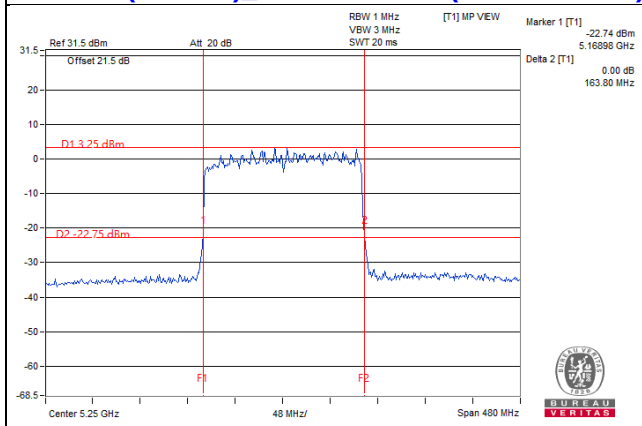
For CH50 (U-NII-1) = 5250MHz - Marker 1

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

802.11ax (VHT160)_Chain 0 / CH50 (U-NII-2A Band) 802.11ax (VHT160)_Chain 1 / CH50 (U-NII-2A Band)



802.11ax (VHT160)_Chain 2 / CH50 (U-NII-2A Band) 802.11ax (VHT160)_Chain 3 / CH50 (U-NII-2A Band)



Note:

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

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

Non-Beamforming Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	17.04	17.04	17.04	17.16
60	5300	17.04	17.04	17.04	17.16
64	5320	16.80	16.80	16.80	16.92
100	5500	16.80	16.92	16.80	16.92
116	5580	16.92	17.16	16.92	17.16
140	5700	17.04	17.16	16.92	17.16
144 (U-NII-2C Band)	5720	13.40	13.52	13.40	13.64
144 (U-NII-3 Band)	5720	3.40	3.40	3.40	3.40

802.11ax (HE20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	19.08	19.08	19.32	19.32
60	5300	19.08	19.08	19.08	19.08
64	5320	19.08	19.08	19.32	19.08
100	5500	19.08	19.44	19.08	19.32
116	5580	19.20	19.20	19.08	19.20
140	5700	19.08	19.08	19.44	19.32
144 (U-NII-2C Band)	5720	14.60	14.84	15.08	14.60
144 (U-NII-3 Band)	5720	4.48	4.60	4.48	4.48

802.11ax (HE40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	38.40	38.64	38.88	37.92
62	5310	38.64	39.12	38.64	39.12
102	5510	38.16	38.40	38.40	38.64
110	5550	39.36	38.40	38.40	38.40
134	5670	38.64	39.12	38.64	37.92
142 (U-NII-2C Band)	5710	34.20	34.20	34.20	34.20
142 (U-NII-3 Band)	5710	4.44	4.44	4.44	4.44

802.11ax (HE80)

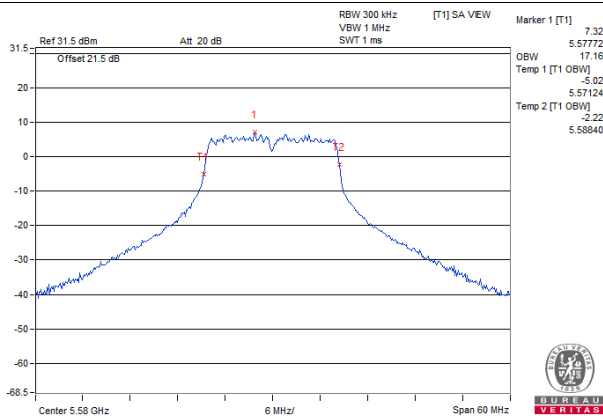
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	77.28	77.76	77.28	77.28
106	5530	77.28	77.28	77.28	78.24
122	5610	77.76	77.76	77.28	77.28
138 (U-NII-2C Band)	5690	73.88	73.88	74.36	73.88
138 (U-NII-3 Band)	5690	3.88	3.40	3.40	3.40

802.11ax (HE160)

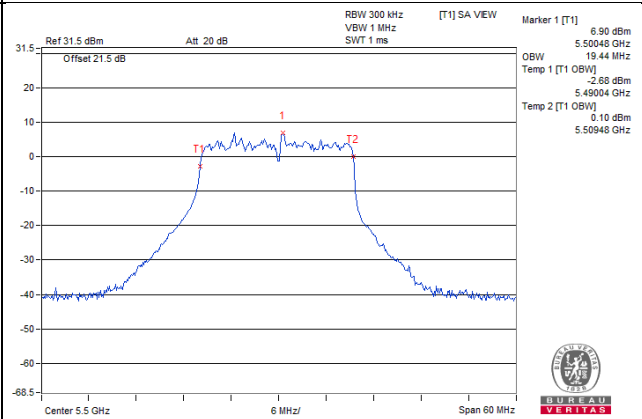
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-1 Band)	5250	157.44	155.52	155.52	156.48
50 (U-NII-2A Band)	5250	157.44	155.52	155.52	156.48
114	5570	156.48	156.48	156.48	156.48

Spectrum Plot of Max. Value

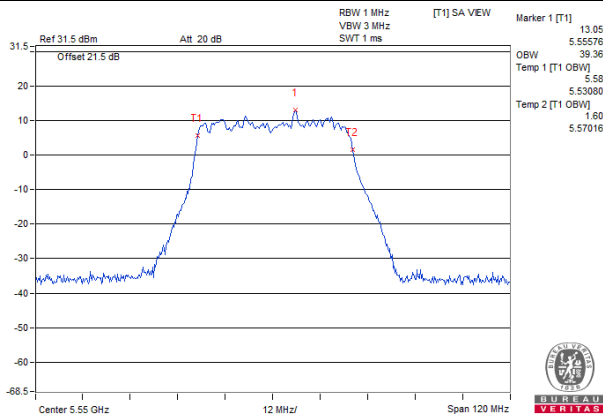
802.11a_Chain 1 / CH116



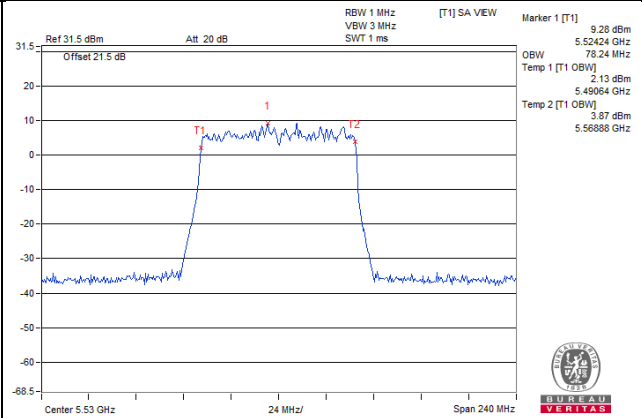
802.11ax (HE20)_Chain 1 / CH100



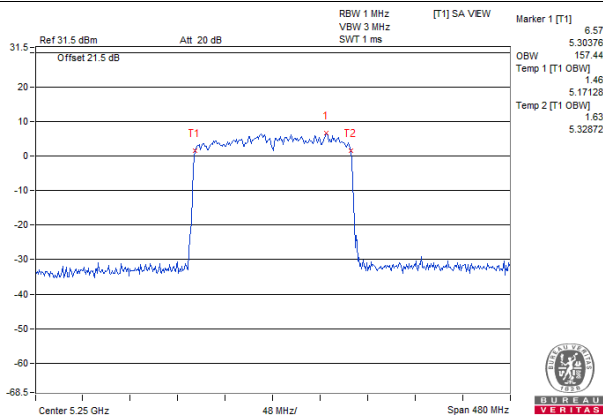
802.11ax (HE40)_Chain 0 / CH110



802.11ax (HE80)_Chain 3 / CH106



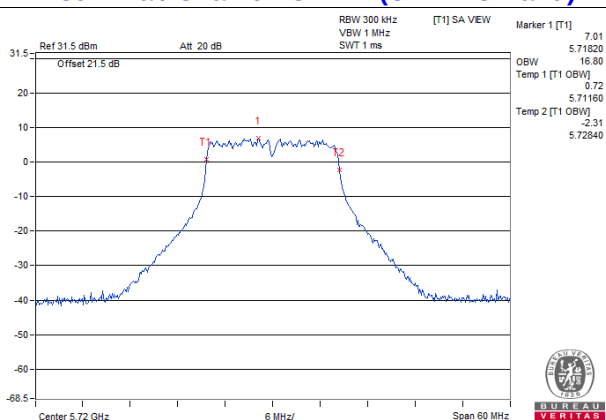
802.11ax (HE160)_Chain 0 / CH50



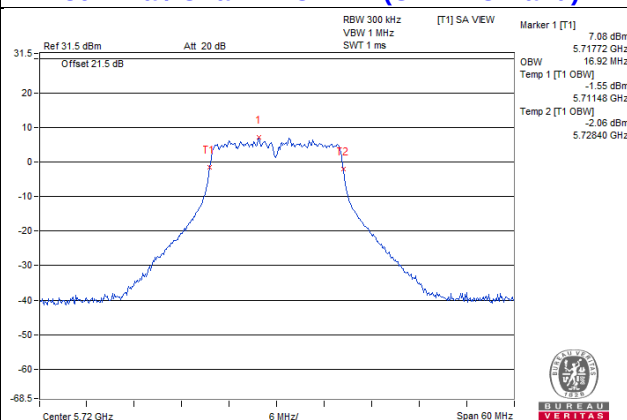
For channel straddling 5725MHz of OCP99 BW

Spectrum Plot Value of OCP99 BW

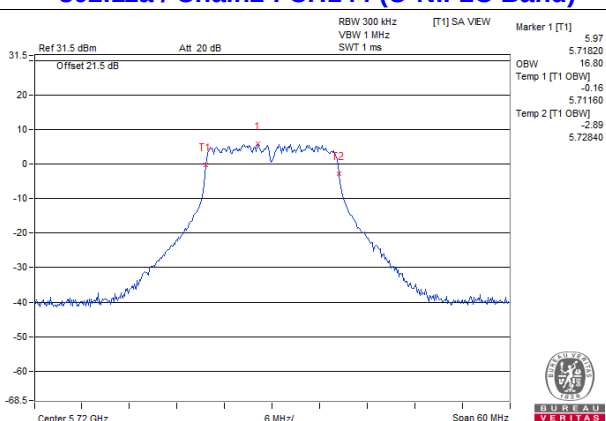
802.11a / Chain0 : CH144 (U-NII-2C Band)



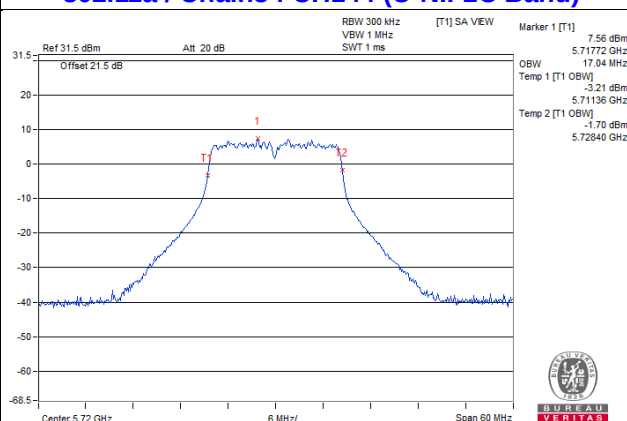
802.11a / Chain1 : CH144 (U-NII-2C Band)



802.11a / Chain2 : CH144 (U-NII-2C Band)

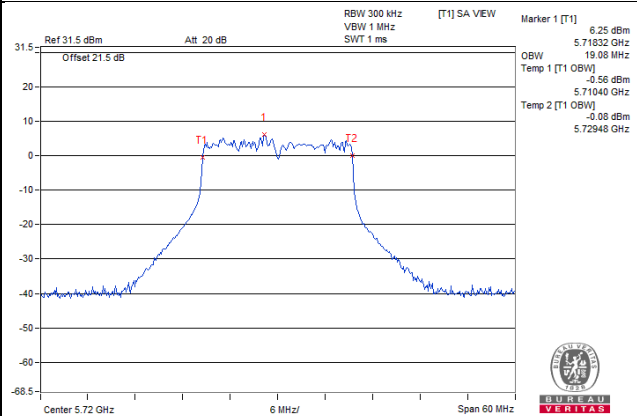


802.11a / Chain3 : CH144 (U-NII-2C Band)

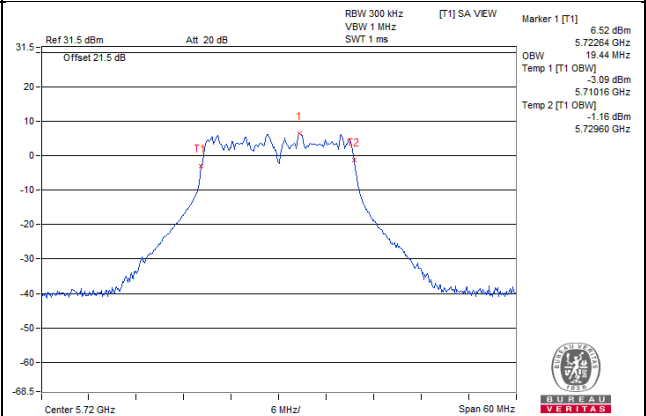


Spectrum Plot Value of OCP99 BW

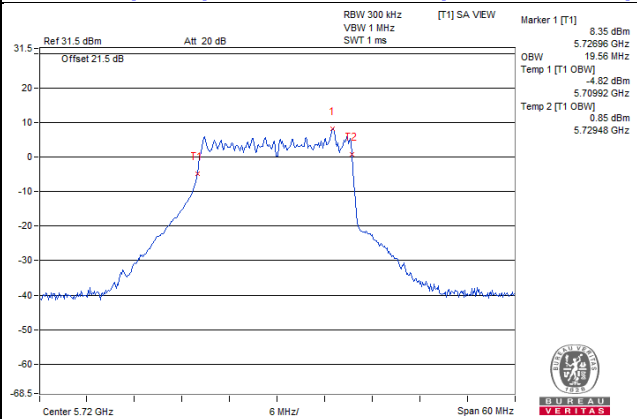
802.11ax (HE20) / Chain0 : CH144 (U-NII-2C Band)



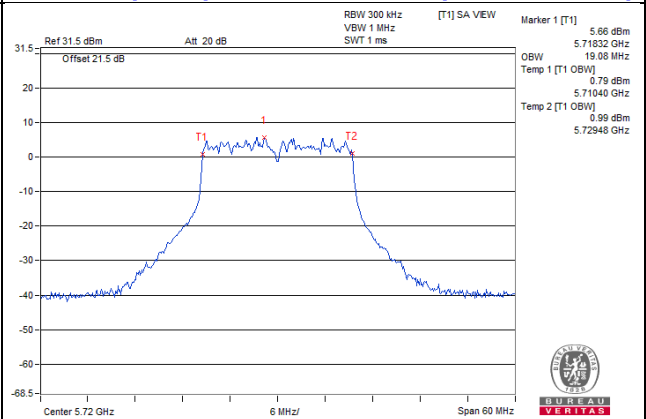
802.11ax (HE20) / Chain1 : CH144 (U-NII-2C Band)



802.11ax (HE20) / Chain2 : CH144 (U-NII-2C Band)

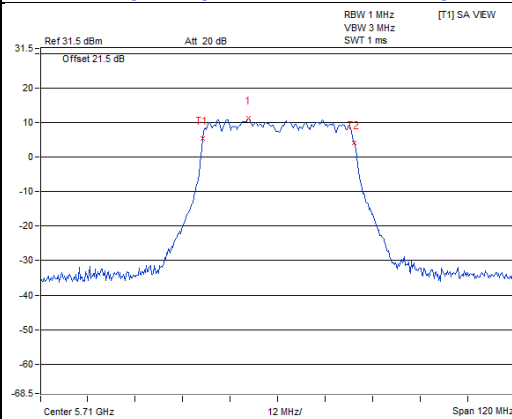


802.11ax (HE20) / Chain3 : CH144 (U-NII-2C Band)

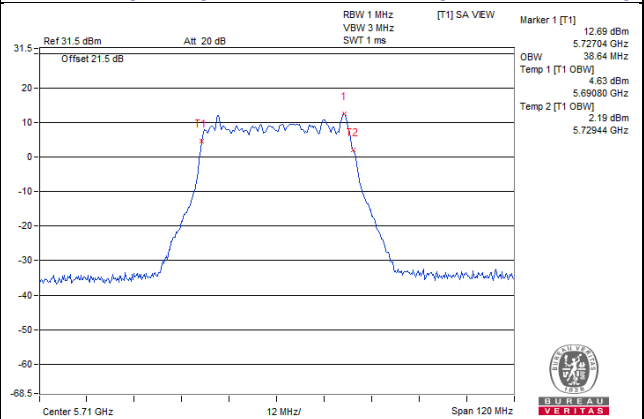


Spectrum Plot Value of OCP99 BW

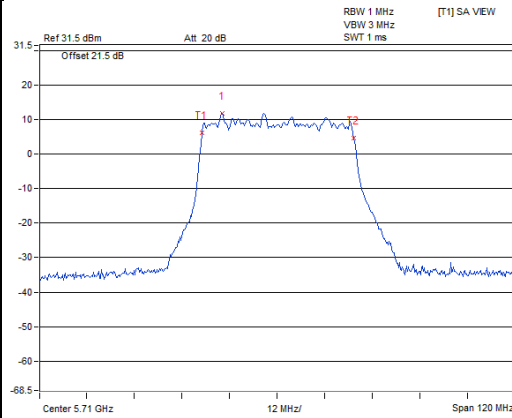
802.11ax (HE40) / Chain0 : CH142 (U-NII-2C Band)



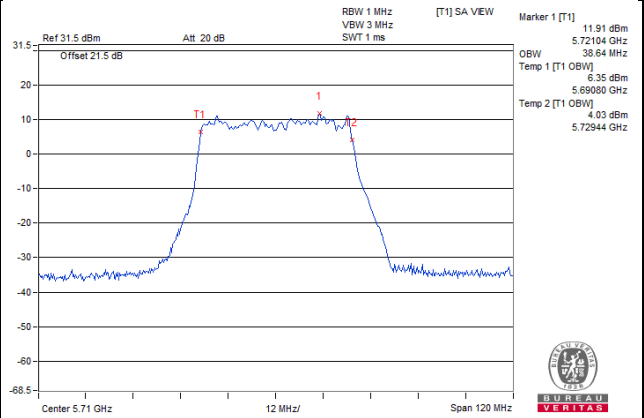
802.11ax (HE40) / Chain1 : CH142 (U-NII-2C Band)



802.11ax (HE40) / Chain2 : CH142 (U-NII-2C Band)

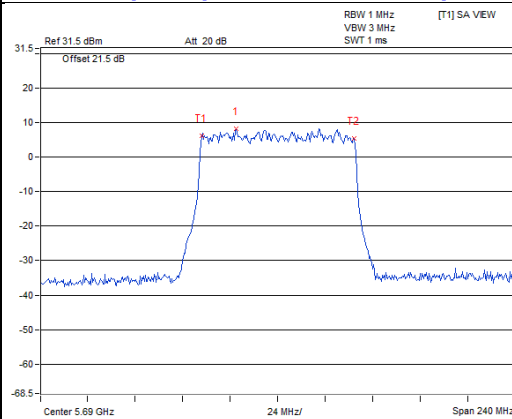


802.11ax (HE40) / Chain3 : CH142 (U-NII-2C Band)

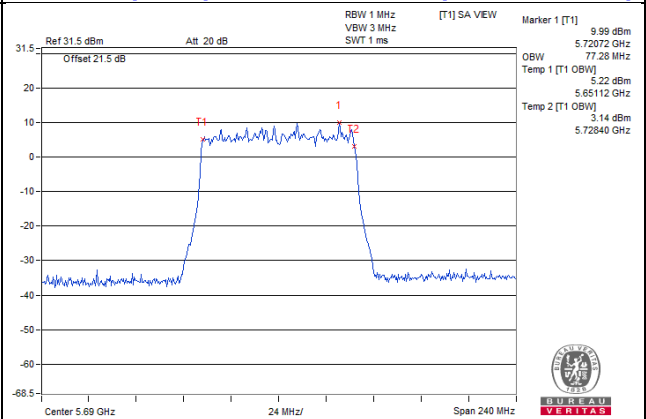


Spectrum Plot Value of OCP99 BW

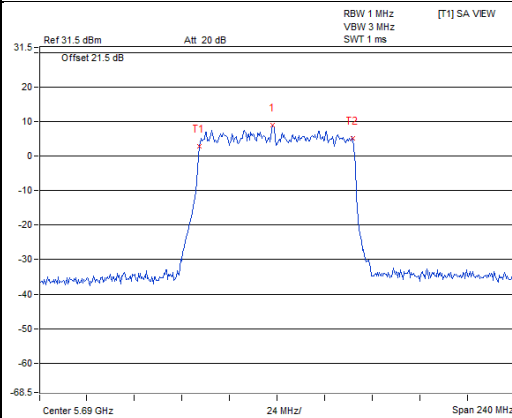
802.11ax (HE80) / Chain0 : CH138 (U-NII-2C Band)



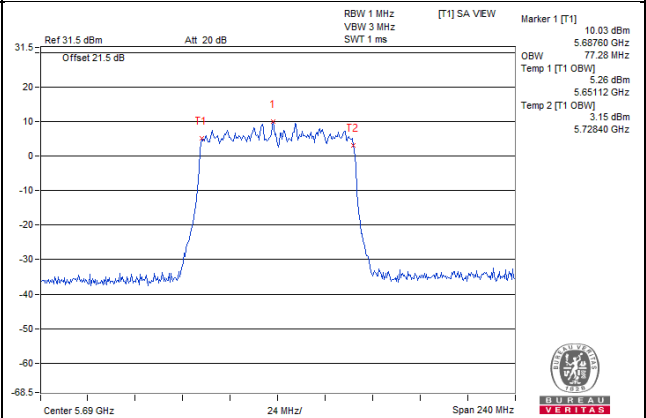
802.11ax (HE80) / Chain1 : CH138 (U-NII-2C Band)



802.11ax (HE80) / Chain2 : CH138 (U-NII-2C Band)



802.11ax (HE80) / Chain3 : CH138 (U-NII-2C Band)



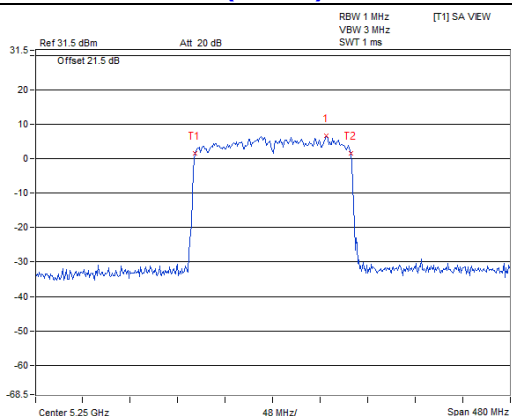
Note:

- For CH144 (U-NII-2C) = 5725MHz - Temp 1
- For CH142 (U-NII-2C) = 5725MHz - Temp 1
- For CH138 (U-NII-2C) = 5725MHz - Temp 1
- For CH144 (U-NII-3) = Temp 2 - 5725MHz
- For CH142 (U-NII-3) = Temp 2 - 5725MHz
- For CH138 (U-NII-3) = Temp 2 - 5725MHz

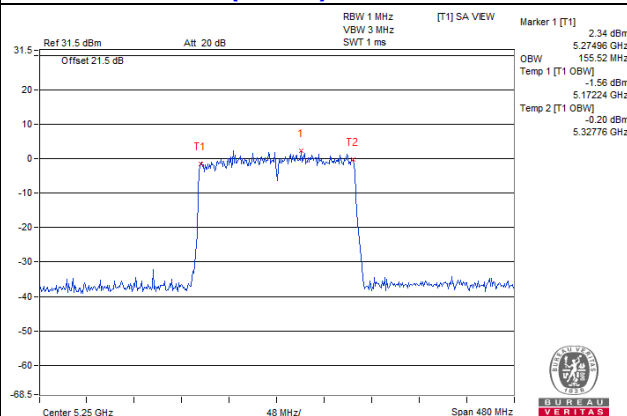
For channel straddling 5250MHz of OCP99 BW

Spectrum Plot Value of OCP99 BW

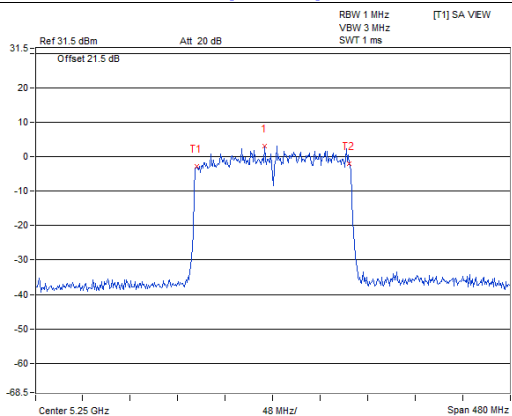
802.11ax (HE160)_Chain 0 / CH50



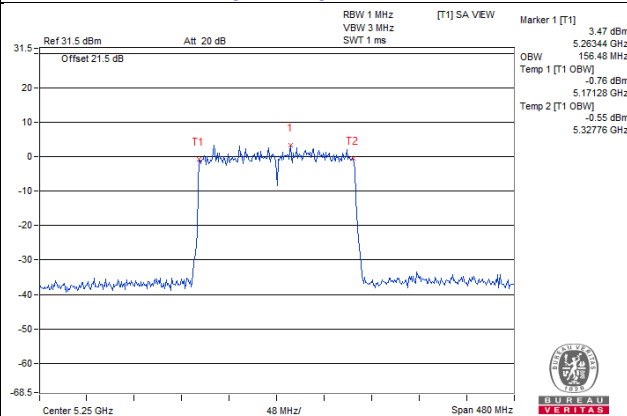
802.11ax (HE160)_Chain 1 / CH50



802.11ax (HE160)_Chain 2 / CH50



802.11ax (HE160)_Chain 3 / CH50



Note:

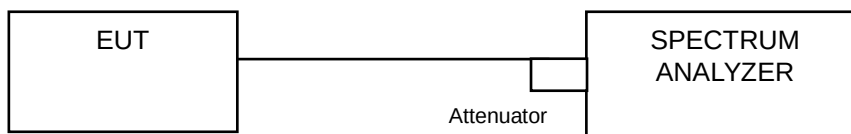
For CH50 (U-NII-1) = 5250MHz - Temp 1
For CH50 (U-NII-2A) = Temp 2 - 5250MHz

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

Using method SA-1

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

For U-NII-3:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-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	Chain 2	Chain 3			
52	5260	2.72	2.37	1.83	2.34	8.35	8.60	Pass
60	5300	2.50	2.39	2.01	2.35	8.34	8.60	Pass
64	5320	2.31	2.52	1.92	2.47	8.33	8.60	Pass
100	5500	2.39	2.07	2.00	2.41	8.24	8.70	Pass
116	5580	2.75	2.35	2.15	2.20	8.39	8.70	Pass
140	5700	2.38	1.94	2.24	2.74	8.36	8.70	Pass
144 (U-NII-2C Band)	5720	2.83	2.39	1.90	2.81	8.52	8.70	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 = 8.4dBi > 6dBi, so the power density limit shall be reduced to $11-(8.4-6) = 8.60\text{dBm}$.
 3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power density limit shall be reduced to $11-(8.3-6) = 8.70\text{dBm}$.

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	Chain 2	Chain 3			
52	5260	2.53	2.46	1.49	2.27	8.23	8.60	Pass
60	5300	2.82	2.02	1.00	2.54	8.17	8.60	Pass
64	5320	2.19	2.69	0.90	3.02	8.29	8.60	Pass
100	5500	2.67	2.17	1.94	2.64	8.39	8.70	Pass
116	5580	1.78	2.68	1.92	2.43	8.24	8.70	Pass
140	5700	2.07	1.91	2.42	2.72	8.31	8.70	Pass
144 (U-NII-2C Band)	5720	1.76	2.51	1.70	2.22	8.08	8.70	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 = 8.4dBi > 6dBi, so the power density limit shall be reduced to $11-(8.4-6) = 8.60\text{dBm}$.
 3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power density limit shall be reduced to $11-(8.3-6) = 8.70\text{dBm}$.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
54	5270	1.53	1.47	1.13	1.45	7.42	8.60	Pass
62	5310	1.87	1.19	1.22	1.15	7.39	8.60	Pass
102	5510	1.73	1.07	0.87	2.08	7.49	8.70	Pass
110	5550	1.66	1.72	0.59	1.98	7.54	8.70	Pass
134	5670	1.47	0.62	0.79	1.60	7.16	8.70	Pass
142 (U-NII-2C Band)	5710	1.81	1.60	0.54	1.01	7.29	8.70	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 = 8.4dBi > 6dBi, so the power density limit shall be reduced to 11-(8.4-6) = 8.60dBm.
3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power density limit shall be reduced to 11-(8.3-6) = 8.70dBm.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
58	5290	-1.59	-1.85	-1.90	-1.60	4.29	8.60	Pass
106	5530	-2.01	-1.66	-1.79	-1.43	4.30	8.70	Pass
122	5610	-2.18	-1.86	-2.08	-1.01	4.26	8.70	Pass
138 (U-NII-2C Band)	5690	-1.64	-2.13	-1.87	-1.69	4.19	8.70	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 = 8.4dBi > 6dBi, so the power density limit shall be reduced to 11-(8.4-6) = 8.60dBm.
3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power density limit shall be reduced to 11-(8.3-6) = 8.70dBm.

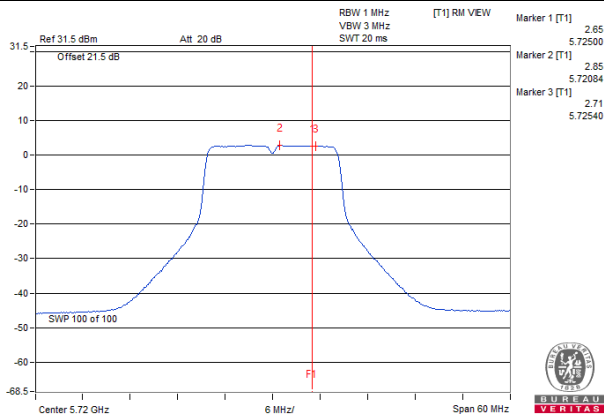
802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
50 (U-NII-1 Band)	5250	-7.71	-8.01	-8.40	-7.53	-1.88	14.60	Pass
50 (U-NII-2A Band)	5250	-7.36	-7.85	-8.08	-7.21	-1.59	8.60	Pass
114	5570	-6.51	-6.79	-6.86	-6.74	-0.70	8.70	Pass

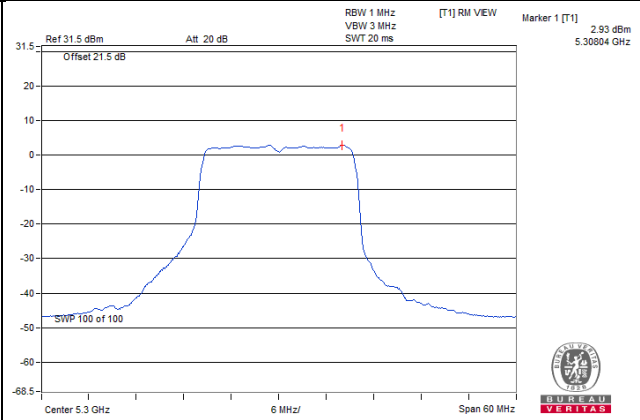
- Note:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = 8.4dBi > 6dBi, so the power density limit shall be reduced to $17-(8.4-6) = 14.60\text{dBm}$.
2. For U-NII-2A: The directional gain = 8.4dBi > 6dBi, so the power density limit shall be reduced to $11-(8.4-6) = 8.60\text{dBm}$.
3. For U-NII-2C: The directional gain = 8.3dBi > 6dBi, so the power density limit shall be reduced to $11-(8.3-6) = 8.70\text{dBm}$.

Spectrum Plot of Worst Value

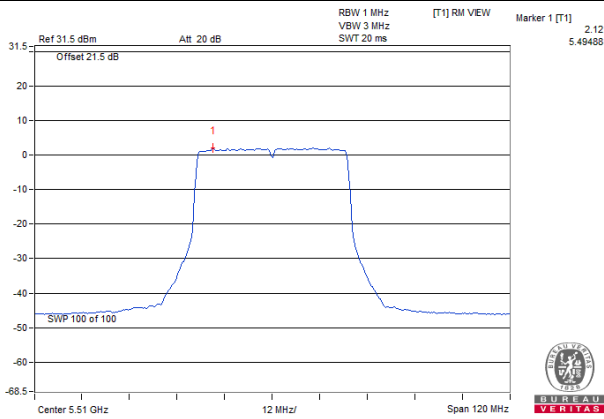
802.11a_Chain 0 / CH144 (U-NII-2C)



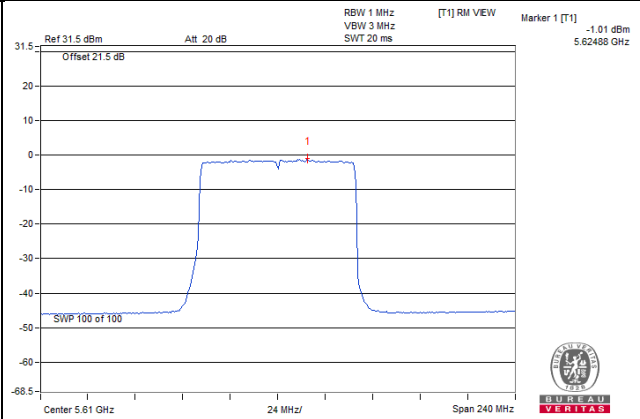
802.11ax (HE20)_Chain 0 / CH60



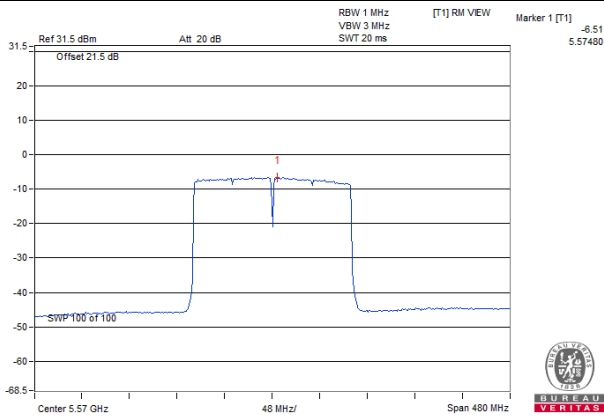
802.11ax (HE40)_Chain 3 / CH102



802.11ax (HE80)_Chain 3 / CH122



802.11ax (HE160)_Chain 0 / CH114



For U-NII-3:

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300kHz)				Total PSD		Total PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1	Chain 2	Chain 3	mW/ 300kHz	dBm/ 300kHz			
144 (U-NII-3 Band)	5720	-5.62	-6.01	-6.78	-5.56	1.0126	0.05	2.27	27.90	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 8.1dBi > 6dBi, so the power density limit shall be reduced to 30-(8.1-6) = 27.90dBm.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)				Total PSD		Total PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1	Chain 2	Chain 3	mW/300 kHz	dBm/300kHz			
144 (U-NII-3 Band)	5720	-6.39	-6.14	-5.73	-5.36	1.0312	0.13	2.35	27.90	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 8.1dBi > 6dBi, so the power density limit shall be reduced to 30-(8.1-6) = 27.90dBm.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)				Total PSD		Total PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1	Chain 2	Chain 3	mW/300 kHz	dBm/300kHz			
142 (U-NII-3 Band)	5710	-7.16	-8.47	-7.75	-7.97	0.662	-1.79	0.43	27.90	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 8.1dBi > 6dBi, so the power density limit shall be reduced to 30-(8.1-6) = 27.90dBm.

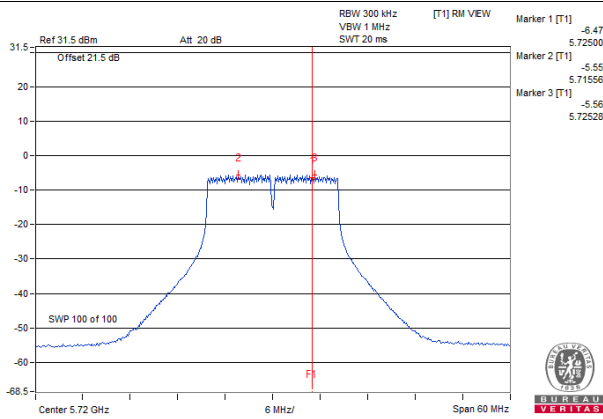
802.11ax (HE80)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)				Total PSD		Total PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1	Chain 2	Chain 3	mW/300 kHz	dBm/300kHz			
138 (U-NII-3 Band)	5690	-11.34	-11.32	-11.78	-11.15	0.29035	-5.37	-3.15	27.90	Pass

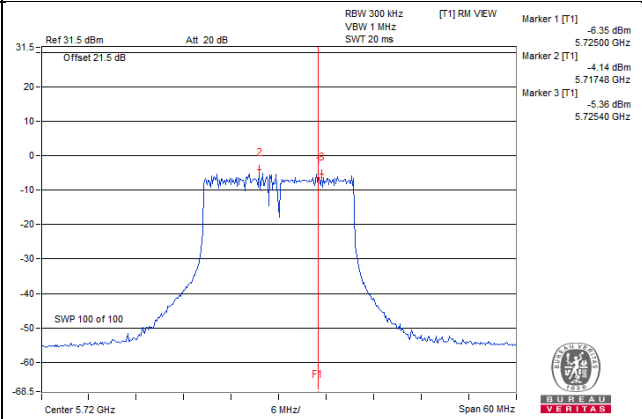
Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = 8.1dBi > 6dBi, so the power density limit shall be reduced to $30 - (8.1 - 6) = 27.90\text{dBm}$.

Spectrum Plot of Worst Value

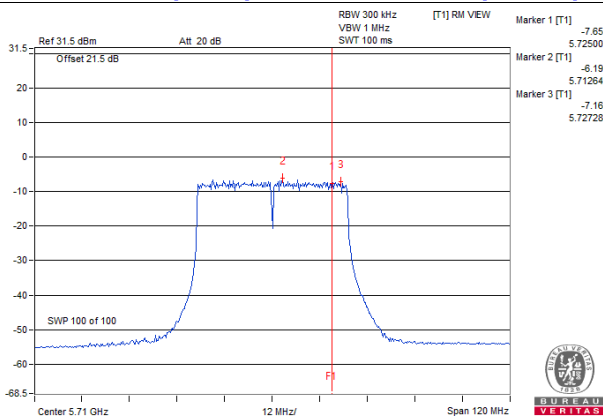
802.11a_Chain 3 / CH144 (U-NII-3)



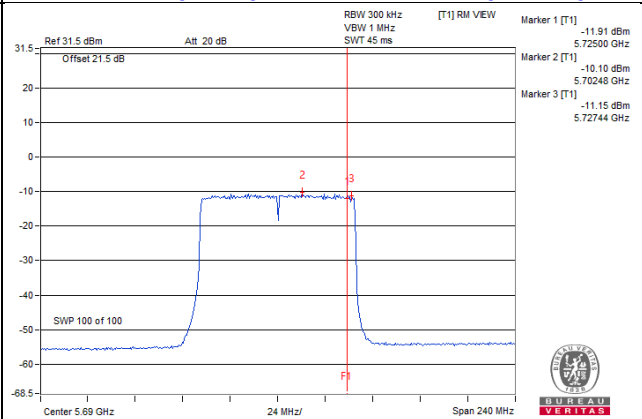
802.11ax (HE20)_Chain 3 / CH144 (U-NII-3)



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



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

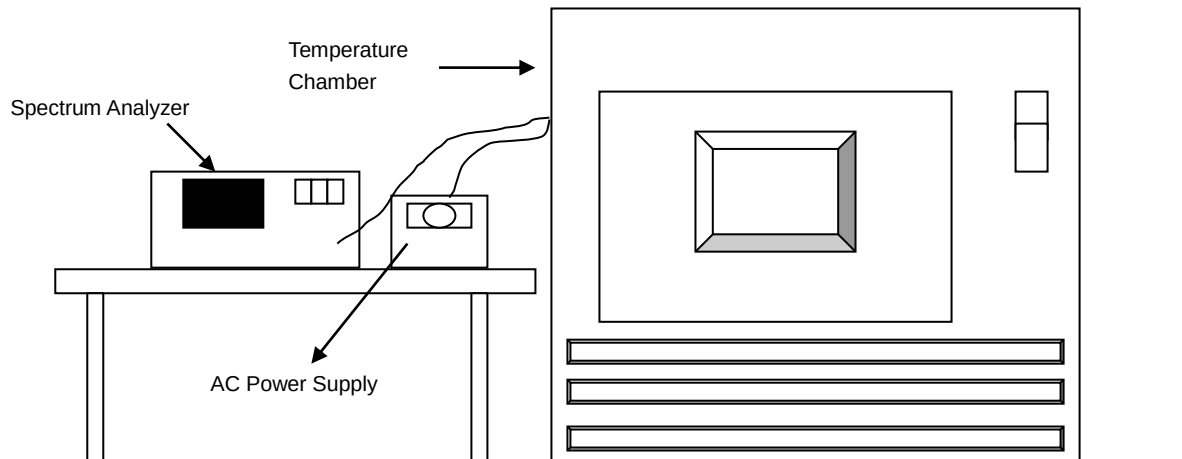


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5260 MHz									
TEMP. (°C)	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	5259.9869	PASS	5259.9861	PASS	5259.986	PASS	5259.9868	PASS
30	120	5259.9801	PASS	5259.9789	PASS	5259.9785	PASS	5259.981	PASS
20	120	5260.0153	PASS	5260.0125	PASS	5260.013	PASS	5260.0157	PASS
10	120	5259.9901	PASS	5259.9923	PASS	5259.9904	PASS	5259.9897	PASS
0	120	5259.9854	PASS	5259.9808	PASS	5259.9845	PASS	5259.981	PASS

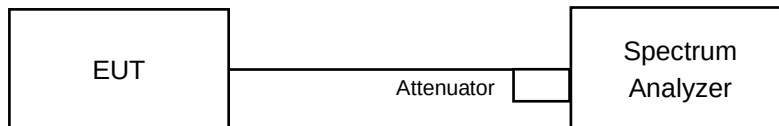
Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5259.991	PASS	5259.9933	PASS	5259.9902	PASS	5259.9902	PASS
	120	5259.9901	PASS	5259.9923	PASS	5259.9904	PASS	5259.9897	PASS
	102	5259.9904	PASS	5259.9922	PASS	5259.9904	PASS	5259.9892	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	3.26	3.27	3.27	3.27	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	4.55	4.55	4.43	4.55	0.5	Pass

802.11ax (HE40)

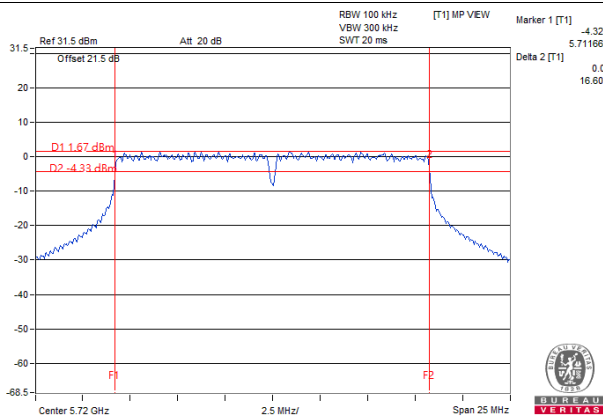
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
142 (U-NII-3 Band)	5710	4.18	4.14	4.14	4.11	0.5	Pass

802.11ax (HE80)

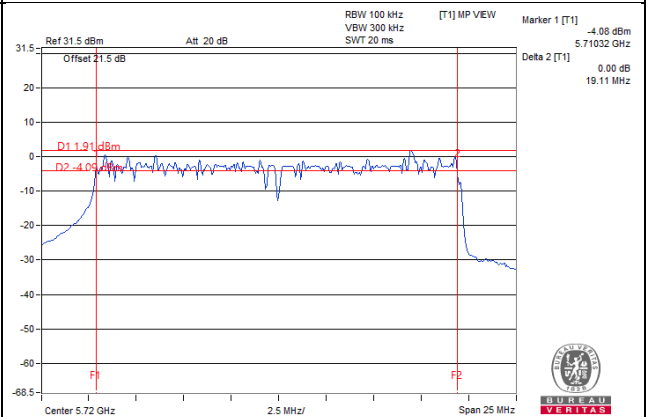
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
138 (U-NII-3 Band)	5690	4.14	4.17	4.06	4.13	0.5	Pass

Spectrum Plot of Worst Value

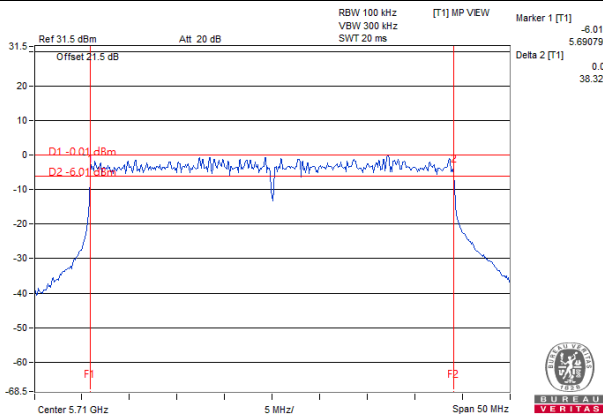
802.11a_Chain 0 / CH144 (U-NII-3)



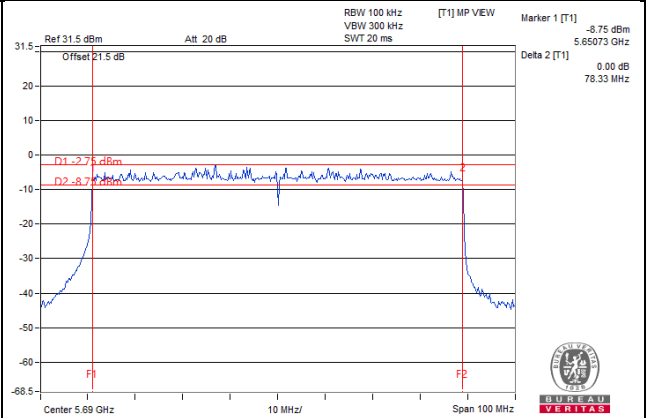
802.11ax (HE20)_Chain 2 / CH144 (U-NII-3)



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



802.11ax (HE80)_Chain 2 / CH138 (U-NII-3)



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

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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